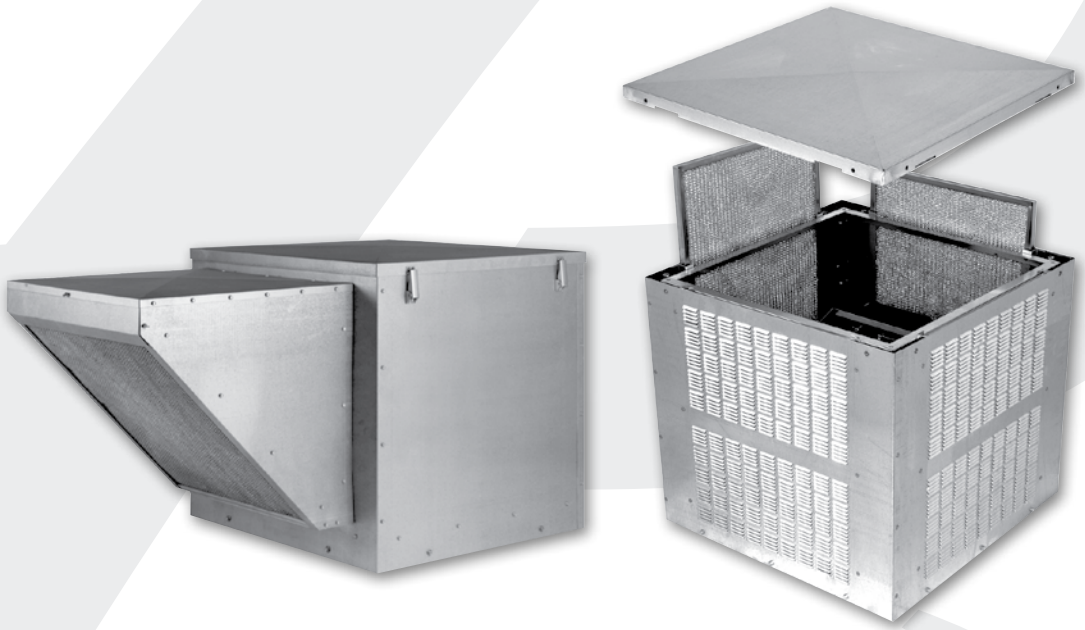
PENN BARRY™

Bulletin MU08



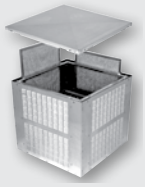
MUFFAN

Model: MU, FS
Filtered Make-up
Fresh Air Supply Fans

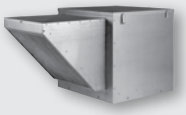
MOVING YOUR WAY

Table of Contents

› Muffan Standard Height Series



Model: MU
- Static pressure up to 1.0 in. wg.
- Direct Drive - Flow capacity up to 3,730 CFM
- Belt Drive - Flow capacity up to 14,426 CFM



Model: FS - Side Intake
- Static pressure up to 1.5 in. wg.
- Belt Drive - Flow capacity up to 12,721 CFM

› Muffan Roof Supply AMCA Certifications

PennBarry certifies that the Muffan models shown on pages 4 through 6 (excluding MU6020) are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

› Muffan UL and CSA Certifications

Muffan models shown on pages 4 - 6, carry the UL label, UL 705, (ZACT), File #E28143.

Muffan fans shown on pages 4 - 6, are also certified by the Canadian Standard Association (File #LR13309).

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.

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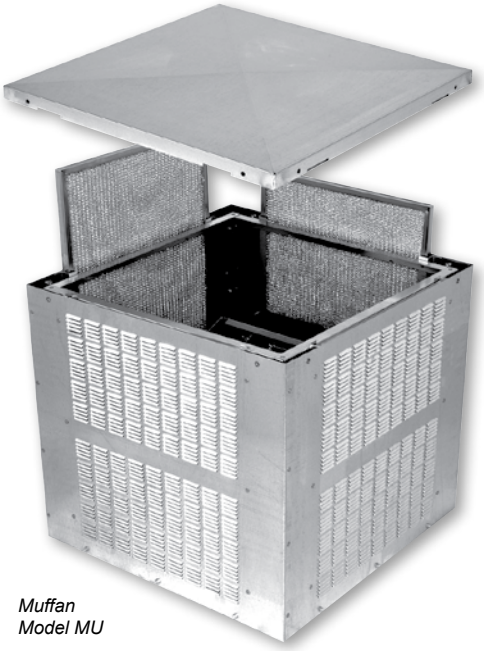
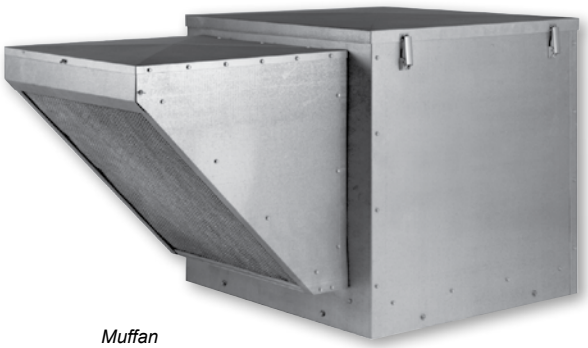
Introduction



Muffan
Model MU



Muffan
Model FS

› Muffan Series

Model: MU

- Static pressure up to 1.0 in. wg.
- Direct Drive - Flow capacity up to 3,730 CFM
- Belt Drive - Flow capacity up to 14,426 CFM

Model: FS - Side Intake

- Static pressure up to 1.5 in. wg.
- Belt Drive - Flow capacity up to 12,721 CFM

› Muffan Fan

Direct Drive

PennBarry's Muffan replaces foul or contaminated air that is removed by a building's exhaust system.

