

# FUMEX

Upblast Roof Exhausters

PRODUCT GUIDE



PENNBARRY™

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# INTRODUCTION

## Fumex Series of Centrifugal Fans

Fumex centrifugal fans are designed for medium to high pressure applications and are available in a range of capacities. They can be either roof or wall mounted. While suitable for general ventilation, Fumex fans are specifically designed to discharge contaminated or grease-laden air or fumes up and away from building surfaces. The optional "Fatrap" (UL762) restaurant grease exhaust configuration (see Fatrap Configuration) makes Fumex fans particularly suited for all food service applications and chemical fume hoods. The optional heat and smoke removal configuration (see Smoke Removal) makes Fumex fans especially prepared for heat and smoke control systems. The optional high wind construction makes Fumex fans well-fitted for high wind hurricane zones.

Fumex fans feature a weather-resistant, seamless spun aluminum housing which provides ample drainage and works in conjunction with a patented wheel design and deeply spun inlets to provide smooth quiet airflow through the ventilator. The centrifugal wheels are aluminum, non-overloading, backward inclined, robotically welded, and dynamically balanced.



*Centrex Direct Drive*

### Direct Drive Units

#### Model: FX (V/S/R/Q/Q1/Q2)

- Static pressure up to 1.5" wg.
- Flow capacity up to 4,489 CFM.
- Fatrap (FT) option available on sizes 13, 16, and 18.
- High Wind Construction (-HW) option available.

### Standard Duty Belt Drive Units

#### Model: FX (B)

- Static pressure up to 2.5" wg.
- Flow capacity up to 21,511 CFM.
- Fatrap (FT) option available.
- Heat & Smoke Removal (-HS) option available.
- High Wind Construction (-HW) option available.

### High Pressure Belt Drive Units

#### Model: FX (BH)

- Static pressure up to 3.0" wg.
- Flow capacity up to 8,623 CFM.
- Fatrap (FT) option available.
- Heat & Smoke Removal (-HS) option available.
- High Wind Construction (-HW) option available.

# CERTIFICATIONS & LISTINGS



## AMCA Certifications

PennBarry certifies that the Fumex direct drive and belt drive models FX, FXBH, and FXBHFT shown 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 Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. FX27B is not AMCA Certified.



## cULus Certification

Fumex fans carry the UL label, UL705 (ZACT/ ZACT7), file #E28413. Fumex fans with the "Fatrap" option carry the UL label, UL762 (YZHW/ YZHW7), file #MH10684. Fumex fans with the heat and smoke removal option carry the UL label, UL793 (ZAXH/ZAXH7), file #MH19473



## High Velocity Hurricane Zone (HVHZ)

Miami-Dade NOA # 17-0112.06  
Florida Product Approval #21559



WARNING

*To fulfill our obligations towards Article 33, in accordance to European REACH Regulation No 1907/2006 EC, we hereby inform you that this article contains the following Substances of Very High Concern mentioned on the Candidate list:*

- Lead

# FEATURES & BENEFITS

## Motor Selection

Both direct drive and belt drive models are available with a wide range of voltages and enclosures (see Motor Selection for a complete listing). Standard belt drive Open Drip Proof (ODP) ball bearing motors are selected using a conservative portion of the NEMA service factor. Standard direct drive ODP motors have Class B insulation and internal overload protection. Overload protection is available as an option on belt drive models. Each size is carefully engineered to match the motor to the wheel capacity.

## Sound Performance

Fumex units deliver outstanding air performance with minimal noise and have the lowest AMCA licensed sound performance in the industry.

## Curb Caps (Base)

Curb caps for direct drive and standard duty belt drive models are available in galvanized steel (standard) or aluminum (optional). Curb caps for high capacity belt drive models are available only in aluminum. All curb caps have fully welded corners and are pre-punched to ensure a leak-tight and easy installation.

## Forced Motor Cooling

Motors and drive components are located out of the airstream in a separate compartment. A cooling tube between the motor dome and discharge apron enables fresh air to be drawn into the motor housing during fan operation. This positive cooling promotes longer life for motor and drive components.

## Easy Maintenance Access

By removing the fasteners, the motor dome lifts off for complete access to all the drive components.

## Vibration Isolators

Multidirectional, rubber-in-shear vibration isolators mitigate residual vibration transmission from the unit to the building.

## Structural Integrity

Durable housings of spun aluminum have a high strength-to-weight ratio and incorporate a rolled bead for additional strength. There are no welds to break or seams to leak. The heavy-gauge motor mounting platform provides positive rigidity between all components of the power train assembly.

## Internal Bracing

Tri-Strut™ supports transfer the weight of the motor mounting platform directly to the curb mounting surface. The aluminum spun housing, therefore, is not used to support any weight. For grease laden applications, there is less surface for grease build-up during normal operation.

## Solid Steel Shafts

Sized so the first critical speed is a minimum of 130% of maximum cataloged operating speed, shafts are precision ground and polished.

## Self-Aligning Bearings

Heavy-duty bearings are sized for a minimum L50 life in excess of 200,000 hours of operation. One hundred percent factory tested, they are designed for air handling applications.

