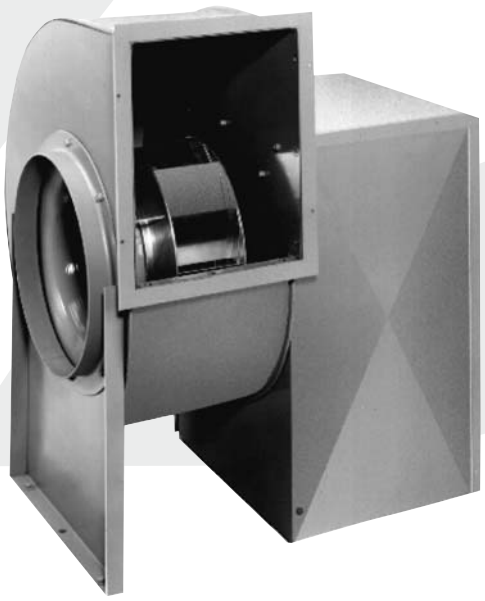
PENN BARRY

Bulletin D05



DYNAMO

Model: D
Class I Centrifugal Fans
SWSI Backward Inclined
Belt Drive

MOVING YOUR WAY

CERTIFIED RATINGS

Dynamo Centrifugal Fans

PennBarry certifies that the Dynamo models contained herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program

UL and CSA Certification

Dynamo fans carry the UL label. Standard Dynamo models are UL 705 (ZACT), listed under File #E28413. Dynamo fans with "Fatrap" configuration are UL762 (YZHW), listed under File #MH10684. Check Underwriters Laboratories Re-Examination Service for specific units listed.

Dynamo fans with the heat and smoke removal option are UL listed under File: MH19473

Dynamo fans are also certified by the Canadian Standard Association (File #LR13309).

FANSIZER®

Product Selection Software

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

Table of Contents

Visit Our Web Site

Point your internet web browser to **www.PennBarry.com** for up-to-the-minute information including:

- On-line catalog
- List of nearest PennBarry representatives
- What's New
- HVAC "Hot Links"

Features and Benefits

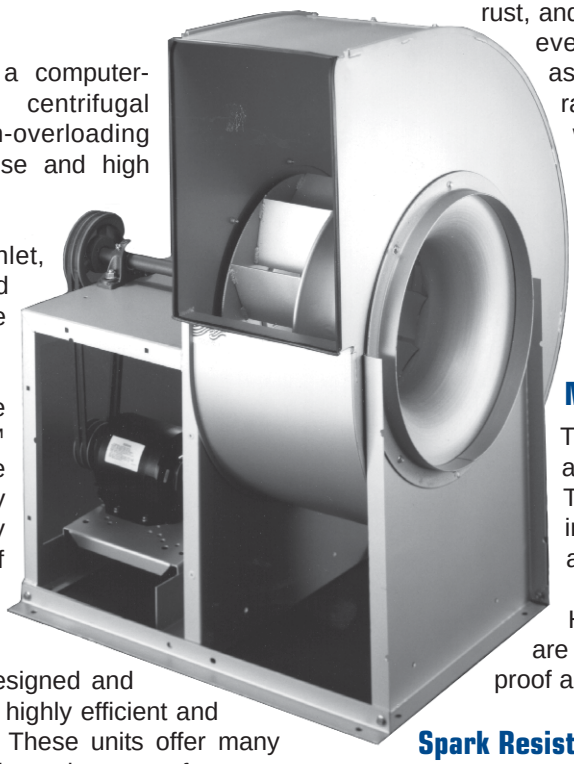
Dynamo Centrifugal Fan

Dynamo centrifugal fans are SWSI, Class I, Arrangement 9 and 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 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 Weld-Lock™ construction. Motors and all drive components have been carefully engineered and tested for durability and performance. A wide range of accessories is 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.

Standard Features

Self Aligning Pillow Block Bearings

Bearings are sized for a minimum L_{50} 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.

Engineered Scrolls

PennBarry's exclusive Weld-Lock™ assembly technique ensures positive air containment with interval lockseam welding. Developed by PennBarry's engineering staff, Weld-Lock combines the advantages of several proven assembly techniques.

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.

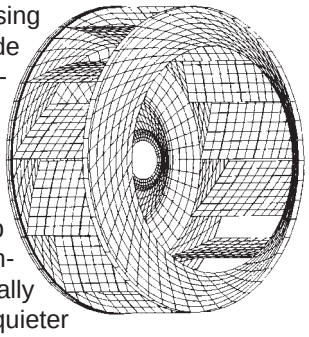
Motors and Drives

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 165% of driven horsepower.

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

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 new 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.



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 ductwork.

Dynamo Fatrap Configuration

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 400°F, 100°F higher than UL requirements, and the highest in the industry.

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.

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 ductwork 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.

UL 762 Listing

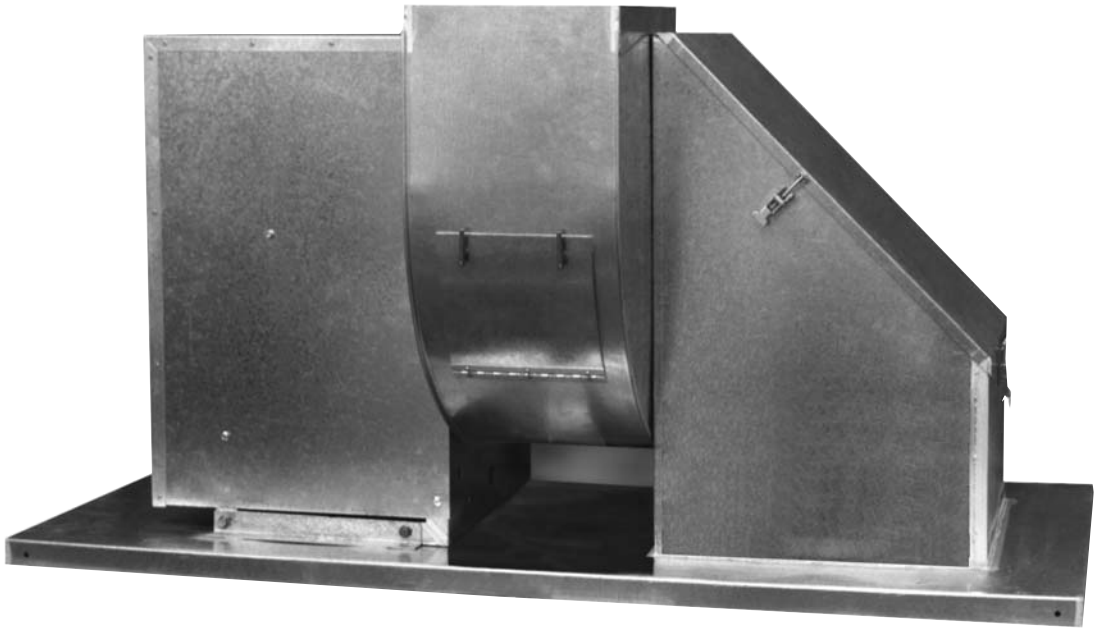
Dynamo Dynapak fans consist of a standard up blast Dynamo unit attached to a fully welded inlet plenum and mounted on a curb cap. The resulting curb mounted assembly provides a unique solution to restaurant grease exhaust applications and is UL762 Listed. The Inlet plenum is equipped with a triple sealed 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 28.

Features and Benefits

Dynamo Centrifugal Fan

Dynapak



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
- Fully welded corners
- 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

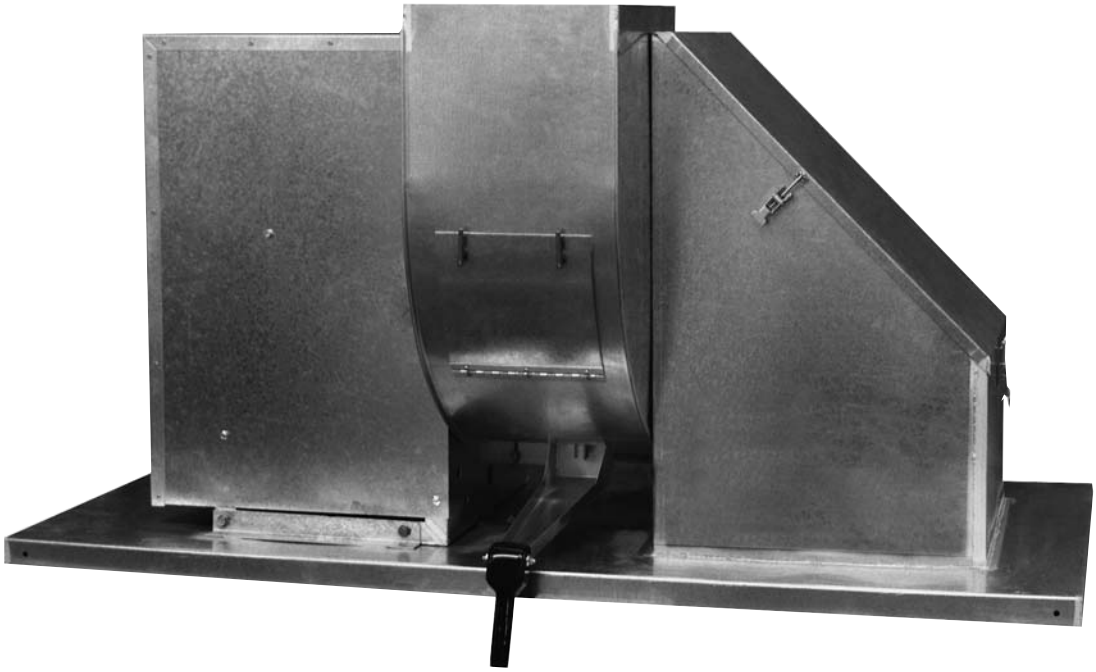
Available For Dynamo Models:

- D10DP, D13DP, D16DP, D20DP and D24DP

Typical Applications Include:

- Laboratory hoods
- Industrial Process Ventilation
- Dry Cleaning

Dynapak Fatrap Configuration



Dynapak Fatrap Includes all the Features of the Dynamo Blower PLUS

UL 762 Listing

- Rated at 400ºF, highest in the industry

Pre-Wired Weatherproof Junction Box

Grease Collector

- Additionally separates the water from the grease
- Amply sized
- Longer time required between cleaning
- Collects from a single swiveling collection spout

Ventilated Curbs (Optional)

- Available to comply with NFPA96

Integral Galvanized Curb Cap

- Eliminates need for costly customized field fabricated transition
- Fully welded corners
- 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 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