Such make-up air is so essential that it is part of safety and building code requirements for commercial kitchens, chemical laboratories, electrical control rooms and where gas equipment is installed. Proper make-up air provisions should be part of every building plan.

Without adequate make-up air, air starvation can create negative pressures within a structure. Doors open with difficulty. Dirt, insects, and debris are drawn in through entrances. Fumes and odors accumulate. Pilot lights operate erratically. Moisture is sucked in through cracks in roofs and walls and around windows and doors. Air becomes stale. Backdrafts occur. Air handling systems operate ineffectively, inefficiently, and expensively. Heated or cooled air is wasted when make-up air is not properly considered.

On the other hand, uncontrolled air flow through windows and doors creates drafts; admits moisture, dust, dirt, and pollen; and lets heat escape.

The Muffan's ability to regulate air flow assures proper replacement air volume under varying conditions. The Muffan can be coordinated to match the exhaust velocity required to remove fumes, vapors, and grease while providing sufficient oxygen. The Muffan feeds the system effectively.

Belt Drive

Larger belt drive models extend the range of the Muffan. Now clean air volumes above 14,400 CFM can be supplied to replace exhausted air and fumes.

Blowers are efficient, double inlet, forward-curved design in strong, die-formed steel housings. Variable pitch pulley allows adjustment in RPM for more precise regulation of air flow. Motor, belts, pulleys and other components form a dependable, durable and quiet-operating assembly easily balanced to meet system requirements.

The housing's louvered sides permit a direct air path, giving the housing a low profile to the roof. Cleanable, permanent filters back-up each louvered side to prevent airborne contaminants from entering. Filters are easily removed for cleaning.

An integral mounting base permits easy installation on a roof curb. Roof curbs speed, simplify, and coordinate installation of roof-mounted supply and exhaust equipment. PennBarry offers an extensive variety of curbs for mounting on flat and sloped roofs.

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Features, Benefits, Options, & Accessories

› Easy Installation
The base/curb cap is free of protruding fasteners which would interfere with installation onto the curb.

› Easy Maintenance Access
A full-size insulated (FS Model only) cover is easily removed via adjustable heavy duty, quick-release latches (FS Model only), providing clear access to all components. The gasket is installed in the cover, not the housing, so it is not damaged during maintenance.

› Structural Integrity
The galvanized housing provides a high degree of rigidity and weather protection by bending and overlapping all seams. Additional angle reinforcement is provided along the interior base, providing stiffness to the walls and support of the unit on the curb. The housing cover is gasketed with thick closed cell neoprene and “pitched” to ensure complete rain run-off.

› Motor Selection
Available in a wide range of voltages and enclosures. Standard belt drive Open Drip Proof (ODP) motors are selected, making an allowance for drive losses.

› 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. Motors can be adjusted to maintain proper belt tension.

› Conduit Entry
A large 1” dia. hole in the base provides ample room to easily run electrical power into the housing.

› 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. (See “Safety Disconnect Switch” for optional disconnect devices.)

› Vibration Isolators
The blower housing/motor assembly uses multi-directional, rubber-in-shear isolators to mitigate residual vibrations transmission from the unit to the building.

› Intake Hood (Model FS Only)
The intake hood is sloped and properly sized for low velocity, preventing water entry. The 1” aluminum filters are washable and secured by easy to use thumb latches.

› Safety Disconnect Switch
Safety disconnect 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 disconnect switches are available for indoor, outdoor, and explosion proof installations. Disconnects are to be field wired by a licensed electrician.

› 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 motor cover 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.)

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

› Dampers
Dampers are available for either counter balanced or motorized operation (motor kit optional). Dampers feature square galvanized steel frame, and multi-leaf, roll formed aluminum blades with nylon bearings.

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

Muffan Model MU, Direct Drive

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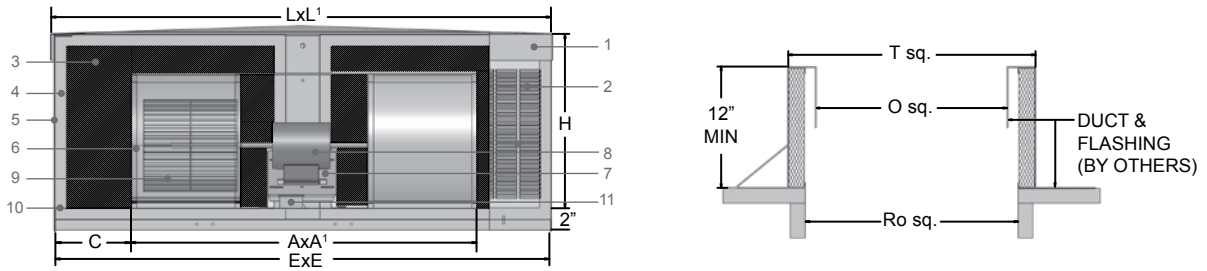
Dimensional Information & Performance Data

Muffan Roof Supply Fan

PENN BARRY™

MU Direct Drive Series

› MU Direct Drive Dimensional Drawings



› Legend

1. Removable Roof Cap
2. Louvered Side Panels
3. Removable 1" Thick Cleanable Filters
4. Filter Track
5. Solid End Panels
6. Blower Housings with Support Bar
7. Motor and Blower Housing Mounting Plates
8. Resilient Mounted Ball Bearing Motor (Thermally Protected)
9. Centrifugal Blower Wheels
10. Integral Mounting Base
11. Disconnect Switch

