



**Bulletin HX09**



**HI-EX**

Upblast Roof Ventilator

- › Standard Height
- › HiteSaver
- › Heat and Smoke Exhaust

*MOVING YOUR WAY*

### › Hi-Ex Standard Height Series

#### HC - Cast Aluminum Propeller

- Static pressure up to 1.0 in. wg.
- Direct Drive - Flow capacity up to 33,000 CFM
- Belt Drive - Flow capacity up to 70,000 CFM

#### HX - Cast Aluminum Propeller

- Static pressure up to 0.75 in. wg.
- Direct Drive - Flow capacity up to 38,000 CFM
- Belt Drive - Flow capacity up to 33,000 CFM

#### HF - Fabricated Steel Propeller

- Static pressure up to 0.5 in. wg.
- Belt Drive - Flow capacity up to 51,000 CFM



### › Hi-Ex HiteSaver Series

#### HZ - Cast Aluminum Propeller

- Static pressure up to 0.75 in. wg.
- Direct Drive - Flow capacity up to 45,000 CFM
- Belt Drive - Flow capacity up to 82,000 CFM

#### HS Fabricated Steel Propeller

- Static pressure up to 0.85 in. wg.
- Belt Drive - Flow capacity up to 50,000 CFM



### › Hi-Ex Heat & Smoke Series

#### HS - With Heat & Smoke Exhaust Option

- Fabricated steel propeller
- Static pressure up to 0.85 in. wg.
- Remote Belt Drive - Flow capacity up to 50,000 CFM

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### › Hi-Ex Roof Ventilator AMCA Certifications

PennBarry certifies that the Models HS 30–48 Roof Exhausters shown on pages 11 - 13 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.



### › Hi-Ex UL and CSA Certifications

Models HC, HF, and HS carry the UL Label, UL 705. Model HS with heat and smoke package carries the UL Label, UL 793.



Models HC and HF exhausters are certified by Canadian Standard Association.



*PennBarry reserves the right to make changes at any time, without notice, to models, construction, specifications, options, availability, etc. This bulletin illustrates the appearance of PennBarry products at the time of publication. To view the latest updates, visit PennBarry at [www.pennbarry.com](http://www.pennbarry.com).*

# Introduction

## Hi-Ex Roof Ventilators



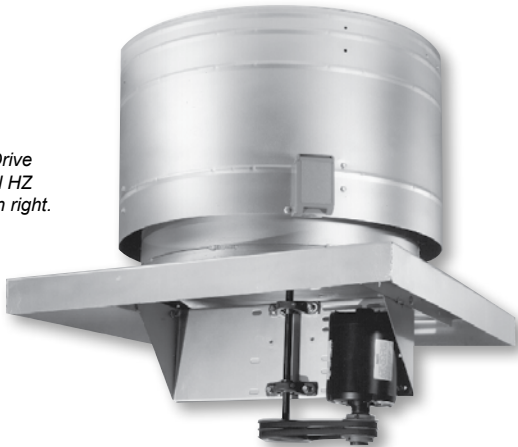
### Introduction

Roof Ventilators

Hi-Ex  
Direct Drive  
Model HC  
shown right.



Hi-Ex  
Belt Drive  
Model HZ  
shown right.



Hi-Ex  
Direct Drive  
Model HX  
shown right.



H  
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#### › Hi-Ex Series of Roof Ventilators

A continuing demand exists in commercial and industrial buildings for high velocity roof ventilators which exhaust foul air and disperse it high above the roof. The Hi-Ex is ideal for the "spot" ventilation of specific problem areas where rapid air removal is necessary or for general plant ventilation. This "plug-in" or package ventilation is easily installed out of the way, up on the roof. It is accessible and yet does not use valuable interior areas nor does it require costly duct systems.

Dampers open automatically when the fan is started. The airstream holds the dampers open and excludes weather until the power is shut off. Then, the dampers automatically close tight as the air blast diminishes.

The direct drive Hi-Ex illustrated above-left is a solid, compact unit completely self-contained. The standard silhouette is streamlined and the straight-thru air blast provides rapid, friction-free, air removal. Note the components are all within the housing. They do not intrude, nor protrude, below the roof line. Two types of belt drive fans are available. One with the motor out of the airstream and the other with the motor inside the ventilator airshaft. Both arrangements permit capacity selections at fan speeds other than standard motor speeds. They enable the adjustment of air volumes on the job if necessary. Your fan schedule specification should indicate "remote drive" if desired.

#### › Hi-Ex Standard Height Series

##### Model: HC - Cast Aluminum Propeller

- Static pressure up to 1.0 in. wg.
- Direct Drive - Flow capacity up to 33,000 CFM
- Belt Drive - Flow capacity up to 70,000 CFM

##### Model: HX - Cast Aluminum Propeller

- Static pressure up to 0.75 in. wg.
- Direct Drive - Flow capacity up to 38,000 CFM
- Belt Drive - Flow capacity up to 33,000 CFM

##### Model: HF - Fabricated Steel Propeller

- Static pressure up to 0.5 in. wg.
- Belt Drive - Flow capacity up to 51,000 CFM

#### › Hi-Ex HiteSaver Series

##### Model: HZ - Cast Aluminum Propeller

- Static pressure up to 0.75 in. wg.
- Direct Drive - Flow capacity up to 45,000 CFM
- Belt Drive - Flow capacity up to 82,000 CFM

##### Model: HS Fabricated Steel Propeller

- Static pressure up to 0.85 in. wg.
- Belt Drive - Flow capacity up to 50,000 CFM

#### › Hi-Ex Heat & Smoke Series

##### Model: HS - With Heat & Smoke Exhaust Option

- Fabricated steel propeller
- Static pressure up to 0.85 in. wg.
- Remote Belt Drive - Flow capacity up to 50,000 CFM

#### › Fan Blades

The design of fan blades has been very carefully determined, to insure highly efficient performance. Cast aluminum, airfoil, or die-formed, high capacity steel fan blades provide the flexibility required to achieve most fan performance ratings. Spark resistant fans use blades cast of high tensile strength aluminum alloy. Versatility is accomplished through the use of four and six blade fans which exhaust an even flow. All blades are balanced to run properly.

#### › Venturi Inlet

Combined with a heavy gauge base is a one-piece, leakproof, spun and streamlined venturi inlet to minimize entrance losses and noise.

#### › Gun Barrel Design

Straight-thru air blast, minimal stack obstructions and absence of caps assure full fan capacity and prevent re-entry of exhausted air through adjacent fresh air intakes or windows. Contaminated air does not damage roof surfaces.

#### › Weather Resistant Operation

Air blast turns back rain and snow, provides an air curtain to keep out the elements. Full size windband protects the dampers while open.

#### › Simplified Construction

HI-EX fans require little maintenance. They are ruggedly built of heavy metal, securely welded and thoroughly reinforced with beading and angle rings. When properly installed, they will withstand high winds. Flutter guards are standard with the HI-EX and provide extra protection against damper flutter due to pressure difference.



*An impressive installation of specially constructed PennBarry Hi-Ex belt drive, high velocity exhausters shown above.*

#### › Dampers

Precision hinged, free moving dampers, set in oil-less bearings automatically overlap the airshaft to prevent heat losses and backdrafts. Centrally located drainage trough runs off water to both ends. Rubber cushioned damper stops are provided to prevent dampers from locking in an open position. Continuous rubber gasketing at the top of the airshaft seals closure at this point and eliminates noise and metal wear.

#### › Damper Assembly

Damper shafts are mounted in oil-less brass or nylon bearings allowing the assembly to operate freely without binding and require no further attention or lubrication. The air shaft is fitted with continuous rubber gasketing to help seal the damper opening and also to eliminate noise upon closure. To prevent the dampers from locking in the open position, rubber stops are installed on the upper wind band support. A drainage trough is centrally located to allow water to run off as required. The complete damper assembly is easily removable to gain access to the internal fan components if required.

The design of the end pivot damper arrangement utilizes the full force of the fan at the blade tips. This maximizes lift, employs the complete working area of the blades, and eliminates dead spots at the center of the hub of the fan.

#### › Damper Bearings

The trouble-free damper bearing assembly provides long wearing surfaces at the pivot points. Damper shafts turn in rust-free, oil-less brass or nylon bearings. Dampers operate freely without binding and require no further attention or lubrication. Damper assemblies are removable if access to the full fan is desired.



The end-pivoted damper arrangement utilizes the full force of the fan at the blade tips. This maximizes lift, employs the complete working area of the blades, and eliminates dead spots at the center or hub of the fan.

# Introduction

## Hi-Ex Roof Ventilators

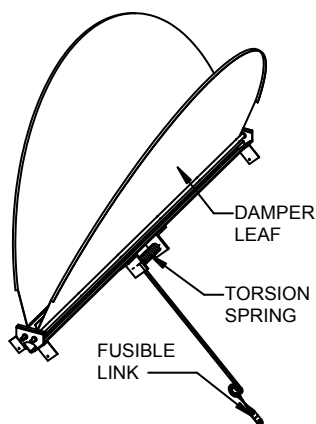


### Options & Accessories

Roof Ventilators

#### › Fire and Smoke Damper

Optional fire and smoke damper provision enables dampers to automatically open in a fire emergency. A sturdy steel, high torsion, special alloy spring arrangement, retained by a heat sensitive fusible link, can be incorporated to provide this protection. This action is independent of fan operation and is activated by UL listed links with pre-determined melting points.



This feature has been widely employed in industrial plant ventilation to permit the escape of noxious, blinding smoke as well as super-heated air and the gases present during a fire. It is recommended by insurance underwriting authorities and safety officials.