Options and Accessories

Dynamo Centrifugal Fan

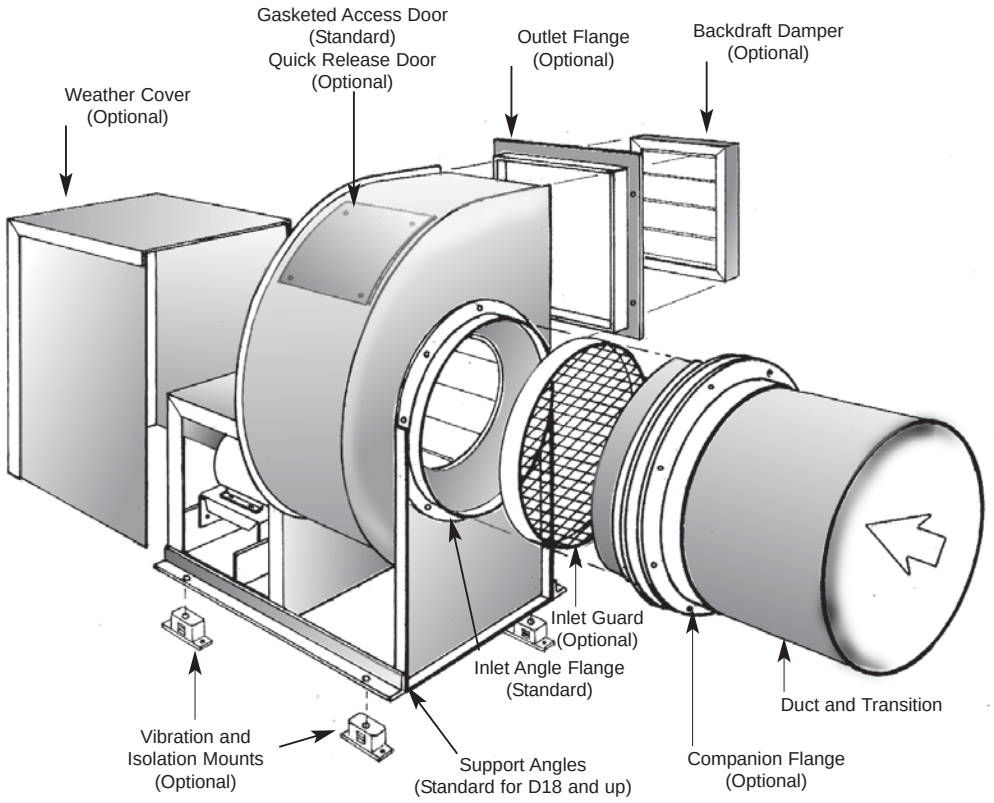
An extensive selection of accessory items to cover various application requirements is available at additional cost.

Support Angles

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

Flanges

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



Inlet and Outlet Guards

Inlet and Outlet Guards provide safety in non-ducted in stallations. 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.

Drive Guards

Drive guards are also available to protect personnel and drive assemblies. Drive guards comply with OSHA requirements and are easily removed for drive inspection and belt adjustment.

Guards are highly recommended whenever the fan is mounted within 7" of occupied space and/or otherwise unprotected with ductwork. Each application must be reviewed for OSHA compliance.

Access Door

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

Ventilated Weather Cover

Available on Arrangement 10 fans, 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 using ordinary hand tools. On larger sizes, the cover incorporates a removable end panel for easy access to drive components without removing the entire cover.

Coatings

Factory applied, multi-coat enamel paint is available for a modest charge. In addition, special coatings - Polyamide Epoxy and Heresite - are available for applications involving corrosive conditions and/or other damaging influences. Please contact your representative with any questions on suggested applications.

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.

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 downblast discharge positions.

Variable Inlet Vanes

Also known as vortex dampers, vanes provide efficient regulation of fan output over all operating ranges with substantial increases in 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.

Safety Switches

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

Spark-Resistant Construction

AMCA “C” and “B” construction are available. 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.

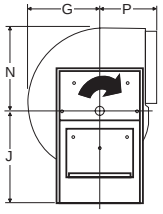
The use of the above standard in no way implies a guarantee of safety for any level of spark resistance. Spark-resistant construction does not protect against ignition of explosive gases caused by catastrophic failure or from any airstream material that may be present in a system.

Selection Criteria

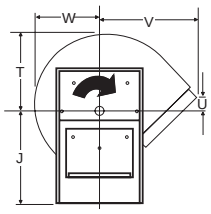
Dynamo Centrifugal Fan

Discharge Positions

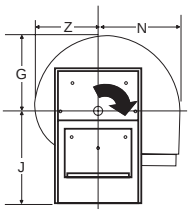
Clockwise Rotation - CW



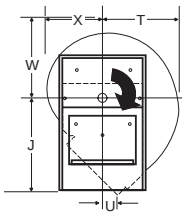
CW(TH)90



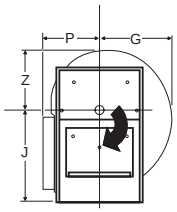
CW(TAD)135



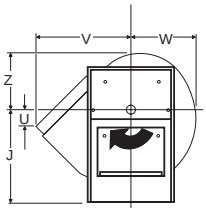
CW(DB)180



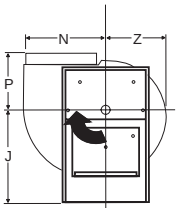
CW(BAD)225



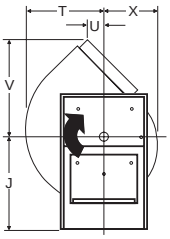
CW(BH)270



CW(BAU)315

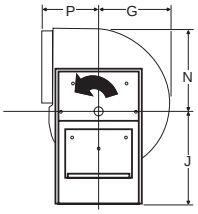


CW(UB)360

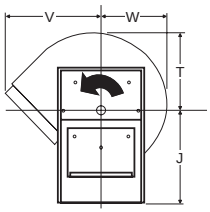


CW(TAU)45

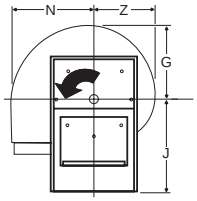
Counterclockwise Rotation - CCW



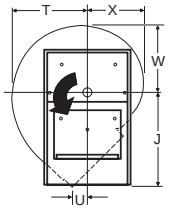
CCW(TH)90



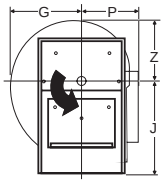
CCW(TAD)135



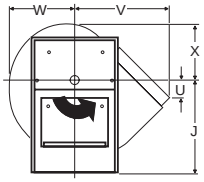
CCW(DB)180



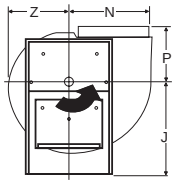
CCW(BAD)225



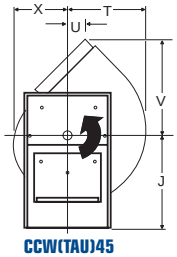
CCW(BH)270



CCW(BAU)315



CCW(UB)360



CCW(TAU)45

Rotation and 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.

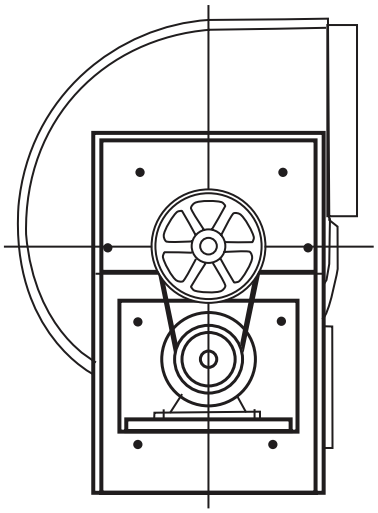
Rotational Designations*

TH - Top Horizontal
TAD - Top Angular Down
DB - Down Blast
BAD - Bottom Angular Down
BH - Bottom Horizontal
UB - Up Blast
TAU - Top Angular Up
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
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	31 1/2	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

All dimensions in inches.



Arrangement 10

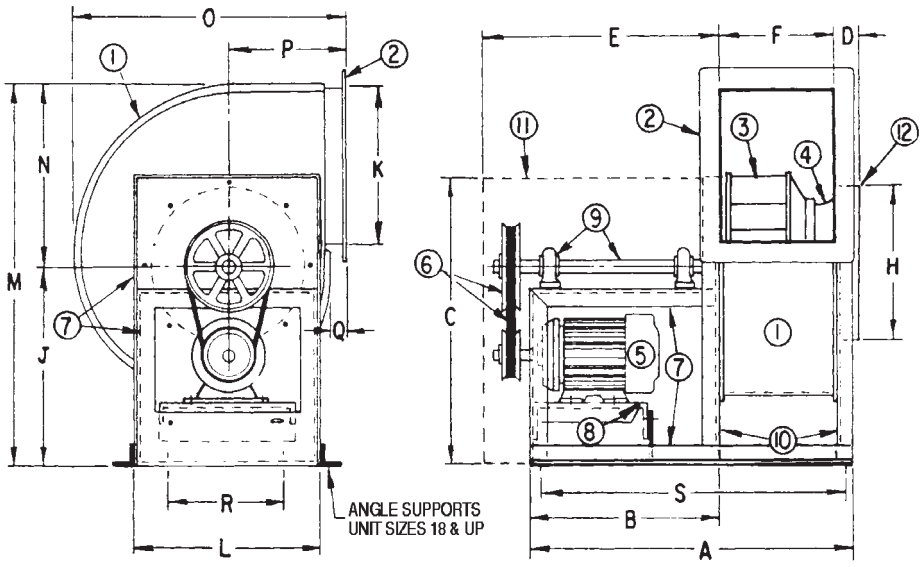
Arrangement 10 Single Width, Single Inlet

Fans are constructed with the motor and bearings out of the airstream. Motors are mounted inside of the pedestal on an adjustable motor plate. This arrangement allows for the use of a weather cover and can be used in ducted or non-ducted applications.

NOTE: 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.

