

CARNES®

Your Single Source For All Your HVAC Needs



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VENTILATION

3rd Edition

Product Code #900-0115

March 2017

THE CARNES EQUATION

- **TOTAL PACKAGE:** With a wide range of products, Carnes prides itself on being “Your Single Source For All Your HVAC Needs”. Why go to three or four manufacturers when Carnes has it all?
- **CUSTOMER SERVICE:** With customer service second to none. Our Sales/Customer Service Department has years of experience waiting to serve YOU and YOUR needs.
- **QUALITY:** Our Union factory prides itself on providing high quality products. In addition, Carnes has one of the lowest warranty rates in the industry.
- **ON-TIME DELIVERY:** With one of the highest on-time shipping rates, Carnes is your reliable source of all your needs.
- **QUICK LEAD TIMES:** Carnes understands that in the HVAC industry, time is money. With that said, Carnes is a leader in the industry with some of the fastest standard lead times.
- **FAST SHIP OPTIONS:** Need your product in a hurry? No problem. Carnes offers a variety of fast ship options ranging from 48 hours to 10 days.
- **CUSTOMIZED PRODUCTS:** Don't see what you are exactly looking for? We can help. In response to our customer's needs, Carnes ships roughly 25,000 units annually that are completely customized.

The Carnes Company has provided solutions to problems in the HVAC industry since 1939.

Dear Valued Customer,

Thank you for your interest in products manufactured by or for the Carnes Company and for reviewing this Ventilator Products catalog! This year, we are celebrating our 78 year anniversary of providing solutions and innovative building products to the HVAC industry. The industry has changed since we started in 1939 and we continue to improve our manufacturing processes allowing us to supply valued products to our customers. Many of our products continue to be manufactured in the USA, by experienced workers, allowing us to provide high quality products and on-time delivery. Our products are sold through our representative and distributor networks in the USA as well as all over the world.

More importantly, our ability to control manufacturing, allows us to provide that added personal touch to your orders as well as through our customer service department. We lead our industry in providing prompt service before and after the sale, which often exceeds customer expectations.

We want to thank you for all of the support you have given us in the past and ask you for your continued support.

Thank you for allowing us to reach these major milestone as we look forward to another 78 years.

With special thanks and wishes for continued success,

A handwritten signature in black ink that reads "Greg Cichon". The signature is written in a cursive style with a large, stylized "G" and "C".

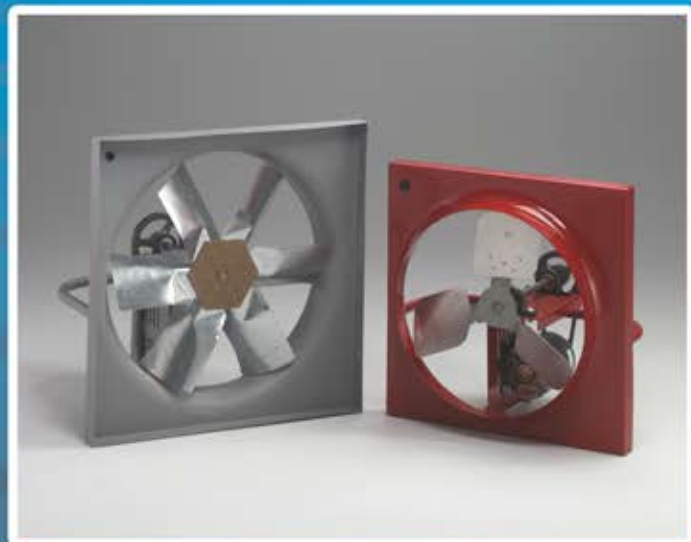
Greg Cichon
General Manager

CARNES®

Your Single Source for All Your HVAC Needs

Vents, Fans & Air Movement Devices

- All units factory run tested and fan rpm is preset
- AMCA certified and UL listed on most models
- Nationally recognized and trusted component manufacturers (bearings, belts, sheaves, motors)
- Wide range of finishes for both protection and appearance
- Wide variety of accessories to provide a complete package (roof curbs, dampers, guards, curb adapters, etc.)
- Wide range of powered and non-powered products to fit a variety of applications
- Highest quality ... less than 1/2% warranty cost ... *one of the lowest in the industry!*



CARNES®

Your Single Source for All Your HVAC Needs



- *Shopping Malls*
- *Restaurants*
- *Schools*
- *Hotels*
- *Hospitals*



CARNES®

*Our website, www.carnes.com,
and CD Selection Software
provide you with the tools to make
the right decision.*

Carnes Fan-C-Lect

Fan Options

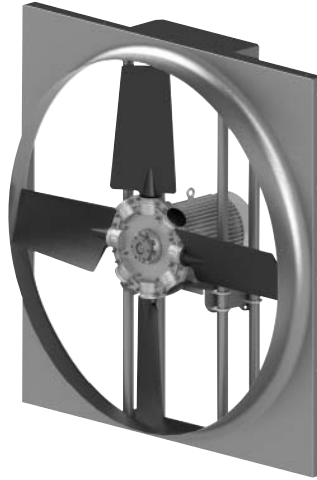
Fan Type Search Volume CFM Pressure SP Find Fans Change Cond

Max Bhp Max RPM Max Sones [70 Deg F @ 0 ft]

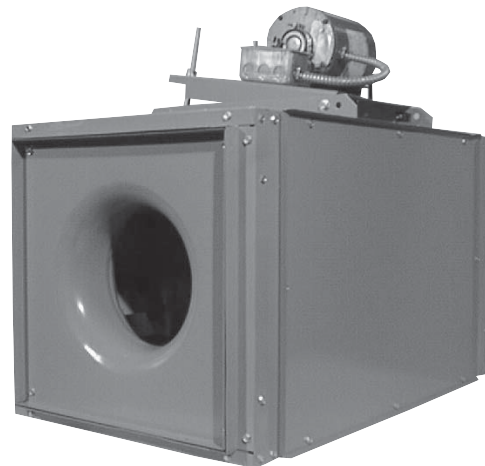
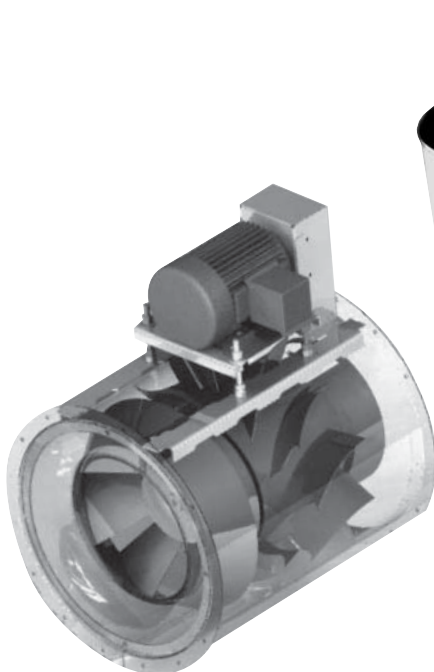
Model	Motor	CFM	SP	RPM	Bhp	Mhp	Range	Sones	TS [mpm]	Price Ratio

Size Tag

RPM Size @ RPM Curve Cancel Save

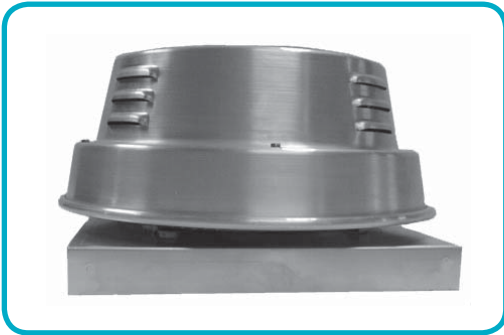


**Your Total Supplier In
AIR MOVEMENT PRODUCTS
AND ACCESSORIES
to complete every requirement!**



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LOW PROFILE ROOF MOUNTED DIRECT DRIVE VELK – Size 06

Carnes Low Profile Direct Drive Roof Exhauster Model VELK is available with 3 different 3-speed motors with capacities from 200 - 500 CFM. The unit features an attractive one piece cover, and rugged aluminum construction to ensure durability and dependability of operation.

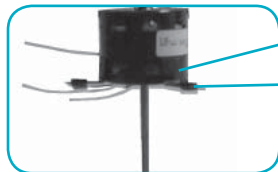
▼ TYPICAL SPECIFICATIONS

VELK Direct Drive Low Profile Centrifugal Power Roof Ventilator Roof Exhaust Fans shall be of the centrifugal direct drive low profile type. The wheel and inlet venturi shall be of spark resistant construction. For maximum performance and quiet, efficient operation, the dynamically balanced wheel will have backward inclined median airfoil blades. The motor will be isolated from the exhaust airstream. Maximum exhaust temperature for continuous operation is 150°F. The motor will consist of 3 speeds and be permanently lubricated with sealed ball bearings. The motor shall be factory wired to a disconnect plug. A conduit chase will be provided for running electrical wire through the curb cap into the motor compartment. Field wiring of motor, disconnect, and conduit will be in accordance with electrical specifications and local codes. Heavy gauge birdscreen shall be furnished. Motors will be factory mounted and the units will be factory run tested prior to shipment. Low Profile Direct Drive Centrifugal Power Roof Ventilators shall be Carnes Company Model VELK.

CONSTRUCTION FEATURES



Removable One Piece Motor Cover



3 Speed Motor
Integral Mounting Brackets & Vibration Isolation



Fan Plate



Backward Inclined Wheel



Structural Support Brackets



Pre-punched Curb Cap

MOTOR COVER

- Heavy gauge spun aluminum.
- Louvers provide positive ventilation.

MOTOR/ELECTRICAL

- 3 speed motor standard.
- Plug type disconnect.
- Sealed conduit chase complies with NEC, allows wiring to pass from motor compartment through curb cap.
- Junction box for incoming power connection.

BIRDSCREEN

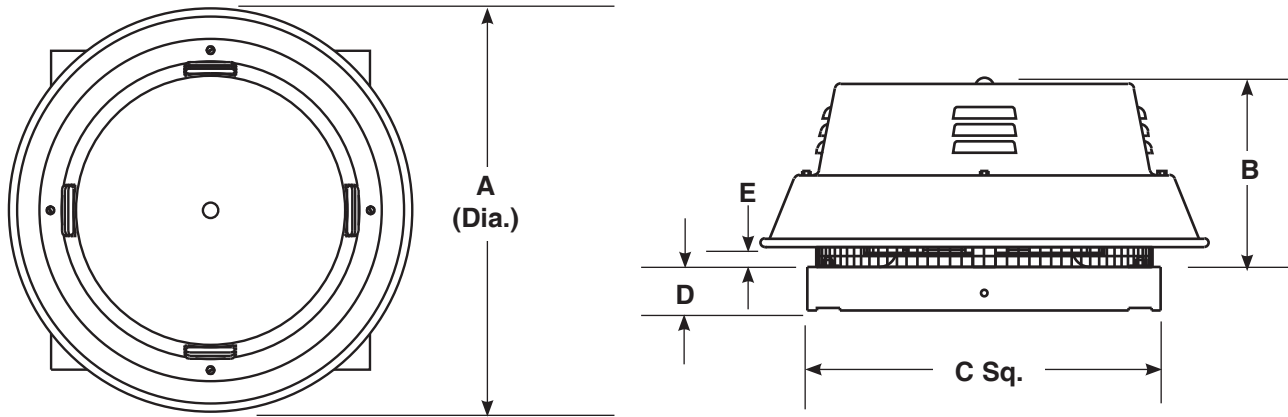
- 1/2" x 1/2" heavy gauge galvanized construction.

WHEEL

- Backward inclined type.
- Integral cooling fins to draw air over the motor.

CURB CAP

- One piece construction with fastened, overlapping corners to ensure strength.
- Pre-punched mounting holes for ease of installation.
- Support structure attached with self-sealing fasteners.



Standard Material Thickness (Inches)					
Unit Size	Housing (Alum.)	Curb Cap (Alum.)	Std. Wheel Blades (Alum.)	Fan Plate (Alum.)	Support Brackets (Alum.)
06	.050	.050	Alum.	.080	.125

Standard Dimensions (Inches)									
Unit Size	Unit Diameter A	Unit Length B	Inside Curb Cap C	E	Curb Cap Width D	Curb O. D. Sq.	Damper Size Sq.	Roof Opening	Max. Unit Weight w/Motor
06	19-1/2	8	15-1/2	3/4	1-7/8	14	10	11	16

MODEL VELK — PERFORMANCE DATA

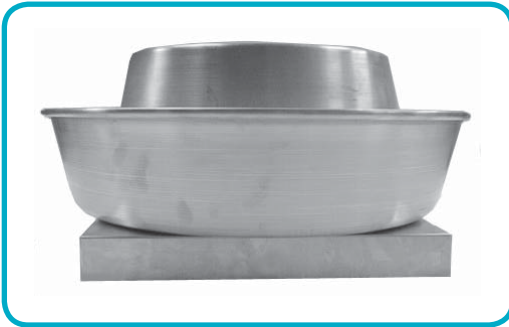
Size	Motor HP	Motor RPM	STATIC PRESSURE, INCHES W. G.									
			0.0	.1	.125	.2	.25	.3	.375	.4	.5	.625
			CFM Sones	CFM Sone	CFM Sones	CFM Sones	CFM Sones	CFM Sones	CFM Sones	CFM Sones	CFM Sones	CFM Sones
06 A1 (High)	1/20	1550	432	388	380	351	331	304	256	240	170	51
			8.7	8.5	8.4	8.2	8.1	8.1	8.0	8.0	8.0	8.0
06 A1 (Med)	1/20	1450	407	364	354	320	293	264	217	201	118	
			7.9	7.5	7.4	7.2	7.0	7.0	6.8	6.8	7.0	
06 A1 (Low)	1/20	1175	329	276	264	212	173	133	24			
			7.0	6.3	6.1	5.7	5.7	5.6	5.6			
06 B1 (High)	1/40	1325	397	349	336	297	264	224	165	135		
			7.2	6.8	6.6	6.3	6.2	6.1	6.0	6.0		
06 B1 (Med)	1/40	1200	362	304	291	235	194	153	32			
			6.4	5.9	5.8	5.5	5.4	5.3	5.4			
06 B1 (Low)	1/40	1000	299	229	209	148	74					
			5.7	4.8	4.5	4.2	4.0					
06 G1 (High)	1/85	900	259	186	159							
			4.1	3.7	3.7							
06 G1 (Med)	1/85	755	217	50								
			3.2	2.7								
06 G1 (Low)	1/85	575	159	3								
			1.5	1.2								

Performance certified is for installation type A: Free inlet, Free outlet.

Performance ratings do not include effects of accessories.

Speed (RPM) shown is nominal. Performance is based on actual speed of test.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculation per AMCA Standard 301. Values shown are for installation "Type A" free inlet hemispherical sone levels.



LOW PROFILE UPBLAST & WALL DIRECT DRIVE VULK – Size 06

Carnes Low Profile Upblast and Wall Direct Drive Exhauster Model VULK is available with 3 different 3-speed motors with capacities from 200 - 425 CFM. The unit features an attractive spun shroud, spun motor cover, and rugged aluminum construction to ensure durability and dependability of operation.

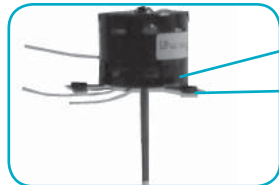
▼ TYPICAL SPECIFICATIONS

VULK Direct Drive Low Profile Upblast Roof and Wall Centrifugal Ventilators shall be of the centrifugal direct drive low profile type. The wheel and inlet venturi shall be of spark resistant construction. For maximum performance and quiet, efficient operation, the dynamically balanced wheel will have backward inclined median airfoil blades. The motor will be isolated from the exhaust airstream. Maximum exhaust temperature for continuous operation is 150°F. The motor will consist of 3 speeds and be permanently lubricated with sealed ball bearings. The motor shall be factory wired to a disconnect plug. A conduit chase will be provided for running electrical wire through the curb cap into the motor compartment. Field wiring of motor, disconnect, and conduit will be in accordance with electrical specifications and local codes. Heavy gauge birdscreen shall be furnished. Motors will be factory mounted and the units will be factory run tested prior to shipment. The unit shall be suitable for wall or roof use. Low Profile Upblast and Wall Direct Drive Centrifugal Ventilators will be Carnes Company Model VULK.

CONSTRUCTION FEATURES



Removable One Piece Motor Cover



3 Speed Motor
Integral Mounting Brackets & Vibration Isolation



Fan Plate



Backward Inclined Wheel



Structural Support Brackets



Upblast Shroud



Pre-punched Curb Cap

MOTOR COVER

- Heavy gauge spun aluminum.
- Vent tube provides positive ventilation.

UPBLAST SHROUD

- Heavy gauge spun aluminum.
- Beaded for strength.

MOTOR/ELECTRICAL

- 3 speed motor standard.
- Plug type disconnect.
- Sealed conduit chase complies with NEC, allows wiring to pass from motor compartment through curb cap.
- Junction box for incoming power connection.

BIRDSCREEN

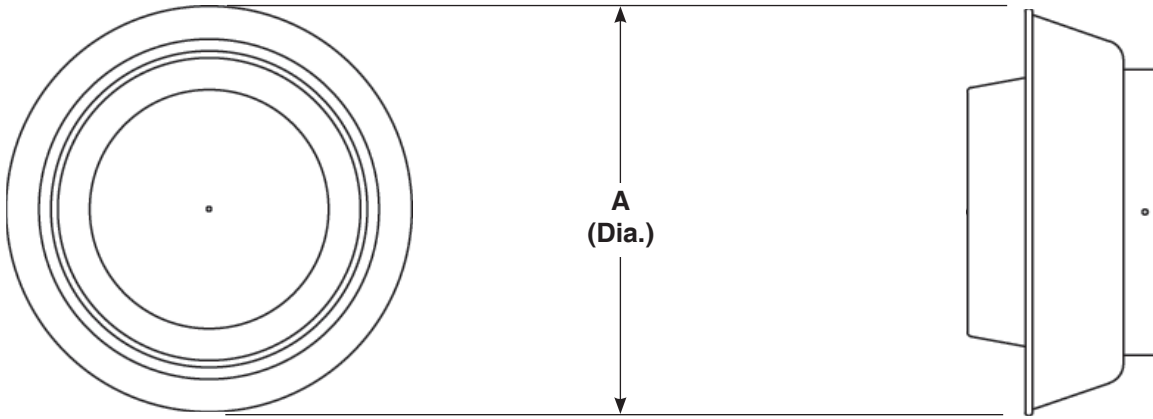
- 1/2" x 1/2" heavy gauge galvanized construction.

WHEEL

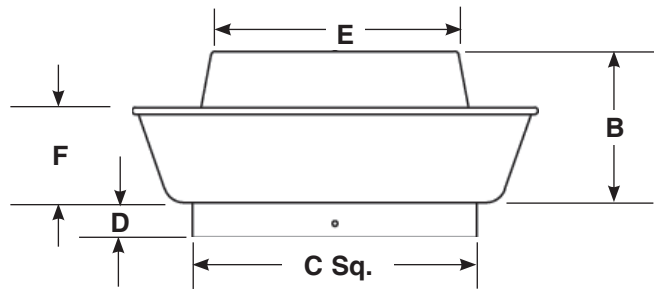
- Backward inclined type.
- Integral cooling fins to draw air over the motor.

CURB CAP

- One piece construction with fastened, overlapping corners to ensure strength.
- Pre-punched mounting holes for ease of installation.
- Support structure attached with self-sealing fasteners.



Standard Material Thickness (Inches)					
Unit Size	Housing (Alum.)	Curb Cap (Alum.)	Std. Wheel Blades (Alum.)	Fan Plate (Alum.)	Support Brackets (Alum.)
06	.050	.050	Alum.	.080	.125



Standard Dimensions (Inches)										
Unit Size	Unit Diameter A	Unit Length B	Inside Curb Cap C	Motor Cover E	Curb Cap Width D	Curb O. D. Sq.	Damper Size Sq.	Roof Opening	Max. Unit Weight w/Motor	Shroud Height F
06	22-1/4	8	15-1/2	13-1/2	1-7/8	14	10	11	16	5

MODEL VULK — PERFORMANCE DATA

Size	Motor HP	Motor RPM	STATIC PRESSURE, INCHES W. G.										
			0.0	.1	.125	.2	.25	.3	.375	.4	.5	.625	
			CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM	
			Sones	Sone	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones
06 A1 (High)	1/20	1550	423	396	389	364	343	328	288	274	219	107	
			8.8	8.7	8.6	8.5	8.4	8.3	8.1	8.0	7.7	6.8	
06 A1 (Med)	1/20	1450	398	368	360	334	313	286	232	214	127		
			8.1	7.8	7.8	7.6	7.4	7.2	6.9	6.8	6.6		
06 A1 (Low)	1/20	1175	323	281	272	228	192	156					
			7.2	6.7	6.5	6.1	6.1	6.0					
06 B1 (High)	1/40	1325	345	313	303	270	239	209	163	148			
			7.1	6.6	6.5	6.2	6.0	5.7	5.5	5.5			
06 B1 (Med)	1/40	1200	313	275	260	207	171	135	42				
			5.8	5.0	4.9	4.6	4.6	4.6	4.9				
06 B1 (Low)	1/40	1000	262	212	190	123	77						
			4.9	4.2	4.0	4.2	4.4						
06 G1 (High)	1/85	900	237	172	149								
			4.1	3.8	3.7								
06 G1 (Med)	1/85	755	203	122									
			3.3	2.6									
06 G1 (Low)	1/85	575	137	132									
			1.3	1.0									

Performance ratings do not include effects of accessories.

Performance certified is for installation type A: Free inlet, Free outlet.

Speed (RPM) shown is nominal. Performance is based on actual speed of test.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculation per AMCA Standard 301. Values shown are for installation "Type A" free inlet hemispherical sone levels.

THREE SPEED MOTOR DESCRIPTION

Carnes models **VELK** and **VULK** are equipped with 3 speed ODP motors as standard. These motors each feature three very distinct speeds and horsepowers, as shown in the performance charts on C-2 of this catalog. These motors can be wired direct or dedicated to a particular speed. For example, the motor can be “hard” wired to high speed and the fan will always run on the high speed. These motors can also be wired to a 3 speed switch, allowing speed changes between high-medium-low.

TYPICAL WIRING DIAGRAMS — (ALL MOTORS)

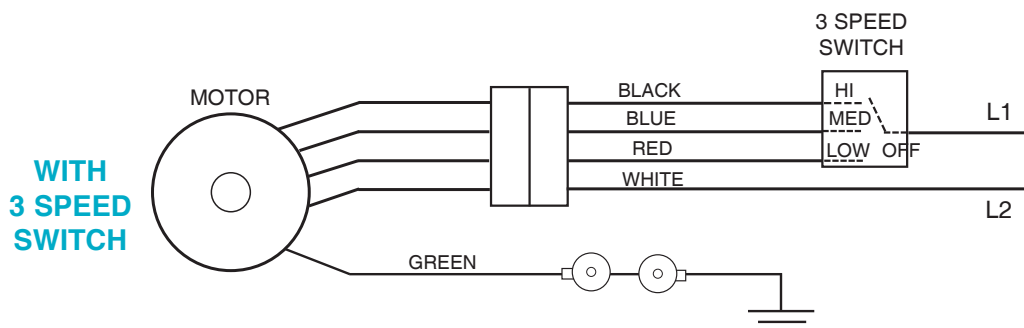
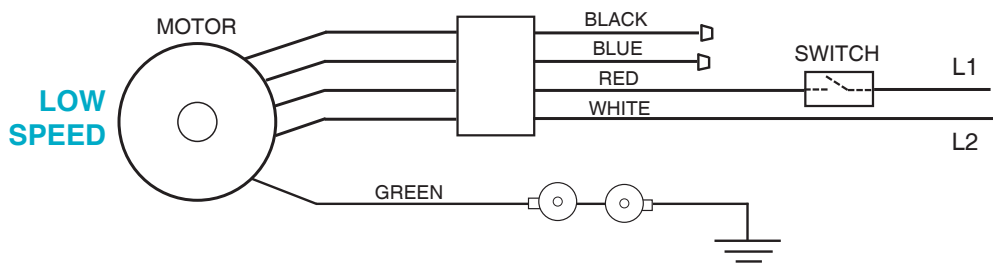
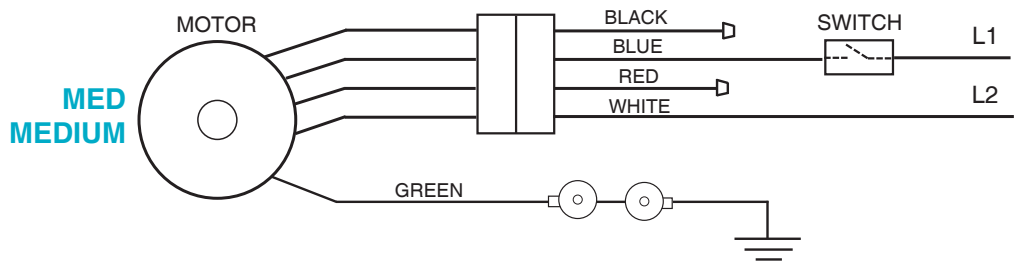
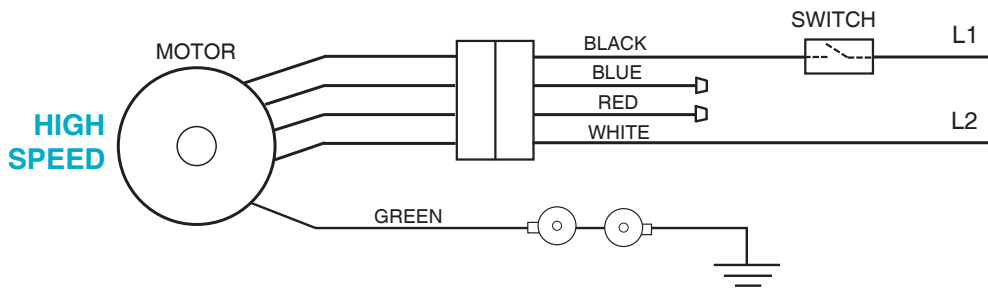


Figure 1

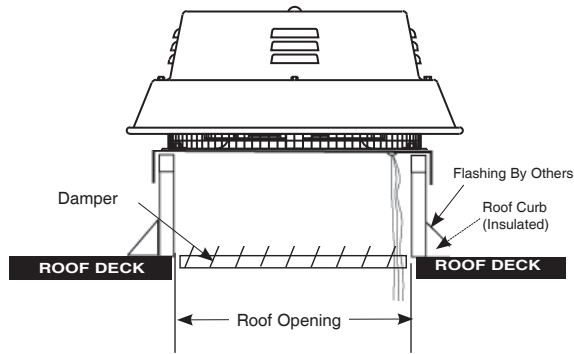


Figure 2

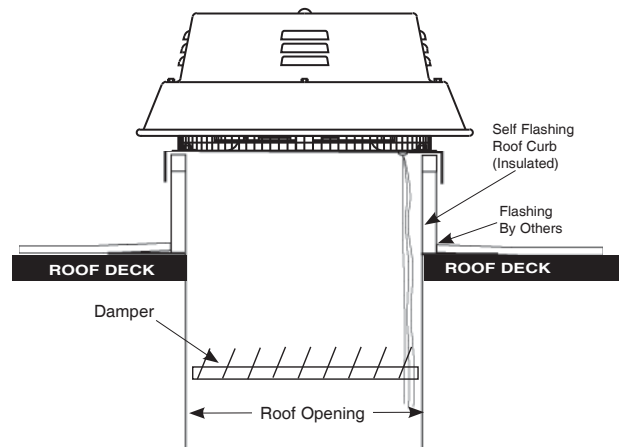


Figure 3

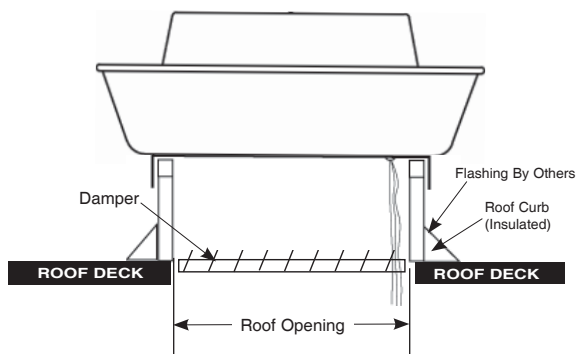


Figure 4

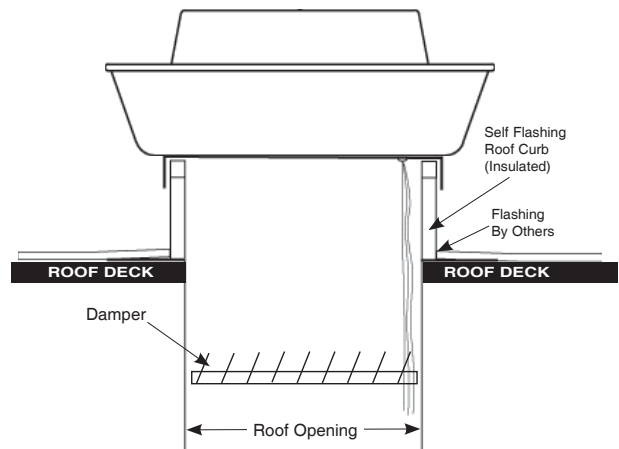
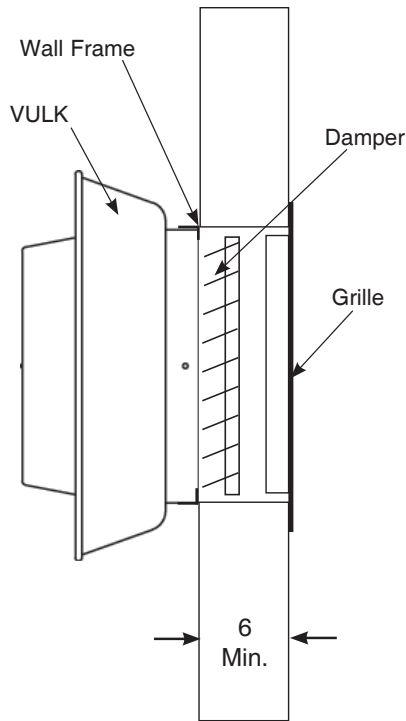


Figure 1 shows a typical Model VELK Low Profile Downblast Power Roof Ventilator & Figure 3 shows a typical Model VULK Low Profile Upblast Power Roof Ventilator installed without duct work. The roof flashing is shown installed over a standard canted style roof curb. A gravity operated backdraft damper is shown installed on the damper shelf which is located at the base of the roof curb. Power wiring is extended through the roof opening, through the damper conduit knockout, into the fan wiring chase and connected to the factory wiring leads.

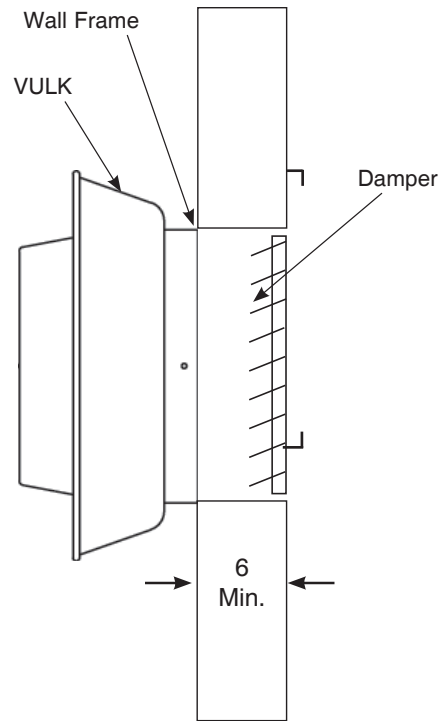
Figure 2 shows a typical Model VELK Low Profile Downblast Power Roof Ventilator & Figure 4 shows a typical Model VULK Low Profile Upblast Power Roof Ventilator installed with an exhaust duct. The duct is shown extending through the roof opening and inside a typical self flashing style roof curb. A gravity operated backdraft damper is shown fastened to a 3/4" x 3/4" sheet metal angle installed inside the exhaust duct. Power wiring is extended through the roof opening, through the damper conduit knockout, into the fan wiring chase and connected to the factory wiring leads.

Figure 5



**Figure 5
NON-DUCTED
Sidewall Installation**

Figure 6



**Figure 6
DUCTED
Sidewall Installation**

Figure 5 shows a typical Model VULK Sidewall Ventilator installed without duct work. The fan is mounted to the wall by a factory provided wall mounting frame. A gravity operated backdraft damper is shown installed in the wall, with a wall grille on the inside of the wall. Power wiring is extended through the wall opening, through the damper conduit knockout, into the fan wiring chase and connected to the factory wiring leads.

Figure 6 shows a typical Model VULK Sidewall Ventilator installed with an exhaust duct. The duct is shown extending through the wall opening. The fan is mounted to the wall by a factory provided wall mounting frame. A gravity backdraft damper is shown installed in the ductwork. Power wiring is extended through the wall opening, through the damper conduit knockout, into the fan wiring chase and connected to the factory wiring leads.

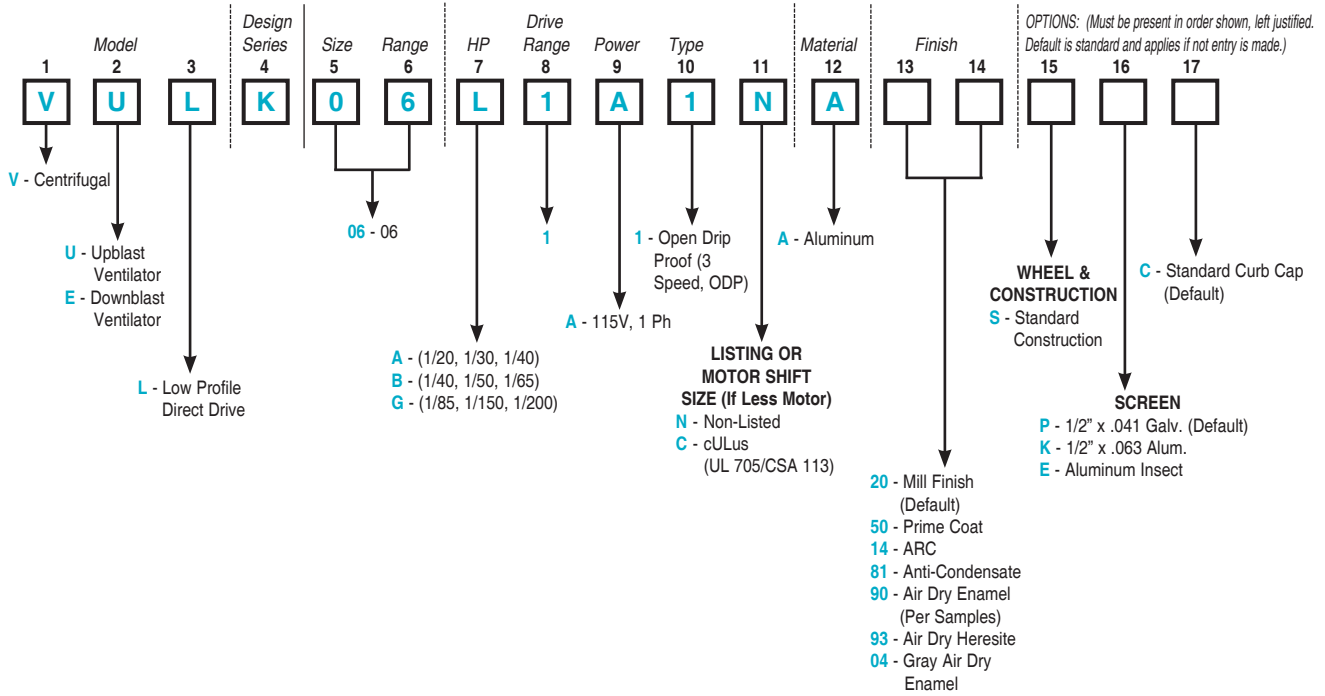
Proper fan performance requires uniform and stable air flow at the fan inlet. Avoid transitions, obstructions, elbows or other duct fittings near the fan inlet.

Typical roof curb height is 8" to 12" above the roof deck. Additional height reduces the likelihood of snow or rain entering through the roof opening.

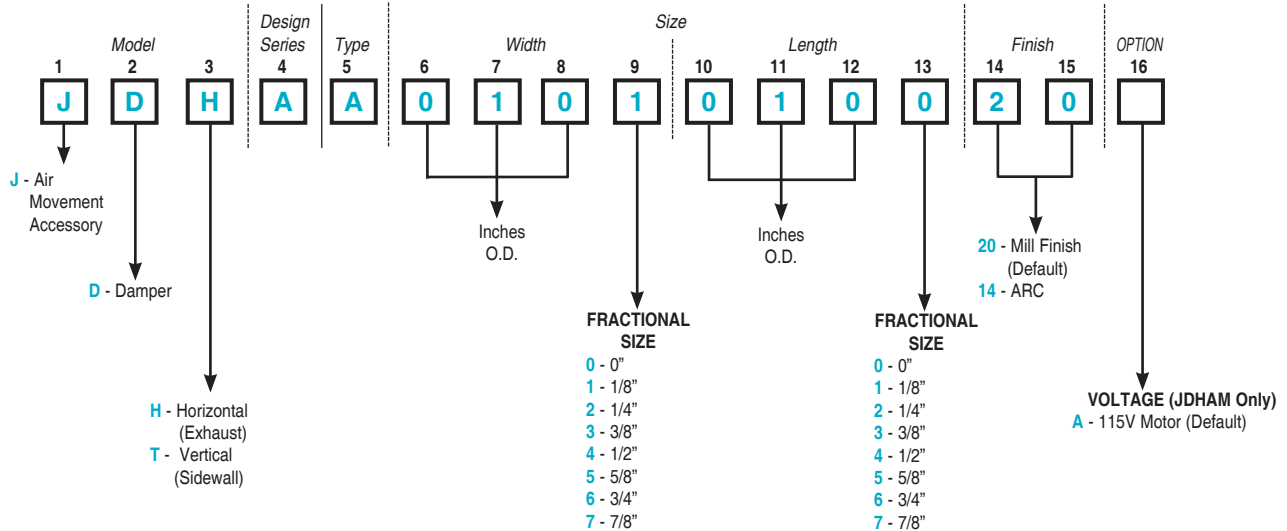
Installation and electrical work should be performed by qualified personnel and must be in accordance with all applicable code requirements.

For protection of personnel, inlet guards are recommended when the fan is within reach (or within 7 feet) of occupied areas or work areas.

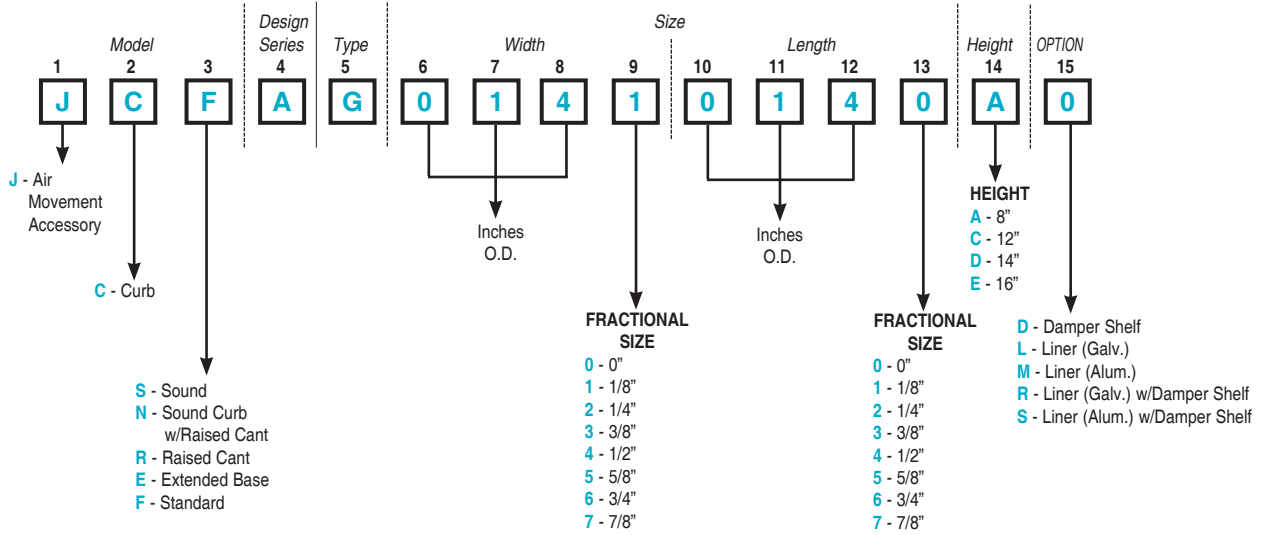
Model VELK and VULK - Low Profile Ventilators



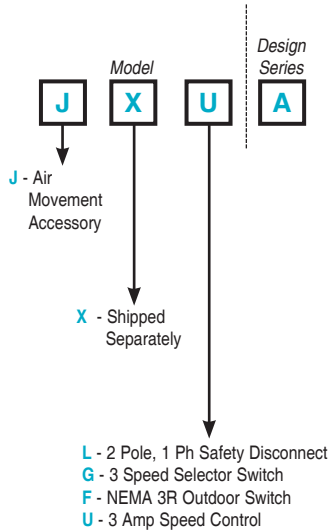
▼ **Dampers**



▼ Curbs



▼ Electrical Accessories



CENTRIFUGAL ROOF EXHAUSTERS

Direct and Belt Driven Models VEDK and VEBK

DESIGNED AND ENGINEERED TO MEET INDUSTRY NEEDS

The belt drive and direct drive spun aluminum centrifugal power roof ventilator line comprises one of the most complete product offerings available to meet various ventilation applications and specifications.

The Carnes Company has designed the VE series downblast fan to meet the rigorous performance and quality standards demanded by the HVAC industry.

The unique design of these fans recaptures lost energy and transforms it into air flow. The combination of the wheel, venturi and support structure provides maximum ventilation at extended static pressure.

Testing has been conducted to ensure durability and dependability of operation.



Direct Driven Model VEDK - Sizes 06 through 18

Carnes direct drive roof exhausters are available in six sizes with capacities from 150 to 4,300 CFM. The direct drive model reduces fan maintenance. Balancing time may also be decreased with optional electronic speed control. The rigid aluminum construction, integral deep spun venturi and diffuser support frame ensure reliable and efficient operation.

Belt Driven Model VEBK - Sizes 06 through 24

These Carnes power roof ventilators are ideal for medium capacity, medium pressure applications from 200 to 11,400 CFM. The belt drive model provides excellent selection flexibility and readily available motor alternatives at lower initial costs. The diffuser support framework of this design adds to the structural integrity of these units while allowing standard fans to operate at up to 3 inches water gauge static pressure.



Belt Driven Model VEBK - Sizes 30 through 54

Air flow performance capacities of up to 39,000 CFM can be achieved with this ventilator design. These five sizes of the VEBK series feature a circular welded steel support frame and an aluminum wind band. The three piece motor cover simplifies access for maintenance of the motor, belt, sheaves and bearings.



▼ **TYPICAL SPECIFICATIONS**

Roof exhaust ventilators shall be of the centrifugal belt or direct driven type. The wheel and spun venturi shall be a centrifugal design of spark resistant construction. For maximum performance and quiet, efficient operation, the wheel shall overlap the inlet venturi and have backward inclined blades. The wheels shall be dynamically balanced to assure smooth and vibration-free rotation under maximum loading. The complete drive assembly, including the motor and the wheel, shall be mounted on vibration isolators. Motor and drives shall be factory mounted. All fans shall be test run prior to shipment.

VEBK Belt Drive Series

Motor and drives shall be isolated from the exhaust airstream. Maximum exhaust temperature for continuous operation is 200°F. Air for cooling the motor shall be supplied to the internal motor compartment through louvers from a location free from discharge contaminants. Motors shall be of the heavy duty type with permanently lubricated, sealed ball bearings. Motors shall be readily accessible for maintenance. The wheel shaft shall be ground, polished, coated with a rust inhibitive finish and mounted in heavy duty, permanently sealed pillowblock ball bearings which are capable of 200,000 hours of life, average operation. The drives shall be sized at a minimum of 165% of driven horsepower. Drive belts shall be oil-resistant, non-static and be capable of 25,000 hours of life, average operation. Sheaves shall be fully machined cast iron, keyed and securely attached to the shafts. Variable pitch motor sheaves shall be standard. Two groove sheaves are standard for units with motors 3 HP and larger.

VEDK Direct Drive Series

Motor and drives shall be isolated from the exhaust airstream. Maximum exhaust temperature for continuous operation is 150°F. Air for cooling the motor shall be supplied to the internal motor compartment through louvers from a location free from discharge contaminants. Motors shall be of the heavy duty type with permanently lubricated, sealed ball bearings. Motors shall be readily accessible for maintenance. Wheels to be furnished with integral fitting for wheel puller.

The motor shall be factory wired to the disconnect junction box and a disconnect switch shall be supplied. A conduit chase shall be provided for running electrical wiring through the curb cap into the motor compartment. Field wiring of motor, disconnect and conduit are to be in accordance with electrical specifications and local codes. Heavy-gauge welded galvanized birdscreen shall be furnished.

Horsepower and noise levels shall not exceed the published values and oversized motors will not be acceptable. Performance ratings shall be AMCA licensed for Air and Sound.

Centrifugal power roof ventilators shall be Carnes Company Model VEBK, belt drive, sizes 06 through 54, or Model VEDK, direct drive, sizes 06 through 18, as manufactured at Carnes Company of Verona, Wisconsin.

AMCA LICENSED AIR and SOUND DATA

Licensed to bear the AMCA Seal for both air and sound.

The Carnes Company certifies that the Models VEDK and VEBK 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.



UL OPTION

Models VEBK and VEDK are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



POWER VENTILATOR

COMPUTERIZED FAN SELECTION: Make the right choice with CARNES FAN-C-LECT™. The Models VEDK and VEBK, as well as the comprehensive offering of CARNES powered ventilators, are included in CARNES user friendly fan selection program.

FAN HOUSING

- Constructed with heavy-gauge aluminum.
- Designed for maximum weather protection, windband and diffusers prevent the entrance of inclement weather.
- Fan hoods beaded for rigidity.
- Interior fan hood lip extended to prevent the entrance of water.
- 3 piece motor cover design (lid, motor tube and fan hood) allows easy access to motor, drives and bearings for maintenance.

MOTOR/ELECTRICAL

- UL listing under Standard 705 available as option on most models.
- Motors are UL recognized components supplied by nationally recognized manufacturers.
- Safety disconnect utility box mounted, switch and cover plate shipped loose for ease of field wiring.
- Sealed conduit chase complies with NEC, allows passage of electrical wire through curb cap into motor compartment.
- Motors through 10 HP mounted as standard.

MOTOR SUPPORT ASSEMBLY

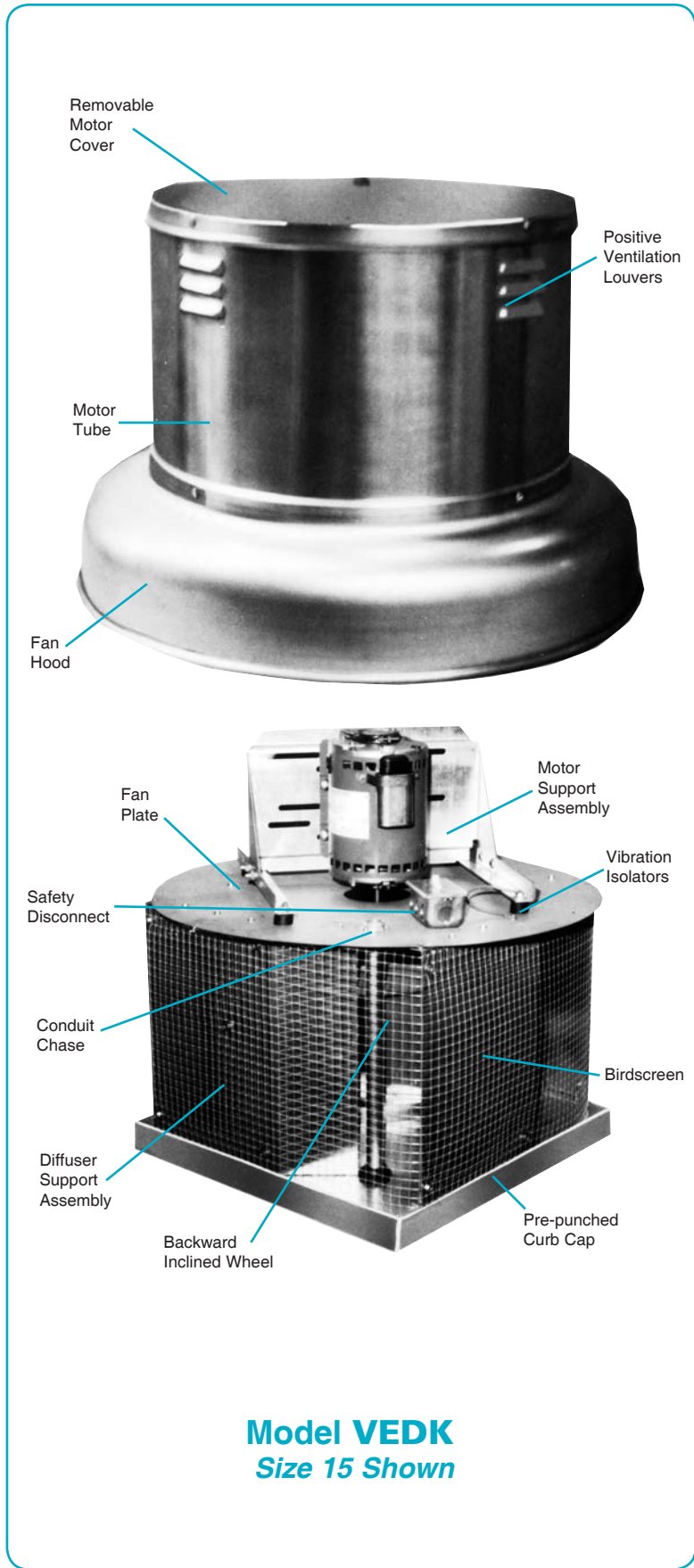
- Bolted, heavy-gauge material.
- Easily adjustable belt tension.
- Motor plate accommodates multiple motor frames.
- Isolated from fan plate to reduce vibration and noise transmission.
- Allows horizontal adjustment of wheel.
- Electrically grounded to meet NEC and UL requirements.

MOTOR COMPARTMENT/TUBE

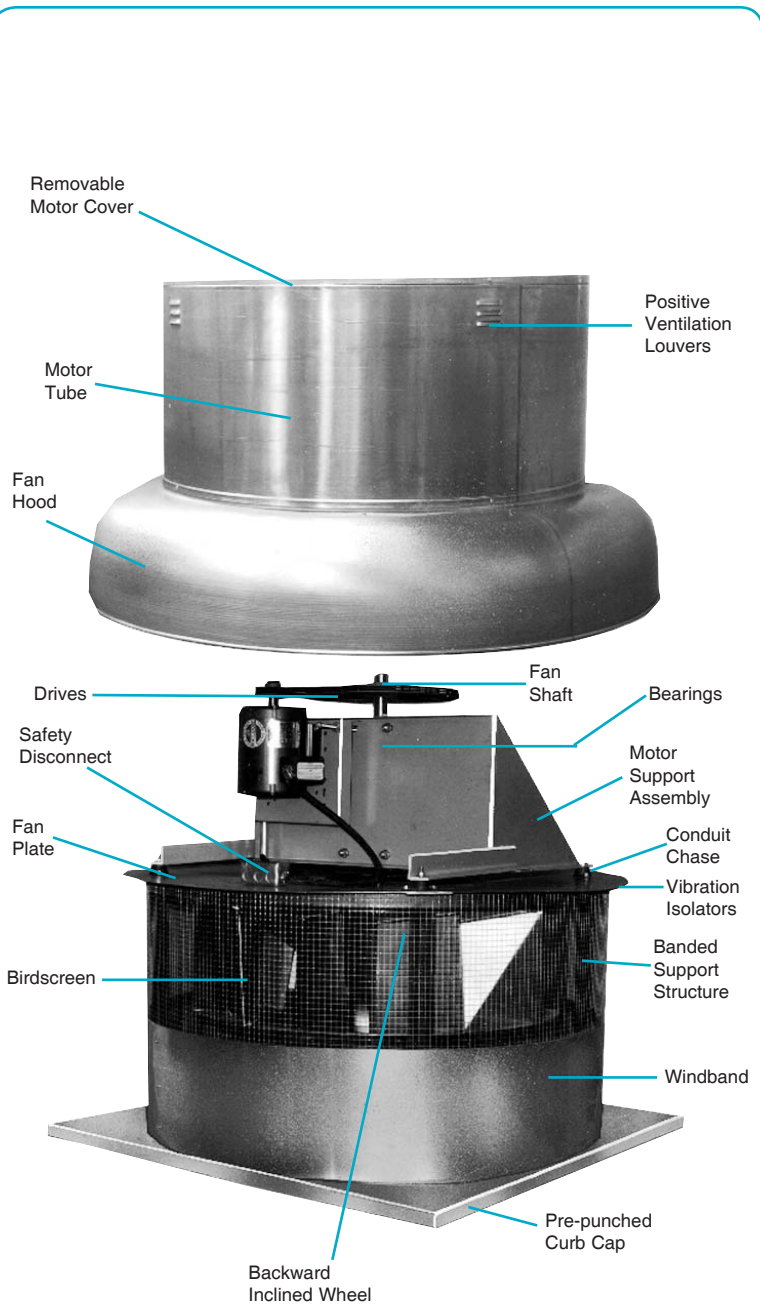
- Strategically located air intake louvers provide positive motor cooling to maximize motor life.
- Easily removable lid and tube utilize durable threaded fastener retainers.
- Fan plate isolates motor compartment from contaminated exhaust air.
- Opening around shaft sized to allow optimum air passage to ensure proper motor compartment cooling.

BIRDSCREEN

- 1/2" by 1/2" heavy-gauge welded galvanized birdscreen attached to unit with easily removable fasteners.
- Birdscreen has a minimal affect on air and sound performance.



Model VEDK
Size 15 Shown



Model VEBK
Size 30 Shown

BEARINGS/SHAFT

- Eccentric locking collar bearings standard on sizes 06-18.
- Dual bearings utilized to properly support the fan shaft.
- Prelubricated sealed, self-aligning ball bearing.
- Rated at 200,000 hours average operation.
- Polished CRS fan shaft with rust inhibitive coating.

DRIVES

- Selected for 165% of the motor horsepower.
- Adjustable V-belt drives with oil resistant non-static conducting belts.
- Two belts standard on units 5 HP and larger.
- Factory preset fan RPM.
- Adjustable motor sheave allows for final air system balancing.

WHEEL

- Backward inclined wheel constructed of non-corrosive or coated heavy-gauge material. Wheel sizes 6-24 are aluminum, above 24 are steel.
- Usage of cooling fins on fan wheel (06-18) backplate draws cooling air down over the motor facilitating motor longevity while motor remains out of the airstream.
- Self-limiting power characteristics.
- Dynamically balanced and test run in each individual unit.

SUPPORT STRUCTURE

Sizes 06 - 24

- Galvanized or aluminum patented diffuser provides structural integrity and protection against weather penetration.
- Self-sealing diffuser fasteners prevent leakage.

Size 30 - 54

- Heavy-gauge coated steel circular frame for structural strength and unit rigidity.
- Aluminum windband provides weather protection.

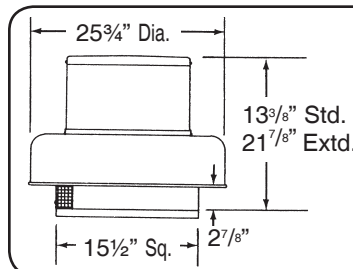
CURB CAP

- One piece construction with fastened, overlapping corners to ensure strength.
- Pre-punched mounting holes for ease of installation.
- Support structure attached with self-sealing fasteners.
- The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow along with protection from entry of adverse weather.

VEDK 06

DIRECT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 2.75 x RPM
 Unit Weight (less Motor) = 30 Lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
F3+ 1/20	J2+ 1/8		.000 CFM BHP SONES	.125 CFM BHP SONES	.250 CFM BHP SONES	.375 CFM BHP SONES	.500 CFM BHP SONES	.625 CFM BHP SONES	.750 CFM BHP SONES	1.000 CFM BHP SONES	1.250 CFM BHP SONES
SPEED CONTROLLABLE MOTORS**		400	155 .01 .1								
		500	193 .01 .1								
		600	232 .01 .5								
		700	270 .01 1.0	130 .01 1.4							
		800	309 .01 1.6	202 .01 1.7							
		900	348 .02 2.2	258 .02 2.1							
		1000	386 .02 2.9	309 .02 2.7	194 .03 3.7						
		1075 *	415 .03 3.5	344 .03 3.3	251 .03 4.0						
		1100	425 .03 3.7	356 .03 3.5	266 .03 4.1						
		1200	464 .04 4.4	401 .04 4.3	325 .04 4.5	211 .05 5.5					
		1300	502 .05 5.3	446 .05 5.1	379 .05 5.1	294 .06 5.9					
		1400	541 .06 6.1	489 .06 5.9	430 .07 5.8	358 .07 6.3	259 .07 7.2				
		1500	580 .07 7.0	532 .08 6.8	477 .08 6.6	415 .08 6.9	339 .09 7.6				
		1600 *	618 .09 7.9	573 .09 7.7	523 .10 7.5	468 .10 7.5	404 .10 8.2	321 .11 9.0			
ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph		1140 *	440 .03 4.0	374 .04 3.8	291 .04 4.2						
		1725 *	667 .11 9.0	625 .12 8.9	580 .12 8.8	532 .13 8.8	475 .13 9.2	412 .13 9.8	328 .13 10.6		

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

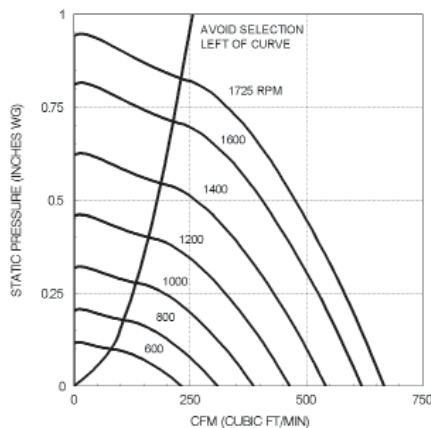
+ RPM range capable with solid state speed control.

Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{W1} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VEDK 06 AIR PERFORMANCE



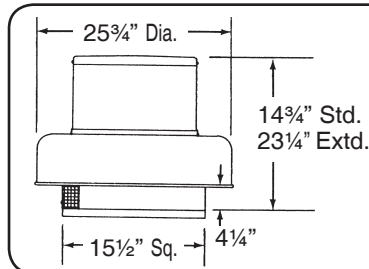
VEDK 06 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
1075	.000	65	58	55	51	51	47	43	34	56
	.125	67	58	54	50	49	45	41	37	54
	.250	68	61	56	53	52	47	43	39	57
1600	.000	79	71	69	63	61	58	55	48	67
	.125	80	71	69	62	60	57	54	48	67
	.250	81	72	68	62	60	56	53	48	66
	.375	82	72	68	61	60	56	52	48	66
	.500	81	73	69	63	62	57	53	49	68
	.625	80	75	71	64	64	59	55	51	69

VEDK 08

DIRECT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 2.75 x RPM
 Unit Weight (less Motor) = 30 Lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

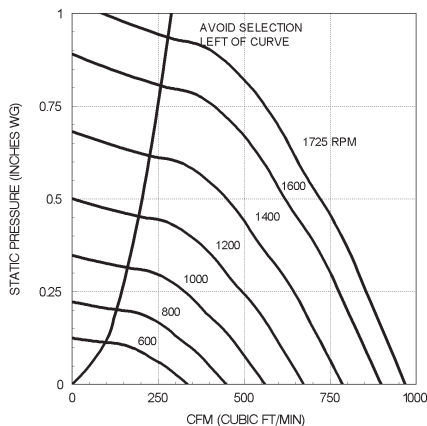
RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																	
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
SPEED CONTROLLABLE MOTORS**	600	337	.01																
			1.5																
	675	379	.01	196	.01														
			2.1		1.7														
	750	421	.01	269	.01														
			2.6		2.2														
	825	463	.02	330	.02														
			3.2		2.7														
	900	505	.02	389	.02	183	.03												
			3.8		3.3		3.5												
	1000	561	.03	462	.03	327	.04												
			4.7		4.2		4.2												
	1075 *	603	.04	511	.04	392	.04												
		5.5		5.0		4.8													
1175	659	.05	576	.05	473	.06	346	.06											
		6.5		5.9		5.7		5.7											
1250	702	.06	624	.06	533	.07	425	.07											
		7.2		6.3		6.3		6.3											
1325	744	.07	671	.07	591	.08	487	.08	363	.08									
		8.0		7.5		7.0		6.9		7.0									
1400	786	.08	717	.09	643	.09	547	.09	448	.10									
		8.7		8.2		7.8		7.7		7.7									
1475	828	.09	763	.10	693	.11	608	.11	517	.11	396	.11							
		9.4		9.0		8.6		8.5		8.5		8.6							
1550	870	.11	808	.11	743	.12	668	.13	579	.13	484	.13	276	.13					
		10.2		9.7		9.5		9.3		9.4		9.4		9.5					
1600 *	898	.12	838	.13	775	.13	706	.14	619	.14	537	.15	410	.15					
		10.7		10.3		10.1		9.9		10.0		10.1		10.2					
ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph	1140 *	640	.04	554	.05	444	.05	303	.05										
		6.1		5.6		5.4		5.5											
	1725 *	968	.15	913	.16	855	.16	795	.17	720	.17	640	.18	560	.18				
		12.1		11.9		11.8		11.6		11.6		11.7		11.8					

Performance certified is for installation type A - free inlet, free outlet.
 Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_W sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VEDK 08 AIR PERFORMANCE



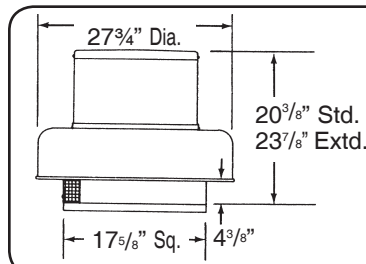
VEDK 08 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
1075	.000	67	65	60	54	54	53	53	46	61
	.125	67	65	59	53	54	52	50	45	60
	.375	65	68	58	53	54	51	48	46	60
1600	.000	78	76	74	66	64	62	63	59	72
	.250	78	76	74	65	63	61	61	57	71
	.375	78	76	73	65	63	61	59	56	70
	.500	76	76	74	65	63	61	59	56	71
	.625	75	77	74	65	63	61	59	56	71
	.750	75	77	74	65	63	61	58	56	71

VEDK 10

DIRECT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 3.27 x RPM
 Unit Weight (less Motor) - 35 Lbs.
 Roof Opening - 13" Sq.
 Curb O. D. - 16" Sq.
 Damper Size - 12" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																		
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250		
		CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	
F4+ 1/20	J3+ 1/8	M2+ 1/3	P2+ 1/2	550	556	.01	323	.02												
				700	707	.03	549	.03	176	.03										
				800	809	.04	673	.05	501	.05										
				825 *	834	.04	703	.05	542	.05										
				900	910	.06	791	.06	654	.07	426	.07								
				975	985	.07	877	.08	756	.09	605	.09								
				1050	1061	.09	961	.10	853	.11	728	.11	528	.11						
				1075 *	1086	.10	989	.11	884	.11	763	.12	587	.12						
				1175	1187	.13	1098	.14	1004	.14	901	.15	781	.15	593	.15				
				1275	1289	.16	1206	.17	1121	.18	1033	.19	928	.19	808	.20	610	.19		
				1375	1390	.20	1313	.21	1236	.22	1153	.23	1064	.24	967	.25	849	.25		
				1500	1516	.26	1445	.27	1376	.29	1302	.30	1225	.31	1140	.31	1051	.32	783	
				1575	1592	.30	1524	.32	1458	.33	1389	.34	1316	.35	1240	.36	1155	.37	959	
				1625 *	1642	.33	1577	.35	1513	.36	1447	.37	1376	.38	1306	.39	1224	.40	1043	
ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph				1140 *	1152	.11	1060	.12	962	.13	853	.14	722	.14	470	.13				
				1725 *	1743	.40	1681	.41	1621	.43	1561	.44	1495	.45	1428	.46	1358	.47	1203	.49

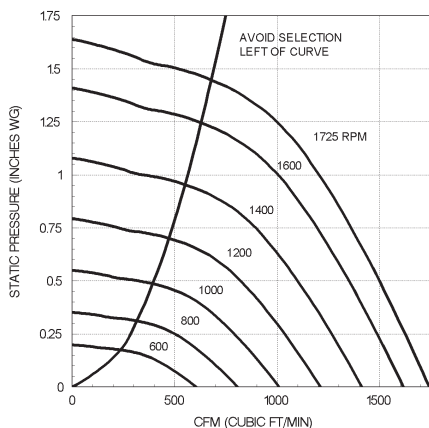
SPEED CONTROLLABLE MOTORS**

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_W sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VEDK 10 AIR PERFORMANCE



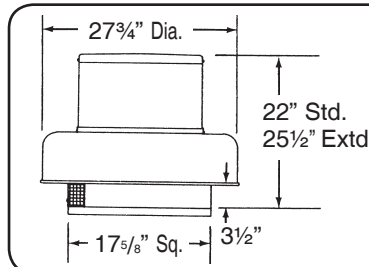
VEDK 10 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
825	.000	58	66	63	57	53	48	42	37	60
	.125	59	66	62	54	49	45	44	44	58
	.375	59	66	60	51	48	46	42	38	57
1075	.000	64	70	74	64	60	56	50	44	69
	.250	65	70	73	62	56	52	49	51	67
	.500	63	71	73	59	55	53	50	45	66
1625	.000	71	78	85	80	72	68	62	57	81
	.500	72	79	84	79	69	64	60	59	80
	1.000	71	79	84	77	67	63	60	57	79

VEDK 12

DIRECT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 3.27 x RPM
 Unit Weight (less Motor) = 35 Lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 12" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																		
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250		
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
F4+ 1/20	J3+ 1/8	M2+ 1/3	P2+ 1/2	550	676	.01	404	.02												
				700	861	.03	679	.03	183	.02										
				800	984	.04	829	.05	623	.05										
				825 *	1014	.05	865	.05	671	.06										
				900	1106	.06	971	.07	809	.07	534	.06								
				975	1199	.07	1075	.08	936	.09	753	.09								
				1050	1291	.09	1177	.10	1055	.11	897	.11	657	.11						
				1075 *	1322	.10	1210	.11	1091	.12	943	.12	733	.12						
				1175	1445	.13	1342	.14	1236	.15	1114	.16	965	.16	737	.15				
				1275	1567	.17	1473	.18	1377	.19	1276	.20	1147	.20	1004	.20	766	.19		
				1375	1690	.21	1603	.22	1515	.23	1421	.24	1317	.25	1195	.26	1085	.26		
				1500	1844	.27	1764	.29	1684	.30	1600	.31	1514	.32	1410	.33	1298	.33	975	
				1575	1936	.32	1860	.33	1784	.34	1705	.35	1623	.36	1535	.37	1429	.38	1197	
				1625 *	1998	.35	1924	.36	1850	.37	1774	.39	1695	.40	1617	.41	1514	.42	1294	
ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph				1140 *	1401	.12	1296	.13	1185	.14	1055	.14	898	.15	578	.13				
				1725 *	2121	.42	2051	.43	1982	.44	1912	.46	1837	.47	1762	.48	1681	.49	1484	

SPEED CONTROLLABLE MOTORS **

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

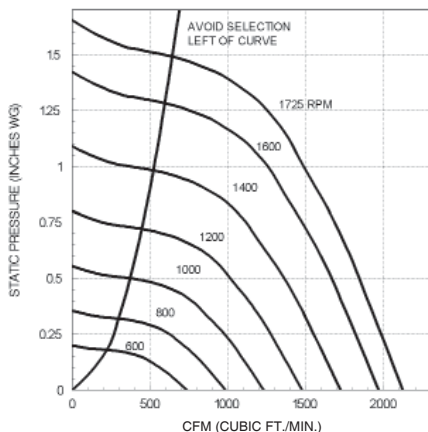
+ RPM range capable with solid state speed control.

Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_W sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VEDK 12 AIR PERFORMANCE



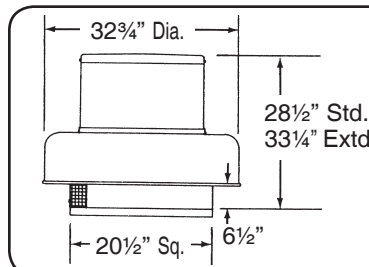
VEDK 12 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
825	.000	67	67	61	56	59	55	47	39	62
	.125	67	67	61	55	54	51	44	37	60
	.375	67	69	60	53	49	47	44	41	58
1075	.000	75	75	72	63	63	64	56	48	70
	.250	74	75	72	63	59	58	52	45	68
	.500	73	75	73	61	57	55	51	47	67
1625	.000	84	87	85	78	71	74	70	62	82
	.500	83	87	85	78	70	69	65	58	81
	1.000	83	87	86	77	69	66	63	58	81

VEDK 15

DIRECT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 4.06 x RPM
 Unit Weight (less Motor) = 50 Lbs.
 Roof Opening = 16" Sq.
 Curb O. D. = 19" Sq.
 Damper Size = 15" Sq.

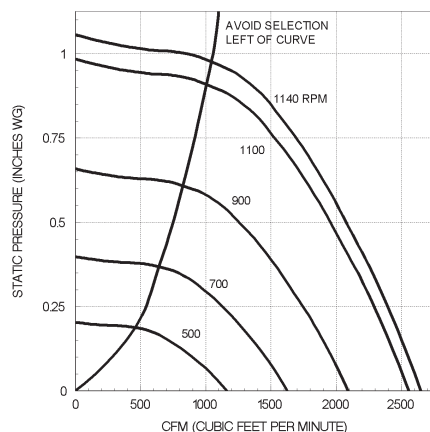
RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																			
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250			
		CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES	CFM BHP	SONES		
SPEED CONTROLLABLE MOTORS**	K4+ 1/6	450	1047	.02	627	.03															
		500	1163	.03	816	.04															
		550	1280	.04	976	.05															
		600	1396	.05	1129	.06	716	.06													
		650	1512	.07	1272	.08	943	.08													
		700	1629	.09	1411	.09	1130	.10	542	.08											
	M3+ 1/3	750	1745	.11	1549	.12	1292	.12	949	.12											
		800	1861	.13	1678	.14	1448	.14	1170	.14											
		825 *	1920	.14	1742	.15	1525	.16	1264	.16	825	.14									
		875	2036	.17	1868	.18	1672	.19	1443	.19	1138	.18									
		925	2152	.20	1994	.21	1815	.22	1603	.22	1355	.22	945	.20							
		975	2269	.24	2118	.25	1955	.26	1759	.26	1544	.26	1257	.25							
1025	2385	.27	2242	.28	2093	.29	1913	.30	1714	.31	1480	.30	1136	.28							
1075 *	2501	.32	2365	.33	2228	.34	2058	.35	1873	.35	1670	.35	1410	.34							
ALL OTHER MOTORS (Non-Speed Controllable)		1140 *	2652	.38	2524	.39	2395	.40	2243	.41	2075	.42	1897	.42	1687	.42	836	.33			
TE, XP, 2 Spd, 230V & All 3 Ph			13.2		13.0		12.7		12.5		12.3		12.2		12.2		12.3				

Performance certified for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wf} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VEDK 15 AIR PERFORMANCE



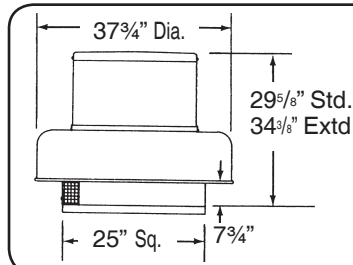
VEDK 15 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
825	.000	75	77	66	63	61	58	51	44	67
	.125	75	77	65	61	59	57	50	44	66
	.250	75	76	63	59	57	55	50	43	65
	.500	75	75	62	58	56	55	51	45	64
	.750	75	75	62	58	56	55	51	46	64
1075	.000	83	82	74	70	67	67	59	52	74
	.250	83	82	73	68	64	64	59	52	73
	.500	84	81	72	66	62	62	58	52	71
	.750	85	80	71	66	62	62	59	53	71
	1.000	85	80	71	66	62	61	59	53	71

VEDK 18

DIRECT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 4.94 x RPM
 Unit Weight (less Motor) = 65 Lbs.
 Roof Opening = 20½" Sq.
 Curb O. D. = 23" Sq.
 Damper Size = 19" Sq.

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
M4+ 1/3	*R3+ 3/4		.000	.125	.250	.375	.500	.625	.750	1.000	1.250
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS**		600	2362 .14 7.1	2089 .15 6.3	1740 .15 6.3	1183 .14 6.3					
		650	2559 .17 8.2	2309 .18 7.4	2015 .19 7.2	1604 .19 7.2	752 .16 7.2				
		700	2756 .22 9.3	2525 .23 8.5	2280 .23 8.2	1930 .24 8.2	1435 .23 8.2				
		750	2953 .27 10.5	2737 .28 9.7	2511 .29 9.1	2216 .29 9.2	1848 .29 9.2	1291 .26 9.3			
		800	3150 .33 11.8	2948 .34 11.1	2737 .35 10.4	2489 .35 10.4	2176 .35 10.4	1751 .34 10.5	1011 .30 10.5		
		825 *	3248 .36 12.6	3052 .37 11.8	2849 .38 11.1	2623 .39 11.1	2328 .39 11.1	1958 .39 11.2	1447 .35 11.2		
		875	3445 .43 12.7	3260 .44 12.2	3071 .45 11.7	2874 .46 11.4	2608 .46 10.8	2307 .46 10.3	1907 .45 9.8		
		925	3642 .51 13.9	3467 .53 13.4	3290 .54 13.0	3104 .55 12.5	2881 .55 12.0	2618 .55 11.5	2306 .54 10.9	1196 .40 10.5	
		975	3839 .59 15.1	3673 .61 14.6	3507 .63 14.2	3331 .64 13.8	3147 .64 13.3	2898 .64 12.8	2634 .63 12.2	1887 .57 11.4	
		1025	4035 .69 16.5	3878 .71 16.0	3720 .72 15.5	3555 .74 15.0	3387 .75 14.6	3171 .75 14.1	2934 .75 13.5	2324 .71 12.5	1125 .51 12.3
	1075 *	4232 .80 17.9	4082 .82 17.4	3932 .83 16.9	3776 .84 16.3	3616 .86 15.8	3439 .86 15.4	3213 .86 14.9	2709 .84 13.9	1965 .75 13.3	
ALL OTHER MOTORS		1140 *	4488 .95 19.6	4346 .97 19.1	4205 .99 18.6	4061 1.00 18.1	3910 1.01 17.7	3759 1.03 17.2	3566 1.03 16.7	3132 1.01 15.7	2548 .98 14.8

Performance certified is for installation type A - free inlet, free outlet.
 Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

+ RPM range capable with solid state speed control.

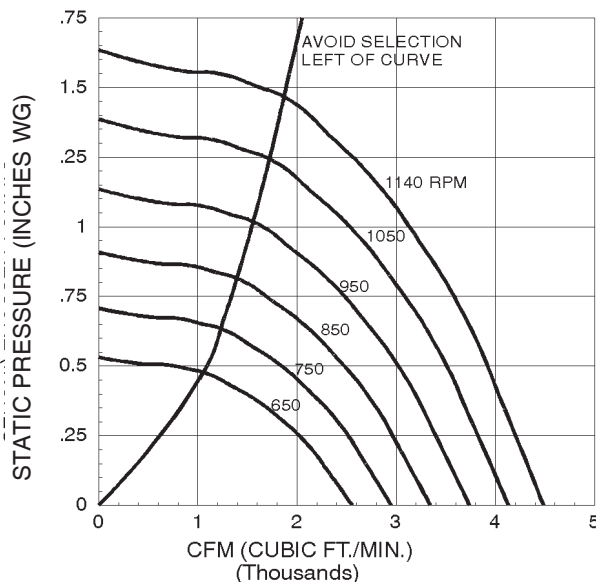
Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wf} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

*NOTE: R3 motors are specifically designed to operate through the above performance range. The motor will not be damaged or harmed at the higher BHP values.

VEDK 18 AIR PERFORMANCE



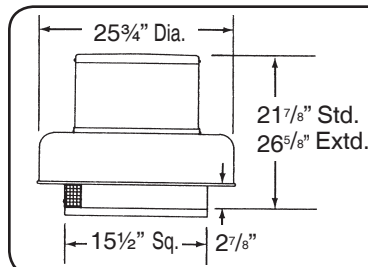
VEDK 18 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
825	.000	75	82	79	71	68	65	58	50	75
	.125	74	81	78	70	66	63	56	49	74
	.250	73	80	77	69	65	61	54	48	73
	.500	73	80	78	70	65	60	54	49	73
	.750	74	81	78	70	64	59	54	49	73
1075	.000	84	83	81	76	72	73	71	63	80
	.250	83	83	79	75	71	72	70	64	79
	.500	82	83	78	74	70	71	68	64	78
	.750	82	82	77	73	68	69	67	64	77
	1.000	81	81	76	71	67	67	66	63	75

VEBK 06

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = .025 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 2.75 x RPM
 Max. Motor Frame Size = 56
 Unit Weight (less motor) = 30 lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.									
(1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500
K1		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	600	232 .01 .6									
	700	271 .01 1.3	130 .01 1.0								
K3 (1/6)	800	310 .01 2.0	202 .01 1.7								
	900	348 .02 2.8	258 .02 2.5								
K4 (1/6)	1000	387 .02 3.4	309 .02 3.3	194 .03 3.0							
	1100	426 .03 4.1	356 .03 4.0	266 .03 3.8							
K5 (1/6)	1200	465 .04 5.0	401 .04 4.8	325 .04 4.8	211 .05 4.8						
	1300	503 .05 5.9	446 .05 5.7	379 .05 5.6	294 .06 5.5						
L1 (1/4)	1400	542 .06 6.8	489 .06 6.5	430 .07 6.4	358 .07 6.3	259 .07 6.1					
	1500	581 .07 7.7	532 .08 7.4	477 .08 7.3	415 .08 7.1	339 .09 6.9					
M1 (1/3)	1550	600 .08 8.2	553 .09 7.9	500 .09 7.7	442 .09 7.5	373 .10 7.3	274 .10 7.1				
	1600	620 .09 8.7	573 .09 8.4	523 .10 8.2	468 .10 8.0	404 .10 7.8	321 .11 7.5				
P1 (1/2)	1650	639 .10 9.2	594 .10 9.0	546 .11 8.7	494 .11 8.5	434 .11 8.2	359 .12 8.0	236 .12 7.8			
	1700	658 .10 9.8	615 .11 9.5	569 .12 9.3	519 .12 8.9	462 .12 8.6	397 .13 8.2	302 .13 7.9			
M1 (1/3)	1750	678 .11 10.3	635 .12 10.0	591 .13 9.8	544 .13 9.5	489 .13 9.2	428 .14 8.8	349 .14 8.5			
	1800	697 .12 10.9	656 .13 10.6	613 .14 10.4	567 .14 10.1	515 .15 9.7	458 .15 9.4	388 .15 9.1			
P1 (1/2)	1850	716 .13 11.3	676 .14 11.1	635 .15 10.8	590 .15 10.5	541 .16 10.2	488 .16 9.8	425 .16 9.5			
	1900	736 .15 11.8	696 .15 11.5	657 .16 11.3	613 .17 11.0	567 .17 10.6	516 .17 10.3	458 .18 10.0	260 .18 9.3		
M1 (1/3)	1950	755 .16 12.2	717 .17 11.9	679 .17 11.7	636 .18 11.5	593 .18 11.1	543 .19 10.8	489 .19 10.5	335 .19 9.8		
	2000	774 .17 12.7	737 .18 12.4	701 .19 12.2	659 .19 11.9	618 .20 11.6	570 .20 11.4	519 .20 11.1	388 .21 10.5		
P1 (1/2)	2050	794 .18 13.1	757 .19 12.9	722 .20 12.6	682 .21 12.4	641 .21 12.1	596 .21 11.9	548 .22 11.6	426 .22 11.1		
	2100	813 .20 13.6	777 .21 13.3	743 .21 13.1	704 .22 12.8	665 .22 12.6	622 .23 12.4	575 .23 12.2	464 .24 11.7	239 .23 11.3	0.23
M1 (1/3)	2150	832 .21 14.1	797 .22 13.8	764 .23 13.6	727 .24 13.3	688 .24 13.1	647 .24 12.9	602 .25 12.7	502 .26 12.3	341 .26 12.0	.26
	2200	852 .23 14.6	817 .24 14.3	785 .24 14.1	749 .25 13.8	711 .26 13.6	673 .26 13.4	629 .27 13.3	533 .27 12.9	395 .28 12.5	.28
P1 (1/2)	2250	871 .24 15.1	837 .25 14.8	805 .26 14.6	771 .27 14.3	734 .27 14.1	698 .28 13.9	655 .28 13.7	563 .29 13.4	444 .30 13.0	.30
	2300	891 .26 15.6	857 .27 15.3	826 .28 15.1	793 .29 14.8	757 .29 14.6	721 .30 14.5	681 .30 14.4	594 .31 14.2	482 .32 14.0	0.30 13.9
M1 (1/3)	2350	910 .28 16.3	877 .29 15.9	847 .30 15.6	815 .30 15.3	780 .31 15.1	744 .31 15.1	707 .32 15.1	623 .33 15.1	520 .34 15.1	.34 15.1
	2400	929 .29 17.0	897 .30 16.5	867 .31 16.1	837 .32 15.9	802 .33 15.7	767 .33 15.6	732 .34 15.6	651 .35 15.7	559 .36 15.7	.36 15.8
P1 (1/2)	2450	949 .31 17.7	917 .32 17.2	888 .33 16.7	859 .34 16.3	825 .35 16.3	791 .35 16.2	757 .36 16.2	678 .37 16.3	590 .38 16.3	.38 16.4
	2500	968 .33 18.5	937 .34 17.9	908 .35 17.4	880 .36 17.2	847 .37 17.0	814 .38 16.8	780 .38 16.8	705 .39 16.9	621 .40 16.9	.41 16.9

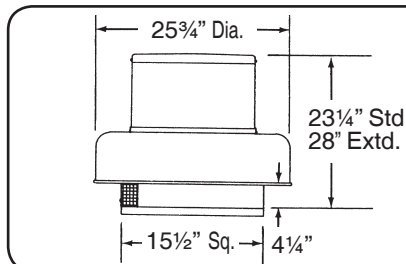
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 08

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = .036 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 2.75 x RPM
 Max. Motor Frame Size = 56
 Unit Weight (less motor) = 30 lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W. G.										
		.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750
K1 (1/6)		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	650	365 .01 2.4	163 .01 1.3									
	750	422 .01 3.0	269 .01 1.8									
K3 (1/6)	850	478 .02 3.7	350 .02 2.4									
	950	534 .02 4.5	428 .03 3.1	272 .03 3.4								
K4 (1/6)	1050	590 .03 5.2	495 .04 4.0	371 .04 4.0								
	1150	646 .04 5.9	560 .05 4.9	453 .05 4.5	318 .05 5.0							
L1 (1/4)	1250	703 .06 6.8	624 .06 5.8	533 .07 5.1	425 .07 5.6							
	1350	759 .07 7.6	686 .08 6.7	610 .08 6.0	507 .09 6.6	393 .09 6.6						
M1 (1/3)	1450	815 .09 8.5	748 .09 7.7	677 .10 6.9	588 .10 6.8	496 .11 7.2	358 .11 7.7					
	1500	843 .10 8.9	778 .10 8.1	710 .11 7.4	628 .11 7.1	538 .12 7.5	428 .12 8.0					
P1 (1/2)	1550	871 .11 9.4	808 .11 8.6	743 .12 7.9	668 .13 7.5	579 .13 7.9	484 .13 8.3	276 .13 8.8				
	1600	899 .12 9.8	838 .13 9.1	775 .13 8.4	706 .14 7.9	619 .14 8.2	537 .15 8.6	410 .15 9.1				
P1 (1/2)	1650	927 .13 10.3	868 .14 9.6	807 .14 8.9	744 .15 8.4	659 .15 8.5	579 .16 8.9	477 .16 9.4				
	1700	955 .14 10.8	898 .15 10.0	839 .16 9.4	778 .16 8.9	700 .17 8.9	620 .17 9.3	532 .18 9.7				
P1 (1/2)	1750	984 .15 11.2	928 .16 10.5	871 .17 10.0	812 .18 9.4	740 .18 9.2	661 .19 9.6	586 .19 10.1				
	1800	1012 .17 11.7	957 .18 11.1	903 .18 10.4	845 .19 9.9	779 .20 9.6	701 .20 10.0	628 .21 10.4	366 .20 11.5			
P1 (1/2)	1850	1040 .18 12.2	987 .19 11.5	934 .20 11.0	878 .21 10.5	818 .21 10.0	742 .22 10.3	669 .22 10.7	478 .22 11.9			
	1900	1068 .20 12.6	1016 .21 12.1	965 .22 11.5	911 .22 11.0	856 .23 10.6	782 .23 10.7	710 .24 11.1	545 .25 12.2			
P1 (1/2)	1950	1096 .21 13.1	1046 .22 12.6	996 .23 12.0	943 .24 11.5	890 .25 11.1	822 .25 11.1	750 .26 11.6	600 .26 12.7			
	2000	1124 .23 13.6	1075 .24 13.1	1026 .25 12.6	975 .26 12.1	923 .26 11.6	861 .27 11.5	791 .27 11.9	655 .28 14.4	351 .28 14.4		
P1 (1/2)	2050	1152 .25 14.2	1104 .26 13.6	1057 .27 13.1	1008 .28 12.7	957 .28 12.3	900 .29 11.9	831 .29 12.4	701 .30 13.5	506 .30 14.7		
	2100	1180 .27 14.7	1134 .28 14.1	1087 .29 13.6	1040 .30 13.3	990 .30 12.8	938 .31 12.6	871 .32 12.8	743 .33 13.9	582 .33 15.1		
P1 (1/2)	2150	1208 .29 15.2	1163 .30 14.7	1117 .31 14.2	1071 .32 13.8	1023 .32 13.4	974 .33 13.2	911 .34 13.3	784 .35 14.3	638 .36 15.5		
	2200	1236 .31 15.7	1192 .32 15.2	1148 .33 14.8	1103 .34 14.3	1056 .35 14.0	1008 .35 13.8	950 .36 13.7	825 .37 14.8	693 .38 15.9	427 .36 17.4	
P1 (1/2)	2250	1265 .33 16.2	1221 .34 15.8	1178 .35 15.3	1134 .36 14.9	1088 .37 14.5	1042 .38 14.3	989 .38 14.2	865 .39 15.1	747 .40 16.3	561 .40 17.6	
	2300	1293 .35 16.7	1250 .36 16.3	1208 .37 15.9	1165 .38 15.5	1120 .39 15.1	1075 .40 14.9	1028 .41 14.8	905 .42 15.5	790 .43 16.7	637 .44 17.9	
P1 (1/2)	2350	1321 .38 17.3	1279 .39 16.9	1238 .40 16.5	1196 .41 16.1	1152 .42 15.7	1108 .42 15.5	1064 .43 15.4	946 .44 15.9	832 .46 17.1	693 .46 18.3	
	2400	1349 .40 17.8	1308 .41 17.4	1267 .42 17.0	1227 .43 16.7	1184 .44 16.3	1141 .45 16.1	1098 .46 16.0	986 .47 16.4	873 .48 17.4	748 .49 18.6	547 .48 19.9
P1 (1/2)	2450	1377 .43 18.3	1337 .44 18.0	1297 .45 17.6	1257 .46 17.3	1216 .47 16.9	1174 .48 16.6	1131 .49 16.6	1026 .50 16.8	914 .51 17.8	803 .52 19.0	636 .52 20
	2500	1405 .45 18.9	1366 .46 18.5	1327 .47 18.2	1288 .49 17.8	1248 .50 17.5	1206 .51 17.3	1165 .51 17.2	1066 .53 17.2	955 .54 18.2	849 .55 19.3	706 .56 21

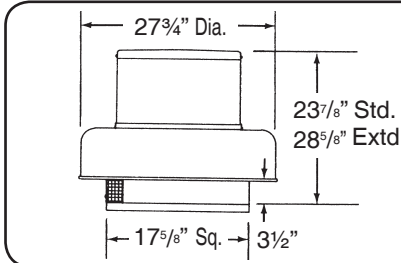
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 10

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = .095 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 3.27 x RPM
 Max. Motor Frame Size = 145T
 Unit Weight (less motor) = 35 lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 12" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
(1/6)	RPM	.000	.125	.250	.375	.500	.750	1.000	1.250	1.500	2.000	2.500	2.750
K1		CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
		SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES
K2 (1/6)	650	657 .02 2.2	481 .03 1.6										
	750	758 .03 3.1	613 .04 2.4	392 .04 2.3									
L1 (1/4)	850	859 .05 4.0	733 .05 3.3	584 .06 3.2	165 .05 3.1								
	950	960 .07 5.0	849 .07 4.4	723 .08 4.0	553 .08 4.0								
M1 (1/3)	1050	1061 .09 6.0	961 .10 5.5	853 .11 5.1	728 .11 4.8	528 .11 4.8							
	1150	1162 .12 7.0	1071 .13 6.5	974 .14 6.1	867 .14 5.8	739 .15 5.6							
PI (1/2)	1250	1263 .15 8.1	1179 .16 7.6	1092 .17 7.2	1001 .18 6.9	893 .18 6.7	519 .17 6.5						
	1350	1364 .19 9.3	1286 .20 8.8	1208 .21 8.3	1123 .22 8.0	1031 .23 7.8	797 .24 7.4						
R1 (3/4)	1400	1415 .21 9.9	1339 .22 9.4	1265 .24 8.9	1183 .24 8.6	1098 .25 8.3	891 .26 7.9	353 .22 7.9					
	1450	1465 .24 10.5	1392 .25 10.0	1321 .26 9.6	1243 .27 9.1	1164 .28 8.9	974 .29 8.5	624 .28 8.4					
S1 (1)	1500	1516 .26 11.1	1445 .27 10.7	1376 .29 10.2	1302 .30 9.8	1225 .31 9.5	1051 .32 9.1	783 .32 8.9					
	1550	1566 .29 11.8	1498 .30 11.3	1431 .31 10.9	1360 .33 10.5	1286 .34 10.2	1121 .35 9.7	900 .36 9.4	294 .29 9.4				
T1 (1-1/2)	1600	1617 .32 12.5	1550 .33 12.0	1486 .34 11.6	1418 .36 11.1	1346 .37 10.8	1190 .38 10.4	1001 .39 9.9	614 .36 9.9				
	1650	1668 .35 13.2	1603 .36 12.7	1540 .38 12.3	1475 .39 11.8	1406 .40 11.4	1258 .42 11.0	1085 .43 10.6	802 .42 10.5				
S1 (1)	1700	1718 .38 13.9	1655 .39 13.4	1594 .41 13.0	1532 .42 12.6	1465 .43 12.2	1325 .45 11.6	1167 .47 11.2	930 .47 11.0	330 .39 11.1			
	1750	1769 .41 14.6	1707 .43 14.1	1648 .44 13.7	1589 .46 13.3	1524 .47 12.9	1392 .49 12.4	1238 .51 11.9	1045 .51 11.6	657 .47 11.6			
S1 (1)	1800	1819 .45 15.4	1759 .47 14.9	1702 .48 14.4	1644 .50 14.0	1582 .51 13.6	1457 .53 13.1	1308 .55 12.6	1138 .56 12.2	851 .54 12.2			
	1850	1870 .49 16.2	1811 .51 15.7	1755 .52 15.3	1700 .54 14.8	1640 .55 14.4	1517 .57 13.8	1377 .59 13.3	1222 .60 13.0	990 .60 12.8			
T1 (1-1/2)	1900	1920 .53 17.0	1863 .55 16.5	1809 .56 16.1	1754 .58 15.7	1698 .59 15.3	1577 .62 14.5	1445 .64 14.0	1304 .65 13.7	1106 .65 13.4			
	1950	1971 .57 17.8	1915 .59 17.3	1862 .61 16.9	1809 .62 16.5	1755 .64 16.1	1638 .66 15.4	1513 .69 14.8	1375 .70 14.3	1210 .71 14.0			
T1 (1-1/2)	2000	2021 .62 18.6	1967 .64 18.1	1915 .65 17.7	1864 .67 17.3	1812 .69 16.9	1697 .71 16.2	1579 .74 15.6	1445 .75 15.1	1294 .76 14.6	644 .68 14.6		
	2050	2072 .67 19.3	2019 .68 18.9	1968 .70 18.5	1918 .72 18.1	1867 .74 17.7	1757 .76 17.0	1645 .79 16.4	1515 .81 15.9	1377 .82 15.4	880 .78 15.1		
T1 (1-1/2)	2100	2122 .72 20	2070 .73 19.7	2021 .75 19.2	1972 .77 18.8	1923 .79 18.5	1816 .82 17.7	1707 .84 17.2	1583 .86 16.7	1455 .88 16.2	1057 .87 15.7		
	2150	2173 .77 21	2122 .79 21	2074 .81 20	2028 .82 19.7	1978 .84 19.2	1874 .87 18.5	1768 .90 17.9	1651 .92 17.4	1526 .94 17.0	1175 .94 16.3		
T1 (1-1/2)	2200	2223 .82 22	2174 .84 21	2127 .86 21	2080 .88 21	2032 .90 20	1933 .93 19.3	1829 .96 18.7	1718 .98 18.2	1596 .100 17.7	1291 .102 16.9	450 .84 17.1	
	2250	2274 .88 22	2225 .90 22	2179 .92 22	2133 .94 21	2087 .96 21	1990 .99 20	1889 .102 19.5	1784 .105 19.0	1665 .108 18.5	1394 .109 17.6	798 .99 17.6	
T1 (1-1/2)	2300	2324 .94 23	2277 .96 23	2232 .98 23	2187 .106 22	2142 .102 22	2048 .105 21	1949 .108 20	1850 .111 19.8	1734 .113 19.3	1478 .116 18.4	1013 .110 18.2	440 .96 18.4
	2350	2375 .100 24	2328 .102 24	2284 .104 23	2240 .106 23	2196 .108 23	2105 .112 22	2008 .115 21	1911 .118 21	1801 .120 20	1562 .124 19.2	1187 .122 18.9	782 .111 18.9
T1 (1-1/2)	2400	2426 .107 25	2379 .109 25	2336 .111 24	2293 .113 24	2250 .115 23	2163 .119 23	2067 .122 22	1972 .125 22	1868 .128 22	1644 .132 21	1305 .131 19.5	1017 .124 19.5
	2450	2476 .114 26	2431 .116 25	2389 .118 25	2346 .120 25	2304 .122 24	2219 .126 24	2126 .129 23	2033 .133 22	1935 .135 22	1716 .139 21	1421 .140 20	1199 .137 20

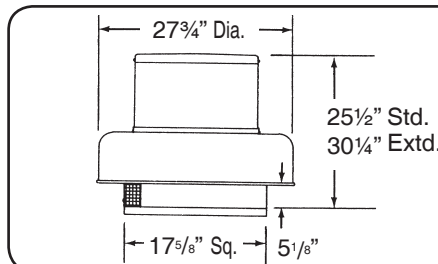
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 12

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = .10 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 3.27 x RPM
 Max. Motor Frame Size = 145T
 Unit Weight (less motor) = 35 lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 12" Sq.