#### › Fan Guards

Since Hi-Ex fans contain rotating parts, PennBarry recommends the following safety precautions be taken during installation, operation, and maintenance. Install fan guards on all nonducted fan installations to protect people working around the fan from accidental falling debris and to protect the fan from foreign objects coming into contact with moving parts. Inlet fan guards for HiteSaver models HS and HZ must be fabricated locally. For proper and safe operation, fan RPM should not exceed that recommended in performance tables. Installations that result in excessive vibration are unacceptable. Designers should urge contractors to refer to operations, maintenance and instructions manuals for proper and acceptable levels of vibration.

#### › Safety Disconnect Switches

UL listed, non-fused, safety disconnect switches can be provided to match system electrical characteristics. These can be furnished in a weatherproof enclosure specifically designed for outdoor installation; or, under the motor weather cover in remote drive belted units. Disconnects are to be field wired by a licensed electrician.



#### › Magnetic Latches

For areas of high winds and interior positive pressure, magnetic latches are available for factory or field mounting. These latches help to minimize flutter and keep dampers closed when the fan is not in operation.

#### › Finishes

Coatings such as air dry Enamel, Epoxy, or Heresite are available upon request. See the coatings brochure for details.

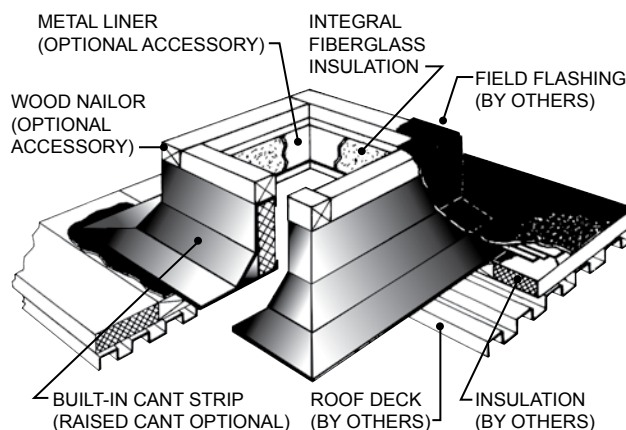
#### › Helper Springs

When extra assistance is required to open dampers under low velocity conditions, helper springs are available. They are recommended for applications where the throat velocity is under 1300 FPM and where the low speed of a two speed motor will be used.

#### › Roof Curbs

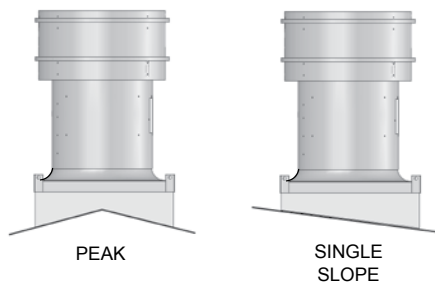
Roof curbs are furnished in a variety of types from canted or self-flashing to sloped or flat pitch. Standard construction includes galvanized or aluminum material, insulation, and metal, rubber gasketing or wood nailer mounting surface. See the roof curbs brochure for details.

Illustrated here, is the Unibeam which is most generally used with Hi-Ex vertical discharge ventilators. Costs of this device are normally less than field built curbs. The Unibeam shown is for flat roof installation.

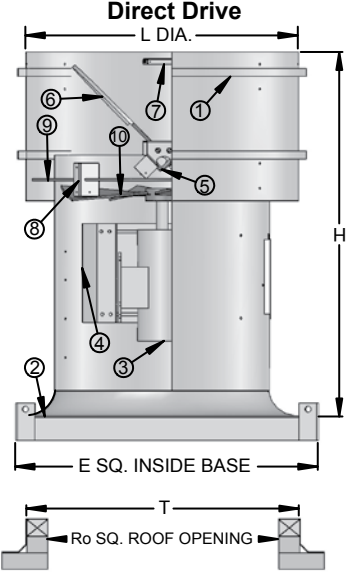


#### › Peaked or Sloped Curbs

Whether the installation is on the peak or a single slope of the building, the Unibeam curb will accommodate the application. Each curb is custom built to meet the needs of the project.

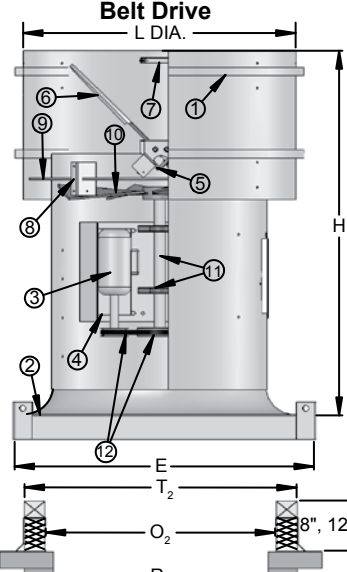


#### › HC, HX, HF Standard Height Series Dimensional Drawings



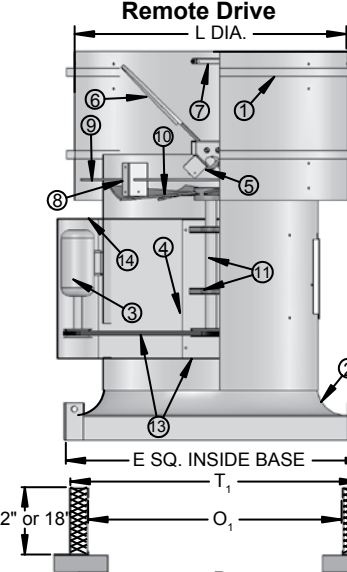
**Direct Drive**  
L DIA.  
H  
E SQ. INSIDE BASE  
T  
Ro SQ. ROOF OPENING

*Shown on Field Built Curb.*



**Belt Drive**  
L DIA.  
H  
E  
T<sub>2</sub>  
O<sub>2</sub>  
R<sub>2</sub>  
8", 12" or 18"

*Shown on Unibeam Curb.*



**Remote Drive**  
L DIA.  
H  
E SQ. INSIDE BASE  
T<sub>1</sub>  
O<sub>1</sub>  
R<sub>1</sub>  
12" or 18"

*Shown on Self Flashing Curb.*

**› Legend**

<ul style="list-style-type: none"> <li>1. Protective Windband and Stiffening Beads</li> <li>2. Spun Venturi and Mounting Base</li> <li>3. Ball Bearing Motor</li> <li>4. Drive Support Assembly</li> </ul>	<ul style="list-style-type: none"> <li>5. Drainage Gutter</li> <li>6. Butterfly Damper Assembly</li> <li>7. Damper Stop-Rubber Cushioned</li> <li>8. Supporting Brackets</li> <li>9. Flutter Guards</li> <li>10. Axial Impeller</li> </ul>	<ul style="list-style-type: none"> <li>11. Fan Shaft and Bearings (Belt Drive)</li> <li>12. Belt and Pulleys</li> <li>13. Belt and Bearing Enclosures with Air Guide (Optional)</li> <li>14. Motor Weather Cover</li> </ul>
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#### › HC, HX, HF Standard Height Series Dimensional References

Fan Dia.	A	H	L	Ro	T	E	Unit Weight		Self Flashing Curb			Fabricated Unibeam Curb			Gauges*	
							Steel	Alum.	R1	O1	T1	R2	O2	T2	Alum.	Steel
24	26	40 1/2	33	26	33 1/2	36	240	200	26	31 1/2	35 1/2	26	30 1/2	34 1/2	12-18	16-20
30	32	44	36	32	39 1/2	42	340	280	32	37 1/2	41 1/2	32	36 1/2	40 1/2	12-16	16-20
36	38	50	42	38	45 1/2	48	440	350	38	43 1/2	47 1/2	38	42 1/2	46 1/2	12-16	16-20
42	44	51	48	44	51 1/2	54	600	500	44	49 1/2	53 1/2	44	48 1/2	52 1/2	12-14	14-18
48	50	59	54	51	58 1/2	60	700	650	51	56 1/2	59 1/2	51	55 1/2	58 1/2	12-14	14-18
54	56	62	60	57	64 1/2	66	900	800	57	62 1/2	65 1/2	57	61 1/2	64 1/2	10-14	14-18
60	62	65	66	63	70 1/2	72	1000	900	63	68 1/2	71 1/2	63	67 1/2	70 1/2	10-14	14-16
72	74	66 1/2	81	75	82 1/2	84	1150	1100	75	80 1/2	83 1/2	75	79 1/2	82 1/2	8-14	14-16

All dimensions in inches. \*First gauges are for mounting bases. Second gauges are for windbands and airshafts. Although mounting base dimensions are standard, adapters and modifications are available when needed. Ask for certified dimension drawings before proceeding since dimensions do change.

#### › HC, HX, HF Standard Height Series Dimensional Information

HI-EX ventilators are available in three standard drive arrangements. Direct drive fans have blades on the motor shaft. Belt drive units are available for general ventilation conditions where the motor and drive components are installed within the ventilator airshaft to take advantage of airstream cooling action. The exhausting air washes the motor and bearings, increasing longevity of these components.

In applications where heat or dirt laden air is being removed, belt drive units can be furnished with the motor installed outside the airshaft, under a separate weather cover. In extremely corrosive applications the fan bearings, belts and fan shaft can be encased in a protective housing.