› MU Direct Drive Dimensional References

Model	Dimensional Data							Filters		Self-Flashing Aluminum Curb			Unibeam or Field Built Curb (UNI-12)			Ship Wt. (lbs)
	L	L¹	H	C	A	A¹	ExE	Qty	Size	RoxRo¹	OxO¹	TxT¹	RoxRo¹	OxO¹	TxT¹	
MU10	25	21	16	4⅜	16¼	4¼	25x19	2	16x20	21½ x 15½	21½ x 15½	34½ x 18½	20½ x 14½	20½ x 14½	23½ x 17½	75
MU20	43	22		6½	30		43x20	4		39½ x 16½	39½ x 16½	42½ x 19½	38½ x 15½	38½ x 15½	41½ x 8½	230
MU30				3	37	6 1/16										240

All dimensions in inches.

› MU Direct Drive Performance Data

Model	RPM	Fan Capacity - CFM																			
		0.00" S.P.		.100" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		.625" S.P.		.750" S.P.		.875" S.P.		1.000" S.P.	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
MU10V*	500	485	0.02	295	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	950	921	0.12	880	0.12	850	0.12	685	0.10	525	0.08	-	-	-	-	-	-	-	-	-	-
	1000	970	0.12	935	0.13	905	0.13	745	0.12	630	0.10	-	-	-	-	-	-	-	-	-	-
	1050	1020	0.13	985	0.14	960	0.14	810	0.13	715	0.13	575	0.12	-	-	-	-	-	-	-	-
MU10R	1450	1485	0.58	1415	0.55	1400	0.54	1315	0.49	1240	0.45	1160	0.41	1065	0.35	965	0.30	790	0.20	350	0.04
	1550	1590	0.66	1525	0.64	1510	0.63	1430	0.60	1355	0.56	1280	0.53	1200	0.49	1110	0.44	1020	0.39	855	0.29
MU20** (1/2 HP)	500	1165	0.05	645	0.05	515	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	680	1585	0.15	1295	0.15	1215	0.15	620	0.10	-	-	-	-	-	-	-	-	-	-	-	-
	760	1775	0.20	1540	0.20	1445	0.20	895	0.15	300	0.10	-	-	-	-	-	-	-	-	-	-
	790	1845	0.25	1620	0.20	1525	0.20	1015	0.15	490	0.10	-	-	-	-	-	-	-	-	-	-
	830	1935	0.30	1705	0.25	1625	0.25	1165	0.20	750	0.15	100	0.10	-	-	-	-	-	-	-	-
	870	2030	0.35	1810	0.30	1735	0.30	1400	0.25	905	0.20	305	0.15	-	-	-	-	-	-	-	-
	910	2125	0.40	1900	0.35	1835	0.35	1545	0.30	1050	0.25	545	0.15	-	-	-	-	-	-	-	-
	940	2195	0.40	1970	0.40	1910	0.40	1645	0.35	1130	0.30	795	0.20	165	0.15	-	-	-	-	-	-
	970	2265	0.45	2030	0.45	1985	0.45	1745	0.40	1250	0.30	910	0.25	335	0.15	-	-	-	-	-	-
	1000	2335	0.50	2100	0.50	2060	0.50	1840	0.45	1355	0.35	1035	0.30	490	0.20	-	-	-	-	-	-
	1020	2380	0.55	2145	0.50	2105	0.50	1895	0.45	1400	0.40	1100	0.30	640	0.25	140	0.15	-	-	-	-
	1075	2395	0.55	2150	0.50	2110	0.50	1900	0.45	1650	0.45	1360	0.45	1120	0.40	640	0.30	-	-	-	-
MU30*** (1HP)	500	1775	0.10	1230	0.05	1065	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	580	2060	0.15	1595	0.15	1475	0.10	480	0.05	-	-	-	-	-	-	-	-	-	-	-	-
	680	2410	0.25	1685	0.20	1930	0.20	1335	0.15	375	0.05	-	-	-	-	-	-	-	-	-	-
	780	2765	0.40	2410	0.35	2300	0.35	1895	0.25	1090	0.10	385	0.05	-	-	-	-	-	-	-	-
	820	2910	0.45	2565	0.40	2485	0.40	2085	0.35	1510	0.20	655	0.05	-	-	-	-	-	-	-	-
	860	3050	0.55	2720	0.50	2660	0.50	2265	0.40	1810	0.30	950	0.10	285	0.05	-	-	-	-	-	-
	900	3195	0.60	2860	0.60	2795	0.55	2440	0.45	2030	0.40	1260	0.15	615	0.10	-	-	-	-	-	-
	960	3405	0.75	3105	0.70	3020	0.65	2725	0.60	2340	0.50	1870	0.35	1050	0.15	505	0.10	-	-	-	-
	990	3510	0.80	3200	0.75	3130	0.75	2855	0.65	2485	0.60	2070	0.45	1280	0.20	705	0.10	-	-	-	-
	1020	3620	0.90	3220	0.80	3240	0.80	2980	0.75	2620	0.65	2245	0.55	1525	0.30	910	0.15	370	0.10	-	-
	1050	3725	1.00	3420	0.90	3350	0.90	3100	0.85	2760	0.70	2405	0.60	1870	0.40	1140	0.20	620	0.10	-	-
	1075	3730	1.00	3450	1.00	3400	0.90	3180	0.85	2950	0.80	2660	0.70	2300	0.65	1890	0.45	1260	0.40	-	-

Speed (RPM) shown is nominal. Performance is based on actual speed of test. Other speeds listed are obtainable by using matching Lek-Trol™ speed controller. Ratings are based on tests to AMCA Standard 210. Performance shown is for installation type B - free inlet, ducted outlet. All static pressures shown are EXTERNAL. 0" S.P. INCLUDES all fan housing losses including the drop across CLEAN filters. Ratings include the effects of filters in the airstream.

