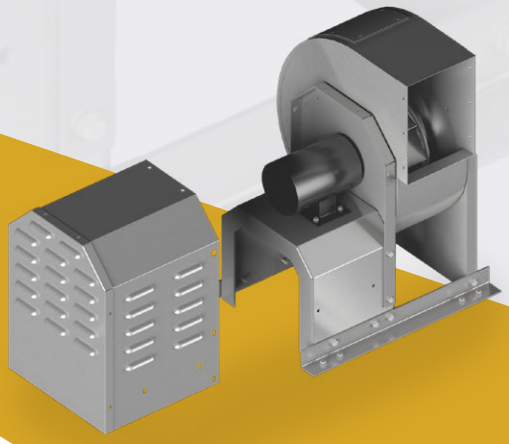
DYNAMO

Utility Blower



PENN BARRY™

BULLETIN D18

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INTRODUCTION

Utility set

Dynamo centrifugal fans are SWSI, Class I, Arrangement 10 general purpose air moving devices. They are used for supply or exhaust applications in commercial, institutional, and industrial HVAC systems.

At the heart of the Dynamo is a computer designed, backward inclined, centrifugal wheel. This heavy duty non-overloading aluminum wheel (steel for heat & smoke removal) assures low noise and high efficiency performance.

The fan wheel, venturi inlet, housing, and frame are engineered to provide maximum performance and reliability.

Fan housings utilize heavy-gauge materials and employ welded construction. Motors and all drive components have been carefully engineered and tested for durability and performance. A wide range of accessories are available to meet various application requirements.

Dynamo centrifugal blowers are designed and built to provide the end user with a highly efficient and extremely reliable air moving unit. These units offer many features as standard equipment that other manufacturers consider options. Each Dynamo is fully assembled, factory set at the specified RPM, and test run prior to shipment.

Dynamo direct drive series

model: D

- Static pressure up to 2.9" wg.
- Direct drive - flow capacity up to 5,000 CFM

Dynamo belt drive series

model: D (B)

- Static pressure up to 6.8" wg.
- Belt drive - flow capacity up to 45,000 CFM

CERTIFICATIONS & LISTINGS

AMCA certification

PennBarry certifies that the Dynamo direct drive and belt drive models shown herein (excluding model D44) 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 if sound is also certified) and comply with the requirements of the AMCA Certified Ratings Program.

UL and cUL certification

Standard Dynamo fans carry the UL label, UL705 (ZACT/ZACT7), file #E28413.

Dynamo fans with "Fatrap" configuration carry the UL label, UL762 (YZHW/YZHW7), file #MH1068 (Belt Drive Only.)

Dynamo fans with the heat and smoke removal option carry the UL label, UL793 (ZAXH/ZAXH7), file #MH19473 (Belt Drive Only).

High Velocity Hurricane Zone (Hvhz)

Miami-Dade NOA # 17-0112.09
Florida Product Approval #21559

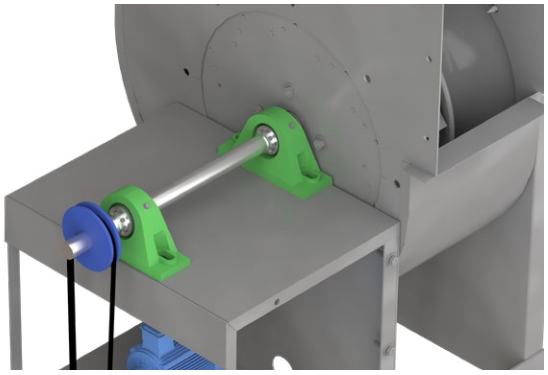
FEATURES & BENEFITS

Self aligning pillow block bearings

Bearings are sized for a minimum L50 life exceeding 200,000 hours of operation. They require no maintenance other than periodic lubrication. Standard Zerk lube fittings allow for ease of lubrication. Extended lube lines are available as an option to facilitate lubrication when a weather cover is used.

Solid steel shafts

Sized to withstand a minimum of 125% of maximum catalogued operating speed, shafts are precision ground, polished, and treated for rust resistance.



Typical Drive, Shaft, and Bearings Assembly

Durable housings

Dynamo blowers are manufactured of heavy gauge zinc coated galvanized steel to insure a long, corrosion resistant life. Galvanized steel resists rust and will help maintain the unit's integrity even in environments such as coastal regions where salt air will rapidly deteriorate black iron, even when it is painted.

Versatile operation

All unit sizes are field rotatable to any of eight discharge positions. Both clockwise and counter-clockwise rotations are available.

Motors and drives

The motors and belt drives are pre-set at the factory to the specified RPM. These drives allow for system balancing in the field. All pulleys are sized for at least 150% of driven horsepower.

High quality, open drip proof motors are standard. Totally enclosed, explosion proof, and two speed motors are available.

Heavy duty support frame

The heavy duty support frame provides a strong structural foundation for the motor and drive assembly, as well as rigid reinforcement for housing members.

Standard gasketed access door

The standard gasketed access door enables easy maintenance of internal components.

Inlet angle flange

The inlet angle flange is standard to facilitate connection to the duct work.

Spark resistant aluminum wheels

Dynamo blowers use PennBarry's computer designed aluminum wheel. They are backward inclined and non-overloading, using heavy gauge aluminum to provide AMCA "C" spark resistant construction. AMCA "B" construction is available as a moderate cost option. This wheel design provides a high level of static efficiency while reducing start-up torque, thus extending drive component life. All wheels are statically and dynamically balanced for quieter operation.

Integral lifting lugs

All Dynamo units come standard with integral lifting lugs. These are built into the back support structure of the scroll housing and can be used with or without the weather cover installed.

Stiffener Angles

Heavy gauge angles, appropriately sized by unit, mean easy assembly mounting to support surface.

OPTIONS & ACCESSORIES

Dampers

Dampers can be installed at the discharge outlet to prevent backdrafts when fans are not in operation. Dampers can be used when outlet velocities do not exceed 4000 FPM for all discharge positions. Gravity dampers are not effective for use in top-angular-down, bottom-angular-down or down blast discharge positions.

Disconnect Safety Switches

Switches in housings are available to turn fans on and off for service only. Field wiring is required.

Drain connections

Drains are made of 2" pipe which is mechanically fastened and sealed to prevent leakage at the lowest point of the scroll. All fans can be supplied with drains except bottom horizontal discharge, where it is not required.

Extended lube lines

Preloaded at the factory, lube lines allow bearing maintenance when a weather cover is installed or when easy access to the bearings is unavailable.

Finishes

Coatings such as Polyester Powder Coat, Epoxy Powder Coat, Phenolic Epoxy Powder Coat, and others are available. See the coatings brochure for details.

Firestat

Firestat switch automatically disconnects the unit when the temperature of the air being exhausted exceeds a preset rating.

Stainless Steel Hardware

If another material is desired for the unit's hardware, stainless steel hardware is available for selection.

Stainless Steel Shaft

If another material is desired for the motor shaft, stainless steel shafts are available for selection.

Steel wheel (Heat & Smoke removal)

The wheel is a standard duty, all welded wheel (standard duty and high pressure belt drive). The blades are curved for improved air performance while increasing their strength and rigidity. The wheel assembly is fully welded to provide extremely durable and consistent performance. The wheel is dynamically balanced. Balancing weights are mechanically attached to the inside of the rims of both the back plate and wheel inlet. This allows a precise placement of the weights anywhere within a full 360° range on two separate planes, without the possibility of detachment.

Variable Frequency Drives

Variable frequency drives (VFDs) are designed to meet performance requirements while increasing efficiency. By varying the fan motor input frequency and voltage, the VFD controls the motor speed and torque, helping to improve productivity and lower energy consumption. The VSC and VSA are ideal for both new and retrofit fan applications. Shipped loose and separately.

Variable inlet vanes

Also known as vortex dampers, vanes provide efficient regulation of fan output over all operating ranges and substantially increases energy efficiency when full fan output is unnecessary. This accessory is suitable for inlet temperatures up to 200ºF. (Not available for D10.)

Vibration isolators, hangers, and rails

These items are available in both rubber-in-shear and spring-type to mitigate residual vibration transmission. All isolators are properly sized to the unit. Floor flex pads are also available.

Spark-resistant construction

AMCA "C" is standard. AMCA "B" is available as an option. AMCA standards offer the following definitions and notes concerning spark-resistant construction:

C The fan shall be so constructed that a shift in the impeller or shaft will not permit two ferrous parts of the fan to rub or strike.

B The fan shall have a non-ferrous impeller and non-ferrous ring about the opening through which the shaft passes. Ferrous hubs, shafts and hardware are allowed provided construction is such that a shift in impeller or shaft will not permit two ferrous parts of the fan to rub or strike. Steps must also be taken to insure that the impeller, bearings and shaft are adequately attached and/or restrained to prevent a lateral or axial shift in these components.

Notes:

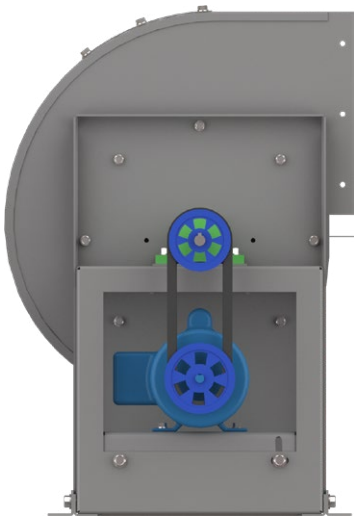
1 No bearings, drive components or electrical components shall be placed in the air or gas stream unless they are constructed or enclosed in such a manner that failure of that component cannot ignite the surrounding gas stream.
2 The user shall electrically ground on all fan parts.
3 For this standard, non-ferrous material shall be material with less than 5% iron or any other material with demonstrated ability to be spark-resistant.
4 The use of aluminum or aluminum alloys in the presence of steel which has been allowed to rust required special consideration. Research by the U.S. Bureau of Mines and others has shown that aluminum impellers rubbing on rusty steel may cause high-intensity sparking.

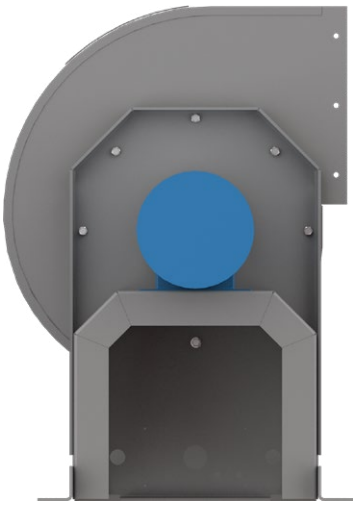
The use of the above standard in no way implies a guarantee of safety for any level of spark resistance. Spark-resistant construction does not protect against ignition of explosive gases caused by catastrophic failure or from any airstream material that may be present in a system.

Arrangement 4 or 10 single width, single inlet

Fans are constructed with the motor and bearings (if apply) out of the mainstream. For arrangement 10, motors are mounted inside of the pedestal on an adjustable motor plate. For arrangement 4, motors are mounted on top of a pedestal. Both arrangements allow for the use of a weather cover and can be used in ducted or non-ducted applications.

Dynamo fans are one component of a system. As such, fan performance is directly effected by that system. It is critical that system designers determine the actual system losses to ensure that the actual flow is as specified in the system design.





An extensive selection of accessory items to cover various application requirements is available at additional cost.

Inlet and outlet guards

Inlet and Outlet Guards provide safety in non-ducted installations. Guards are constructed of expanded steel in a removable frame attached to the fan housing. They are easily removed by maintenance personnel for cleaning or inspection.

Ventilated weather cover

The weather cover protects the shaft, bearings, motor and drive components from weather and other detrimental conditions. Galvanized steel covers are easily removed and reinstalled with thumb screws, requiring no tools. On larger sizes, the cover incorporates a removable end panel for easy access to drive components without removing the entire cover. Weather covers also act as drive guards to protect personnel and drive assemblies.

Flanges

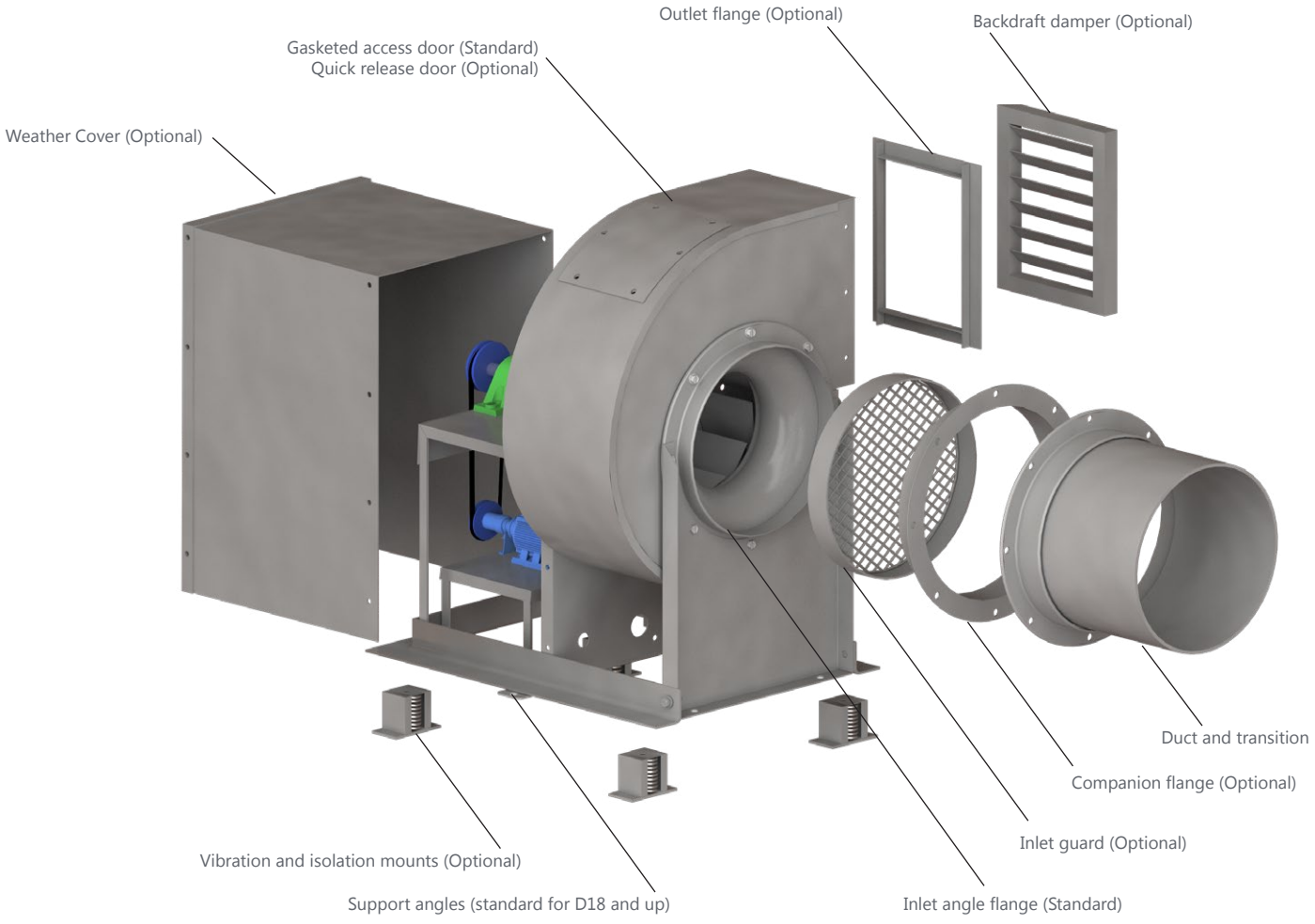
Outlet flanges facilitate the connection of duct work. Companion flanges are also available when the Dynamo is connected to duct work by a transition section. The companion flange fits the fan to the transition and guarantees proper sizing.

Access door

While a gasketed access door is standard, an optional quick release type door is available to allow for periodic inspection and cleaning.

High Wind Construction

High wind construction Dynamo fans are specifically designed for high velocity hurricane zones (HVHZ). The Dynamo models are designed to withstand 150 MPH winds in accordance with Miami-Dade and Florida Building Code standards. The units are 3rd party tested and certified through a 3rd party Professional Engineer (P.E.) to meet these strict standards. Installation details are provided and since there are no tie downs or external braces required for attaching the unit to the roof or curb this makes installation simple and easy. A wide range is offered to meet all of your ventilation needs.



DYNAMO HEAT & SMOKE CONFIGURATION - BELT DRIVE UNITS

UL power ventilator for smoke control

The Heat and Smoke (-HS) option provides a superior option for smoke control. The UL smoke control listing references UL705, UL793, Industrial Risk Insurers (IRI), and Southern Building Code Congress International (SBCI). The UL standard requires the fan to run at 500°F for 4 hours (IRI) and 1000°F for 15 minutes (SBCCI). PennBarry Heat and Smoke Removal configured Dynamo units are listed at 500°F for 4 hours and 1000°F for 41 minutes. The additional 26 minutes at 1000°F will buy precious time in the event of a fire. The –HS option is available for all sizes of the Dynamo line.

DYNAMO FATRAP CONFIGURATION - BELT DRIVE UNITS

Dynamo fans can be specially configured for food service applications with the addition of a group of accessories that either meets a requirement or eases installation requirements according to NFPA 96. NFPA 96 "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations" is the generally recognized authority nationwide for restaurant installation requirements. However, local codes may vary.

The special Dynamo configuration is called a "Fatrap." Fatrap configured fans are ideal for use in commercial kitchens over grills, charcoal broilers, deep fat fryers, steam tables, ranges, dishwashers, and other appliances.

UL 762 listing

Fatrap configured Dynamo fans are listed at 500°F, which is 200°F higher than UL requirements and is the highest in the industry.

Dynamo Dynapak fans consist of a standard up blast Dynamo unit attached to a fully welded inlet plenum and mounted on a curb cap. The resulting curb mounted assembly provides a unique solution to restaurant grease exhaust applications and is UL762 Listed. The Inlet plenum is equipped with a triple sealed removable access panel which allows cleaning of the fan and duct work without removal or hinging. This eliminates potential roof or fan damage caused by cleaning crews. All unwelded mating surfaces (to allow for service) are sealed with high temperature, UV rated silicone.

The high velocity discharge of the exhaust air stream helps to disperse contaminants away from the restaurant and minimize the cloud that sometimes forms as a result of high volume, intense cooking. The high static pressure capability of these heavy duty blowers (sometimes greater than 5" w.g.) makes them ideal for long, complicated duct runs or for use with specialized filtration equipment. An easily removable weather cover allows access to motors, belts, bearings, etc., for inspection or maintenance.

Dynapak units are available in sizes D10DPFT, D13DPFT, D16DPFT, D20DPFT & D24DPFT. For performance data refer to the corresponding Dynamo units shown on pages 14 through 22.

Grease collector / separator box

Designed for easy installation, the grease is routed from a single swiveling collection spout to an amply sized durable galvanized steel box, trapping grease and residue, and avoiding discharge onto the roof surface. Additionally, these boxes separate the water from the grease, prolonging the time required between periodic maintenance.

Ventilated curbs

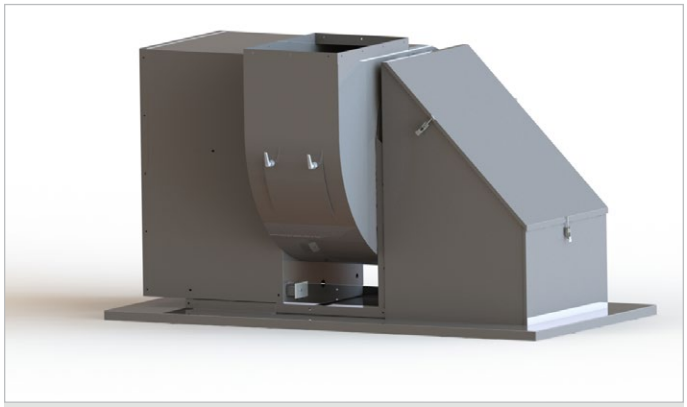
NFPA 96 requires the use of ventilated mounting curbs to provide an approved arrangement for connecting a range hood and duct work to the roof fan for buildings two stories or higher. PennBarry's ventilated mounting curbs, 18" high, comply with that standard when properly installed. Ventilated curbs have a flat mounting flange for fastening directly to the roof deck. This flange should be securely fastened and flashed to ensure weather-tightness. Ventilated pedestals are designed to fit on an existing curb. They provide cap flashing when so installed.

Pre-wired junction box

A weather-proof junction box is factory wired and mounted to the housing exterior. An appropriately sized disconnect switch is commonly selected as an additional option. These items meet the code requirements for positive electric shut-off.

DYNAPAK & DYNAPAK FATRAP

Curb mounted utility set with integral inlet box



Dynapak

Includes all the features of the dynamo blower PLUS

Integral galvanized curb cap
- Eliminates need for costly customized field fabricated transition
- Comes with fully welded corners
- Equipped with pre-punched mounting holes

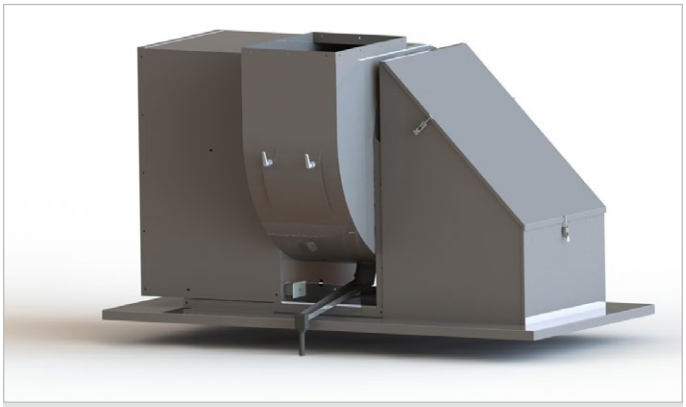
Fully welded inlet box
- Includes gasketed removable access cover with quick release latches
- Allows easy duct cleaning and inspection

Vented weather cover provided as standard
- Allows full access for normal maintenance

High temperature sealant provided
- Between scroll casing and side

High velocity discharge
- Throws contaminants further into the atmosphere
- Reduces possibility of contaminant collection on roof

Dynapak fatrap configuration



Dynapak Fatrap

Includes all the features of the dynamo blower PLUS

UL 762 Listing
- Rated at 500ºF, highest in the industry

Pre-wired weatherproof junction box

Grease collector
- Separates the water from the grease
- Provides ample space
- Lengthens time required between cleaning
- Collects from a single swiveling collection spout

Integral galvanized curb cap
- Eliminates need for costly customized field fabricated transition
- Equipped with fully welded corners
- Pre-punched mounting holes

Curb mounted utility set with integral inlet box

Available for dynamo models
- D10DP, D13DP, D16DP, D20DP and D24DP

Typical applications
- Laboratory hoods
- Industrial process ventilation
- Dry cleaning

Dynapak fatrap configuration

Fully welded inlet box
- Includes gasketed removable access cover with quick release latches
- Allows easy duct cleaning and inspection

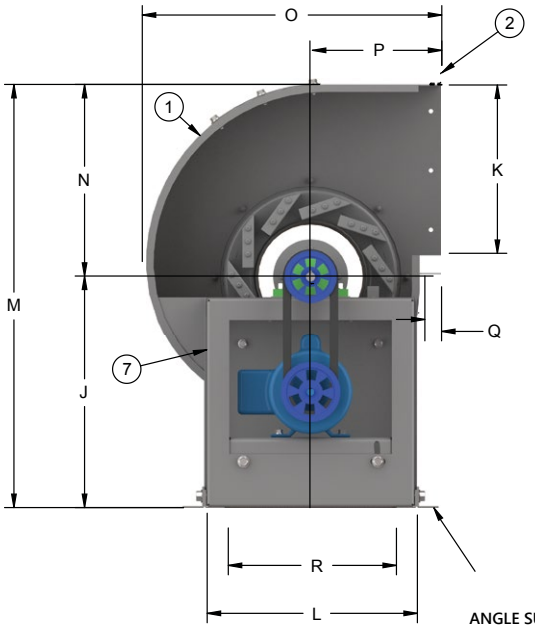
Vented weather cover provided as standard
- Allows full access for normal maintenance

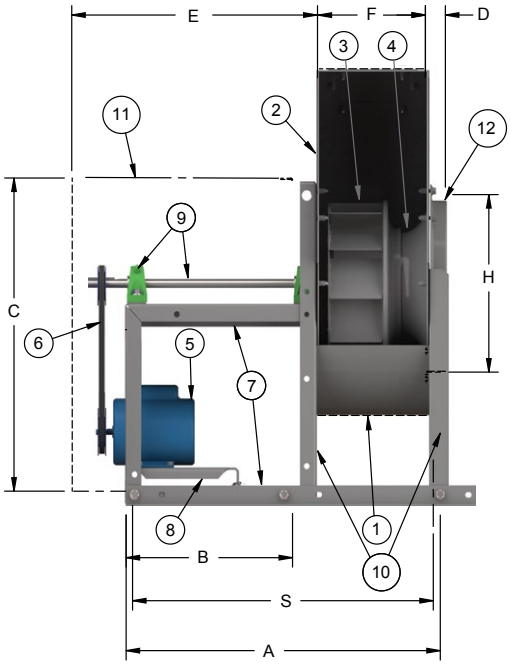
High temperature sealant provided
- Between Scroll Casing and Sides

High velocity discharge
- Throws contaminants further into the atmosphere
- Reduces possibility of contaminant collection on roof

Available for dynamo models
- D10DPFT, D13DPFT, D16DPFT, D20DPFT and D24DPFT

GENERAL PURPOSE UTILITY FANS - BELT DRIVE OPTION





1 Blower scroll housing
2 Outlet duct flange (optional)
3 Centrifugal wheel (aluminum non-overloading)
4 Spun inlet with Cutoff (D16 and up)
5 Ball Bearing motor
6 Belt and pulleys (where required twin groove belts and pulleys will be provided)
7 Drive frame support assembly
8 Adjustable motor mounting plate
9 Fan shaft and bearings
10 Support legs with mounting holes
11 Belt and bearing enclosure (optional)
12 Inlet angle flange

Unit Size	Wheel Dia.	Shaft Dia.	A	B	C	D	E	Outlet		Inlet H	J	L	M	N	O	P	Q	R	S	Mgt. Hole Dia.	Ship Wts.
								F	K												
6	11 1/4	3/4	24	14 1/2	22 1/2	1 1/4	18 1/2	8 1/4	11 1/4	11 1/4	15 1/2	14	28 3/8	12 7/8	20	8 5/8	1 1/2	10	22 3/4	1/2	130
7	11 1/4	3/4	24	14 1/2	22 1/2	1 1/4	18 1/2	8 1/4	11 1/4	11 1/4	15 1/2	14	28 3/8	12 7/8	20	8 5/8	1 1/2	10	22 3/4	1/2	130
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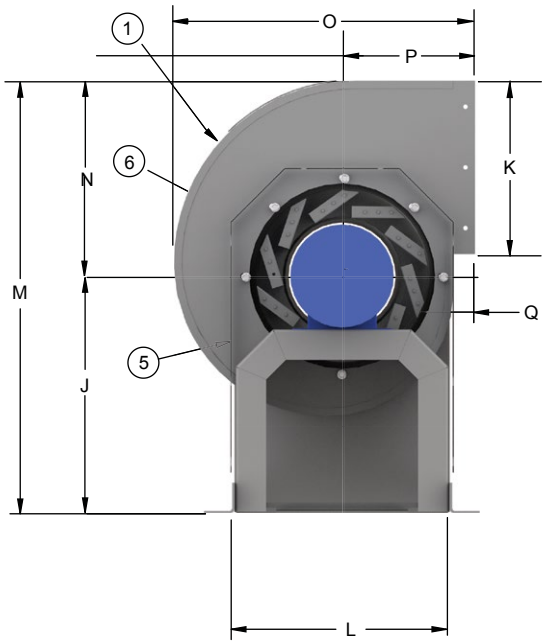
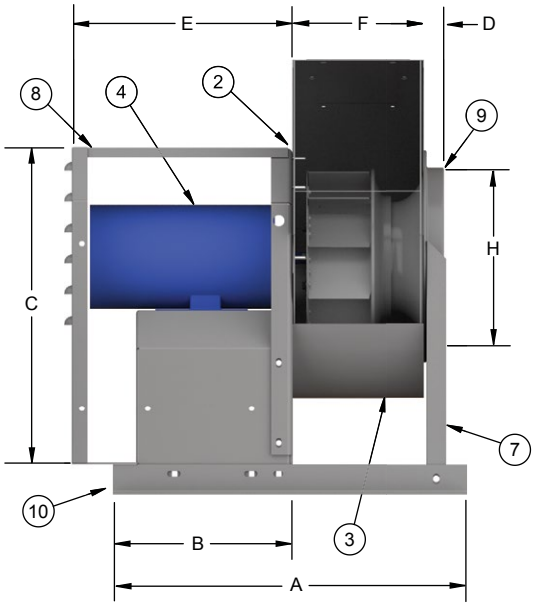
44	45	2 11/16	64 13/16	25 3/8	78	3 1/4	36 5/16	35 1/2	46 13/16	46	52 1/4	58 11/16	99	46 3/4	79 7/8	37 1/2	3 3/4	52 1/2	61 7/8	1/2	1875