# Performance Data

Hi-Ex Roof Ventilators



## HC Standard Height Series

HC Standard Height Series Performance Data (Spark Resistant Construction for Industrial Use)

Roof Ventilators

Model	RPM	Tip Speed FPM	Fan Capacity - CFM													
			0" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		.750" S.P.		1.000" S.P.	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
HC24T1	1140	7163	5050	0.32	4530	0.35	3775	0.36	2920	0.36	2230	0.38	-	-	-	-
HC24T2	1140	7163	7220	0.95	6160	0.94	4875	0.94	3510	0.93	2190	0.94	-	-	-	-
HC24Q	1750	10996	7750	1.15	7435	1.18	7090	1.23	6665	1.27	6140	1.29	5155	1.30	4070	1.32
HC24	1105	6943	4895	0.29	4350	0.32	3610	0.33	2730	0.33	2015	0.35	-	-	-	-
	1265	7948	5600	0.43	5150	0.46	4505	0.49	3850	0.49	3080	0.49	1895	0.55	-	-
	1450	9111	6420	0.65	6030	0.68	5555	0.72	4935	0.74	4370	0.74	3030	0.77	2115	0.83
	1595	10022	7065	0.87	6715	0.90	6315	0.95	5800	0.97	5240	0.99	4080	0.98	3045	1.05
HC30W1	860	6754	8200	0.38	7200	0.42	5940	0.44	3760	0.43	1610	0.42	-	-	-	-
HC30W2	860	6754	9470	0.64	8495	0.65	7440	0.66	5815	0.65	2930	0.68	-	-	-	-
HC30T1	1140	8954	10870	0.88	10165	0.95	9345	0.99	8500	1.03	7230	1.04	3615	0.97	1250	1.19
HC30T2	1140	8954	12555	1.48	11820	1.50	11075	1.52	10290	1.54	9475	1.56	6410	1.51	-	-
HC30	890	6990	8485	0.42	7525	0.46	6415	0.49	4545	0.48	2120	0.45	-	-	-	-
	1020	8011	9725	0.63	8920	0.69	8025	0.72	6785	0.74	5075	0.72	-	-	-	-
	1125	8836	10725	0.84	10010	0.92	9180	0.95	8310	0.99	6980	1.00	3300	0.92	-	-
	1285	10092	12250	1.26	11640	1.35	10925	1.40	10200	1.44	9430	1.48	6985	1.46	3525	1.37
HC36W1	860	8105	11975	0.86	10490	0.90	8730	0.93	5585	0.96	2465	1.1	-	-	-	-
HC36W2	860	8105	15690	1.71	14690	1.78	13565	1.83	12050	1.85	10420	1.82	4935	1.63	-	-
HC36	635	5985	11585	0.69	10150	0.73	8080	0.74	4455	0.67	-	-	-	-	-	-
	700	6597	12770	0.92	11500	0.97	9780	1.00	7590	0.97	3955	0.88	-	-	-	-
	800	7540	14595	1.37	13515	1.44	12225	1.48	10490	1.48	8455	1.44	-	-	-	-
	880	8294	16055	1.83	15085	1.90	13970	1.96	12550	1.98	10995	1.96	5575	1.75	-	-
	1010	9519	18425	2.76	17595	2.85	16675	2.92	15660	2.98	14340	2.99	11415	2.92	6280	2.64
HC42W1	860	9456	20440	1.92	18765	2.00	17025	2.02	15005	2.09	10935	2.17	-	-	-	-
HC42W2	860	9456	23105	3.59	21970	3.69	20705	3.75	19235	3.75	17225	3.77	12550	3.74	7365	3.53
HC42	550	6048	14775	0.94	12845	0.98	9775	0.98	5870	0.94	-	-	-	-	-	-
	630	6927	16925	1.41	15300	1.47	13025	1.48	9945	1.47	6495	1.40	-	-	-	-
	695	7642	18670	1.89	17225	1.97	15450	1.98	12895	1.99	9895	1.97	-	-	-	-
	795	8742	21360	2.84	20120	2.92	18705	2.96	16840	2.98	14570	2.97	9240	2.85	-	-
	945	10391	25390	4.76	24365	4.88	23250	4.95	22055	4.97	20445	5.00	16600	4.98	12085	4.85
HC48W1	860	10807	30135	3.99	28195	4.07	26140	4.15	23890	4.22	21345	4.32	-	-	-	-
HC48W2	860	10807	33030	5.65	31415	5.74	29705	5.83	27900	5.89	25930	5.89	21325	5.74	13025	5.37
HC48	540	6786	20740	1.40	18060	1.45	14775	1.44	9805	1.35	-	-	-	-	-	-
	600	7540	23045	1.92	20660	1.98	17935	2.00	14605	1.94	8295	1.82	-	-	-	-
	685	8608	26310	2.86	24245	2.93	21995	2.98	19410	2.96	16410	2.88	-	-	-	-
	810	10179	31110	4.72	29385	4.81	27565	4.89	25595	4.93	23415	4.91	18515	4.72	-	-
HC54	490	6927	24440	1.42	21575	1.45	17145	1.46	8235	1.28	-	-	-	-	-	-
	540	7634	26935	1.91	24340	1.94	20700	1.96	16030	1.91	6050	1.66	-	-	-	-
	620	8765	30925	2.89	28635	2.93	26230	2.95	22335	2.99	18175	2.88	-	-	-	-
	735	10391	36660	4.81	34710	4.88	32850	4.88	30545	4.92	27160	4.97	19780	4.70	5555	4.28
	845	11946	42145	7.31	40440	7.40	38825	7.42	37225	7.43	35025	7.48	29435	7.50	22375	7.11
HC60	405	6362	33770	2.84	30170	2.90	26070	2.94	19320	2.87	10155	3.27	-	-	-	-
	480	7540	40025	4.72	37180	4.80	33695	4.85	30175	4.90	25550	4.88	10765	5.64	4540	6.67
	550	8639	45865	7.11	43465	7.20	40505	7.26	37480	7.32	34370	7.37	19420	7.25	11975	8.56
	610	9582	50865	9.70	48745	9.80	46165	9.88	43455	9.95	40720	10.00	34505	10.04	18385	10.39
HC72	453	8539	55686	5.28	47552	4.87	38271	5.02	27528	5.36	-	-	-	-	-	-
	519	9783	63799	7.94	56508	7.39	49398	7.41	40308	7.60	30942	8.1	-	-	-	-
	572	10782	70314	10.63	63532	9.94	57585	9.81	49889	10.07	41375	10.33	-	-	-	-

\*Direct drive models are italicized and belt driven models are boldface. BHP does not include drive losses.  
(Explosion proof motors and disconnects are available when specified)

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#### › HX Standard Height Series Performance Data (Spark Resistant Construction for Industrial Use)

