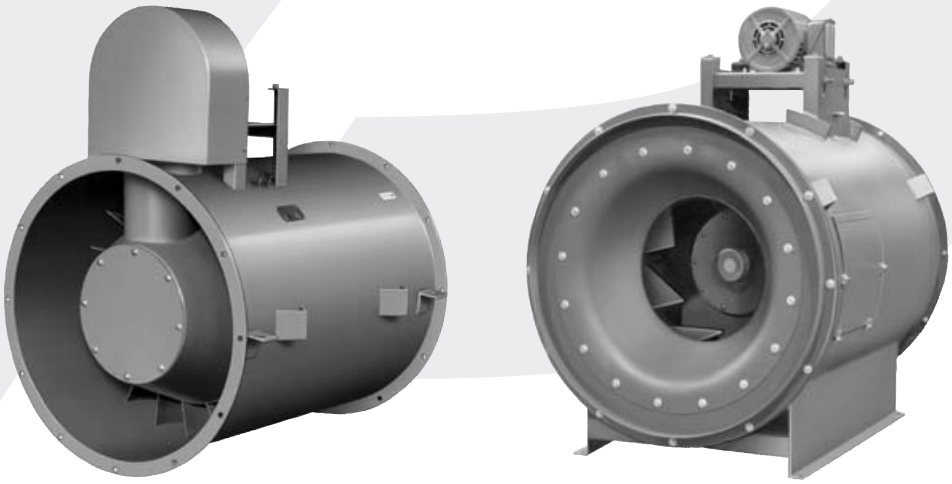
PENN BARRY

Bulletin TUB05



TUBULAR INLINE CENTRIFUGAL FANS

Model: TUB
Airfoil and Backward Inclined
Class I, II and III Belt Drive

MOVING YOUR WAY

CERTIFIED RATINGS

PennBarry certifies that the Tubular Centrifugal Fans shown on pages 22-38 and 40-43 are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

FANSIZER®
Product Selection Software

FanSizer software allows you to select the best centrifugal or axial unit for your application. Input CFM and static pressure, and FanSizer will make the optimum selection. It allows you to complete job schedules which you can store, modify and print in seconds. Features include: on-line help, on-screen product drawings and dimensons, and complete text specifications. In addition, you can convert job schedules to ASCII code for use with other programs like word processing.

FANCAD®
Library of CAD Drawings

FanCad is a library of drawings for use with computer-aided design (CAD) systems. FanCad's pre-drawn details can save hour of drafting time. Included are all popular PennBarry fans and related items.

FanSizer and FanCad are registered trademarks.

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- On-line catalog
- List of nearest PennBarry representatives
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General Information

TUB - Tubular Centrifugal Fan

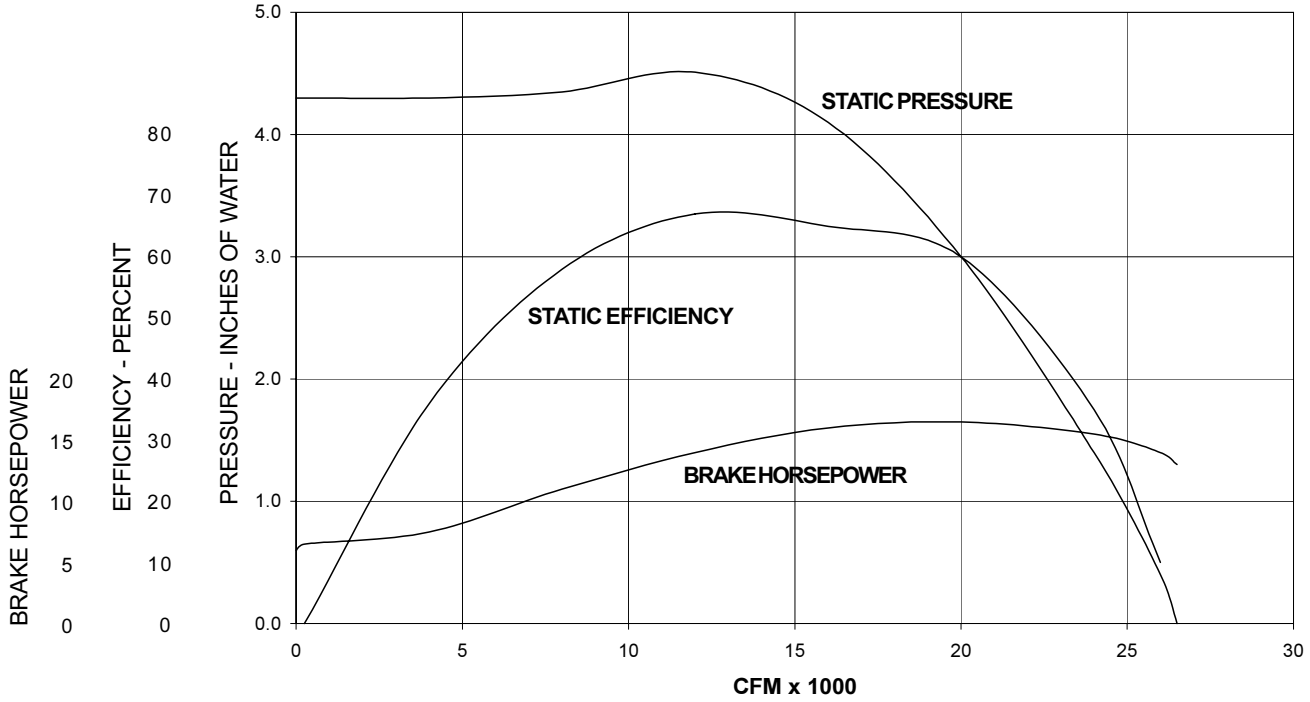
PennBarry inline centrifugals, or “tubular” fans, are the most practical fans for many applications. Straight-line airflow through the fan eliminates unnecessary duct elbows, and tubular fans are normally quieter than axial type inline fans. In addition, vertically mounted units and ceiling hung fans save valuable floor space.

The PennBarry tubular centrifugal fans employ backward inclined (sizes 90-165) and airfoil (sizes 182-890) non-overloading wheels with a mated funnel and wheel cone. This design results in higher efficiencies and, consequently, lower sound levels.

This Tubular Centrifugal Fan has been designed for efficient operation throughout its wide performance range. Accomplishing this high performance goal is a result of a combination of properly designed spun inlet cones, highly efficient Type BC and AF wheels, with spun shrouds and aero dynamic conversion vanes. All parts of the fan in the airstream have been designed and manufactured to produce the best possible results under rated operating conditons since most tubular centrifugal fans are supplied for low to medium pressure return air and exhaust air applications, our fans have been designed to maximize efficiency at these pressures. The TUB 365 performance curve shown below best illustrates this fact, posting high efficiency in the range of 12,000 CFM to 21,000 CFM. This range is unusually wide compared to competitive models and is typical of our entire range of sizes from 90 thru 600. Higher efficiencies means it will often be possible to select fans with lower installed motor horsepower, with lower installation costs for wiring and motor control equipment as well as first cost of motors. Even if similar sized motors are required, lower brake horsepower results in lower energy consumption and considerable savings in utility bills over the operating life of the building. Such true evaluation will more than justify quality equipment.

Quality engineering and outstanding service have become PennBarry trademarks over the years. Our products are backed by extensive research and testing in an AMCA International Accredited Laboratory. Like other PennBarry products, rugged construction and accurate performance ratings of tubular centrifugal fans assure a long life of trouble-free operation. PennBarry has a professional, experienced staff to serve its customers and independent sales representatives that work closely with the factory to provide the correct high performance air moving equipment for each application.

TUB Model 365
Performance Curve

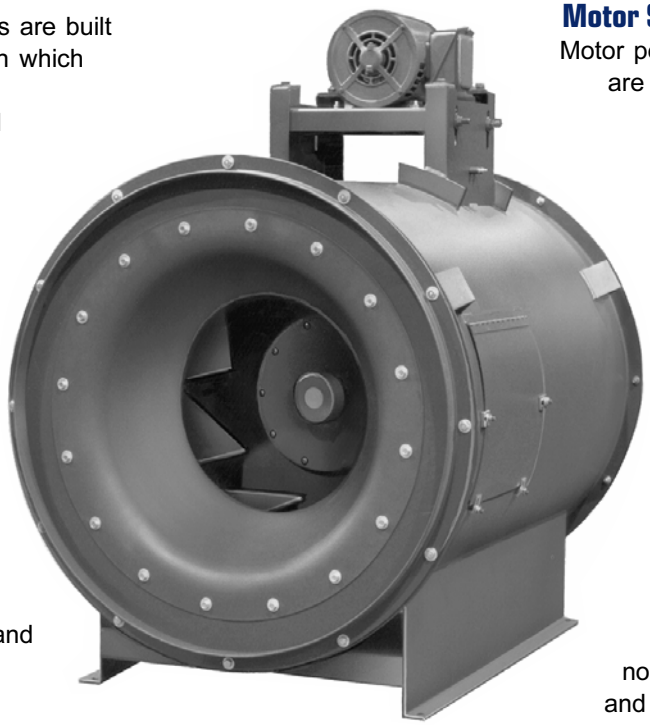


Features and Benefits

Tubular Centrifugal Fan - TUB

Housings

PennBarry tubular centrifugal fans are built to last longer than the systems in which they are installed. Housings are constructed of heavy gauge steel and are continuously welded so they will be strong and airtight. A completely enclosed fan mounting base is furnished on horizontal floor mount units. Welded suspension brackets are supplied on horizontal ceiling hung fans. Reinforced end brackets for floor mounting or ceiling mounting are furnished for vertical units. Lifting clips are welded to the housing of all PennBarry tubular fans for easy handling. Inlet cones are bolted to the inlet side in a way that facilitates removal and access to the wheel.



Tubular Centrifugal Fan

Tubular fans have a cylindrical chamber, called the inner shaft barrel, located in the middle of the airstream. The inner shaft barrel houses the fan sheave, shaft and bearings. The barrel is continuously welded except for a bolted access panel on the discharge end.

Motor Supports

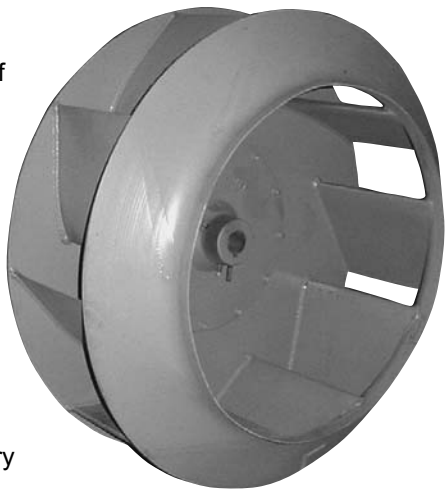
Motor pedestals on Arrangement 1 fans are continuously welded steel plate and become a part of the fan mounting base. Motors are mounted on adjustable slide bases. The motor platform on Arrangement 3 and 9 fans has four adjustment points to assure optimum rigidity and accurate belt tensioning. Support legs for Arrangement 3 and 9 motor platforms are heavy steel angle.

Wheels

PennBarry tubular centrifugal fans have energy efficient, non-overloading backward inclined and airfoil wheels. Wheel diameters are in accordance with the standard sizes adopted by AMCA. The wheels are specially designed for maximum efficiency and quiet operation. The blades are continuously welded to the backplate and wheel cone.

Straightening Vanes

The straightening vanes of the PennBarry tubular centrifugal fan serve a double purpose. They not only support the inner shaft barrel assembly, but also straighten the airflow exiting the fan wheel. This configuration contributes substantially to the overall operating efficiency of the PennBarry tubular fan.



Tubular Airfoil Wheel

Bearings and Shafts

Bearings are ball or roller anti-friction type with a minimum L_{10} life of at least 40,000 hours. They are designed for maintenance-free operation under normal conditions. One piece cast iron pillow blocks are standard, but split pillow blocks are also available. All bearings have extended lubrication lines to the outside of the fan housing for ease of maintenance. To assure smooth operation, first critical shaft speeds are at least 142% of the fan's maximum operating speed.

Options and Accessories

TUB - Tubular Centrifugal Fan

Fan Arrangements

Arrangement 1

Arrangement 1 tubular fans are floor mounted units with horizontal airflow. A continuously welded motor pedestal becomes an integral part of the fan mounting base. The motor pedestal can be located on either side of the fan housing. The wheel is overhung on the end of a shaft which is supported on two widely spaced bearings. Bearings are mounted on a steel pedestal contained within the inner shaft barrel.

Arrangement 1 fans are available in Class I, II and III and in sizes 182 through 890. Contact the factory for dimensional data. Maximum operating temperature for Arrangement 1 fans is 200°F.

Arrangement 3

Arrangement 3 tubular fans are different from other tubular fans in that the wheel is suspended on the shaft between the bearings, like on Arrangement 3 scroll fans. One of the bearings is mounted inside the inner shaft barrel; the other is mounted on sturdy structural supports at the fan inlet. Because there is a bearing in the airstream, the maximum operating temperature for Arrangement 3 is 180°F. The suspended wheel configuration allows the fan to be 30% shorter than other tubulars.

On Arrangement 3 fans the motor is mounted directly on the fan housing in any of eight standard locations. It should be noted, however, that several of those motor positions interfere with standard floor mounts, and several may not work well with ceiling hung units.

Arrangement 3 fans are for horizontal airflow. Base mounted units are available in sizes 90 through 890; ceiling hung units come in sizes 90 through 542.

Arrangement 9

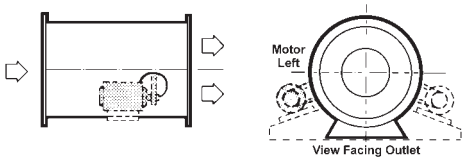
Arrangement 9 fans are the most versatile type of tubular fan. They can be horizontal base mounted, horizontal ceiling hung, or vertically mounted. The wheel, shaft and bearing configuration is the same as Arrangement 1, but the motor is mounted on the fan housing, the same as with Arrangement 3 fans. Vertical units are constructed with reinforcing end brackets for either floor or ceiling mounts.

Base mounted Arrangement 9 fans are available in sizes 90 through 890. Ceiling hung fans are available from size 90 through 542 on a standard basis. Vertical mounted fans are available from size 90 through 660 on a standard basis. Vertical fans larger than 660 are custom engineered.

Arrangement 9 Vertical Roof Mount

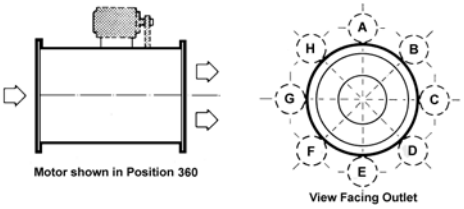
Arrangement 9 Floor Mounted

Drive Arrangements for Tubular Centrifugal Fans



ARRANGEMENT 1
For belt drive. Wheel overhung on a shaft supported by bearings mounted within casing. Motor mounted independent of casing. Horizontal discharge.

Arrow ⇨ designates the direction of airflow.



ARRANGEMENTS 3 & 9
For belt drive. Wheel overhung (Arr. 9) or suspended (Arr. 3) on a shaft supported by bearings. Designed for mounting of motor on outside of casing in one of the standard locations shown. Largest motor to be mounted on standard construction Arr. 3 & 9 is 50 HP, 1800 RPM, 326 T frame. Contact factory if larger motor is required.

Trak SwingOut and MaxAccess Fans

In some air moving applications there are problems with foreign materials building up inside the fan. Spray paint exhaust systems and systems exhausting greasy air often experience this condition. Fans in such systems should be inspected and cleaned frequently. PennBarry Trak SwingOut and MaxAccess fans provide superior accessibility for applications where quick inspection and clean-out are important. These special vertically mounted, Arrangement 9 tubular fans keep down-time to a minimum and help maintain tight production schedules. Servicing can be completed in minutes rather than hours. Repairing fans and replacing wheels is also easier with Trak SwingOut fans because of full accessibility. Trak SwingOut and MaxAccess fans are available in Class I and II in sizes from 222 through 490. Fans larger than 490 are custom engineered.

On Trak SwingOut fans the entire rotating assembly swings out of the fan housing on special heavy duty hinges. The PennBarry patented retractable inlet funnel provides an aerodynamically efficient overlap between the inlet and wheel. As the SwingOut assembly closes, the door is guided into place by a wheel rolling on a guide track. An extruded neoprene gasket surrounds the door to form an airtight seal.

On MaxAccess fans the rotating assembly is permanently mounted within the fan, but two large doors allow immediate inspection of the fan interior. The reinforced doors are opened quickly, without tools. They have heavy duty hinges and are gasketed with neoprene for airtight seals. Removable inner plates on the drive compartment provide easy access to the drive and bearings. Extended lube fittings help to make servicing fast.

Trak SwingOut

Available Fan Configurations

ARRANGEMENT	AIRFLOW	AVAILABLE FAN SIZES		
		BASE MOUNTED	CEILING HUNG	VERTICAL MOUNTED
1	Horizontal	90 – 890	–	–
3	Horizontal	90 – 890	90 – 542	–
9	Horizontal	90 – 890	90 – 542	–
9	Vertical	–	–	90 – 542
Trak SwingOut	Vertical	–	–	222 – 490
MaxAccess	Vertical	–	–	222 – 490

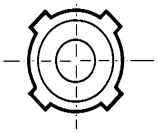
Vertical Mounting

Specify either up blast or down blast discharge for vertically-mounted fans.

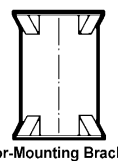
The locations of motors, supports, access doors, etc., are determined by viewing the outlet of the fan and resting location 180 on the floor as shown for Arrangement 9.

Arrangement 9 can be furnished with supports for floor, wall or ceiling mounting. The positions of these supports determines which motor locations are available for motor placement. Generally motor locations 135, 180 and 225 are not available on floor, wall or inverted ceiling-mounted fans and motor locations 45, 90, 270 and 315 may not be available for ceiling-hung fans.

Another method of mounting vertical fans is shown in the view on the right. Specify fan to be furnished with ceiling-mounting brackets, floor-mounting brackets or both.



Ceiling-Mounted Brackets



Floor-Mounting Brackets

MaxAccess

Options and Accessories

TUB - Tubular Centrifugal Fan

Companion Flanges
Provided as an accessory to accommodate slip connections at the inlet or discharge when required.

Weather Cover
Provided with ventilation slots, affording complete weatherproof protection of motor and drive for outdoor installation. NOTE: Weather cover OR belt guard may be provided, not both. Weather covers are not available on horizontal ceiling hung fans.

Lifting Lugs
These are a standard accessory on all PennBarry tubular centrifugal fans, provided for convenience and ease in handling during installation.

Ceiling Brackets
Structural angles welded to the fan casing are provided to accommodate rod hangers where the fan is intended to be ceiling suspended.

Discharge Cap
Often called a wind band, it is used with the vertical upblast units. It consists of a butterfly type gravity damper surrounded by a wind break. It provides weather protection during both operating and shutdown conditions.

End Bracket
Provided for vertical airflow only, floor or ceiling mounted. See dimension pages for specific type of end brackets according to fan size.

Access Doors
Located over the wheel, position is determined by installation requirements. Doors are available in either the bolted type or the quick-opening hinged type. All hardware is stainless steel or cadmium plated to resist corrosion.

Curb Cap
Provided as a base for the unit to be installed over the roof curb which would be provided by others.

Additional Options
- Shaft Seals
- Vibration Isolators
- Drains
- Inlet and/or Discharge Screens
- Special Paints or Coatings
- Special metals such as Stainless Steel

Variable Inlet Vanes
Externally mounted inlet vanes and inlet vanes that are “nested” inside the inlet cone are available as accessories. Suitable for manual or motorized operation. Constructed with stainless steel rods and friction-free bearings to assure smooth and vibrationless performance.

Belt Guard
Protective cover surrounding the moving parts, provided for personnel safety. Available with tachometer opening where specified. Totally enclosed type guard is also available.

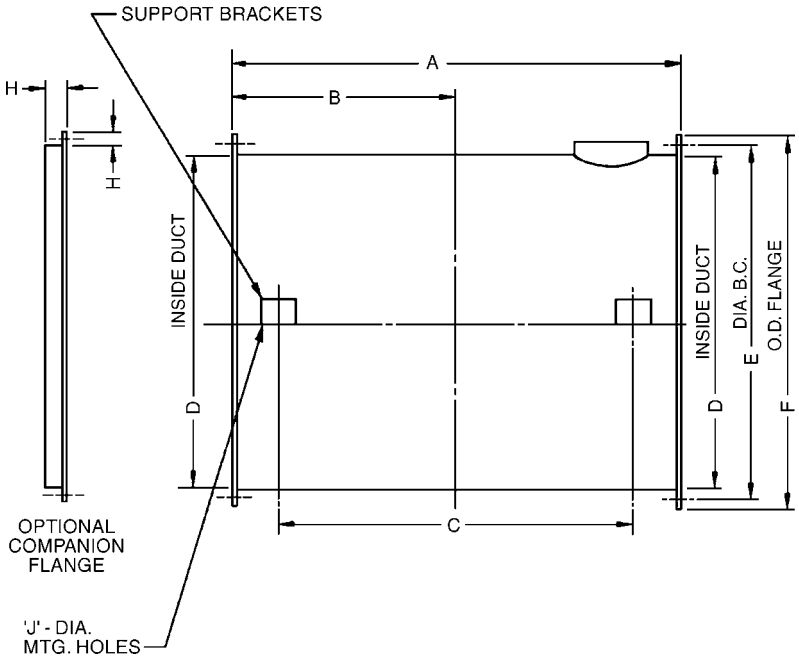
Spark Resistant Construction
Type B and C are both available in accordance with AMCA specifications. Type B includes an aluminum wheel and non-ferrous rub ring. Type C fans have steel wheels, but are constructed with aluminum inlet cones and rub rings so that a shift in the wheel will not allow two ferrous parts to strike.

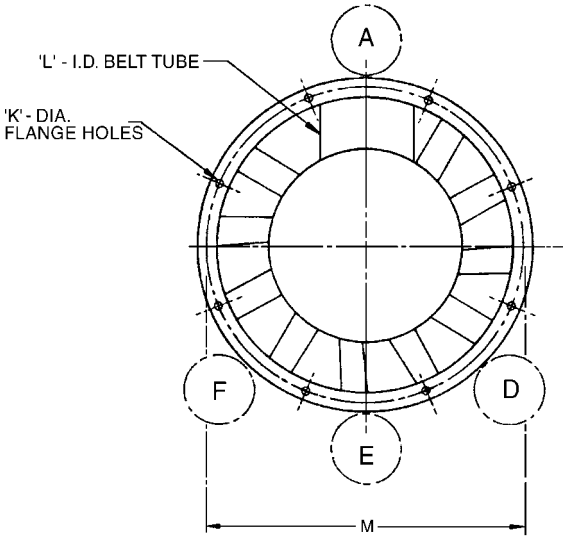
Arrangement 9 Ceiling Suspended with Totally Enclosed Belt Guard

Arrangement 9 Vertical with Discharge Cap, Weather Cover, Access Door and End Brackets

Tubular Centrifugal Fan Data

Horizontal Ceiling Hung - Arrangement 9, Class I & II





DISCHARGE VIEW

Notes:

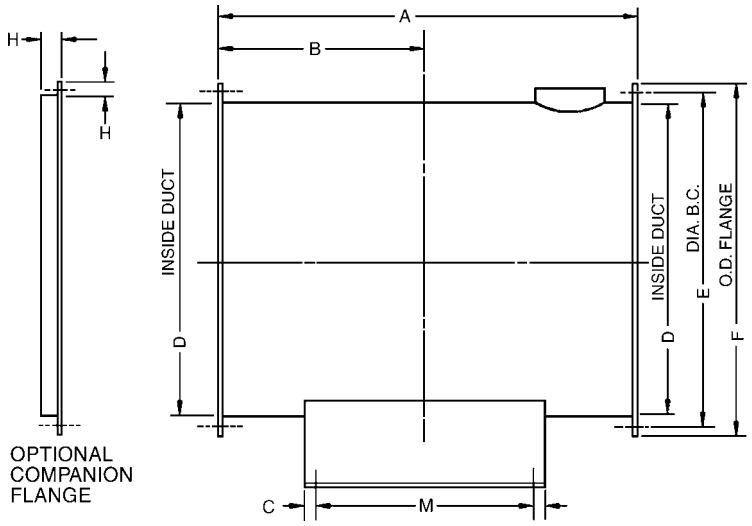
1. All units equipped with adjustable motor base.
2. Motor available in A, D, E, or F locations only.
3. "M" dimension is distance between mounting holes in support brackets
4. Fan duct mounting holes:
   90 - 165 = (8) 9/16 dia. holes equally spaced about a "B" dia. bolt circle.
5. Dimensions should not be used for construction. Certified drawings are available upon request.

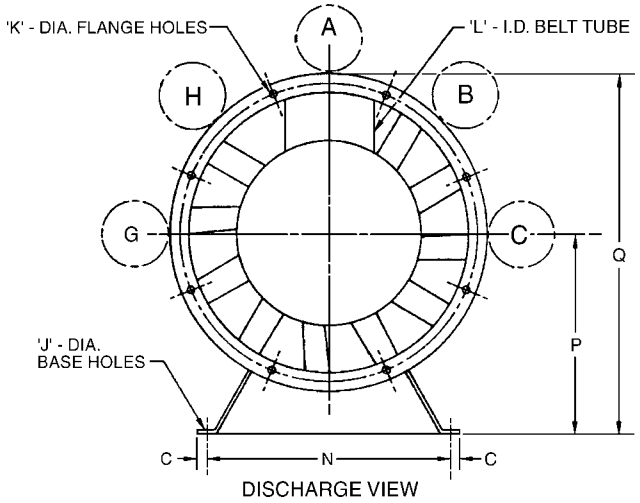
TOLERANCE +/- 1/8

SIZE	DIMENSIONS - INCHES													MAX MTR. FRAME
	A	B	C	D	E	F	G - DIA. SFT.		H	J	K	L	M	
							Class I	Class II						
90	20.38	10.19	14.38	12.75	14.00	14.81	0.750	N/A	1.00	0.50	0.38	4.50	14.00	145T
105	24.00	12.00	17.50	14.75	16.00	16.81	0.750	N/A	1.00	0.50	0.38	5.50	16.00	145T
122	24.75	12.38	19.75	16.56	18.25	19.25	1.188	1.188	1.25	0.56	0.56	5.75	18.94	184T
135	27.38	13.69	22.38	18.25	20.00	21.00	1.188	1.438	1.25	0.56	0.56	6.31	20.63	184T
150	30.38	15.19	25.38	20.25	22.00	23.00	1.188	1.438	1.25	0.56	0.56	7.06	22.63	215T
165	33.38	16.69	28.38	22.31	24.00	25.00	1.438	1.438	1.25	0.56	0.56	7.75	24.69	256T

Tubular Centrifugal Fan Data

Horizontal Base Mounted - Arrangement 9, Class I & II





DISCHARGE VIEW

Notes:

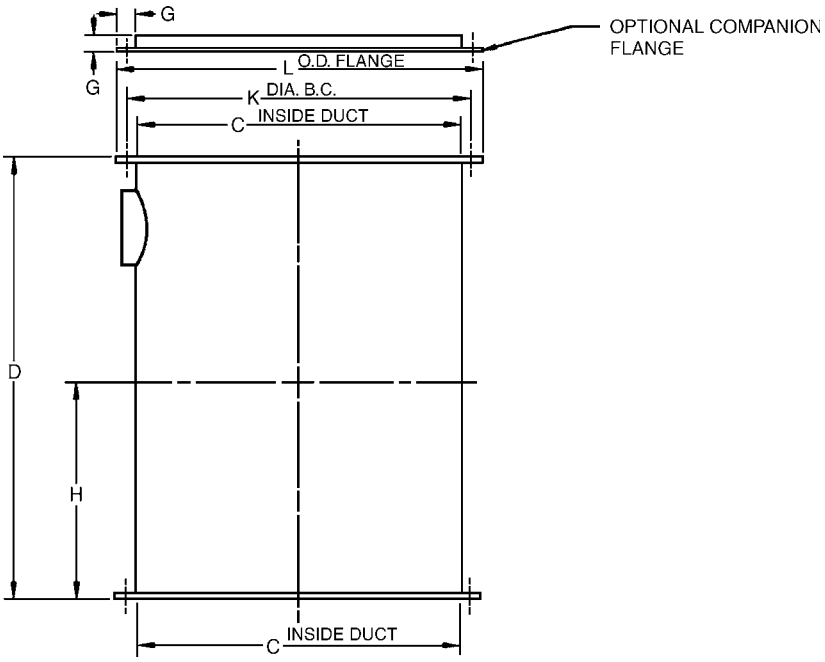
1. All units equipped with adjustable motor base.
2. Motor available in A, B, C, G, or H locations only.
3. Fan duct mounting holes:
   90 - 165 = (8) 9/16 dia. holes equally spaced about a “B” dia. bolt circle.
4. Dimensions should not be used for construction. Certified drawings are available upon request.