RPM Range -Motor HP	RPM	STATIC PRESSURE, INCHES W. G.																							
		.000		.125		.250		.375		.500		.750		1.000		1.250		1.500		2.000		2.500		2.750	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
K1 (1/6)	550	676	.01	404	.02																				
K2 (1/6)	650	799	.02	595	.03																				
K3 (1/6)	750	922	.03	757	.04	487	.04																		
L1 (1/4)	850	1045	.05	901	.06	718	.06																		
M1 (1/3)	950	1168	.07	1041	.08	894	.08	692	.08																
P1 (1/2)	1050	1291	.09	1177	.10	1055	.11	897	.11	657	.11														
R1 (3/4)	1150	1414	.12	1310	.13	1200	.14	1072	.15	917	.15														
S1 (1)	1250	1537	.16	1441	.17	1342	.18	1238	.19	1104	.19	639	.17												
T1 (1-1/2)	1350	1660	.20	1571	.21	1481	.22	1385	.23	1275	.24	998	.24												
	1450	1783	.25	1700	.26	1617	.27	1529	.28	1441	.29	1202	.30	772	.27										
	1500	1844	.27	1764	.29	1684	.30	1600	.31	1514	.32	1298	.33	975	.32										
	1550	1906	.30	1828	.31	1751	.33	1670	.34	1587	.35	1385	.36	1126	.36										
	1600	1967	.33	1892	.34	1817	.36	1739	.37	1659	.38	1471	.40	1246	.40	752	.35								
	1650	2028	.36	1956	.38	1883	.39	1809	.40	1731	.41	1556	.43	1342	.44	1007	.42								
	1700	2090	.40	2019	.41	1949	.43	1877	.44	1802	.45	1640	.47	1437	.48	1160	.47								
	1750	2151	.43	2083	.45	2014	.46	1946	.48	1872	.49	1722	.51	1530	.53	1309	.52	802	.45						
	1800	2213	.47	2146	.49	2080	.50	2013	.52	1942	.53	1799	.55	1617	.57	1414	.57	1068	.52						
	1850	2274	.51	2210	.53	2145	.54	2080	.56	2012	.57	1873	.60	1703	.61	1510	.62	1233	.60						
	1900	2336	.55	2273	.57	2210	.59	2147	.60	2081	.62	1946	.64	1788	.66	1605	.68	1384	.67						
	1950	2397	.60	2336	.62	2274	.63	2213	.65	2150	.66	2018	.69	1872	.71	1699	.73	1507	.73						
	2000	2459	.65	2399	.66	2339	.68	2279	.70	2219	.71	2090	.74	1955	.76	1787	.78	1604	.79	757	.62				
	2050	2520	.70	2462	.71	2403	.73	2345	.75	2286	.76	2161	.79	2037	.82	1873	.84	1699	.85	1088	.76				
	2100	2582	.75	2525	.77	2468	.78	2410	.80	2353	.82	2232	.85	2109	.88	1958	.90	1793	.91	1313	.87				
	2150	2643	.80	2587	.82	2532	.84	2476	.86	2420	.87	2302	.90	2183	.93	2042	.96	1886	.98	1466	.95				
	2200	2705	.86	2650	.88	2596	.90	2541	.92	2487	.93	2373	.97	2255	.99	2126	1.02	1973	1.04	1616	1.04				
	2250	2766	.92	2713	.94	2660	.96	2606	.98	2553	1.00	2442	1.03	2328	1.06	2208	1.09	2059	1.11	1737	1.12	960	.93		
	2300	2828	.98	2775	1.00	2723	1.02	2671	1.04	2619	1.06	2512	1.09	2400	1.13	2290	1.16	2144	1.18	1834	1.20	1258	1.04		
	2350	2889	1.05	2838	1.07	2787	1.09	2736	1.11	2685	1.13	2581	1.16	2471	1.19	2361	1.23	2229	1.25	1930	1.28	1475	1.22	927	1.02
	2400	2951	1.12	2901	1.14	2851	1.16	2801	1.18	2751	1.20	2649	1.24	2542	1.27	2435	1.30	2312	1.33	2024	1.36	1627	1.32	1257	.122
	2450	3012	1.19	2963	1.21	2914	1.23	2865	1.25	2816	1.27	2718	1.31	2613	1.34	2508	1.38	2395	1.40	2121	1.45	1778	1.43	1501	1.38

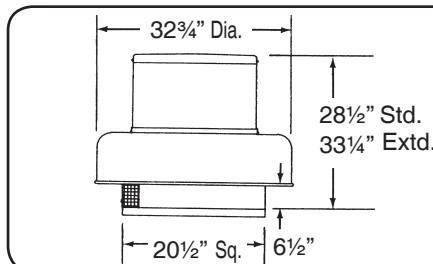
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

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VEBK 15

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = .282 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 4.06 x RPM
 Max. Motor Frame Size = 182T
 Unit Weight (less motor) = 50 lbs.
 Roof Opening = 16" Sq.
 Curb O. D. = 19" Sq.
 Damper Size = 15" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.125	.250	.375	.500	.750	1.000	1.250	1.500	2.000	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	550	1279 .04 3.3	976 .05 2.6										
	600	1395 .05 4.0	1129 .06 3.3	716 .06 3.2									
L1 (1/4)	650	1511 .07 4.7	1272 .08 4.0	943 .08 3.8									
	700	1628 .09 5.3	1411 .09 4.7	1130 .10 4.4	542 .08 4.5								
M1 (1/3)	750	1744 .11 6.0	1549 .12 5.5	1292 .12 5.1	949 .12 5.1								
	800	1860 .13 6.8	1678 .14 6.2	1448 .14 5.8	1170 .14 5.8								
P1 (1/2)	850	1976 .16 7.5	1805 .17 7.0	1600 .17 6.6	1358 .17 6.5	1019 .17 6.5							
	900	2093 .19 8.3	1931 .19 7.7	1744 .20 7.3	1524 .21 6.9	1255 .20 6.7							
R1 (3/4)	950	2209 .22 9.0	2056 .23 8.5	1885 .24 8.1	1681 .24 7.7	1450 .24 7.4							
	1000	2325 .25 9.8	2180 .26 9.3	2024 .27 8.9	1836 .28 8.5	1633 .28 8.3	920 .25 8.1						
S1 (1)	1050	2441 .29 10.7	2303 .31 10.2	2161 .32 9.8	1986 .32 9.4	1794 .33 9.2	1291 .31 8.9						
	1100	2558 .34 11.6	2426 .35 11.1	2293 .36 10.6	2129 .37 10.3	1951 .38 10.1	1526 .37 9.7						
T1 (1-1/2)	1150	2674 .39 12.6	2548 .40 12.1	2421 .41 11.6	2271 .42 11.3	2105 .43 11.1	1725 .43 10.7	993 .36 10.7					
	1200	2790 .44 13.5	2670 .45 13.1	2548 .46 12.6	2410 .48 12.3	2257 .49 12.1	1912 .49 11.7	1431 .47 11.6					
V1 (2)	1250	2906 .50 14.5	2791 .51 14.1	2674 .52 13.6	2548 .54 13.4	2401 .55 13.2	2082 .55 12.7	1669 .54 12.5					
	1300	3022 .56 15.6	2912 .57 15.1	2799 .59 14.7	2685 .60 14.4	2543 .61 14.2	2241 .62 13.8	1885 .62 13.5	1266 .56 13.6				
	1350	3138 .63 16.6	3032 .64 16.1	2924 .65 15.7	2815 .67 15.5	2684 .68 15.3	2398 .70 14.9	2075 .69 14.6	1641 .67 14.6				
	1400	3255 .70 17.7	3135 .71 17.3	3048 .73 16.9	2943 .74 16.6	2823 .75 16.4	2553 .77 16.1	2261 .77 15.8	1877 .76 15.7	1084 .62 15.8			
	1450	3371 .77 18.8	3273 .79 18.4	3171 .81 18.0	3070 .82 17.8	2961 .83 17.6	2707 .86 17.2	2425 .86 16.9	2095 .86 16.8	1610 .79 16.8			
	1500	3488 .86 20	3392 .87 19.5	3294 .89 19.2	3197 .90 18.9	3097 .92 18.7	2852 .95 18.4	2585 .96 18.1	2285 .95 17.9	1898 .92 17.9			
	1550	3604 .95 21	3512 .96 21	3417 .98 20	3322 1.00 20	3228 1.01 20	2995 1.04 19.0	2742 1.05 19.0	2472 1.05 19.0	2132 1.04 19.0			
	1600	3720 1.04 22	3631 1.06 22	3539 1.07 21	3448 1.09 21	3356 1.11 21	3137 1.14 21	2897 1.16 20	2643 1.16 20	2339 1.15 20			
	1650	3836 1.14 23	3747 1.16 23	3661 1.18 23	3572 1.19 22	3483 1.21 22	3278 1.24 22	3049 1.27 21	2804 1.27 21	2529 1.26 21	1650 1.15 21		
	1700	3953 1.25 24	3866 1.27 24	3783 1.28 24	3697 1.30 24	3610 1.32 23	3417 1.35 23	3201 1.38 23	2962 1.39 22	2715 1.38 22	2038 1.33 22		
	1750	4069 1.36 25	3985 1.38 25	3904 1.40 25	3820 1.42 25	3736 1.44 24	3555 1.47 24	3345 1.50 24	3118 1.51 24	2886 1.52 23	2276 1.48 23		
	1800	4185 1.48 27	4104 1.50 26	4025 1.52 26	3944 1.54 26	3862 1.56 26	3692 1.59 25	3488 1.62 25	3273 1.65 25	3047 1.65 24	2510 1.63 24	1280 1.28 24	
	1850	4301 1.61 28	4222 1.63 28	4146 1.65 27	4067 1.67 27	3987 1.69 27	3828 1.73 27	3629 1.76 26	3425 1.79 26	3206 1.79 26	2711 1.78 25	1890 1.58 25	
	1900	4417 1.74 29	4340 1.76 29	4266 1.78 29	4189 1.80 28	4112 1.82 28	3958 1.86 28	3770 1.90 28	3577 1.93 27	3363 1.94 27	2900 1.92 26	2276 1.86 26	1536 1.59 27
	1950	4534 1.88 30	4459 1.90 30	4387 1.92 30	4311 1.95 30	4236 1.97 30	4086 2.01 29	3909 2.04 29	3721 2.08 28	3518 2.09 28	3087 2.09 28	2514 2.04 27	2066 1.88 27
	1975	4592 1.96 31	4518 1.98 31	4447 2.00 30	4372 2.02 30	4298 2.04 30	4150 2.08 30	3979 2.12 29	3793 2.15 29	3595 2.17 29	3180 2.17 28	2632 2.13 28	2279 2.02 28

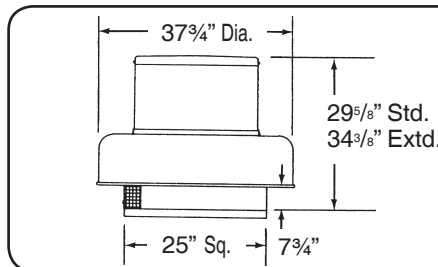
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VEBK 18

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = .64 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 4.94 x RPM
 Max. Motor Frame Size = 184T
 Unit Weight (less motor) = 65 lbs.
 Roof Opening = 20 1/2" Sq.
 Curb O. D. = 23 1/2" Sq.
 Damper Size = 19" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W. G.											
		.000	.125	.250	.375	.500	.750	1.000	1.250	1.500	2.000	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K1 (1/6)	L1 (1/4)	2079 .09 6.1	1790 .10 5.3	1416 .11 5.3	508 .08 5.3								
	M1 (1/3)	2268 .12 7.1	2008 .13 6.3	1692 .14 6.3	1225 .13 6.3								
P1 (1/2)	650	2457 .15 8.2	2221 .16 7.4	1951 .17 7.2	1592 .17 7.2	937 .15 7.2							
	700	2646 .19 9.3	2427 .20 8.5	2184 .21 8.2	1887 .22 8.2	1484 .21 8.2							
R1 (3/4)	750	2835 .24 10.5	2631 .25 9.7	2409 .26 9.1	2152 .26 9.2	1835 .27 9.2							
	800	3024 .29 11.8	2832 .30 11.1	2629 .31 10.4	2409 .32 10.4	2134 .32 10.4	1212 .29 10.5						
S1 (1)	850	3213 .35 13.3	3033 .36 12.5	2845 .37 11.8	2642 .38 11.7	2401 .39 11.8	1747 .38 11.8						
	900	3402 .41 14.8	3232 .42 14.1	3059 .43 13.3	2867 .44 13.1	2660 .45 13.1	2134 .46 13.2						
T1 (1-1/2)	950	3590 .48 15.9	3430 .49 15.3	3268 .51 14.7	3089 .52 14.2	2907 .53 14.1	2437 .54 13.9	1699 .52 13.8					
	1000	3779 .56 17.0	3627 .58 16.4	3473 .59 15.8	3308 .60 15.2	3135 .61 15.1	2723 .63 14.5	2194 .62 14.0					
V1 (2)	1050	3968 .65 17.9	3824 .66 17.3	3677 .68 16.7	3524 .69 16.3	3359 .70 15.8	2988 .72 15.1	2530 .73 14.3	1762 .69 14.0				
	1100	4157 .75 18.6	4019 .76 18.1	3879 .78 17.6	3737 .79 17.1	3580 .80 16.6	3247 .83 15.6	2832 .84 14.6	2281 .82 13.8				
W1 (3)	1150	4346 .86 20	4215 .87 19.5	4081 .88 19.0	3947 .90 18.5	3799 .91 18.0	3498 .94 17.0	3119 .96 16.0	2681 .95 15.1	1928 .91 14.9			
	1175	4441 .91 21	4312 .93 20	4181 .94 19.7	4050 .96 19.2	3907 .97 18.7	3613 1.00 17.8	3252 1.02 16.8	2835 1.02 15.9	2208 .99 15.4			
V1 (2)	1200	4535 .97 21	4409 .99 21	4281 1.00 20	4152 1.02 19.9	4015 1.03 19.5	3727 1.06 18.6	3385 1.08 17.6	2987 1.09 16.7	2451 1.06 16.0			
	1225	4630 1.03 22	4506 1.05 22	4381 1.07 21	4255 1.08 21	4123 1.10 20	3840 1.12 19.3	3515 1.15 18.4	3138 1.17 17.5	2690 1.14 16.6			
V1 (2)	1250	4724 1.10 23	4604 1.11 22	4480 1.13 22	4357 1.15 21	4229 1.16 21	3953 1.19 20	3645 1.22 19.2	3286 1.24 18.3	2876 1.22 17.5			
	1275	4819 1.17 24	4700 1.18 23	4580 1.20 23	4459 1.21 22	4336 1.23 22	4065 1.26 21	3774 1.29 20	3429 1.31 19.2	3031 1.30 18.4	1385 1.04 17.9		
V1 (2)	1300	4913 1.24 24	4797 1.25 24	4679 1.27 23	4560 1.29 23	4442 1.30 22	4176 1.33 22	3901 1.36 21	3563 1.39 20	3184 1.39 19.2	1875 1.23 18.6		
	1325	5008 1.31 25	4894 1.33 24	4778 1.34 24	4661 1.36 24	4545 1.38 23	4287 1.41 23	4026 1.43 22	3696 1.46 21	3336 1.47 20	2193 1.38 19.3		
W1 (3)	1350	5102 1.38 26	4991 1.40 25	4877 1.42 25	4762 1.44 24	4648 1.45 24	4397 1.48 23	4141 1.51 23	3828 1.54 22	3485 1.56 21	2476 1.49 20		
	1375	5197 1.46 26	5087 1.48 26	4975 1.50 26	4863 1.52 25	4751 1.53 25	4507 1.56 24	4255 1.59 24	3959 1.62 23	3633 1.65 22	2727 1.59 21		
V1 (2)	1400	5291 1.54 27	5184 1.56 27	5074 1.58 27	4964 1.60 26	4854 1.62 26	4616 1.65 25	4369 1.68 24	4088 1.71 24	3774 1.74 23	2968 1.69 21		
	1425	5386 1.63 28	5280 1.65 28	5172 1.66 27	5064 1.68 27	4956 1.70 27	4724 1.73 26	4482 1.76 25	4217 1.80 25	3908 1.83 24	3205 1.80 22	1526 1.44 22	
V1 (2)	1450	5480 1.72 29	5377 1.73 29	5271 1.75 28	5164 1.79 28	5058 1.79 28	4833 1.82 27	4594 1.85 26	4344 1.89 26	4041 1.92 25	3363 1.90 23	2035 1.70 23	
	1475	5575 1.81 30	5473 1.82 30	5369 1.84 29	5264 1.86 29	5160 1.88 29	4940 1.92 28	4706 1.95 27	4472 1.98 27	4173 2.01 26	3517 2.02 24	2379 1.89 24	
V1 (2)	1500	5669 1.90 31	5569 1.92 30	5467 1.94 30	5364 1.96 30	5261 1.98 29	5048 2.01 29	4817 2.04 28	4587 2.08 28	4304 2.11 27	3670 2.13 25	2663 2.04 24	1764 1.81 24
	1525	5764 2.00 32	5666 2.02 31	5565 2.03 31	5464 2.05 31	5362 2.07 30	5155 2.11 30	4928 2.14 29	4702 2.18 29	4434 2.21 28	3822 2.24 26	2929 2.17 25	2209 1.99 25
V1 (2)	1550	5858 2.10 33	5762 2.12 32	5662 2.13 32	5563 2.15 32	5463 2.17 31	5261 2.21 31	5038 2.25 30	4815 2.28 30	4563 2.31 29	3972 2.36 27	3171 2.29 26	2530 2.20 26
	1575	5953 2.20 34	5858 2.22 34	5760 2.24 33	5662 2.26 33	5564 2.28 33	5368 2.32 32	5148 2.35 31	4929 2.39 31	4691 2.42 30	4120 2.48 28	3411 2.42 27	2814 2.37 27

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

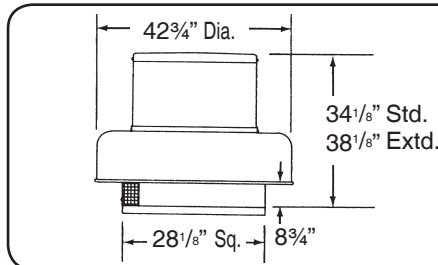
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Power Roof Vents

VEBK 21

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = 1.28 x $\left[\frac{\text{RPM}}{1000} \right]^3$
 Tip Speed = 5.76 x RPM
 Max. Motor Frame Size = 184T
 Unit Weight (less motor) = 100 lbs.
 Roof Opening = 23 1/2" Sq.
 Curb O. D. = 26 1/2" Sq.
 Damper Size = 22" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
L1 (1/4)	RPM	.000	.125	.250	.375	.500	.750	1.000	1.250	1.500	2.000	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
M1 (1/3)	400	2231 .07 4.2	1832 .08 3.3	921 .07 3.3									
	450	2510 .11 5.3	2165 .11 4.3	1670 .12 4.1									
P1 (1/2)	500	2788 .14 6.4	2489 .15 5.5	2112 .16 5.1	1312 .15 5.1								
	550	3067 .19 7.7	2798 .20 6.8	2484 .21 6.2	2033 .21 6.0								
R1 (3/4)	600	3346 .25 8.8	3099 .26 8.1	2822 .27 7.4	2486 .27 7.1	1957 .28 7.0							
	650	3625 .32 10.0	3397 .33 9.2	3151 .34 8.6	2880 .35 8.2	2509 .35 8.0							
S1 (1)	700	3904 .40 11.2	3692 .41 10.5	3474 .42 9.9	3222 .43 9.3	2929 .44 9.1	1727 .41 9.0						
	750	4183 .49 12.5	3986 .50 11.8	3787 .52 11.2	3557 .53 10.7	3322 .53 10.4	2568 .54 10.0						
T1 (1-1/2)	800	4461 .59 13.8	4277 .61 13.2	4091 .62 12.7	3885 .63 12.1	3665 .64 11.6	3113 .65 11.3	1842 .60 11.2					
	850	4740 .71 15.2	4567 .73 14.6	4392 .74 14.1	4208 .76 13.6	4001 .77 13.1	3527 .78 12.6	2785 .78 12.3					
V1 (2)	875	4880 .77 16.1	4711 .79 15.4	4541 .81 14.8	4368 .82 14.3	4166 .83 13.9	3730 .85 13.3	3065 .85 12.9					
	900	5019 .84 16.9	4856 .86 16.3	4690 .88 15.6	4525 .89 15.1	4331 .90 14.6	3930 .93 14.0	3340 .93 13.7	2162 .87 13.6				
W1 (3)	925	5158 .92 17.7	4999 .93 17.1	4838 .95 16.5	4677 .97 15.9	4494 .98 15.4	4113 1.00 14.8	3605 1.01 14.4	2633 .98 14.3				
	950	5298 .99 18.6	5143 1.01 18.0	4986 1.03 17.4	4830 1.04 16.8	4656 1.06 16.3	4285 1.08 15.6	3814 1.09 15.2	3110 1.09 14.9				
V1 (2)	975	5437 1.07 19.4	5287 1.09 18.8	5134 1.11 18.3	4981 1.13 17.8	4817 1.14 17.3	4456 1.16 16.5	4020 1.18 16.0	3391 1.18 15.6	2168 1.07 15.6			
	1000	5577 1.16 20	5430 1.17 19.7	5281 1.19 19.2	5132 1.21 18.7	4977 1.23 18.2	4625 1.25 17.5	4223 1.27 17.0	3667 1.27 16.5	2625 1.22 16.4			
W1 (3)	1050	5856 1.34 22	5716 1.36 22	5574 1.38 21	5432 1.40 20	5291 1.42 20	4959 1.44 19.3	4624 1.47 18.8	4163 1.48 18.3	3512 1.47 18.0			
	1075	5995 1.44 23	5859 1.46 22	5720 1.48 22	5582 1.50 21	5443 1.52 21	5125 1.54 20	4797 1.57 19.7	4370 1.58 19.2	3791 1.58 18.8			
W1 (3)	1100	6134 1.54 24	6001 1.56 23	5866 1.58 23	5731 1.60 22	5595 1.62 22	5289 1.65 21	4969 1.68 21	4575 1.69 20	4066 1.70 19.7			
	1125	6274 1.65 25	6144 1.67 24	6011 1.69 24	5879 1.71 23	5747 1.73 23	5453 1.76 22	5139 1.79 22	4778 1.81 21	4337 1.82 21	2461 1.60 20		
W1 (3)	1150	6413 1.76 26	6286 1.78 25	6157 1.80 25	6027 1.82 24	5898 1.84 24	5615 1.88 23	5309 1.91 23	4979 1.93 22	4558 1.94 22	2946 1.84 21		
	1175	6553 1.88 27	6428 1.90 26	6302 1.92 26	6175 1.94 25	6048 1.96 25	5777 2.00 24	5477 2.03 23	5177 2.06 23	4766 2.07 22	3446 2.02 22		
W1 (3)	1200	6692 2.00 27	6571 2.02 27	6446 2.04 26	6322 2.06 26	6198 2.09 26	5937 2.13 25	5644 2.16 24	5350 2.19 24	4971 2.20 23	3915 2.20 22		
	1225	6831 2.13 28	6713 2.15 28	6591 2.17 27	6469 2.19 27	6348 2.22 26	6098 2.26 26	5810 2.29 25	5522 2.32 24	5175 2.34 24	4197 2.34 23		
W1 (3)	1250	6971 2.26 29	6854 2.28 29	6735 2.30 28	6616 2.33 28	6497 2.35 27	6257 2.40 27	5975 2.43 26	5693 2.46 25	5376 2.48 25	4474 2.49 24	2131 2.00 24	
	1275	7110 2.40 30	6996 2.42 29	6879 2.44 29	6763 2.47 28	6646 2.49 28	6412 2.54 27	6139 2.57 27	5863 2.60 26	5576 2.63 26	4748 2.64 25	3098 2.47 25	
W1 (3)	1300	7250 2.54 31	7138 2.56 30	7023 2.59 30	6909 2.61 29	6794 2.64 29	6565 2.68 28	6302 2.72 28	6031 2.75 27	5760 2.78 27	5018 2.80 26	3551 2.69 25	
	1325	7389 2.69 32	7280 2.71 31	7167 2.74 31	7055 2.76 30	6942 2.79 30	6718 2.84 29	6465 2.87 28	6199 2.91 28	5933 2.94 27	5239 2.97 27	4114 2.94 26	3025 2.71 26
W1 (3)	1350	7529 2.85 32	7421 2.87 32	7311 2.89 32	7201 2.92 31	7090 2.94 31	6870 2.99 30	6627 3.04 29	6366 3.07 29	6105 3.10 29	5447 3.13 27	4472 3.13 27	3482 2.99 27
	1375	7668 3.01 33	7563 3.03 33	7454 3.06 32	7346 3.08 32	7238 3.11 32	7021 3.16 31	6788 3.20 30	6531 3.24 30	6275 3.27 29	5653 3.31 28	4752 3.31 28	3975 3.23 28

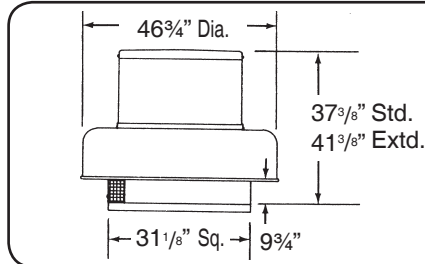
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 24

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = 3.26 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 6.68 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 125 lbs.
 Roof Opening = 26 1/2" Sq.
 Curb O. D. = 29 1/2" Sq.
 Damper Size = 26" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
M1 (1/3)	RPM	.000	.125	.250	.375	.500	.750	1.000	1.250	1.500	2.000	2.500	2.750	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
P1 (1/2)	400	3803 .21 6.6	3306 .21 5.8	2595 .21 4.9										
	450	4278 .30 8.1	3849 .30 7.4	3289 .30 6.6	2561 .29 5.8									
R1 (3/4)	S1 (1)	500	4753 .41 9.5	4367 .41 8.9	3936 .41 8.2	3330 .41 7.5	2403 .38 7.1							
		550	5228 .54 11.0	4877 .55 10.4	4501 .55 9.8	4013 .55 9.1	3432 .54 8.7							
T1 (1-1/2)	V1 (2)	575	5466 .62 11.8	5130 .63 11.3	4778 .63 10.6	4341 .63 10.0	3810 .62 9.6							
		600	5704 .71 12.7	5382 .71 12.1	5052 .71 11.5	4663 .71 11.0	4163 .71 10.6	2526 .63 10.1						
W1 (3)	X1 (5)	625	5941 .80 13.7	5632 .80 13.2	5324 .81 12.5	4964 .81 12.0	4500 .80 11.6	3375 .78 10.9						
		650	6179 .90 14.6	5881 .90 14.1	5585 .91 13.5	5248 .91 13.0	4830 .90 12.7	3836 .89 11.9						
Y1 (7-1/2)		675	6417 1.01 15.6	6130 1.01 15.1	5845 1.02 14.6	5528 1.02 14.1	5155 1.01 13.7	4224 1.00 13.0	1953 .84 12.8					
		700	6654 1.12 16.7	6378 1.13 16.2	6103 1.13 15.6	5805 1.13 15.2	5476 1.13 14.9	4603 1.12 14.2	3157 1.04 13.7					
		725	6892 1.25 17.7	6625 1.25 17.3	6359 1.26 16.7	6080 1.26 16.2	5770 1.26 16.0	4965 1.25 15.3	4009 1.23 14.7					
		750	7130 1.38 18.8	6871 1.39 18.4	6615 1.39 17.9	6353 1.39 17.3	6053 1.39 17.1	5304 1.39 16.4	4421 1.37 15.7					
		775	7367 1.52 19.9	7117 1.53 19.5	6869 1.53 19.0	6620 1.54 18.5	6334 1.54 18.2	5638 1.53 17.5	4810 1.51 16.9	3274 1.37 16.6				
		800	7605 1.68 21	7362 1.68 21	7122 1.69 20	6881 1.69 19.6	6612 1.69 19.3	5967 1.69 18.7	5191 1.67 18.0	4123 1.61 17.6				
		825	7843 1.84 22	7607 1.84 22	7374 1.85 21	7141 1.85 21	6887 1.86 20	6292 1.85 19.9	5565 1.84 19.2	4730 1.81 18.6				
		850	8080 2.01 23	7852 2.02 23	7625 2.02 22	7399 2.03 22	7161 2.03 21	6613 2.03 21	5908 2.02 20	5122 1.99 20	3622 1.81 20			
		875	8318 2.19 25	8096 2.20 24	7876 2.20 24	7656 2.21 23	7433 2.22 23	6919 2.21 22	6245 2.20 22	5508 2.18 21	4471 2.10 21			
		900	8556 2.39 26	8340 2.39 25	8126 2.40 25	7912 2.40 24	7698 2.41 24	7204 2.41 23	6578 2.40 23	5887 2.38 22	5122 2.35 22			
		925	8793 2.59 27	8583 2.60 26	8375 2.60 26	8167 2.61 25	7959 2.61 25	7486 2.62 24	6907 2.61 24	6261 2.59 23	5516 2.56 23			
		950	9031 2.81 28	8826 2.81 27	8623 2.82 27	8421 2.83 26	8218 2.83 26	7766 2.83 26	7232 2.83 25	6601 2.81 24	5903 2.79 24			
		975	9269 3.04 29	9069 3.04 28	8871 3.05 28	8674 3.05 27	8477 3.06 27	8044 3.06 27	7553 3.06 26	6938 3.05 26	6285 3.02 25	3963 2.67 24		
		1000	9506 3.28 30	9311 3.28 29	9119 3.29 29	8926 3.29 29	8734 3.30 28	8321 3.31 28	7871 3.30 27	7272 3.29 27	6661 3.27 26	4807 3.08 25		
		1025	9744 3.53 31	9554 3.53 31	9366 3.54 30	9178 3.55 30	8990 3.55 29	8595 3.56 29	8157 3.56 29	7602 3.55 28	7017 3.53 27	5660 3.46 26		
		1050	9982 3.79 32	9796 3.80 32	9612 3.80 31	9429 3.81 31	9246 3.82 30	8869 3.83 30	8440 3.83 30	7928 3.82 29	7357 3.80 29	6085 3.74 28		
		1075	10219 4.07 33	10038 4.08 33	9859 4.08 32	9679 4.09 32	9500 4.10 32	9140 4.11 31	8722 4.11 31	8251 4.10 30	7694 4.08 30	6477 4.03 29	3669 3.29 28	
		1100	10457 4.36 34	10279 4.37 34	10104 4.37 34	9929 4.38 33	9754 4.39 33	9404 4.40 32	9002 4.40 32	8571 4.40 32	8026 4.38 31	6863 4.33 30	4765 3.95 30	
		1125	10695 4.66 35	10521 4.67 35	10350 4.68 35	10179 4.68 34	10007 4.69 34	9665 4.70 34	9280 4.71 34	8880 4.71 33	8356 4.69 33	7244 4.64 31	5613 4.43 31	3663 3.69 31
		1150	10932 4.98 37	10762 4.99 37	10595 5.00 36	10427 5.00 36	10260 5.01 35	9925 5.02 35	9556 5.03 35	9165 5.03 35	8682 5.01 34	7621 4.97 33	6422 4.90 32	4873 4.47 32
		1175	11170 5.31 38	11008 5.32 38	10839 5.33 37	10676 5.34 37	10512 5.34 37	10184 5.36 36	9831 5.36 36	9449 5.36 36	9005 5.35 35	7985 5.32 34	6820 5.24 33	5719 5.01 33
		1200	11408 5.66 39	11244 5.67 39	11084 5.67 39	10923 5.68 39	10763 5.69 38	10442 5.70 38	10105 5.71 38	9730 5.71 37	9326 5.71 37	8327 5.67 36	7212 5.60 35	6572 5.54 34

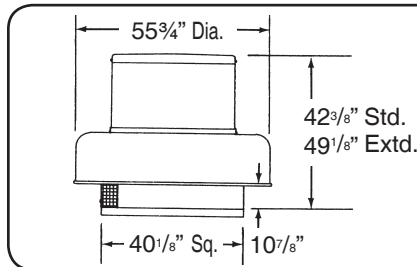
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 30

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = 7.54 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 8.25 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 190 lbs.
 Roof Opening = 35 1/2" Sq.
 Curb O. D. = 38 1/2" Sq.
 Damper Size = 34" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
P1 (1/2)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	2.000	2.500
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
P2 (1/2)	275	4812 .14 4.8	3503 .16 3.2										
	300	5249 .18 5.6	4124 .20 4.2	1666 .15 3.3									
R1 (3/4)	325	5686 .22 6.5	4674 .25 5.2	2917 .23 3.9									
	350	6124 .28 7.5	5192 .31 6.2	3818 .31 4.7									
S1 (1)	375	6561 .34 8.5	5699 .38 7.2	4599 .39 5.7	2538 .32 5.1								
	400	6999 .42 9.4	6199 .46 8.2	5234 .48 6.8	3648 .44 5.8								
T1 (1-1/2)	425	7436 .50 10.4	6691 .54 9.1	5850 .57 7.9	4558 .56 6.6	2405 .43 6.4							
	450	7874 .59 11.4	7177 .64 10.1	6408 .68 9.0	5348 .68 7.7	3729 .61 7.1							
V1 (2)	475	8311 .70 12.4	7651 .74 11.2	6931 .79 10.1	6034 .80 8.8	4710 .75 7.8	2678 .60 7.8						
	500	8748 .82 13.5	8121 .86 12.3	7445 .91 11.3	6661 .94 10.0	5559 .92 8.9	4034 .82 8.5						
W1 (3)	525	9186 .95 14.6	8589 .99 13.5	7953 1.04 12.4	7273 1.08 11.2	6342 1.08 10.1	5037 .99 9.4	3241 .85 9.4					
	550	9623 1.09 15.7	9053 1.14 14.6	8454 1.19 13.6	7824 1.24 12.7	7006 1.25 11.5	5927 1.21 10.5	4518 1.10 10.3					
X1 (5)	575	10061 1.24 16.9	9515 1.30 15.8	8951 1.35 14.9	8348 1.40 14.1	7633 1.42 13.0	6719 1.41 12.0	5514 1.31 11.2					
	600	10498 1.41 18.1	9975 1.47 17.1	9443 1.52 16.2	8865 1.58 15.5	8247 1.62 14.4	7453 1.62 13.4	6412 1.57 12.5	3332 1.21 12.2				
Y1 (7-1/2)	625	10935 1.59 19.4	10434 1.65 18.4	9931 1.71 17.6	9376 1.77 16.8	8821 1.82 15.9	8088 1.83 15.0	7207 1.81 14.0	4776 1.58 13.3				
	650	11373 1.79 21	10890 1.85 19.7	10408 1.92 18.9	9881 1.97 18.2	9348 2.03 17.4	8711 2.06 16.4	7977 2.06 15.6	5835 1.87 14.4				
	675	11810 2.01 22	11346 2.07 21	10881 2.14 20	10382 2.20 19.5	9869 2.25 18.8	9323 2.30 17.9	8616 2.30 17.0	6782 2.16 15.5	4002 1.77 15.5			
	700	12248 2.24 23	11800 2.31 22	11352 2.37 22	10879 2.44 21	10384 2.50 20	9888 2.56 19.4	9244 2.57 18.5	7635 2.50 17.0	5394 2.22 16.6			
	725	12685 2.49 25	12253 2.56 24	11820 2.63 23	11372 2.69 22	10894 2.76 22	10415 2.82 21	9861 2.85 20	8426 2.82 18.4	6457 2.59 17.6	2624 1.67 17.6		
	750	13123 2.75 26	12704 2.83 25	12286 2.90 24	11861 2.97 24	11399 3.03 23	10937 3.10 22	10468 3.16 22	9197 3.16 20	7407 2.94 18.7	5076 2.57 18.7		
	775	13560 3.04 28	13155 3.11 27	12751 3.19 26	12346 3.26 25	11900 3.33 24	11453 3.39 24	11005 3.46 23	9837 3.48 21	8291 3.37 20	6267 3.07 20		
	800	13997 3.34 29	13605 3.42 28	13213 3.50 27	12822 3.57 26	12398 3.64 26	11964 3.71 25	11531 3.78 24	10467 3.83 23	9088 3.77 21	7297 3.51 21		
	825	14435 3.67 30	14055 3.74 29	13675 3.82 28	13295 3.90 28	12892 3.98 27	12472 4.05 26	12051 4.12 26	11087 4.20 24	9870 4.18 23	8242 3.93 22	1407 1.73 22	
	850	14872 4.01 32	14503 4.09 31	14134 4.17 30	13766 4.25 29	13383 4.33 28	12975 4.40 28	12567 4.48 27	11699 4.60 26	10578 4.60 24	9116 4.46 23	4810 3.46 22	
	875	15310 4.37 33	14951 4.46 32	14593 4.54 31	14235 4.62 30	13871 4.71 30	13475 4.78 29	13079 4.86 28	12286 5.01 27	11214 5.02 26	9913 4.93 24	6362 4.24 24	
	900	15747 4.76 35	15399 4.85 34	15050 4.93 33	14702 5.02 32	14353 5.10 31	13971 5.18 30	13586 5.26 30	12816 5.41 28	11842 5.46 27	10696 5.42 26	7458 4.86 25	
	925	16184 5.17 36	15845 5.26 35	15506 5.34 34	15168 5.43 33	14829 5.52 33	14465 5.60 32	14090 5.68 31	13341 5.84 30	12461 5.92 28	11430 5.92 27	8473 5.44 26	1922 2.65 26
	950	16622 5.60 38	16292 5.69 37	15962 5.78 36	15632 5.87 35	15302 5.96 34	14956 6.05 34	14591 6.13 33	13861 6.29 32	13072 6.42 30	12069 6.42 29	9419 5.98 27	5356 4.82 27
	975	17059 6.05 39	16738 6.14 39	16416 6.24 38	16094 6.33 37	15773 6.42 37	15444 6.51 36	15089 6.60 35	14378 6.77 33	13666 6.93 32	12699 6.94 30	10320 6.70 28	6967 5.82 28
	1000	17497 6.53 41	17183 6.62 40	16870 6.72 39	16556 6.81 39	16242 6.91 38	15929 7.01 37	15584 7.09 36	14890 7.26 35	14197 7.44 34	13322 7.49 32	11118 7.33 29	8068 6.59 29

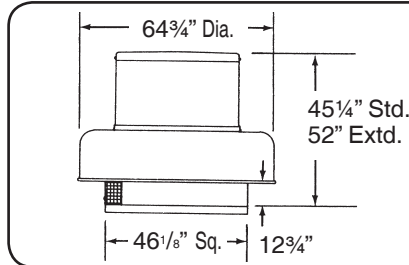
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 36

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = 20.52 x $\left[\frac{\text{RPM}}{1000} \right]^3$
 Tip Speed = 9.62 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 310 lbs.
 Roof Opening = 41 1/2" Sq.
 Curb O. D. = 44 1/2" Sq.
 Damper Size = 40" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
R1 (3/4)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
S1 (1)	250	7175 .30 10.3	5986 .32 6.3	3143 .25 2.9									
	270	7749 .38 11.3	6669 .40 7.7	4727 .40 3.8									
T1 (1-1/2)	290	8323 .47 12.3	7339 .50 8.9	5911 .50 5.1									
	310	8898 .58 13.4	7990 .61 10.2	6788 .61 6.7	4287 .51 4.6								
V1 (2)	330	9472 .70 14.4	8619 .73 11.5	7638 .75 8.4	5748 .69 5.6								
	350	10046 .83 15.5	9242 .87 12.7	8342 .89 10.2	6948 .87 7.0	4034 .68 5.9							
W1 (3)	370	10620 .99 16.6	9859 1.02 14.0	9030 1.04 11.9	7894 1.04 8.5	5865 .94 6.8							
	390	11194 1.15 17.7	10472 1.19 15.3	9707 1.22 13.2	8757 1.23 10.3	7181 1.17 8.2	4354 .92 7.5						
X1 (5)	410	11768 1.34 18.9	11081 1.38 16.6	10375 1.41 14.6	9566 1.43 12.1	8354 1.41 9.6	6297 1.25 8.4						
	430	12342 1.55 20	11687 1.58 17.9	11033 1.62 16.0	10264 1.64 14.0	9236 1.63 11.2	7663 1.55 9.8	5095 1.28 9.3					
Y1 (7-1/2)	450	12916 1.77 21	12290 1.81 19.3	11665 1.85 17.4	10951 1.88 15.8	10097 1.88 13.0	8861 .184 11.4	6960 1.66 10.4					
	470	13490 2.02 23	12891 2.06 21	12292 2.10 18.8	11631 2.13 17.3	10925 2.15 14.9	9855 2.12 13.0	8331 2.02 12.0					
C1 (10)	490	14064 2.29 24	13490 2.33 22	12915 2.38 20	12302 2.41 18.7	11625 2.43 16.9	10727 2.42 14.8	9532 2.36 13.6	5112 1.82 12.7				
	510	14638 2.58 25	14086 2.63 23	13534 2.67 22	12967 2.71 20	12316 2.74 18.8	11581 2.75 16.6	10581 2.71 15.2	7349 2.37 13.9				
	530	15212 2.90 26	14681 2.94 25	14150 2.99 23	13619 3.04 22	12999 3.06 20	12374 3.09 18.4	11458 3.06 16.9	8768 2.80 15.5				
	550	15786 3.24 28	15274 3.29 26	14763 3.33 25	14251 3.38 23	13676 3.42 22	13072 3.44 20	12318 3.44 18.7	10062 3.27 16.9	5974 2.62 16.3			
	570	16360 3.60 29	15866 3.65 27	15373 3.70 26	14879 3.75 25	14345 3.79 23	13763 3.83 22	13163 3.84 20	11254 3.74 18.2	8202 3.30 17.2			
	590	16934 4.00 30	16457 4.05 29	15980 4.10 27	15503 4.15 26	15009 4.20 25	14447 4.23 24	13885 4.25 22	12267 4.20 19.7	9624 3.84 18.3	4518 2.62 18.2		
	610	17508 4.42 32	17047 4.47 30	16586 4.52 29	16124 4.58 27	15663 4.63 26	15124 4.66 25	14580 4.69 24	13144 4.66 22	10952 4.44 19.6	7424 3.62 19.1		
	630	18082 4.86 33	17635 4.92 32	17189 4.98 30	16742 5.03 29	16296 5.09 28	15795 5.13 27	15269 5.15 26	14006 5.16 23	12152 5.00 21	9387 4.48 20		
	650	18656 5.34 34	18223 5.40 33	17790 5.46 32	17357 5.52 30	16925 5.57 29	16462 5.62 28	15951 5.65 27	14856 5.69 25	13286 5.60 23	10801 5.18 21	6977 4.30 21	
	670	19230 5.85 36	18810 5.91 35	18390 5.97 33	17970 6.03 32	17550 6.09 31	17123 6.15 30	16628 6.18 29	15637 6.24 27	14171 6.16 24	12105 5.89 22	9298 5.19 22	
	680	19517 6.12 37	19103 6.18 35	18690 6.24 34	18276 6.30 33	17862 6.36 32	17448 6.42 30	16964 6.45 29	15988 6.51 27	14608 6.46 26	12708 6.23 24	10104 5.63 23	4583 3.74 23
	690	19804 6.39 37	19396 6.45 36	18989 6.51 35	18581 6.57 34	18173 6.64 32	17765 6.70 31	17299 6.73 30	16337 6.80 29	15042 6.76 27	13305 6.57 25	10816 6.04 24	6874 4.97 23
	700	20091 6.67 38	19689 6.73 37	19287 6.80 36	18885 6.86 34	18483 6.92 33	18081 6.98 32	17632 7.03 31	16685 7.09 30	15473 7.07 28	13895 6.93 26	11521 6.44 24	8068 5.43 24
	710	20378 6.96 39	19982 7.03 38	19586 7.09 36	19189 7.15 35	18793 7.21 34	18397 7.28 33	17965 7.33 32	17030 7.39 31	15900 7.39 29	14464 7.30 27	12217 6.85 25	9223 5.95 25
	720	20665 7.26 40	20274 7.32 38	19884 7.39 37	19493 7.45 36	19102 7.52 35	18711 7.58 34	18296 7.63 33	17375 7.70 32	16325 7.72 30	14908 7.63 28	12852 7.28 26	10302 6.64 25
	730	20952 7.57 40	20567 7.63 39	20181 7.70 38	19796 7.76 37	19410 7.83 36	19025 7.89 35	18627 7.95 34	17718 8.02 32	16747 8.06 31	15350 7.96 29	13457 7.67 27	11010 7.02 26
	740	21239 7.88 41	20859 7.95 40	20479 8.01 39	20099 8.08 38	19718 8.15 37	19338 8.21 36	18956 8.28 35	18060 8.34 33	17163 8.41 32	15788 8.31 30	14056 8.07 29	11730 7.48 27
	750	21526 8.21 42	21151 8.27 41	20776 8.34 39	20401 8.41 38	20026 8.47 37	19650 8.54 37	19275 8.61 36	18400 8.68 34	17515 8.75 33	16224 8.67 31	14650 8.48 30	12433 7.95 28

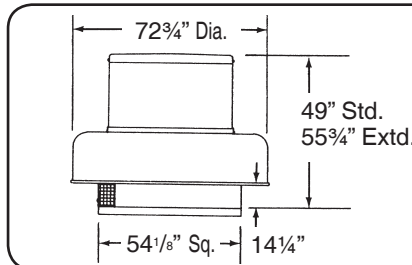
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 42

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = 39.60 x $\left[\frac{\text{RPM}}{1000}\right]^3$
 Tip Speed = 11.26 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 490 lbs.
 Roof Opening = 49½" Sq.
 Curb O. D. = 52½" Sq.
 Damper Size = 48" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
RPM	CFM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
		CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
T1 (1-1/2)	215	8635 .35 6.6	7273 .39 5.5											
	230	9238 .43 7.6	7988 .47 6.5	5729 .46 5.0										
	245	9840 .52 8.6	8691 .56 7.5	7022 .58 6.0										
	260	10443 .62 9.5	9384 .66 8.4	7950 .70 7.0										
	275	11045 .74 10.4	10047 .78 9.3	8852 .83 8.1	6133 .76 6.7									
	290	11648 .86 11.3	10701 .91 10.2	9603 .96 9.1	7755 .95 7.7									
	305	12250 1.00 12.2	11350 1.05 11.2	10330 1.10 10.3	8909 1.12 8.8									
	320	12853 1.16 13.2	11995 1.21 12.1	11047 1.26 11.2	9832 1.30 9.9	7447 1.22 8.7								
	335	13455 1.33 14.2	12636 1.38 13.2	11755 1.44 12.3	10734 1.50 11.1	8966 1.46 9.8								
	V1 (2)	350	14058 1.52 15.2	13274 1.57 14.2	12455 1.63 13.4	11508 1.69 12.2	10151 1.70 10.9	7164 1.52 10.0						
365		14660 1.72 16.2	13908 1.78 15.3	13148 1.84 14.4	12239 1.90 13.5	11079 1.93 12.2	9178 1.86 11.0							
W1 (3)	380	15263 1.94 17.4	14540 2.00 16.5	13818 2.06 15.7	12962 2.13 14.9	11987 2.18 13.5	10502 2.15 12.3							
	395	15865 2.18 18.8	15170 2.24 17.9	14475 2.30 17.0	13676 2.37 16.2	12837 2.44 15.0	9575 2.18 12.5							
X1 (5)	410	16468 2.44 20	15798 2.50 19.3	15129 2.57 18.5	14383 2.64 17.6	13575 2.71 16.5	12504 2.73 15.1	10956 2.68 13.8						
	425	17070 2.71 22	16424 2.78 21	15778 2.85 19.8	15084 2.92 19.0	14304 3.00 18.1	13411 3.05 16.6	12203 3.04 15.3						
Y1 (7-1/2)	440	17673 3.01 23	17049 3.08 22	16425 3.15 21	15779 3.22 20	15025 3.30 19.7	14272 3.38 18.3	13137 3.38 16.8	8651 2.99 14.9					
	455	18275 3.33 25	17672 3.40 24	17069 3.47 23	16465 3.55 22	15739 3.63 21	15011 3.71 19.9	14054 3.74 18.5	10894 3.30 16.0					
CI (10)	470	18878 3.67 26	18294 3.75 25	17710 3.82 24	17126 3.89 24	16447 3.98 23	15742 4.06 22	14956 4.13 20	12349 4.01 17.5					
	485	19480 4.03 28	18914 4.11 27	18348 4.19 26	17782 4.26 25	17150 4.35 24	16466 4.44 23	15782 4.52 22	13660 4.50 19.1					
	500	20083 4.42 30	19534 4.50 29	18985 4.58 28	18436 4.66 27	17847 4.74 26	17184 4.83 25	16520 4.92 24	14669 4.95 21	10887 4.54 18.9				
	515	20685 4.83 31	20152 4.91 30	19619 4.99 29	19086 5.07 28	18539 5.16 27	17895 5.25 26	17251 5.34 25	15595 5.42 22	12873 5.20 20				
	530	21287 5.26 32	20770 5.35 31	20252 5.43 30	19734 5.52 29	19216 5.60 29	18601 5.69 28	17976 5.79 27	16507 5.91 24	14205 5.78 22				
	545	21890 5.72 34	21386 5.81 33	20883 5.90 32	20379 5.98 31	19875 6.07 30	19302 6.16 29	18694 6.26 28	17407 6.44 26	15511 6.40 23	11518 5.81 22			
	560	22492 6.21 35	22002 6.30 34	21512 6.39 33	21022 6.48 32	20532 6.56 31	19999 6.66 30	19407 6.76 30	18223 6.96 27	16462 6.96 25	13728 6.66 23			
	575	23095 6.72 36	22618 6.81 36	22140 6.90 35	21663 7.00 34	21185 7.09 33	20691 7.18 32	20114 7.28 31	18961 7.49 29	17387 7.54 27	15068 7.34 25			
	590	23697 7.26 38	23232 7.36 37	22767 7.45 36	22302 7.54 35	21836 7.64 34	21371 7.73 33	20817 7.83 33	19693 8.05 31	18301 8.16 29	16383 8.06 26	12641 7.41 25		
	605	24300 7.83 39	23846 7.93 38	23392 8.02 38	22939 8.12 37	22485 8.21 36	22031 8.31 35	21516 8.41 34	20420 8.63 33	19203 8.80 30	17506 8.77 28	14840 8.39 26		
	620	24902 8.43 41	24460 8.52 40	24017 8.62 39	23574 8.72 38	23131 8.82 37	22689 8.92 37	22210 9.02 36	21141 9.25 35	20071 9.47 32	18439 9.45 30	16181 9.19 28		
	635	25505 9.05 42	25073 9.15 41	24640 9.25 41	24208 9.36 40	23776 9.46 39	23343 9.56 38	22901 9.66 38	21857 9.89 36	20813 10.12 34	19360 10.16 32	17498 10.03 30	14151 9.37 28	
	650	26107 9.71 44	25685 9.81 43	25263 9.92 42	24840 10.02 42	24418 10.12 41	23996 10.22 40	23574 10.33 39	22568 10.56 38	21548 10.80 36	20270 10.91 34	18691 10.87 32	16155 10.45 30	

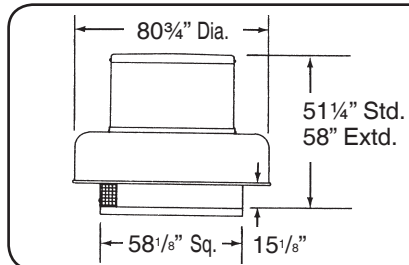
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 48

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = 75.47 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 12.83 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 540 lbs.
 Roof Opening = 53 1/2" Sq.
 Curb O. D. = 56 1/2" Sq.
 Damper Size = 52" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.									
T1 (1-1/2)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
V1 (2)	200	12971 .52 8.6	10538 .57 6.7								
	220	14268 .70 9.9	12172 .76 8.2	9111 .73 7.1							
W1 (3)	240	15565 .91 11.4	13652 .98 9.8	11369 .98 8.6							
	260	16862 1.15 12.9	15114 1.22 11.5	13015 1.26 10.6	9976 1.18 10.2						
X1 (5)	280	18159 1.44 14.6	16590 1.51 13.7	14665 1.57 13.0	12442 1.54 12.3						
	290	18807 1.60 15.7	17320 1.67 15.0	15495 1.74 14.2	13596 1.73 13.5						
Y1 (7-1/2)	300	19456 1.77 17.0	18045 1.85 16.3	16314 1.93 15.6	14425 1.92 14.8	11492 1.82 14.5					
	310	20104 1.95 18.3	18766 2.03 17.6	17124 2.13 17.0	15241 2.13 16.2	12746 2.05 15.8					
C1 (10)	320	20753 2.15 19.6	19451 2.22 19.0	17880 2.34 18.4	16071 2.34 17.6	13968 2.29 17.0					
	330	21401 2.35 21	20128 2.43 20	18617 2.55 19.9	16901 2.57 19.1	15163 2.54 18.4	12158 2.39 18.3				
V1 (2)	340	22050 2.57 22	20804 2.65 22	19350 2.77 21	17722 2.80 21	16127 2.80 19.9	13427 2.67 19.7				
	350	22698 2.81 24	21478 2.89 23	20078 3.01 23	18550 3.06 22	16951 3.06 22	14672 2.97 21				
W1 (3)	360	23347 3.05 25	22150 3.14 25	20801 3.26 25	19374 3.33 24	17765 3.33 23	15885 3.27 23	13126 3.09 23			
	370	23995 3.32 27	22820 3.40 27	21546 3.53 27	20190 3.62 26	18598 3.62 25	17077 3.59 25	14400 3.42 25			
X1 (5)	380	24644 3.59 29	23489 3.67 29	22286 3.80 28	20999 3.93 28	19429 3.92 27	18020 3.91 27	15651 3.78 26			
	390	25292 3.88 31	24157 3.96 31	23023 4.10 31	21756 4.23 30	20252 4.23 30	18844 4.23 29	16875 4.14 28			
Y1 (7-1/2)	400	25941 4.19 32	24823 4.27 32	23755 4.41 32	22495 4.54 32	21076 4.57 31	19660 4.57 31	18076 4.51 30			
	410	26590 4.51 34	25489 4.59 34	24485 4.73 33	23230 4.87 33	21903 4.92 33	20486 4.93 32	19218 4.90 31			
C1 (10)	420	27238 4.85 35	26153 4.93 35	25211 5.07 35	23906 5.22 35	22723 5.30 34	21320 5.29 33	20048 5.28 33	15709 4.94 32		
	430	27887 5.21 36	26816 5.28 36	25934 5.43 36	24687 5.58 36	23537 5.69 36	22147 5.68 35	20870 5.67 34	16976 5.40 34		
V1 (2)	440	28535 5.58 38	27479 5.65 37	26654 5.80 37	25411 5.96 37	24345 6.10 37	22966 6.08 36	21684 6.09 36	18223 5.88 35		
	450	29184 5.97 39	28150 6.04 39	27335 6.19 39	26153 6.35 39	25097 6.50 38	23795 6.50 38	22514 6.51 37	19445 6.36 36		
W1 (3)	460	29832 6.37 40	28821 6.45 40	28013 6.60 40	26895 6.76 40	25836 6.92 40	24621 6.95 39	23348 6.95 38	20648 6.85 37		
	470	30481 6.80 42	29491 6.88 42	28690 7.02 41	27634 7.19 41	26572 7.35 41	25440 7.42 41	25175 7.41 40	21834 7.37 39	17617 6.93 39	
X1 (5)	480	31129 7.24 43	30160 7.32 43	29365 7.47 43	28369 7.63 43	27394 7.80 43	26254 7.91 42	24995 7.89 41	22738 7.87 40	18884 7.50 40	
	490	31778 7.70 45	30828 7.79 44	30039 7.93 44	29102 8.10 44	28033 8.27 44	27063 8.42 44	25821 8.39 43	23564 8.39 42	20134 8.09 41	
Y1 (7-1/2)	500	32426 8.18 46	31496 8.27 46	30712 8.41 46	29831 8.58 45	28759 8.76 45	27828 8.93 45	26649 8.93 45	24382 8.92 43	21362 8.70 42	
	510	33075 8.68 47	32162 8.77 47	31384 8.91 47	30558 9.09 47	29481 9.27 47	28569 9.44 47	27471 9.48 46	25195 9.48 45	22570 9.30 44	18676 8.79 44
C1 (10)	520	33723 9.21 49	32828 9.29 49	32054 9.44 49	31283 9.61 48	30228 9.79 48	29306 9.97 48	28288 10.05 48	26029 10.05 46	23764 9.94 45	19953 9.46 45
	530	34372 9.75 50	33494 9.84 50	32724 9.98 50	32005 10.15 50	30970 10.34 50	30040 10.52 50	29099 10.65 49	26863 10.63 48	24868 10.58 47	21212 10.15 47

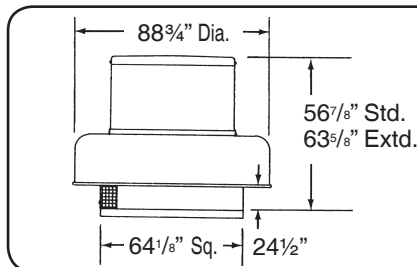
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 54

BELT DRIVE PRV

PERFORMANCE DATA



DESIGN DATA

Max BHP = 110.85 x $\left[\frac{\text{RPM}}{1000}\right]^3$

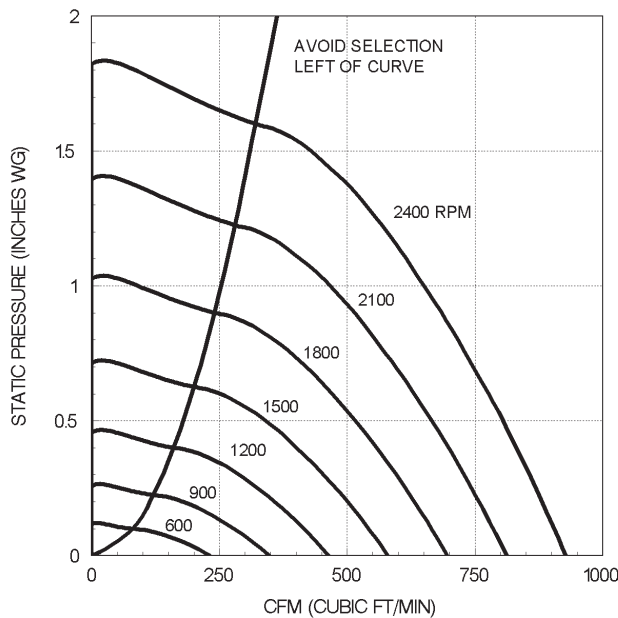
Tip Speed = 14.40 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 665 lbs.
 Roof Opening = 59 1/2" Sq.
 Curb O. D. = 62 1/2" Sq.
 Damper Size = 58" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.									
T1 (1-1/2)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
V1 (2)	190	16507 .62 9.9	13811 .73 8.3	10637 .77 6.2							
	200	17376 .72 10.6	14784 .85 9.3	11998 .90 6.8							
W1 (3)	210	18245 .84 11.3	15779 .97 10.3	13195 1.03 7.5							
	220	19114 .96 12.1	16762 1.10 11.2	14352 1.18 8.5	10754 1.18 7.9						
X1 (5)	230	19982 1.10 12.9	17727 1.24 12.0	15484 1.36 9.6	12641 1.37 8.5						
	240	20851 1.25 13.8	18671 1.40 12.9	16597 1.52 10.8	14058 1.56 9.1						
Y1 (7-1/2)	250	21720 1.41 14.7	19608 1.58 13.9	17689 1.70 11.9	15304 1.75 9.8	11593 1.71 9.8					
	260	22589 1.59 15.6	20540 1.76 14.8	18679 1.89 13.2	16491 1.95 10.8	13619 1.97 10.5					
C1 (10)	270	23458 1.78 16.6	21466 1.97 15.8	19659 2.10 14.5	17641 2.19 12.2	15228 2.22 11.5					
	280	24326 1.98 17.9	22387 2.18 17.2	20629 2.33 16.1	18772 2.45 13.7	16623 2.48 12.5	13063 2.41 12.5				
V1 (7-1/2)	290	25195 2.20 19.4	23315 2.41 18.6	21622 2.56 17.8	19891 2.69 15.2	17830 2.73 13.5	15088 2.72 13.5				
	300	26064 2.44 21	24241 2.66 20	22612 2.81 19.3	20994 2.95 16.8	19016 2.99 14.9	16759 3.04 14.6				
W1 (3)	310	26933 2.69 22	25163 2.92 22	23595 3.08 21	22043 3.23 18.6	20168 3.31 16.5	18172 3.36 15.7	14979 3.29 15.7			
	320	27802 2.96 24	26082 3.19 23	24569 3.36 22	23031 3.52 20	21303 3.66 18.2	19427 3.67 16.9	16991 3.67 16.9			
X1 (5)	330	28670 3.25 26	26998 3.49 25	25517 3.67 24	24010 3.84 22	22427 3.99 19.9	20622 4.00 18.2	18553 4.05 18.1			
	340	29539 3.55 27	27911 3.80 27	26460 3.99 26	24982 4.18 24	23537 4.32 22	21792 4.36 19.9	19964 4.43 19.3			
Y1 (7-1/2)	350	30408 3.87 29	28821 4.13 28	27398 4.34 27	25965 4.52 26	24635 4.67 23	22937 4.77 22	21215 4.81 21			
	360	31277 4.22 31	29729 4.48 30	28332 4.70 29	26960 4.89 28	25656 5.05 25	24069 5.21 23	22412 5.20 22	17711 5.16 22		
C1 (10)	370	32146 4.58 32	30635 4.85 31	29261 5.08 30	27948 5.27 29	26642 5.45 27	25191 5.61 25	23589 5.62 23	19718 5.68 23		
	380	33014 4.96 34	31538 5.24 33	30187 5.49 32	28930 5.67 31	27622 5.87 28	26301 6.03 26	24738 6.10 24	21274 6.18 23		
V1 (7-1/2)	390	33883 5.36 35	32440 5.65 34	31110 5.91 33	29906 6.09 32	28595 6.31 30	27400 6.47 28	25784 6.61 26	22688 6.69 24		
	400	34752 5.78 36	33345 6.08 35	32030 6.36 34	30858 6.54 33	29568 6.77 32	28437 6.93 29	27002 7.12 28	23997 7.20 25	19296 7.06 25	
W1 (3)	410	35621 6.23 37	34248 6.54 36	32960 6.82 35	31803 7.02 34	30566 7.24 33	29426 7.43 31	28117 7.61 29	25201 7.70 26	21314 7.70 26	
	420	36490 6.69 38	35149 7.01 37	33887 7.30 37	32744 7.51 36	31557 7.74 35	30408 7.94 32	29222 8.12 31	26390 8.23 28	23090 8.34 27	
X1 (5)	425	36924 6.94 39	35599 7.26 38	34350 7.55 37	33213 7.77 36	32051 7.99 36	30897 8.21 33	29771 8.38 32	26979 8.51 28	23805 8.65 28	
	430	37358 7.18 40	36049 7.51 39	34812 7.81 38	33681 8.04 37	32544 8.26 36	31384 8.48 34	30318 8.65 32	27557 8.82 29	24516 8.96 28	
Y1 (7-1/2)	435	37793 7.44 40	36498 7.77 39	35273 8.07 39	34148 8.30 38	33035 8.52 37	31870 8.76 35	30836 8.93 33	28132 9.14 30	25221 9.28 29	20488 9.04 29
	440	38227 7.70 41	36947 8.03 40	35733 8.33 39	34615 8.58 38	33524 8.80 38	32355 9.05 36	31332 9.22 34	28704 9.47 31	25922 9.61 29	21508 9.41 29
C1 (10)	445	38662 7.96 42	37396 8.30 41	36193 8.61 40	35080 8.86 39	34013 9.08 39	32838 9.34 37	31827 9.51 35	29273 9.81 32	26561 9.93 30	22519 9.80 30
	450	39096 8.23 42	37845 8.57 41	36652 8.89 41	35545 9.15 40	34500 9.36 39	33337 9.63 38	32320 9.81 36	29839 10.16 33	27166 10.23 31	23521 10.19 31

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VEBK 06
Air Performance



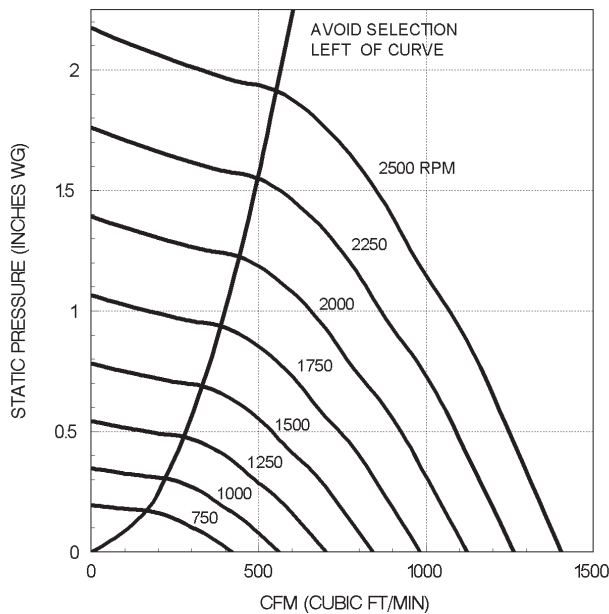
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 06
Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
600	.000	50	48	43	39	35	30	22	14	41
	.125	58	61	56	53	48	46	39	32	55
1000	.000	59	63	57	54	48	46	39	31	56
	.125	58	61	56	53	48	46	39	32	55
1400	.000	71	67	68	62	58	54	51	43	65
	.500	69	64	65	63	54	56	54	41	64
1800	.000	80	70	77	68	66	60	59	51	72
	.375	77	70	75	68	65	60	58	51	71
	.750	77	70	70	73	60	60	63	51	72
2100	.000	86	76	79	73	70	65	63	56	76
	.500	82	75	77	73	69	64	62	56	75
	1.000	82	75	73	76	66	63	66	57	75
2300	.000	89	79	80	76	72	67	65	59	78
	.500	85	78	79	75	72	67	63	58	77
	1.000	85	78	76	77	70	66	66	60	77
2500	.000	89	79	80	76	72	67	65	59	78
	.500	85	78	79	75	72	67	63	58	77
	1.000	85	78	76	77	70	66	66	60	77
	1.500	85	78	74	78	69	64	69	61	78

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 08
Air Performance



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

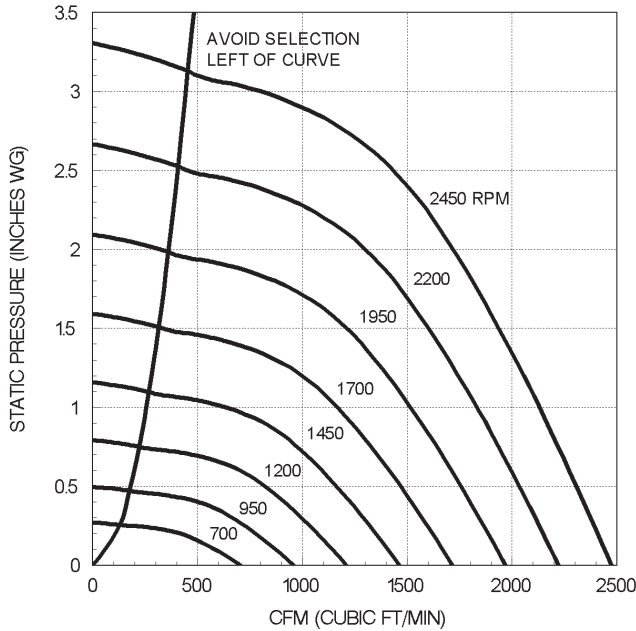
VEBK 08
Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
650	.000	41	41	41	40	41	42	42	42	49
	.000	50	58	53	53	50	52	52	52	59
1050	.250	58	59	52	54	51	50	46	42	57
	.000	60	66	64	62	59	59	59	59	67
1450	.500	68	70	64	62	60	58	55	51	66
	.000	68	70	72	67	65	63	64	64	72
1800	.500	67	75	71	65	65	62	60	57	70
	1.000	80	78	74	68	68	64	62	57	73
	.000	73	73	78	71	70	66	67	67	76
2100	.500	71	77	77	69	69	66	65	63	75
	1.000	77	81	78	70	70	67	65	61	76
	.000	76	75	81	74	72	68	69	69	78
2300	.750	72	81	80	72	71	68	67	64	77
	1.500	85	86	83	74	74	70	68	64	80
	.000	77	78	83	77	74	70	71	71	81
2500	.500	75	81	83	76	74	70	70	68	80
	1.000	74	83	83	75	73	70	69	66	80
	1.750	85	89	86	77	75	72	70	66	82
	.000	77	78	83	77	74	70	71	71	81

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

Cent. Power Roof Vents

VEBK 10 Air Performance



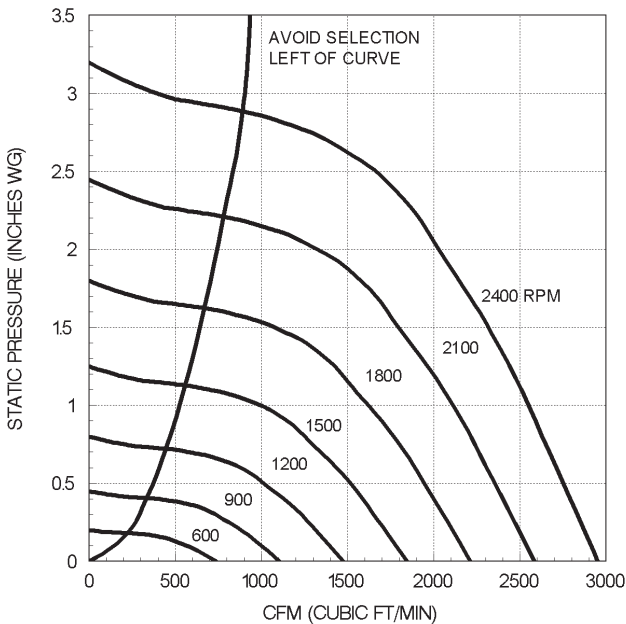
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 10 Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
650	.000	49	53	50	49	47	41	34	27	51
	.000	56	66	66	60	60	56	49	42	64
1050	.500	59	63	61	55	53	53	48	43	59
	.000	65	71	74	70	66	64	58	51	72
1400	.375	66	71	72	67	73	60	55	50	69
	.750	64	70	70	65	60	59	56	51	68
	.000	73	75	80	78	71	70	65	58	79
1750	.625	70	76	78	75	68	66	62	56	76
	1.250	68	75	76	72	65	63	63	58	74
	.000	78	79	85	83	76	75	71	64	84
2100	.500	76	80	84	82	75	72	69	63	82
	1.000	74	81	83	80	73	70	67	62	81
	2.000	72	79	81	78	71	68	68	63	79
	.000	80	84	87	88	81	78	75	69	88
2450	1.000	77	85	87	86	79	75	72	67	86
	2.000	74	84	86	84	77	72	71	67	84
	2.500	74	83	85	83	76	72	71	68	84
	3.000	76	83	85	83	76	72	71	68	84

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 12 Air Performance



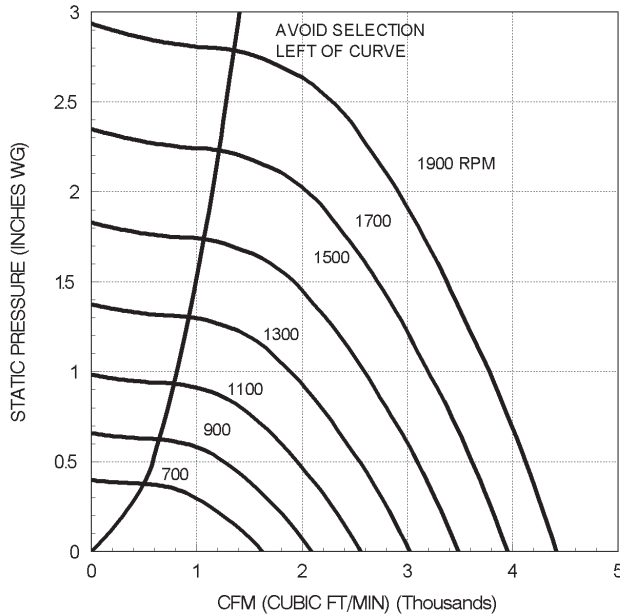
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 12 Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	55	55	47	47	49	42	34	26	52
	.000	71	71	67	60	61	60	52	44	66
950	.375	71	72	67	58	54	52	48	43	63
	.000	81	82	82	70	66	71	64	56	77
1350	.375	80	82	82	70	64	65	59	52	76
	.750	80	82	83	68	63	61	58	53	76
	.000	85	89	87	81	73	75	72	65	84
1750	.750	85	89	87	81	72	70	67	60	83
	1.500	85	89	88	80	70	66	64	61	83
	.000	89	94	93	88	78	78	78	71	90
2100	.500	88	94	93	89	78	76	75	68	89
	1.000	88	94	93	89	78	74	72	66	89
	2.000	88	94	94	89	76	72	69	66	89
	.000	91	98	98	95	83	80	83	76	95
2450	.500	91	98	98	95	83	79	81	74	95
	1.000	91	98	98	95	83	78	78	72	95
	2.000	90	98	98	96	82	77	75	71	95
	2.750	90	98	98	96	80	76	73	70	95

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 15
Air Performance



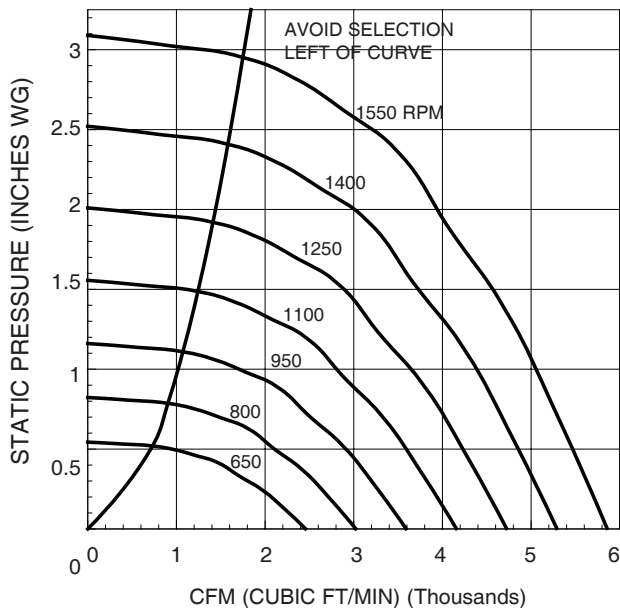
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 15
Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	61	56	54	52	52	45	38	32	56
	.000	71	72	67	64	62	59	52	45	67
850	.500	76	70	64	59	57	55	52	46	64
	.000	75	77	75	72	70	68	63	55	76
1150	.500	76	78	75	69	66	64	60	54	73
	1.000	77	78	75	67	63	62	59	54	72
	.000	82	84	83	78	75	75	70	63	82
1450	1.000	82	84	83	75	70	69	66	61	79
	1.500	83	84	84	74	69	68	66	60	79
	.000	86	89	88	84	80	79	76	69	87
1750	1.000	85	90	88	82	77	76	72	67	85
	1.500	85	90	89	81	75	73	71	66	85
	2.250	87	89	90	81	74	72	71	66	84
	.000	87	93	91	87	83	82	79	72	90
1950	1.000	87	94	92	86	81	79	76	70	89
	2.000	86	93	92	85	78	75	74	69	88
	2.500	87	92	92	85	77	75	73	69	88
	3.000	89	92	92	85	77	75	73	69	88

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 18
Air Performance



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

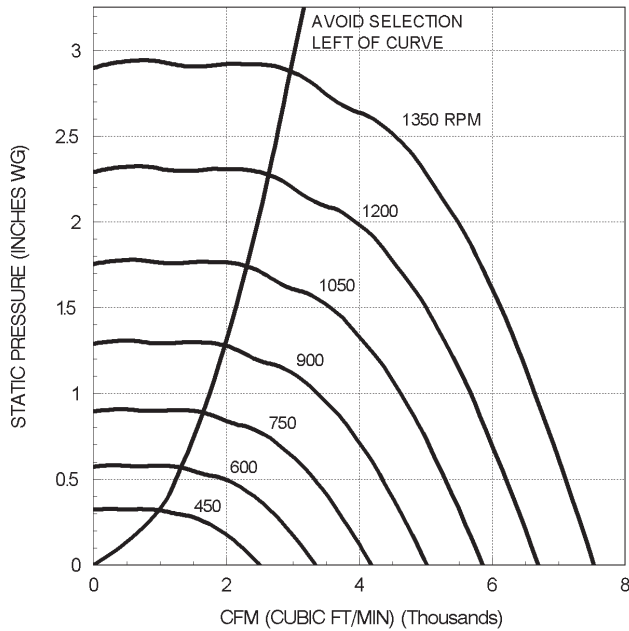
VEBK 18
Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	68	72	63	59	57	54	43	39	63
	.000	73	80	75	68	65	62	55	48	72
750	.625	72	79	74	67	61	56	51	47	70
	.000	77	84	82	75	71	69	65	56	79
950	.500	76	82	81	73	68	65	60	54	76
	1.000	76	82	80	72	67	63	59	54	76
	.000	84	85	83	78	74	75	73	66	82
1150	1.000	83	83	79	74	69	70	68	65	78
	1.500	82	82	78	72	68	68	67	64	76
	.000	86	89	89	83	78	78	77	71	86
1350	1.000	85	88	87	80	75	75	73	70	84
	1.750	85	87	85	78	73	71	71	68	82
	2.250	85	87	85	77	72	71	70	68	81
	.000	87	93	93	86	81	80	80	74	90
1500	1.000	86	92	92	84	79	78	77	73	88
	1.750	86	91	90	82	77	75	74	72	86
	2.250	87	90	90	81	75	73	73	71	85
	2.750	87	90	90	81	75	73	73	71	85

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

Cent. Power Roof Vents

VEBK 21 Air Performance



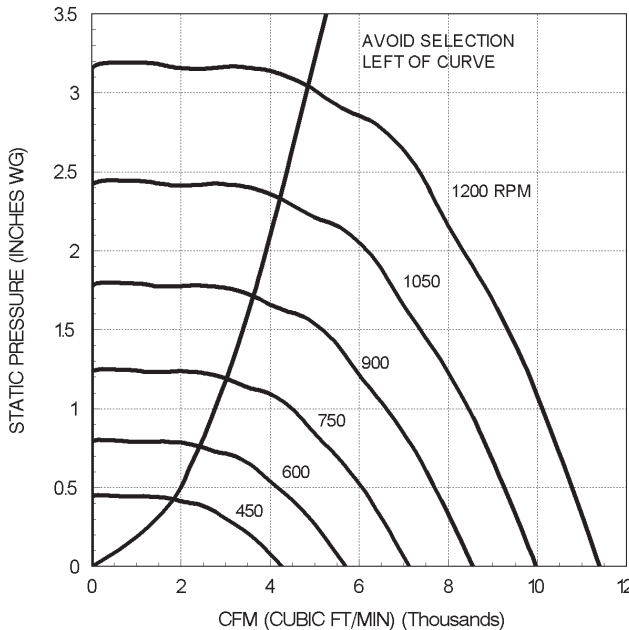
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 21 Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
400	.000	59	59	55	54	55	52	45	38	59
	.000	67	73	66	63	63	64	58	51	69
600	.500	68	70	62	59	60	58	54	51	65
	.000	77	78	76	71	70	70	67	60	76
800	.500	76	78	75	68	67	67	62	54	74
	1.000	76	77	73	66	66	65	62	58	72
	.000	84	82	84	77	74	75	74	67	82
1000	.750	83	83	83	74	71	72	70	61	80
	1.500	82	83	81	72	70	71	68	65	78
	.000	89	86	90	82	78	78	79	73	87
1200	1.000	87	87	89	80	75	77	76	68	85
	1.500	87	87	88	79	74	76	74	68	84
	2.250	87	87	87	78	74	75	73	69	83
1325	.000	91	89	92	86	81	81	81	76	89
	1.000	90	90	91	84	79	79	79	72	88
	2.000	88	90	90	82	77	78	76	72	86
	2.500	88	90	90	82	76	77	76	62	86
	2.750	88	90	90	82	76	77	76	72	86

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 24 Air Performance



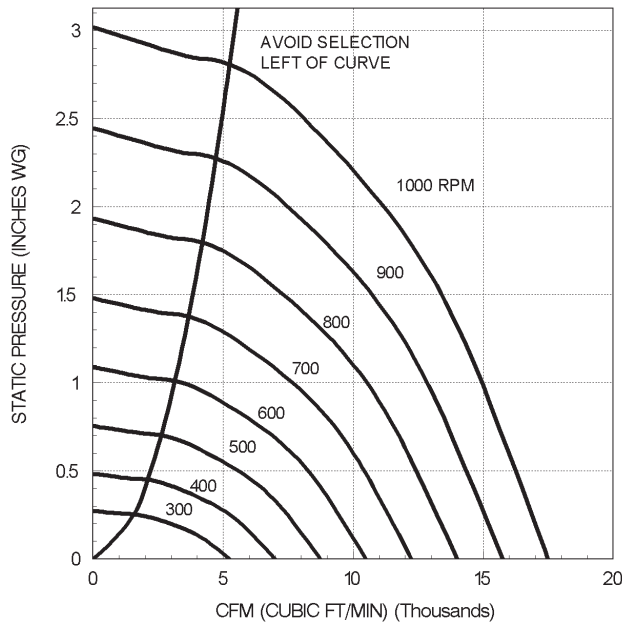
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 24 Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
400	.000	67	66	62	61	62	56	50	44	65
	.000	76	75	71	69	69	66	60	54	73
550	.375	78	76	69	65	65	61	56	51	70
	.625	78	76	67	63	62	58	54	50	68
700	.000	83	82	79	74	74	73	67	61	79
	.500	84	83	77	71	71	70	63	58	77
	.750	83	83	77	70	69	67	62	57	75
850	1.000	83	84	77	69	68	65	60	56	75
	.000	88	88	85	79	78	79	73	67	85
	.500	89	89	84	77	76	77	70	65	83
1000	.750	89	90	84	76	75	76	69	64	82
	1.000	88	90	84	75	74	74	68	63	81
	1.500	88	90	84	73	72	71	66	62	81
1000	.000	91	92	90	84	81	83	78	72	89
	.500	92	93	90	83	80	81	76	70	88
	1.000	92	94	89	81	78	79	74	69	87
	1.500	91	94	90	80	77	77	72	67	86
	2.000	91	94	90	79	76	75	71	66	85

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 30
Air Performance



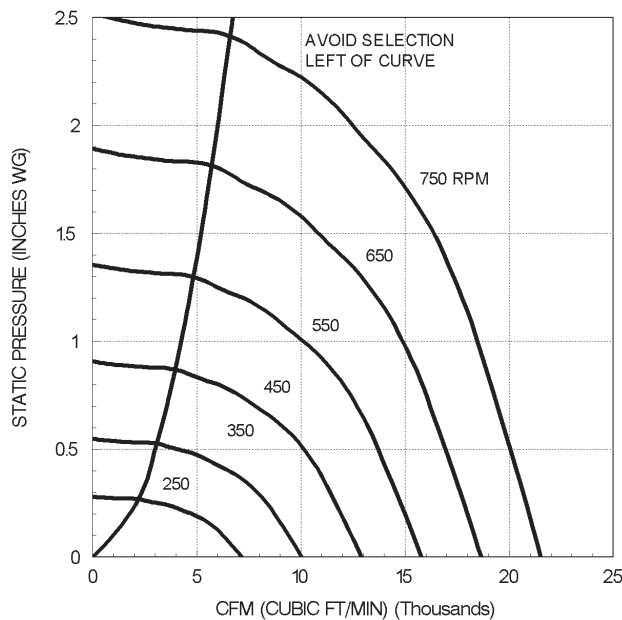
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 30
Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
275	.000	64	62	60	60	56	49	44	38	61
	.375	71	64	58	56	55	52	48	44	60
375	.000	78	78	74	72	71	66	60	54	75
	.375	76	74	68	65	64	61	56	52	69
	.625	76	73	65	62	61	58	55	50	67
475	.000	82	85	81	77	77	74	67	61	81
	.500	80	83	77	72	71	68	64	59	77
	1.000	81	81	73	68	66	65	61	57	73
600	.000	85	91	87	81	81	80	73	67	87
	.500	84	90	85	78	78	76	70	65	84
	1.000	85	88	81	74	72	71	67	63	80
	1.500	85	88	80	72	71	70	66	62	78
725	.000	88	93	91	85	84	83	77	71	90
	.500	86	93	89	83	82	80	75	70	88
	1.000	86	92	87	80	78	77	72	68	85
	1.500	87	91	84	76	74	73	70	66	82
825	2.000	87	91	84	76	74	73	70	66	82

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 36
Air Performance



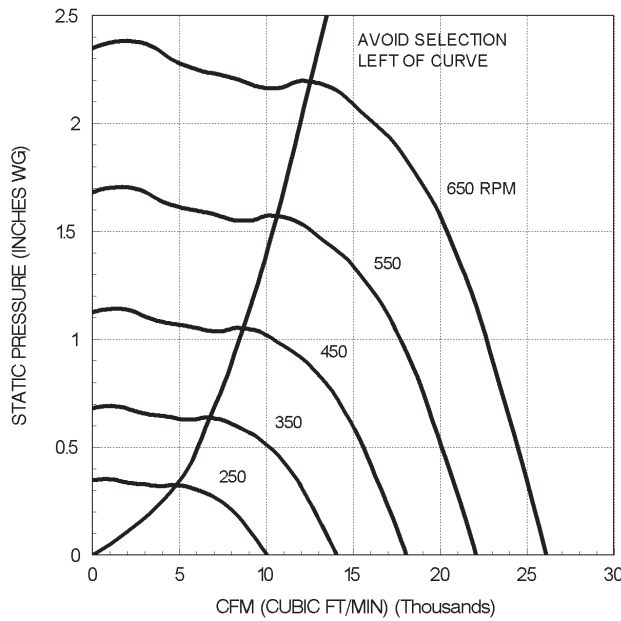
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 36
Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
250	.000	70	67	64	60	56	57	61	65	68
	.500	75	68	62	59	56	53	49	42	62
350	.000	79	77	73	69	65	64	67	71	75
	.375	83	80	74	69	66	64	64	65	74
	.625	83	76	69	64	62	59	56	51	69
425	.000	85	83	78	74	70	68	70	74	79
	.375	83	80	74	69	66	64	64	65	74
	.625	83	76	69	64	62	59	56	51	69
500	.000	89	88	83	79	75	71	72	76	83
	.500	88	85	79	73	70	67	68	69	78
	1.000	90	80	74	67	66	62	60	53	73
575	.000	92	92	87	83	79	75	75	78	86
	.500	91	90	85	78	75	72	72	73	83
	1.000	93	87	81	73	71	68	66	63	79
	1.500	94	85	78	71	70	66	64	58	77
650	.000	94	95	91	86	82	78	77	80	89
	.500	94	94	89	83	79	76	75	77	87
	1.000	94	92	87	80	76	73	72	71	84
	1.500	96	91	83	76	73	70	67	63	81
	1.750	96	90	82	75	72	69	67	61	81

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 42 Air Performance



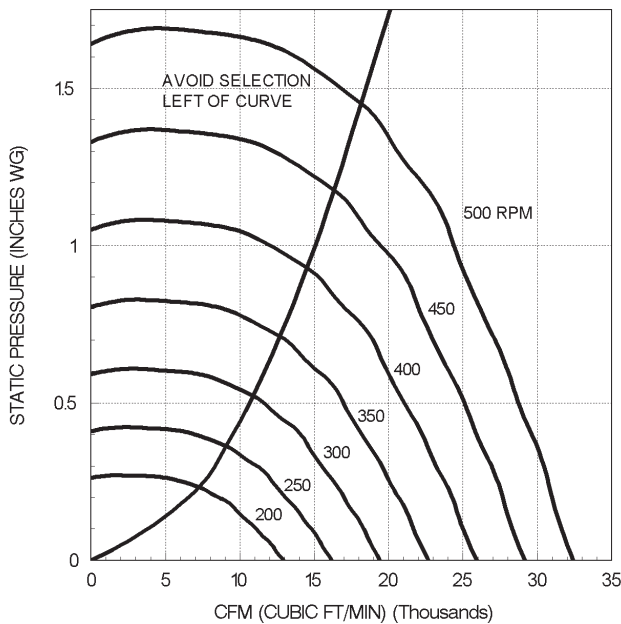
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 42 Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
215	.000	69	67	65	62	59	60	47	34	65
	.000	77	74	71	69	65	67	57	44	72
275	.375	70	66	64	62	60	56	53	50	65
	.000	83	80	77	74	70	71	65	52	77
335	.250	82	78	73	70	67	68	63	53	74
	.500	78	73	70	67	65	63	59	54	71
395	.000	89	85	81	78	75	73	71	58	81
	.375	87	83	78	74	72	70	69	59	78
460	.750	83	78	74	71	69	66	63	59	75
	.000	94	89	85	82	79	76	77	65	85
460	.375	92	88	83	79	76	74	75	64	83
	.750	90	85	80	76	74	72	71	64	81
	1.000	89	82	78	75	73	70	67	63	79
525	.000	97	93	89	85	82	78	82	70	89
	.500	96	92	87	82	80	76	79	69	87
	.750	95	92	86	81	79	75	78	69	86
	1.000	94	89	84	80	78	75	75	68	84
	1.250	93	87	82	78	77	74	71	67	82

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 48 Air Performance



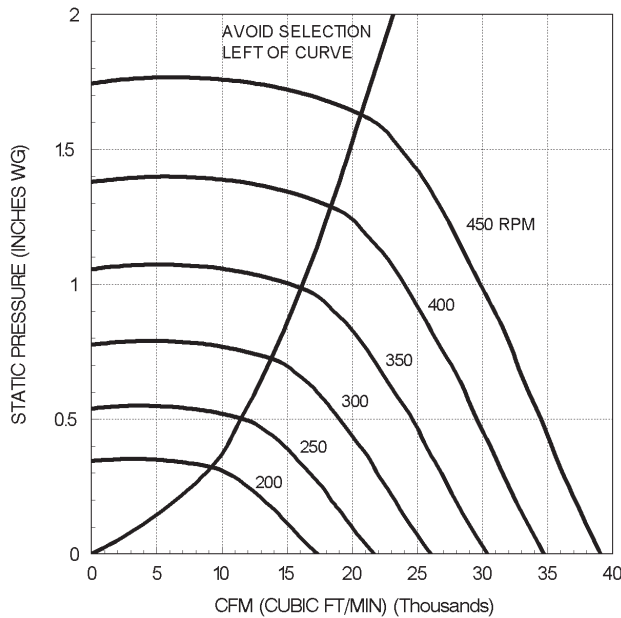
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 48 Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
200	.000	74	69	67	64	60	65	53	41	69
	.000	83	76	73	70	66	68	62	49	74
250	.250	83	75	68	64	64	63	57	48	70
	.000	91	82	78	75	72	71	69	57	79
300	.250	92	81	75	70	68	69	65	55	76
	.500	91	80	73	68	67	67	61	54	74
350	.000	97	87	82	79	76	73	75	63	83
	.375	99	86	80	73	71	72	70	60	80
	.625	98	86	78	72	70	71	66	59	79
400	.000	103	91	85	82	79	75	80	68	87
	.250	104	91	85	79	76	75	78	67	85
	.500	104	91	84	76	74	74	74	65	84
	.750	104	90	82	75	73	74	71	63	83
450	.000	105	96	89	85	83	79	82	73	90
	.250	106	96	89	83	80	78	80	71	89
	.500	106	96	88	81	78	77	78	70	88
	.750	106	96	87	80	77	77	76	68	87
	1.000	106	96	86	79	76	77	74	67	87

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VEBK 54
Air Performance



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VEBK 54
Sound Performance

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
190	.000	77	70	70	68	62	68	52	32	72
	.000	84	77	74	73	68	71	61	42	76
230	.375	79	71	66	65	62	62	56	42	68
	.000	88	81	77	76	72	72	67	48	79
260	.500	84	75	70	68	65	64	61	47	72
	.000	92	85	79	79	75	73	72	53	82
290	.375	89	81	75	73	71	69	68	53	77
	.625	89	79	72	70	69	66	65	52	75
	.000	95	89	82	81	78	74	77	58	84
320	.375	94	86	79	77	75	71	74	58	81
	.750	92	83	75	72	71	68	69	56	77
	.000	98	92	84	83	81	75	82	62	87
350	.375	97	90	82	81	79	74	79	63	85
	.750	96	86	77	74	74	69	73	59	80
	.000	100	94	86	85	83	77	83	67	89
380	.500	99	93	84	82	80	75	80	66	87
	.750	98	90	81	78	77	72	76	64	83
	1.000	98	89	80	76	76	71	74	63	82
	.000	98	89	80	76	76	71	74	63	82

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

COMPUTERIZED FAN SELECTION: Make the right choice with CARNES **FAN-C-LECT™**. The Models **VEDK** and **VEBK**, as well as the comprehensive offering of CARNES powered ventilators, are included in CARNES user friendly fan selection program.

Cent. Power Roof Vents

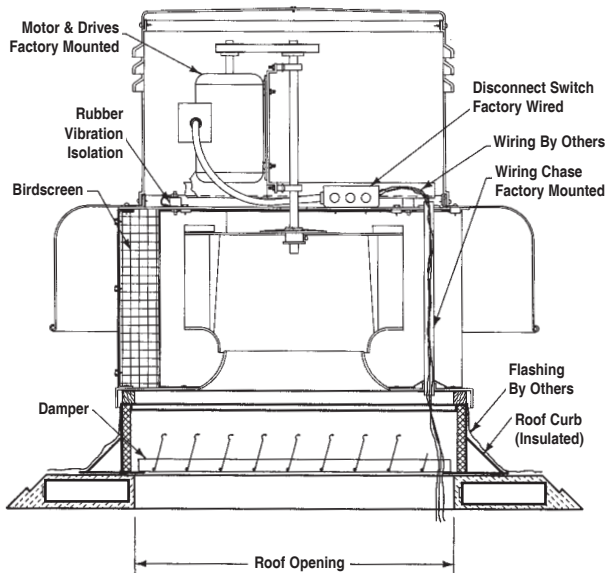


Figure 1

**POWER ROOF VENTILATOR
(NON-DUCTED INSTALLATION)**

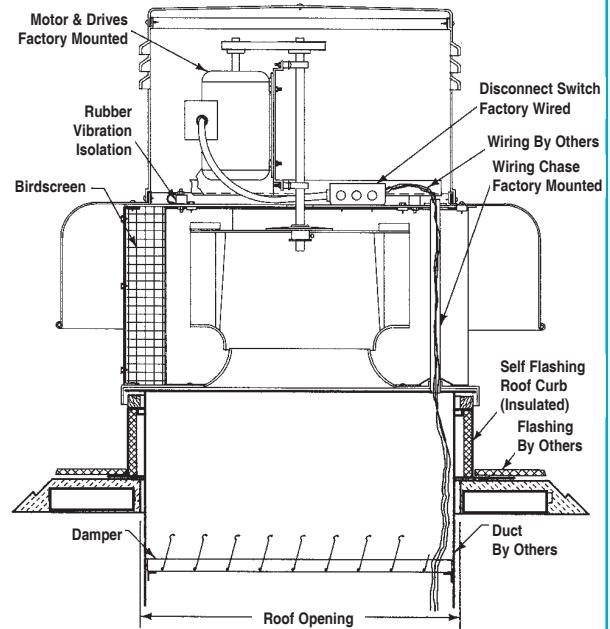


Figure 2

**POWER ROOF VENTILATOR
(DUCTED INSTALLATION)**

Figure 1 shows a typical Model **VEBK** power roof ventilator installation without duct work. The roof flashing is shown installed over standard canted style roof curb. A gravity operated backdraft damper is shown installed on the damper shelf which is located at the base of the roof curb. Power wiring is extended through the roof opening, through the damper conduit knockout, into the fan wiring chase and to the factory wired disconnect switch.

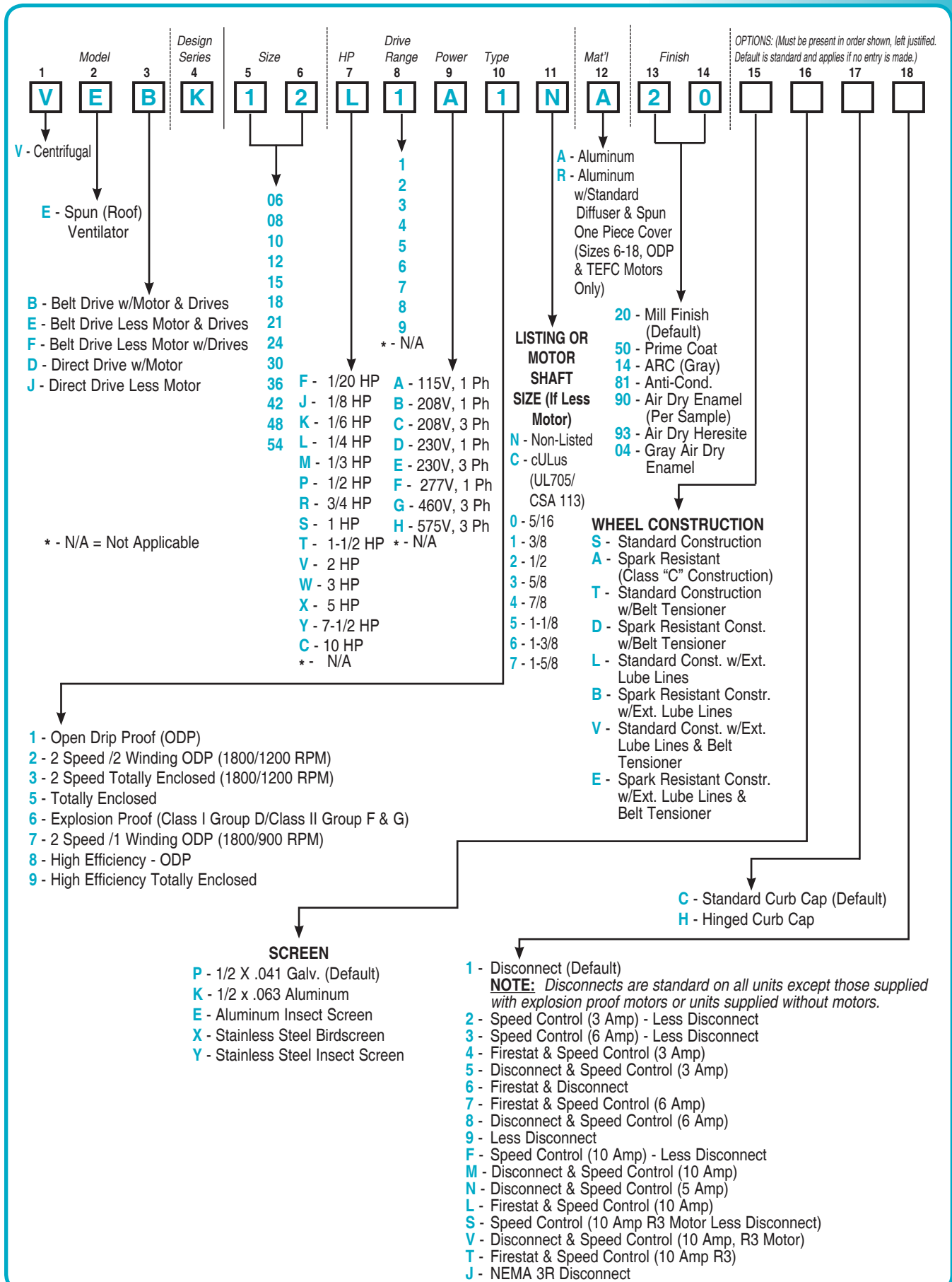
Figure 2 shows a typical Model **VEBK** power roof ventilator installation with an exhaust duct. The duct is shown extending through the roof opening and inside a typical self flashing style roof curb. A gravity operated backdraft damper is shown fastened to a 3/4" x 3/4" sheet metal angle installed inside the exhaust duct.

Proper fan performance requires uniform and stable air flow at the fan inlet. Avoid transitions, obstructions, elbows or other duct fittings near the fan inlet.

Typical roof curb height is 8" to 12" above the roof deck. Additional height reduces the likelihood of snow or rain entering through the roof opening.

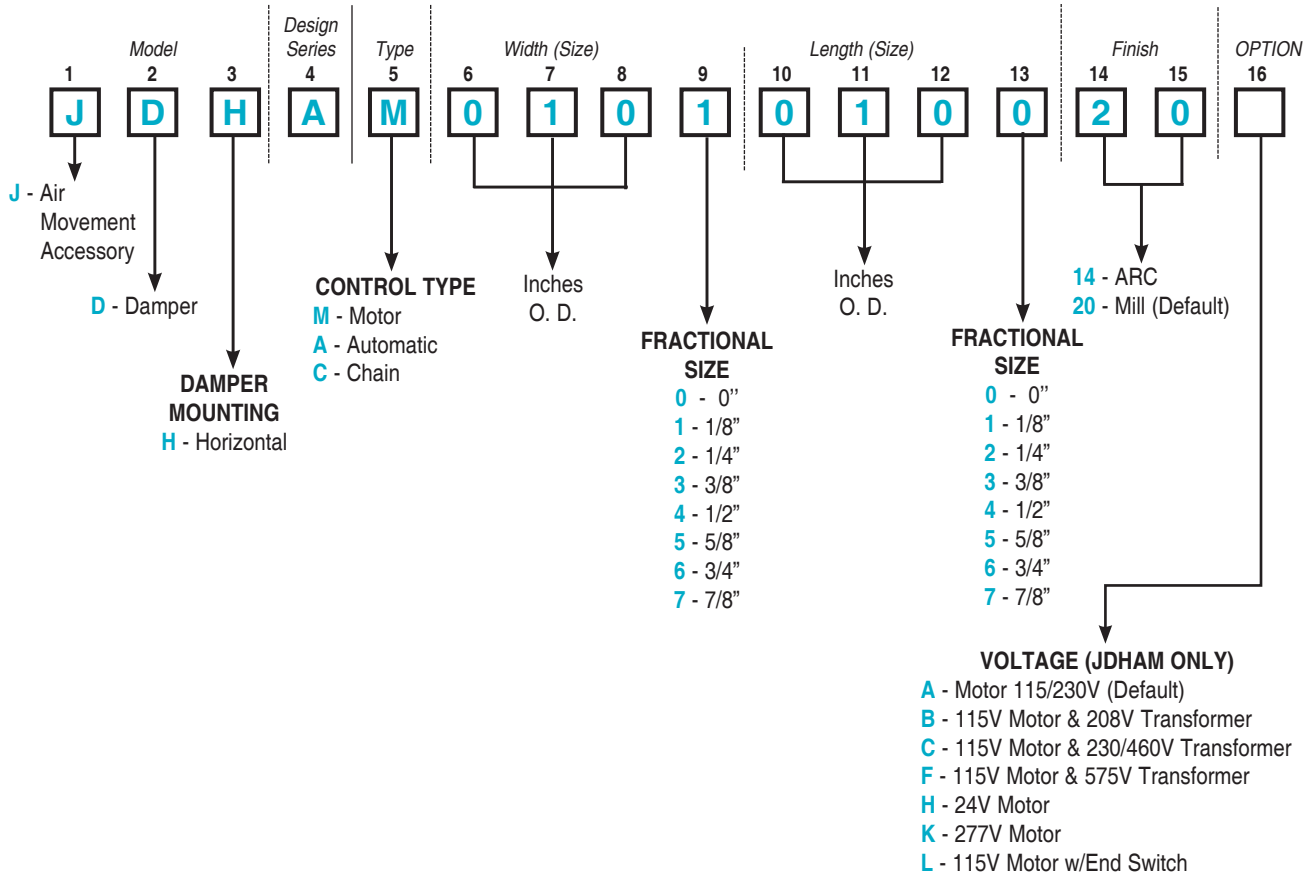
Installation and electrical work should be performed by qualified personnel and must be in accordance with all applicable code requirements.

For protection of personnel, inlet guards are recommended when the fan is within reach (or within 7 feet) of occupied areas or work areas.

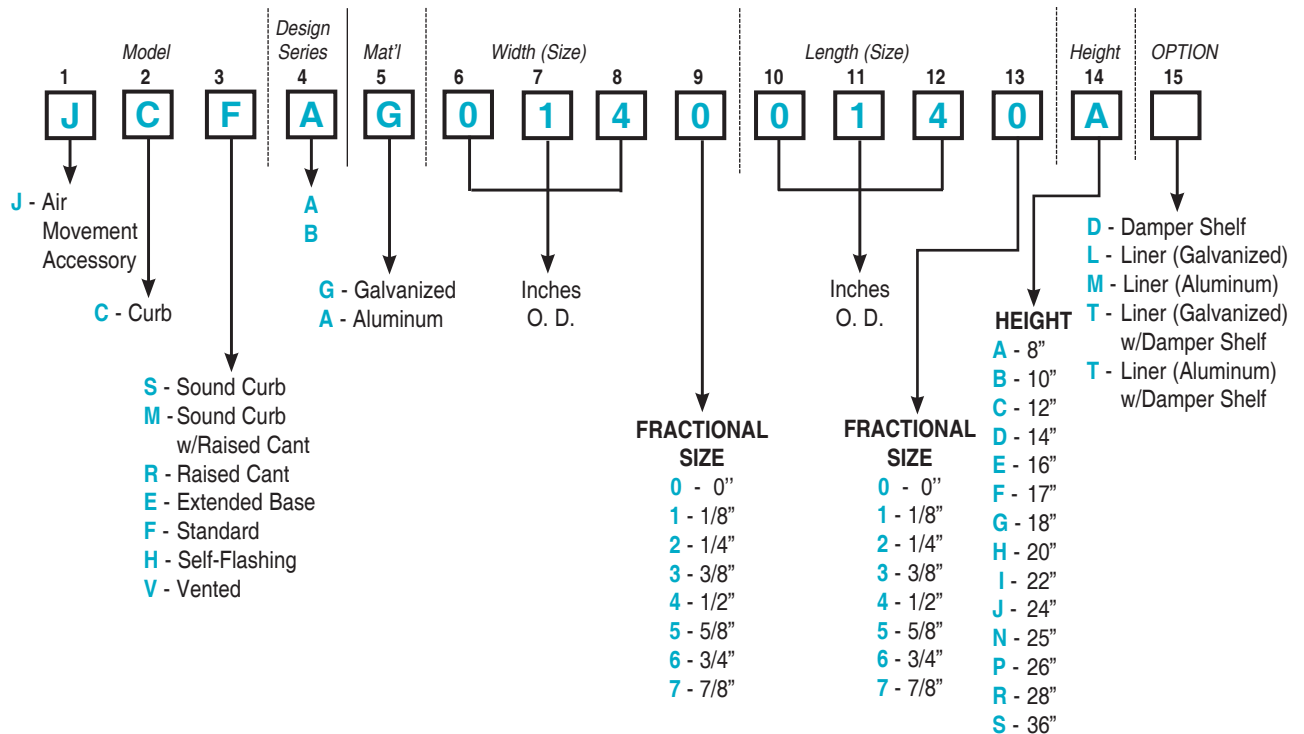


Cent. Power Roof Vents

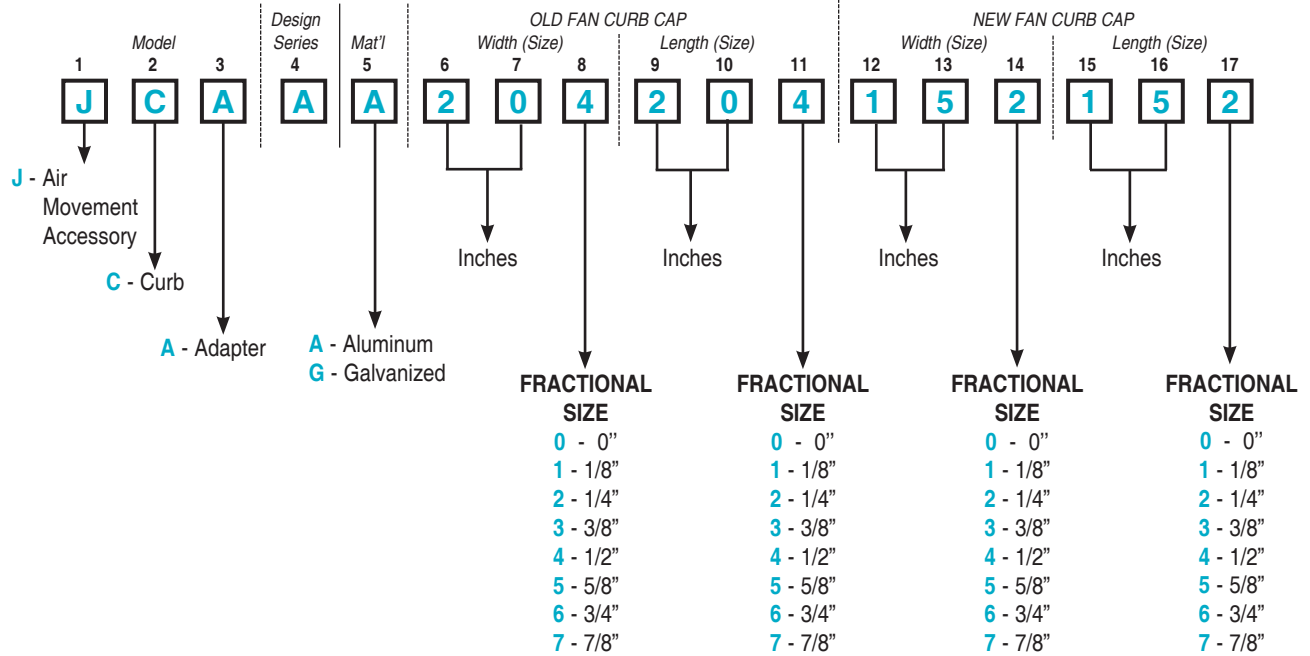
▼ Dampers



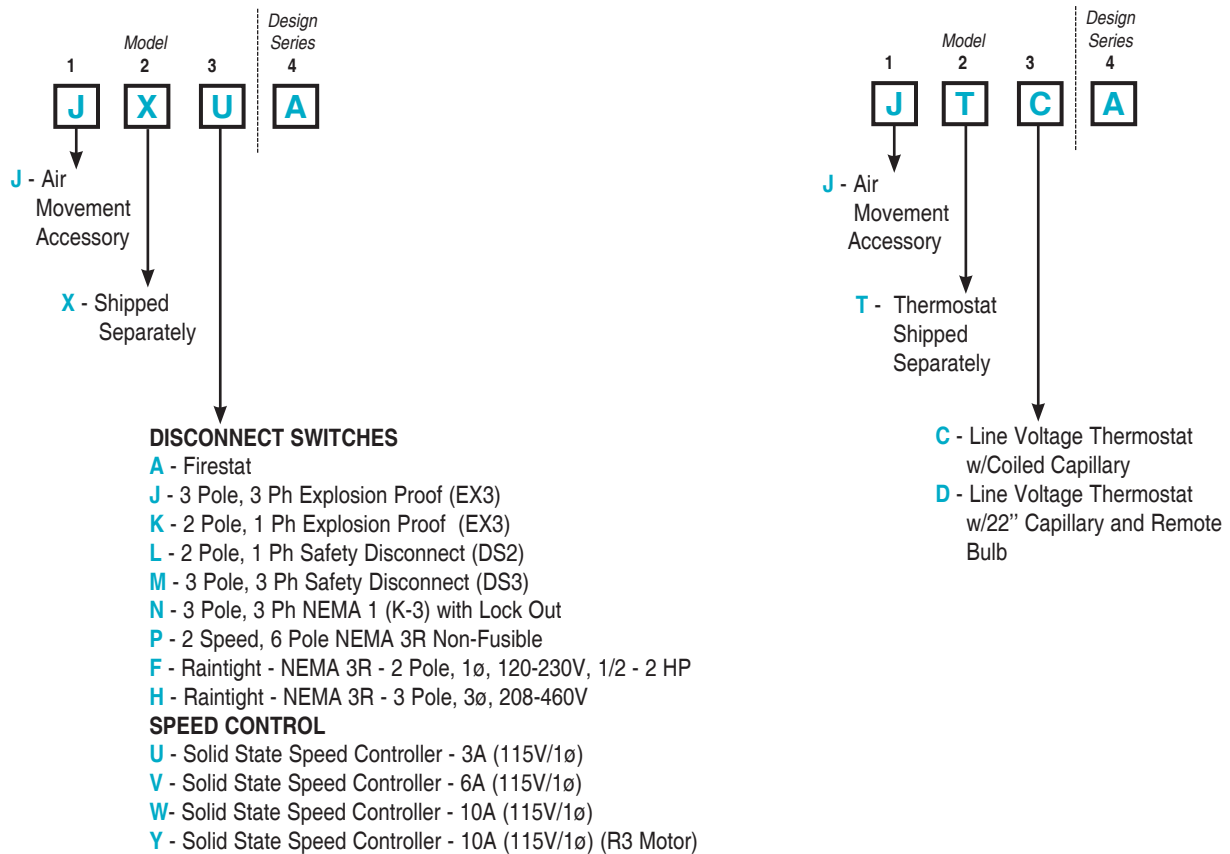
▼ Curbs



▼ Curb Cap Adapters

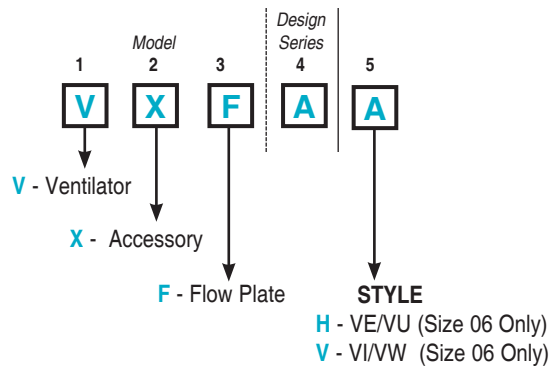


▼ Electrical Accessories



Cent. Power Roof Vents

▼ Electrical Accessories



CENTRIFUGAL WALL EXHAUSTERS

Direct and Belt Driven

Models VWDK and VWBK

DESIGNED AND ENGINEERED TO MEET INDUSTRY NEEDS

The Carnes Company centrifugal wall exhaust ventilator is the fan to use when the roof top ventilation is impractical or impossible. These direct and belt driven units mount to exterior walls and are designed so the air flow is away from the building.

The VW series wall exhauster is designed to compliment the configurations of the Carnes roof mounted ventilators - the VE series downblast and the VU series upblast fans.

