



FUME EXHAUST

Models: FH, FHL
Curb Mounted
Centrifugal Fans

The PennBarry FH fans are designed to meet the various requirements for fume exhaust systems. PennBarry's exclusive discharge venturi design allows the selection of the discharge velocity to meet the code requirements for high velocity discharge to atmosphere. Discharge velocities from 1250 FPM to 4000 FPM can be obtained by fan selection as required for the particular application. To obtain the required discharge velocity it is necessary to accelerate the air flow from the fan outlet velocity up to the required discharge velocity. Some static pressure will be required to accelerate the air which will need to be added to the system pressure requirements in order to determine the fan performance requirements. The PennBarry FH Series fans accomplish the required acceleration with a minimum pressure loss.

The standard FH fans have a discharge height 7 feet above the roof level, and can be supplied with discharge heights up to 20 feet.

The FHL fans have a lower discharge height for applications requiring only a minimum of 40 inches discharge height.

The PennBarry FH systems are supplied with an integral gravity backdraft damper for weather protection of the system and elimination of backdrafts caused by the wind, or building negative pressures when the fan is not operating.

Standard FH fans are suitable for continuous operation with exhaust air temperatures up to 150°F. For exhaust temperatures up to 300°F, the FH fans are available with an optional forced air ventilation system to cool the bearing and motor compartment.

Features and Capabilities

- Roof curb mounted
- Backward inclined centrifugal fans
- Class I and II duty
- Flow capacities from 350 to 80,000 CFM
- System pressures up to 8 inches w.g.



FH Fan

The FH fan has a discharge height of 7 feet as standard, and is available with an extended stack for up to 20 feet discharge height. Stack heights greater than 10 feet will require guy wires for support. The venturi discharge allows for selection of the discharge velocity required for the application.



FHL Fan

The FHL fans have all of the features of the FH fans, but are designed to have a lower discharge height. FHL fans can be used in applications where only 40 inches of discharge height is required.

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.

Due to the large number of available configurations the selection of this fan is accomplished with PennBarry's product selection software. Consult your representative or our factory if you need assistance.

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Following publication of this catalog changes may have been made in standard equipment, options and the like that would not be included.

We reserve the right to make changes at any time, without notice, to models, specifications, options, availability, etc.

This bulletin illustrates the appearance of PennBarry products at the time of publication and we reserve the right to make changes in design and construction at anytime without notice. Your local sales representative is the best source for current information.

Options and Accessories

FH/FHL - Fume Exhaust Systems

Discharge Cap and Damper

PennBarry FH fans have a unique discharge cap with a deep spun steel discharge venturi sized to control the discharge velocity as required by the application with minimum pressure loss.

The discharge cap features a gravity operated damper to prevent backdrafts when the fan is not operating.



The damper is protected by an encircling windband. The damper is furnished with large hinge pins that rotate in oil impregnated bronze bearings for maintenance free operation.

Backward Inclined Centrifugal Wheel

PennBarry's high efficiency, non-overloading backward inclined wheel provides desirable performance characteristics for exhaust application. Precision formed blades are welded to the spun shroud for a very rugged wheel construction. Wheels are statically and dynamically balanced.

Fan Housing

FH fans utilize an inline centrifugal fan design. The housing is of heavy gage steel and all-welded construction. The bearing assembly is contained in a tapered tube that is completely welded. PennBarry's unique flow conversion vanes efficiently convert the flow from the wheel to an axial direction and maximize static regain. A deep, spun inlet cone provides for close running clearance at the wheel inlet with a minimum of turbulent losses.

Bearings and Shaft

FH fans are equipped with cast iron, self-aligning pillow block bearings. Lubrication lines are extended to the outside of the fan for ease of maintenance. Bearings are sized for long trouble-free life, and the shafts are precision ground for precise fit with bearings. The fan wheel and drive pulley are securely fastened to the shaft with keys and set screws.

Drives

All units up to 7-1/2 horsepower are furnished with adjustable pitch drives, providing speed adjustments to meet the application. All drives are based on a minimum 1.2 service factor for long life. Two belt drives are available as an option. Sheaves are precision machined, cast iron construction. Belts can be changed from the exterior of the fan.