Centrifugal General Purpose Utility Fans

Dynamo Centrifugal Fan



Legend

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

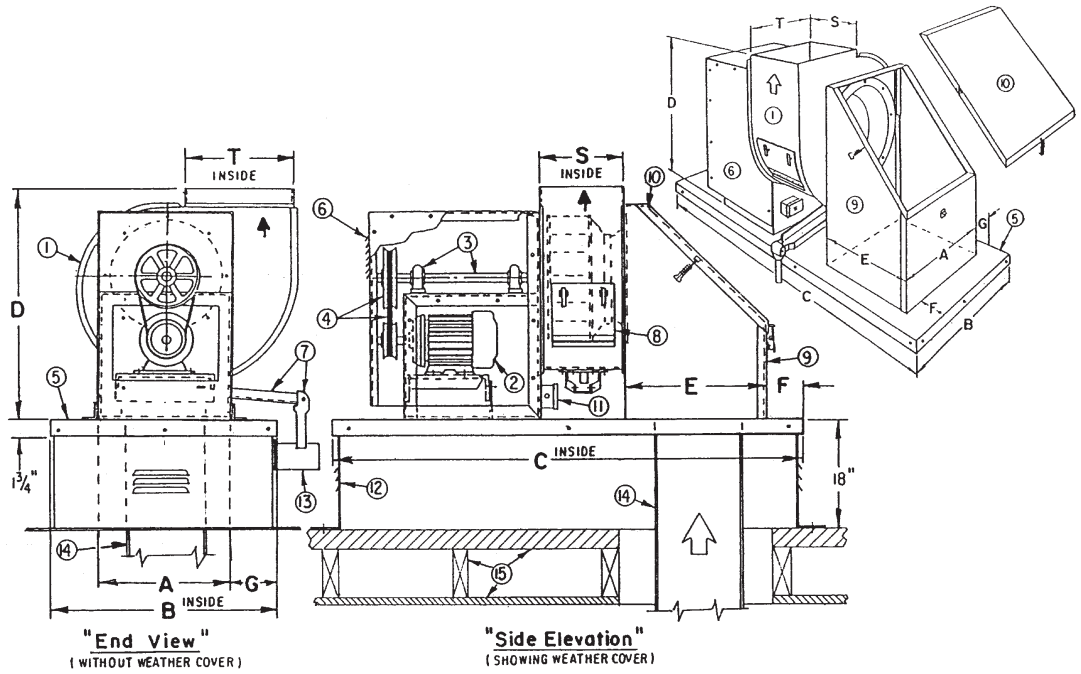
Dimensional Data

Unit Size	Wheel Dia.	Shaft Dia.	A	B	C	D	E	Outlet		Inlet	J	L	M	N	O	P	Q	R	S	Mtg. Hole Dia.	Ship Wts.*
								F	K	H											
10	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 11/16	13 3/16	20	8 11/16	1 1/2	10	22 3/4	1/2	130
12	12 7/8	3/4	26 1/8	14 1/2	25 1/4	1 1/4	18 1/2	10 3/8	12	13	17	16	31 1/2	14 1/2	21 13/16	9 3/8	1 1/2	13	24 7/8	1/2	136
13	13 5/8	1	26 1/4	14 1/2	26 1/2	1 1/4	18 1/2	10 1/2	14 3/8	14	18	17 1/4	34 1/16	16 1/16	24 1/16	10 5/16	1 1/2	14	25	1/2	140
15	15 7/8	1	30 3/8	16	29 5/8	1 1/4	20 1/2	11 5/8	15 3/4	15 3/4	20	19 1/4	37 7/8	17 7/8	26 11/16	11 5/16	1 1/2	15	29 1/8	1/2	176
16	16 3/8	1 3/16	30 1/4	16	32 3/8	1 1/4	20 1/2	12 3/4	17 1/2	17 1/4	22	20 3/4	41 5/8	19 5/8	29 1/8	12 5/16	1 1/2	16	28 3/4	1/2	194
18	18 1/2	1 3/16	33 1/2	17 7/8	35 1/4	1 1/2	23 1/2	14 1/8	19 3/8	19	24	22 1/2	45 5/8	21 5/8	32 3/8	13 7/8	1 1/2	18	32	1/2	274
20	20	1 3/16	36 1/4	20	37 5/8	1 1/2	28 1/2	14 3/4	21 3/4	20 1/2	25 1/2	24 1/4	48 13/16	23 5/16	34 13/16	14 13/16	1 1/2	20	34 3/4	5/8	312
22	22 7/8	1 3/16	38 1/2	20	43	1 1/2	28 1/2	17	23 7/16	24	28 3/4	28	54 5/16	25 9/16	37 15/16	16 1/16	1 1/2	24	37	5/8	351
24	24 5/8	1 7/16	40 1/2	20	46	1 1/2	28 1/2	19	26	25	31 1/2	29	59 9/16	28 1/16	41 3/16	17 1/4	1 1/2	24	39	5/8	462
30	30 7/16	1 11/16	50 3/8	25	56 1/2	1 3/4	35 1/8	23 1/8	31 11/16	31 1/2	38	36 15/16	72 13/16	34 13/16	51 1/2	21 13/16	2	30	46 3/8	5/8	875
36	36 15/16	2	55 1/2	25	66 3/8	1 3/4	35 1/8	28 1/4	38 7/16	41 1/8	44	44 3/4	82 9/16	38 9/16	59 7/16	25 7/8	2 3/8	34	51 1/2	5/8	1250

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

Dynapak (Fatrap) Curb Mount Restaurant Exhauster

Dynamo Centrifugal Fan



Legend

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)

Dimensional Data

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	17 9/16	5 1/32	5 15/16	8 1/4	11 1/4
D13DP	13 5/8	1	17 3/4	28 1/8	56 1/8	28 5/16	17 5/16	4 31/32	5 11/32	10 1/2	14 3/8
D16DP	16 3/8	1 3/16	20 15/16	34 1/8	68 1/8	34 5/16	20 13/16	6 1/32	6 19/32	12 3/4	17 1/2
D20DP	20	1 3/16	24 1/2	40 3/16	80 3/16	40 5/16	24 5/16	6 1/32	7 27/32	14 3/4	21 3/4
D24DP	24 5/8	1 7/16	29 5/16	44 3/16	88 3/16	48 3/4	29 1/16	5 31/32	7 7/16	19	26

All dimensions in inches.

Motor Selection

Dynamo Centrifugal Fan

Motor Frame Size

HP	Single Phase					200V, 230V, 460V OR 575V Three Phase			
	Open Drip Proof		TE	Expl	2 Speed	Open	TE	Expl	2 Speed
	115V	230V	115/230	Proof	2 WDG	Drip Proof		Proof	2 WDG
1/4	48	48	48	48 / 56	48	48	48	48	–
1/3	48 / 56	48 / 56	56	56	56	56	56	56	–
1/2	48 / 56	48 / 56	56	56	56	56	56	56	56
3/4	56	56	56	56	56	56	56	56	56
1	56	56	56	56	56	56	56	56	145T
1 1/2	56	56	145T	184T	–	56	56	56	182T
2	145T	145T	182T	182T	–	56 / 145T	145T	145T	182T
3	184T	184T	184T	215T	–	56 / 145T	182T	182T	184T
5	–	–	–	–	–	184T	184T	184T	215T
7 1/2	–	–	–	–	–	213T	213T	213T	215T
10	–	–	–	–	–	215T	215T	215T	256T
15	–	–	–	–	–	254T	254T	254T	284T
20	–	–	–	–	–	256T	256T	256T	284T
25	–	–	–	–	–	284T	284T	284T	286T

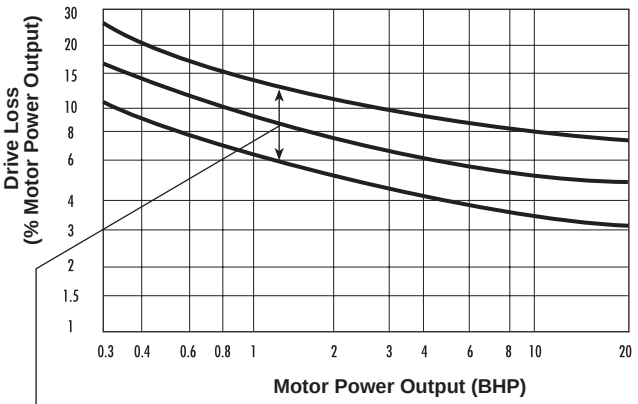
380V/3Ph/50Hz motors are available. On horsepowers less than 1, motor frame sizes may change due to variations in voltage, special features and motor manufacturer. Motors shown are ball bearing, continuous duty, 1750 RPM or 1750/1140 RPM for two speed, two winding motors.

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%.

Caution: 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.

Note: FanSizer software incorporates a drive loss allowance when selecting a required nominal horsepower.



Range of drive loss for standard belts. Higher fan speeds tend to have higher losses than lower fan speeds at the same horsepower.

Nominal Ampere Ratings

Single Phase

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

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 shown on the left is from the NEC 2005 edition, table 430-148.

Three Phase

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 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 shown on the left is from the NEC 2005 edition, table 430-150.

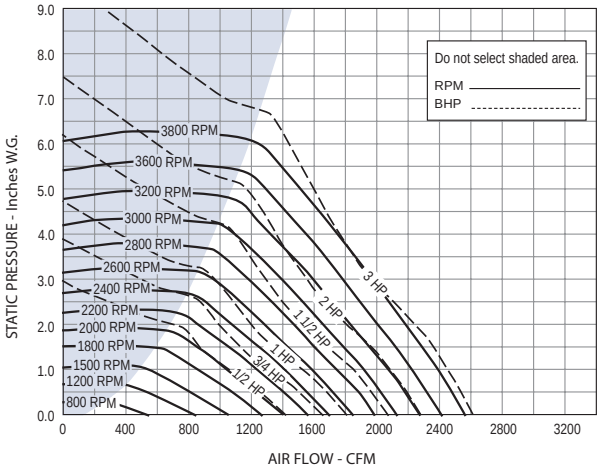
The amperages given here are approximate values only and represent averages compiled from the tables of leading motor manufacturers. Overload relay heaters should not be selected on the basis of these tables only. Heaters must be selected in accordance with the actual motor current as shown on the nameplate. 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.

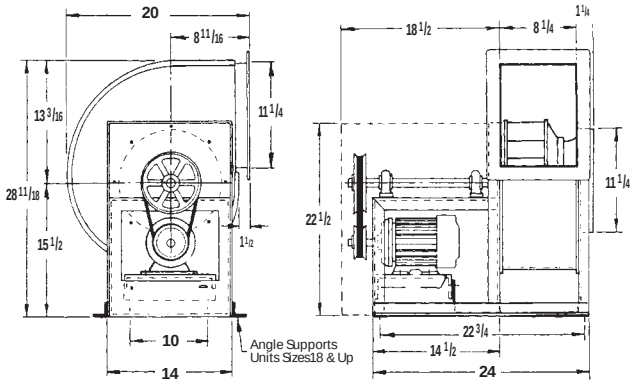
NOTE: On most Belt Drive PennBarry roof exhausters the motor synchronous speed is 1800 RPM.

Performance Data

Dynamo Centrifugal Fan

D10





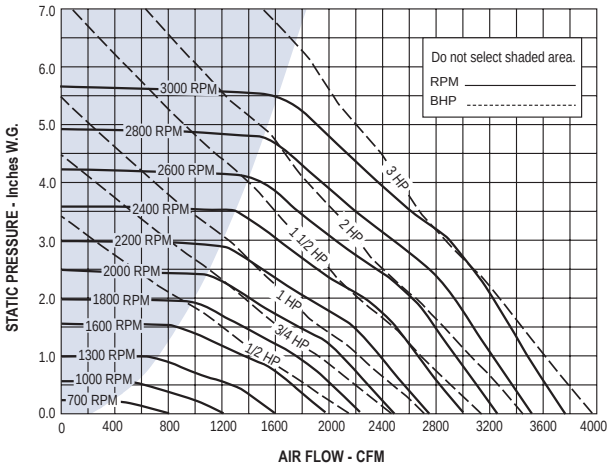
Maximum RPM: 3615	Max BHP: (RPM/2485) 3	Outlet Area: 0.65 Sq. Ft.
Wheel Diameter: 11 1/4"	Tip Speed: 2.95 X RPM	Max Motor Frame Size: 145T

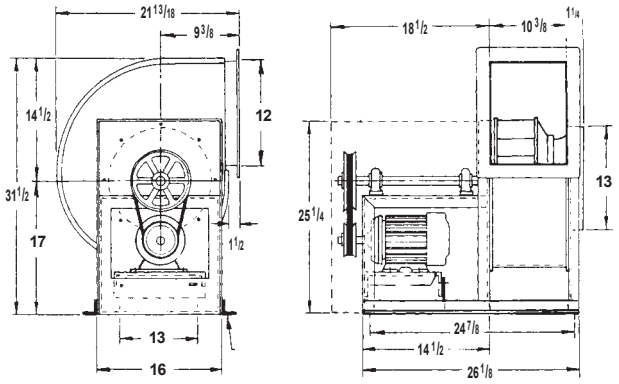
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
500	769	949	0.056	1137	0.089	1293	0.123	1429	0.162								
600	923	1063	0.076	1232	0.119	1381	0.159	1513	0.199	1627	0.241	1744	0.293				
700	1077	1176	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	0.580	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 drive losses.
Performance ratings do not include the e□ects of appurtenances in the airstream.