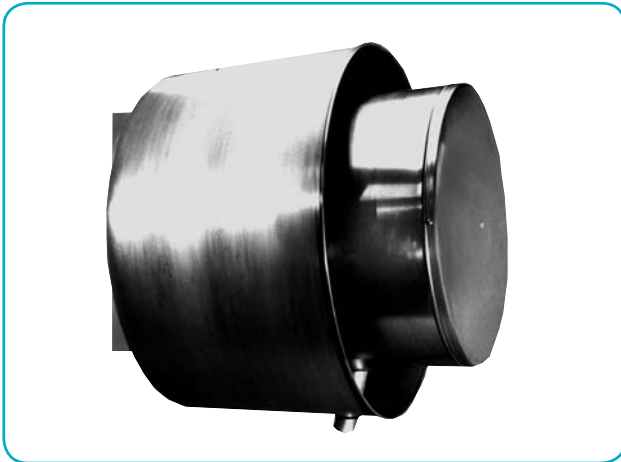
The patented design of the diffuser support adds to the structural rigidity of the wall ventilator. The combination of the diffusers, the backwardly inclined

median airfoil wheel and the deep spun venturi allows fan operation at extended static pressures.

The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow along with protection from entry of adverse weather elements.

The air flow design of these fans has been thoroughly tested at Carnes' accredited laboratory.

Testing has also been conducted to ensure trouble-free startup and to ensure product durability and dependability of operation.



Direct Driven Model VWDK

Carnes direct drive centrifugal wall exhaust fans are available in six sizes with capacities from 150 to 4100 CFM. Certain direct drive units can be supplied with an optional electronic speed control which increases the fan's air flow flexibility. Direct driven fans require minimal maintenance and the one piece spun aluminum outer shroud is designed to be visually compatible with the Carnes spun aluminum roof mounted ventilators.

Maximum exhaust temperature for continuous operation is 150°F.

Belt Driven Model VWBK

The Carnes series VWBK belt driven wall exhaust fans are ideal for low to high air flows covering a range of static pressures, up to 2¾ inches, water gauge. This series features eight sizes with air performance capabilities of 225 to over 9,000 CFM. Structural integrity is enhanced by incorporating the diffuser support framework into the design of the fan. Housing construction is spun and shaped aluminum and utilizes a one or two piece outer shroud for rigidity and ease of maintenance.

Maximum exhaust temperature for continuous operation is 200°F.



▼ TYPICAL SPECIFICATIONS

Wall exhaust ventilators shall be of the centrifugal belt or direct driven type. The motor compartments shall be constructed of heavy gauge aluminum mounted on an independent support structure. The outer shroud shall have a rolled bead for added strength. The wheel and spun inlet venturi shall be a centrifugal design of non-sparking construction. For maximum performance and quiet, efficient operation, the wheel shall overlap the inlet venturi and have backward inclined median airfoil blades. The wheels shall be dynamically balanced to assure smooth and vibration-free rotation under maximum loading. The complete drive assembly, including the motor and the wheel, shall be mounted on vibration isolators. The motor and drives shall be factory mounted. All fans shall be test run prior to shipment.

VWBK BELT DRIVE SERIES

Motors and drives shall be isolated from the exhaust airstream. Air for cooling the motor shall be supplied to the internal motor compartment through a vent tube from a location free from discharge contaminants. Motors shall be of the heavy duty type with permanently lubricated, sealed ball bearings. Motors shall be readily accessible for maintenance. Wheel shaft shall be ground, polished, coated with a rust inhibitive finish and mounted in heavy duty, permanently sealed pillowblock ball bearings which are capable of 200,000 hours of life, average operation. Drives shall be sized at a minimum of 165% of driven horsepower. Drive belts shall be oil-resistant, non-static and be capable of 25,000 hours of life, average operation. Sheaves shall be fully machined cast iron, keyed and securely attached to the shafts. Variable pitch motor sheaves shall be standard.

VWDK DIRECT DRIVE SERIES

Motors shall be isolated from the exhaust airstream. Air for cooling the motor shall be supplied to the internal motor compartment through a vent tube from a location free from discharge contaminants. Motors shall be readily accessible for maintenance. Wheels to be furnished with integral fitting for wheel puller.

The motor shall be factory wired to the disconnect junction box and a disconnect switch shall be supplied. Field wiring of motor, disconnect and conduit are to be in accordance with electrical specifications and local codes. Heavy gauge welded galvanized birdscreen shall be furnished.

Horsepower and noise levels shall not exceed the published values and oversized motors will not be acceptable. Performance ratings shall be AMCA licensed for Air and Sound.

Centrifugal wall exhaust ventilators shall be Carnes Model VWBK, belt drive, sizes 06 through 24, or Model VWDK, direct drive, sizes 06 through 18, as manufactured at Carnes Company of Verona, Wisconsin.

AMCA LICENSED AIR and SOUND DATA

Licensed to bear the AMCA Seal for both air and sound.

The Carnes Company certifies that the Models VW 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.



UL OPTION

Models VWDK and VWBK are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



**POWER
VENTILATOR**

CONSTRUCTION

FAN HOUSING

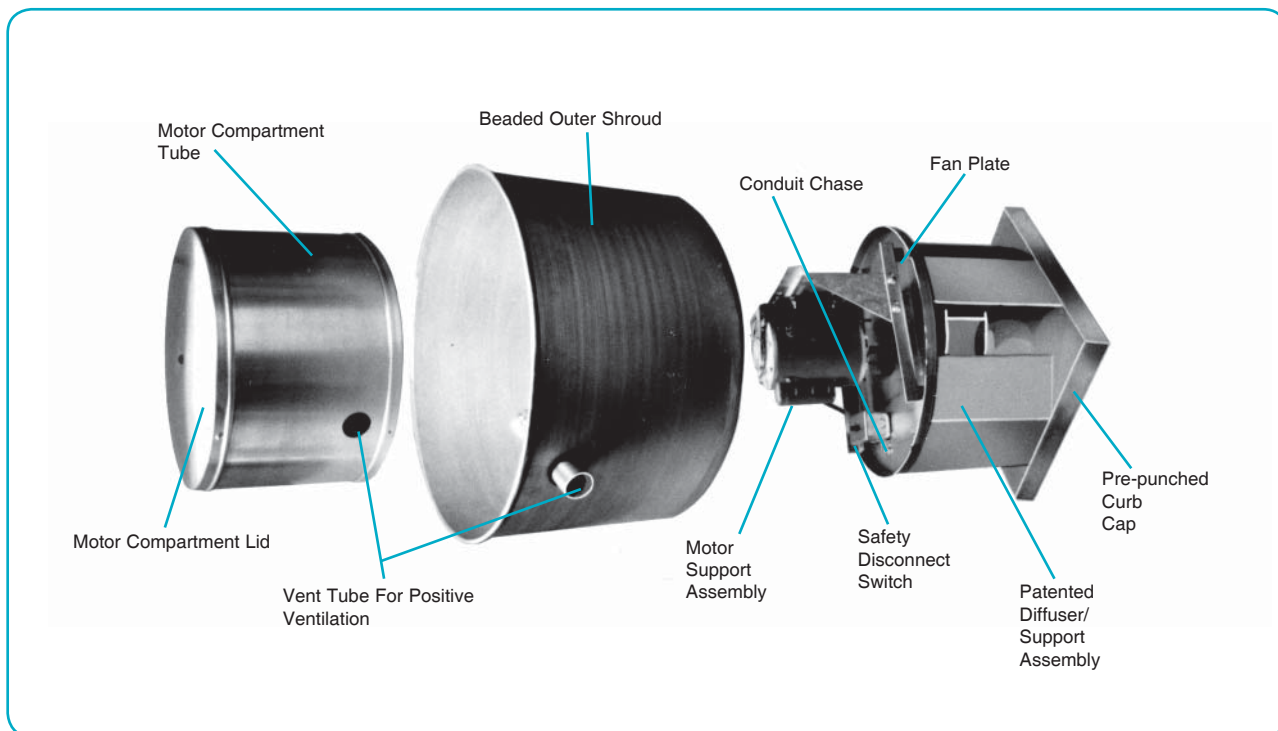
- Constructed with heavy gauge aluminum.
- Designed for maximum weather protection, outer shroud and diffusers prevent the entrance of inclement weather.
- Outer shroud beaded for rigidity.
- Fan plate designed to prevent entrance of contaminated air and airborne particles into the motor compartment.
- Two piece motor cover design (lid and motor tube) allows easy access to motor, drives and bearings for maintenance.
- Drain opening.

MOTOR/ELECTRICAL

- **UL** listing under Standard 705 available as option on most models.
- Motors are **UL** recognized components by nationally recognized manufacturers.
- Safety disconnect utility box mounted, switch and cover plate shipped loose for ease of field wiring.
- Sealed conduit chase complies with **NEC**, allows passage of electrical wire through curb cap into motor compartment.
- Motor through 3 HP mounted as standard.

VWDK 10

*Units rotated for viewing purposes
install with vent tube opening directed down*



MOTOR COMPARTMENT/TUBE

- Vent tube provides positive motor cooling to maximize motor life.
- Easily removable lid and tube utilize durable threaded fastener retainers.
- Opening around shaft sized to allow for optimum air passage to ensure proper motor compartment cooling.

BIRDSCREEN

- 1/2" by 1/2" heavy gauge welded galvanized birdscreen attached to unit with easily removable fasteners.
- Birdscreen has a minimal effect on air and sound performance.

MOTOR SUPPORT ASSEMBLY

- Bolted, heavy gauge material.
- Easily adjustable belt tension.
- Motor plate accommodates multiple motor frames.
- Isolated from fan plate to reduce vibration and noise transmission.
- Allows horizontal adjustment of wheel.
- Electrically grounded to meet **NEC** and **UL** requirements.

Cent. Power Wall Vents

FEATURES

BEARINGS/SHAFT

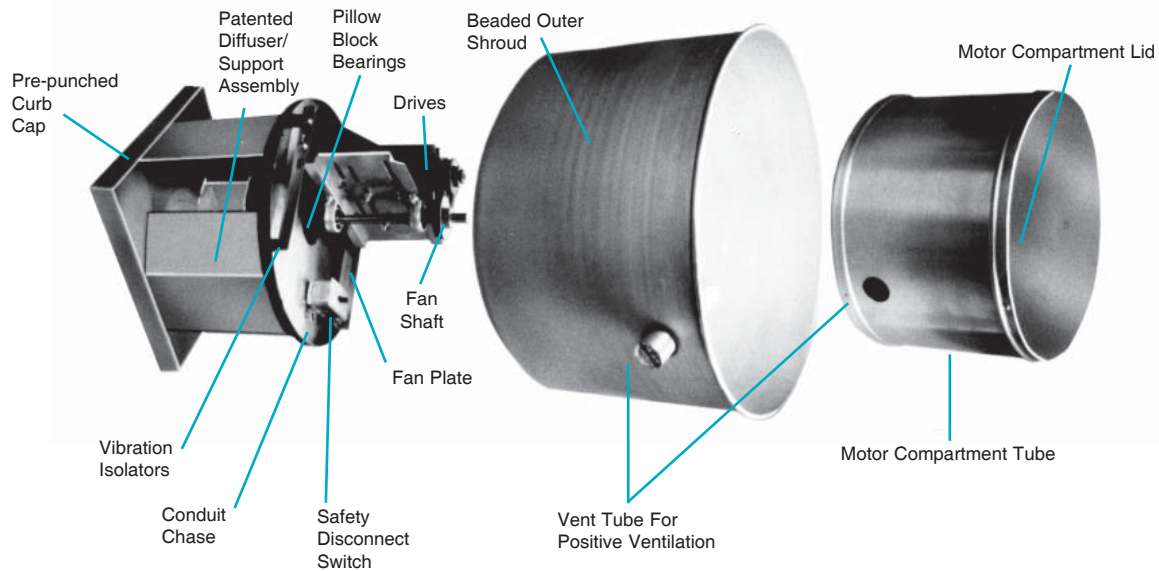
- Eccentric locking collar bearings standard on sizes 06-18.
- Dual bearings utilized to properly support the fan shaft.
- Prelubricated sealed, self-aligning rated at 200,000 hours average operation.
- Polished CRS fan shaft with rust inhibitive coating.

DRIVES

- Selected for 165% of the motor horsepower.
- Adjustable V-belt drives with oil resistant non-static conducting belts.
- Factory preset fan RPM.
- Adjustable motor sheave allow for final air system balancing.

VWBK 12

*Units rotated for viewing purposes
install with vent tube opening directed down*



WALL MOUNTING CAP

- One piece construction with fastened, overlapping corners to ensure strength.
- Pre-punched mounting holes for ease of installation.
- Support structure attached with self-sealing fasteners.
- The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow along with protection from entry of adverse weather elements.
- Mounting frame 1-1/2" by 1-1/2" angle to facilitate field installation.

SUPPORT STRUCTURE

- Galvanized or aluminum patented diffuser provides structural integrity and protection against weather penetration.
- Self-sealing diffuser fasteners prevent leakage.

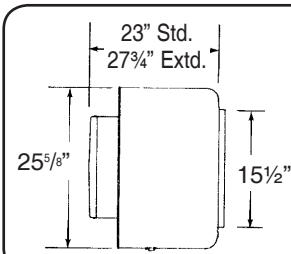
WHEEL

- Backward inclined wheels constructed of non-corrosive or coated heavy-gauge material. Wheel sizes 6-24 are aluminum, above 24 are steel.
- Usage of cooling fins on fan wheel backplate draws cooling air down over the motor facilitating motor longevity while motor remains out of the airstream.
- Self-limiting power characteristics.
- Dynamically balanced and test run in each individual unit.

VWDK 06

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 2.75 x RPM
 Unit Weight (less Motor) = 45 Lbs.
 Wall Opening = 12" Sq.
 Damper Size = 12" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																			
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250			
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP		
SPEED CONTROLLABLE MOTORS	400	150	.01																		
			.1																		
	500	188	.01																		
			.2																		
	600	225	.01																		
			.6																		
	700	263	.01	119	.01																
			1.1		1.3																
	800	300	.01	193	.01																
			1.7		1.7																
	900	338	.01	248	.02																
			2.3		2.1																
	1000	376	.02	297	.02	179	.02														
			2.9		2.7		3.4														
1075 *	404	.02	332	.03	237	.03															
		3.4		3.2		3.6															
1100	413	.02	343	.03	253	.03															
		3.5		3.3		3.7															
1200	451	.03	387	.04	314	.04	194	.04													
		4.1		4.0		4.1		5.0													
1300	488	.04	429	.04	365	.05	278	.05													
		4.8		4.6		4.5		5.3													
1400	526	.05	471	.05	414	.06	343	.06	239	.06											
		5.4		5.3		5.2		5.7		6.6											
1500	563	.06	513	.07	461	.07	400	.07	320	.08											
		6.1		6.0		5.9		6.1		6.9											
1600 *	601	.07	553	.08	505	.08	451	.09	385	.09	300	.09									
		6.9		6.8		6.7		6.6		7.3		8.2									
ALL OTHER MOTORS	1140 *	428	.03	361	.03	278	.03														
		3.7		3.6		3.8															
1725 *	648	.09	604	.10	559	.10	512	.11	458	.11	391	.12	303	.12							
		7.8		7.7		7.6		7.5		7.8		8.6		9.5							

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

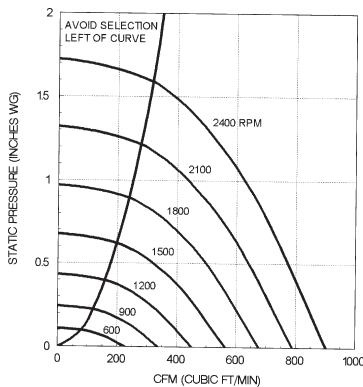
+ RPM range capable with solid state speed control.

Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VWDK 06 AIR PERFORMANCE



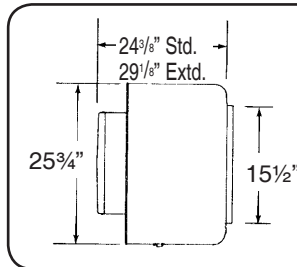
VWDK 06 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS									
		OCTAVE BANDS									
		1	2	3	4	5	6	7	8	LWA	
1075	.000	50	57	51	52	48	49	43	39	55	
	.125	54	56	52	51	48	47	43	38	54	
	.375	61	63	56	58	53	50	45	41	59	
1600	.000	65	65	66	62	59	57	55	50	65	
	.250	66	66	65	62	59	57	54	50	65	
	.375	66	67	65	62	59	56	54	49	65	
	.500	68	69	67	63	61	58	54	50	66	
	.625	71	71	69	65	63	59	56	51	68	
	.750	73	74	71	67	65	61	57	52	70	

VWDK 08

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 2.75 x RPM
 Unit Weight (less Motor) = 45 Lbs.
 Wall Opening = 12" Sq.
 Damper Size = 12" Sq.

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
F3+ 1/20	J2+ 1/8		.000	.125	.250	.375	.500	.625	.750	1.000	1.250
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS		600	331 .01 2.0								
		675	373 .01 2.6	193 .01 1.4							
		750	414 .01 3.1	267 .01 2.0							
		825	455 .01 3.7	328 .02 2.6							
		900	497 .02 4.2	385 .02 3.2	176 .02 2.8						
		1000	552 .03 5.0	455 .03 4.0	321 .03 3.5						
		1075 *	593 .03 5.6	504 .04 4.7	389 .04 4.2						
		1175	649 .04 6.4	568 .05 5.6	470 .05 5.0	340 .05 4.7					
		1250	690 .05 7.1	614 .06 6.3	527 .06 5.6	420 .06 5.4					
		1325	731 .06 7.7	661 .07 7.0	582 .07 6.4	484 .07 6.0	348 .08 5.9				
		1400	773 .07 8.3	706 .08 7.7	635 .08 7.1	546 .09 6.7	439 .09 6.5				
		1475	814 .09 9.0	751 .09 8.4	684 .10 7.8	603 .10 7.4	512 .10 7.2	379 .10 7.1			
		1550	856 .10 9.7	795 .11 9.1	732 .11 8.6	660 .12 8.1	576 .12 7.9	474 .12 7.7	280 .12 7.8		
		1600 *	883 .11 10.2	825 .12 9.6	764 .12 9.1	696 .13 8.6	617 .13 8.4	527 .13 8.2	390 .13 8.2		
ALL OTHER MOTORS		1140 *	629 .04 6.1	546 .04 5.3	443 .05 4.7	290 .05 4.5					
		1725 *	952 .14 11.5	898 .14 10.9	842 .15 10.4	784 .16 9.9	713 .16 9.5	637 .17 9.4	548 .17 9.3		

Performance certified is for installation type A - free inlet, free outlet.
 Speed (RPM) is nominal. Performance is based on actual speed of test.

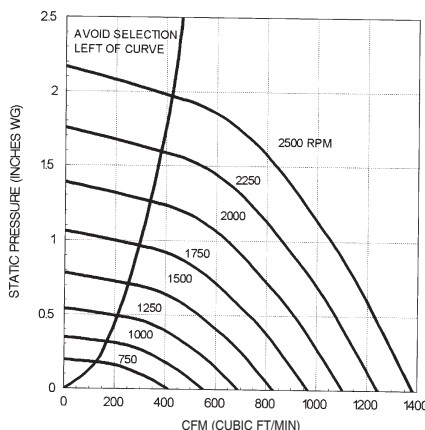
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**

- * Base Unit - As run motor speeds.
 - + RPM range capable with solid state speed control.
- Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_W sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VWDK 08 AIR PERFORMANCE



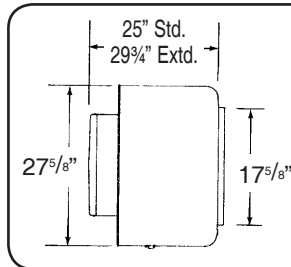
VWDK 08 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
1075	.000	56	68	57	54	50	50	52	53	60
	.125	57	64	54	53	49	49	49	49	58
	.375	58	60	53	53	51	51	47	43	57
1600	.000	74	73	74	66	61	59	60	61	70
	.250	74	71	71	64	61	58	58	58	68
	.375	74	71	70	63	60	58	57	57	67
	.500	73	71	69	63	60	58	57	56	67
	.625	72	70	69	63	61	60	58	55	67
	.750	72	70	68	63	61	60	58	54	68

VWDK 10

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 3.27 x RPM
 Unit Weight (less Motor) = 50 Lbs.
 Wall Opening = 14" Sq.
 Damper Size = 14" Sq.

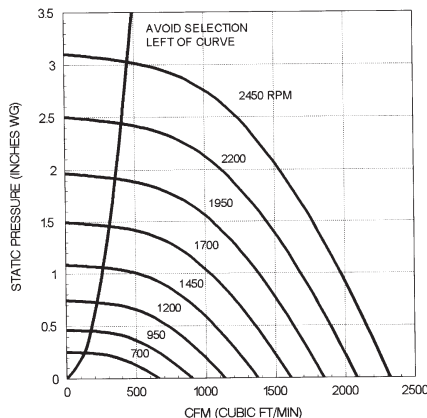
RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																	
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
SPEED CONTROLLABLE MOTORS	550	520	.01	277	.01														
	700	662	.02	500	.03														
	800	757	.03	620	.04	432	.04												
	825 *	781	.04	648	.04	477	.04												
	900	852	.05	731	.05	589	.06	355	.06										
	975	923	.06	813	.07	689	.07	521	.07										
	1050	994	.08	893	.08	782	.09	644	.09	439	.09								
	1075 *	1017	.08	919	.09	812	.10	681	.10	506	.10								
	1175	1112	.11	1023	.12	926	.12	819	.13	687	.13	494	.13						
	1275	1206	.14	1124	.15	1037	.15	944	.16	836	.17	702	.17	508	.16				
	1375	1301	.17	1225	.18	1145	.19	1061	.20	969	.21	861	.21	730	.21				
	1500	1419	.22	1350	.23	1279	.24	1202	.25	1124	.26	1036	.27	933	.27	662	.26		
	1575	1490	.26	1424	.27	1357	.28	1284	.29	1211	.30	1131	.31	1044	.31	819	.32	295	.26
	1625 *	1538	.28	1473	.29	1409	.31	1339	.32	1268	.33	1193	.34	1112	.34	910	.35	584	.33
ALL OTHER MOTORS	1140 *	1079	.10	987	.11	886	.11	775	.12	627	.12	375	.11						
	1725 *	1632	.34	1572	.35	1511	.36	1447	.37	1380	.39	1313	.40	1239	.40	1067	.41	850	.41

Performance certified is for installation type A - free inlet, free outlet.
 Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VWDK 10 AIR PERFORMANCE



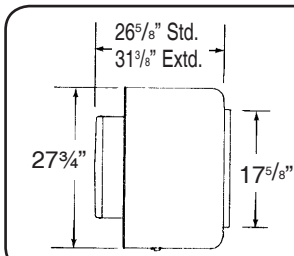
VWDK 10 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	54	60	55	52	52	52	44	37	57
	.125	58	58	53	50	50	49	42	35	55
	.375	58	57	52	49	49	49	45	40	55
1075	.000	61	65	64	59	57	59	53	45	64
	.250	65	64	62	57	55	56	50	44	62
	.500	65	63	60	56	55	56	52	48	62
1625	.000	76	73	78	72	68	67	66	59	75
	.500	75	77	76	70	66	64	63	57	74
	1.000	72	77	75	69	65	64	64	59	73

VWDK 12

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 3.27 x RPM
 Unit Weight (less Motor) = 50 Lbs.
 Wall Opening = 14" Sq.
 Damper Size = 14" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.											
		.000	.125	.250	.375	.500	.625	.750	1.000	1.250			
F4+ 1/20	J3+ 1/8	M2+ 1/3	P2+ 1/2	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS**	550				661 .01 2.0	386 .02 1.6							
	700				841 .03 3.7	657 .03 3.2	186 .02 3.1						
	800				961 .04 5.0	804 .05 4.5	593 .05 4.2						
	825 *				991 .05 5.2	839 .05 4.8	642 .05 4.4						
	900				1081 .06 6.0	941 .06 5.6	782 .07 5.2	513 .06 5.2					
	975				1171 .08 6.9	1042 .08 6.5	906 .09 6.1	716 .09 6.0					
	1050				1261 .09 7.9	1141 .10 7.4	1023 .11 7.1	862 .11 6.9	631 .10 6.9				
	1075 *				1291 .10 8.2	1173 .11 7.8	1059 .11 7.4	910 .12 7.2	702 .11 7.2				
	1175				1411 .13 9.6	1303 .14 9.2	1198 .15 8.8	1078 .15 8.6	924 .15 8.5	708 .15 8.5			
	1275				1532 .17 11.2	1431 .18 10.8	1334 .18 10.4	1238 .19 10.0	1110 .19 9.9	957 .20 9.8	734 .18 9.9		
	1375				1652 .21 12.9	1559 .22 12.5	1468 .23 12.1	1379 .24 11.7	1275 .24 11.5	1150 .24 11.5	1005 .24 11.5		
	1500				1800 .27 15.1	1716 .28 14.8	1633 .29 14.4	1551 .30 14.1	1469 .31 13.9	1364 .31 13.7	1248 .32 13.7	935 .31 13.9	
	1575				1892 .32 16.5	1810 .33 16.3	1731 .34 16.0	1652 .35 15.5	1574 .36 15.3	1486 .36 15.2	1382 .37 15.1	1135 .37 15.2	525 .28 15.4
	1625 *				1952 .35 17.3	1873 .36 17.1	1795 .37 16.8	1719 3.8 16.3	1644 .39 16.1	1565 .40 15.9	1465 .40 15.8	1235 .40 15.9	863 .37 16.0
ALL OTHER MOTORS	1140 *				1369 .12 9.1	1258 .13 8.7	1150 .13 8.3	1021 .14 8.1	855 .14 8.0	573 .12 8.0			
	1725 *				2072 .42 18.7	1997 .43 18.4	1924 .44 18.1	1852 .45 17.7	1781 .46 17.4	1710 .47 17.2	1627 .48 17.0	1428 .48 16.9	1180 .48 17.1

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

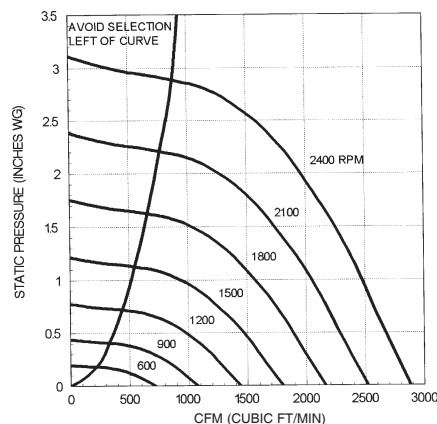
+ RPM range capable with solid state speed control.

Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_W sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VWDK 12 AIR PERFORMANCE



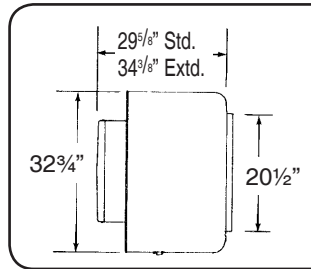
VWDK 12 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	65	64	60	54	59	55	45	35	62
	.125	65	63	59	53	57	51	45	38	60
	.375	67	61	59	51	52	51	46	42	58
1075	.000	68	72	69	63	63	62	55	45	69
	.250	68	72	68	62	60	59	53	47	67
	.500	63	71	68	61	58	57	54	48	66
1625	.000	72	85	82	77	70	74	69	60	80
	.500	71	85	81	76	68	72	66	60	79
	1.000	73	86	81	76	67	68	66	60	78

VWDK 15

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 4.06 x RPM
 Unit Weight (less Motor) = 75 Lbs.
 Wall Opening = 17" Sq.
 Damper Size = 17" Sq.

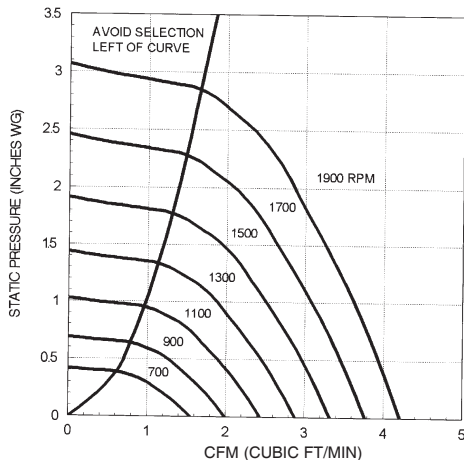
RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.												
		K4+ 1/6		M3+ 1/3		.000	.125	.250	.375	.500	.625	.750	1.000	1.250
		CFM	BHP	CFM	BHP	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES
SPEED CONTROLLABLE MOTORS	450	993	.02	655	.03									
			2.6	2.9										
	500	1103	.03	815	.04									
			3.3	3.6										
	550	1214	.04	961	.05	441	.04							
			4.1	4.3	4.6									
	600	1324	.06	1098	.06	796	.07							
			5.0	5.1	5.3									
	650	1434	.07	1230	.08	973	.08							
			5.9	6.0	6.1									
	700	1545	.09	1359	.10	1132	.10	787	.10					
			6.8	6.8	6.9	7.2								
	750	1655	.11	1485	.12	1279	.13	1029	.12					
		7.7	7.7	7.8	8.0									
800	1765	.14	1606	.15	1422	.15	1206	.16	854	.15				
		8.7	8.7	8.7	8.9	9.1								
825 *	1820	.15	1666	.16	1490	.17	1288	.17	1002	.17				
		9.2	9.2	9.2	9.3	9.5								
875	1931	.18	1785	.19	1623	.20	1439	.20	1221	.21	778	.18		
		10.3	10.2	10.2	10.2	10.4	10.5							
925	2041	.21	1904	.22	1755	.23	1585	.24	1396	.24	1135	.24		
		11.4	11.2	11.2	11.2	11.4	11.6							
975	2151	.25	2021	.26	1884	.27	1729	.28	1555	.28	1353	.28	1002	
		12.5	12.4	12.3	12.2	12.4	12.6	12.7						
1025	2262	.29	2138	.30	2011	.31	1864	.32	1704	.32	1529	.33	1307	
		13.6	13.5	13.4	13.3	13.4	13.6	13.8						
1075 *	2372	.33	2254	.34	2135	.35	1997	.36	1850	.37	1693	.38	1507	
		14.8	14.7	14.6	14.5	14.5	14.6	14.8						
ALL OTHER MOTORS	1140 *	2525	.37	2410	.38	2292	.39	2155	.40	2006	.41	1842	.42	1666
		13.3	12.8	12.8	11.2	11.2	11.2	11.2					1084	
													11.2	

Performance certified is for installation type A - free inlet, free outlet.
 Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wf} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VWDK 15 AIR PERFORMANCE



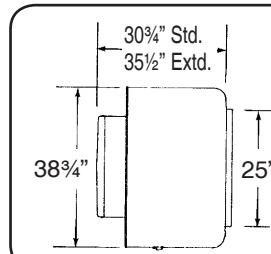
VWDK 15 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	74	76	73	68	63	60	54	46	70
	.125	73	76	73	68	64	60	54	47	70
	.250	73	75	72	69	64	60	54	49	71
	.500	73	74	72	69	66	61	56	51	71
	.750	73	74	72	69	66	61	57	51	71
1075	.000	81	81	81	76	70	68	62	55	78
	.250	80	81	80	76	71	67	62	56	78
	.500	80	80	80	77	72	67	63	57	78
	.750	81	80	80	77	73	68	64	58	78
	1.000	81	79	79	77	73	69	64	59	79

VWDK 18

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 4.94 x RPM
 Unit Weight (less Motor) = 95 Lbs.
 Wall Opening = 22" Sq.
 Damper Size = 22" Sq.

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.										
M4+ 1/3	*R3+ 3/4		.000	.125	.250	.375	.500	.625	.750	1.000	1.250		
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS		600	2266 .14 6.2	1942 .15 5.4	1538 .14 4.8	955 .12 4.5							
		650	2455 .18 7.1	2163 .19 6.4	1807 .18 5.8	1362 .17 5.3	650 .13 5.3						
		700	2644 .23 8.1	2374 .23 7.4	2055 .23 6.8	1685 .23 6.2	1166 .20 6.1						
		750	2833 .28 9.1	2580 .29 8.4	2296 .29 7.8	1969 .28 7.3	1569 .26 6.9	999 .22 6.9					
		800	3022 .34 10.2	2784 .35 9.4	2528 .35 8.8	2232 .34 8.3	1898 .34 7.8	1455 .31 7.6	843 .24 7.6				
		825 *	3116 .37 10.6	2885 .38 10.0	2641 .38 9.3	2357 .38 8.8	2042 .37 8.3	1651 .35 8.0	1134 .30 8.0				
		875	3305 .44 11.7	3086 .45 11.1	2865 .46 10.4	2602 .45 9.9	2323 .45 9.4	2008 .44 8.9	1582 .40 8.8				
		925	3494 .53 13.0	3286 .53 12.3	3084 .54 11.7	2842 .54 11.1	2584 .53 10.5	2298 .52 10.1	1970 .50 9.7	988 .38 9.7			
		975	3683 .62 14.2	3486 .62 13.5	3296 .63 12.9	3075 .63 12.3	2832 .63 11.8	2579 .62 11.3	2296 .61 10.8	1517 .52 10.5			
		1025	3871 .72 15.4	3685 .72 14.8	3502 .73 14.3	3301 .73 13.7	3076 .73 13.3	2843 .72 12.7	2584 .71 12.2	1945 .65 11.6	979 .50 11.6		
	1075 *	4060 .82 16.7	3882 .83 16.1	3767 .84 15.7	3523 .85 15.2	3315 .85 14.7	3092 .84 14.2	2864 .83 13.7	2327 .79 12.7	1561 .68 12.7			
ALL OTHER MOTORS		1140 *	4306 .98 18.7	4138 .99 18.1	3972 1.00 17.6	3811 1.01 17.1	3615 1.01 16.7	3410 1.01 16.2	3200 1.00 15.6	2734 .97 14.7	2128 .90 14.2		

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**

* Base Unit - As run motor speeds.

+ RPM range capable with solid state speed control.

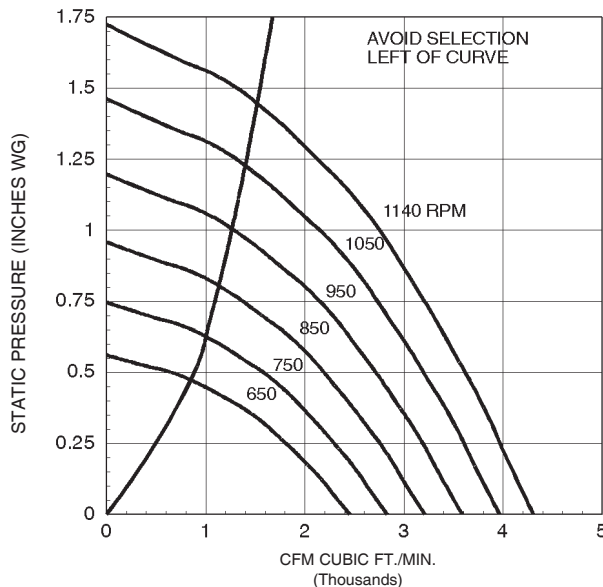
Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_W sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

***NOTE:** R3 motors are specifically designed to operate through the above performance range. The motor will not be damaged or harmed at the higher BHP values.

VWDK 18 AIR PERFORMANCE



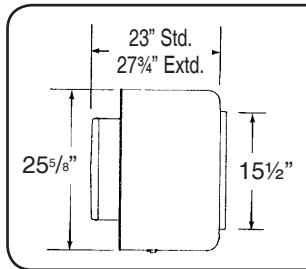
VWDK 18 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	75	77	71	68	68	65	60	54	73
	.125	74	77	70	67	67	64	58	53	71
	.250	74	76	69	66	65	62	57	51	70
	.500	72	74	67	64	63	60	56	52	68
	.750	71	73	66	62	62	60	56	52	67
1075	.000	83	83	81	75	74	72	67	62	80
	.250	82	83	80	74	73	70	66	60	78
	.500	81	82	79	72	71	69	64	59	77
	.750	80	81	78	71	69	68	64	59	76
	1.000	79	79	77	70	68	66	63	59	75

VWBK 06

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = .023 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

- Tip Speed = 2.75 x RPM
- Max. Motor Frame Size = 56
- Unit Weight (less motor) = 45 lbs.
- Wall Opening = 12" Sq.
- Damper Size = 12" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
(1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
K1		CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES
K2 (1/6)	600	225 .01 .5												
	700	263 .01 1.0	119 .01 1.3											
K3 (1/6)	800	300 .01 1.6	193 .01 1.7											
	900	338 .01 2.1	248 .02 2.1											
K4 (1/6)	1000	376 .02 2.8	297 .02 2.7	179 .02 3.5										
	1100	413 .02 3.5	343 .03 3.3	253 .03 3.7										
K5 (1/6)	1200	451 .03 4.1	387 .04 3.9	314 .04 4.0	194 .04 5.0									
	1300	488 .04 4.7	429 .04 4.6	365 .05 4.5	278 .05 5.3									
L1 (1/4)	1400	526 .05 5.4	471 .05 5.3	414 .06 5.2	343 .06 5.6	239 .06 6.5								
	1500	563 .06 6.1	513 .07 6.0	461 .07 5.9	400 .07 6.0	320 .08 6.8								
M1 (1/3)	1550	582 .07 6.5	533 .07 6.3	483 .08 6.2	426 .08 6.2	354 .08 7.0	252 .09 7.9							
	1600	601 .07 6.8	553 .08 6.7	505 .08 6.6	451 .09 6.5	385 .09 7.2	300 .09 8.0							
L1 (1/4)	1650	620 .08 7.2	574 .09 7.1	527 .09 7.0	475 .10 6.9	416 .10 7.4	338 .10 8.2	218 .10 9.2						
	1700	639 .09 7.6	594 .09 7.5	548 .10 7.4	500 .10 7.3	446 .11 7.6	375 .11 8.4	278 .11 9.3						
L1 (1/4)	1750	657 .10 8.0	614 .10 7.9	570 .11 7.8	524 .11 7.7	471 .12 7.8	407 .12 8.6	327 .12 9.5						
	1800	676 .10 8.4	634 .11 8.3	591 .12 8.1	548 .12 8.1	496 .13 8.0	438 .13 8.8	365 .13 9.7						
L1 (1/4)	1850	695 .11 8.8	654 .12 8.7	612 .13 8.6	570 .13 8.5	521 .14 8.4	468 .14 9.0	401 .14 9.9						
	1900	714 .12 9.2	674 .13 9.1	633 .14 9.0	592 .14 8.9	546 .15 8.8	498 .15 9.3	435 .15 10.1						
L1 (1/4)	1950	732 .13 9.6	693 .14 9.5	654 .15 9.4	614 .15 9.3	571 .16 9.2	523 .16 9.5	466 .17 10.3	308 .17 12.2					
	2000	751 .14 10.0	713 .15 9.9	675 .16 9.8	636 .16 9.8	595 .17 9.7	549 .18 9.8	497 .18 10.5	357 .18 12.4					
L1 (1/4)	2050	770 .15 10.5	733 .16 10.4	696 .17 10.3	658 .18 10.2	619 .18 10.1	574 .19 10.1	527 .19 10.8	400 .20 12.6					
	2100	789 .16 10.9	753 .17 10.9	716 .18 10.8	679 .19 10.7	642 .19 10.6	599 .20 10.5	555 .21 11.0	437 .21 12.8					
L1 (1/4)	2150	808 .18 11.4	772 .18 11.3	737 .19 11.2	701 .20 11.2	664 .21 11.1	623 .21 11.0	580 .22 11.3	474 .23 13.0	307 .23 15.0				
	2200	826 .19 12.0	792 .20 11.8	757 .21 11.7	722 .21 11.7	686 .22 11.6	648 .23 11.5	606 .23 11.5	506 .24 13.3	364 .24 15.2				
L1 (1/4)	2250	845 .20 12.4	811 .21 12.3	777 .22 12.2	743 .23 12.2	708 .23 12.1	672 .24 12.0	631 .25 11.9	537 .26 13.5	413 .26 15.3				
	2300	864 .22 12.8	831 .23 12.8	798 .23 12.7	764 .24 12.6	730 .25 12.6	696 .26 12.5	656 .26 12.4	568 .27 13.7	453 .28 15.5				
L1 (1/4)	2350	883 .23 13.3	850 .24 13.2	818 .25 13.1	785 .26 13.1	752 .26 13.0	719 .27 13.0	680 .28 12.9	598 .29 13.9	490 .30 15.7	330 .30 17.7			
	2400	901 .25 13.7	870 .25 13.6	838 .26 13.6	806 .27 13.5	774 .28 13.5	741 .29 13.4	704 .29 13.4	628 .31 14.1	527 .31 15.8	389 .32 17.8			
L1 (1/4)	2450	920 .26 14.1	889 .27 14.1	858 .28 14.0	827 .29 14.0	795 .30 13.9	763 .30 13.9	729 .31 13.9	654 .33 14.4	560 .33 16.0	438 .34 17.9			
	2500	939 .28 14.6	909 .29 14.5	878 .30 14.5	848 .31 14.5	816 .31 14.4	785 .32 14.4	753 .33 14.4	679 .34 14.7	591 .35 16.2	482 .36 18.0			

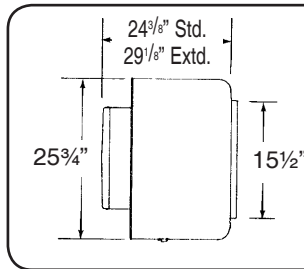
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VWBK 08

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = .033 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

- Tip Speed = 2.75 x RPM
- Max. Motor Frame Size = 56
- Unit Weight (less motor) = 45 lbs.
- Wall Opening = 12" Sq.
- Damper Size = 12" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	650	359 .01 2.0	154 .01 1.4										
	750	415 .01 2.8	267 .01 2.0										
K3 (1/6)	850	470 .02 3.7	347 .02 2.8										
	950	525 .02 4.6	421 .03 3.8	266 .03 3.8									
K4 (1/6)	1050	580 .03 5.4	488 .04 4.5	368 .04 3.9									
	1150	636 .04 6.2	552 .05 5.4	452 .05 4.8	305 .05 4.6								
L1 (1/4)	1250	691 .05 7.1	614 .06 6.3	527 .06 5.6	420 .06 5.4								
	1350	746 .07 7.9	676 .07 7.2	600 .08 6.6	505 .08 6.3	385 .08 6.1							
M1 (1/3)	1450	802 .08 8.8	736 .09 8.2	667 .09 7.6	584 .10 7.1	490 .10 7.0	340 .10 6.9						
	1500	829 .09 9.3	766 .10 8.6	700 .10 8.1	622 .11 7.6	533 .11 7.4	417 .11 7.3						
P1 (1/2)	1550	857 .10 9.7	795 .11 9.1	732 .11 8.6	660 .12 8.1	576 .12 7.9	474 .12 7.7	280 .12 7.8					
	1600	884 .11 10.2	825 .12 9.6	764 .12 9.0	696 .13 8.6	617 .13 8.3	527 .13 8.2	390 .13 8.1					
K1 (1/6)	1650	912 .12 10.7	854 .13 10.1	795 .13 9.6	733 .14 9.1	656 .14 8.8	573 .15 8.7	468 .15 8.6					
	1700	940 .13 11.2	884 .14 10.6	827 .14 10.1	768 .15 9.6	694 .16 9.3	616 .16 9.1	522 .16 9.0					
K2 (1/6)	1750	967 .14 11.7	913 .15 11.1	858 .16 10.6	801 .16 10.2	732 .17 9.7	658 .17 9.6	574 .18 9.5					
	1800	995 .15 12.3	942 .16 11.8	889 .17 11.2	833 .18 10.6	769 .18 10.2	699 .19 10.1	621 .19 10.0	352 .18 10.0				
K3 (1/6)	1850	1023 .17 13.0	971 .18 12.4	920 .18 11.9	865 .19 11.3	806 .20 10.8	737 .20 10.7	664 .20 10.6	455 .20 10.4				
	1900	1050 .18 13.7	1000 .19 13.1	950 .20 12.5	897 .21 12.0	842 .21 11.5	776 .22 11.2	706 .22 11.1	532 .23 11.0				
K4 (1/6)	1950	1078 .20 14.4	1029 .21 13.8	981 .21 13.2	929 .22 12.7	878 .23 12.2	813 .23 11.8	748 .24 11.7	589 .24 11.5				
	2000	1106 .21 15.1	1057 .22 14.5	1011 .23 14.0	961 .24 13.4	911 .25 12.9	851 .25 12.5	787 .25 12.4	641 .26 12.1	359 .26 12.1			
L1 (1/4)	2050	1133 .23 15.9	1086 .24 15.3	1041 .25 14.7	992 .25 14.2	944 .26 13.6	888 .27 13.1	826 .27 13.0	693 .28 12.8	480 .28 12.6			
	2100	1161 .25 16.6	1115 .25 16.0	1070 .26 15.5	1024 .27 14.9	976 .28 14.4	924 .29 13.9	864 .29 13.6	736 .30 13.4	558 .30 13.3			
M1 (1/3)	2150	1189 .26 17.4	1143 .27 16.8	1100 .28 16.2	1055 .29 15.7	1008 .30 15.2	960 .31 14.7	901 .31 14.3	779 .32 14.1	626 .33 13.9			
	2200	1216 .28 18.2	1172 .29 17.6	1130 .30 17.0	1086 .31 16.4	1040 .32 15.9	995 .33 15.5	939 .33 15.0	821 .34 14.7	679 .35 14.5	419 .33 14.4		
P1 (1/2)	2250	1244 .30 18.7	1201 .31 18.1	1159 .32 17.6	1116 .33 17.0	1072 .34 16.6	1028 .35 16.1	975 .35 15.6	862 .36 15.3	732 .37 15.1	532 .37 14.9		
	2300	1271 .32 19.2	1229 .33 18.7	1189 .34 18.2	1147 .35 17.6	1104 .36 17.2	1060 .37 16.7	1012 .38 16.3	903 .39 15.9	782 .40 15.7	610 .40 15.6		
K2 (1/6)	2350	1299 .34 19.8	1258 .35 19.3	1218 .36 18.7	1178 .37 18.2	1135 .38 17.8	1093 .39 17.3	1048 .40 16.9	940 .41 16.5	825 .42 16.3	680 .43 16.2		
	2400	1327 .37 20	1286 .38 19.8	1247 .39 19.3	1208 .40 18.9	1166 .41 18.4	1125 .42 18.0	1083 .43 17.6	979 .44 17.1	867 .45 16.9	733 .45 16.8	519 .44 16.7	
K3 (1/6)	2450	1354 .39 21	1314 .40 20	1276 .41 19.9	1238 .42 19.5	1198 .43 19.1	1157 .44 18.6	1116 .45 18.2	1016 .46 17.7	909 .47 17.5	786 .48 17.4	606 .48 17.3	
	2500	1382 .41 21	1343 .43 21	1305 .44 21	1268 .45 20	1229 .46 19.7	1189 .47 19.3	1149 .48 18.9	1054 .49 18.2	951 .50 18.1	839 .51 18.0	683 .51 17.9	

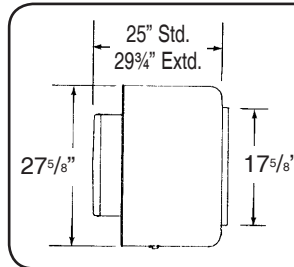
Performance certified is for installation type A - free inlet, free outlet.
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VWBK 10

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = $.081 \times \left[\frac{\text{RPM}}{1000} \right]^3$
 Tip Speed = 3.27 x RPM
 Max. Motor Frame Size = 145T
 Unit Weight (less motor) = 50 lbs.
 Wall Opening = 14" Sq.
 Damper Size = 14" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
(1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
K1		CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
		SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES
K2 (1/6)	650	616 .02 2.4											
	750	711 .03 3.4	331 .03 3.2										
L1 (1/4)	850	805 .04 4.3	515 .05 4.0										
	950	900 .06 5.5	657 .07 4.8										
M1 (1/3)	1050	995 .08 6.7	782 .09 5.9	439 .09 6.0									
	1150	1090 .10 7.0	897 .12 6.3	645 .12 6.3									
P1 (1/2)	1200	1136 .11 7.5	954 .13 6.7	725 .14 6.8									
	1250	1184 .13 8.0	1009 .15 7.3	800 .16 7.2	416 .15 7.3								
R1 (3/4)	1300	1230 .14 8.5	1064 .16 7.8	875 .18 7.7	576 .17 7.8								
	1350	1279 .16 9.0	1118 .18 8.3	937 .20 8.2	684 .20 8.3								
S1 (1)	1400	1327 .18 9.6	1172 .20 8.9	1001 .22 8.7	775 .22 8.8								
	1450	1374 .20 10.2	1226 .22 9.5	1063 .24 9.2	858 .25 9.3	508 .23 9.4							
K1	1500	1421 .22 10.8	1279 .24 10.1	1124 .26 9.8	933 .27 9.8	662 .26 9.9							
	1550	1469 .24 11.5	1331 .27 10.8	1182 .29 10.3	1007 .30 10.4	773 .30 10.5							
L1	1600	1516 .27 12.2	1383 .29 11.5	1239 .31 11.0	1080 .33 11.0	865 .33 11.1	480 .30 11.1						
	1650	1563 .29 12.9	1435 .32 12.2	1296 .34 11.5	1144 .36 11.6	954 .36 11.6	667 .35 11.7						
M1	1700	1611 .32 13.6	1486 .35 12.9	1352 .37 12.3	1207 .39 12.2	1030 .40 12.2	801 .39 12.3						
	1750	1658 .35 14.3	1536 .38 13.6	1407 .40 13.0	1270 .42 12.9	1105 .43 12.9	896 .43 12.9	514 .40 13.0					
P1	1800	1706 .38 15.1	1587 .41 14.3	1462 .43 13.8	1332 .45 13.6	1178 .47 13.5	987 .47 13.5	710 .45 13.6					
	1850	1753 .42 15.8	1637 .44 15.1	1517 .47 14.5	1393 .49 14.3	1250 .51 14.2	1075 .51 14.2	845 .50 14.2					
R1	1900	1800 .45 16.6	1688 .48 15.9	1571 .50 15.3	1450 .53 14.9	1314 .55 14.8	1151 .55 14.8	950 .55 14.8	596 .51 14.9				
	1950	1848 .49 17.4	1738 .52 16.7	1625 .54 16.1	1507 .57 15.7	1378 .59 15.6	1225 .60 15.5	1042 .60 15.5	783 .58 15.5				
S1	2000	1895 .53 18.0	1788 .56 17.4	1679 .58 16.8	1564 .61 16.3	1440 .63 16.2	1299 .64 16.1	1132 .65 16.1	918 .63 16.1	446 .55 16.2			
	2050	1942 .57 18.7	1838 .60 18.1	1733 .63 17.5	1620 .65 17.0	1502 .67 16.9	1374 .69 16.8	1213 .70 16.7	1022 .69 16.7	716 .66 16.7			
K1	2100	1990 .61 19.4	1887 .64 18.8	1786 .67 18.2	1676 .70 17.7	1564 .72 17.5	1438 .74 17.4	1288 .75 17.3	1114 .74 17.3	878 .73 17.3			
	2150	2037 .65 20	1937 .69 19.5	1839 .72 18.9	1731 .74 18.4	1625 .77 18.2	1502 .79 18.1	1363 .80 18.0	1204 .80 17.9	1013 .78 17.9	658 .74 18.0		
L1	2200	2085 .70 21	1987 .73 20	1891 .77 19.6	1786 .79 19.1	1681 .82 18.9	1565 .84 18.8	1436 .86 18.6	1289 .86 18.5	1108 .86 18.5	857 .83 18.5		
	2250	2132 .75 21	2036 .78 21	1943 .82 20	1841 .84 19.9	1738 .87 19.7	1628 .89 19.5	1510 .92 19.3	1364 .92 19.2	1200 .92 19.1	993 .89 19.1	601 .84 19.2	
M1	2300	2179 .80 22	2085 .83 21	1994 .87 21	1895 .90 21	1795 .93 20	1690 .95 20	1575 .97 20	1439 .98 19.9	1290 .98 19.8	1113 .98 19.7	833 .93 19.8	
	2350	2227 .85 23	2135 .89 22	2046 .92 22	1950 .95 21	1851 .98 21	1751 .1.01 21	1639 .1.03 21	1513 .1.05 21	1375 .1.05 20	1206 .1.05 20	988 .1.02 20	563 .93 21

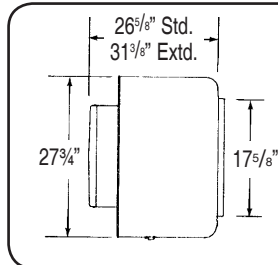
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
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VWBK 12

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = .094 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

Tip Speed = 3.27 x RPM
 Max. Motor Frame Size = 145T
 Unit Weight (less motor) = 50 lbs.
 Wall Opening = 14" Sq.
 Damper Size = 14" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	550	685 .02 2.0											
	650	810 .03 3.1											
K3 (1/6)	750	934 .04 4.3	515 .05 3.8										
	850	1059 .06 5.5	739 .07 4.7										
L1 (1/4)	950	1184 .08 6.6	910 .09 5.8										
	1050	1308 .11 7.9	1070 .12 7.1	695 .12 6.9									
M1 (1/3)	1100	1370 .13 8.6	1145 .14 7.7	839 .15 7.5									
	1150	1433 .14 9.3	1220 .16 8.4	942 .17 8.2									
P1 (1/2)	1200	1495 .16 10.0	1294 .18 9.2	1042 .19 8.8									
	1250	1557 .19 10.8	1367 .20 9.9	1128 .21 9.5	724 .20 9.5								
R1 (3/4)	1300	1620 .21 11.6	1439 .22 10.8	1214 .24 10.3	894 .24 10.3								
	1350	1682 .23 12.4	1511 .25 11.6	1297 .27 11.0	1033 .27 11.1								
S1 (1)	1450	1806 .29 14.1	1647 .31 13.5	1459 .33 12.9	1238 .34 12.9	864 .32 13.0							
	1500	1869 .32 15.1	1715 .34 14.4	1536 .36 13.9	1329 .37 13.7	1029 .36 13.9							
S1 (1)	1550	1931 .35 16.0	1782 .37 15.5	1611 .39 14.9	1415 .41 14.6	1175 .41 14.8							
	1600	1993 .39 17.0	1849 .41 16.4	1686 .43 15.8	1500 .45 15.4	1278 .45 15.6	874 .42 15.8						
S1 (1)	1650	2056 .43 17.6	1916 .45 17.1	1761 .47 16.4	1583 .49 16.1	1380 .50 16.2	1068 .48 16.2						
	1700	2118 .47 18.3	1982 .49 17.8	1834 .51 17.0	1666 .53 16.7	1478 .54 16.6	1220 .54 16.8						
S1 (1)	1750	2180 .51 19.1	2048 .53 18.5	1907 .55 17.9	1747 .58 17.5	1565 .59 17.3	1349 .59 17.5	946 .54 17.6					
	1800	2243 .56 19.9	2114 .58 19.3	1980 .60 18.9	1824 .62 18.5	1651 .64 18.2	1452 .64 18.2	1147 .62 18.2					
S1 (1)	1900	2367 .65 22	2246 .68 21	2123 .70 21	1976 .72 20	1819 .74 20	1652 .76 19.9	1442 .76 19.9	1065 .70 19.8				
	1950	2429 .71 23	2311 .73 22	2193 .75 22	2051 .78 21	1902 .80 21	1739 .82 21	1546 .82 21	1257 .79 21				
S1 (1)	2000	2492 .76 24	2376 .79 23	2261 .81 23	2125 .84 22	1984 .86 22	1825 .88 22	1648 .89 22	1409 .87 22	1001 .79 22			
	2050	2554 .82 25	2442 .85 24	2329 .87 24	2199 .90 23	2063 .92 23	1910 .94 23	1749 .96 23	1553 .95 23	1220 .90 23			
S1 (1)	2100	2616 .88 26	2506 .91 25	2397 .93 25	2273 .96 24	2140 .99 24	1994 1.01 24	1842 1.02 24	1657 1.02 24	1391 .99 24	938 .88 24		
	2200	2741 1.01 28	2636 1.04 27	2531 1.07 27	2418 1.09 26	2291 1.12 26	2159 1.15 26	2014 1.17 26	1860 1.18 26	1678 1.17 26	1391 1.13 26		
S1 (1)	2250	2803 1.09 29	2701 1.11 28	2598 1.14 28	2490 1.17 27	2366 1.19 27	2241 1.22 27	2099 1.24 27	1958 1.26 27	1782 1.26 27	1544 1.23 27	1181 1.14 27	433 .85 27

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

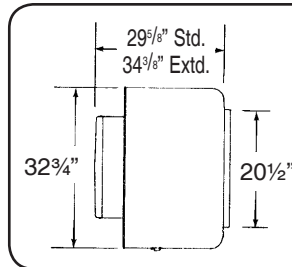
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Power Wall Vents

VWBK 15

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .285 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 4.06 x RPM

Max. Motor Frame Size = 145T

Unit Weight (less motor) = 75 lbs.

Wall Opening = 17" Sq.

Damper Size = 17" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES
K2 (1/6)	550	1214 .04	441 .04											
	600	1324 .06	796 .07											
L1 (1/4)	650	1434 .07	973 .08											
	700	1545 .09	1132 .10											
M1 (1/3)	750	1655 .11	1279 .13											
	800	1765 .14	1422 .15	854 .15										
P1 (1/2)	850	1876 .16	1557 .18	1131 .19										
	900	1986 .19	1689 .21	1309 .22										
R1 (3/4)	950	2096 .23	1819 .25	1480 .26	713 .22									
	1000	2207 .27	1948 .29	1630 .30	1170 .30									
S1 (1)	1050	2317 .31	2074 .33	1778 .35	1418 .35									
	1100	2427 .35	2195 .38	1922 .40	1595 .41	882 .35								
T1 (1-1/2)	1150	2538 .40	2316 .43	2062 .45	1770 .47	1324 .45								
	1200	2648 .46	2436 .49	2196 .51	1923 .53	1593 .53								
	1250	2758 .52	2555 .55	2329 .57	2072 .59	1771 .60	1215 .54							
	1300	2868 .58	2673 .61	2460 .64	2218 .66	1946 .67	1560 .66							
	1350	2979 .65	2791 .68	2590 .71	2362 .73	2112 .75	1811 .75	1133 .65						
	1400	3089 .73	2908 .76	2718 .79	2503 .82	2263 .83	1989 .84	1575 .81						
	1450	3199 .81	3024 .84	2846 .87	2637 .90	2412 .92	2164 .93	1851 .93	1067 .76					
	1500	3310 .90	3141 .93	2970 .96	2771 .99	2558 1.01	2333 1.03	2058 1.03	1627 .97					
	1525	3365 .94	3199 .98	3031 1.01	2837 1.04	2630 1.06	2409 1.08	2148 1.09	1773 1.05	633 .73				
	1550	3420 .99	3257 1.02	3091 1.06	2903 1.09	2702 1.11	2485 1.13	2236 1.14	1911 1.13	1138 .93				
	1575	3475 1.04	3314 1.07	3152 1.11	2968 1.14	2773 1.17	2559 1.18	2324 1.20	2048 1.19	1481 1.07				
	1600	3530 1.09	3372 1.12	3212 1.16	3033 1.19	2845 1.22	2634 1.24	2411 1.25	2152 1.26	1707 1.18				
	1625	3586 1.14	3430 1.18	3272 1.21	3098 1.25	2913 1.27	2708 1.29	2499 1.31	2241 1.31	1865 1.27	826 .94			
	1650	3641 1.19	3487 1.23	3332 1.27	3163 1.30	2980 1.33	2781 1.35	2577 1.37	2330 1.38	2004 1.35	1322 1.16			
	1675	3696 1.25	3545 1.29	3392 1.32	3227 1.36	3047 1.39	2854 1.41	2653 1.43	2418 1.44	2141 1.43	1612 1.30			
	1700	3751 1.31	3602 1.34	3452 1.38	3292 1.42	3114 1.45	2926 1.47	2728 1.49	2506 1.50	2263 1.51	1837 1.42			
	1725	3806 1.36	3660 1.40	3511 1.44	3356 1.48	3181 1.51	2998 1.54	2803 1.56	2593 1.57	2352 1.57	1986 1.52	1118 1.22		
	1750	3861 1.43	3717 1.46	3571 1.50	3419 1.54	3247 1.57	3070 1.60	2877 1.62	2681 1.64	2441 1.64	2125 1.61	1557 1.45		

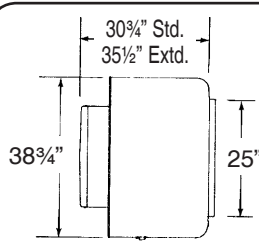
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VWBK 18

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .659 x $\left[\frac{\text{RPM}}{1000} \right]^3$
 Tip Speed = 4.94 x RPM
 Max. Motor Frame Size = 145T
 Unit Weight (less motor) = 85 lbs.
 Wall Opening = 22" Sq.
 Damper Size = 22" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W. G.											
		.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
K1 (1/6)		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
L1 (1/4)	550	2045 .10 5.5	1364 .11 3.7										
	M1 (1/3)	600	2231 .13 6.4	1642 .14 4.7									
P1 (1/2)		650	2417 .17 7.3	1891 .18 5.8	820 .14 4.8								
	R1 (3/4)	700	2603 .21 8.3	2126 .23 6.8	1383 .21 5.5								
S1 (1)		750	2789 .26 9.3	2349 .28 7.9	1754 .27 6.6								
	T1 (1-1/2)	800	2974 .32 10.4	2569 .33 9.0	2067 .33 7.7	1089 .27 7.0							
V1 (2)		850	3160 .38 11.6	2785 .40 10.3	2330 .40 9.0	1635 .38 7.8							
		900	3346 .45 12.4	2997 .47 11.1	2579 .48 10.1	2025 .47 9.2							
		950	3532 .53 13.6	3208 .56 12.4	2823 .56 11.3	2347 .56 10.3	1581 .49 10.2						
		1000	3718 .62 14.8	3413 .65 13.7	3051 .66 12.6	2644 .66 11.6	2035 .62 11.1						
		1025	3811 .67 15.4	3513 .70 14.3	3164 .71 13.3	2772 .71 12.2	2229 .68 11.6	1236 .54 11.6					
		1050	3904 .72 16.1	3613 .75 15.0	3275 .76 14.0	2899 .76 13.0	2412 .74 12.1	1640 .64 12.1					
		1075	3997 .78 16.7	3713 .80 15.7	3386 .81 14.7	3024 .82 13.7	2571 .80 12.7	1901 .73 12.7					
		1100	4090 .83 17.5	3812 .86 16.4	3496 .87 15.5	3148 .88 14.5	2728 .86 13.5	2132 .82 13.3					
		1125	4183 .89 18.2	3911 .92 17.2	3605 .93 16.2	3271 .94 15.2	2884 .93 14.3	2329 .89 13.9	1402 .72 13.9				
		1150	4276 .95 19.0	4010 .98 18.0	3714 .99 17.0	3392 1.00 16.0	3029 1.00 15.0	2523 .97 14.5	1795 .84 14.5				
		1175	4369 1.01 19.7	4108 1.04 18.7	3822 1.06 17.8	3513 1.07 16.8	3158 1.06 15.8	2703 1.04 15.0	2055 .95 15.0				
		1200	4462 1.08 20	4207 1.11 19.5	3929 1.13 18.6	3625 1.14 17.6	3285 1.13 16.6	2863 1.11 15.7	2296 1.06 15.6	1030 .77 15.6			
		1225	4555 1.15 21	4305 1.18 20	4036 1.20 19.3	3738 1.21 18.4	3410 1.21 17.4	3020 1.19 16.5	2494 1.15 16.3	1727 .99 16.3			
		1250	4648 1.22 22	4402 1.25 21	4142 1.27 20	3851 1.28 19.2	3535 1.28 18.3	3176 1.27 17.3	2689 1.24 16.9	2021 1.10 16.9			
		1275	4740 1.29 23	4500 1.32 22	4248 1.35 21	3962 1.36 20	3659 1.36 19.1	3330 1.35 18.2	2883 1.33 17.6	2280 1.22 17.6			
		1300	4833 1.37 24	4598 1.40 23	4354 1.43 22	4073 1.44 21	3781 1.45 19.9	3460 1.44 19.0	3043 1.41 18.2	2510 1.35 18.2	1639 1.12 18.2		
		1325	4926 1.45 24	4695 1.48 24	4459 1.51 23	4184 1.52 22	3903 1.53 21	3588 1.53 19.8	3202 1.50 18.9	2708 1.45 18.8	2042 1.31 18.8		
		1350	5019 1.54 25	4792 1.57 24	4564 1.60 23	4294 1.61 23	4024 1.62 22	3714 1.62 21	3359 1.60 19.8	2903 1.56 19.5	2303 1.42 19.5		
		1375	5112 1.62 26	4889 1.66 25	4668 1.69 24	4403 1.70 23	4138 1.71 23	3840 1.71 22	3514 1.69 21	3096 1.67 20	2560 1.56 20	1655 1.29 20	
		1400	5205 1.71 27	4986 1.75 26	4769 1.78 25	4511 1.79 24	4251 1.81 23	3965 1.80 22	3666 1.80 22	3261 1.77 21	2765 1.70 21	2109 1.53 21	
		1425	5298 1.81 28	5083 1.84 27	4870 1.87 26	4620 1.89 25	4364 1.90 24	4088 1.90 23	3795 1.90 22	3420 1.86 22	2962 1.81 22	2371 1.65 22	
		1450	5391 1.90 29	5179 1.94 28	4970 1.97 27	4727 1.99 26	4476 2.00 25	4211 2.01 24	3923 2.00 23	3577 1.97 22	3156 1.93 22	2629 1.81 22	1758 1.52 22
		1475	5484 2.00 30	5276 2.04 29	5070 2.07 28	4835 2.09 27	4588 2.11 26	4333 2.11 25	4050 2.11 24	3733 2.09 23	3346 2.06 23	2854 1.97 23	2215 1.79 23
		1500	5577 2.11 31	5372 2.14 30	5170 2.18 29	4942 2.20 28	4699 2.21 27	4454 2.22 26	4175 2.22 25	3887 2.20 24	3507 2.16 24	3052 2.10 24	2478 1.92 24

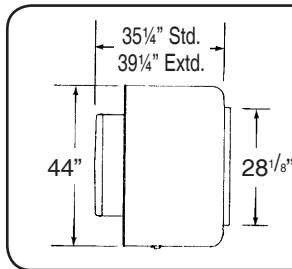
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VWBK 21

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = 1.27 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

- Tip Speed = 5.76 x RPM
- Max. Motor Frame Size = 184T
- Unit Weight (less motor) = 130 lbs.
- Wall Opening = 25" Sq.
- Damper Size = 25" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
L1 (1/4)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES
M1 (1/3)	400	2168 .08	728 .06										
	450	2439 .11	1443 .11										
	500	2709 .15	1883 .15										
P1 (1/2)	550	2980 .20	2261 .21	329 .10									
	600	3251 .26	2614 .27	1608 .25									
	650	3522 .34	2941 .35	2163 .34									
R1 (3/4)	700	3793 .42	3261 .43	2602 .42	1401 .35								
	750	4064 .52	3575 .53	2992 .53	2162 .50								
	800	4335 .63	3884 .65	3360 .65	2685 .63	1456 .50							
S1 (1)	850	4606 .75	4189 .77	3707 .78	3124 .75	2297 .71							
	875	4742 .82	4339 .84	3872 .85	3336 .84	2603 .80	812 .48						
	900	4877 .89	4485 .92	4035 .93	3525 .92	2886 .89	1737 .73						
T1 (1-1/2)	925	5012 .97	4631 .99	4197 1.00	3713 1.00	3111 .97	2162 .87						
	950	5148 1.05	4777 1.08	4358 1.09	3897 1.09	3333 1.06	2563 .99						
	975	5283 1.13	4921 1.16	4517 1.17	4080 1.18	3551 1.13	2871 1.11	1690 .87					
V1 (2)	1000	5419 1.22	5066 1.25	4676 1.27	4261 1.27	3766 1.24	3164 1.21	2152 1.15					
	1050	5690 1.41	5353 1.44	4989 1.46	4599 1.47	4152 1.46	3619 1.43	2930 1.36	1764 1.07				
	1075	5825 1.52	5497 1.55	5145 1.57	4764 1.58	4338 1.57	3839 1.51	3227 1.49	2240 1.42				
W1 (3)	1100	5961 1.62	5639 1.66	5300 1.68	4927 1.69	4523 1.69	4056 1.63	3513 1.62	2648 1.48	657 .78			
	1125	6096 1.74	5782 1.77	5454 1.80	5089 1.81	4705 1.81	4270 1.76	3740 1.74	3047 1.65	1935 1.33			
	1150	6232 1.86	5924 1.89	5607 1.92	5251 1.93	4886 1.93	4461 1.92	3963 1.88	3354 1.82	2408 1.73			
	1175	6367 1.98	6066 2.02	5759 2.05	5411 2.06	5062 2.06	4650 2.05	4183 1.97	3648 1.95	2815 1.80	1146 1.18		
	1200	6503 2.11	6208 2.15	5911 2.18	5570 2.19	5228 2.20	4836 2.19	4400 2.12	3903 2.11	3215 1.99	2184 1.68		
	1225	6638 2.24	6349 2.28	6063 2.32	5728 2.33	5394 2.34	5021 2.33	4615 2.27	4128 2.26	3533 2.19	2640 2.11		
	1250	6774 2.38	6490 2.42	6210 2.46	5886 2.47	5558 2.48	5204 2.48	4813 2.46	4350 2.41	3828 2.36	3046 2.18	2009 1.82	
	1275	6909 2.53	6631 2.57	6356 2.61	6042 2.62	5721 2.63	5385 2.63	5002 2.62	4569 2.52	4101 2.52	3445 2.39	2499 2.10	
	1300	7045 2.68	6772 2.72	6502 2.76	6198 2.78	5883 2.79	5566 2.80	5190 2.78	4786 2.70	4327 2.69	3756 2.62	2926 2.53	1320 1.63
	1325	7180 2.84	6912 2.88	6648 2.92	6353 2.94	6044 2.95	5735 2.96	5375 2.95	5001 2.88	4550 2.87	4051 2.81	3330 2.62	2383 2.24
	1350	7316 3.00	7053 3.04	6793 3.08	6508 3.11	6204 3.12	5901 3.13	5560 3.12	5198 3.10	4771 3.05	4328 2.99	3716 2.89	2848 2.81
	1375	7451 3.17	7193 3.22	6938 3.26	6662 3.28	6364 3.29	6066 3.30	5742 3.30	5387 3.28	4989 3.18	4555 3.18	4015 3.10	3256 2.88

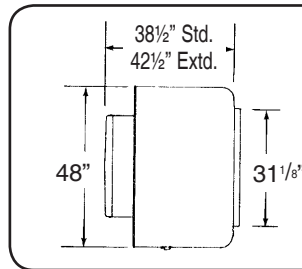
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VWBK 24

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = 3.28 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

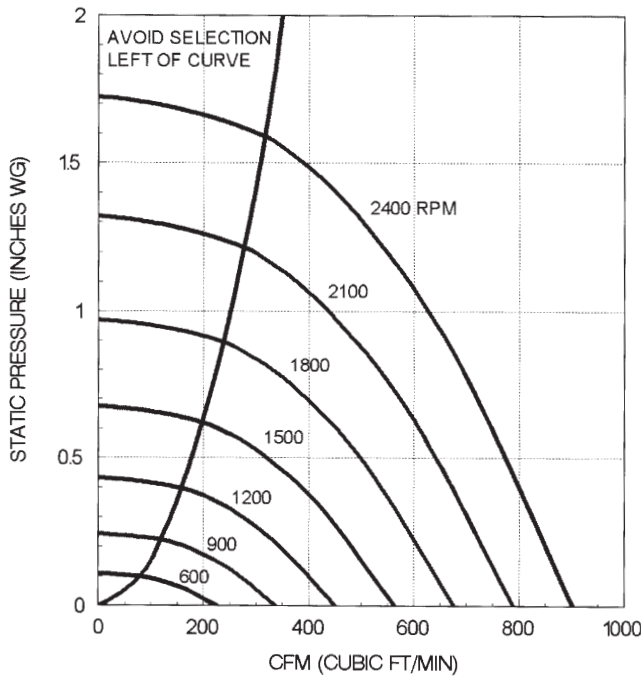
- Tip Speed = 6.68 x RPM
- Max. Motor Frame Size = 184T
- Unit Weight (less motor) = 160 lbs.
- Wall Opening = 28" Sq.
- Damper Size = 28" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
M1 (1/3)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
P1 (1/2)	400	3618 .21 6.5	2241 .19 5.0										
	425	3845 .25 7.3	2595 .24 5.7										
	450	4070 .29 8.2	2927 .29 6.5										
R1 (3/4) S1 (1)	475	4298 .34 8.9	3247 .34 7.1										
	500	4523 .40 9.7	3559 .40 7.8	1907 .33 7.3									
	525	4750 .47 10.4	3848 .47 8.6	2484 .42 7.9									
T1 (1-1/2)	550	4975 .54 11.2	4125 .54 9.4	2942 .50 8.7									
	575	5201 .61 12.0	4398 .62 10.3	3303 .58 9.5									
	600	5427 .70 12.9	4667 .70 11.2	3655 .67 10.3	1941 .53 9.9								
V1 (2)	625	5653 .79 13.8	4934 .80 12.2	3991 .77 11.2	2664 .67 10.7								
	650	5879 .88 14.6	5197 .90 13.2	4315 .87 12.1	3173 .78 11.5								
	675	6105 .99 15.5	5458 1.01 14.1	4633 .98 13.0	3623 .92 12.4	1346 .59 12.2							
W1 (3)	700	6332 1.10 16.5	5711 1.12 15.1	4945 1.10 13.9	3985 1.04 13.4	2504 .88 13.0							
	725	6558 1.23 17.7	5959 1.25 16.1	5247 1.24 14.9	4339 1.18 14.4	3162 1.06 13.9							
	750	6784 1.36 18.8	6205 1.38 17.2	5526 1.38 16.0	4686 1.32 15.4	3654 1.20 14.9							
P1 (1/2)	775	7010 1.50 19.9	6450 1.52 18.3	5803 1.52 17.1	5013 1.47 16.4	4111 1.37 15.7	2520 1.14 15.7						
	800	7236 1.65 21	6693 1.67 19.5	6077 1.68 18.2	5335 1.63 17.5	4482 1.55 17.1	3261 1.39 16.8						
	825	7462 1.81 22	6936 1.83 21	6348 1.83 19.4	5653 1.80 18.6	4839 1.73 18.3	3833 1.61 17.9	1535 1.04 17.9					
R1 (3/4) S1 (1)	850	7688 1.98 23	7178 2.00 22	6616 2.00 21	5966 1.97 19.7	5189 1.91 19.4	4296 1.77 19.0	2799 1.52 18.9					
	875	7914 2.16 25	7418 2.18 23	6883 2.19 22	6275 2.16 21	5528 2.10 20	4730 2.00 20	3537 1.81 18.1					
	900	8141 2.35 26	7658 2.37 24	7148 2.38 23	6561 2.37 22	5854 2.31 22	5092 2.22 21	4129 2.08 21	2244 1.56 21				
T1 (1-1/2)	920	8324 2.51 27	7850 2.53 25	7358 2.55 24	6784 2.54 23	6112 2.47 22	5377 2.39 22	4501 2.22 22	3092 1.95 22				
	930	8414 2.59 27	7945 2.62 26	7463 2.63 24	6895 2.63 24	6240 2.56 23	5518 2.48 23	4686 2.32 22	3424 2.07 22				
	940	8505 2.67 28	8041 2.70 26	7567 2.72 25	7006 2.71 24	6367 2.65 23	5658 2.57 23	4868 2.42 23	3687 2.21 23				
V1 (2)	950	8595 2.76 28	8136 2.79 27	7671 2.81 25	7116 2.80 24	6494 2.74 24	5797 2.67 23	5050 2.52 23	3948 2.34 23				
	960	8686 2.85 29	8231 2.88 27	7776 2.90 26	7226 2.90 25	6620 2.83 24	5936 2.76 24	5203 2.65 23	4206 2.48 23	2258 1.84 23			
	970	8776 2.94 29	8326 2.97 27	7879 2.99 26	7335 2.99 25	6745 2.93 24	6074 2.86 24	5348 2.75 24	4420 2.60 24	2807 2.12 24			
W1 (3)	980	8867 3.03 29	8421 3.06 28	7978 3.09 27	7444 3.08 26	6870 3.02 25	6203 2.96 25	5493 2.85 24	4607 2.71 24	3177 2.31 24			
	990	8957 3.12 30	8516 3.15 28	8078 3.18 27	7553 3.18 26	6995 3.12 25	6334 3.06 25	5636 2.96 25	4793 2.81 24	3543 2.49 24			
	1000	9045 3.22 30	8611 3.25 29	8177 3.28 28	7662 3.28 27	7118 3.22 26	6464 3.16 25	5779 3.06 25	4978 2.87 25	3813 2.62 25			

Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

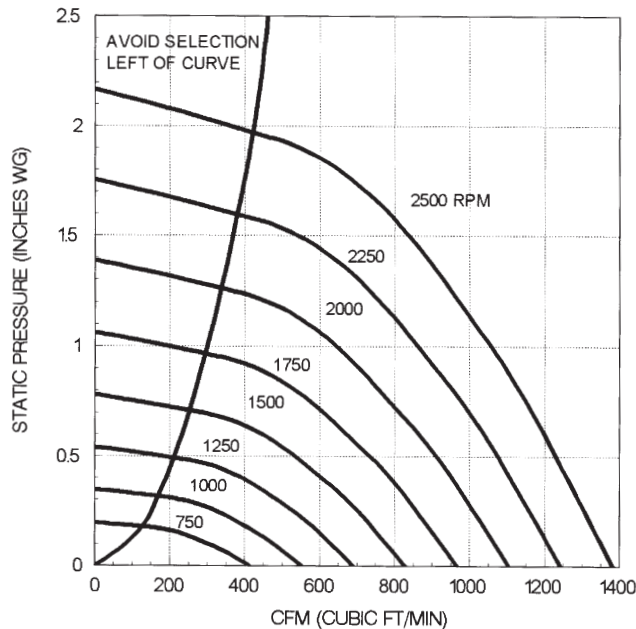
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VWBK 06
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VWBK 08
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VWBK 06
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
600	.000	40	39	36	37	34	30	26	22	39
	.125	58	57	51	49	47	43	39	35	52
1000	.000	58	56	52	49	48	44	40	36	53
	.125	58	57	51	49	47	43	39	35	52
1400	.000	65	62	61	58	55	55	51	46	62
	.500	68	68	64	62	59	56	52	47	65
1800	.000	71	67	70	65	63	60	59	54	69
	.375	71	69	70	65	62	59	57	53	68
	.750	74	74	73	68	66	62	59	54	71
2100	.000	78	70	76	69	67	63	63	58	73
	.500	76	73	75	69	67	63	62	57	73
2300	1.000	79	78	78	71	70	65	63	58	75
	.000	81	73	78	71	70	65	66	61	75
	.500	79	76	77	72	69	65	64	60	75
2500	1.000	79	79	79	73	71	66	64	60	76
	.000	82	76	80	74	72	68	67	63	78
	.500	81	78	79	74	71	67	66	62	77
	1.000	79	80	80	75	71	68	66	62	78
	1.500	83	84	84	78	75	71	68	64	81

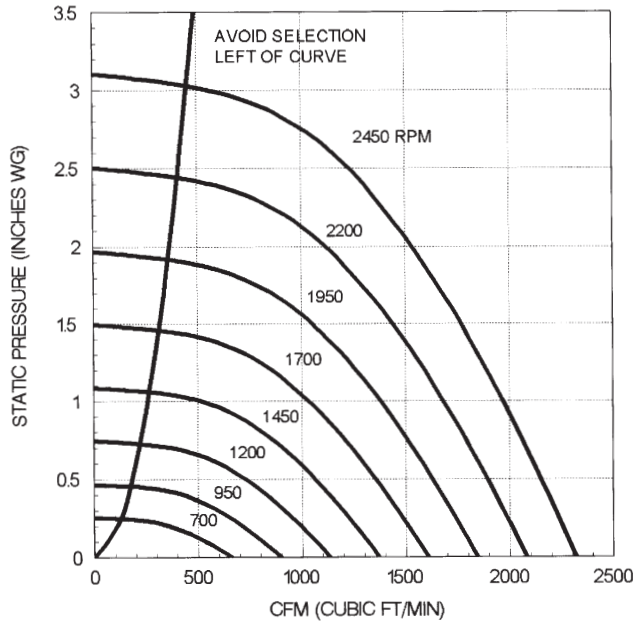
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301

VWBK 08
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
650	.000	52	57	42	41	39	40	38	37	47
	.250	69	68	66	54	52	50	50	48	61
1050	.000	69	68	66	54	52	50	50	48	61
	.250	68	70	62	53	51	48	46	41	60
1450	.000	69	71	70	63	58	57	58	59	67
	.500	69	68	65	60	58	57	55	53	65
1800	.000	80	74	79	70	65	61	62	63	74
	.500	79	73	74	66	63	60	60	59	71
	1.000	76	73	72	66	64	63	61	57	71
2100	.000	87	76	86	75	69	65	65	66	80
	.500	86	77	82	71	68	64	64	64	77
2300	1.000	83	77	80	70	68	65	64	62	75
	.000	90	79	88	78	72	67	67	68	82
	.750	88	80	84	74	70	66	65	65	79
2500	1.500	84	80	81	73	71	68	67	64	78
	.000	91	83	89	82	75	69	69	70	84
	.500	90	83	87	79	74	69	68	68	82
	1.000	89	83	85	77	73	68	67	67	81
	1.750	86	83	83	76	73	70	69	66	80

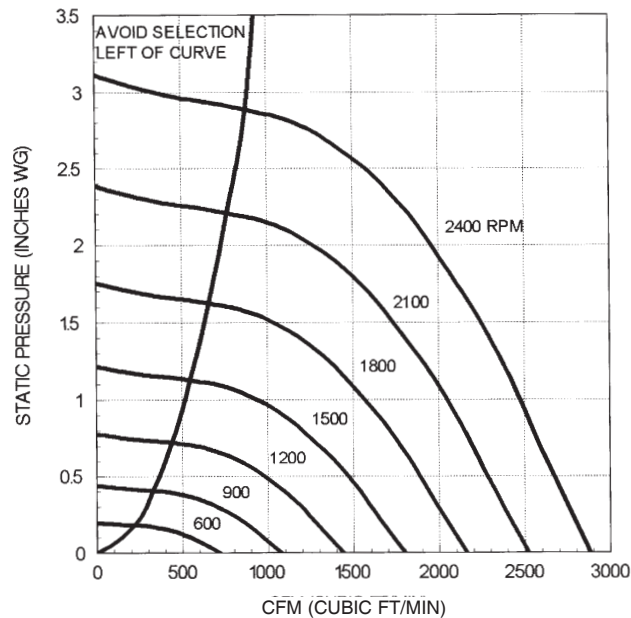
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301

VWBK 10
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VWBK 12
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VWBK 10
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
650	.000	52	55	50	47	47	44	37	31	51
	.375	63	65	60	55	53	51	49	46	60
950	.000	64	69	69	65	62	62	59	51	69
	.375	67	70	67	63	60	60	56	50	67
	.750	68	70	66	62	59	60	58	53	67
1300	.000	72	74	76	72	68	67	67	59	75
	.625	71	78	74	70	66	65	64	58	73
	1.250	72	78	73	69	65	64	64	60	73
1650	.000	78	78	82	78	73	71	73	65	81
	.500	76	82	81	77	72	69	70	64	80
	1.000	74	84	80	76	71	69	69	64	79
	2.000	76	84	80	75	70	68	69	65	78
2000	.000	81	84	85	83	78	75	76	71	85
	.500	79	86	86	82	77	74	74	69	84
	1.000	78	87	86	82	76	73	73	68	84
	2.000	75	87	85	80	75	72	73	70	83
	2.500	76	87	85	80	75	72	73	70	83

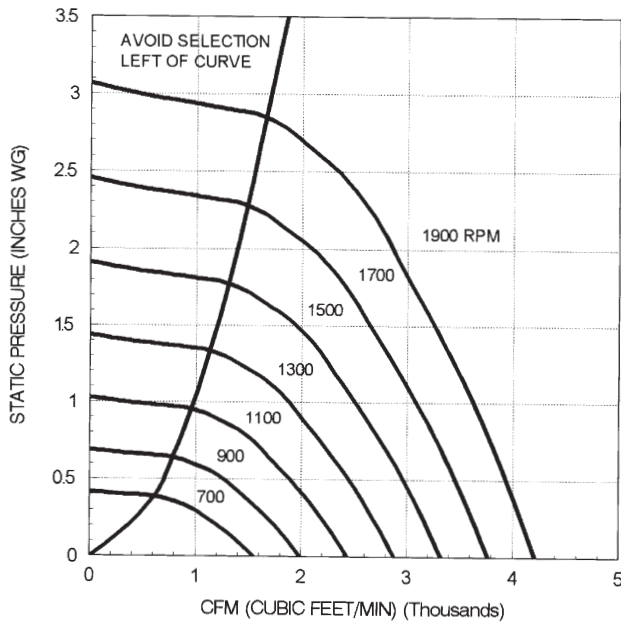
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301

VWBK 12
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	53	50	46	48	48	40	30	20	51
	.375	67	67	64	57	56	54	50	44	62
950	.000	70	77	74	68	65	67	60	50	73
	.375	69	77	73	67	64	65	58	51	71
	.750	69	77	73	67	62	62	58	52	70
1250	.000	72	85	82	76	69	74	69	59	80
	.750	71	85	81	75	67	68	65	59	78
	1.250	74	86	80	75	66	67	65	60	78
1600	.000	75	87	88	83	76	77	75	66	85
	.750	75	87	87	82	74	74	72	65	84
	1.250	75	87	87	82	74	72	70	65	84
	1.750	77	88	87	82	73	71	70	66	83
1950	.000	78	88	92	88	80	79	79	71	89
	1.000	77	88	92	87	79	77	76	70	88
	1.500	77	88	92	87	79	75	74	70	88
	2.000	79	89	92	86	79	75	74	70	88
	2.500	80	90	92	86	78	74	74	70	88

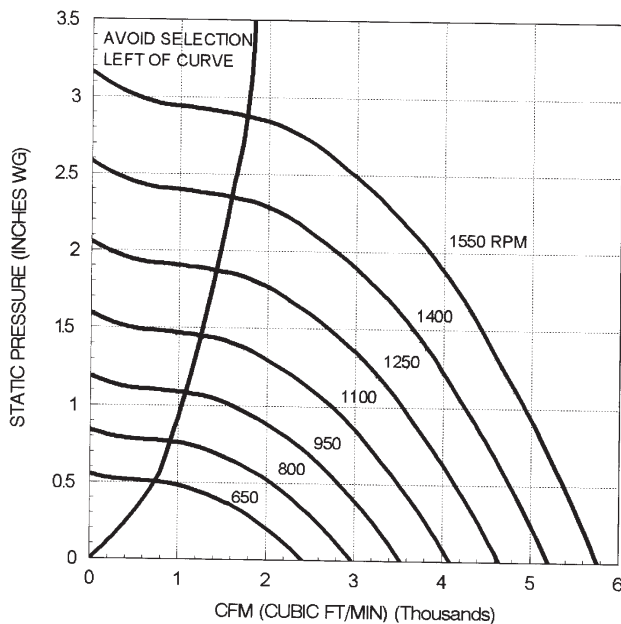
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301

VWBK 15
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VWBK 18
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VWBK 15
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	62	64	60	55	53	48	41	33	58
800	.000	73	75	72	67	63	59	53	45	70
	.375	72	74	71	68	64	60	55	49	70
1050	.000	80	81	81	76	70	67	61	54	77
	.375	79	80	79	76	71	67	62	56	77
	.750	81	79	79	76	72	68	63	58	78
1300	.000	84	87	87	82	76	72	68	61	84
	.750	83	86	86	82	78	73	68	63	84
	1.250	85	86	85	82	78	74	70	64	84
1550	.000	87	92	93	88	82	77	73	67	89
	.750	86	91	92	87	82	78	73	67	87
	1.250	87	91	91	87	83	78	74	68	89
	1.750	88	91	91	87	83	79	74	70	89
1750	.000	89	95	96	92	85	80	77	71	93
	1.000	88	94	95	91	86	81	76	71	92
	1.500	89	95	94	90	86	81	77	72	92
	2.000	89	95	94	90	86	82	78	73	92
	2.500	90	95	94	90	87	82	78	73	92

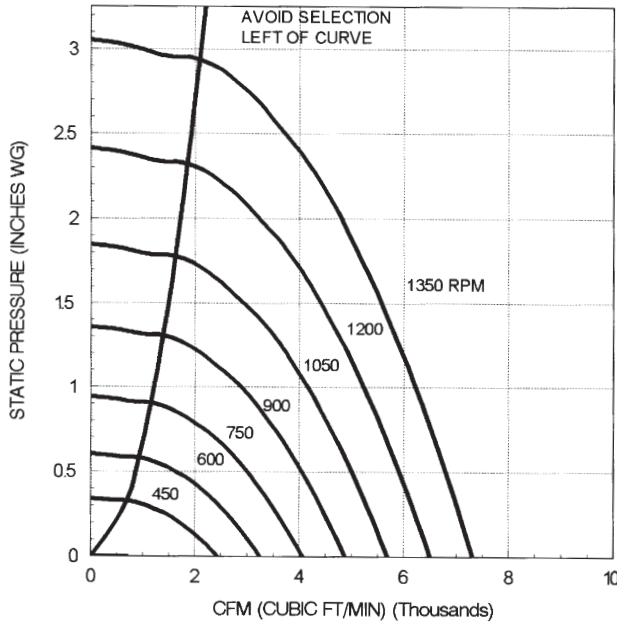
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301

VWBK 18
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	67	66	59	59	58	53	46	39	62
750	.000	76	75	70	66	66	62	56	49	70
	.500	72	70	64	59	58	56	52	46	64
950	.000	78	81	76	72	71	69	64	58	76
	.375	78	79	75	70	68	66	61	55	74
	.625	76	78	73	68	66	64	60	56	72
1150	.000	84	85	84	77	75	74	69	64	82
	1.000	82	82	80	72	70	69	65	61	77
	1.500	81	81	79	72	69	68	65	61	76
1350	.000	88	89	90	81	79	78	74	69	86
	1.000	87	87	87	78	75	74	71	66	83
	1.500	86	86	85	76	73	72	70	66	81
	2.000	86	85	85	76	73	72	69	66	81
1500	.000	91	91	94	84	81	81	77	72	89
	1.000	90	90	92	82	79	78	74	69	87
	1.500	89	89	90	80	77	76	73	69	86
	2.000	88	88	89	79	75	75	72	68	84
	2.500	89	88	89	79	75	75	72	68	84

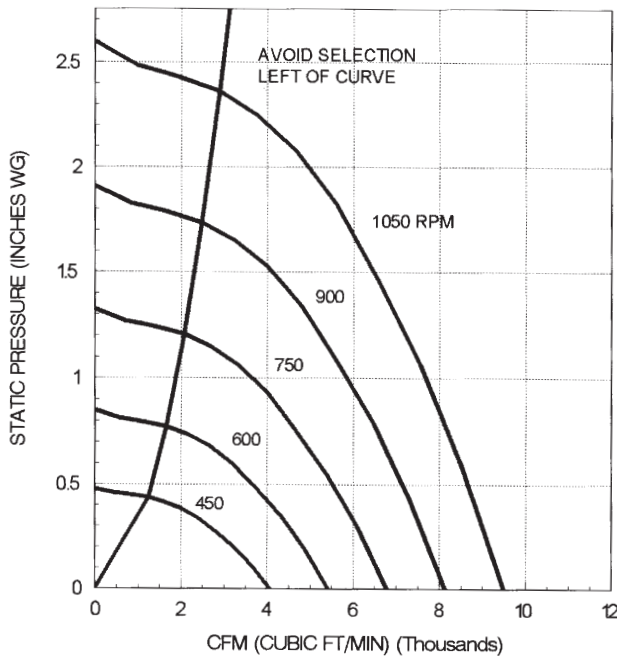
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301

VWBK 21 AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VWBK 24 AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VWBK 21 SOUND PERFORMANCE

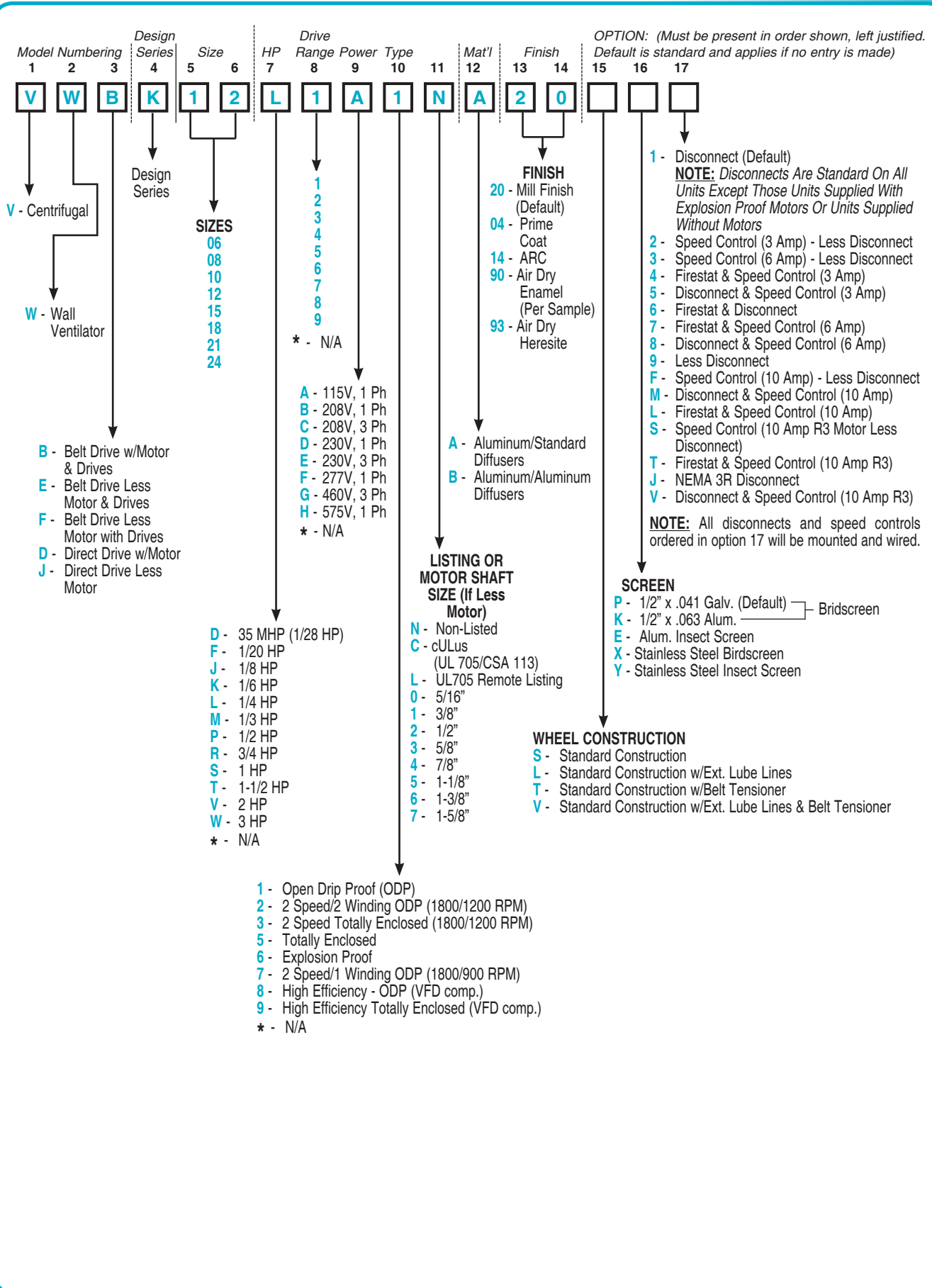
RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
400	.000	59	59	57	57	55	50	43	37	59
	.500	68	72	66	66	67	62	56	49	70
775	.000	77	77	75	72	72	69	64	57	76
	.375	77	77	73	69	68	66	61	55	74
	.750	78	77	72	66	67	66	61	54	73
950	.000	84	82	82	77	76	75	70	64	82
	.500	84	82	80	74	73	72	67	61	79
	1.250	85	83	80	71	71	72	67	60	78
1125	.000	90	85	87	81	79	80	75	69	86
	1.000	89	87	86	77	75	77	72	66	83
	1.500	90	87	86	76	74	76	73	66	83
	2.000	90	87	86	76	74	76	73	68	83
1300	.000	93	90	91	85	83	83	79	73	90
	1.000	91	91	90	83	80	80	76	71	88
	1.500	92	91	90	82	78	79	76	70	87
	2.000	93	92	90	81	77	79	77	70	87
	2.750	93	92	90	80	77	79	77	70	87

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301

VWBK 24 SOUND PERFORMANCE

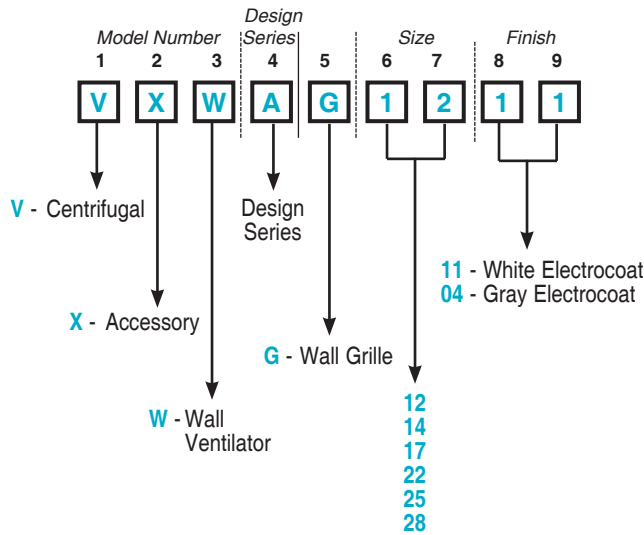
RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
400	.000	69	68	61	59	60	59	50	40	65
	.500	76	78	72	67	66	67	61	51	73
550	.375	75	75	68	64	64	62	57	50	69
	.625	74	75	67	62	63	62	56	50	68
	1.000	82	84	80	73	71	72	70	60	79
700	.500	81	82	78	71	69	69	64	58	76
	.750	82	81	77	69	68	69	64	57	75
	1.000	82	81	77	68	68	68	64	57	75
850	.000	87	89	87	78	75	76	76	67	84
	.500	86	88	85	77	73	75	72	65	82
	.750	86	87	85	76	72	75	70	64	82
	1.000	87	87	84	75	72	74	70	63	81
1000	1.500	87	86	84	73	71	73	70	63	81
	.000	90	93	92	84	79	80	81	73	89
	.500	90	92	91	83	78	79	78	71	87
	1.000	90	91	89	81	76	78	75	69	86
	1.500	90	91	89	80	76	77	75	68	85
2.000	91	90	89	79	75	77	74	68	85	

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301

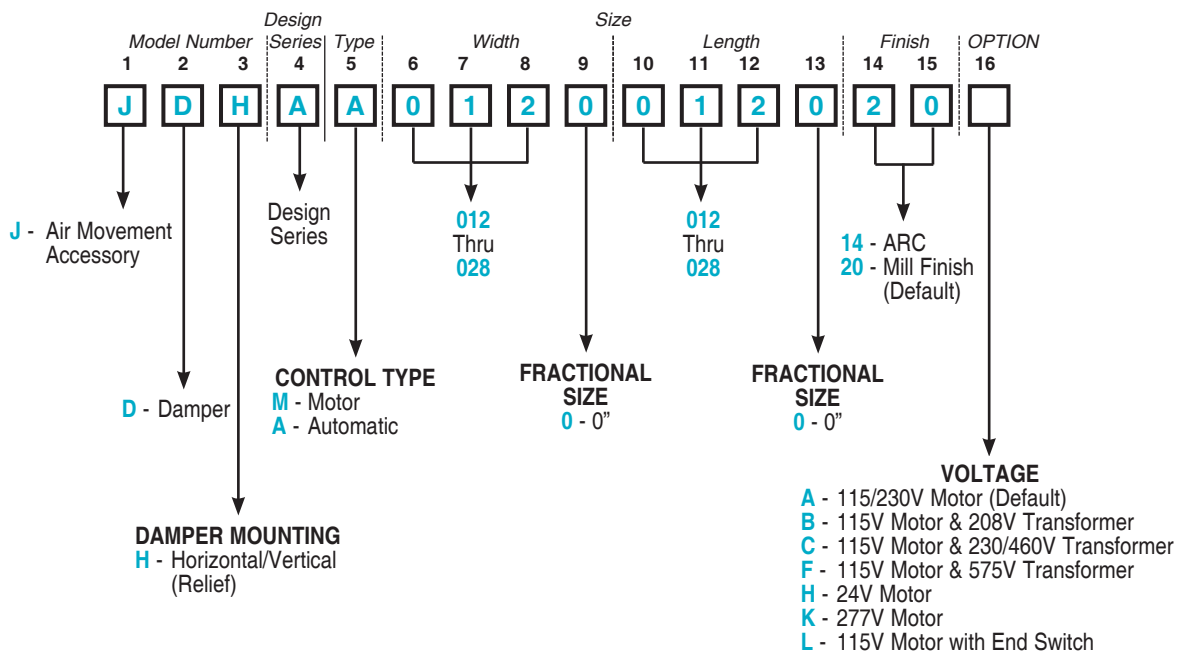


Cent. Power Wall Vents

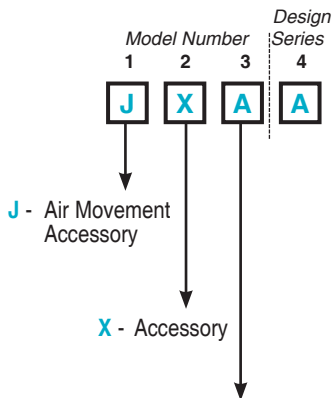
▼ Wall Grilles



▼ Dampers



▼ **Electrical Accessories**



J - Air Movement Accessory

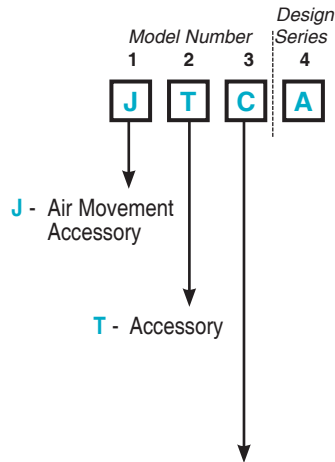
X - Accessory

DISCONNECT SWITCHES

- A - Firestat
- J - 3 Pole, 3 Phase, Explosion Proof (EX3)
- K - 2 Pole, 1 Phase, Explosion Proof (EX2)
- L - 2 Pole, 1 Phase, Safety Disconnect (DS2)
- M - 3 Pole, 3 Phase, Safety Disconnect (DS3)
- N - 3 Pole, 3 Phase, NEMA (K-3) with Lock Out
- P - 2 Speed, 6 Pole NEMA 3R Non-Fusible
- F - Raintight - NEMA 3R - 2 Pole, 1ø, 120-230V, 1/2 to 2 HP
- H - Raintight - NEMA 3R - 3 Pole, 3ø, 208-460V

SPEED CONTROLS

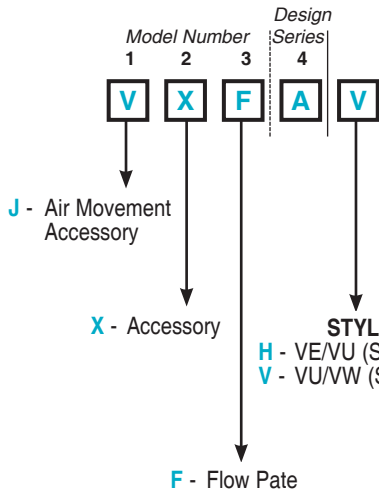
- U - Solid State Speed Controller - 3 Amp (115V/1ø)
- V - Solid State Speed Controller - 6 Amp (115V/1ø)
- W - Solid State Speed Controller - 10 Amp (115V/1ø)
- Y - Solid State Speed Controller - 10 Amp (115V/1ø) (R3 Motor)



J - Air Movement Accessory

T - Accessory

- A - 2 Pole, 1 Phase - NEMA 4 - Watertight Disconnect
- B - 3 Pole, 3 Phase - NEMA 4 - Watertight Disconnect
- C - Line Voltage Thermostat with Coiled Capillary
- D - Line Voltage Thermostat with 22" Capillary and Remote Bulb
- N - 2/3 Pole, 1 or 3 Phase NEMA4X Disconnect



J - Air Movement Accessory

X - Accessory

F - Flow Pate

STYLE

- H - VE/VU (Size 6 Only)
- V - VU/VW (Size 6 Only)

CENTRIFUGAL UPBLAST ROOF EXHAUSTERS

Direct and Belt Driven Models VUDK and VUBK

DESIGNED AND ENGINEERED TO MEET INDUSTRY NEEDS

The Carnes Company centrifugal upblast fan provides a vertical discharge of air to meet general and specific HVAC ventilation needs. Applications include chemical process, laboratory fume removal or any other situation where it is required that contaminated air be exhausted away from supply air intakes and building roof lines.