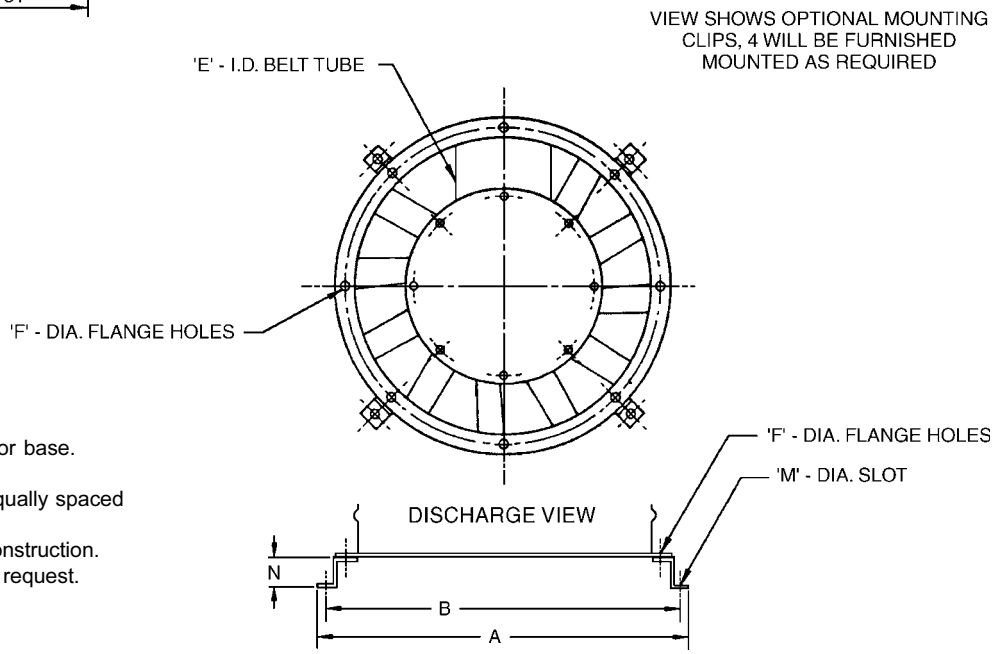
TOLERANCE +/- 1/8

SIZE	DIMENSIONS - IN.																MAX MTR. FRAME
	A	B	C	D	E	F	G - DIA. SFT. Class I	G - DIA. SFT. Class II	H	J	K	L	M	N	P	Q	
90	20.38	10.19	1.31	12.75	14.00	14.81	0.75	N/A	1.00	0.50	0.38	4.50	16.75	12.50	8.88	16.50	145T
105	24.00	12.00	1.31	14.75	16.00	16.81	0.75	N/A	1.00	0.50	0.38	5.50	20.38	15.00	9.88	18.50	145T
122	24.75	12.38	0.63	16.56	18.25	19.25	1.188	1.188	1.25	0.44	0.56	5.75	14.75	14.75	12.00	21.63	184T
135	27.38	13.69	0.63	18.25	20.00	21.00	1.188	1.438	1.25	0.44	0.56	6.31	16.75	16.75	13.00	23.50	184T
150	30.38	15.19	0.63	20.25	22.00	23.00	1.188	1.438	1.25	0.44	0.56	7.06	19.75	18.75	14.00	25.50	215T
165	33.38	16.69	0.63	22.31	24.00	25.00	1.438	1.438	1.25	0.44	0.56	7.75	22.75	20.75	15.00	27.50	256T

Tubular Centrifugal Fan Data

Vertical Discharge - Arrangement 9, Class I & II





Notes:

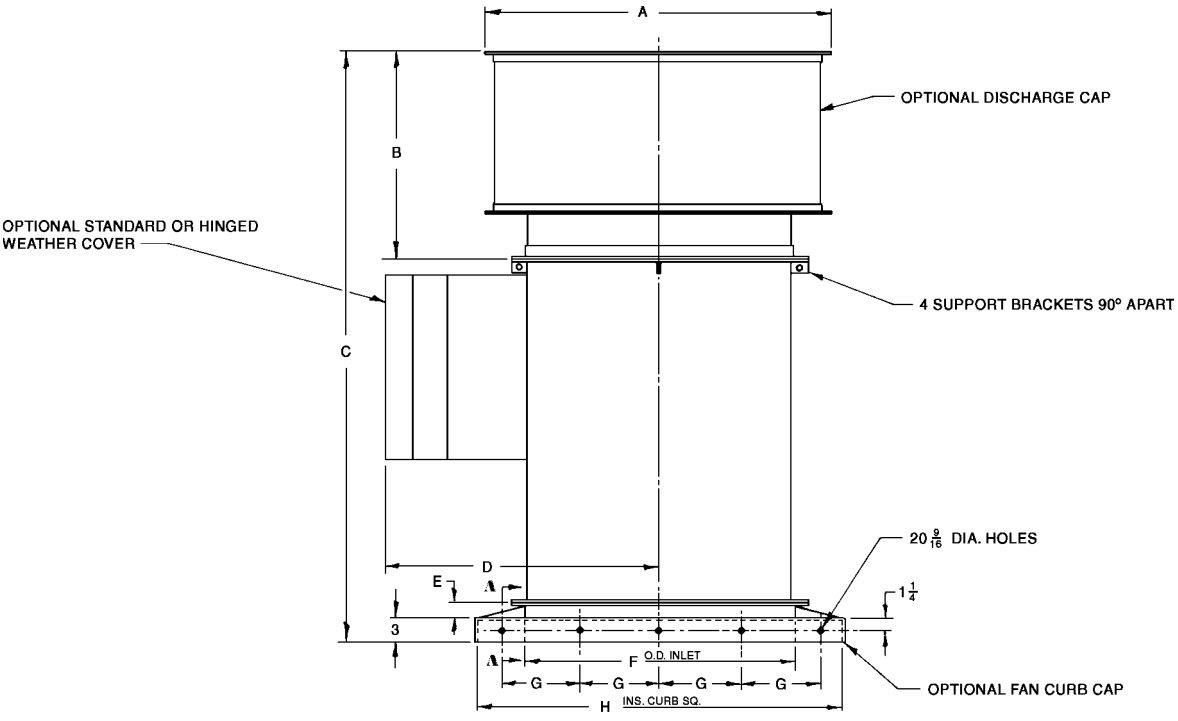
1. All units equipped with adjustable motor base.
2. Fan duct mounting holes:
   90 - 165 = (8) 9/16 dia. holes equally spaced about a “B” dia. bolt circle.
3. Dimensions should not be used for construction. Certified drawings are available upon request.

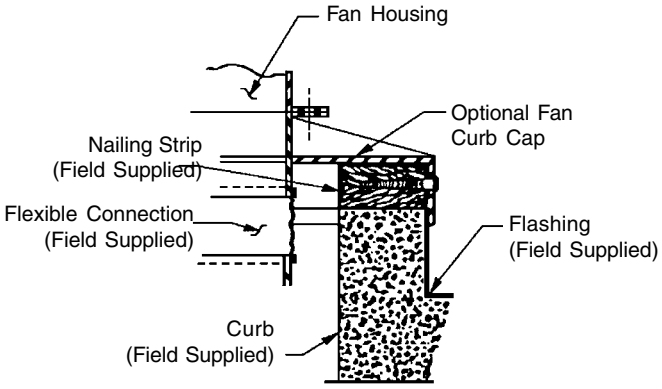
TOLERANCE +/- 1/8

SIZE	DIMENSIONS - INCHES														MAX MTR. FRAME
	A	B	C	D	E	F	G	H	J - DIA. SFT. Class I	J - DIA. SFT. Class II	K	L	M	N	
90	16.88	14.88	12.75	20.38	4.50	0.38	1.00	10.19	0.750	N/A	14.00	14.81	0.50	2.25	145T
105	18.88	16.63	14.75	24.00	5.50	0.38	1.00	12.00	0.750	N/A	16.00	16.81	0.50	2.25	145T
122	22.75	21.50	16.56	24.75	5.75	0.56	1.25	12.38	1.188	1.188	18.25	19.25	0.50	3.19	184T
135	24.50	23.25	18.25	27.38	6.31	0.56	1.25	13.69	1.188	1.438	20.00	21.00	0.50	3.19	184T
150	26.50	25.25	20.25	30.38	7.06	0.56	1.25	15.19	1.188	1.438	22.00	23.00	0.50	3.19	215T
165	28.69	27.19	22.31	33.38	7.75	0.56	1.25	16.69	1.188	1.438	24.00	25.00	0.50	3.19	256T

Tubular Centrifugal Fan Data

Roof Mounted - Arrangement 9, Class I & II





SECTION A-A
Recommended Curb Construction

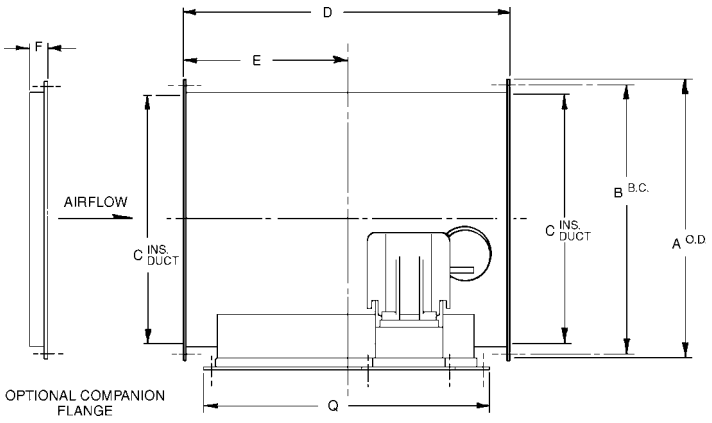
Notes:
1. All units equipped with adjustable motor base.
2. Guy wire bracing must be provided by the customer when necessary.
3. Dimensions should not be used for construction. Certified drawings are available upon request.

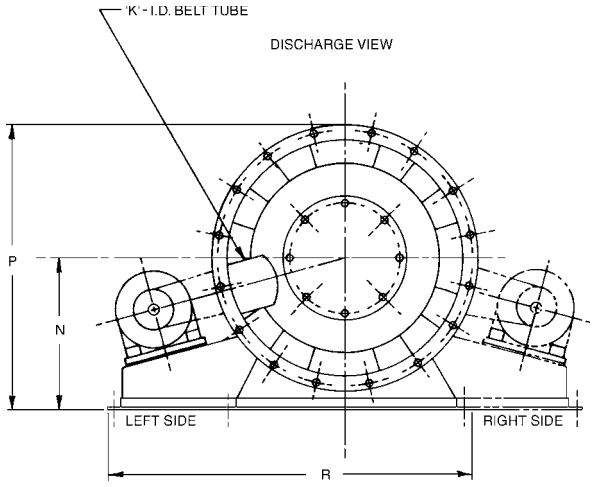
TOLERANCE +/- 1/8 inch

SIZE	DIMENSIONS - IN.												MAX MTR. FRAME
	A	B	C	D	E	F	G	H	J - DIA. SFT. Class I	J - DIA. SFT. Class II	L	K	
122	24.88	17.50	46.50	26.63	1.25	17.00	5.00	3.00	1.188	1.188	1.25	0.56	184T
135	26.63	18.50	50.13	28.38	1.25	18.75	5.00	3.00	1.188	1.438	1.25	0.56	184T
150	28.63	20.50	55.13	30.38	1.25	20.75	5.00	3.00	1.188	1.438	1.25	0.56	215T
165	30.63	21.50	59.13	32.38	1.25	22.75	5.00	3.00	1.188	1.438	1.25	0.56	256T

Tubular Centrifugal Fan Data

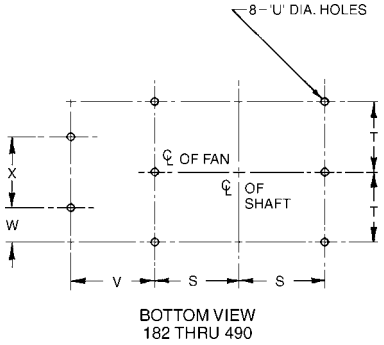
Horizontal - Arrangement 1, Class I & II

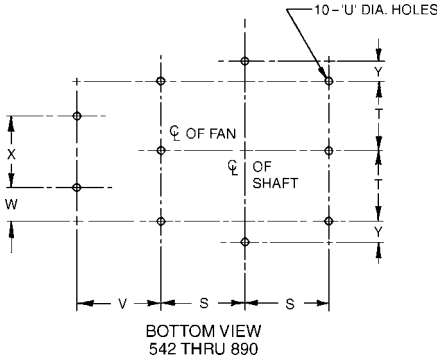




Notes:

1. All units equipped with "J" dia. shaft and bearings.
2. Motor available on R = Right Side or L = Left Side as viewed from discharge.
3. Fan duct mounting holes:
   182 - 270 = (12) 9/16 dia. holes equally spaced about a "B" dia. bolt circle.
   300 - 365 = (16) 9/16 dia. holes equally spaced about a "B" dia. bolt circle.
   402 - 445 = (16) 13/16 dia. holes equally spaced about a "B" dia. bolt circle.
   490 - 890 = (24) 13/16 dia. holes equally spaced about a "B" dia. bolt circle.
4. Dimensions should not be used for construction. Certified drawings are available upon request.





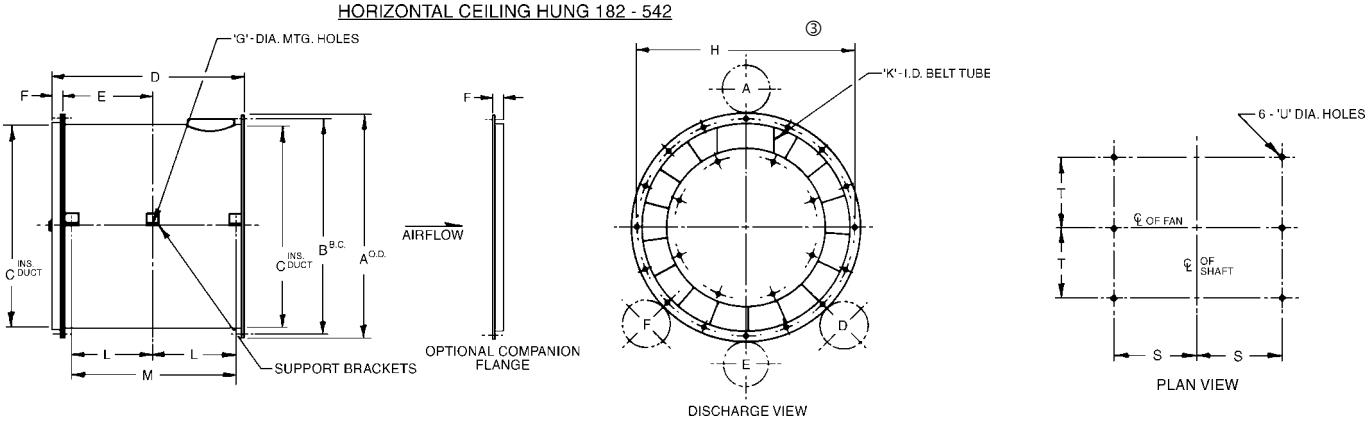
TOLERANCE +/- 1/8 inch

SIZE	A	B	C	D	E	F	'J'- DIA. SFT. CL I	'J'- DIA. SFT. CL II	K	N	P	Q	R	S	T	U	V	W	X	Y	MAX MTR FR
182	28	26 3/4	24 11/16	32 1/4	16 1/8	1 1/2	1 7/16	1 7/16	Contact Factory For Dimensional Data												184T
200	30 5/16	29 1/8	27 1/16	35 5/8	17 11/16	1 1/2	1 7/16	1 7/16													256T
222	33 3/8	32 1/8	30 1/16	39 1/4	19 5/8	1 1/2	1 7/16	1 11/16													256T
245	36 3/8	35 1/8	33 1/8	43 1/4	21 5/8	1 1/2	1 11/16	1 11/16													256T
270	39 3/4	38 1/2	36 1/2	47 5/8	23 13/16	1 1/2	1 11/16	1 15/16													256T
300	44 7/8	43 1/8	40 9/16	52 7/8	26 7/16	2	1 11/16	2 3/16													326T
330	49	47 1/4	44 5/8	58 1/8	29 1/16	2	1 11/16	2 3/16													326T
365	53 3/4	52	49 3/8	64 3/8	32 3/16	2	1 15/16	2 7/16													365T
402	59 3/4	57 1/2	54 3/8	70 7/8	35 7/16	2 1/2	2 3/16	2 11/16													365T
445	65 1/2	63 1/4	60 3/16	78 5/8	39 5/16	2 1/2	2 7/16	2 11/16													405T
490	71 5/8	69 3/8	66 1/4	86 3/8	43 3/16	2 1/2	2 15/16	3 7/16													405T
542	79 3/4	77	73 3/8	95 5/8	47 13/16	3	2 15/16	3 15/16													405T
600	87 1/2	84 3/4	81 3/16	105 5/8	52 13/16	3	3 7/16	4 7/16													405T
660	97 5/8	94 7/8	89 5/16	116 3/8	58 3/16	3	3 7/16	4 7/16													405T
730	107 1/8	104 3/8	98 3/4	128 1/2	64 1/4	3	3 15/16	4 15/16													445T
807	117 5/8	114 7/8	109 1/4	142 1/8	71 1/16	3	4 7/16	4 15/16													445T
890	128 3/4	126 1/16	120 5/16	156 1/4	78 1/8	3	4 15/16	5 15/16													445T

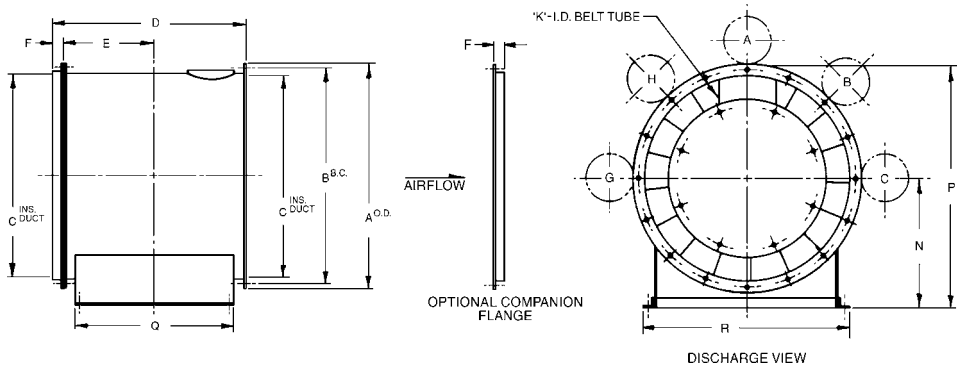
Tubular Centrifugal Fan Data

Horizontal - Arrangement 3, Class I & II

HORIZONTAL CEILING HUNG 182 - 542



HORIZONTAL BASE MOUNTED 182 - 890



Notes:

1. All units equipped with “J” dia. shaft and bearings.
2. All units equipped with adjustable motor base.

③ Mounting hole distance in support brackets.

4. Motor available in A, D, E or F location only on ceiling hung units.
5. Motor available in A, B, C, G or H location only on base mounted units.
6. Fan duct mounting holes:
   182 - 270 = (12) 9/16 dia. holes equally spaced about a “B” dia. bolt circle.
   300 - 365 = (16) 9/16 dia. holes equally spaced about a “B” dia. bolt circle.
   402 - 445 = (16) 13/16 dia. holes equally spaced about a “B” dia. bolt circle.
   490 - 890 = (24) 13/16 dia. holes equally spaced about a “B” dia. bolt circle.

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

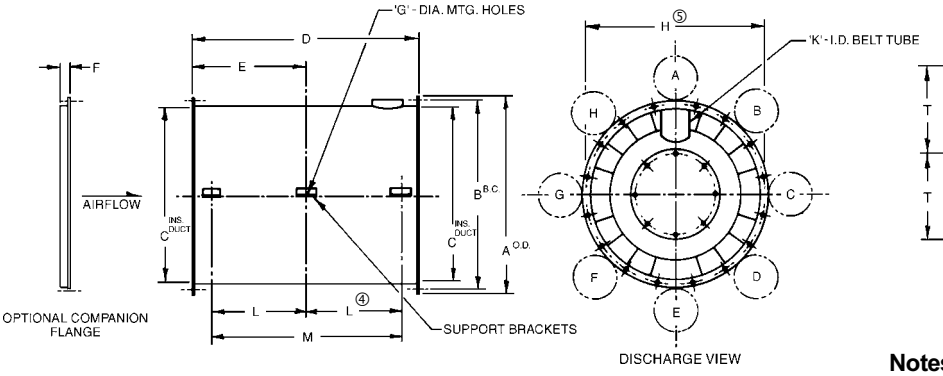
TOLERANCE +/- 1/8

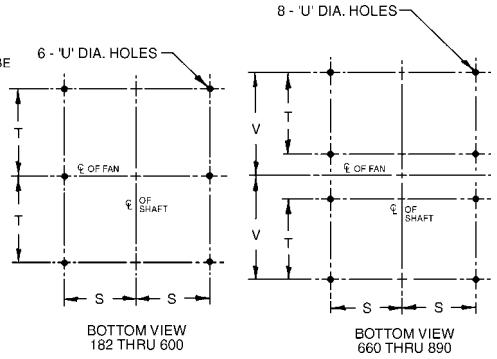
SIZE	A	B	C	D	E	F	G	H	"J" DIA. SHAFT		K	L	M	N	P	Q	R	S	T	U	MAX MTR. FRAME	
									CL1	CL2											ODP	TEFC
182	28	26 3/4	24 11/16	23 1/2	11	1 1/2	9/16	27 1/8	1 3/16	1 7/16	6 5/8	—	15 3/4	16	30	16 3/4	21 1/4	10	7 3/4	7/16	286T	286T
200	30 5/16	29 1/8	27 1/16	25 5/8	12 1/16	1 1/2	9/16	30	1 3/16	1 7/16	7 5/16	—	17 3/8	18	33 1/8	18 3/4	23 3/4	11	8 1/2	9/16	286T	286T
222	33 3/8	32 1/8	30 1/16	28 3/8	13 7/16	1 1/2	9/16	33	1 7/16	1 7/16	8 1/8	—	20 1/8	20	36 11/16	21 5/8	26 1/4	12 1/4	9 15/16	9/16	326T	326T
245	36 3/8	35 1/8	33 1/8	31	14 3/4	1 1/2	13/16	36 1/6	1 11/16	1 11/16	8 15/16	—	22 3/4	21	39 3/16	24 1/4	28 3/4	13 1/2	11 1/4	9/16	326T	326T
270	39 3/4	38 1/2	36 1/2	33	15 3/4	1 1/2	13/16	39 7/16	1 11/16	1 11/16	9 7/8	—	24 3/4	23	42 7/8	25 7/8	30 1/4	14 1/4	12 1/16	9/16	326T	326T
300	44 7/8	43 1/8	40 9/16	37	17 1/2	2	13/16	43 9/16	1 11/16	1 11/16	11	—	28 1/4	25	47 7/16	29 5/8	35 1/8	16 11/16	13 15/16	9/16	365T	365T
330	49	47 1/4	44 5/8	40 1/2	19 1/4	2	13/16	47 5/8	1 15/16	1 15/16	12 1/4	—	31 3/4	27	51 1/2	33 3/8	38 7/8	18 9/16	15 13/16	9/16	365T	365T
365	53 3/4	52	49 3/8	44 1/8	21 1/16	2	13/16	52 3/8	1 15/16	2 3/16	13 3/8	—	35 3/8	29	55 7/8	37	42 5/8	20 7/16	17 5/8	9/16	365T	365T
402	59 3/4	57 1/2	54 3/8	51 1/2	24 1/2	2 1/2	13/16	57 7/8	2 3/16	2 7/16	14 13/16	—	37 1/2	33	62 7/8	43 1/2	47 1/2	22 5/8	20 5/8	13/16	365T	365T
445	65 1/2	63 1/4	60 3/16	56 3/8	26 15/16	2 1/2	13/16	63 11/16	2 3/16	2 11/16	16 3/8	—	42 3/8	36	68 3/4	48 3/4	52	24 7/8	23 1/4	13/16	365T	365T
490	71 5/8	69 3/8	66 1/4	61 1/2	29 1/2	2 1/2	13/16	69 3/4	2 7/16	2 15/16	17 15/16	—	47 1/2	39	74 13/16	53 5/8	58	27 7/8	25 11/16	13/16	365T	365T
542	79 3/4	77	73 3/8	68 5/8	32 13/16	3	1 1/16	76 1/8	2 11/16	3 7/16	19 7/8	26 5/16	52 5/8	43	82 7/8	58	67	32 1/8	24 1/2	13/16	405T	405T
600	87 1/2	84 3/4	81 3/16	75 1/4	36 1/8	3	—	—	2 15/16	3 15/16	22 1/16	—	—	47	90 3/4	64 5/8	72	34 5/8	27 13/16	13/16	405T	405T
660	95 5/8	92 7/8	89 5/16	82 1/4	39 5/8	3	—	—	3 7/16	3 15/16	24 1/4	—	—	52	99 13/16	71 7/8	81	38 5/8	31 7/16	13/16	405T	405T
730	107 1/8	104 3/8	98 3/4	90 1/4	43 5/8	3	—	—	3 15/16	4 7/16	36 7/8	—	—	57	110 9/16	79 3/4	88	42 1/8	35 3/8	13/16	405T	405T
807	117 5/8	114 7/8	109 1/4	99	48 1/8	3	—	—	3 15/16	4 15/16	29 3/4	—	—	62	120 13/16	88 3/4	98	47 1/8	39 7/8	13/16	405T	405T
890	128 3/4	126 1/16	120 5/16	108 3/4	52 7/8	3	—	—	4 7/16	5 7/16	39 9/16	—	—	68 1/2	132 7/8	97 1/4	106	51 1/8	43 1/8	13/16	405T	405T

Tubular Centrifugal Fan Data

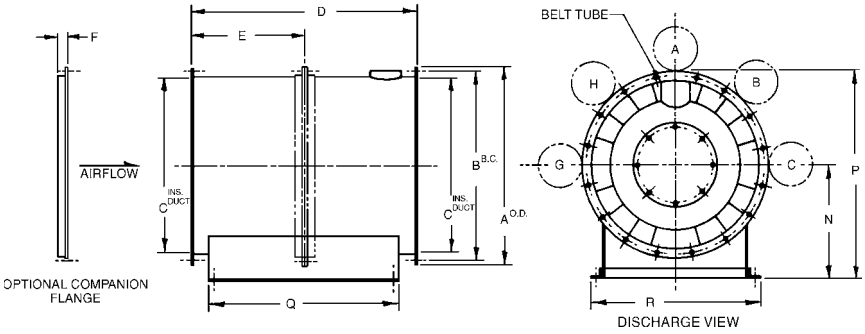
Horizontal - Arrangement 9, Class I, II & III

HORIZONTAL CEILING HUNG 182 - 542





HORIZONTAL BASE MOUNTED 182 - 890



Notes:

1. All units equipped with "J" dia. shaft and bearings.
2. All units equipped with adjustable motor base.
3. "L" dimension may vary when motor is located in "C" or "G" position.

④ For location of hanging clips on size 542 contact factory.

⑤ Mounting hole distance in support brackets.

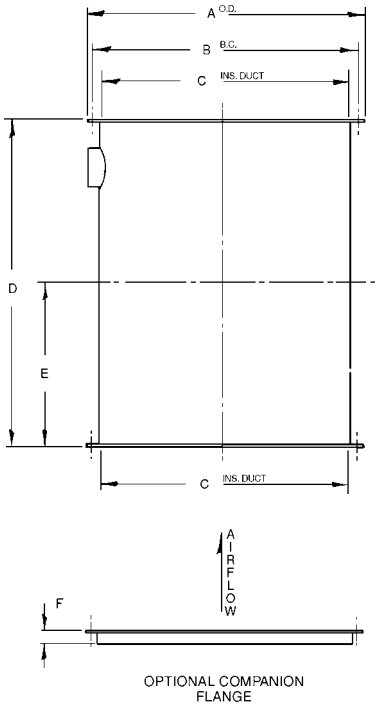
6. On base mounted units motor available in A, B, C, G or H location only.
7. Size 660 and up are split into front and rear sections and are shipped in two (2) pieces for joining at job site.
8. Fan duct mounting holes:
   182 - 270 = (12) 9/16 dia. holes equally spaced about a "B" dia. bolt circle.
   300 - 365 = (16) 9/16 dia. holes equally spaced about a "B" dia. bolt circle.
   402 - 445 = (16) 13/16 dia. holes equally spaced about a "B" dia. bolt circle.
   490 - 890 = (24) 13/16 dia. holes equally spaced about a "B" dia. bolt circle.
9. Dimensions should not be used for construction. Certified drawings are available upon request.

TOLERANCE +/- 1/8

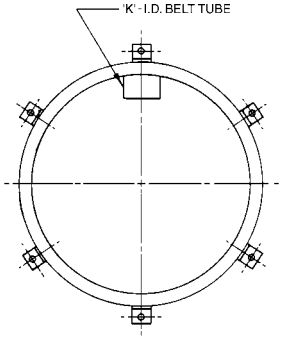
SIZE	A	B	C	D	E	F	G	H	'J' - DIA. SHAFT			K	L	M	N	P	Q	R	S	T	U	V	MAX MOTOR FRAME
									CL I	CL II	CL III												ODP & TEFC
182	28	26 3/4	24 11/16	32 1/4	16 1/8	1 1/2	9/16	27 1/8	1 7/16	1 7/16	1 11/16	6 5/8	—	27 1/4	16	30	27	21 1/4	10	12 7/8	7/16	—	286T
200	30 5/16	29 1/8	27 1/16	35 3/8	17 11/16	1 1/2	9/16	30	1 7/16	1 7/16	1 11/16	7 5/16	—	28 7/8	18	33 1/8	30	23 3/4	11	14 1/8	9/16	—	286T
222	33 3/8	32 1/8	30 1/16	39 1/4	19 5/8	1 1/2	9/16	33	1 7/16	1 11/16	2 3/16	8 1/8	—	32 3/4	20	36 11/16	34	26 1/4	12 1/4	16 1/8	9/16	—	326T
245	36 3/8	35 1/8	33 1/8	43 1/4	21 5/8	1 1/2	13/16	36 1/16	1 11/16	1 11/16	2 3/16	5 15/16	—	36 3/4	21	39 3/16	38	28 3/4	13 1/2	18 1/8	9/16	—	326T
270	39 3/4	38 1/2	36 1/2	47 5/8	23 13/16	1 1/2	13/16	39 7/16	1 11/16	1 15/16	2 7/16	9 7/8	—	41 1/8	23	42 7/8	42	30 1/4	14 1/4	20 1/8	9/16	—	326T
300	44 7/8	43 1/8	40 9/16	52 7/8	26 7/16	2	13/16	43 9/16	1 11/16	2 3/16	2 7/16	11	—	46 3/8	25	47 7/16	47 1/2	35 1/8	16 11/16	22 7/8	9/16	—	365T
330	49	47 1/4	44 5/8	58 1/8	29 1/16	2	13/16	47 5/8	1 11/16	2 3/16	2 11/16	12 1/8	—	51 5/8	27	51 1/2	53	38 7/8	18 9/16	25 5/8	9/16	—	365T
365	53 3/4	52	49 3/8	64 3/8	32 3/16	2	13/16	52 3/8	1 15/16	2 7/16	2 15/16	13 3/8	—	57 7/8	29	55 7/8	59	42 5/8	20 7/16	28 5/8	9/16	—	365T
402	59 3/4	57 1/2	54 3/8	70 7/8	35 7/16	2 1/2	13/16	57 7/8	2 3/16	2 11/16	3 7/16	14 13/16	31 7/16	62 7/8	33	62 7/8	65 3/4	47 1/2	22 5/8	31 7/8	13/16	—	365T
445	65 1/2	63 1/4	60 3/16	78 5/8	39 5/16	2 1/2	13/16	63 11/16	2 7/16	2 11/16	3 7/16	16 3/8	35 5/16	70 5/8	36	68 3/4	73	52	24 7/8	35 3/8	13/16	—	365T
490	71 5/8	69 3/8	66 1/4	86 3/8	43 3/16	2 1/2	13/16	69 3/4	2 15/16	3 7/16	3 15/16	17 15/16	39 3/16	78 3/8	39	74 13/16	81	58	27 7/8	39 3/8	13/16	—	365T
542	79 3/4	77	73 3/8	95 5/8	47 13/16	3	1 1/16	76 7/8	2 15/16	3 15/16	4 7/16	19 7/8	—	—	43	82 7/8	88	67	32 1/8	39 1/2	13/16	—	405T
600	87 1/2	84 3/4	81 3/16	105 5/8	52 13/16	3	—	—	3 7/16	4 7/16	4 15/16	22 1/16	—	—	47	90 3/4	98	72	34 5/8	44 1/2	13/16	—	405T
660	95 5/8	92 7/8	89 5/16	116 3/8	58 3/16	3	—	—	3 7/16	4 7/16	5 7/16	24 1/4	—	—	52	99 13/16	109	81	38 5/8	41	13/16	50	405T
730	107 1/8	104 3/8	98 3/4	128 1/2	64 1/4	3	—	—	3 15/16	4 15/16	5 15/16	26 7/8	—	—	57	110 9/16	121	88	42 1/8	47	13/16	56	405T
807	117 5/8	114 7/8	109 1/4	142 1/8	71 1/16	3	—	—	4 7/16	4 15/16	6 7/16	29 3/4	—	—	62	120 13/16	135	98	47 1/8	53	13/16	62	405T
890	128 3/4	126 1/16	120 5/16	156 1/4	78 1/8	3	—	—	4 15/16	5 15/16	6 15/16	39 9/16	—	—	68 1/2	132 7/8	146 1/2	106	51 1/8	58	13/16	67 3/4	405T