* *Outlet Velocity = CFM / .75 Tip Speed = 1.9 x RPM.*

** *Outlet Velocity = CFM / .66 Tip Speed = 2.1 x RPM.*

*** *Outlet Velocity = CFM / .87 Tip Speed = 2.4 x RPM.*

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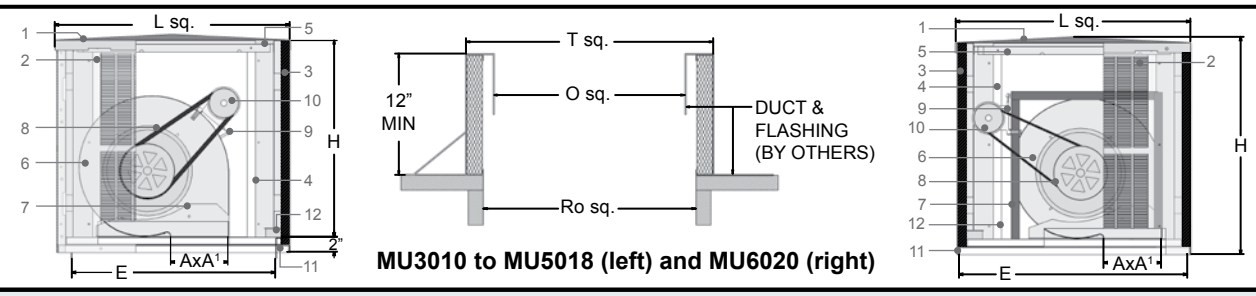
› MU Belt Drive Dimensional Drawings



MU3010 to MU5018 (left) and MU6020 (right)

› Legend

1. Removable Roof Cap
2. Louvered Side Panels
3. Removable 1" (2" for MU6020) Thick Cleanable Filters
4. Filter Track
5. Angle Reinforcing Supports
6. Blower Housing
7. Blower Housing Mounting Angles
8. Belt and Pulleys
9. Adjustable Motor Mounting Plate
10. Motor
11. Mounting Base
12. Disconnect Switch

› MU Belt Drive Dimensional References

Model	Dimensional Data					Filters		Self-Flashing Aluminum Curb			Unibeam or Field Built Curb (UNI-12)			Ship Wt. (lbs)
	L	H	A	A¹	E	Qty	Size	RoxRo¹	OxO¹	TxT¹	RoxRo¹	OxO¹	TxT¹	
MU3010	28½	24	11⅞	13⅛	22½	4	20 x 25	19	19	22	18	18	21	100
MU4012	36½	27	13 7/16	15⅝	27½	4	20 x 25	24	24	27	23	23	26	160
MU4015	36½	27	15⅞	18⅝	27½	4	20 x 25	24	24	27	23	23	26	180
MU5018	45	27	19⅛	22⅛	31	8	20 x 25	27 ½	27 ½	30 ½	26 ½	26 ½	29 ½	310
MU6020	58½	47	24½	24½	58	16	20 x 25	54 ½	54 ½	57 ½	53 ½	53 ½	56 ½	770

All dimensions in inches.

› MU3010 Belt Drive Performance Data

HP	RPM	Fan Capacity - CFM																	
		0.00" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		.625" S.P.		.750" S.P.		.875" S.P.		1.000" S.P.	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1/4	400	1346	0.09	808	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	500	1683	0.18	1302	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	569	1915	0.27	1591	0.20	1162	0.13	-	-	-	-	-	-	-	-	-	-	-	-
	590	1986	0.30	1676	0.23	1285	0.16	-	-	-	-	-	-	-	-	-	-	-	-
	610	2053	0.33	1756	0.26	1399	0.19	-	-	-	-	-	-	-	-	-	-	-	-
1/3	625	2104	0.35	1816	0.28	1476	0.21	-	-	-	-	-	-	-	-	-	-	-	-
	650	2188	0.40	1914	0.33	1589	0.25	1104	0.17	-	-	-	-	-	-	-	-	-	-
1/2	675	2272	0.44	2012	0.37	1701	0.29	1279	0.21	-	-	-	-	-	-	-	-	-	-
	699	2353	0.49	2105	0.42	1806	0.34	1436	0.25	-	-	-	-	-	-	-	-	-	-
	720	2424	0.54	2185	0.46	1897	0.38	1559	0.29	366	0.09	-	-	-	-	-	-	-	-
	740	2491	0.58	2259	0.51	1982	0.42	1674	0.34	1207	0.23	-	-	-	-	-	-	-	-
3/4	760	2558	0.63	2332	0.55	2066	0.46	1783	0.38	1341	0.28	-	-	-	-	-	-	-	-
	780	2626	0.68	2405	0.60	2148	0.51	1874	0.42	1481	0.32	-	-	-	-	-	-	-	-
	800	2693	0.74	2478	0.65	2230	0.56	1964	0.47	1616	0.37	-	-	-	-	-	-	-	-