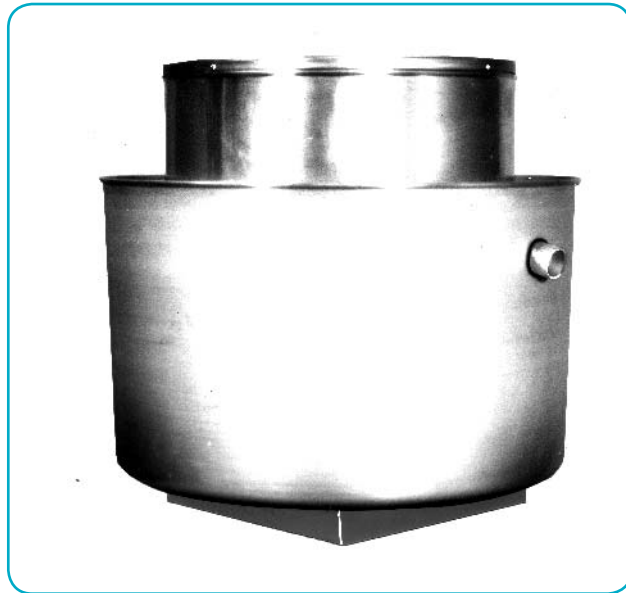
The unique diffuser/support structure combined with the backwardly inclined median airfoil wheel and deep spun venturi enable the Carnes VU series upblast fans to operate at high static pressures (up

to 3 inches w.g.) as standard.

The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow along with protection from entry of adverse weather elements.

The air flow design of these fans has been thoroughly tested at Carnes' accredited laboratory.

Testing has also been conducted to ensure trouble-free startup and to ensure product durability and dependability of operation.



Direct Driven Model VUDK - Sizes 06 through 18

Carnes direct drive centrifugal upblast fans are available in six sizes with capacities from 150 to 4100 CFM. Certain direct drive units can be supplied with an optional electronic speed control which increases the fan's air flow flexibility. Direct driven fans require minimal maintenance and the one piece spun aluminum outer shroud simplifies interior unit cleaning. Maximum exhaust temperature for continuous operation is 150°F.

Belt Driven Model VUBK - Sizes 06 through 48

The Carnes series VUBK belt driven upblast fans are ideal for low to high air flows covering a range of static pressures, up to 3 inches, water gauge. This series features twelve sizes with air performance capacities of 230 to 31,000 CFM. Structural integrity is enhanced on the sizes 06 through 24 by incorporating the diffuser support framework while sizes 30 through 48 gain rigidity by utilizing a circular welded steel support frame. Housing construction one or two piece spun and shaped aluminum housing for ease of accessibility to the unit interior. Maximum exhaust temperature for continuous operation is 200°F.



▼ **TYPICAL SPECIFICATIONS**

Upblast exhaust ventilators shall be of the centrifugal belt or direct driven type. The motor compartment shall be constructed of heavy-gauge aluminum mounted on an independent support structure. The outer shroud shall have a rolled bead for added strength. The wheel and spun inlet venturi shall be a centrifugal design of non-sparking construction. For maximum performance and quiet, efficient operation, the wheel shall overlap the inlet venturi and have backward inclined median airfoil blades. The wheel shall be dynamically balanced to assure smooth and vibration-free rotation under maximum loading. The complete drive assembly, including the motor and the wheel, shall be mounted on vibration isolators. The motor and drives shall be factory mounted and all fans will be test run prior to shipment.

VUBK BELT DRIVE SERIES

Motor and drives shall be isolated from the exhaust airstream. Air for cooling the motor shall be supplied to the internal motor compartment through a vent tube from a location free from discharge contaminants. Motors shall be of the heavy duty type with permanently lubricated, sealed ball bearings. Motors shall be readily accessible for maintenance. Wheel shaft shall be ground, polished, coated with a rust inhibitive finish and mounted in heavy duty, permanently sealed pillowblock ball bearings which are capable of 200,000 hours of life, average operation. Drives shall be sized at a minimum of 165% of driven horsepower. Drive belts shall be oil-resistant, non-static and be capable of 25,000 hours of life, average operation. Sheaves shall be fully machined cast iron or pressed steel, keyed and securely attached to the shafts. Variable pitch motor sheaves shall be standard.

VUDK DIRECT DRIVE SERIES

Motors shall be isolated from the exhaust airstream. Air for cooling the motor shall be supplied to the internal motor compartment through a vent tube from a location free from discharge contaminants. Motors shall be of the heavy duty type with permanently lubricated, sealed bearings. Motors shall be readily accessible for maintenance. Wheels to be furnished with integral fitting for wheel puller.

The motor shall be factory wired to the disconnect junction box and a disconnect switch shall be supplied. A conduit chase shall be provided for running electrical wiring through the curb cap into the motor compartment.

Horsepower and noise levels shall not exceed the published values and oversized motors will not be acceptable. Performance ratings shall be AMCA licensed for Air and Sound.

Centrifugal power upblast ventilators shall be Carnes Model VUBK, belt drive, sizes 06 through 48, or Model VUDK, drive drive, sizes 06 through 18, as manufactured at Carnes Company of Verona, Wisconsin.

AMCA LICENSED AIR and SOUND DATA

Licensed to bear the AMCA Seal for both air and sound.

The Carnes Company certifies that the Models VU 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.



UL OPTION

Models VUBK and VUDK are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



POWER VENTILATOR

FAN HOUSING

- Constructed with heavy-gauge aluminum.
- Designed for maximum weather protection, outer shroud prevents the entrance of inclement weather.
- Outer shroud beaded for rigidity.
- Fan plate designed to prevent the entrance of contaminated air and airborne particles into the motor compartment.
- Two piece motor cover design (lid and motor tube) allows easy access to motor, drives and bearings for maintenance.
- Drain opening.

MOTOR/ELECTRICAL

- **UL** listing under Standard 705 available as option on most models.
- Motors are **UL** recognized components supplied by nationally recognized manufacturers.
- Safety disconnect utility box mounted, switch and cover plate shipped loose for ease of field wiring.
- Sealed conduit chase complies with **NEC**, allows passage of electrical wire through curb cap into motor compartment.
- Motor through 10 HP mounted as standard.

MOTOR SUPPORT ASSEMBLY

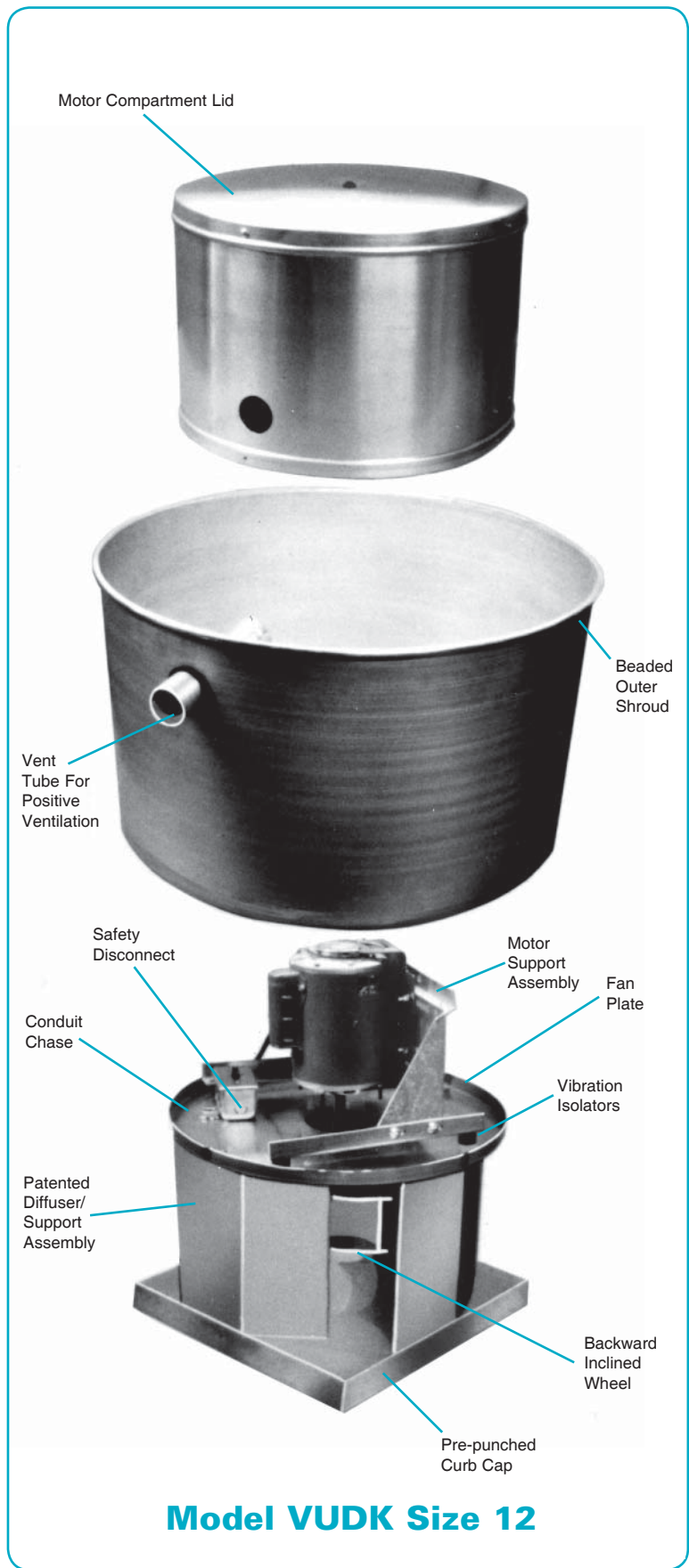
- Bolted, heavy-gauge material.
- Easily adjustable belt tension.
- Motor plate accommodates multiple motor frames.
- Isolated from fan plate to reduce vibration and noise transmission.
- Allows horizontal adjustment of wheel
- Electrically grounded to meet **NEC** and **UL** requirements.

MOTOR COMPARTMENT/TUBE

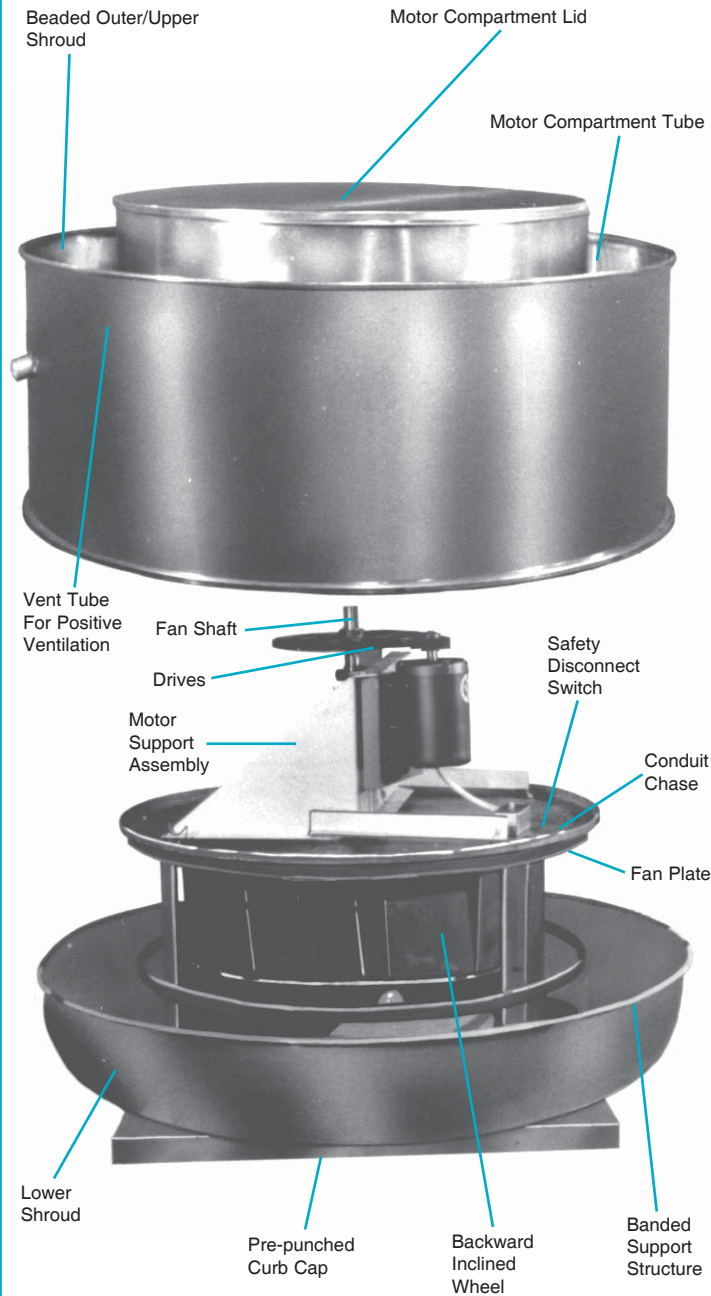
- Vent tube provides positive motor cooling to maximize motor life.
- Easily removable lid and tube utilize durable threaded fastener retainers.
- Fan plate isolates motor compartment from contaminated exhaust air.
- Opening around shaft sized to allow optimum air passage to ensure proper motor compartment cooling.

BIRDSCREEN

- 1/2" by 1/2" heavy-gauge welded galvanized birdscreen attached to unit with easily removable fasteners.
- Birdscreen has a minimal effect on air and sound performance.



Model VUDK Size 12



Model VUBK Size 30

BEARINGS/SHAFT

- Eccentric locking collar bearings standard on sizes 06-18.
- Dual bearings utilized to properly support the fan shaft.
- Prelubricated sealed, self-aligning.
- Rated at 200,000 hours average operation.
- Polished CRS fan shaft with rust inhibitive coating.

DRIVES

- Selected for 165% of the motor horsepower.
- Adjustable V-belt drives with oil resistant non-static conducting belts.
- Two belts standard on units 5 HP and larger.
- Factory preset fan RPM.
- Adjustable sheaves allow for final air system balancing.

WHEEL

- Backward inclined wheels constructed of non-corrosive or coated heavy-gauge material. Wheel sizes 6-24 are aluminum, above 24 are steel.
- Usage of cooling fins on fan wheel backplate draws cooling air down over the motor facilitating motor longevity while motor remains out of the airstream.
- Self-limiting power characteristics.
- Dynamically balanced and test run in each individual unit.

SUPPORT STRUCTURE

Sizes 06 - 24

- Galvanized or aluminum patented diffuser provides structural integrity and protection against weather penetration.
- Self-sealing diffuser fasteners prevent leakage.

Sizes 30 - 48

- Heavy-gauge coated steel circular bands welded together for structural strength and unit rigidity.

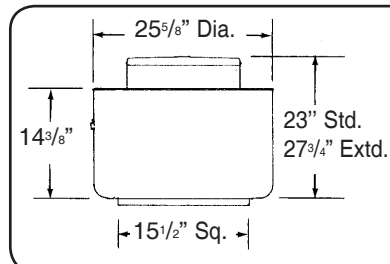
CURB CAP

- One piece construction with fastened/welded, overlapping corners to ensure strength.
- Pre-punched mounting holes for ease of installation.
- Support structure attached with self-sealing fasteners.
- The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow along with protection from entry of adverse weather elements.

VUDK 06

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 2.75 x RPM
 Unit Weight (less Motor) = 40 Lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
F3+ 1/20	J2+ 1/8		.000	.125	.250	.375	.500	.625	.750	1.000	1.250
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS**		400	150 .01 .1								
		500	188 .01 .2								
		600	225 .01 .6								
		700	263 .01 1.1	119 .01 1.3							
		800	300 .01 1.7	193 .01 1.7							
		900	338 .01 2.3	248 .02 2.1							
		1000	376 .02 2.9	297 .02 2.7	179 .02 3.4						
		1075 *	404 .02 3.4	332 .03 3.2	237 .03 3.6						
		1100	413 .02 3.5	343 .03 3.3	253 .03 3.7						
		1200	451 .03 4.1	387 .04 4.0	314 .04 4.1	194 .04 5.0					
		1300	488 .04 4.8	429 .04 4.6	365 .05 4.5	278 .05 5.3					
		1400	526 .05 5.4	471 .05 5.3	414 .06 5.2	343 .06 5.7	239 .06 6.6				
	1500	563 .06 6.1	513 .07 6.0	461 .07 5.9	400 .07 6.1	320 .08 6.9					
	1600 *	601 .07 6.9	553 .08 6.8	505 .08 6.7	451 .09 6.6	385 .09 7.3	300 .09 8.2				
ALL OTHER MOTORS		1140 *	428 .03 3.7	361 .03 3.6	278 .03 3.8						
		1725 *	648 .09 7.8	604 .10 7.7	559 .10 7.6	512 .11 7.5	458 .11 7.8	391 .12 8.6	303 .12 9.5		

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

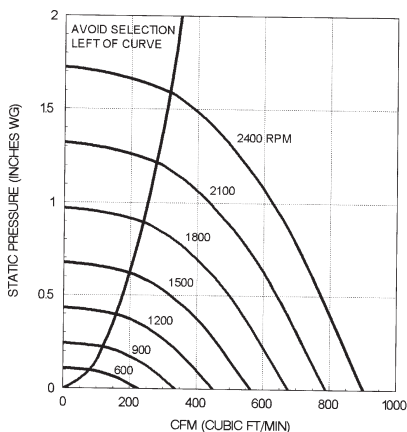
** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

- * Base Unit - As run motor speeds.
 - + RPM range capable with solid state speed control.
- Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_W sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VUDK 06 AIR PERFORMANCE



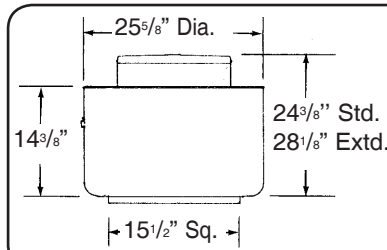
VUDK 06 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
1075	.000	50	57	51	52	48	49	43	39	55
	.125	54	56	52	51	48	47	43	38	54
	.375	61	63	56	58	53	50	45	41	59
1600	.000	65	65	66	62	59	57	55	50	65
	.250	66	66	65	62	59	57	54	50	65
	.375	66	67	65	62	59	56	54	49	65
	.500	68	69	67	63	61	58	54	50	66
	.625	71	71	69	65	63	59	56	51	68
	.750	73	74	71	67	65	61	57	52	70

VUDK 08

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 2.75 x RPM
 Unit Weight (less Motor) = 40 Lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
F3+ 1/20	J2+ 1/8		.000 CFM BHP SONES	.125 CFM BHP SONES	.250 CFM BHP SONES	.375 CFM BHP SONES	.500 CFM BHP SONES	.625 CFM BHP SONES	.750 CFM BHP SONES	1.000 CFM BHP SONES	1.250 CFM BHP SONES
SPEED CONTROLLABLE MOTORS		600	331 .01 2.0								
		675	373 .01 2.6	193 .01 1.4							
		750	414 .01 3.1	267 .01 2.0							
		825	455 .01 3.7	328 .02 2.6							
		900	497 .02 4.2	385 .02 3.2	176 .02 2.8						
		1000	552 .03 5.0	455 .03 4.0	321 .03 3.5						
		1075 *	593 .03 5.6	504 .04 4.7	389 .04 4.2						
		1175	649 .04 6.4	568 .05 5.6	470 .05 5.0	340 .05 4.7					
		1250	690 .05 7.1	614 .06 6.3	527 .06 5.6	420 .06 5.4					
		1325	731 .06 7.7	661 .07 7.0	582 .07 6.4	484 .07 6.0	348 .08 5.9				
		1400	773 .07 8.3	706 .08 7.7	635 .08 7.1	546 .09 6.7	439 .09 6.5				
		1475	814 .09 9.0	751 .09 8.4	684 .10 7.8	603 .10 7.4	512 .10 7.2	379 .10 7.1			
		1550	856 .10 9.7	795 .11 9.1	732 .11 8.6	660 .12 8.1	576 .12 7.9	474 .12 7.7	280 .12 7.8		
	1600 *	883 .11 10.2	825 .12 9.6	764 .12 9.1	696 .13 8.6	617 .13 8.4	527 .13 8.2	390 .13 8.2			
ALL OTHER MOTORS		1140 *	629 .04 6.1	546 .04 5.3	443 .05 4.7	290 .05 4.5					
		1725 *	952 .14 11.5	898 .14 10.9	842 .15 10.4	784 .16 9.9	713 .16 9.5	637 .17 9.4	548 .17 9.3		

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

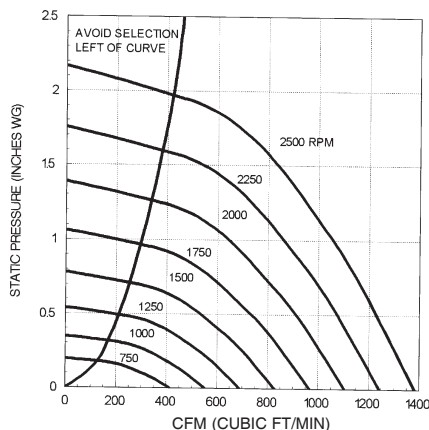
+ RPM range capable with solid state speed control.

Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wf} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VUDK 08 AIR PERFORMANCE



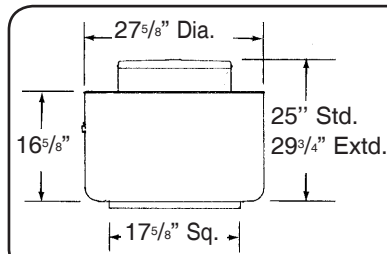
VUDK 08 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
1075	.000	56	68	57	54	50	50	52	53	60
	.125	57	64	54	53	49	49	49	49	58
	.375	58	60	53	53	51	51	47	43	57
1600	.000	74	73	74	66	61	59	60	61	70
	.250	74	71	71	64	61	58	58	58	68
	.375	74	71	70	63	60	58	57	57	67
	.500	73	71	69	63	60	58	57	56	67
	.625	72	70	69	63	61	60	58	55	67
	.750	72	70	68	63	61	60	58	54	68

VUDK 10

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 3.27 x RPM
 Unit Weight (less Motor) = 45 Lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 12" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																	
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
SPEED CONTROLLABLE MOTORS	550	520	.01	277	.01														
	700	662	.02	500	.03														
	800	757	.03	620	.04	432	.04												
	825 *	781	.04	648	.04	477	.04												
	900	852	.05	731	.05	589	.06	355	.06										
	975	923	.06	813	.07	689	.07	521	.07										
	1050	994	.08	893	.08	782	.09	644	.09	439	.09								
	1075 *	1017	.08	919	.09	812	.10	681	.10	506	.10								
	1175	1112	.11	1023	.12	926	.12	819	.13	687	.13	494	.13						
	1275	1206	.14	1124	.15	1037	.15	944	.16	836	.17	702	.17	508	.16				
	1375	1301	.17	1225	.18	1145	.19	1061	.20	969	.21	861	.21	730	.21				
	1500	1419	.22	1350	.23	1279	.24	1202	.25	1124	.26	1036	.27	933	.27	662	.26		
	1575	1490	.26	1424	.27	1357	.28	1284	.29	1211	.30	1131	.31	1044	.31	819	.32	295	.26
1625 *	1538	.28	1473	.29	1409	.31	1339	.32	1268	.33	1193	.34	1112	.34	910	.35	584	.33	
ALL OTHER MOTORS	1140 *	1079	.10	987	.11	886	.11	775	.12	627	.12	375	.11						
	1725 *	1632	.34	1572	.35	1511	.36	1447	.37	1380	.39	1313	.40	1239	.40	1067	.41	850	.41

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

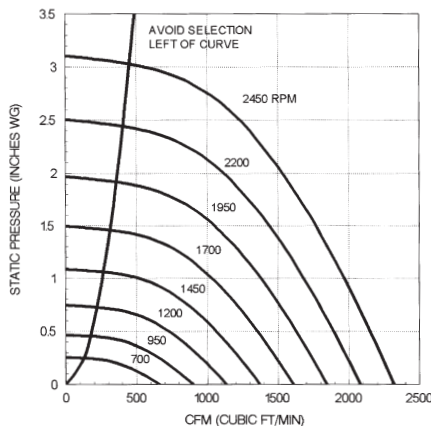
** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

- * Base Unit - As run motor speeds.
 - + RPM range capable with solid state speed control.
- Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_W sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VUDK 10 AIR PERFORMANCE



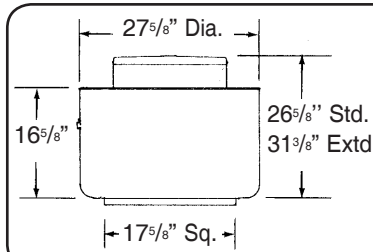
VUDK 10 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS									
		OCTAVE BANDS									
		1	2	3	4	5	6	7	8	LWA	
825	.000	54	60	55	52	52	52	44	37	57	
	.125	58	58	53	50	50	49	42	35	55	
	.375	58	57	52	49	49	49	45	40	55	
1075	.000	61	65	64	59	57	59	53	45	64	
	.250	65	64	62	57	55	56	50	44	62	
	.500	65	63	60	56	55	56	52	48	62	
1625	.000	76	73	78	72	68	67	66	59	75	
	.500	75	77	76	70	66	64	63	57	74	
	1.000	72	77	75	69	65	64	64	59	73	

VUDK 12

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 3.27 x RPM
 Unit Weight (less Motor) = 45 Lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 12" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.													
		.000	.125	.250	.375	.500	.625	.750	1.000	1.250					
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES					
SPEED CONTROLLABLE MOTORS	550	661 .01 2.0	386 .02 1.6												
	700	841 .03 3.7	657 .03 3.2	186 .02 3.1											
	800	961 .04 5.0	804 .05 4.5	593 .05 4.2											
	825 *	991 .05 5.2	839 .05 4.8	642 .05 4.4											
	900	1081 .06 6.0	941 .06 5.6	782 .07 5.2	513 .06 5.2										
	975	1171 .08 6.9	1042 .08 6.5	906 .09 6.1	716 .09 6.0										
	1050	1261 .09 7.9	1141 .10 7.4	1023 .11 7.1	862 .11 6.9	631 .10 6.9									
	1075 *	1291 .10 8.2	1173 .11 7.8	1059 .11 7.4	910 .12 7.2	702 .11 7.2									
	1175	1411 .13 9.6	1303 .14 9.2	1198 .15 8.8	1078 .15 8.6	924 .15 8.5	708 .15 8.5								
	1275	1532 .17 11.2	1431 .18 10.8	1334 .18 10.4	1238 .19 10.0	1110 .19 9.9	957 .20 9.8	734 .18 9.9							
	1375	1652 .21 12.9	1559 .22 12.5	1468 .23 12.1	1379 .24 11.7	1275 .24 11.5	1150 .24 11.5	1005 .24 11.5							
	1500	1800 .27 15.1	1716 .28 14.8	1633 .29 14.4	1551 .30 14.1	1469 .31 13.9	1364 .31 13.7	1248 .32 13.7	935 .31 13.9						
	1575	1892 .32 16.5	1810 .33 16.3	1731 .34 16.0	1652 .35 15.5	1574 .36 15.3	1486 .36 15.2	1382 .37 15.1	1135 .37 15.2	525 .28 15.4					
	1625 *	1952 .35 17.3	1873 .36 17.1	1795 .37 16.8	1719 3.8 16.3	1644 .39 16.1	1565 .40 15.9	1465 .40 15.8	1235 .40 15.9	863 .37 16.0					
ALL OTHER MOTORS	1140 *	1369 .12 9.1	1258 .13 8.7	1150 .13 8.3	1021 .14 8.1	855 .14 8.0	573 .12 8.0								
	1725 *	2072 .42 18.7	1997 .43 18.4	1924 .44 18.1	1852 .45 17.7	1781 .46 17.4	1710 .47 17.2	1627 .48 17.0	1428 .48 16.9	1180 .48 17.1					

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

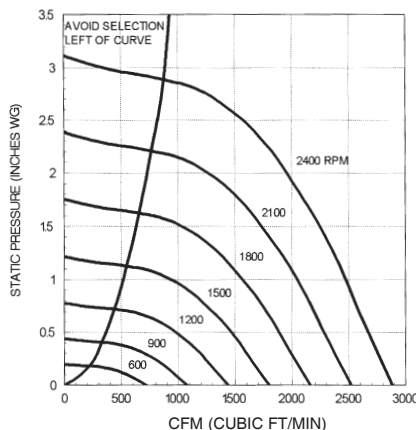
** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

- * Base Unit - As run motor speeds.
 - + RPM range capable with solid state speed control.
- Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VUDK 12 AIR PERFORMANCE



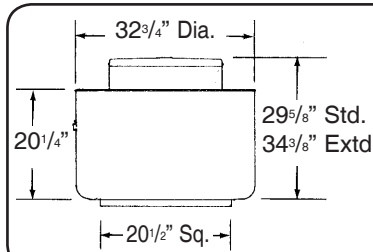
VUDK 12 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	65	64	60	54	59	55	45	35	62
	.125	65	63	59	53	57	51	45	38	60
	.375	67	61	59	51	52	51	46	42	58
1075	.000	68	72	69	63	63	62	55	45	69
	.250	68	72	68	62	60	59	53	47	67
	.500	63	71	68	61	58	57	54	48	66
1625	.000	72	85	82	77	70	74	69	60	80
	.500	71	85	81	76	68	72	66	60	79
	1.000	73	86	81	76	67	68	66	60	78

VUDK 15

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 4.06 x RPM
 Unit Weight (less Motor) = 65 Lbs.
 Roof Opening = 16" Sq.
 Curb O. D. = 19" Sq.
 Damper Size = 15" Sq.

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
K4+ 1/6	M3+ 1/3		.000	.125	.250	.375	.500	.625	.750	1.000	1.250
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS		450	993 .02 2.6	655 .03 2.9							
		500	1103 .03 3.3	815 .04 3.6							
		550	1214 .04 4.1	961 .05 4.3	441 .04 4.6						
		600	1324 .06 5.0	1098 .06 5.1	796 .07 5.3						
		650	1434 .07 5.9	1230 .08 6.0	973 .08 6.1						
		700	1545 .09 6.8	1359 .10 6.8	1132 .10 6.9	787 .10 7.2					
		750	1655 .11 7.7	1485 .12 7.7	1279 .13 7.8	1029 .12 8.0					
		800	1765 .14 8.7	1606 .15 8.7	1422 .15 8.7	1206 .16 8.9	854 .15 9.1				
		825 *	1820 .15 9.2	1666 .16 9.2	1490 .17 9.2	1288 .17 9.3	1002 .17 9.5				
		875	1931 .18 10.3	1785 .19 10.2	1623 .20 10.2	1439 .20 10.2	1221 .21 10.4	778 .18 10.5			
		925	2041 .21 11.4	1904 .22 11.2	1755 .23 11.2	1585 .24 11.2	1396 .24 11.4	1135 .24 11.6			
		975	2151 .25 12.5	2021 .26 12.4	1884 .27 12.3	1729 .28 12.2	1555 .28 12.4	1353 .28 12.6	1002 .26 12.7		
		1025	2262 .29 13.6	2138 .30 13.5	2011 .31 13.4	1864 .32 13.3	1704 .32 13.4	1529 .33 13.6	1307 .33 13.8		
		1075 *	2372 .33 14.8	2254 .34 14.7	2135 .35 14.6	1997 .36 14.5	1850 .37 14.5	1693 .38 14.6	1507 .38 14.8		
ALL OTHER MOTORS		1140 *	2525 .37 13.3	2410 .38 12.8	2292 .39	2155 .40 11.9	2006 .41 11.6	1842 .42 11.4	1666 .42 11.2	1084 .38 11.2	

Performance certified is for installation type A - free inlet, free outlet.
 Speed (RPM) is nominal. Performance is based on actual speed of test.

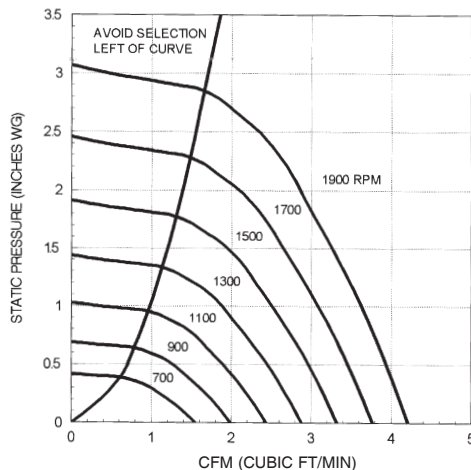
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**

- * Base Unit - As run motor speeds.
- + RPM range capable with solid state speed control.
- Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wf} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VUDK 15 AIR PERFORMANCE



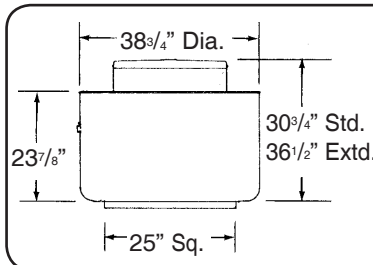
VUDK 15 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	74	76	73	68	63	60	54	46	70
	.125	73	76	73	68	64	60	54	47	70
	.250	73	75	72	69	64	60	54	49	71
	.500	73	74	72	69	66	61	56	51	71
	.750	73	74	72	69	66	61	57	51	71
1075	.000	81	81	81	76	70	68	62	55	78
	.250	80	81	80	76	71	67	62	56	78
	.500	80	80	80	77	72	67	63	57	78
	.750	81	80	80	77	73	68	64	58	78
	1.000	81	79	79	77	73	69	64	59	79

VUDK 18

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA

Tip Speed = 4.94 x RPM
 Unit Weight (less Motor) = 85 Lbs.
 Roof Opening = 20 1/2" Sq.
 Curb O. D. = 23 1/2" Sq.
 Damper Size = 19" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																		
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250		
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
SPEED CONTROLLABLE MOTORS**	M4+ 1/3	600	2266	.14	1942	.15	1538	.14	955	.12										
		650	2455	.18	2163	.19	1807	.18	1362	.17	650	.13								
	R3+ 3/4	700	2644	.23	2374	.23	2055	.23	1685	.23	1166	.20								
		750	2833	.28	2580	.29	2296	.29	1969	.28	1569	.26	999	.22						
		800	3022	.34	2784	.35	2528	.35	2232	.34	1898	.34	1455	.31	843	.24				
		825*	3116	.37	2885	.38	2641	.38	2357	.38	2042	.37	1651	.35	1134	.30				
		875	3305	.44	3086	.45	2865	.46	2602	.45	2323	.45	2008	.44	1582	.40				
		925	3494	.53	3286	.53	3084	.54	2842	.54	2584	.53	2298	.52	1970	.50	988	.38		
		975	3683	.62	3486	.62	3296	.63	3075	.63	2832	.63	2579	.62	2296	.61	1517	.52		
		1025	3871	.72	3685	.72	3502	.73	3301	.73	3076	.73	2843	.72	2584	.71	1945	.65	979	.50
1075*	4060	.82	3882	.83	3767	.84	3523	.85	3315	.85	3092	.84	2864	.83	2327	.79	1561	.68		
ALL OTHER MOTORS	1140*	4306	.98	4138	.99	3972	1.00	3811	1.01	3615	1.01	3410	1.01	3200	1.00	2734	.97	2128	.90	

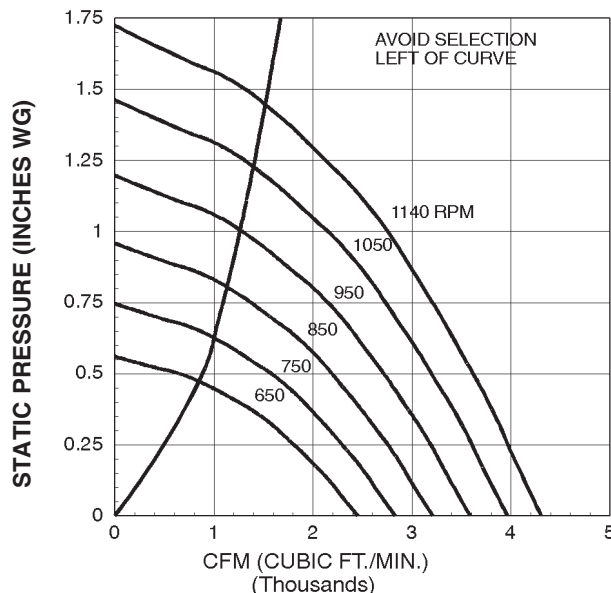
Performance certified is for installation type A - free inlet, free outlet.
 Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_Wi sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

*NOTE: R3 motors are specifically designed to operate through the above performance range. The motor will not be damaged or harmed at the higher BHP values.

VUDK 18 AIR PERFORMANCE



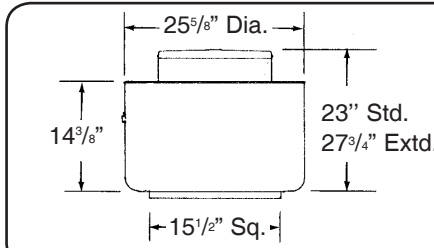
VUDK 18 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
825	.000	75	77	71	68	68	65	60	54	73
	.125	74	77	70	67	67	64	58	53	71
	.250	74	76	69	66	65	62	57	51	70
	.500	72	74	67	64	63	60	56	52	68
	.750	71	73	66	62	62	60	56	52	67
1075	.000	83	83	81	75	74	72	67	62	80
	.250	82	83	80	74	73	70	66	60	78
	.500	81	82	79	72	71	69	64	59	77
	.750	80	81	78	71	69	68	64	59	76
	1.000	79	79	77	70	68	66	63	59	75

VUBK 06

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .023 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 2.75 x RPM
 Max. Motor Frame Size = 56
 Unit Weight (less motor) = 40 lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
(1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
K1		CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
		SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES
K2 (1/6)	600	225 .01											
	700	263 .01	119 .01										
K3 (1/6)	800	300 .01	193 .01										
	900	338 .01	248 .02										
K4 (1/6)	1000	376 .02	297 .02	179 .02									
	1100	413 .02	343 .03	253 .03									
K5 (1/6)	1200	451 .03	387 .04	314 .04	194 .04								
	1300	488 .04	429 .04	365 .05	278 .05								
L1 (1/4)	1400	526 .05	471 .05	414 .06	343 .06	239 .06							
	1500	563 .06	513 .07	461 .07	400 .07	320 .08							
M1 (1/3)	1550	582 .07	533 .07	483 .08	426 .08	354 .08	252 .09						
	1600	601 .07	553 .08	505 .08	451 .09	385 .09	300 .09						
M1 (1/3)	1650	620 .08	574 .09	527 .09	475 .10	416 .10	338 .10	218 .10					
	1700	639 .09	594 .09	548 .10	500 .10	446 .11	375 .11	278 .11					
M1 (1/3)	1750	657 .10	614 .10	570 .11	524 .11	471 .12	407 .12	327 .12					
	1800	676 .10	634 .11	591 .12	548 .12	496 .13	438 .13	365 .13					
M1 (1/3)	1850	695 .11	654 .12	612 .13	570 .13	521 .14	468 .14	401 .14					
	1900	714 .12	674 .13	633 .14	592 .14	546 .15	498 .15	435 .15					
M1 (1/3)	1950	732 .13	693 .14	654 .15	614 .15	571 .16	523 .16	466 .17	308 .17				
	2000	751 .14	713 .15	675 .16	636 .16	595 .17	549 .18	497 .18	357 .18				
M1 (1/3)	2050	770 .15	733 .16	696 .17	658 .18	619 .18	574 .19	527 .19	400 .20				
	2100	789 .16	753 .17	716 .18	679 .19	642 .19	599 .20	555 .21	437 .21				
M1 (1/3)	2150	808 .18	772 .18	737 .19	701 .20	664 .21	623 .21	580 .22	474 .23	307 .23			
	2200	826 .19	792 .20	757 .21	722 .21	686 .22	648 .23	606 .23	506 .24	364 .24			
M1 (1/3)	2250	845 .20	811 .21	777 .22	743 .23	708 .23	672 .24	631 .25	537 .26	413 .26			
	2300	864 .22	831 .23	798 .23	764 .24	730 .25	696 .26	656 .26	568 .27	453 .28			
M1 (1/3)	2350	883 .23	850 .24	818 .25	785 .26	752 .26	719 .27	680 .28	598 .29	490 .30	330 .30		
	2400	901 .25	870 .25	838 .26	806 .27	774 .28	741 .29	704 .29	628 .31	527 .31	389 .32		
M1 (1/3)	2450	920 .26	889 .27	858 .28	827 .29	795 .30	763 .30	729 .31	654 .33	560 .33	438 .34		
	2500	939 .28	909 .29	878 .30	848 .31	816 .31	785 .32	753 .33	679 .34	591 .35	482 .36		

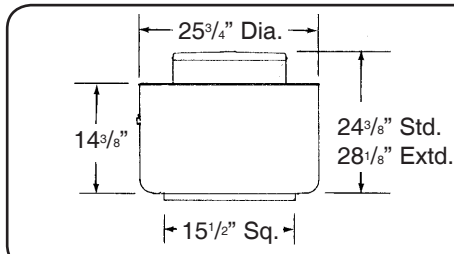
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VUBK 08

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .033 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 2.75 x RPM
 Max. Motor Frame Size = 56
 Unit Weight (less motor) = 40 lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
(1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
K1		CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
		SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES	SONES
K2 (1/6)	650	359 .01 2.0	154 .01 1.4										
	750	415 .01 2.8	267 .01 2.0										
K3 (1/6)	850	470 .02 3.7	347 .02 2.8										
	950	525 .02 4.6	421 .03 3.8	266 .03 3.8									
K4 (1/6)	1050	580 .03 5.4	488 .04 4.5	368 .04 3.9									
	1150	636 .04 6.2	552 .05 5.4	452 .05 4.8	305 .05 4.6								
L1 (1/4)	1250	691 .05 7.1	614 .06 6.3	527 .06 5.6	420 .06 5.4								
	1350	746 .07 7.9	676 .07 7.2	600 .08 6.6	505 .08 6.3	385 .08 6.1							
M1 (1/3)	1450	802 .08 8.8	736 .09 8.2	667 .09 7.6	584 .10 7.1	490 .10 7.0	340 .10 6.9						
	1500	829 .09 9.3	766 .10 8.6	700 .10 8.1	622 .11 7.6	533 .11 7.4	417 .11 7.3						
P1 (1/2)	1550	857 .10 9.7	795 .11 9.1	732 .11 8.6	660 .12 8.1	576 .12 7.9	474 .12 7.8	280 .12 7.8					
	1600	884 .11 10.2	825 .12 9.6	764 .12 9.0	696 .13 8.6	617 .13 8.3	527 .13 8.2	390 .13 8.1					
P1 (1/2)	1650	912 .12 10.7	854 .13 10.1	795 .13 9.6	733 .14 9.1	656 .14 8.8	573 .15 8.7	468 .15 8.6					
	1700	940 .13 11.2	884 .14 10.6	827 .14 10.1	768 .15 9.6	694 .16 9.3	616 .16 9.1	522 .16 9.0					
P1 (1/2)	1750	967 .14 11.7	913 .15 11.1	858 .16 10.6	801 .16 10.2	732 .17 9.7	658 .17 9.6	574 .18 9.5					
	1800	995 .15 12.3	942 .16 11.8	889 .17 11.2	833 .18 10.6	769 .18 10.2	699 .19 10.1	621 .19 10.0	352 .18 10.0				
P1 (1/2)	1850	1023 .17 13.0	971 .18 12.4	920 .18 11.9	865 .19 11.3	806 .20 10.8	737 .20 10.7	664 .20 10.6	455 .20 10.4				
	1900	1050 .18 13.7	1000 .19 13.1	950 .20 12.5	897 .21 12.0	842 .21 11.5	776 .22 11.2	706 .22 11.1	532 .23 11.0				
P1 (1/2)	1950	1078 .20 14.4	1029 .21 13.8	981 .21 13.2	929 .22 12.7	878 .23 12.2	813 .23 11.8	748 .24 11.7	589 .24 11.5				
	2000	1106 .21 15.1	1057 .22 14.5	1011 .23 14.0	961 .24 13.4	911 .25 12.9	851 .25 12.5	787 .25 12.4	641 .26 12.1	359 .26 12.1			
P1 (1/2)	2050	1133 .23 15.9	1086 .24 15.3	1041 .25 14.7	992 .25 14.2	944 .26 13.6	888 .27 13.1	826 .27 13.0	693 .28 12.8	480 .28 12.6			
	2100	1161 .25 16.6	1115 .25 16.0	1070 .26 15.5	1024 .27 14.9	976 .28 14.4	924 .29 13.9	864 .29 13.6	736 .30 13.4	558 .30 13.3			
P1 (1/2)	2150	1189 .26 17.4	1143 .27 16.8	1100 .28 16.2	1055 .29 15.7	1008 .30 15.2	960 .31 14.7	901 .31 14.3	779 .32 14.1	626 .33 13.9			
	2200	1216 .28 18.2	1172 .29 17.6	1130 .30 17.0	1086 .31 16.4	1040 .32 15.9	995 .33 15.5	939 .33 15.0	821 .34 14.7	679 .35 14.5	419 .33 14.4		
P1 (1/2)	2250	1244 .30 18.7	1201 .31 18.1	1159 .32 17.6	1116 .33 17.0	1072 .34 16.6	1028 .35 16.1	975 .35 15.6	862 .36 15.3	732 .37 15.1	532 .37 14.9		
	2300	1271 .32 19.2	1229 .33 18.7	1189 .34 18.2	1147 .35 17.6	1104 .36 17.2	1060 .37 16.7	1012 .38 16.3	903 .39 15.9	782 .40 15.7	610 .40 15.6		
P1 (1/2)	2350	1299 .34 19.8	1258 .35 19.3	1218 .36 18.7	1178 .37 18.2	1135 .38 17.8	1093 .39 17.3	1048 .40 16.9	940 .41 16.5	825 .42 16.3	680 .43 16.2		
	2400	1327 .37 20	1286 .38 19.8	1247 .39 19.3	1208 .40 18.9	1166 .41 18.4	1125 .42 18.0	1083 .43 17.6	979 .44 17.1	867 .45 16.9	733 .45 16.8	519 .44 16.7	
P1 (1/2)	2450	1354 .39 21	1314 .40 20	1276 .41 19.9	1238 .42 19.5	1198 .43 19.1	1157 .44 18.6	1116 .45 18.2	1016 .46 17.7	909 .47 17.5	786 .48 17.4	606 .48 17.3	
	2500	1382 .41 21	1343 .43 21	1305 .44 21	1268 .45 20	1229 .46 19.7	1189 .47 19.3	1149 .48 18.9	1054 .49 18.2	951 .50 18.1	839 .51 18.0	683 .51 17.9	

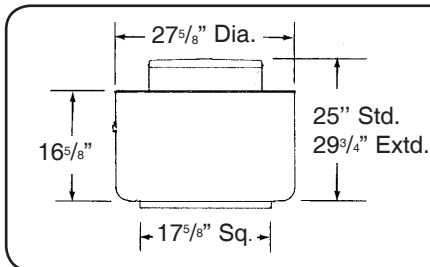
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VUBK 10

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .082 x $\left[\frac{\text{RPM}}{1000}\right]^3$
 Tip Speed = 3.27 x RPM
 Max. Motor Frame Size = 145T
 Unit Weight (less motor) = 45 lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 12" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	650	616 .02 2.4											
	750	711 .03 3.4	331 .03 3.2										
L1 (1/4)	850	805 .04 4.3	515 .05 4.0										
	950	900 .06 5.5	657 .07 4.8										
M1 (1/3)	1050	995 .08 6.7	782 .09 5.9	439 .09 6.0									
	1150	1090 .10 7.0	897 .12 6.3	645 .12 6.3									
P1 (1/2)	1200	1136 .11 7.5	954 .13 6.7	725 .14 6.8									
	1250	1184 .13 8.0	1009 .15 7.3	800 .16 7.2	416 .15 7.3								
R1 (3/4)	1300	1230 .14 8.5	1064 .16 7.8	875 .18 7.7	576 .17 7.8								
	1350	1279 .16 9.0	1118 .18 8.3	937 .20 8.2	684 .20 8.3								
S1 (1)	1400	1327 .18 9.6	1172 .20 8.9	1001 .22 8.7	775 .22 8.8								
	1450	1374 .20 10.2	1226 .22 9.5	1063 .24 9.2	858 .25 9.3	508 .23 9.4							
T1 (1-1/2)	1500	1421 .22 10.8	1279 .24 10.1	1124 .26 9.8	933 .27 9.8	662 .26 9.9							
	1550	1469 .24 11.5	1331 .27 10.8	1182 .29 10.3	1007 .30 10.4	773 .30 10.5							
	1600	1516 .27 12.2	1383 .29 11.5	1239 .31 11.0	1080 .33 11.0	865 .33 11.1	480 .30 11.1						
	1650	1563 .29 12.9	1435 .32 12.2	1296 .34 11.5	1144 .36 11.6	954 .36 11.7	667 .35 11.7						
	1700	1611 .32 13.6	1486 .35 12.9	1352 .37 12.3	1207 .39 12.2	1030 .40 12.2	801 .39 12.3						
	1750	1658 .35 14.3	1536 .38 13.6	1407 .40 13.0	1270 .42 12.9	1105 .43 12.9	896 .43 13.0	514 .40 13.0					
	1800	1706 .38 15.1	1587 .41 14.3	1462 .43 13.8	1332 .45 13.6	1178 .47 13.5	987 .47 13.5	710 .45 13.6					
	1850	1753 .42 15.8	1637 .44 15.1	1517 .47 14.5	1393 .49 14.3	1250 .51 14.2	1075 .51 14.2	845 .50 14.2					
	1900	1800 .45 16.6	1688 .48 15.9	1571 .50 15.3	1450 .53 14.9	1314 .55 14.8	1151 .55 14.8	950 .55 14.8	596 .51 14.9				
	1950	1848 .49 17.4	1738 .52 16.7	1625 .54 16.1	1507 .57 15.7	1378 .59 15.6	1225 .60 15.5	1042 .60 15.5	783 .58 15.5				
	2000	1895 .53 18.0	1788 .56 17.4	1679 .58 16.8	1564 .61 16.3	1440 .63 16.2	1299 .64 16.1	1132 .65 16.1	918 .63 16.1	446 .55 16.2			
	2050	1942 .57 18.7	1838 .60 18.1	1733 .63 17.5	1620 .65 17.0	1502 .67 16.9	1374 .69 16.8	1213 .70 16.7	1022 .69 16.7	716 .66 16.7			
	2100	1990 .61 19.4	1887 .64 18.8	1786 .67 18.2	1676 .70 17.7	1564 .72 17.5	1438 .74 17.4	1288 .75 17.3	1114 .74 17.3	878 .73 17.3			
	2150	2037 .65 20	1937 .69 19.5	1839 .72 18.9	1731 .74 18.4	1625 .77 18.2	1502 .79 18.1	1363 .80 18.0	1204 .80 17.9	1013 .78 17.9	658 .74 18.0		
	2200	2085 .70 21	1987 .73 20	1891 .77 19.6	1786 .79 19.1	1681 .82 18.9	1565 .84 18.8	1436 .86 18.6	1289 .86 18.5	1108 .86 18.5	857 .83 18.5		
	2250	2132 .75 21	2036 .78 21	1943 .82 20	1841 .84 19.9	1738 .87 19.7	1628 .89 19.5	1510 .92 19.3	1364 .92 19.2	1200 .92 19.1	993 .89 19.1	601 .84 19.2	
	2350	2227 .85 23	2135 .89 22	2046 .92 22	1950 .95 21	1851 .98 21	1751 1.01 21	1639 1.03 21	1513 1.05 21	1375 1.05 20	1206 1.05 20	988 1.02 20	563 .93 21
	2450	2321 .97 24	2233 1.00 24	2148 1.04 23	2057 2.07 23	1963 1.10 23	1868 1.13 23	1765 1.16 22	1657 1.18 22	1525 1.19 22	1387 1.19 22	1221 1.18 22	996 1.15 22

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

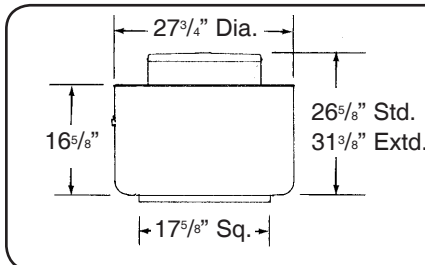
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Upblast Roof Vents

VUBK 12

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .094 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 3.27 x RPM
 Max. Motor Frame Size = 145T
 Unit Weight (less motor) = 45 lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 12" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES
K2 (1/6)	550	660 .01 2.0												
	650	780 .02 3.1												
K3 (1/6)	750	900 .03 4.3	468 .04 3.6											
	850	1020 .05 5.5	690 .06 4.7											
L1 (1/4)	950	1140 .07 6.6	865 .08 5.8											
	1050	1260 .09 7.9	1023 .11 7.1	631 .10 6.9										
M1 (1/3)	1100	1321 .11 8.6	1094 .12 7.7	771 .12 7.5										
	1200	1442 .14 10.0	1232 .16 9.2	862 .16 8.8										
P1 (1/2)	1250	1500 .15 10.8	1301 .17 9.9	1067 .18 9.5	633 .16 9.5									
	1300	1562 .18 11.6	1368 .20 10.8	1152 .21 10.3	813 .20 10.3									
RI (3/4)	1350	1620 .20 12.4	1435 .22 11.6	1234 .23 11.0	952 .23 11.1									
	1450	1740 .25 14.1	1567 .27 13.5	1395 .28 12.9	1153 .29 12.9	758 .26 13.0								
S1 (1)	1500	1800 .27 15.1	1633 .29 14.4	1469 .31 13.9	1248 .32 13.7	935 .31 13.9								
	1550	1860 .30 16.0	1698 .32 15.5	1539 .34 14.9	1340 .35 14.6	1075 .35 14.8								
T1 (1-1/2)	1600	1920 .33 17.0	1763 .36 16.4	1609 .37 15.8	1423 .38 15.4	1185 .39 15.6	743 .33 15.8							
	1650	1980 .37 17.6	1828 .39 17.1	1678 .41 16.4	1506 .42 16.1	1284 .42 16.2	963 .40 16.2							
T1 (1-1/2)	1700	2040 .40 18.3	1892 .42 17.8	1747 .44 17.0	1587 .46 16.7	1380 .46 16.6	1110 .45 16.8							
	1750	2100 .44 19.1	1956 .46 18.5	1815 .48 17.9	1667 .50 17.5	1476 .50 17.3	1249 .48 17.5	792 .43 17.6						
T1 (1-1/2)	1800	2160 .47 19.9	2020 .50 19.3	1883 .52 18.9	1746 .54 18.5	1564 .55 18.2	1347 .55 18.2	1025 .51 18.2						
	1900	2280 .56 22	2148 .58 21	2017 .61 21	1887 .63 20	1730 .64 20	1542 .64 19.9	1321 .64 19.8	929 .57 19.8					
T1 (1-1/2)	1950	2340 .60 23	2211 .63 22	2084 .65 22	1957 .67 21	1811 .69 21	1637 .70 21	1432 .70 21	1131 .66 21					
	2000	2400 .65 24	2274 .68 23	2150 .70 23	2027 .72 22	1892 .74 22	1728 .75 22	1531 .75 22	1281 .73 22	745 .59 22				
T1 (1-1/2)	2050	2460 .70 25	2337 .73 24	2216 .75 24	2095 .78 23	1971 .80 23	1812 .80 23	1629 .81 23	1421 .81 23	1069 .73 23				
	2100	2520 .75 26	2400 .78 25	2281 .81 25	2164 .83 24	2047 .85 24	1894 .86 24	1725 .87 24	1534 .87 24	1262 .83 24	559 .60 24			
T1 (1-1/2)	2200	2640 .87 28	2526 .90 27	2412 .93 27	2300 .95 26	2188 .97 26	2057 .99 26	1908 1.00 26	1732 1.00 26	1542 1.00 26	1238 .93 26			
	2250	2700 .93 29	2588 .96 28	2477 .99 28	2367 1.01 27	2258 1.04 27	2137 1.05 27	1992 1.06 27	1828 1.07 27	1650 1.07 27	1403 1.03 27	946 .89 27		
T1 (1-1/2)	2300	2760 .99 30	2651 1.02 29	2542 1.05 29	2434 1.08 29	2327 1.10 28	2217 1.12 28	2074 1.13 28	1924 1.14 28	1750 1.14 28	1543 1.13 28	1228 1.05 28		
	2350	2820 1.12 31	2713 1.09 31	2606 1.12 30	2501 1.15 30	2396 1.17 29	2291 1.19 29	2156 1.21 29	2017 1.22 29	1848 1.22 29	1677 1.22 29	1417 1.17 29	910 .98 29	
T1 (1-1/2)	2400	2880 1.12 32	2775 1.16 32	2671 1.19 31	2567 1.22 31	2465 1.24 31	2362 1.27 30	2237 1.28 30	2101 1.29 30	1944 1.30 30	1778 1.30 30	1558 1.27 30	1238 1.17 30	
	2450	2940 1.20 34	2837 1.23 33	2735 1.26 32	2634 1.29 32	2533 1.32 32	2432 1.34 32	2318 1.36 31	2184 1.37 31	2040 1.38 31	1876 1.38 31	1697 1.37 31	1440 1.31 31	

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

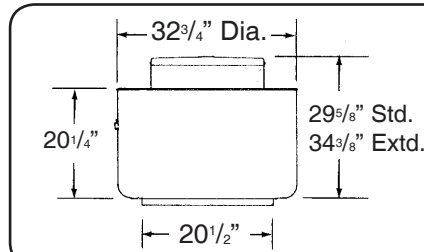
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Upblast Roof Vents

VUBK 15

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .285 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 4.06 x RPM
 Max. Motor Frame Size = 182T
 Unit Weight (less motor) = 65 lbs.
 Roof Opening = 16" Sq.
 Curb O. D. = 19" Sq.
 Damper Size = 15" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	550	1214 .04 4.1	441 .04 4.6										
	600	1324 .06 5.0	796 .07 5.3										
L1 (1/4)	650	1434 .07 5.9	973 .08 6.1										
	700	1545 .09 6.8	1132 .10 6.9										
M1 (1/3)	750	1655 .11 7.7	1279 .13 7.8										
	800	1765 .14 8.7	1422 .15 8.7	854 .15 9.1									
P1 (1/2)	850	1876 .16 9.8	1557 .18 9.7	1131 .19 10.0									
	900	1986 .19 10.8	1689 .21 10.7	1309 .22 10.9									
R1 (3/4)	950	2096 .23 11.9	1819 .25 11.7	1480 .26 11.9	713 .22 12.1								
	1000	2207 .27 13.1	1948 .29 12.8	1630 .30 12.9	1170 .30 13.3								
S1 (1)	1050	2317 .31 14.2	2074 .33 14.0	1778 .35 13.9	1418 .35 14.3								
	1100	2427 .35 15.5	2195 .38 15.2	1922 .40 15.1	1595 .41 15.3	882 .35 15.6							
T1 (1-1/2)	1150	2538 .40 16.8	2316 .43 16.6	2062 .45 16.4	1770 .47 16.5	1324 .45 16.8							
	1200	2648 .46 18.1	2436 .49 17.9	2196 .51 17.7	1923 .53 17.8	1593 .53 18.0							
V1 (2)	1250	2758 .52 19.4	2555 .55 19.2	2329 .57 19.0	2072 .59 19.1	1771 .60 19.3	1215 .54 19.5						
	1300	2868 .58 21	2673 .61 21	2460 .64 20	2218 .66 20	1946 .67 20	1560 .66 21						
	1400	3089 .73 24	2908 .76 23	2718 .79 23	2503 .82 23	2263 .83 23	1989 .84 23	1575 .81 23					
	1450	3199 .81 25	3024 .84 25	2846 .87 25	2637 .90 25	2412 .92 25	2164 .93 25	1851 .93 25	1067 .76 25				
	1500	3310 .90 27	3141 .93 26	2970 .96 26	2771 .99 26	2558 1.01 26	2333 1.03 26	2058 1.03 26	1627 .97 26				
	1550	3420 .99 28	3257 1.02 28	3091 1.06 28	2903 1.09 28	2702 1.11 28	2485 1.13 28	2236 1.14 28	1911 1.13 28	1138 .93 28			
	1600	3530 1.09 30	3372 1.12 30	3212 1.16 30	3033 1.19 29	2845 1.22 29	2634 1.24 29	2411 1.25 29	2152 1.26 29	1707 1.18 29			
	1650	3641 1.19 32	3487 1.23 31	3332 1.27 31	3163 1.30 31	2980 1.33 31	2781 1.35 31	2577 1.37 31	2330 1.38 31	2004 1.35 31	1322 1.16 31		
	1700	3751 1.31 33	3602 1.34 33	3452 1.38 33	3292 1.42 33	3114 1.45 33	2926 1.47 33	2728 1.49 33	2506 1.50 33	2263 1.51 33	1837 1.42 33		
	1725	3806 1.36 34	3660 1.40 34	3511 1.44 34	3356 1.48 34	3181 1.51 34	2998 1.54 34	2803 1.56 34	2593 1.57 34	2352 1.57 34	1986 1.52 34	1118 1.22 34	
	1750	3861 1.43 35	3717 1.46 34	3571 1.50 34	3419 1.54 34	3247 1.57 34	3070 1.60 34	2877 1.62 34	2681 1.64 34	2441 1.64 34	2125 1.61 34	1557 1.45 34	
	1800	3972 1.55 36	3831 1.59 36	3689 1.63 36	3546 1.67 36	3379 1.70 35	3211 1.73 35	3024 1.76 35	2837 1.78 35	2618 1.79 35	2389 1.79 35	1993 1.70 35	985 1.31 36
	1850	4082 1.68 38	3946 1.72 37	3807 1.77 37	3669 1.81 37	3509 1.84 37	3346 1.87 37	3170 1.90 37	2988 1.92 37	2793 1.94 37	2567 1.94 37	2270 1.91 37	1766 1.74 37
	1900	4192 1.82 39	4060 1.87 39	3925 1.91 39	3790 1.95 39	3639 1.99 38	3480 2.02 38	3314 2.05 38	3137 2.07 38	2959 2.10 38	2745 2.10 38	2528 2.10 39	2157 2.02 39
	1950	4303 1.97 41	4174 2.01 41	4042 2.06 41	3911 2.10 40	3767 2.14 40	3613 2.17 40	3458 2.21 40	3284 2.23 40	3111 2.26 40	2920 2.27 40	2706 2.27 40	2434 2.25 40
	1975	4358 2.05 42	4230 2.09 42	4101 2.14 42	3971 2.18 41	3832 2.22 41	3679 2.25 41	3526 2.29 41	3356 2.31 41	3186 2.34 41	3006 2.36 41	2795 2.36 41	2570 2.36 41

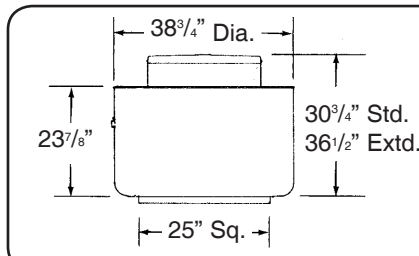
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VUBK 18

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .659 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 4.94 x RPM
 Max. Motor Frame Size = 184T
 Unit Weight (less motor) = 85 lbs.
 Roof Opening = 20-1/2" Sq.
 Curb O. D. = 23-1/2" Sq.
 Damper Size = 19" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
L1 (1/4)	550	2045 .10 5.5	1364 .11 3.7										
	M1 (1/3)	600	2231 .13 6.4	1642 .14 4.7									
P1 (1/2)		650	2417 .17 7.3	1891 .18 5.8	820 .14 4.8								
	R1 (3/4)	700	2603 .21 8.3	2126 .23 6.8	1383 .21 5.5								
S1 (1)		750	2789 .26 9.3	2349 .28 7.9	1754 .27 6.6								
	T1 (1-1/2)	800	2974 .32 10.4	2569 .33 9.0	2067 .33 7.7	1089 .27 7.0							
V1 (2)		850	3160 .38 11.6	2785 .40 10.3	2330 .40 9.0	1635 .38 7.8							
	W1 (3)	900	3346 .45 12.4	2997 .47 11.1	2579 .48 10.1	2025 .47 9.2							
		950	3532 .53 13.6	3208 .56 12.4	2823 .56 11.3	2347 .56 10.3	1581 .49 10.2						
		1000	3718 .62 14.8	3413 .65 13.7	3051 .66 12.6	2644 .66 11.6	2035 .62 11.1						
		1050	3904 .72 16.1	3613 .75 15.0	3275 .76 14.0	2899 .76 13.0	2412 .74 12.1	1640 .64 12.1					
		1100	4090 .83 17.5	3812 .86 16.4	3496 .87 15.5	3148 .88 14.5	2728 .86 13.5	2132 .82 13.3					
		1150	4276 .95 19.0	4010 .98 18.0	3714 .99 17.0	3392 1.00 16.0	3029 1.00 15.0	2523 .97 14.5	1795 .84 14.5				
		1175	4369 1.01 19.7	4108 1.04 18.7	3822 1.06 17.8	3513 1.07 16.8	3158 1.06 15.8	2703 1.04 15.0	2055 .95 15.0				
		1200	4462 1.08 20	4207 1.11 19.5	3929 1.13 18.6	3625 1.14 17.6	3285 1.13 16.6	2863 1.11 15.7	2296 1.06 15.6	1030 .77 15.6			
		1225	4555 1.15 21	4305 1.18 20	4036 1.20 19.3	3738 1.21 18.4	3410 1.21 17.4	3020 1.19 16.5	2494 1.15 16.3	1727 .99 16.3			
		1250	4648 1.22 22	4402 1.25 21	4142 1.27 20	3851 1.28 19.2	3535 1.28 18.3	3176 1.27 17.3	2689 1.24 16.9	2021 1.10 16.9			
		1275	4740 1.29 23	4500 1.32 22	4248 1.35 21	3962 1.36 20	3659 1.36 19.1	3330 1.35 18.2	2883 1.33 17.6	2280 1.22 17.6			
		1300	4833 1.37 24	4598 1.40 23	4354 1.43 22	4073 1.44 21	3781 1.45 19.9	3460 1.44 19.0	3043 1.41 18.2	2510 1.35 18.2	1639 1.12 18.2		
		1325	4926 1.45 24	4695 1.48 24	4459 1.51 23	4184 1.52 22	3903 1.53 21	3588 1.53 19.8	3202 1.50 18.9	2708 1.45 18.8	2042 1.31 18.8		
		1350	5019 1.54 25	4792 1.57 24	4564 1.60 23	4294 1.61 23	4024 1.62 22	3714 1.62 21	3359 1.60 19.8	2903 1.56 19.5	2303 1.42 19.5		
		1375	5112 1.62 26	4889 1.66 25	4668 1.69 24	4403 1.70 23	4138 1.71 23	3840 1.71 22	3514 1.69 21	3096 1.67 20	2560 1.56 20	1655 1.29 20	
		1400	5205 1.71 27	4986 1.75 26	4769 1.78 25	4511 1.79 24	4251 1.81 23	3965 1.80 22	3666 1.80 21	3261 1.77 21	2765 1.70 21	2109 1.53 21	
		1425	5298 1.81 28	5083 1.84 27	4870 1.87 26	4620 1.89 25	4364 1.90 24	4088 1.90 23	3795 1.90 22	3420 1.86 22	2962 1.81 22	2371 1.65 22	
		1450	5391 1.90 29	5179 1.94 28	4970 1.97 27	4727 1.99 26	4476 2.00 25	4211 2.01 24	3923 2.00 23	3577 1.97 22	3156 1.93 22	2629 1.81 22	1758 1.52 22
		1475	5484 2.00 30	5276 2.04 29	5070 2.07 28	4835 2.09 27	4588 2.11 26	4333 2.11 25	4050 2.11 24	3733 2.09 23	3346 2.06 23	2854 1.97 23	2215 1.79 23
		1500	5577 2.11 31	5372 2.14 30	5170 2.18 29	4942 2.20 28	4699 2.21 27	4454 2.22 26	4175 2.22 25	3887 2.20 24	3507 2.16 24	3052 2.10 24	2478 1.92 24
		1525	5670 2.21 32	5468 2.25 31	5269 2.29 30	5048 2.31 29	4809 2.32 28	4570 2.34 27	4300 2.33 26	4026 2.32 25	3666 2.29 24	3247 2.24 24	2736 2.09 24
		1550	5763 2.32 33	5564 2.36 32	5369 2.40 31	5154 2.42 30	4919 2.44 29	4684 2.45 28	4424 2.45 27	4155 2.44 26	3823 2.41 25	3440 2.38 25	2970 2.28 25
		1575	5856 2.44 33	5660 2.48 32	5468 2.51 31	5260 2.54 30	5028 2.56 30	4797 2.57 29	4547 2.57 28	4282 2.56 27	3979 2.54 26	3617 2.51 25	3169 2.43 25

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

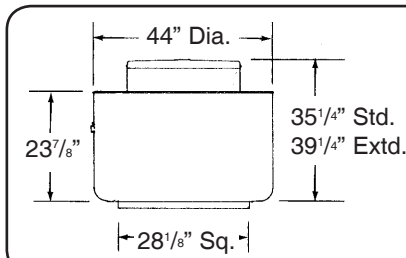
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Uplast Roof Vents

VUBK 21

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

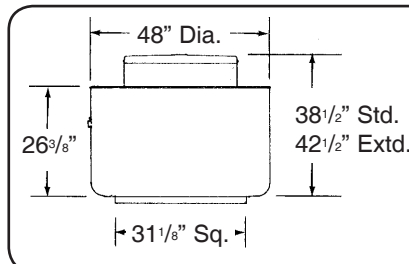
Max BHP = 1.28 x $\left[\frac{\text{RPM}}{1000} \right]^3$
 Tip Speed = 5.76 x RPM
 Max. Motor Frame Size = 184T
 Unit Weight (less motor) = 120 lbs.
 Roof Opening = 23-1/2" Sq.
 Curb O. D. = 26-1/2" Sq.
 Damper Size = 22" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
L1 (1/4)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES
M1 (1/3)	400	2168 4.2	.08 3.3	728 3.3	.06									
	450	2439 5.3	.11 4.2	1443 4.2	.11									
P1 (1/2)	500	2709 6.4	.15 5.3	1883 5.3	.15									
	550	2980 7.6	.20 6.4	2261 6.4	.21	329 6.1	.10							
R1 (3/4)	600	3251 8.8	.26 7.4	2614 7.4	.27	1608 7.1	.25							
	650	3522 10.0	.34 8.6	2941 8.6	.35	2163 8.2	.34							
S1 (1)	700	3793 11.2	.42 9.9	3261 9.9	.43	2602 9.4	.42	1401 9.3	.35					
	750	4064 12.6	.52 11.3	3575 11.3	.53	2992 10.7	.53	2162 10.5	.50					
T1 (1-1/2)	800	4335 14.0	.63 12.8	3884 12.8	.65	3360 12.0	.65	2685 11.8	.63	1456 11.7	.50			
	850	4606 15.6	.75 14.4	4189 14.4	.77	3707 13.4	.78	3124 13.2	.75	2297 13.1	.71			
V1 (2)	875	4742 16.4	.82 15.2	4339 15.2	.84	3872 14.1	.85	3336 13.9	.84	2603 13.8	.80	812 13.7	.48	
	900	4877 17.2	.89 16.0	4485 16.0	.92	4035 14.9	.93	3525 14.7	.92	2886 14.5	.89	1737 14.4	.73	
W1 (3)	925	5012 18.1	.97 16.9	4631 16.9	.99	4197 15.7	1.00	3713 15.4	1.00	3111 15.2	.97	2162 15.1	.87	
	950	5148 18.9	1.05 17.7	4777 17.7	1.08	4358 16.6	1.09	3897 16.1	1.09	3333 15.9	1.06	2563 15.8	.99	
V1 (2)	975	5283 19.8	1.13 18.6	4921 18.6	1.16	4517 17.5	1.17	4080 16.9	1.18	3551 16.7	1.13	2871 16.6	1.11	1690 16.6
	1000	5419 21	1.22 19.5	5066 19.5	1.25	4676 18.4	1.27	4261 17.7	1.27	3766 17.6	1.24	3164 17.4	1.15	2152 17.4
W1 (3)	1050	5690 22	1.41 21	5353 21	1.44	4989 20	1.46	4599 19.4	1.47	4152 19.2	1.46	3619 19.1	1.43	2930 19.0
	1075	5825 23	1.52 22	5497 22	1.55	5145 21	1.57	4764 20	1.58	4338 20	1.57	3839 19.9	1.51	3227 19.8
W1 (3)	1100	5961 24	1.62 23	5639 23	1.66	5300 22	1.68	4927 21	1.69	4523 21	1.69	4056 21	1.62	3513 21
	1125	6096 25	1.74 24	5782 24	1.77	5454 23	1.80	5089 22	1.81	4705 22	1.81	4270 22	1.76	3740 22
W1 (3)	1150	6232 26	1.86 25	5924 25	1.89	5607 24	1.92	5251 23	1.93	4886 23	1.93	4461 23	1.88	3963 22
	1175	6367 27	1.98 26	6066 26	2.02	5759 25	2.05	5411 24	2.06	5062 23	2.06	4650 23	2.05	4183 23
W1 (3)	1200	6503 28	2.11 27	6208 27	2.15	5911 26	2.18	5570 25	2.19	5228 24	2.20	4836 24	2.19	4400 24
	1225	6638 29	2.24 28	6349 28	2.28	6063 27	2.32	5728 26	2.33	5394 25	2.34	5021 25	2.33	4615 25
W1 (3)	1250	6774 30	2.38 29	6490 29	2.42	6210 27	2.46	5886 27	2.47	5558 26	2.48	5204 26	2.48	4813 26
	1275	6909 30	2.53 29	6631 29	2.57	6356 28	2.61	6042 28	2.62	5721 27	2.63	5385 27	2.62	5002 27
W1 (3)	1300	7045 31	2.68 30	6772 30	2.72	6502 29	2.76	6198 28	2.78	5883 28	2.79	5566 27	2.80	5190 27
	1325	7180 32	2.84 31	6912 31	2.88	6648 30	2.92	6353 29	2.94	6044 29	2.95	5735 28	2.96	5375 28
W1 (3)	1350	7316 33	3.00 32	7053 32	3.04	6793 31	3.08	6508 30	3.11	6204 30	3.12	5901 29	3.13	5560 29
	1375	7451 34	3.17 33	7193 33	3.22	6938 32	3.26	6662 31	3.28	6364 31	3.29	6066 30	3.30	5742 30
W1 (3)	1400	7587 35	3.34 34	7334 34	3.38	7079 33	3.42	6800 32	3.45	6500 32	3.46	6200 31	3.47	5900 31
	1425	7723 36	3.51 35	7475 35	3.52	7220 34	3.56	6941 33	3.59	6641 33	3.60	6341 32	3.61	6041 32
W1 (3)	1450	7860 37	3.68 36	7616 36	3.72	7361 35	3.76	7082 34	3.79	6782 34	3.80	6482 33	3.81	6182 33
	1475	8000 38	3.85 37	7757 37	3.88	7502 36	3.92	7223 35	3.95	6923 35	3.96	6623 34	3.97	6323 34
W1 (3)	1500	8140 39	4.02 38	7898 38	4.05	7643 37	4.09	7364 36	4.12	7064 36	4.13	6764 35	4.14	6464 35
	1525	8280 40	4.19 39	8039 39	4.22	7784 38	4.26	7505 37	4.29	7205 37	4.30	6905 36	4.31	6605 36
W1 (3)	1550	8420 41	4.36 40	8180 40	4.39	7925 39	4.43	7646 38	4.46	7346 38	4.47	7046 37	4.48	6746 37
	1575	8560 42	4.53 41	8321 41	4.56	8066 40	4.60	7787 39	4.63	7487 39	4.64	7187 38	4.65	6887 38
W1 (3)	1600	8700 43	4.70 42	8462 42	4.73	8207 41	4.77	7928 40	4.80	7628 40	4.81	7328 39	4.82	7028 39
	1625	8840 44	4.87 43	8603 43	4.90	8348 42	4.94	8069 41	4.97	7769 41	4.98	7469 40	4.99	7169 40
W1 (3)	1650	8980 45	5.04 44	8744 44	5.07	8489 43	5.11	8210 42	5.14	7910 42	5.15	7610 41	5.16	7310 41
	1675	9120 46	5.21 45	8885 45	5.24	8630 44	5.28	8351 43	5.31	8051 43	5.32	7751 42	5.33	7451 42
W1 (3)	1700	9260 47	5.38 46	9026 46	5.41	8771 45	5.45	8492 44	5.48	8212 44	5.49	7912 43	5.50	7612 43
	1725	9400 48	5.55 47	9167 47	5.58	8912 46	5.62	8633 45	5.65	8353 45	5.66	8053 44	5.67	7753 44
W1 (3)	1750	9540 49	5.72 48	9308 48	5.75	9053 47	5.79	8774 46	5.82	8494 46	5.83	8194 45	5.84	7894 45
	1775	9680 50	5.89 49	9449 49	5.92	9194 48	5.96	8915 47	5.99	8635 47	6.00	8335 46	6.01	8035 46
W1 (3)	1800	9820 51	6.06 50	9590 50	6.09	9335 49	6.13	9036 48	6.16	8756 48	6.17	8456 47	6.18	8156 47
	1825	9960 52	6.23 51	9731 51	6.26	9476 50	6.30	9177 49	6.33	8897 49	6.34	8597 48	6.35	8297 48
W1 (3)	1850	10100 53	6.40 52	9872 52	6.43	9617 51	6.47	9318 50	6.50	9018 50	6.51	8718 49	6.52	8418 49
	1875	10240 54	6.57 53	10013 53	6.60	9758 52	6.64	9459 51	6.67	9159 51	6.68	8859 50	6.69	8559 50
W1 (3)	1900	10380 55	6.74 54	10154 54	6.77	9899 53	6.81	9600 52	6.84	9300 52	6.85	9000 51	6.86	8700 51
	1925	10520 56	6.91 55	10295 55	6.94	10040 54	6.98	9741 53	7.01	9441 53	7.02	9141 52	7.03	8841 52
W1 (3)	1950	10660 57	7.08 56	10436 56	7.11	10181 55	7.15	9882 54	7.18	9582 54	7.19	9282 53	7.20	8982 53
	1975	10800 58	7.25 57	10577 57	7.28	10322 56	7.32	10023 55	7.35	9723 55	7.36	9423 54	7.37	9123 54
W1 (3)	2000	10940 59	7.42 58	10718 58	7.45	10463 57	7.49	10164 56	7.52	9864 56	7.53	9564 55	7.54	9264 55
	2025	11080 60	7.59 59	10859 59	7.62	10604 58	7.66	10305 57	7.69	10005 57	7.70	9705 56	7.71	9405 56
W1 (3)	2050	11220 61	7.76 60	11000 60	7.79	10745 59	7.83	10446 58	7.86	10146 58	7.87	9846 57	7.88	9546 57
	2075	11360 62	7.93 61	11141 61	7.96	10886 60	7.99	10587 59	8.02	10287 59	8.03	9987 58	8.04	9687 58
W1 (3)	2100	11500 63	8.10 62	11282 62	8.13	11027 61	8.17	10728 60	8.20	10428 60	8.21	10128 59	8.22	9828 59
	2125	11640 64	8.27 63	11423 63	8.30	11168 62	8.34	10869 61	8.37	10569 61	8.38	10269 60	8.39	9969 60
W1 (3)	2150	11780 65	8.44 64	11564 64	8.47	11309 63	8.51	11010 62	8.54	10710 62	8.55	10410 61	8.56	10110 61
	2175	11920 66	8.61 65	11705 65	8.64	11450 64	8.68	11151 63	8.71	10851 63	8.72	10551 62	8.73	10251 62
W1 (3)	2200	12060 67	8.78 66	11846 66	8.81	11591 65	8.85	11292 64	8.88	10992 64	8.89	10692 63	8.90	10392 63
	2225	12200 68	8.95 67	11987 67	8.98	11732 66	9.02	11433 65	9.05	11133 65	9.0			

VUBK 24

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = 3.26 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 6.68 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 150 lbs.
 Roof Opening = 26-1/2" Sq.
 Curb O. D. = 29-1/2" Sq.
 Damper Size = 26" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W. G.																									
		.000		.250		.500		.750		1.000		1.250		1.500		1.750		2.000		2.250		2.500		2.750			
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP		
M1 (1/3)	P1 (1/2)	400	3618	.21	2241	.19																					
		425	3845	.25	2595	.24																					
		450	4070	.29	2927	.29																					
	R1 (3/4)	S1 (1)	475	4298	.34	3247	.34																				
			500	4523	.40	3559	.40	1907	.33																		
			525	4750	.47	3848	.47	2484	.42																		
	T1 (1-1/2)	V1 (2)	550	4975	.54	4125	.54	2942	.50																		
			575	5201	.61	4398	.62	3303	.58																		
			600	5427	.70	4667	.70	3655	.67	1941	.53																
	W1 (3)	X1 (5)	625	5653	.79	4934	.80	3991	.77	2664	.67																
			650	5879	.88	5197	.90	4315	.87	3173	.78																
			675	6105	.99	5458	1.01	4633	.98	3623	.92	1346	.59														
Y1 (7-1/2)		700	6332	1.10	5711	1.12	4945	1.10	3985	1.04	2504	.88															
		725	6558	1.23	5959	1.25	5247	1.24	4339	1.18	3162	1.06															
		750	6784	1.36	6205	1.38	5526	1.38	4686	1.32	3654	1.20															
		775	7010	1.50	6450	1.52	5803	1.52	5013	1.47	4111	1.37	2520	1.14													
		800	7236	1.65	6693	1.67	6077	1.68	5335	1.63	4482	1.55	3261	1.39													
		825	7462	1.81	6936	1.83	6348	1.83	5653	1.80	4839	1.73	3833	1.61	1535	1.04											
		850	7688	1.98	7178	2.00	6616	2.00	5966	1.97	5189	1.91	4296	1.77	2799	1.52											
		875	7914	2.16	7418	2.18	6883	2.19	6275	2.16	5528	2.10	4730	2.00	3537	1.81											
		900	8141	2.35	7658	2.37	7148	2.38	6561	2.37	5854	2.31	5092	2.22	4129	2.08	2244	1.56									
		950	8595	2.76	8136	2.79	7671	2.81	7116	2.80	6494	2.74	5797	2.67	5050	2.52	3948	2.34									
		1000	9045	3.22	8611	3.25	8177	3.28	7662	3.28	7118	3.22	6464	3.16	5779	3.06	4978	2.87	3813	2.62							
		1050	9497	3.73	9084	3.76	8671	3.79	8199	3.78	7697	3.77	7107	3.69	6480	3.61	5810	3.49	4969	3.34	3756	2.97					
		1075	9723	4.00	9320	4.03	8916	4.06	8465	4.06	7975	4.06	7423	3.98	6814	3.91	6169	3.79	5431	3.58	4419	3.38	2636	2.64			
		1100	9550	4.28	9555	4.32	9160	4.35	8730	4.35	8250	4.35	7735	4.28	7141	4.21	6523	4.11	5884	3.98	5014	3.80	3711	3.33			
		1125	10176	4.58	9790	4.62	9404	4.65	8993	4.66	8524	4.66	8044	4.59	7463	4.52	6873	4.43	6247	4.30	5480	4.05	4446	3.80	2602	2.94	
		1150	10402	4.90	10024	4.93	9647	4.96	9255	4.98	8796	4.99	8337	4.94	7782	4.85	7217	4.77	6606	4.65	5940	4.42	5093	4.27	3756	3.75	
		1175	10628	5.22	10258	5.26	9889	5.29	9515	5.32	9066	5.29	8617	5.28	8098	5.19	7542	5.12	6960	5.00	6361	4.86	5575	4.68	4534	4.27	
		1200	10854	5.56	10492	5.60	10131	5.63	9769	5.67	9335	5.64	8895	5.64	8411	5.55	7866	5.47	7310	5.37	6724	5.23	6038	4.97	5184	4.81	

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

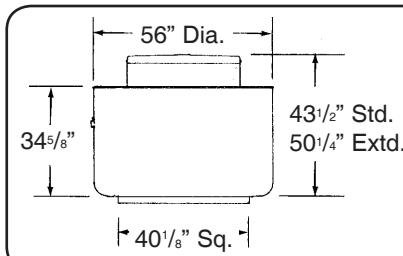
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Upblast Roof Vents

VUBK 30

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = 7.40 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

- Tip Speed = 8.25 x RPM
- Max. Motor Frame Size = 254T
- Unit Weight (less motor) = 220 lbs.
- Roof Opening = 35-1/2" Sq.
- Curb O. D. = 38-1/2" Sq.
- Damper Size = 34" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
P1 (1/2)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
P2 (1/2)	275	4591 .14 4.7											
	300	5009 .18 5.5	1657 .14 3.4										
R1 (3/4)	325	5426 .23 6.4	2935 .24 4.0										
	350	5843 .28 7.3	3723 .31 4.8										
S1 (1)	375	6261 .35 8.3	4390 .39 5.8										
	400	6678 .43 9.3	4972 .47 6.9										
T1 (1-1/2)	425	7095 .51 10.2	5537 .57 7.9	2391 .41 6.6									
	450	7513 .61 11.2	6085 .68 9.0	3817 .63 7.3									
V1 (2)	475	7930 .71 12.2	6590 .79 10.1	4675 .76 7.9									
	500	8347 .83 13.3	7086 .92 11.2	5403 .90 8.9									
W1 (3)	525	8765 .96 14.4	7576 1.06 12.4	6078 1.06 10.1	3218 .82 9.4								
	550	9182 1.11 15.5	8059 1.21 13.6	6669 1.22 11.5	4635 1.14 10.3								
X1 (5)	575	9600 1.26 16.7	8538 1.38 14.8	7244 1.40 12.9	5497 1.32 11.3								
	600	10017 1.43 17.9	9012 1.56 16.1	7807 1.60 14.3	6276 1.55 12.6	3313 1.15 12.4							
Y1 (7-12)	625	10434 1.62 19.1	9476 1.75 17.4	8361 1.79 15.8	6961 1.77 14.0	4816 1.51 13.5							
	650	10852 1.82 20	9930 1.96 18.7	8882 2.03 17.3	7615 2.01 15.6	5871 1.93 14.6							
	675	11269 2.04 22	10382 2.19 20	9385 2.27 18.7	8200 2.26 17.1	6720 2.18 15.7	3975 1.70 15.7						
	700	11687 2.28 23	10831 2.43 21	9881 2.52 20	8776 2.53 18.6	7445 2.47 17.2	5453 2.13 16.9						
	725	12104 2.53 25	11277 2.68 23	10373 2.79 22	9341 2.82 20	8128 2.77 18.6	6504 2.68 18.0	3055 1.74 18.0					
	750	12521 2.80 26	11722 2.96 24	10860 3.07 23	9899 3.09 22	8780 3.09 20	7356 2.97 19.1	5033 2.50 19.1					
	775	12939 3.09 27	12165 3.26 26	11344 3.38 24	10449 3.42 23	9366 3.42 22	8113 3.35 20	6425 2.99 20					
	800	13356 3.40 29	12606 3.57 27	11823 3.71 26	10957 3.79 25	9944 3.77 23	8800 3.71 22	7325 3.62 21	4789 2.86 21				
	825	13773 3.73 30	13046 3.90 28	12299 4.06 27	11460 4.14 26	10513 4.15 25	9475 4.11 23	8173 3.97 22	6271 3.43 22				
	850	14191 4.08 32	13485 4.26 30	12772 4.43 28	11957 4.51 27	11074 4.55 26	10087 4.51 25	8916 4.41 24	7425 4.27 23	4781 3.31 23			
	875	14608 4.45 33	13922 4.63 31	13240 4.82 30	12451 4.91 29	11629 4.91 27	10670 4.93 26	9603 4.86 25	8284 4.78 25	6316 3.97 25			
	900	15026 4.84 34	14359 5.03 33	13695 5.22 31	12940 5.32 30	12717 5.41 29	11245 5.38 28	10279 5.33 27	9125 5.21 26	7635 5.01 26	4970 3.88 26		
	925	15443 5.26 36	14794 5.45 34	14148 5.65 33	13426 5.76 31	12677 5.85 30	11813 5.85 29	10905 5.81 28	9821 5.70 27	8500 5.60 27	6527 4.80 27		
	950	15860 5.70 38	15228 5.90 36	14599 6.10 34	13909 6.23 33	13180 6.32 32	12374 6.35 31	11490 6.30 30	10506 6.22 29	9349 6.05 28	7914 5.53 28	5324 4.61 28	
	975	16278 6.16 39	15662 6.36 38	15049 6.57 36	14389 6.72 35	13678 6.81 33	12929 6.80 32	12068 6.83 31	11180 6.78 30	10115 6.65 29	8806 6.52 29	6878 5.63 29	
	1000	16695 6.64 41	16094 6.85 39	15497 7.06 38	14865 7.23 36	14173 7.33 35	13479 7.34 34	12639 7.38 33	11800 7.34 32	10806 7.23 31	9659 7.00 30	8265 6.42 30	5819 5.49 30

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

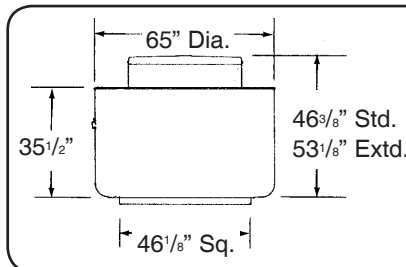
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Uphlast Roof Vents

VUBK 36

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = 19.71 x $\left[\frac{\text{RPM}}{1000}\right]^3$
 Tip Speed = 9.62 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 350 lbs.
 Roof Opening = 41-1/2" Sq.
 Curb O. D. = 44-1/2" Sq.
 Damper Size = 40" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W. G.																										
		.000		.250		.375		.500		.625		.750		1.000		1.250		1.500		1.750		2.000		2.250				
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP			
R1 (3/4)	S1 (1) T1 (1-1/2) V1 (2) W1 (3) X1 (5) V1 (7-1/2)	250	6697 .30 9.2	2317 .22 3.7																								
		270	7233 .37 10.3	4086 .35 4.8																								
		290	7769 .46 11.4	5275 .47 6.2																								
		310	8304 .57 12.5	6161 .58 7.5	3363 .46 5.7																							
		330	8840 .68 13.7	6979 .71 8.9	4960 .64 6.9																							
		350	9376 .82 14.9	7690 .85 10.4	6213 .82 8.3	2711 .53 7.0																						
		370	9912 .96 16.1	8370 1.00 11.7	7140 .99 9.7	4963 .84 8.2																						
		390	10447 1.13 17.4	9039 1.17 13.2	7972 1.17 11.3	6296 1.08 9.5	2764 .69 8.4																					
		410	10983 1.31 18.7	9697 1.36 14.6	8772 1.36 13.0	7454 1.32 11.0	5254 1.12 9.6																					
		430	11519 1.51 20	10346 1.56 16.1	9464 .157 14.8	8361 1.55 12.7	6657 1.43 11.2	3593 1.04 10.1																				
		450	12055 1.74 21	10988 1.79 17.7	10145 1.80 16.5	9191 1.79 14.6	7907 1.73 12.9	5826 1.48 11.6																				
		470	12591 1.98 23	11596 2.04 19.2	10816 2.05 18.1	10003 2.05 16.5	8871 2.01 14.7	7226 1.86 13.4																				
		490	13126 2.24 24	12173 2.30 21	11478 2.32 19.6	10704 2.32 18.5	9734 2.30 16.6	8480 2.21 15.2	2817 1.18 13.2																			
		510	13662 2.53 25	12746 2.59 22	12132 2.61 21	11389 2.62 20	10558 2.61 18.5	9494 2.56 17.0	5949 2.07 14.6																			
		530	14198 2.84 27	13316 2.90 24	12780 2.93 23	12064 2.93 22	11349 2.94 21	10381 2.91 18.9	7528 2.59 16.5																			
		550	14734 3.17 28	13884 3.24 25	13421 3.27 24	12732 3.28 24	12042 3.29 23	11211 3.27 21	8806 3.03 18.3	3594 1.83 16.8																		
		570	15269 3.53 30	14450 3.60 27	14040 3.63 26	13392 3.65 25	12726 3.65 24	12025 3.66 23	10051 3.51 20	6635 2.89 18.3																		
		590	15805 3.91 31	15013 3.99 28	14617 4.02 27	14045 4.04 27	13402 4.05 26	12760 4.06 25	11014 3.97 22	8243 3.50 19.9																		
		610	16341 4.32 33	15575 4.40 30	15192 4.44 29	14693 4.46 28	14071 4.47 27	13449 4.48 27	11904 4.43 24	9535 4.10 22	5347 3.18 20																	
		630	16877 4.76 34	16135 4.84 32	15764 4.88 31	15335 4.91 29	14733 4.92 29	14131 4.93 28	12735 4.91 26	10788 4.69 24	7723 3.94 22																	
650	17412 5.23 36	16694 5.31 34	16334 5.35 32	15972 5.39 31	15389 5.40 30	14805 5.41 30	13554 5.41 28	11866 5.27 26	9277 4.78 24	4095 2.94 22																		
670	17948 5.73 38	17251 5.81 35	16902 5.85 34	16553 5.90 33	16039 5.91 32	15473 5.93 31	14341 5.95 29	12790 5.85 27	10557 5.45 26	7309 4.65 23																		
680	18216 5.99 39	17529 6.07 36	17185 6.12 35	16842 6.16 34	16363 6.18 33	15805 6.19 32	14689 6.21 30	13225 6.14 28	11187 5.79 27	8303 4.94 24																		
690	18484 6.26 39	17807 6.34 37	17468 6.39 36	17129 6.43 35	16685 6.46 34	16135 6.47 33	15036 6.49 31	13643 6.43 29	11810 6.15 28	9108 5.41 26																		
700	18752 6.53 40	18084 6.62 38	17750 6.66 37	17417 6.71 36	17005 6.74 35	16464 6.75 34	15380 6.77 32	14059 6.72 30	12426 6.53 28	9885 5.95 27	5422 4.26 25																	
710	19020 6.82 41	18359 6.91 39	18032 6.95 38	17703 6.99 37	17325 7.03 36	16791 7.04 35	15723 7.06 33	14471 7.03 31	12904 6.86 29	10531 6.33 28	6954 5.27 26																	
720	19288 7.11 42	18636 7.20 40	18314 7.24 39	17990 7.29 38	17644 7.33 37	17117 7.34 36	16064 7.37 34	14880 7.35 32	13369 7.20 30	11170 6.72 29	8311 5.81 27																	
730	19555 7.41 43	18913 7.50 41	18595 7.55 40	18275 7.59 39	17955 7.64 38	17442 7.65 37	16403 7.67 35	15287 7.67 33	13830 7.55 32	11082 7.12 30	9123 6.20 28																	
740	19823 7.72 44	19189 7.81 42	18876 7.86 41	18560 7.90 40	18245 7.95 39	17766 7.97 38	16741 7.99 36	15691 8.01 34	14281 7.90 33	12428 7.53 31	9926 6.74 29	5250 4.74 28																
750	20091 8.03 45	19466 8.13 43	19157 8.18 42	18845 8.22 41	18534 8.27 40	18089 8.29 39	17077 8.32 37	16066 8.34 36	14701 8.24 34	13047 7.96 32	10676 7.34 30	6592 6.06 29																

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

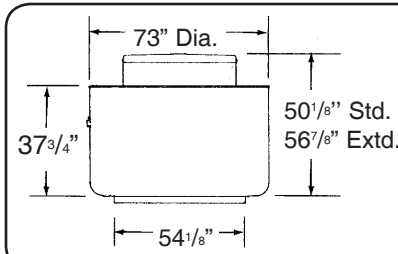
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Upblast Roof Vents

VUBK 42

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = 39.60 x $\left[\frac{\text{RPM}}{1000}\right]^3$
 Tip Speed = 11.26 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 530 lbs.
 Roof Opening = 41-12" Sq.
 Curb O. D. = 52-1/2" Sq.
 Damper Size = 48" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
S1 (1)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
T1 (1-12)	215	8225 .36 6.5	6840 .39 5.1										
	230	8799 .44 7.4	7505 .47 6.1	4752 .41 4.4									
	245	9372 .53 8.3	8159 .57 7.1	7610 .55 5.3									
	260	9946 .64 9.1	8804 .67 8.0	7188 .68 6.4									
	275	10520 .76 9.9	9441 .79 8.8	8111 .81 7.4	5046 .68 6.1								
	290	11094 .89 10.8	10071 .93 9.7	9008 .96 8.5	6655 .87 7.0								
	305	11668 1.03 11.6	10695 1.07 10.6	9715 1.11 9.5	7855 1.08 8.1								
	320	12242 1.19 12.5	11314 1.23 11.5	10382 1.28 10.6	8902 1.26 9.2	6182 1.10 8.1							
	335	12815 1.37 13.5	11929 1.41 12.4	11040 1.46 11.5	9824 1.47 10.3	7698 1.34 9.1							
	350	13389 1.56 14.6	12541 1.61 13.5	11691 1.65 12.6	10725 1.69 11.5	8904 1.62 10.2							
	365	13963 1.77 15.7	13150 1.82 14.7	12335 1.87 13.7	11515 1.92 12.7	9997 1.87 11.4	7650 1.66 10.5						
	380	14537 1.99 17.0	13755 2.05 15.9	12974 2.10 15.0	12187 2.15 14.1	10927 2.13 12.7	9085 2.03 11.8						
395	15111 2.24 18.2	14359 2.29 17.2	13609 2.35 16.3	12851 2.40 15.4	11838 2.41 14.1	10235 2.34 13.2	7887 2.06 12.4						
410	15685 2.50 19.5	14960 2.56 18.5	14237 2.62 17.7	13508 2.67 16.8	12732 2.72 15.6	11297 2.65 14.6	9400 2.46 13.8						
425	16258 2.79 21	15559 2.85 19.8	14862 2.91 19.0	14160 2.96 18.3	13456 3.02 17.2	12226 2.98 16.1	10626 2.89 15.3						
440	16832 3.09 22	16157 3.15 21	15483 3.22 20	14806 3.28 19.6	14126 3.34 18.9	13138 3.33 17.6	11761 3.25 16.8						
455	17406 3.42 23	16753 3.48 23	16102 3.55 22	15448 3.61 21	14790 3.67 20	14034 3.71 19.2	12741 3.63 18.4	8994 3.18 17.0					
470	17980 3.77 25	17347 3.84 24	16717 3.90 23	16085 3.97 23	15448 4.03 22	14812 4.10 21	13664 4.04 19.9	10512 3.66 18.5					
485	18554 4.14 26	17940 4.21 26	17330 4.28 25	16719 4.35 24	16102 4.41 23	15484 4.48 23	14572 4.47 21	11828 4.25 20					
500	19128 4.54 28	18532 4.61 27	17940 4.68 26	17347 4.75 25	16750 4.82 25	16151 4.89 24	15466 4.93 23	12973 4.76 22					
515	19701 4.96 29	19123 5.03 28	18548 5.10 27	17973 5.17 27	17394 5.25 26	16813 5.32 25	16232 5.39 24	14064 5.24 23	10698 4.64 22				
530	20275 5.41 30	19714 5.48 29	19155 5.55 28	18596 5.63 28	18034 5.70 27	17469 5.77 27	16905 5.85 26	14998 5.76 24	12204 5.32 23				
545	20849 5.88 31	20303 5.95 30	19759 6.03 30	19215 6.11 29	18671 6.18 28	18121 6.26 28	17572 6.33 27	15918 6.30 25	13435 6.05 24				
560	21423 6.38 32	20891 6.46 32	20362 6.53 31	19833 6.61 30	19304 6.69 30	18769 6.77 29	18235 6.84 29	16825 6.88 27	14579 6.69 26	11296 5.89 24			
575	21997 6.90 33	21479 6.98 33	20963 7.06 32	20448 7.14 32	19933 7.22 31	19413 7.30 30	18893 7.38 30	17720 7.49 28	15674 7.29 27	12812 6.69 26			
590	22570 7.46 35	22065 7.54 34	21563 7.62 33	21061 7.70 33	20559 7.79 32	20054 7.87 32	19547 7.95 31	18532 8.11 30	16610 7.93 29	14176 7.61 27			
605	23144 8.04 36	22652 8.13 35	22162 8.21 35	21672 8.29 34	21189 8.38 34	20691 8.46 33	20196 8.54 33	19207 8.71 32	17533 8.61 30	15329 8.36 29	12214 7.42 28		
620	23718 8.65 37	23237 8.74 37	22759 8.83 36	22281 8.91 36	21804 9.00 35	21325 9.09 35	20842 9.17 35	19877 9.34 34	18443 9.32 32	16463 9.13 30	13731 8.36 29		
635	24292 9.30 39	23822 9.39 38	23356 9.47 38	22889 9.56 37	22423 9.65 37	21956 9.74 37	21485 9.83 36	20543 10.00 36	19343 10.06 34	17491 9.85 32	15136 9.46 31	11640 8.33 30	
650	24866 9.97 41	24407 10.06 40	23951 10.15 40	23495 10.24 39	23039 10.33 39	22584 10.42 38	22125 10.51 38	21204 10.69 37	20233 10.85 36	18423 10.26 34	16292 10.33 33	13387 9.30 31	

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

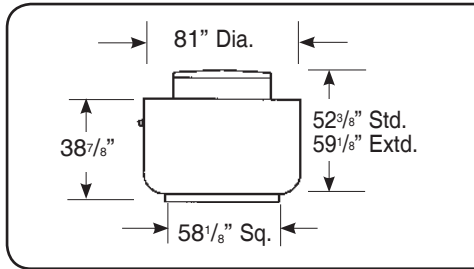
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Uphlast Roof Vents

VUBK 48

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = 66.04 × $\left[\frac{\text{RPM}}{1000}\right]^3$