Model	RPM	Tip Speed FPM	Fan Capacity - CFM													
			0" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		.625" S.P.		.750" S.P.	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
<i>HX24W</i>	860	5405	5590	0.45	4240	0.45	1820	0.45	-	-	-	-	-	-	-	-
<i>HX24T</i>	1140	7163	7410	1.04	6645	1.04	5215	1.05	3270	1.08	1770	1.15	-	-	-	-
<b>HX24</b>	<b>780</b>	<b>4901</b>	<b>5070</b>	<b>0.33</b>	<b>3400</b>	<b>0.34</b>	<b>970</b>	<b>0.39</b>	-	-	-	-	-	-	-	-
	<b>1025</b>	<b>6440</b>	<b>6665</b>	<b>0.75</b>	<b>5720</b>	<b>0.75</b>	<b>3875</b>	<b>0.84</b>	<b>1915</b>	<b>0.79</b>	<b>525</b>	<b>1.06</b>	-	-	-	-
	<b>1290</b>	<b>8105</b>	<b>8385</b>	<b>1.50</b>	<b>7770</b>	<b>1.50</b>	<b>6695</b>	<b>1.50</b>	<b>5155</b>	<b>1.64</b>	<b>3450</b>	<b>1.53</b>	<b>2150</b>	<b>1.63</b>	<b>1015</b>	<b>1.97</b>
<i>HX30W</i>	860	6754	8950	0.63	7250	0.65	5625	0.65	3725	0.64	-	-	-	-	-	-
<i>HX30T</i>	1140	8954	11865	1.46	10770	1.50	9050	1.51	8305	1.56	6735	1.50	5400	1.50	-	-
<b>HX30</b>	<b>780</b>	<b>6126</b>	<b>8120</b>	<b>0.47</b>	<b>6015</b>	<b>0.49</b>	<b>4330</b>	<b>0.48</b>	<b>1595</b>	<b>0.54</b>	-	-	-	-	-	-
	<b>980</b>	<b>7697</b>	<b>10200</b>	<b>0.92</b>	<b>8950</b>	<b>0.96</b>	<b>7395</b>	<b>1.00</b>	<b>5715</b>	<b>0.95</b>	<b>4015</b>	<b>0.95</b>	-	-	-	-
	<b>1235</b>	<b>9700</b>	<b>12855</b>	<b>1.85</b>	<b>11755</b>	<b>1.91</b>	<b>10655</b>	<b>1.92</b>	<b>9455</b>	<b>1.99</b>	<b>8440</b>	<b>1.96</b>	<b>6875</b>	<b>1.90</b>	<b>5650</b>	<b>1.90</b>
<i>HX36W</i>	860	8105	13920	1.22	12525	1.28	10520	1.30	6615	1.26	1715	1.43	-	-	-	-
<i>HX36T</i>	1140	10744	14860	1.51	13350	1.52	11540	1.60	9310	1.68	5810	1.70	2215	1.79	-	-
<i>HX36Q</i>	1750	16493	20255	4.18	19185	4.26	18025	4.34	16775	4.40	15430	4.44	13990	4.50	12500	4.61
<b>HX36</b>	<b>785</b>	<b>7398</b>	<b>12705</b>	<b>0.93</b>	<b>11110</b>	<b>0.98</b>	<b>9140</b>	<b>0.99</b>	<b>2920</b>	<b>1.02</b>	-	-	-	-	-	-
	<b>990</b>	<b>9331</b>	<b>16025</b>	<b>1.86</b>	<b>14875</b>	<b>1.94</b>	<b>13330</b>	<b>1.98</b>	<b>12100</b>	<b>1.98</b>	<b>7475</b>	<b>1.92</b>	<b>2885</b>	<b>2.10</b>	-	-
<i>HX42W1</i>	860	9456	23245	3.04	20375	3.12	17980	3.12	14050	3.12	9520	3.24	4770	3.48	-	-
<i>HX42W2</i>	860	9456	19765	1.84	17930	1.99	16155	2.08	14020	2.19	10985	2.22	6270	2.29	2045	2.51
<i>HX42T</i>	1140	12535	27515	4.71	25410	5.04	23035	5.27	20595	5.43	18025	5.50	14955	5.50	10015	5.41
<b>HX42</b>	<b>670</b>	<b>7367</b>	<b>15400</b>	<b>0.87</b>	<b>13045</b>	<b>0.97</b>	<b>10305</b>	<b>1.04</b>	<b>5270</b>	<b>1.08</b>	-	-	-	-	-	-
	<b>765</b>	<b>8412</b>	<b>17580</b>	<b>1.30</b>	<b>15520</b>	<b>1.42</b>	<b>13405</b>	<b>1.50</b>	<b>10440</b>	<b>1.56</b>	<b>5325</b>	<b>1.62</b>	-	-	-	-
	<b>965</b>	<b>10611</b>	<b>22180</b>	<b>2.60</b>	<b>20545</b>	<b>2.77</b>	<b>18910</b>	<b>2.90</b>	<b>17260</b>	<b>2.99</b>	<b>15210</b>	<b>3.11</b>	<b>12450</b>	<b>3.14</b>	<b>8605</b>	<b>3.22</b>
<i>HX48M</i>	690	8671	30920	3.81	27585	3.96	23330	4.06	17050	3.85	10595	3.95	4195	4.52	-	-
<i>HX48W</i>	860	10807	38540	7.38	36000	7.56	32955	7.73	29445	7.86	25915	7.86	19185	7.41	14155	7.59
<b>HX48</b>	<b>545</b>	<b>6849</b>	<b>24425</b>	<b>1.88</b>	<b>19780</b>	<b>1.99</b>	<b>12230</b>	<b>1.89</b>	<b>4740</b>	<b>2.12</b>	-	-	-	-	-	-
	<b>625</b>	<b>7854</b>	<b>28010</b>	<b>2.83</b>	<b>24205</b>	<b>2.96</b>	<b>19640</b>	<b>3.02</b>	<b>11390</b>	<b>2.88</b>	<b>4885</b>	<b>3.25</b>	-	-	-	-
	<b>740</b>	<b>9299</b>	<b>33160</b>	<b>4.70</b>	<b>30110</b>	<b>4.86</b>	<b>26230</b>	<b>5.00</b>	<b>22045</b>	<b>4.99</b>	<b>14690</b>	<b>4.75</b>	<b>10210</b>	<b>4.90</b>	<b>2050</b>	<b>5.92</b>

\*Direct drive models are italicized and belt driven models are boldface. Performance shown is for installation type A- Free inlet, Free outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating (BHP) does not include drive losses.

# Performance Data

Hi-Ex Roof Ventilators



## HF Standard Height Series

### HF Standard Height Series Performance Data (Standard Construction for Industrial Use)

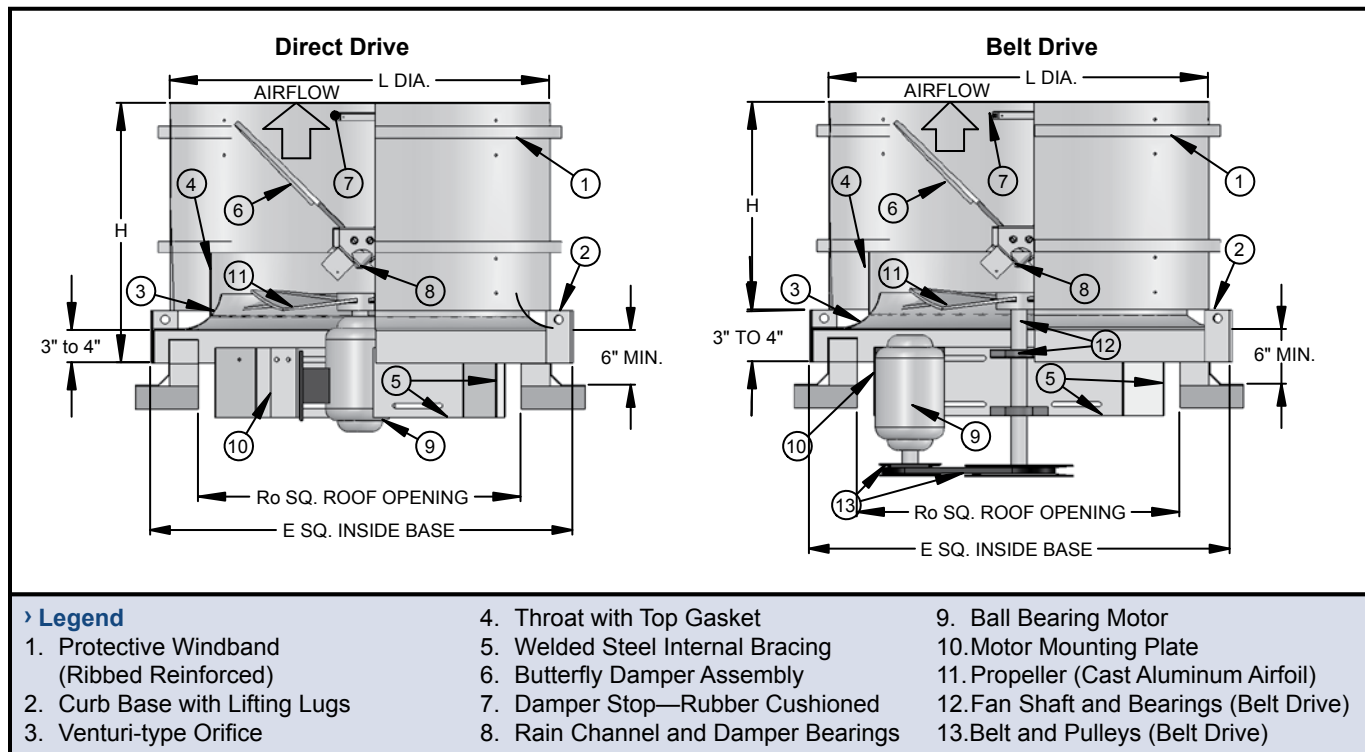
Model	RPM	Tip Speed FPM	Fan Capacity - CFM									
			0" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
HF24	611	3839	4890	0.30	4075	0.30	2565	0.29	1735	0.33	-	-
	672	4222	5375	0.39	4685	0.40	3190	0.38	2325	0.41	-	-
	750	4712	6000	0.55	5410	0.55	4190	0.52	3155	0.54	2495	0.58
	857	5385	6855	0.82	6320	0.81	5680	0.81	4320	0.78	3550	0.80
	943	5925	7545	1.09	7065	1.08	6555	1.10	5470	1.04	4425	1.04
HF30	440	3456	6640	0.29	4525	0.28	2280	0.31	-	-	-	-
	484	3801	7305	0.39	5655	0.38	2450	0.40	-	-	-	-
	538	4225	8120	0.54	6775	0.54	3815	0.52	2775	0.57	-	-
	615	4830	9280	0.80	8225	0.82	6190	0.76	3530	0.80	3085	0.86
	678	5325	10230	1.08	9335	1.10	7845	1.05	5205	1.02	3325	1.10
	775	6087	11695	1.61	10970	1.64	9860	1.62	8200	1.54	5785	1.53
HF36	370	3487	9445	0.40	6950	0.37	-	-	-	-	-	-
	412	3883	10515	0.55	8265	0.52	3875	0.51	-	-	-	-
	470	4430	11995	0.82	10120	0.78	7570	0.75	3135	0.78	-	-
	520	4901	13270	1.11	11640	1.07	9705	1.02	5585	1.02	-	-
	594	5598	15160	1.65	13815	1.60	12060	1.56	10115	1.51	6090	1.52
	654	6164	16690	2.20	15500	2.15	13980	2.10	12530	2.05	10190	2.02
HF42	750	7069	19140	3.32	18135	3.26	16895	3.20	15505	3.15	14275	3.08
	391	4299	14530	0.81	12940	0.81	7480	0.80	-	-	-	-
	430	4728	15980	1.08	14735	1.09	10485	1.05	5830	1.13	-	-
	492	5410	18285	1.62	17370	1.64	15090	1.57	10210	1.59	-	-
	542	5960	20145	2.17	19355	2.19	17765	2.15	14030	2.09	9765	2.14
	620	6817	23040	3.25	22410	3.28	21370	3.28	19555	3.17	15760	3.13
HF48	735	8082	27315	5.41	26830	5.45	26115	5.47	25090	5.45	23665	5.30
	323	4059	18195	0.81	13475	0.82	-	-	-	-	-	-
	355	4461	20000	1.08	16030	1.09	9080	1.13	-	-	-	-
	407	5115	22930	1.62	19810	1.65	14585	1.65	-	-	-	-
	448	5630	25235	2.16	22595	2.20	18310	2.20	12585	2.24	-	-
	513	6447	28900	3.25	26810	3.30	23500	3.30	19230	3.30	14060	3.37
HF54	608	7640	34250	5.41	32680	5.49	30245	5.49	27235	5.49	23625	5.50
	280	3958	21780	1.03	15715	1.10	-	-	-	-	-	-
	320	4524	24890	1.54	19790	1.64	-	-	-	-	-	-
	353	4990	27455	2.07	22850	2.20	16190	2.13	-	-	-	-
	404	5711	31420	3.10	27635	3.27	23095	3.30	12535	3.06	-	-
	480	6786	37335	5.20	34275	5.43	30515	5.52	26670	5.53	17330	5.23
HF60	549	7761	42700	7.78	40015	8.07	36910	8.22	33770	8.26	30200	8.26
	290	4555	27105	1.60	23545	1.63	15305	1.67	-	-	-	-
	320	5027	29905	2.15	26900	2.19	20570	2.19	12145	2.25	-	-
	366	5749	34205	3.22	31845	3.26	27985	3.30	20685	3.32	13335	3.38
	435	6833	40655	5.40	38755	5.44	36120	5.51	32440	5.54	26065	5.52
	497	7807	46450	8.06	44855	8.08	42835	8.17	40160	8.23	36690	8.25
HF60	547	8592	51120	10.74	49770	10.76	48070	10.86	45790	10.94	43175	10.99