## Drives and Belts

Pulleys are pre-set to the specified RPM. Cast iron variable pitch pulleys are adjustable, allowing for field balancing based on actual field conditions. All pulleys are sized for at least 150% of the driven horsepower.

## Conduit

Both direct and belt drive units include a large 1" nominal conduit chase (not available on heat and smoke removal units; wiring is run via the cooling tubes) for easy installation of wiring from the motor dome to below the curb cap. Fatrap units are factory wired to an external NEMA 3R junction box.

# FEATURES & BENEFITS

## Reverse Venturi

Reverse venturi reduces turbulence and improves distribution of the air as it enters the wheel inlet and is “captured” by the blades.



## Wheels

Fumex fans offer patented wheel designs. Carefully matched, highly-tooled venturis enhance the performance of these backward inclined and non-overloading centrifugal wheels. Made of advanced aluminum alloys, the various wheel components provide superior strength and durability, as well as spark resistant construction. The heat and smoke removal configuration utilizes steel construction.

## Silent Wheel (Direct Drive)

- Blades’ highly curved leading edges provide unsurpassed low sound numbers with excellent air performance.
- Backplate and inlet are stamped for consistency, plus dynamic balancing ensure smooth, vibration-free operation.
- Riveted or riveted and welded construction ensure superior dependability over other wheel designs.



## Standard Duty, All Welded Wheel

(Standard Duty & High Pressure Belt Drive)

- Blades are curved for improved air performance while increasing their strength and rigidity.
- Backplate and inlet are stamped for consistency. They include a perimeter rim which enhances strength and improves balancing.
- Wheel assembly is robotically welded to provide extremely durable and consistent performance.
- 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.

## Enhanced Direct Drives

These enhanced units have Gplus™ motor selection up to 2 HP (available on single phase and three phase) and are available up to size 24. Design enhancements to Direct Drive Fumex models significantly improve air performance, while Gplus™ EC motors offer higher efficiency, and quieter, more reliable operation. Combined with PennBarry’s patented, backward inclined, centrifugal wheel, these fan units deliver low noise and high efficiency performance.

## Internal Wiring

All direct and belt drive models with ODP motors feature a polarized disconnect plug which is factory wired from the motor to the junction box. This provides a positive method of electric shut-off as required by most codes without requiring the traditional disconnect switch. In addition, weather resistant NEMA 3R wiring is available for selection.

# OPTIONS & ACCESSORIES

## Spare Belt

One or two extra sets of spare belts are available for selection.

## iQ Controllers

There are two types of iQ controllers available:

- iQ-IPCM (Intelligent Pressure Control Module), with Duct Sentry™ technology is designed to maintain constant pressure 24/7 within a duct system by controlling fan motor speed
- iQ-MS (Multi-Speed Controller), with dual set-point interface allows the user to set and remotely switch among two different motor speeds.

Both of them provide motor control signal output of 0-10 VDC for seamless integration with today's advanced motor technologies to provide substantial energy savings and peace of mind.

## Extend Lube Lines

Preloaded at the factory, lube lines allow bearing maintenance when easy access to the bearings is unavailable.

## Stainless Steel Hardware

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

## Variable Frequency Drives

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

## 0-10 Output Potentiometer

Potentiometers are always paired with Green Plus motors. With the potentiometer, the Green Plus motors can be turned down to as low as 80% the max operating speed while maintaining 90% efficiency through the operating range. Additionally, the Green Plus can accept 0-10V input to tie to building management systems, not only allowing for savings in direct fan energy consumption but reducing the exhaust of conditioned air during off peak hours as well

## Stainless Steel Shaft

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

## Transformers

To meet local requirements 277V transformers are available for all direct drive units. The transformers are step-down and will step the voltage down to 120V. Shipped loose for field installation.

## Finishes

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

# OPTIONS & ACCESSORIES

## Mounting Pedestal

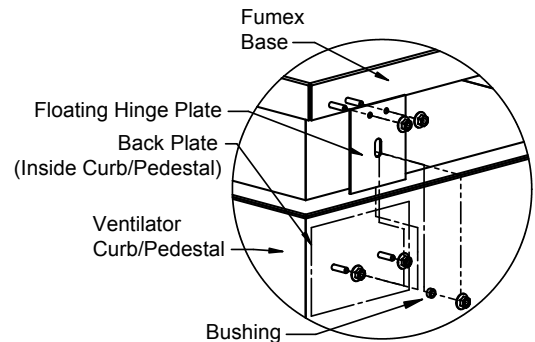
The 12" high mounting pedestal, available in aluminum or galvanized steel, incorporates a removable access panel for easy inspection and service of motor operated backdraft dampers. It provides solid ventilator support and a weather resistant seal that does not injure or disturb flashing. This item should not be used with Fatrap units.

## Hinged Sub-Base

Hinged sub-bases provide access to the curb well for damper service or the clean out for grease applications. Constructed with a rust proof hinge arrangement and low height, (3 ½") the assembly is easily manipulated and reduces the impact on overall installation height. This accessory is available for use with most models for either factory built or existing roof curbs.