*All dimensions in inches. *Shipping weights include standard motors, drives, and weather cover. Weights will vary depending on motor selection and accessories used.*

GENERAL PURPOSE UTILITY FANS - DIRECT DRIVE OPTION





1 Drive frame support
2 Support legs with mounting holes
3 Motor enclosure (optional)
4 Inlet angle flange
5 Angle supports
6 Blower scroll housing
7 Centrifugal wheel (aluminum non-overloading)
8 Spun inlet
9 Motor
10 Motor mount

Unit Size	Wheel Dia.	Shaft Dia.	A	B	C	D	E	Outlet		Inlet H	J	L	M	N	O	P	Q	Mgt. Hole Dia.	Ship Wts.
								F	K										
6	11 1/4	3/4	23	11 3/4	20 1/4	1 1/4	14 1/4	8 1/2	11 1/4	11 1/2	15 1/2	14	28 1/4	12 3/4	19 3/4	8 3/4	1 1/2	1/2	130
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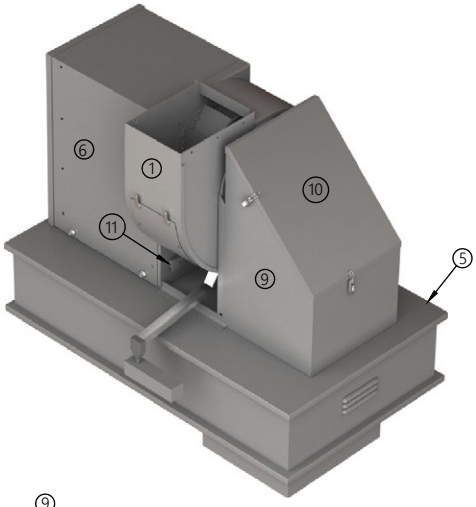
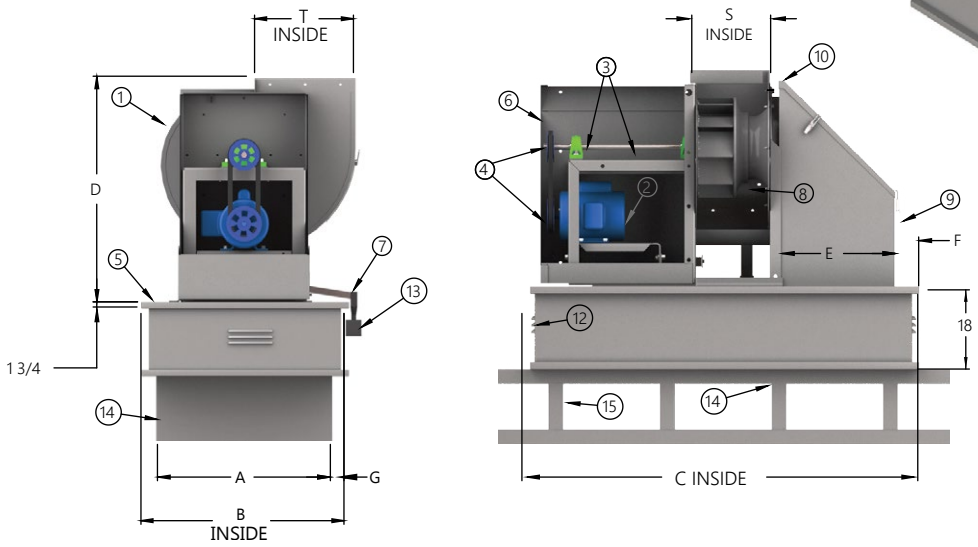
18	18 1/2	1 3/16	30	12 1/2	32 1/2	1 1/4	14 1/2	14 1/2	19 1/2	19 1/4	24	22 1/2	45 1/4	21 1/4	32	13 3/4	1 3/4	1/2	274

*All dimensions in inches. *Shipping weights include standard motors, drives, and weather cover. Weights will vary depending on motor selection and accessories used.*

DYNAPAK (FATRAP) CURB MOUNT RESTAURANT EXHAUSTER





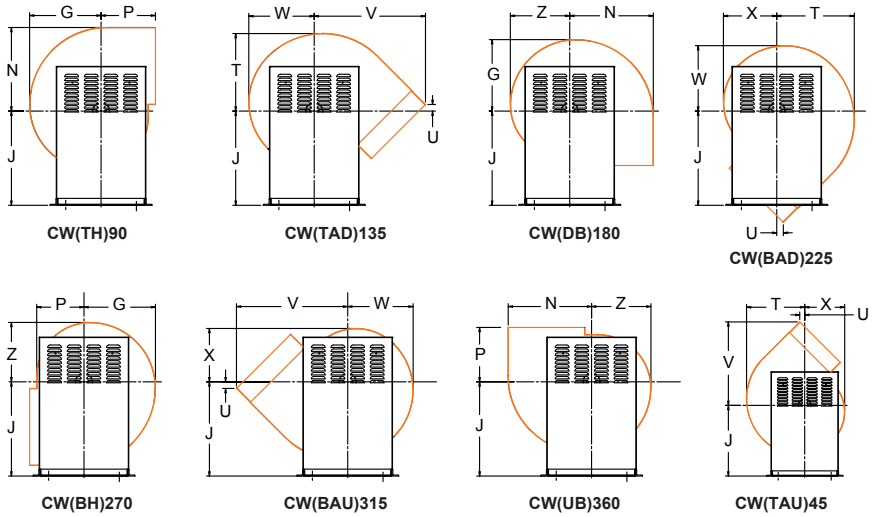
1 Blower scroll housing - upblast discharge
2 Ball bearing motor
3 Fan shaft and bearings
4 Belt and pulleys
5 Curb cap mounting base
6 Vented weather cover
7 Grease drain trough and downspout (Fatrap only)
8 Hinged and latched access door
9 Continuously welded plenum
10 Positively sealed access door with adjustable tension latches
11 Disconnect switch box
12 Vented prefabricated steel curb (optional)
13 Grease collection box (optional)
14 Welded exhaust duct (by others)
15 Roof structure (by others)

Model	Wheel Dia.	Shaft Dia.	A	B	C	D	E	F	G	S	T
D10DP	11 3/4	3/4	14 1/4	26 1/8	52 1/8	24 1/8	18 1/2	5	6	8 1/4	11 1/4
D13DP	13 5/8	1	17 1/2	28 1/8	56 1/8	33 5/8	18 5/16	5	5 3/16	10 1/2	14 3/8
D16DP	16 3/8	1 3/16	21	34 1/8	68 1/8	41 5/8	21 7/8	6	6 5/8	12 3/4	17 1/2
D20DP	20	1 3/16	24 1/2	36 5/8	76 1/2	48 1/2	25 5/16	6	7 13/16	14 3/4	21 3/4
D24DP	24 5/8	1 7/16	28 3/4	43 7/8	87 7/8	59 3/8	24 3/4	6	7 7/16	19	26

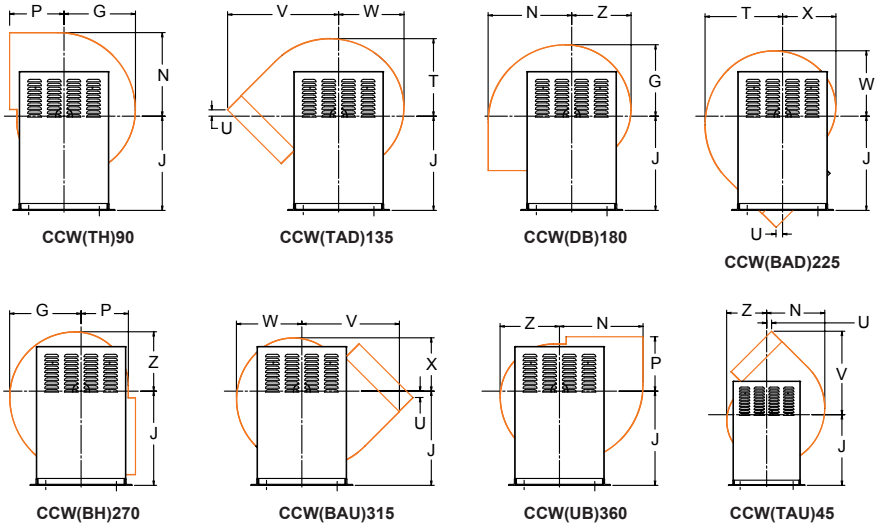
All dimensions in inches.

DISCHARGE POSITIONS & DIMENSIONS

Clockwise rotation - CW



Counterclockwise rotation - CCW



Rotational designations*

TH - Top horizontal
BH - Bottom horizontal
TAD - Top angular down
UB - Up blast
DB - Down blast
TAU - Top angular up
BAD - Bottom angular down
BAU - Bottom angular up

** Units will be supplied in the CW90(TH) position unless otherwise specified.*

Unit Size	G	J	P	T	U	V	W	X	Z
6	11 5/16	15 1/2	8 11/16	12 1/4	2 7/8	15 1/8	10 3/8	8 9/16	9 7/16
7	11 5/16	15 1/2	8 11/16	12 1/4	2 7/8	15 1/8	10 3/8	8 9/16	9 7/16
8	11 5/16	15 1/2	8 11/16	12 1/4	2 7/8	15 1/8	10 3/8	8 9/16	9 7/16
10	11 5/16	15 1/2	8 11/16	12 1/4	2 7/8	15 1/8	10 3/8	8 9/16	9 7/16
12	12 7/16	17	9 3/8	13 7/16	3 1/4	16 9/16	11 3/8	9 3/8	10 3/8
13	13 3/4	18	10 5/16	14 7/8	3 3/4	18 5/16	12 5/8	10 5/16	11 1/2
15	15 3/8	20	11 5/16	16 5/8	4 7/16	20 3/8	14 1/16	11 1/2	12 13/16
16	16 11/16	22	12 5/16	18 3/16	4 7/8	22 1/4	15 7/16	12 5/8	14
18	18 1/2	24	13 7/8	20 1/16	5 3/16	24 3/4	17	13 7/8	15 7/16
20	20	25 1/2	14 13/16	21 5/8	5 11/16	26 11/16	18 5/16	15	16 5/8
22	21 7/8	28 3/4	16 1/16	23 11/16	6 7/16	29 1/8	20 1/16	16 3/8	18 1/4
24	23 15/16	3 11/2	17 1/4	26	7 5/16	31 11/16	21 7/8	17 13/16	19 7/8
30	29 49/64	38	21 13/16	32 17/64	8 63/64	39 27/32	27 17/64	22 1/4	24 49/64
36	33 1/2	44	25 7/8	36	8 3/4	45 3/8	31	25 31/32	28 15/32

Rotation & discharge dimensions

The direction of rotation is determined from the drive side of the fan. On single inlet fans, drive side is always considered as the side opposite the fan inlet. Direction of discharge is determined per diagrams shown. Angle of discharge is referred to the vertical axis of the fan and designated in degrees.

All dimensions in inches.

DIRECT DRIVE MOTOR SELECTION

Green plus electronically commutated motor

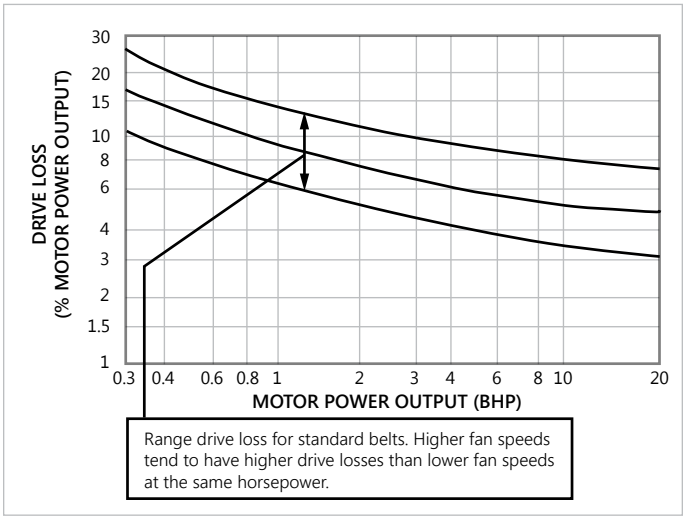
The Green Plus (GP) option utilizes EC motors to provide significantly greater efficiency, flexibility, and controllability over standard direct drive permanent split capacitor (PSC) motors. Using a potentiometer (optional), the Green Plus motors can be turned down to as low as 80% the max operating speed while maintaining 90% efficiency through the operating range. Additionally, the Green Plus can accept 0-10V input to tie to building management systems, allowing for savings in not only direct fan energy consumption but reducing the exhaust of conditioned air during off peak hours as well. All Dynamo Green Plus motors come for usage with 115V/208V-230V/460v, single phase or three phase, 50/60 Hz applications.

Model	Size	Tap	ECM HP
D	6	L	1/6
	6	M	1/6
	6	V	1/6
	6	S	1/6
	6	R	1/4
	6	Q	1/3
	7	L	1/6
	7	M	1/6
	7	V	1/6
	7	S	1/6
	7	R	1/4
	7	Q	1/3
	8	L	1/6
	8	M	1/6
	8	V	1/6
	8	S	1/6
	8	R	1/4
	8	Q	1/3
	10	L	1/6
	10	M	1/6
	10	V	1/6
	10	S	1/6
	10	R	1/4
	10	Q	1/3
	12	L	1/6
	12	M	1/6
	12	V	1/4
	12	S	1/2
	12	R	3/4
	12	Q	1/6
	13	L	1/6
	13	M	1/6
	13	V	1/6
	13	S	1/3
	13	R	1/2
	13	Q	3/4
	15	L	1/6
	15	M	1/6
	15	V	1/3
	15	S	3/4
	15	R	1
	15	Q	1 1/2
	16	L	1/6
	16	M	1/6
	16	V	1/2
	16	S	3/4
	16	R	2
	16	Q	2
	18	L	1/6
	18	M	3/4

BELT DRIVE MOTOR SELECTION

Belt drive losses

The AMCA Review Committee has developed the chart shown below for the purpose of estimating belt drive losses. To calculate total BHP (including drive losses): Find the BHP of your operating point on the x axis on the graph below. Follow the vertical line to the curves indicating the range of drive losses. Look at the y-axis on the left and find the drive loss percentage. Calculate the total BHP by adding the drive loss to the operating point BHP. For BHP's below 0.3, use 30%.



For totally enclosed, explosion proof, multi-speed and all 1.0 Service Factor motors, fan BHP plus drive losses should not exceed motor rated HP.

Graph reprinted from AMCA publication 203, with the express written permission from the Air Movement and Control Association, Inc., 30 West University Drive, Arlington Heights, IL 60004-1983.

Single phase

The values of full-load currents, shown on the left, are for motors running at usual speeds and motors with normal torque characteristics. Motors built for especially low speeds or high torques may have higher full-load currents, and multi-speed motors will have full-load current varying with speed, in which case the nameplate current ratings shall be used.

The voltages listed are rated motor voltages. The currents listed shall be permitted for system voltage ranges of 110 to 120 and 230 to 240 volts.

The table data from the NEC 2005 edition, table 430-148.

HP	115V	208V	230V
1/6	4.4	2.4	2.2
1/4	5.8	3.2	2.9
1/3	7.2	4.0	3.6
1/2	9.8	5.4	4.9
3/4	13.8	7.6	6.9
1	16.0	8.8	8.0

Three phase

The values of full-load currents, shown on the left, are typical for motors running at speeds usual for belted motors and motors with normal torque characteristics. Motors built for low speeds (1200 RPM or less) or high torques may require more running current, and multi-speed motors will have full-load current varying with speed, in which case the nameplate current ratings shall be used.

The voltages listed are rated motor voltages. The currents listed shall be permitted for system voltage ranges of 230 to 240 and 440 to 480 volts.

The table data from the NEC 2005 edition, table 430-150.

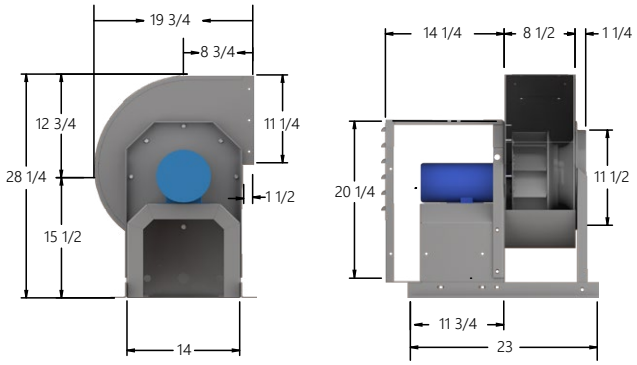
HP	208V	230V	460V
1/2	2.4	2.2	1.1
3/4	3.5	3.2	1.6
1	4.6	4.2	2.1
1 1/2	6.6	6.0	3.0
2	7.5	6.8	3.4
3	10.6	9.6	4.8
5	16.7	15.2	7.6
7 1/2	24.2	22	11
10	30.8	28	14
15	46.2	42	21
20	59.4	54	27
25	74.8	68	34

The amperages given here are approximate values only and represent averages compiled from the tables of leading motor manufacturers. Overload relay heaters should not be selected on the basis of these tables only. Heaters must be selected in accordance with the actual motor current as shown on the nameplate. It is also important that ambient temperatures of the area in which the motor control is located be taken into consideration when making heater selections. Ambient compensated overload relays are available for abnormal temperature conditions.

On most Belt Drive PennBarry roof exhausters, the motor synchronous speed is 1800 RPM.

DIRECT DRIVE PERFORMANCE DATA

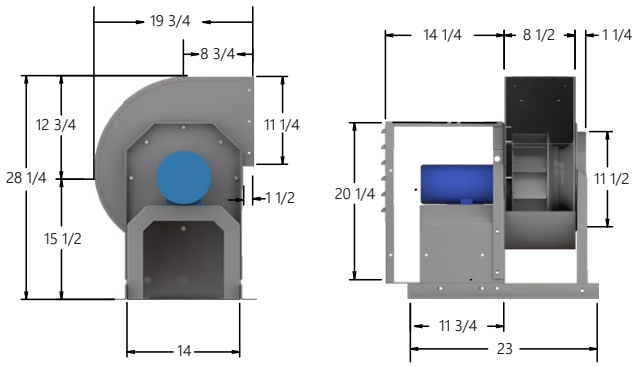
D06 | direct drive



Model	HP	RPM	0.000" S.P.		0.250" S.P.		0.500" S.P.		0.750" S.P.		1.000" S.P.		1.250" S.P.	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D06L	1/6	500	100	1.5	-	-	-	-	-	-	-	-	-	-
D06M	1/6	690	138	3.3	-	-	-	-	-	-	-	-	-	-
D06V	1/6	1050	211	7.1	153	6.8	79	6.5	-	-	-	-	-	-
D06S	1/6	1300	261	9.9	218	9.9	164	9.4	104	9.1	-	-	-	-
D06R	1/4	1550	311	13.3	276	13.2	235	12.8	188	12.4	140	12.1	42	12.0
D06Q	1/3	1750	351	16.0	320	15.9	287	15.8	246	15.2	205	14.9	163	14.6

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

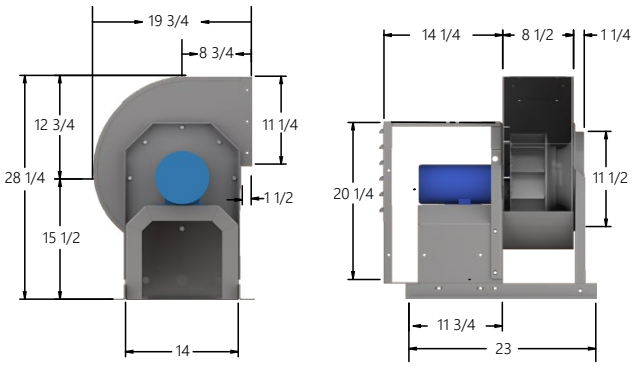
D07 | direct drive



Model	HP	RPM	0.000" S.P.		0.250" S.P.		0.500" S.P.		0.750" S.P.		1.000" S.P.		1.250" S.P.	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D07L	1/6	500	183	0.9	-	-	-	-	-	-	-	-	-	-
D07M	1/6	690	252	2.0	91	1.7	-	-	-	-	-	-	-	-
D07V	1/6	1050	384	5.2	288	4.8	191	4.6	-	-	-	-	-	-
D07S	1/6	1300	475	7.6	398	7.2	319	6.7	242	6.7	-	-	-	-
D07R	1/4	1550	567	10.4	502	10.0	437	9.7	371	9.1	306	9.1	215	9.2
D07Q	1/3	1750	640	12.7	583	12.5	525	12.2	467	11.6	408	11.0	351	11.1

"Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories)."

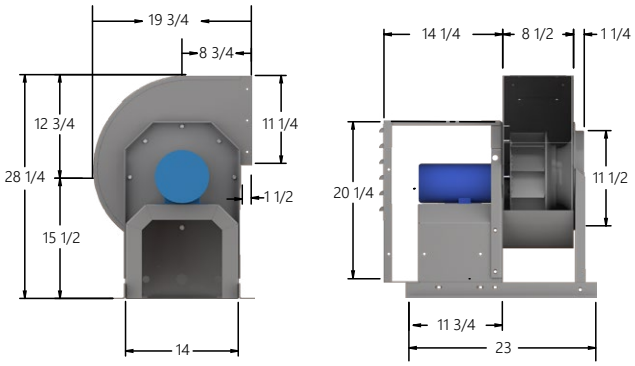
D08 | direct drive



Model	HP	RPM	0.000" S.P.		0.250" S.P.		0.500" S.P.		0.750" S.P.		1.000" S.P.		1.250" S.P.	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D08L	1/6	500	237	1.0	-	-	-	-	-	-	-	-	-	-
D08M	1/6	690	327	2.1	151	1.6	-	-	-	-	-	-	-	-
D08V	1/6	1050	498	5.6	389	4.9	270	4.4	-	-	-	-	-	-
D08S	1/6	1300	617	8.1	527	7.4	434	6.7	340	6.5	-	-	-	-
D08R	1/4	1550	735	10.8	660	10.3	587	9.6	505	8.8	425	8.6	344	8.5
D08Q	1/3	1750	830	13.5	763	13.1	698	12.7	631	11.9	557	11.0	487	10.7

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

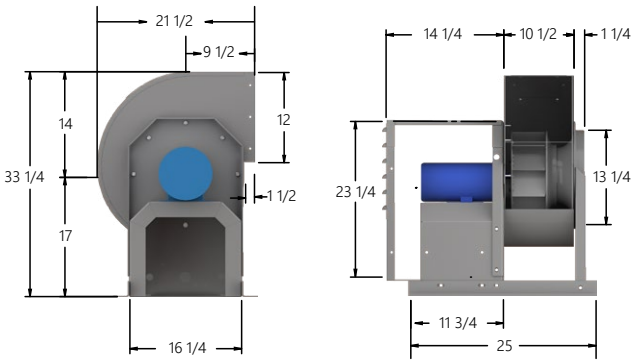
D10 | direct drive



Model	HP	RPM	0.000" SP		0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250"SP	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D10L	1/6	500	356	0.6	-	-	-	-	-	-	-	-	-	-
D10M	1/6	690	492	2.0	-	-	-	-	-	-	-	-	-	-
D10V	1/6	1050	748	7.1	589	7.0	402	7.3	-	-	-	-	-	-
D10S	1/6	1300	926	10.6	806	10.4	666	10.1	508	10.4	-	-	-	-
D10R	1/4	1550	1104	14.5	1009	14.3	892	13.5	775	13.3	642	13.5	-	-
D10Q	1/3	1750	1247	15.6	1166	15.6	1066	15.2	960	14.8	855	14.8	737	14.8

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

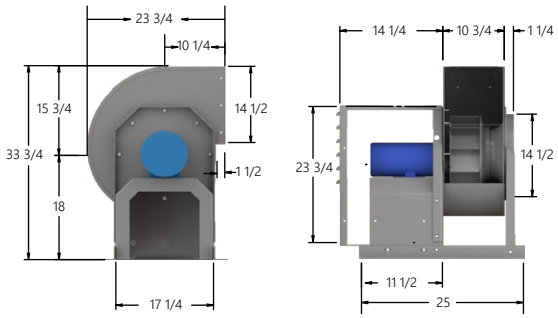
D12 | direct drive



Model	HP	RPM	0.000" SP		0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250"SP		1.500" SP		1.750"SP		2.000" SP	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D12L	1/6	500	593	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D12M	1/6	690	818	2.9	531	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D12V	1/6	1050	1244	7.7	1081	7.7	877	7.9	641	8.0	-	-	-	-	-	-	-	-	-	-
D12S	1/4	1300	1541	11.2	1417	8.8	1261	8.0	1098	7.3	916	7.0	-	-	-	-	-	-	-	-
D12R	1/2	1550	1837	14.3	1735	14.1	1618	13.9	1482	13.8	1345	13.5	1201	13.4	1042	13.2	-	-	-	-
D12Q	3/4	1750	2074	16.8	1984	16.7	1887	16.8	1777	13.7	1651	15.9	1530	15.6	1404	15.1	1269	15.0	1121	14.8

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

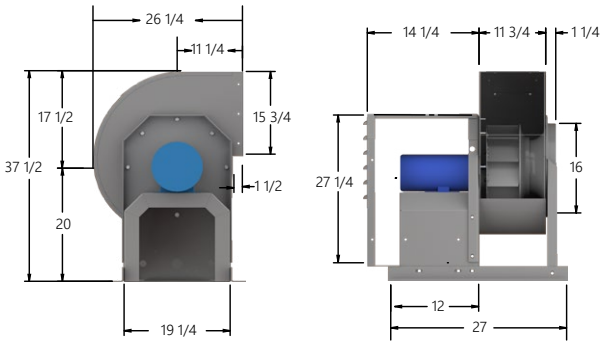
D13 | direct drive



Model	HP	RPM	0.000" SP		0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250"SP		1.500" SP		1.750"SP		2.000" SP	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D13L	1/6	500	729	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D13 M	1/6	690	1006	4.1	589	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D13V	1/6	1050	1532	9.8	1327	9.8	1005	9.7	-	-	-	-	-	-	-	-	-	-	-	-
D13S	1/3	1300	1896	14.0	1736	13.9	1530	13.9	1261	13.6	980	13.1	-	-	-	-	-	-	-	-
D13R	1/2	1550	2261	16.7	2128	16.8	1986	16.6	1789	16.2	1561	15.8	1334	15.5	1093	15.0	-	-	-	-
D13Q	3/4	1750	2553	19.9	2435	20.0	2313	19.8	2181	19.5	1984	19.0	1781	18.5	1584	18.3	1373	17.8	1159	17.4

