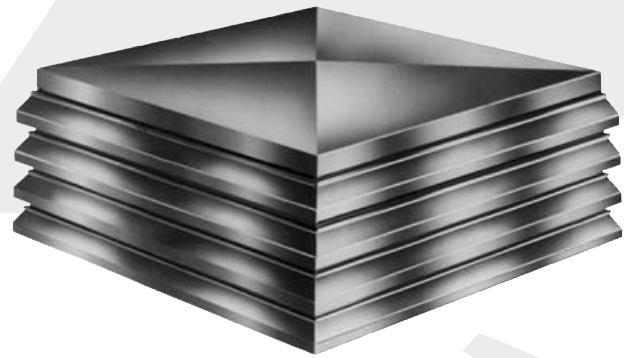




Bulletin PH05



PENNHOUSE

Model: PH
Roof Mounted
Louvered Gravity Ventilator
Intake / Relief

MOVING YOUR WAY

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.

FANCAD®

Library of CAD Drawings

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

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"
- Customer information for each plant

FanSizer and FanCad are registered trademarks.

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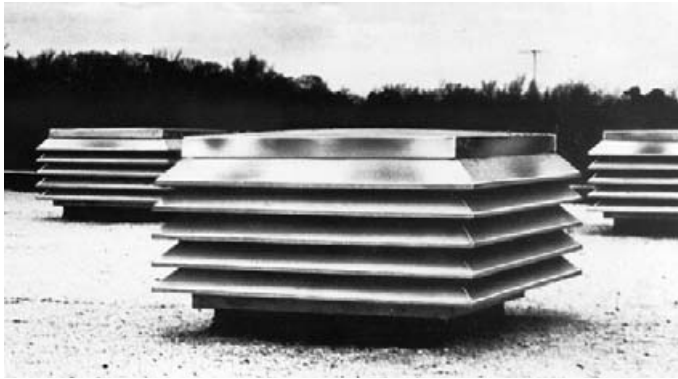
Following publication of this catalog changes may have been made in standard equipment, options and the like that would not be included.

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.

General Information

Pennhouse

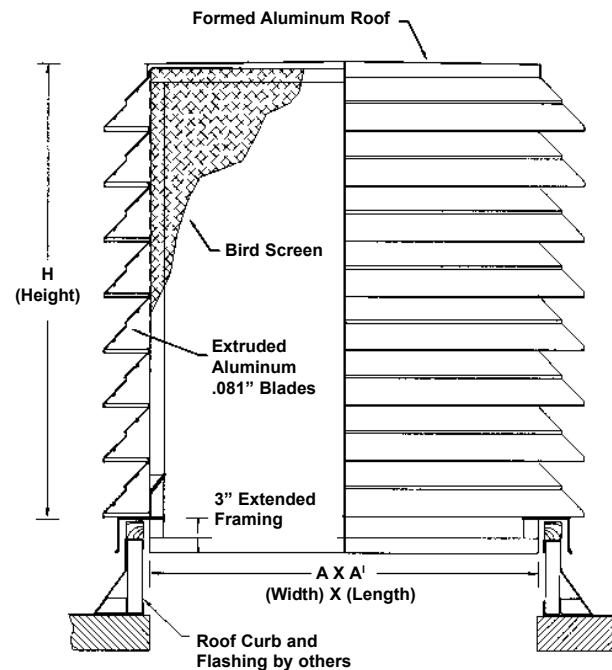


PennBarry's aluminum Pennhouses are attractive, architecturally appealing housings designed for several uses. Units serve frequently as gravity ventilators, pressure relief units, fan discharge caps, spillways, fresh air intakes, and sight shields (for aesthetic purposes) for roof-mounted equipment. The silhouette of the Pennhouse is compatible with the Linea centrifugal exhauster line. This serves to maintain architectural harmony where units of both types are required on the same roof.