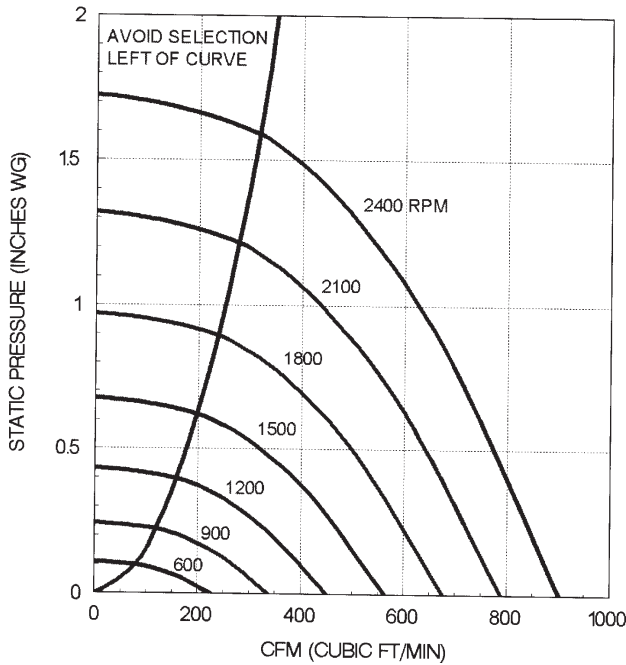
Tip Speed = 12.83 × RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 585 lbs.
 Roof Opening = 53-1/2" Sq.
 Curb O. D. = 56-1/2" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.														
T1 (1-1/2)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000			
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES		
V1 (2)	200	11712 .46 7.4	9785 .52 5.9													
	220	12383 .61 8.7	11136 .68 7.2	8433 .74 6.5												
	240	14054 .80 10.0	12457 .87 8.7	10432 .91 7.9												
	260	15226 1.01 11.5	13755 1.10 10.3	12111 1.16 9.6	9063 1.23 9.3											
	280	16397 1.26 13.5	15036 1.36 12.2	13643 1.44 11.4	11568 1.45 11.0											
	W1 (3)	290	16982 1.40 14.5	15670 1.50 13.2	14326 1.59 12.4	12438 1.61 11.9										
		300	17568 1.55 15.5	16300 1.65 14.2	15002 1.75 13.4	14133 1.78 12.9	10428 1.88 12.8									
		310	18154 1.71 16.6	16927 1.82 15.3	15673 1.91 14.4	14133 1.97 13.9	11783 2.09 13.7									
		320	18739 1.89 17.6	17551 1.99 16.4	16338 2.09 15.5	14692 2.17 15.0	13042 2.17 14.7									
		330	19325 2.07 18.7	18172 2.18 17.5	16999 2.28 16.6	15780 2.37 16.1	13941 2.38 15.7	10731 2.33 15.7								
X1 (5)		340	19910 2.26 19.7	18792 2.38 18.6	17655 2.48 17.7	16508 2.58 17.3	14803 2.60 16.9	12330 2.85 16.8								
		350	20496 2.47 21	19409 2.58 19.7	18307 2.70 18.8	17193 2.80 18.4	15652 2.83 18.0	13607 2.95 17.8								
		360	21082 2.69 22	20025 2.81 21	18956 2.92 19.9	17873 3.03 19.5	16490 3.08 19.1	14805 3.08 18.9	11497 2.94 18.9							
		370	21667 2.92 23	20639 3.04 22	19601 3.16 21	18547 3.27 21	17317 3.35 20	15678 3.35 20	13190 3.71 20							
		Y1 (7-1/2)	380	22253 3.16 24	21251 3.29 23	20243 3.41 22	19217 3.52 22	18135 3.63 21	16539 3.63 21	14474 3.84 21						
	390		22838 3.41 26	21863 3.54 24	20883 3.67 24	19883 3.79 23	18883 3.91 23	17389 3.92 22	15734 3.97 22							
	400		23424 3.68 27	22472 3.82 26	21519 3.95 25	20545 4.07 24	19570 4.19 24	18229 4.23 24	16712 4.23 24							
	410		24010 3.97 28	23081 4.10 27	22154 4.24 26	21203 4.36 25	20252 4.49 25	19059 4.55 25	17579 4.56 25							
	C1 (10)		420	24595 4.26 29	23689 4.41 28	22784 4.55 27	21857 4.67 27	20929 4.80 26	19880 4.89 26	18436 4.90 26	14018 4.97 26					
			430	25181 4.58 30	24295 4.72 29	23412 4.86 28	22509 5.00 28	21602 5.12 27	20694 5.25 27	19283 5.25 27	15587 5.76 27					
440			25766 4.90 32	24901 5.05 31	24038 5.20 30	23157 5.33 29	22271 5.47 28	21385 5.60 28	20120 5.63 28	16867 5.93 28						
450			26352 5.25 33	25506 5.40 32	24662 5.55 31	23803 5.69 30	22937 5.82 29	22070 5.96 29	20950 6.02 29	18126 6.10 29						
C1 (10)			460	26938 5.60 34	26110 5.76 33	25284 5.91 32	24446 6.06 32	23599 6.19 31	22751 6.33 30	21771 6.43 30	19133 6.43 30					
			470	27523 5.98 35	26713 6.13 35	25905 6.29 34	25087 6.44 33	24258 6.58 32	23428 6.72 32	22584 6.86 31	20003 6.86 31	15746 7.00 31				
		480	28109 6.37 37	27315 6.53 36	26524 6.69 35	25726 6.84 34	24914 6.99 33	24101 7.13 33	23289 7.27 33	20863 7.31 32	17330 8.04 32					
		490	28694 6.77 38	27917 6.94 37	27142 7.10 36	26362 7.26 36	25567 7.41 35	24771 7.55 34	23975 7.70 34	21715 7.78 33	18612 8.25 33					
		C1 (10)	500	29280 7.20 39	28518 7.36 39	27758 7.53 38	26997 7.70 37	26217 7.85 36	25437 8.00 36	24657 8.15 35	22568 8.26 35	19876 8.46 34				
			510	29866 7.64 41	29118 7.81 40	28374 7.98 39	27629 8.15 39	26865 8.30 38	26100 8.45 37	25336 8.61 37	23394 8.77 36	21015 8.77 36	16412 8.47 36			
	520		30451 8.09 42	29718 8.27 42	28988 8.44 41	28257 8.62 40	27510 8.77 39	26761 8.93 39	26011 9.09 38	24222 9.29 38	21889 9.29 37	18127 9.83 37	9825 6.03 37			
	530		30137 8.57 44	30317 8.75 43	29601 8.92 42	28884 9.10 42	28154 9.27 41	27418 9.42 40	26682 9.58 40	25044 9.84 39	22754 9.84 39	19523 10.67 38	10966 6.65 38			

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

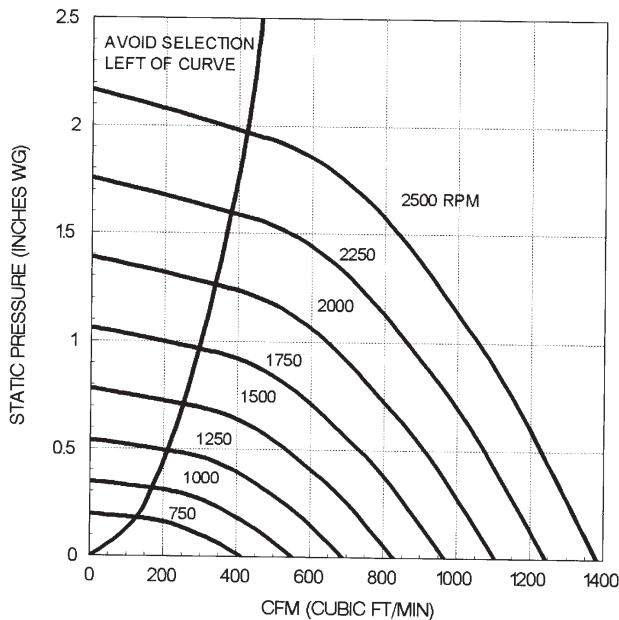
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VUBK 06 AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 08 AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 06 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
600	.000	40	39	36	37	34	30	26	22	39
	.125	58	57	51	49	47	43	39	35	52
1000	.000	58	56	52	49	48	44	40	36	53
	.125	58	57	51	49	47	43	39	35	52
1400	.000	65	62	61	58	55	55	51	46	62
	.500	68	68	64	62	59	56	52	47	65
1800	.000	71	67	70	65	63	60	59	54	69
	.375	71	69	70	65	62	59	57	53	68
	.750	74	74	73	68	66	62	59	54	71
2100	.000	78	70	76	69	67	63	63	58	73
	.500	76	73	75	69	67	63	62	57	73
2300	1.000	79	78	78	71	70	65	63	58	75
	.000	81	73	78	71	70	65	66	61	75
	.500	79	76	77	72	69	65	64	60	75
2500	1.000	79	79	79	73	71	66	64	60	76
	.000	82	76	80	74	72	68	67	63	78
	.500	81	78	79	74	71	67	66	62	77
	1.000	79	80	80	75	71	68	66	62	78
	1.500	83	84	84	78	75	71	68	64	81

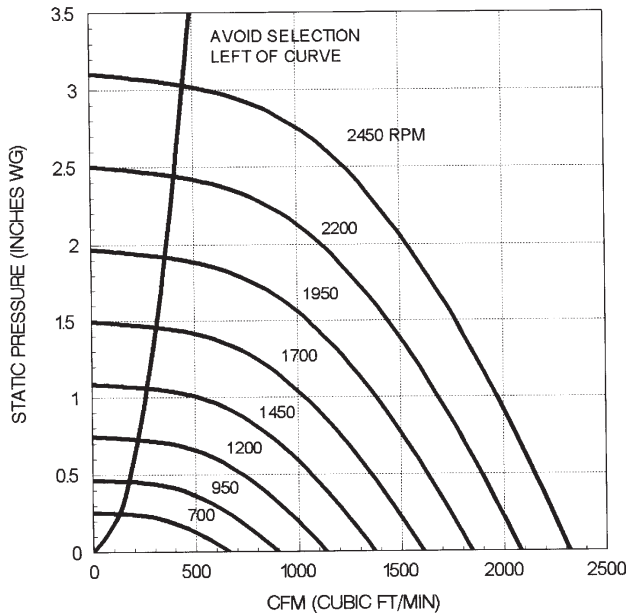
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VUBK 08 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
650	.000	52	57	42	41	39	40	38	37	47
	.250	68	70	62	53	51	48	46	41	60
1050	.000	69	68	66	54	52	50	50	48	61
	.250	68	70	62	53	51	48	46	41	60
1450	.000	69	71	70	63	58	57	58	59	67
	.500	69	68	65	60	58	57	55	53	65
1800	.000	80	74	79	70	65	61	62	63	74
	.500	79	73	74	66	63	60	60	59	71
	1.000	76	73	72	66	64	63	61	57	71
2100	.000	87	76	86	75	69	65	65	66	80
	.500	86	77	82	71	68	64	64	64	77
	1.000	83	77	80	70	68	65	64	62	75
2300	.000	90	79	88	78	72	67	67	68	82
	.750	88	80	84	74	70	66	65	65	79
2500	1.500	84	80	81	73	71	68	67	64	78
	.000	91	83	89	82	75	69	69	70	84
	.500	90	83	87	79	74	69	68	68	82
	1.000	89	83	85	77	73	68	67	67	81
	1.750	86	83	83	76	73	70	69	66	80

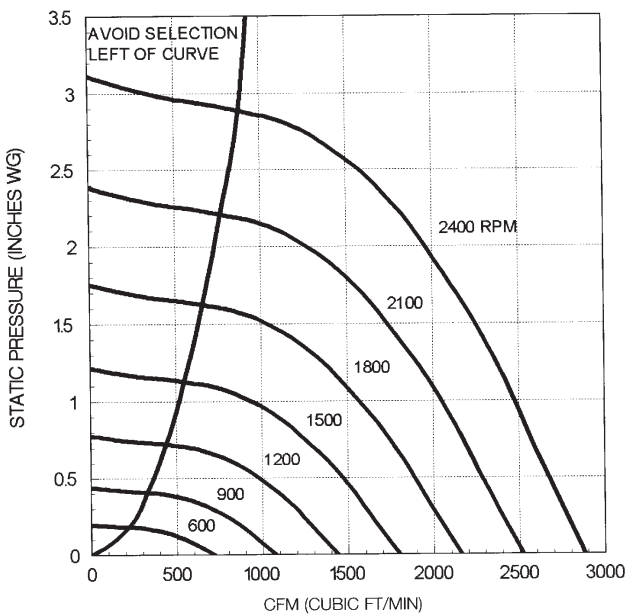
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VUBK 10
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 12
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 10
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
650	.000	52	55	50	47	47	44	37	31	51
950	.000	64	65	64	58	55	54	49	43	62
	.375	63	65	60	55	53	51	49	46	60
1300	.000	64	69	69	65	62	62	59	51	69
	.375	67	70	67	63	60	60	56	50	67
	.750	68	70	66	62	59	60	58	53	67
1650	.000	72	74	76	72	68	67	67	59	75
	.625	71	78	74	70	66	65	64	58	73
	1.250	72	78	73	69	65	64	64	60	73
2000	.000	78	78	82	78	73	71	73	65	81
	.500	76	82	81	77	72	69	70	64	80
	1.000	74	84	80	76	71	69	69	64	79
2350	2.000	76	84	80	75	70	68	69	65	78
	.000	81	84	85	83	78	75	76	71	85
	.500	79	86	86	82	77	74	74	69	84
	1.000	78	87	86	82	76	73	73	68	84
2350	2.000	75	87	85	80	75	72	73	70	83
	2.500	76	87	85	80	75	72	73	70	83

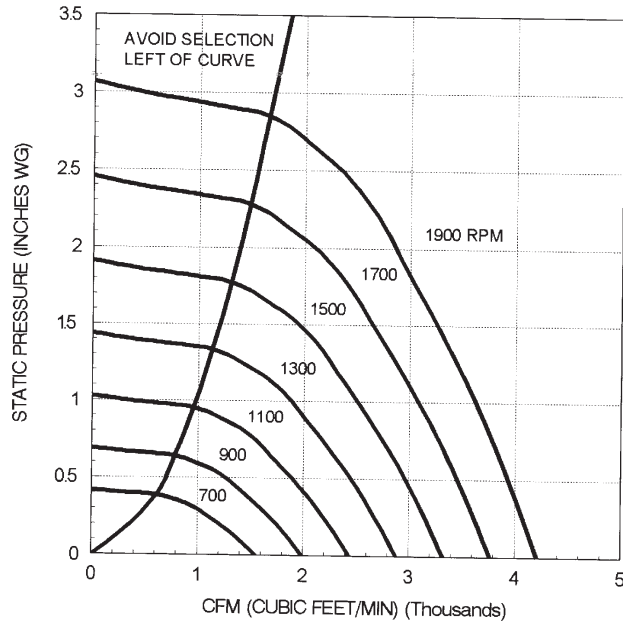
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VUBK 12
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	53	50	46	48	48	40	30	20	51
950	.000	67	68	64	59	61	59	50	40	65
	.375	67	67	64	57	56	54	50	44	62
1250	.000	70	77	74	68	65	67	60	50	73
	.375	69	77	73	67	64	65	58	51	71
	.750	69	77	73	67	62	62	58	52	70
1600	.000	72	85	82	76	69	74	69	59	80
	.750	71	85	81	75	67	68	65	59	78
	1.250	74	86	80	75	66	67	65	60	78
1950	.000	75	87	88	83	76	77	75	66	85
	.750	75	87	87	82	74	74	72	65	84
	1.250	75	87	87	82	74	72	70	65	84
	1.750	77	88	87	82	73	71	70	66	83
2250	.000	78	88	92	88	80	79	79	71	89
	1.000	77	88	92	87	79	77	76	70	88
	1.500	77	88	92	87	79	75	74	70	88
	2.000	79	89	92	86	79	75	74	70	88
	2.500	80	90	92	86	78	74	74	70	88

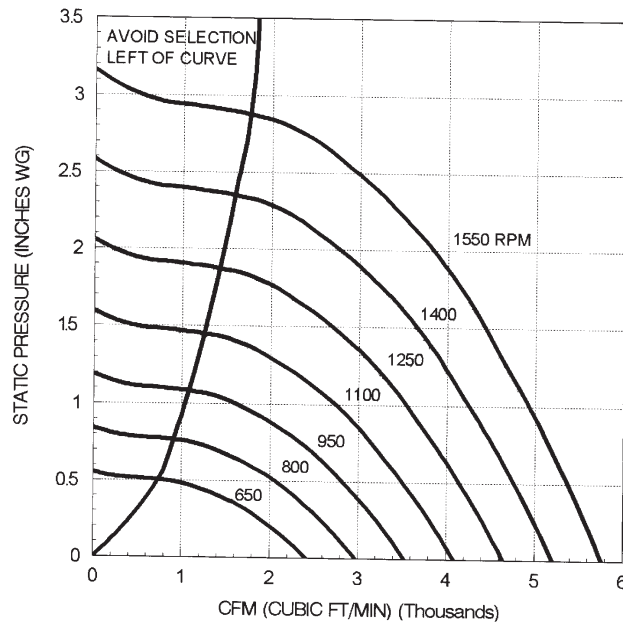
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VUBK 15 AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 18 AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 15 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
550	.000	62	64	60	55	53	48	41	33	58
	.375	72	74	71	68	64	60	55	49	70
800	.000	73	75	72	67	63	59	53	45	70
	.375	72	74	71	68	64	60	55	49	70
	.750	81	79	79	76	72	68	63	58	78
1050	.000	80	81	81	76	70	67	61	54	77
	.375	79	80	79	76	71	67	62	56	77
	.750	81	79	79	76	72	68	63	58	78
1300	.000	84	87	87	82	76	72	68	61	84
	.750	83	86	86	82	78	73	68	63	84
	1.250	85	86	85	82	78	74	70	64	84
1550	.000	87	92	93	88	82	77	73	67	89
	.750	86	91	92	87	82	78	73	67	87
	1.250	87	91	91	87	83	78	74	68	89
	1.750	88	91	91	87	83	79	74	70	89
1750	.000	89	95	96	92	85	80	77	71	93
	1.000	88	94	95	91	86	81	76	71	92
	1.500	89	95	94	90	86	81	77	72	92
	2.000	89	95	94	90	86	82	78	73	92
	2.500	90	95	94	90	87	82	78	73	92

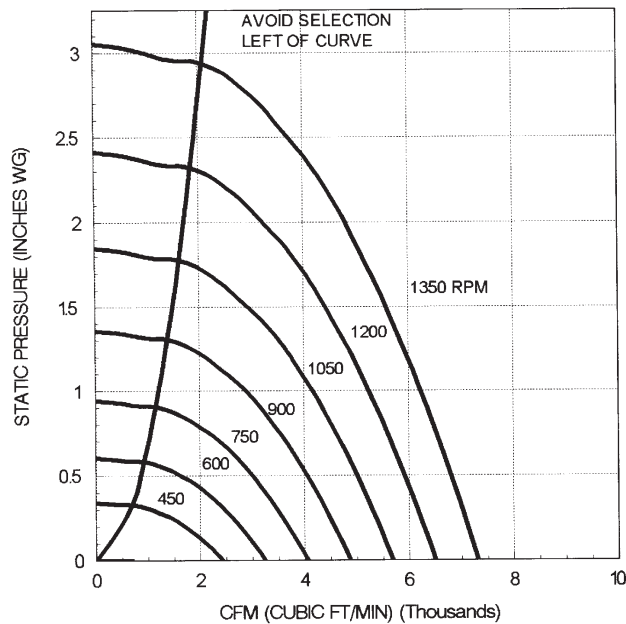
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VUBK 18 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
550	.000	67	66	59	59	58	53	46	39	62
	.375	76	75	70	66	66	62	56	49	70
750	.500	72	70	64	59	58	56	52	46	64
	.000	78	81	76	72	71	69	64	58	76
950	.375	78	79	75	70	68	66	61	55	74
	.625	76	78	73	68	66	64	60	56	72
	.000	84	85	84	77	75	74	69	64	82
1150	1.000	82	82	80	72	70	69	65	61	77
	1.500	81	81	79	72	69	68	65	61	76
	.000	88	89	90	81	79	78	74	69	86
1350	1.000	87	87	87	78	75	74	71	66	83
	1.500	86	86	85	76	73	72	70	66	81
	2.000	86	85	85	76	73	72	69	66	81
	.000	91	91	94	84	81	81	77	72	89
1500	1.000	90	90	92	82	79	78	74	69	87
	1.500	89	89	90	80	77	76	73	69	86
	2.000	88	88	89	79	75	75	72	68	84
	2.500	89	88	89	79	75	75	72	68	84
	.000	91	91	94	84	81	81	77	72	89

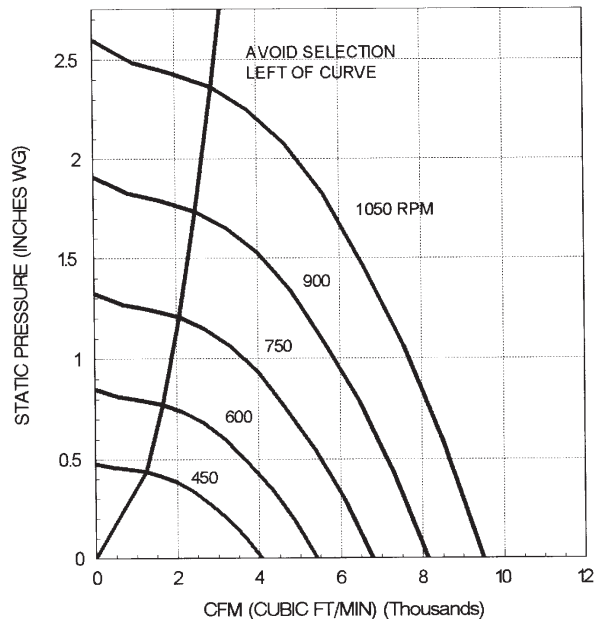
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VUBK 21
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 24
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 21
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
400	.000	59	59	57	57	55	50	43	37	59
	.500	70	71	61	60	62	60	53	46	66
600	.000	68	72	66	66	67	62	56	49	70
	.375	77	77	75	72	72	69	64	57	76
	.750	78	77	72	66	67	66	61	54	73
775	.000	84	82	82	77	76	75	70	64	82
	.500	84	82	80	74	73	72	67	61	79
	1.250	85	83	80	71	71	72	67	60	78
950	.000	90	85	87	81	79	80	75	69	86
	1.000	89	87	86	77	75	77	72	66	83
	1.500	90	87	86	76	74	76	73	66	83
	2.000	90	87	86	76	74	76	73	68	83
1125	.000	93	90	91	85	83	83	79	73	90
	1.000	91	91	90	83	80	80	76	71	88
	1.500	92	91	90	82	78	79	76	70	87
	2.000	93	92	90	81	77	79	77	70	87
	2.750	93	92	90	80	77	79	77	70	87

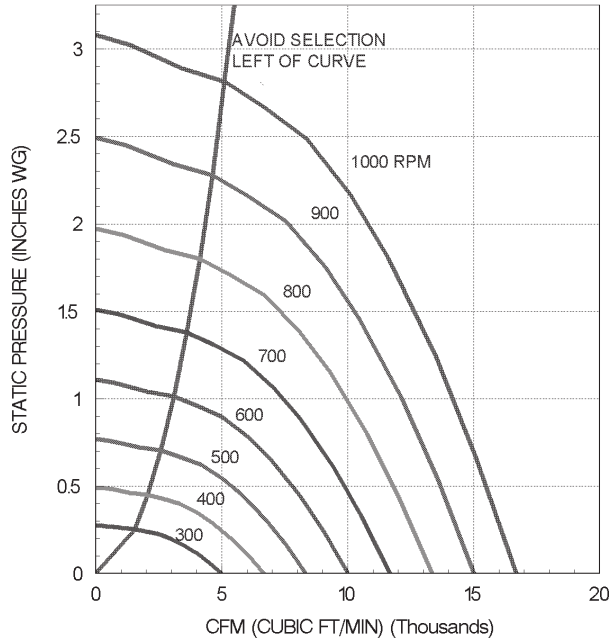
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VUBK 24
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
400	.000	69	68	61	59	60	59	50	40	65
	.500	76	78	72	67	66	67	61	51	73
550	.000	75	75	68	64	64	62	57	50	69
	.375	74	75	67	62	63	62	56	50	68
	.625	74	75	67	62	63	62	56	50	68
700	.000	82	84	80	73	71	72	70	60	79
	.500	81	82	78	71	69	69	64	58	76
	.750	82	81	77	69	68	69	64	57	75
	1.000	82	81	77	68	68	68	64	57	75
850	.000	87	89	87	78	75	76	76	67	84
	.500	86	88	85	77	73	75	72	65	82
	.750	86	87	85	76	72	75	70	64	82
	1.000	87	87	84	75	72	74	70	63	81
	1.500	87	86	84	73	71	73	70	63	81
1000	.000	90	93	92	84	79	80	81	73	89
	.500	90	92	91	83	78	79	78	71	87
	1.000	90	91	89	81	76	78	75	69	86
	1.500	90	91	89	80	76	77	75	68	85
	2.000	91	90	89	79	75	77	74	68	85

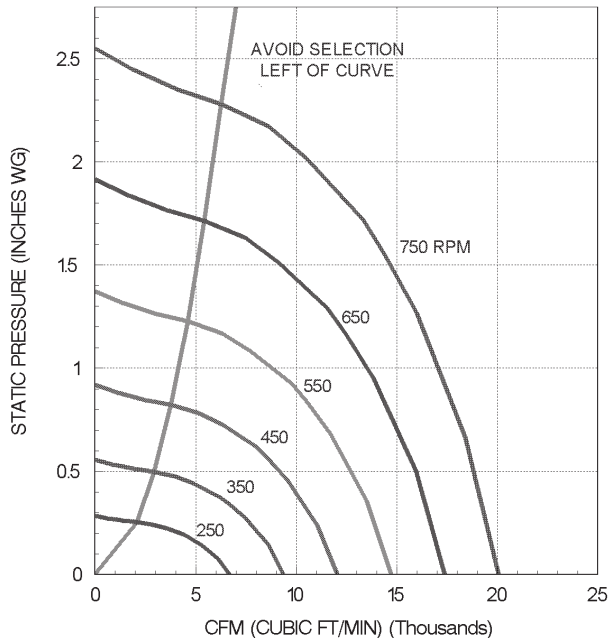
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VUBK 30
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 36
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 30
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
275	.000	64	61	60	60	56	49	43	37	61
	.375	73	70	66	67	65	59	52	46	69
475	.000	78	78	73	72	71	66	60	53	75
	.375	77	74	67	66	65	61	56	51	69
	.625	77	72	65	63	62	59	54	50	67
575	.000	82	83	79	76	76	72	66	59	80
	.500	81	81	74	71	70	67	62	57	75
	.750	82	79	71	67	67	64	60	55	72
675	.000	85	88	84	80	80	77	71	64	84
	.500	85	87	81	76	76	73	68	62	81
	1.000	86	85	77	71	70	69	64	60	77
	1.250	86	85	77	71	70	69	64	60	77
775	.000	88	93	88	83	83	82	75	69	88
	.500	88	91	86	80	80	79	73	67	86
	.750	88	91	85	78	79	77	71	66	84
	1.000	88	90	83	76	76	75	70	65	83
	1.500	89	90	81	74	74	73	68	64	81

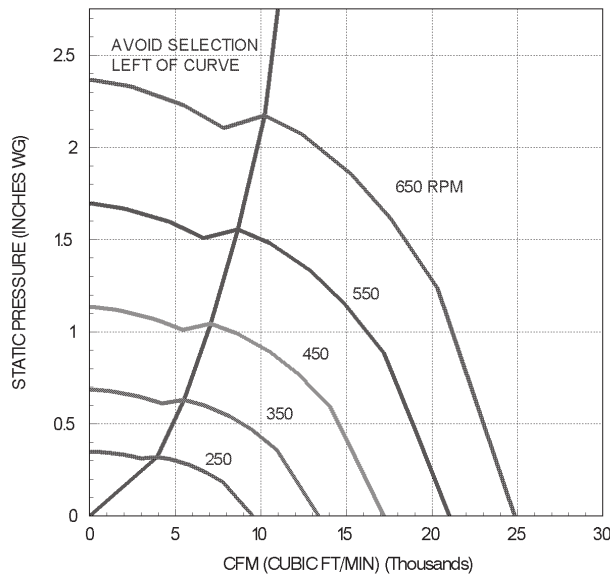
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VUBK 36
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
250	.000	71	67	63	61	59	60	61	61	67
	.375	78	75	70	67	65	65	66	66	73
400	.000	83	82	76	72	70	69	70	71	78
	.375	81	78	72	68	66	66	64	58	73
	.625	80	74	69	65	64	60	55	51	69
475	.000	87	87	82	77	74	73	74	74	82
	.500	86	84	78	72	71	70	70	64	78
	.750	86	81	75	70	69	67	64	59	75
550	.000	91	92	86	80	78	76	77	78	86
	.500	91	90	83	77	76	73	76	71	83
	1.000	91	86	80	74	73	71	68	63	79
	1.250	91	85	78	72	72	69	63	59	78
600	.000	93	94	89	83	80	78	79	79	88
	.500	92	93	87	80	78	76	78	74	86
	.750	92	92	85	78	77	75	77	72	85
	1.000	93	90	84	77	76	74	73	68	83
	1.250	93	89	82	76	75	73	69	65	81

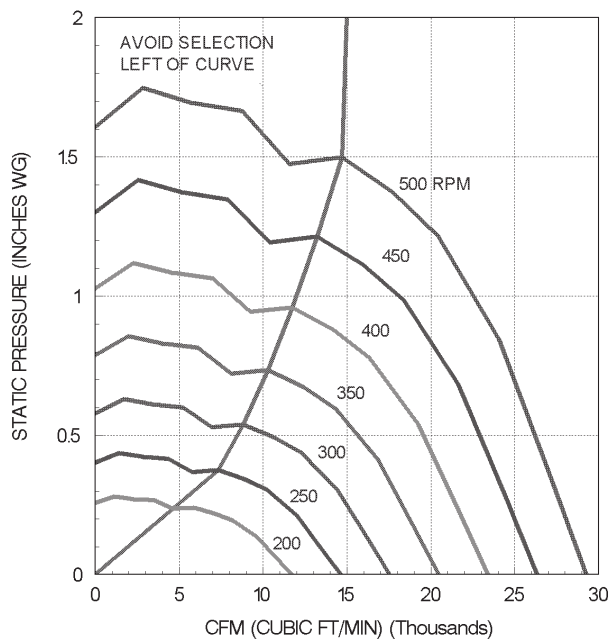
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VUBK 42
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 48
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VUBK 42
SOUND PERFORMANCE

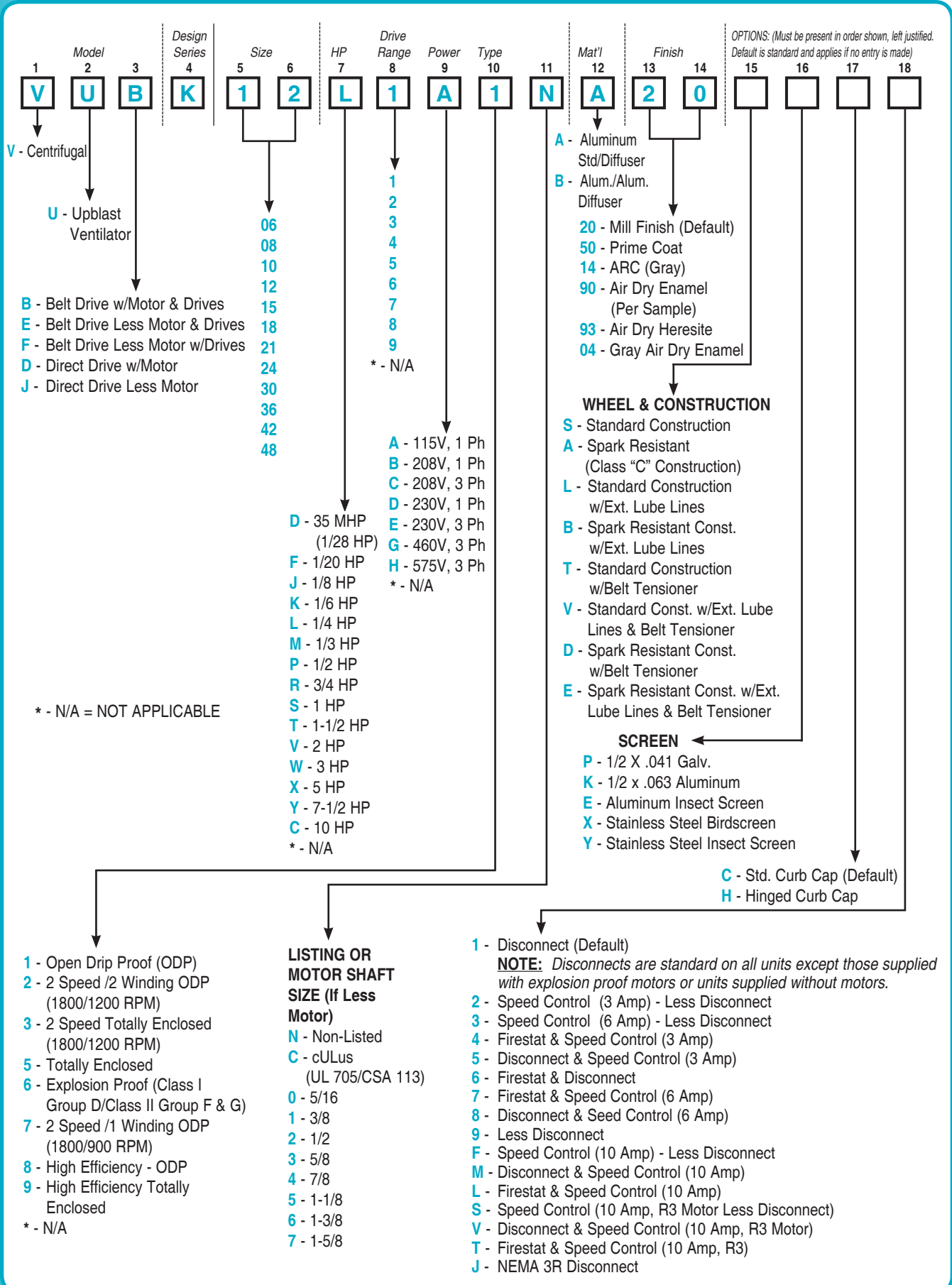
RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
215	.000	68	67	63	60	58	59	51	42	64
	.375	75	73	70	67	63	65	59	51	71
275	.000	82	79	76	72	69	69	66	57	76
	.250	82	78	73	69	66	67	62	50	73
	.500	80	75	70	67	64	61	56	48	70
335	.000	87	83	80	76	73	71	71	62	80
	.375	87	82	77	72	70	69	67	55	77
	.750	86	78	74	70	68	64	59	52	73
390	.000	91	87	84	80	76	73	75	67	83
	.375	91	86	82	76	74	72	73	62	81
	.750	91	84	79	74	72	69	67	58	79
445	1.000	91	82	78	73	71	68	62	56	77
	.000	95	90	87	83	80	75	79	71	86
	.500	95	90	85	79	77	74	77	66	84
500	.750	95	89	84	78	76	73	75	64	83
	1.000	95	87	83	77	75	72	70	62	82
	1.250	96	86	81	76	74	71	66	60	80

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

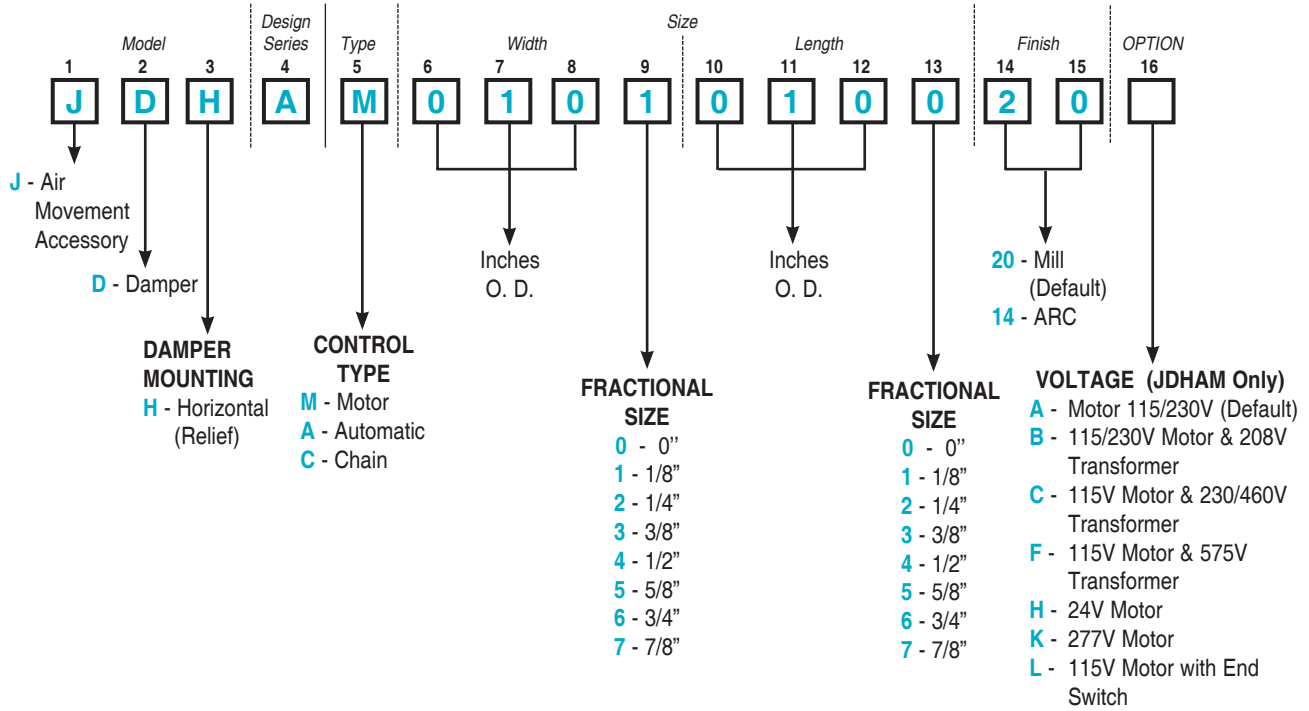
VUBK 48
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
200	.000	77	69	65	63	59	59	52	44	66
	.250	83	77	72	69	65	64	59	52	72
250	.000	89	84	77	73	70	68	65	58	77
	.250	89	82	73	69	68	66	62	52	74
	.500	89	81	72	67	67	64	59	51	73
300	.000	93	89	81	77	74	71	70	63	81
	.375	94	87	78	72	71	69	66	57	78
	.625	94	87	77	70	71	68	64	56	77
350	.000	97	94	85	80	78	74	74	67	85
	.250	98	93	83	77	76	73	73	64	83
	.500	98	92	82	74	75	72	71	62	82
400	.750	99	92	81	73	74	71	68	60	82
	.000	99	98	89	84	81	77	77	71	88
	.250	100	97	88	81	79	76	76	69	87
450	.500	100	96	87	79	78	76	75	67	86
	.750	101	96	86	78	77	75	73	65	86
	1.000	101	96	86	77	77	74	71	64	85

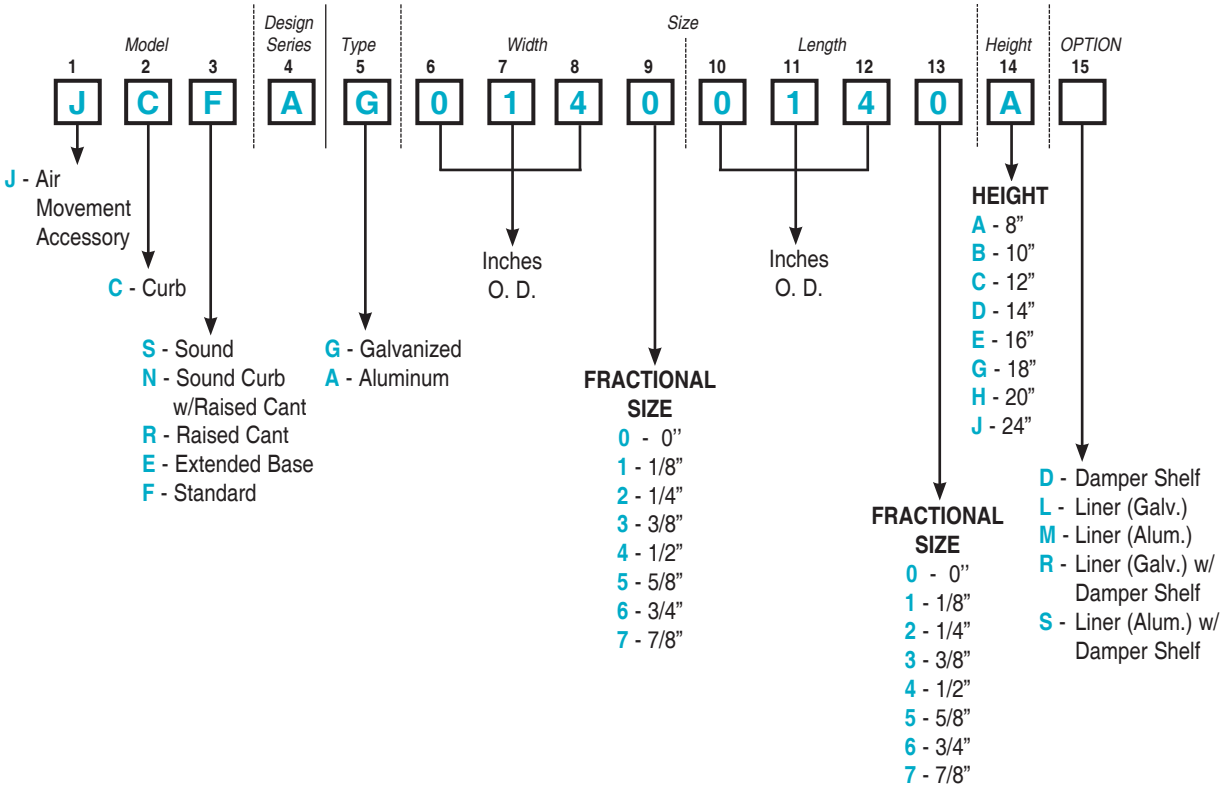
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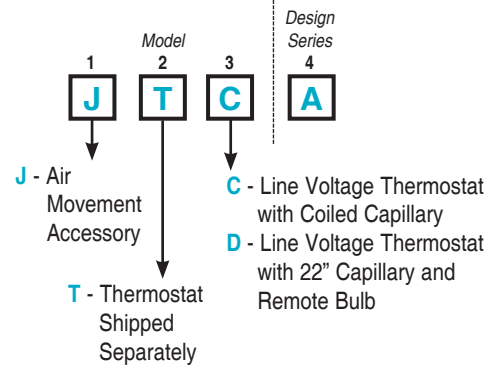
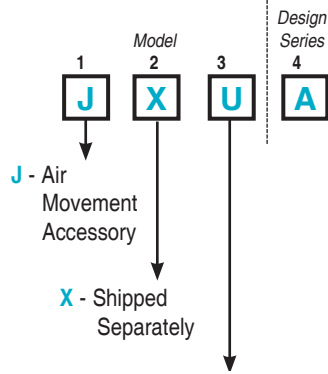
▼ **Dampers**



▼ **Curbs**

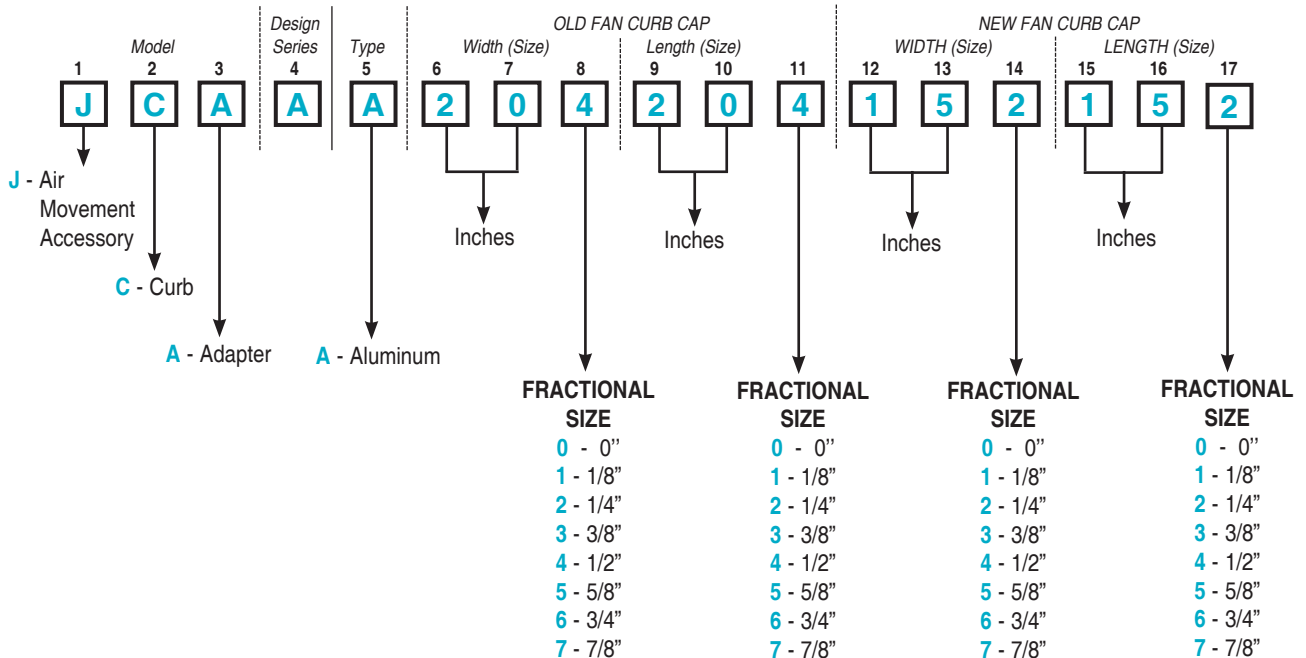


▼ Electrical Accessories



- A - Firestat
 - J - 3 Pole, 3 Ph Explosion Proof
 - K - 2 Pole, 1 Ph Explosion Proof
 - L - 2 Pole, 1 Ph Safety Disconnect
 - M - 3 Pole 3 Ph Safety Disconnect
 - N - 3 Pole, 3 Ph NEMA 1
 - P - 2 Speed, 6 Pole NEMA 3R Non-Fusible
 - R - 1 or 3 Ph to 1 HP, for 2-Speed 2 Winding Motors
 - S - 1 Ph to 1/2 HP, for 2-Speed 2 Winding Motors
 - T - 3 Ph to 2 HP, for 2-Speed 2 Winding Motors
 - U - Solid State Speed Controller - 3A (115V/1 ϕ)
 - V - Solid State Speed Controller - 6A (115V/1 ϕ)
 - W - Solid State Speed Controller - 10A (115V/1 ϕ)
 - Y - Solid State Speed Controller - 10A R3 Motor (115V/1 ϕ)
- Disconnect Switches**
- Hi-Low-Off Switches**
- Speed Control**

▼ Curb Cap Adapters



**CENTRIFUGAL UPBLAST ROOF EXHAUSTERS
COMMERCIAL KITCHEN APPLICATIONS
Belt Driven Model VRBK**

DESIGNED AND ENGINEERED TO MEET INDUSTRY NEEDS

The Carnes Company series VR centrifugal upblast fan is designed and built to handle the exhaust of hot, greasy air from commercial kitchen hoods. Maximum exhaust temperature for continuous operation is 300°F. The Model VRBK fan discharges contaminated air away from supply air intakes and building exteriors. These exhaust fans can be roof or wall mounted through size 24 (with HP limitations shown below). Sizes 30-48 are to be roof mounted only.

The unique diffuser/support structure combined with

the backwardly inclined wheel and deep spun venturi enable the Carnes VR series upblast fans to operate at high static pressures (up to 3 inches w.g.) as standard. The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow along with protection from entry of adverse weather elements. The air flow design of these fans has been thoroughly tested at Carnes' accredited laboratory.

Testing has also been conducted to ensure trouble-free start-up and to ensure product durability and dependability of operation.



Model VRBK - Sizes 06 through 24

Designed for roof or wall mounted installations except for the following:

Selections which are suitable for roof mount only-

VRBK 10 - 1½ HP	VRBK 18 - 3 HP
VRBK 12 - 1½ HP	VRBK 24 - 5 HP
VRBK 15 - 2 HP	VRBK 24 - 7½ HP

The Models VRBK sizes 06-24 incorporate the patented diffuser assembly. This unique support framework enhances the units structural integrity while increasing the static pressure capabilities up to 3 inches w. g. Housing construction is a spun aluminum outer shroud with a spark resistant wheel.

Model VRBK - Sizes 30 through 48

Designed for roof mounted installation only.

Models VRBK sizes 30-48 are designed with a two piece spun and shaped aluminum housing for ease of accessibility to the unit interior. Structural rigidity is accomplished by utilizing a circular welded steel support frame.



▼ TYPICAL SPECIFICATIONS
VRBK Belt Drive Series

Upblast exhaust ventilators shall be of the centrifugal belt driven type. The motor compartments shall be constructed of heavy-gauge aluminum mounted on an independent support structure. The outer shroud shall have a rolled bead for added strength. The wheel and spun inlet venturi shall be a centrifugal design of non-sparking construction. For maximum performance and quiet, efficient operation, the wheel shall overlap the inlet venturi and have backward inclined blades. The wheels shall be dynamically balanced to assure smooth and vibration-free rotation under maximum loading. The complete drive assembly, including the motor and the wheel, shall be mounted on vibration isolators. Motor and drives shall be factory mounted. All fans shall be test run prior to shipment.

Motor and drives shall be isolated from the exhaust airstream. Air for cooling the motor shall be supplied to the internal motor compartment through a vent tube from a location free from discharge contaminants. Motors shall be of the heavy-duty type with permanently lubricated, sealed ball bearings. Motors shall be readily accessible for maintenance. Wheel shaft shall be ground, polished, coated with a rust inhibitive finish and mounted in heavy-duty,

permanently sealed pillowblock ball bearings which are capable of 200,000 hours of life, average operation. Drives shall be sized at a minimum of 165% of driven horsepower. Drive belts shall be oil-resistant, non-static and be capable of 25,000 hours of life, average operation. Sheaves shall be fully machined cast iron or pressed steel, keyed and securely attached to the shafts. Variable pitch motor sheaves shall be standard.

The motor shall be factory wired to the disconnect switch. The disconnect shall be mounted in a listed junction box, suitable for wet locations. Wiring from the disconnect will travel through listed, flexible conduit to the motor compartment.

Horsepower and noise levels shall not exceed the published values and oversized motors will not be acceptable. Performance ratings shall be AMCA licensed for air and sound.

Centrifugal power upblast ventilators for commercial kitchen applications shall be Carnes Company Model VRBK, belt drive, sizes 06 through 48, as manufactured at Carnes Company of Verona, Wisconsin.

AMCA LICENSED AIR and SOUND DATA

Licensed to bear the AMCA Seal for both air and sound.

The Carnes Company certifies that the Model VRBK shown herein is 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.



UL LISTINGS

Model VRBK fans are Listed to UL Standard 762 and to ULC Standard S-645-93. File Number MH11908. UL Listing may be optional and must be specified when required.



POWER VENTILATOR
FOR RESTAURANT
EXHAUST APPLIANCES

CONSTRUCTION

FAN HOUSING

- Constructed with heavy-gauge aluminum.
- Designed for maximum weather protection, outer shroud prevents the entrance of inclement weather.
- Outer shroud beaded for rigidity.
- Fan plate designed to prevent the entrance of contaminated air and airborne particles into the motor compartment.
- Two piece motor cover design (lid and motor tube) allows easy access to motor, drives and bearings for maintenance.
- Drain opening is integral with upblast shroud. Optional drain fitting and grease trough capture grease and keep it off of the roof.

MOTOR/ELECTRICAL

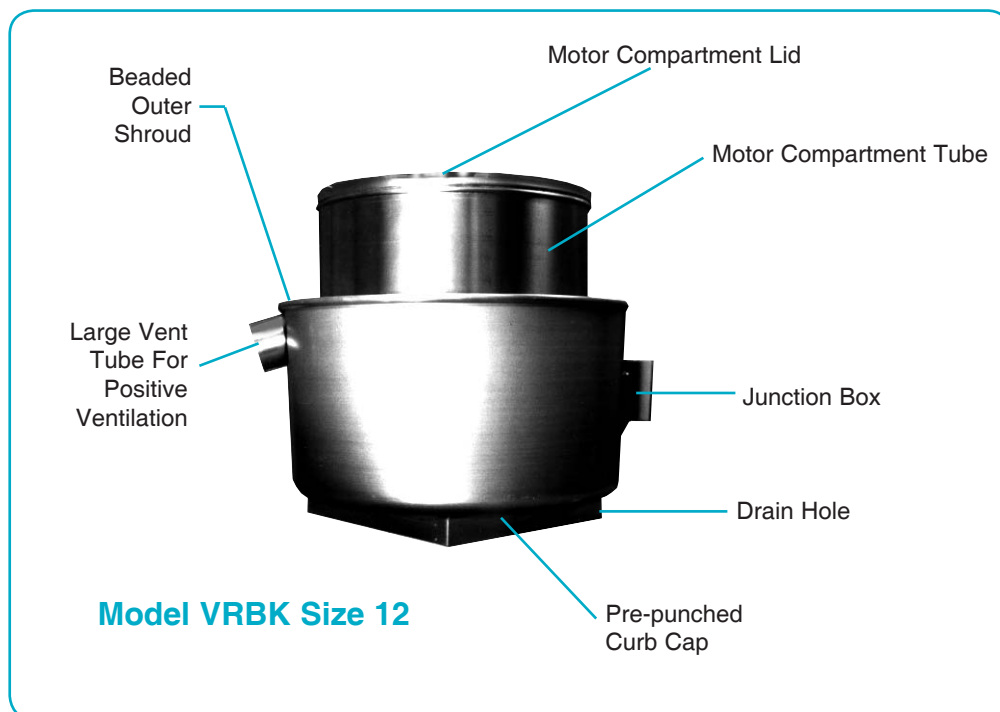
- Model VRBK fans are **UL** Listed for grease removal under Standard 762 and ULC S-645.
- All motors are **UL** or **CSA** recognized components.
- Disconnect comes mounted and wired.
- Wiring is protected by listed, flexible conduit and is external to the exhaust air stream.

MOTOR SUPPORT ASSEMBLY

- Heavy-gauge motor mounting system is bolted together and made of galvanized and galvanized steel components.
- Easily adjustable belt tension.
- Motor plate accommodates multiple motor frames.
- Isolated from fan plate to reduce vibration and noise transmission.
- Allows horizontal adjustment of wheel.
- Electrically grounded to meet **NEC** and **UL** requirements.

MOTOR COMPARTMENT/TUBE

- Motor compartment insulated for operating temperatures to 300°F.
- Large vent tube provides positive motor cooling to maximize motor life.
- Easily removable lid and tube utilize durable threaded fastener retainers.
- Fan plate isolates motor compartment from contaminated exhaust air.
- Opening around shaft sized to allow optimum air passage to ensure proper motor compartment cooling.



FEATURES

BEARINGS/SHAFT

- Dual bearings utilized to properly support the fan shaft.
- Prelubricated sealed, self-aligning.
- Rated at 200,000 hours average operation.
- Polished CRS fan shaft with rust inhibitive coating.

DRIVES

- Selected for 165% of the motor horsepower.
- Adjustable V-belt drives with oil resistant non-static conducting belts.
- Dual belts standard on units 5 HP and larger.
- Factory preset fan RPM.
- Adjustable sheaves allow for final air system balancing.

WHEEL

- Backward inclined wheels constructed of non-corrosive or coated heavy-gauge material. Wheel sizes 6-24 are aluminum, above 24 are steel.
- Usage of cooling fins on fan wheel backplate draws cooling air down over the motor facilitating motor longevity while motor remains out of the airstream.
- Self-limiting power characteristics.
- Dynamically balanced and test run in each individual unit.

SUPPORT STRUCTURE

Sizes 06 - 24

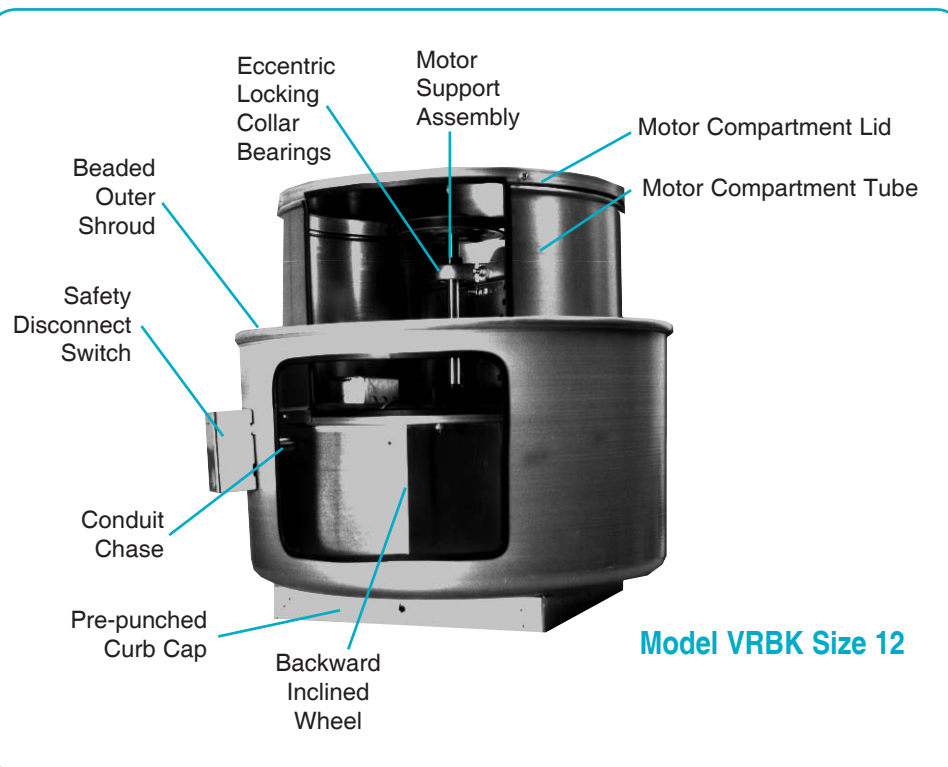
- Galvanized patented diffuser provides structural integrity and protection against weather penetration.
- Self-sealing diffuser fasteners prevent leakage.

Sizes 30 - 48

- Heavy-gauge coated circular steel structural frame provides strength and unit rigidity.

CURB CAP/WALL MOUNTING CAP

- One piece construction with fastened/welded, overlapping corners to ensure strength.
- Pre-punched mounting holes for ease of installation.
- Support structure attached with self-sealing fasteners.
- The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow along with protection from entry of adverse weather elements.
- VRBK sizes 06-24 up to 3 HP can be wall mounted for exhaust.



GENERAL RULES TO FOLLOW

- Kitchen air pressure should be kept negative relative to dining and other areas to ensure odor control.
- The exhaust fan should be located at the discharge end of the duct run to minimize the effect of any ductwork leaks.
- Outdoor air louvers, intake and exhaust, should be located so the exhaust air is not drawn back into the system.
- On large hoods (over 12 feet long), if possible, use two small exhaust fans instead of one large fan. Benefits include uniform air distribution and the capability, depending on need, of operating one or both fans.
- Make-up air should equal 80-85% of exhausted air levels.

NFPA 96 - Standard for the Installation of Equipment for the Removal of Smoke and Grease-laden Vapors from Commercial Cooking Equipment.

REQUIREMENTS

- Air velocity through ductwork is not to be less than 1500 FPM.
- Ventilators approved and listed for commercial cooking equipment use.
- 10 feet minimum distance between exhaust fan and air intake unit.

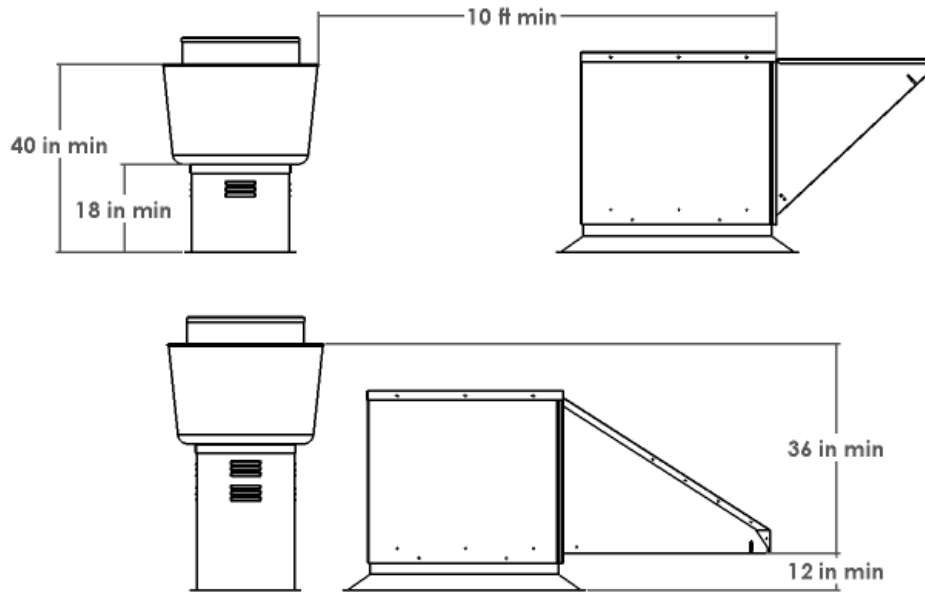
ROOFTOP TERMINATIONS

- 10 feet clearance from fan outlet to adjacent buildings and property lines.
- 40 inches minimum clearance between fan outlet and roof surface with exhaust air flow directed up.
- Ductwork extends a minimum of 18 inches above the roof surface.

WALL TERMINATIONS

- Through masonry wall with a minimum of 10 feet clearance from the outlet to adjacent buildings, property lines, combustible construction or electrical lines or equipment.
- Exhaust air flow perpendicular outward from the wall or upward.

SYSTEM DESIGN CONSIDERATIONS



When using the VRBK for kitchen exhaust applications it is recommended that supply CFM be 80-90% of exhaust CFM. This creates a light vacuum in the kitchen keeping odors out of the dining area.

NFPA guidelines for restaurant supply and exhaust applications

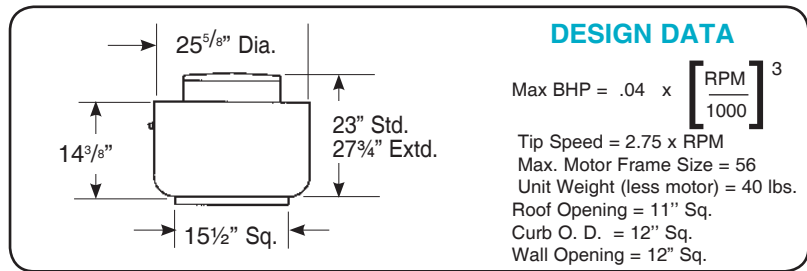
- Outlet of exhaust fan must be minimum 40 inches from roof.
- Distance from roof to top of curb cap must be minimum 18 inches.
- Distance from outlet of exhaust to intake of supply must be a minimum of 10 feet.
- Alternately, outlet of exhaust must be minimum 36 inches from top of supply intake.

**Consult your local code authority for all installation requirements.*

VRBK 06

BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	600	218 .01 0.8											
	700	254 .01 1.5	110 .01 1.7										
K3 (1/6)	800	290 .02 2.3	188 .02 2.2										
	900	327 .02 3.2	242 .02 2.9										
K4 (1/6)	1000	363 .03 4.0	289 .03 3.7	165 .04 3.9									
	1100	399 .04 3.8	332 .04 4.4	246 .05 4.6									
L1 (1/4)	1200	435 .05 5.6	375 .06 5.2	304 .06 5.3	179 .06 5.6								
	1300	472 .07 6.4	416 .07 8.0	356 .07 6.0	269 .08 6.2								
M1 (1/3)	1400	508 .08 7.3	456 .09 6.8	402 .09 6.7	334 .10 6.9	220 .10 7.2							
	1500	554 .01 8.1	496 .11 7.7	446 .11 7.5	389 .12 7.6	309 .12 7.9							
L1 (1/4)	1550	563 .11 8.6	516 .12 8.1	468 .12 7.9	415 .13 8.0	344 .13 8.2	232 .13 8.5						
	1600	581 .12 9.1	535 .13 8.6	489 .13 8.4	439 .14 8.4	376 .14 8.6	277 .14 8.9						
L1 (1/4)	1650	599 .13 9.5	555 .14 9.1	510 .15 8.8	464 .15 8.8	404 .16 9.0	322 .16 9.2	208 .16 9.5					
	1700	617 .15 10.0	574 .15 9.6	531 .16 9.2	486 .16 9.2	432 .17 9.3	363 .17 9.6	256 .17 9.9					
L1 (1/4)	1750	635 .16 10.5	594 .17 10.1	552 .17 9.7	508 .18 9.7	458 .18 9.7	395 .19 10.0	301 .19 10.3					
	1800	653 .18 11.0	613 .18 10.6	572 .19 10.2	530 .19 10.2	484 .20 10.2	427 .20 10.4	346 .21 10.7					
L1 (1/4)	1850	671 .19 11.5	632 .20 11.1	593 .20 10.6	552 .21 10.6	509 .21 10.6	455 .22 10.8	389 .22 11.0					
	1900	690 .21 12.0	651 .21 11.5	613 .22 11.0	573 .22 11.0	533 .23 11.0	482 .24 11.1	422 .24 11.3					
M1 (1/3)	1950	708 .22 12.4	670 .23 12.0	633 .23 11.6	595 .24 11.4	556 .25 11.4	509 .25 11.5	454 .26 11.7	283 .26 12.2				
	2000	726 .24 12.9	689 .25 12.5	653 .25 12.1	616 .26 11.9	578 .27 11.9	535 .27 11.9	484 .28 12.1	329 .28 12.6				
M1 (1/3)	2050	744 .26 13.3	708 .26 13.0	673 .27 12.6	637 .28 12.4	600 .29 12.4	560 .29 12.4	511 .30 12.5	374 .30 13.0				
	2100	762 .28 13.0	727 .28 13.5	693 .29 13.1	658 .30 12.8	622 .31 12.8	584 .31 12.8	538 .32 12.9	419 .33 13.4				
M1 (1/3)	2150	780 .30 14.4	746 .30 14.0	713 .31 13.6	678 .32 13.2	643 .33 13.3	608 .33 13.3	565 .34 13.3	459 .35 13.8	288 .35 14.2			
	2200	798 .32 14.9	765 .33 14.5	733 .33 14.1	699 .34 13.7	665 .35 13.7	630 .36 13.7	590 .36 13.8	491 .37 14.2	335 .38 14.6			

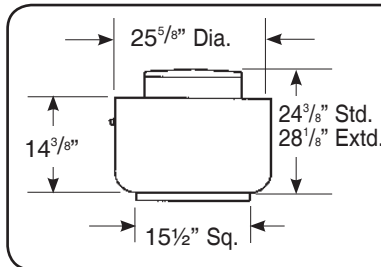
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VRBK 08

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .05 x $\left[\frac{\text{RPM}}{1000}\right]^3$
 Tip Speed = 2.75 x RPM
 Max. Motor Frame Size = 56
 Unit Weight (less motor) = 40 lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Wall Opening = 12" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	650	343 .01 2.3	160 .01 1.8											
	750	396 .02 3.1	259 .02 2.5											
K3 (1/6)	850	448 .02 3.9	339 .03 3.5											
	950	501 .03 4.9	408 .04 4.4	264 .04 4.3										
K4 (1/6)	1050	554 .04 5.8	471 .05 5.4	357 .05 5.0										
	1150	607 .06 6.7	531 .06 6.3	440 .07 6.0	309 .07 6.1									
L1 (1/4)	1250	659 .07 7.6	590 .08 7.2	515 .08 6.9	404 .09 6.8									
	1350	712 .09 8.6	648 .10 8.2	581 .10 7.9	492 .11 7.7	379 .11 7.8								
M1 (1/3)	1450	765 .12 9.5	705 .12 9.2	644 .13 8.9	571 .13 8.7	473 .14 8.5	354 .14 8.8							
	1500	791 .13 10.1	733 .13 9.8	675 .14 9.4	608 .14 9.2	517 .15 9.0	415 .15 9.2							
P1 (1/2)	1550	818 .14 10.6	762 .15 10.3	705 .15 10.0	645 .16 9.7	560 .16 9.5	463 .17 9.6	338 .16 9.8						
	1600	844 .16 11.2	790 .16 10.9	735 .17 10.5	678 .17 10.3	602 .18 10.1	509 .18 10.0	403 .18 10.2						
P1 (1/2)	1650	870 .17 11.7	818 .18 11.4	765 .18 11.1	710 .19 10.8	641 .19 10.6	555 .20 10.4	461 .20 10.7						
	1700	897 .19 12.3	846 .19 12.0	795 .20 11.6	741 .21 11.4	678 .21 11.2	598 .22 11.1	509 .22 11.2						
P1 (1/2)	1750	923 .21 12.9	873 .21 12.6	824 .22 12.3	773 .23 12.0	715 .23 11.8	641 .23 11.7	556 .24 11.6						
	1800	949 .22 13.4	901 .23 13.2	854 .24 12.9	804 .24 12.6	752 .25 12.4	682 .25 12.3	601 .26 12.2	403 .26 12.5					
P1 (1/2)	1850	976 .24 14.0	929 .25 13.7	882 .26 13.4	834 .26 13.2	784 .27 13.0	720 .27 12.9	645 .28 12.7	468 .28 13.0					
	1900	1002 .26 14.4	956 .27 14.2	911 .28 13.9	865 .28 13.7	816 .29 13.5	758 .30 13.4	687 .30 13.3	528 .31 13.4					
P1 (1/2)	1950	1029 .28 15.0	984 .29 14.7	940 .30 14.5	895 .31 14.2	848 .31 14.1	795 .32 14.0	729 .32 13.9	575 .33 13.8					
	2000	1055 .31 15.5	1011 .31 15.3	968 .32 15.0	925 .33 14.8	879 .34 14.6	832 .34 14.5	769 .35 14.4	622 .36 14.4	434 .35 14.7				
P1 (1/2)	2050	1081 .33 16.1	1039 .34 15.9	997 .34 15.6	955 .35 15.4	910 .36 15.2	865 .70 15.1	807 .37 15.0	668 .38 14.8	500 .38 15.1				
	2100	1108 .35 16.7	1066 .36 16.5	1025 .37 16.2	984 .38 16.0	941 .39 15.8	897 .39 15.7	844 .40 15.6	713 .41 15.3	564 .41 15.6				
P1 (1/2)	2150	1134 .38 17.3	1093 .39 17.1	1053 .40 16.9	1014 .40 16.6	972 .41 16.4	929 .42 16.3	881 .43 16.2	756 .44 15.9	615 .44 16.1				
	2200	1160 .41 17.9	1121 .42 17.7	1082 .42 17.5	1043 .43 17.3	1002 .44 17.1	961 .45 16.9	918 .45 16.8	799 .47 16.5	662 .47 16.6	488 .47 16.9			
P1 (1/2)	2250	1187 .44 18.4	1148 .45 18.2	1110 .45 18.0	1072 .46 17.8	1032 .47 17.7	992 .48 17.5	950 .48 17.4	841 .50 17.1	709 .51 17.1	553 .50 17.4			
	2300	1213 .47 19.0	1175 .48 18.8	1138 .48 18.6	1101 .49 18.4	1062 .50 18.3	1023 .51 18.1	982 .52 18.0	881 .53 17.7	755 .54 17.6	617 .54 17.9			

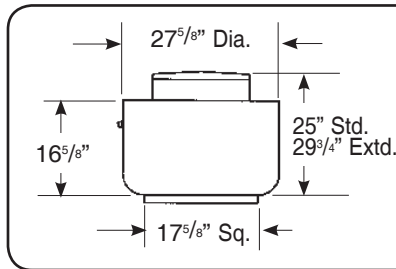
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VRBK 10

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .12 x $\left[\frac{\text{RPM}}{1000}\right]^3$
 Tip Speed = 3.27 x RPM
 Max. Motor Frame Size = 145T
 Unit Weight (less motor) = 45 lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Wall Opening = 14" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	650	604 .02 3.1											
	750	697 .03 4.2	409 .04 3.8										
L1 (1/4)	850	790 .05 5.3	559 .06 4.5										
	950	883 .07 6.5	689 .08 5.7										
M1 (1/3)	1050	975 .09 7.5	805 .11 6.7	561 .12 6.8									
	1150	1068 .12 8.6	919 .14 7.8	715 .15 7.5									
P1 (1/2)	1200	1115 .14 9.2	972 .16 8.4	788 .17 7.9									
	1250	1161 .16 9.8	1025 .17 9.1	858 .19 8.5	630 .20 8.9								
R1 (3/4)	1300	1208 .18 10.4	1077 .19 9.7	920 .21 9.2	709 .22 9.4								
	1350	1254 .20 11.0	1128 .22 10.4	981 .24 9.8	787 .24 9.8								
S1 (1)	1400	1301 .22 11.7	1180 .24 11.1	1040 .26 10.5	863 .27 10.3								
	1450	1347 .24 12.4	1231 .26 11.8	1099 .29 11.2	937 .30 10.8	738 .31 11.2							
T1 (1-1/2)	1500	1393 .17 13.1	1281 .29 12.5	1156 .31 11.9	1008 .33 11.4	817 .34 11.8							
	1550	1440 .30 13.8	1332 .32 13.2	1213 .34 12.7	1075 .36 12.2	895 .37 12.3							
S1 (1)	1600	1486 .33 14.5	1382 .35 13.9	1270 .37 13.4	1137 .40 13.0	971 .41 12.9	791 .41 13.2						
	1650	1533 .36 15.2	1432 .38 14.7	1325 .41 14.1	1198 .43 13.7	1046 .44 13.5	871 .45 13.8						
S1 (1)	1700	1579 .39 16.0	1481 .42 15.5	1378 .44 15.0	1257 .47 14.5	1118 .48 14.1	950 .49 14.4						
	1750	1632 .40 16.8	1538 .43 16.3	1438 .45 15.8	1333 .49 15.3	1209 .50 14.9	1049 .51 15.0	869 .51 15.3					
S1 (1)	1800	1679 .41 17.6	1588 .44 17.1	1491 .47 16.6	1389 .50 16.2	1276 .52 15.8	1126 .53 15.7	955 .54 16.0					
	1850	1726 .45 18.4	1637 .48 17.9	1544 .51 17.4	1444 .54 17.0	1341 .56 16.6	1203 .58 16.4	1040 .58 16.7					
S1 (1)	1900	1772 .49 19.2	1686 .52 18.7	1597 .55 18.2	1499 .58 17.8	1399 .60 17.4	1274 .62 17.1	1122 .63 17.3	956 .63 17.6				
	1950	1819 .53 20.0	1735 .56 19.5	1649 .59 19.0	1553 .62 18.5	1458 .64 18.1	1342 .67 17.7	1200 .68 17.8	1042 .68 18.1				
S1 (1)	2000	1866 .57 21.0	1784 .60 20.0	1700 .63 19.6	1607 .66 19.1	1515 .69 18.8	1410 .71 18.4	1277 .73 18.3	1126 .73 18.6	968 .74 18.8			
	2050	1912 .61 21.0	1833 .64 21.0	1750 .68 20.0	1661 .71 19.8	1572 .74 19.4	1476 .76 19.1	1352 .78 18.8	1208 .79 19.0	1054 .79 19.3			
S1 (1)	2100	1959 .66 22.0	1881 .69 21.0	1801 .72 21.0	1715 .76 20.0	1628 .79 20.0	1536 .81 19.7	1421 .84 19.4	1287 .85 19.5	1140 .85 19.8			
	2150	2005 .71 23.0	1930 .74 22.0	1852 .77 22.0	1768 .81 21.0	1683 .84 21.0	1595 .87 20.0	1489 .89 20.0	1364 .91 20.0	1224 .91 20.0	1076 .92 20.0		
S1 (1)	2200	2052 .76 23.0	1978 .79 23.0	1902 .82 22.0	1822 .86 22.0	1738 .89 21.0	1653 .92 21.0	1556 .95 21.0	1440 .97 21.0	1305 .97 21.0	1162 .98 21.0		
	2250	2099 .81 24.0	2027 .84 24.0	1952 .88 23.0	1875 .92 23.0	1792 .95 22.0	1710 .98 22.0	1623 1.01 21.0	1510 1.03 21.0	1383 1.04 21.0	1247 1.05 22.0	1106 1.05 22.0	
S1 (1)	2350	2192 .92 26.0	2123 .96 25.0	2052 .99 25.0	1980 1.04 24.0	1900 1.07 24.0	1822 1.10 23.0	1741 1.13 24.0	1646 1.16 22.0	1536 1.18 22.0	1410 1.19 23.0	1278 1.19 23.0	1143 1.20 23.0
	2450	2285 1.04 27.0	2219 1.08 27.0	2151 1.12 26.0	2082 1.16 26.0	2007 1.20 25.0	1932 1.24 25.0	1856 1.27 24.0	1777 1.30 24.0	1675 1.32 24.0	1565 1.34 24.0	1444 1.34 24.0	1315 1.35 24.0

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VRBK 12

BELT DRIVE

PERFORMANCE DATA

DESIGN DATA

Max BHP = .15 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 2.27 x RPM

Max. Motor Frame Size = 145T

Unit Weight (less motor) = 45 lbs.

Roof Opening = 13" Sq.

Curb O. D. = 16" Sq.

Wall Opening = 14" Sq.

RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W. G.																							
		.000		.250		.500		.750		1.000		1.250		1.500		1.750		2.000		2.250		2.500		2.750	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
K1 (1/6)	550	680	.02																						
	650	804	.03																						
K2 (1/6)	750	927	.05	560	.06																				
	850	1051	.07	757	.08																				
K3 (1/6)	950	1174	.10	925	.11																				
	1050	1298	.13	1080	.15	761	.15																		
L1 (1/4)	1100	1360	.15	1153	.17	880	.18																		
	1200	1483	.19	1295	.22	1067	.23																		
L1 (1/4)	1250	1545	.22	1365	.24	1155	.26	816	.25																
	1300	1607	.25	1434	.27	1240	.29	973	.29																
M1 (1/4)	1350	1669	.28	1505	.30	1319	.32	1084	.32																
	1450	1793	.34	1644	.37	1474	.39	1272	.40	964	.39														
P1 (1/3)	1500	1854	.38	1713	.41	1550	.43	1361	.44	1120	.44														
	1550	1916	.42	1781	.45	1623	.47	1448	.49	1233	.49														
R1 (1/2)	1600	1978	.46	1850	.49	1694	.52	1531	.53	1333	.54	1008	.52												
	1650	2040	.51	1917	.54	1765	.56	1610	.58	1425	.59	1171	.59												
St (1)	1700	2102	.55	1983	.59	1835	.61	1688	.63	1515	.65	1306	.65												
	1750	2198	.57	2064	.60	1946	.63	1804	.65	1640	.67	1446	.68	1170	.66										
T1 (1-1/2)	1800	2260	.62	2131	.65	2017	.68	1880	.70	1726	.73	1544	.74	1316	.73										
	1900	2386	.73	2265	.76	2158	.79	2029	.82	1895	.84	1732	.87	1550	.87	1293	.85								
T1 (1-1/2)	1950	2449	.79	2332	.82	2225	.85	2103	.88	1975	.91	1822	.93	1649	.94	1438	.93								
	2000	2512	.85	2398	.88	2291	.92	2177	.95	2052	.97	1908	1.00	1745	1.01	1571	1.02	1290	.99						
T1 (1-1/2)	2050	2574	.92	2464	.95	2358	.99	2249	1.02	2128	1.04	1993	1.07	1839	1.09	1670	1.09	1437	1.08						
	2100	2637	.99	2530	1.02	2424	1.06	2321	1.09	2203	1.12	2078	1.14	1932	1.17	1769	1.17	1581	1.17	1305	1.13				
T1 (1-1/2)	2200	2763	1.13	2662	1.17	2556	1.21	2464	1.24	2352	1.27	2238	1.30	2106	1.33	1960	1.34	1802	1.35	1598	1.34				
	2250	2826	1.21	2728	1.25	2622	1.29	2535	1.33	2426	1.36	2315	1.38	2191	1.41	2053	1.44	1900	1.44	1741	1.45	1484	1.41		
T1 (1-1/2)	2300	2888	1.29	2794	1.33	2687	1.37	2606	1.41	2500	1.44	2391	1.47	2275	1.50	2143	1.53	1997	1.54	1845	1.54	1630	1.52		
			28.0		27.0		27.0		27.0		26.0		25.0		25.0		24.0		25.0		25.0		25.0		

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

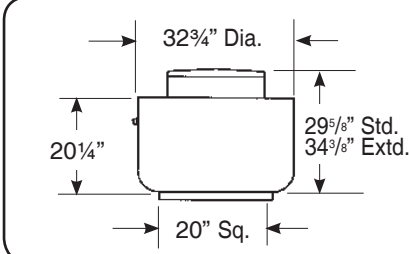
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. Restaurant Roof/Wall

VRBK 15

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .33 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 4.06 x RPM
 Max. Motor Frame Size = 182T
 Unit Weight (less motor) = 65 lbs.
 Roof Opening = 16" Sq.
 Curb O. D. = 19" Sq.
 Wall Opening = 17" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES
K2 (1/4)	550	1211 .06	278 .05											
	600	1321 .08	735 .08											
L1 (1/4)	650	1431 .10	944 .11											
	700	1542 .12	1103 .14											
M1 (1/2)	750	1652 .15	1245 .17											
	800	1762 .19	1383 .20	688 .18										
P1 (1/3)	850	1925 .19	1562 .21	1093 .21										
	900	2038 .23	1699 .25	1308 .26										
R1 (3/4)	950	2152 .27	1834 .29	1477 .30	648 .25									
	1000	2265 .31	1967 .33	1633 .35	1096 .33									
S1 (1)	1050	2378 .36	2098 .38	1782 .40	1387 .40									
	1100	2491 .42	2228 .44	1925 .46	1593 .47	781 .39								
T1 (1-1/2)	1150	2604 .47	2357 .50	2065 .52	1766 .53	1237 .50								
	1200	2718 .54	2482 .57	2203 .59	1923 .60	1535 .60								
V1 (2)	1250	2883 .59	2666 .63	2428 .65	2165 .66	1850 .66	1318 .62							
	1300	2998 .67	2792 .70	2561 .73	2316 .74	2043 .75	1652 .73							
V1 (2)	1350	3160 .74	2957 .77	2719 .79	2478 .80	2196 .81	1850 .78	1453 .74						
	1400	3229 .84	3038 .87	2826 .90	2619 .92	2369 .93	2078 .93	1650 .89						
V1 (2)	1450	3344 .93	3160 .97	2957 .99	2756 1.01	2519 1.03	2270 1.04	1944 1.03	1360 .94					
	1500	3459 1.03	3282 1.07	3087 1.10	2891 1.12	2671 1.13	2450 1.15	2144 1.14	1701 1.09					
V1 (2)	1550	3574 1.13	3403 1.18	3216 1.21	3024 1.23	2824 1.25	2603 1.27	2343 1.27	2032 1.25	1453 1.14				
	1600	3690 1.25	3524 1.29	3345 1.32	3157 1.35	2974 1.37	2754 1.38	2531 1.40	2236 1.39	1794 1.32				
V1 (2)	1650	3805 1.37	3644 1.41	3472 1.45	3290 1.48	3117 1.50	2903 1.51	2705 1.54	2433 1.53	2126 1.50	1583 1.39			
	1700	3920 1.50	3764 1.55	3599 1.58	3422 1.61	3252 1.63	3057 1.65	2858 1.67	2627 1.68	2348 1.66	1923 1.58			
V1 (2)	1725	3978 1.56	3824 1.61	3663 1.65	3488 1.68	3319 1.70	3133 1.72	2933 1.74	2722 1.76	2448 1.74	2089 1.69	1570 1.56		
	1750	4036 1.63	3884 1.68	3726 1.72	3554 1.75	3386 1.78	3208 1.79	3008 1.81	2817 1.84	2546 1.82	2254 1.79	1742 1.67		
V1 (2)	1800	4151 1.78	4004 1.83	3852 1.87	3684 1.90	3520 1.93	3359 1.95	3157 1.96	2976 1.99	2741 1.99	2478 1.97	2080 1.89	1583 1.76	
	1850	4266 1.93	4123 1.93	3977 2.02	3814 2.06	3652 2.09	3499 2.11	3311 2.13	3128 2.15	2932 2.17	2677 2.15	2411 2.13	1927 1.99	
V1 (2)	1900	4382 2.09	4242 2.15	4101 2.19	3943 2.22	3785 2.26	3634 2.28	3463 2.30	3279 2.32	3107 2.35	2872 2.34	2623 2.32	2263 2.24	

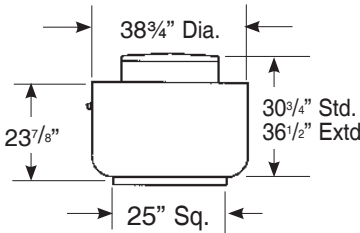
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VRBK 18

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = .63 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 4.94 x RPM

Max. Motor Frame Size = 184T

Unit Weight (less motor) = 85 lbs.

Roof Opening = 20-1/2" Sq.

Curb O. D. = 23-1/2" Sq.

Wall Opening = 22" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
L1 (1/4)	550	1989 .12 5.1	1223 .12 3.4											
	600	2170 .16 6.1	1509 .16 4.3											
M1 (1/3)	650	2351 .20 7.0	1750 .21 5.2	739 .17 4.8										
	700	2532 .25 7.9	1982 .26 6.1	1197 .24 5.5										
P1 (1/2)	750	2713 .31 8.7	2209 .32 6.9	1554 .31 6.2										
	800	2899 .33 9.6	2455 .35 7.9	1912 .35 7.1	1061 .29 7.1									
R1 (3/4)	850	3080 .40 10.6	2668 .42 9.0	2168 .42 8.1	1468 .38 7.8									
	900	3261 .48 11.6	2879 .50 10.2	2416 .50 9.2	1830 .48 8.6									
S1 (1)	950	3442 .56 12.9	3087 .59 11.4	2661 .59 10.3	2184 .58 9.5	1445 .51 9.5								
	1000	3623 .65 14.2	3293 .68 12.7	2902 .69 11.5	2446 .68 10.7	1829 .63 10.5								
T1 (1-1/2)	1050	3805 .76 15.4	3497 .79 14.1	3122 .80 12.7	2700 .79 11.9	2190 .76 11.4	1514 .68 11.4							
	1100	3986 .87 16.9	3696 .91 15.4	3338 .92 14.0	2948 .92 13.2	2540 .90 12.4	1915 .83 12.4							
V1 (2)	1150	4167 .99 18.3	3886 1.03 16.9	3552 1.04 15.5	3194 1.05 14.5	2800 1.04 13.8	2276 .98 13.4	1657 .89 13.5						
	1175	4257 1.06 19.0	3981 1.10 17.6	3658 1.11 16.2	3315 1.12 15.2	2928 1.11 14.4	2457 1.07 13.9	1864 .98 14.0						
W1 (3)	1200	4348 1.13 19.7	4076 1.17 18.4	3764 1.18 17.0	3436 1.20 15.9	3055 1.18 15.1	2634 1.15 14.4	2061 1.07 14.5	1432 .96 14.6					
	1225	4477 1.17 20.0	4201 1.20 19.1	3902 1.22 17.7	3583 1.23 16.5	3232 1.23 15.8	2821 1.21 15.0	2309 1.14 15.1	1701 1.02 15.1					
W1 (3)	1250	4568 1.24 21.0	4298 1.27 19.7	4006 1.29 18.3	3697 1.30 17.1	3358 1.30 16.4	2974 1.29 15.7	2490 1.23 15.6	1918 1.12 15.7					
	1275	4660 1.32 22.0	4396 1.34 20.0	4109 1.37 19.0	3810 1.38 17.7	3483 1.39 17.0	3126 1.38 16.3	2669 1.33 16.0	2132 1.23 16.1					
W1 (3)	1300	4751 1.40 22.0	4493 1.42 21.0	4212 1.45 19.6	3922 1.47 18.3	3606 1.47 17.6	3257 1.46 17.0	2829 1.42 16.5	2323 1.33 16.6	1734 1.12 16.8				
	1325	4843 1.48 23.0	4590 1.51 21.0	4315 1.54 20.0	4032 1.55 18.9	3724 1.56 18.3	3387 1.55 17.6	2985 1.52 17.0	2507 1.44 17.1	1953 1.32 17.0				
W1 (3)	1350	4934 1.57 23.0	4687 1.59 22.0	4417 1.62 21.0	4140 1.64 19.6	3840 1.64 18.9	3515 1.64 18.2	3140 1.62 17.6	2689 1.55 17.6	2168 1.44 17.7				
	1375	5025 1.65 24.0	4784 1.68 23.0	4518 1.71 22.0	4248 1.73 20.0	3956 1.74 19.5	3641 1.73 18.9	3293 1.72 18.2	2868 1.67 18.1	2373 1.56 18.2	1805 1.42 18.4			
W1 (3)	1400	5117 1.75 25.0	4880 1.77 23.0	4620 1.81 22.0	4355 1.83 21.0	4071 1.83 20.0	3767 1.83 19.5	3443 1.82 18.9	3029 1.78 18.5	2559 1.68 18.7	2025 1.55 18.8			
	1425	5208 1.84 25.0	4977 1.87 24.0	4721 1.91 23.0	4461 1.92 22.0	4185 1.93 21.0	3892 1.93 20.0	3573 1.93 19.5	3186 1.89 19.0	2742 1.80 19.2	2241 1.68 19.3			
W1 (3)	1450	5299 1.94 26.0	5073 1.97 25.0	4821 2.01 23.0	4567 2.03 22.0	4299 2.03 21.0	4015 2.04 21.0	3702 2.03 20.0	3341 2.03 19.6	2923 1.93 19.6	2454 1.80 19.8	1908 1.67 20.0		
	1475	5391 2.04 26.0	5169 2.07 25.0	4922 2.11 24.0	4673 2.13 23.0	4411 2.14 22.0	4133 2.15 21.0	3830 2.14 20.0	3495 2.12 20.0	3101 2.07 20.0	2641 1.95 20.0	2128 1.81 20.0		
W1 (3)	1500	5482 2.15 27.0	5265 2.17 26.0	5022 2.22 25.0	4778 2.24 24.0	4524 2.25 23.0	4250 2.26 22.0	3957 2.25 21.0	3646 2.24 21.0	3259 2.19 21.0	2825 2.09 21.0	2344 1.95 21.0		
	1525	5574 2.26 28.0	5360 2.28 27.0	5122 2.33 25.0	4882 2.35 24.0	4634 2.36 23.0	4366 2.37 23.0	4083 2.37 22.0	3786 2.36 21.0	3416 2.31 21.0	3007 2.23 21.0	2557 2.10 21.0	2039 1.95 22.0	
W1 (3)	1550	5665 2.37 28.0	5455 2.40 27.0	5221 2.44 26.0	4985 2.47 25.0	4742 2.48 24.0	4481 2.49 23.0	4208 2.49 23.0	3915 2.48 22.0	3571 2.44 22.0	3180 2.38 22.0	2748 2.25 22.0	2258 2.10 22.0	
	1575	5756 2.49 29.0	5550 2.51 28.0	5320 2.56 27.0	5088 2.59 26.0	4850 2.60 25.0	4596 2.61 24.0	4332 2.61 23.0	4044 2.60 23.0	3725 2.58 22.0	3356 2.52 22.0	2933 2.40 22.0	2474 2.26 23.0	

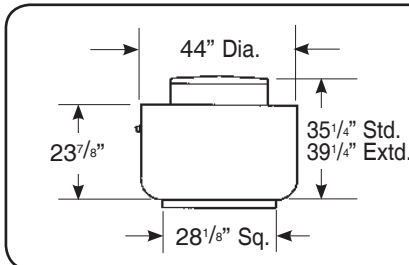
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VRBK 21

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = 1.28 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 5.76 x RPM
 Max. Motor Frame Size = 184T
 Unit Weight (less motor) = 120 lbs.
 Roof Opening = 23-1/2" Sq.
 Curb O. D. = 26-1/2" Sq.
 Wall Opening = 25" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.													
L1 (1/4)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750		
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	
M1 (1/3)	400	2168 .08 4.2	728 .06 3.3												
	450	2439 .11 5.3	1443 .11 4.2												
	P1 (1/2)	500	2709 .15 6.4	1883 .15 5.3											
		550	2980 .20 7.6	2261 .21 6.4	329 .10 6.1										
	R1 (3/4)	600	3251 .26 8.8	2614 .27 7.4	1608 .25 7.1										
		650	3522 .34 10.0	2941 .35 8.6	2163 .34 8.2										
	S1 (1)	700	3793 .42 11.2	3261 .43 9.9	2602 .42 9.4	1401 .35 9.3									
		750	4064 .52 12.6	3575 .53 11.3	2992 .53 10.7	2162 .50 10.5									
	T1 (1-1/2)	800	4335 .63 14.0	3884 .65 12.8	3360 .65 12.0	2685 .63 11.8	1456 .50 11.7								
		850	4606 .75 15.6	4189 .77 14.4	3707 .78 13.4	3124 .75 13.2	2297 .71 13.1								
	V1 (2)	875	4742 .82 16.4	4339 .84 15.2	3872 .85 14.1	3336 .84 13.9	2603 .80 13.8	812 .48 13.7							
		900	4877 .89 17.2	4485 .92 16.0	4035 .93 14.9	3525 .92 14.7	2886 .89 14.5	1737 .73 14.4							
W1 (3)	925	5012 .97 18.1	4631 .99 16.9	4197 1.00 15.7	3713 1.00 15.4	3111 .97 15.2	2162 .87 15.1								
	950	5148 1.05 18.9	4777 1.08 17.7	4358 1.09 16.6	3897 1.09 16.1	3333 1.06 15.9	2563 .99 15.8								
W1 (3)	975	5283 1.13 19.8	4921 1.16 18.6	4517 1.17 17.5	4080 1.18 16.9	3551 1.13 16.7	2871 1.11 16.6	1690 .87 16.6							
	1000	5419 1.22 21.0	5066 1.25 19.5	4676 1.27 18.4	4261 1.27 17.7	3766 1.24 17.6	3164 1.21 17.4	2152 1.15 17.4							
W1 (3)	1050	5690 1.41 22.0	5353 1.44 21.0	4989 1.46 20.0	4599 1.47 19.4	4152 1.46 19.2	3619 1.43 19.1	2930 1.36 19.0	1764 1.07 19.0						
	1075	5825 1.52 23.0	5497 1.55 22.0	5145 1.57 21.0	4764 1.58 20.0	4338 1.57 20.0	3839 1.51 20.0	3227 1.49 19.9	2240 1.42 19.8						
W1 (3)	1100	5961 1.62 24.0	5639 1.66 23.0	5300 1.68 22.0	4927 1.69 21.0	4523 1.69 21.0	4056 1.63 21.0	3513 1.62 21.0	2648 1.48 21.0	657 .78 21.0					
	1125	6096 1.74 25.0	5782 1.77 24.0	5454 1.80 23.0	5089 1.81 22.0	4705 1.81 22.0	4270 1.76 22.0	3740 1.74 22.0	3047 1.65 22.0	1935 1.33 22.0					
W1 (3)	1150	6232 1.86 26.0	5924 1.89 25.0	5607 1.92 24.0	5251 1.93 23.0	4886 1.93 23.0	4461 1.92 23.0	3963 1.88 23.0	3354 1.82 22.0	2408 1.73 22.0					
	1175	6367 1.98 27.0	6066 2.02 26.0	5759 2.05 25.0	5411 2.06 24.0	5062 2.06 23.0	4650 2.05 23.0	4183 1.97 23.0	3648 1.95 23.0	2815 1.80 23.0	1146 1.18 23.0				
W1 (3)	1200	6503 2.11 28.0	6208 2.15 27.0	5911 2.18 26.0	5570 2.19 25.0	5228 2.20 24.0	4836 2.19 24.0	4400 2.12 24.0	3903 2.11 24.0	3215 1.99 24.0	2184 1.68 24.0				
	1225	6638 2.24 29.0	6349 2.28 28.0	6063 2.32 27.0	5728 2.33 26.0	5394 2.34 25.0	5021 2.33 25.0	4615 2.27 25.0	4128 2.26 25.0	3533 2.19 25.0	2640 2.11 25.0				
W1 (3)	1250	6774 2.38 30.0	6490 2.42 29.0	6210 2.46 27.0	5886 2.47 27.0	5558 2.48 26.0	5204 2.48 26.0	4813 2.46 26.0	4350 2.41 26.0	3828 2.36 26.0	3046 2.18 26.0	2009 1.82 26.0			
	1275	6909 2.53 31.0	6631 2.57 29.0	6356 2.61 28.0	6042 2.62 28.0	5721 2.63 27.0	5385 2.63 27.0	5002 2.62 27.0	4569 2.52 27.0	4101 2.52 27.0	3445 2.39 27.0	2499 2.10 26.0			
W1 (3)	1300	7045 2.68 31.0	6772 2.72 30.0	6502 2.76 29.0	6198 2.78 28.0	5883 2.79 28.0	5566 2.80 27.0	5190 2.78 27.0	4786 2.70 27.0	4327 2.69 27.0	3756 2.62 27.0	2926 2.53 27.0	1320 1.63 27.0		
	1325	7180 2.84 32.0	6912 2.88 31.0	6648 2.92 30.0	6353 2.94 29.0	6044 2.95 29.0	5735 2.96 28.0	5375 2.95 28.0	5001 2.88 28.0	4550 2.87 28.0	4051 2.81 28.0	3330 2.62 28.0	2383 2.24 28.0		
W1 (3)	1350	7316 3.00 33.0	7053 3.04 32.0	6793 3.08 31.0	6508 3.11 30.0	6204 3.12 30.0	5901 3.13 29.0	5560 3.12 29.0	5198 3.10 29.0	4771 3.05 29.0	4328 2.99 29.0	3716 2.89 29.0	2848 2.81 29.0		
	1375	7451 3.17 34.0	7193 3.22 33.0	6938 3.26 32.0	6662 3.28 31.0	6364 3.29 31.0	6066 3.30 30.0	5742 3.30 30.0	5387 3.28 30.0	4989 3.18 30.0	4555 3.18 30.0	4015 3.10 30.0	3256 2.88 30.0		

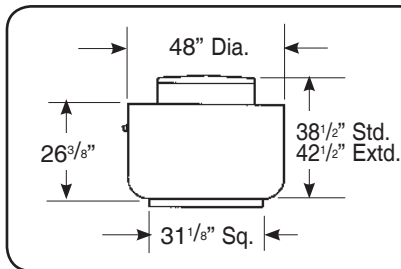
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

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VRBK 24

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = 3.26 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 6.68 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 150 lbs.
 Roof Opening = 26-1/2" Sq.
 Curb O. D. = 29-1/2" Sq.
 Wall Opening = 28" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.																							
MT1 (1/3)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	CFM BHP		CFM BHP		CFM BHP		CFM BHP		CFM BHP		CFM BHP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
P1 (1/2)	400	3618	.21	2241	.19																				
	425	3845	.25	2595	.24																				
	450	4070	.29	2927	.29																				
	475	4298	.34	3247	.34																				
R1 (3/4) S1 (1)	500	4523	4.0	3559	.40	1907	.33																		
	525	4750	.47	3848	.47	2484	.42																		
	550	4975	.54	4125	.54	2942	.50																		
	575	5201	.61	4398	.62	3303	.58																		
T1 (1-1/2)	600	5427	.70	4667	.70	3655	.67	1941	.53																
	625	5653	.79	4934	.80	3991	.77	2664	.67																
	650	5879	.88	5197	.90	4315	.87	3173	.78																
	675	6105	.99	5458	1.01	4633	.98	3623	.92	1346	.59														
V1 (2)	700	6332	1.10	5711	1.12	4945	1.10	3985	1.04	2504	.88														
	725	6558	1.23	5959	1.25	5247	1.24	4339	1.18	3162	1.06														
	750	6784	1.36	6205	1.38	5526	1.38	4686	1.32	3654	1.20														
	775	7010	1.50	6450	1.52	5803	1.52	5013	1.47	4111	1.37	2520	1.14												
W1 (3)	800	7236	1.65	6693	1.67	6077	1.68	5335	1.63	4482	1.55	3261	1.39												
	825	7462	1.81	6936	1.83	6348	1.83	5653	1.80	4839	1.73	3833	1.61	1535	1.04										
	850	7688	1.98	7178	2.00	6616	2.00	5966	1.97	5189	1.91	4296	1.77	1719	1.19	2799	1.52								
	875	7914	2.16	7418	2.18	6883	2.19	6275	2.16	5528	2.10	4730	2.00	3537	1.81										
X1 (5)	900	8141	2.35	7658	2.37	7148	2.38	6561	2.37	5854	2.31	5092	2.22	4129	2.08	2244	1.56								
	950	8595	2.76	8136	2.79	7671	2.81	7116	2.80	6494	2.74	5797	2.67	5050	2.52	3948	2.34								
	1000	9045	3.22	8611	3.25	8177	3.28	7662	3.28	7118	3.22	6464	3.16	5779	3.06	4978	2.87	3813	2.62						
	1050	9497	3.73	9084	3.76	8671	3.79	8199	3.78	7697	3.77	7107	3.69	6480	3.61	5810	3.49	4969	3.34	3756	2.97				
Y1 (7-1/2) Roof Mount Only	1075	9723	4.00	9320	4.03	8916	4.06	8465	4.06	7975	4.06	7423	3.98	6814	3.91	6169	3.79	5431	3.58	4419	3.38	2636	2.64		
	1100	9550	4.28	9555	4.32	9160	4.35	8730	4.35	8250	4.35	7735	4.28	7141	4.21	6523	4.11	5884	3.98	5014	3.80	3711	3.33		
	1125	10176	4.58	9790	4.62	9404	4.65	8993	4.66	8524	4.66	8044	4.59	7463	4.52	6873	4.43	6247	4.30	5480	4.05	4446	3.80	2602	2.94
	1150	10402	4.90	10024	4.93	9647	4.96	9255	4.98	8796	4.99	8337	4.94	7782	4.85	7217	4.77	6606	4.65	5940	4.42	5093	4.27	3756	3.75
Roof Mount Only	1175	10628	5.22	10258	5.26	9889	5.29	9515	5.32	9066	5.29	8617	5.28	8098	5.19	7542	5.12	6960	5.00	6361	4.86	5575	4.68	4534	4.27
	1200	10854	5.56	10492	5.60	10131	5.63	9769	5.67	9335	5.64	8895	5.64	8411	5.55	7866	5.47	7310	5.37	6724	5.23	6038	4.97	5184	4.81

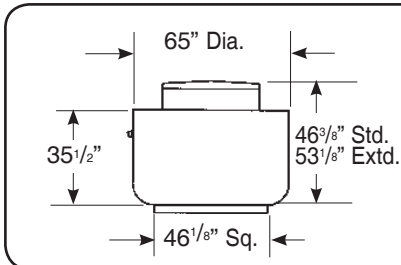
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VRBK 36

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = 19.71 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

- Tip Speed = 9.62 x RPM
- Max. Motor Frame Size = 254T
- Unit Weight (less motor) = 350 lbs.
- Roof Opening = 41-1/2" Sq.
- Curb O. D. = 44-1/2" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
R1 (3/4)	RPM	.000	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	2.250
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
S1 (1)	250	6697 .30 9.2	2317 .22 3.7										
	270	7233 .37 10.3	4086 .35 4.8										
T1 (1-1/2)	290	7769 .46 11.4	5275 .47 6.2										
	310	8304 .57 12.5	6161 .58 7.5	3363 .46 5.7									
V1 (2)	330	8840 .68 13.7	6979 .71 8.9	4960 .64 6.9									
	350	9376 .82 14.9	7690 .85 10.4	6213 .82 8.3	2711 .53 7.0								
W1 (3)	370	9912 .96 16.1	8370 1.00 11.7	7140 .99 9.7	4963 .84 8.2								
	390	10447 1.13 17.4	9039 1.17 13.2	7972 1.17 11.3	6296 1.08 9.5	2764 .69 8.4							
X1 (5)	410	10983 1.31 18.7	9697 1.36 14.6	8772 1.36 13.0	7454 1.32 11.0	5254 1.12 9.6							
	430	11519 1.51 20.0	10346 1.56 16.1	9464 1.57 14.8	8361 1.55 12.7	6657 1.43 11.2	3593 1.04 10.1						
Y1 (7-1/2)	450	12055 1.74 21.0	10988 1.79 17.7	10145 1.80 16.5	9191 1.79 14.6	7907 1.73 12.9	5826 1.48 11.6						
	470	12591 1.98 23.0	11596 2.04 19.2	10816 2.05 18.1	10003 2.05 16.5	8871 2.01 14.7	7226 1.86 13.4						
	490	13126 2.24 24.0	12173 2.30 21.0	11478 2.32 19.6	10704 2.32 18.5	9734 2.30 16.6	8480 2.21 15.2	2817 1.18 13.2					
	510	13662 2.53 25.0	12746 2.59 22.0	12132 2.61 21.0	11389 2.62 20.0	10558 2.61 18.5	9494 2.56 17.0	5949 2.07 14.6					
	530	14198 2.84 27.0	13316 2.90 24.0	12780 2.93 23.0	12064 2.93 22.0	11349 2.94 21.0	10381 2.91 18.9	7528 2.59 16.5					
	550	14734 3.17 28.0	13884 3.24 25.0	13421 3.27 24.0	12732 3.28 24.0	12042 3.29 23.0	11211 3.27 21.0	8806 3.03 18.3	3594 1.83 16.8				
	570	15269 3.53 30.0	14450 3.60 27.0	14040 3.63 26.0	13392 3.65 25.0	12726 3.65 24.0	12025 3.66 23.0	10051 3.51 20.0	6635 2.89 18.3				
	590	15805 3.91 31.0	15013 3.99 28.0	14617 4.02 27.0	14045 4.04 27.0	13402 4.05 26.0	12760 4.06 25.0	11014 3.97 22.0	8243 3.50 19.9				
	610	16341 4.32 33.0	15575 4.40 30.0	15192 4.44 29.0	14693 4.46 28.0	14071 4.47 27.0	13449 4.48 27.0	11904 4.43 24.0	9535 4.10 20.0	5347 3.18 20.0			
	630	16877 4.76 34.0	16135 4.84 32.0	15764 4.88 31.0	15335 4.91 29.0	14733 4.92 29.0	14131 4.93 28.0	12735 4.91 26.0	10788 4.69 24.0	7723 3.94 22.0			
	650	17412 5.23 36.0	16694 5.31 34.0	16334 5.35 32.0	15972 5.39 31.0	15389 5.40 30.0	14805 5.41 30.0	13554 5.41 28.0	11866 5.27 26.0	9277 4.78 24.0	4095 2.94 22.0		
	670	17948 5.73 38.0	17251 5.81 35.0	16902 5.85 34.0	16553 5.90 33.0	16039 5.91 32.0	15473 5.93 31.0	14341 5.95 29.0	12790 5.85 27.0	10557 5.45 26.0	7309 4.65 23.0		
	680	18216 5.99 39.0	17529 6.07 36.0	17185 6.12 35.0	16842 6.16 34.0	16363 6.18 33.0	15805 6.19 32.0	14689 6.21 30.0	13225 6.14 28.0	11187 5.79 27.0	8303 4.94 24.0		
	690	18484 6.26 39.0	17807 6.34 37.0	17468 6.39 36.0	17129 6.43 35.0	16685 6.46 34.0	16135 6.47 33.0	15036 6.49 31.0	13643 6.43 29.0	11810 6.15 28.0	9108 5.41 26.0		
	700	18752 6.53 40.0	18084 6.62 38.0	17750 6.66 37.0	17417 6.71 36.0	17005 6.74 35.0	16464 6.75 34.0	15380 6.77 32.0	14059 6.72 30.0	12426 6.53 28.0	9885 5.95 27.0	5422 4.26 25.0	
	710	19020 6.82 41.0	18359 6.91 39.0	18032 6.95 38.0	17703 6.99 37.0	17325 7.03 36.0	16791 7.04 35.0	15723 7.06 33.0	14471 7.03 31.0	12904 6.86 29.0	10531 6.33 28.0	6954 5.27 26.0	
	720	19288 7.11 42.0	18636 7.20 40.0	18314 7.24 39.0	17990 7.29 38.0	17644 7.33 37.0	17117 7.34 36.0	16064 7.37 34.0	14880 7.35 32.0	13369 7.20 30.0	11170 6.72 29.0	8311 5.81 27.0	
	730	19555 7.41 43.0	18913 7.50 41.0	18595 7.55 40.0	18275 7.59 39.0	17955 7.64 38.0	17442 7.65 37.0	16403 7.67 35.0	15287 7.67 33.0	13830 7.55 32.0	11082 7.12 30.0	9123 6.20 28.0	
	740	19823 7.72 44.0	19189 7.81 42.0	18876 7.86 41.0	18560 7.90 40.0	18245 7.95 39.0	17766 7.97 38.0	16741 7.99 36.0	15691 8.01 34.0	14281 7.90 33.0	12428 7.53 31.0	9926 6.74 29.0	5250 4.74 28.0
	750	20091 8.03 45.0	19466 8.13 43.0	19157 8.18 42.0	18845 8.22 41.0	18534 8.27 40.0	18089 8.29 39.0	17077 8.32 37.0	16066 8.34 36.0	14701 8.24 34.0	13047 7.96 32.0	10676 7.34 30.0	6592 6.06 29.0

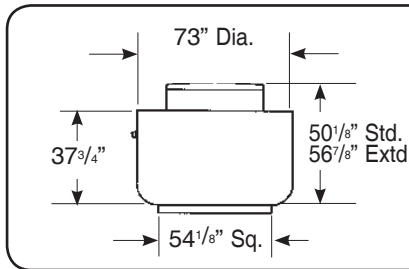
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VRBK 42

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = 39.60 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 11.26 x RPM

Max. Motor Frame Size = 254T

Unit Weight (less motor) = 530 lbs.