› MU4012 Belt Drive Performance Data

HP	RPM	Fan Capacity - CFM																	
		0.00" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		.625" S.P.		.750" S.P.		.875" S.P.		1.000" S.P.	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1/4	400	2355	0.24	1950	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/3	440	2590	0.32	2255	0.28	1550	0.18	-	-	-	-	-	-	-	-	-	-	-	-
	460	2710	0.36	2410	0.33	1810	0.24	-	-	-	-	-	-	-	-	-	-	-	-
1/2	480	2825	0.41	2570	0.39	2040	0.29	-	-	-	-	-	-	-	-	-	-	-	-
	500	2945	0.46	2720	0.45	2225	0.35	1420	0.19	-	-	-	-	-	-	-	-	-	-
3/4	540	3180	0.58	3005	0.58	2570	0.48	1915	0.34	-	-	-	-	-	-	-	-	-	-
	560	3300	0.65	3140	0.64	2715	0.54	2175	0.42	-	-	-	-	-	-	-	-	-	-
1	600	3535	0.80	3410	0.79	3020	0.70	2620	0.59	1800	0.38	-	-	-	-	-	-	-	-
	620	3650	0.88	3540	0.88	3175	0.79	2795	0.68	2155	0.50	-	-	-	-	-	-	-	-
	660	3885	1.06	3790	1.06	3480	0.98	3135	0.87	2675	0.72	1765	0.43	-	-	-	-	-	-
1 1/2	680	4005	1.16	3910	1.16	3645	1.11	3295	0.98	2895	0.84	2185	0.60	-	-	-	-	-	-
	700	4120	1.27	4030	1.27	3795	1.23	3435	1.08	3080	0.95	2515	0.75	-	-	-	-	-	-
	720	4240	1.38	4155	1.38	3940	1.35	3590	1.19	3260	1.07	2775	0.88	1870	0.54	-	-	-	-
	740	4360	1.50	4275	1.50	4080	1.47	3740	1.32	3435	1.20	3015	1.02	2305	0.74	-	-	-	-

See performance notes on next page.

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Performance Data

Muffan Roof Supply Fan

PENN BARRY™

MU Belt Drive Series

› MU4015 Belt Drive Performance Data

HP	RPM	Fan Capacity - CFM																	
		0.00" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		.625" S.P.		.750" S.P.		.875" S.P.		1.000" S.P.	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1/3	340	3525	0.40	2765	0.28	1165	0.10	-	-	-	-	-	-	-	-	-	-	-	-
1/2	360	3730	0.48	3025	0.35	1865	0.18	-	-	-	-	-	-	-	-	-	-	-	-
	380	3940	0.56	3285	0.42	2365	0.26	-	-	-	-	-	-	-	-	-	-	-	-
3/4	400	4145	0.66	3545	0.51	2740	0.35	-	-	-	-	-	-	-	-	-	-	-	-
	420	4355	0.76	3795	0.60	3060	0.44	1580	0.21	-	-	-	-	-	-	-	-	-	-
1	460	4770	1.00	4275	0.83	3640	0.66	2775	0.45	-	-	-	-	-	-	-	-	-	-
	480	4975	1.13	4505	0.96	3900	0.78	3170	0.58	1605	0.28	-	-	-	-	-	-	-	-
1 1/2	500	5180	1.28	4735	1.10	4165	0.91	3530	0.71	2380	0.44	-	-	-	-	-	-	-	-
	520	5390	1.44	4955	1.25	4420	1.06	3830	0.86	2935	0.60	-	-	-	-	-	-	-	-
2	560	5805	1.80	5405	1.59	4945	1.39	4410	1.18	3770	0.94	2695	0.62	-	-	-	-	-	-
	580	6010	2.00	5625	1.78	5195	1.57	4670	1.36	4120	1.13	3245	0.82	1905	0.45	-	-	-	-
	600	6220	2.21	5850	1.99	5440	1.77	4935	1.55	4420	1.31	3720	1.03	2475	0.66	-	-	-	-
3	620	6425	2.44	6070	2.21	5680	1.98	5200	1.76	4715	1.52	4100	1.25	3155	0.89	1465	0.46	-	-
	640	6635	2.68	6290	2.45	5920	2.21	5455	1.98	5000	1.74	4460	1.47	3670	1.14	2345	0.72	-	-
	660	6840	2.94	6505	2.70	6155	2.46	5715	2.22	5275	1.97	4790	1.71	4135	1.39	3105	0.99	1255	0.50

› MU5018 Belt Drive Performance Data

HP	RPM	Fan Capacity - CFM																	
		0.00" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		.625" S.P.		.750" S.P.		.875" S.P.		1.000" S.P.	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1/2	263	4750	0.51	3771	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	302	5455	0.78	4766	0.64	2849	0.35	-	-	-	-	-	-	-	-	-	-	-	-
1	328	5925	1.00	5375	0.86	3997	0.57	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	377	6810	1.51	6332	1.36	5472	1.12	3896	0.72	-	-	-	-	-	-	-	-	-	-
2	400	7225	1.81	6775	1.64	6062	1.41	4832	1.03	-	-	-	-	-	-	-	-	-	-
	416	7514	2.03	7081	1.86	6465	1.64	5404	1.26	-	-	-	-	-	-	-	-	-	-
3	430	7767	2.24	7348	2.07	6813	1.86	5810	1.49	4204	1.03	-	-	-	-	-	-	-	-
	450	8128	2.57	7728	2.39	7302	2.20	6377	1.84	5134	1.36	-	-	-	-	-	-	-	-
	477	8616	3.06	8239	2.87	7861	2.68	7096	2.34	6136	1.88	4465	1.35	-	-	-	-	-	-
5	500	9032	3.53	8671	3.32	8311	3.12	7680	2.81	6808	2.37	5622	1.84	-	-	-	-	-	-
	520	9393	3.97	9047	3.76	8700	3.55	8180	3.26	7375	2.83	6372	2.29	4687	1.68	-	-	-	-
	540	9754	4.44	9421	4.22	9087	4.01	8672	3.75	7916	3.33	7063	2.80	5864	2.21	-	-	-	-
	567	10242	5.14	9924	4.91	9607	4.69	9289	4.46	8607	4.04	7839	3.53	6883	2.94	5459	2.34	-	-