## Floating Hinge Kit

A floating hinge kit is also available for field installation. This assembly connects the exhauster directly to the roof curb and provides the same level of access as the hinged sub-base.



## Aluminum Bird & Insect Screen

Bird screens are available for all direct and belt drive models. An aluminum insect screen with a smaller mesh than the standard bird screen is also available. However, please note that NFPA 96 installations do not allow the use of bird or insect screens. The requirements of local codes must be reviewed to determine if there are any conflicts.

## Internal Wiring

NEMA 3R wiring is available for both direct and belt drive models.

## Backdraft Dampers

Backdraft dampers are available for either gravity or motorized operation (motor kit optional). Dampers feature square galvanized steel frames and multi-leaf, roll formed aluminum blades with nylon bearings. Backdraft dampers should not be used when venting kitchen hoods. NFPA 96 installations do not allow the use of dampers. The requirements of local codes must be reviewed to determine if there are any conflicts.

## Safety Service Switch

Safety service switches are available to allow positive electrical shut-off and safety. Switches are factory mounted when factory wiring is requested. Wiring is only run from the motor to the junction box. (Factory wiring of explosion proof applications is not available.) A wide range of NEMA rated enclosures with service switches are available for indoor, outdoor, and explosion proof installations. Service switches are to be field wired by a licensed electrician.



## Firestat Switch

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





# OPTIONS & ACCESSORIES

## Time-Delay Switch

(For select direct drive models only) The Airminder Model AM12 switch is a UL recognized and CSA certified time-delay relay that operates both the fan and room light to ventilate an area even after the occupants depart. In the "On" position, the Airminder turns the light and fan on immediately. In the "Off" position, the light goes off immediately, and the fan is in operation for a period of time as preset from 1 to 60 minutes. Suitable only for 1/3 HP maximum at 120/1/60.



## Speed Controllers

The Lek-Trol™ controller allows adjustment in speed to a maximum of 50% reduction, which results in a very cost effective means for system balancing. The device can be located under the fan dome to prevent unauthorized tampering or on the wall for ease of operation by the building occupants. (Available on direct drive units with ODP motors and some select TE motors. See reference table under Motor Availability)



## Spark Resistant Construction

AMCA 'B' construction is available as standard construction on direct drive units and as an option on belt drive units (not available on heat and smoke removal units). If required, an explosion proof motor and service switch may be selected as options.

## Wall Mounting

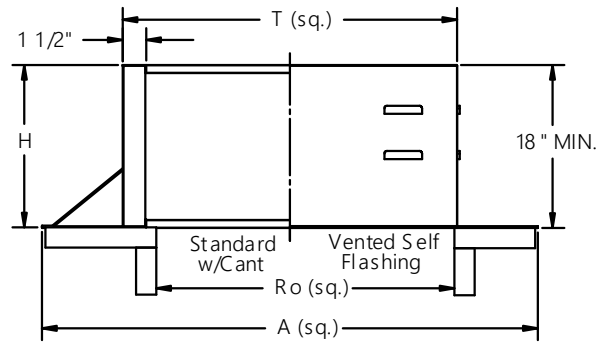
This option is provided as a separate product line, whose models include a "W" prefix. Product line includes models up to size 24, motors up to 2HP, and round bases (not available on heat and smoke removal units).

## Prefabricated Curb

A variety of sizes of prefabricated roof curbs are available. Galvanized steel unibeam curbs are the most popular. For a complete listing of all curb types and sizes available, see the latest PennBarry Ventilation Curb brochure. Please note that NFPA 96 installations require a specific curb height. See Fatrap configuration on the next page.