D12





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	805	801	0.056	993	0.096	1141	0.139	1276	0.184								
800	920	848	0.069	1042	0.112	1189	0.163	1314	0.211	1432	0.263						
900	1034	907	0.083	1091	0.136	1237	0.186	1362	0.244	1472	0.298	1577	0.355	1680	0.416		
1000	1149	972	0.101	1138	0.161	1286	0.213	1410	0.274	1520	0.338	1619	0.398	1713	0.460	1807	0.526
1100	1264	1043	0.123	1184	0.187	1335	0.249	1458	0.306	1567	0.375	1667	0.447	1758	0.512	1843	0.578
1200	1379	1115	0.149	1238	0.214	1383	0.287	1507	0.349	1616	0.416	1715	0.491	1806	0.569	1891	0.641
1300	1494	1187	0.177	1299	0.244	1427	0.324	1556	0.399	1665	0.465	1763	0.539	1854	0.621	1939	0.705
1400	1609	1260	0.210	1364	0.280	1476	0.365	1603	0.449	1713	0.523	1812	0.594	1902	0.677	1987	0.765
1500	1724	1335	0.248	1435	0.322	1535	0.407	1647	0.498	1763	0.588	1860	0.663	1951	0.739	2035	0.829
1600	1839	1410	0.289	1507	0.370	1596	0.453	1696	0.552	1807	0.648	1909	0.737	1999	0.818	2084	0.900
1700	1954	1485	0.334	1579	0.422	1661	0.506	1753	0.607	1853	0.711	1957	0.814	2049	0.905	2132	0.990
1800	2069	1561	0.384	1651	0.479	1731	0.567	1814	0.667	1901	0.778	2000	0.887	2098	0.996	2181	1.087
1900	2184	1638	0.440	1724	0.541	1803	0.636	1876	0.732	1960	0.849	2048	0.965	2141	1.079	2231	1.192
2000	2299	1715	0.502	1797	0.610	1875	0.710	1944	0.808	2021	0.923	2098	1.048	2187	1.168	2275	1.287
2100	2414	1792	0.569	1872	0.685	1946	0.788	2014	0.892	2082	1.002	2158	1.132	2235	1.261	2320	1.388
2200	2529	1870	0.645	1946	0.763	2019	0.875	2086	0.984	2148	1.093	2219	1.222	2290	1.359	2368	1.492
2300	2644	1947	0.726	2022	0.849	2092	0.969	2158	1.083	2218	1.195	2281	1.318	2350	1.458	2417	1.603
2400	2759	2025	0.816	2097	0.940	2165	1.068	2230	1.188	2289	1.305	2346	1.425	2411	1.565	2477	1.714
2500	2874	2103	0.912	2173	1.039	2239	1.176	2302	1.300	2361	1.424	2416	1.546	2473	1.678	2538	1.832
2600	2989	2181	1.016	2250	1.147	2313	1.289	2374	0.419	2433	1.549	2487	1.677	2539	1.805	2599	1.956
2700	3103	2260	1.129	2327	1.262	2388	1.409	2447	1.547	2505	1.683	2559	1.816	2610	1.949	2661	2.088
2800	3218	2338	1.248	2404	1.384	2463	1.536	2521	1.685	2577	1.824	2630	1.962	2680	2.099	2729	2.239
2900	3333	2417	1.377	2481	1.515	2539	1.672	2595	1.831	2650	1.974	2702	2.117	2752	2.261	2799	2.403
3000	3448	2496	1.515	2558	1.654	2615	1.817	2669	1.981	2723	2.134	2774	2.281	2824	2.431	2870	2.577
3100	3563	2575	1.662	2635	1.805	2691	1.970	2744	2.140	2796	2.301	2847	2.456	2896	2.610	2942	2.762
3200	3678	2654	1.819	2713	1.967	2768	2.134	2819	2.307	2870	2.480	2919	2.636	2968	2.798	3013	2.954

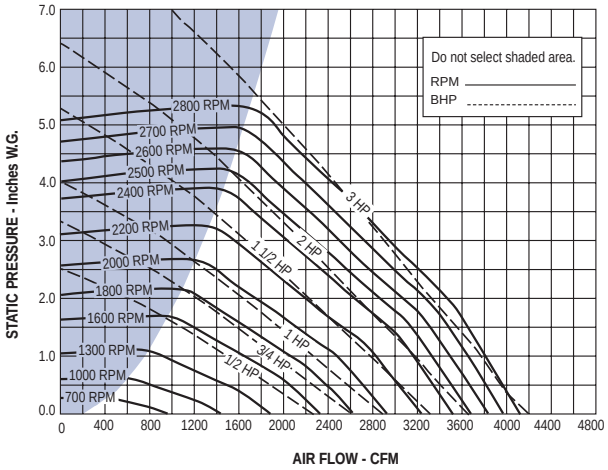
CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1379	1971	0.713	2050	0.789	2128	0.868	2206	0.950								
1300	1494	2019	0.785	2094	0.862	2166	0.941	2240	1.026	2384	1.200						
1400	1609	2067	0.855	2143	0.945	2214	1.027	2283	1.112	2418	1.289	2551	1.474				
1500	1724	2115	0.824	2190	1.019	2262	1.117	2331	1.208	2460	1.388	2586	1.578	2711	1.777		
1600	1839	2163	0.996	2238	1.096	2310	1.199	2379	1.302	2508	1.499	2628	1.691	2746	1.893	2864	2.106
1700	1954	2212	1.077	2287	1.179	2358	1.284	2426	1.391	2556	1.612	2676	1.818	2789	2.022	2900	2.236
1800	2069	2260	1.178	2336	1.271	2407	1.376	2475	1.488	2603	1.714	2724	1.949	2837	2.165	2944	2.382
1900	2184	2309	1.287	2384	1.384	2455	1.479	2523	1.586	2651	1.823	2772	2.067	2885	2.313	2991	2.538
2000	2299	2359	1.404	2433	1.505	2504	1.606	2572	1.707	2700	1.938	2819	2.188	2932	2.444		
2100	2414	2404	1.514	2482	1.632	2553	1.740	2620	1.845	2749	2.058	2868	2.318	2980	2.581		
2200	2529	2448	1.625	2528	1.756	2602	1.880	2669	1.991	2797	2.213	2917	2.452				
2300	2644	2495	1.740	2572	1.879	2649	2.019	2719	2.146	2846	2.379	2965	2.610				
2400	2759	2544	1.863	2618	2.005	2692	2.150	2765	2.295	2895	2.552	3014	2.795				
2500	2874	2599	1.985	2667	2.140	2738	2.290	2809	2.441	2945	2.734						
2600	2989	2660	2.116	2719	2.278	2786	2.435	2854	2.591	2990	2.905						
2700	3103	2721	2.252	2779	2.418	2836	2.589	2903	2.751								
2800	3218	2783	2.396	2840	2.566	2896	2.741	2951	2.914								
2900	3333	2846	2.549	2901	2.721	2956	2.899	3010	3.082								
3000	3448	2916	2.727	2963	2.885	3018	3.070										
3100	3563	2986	2.914														

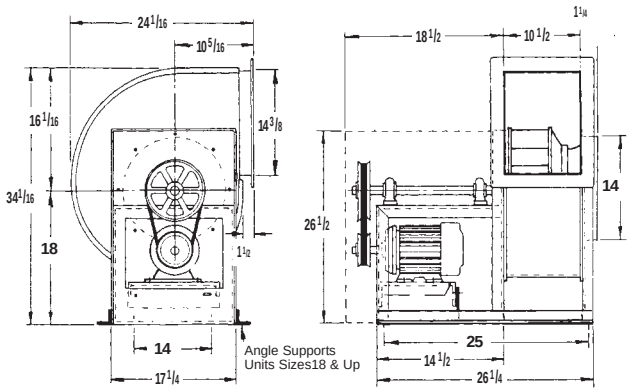
Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

Performance Data

Dynamo Centrifugal Fan

D13





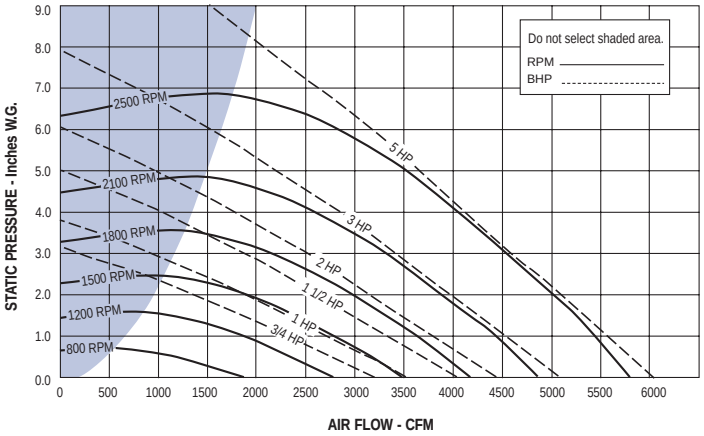
Maximum RPM: 2855	Max BHP: (RPM/1885)^3	Outlet Area: 1.05 Sq. Ft.
Wheel Diameter: 13 5/8"	Tip Speed: 3.57 X RPM	Max Motor Frame Size: 145T

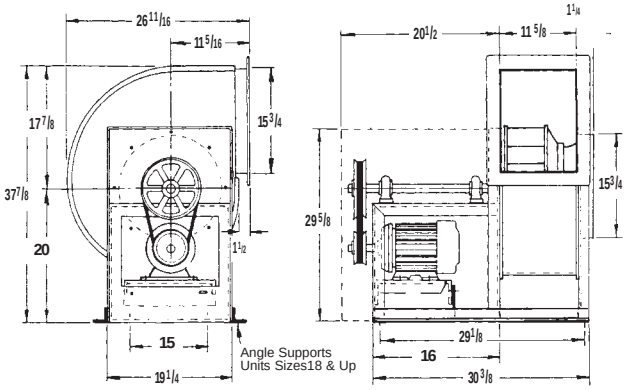
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	857	832	0.081	1004	0.137	1146	0.200	1267	0.268	1374	0.341	1480	0.418				
1000	952	879	0.098	1047	0.158	1187	0.224	1308	0.296	1414	0.372	1509	0.453	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	0.820	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 drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

