Upblast Power Roof Ventilators JBCMO & JBSMO





## Model JBCMO & JBSMO Belt Drive Upblast Power Roof Ventilators

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### **APPLICATION**

American Coolair upblast power roof ventilators are designed for long life, low maintenance, and all-weather performance. The proven upblast design is the most cost effective roof exhauster built today and offers the best value of all PRV types.

### JBCMO General Ventilation

JBCMO PRVs provide an efficient and economical solution for general roof upblast ventilation applications. They are designed for use in commercial and industrial applications including factories, warehouses, commercial buildings, machine rooms or any areas requiring the movement of air.

With its design featuring the motor located outside the airstream, JBCMO PRVs are ideal for use in applications where it is necessary for the fan assembly to be located above the roof or where roof access to the motor is required.

With an optional Belt & Bearing Cover, JBCMO's may be used where the motor, belts, bearings and drive shaft must be isolated from the airstream.

### JBSMO Heat/Smoke Removal

JBSMO upblast power roof ventilators are designed and built to meet the increasing need for power venting the combustion by-products of a fire.

These units are designed to be installed in the roof systems of shopping centers, wholesale warehouses, hotel atriums and any other place where building codes require the removal of smoke and heat by power roof ventilators.

JBSMO models provide an economical solution for most heat & smoke removal applications. They have been designed to exceed the high temperature capability requirements of UL's "Power Ventilators for Smoke Control Systems" (UL793), shown to operate at 500 °F for 4 hours minimum, 752 °F (400 °C) for 2 hours, and 1,000 °F for 20 minutes.



All Type JBCMO ventilators are listed by Underwriters Laboratory, Inc. to U.S. and Canadian safety standards.

Licensed ratings for both air and sound performance are available for all JBCMO PRVs. These ratings, along with dimensional drawings, are included in this form.



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#### All-Weather Performance

American Coolair upblast power roof ventilators are designed to discharge vertically so that air velocity seals the opening against rain and snow while the unit is in operation. When the fan is switched off, counterbalanced dampers close by gravity to provide a weather-resistant closure. The fiberglass dampers close quietly and serve as a skylight when unit is not in operation. Motor covers are standard for all JBCMO and JBSMO models.

#### Construction

MATERIALS: The fan frame assembly is fabricated of heavy gauge steel and the dampers are constructed of durable fiberglass for years of quiet, maintenancefree operation. The wind shroud and PRV housing are made of galvanized steel; an exterior finish coat of epoxy can be specified. See individual fan types for information on blade material.

Painted parts are coated with a thermosetting epoxy to provide a protective coating rated excellent for hardness, impact resistance, adhesion and chemical resistance. For protective coating options see the Accessories section.

All blade assemblies are dynamically balanced.

Parts requiring painting are processed through the American Coolair multi-stage pretreatment system prior to the application of any coatings to ensure maximum finish adhesion. These parts use a thermosetting epoxy powder paint with an average thickness of 3 mils and baked at 400°F to a smooth, hard, continuous finish.

#### **Drive Mechanism**

Both the JBCMO and JBSMO models are belt driven, designed for quieter operation and lower initial cost. They use standardly available 1750 RPM motors. A belt and bearing cover designed to keep the motor, belts, and bearings isolated from the airstream is standard for JBSMO units, and an optional accessory for JBCMO units. Note: All JBSMO units feature dual belts.

All standard belt drive models are equipped with a variable pitch motor pulley which allows fan speed adjustment where desirable. Caution should be exercised in making a speed adjustment. If pulley is opened to reduce propeller speed, air velocity may be reduced below minimum essential for all-weather usage. A speed increase may overload the motor. Contact your American Coolair representative for information on fan performance and motor load before making any adjustment.

#### Motors

The motors for all JBCMO and JBSMO models is located out of the airstream. Totally enclosed motors are standard. Several alternatives, such as explosionproof motors, energy efficient motors and severe duty motors, are available to fit your specific needs.

Only nationally recognized brand motors with nationwide service facilities are used.