# OPTIONS & ACCESSORIES

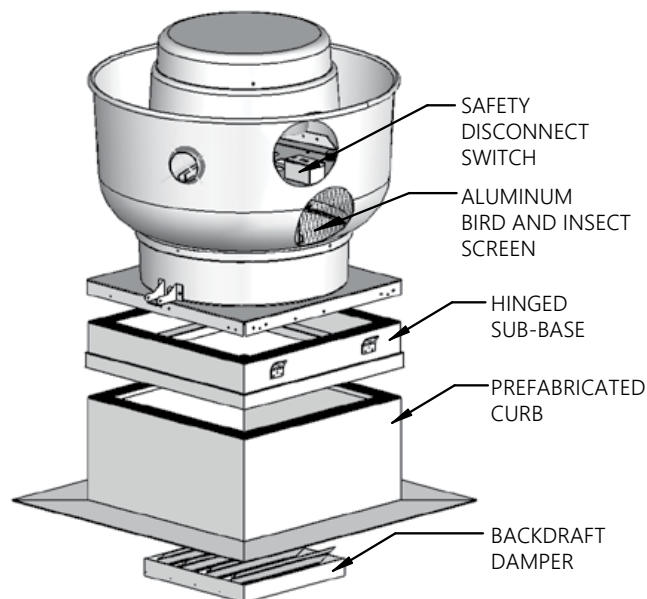
## Fumex Curb



Model	E <sup>(3)</sup> SQ	T <sup>(3)</sup> SQ	A SQ	Ro(3) SQ	Damper Size SQ	Galv. Steel Gauge
FX08S/R	18.5	17	25	11.5	11.25	18
FX10S/R	18.5	17	25	11.5	11.25	18
FX11V/S/R/Q	18.5	17	25	11.5	11.25	18
FX13V/S/R/Q	18.5	17	25	11.5	11.25	18
FX16V/S/R/Q1/Q2	20.5	19	27	16	15.75	18
FX18V	28.5	27	35	20	19.75	18
FX08B to FX14B	24.75	23.25	31.25	16	15.75	18
FX12BH	24.75	23.25	31.25	16	15.75	18
FX121H	24.75	23.25	31.25	16	15.75	18
FX13BHFT	24.75	23.25	31.25	16	15.75	18
FX131H	24.75	23.25	31.25	16	15.75	18
FX16B and FX18B	28.5	27	35	20	19.75	18
FX18BH	28.5	27	35	20	19.75	18
FX24B	33.5	32	40	25	24.75	18
FX24BH	33.5	32	40	25	24.75	18
FX27B and FX30B	36.5	35	43	28	27.75	18
FX36B	44.5	43	51	36	35.5	18

Standard heights "H" are 8", 12", and 18" including wood nailer. "T" dimension of curb is 1 1/2" less than the dimension of inside base of fan ("E"). "Ro" refers to Roof Opening. "E" dimension is inside base of fan. For FT (Fatrap) units, curbs are cantless, 18" high and optionally vented.

## Exploded View



# OPTIONS & ACCESSORIES

## Fatrap Configuration

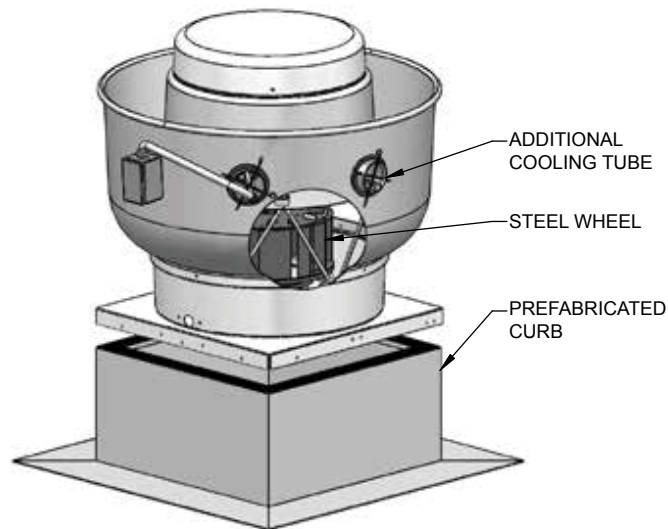
Fatrap configured fans are ideal for use in commercial kitchens over grilles, charcoal broilers, deep fat fryers, steam tables, ranges, dishwashers, and other appliances. Fumex fans are specially configured for food service applications with the addition of a group of accessories that either meets a 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.

Included in the units are the following.

- UL 762 Listing: Fatrap configured Fumex fans are listed at 400°F — 100°F higher than UL requirements. The high temperature rating is the result of the fan’s highly efficient forced motor cooling capability. Three direct drive (sizes 13 – 18) and all belt drive models are listed.
- Pre-wired Junction Box: A weather-proof junction box is factory wired and mounted to the housing exterior. An appropriately sized service 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.

## Additional Fatrap Accessories

Ventilated Curbs and Pedestals: For buildings two stories or higher NFPA 96 requires the use of ventilated mounting curbs or pedestals to provide an approved arrangement for connecting a range hood and duct work to the roof fan. PennBarry’s ventilated mounting curbs and pedestals, 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.



# OPTIONS & ACCESSORIES

## Heat & Smoke Removal Configuration

While Fumex fans are commonly used for general ventilation, they are also designed to discharge contaminated or grease-laden air or fumes up and away from building surfaces with the Fatrap option. 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 Fumex units are listed at 500°F for 4 hours and 1000°F for 1 hour. The additional 45 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.

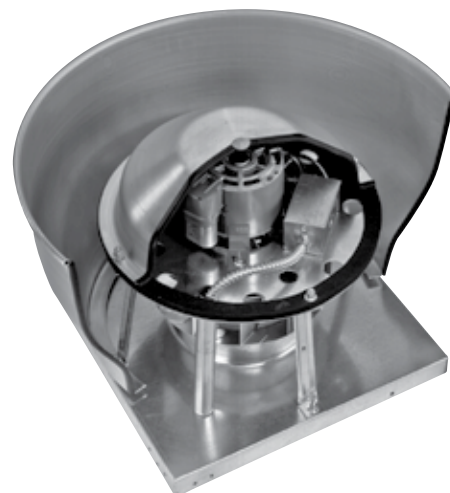
**Forced Motor Cooling:** Motors and drive components are located out of the airstream in a separate compartment. Two cooling tubes are located between the motor dome and discharge apron which enables fresh air to be drawn into the motor compartment during fan operation. This allows the cooler outside air to wash over the motor and bearings. This positive cooling promotes longer life for the motor and drive components.