Roof Opening = 49-1/2" Sq.

Curb O. D. = 52-1/2" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
S1 (1)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
T1 (1-1/2)	215	8225 .36 6.5	6840 .39 5.1										
	230	8799 .44 7.4	7505 .47 6.1	4752 .41 4.4									
	245	9372 .53 8.3	8159 .57 7.1	7610 .55 5.3									
	260	9946 .64 9.1	8804 .67 8.0	7188 .68 6.4									
	275	10520 .76 9.9	9441 .79 8.8	8111 .81 7.4	5046 .68 6.1								
	290	11094 .89 10.8	10071 .93 9.7	9008 .96 8.5	6655 .87 7.0								
	305	11668 1.03 11.6	10695 1.07 10.6	9715 1.11 9.5	7855 1.08 8.1								
	320	12242 1.19 12.5	11314 1.23 11.5	10382 1.28 10.6	8902 1.26 9.2	6182 1.10 8.1							
	335	12815 1.37 13.5	11929 1.41 12.4	11040 1.46 11.5	9824 1.47 10.3	7698 1.34 9.1							
	350	13389 1.56 14.6	12541 1.61 13.5	11691 1.65 12.6	10725 1.69 11.5	8904 1.62 10.2							
W1 (3)	365	13963 1.77 15.7	13150 1.82 14.7	12335 1.87 13.7	11515 1.92 12.7	9997 1.87 11.4	7650 1.66 10.5						
	380	14537 1.99 17.0	13755 2.05 15.9	12974 2.10 15.0	12187 2.15 14.1	10927 2.13 12.7	9085 2.03 11.8						
	395	15111 2.24 18.2	14359 2.29 17.2	13609 2.35 16.3	12851 2.40 15.4	11838 2.41 14.1	10235 2.34 13.2	7887 2.06 12.4					
	410	15685 2.50 19.5	14960 2.56 18.5	14237 2.62 17.7	13508 2.67 16.8	12732 2.72 15.6	11297 2.65 14.6	9400 2.46 13.8					
	425	16258 2.79 21.0	15559 2.85 19.8	14862 2.91 19.0	14160 2.96 18.3	13456 3.02 17.2	12226 2.98 16.1	10626 2.89 15.3					
	440	16832 3.09 22.0	16157 3.15 21.0	15483 3.22 20.0	14806 3.28 19.6	14126 3.34 18.9	13138 3.33 17.6	11761 3.25 16.8					
	455	17406 3.42 23.0	16753 3.48 23.0	16102 3.55 22.0	15448 3.61 21.0	14790 3.67 20.0	14034 3.71 19.2	12741 3.63 18.4	8994 3.18 17.0				
	470	17980 3.77 25.0	17347 3.84 24.0	16717 3.90 23.0	16085 3.97 23.0	15448 4.03 22.0	14812 4.10 21.0	13664 4.04 19.9	10512 3.66 18.5				
	485	18554 4.14 26.0	17940 4.21 26.0	17330 4.28 25.0	16719 4.35 24.0	16102 4.41 23.0	15484 4.48 23.0	14572 4.47 21.0	11828 4.25 20.0				
	500	19128 4.54 28.0	18532 4.61 27.0	17940 4.68 26.0	17347 4.75 25.0	16750 4.82 25.0	16151 4.89 24.0	15466 4.93 23.0	12973 4.76 22.0				
X1 (5)	515	19701 4.96 29.0	19123 5.03 28.0	18548 5.10 27.0	17973 5.17 27.0	17394 5.25 26.0	16813 5.32 25.0	16232 5.39 24.0	14064 5.24 23.0	10698 4.64 22.0			
	530	20275 5.41 30.0	19714 5.48 29.0	19155 5.55 28.0	18596 5.63 28.0	18034 5.70 27.0	17469 5.77 27.0	16905 5.85 26.0	14998 5.76 24.0	12204 5.32 23.0			
	545	20849 5.88 31.0	20303 5.95 30.0	19759 6.03 30.0	19215 6.11 29.0	18671 6.18 28.0	18121 6.26 28.0	17572 6.33 27.0	15918 6.30 25.0	13435 6.05 24.0			
	560	21423 6.38 32.0	20891 6.46 32.0	20362 6.53 31.0	19833 6.61 30.0	19304 6.69 30.0	18769 6.77 29.0	18235 6.84 29.0	16825 6.88 27.0	14579 6.69 26.0	11296 5.89 24.0		
	575	21997 6.90 33.0	21479 6.98 33.0	20963 7.06 32.0	20448 7.14 32.0	19933 7.22 31.0	19413 7.30 30.0	18893 7.38 30.0	17720 7.49 28.0	15674 7.29 27.0	12812 6.69 26.0		
	590	22570 7.46 35.0	22065 7.54 34.0	21563 7.62 33.0	21061 7.70 33.0	20559 7.79 32.0	20054 7.87 32.0	19547 7.95 31.0	18532 8.11 30.0	16610 7.93 28.0	14176 7.61 27.0		
	605	23144 8.04 36.0	22652 8.13 35.0	22162 8.21 35.0	21672 8.29 34.0	21183 8.38 34.0	20691 8.46 33.0	20196 8.54 33.0	19207 8.71 32.0	17533 8.61 30.0	15329 8.36 29.0	12214 7.42 28.0	
	620	23718 8.65 37.0	23237 8.74 37.0	22759 8.83 36.0	22281 8.91 36.0	21804 9.00 35.0	21325 9.09 35.0	20842 9.17 35.0	19877 9.34 34.0	18443 9.32 32.0	16463 9.13 30.0	13731 8.36 29.0	
	635	24292 9.30 39.0	23822 9.39 38.0	23356 9.47 38.0	22889 9.56 37.0	22423 9.65 37.0	21956 9.74 37.0	21485 9.83 36.0	20543 10.00 36.0	19343 10.06 34.0	17491 9.85 32.0	15136 9.46 31.0	11640 8.33 30.0
	650	24866 9.97 41.0	24407 10.06 40.0	23951 10.15 40.0	23495 10.24 39.0	23039 10.33 39.0	22584 10.42 38.0	22125 10.51 38.0	21204 10.69 37.0	20233 10.85 36.0	18423 10.26 34.0	16292 10.33 33.0	13387 9.30 31.0

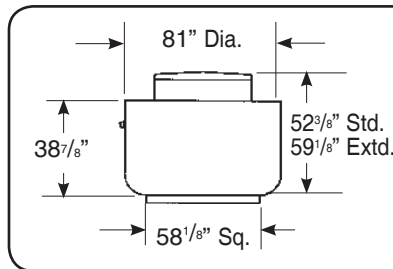
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VRBK 48

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

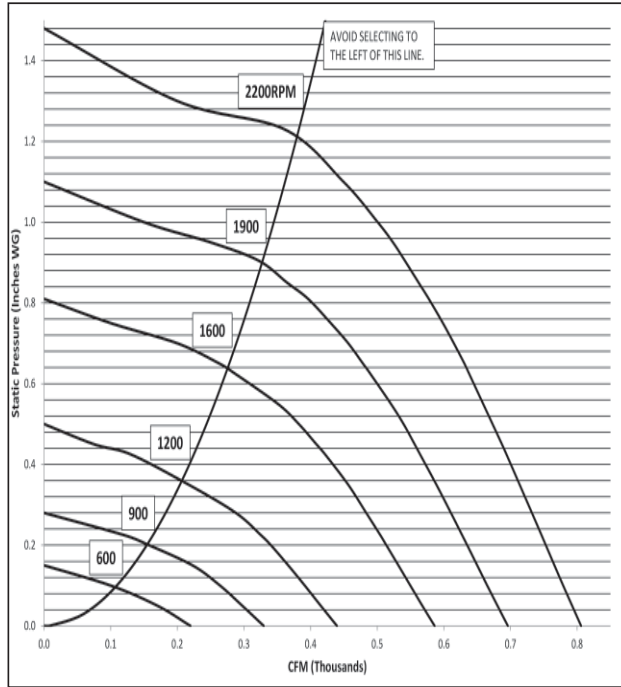
Max BHP = 66.04 x $\left[\frac{\text{RPM}}{1000}\right]^3$
 Tip Speed = 12.83 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 585 lbs.
 Roof Opening = 53-1/2" Sq.
 Curb O. D. = 56-1/2" Sq.

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
T1 (1-1/2)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
V1 (2)	200	11712 .46 7.4	9785 .52 5.9										
	220	12383 .61 8.7	11136 .68 7.2	8433 .74 6.5									
W1 (3)	240	14054 .80 10.0	12457 .87 8.7	10432 .91 7.9									
	260	15226 1.01 11.5	13755 1.10 10.3	12111 1.16 9.6	9063 1.23 9.3								
X1 (5)	280	16397 1.26 13.5	15036 1.36 12.2	13643 1.44 11.4	11568 1.45 11.0								
	290	16982 1.40 14.5	15670 1.50 13.2	14326 1.59 12.4	12438 1.61 11.9								
V1 (7-1/2)	300	17568 1.55 15.5	16300 1.65 14.2	15002 1.75 13.4	13292 1.78 12.9	10428 1.88 12.8							
	310	18154 1.71 16.6	16927 1.82 15.3	15673 1.91 14.4	14133 1.97 13.9	11783 2.09 13.7							
C1 (10)	320	18739 1.89 17.6	17551 1.99 16.4	16338 2.09 15.5	14692 2.17 15.0	13042 2.17 14.7							
	330	19325 2.07 18.7	18172 2.18 17.5	16999 2.28 16.6	15780 2.37 16.1	13941 2.38 15.7	10731 2.33 15.7						
V1 (7-1/2)	340	19910 2.26 19.7	18792 2.38 18.6	17655 2.48 17.7	16508 2.58 17.3	14803 2.60 16.9	12330 2.85 16.8						
	350	20496 2.47 21.0	19409 2.58 19.7	18307 2.70 18.8	17193 2.80 18.4	15652 2.83 18.0	13607 2.95 17.8						
C1 (10)	360	21082 2.69 22.0	20025 2.81 21.0	18956 2.92 19.9	17873 3.03 19.5	16490 3.08 19.1	14805 3.08 18.9	11497 2.94 18.9					
	370	21667 2.92 23.0	20639 3.04 22.0	19601 3.16 21.0	18547 3.27 21.0	17317 3.35 20.0	15678 3.35 20.0	13190 3.71 20.0					
C1 (10)	380	22253 3.16 24.0	21251 3.29 23.0	20243 3.41 22.0	19217 3.52 22.0	18135 3.63 21.0	16539 3.63 21.0	14474 3.84 21.0					
	390	22838 3.41 26.0	21863 3.54 24.0	20883 3.67 24.0	19883 3.79 23.0	18883 3.91 23.0	17389 3.92 22.0	15734 3.97 22.0					
C1 (10)	400	23424 3.68 27.0	22472 3.82 26.0	21519 3.95 25.0	20545 4.07 24.0	19570 4.19 24.0	18229 4.23 24.0	16712 4.23 24.0					
	410	24010 3.97 28.0	23081 4.10 27.0	22154 4.24 26.0	21203 4.36 25.0	20252 4.49 25.0	19059 4.55 25.0	17579 4.56 25.0					
C1 (10)	420	24595 4.26 29.0	23689 4.41 28.0	22784 4.55 27.0	21857 4.67 27.0	20929 4.80 26.0	19880 4.89 26.0	18436 4.90 26.0	14018 4.97 26.0				
	430	25181 4.58 30.0	24295 4.72 29.0	23412 4.86 28.0	22509 5.00 28.0	21602 5.12 27.0	20694 5.25 27.0	19283 5.25 27.0	15587 5.76 27.0				
C1 (10)	440	25766 4.90 32.0	24901 5.05 31.0	24038 5.20 30.0	23157 5.33 29.0	22271 5.47 28.0	21385 5.60 28.0	20120 5.63 28.0	16867 5.93 28.0				
	450	26352 5.25 33.0	25506 5.40 32.0	24662 5.55 31.0	23803 5.69 30.0	22937 5.82 29.0	22070 5.96 29.0	20950 6.02 29.0	18126 6.10 29.0				
C1 (10)	460	26938 5.60 34.0	26110 5.76 33.0	25284 5.91 32.0	24446 6.06 32.0	23599 6.19 31.0	22751 6.33 30.0	21771 6.43 30.0	19133 6.43 30.0				
	470	27523 5.98 35.0	26713 6.13 35.0	25905 6.29 34.0	25087 6.44 33.0	24258 6.58 32.0	23428 6.72 32.0	22584 6.86 31.0	20003 6.86 31.0	15746 7.00 31.0			
C1 (10)	480	28109 6.37 37.0	27315 6.53 36.0	26524 6.69 35.0	25726 6.84 34.0	24914 6.99 33.0	24101 7.13 33.0	23289 7.27 33.0	20863 7.31 32.0	17330 8.04 32.0			
	490	28694 6.77 38.0	27917 6.94 37.0	27142 7.10 36.0	26362 7.26 36.0	25567 7.41 35.0	24771 7.55 34.0	23975 7.70 34.0	21715 7.78 33.0	18612 8.25 33.0			
C1 (10)	500	29280 7.20 39.0	28518 7.36 39.0	27758 7.53 38.0	26997 7.70 37.0	26217 7.85 36.0	25437 8.00 36.0	24657 8.15 35.0	22558 8.26 35.0	19876 8.46 34.0			
	510	29866 7.64 41.0	29118 7.81 40.0	28374 7.98 39.0	27629 8.15 39.0	26865 8.30 38.0	26100 8.45 37.0	25336 8.61 37.0	23394 8.77 36.0	21015 8.77 36.0	16412 8.47 36.0		
C1 (10)	520	30451 8.09 42.0	29718 8.27 42.0	28988 8.44 41.0	28257 8.62 40.0	27510 8.77 39.0	26761 8.93 39.0	26011 9.09 38.0	24222 9.29 37.0	21889 9.29 37.0	18127 9.83 37.0	9825 6.03 37.0	
	530	30137 8.57 44.0	30317 8.75 43.0	29601 8.92 42.0	28884 9.10 42.0	28154 9.27 41.0	27418 9.42 40.0	26682 9.58 40.0	25044 9.84 39.0	22754 9.84 39.0	19523 10.67 38.0	10966 6.65 38.0	

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VRBK 06 AIR PERFORMANCE



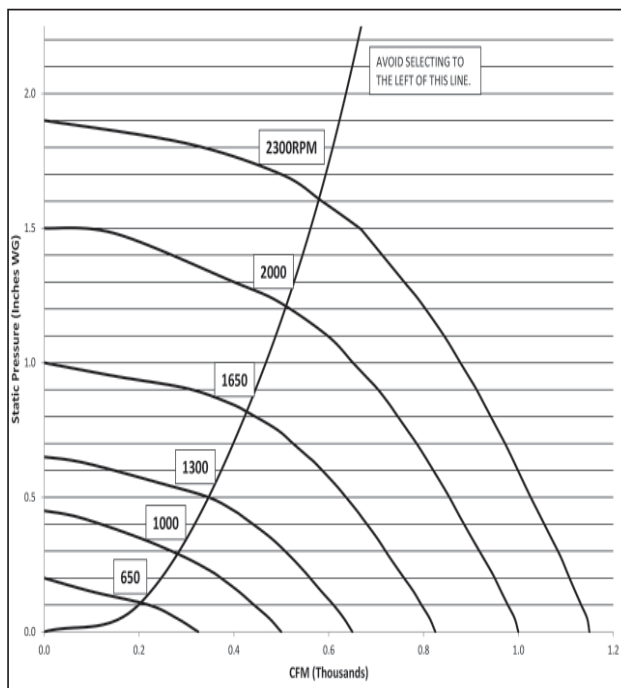
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 06 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10^{-12} WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
600	0.000	60	65	64	56	51	50	43	33	60
	0.125	60	61	59	53	50	48	41	33	56
1000	0.000	59	64	62	53	49	48	40	30	57
	0.125	60	61	59	53	50	48	41	33	56
1400	0.000	63	69	71	65	58	56	52	42	66
	0.500	66	70	69	66	60	57	52	46	67
1800	0.000	66	73	77	74	64	61	61	51	74
	0.375	66	74	74	71	64	62	60	52	72
	0.750	69	75	75	73	66	63	60	54	74
2100	0.000	68	75	79	78	70	65	64	57	78
	0.500	68	76	77	75	69	66	64	57	76
	1.000	70	77	78	77	71	67	64	58	77

The sound power level ratings shown are in decibels, referred to 10^{-12} watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and $L_{wi}A$ sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 08 AIR PERFORMANCE



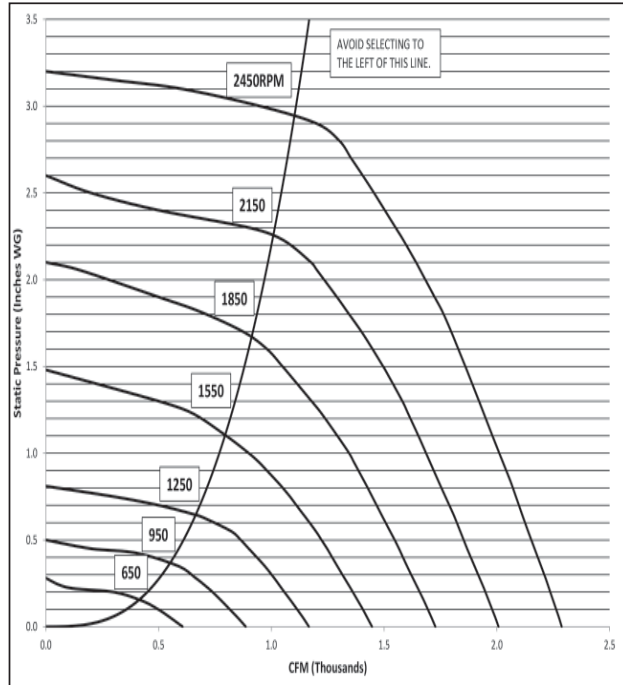
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 08 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10^{-12} WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
650	0.000	65	69	67	59	55	54	53	51	64
	0.250	65	65	62	55	53	52	47	41	60
1050	0.000	63	67	65	56	53	52	50	48	61
	0.250	65	65	62	55	53	52	47	41	60
1450	0.000	68	72	74	68	61	60	58	56	70
	0.500	69	73	71	66	60	60	57	51	69
1800	0.000	72	76	80	75	66	65	64	62	76
	0.500	72	77	77	74	65	65	63	59	75
	1.000	72	78	77	74	66	66	64	59	75
2100	0.000	74	78	82	80	71	68	67	65	80
	0.500	74	79	81	79	70	68	67	64	79
	1.000	74	80	80	78	70	68	67	62	78
2300	0.000	76	80	84	82	74	70	69	68	82
	0.750	75	81	82	81	73	70	69	66	81
	1.500	75	81	82	80	74	71	70	66	81

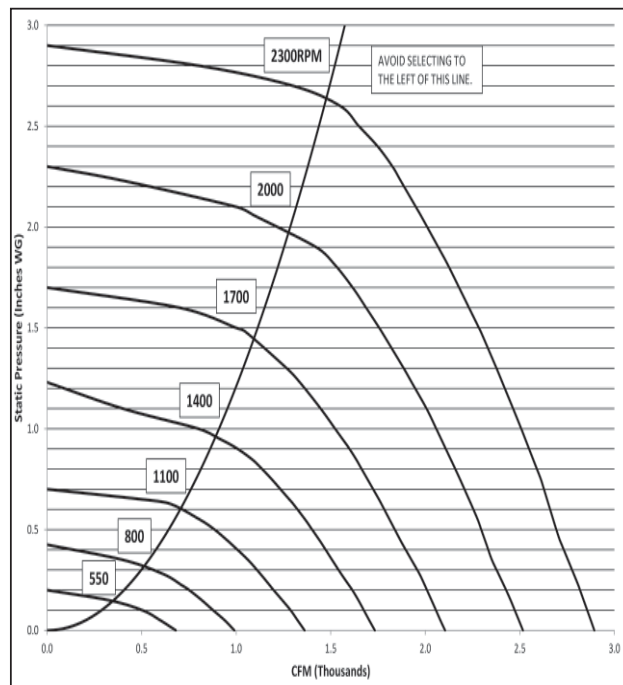
The sound power level ratings shown are in decibels, referred to 10^{-12} watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and $L_{wi}A$ sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 10
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 12
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 10
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
650	0.000	69	73	71	62	58	61	58	52	68
	0.375	66	69	62	53	54	56	51	46	61
1300	0.000	71	75	75	67	61	63	62	56	71
	0.375	71	75	73	64	60	62	60	54	69
	0.750	70	74	72	64	60	62	60	56	69
1650	0.000	74	79	81	76	66	67	69	63	78
	0.625	73	79	80	73	65	66	67	61	76
	1.250	72	79	79	72	65	67	67	63	76
2000	0.000	76	82	86	83	71	70	75	69	83
	0.500	77	83	86	81	70	70	73	68	82
	1.000	76	82	85	79	69	69	72	67	81
	2.000	75	82	85	79	70	71	72	69	81
2350	0.000	79	85	88	87	78	74	77	74	87
	0.500	79	85	88	86	77	73	76	73	86
	1.000	79	85	88	85	76	73	75	72	86
	2.000	76	83	88	84	75	72	75	72	85
	2.500	76	83	88	84	75	74	75	72	85

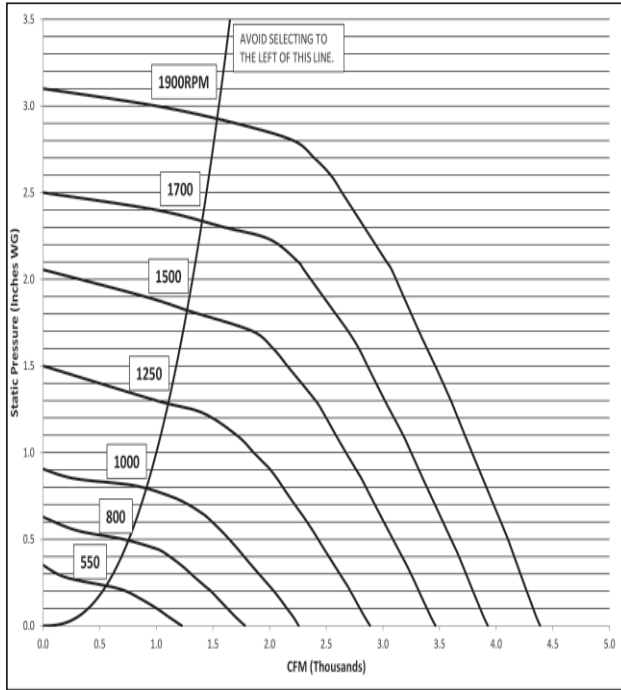
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wi}A sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 12
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
550	0.000	62	55	47	45	43	40	35	30	49
	0.375	71	72	62	55	55	54	49	43	62
1250	0.000	73	79	75	66	62	62	58	53	71
	0.250	73	79	74	65	62	61	57	51	70
	0.500	72	77	73	64	61	60	56	50	69
1600	0.000	75	83	85	74	68	67	66	61	79
	0.750	73	82	82	72	66	66	64	58	77
	1.250	76	83	82	71	65	66	65	60	77
1950	0.000	77	86	90	81	73	72	71	66	84
	0.750	75	86	89	79	72	72	70	64	83
	1.250	75	85	88	78	71	71	69	64	82
	1.750	77	86	88	78	70	71	70	65	82
2250	0.000	78	87	93	86	78	75	74	70	88
	1.000	76	87	92	85	76	75	73	69	87
	1.500	76	86	91	84	76	74	73	68	86
	2.000	77	87	91	84	75	74	73	69	86
	2.500	79	88	91	84	75	73	73	70	86

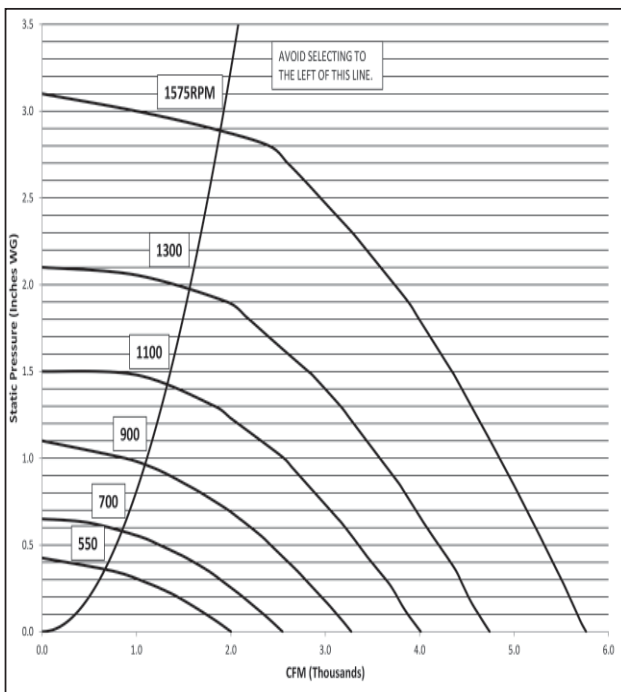
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wi}A sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 15 AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 18 AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 15 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
550	0.000	64	64	56	53	52	47	37	27	57
	0.375	68	72	65	58	57	55	49	43	63
800	0.000	70	75	68	61	61	60	51	41	67
	0.375	73	78	77	68	64	63	57	51	72
	0.750	73	77	75	66	63	62	58	52	71
1050	0.000	77	82	85	76	71	72	68	58	80
	0.750	76	81	84	74	68	68	64	58	78
	1.250	78	81	82	74	67	68	64	58	77
1300	0.000	79	84	89	82	75	76	74	65	85
	0.750	78	83	89	81	73	73	69	63	84
	1.250	78	83	87	80	72	72	69	63	82
	1.750	80	84	87	80	72	72	69	64	82
1550	0.000	81	86	91	86	79	78	77	69	88
	1.000	80	85	91	85	77	75	72	67	86
	1.500	80	85	89	84	76	75	72	67	85
	2.000	79	84	88	83	75	74	72	67	85
	2.500	86	88	90	84	76	75	73	67	86

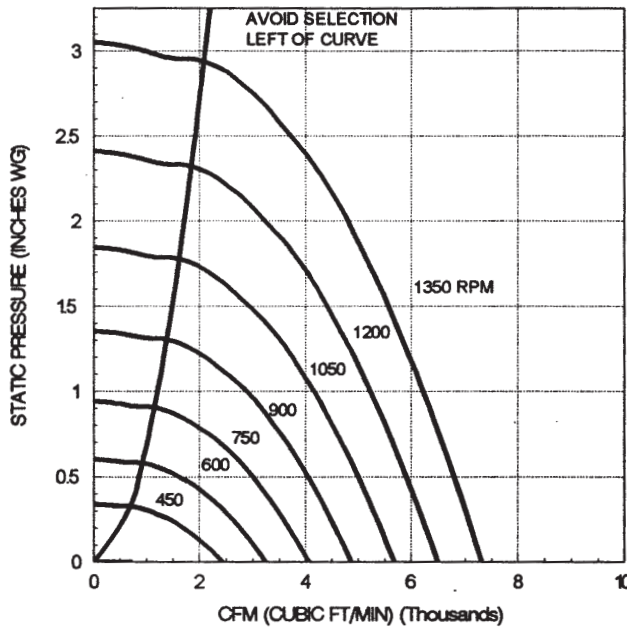
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wj}; A sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 18 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
550	0.000	68	68	59	56	55	55	44	33	61
	0.500	71	70	65	60	57	54	48	41	63
750	0.000	74	76	69	64	62	63	55	44	69
	0.375	78	80	78	70	67	67	64	53	75
	0.625	78	75	73	67	63	61	56	49	70
950	0.000	82	84	85	75	71	71	72	61	80
	1.000	84	79	79	72	68	66	62	55	75
	1.500	84	79	79	73	68	66	62	55	75
1150	0.000	85	87	89	80	76	74	76	67	85
	1.000	88	83	83	77	72	70	67	60	80
	1.500	89	83	83	77	72	70	66	60	80
	2.000	89	83	83	77	72	70	66	60	80
1350	0.000	87	89	91	84	78	77	78	71	87
	1.000	91	86	85	80	75	72	69	63	82
	1.500	91	86	85	80	75	72	69	63	82
	2.000	92	86	85	81	75	72	69	63	83
	2.500	92	87	85	81	75	73	69	63	83

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wj}; A sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 21
AIR PERFORMANCE



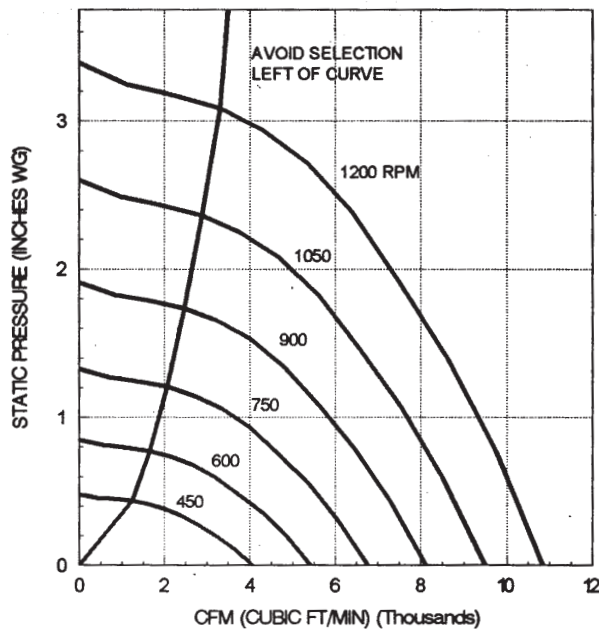
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 21
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
400	.000	59	59	57	57	55	50	43	37	59
	.500	68	72	66	66	67	62	56	49	70
600	.000	77	77	75	72	72	69	64	57	76
	.375	77	77	73	69	68	66	61	55	74
775	.750	78	77	72	66	67	66	61	54	73
	.000	84	82	82	77	76	75	70	64	82
950	.500	84	82	80	74	73	72	67	61	79
	1.250	85	83	80	71	71	72	67	60	78
	.000	90	85	87	81	79	80	75	69	86
1125	1.000	89	87	86	77	75	77	72	66	83
	1.500	90	87	86	76	74	76	73	66	83
	2.000	90	87	86	76	74	76	73	68	83
1300	.000	93	90	91	85	83	83	79	73	90
	1.000	91	91	90	83	80	80	76	71	88
	1.500	92	91	90	82	78	79	76	70	87
	2.000	93	92	90	81	77	79	77	70	87
	2.750	93	92	90	80	77	79	77	70	87

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wi}A sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 24
AIR PERFORMANCE



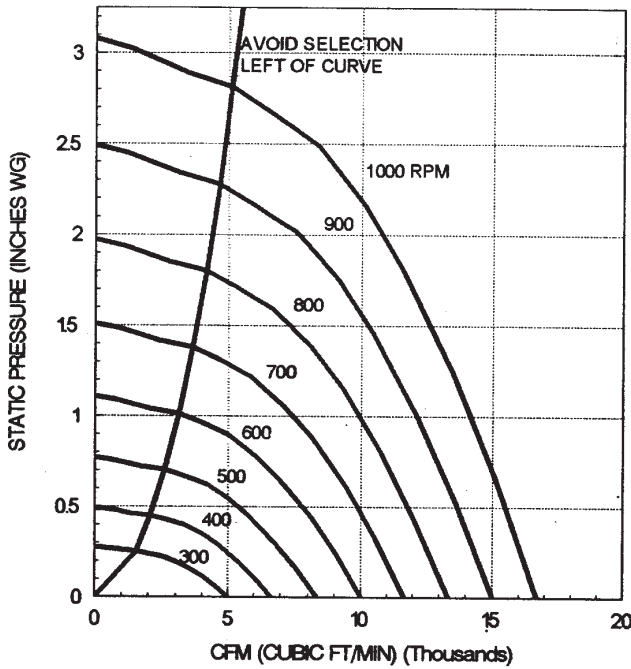
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 24
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
400	.000	69	68	61	59	60	59	50	40	65
	.500	76	78	72	67	66	67	61	51	73
550	.375	75	75	68	64	64	62	57	50	69
	.625	74	75	67	62	63	62	56	50	68
700	.000	82	84	80	73	71	72	70	60	79
	.500	81	82	78	71	69	69	64	58	76
	.750	82	81	77	69	68	69	64	57	75
850	1.000	82	81	77	68	68	68	64	57	75
	.000	87	89	87	78	75	76	76	67	84
	.500	86	88	85	77	73	75	72	65	82
	.750	86	87	85	76	72	75	70	64	82
1000	1.000	87	87	84	75	72	74	70	63	81
	1.500	87	86	84	73	71	73	70	63	81
	.000	90	93	92	84	79	80	81	73	89
	.500	90	92	91	83	78	79	78	71	87
1000	1.000	90	91	89	81	76	78	75	69	86
	1.500	90	91	89	80	76	77	75	68	85
	2.000	91	90	89	79	75	77	74	68	85

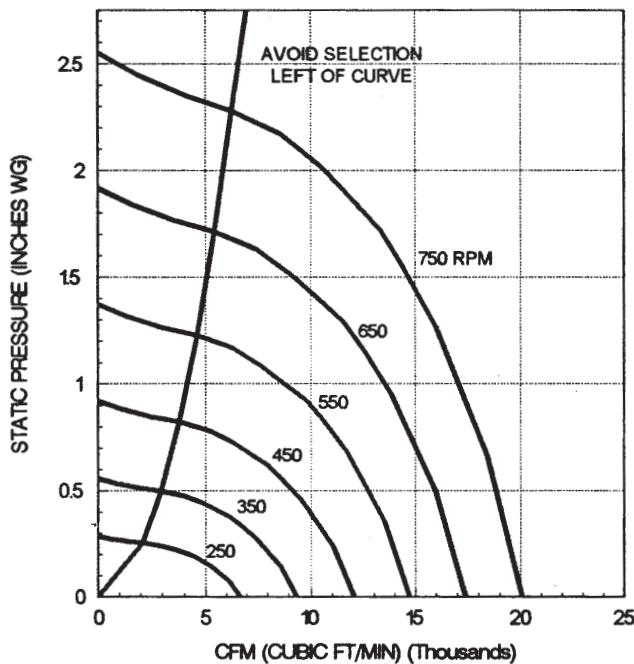
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wi}A sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 30
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 36
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 30
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
275	.000	64	61	60	60	56	49	43	37	61
	.375	70	64	58	58	57	52	48	43	61
375	.000	73	70	66	67	65	59	52	46	69
	.375	70	64	58	58	57	52	48	43	61
	.750	70	64	58	58	57	52	48	43	61
475	.000	78	78	73	72	71	66	60	53	75
	.375	77	74	67	66	65	61	56	51	69
	.625	77	72	65	63	62	59	54	50	67
575	.000	82	83	79	76	76	72	66	59	80
	.500	81	81	74	71	70	67	62	57	75
	.750	82	79	71	67	67	64	60	55	72
675	.000	85	88	84	80	80	77	71	64	84
	.500	85	87	81	76	76	73	68	62	81
	1.000	86	85	77	71	70	69	64	60	77
	1.250	86	85	77	71	70	69	64	60	77
775	.000	88	93	88	83	83	82	75	69	88
	.500	88	91	86	80	80	79	73	67	86
	.750	88	91	85	78	79	77	71	66	84
	1.000	88	90	83	76	76	75	70	65	83
	1.500	89	90	81	74	74	73	68	64	81

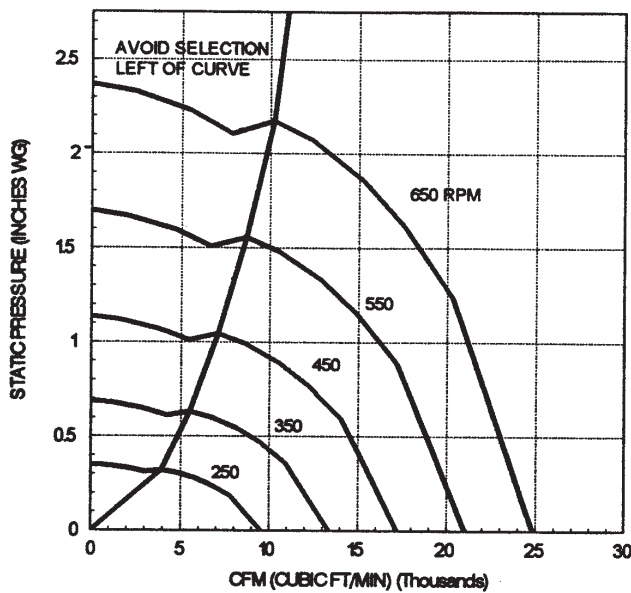
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wiA} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 36
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
250	.000	71	67	63	61	59	60	61	61	67
	.375	73	68	63	61	59	56	51	47	64
325	.000	78	75	70	67	65	65	66	66	73
	.375	73	68	63	61	59	56	51	47	64
	.750	73	68	63	61	59	56	51	47	64
400	.000	83	82	76	72	70	69	70	71	78
	.375	81	78	72	68	66	66	64	58	73
	.625	80	74	69	65	64	60	55	51	69
475	.000	87	87	82	77	74	73	74	74	82
	.500	86	84	78	72	71	70	70	64	78
	.750	86	81	75	70	69	67	64	59	75
550	.000	91	92	86	80	78	76	77	78	86
	.500	91	90	83	77	76	73	76	71	83
	1.000	91	86	80	74	73	71	68	63	79
	1.250	91	85	78	72	72	69	63	59	78
600	.000	93	94	89	83	80	78	79	79	88
	.500	92	93	87	80	78	76	78	74	86
	.750	92	92	85	78	77	75	77	72	85
	1.000	93	90	84	77	76	74	73	68	83
	1.250	93	89	82	76	75	73	69	65	81

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wiA} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 42
AIR PERFORMANCE



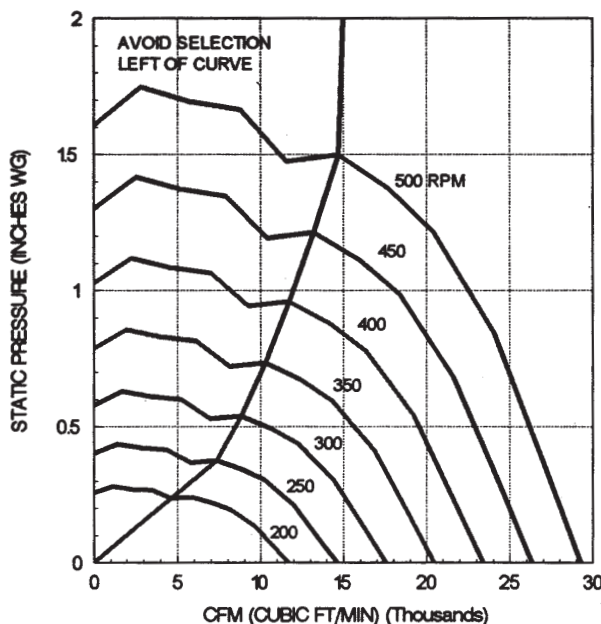
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VRBK 42
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
215	.000	68	67	63	60	58	59	51	42	64
	.000	75	73	70	67	63	65	59	51	71
275	.375	72	68	63	61	58	54	48	42	64
	.000	82	79	76	72	69	69	66	57	76
335	.250	82	78	73	69	66	67	62	50	73
	.500	80	75	70	67	64	61	56	48	70
390	.000	87	83	80	76	73	71	71	62	80
	.375	87	82	77	72	70	69	67	55	77
445	.750	86	78	74	70	68	64	59	52	73
	.000	91	87	84	80	76	73	75	67	83
445	.375	91	86	82	76	74	72	73	62	81
	.750	91	84	79	74	72	69	67	58	79
	1.000	91	82	78	73	71	68	62	56	77
500	.000	95	90	87	83	80	75	79	71	86
	.500	95	90	85	79	77	74	77	66	84
	.750	95	89	84	78	76	73	75	64	83
	1.000	95	87	83	77	75	72	70	62	82
500	1.250	96	86	81	76	74	71	66	60	80

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wi}A sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VRBK 48
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

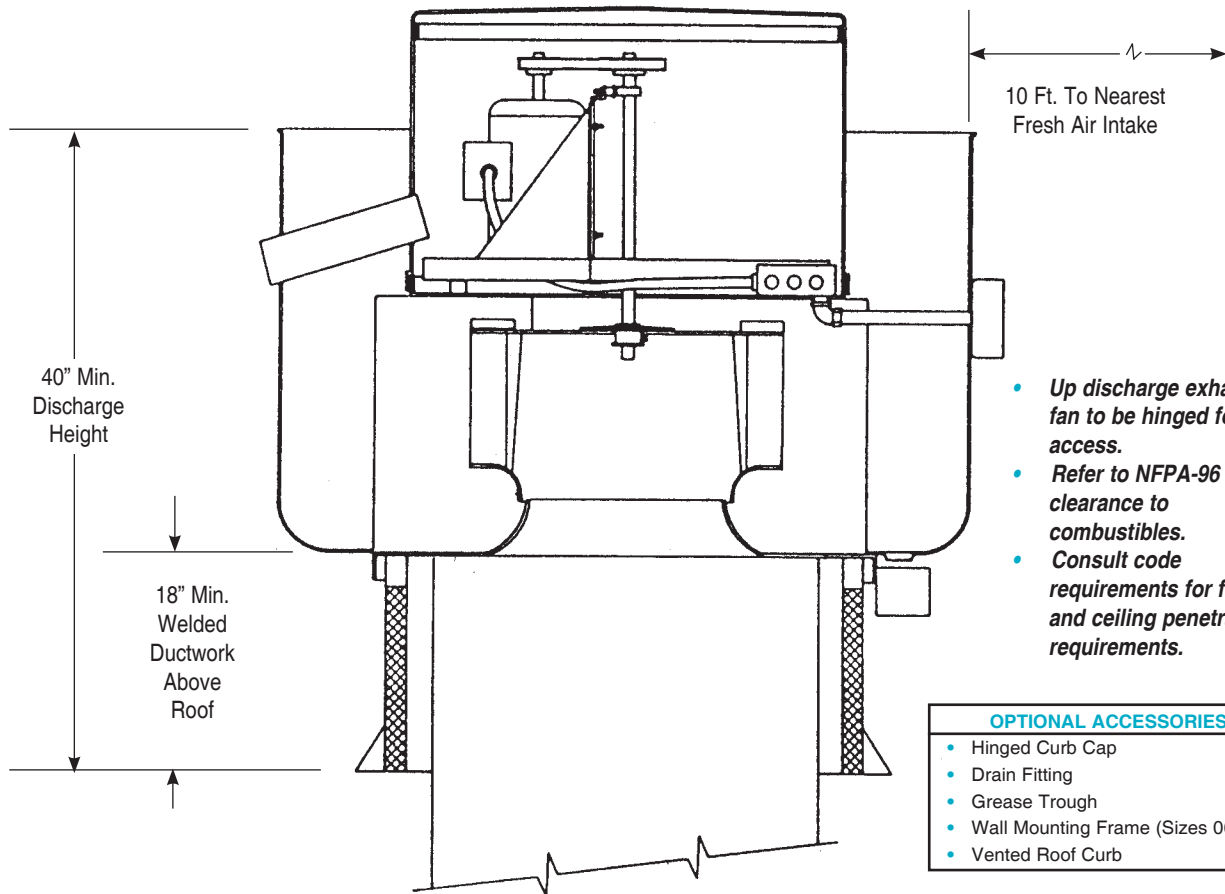
VRBK 48
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
200	.000	77	69	65	63	59	59	52	44	66
	.000	83	77	72	69	65	64	59	52	72
250	.250	82	74	66	64	62	60	53	45	68
	.000	89	84	77	73	70	68	65	58	77
300	.250	89	82	73	69	68	66	62	52	74
	.500	89	81	72	67	67	64	59	51	73
350	.000	93	89	81	77	74	71	70	63	81
	.375	94	87	78	72	71	69	66	57	78
400	.625	94	87	77	70	71	68	64	56	77
	.000	97	94	85	80	78	74	74	67	85
400	.250	98	93	83	77	76	73	73	64	83
	.500	98	92	82	74	75	72	71	62	82
	.750	99	92	81	73	74	71	68	60	82
450	.000	99	98	89	84	81	77	77	71	88
	.250	100	97	88	81	79	76	76	69	87
	.500	100	96	87	79	78	76	75	67	86
	.750	101	96	86	78	77	75	73	65	86
450	1.000	101	96	86	77	77	74	71	64	85

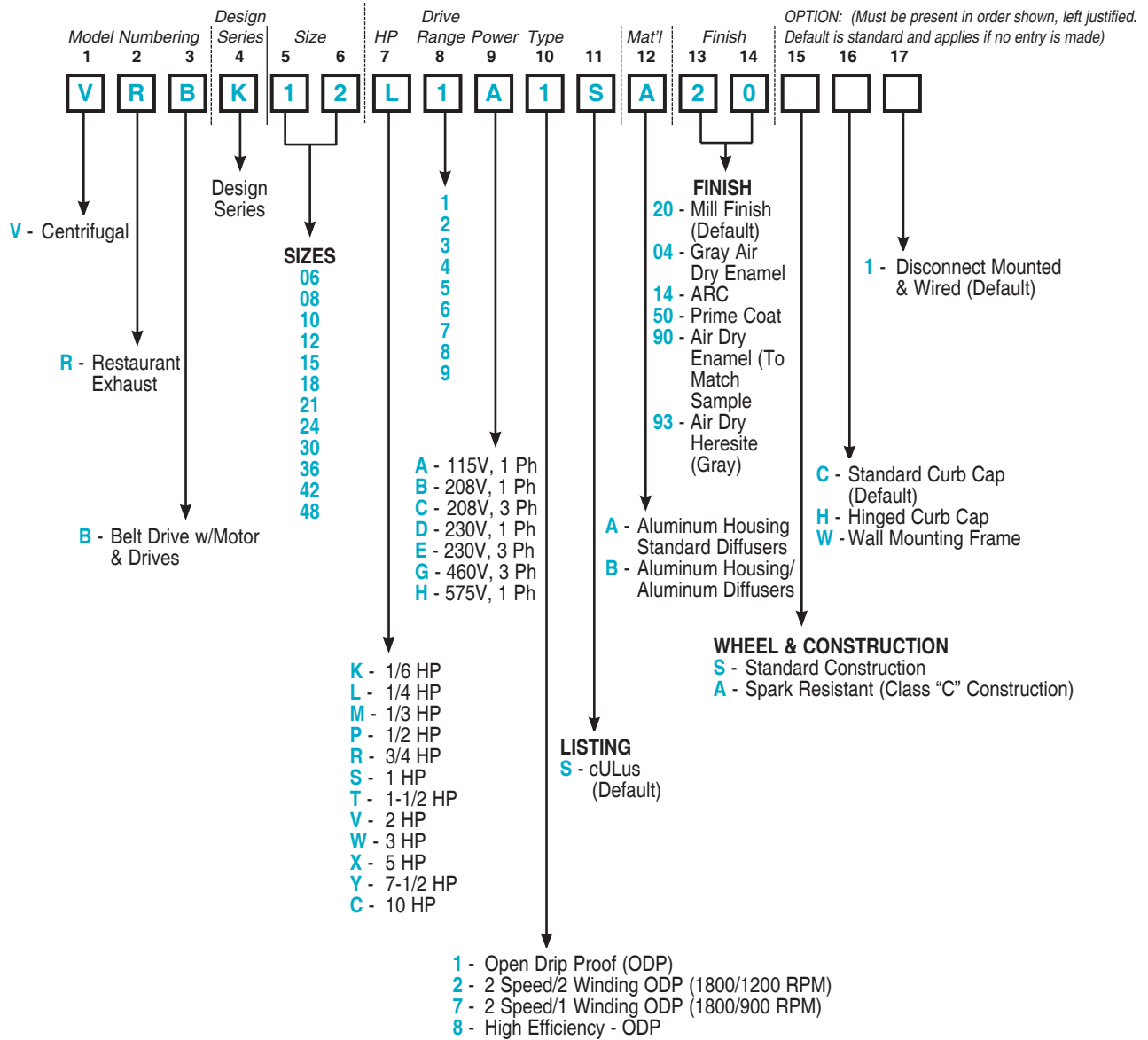
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} and L_{wi}A sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

RESTAURANT INSTALLATION

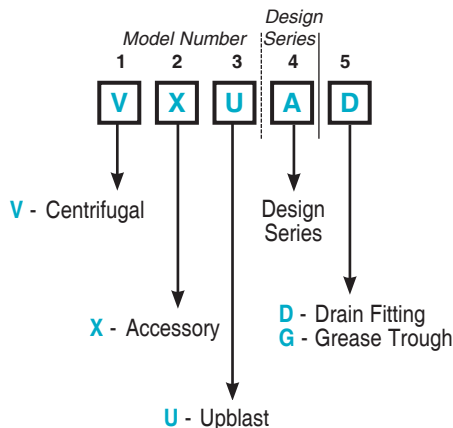
Typical installation - consult local codes for specific requirements.



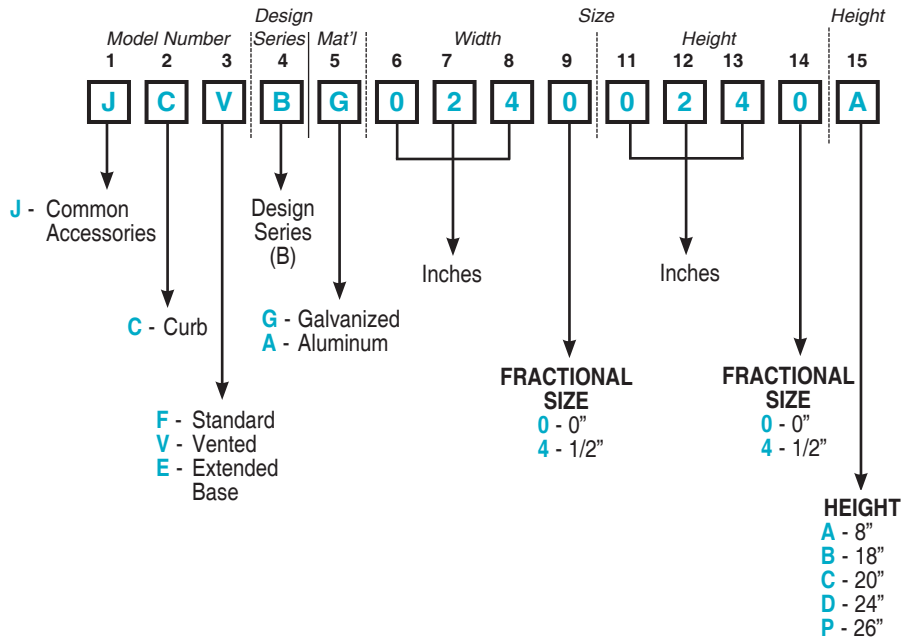
- | OPTIONAL ACCESSORIES |
|-------------------------------------|
| • Hinged Curb Cap |
| • Drain Fitting |
| • Grease Trough |
| • Wall Mounting Frame (Sizes 06-24) |
| • Vented Roof Curb |



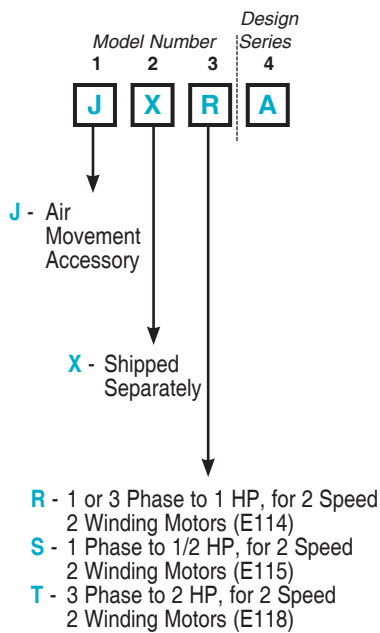
▼ Accessories



▼ Curbs

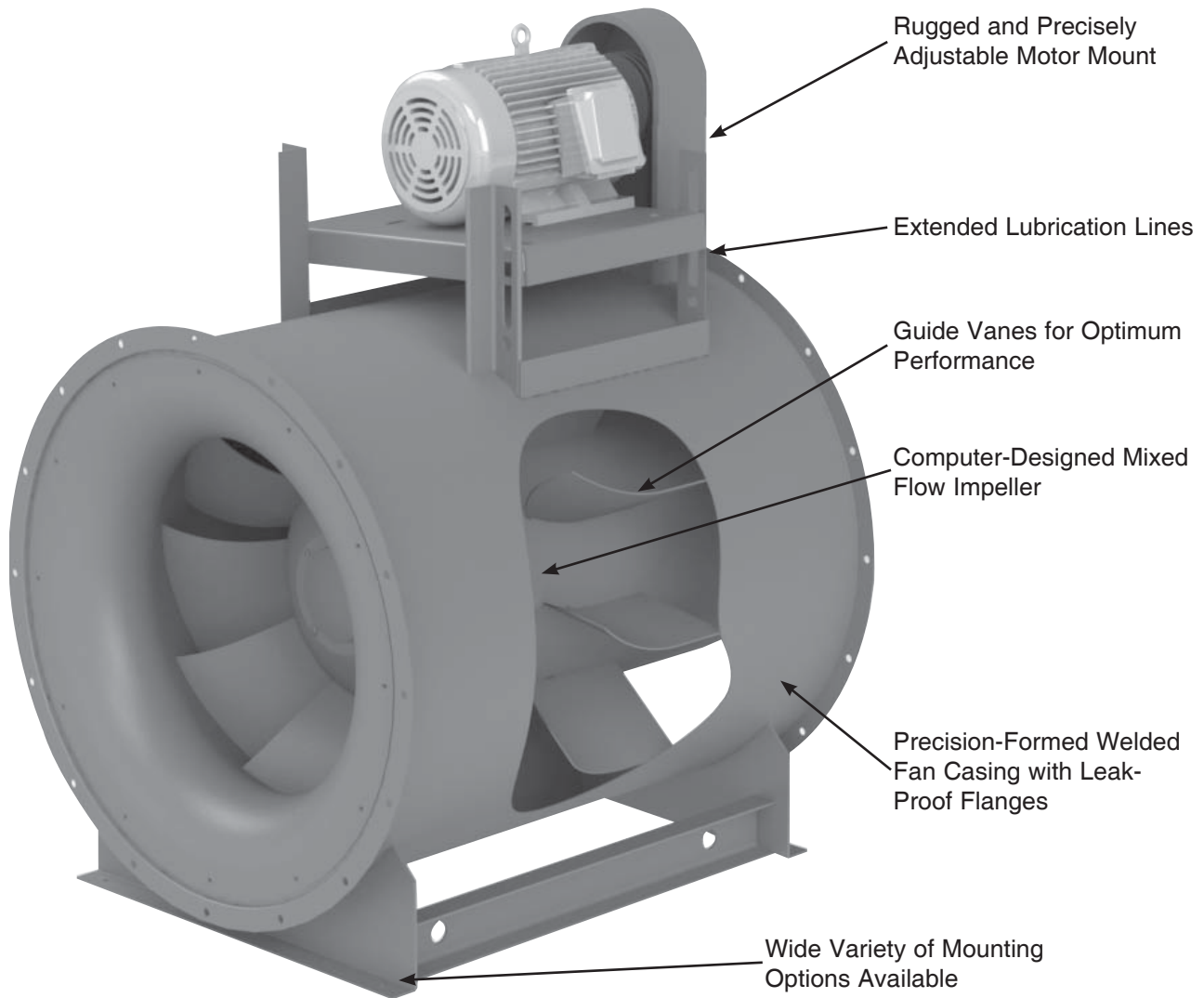


▼ Electrical Accessories



Model VMBL

CONSTRUCTION FEATURES - Advanced Mixed Flow Fan



A product of the latest computerized design techniques, improving upon already proven designs, the VMBL Mixed Flow Fan is designed to save the user cost both in terms of energy consumption and a long trouble-free life. Lower operating speed for a given performance level is the key to this feature, and our VMBL delivers!

The VMBL features bearings lubrication via extended lubrication lines and an externally adjustable motor base. Leakproof rolled flanges assure the fan's integrity. Shafts and bearings are sized for long and robust service life. While intended for HVAC applications, the VMBL has a heavy-duty construction, which makes it a favorite for industrial applications as well.

AMCA LICENSED AIR and SOUND DATA

The Carnes Company certifies that the Model VMBL shown herein is licensed to bear the AMCA Seal - Airflow Measurement Station Performance. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 611 and comply with the requirements of the AMCA Certified Ratings Program.



Model VMBL

ADVANCED MIXED FLOW FAN

Fans shall be VMBL Advanced Mixed Flow Fans. Fans shall be V-belt driven with fixed or adjustable pulleys. The fan impeller shall be mounted on a separate shaft and the bearings supported within a tube centered in the fan casing.

Guide Specifications

Performance

Fans shall be tested in accordance with AMCA 210 test code for air moving devices and shall be guaranteed by Carnes Company to be deliver rated published performance levels within permitted tolerances. Fans shall be tested in an AMCA-approved laboratory for air and sound performance.

Construction

Fan casing shall be minimum of welded 14-gauge. The casing joints shall be continuously welded. Drilled inlet and outlet flanges are standard and shall be integrally rolled or solid welded to insure a leak-proof casing.

Guide Vanes

Fan casing shall be fitted with aerodynamically designed stationary straightening guide vanes on the discharge side of the impeller. Vane design shall be integrated with casing design so as to maximize air-straightening effect. Vanes shall be precisely located and welded to both the fan casing and the bearing housing and act to straighten the tangential component of the air movement downstream of the impeller blades, thereby converting rotational energy losses to pressure, improving efficiency and static pressure capability and reducing power requirements.

Impeller

Impeller shall be made of fabricated steel of all welded construction. Fan impeller shall be designed by means of Computational Fluid Dynamics (CFD) software for maximum efficiency. Conversion (guide) vanes shall be matched to impeller design for improved efficiency and decreased noise output.

Shaft

Shafts shall be AISI 1040 or 1045 cold drawn steel round shapes, accurately turned, ground, polished, and checked for accuracy and straightness. Shaft size shall be selected for the first critical speed of at least 1.25 times the maximum speed.

Bearings

Bearings shall be heavy duty, grease lubricated,

anti-friction ball or spherical roller, self-aligning, flange block type and selected for a minimum average bearing life (AFBMA L-50) in excess of 200,000 hours at the maximum load. All bearings shall be provided with prefilled factory extended lubrication lines fitted with grease fittings terminating at the casing exterior.

Drive

Fans shall be equipped with a (fixed/adjustable*) pitch V-belt drive selected to operate at the required RPM. The V-belt drive is to consist of cast iron sheaves and anti-static conducting belts. Drives shall be selected with a (1.3-1.5) service factor based upon the required motor horsepower of the fan. The complete fan shaft and bearing assembly is mounted within a steel fabricated inner cylinder.

**Fixed only for select drive ranges.*

Motor

Motors for fans shall be manufactured in accordance with current applicable standards of IEEE and NEMA and, where applicable, shall meet at least current EPACT standards for efficiency level. Motors shall be foot-mounted, NEMA standard (ODP, TEFC), continuous duty, ball bearing type with class (B or F) insulation and of cast iron construction when commercially available.

Finish

The entire fan assembly, excluding the shaft, bearings and impeller, shall be thoroughly cleaned before application of finish coat. Prior to assembly, all steel parts are primed and then painted with a molecular film technique epoxy and then electrostatic incorporation of a solid powder to obtain a uniform finish.

Accessories

When specified, accessories shall be provided by Carnes Company to maintain one-source responsibility.

Factory Run Test

All fans with motors and drives mounted by Carnes Company shall be completely assembled and test run as a unit at the specified operating speed prior to shipment.

Model VMBL 12 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.															
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
1400	1528 0.17 11.4	1399 0.20 10.4	1247 0.22 10.0													
1490	1627 0.20 12.7	1505 0.23 11.8	1366 0.26 11.3	1202 0.28 11.0	920 0.29 10.7											
1575	1719 0.24 13.7	1604 0.27 12.9	1476 0.30 12.4	1329 0.32 12.0	1128 0.34 11.7											
1660	1812 0.28 14.9	1703 0.31 14.2	1584 0.34 13.6	1454 0.37 13.3	1296 0.39 12.9	1004 0.40 12.6										
1750	1911 0.32 16.6	1807 0.36 15.7	1698 0.40 15.0	1574 0.43 14.6	1433 0.45 14.2	1236 0.47 13.8	804 0.44 13.6									
1855	2025 0.38 18.1	1928 0.42 17.5	1828 0.46 16.9	1712 0.50 16.5	1589 0.53 16.1	1447 0.55 15.6	1209 0.56 15.3									
1960	2140 0.45 19.6	2047 0.50 19.3	1955 0.54 19.0	1847 0.57 18.6	1737 0.61 18.2	1607 0.63 17.7	1452 0.65 17.4	1170 0.65 17.2								
2065	2254 0.53 22.0	2167 0.57 21.4	2079 0.62 20.8	1981 0.66 20.4	1876 0.69 20.0	1763 0.73 19.7	1636 0.75 19.4	1449 0.77 19.1	1121 0.75 18.8							
2190	2391 0.63 24.1	2308 0.68 23.7	2225 0.73 23.3	2138 0.77 23.0	2039 0.81 22.7	1940 0.85 22.3	1825 0.88 22.0	1705 0.90 21.7	1508 0.92 21.4							
2310	2522 0.74 26.6	2443 0.79 26.3	2365 0.84 25.9	2286 0.89 25.6	2193 0.93 25.2	2099 0.97 24.7	2001 1.01 24.3	1888 1.04 23.8	1774 1.07 23.4	1259 1.05 22.9						
2380	2598 0.81 28.3	2522 0.86 28.0	2446 0.91 27.7	2370 0.96 27.4	2281 1.01 27.0	2191 1.05 26.5	2100 1.09 26.1	1992 1.12 25.7	1882 1.15 25.2	1526 1.18 24.6						
2545	2778 0.99 31.5	2707 1.05 31.1	2636 1.10 30.7	2565 1.16 30.3	2488 1.21 29.9	2403 1.25 29.6	2318 1.30 29.3	2233 1.34 28.9	2131 1.37 28.6	1908 1.43 27.9	1442 1.41 27.3					
2690	2937 1.17 35.1	2869 1.23 34.5	2802 1.29 33.9	2735 1.34 33.3	2667 1.40 32.7	2587 1.45 32.3	2507 1.50 31.9	2427 1.54 31.5	2344 1.59 31.1	2149 1.66 30.3	1866 1.70 29.8	1302 1.62 29.7				
2840	3101 1.38 38.0	3037 1.44 37.6	2973 1.50 37.2	2909 1.56 36.9	2845 1.62 36.5	2775 1.68 36.1	2699 1.73 35.7	2623 1.78 35.3	2547 1.83 35.0	2374 1.91 34.2	2189 1.98 33.5	1862 2.00 32.8	1235 1.87 32.2			
2990	3264 1.61 40.6	3204 1.67 40.3	3143 1.74 40.0	3083 1.80 39.7	3022 1.86 39.4	2961 1.93 39.1	2889 1.98 38.8	2816 2.03 38.4	2744 2.09 38.0	2595 2.19 37.3	2419 2.26 36.5	2209 2.32 35.8	1881 2.34 35.3			
3225	3521 2.02 46.2	3465 2.09 45.6	3409 2.16 45.1	3352 2.23 44.5	3296 2.29 43.9	3240 2.36 43.3	3182 2.43 42.8	3115 2.49 42.5	3047 2.54 42.2	2913 2.66 41.7	2769 2.76 41.1	2606 2.84 40.5	2426 2.91 39.9	2122 2.93 39.3	1600 2.80 38.7	
3400	3712 2.37 50.5	3659 2.44 50.1	3605 2.51 49.7	3552 2.58 49.3	3499 2.66 49.0	3446 2.73 48.6	3392 2.80 48.2	3333 2.87 47.8	3270 2.93 47.3	3142 3.05 46.5	3015 3.17 45.6	2868 3.26 44.7	2714 3.35 43.8	2527 3.42 43.1	2239 3.43 43.1	1754 3.30 43.0

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 15 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.														
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
1245	1935 0.21 12.0	1772 0.25 11.1	1579 0.28 10.7	1342 0.30 10.3											
1315	2044 0.25 13.3	1890 0.29 12.3	1711 0.32 11.8	1501 0.35 11.4	1108 0.35 11.1										
1400	2176 0.30 14.5	2031 0.34 13.6	1868 0.38 13.0	1683 0.41 12.6	1428 0.43 12.3										
1480	2301 0.35 15.8	2163 0.40 14.8	2013 0.44 14.1	1848 0.48 13.8	1650 0.50 13.5	1299 0.51 13.2									
1565	2433 0.42 17.3	2303 0.46 16.5	2166 0.51 15.7	2010 0.55 15.2	1834 0.58 14.7	1596 0.60 14.4									
1650	2565 0.49 18.6	2442 0.54 17.8	2317 0.59 17.0	2169 0.63 16.6	2013 0.67 16.3	1834 0.70 15.9	1535 0.71 15.7								
1740	2705 0.57 20.1	2588 0.62 19.5	2471 0.68 19.0	2334 0.72 18.5	2194 0.77 18.0	2029 0.80 17.5	1831 0.83 17.2	1469 0.82 17.1							
1855	2884 0.69 23.0	2774 0.75 22.4	2664 0.80 21.9	2542 0.86 21.3	2411 0.90 20.7	2272 0.95 20.1	2113 0.98 19.5	1899 1.00 19.1	1539 0.99 19.2						
1960	3047 0.82 25.1	2943 0.88 24.5	2839 0.94 23.9	2730 0.99 23.3	2605 1.04 22.9	2480 1.09 22.5	2338 1.13 22.1	2187 1.17 21.7	1954 1.18 21.5						
2060	3202 0.95 26.9	3104 1.01 26.5	3005 1.07 26.1	2906 1.14 25.8	2788 1.19 25.4	2669 1.24 25.0	2547 1.29 24.6	2404 1.33 24.3	2261 1.36 23.9						
2175	3381 1.12 30.1	3288 1.18 29.4	3194 1.25 28.8	3101 1.31 28.2	2995 1.37 27.8	2882 1.43 27.5	2770 1.48 27.2	2647 1.53 26.9	2511 1.57 26.7	2131 1.62 26.1					
2280	3544 1.29 32.5	3455 1.36 32.2	3366 1.42 31.8	3277 1.49 31.5	3182 1.56 31.2	3075 1.62 30.7	2967 1.67 30.3	2860 1.73 29.8	2735 1.77 29.4	2473 1.85 28.5					
2415	3754 1.53 36.6	3670 1.60 36.3	3586 1.67 36.0	3502 1.75 35.7	3417 1.82 35.3	3318 1.88 34.8	3217 1.94 34.3	3116 2.00 33.8	3015 2.06 33.2	2772 2.15 32.2	2441 2.21 31.4	1797 2.14 31.0			
2545	3956 1.79 40.6	3876 1.87 40.1	3797 1.94 39.7	3717 2.02 39.2	3637 2.10 38.7	3550 2.17 38.3	3454 2.23 37.9	3358 2.30 37.5	3262 2.36 37.2	3049 2.47 36.4	2817 2.56 35.7	2427 2.59 35.0			
2720	4228 2.18 44.9	4154 2.27 44.4	4079 2.35 43.9	4004 2.43 43.4	3929 2.51 43.0	3854 2.59 42.5	3768 2.67 42.1	3678 2.73 41.7	3588 2.80 41.3	3409 2.94 40.5	3196 3.04 39.7	2979 3.14 38.9	2592 3.16 38.3		
2880	4477 2.59 49.7	4407 2.68 49.0	4336 2.77 48.4	4265 2.85 47.8	4195 2.94 47.2	4124 3.03 46.5	4051 3.11 45.9	3967 3.19 45.6	3882 3.26 45.2	3712 3.40 44.5	3532 3.54 43.7	3328 3.64 43.0	3115 3.74 42.3	2732 3.75 42.2	
3045	4734 3.06 54.0	4667 3.16 53.6	4600 3.25 53.2	4533 3.34 52.7	4466 3.43 52.3	4400 3.52 51.9	4333 3.62 51.5	4260 3.70 51.2	4180 3.78 50.8	4019 3.93 50.2	3859 4.08 49.5	3678 4.21 48.9	3485 4.32 48.3	3273 4.42 47.6	2911 4.44 46.9

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 16 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.																
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
900	2076 0.14 7.8	1770 0.17 6.8	1298 0.19 6.4														
1000	2306 0.19 9.5	2037 0.23 8.3	1697 0.26 7.7														
1120	2583 0.26 11.5	2351 0.31 10.2	2076 0.35 9.6	1677 0.36 9.1													
1250	2883 0.37 13.6	2675 0.42 12.3	2440 0.46 11.6	2159 0.50 11.2	1722 0.50 11.1												
1320	3044 0.43 15.2	2847 0.48 13.9	2630 0.54 13.0	2382 0.58 12.5	2066 0.60 12.0	1334 0.55 12.2											
1400	3229 0.51 16.5	3043 0.57 15.5	2844 0.63 14.7	2627 0.68 14.1	2353 0.70 13.5	1937 0.70 13.5											
1470	3390 0.60 17.7	3214 0.66 16.7	3028 0.71 15.8	2822 0.77 15.3	2579 0.80 14.8	2282 0.82 14.4	1700 0.78 14.8										
1565	3609 0.72 19.7	3443 0.78 18.6	3276 0.85 17.7	3082 0.90 17.2	2877 0.96 16.7	2630 0.98 16.2	2278 0.99 16.1	1610 0.92 16.3									
1650	3805 0.84 21.3	3648 0.91 20.2	3490 0.98 19.2	3311 1.04 18.7	3127 1.10 18.2	2904 1.14 17.8	2669 1.17 17.4	2259 1.15 17.5									
1740	4013 0.99 23.7	3864 1.06 22.7	3714 1.13 21.7	3550 1.20 21.0	3375 1.26 20.5	3187 1.32 20.0	2964 1.35 19.5	2703 1.37 19.2	2295 1.34 19.5								
1835	4232 1.16 25.4	4090 1.23 24.4	3949 1.31 23.4	3799 1.38 22.5	3634 1.45 22.0	3468 1.52 21.6	3268 1.56 21.1	3057 1.59 20.6	2767 1.60 20.4								
1975	4555 1.44 28.3	4423 1.52 27.4	4292 1.60 26.5	4160 1.68 25.7	4009 1.76 25.2	3855 1.83 24.7	3701 1.90 24.2	3508 1.94 23.8	3312 1.98 23.3	2715 1.97 23.2							
2085	4809 1.70 31.9	4684 1.78 30.8	4559 1.87 29.8	4435 1.95 28.8	4299 2.03 28.0	4153 2.11 27.6	4007 2.19 27.1	3852 2.26 26.6	3666 2.29 26.2	3256 2.35 25.4	2464 2.24 26.1						
2210	5097 2.02 34.6	4979 2.11 33.5	4862 2.20 32.5	4744 2.29 31.4	4624 2.38 30.4	4487 2.46 30.0	4349 2.54 29.5	4212 2.63 29.0	4059 2.69 28.6	3709 2.77 27.6	3206 2.77 27.4	2245 2.57 27.8					
2340	5397 2.40 38.4	5286 2.50 37.3	5175 2.59 36.1	5064 2.69 34.9	4953 2.78 33.7	4829 2.87 33.0	4699 2.96 32.5	4570 3.04 32.1	4440 3.13 31.6	4127 3.24 30.7	3796 3.32 29.8	3228 3.27 30.1					
2455	5662 2.78 41.0	5556 2.87 39.9	5450 2.97 38.8	5344 3.07 37.7	5239 3.17 36.6	5129 3.27 35.7	5005 3.36 35.2	4881 3.45 34.8	4758 3.54 34.4	4489 3.70 33.5	4174 3.79 32.6	3795 3.83 32.1	3216 3.75 32.7				
2590	5973 3.26 44.4	5873 3.36 43.5	5773 3.47 42.6	5672 3.57 41.8	5572 3.68 40.9	5472 3.78 40.0	5360 3.88 39.4	5243 3.98 39.0	5125 4.07 38.6	4891 4.26 37.7	4606 4.38 36.8	4307 4.48 35.9	3889 4.48 35.6	3340 4.40 35.8			
2740	6319 3.86 50.2	6224 3.97 49.0	6130 4.08 47.8	6035 4.19 46.6	5940 4.30 45.4	5845 4.41 44.2	5750 4.52 43.0	5639 4.62 42.6	5528 4.73 42.2	5306 4.93 41.3	5075 5.12 40.4	4792 5.22 39.6	4509 5.32 38.7	4090 5.31 38.6	3571 5.22 39.0		
2900	6688 4.57 54.3	6599 4.69 53.4	6509 4.81 52.6	6420 4.93 51.8	6330 5.04 50.9	6240 5.16 50.1	6151 5.28 49.2	6056 5.39 48.5	5951 5.50 48.0	5742 5.71 47.1	5532 5.93 46.1	5297 6.09 45.2	5030 6.20 44.2	4762 6.31 43.3	4369 6.30 43.1	3879 6.20 43.4	3003 5.84 43.7

Performance certified is for installation type B - free inlet, ducted outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 18 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.															
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
900	2916 0.24 9.8	2582 0.29 8.7	2160 0.33 8.1													
1000	3240 0.33 11.9	2948 0.39 10.3	2605 0.44 9.7	2103 0.45 9.3												
1055	3418 0.39 12.8	3142 0.45 11.6	2825 0.50 10.9	2429 0.54 10.3												
1115	3613 0.46 14.2	3351 0.52 12.8	3057 0.58 12.0	2704 0.62 11.5	2152 0.62 11.4											
1180	3823 0.54 15.3	3576 0.61 14.0	3304 0.67 13.2	2994 0.73 12.8	2600 0.75 12.5											
1255	4066 0.65 17.2	3834 0.72 15.9	3585 0.79 15.0	3315 0.86 14.4	2974 0.89 13.9	2465 0.89 13.8										
1320	4277 0.76 18.4	4056 0.83 17.2	3826 0.91 16.2	3569 0.98 15.6	3268 1.03 15.0	2912 1.05 14.5	2237 1.01 15.2									
1400	4536 0.91 19.9	4328 0.99 18.9	4118 1.07 18.0	3876 1.14 17.5	3621 1.20 17.0	3311 1.24 16.5	2876 1.24 16.5									
1480	4795 1.07 22.1	4598 1.16 20.9	4402 1.24 19.7	4178 1.32 19.1	3949 1.39 18.6	3673 1.44 18.2	3379 1.48 17.7	2882 1.46 17.9								
1560	5055 1.25 24.1	4868 1.34 23.1	4681 1.43 22.1	4476 1.52 21.4	4259 1.60 21.0	4026 1.67 20.5	3747 1.71 20.0	3433 1.74 19.6	2924 1.70 19.9							
1675	5427 1.55 27.0	5253 1.65 26.1	5079 1.74 25.1	4899 1.84 24.2	4697 1.92 23.8	4494 2.01 23.4	4262 2.08 22.9	4002 2.12 22.5	3719 2.15 22.1							
1770	5735 1.83 29.9	5570 1.93 28.7	5406 2.03 27.5	5241 2.13 26.3	5052 2.23 25.8	4861 2.32 25.4	4669 2.41 25.0	4430 2.46 24.6	4184 2.51 24.2	3452 2.50 24.2						
1860	6027 2.13 32.3	5870 2.23 31.3	5713 2.34 30.3	5557 2.44 29.3	5386 2.54 28.5	5203 2.64 28.1	5021 2.74 27.6	4825 2.82 27.1	4592 2.87 26.6	4072 2.94 25.9						
1975	6399 2.54 35.3	6252 2.66 34.3	6104 2.77 33.3	5957 2.88 32.2	5806 2.99 31.3	5634 3.10 30.8	5462 3.20 30.4	5291 3.30 29.9	5100 3.38 29.4	4660 3.49 28.5	4033 3.49 28.3					
2115	6853 3.13 39.5	6715 3.25 38.5	6577 3.37 37.5	6439 3.49 36.5	6302 3.61 35.5	6151 3.72 34.8	5991 3.83 34.3	5830 3.94 33.8	5670 4.05 33.3	5292 4.20 32.3	4880 4.31 31.4	4229 4.27 31.4				
2240	7258 3.71 44.7	7128 3.84 43.6	6998 3.97 42.6	6868 4.10 41.6	6737 4.22 40.5	6607 4.35 39.5	6456 4.47 39.0	6304 4.58 38.5	6153 4.70 38.0	5841 4.92 37.0	5453 5.04 36.0	5064 5.15 35.0	4374 5.06 35.3			
2320	7517 4.12 47.0	7391 4.26 45.9	7266 4.39 44.7	7140 4.52 43.5	7015 4.65 42.3	6889 4.78 41.1	6750 4.91 40.7	6604 5.03 40.7	6457 5.15 40.7	6165 5.39 40.6	5811 5.54 40.5	5436 5.66 40.4	4928 5.69 40.0	4244 5.58 39.0		
2460	7971 4.92 52.0	7852 5.06 50.7	7734 5.20 49.5	7615 5.34 48.2	7497 5.48 47.0	7378 5.62 45.7	7260 5.76 44.5	7122 5.89 44.1	6984 6.01 43.8	6708 6.27 43.0	6425 6.51 42.3	6072 6.64 41.6	5718 6.77 40.9	5222 6.78 40.7	4577 6.67 40.9	
2600	8424 5.81 58.3	8312 5.95 57.0	8200 6.10 55.8	8088 6.25 54.5	7976 6.40 53.3	7864 6.55 52.0	7752 6.69 50.8	7635 6.84 49.7	7504 6.97 49.3	7243 7.24 48.4	6982 7.51 47.6	6691 7.73 46.7	6357 7.87 45.8	6022 8.00 45.0	5552 8.01 44.7	4942 7.89 45.0

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 20 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.															
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
690	3183 0.20 7.7	2677 0.25 6.7														
765	3529 0.27 9.3	3083 0.33 8.2	2505 0.37 7.7													
845	3898 0.36 11.3	3505 0.43 9.8	3022 0.48 9.2	2224 0.49 9.1												
900	4152 0.43 12.3	3789 0.51 11.0	3364 0.57 10.4	2769 0.60 10.0												
945	4360 0.50 13.6	4014 0.58 12.3	3616 0.65 11.5	3122 0.69 10.7												
1000	4614 0.60 14.7	4287 0.68 13.3	3918 0.75 12.6	3479 0.81 12.1	2812 0.81 11.9											
1065	4913 0.72 16.5	4606 0.81 15.2	4269 0.89 14.4	3890 0.96 13.8	3431 1.00 13.2											
1125	5190 0.85 17.7	4900 0.94 16.5	4589 1.03 15.6	4248 1.11 15.1	3826 1.16 14.5	3213 1.16 14.4										
1190	5490 1.00 19.5	5215 1.10 18.2	4930 1.19 17.1	4608 1.28 16.6	4242 1.35 16.1	3831 1.39 15.6	3094 1.36 16.1									
1250	5767 1.16 21.0	5505 1.26 19.8	5242 1.36 18.6	4936 1.46 18.2	4617 1.54 17.8	4226 1.59 17.4	3694 1.60 17.2									
1345	6205 1.45 23.7	5962 1.56 22.5	5719 1.67 21.3	5446 1.77 20.6	5161 1.87 20.1	4834 1.94 19.6	4471 1.99 19.1	3939 1.99 19.2								
1420	6551 1.70 25.5	6321 1.82 24.5	6091 1.93 23.6	5842 2.04 22.9	5572 2.15 22.4	5301 2.25 22.0	4957 2.31 21.5	4613 2.36 21.1	4035 2.33 21.2							
1500	6920 2.01 28.2	6702 2.13 27.1	6484 2.25 25.9	6260 2.37 24.9	6005 2.48 24.5	5749 2.59 24.0	5463 2.68 23.6	5137 2.74 23.1	4811 2.79 22.7							
1590	7336 2.39 31.3	7130 2.52 30.2	6924 2.65 29.2	6718 2.78 28.1	6484 2.90 27.6	6243 3.02 27.1	6002 3.13 26.6	5711 3.21 26.1	5404 3.27 25.7	4535 3.27 25.5						
1700	7843 2.93 34.9	7651 3.06 33.9	7458 3.20 32.8	7266 3.34 31.8	7062 3.47 31.0	6836 3.60 30.5	6611 3.72 30.1	6385 3.85 29.7	6107 3.92 29.2	5532 4.05 28.4	4549 3.97 28.5					
1800	8304 3.47 39.1	8123 3.62 37.8	7941 3.76 36.5	7759 3.91 35.2	7578 4.05 33.9	7367 4.19 33.4	7154 4.32 32.9	6942 4.46 32.5	6729 4.59 32.0	6186 4.72 31.1	5539 4.80 30.5	4472 4.65 31.1				
1900	8766 4.08 42.5	8594 4.24 41.4	8422 4.39 40.4	8249 4.54 39.3	8077 4.70 38.3	7892 4.85 37.5	7690 4.99 36.9	7488 5.13 36.4	7287 5.27 35.9	6823 5.47 34.8	6309 5.61 33.8	5550 5.60 33.6	4305 5.33 34.0			
2020	9319 4.91 47.4	9158 5.07 46.4	8996 5.23 45.3	8834 5.40 44.2	8672 5.56 43.2	8510 5.72 42.1	8324 5.88 41.5	8134 6.02 41.0	7945 6.17 40.5	7565 6.47 39.5	7086 6.63 38.5	6602 6.78 37.4	5823 6.72 37.6	4659 6.44 38.3		
2185	10081 6.21 54.9	9931 6.39 53.8	9781 6.56 52.7	9632 6.74 51.6	9482 6.92 50.4	9332 7.09 49.3	9183 7.27 48.2	9008 7.43 47.7	8832 7.59 47.2	8481 7.92 46.2	8121 8.23 45.1	7673 8.39 44.1	7226 8.55 43.1	6594 8.56 42.8	5775 8.42 43.2	
2290	10565 7.15 59.4	10422 7.34 58.3	10279 7.52 57.2	10137 7.71 56.1	9994 7.89 55.0	9851 8.08 53.9	9708 8.26 52.8	9556 8.44 51.9	9389 8.61 51.4	9054 8.95 50.3	8719 9.29 49.3	8336 9.54 48.2	7909 9.71 47.2	7483 9.88 46.1	6821 9.84 46.1	6040 9.69 46.5

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 23 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.														
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
690	4489 0.31 10.0	4009 0.39 8.3	3380 0.44 7.3												
745	4847 0.39 11.3	4417 0.47 9.5	3854 0.54 8.5												
795	5172 0.47 12.7	4780 0.56 10.9	4274 0.65 9.9	3593 0.69 9.3											
845	5498 0.56 13.8	5129 0.66 12.1	4677 0.76 11.1	4139 0.82 10.2											
910	5921 0.71 15.7	5578 0.81 14.0	5175 0.91 12.8	4700 0.99 11.9	4048 1.03 11.6										
955	6213 0.82 16.8	5887 0.93 15.2	5515 1.04 14.0	5079 1.13 13.2	4597 1.19 12.4	3711 1.20 13.0									
1010	6571 0.96 18.6	6263 1.08 17.0	5925 1.20 15.7	5533 1.31 14.9	5078 1.38 14.1	4430 1.41 14.0									
1060	6897 1.12 20.0	6602 1.24 18.4	6293 1.36 17.0	5922 1.48 16.3	5505 1.56 15.5	5062 1.63 14.8	4249 1.64 15.5								
1140	7417 1.39 22.6	7144 1.52 21.1	6870 1.66 19.6	6531 1.78 18.8	6174 1.90 18.1	5770 1.97 17.4	5280 2.03 17.1	4524 2.04 17.6							
1205	7840 1.64 24.7	7581 1.78 23.4	7322 1.92 22.1	7018 2.06 21.1	6692 2.19 20.2	6323 2.28 19.4	5941 2.36 18.5	5369 2.40 18.6							
1270	8263 1.92 26.9	8017 2.07 25.6	7772 2.22 24.4	7500 2.36 23.3	7190 2.50 22.5	6865 2.62 21.8	6502 2.71 21.0	6140 2.79 20.3	5507 2.81 20.8						
1345	8751 2.28 29.8	8519 2.44 28.6	8287 2.59 27.3	8050 2.75 26.1	7757 2.90 25.3	7464 3.05 24.5	7136 3.15 23.7	6794 3.24 22.9	6452 3.33 22.1						
1440	9369 2.80 33.4	9152 2.96 32.0	8936 3.13 30.6	8719 3.30 29.2	8465 3.47 28.2	8191 3.62 27.6	7918 3.78 26.9	7601 3.88 26.2	7281 3.97 25.6	6415 4.10 25.2					
1520	9889 3.29 37.3	9684 3.47 35.9	9479 3.65 34.4	9274 3.82 33.0	9053 4.00 31.8	8794 4.17 31.1	8535 4.33 30.5	8265 4.48 29.8	7963 4.58 29.1	7357 4.78 27.8					
1615	10507 3.94 40.5	10314 4.13 39.1	10121 4.32 37.7	9928 4.51 36.3	9735 4.70 34.9	9501 4.88 34.1	9257 5.06 33.5	9013 5.24 32.8	8754 5.39 32.2	8184 5.60 30.9	7503 5.77 30.2				
1710	11126 4.68 45.2	10943 4.88 43.8	10761 5.08 42.3	10579 5.28 40.9	10396 5.49 39.4	10199 5.68 38.2	9969 5.87 37.6	9739 6.06 37.0	9509 6.24 36.3	8991 6.51 35.1	8453 6.73 33.8	7669 6.86 33.7			
1830	11906 5.74 49.4	11736 5.95 48.1	11566 6.17 46.8	11395 6.38 45.5	11225 6.60 44.2	11054 6.81 42.9	10856 7.02 42.0	10641 7.22 41.4	10426 7.42 40.8	9988 7.80 39.6	9485 8.04 38.3	8982 8.28 37.1	8223 8.40 37.3		
1985	12915 7.32 56.4	12758 7.56 55.1	12601 7.79 53.9	12444 8.02 52.7	12286 8.26 51.5	12129 8.49 50.3	11972 8.72 49.0	11788 8.95 48.2	11589 9.16 47.6	11192 9.60 46.3	10779 9.99 45.1	10316 10.25 43.9	9852 10.51 42.6	9278 10.71 42.1	8409 10.74 43.4

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 27 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.														
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
600	5585 0.37 9.9	4971 0.46 8.2	4136 0.54 7.3												
665	6190 0.50 11.7	5651 0.61 10.1	4964 0.70 9.0												
700	6515 0.58 12.8	6013 0.70 11.0	5396 0.80 10.0	4459 0.85 9.5											
745	6934 0.70 14.4	6462 0.83 12.6	5917 0.94 11.5	5198 1.02 10.5											
790	7353 0.84 15.6	6908 0.97 13.9	6405 1.09 12.7	5773 1.18 11.8											
835	7772 0.99 17.2	7351 1.13 15.5	6886 1.26 14.3	6335 1.37 13.4	5632 1.45 12.6										
875	8144 1.14 18.6	7742 1.29 16.9	7309 1.42 15.5	6824 1.55 14.7	6192 1.64 13.8	5228 1.67 13.8									
935	8703 1.39 20.8	8326 1.55 19.0	7936 1.70 17.4	7493 1.84 16.7	6953 1.95 16.1	6322 2.03 15.5									
945	8796 1.43 21.1	8423 1.59 19.5	8040 1.75 18.0	7601 1.89 17.2	7077 2.00 16.3	6492 2.10 15.5									
995	9261 1.67 22.8	8908 1.84 21.3	8554 2.01 19.7	8139 2.16 18.9	7693 2.29 18.1	7137 2.39 17.2	6399 2.45 17.1								
1050	9773 1.97 24.6	9438 2.14 23.1	9103 2.32 21.6	8723 2.48 20.7	8329 2.63 19.9	7831 2.75 19.2	7304 2.86 18.4	6458 2.89 18.7							
1110	10331 2.33 26.4	10015 2.51 25.3	9698 2.70 24.3	9353 2.87 23.4	8980 3.04 22.6	8571 3.18 21.8	8073 3.30 21.0	7547 3.40 20.3	6672 3.41 21.0						
1200	11169 2.94 31.1	10876 3.14 29.6	10583 3.34 28.1	10287 3.54 26.7	9941 3.72 26.0	9596 3.89 25.4	9194 4.04 24.7	8734 4.16 24.0	8273 4.28 23.4	6687 4.32 24.4					
1270	11821 3.48 33.8	11544 3.70 32.6	11267 3.91 31.3	10990 4.12 30.1	10678 4.32 29.2	10352 4.50 28.5	10026 4.69 27.8	9609 4.83 27.2	9174 4.95 26.5	7995 5.10 26.4					
1345	12519 4.14 38.0	12257 4.36 36.6	11996 4.59 35.2	11734 4.82 33.8	11458 5.03 32.6	11150 5.23 31.7	10842 5.43 30.9	10526 5.62 30.0	10115 5.75 29.2	9293 6.02 27.5					
1440	13403 5.08 42.7	13159 5.32 41.3	12914 5.56 39.8	12670 5.80 38.4	12426 6.05 36.9	12148 6.26 36.1	11861 6.47 35.4	11573 6.68 34.7	11279 6.89 34.0	10511 7.18 32.6	9643 7.43 31.7				
1530	14241 6.09 48.5	14011 6.35 47.0	13781 6.60 45.5	13551 6.86 44.1	13321 7.12 42.6	13082 7.37 41.3	12811 7.59 40.6	12541 7.82 39.9	12270 8.04 39.2	11634 8.41 37.8	10911 8.72 36.4	9958 8.92 36.1			
1670	15544 7.92 55.5	15333 8.20 54.1	15122 8.48 52.6	14912 8.76 51.2	14701 9.04 49.8	14491 9.32 48.3	14268 9.59 47.1	14020 9.84 46.4	13772 10.08 45.7	13276 10.57 44.4	12670 10.96 43.0	12008 11.29 41.6	11264 11.58 40.7	10101 11.62 42.0	
1770	16474 9.43 61.1	16276 9.73 59.6	16077 10.02 58.2	15878 10.32 56.8	15680 10.62 55.4	15481 10.92 54.0	15282 11.21 52.6	15062 11.49 51.6	14828 11.75 51.0	14360 12.26 49.7	13891 12.78 48.3	13266 13.14 47.0	12641 13.49 45.7	11924 13.79 44.9	10827 13.83 46.1

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 30 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.															
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
530	7024 0.46 10.0	6241 0.58 8.2	5172 0.67 7.2													
570	7554 0.57 11.4	6841 0.70 9.5	5906 0.80 8.5													
625	8282 0.75 13.0	7651 0.90 11.5	6878 1.02 10.3													
665	8813 0.90 14.7	8219 1.06 12.9	7532 1.20 11.8	6630 1.30 10.8												
700	9276 1.05 16.0	8712 1.22 14.4	8073 1.37 13.3	7267 1.49 12.4												
750	9939 1.29 18.4	9413 1.47 16.6	8833 1.64 15.3	8154 1.78 14.3	7325 1.89 13.3											
790	10469 1.51 19.8	9969 1.70 18.1	9434 1.88 16.7	8843 2.04 15.8	8060 2.16 14.8											
840	11132 1.82 21.8	10662 2.02 20.0	10176 2.21 18.3	9620 2.39 17.4	8957 2.53 16.6	8217 2.65 15.7										
885	11728 2.12 23.5	11282 2.34 21.7	10836 2.55 19.9	10310 2.73 19.2	9746 2.91 18.6	9044 3.03 17.9	8114 3.11 17.6									
960	12722 2.71 26.8	12311 2.94 25.4	11899 3.17 23.9	11442 3.38 22.8	10955 3.58 22.0	10382 3.75 21.1	9735 3.89 20.3	8869 3.97 20.2								
1010	13384 3.16 29.1	12994 3.40 27.7	12603 3.64 26.2	12186 3.87 25.0	11723 4.08 24.2	11252 4.29 23.4	10636 4.43 22.5	10021 4.58 21.7	9059 4.63 22.0							
1075	14246 3.81 32.8	13879 4.06 31.3	13511 4.32 29.7	13143 4.58 28.1	12709 4.80 27.4	12274 5.03 26.6	11782 5.22 25.8	11203 5.38 25.0	10625 5.53 24.3	8689 5.60 25.3						
1135	15041 4.48 32.5	14693 4.75 31.8	14345 5.02 31.2	13997 5.29 30.6	13607 5.54 29.9	13195 5.78 29.2	12784 6.02 28.5	12269 6.20 27.8	11721 6.36 27.1	10279 6.56 26.8						
1200	15902 5.30 35.6	15573 5.58 35.2	15244 5.87 34.8	14915 6.16 34.3	14569 6.43 33.8	14180 6.68 32.9	13791 6.93 32.1	13398 7.18 31.2	12880 7.35 30.4	11845 7.70 28.7	10119 7.77 29.8					
1285	17029 6.50 43.8	16722 6.81 42.5	16414 7.12 41.2	16107 7.42 39.9	15800 7.73 38.6	15451 8.01 37.6	15088 8.28 36.8	14724 8.55 36.0	14360 8.81 35.2	13393 9.18 33.6	12333 9.51 32.4	10632 9.55 33.8				
1370	18155 7.88 50.3	17867 8.21 48.8	17579 8.53 47.2	17291 8.86 45.6	17002 9.19 44.0	16706 9.51 42.6	16365 9.80 41.9	16025 10.08 41.1	15684 10.37 40.4	14899 10.86 39.0	13992 11.25 37.6	12862 11.53 37.0	11266 11.58 38.2			
1460	19348 9.54 56.3	19077 9.89 54.7	18807 10.23 53.2	18537 10.58 51.7	18266 10.93 50.1	17996 11.28 48.6	17701 11.61 47.5	17381 11.91 46.8	17061 12.22 46.1	16421 12.83 44.8	15604 13.28 43.4	14753 13.69 42.0	13632 13.96 41.8	12135 14.01 43.1		
1560	20673 11.63 64.4	20420 12.01 62.8	20167 12.38 61.1	19914 12.75 59.5	19661 13.12 57.9	19408 13.50 56.2	19154 13.87 54.6	18868 14.21 53.7	18569 14.54 53.0	17970 15.19 51.6	17350 15.82 50.2	16553 16.26 48.9	15756 16.71 47.5	14752 17.02 47.0	13351 17.07 48.3	11944 17.12 49.5

Performance certified is for installation type B - free inlet, ducted outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 33 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.															
	0.000	0.250	0.500	0.750	1.000	1.500	2.000	3.000	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500
	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones
485	9034 0.54	7936 0.71	6378 0.83	2055 0.80	302 1.00											
	11.4	9.7	8.4	9.5	10.9											
510	9500 0.63	8475 0.81	7062 0.94	3397 0.87	989 1.09											
	12.5	10.7	9.3	10.0	11.5											
535	9965 0.73	9009 0.92	7731 1.07	5601 1.10	1495 1.15											
	13.5	11.7	10.4	10.4	11.8											
585	10897 0.95	10045 1.17	8985 1.34	7496 1.45	3717 1.32	86 1.79										
	15.7	14.0	12.7	11.4	12.8	15.6										
620	11549 1.13	10745 1.36	9773 1.55	8525 1.70	6555 1.71	1116 1.99										
	17.4	15.7	14.4	13.1	13.5	16.1										
675	12573 1.46	11835 1.71	10986 1.93	9987 2.12	8637 2.23	2302 2.20	83 2.76									
	20.0	18.5	17.1	15.9	14.7	17.2	19.7									
710	13225 1.70	12523 1.96	11744 2.20	10857 2.41	9683 2.56	4209 2.39	1165 3.03									
	21.6	20.1	18.7	17.6	16.4	17.9	20.4									
750	13970 2.00	13306 2.28	12600 2.55	11760 2.77	10758 2.95	7297 2.95	1983 3.23									
	23.4	22.0	20.6	19.5	18.4	18.6	21.1									
800	14902 2.43	14279 2.73	13656 3.02	12870 3.26	12066 3.49	9585 3.70	3793 3.53									
	25.7	24.3	22.9	21.8	20.8	19.5	22.0									
850	15833 2.91	15247 3.23	14660 3.55	13961 3.81	13220 4.06	11323 4.44	6773 4.05	833 5.33								
	28.1	26.7	25.4	24.3	23.3	21.2	22.9	27.8								
900	16764 3.46	16211 3.79	15657 4.13	15036 4.43	14336 4.69	12681 5.14	10167 5.25	2055 5.79								
	30.6	29.3	27.9	26.7	25.7	23.8	23.9	28.8								
960	17882 4.20	17363 4.56	16844 4.91	16310 5.26	15654 5.54	14264 6.08	12414 6.43	3557 6.27	289 7.88							
	34.1	32.6	31.2	29.7	28.8	27.0	25.2	30.0	34.9							
1000	18627 4.75	18129 5.12	17630 5.49	17132 5.86	16520 6.16	15261 6.75	13582 7.17	5735 6.72	1531 8.50							
	36.4	35.0	33.6	32.2	31.2	29.3	27.4	30.7	35.7							
1060	19745 5.65	19274 6.05	18804 6.44	18334 6.83	17805 7.19	16617 7.81	15196 8.33	10252 8.32	2792 9.12	1604 10.13						
	40.1	38.8	37.5	36.1	34.9	33.0	31.0	31.9	36.9	39.4						
1135	21142 6.94	20703 7.36	20263 7.78	19824 8.20	19385 8.62	18281 9.29	17157 9.95	13692 10.57	5561 10.05	3174 11.01	2101 12.12	632 12.90				
	45.2	43.8	42.5	41.2	39.9	37.9	36.0	33.8	38.6	41.1	43.5	46.0				
1205	22446 8.31	22032 8.75	21618 9.20	21205 9.65	20791 10.09	19807 10.85	18761 11.56	16093 12.63	9882 11.64	5960 12.01	3515 13.00	2505 14.18	1269 15.15			
	50.1	48.8	47.6	46.3	45.0	42.9	41.0	37.2	40.3	42.7	45.1	47.5	49.9			
1280	23843 9.95	23453 10.43	23064 10.90	22674 11.38	22285 11.85	21418 12.72	20434 13.47	18126 14.75	14653 15.11	10679 14.02	6814 14.25	4004 15.23	3053 16.48	2101 17.74	699 18.50	
	55.9	54.6	53.4	52.1	50.9	48.6	46.7	42.9	42.5	44.8	47.1	49.4	51.7	54.0	56.3	
1365	25426 12.07	25061 12.58	24696 13.08	24330 13.59	23965 14.10	23220 15.09	22298 15.90	20364 17.43	17825 18.50	15822 18.34	12881 17.64	8350 16.91	5437 17.90	3832 19.12	2940 20.46	1965 21.70
	62.9	61.7	60.5	59.2	58.0	55.6	53.7	49.8	46.0	47.5	49.7	51.9	54.1	56.3	58.6	60.8
1470	27382 15.08	27043 15.62	26704 16.17	26365 16.71	26025 17.26	25347 18.35	24560 19.30	22847 21.03	20716 22.39	19549 22.98	17853 22.98	15994 22.81	11498 20.87	8336 21.38	5631 22.45	4191 23.77
	71.0	69.8	68.6	67.3	66.1	63.7	61.6	57.8	54.1	52.2	52.5	54.8	57.1	59.4	61.7	64.0

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model VMBL 36 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.															
	0.000	0.250	0.500	0.750	1.000	1.500	2.000	3.000	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500
	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones
435	11384 0.69	10015 0.90	8078 1.05	3467 1.02	577 1.26											
	11.5	9.9	8.6	9.5	10.5											
470	12300 0.87	11072 1.11	9412 1.28	5964 1.25	2414 1.41											
	13.1	11.4	10.2	10.4	11.4											
500	13085 1.05	11964 1.31	10519 1.51	8234 1.59	3894 1.55											
	14.5	12.8	11.6	11.2	12.3											
530	13870 1.25	12817 1.52	11516 1.75	9786 1.91	5300 1.70	556 2.29										
	16.1	14.3	13.1	12.0	13.1	15.3										
560	14655 1.47	13659 1.76	12461 2.01	10939 2.19	8575 2.22	2155 2.49										
	17.7	16.0	14.7	13.5	13.8	16.0										
605	15833 1.85	14910 2.17	13852 2.45	12614 2.68	10956 2.84	4413 2.80	257 3.47									
	20.1	18.6	17.3	16.1	15.2	17.3	19.4									
650	17010 2.30	16152 2.64	15217 2.95	14133 3.22	12758 3.42	6532 3.13	2663 3.86									
	22.5	21.1	19.8	18.7	17.6	18.5	20.4									
685	17926 2.69	17112 3.05	16264 3.39	15235 3.67	14066 3.92	10456 4.07	4430 4.18									
	24.3	22.9	21.6	20.5	19.5	19.4	21.3									
720	18842 3.12	18067 3.50	17292 3.87	16321 4.17	15342 4.47	12327 4.76	6121 4.51									
	26.2	24.9	23.5	22.5	21.5	20.4	22.3									
760	19889 3.67	19155 4.07	18421 4.46	17546 4.80	16618 5.11	14245 5.59	8643 5.13	1355 6.62								
	28.3	27.1	25.8	24.7	23.8	21.8	23.4	27.2								
810	21198 4.45	20509 4.87	19820 5.29	19055 5.68	18185 6.01	16150 6.58	13100 6.75	3976 7.27								
	31.3	30.0	28.7	27.5	26.6	24.8	24.8	28.7								
850	22244 5.14	21588 5.58	20931 6.02	20248 6.45	19419 6.80	17634 7.46	15205 7.86	5968 7.83	52 9.73							
	34.0	32.6	31.3	30.0	29.1	27.3	26.0	29.9	33.8							
815	21329 4.53	20644 4.95	19959 5.38	19205 5.77	18340 6.10	16337 6.68	13367 6.88	4229 7.34								
	31.6	30.3	29.0	27.8	26.9	25.1	25.0	28.9								
970	25385 7.64	24810 8.14	24234 8.65	23659 9.15	23039 9.63	21585 10.43	19939 11.13	14855 11.55	6328 11.84	3736 12.92	1143 14.00					
	42.4	41.0	39.6	38.1	36.9	35.1	33.4	33.6	37.7	39.8	41.9					
1015	26563 8.75	26013 9.28	25463 9.81	24913 10.34	24363 10.86	22982 11.71	21583 12.54	17262 13.33	8503 12.71	6026 13.84	3548 14.97	1071 16.10				
	45.9	44.5	43.0	41.6	40.2	38.4	36.7	35.2	39.3	41.4	43.5	45.6				
1095	28656 10.99	28146 11.56	27637 12.13	27127 12.70	26617 13.27	25427 14.26	24139 15.16	20924 16.57	15159 16.26	9887 15.57	7590 16.79	5294 18.02	2998 19.24	701 20.46		
	52.4	51.1	49.7	48.4	47.0	44.9	43.1	39.4	42.1	44.3	46.4	48.6	50.8	52.9		
1175	30750 13.57	30275 14.19	29800 14.80	29325 15.41	28850 16.02	27829 17.17	26630 18.14	23939 19.87	20090 20.69	17484 20.49	11386 18.77	9246 20.08	7106 21.39	4966 22.70	2826 24.01	686 25.32
	59.7	58.4	57.1	55.8	54.4	52.0	50.2	46.6	45.3	47.3	49.4	51.4	53.4	55.5	57.5	59.5
1250	32713 16.34	32266 16.99	31820 17.64	31373 18.30	30927 18.95	30034 20.25	28924 21.30	26668 23.36	23608 24.78	21504 24.92	19055 24.71	12814 22.20	10740 23.55	8728 24.94	6716 26.33	4705 27.73
	67.0	65.8	64.5	63.3	62.0	59.5	57.6	53.8	50.1	50.7	52.6	54.5	56.5	58.4	60.3	62.3
1335	34937 19.91	34519 20.60	34101 21.30	33683 21.99	33265 22.69	32429 24.08	31484 25.33	29372 27.53	26832 29.34	25393 30.09	23575 30.41	21282 30.19	17685 29.07	12765 27.66	10881 29.15	8998 30.64
	74.7	73.4	72.2	71.0	69.8	67.3	65.2	61.6	57.9	56.1	56.1	58.1	60.1	62.1	64.1	66.2