\*Belt drive performance data. BHP does not include drive losses.

Roof Ventilators

Hi-Ex

#### › HZ HiteSaver Series Dimensional Drawings



#### › HZ HiteSaver Series Dimensional Reference

Fan Diameter	H	L Diameter	Ro	ESQ.	F Maximum		Approximate Ship Weight	
					Direct	Belt	Direct	Belt
24	24	33	30 1/2	36	15	16 1/2	200	230
30	24	36	36 1/2	42	16	17 1/2	230	290
36	28	42	42 1/2	48	18	20	310	400
42	30	48	48 1/2	54	20	22	380	550
48	31	54	54 1/2	60	22	22	490	640
54	34	60	60 1/2	66	24	22	580	740
60	36	66	66 1/2	72	24	22	710	900
72	39 1/2	81	78 1/2	84	-	27	-	1030

All weights in lbs. All dimensions in inches.

#### › HZ HiteSaver Series Dimensional Information

For applications where height is a consideration, PennBarry offers the HiteSaver, Model HZ. The HiteSaver features an extra-low profile. The propeller, motor and drive are recessed into the roof opening and extend below the roof line. This design provides for convenient access from the building interior when structural members provide clearance.

The windband is constructed of galvanized steel and contains two reinforcing ribs. This assembly is supported by the curb base and steel brackets. The curb base is all-welded heavy gauge galvanized steel with a deep spun venturi to smooth airflow. External bracing provides extra rigidity. Integral lifting lugs are included.

# Performance Data

Hi-Ex Roof Ventilators



## HZ HiteSaver Series

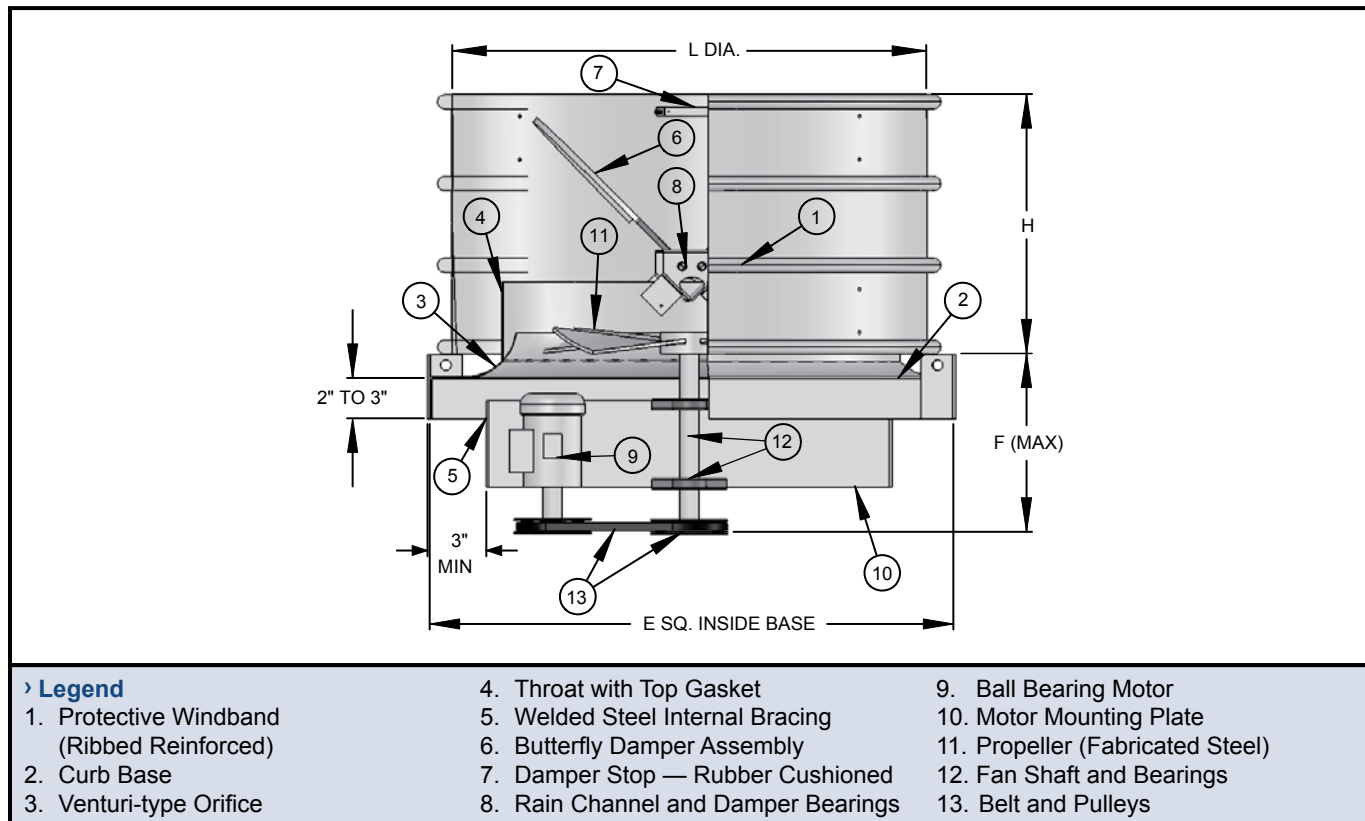
► HZ HiteSaver Series Performance Data (Direct and Belt Drive for Commercial Use)