Galvanized Curb Caps

FH fans are provided with heavy gage steel, all welded curb caps that are HOT DIP GALVANIZED after fabrication to provide a leakproof design, and exceptionally long life. The curbs have a WIRING POST to facilitate running of conduit to the motor. A slip-fit duct connection collar is built into the curb cap for connection of the system ductwork. The use of a flexible duct connector is recommended to reduce noise transmission to the ductwork.

Prefab Curbs

Heavy gage galvanized prefab roof curbs, sized to match the fan are available. Standard curbs are 12 inches high and are also available in single or double pitch.

Weather Cover

The FH fans are equipped with a galvanized weather cover to protect the motor and drive from the elements. The cover is easily removed for access to the motor and drive. Belts can be replaced from the exterior of the fan.

Motors

FH fans are furnished with open drip proof, totally enclosed or explosion proof motors to meet specification requirements. Special duty motors are available upon request.

Finish

FH fans are painted with a high grade grey industrial enamel which is attractive and functional. The windband is made of galvanized steel and the curb cap is hot-dip galvanized after fabrication.

Shaft Steel

FH fans can be provided with a Teflon, minimum leakage shaft seal as an option, (not gas-tight). Shaft seals are recommended on applications handling corrosive or toxic fumes, and are furnished as standard on AMCA B and C, spark resistant construction.

Access Door

A gasketed access door can be provided for access to the wheel. The PennBarry access door is provided with a nut and pawl hold down for quick opening.

Extended Stack

The FH fans can be provided with discharge heights up to 20 feet above the roof level. Discharge heights over 10 feet will require guying furnished by the user. Guy lugs are provided. Specify desired discharge height. Discharge heights are based on installation on a 12-inch high roof curb.

Disconnect Switches

Nema 3R or Nema 4 disconnect switches are available as an accessory. Switches are factory mounted and can be furnished wired when specified.

Drain

Threaded drain connections can be provided, located at the lowest point of the fan housing. Drain plugs are not furnished.

AMCA "B" or "C" Spark Resistant Construction

FH fans are available in AMCA "B" or "C" spark resistant construction as defined in AMCA Standard 99-0401-82. Shaft seals are standard on AMCA "B" or "C" construction. The user is required to electrically ground all fan parts.

Special Protection Coatings

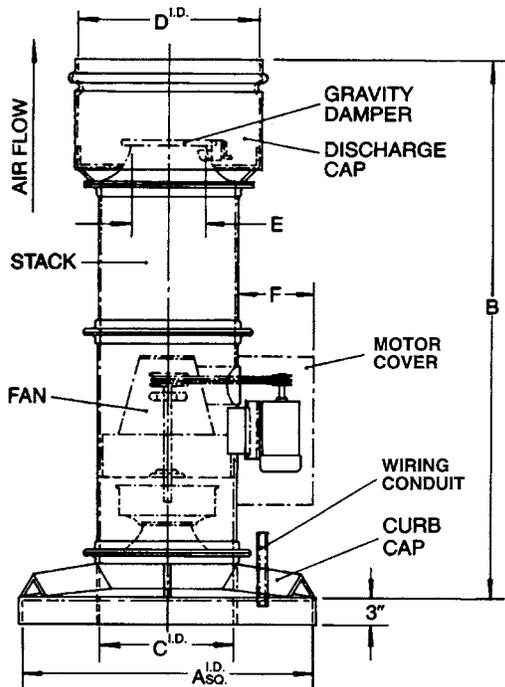
PennBarry FH fans can be provided with Teflon-P* coating in the air stream. Teflon-P* is inert to almost all chemicals and provides the widest range of corrosive protection of any coating. Contact Penn Ventilation for information on a wide range of special paints and coatings are available for corrosion protection.

* Registered trademark of E.I. DuPont Co.