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

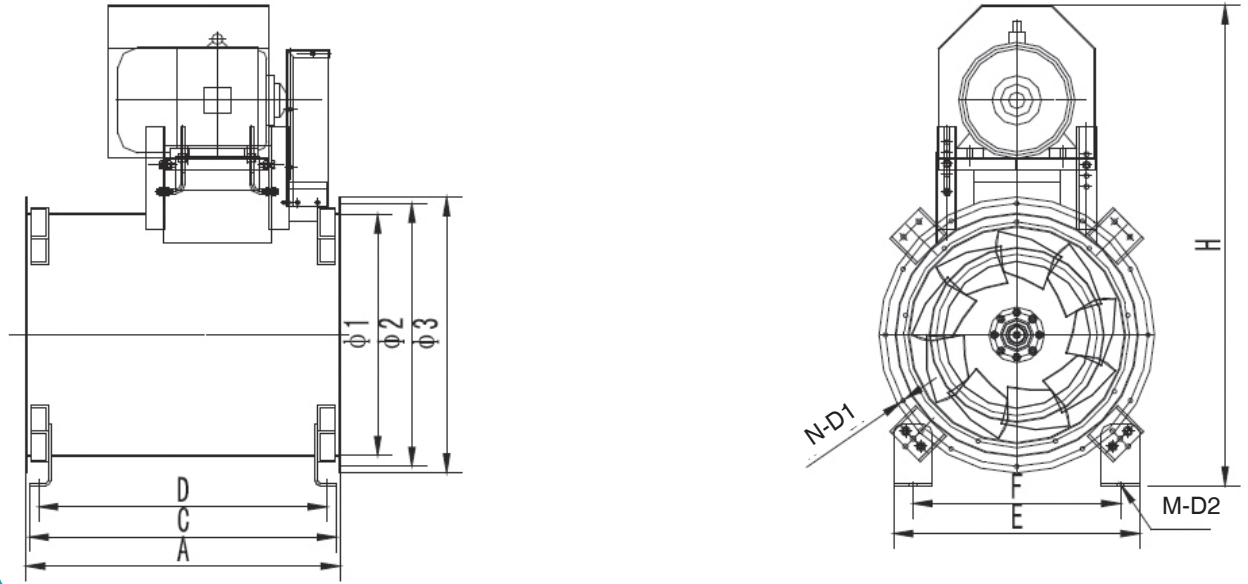
Model VMBL 40 - BELT DRIVE – PERFORMANCE DATA

RPM	STATIC PRESSURE, INCHES W. G.															
	0.000	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500
	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones	CFM BHP Sones
400	14552 0.93 11.9	12907 1.20 10.5	10610 1.40 9.2													
425	15462 1.11 13.4	13952 1.41 11.9	11924 1.64 10.7													
450	16371 1.32 14.9	14985 1.65 13.1	13202 1.90 12.0	10403 2.01 11.5												
470	17099 1.50 16.0	15774 1.84 14.0	14128 2.12 12.9	11855 2.30 11.9												
505	18372 1.87 18.1	17139 2.23 16.4	15661 2.54 15.1	13794 2.78 14.0	10924 2.83 14.2											
535	19464 2.22 19.6	18300 2.61 18.2	16952 2.95 16.8	15349 3.23 15.6	13135 3.39 14.8											
565	20555 2.61 21.8	19453 3.02 20.0	18224 3.39 18.5	16830 3.72 17.4	14968 3.95 16.2	12243 3.96 16.7										
615	22374 3.37 24.9	21362 3.82 23.2	20310 4.25 21.6	19030 4.60 20.6	17582 4.91 19.7	15839 5.15 18.8	13115 5.10 19.5									
645	23466 3.89 26.6	22500 4.35 25.4	21535 4.82 24.1	20324 5.20 23.0	19103 5.57 21.8	17442 5.82 20.7	15343 5.93 20.5									
680	24739 4.55 28.6	23823 5.05 27.3	22907 5.54 26.1	21814 5.96 24.9	20656 6.35 23.9	19267 6.67 22.8	17690 6.94 21.7	15344 6.92 22.3								
720	26194 5.41 32.1	25329 5.93 30.4	24464 6.45 28.7	23495 6.92 27.5	22401 7.33 26.7	21302 7.75 25.9	19813 8.03 25.1	18257 8.28 24.4								
775	28195 6.74 36.7	27392 7.30 35.1	26588 7.87 33.5	25773 8.42 32.0	24757 8.87 31.0	23741 9.31 30.1	22643 9.72 29.1	21260 10.03 28.2	19876 10.33 27.2							
815	29650 7.84 39.7	28886 8.43 38.3	28122 9.02 37.0	27358 9.61 35.6	26444 10.11 34.5	25478 10.58 33.4	24511 11.05 32.4	23332 11.42 31.4	22016 11.74 30.4	18506 11.92 30.7						
860	31288 9.21 44.5	30563 9.84 42.9	29839 10.46 41.2	29115 11.08 39.5	28320 11.66 38.1	27404 12.15 37.2	26488 12.64 36.3	25572 13.14 35.4	24364 13.49 34.5	21781 14.11 32.9	17809 13.91 35.4					
915	33289 11.10 48.4	32608 11.76 47.0	31927 12.42 45.7	31247 13.09 44.4	30566 13.75 43.0	29725 14.29 42.1	28864 14.81 41.2	28003 15.34 40.3	27142 15.86 39.4	24816 16.59 37.6	21905 16.93 37.4	17112 16.29 39.3				
970	35289 13.22 54.0	34647 13.92 52.5	34005 14.63 50.9	33363 15.33 49.3	32721 16.03 47.8	32014 16.68 46.5	31202 17.23 45.6	30390 17.79 44.7	29578 18.35 43.8	27676 19.29 42.0	25466 20.05 40.3	22316 20.11 41.5	16652 18.91 43.8			
1030	37472 15.83 60.6	36868 16.58 59.0	36263 17.32 57.5	35659 18.07 56.0	35054 18.81 54.4	34449 19.56 52.9	33717 20.18 51.8	32953 20.77 50.8	32188 21.36 49.7	30659 22.54 47.7	28634 23.39 45.6	26552 24.20 43.6	23341 24.05 45.7	17896 22.72 48.0		
1120	40747 20.35 70.8	40191 21.16 69.1	39635 21.97 67.5	39079 22.79 65.8	38523 23.60 64.1	37967 24.41 62.5	37411 25.22 60.8	36730 25.89 59.8	36027 26.53 58.8	34620 27.81 57.0	33214 29.10 55.1	31316 29.99 53.3	29402 30.87 51.4	26781 31.04 52.4	23731 30.78 54.9	
1190	43293 24.41 78.3	42770 25.27 76.9	42247 26.14 75.6	41723 27.00 74.2	41200 27.86 72.8	40677 28.72 71.4	40153 29.58 70.0	39623 30.44 68.7	38961 31.12 67.7	37637 32.48 65.7	36313 33.85 63.7	34899 35.13 61.7	33098 36.06 59.7	31296 37.00 57.7	28914 37.28 58.2	26044 37.00 60.7

Performance certified is for installation type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Model: VMBL 12-16



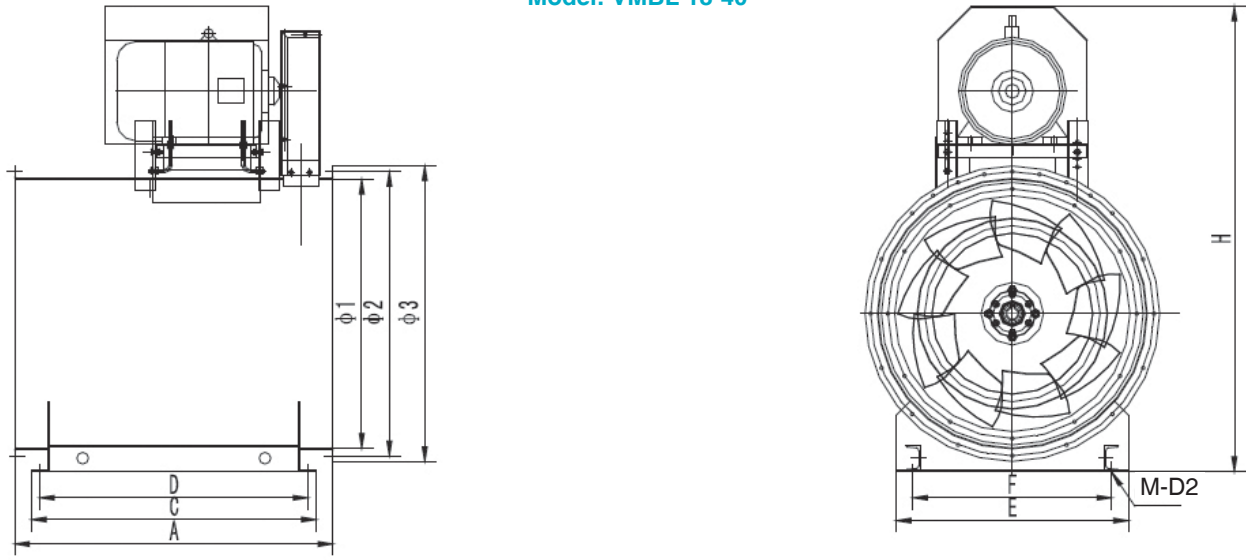
DIMENSIONS LISTED IN INCHES

Model	Wheel	1	2	3	A	C	D	E	F	N	D1	M	D2	H (Max)	Weight (lb)
12	15.75	18	19	21	24	23	22	19	16	8	0	4	1	39	130
15	17.75	20	22	23	28	27	25	21	18	12	0	4	1	42	157
16	19.75	22	24	25	29	28	26	23	19	12	0	4	1	46	201

DIMENSIONS LISTED IN MILLIMETERS

Model	Wheel	1	2	3	A	C	D	E	F	N	D1	M	D2	H (Max)	Weight (Kg)
12	400	450	490	530	610	594	550	486	406	8	12	4	15	980	59
15	450	510	550	590	707	691	647	546	456	12	12	4	15	1070	71
16	500	560	610	640	730	714	670	572	482	12	12	4	15	1160	91

Model: VMBL 18-40



DIMENSIONS LISTED IN INCHES

Model	Wheel	1	2	3	A	C	D	E	F	N	D1	M	D2	H (Max)	Weight (lb)
18	22.0	25	26	28	33	29	27	20	16	12	0.472	4	0.591	48	254
20	24.25	28	30	31	36	32	31	24	20	12	0.472	4	0.591	55	355
23	28.0	32	34	35	38	34	32	28	24	16	0.472	6	0.591	57	403
27	31.5	36	38	39	42	39	37	31	27	16	0.551	6	0.787	63	542
30	35.5	40	42	43	48	44	42	35	31	16	0.551	6	0.787	67	644
33	39.5	44	46	48	52	47	45	39	34	20	0.551	6	0.787	72	847
36	44.0	50	52	54	58	55	53	43	35	20	0.551	6	0.787	81	1164
40	49.25	56	58	60	64	60	58	48	40	20	0.551	6	0.787	87	1495

DIMENSIONS LISTED IN MILLIMETERS

Model	Wheel	1	2	3	A	C	D	E	F	N	D1	M	D2	H (Max)	Weight (Kg)
18	560	630	670	710	830	730	690	510	410	12	12	4	15	1230	115
20	630	712	750	792	915	825	775	620	520	12	12	4	15	1400	161
23	710	809	855	889	960	860	810	700	600	16	12	6	15	1455	183
27	800	910	955	990	1075	985	936	790	690	16	14	6	20	1590	246
30	900	1017	1055	1097	1210	1120	1070	890	790	16	14	6	20	1690	292
33	1000	1130	1180	1230	1320	1190	1140	990	870	20	14	6	20	1825	384
36	1120	1270	1320	1370	1470	1390	1336	1100	900	20	14	6	20	2045	528
40	1250	1421	1470	1520	1637	1530	1480	1220	1020	20	14	6	20	2205	678

VMBL 12
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
1400	0.000	69	75	70	73	70	68	60	50	75
	1.000	78	80	77	79	77	75	69	59	81
1800	1.000	79	80	75	77	75	69	63	56	79
	2.000	79	78	73	76	73	68	64	60	77
2200	0.000	84	84	86	83	82	79	76	66	87
	1.000	87	84	85	81	82	77	72	63	86
	2.000	86	84	84	81	82	75	70	62	85
	3.000	86	84	84	81	82	75	70	62	85
2600	0.000	88	87	92	87	86	83	81	73	91
	1.000	92	89	91	85	86	82	78	70	90
	2.000	91	89	91	85	86	81	75	68	90
	3.000	89	88	89	85	86	80	74	68	89
3400	0.000	93	96	98	92	93	91	88	82	98
	1.000	95	97	98	91	92	90	87	80	97
	2.000	97	98	98	90	92	90	85	78	97
	3.000	95	97	97	90	92	89	83	77	96
	4.000	94	97	97	90	92	88	82	76	96
	5.000	94	97	97	90	92	88	81	75	96

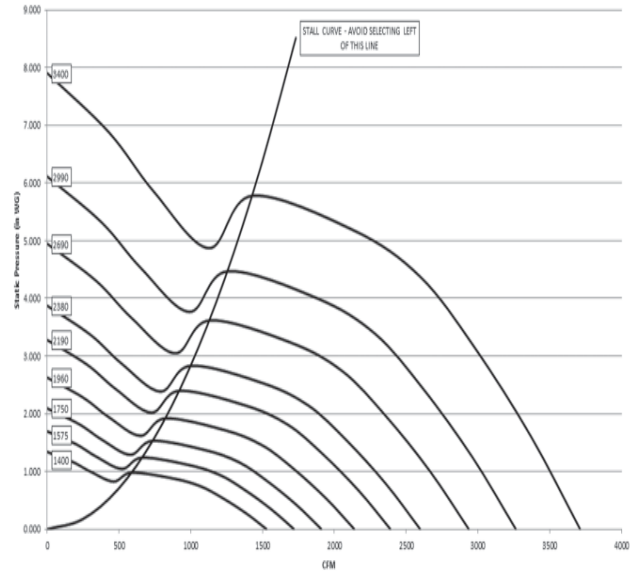
VMBL 15
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
1245	0.000	70	77	72	74	70	69	59	49	76
1675	0.000	79	82	77	80	78	76	69	60	83
	1.000	81	82	75	79	77	71	65	57	81
2100	2.000	80	79	75	79	75	69	63	60	80
	0.000	86	87	87	85	84	82	78	68	89
2100	1.000	89	87	86	84	84	79	74	65	88
	2.000	88	87	86	84	84	78	72	65	87
	3.000	88	87	86	84	84	78	72	65	87
2325	0.000	89	89	91	89	88	84	81	71	92
	1.000	93	90	89	87	86	83	78	68	91
	2.000	91	90	89	87	86	81	75	68	90
	3.000	91	90	89	87	86	79	73	68	89
3045	4.000	91	90	86	86	85	79	73	70	89
	0.000	96	97	100	93	94	91	89	82	99
	1.000	98	98	99	92	94	90	88	80	98
	2.000	100	98	99	91	94	90	86	79	98
	3.000	99	98	99	91	94	89	85	78	98
	4.000	97	98	99	91	94	88	83	76	97
	5.000	97	98	98	91	94	88	82	76	97

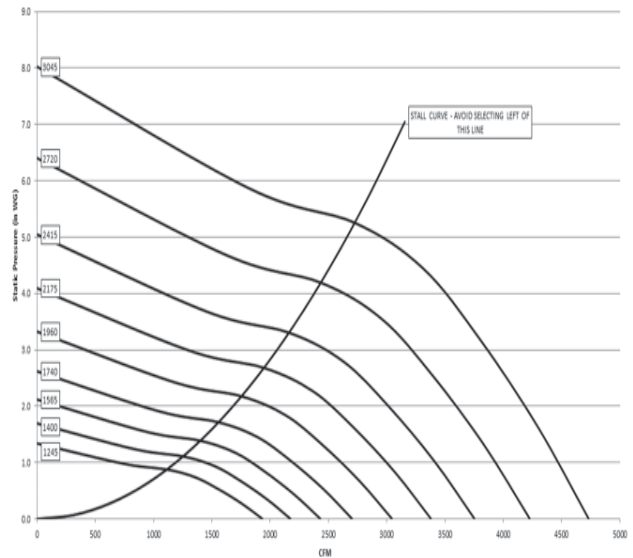
Values shown are for inlet L_{WiA} sound power levels for installation Type B: Free inlet, ducted outlet. The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA International Standard 301.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VMBL 12
AIR PERFORMANCE



VMBL 15
AIR PERFORMANCE

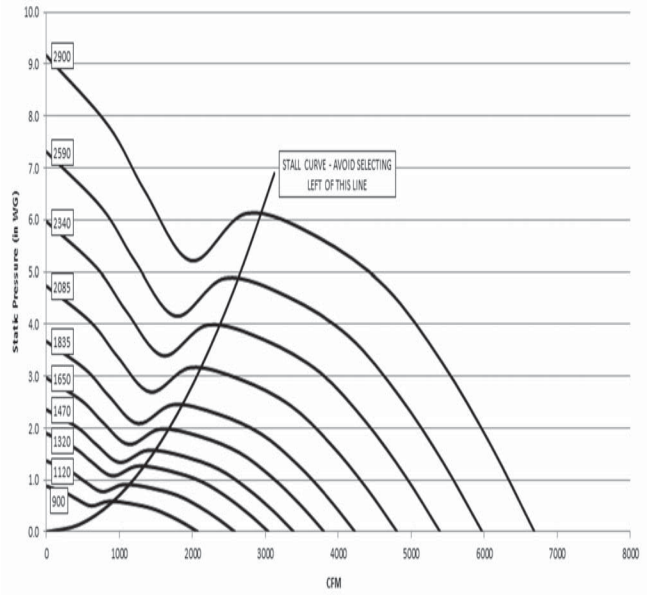


Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VMBL 16
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
900	0.000	59	66	65	67	66	62	52	42	70
	0.000	68	73	76	75	76	73	65	55	80
	0.250	67	73	75	73	74	71	64	55	78
	0.500	67	73	75	72	73	70	63	54	77
	0.750	67	73	75	72	72	68	62	55	76
	1.000	69	73	74	72	70	67	62	56	75
	1.250	73	73	74	72	70	67	64	61	75
1300	1.500	77	73	73	72	69	66	66	66	75
	1.750	82	73	72	72	68	65	67	72	76
	0.000	76	78	83	81	81	80	75	65	86
	0.500	75	77	83	80	80	79	73	63	85
	1.000	75	77	83	79	78	77	71	63	83
	1.500	75	78	83	79	77	76	70	63	82
	2.000	75	78	83	79	77	76	70	63	82
1700	2.500	75	78	83	79	77	76	70	63	82
	0.000	82	82	87	86	86	86	82	72	92
	0.500	82	82	87	85	85	85	80	71	90
	1.000	81	81	87	84	84	84	79	70	89
	1.500	81	82	87	84	83	83	78	70	89
	2.000	80	82	87	84	83	82	77	70	88
	2.500	80	82	87	84	82	81	76	69	88
2100	3.000	84	86	86	85	82	80	76	72	88
	0.350	82	82	87	85	85	85	81	71	91
	4.000	93	93	83	86	82	79	76	77	88
	4.500	97	96	82	87	82	78	76	80	89
	0.000	87	91	93	95	93	93	91	84	99
	0.500	87	91	93	95	92	92	90	83	99
	1.000	86	90	93	95	92	92	90	83	98
2900	1.500	86	90	93	95	91	91	89	82	98
	2.000	86	90	93	95	91	91	89	82	97
	2.500	86	90	93	95	91	90	88	81	97
	3.000	86	90	93	95	91	90	88	81	97
	3.500	85	90	93	95	90	89	87	81	97
	4.000	85	90	93	95	90	89	87	80	97
	4.500	85	90	93	95	90	88	86	80	96
2900	5.000	86	91	93	95	90	88	86	80	96
	5.500	88	93	94	94	90	88	85	81	96

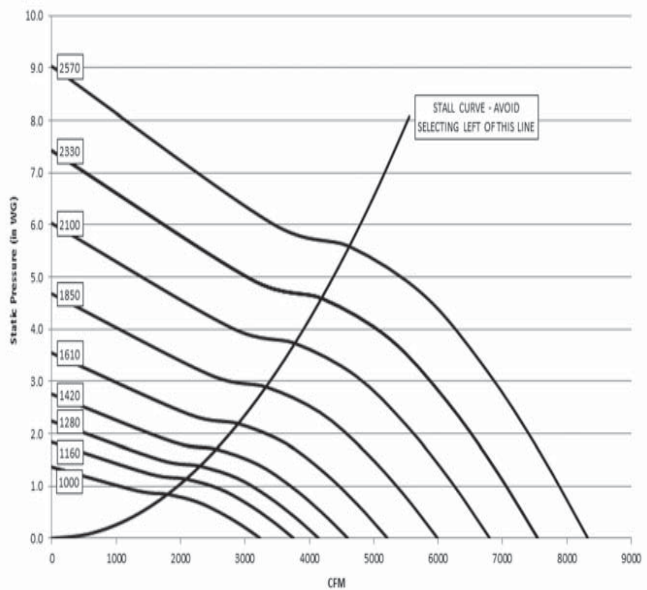
VMBL 16
AIR PERFORMANCE



VMBL 18
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
900	0.000	63	70	69	70	70	65	55	45	73
	0.000	71	76	78	78	78	76	67	57	82
	0.250	70	76	77	76	76	74	65	56	80
	0.500	70	76	77	75	75	72	64	56	79
	0.750	70	76	77	75	74	71	64	56	78
	1.000	71	76	77	74	73	70	64	56	77
	1.250	73	76	77	74	72	69	65	60	77
1240	1.500	77	76	77	74	71	68	66	65	77
	0.000	77	80	85	83	83	81	75	65	88
	0.500	76	79	84	82	82	80	74	65	86
	1.000	76	80	84	81	80	78	73	64	85
	1.500	76	80	84	81	79	77	72	64	84
	2.000	76	80	84	81	79	77	72	64	84
	2.500	76	80	84	81	79	77	72	64	84
1580	3.000	76	80	84	81	79	77	72	64	84
	0.000	84	85	89	88	88	87	84	74	93
	0.500	83	84	89	87	87	86	82	73	92
	1.000	83	84	89	86	86	85	81	72	91
	1.500	83	84	89	86	85	84	80	72	90
	2.000	82	85	89	86	85	83	79	71	90
	2.500	82	85	89	86	84	82	78	71	90
1975	3.000	84	86	88	86	84	82	78	72	89
	0.350	84	85	89	87	87	86	83	73	92
	4.000	91	91	86	88	84	80	76	77	89
	4.500	95	94	85	88	84	80	76	80	90
	5.000	99	96	83	89	84	79	75	82	90
	0.000	90	92	95	96	94	94	92	84	100
	0.500	90	92	95	96	93	93	91	83	100
2600	1.000	89	91	94	95	93	93	90	82	99
	1.500	89	91	94	95	92	92	89	81	98
	2.000	89	91	94	95	92	92	89	81	98
	2.500	89	91	94	95	92	91	88	81	98
	3.000	89	91	94	95	92	91	88	81	98
	3.500	88	91	95	95	91	90	87	80	97
	4.000	88	91	95	95	91	90	87	80	97
2600	4.500	88	91	95	95	91	89	86	80	97
	5.000	89	92	95	95	91	89	86	80	97
	5.500	91	94	95	94	91	88	85	81	97

VMBL 18
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

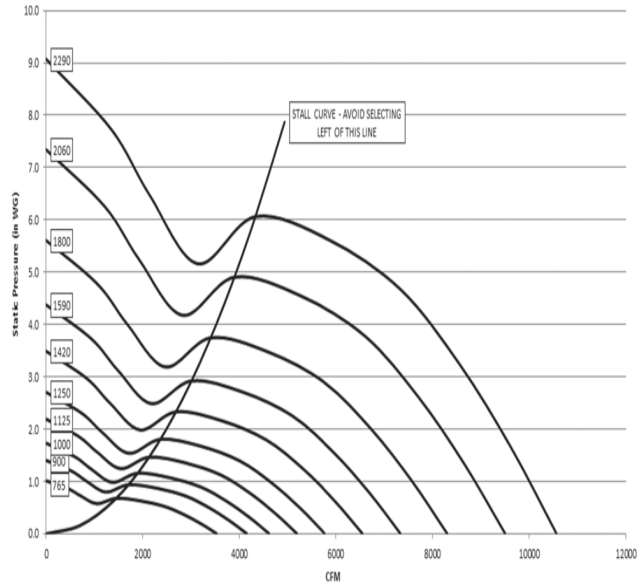
Values shown are for inlet L_{WA} sound power levels for installation Type B: Free inlet, ducted outlet. The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA International Standard 301.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VMBL 20
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
690	0.000	62	67	67	68	66	59	49	39	70
	0.000	70	76	75	76	76	73	63	53	80
	0.250	69	76	73	74	74	71	61	52	78
	0.500	69	76	73	73	73	69	61	52	77
	0.750	70	76	73	72	72	68	60	53	76
	1.000	72	75	73	72	71	67	61	56	75
	1.250	75	73	74	72	70	66	64	64	75
1000	1.500	79	71	75	72	69	65	67	71	76
	0.000	78	81	84	83	83	81	73	63	87
	0.500	77	81	83	81	81	78	71	62	85
	1.000	77	81	83	81	80	77	70	63	84
	1.500	77	81	83	80	78	75	69	63	83
	2.000	77	81	83	80	78	75	69	63	83
	2.500	77	81	83	80	78	75	69	63	83
1350	0.000	83	86	90	87	87	86	81	71	92
	0.500	83	85	90	86	86	85	79	70	91
	1.000	82	85	90	85	85	84	78	69	90
	1.500	82	85	90	85	84	83	77	69	90
	2.000	82	85	90	85	84	82	77	69	89
	2.500	83	86	90	85	83	81	76	70	89
	3.000	87	88	89	85	82	80	76	72	88
1650	0.350	83	85	90	87	86	85	80	70	91
	4.000	95	92	86	85	81	79	76	78	88
	0.000	92	92	96	96	95	95	92	83	101
	0.500	92	92	96	95	94	94	91	82	100
	1.000	91	91	96	95	94	94	90	82	99
	1.500	91	91	96	94	93	93	89	81	99
	2.000	91	91	96	94	93	93	89	81	98
2290	2.500	91	91	96	94	92	92	88	80	98
	3.000	91	91	96	94	92	92	88	80	98
	3.500	90	92	96	94	92	91	87	80	98
	4.000	90	92	96	94	91	91	87	79	97
	4.500	90	92	96	94	91	91	86	79	97
	5.000	91	93	96	94	91	90	86	80	97
	5.500	94	96	95	94	91	89	85	81	97

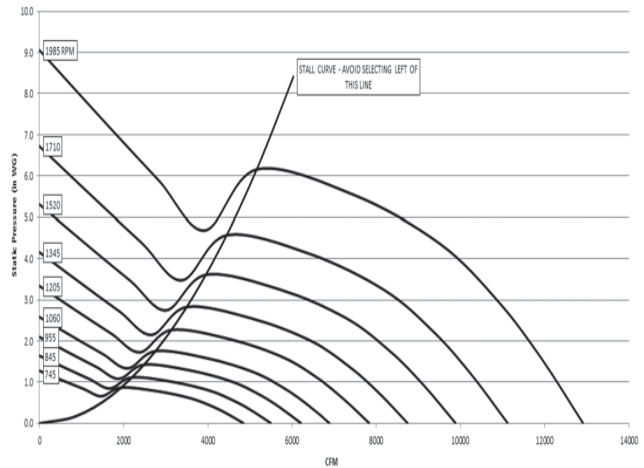
VMBL 20
AIR PERFORMANCE



VMBL 23
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
690	0.000	66	70	69	70	69	67	56	45	73
	0.000	76	77	77	77	77	75	68	57	81
	0.250	75	76	76	76	75	73	65	55	80
	0.500	74	74	75	75	74	71	63	54	78
	0.750	74	73	74	74	73	70	63	54	77
	1.000	74	72	73	73	72	69	62	54	76
	1.250	76	74	75	75	72	68	61	54	77
950	1.500	79	77	77	77	73	68	61	54	78
	2.000	84	82	80	80	74	66	59	54	80
	0.000	83	82	84	82	82	81	77	66	87
	0.500	82	80	82	81	80	79	73	63	85
	1.000	83	79	81	80	79	77	71	62	84
	1.500	84	77	79	78	78	75	69	61	82
	2.000	84	77	79	78	78	75	69	61	82
1200	2.500	84	77	79	78	78	75	69	61	82
	0.000	88	87	88	86	87	85	83	72	92
	0.500	88	86	87	86	86	84	81	70	91
	1.000	89	85	86	85	85	83	79	69	89
	1.500	90	84	85	84	84	82	77	68	88
	2.000	91	83	84	83	83	81	76	68	87
	2.500	92	83	84	83	83	80	75	67	87
1450	3.000	92	86	85	84	84	80	75	67	88
	0.350	88	86	87	86	86	84	82	71	91
	4.000	92	93	88	87	86	80	73	67	90
	4.500	92	96	90	89	87	80	73	67	91
	0.000	94	96	95	94	93	93	91	84	99
	0.500	94	96	94	94	93	92	90	83	98
	1.000	94	95	94	93	92	92	89	82	98
1985	1.500	94	95	93	93	92	91	88	81	97
	2.000	95	95	93	93	92	91	88	81	97
	2.500	95	95	92	92	91	90	87	80	96
	3.000	96	95	91	91	90	89	86	79	96
	3.500	97	95	91	91	90	89	86	79	95
	4.000	97	95	90	90	89	88	85	78	95
	4.500	98	95	90	90	89	88	85	78	95
5.000	5.000	98	96	92	91	90	88	85	78	95
	5.500	98	98	93	92	91	89	84	78	96

VMBL 23
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

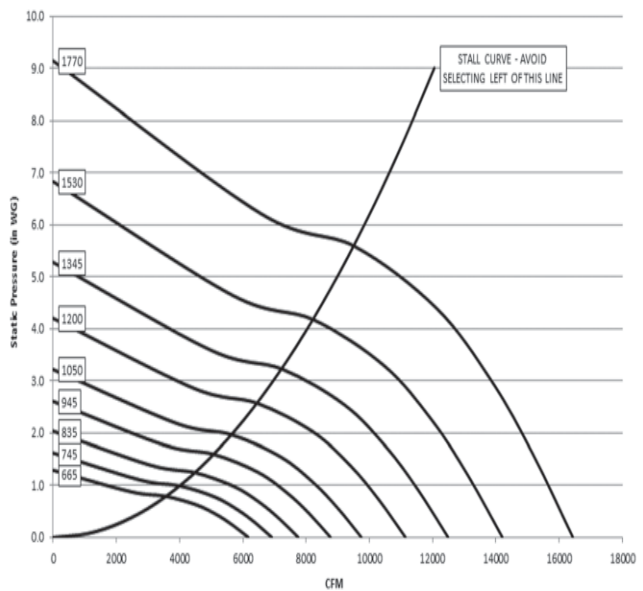
Values shown are for inlet L_{WA} sound power levels for installation Type B: Free inlet, ducted outlet. The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA International Standard 301.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VMBL 27
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
600	0.000	68	70	70	71	70	65	54	43	73
	0.000	76	78	77	78	78	76	66	55	82
	0.250	75	76	76	76	76	73	63	53	80
	0.500	74	75	75	75	75	71	62	53	78
	0.750	73	74	74	74	74	69	61	53	77
825	1.000	73	73	73	74	73	68	61	53	76
	1.250	76	75	75	75	73	68	61	53	77
	1.500	80	77	77	76	73	68	61	54	78
	0.000	83	83	84	83	83	81	75	64	87
	0.500	82	81	82	81	81	78	72	62	85
1050	1.000	82	80	81	80	80	77	71	62	84
	1.500	83	78	79	79	78	75	69	61	82
	2.000	83	78	79	79	78	75	69	61	82
	2.500	83	78	79	79	78	75	69	61	82
	3.000	83	78	79	79	78	75	69	61	82
1300	0.000	90	89	89	88	88	87	83	72	93
	0.500	90	87	88	87	86	85	80	70	91
	1.000	90	86	87	86	85	84	78	69	90
	1.500	91	85	86	85	85	83	77	68	89
	2.000	91	84	85	84	84	82	76	68	89
	2.500	92	85	85	84	84	81	76	68	88
	3.000	93	88	86	85	85	81	75	68	89
	0.350	90	88	89	87	87	86	81	71	92
	4.000	95	94	90	89	87	80	74	68	91
	4.500	96	97	91	90	88	80	74	68	92
1770	0.000	97	97	97	95	95	94	92	84	100
	0.500	97	97	96	95	94	93	91	83	100
	1.000	97	96	96	94	94	93	90	81	99
	1.500	97	96	95	94	93	92	89	80	98
	2.000	98	96	95	94	93	92	88	80	98
	2.500	98	95	94	93	92	91	88	79	97
	3.000	99	95	93	92	92	90	87	79	97
	3.500	100	95	93	92	92	90	86	79	96
	4.000	100	94	92	91	91	89	86	78	96
	4.500	101	94	92	91	91	89	85	78	96
5.000	101	96	93	92	92	89	85	78	96	
5.500	101	97	94	93	92	90	84	78	97	

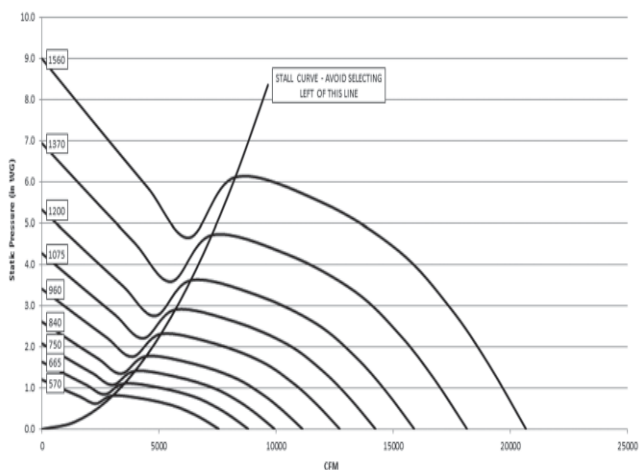
VMBL 27
AIR PERFORMANCE



VMBL 30
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
530	0.000	69	71	71	72	70	64	53	42	74
	0.000	77	80	78	79	78	75	64	53	82
	0.500	74	77	76	76	75	70	61	52	79
	1.000	73	75	74	75	73	68	60	52	77
	1.500	81	79	77	78	73	67	60	54	78
725	0.000	85	85	85	85	84	83	75	64	88
	0.500	84	83	84	83	82	80	72	62	86
	1.000	83	82	83	82	81	78	70	61	85
	1.500	83	80	81	81	80	76	69	61	84
	2.000	83	80	81	81	80	76	69	61	84
950	2.500	83	80	81	81	80	76	69	61	84
	3.000	83	80	81	81	80	76	69	61	84
	0.000	90	89	90	89	87	87	82	71	92
	0.500	90	88	89	87	87	86	80	70	91
	1.000	90	87	88	87	86	84	78	68	91
1150	1.500	90	86	87	86	85	83	77	68	90
	2.000	91	85	86	85	85	82	76	68	89
	2.500	92	85	86	85	84	81	75	67	88
	3.000	93	88	87	86	85	81	75	67	89
	0.350	90	88	89	89	87	86	81	70	91
1560	4.000	95	93	90	89	86	80	74	67	91
	0.000	99	97	98	95	96	95	93	83	101
	0.500	99	96	97	95	95	94	92	82	100
	1.000	99	96	97	94	95	94	90	80	100
	1.500	99	95	96	94	94	93	89	79	99
	2.000	100	95	96	94	94	93	88	79	99
	2.500	100	94	95	93	93	92	88	78	98
	3.000	101	94	94	92	93	91	87	78	98
	3.500	102	94	94	92	93	91	86	78	97
	4.000	103	93	93	91	92	90	85	77	97
4.500	103	94	93	91	92	90	85	77	96	
5.000	103	95	94	92	93	90	85	77	97	
5.500	103	97	95	93	93	90	84	77	97	

VMBL 30
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

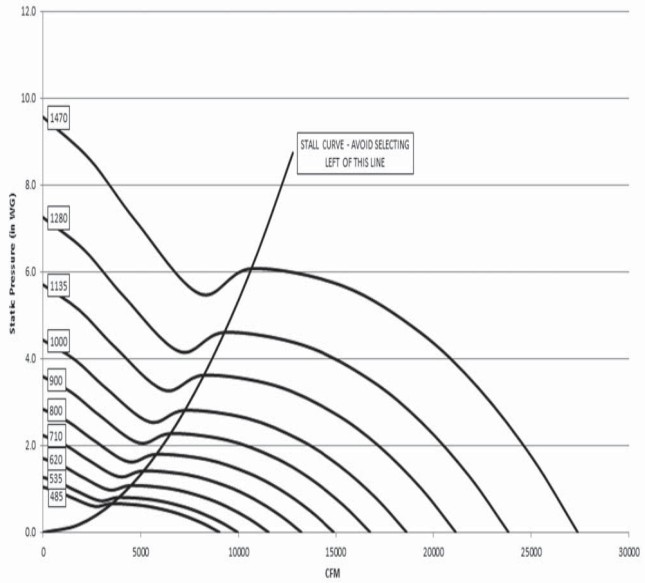
Values shown are for inlet L_{WIA} sound power levels for installation Type B: Free inlet, ducted outlet. The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA International Standard 301.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VMBL 33
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
485	0.000	74	71	72	73	71	65	55	45	75
	0.000	80	81	78	79	78	74	66	56	82
	0.500	77	78	76	77	76	70	61	52	79
	1.000	77	78	76	76	74	67	59	49	78
	1.500	88	87	82	79	74	66	59	53	80
650	0.000	89	93	88	88	87	84	78	68	92
	0.500	88	91	86	87	87	83	75	66	90
	1.000	87	89	85	86	86	82	73	64	89
	1.500	86	88	84	84	85	80	72	62	88
	2.000	86	88	84	84	85	80	72	62	88
825	2.500	86	88	84	84	85	80	72	62	88
	0.000	93	97	93	93	93	91	84	75	97
	0.500	92	95	92	92	92	90	82	74	96
	1.000	92	94	91	91	92	88	80	72	95
	1.500	91	93	90	90	91	88	80	71	94
1000	2.000	91	92	89	89	90	87	79	70	94
	2.500	90	91	88	88	90	86	78	69	93
	3.000	92	93	89	89	90	85	77	68	93
	0.350	92	96	92	92	92	90	83	74	96
	4.000	99	98	94	92	91	84	76	69	95
1335	0.000	98	103	102	99	99	98	94	85	104
	0.500	98	102	101	98	98	97	93	84	104
	1.000	97	102	101	98	98	97	92	83	103
	1.500	97	101	100	97	97	96	91	82	102
	2.000	97	101	100	97	97	96	91	82	102
1335	2.500	97	100	99	96	97	96	90	81	101
	3.000	96	100	99	96	96	95	90	81	101
	3.500	96	99	98	95	96	95	89	80	101
	4.000	96	99	98	95	96	95	89	80	100
	4.500	95	98	97	94	95	94	88	79	100
1335	5.000	96	99	98	94	95	94	88	79	100
	5.500	98	101	99	95	96	94	88	79	100

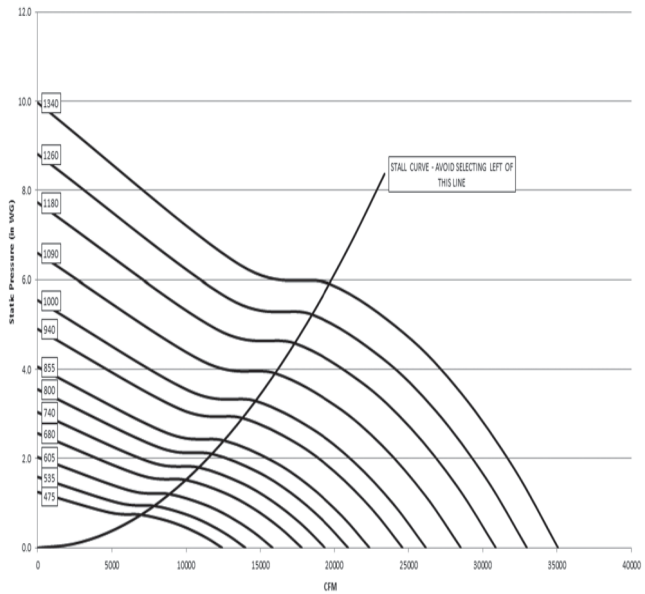
VMBL 33
AIR PERFORMANCE



VMBL 36
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
435	0.000	76	72	74	74	71	65	55	45	75
	0.000	84	85	82	83	82	77	68	58	85
	0.500	81	81	79	81	79	74	65	56	83
	1.000	79	80	78	79	78	72	63	53	81
	1.500	86	84	81	81	78	70	62	55	82
640	2.000	94	90	86	84	77	69	63	58	84
	0.000	85	90	84	85	85	82	76	66	89
	0.500	84	87	82	84	84	80	72	63	88
	1.000	83	86	81	83	83	79	71	61	86
	1.500	82	84	80	81	82	77	69	59	85
850	2.000	82	84	80	81	82	77	69	59	85
	2.500	82	84	80	81	82	77	69	59	85
	3.000	82	84	80	81	82	77	69	59	85
	3.500	82	84	80	81	82	77	69	59	85
	0.000	90	94	90	90	90	88	83	74	94
1050	0.500	89	92	89	89	89	87	80	71	93
	1.000	89	91	88	88	89	86	78	69	92
	1.500	88	90	87	87	88	85	77	68	92
	2.000	87	89	86	86	87	84	76	67	91
	2.500	88	90	87	85	87	83	75	67	90
1050	3.000	92	93	89	87	88	83	75	67	91
	0.350	89	93	89	89	89	87	81	72	94
	4.000	100	100	95	91	89	81	73	67	94
	4.500	104	103	97	93	90	81	73	67	95
	5.000	108	107	100	95	90	80	72	67	97
1470	5.500	112	110	103	97	91	79	71	67	100
	0.000	95	101	102	97	97	97	93	85	103
	0.500	95	100	101	96	97	96	92	84	102
	1.000	94	100	100	96	96	96	91	83	102
	1.500	94	99	99	95	96	95	90	82	101
1470	2.000	94	99	99	95	96	95	90	82	101
	2.500	93	98	98	94	95	94	89	81	100
	3.000	93	98	98	94	95	94	89	80	100
	3.500	93	98	97	94	94	94	88	80	99
	4.000	92	97	97	93	94	93	88	79	99
1470	4.500	92	97	96	93	93	93	87	78	98
	5.000	94	98	97	94	94	93	87	78	99
	5.500	96	100	99	95	94	93	86	78	99

VMBL 36
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

Values shown are for inlet L_{WiA} sound power levels for installation Type B: Free inlet, ducted outlet. The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA International Standard 301.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

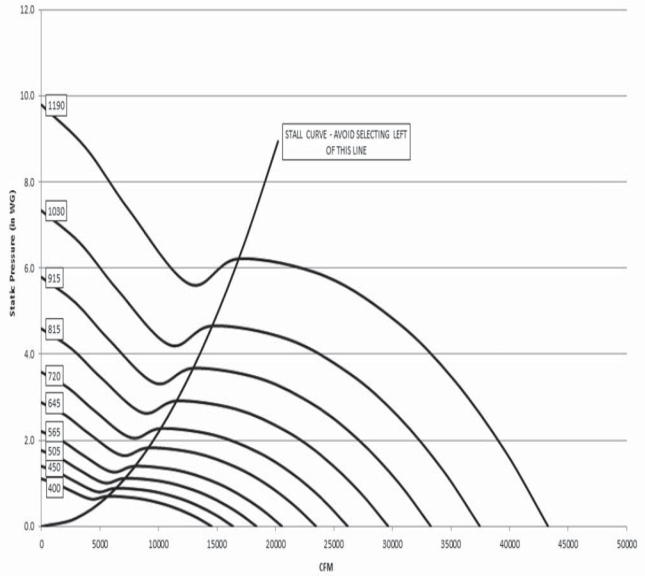
VMBL 40
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
400	0.000	78	74	75	75	72	65	55	45	76
	0.000	85	83	83	83	81	76	67	57	85
	0.500	81	80	80	81	79	71	63	54	83
	1.000	79	78	78	80	77	69	60	50	81
	1.500	86	84	82	81	75	67	60	53	81
550	0.000	90	92	88	89	88	84	76	66	92
	0.500	89	90	87	88	87	82	74	65	90
	1.000	87	88	86	86	86	80	72	63	89
	1.500	87	88	85	86	85	79	71	61	88
	2.000	87	88	85	86	85	79	71	61	88
	2.500	87	88	85	86	85	79	71	61	88
	3.000	87	88	85	86	85	79	71	61	88
725	0.000	94	98	93	93	92	90	84	74	97
	0.500	94	97	91	92	92	89	81	72	96
	1.000	93	95	90	91	91	87	79	70	95
	1.500	92	94	90	90	91	86	79	69	94
	2.000	91	93	89	89	90	86	78	68	93
	2.500	90	92	89	88	89	85	77	67	93
	3.000	94	95	90	90	90	84	76	67	93
	4.000	94	97	92	93	92	89	82	72	96
	4.500	101	101	94	94	91	83	75	68	95
	4.500	105	104	96	96	92	82	74	69	97
875	0.000	100	104	102	100	100	98	93	85	105
	0.500	100	103	101	99	99	98	92	84	104
	1.000	99	103	100	99	99	97	91	83	103
	1.500	99	102	99	98	98	97	90	82	103
	2.000	99	102	99	98	98	97	90	81	102
	2.500	98	101	98	97	97	96	89	80	102
	3.000	98	101	98	97	97	96	89	80	102
	3.500	98	100	98	96	97	95	88	79	101
	4.000	97	100	97	96	96	95	88	79	101
	4.500	97	99	97	95	96	94	87	78	100
1190	5.000	98	100	98	96	96	94	87	78	100
	5.500	100	102	99	97	97	93	86	78	101

Values shown are for inlet L_{wiA} sound power levels for installation Type B: Free inlet, ducted outlet. The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA International Standard 301.

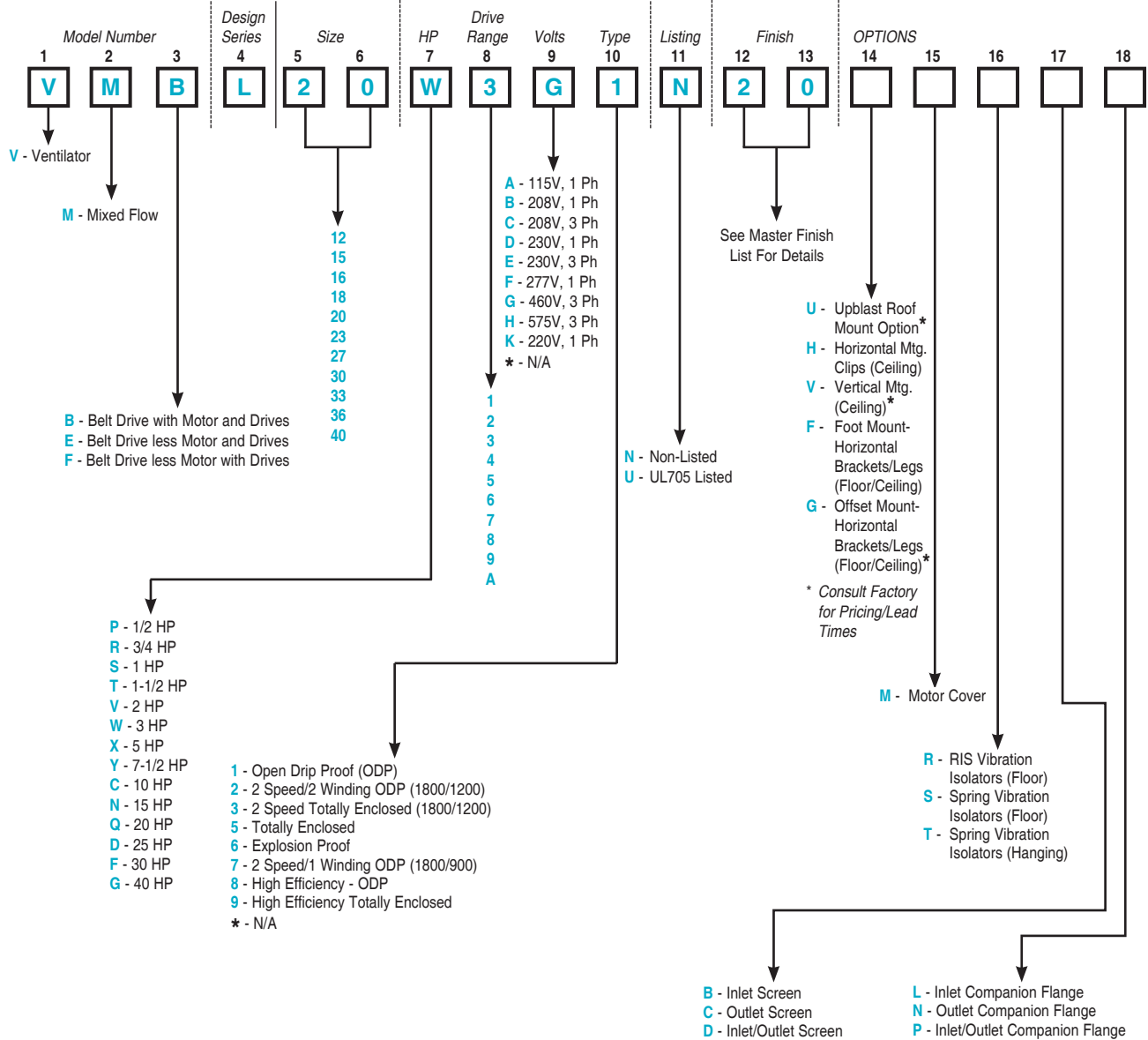
The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VMBL 40
AIR PERFORMANCE

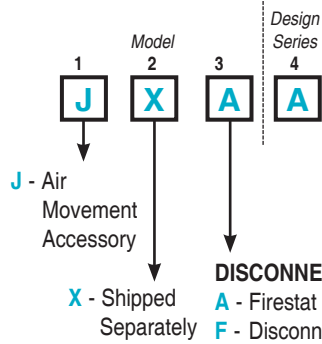


Performance certified is for installation type A - free inlet, free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

MODEL NUMBERING SYSTEM | Model VMBL



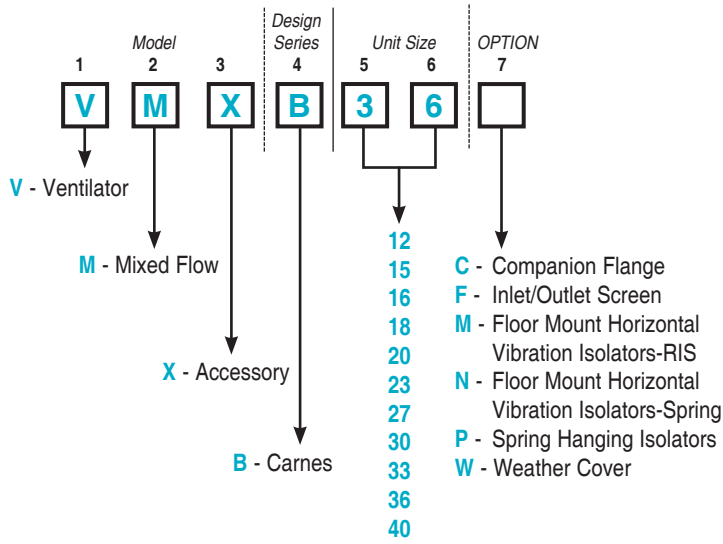
▼ **Electrical Accessories**



- DISCONNECT SWITCHES**
- A** - Firestat
 - F** - Disconnect, 2 Pole, 1 Ph NEMA 3R
 - H** - Disconnect, 3 Pole, 3 Ph NEMA 3R
 - J** - Disconnect, 3 Pole, 3 Ph Explosion Proof
 - K** - Disconnect, 2 Pole, 1 Ph Explosion Proof
 - L** - Disconnect, 2 Pole, 1 Ph NEMA 1
 - M** - Disconnect, 3 Pole, 3 Ph NEMA 1
 - N** - Disconnect, 3 Pole, 3 Ph NEMA 1 with Locking Hasp
 - P** - Disconnect, 6 Pole, 40 AMP, for 2 Speed, 2 Winding Motors

NOTE: Units with two speed motors are fitted with two separate standard disconnects unless ordered otherwise.

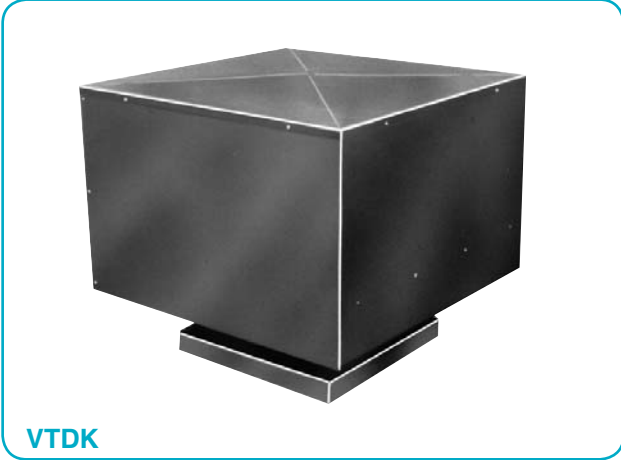
▼ Mounting Accessories



LOW SILHOUETTE CENTRIFUGAL ROOF EXHAUSTERS

LINEAR

The linear appearance of the Model VT provides a clean low profile that blends attractively with many architectural designs. The Model VTDK is direct driven and the Model VTBK is belt driven. Both direct and belt drive fans are available with aluminum or galvanized steel hoods. Maximum exhaust temperature for continuous operation is 150°F.



VTDK

Model VTDK: Direct Drive

The Carnes Model VTDK provides direct drive capability in a well engineered low silhouette design available in capacities from 150 to 4400 CFM. An all aluminum deep spun venturi and isolated motor mounts provide quiet and efficient operation.

Model VTBK: Belt Drive

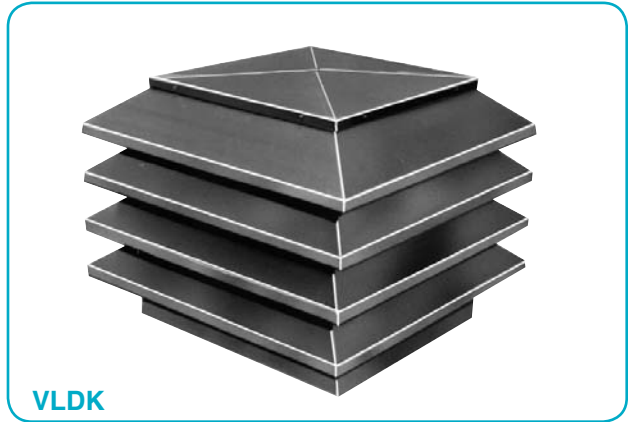
The Model VTBK is available in 13 sizes with capacities from 220 to 38,500 CFM. Units through size 24 feature spark resistant impellers while unit sizes 30 through 54 are available in all welded steel or optional aluminum.

LOUVERED

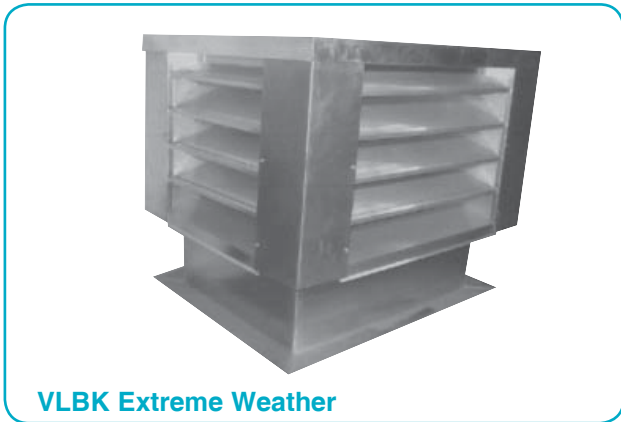
The Model VL features an attractive low silhouette louvered design that will compliment any building. This series features extruded aluminum louvers with mitered and welded corners. Design flexibility is increased by the availability of both belt drive (Model VLBK) and direct drive (Model VLDK) selections. Extreme Weather package is also available in this model, featuring Miami Dade County approved enclosures. Maximum exhaust temperature for continuous operation is 150°F.

Model VLDK: Direct Drive

Carnes louvered direct driven PRV's are available in capacities from 150 to 4400 CFM. Direct drive offers reduced maintenance and increased efficiency. Optional electronic speed control increases flexibility by providing variable performance over an extended range.



VLDK



VLBK Extreme Weather

Model VLBK: Belt Drive

The Model VLBK belt driven PRV's are available in capacities from 220 to 38,500 CFM. Belt driven units feature wide performance capabilities and readily available motor selections. A variable speed motor sheave simplifies final system balancing. Optional Extreme Weather package is available as well.

▼ TYPICAL SPECIFICATIONS

Roof exhaust ventilators shall be of the centrifugal belt or direct driven type. The wheel and spun venturi shall be a centrifugal design of non-sparking construction. For maximum performance and quiet efficient operation, the wheel shall overlap the inlet venturi and have backward inclined median airfoil blades. The wheels shall be dynamically balanced to assure smooth and vibration-free rotation under maximum loading. The complete drive assembly, including the motor and the wheel, shall be mounted on vibration isolators. Motor and drives shall be factory mounted. All fans shall be test run prior to shipment.

VLBK AND VTBK BELT DRIVE SERIES

Model VLBK Only - Hood construction shall be of heavy extruded aluminum louvers with mitered and welded corners. Lid shall be removable. Extreme Weather package consists of heavy extruded aluminum frame and louvers. Louvers are mechanically fastened and welded to jambs on backside of blade.

Model VTBK Only - Hood construction shall be of heavy galvanized steel (alum. optional). Lid shall be removable.

Motors shall be of the heavy-duty type with permanently lubricated, sealed ball bearings. Motors shall be readily accessible for maintenance. Wheel shaft shall be ground, polished, coated with a rust inhibitive finish and mounted in heavy-duty, permanently sealed pillowblock ball bearings which are capable of 200,000 hours of life, average operation. Drives shall be sized at a minimum of 165% of driven horsepower. Drive belts shall be oil-resistant, non-static and be capable of 25,000 hours of life, average operation. Sheaves shall be full machined cast iron or pressed steel, keyed and securely attached to the shafts. Variable pitch motor sheaves shall be standard.

VLDK AND VTDK DIRECT DRIVE SERIES

Model VLDK Only - Hood construction shall be of heavy extruded aluminum louvers with mitered and welded corners. Lid shall be removable for service.

Model VTDK Only - Hood construction shall be of heavy galvanized steel (aluminum optional). Lid shall be removable.

Motors shall be of the heavy-duty type with permanently lubricated, sealed ball bearings. Motors shall be readily accessible for maintenance. Wheels to be furnished with integral fitting for wheel puller.

Motors through 10 HP shall be factory mounted. The motor shall be factory wired to the disconnect junction box and a disconnect switch shall be supplied. Field wiring of motor, disconnect and conduit are to be in accordance with electrical specifications and local codes. Heavy-gauge welded galvanized birdscreen shall be furnished.

Horsepower and noise levels shall not exceed the published values and oversized motors will not be acceptable.

Centrifugal power roof ventilators shall be Carnes Company Model VLBK or VTBK, belt drive, sizes 06 through 54, or Model VLDK or VTDK, direct drive, sizes 06 through 18, as manufactured at Carnes Company of Verona, Wisconsin.

UL OPTION

Models VL and VT are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



**POWER
VENTILATOR**

CONSTRUCTION

FAN HOUSING

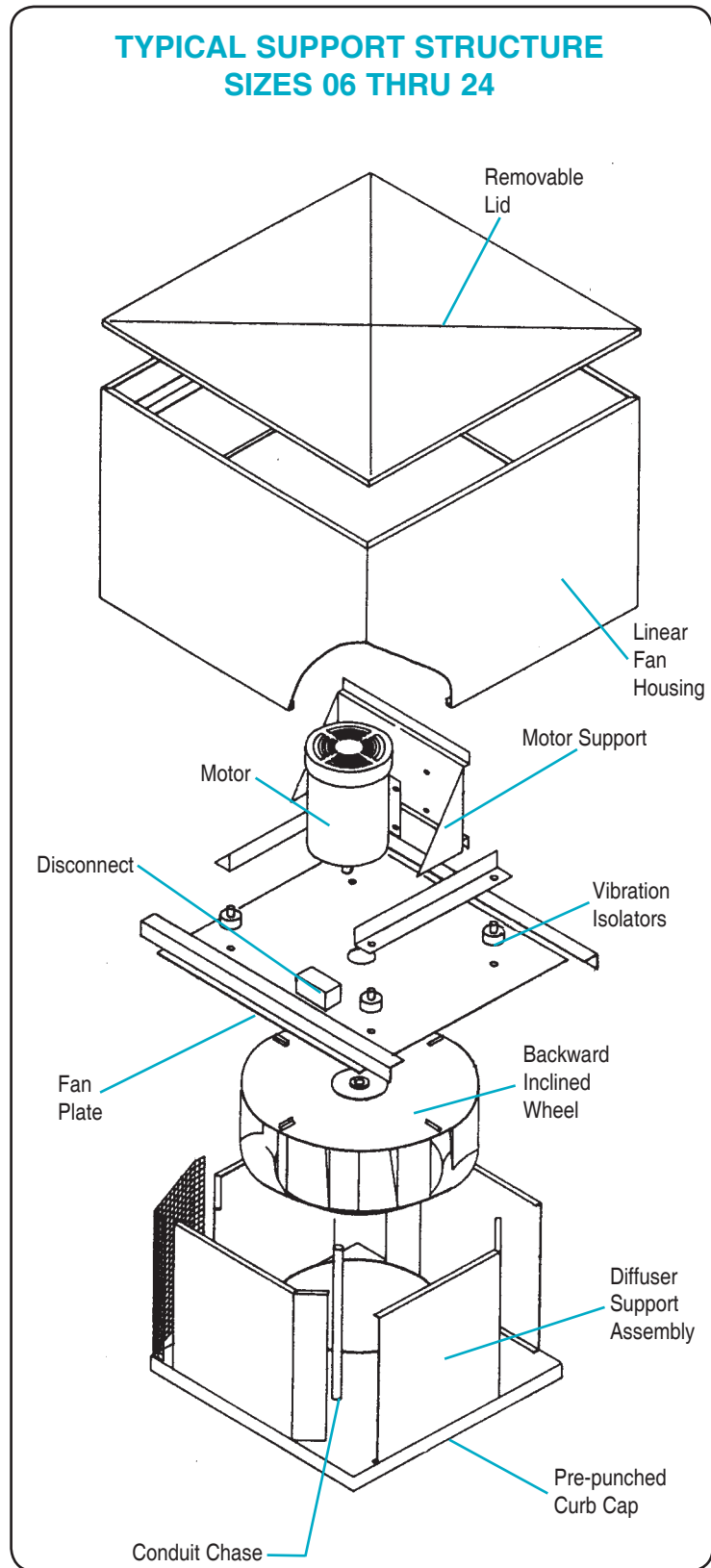
- VL series hoods feature heavy extruded aluminum louvers with mitered and welded corners.
- VT series hoods provide linear appearance constructed of galvanized steel or aluminum.
- Designed for maximum weather protection, windband and diffusers prevent the entrance of inclement weather.
- Easily removable lid utilizes durable threaded fastener retainers.
- Removable lid allows easy access to motor, drives and bearings for maintenance.

MOTOR/ELECTRICAL

- **UL** listing under Standard 705 available as option on most models.
- Motors are **UL** recognized by nationally recognized manufacturers.
- Utility box ship mounted. Safety disconnect and cover plate ship loose for ease of field wiring.
- Motors through 10 HP are factory mounted as standard.

MOTOR SUPPORT ASSEMBLY

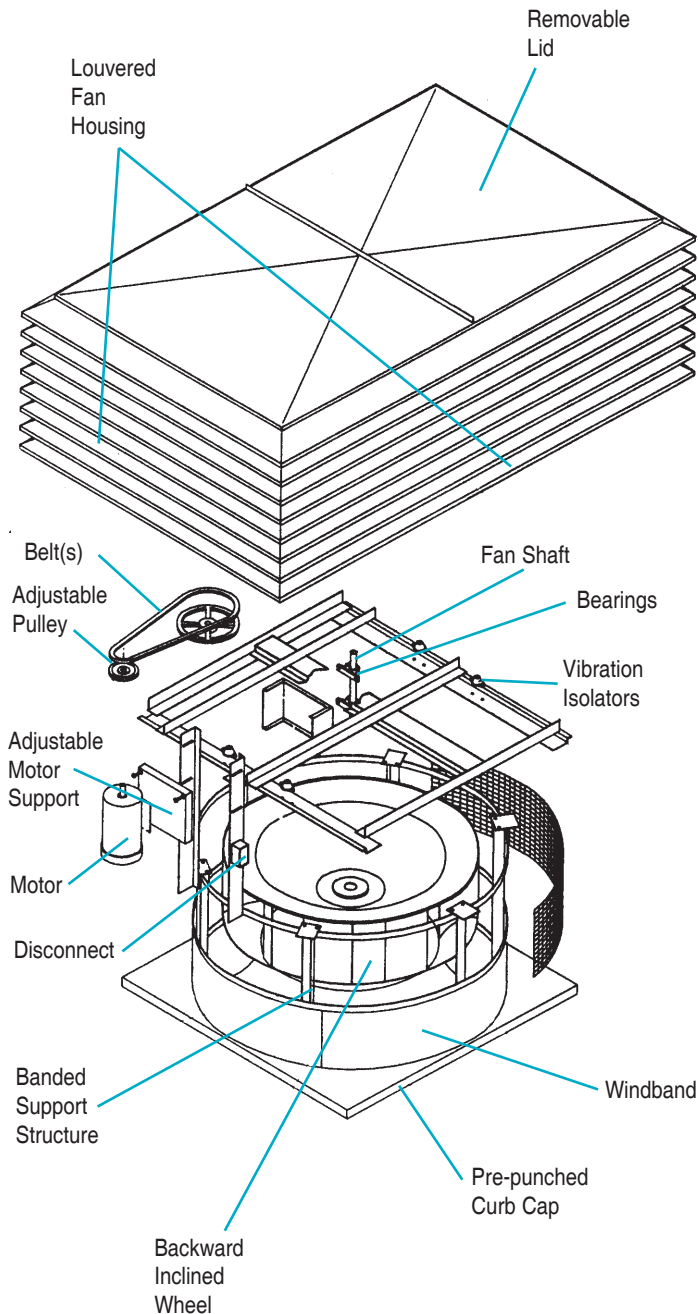
- Bolted, heavy-gauge material.
- Easily adjustable belt tension.
- Motor plate accommodates multiple motor frames.
- Isolated from fan plate to reduce vibration and noise transmission.
- Allows horizontal adjustment of wheel.
- Electrically grounded to meet **NEC** and **UL** requirements.



Low Silhouette Cent. Roof

FEATURES

TYPICAL SUPPORT STRUCTURE SIZES 30 THRU 54



BEARINGS/SHAFT

- Dual bearings utilized to properly support the fan shaft.
- Prelubricated sealed, self-aligning.
- Rated at 200,000 hours average operation.
- Polished CRS fan shaft with rust inhibitive coating.
- Eccentric locking collar bearings on fan sizes 06 thru 18.

DRIVES

- Selected for 165% of the motor horsepower.
- Adjustable V-belt drives with oil resistant non-static conducting belts.
- Two belts standard on units 5 HP and larger.
- Factory present fan RPM.
- Adjustable motor sheave allows for final air system balancing.

WHEEL

- Backward inclined wheels constructed of non-corrosive or coated heavy-gauge material. Wheel sizes 6-24 are aluminum, above 24 are steel.
- Self-limiting power characteristics.
- Dynamically balanced and test run in each individual unit.

SUPPORT STRUCTURE

Sizes 06 - 24

- Galvanized or aluminum patented diffuser provides structural integrity and protection against weather entrance.
- Self-sealing diffuser fasteners prevent leakage.

Sizes 30 - 54

- Heavy-gauge coated steel circular bands welded together for structural strength and unit rigidity.
- Aluminum windband provides weather protection and serves as air directional guide.

CURB CAP

- One piece construction with fastened/welded, overlapping corners to ensure strength.
- Pre-punched mounting holes for ease of installation.
- The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow along with protection from entry of adverse weather elements.

CONSTRUCTION - EXTREME WEATHER

MOTOR SUPPORT ASSEMBLY

- Bolted, heavy-gauge material.
- Easily adjustable to tension belt.
- Motor plate accommodates multiple motor frames.
- Isolated from fan plate to reduce vibration and noise transmission.
- Allows horizontal adjustment on wheel.
- Electrically grounded to meet **NEC** and **UL** requirements.

MOTOR/ELECTRICAL

- **UL** listing under Standard 705 available as option on most models.
- Motors are **UL** recognized by nationally recognized manufacturers.
- Utility box ships mounted. Safety disconnect and cover plate ship loose for ease of field wiring.
- Motors through 10 HP are factory mounted as standard.

BEARING/SHAFT

- Dual bearings utilized to properly support the fan shaft.
- Prelubricated sealed, self-aligning.
- Rated at 200,000 hours average operation.
- Polished CRS fan shaft with rust inhibitive coating.
- Eccentric locking collar bearings on fan sizes 06 thru 18.

DRIVES

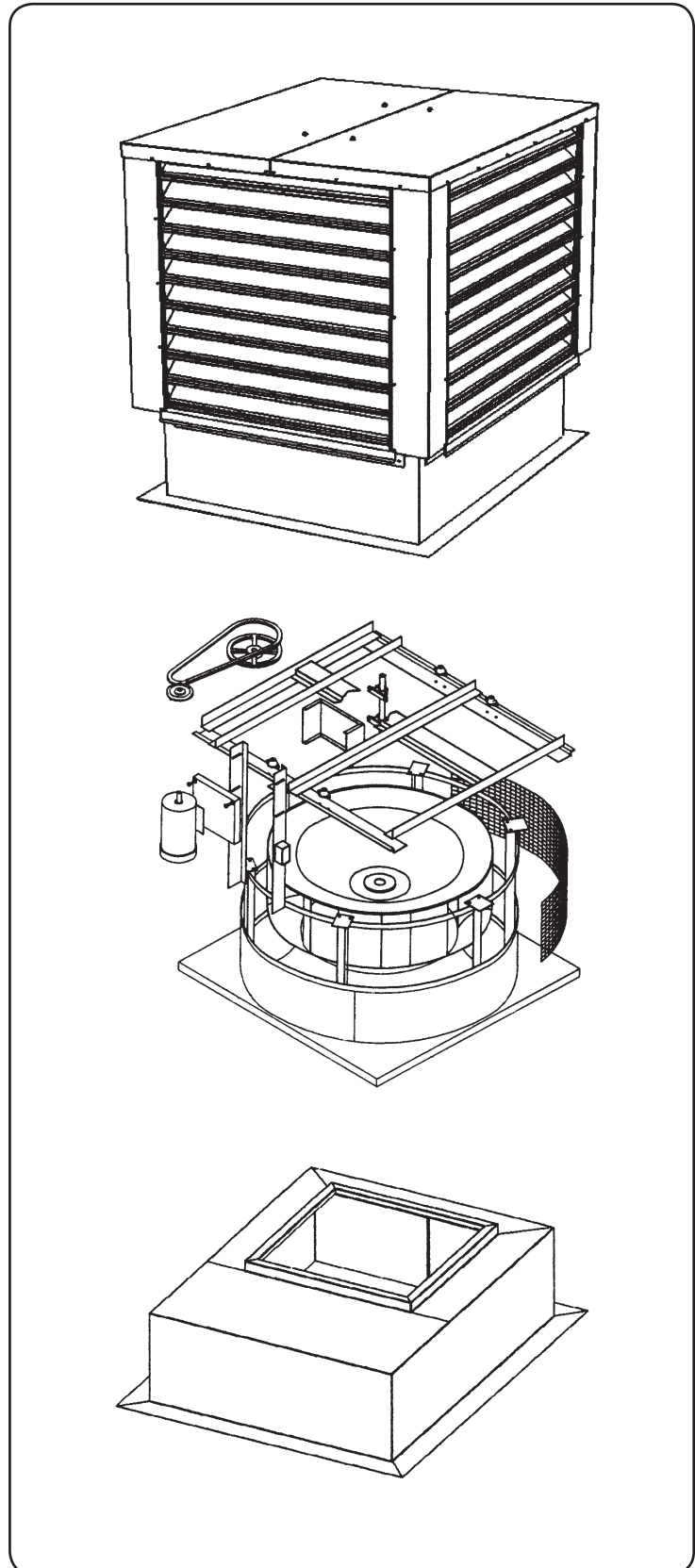
- Selected for 165% of the motor horsepower.
- Adjustable V-belt drives with oil resistant non-static conducting belts.
- Two belts standard on units 5 HP and larger.
- Factory present fan RPM.
- Adjustable motor sheave allows for final air system balancing.

WHEEL

- Backward inclined median airfoil wheels constructed of non-corrosive or coated heavy-gauge material.
- Self-limiting power characteristics.
- Dynamically balanced and test run in each individual unit.

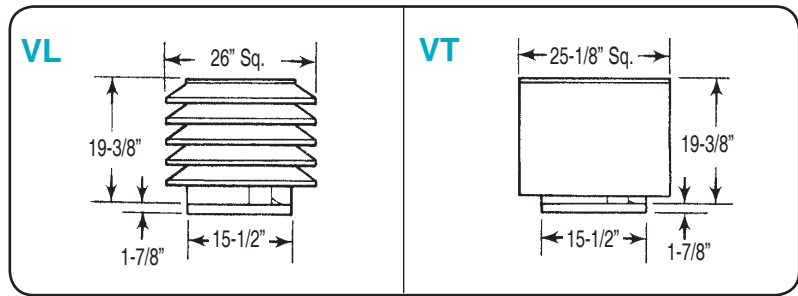
FAN HOUSING

- **Louver Frame:** Heavy-gauge 6"x.125" thick 6063T5 extruded aluminum.
- **Louver Blade:** Drainable design .125" thick 6063T5 extruded aluminum, mechanically fastened and welded to jambs on backside of blade, set on 38° angles (bottom blade opening varies).
- **Roof:** .080" formed aluminum.



VLDK 06 VTDK 06 DIRECT DRIVE

PERFORMANCE DATA



RPM RANGE - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.												
		F3+ 1/20		J2+ 1/8		.000	.125	.250	.375	.500	.625	.750	1.000	1.250
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM
SPEED CONTROLLABLE MOTORS**	400	152	.01											
	500	190	.01											
	600	228	.01											
	700	267	.01	122	.01									
	800	305	.01	198	.01									
	900	343	.02	254	.02									
	1000	381	.02	303	.03	182	.03							
	1075 *	409	.03	338	.03	242	.03							
	1100	419	.03	350	.03	260	.04							
	1200	457	.04	393	.04	319	.05	195	.05					
	1300	495	.05	435	.05	373	.06	285	.06					
	1400	533	.06	478	.06	422	.07	352	.07	244	.07			
1500	571	.07	519	.08	469	.08	408	.09	329	.09				
1600 *	609	.09	560	.09	513	.10	461	.10	397	.11	305	.11		
ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph	1140 *	432	.04	347	.04	237	.04							
	1725 *	653	.14	599	.14	541	.14	481	.14	407	.14	319	.14	

DESIGN DATA
 Tip Speed = 2.75 x RPM
 Unit Weight (less Motor) = 45 Lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

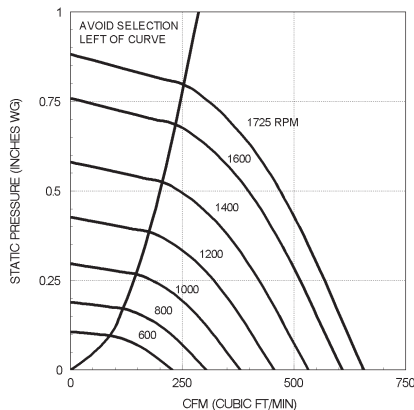
** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

- * Base Unit - As run motor speeds.
 - + RPM range capable with solid state speed control.
- Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation Type A, free inlet hemispherical sone levels.

VLDK 06 and VTDK 06 AIR PERFORMANCE

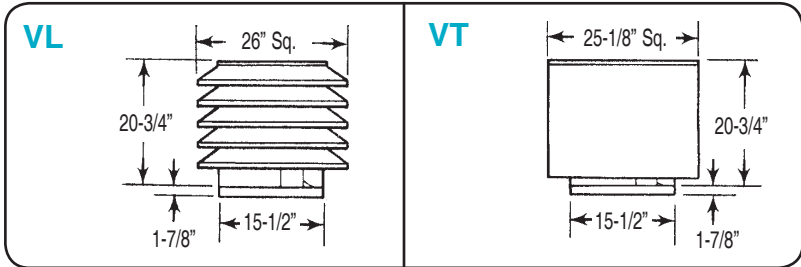


VLDK 06 and VTDK 06 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
1075	.000	55	62	53	53	49	50	47	45	57
	.125	54	60	52	53	49	48	45	42	55
	.375	54	60	52	55	51	49	45	41	57
1600	.000	70	69	69	62	61	58	57	55	67
	.250	69	69	68	63	60	57	56	52	66
	.375	69	68	67	62	60	57	55	52	66
	.500	68	68	67	63	61	58	56	52	67
	.625	68	68	67	64	63	59	56	52	67
	.750	68	68	68	64	63	59	56	52	68

VLDK 08 VTDK 08 DIRECT DRIVE

PERFORMANCE DATA



RPM RANGE - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.																				
F3+ 1/20	J2+ 1/8		.000 CFM BHP SONES	.125 CFM BHP SONES	.250 CFM BHP SONES	.375 CFM BHP SONES	.500 CFM BHP SONES	.625 CFM BHP SONES	.750 CFM BHP SONES	1.000 CFM BHP SONES	1.250 CFM BHP SONES												
SPEED CONTROLLABLE MOTORS**		600	315 .01 2.2																				
		675	354 .01 2.6	158 .01 1.2																			
		750	393 .01 3.1	237 .02 1.6																			
		825	433 .02 3.6	295 .02 2.2																			
		900	472 .02 4.1	348 .03 2.7																			
		1000	524 .03 4.8	417 .03 3.5	279 .04 3.2																		
		1075 *	564 .04 5.3	465 .04 4.1	347 .05 3.7																		
		1175	616 .05 6.0	527 .05 5.0	423 .06 4.4	285 .06 4.4																	
		1250	656 .06 6.6	573 .06 5.6	476 .07 5.0	369 .07 4.9																	
		1325	695 .07 7.2	618 .08 6.3	529 .08 5.6	431 .08 5.4	265 .08 5.5																
		1400	734 .08 7.8	663 .09 6.9	580 .09 6.2	490 .10 6.0	378 .10 6.0																
		1475	773 .10 8.4	707 .10 7.6	629 .11 6.9	544 .11 6.6	453 .12 6.6	276 .11 6.7															
	1550	813 .11 9.0	750 .12 8.2	677 .13 7.6	597 .13 7.2	514 .14 7.1	406 .14 7.2																
	1600 *	839 .12 9.4	778 .13 8.7	708 .14 8.1	633 .14 7.6	553 .15 7.5	464 .15 7.6	249 .14 7.7															
ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph		1140 *	598 .05 5.8	506 .05 4.6	397 .05 4.1	206 .05 4.2																	
		1725 *	905 .16 10.5	848 .16 9.8	784 .17 9.2	717 .18 8.7	643 .18 8.6	569 .19 8.5	475 .19 8.7														

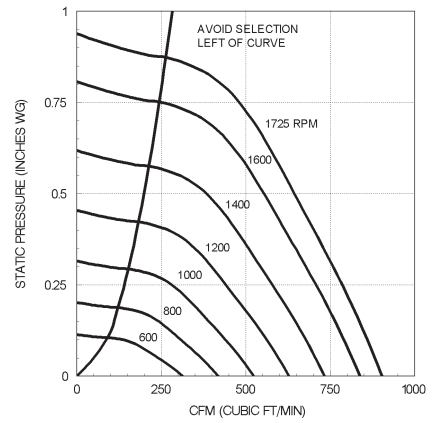
DESIGN DATA
 Tip Speed = 2.75 x RPM
 Unit Weight (less Motor) = 45 Lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation Type A, free inlet hemispherical sone levels.

VLDK 08 and VTDK 08 AIR PERFORMANCE



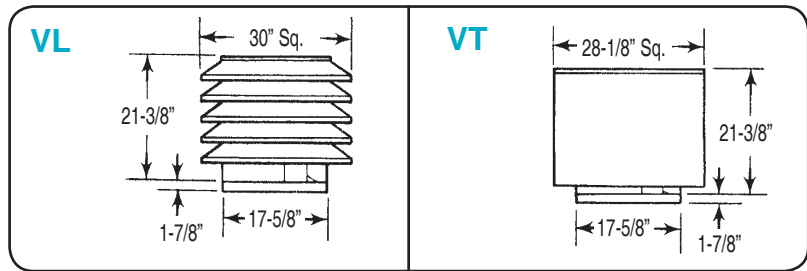
VLDK 08 and VTDK 08 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
1075	.000	53	61	53	53	49	49	52	54	59
	.125	54	57	52	53	48	48	48	48	56
	.375	54	59	52	54	51	50	45	41	57
1600	.000	71	68	69	64	60	58	59	61	68
	.250	71	67	67	63	60	57	57	57	66
	.375	71	67	66	63	60	57	56	55	66
	.500	70	67	66	63	61	58	56	54	67
	.625	69	67	67	63	62	59	57	52	67
	.750	69	68	67	63	62	59	57	52	67

Low Silhouette Cent. Roof

VLDK 10 VTDK 10 DIRECT DRIVE

PERFORMANCE DATA



RPM RANGE - Motor HP	RPM	STATIC PRESSURE, INCHES W.G.																	
		.000		.125		.250		.375		.500		.625		.750		1.000		1.250	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
SPEED CONTROLLABLE MOTORS**	550	542	.01	317	.02														
	700	690	.03	547	.04														
	800	788	.04	666	.05	495	.05												
	825 *	813	.05	694	.05	540	.06												
	900	887	.06	778	.07	660	.08	397	.07										
	975	960	.08	860	.09	755	.10	596	.10										
	1050	1034	.10	941	.11	849	.12	727	.12	492	.12								
	1075 *	1059	.10	968	.11	877	.12	768	.13	570	.13								
	1175	1157	.14	1074	.15	991	.16	901	.17	777	.17	553	.17						
	1275	1256	.17	1179	.19	1103	.20	1026	.21	936	.22	803	.22	568	.21				
	1375	1354	.22	1283	.23	1212	.24	1142	.26	1063	.27	971	.28	835	.27				
	1500	1478	.28	1412	.30	1347	.31	1282	.32	1217	.34	1142	.35	1053	.36	743	.35		
1575	1551	.33	1489	.34	1427	.36	1365	.37	1304	.38	1236	.40	1163	.41	938	.41	270	.34	
1625 *	1601	.36	1540	.38	1480	.39	1420	.40	1361	.42	1298	.43	1228	.45	1037	.45	617	.43	
ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph	1140 *	1123	.12	1037	.13	952	.14	856	.15	718	.16	378	.14						
	1725 *	1699	.43	1642	.45	1586	.46	1529	.48	1473	.49	1416	.51	1354	.52	1205	.54	974	.54

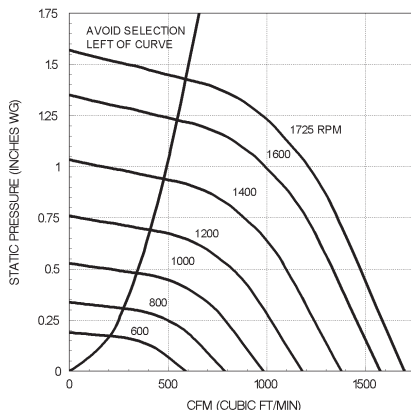
DESIGN DATA
 Tip Speed = 3.27 x RPM
 Unit Weight (less Motor) = 45 Lbs.
 Roof Opening = 11" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 10" Sq.

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation Type A, free inlet hemispherical sone levels.

VLDK 10 and VTDK 10 AIR PERFORMANCE

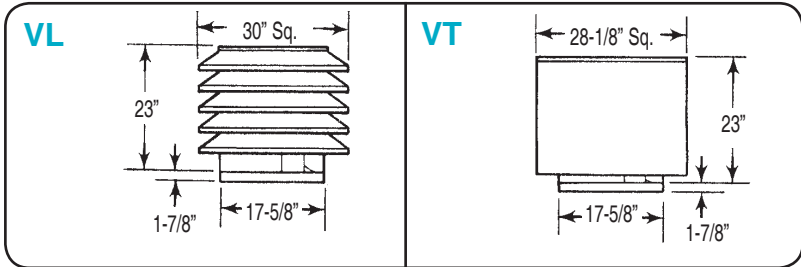


VLDK 10 and VTDK 10 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
825	.000	53	65	57	51	50	51	44	37	57
	.125	51	62	55	50	48	49	42	35	55
	.375	50	64	52	48	50	51	47	43	57
1075	.000	59	69	67	60	56	57	53	46	64
	.250	57	67	65	58	54	55	50	43	62
	.500	56	67	64	57	55	56	53	48	63
1625	.000	70	72	83	74	66	65	66	59	77
	.500	68	71	80	72	65	63	64	57	75
	1.000	67	70	81	70	64	64	64	59	75

VLDK 12 VTDK 12 DIRECT DRIVE

PERFORMANCE DATA

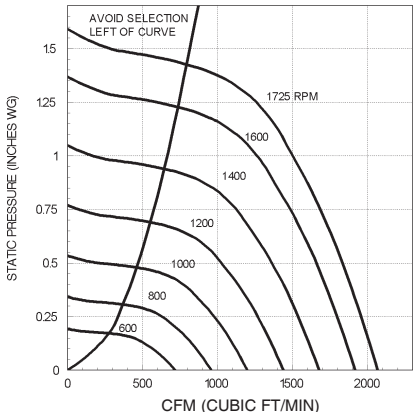


RPM RANGE - Motor HP					STATIC PRESSURE, INCHES W.G.											
F4+ 1/20	J3+ 1/8	M2+ 1/3	P2+ 1/2	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250			
					CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES		
SPEED CONTROLLABLE MOTORS					550	660 .01 2.0	407 .02 1.7									
					700	840 .03 3.6	680 .03 3.2									
					800	960 .04 4.7	827 .05 4.3	628 .05 4.2								
					825 *	989 .05 5.0	863 .05 4.6	677 .06 4.5								
					900	1079 .06 5.8	967 .07 5.4	814 .07 5.2	513 .07 5.3							
					975	1169 .08 6.6	1067 .09 6.3	937 .09 5.9	759 .10 6.0							
					1050	1259 .10 7.5	1165 .11 7.2	1054 .11 6.9	906 .12 6.8	642 .11 6.9						
					1075 *	1289 .10 7.8	1197 .11 7.5	1090 .12 7.2	951 .13 7.1	741 .13 7.1						
					1175	1409 .14 9.1	1325 .15 8.8	1231 .15 8.5	1117 .16 8.2	974 .17 8.3	723 .16 8.4					
					1275	1529 .17 10.4	1451 .18 10.2	1370 .19 9.9	1274 .21 9.6	1155 .21 9.5	1013 .21 9.8	736 .20 9.8				
					1375	1649 .22 12.3	1577 .23 12.0	1504 .24 11.7	1418 .25 11.4	1319 .26 11.2	1207 .27 11.3	1066 .27 11.3				
					1500	1799 .28 14.8	1733 .30 14.5	1666 .31 14.2	1593 .32 13.9	1512 .33 13.6	1414 .34 13.5	1310 .35 13.6	978 .34 13.8			
					1575	1889 .33 16.4	1826 .34 16.2	1763 .35 15.9	1697 .36 15.6	1619 .38 15.4	1536 .39 15.1	1437 .40 15.2	1206 .40 15.4	267 .26 15.8		
					1625 *	1949 .36 17.5	1888 .37 17.3	1827 .39 17.0	1765 .40 16.8	1690 .41 16.5	1615 .43 16.2	1520 .43 16.2	1305 .44 16.4	814 .40 16.8		
					ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph					1140 *	1367 .13 8.6	1280 .13 8.3	1182 .14 8.0	1060 .15 7.8	905 .15 7.9	500 .13 8.0
					1725 *	2069 .43 19.4	2011 .45 19.2	1954 .46 18.9	1896 .47 18.6	1830 .49 18.4	1759 .50 18.1	1682 .51 17.9	1499 .53 18.1			

DESIGN DATA
 Tip Speed = 3.27 x RPM
 Unit Weight (less Motor) = 50 Lbs.
 Roof Opening = 13" Sq.
 Curb O. D. = 16" Sq.
 Damper Size = 12" Sq.

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control.
 Performance ratings do not include the effects of accessories.

VLDK 12 and VTDK 12 AIR PERFORMANCE



The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation Type A, free inlet hemispherical sone levels.

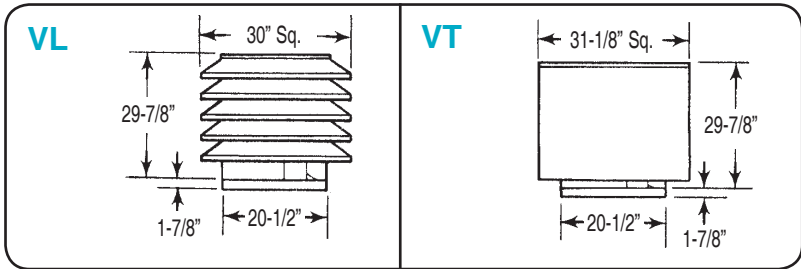
VLDK 12 and VTDK 12 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
825	.000	62	67	57	56	56	53	48	43	61
	.125	62	66	55	55	55	52	47	42	59
	.375	64	67	54	54	54	51	47	43	59
1075	.000	69	72	66	63	63	60	55	50	67
	.250	68	72	64	61	61	59	54	49	66
	.500	71	72	63	60	60	58	54	50	65
1625	.000	82	82	85	74	72	71	67	62	80
	.500	81	81	84	72	70	69	66	61	79
	1.000	81	83	84	71	69	68	66	61	79

Low Silhouette Cent. Roof

VLDK 15 VTDK 15 DIRECT DRIVE

PERFORMANCE DATA



RPM RANGE - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
K4+ 1/6	M3+ 1/3		.000 CFM BHP SONES	.125 CFM BHP SONES	.250 CFM BHP SONES	.375 CFM BHP SONES	.500 CFM BHP SONES	.625 CFM BHP SONES	.750 CFM BHP SONES	1.000 CFM BHP SONES	1.250 CFM BHP SONES
SPEED CONTROLLABLE MOTORS**		450	1011 .02 2.0	585 .03 1.6							
		500	1124 .03 2.7	786 .04 2.2							
		550	1236 .04 3.5	945 .05 3.0							
		600	1349 .06 4.2	1086 .06 3.8	625 .06 3.6						
		650	1461 .07 5.0	1225 .08 4.5	891 .08 4.3						
		700	1573 .09 5.7	1360 .10 5.2	1086 .10 4.8	251 .06 4.9					
		750	1686 .11 6.4	1493 .12 6.0	1256 .12 5.6	856 .12 5.5					
		800	1798 .13 7.2	1621 .14 6.8	1400 .15 6.5	1109 .14 6.2					
		825 *	1854 .15 7.6	1682 .15 7.3	1471 .16 6.9	1212 .16 6.6	577 .13 6.5				
		875	1967 .17 8.5	1804 .18 8.2	1610 .19 7.8	1393 .19 7.5	1041 .18 7.4				
		925	2079 .21 9.5	1926 .22 9.2	1748 .22 8.8	1557 .23 8.5	1286 .22 8.4	700 .18 8.3			
		975	2191 .24 10.6	2046 .25 10.3	1883 .26 9.9	1701 .26 9.6	1482 .26 9.3	1145 .25 9.3			
		1025	2304 .28 11.7	2165 .29 11.4	2017 .30 11.1	1841 .31 10.7	1661 .31 10.4	1396 .30 10.5	931 .26 10.6		
		1075 *	2416 .32 13.0	2284 .33 12.8	2149 .34 12.5	1981 .35 12.2	1818 .35 11.9	1602 .35 11.7	1294 .34 11.8		
ALL OTHER MOTORS (Non-Speed Controllable) TE, XP, 2 Spd, 230V & All 3 Ph		1140 *	2562 .38 14.9	2438 .40 14.7	2313 .41 14.4	2160 .42 14.1	2004 .42 13.8	1836 .42 13.5	1608 .42 13.6	346 .25 13.6	

DESIGN DATA
 Tip Speed = 4.06 x RPM
 Unit Weight (less Motor) = 65 Lbs.
 Roof Opening = 16" Sq.
 Curb O. D. = 19" Sq.
 Damper Size = 15" Sq.

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

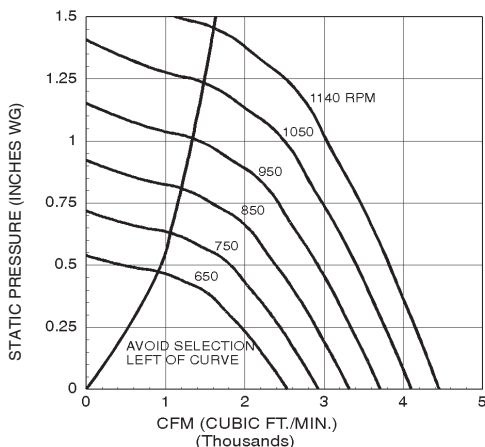
+ RPM range capable with solid state speed control.

Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation Type A, free inlet hemispherical sone levels.

VLDK 15 and VTDK 15 AIR PERFORMANCE

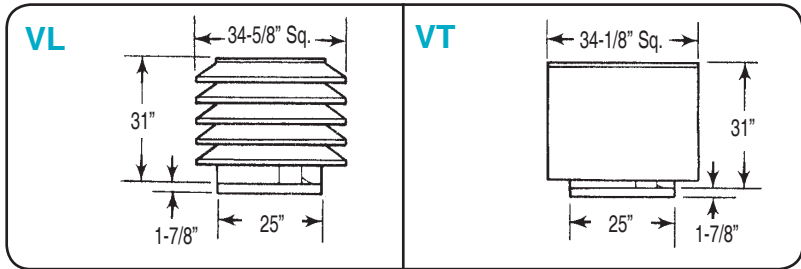


VLDK 15 and VTDK 15 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	74	71	69	63	61	58	52	45	67
	.125	74	70	68	62	60	57	51	44	66
	.250	74	70	67	61	59	56	50	44	65
	.500	74	71	65	59	58	56	50	43	64
	.750	73	73	64	57	58	57	51	41	64
1075	.000	78	82	79	71	68	66	60	53	75
	.125	78	82	78	70	67	65	60	53	75
	.500	79	81	77	68	65	62	58	52	73
	.750	78	82	77	66	64	62	58	51	73
	1.000	77	82	77	64	64	63	60	57	73

VLDK 18 VTDK 18 DIRECT DRIVE

PERFORMANCE DATA



RPM RANGE - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.																
M4+ 1/3	* R3+ 3/4		.000 CFM BHP SONES	.125 CFM BHP SONES	.250 CFM BHP SONES	.375 CFM BHP SONES	.500 CFM BHP SONES	.625 CFM BHP SONES	.750 CFM BHP SONES	1.000 CFM BHP SONES	1.250 CFM BHP SONES								
SPEED CONTROLLABLE MOTORS**		600	2343 6.7	.14 6.1	2043 5.7	.15 5.5	1683 5.5	.15 5.5	1098 5.5	.14 5.5	DESIGN DATA Tip Speed = 4.94 x RPM Unit Weight (less Motor) = 80 Lbs. Roof Opening = 20-1/2" Sq. Curb O. D. = 23-1/2" Sq. Damper Size = 19" Sq.								
		650	2538 7.8	.18 7.4	2265 7.0	.19 7.0	1949 7.0	.19 7.0	1570 6.8	.19 6.7									
		700	2734 9.2	.22 8.8	2482 8.4	.23 8.4	2208 8.4	.24 8.4	1868 8.2	.23 8.0									
		750	2929 10.7	.27 10.4	2696 10.4	.28 10.4	2441 10.1	.29 10.1	2143 9.9	.29 9.7									
		800	3124 12.4	.33 12.1	2907 12.1	.34 12.1	2670 11.9	.35 11.9	2407 11.7	.36 11.4									
		825 *	3222 13.3	.36 13.0	3012 13.0	.37 12.8	2783 12.8	.38 12.6	2537 12.4	.39 12.4									
		875	3417 14.6	.43 14.3	3221 14.3	.45 14.1	3007 14.1	.46 13.8	2787 13.6	.46 13.4									
		925	3612 15.7	.51 15.4	3428 15.4	.53 15.2	3228 15.2	.54 15.0	3020 15.0	.55 14.8									
		975	3807 16.9	.59 16.6	3635 16.6	.61 16.4	3446 16.4	.63 16.2	3249 15.9	.64 15.7									
		1025	4003 18.1	.69 17.8	3839 17.8	.71 17.6	3661 17.6	.72 17.4	3475 17.4	.74 17.1									
	1075 *	4198 19.3	.80 19.0	4042 19.0	.82 18.8	3873 18.8	.83 18.6	3698 18.6	.84 18.4										
ALL OTHER MOTORS (NON-SPEED CONTROLLABLE) TE, XP, 2 SPD, 230V, & ALL 3 Ph		1140 *	4452 21	.95 21	4305 21	.97 21	4148 21	.99 20	3985 20	1.00 20	3816 20	1.01 19.9	3646 19.7	1.03 20	3449 20	1.03 20	3033 20	1.01 20	2479 20

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

+ RPM range capable with solid state speed control.

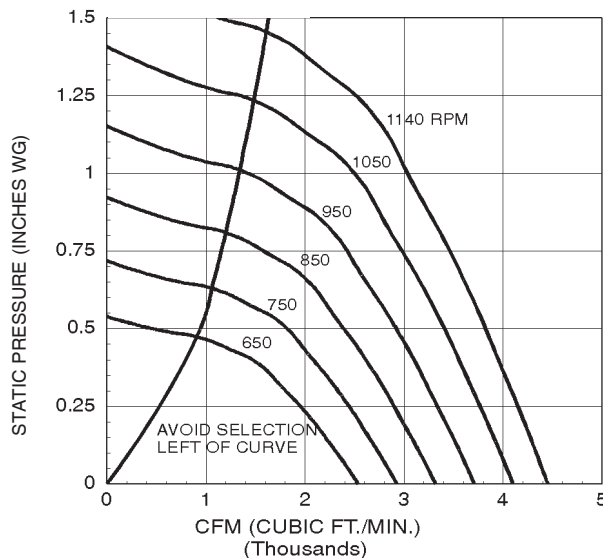
Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{Wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation Type A, free inlet hemispherical sone levels.

*NOTE: R3 motors are specifically designed to operate through the above performance range. The motor will not be damaged or harmed at the higher BHP values.

VLDK 18 and VTDK 18 AIR PERFORMANCE

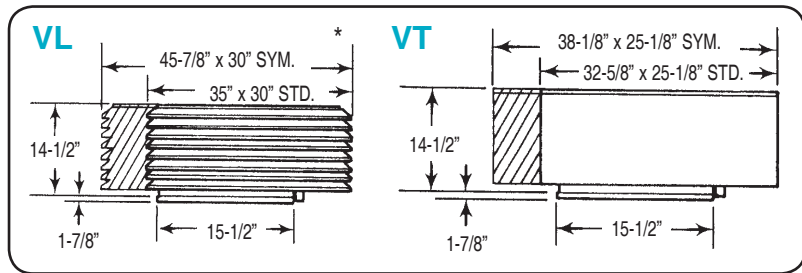


VLDK 18 and VTDK 18 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
825	.000	75	84	73	70	67	67	61	52	75
	.125	76	85	73	70	66	66	59	51	74
	.250	76	85	72	69	65	64	58	49	74
	.500	77	85	71	68	63	61	54	46	73
	.750	81	84	71	68	62	59	53	47	72
1075	.000	79	89	84	78	74	73	69	61	82
	.250	79	89	84	77	73	72	67	59	81
	.500	80	89	84	76	72	70	65	57	81
	.750	81	90	83	76	71	68	63	56	80
	1.000	84	90	83	76	71	67	62	55	80

VLBK 06 VTBK 06 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP	RPM	STATIC PRESSURE, INCHES W. G.											
		.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000
K1 (1/6)		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	600	228 .00 1.0											
	700	267 .01 1.5	122 .01 1.3										
K3 (1/6)	800	305 .01 2.2	198 .01 1.8										
	900	343 .02 2.8	254 .02 2.4										
K4 (1/6)	1000	381 .02 3.5	303 .03 3.0	182 .03 3.3									
	1100	419 .03 4.1	350 .03 3.7	260 .04 3.8									
K5 (1/6)	1200	457 .04 4.9	393 .04 4.4	319 .05 4.4	195 .05 4.7								
	1300	495 .05 5.6	435 .05 5.2	373 .06 5.0	285 .06 5.3								
L1 (1/4)	1400	533 .06 6.4	478 .06 6.0	422 .07 5.7	352 .07 5.9	244 .07 6.1							
	1500	571 .07 7.2	519 .08 6.8	469 .08 6.5	408 .09 6.5	329 .09 6.8							
M1 (1/3)	1550	590 .08 7.6	540 .09 7.2	492 .09 6.9	435 .10 6.9	363 .10 7.1	253 .10 7.3						
	1600	609 .09 8.0	560 .09 7.7	513 .10 7.4	461 .10 7.3	397 .11 7.4	305 .11 7.7						
P1 (1/2)	1650	628 .10 8.5	581 .10 8.1	535 .11 7.9	485 .11 7.7	426 .12 7.8	349 .12 8.0						
	1700	647 .11 9.0	601 .11 8.7	556 .12 8.4	509 .12 8.1	453 .13 8.2	383 .13 8.4	280 .13 8.6					
M1 (1/3)	1750	666 .12 9.5	621 .12 9.2	578 .13 8.9	533 .13 8.6	481 .14 8.7	418 .14 8.8	331 .14 9.0					
	1800	685 .13 10.0	642 .13 9.7	599 .14 9.4	557 .15 9.1	509 .15 9.1	451 .15 9.3	376 .16 9.4					
P1 (1/2)	1850	704 .14 10.5	662 .14 10.3	621 .15 10.0	580 .16 9.7	533 .16 9.6	479 .17 9.7	412 .17 9.8					
	1900	724 .15 11.1	682 .16 10.8	642 .16 10.5	603 .17 10.3	558 .17 10.1	507 .18 10.2	446 .18 10.4					
M1 (1/3)	1950	743 .16 11.8	702 .17 11.4	663 .18 11.1	624 .18 10.8	582 .19 10.6	534 .19 10.7	480 .20 10.8	307 .20 11.1				
	2000	762 .18 12.4	722 .18 12.1	684 .19 11.8	646 .20 11.5	606 .20 11.2	561 .21 11.2	510 .21 11.3	364 .21 11.6				
M1 (1/3)	2050	781 .19 12.9	742 .20 12.7	705 .20 12.4	668 .21 12.1	630 .22 11.8	587 .22 11.7	538 .23 11.9	409 .23 12.1				
	2100	800 .20 13.6	762 .21 13.3	725 .22 13.0	689 .22 12.7	653 .23 12.4	612 .24 12.3	565 .24 12.4	450 .25 12.7				
M1 (1/3)	2150	819 .22 14.2	782 .23 13.9	746 .23 13.6	711 .24 13.3	676 .25 13.0	636 .25 12.8	592 .26 12.9	485 .26 13.2	284 .26 13.4			
	2200	838 .23 14.7	801 .24 14.4	767 .25 14.1	732 .26 13.7	699 .26 13.4	660 .27 13.2	621 .27 13.3	519 .28 13.5	368 .28 13.8			
M1 (1/3)	2250	857 .25 15.2	821 .26 14.9	787 .26 14.6	754 .27 14.3	720 .28 14.0	684 .29 13.7	646 .29 13.7	553 .30 14.0	419 .30 14.3			
	2300	876 .27 15.7	841 .28 15.4	808 .28 15.1	775 .29 14.9	742 .30 14.6	708 .30 14.3	670 .31 14.2	583 .32 14.4	464 .32 14.7			
M1 (1/3)	2350	895 .29 16.2	861 .29 15.9	828 .30 15.6	796 .31 15.4	764 .32 15.1	731 .32 14.9	694 .33 14.7	611 .34 14.9	505 .35 15.1	296 .34 15.3		
	2400	914 .31 16.7	880 .31 16.4	849 .32 16.2	817 .33 15.9	785 .34 15.7	754 .34 15.4	718 .35 15.2	639 .36 15.4	539 .37 15.6	390 .37 15.8		
M1 (1/3)	2450	933 .32 17.2	900 .33 16.9	869 .34 16.7	838 .35 16.4	807 .36 16.2	778 .36 16.0	742 .37 15.8	666 .38 15.9	574 .39 16.1	446 .39 16.3		
	2500	952 .34 17.7	920 .35 17.4	889 .36 17.2	859 .37 17.0	828 .38 16.8	798 .39 16.5	766 .39 16.3	693 .40 16.3	607 .41 16.5	491 .42 16.7		

DESIGN DATA

Max BHP = $.027 \times \left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 2.75 x RPM
 Max. Motor Frame Size = 56
 Unit Weight (less motor) = 45 lbs.