Model	RPM	Tip Speed FPM	Fan Capacity - CFM									
			0" S.P.		.125" S.P.		.250" S.P.		.500" S.P.		.750" S.P.	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
HZ24W	860	5404	4900	0.32	4135	0.34	2845	0.34	1235	0.43	-	-
HZ24T2	1140	7226	6305	0.69	5805	0.70	5155	0.72	3205	0.72	2080	0.85
HZ24Q1	1750	10996	7750	1.43	7525	1.46	7200	1.51	6480	1.61	5460	1.65
HZ24Q2	1750	10996	8635	1.87	8475	1.90	8150	1.94	7405	2.02	6290	2.04
<b>HZ24</b>	999	6277	6015	0.50	5085	0.53	4295	0.53	2200	0.58	-	-
	1258	7904	7570	1.00	6690	1.04	6185	1.06	4360	1.05	3170	1.13
	1441	9054	8675	1.50	7795	1.56	7370	1.59	6320	1.60	4445	1.58
	1586	9965	9545	2.00	8665	2.07	8270	2.10	7460	2.14	5760	2.12
HZ30W2	860	6754	7555	0.47	6610	0.51	5420	0.54	2320	0.57	-	-
HZ30W3	860	6754	9120	0.76	8085	0.78	6600	0.79	3215	0.80	1325	1.05
HZ30T2	1140	9032	11205	1.44	10535	1.50	9660	1.54	7770	1.60	6290	1.61
HZ30T3	1140	9032	12640	2.01	11970	2.06	10915	2.07	8650	2.07	6335	2.07
<b>HZ30</b>	753	5914	8400	0.50	6870	0.53	5040	0.53	-	-	-	-
	949	7453	10585	1.00	9200	1.06	7975	1.06	5095	1.07	1310	1.12
	1086	8529	12110	1.50	10775	1.58	9995	1.60	7320	1.60	4655	1.60
	1195	9386	13325	2.00	12010	2.10	11360	2.12	9025	2.13	6855	2.13
	1368	10744	15255	3.00	13945	3.14	13310	3.16	11790	3.19	9560	3.19
HZ36W1	860	8105	10945	0.73	9625	0.76	8070	0.77	3835	0.79	1345	0.77
HZ36W3	860	8105	14650	1.56	13380	1.58	11865	1.59	7175	1.62	3730	1.87
HZ36T2	1140	10839	15695	2.03	14680	2.11	13600	2.15	11265	2.18	8130	2.15
HZ36T3	1140	10839	18140	2.99	17195	3.04	16130	3.06	13850	3.07	10735	3.07
<b>HZ36</b>	774	7295	13595	1.00	11270	1.04	9475	1.04	3860	1.11	-	-
	886	8350	15565	1.50	13330	1.55	11865	1.56	7220	1.59	3240	1.80
	975	9189	17130	2.00	14925	2.07	13650	2.08	10415	2.09	5490	2.17
	1116	10518	19605	3.00	17405	3.09	16340	3.11	13890	3.12	10485	3.15
	1323	12469	23240	5.00	20955	5.11	20115	5.17	18200	5.20	16005	5.20
HZ42W1	860	9456	18130	1.92	16780	2.04	15620	2.14	12565	2.21	8675	2.18
HZ42W2	860	9456	21765	3.10	20535	3.16	19225	3.17	16150	3.25	11830	3.28
HZ42T1	1140	12645	23930	4.59	23275	4.76	22245	4.90	20535	5.18	18425	5.35
<b>HZ42</b>	569	6256	14955	1.02	12955	1.02	10385	1.03	-	-	-	-
	652	7169	17140	1.50	15435	1.53	13415	1.55	7715	1.58	-	-
	717	7884	18850	2.00	17310	2.03	15580	2.05	10975	2.08	-	-
	821	9027	21580	3.00	20260	3.04	18820	3.06	15320	3.10	10985	3.15
	973	10699	25575	4.99	24480	5.05	23300	5.08	20695	5.14	17495	5.16
HZ48W1	860	10807	31350	5.22	29815	5.30	28195	5.30	24675	5.32	19925	5.43
HZ48W2	860	10807	35325	7.18	33650	7.29	31880	7.36	28135	7.48	23380	7.63
HZ48T2	1140	14451	38320	9.86	37310	9.97	36180	10.06	33935	10.25	31460	10.37
<b>HZ48</b>	568	7138	20710	1.50	18300	1.52	15575	1.53	4210	1.57	-	-
	625	7854	22790	2.00	20610	2.03	18260	2.04	10810	2.06	-	-
	715	8985	26075	2.99	24185	3.03	22225	3.05	17185	3.06	7790	3.12
	848	10656	30925	4.99	29355	5.06	27700	5.07	24220	5.10	19350	5.12
	971	12202	35410	7.49	34050	7.58	32620	7.59	29700	7.66	26325	7.67
HZ54W1	860	12158	31265	5.18	31200	5.20	30585	5.21	27705	5.24	22695	5.26
HZ54W2	860	12158	41020	7.22	39260	7.31	37330	7.40	33120	7.42	27980	7.54
HZ54W3	860	12158	47035	10.49	45130	10.53	43205	10.60	39890	10.66	36325	10.75
<b>HZ54</b>	559	7903	26675	1.99	23815	2.04	20415	2.06	9300	2.11	-	-
	640	9048	30540	2.99	28065	3.05	25330	3.07	18235	3.16	-	-
	759	10730	36215	4.99	34155	5.06	31980	5.12	26890	5.16	20085	5.28
	869	12285	41465	7.49	39680	7.58	37830	7.65	33695	7.69	28770	7.79
HZ60W1	860	13509	37265	4.51	35235	4.66	33060	4.78	28505	4.91	23240	4.90
HZ60W2	860	13509	45630	7.50	43755	7.59	41675	7.69	36990	7.70	31465	7.70
<b>HZ60</b>	579	9095	34525	2.99	31335	3.04	27620	3.03	16455	2.94	-	-
	687	10791	40965	5.00	38350	5.04	35450	5.07	28170	4.97	15390	4.92
	786	12346	46870	7.48	44640	7.51	42135	7.60	36575	7.53	29950	7.38
	866	13603	51640	10.01	49640	10.03	47410	10.14	42590	10.14	36725	9.99
HZ72	991	15567	59095	15.00	57370	15.04	55490	15.09	51480	15.22	47005	15.13
<b>HZ72</b>	381	7182	47904	3.25	38163	2.92	-	-	-	-	-	-
	453	8539	56957	5.47	48799	4.94	39807	4.97	-	-	-	-
	519	9783	65255	8.22	58211	7.53	50851	7.40	-	-	-	-
	572	10782	71919	11.00	65613	10.18	58985	9.90	43678	10.29	-	-
	656	12365	82481	16.60	77114	15.52	71216	15.02	59034	15.06	-	-

Direct drive models are italicized and belt driven models are boldface. Power rating (BHP) does not include drive losses.

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### › HS HiteSaver Series Dimensional Drawings



### › HS HiteSaver Series Dimensional Reference

Fan Diameter	H	L	Ro	E	F
30	24	36	34	38 1/2	15
36	28	42	40	44 1/2	15
42	30	48	46	50 1/2	18
48	31	54	52	56 1/2	18

All dimensions in inches.

### › HS HiteSaver Series Dimensional Information

For applications where height is a consideration, PennBarry also offers the HiteSaver, Model HS. The HiteSaver features an extra-low profile. The propeller, motor, and drive are recessed into the roof opening and extend below the roof line. This design provides for convenient access from the building interior when structural members provide clearance.

The windband is constructed of galvanized steel and contains two reinforcing ribs. This assembly is supported by the curb base and steel brackets. The curb base is all-welded heavy gauge galvanized steel with a deep spun venturi to smooth air-flow. External bracing provides extra rigidity. Integral lifting lugs are included.

# Dimensional Information

Hi-Ex Roof Ventilators



## HS HiteSaver Series with Heat & Smoke Exhaust Package

### › HS HiteSaver Series with Heat & Smoke Exhaust Package Dimensional Drawings

Roof Ventilators

**› Legend**

1. Protective Windband (Ribbed Reinforced)
2. Curb Base
3. Venturi-type Orifice
4. Throat with Top Gasket
5. Welded Steel Internal Bracing
6. Butterfly Damper Assembly
7. Damper-Stop Rubber Cushioned
8. Rain Channel & Damper Bearings
9. Ball Bearing Motor
10. Motor Mounting Plate
11. Propeller (Fabricated Steel)
12. Fan Shaft & Bearings
13. Belt & Pulleys (Double Groove Min. High Temperature Belts)
14. Motor Weather Cover (Remote Drive)
15. Belt & Bearing Breather Duct Enclosure
16. Torsion Springs & Fusible Links - 165°F
17. Extended Grease Lines & Fittings (Optional)
18. Disconnect Switch - (Optional Remote Outside Mount)

*Must specify heat and smoke option when ordering.*

### › HS HiteSaver Series with Heat & Smoke Exhaust Package Dimensional Reference

Model	HS24	HS30	HS36	HS42	HS48	HS54	HS60
L Dia	33	36	42	48	54	60	66
H	24	24	28	30	31	34	36
†E <sup>sq.</sup>	33 1/2	38 1/2	44 1/2	50 1/2	56 1/2	66	72
Ro <sup>sq.</sup>	30	34	40	46	52	61 1/2	67 1/2
F <sup>MAX.</sup>	24	24	24	24	24	24	24

<sup>†</sup>Outside dimension of curb should be 1 1/2" less than 'E' dimension. All dimensions in inches.

### › HS HiteSaver Series with Heat & Smoke Exhaust Package

- 1000°F for minimum 15 minutes (SBCCI "Standard Fire Prevention Code")
- 500°F for 4 hours (IRI Requirement)
- UL listed "Power Ventilators for Smoke Control Systems", which includes UL 705 "Power Ventilators" and UL793 "Automatically Operated Roof Vents for Smoke and Heat". This testing includes Snow Load, Dust Load, and Cycling Tests for butterfly dampers.

While these fans are commonly used for general ventilation, when equipped with Heat and Smoke 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 minimum time limits stated. To maintain power to these fans during emergencies, special consideration must be made for field power supply. In the event that power is disrupted, fusible links melt when the temperature exceeds 165°F, at which point the unit functions as a gravity exhaust ventilator. In the event of an emergency, if power is maintained, the units will operate for the minimum 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.

#### Aspirated Belt and Bearing Cover

Shields critical drive components from high temperature air-stream. Cool ambient air is drawn through the enclosure to maintain temperature during emergency operation.

#### Vented and Aspirated Motor Compartment

Cool ambient air is drawn through the motor compartment to assure temperature around the motor doesn't exceed safe limits.

#### Two Groove Pulleys

Sized for minimum 200% of installed horsepower, each belt is capable of handling the complete load. This provides maximum reliability and safety.

#### Galvanized Steel Damper Blades

Provide higher temperature resistance and better durability than aluminum blades used for exclusive general ventilation applications.

#### Service Access Panel

Allows access to bearings and belts for routine inspection and maintenance when fans are used for general ventilation. Regular inspection and maintenance helps assure that Heat and Smoke exhaust fans operate as intended when emergency smoke removal is required.