Tubular Centrifugal Fan Data

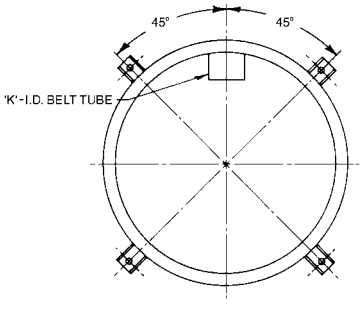
Vertical - Arrangement 9, Class I & II



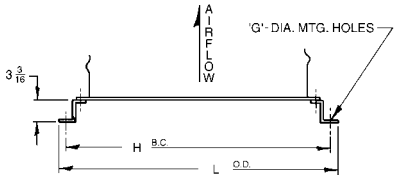
OPTIONAL COMPANION FLANGE

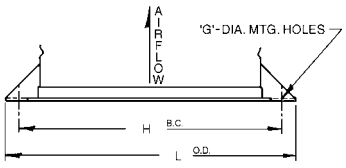


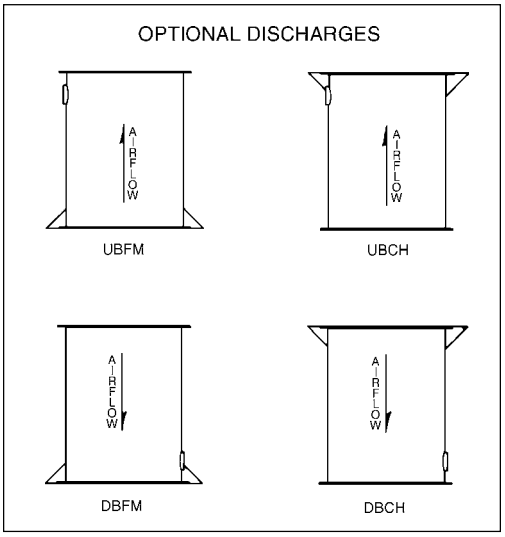
VIEW SHOWS STANDARD MOUNTING CLIPS, 6 WILL BE FURNISHED MOUNTED AS REQUIRED (SIZE 182 - 365)



VIEW SHOWS STANDARD END BRACKETS 4 WILL BE FURNISHED (SIZE 402 - 660)







Notes:

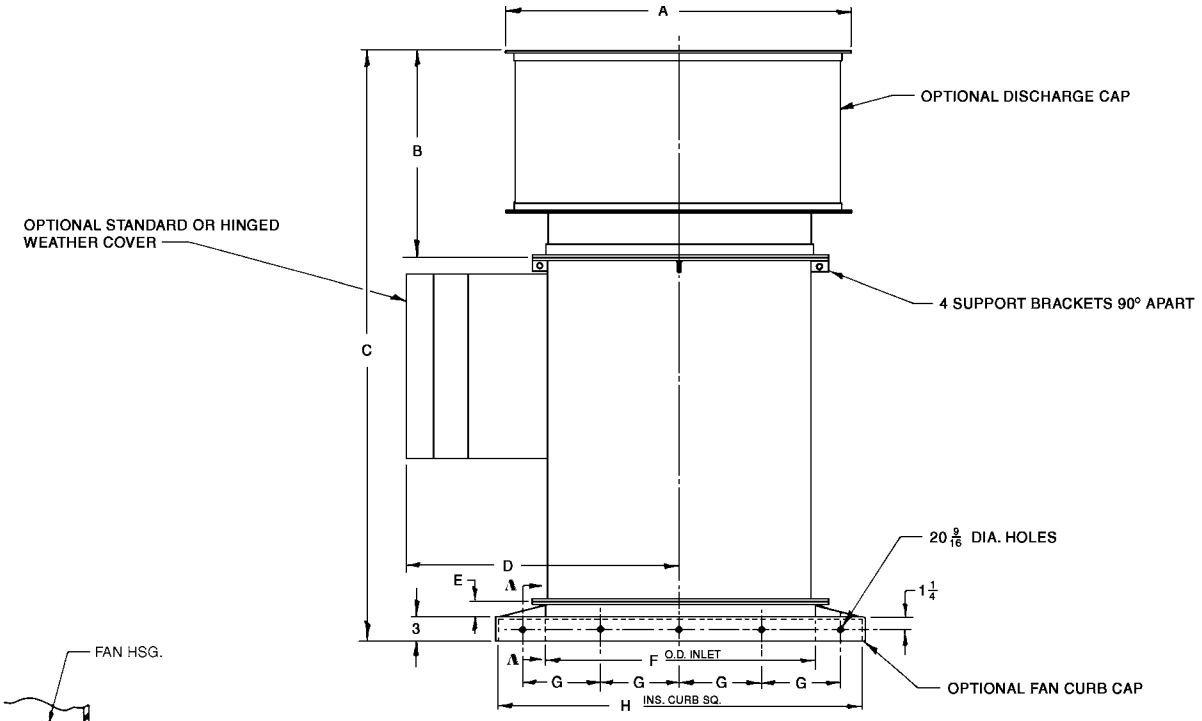
1. All units equipped with “J” diameter drive extensions.
2. All units equipped with adjustable motor base.
3. **MAXIMUM MOTOR SIZE** - 50 HP @ 1800 RPM (Fr 326T). Refer others to factory.
4. Fan duct mounting holes:
   - 182 - 270 = (12) 9/16 dia. holes equally spaced about a “B” dia. bolt circle.
   - 300 - 365 = (16) 9/16 dia. holes equally spaced about a “B” dia. bolt circle.
   - 402 - 445 = (16) 13/16 dia. holes equally spaced about a “B” dia. bolt circle.
   - 490 - 660 = (24) 13/16 dia. holes equally spaced about a “B” dia. bolt circle.
5. Dimensions should not be used for construction. Certified drawings are available upon request.

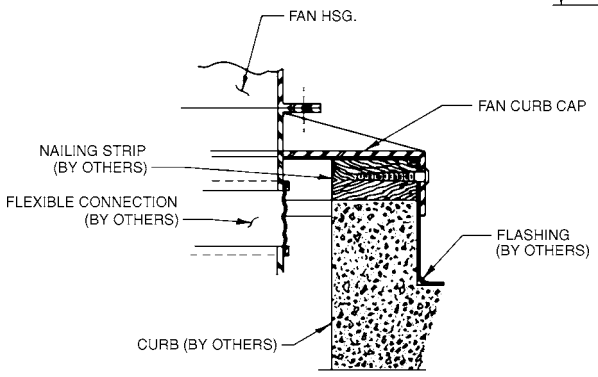
TOLERANCE +/- 1/8

SIZE	A	B	C	D	E	F	G	H	"J" DR. EXT.		K	L
									Class I	Class II		
182	28	26 3/4	24 11/16	32 1/4	16 1/8	1 1/2	7/16	29 3/4	1 3/16	1 7/16	6 5/8	31
200	30 5/16	29 1/8	27 1/16	35 3/8	17 11/16	1 1/2	7/16	33 11/16	1 7/16	1 7/16	7 5/16	35 7/16
222	33 3/8	32 1/8	30 1/16	39 1/4	19 5/8	1 1/2	3/4	36 11/16	1 7/16	1 11/16	8 1/8	38 7/16
245	36 3/8	35 1/8	33 1/8	43 1/4	21 5/8	1 1/2	3/4	39 5/8	1 11/16	1 11/16	8 15/16	41 3/8
270	39 3/4	38 1/2	36 1/2	47 5/8	23 13/16	1 1/2	3/4	43 1/8	1 11/16	1 15/16	9 7/8	44 7/8
300	44 7/8	43 1/8	40 9/16	52 7/8	26 7/16	2	3/4	47 3/8	1 11/16	2 3/16	11	49 1/8
330	49	47 1/4	44 5/8	58 1/8	29 1/16	2	3/4	51 7/16	1 11/16	2 3/16	12 1/8	53 3/16
365	53 3/4	52	49 3/8	64 3/8	32 3/16	2	3/4	56 3/16	1 15/16	2 7/16	13 3/8	57 15/16
402	59 3/4	57 1/2	54 3/8	70 7/8	35 7/16	2 1/2	9/16	65 3/4	2 3/16	2 11/16	14 13/16	67 3/4
445	65 1/2	63 1/4	60 3/16	78 5/8	39 5/16	2 1/2	9/16	71 1/2	2 7/16	2 11/16	16 3/8	73 1/2
490	71 5/8	69 3/8	66 1/4	86 3/8	43 3/16	2 1/2	9/16	77 5/8	2 15/16	3 7/16	17 15/16	79 5/8
542	79 3/4	77	73 3/8	95 5/8	47 13/16	3	13/16	84 5/8	2 15/16	3 15/16	19 7/8	86 5/8
600	87 1/2	84 3/4	81 3/16	105 5/8	52 13/16	3	13/16	95	3 7/16	4 7/16	221/16	100
660	95 5/8	92 7/8	89 5/16	116 3/8	58 3/16	3	13/16	103 1/8	3 7/16	4 7/16	24 1/4	108 1/8

Tubular Centrifugal Fan Data

Roof Mounted - Class I & II





SECTION AA
RECOMMENDED CURB CONSTRUCTION

SIZE	A	B	C	D	E	F	G	H	"J" DR. EXT.	MAX MTR FRM
182	33 5/8	22 1/2	59 1/4	33 3/4	1 1/2	25 3/16	6 1/2	34 7/8	3	213T
200	39 5/8	25 1/2	65 3/8	35 1/4	1 1/2	27 11/16	7 1/2	37 3/8	3	215T
222	39 5/8	25 1/2	69 1/4	38 3/4	1 1/2	30 11/16	8 1/2	40 3/8	3	254T
245	45 5/8	28 1/2	76 1/4	40 1/2	1 1/2	33 3/4	9	43 3/8	3	254T
270	45 5/8	28 1/2	80 5/8	42 1/4	1 1/2	37 1/8	10	46 3/4	3	256T
300	51 5/8	31	88 7/8	44 1/2	2	41 3/8	11	51	3	256T
330	57 5/8	34	97 1/8	47 1/2	2	45 7/16	12	55 1/8	3	284T
365	63 5/8	37	106 3/8	50	2	50 3/16	13	59 7/8	3	286T
402	69 5/8	40 1/2	116 7/8	55 1/2	2 1/2	55 3/16	14	64 7/8	3	324T
445	75 5/8	42 1/2	126 5/8	58 3/4	2 1/2	61	15 1/2	69 5/8	3	324T
490	84 5/8	49 1/2	141 3/8	61 3/4	2 1/2	67 1/16	17	76 3/8	3	324T
542	94 5/8	57	159 5/8	71	6	74 1/4	15	86 3/4	4	405T
600	94 5/8	57	169 5/8	75	3	82	17 1/4	96 1/4	4	405T
660	104 5/8	66	189 3/8	81	3	90 1/8	17 1/2	105 1/4	4	405T

Notes:

1. All units equipped with adjustable motor base.
2. Guy wire bracing must be provided by the customer when necessary.
3. **MAXIMUM MOTOR SIZE** - 50 HP @ 1800 RPM (Fr 326T). Refer others to factory.
4. Dimensions should not be used for construction. Certified drawings are available upon request.

TOLERANCE +/- 1/8

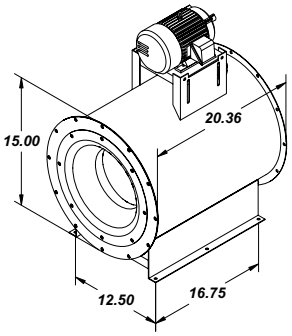
TUB - Performance Data

Tubular Centrifugal Fan

90

Wheel Diameter = 9.1875 in.	Maximum BHP = 0.017 x (RPM/1000)^3
Wheel Type = Backward Inclined	Tip Speed, FPM = 2.40 x RPM
Inlet and Outlet (Diameters) = 12.75 in.	Area = .87 ft.^{2}

Class	Max. RPM
I	4150



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP		1 3/4" SP		2" SP		2 1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
87	**100**	1025	0.01	1422	.0.03	1710	0.06	1955	0.08	2156	0.11								
174	**200**	**1146**	**0.02**	1508	0.05	1800	0.08	2050	0.11	2267	0.15	2466	0.18	2653	0.22	2844	0.27	3151	0.36
261	**300**	1334	0.04	**1649**	**0.07**	**1915**	**0.11**	2154	0.15	2366	0.19	2561	0.24	2745	0.29	2916	0.33	3224	0.43
348	**400**	1543	0.06	1837	0.10	2074	0.14	**2292**	**0.19**	**2490**	**0.24**	2677	0.29	2853	0.34	3016	0.40	3319	0.52
435	**500**	1785	0.10	2039	0.14	2271	0.20	2464	0.25	2651	0.30	**2823**	**0.35**	**2986**	**0.41**	**3141**	**0.47**	3437	0.60
522	**600**	2026	0.14	2264	0.20	2469	0.26	2668	0.32	2837	0.38	2994	0.44	3150	0.50	3297	0.57	**3572**	**0.70**
609	**700**	2283	0.20	2508	0.27	2690	0.33	2867	0.40	3035	0.48	3197	0.55	3336	0.62	3471	0.69	3736	0.83
696	**800**	2538	0.28	2745	0.35	2937	0.43	3087	0.50	3247	0.58	3387	0.66	3542	0.75	3674	0.83	3914	0.99
783	**900**	2799	0.37	2996	0.46	3172	0.54	3334	0.63	3464	0.71	3615	0.81	3734	0.89	3865	0.98	4119	1.17
870	**1000**	3066	0.49	3255	0.59	3412	0.68	3571	0.77	3712	0.87	3827	0.96	3975	1.07	4079	1.16		
957	**1100**	3335	0.63	3509	0.73	3664	0.84	3806	0.94	3950	1.05	4078	1.15						
1044	**1200**	3608	0.80	3768	0.91	3924	1.03	4052	1.13										
1131	**1300**	3882	0.99	4031	1.11														

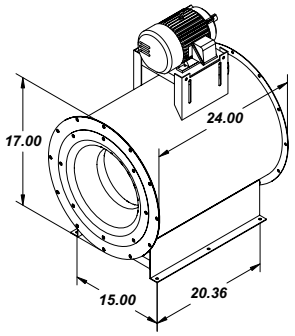
CFM	OV	3" SP		3 1/2" SP		4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		6 1/2" SP		7" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
174	**200**	3420	0.45	3671	0.55	3909	0.66	**4119**	**0.76**										
261	**300**	3503	0.54	3762	0.65	4015	0.77												
348	**400**	3600	0.65	3861	0.78	**4099**	**0.91**												
435	**500**	3706	0.75	3956	0.89														
522	**600**	3830	0.85	**4076**	**1.01**														
609	**700**	**3981**	**0.99**																
696	**800**	4148	1.15																

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) Model 90 is not licensed to bear the AMCA Seal.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

105

Wheel Diameter = 10.625 in.	Maximum BHP = 0.032 x (RPM/1000)^3
Wheel Type = Backward Inclined	Tip Speed, FPM = 2.78 x RPM
Inlet and Outlet (Diameters) = 14.75 in.	Area = 1.17 ft.^{2}

Class	Max. RPM
I	3600



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP		1 3/4" SP		2" SP		2 1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
117	100	911	0.02	1256	0.04	1520	0.07												
234	200	**998**	**0.03**	1331	0.06	1599	0.09	1823	0.13	2023	0.17	2200	0.22	2362	0.26	2513	0.31	2790	0.42
351	300	1129	0.04	1430	0.08	1678	0.13	1895	0.17	2097	0.22	2276	0.28	2438	0.33	2590	0.39	2872	0.50
468	400	1270	0.06	**1555**	**0.11**	**1790**	**0.16**	1995	0.22	2180	0.28	2350	0.34	2509	0.40	2662	0.47	2949	0.61
585	500	1423	0.09	1694	0.15	1917	0.21	**2115**	**0.27**	**2291**	**0.34**	2455	0.41	2607	0.49	2751	0.56	3019	0.71
702	600	1595	0.13	1844	0.19	2056	0.26	2259	0.34	2418	0.41	**2575**	**0.49**	**2720**	**0.57**	2860	0.66	3119	0.83
819	700	1776	0.18	2000	0.25	2210	0.33	2385	0.40	2559	0.49	2702	0.57	2848	0.67	**2982**	**0.76**	**3231**	**0.96**
936	800	1969	0.24	2171	0.33	2356	0.41	2540	0.50	2693	0.58	2842	0.68	2995	0.79	3109	0.87	3357	1.09
1053	900	2167	0.33	2347	0.42	2523	0.51	2684	0.60	2847	0.71	2989	0.80	3117	0.90	3253	1.01	3484	1.23
1170	1000	2366	0.42	2531	0.52	2694	0.63	2845	0.73	2991	0.84	3139	0.95	3275	1.06	3388	1.16		
1287	1100	2569	0.54	2723	0.65	2870	0.76	3017	0.88	3150	0.99	3283	1.11	3418	1.23	3547	1.36		
1404	1200	2775	0.68	2921	0.80	3053	0.91	3189	1.04	3322	1.17	3443	1.30	3565	1.42				
1521	1300	2983	0.85	3118	0.97	3243	1.09	3368	1.23	3493	1.37								
1638	1400	3191	1.04	3318	1.17	3440	1.30	3553	1.44										
1755	1500	3400	1.26	3520	1.40														

CFM	OV	3" SP		3 1/2" SP		4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		6 1/2" SP		7" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
234	200	3041	0.53																
351	300	3126	0.63	3356	0.77	**3569**	**0.91**												
468	400	3198	0.75	3429	0.90														
585	500	3265	0.87	3508	1.04														
702	600	3357	1.01	**3579**	**1.20**														
819	700	3464	1.16																
936	800	**3580**	**1.31**																

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) Model 105 is not licensed to bear the AMCA Seal.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

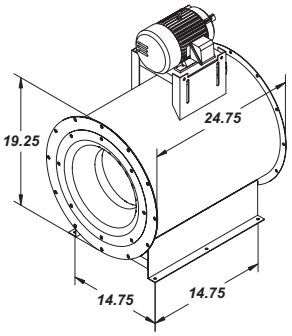
TUB - Performance Data

Tubular Centrifugal Fan

122

Wheel Diameter = 12.25 in.	Maximum BHP = 0.077 x (RPM/1000)^3
Wheel Type = Backward Inclined	Tip Speed, FPM = 3.21 x RPM
Inlet and Outlet (Diameters) = 16.56 in.	Area = 1.50 ft.^{2}

Class	Max. RPM
I	2561
II	3327



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
750	500	**1021**	**0.08**	**1190**	**0.13**	**1345**	**0.18**	**1491**	**0.23**										
900	600	1155	0.12	1307	0.17	1444	0.23	1574	0.29	**1696**	**0.36**	**1818**	**0.42**						
1050	700	1295	0.16	1434	0.23	1559	0.29	1675	0.36	1786	0.43	1896	0.50	**2104**	**0.65**				
1200	800	1437	0.22	1568	0.30	1683	0.37	1790	0.44	1891	0.52	1991	0.60	2182	0.76	**2364**	**0.93**	**2541**	**1.12**
1350	900	1581	0.29	1705	0.38	1813	0.46	1913	0.54	2006	0.63	2099	0.71	2275	0.88	2444	1.07	2607	1.26
1500	1000	1727	0.38	1845	0.48	1947	0.57	2042	0.66	2129	0.75	2216	0.84	2380	1.03	2537	1.22	2690	1.43
1650	1100	1875	0.48	1987	0.59	2085	0.69	2174	0.79	2257	0.89	2340	0.99	2494	1.19	2642	1.40	2784	1.62
1800	1200	2023	0.60	2131	0.72	2225	0.84	2310	0.95	2389	1.06	2468	1.16	2614	1.38	2754	1.60	2888	1.83
1950	1300	2171	0.74	2276	0.88	2366	1.00	2449	1.12	2525	1.24	2600	1.36	2740	1.59	2872	1.83	3000	2.07
2100	1400	2321	0.91	2422	1.05	2509	1.19	2589	1.32	2662	1.45	2735	1.57	2869	1.83	2995	2.08	3117	2.34
2250	1500	2471	1.09	2569	1.25	2654	1.40	2731	1.54	2801	1.68	2871	1.81	3001	2.09	3123	2.36	3239	2.63
2400	1600	2621	1.30	2717	1.47	2799	1.63	2874	1.78	2942	1.93	3010	2.08	3135	2.37	3253	2.66	3365	2.95
2550	1700	2772	1.53	2865	1.72	2945	1.89	3018	2.06	3084	2.22	3150	2.38	3272	2.69	3385	2.99	3494	3.30
2700	1800	2923	1.79	3014	1.99	3092	2.18	3163	2.36	3228	2.53	3292	2.70	3410	3.03	3520	3.36	3626	3.68
2850	1900	3075	2.08	3163	2.30	3239	2.50	3309	2.69	3372	2.87	3434	3.05	3549	3.40	3657	3.75	3759	4.10
3000	2000	3227	2.40	3312	2.63	3387	2.84	3455	3.05	3517	3.25	3578	3.44	3690	3.81	3795	4.18	3895	4.54
3150	2100	3379	2.75	3462	3.00	3535	3.23	3602	3.44	3662	3.65	3722	3.85	3832	4.25	3934	4.64		
3300	2200	3531	3.14	3613	3.40	3684	3.64	3749	3.87	3808	4.09	3867	4.31	3974	4.73				
3450	2300	3684	3.56	3763	3.84	3833	4.09	3897	4.33										
3600	2400	3837	4.02	3914	4.31	3983	4.58												
3750	2500	3989	4.52																

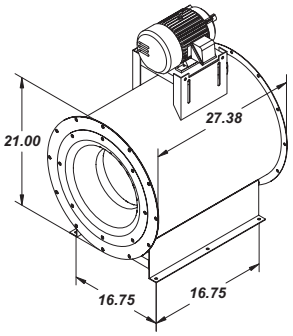
CFM	OV	3 1/2" SP		4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1350	900	**2766**	**1.47**	2921	1.69														
1500	1000	2838	1.64	**2982**	**1.87**	**3124**	**2.10**												
1650	1100	2923	1.84	3059	2.08	3192	2.32	**3322**	**2.57**	**3450**	**2.82**	3576	3.09						
1800	1200	3019	2.07	3147	2.31	3272	2.56	3396	2.82	3517	3.08	**3636**	**3.36**	3869	3.93				
1950	1300	3124	2.32	3245	2.57	3364	2.83	3480	3.10	3595	3.38	3708	3.66	**3930**	**4.25**				
2100	1400	3235	2.60	3351	2.87	3464	3.14	3574	3.42	3684	3.70	3791	3.99						
2250	1500	3353	2.91	3463	3.19	3570	3.47	3676	3.76	3780	4.06	3883	4.36						
2400	1600	3474	3.24	3580	3.54	3683	3.84	3784	4.14	3884	4.45	3982	4.76						
2550	1700	3599	3.61	3701	3.92	3800	4.23	3898	4.55	3994	4.87								
2700	1800	3727	4.01	3826	4.34	3922	4.67												
2850	1900	3858	4.44	3953	4.78														
3000	2000	3990	4.90																

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) Model 122 is not licensed to bear the AMCA Seal.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

135

Wheel Diameter = 13.50 in.	Maximum BHP = 0.126 x (RPM/1000)^3
Wheel Type = Backward Inclined	Tip Speed, FPM = 3.53 x RPM
Inlet and Outlet (Diameters) = 18.25 in.	Area = 1.82 ft.^{2}

Class	Max. RPM
I	3173
II	4000



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	495	**919**	**0.10**	**1074**	**0.15**	**1216**	**0.21**	**1349**	**0.28**										
1100	604	1053	0.15	1190	0.21	1314	0.28	1431	0.35	**1542**	**0.43**	**1652**	**0.51**						
1300	714	1192	0.21	1318	0.29	1429	0.37	1534	0.45	1633	0.54	1731	0.62	**1918**	**0.81**	**2096**	**1.01**		
1500	824	1334	0.29	1451	0.38	1554	0.47	1650	0.56	1740	0.66	1829	0.75	1998	0.95	2161	1.17	**2318**	**1.40**
1700	934	1479	0.39	1589	0.50	1685	0.60	1774	0.70	1857	0.81	1939	0.91	2095	1.13	2245	1.36	2389	1.60
1900	1044	1625	0.51	1729	0.64	1820	0.75	1904	0.87	1982	0.99	2059	1.10	2203	1.33	2342	1.58	2476	1.83
2100	1154	1772	0.66	1872	0.80	1959	0.93	2038	1.06	2111	1.19	2184	1.31	2320	1.57	2450	1.83	2575	2.10
2300	1264	1920	0.84	2016	0.99	2099	1.14	2175	1.28	2245	1.42	2314	1.56	2443	1.84	2565	2.12	2683	2.40
2500	1374	2068	1.04	2161	1.22	2241	1.38	2314	1.53	2381	1.69	2447	1.84	2570	2.14	2687	2.44	2799	2.75
2700	1484	2218	1.28	2307	1.47	2385	1.65	2455	1.82	2519	1.99	2583	2.15	2701	2.47	2813	2.80	2919	3.13
2900	1593	2368	1.55	2454	1.76	2529	1.96	2597	2.14	2659	2.32	2721	2.50	2835	2.85	2942	3.20	3044	3.55
3100	1703	2518	1.86	2602	2.09	2675	2.30	2741	2.50	2801	2.70	2861	2.89	2971	3.27	3074	3.64	3173	4.02
3300	1813	2668	2.22	2750	2.46	2821	2.69	2885	2.91	2944	3.12	3002	3.32	3108	3.73	3208	4.13	3304	4.53
3500	1923	2820	2.61	2899	2.87	2968	3.12	3030	3.35	3072	3.58	3144	3.80	3248	4.24	3345	4.66	3437	5.09
3700	2033	2971	3.05	3048	3.33	3115	3.59	3176	3.85	3232	4.09	3287	4.33	3388	4.79	3483	5.24	3572	5.69
3900	2143	3122	3.53	3197	3.84	3263	4.12	3323	4.39	3377	4.65	3431	4.90	3530	5.39	3622	5.88	3709	6.35
4100	2253	3274	4.07	3347	4.39	3411	4.69	3470	4.98	3523	5.26	3576	5.53	3672	6.05	3762	6.56	3847	7.07
4300	2363	3426	4.66	3498	5.00	3560	5.32	3617	5.63	3669	5.92	3721	6.21	3815	6.76	3903	7.30	3987	7.84
4500	2473	3479	5.30	3648	5.67	3709	6.01	3765	6.33	3816	6.64	3867	6.94	3959	7.53				
4700	2582	3731	6.00	3799	6.39	3859	6.75	3914	7.09										
4900	2692	3884	6.76	3950	7.17														

CFM	OV	3 1/2" SP		4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1700	934	**2530**	**1.85**	**2667**	**2.12**														
1900	1044	2607	2.10	2735	2.37	**2860**	**2.66**	2982	2.96										
2100	1154	2697	2.38	2817	2.67	2934	2.97	**3048**	**3.27**	**3161**	**3.59**	**3272**	**3.92**						
2300	1264	2798	2.70	2910	3.00	3020	3.31	3128	3.63	3234	3.96	3339	4.30	**3544**	**5.01**				
2500	1374	2907	3.06	3013	3.38	3117	3.71	3219	4.04	3319	4.38	3418	4.73	3612	5.46	**3802**	**6.22**	**3987**	**7.02**
2700	1484	3023	3.46	3124	3.80	3222	4.14	3319	4.49	3414	4.85	3508	5.21	3692	5.96	3872	6.74		
2900	1593	3143	3.91	3240	4.26	3334	4.62	3426	4.99	3517	5.36	3606	5.74	3781	6.52	3953	7.33		
3100	1703	3268	4.39	3360	4.77	3450	5.15	3539	5.54	3626	5.93	3711	6.32	3879	7.13				
3300	1813	3395	4.93	3484	5.33	3571	5.73	3656	6.13	3740	6.54	3822	6.96	3982	7.80				
3500	1923	3526	5.51	3612	5.93	3696	6.35	3778	6.78	3858	7.21	3937	7.64						
3700	2033	3659	6.14	3742	6.59	3823	7.03	3902	7.48	3980	7.93								
3900	2143	3793	6.83	3874	7.30	3953	7.77												
4100	2253	3929	7.57																

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) Model 135 is not licensed to bear the AMCA Seal.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

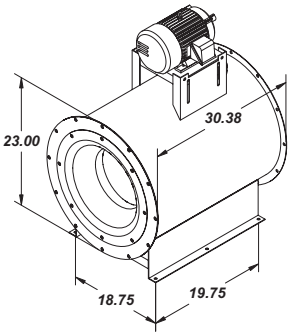
TUB - Performance Data

Tubular Centrifugal Fan

150

Wheel Diameter = 15.00 in.	Maximum BHP = 0.213 x (RPM/1000)^3
Wheel Type = Backward Inclined	Tip Speed, FPM = 3.93 x RPM
Inlet and Outlet (Diameters) = 20.25 in.	Area = 2.24 ft.^{2}

Class	Max. RPM
I	2827
II	2643
III	4000



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1100	491	**822**	**0.12**	**962**	**0.19**	**1090**	**0.26**	**1212**	**0.34**										
1250	558	894	0.15	1024	0.23	1142	0.31	1253	0.39	**1358**	**0.49**	1463	0.59						
1400	625	969	0.19	1090	0.28	1200	0.36	1303	0.45	1400	0.55	**1497**	**0.65**						
1550	692	1045	0.24	1160	0.33	1262	0.43	1359	0.52	1450	0.63	1540	0.73	**1712**	**0.96**				
1700	759	1122	0.29	1232	0.40	1329	0.50	1419	0.60	1505	0.72	1590	0.83	1752	1.06	**1907**	**1.32**		
1850	826	1200	0.36	1305	0.47	1398	0.58	1484	0.69	1565	0.81	1645	0.93	1798	1.18	1944	1.44	2086	1.73
2000	893	1279	0.43	1380	0.55	1469	0.67	1551	0.80	1628	0.92	1705	1.04	1849	1.30	1988	1.58	**2123**	**1.87**
2150	960	1358	0.51	1456	0.65	1542	0.78	1620	0.91	1694	1.04	1767	1.17	1905	1.44	2037	1.73	2166	2.03
2300	1027	1438	0.60	1533	0.75	1616	0.89	1692	1.03	1762	1.17	1832	1.31	1964	1.60	2091	1.89	2213	2.20
2450	1094	1518	0.71	1610	0.87	1691	1.02	1764	1.17	1832	1.32	1900	1.46	2027	1.76	2148	2.07	2265	2.40
2600	1161	1599	0.82	1689	0.99	1766	1.16	1838	1.31	1904	1.47	1969	1.63	2091	1.94	2208	2.27	2321	2.60
2750	1228	1679	0.95	1767	1.13	1843	1.31	1912	1.48	1976	1.65	2040	1.81	2158	2.14	2270	2.48	2379	2.83
3050	1362	1842	1.25	1926	1.46	1998	1.65	2064	1.84	2125	2.03	2185	2.21	2296	2.58	2402	2.95	2503	3.33
3350	1496	2005	1.60	2085	1.84	2155	2.06	2218	2.27	2276	2.48	2333	2.68	2439	3.09	2539	3.49	2635	3.90
3650	1629	2169	2.02	2246	2.29	2313	2.53	2374	2.76	2429	2.99	2484	3.22	2586	3.66	2681	4.10	2772	4.54
3950	1763	2333	2.51	2408	2.80	2472	3.07	2531	3.33	2585	3.58	2638	3.83	2735	4.31	2827	4.79	2914	5.27
4250	1897	2498	3.07	2570	3.40	2633	3.69	2690	3.97	2742	4.25	2793	4.52	2887	5.04	2975	5.56	3059	6.08
4550	2031	2664	3.72	2733	4.07	2794	4.39	2849	4.70	2899	5.00	2949	5.29	3040	5.86	3125	6.42	3206	6.97
4850	2165	2830	4.45	2897	4.83	2956	5.18	3009	5.52	3058	5.84	3106	6.16	3195	6.77	3278	7.37	3356	7.96
5150	2299	2996	5.27	3061	5.68	3118	6.06	3170	6.43	3218	6.78	3265	7.12	3351	7.78	3431	8.42	3507	9.06
5450	2433	3162	6.20	3225	6.64	3281	7.05	3332	7.43	3378	7.80	3424	8.17	3508	8.88	3586	9.57	3660	10.25
5750	2567	3229	7.22	3390	7.69	3444	8.13	3494	8.55	3539	8.95	3584	9.34	3666	10.10	3742	10.83	3815	11.55
6050	2701	3496	8.35	3555	8.86	3608	9.33	3656	9.77	3701	10.20	3745	10.62	3825	11.42	3899	12.21	3970	12.97
6350	2835	3663	9.60	3721	10.14	3772	10.64	3819	11.11	3863	11.56	3906	12.01	3984	12.87				