#### Installation, Selection and Maintenance

**INSTALLATION:** Coolair Upblast PRVs are shipped either fully assembled or in two packages for quick assembly and installation on the roof curb. Mounting, installation and maintenance instructions are included. The base section containing curb cap, housing, fan and motor should be securely attached to the roof curb. The wind shroud/damper assembly is then easily attached to the base. Although motor and fan bearings are suitable for all-angle usage, satisfactory operation of dampers requires unit to be mounted to a level horizontal curb.

Before connecting motor to power source, check motor nameplate to be sure of correct phase and voltage. Make sure propeller turns freely without striking fan frame or any foreign object which may interfere with its operation. Note direction arrow on orifice to make sure propeller rotation is correct when power is connected.

**SOUND:** When sound is a critical problem, ventilator selection should be made from accurate sound data. The only completely accurate sound ratings are octave band sound power levels. Your American Coolair representative can furnish these for each PRV model on request. With this data, the acoustical engineer can accurately predict on-the-job sound levels.

Published sound ratings are in Sones. Your American Coolair representative can also provide sound ratings in dBA. Both Sones and dBA are sound ratings which have been calculated from the octave band sound power ratings. They may be used as a guide in fan selection where sound is <u>NOT</u> a critical factor. Both Sones and dBA ratings reflect inlet sound levels.

**MAINTENANCE:** American Coolair's power roof ventilators are factory lubricated for extended service. JBCMO and JBSMO units use pillow-block ball bearings and should be lubricated annually or more frequently, depending upon conditions and operating cycle. External re-lubrication fan bearing fittings are standard on all JBCMO and JBSMO fans. Refer to maintenance instructions shipped with fan. Re-check belt tension as part of maintenance routine to ensure maximum efficiency and belt life.

#### Additional Information Available

American Coolair can provide installation instructions and maintenance information at your request, as well as information on any air movement need you may have. This information may also be found at **www.AmericanCoolair.com**. For performance requirements not listed or alternate construction requirements, contact your American Coolair representative.

American Coolair has over 90 years of experience in air moving systems and offers you the very best equipment and knowledgeable personnel.

# **JBCMO** Features and Dimensions

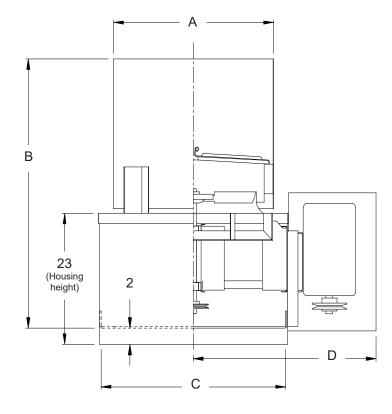
• Belt drive — 5,800 to 64,400 CFM; static pressure up to 5/8"



 Adjustable cast aluminum airfoil blade assembly



- All-weather performance
- Efficient and reliable
- Welded steel fan frame with protective epoxy coating
- Galvanized housing, curb cap, and wind shroud
- Motor located out of the airstream allows for easy access from roof.
- Fiberglass damper doors
- Motor cover
- Heavy duty pillow block bearings with external re-lubrication fittings
- Variable pitch pulleys



	Dimensions in Inches								
Fan Size	Α	В	С	D					
24	32	49 7/8	37 1/2	36 3/4					
30	38	54 3/4	43 1/2	39 3/4					
36	44	54 3/4	49 1/2	42 3/4					
42	50	59 3/4	55 1/2	45 3/4					
48	56	61 1/4	61 1/2	48 3/4					
54	62	63 7/8	67 1/2	51 3/4					
60	68	67 3/4	76 1/2	56 1/4					

Dimension A is the diameter of the circular wind shroud.

Dimension B is the overall height above the curb.

Dimension C is the square I.D. of the curb cap.

Dimension D is the distance to outside edge of motor cover.