## High Wind Construction

High wind construction Fumex fans are specifically designed for high wind hurricane zones (HWHZ). The Fumex models are designed to withstand 150 MPH winds in accordance with Miami-Dade and Florida Building Code standards. The units are 3rd party tested and certified through a 3rd party Professional Engineer (P.E.) to meet these strict standards. Installation details are provided and since there are no tie downs or external braces required for attaching the unit to the roof or curb this makes installation simple and easy. A wide range is offered to meet all of your ventilation needs which includes all belt and direct drive sizes 36 and under.



*Belt Drive Fumex Cutaway*



*Direct Drive Fumex Cutaway*

### Product Certifications:

- 18) Miami-Dade NOA # 14-0311.03
- 19) Florida Product Approval #12339
- 20) Texas Department of Insurance # RV-48

# MOTOR AVAILABILITY

## Green Plus Electronically Commutated Motor

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



Model	HP	1-Phase		
		ODP 110-120V	TE 110-120V	TE 208-480V
FX08VGP	1/6	-	X	X
FX08S/RGP	1/6	-	X	X
FX08QGP	1/6	-	X	X
FX10VGP	1/6	-	X	X
FX10S/RGP	1/6	-	X	X
FX10QGP	1/6	-	X	X
FX11V/S/RGP	1/6	-	X	X
FX11QGP	1/4	-	X	X
FX13V/S/RGP	1/6	-	X	X
FX13QGP	1/4	-	X	X
FX16VGP	1/6	-	X	X
FX16S/RGP	1/3	X	X	X
FX16Q1GP	1/2	X	X	X
FX16Q2GP	3/4	X	-	X
FX18VGP	3/4	X	X	X

# MOTOR AVAILABILITY

## Variable Speed Motor Control

PennBarry offers Lek-Trol™ solid state controllers to alter the high speed of most direct drive motors by as much as 50%. If variable speed is required, check the Lek-Trol™ availability table below to verify that controllers exist for the fan model selected. Remember, Lek-Trol™ controllers are currently only available for direct drive motors including all standard Open Drip Proof (ODP) 60 Hz motors. Not all totally enclosed motors are currently available with variable speed control. Inverter rated motors suitable for use with variable frequency drives can be supplied for belt drive models. Contact your local PennBarry representative for availability.

## Available Lek-Trol™ Speed Controls

Model	60 Hz					50 Hz		
	ODP	Totally Enclosed				Totally Enclosed		
	115V	115V	200V	208V	230V	110V	220V	240V
FX08S	-	-	-	-	-	-	-	-
FX08R	LT25	-	-	-	-	-	-	-
FX10S	-	-	-	-	-	-	-	-
FX10R	LT30	LT30	LT35	LT35	LT35	LT30	LT35	LT35
FX11V	-	-	-	-	-	-	-	-
FX11S	-	-	-	-	-	-	-	-
FX11R	LT30	-	-	-	-	-	-	-
FX11Q	LT50	-	-	-	-	-	-	-
FX13V	-	-	-	-	-	-	-	-
FX13S	-	-	-	-	-	-	-	-
FX13R	LT30	LT30	LT35	LT35	LT35	LT50	LT35	LT35
FX13Q	LT45	LT50	LT35	LT35	LT35	LT50	LT35	LT35
FX16V	-	-	-	-	-	-	-	-
FX16S	-	-	-	-	-	-	-	-
FX16R	LT50	-	-	-	-	-	-	-
FX16Q1	LT40	-	-	-	-	-	-	-
FX16Q2	LT75	-	-	-	-	-	-	-
FX18V	LT60	-	-	-	-	-	-	-

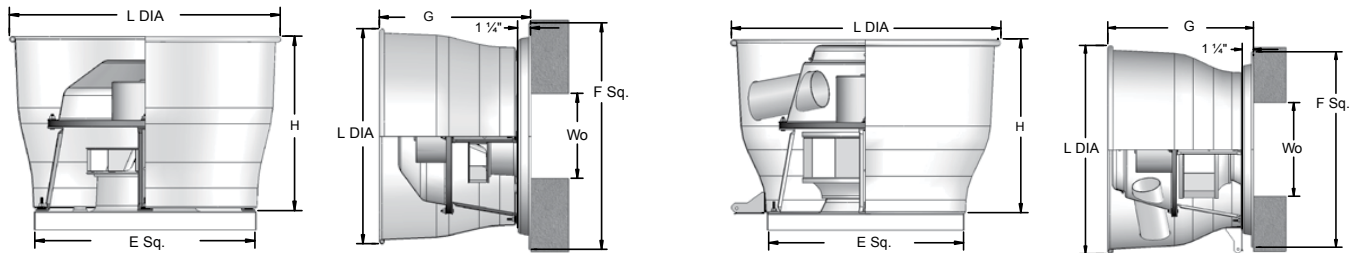
Lek-Trols™ indicated for multi-speed models (eg., FX16V/S/R) are applicable only for the high speed. Do not use on low or medium speed for multi-speed models. Items noted with ( - ) are not applicable.

# DIRECT DRIVE | DIMENSIONS

Fumex direct drive models are available with single and multi-speed motors.