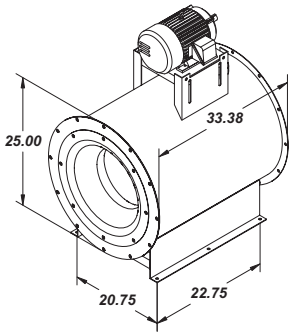
CFM	OV	3 1/2" SP		4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	893	2254	2.18																
2150	960	**2290**	**2.34**	**2412**	**2.67**	2531	3.02												
2300	1027	2332	2.53	2449	2.87	**2563**	**3.22**	2674	3.59										
2450	1094	2379	2.73	2491	3.08	2600	3.44	**2707**	**3.81**	2813	4.20								
2600	1161	2430	2.95	2537	3.30	2642	3.67	2746	4.05	**2847**	**4.45**	**2947**	**4.85**						
2750	1228	2485	3.18	2588	3.55	2689	3.93	2788	4.32	2886	4.72	2982	5.13	3170	6.00				
3050	1362	2602	3.71	2698	4.10	2792	4.50	2885	4.91	2976	5.33	3065	5.76	**3241**	**6.65**	**3413**	**7.59**	3581	8.57
3350	1496	2728	4.31	2818	4.73	2906	5.15	2993	5.59	3079	6.03	3163	6.48	3228	7.41	3490	8.37	**3648**	**9.38**
3650	1629	2860	4.99	2946	5.43	3029	5.89	3111	6.35	3192	6.81	3272	7.29	3427	8.26	3580	9.26	3729	10.30
3950	1763	2998	5.74	3079	6.22	3159	6.71	3237	7.19	3314	7.69	3389	8.19	3537	9.21	3681	10.25	3822	11.33
4250	1897	3139	6.59	3218	7.10	3294	7.62	3368	8.14	3441	8.66	3513	9.19	3654	10.26	3791	11.35	3926	12.47
4550	2031	3284	7.52	3359	8.07	3432	8.62	3504	9.17	3574	9.73	3643	10.28	3777	11.41	3909	12.56		
4850	2165	3431	8.55	3504	9.14	3574	9.72	3643	10.31	3711	10.90	3777	11.48	3906	12.67				
5150	2299	3580	9.68	3651	10.31	3719	10.93	3786	11.55	3851	12.17	3915	12.79						
5450	2433	3731	10.92	3800	11.58	3866	12.24	3931	12.90	3994	13.56								
5750	2567	3884	12.27	3950	12.97														

Notes: 1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) Model 150 is not licensed to bear the AMCA Seal.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

165

Wheel Diameter = 16.50 in.	Maximum BHP = 0.343 x (RPM/1000)^3
Wheel Type = Backward Inclined	Tip Speed, FPM = 4.32 x RPM
Inlet and Outlet (Diameters) = 22.31 in.	Area = 2.72 ft.^{2}

Class	Max. RPM
I	2561
II	3327
III	3869



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/4" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1300	478	**736**	**0.14**	**866**	**0.22**	**984**	**0.31**	**1096**	**0.40**										
1500	551	808	0.18	927	0.27	1034	0.37	1136	0.47	**1232**	**0.59**	1328	0.70						
1700	625	883	0.23	993	0.34	1092	0.44	1186	0.55	1274	0.67	**1362**	**0.79**						
1900	699	959	0.30	1063	0.41	1156	0.53	1242	0.65	1324	0.78	1406	0.90	**1561**	**1.18**				
2100	772	1037	0.37	1135	0.50	1223	0.63	1304	0.76	1381	0.90	1457	1.03	1602	1.32	**1741**	**1.63**		
2300	846	1115	0.46	1209	0.60	1292	0.74	1369	0.88	1442	1.03	1514	1.17	1650	1.47	1781	1.80	**1907**	**2.15**
2500	919	1194	0.56	1285	0.72	1364	0.87	1438	1.02	1506	1.18	1574	1.33	1703	1.65	1827	1.99	1946	2.35
2700	993	1274	0.68	1362	0.85	1438	1.01	1508	1.18	1573	1.35	1638	1.51	1761	1.84	1878	2.20	1992	2.57
2900	1066	1354	0.81	1439	1.00	1513	1.18	1580	1.35	1643	1.53	1705	1.70	1822	2.06	1934	2.43	2042	2.81
3100	1140	1435	0.96	1517	1.16	1588	1.35	1654	1.54	1714	1.73	1774	1.92	1886	2.30	1993	2.68	2097	3.08
3300	1213	1516	1.13	1596	1.35	1665	1.55	1728	1.75	1787	1.95	1845	2.15	1953	2.55	2055	2.96	2155	3.38
3500	1287	1597	1.31	1675	1.55	1742	1.77	1804	1.99	1860	2.20	1916	2.41	2021	2.83	2120	3.26	2215	3.70
3700	1360	1678	1.52	1754	1.77	1820	2.01	1880	2.24	1935	2.47	1990	2.69	2091	3.14	2187	3.59	2279	4.04
3900	1434	1760	1.75	1834	2.02	1898	2.27	1957	2.52	2010	2.76	2064	2.99	2162	3.46	2255	3.94	2344	4.41
4100	1507	1842	2.00	1915	2.29	1977	2.56	2034	2.82	2087	3.07	2139	3.32	2234	3.82	2325	4.31	2411	4.81
4300	1581	1924	2.28	1995	2.58	2057	2.87	2112	3.14	2163	3.41	2214	3.68	2308	4.20	2395	4.72	2480	5.24
4700	1728	2089	2.90	2157	3.25	2216	3.57	2270	3.87	2319	4.17	2367	4.46	2457	5.04	2540	5.61	2620	6.17
5100	1875	2254	3.64	2319	4.02	2376	4.37	2428	4.71	2475	5.04	2522	5.36	2608	5.99	2688	6.62	2765	7.23
5500	2022	2419	4.49	2483	4.91	2538	5.30	2588	5.68	2634	6.04	2679	6.39	2762	7.08	2839	7.75	2913	8.42
5900	2169	2586	5.47	2646	5.93	2700	6.36	2748	6.77	2793	7.16	2837	7.55	2917	8.29	2992	9.03	3063	9.75
6300	2316	2752	6.58	2811	7.09	2863	7.55	2910	8.00	2953	8.42	2995	8.84	3073	9.65	3146	10.44	3215	11.22
6700	2463	2919	7.84	2976	8.39	3026	8.89	3072	9.37	3114	9.83	3155	10.29	3231	11.16	3301	12.01	3368	12.85
7100	2610	3086	9.26	3141	9.84	3190	10.39	3234	10.91	3275	11.40	3315	11.89	3389	12.83	3458	13.74	3523	14.64
7500	2757	3253	10.84	3306	11.47	3354	12.05	3397	12.61	3437	13.14	3477	13.66	3549	14.67	3616	15.65	3679	16.60

CFM	OV	3 1/2" SP		4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2300	846	2030	2.51																
2500	919	**2063**	**2.72**	2176	3.12														
2700	993	2102	2.95	**2210**	**3.36**	**2316**	**3.78**												
2900	1066	2147	3.21	2250	3.63	2351	4.06	**2450**	**4.51**	2547	4.98								
3100	1140	2197	3.50	2296	3.93	2392	4.37	2487	4.83	**2580**	**5.30**	2671	5.79						
3300	1213	2251	3.81	2345	4.25	2438	4.71	2529	5.18	2618	5.66	**2706**	**6.16**	2878	7.20				
3500	1287	2308	4.14	2399	4.60	2487	5.07	2575	5.55	2661	6.05	2745	6.56	**2911**	**7.62**	3072	8.73		
3700	1360	2368	4.51	2455	4.98	2541	5.46	2625	5.96	2707	6.47	2789	6.99	2949	8.07	**3105**	**9.21**	3257	10.39
3900	1434	2430	4.90	2515	5.39	2597	5.89	2678	6.40	2758	6.92	2837	7.46	2991	8.56	3141	9.71	**3289**	**10.92**
4100	1507	2495	5.31	2576	5.82	2656	6.34	2735	6.87	2812	7.41	2888	7.96	3037	9.09	3182	10.26	3325	11.48
4300	1581	2561	5.76	2640	6.29	2717	6.83	2793	7.37	2868	7.93	2941	8.49	3086	9.65	3227	10.85	3365	12.09
4700	1728	2698	6.74	2772	7.31	2846	7.89	2917	8.47	2988	9.06	3057	9.66	3193	10.88	3325	12.13	3455	13.43
5100	1875	2839	7.85	2910	8.46	2980	9.08	3048	9.70	3115	10.33	3180	10.97	3309	12.25	3434	13.57	3557	14.92
5500	2022	2983	9.08	3052	9.75	3118	10.41	3183	11.08	3247	11.75	3310	12.42	3432	13.78	3552	15.17	3669	16.59
5900	2169	3131	10.46	3197	11.17	3261	11.89	3323	12.60	3384	13.31	3444	14.03	3562	15.47	3676	16.94	3787	18.42
6300	2316	3281	11.99	3344	12.75	3406	13.51	3466	14.27	3525	15.03	3583	15.79	3696	17.32	3805	18.87		
6700	2463	3432	13.67	3494	14.49	3554	15.30	3612	16.11	3669	16.92	3725	17.72	3833	19.34				
7100	2610	3585	15.52	3645	16.39	3704	17.25	3760	18.12	3815	18.97	3869	19.83						
7500	2757	3740	17.54	3798	18.47	3855	19.39												

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) Model 165 is not licensed to bear the AMCA Seal.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

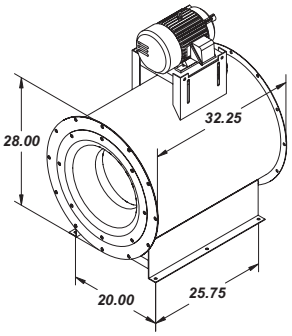
TUB - Performance Data

Tubular Centrifugal Fan

182

Wheel Diameter = 18.25 in.	Maximum BHP = 0.43 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 4.78 x RPM
Inlet and Outlet (Diameters) = 24.69 in.	Area = 3.32 ft.^{2}

Class	Max. RPM
I	2303
II	2990
III	3762



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1660	500	669	0.12	788	0.21	**898**	**0.31**	1003	0.42								
1992	600	755	0.17	860	0.27	957	0.38	**1049**	**0.49**	1225	0.76						
2324	700	846	0.24	940	0.35	1027	0.46	1110	0.59	1266	0.80	1417	1.17				
2656	800	940	0.32	1025	0.44	1105	0.57	1180	0.70	**1322**	**1.00**	1458	1.32	1590	1.67		
2988	900	1036	0.41	1114	0.55	1187	0.69	1257	0.84	1388	1.15	**1513**	**1.49**	1633	1.85	1751	2.24
3320	1000	1133	0.53	1206	0.68	1274	0.84	1338	1.00	1460	1.33	1576	1.69	**1688**	**2.06**	1796	2.47
3652	1100	1232	0.68	1300	0.84	1363	1.01	1423	1.18	1537	1.54	1646	1.91	1750	2.31	**1851**	**2.73**
3984	1200	1332	0.84	1395	1.02	1454	1.20	1511	1.39	1618	1.77	1720	2.17	1819	2.58	1914	3.02
4316	1300	1433	1.04	1491	1.23	1547	1.43	1601	1.63	1702	2.03	1799	2.45	1892	2.89	1982	3.34
4648	1400	1534	1.27	1589	1.47	1642	1.68	1692	1.89	1789	2.33	1881	2.77	1969	3.23	2055	3.71
4980	1500	1636	1.53	1688	1.75	1738	1.97	1786	2.19	1877	2.65	1965	3.12	2049	3.61	2131	4.10
5312	1600	1738	1.82	1787	2.06	1834	2.29	1880	2.53	1968	3.02	2051	3.51	2132	4.02	2210	4.54
5644	1700	1840	2.15	1887	2.40	1932	2.65	1976	2.90	2059	3.42	2139	3.94	2217	4.47	2291	5.02
5976	1800	1943	2.52	1988	2.79	2030	3.05	2072	3.32	2152	3.86	2229	4.41	2303	4.96	2375	5.53
6308	1900	2046	2.93	2089	3.21	2129	3.49	2169	3.77	2246	4.34	2320	4.92	2391	5.50	2461	6.10
6640	2000	2150	3.39	2190	3.68	2229	3.98	2267	4.27	2341	4.87	2412	5.47	2481	6.08	2548	6.70
6972	2100	2253	3.89	2292	4.20	2329	4.51	2366	4.82	2437	5.44	2505	6.07	2572	6.71	2636	7.36
7304	2200	2357	4.44	2394	4.77	2430	5.09	2465	5.41	2533	6.07	2600	6.72	2664	7.39	2726	8.06
7636	2300	2460	5.04	2496	5.38	2531	5.72	2565	6.06	2631	6.74	2694	7.43	2756	8.12	2817	8.82
7968	2400	2565	5.70	2599	6.05	2632	6.41	2665	6.76	2728	7.47	2790	8.18	2850	8.90	2909	9.63
8300	2500	2669	6.41	2701	6.78	2734	7.15	2765	7.51	2827	8.25	2886	9.00	2945	9.74	3001	10.50
8632	2600	2772	7.18	2804	7.56	2835	7.95	2866	8.33	2925	9.10	2983	9.87	3040	10.64	3095	11.42
8964	2700	2876	8.00	2908	8.41	2937	8.80	2967	9.20	3025	10.00	3081	10.80	3136	11.60	3189	12.41
9296	2800	2979	8.87	3011	9.32	3040	9.73	3068	10.14	3124	10.96	3179	11.79	3232	12.62	3284	13.46

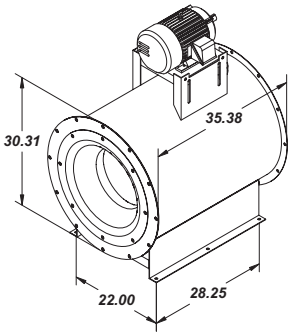
CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3320	1000	2007	3.35	2111	3.82												
3652	1100	2048	3.63	2143	4.11	2238	4.62	2332	5.15								
3984	1200	2098	3.95	2188	4.44	2276	4.96	2364	5.49	2450	6.05						
4316	1300	**2156**	**4.31**	**2240**	**4.82**	2324	5.35	2406	5.89	2487	6.46	2648	7.64				
4648	1400	2220	4.71	2300	5.23	**2379**	**5.77**	**2456**	**6.33**	2533	6.91	2685	8.11	2834	9.39		
4980	1500	2288	5.14	2364	5.69	2439	6.25	2513	6.82	**2586**	**7.41**	2730	8.64	2872	9.93	3011	11.29
5312	1600	2360	5.62	2433	6.19	2505	6.76	2575	7.35	2645	7.96	**2782**	**9.22**	2917	10.53	3050	11.91
5644	1700	2436	6.14	2506	6.73	2574	7.32	2642	7.93	2709	8.56	2840	9.84	**2969**	**11.19**	3096	12.59
5976	1800	2514	6.71	2581	7.31	2647	7.93	2712	8.56	2776	9.20	2902	10.52	3026	11.90	**3147**	**13.33**
6308	1900	2594	7.32	2659	7.94	2723	8.58	2785	9.23	2847	9.89	2968	11.25	3087	12.66	3204	14.12
6640	2000	2677	7.97	2739	8.62	2801	9.28	2861	9.95	2921	10.64	3038	12.04	3152	13.48	3265	14.98
6972	2100	2761	8.68	2821	9.35	2881	10.03	2939	10.73	2997	11.43	3110	12.87	3221	14.36	3330	15.89
7304	2200	2847	9.43	2905	10.13	2963	10.84	3019	11.55	3075	12.28	3185	13.77	3292	15.29	3397	16.86
7636	2300	2934	10.24	2990	10.96	3046	11.69	3101	12.44	3155	13.19	3262	14.71	3366	16.28	3468	17.89
7968	2400	3022	11.10	3077	11.85	3131	12.61	3185	13.37	3237	14.15	3340	15.72	3441	17.33	3540	18.98
8300	2500	3111	12.02	3165	12.80	3218	13.58	3269	14.37	3321	15.17	3421	16.79	3519	18.44	3615	20.13
8632	2600	3202	13.00	3254	13.80	3305	14.61	3356	15.43	3405	16.25	3503	17.92	3599	19.62	3692	21.35
8964	2700	3293	14.05	3344	14.87	3394	15.70	3443	16.54	3491	17.39	3586	19.11	3680	20.86		
9296	2800	3385	15.15	3435	16.00	3483	16.86	3531	17.73	3578	18.60	3671	20.37	3762	22.16		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

200

Wheel Diameter = 20.00 in.	Maximum BHP = 0.69 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 5.23 x RPM
Inlet and Outlet (Diameters) = 27.06 in.	Area = 4.00 ft.^{2}

Class	Max. RPM
I	2102
II	2722
III	3433



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	500	610	0.15	719	0.25	**819**	**0.37**	916	0.50								
2400	600	689	0.21	785	0.33	873	0.45	**957**	**0.59**	1118	0.91						
2800	700	772	0.28	858	0.42	937	0.56	1012	0.71	1156	1.04	1293	1.41				
3200	800	858	0.38	936	0.53	1008	0.68	1077	0.84	**1207**	**1.20**	1331	1.58	1451	2.00		
3600	900	945	0.50	1017	0.66	1083	0.83	1147	1.01	1266	1.38	**1380**	**1.79**	1490	2.22	1598	2.69
4000	1000	1034	0.64	1100	0.82	1162	1.01	1221	1.20	1332	1.60	1438	2.02	**1540**	**2.48**	1639	2.96
4400	1100	1124	0.81	1186	1.01	1243	1.21	1298	1.42	1403	1.84	1502	2.30	1597	2.77	**1689**	**3.27**
4800	1200	1215	1.01	1273	1.23	1327	1.45	1379	1.67	1477	2.12	1570	2.60	1659	3.10	1746	3.63
5200	1300	1307	1.25	1361	1.48	1412	1.71	1461	1.95	1553	2.44	1642	2.94	1726	3.47	1809	4.02
5600	1400	1400	1.52	1450	1.77	1498	2.02	1544	2.27	1632	2.79	1716	3.33	1797	3.88	1875	4.45
6000	1500	1493	1.83	1540	2.10	1585	2.37	1629	2.64	1713	3.19	1793	3.75	1870	4.33	1944	4.93
6400	1600	1586	2.19	1631	2.47	1674	2.75	1716	3.04	1795	3.62	1872	4.22	1945	4.83	2016	5.45
6800	1700	1679	2.58	1722	2.88	1763	3.18	1803	3.49	1879	4.10	1952	4.73	2023	5.37	2091	6.02
7200	1800	1773	3.03	1814	3.34	1853	3.66	1891	3.99	1964	4.63	2034	5.29	2102	5.96	2167	6.65
7600	1900	1867	3.52	1906	3.86	1943	4.19	1979	4.53	2050	5.21	2117	5.90	2182	6.61	2245	7.32
8000	2000	1962	4.07	1998	4.42	2034	4.78	2069	5.13	2136	5.85	2201	6.57	2264	7.30	2325	8.05
8400	2100	2056	4.67	2091	5.04	2125	5.42	2159	5.79	2224	6.54	2286	7.29	2347	8.06	2406	8.84
8800	2200	2151	5.34	2184	5.72	2217	6.11	2249	6.50	2312	7.29	2372	8.08	2430	8.87	2487	9.68
9200	2300	2245	6.06	2278	6.46	2309	6.87	2340	7.28	2400	8.10	2459	8.92	2515	9.75	2570	10.59
9600	2400	2340	6.85	2371	7.27	2402	7.69	2431	8.12	2490	8.97	2546	9.83	2601	10.69	2654	11.57
10000	2500	2435	7.70	2465	8.14	2494	8.58	2523	9.03	2579	9.91	2634	10.80	2687	11.70	2739	12.61
10400	2600	2530	8.62	2559	9.08	2587	9.54	2615	10.00	2669	10.92	2722	11.85	2774	12.78	2824	13.72
10800	2700	2624	9.60	2653	10.10	2680	10.57	2707	11.05	2760	12.01	2811	12.97	2861	13.93	2910	14.90
11200	2800	2718	10.65	2747	11.19	2774	11.68	2800	12.18	2851	13.17	2901	14.16	2949	15.16	2997	16.17

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	1000	1832	4.02	1926	4.59												
4400	1100	1868	4.36	1956	4.94	2042	5.55	2128	6.18								
4800	1200	1914	4.74	1996	5.34	2077	5.96	2157	6.60	2236	7.27						
5200	1300	**1967**	**5.17**	**2044**	**5.79**	2120	6.42	2195	7.08	2270	7.75	2416	9.18				
5600	1400	2025	5.65	2098	6.28	**2170**	**6.94**	**2241**	**7.61**	2312	8.30	2450	9.75	2586	11.28		
6000	1500	2088	6.18	2157	6.83	2226	7.55	2293	8.19	**2360**	**8.90**	2491	10.38	2620	11.93	2748	13.56
6400	1600	2154	6.75	2220	7.43	2286	8.12	2350	8.83	2414	9.56	**2539**	**11.07**	2662	12.65	2783	14.31
6800	1700	2222	7.38	2286	8.08	2349	8.79	2411	9.53	2472	10.28	2592	11.82	**2709**	**13.44**	2825	15.12
7200	1800	2294	8.05	2355	8.78	2415	9.52	2475	10.28	2533	11.05	2648	12.64	2761	14.29	**2872**	**16.01**
7600	1900	2367	8.79	2426	9.54	2484	10.31	2542	11.09	2598	11.88	2709	13.52	2817	15.21	2924	16.96
8000	2000	2442	9.57	2499	10.35	2556	11.15	2611	11.95	2665	12.77	2772	14.46	2877	16.19	2979	17.99
8400	2100	2519	10.42	2574	11.23	2629	12.05	2682	12.88	2735	13.73	2838	15.46	2939	17.24	3038	19.08
8800	2200	2597	11.33	2651	12.17	2703	13.02	2755	13.88	2806	14.75	2906	16.53	3004	18.36	3100	20.24
9200	2300	2677	12.30	2729	13.17	2780	14.05	2830	14.93	2879	15.84	2976	17.67	3071	19.55	3164	21.48
8600	2400	2758	13.33	2808	14.23	2857	15.14	2906	16.06	2954	16.99	3048	18.88	3140	20.81	3231	22.79
10000	2500	2839	14.44	2888	15.37	2936	16.31	2983	17.26	3030	18.22	3122	20.16	3211	22.15	3299	24.18
10400	2600	2922	15.62	2969	16.58	3016	17.55	3062	18.53	3107	19.51	3196	21.52	3284	23.56	3369	25.64
10800	2700	3005	16.87	3051	17.86	3097	18.86	3141	19.87	3186	20.89	3273	22.95	3358	25.05		
11200	2800	3089	18.19	3134	19.22	3178	20.25	3222	21.29	3265	22.34	3350	24.46	3433	26.62		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

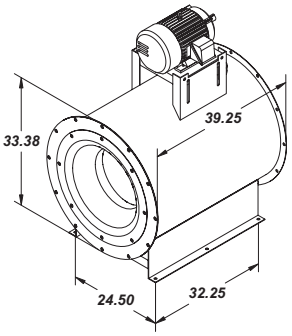
TUB - Performance Data

Tubular Centrifugal Fan

222

Wheel Diameter = 22.25 in.	Maximum BHP = 1.15 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 5.83 x RPM
Inlet and Outlet (Diameters) = 30.06 in.	Area = 4.93 ft.^{2}

Class	Max. RPM
I	1889
II	2447
III	3085



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2465	500	548	0.19	646	0.31	**736**	**0.46**	823	0.62								
2958	600	619	0.26	705	0.40	785	0.56	**860**	**0.73**	1005	1.12						
2451	700	694	0.35	771	0.51	842	0.69	910	0.87	1039	1.28	1162	1.74				
3944	800	771	0.47	841	0.65	906	0.84	968	1.04	**1085**	**1.48**	1196	1.96	1304	2.48		
4437	900	849	0.62	914	0.82	974	1.03	1031	1.25	1138	1.71	**1241**	**2.21**	1340	2.75	1436	3.33
4930	1000	930	0.79	989	1.02	1045	1.25	1097	1.48	1198	1.98	1293	2.51	**1384**	**3.07**	1473	3.67
5423	1100	1011	1.01	1066	1.25	1118	1.50	1167	1.75	1261	2.28	1350	2.84	1435	3.43	**1518**	**4.05**
5916	1200	1093	1.26	1144	1.52	1193	1.79	1239	2.06	1327	2.63	1411	3.22	1492	3.84	1570	4.49
6409	1300	1175	1.55	1223	1.83	1269	2.12	1313	2.42	1396	3.02	1476	3.64	1552	4.30	1626	4.97
6902	1400	1258	1.88	1303	2.19	1347	2.50	1388	2.81	1467	3.46	1542	4.12	1615	4.80	1685	5.51
7395	1500	1342	2.27	1384	2.60	1425	2.93	1464	3.26	1540	3.94	1612	4.64	1681	5.36	1748	6.10
7888	1600	1425	2.70	1466	3.05	1505	3.41	1542	3.76	1614	4.48	1682	5.22	1748	5.97	1812	6.75
8381	1700	1509	3.20	1548	3.57	1585	3.94	1620	4.32	1689	5.08	1755	5.85	1818	6.65	1879	7.46
8874	1800	1594	3.75	1630	4.14	1665	4.54	1699	4.93	1765	5.73	1828	6.55	1889	7.38	1948	8.23
9367	1900	1678	4.36	1713	4.77	1747	5.19	1779	5.61	1842	6.45	1903	7.31	1961	8.18	2018	9.06
9860	2000	1763	5.04	1796	5.47	1828	5.91	1860	6.35	1920	7.24	1978	8.13	2035	9.04	2090	9.96
10353	2100	1848	5.78	1880	6.24	1910	6.70	1940	7.16	1999	8.09	2055	9.03	2109	9.98	2162	10.94
10846	2200	1933	6.60	1963	7.08	1993	7.56	2022	8.05	2078	9.02	2132	10.00	2185	10.98	2236	11.98
11339	2300	2018	7.50	2047	8.00	2076	8.50	2104	9.01	2158	10.02	2210	11.04	2261	12.07	2310	13.11
11832	2400	2103	8.48	2131	9.00	2159	9.52	2186	10.05	2238	11.10	2288	12.16	2338	13.23	2386	14.31
12325	2500	2189	9.53	2216	10.08	2242	10.62	2268	11.17	2318	12.27	2367	13.37	2415	14.48	2462	15.60
12818	2600	2274	10.67	2300	11.24	2326	11.81	2351	12.38	2399	13.52	2447	14.67	2493	15.82	2538	16.98
13311	2700	2359	11.88	2385	12.50	2409	13.09	2434	13.68	2481	14.86	2527	16.05	2572	17.24	2616	18.45
13804	2800	2443	13.19	2469	13.85	2493	14.46	2517	15.07	2563	16.30	2607	17.53	2651	18.76	2694	20.01

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4930	1000	1646	4.97	1731	5.68												
5423	1100	1679	5.39	1758	6.11	1836	6.86	1913	7.65								
5916	1200	1721	5.87	1794	6.61	1867	7.37	1939	8.17	2010	8.99						
6409	1300	**1768**	**6.40**	**1838**	**7.16**	1906	7.95	1973	8.76	2040	9.60	2172	11.36				
6902	1400	1820	7.00	1886	7.78	**1951**	**8.58**	**2015**	**9.41**	2078	10.27	2202	12.06	2324	13.96		
7395	1500	1876	7.65	1939	8.45	2001	9.29	2061	10.14	**2121**	**11.02**	2239	12.84	2355	14.77	2470	16.78
7888	1600	1936	8.36	1996	9.19	2054	10.05	2112	10.93	2170	11.83	**2282**	**13.70**	2393	15.66	2501	17.71
8381	1700	1998	9.13	2055	10.00	2111	10.88	2167	11.79	2222	12.72	2329	14.63	**2435**	**16.63**	2539	18.71
8874	1800	2062	9.97	2117	10.87	2171	11.78	2224	12.72	2277	13.67	2380	15.64	2482	17.69	**2581**	**19.81**
9367	1900	2128	10.87	2181	11.81	2233	12.75	2284	13.72	2335	14.71	2435	16.73	2532	18.82	2628	20.99
9860	2000	2195	11.85	2247	12.81	2297	13.80	2347	14.80	2396	15.81	2492	17.89	2586	20.04	2678	22.26
10353	2100	2264	12.90	2314	13.90	2363	14.91	2411	15.95	2458	16.99	2551	19.13	2642	21.34	2731	23.61
10846	2200	2335	14.02	2383	15.06	2430	16.11	2476	17.17	2522	18.26	2612	20.46	2700	22.73	2786	25.06
11339	2300	2406	15.22	2453	16.30	2498	17.38	2544	18.48	2588	19.60	2675	21.87	2760	24.20	2844	26.59
11832	2400	2479	16.50	2524	17.62	2568	18.74	2612	19.88	2655	21.03	2740	23.37	2823	25.76	2904	28.21
12325	2500	2552	17.87	2596	19.02	2639	20.19	2682	21.36	2724	22.54	2806	24.95	2886	27.41	2965	29.92
12818	2600	2626	19.33	2669	20.52	2711	21.72	2752	22.93	2793	24.15	2873	26.63	2952	29.16	3028	31.74
13311	2700	2701	20.88	2743	22.10	2783	23.34	2824	24.59	2864	25.85	2942	28.40	3018	31.00		
13804	2800	2777	22.52	2817	23.79	2857	25.06	2896	26.35	2935	27.65	3011	30.27	3085	32.94		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