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

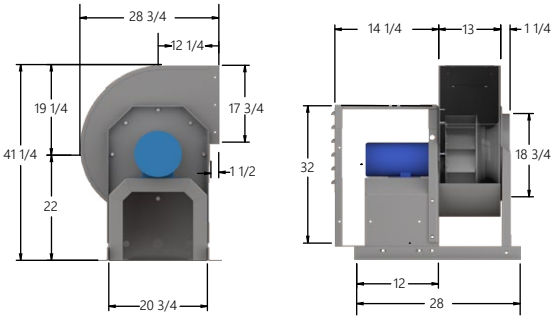
D15 | direct drive



Model	HP	RPM	0.000" SP		0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250"SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		2.750" SP		3.000" SP	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D15L	1/6	500	1160	2.5	498	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D15M	1/6	690	1600	5.9	1212	6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D15V	1/3	1050	2435	13.4	2192	13.4	1923	13.2	1,638	12.3	1,224	12.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D15S	3/4	1300	3015	19.4	2825	19.4	2613	19.4	2395	18.5	2195	17.3	1,893	16.4	1,557	16.2	-	-	-	-	-	-	-	-	-	-	-	-
D15R	1	1550	3595	22.9	3435	22.9	3268	22.8	3087	22.7	2904	22.2	2731	21.8	2564	21.0	2290	19.9	1995	19.1	1725	19.0	-	-	-	-	-	-
D15Q	1 1/2	1750	4059	25.6	3917	25.5	3776	25.5	3617	25.5	3457	25.3	3295	24.9	3139	24.5	2992	24.2	2811	23.6	2565	22.8	2298	21.9	2066	21.4	1809	21.5

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

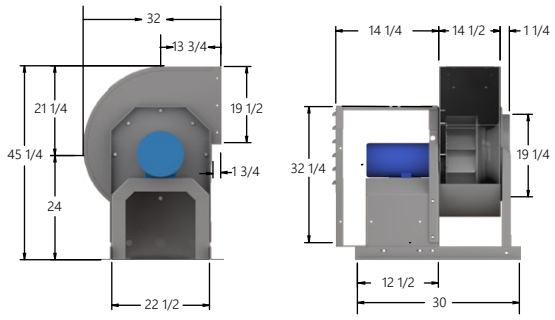
D16 | direct drive



Model	HP	RPM	0.000" SP		0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250"SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		2.750" SP	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D16L	1/6	500	1385	2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D16M	1/6	690	1912	5.9	1499	6.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D16V	1/2	1050	2909	13.9	2666	13.8	2376	13.8	2,028	13.5	1,613	12.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D16S	1	1300	3602	18.8	3410	18.7	3194	18.6	2958	18.3	2691	17.8	2,386	17.3	2,060	16.8	-	-	-	-	-	-	-	-	-	-
D16R	2	1550	4294	24.4	4133	24.3	3969	24.3	3778	23.9	3581	23.5	3378	22.9	3131	22.0	2,873	21.5	2,603	21.0	2,267	20.8	-	-	-	-
D16Q	2	1750	4849	27.7	4706	27.6	4563	27.6	4405	27.5	4236	27.3	4061	27.0	3881	26.6	3677	25.7	3457	24.8	3226	24.5	2987	24.2	2728	24.0

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

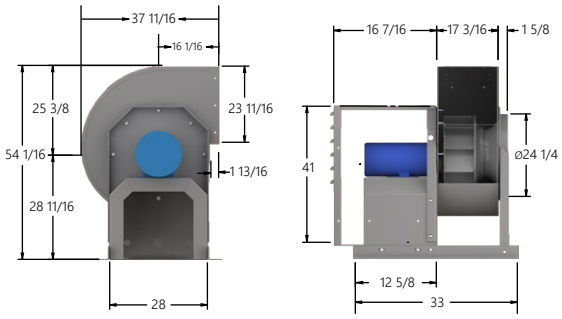
D18 | direct drive



Model	HP	RPM	0.000" SP		0.250" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D18L	1/6	500	2128	2.4	1,486	2.7	-	-	-	-	-	-	-	-
D18M	3/4	690	2937	8.5	2502	9.4	1,969	8.8	-	-	-	-	-	-
D18V	1	1050	4469	11.6	4194	12.6	3902	13.7	3,595	13.6	3,281	13.6	2,784	13.2

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

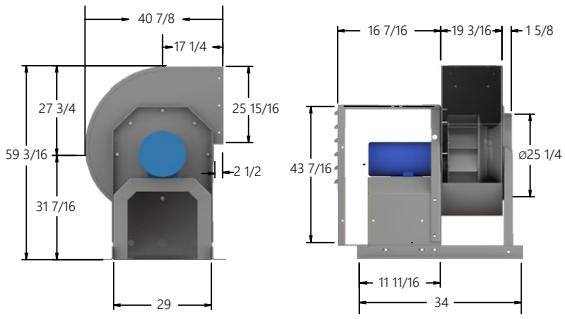
D22 | direct drive



Model	HP	RPM	0.000" SP		0.250" SP		0.500" SP		0.750" SP	
			CFM	SONES	CFM	SONES	CFM	SONES	CFM	SONES
D22L	1/4	500	3681	7.1	2,933	7.0	-	-	-	-
D22M	3/4	690	5080	10.8	4565	10.8	3,992	10.7	3,321	10.3

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

D24 | direct drive

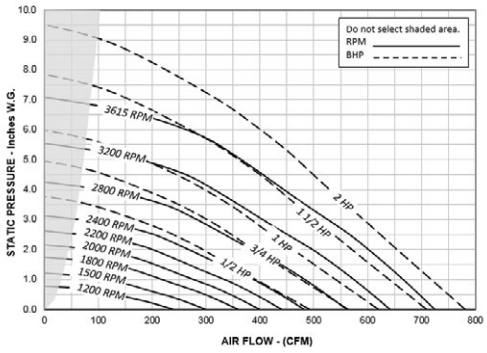


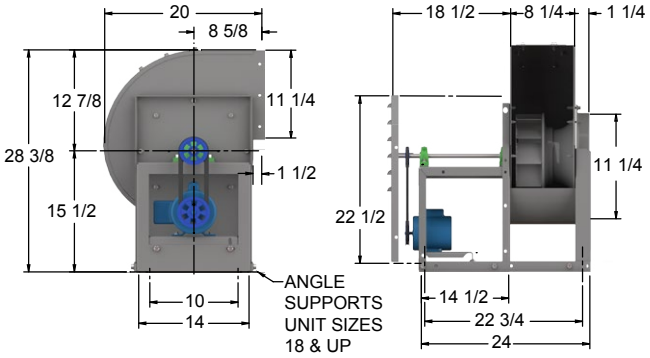
Model	HP	RPM	0.000" SP		0.250" SP		0.500" SP	
			CFM	SONES	CFM	SONES	CFM	SONES
D24L	1/2	500	4792	10.4	4004	9.8	2862	8.7

Performance Certified For Installation Type B - Free Inlet, Ducted Outlet. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels. Performance Ratings Do Not Include The Effects Of Appurtenances (Accessories).

BELT DRIVE PERFORMANCE DATA

D06 | Belt drive





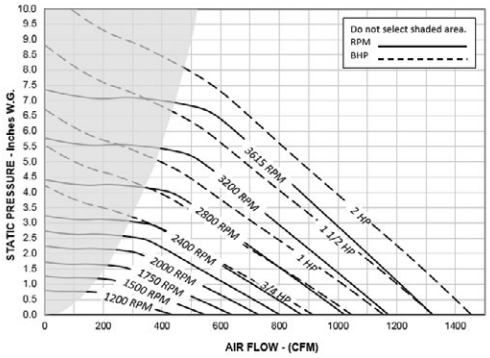
Maximum RPM: 3615	Max BHP: (RPM/3046)^3	Outlet Area: 0.65 Sq. Ft.	Wheel Diameter: 11 1/4"	Tip Speed: 2.95 X RPM	Max Motor Frame Size: 145T

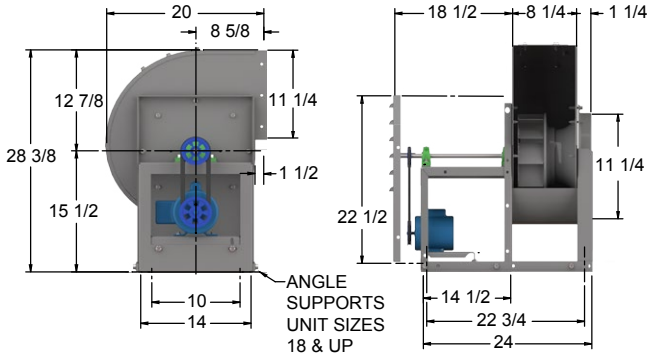
CFM	OV	.25" S.P.		.50" S.P.		.75" S.P.		1" S.P.		1.25" S.P.		1.50" S.P.		1.75" S.P.		2" S.P.	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
200	303	1227	0.065	1425	0.098	1591	0.133	1733	0.168	1862	0.207	1980	0.249	2090	0.293	2193	0.338
225	341	1330	0.083	1513	0.120	1677	0.158	1817	0.197	1942	0.237	2058	0.279	2167	0.326	2269	0.375
250	379	1436	0.105	1603	0.145	1763	0.186	1903	0.229	2026	0.273	2139	0.317	2245	0.363	2345	0.413
275	417	1543	0.130	1703	0.174	1851	0.219	1988	0.265	2112	0.312	2223	0.360	2327	0.409	2425	0.459
300	455	1656	0.160	1805	0.207	1940	0.256	2075	0.306	2198	0.357	2309	0.408	2411	0.460	2508	0.514
325	492	1771	0.195	1909	0.246	2038	0.297	2163	0.351	2284	0.406	2395	0.461	2497	0.516	2593	0.573
350	530	1886	0.234	2015	0.290	2140	0.345	2253	0.401	2371	0.459	2481	0.518	2583	0.577	2679	0.638
375	568	2003	0.280	2122	0.339	2242	0.398	2353	0.458	2460	0.519	2568	0.581	2669	0.645	2765	0.709
400	606	2120	0.331	2232	0.394	2347	0.457	2454	0.520	2553	0.584	2657	0.651	2756	0.717	2850	0.784
425	644	2238	0.388	2346	0.455	2453	0.522	2556	0.589	2653	0.657	2747	0.726	2844	0.796	2937	0.867
450	682	2357	0.452	2460	0.523	2559	0.594	2660	0.665	2755	0.736	2844	0.808	2934	0.882	3025	0.956
475	720	2476	0.523	2575	0.598	2667	0.673	2765	0.747	2857	0.822	2945	0.899	3028	0.975	3115	1.053
500	758	2596	0.602	2691	0.680	2780	0.760	2871	0.838	2961	0.917	3046	0.996	3128	1.076	3206	1.156
525	795	2716	0.688	2807	0.770	2893	0.853	2979	0.937	3066	1.019	3149	1.101	3229	1.185	3306	1.270
550	833	2837	0.783	2924	0.868	3007	0.955	3087	1.044	3172	1.129	3253	1.216	3331	1.303	3406	1.390
575	871	2957	0.886	3042	0.976	3122	1.066	3199	1.158	3279	1.249	3358	1.339	3434	1.429	3508	1.521
600	909	3079	0.999	3160	1.092	3238	1.186	3312	1.281	3386	1.376	3464	1.471	3539	1.566	3611	1.660
625	947	3200	1.120	3279	1.218	3354	1.316	3426	1.414	3496	1.514	3571	1.613	-	-	-	-
650	985	3322	1.252	3398	1.353	3471	1.455	3541	1.557	3609	1.661	-	-	-	-	-	-
700	1061	3566	1.547	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CFM	OV	2.25" S.P		2.50" S.P.		2.75" S.P.		3" S.P.		3.50" S.P.		4" S.P.		4.5" S.P.		5" S.P.	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
200	303	2294	0.386	2395	0.437	2492	0.490	2585	0.544	2759	0.657	2922	0.775	3077	0.900	3229	1.032
225	341	2365	0.424	2456	0.475	2544	0.528	2636	0.584	2810	0.702	2973	0.826	3125	0.954	3270	1.087
250	379	2441	0.466	2532	0.520	2618	0.575	2701	0.632	2862	0.750	3024	0.879	3176	1.012	3320	1.150
275	417	2518	0.512	2608	0.569	2694	0.627	2777	0.687	2933	0.809	3079	0.936	3228	1.073	3371	1.215
300	455	2600	0.568	2687	0.623	2772	0.683	2853	0.745	3008	0.873	3153	1.005	3290	1.142	3423	1.284
325	492	2683	0.630	2769	0.689	2852	0.748	2932	0.808	3085	0.941	3229	1.079	3365	1.222	3494	1.368
350	530	2768	0.699	2853	0.760	2935	0.823	3014	0.886	3163	1.015	3306	1.159	3441	1.306	3569	1.458
375	568	2854	0.772	2938	0.837	3019	0.903	3097	0.970	3245	1.105	3384	1.243	3518	1.396	-	-
400	606	2940	0.853	3025	0.921	3105	0.990	3182	1.060	3328	1.201	3466	1.346	3597	1.493	-	-
425	644	3026	0.939	3110	1.011	3192	1.084	3268	1.157	3413	1.306	3549	1.456	-	-	-	-
450	682	3112	1.031	3196	1.107	3277	1.184	3355	1.261	3499	1.417	-	-	-	-	-	-
475	720	3201	1.132	3283	1.211	3363	1.292	3440	1.372	3585	1.534	-	-	-	-	-	-
500	758	3290	1.239	3371	1.322	3450	1.406	3526	1.491	-	-	-	-	-	-	-	-
525	795	3380	1.354	3460	1.441	3538	1.529	3613	1.617	-	-	-	-	-	-	-	-
550	833	3479	1.479	3551	1.568	-	-	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free Inlet, Ducted Outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

D07 | Belt drive





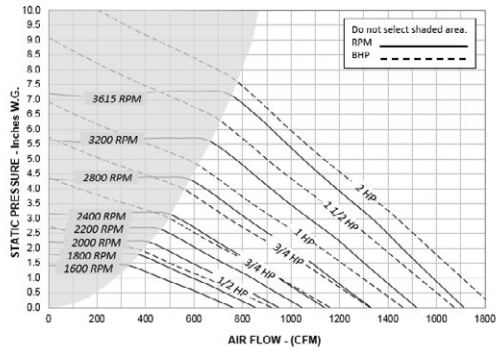
Maximum RPM: 3615	Max BHP: (RPM/3014)^3	Outlet Area: 0.65 Sq. Ft.	Wheel Diameter: 11 1/4"	Tip Speed: 2.95 X RPM	Max Motor Frame Size: 145T

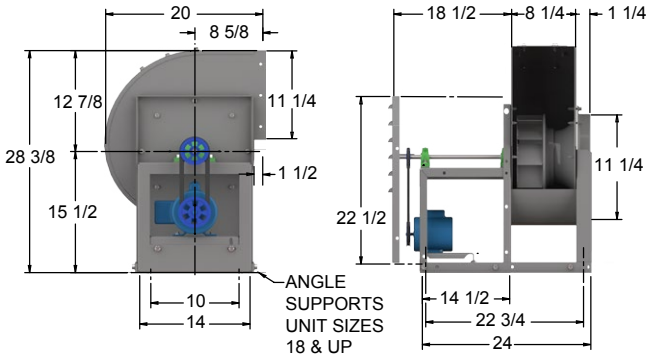
CFM	OV	.25" S.P.		.50" S.P.		.75" S.P.		1" S.P.		1.25" S.P.		1.50" S.P.		1.75" S.P.		2" S.P.	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
300	455	1077	0.043	1261	0.071	1408	0.101	1538	0.133	1656	0.166	1763	0.201	1865	0.237	1980	0.279
350	530	1189	0.057	1364	0.088	1508	0.122	1633	0.157	1746	0.194	1852	0.232	1950	0.271	2042	0.312
400	606	1304	0.074	1470	0.109	1611	0.147	1733	0.185	1843	0.225	1945	0.267	2040	0.309	2131	0.353
450	682	1423	0.095	1580	0.134	1715	0.175	1835	0.217	1943	0.261	2042	0.305	2135	0.352	2222	0.399
500	758	1544	0.120	1692	0.163	1822	0.208	1939	0.254	2046	0.301	2143	0.349	2234	0.399	2320	0.449
550	833	1667	0.151	1808	0.197	1932	0.245	2045	0.295	2149	0.346	2245	0.398	2335	0.451	2419	0.505
600	909	1793	0.187	1925	0.236	2045	0.288	2153	0.341	2254	0.396	2349	0.452	2438	0.509	2521	0.567
650	985	1919	0.229	2045	0.281	2159	0.337	2264	0.394	2362	0.452	2454	0.511	2541	0.572	2623	0.633
700	1061	2047	0.277	2166	0.333	2276	0.392	2377	0.453	2472	0.515	2561	0.577	2646	0.641	2727	0.706
750	1136	2176	0.332	2289	0.391	2394	0.454	2492	0.518	2584	0.584	2671	0.651	2753	0.717	2833	0.787
800	1212	2306	0.395	2413	0.457	2514	0.523	2608	0.590	2698	0.660	2782	0.730	2862	0.801	2940	0.874
850	1288	2436	0.465	2539	0.531	2635	0.599	2726	0.671	2813	0.744	2895	0.818	2973	0.893	3049	0.969
900	1364	2567	0.543	2665	0.613	2758	0.685	2846	0.760	2929	0.836	3009	0.914	3086	0.993	3159	1.072
950	1439	2699	0.631	2793	0.705	2881	0.779	2966	0.856	3047	0.937	3125	1.018	3200	1.101	3271	1.184
1000	1515	2831	0.727	2921	0.805	3006	0.883	3088	0.963	3167	1.047	3242	1.132	3315	1.219	3385	1.306
1050	1591	2963	0.833	3050	0.915	3132	0.997	3211	1.080	3287	1.167	3360	1.255	3431	1.345	3500	1.437
1100	1667	3096	0.950	3179	1.035	3259	1.121	3335	1.208	3408	1.296	3480	1.389	3549	1.483	-	-
1150	1742	3229	1.077	3309	1.166	3386	1.256	3460	1.347	3531	1.438	3600	1.533	-	-	-	-
1200	1818	3362	1.215	3440	1.309	3514	1.402	3585	1.496	-	-	-	-	-	-	-	-
1250	1894	3496	1.365	3571	1.463	-	-	-	-	-	-	-	-	-	-	-	-

CFM	OV	2.25" S.P.		2.50" S.P.		2.75" S.P.		3" S.P.		3.5" S.P.		4" S.P.		4.5" S.P.		5" S.P.	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
400	606	2217	0.398	2299	0.444	2377	0.492	2452	0.540	2621	0.648	2783	0.762	2935	0.880	3079	1.003
425	644	2262	0.422	2343	0.470	2421	0.519	2495	0.569	2639	0.673	2801	0.790	2953	0.911	3097	1.036
450	682	2307	0.447	2388	0.497	2465	0.547	2539	0.598	2679	0.704	2818	0.817	2970	0.941	3114	1.069
475	720	2353	0.474	2433	0.525	2510	0.577	2583	0.629	2723	0.738	2854	0.852	2987	0.972	3131	1.103
500	758	2401	0.501	2479	0.554	2555	0.607	2628	0.662	2767	0.774	2897	0.890	3020	1.009	3148	1.137
550	833	2499	0.560	2576	0.616	2649	0.673	2720	0.732	2857	0.850	2986	0.972	3108	1.097	3223	1.225
600	909	2600	0.625	2675	0.684	2747	0.744	2817	0.806	2949	0.932	3076	1.060	3197	1.192	3312	1.327
650	985	2702	0.696	2776	0.759	2847	0.822	2916	0.887	3046	1.019	3169	1.155	3288	1.294	3401	1.434
700	1061	2804	0.772	2878	0.839	2949	0.907	3016	0.975	3145	1.113	3266	1.255	3382	1.402	3493	1.550
750	1136	2908	0.856	2981	0.926	3051	0.998	3119	1.071	3246	1.216	3366	1.365	3479	1.516	3588	1.671
800	1212	3014	0.947	3085	1.020	3154	1.095	3221	1.172	3348	1.326	3466	1.481	3579	1.640	-	-
850	1288	3121	1.045	3191	1.123	3259	1.201	3325	1.281	3450	1.442	3568	1.606	-	-	-	-
900	1364	3230	1.153	3299	1.234	3365	1.315	3430	1.399	3553	1.566	-	-	-	-	-	-
950	1439	3341	1.269	3408	1.354	3473	1.439	3536	1.525	-	-	-	-	-	-	-	-
1000	1515	3453	1.394	3518	1.482	3582	1.571	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

D08 | Belt drive





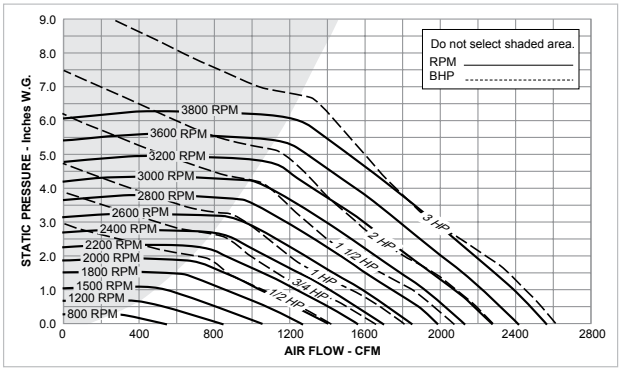
Maximum RPM: 3615	Max BHP: $(RPM/2952)^3$	Outlet Area: 0.65 Sq. Ft.	Wheel Diameter: 11 1/4"	Tip Speed: 2.95 X RPM	Max Motor Frame Size: 145T

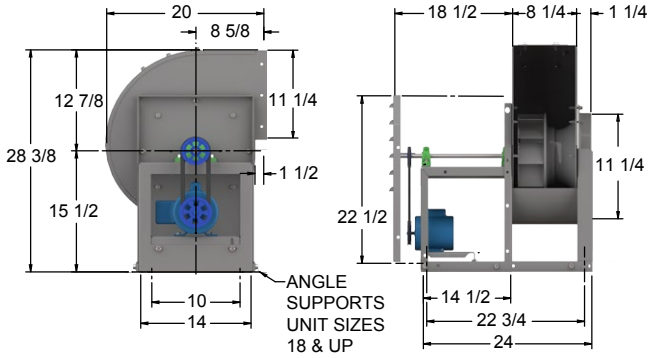
CFM	OV (FPM)	.25" S.P.		.50" S.P.		.75" S.P.		1" S.P.		1.25" S.P.		1.50" S.P.		1.75" S.P.		2" S.P.	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
300	455	909	0.028	1095	0.051	1242	0.074	1369	0.100	-	-	-	-	-	-	-	-
350	530	987	0.036	1171	0.061	1315	0.088	1440	0.116	1551	0.145	1653	0.176	-	-	-	-
400	606	1069	0.045	1248	0.073	1390	0.103	1513	0.134	1622	0.166	1722	0.199	1816	0.233	-	-
450	682	1158	0.056	1325	0.087	1467	0.120	1587	0.154	1695	0.189	1794	0.224	1886	0.261	1972	0.298
500	758	1249	0.070	1403	0.103	1544	0.139	1663	0.175	1770	0.213	1868	0.252	1958	0.291	2043	0.331
550	833	1342	0.086	1484	0.120	1621	0.159	1742	0.200	1846	0.240	1942	0.281	2032	0.324	2116	0.367
600	909	1437	0.105	1573	0.142	1699	0.182	1817	0.225	1924	0.270	2018	0.314	2106	0.359	2190	0.405
650	985	1532	0.127	1662	0.167	1779	0.208	1894	0.254	2000	0.301	2096	0.349	2183	0.397	2265	0.446
700	1061	1628	0.152	1754	0.195	1864	0.238	1973	0.285	2077	0.336	2173	0.387	2260	0.438	2341	0.489
750	1136	1725	0.180	1846	0.226	1953	0.272	2053	0.320	2154	0.372	2249	0.427	2338	0.482	2419	0.537
800	1212	1823	0.212	1940	0.261	2043	0.309	2138	0.359	2234	0.413	2326	0.470	2414	0.528	2496	0.587
850	1288	1921	0.248	2035	0.299	2134	0.351	2227	0.404	2314	0.458	2405	0.517	2491	0.578	2572	0.639
900	1364	2020	0.287	2130	0.342	2227	0.397	2316	0.452	2400	0.508	2485	0.568	2569	0.631	2649	0.695
950	1439	2120	0.332	2226	0.389	2320	0.447	2407	0.504	2489	0.563	2566	0.623	2648	0.688	2727	0.756
1000	1515	2220	0.380	2322	0.441	2414	0.501	2499	0.562	2578	0.623	2654	0.686	2729	0.751	2806	0.820
1100	1667	2422	0.493	2516	0.558	2605	0.626	2685	0.692	2760	0.758	2833	0.827	2902	0.895	2969	0.965
1200	1818	2625	0.626	2713	0.698	2796	0.770	2874	0.844	2946	0.916	3015	0.989	3081	1.062	3145	1.137
1300	1970	2829	0.782	2911	0.859	2990	0.939	3065	1.018	3134	1.096	3200	1.175	3263	1.253	3325	1.334
1400	2121	3034	0.963	3111	1.047	3185	1.131	3256	1.216	3324	1.301	3387	1.385	3448	1.470	3507	1.555
1600	2424	3445	1.408	3515	1.504	3581	1.600	-	-	-	-	-	-	-	-	-	-

CFM	OV (FPM)	2.25" S.P.		2.50" S.P.		2.75" S.P.		3" S.P.		3.50" S.P.		4" S.P.		4.50" S.P.		5" S.P.	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
450	682	2054	0.337	2131	0.377	-	-	-	-	-	-	-	-	-	-	-	-
500	758	2124	0.372	2201	0.415	2274	0.458	2344	0.502	-	-	-	-	-	-	-	-
550	833	2196	0.411	2272	0.456	2344	0.501	2414	0.547	2546	0.643	-	-	-	-	-	-
600	909	2269	0.453	2344	0.500	2416	0.547	2485	0.596	2616	0.696	2738	0.799	-	-	-	-
650	985	2343	0.495	2418	0.547	2489	0.598	2557	0.649	2687	0.754	2808	0.861	2923	0.972	3033	1.086
700	1061	2418	0.541	2492	0.595	2563	0.650	2631	0.705	2759	0.815	2880	0.928	2994	1.043	3102	1.161
750	1136	2495	0.592	2568	0.648	2637	0.704	2705	0.762	2833	0.881	2952	0.998	3065	1.118	3173	1.241
800	1212	2573	0.646	2644	0.704	2713	0.763	2780	0.824	2906	0.946	3025	1.073	3138	1.199	3244	1.325
850	1288	2650	0.702	2723	0.765	2791	0.827	2856	0.889	2981	1.017	3099	1.148	3211	1.283	3317	1.416
900	1364	2726	0.761	2799	0.827	2869	0.894	2934	0.959	3057	1.092	3174	1.228	3285	1.368	3391	1.511
1000	1515	2881	0.891	2952	0.963	3021	1.035	3088	1.110	3212	1.256	3327	1.403	3435	1.551	3539	1.703
1100	1667	3039	1.039	3109	1.117	3176	1.195	3241	1.274	3365	1.434	3483	1.598	3589	1.756	-	-
1200	1818	3207	1.212	3269	1.290	3334	1.373	3398	1.458	3519	1.629	-	-	-	-	-	-
1300	1970	3385	1.415	3443	1.496	3499	1.578	3558	1.665	-	-	-	-	-	-	-	-
1400	2121	3565	1.642	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free Inlet, Ducted Outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