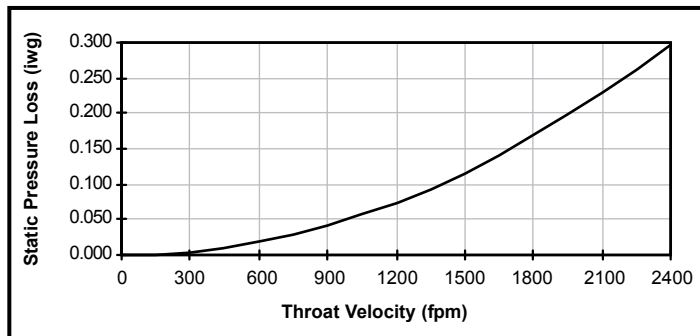
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#### ► HS HiteSaver Series Performance Data

Model	RPM	Tip Speed FPM	Fan Capacity - CFM										Sones @ 1/8"
			0" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
HS24	592	3720	4736	0.27	3847	0.27	2387	0.27	-	-	-	-	14.60
	637	4002	5095	0.33	4319	0.33	2843	0.32	2025	0.36	-	-	16.00
	733	4606	5864	0.50	5243	0.50	3959	0.48	3000	0.51	2311	0.55	19.20
	843	5297	6744	0.77	6203	0.77	5511	0.77	4169	0.74	3431	0.77	23.20
	904	5680	7232	0.95	6728	0.95	6141	0.95	4933	0.91	4054	0.93	24.20
HS30	658	5168	7721	0.55	6640	0.57	4887	0.54	-	-	-	-	12.20
	756	5938	8872	0.83	7989	0.86	6637	0.84	5142	0.83	-	-	16.00
	811	6370	9517	1.02	8710	1.06	7604	1.06	6072	1.01	4871	1.05	18.50
	932	7320	10937	1.55	10253	1.60	9410	1.62	8243	1.58	6936	1.53	24.00
	1027	8066	12052	2.07	11445	2.13	10725	2.17	9835	2.16	8591	2.07	28.00
HS36	445	4194	10688	0.51	8596	0.56	-	-	-	-	-	-	13.60
	512	4825	12297	0.77	10508	0.83	-	-	-	-	-	-	15.80
	549	5174	13186	0.95	11524	1.02	9757	1.07	-	-	-	-	17.00
	631	5947	15155	1.44	13722	1.52	12206	1.58	-	-	-	-	19.60
	695	6550	16692	1.92	15395	2.01	14052	2.09	12672	2.16	-	-	22.00
HS42	403	4431	15531	0.98	13180	1.03	-	-	-	-	-	-	12.60
	463	5091	17843	1.48	15885	1.55	13585	1.61	-	-	-	-	16.50
	511	5619	19693	1.99	17944	2.06	15891	2.13	-	-	-	-	19.90
	586	6443	22584	3.00	21080	3.09	19376	3.16	17558	3.24	-	-	26.00
	696	7653	26823	5.03	25557	5.13	24240	5.23	22735	5.31	21202	5.40	35.00
HS48	316	3971	17495	0.77	13377	0.82	5086	0.86	-	-	-	-	12.10
	339	4260	18768	0.94	15093	1.02	8670	1.02	-	-	-	-	13.40
	390	4901	21592	1.44	18655	1.53	14211	1.53	6677	1.61	-	-	16.90
	430	5404	23807	1.93	21327	2.03	17621	2.08	12352	2.05	-	-	20.00
	493	6195	27295	2.91	25247	3.03	22313	3.12	18902	3.13	13871	3.10	25.00
	586	7364	32444	4.88	30734	5.03	28716	5.16	26059	5.25	23193	5.26	32.00
HS54	318	4496	24733	1.51	19580	1.61	-	-	-	-	-	-	21.00
	351	4962	27300	2.03	22668	2.16	13174	1.99	-	-	-	-	24.00
	402	5683	31266	3.05	27361	3.22	22864	3.25	-	-	-	-	29.00
	478	6758	37177	5.13	34095	5.36	30359	5.45	26426	5.46	15857	5.03	36.00
	548	7747	42622	7.73	39933	8.02	36827	8.18	33643	8.22	30060	8.21	43.00
	574	8115	44644	8.89	42076	9.20	39192	9.38	36116	9.44	32916	9.47	45.00
HS60	315	4948	29439	2.05	26331	2.09	19711	2.08	-	-	-	-	23.00
	361	5671	33738	3.09	31289	3.13	27304	3.17	19787	3.14	-	-	27.00
	429	6739	40093	5.18	38178	5.22	35404	5.28	31350	5.30	25004	5.26	34.00
	492	7728	45981	7.82	44368	7.84	42289	7.93	39580	7.99	35657	7.99	41.00
	542	8514	50654	10.45	49267	10.47	47550	10.57	45208	10.64	42647	10.70	47.00

BHP does not include drive losses. Performance shown is for fans without ducts. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: free inlet fan sone levels.

#### ► HS Heat & Smoke Exhaust Package Static Pressure Loss



#### ► HS HiteSaver Series Throat Area

Model	Throat Area (Sq. Ft.)
24	3.14
30	4.91
36	7.07
40	8.73
42	9.63
48	12.57
54	15.91
60	19.64

# Engineering Specifications

Hi-Ex Roof Ventilators



## Engineering Specifications

Roof Ventilators

### › Model

HC = Standard Height;  
Cast Aluminum Propeller  
HF = Standard Height;  
Cast Aluminum Propeller;  
AMCA Certified  
HX = Standard Height;  
Fabricated Steel Propeller  
HS = HiteSaver; Cast Aluminum Propeller  
HZ = HiteSaver; Fabricated Steel Propeller

### › Unit Size

24	36	48	60
30	42	54	72

### › Drive Type

D = Direct Drive  
B = Belt Drive

### › Motor Tap

M = 690 RPM  
Q = 1750 RPM  
Q1 = 1750 RPM  
Q2 = 1750 RPM  
T = 1140 RPM  
T1 = 1140 RPM  
T2 = 1140 RPM  
T3 = 1140 RPM  
W = 860 RPM  
W1 = 860 RPM  
W2 = 860 RPM  
W3 = 860 RPM

### › Motor Speed

1 = Single Speed  
2 = 2S2W 1800/1200  
3 = 2S1W 1800/900

### › Horse Power

1/4	3/4	2	7 1/2
1/3	1	3	10
1/2	1 1/2	5	15

0 = None  
X = Special

### › Enclosure

O = Open Drip Proof  
T = Totally Enclosed  
E = Explosion Proof  
X = Special

### › Voltage

B = 115V	E = 208V	P = 460V
D = 200V	G = 230V	R = 575V

X = Special

### › Phase

1 = Single  
3 = Three

### › Cycle

5 = 50 Hz  
6 = 60 Hz

### › Efficiency

S = Standard  
P = Premium

### › Paint / Coating

0 = None  
B = Epoxy\*  
C = Heresite\*  
D = Heresite with UV\*  
Q = Enamel\*  
X = Special  
*\* Not available with choice of color.*

### › Color

0 = None  
00 = Standard Gray  
50 = Chrome Green  
53 = Williamsburg Blue  
55 = Pale Green  
56 = Dove Gray  
61 = White  
63 = Oxford Beige  
65 = Dover White  
66 = Desert Tan  
70 = Black  
73 = Smoke Gray  
77 = Brick Red  
79 = Peppercorn  
81 = Pale Brown  
83 = Chocolate Brown  
85 = Timeless Bronze  
94 = Charcoal  
X = Special

### › AMCA Spark Rating

0 = None  
C = Standard  
B = Optional

### › Damper

0 = None  
BDD = Gravity Backdraft Damper  
MD1 = Gravity Backdraft Damper 115V  
MD2 = Gravity Backdraft Damper 230V  
MD4 = Gravity Backdraft Damper 460V  
ED1 = Explosion Proof Motor  
Operated Damper 115V

### › Screen

0 = None  
B = Bird Screen  
S = Insect/Bird Screen

### › Roof Curb

0 = None	J = SCA16	T = UA12
A = UCG8	K = UCA18	U = UA18
B = UCG12	L = UG12	V = UG18
C = UCG18	M = SA16	W = URA12
D = UCA8	N = SFG12	Y = URA18
E = UCA12	P = SFG18	1 = URG12
F = SFA12	Q = SG16	2 = URG18
G = SFA18	R = SRA16	
H = SCG16	S = SRG16	

### › Slope

0 = None  
S = Single  
D = Double

### › Metal Liner

0 = None  
L = Metal Liner

### › Damper Holding Plate

0 = None  
P = Damper Holding Plate

### › Neoprene Gasket

0 = None  
G = Gasket

### › No Wooden Nailer

0 = None  
N = No Wooden Nailer

### › Curb Paint/Coating

0 = None  
B = Air Dried Epoxy  
Q = Air Dried Enamel  
X = Special

### › Thermal Overload Protection

0 = None  
P = Thermal Protection

### › Disconnect Switch

0 = None  
3R = Nema 3R Disconnect Switch  
4 = Nema 4 Disconnect Switch  
7 = Nema 7 Disconnect Switch  
9 = Nema 9 Disconnect Switch  
X = Special

### › Internal Wiring

0 = None  
3R = Nema 3R Internal Wiring  
4 = Nema 4 Internal Wiring  
X = Special

### › Firestat Switch

0 = None  
F = Firestat Switch

### › Extended Lube Lines

0 = None  
E = Lube Lines

### › Aluminum Housing

0 = None  
H = Aluminum

### › Roof Pitch Adapters

0 = None  
S = Single Slope  
D = Double Slope

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#### › Remote Drive with Cover

0 = None  
C = Remote

#### › Belt / Bearing Cover

0 = None  
B = Cover

#### › Mag Damper Latch

0 = None  
L = Latch

#### › Inlet Guard

0 = None  
G = Guard

#### › Heat / Smoke Kit

0 = None  
H = Heat / Smoke

#### › Helper Spring

0 = None  
H = Helper Spring

#### › Torsion Spring

0 = None  
T = Torsion Spring

#### › HC

##### Direct Drive Units

Direct Drive Axial Upblast Roof exhaust fan shall be Hi-Ex HC, manufactured by PennBarry; Richardson, TX 75081.

Units shall be weather resistant and designed to withstand prevailing wind velocities. A heavy gauge galvanized motor mounting panel shall be securely fastened to heavy gauge galvanized air-shaft. Airshaft shall be welded to a heavy gauge galvanized base with welded corners, pre-punched mounting holes, and a deeply spun venturi. A ribbed reinforced galvanized windband shall be securely fastened to air shaft and shall include automatic butterfly dampers which open and close with the start and stop of the fan. No portion of fan shall protrude below the roof line.