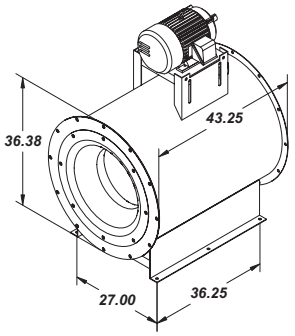
Performance Data - TUB

Tubular Centrifugal Fan

245

Wheel Diameter = 24.50 in.	Maximum BHP = 1.87 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 6.41 x RPM
Inlet and Outlet (Diameters) = 33.13 in.	Area = 5.98 ft.^{2}

Class	Max. RPM
I	1715
II	2227
III	2802



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2990	500	498	0.22	587	0.38	**669**	**0.56**	747	0.75								
3588	600	562	0.31	640	0.49	713	0.68	**781**	**0.89**	912	1.36						
4186	700	630	0.43	700	0.62	765	0.83	826	1.06	943	1.56	1055	2.12				
4784	800	700	0.57	764	0.79	823	1.02	879	1.27	**985**	**1.79**	1086	2.37	1184	3.01		
5382	900	771	0.75	830	0.99	884	1.25	936	1.51	1034	2.07	**1127**	**2.68**	1216	3.34	1304	4.04
5980	1000	844	0.96	898	1.23	949	1.51	997	1.80	1088	2.40	1174	3.04	**1257**	**3.72**	1338	4.45
6578	1100	918	1.22	968	1.51	1015	1.82	1060	2.12	1145	2.77	1226	3.44	1304	4.16	**1379**	**4.91**
7176	1200	992	1.52	1039	1.84	1083	2.17	1125	2.50	1205	3.19	1281	3.90	1355	4.65	1426	5.44
7774	1300	1067	1.88	1111	2.22	1152	2.57	1192	2.93	1268	3.66	1340	4.42	1409	5.21	1476	6.03
8372	1400	1143	2.28	1184	2.66	1223	3.03	1261	3.41	1332	4.19	1401	4.99	1467	5.82	1530	6.68
8970	1500	1218	2.75	1257	3.15	1294	3.55	1330	3.96	1398	4.78	1464	5.63	1526	6.50	1587	7.40
9568	1600	1294	3.28	1331	3.70	1366	4.13	1400	4.56	1466	5.44	1528	6.33	1588	7.24	1646	8.18
10166	1700	1371	3.88	1406	4.33	1439	4.78	1471	5.23	1534	6.16	1593	7.10	1651	8.06	1707	9.04
10764	1800	1447	4.54	1480	5.02	1512	5.50	1543	5.98	1603	6.95	1660	7.94	1715	8.95	1769	9.97
11362	1900	1524	5.29	1556	5.79	1586	6.29	1616	6.80	1673	7.82	1728	8.86	1781	9.91	1833	10.98
11960	2000	1601	6.11	1631	6.64	1660	7.17	1689	7.70	1744	8.77	1797	9.86	1848	10.96	1898	12.08
12558	2100	1678	7.01	1707	7.57	1735	8.13	1762	8.69	1815	9.81	1866	10.95	1916	12.10	1964	13.26
13156	2200	1755	8.01	1783	8.59	1810	9.17	1836	9.76	1887	10.93	1936	12.12	1984	13.32	2030	14.53
13754	2300	1833	9.09	1859	9.70	1885	10.31	1910	10.92	1959	12.15	2007	13.39	2053	14.63	2098	15.89
14352	2400	1910	10.28	1936	10.91	1960	11.55	1985	12.18	2032	13.46	2078	14.75	2123	16.05	2167	17.35
14950	2500	1988	11.56	2012	12.22	2036	12.88	2060	13.54	2105	14.87	2150	16.21	2193	17.56	2236	18.92
15548	2600	2065	12.93	2089	13.63	2112	14.32	2135	15.01	2179	16.39	2222	17.78	2264	19.18	2305	20.59
16146	2700	2142	14.41	2166	15.15	2188	15.87	2210	16.58	2253	18.02	2295	19.46	2336	20.91	2375	22.37
16744	2800	2219	15.99	2243	16.79	2264	17.53	2286	18.27	2327	19.76	2368	21.25	2407	22.75	2446	24.26

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5980	1000	1495	6.03	1572	6.89												
6578	1100	1525	6.54	1597	7.41	1667	8.32	1737	9.27								
7176	1200	1563	7.12	1629	8.01	1695	8.94	1761	9.90	1825	10.90						
7774	1300	**1606**	**7.77**	**1669**	**8.68**	1731	9.63	1792	10.62	1853	11.64	1972	13.77				
8372	1400	1653	8.48	1713	9.43	**1772**	**10.41**	**1830**	**11.41**	1887	12.45	2000	14.62	2111	16.92		
8970	1500	1704	9.27	1761	10.25	1817	11.26	1872	12.29	**1926**	**13.36**	2034	15.57	2139	17.90	2243	20.35
9568	1600	1758	10.13	1812	11.15	1866	12.19	1918	13.25	1970	14.35	**2072**	**16.61**	2173	18.98	2272	21.47
10166	1700	1814	11.07	1866	12.12	1917	13.20	1968	14.30	2018	15.42	2115	17.74	**2211**	**20.17**	2306	22.69
10764	1800	1872	12.09	1922	13.18	1972	14.29	2020	15.42	2068	16.58	2162	18.97	2254	21.44	**2344**	**24.02**
11362	1900	1932	13.18	1981	14.31	2028	15.46	2075	16.64	2121	17.83	2211	20.28	2300	22.82	2387	25.45
11960	2000	1994	14.37	2040	15.54	2086	16.73	2131	17.94	2176	19.17	2263	21.69	2348	24.30	2432	26.99
12558	2100	2056	15.64	2101	16.85	2146	18.08	2189	19.33	2232	20.60	2317	23.20	2399	25.88	2480	28.63
13156	2200	2120	17.00	2164	18.26	2207	19.53	2249	20.82	2291	22.13	2372	24.81	2452	27.56	2530	30.38
13754	2300	2185	18.45	2227	19.76	2269	21.08	2310	22.41	2350	23.76	2429	26.52	2507	29.34	2583	32.24
14352	2400	2251	20.01	2292	21.36	2332	22.72	2372	24.10	2411	25.50	2488	28.33	2563	31.23	2637	34.20
14950	2500	2318	21.67	2357	23.07	2397	24.47	2435	25.90	2473	27.33	2548	30.25	2621	33.24	2693	36.28
15548	2600	2385	23.44	2424	24.88	2462	26.33	2499	27.80	2536	29.28	2609	32.29	2680	35.35	2750	38.48
16146	2700	2453	25.31	2491	26.80	2528	28.30	2564	29.82	2600	31.34	2671	34.44	2741	37.59		
16744	2800	2522	27.30	2558	28.84	2594	30.39	2630	31.85	2665	33.52	2734	36.71	2802	39.94		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

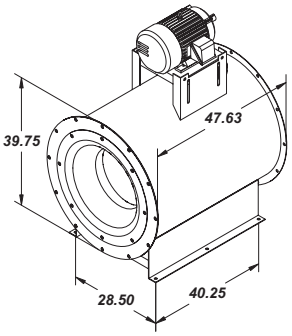
TUB - Performance Data

Tubular Centrifugal Fan

270

Wheel Diameter = 27.00 in.	Maximum BHP = 3.10 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 7.08 x RPM
Inlet and Outlet (Diameters) = 36.50 in.	Area = 7.27 ft.^{2}

Class	Max. RPM
I	1506
II	1949
III	2436



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3635	500	433	0.25	**513**	**0.42**	591	0.62	668	0.86								
4362	600	488	0.34	558	0.54	**624**	**0.75**	688	0.99								
5089	700	546	0.46	609	0.68	667	0.92	**723**	**1.17**	834	1.74						
5816	800	606	0.61	663	0.86	716	1.12	766	1.39	864	1.98	961	2.65	1057	3.41		
6543	900	668	0.79	720	1.07	768	1.36	815	1.66	**904**	**2.29**	990	2.97	1076	3.72	1161	4.56
7270	1000	731	1.02	779	1.33	823	1.64	866	1.96	948	2.64	**1027**	**3.35**	**1105**	**4.12**	1182	4.96
7997	1100	794	1.28	839	1.62	880	1.96	920	2.31	997	3.04	1070	3.79	1141	4.59	**1212**	**5.44**
8724	1200	858	1.60	900	1.96	939	2.34	976	2.71	1048	3.49	1117	4.29	1183	5.13	1248	6.01
9451	1300	923	1.96	962	2.36	999	2.76	1034	3.17	1101	3.99	1166	4.85	1229	5.73	1290	6.64
10178	1400	988	2.38	1024	2.81	1059	3.24	1093	3.67	1157	4.56	1218	5.46	1277	6.39	1335	7.35
10905	1500	1053	2.86	1088	3.32	1121	3.78	1153	4.24	1213	5.18	1271	6.14	1328	7.12	1382	8.12
11632	1600	1119	3.41	1152	3.89	1183	4.38	1213	4.88	1271	5.87	1326	6.88	1380	7.92	1432	8.97
12359	1700	1185	4.02	1216	4.54	1246	5.06	1274	5.58	1330	6.63	1383	7.70	1434	8.79	1484	9.89
13086	1800	1251	4.71	1280	5.26	1309	5.80	1336	6.35	1389	7.46	1440	8.59	1489	9.73	1537	10.89
13813	1900	1317	5.47	1345	6.05	1372	6.63	1399	7.21	1450	8.38	1498	9.56	1546	10.75	1592	11.97
14540	2000	1383	6.30	1410	6.92	1436	7.53	1462	8.14	1511	9.37	1558	10.61	1603	11.86	1647	13.13
15267	2100	1448	7.20	1476	7.89	1501	8.52	1525	9.16	1572	10.45	1617	11.74	1661	13.05	1704	14.37
15994	2200	1513	8.17	1541	8.94	1565	9.60	1589	10.27	1634	11.62	1678	12.97	1720	14.34	1761	15.72
16721	2300	1578	9.22	1607	10.08	1630	10.78	1653	11.48	1696	12.88	1739	14.29	1780	15.72	1820	17.15
17448	2400	1642	10.34	1673	11.33	1695	12.05	1717	12.78	1759	14.24	1800	15.71	1840	17.20	1878	18.69
18175	2500	1706	11.54	1739	12.67	1760	13.43	1781	14.19	1822	15.71	1862	17.24	1900	18.78	1938	20.33
18902	2600	1769	12.81	1805	14.13	1826	14.91	1846	15.70	1886	17.28	1924	18.87	1961	20.47	1998	22.08
19629	2700	1833	14.16	1871	15.68	1891	16.51	1911	17.33	1949	18.97	1987	20.62	2023	22.27	2058	23.94
20356	2800	1896	15.59	1937	17.33	1957	18.22	1976	19.07	2013	20.77	2049	22.47	2085	24.19	2119	25.91

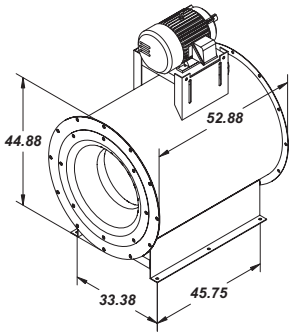
CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7997	1100	1352	7.32	1422	8.37												
8724	1200	1377	7.91	1441	8.94	1506	10.04										
9451	1300	**1410**	**8.60**	**1469**	**9.64**	1528	10.73	1587	11.88	1647	13.09						
10178	1400	1447	9.37	1503	10.43	**1558**	**11.54**	1613	12.69	1668	13.89	1778	16.46				
10905	1500	1489	10.22	1541	11.32	1593	12.45	**1645**	**13.62**	**1696**	**14.83**	1799	17.38	1902	20.14		
11632	1600	1533	11.15	1583	12.29	1632	13.45	1681	14.65	1729	15.88	**1826**	**18.45**	1922	21.20	2018	24.13
12359	1700	1581	12.17	1628	13.34	1675	14.54	1721	15.77	1767	17.03	1858	19.65	**1949**	**22.41**	2039	25.33
13086	1800	1630	13.26	1675	14.48	1720	15.72	1764	16.99	1808	18.29	1894	20.96	1980	23.76	**2066**	**26.70**
13813	1900	1681	14.44	1724	15.71	1767	17.00	1809	18.30	1851	19.64	1934	22.38	2016	25.23	2098	28.20
14540	2000	1733	15.71	1775	17.02	1816	18.36	1857	19.71	1897	21.09	1976	23.91	2055	26.82	2133	29.85
15267	2100	1787	17.06	1827	18.43	1867	19.81	1906	21.22	1945	22.64	2021	25.54	2097	28.53	2171	31.61
15994	2200	1841	18.51	1880	19.93	1919	21.37	1956	22.82	1994	24.29	2068	27.28	2140	30.35	2212	33.50
16721	2300	1897	20.06	1935	21.53	1972	23.02	2008	24.52	2045	26.04	2116	29.12	2186	32.28	2255	35.51
17448	2400	1953	21.71	1990	23.23	2026	24.77	2061	26.33	2097	27.90	2166	31.08	2234	34.33	2300	37.64
18175	2500	2011	23.46	2046	25.04	2081	26.63	2115	28.24	2150	29.86	2217	33.14	2282	36.49	2347	39.89
18902	2600	2069	25.32	2103	26.96	2137	28.61	2170	30.27	2203	31.94	2269	35.32	2333	38.76	2395	42.26
19629	2700	2127	27.29	2161	28.99	2194	30.69	2226	32.41	2258	34.13	2322	37.62	2384	41.16		
20356	2800	2186	29.39	2219	31.14	2251	32.89	2283	34.67	2314	36.45	2376	40.04	2436	43.68		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

300

Wheel Diameter = 30.00 in.	Maximum BHP = 5.25 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 7.86 x RPM
Inlet and Outlet (Diameters) = 40.56 in.	Area = 8.97 ft.^{2}

Class	Max. RPM
I	1355
II	1754
III	2192



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4485	500	390	0.30	**462**	**0.52**	532	0.76	601	1.06								
5382	600	439	0.42	502	0.66	**562**	**0.93**	619	1.22								
6279	700	491	0.57	548	0.84	600	1.13	**651**	**1.45**	750	2.14						
7176	800	546	0.75	597	1.06	644	1.38	690	1.72	778	2.45	865	3.27	952	4.21		
8073	900	601	0.98	648	1.33	691	1.68	733	2.05	**813**	**2.82**	891	3.67	968	4.60	1045	5.63
8970	1000	657	1.26	701	1.64	741	2.03	780	2.42	853	3.25	**924**	**4.14**	**994**	**5.09**	1064	6.12
9867	1100	715	1.59	755	2.00	792	2.43	828	2.86	897	3.75	963	4.68	1027	5.67	**1091**	**6.72**
10764	1200	772	1.97	810	2.43	845	2.88	879	3.35	943	4.30	1005	5.30	1065	6.33	1124	7.42
11661	1300	830	2.42	866	2.91	899	3.41	931	3.91	991	4.93	1049	5.98	1106	7.07	1161	8.20
12558	1400	889	2.94	922	3.47	953	4.00	983	4.53	1041	5.62	1096	6.74	1149	7.89	1201	9.07
13455	1500	948	3.54	979	4.10	1009	4.67	1037	5.24	1092	6.40	1144	7.58	1195	8.79	1244	10.03
14352	1600	1007	4.21	1036	4.81	1065	5.41	1092	6.02	1144	7.25	1194	8.50	1242	9.77	1289	11.08
15249	1700	1066	4.97	1094	5.60	1121	6.24	1147	6.89	1197	8.19	1244	9.51	1291	10.85	1335	12.21
16146	1800	1126	5.82	1152	6.49	1178	7.16	1203	7.84	1250	9.21	1296	10.60	1340	12.01	1383	13.44
17043	1900	1185	6.75	1211	7.47	1235	8.18	1259	8.90	1305	10.34	1349	11.80	1391	13.28	1432	14.77
17940	2000	1244	7.78	1269	8.55	1293	9.30	1315	10.05	1359	11.57	1402	13.10	1443	14.64	1483	16.20
18837	2100	1303	8.89	1328	9.74	1351	10.52	1372	11.31	1415	12.90	1456	14.50	1495	16.11	1533	17.75
19734	2200	1362	10.09	1387	11.03	1409	11.86	1430	12.68	1471	14.34	1510	16.01	1548	17.70	1585	19.40
20631	2300	1420	11.38	1446	12.45	1467	13.31	1487	14.17	1527	15.90	1565	17.65	1602	19.40	1638	21.18
21528	2400	1478	12.77	1506	13.98	1526	14.88	1545	15.78	1583	17.58	1620	19.40	1656	21.23	1690	23.07
22425	2500	1535	14.24	1565	15.65	1584	16.58	1603	17.51	1640	19.39	1676	21.28	1710	23.18	1744	25.10
23322	2600	1592	15.82	1625	17.44	1643	18.41	1661	19.38	1697	21.34	1732	23.30	1765	25.27	1798	27.25
24219	2700	1649	17.49	1684	19.36	1702	20.38	1720	21.39	1754	23.42	1788	25.45	1820	27.49	1852	29.55
25116	2800	1706	19.25	1743	21.40	1761	22.50	1779	23.54	1812	25.64	1844	27.75	1876	29.86	1907	31.99

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9867	1100	1217	9.04	1280	10.33												
10764	1200	1239	9.77	1297	11.04	1355	12.39										
11661	1300	**1269**	**10.61**	**1322**	**11.90**	1375	13.25	1429	14.67	1482	16.16						
12558	1400	1302	11.56	1352	12.88	**1402**	**14.25**	1452	15.67	1501	17.15	1600	20.32				
13455	1500	1340	12.62	1387	13.97	1434	15.37	**1480**	**16.81**	**1526**	**18.31**	1619	21.46	1711	24.87		
14352	1600	1380	13.77	1425	15.17	1469	16.60	1513	18.08	1556	19.60	**1643**	**22.78**	1730	26.17	1817	29.79
15249	1700	1422	15.02	1465	16.47	1507	17.95	1549	19.47	1590	21.03	1672	24.26	**1754**	**27.67**	1835	31.27
16146	1800	1467	16.37	1507	17.88	1548	19.41	1587	20.98	1627	22.57	1705	25.88	1782	29.33	**1859**	**32.96**
17043	1900	1513	17.83	1552	19.39	1590	20.98	1628	22.60	1666	24.24	1741	27.63	1814	31.15	1888	34.82
17940	2000	1560	19.39	1597	21.02	1634	22.66	1671	24.34	1707	26.03	1779	29.52	1849	33.12	1919	36.85
18837	2100	1608	21.06	1644	22.75	1680	24.46	1715	26.19	1750	27.95	1819	31.53	1887	35.22	1954	39.03
19734	2200	1657	22.85	1692	24.61	1727	26.38	1761	28.17	1794	29.98	1861	33.68	1926	37.47	1991	41.36
20631	2300	1707	24.76	1741	26.58	1775	28.42	1808	30.27	1840	32.15	1904	35.95	1967	39.85	2030	43.84
21528	2400	1758	26.80	1791	28.68	1823	30.58	1855	32.50	1887	34.44	1949	38.37	2010	42.38	2070	46.47
22425	2500	1810	28.96	1841	30.91	1873	32.88	1904	34.87	1935	36.87	1995	40.92	2054	45.04	2112	49.25
23322	2600	1862	31.26	1893	33.28	1923	35.32	1953	37.37	1983	39.43	2042	43.61	2099	47.86	2156	52.18
24219	2700	1884	31.62	1914	33.70	1944	35.79	1974	37.89	2003	40.01	2032	42.14	2089	46.45	2145	50.82
25116	2800	1967	36.28	1997	38.44	2026	40.61	2054	42.80	2082	44.99	2138	49.43	2192	53.93		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

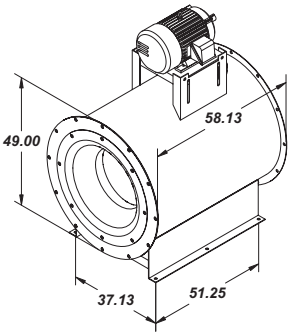
TUB - Performance Data

Tubular Centrifugal Fan

330

Wheel Diameter = 33.00 in.	Maximum BHP = 8.45 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 8.65 x RPM
Inlet and Outlet (Diameters) = 44.63 in.	Area = 10.86 ft.^{2}

Class	Max. RPM
I	1232
II	1595
III	1993



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5430	500	354	0.37	**420**	**0.63**	483	0.93	547	1.28								
6516	600	399	0.51	456	0.80	**510**	**1.12**	563	1.48								
7602	700	447	0.69	498	1.02	546	1.37	**592**	**1.75**	682	2.59						
8688	800	496	0.91	542	1.29	586	1.68	627	2.08	707	2.96	786	3.96	865	5.09		
9774	900	546	1.19	589	1.60	629	2.03	666	2.48	**739**	**3.41**	810	4.44	880	5.56	950	6.81
10860	1000	598	1.52	637	1.98	674	2.45	709	2.93	776	3.94	**840**	**5.01**	**904**	**6.16**	967	7.40
11946	1100	650	1.92	686	2.42	720	2.93	753	3.46	815	4.53	875	5.67	934	6.86	**991**	**8.13**
13032	1200	702	2.39	736	2.93	768	3.49	799	4.05	857	5.21	913	6.41	968	7.66	1021	8.98
14118	1300	755	2.93	787	3.52	817	4.12	846	4.73	901	5.96	954	7.24	1005	8.56	1055	9.93
15204	1400	808	3.56	838	4.20	867	4.84	894	5.49	946	6.81	996	8.16	1045	9.55	1092	10.98
16290	1500	862	4.28	890	4.96	917	5.64	943	6.34	993	7.74	1040	9.17	1086	10.64	1131	12.14
17376	1600	915	5.09	942	5.82	968	6.55	992	7.28	1040	8.77	1085	10.28	1129	11.83	1172	13.40
18462	1700	969	6.01	995	6.78	1019	7.55	1043	8.33	1088	9.90	1131	11.50	1173	13.12	1214	14.77
19548	1800	1023	7.04	1047	7.85	1071	8.67	1093	9.49	1137	11.15	1178	12.83	1218	14.53	1258	16.26
20634	1900	1077	8.17	1101	9.04	1123	9.90	1144	10.76	1186	12.51	1226	14.28	1265	16.06	1302	17.87
21720	2000	1131	9.41	1154	10.34	1175	11.25	1196	12.16	1236	13.99	1274	15.85	1311	17.72	1348	19.61
22806	2100	1185	10.76	1207	11.78	1228	12.73	1248	13.68	1286	15.61	1323	17.54	1359	19.50	1394	21.47
23892	2200	1238	12.21	1261	13.35	1281	14.35	1300	15.34	1337	17.35	1373	19.38	1407	21.42	1441	23.48
24978	2300	1291	13.77	1315	15.06	1334	16.10	1352	17.14	1388	19.24	1422	21.35	1456	23.48	1489	25.62
26064	2400	1343	15.45	1369	16.92	1387	18.00	1405	19.09	1439	21.28	1473	23.48	1505	25.69	1537	27.92
27150	2500	1396	17.24	1423	18.93	1440	20.06	1457	21.19	1491	23.47	1523	25.75	1555	28.05	1585	30.37
28236	2600	1448	19.14	1477	21.10	1494	22.28	1510	23.46	1543	25.82	1574	28.19	1605	30.58	1634	32.98
29322	2700	1499	21.16	1531	23.42	1547	24.66	1564	25.88	1595	28.33	1625	30.80	1655	33.27	1684	35.76
30408	2800	1551	23.29	1585	25.89	1601	27.22	1617	28.48	1647	31.02	1677	33.57	1706	36.13	1734	38.71

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
11946	1100	1106	10.94	1164	12.50												
13032	1200	1127	11.82	1179	13.36	1232	15.00										
14118	1300	**1153**	**12.84**	**1202**	**14.40**	1250	16.03	1299	17.75	1347	19.55						
15204	1400	1184	13.99	1229	15.58	**1275**	**17.24**	1320	18.96	1365	20.75	1455	24.59				
16290	1500	1218	15.27	1261	16.90	1303	18.59	**1345**	**20.34**	**1388**	**22.15**	1472	25.97	1556	30.09		
17376	1600	1255	16.66	1295	18.35	1335	20.09	1375	21.88	1415	23.72	**1494**	**27.57**	1572	31.67	1651	36.05
18462	1700	1293	18.18	1332	19.93	1370	21.72	1408	23.56	1446	25.44	1520	29.35	**1594**	**33.48**	1668	37.84
19548	1800	1333	19.81	1370	21.63	1407	23.49	1443	25.38	1479	27.32	1550	31.31	1620	35.49	**1690**	**39.88**
20634	1900	1375	21.57	1411	23.46	1446	25.39	1480	27.34	1515	29.34	1582	33.43	1649	37.69	1716	42.13
21720	2000	1418	23.46	1452	25.43	1486	27.42	1519	29.45	1552	31.50	1617	35.71	1681	40.07	1745	44.59
22806	2100	1462	25.49	1495	27.53	1527	29.60	1559	31.69	1591	33.82	1654	38.15	1715	42.62	1776	47.23
23892	2200	1506	27.65	1538	29.77	1570	31.92	1601	34.09	1631	36.28	1692	40.75	1751	45.33	1810	50.05
24978	2300	1552	29.96	1583	32.16	1613	34.39	1643	36.63	1673	38.90	1731	43.51	1789	48.22	1845	53.05
26064	2400	1598	32.42	1628	34.71	1657	37.01	1687	39.33	1715	41.67	1772	46.42	1827	51.28	1882	56.23
27150	2500	1645	35.04	1674	37.41	1703	39.79	1731	42.19	1759	44.61	1813	49.51	1867	54.50	1920	59.59
28236	2600	1692	37.82	1721	40.27	1748	42.73	1776	45.21	1803	47.71	1856	52.77	1908	57.91	1960	63.13
29322	2700	1740	40.77	1768	43.30	1795	45.85	1821	48.41	1848	50.99	1899	56.20	1950	61.49		
30408	2800	1788	43.90	1815	46.51	1841	49.14	1867	51.78	1893	54.44	1944	59.82	1993	65.26		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

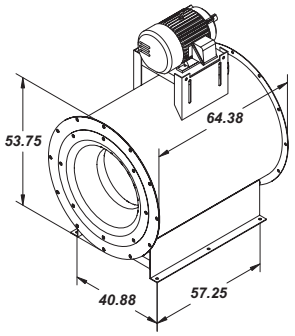
Performance Data - TUB

Tubular Centrifugal Fan

365

Wheel Diameter = 36.50 in.	Maximum BHP = 14.65 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 9.56 x RPM
Inlet and Outlet (Diameters) = 49.38 in.	Area = 13.30 ft.^{2}

Class	Max. RPM
I	1090
II	1416
III	1768



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6650	500	314	0.45	**373**	**0.76**	429	1.11	482	1.51								
7980	600	354	0.62	405	0.97	**454**	**1.36**	500	1.78	588	2.72						
9310	700	396	0.84	442	1.24	485	1.67	**526**	**2.12**	605	3.12	680	4.23				
10640	800	440	1.12	481	1.57	520	2.04	557	2.53	**629**	**3.59**	697	4.76	763	6.01		
11970	900	485	1.47	522	1.96	557	2.47	591	3.01	657	4.15	**720**	**5.37**	780	6.69	840	8.09
13300	1000	531	1.90	565	2.43	597	2.99	628	3.57	689	4.78	747	6.08	**803**	**7.46**	858	8.91
14630	1100	577	2.40	608	2.99	638	3.59	667	4.21	724	5.51	778	6.88	830	8.33	**881**	**9.85**
15960	1200	624	3.00	653	3.63	681	4.28	708	4.95	760	6.34	811	7.79	860	9.31	908	10.89
17290	1300	672	3.69	698	4.38	724	5.08	750	5.79	799	7.26	846	8.80	893	10.39	938	12.05
18620	1400	719	4.50	744	5.23	769	5.98	792	6.74	839	8.30	884	9.92	927	11.60	970	13.34
19950	1500	767	5.41	791	6.20	814	6.99	836	7.80	880	9.46	922	11.17	963	12.93	1004	14.75
21280	1600	815	6.46	837	7.29	859	8.14	880	8.99	922	10.74	962	12.54	1001	14.39	1040	16.29
22610	1700	864	7.63	884	8.51	905	9.41	925	10.32	964	12.16	1003	14.05	1040	15.99	1077	17.97
23940	1800	912	8.94	932	9.88	951	10.82	970	11.78	1008	13.72	1044	15.70	1080	17.73	1115	19.80
25270	1900	961	10.41	979	11.39	998	12.39	1016	13.39	1052	15.43	1087	17.50	1121	19.62	1154	21.78
26600	2000	1009	12.03	1027	13.06	1045	14.11	1062	15.16	1096	17.29	1130	19.47	1162	21.68	1194	23.93
27930	2100	1058	13.81	1075	14.90	1092	15.99	1108	17.10	1141	19.33	1173	21.59	1205	23.90	1235	26.24
29260	2200	1106	15.75	1123	16.91	1139	18.05	1155	19.20	1186	21.53	1217	23.90	1247	26.30	1277	28.73
30590	2300	1155	17.85	1171	19.10	1187	20.29	1202	21.50	1232	23.92	1262	26.38	1291	28.88	1319	31.40
31920	2400	1203	20.11	1219	21.48	1234	22.72	1249	23.97	1278	26.50	1306	29.06	1334	31.65	1362	34.27
33250	2500	1251	22.54	1268	24.06	1282	25.35	1296	26.65	1324	29.28	1352	31.94	1379	34.62	1405	37.34
34580	2600	1299	25.14	1316	26.84	1330	28.19	1344	29.54	1371	32.27	1397	35.02	1423	37.80	1449	40.61
35910	2700	1346	27.92	1365	29.84	1378	31.24	1391	32.64	1417	35.46	1443	38.32	1468	41.20	1493	44.10
37240	2800	1394	30.87	1414	33.07	1426	34.51	1439	35.96	1464	38.89	1489	41.84	1513	44.82	1538	47.82