### **Performance Ratings**



American Coolair Corporation certifies that the Type JBCMO PRVs shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

# **Typical Specifications**

Upblast power roof ventilators shall be American Coolair Type JBCMO as manufactured by American Coolair Corporation, Jacksonville, Florida; specific models shall be as shown in the fan schedule. Structural angle supports shall be of welded steel construction, wind shroud, housing and curb cap shall be of galvanized steel. Dampers shall be of fiberglass for durability and quiet, maintenance-free operation. Fan blades shall be of high strength cast aluminum airfoil design securely attached to a heavy cast aluminum hub. Blade pitch shall be adjustable. Ball bearings shall be of the heavy duty pillow block type. Motor pulleys shall be variable pitch. PRVs shall be licensed to bear the AMCA Certified Ratings Seal for air performance and sound. (Specify for each PRV model in schedule the required CFM and static pressure; motor enclosure, phase and voltage; and accessories such as safety disconnect switch, magnetic latches, prefabricated curb and special protective coating, etc.)

Item	Cu	bic Feet P	er Minute (	CFM) at St	atic Pressu	Ire <sup>1</sup>		Fan	Motor	Fan	Sones <sup>2</sup>	Мах
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	Fan Model	Size	HP	RPM	@ 0"	BHP <sup>3</sup>
1	8,268	7,179	5,918				JBCMO24K		3/4	1130	21	0.75
2	9,080	8,103	6,986	5,809			JBCMO24L		1	1241	24	1.00
3	10,397	9,557	8,626	7,610	6,581		JBCMO24M	24	1 1/2	1421	29	1.50
4	11,385	10,624	9,796	8,895	7,955	7,007	JBCMO24N	24	2	1556	34	2.00
5	13,105	12,450	11,754	11,009	10,217	9,400	JBCMO24P		3	1791	43	3.00
6	15,570	15,024	14,455	13,858	13,232	12,577	JBCMO24Q		5	2128	59	5.00
7	11,079	9,198					JBCMO30K		3/4	897	19.0	0.75
8	12,166	10,477	8,556				JBCMO30L		1	985	22	1.00
9	13,944	12,494	10,890	9,150			JBCMO30M		1 1/2	1129	27	1.51
10	15,315	14,006	12,584	11,041	9,438	7,699	JBCMO30N	30	2	1240	31	2.00
11	17,538	16,406	15,202	13,915	12,553	11,151	JBCMO30P		3	1420	40	3.00
12	20,799	19,852	18,865	17,831	16,747	15,614	JBCMO30Q		5	1684	52	5.00
13	15,706	12,872	9,364				JBCMO36L		1	760	21	1.00
14	17,958	15,550	12,667	9,323			JBCMO36M		1 1/2	869	27	1.50
15	19,777	17,622	15,120	12,314			JBCMO36N		2	957	31	2.01
16	22,629	20,775	18,713	16,387	13,899		JBCMO36P	36	3	1095	40	3.01
17	26,803	25,260	23,604	21,803	19,835	17,781	JBCMO36Q		5	1297	54	5.00
18	30,668	29,330	27,920	26,426	24,826	23,112	JBCMO36R		7 1/2	1484	71	7.49
19	20,737	17,431					JBCMO42M		1 1/2	769	26	1.50
20	22,787	19,806	16,507				JBCMO42N		2	845	30	1.98
21	26,077	23,497	20,730	17,728	14,221		JBCMO42P	42	3	967	37	3.00
22	30,904	28,745	26,491	24,097	21,563	18,844	JBCMO42Q		5	1146	50	4.99
23	35,434	33,560	31,628	29,620	27,509	25,304	JBCMO42R		7 1/2	1314	64	7.50
24	39,048	37,352	35,613	33,825	31,970	30,033	JBCMO42S		10	1448	76	9.99
25	26,520	22,947	18,974				JBCMO48N		2	634	24	2.00
26	30,326	27,267	23,862	20,271			JBCMO48P		3	725	30	3.00
27	35,973	33,447	30,668	27,763	24,748	21,431	JBCMO48Q	48	5	860	39	5.00
28	41,160	38,977	36,624	34,125	31,580	28,960	JBCMO48R	10	7 1/2	984	49	7.49
29	45,343	43,374	41,281	39,060	36,765	34,450	JBCMO48S		10	1084	59	10.00
30	37,092	33,071	28,042	22,264			JBCM054P		3	619	33	3.00
31	43,983	40,699	36,850	32,376	27,532	22,026	JBCMO54Q	54	5	734	45	5.00
32	50,335	47,515	44,348	40,749	36,760	32,559	JBCM054R		7 1/2	840	58	7.50
33	55,368	52,829	50,044	46,947	43,519	39,837	JBCM054S		10	924	69	9.99
34	43,102	37,100	29,758				JBCMO60P	60	3	534	26	2.99
35	51,092	46,205	40,398	34,059	26,127		JBCMO60Q		5	633	35	4.99
36	58,518	54,334	49,581	44,188	38,641	32,103	JBCMO60R		7 1/2	725	44	7.49
37	64,410	60,648	56,482	51,814	46,802	41,726	JBCMO60S		10	798	52	9.99