D15





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	0.09	800	0.16	916	0.23	1020	0.30	1116	0.39	1205	0.47	1289	0.56	1369	0.66
1375	1058	744	0.13	864	0.20	971	0.28	1069	0.36	1159	0.45	1243	0.55	1323	0.65	1399	0.75
1600	1231	823	0.17	935	0.26	1034	0.34	1125	0.43	1210	0.53	1290	0.63	1366	0.74	1438	0.85
1825	1404	905	0.23	1011	0.32	1102	0.42	1187	0.52	1267	0.62	1343	0.73	1416	0.84	1485	0.96
2050	1577	988	0.30	1089	0.40	1175	0.51	1255	0.62	1330	0.73	1402	0.84	1471	0.96	1537	1.08
2275	1750	1073	0.38	1169	0.50	1251	0.61	1327	0.73	1398	0.85	1465	0.97	1531	1.10	1594	1.23
2500	1923	1159	0.47	1250	0.61	1330	0.74	1402	0.86	1469	0.99	1533	1.12	1595	1.26	1656	1.39
2725	2096	1247	0.59	1332	0.73	1410	0.87	1479	1.01	1543	1.15	1605	1.29	1664	1.44	1721	1.58
2950	2269	1337	0.72	1416	0.87	1490	1.03	1558	1.18	1620	1.33	1679	1.48	1736	1.64	1790	1.79
3175	2442	1428	0.87	1501	1.03	1572	1.20	1638	1.37	1698	1.53	1755	1.70	1810	1.86	1862	2.02
3400	2615	1520	1.04	1587	1.22	1655	1.40	1719	1.58	1778	1.75	1833	1.93	1886	2.10	1937	2.28
3625	2788	1613	1.24	1674	1.42	1739	1.61	1800	1.81	1858	2.00	1912	2.18	1964	2.37	2013	2.56
3850	2962	1707	1.46	1763	1.65	1823	1.85	1883	2.06	1939	2.26	1992	2.46	2042	2.66	2090	2.86
4075	3135	1801	1.71	1852	1.91	1909	2.12	1966	2.34	2021	2.55	2073	2.77	2122	2.98	2169	3.19
4300	3308	1895	1.99	1943	2.20	1996	2.42	2050	2.64	2104	2.87	2154	3.10	2202	3.32	2248	3.55
4525	3481	1990	2.30	2034	2.51	2084	2.74	2136	2.98	2187	3.22	2236	3.46	2283	3.69	2329	3.93
4750	3654	2085	2.63	2126	2.86	2173	3.09	2222	3.34	2271	3.59	2319	3.84	2365	4.10	2410	4.35
4975	3827	2180	3.00	2219	3.24	2262	3.48	2309	3.74	2356	4.00	2402	4.26	2447	4.53	2491	4.79
5200	4000	2275	3.41	2312	3.65	2353	3.90	2396	4.17	2441	4.44	2486	4.72	2530	4.99	2573	5.27
5425	4173	2371	3.85	2405	4.10	2444	4.36	2485	4.63	2528	4.92	2571	5.20	0	0.00	0	0.00

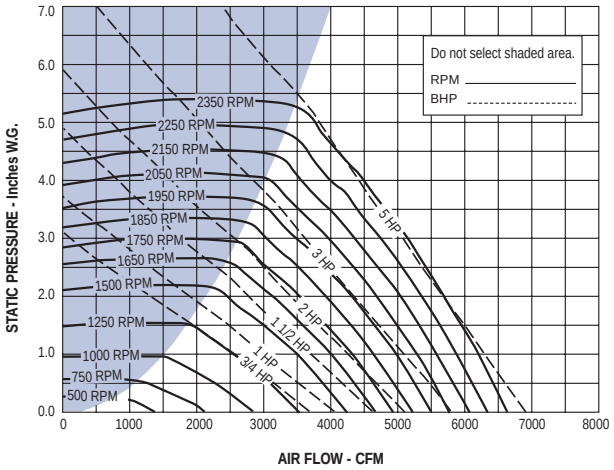
CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1600	1231	1507	0.96	1574	1.08	1638	1.20	1701	1.32	1820	1.58	1932	1.85	0	0.00	0	0.00
1750	1346	1536	1.04	1600	1.16	1663	1.29	1723	1.42	1840	1.68	1951	1.96	2056	2.25	2156	2.56
1900	1462	1567	1.12	1630	1.25	1691	1.38	1750	1.52	1863	1.79	1971	2.08	2075	2.37	2174	2.68
2050	1577	1601	1.21	1662	1.35	1721	1.48	1779	1.62	1890	1.91	1995	2.20	2096	2.51	2193	2.83
2200	1692	1637	1.31	1696	1.45	1754	1.59	1811	1.73	1919	2.03	2022	2.34	2120	2.66	2215	2.98
2350	1808	1674	1.42	1733	1.56	1789	1.71	1844	1.85	1950	2.16	2051	2.48	2147	2.81	2240	3.15
2500	1923	1714	1.54	1771	1.68	1826	1.83	1880	1.98	1983	2.30	2082	2.63	2177	2.97	2268	3.32
2650	2038	1756	1.66	1811	1.81	1865	1.97	1917	2.12	2018	2.45	2115	2.79	2208	3.14	2297	3.49
2800	2154	1799	1.80	1852	1.95	1905	2.11	1956	2.27	2055	2.61	2150	2.95	2241	3.31	2329	3.68
2950	2269	1844	1.95	1896	2.11	1947	2.27	1997	2.43	2093	2.78	2186	3.13	2276	3.50	2362	3.88
3100	2385	1890	2.10	1940	2.27	1990	2.44	2039	2.61	2133	2.96	2224	3.32	2312	3.70	2396	4.08
3250	2500	1937	2.27	1987	2.44	2035	2.62	2082	2.79	2174	3.15	2263	3.52	2349	3.91	2432	4.30
3400	2615	1986	2.45	2034	2.63	2081	2.81	2127	2.99	2217	3.36	2304	3.74	2388	4.13	2470	4.53
3550	2731	2035	2.64	2082	2.83	2128	3.01	2173	3.20	2261	3.58	2345	3.97	2428	4.37	2508	4.78
3700	2846	2086	2.84	2131	3.04	2176	3.23	2220	3.42	2306	3.81	2389	4.21	2469	4.62	2548	5.04
3850	2962	2137	3.06	2182	3.26	2225	3.45	2268	3.65	2352	4.06	2433	4.47	2512	4.89	2589	5.31
4050	3115	2205	3.36	2249	3.57	2292	3.78	2334	3.98	2415	4.40	2494	4.83	2571	5.26	0	0.00
4250	3269	2275	3.68	2318	3.90	2360	4.12	2401	4.34	2480	4.78	2556	5.22	0	0.00	0	0.00
4450	3423	2346	4.03	2388	4.26	2429	4.49	2469	4.72	2546	5.17	0	0.00	0	0.00	0	0.00
4650	3577	2417	4.40	2458	4.64	2498	4.88	2537	5.12	0	0.00	0	0.00	0	0.00	0	0.00

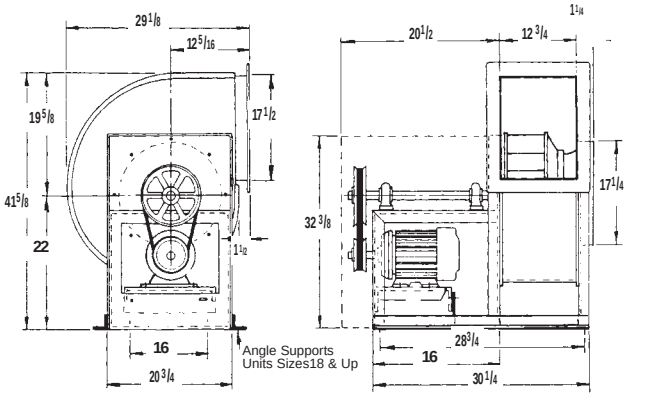
Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

Performance Data

Dynamo Centrifugal Fan

D16





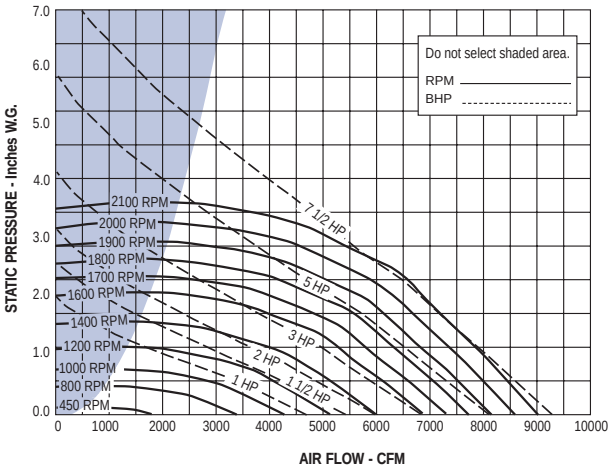
Maximum RPM: 2400	Max BHP: (RPM/1359)^3	Outlet Area: 1.50 Sq. Ft.
Wheel Diameter: 16 3/8"	Tip Speed: 4.29 X RPM	Max Motor Frame Size: 184T

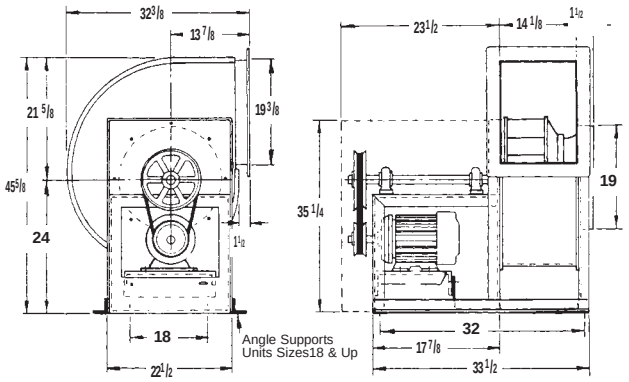
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1250	833	626	0.098	766	0.171												
1400	933	663	0.115	798	0.197	906	0.280										
1550	1033	705	0.138	830	0.225	942	0.318	1032	0.411								
1700	1133	748	0.165	868	0.260	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 drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

D18





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

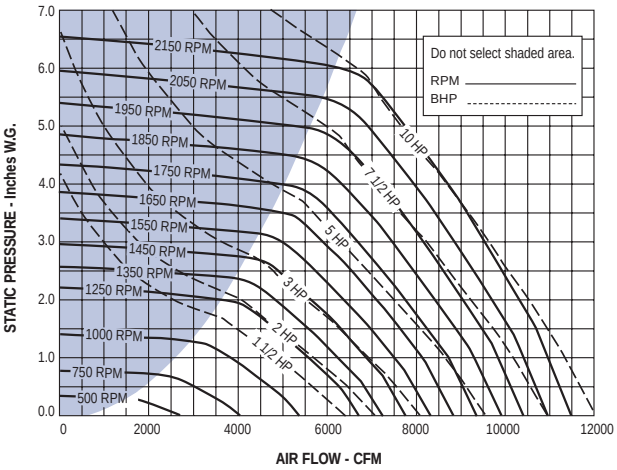
CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1850	974	1252	1.168	1316	1.321	1377	1.478	1435	1.637	1546	1.973	1650	2.325				
2075	1092	1261	1.267	1325	1.430	1385	1.594	1443	1.763	1553	2.114	1655	2.477	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						