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
13300	1000	964	12.05														
14630	1100	980	13.10	1028	14.83	1075	16.63										
15960	1200	1001	14.26	1046	16.05	1090	17.90	1134	19.81	1177	21.78						
17290	1300	**1025**	**15.56**	1068	17.40	1110	19.31	1151	21.27	1192	23.29	1272	27.52				
18620	1400	1052	16.98	**1093**	**18.89**	**1133**	**20.86**	1172	22.88	1211	24.96	1287	29.28	1361	33.82		
19950	1500	1082	18.54	1121	20.52	1159	22.55	**1196**	**24.63**	**1233**	**26.77**	1305	31.20	1376	35.84	1446	40.68
21280	1600	1114	20.24	1151	22.29	1187	24.39	1222	26.54	1258	28.74	**1327**	**33.29**	1395	38.04	1461	42.98
22610	1700	1148	22.08	1183	24.21	1217	26.38	1251	28.60	1285	30.87	1351	35.55	**1416**	**40.42**	1480	45.47
23940	1800	1183	24.08	1217	26.28	1250	28.53	1282	30.83	1314	33.17	1378	37.98	1440	42.97	**1501**	**48.14**
25270	1900	1220	26.23	1252	28.51	1283	30.84	1315	33.21	1346	35.63	1406	40.59	1466	45.71	1525	51.00
26600	2000	1257	28.54	1288	30.91	1319	33.32	1349	35.78	1378	38.27	1437	43.37	1494	48.64	1551	54.06
27930	2100	1296	31.03	1326	33.49	1355	35.98	1384	38.51	1412	41.08	1469	46.34	1524	51.75	1579	57.31
29260	2200	1335	33.70	1364	36.24	1392	38.82	1420	41.44	1448	44.09	1502	49.50	1556	55.06	1609	60.77
30590	2300	1375	36.56	1403	39.19	1430	41.85	1457	44.55	1484	47.29	1537	52.86	1588	58.57	1639	64.43
31920	2400	1416	39.61	1443	42.33	1469	45.08	1495	47.86	1521	50.68	1572	56.42	1622	62.29	1672	68.30
33250	2500	1458	42.86	1484	45.67	1509	48.51	1534	51.38	1559	54.29	1609	60.19	1657	66.23	1705	72.39
34580	2600	1500	46.32	1525	49.22	1549	52.15	1574	55.11	1598	58.11	1646	64.18	1693	70.38	1740	76.71
35910	2700	1542	50.00	1567	53.00	1590	56.01	1614	59.07	1638	62.15	1684	68.40	1730	74.76		
37240	2800	1585	53.91	1609	56.99	1632	60.11	1655	63.25	1678	66.42	1723	72.84	1768	79.38		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

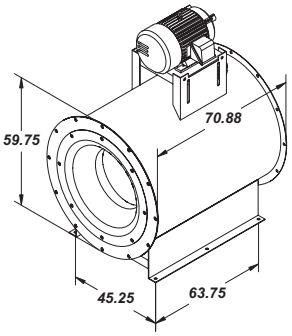
TUB - Performance Data

Tubular Centrifugal Fan

402

Wheel Diameter = 40.25 in.	Maximum BHP = 23.88 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 10.55 x RPM
Inlet and Outlet (Diameters) = 54.38 in.	Area = 16.13 ft.^{2}

Class	Max. RPM
I	989
II	1284
III	1603



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8065	500	285	0.54	**338**	**0.92**	389	1.35	437	1.83								
9678	600	321	0.75	367	1.18	**411**	**1.66**	453	2.17	534	3.31						
11291	700	359	1.02	400	1.51	439	2.03	**477**	**2.58**	549	3.79	617	5.14				
12904	800	399	1.37	436	1.91	471	2.48	505	3.08	**570**	**4.37**	632	5.78	692	7.31		
14517	900	440	1.79	473	2.39	505	3.01	536	3.66	596	5.04	**653**	**6.53**	708	8.13	761	9.83
16130	1000	481	2.30	512	2.96	541	3.64	570	4.34	625	5.82	677	7.39	**728**	**9.07**	778	10.84
17743	1100	523	2.92	552	3.63	579	4.37	605	5.12	656	6.70	705	8.37	753	10.13	**799**	**11.97**
19356	1200	566	3.64	592	4.42	617	5.21	642	6.02	689	7.70	735	9.47	780	11.32	823	13.25
20969	1300	609	4.49	633	5.32	657	6.17	680	7.04	724	8.83	767	10.70	809	12.64	850	14.66
22582	1400	652	5.47	675	6.36	697	7.27	719	8.19	761	10.10	801	12.07	841	14.11	879	16.22
24195	1500	696	6.58	717	7.54	738	8.51	758	9.49	798	11.50	836	13.58	874	15.72	910	17.93
25808	1600	739	7.85	759	8.86	779	9.89	798	10.94	836	13.06	872	15.25	908	17.50	943	19.81
27421	1700	783	9.28	802	10.35	821	11.44	839	12.54	874	14.79	909	17.09	943	19.44	976	21.85
29034	1800	827	10.88	845	12.01	862	13.16	880	14.32	914	16.68	947	19.09	979	21.56	1011	24.08
30647	1900	871	12.66	888	13.85	905	15.06	921	16.28	954	18.76	985	21.29	1016	23.86	1047	26.49
32260	2000	915	14.63	931	15.89	947	17.16	963	18.44	994	21.03	1024	23.67	1054	26.36	1083	29.09
33873	2100	959	16.80	975	18.12	990	19.45	1005	20.79	1035	23.50	1064	26.26	1092	29.06	1120	31.91
35486	2200	1003	19.15	1018	20.56	1033	21.95	1047	23.35	1076	26.19	1104	29.06	1131	31.98	1158	34.94
37099	2300	1047	21.70	1062	23.23	1076	24.68	1090	26.14	1117	29.09	1144	32.08	1170	35.12	1196	38.19
38712	2400	1091	24.45	1106	26.12	1119	27.63	1133	29.15	1159	32.23	1185	35.34	1210	38.49	1235	41.67
40325	2500	1134	27.41	1150	29.26	1163	30.83	1175	32.41	1201	35.61	1226	38.84	1250	42.10	1274	45.40
41938	2600	1178	30.57	1194	32.64	1206	34.28	1218	35.92	1243	39.24	1267	42.59	1291	45.97	1314	49.39
43551	2700	1221	33.95	1238	36.29	1250	37.99	1262	39.69	1285	43.12	1308	46.60	1331	50.10	1354	53.63
45164	2800	1264	37.54	1282	40.21	1293	41.97	1305	43.73	1328	47.29	1350	50.88	1372	54.50	1394	58.15

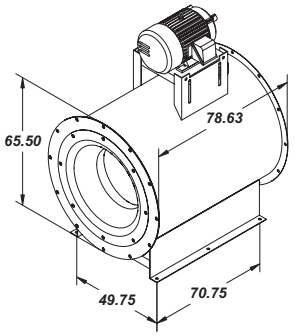
CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
16130	1000	874	14.66														
17743	1100	889	15.93	932	18.03	975	20.22										
19356	1200	907	17.35	948	19.52	989	21.76	1028	24.09	1068	26.49						
20969	1300	**930**	**18.92**	968	21.16	1006	23.48	1044	25.87	1081	28.33	1154	33.46				
22582	1400	954	20.65	**991**	**22.97**	**1027**	**25.36**	1063	27.82	1098	30.35	1167	35.60	1235	41.12		
24195	1500	981	22.55	1016	24.95	1051	27.42	**1084**	**29.96**	**1118**	**32.55**	1183	37.94	1248	43.58	1311	49.47
25808	1600	1010	24.61	1044	27.10	1076	29.66	1109	32.27	1140	34.95	**1203**	**40.49**	1265	46.26	1325	52.27
27421	1700	1041	26.85	1073	29.44	1104	32.08	1135	34.78	1165	37.54	1225	43.23	**1284**	**49.15**	1342	55.29
29034	1800	1073	29.28	1103	31.96	1133	34.69	1163	37.49	1192	40.33	1249	46.19	1306	52.26	**1361**	**58.54**
30647	1900	1106	31.89	1135	34.67	1164	37.51	1192	40.39	1220	43.33	1275	49.35	1330	55.59	1383	62.02
32260	2000	1140	34.71	1168	37.59	1196	40.52	1223	43.50	1250	46.53	1303	52.74	1355	59.14	1407	65.74
33873	2100	1175	37.74	1202	40.72	1229	43.76	1255	46.83	1281	49.96	1332	56.35	1382	62.93	1432	69.70
35486	2200	1211	40.98	1237	44.07	1262	47.21	1288	50.39	1313	53.61	1362	60.19	1411	66.96	1459	73.90
37099	2300	1247	44.46	1272	47.65	1297	50.89	1321	54.18	1346	57.50	1393	64.28	1440	71.23	1487	78.35
38712	2400	1284	48.17	1308	51.47	1332	54.82	1356	58.20	1379	61.63	1426	68.61	1471	75.75	1516	83.06
40325	2500	1322	52.12	1345	55.54	1368	58.99	1391	62.48	1414	66.02	1459	73.20	1503	80.54	1546	88.03
41938	2600	1360	56.33	1383	59.86	1405	63.42	1427	67.02	1449	70.66	1493	78.05	1535	85.59	1578	93.28
43551	2700	1399	60.80	1421	64.44	1442	68.12	1464	71.83	1485	75.57	1527	83.17	1569	90.92		
45164	2800	1438	65.55	1459	69.31	1480	73.09	1501	76.91	1522	80.76	1562	88.58	1603	96.53		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

445

Wheel Diameter = 44.50 in.	Maximum BHP = 39.45 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 11.65 x RPM
Inlet and Outlet (Diameters) = 60.19 in.	Area = 19.76 ft.^{2}

Class	Max. RPM
I	971
II	1162
III	1450



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9880	**500**	257	0.66	**306**	**1.13**	352	1.66	395	2.24								
11856	**600**	290	0.92	332	1.45	**372**	**2.02**	410	2.65	483	4.05						
13832	**700**	325	1.25	362	1.84	397	2.48	**431**	**3.16**	496	4.64	558	6.28				
15808	**800**	361	1.67	394	2.33	426	3.03	457	3.76	**515**	**5.34**	572	7.07	626	8.94		
17784	**900**	398	2.19	428	2.92	457	3.68	485	4.47	539	6.16	**590**	**7.98**	640	9.94	689	12.02
19760	**1000**	435	2.82	463	3.62	490	4.45	515	5.30	565	7.11	613	9.04	**659**	**11.08**	704	13.25
21736	**1100**	473	3.57	499	4.44	523	5.34	547	6.26	593	8.19	638	10.23	681	12.38	**723**	**14.63**
23712	**1200**	512	4.45	535	5.40	558	6.37	581	7.36	624	9.42	665	11.57	705	13.83	745	16.19
25688	**1300**	551	5.49	573	6.51	594	7.55	615	8.61	655	10.80	694	13.08	732	15.45	769	17.92
27664	**1400**	590	6.68	610	7.77	630	8.89	650	10.02	688	12.34	725	14.75	760	17.24	795	19.82
29640	**1500**	629	8.05	648	9.21	667	10.40	686	11.60	721	14.06	756	16.60	790	19.22	823	21.92
31616	**1600**	669	9.60	687	10.84	704	12.09	722	13.37	756	15.97	789	18.64	821	21.39	853	24.21
33592	**1700**	708	11.34	725	12.66	742	13.99	759	15.33	791	18.07	822	20.88	853	23.76	883	26.71
35568	**1800**	748	13.29	764	14.69	780	16.09	796	17.51	826	20.39	856	23.34	886	26.35	914	29.43
37544	**1900**	788	15.47	803	16.93	818	18.41	833	19.90	863	22.93	891	26.02	919	29.17	947	32.38
39520	**2000**	828	17.88	842	19.42	857	20.97	971	22.54	899	25.71	926	28.94	953	32.22	980	35.56
41496	**2100**	868	20.53	882	22.15	895	23.77	909	25.41	936	28.73	962	32.10	988	35.52	1013	39.00
43472	**2200**	907	23.41	921	25.13	934	26.83	947	28.54	973	32.01	998	35.52	1023	39.09	1047	42.70
45448	**2300**	947	26.53	961	28.39	973	30.16	986	31.95	1010	35.56	1035	39.22	1059	42.92	1082	46.68
47423	**2400**	987	29.89	1000	31.92	1012	33.78	1024	35.64	1048	39.40	1071	43.20	1094	47.04	1117	50.94
49400	**2500**	1026	33.50	1040	35.76	1052	37.68	1063	39.62	1086	43.52	1109	47.47	1131	51.46	1153	55.50
51376	**2600**	1065	37.37	1080	39.90	1091	41.90	1102	43.91	1124	47.96	1146	52.05	1167	56.19	1189	60.37
53352	**2700**	1104	41.50	1119	44.36	1130	46.44	1141	48.52	1162	52.71	1183	56.95	1204	61.24	1225	65.56
55328	**2800**	1143	45.89	1159	49.15	1170	51.30	1180	53.45	1201	57.81	1221	62.19	1241	66.62	1261	71.08

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
19760	**1000**	790	17.92														
21736	**1100**	804	19.47	843	22.04	882	24.71										
23712	**1200**	821	21.20	858	23.85	894	26.60	930	29.44	966	32.38						
25688	**1300**	**841**	**23.13**	876	25.87	910	28.70	944	31.62	978	34.62	1043	40.90				
27664	**1400**	863	25.24	**896**	**28.08**	**929**	**31.00**	961	34.01	993	37.09	1055	43.52	1117	50.26		
29640	**1500**	888	27.56	919	30.50	950	33.52	**981**	**36.62**	**1011**	**39.79**	1070	46.38	1129	53.27	1186	60.47
31616	**1600**	914	30.08	944	33.13	973	36.25	1003	39.45	1031	42.72	**1088**	**49.49**	1144	56.54	1198	63.89
33592	**1700**	942	32.82	970	35.98	998	39.21	1026	42.52	1054	45.89	1108	52.84	**1161**	**60.08**	1214	67.58
35568	**1800**	970	35.79	998	39.06	1025	42.41	1052	45.82	1078	49.30	1130	56.45	1181	63.87	**1231**	**71.56**
37544	**1900**	1000	38.98	1027	42.38	1053	45.84	1078	49.37	1104	52.96	1154	60.33	1203	67.94	1251	75.81
39520	2000	1031	42.43	1056	45.95	1081	49.53	1106	53.18	1130	56.88	1178	64.46	1226	72.29	1272	80.36
41496	**2100**	1063	46.13	1087	49.78	1111	53.48	1135	57.25	1158	61.07	1205	68.88	1250	76.92	1295	85.19
43472	**2200**	1095	50.10	1119	53.87	1142	57.71	1165	61.59	1187	65.53	1232	73.58	1276	81.84	1319	90.33
45448	**2300**	1128	54.34	1151	58.25	1173	62.21	1195	66.22	1217	70.28	1260	78.57	1303	87.06	1345	95.77
47423	**2400**	1162	58.87	1183	62.91	1205	67.00	1226	71.14	1248	75.33	1289	83.86	1331	92.59	1371	101.53
49400	**2500**	1196	63.71	1217	67.88	1238	72.10	1258	76.37	1279	80.69	1319	89.47	1359	98.44	1399	107.60
51376	**2600**	1230	68.85	1251	73.16	1271	77.52	1291	81.92	1311	86.37	1350	95.40	1389	104.62	1427	114.02
53352	**2700**	1265	74.32	1285	78.77	1304	83.26	1324	87.80	1343	92.38	1381	101.66	1419	111.13		
55328	**2800**	1300	80.13	1319	84.82	1339	89.34	1357	94.01	1376	98.72	1413	108.27	1450	117.99		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

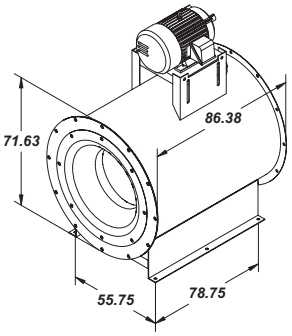
TUB - Performance Data

Tubular Centrifugal Fan

490

Wheel Diameter = 49.00 in.	Maximum BHP = 63.87 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 12.85 x RPM
Inlet and Outlet (Diameters) = 66.25 in.	Area = 23.94 ft.^{2}

Class	Max. RPM
I	812
II	1055
III	1316



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
11970	500	234	0.80	**278**	**1.37**	319	2.01	359	2.72								
14364	600	263	1.12	302	1.75	**338**	**2.45**	372	3.21	438	4.91						
16758	700	295	1.52	329	2.24	361	3.00	**392**	**3.83**	451	5.62	507	7.62				
19152	800	328	2.03	358	2.83	387	3.67	415	4.56	**468**	**6.47**	519	8.57	568	10.84		
21546	900	361	2.65	389	3.54	415	4.46	440	5.42	489	7.47	**536**	**9.68**	581	12.05	625	14.57
23940	1000	395	3.42	420	4.39	445	5.39	468	6.43	513	8.62	556	10.96	**598**	**13.44**	639	16.06
26334	1100	430	4.33	453	5.38	475	6.47	497	7.59	539	9.93	579	12.40	618	15.01	**656**	**17.74**
28728	1200	465	5.40	486	6.55	507	7.72	527	8.92	566	11.42	604	14.03	640	16.77	676	19.63
31122	1300	500	6.65	520	7.89	539	9.15	558	10.44	595	13.09	630	15.86	665	18.73	698	21.72
33516	1400	536	8.10	554	9.43	572	10.77	590	12.14	625	14.96	658	17.88	690	20.91	722	24.04
35910	1500	571	9.76	589	11.17	606	12.61	623	14.06	655	17.05	687	20.22	718	23.30	748	26.58
38304	1600	607	11.63	624	13.14	640	14.66	656	16.21	686	19.36	716	22.60	746	25.93	774	29.36
40698	1700	643	13.75	659	15.34	674	16.96	689	18.56	718	21.92	747	25.32	775	28.81	802	32.39
43092	1800	679	16.12	694	17.81	708	19.51	723	21.23	750	24.73	778	28.30	804	31.95	830	35.68
45486	1900	715	18.76	729	20.53	743	22.32	757	24.13	783	27.80	809	31.55	835	35.36	860	39.26
47880	2000	752	21.68	765	23.55	778	25.43	791	27.32	816	31.17	841	35.08	866	39.07	890	43.12
50274	2100	788	24.89	801	26.85	813	28.82	826	30.81	850	34.83	874	38.92	897	43.07	920	47.29
52668	2200	824	28.38	836	30.48	848	32.54	860	34.61	884	38.81	906	43.07	929	47.39	951	51.78
55062	2300	860	32.16	872	34.42	884	36.57	895	38.74	918	43.12	940	47.55	961	52.04	983	56.59
57456	2400	896	36.24	908	38.70	919	40.92	930	43.21	952	47.77	973	52.37	994	57.04	1015	61.76
59850	2500	932	40.62	944	43.36	955	45.69	965	48.04	986	52.77	1007	57.56	1027	62.39	1047	67.29
62244	2600	967	45.31	980	48.38	991	50.80	1001	53.24	1021	58.15	1041	63.11	1060	68.13	1079	73.19
64638	2700	1003	50.31	1017	53.78	1027	56.30	1036	58.83	1056	63.91	1075	69.06	1094	74.25	1112	79.48
67032	2800	1038	55.64	1053	59.59	1062	62.19	1072	64.81	1091	70.09	1109	75.40	1127	80.77	1145	86.18

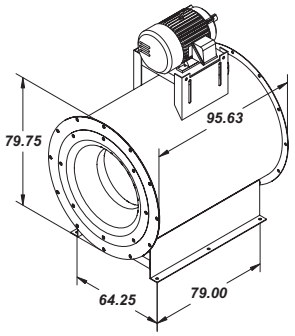
CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
23940	1000	718	21.72														
26334	1100	730	23.60	766	26.72	801	29.96										
28728	1200	745	25.71	779	28.92	812	32.25	845	35.70	877	39.26						
31122	1300	**763**	**28.04**	795	31.36	826	34.79	857	38.33	888	41.98	948	49.59				
33516	1400	784	30.60	**814**	**34.05**	**844**	**37.59**	873	41.23	902	44.72	958	52.76	1014	60.94		
35910	1500	806	33.41	835	36.98	863	40.64	**891**	**44.40**	**918**	**48.25**	972	56.23	1025	64.59	1077	73.32
38304	1600	830	36.47	857	40.17	884	43.95	910	47.83	937	51.80	**988**	**60.00**	1039	68.56	1088	77.46
40698	1700	855	39.79	881	43.63	907	47.55	932	51.55	957	55.64	1006	64.07	**1055**	**72.84**	1102	81.94
43092	1800	881	43.39	906	47.36	931	51.42	955	55.55	979	59.77	1026	68.45	1073	77.45	**1118**	**86.76**
45486	1900	908	47.27	932	51.39	956	55.59	979	59.86	1002	64.21	1048	73.14	1092	82.38	1136	91.92
47880	2000	936	51.44	959	55.71	982	60.06	1004	64.47	1027	68.96	1070	78.16	1113	87.65	1155	97.43
50274	2100	965	55.93	987	60.35	1009	64.85	1031	69.41	1052	74.04	1094	83.51	1135	93.27	1176	103.29
52668	2200	995	60.74	1016	65.32	1037	69.97	1058	74.68	1078	79.45	1119	89.21	1159	99.23	1198	109.52
55062	2300	1024	65.89	1045	70.62	1065	75.43	1085	80.29	1105	85.22	1145	95.26	1183	105.56	1221	116.12
57456	2400	1055	71.38	1075	76.28	1094	81.24	1114	86.26	1133	91.34	1171	101.68	1208	112.27	1245	123.10
59850	2500	1086	77.24	1105	82.31	1124	87.42	1143	92.60	1161	97.84	1198	108.48	1234	119.36	1270	130.47
62244	2600	1117	83.48	1136	88.71	1154	93.99	1172	99.33	1190	104.72	1226	115.67	1261	126.84	1296	138.24
64638	2700	1149	90.11	1167	95.51	1185	100.95	1202	106.45	1220	112.00	1254	123.27	1289	134.74		
67032	2800	1181	97.15	1198	102.71	1216	108.32	1233	113.98	1250	119.69	1283	131.28	1316	143.06		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

542

Wheel Diameter = 54.25 in.	Maximum BHP = 106.27 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 14.29 x RPM
Inlet and Outlet (Diameters) = 73.31 in.	Area = 29.32 ft.^{2}

Class	Max. RPM
I	733
II	953
III	1189



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
14660	500	211	0.99	**251**	**1.68**	288	2.46	324	3.33								
17592	600	238	1.37	272	2.15	**305**	**3.01**	336	3.94	396	6.02						
20524	700	266	1.86	297	2.74	326	3.68	**354**	**4.69**	407	6.89	458	9.34				
23456	800	296	2.48	323	3.46	349	4.50	375	5.59	**423**	**7.94**	469	10.50	513	13.29		
26388	900	326	3.25	351	4.34	375	5.47	398	6.65	442	9.16	**484**	**11.87**	525	14.77	565	17.86
29320	1000	357	4.19	380	5.38	401	6.61	423	7.88	463	10.57	502	13.43	**540**	**16.47**	577	19.69
32252	1100	388	5.30	409	6.60	429	7.93	449	9.31	487	12.17	523	15.20	558	18.40	593	21.75
35184	1200	420	6.62	439	8.02	458	9.46	476	10.94	511	14.00	545	17.20	578	20.56	611	24.06
38116	1300	452	8.16	470	9.67	487	11.21	504	12.79	537	16.05	569	19.44	600	22.96	631	26.63
41048	1400	484	9.93	501	11.55	517	13.20	533	14.89	564	18.34	594	21.92	624	25.63	652	29.46
43980	1500	516	11.96	532	13.69	547	15.45	562	17.24	592	20.90	620	24.67	648	28.56	675	32.58
46912	1600	548	14.26	563	16.10	578	17.97	592	19.87	620	23.73	647	27.70	673	31.79	699	35.98
49844	1700	581	16.85	595	18.81	609	20.79	622	22.79	649	26.86	674	31.04	700	35.32	724	39.70
52776	1800	613	19.76	627	21.83	640	23.91	653	26.02	678	30.31	702	34.69	726	39.16	750	43.74
55708	1900	646	23.00	659	25.17	671	27.36	683	29.58	707	34.08	731	38.67	754	43.35	776	48.12
58640	2000	679	26.58	691	28.86	703	31.17	714	33.49	737	38.20	760	43.00	782	47.88	803	52.85
61572	2100	712	30.51	723	32.92	734	35.33	746	37.77	768	42.70	789	47.70	810	52.79	831	57.97
64504	2200	744	34.79	755	37.36	766	39.88	777	42.42	798	47.57	819	52.79	839	58.09	859	63.47
67436	2300	777	39.42	788	42.19	798	44.83	808	47.49	829	52.85	849	58.28	868	63.79	887	69.37
70368	2400	809	44.42	820	47.44	830	50.20	840	52.96	860	58.55	879	64.20	898	69.92	916	75.71
73300	2500	841	49.79	853	53.15	862	56.01	872	58.88	891	64.68	909	70.55	927	76.48	945	82.48
76232	2600	874	55.54	886	59.30	895	62.27	904	65.26	922	71.28	940	77.36	957	83.51	975	89.72
79164	2700	906	61.67	918	65.93	927	69.01	936	72.11	953	78.34	971	84.65	988	91.01	1004	97.43
82096	2800	938	68.20	951	73.05	960	76.24	968	79.44	985	85.91	1002	92.43	1018	99.01	1034	105.64

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
29320	1000	648	26.63														
32252	1100	659	28.93	692	32.75	723	36.73										
35184	1200	673	31.51	703	35.45	733	39.54	763	43.76	792	48.12						
38116	1300	**690**	**34.37**	718	38.44	746	42.65	774	46.99	802	51.46	856	60.79				
41048	1400	708	37.51	**735**	**41.73**	**762**	**46.07**	788	50.54	814	55.13	866	64.68	916	74.70		
43980	1500	728	40.96	754	45.33	779	49.81	**804**	**54.42**	**829**	**59.14**	878	68.93	926	79.17	973	89.87
46912	1600	750	44.71	774	49.24	798	53.88	822	58.63	846	63.49	**892**	**73.55**	938	84.04	983	94.95
49844	1700	772	48.78	796	53.48	819	58.28	842	63.19	864	68.20	909	78.54	**953**	**89.29**	995	100.44
52776	1800	796	53.18	818	58.05	841	63.03	862	68.10	884	73.27	927	83.90	969	94.93	**1010**	**106.35**
55708	1900	820	57.94	842	62.99	863	68.13	884	73.37	905	79.08	946	89.66	986	100.98	1026	112.67
58640	2000	846	63.06	866	68.29	887	73.62	907	79.03	927	84.53	967	95.81	1005	107.44	1043	119.42
61572	2100	872	68.56	892	73.98	911	79.49	931	85.08	950	90.76	988	102.37	1025	114.32	1062	126.61
64504	2200	898	74.45	917	80.07	936	85.76	955	91.54	974	97.39	1011	109.35	1047	121.64	1082	134.24
67436	2300	925	80.76	944	86.57	962	92.46	980	98.42	998	104.46	1034	116.77	1069	129.40	1103	142.33
70368	2400	953	87.50	971	93.50	988	99.58	1006	105.73	1023	111.96	1058	124.64	1091	137.61	1125	150.89
73300	2500	981	94.68	998	100.89	1015	107.16	1032	113.51	1049	119.93	1082	132.97	1115	146.30	1147	159.92
76232	2600	1009	102.33	1026	108.74	1042	115.21	1059	121.75	1075	128.36	1107	141.79	1139	155.48	1170	169.46
79164	2700	1038	110.46	1054	117.07	1070	123.74	1086	130.48	1102	137.29	1133	151.09	1164	165.16		
82096	2800	1066	119.08	1082	125.90	1098	132.78	1113	139.72	1129	146.72	1159	160.91	1189	175.36		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

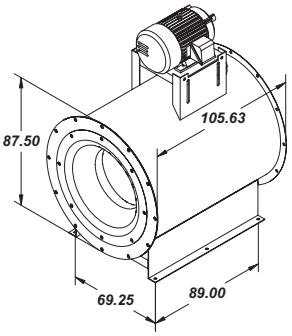
TUB - Performance Data

Tubular Centrifugal Fan

600

Wheel Diameter = 60.00 in.	Maximum BHP = 175.84 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 15.71 x RPM
Inlet and Outlet (Diameters) = 81.13 in.	Area = 35.90 ft.^{2}

Class	Max. RPM
I	663
II	861
III	1075



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
17950	500	191	1.21	**227**	**2.05**	261	3.01	293	4.07								
21540	600	215	1.67	246	2.63	**276**	**3.68**	304	4.82	358	7.36						
25130	700	241	2.28	268	3.35	295	4.50	**320**	**5.74**	368	8.43	414	11.42				
28720	800	267	3.04	292	4.24	316	5.50	339	6.84	**382**	**9.71**	424	12.85	464	16.25		
32310	900	295	3.98	317	5.30	339	6.69	360	8.13	399	11.20	**438**	**14.52**	475	18.07	511	21.85
35900	1000	323	5.12	343	6.58	363	8.08	382	9.64	419	12.93	454	16.43	**488**	**20.15**	522	24.08
39490	1100	351	6.49	370	8.07	388	9.70	406	11.38	440	14.89	473	18.60	505	22.50	**536**	**26.61**
43080	1200	380	8.10	397	9.82	414	11.58	430	13.38	462	17.12	493	21.04	523	25.15	552	29.43
46670	1300	408	9.98	425	11.83	440	13.72	456	15.65	486	19.63	515	23.77	543	28.09	570	32.57
50260	1400	437	12.15	453	14.13	467	16.15	482	18.21	510	22.43	537	26.81	564	31.35	590	36.04
53850	1500	467	14.63	481	16.75	495	18.90	508	21.09	535	25.56	561	30.18	586	34.94	610	39.85
57440	1600	496	17.44	509	19.70	522	21.99	535	24.30	560	29.03	585	33.89	609	38.88	630	44.01
61030	1700	525	20.62	538	23.01	550	25.43	563	27.87	586	32.86	610	37.97	632	43.20	655	48.56
64620	1800	555	24.17	567	26.70	578	29.25	590	31.83	613	37.07	635	42.43	657	47.91	678	53.50
68210	1900	584	28.13	596	30.79	607	33.47	618	36.18	640	41.69	661	47.30	682	53.02	702	58.86
71800	2000	614	32.51	625	35.30	635	38.12	646	40.97	667	46.73	687	52.60	707	58.57	726	64.65
75390	2100	643	37.32	654	40.26	664	43.22	674	46.20	694	52.23	713	58.35	733	64.58	751	70.90
78980	2200	673	42.56	683	45.69	693	48.78	702	51.89	722	58.19	740	64.58	759	71.06	777	77.63
82570	2300	702	48.22	712	51.61	722	54.84	731	58.09	749	64.65	767	71.29	785	78.03	802	84.86
86160	2400	732	54.34	742	58.03	751	61.40	760	64.78	777	71.62	795	78.53	812	85.53	828	92.60
89750	2500	761	60.90	771	65.02	780	68.51	788	72.03	805	79.12	822	86.30	839	93.55	855	100.89
93340	2600	790	67.93	801	72.54	809	76.17	817	79.83	834	87.19	850	94.63	866	102.15	881	109.74
96930	2700	819	75.44	830	80.64	838	84.42	846	88.20	862	95.83	878	103.54	893	111.32	908	119.18
100520	2800	848	83.43	860	89.35	868	93.25	875	97.18	891	105.09	906	113.06	921	121.10	935	129.22