D10 | belt drive





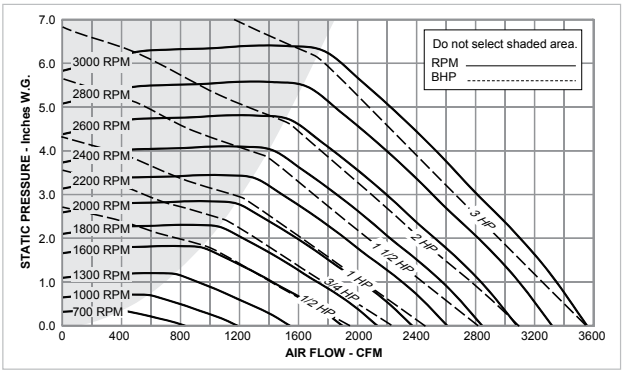
Maximum RPM: 3615	Max BHP: (RPM/2485)^3	Outlet Area: 0.65 Sq. Ft.	Wheel Diameter: 11 1/4"	Tip Speed: 2.95 X RPM	Max Motor Frame Size: 145T

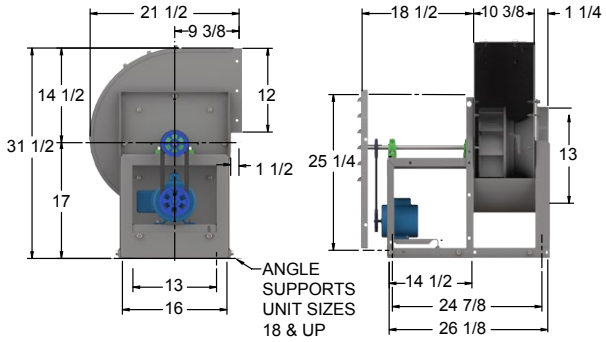
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2"SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
500	769	949	0.056	1137	0.089	1293	0.123	1429	0.162	-	-	-	-	-	-	-	-
600	923	1063	0.076	1232	0.119	1381	0.159	1513	0.199	1627	0.241	1744	0.293	-	-	-	-
700	1077	1176	0.100	1335	0.155	1474	0.202	1602	0.248	1717	0.295	1821	0.343	1917	0.393	2017	0.453
800	1231	1291	0.130	1447	0.193	1575	0.251	1694	0.306	1806	0.359	1911	0.412	2007	0.465	2096	0.522
900	1385	1412	0.169	1561	0.237	1681	0.308	1794	0.370	1899	0.431	2000	0.491	2095	0.550	2185	0.611
1000	1538	1537	0.219	1674	0.289	1795	0.367	1898	0.445	2000	0.512	2094	0.58	2186	0.647	2274	0.713
1100	1692	1664	0.278	1790	0.349	1909	0.434	2010	0.520	2103	0.604	2195	0.677	2282	0.752	2365	0.827
1200	1846	1793	0.348	1907	0.418	2022	0.510	2125	0.605	2213	0.698	2298	0.787	2383	0.868	2464	0.950
1300	2000	1923	0.429	2030	0.503	2137	0.596	2238	0.698	2328	0.800	2408	0.901	2487	0.998	2565	1.085
1400	2154	2055	0.524	2156	0.603	2254	0.693	2351	0.801	2443	0.912	2522	1.020	2596	1.129	2669	1.235
1500	2308	2191	0.634	2282	0.716	2372	0.802	2466	0.916	2555	1.034	2639	1.154	2710	1.268	2779	1.385
1600	2462	2325	0.759	2410	0.844	2496	0.935	2583	1.045	2669	1.168	2750	1.294	2826	1.420	2894	1.544
1700	2615	2461	0.900	2539	0.987	2622	1.085	2701	1.186	2784	1.316	2863	1.448	2939	1.583	3009	1.716
1800	2769	2598	1.059	2669	1.147	2748	1.250	2823	1.353	2901	1.479	2978	1.618	3051	1.757	3122	1.900
1900	2923	2734	1.234	2799	1.324	2876	1.434	2948	1.542	3019	1.656	3094	1.802	3165	1.947	3235	2.098
2000	3077	2871	1.429	2933	1.523	3004	1.635	3074	1.749	3141	1.864	3211	2.002	3281	2.156	3348	2.310
2100	3231	3009	1.645	3068	1.743	3133	1.855	3201	1.976	3266	2.096	3329	2.219	3397	2.378	3463	2.540
2200	3385	3146	1.880	3203	1.984	3263	2.096	3328	2.222	3391	2.347	3452	2.474	3515	2.621	3579	2.788
2300	3538	3284	2.138	3339	2.247	3393	2.358	3456	2.489	3518	2.622	3577	2.754	-	-	-	-
2400	3692	3422	2.419	3475	2.533	3526	2.647	3585	2.779	-	-	-	-	-	-	-	-

CFM	OV (FPM)	2.25 SP "		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
800	1231	2179	0.579	2265	0.644	2356	0.719	-	-	-	-	-	-	-	-	-	-
900	1385	2270	0.671	2348	0.735	2423	0.799	2497	0.867	2657	1.031	-	-	-	-	-	-
1000	1538	2358	0.779	2438	0.846	2514	0.913	2585	0.983	2719	1.125	2857	1.291	-	-	-	-
1100	1692	2448	0.900	2526	0.972	2602	1.046	2674	1.118	2810	1.268	2935	1.424	3056	1.589	3186	1.785
1200	1846	2541	1.032	2617	1.112	2691	1.190	2763	1.270	2899	1.430	3027	1.592	3143	1.759	3255	1.932
1300	2000	2641	1.174	2713	1.262	2783	1.351	2853	1.436	2988	1.608	3114	1.780	3234	1.955	3345	2.134
1400	2154	2743	1.330	2814	1.424	2882	1.519	2948	1.615	3078	1.801	3203	1.986	3322	2.172	3435	2.359
1500	2308	2847	1.502	2916	1.601	2983	1.702	3048	1.804	3172	2.009	3294	2.209	3411	2.406	3523	2.605
1600	2462	2958	1.668	3021	1.796	3086	1.902	3150	2.010	3272	2.227	3387	2.445	3502	2.659	3613	2.871
1700	2615	3072	1.846	3134	1.981	3193	2.115	3254	2.236	3374	2.465	3487	2.693	3596	2.927	-	-
1800	2769	3188	2.041	3248	2.181	3306	2.321	3362	2.462	3477	2.720	3589	2.962	-	-	-	-
1900	2923	3301	2.247	3364	2.398	3420	2.542	3476	2.692	3582	2.991	-	-	-	-	-	-
2000	3077	3414	2.468	3477	2.626	3536	2.783	3590	2.936	-	-	-	-	-	-	-	-
2100	3231	3527	2.704	3589	2.869	-	-	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free Inlet, Ducted Outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

D12 | belt drive





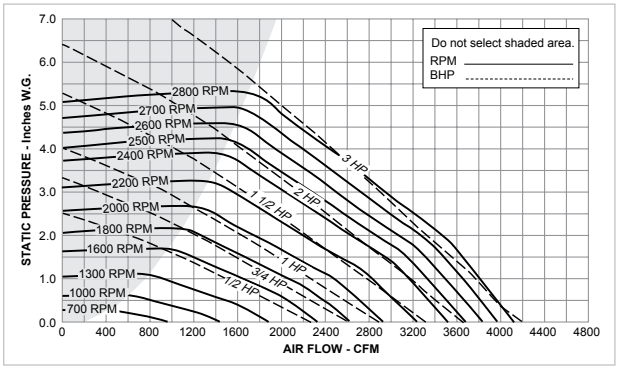
Maximum RPM: 3020	Max BHP: (RPM/2065)^3	Outlet Area: 0.87 Sq. Ft.	Wheel Diameter: 12 7/8"	Tip Speed: 3.38 X RPM	Max Motor Frame Size: 145T

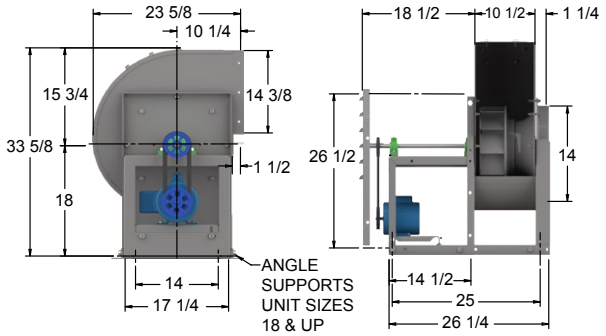
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
700	814	793	0.061	947	0.103	1078	0.149	1197	0.199	-	-	-	-	-	-	-	-
800	930	858	0.078	1004	0.124	1128	0.173	1241	0.226	1341	0.281	-	-	-	-	-	-
900	1047	925	0.097	1064	0.148	1183	0.202	1290	0.258	1390	0.318	1481	0.380	-	-	-	-
1000	1163	993	0.120	1128	0.177	1241	0.234	1344	0.295	1439	0.358	1529	0.424	1613	0.493	1693	0.564
1100	1279	1062	0.147	1193	0.209	1301	0.271	1401	0.336	1493	0.404	1579	0.473	1662	0.546	1739	0.620
1200	1395	1132	0.178	1260	0.246	1365	0.313	1460	0.382	1549	0.453	1632	0.527	1712	0.604	1788	0.682
1300	1512	1207	0.215	1326	0.287	1430	0.360	1521	0.433	1607	0.509	1689	0.587	1765	0.667	1838	0.749
1400	1628	1285	0.257	1394	0.333	1496	0.412	1585	0.490	1667	0.570	1747	0.653	1822	0.737	1893	0.823
1500	1744	1363	0.304	1463	0.385	1563	0.470	1651	0.554	1731	0.638	1806	0.725	1880	0.813	1950	0.904
1600	1860	1442	0.357	1533	0.443	1630	0.533	1717	0.623	1795	0.712	1868	0.802	1938	0.895	2007	0.990
1700	1977	1522	0.418	1603	0.507	1697	0.601	1784	0.699	1861	0.793	1932	0.887	2000	0.984	2066	1.084
1800	2093	1602	0.485	1677	0.578	1766	0.678	1850	0.779	1927	0.880	1997	0.980	2064	1.082	2127	1.184
1900	2209	1682	0.558	1755	0.658	1835	0.760	1917	0.867	1994	0.976	2063	1.080	2128	1.186	2191	1.294
2000	2326	1763	0.641	1832	0.743	1905	0.851	1985	0.962	2060	1.076	2130	1.189	2194	1.300	2255	1.411
2100	2442	1844	0.730	1911	0.839	1976	0.949	2054	1.066	2127	1.184	2196	1.303	2260	1.420	2320	1.536
2200	2558	1925	0.828	1990	0.942	2051	1.058	2123	1.177	2195	1.301	2263	1.426	2327	1.550	2386	1.671
2300	2674	2007	0.936	2069	1.054	2128	1.174	2193	1.298	2263	1.426	2330	1.556	2393	1.686	2453	1.816
2400	2791	2089	1.053	2149	1.176	2206	1.301	2264	1.428	2333	1.562	2398	1.697	2460	1.832	2520	1.969
2500	2907	2171	1.180	2229	1.308	2284	1.437	2337	1.568	2402	1.705	2466	1.845	2527	1.986	2586	2.128
2600	3023	2253	1.316	2309	1.448	2362	1.582	2414	1.719	2472	1.859	2535	2.004	2595	2.150	2653	2.298
2700	3140	2335	1.462	2389	1.599	2441	1.738	2491	1.879	2543	2.024	2605	2.175	2663	2.324	2720	2.476
2800	3256	2417	1.620	2470	1.763	2521	1.908	2569	2.052	2616	2.199	2675	2.355	2732	2.509	2788	2.667
2900	3372	2500	1.790	2551	1.937	2600	2.086	2648	2.237	2693	2.387	2745	2.545	2802	2.707	-	-
3000	3488	2583	1.971	2632	2.122	2680	2.277	2726	2.431	2771	2.589	2816	2.748	-	-	-	-
3100	3605	2665	2.163	2713	2.320	2760	2.480	2805	2.640	-	-	-	-	-	-	-	-
3200	3721	2748	2.368	2795	2.531	2840	2.694	-	-	-	-	-	-	-	-	-	-

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1100	1279	1812	0.696	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200	1395	1861	0.763	1930	0.845	1996	0.929	-	-	-	-	-	-	-	-	-	-
1300	1512	1910	0.834	1979	0.921	2044	1.008	2107	1.10	-	-	-	-	-	-	-	-
1400	1628	1961	0.911	2029	1.002	2093	1.093	2156	1.19	2274	1.38	2393	1.59	-	-	-	-
1500	1744	2016	0.995	2080	1.089	2143	1.184	2205	1.28	2323	1.48	2433	1.69	2540	1.91	-	-
1600	1860	2073	1.086	2136	1.184	2196	1.283	2256	1.39	2372	1.59	2481	1.81	2585	2.03	2683	2.25
1700	1977	2131	1.185	2193	1.287	2253	1.391	2310	1.50	2422	1.71	2531	1.94	2633	2.16	2731	2.40
1800	2093	2189	1.289	2251	1.397	2310	1.505	2367	1.61	2475	1.84	2580	2.07	2683	2.30	2780	2.55
1900	2209	2251	1.403	2309	1.513	2368	1.627	2424	1.74	2531	1.97	2632	2.21	2732	2.45	2829	2.70
2000	2326	2314	1.525	2371	1.640	2426	1.755	2482	1.87	2588	2.11	2688	2.36	2784	2.61	-	-
2100	2442	2378	1.655	2434	1.774	2488	1.895	2541	2.02	2646	2.27	2745	2.52	2840	2.78	-	-
2200	2558	2443	1.794	2498	1.918	2551	2.043	2603	2.17	2704	2.43	2802	2.69	-	-	-	-
2300	2674	2509	1.943	2563	2.072	2615	2.200	2666	2.33	2763	2.60	-	-	-	-	-	-
2400	2791	2575	2.101	2628	2.233	2680	2.368	2730	2.50	2826	2.78	-	-	-	-	-	-
2500	2907	2642	2.269	2695	2.408	2746	2.548	2795	2.69	-	-	-	-	-	-	-	-
2600	3023	2709	2.446	2762	2.593	2812	2.736	-	-	-	-	-	-	-	-	-	-
2700	3140	2775	2.629	2828	2.783	-	-	-	-	-	-	-	-	-	-	-	-
2800	3256	2842	2.824	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

D13 | belt drive





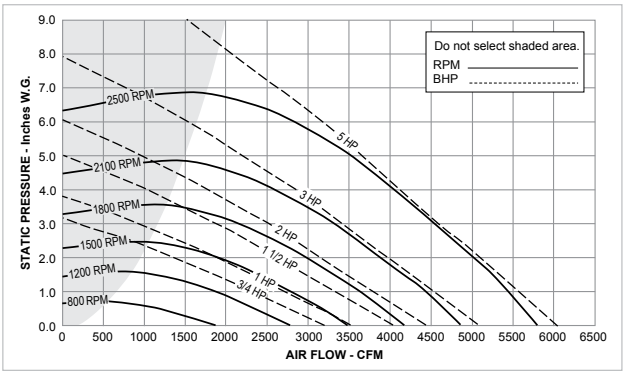
Maximum RPM: 2855	Max BHP: (RPM/1885)^3	Outlet Area: 1.05 Sq. Ft.	Wheel Diameter: 13 5/8"	Tip Speed: 3.57 X RPM	Max Motor Frame Size: 145T

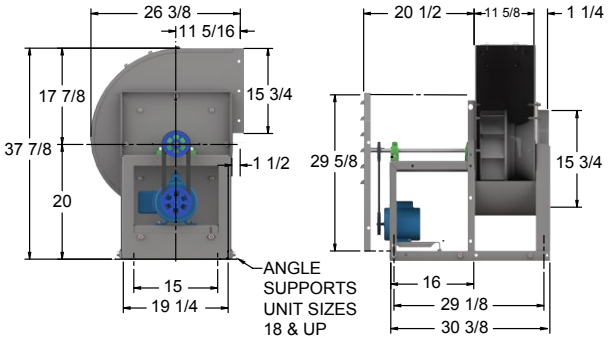
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	857	832	0.081	1004	0.137	1146	0.200	1267	0.268	1374	0.341	1480	0.418	-	-	-	-
1000	952	879	0.098	1047	0.158	1187	0.224	1308	0.296	1414	0.372	1509	0.453	1606	0.538	-	-
1100	1048	925	0.117	1094	0.182	1229	0.252	1348	0.327	1455	0.406	1551	0.491	1638	0.580	1725	0.672
1200	1143	976	0.138	1142	0.208	1272	0.282	1389	0.361	1495	0.445	1592	0.532	1680	0.624	1761	0.720
1300	1238	1034	0.163	1189	0.238	1317	0.316	1431	0.399	1536	0.486	1632	0.578	1722	0.673	1804	0.772
1400	1333	1094	0.190	1237	0.272	1365	0.354	1475	0.441	1578	0.532	1673	0.627	1761	0.726	1844	0.827
1500	1429	1155	0.221	1283	0.309	1413	0.395	1521	0.487	1620	0.581	1714	0.680	1802	0.783	1884	0.889
1600	1524	1216	0.257	1329	0.349	1460	0.441	1568	0.536	1664	0.635	1757	0.738	1843	0.844	1925	0.954
1700	1619	1278	0.296	1381	0.392	1507	0.491	1616	0.590	1711	0.694	1800	0.800	1885	0.910	1966	1.023
1800	1714	1340	0.340	1439	0.440	1554	0.546	1664	0.650	1759	0.758	1845	0.867	1928	0.981	2008	1.098
1900	1810	1403	0.389	1498	0.492	1600	0.605	1711	0.714	1807	0.826	1892	0.940	1972	1.057	2051	1.179
2000	1905	1466	0.442	1559	0.549	1648	0.668	1758	0.783	1855	0.899	1940	1.018	2019	1.139	2094	1.263
2100	2000	1531	0.501	1620	0.611	1702	0.732	1804	0.857	1901	0.978	1988	1.100	2067	1.228	2140	1.354
2200	2095	1596	0.565	1681	0.680	1760	0.805	1850	0.935	1949	1.063	2036	1.190	2115	1.321	2188	1.454
2300	2190	1662	0.635	1742	0.753	1819	0.882	1897	1.019	1995	1.152	2083	1.286	2163	1.419	2236	1.558
2400	2286	1728	0.711	1804	0.834	1879	0.965	1951	1.104	2041	1.248	2130	1.387	2210	1.525	2284	1.667
2500	2381	1794	0.793	1867	0.921	1940	1.055	2009	1.200	2087	1.348	2177	1.494	2257	1.638	2332	1.783
2600	2476	1860	0.882	1929	1.013	2001	1.150	2067	1.299	2137	1.455	2222	1.606	2304	1.756	2379	1.908
2700	2571	1926	0.976	1992	1.112	2062	1.254	2127	1.406	2191	1.563	2269	1.726	2351	1.882	2426	2.038
2800	2667	1992	1.078	2055	1.218	2124	1.366	2187	1.519	2249	1.683	2315	1.850	2397	2.014	2473	2.175
2900	2762	2059	1.188	2120	1.333	2185	1.483	2248	1.640	2307	1.807	2369	1.979	2443	2.152	2519	2.318
3000	2857	2126	1.305	2185	1.454	2248	1.610	2309	1.768	2367	1.940	2424	2.113	2489	2.295	2655	2.469
3100	2952	2193	1.429	2250	1.583	2310	1.743	2370	1.905	2427	2.079	2482	2.258	2541	2.445	2611	2.627
3200	3048	2260	1.562	2316	1.721	2373	1.885	2432	2.053	2488	2.228	2541	2.412	2595	2.597	2658	2.793
3300	3143	2327	1.702	2381	1.865	2436	2.035	2493	2.205	2549	2.384	2601	2.572	2653	2.764	2709	2.963
3400	3238	2394	1.851	2447	2.020	2499	2.192	2555	2.368	2610	2.549	2661	2.740	2711	2.937	-	-

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1143	1841	0.82	1920	0.921	2000	1.026	-	-	-	-	-	-	-	-	-	-
1300	1238	1880	0.875	1952	0.982	2026	1.090	2100	1.201	-	-	-	-	-	-	-	-
1400	1333	1922	0.933	1994	1.044	2062	1.156	2130	1.272	2267	1.509	-	-	-	-	-	-
1500	1429	2962	0.998	2036	1.109	2105	1.227	2170	1.346	2297	1.593	2425	1.848	-	-	-	-
1600	1524	2002	1.067	2076	1.183	2146	1.301	2213	1.425	2335	1.678	2454	1.942	2574	2.214	-	-
1700	1619	2042	1.139	2116	1.261	2186	1.383	2253	1.508	2378	1.769	2492	2.040	2604	2.321	2717	2.611
1800	1714	2083	1.217	2156	1.342	2226	1.469	2293	1.599	2419	1.862	2534	2.141	2642	2.431	2747	2.727
1900	1810	2126	1.303	2197	1.428	2266	1.559	2333	1.693	2459	1.967	2577	2.249	2684	2.544	2786	2.851
2000	1905	2169	1.393	2240	1.523	2308	1.656	2374	1.794	2499	2.076	2616	2.365	2727	2.664	2828	2.976
2100	2000	2212	1.486	2282	1.621	2350	1.759	2415	1.899	2539	2.188	2656	2.487	2767	2.795	-	-
2200	2095	2257	1.587	2326	1.727	2393	1.869	2457	2.012	2580	2.307	2696	2.614	2806	2.929	-	-
2300	2190	2305	1.698	2371	1.839	2436	1.983	2500	2.131	2622	2.434	2737	2.748	2846	3.070	-	-
2400	2286	2352	1.811	2418	1.958	2481	2.106	2543	2.256	2664	2.567	2778	2.886	-	-	-	-
2500	2381	2400	1.931	2465	2.082	2528	2.236	2588	2.389	2707	2.708	2820	3.035	-	-	-	-
2600	2476	2449	2.059	2513	2.214	2575	2.372	2635	2.531	2751	2.857	-	-	-	-	-	-
2700	2571	2496	2.194	2562	2.354	2623	2.515	2682	2.678	2795	3.010	-	-	-	-	-	-
2800	2667	2543	2.337	2610	2.500	2671	2.665	2730	2.834	-	-	-	-	-	-	-	-
2900	2762	2590	2.487	2656	2.653	2720	2.823	2778	2.996	-	-	-	-	-	-	-	-
3000	2857	2637	2.642	2703	2.816	2767	2.992	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

D15 | belt drive





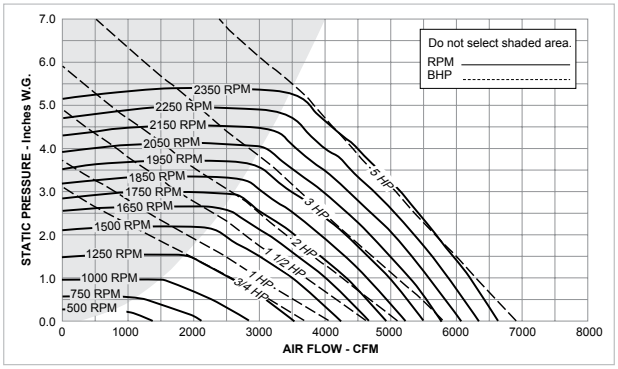
Maximum RPM: 2600	Max BHP: (RPM/1446)^3	Outlet Area: 1.30 Sq. Ft.	Wheel Diameter: 15 7/8"	Tip Speed: 4.16 X RPM	Max Motor Frame Size: 184T

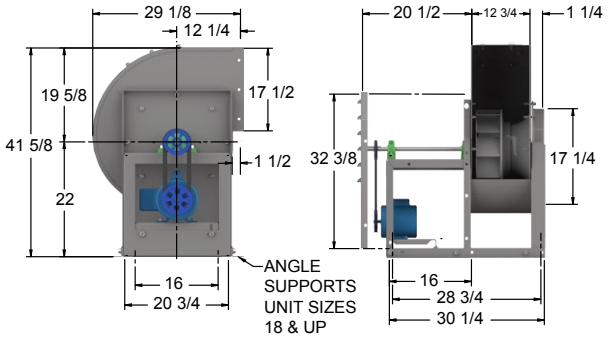
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1150	885	667	0.090	800	0.160	916	0.230	1020	0.300	1116	0.390	1205	0.470	1289	0.560	1369	0.660
1375	1058	744	0.130	864	0.200	971	0.280	1069	0.360	1159	0.450	1243	0.550	1323	0.650	1399	0.750
1600	1231	823	0.170	935	0.260	1034	0.340	1125	0.430	1210	0.530	1290	0.630	1366	0.740	1438	0.850
1825	1404	905	0.230	1011	0.320	1102	0.420	1187	0.520	1267	0.620	1343	0.730	1416	0.840	1485	0.960
2050	1577	988	0.300	1089	0.400	1175	0.510	1255	0.620	1330	0.730	1402	0.840	1471	0.960	1537	1.080
2275	1750	1073	0.380	1169	0.500	1251	0.610	1327	0.730	1398	0.850	1465	0.970	1531	1.100	1594	1.230
2500	1923	1159	0.470	1250	0.610	1330	0.740	1402	0.860	1469	0.990	1533	1.120	1595	1.260	1656	1.390
2725	2096	1247	0.590	1332	0.730	1410	0.870	1479	1.010	1543	1.150	1605	1.290	1664	1.440	1721	1.580
2950	2269	1337	0.720	1416	0.870	1490	1.030	1558	1.180	1620	1.330	1679	1.480	1736	1.640	1790	1.790
3175	2442	1428	0.870	1501	1.030	1572	1.200	1638	1.370	1698	1.530	1755	1.700	1810	1.860	1862	2.020
3400	2615	1520	1.040	1587	1.220	1655	1.400	1719	1.580	1778	1.750	1833	1.930	1886	2.100	1937	2.280
3625	2788	1613	1.240	1674	1.420	1739	1.610	1800	1.810	1858	2.000	1912	2.180	1964	2.370	2013	2.560
3850	2962	1707	1.460	1763	1.650	1823	1.850	1883	2.060	1939	2.260	1992	2.460	2042	2.660	2090	2.860
4075	3135	1801	1.710	1852	1.910	1909	2.120	1966	2.340	2021	2.550	2073	2.770	2122	2.980	2169	3.190
4300	3308	1895	1.990	1943	2.200	1996	2.420	2050	2.640	2104	2.870	2154	3.100	2202	3.320	2248	3.550
4525	3481	1990	2.300	2034	2.510	2084	2.740	2136	2.980	2187	3.220	2236	3.460	2283	3.690	2329	3.930
4750	3654	2085	2.630	2126	2.860	2173	3.090	2222	3.340	2271	3.590	2319	3.840	2365	4.100	2410	4.350
4975	3827	2180	3.000	2219	3.240	2262	3.480	2309	3.740	2356	4.000	2402	4.260	2447	4.530	2491	4.790
5200	4000	2275	3.410	2312	3.650	2353	3.900	2396	4.170	2441	4.440	2486	4.720	2530	4.990	2573	5.270
5425	4173	2371	3.850	2405	4.100	2444	4.360	2485	4.630	2528	4.920	2571	5.200	-	-	-	-