Pennhouse louver blades are heavy aluminum alloy made from .081" thickness 6063 T5 extrusion. The storm blade feature is standard on all Pennhouses and provides extra rigidity for the blades. Pennhouse corners are available in both a box corner or mitered corner with aluminum welded construction. Large size units, where the dimensions exceed 72 X 220 X 80 are generally shipped in sections. Consult our factory for construction details. Structural framing for the Pennhouse is sturdy extruded aluminum members on maximum 48" centers. Vertical angles project down to the lower edge of the curb cap and are a convenient and strong place for fastening to the roof curb. This combination of good design, modern production methods, and volume buying by America's largest ventilator manufacturer brings you the Pennhouse at costs comparable to ordinary sheet metal houses.



Extruded Aluminum Pennhouse



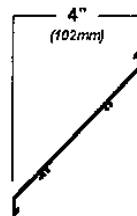
Maximum Stress

- Both flat roof (cross broke) and pitched roof are braced for 30 pounds per square foot snow load.
- Pennhouse units are braced to withstand up to 60 mph wind load.

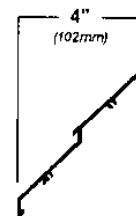
NOTE: Louver velocities above 500 fpm are not recommended for Intake. Pennhouse **HEIGHT should not exceed more than 1/2 the length** of the shortest side for Intake Pennhouses (as determined by AMCA).

Louvers

Extruded aluminum Pennhouses are available in both the 4", 45° step and flat blade louver as standard. Additionally, formed aluminum Pennhouses are available in .063", .081" and .125" thickness. Galvanized steel Pennhouses are also available in both 18 and 16 gauge steel.



45° FLAT



45° STEP

Blank-Off Panels

Blank-off panels are generally used to close off the inactive sections in a line of louvers. When used in Pennhouses, divider baffles or blank-off panels allow air intake through one section of the Pennhouse and air discharge through another. Blank-off panels can be insulated or non-insulated, removable or non-removable.

Dampers

Where additional air control is necessary, Pennhouses can be fitted with backdraft or control dampers. Installed behind the stationary Pennhouse blades or in the throat, dampers may be operated by electric motors, pneumatic motors or manual actuators. Units are manufactured and shipped in matched, marked modular sections for easy on-site installation with dampers installed and test-cycled at the factory before shipment.

Hinged Roof / Insulated Roof / Roof Liner / Pitched Roof

On Pennhouse sizes not exceeding 60" X 60" throat, roof can be hinged for lift up access. Corkcote anti-condensate, 1" or 2" insulation can be directly affixed to underside of roof, also a metal liner can be used to enclose the insulation. Pitched roof is also available, but required when the shortest dimension exceeds 72".

Sub Frame Panels / Doors

Pennhouses may be provided with a hinged or lift out louvered panel mounted in a subframe (box corner style only).

Security Bars

Selection of bar diameters, frame styles and spacing are available.

Framing / Curb Cap

Flush framing can be specified, replacing the standard 3" extended framing. Standard curb cap of 2 3/4" can be replaced by 4 1/2" curb cap or other sizes by specifying.

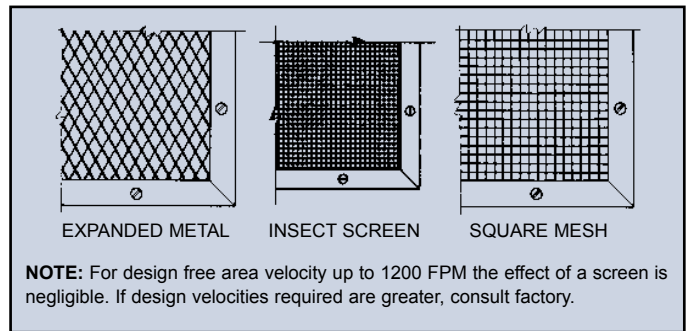
Roof Curbs

See the latest Roof Curbs catalog for a full line of PennBarry Roof Curbs.

Suggested Specifications

LOUVER HOUSE, roof mounted air intake/exhaust housings shall be PennBarry Pennhouse, manufactured by PennBarry. Louver houses shall have heavy .081" thickness extruded aluminum blades of the storm blade style with corners mitered and welded or box corners if ordering filters. Curb caps shall be formed of heavy gauge aluminum and the entire assembly braced by heavy interior aluminum upright angles at the corners and along the sides. Louver houses shall have a (mill finish) and be shipped in pre-assembled sections in sizes up to 72 X 220 X 80 and shall have 1/2" mesh, 19 gauge galvanized bird screen.