› MU6020 Belt Drive Performance Data

HP	RPM	Fan Capacity - CFM																	
		0.00" S.P.		.125" S.P.		.250" S.P.		.375" S.P.		.500" S.P.		.625" S.P.		.750" S.P.		.875" S.P.		1.000" S.P.	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1/2	246	5817	0.51	4438	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4	284	6716	0.78	5583	0.60	3795	0.35	-	-	-	-	-	-	-	-	-	-	-	-
1	308	7284	1.00	6259	0.80	4868	0.56	-	-	-	-	-	-	-	-	-	-	-	-
1 1/2	354	8371	1.52	7517	1.30	6466	1.05	4967	0.71	-	-	-	-	-	-	-	-	-	-
2	373	8821	1.77	8023	1.56	7045	1.29	5789	0.97	-	-	-	-	-	-	-	-	-	-
	390	9223	2.03	8460	1.80	7553	1.52	6455	1.23	4757	0.83	-	-	-	-	-	-	-	-
3	408	9648	2.32	8920	2.08	8077	1.79	7080	1.51	5696	1.09	-	-	-	-	-	-	-	-
	448	10594	3.07	9931	2.81	9196	2.51	8361	2.20	7371	1.85	5947	1.37	-	-	-	-	-	-
5	467	11044	3.48	10407	3.21	9718	2.90	8934	2.57	8033	2.23	6870	1.75	4886	1.21	-	-	-	-
	532	12581	5.14	12022	4.83	11463	4.52	10800	4.13	10098	3.76	9320	3.38	8372	2.89	7137	2.32	-	-
7 1/2	554	13101	5.81	12565	5.49	12028	5.16	11409	4.77	10755	4.37	10047	4.01	9215	3.55	8189	2.94	6858	2.43
	585	13834	6.84	13326	6.50	12818	6.16	12258	5.77	11649	5.33	10995	4.94	10286	4.52	9466	4.01	8449	3.33
	610	14426	7.75	13938	7.40	13451	7.04	12935	6.66	12351	6.20	11745	5.77	11102	5.37	10358	4.88	9491	4.27

Power Rating (BHP) Includes drive losses. Outlet Velocity = CFM ÷ 1.41. Tip Speed 3.3 x RPM. Performance shown is for installation type B: free inlet, ducted outlet
The AMCA Certified Ratings Seal applies to air performance ratings only. Performance ratings include the effects of filters in the airstream.

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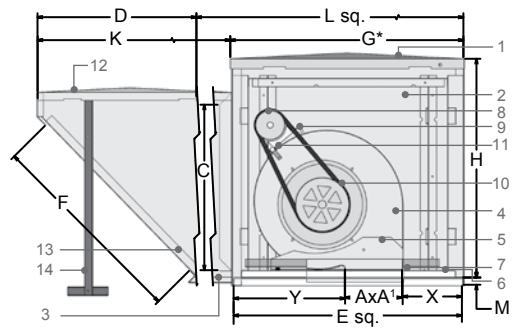
› FS Belt Drive Dimensional Drawings



› Legend

1. Removable Roof Cap with Gasket
2. Galvanized Steel Housing
3. Integral Mounting Base
4. Blower Housing
5. Blower Housing Mounting Plates
6. Steel Angle Cross Braces
7. Anti-vibration Mounts
8. Thermally Protected Motor
9. Safety Disconnect Switch
10. Belt and Pulleys
11. Adjustable Motor Mounting Plate
12. Filter Hood (Optional Extension)
13. Cleanable Filters
14. Hood Support Angles with Feet

› FS Belt Drive Dimensional References

Model	E* Sq.	Ro Sq.	L Sq.	H	Y	Outlet A x A¹		X	Inlet Duct C	Inlet Duct B	D	F	G**	K	M	Qty/Size (WxH) of Filters
FS10B	28 ⅜	20	28 ⅞	27 ⅛	8	11 ½	13	8 ⅞	22 ½	22 ⅞	23 ⅝	27 ⅛	120	19 ⅜	2	(1) 21 ½ x 26 ¼
FS12B	32 ⅜	24	32 ⅞	31 ⅜	8 ⅝	13 ½	15 ½	10 ¼	26 ¾	26 ⅞	27 ¾	33 ⅛	120	23 ⅜	2	(1) 25 ¾ x 32 ¼
FS15B	32 ⅜	24	32 ⅞	31 ⅜	7 ½	15 ⅞	18 ⅝	9	26 ¾	26 ⅞	27 ¾	33 ⅛	120	23 ⅜	2	(1) 25 ¾ x 32 ¼
FS18B	36 ⅜	28	36 ⅞	35 ⅛	6 ⅛	18 ⅞	21 ¾	10 ⅝	30 ½	30 ⅝	31 ⅝	38 ½	120	27 ¼	2 ½	(2) 18 ¾ x 29 ½
FS20B	48 ⅜	40	48 ⅞	52 ⅝	11 ⅞	24 ⅞	24 ¾	12 ⅜	42	42 ⅛	43	54 ⅝	120	38 ¾	3 ½	(2) 26 ⅞ x 41