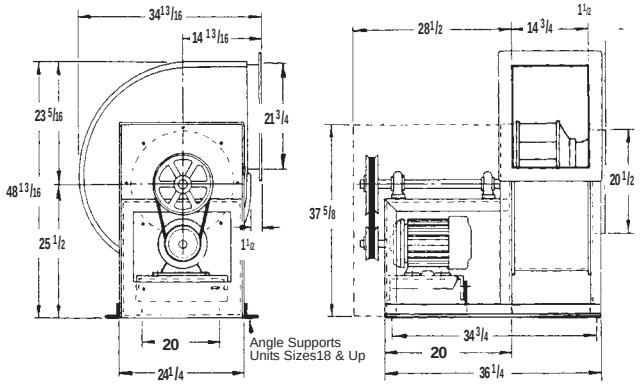
Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

Performance Data

Dynamo Centrifugal Fan

D20





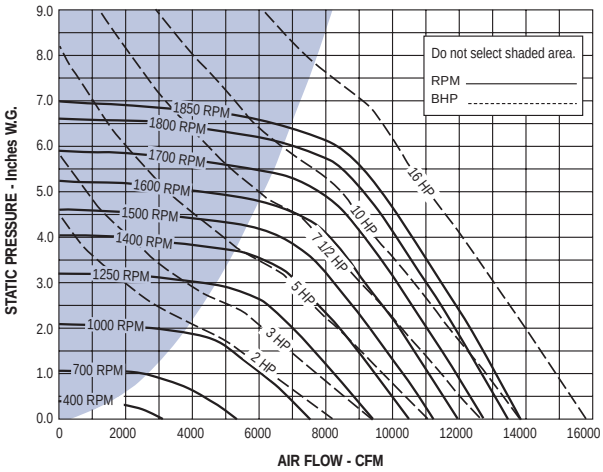
Maximum RPM: 2175	Max BHP: (RPM/992)^3	Outlet Area: 2.20 Sq. Ft.
Wheel Diameter: 20"	Tip Speed: 5.24 X RPM	Max Motor Frame Size: 256T

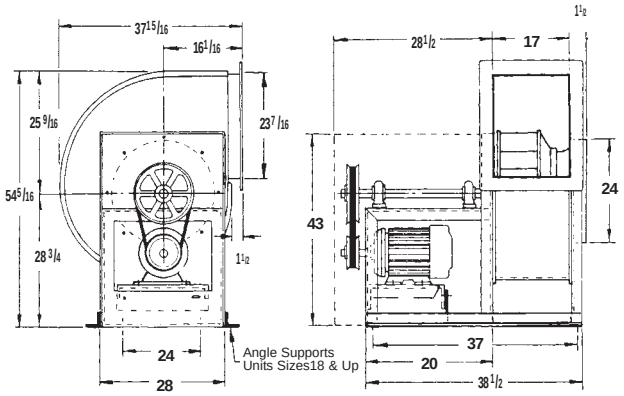
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2500	1136	590	0.204	691	0.337	780	0.478	874	0.648								
2750	1250	628	0.244	723	0.385	809	0.540	887	0.692	975	0.895						
3000	1364	667	0.290	757	0.437	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 drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

D22





Maximum RPM: 1865	Max BHP: (RPM/806)^3	Outlet Area: 2.80 Sq. Ft.
Wheel Diameter: 22 7/8"	Tip Speed: 5.99 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	O.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

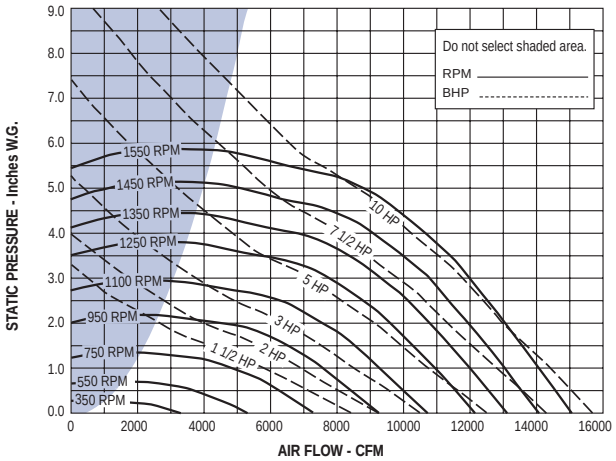
CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5000	1786	1145	2.784	1195	3.134	1243	3.497	1290	3.868								
5300	1893	1160	2.923	1208	3.273	1256	3.646	1302	4.030	1390	4.810						
5600	2000	1181	3.104	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				

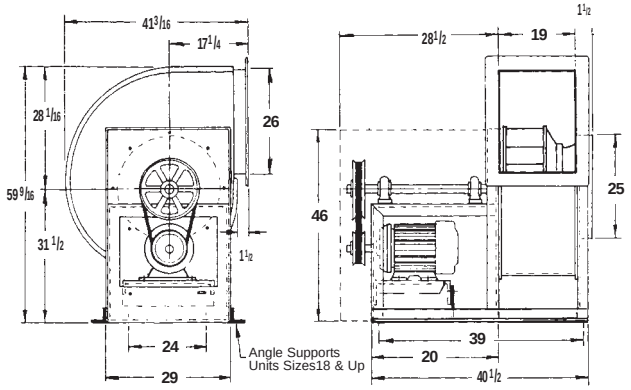
Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

Performance Data

Dynamo Centrifugal Fan

D24





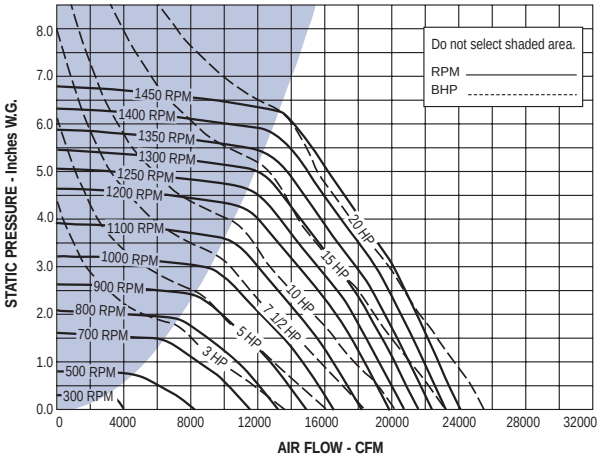
Maximum RPM: 1575	Max BHP: (RPM/706)^3	Outlet Area: 3.40 Sq. Ft.
Wheel Diameter: 24 7/8"	Tip Speed: 6.45 X RPM	Max Motor Frame Size: 256T

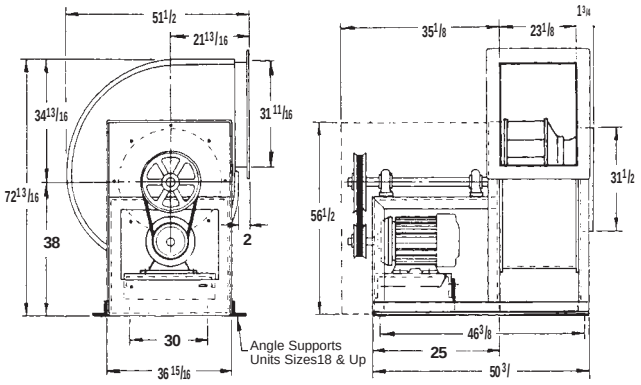
CFM	OV (FPM)	.25" SP		.50" SP		.75" SP		1" SP		1.25" SP		1.50" SP		1.75" SP		2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2900	853	408	0.191	500	0.344	588	0.534	671	0.748	741	0.953	805	1.165	864	1.385	919	1.612
3275	963	437	0.233	522	0.400	601	0.590	678	0.812	751	1.053	814	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	6.457	1414	6.974	1440	7.506	1466	8.063	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 drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

D30





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

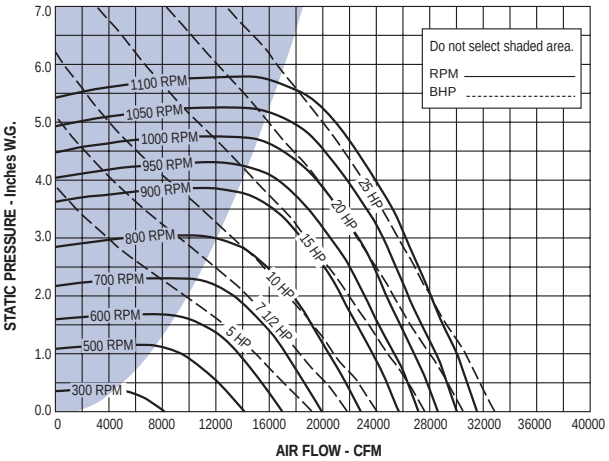
CFM	OV (FPM)	2.25" SP		2.50" SP		2.75" SP		3" SP		3.50" SP		4" SP		4.50" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	1769	893	4.771	925	5.250	956	5.752	988	6.309								
9500	1867	912	5.140	942	5.602	972	6.099	1001	6.612								
10000	1965	933	5.574	961	6.012	989	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						

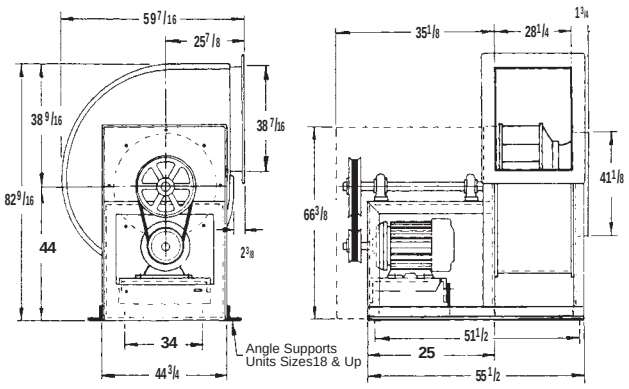
Performance shown is for installation type B - Free inlet, Ducted outlet. Power rating (BHP) does not include drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

Performance Data

Dynamo Centrifugal Fan

D36





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	19.960	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 drive losses.
Performance ratings do not include the effects of appurtenances in the airstream.

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				
Area Sone Levels	Noise Criteria NC	dBA (1)	Types of Areas	
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

Notes: (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.