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1600	1231	1507	0.960	1574	1.080	1638	1.200	1701	1.320	1820	1.580	1932	1.850	-	-	-	-
1750	1346	1536	1.040	1600	1.160	1663	1.290	1723	1.420	1840	1.680	1951	1.960	2056	2.250	2156	2.560
1900	1462	1567	1.120	1630	1.250	1691	1.380	1750	1.520	1863	1.790	1971	2.080	2075	2.370	2174	2.680
2050	1577	1601	1.210	1662	1.350	1721	1.480	1779	1.620	1890	1.910	1995	2.200	2096	2.510	2193	2.830
2200	1692	1637	1.310	1696	1.450	1754	1.590	1811	1.730	1919	2.030	2022	2.340	2120	2.660	2215	2.980
2350	1808	1674	1.420	1733	1.560	1789	1.710	1844	1.850	1950	2.160	2051	2.480	2147	2.810	2240	3.150
2500	1923	1714	1.540	1771	1.680	1826	1.830	1880	1.980	1983	2.300	2082	2.630	2177	2.970	2268	3.320
2650	2038	1756	1.660	1811	1.810	1865	1.970	1917	2.120	2018	2.450	2115	2.790	2208	3.140	2297	3.490
2800	2154	1799	1.800	1852	1.950	1905	2.110	1956	2.270	2055	2.610	2150	2.950	2241	3.310	2329	3.680
2950	2269	1844	1.950	1896	2.110	1947	2.270	1997	2.430	2093	2.780	2186	3.130	2276	3.500	2362	3.880
3100	2385	1890	2.100	1940	2.270	1990	2.440	2039	2.610	2133	2.960	2224	3.320	2312	3.700	2396	4.080
3250	2500	1937	2.270	1987	2.440	2035	2.620	2082	2.790	2174	3.150	2263	3.520	2349	3.910	2432	4.300
3400	2615	1986	2.450	2034	2.630	2081	2.810	2127	2.990	2217	3.360	2304	3.740	2388	4.130	2470	4.530
3550	2731	2035	2.640	2082	2.830	2128	3.010	2173	3.200	2261	3.580	2345	3.970	2428	4.370	2508	4.780
3700	2846	2086	2.840	2131	3.040	2176	3.230	2220	3.420	2306	3.810	2389	4.210	2469	4.620	2548	5.040
3850	2962	2137	3.060	2182	3.260	2225	3.450	2268	3.650	2352	4.060	2433	4.470	2512	4.890	2589	5.310
4050	3115	2205	3.360	2249	3.570	2292	3.780	2334	3.980	2415	4.400	2494	4.830	2571	5.260	-	-
4250	3269	2275	3.680	2318	3.900	2360	4.120	2401	4.340	2480	4.780	2556	5.220	-	-	-	-
4450	3423	2346	4.030	2388	4.260	2429	4.490	2469	4.720	2546	5.170	-	-	-	-	-	-
4650	3577	2417	4.400	2458	4.640	2498	4.880	2537	5.120	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

D16 | belt drive





Maximum RPM: 2400	Max BHP: (RPM/1359)^3	Outlet Area: 1.50 Sq. Ft.	Wheel Diameter: 16 3/8"	Tip Speed: 4.29 X RPM	Max Motor Frame Size: 184T

CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1250	833	626	0.098	766	0.171	-	-	-	-	-	-	-	-	-	-	-	-
1400	933	663	0.115	798	0.197	906	0.280	-	-	-	-	-	-	-	-	-	-
1550	1033	705	0.138	830	0.225	942	0.318	1032	0.411	-	-	-	-	-	-	-	-
1700	1133	748	0.165	868	0.26	974	0.357	1066	0.459	1147	0.561	-	-	-	-	-	-
1850	1233	793	0.196	905	0.294	1005	0.399	1101	0.511	1179	0.619	1255	0.733	-	-	-	-
2000	1333	838	0.229	943	0.332	1041	0.447	1132	0.563	1216	0.685	1286	0.802	1356	0.925	-	-
2150	1433	884	0.266	984	0.377	1080	0.501	1163	0.618	1249	0.750	1322	0.878	1386	1.004	1451	1.136
2300	1533	931	0.308	1028	0.429	1117	0.553	1200	0.685	1278	0.814	1356	0.957	1423	1.094	1482	1.228
2450	1633	979	0.355	1072	0.487	1155	0.610	1239	0.758	1311	0.888	1387	1.035	1457	1.184	1519	1.330
2600	1733	1027	0.406	1116	0.546	1196	0.676	1276	0.825	1349	0.974	1417	1.116	1489	1.276	1553	1.432
2750	1833	1076	0.464	1161	0.611	1239	0.752	1314	0.899	1388	1.065	1452	1.211	1518	1.368	1586	1.539
2900	1933	1127	0.529	1207	0.682	1283	0.835	1352	0.977	1425	1.150	1491	1.318	1552	1.474	1615	1.642
3050	2033	1177	0.599	1253	0.758	1327	0.922	1395	1.073	1463	1.241	1529	1.423	1589	1.591	1647	1.757
3200	2133	1228	0.677	1300	0.840	1372	1.014	1438	1.175	1501	1.338	1567	1.528	1628	1.719	1683	1.887
3350	2233	1280	0.763	1348	0.930	1417	1.111	1482	1.287	1542	1.449	1605	1.639	1666	1.839	1722	2.030
3500	2333	1332	0.857	1396	1.027	1462	1.215	1526	1.403	1585	1.574	1643	1.755	1703	1.961	1761	2.174
3650	2433	1384	0.957	1444	1.130	1508	1.326	1571	1.524	1629	1.710	1684	1.888	1741	2.091	1798	2.310
3800	2533	1436	1.066	1492	1.240	1555	1.445	1616	1.651	1673	1.851	1727	2.036	1780	2.231	1836	2.455
3950	2633	1489	1.185	1543	1.365	1602	1.570	1661	1.785	1717	1.997	1770	2.192	1821	2.387	1874	2.606
4100	2733	1541	1.309	1593	1.495	1650	1.706	1707	1.930	1762	2.149	1814	2.359	1864	2.560	1912	2.764
4250	2833	1593	1.442	1644	1.636	1697	1.847	1753	2.080	1807	2.308	1859	2.539	1907	2.741	1954	2.949
4400	2933	1646	1.586	1694	1.783	1745	1.998	1800	2.240	1852	2.476	1903	2.713	1951	2.935	1997	3.148
4550	3033	1698	1.736	1746	1.946	1794	2.162	1847	2.407	1898	2.655	1948	2.899	1995	3.138	2041	3.361
4700	3133	1751	1.899	1797	2.114	1843	2.334	1894	2.583	1944	2.842	1993	3.094	2040	3.347	2085	3.583
4850	3233	1803	2.069	1849	2.296	1893	2.519	1942	2.772	1990	3.033	2038	3.297	2084	3.555	2129	3.814
5000	3333	1856	2.252	1901	2.488	1944	2.718	1990	2.970	2037	3.238	2084	3.514	2129	3.777	2173	4.047
5150	3433	1908	2.442	1953	2.691	1994	2.923	2038	3.178	2085	3.457	2130	3.738	2174	4.009	2218	4.289
5300	3533	1961	2.646	2006	2.909	2045	3.143	2086	3.395	2132	3.680	2176	3.967	2220	4.256	2263	4.541
5450	3633	2014	2.862	2058	3.134	2096	3.374	2136	3.632	2180	3.919	2223	4.211	2266	4.513	2308	4.802
5600	3733	2067	3.089	2110	3.370	2148	3.621	2186	3.879	2228	4.167	2270	4.466	2312	4.775	2353	5.074

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2600	1733	1611	1.587	1664	1.740	1717	1.897	1774	2.065	-	-	-	-	-	-	-	-
2750	1833	1646	1.705	1701	1.869	1751	2.029	1800	2.192	1909	2.550	-	-	-	-	-	-
2900	1933	1679	1.824	1735	1.997	1788	2.172	1835	2.337	1931	2.690	-	-	-	-	-	-
3050	2033	1708	1.940	1768	2.129	1822	2.313	1872	2.494	1963	2.854	2054	3.224	-	-	-	-
3200	2133	1739	2.065	1798	2.260	1855	2.459	1906	2.650	1999	3.028	2083	3.403	2174	3.808	-	-
3350	2233	1774	2.207	1828	2.396	1884	2.600	1939	2.809	2035	3.210	2120	3.604	2201	4.003	2289	4.431
3500	2333	1813	2.366	1863	2.553	1914	2.749	1968	2.963	2068	3.391	2156	3.808	2235	4.217	2314	4.641
3650	2433	1852	2.531	1900	2.721	1949	2.920	1998	3.126	2101	3.580	2191	4.018	2272	4.449	2347	4.878
3800	2533	1889	2.681	1940	2.907	1986	3.105	2033	3.313	2130	3.761	2224	4.228	2308	4.684	2383	5.127
3950	2633	1927	2.841	1977	3.075	2025	3.303	2069	3.509	2160	3.951	2255	4.437	2341	4.916	-	-
4100	2733	1965	3.008	2015	3.251	2063	3.496	2108	3.724	2194	4.163	2284	4.646	2374	5.156	-	-
4250	2833	2003	3.181	2053	3.433	2101	3.687	2148	3.942	2231	4.398	2315	4.869	-	-	-	-
4400	2933	2042	3.365	2091	3.621	2138	3.879	2184	4.143	2270	4.648	2350	5.119	-	-	-	-
4550	3033	2085	3.583	2129	6.817	2176	4.084	2222	4.356	2309	4.905	-	-	-	-	-	-
4700	3133	2128	3.809	2170	4.039	2215	4.301	2260	4.577	2346	5.137	-	-	-	-	-	-
4850	3233	2172	4.050	2213	4.284	2253	4.520	2298	4.805	-	-	-	-	-	-	-	-
5000	3333	2216	4.301	2257	4.544	2296	4.784	2337	5.048	-	-	-	-	-	-	-	-
5150	3433	2260	4.562	2300	4.809	2339	5.058	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

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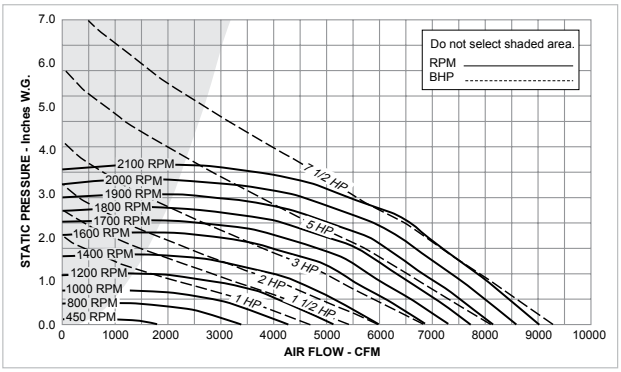

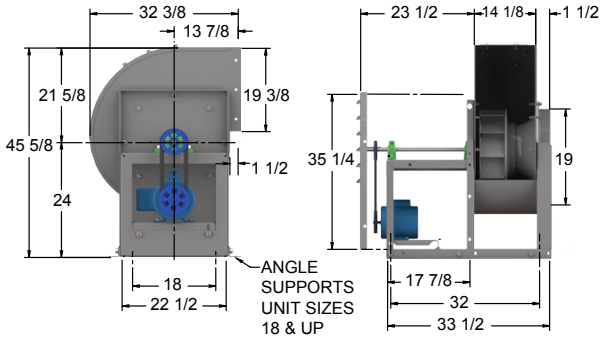

Maximum RPM: 2150	Max BHP: (RPM/1067)³	Outlet Area: 1.90 Sq. Ft.	Wheel Diameter: 18 1/8˝	Tip Speed: 4.85 X RPM	Max Motor Frame Size: 215T

CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1400	737	488	0.095	622	0.179	739	0.274	841	0.378	934	0.489	1018	0.604	1095	0.724	1169	0.853
1625	855	521	0.116	648	0.214	754	0.312	853	0.423	944	0.544	1027	0.670	1104	0.799	1176	0.934
1850	974	563	0.145	675	0.248	778	0.360	868	0.473	956	0.600	1038	0.736	1113	0.876	1185	1.022
2075	1092	607	0.180	701	0.284	804	0.412	891	0.535	971	0.663	1050	0.804	1125	0.953	1195	1.108
2300	1211	650	0.220	737	0.330	830	0.463	917	0.606	994	0.740	1066	0.881	1137	1.034	1207	1.198
2525	1329	695	0.268	779	0.386	857	0.518	943	0.672	1020	0.828	1089	0.974	1155	1.129	1219	1.290
2750	1447	740	0.323	822	0.450	892	0.585	970	0.745	1046	0.913	1115	1.079	1179	1.240	1239	1.404
2975	1566	786	0.385	866	0.523	932	0.663	998	0.819	1073	1.001	1141	1.182	1205	1.363	1265	1.538
3200	1684	833	0.456	909	0.603	975	0.754	1034	0.911	1100	1.093	1168	1.287	1231	1.483	1291	1.680
3425	1803	882	0.538	953	0.692	1018	0.853	1074	1.015	1131	1.192	1195	1.397	1258	1.604	1317	1.816
3650	1921	930	0.627	998	0.793	1061	0.961	1117	1.135	1168	1.312	1223	1.507	1285	1.732	1343	1.951
3875	2039	980	0.730	1044	0.906	1105	1.083	1160	1.265	1210	1.450	1259	1.645	1312	1.859	1370	2.096
4100	2158	1029	0.841	1089	1.026	1149	1.215	1203	1.404	1252	1.598	1298	1.796	1346	2.010	1397	2.242
4325	2276	1079	0.965	1136	1.162	1193	1.356	1247	1.559	1295	1.760	1340	1.966	1383	2.178	1429	2.405
4550	2395	1129	1.102	1184	1.310	1239	1.516	1290	1.722	1339	1.937	1383	2.152	1425	2.371	1466	2.596
4775	2513	1179	1.251	1232	1.468	1284	1.685	1335	1.904	1382	2.123	1426	2.349	1467	2.575	1507	2.809
5000	2632	1230	1.417	1281	1.643	1330	1.869	1379	2.095	1426	2.328	1470	2.562	1510	2.796	1549	3.037
5225	2750	1281	1.596	1330	1.831	1376	2.067	1424	2.303	1470	2.545	1513	2.786	1553	3.030	1591	3.277
5450	2868	1331	1.787	1379	2.034	1423	2.279	1470	2.529	1514	2.775	1557	3.031	1597	3.283	1634	3.537
5675	2987	1382	1.996	1428	2.251	1471	2.507	1515	2.764	1559	3.025	1601	3.289	1640	3.548	1678	3.817
5900	3105	1433	2.222	1478	2.488	1520	2.755	1562	3.025	1604	3.290	1645	3.562	1684	3.834	1721	4.105
6125	3224	1485	2.468	1528	2.741	1569	3.019	1608	3.296	1650	3.576	1690	3.856	1728	4.136	1765	4.420
6350	3342	1536	2.728	1578	3.012	1618	3.299	1656	3.589	1695	3.871	1735	4.166	1772	4.453	1808	4.743
6575	3461	1587	3.004	1628	3.299	1667	3.597	1704	3.895	1742	4.197	1780	4.493	1817	4.793	1852	5.090
6800	3579	1639	3.306	1678	3.605	1716	3.912	1752	4.219	1788	4.533	1825	4.836	1862	5.151	1897	5.462

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1850	974	1252	1.168	1316	1.321	1377	1.478	1435	1.637	1546	1.973	1650	2.325	-	-	-	-
2075	1092	1261	1.267	1325	1.430	1385	1.594	1443	1.763	1553	2.114	1655	2.477	1752	2.857	1845	3.255
2300	1211	1273	1.367	1335	1.538	1394	1.714	1452	1.894	1561	2.261	1663	2.643	1759	3.038	1850	3.445
2525	1329	1285	1.469	1347	1.650	1406	1.835	1463	2.027	1570	2.415	1672	2.817	1767	3.226	1858	3.652
2750	1447	1300	1.582	1359	1.765	1418	1.960	1475	2.161	1581	2.567	1680	2.989	1776	3.423	1866	3.863
2975	1566	1321	1.714	1377	1.901	1431	2.092	1487	2.299	1593	2.724	1692	3.164	1785	3.617	1875	4.083
3200	1684	1347	1.867	1400	2.056	1451	2.248	1503	2.453	1605	2.885	1704	3.344	1797	3.815	1885	4.299
3425	1803	1373	2.027	1425	2.223	1476	2.427	1524	2.629	1620	3.060	1716	3.527	1809	4.018	1897	4.520
3650	1921	1399	2.179	1451	2.402	1502	2.618	1550	2.832	1641	3.267	1731	3.729	1821	4.225	1909	4.746
3875	2039	1425	2.331	1478	2.573	1528	2.816	1576	3.043	1666	3.494	1752	3.964	1837	4.458	1921	4.977
4100	2158	1452	2.494	1504	2.743	1554	2.996	1602	3.254	1692	3.737	1776	4.217	1857	4.715	1937	5.235
4325	2276	1479	2.659	1531	2.924	1581	3.190	1628	3.452	1718	3.990	1802	4.492	1881	5.000	1958	5.529
4550	2395	1510	2.837	1558	3.108	1608	3.390	1655	3.664	1744	4.221	1828	4.778	1907	5.308	1982	5.845
4775	2513	1546	3.045	1589	3.306	1634	3.585	1682	3.884	1771	4.464	1854	5.053	1933	5.627	2008	6.187
5000	2632	1586	3.278	1625	3.536	1665	3.803	1709	4.103	1798	4.715	1881	5.326	1959	5.945	2034	6.540
5225	2750	1628	3.531	1663	3.782	1701	4.056	1740	4.340	1825	4.974	1907	5.599	1986	6.250	2060	6.901
5450	2868	1670	3.796	1705	4.060	1739	4.327	1775	4.609	1851	5.217	1934	5.891	2012	6.554	2086	7.227
5675	2987	1713	4.082	1748	4.358	1781	4.630	1813	4.905	1884	5.510	1961	6.190	2039	6.877	2113	7.573
5900	3105	1756	4.382	1790	4.663	1823	4.948	1855	5.234	1920	5.833	1988	6.470	2066	7.211	-	-
6125	3224	1800	4.704	1833	4.991	1866	5.288	1897	5.578	1958	6.179	2023	6.823	2093	7.537	-	-
6350	3342	1844	5.046	1877	5.342	1909	5.643	1940	5.946	1999	6.552	2059	7.193	-	-	-	-
6575	3461	1887	5.399	1921	5.710	1952	6.015	1983	6.330	2041	6.951	2098	7.598	-	-	-	-
6800	3579	1931	5.776	1964	6.092	1996	6.412	2026	6.731	2084	7.377	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

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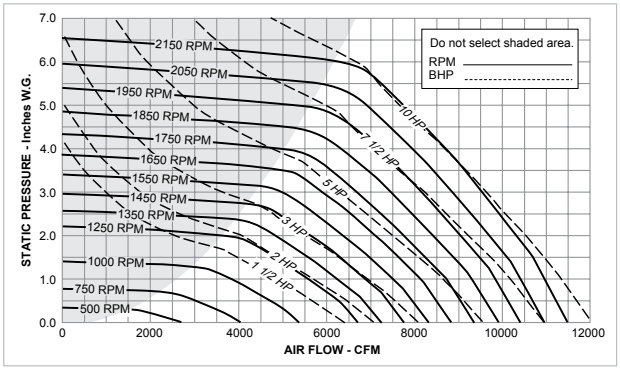

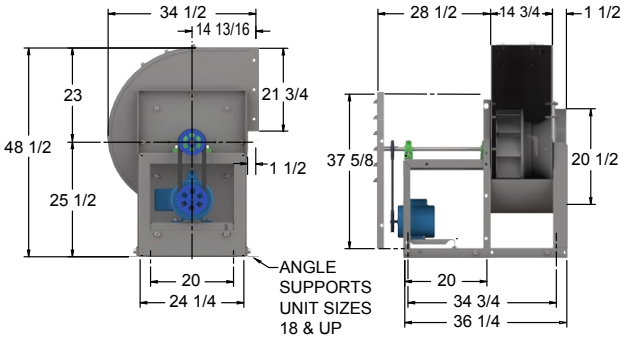

Maximum RPM: 2175	Max BHP: $(RPM/992)^3$	Outlet Area: 2.20 Sq. Ft.	Wheel Diameter: 20˝	Tip Speed: 5.24 X RPM	Max Motor Frame Size: 256T

CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2500	1136	590	0.204	691	0.337	780	0.478	874	0.648	-	-	-	-	-	-	-	-
2750	1250	628	0.244	723	0.385	809	0.540	887	0.692	975	0.895	-	-	-	-	-	-
3000	1364	667	0.290	757	0.437	839	0.604	913	0.774	986	0.944	1067	1.172	-	-	-	-
3250	1477	707	0.342	793	0.498	870	0.674	943	0.855	1009	1.037	1079	1.234	1153	1.480	-	-
3500	1591	747	0.401	830	0.568	904	0.749	973	0.942	1038	1.139	1099	1.334	1165	1.553	1234	1.818
3750	1705	788	0.468	867	0.644	938	0.829	1004	1.036	1068	1.244	1127	1.457	1183	1.661	1245	1.896
4000	1818	829	0.543	906	0.730	974	0.922	1038	1.135	1099	1.358	1157	1.580	1212	1.812	1264	2.025
4250	1932	872	0.628	945	0.823	1011	1.027	1072	1.241	1130	1.474	1187	1.709	1241	1.949	1292	2.194
4500	2045	917	0.724	9840	0.924	1048	1.139	1107	1.357	1164	1.600	1218	1.850	1271	2.097	1322	2.355
4750	2159	962	0.830	1024	1.035	1086	1.262	1143	1.488	1198	1.732	1251	1.995	1302	2.258	1352	2.523
5000	2273	1007	0.946	1064	1.157	1125	1.395	1181	1.635	1233	1.876	1285	2.148	1333	2.422	1382	2.699
5250	2386	1053	1.075	1105	1.292	1164	1.537	1218	1.787	1269	2.038	1319	2.309	1367	2.596	1413	2.890
5500	2500	1098	1.213	1146	1.437	1203	1.688	1256	1.952	1307	2.218	1354	2.483	1401	2.778	1446	3.080
5750	2614	1144	1.366	1188	1.596	1243	1.854	1295	2.129	1344	2.404	1390	2.678	1436	2.974	1480	3.284
6000	2727	1190	1.531	1231	1.768	1283	2.031	1334	2.316	1382	2.606	1428	2.894	1471	3.182	1514	3.496
6250	2841	1236	1.709	1276	1.957	1324	2.226	1374	2.520	1420	2.816	1465	3.116	1508	3.418	1549	3.725
6500	2955	1283	1.906	1321	2.159	1365	2.433	1413	2.729	1459	3.041	1503	3.355	1545	3.665	1585	3.977
6750	3068	1329	2.112	1366	2.375	1406	2.651	1453	2.957	1498	3.278	1541	3.605	1582	3.923	1622	4.249
7000	3182	1376	2.338	1411	2.606	1448	2.891	1494	3.205	1538	3.533	1580	3.869	1620	4.202	1659	4.535
7250	3295	1422	2.576	1457	2.857	1490	3.142	1534	3.461	1577	3.795	1619	4.147	1658	4.493	1697	4.841
7500	3409	1469	2.836	1502	3.118	1535	3.417	1575	3.738	1617	4.077	1658	4.437	1697	4.799	1734	5.152
7750	3523	1515	3.106	1548	3.401	1580	3.709	1616	4.029	1658	4.384	1697	4.741	1736	5.118	1772	5.485
8000	3636	1562	3.400	1594	3.701	1625	4.017	1658	4.343	1698	4.699	1737	5.068	1775	5.452	1811	5.834
8250	3750	1609	3.712	1640	4.018	1670	4.342	1699	4.665	1739	5.037	1777	5.409	1814	5.800	1850	6.197
8500	3864	1656	4.043	1686	4.354	1715	4.684	1743	5.017	1780	5.391	1817	5.769	1854	6.173	1889	6.575
8750	3977	1703	4.393	1732	4.708	1761	5.053	1788	5.392	1821	5.762	1858	6.156	1894	6.561	1928	6.969
9000	4091	1750	4.762	1778	5.081	1806	5.432	1833	5.786	1863	6.159	1899	6.561	1934	6.967	1968	7.390
9250	4205	1797	5.152	1825	5.482	1852	5.840	1878	6.199	1904	6.565	1940	6.982	1974	7.394	2008	7.828
9500	4318	1844	5.563	1871	5.895	1898	6.268	1923	6.631	1949	7.015	1981	7.422	2015	7.850	2048	8.283
9750	4432	1891	5.995	1918	6.338	1943	6.706	1969	7.095	1993	7.472	2023	7.892	2056	8.325	2088	8.759

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4500	2045	1370	2.616	1416	2.851	1466	3.109	1520	3.438	-	-	-	-	-	-	-	-
4750	2159	1399	2.790	1445	3.070	1489	3.321	1535	3.585	1637	4.273	-	-	-	-	-	-
5000	2273	1429	2.979	1474	3.264	1517	3.552	1560	3.827	1649	4.412	1747	5.172	-	-	-	-
5250	2386	1460	3.182	1504	3.472	1547	3.773	1588	4.075	1668	4.642	1758	5.329	1851	6.135	-	-
5500	2500	1490	3.387	1534	3.690	1577	4.003	1618	4.317	1696	4.942	1774	5.539	1862	6.318	1950	7.161
5750	2614	1523	3.606	1565	3.924	1607	4.242	1648	4.568	1725	5.226	1798	5.853	1875	6.503	1960	7.358
6000	2727	1557	3.831	1597	4.163	1638	4.498	1678	4.829	1754	5.502	1826	6.194	1896	6.833	1973	7.562
6250	2841	1591	4.067	1631	4.411	1669	4.756	1708	5.099	1784	5.796	1856	6.513	1924	7.219	1991	7.882
6500	2955	1625	4.312	1665	4.669	1703	5.027	1740	5.392	1815	6.111	1886	6.842	1953	7.583	2018	8.300
6750	3068	1660	4.576	1699	4.637	1737	5.308	1773	5.677	1845	6.427	1916	7.183	1983	7.948	2047	8.728
7000	3182	1697	4.875	1734	5.225	1771	5.600	1807	5.981	1876	6.760	1946	7.534	2013	8.324	2076	9.115
7250	3295	1734	5.187	1770	5.539	1805	5.902	1841	6.297	1910	7.102	1977	7.909	2043	8.711	2106	9.526
7500	3409	1771	5.512	1806	5.869	1841	6.239	1876	6.634	1944	7.455	2008	8.287	2073	9.111	2136	9.950
7750	3523	1809	5.861	1844	6.232	1878	6.606	1910	6.973	1978	7.820	2042	8.679	2104	9.535	2167	10.400
8000	3636	1846	6.214	1881	6.599	1914	6.977	1947	7.368	2012	8.198	2075	9.069	2136	9.968	-	-
8250	3750	1885	6.600	1919	6.992	1952	7.384	1984	7.778	2047	8.599	2109	9.485	2169	10.396	-	-
8500	3864	1923	6.983	1956	7.388	1989	7.795	2021	8.203	2082	9.021	2144	9.927	-	-	-	-
8750	3977	1962	7.392	1995	7.818	2027	8.233	2058	8.644	2119	9.489	-	-	-	-	-	-
9000	4091	2001	7.817	2033	8.247	2065	8.688	2096	9.113	2156	9.974	-	-	-	-	-	-
9250	4205	2041	8.271	2072	8.703	2103	9.149	2134	9.599	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

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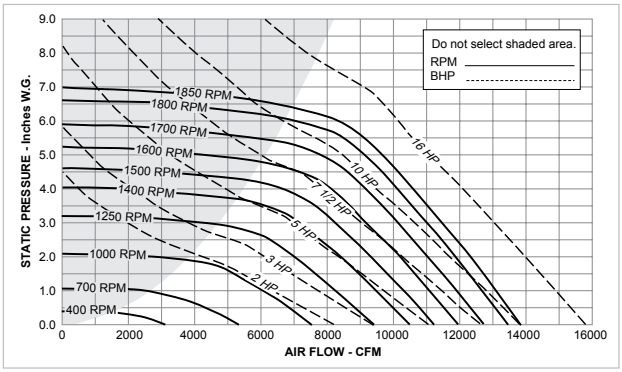