1 - Performance certified is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories)

- The sound ratings shown are loudness values in hemispherical sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA Standard 301. Values

 shown are for installation Type A: free inlet hemispherical sone levels. The sound ratings shown are at 0° static pressure.
Maximum brake horsepower (BHP) within the catalog performance range. Power rating (BHP) does not include transmission losses. Bearing losses are included. BHP at most static pressures listed is less than that shown, in some cases substantially less. For specific BHP values at individual static pressure points contact your American Coolair representative
To convert air performance (CFM and SP) and power (BHP) to metric units, multiply CFM x.000472 to obtain cubic meters per second (m<sup>3</sup>/s). Multiply SP x 248.36 to obtain pascals (Pa). Multiply BHP x .7457 to obtain kilowatts (kW)

# **JBSMO** Features and Dimensions

• Belt drive — 5,300 to 49,500 CFM; static pressure up to 5/8"



- Durable and efficient formed steel blade assembly
  - A A B C C C

- Designed for heat and smoke ventilation
- Emergency operation up to 1000 °F
- All critical components exposed to the air stream are ferrous construction (except damper doors)
- All-weather performance
- Motor, belts, and bearings isolated from the airstream
- Automatic heat/smoke damper device
- Heavy duty pillow block bearings with external re-lubrication fittings
- Motor cover
- Dual belt drive
- Variable pitch pulleys

	Dimensions in Inches								
Fan Size	Α	В	С	D					
24	32	49 7/8	37 1/2	36 3/4					
30	38	54 3/4	43 1/2	39 3/4					
36	44	54 3/4	49 1/2	42 3/4					
42	50	59 3/4	55 1/2	45 3/4					
48	56	61 1/4	61 1/2	48 3/4					
54	62	63 7/8	67 1/2	51 3/4					
60	68	67 3/4	76 1/2	56 1/4					

Dimension A is the diameter of the circular wind shroud.

Dimension B is the overall height above the curb.

Dimension C is the square I.D. of the curb cap.

Dimension D is the distance to outside edge of motor cover.

### **Performance Ratings**



American Coolair Corporation certifies that the Type JBSMO PRVs shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

# **Typical Specifications**

Heat and smoke removal power roof ventilators shall be American Coolair Type JBSMO as manufactured by American Coolair Corporation, Jacksonville, Florida; specific models shall be as shown in the fan schedule. PRVs shall be designed and tested to operate at 500 °F for 4 hours, 752 °F (400 °C) for 2 hours, and 1,000 °F for 20 minutes. PRV shall be UL Listed as a "Power Ventilator for Smoke Control Systems." Motor shall be out of the airstream, with the belts and bearings enclosed in tubes to protect them from the high temperature airstream. Positive ventilation of the motor compartment and the belt and bearing tubes shall be provided. Optional features such as external lubrication lines, safety disconnect switch, roof curbs, etc. shall be as listed in the fan schedule or specification.