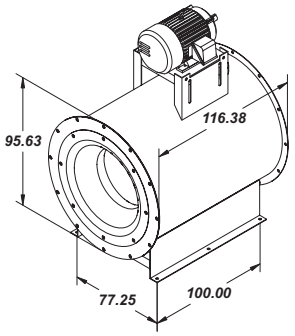
CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
35900	1000	586	32.57														
39490	1100	596	35.39	625	40.07	654	44.93										
43080	1200	609	38.54	636	43.37	663	48.36	690	53.53	716	58.87						
46670	1300	**623**	**42.04**	649	47.02	675	52.17	700	57.48	725	62.95	774	74.35				
50260	1400	640	45.89	**665**	**51.05**	**689**	**56.36**	713	61.82	736	67.44	783	79.11	828	91.38		
53850	1500	658	50.10	682	55.44	705	60.93	**727**	**66.56**	**750**	**72.34**	794	84.32	837	96.85	879	109.93
57440	1600	678	54.69	700	60.23	722	65.90	743	71.72	765	77.67	**807**	**89.97**	848	102.79	889	116.14
61030	1700	698	59.67	719	65.41	740	71.29	761	77.29	781	83.42	822	96.07	**861**	**109.22**	900	122.86
64620	1800	720	65.06	740	71.01	760	77.10	780	83.30	799	89.62	838	102.63	876	116.12	**913**	**130.09**
68210	1900	742	70.87	761	77.05	781	83.34	800	89.75	818	96.28	855	109.67	892	123.52	928	137.83
71800	2000	765	77.13	783	83.54	802	90.05	820	96.67	838	103.40	874	117.19	909	131.42	943	146.08
75390	2100	788	83.86	806	90.49	824	97.23	842	104.07	859	111.02	893	125.22	927	139.84	960	154.87
78980	2200	812	91.07	829	97.94	847	104.91	864	111.97	880	119.13	914	133.76	946	148.79	978	164.21
82570	2300	837	98.79	853	105.89	870	113.09	886	120.39	903	127.77	935	142.83	966	158.28	997	174.10
86160	2400	861	107.03	878	114.37	894	121.81	910	129.34	925	136.95	956	152.46	987	168.33	1017	184.57
89750	2500	887	115.81	902	123.41	918	131.08	933	138.84	948	146.70	978	162.65	1008	178.96	1037	195.62
93340	2600	912	125.17	927	133.01	942	140.93	957	148.93	972	157.01	1001	173.43	1030	190.19	1058	207.28
96930	2700	938	135.12	953	143.20	967	151.36	982	159.61	996	167.93	1024	184.82	1052	202.03		
100520	2800	964	145.67	978	154.01	993	162.42	1007	170.90	1021	179.47	1048	196.83	1075	214.50		

Notes: 1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

660

Wheel Diameter = 66.00 in.	Maximum BHP = 283.21 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 17.28 x RPM
Inlet and Outlet (Diameters) = 89.25 in.	Area = 43.44 ft.^{2}

Class	Max. RPM
I	603
II	783
III	977



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
21720	500	173	1.46	**206**	**2.48**	237	3.64	266	4.93								
26064	600	195	2.02	224	3.18	**251**	**4.45**	276	5.83	325	8.90						
30408	700	219	2.75	244	4.06	268	5.45	**291**	**6.94**	334	10.20	376	13.82				
34752	800	243	3.68	266	5.13	287	6.66	308	8.27	**347**	**11.75**	385	15.55	422	19.66		
39096	900	268	4.81	288	6.42	308	8.09	327	9.84	363	13.56	**398**	**17.56**	431	21.86	464	26.44
43440	1000	293	6.20	312	7.96	330	9.78	347	11.67	381	15.64	413	19.88	**444**	**24.38**	474	29.14
47784	1100	319	7.85	336	9.77	353	11.74	369	13.77	400	18.02	430	22.50	459	27.23	**487**	**32.19**
52128	1200	345	9.80	361	11.88	376	14.01	391	16.19	420	20.71	448	25.46	475	30.43	502	35.61
56472	1300	371	12.07	386	14.31	400	16.60	414	18.93	442	23.75	468	28.77	493	33.99	518	39.41
60816	1400	398	14.70	411	17.10	425	19.54	438	22.03	464	27.14	488	32.44	513	37.93	536	43.61
65160	1500	424	17.70	437	20.27	450	22.87	462	25.51	486	30.93	510	36.52	533	42.28	555	48.21
69504	1600	451	21.11	463	23.84	475	26.60	487	29.40	509	35.13	532	41.01	553	47.05	575	53.26
73848	1700	477	24.95	489	27.84	500	30.77	511	33.73	533	39.76	554	45.94	575	52.27	595	58.76
78192	1800	504	29.24	515	32.30	526	35.39	536	38.51	557	44.86	577	51.34	597	57.97	616	64.74
82536	1900	531	34.04	541	37.25	552	40.50	562	43.78	581	50.44	601	57.23	620	64.16	638	71.22
86880	2000	558	39.34	568	42.72	577	46.13	587	49.57	606	56.55	624	63.65	643	70.87	660	78.23
91224	2100	585	45.16	594	48.72	604	52.29	613	55.90	631	63.20	649	70.61	666	78.14	683	85.79
95568	2200	612	51.49	621	55.29	630	59.03	639	62.79	656	70.41	673	78.14	690	85.98	706	93.94
99912	2300	638	58.35	647	62.45	656	66.35	664	70.29	681	78.22	697	86.27	714	94.42	729	102.68
104256	2400	665	65.75	674	70.22	682	74.30	691	78.39	707	86.66	722	95.02	738	103.49	753	112.05
108600	2500	692	73.96	701	78.67	709	82.89	717	87.15	732	95.74	747	104.42	762	113.20	777	122.08
112944	2600	718	82.20	728	87.77	735	92.17	743	96.59	758	105.50	772	114.50	787	123.60	801	132.79
117288	2700	744	91.28	755	97.58	762	102.15	769	106.73	784	115.95	798	125.28	812	134.70	826	144.20
121632	2800	771	100.95	782	108.12	789	112.84	796	117.58	810	127.16	823	136.80	837	146.54	850	156.36

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
43440	1000	533	39.41														
47784	1100	542	42.82	568	48.48	594	54.36										
52128	1200	553	46.64	578	52.47	603	58.52	627	64.77	651	71.23						
56472	1300	**567**	**50.87**	590	56.90	613	63.13	636	69.55	659	76.16	703	89.97				
60816	1400	582	55.52	**604**	**61.77**	**626**	**68.19**	648	74.80	669	81.60	711	95.73	753	110.57		
65160	1500	598	60.62	620	67.09	640	73.73	**661**	**80.54**	**681**	**87.53**	722	102.02	761	117.19	799	133.01
69504	1600	616	66.17	636	72.88	656	79.75	676	86.78	695	93.98	**734**	**108.86**	771	124.38	808	140.53
73848	1700	635	72.20	654	79.15	673	86.26	692	93.52	710	100.94	747	116.24	**783**	**132.15**	818	148.66
78192	1800	654	78.72	673	85.93	691	93.29	709	100.79	727	108.44	762	124.18	796	140.51	**830**	**157.41**
82536	1900	674	85.75	692	93.23	710	100.85	727	108.60	744	116.50	778	132.70	811	149.46	843	166.77
86880	2000	695	93.33	712	101.08	729	108.96	746	116.97	762	125.12	794	141.80	826	159.02	858	176.76
91224	2100	716	101.47	733	109.50	749	117.65	765	125.93	781	134.33	812	151.52	843	169.21	873	187.40
95568	2200	738	110.20	754	118.51	770	126.94	785	135.48	800	144.15	831	161.85	860	180.03	889	198.69
99912	2300	760	119.54	776	128.13	791	136.84	806	145.67	820	154.61	850	172.83	878	191.52	906	210.66
104256	2400	783	129.51	798	138.39	812	147.39	827	156.50	841	165.71	869	184.48	897	203.68	924	223.33
108600	2500	806	140.14	820	149.32	834	158.61	848	168.00	862	177.50	889	196.81	916	216.54	943	236.70
112944	2600	829	151.46	843	160.94	857	170.53	870	180.20	884	189.99	910	209.86	936	230.13	962	250.81
117288	2700	853	163.49	866	173.28	879	183.15	892	193.13	905	203.20	931	223.63	957	244.45		
121632	2800	876	176.25	889	186.35	902	196.52	915	206.79	928	217.16	953	238.17	977	259.55		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

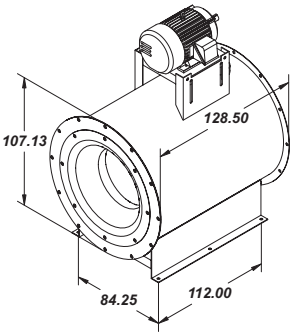
TUB - Performance Data

Tubular Centrifugal Fan

730

Wheel Diameter = 73.00 in.	Maximum BHP = 468.86 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 19.15 x RPM
Inlet and Outlet (Diameters) = 98.69 in.	Area = 53.12 ft.^{2}

Class	Max. RPM
I	545
II	708
III	884



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
26560	500	157	1.78	**186**	**3.04**	214	4.46	241	6.03								
31872	600	177	2.48	202	3.89	**227**	**5.45**	250	7.13	294	10.89						
37184	700	198	3.37	221	4.96	242	6.67	**263**	**8.49**	302	12.48	340	16.91				
42496	800	220	4.50	240	6.27	260	8.14	278	10.12	**314**	**14.37**	348	19.02	381	24.06		
47808	900	242	5.89	261	7.85	278	9.90	295	12.04	328	16.58	**360**	**21.49**	390	26.74	420	32.34
53120	1000	265	7.58	282	9.73	298	11.96	314	14.27	344	19.13	373	24.32	**401**	**29.82**	429	35.64
58432	1100	288	9.60	304	11.95	319	14.36	333	16.85	362	22.04	389	27.53	415	33.31	**440**	**39.38**
63744	1200	312	11.99	326	14.53	340	17.14	354	19.80	380	25.34	405	31.15	430	37.22	454	43.57
69056	1300	336	14.77	349	17.51	362	20.31	375	23.16	399	29.05	423	35.19	446	41.58	469	48.22
74368	1400	359	17.98	372	20.92	384	23.91	396	26.95	419	33.21	442	39.69	463	46.40	485	53.35
79680	1500	383	21.66	395	24.79	407	27.98	418	31.21	440	37.84	461	44.67	481	51.72	502	58.98
84992	1600	407	25.82	418	29.16	429	32.54	440	35.97	461	42.97	481	50.16	500	57.56	520	65.15
90304	1700	432	30.52	442	34.06	452	37.64	462	41.26	482	48.64	501	56.20	520	63.95	538	71.88
95616	1800	456	35.78	466	39.52	475	43.30	485	47.12	504	54.88	522	62.81	540	70.91	557	79.20
100928	1900	480	41.64	489	45.57	499	49.55	508	53.56	526	61.71	543	70.02	560	78.49	577	87.13
106240	2000	504	48.12	513	52.26	522	56.43	531	60.64	548	69.18	565	77.87	581	86.70	597	95.70
111552	2100	529	55.25	537	59.60	546	63.97	554	68.39	570	77.31	586	86.38	602	95.59	617	104.96
116864	2200	553	63.00	561	67.64	569	72.21	577	76.81	593	86.14	608	95.59	623	105.19	638	114.92
122176	2300	577	71.39	585	76.40	593	81.17	601	85.99	616	95.70	631	105.54	645	115.51	659	125.61
127488	2400	601	80.43	609	85.90	617	90.89	624	95.90	639	106.02	653	116.24	667	126.60	681	137.08
132800	2500	625	90.15	634	96.24	641	101.41	648	106.62	662	117.12	676	127.75	689	138.48	702	149.35
138112	2600	649	100.56	658	107.38	665	112.76	672	118.16	685	129.07	698	140.08	711	151.21	724	162.45
143424	2700	673	111.67	682	119.38	689	124.96	695	130.56	708	141.85	721	153.27	734	164.79	746	176.42
148736	2800	697	123.50	707	132.27	713	138.04	719	143.85	732	155.56	744	167.36	756	179.27	769	191.28

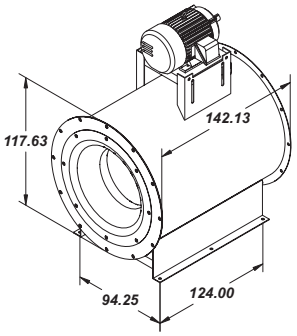
CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
53120	1000	482	48.21														
58432	1100	490	52.39	514	59.31	537	66.51										
63744	1200	500	57.06	523	64.19	545	71.59	567	79.24	588	87.14						
69056	1300	**512**	**62.23**	534	69.61	555	77.23	575	85.08	596	93.18	636	110.06				
74368	1400	526	67.93	**546**	**75.56**	**566**	**83.43**	586	91.51	605	99.82	643	117.11	680	135.26		
79680	1500	541	74.16	560	82.07	579	90.20	**598**	**98.53**	**616**	**107.09**	652	124.81	688	143.36	723	162.72
84992	1600	557	80.95	575	89.15	593	97.56	611	106.16	629	114.97	**663**	**133.17**	697	152.16	730	171.92
90304	1700	574	88.32	591	96.83	608	105.53	625	114.41	642	123.49	675	142.21	**708**	**161.68**	740	181.87
95616	1800	591	96.30	608	105.12	625	114.12	641	123.30	657	132.66	689	151.92	720	171.89	**750**	**192.57**
100928	1900	610	104.91	626	114.06	641	123.37	657	132.86	673	142.52	703	162.34	733	182.84	762	204.02
106240	2000	628	114.18	644	123.66	659	133.30	674	143.10	689	153.06	718	173.48	747	194.54	775	216.24
111552	2100	648	124.14	663	133.96	677	143.93	692	154.05	706	164.34	734	185.36	762	207.00	789	229.25
116864	2200	667	134.81	682	144.98	696	155.29	710	165.75	724	176.35	751	198.00	778	220.25	804	243.08
122176	2300	687	146.24	701	156.75	715	167.41	728	178.20	742	189.14	768	211.43	794	234.30	819	257.72
127488	2400	708	158.44	721	169.30	734	180.31	747	191.45	760	202.73	786	225.68	811	249.17	836	273.21
132800	2500	729	171.44	742	182.68	754	194.04	767	205.53	779	217.15	804	240.77	828	264.91	852	289.57
138112	2600	750	185.29	762	196.89	774	208.62	787	220.45	799	232.43	823	256.73	846	281.53	870	306.83
143424	2700	771	200.01	783	211.98	795	224.06	807	236.27	819	248.59	842	273.59	865	299.06		
148736	2800	792	215.63	804	227.97	816	240.42	827	252.98	939	265.66	861	291.37	884	317.52		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

807

Wheel Diameter = 80.75 in.	Maximum BHP = 776.44 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 21.14 x RPM
Inlet and Outlet (Diameters) = 109.19 in.	Area = 65.02 ft.^{2}

Class	Max. RPM
I	493
II	640
III	799



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
32510	500	142	2.18	**168**	**3.72**	194	5.45	217	7.37								
39012	600	160	3.03	183	4.76	**205**	**6.66**	226	8.73	266	13.33						
45514	700	179	4.12	199	6.07	219	8.16	**237**	**10.39**	273	15.27	307	20.69				
52016	800	199	5.50	217	7.67	235	9.97	251	12.38	**284**	**17.58**	315	23.27	345	29.43		
58518	900	219	7.21	236	9.61	252	12.11	267	14.73	297	20.29	**325**	**26.29**	353	32.72	379	39.57
65020	1000	240	9.28	255	11.91	270	14.64	284	17.46	311	23.41	337	29.76	**363**	**36.49**	388	43.62
71522	1100	261	11.75	275	14.62	288	17.58	301	20.62	327	26.97	351	33.69	375	40.76	**398**	**48.19**
78024	1200	282	14.67	295	17.78	307	20.97	320	24.23	343	31.01	366	38.11	388	45.55	410	53.31
84526	1300	303	18.07	315	21.43	327	24.85	339	28.34	361	35.55	382	43.06	403	50.88	424	59.00
91028	1400	325	22.00	336	25.60	347	29.26	358	32.98	379	40.63	399	48.57	419	56.78	438	65.27
97530	1500	347	26.50	357	30.34	367	34.23	378	38.19	397	46.30	417	54.66	435	63.29	453	72.17
104032	1600	368	31.60	378	35.68	388	39.82	398	44.01	416	52.58	434	61.38	452	70.43	470	79.72
110534	1700	390	37.34	399	41.67	409	46.06	418	50.49	436	59.52	453	68.77	470	78.24	486	87.96
117036	1800	412	43.78	421	48.36	430	52.98	438	57.65	455	67.15	472	76.85	488	86.77	504	96.91
123538	1900	434	50.95	442	55.76	451	60.63	459	65.54	475	75.51	491	85.68	506	96.04	521	106.61
130040	2000	456	58.88	464	63.94	472	69.05	480	74.20	495	84.65	510	95.28	525	106.09	540	117.10
136542	2100	478	67.60	486	72.93	493	78.28	501	83.68	515	94.60	530	105.69	544	116.97	558	128.43
143044	2200	500	77.08	507	82.76	515	88.36	522	93.99	536	105.40	550	116.96	564	128.71	577	140.61
149546	2300	522	87.35	529	93.48	536	99.32	543	105.21	557	117.10	570	129.13	583	141.34	596	153.70
156048	2400	543	98.42	551	105.11	558	111.21	564	117.34	577	129.72	590	142.24	603	154.91	615	167.73
162550	2500	565	110.31	573	117.76	579	124.08	586	130.46	598	143.31	611	156.31	623	169.45	635	182.74
169052	2600	587	123.05	595	131.39	601	137.97	607	144.59	619	157.93	631	171.40	643	185.02	655	198.77
175554	2700	608	136.64	617	146.07	623	152.91	629	159.76	640	173.57	652	187.54	663	201.64	675	215.86
182056	2800	630	151.11	639	161.84	644	168.90	650	176.01	662	190.34	673	204.78	684	219.35	695	234.05

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
65020	1000	435	58.99														
71522	1100	443	64.10	464	72.57	486	81.38										
78024	1200	452	69.81	472	78.55	493	87.60	512	96.95	532	106.62						
84526	1300	**463**	**76.15**	482	85.17	501	94.49	520	104.11	538	114.01	575	134.67				
91028	1400	475	83.12	**494**	**92.46**	**512**	**102.08**	529	111.98	547	122.14	581	143.29	615	165.51		
97530	1500	489	90.74	506	100.42	523	110.36	**540**	**120.57**	**557**	**131.03**	590	152.72	622	175.42	653	199.11
104032	1600	503	99.05	520	109.09	536	119.37	552	129.90	568	140.67	**599**	**162.95**	630	186.19	660	210.37
110534	1700	519	108.07	534	118.48	550	129.12	565	139.99	581	151.10	610	174.00	**640**	**197.82**	669	222.54
117036	1800	535	117.83	550	128.63	565	139.64	579	150.87	594	162.33	622	185.89	651	210.33	**678**	**235.62**
123538	1900	551	128.37	566	139.56	580	150.96	594	162.56	608	174.38	635	198.64	662	223.73	689	249.64
130040	2000	568	139.71	582	151.31	596	163.10	609	175.10	623	187.29	649	212.27	675	238.04	701	264.59
136542	2100	585	151.90	599	163.91	612	176.11	625	188.50	638	201.08	664	226.81	689	253.29	713	280.52
143044	2200	603	164.96	616	177.39	629	190.01	642	202.81	654	215.78	679	242.28	703	269.49	727	297.43
149546	2300	621	178.93	634	191.80	646	204.84	658	218.05	671	231.43	694	258.71	718	286.68	741	315.34
156048	2400	640	193.86	652	207.16	664	220.63	676	234.26	687	248.06	710	276.15	733	304.89	755	334.30
162550	2500	659	209.77	670	223.52	682	237.42	693	251.48	705	265.70	727	294.60	749	324.15	771	354.32
169052	2600	678	226.72	689	240.92	700	255.26	711	269.75	722	284.40	744	314.14	765	344.48	786	375.44
175554	2700	708	259.38	719	274.16	729	289.10	740	304.17	761	334.46	782	365.93				
182056	2800	727	278.95	737	294.18	748	309.55	758	325.06	779	356.52	799	388.52				

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

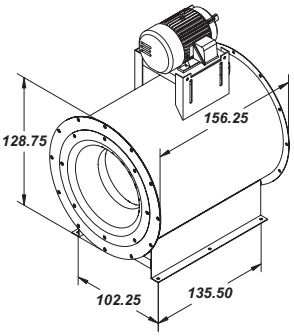
TUB - Performance Data

Tubular Centrifugal Fan

890

Wheel Diameter = 89.00 in.	Maximum BHP = 1262.79 x (RPM/1000)^3
Wheel Type = Airfoil	Tip Speed, FPM = 23.30 x RPM
Inlet and Outlet (Diameters) = 120.38 in.	Area = 79.10 ft.^{2}

Class	Max. RPM
I	447
II	581
III	725



CFM	OV	1/4" SP		1/2" SP		3/4" SP		1" SP		1 1/2" SP		2" SP		2 1/2" SP		3" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
39550	500	128	2.65	**153**	**4.52**	176	6.62	197	8.96								
47460	600	145	3.68	166	5.79	**186**	**8.09**	205	10.60	241	16.19						
55370	700	162	5.01	181	7.37	198	9.91	**215**	**12.62**	248	18.55	279	25.13				
63280	800	180	6.68	197	9.32	213	12.11	228	15.04	**257**	**21.36**	286	28.27	313	35.76		
71190	900	199	8.75	214	11.67	228	14.71	242	17.89	269	24.65	**295**	**31.94**	320	39.75	344	48.07
79100	1000	217	11.27	231	14.47	245	17.78	257	21.21	282	28.44	306	36.15	**329**	**44.33**	352	52.98
87010	1100	236	14.27	249	17.76	261	21.35	273	25.05	296	32.77	319	40.92	340	49.51	**361**	**58.54**
94920	1200	256	17.82	267	21.60	279	25.47	290	29.44	312	37.67	332	46.30	352	55.33	372	64.76
102830	1300	275	21.95	286	26.03	297	30.18	307	34.43	327	43.18	347	52.31	366	61.80	384	71.67
110740	1400	295	26.73	305	31.09	315	35.54	325	40.06	344	49.36	362	59.00	380	68.97	397	79.29
118650	1500	314	32.19	324	36.85	333	41.59	343	46.40	360	56.24	378	66.40	395	76.88	411	87.67
126560	1600	334	38.38	343	43.34	352	48.37	361	53.47	378	63.87	394	74.56	410	85.56	426	96.84
134470	1700	354	45.36	362	50.62	371	55.95	379	61.33	395	72.30	411	83.54	426	95.05	441	106.85
142380	1800	374	53.18	382	58.74	390	64.36	398	70.03	413	81.57	428	93.36	443	105.41	457	117.72
150290	1900	394	61.89	401	67.74	409	73.65	416	79.62	431	91.73	445	104.08	459	116.67	473	129.50
158200	2000	414	71.53	421	77.68	428	83.88	435	90.14	449	102.83	463	115.74	476	128.88	490	142.25
166110	2100	434	82.12	441	88.59	447	95.09	454	101.65	468	114.91	481	128.39	494	142.09	506	156.01
174020	2200	453	93.64	460	100.54	467	107.34	473	114.18	486	128.04	499	142.09	511	156.35	523	170.81
181930	2300	473	106.11	480	113.56	486	120.65	493	127.81	505	142.24	517	156.87	529	171.69	541	186.71
189840	2400	493	119.55	500	127.68	506	135.10	512	142.54	524	157.58	535	172.78	547	188.18	558	203.76
197750	2500	513	134.00	520	143.05	526	150.73	531	158.48	543	174.09	554	189.89	565	205.84	576	221.99
205660	2600	532	149.47	540	159.60	545	167.60	551	175.64	562	191.85	573	208.22	583	224.76	594	241.46
213570	2700	552	165.99	559	177.44	565	185.74	570	194.07	581	210.85	591	227.82	602	244.94	612	262.22
221480	2800	571	183.56	579	196.60	585	205.18	590	213.82	600	231.22	610	248.76	620	266.46	630	284.32

CFM	OV	4" SP		4 1/2" SP		5" SP		5 1/2" SP		6" SP		7" SP		8" SP		9" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
79100	1000	395	71.67														
87010	1100	402	77.87	421	88.16	441	98.85										
94920	1200	410	84.81	429	95.42	447	106.41	465	117.78	483	129.52						
102830	1300	**420**	**92.50**	438	103.47	445	114.79	472	126.47	489	138.50	521	163.60				
110740	1400	431	100.97	**448**	**112.32**	**464**	**124.00**	480	136.02	496	148.38	527	174.07	558	201.05		
118650	1500	444	110.23	459	121.99	475	134.07	**490**	**146.46**	**505**	**159.17**	535	185.52	564	213.09	593	241.87
126560	1600	457	120.33	472	132.52	486	145.01	501	157.80	515	170.89	**544**	**197.95**	572	226.17	599	255.55
134470	1700	471	131.28	485	143.93	499	156.85	513	170.06	527	183.55	554	211.38	**580**	**240.31**	607	270.33
142380	1800	485	143.14	499	156.25	512	169.63	526	183.28	539	197.19	565	225.82	590	255.50	**615**	**286.23**
150290	1900	500	155.94	513	169.53	526	183.38	539	197.48	552	211.84	577	241.30	601	271.78	625	303.25
158200	2000	515	169.72	528	183.80	540	198.13	553	212.70	565	227.51	589	257.86	613	289.17	636	321.42
166110	2100	531	184.52	543	199.11	555	213.93	567	228.99	579	244.27	602	275.52	625	307.69	647	340.76
174020	2200	547	200.38	559	215.49	571	230.82	582	246.36	593	262.12	616	294.31	638	327.37	659	361.31
181930	2300	564	217.36	575	232.99	586	248.84	597	264.88	608	281.14	630	314.27	651	348.26	672	383.07
189840	2400	581	235.50	591	251.65	602	268.02	613	284.58	624	301.34	644	335.45	665	370.37	685	406.10
197750	2500	598	254.82	608	271.53	619	288.42	629	305.50	639	322.77	659	357.88	679	393.00	699	430.42
205660	2600	615	275.42	625	292.66	635	310.08	645	327.68	655	345.48	675	381.60	694	418.47	713	456.07
213570	2700	632	297.29	642	315.09	652	333.04	662	351.19	671	369.50	690	406.66	709	444.52		
221480	2800	650	320.50	659	338.86	669	357.36	678	376.03	688	394.88	706	433.09	725	471.97		

Notes:
1) Performance shown is for Installation Type B: free inlet, ducted outlet.
2) Performance ratings do not include the effects of appurtenances in the airstream.
3) Power rating (BHP) does not include drive losses.
4) Bold figures indicate maximum static efficiency.
5) For Arrangement 3 fans increase RPM and BHP shown in performance tables by 3.3% and 10%, respectively.
6) Dimensions should not be used for construction. Certified drawings are available upon request.

Sound Data - TUB

Tubular Centrifugal Fan

Size 122

RPM	Octave Band Limits (CPS)								CFM WOV
	63	125	250	500	1000	2000	4000	8000	
1000	81	77	70	74	68	64	60	59	975
1100	85	80	74	75	69	68	63	61	1073
1200	88	83	77	79	72	70	65	65	1170
1300	92	85	81	81	75	74	67	67	1268
1400	95	87	82	82	78	77	69	68	1365
1500	96	88	84	83	79	78	71	69	1463
1600	98	90	86	84	80	80	73	71	1560
1700	99	93	89	87	82	83	75	73	1658
1800	100	97	93	91	84	86	79	77	1755
1900	104	98	93	90	84	86	79	77	1853
2000	107	98	93	90	84	85	78	77	1950
2100	109	99	93	92	84	86	80	78	2048
2200	111	101	94	94	85	88	83	79	2145
2300	111	102	95	95	87	89	84	80	2243
2400	110	102	96	95	89	89	85	81	2340
2500	112	104	97	97	90	91	87	82	2438
2600	113	106	98	98	91	92	89	83	2535
2700	113	108	100	99	94	93	90	84	2633
2800	114	111	101	100	96	94	91	85	2730
3000	114	112	101	102	99	95	92	87	2925
3200	115	116	104	103	100	96	94	89	3120
3400	116	117	105	104	101	97	95	90	3315
3600	117	118	106	105	102	98	96	91	3510
3800	118	119	107	106	103	99	97	92	3705

Size 135

RPM	Octave Band Limits (CPS)								CFM WOV
	63	125	250	500	1000	2000	4000	8000	
1000	84	80	73	77	71	67	63	62	1305
1100	88	83	77	78	72	71	66	64	1436
1200	91	86	80	82	75	73	68	68	1566
1300	95	88	84	84	78	77	70	70	1697
1400	98	90	85	85	81	80	72	71	1827
1500	99	91	87	86	82	81	74	72	1958
1600	101	93	89	87	83	83	76	74	2088
1700	102	96	92	90	85	86	78	76	2219
1800	103	100	96	94	87	89	82	80	2349
1900	107	101	96	93	87	89	82	80	2480
2000	110	101	96	93	87	88	81	80	2610
2100	112	102	96	95	87	89	83	81	2741
2200	114	104	97	97	88	91	86	82	2871
2300	114	105	98	98	90	92	87	83	3002
2400	113	105	99	98	92	92	88	84	3132
2500	115	107	100	100	93	94	90	85	3263
2600	116	109	101	101	94	95	92	86	3393
2700	116	111	103	102	97	96	93	87	3524
2800	117	114	104	103	99	97	94	88	3654
3000	117	115	104	105	102	98	95	90	3915
3200	118	119	107	106	103	99	97	92	4176
3400	119	120	108	107	104	100	98	93	4437
3600	120	121	109	108	105	101	99	94	4698
3800	121	122	110	109	106	102	100	95	4959

Size 150

RPM	Octave Band Limits (CPS)								CFM WOV
	63	125	250	500	1000	2000	4000	8000	
1000	87	83	76	80	74	70	66	65	1790
1100	91	86	80	81	75	74	69	67	1969
1200	94	89	83	85	78	76	71	71	2148
1300	98	91	87	87	81	80	73	73	2327
1400	101	93	88	88	84	83	75	74	2506
1500	102	94	90	89	85	84	77	75	2685
1600	104	96	92	90	86	86	79	77	2864
1700	105	99	95	93	88	89	81	79	3043
1800	106	103	99	97	90	92	85	83	3222
1900	110	104	99	96	90	92	85	83	3401
2000	113	104	99	96	90	91	84	83	3580
2100	115	105	99	98	90	92	86	84	3759
2200	117	107	100	100	91	94	89	85	3938
2300	117	108	101	101	93	95	90	86	4117
2400	116	108	102	101	95	95	91	87	4296
2500	118	110	103	103	96	97	93	88	4475
2600	119	112	104	104	97	98	95	89	4654
2700	119	114	106	105	100	99	96	90	4833
2800	120	117	107	106	102	100	97	91	5012
3000	120	118	107	108	105	101	98	93	5370
3200	121	122	110	109	106	102	100	95	5728
3400	122	123	111	110	107	103	101	96	6086
3600	123	124	112	111	108	104	102	97	6444
3800	124	125	113	112	109	105	103	98	6802

Size 165

RPM	Octave Band Limits (CPS)								CFM WOV
	63	125	250	500	1000	2000	4000	8000	
1000	90	86	79	83	77	73	69	68	2383
1100	94	89	83	84	78	77	72	70	2621
1200	97	92	86	88	81	79	74	74	2860
1300	101	94	90	90	84	83	76	76	3098
1400	104	96	91	91	87	86	78	77	3336
1500	105	97	93	92	88	87	80	78	3575
1600	107	99	95	93	89	89	82	80	3813
1700	108	102	98	96	91	92	84	82	4051
1800	109	106	102	100	93	95	88	86	4289
1900	113	107	102	99	93	95	88	86	4528
2000	116	107	102	99	93	94	87	86	4766
2100	118	108	102	101	93	95	89	87	5004
2200	120	110	103	103	94	97	92	88	5243
2300	120	111	104	104	96	98	93	89	5481
2400	119	111	105	104	98	98	94	90	5719
2500	121	113	106	106	99	100	96	91	5958
2600	122	115	107	107	100	101	98	92	6196
2700	122	117	109	108	103	102	99	93	6434
2800	123	120	110	109	105	103	100	94	6672
3000	123	121	110	111	108	104	101	96	7149
3200	124	125	113	112	109	105	103	98	7626
3400	125	126	114	113	110	106	104	99	8102
3600	126	127	115	114	111	107	105	100	8579
3800	127	128	116	115	112	108	106	101	9055

Correction in dB for Point of Operation

Sizes 122-165 (1000-1799 RPM)

% WOV	Octave Band Limits (CPS)							
	1	2	3	4	5	6	7	8
50	+1	0	0	0	0	0	0	+1
60	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
90	+1	+1	+2	+2	+2	+1	0	0
100	+1	+1	+2	+3	+3	+3	0	0

Sizes 122-165 (1800-3800 RPM)

% WOV	Octave Band Limits (CPS)							
	1	2	3	4	5	6	7	8
50	+1	+1	0	0	0	+1	+2	+3
60	0	0	0	0	0	0	+1	+1
70	0	0	0	0	0	0	0	0
80	+1	0	0	0	+1	0	0	−1
90	−1	0	0	+1	+2	+2	+1	−1
100	−1	+2	+2	+2	+4	+5	+3	+1

The sound power level ratings shown are in decibels, referred to 10^{-12} watts calculated per AMCA Standard 301. Values shown are for inlet Lwi sound power levels for Installation Type B: free inlet, ducted outlet. Ratings do not include the effects of duct end correction.