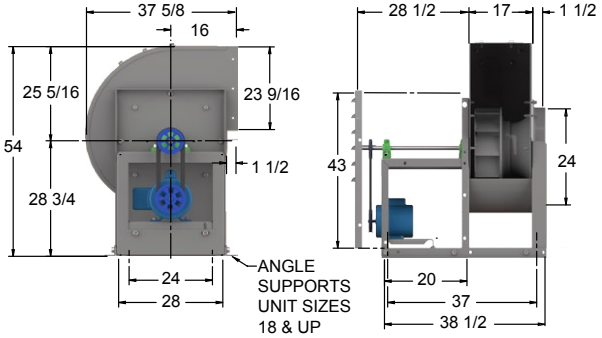

Maximum RPM: 1865	Max BHP: (RPM/806)^3	Outlet Area: 2.80 Sq. Ft.	Wheel Diameter: 22 7/8"	Tip Speed: 4.99 X RPM	Max Motor Frame Size: 256T

CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2900	1036	496	0.226	580	0.370	661	0.536	745	0.746	-	-	-	-	-	-	-	-
3200	1143	529	0.271	608	0.429	679	0.429	757	0.798	832	1.035	-	-	-	-	-	-
3500	1250	563	0.323	639	0.493	705	0.664	771	0.857	843	1.098	911	1.358	-	-	-	-
3800	1357	598	0.383	670	0.563	733	0.751	793	0.941	856	1.167	923	1.439	985	1.719	-	-
4100	1464	633	0.449	701	0.639	763	0.843	819	1.043	875	1.260	935	1.517	996	1.808	1054	2.113
4400	1571	670	0.527	735	0.730	794	0.942	848	1.162	899	1.376	952	1.619	1009	1.904	1066	2.218
4700	1679	706	0.610	768	0.825	825	1.049	878	1.285	927	1.514	975	1.751	1024	2.012	1078	2.322
5000	1786	743	0.704	803	0.935	857	1.168	908	1.412	956	1.667	1002	1.909	1047	2.165	1093	2.445
5300	1893	780	0.808	837	1.052	890	1.298	939	1.551	986	1.819	1030	2.081	1072	2.335	1115	2.613
5600	2000	818	0.926	872	1.182	923	1.437	971	1.705	1017	1.983	1059	2.263	1101	2.538	1140	2.806
5900	2107	856	1.055	908	1.323	957	1.591	1003	1.868	1048	2.157	1090	2.452	1129	2.745	1169	3.035
6200	2214	894	1.195	944	1.474	992	1.761	1036	2.044	1079	2.341	1120	2.645	1159	2.958	1197	3.268
6500	2321	932	1.347	981	1.642	1026	1.937	1070	2.237	1111	2.543	1152	2.863	1190	3.184	1227	3.517
6800	2429	971	1.516	1018	1.822	1061	2.131	1104	2.443	1144	2.759	1183	3.085	1221	3.422	1257	3.762
7100	2536	1010	1.699	1055	2.015	1097	2.339	1138	2.661	1177	2.987	1215	3.327	1252	3.671	1288	4.027
7400	2643	1049	1.897	1092	2.222	1133	2.559	1173	2.899	1211	3.236	1248	3.586	1284	3.942	1319	4.305
7700	2750	1088	2.110	1129	2.443	1169	2.792	1208	3.152	1245	3.498	1281	3.857	1315	4.216	1350	4.595
8000	2857	1128	2.344	1167	2.685	1206	3.048	1243	3.418	1280	3.783	1315	4.150	1348	4.518	1382	4.909
8300	2964	1167	2.589	1205	2.943	1243	3.318	1279	3.700	1314	4.074	1349	4.459	1382	4.844	1414	5.237
8600	3071	1206	2.850	1243	3.218	1280	3.605	1315	3.997	1349	4.389	1383	4.783	1416	5.185	1447	5.584
8900	3179	1246	3.137	1281	3.509	1317	3.908	1351	4.310	1384	4.721	1418	5.133	1450	5.542	1480	5.947
9200	3286	1286	3.442	1319	3.817	1354	4.227	1388	4.649	1420	5.071	1452	5.489	1484	5.916	1514	6.337
9500	3393	1325	3.757	1358	4.153	1392	4.575	1425	5.006	1456	5.436	1487	5.873	1518	6.307	1548	6.745
9800	3500	1365	4.101	1397	4.507	1429	4.930	1462	5.381	1493	5.831	1522	6.275	1553	6.727	1582	7.171
10100	3607	1405	4.465	1436	4.882	1467	5.315	1499	5.776	1529	6.232	1558	6.695	1588	7.167	1617	7.628
10400	3714	1445	4.851	1475	5.277	1505	5.720	1536	6.189	1566	6.665	1594	7.134	1623	7.625	1651	8.090
10700	3821	1484	5.247	1514	5.693	1543	6.145	1573	6.622	1603	7.118	1631	7.606	1658	8.096	1686	8.586
11000	3929	1524	5.676	1553	6.131	1581	6.591	1611	7.089	1639	7.578	1667	8.084	1694	8.593	1721	9.102
11300	4036	1564	6.128	1593	6.603	1620	7.071	1649	7.577	1677	8.086	1704	8.598	1730	9.111	1756	9.639
11600	4143	1604	6.603	1632	7.087	1659	7.573	1686	8.073	1714	8.602	1741	9.134	1767	9.666	1792	10.197
11900	4250	1644	7.103	1672	7.607	1698	8.100	1724	8.606	1751	9.141	1777	9.675	1803	10.226	1828	10.776

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5000	1786	1145	2.784	1195	3.134	1243	3.497	1290	3.868	-	-	-	-	-	-	-	-
5300	1893	1160	2.923	1208	3.273	1256	3.646	1302	4.030	1390	4.810	-	-	-	-	-	-
5600	2000	1181	3.104	1223	3.427	1268	3.790	1314	4.184	1401	5.001	1484	5.831	-	-	-	-
5900	2107	1206	3.321	1245	3.636	1285	3.977	1327	4.351	1413	5.179	1494	6.050	1573	6.929	-	-
6200	2214	1234	3.568	1269	3.868	1307	4.207	1345	4.563	1426	5.372	1506	6.251	1582	7.163	1657	8.092
6500	2321	1262	3.827	1297	4.142	1331	4.463	1367	4.816	1439	5.569	1519	6.470	1594	7.397	1667	8.365
6800	2429	1291	4.103	1326	4.438	1359	4.764	1391	5.095	1459	5.835	1532	6.693	1607	7.641	1679	8.633
7100	2536	1322	4.384	1355	4.747	1387	5.077	1419	5.423	1483	6.155	1548	6.951	1620	7.891	1691	8.888
7400	2643	1352	4.667	1385	5.048	1416	5.416	1448	5.777	1508	6.495	1570	7.286	1633	8.143	1704	9.164
7700	2750	1383	4.973	1415	5.358	1446	5.750	1476	6.132	1536	6.880	1594	7.653	1654	8.500	1717	9.444
8000	2857	1414	5.292	1446	5.693	1477	6.101	1506	6.500	1564	7.279	1620	8.058	1677	8.895	1735	9.795
8300	2964	1446	5.637	1477	6.042	1507	6.453	1537	6.880	1593	7.709	1648	8.501	1701	9.315	1757	10.215
8600	3071	1478	5.996	1508	6.405	1538	6.831	1567	7.261	1623	8.140	1677	8.977	1729	9.804	1781	10.674
8900	1379	1510	6.368	1540	6.796	1570	7.239	1598	7.671	1653	8.565	1706	9.470	1758	10.326	1807	11.179
9200	3286	1543	6.763	1572	7.203	1601	7.648	1629	8.095	1684	9.022	1735	9.943	1786	10.849	1835	11.730
9500	3393	1577	7.188	1605	7.633	1633	8.088	7661	8.551	1714	9.478	1766	10.447	1815	11.408	1864	12.318
9800	3500	1611	7.631	1638	8.079	1665	8.542	1692	9.009	1746	9.984	1796	10.949	1845	11.951	-	-
10100	3607	1645	8.092	1672	8.557	1698	9.022	1724	9.499	1777	10.489	1827	11.486	-	-	-	-
10400	3714	1679	8.572	1706	9.054	1732	9.535	1757	10.015	1808	11.013	1858	12.041	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

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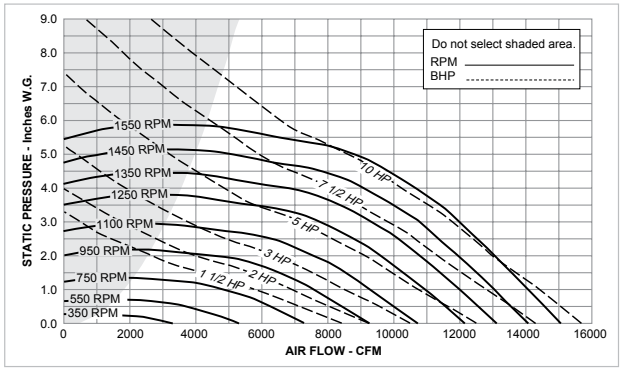
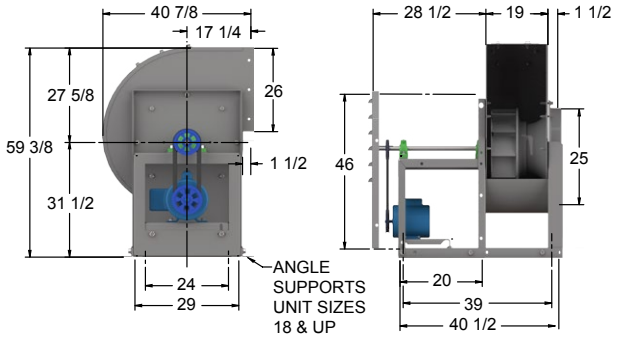




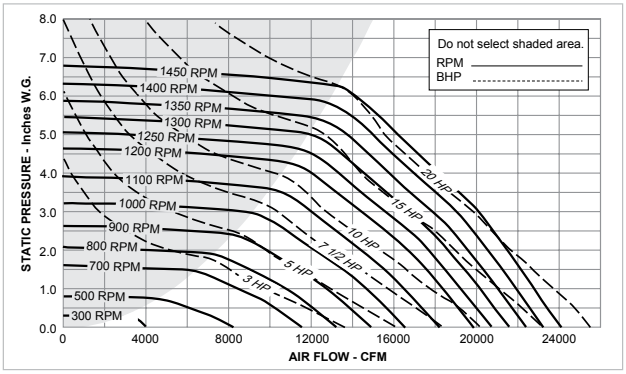
Maximum RPM: 1575	Max BHP: (RPM/706)^3	Outlet Area: 3.40 Sq. Ft.	Wheel Diameter: 24 7/8˝	Tip Speed: 6.45 X RPM	Max Motor Frame Size: 256T

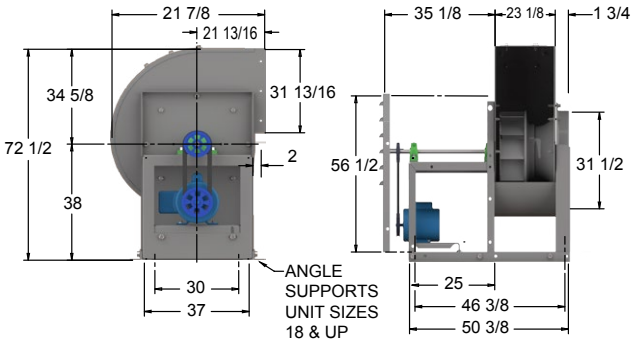
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2900	853	408	0.191	500	0.344	588	0.534	671	0.748	741	0.953	805	1.165	864	1.385	919	1.612
3275	963	437	0.233	522	0.400	601	0.590	678	0.812	751	1.053	814	1.283	873	1.520	928	1.764
3650	1074	469	0.286	546	0.461	618	0.653	688	0.878	758	1.133	825	1.408	883	1.663	937	1.921
4025	1184	502	0.348	572	0.527	611	0.741	704	0.958	768	1.216	831	1.497	892	1.795	947	2.083
4400	1294	535	0.415	599	0.601	664	0.831	725	1.062	783	1.313	841	1.595	898	1.899	956	2.230
4775	1404	569	0.493	630	0.696	690	0.927	748	1.183	802	1.431	856	1.713	909	2.017	962	2.346
5150	1515	604	0.583	662	0.803	716	1.030	772	1.305	824	1.572	874	1.847	924	2.154	973	2.481
5525	1625	638	0.680	695	0.925	745	1.155	798	1.434	847	1.727	898	2.014	942	2.310	989	2.642
5900	1735	674	0.795	728	1.057	776	1.299	824	1.571	873	1.883	919	2.197	964	2.503	1006	2.813
6275	1846	710	0.921	762	1.199	808	7.461	851	1.723	899	2.048	943	2.379	986	2.706	1028	3.033
6650	1956	746	1.059	796	1.353	841	1.641	883	1.917	925	2.221	969	2.570	1010	2.926	1051	3.273
7025	2066	783	1.216	830	1.521	874	1.836	914	2.119	952	2.412	995	2.772	1035	3.137	1074	3.522
7400	2176	820	1.389	864	1.702	907	2.035	947	2.349	984	2.654	1021	2.984	1061	3.367	1099	3.759
7775	2287	857	1.576	899	1.904	941	2.253	979	2.587	1016	2.912	1050	3.234	1088	3.618	1125	4.018
8150	2397	894	1.781	935	2.129	975	2.487	1012	2.849	1048	3.186	1081	3.518	1114	3.871	1151	4.289
8525	2507	931	2.003	970	2.362	1009	2.736	1046	3.122	1080	3.477	1113	3.828	1145	4.190	1178	4.584
8900	2618	969	2.250	1006	2.618	1044	3.011	1079	3.402	1113	3.795	1145	4.156	1176	4.526	1206	4.904
9275	2728	1006	2.510	1043	2.901	1078	3.295	1113	3.708	1146	4.126	1178	4.514	1208	4.892	1237	5.276
9650	2838	1044	2.798	1079	3.195	1113	3.607	1147	4.032	1180	4.473	1211	4.892	1240	5.277	1269	5.681
10025	2949	1082	3.107	1116	3.518	1149	3.948	1182	4.386	1213	4.827	7244	5.291	1273	5.696	1301	6.106
10400	3059	1120	3.438	1153	3.863	1184	4.298	1216	4.750	1247	5.212	1277	5.685	1306	6.137	1333	6.552
10775	3169	1158	3.792	1190	4.230	1220	4.677	1251	5.145	1282	5.631	1311	6.114	1339	6.600	1366	7.036
11150	3279	1196	4.170	1227	4.620	1257	5.091	1286	5.563	1316	6.059	1344	6.549	1372	7.060	1399	7.542
11525	3390	1234	4.572	1264	5.034	1293	5.516	1322	6.017	1351	6.522	1379	7.035	1406	7.554	1432	8.072
11900	3500	1272	5.000	1301	5.472	1330	5.978	1357	6.480	1385	6.995	1413	7.530	1439	8.054	1465	8.598
12275	3610	1310	5.454	1339	5.949	1366	6.452	1393	6.971	1420	7.505	1447	8.048	1473	6.594	1498	9.142
12650	3721	1349	5.947	1376	6.441	1403	6.966	1429	7.498	1455	8.041	1482	8.607	1507	9.158	1532	9.728
13025	3831	1387	6.547	1414	6.974	1440	7.506	1466	8.620	1491	8.620	1517	9.192	1542	9.766	1566	10.339

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2900	853	972	1.849	1022	2.091	-	-	-	-	-	-	-	-	-	-	-	-
3275	963	980	2.017	1029	2.274	1076	2.536	1121	2.803	-	-	-	-	-	-	-	-
3650	1074	989	2.191	1037	2.458	1084	2.740	1128	3.021	1213	3.610	1292	4.213	-	-	-	-
4025	1184	997	2.362	1046	2.653	1093	2.953	1137	3.250	1221	3.872	1299	4.508	1373	5.159	1444	5.840
4400	1294	1008	2.549	1056	2.856	1101	3.163	1146	3.486	1229	4.130	1307	4.802	1380	5.489	1450	6.195
4775	1404	1015	2.693	7066	3.055	1112	3.391	1156	3.730	1238	4.405	1316	5.110	1389	5.831	1458	6.567
5150	1515	1023	2.835	1072	3.203	1120	3.582	1166	3.972	1248	4.690	1325	5.426	1398	6.180	1467	6.950
5525	1625	1034	2.987	1081	3.361	1126	3.746	1172	4.150	1259	4.983	1335	5.751	1407	6.536	1476	7.340
5900	1735	1050	3.166	1093	3.538	1137	3.932	1180	4.341	1265	5.194	1346	6.086	1417	6.899	1484	7.722
6275	1846	1068	3.368	1110	3.746	1150	4.131	1191	4.543	1271	5.401	1352	6.328	1428	7.277	1495	8.138
6650	1956	1090	3.615	1128	3.971	1167	4.361	1206	4.777	1283	5.647	1358	6.566	1434	7.548	1506	8.558
7025	2066	1113	3.884	1150	4.247	11864	4.621	1222	5.018	1295	5.892	1369	8.838	1440	7.816	1512	8.855
7400	2176	1136	4.166	1173	4.546	1208	4.926	1243	5.328	1312	6.183	1380	7.110	1450	8.109	1518	9.153
7775	2287	1161	4.435	1196	4.859	1231	5.256	1265	5.662	1329	6.482	1396	7.425	1461	8.413	1528	9.480
8150	2397	1187	4.724	1221	5.161	1254	5.600	1287	6.010	1352	6.878	1413	7.764	1477	8.776	1539	9.818
8525	2507	1213	5.025	1246	5.467	1279	5.933	1310	6.386	1374	7.274	1434	8.177	1493	9.136	1554	10.208
8900	2618	1239	5.339	1272	5.799	1304	6.269	1335	6.747	1397	7.701	1456	8.621	1512	9.560	-	-
9275	2728	1266	5.660	1299	6.158	1330	6.632	1361	7.128	1419	8.124	1478	9.080	1534	10.053	-	-
9650	2838	1297	6.090	1325	6.517	1357	7.024	1387	7.523	1445	8.554	1501	9.574	-	-	-	-
10025	2949	1328	6.520	1354	6.936	1383	7.416	1413	7.933	1471	9.000	1525	10.075	-	-	-	-
10400	3059	1360	6.986	1386	7.420	1411	7.855	1440	8.375	1497	9.461	-	-	-	-	-	-
10775	3169	1392	7.473	1418	7.927	1442	8.364	1466	8.815	1523	9.937	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

D30 | belt drive





Maximum RPM: 1450	Max BHP: (RPM/524)^3	Outlet Area: 5.08 Sq. Ft.	Wheel Diameter: 30 7/16"	Tip Speed: 7.97 X RPM	Max Motor Frame Size: 286T

CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	1179	430	0.527	493	0.830	548	1.140	596	1.418	643	1.748	-	-	-	-	-	-
6500	1277	456	0.621	515	0.939	569	1.280	615	1.587	659	1.906	702	2.271	-	-	-	-
7000	1376	483	0.729	537	1.054	590	1.424	636	1.787	676	2.087	717	2.447	758	2.857	-	-
7500	1474	510	0.848	559	1.179	610	1.571	657	1.970	698	2.338	735	2.670	773	3.062	811	3.501
8000	1572	537	0.978	583	1.325	632	1.734	677	2.152	719	2.585	755	2.939	790	3.308	825	3.720
8500	1670	564	1.122	609	1.496	654	1.906	698	2.354	739	2.803	776	3.239	809	3.601	843	4.015
9000	1769	592	1.284	635	1.681	676	2.090	719	2.561	760	3.044	797	3.519	831	3.959	862	4.346
9500	1867	620	1.455	661	1.882	699	2.296	741	2.784	780	3.285	817	3.785	852	4.302	883	4.734
10000	1965	649	1.650	688	2.104	724	2.530	763	3.020	802	3.557	838	4.079	872	4.605	904	5.140
11000	2162	707	2.091	742	2.593	777	3.081	808	3.544	845	4.110	880	4.697	913	5.272	945	5.857
10500	2063	678	1.861	715	2.340	750	2.190	786	3.281	823	3.820	859	4.387	893	4.939	924	5.482
11500	2260	736	2.339	769	2.865	803	3.379	834	3.869	868	4.431	902	5.029	934	5.638	966	6.248
12000	2358	765	2.607	797	3.168	829	3.695	860	4.214	890	4.151	924	5.377	956	6.014	986	6.637
12500	2456	794	2.896	824	3.478	856	4.036	886	4.579	914	5.116	946	5.141	978	6.405	1008	7.074
13000	2555	824	3.217	853	3.820	883	4.398	912	4.965	940	5.530	969	6.140	1000	6.814	1029	7.487
13500	2653	853	3.549	881	4.171	910	4.782	939	5.390	966	5.966	992	6.556	1022	7.239	1051	7.939
14000	2751	882	3.903	910	4.558	937	5.188	965	5.817	992	6.425	1017	7.023	1044	7.682	1073	8.410
14500	2849	912	4.296	938	4.954	965	5.635	992	6.277	1018	6.908	1043	7.533	1067	8.166	1095	8.898
15000	2948	942	4.714	967	5.389	992	6.089	1019	6.761	1045	7.436	1069	8.068	1092	8.705	1118	9.432
15500	3046	971	5.143	996	5.850	1020	6.576	1046	7.270	1071	7.967	1095	8.628	1118	9.293	1141	9.986
16000	3144	1001	5.615	1025	6.338	1049	7.096	1073	7.805	1098	8.533	1122	9.239	1144	9.907	1166	10.601
16500	3242	1030	6.110	1054	6.853	1077	7.623	1101	8.389	1125	9.125	1148	9.853	1170	10.548	1192	11.270
17000	3341	1060	6.654	1084	7.416	1106	8.199	1128	8.978	1152	9.745	1175	10.519	1197	11.245	1218	11.968
17500	3439	1090	7.229	1113	7.989	1135	8.804	1156	9.620	1179	10.393	1201	11.170	1223	11.944	1244	12.694
18000	3537	1120	7.837	1142	8.591	1163	9.415	1194	10.270	1206	11.070	1228	11.877	1249	12.671	1270	13.450
18500	3635	1149	8.455	1171	9.223	1192	10.080	1212	10.942	1233	11.777	1255	12.614	1276	13.451	1296	14.236
19000	3734	1179	9.129	1201	9.912	1221	10.776	1241	11.671	1261	12.543	1282	13.382	1303	14.250	1323	15.086
19500	3832	1209	9.838	1230	10.608	1250	11.505	1269	12.403	1288	13.313	1309	14.182	1330	15.081	1349	15.936
20000	3930	1239	10.583	1260	11.365	1279	12.268	1298	13.198	1316	14.125	1337	15.048	1357	15.944	1376	16.832
20500	4028	1269	11.365	1289	12.129	1308	13.064	1327	14.027	1345	14.986	1364	15.914	1384	16.841	1403	17.758

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	1769	893	4.771	925	5.250	956	5.752	988	6.309	-	-	-	-	-	-	-	-
9500	1867	912	5.140	942	5.602	972	6.099	1001	6.612	-	-	-	-	-	-	-	-
10000	1965	933	5.574	961	6.012	989	6.487	1018	7.017	1074	8.140	-	-	-	-	-	-
10500	2063	955	6.050	982	6.493	1008	6.940	1035	7.442	1089	8.544	1144	9.811	-	-	-	-
11000	2162	975	6.443	1003	6.999	1029	7.469	1054	7.940	1106	9.029	1157	10.213	1210	11.586	-	-
11500	2260	995	6.839	1024	7.465	1051	8.046	1076	8.542	1124	9.557	1174	10.754	1223	12.041	1273	13.474
12000	2358	1016	7.273	1044	7.902	1071	8.542	1097	9.147	1144	10.178	1191	11.318	1238	12.572	1285	13.949
12500	2456	1037	7.725	1065	8.379	1092	9.045	1118	9.718	1165	10.859	1209	11.935	1255	13.198	1300	14.524
13000	2555	1058	8.195	1085	8.851	1112	9.541	1138	10.238	1186	11.567	1230	12.692	1273	13.876	1317	15.213
13500	2653	1079	8.656	1106	9.365	1133	10.081	1158	10.776	1207	12.228	1251	13.479	1293	14.666	1335	15.959
14000	2751	1101	9.153	1128	9.911	1154	10.642	1179	11.362	1227	12.834	1273	14.330	1314	15.533	1353	16.735
14500	2849	1123	9.670	1149	10.427	1175	11.220	1200	11.968	1248	13.491	1293	15.031	1335	16.431	1374	17.682
15000	2948	1145	10.206	1171	10.990	1196	11.780	1221	12.565	1268	14.137	1313	15.725	1356	17.349	1395	18.662
15500	3046	1167	10.761	1193	11.573	1218	12.390	1242	13.211	1289	14.838	1334	16.476	1377	18.151	1416	19.675
16000	3144	1190	11.366	1215	12.176	1240	13.021	1264	13.869	1310	15.562	1355	17.252	1397	18.937	1437	20.640
16500	3242	1213	11.991	1238	12.832	1262	13.673	1286	14.548	1331	16.290	1375	18.012	1417	19.745	-	-
17000	3341	1238	12.686	1260	13.479	1284	14.347	1308	15.250	1353	17.045	1396	18.835	1438	20.620	-	-
17500	3439	1264	13.439	1284	14.208	1307	15.078	1330	15.974	1375	17.824	1417	19.677	-	-	-	-
18000	3537	1290	14.222	1309	14.985	1329	15.798	1352	16.721	1397	18.626	1439	20.532	-	-	-	-
18500	3635	1316	15.036	1335	15.826	1354	16.639	1375	17.530	1419	19.453	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

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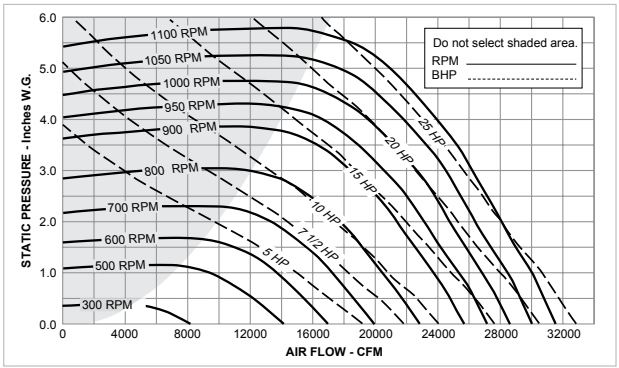

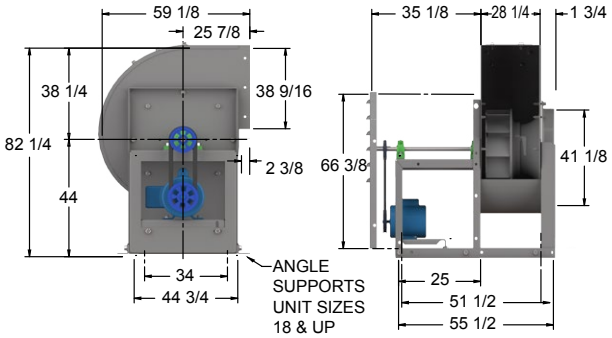

Maximum RPM: 1125	Max BHP: (RPM/367)^3	Outlet Area: 7.54 Sq. Ft.	Wheel Diameter: 36 15/16˝	Tip Speed: 9.68 X RPM	Max Motor Frame Size: 286T

CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	1193	360	0.885	400	1.284	443	1.737	482	2.209	523	2.752	565	3.335	-	-	-	-
9650	1280	380	1.033	418	1.454	457	1.917	495	2.410	532	2.951	571	3.552	609	4.159	-	-
10300	1366	401	1.206	436	1.627	472	2.119	509	2.634	544	3.185	579	3.782	615	4.418	651	5.076
10950	1452	421	1.387	456	1.839	489	2.347	524	2.886	557	3.438	590	4.049	623	4.694	657	5.376
11600	1538	442	1.589	475	2.057	505	2.573	538	3.137	571	3.720	601	4.308	633	4.989	664	5.671
12250	1624	462	1.799	495	2.312	524	2.842	554	3.420	586	4.037	610	4.650	644	5.200	674	6.005
12900	1711	483	2.039	515	2.588	543	3.129	571	3.732	600	4.350	630	5.002	658	5.666	685	6.352
13550	1797	503	2.287	535	2.886	562	3.435	588	4.052	616	4.704	645	5.387	672	6.058	698	6.755
14200	1883	524	2.569	555	3.206	582	3.784	607	4.414	632	5.066	659	5.765	686	6.467	712	7.195
14850	1969	546	2.890	576	3.567	601	4.144	626	4.797	649	5.471	675	6.190	701	6.923	726	7.653
15500	2055	567	3.220	596	3.935	621	4.548	645	5.203	667	5.886	691	6.623	716	7.400	741	8.163
16150	2142	589	3.594	617	4.335	641	4.978	661	5.632	686	6.349	708	7.106	732	7.890	756	8.695
16800	2228	611	3.995	637	4.738	661	5.435	684	6.124	705	6.836	726	7.607	748	8.399	771	9.236
17450	2314	633	4.426	657	5.167	682	5.946	704	6.646	724	7.348	745	8.155	765	8.963	787	9.799
18100	2400	656	4.910	678	5.647	702	6.461	724	7.198	744	7.918	764	8.729	783	9.549	803	10.386
18750	2486	678	5.405	699	6.156	723	7.034	744	7.780	763	8.502	783	9.331	802	10.185	820	11.036
19400	2573	700	5.932	719	6.688	743	7.595	764	8.393	783	9.150	802	9.960	820	10.810	838	11.699
20050	2659	722	6.492	740	7.237	764	8.210	784	9.038	803	9.831	821	10.625	839	11.502	857	12.427
20700	2745	744	7.088	762	7.870	784	8.825	805	9.752	823	10.545	841	11.375	859	12.267	876	13.184
21350	2831	767	7.749	783	8.507	804	9.471	825	10.465	843	11.294	861	12.160	878	13.021	895	13.974
22000	2917	789	8.419	805	9.212	825	10.185	846	11.248	864	12.120	881	12.981	898	13.876	914	14.974
22650	3004	811	9.127	827	9.956	846	10.935	866	12.002	884	12.942	901	13.839	917	14.722	933	15.648
23300	3090	834	9.909	849	10.740	666	11.882	886	12.791	905	13.847	921	14.734	937	15.653	953	16.604
23950	3176	856	10.698	871	11.565	887	12.505	907	13.660	925	14.746	941	15.668	957	16.623	973	17.611
24600	3262	878	11.528	893	12.431	908	13.367	927	14.521	946	15.726	962	16.694	977	17.633	993	18.658
25250	3348	901	12.442	915	13.341	929	14.268	946	15.468	966	16.667	982	17.710	998	18.741	1013	19.747
25900	3435	923	13.359	937	14.294	951	15.258	968	16.405	986	17.647	1003	18.823	1018	19.836	1033	20.879
26550	3521	946	14.367	960	15.341	973	16.294	989	17.433	1007	18.721	1023	19.925	1038	20.973	1053	22.053
27200	3607	968	15.376	982	16.387	995	17.377	1010	18.504	1027	19.781	1044	21.102	1059	22.217	1073	23.272
27850	3693	991	16.482	1004	17.482	1017	18.508	1031	19.619	1048	20.941	1064	22.246	1079	23.445	1093	24.535
28500	3779	1013	17.588	1026	18.624	1039	19.687	1052	20.779	1068	22.085	1084	23.431	1100	24.785	1114	25.914
29150	3866	1036	18.797	1048	19.816	1061	20.917	1073	21.985	1089	23.335	1105	24.727	1120	26.090	-	-

CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
13550	1797	725	7.522	752	8.321	778	9.112	806	9.964	861	11.707	-	-	-	-	-	-
14200	1883	736	7.912	762	8.728	788	9.572	814	10.448	866	12.218	918	14.033	-	-	-	-
14850	1969	751	8.434	774	9.195	799	10.058	823	10.908	873	12.732	923	14.623	972	16.527	-	-
15500	2055	765	8.943	788	9.736	810	10.532	834	11.438	881	13.277	930	15.252	977	17.188	-	-
16150	2142	779	9.472	802	10.296	824	11.127	846	11.996	891	13.863	937	15.846	983	17.889	1029	19.952
16800	2228	794	10.058	817	10.916	838	11.738	859	12.602	902	14.476	945	16.437	990	18.551	1034	20.696
17450	2314	809	10.669	831	11.519	853	12.414	873	13.288	914	15.129	955	17.111	997	19.211	1041	21.448
18100	2400	825	11.304	846	12.186	867	13.071	888	13.999	927	15.835	967	17.852	1007	19.96	1048	22.192
18750	2486	841	11.949	861	12.864	882	13.797	902	14.710	941	16.607	978	18.545	1017	20.710	1057	22.992
19400	2573	857	12.617	877	13.565	897	14.548	917	15.494	956	17.458	992	19.408	1029	21.538	1066	23.768
20050	2659	874	13.346	893	14.292	913	15.319	932	16.306	970	18.280	1006	20.292	1041	22.385	1077	24.637
20700	2745	893	14.139	910	15.094	929	16.107	947	17.108	985	19.186	1021	21.263	1055	23.356	1089	25.566
21350	2831	911	14.914	927	15.890	945	16.921	963	17.955	999	20.061	1035	22.200	1069	24.355	-	-
22000	2917	930	15.770	946	16.780	962	17.818	980	18.887	1014	21.023	1050	23.231	1084	25.451	-	-
22650	3004	949	16.658	965	17.703	980	18.728	996	19.792	1030	21.994	1064	24.224	-	-	-	-
23300	3090	969	17.634	984	18.661	999	19.721	1013	20.752	1046	22.994	1079	25.315	-	-	-	-
23950	3176	988	18.593	1003	19.654	1018	20.748	1032	21.813	1063	24.093	-	-	-	-	-	-
24600	3262	1007	19.601	1022	20.682	1037	21.812	1051	22.912	1079	25.156	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

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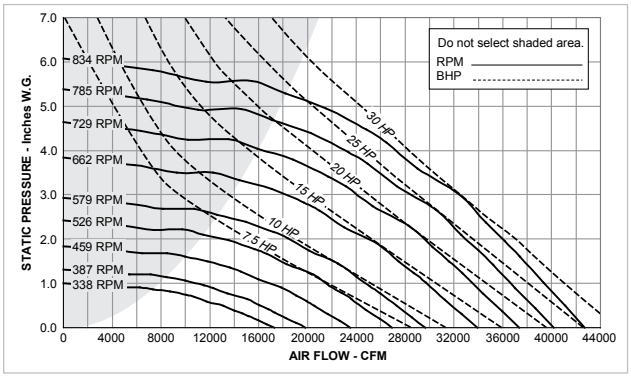

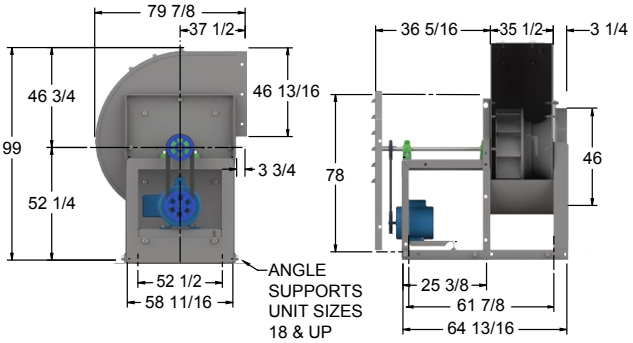

Maximum RPM: 880	Max BHP: (RPM/268)^3	Outlet Area: 11.51 Sq. Ft.	Wheel Diameter: 44 1/2"	Tip Speed: 11.65 X RPM	Max Motor Frame Size: 286T

CFM	OV (FPM)	0.25		0.50		0.75		1.00		1.25		1.50		1.75		2.00	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	783	237	0.670	287	1.150	330	1.670	370	2.210	406	2.770	-	-	-	-	-	-
10000	870	252	0.800	298	1.320	340	1.880	378	2.460	413	3.070	446	3.700	-	-	-	-
11000	957	267	0.950	311	1.510	351	2.110	387	2.730	421	3.380	453	4.050	483	4.740	-	-
12000	1043	283	1.120	325	1.720	362	2.360	397	3.020	430	3.710	461	4.430	490	5.160	518	5.900
13000	1130	299	1.320	339	1.960	375	2.640	408	3.340	440	4.070	470	4.820	498	5.590	525	6.380
14000	1217	316	1.540	354	2.220	388	2.940	420	3.680	450	4.450	479	5.250	507	6.060	533	6.890
15000	1304	333	1.790	369	2.510	402	3.270	433	4.050	462	4.860	490	5.700	517	6.550	542	7.420
16000	1391	351	2.060	385	2.830	416	3.630	446	4.450	474	5.300	501	6.180	527	7.070	552	7.980
17000	1478	368	2.370	401	3.180	431	4.020	459	4.890	487	5.780	513	6.690	538	7.620	562	8.570
18000	1565	386	2.720	417	3.570	446	4.450	474	5.350	500	6.280	525	7.230	550	8.210	573	9.200
19000	1652	404	3.090	434	3.990	462	4.910	488	5.860	514	6.830	538	7.820	562	8.830	585	9.860
20000	1739	422	3.510	450	4.450	477	5.410	503	6.400	528	7.410	551	8.440	574	9.490	597	10.560
21000	1826	440	3.960	468	4.940	494	5.950	518	6.980	542	8.030	565	9.100	588	10.190	609	11.300
22000	1913	458	4.450	485	5.480	510	6.530	534	7.600	557	8.690	579	9.800	601	10.930	622	12.080
23000	2000	477	4.990	502	6.060	526	7.150	550	8.260	572	9.400	594	10.550	615	11.720	636	12.910
24000	2087	495	5.570	520	6.690	543	7.820	566	8.970	588	10.150	609	11.340	629	12.550	649	13.780
25000	2174	514	6.200	538	7.360	560	8.530	582	9.730	603	10.950	624	12.180	644	13.430	663	14.700
26000	2261	532	6.880	555	8.080	577	9.300	599	10.540	619	11.800	639	13.070	659	14.370	678	15.680
27000	2348	551	7.600	573	8.850	595	10.110	615	11.400	635	12.700	655	14.010	674	15.350	692	16.700
28000	2435	570	8.380	591	9.670	612	10.980	632	12.310	652	13.650	671	15.010	689	16.380	707	17.780
29000	2522	589	9.220	610	10.550	630	11.900	649	13.270	668	14.660	687	16.060	705	17.470	722	18.910
30000	2609	608	10.110	628	11.490	647	12.880	666	14.290	685	15.720	703	17.160	721	18.620	738	20.100
31000	2696	626	11.060	646	12.480	665	13.920	684	15.370	702	16.840	719	18.330	736	19.830	753	21.350
32000	2783	645	12.060	664	13.530	683	15.020	701	16.510	719	18.030	736	19.560	753	21.100	769	22.660
33000	2870	664	13.140	683	14.650	701	16.180	719	17.720	736	19.270	752	20.840	769	22.430	785	24.030
34000	2957	683	14.270	701	15.830	719	17.400	736	18.980	753	20.580	769	22.200	785	23.830	801	25.470
35000	3043	702	15.470	720	17.070	737	18.690	754	20.320	770	21.960	786	23.620	802	25.290	817	26.970
36000	3130	721	16.740	739	18.390	755	20.050	772	21.720	788	23.410	803	25.110	819	26.820	834	28.550

CFM	OV (FPM)	2.25		2.50		2.75		3.00		3.50		4.00		4.50		5.00	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
13000	1130	551	7.190	576	8.000	-	-	-	-	-	-	-	-	-	-	-	-
14000	1217	559	7.730	583	8.590	607	9.470	630	10.350	-	-	-	-	-	-	-	-
15000	1304	567	8.310	591	9.210	614	10.130	637	11.060	680	12.950	-	-	-	-	-	-
16000	1391	576	8.910	599	9.850	622	10.810	644	11.780	686	13.760	726	15.790	-	-	-	-
17000	1478	586	9.540	608	10.530	630	11.530	652	12.540	693	14.610	733	16.720	771	18.870	-	-
18000	1565	596	10.210	618	11.230	640	12.270	661	13.330	701	15.480	740	17.680	777	19.910	813	22.190
19000	1652	607	10.910	628	11.970	649	13.060	670	14.150	710	16.380	748	18.670	784	20.990	819	23.360
20000	1739	618	11.650	639	12.750	660	13.880	680	15.010	719	17.330	756	19.690	792	22.100	826	24.550
21000	1826	630	12.430	651	13.570	671	14.740	690	15.910	728	18.310	765	20.750	800	23.250	834	25.780
22000	1913	643	13.250	663	14.440	682	15.640	701	16.850	738	19.330	774	21.860	809	24.430	842	27.050
23000	2000	656	14.120	675	15.340	694	16.580	713	17.840	749	20.400	784	23.000	818	25.660	851	28.360
24000	2087	669	15.030	688	16.300	706	17.580	725	18.870	760	21.510	795	24.190	828	26.930	860	29.720
25000	2174	682	15.990	701	17.300	719	18.620	737	19.950	772	22.670	805	25.430	838	28.250	870	31.120
26000	2261	696	17.000	714	18.350	732	19.710	750	21.080	784	23.880	817	26.720	849	29.620	-	-
27000	2348	710	18.070	728	19.450	746	20.850	763	22.270	796	25.140	828	28.070	860	31.040	-	-
28000	2435	725	19.180	742	20.610	759	22.050	776	23.500	809	26.460	840	29.460	-	-	-	-
29000	2522	740	20.360	757	21.820	773	23.300	790	24.800	822	27.830	853	30.910	-	-	-	-
30000	2609	755	21.590	771	23.090	788	24.610	804	26.150	835	29.260	-	-	-	-	-	-
31000	2696	770	22.880	786	24.420	802	25.990	818	27.560	849	30.750	-	-	-	-	-	-
32000	2783	785	24.230	801	25.820	817	27.420	832	29.030	-	-	-	-	-	-	-	-
33000	2870	801	25.640	817	27.270	832	28.910	847	30.570	-	-	-	-	-	-	-	-
34000	2957	817	27.120	832	28.790	847	30.480	-	-	-	-	-	-	-	-	-	-
35000	3043	833	28.670	848	30.380	-	-	-	-	-	-	-	-	-	-	-	-
36000	3130	849	30.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances in the airstream. All dimensions in inches.

BELT DRIVE SOUND POWER LEVELS, SONE RATINGS, & SOUND CLASSIFICATION GUIDE

Sound power levels

Since any mechanical device generates some sound energy into the air, fans will create some noise. Because of the great number of factors influencing sound output it is invalid to compare fans based on RPM, tip speed or outlet velocity. The only accurate basis of comparison is the sound power level generated by the fan at the required point of operation.

Having sound power levels for a specific fan at a specific operating point allows the system designer to determine the theoretical sound pressure level at any point in the occupied space. AMCA Publication 303 and the ASHRAE Guides provide more information on this process. Another typical application of sound power levels is to compare similar fans. Generally differences of 6 dB in the 63 Hz band and 3 dB in all other bands are considered insignificant.

System designers use many methods to predict acoustic acceptability of an occupied space.

The A weighted sound pressure level provides a single number that corresponds well to the human judgement of relative loudness. OSHA bases their requirements regarding exposure to noise on A weighted sound pressure levels. The disadvantage of this method is that A-weighted sound pressure levels do not provide information as to the quality of the sound. Noise Criteria (NC) curves are also widely used. To determine the NC level, the sound power spectrum is compared to defined limits. Other methods include RC curves, Sones, SIL and Noise Rating Curves.

Each method relies on sound pressure level information because the human ear "hears" sound pressure fluctuations, not sound power (watts). Sound pressure is a function of the attenuation of the space and the distance from the source. Consider a 100 watt light bulb. It provides adequate light for a closet, but not for a classroom, and in a stadium it would be imperceptible. While the light source was the same power (100 watts), the brightness level changed dramatically. Similarly, the same sound power level (acoustical energy) produces greatly different sound pressure levels (noise).

Sone ratings

PennBarry has provided sone ratings to allow designers to make an educated judgment as to the noise level a fan will develop in a space. Sone ratings are a loudness index developed from sound power level data. The calculation is at 5' from the fan inlet and in front of a reflecting plane (hard wall). Sones are weighted similarly to the A-weighting scale in that more weight is given to frequencies that people can hear "well" and less weight to frequencies that people do not hear "well". A significant feature of the sone scale is that it is linear rather than logarithmic. This means that 40 sones is 33% louder than 30 sones, as opposed to 40 dB being twice as loud as 30 dB.

Since the sone rating is determined from well defined assumptions and is linear in nature, it is ideal for comparing different fans moving air at the same CFM and SP. When using sones for this purpose, differences of 3 sones are considered negligible. The suggested loudness level chart below is a practical guideline for acceptable installed performance.

The sone values shown in this catalog are based on the sound power levels determined above, and calculated in accordance with AMCA Standard 301 "Methods for Calculating Fan Sound Ratings from Laboratory Test Data."

Sound classification guide

Suggested Loudness Level			Types of Areas	
Area Sone Levels	Noise Criteria NC	dBA (1)		
Up to 9	32 to 54	35 to 60	Bingo Hall, Auction Room, Hotel Ballroom, Social Club, Reception Room, Apartment House, Professional Office, Supervisor Office, Courtroom, School and Classroom, Hospital Ward, Operating Room, Correction Facility.	Moderately Quiet Sound
9.1 to 13	55 to 59	61 to 65	Lobby/Corridor, Spectator Area, Chicken House, Greenhouse, General Open Office, Restaurant, Night Club, Department Store, Ticket Sales Office, Casino, Spa, Control Room, Rail, Bus, Plane, Bowling Alley, Print Shop, Drafting Office, Convention Hall	Average
13.1 to 18	60 to 64	66 to 70	Washroom & Toilet, Retail Shop, Bus Terminal Lounge, Foreman's Office, Cocktail Lounge, Office Hall & Corridor, Tabulation & Computation Office, Kitchen Cafeteria, Hotel Garage, Computer Room, Warehouse, Battery Charging Room	Commercial
18.1 to 50	65 to 78	71 to 84	General Storage Area, Restaurant Banquet Room, Swimming Pool, Supermarket, Hotel Kitchen and Laundry, Welding Booth Department Store Main Floor, Paint Booth, Heat Treating Plant, Tool Maintenance Area	High Sound
50.1 Plus	78.1 to 85+	84.1 to 90+ (2)	Manufacturing Area, Heavy Machine Foundry, Assembly Line, Machine Shops, Punch Press Shop, Light Machine Area, Boiler Room, Emergency Generator Room, Pump House, Power Plant, Transformer, Steel Mill, Engine Test Room, Compressor Room, Steel Stamping	Ext. Heavy Industrial

1 dBA range of A-weighted sound levels, in decibels.

2 Sound levels this high are subject to OSHA Standards for safety, as well as state and local ordinances. Sound attenuation provisions should be considered.

Source: ASHRAE, AMCA Publications.

BELT DRIVE SOUND POWER DATA

D06

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
200	0.250	1224	9.0	73	71	70	70	65	56	54	53
	1.000	1733	14.7	82	79	78	76	73	67	60	82
	4.000	2914	31.5	87	92	89	89	87	83	75	73
	6.000	3504	41.6	91	95	94	94	91	88	82	76
250	0.250	1433	11.6	77	75	72	74	70	62	57	57
	1.000	1902	17.1	85	82	80	79	76	70	62	65
	4.000	3017	33.2	87	92	90	90	88	84	77	73
	6.000	3578	43.1	91	95	94	94	92	89	83	76
300	0.250	1655	14.5	79	79	76	77	74	68	60	61
	1.750	2411	24.4	89	88	85	85	82	77	69	69
	3.500	3005	33.5	87	94	90	90	88	84	77	73
	5.000	3425	40.2	90	94	93	93	91	87	81	75
350	0.250	1886	18.1	81	83	80	80	78	73	63	64
	1.750	2582	27.1	87	90	87	86	84	79	72	70
	3.500	3163	36.4	89	95	92	91	89	85	78	73
	5.000	3566	43.7	91	97	95	94	92	89	83	76
400	0.250	2121	21.3	83	86	83	82	81	76	66	66
	2.250	2938	33.2	86	95	90	89	88	84	76	72
	4.500	3597	45.0	92	98	95	94	92	89	83	76
500	1.000	2865	33.1	81	92	90	88	89	86	77	72
	2.000	3208	38.6	85	94	93	90	91	88	81	74
	3.000	3524	44.4	89	97	95	93	92	89	84	75
600	0.500	3163	38.7	84	94	93	91	91	88	81	74
	2.000	3600	48.0	85	95	96	93	93	92	86	76
700	0.250	3571	47.6	87	97	97	94	94	91	86	76

D07

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
200	0.250	866	2.9	62	59	58	51	44	38	32	26
	1.250	1530	9.0	75	73	72	69	64	59	52	46
300	0.500	1260	6.4	76	69	67	63	56	49	43	38
	1.750	1873	12.6	78	79	77	75	69	64	58	52
	3.000	2365	18.4	80	85	82	81	76	71	66	59
400	0.250	1303	7.2	79	71	69	66	58	51	44	37
	3.000	2462	19.5	81	87	83	82	77	72	67	60
	5.500	3198	29.4	86	91	90	88	86	80	75	68
500	1.000	1941	13.7	83	83	78	77	70	63	57	50
	3.000	2622	21.1	82	89	85	83	79	73	67	61
	5.000	3156	28.7	86	91	89	87	85	80	75	68
	6.500	3522	34.0	89	92	93	90	88	83	78	71
600	0.500	1923	15.0	83	85	78	77	71	64	56	50
	3.250	2878	24.2	84	92	87	85	83	76	69	63
	6.000	3530	34.0	89	93	93	90	88	83	77	71
700	0.250	2049	16.7	80	87	81	80	74	66	59	52
	2.750	2948	25.5	84	93	88	85	83	76	70	63
	5.000	3485	33.2	89	94	93	89	88	82	75	69
800	0.250	2309	19.3	79	89	84	82	78	70	63	56
	1.500	2783	25.1	82	94	88	85	83	75	68	61
	3.000	3223	30.3	87	96	92	87	87	79	73	66
	4.500	3574	34.6	89	95	93	90	89	82	75	69
1000	0.500	2924	27.9	84	93	90	87	86	78	71	63
	1.000	3086	30.4	85	96	92	87	87	80	72	65
	2.500	3521	36.5	89	97	96	90	90	83	76	69
1250	0.250	3503	38.5	89	95	96	91	91	85	77	69

D08

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
250	0.250	826	2.5	59	58	56	50	43	37	31	24
450	0.500	1328	7.0	76	70	69	65	58	52	45	38
	1.250	1682	9.9	76	74	73	72	66	60	54	48
	2.000	1977	12.9	77	77	76	76	70	65	59	54
650	1.000	1902	13.2	83	81	76	76	70	63	56	49
	2.500	2397	17.8	80	84	81	81	75	70	64	58
	3.500	2677	21.1	85	86	83	83	79	74	69	63
	5.000	3066	26.0	92	88	86	86	83	78	73	67
850	0.500	2026	16.2	80	86	80	80	73	67	60	52
	2.000	2572	20.8	82	90	84	83	78	72	65	59
	3.500	2957	25.1	90	90	86	86	82	77	70	64
	5.000	3294	29.5	94	90	88	87	86	80	75	68
	6.500	3606	34.7	98	91	90	89	89	83	78	72
1050	0.250	2300	20.3	78	88	84	84	78	72	65	57
	1.000	2593	23.7	82	93	86	85	81	74	67	60
	2.250	2980	27.8	90	94	88	87	84	77	71	63
	3.500	3279	30.3	93	94	90	88	86	80	73	66
	5.000	3588	35.5	97	95	92	89	89	82	76	69
1250	0.250	2707	26.4	86	91	88	88	84	77	71	62
	1.250	3034	30.2	91	95	90	89	86	79	73	65
	2.250	3324	34.5	94	97	93	89	88	82	75	67
	3.250	3561	38.3	97	99	94	90	90	83	76	69
1450	0.500	3183	34.4	92	93	93	91	89	82	76	67
	1.000	3324	36.7	94	95	94	91	90	83	76	68
	1.500	3468	39.5	96	97	96	91	91	84	77	69
	2.000	3606	42.3	97	100	97	91	92	85	78	70

D10

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
500	0.250	951	6.1	72	71	62	61	55	51	48	46
	1.000	1435	12.5	76	83	74	72	66	61	58	56
700	0.500	1337	11.0	75	81	72	70	65	60	56	53
	1.250	1702	15.5	79	85	80	75	72	66	61	56
	2.000	2026	20.3	82	88	87	78	77	70	66	62
900	1.000	1793	16.5	79	86	81	76	74	68	62	59
	2.250	2252	22.4	83	87	88	81	80	74	68	64
	3.500	2668	24.5	84	87	84	84	84	78	73	66
1100	0.250	1659	15.8	78	85	80	77	73	68	60	56
	1.250	2107	20.3	82	87	86	79	78	73	66	62
	3.000	2650	24.4	84	87	84	84	84	78	72	66
	5.000	3201	29.4	90	90	88	87	85	81	77	73
1400	0.500	2151	21.8	82	89	87	81	80	74	68	62
	2.000	2675	24.6	84	87	84	84	84	78	73	66
	3.500	3058	28.3	87	90	87	86	85	80	76	71
	5.000	3404	30.4	94	90	89	87	84	80	78	74
1800	0.250	2589	22.9	82	86	84	84	82	76	72	66
	2.000	3126	29.3	88	90	87	87	85	81	77	73
	4.000	3586	32.6	96	90	90	88	86	80	78	77
2000	1.000	3067	28.2	88	90	87	86	84	80	76	72
	2.250	3419	33.2	94	91	89	89	87	82	79	77
	3.000	3596	33.6	96	90	89	89	86	80	78	78
2200	0.500	3192	28.7	90	90	88	86	84	80	77	73
	1.250	3385	30.2	93	90	89	87	84	80	78	74
	2.000	3586	31.5	97	90	90	87	84	80	79	76
2400	0.250	3415	29.9	94	90	90	87	84	79	78	75
	1.000	3573	31.3	96	90	90	87	84	79	78	76

The sound power level ratings shown are in decibels, 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. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels.