Sound Power Data

Dynamo Centrifugal Fan

D10

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
500	0.250	948	72	69	63	61	56	50	47	44
500	1.000	1428	76	83	74	71	66	61	58	56
700	0.500	1334	74	79	72	70	65	60	55	53
700	1.250	1717	78	83	79	74	71	66	62	59
700	2.000	2016	80	84	82	76	72	70	66	64
900	1.000	1794	79	83	80	75	72	68	63	59
900	2.250	2269	83	84	81	79	74	72	68	66
900	3.500	2656	84	87	84	84	83	77	72	66
1100	0.250	1664	78	84	79	76	73	68	61	57
1100	1.250	2102	81	84	82	79	75	71	68	63
1100	3.000	2674	84	87	84	84	83	78	72	66
1100	5.000	3185	88	89	87	86	83	79	77	72
1400	0.500	2155	82	85	83	81	77	75	71	65
1400	2.000	2669	84	87	84	84	84	78	72	66
1400	3.500	3078	86	89	86	86	84	79	76	71
1400	5.000	3434	94	90	89	87	83	80	78	75
1800	0.250	2606	82	86	83	84	82	76	73	66
1800	2.000	3122	86	89	86	88	85	80	76	72
1800	4.000	3588	96	90	90	89	85	80	79	77
2000	1.000	3078	86	90	87	88	85	81	77	73
2000	2.250	3413	93	90	89	89	86	81	79	77
2000	3.000	3590	96	90	89	89	86	81	79	78
2200	0.500	3203	89	90	88	88	86	81	78	75
2200	1.250	3391	93	91	89	90	87	82	80	78
2200	2.000	3579	97	92	91	91	88	83	81	80
2400	0.250	3422	94	91	90	90	87	82	80	78
2400	1.000	3585	97	92	91	91	88	83	81	80

D13

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
900	0.250	832	74	69	64	60	56	51	44	40
900	1.500	1480	82	82	76	74	69	66	61	56
1100	0.750	1229	78	84	74	71	66	63	57	51
1100	2.250	1812	88	84	80	80	74	71	68	63
1300	1.000	1431	82	83	78	75	70	67	62	56
1300	2.000	1804	87	84	80	80	74	71	68	64
1300	3.000	2100	90	88	82	84	78	74	71	67
1500	1.500	1714	84	83	80	79	73	70	67	63
1500	2.750	2105	89	88	83	84	78	74	72	67
1500	4.000	2425	92	91	85	87	81	77	75	70
1900	0.250	1403	78	80	76	72	67	64	58	52
1900	1.750	1972	87	86	82	84	77	74	71	67
1900	3.500	2459	91	91	86	87	82	77	75	70
1900	5.000	2786	94	84	88	89	84	79	77	73
2300	1.000	1897	86	87	83	87	78	75	72	67
2300	3.000	2500	91	91	86	88	83	78	76	72
2300	4.500	2846	94	94	89	89	85	80	78	73
2700	1.500	2269	88	89	85	88	82	78	76	71
2700	2.500	2562	90	91	88	90	85	80	78	74
2700	3.500	2795	92	94	90	90	86	81	79	75
3000	1.000	2309	87	88	84	88	82	77	75	70
3000	2.000	2565	89	91	88	90	85	80	78	74
3000	2.750	2767	90	93	91	91	87	82	79	76
3200	0.750	2373	86	87	84	87	81	77	75	69
3200	2.250	2729	89	92	90	90	86	81	79	75
3400	0.250	2394	83	84	81	84	78	73	71	66
3400	1.750	2711	89	91	89	90	85	80	78	74

D12

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
700	0.250	801	67	65	64	58	52	47	43	37
700	1.000	1276	77	77	74	73	64	59	57	52
900	0.500	1091	73	74	71	69	61	55	52	47
900	1.750	1680	80	78	77	74	68	66	63	59
1100	0.750	1335	77	77	75	74	67	62	58	53
1100	1.500	1667	80	78	78	76	70	67	63	59
1100	2.500	2015	82	80	78	77	70	69	68	63
1300	1.000	1556	79	78	79	76	71	66	62	58
1300	2.250	2019	82	80	80	78	72	70	68	64
1300	3.500	2384	85	83	80	81	75	72	71	67
1500	1.250	1763	80	78	81	78	73	70	65	61
1500	2.750	2262	84	82	80	81	75	72	70	66
1500	4.500	2711	86	85	83	83	78	75	74	70
1900	0.250	1638	76	75	78	74	69	66	61	56
1900	1.750	2141	83	82	83	83	77	74	71	66
1900	3.500	2651	86	84	82	84	79	75	73	69
1900	5.000	2991	88	87	84	86	81	76	76	71
2200	1.500	2219	84	83	84	86	80	76	73	67
2200	2.750	2602	86	84	83	85	80	76	74	69
2200	4.000	2917	87	86	84	85	80	76	75	71
2600	1.000	2374	84	83	84	89	81	77	74	68
2600	2.250	2660	86	86	85	89	84	79	76	71
2600	3.500	2990	88	87	85	87	83	78	76	72
3000	0.750	2615	83	83	83	88	81	77	74	68
3000	2.750	3018	88	88	86	91	87	81	79	73
3200	0.250	2654	81	81	81	86	79	74	72	66
3200	2.000	3013	88	88	87	93	87	82	80	74

D15

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
1150	0.250	663	73	70	63	61	57	49	43	38
1150	1.500	1235	88	86	78	72	69	65	62	58
1450	0.750	987	79	84	74	71	69	62	56	50
1450	2.500	1592	83	83	82	77	73	71	68	65
1750	1.000	1161	88	84	78	73	68	63	60	55
1750	2.250	1540	83	83	82	77	73	71	68	65
1750	3.500	1886	87	87	85	82	78	75	72	69
2050	1.500	1396	90	85	82	77	73	69	65	61
2050	3.000	1782	86	87	85	81	77	75	72	68
2050	4.500	2143	89	89	87	85	81	78	75	71
2650	0.250	1159	87	85	79	73	69	64	59	53
2650	1.750	1633	83	84	86	80	77	74	70	66
2650	3.500	2002	89	89	87	84	80	77	75	71
3400	1.000	1639	81	84	88	82	78	75	71	66
3400	3.000	2118	88	89	89	88	83	79	76	72
3400	5.000	2453	93	93	89	90	85	81	79	75
4000	1.500	1973	85	88	91	87	82	79	75	71
4000	3.000	2303	89	91	89	91	85	81	78	73
4000	4.500	2546	93	93	90	92	86	82	80	75
4450	1.000	1995	84	87	90	87	82	79	75	70
4450	2.250	2299	89	90	90	93	86	82	79	74
4450	3.500	2528	91	93	90	94	87	83	80	75
4900	1.000	2165	85	87	89	89	83	80	76	71
4900	2.750	2536	91	92	91	95	88	84	81	76
5200	0.500	2203	83	85	87	88	81	78	74	69
5200	2.250	2480	90	92	90	95	87	83	80	75

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

Sound Power Data

Dynamo Centrifugal Fan

D16

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
1250	0.250	626	67	67	67	59	56	51	45	41
1550	0.500	830	75	73	74	67	63	60	53	49
1550	1.000	1032	83	76	77	75	68	65	59	54
1850	0.750	1005	83	76	78	75	68	65	59	54
1850	1.500	1255	85	81	81	77	71	69	64	60
2150	1.000	1163	84	79	80	77	71	68	63	58
2150	2.000	1451	85	82	85	78	73	72	68	64
2450	1.250	1311	85	80	83	79	73	71	66	62
2450	2.000	1519	86	82	86	80	75	74	69	66
2450	2.750	1694	89	85	88	83	77	76	72	68
2750	1.500	1452	83	80	86	79	75	73	68	65
2750	2.500	1701	89	85	88	84	78	76	72	68
2750	3.500	1909	91	88	90	88	81	79	75	71
3500	0.250	1332	81	78	82	77	72	69	65	60
3500	1.750	1703	87	84	88	86	79	77	73	68
3500	3.500	2068	93	89	89	91	83	81	78	73
3500	5.000	2314	95	92	90	95	86	84	81	76
4400	1.000	1800	88	85	88	90	81	79	75	70
4400	2.500	2091	92	89	88	92	84	82	78	73
4400	4.000	2350	95	92	90	95	86	83	81	76
5000	1.500	2084	91	88	88	93	84	82	79	73
5000	2.250	2216	94	90	89	95	86	84	81	75
5300	1.000	2086	90	87	87	92	83	81	78	72
5300	2.500	2344	95	91	89	96	87	85	82	77
5600	0.250	2067	87	83	83	88	80	77	74	68
5600	2.000	2353	94	90	88	96	86	84	81	76

D18

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
1400	0.250	488	63	60	51	47	45	39	32	29
1400	2.250	1238	88	85	78	75	67	64	62	59
1850	0.750	778	80	76	72	68	66	63	58	52
1850	2.500	1316	90	87	80	77	69	66	64	61
1850	4.000	1650	92	91	84	81	74	70	68	65
2750	1.000	970	84	81	77	73	70	68	64	58
2750	3.000	1475	93	91	84	81	73	70	68	64
2750	5.000	1866	95	94	88	85	79	74	71	68
3650	0.250	930	78	75	71	67	65	63	59	52
3650	1.750	1285	89	86	83	79	74	72	69	65
3650	3.500	1641	94	93	86	84	77	73	71	67
4550	1.500	1383	89	86	84	80	76	75	72	67
4550	3.000	1655	95	93	87	84	78	74	72	69
4550	5.000	1982	97	97	90	88	82	76	74	71
5225	0.750	1376	86	83	82	78	74	72	70	65
5225	2.750	1701	95	93	88	85	79	76	75	71
5900	1.500	1645	91	89	87	83	79	77	75	70
5900	3.000	1855	96	94	90	86	81	78	76	73
5900	4.500	2066	101	98	93	88	82	77	76	73
6575	0.750	1667	88	86	84	80	76	74	72	68
6575	2.500	1921	95	93	91	86	82	80	78	75
6575	4.000	2098	100	97	93	89	84	80	79	76
6800	0.250	1639	86	84	81	77	73	71	69	65
6800	1.500	1825	92	90	88	84	80	77	75	72
6800	3.000	2026	97	95	92	88	84	81	79	76

D20

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
2500	0.250	590	73	70	65	60	58	54	49	46
2500	1.000	874	81	80	75	70	66	64	59	55
3500	0.500	830	79	79	76	71	67	65	60	56
3500	1.500	1099	84	82	82	77	71	69	66	62
3500	2.000	1234	88	83	85	79	73	69	67	65
4500	0.750	1048	82	80	84	77	72	70	66	62
4500	2.000	1322	87	84	87	81	75	72	70	67
4500	3.000	1520	89	91	89	84	79	75	72	70
5500	0.250	1098	80	78	83	76	71	69	69	61
5500	1.000	1256	86	82	89	81	76	74	70	67
5500	2.250	1490	86	89	89	84	78	75	73	69
5500	3.500	1696	91	93	91	88	82	77	75	72
5500	5.000	1950	94	96	92	92	85	80	77	75
6500	1.250	1459	85	88	91	85	80	77	74	70
6500	2.000	1585	86	90	92	86	81	77	75	71
6500	3.000	1740	89	92	91	88	83	78	76	73
6500	5.000	2018	96	98	93	94	87	81	78	76
7500	0.250	1469	82	85	88	82	77	74	71	67
7500	1.000	1575	85	90	93	87	81	78	75	71
7500	2.250	1771	88	92	92	90	84	80	78	74
7500	4.000	2008	93	96	92	94	86	81	78	76
8500	0.750	1715	85	89	91	88	82	78	76	72
8500	2.000	1889	89	93	92	94	86	82	79	76
8500	3.500	2082	92	96	92	95	88	83	80	78
9750	0.250	1891	84	88	87	89	81	77	74	71
9750	1.250	1993	88	93	90	94	85	81	79	75
9750	2.000	2088	91	95	92	97	88	84	81	78