TUB - Sound Data

Tubular Centrifugal Fan

Size 182

RPM	Octave Band Limits (CPS) 45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	CFM WOV
800	78	76	71	68	65	61	59	54	2508
900	82	79	75	71	68	64	61	58	2822
1000	84	81	78	74	71	67	64	62	3135
1100	87	84	81	76	73	70	66	64	3449
1200	91	86	83	79	76	72	69	67	3763
1300	93	88	86	81	78	75	71	69	4076
1400	96	90	87	82	80	77	73	70	4390
1500	97	92	89	84	82	78	75	72	4703
1600	98	93	91	86	83	80	76	74	5017
1700	99	95	92	88	85	82	78	75	5331
1800	100	97	94	90	86	83	79	76	5644
2000	104	97	94	91	86	83	79	76	6271
2200	106	98	95	94	89	85	82	78	6899
2400	108	100	97	96	91	88	84	80	7526
2600	109	102	99	98	93	90	86	82	8153
2800	111	106	101	100	95	91	88	84	8780
3000	112	108	102	102	98	93	90	86	9407
3200	113	111	104	104	100	95	91	88	10035
3400	114	113	106	105	101	97	93	90	10662
3600	115	115	107	106	103	98	95	92	11289

Size 200

RPM	Octave Band Limits (CPS) 45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	CFM WOV
700	77	75	70	68	64	61	58	53	2889
800	81	78	74	71	68	64	61	57	3301
900	84	81	78	74	71	67	64	61	3714
1000	87	84	80	77	74	70	67	65	4127
1100	90	86	84	79	76	72	69	67	4540
1200	93	89	86	81	79	75	72	69	4952
1300	96	91	88	83	81	77	74	71	5365
1400	98	92	90	85	83	79	76	73	5778
1500	100	94	92	87	85	81	78	75	6191
1600	101	96	94	89	86	83	79	76	6603
1700	102	98	95	91	88	84	81	78	7016
1800	103	99	96	93	89	86	82	79	7429
2000	107	99	96	94	89	86	82	79	8254
2200	109	100	98	96	91	88	85	81	9080
2400	111	102	100	99	93	90	87	83	9905
2600	112	105	101	101	96	92	89	85	10731
2800	113	108	103	103	98	94	91	87	11556
3000	115	111	105	105	100	96	92	89	12382
3200	116	114	107	106	102	98	94	91	13207
3400	117	116	109	108	104	100	96	93	14033

Size 222

RPM	Octave Band Limits (CPS) 45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	CFM WOV
700	81	78	73	71	68	64	61	57	3978
800	84	82	77	74	71	67	65	60	4546
900	88	85	81	77	74	70	67	64	5114
1000	90	87	84	80	77	73	70	68	5682
1100	93	90	87	82	79	76	72	70	6251
1200	97	92	89	85	82	78	75	73	6819
1300	99	94	92	87	84	81	77	75	7387
1400	102	96	94	88	86	83	79	76	7956
1500	103	98	95	90	88	84	81	78	8524
1600	104	99	97	92	89	86	82	80	9092
1700	105	101	98	94	91	88	84	81	9661
1800	106	103	100	96	92	89	85	82	10229
2000	110	103	100	97	92	89	85	82	11365
2200	112	104	101	100	95	91	88	84	12502
2400	114	106	103	102	97	94	90	86	13639
2600	115	108	105	104	99	96	92	88	14775
2800	117	112	107	106	101	97	94	90	15912
3000	118	114	108	108	104	99	96	92	17048

Size 245

RPM	Octave Band Limits (CPS) 45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	CFM WOV
600	80	77	72	70	66	63	60	56	4552
700	84	81	76	74	70	67	64	60	5311
800	87	85	80	77	74	70	68	63	6069
900	91	87	84	80	77	73	70	67	6828
1000	93	90	87	83	80	76	73	71	7587
1100	96	93	90	85	82	79	75	73	8345
1200	99	95	92	88	85	81	78	76	9104
1300	102	97	95	90	87	83	80	78	9863
1400	105	99	96	91	89	86	82	79	10622
1500	106	101	98	93	91	87	84	81	11380
1600	107	102	100	95	92	89	85	83	12139
1700	108	104	101	97	94	91	87	84	12898
1800	109	106	102	99	95	92	88	85	13657
2000	113	106	102	100	95	92	88	85	15174
2200	115	107	104	103	97	94	91	87	16691
2400	117	109	106	105	100	97	93	89	18209
2600	118	111	108	107	102	99	95	91	19726
2800	120	115	110	109	104	100	97	93	21244

Correction in dB for Point of Operation

Sizes 182-245 (600-1799 RPM)

% WOV	Octave Bands 1	2	3	4	5	6	7	8
50	+1	0	0	0	0	0	0	+1
60	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
90	+1	+1	+2	+2	+2	+1	0	0
100	+1	+1	+2	+3	+3	+3	0	0

Sizes 182-245 (1800-3600 RPM)

% WOV	Octave Bands 1	2	3	4	5	6	7	8
50	+1	+1	0	0	0	+1	+2	+3
60	0	0	0	0	0	0	+1	+1
70	0	0	0	0	0	0	0	0
80	+1	0	0	0	+1	0	0	−1
90	−1	0	0	+1	+2	+2	+1	−1
100	−1	+2	+2	+2	+4	+5	+3	+1

The sound power level ratings shown are in decibels, referred to 10^{-12} watts calculated per AMCA Standard 301. Values shown are for inlet Lwi sound power levels for Installation Type B: free inlet, ducted outlet. Ratings do not include the effects of duct end correction.

Sound Data - TUB

Tubular Centrifugal Fan

Size 270

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
600	80	77	74	70	67	61	54	49	6419
650	83	79	76	72	69	64	57	51	6954
700	84	81	78	74	71	66	59	54	7489
750	86	83	80	76	73	68	61	56	8025
800	88	85	82	77	75	70	63	58	8559
850	90	86	84	79	76	72	65	59	9094
900	92	87	85	80	78	73	67	61	9629
950	93	89	87	81	79	75	69	62	10164
1000	95	90	88	83	81	76	71	64	10700
1100	95	92	89	85	81	76	71	64	11769
1200	96	94	92	87	83	78	73	67	12839
1300	98	95	94	89	85	81	75	70	13909
1400	100	97	96	91	87	83	77	72	14979
1500	101	99	98	93	89	85	79	74	16050
1600	103	100	99	94	90	87	81	76	17119
1700	104	102	101	96	92	88	83	78	18189
1800	105	103	102	98	94	90	85	80	19259
1900	106	104	104	100	95	91	86	81	20329
2000	107	105	105	101	97	93	88	83	21400
2200	108	108	107	104	100	95	91	86	23539
2400	110	110	109	107	102	98	93	88	25679
2600	111	113	111	109	104	100	96	90	27819

Size 300

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
550	81	79	74	71	67	62	55	49	8072
600	84	81	77	74	70	65	58	52	8806
650	86	83	79	76	72	67	60	55	9540
700	88	85	81	77	74	69	62	57	10274
750	89	86	83	79	76	71	64	59	11008
800	91	88	85	81	78	73	66	61	11742
850	93	89	87	82	80	75	68	62	12475
900	95	91	88	83	81	77	70	64	13209
950	97	92	90	85	83	78	72	65	13943
1000	98	93	91	86	84	80	74	67	14677
1100	98	95	92	88	84	79	74	67	16145
1200	99	97	95	90	86	82	76	70	17613
1300	101	99	97	92	88	84	78	73	19080
1400	103	100	99	94	90	86	80	75	20548
1500	105	102	101	96	92	88	83	77	22016
1600	106	104	103	98	94	90	84	79	23484
1700	107	105	104	99	95	92	86	81	24951
1800	108	106	105	101	97	93	88	83	26419
1900	109	108	107	103	99	95	89	85	27887
2000	110	109	108	105	100	96	91	86	29355
2200	112	111	110	107	103	99	94	89	32290
2400	113	114	112	110	105	101	97	91	35226

Size 330

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
500	81	79	74	72	68	62	55	49	9767
550	84	81	77	74	70	65	58	52	10744
600	86	84	80	77	73	68	61	55	11721
650	89	86	82	79	75	70	63	57	12698
700	91	87	84	80	77	72	65	60	13675
750	92	89	86	82	79	74	67	62	14651
800	94	91	88	84	81	76	69	64	15628
850	96	92	90	85	83	78	71	65	16605
900	98	94	91	86	84	79	73	67	17582
950	99	95	93	88	85	81	75	68	18559
1000	101	96	94	89	87	83	77	70	19535
1100	101	98	95	91	87	82	77	70	21489
1200	102	100	98	93	89	85	79	73	23443
1300	104	102	100	95	91	87	81	76	25396
1400	106	103	102	97	93	89	83	78	27350
1500	107	105	104	99	95	91	85	80	29303
1600	109	107	106	101	97	93	87	82	31257
1700	110	108	107	102	98	95	89	84	33211
1800	111	109	108	104	100	96	91	86	35164
1900	112	110	110	106	102	97	92	88	37118
2000	113	112	111	107	103	99	94	89	39071
2100	114	113	112	109	105	100	95	90	41025
2200	114	114	113	110	106	102	97	92	42978

Correction in dB for Point of Operation

Sizes 270-330 (500-1099 RPM)

% WOV	Octave Bands							
	1	2	3	4	5	6	7	8
50	+5	+4	+3	+1	−1	0	+1	0
60	+2	+1	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0
80	+2	+1	+1	+1	0	0	0	0
90	+3	+2	+2	+3	+1	+2	0	0
100	+3	+3	+2	+4	+3	+5	+2	+5

Sizes 270-330 (1100-2700 RPM)

% WOV	Octave Bands							
	1	2	3	4	5	6	7	8
50	+5	+4	+3	+1	−1	0	+1	0
60	+2	+1	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0
80	+2	+1	+1	+1	0	0	0	0
90	+3	+2	+2	+3	+1	+2	0	0
100	+3	+3	+2	+4	+3	+5	+2	+5

The sound power level ratings shown are in decibels, referred to 10^{-12} watts calculated per AMCA Standard 301. Values shown are for inlet Lwi sound power levels for Installation Type B: free inlet, ducted outlet. Ratings do not include the effects of duct end correction.

TUB - Sound Data

Tubular Centrifugal Fan

Size 365

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
425	83	80	77	72	69	63	57	52	11300
450	86	81	78	73	70	65	59	54	11964
475	88	83	80	74	72	67	61	55	12629
500	90	84	81	76	73	68	62	57	13294
550	90	85	82	78	73	68	62	57	14623
600	91	88	84	80	76	70	64	58	15952
650	92	90	86	83	78	72	66	60	17285
700	94	92	88	85	80	74	68	62	18611
750	95	93	90	86	82	76	70	64	19941
800	97	95	92	88	84	78	72	66	21270
850	98	97	93	90	86	80	74	68	22600
900	99	98	95	91	87	82	76	69	23929
950	101	99	96	93	88	83	78	71	25258
1000	102	101	98	94	90	85	79	73	26588
1100	103	103	101	95	93	88	82	74	29247
1200	105	105	103	98	95	91	85	77	31905
1300	106	107	106	100	97	94	88	80	34564
1400	108	108	108	102	99	96	90	83	37223
1500	109	110	109	104	100	98	92	85	39882
1600	110	111	111	106	102	100	94	87	42541
1700	111	113	112	108	103	101	96	89	45200
1800	112	114	114	110	105	103	98	91	47858
1900	113	115	115	111	106	104	99	92	50517

Size 402

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
400	84	81	78	73	70	64	58	53	14261
425	86	83	80	75	72	66	60	55	15152
450	89	84	81	76	73	68	62	57	16044
475	91	86	83	77	75	70	64	58	16935
500	93	87	84	79	76	71	65	60	17826
550	93	88	85	81	76	71	65	60	19609
600	94	91	87	83	79	73	67	61	21392
650	95	93	89	86	81	75	69	63	23175
700	97	95	91	88	83	77	71	65	24957
750	98	96	93	89	85	79	73	67	26740
800	100	98	95	91	87	81	75	69	28523
850	101	100	96	93	89	83	77	71	30305
900	102	101	98	94	90	85	79	72	32088
950	103	102	99	96	91	86	81	74	33871
1000	105	104	101	97	93	88	82	76	35653
1100	106	106	104	98	96	91	85	77	39219
1200	108	108	106	101	98	94	88	80	42784
1300	109	110	109	103	100	97	91	83	46350
1400	111	111	111	105	102	99	93	86	49915
1500	112	113	112	107	103	101	95	88	53480
1600	113	114	114	109	105	103	97	90	57046
1700	114	116	115	111	106	104	99	92	60611

Size 445

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
375	86	83	79	75	71	65	59	54	18068
400	88	84	81	76	73	67	61	56	19273
425	89	86	83	78	75	69	63	58	20477
450	92	87	84	79	76	71	65	60	21682
475	94	89	86	80	78	73	67	61	22886
500	96	90	87	82	79	74	68	63	24091
550	96	91	88	84	79	74	68	63	26500
600	97	94	90	86	82	76	70	64	28909
650	98	96	92	89	84	78	72	66	31318
700	100	98	94	91	86	80	74	68	33727
750	101	99	96	92	88	82	76	70	36136
800	103	101	98	94	90	84	78	72	38546
850	104	103	99	96	92	86	80	74	40955
900	105	104	101	97	93	88	82	75	43364
950	107	105	102	99	95	89	84	77	45773
1000	108	107	104	100	96	91	85	79	48182
1100	109	109	107	101	99	94	88	80	53000
1200	111	111	108	104	101	97	91	83	57819
1300	112	113	112	106	103	100	94	86	62637
1400	114	114	114	108	105	102	96	89	67455
1500	115	116	115	111	106	104	98	91	72273
1600	116	117	117	112	108	106	100	93	77092

Size 490

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
350	87	84	79	76	72	66	60	55	22514
375	89	86	82	78	74	68	62	57	24122
400	90	87	84	79	76	70	64	59	25731
425	92	89	86	80	78	72	66	61	27339
450	95	90	87	82	79	74	68	63	28947
475	97	92	89	83	81	76	70	64	30555
500	99	93	90	85	82	77	71	66	32163
550	99	94	90	87	82	77	71	66	35380
600	100	97	93	89	85	79	73	67	38596
650	101	99	95	91	87	81	75	69	41813
700	103	101	97	94	89	83	77	71	45029
750	104	102	99	95	91	85	79	73	48245
800	106	104	101	97	93	87	81	75	51462
850	107	106	102	99	95	89	83	77	54678
900	108	107	104	100	96	91	85	78	57894
950	109	108	105	101	97	92	87	80	61111
1000	111	109	107	103	99	94	88	82	64327
1100	112	112	110	104	102	97	91	83	70760
1200	114	114	112	107	104	100	94	86	77193
1300	115	116	115	109	106	103	97	89	83626
1400	117	117	117	111	108	105	99	91	90058
1500	118	119	118	113	109	107	101	94	96491

The sound power level ratings shown are in decibels, referred to 10^{-12} watts calculated per AMCA Standard 301. Values shown are for inlet Lwi sound power

Sound Data - TUB

Tubular Centrifugal Fan

Size 542

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
325	88	85	80	77	73	67	61	56	28372
350	90	87	83	79	76	69	63	58	30554
375	92	89	85	81	77	71	65	60	32737
400	94	90	87	82	79	73	67	62	34919
425	95	92	89	84	81	75	69	64	37102
450	98	93	90	85	82	77	71	66	39284
475	100	95	92	86	84	79	73	67	41467
500	102	96	93	88	85	80	74	69	43649
550	102	97	94	90	85	80	74	69	48014
600	103	100	96	92	88	82	76	70	52379
650	104	102	98	95	90	84	78	72	56744
700	106	104	100	97	92	86	80	74	61109
750	107	106	102	99	94	89	82	76	65474
800	109	107	104	100	96	90	84	78	69839
850	110	109	105	102	98	92	86	80	74204
900	111	110	107	103	99	94	88	81	78568
950	113	111	108	105	101	95	90	83	82933
1000	114	113	110	106	102	97	91	85	87298
1100	115	115	113	107	105	100	94	86	96028
1200	117	117	115	110	107	103	97	89	10475
1300	118	119	118	112	109	106	100	92	113488
1400	120	120	120	114	111	108	102	95	122218

Size 600

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
300	89	86	81	78	74	68	62	57	35431
325	91	88	83	80	76	70	65	59	38383
350	93	90	86	82	79	72	67	61	41336
375	95	92	88	84	81	74	68	63	44288
400	97	93	90	85	82	76	70	65	47241
425	99	95	92	87	84	78	72	67	50194
450	101	96	93	88	85	80	74	69	53146
475	103	98	95	89	87	82	76	70	56099
500	105	99	96	91	88	84	77	72	59051
550	105	100	97	93	88	84	77	72	64957
600	106	103	99	95	91	85	79	73	70862
650	107	105	101	98	93	87	81	75	76767
700	109	107	103	100	95	89	83	77	82672
750	110	109	105	102	97	92	85	79	88577
800	112	110	107	103	99	94	87	81	94483
850	113	112	108	105	101	95	89	83	10038
900	114	113	110	106	102	97	91	84	106293
950	116	114	111	108	104	98	93	86	112198
1000	117	116	113	109	105	100	94	88	118103
1100	118	118	116	110	108	103	97	89	129914
1200	120	120	118	113	110	106	100	92	141724

Size 660

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
275	89	86	81	79	74	68	63	57	43228
300	92	89	84	81	77	71	65	60	47158
325	94	91	86	83	79	73	67	62	51088
350	96	93	89	85	81	75	69	64	55018
375	98	95	91	87	83	77	71	66	58948
400	100	96	93	88	85	79	73	68	62878
425	101	98	95	90	87	81	75	70	66808
450	104	99	96	91	88	83	77	72	70738
475	106	101	98	92	90	85	79	73	74668
500	108	102	99	94	91	86	80	75	78598
550	108	103	100	96	91	86	80	75	86457
600	109	106	102	98	94	88	82	76	94317
650	110	108	104	101	96	90	84	78	10217
700	112	110	106	103	98	92	86	80	110037
750	113	111	108	104	100	94	88	82	117897
800	115	113	110	106	102	96	90	84	125757
850	116	115	111	108	104	98	92	86	133616
900	117	116	113	109	105	100	94	87	141476
950	119	117	114	111	106	101	96	89	149336
1000	120	119	116	112	108	103	97	91	157196

Size 730

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
275	92	90	84	82	77	71	66	60	58494
300	95	92	87	84	80	74	68	63	63811
325	97	94	89	86	82	76	70	65	69129
350	99	96	92	88	85	78	72	67	74447
375	101	98	94	90	86	80	74	69	79764
400	103	99	96	91	88	82	76	71	85082
425	104	101	98	93	90	84	78	73	90400
450	107	102	99	94	91	86	80	75	95717
475	109	104	101	95	92	88	82	76	101035
500	111	105	102	97	94	90	83	78	106352
550	111	106	103	99	94	90	83	78	116988
600	112	109	105	101	97	91	85	79	127623
650	113	111	107	104	99	93	87	81	138258
700	115	113	109	106	101	95	89	83	148894
750	116	115	111	108	103	98	91	85	159529
800	118	116	113	109	105	99	93	87	170164
850	119	118	114	111	107	101	95	89	180800
900	120	119	116	112	108	103	97	90	191435
950	122	120	117	114	110	104	99	92	202070
1000	123	122	119	115	111	106	100	94	212705

Size 807

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
250	93	90	85	82	78	71	66	60	71974
275	95	93	87	85	81	74	69	63	79171
300	98	95	90	87	83	77	71	66	86369
325	100	97	92	89	86	79	74	68	93566
350	102	99	95	91	88	81	76	70	100764
375	104	101	97	93	90	83	77	72	107961
400	106	102	99	94	91	85	79	74	115159
425	108	104	101	96	93	87	81	76	122356
450	110	105	102	97	94	89	83	78	129553
475	112	107	104	98	96	91	85	80	136751
500	114	108	105	100	97	93	86	81	143948
550	114	109	106	102	97	93	86	81	158343
600	115	112	108	104	100	94	88	82	172738
650	116	114	110	107	102	96	90	84	187133
700	118	116	112	109	104	98	92	86	201528
750	119	118	114	111	106	101	94	88	215923
800	121	119	116	112	108	103	96	90	230318
850	122	121	117	114	110	104	98	92	244712
900	123	122	119	115	111	106	100	93	259107

Size 890

RPM	Octave Band Limits (CPS)								CFM WOV
	45 90	90 180	180 355	355 710	710 1400	1400 2800	2800 5600	5600 11200	
250	96	93	88	85	81	74	69	63	96365
275	98	96	90	88	84	77	72	66	106001
300	101	98	93	90	86	80	74	69	115638
325	103	100	95	92	88	82	77	71	125274
350	105	102	98	94	91	84	79	73	134911
375	107	104	100	96	92	86	80	75	144547
400	109	105	102	97	94	88	82	77	154184
425	111	107	104	99	96	90	84	79	163820
450	113	108	105	100	97	92	86	81	173457
475	115	110	107	101	99	94	88	82	183093
500	117	111	108	103	100	96	89	84	192730
550	117	112	109	105	100	95	89	84	212003
600	118	115	111	107	103	97	91	85	231276
650	119	117	113	110	105	99	93	87	250549
700	121	119	115	112	107	101	95	89	269822
750	122	121	117	114	109	104	97	91	289095
800	124	122	119	115	111	106	99	93	308368
850	125	124	120	117	113	107	101	95	327641

The sound power level ratings shown are in decibels, referred to 10^{-12} watts calculated per AMCA Standard 301. Values shown are for inlet Lwi sound power

Sample Specifications

TUB - Tubular Centrifugal Fan

General – Furnish and install, as shown on the plans, PennBarry Tubular Centrifugal fans of the non-overloading design and of the arrangement indicated (1, 3, 9). Unless otherwise directed, fans shall conform to the layout on the drawings.

Fans shall be constructed of low carbon steel and painted with an approved coating. Each fan shall receive a documented inspection by a qualified inspector before leaving the factory. The inspection shall include welding, dimensions, bearings and overall workmanship.

Performance – Fan air performance shall be based on tests conducted in accordance with AMCA Standard 210. Fans shall be non-overloading and shall have a sharply rising pressure characteristic extending through the operating range and continuing to rise well beyond the efficiency peak to assure quiet and stable operation under all conditions. Horsepower characteristics shall be truly self-limiting and shall reach a peak in the normal selection area.

Wheels – Wheels shall be in accordance with the standard sizes adopted by AMCA for tubular centrifugal fans. Wheels shall be the high efficient, non-overloading airfoil type only. Airfoil blades shall be die-formed, double-surface type blades continuously welded (stitch welding unacceptable) to a hub plate and wheel cone. All fan wheels shall have tapered, smooth flowing, wheel cones (flat wheel cones unacceptable). The standard coating shall be an industrial alkyd enamel.

Shaft and Bearings – Shafts shall be AISI C-1045 hot rolled steel turned, ground and polished. The shaft's first critical speed shall be at least 142% of the fan's maximum operating speed. This critical speed will refer to the top of the speed range for the fan's AMCA class.

Bearings shall be designed for heavy-duty service with a minimum L_{10} life of [40,000] [80,000] hours. This performance is based on the maximum operating speed of the fan's AMCA class, the operating temperature of the fan and the horsepower. Bearings shall be heavy-duty, self-aligning pillow block type. Pillowblock bearings shall be either single row ball or double row spherical roller type.

Balancing – Wheels shall be dynamically balanced, individually to ANSI S2.19, G6.3. Assembled fans shall then be dynamically balanced using a vibration analyzer to measure velocity. The final reading **shall not exceed 0.1 inches per second** at the fan shaft speed. The exact level of vibration shall be recorded on the fans as proof of the final dynamic balance at the factory.

Accessories – Accessories shall be provided as called for in the plans and specifications. Optional accessories include belt guard, weather cover, bolted access door, quick open access door, drain, variable inlet vanes with stainless steel rods, inlet companion flange, discharge companion flange, inlet screen, discharge screen, shaft seal, discharge cap, curb cap, spark resistant construction and vibration isolators.

Sound Power Levels – Manufacturer shall provide sound power ratings in the eight octave bands. Sound power levels shall be based on AMCA Standard 301. Sound power ratings shall be in decibels referenced to 10^{-12} watts.

Submittals – Submittals for approval of equipment shall include _____ copies of outline drawings, sound power ratings and pressure-volume performance curves showing point of operation.

General Construction – Housings shall be of heavy gauge steel, structurally reinforced and suitably braced to prevent vibration or pulsation, and shall be arc welded throughout. Lifting lugs shall be welded to the housing to facilitate handling of the fans. Straightening vanes shall be standard construction to assure maximum efficiency and lowest noise levels.

Trak SwingOut – The entire rotating assembly, including the wheel, bearings, shaft, motor and pulleys shall be mounted on a single, hinged SwingOut door to eliminate the need for disassembly for servicing or cleaning.

Inlets shall be fully streamlined and the inlet cone assembly shall be removable through the SwingOut servicing door. The inlet cone shall be designed to overlap the wheel cone to minimize air bypass and noise levels and maximize efficiency. The wheel and inlet cone overlap shall be established by positioning the inlet cone into the wheel, eliminating the need to raise and lower the heavy door and rotating assembly into place. The inlet cone shall retract by means of a handle located on the outside of the unit. In its retracted position, the inlet cone shall permit free clearance for the door and rotating assembly to swing in an outward direction, minimizing the force needed to break any coating seals which may develop inside the fan during operation. A roller on the bottom of the door and a roller track on the housing shall be provided to allow easy door closure and to assure proper wheel alignment.

Door gasketing shall be heavy duty, neoprene compound, extruded P-mold design to ensure gas-tight construction and prevent leakage during operation and washdown cycles. A positive locking mechanism shall be provided to prevent accidental opening of the SwingOut door by unauthorized personnel.

MaxAccess – Two hinged SwingOut doors, reinforced with steel ribs, shall be installed to allow direct access to the airstream. All sizes except 222 shall be constructed with a large wheel removal panel in addition to the SwingOut doors.

Inlets shall be fully streamlined and the inlet cone shall overlap the wheel cone to minimize air bypass, reduce noise levels, and maximize efficiency.

One Year Limited Warranty

Tubular Centrifugal Fan - TUB

What Products Are Covered

PennBarry Commercial and Industrial Fans (each, a "PennBarry Product")

One Year Limited Warranty For PennBarry Products

PennBarry warrants to the original commercial purchaser that the PennBarry Products will be free from defects in material and workmanship for a period of one (1) year from the date of shipment.

Exclusive Remedy

PennBarry will, at its option, repair or replace (without removal or installation) the affected components of any defective PennBarry Product; repair or replace (without removal or installation) the entire defective PennBarry Product; or refund the invoiced price of the PennBarry Product. In all cases, a reasonable time period must be allowed for warranty repairs to be completed.

What You Must Do

In order to make a claim under these warranties:

1. You must be the original commercial purchaser of the PennBarry Product.
2. You must promptly notify us within the warranty period of any defect and provide us with any substantiation that we may reasonably request.
3. The PennBarry Product must have been installed and maintained in accordance with good industry practice and any specific PennBarry Blower recommendations.

Exclusions

These warranties do not cover defects caused by:

1. Improper design or operation of the system into which the PennBarry Product is incorporated.
2. Improper installation.
3. Accident, abuse or misuse.
4. Unreasonable use (including any use for non-commercial purposes, failure to provide reasonable and necessary maintenance as specified by PennBarry, misapplication and operation in excess of stated performance characteristics).
5. Components not manufactured by PennBarry.

Limitations

1. In all cases, PennBarry reserves the right to fully satisfy its obligations under the Limited Warranties by refunding the invoiced price of the defective PennBarry Product (or, if the PennBarry Product has been discontinued, of the most nearly comparable current product).
2. PennBarry reserves the right to furnish a substitute or replacement component or product in the event a PennBarry Product or any component of the product is discontinued or otherwise unavailable.
3. PennBarry's only obligation with respect to components not manufactured by PennBarry shall be to pass through the warranty made by the manufacturer of the defective component.

General

The foregoing warranties are exclusive and in lieu of all other warranties except that of title, whether written, oral or implied, infact or in law (including any warranty of merchantability or fitness for a particular purpose).

PennBarry heareby disclaims any liability for special, punitive, indirect, incidental or consequential damages, including without limitation, lost profits or revenues, loss of use of equipment, cost of capital, cost of substitute products, facilities or services, downtime, shutdown or slowdown costs.

The remedies of the original commercial purchaser set forth herein are exclusive and the liability of PennBarry with respect to the PennBarry Products, whether in contract, tort, warranty, strict liability or other legal theory shall not exceed the invoiced price charged by PennBarry to its customer for the affected PennBarry Product at the time the claim is made.

Inquiries regarding these warranties should be sent to: PennBarry, 1401 North Plano Road, Richardson, TX 75081.

Other PennBarry Products

CENTRIFUGAL PRODUCTS

Domex
Centrifugal
Roof Exhausters

Fumex Fatrap
Kitchen Hood Centrifugal
Roof Exhausters

Zephyr
Ceiling and Inline Fans

Dynamo
Centrifugal Blowers

Centrex Inliner
Centrifugal Inline Fans

LC Dynafan
Low Contour Centrifugal
Roof Exhausters

ESI
Efficient Silent
Inline Fan

Fume Exhaust
Curb Mounted
Centrifugal Fans

AXIAL / GRAVITY PRODUCTS

Breezeway
Propeller Wall Fans

HI-EX
Power Roof Ventilator

Tubeaxial
Inline Fans

Vaneaxial
Inline Fans

Powered Airette
Axial Roof Ventilators

Airette
Gravity Intake/Relief Hood

Domex Axial
Axial Roof Ventilators

Axcentrix
Bifurcator Fan

For more information contact your local PennBarry Sales Manufacturer Representative or visit us at **www.PennBarry.com**

PENN BARRY