Item	Cu	Cubic Feet Per Minute (CFM) at Static Pressure <sup>1</sup>						Fan	Fan Motor	Fan	Sones <sup>2</sup>	Max
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	Fan Model	Size	HP	RPM	@ 0"	BHP <sup>3</sup>
1	6,123	5,689	5,265				JBSMO24K		3/4	1103	28	0.75
2	6,650	6,249	5,860	5,457			JBSMO24L		1	1198	31	1.00
3	7,600	7,247	6,904	6,563	6,205		JBSMO24M	24	1 1/2	1369	35	1.50
4	8,349	8,027	7,713	7,404	7,090	6,758	JBSMO24N	24	2	1504	38	2.00
5	9,726	9,449	9,176	8,908	8,643	8,376	JBSMO24P		3	1752	49	3.00
6	11,724	11,494	11,266	11,041	10,818	10,598	JBSM024Q		5	2112	69	5.00
7	9,707	8,986	8,173				JBSMO30L		1	927	29	1.00
8	11,016	10,390	9,697	8,963			JBSMO30M		1 1/2	1052	34	1.50
9	12,032	11,463	10,844	10,179	9,505		JBSMO30N	30	2	1149	37	2.00
10	13,823	13,333	12,811	12,254	11,671	11,084	JBSMO30P		3	1320	44	3.00
11	16,765	16,365	15,948	15,512	15,056	14,582	JBSMO30Q		5	1601	57	5.00
12	13,767	12,646	11,482				JBSMO36M		1 1/2	736	26	1.50
13	14,983	13,955	12,898	11,781			JBSMO36N	36	2	801	31	2.00
14	17,134	16,238	15,324	14,384	13,393		JBSMO36P	30	3	916	42	3.00
15	20,445	19,697	18,937	18,167	17,381	16,569	JBSMO36Q		5	1093	58	5.00
16	18,891	17,361	15,796				JBSMO42N		2	693	30	2.00
17	21,208	19,848	18,468	17,039	15,456		JBSMO42P	42	3	778	37	3.00
18	25,269	24,130	22,981	21,817	20,620	19,359	JBSMO42Q	42	5	927	52	5.00
19	29,303	28,322	27,334	26,340	25,335	24,309	JBSMO42R		7 1/2	1075	69	7.49
20	23,748	22,226	20,616	18,785			JBSMO48P		3	617	32	2.99
21	28,020	26,739	25,410	24,015	22,466	20,600	JBSMO48Q	48	5	728	43	5.00
22	32,408	31,305	30,173	29,007	27,792	26,481	JBSMO48R	40	7 1/2	842	56	7.49
23	36,026	35,037	34,026	32,992	31,932	30,830	JBSMO48S		10	936	70	9.99
24	28,779	26,876	24,577				JBSM054P		3	568	36	3.00
25	33,440	31,841	30,000	27,924	25,795		JBSM054Q	54	5	660	47	4.99
26	38,405	37,035	35,519	33,818	31,991	30,149	JBSM054R		7 1/2	758	60	7.50
27	42,712	41,490	40,170	38,722	37,142	35,491	JBSM054S		10	843	74	9.99
28	33,296	30,388	27,179				JBSMO60P		3	514	32	2.99
29	38,931	36,469	33,862	30,968	27,593		JBSMO60Q	60	5	601	42	4.99
30	44,632	42,497	40,275	37,928	35,347	32,436	JBSMO60R	60	7 1/2	689	53	7.49
31	49,490	47,572	45,592	43,537	41,363	38,991	JBSMO60S		10	764	64	9.99

1 — Performance certified is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories)

2 — The sound ratings shown are loudness values in hemispherical sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free inlet hemispherical sone levels. The sound ratings shown are at 0" static pressure.

3 — Maximum brake horsepower (BHP) within the catalog performance range. Power rating (BHP) does not include transmission losses. Bearing losses are included. BHP at most static

pressures listed is less than that shown, in some cases substantially less. For specific BHP values at individual static pressure points contact your American Coolair representative — To convert air performance (CFM and SP) and power (BHP) to metric units, multiply CFM x .000472 to obtain cubic meters per second (m<sup>3</sup>/s). Multiply SP x 248.36 to obtain pascals (Pa). Multiply BHP x .7457 to obtain kilowatts (kW)

### ACCESSORIES

**SAFETY DISCONNECT SWITCH:** Prevents accidental starting of PRV and is protected in a NEMA 3R enclosure. Pre-wiring of switch to motor may also be specified.