Statically and dynamically balanced propellers shall be cast aluminum and airfoil shaped. Motors shall be continuous duty, ball bearing design, positively cooled, and furnished at the specified voltage and phase.

##### Belt Drive Units

Belt Drive Axial Upblast Roof exhaust fan shall be Hi-Ex HC, manufactured by PennBarry; Richardson, TX 75081.

Units shall be weather resistant and designed to withstand prevailing wind velocities. A heavy gauge galvanized motor mounting panel shall be securely fastened to heavy gauge galvanized air-shaft. Airshaft shall be welded to a heavy gauge galvanized base with welded corners, pre-punched mounting holes, and a deeply spun venturi. A ribbed reinforced galvanized windband shall be securely fastened to air shaft and shall include automatic butterfly dampers which open and close with the start and stop of the fan. No portion of fan shall protrude below the roof line.

Statically and dynamically balanced propellers shall be cast aluminum and airfoil shaped. Motors shall be continuous duty, ball bearing design, positively cooled, and furnished at the specified voltage, phase, and enclosure. Shafts shall be turned, ground, polished, and rust protected. Pulleys shall be adjustable, cast iron, machined, keyed, securely attached, and sized for 150% of the horsepower at its rated maximum speed.

#### › HX

##### Direct Drive Units

Direct Drive Axial Upblast Roof exhaust fan shall be Hi-Ex HX, manufactured by PennBarry; Richardson, TX 75081.

Units shall be weather resistant and designed to withstand prevailing wind velocities. A heavy gauge galvanized motor mounting panel shall be securely fastened to heavy gauge galvanized air-shaft. Airshaft shall be welded to a heavy gauge galvanized base with welded corners, pre-punched mounting holes, and a deeply spun venturi. A ribbed reinforced galvanized windband shall be securely fastened to air shaft and shall include automatic butterfly dampers which open and close with the start and stop of the fan. No portion of fan shall protrude below the roof line.

Statically and dynamically balanced propellers shall be cast aluminum and airfoil shaped. Motors shall be continuous duty, ball bearing design, positively cooled, and furnished at the specified voltage and phase.

##### Belt Drive Units

Belt Drive Axial Upblast Roof exhaust fan shall be Hi-Ex HX, manufactured by PennBarry; Richardson, TX 75081.

Units shall be weather resistant and designed to withstand prevailing wind velocities. A heavy gauge galvanized motor mounting panel shall be securely fastened to heavy gauge galvanized air-shaft. Airshaft shall be welded to a heavy gauge galvanized base with welded corners, pre-punched mounting holes, and a deeply spun venturi. A ribbed reinforced galvanized windband shall be securely fastened to air shaft and shall include automatic butterfly dampers which open and close with the start and stop of the fan. No portion of fan shall protrude below the roof line.

Statically and dynamically balanced propellers shall be cast aluminum and airfoil shaped. Motors shall be continuous duty, ball bearing design, positively cooled, and furnished at the specified voltage, phase, and enclosure. Shafts shall be turned, ground, polished, and rust protected. Pulleys shall be adjustable, cast iron, machined, keyed, securely attached, and sized for 150% of the horsepower at its rated maximum speed.

### Engineering Specifications

#### › HZ

##### Direct Drive Units

Direct Drive Axial Low Contour Upblast Roof exhaust fan shall be Hi-Ex HZ, manufactured by PennBarry; Richardson, TX 75081.

Units shall be weather resistant and designed to withstand prevailing wind velocities. A heavy gauge galvanized motor mounting panel shall be securely fastened to a ribbed reinforced galvanized windband. Windband shall be securely attached to a heavy gauge galvanized base with welded corners, pre-punched mounting holes, and a deeply spun venturi, and shall include automatic butterfly dampers which open and close with the start and stop of the fan.

Statically and dynamically balanced propellers shall be cast aluminum and airfoil shaped. Motors shall be continuous duty, ball bearing design, positively cooled, and furnished at the specified voltage, phase, and enclosure.

##### Belt Drive Units

Belt Drive Axial Low Contour Upblast Roof exhaust fan shall be Hi-Ex HZ, manufactured by PennBarry; Richardson, TX 75081.

Units shall be weather resistant and designed to withstand prevailing wind velocities. A heavy gauge galvanized motor mounting panel shall be welded and securely fastened to a ribbed reinforced galvanized windband. Windband shall be securely attached to a heavy gauge galvanized base with welded corners, pre-punched mounting holes, and a deeply spun venturi, and shall include automatic butterfly dampers which open and close with the start and stop of the fan.

Statically and dynamically balanced propellers shall be cast aluminum and airfoil shaped. Motors shall be continuous duty, ball bearing design, positively cooled, and furnished at the specified voltage, phase, and enclosure. Shafts shall be turned, ground, polished, and rust protected. Pulleys shall be adjustable, cast iron, machined, keyed, and securely attached, and sized for the 150% of the horsepower at its rated maximum speed.

#### › HF

##### Belt Drive Units

Belt Drive Axial Upblast Roof exhaust fan shall be Hi-Ex HF, manufactured by PennBarry; Richardson, TX 75081.

Units shall carry UL705 listing and be CSA certified. Units shall be weather resistant and designed to withstand prevailing wind velocities. A heavy gauge galvanized motor mounting panel shall be securely fastened to heavy gauge galvanized airshaft. Airshaft shall be welded to a heavy gauge galvanized base with welded corners, pre-punched mounting holes, and a deeply spun venturi. A ribbed reinforced galvanized windband shall be securely fastened to air shaft and shall include automatic butterfly dampers which open and close with the start and stop of the fan. No portion of fan shall protrude below the roof line.

Statically and dynamically balanced propellers shall be of fabricated steel. Motors shall be continuous duty, ball bearing design, positively cooled, and furnished at the specified voltage, phase, and enclosure. Shafts shall be turned, ground, polished, and rust protected. Pulleys shall be adjustable, cast iron, machined, keyed, securely attached, and sized for 150% of the horsepower at its rated maximum speed.

#### › HS

##### Belt Drive Units

Belt Drive Axial Low Contour Upblast Roof exhaust fan shall be Hi-Ex HS, manufactured by PennBarry; Richardson, TX 75081.

Units shall be weather resistant and designed to withstand prevailing wind velocities. A heavy gauge galvanized motor mounting panel shall be welded and securely fastened to ribbed reinforced galvanized windband. Windband shall be securely attached to a heavy gauge galvanized base with welded corners, pre-punched mounting holes, and a deeply spun venturi, and shall include automatic butterfly dampers which open and close with the start and stop of the fan.

Statically and dynamically balanced propellers shall be heavy gauge steel. Motors shall be continuous duty, ball bearing design, positively cooled, and furnished at the specified voltage, phase, and enclosure. Shafts shall be turned, ground, polished, and rust protected. Pulleys shall be adjustable, cast iron, machined, keyed, securely attached, and sized for 150% of the horsepower at its rated maximum speed.

Each model HS fan shall bear the AMCA Licensed Ratings Seal for Air and Sound Performance (30-48), and shall be UL (UL Std. 705, UL Std. 793 optional).

If specified, Heat and Smoke option, fan shall additionally provide UL 793 Listing (500°F for 4 hrs./1000°F for 15 min.), pedestal mounting, remote motor mounting, and damper springs activated by fusible links.

### 1-Year Limited Manufacturer Warranty

#### › Products 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:

- You must be the original commercial purchaser of the PennBarry Product.
- You must promptly notify us, within the warranty period, of any defect and provide us with any substantiation that we may reasonably request.
- 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:

- Improper design or operation of the system into which the PennBarry Product is incorporated.
- Improper installation.
- Accident, abuse or misuse.
- 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).
- Components not manufactured by PennBarry.

#### › Limitations

- 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).
- 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.
- 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

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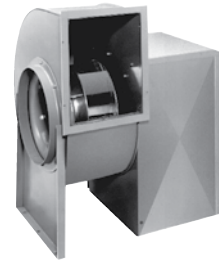
› **Domex**  
Centrifugal  
Roof Exhausters



› **Fumex Fatrap**  
Kitchen Hood Centrifugal  
Roof Exhausters



› **Zephyr**  
Ceiling and Inline Fans



› **Dynamo**  
Centrifugal Blowers



› **Centrex Inliner**  
Centrifugal Inline Fan



› **LC Dynafan**  
Low Contour Centrifugal  
Roof Exhausters



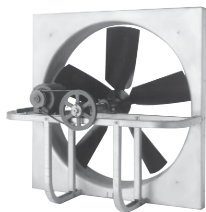
› **ESI**  
Efficient Silent  
Inline Fan



› **Fume Exhaust**  
Curb Mounted  
Centrifugal Fans

## Axial / Gravity Products

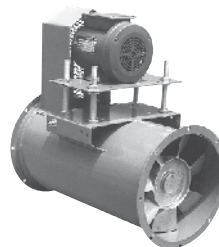
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› **Breezeway**  
Propeller Wall Fan



› **Hi-Ex**  
Power Roof Ventilator



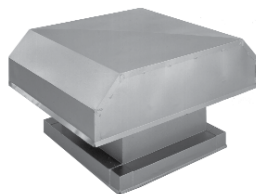
› **Tubeaxial**  
Inline Fans



› **Vaneaxial**  
Inline Fans



› **Powered Airette**  
Axial Roof Ventilators



› **Airette**  
Gravity Intake/Relief Hood



› **Domex Axial**  
Axial Roof Ventilators



› **Axcentrix**  
Bifurcator Fan



PENN BARRY™

For more information, contact your local PennBarry Sales  
Manufacturer Representative or visit us at [www.PennBarry.com](http://www.PennBarry.com).

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