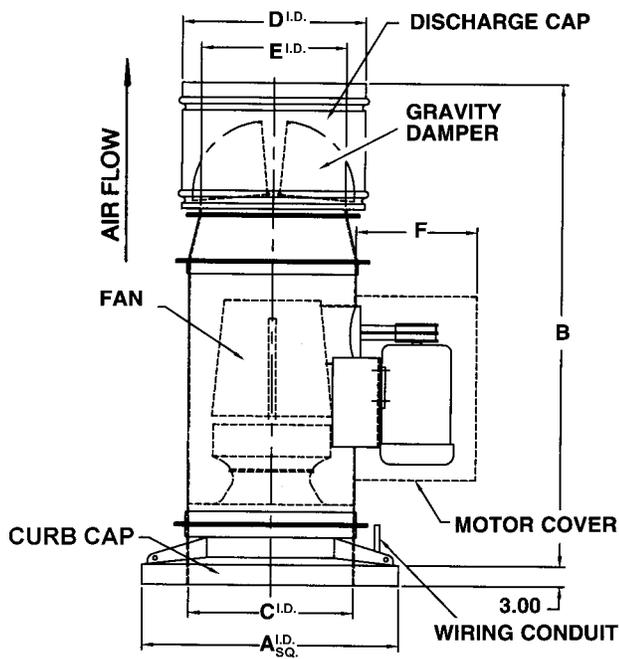
Dimensional Data

Fume Exhaust Systems - FH/FHL

FH and FHL Series (Sizes 90-245)



FH Series (Sizes 270-490)



PennBarry maintains a policy of continuous improvement. Specifications and dimensions may be changed without notice.

Dimensional Data

MODEL NUMBER	A	B ^{FH}	B ^{FHL}	C	D	E	F	APPROX. WT. (lbs.)*
FH90-50	30	86	40 ^{7/8}	12 ^{5/8}	14	5	15 ^{3/16}	270
FH90-60	30	86	40 ^{7/8}	12 ^{5/8}	14	5 ^{1/2}	15 ^{3/16}	270
FH105-50	30	86	44 ^{1/2}	14 ^{5/8}	16	5 ^{1/2}	15 ^{11/16}	315
FH105-60	30	86	44 ^{1/2}	14 ^{5/8}	16	6	15 ^{11/16}	315
FH105-65	30	86	44 ^{1/2}	14 ^{5/8}	16	6 ^{1/2}	15 ^{11/16}	315
FH105-70	30	86	44 ^{1/2}	14 ^{5/8}	16	7	15 ^{11/16}	315
FH122-60	30	89	51 ^{1/2}	16 ^{7/8}	18 ^{1/4}	6	19 ^{9/16}	360
FH122-65	30	89	51 ^{1/2}	16 ^{7/8}	18 ^{1/4}	6 ^{1/2}	19 ^{9/16}	360
FH122-70	30	89	51 ^{1/2}	16 ^{7/8}	18 ^{1/4}	7	19 ^{9/16}	360
FH122-80	30	89	51 ^{1/2}	16 ^{7/8}	18 ^{1/4}	7 ^{1/2}	19 ^{9/16}	360
FH122-90	30	89	51 ^{1/2}	16 ^{7/8}	18 ^{1/4}	8 ^{3/4}	19 ^{9/16}	360
FH122-10	30	89	51 ^{1/2}	16 ^{7/8}	18 ^{1/4}	9 ^{3/4}	19 ^{9/16}	360
FH122-11	30	89	51 ^{1/2}	16 ^{7/8}	18 ^{1/4}	11	19 ^{9/16}	360
FH135-10	33	91	55 ^{3/4}	18 ^{5/8}	21	10	19 ^{9/16}	430
FH135-11	33	91	55 ^{3/4}	18 ^{5/8}	21	11	19 ^{9/16}	430
FH135-12	33	91	55 ^{3/4}	18 ^{5/8}	21	12	19 ^{11/16}	430
FH135-13	33	91	55 ^{3/4}	18 ^{5/8}	21	13	19 ^{11/16}	430
FH150-12	33	91	58 ^{3/4}	20 ^{5/8}	23	12	20 ^{3/16}	480
FH150-13	33	91	58 ^{3/4}	20 ^{5/8}	23	13	20 ^{3/16}	480
FH150-16	33	91	58 ^{3/4}	20 ^{5/8}	23	16	20 ^{3/16}	480
FH150-18	33	91	58 ^{3/4}	20 ^{5/8}	23	17 ^{1/2}	20 ^{3/16}	480
FH165-16	38	91	61 ^{1/2}	22 ^{3/4}	25 ^{1/8}	16	21 ^{1/8}	560
FH165-18	38	91	61 ^{1/2}	22 ^{3/4}	25 ^{1/8}	17 ^{1/2}	21 ^{1/8}	560
FH165-19	38	91	61 ^{1/2}	22 ^{3/4}	25 ^{1/8}	19	21 ^{1/8}	560
FH182-19	38	91	64 ^{3/4}	25 ^{1/8}	27 ^{1/2}	10	23 ^{7/16}	630
FH182-21	38	91	64 ^{3/4}	25 ^{1/8}	27 ^{1/2}	20 ^{1/2}	23 ^{7/16}	630
FH200-21	40	91	67 ^{7/8}	27 ^{1/2}	29 ^{7/8}	20 ^{1/2}	26 ^{11/16}	715
FH200-22	40	91	67 ^{7/8}	27 ^{1/2}	29 ^{7/8}	22	26 ^{11/16}	715
FH222-22	44	91	73 ^{1/2}	30 ^{3/4}	33 ^{1/8}	22	26 ^{11/16}	790
FH222-24	44	91	73 ^{1/2}	30 ^{3/4}	33 ^{1/8}	23 ^{1/2}	26 ^{11/16}	790
FH245-24	44	91	78 ^{1/4}	33 ^{3/4}	36 ^{1/4}	23 ^{1/2}	26 ^{11/16}	850
FH245-26	44	91	78 ^{1/4}	33 ^{3/4}	36 ^{1/4}	25 ^{1/2}	26 ^{11/16}	850
FH245-28	44	91	78 ^{1/4}	33 ^{3/4}	36 ^{1/4}	27 ^{1/2}	26 ^{11/16}	850
FH245-30	44	91	78 ^{1/4}	33 ^{3/4}	36 ^{1/4}	30	26 ^{11/16}	850
FH270**	50	91 ^{1/2}	-	37 ^{1/2}	42	36 ^{3/8}	26 ^{11/16}	1025
FH300**	54	101	-	41 ^{5/8}	48	36 ^{3/8}	26 ^{15/16}	1350
FH330**	58	113	-	45 ^{3/4}	48	42 ^{7/16}	28 ^{15/16}	1500
FH365**	63	119 ^{1/2}	-	50 ^{1/2}	54	48 ^{1/2}	28 ^{15/16}	1800
FH402**	68	130 ^{3/4}	-	55 ^{5/8}	54	54 ^{9/16}	29 ^{15/16}	2460
FH445**	74	146 ^{1/4}	-	61 ^{1/2}	66	60 ^{5/8}	33 ^{13/16}	3200
FH490**	80	151 ^{1/2}	-	67 ^{3/4}	66	60 ^{5/8}	33 ^{13/16}	3850