*All dimensions in inches. *Outside dimension of curb should be 1 ½" less than 'E' dimension. ** With optional extension only.*

› FS Belt Drive Performance Data

Model	HP	RPM	Peak BHP	Fan Capacity - CFM									
				.000"S.P	.125" S.P.	.250" S.P.	.375" S.P.	.500" S.P.	.625" S.P.	.750" S.P.	1.000" S.P.	1.250" S.P.	1.500" S.P.
				CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM
FS10B	1/4	739	0.30	1837	1653	1415	-	-	-	-	-	-	-
	1/3	795	0.38	1977	1806	1593	1332	-	-	-	-	-	-
	1/2	915	0.57	2275	2129	1960	1765	1526	-	-	-	-	
	3/4	1052	0.87	2616	2489	2357	2195	2024	1819	-	-	-	-
	1	1127	1.07	2802	2684	2562	2420	2262	2094	1895	-	-	
	1 1/2	1295	1.63	3220	3117	3013	2905	2776	2639	2500	2163	-	-
FS12B	1/4	527	0.30	2300	2021	1522	-	-	-	-	-	-	
	1/3	567	0.38	2475	2225	1804	-	-	-	-	-	-	
	1/2	653	0.57	2851	2640	2354	1918	-	-	-	-	-	-
	3/4	750	0.87	3274	3093	2883	2583	2186	1631	-	-	-	-
	1	804	1.07	3510	3341	3158	2908	2567	2193	-	-	-	-
	1 1/2	924	1.62	4034	3886	3736	3559	3333	3041	2717	-	-	-
	2	1019	2.18	4449	4314	4181	4038	3863	3645	3377	2789	-	-
	3	1169	3.29	5103	4986	4871	4752	4626	4472	4296	3848	3336	2607
FS15B	1/4	338	0.30	2883	2349	-	-	-	-	-	-	-	-
	1/3	364	0.37	3105	2625	-	-	-	-	-	-	-	-
	1/2	418	0.57	3565	3160	2567	-	-	-	-	-	-	-
	3/4	481	0.87	4103	3754	3355	2668	-	-	-	-	-	-
	1	516	1.07	4401	4078	3725	3198	-	-	-	-	-	-
	1 1/2	593	1.62	5058	4779	4487	4151	3655	2955	-	-	-	-
	2	654	2.17	5578	5324	5065	4791	4451	3966	3324	-	-	-
	3	750	3.28	6397	6174	5953	5723	5479	5192	4791	3735	-	-
	5	891	5.50	7600	7411	7228	7038	6845	6644	6423	5859	5078	-
FS18B	1/2	426	0.57	4068	3607	2999	-	-	-	-	-	-	-
	3/4	489	0.86	4669	4280	3823	3208	-	-	-	-	-	-
	1	525	1.07	5013	4650	4237	3717	3074	-	-	-	-	-
	1 1/2	603	1.62	5758	5440	5107	4730	4248	3695	-	-	-	-
	2	665	2.17	6350	6059	5779	5439	5066	4626	4119	-	-	-
	3	762	3.27	7276	7021	6776	6512	6215	5902	5518	4662	-	-
	5	906	5.50	8651	8434	8226	8021	7802	7553	7302	6716	6063	5270
FS20B	3/4	386	0.86	5995	5426	4492	3306	-	-	-	-	-	-
	1	414	1.07	6430	5933	5115	4077	-	-	-	-	-	-
	1 1/2	476	1.62	7393	6963	6376	5575	4653	3441	-	-	-	-
	2	524	2.16	8139	7746	7272	6634	5849	4980	3871	-	-	-
	3	602	3.28	9350	9006	8672	8167	7594	6914	6185	4349	-	-
	5	715	5.49	11106	10811	10531	10239	9802	9364	8814	7636	6325	-
	7 1/2	819	8.26	12721	12461	12215	11971	11704	11322	10940	10033	9017	7911

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Engineering Specifications

› Model
MU = Muffan Fan
FS = Side Intake

› Unit Size
10	30	4012	5018
20	3010	4015	6020

› Drive Type
D = Direct Drive B = Belt Drive

› Motor Tap
C = 690 RPM RC = 1750 RPM
SC = 1750 RPM VC = 1750 RPM

› Motor Speed
1 = Single Speed 2 = 2S2W 1800/1200
3 = 2S1W 1800/900 4 = 2S1W 1800/1200

› Horse Power
1/4	1/2	1	2	5
1/3	3/4	1 1/2	3	7 1/2

› Enclosure
O = Open Drip Proof X = Special

› Voltage
A = 110V	G = 230V	N = 440V
B = 115V	H = 240V	P = 460V
C = 120V	J = 277V	Q = 480V
D = 200V	K = 380V	R = 575V
E = 208V	L = 400V	S = 600V
F = 220V	M = 415V	

› Phase
1 = Single 3 = Three

› Cycle
5 = 50 Hz 6 = 60 Hz

› Efficiency
S = Standard P = Premium

› Paint / Coating
0 = None
F = Epoxy Powder Coat*
G = Epoxy Powder Coat with UV*
H = Hi-Temp Powder Coat*
J = Non-Stick Powder Coat*
K = Phenolic Powder Coat*
L = Phenolic Powder Coat with UV*
N = Polyester Powder Coat
X = Special
** Not available with choice of color.*