D22

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
2900	0.250	496	78	74	66	62	57	50	44	38
2900	1.000	745	81	78	75	67	62	59	55	51
4100	0.500	701	79	81	75	68	65	61	54	50
4100	1.250	875	82	84	82	75	69	65	61	57
4100	2.250	1110	83	82	87	79	74	71	67	64
5300	0.750	890	81	84	83	76	70	67	62	57
5300	1.750	1072	84	84	89	80	75	71	67	63
5300	3.500	1390	86	87	93	85	81	78	74	71
6500	0.250	932	79	82	82	75	69	66	60	56
6500	1.000	1070	83	85	89	81	76	72	67	63
6500	2.250	1262	85	85	94	83	79	75	71	68
6500	5.000	1667	90	92	97	94	87	84	80	75
7700	0.750	1169	85	86	91	84	80	77	71	68
7700	1.750	1315	86	87	94	85	81	77	73	69
7700	3.500	1536	88	91	97	90	85	81	77	73
8900	0.500	1281	84	86	91	84	80	78	71	68
8900	1.500	1418	87	90	95	88	83	80	75	71
8900	2.750	1570	88	91	97	90	85	82	77	73
8900	5.000	1807	92	95	98	98	90	87	82	78
10400	0.250	1445	83	86	90	84	80	77	72	68
10400	1.250	1566	88	90	95	90	85	82	77	73
10400	2.500	1706	90	92	97	94	88	84	80	75
10400	4.000	1858	92	94	98	98	90	86	82	77
11900	0.250	1644	84	87	91	87	81	79	73	69
11900	1.250	1751	88	90	94	93	86	83	78	74
11900	2.250	1853	90	93	97	96	88	85	80	76

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

Sound Power Data

Dynamo Centrifugal Fan

D24

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
2900	0.250	408	75	71	69	65	63	54	47	40
2900	1.250	741	84	81	76	72	72	67	62	57
2900	2.250	972	74	79	84	77	75	72	67	64
4025	0.500	572	80	80	76	73	70	63	57	50
4025	2.500	1046	77	80	86	79	78	75	70	66
4025	5.000	1444	82	83	90	84	83	81	77	72
5150	1.000	772	85	83	79	75	73	68	65	57
5150	2.750	1120	79	81	87	81	80	77	72	69
5150	5.000	1467	84	84	91	85	84	82	78	73
6650	1.500	969	77	83	87	81	79	75	69	65
6650	3.000	1206	82	82	91	83	82	80	75	71
6650	5.000	1506	85	85	93	86	85	83	79	74
8150	0.500	935	78	84	84	80	79	76	68	63
8150	2.250	1187	83	84	92	84	84	81	75	70
8150	5.000	1539	86	86	94	87	86	84	81	75
9650	1.250	1180	86	86	93	86	87	84	77	71
9650	2.250	1297	85	86	94	87	87	84	78	72
9650	4.000	1501	87	87	95	88	88	86	82	76
10775	1.000	1251	86	85	94	86	87	84	78	71
10775	2.000	1366	88	88	95	89	89	87	81	74
10775	3.000	1466	89	88	96	89	89	87	83	76
11525	0.750	1293	85	85	92	85	86	84	77	70
11525	1.750	1406	89	89	96	89	90	88	82	75
11525	2.500	1482	90	89	96	90	90	88	83	76
13025	0.250	1387	83	83	90	84	84	82	76	69
13025	1.250	1491	89	88	95	89	89	87	82	74
13025	2.000	1556	91	90	97	91	92	90	85	77

D36

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
9000	0.250	360	80	70	62	58	54	51	48	47
9000	1.500	565	89	89	81	74	72	68	65	64
11600	0.500	475	84	84	73	66	63	59	55	54
11600	1.750	633	91	92	83	77	76	72	69	68
11600	2.750	760	97	96	88	82	80	77	75	74
14200	0.750	582	88	92	81	75	72	67	64	61
14200	2.000	712	93	94	86	80	79	75	71	69
14200	3.000	814	97	98	91	84	82	78	76	73
14200	4.000	918	100	100	95	87	85	81	78	76
16800	1.000	684	92	96	87	81	79	74	70	68
16800	2.250	794	95	98	90	83	81	77	73	70
16800	4.000	945	100	101	97	88	86	82	78	76
19400	0.250	700	88	92	84	78	75	70	66	64
19400	1.250	783	94	98	90	83	81	79	73	70
19400	2.250	857	96	99	93	85	83	78	75	72
19400	5.000	1066	102	103	102	91	89	85	81	78
22000	1.000	846	96	99	93	85	83	78	74	71
22000	2.250	930	97	99	96	87	84	80	76	73
22000	4.500	1084	102	102	102	91	89	85	81	78
24600	0.750	908	95	98	94	85	82	77	73	71
24600	2.000	993	98	99	97	87	84	80	76	73
24600	3.500	1079	101	101	101	90	87	84	80	77
27200	0.500	982	95	96	96	85	82	77	73	70
27200	1.500	1044	100	100	101	90	86	82	78	75
27200	2.500	1100	100	100	99	89	86	82	79	75
29150	0.250	1036	94	95	95	84	81	76	72	69
29150	1.750	1120	101	101	103	92	88	84	80	77

D30

CFM	SP	RPM	Sound Power Levels (dB re 10-12) Octave Band Center Frequency (hz)							
			63	125	250	500	1000	2000	4000	8000
6000	0.250	430	75	73	68	63	59	53	47	42
6000	1.250	643	84	83	75	71	69	66	61	58
8500	0.500	609	80	86	78	75	72	68	63	59
8500	1.500	776	82	89	83	79	76	73	69	66
8500	2.500	909	86	89	83	78	74	72	70	67
11000	0.250	707	82	86	80	77	74	70	66	63
11000	0.750	777	86	91	85	82	79	6	71	68
11000	1.750	913	82	86	82	76	73	70	68	65
11000	2.750	1029	89	87	90	80	77	74	73	69
11000	4.500	1210	97	92	93	85	81	78	77	73
13500	0.250	853	85	89	86	80	78	75	70	67
13500	1.000	939	81	83	81	74	71	68	66	63
13500	2.000	1051	88	84	89	79	76	73	72	68
13500	3.000	1158	92	86	92	82	80	76	75	71
13500	5.000	1335	98	91	94	86	84	80	79	75
16000	0.250	1001	78	77	81	71	68	64	63	59
16000	0.750	1049	83	80	85	75	72	68	67	63
16000	1.750	1144	90	83	89	80	77	73	72	68
16000	2.750	1240	93	87	92	83	80	77	76	72
16000	4.500	1397	97	91	95	87	84	81	79	76
18500	0.500	1171	85	79	85	75	73	69	68	64
18500	1.500	1255	90	84	89	80	78	74	73	69
18500	2.500	1335	94	87	92	83	81	78	76	73
18500	3.500	1419	97	90	95	86	84	80	79	75
20500	0.250	1269	85	79	84	76	73	70	68	64
20500	1.000	1327	90	84	88	80	77	74	72	69
20500	1.750	1384	93	87	91	82	80	77	75	72

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

Sample Specifications

Dynamo Centrifugal Fan

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, 1401 North Plano Road, Richardson, Texas 75081. 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, with Weld-Lock™ construction. 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 (L_{50}) of 200,000 hours at maximum operating speed. Shafts shall be turned, ground, polished and rust protected. 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 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.

Pulleys shall be adjustable (through 20 HP) cast iron, machined, keyed and securely attached. Belts and pulleys shall be sized for 165% 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. The computerized print out shall be filed and made available upon customer request.

Fans shall be licensed to bear the AMCA Air and Sound Certified Ratings Seal. Fan air performance ratings shall be

Heat & Smoke Removal Configuration
While Dynamo fans are commonly used for supply or exhaust applications in commercial, institutional and industrial HVAC systems, they are also designed to discharge contaminated or grease-laden air or fumes up and away from building surfaces with the Fatrap option and when equipped with the Heat and Smoke Removal option, this series of fans incorporates features exclusively designed to exhaust heat and smoke in the event of fire. During these emergencies, the fans are designed to operate at the temperature and time limits stated below. To maintain power to these fans during emergencies, special consideration must be made for field power supply. In the event of an emergency, if power is maintained, the units will operate for the times and temperatures indicated, after which they will continue to operate until they are destroyed by the extreme temperature generated during an actual fire, or their roof structure collapses. For smoke control systems, Heat and Smoke Removal configured fans are listed per UL for emergency smoke removal, referencing UL705, UL793, Industrial Risk Insurers (IRI), and Southern Building Code Congress International (SBCCI). 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.

Steel Wheel:
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 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.

Addition to specification:
and shall be UL (UL Std. 705, UL Std. 762 optional) and CSA listed. If specified (Fatrap option), fan shall additionally provide UL 762 Listing rated at 400º F., 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 listing rated for 500°F at 4-hours and 1000°F at 41 minutes, including a steel wheel.

Limited One Year Warranty

Dynamo Centrifugal Fan

What Products Are Covered

PennBarry Fans and Ventilators (each, a "PennBarry Product")

One Year Limited Warranty For PennBarry Products

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

Exclusive Remedy

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

What You Must Do

In order to make a claim under these warranties:

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

Exclusions

These warranties do not cover defects caused by:

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

Limitations

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

General

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

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

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

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

Other PennBarry Products

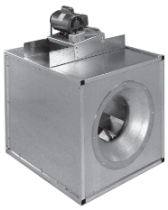
CENTRIFUGAL PRODUCTS

Domex
Centrifugal
Roof Exhausters

Fumex Fatrap
Kitchen Hood Centrifugal
Roof Exhausters

Zephyr
Ceiling and Inline Fans

Dynamo
Centrifugal Blowers



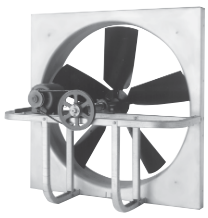
Centrex Inliner
Centrifugal Inline Fans

LC Dynafan
Low Contour Centrifugal
Roof Exhausters

ESI
Efficient Silent
Inline Fan

Fume Exhaust
Curb Mounted
Centrifugal Fans

AXIAL / GRAVITY PRODUCTS



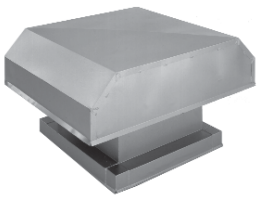
Breezeway
Propeller Wall Fans

HI-EX
Power Roof Ventilator

Tubeaxial
Inline Fans

Vaneaxial
Inline Fans

Powered Airette
Axial Roof Ventilators



Airette
Gravity Intake/Relief Hood

Domex Axial
Axial Roof Ventilators

Axcentrix
Bifurcator Fan

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

PENN BARRY