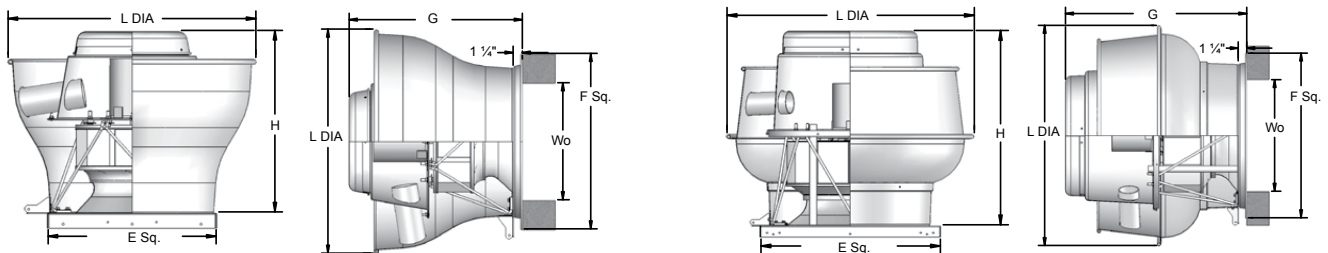
A single Fumex fan may be made suitable for several requirements by a simple wiring change. This feature provides flexibility for a variety of reasons, including energy savings, off hours requirements, future expansion, or unexpected field variations. When compared to belt drive models, direct drive fans require less maintenance, have a simpler construction, cost less, and are lighter in weight.

Fumex direct drive models are available in six sizes (8, 10, 11, 13, 16, and 18). Their capacities are up to 4500 CFM, with static pressures up to 1 1/2".



FX08-FX11

FX13



FX16

FX18

Model	L DIA	H	E Sq.	Wo Sq.	F Sq.	G	Galv. Steel Base	Aluminum Base	Discharge Apron	Est. Ship Weight
FX08	25	14 1/8	18 1/2	9	16 7/8	24	16 Gauge	0.064"	0.050"	29 lbs.
FX10/ FX11	25	14 1/8	18 1/2	11 1/2	16 7/8	24	16 Gauge	0.064"	0.050"	32 /42 lbs. (1)
FX13	25 1/2	16 1/2	18 1/2	11 1/2	17 7/8	24	16 Gauge	0.064"	0.050"	45lbs.(2)
FX16	30 1/4	22 3/8	20 1/2	16	24	24 1/4	16 Gauge	0.064"	0.064"	69lbs.(3)
FX18	39	31	28 1/2	20	29 1/2	32 1/2	16 Gauge	0.064"	0.080"	87 lbs.

All dimensions are in inches.

(1) 11Q estimated ship weight = 44 lbs.

(2) 13Q estimated ship weight = 52 lbs.

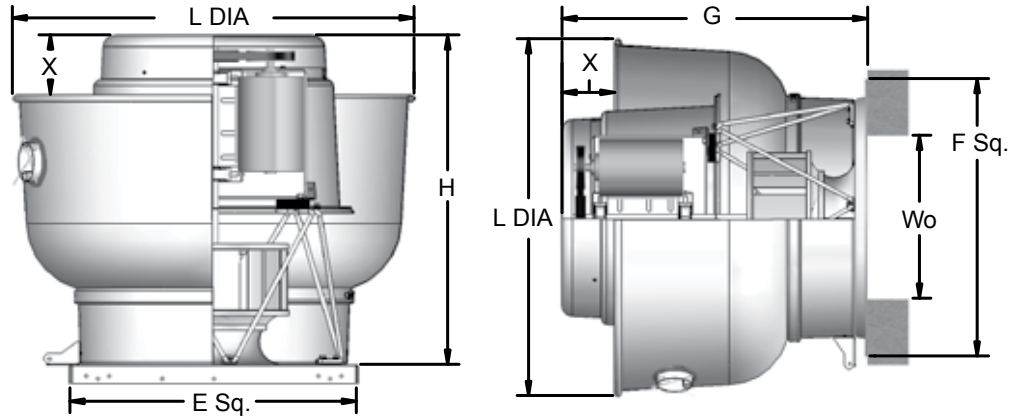
(3) 16Q1 estimated ship weight = 71 lbs. 16Q2 estimated ship weight = 73 lbs.

## Enhanced Direct Drives

Model	L DIA	H	E Sq.	Wo Sq.	F Sq.	G	X	Damper Size	Max Motor Frame Size	Galv. Steel Base	Discharge Apron	Est. Ship Weight (lbs.)
FX081	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	15 3/4	56	16 gage	0.064	101
FX101	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	15 3/4	56	16 gage	0.064	101
FX121H	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	15 3/4	56	16 gage	0.064	116
FX131/H	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	15 3/4	56	16 gage	0.064	116
FX141	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	15 3/4	56	16 gage	0.064	118
FX161	39	31	28 1/2	20	29 1/2	32 1/2	6 1/2	19 3/4	145T	14 gage	0.064	151
FX181/H	39	31	28 1/2	20	29 1/2	32 1/2	6 1/2	19 3/4	145T	14 gage	0.064	152
FX241/H	46	34 1/2	33 1/2	25	35 7/8	36	7	24 3/4	184T	14 gage	0.064	200