› AMCA Classification
0 = None
C = AL IN/PL
B = ALWL/PLT

› Color
0 = None	00 = Standard Gray
50 = Chrome Green	53 = Will. 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= Choc. Brown
85 = Timeless Bronze	
94 = Charcoal	X = Special

› Damper
0 = None
CBD = Counter Balanced Supply Damper
MD1 = Motor Operated Damper 115V
MD2 = Motor Operated Damper 230V
MD4 = Motor Operated Damper 460V

› Roof Curb
0 = None	K = UCA18	V = UG18
A = UCG8	L = UG12	W= URA12
B = UCG12	M = SA16	Y = URA18
C = UCG18	N = SFG12	1 = URG12
D = UCA8	P = SFG18	2 = URG18
E = UCA12	Q = SG16	4 = UVA18
F = SFA12	R = SRA16	5 = UVG18
G = SFA18	S = SRG16	10 = SFA8
H = SCG16	T = UA12	11 = USCG
J = SCA16	U = UA18	12 = USCA

› 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

› Thermal Overload Protection
0 = None P = Thermal Protection

› Side Discharge Pedestal
0 = None
A = Aluminum
G = Galvanized

› Disconnect Switch
0 = None
1 = Nema 1
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

› MU

Direct Drive Units

Direct drive Roof Supply (Intake) fan shall be Muffan MU, manufactured by PennBarry, Richardson, Texas 75081. Fan housing shall be low profile, galvanized steel, incorporate die formed louvered side panels and a removable roof cap for access to filters and motor/fan assembly. Removable, permanent, washable filters shall be mounted behind all louvered openings. Fans shall have two forward curved centrifugal wheel assemblies sharing a center mounted motor. Fan motor shall be continuous duty, ball bearing design, permanently lubricated, positively cooled and double shafted. Each fan shall be UL and CSA listed.

Belt Drive Units

Belt driven Roof Supply (Intake) fan shall be Muffan MU, manufactured by PennBarry, Richardson, Texas 75081. Fan housing shall be low profile, galvanized steel, incorporate die formed louvered side panels and a removable roof cap for access to filters and motor/fan assembly. Removable, permanent, washable filters shall be mounted behind all louvered openings. Fans shall have a forward curved centrifugal wheel. Fan motor shall be continuous duty, ball bearing design, permanently lubricated, positively cooled and furnished at the specified voltage, phase and enclosure. Pulleys shall be adjustable, cast iron, machined, keyed, securely attached and sized for 150% of the horsepower at its rated maximum speed. Each fan shall bear the AMCA Licensed Ratings Seal for Air Performance and shall be UL and CSA listed.

Continued on next page.

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› FS

Belt Drive Units

Belt driven Roof Filtered Supply (intake) fan shall be FS Muffan, manufactured by PennBarry, Richardson, Texas 75081. Fan housing shall be galvanized steel, incorporate an intake hood (extended version optionally available for NFPA96), and a pitched removable housing cover, gasketed and insulated, including quick release latches. Removable, permanent, washable filter(s) shall be mounted on the intake hood opening. Fan shall have a forward curved centrifugal wheel. Fan motor shall be continuous duty, ball bearing design, permanently lubricated, positively cooled and furnished at the specified voltage, phase and enclosure. Pulleys shall be adjustable, cast iron, machined, keyed, securely attached and sized for 150% of the horsepower at its rated maximum speed.

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

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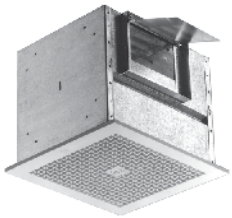
Other PennBarry Products

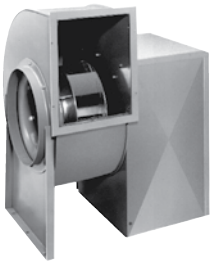
Centrifugal Products

› Domex
Centrifugal
Roof Exhausters

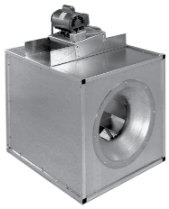
› Fumex Fatrap
Kitchen Hood Centrifugal
Roof Exhausters



› Zephyr
Ceiling and Inline Fans



› Dynamo
Centrifugal Blowers



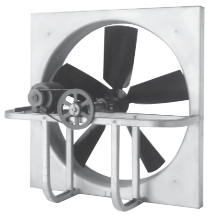
› Centrex Inliner
Centrifugal Inline Fan

› LC Dynafan
Low Contour Centrifugal
Roof Exhausters

› ESI
Efficient Silent
Inline Fan

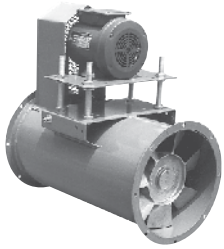
› Fume Exhaust
Curb Mounted
Centrifugal Fans

Axial / Gravity Products



› Breezeway
Propeller Wall Fan

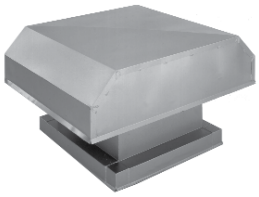
› Hi-Ex
Power Roof Ventilator



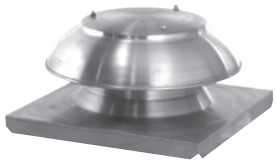
› Tubeaxial
Inline Fans

› Vaneaxial
Inline Fans

› Powered Airette
Axial Roof Ventilators



› Airette
Gravity Intake/Relief Hood



› Domex Axial
Axial Roof Ventilators

› Axcentrix
Bifurcator Fan

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Manufacturer Representative or visit us at www.PennBarry.com.

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