Screens



Filters For Intake Vents

All louver Pennhouses can be supplied with filter racks and disposable or permanent filters in a wide range of styles and efficiencies. 1" and 2" filter racks are available on front or rear, hinged or flush mount, top or side loading and filters are available in disposable or washable (box corner style only).

Expanded Metal

.051" aluminum diamond mesh, 3/4" size is available. This screen has the highest free area for bird screens.

Insect Screens

Framed insect screens are stocked in 18 X 14, .011" mesh aluminum.

Stainless Steel

Stainless steel screens are available in 1/2", mesh, 18 gauge.

PH - Performance

Pennhouse

Pennhouse Sizing Guideline

Air Flow (cfm) ÷ Louver Velocity (fpm) = Free Area (Square Feet)

A – Use the **Static Pressure Loss Chart** and determine the Louver **Free Area Velocity** (fpm) that has both an acceptable Pressure Drop and Velocity (if specified).

B – Execute the formula above to calculate the **Free Area** required.

C – Use the **Pennhouse sizing chart** to find the **Free Area** required (square feet), move down the column of throat sizes and heights to find the appropriate fit.

Static Pressure Loss (Inches W.G.)

LOUVER VELOCITY FPM	FLAT BLADE		STEP BLADE	
	INTAKE	EXHAUST	INTAKE	EXHAUST
300	0.02	0.02	0.02	0.02
400	0.03	0.03	0.03	0.03
500	0.05	0.05	0.04	0.04
600	0.07	0.06	0.06	0.06
700	0.09	0.09	0.08	0.08
800	0.12	0.12	0.11	0.11
900	0.15	0.15	0.14	0.14
1000	0.18	0.18	0.17	0.17
1100	0.22	0.22	0.2	0.2
1200	0.26	0.26	0.24	0.24
1300	0.31	0.3	0.29	0.28
1600	0.47	0.46	0.43	0.43
2000	0.73	0.72	0.68	0.67

Pennhouse Sizing Chart Flat & Step

HEIGHT	FREE AREA REQUIRED (SQUARE FEET)																		
	2	4	6	8	10	12	14	16	18	20	25	30	35	40	45	50	55	60	
	THROAT SIZE (PERIMETER INCHES)																		
22"	32	66	98	132	164	198	230	262	296	328	410	494	576	656	–	–	–	–	
27"	–	–	78	104	130	156	182	208	234	260	326	392	456	522	586	652	–	–	
31"	–	–	64	86	108	130	152	172	194	216	270	324	378	432	486	540	594	648	
36"	–	–	–	74	92	110	128	146	164	184	228	274	320	366	412	458	504	550	
40"	–	–	–	–	–	96	112	128	144	160	200	240	280	320	360	400	440	480	
45"	–	–	–	–	–	–	98	112	126	142	176	212	246	282	318	352	388	424	
50"	–	–	–	–	–	–	–	102	114	126	160	192	224	256	286	318	350	382	
54"	–	–	–	–	–	–	–	–	104	116	144	172	202	230	260	288	316	346	
59"	–	–	–	–	–	–	–	–	–	–	132	158	184	212	236	264	290	316	
64"	–	–	–	–	–	–	–	–	–	–	–	146	170	194	220	244	268	292	
68"	–	–	–	–	–	–	–	–	–	–	–	–	136	158	180	202	224	248	270
73"	–	–	–	–	–	–	–	–	–	–	–	–	–	148	168	188	210	230	252
77"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	176	196	216	236	

One Year Limited Warranty

Pennhouse

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



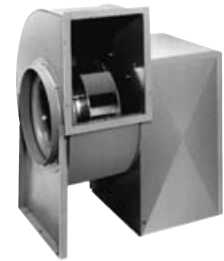
Domex
Centrifugal
Roof Exhausters



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

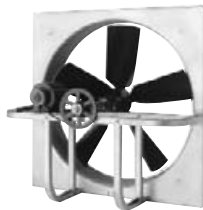


ESI
Efficient Silent
Inline Fan



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