All dimensions are in inches

# BELT DRIVE | DIMENSIONS



Model	L DIA	H	E Sq.	Wo/ Ro	F Sq.	G	X	Est. Ship Weight (lbs)
FX08B	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	110 <sup>(1)</sup>
FX10B	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	115 <sup>(1)</sup>
FX12B	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	112 <sup>(2)</sup>
FX13B(HFT)	35	28 3/4	24 3/4	-	-	-	5 3/4	144 <sup>(2)</sup>
FX14B	35	28 3/4	24 3/4	16	27 1/4	30	5 3/4	145 <sup>(3)</sup>
FX16B	39	31	28 1/2	20	29 1/2	32 1/2	6 1/2	145 <sup>(3)</sup>
FX18B(H)	39	31	28 1/2	20	29 1/2	32 1/2	6 1/2	190 <sup>(4)</sup>
FX24B(H)	46	34 1/2	33 1/2	25	35 7/8	36	7	190 <sup>(4)</sup>
FX27B	53 1/2	35 1/2	36 1/2	-	-	-	6 1/2	219 <sup>(4)</sup>
FX30B	53 1/2	35 1/2	36 1/2	-	-	-	6 1/2	219 <sup>(5)</sup>
FX36B	66	47 1/2	44 1/2	-	-	-	5 1/2	470 <sup>(6)</sup>

Model	Galv. Steel Base	Aluminum Base	Discharge Apron	Damper Size (in.)	Max Motor Frame Size
FX08B	16 Gauge	0.064"	0.064"	15 3/4	55
FX10B	16 Gauge	0.064"	0.064"	15 3/4	56
FX12B	16 Gauge	0.064"	0.064"	15 3/4	56
FX13B(HFT)	16 Gauge	0.064"	0.064"	15 3/4	56
FX14B	16 Gauge	0.064"	0.064"	15 3/4	56
FX16B	14 Gauge	0.080"	0.080"	19 3/4	145T
FX18B(H)	14 Gauge	0.080"	0.080"	19 3/4	145T
FX24B(H)	14 Gauge	0.080"	0.080"	24 3/4	184T
FX27B	14 Gauge	0.080"	0.080"	27 3/4	184T
FX30B	14 Gauge	0.080"	0.080"	27 3/4	184T
FX36B	12 Gauge	0.102"	0.080"	35 1/2	213T

All dimensions are in inches

- (1) Add 8 lbs. for Heat and Smoke option
- (2) Add 11 lbs. for Heat and Smoke option
- (3) Add 20 lbs. for Heat and Smoke option
- (4) Add 55 lbs. for Heat and Smoke option
- (5) Add 65 lbs. for Heat and Smoke option
- (6) Add 110 lbs. for Heat and Smoke option



# FAN SELECTIONS

## Model

FX = Fumex centrifugal roof exhaust upblast fan

## Construction

<p><b>Application</b> E = Exhaust / Relief S = Supply / Intake</p> <p><b>Application Flow (CFM)</b> &lt;enter value&gt;</p> <p><b>Application Static Pressure (inwg)</b> &lt;enter value&gt;</p>	<p><b>Drive Type</b> B = Belt D = Direct</p> <p><b>Drive Kit Option</b> 0 = None A = Adjustable drive kit L = Life safety X = Special</p>	<p><b>Fan RPM</b> &lt;#####&gt;</p> <p><b>Unit Size</b> 8, 81, 10, 101, 11, 12, 121, 13, 131, 14, 141, 16, 161, 18, 181, 24, 241, 27, 30, 36</p> <p><b>Wheel Width</b> 0 = Standard H = High pressure</p>
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## Motor

<p><b>Efficiency</b> G = Green Plus (ECM) P = Premium S = Standard</p> <p><b>Horsepower</b> 0.020 = 1/50 0.033 = 1/30 0.050 = 1/20 0.040 = 1/25 0.083 = 1/12 0.091 = 1/11 0.143 = 1/7 0.167 = 1/6 0.200 = 1/5 0.250 = 1/4 0.333 = 1/3 0.500 = 1/2 0.750 = 3/4 01.00 = 1 01.50 = 1 1/2 02.00 = 2 03.00 = 3 05.00 = 5 07.50 = 7 1/2 10.00 = 10 15.00 = 15 20.00 = 20 25.00 = 25 X = Special</p>	<p><b>Motors and Drives</b> F = Factory mounted L = Less motor less drive</p> <p><b>Motor Enclosure</b> 0 = None 1 = TE w/Overload 2 = TE w/o Overload 3 = ODP w/Overload 4 = ODP w/o Overload 5 = EXP C2D1 7 = TE w/ SGR X = Special</p> <p><b>Motor Tap</b> 0 = None K = 1650 RPM (Q1) L = 500 RPM M = 690 RPM Q = 1750 RPM (Q2) R = 1550 RPM S = 1300 RPM V = 1050 RPM W = 860 RPM (W1,W2,W3)</p>	<p><b>Voltage/Phase/Cycle</b> 1 = 380V/1PH/50HZ 2 = 400V/1PH/50HZ 3 = 415V/1PH/50HZ 4 = 460V/1PH/60HZ B = 110V/1PH/50HZ* C = 115V/1PH/60HZ D = 120V/1PH/60HZ* F = 208V/1PH/60HZ G = 208V/3PH/60HZ H = 220V/1PH/50HZ* J = 220V/3PH/50HZ* K = 230V/1PH/60HZ L = 230V/3PH/60HZ M = 240V/1PH/50HZ* N = 240V/3PH/50HZ* P = 277V/1PH/60HZ*# Q = 380V/3PH/50HZ* R = 380V/3PH/60HZ* S = 400V/3PH/50HZ* T = 415V/3PH/50HZ* U = 440V/3PH/50HZ* V = 460V/3PH/60HZ W = 480V/3PH/60HZ* X = Special Y = 575V/3PH/60HZ * Non-standard offering subject to longer lead times and price adjustment # 277V applications require a transformer</p>
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# FAN SELECTIONS