**PRE-FABRICATED ROOF CURB:** Surface mount, 8-inch standard height curbs. Curbs are welded galvanized steel, insulated, with wood nailer. Construction to accommodate single or double pitch roof slope is also available.

**MAGNETIC LATCHES:** The addition of magnetic latches can minimize "damper flap" and accidental venting when unit is not in use.

**GALVANIZED DAMPER DOORS:** Damper doors made of heavy gauge galvanized steel are available in place of the standard fiberglass doors.

**AUTOMATIC HEAT AND SMOKE VENTING** (JBCMO): Spring operated arms open dampers when activated by excessive heat melting 165°F., U.L.-Listed fusible link. PRV thus becomes a gravity heat and smoke vent. (Standard on JBSMO units.)

**BELT & BEARING COVER (JBCMO):** The cover isolates the belts and bearings from the airstream (Standard on JBSMO units.)

**PROTECTIVE COATINGS:** The fan assembly and curb cap are heavy gauge steel using all welded construction throughout. The standard finish is epoxy, however, additional corrosion protection is available by specifying hot dip galvanizing.

The wind shroud on all units is fabricated of galvanized steel. A finish coat of epoxy can be specified on all galvanized components, if desirable.

For applications that require more specialized surface protection, American Coolair offers alternatives: 6 mil epoxy or hot dip galvanizing, and others. For more information about special protective coatings, contact your American Coolair representative.

**OUTLET GUARDS:** Outlet guards are constructed of 1" x 1", galvanized wire mesh. The outlet guard mounts on the top edge of wind shroud. These guards prevent entry of foreign objects that might damage units.

REPRESENTED BY:

#### Limited Warranty

In the sale of its products, American Coolair Corporation agrees to correct, by repairs or replacement, any defects in workmanship or material that may develop under proper and normal use during the period of one year from the date of shipment from the factory. Any product or part proving, upon American Coolair's examination, to be defective during limited warranty period will be repaired or replaced, at American Coolair's option, f.o.b. factory, without charge.

Deterioration or wear caused by chemicals, abrasive action or excessive heat shall not constitute defects.

Motors are guaranteed only to the extent of the manufacturer's warranty.

American Coolair's limited warranty does not apply to any of its products or parts that have been subject to accidental damage, misuse by the user, unauthorized modifications, improper installation or electrical wiring, or lack of proper lubrication or other service requirements as established by American Coolair.

Repairs or replacements provided under the above terms shall constitute fulfillment of all American Coolair's obligations with respect to limited warranty.

THE LIMITED WARRANTY STATED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING WITHOUT LIMITATION THAT OF MERCHANTABILITY AND FITNESS.

NO LIABILITY FOR REINSTALLATION COST OR FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY NATURE IS ASSUMED OR SHALL BE IMPOSED UPON AMERICAN COOLAIR.

WARNING



**DO NOT** INSTALL FAN WITH MOVING PARTS WITHIN 8 FEET OF FLOOR OR GRADE LEVEL WITHOUT A GUARD THAT COMPLIES WITH OSHA REGULATIONS. **DO NOT** USE UNLESS ELECTRICAL WIRING COMPLIES WITH ALL APPLICABLE CODES. **DO NOT** WIRE WITHOUT PROVIDING FOR A POWER SOURCE DISCONNECT AT THE FAN ITSELF. **DO NOT** SERVICE EXCEPT BY A QUALIFIED MAINTENANCE TECHNICIAN AND ONLY AFTER DISCONNECTING THE POWER SOURCE. FAILURE TO OBSERVE THESE PRECAUTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

CAUTION



AMERICAN COOLAIR CORPORATION P.O. BOX 2300 ~ Jacksonville, Florida 32203 Phone: (904) 389-3646 Fax: (904) 387-3449 or (904) 381-7560 E-mail: info@coolair.com Web: AmericanCoolair.com