D12

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
700	0.250	794	4.7	66	64	63	57	51	46	42	36
	1.000	1199	10.2	76	77	73	72	63	58	55	50
900	0.500	1065	8.3	72	73	71	68	61	55	52	46
	1.750	1579	14.3	79	80	77	74	71	70	64	60
1100	0.750	1303	11.5	77	78	75	73	66	62	58	53
	1.500	1573	14.3	79	80	77	74	71	70	64	60
	2.500	1894	14.8	82	79	78	75	69	69	67	62
1300	1.000	1524	14.0	79	81	77	75	71	68	63	58
	2.250	1902	15.9	82	79	80	77	71	70	67	63
	3.500	2241	18.3	84	82	80	80	73	71	70	66
1500	1.250	1734	15.9	76	80	80	76	72	72	67	62
	2.750	2135	18.8	83	81	82	81	75	72	68	65
	4.500	2549	21.6	87	85	82	83	77	73	73	69
1900	0.250	1671	16.5	75	81	80	76	73	73	67	62
	1.750	2131	21.0	83	82	85	84	77	74	70	65
	3.500	2524	23.8	87	85	82	86	80	75	73	68
	5.000	2817	24.2	87	87	84	85	80	76	74	70
2200	1.500	2261	24.2	84	83	85	87	80	76	73	67
	2.750	2555	25.7	87	85	83	88	82	76	74	69
	4.000	2799	25.2	87	87	84	86	81	76	75	70
2600	1.000	2409	27.3	85	85	83	91	81	76	74	68
	2.250	2707	29.7	87	87	85	91	84	79	76	71
	3.500	2658	27.6	88	87	85	88	83	78	76	72
3000	0.750	2662	22.4	87	86	83	83	78	74	73	69
	2.250	2975	33.3	88	88	87	92	87	81	79	73
3200	0.250	2738	22.9	87	86	83	84	78	74	74	70
	1.750	3012	24.6	88	86	84	85	81	76	75	71

D13

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
900	0.250	830	5.5	74	67	63	59	55	50	44	40
	1.500	1485	15.3	82	86	77	74	69	66	62	57
1100	0.750	1231	13.1	78	84	75	72	66	63	57	50
	2.250	1819	19.2	87	87	83	80	74	71	68	63
1300	1.000	1435	15.7	82	86	80	75	70	67	62	56
	2.000	1794	19.4	86	87	83	81	75	71	68	63
	3.000	2106	22.7	90	88	83	84	78	74	71	67
1500	1.500	1715	19.4	84	88	83	80	74	71	67	62
	2.750	2094	22.9	89	88	83	84	78	74	72	67
	4.000	2432	27.2	92	92	86	87	81	77	74	70
1900	0.250	1403	13.9	80	84	76	72	68	65	60	55
	1.750	1981	22.2	86	87	82	84	77	74	72	66
	3.500	2445	27.6	92	91	86	87	82	77	75	70
	5.000	2781	30.6	93	93	88	89	84	78	77	72
2300	1.000	1902	22.6	85	86	82	86	77	75	71	66
	3.000	2508	29.3	91	92	87	89	83	78	76	72
	4.500	2836	31.5	93	94	88	89	85	79	77	73
2700	1.500	2268	26.7	88	89	84	88	81	77	75	70
	2.500	2560	29.1	91	92	87	89	83	78	76	72
	3.500	2807	34.2	92	94	90	91	87	81	79	75
3000	1.000	2304	27.9	89	89	85	89	82	78	76	70
	2.000	2560	29.7	91	92	87	89	83	78	76	72
	2.750	2760	30.5	93	93	88	89	84	78	77	72
3200	0.750	2372	26.3	92	91	85	86	81	76	74	70
	2.250	2725	30.4	93	93	88	89	84	79	77	72
3400	0.250	2394	26.6	92	92	85	86	81	76	74	70
	1.750	2712	30.5	92	93	87	89	84	79	77	72

D15

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
1150	0.250	663	5.6	72	70	63	60	56	48	43	38
	1.500	1228	16.0	88	87	78	72	69	65	62	58
1450	0.750	987	12.6	77	84	73	70	68	62	55	49
	2.500	1584	21.9	92	91	84	79	74	72	68	65
1750	1.000	1161	15.0	87	85	78	73	69	64	60	55
	2.250	1539	21.3	94	90	83	78	74	71	68	64
	3.500	1876	22.8	87	88	86	82	78	76	73	69
2050	1.500	1396	19.0	93	87	82	77	73	69	65	61
	3.000	1782	22.0	88	88	85	81	77	75	71	68
	4.500	2131	26.9	90	90	87	86	81	78	76	72
2650	0.250	1144	14.6	85	86	76	71	68	63	60	55
	1.750	1634	23.4	95	89	86	81	77	74	70	66
	3.500	2010	25.2	88	89	87	85	80	77	74	71
3400	1.000	1653	26.2	94	93	89	83	79	76	71	66
	3.000	2119	28.7	88	89	89	88	83	80	76	72
	5.000	2458	32.3	92	92	89	90	85	81	79	74
4000	1.500	1977	27.7	85	88	90	88	83	79	76	71
	3.000	2300	33.3	89	91	90	92	85	81	78	73
	4.500	2546	34.5	92	93	89	92	86	82	79	75
4450	1.000	1983	24.4	88	89	86	84	80	77	74	70
	2.250	2289	33.0	89	91	89	92	85	81	78	73
	3.500	2524	36.0	91	92	90	93	87	82	79	75
4900	1.000	2141	27.1	90	90	87	86	81	78	76	72
	2.750	2525	33.0	93	93	89	90	85	81	79	75
5200	0.500	2179	27.8	90	90	87	87	82	79	76	72
	2.250	2509	33.2	92	92	89	91	85	81	79	75

D16

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
1250	0.250	625	5.8	67	67	67	59	55	51	44	41
1550	0.500	828	9.4	74	73	74	67	62	60	53	48
	1.000	1040	13.0	83	77	78	75	68	65	59	54
1850	0.750	1003	12.6	82	76	78	75	67	65	58	53
	1.500	1266	17.3	88	82	81	80	71	69	65	60
2150	1.000	1161	15.6	86	79	81	78	71	68	63	58
	2.000	1464	20.0	88	84	85	80	74	73	68	65
2450	1.250	1309	18.4	88	82	84	80	73	71	66	61
	2.000	1514	20.8	87	83	86	81	75	74	69	65
	2.750	1707	23.7	89	85	88	85	77	76	72	68
2750	1.500	1450	21.0	88	83	87	81	75	73	69	64
	2.500	1695	24.0	88	85	87	85	78	76	72	68
	3.500	1924	28.1	92	88	89	88	80	78	75	71
3500	0.250	1328	18.0	88	83	82	80	72	70	66	62
	1.750	1704	25.9	87	84	88	88	79	77	73	68
	3.500	2054	31.6	92	89	89	91	82	80	77	72
	5.000	2330	36.8	94	91	89	91	85	83	80	75
4400	1.000	1801	31.2	88	86	88	93	81	79	85	70
	2.500	2095	34.3	92	89	88	93	84	82	79	73
	4.000	2346	37.2	95	91	89	94	85	83	80	75
5000	1.500	2086	34.7	92	89	88	94	84	81	78	73
	2.250	2221	39.0	93	90	89	95	86	84	81	75
5300	1.000	2088	35.3	92	89	89	94	84	82	79	73
	2.500	2349	37.3	95	91	89	94	85	83	80	75
5600	0.250	2062	30.9	93	90	90	90	82	80	77	72
	2.000	2356	37.4	95	92	89	94	85	83	80	75

The sound power level ratings shown are in decibels, 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.The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels.

D18

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
1400	0.250	487	3.6	68	64	55	52	51	44	37	34
	2.250	1238	17.9	90	88	80	77	69	66	65	61
1850	0.750	774	11.6	88	79	70	67	63	60	55	49
	2.500	1315	19.6	91	89	82	78	71	68	66	63
	4.000	1650	27.1	96	95	87	84	77	73	71	68
2750	1.000	968	11.8	81	78	74	70	68	65	62	55
	3.000	1474	23.5	94	93	85	81	74	70	68	65
	5.000	1864	31.0	98	96	90	87	81	75	73	70
3650	0.250	933	9.9	79	76	71	67	64	63	58	52
	1.750	1282	19.0	88	85	83	78	74	72	69	64
	3.500	1641	26.6	95	94	87	84	77	73	71	68
4550	1.500	1378	21.7	88	86	86	80	76	75	72	67
	3.000	1647	26.6	94	93	88	84	78	75	74	70
	5.000	1978	32.4	97	97	91	88	82	77	74	71
5225	0.750	1378	21.1	92	91	83	79	72	69	67	64
	2.750	1705	27.7	94	93	89	84	79	77	75	72
5900	1.500	1638	26.9	96	95	87	84	77	72	71	67
	3.000	1854	30.6	96	94	91	86	81	79	77	74
	4.500	2062	35.1	100	98	93	88	82	77	76	73
6575	0.750	1671	27.5	96	95	88	84	77	73	71	68
	2.500	1910	31.5	96	96	91	87	82	78	76	72
	4.000	2101	35.7	99	97	93	89	84	80	78	75
6800	0.250	1642	27.0	96	95	87	84	77	72	71	67
	1.500	1824	30.3	98	96	90	86	80	75	72	70
	3.000	2016	33.1	97	95	92	88	83	81	79	76

D20

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
2500	0.250	590	6.1	73	68	64	59	57	53	48	44
	1.000	873	12.1	81	80	75	70	66	64	59	55
3500	0.500	829	11.0	80	79	74	69	65	63	57	54
	1.500	1101	17.4	84	84	83	77	71	69	66	62
	2.000	1233	19.0	88	83	85	78	73	70	67	65
4500	0.750	1048	16.9	84	84	83	76	71	69	65	61
	2.000	1317	21.2	86	84	87	80	75	72	70	66
	3.000	1523	25.7	89	92	89	84	79	75	72	70
5500	0.250	1095	16.6	85	84	82	76	71	68	65	61
	1.000	1257	22.2	85	81	89	80	76	74	70	67
	2.250	1485	25.6	85	89	91	84	78	75	73	69
	3.500	1696	29.7	90	93	91	89	82	77	75	72
	5.000	1948	36.5	94	97	92	93	86	80	77	75
6500	1.250	1459	27.5	85	88	93	85	79	77	73	70
	2.000	1584	28.8	85	91	93	86	81	78	75	71
	3.000	1734	31.2	88	92	91	91	83	79	76	73
	5.000	2020	38.5	95	97	92	94	87	81	78	76
7500	0.250	1464	24.3	89	90	89	83	78	73	71	69
	1.000	1577	30.4	87	91	94	87	82	78	75	72
	2.250	1771	35.2	88	92	92	94	84	81	78	74
	4.000	2002	38.0	92	96	92	94	86	81	78	76
8500	0.750	1712	29.7	91	94	91	89	82	77	75	72
	2.000	1889	37.6	93	95	92	94	85	81	78	75
	3.500	2081	40.7	91	96	92	95	88	83	81	77
9750	0.250	1887	34.8	94	96	92	92	85	80	77	75
	1.250	1996	37.9	95	97	92	93	86	81	78	76
	2.000	2089	40.3	96	98	93	94	88	82	79	77

D22

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
2900	0.250	663	5.6	72	70	63	60	56	48	43	38
	1.000	1228	16.0	88	87	78	72	69	65	62	58
4100	0.500	987	12.6	77	84	73	70	68	62	55	49
	1.250	1584	21.9	92	91	84	79	74	72	68	65
	2.250	1161	15.0	87	85	78	73	69	64	60	55
5300	0.750	1539	21.3	94	90	83	78	74	71	68	64
	1.750	1876	22.8	87	88	86	82	78	76	73	69
	3.500	1396	19.0	93	87	82	77	73	69	65	61
6500	0.250	1782	22.0	88	88	85	81	77	75	71	68
	1.000	2131	26.9	90	90	87	86	81	78	76	72
	2.250	1144	14.6	85	86	76	71	68	63	60	55
	5.000	1634	23.4	95	89	86	81	77	74	70	66
7700	0.750	2010	25.2	88	89	87	85	80	77	74	71
	1.750	1653	26.2	94	93	89	83	79	76	71	66
	3.500	2119	28.7	88	89	89	88	83	80	76	72
8900	0.500	2458	32.3	92	92	89	90	85	81	79	74
	1.500	1977	27.7	85	88	90	88	83	79	76	71
	2.750	2300	33.3	89	91	90	92	85	81	78	73
	5.000	2546	34.5	92	93	89	92	86	82	79	75
10400	0.250	1983	24.4	88	89	86	84	80	77	74	70
	1.250	2289	33.0	89	91	89	92	85	81	78	73
	2.500	2524	36.0	91	92	90	93	87	82	79	75
	4.000	2141	27.1	90	90	87	86	81	78	76	72
11900	0.250	2525	33.0	93	93	89	90	85	81	79	75
	1.250	2179	27.8	90	90	87	87	82	79	76	72
	2.250	2509	33.2	92	92	89	91	85	81	79	75

D24

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
2900	0.250	408	7.1	75	71	68	64	62	52	46	39
	1.250	740	14.5	84	82	77	74	72	68	62	56
	2.250	975	21.2	91	87	84	79	77	75	69	65
4025	0.500	571	12.0	80	81	76	72	69	62	56	49
	2.500	1045	23.1	91	86	87	81	79	77	71	67
	5.000	1450	30.7	85	85	92	86	85	83	79	74
5150	1.000	770	15.5	85	83	79	85	74	68	65	57
	2.750	1116	24.8	91	85	88	82	81	78	73	69
	5.000	1468	31.1	85	85	93	86	86	84	79	74
6650	1.500	966	22.8	90	84	88	81	79	75	70	65
	3.000	1208	26.8	86	83	91	84	83	80	75	71
	5.000	1498	31.9	86	85	93	86	86	84	80	75
8150	0.500	935	19.8	90	87	82	78	76	74	68	64
	2.250	1184	28.2	89	84	91	85	84	81	75	70
	5.000	1542	33.2	86	86	94	87	86	84	80	75
9650	1.250	1178	26.7	89	83	90	84	83	80	75	70
	2.250	1297	31.8	85	86	94	86	87	84	78	72
	4.000	1497	36.1	87	87	95	88	88	86	81	76
10775	1.000	1251	27.4	82	83	91	84	83	80	76	72
	2.000	1363	36.7	87	88	95	89	89	87	81	74
	3.000	1469	38.0	88	88	96	89	89	87	82	76
11525	0.750	1294	27.9	83	83	91	84	84	81	77	72
	1.750	1403	35.5	87	87	94	88	88	86	81	75
	2.500	1480	40.4	89	89	96	90	90	88	83	76
13025	0.250	1387	29.3	84	84	92	85	85	83	78	73
	1.250	1492	31.8	85	85	93	86	86	84	80	75
	2.000	1564	33.8	87	86	94	87	87	85	81	76

The sound power level ratings shown are in decibels, 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. The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels.

D30

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
6000	0.250	432	7.5	76	75	67	63	59	53	48	43
	1.250	646	15.5	88	85	79	74	69	66	61	57
8500	0.500	612	15.4	87	85	78	74	70	66	60	56
	1.500	770	20.0	88	88	84	78	75	72	67	63
	2.500	914	25.2	91	91	89	82	79	76	72	68
11000	0.250	704	17.1	89	86	81	75	71	68	63	59
	0.750	779	23.0	89	91	87	80	78	74	69	65
	1.750	908	26.5	89	92	90	83	80	77	73	69
	2.750	1023	31.2	91	89	95	85	82	79	75	72
	4.500	1217	32.6	97	93	94	85	81	79	77	73
13500	0.250	849	22.1	91	90	85	79	76	73	69	65
	1.000	940	32.8	92	94	94	86	84	81	76	72
	2.000	1051	33.1	93	91	95	85	83	80	76	73
	3.000	1150	30.3	97	93	92	84	80	78	76	72
	5.000	1334	34.9	98	92	95	86	83	80	79	75
16000	0.250	997	31.1	91	89	95	85	82	79	75	72
	0.750	1046	31.2	92	90	94	85	82	79	75	72
	1.750	1149	30.3	97	93	92	84	80	78	76	72
	2.750	1241	33.5	98	93	94	85	82	79	77	74
	4.500	1385	36.8	99	93	95	87	84	81	80	76
18500	0.500	1166	30.9	97	93	93	84	80	78	76	73
	1.500	1255	33.9	98	93	95	86	82	79	78	74
	2.500	1342	35.7	99	93	95	87	84	80	79	75
	3.500	1421	37.6	99	92	96	87	85	82	80	77
20500	0.250	1266	34.1	98	93	95	86	82	79	78	74
	1.000	1322	35.2	99	93	95	87	83	80	79	75
	1.750	1383	36.7	99	93	95	87	84	81	80	76

D36

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
9000	0.250	359	8.9	85	75	65	62	58	54	51	50
	1.500	564	20.0	90	91	81	74	71	68	66	65
11600	0.500	474	15.1	887	87	76	69	66	62	59	56
	1.750	633	22.8	91	92	83	77	75	72	69	67
	2.750	760	29.6	97	95	88	81	80	76	75	74
14200	0.750	581	21.1	90	92	83	76	73	69	65	63
	2.000	710	25.6	92	94	86	80	78	74	71	68
	3.000	814	31.9	98	97	90	83	81	77	75	73
	4.000	918	37.2	101	99	94	86	84	80	78	76
16800	1.000	682	27.0	92	96	87	81	78	74	69	67
	2.250	792	30.7	95	98	89	82	81	76	73	70
	4.000	946	37.5	99	99	96	86	84	80	77	75
19400	0.250	701	26.5	95	93	85	80	78	75	74	73
	1.250	781	32.7	95	99	91	84	81	77	73	70
	2.250	858	34.6	96	99	93	85	83	78	75	72
	5.000	1067	43.9	100	100	100	89	86	83	78	75
22000	1.000	843	34.2	100	98	91	84	82	78	77	75
	2.250	930	38.5	98	99	97	87	84	80	76	73
	4.500	1080	44.2	100	100	100	89	86	83	78	75
24600	0.750	911	37.0	101	99	94	85	84	80	78	76
	2.000	990	42.9	99	100	100	88	85	81	77	74
	3.500	1081	44.3	100	100	100	89	86	83	78	75
27200	0.500	983	40.7	101	99	97	87	85	81	78	76
	1.500	1041	43.5	101	100	99	88	86	82	79	76
	2.500	1098	43.2	100	101	99	89	86	83	79	75
29150	0.250	1035	43.3	101	100	99	88	86	82	79	76
	1.750	1117	46.6	101	100	101	90	87	84	79	76

D44

CFM	SP	RPM	Sones	Sound Power Levels							
				Octave Band Center Frequency (Hz)							
				63	125	250	500	1000	2000	4000	8000
9000	0.500	286	7.1	72	68	68	62	60	55	51	48
	1.000	369	10.6	79	74	73	71	65	62	58	54
12000	0.250	278	7.6	72	69	69	64	62	57	52	47
	1.000	396	12.4	83	76	74	74	66	65	60	56
	1.750	488	18.2	87	87	80	79	72	70	65	61
16000	0.500	379	12.5	81	76	75	74	68	66	61	56
	1.500	500	19.4	88	88	81	80	74	71	66	62
	2.500	597	25.0	92	92	85	84	79	76	71	67
	3.500	683	31.2	95	96	88	88	83	80	75	70
20000	1.000	498	20.8	87	90	82	81	75	73	68	63
	2.000	595	25.3	92	92	85	85	80	77	72	67
	3.000	678	30.8	95	96	87	88	83	80	74	70
	4.000	754	36.5	98	98	91	90	86	83	77	73
21000	3.150	701	32.8	96	97	88	89	84	81	75	71
24000	0.500	504	23.6	89	91	83	83	78	77	71	66
	2.000	646	29.9	94	95	87	87	83	80	75	70
	3.500	759	37.4	98	98	91	91	87	83	78	73
	5.000	858	45.7	102	101	97	93	89	86	81	77
28000	1.000	617	31.0	93	95	88	88	84	81	76	71
	2.500	738	37.0	98	97	90	91	87	84	79	74
	4.000	839	45.0	102	100	96	93	90	87	82	77
32000	0.500	642	36.7	96	98	90	90	87	84	79	74
	1.750	739	40.7	99	99	92	92	89	86	81	75
	3.000	826	45.1	102	100	95	93	91	87	82	77
36000	0.250	697	32.5	96	97	88	88	84	80	75	71
	1.000	747	45.5	101	101	93	93	90	88	83	77

The sound power level ratings shown are in decibels, 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.The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation type B: free inlet hemispherical sone levels.

ENGINEERING SPECIFICATIONS

Model
D = Utility blower

Unit size
6,7,8,10, 12, 13, 15, 16, 18, 20, 22, 24, 30, 36, 44

Drive type
D = Direct drive
B = Belt drive

Motor tap
L = 500 RPM
M= 690 RPM
V = 1050 RPM
S = 1300 RPM
R = 1550 RPM
Q= 1750 RPM

Motor speed
1 = Single speed
2 = 2S2W single and three phase
3 = 2S1W three phase

Horse power
See selection software.

Enclosure
O = Open drip proof
T = Totally enclosed
E = Explosion proof

Voltage
See selection software.

Phase
1 = Single
3 = Three

Cycle
5 = 50 Hz
6 = 60 Hz

Efficiency
S = Standard
H = High efficiency
G= Green plus ECM

Fan RPM
See selection software.

Application CFM
See selection software.

Application Static Pressure
See selection software.

Rotation
CW = Clockwise
CCW = Counter clockwise

Discharge position
BAD, BAU, BH, DB, TAD, TAU, TH, UB

Paint / coating
Dependent on model.
See selection software.

Color
0 = None
00 = Standard gray
50 = Chrome green
55 = Pale green
56 = Dove gray
61 = White
63 = Oxford beige
65 = Dover white
66 = Desert tan
70 = Black
73 = Smoke gray
77 = Brick red
79 = Peppercorn
81 = Pale brown
83 = Chocolate brown
85 = Timeless bronze
94 = Charcoal
X = Special

AMCA spark rating
0 = None
C = Standard
B = Optional

Outlet damper
0 = None
A = BDD gravity backdraft
B = Opposed blade
C = 110/115/120 OBD motorized
D = 208/230 OBD motorized
E = 440/460/480 OBD motorized
F = Parallel blade
G = 110/115/120 Parallel motorized
H = 208/230 Parallel motorized
J = 440/460/480 Parallel motorized
X = Special

Access door
0 = None
B = Bolted access door
Q = Quick release access door

Stiffener angles
0 = None
A = Stiffener angles

Weather cover
0 = None
C = Weather cover

Extended lube lines
0 = None
L = Extended lube lines

Vibration isolation
0 = None
RH = Rubber hanger
SH = Spring hanger
RF = Rubber floor
SF = Spring floor
SC = Support channels with rubber floor
FP = Flex pad

Thermal overload protection
0 = None
P = Thermal overload protection

Disconnect switch
0 = None
1 = NEMA 1
3R = NEMA 3R
4 = NEMA 4
7 = NEMA 7

Internal wiring
0 = None
1 = NEMA 1
3R = NEMA 3R

Firestat switch
0 = None
F = Firestat switch

Fatrap / dynapak
0 = None
F = Fatrap
DP = Dynapak
FD = Fatrap / dynapak

Guard
0 = None
I = Inlet
U = Outlet
B = Both

Flange
0 = None
I = Inlet
U = Outlet
B = Both

Companion flange
0 = None
F = Inlet
U = Outlet
B = Both

Variable inlet vanes
0 = None
B = Variable inlet vanes

Drain
0 = None
D = Drain

Dynamo - belt drive units

Belt driven centrifugal exhaust or supply blowers shall be Dynamo, general purpose, belt driven utility fans with non-overloading, backwardly inclined aluminum wheels, as manufactured by PennBarry. Fans shall be single inlet, single width, AMCA arrangement 10 with clockwise (or CCW) rotation. Air discharge position shall be THD unless specified otherwise.

Fan housing shall be heavy gauge galvanized steel for maximum corrosion protection. Housings shall be field rotatable to any of eight 45° incremental air discharge positions. Fan scrolls shall be equipped with a bolted, gasketed (quick release if specified) access door for cleaning and inspection.

The bearing supports shall be constructed of welded structural steel members to prevent vibration and rigidly support the shaft and bearings, bearings shall be heavy duty, self-aligning, pillow block ball bearings, grease lubricated and selected for minimum life (L50) of 200,000 hours at maximum operating speed. Shafts shall be turned, ground, and polished. Shafts shall be sized so the first critical speed is at least 20% over the maximum operating speed. Close tolerances shall be maintained along the length of the shaft.

The standard fan wheel shall be aluminum (steel for smoke removal), non-overloading backward inclined type. The wheels shall be statically and dynamically balanced. The wheel and inlet shall be aerodynamically designed and constructed to provide maximum performance and efficiency.

Steel Wheel (Heat and Smoke Removal) - The wheel is a standard duty, all-welded wheel. The blades are curved for improved air performance, while increasing their strength and rigidity. The wheel assembly is fully welded to provide extremely durable and consistent performance. The wheel is dynamically balanced. Balancing weights are mechanically attached to the inside of the rims of both the backplate and wheel inlet. This allows a precise placement of the weights anywhere within a full 360° range on two separate planes, without the possibility of detachment

Pulleys shall be adjustable (through 20 HP) cast iron, machined, keyed, and securely attached. Belts and pulleys shall be sized for 150% of the installed motor horsepower. Motors shall be heavy duty, ball bearing, open drip proof (totally enclosed or other type if specified) motors. After assembly, the entire unit, with drive train installed and set to specified RPM, shall have a computerized vibration analysis performed. Vibration shall be measured in the horizontal, vertical, and axial directions at each bearing to assure quality and smooth operation.

Fans shall be licensed to bear the AMCA Air and Sound Certified Ratings Seal. Fan air performance ratings shall be bear on test conducted in an AMCA registered laboratory for AMCA 210 air performance testing. The test standard used shall be ANSI/AMCA Standard 210-85, ANSI/ASHRAE Standard 51-1985 “Laboratory Methods of Testing Fans for Rating.” All sizes must be tested, calculations to other sizes not acceptable. Fan sound performance shall be based on tests conducted in an AMCA registered laboratory for AMCA 300 Sound Performance Testing. The test standard shall be 300 “Reverberant Room Method for Sound Testing of Fans.” All sizes must be tested, calculations to other sizes are not acceptable, Air or Sound tests results are to be made available upon request.

Fans shall be UL (UL Std. 705, UL Std. 762 optional) listed. If specified (Fatrap option), fan shall additionally provide UL 762 Listing rated at 500ºF, motor pre-wired to a weather-proof junction box, and drain connection leading into a grease collector/separator box. If specified (heat and smoke removal option), fan shall additionally provide UL power ventilator for smoke control systems listing rated for 500°F at 4-hours and 1000°F at 41 minutes, including a steel wheel.

Dynamo - direct drive units

Direct driven centrifugal exhaust or supply blowers shall be Dynamo, general purpose utility fans with non-overloading, backwardly inclined aluminum wheels, as manufactured by PennBarry. Fans shall be single inlet, single width, AMCA arrangement 10 with clockwise (or CCW) rotation. Air discharge position shall be THD unless specified otherwise.

Fan housing shall be heavy gauge galvanized steel for maximum corrosion protection. Housings shall be field rotatable to any of eight 45° incremental air discharge positions. Fan scrolls shall be equipped with a bolted, gasketed (quick release if specified) access door for cleaning and inspection.

The standard fan wheel shall be aluminum, non-overloading backward inclined type. The wheels shall be statically and dynamically balanced. The wheel and inlet shall be aerodynamically designed and constructed to provide maximum performance and efficiency. Motors shall be continuous duty, multi-speed, totally enclosed (or other type if specified) motors.

Fans shall be licensed to bear the AMCA Air and Sound Certified Ratings Seal and shall be UL (UL Std. 705) listed.

PENNBARRY PRODUCT SOLUTIONS

Commercial

- Roof & wall exhaust centrifugal fans
- Ceiling, wall, & inline centrifugal fans
- Roof supply centrifugal fans
- Square & round centrifugal fans
- Wall mounted axial fans
- Hooded roof axial fans
- Upblast roof axial fans
- Gravity ventilators
- Roof curbs

Industrial

- Freestanding centrifugal fans
- Industrial & material handling fans
- Tubular centrifugal inline fans
- Mixed flow centrifugal fans
- Plug & plenum fans
- Wall mounted propeller fans
- Tube axial fans
- Vane axial fans
- Bifurcator fans
- Lab exhaust

Kitchen ventilation

- Make-up air units
- Exhaust fans

Energy recovery

- Outdoor units
- Indoor units

PennBarry is proud to be your preferred manufacturer of commercial and industrial fans and blowers. Learn how PennBarry can assist you in your next application by contacting your PennBarry Representative or visiting us on the web at www.pennbarry.com

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