## Electrical Accessories

### Controllers

- 0 = None
- A = 0-10V output potentiometer
- 1 = Lek-Trol solid state speed controller (mounted)
- 2 = Lek-Trol solid state speed controller (loose)
- 3 = Multi speed controller, iQ-MS (ECM only)
- 4 = iQ-IPCM-no power supply (ECM only)
- 5 = iQ-IPCM with 115V/230V power supply (ECM only)
- 6 = iQ-IPCM with 277V power supply (ECM only)

- 7 = Provided by others
  - V = VFD (belt drive only)
- Note: VFD can be ordered separately

### Service Switches and ITW\*

- 0 = None
- 1 = NEMA 1 ITW only
- 3 = NEMA 3R ITW only
- A = NEMA 1 - loose
- C = NEMA 1 - mounted and wired
- D = NEMA 3R - loose
- F = NEMA 3R - mounted and wired
- G = NEMA 4 - loose
- N = NEMA 7 - loose
- Q = NEMA 9 - loose

- X = Special
- \* ITW - Internal wiring not provided on explosion proof motors

### Switches / Sensors

- 0 = None
- A = Airminder switch (time delay)
- B = Airminder+firestat
- F = Firestat switch

### Transformer

- 0 = None
- B = 277Vx115V

## Options and Accessories

### Construction Accessories

- 0 = None
- A = Aluminum curb cap (standard)
- F = Floating hinge kit (aluminum base)
- G = Floating hinge kit (steel base)
- H = Hinged sub-base (aluminum base)
- J = Hinged sub-base (steel base)
- S = Steel curb cap
- W = Wall mounted adaptor

### Curb

- 0 = None
  - C = Curb
- Note: Curbs ordered separately on all PLOPs

### Damper

- 0 = None
- D = Damper

### Extended Lube Lines

- 0 = None
- L = Extended lube lines

### Guard/Screen

- 0 = None
- B = Bird screen
- C = Insect/bird screen

### Paint/Coating

- 0 = None
- F = Epoxy powder coat (light gray)

- G = Epoxy powder coat with UV protection (gray)
  - H = Hi-temp powder coat (black)
  - J = Non-stick powder coat (clear)
  - K = Phenolic epoxy powder coat (gray)
  - L = Phenolic epoxy powder coat with UV protection (gray)
  - N = Polyester powder coat\*
  - X = Special
- \* Colors only available in Polyester Powder Coat

### Paint Color\*

- 00 = None
  - 50 = Chrome green
  - 55 = Pale green
  - 56 = Dove gray (PPC standard)
  - 61 = White
  - 63 = Oxford beige
  - 65 = Dover white
  - 66 = Desert tan
  - 70 = Black
  - 73 = Smoke gray
  - 77 = Brick red
  - 79 = Peppercorn
  - 81 = Pale brown
  - 83 = Chocolate brown
  - 85 = Timeless bronze
  - 94 = Charcoal
  - X = Special
- \* Colors only available for polyester powder coat

### Pedestal

- 0 = None
- A = Galvanized pedestal
- B = Galvanized vented pedestal
- C = Aluminum pedestal
- D = Aluminum vented pedestal

### Spare Belt(s)

- 0 = None
- 1 = 1 spare set
- 2 = 2 spare set

### Special Applications

- 0 = None
- 2 = Restaurant exhaust (UL762)
- 4 = UL heat & smoke

### Special Construction

- 0 = None
- B = Spark resistance (AMCA B)
- C = Spark resistance (AMCA C)
- D = Spark resistance (AMCA C) + high wind (Miami-Dade)
- E = Spark resistance (AMCA B) + high wind (Miami-Dade)
- H = High wind (Miami-Dade)

### Stainless Steel

- 0 = None
- B = Hardware & shaft
- H = Hardware
- S = 304SS Shaft
- X = Special

# PENNBARRY PRODUCT SOLUTIONS



## Commercial

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



## Industrial

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



## Kitchen ventilation

- Make-up air units
- Exhaust fans



## Energy recovery

- Outdoor units
- Indoor units

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

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