* Less motor and drive.

** Consult factory for performance, price and availability.

One Year Limited Warranty

Fume Exhaust Systems - FH/FHL

What Products Are Covered

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

One Year Limited Warranty For PennBarry Products

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

Exclusive Remedy

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

What You Must Do

In order to make a claim under these warranties:

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

Exclusions

These warranties do not cover defects caused by:

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

Limitations

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

General

The foregoing warranties are exclusive and in lieu of all other warranties except that of title, whether written, oral or implied, 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 invoiced price charged by PennBarry to its customer for the affected PennBarry Product at the time the claim is made.

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

OTHER PENNBARRY PRODUCTS

CENTRIFUGAL PRODUCTS



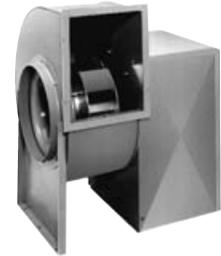
Domex
Centrifugal
Roof Exhausters



Fumex Fatrap
Kitchen Hood Centrifugal
Roof Exhausters



Zephyr
Ceiling and Inline Fans



Dynamo
Centrifugal Blowers



Centrex Inliner
Centrifugal Inline Fans



LC Dynafan
Low Contour Centrifugal
Roof Exhausters

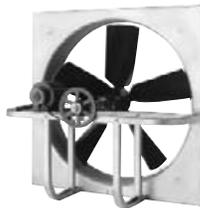


ESI
Efficient Silent
Inline Fan



Fume Exhaust
Curb Mounted
Centrifugal Fans

AXIAL / GRAVITY PRODUCTS



Breezeway
Propeller Wall Fans



HI-EX
Power Roof Ventilator



Tubeaxial
Inline Fans



Vaneaxial
Inline Fans



Powered Airette
Axial Roof Ventilators



Airette
Gravity Intake/Relief Hood



Domex Axial
Axial Roof Ventilators



Axcentrix
Bifurcator Fan

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