Roof Opening = 11" Sq.
 Curb O. D. = 14" Sq.
 Damper Size = 10" Sq.

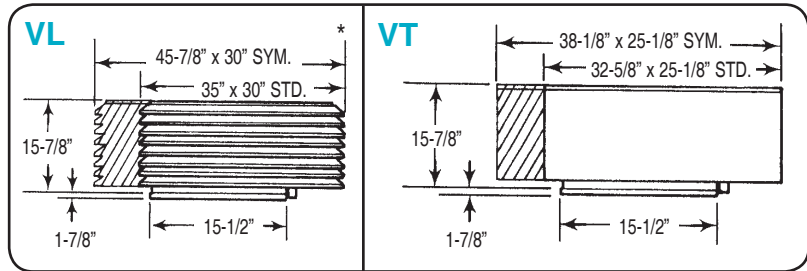
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.
 * For Extreme Weather dimensions, please see page 157.

Low Silhouette Cent. Roof

VLBK 08 VTBK 08 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	650	341 .01 2.5												
	750	393 .01 3.1	237 .02 1.6											
K3 (1/6)	850	446 .02 3.8	313 .02 2.4											
	950	498 .03 4.5	383 .03 3.1	214 .03 2.9										
K4 (1/6)	1050	551 .04 5.2	449 .04 3.9	326 .04 3.5										
	1150	603 .05 5.8	512 .05 4.7	405 .05 4.2	234 .05 4.3									
L1 (1/4)	1250	656 .06 6.6	573 .06 5.6	476 .07 5.0	369 .07 4.9									
	1350	708 .07 7.4	633 .08 6.5	546 .08 5.8	452 .09 5.6	315 .09 5.7								
M1 (1/3)	1450	760 .09 8.2	692 .10 7.4	613 .10 6.7	526 .11 6.4	431 .11 6.4								
	1500	787 .10 8.6	721 .11 7.8	645 .11 7.1	562 .12 6.8	473 .12 6.8	334 .12 6.8							
P1 (1/2)	1550	813 .11 9.0	750 .12 8.2	677 .13 7.6	597 .13 7.2	514 .14 7.1	406 .14 7.2							
	1600	839 .12 9.4	778 .13 8.7	708 .14 8.1	633 .14 7.6	553 .15 7.5	464 .15 7.6	249 .14 7.7						
	1650	865 .14 9.8	806 .14 9.2	739 .15 8.5	667 .15 8.1	590 .16 8.0	507 .16 8.0	379 .16 8.0						
	1700	891 .15 10.3	834 .16 9.6	769 .16 9.0	700 .17 8.5	626 .17 8.4	548 .18 8.3	447 .18 8.4						
	1750	918 .16 10.7	862 .17 10.0	800 .18 9.5	734 .18 8.9	661 .19 8.8	589 .19 8.7	505 .20 8.9						
	1800	944 .18 11.1	890 .19 10.5	830 .19 9.9	766 .20 9.4	696 .20 9.2	627 .21 9.2	549 .21 9.3						
	1850	970 .19 11.6	917 .20 11.0	860 .21 10.4	798 .21 10.0	732 .22 9.6	663 .23 9.6	590 .23 9.7	296 .22 9.9					
	1900	996 .21 12.0	945 .22 11.5	890 .22 10.9	830 .23 10.4	766 .24 10.1	699 .24 10.0	631 .25 10.1	427 .25 10.4					
	1950	1023 .23 12.5	972 .23 11.9	919 .24 11.4	861 .25 10.9	800 .25 10.6	734 .26 10.5	670 .27 10.5	501 .27 10.9					
	2000	1049 .24 12.9	1000 .25 12.4	949 .26 11.9	892 .27 11.5	834 .27 11.0	770 .28 11.0	707 .29 11.0	558 .29 11.4					
	2050	1075 .26 13.4	1027 .27 12.9	978 .28 12.4	923 .29 12.0	867 .29 11.6	806 .30 11.4	743 .31 11.5	610 .32 11.9					
	2100	1101 .28 13.9	1055 .29 13.4	1007 .30 12.9	953 .31 12.5	899 .32 12.1	840 .32 11.9	779 .33 12.0	652 .34 12.4	428 .33 12.7				
	2150	1127 .30 14.4	1082 .31 13.8	1037 .32 13.4	983 .33 13.0	930 .34 12.6	874 .34 12.3	814 .35 12.4	693 .36 12.8	527 .36 13.2				
	2200	1154 .32 14.8	1109 .33 14.3	1065 .34 13.9	1014 .35 13.5	962 .36 13.1	908 .37 12.8	849 .37 12.8	734 .39 13.2	583 .39 13.6				
	2250	1180 .35 15.3	1136 .36 14.8	1093 .37 14.4	1044 .38 14.0	993 .38 13.7	941 .39 13.3	886 .39 13.3	773 .41 13.6	640 .42 14.0				
	2300	1206 .37 15.8	1164 .38 15.3	1121 .39 14.9	1074 .40 14.5	1024 .41 14.2	974 .42 13.9	920 .42 13.7	808 .44 14.0	688 .44 14.4	468 .44 14.6			
	2350	1232 .40 16.3	1191 .41 15.9	1149 .42 15.4	1103 .43 15.0	1055 .43 14.7	1006 .44 14.4	954 .45 14.2	846 .46 14.4	730 .48 14.8	569 .47 15.1			
	2400	1259 .42 16.8	1218 .43 16.4	1177 .44 16.0	1133 .45 15.6	1085 .46 15.2	1038 .47 14.9	988 .48 14.6	882 .49 14.8	772 .50 15.2	627 .51 15.6			
	2450	1285 .45 17.2	1245 .46 16.9	1205 .47 16.5	1162 .48 16.2	1116 .49 15.8	1069 .50 15.5	1021 .50 15.2	917 .52 15.3	813 .53 15.6	684 .54 16.0	401 .51 16.2		
	2500	1311 .48 17.7	1272 .49 17.4	1233 .50 17.0	1192 .51 16.7	1146 .52 16.4	1100 .53 16.0	1054 .53 15.7	953 .55 15.7	852 .57 16.0	738 .58 16.4	538 .56 16.7		

DESIGN DATA

Max BHP = .037 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 2.75 x RPM

Max. Motor Frame Size = 56

Unit Weight (less motor) = 45 lbs.

Roof Opening = 11" Sq.

Curb O. D. = 14" Sq.

Damper Size = 10" Sq.

Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.
* For Extreme Weather dimensions, please see page 157.

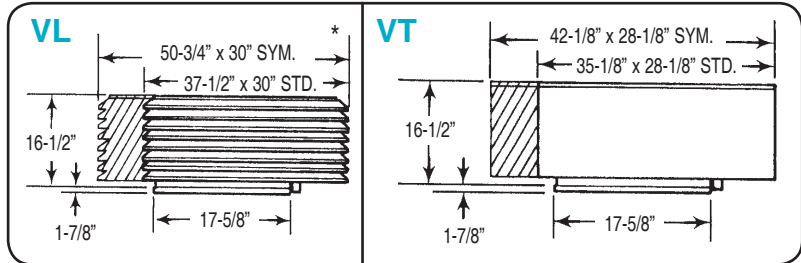
Low Silhouette Cent. Roof

VLBK 10

VTBK 10

BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES	BHP SONES	CFM SONES
K2 (1/6)	650	640 2.3	.02											
	750	739 3.3	.04 3.1	372 3.8	.04									
L1 (1/4)	850	837 4.3	.05 3.8	582 3.8	.07									
	950	936 5.3	.07 4.6	724 4.6	.09									
M1 (1/3)	1050	1034 6.2	.10 5.4	849 5.4	.12	492 5.7								
	1150	1133 7.4	.13 6.5	963 6.5	.15	735 6.5								
P1 (1/2)	1250	1231 8.6	.16 7.7	1075 7.7	.19	423 7.7	.19							
	1350	1330 9.9	.21 9.0	1185 9.0	.23	1032 8.7	.25	783 8.8	.26					
R1 (3/4)	1400	1379 10.7	.23 9.7	1239 9.7	.26	1095 9.3	.28	886 9.5	.29					
	1450	1428 11.4	.26 10.4	1293 10.4	.28	1157 9.9	.31	970 10.1	.32	531 10.3				
S1 (1)	1500	1478 12.1	.28 11.1	1347 11.1	.31	1217 10.5	.34	1053 10.8	.36	743 11.0				
	1550	1527 12.9	.31 11.9	1401 11.9	.34	1275 11.2	.37	1131 11.4	.39	886 11.6				
T1 (1-1/2)	1600	1576 13.7	.34 12.6	1454 12.6	.37	1332 12.0	.40	1196 12.3	.43	447 12.5	.39			
	1650	1625 14.6	.38 13.4	1507 13.4	.41	1389 12.8	.44	1259 13.0	.47	745 13.3	.46			
T1 (1-1/2)	1700	1675 15.4	.41 14.3	1559 14.3	.44	1445 13.6	.47	1322 13.5	.50	1163 13.8	.52			
	1750	1724 16.1	.45 15.0	1612 15.0	.48	1501 14.4	.51	1385 14.3	.54	1246 14.5	.56	470 14.8	.51	
T1 (1-1/2)	1800	1773 16.8	.49 15.6	1664 15.6	.52	1556 15.0	.55	1448 14.8	.59	1319 15.0	.62	795 15.3	.58	
	1850	1822 17.5	.53 16.3	1717 16.3	.57	1611 15.6	.60	1506 15.1	.63	1384 15.3	.66	950 15.8	.66	
T1 (1-1/2)	1900	1872 18.1	.58 17.0	1769 17.0	.61	1666 16.2	.64	1564 15.8	.68	1447 16.0	.71	1300 16.2	.73	1089 16.4
	1950	1921 18.7	.62 17.6	1820 17.6	.66	1720 16.9	.69	1621 16.3	.73	1511 16.4	.76	1382 16.6	.79	1192 16.8
T1 (1-1/2)	2000	1970 19.2	.67 18.2	1872 18.2	.71	1775 17.4	.74	1677 16.9	.78	1573 16.7	.82	1459 17.0	.85	1287 17.3
	2050	2019 19.8	.73 18.8	1924 18.8	.76	1829 18.0	.80	1734 17.5	.83	1635 17.2	.87	1523 17.4	.90	1371 17.6
T1 (1-1/2)	2100	2069 20	.78 19.4	1975 19.4	.82	1882 18.6	.85	1790 18.1	.89	1697 17.7	.93	1587 18.0	.96	1454 18.1
	2150	2118 21	.84 20	2027 20	.87	1936 19.2	.91	1845 18.7	.95	1755 18.2	.99	1651 18.4	1.03	1536 18.5
T1 (1-1/2)	2200	2167 22	.90 21	2078 21	.93	1989 20	.97	1901 19.5	1.01	1812 18.9	1.05	1714 18.8	1.09	1610 19.0
	2250	2216 23	.96 22	2129 22	1.00	2042 21	1.04	1956 20	1.08	1869 19.5	1.12	1776 19.5	1.16	1674 19.5
T1 (1-1/2)	2300	2266 23	1.02 23	2180 23	1.06	2095 22	1.10	2011 21	1.15	1926 20	1.19	1838 20	1.23	1738 20
	2350	2315 24	1.09 23	2232 23	1.13	2148 23	1.17	2065 22	1.22	1983 21	1.26	1900 21	1.30	1802 21
T1 (1-1/2)	2400	2364 25	1.16 24	2283 24	1.21	2201 24	1.25	2120 23	1.29	2039 22	1.33	1958 22	1.38	1865 22
	2450	2413 26	1.24 25	2333 25	1.28	2254 24	1.32	2174 24	1.37	2095 23	1.41	2015 23	1.45	1927 23
T1 (1-1/2)	2500	2462 27	1.31 26	2382 26	1.35	2293 26	1.39	2212 25	1.43	2131 24	1.47	2050 24	1.51	1969 24
	2550	2511 28	1.38 27	2431 27	1.42	2342 27	1.46	2261 26	1.50	2180 25	1.54	2100 25	1.58	2019 25

DESIGN DATA

Max BHP = .106 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 3.27 x RPM

Max. Motor Frame Size = 145T

Unit Weight (less motor) = 50 lbs.

Roof Opening = 13" Sq.

Curb O. D. = 16" Sq.

Damper Size = 12" Sq.

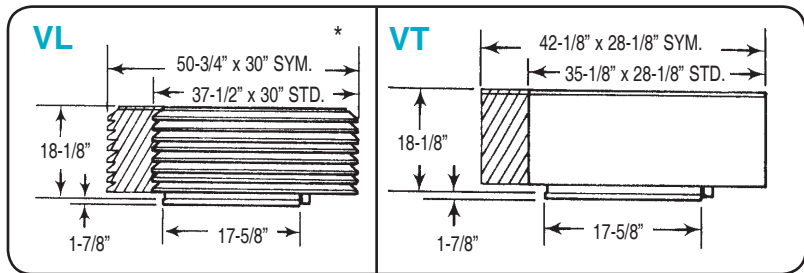
Low Silhouette Cent. Roof

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.
 * For Extreme Weather dimensions, please see page 157.

VLBK 12 VTBK 12 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	550	685 .02 2.0												
K3 (1/6)	650	809 .03 3.0												
L1 (1/4)	750	934 .04 4.1	493 .05 3.7											
M1 (1/3)	850	1058 .06 5.2	756 .07 4.7											
P1 (1/2)	950	1183 .08 6.3	928 .10 5.7											
R1 (3/4)	1050	1307 .11 7.5	1084 .13 6.9	6660 .12 6.9										
S1 (1)	1150	1432 .14 8.7	1229 .16 8.1	954 .17 8.0										
T1 (1-1/2)	1250	1557 .15 10.0	1371 .21 9.5	1153 .22 9.2	602 .19 9.5									
	1350	1681 .23 11.8	1510 .26 11.2	1324 .28 10.8	1023 .28 10.9									
	1450	1806 .29 13.7	1647 .32 13.2	1482 .34 12.7	1268 .35 12.7	737 .30 13.0								
	1500	1868 .32 14.8	1714 .35 14.2	1555 .37 13.6	1359 .38 13.6	986 .37 13.8								
	1550	1930 .35 15.9	1781 .38 15.4	1628 .41 14.8	1445 .42 14.7	1158 .42 14.9								
	1600	1992 .39 17.0	1848 .42 16.5	1700 .44 15.9	1531 .46 15.7	1284 .46 15.9	635 .37 16.3							
	1650	2055 .42 18.1	1915 .46 17.6	1772 .48 17.0	1615 .50 16.7	1406 .51 17.0	990 .484 17.2							
	1700	2117 .46 19.0	1981 .50 18.5	1843 .53 18.0	1698 .55 17.5	1513 .56 17.7	1182 .54 18.0							
	1750	2179 .50 19.7	2048 .54 19.3	1914 .57 18.7	1776 .60 18.2	1600 .61 18.4	1339 .61 18.6	667 .48 19.1						
	1800	2241 .55 20	2113 .59 20	1984 .62 19.5	1850 .64 19.0	1687 .66 19.0	1463 .66 19.3	1041 .61 19.5						
	1850	2304 .60 21	2179 .63 21	2054 .67 20	1924 .70 19.8	1772 .71 19.7	1585 .72 19.9	1252 .69 20						
	1900	2366 .65 22	2245 .68 22	2123 .72 21	1996 .75 21	1856 .77 20	1690 .78 21	1424 .77 21	823 .65 21					
	1950	2428 .70 23	2310 .74 22	2192 .78 22	2069 .81 21	1940 .83 21	1778 .84 21	1549 .84 21	1158 .78 22					
	2000	2490 .75 24	2375 .79 23	2260 .83 23	2140 .86 22	2020 .89 22	1864 .91 22	1671 .91 22	1359 .88 22					
	2050	2553 .81 24	2440 .85 24	2328 .89 24	2212 .93 23	2095 .96 23	1950 .97 23	1792 .99 23	1531 .97 23	1038 .86 23				
	2100	2615 .87 25	2505 .91 25	2396 .96 25	2283 .99 24	2168 1.02 24	2035 1.04 24	1884 1.06 24	1657 1.05 24	1320 1.00 24				
	2150	2677 .94 26	2570 .98 26	2463 1.02 25	2353 1.06 25	2241 1.09 25	2118 1.12 24	1972 1.13 25	1780 1.13 25	1494 1.10 25	887 .92 26			
	2200	2739 1.00 27	2635 1.05 27	2530 1.09 26	2423 1.13 26	2314 1.16 26	2202 1.19 25	2058 1.21 25	1902 1.22 26	1660 1.20 26	1249 1.10 26			
	2250	2802 1.07 28	2699 1.12 28	2597 1.16 27	2493 1.20 27	2386 1.24 26	2279 1.27 26	2143 1.29 26	2003 1.30 27	1784 1.29 27	1479 1.24 27	777 1.00 28		
	2300	2864 1.15 29	2764 1.19 29	2664 1.24 28	2563 1.28 28	2458 1.32 28	2354 1.35 27	2228 1.37 27	2091 1.39 27	1907 1.38 28	1652 1.36 28	1207 1.23 28		
	2350	2926 1.22 30	2828 1.27 30	2730 1.32 29	2632 1.36 29	2530 1.40 29	2427 1.43 28	2312 1.46 28	2178 1.47 28	2028 1.48 29	1802 1.47 29	1483 1.40 29	732 1.10 30	
	2400	2989 1.30 31	2893 1.35 31	2797 1.40 30	2701 1.45 30	2601 1.48 30	2500 1.52 29	2395 1.55 29	2264 1.56 29	2132 1.58 30	1926 1.57 30	1657 1.53 30	1195 1.37 31	
	2450	3051 1.38 32	2957 1.43 32	2863 1.48 31	2769 1.53 31	2671 1.57 31	2573 1.61 30	2475 1.64 30	2349 1.66 30	2220 1.68 30	2048 1.68 31	1829 1.66 31	1483 1.56 32	

DESIGN DATA

Max BHP = .103 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 3.27 x RPM

Max. Motor Frame Size = 145T

Unit Weight (less motor) = 50 lbs.

Roof Opening = 13" Sq.

Curb O. D. = 16" Sq.

Damper Size = 12" Sq.

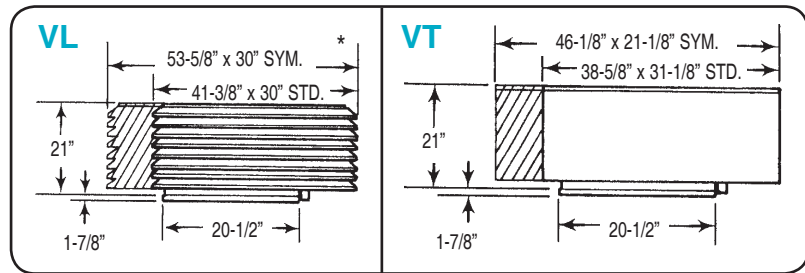
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.
* For Extreme Weather dimensions, please see page 157.

Low Silhouette Cent. Roof

VLBK 15 VTBK 15 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	550	1236 .04 3.5												
	600	1349 .06 4.2	625 .06 3.5											
	650	1461 .07 5.0	891 .08 4.2											
L1 (1/4)	700	1573 .09 5.7	1086 .10 4.7											
M1 (1/3)	750	1686 .11 6.4	1256 .12 5.5											
	800	1798 .13 7.2	1400 .15 6.4											
	850	1910 .16 8.0	1540 .17 7.3	893 .17 6.9										
	900	2023 .19 9.0	1679 .21 8.2	1170 .20 7.8										
P1 (1/2)	950	2135 .22 10.0	1816 .24 9.3	1390 .24 8.8										
	1000	2248 .26 11.1	1950 .28 10.4	1572 .29 9.8	528 .20 9.9									
	1050	2360 .30 12.3	2083 .32 11.7	1745 .33 11.0	1147 .32 11.1									
R1 (3/4)	1100	2472 .35 13.8	2214 .37 13.1	1890 .38 12.5	1423 .37 12.4									
	1150	2585 .39 15.2	2338 .42 14.6	2032 .43 14.0	1653 .43 13.8	537 .29 13.8								
	1200	2697 .45 16.7	2460 .47 16.1	2172 .49 15.6	1836 .49 15.1	1251 .47 15.2								
S1 (1)	1250	2809 .51 18.2	2582 .53 17.6	2311 .55 17.0	2015 .56 16.5	1545 .54 16.5								
	1300	2922 .57 19.1	2703 .60 18.6	2449 .62 18.1	2178 .63 17.6	1781 .62 17.4	821 .47 17.3							
	1350	3034 .64 20	2824 .67 19.6	2585 .69 19.1	2323 .70 18.6	1990 .70 18.4	1448 .67 18.3							
T1 (1-1/2)	1400	3147 .71 21	2944 .74 21	2720 .77 20	2465 .78 19.7	2172 .78 19.4	1742 .76 19.3	503 .48 19.2						
	1450	3259 .79 22	3063 .82 22	2853 .85 21	2604 .87 21	2351 .87 20	1976 .86 20	1322 .74 20						
	1500	3371 .88 23	3182 .91 23	2985 .94 22	2745 .96 22	2512 .96 21	2190 .96 21	1712 .94 21						
	1550	3484 .97 24	3301 1.00 24	3116 1.03 23	2884 1.05 23	2657 1.06 23	2373 1.06 22	1985 1.04 22	1216 .88 22					
V1 (2)	1600	3596 1.06 25	3419 1.10 25	3241 1.13 24	3021 1.15 24	2800 1.17 24	2553 1.17 23	2218 1.16 23	1730 1.12 23					
	1650	3708 1.16 26	3536 1.20 26	3364 1.24 25	3157 1.26 25	2941 1.28 25	2729 1.28 25	2424 1.28 24	2023 1.24 24	1155 1.00 24				
	1700	3821 1.27 27	3654 1.31 27	3487 1.35 27	3292 1.37 26	3080 1.39 26	2875 1.40 26	2607 1.40 25	2265 1.38 25	1787 1.34 25				
	1750	3933 1.39 28	3771 1.43 28	3609 1.47 28	3426 1.50 28	3219 1.52 27	3019 1.53 27	2787 1.53 27	2495 1.52 27	2082 1.47 26	1223 1.20 26			
	1800	4046 1.51 30	3888 1.55 30	3730 1.59 29	3558 1.62 29	3358 1.64 29	3162 1.66 28	2964 1.66 28	2684 1.66 28	2340 1.63 28	1876 1.58 28	495 .95 28		
	1850	4158 1.64 32	4004 1.68 31	3851 1.72 31	3690 1.76 31	3495 1.78 30	3300 1.80 30	3114 1.81 29	2866 1.81 29	2572 1.79 29	2172 1.73 29	1399 1.47 29		
	1900	4270 1.78 34	4121 1.82 33	3971 1.86 33	3821 1.90 32	3631 1.92 32	3441 1.95 31	3258 1.95 31	3045 1.96 31	2780 1.96 31	2439 1.91 31	1994 1.86 31	772 1.24 31	
	1950	4383 1.92 36	4237 1.97 35	4092 2.01 35	3946 2.05 34	3766 2.08 34	3581 2.10 34	3402 2.11 33	3222 2.12 33	2963 2.12 33	2672 2.09 33	2289 2.02 33	1633 1.79 33	
	1975	4439 2.00 37	4295 2.04 36	4151 2.08 36	4008 2.13 35	3833 2.15 35	3651 2.18 35	3473 2.19 34	3295 2.20 34	3054 2.20 34	2787 2.19 34	2435 2.13 34	1926 1.94 34	

DESIGN DATA

Max BHP = .285 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 4.06 x RPM

Max. Motor Frame Size = 182T

Unit Weight (less motor) = 65 lbs.

Roof Opening = 16-1/2" Sq.

Curb O. D. = 19" Sq.

Damper Size = 15" Sq.

Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.

* For Extreme Weather dimensions, please see page 157.

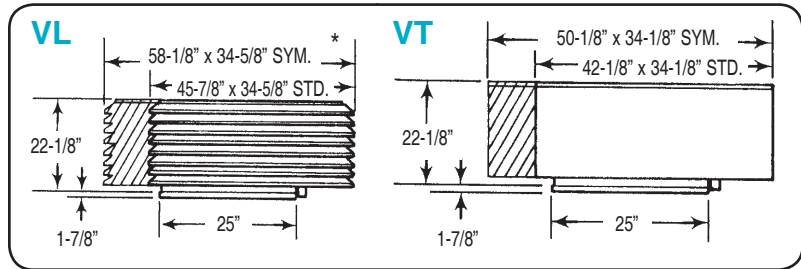
Low Silhouette Cent. Roof

VLBK 18

VTBK 18

BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.													
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750		
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	
L1 (1/4)	550	2130 .10 5.8	1463 .11 4.2												
	M1 (1/3)	600	2324 .13 7.1	1748 .15 5.1											
		650	2517 .17 8.4	2016 .18 6.0	611 .14 6.3										
	P1 (1/2)	700	2711 .21 9.7	2261 .23 7.0	1509 .23 7.2										
		750	2905 .26 10.7	2486 .28 8.0	1898 .29 8.0										
	R1 (3/4)	800	3098 .32 11.7	2708 .34 9.2	2203 .35 8.8	888 .27 9.1									
		850	3292 .38 12.7	2926 .40 10.7	2480 .42 9.7	1764 .40 10.1									
	S1 (1)	900	3486 .45 13.9	3142 .48 11.6	2750 .49 10.7	2209 .49 11.1									
		950	3679 .53 15.1	3355 .56 13.0	3012 .58 11.8	2518 .58 12.2	1634 .52 12.5								
	T1 (1-1/2)	1000	3873 .62 16.4	3565 .65 14.4	3243 .67 13.2	2812 .68 13.3									
		1050	4067 .72 17.7	3774 .75 15.9	3469 .77 14.6	3087 .78 14.4	2618 .78 14.9	1630 .68 15.3							
	V1 (2)	1100	4260 .83 18.1	3981 .86 17.2	3691 .88 16.2	3355 .90 15.4	2926 .91 14.7	2310 .87 14.2							
		1150	4454 .94 19.6	4186 .98 18.7	3911 1.00 17.7	3619 1.02 16.9	3221 1.04 16.2	2776 1.03 15.6	1782 .89 15.1						
	W1 (3)	1175	4551 1.01 20	4289 1.04 19.4	4020 1.07 18.5	3745 1.09 17.6	3359 1.10 17.0	2933 1.10 16.4	2154 1.05 15.8						
		1200	4648 1.07 21	4391 1.11 20	4129 1.13 19.3	3860 1.16 18.4	3497 1.17 17.8	3089 1.17 17.2	2468 1.12 16.6						
	V1 (2)	1225	4744 1.14 22	4493 1.18 21	4237 1.21 20	3973 1.23 19.2	3632 1.24 18.5	3242 1.25 18.0	2732 1.23 17.4	1479 .99 17.0					
1250		4841 1.21 23	4595 1.25 22	4345 1.28 21	4087 1.30 20	3767 1.32 19.3	3393 1.33 18.7	2964 1.32 18.2	2053 1.17 17.7						
V1 (2)	1275	4938 1.29 23	4697 1.32 23	4452 1.36 22	4199 1.38 21	3900 1.40 20	3543 1.41 19.5	3137 1.40 19.0	2401 1.35 18.5						
	1300	5035 1.36 24	4798 1.40 23	4559 1.43 23	4311 1.46 22	4032 1.48 21	3680 1.50 20	3293 1.49 19.8	2714 1.43 19.3	1222 1.08 19.0					
V1 (2)	1325	5132 1.44 25	4900 1.48 24	4666 1.52 23	4422 1.54 22	4164 1.56 22	3818 1.58 21	3448 1.58 21	2968 1.56 20	2010 1.35 19.7					
	1350	5229 1.53 26	5001 1.57 25	4772 1.60 24	4533 1.63 23	4294 1.65 23	3955 1.67 22	3600 1.67 21	3200 1.66 21	2402 1.58 20					
W1 (3)	1375	5325 1.61 27	5102 1.65 26	4878 1.69 25	4643 1.72 24	4408 1.74 23	4090 1.76 23	3752 1.77 22	3375 1.76 22	2717 1.66 21	1162 1.24 21				
	1400	5422 1.70 28	5202 1.74 27	4983 1.78 26	4753 1.81 25	4522 1.83 24	4225 1.85 24	3898 1.87 23	3531 1.86 23	3019 1.82 22	2043 1.57 22				
W1 (3)	1425	5519 1.80 29	5303 1.84 28	5087 1.88 27	4862 1.90 26	4636 1.93 25	4358 1.95 24	4037 1.97 24	3686 1.96 23	3253 1.94 23	2451 1.76 23				
	1450	5616 1.89 29	5404 1.93 29	5192 1.97 28	4971 2.00 27	4749 2.03 26	4490 2.05 25	4175 2.07 25	3839 2.07 24	3482 2.06 24	2776 1.99 23	1247 1.46 23			
W1 (3)	1475	5713 1.99 30	5504 2.03 30	5296 2.08 29	5080 2.11 28	4861 2.13 27	4622 2.16 26	4311 2.18 26	3991 2.18 25	3640 2.17 25	3089 2.09 24	2142 1.83 24			
	1500	5810 2.10 31	5604 2.14 30	5399 2.18 30	5188 2.21 29	4973 2.24 28	4752 2.27 27	4447 2.28 27	4141 2.30 26	3796 2.29 26	3343 2.26 25	2550 2.04 25			
W1 (3)	1525	5906 2.20 32	5705 2.25 31	5503 2.29 31	5296 2.32 30	5084 2.35 29	4872 2.38 28	4582 2.40 27	4282 2.42 27	3951 2.41 26	3575 2.40 26	2883 2.31 26	1454 1.76 25		
	1550	6003 2.31 33	5805 2.36 32	5606 2.40 31	5404 2.44 30	5195 2.46 29	4987 2.49 29	4715 2.51 28	4420 2.53 28	4104 2.53 27	3770 2.52 27	3197 2.42 26	2296 2.14 26		
W1 (3)	1575	6100 2.43 34	5905 2.47 33	5709 2.51 32	5511 2.55 31	5306 2.58 30	5100 2.61 29	4848 2.63 29	4557 2.65 28	4255 2.66 28	3927 2.65 27	3467 2.60 27	2703 2.37 26		

DESIGN DATA

Max BHP = .682 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 4.94 x RPM
 Max. Motor Frame Size = 184T
 Unit Weight (less motor) = 85 lbs.

Roof Opening = 20-1/2" Sq.
 Curb O. D. = 23-1/2" Sq.
 Damper Size = 19" Sq.

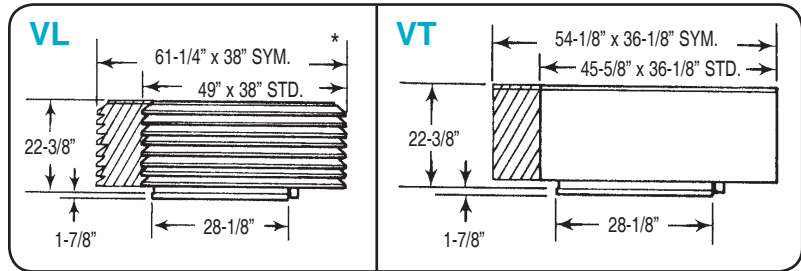
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.
 * For Extreme Weather dimensions, please see page 157.

Low Silhouette Cent. Roof

VLBK 21 VTBK 21 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.													
L1 (1/4)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750		
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	
M1 (1/3)	400	2267 .08 4.3													
	450	2550 .11 5.4	1462 .11 4.7												
	P1 (1/2)	500	2833 .15 6.6	1951 .16 5.8											
		550	3117 .20 7.9	2385 .21 7.2											
	R1 (3/4)	600	3400 .26 9.1	2794 .28 8.5	1599 .25 8.7										
		650	3683 .33 10.4	3133 .35 9.6	2212 .34 9.8										
	S1 (1)	700	3967 .42 11.6	3466 .43 10.9	2697 .44 11.0										
		750	4250 .51 13.1	3792 .53 12.3	3128 .54 12.2	2190 .50 12.5									
	T1 (1-1/2)	800	4533 .62 14.6	4114 .64 13.8	3567 .66 13.5	2750 .64 13.8									
		850	4817 .75 16.1	4431 .77 15.5	3961 .79 15.0	3239 .78 15.1	2284 .71 15.3								
V1 (2)	875	4958 .82 17.0	4585 .84 16.4	4132 .86 16.0	3458 .86 15.9	2652 .81 16.0									
	900	5100 .89 17.9	4737 .91 17.4	4302 .93 16.9	3674 .94 16.8	2923 .90 16.8									
W1 (3)	925	5242 .96 18.7	4888 .98 18.3	4470 1.01 17.9	3886 1.02 17.8	3189 .99 17.8	1906 .84 17.8								
	950	5383 1.04 19.6	5040 1.06 19.2	4637 1.09 18.8	4108 1.11 18.7	3450 1.06 18.7	2549 .99 18.7								
V1 (2)	975	5525 1.13 21	5190 1.15 20	4802 1.18 19.8	4327 1.20 19.6	3683 1.18 19.7	2929 1.12 19.8								
	1000	5667 1.22 22	5340 1.24 21	4967 1.27 21	4543 1.29 21	3903 1.28 21	3201 1.23 21	942 .72 21							
V1 (2)	1025	5808 1.31 22	5490 1.33 22	5131 1.36 22	4741 1.39 22	4120 1.38 22	3468 1.34 22	2468 1.21 22							
	1050	5950 1.41 23	5639 1.43 23	5294 1.46 23	4913 1.49 23	4334 1.49 23	3731 1.41 23	2935 1.36 23							
V1 (2)	1075	6092 1.51 24	5788 1.54 24	5455 1.56 24	5084 1.59 24	4549 1.61 24	3983 1.58 24	3285 1.51 24	716 .78 24						
	1100	6233 1.62 25	5937 1.64 25	5616 1.67 25	5253 1.70 25	4770 1.72 25	4205 1.70 25	3556 1.64 25	2466 1.46 25						
V1 (2)	1125	6375 1.73 27	6085 1.76 26	5777 1.79 26	5421 1.82 26	4989 1.84 26	4424 1.82 26	3822 1.77 27	3030 1.65 27						
	1150	6517 1.85 28	6233 1.88 28	5936 1.90 27	5589 1.94 27	5205 1.97 27	4641 1.95 28	4085 1.86 28	3411 1.83 28	811 .98 28					
V1 (2)	1175	6658 1.97 29	6381 2.00 28	6095 2.03 28	5755 2.06 28	5415 2.10 28	4854 2.09 28	4340 2.06 29	3699 1.98 29	2609 1.78 29					
	1200	6800 2.10 29	6529 2.13 29	6254 2.16 29	5921 2.19 29	5588 2.23 29	5069 2.23 29	4563 2.20 29	3968 2.14 30	3198 2.00 30					
V1 (2)	1225	6942 2.24 30	6676 2.26 30	6408 2.29 30	6085 2.33 30	5759 2.36 30	5290 2.38 30	4782 2.35 30	4233 2.22 30	3580 2.20 31	1169 1.34 31				
	1250	7083 2.38 31	6823 2.41 31	6560 2.43 31	6249 2.47 31	5929 2.50 31	5510 2.52 31	4999 2.51 31	4494 2.40 31	3888 2.38 31	2872 2.16 32				
V1 (2)	1275	7225 2.52 32	6970 2.55 32	6712 2.58 32	6412 2.61 32	6098 2.65 31	5727 2.68 32	5214 2.67 32	4740 2.64 32	4157 2.55 32	3426 2.40 32				
	1300	7367 2.67 33	7117 2.70 33	6864 2.73 33	6574 2.77 32	6267 2.80 32	5942 2.84 32	5427 2.84 33	4962 2.80 33	4424 2.73 33	3807 2.63 33	2177 2.33 33			
V1 (2)	1325	7508 2.83 34	7263 2.86 34	7015 2.89 34	6736 2.93 33	6434 2.96 33	6132 3.00 33	5646 3.01 33	5182 2.98 34	4687 2.84 34	4114 2.83 34	3234 2.62 34			
	1350	7650 2.99 35	7410 3.02 35	7166 3.06 35	6897 3.09 34	6601 3.13 34	6304 3.17 34	5866 3.18 34	5399 3.16 35	4946 3.04 35	4385 3.03 35	3704 2.87 35	1040 1.64 35		

DESIGN DATA

Max BHP = 1.292 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 5.76 x RPM
 Max. Motor Frame Size = 184T
 Unit Weight (less motor) = 120 lbs.

Roof Opening = 23-1/2" Sq.
 Curb O. D. = 26-1/2" Sq.
 Damper Size = 22" Sq.

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

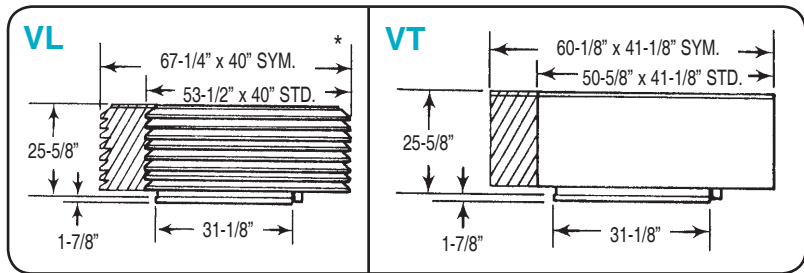
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.

* For Extreme Weather dimensions, please see page 157.

Low Silhouette Cent. Roof

VLBK 24 VTBK 24 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.																
M1 (1/3)	P1 (1/2)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750				
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES			
R1 (3/4)	S1 (1)	400	3889 .21 7.0	2542 .21 5.9														
		450	4375 .30 8.5	3277 .31 7.3														
		500	4861 .42 10.6	3938 .42 8.8	1868 .33 8.6													
	T1 (1-1/2)	V1 (2)	550	5347 .55 13.0	4558 .56 11.2	3343 .54 10.7												
			575	5590 .63 14.3	4856 .64 12.5	3738 .64 11.9												
			600	5834 .72 15.5	5151 .73 14.0	4116 .72 13.2												
		W1 (3)	X1 (5)	625	6077 .81 16.8	5442 .82 15.3	4480 .82 14.5	2929 .72 14.4										
				650	6320 .91 17.7	5731 .92 16.4	4817 .92 15.3	3569 .87 15.3										
				675	6563 1.02 18.7	6002 1.03 17.4	5150 1.04 16.2	4125 1.00 16.1										
			Y1 (7-1/2)	V1 (7-1/2)	700	6806 1.14 19.7	6265 1.15 18.3	5477 1.16 17.0	4514 1.15 17.0	2188 .85 16.9								
					725	7049 1.27 21	6527 1.28 19.4	5799 1.29 17.9	4893 1.27 17.8	3480 1.14 17.8								
					750	7292 1.40 22	6787 1.41 21	6110 1.43 18.9	5266 1.41 18.7	4109 1.33 18.6								
Y1 (7-1/2)				V1 (7-1/2)	775	7535 1.55 23	7047 1.56 22	6412 1.57 20	5616 1.57 19.6	4666 1.51 19.6								
					800	7778 1.70 24	7305 1.71 23	6711 1.73 21	5953 1.72 21	5085 1.71 21	3443 1.45 21							
					825	8021 1.87 25	7562 1.88 24	7008 1.89 22	6284 1.89 21	5467 1.89 21	4287 1.75 21							
	Y1 (7-1/2)			V1 (7-1/2)	850	8264 2.04 26	7819 2.05 25	7302 2.07 23	6612 2.07 22	5843 2.05 22	4851 1.96 22							
					875	8507 2.23 27	8075 2.24 26	7594 2.25 25	6936 2.26 23	6213 2.25 23	5383 2.22 23	3702 1.87 23						
					900	8750 2.42 29	8330 2.44 27	7883 2.45 26	7256 2.46 24	6554 2.45 24	5771 2.43 24	4610 2.26 24						
		Y1 (7-1/2)		V1 (7-1/2)	925	8993 2.63 30	8584 2.64 29	8171 2.66 27	7561 2.67 26	6890 2.66 25	6152 2.62 25	5177 2.51 25	2829 1.95 25					
					950	9236 2.85 32	8838 2.86 31	8440 2.88 29	7863 2.89 27	7222 2.89 27	6527 2.86 27	5733 2.78 27	4250 2.28 27					
					975	9479 3.08 33	9091 3.10 32	8703 3.11 31	8163 3.12 29	7550 3.13 28	6898 3.11 28	6153 3.09 28	5046 2.88 28					
			Y1 (7-1/2)	V1 (7-1/2)	1000	9723 3.33 35	9344 3.34 34	8966 3.35 32	8460 3.37 31	7875 3.38 29	7243 3.36 29	6537 3.35 29	5612 3.18 29	3735 2.62 29				
					1025	9966 3.58 37	9596 3.59 36	9227 3.61 34	8755 3.62 32	8197 3.64 31	7580 3.62 31	6916 3.58 31	6168 3.49 31	4913 3.21 31				
					1050	10209 3.85 39	9848 3.86 38	9488 3.88 36	9048 3.89 34	8511 3.91 33	7914 3.90 32	7289 3.87 32	6598 3.85 32	5569 3.62 32	3281 2.87 32			
Y1 (7-1/2)				V1 (7-1/2)	1075	10452 4.13 40	10100 4.15 40	9748 4.16 38	9339 4.17 36	8815 4.19 35	8244 4.19 34	7656 4.17 34	6983 4.16 34	6133 3.97 34	4706 3.54 34			
					1100	10695 4.43 42	10351 4.44 42	10007 4.46 40	9629 4.47 38	9116 4.49 37	8571 4.49 36	7996 4.48 36	7363 4.41 36	6686 4.32 36	5588 4.10 36	2866 3.06 36		
					1125	10938 4.74 44	10601 4.75 44	10265 4.76 41	9917 4.78 39	9415 4.80 38	8895 4.81 38	8333 4.79 38	7737 4.75 38	7092 4.74 38	6163 4.50 38	4542 3.89 38		
	Y1 (7-1/2)			V1 (7-1/2)	1150	11181 5.06 46	10852 5.07 46	10523 5.09 44	10194 5.10 42	9713 5.12 41	9216 5.14 39	8666 5.12 39	8108 5.10 39	7477 5.09 39	6723 4.89 39	5611 4.59 39		
					1175	11424 5.40 49	11102 5.41 48	10780 5.43 46	10458 5.44 45	10008 5.46 43	9528 5.48 42	8997 5.47 41	8459 5.45 41	7857 5.38 41	7239 5.38 41	6251 5.08 41	4510 4.31 41	
					1200	11667 5.75 51	11352 5.76 50	11036 5.78 49	10721 5.79 47	10302 5.81 45	9832 5.83 44	9324 5.83 43	8797 5.81 43	8232 5.76 43	7627 5.76 43	6814 5.51 43	5704 5.13 43	

DESIGN DATA

Max BHP = 3.381 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 6.68 x RPM

Max. Motor Frame Size = 254T

Unit Weight (less motor) = 145 lbs.

Roof Opening = 26-1/2" Sq.

Curb O. D. = 29-1/2" Sq.

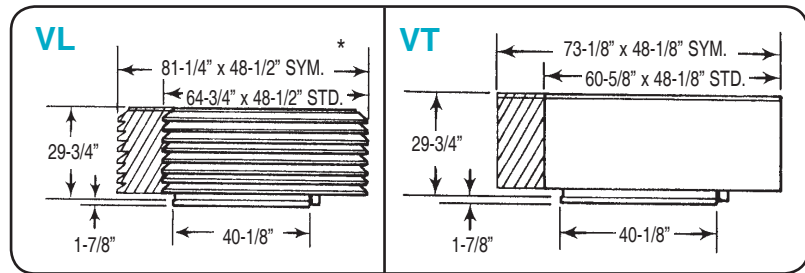
Damper Size = 26" Sq.

Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.
* For Extreme Weather dimensions, please see page 157.

VLBK 30 VTBK 30 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
P1 (1/2)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
P2 (1/2)	250	4553 .11 4.0												
	275	5008 .14 4.8												
R1 (3/4)	300	5464 .18 5.7	1207 .12 3.6											
	325	5919 .23 6.6	3353 .27 4.6											
S1 (1)	350	6374 .29 7.5	4274 .35 5.6											
	375	6829 .36 8.4	5037 .44 6.6											
T1 (1-1/2)	400	7285 .44 9.3	5670 .53 7.7											
	425	7740 .52 10.3	6285 .64 8.9	1779 .36 7.0										
V1 (2)	450	8195 .62 11.4	6861 .75 10.2	4264 .67 8.1										
	475	8651 .73 12.8	7401 .87 11.8	5351 .87 9.6										
W1 (3)	500	9106 .85 14.5	7932 1.00 13.3	6204 1.04 11.4										
	525	9561 .99 16.0	8458 1.14 15.0	6982 1.20 13.2	2613 .75 11.3									
X1 (5)	550	10016 1.14 17.5	8977 1.30 16.6	7625 1.39 15.1	5158 1.21 13.0									
	575	10472 1.30 19.2	9492 1.47 18.3	8250 1.58 17.0	6288 1.52 14.9									
Y1 (7-1/2)	600	10927 1.48 21	9995 1.66 20	8864 1.79 19.1	7205 1.78 16.9	2414 1.00 15.4								
	625	11382 1.67 23	10488 1.86 22	9455 2.02 21	7995 2.01 19.0	5384 1.78 17.1								
	650	11838 1.88 24	10977 2.07 23	9998 2.24 22	8737 2.31 21	6706 2.16 18.6								
	675	12293 2.10 25	11464 2.30 24	10536 2.48 24	9373 2.57 22	7694 2.50 20	3105 1.52 18.8							
	700	12748 2.34 26	11949 2.55 26	11068 2.74 25	9999 2.86 24	8548 2.83 22	6090 2.51 20							
	725	13203 2.60 28	12432 2.82 27	11595 3.02 26	10615 3.17 25	9334 3.14 23	7428 2.99 22	2132 1.50 21						
	750	13659 2.88 29	12912 3.11 28	12118 3.32 27	11223 3.50 27	10074 3.54 25	8420 3.41 23	5492 2.83 22						
	775	14114 3.18 30	13392 3.41 30	12637 3.64 29	11788 3.38 28	10712 3.90 26	9314 3.83 25	7136 3.35 23	1673 1.60 23					
	800	14569 3.50 32	13869 3.74 31	13153 3.97 30	12330 4.17 29	11340 4.27 28	10106 4.20 27	8370 4.05 25	3803 2.58 24					
	825	15025 3.84 33	14346 4.08 32	13665 4.33 31	12867 4.54 31	11959 4.67 30	10883 4.65 28	9357 4.55 27	7020 4.07 26	1515 1.81 26				
	850	15480 4.20 35	14821 4.45 34	14164 4.71 33	13400 4.92 32	12571 5.10 31	11557 5.15 30	10236 5.06 29	8432 4.63 28	3558 2.89 27				
	875	15935 4.58 36	15295 4.84 35	14657 5.10 34	13929 5.33 34	13176 5.55 33	12191 5.60 32	11028 5.49 30	9474 5.35 29	7106 4.75 28	1603 2.16 28			
	900	16391 4.98 37	15768 5.25 37	15148 5.52 36	14454 5.76 35	13722 5.99 34	12817 6.08 33	11806 6.03 32	10453 5.96 31	8527 5.35 30	3621 3.36 30			
	925	16846 5.41 39	16240 5.69 38	15636 5.96 37	14976 6.22 36	14624 6.45 36	13435 6.59 35	12504 6.64 34	11276 6.53 33	9714 6.27 32	7330 5.55 31	1899 2.66 31		
	950	17301 5.86 41	16711 6.14 40	16123 6.43 39	15495 6.70 38	14801 6.93 38	14047 7.12 37	13140 7.18 36	12065 7.04 35	10702 6.94 34	8786 6.20 33	3496 4.02 33		
	975	17756 6.33 44	17181 6.63 43	16609 6.92 42	16010 7.20 41	15335 7.44 40	14652 7.68 39	13768 7.74 38	12841 7.67 36	11612 7.62 36	10059 7.30 35	7723 6.50 34	2369 3.34 34	

DESIGN DATA

Max BHP = 8.403 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 8.25 x RPM

Max. Motor Frame Size = 254T

Unit Weight (less motor) = 210 lbs.

Roof Opening = 35-1/2" Sq.

Curb O. D. = 38-1/2" Sq.

Damper Size = 34" Sq.

Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.
* For Extreme Weather dimensions, please see page 157.

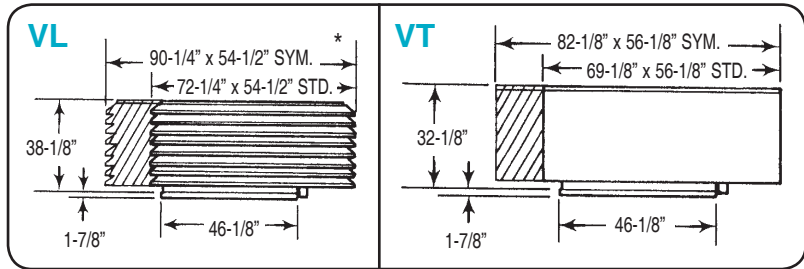
Low Silhouette Cent. Roof

VLBK 36

VTBK 36

BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
R1 (3/4)	RPM	.000	.125	.250	.375	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
S1 (1)	250	6973 .30 10.7	5785 .32 6.3	2249 .22 3.8									
	270	7530 .37 11.9	6458 .40 7.6	4447 .37 5.1									
T1 (1-1/2)	290	8088 .46 13.0	7096 .49 8.8	5671 .50 6.6									
	310	8646 .57 14.1	7724 .60 10.0	6654 .61 8.1	3273 .45 5.8								
V1 (2)	330	9204 .68 15.2	8344 .71 11.4	7365 .74 9.5	5401 .72 7.2								
	350	9762 .81 16.4	8957 .85 12.8	8060 .88 10.8	6679 .87 8.6	2647 .55 6.9							
W1 (3)	370	10319 .96 17.7	9563 1.00 14.3	8741 1.04 12.2	7695 1.04 10.1	5148 .88 8.3							
	390	10877 1.13 18.9	10159 1.16 15.8	9395 1.21 13.6	8519 1.22 11.8	6833 1.16 9.8							
X1 (5)	410	11435 1.31 20	10752 1.35 17.3	10031 1.39 15.1	9224 1.42 13.7	8014 1.40 11.5							
	430	11993 1.51 22	11341 1.55 18.8	10660 1.60 16.7	9917 1.63 15.4	9024 1.63 13.3	3444 1.06 10.0						
Y1 (7-1/2)	450	12551 1.73 23	11928 1.77 20	11284 1.82 18.2	10599 1.87 17.0	9825 1.88 15.3	5968 1.53 11.6						
	470	13108 1.97 24	12512 2.01 22	11901 2.06 19.7	11261 2.12 18.5	10531 2.13 17.3	7680 1.99 13.5						
C1 (10)	490	13666 2.23 26	13094 2.28 23	12515 2.33 21	11900 2.38 20	11226 2.41 19.2	9178 2.37 15.5	2902 1.28 13.1					
	510	14224 2.52 27	13674 2.56 25	13124 2.61 23	12534 2.67 23	11912 2.72 21	10215 2.70 17.5	5803 2.09 14.7					
C1 (10)	530	14782 2.82 29	14253 2.87 26	13725 2.92 25	13161 2.99 23	12590 3.05 22	11218 3.07 19.5	7995 2.68 16.7					
	550	15340 3.16 30	14830 3.21 28	14321 3.26 26	13784 3.32 25	13237 3.39 24	11993 3.43 22	9561 3.24 18.7	3672 2.00 16.9				
C1 (10)	570	15897 3.51 31	15405 3.57 30	14915 3.62 28	14403 3.68 26	13875 3.75 26	12701 3.81 24	10827 3.74 21	6464 2.92 18.6				
	590	16455 3.90 33	15979 3.95 31	15506 4.01 30	15017 4.07 28	14507 4.14 27	13399 4.22 26	11852 4.19 23	8669 3.65 20				
C1 (10)	610	17013 4.31 34	16553 4.36 33	16095 4.42 31	15629 4.48 30	15135 4.55 29	14090 4.65 28	12855 4.67 25	10363 4.38 22	5154 3.13 21			
	630	17571 4.74 36	17125 4.80 34	16681 4.86 33	16237 4.92 32	15759 5.00 30	14773 5.12 29	13667 5.15 27	11681 5.01 24	7754 4.17 23			
C1 (10)	650	18129 5.21 38	17696 5.27 36	17266 5.33 35	16836 5.39 33	16379 5.47 32	15449 5.62 30	14377 5.65 29	12760 5.58 26	9885 4.97 24	4228 3.26 24		
	670	18686 5.71 39	18267 5.77 38	17850 5.83 36	17433 5.89 35	16995 5.97 34	16096 6.13 32	15079 6.18 30	13773 6.16 28	11470 5.82 26	7110 4.57 25		
C1 (10)	680	18965 5.97 40	18552 6.03 39	18141 6.09 37	17730 6.16 36	17302 6.23 35	16416 6.39 33	15428 6.46 31	14273 6.46 29	12132 6.19 27	8319 5.17 26		
	690	19244 6.23 41	18837 6.30 39	18432 6.36 38	18027 6.43 37	17608 6.50 36	16735 6.66 34	15774 6.74 32	14765 6.78 30	12787 6.58 28	9396 5.61 27	3288 3.17 27	
C1 (10)	700	19523 6.51 42	19121 6.57 40	18722 6.64 39	18323 6.70 38	17913 6.78 37	17053 6.94 35	16119 7.04 33	15124 7.07 31	13359 6.93 29	10458 6.15 27	5294 4.44 27	
	710	19802 6.79 42	19406 6.86 41	19012 6.92 40	18619 6.99 39	18218 7.06 38	17370 7.23 36	16462 7.34 34	15481 7.37 32	13873 7.26 30	11472 7.19 28	6792 5.27 28	
C1 (10)	720	20081 7.08 43	19690 7.15 42	19302 7.22 41	18914 7.28 40	18522 7.35 39	17686 7.52 37	16804 7.65 35	15836 7.68 33	14383 7.61 31	12144 7.17 29	8055 5.84 28	
	730	20360 7.38 44	19974 7.45 43	19592 7.52 42	19209 7.59 41	18825 7.65 40	18001 7.83 37	17144 7.97 36	16190 8.00 34	14889 7.96 32	12808 7.60 30	9227 6.56 29	2975 3.46 29
C1 (10)	740	20639 7.69 45	20258 7.76 44	19881 7.83 43	19503 7.90 42	19126 7.97 40	18315 8.14 39	17843 8.29 37	16541 8.33 35	15391 8.32 33	13466 8.05 31	10297 7.00 29	5224 5.05 29
	750	20918 8.00 46	20542 8.07 45	20170 8.14 43	19797 8.21 42	19425 8.29 41	18628 8.46 40	17820 8.63 38	16891 8.67 36	15888 8.69 34	14114 8.51 32	11356 7.62 30	6747 6.01 30

DESIGN DATA

Max BHP = 20.634 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 9.62 x RPM

Max. Motor Frame Size = 254T

Unit Weight (less motor) = 335 lbs.

Roof Opening = 41-1/2" Sq.

Curb O. D. = 44-1/2" Sq.

Damper Size = 40" Sq.

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

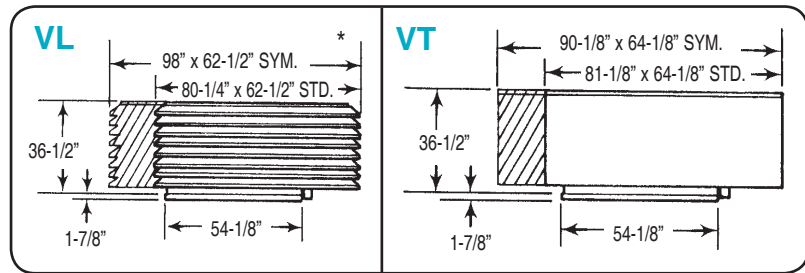
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.

* For Extreme Weather dimensions, please see page 157.

Low Silhouette Cent. Roof

VLBK 42 VTBK 42 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
S1 (1)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
T1 (1-1/2)	215	8616 .35 6.4	7139 .39 5.6											
	230	9217 .43 7.4	7852 .47 6.5	5515 .46 6.4										
	245	9818 .52 8.4	8552 .57 7.5	7013 .58 7.2										
	260	10420 .62 9.2	9242 .67 8.4	7915 .70 7.9										
	275	11021 .73 10.0	9923 .79 9.1	8673 .83 8.6	5766 .73 8.5									
	290	11622 .85 10.8	10596 .92 10.0	9415 .97 9.4	7721 .95 9.3									
	305	12223 .99 11.6	11247 1.06 10.8	10142 1.12 10.2	9002 1.13 10.0	2105 .58 9.9								
	320	12824 1.15 12.5	11894 1.22 11.7	10856 1.28 11.1	9774 1.30 10.8	7085 1.25 10.7								
	335	13425 1.32 13.4	12537 1.39 12.7	11561 1.46 12.0	10532 1.49 11.6	8927 1.47 11.5								
	350	14026 1.50 14.3	13176 1.58 13.7	12258 1.65 13.0	11277 1.70 12.6	10217 1.71 12.4	4668 1.17 12.4							
V1 (2)	365	14627 1.70 15.4	13811 1.79 14.7	12947 1.86 14.1	12010 1.92 13.7	11056 1.93 13.5	8899 1.84 13.4							
	380	15229 1.92 16.6	14444 2.01 15.9	13630 2.09 15.3	12730 2.15 14.8	11818 2.18 14.6	10455 2.16 14.5	4094 1.35 14.4						
	395	15830 2.16 18.0	15075 2.25 17.3	14308 2.34 16.6	13442 2.40 16.0	12568 2.44 15.8	11686 2.46 15.6	9096 2.38 15.4						
	410	16431 2.41 19.5	15703 2.51 18.8	14980 2.60 18.1	14146 2.67 17.4	13309 2.73 17.1	12459 2.74 16.8	10909 2.69 16.6						
	425	17032 2.69 21	16330 2.79 20	15632 2.88 19.6	14843 2.96 18.9	14038 3.03 18.4	13220 3.05 18.2	12202 3.04 17.9						
	440	17633 2.98 23	16955 3.08 22	16281 3.19 21	15535 3.27 20	14757 3.34 19.8	13971 3.38 19.5	13179 3.39 19.3	5092 2.16 18.8					
	455	18234 3.30 24	17578 3.40 23	16926 3.51 23	16221 3.60 22	15469 3.67 21	14713 3.73 21	13947 3.75 21	10353 3.63 20					
	470	18835 3.64 26	18200 3.74 25	17569 3.85 24	16902 3.95 24	16174 4.03 23	15446 4.10 22	14705 4.12 22	12296 4.04 21					
	485	19436 4.00 28	18821 4.11 27	18210 4.22 26	1579 4.32 25	16873 4.40 25	16168 4.48 24	15454 4.52 24	13598 4.50 23	4310 2.49 23				
	500	20038 4.38 29	19440 4.49 28	18848 4.61 28	18251 4.72 27	17567 4.80 26	16882 4.89 26	16195 4.95 25	14801 4.98 24	10157 4.29 24				
X1 (5)	515	20639 4.78 30	20058 4.90 30	19481 5.02 29	18906 5.14 28	18256 5.23 27	17591 5.31 27	16927 5.40 26	15575 5.44 25	12426 5.16 25				
	530	21240 5.22 31	20676 5.34 31	20114 5.46 30	19566 5.58 29	18940 5.68 29	18295 5.77 28	17649 5.85 27	16339 5.92 27	14143 5.81 26	4260 3.18 26			
	545	21841 5.67 33	21292 5.80 32	20746 5.92 31	20203 6.04 30	19620 6.15 30	18993 6.24 29	18365 6.33 29	17095 6.43 28	15440 6.40 27	10640 5.44 27			
	560	22442 6.15 34	21908 6.28 33	21377 6.41 32	20848 6.54 32	20297 6.66 31	19686 6.75 30	19075 6.84 30	17843 6.96 29	16599 7.00 28	13052 6.80 28			
	575	23043 6.66 35	22523 6.79 34	22006 6.92 34	21491 7.05 33	20970 7.18 32	20375 7.28 32	19779 7.37 31	18584 7.53 30	17373 7.57 30	15004 7.39 29	5118 4.23 29		
	590	23644 7.19 36	23137 7.33 36	22633 7.47 35	22132 7.60 34	21627 7.73 34	21059 7.84 33	20479 7.94 33	19319 8.13 31	18138 8.16 31	16310 8.08 30	11731 6.97 30		
	605	24245 7.76 38	23751 7.90 37	23529 8.03 36	22770 8.17 36	22279 8.31 35	21740 8.43 34	21175 8.53 34	20043 8.73 33	18896 8.79 32	17594 8.80 31	14155 8.58 31		
	620	24847 8.35 39	24364 8.49 38	23884 8.63 38	23404 8.77 37	22927 8.92 36	22418 9.04 36	21866 9.14 35	20762 9.35 34	19646 9.45 33	18522 9.49 33	16112 9.26 32	6542 5.71 32	
	635	25448 8.97 41	24976 9.12 40	24507 9.26 39	24039 9.41 38	23574 9.55 38	23092 9.69 37	22553 9.79 37	21476 10.00 35	20390 10.15 35	19293 10.19 34	17421 10.05 33	13300 8.93 33	
	650	26049 9.62 42	25588 9.77 41	25130 9.92 41	24672 10.07 40	24218 10.21 39	23760 10.36 39	23237 10.47 38	22184 10.69 37	21128 10.88 36	20056 10.91 35	18708 10.89 35	15525 10.34 34	

DESIGN DATA

Max BHP = 39.859 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 11.26 x RPM

Max. Motor Frame Size = 254T

Unit Weight (less motor) = 515 lbs.

Roof Opening = 49-1/2" Sq.

Curb O. D. = 52-1/2" Sq.

Damper Size = 48" Sq.

Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.

* For Extreme Weather dimensions, please see page 157.

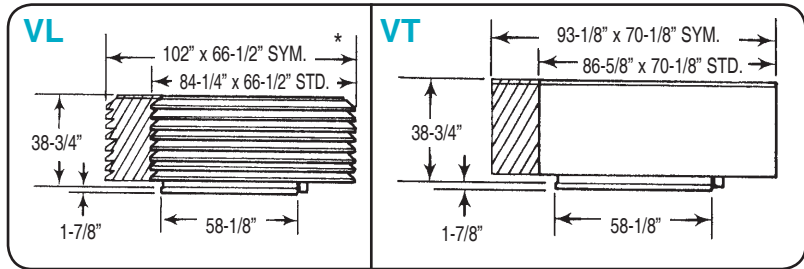
Low Silhouette Cent. Roof

VLBK 48

VTBK 48

BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
T1 (1-1/2)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
V1 (2)	200	12803 .49 8.8	10626 .56 6.5	8866 .35 5.1										
	220	14083 .65 10.3	12093 .73 8.1	9553 .74 6.6										
W1 (3)	240	15364 .85 11.9	13527 .93 9.7	11571 .98 8.4	3468 .56 7.9									
	260	16644 1.08 13.7	14937 1.18 11.6	13249 1.24 10.5	10647 1.21 10.0									
X1 (5)	280	17924 1.35 15.7	16328 1.46 14.1	14816 1.53 13.0	12846 1.55 12.4	4743 .93 11.9								
	290	18564 1.50 16.8	17019 1.61 15.4	15557 1.69 14.4	13835 1.73 13.7	10452 1.60 13.2								
Y1 (7-1/2)	300	19205 1.66 18.0	17711 1.78 16.8	16292 1.86 15.8	14687 1.91 15.1	12255 1.85 14.6								
	310	19845 1.83 19.3	18399 1.95 18.2	17020 2.04 17.3	15527 2.10 16.5	13386 2.08 16.0	4518 1.20 15.6							
C1 (10)	320	20485 2.01 21	19084 2.14 19.4	17742 2.24 18.5	16356 2.31 17.8	14476 2.30 17.3	7067 1.54 16.8							
	330	21125 2.21 22	19767 2.34 20	18460 2.44 19.5	17175 2.53 18.8	15547 2.55 18.2	12731 2.41 17.7							
Y1 (7-1/2)	340	21765 2.42 22	20447 2.55 21	19172 2.66 21	17927 2.75 19.7	16414 2.78 19.2	14236 2.72 18.7	5056 1.60 18.2						
	350	22405 2.64 24	21125 2.77 22	19880 2.89 21	18671 2.98 21	17261 3.03 20	15340 3.00 19.6	7605 2.00 19.1						
Y1 (7-1/2)	360	23045 2.87 25	21801 3.01 23	20585 3.13 23	19409 3.23 22	18099 3.29 21	16426 3.29 21	13676 3.11 20						
	370	23686 3.11 26	22474 3.26 25	21285 3.39 24	20142 3.49 23	18927 3.57 22	17483 3.59 22	15322 3.50 21						
Y1 (7-1/2)	380	24326 3.37 27	23146 3.52 26	21983 3.66 25	20869 3.76 24	19747 3.86 23	18340 3.88 23	16431 3.83 22						
	390	24966 3.65 28	23817 3.80 27	22677 3.94 26	21592 4.05 25	20507 4.16 24	19188 4.19 24	17522 4.17 23	5166 2.34 22					
Y1 (7-1/2)	400	25606 3.93 29	24486 4.09 28	23368 4.24 27	22310 4.35 26	21252 4.46 25	20027 4.52 25	18598 4.52 24	7731 2.78 23					
	410	26246 4.24 31	25153 4.40 29	24060 4.55 28	23025 4.67 27	21993 4.78 27	20858 4.86 26	19555 4.88 26	14759 4.51 25					
Y1 (7-1/2)	420	26886 4.56 32	25819 4.72 30	24752 4.88 29	23736 5.00 29	22728 5.12 28	21681 5.22 27	20408 5.24 27	16567 5.02 26					
	430	27526 4.89 33	26484 5.05 31	25442 5.22 31	24443 5.35 30	23459 5.47 29	22475 5.59 28	21254 5.62 28	18000 5.51 27	2914 2.26 26				
Y1 (7-1/2)	440	28167 5.24 34	27148 5.41 33	26130 5.58 32	25147 5.72 31	24185 5.84 30	23224 5.96 30	22091 6.01 29	19106 5.94 28	6801 3.49 27				
	450	28807 5.60 36	27811 5.78 35	26815 5.95 33	25848 6.10 32	24908 6.22 32	23968 6.35 31	22920 6.43 30	20197 6.40 29	9352 4.12 29				
Y1 (7-1/2)	460	29447 5.98 38	28473 6.16 36	27498 6.34 35	26547 6.50 34	25627 6.62 33	24707 6.75 32	23743 6.86 32	21274 6.87 31	16794 6.37 30				
	470	30087 6.38 39	29134 6.57 38	28180 6.75 37	27243 6.91 36	26342 7.04 35	25442 7.17 34	24541 7.30 33	22285 7.36 32	18599 7.05 31				
Y1 (7-1/2)	480	30727 6.80 41	29794 6.99 40	28860 7.17 38	27936 7.35 37	27054 7.48 36	26173 7.61 36	25291 7.74 35	23142 7.83 34	20041 7.66 33	6935 4.46 32			
	490	31367 7.23 43	30453 7.42 41	29538 7.61 40	28627 7.80 39	27763 7.93 38	26900 8.07 38	26036 8.20 37	23992 8.32 36	21148 8.20 35	9495 5.11 34			
Y1 (7-1/2)	500	32008 7.69 44	31111 7.88 43	30215 8.07 42	29319 8.27 41	28470 8.41 40	27623 8.54 39	26777 8.68 39	24834 8.83 38	22243 8.76 37	12014 5.74 36			
	510	32648 8.16 46	31769 8.35 45	30890 8.55 44	30011 8.75 43	29173 8.90 42	28343 9.04 41	27514 9.18 41	25669 9.36 40	23324 9.35 39	19500 8.88 38	4083 4.01 37		
Y1 (7-1/2)	520	33288 8.64 48	32426 8.85 47	31564 9.05 46	30702 9.25 45	29874 9.41 44	29060 9.55 43	28246 9.69 43	26498 9.92 42	24393 9.96 41	21294 9.67 40	7889 5.74 39		
	530	33928 9.15 50	33082 9.36 49	32237 9.56 48	31391 9.77 47	30573 9.94 46	29774 10.08 46	28976 10.23 45	27321 10.49 44	25304 10.55 43	22419 10.34 42	10446 6.52 41		

DESIGN DATA

Max BHP = 70.891 x $\left[\frac{\text{RPM}}{1000}\right]^3$

Tip Speed = 12.83 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 505 lbs.

Roof Opening = 53-1/2" Sq.
 Curb O. D. = 56-1/2" Sq.
 Damper Size = 52" Sq.

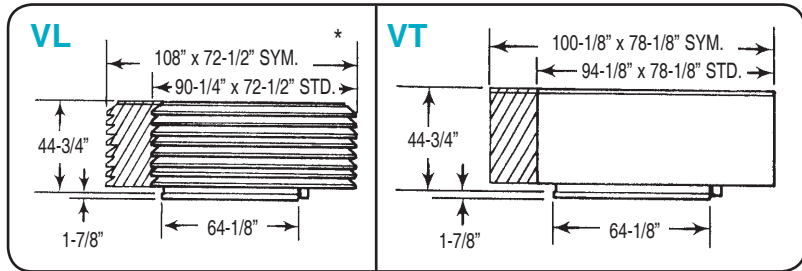
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.
 * For Extreme Weather dimensions, please see page 157.

Low Silhouette Cent. Roof

VLBK 54 VTBK 54 BELT DRIVE

PERFORMANCE DATA



RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
T1 (1-1/2)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
V1 (2)	190	16266 .66 9.0	13719 .74 6.8	10466 .79 6.5										
	200	17122 .77 9.9	14690 .86 7.6	11767 .93 7.1										
	210	17978 .89 10.8	15650 .98 8.5	13024 1.07 7.9										
	220	18834 1.02 11.7	16600 1.11 9.6	14200 1.22 8.6	6821 .90 8.8									
	230	19690 1.16 12.7	17542 1.26 10.8	15333 1.38 9.5	12337 1.40 9.7									
	240	20546 1.32 13.9	18475 1.42 12.1	16445 1.54 10.6	13778 1.60 10.6									
	250	21403 1.49 15.2	19402 1.60 13.4	17540 1.73 11.8	15051 1.81 11.7	5826 1.15 11.6								
	260	22259 1.68 16.5	20323 1.79 14.8	18547 1.92 13.2	16298 2.04 12.8	13239 1.99 12.7								
	270	23115 1.88 17.9	21239 1.99 16.2	19529 2.13 14.7	17455 2.26 14.0	14984 2.28 13.8								
	280	23971 2.10 19.3	22162 2.21 17.8	20501 2.35 16.3	18588 2.49 15.4	16278 2.54 15.1	6741 1.64 14.8							
W1 (3)	290	24827 2.33 21	23081 2.45 19.2	21464 2.59 17.9	19705 2.74 16.8	17546 2.83 16.5	14676 2.76 16.1							
	300	25683 2.58 22	23995 2.70 21	22421 2.85 19.6	20807 3.00 18.4	18792 3.13 17.9	16474 3.12 17.5	4054 1.59 17.2						
	310	26539 2.85 24	24906 2.97 22	23370 3.12 21	21880 3.28 20	19953 3.42 19.5	17808 3.45 18.9	9070 2.43 18.4						
	320	27395 3.13 25	25813 3.26 24	24313 3.41 23	22870 3.58 22	21090 3.72 21	19084 3.80 20	16498 3.73 19.7						
	330	28251 3.44 26	26717 3.57 25	25250 3.72 24	23851 3.89 23	22213 4.05 22	20339 4.16 21	18263 4.16 21						
	340	29107 3.76 28	27618 3.89 26	26183 4.05 25	24824 4.22 24	23322 4.39 23	21550 4.54 22	19560 4.55 22						
	350	29964 4.10 29	28517 4.24 28	27110 4.39 26	25791 4.57 25	24419 4.75 24	22698 4.91 23	20837 4.97 23	6613 2.88 22					
	360	30820 4.46 30	29413 4.60 29	28033 4.76 28	26751 4.94 27	25468 5.13 26	23831 5.29 25	22094 5.41 24	17303 5.22 23					
	370	31676 4.84 31	30307 4.99 30	28953 5.14 29	27705 5.33 28	26457 5.53 27	24952 5.70 26	23324 5.86 26	19140 5.77 24					
	380	32532 5.25 33	31199 5.40 32	29868 5.55 30	28653 5.75 29	27438 5.94 28	26060 6.13 28	24475 6.30 27	20932 6.35 26					
X1 (5)	390	33388 5.67 34	32090 5.83 33	30791 5.98 32	29597 6.18 31	28413 6.38 30	27158 6.58 29	25613 6.75 28	22251 6.87 27	6790 3.85 26				
	400	34244 6.12 36	32978 6.28 34	31712 6.44 33	30535 6.64 32	29381 6.84 31	28226 7.05 30	26739 7.23 30	23534 7.41 29	11603 5.20 27				
	410	35100 6.59 37	33865 6.75 36	32630 6.92 35	31470 7.11 34	30344 7.33 33	29217 7.54 32	27854 7.73 31	24799 7.99 30	20733 7.81 29				
	420	35956 7.09 39	34751 7.25 37	33545 7.42 36	32400 7.61 35	31301 7.83 34	30201 8.05 33	28958 8.26 32	26048 8.59 31	22538 8.52 30				
	425	36384 7.34 40	35193 7.51 38	34001 7.68 37	32864 7.87 36	31777 8.09 35	30691 8.32 34	29507 8.53 33	26667 8.90 32	23429 8.88 31	6285 4.68 31			
	430	36812 7.60 41	35635 7.77 39	34457 7.94 38	33327 8.14 37	32253 8.36 36	31179 8.59 35	30053 8.80 34	27251 9.18 33	24096 9.20 32	8715 5.50 32			
	435	37240 7.87 42	36076 8.04 40	34912 8.22 39	33789 8.41 38	32727 8.64 37	31666 8.86 36	30597 9.09 35	27827 9.47 34	24744 9.53 33	11076 6.29 32			
	440	37668 8.15 43	36518 8.32 41	35367 8.49 40	34250 8.69 39	33201 8.92 38	32151 9.15 37	31102 9.37 36	28400 9.77 34	25389 9.86 33	13642 7.21 33			
	445	38096 8.43 44	36959 8.60 42	35821 8.78 41	34711 8.97 40	33673 9.20 39	32635 9.43 38	31597 9.67 37	28970 10.07 35	26029 10.21 34	21956 9.93 34			
	450	38525 8.72 45	37399 8.89 43	36274 9.07 42	35170 9.26 40	34144 9.49 39	33118 9.73 38	32091 9.96 38	29538 10.37 36	26666 10.56 35	22869 10.34 35			

DESIGN DATA

Max BHP = 115.906 x $\left[\frac{\text{RPM}}{1000} \right]^3$

Tip Speed = 14.40 x RPM
 Max. Motor Frame Size = 254T
 Unit Weight (less motor) = 690 lbs.

Roof Opening = 59-1/2" Sq.
 Curb O. D. = 62-1/2" Sq.
 Damper Size = 58" Sq.

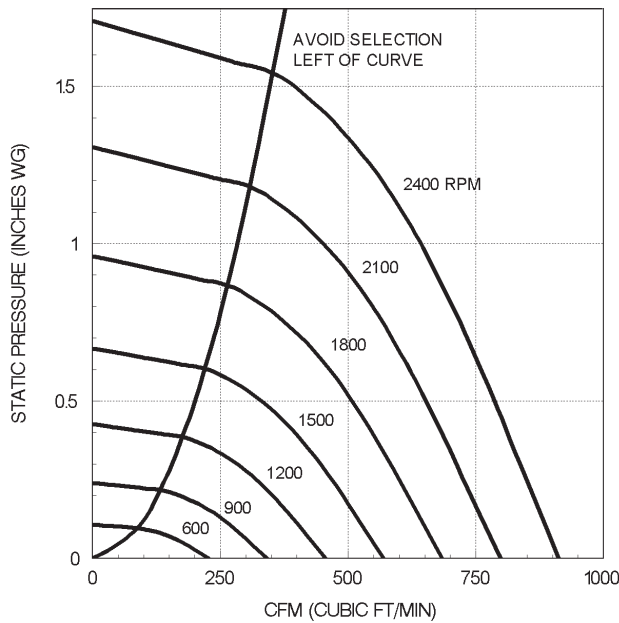
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field. Values shown are for installation type A, free inlet hemispherical sone levels.

* For Extreme Weather dimensions, please see page 157.

Low Silhouette Cent. Roof

VLBK & VTBK 06
AIR PERFORMANCE



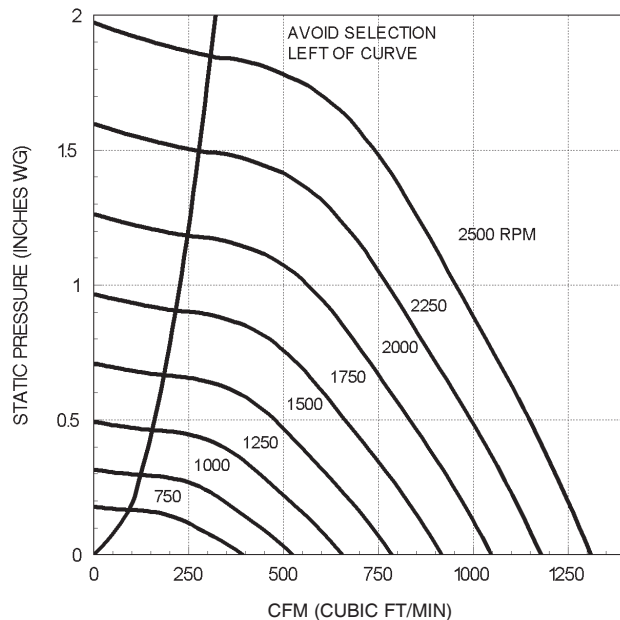
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 06
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
600	.000	44	38	38	36	37	35	32	30	42
	.125	53	57	50	50	47	46	43	39	53
1000	.000	65	67	64	60	57	55	54	51	64
	.500	63	65	62	61	59	56	53	48	64
1450	.000	75	72	74	66	64	61	60	58	71
	.375	73	71	72	65	64	60	58	55	70
	.750	73	70	72	66	66	62	59	55	71
1800	.000	82	74	80	70	69	64	64	62	76
	.500	79	74	79	69	68	63	62	59	74
	1.000	78	74	78	69	70	65	64	59	75
2100	.000	85	77	83	73	72	66	66	64	78
	.500	82	77	81	72	71	66	65	62	77
	1.000	81	76	81	72	72	67	65	62	77
2300	.000	86	80	84	77	74	69	68	66	80
	.500	84	80	83	76	73	68	67	64	79
	1.000	83	80	82	75	73	69	67	64	79
	1.500	82	79	82	76	75	71	68	64	80

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 08
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

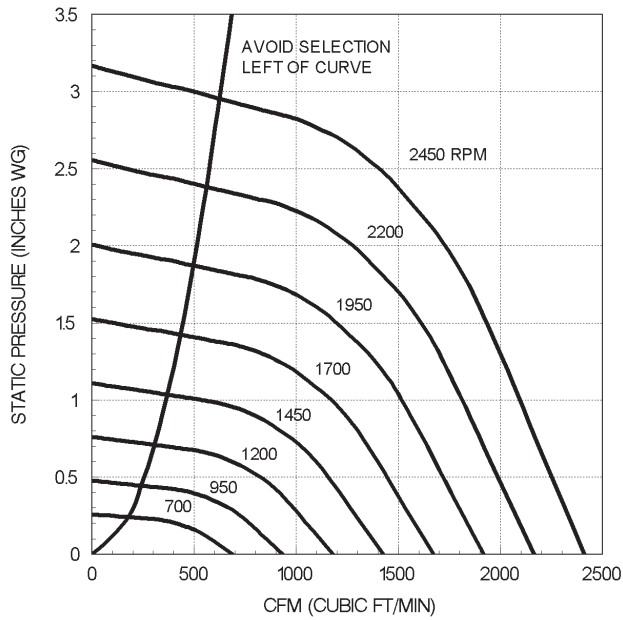
VLBK & VTBK 08
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
650	.000	44	41	40	38	38	40	42	44	48
	.250	53	57	51	53	50	49	45	41	56
1050	.000	66	66	65	61	57	56	57	59	65
	.500	65	65	63	61	59	57	54	50	64
1450	.000	76	70	74	67	64	60	61	63	71
	.500	76	70	70	66	64	60	59	58	69
	1.000	74	70	72	66	65	62	60	55	70
1800	.000	84	72	79	71	69	64	64	66	75
	.500	83	73	75	70	68	63	62	62	74
	1.000	81	73	77	69	69	65	64	60	74
2100	.000	87	75	82	74	71	66	66	68	78
	.750	85	77	78	72	71	66	65	63	76
	1.500	83	76	80	72	72	68	67	62	77
2300	.000	88	79	83	77	73	68	68	69	80
	.500	88	80	81	76	73	68	67	67	79
	1.000	87	80	80	75	73	68	67	65	79
	1.750	85	79	82	75	74	70	69	65	79

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

Low Silhouette Cent. Roof

VLBK & VTBK 10
AIR PERFORMANCE



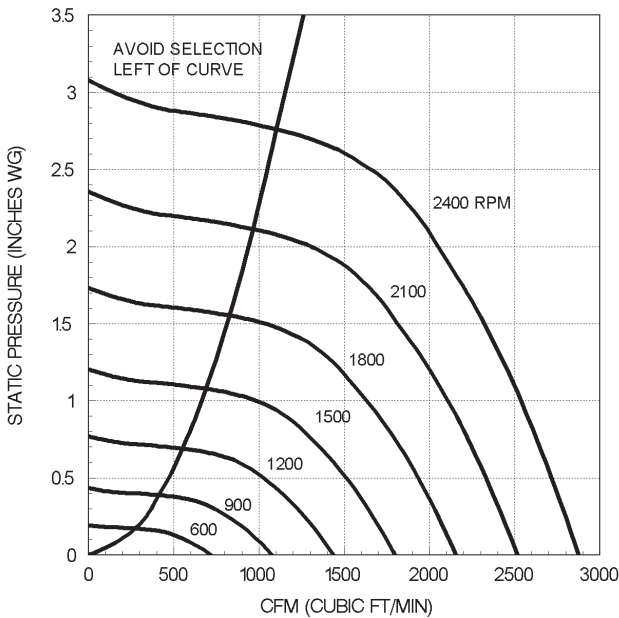
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 10
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
650	.000	51	56	49	45	45	44	37	30	50
	.500	58	69	66	59	55	57	52	45	64
1050	.000	55	67	63	56	54	55	52	48	62
	.375	66	71	77	69	63	62	61	54	72
	.750	64	69	75	67	61	60	59	52	70
1400	.000	63	69	75	65	61	61	60	55	70
	.625	72	73	85	76	68	66	68	61	80
	1.250	70	72	82	74	67	65	66	59	77
1750	.000	69	71	83	72	66	66	66	62	77
	.500	75	78	87	83	74	71	72	67	84
	1.000	74	77	85	82	73	70	70	66	82
	2.000	73	76	85	81	73	69	69	65	82
2100	.000	72	75	85	80	71	70	70	67	81
	1.000	78	82	89	89	80	75	75	72	88
	2.000	76	81	86	87	78	73	73	70	86
	3.000	75	80	86	86	77	73	73	71	86
2450	.000	74	79	86	86	76	73	73	71	86
	1.000	74	79	86	86	76	73	74	72	86
	2.000	74	79	86	86	76	73	74	72	86
	3.000	74	79	86	86	76	73	74	72	86

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 12
AIR PERFORMANCE



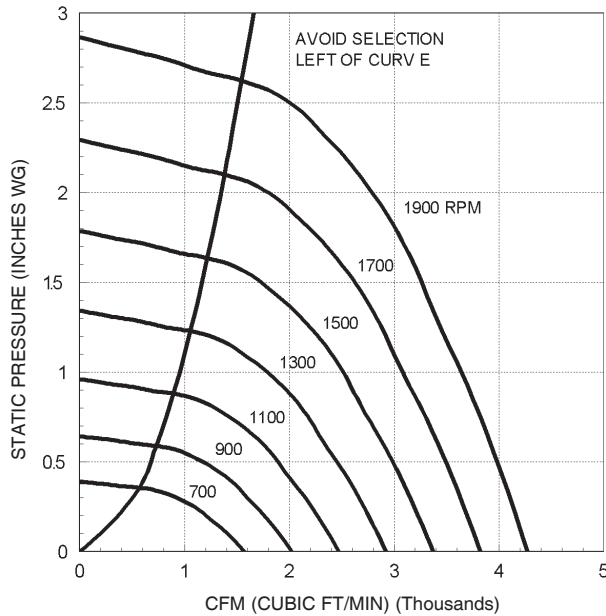
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 12
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
550	.000	53	48	46	47	46	41	36	31	50
	.375	65	70	61	60	60	57	52	47	64
950	.000	67	69	58	57	57	55	51	46	62
	.375	76	78	76	69	68	66	62	57	74
	.750	75	75	75	67	66	65	61	56	73
1350	.000	76	78	75	66	65	64	60	56	72
	.625	84	84	87	76	74	73	70	64	82
	1.250	82	83	86	74	71	71	68	63	81
1750	.000	83	86	87	73	71	70	68	64	81
	.500	89	88	91	82	78	77	75	70	86
	1.000	88	88	90	81	77	76	74	69	86
	2.000	87	87	90	80	76	75	73	68	85
2100	.000	87	90	90	79	75	75	73	69	85
	.500	91	92	94	88	82	80	78	74	90
	1.000	91	92	93	88	81	79	78	73	90
	2.000	90	92	93	87	80	79	77	73	89
2400	.000	89	92	93	86	79	78	76	72	89
	.500	89	94	94	86	79	77	76	72	89
	1.000	89	94	94	86	79	77	76	72	89
	2.000	89	94	94	86	79	77	76	72	89

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 15
AIR PERFORMANCE



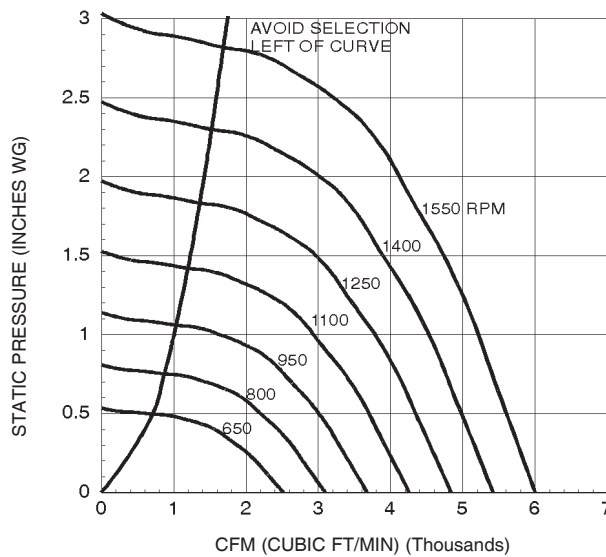
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 15
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	64	62	55	53	51	46	39	32	56
	.750	72	70	65	61	59	55	49	42	64
1000	.000	77	79	76	69	66	64	58	51	73
	.375	78	78	74	67	63	61	56	50	71
	.750	77	79	74	64	63	61	57	49	70
1250	.000	80	89	84	75	71	70	65	58	80
	.750	82	88	82	72	68	66	62	56	78
	1.000	81	88	83	70	68	66	63	56	78
1500	.000	83	92	87	82	76	74	70	64	84
	.750	85	92	86	80	74	72	68	62	83
	1.000	85	92	85	79	74	71	67	62	83
	1.500	84	91	86	78	73	71	68	62	82
1700	.000	85	94	90	86	80	77	74	68	88
	.750	87	94	89	85	78	75	72	67	87
	1.000	87	94	89	85	78	75	72	66	86
	1.500	87	94	88	84	77	74	71	66	86
	2.000	86	94	89	83	76	74	71	66	86

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 18
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

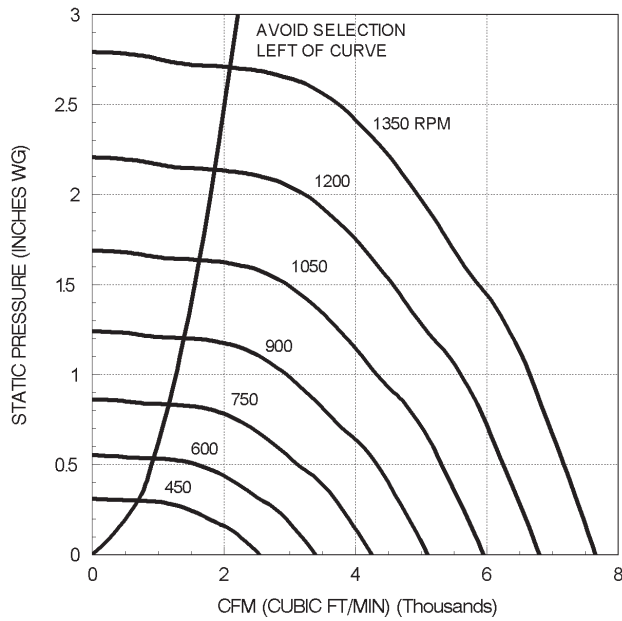
VLBK & VTBK 18
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	66	65	63	59	60	57	45	37	64
	.625	77	73	72	67	65	68	56	47	73
950	.000	80	80	79	74	71	72	66	55	78
	.500	79	79	77	71	67	64	58	51	74
	1.000	83	80	78	72	67	63	58	52	75
1150	.000	83	86	84	78	75	73	70	65	82
	1.000	82	83	81	75	72	70	67	61	79
	1.500	81	82	79	72	70	70	67	61	77
1350	.000	87	90	90	82	79	77	74	70	87
	1.000	85	88	88	80	77	75	71	66	84
	1.500	85	88	86	79	75	74	71	66	83
	2.000	85	87	85	77	74	74	72	66	82
1500	.000	89	93	94	85	82	80	77	73	90
	1.000	88	91	92	84	80	78	75	70	88
	1.500	87	91	91	83	78	77	74	69	87
	2.000	88	90	90	81	77	77	75	69	86
	2.500	88	90	89	79	76	76	75	69	85

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

Low Silhouette Cent. Roof

VLBK & VTBK 21 AIR PERFORMANCE



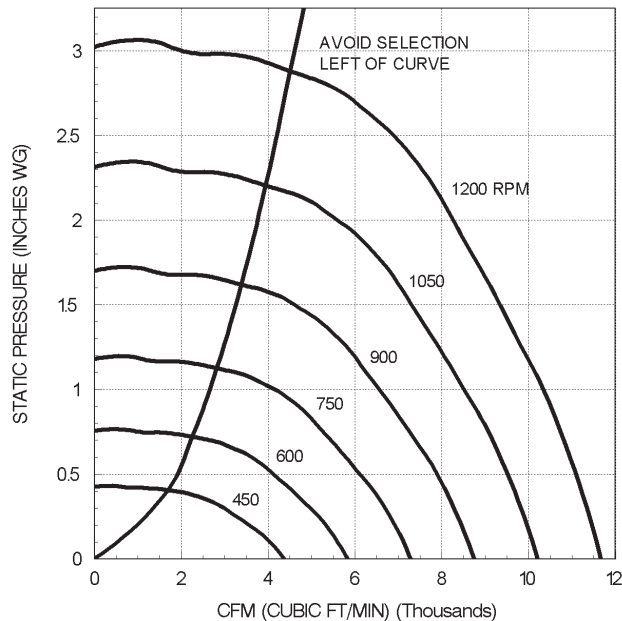
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 21 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
400	.000	62	61	58	58	55	49	41	38	60
	.500	71	75	68	67	67	62	55	47	71
600	.000	72	78	64	61	63	62	54	44	68
	.500	78	81	78	74	73	70	64	56	78
800	.000	78	82	78	71	70	68	62	55	76
	.750	78	83	78	69	69	69	63	54	76
950	.000	82	85	85	78	77	75	70	62	83
	.750	82	85	85	75	74	73	68	60	81
	1.250	82	87	86	73	72	73	70	60	81
1350	.000	86	88	90	81	80	80	74	67	87
	.750	85	88	91	79	78	77	72	65	86
	1.250	85	89	92	78	76	77	73	65	86
	1.750	85	90	92	77	74	76	75	66	86
1225	.000	88	91	93	85	82	82	78	70	89
	.750	87	90	94	83	81	81	76	69	89
	1.000	87	90	94	83	80	80	75	68	89
	1.500	87	91	95	82	78	79	76	69	89
	2.00	87	92	96	81	77	78	78	69	89

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 24 AIR PERFORMANCE



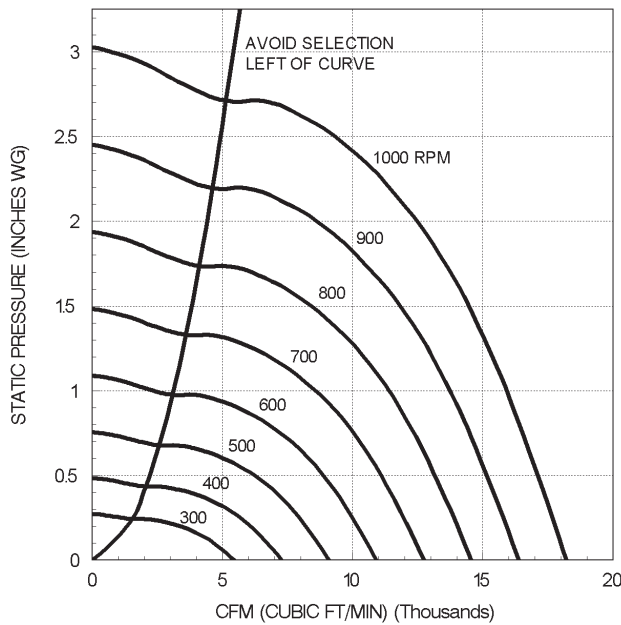
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 24 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
400	.000	74	71	62	61	61	58	51	44	66
	.000	79	83	73	68	68	67	61	54	74
550	.375	78	80	70	66	67	64	58	52	72
	.625	78	80	69	65	66	64	58	51	71
700	.000	84	90	83	75	73	73	69	61	81
	.500	83	87	79	73	71	71	66	59	78
	.750	84	87	78	72	71	71	66	59	78
	1.000	84	87	78	71	71	71	66	59	78
825	.000	87	93	89	79	76	77	74	67	85
	.500	86	91	86	78	75	76	72	65	83
	.750	87	90	85	77	74	76	71	64	83
	1.000	87	90	84	76	74	75	71	64	82
950	1.250	88	90	84	75	74	75	71	64	82
	.000	90	95	94	83	80	80	78	71	90
	.500	89	94	92	82	79	80	77	70	88
	1.000	89	93	90	81	78	79	75	69	87
	1.500	91	93	90	80	77	79	75	69	86
1.750	92	93	90	79	77	78	75	69	86	

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 30
AIR PERFORMANCE



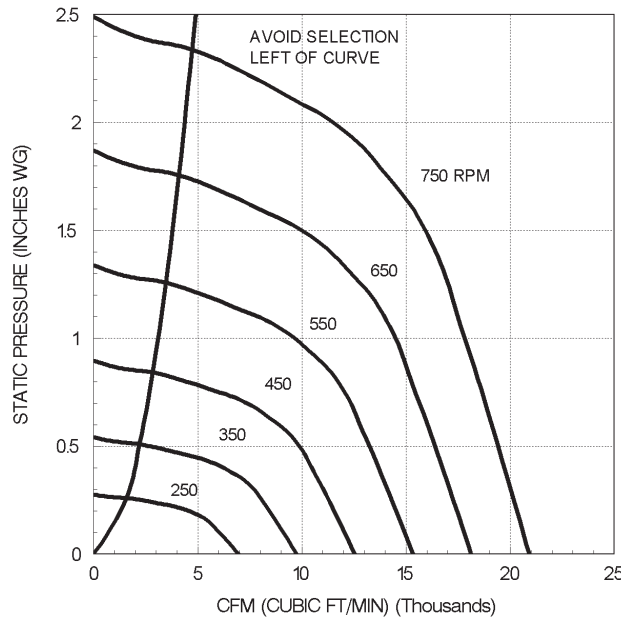
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 30
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
275	.000	70	61	60	59	54	49	44	39	60
	.375	74	65	59	58	55	53	49	44	61
375	.000	79	71	66	68	63	58	53	48	69
	.375	82	82	73	72	70	65	60	55	75
475	.000	82	82	73	72	70	65	60	55	75
	.375	81	79	70	68	65	61	58	54	71
600	.000	85	92	81	77	77	72	66	61	81
	.500	84	91	78	74	73	69	65	61	80
725	.000	87	87	74	69	68	65	62	57	75
	.500	87	96	87	81	82	77	72	67	87
825	.000	87	96	85	79	79	75	70	67	85
	.500	89	94	83	76	76	72	69	65	83
825	1.000	93	92	80	73	73	69	67	63	80
	1.500	89	98	92	84	85	81	76	71	90
825	.500	89	98	91	83	83	79	74	70	89
	1.000	89	98	90	81	81	77	73	70	87
825	1.500	93	96	87	79	77	74	71	67	85
	2.000	95	95	86	77	76	73	70	66	84

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 36
AIR PERFORMANCE



Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

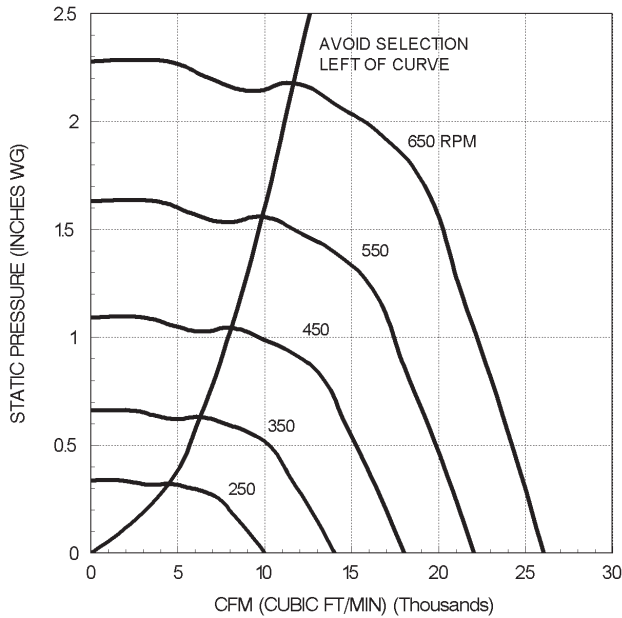
VLBK & VTBK 36
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
250	.000	68	65	63	60	59	62	64	65	70
	.500	77	75	72	69	66	68	70	72	76
350	.000	73	69	65	63	60	56	52	48	65
	.375	83	82	79	76	72	72	75	77	82
450	.375	84	83	76	72	69	70	71	66	78
	.750	83	78	73	69	67	64	61	57	73
550	.000	88	89	84	81	78	76	79	80	86
	.750	89	89	81	76	74	71	75	69	82
650	1.250	91	84	78	74	72	68	65	60	78
	.000	92	94	89	85	82	79	82	84	90
650	.750	93	95	88	82	79	76	81	77	88
	1.250	95	93	86	80	77	74	76	71	85
750	1.750	98	89	83	78	76	73	69	65	82
	.000	95	97	93	89	86	82	84	86	93
750	.750	95	98	93	87	84	80	83	82	92
	1.250	95	98	92	85	82	79	82	80	91
750	1.750	98	96	90	84	81	78	78	75	88
	2.250	100	94	88	82	80	77	74	69	87

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

Low Silhouette Cent. Roof

VLBK & VTBK 42 AIR PERFORMANCE



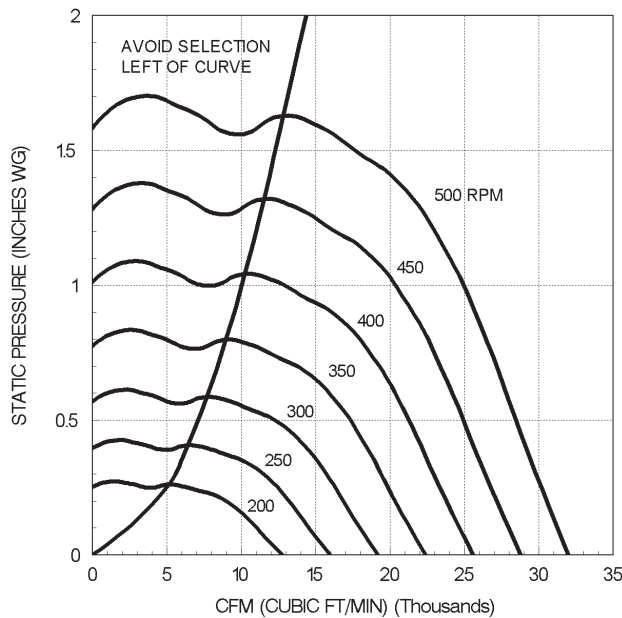
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 42 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
215	.000	69	67	64	63	58	59	47	34	65
	.375	70	68	67	68	63	60	57	52	69
275	.000	78	80	76	74	70	69	64	52	77
	.250	77	78	74	73	69	67	62	51	75
335	.500	74	75	72	72	69	66	62	56	74
	.000	86	84	81	78	75	72	71	58	81
395	.375	84	82	78	76	75	70	68	57	79
	.750	82	79	76	76	74	70	67	62	79
460	.000	94	89	85	81	80	74	77	64	85
	.375	92	87	83	80	80	73	75	63	84
	.750	91	85	81	79	79	73	73	64	83
525	1.000	90	84	80	79	79	73	71	66	83
	.000	99	92	89	85	84	77	80	70	89
	.500	97	90	87	83	83	76	79	68	88
	.750	96	89	86	82	83	76	78	68	87
525	1.000	96	88	85	82	83	76	76	69	87
	1.250	96	87	83	82	82	77	75	70	86

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 48 AIR PERFORMANCE



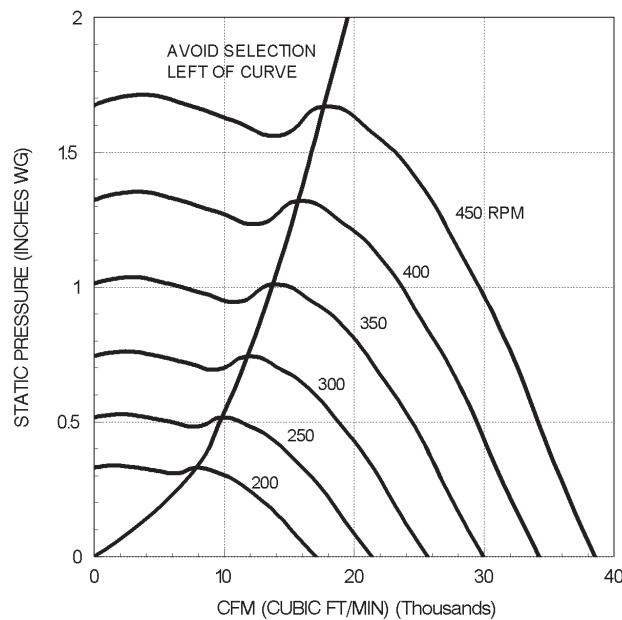
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 48 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
200	.000	75	70	72	68	62	64	51	37	70
	.250	84	77	77	74	69	68	60	46	76
250	.000	84	75	68	64	62	62	56	45	69
	.250	84	75	68	64	62	62	56	45	69
300	.000	91	83	80	79	74	72	67	54	81
	.250	93	81	75	71	68	67	64	52	75
350	.500	93	80	73	68	65	63	59	52	73
	.000	95	88	83	84	79	75	74	60	85
390	.375	97	86	80	74	71	69	70	58	79
	.625	97	86	78	72	70	67	65	57	78
	.000	97	92	85	87	82	77	78	65	88
390	.250	98	91	84	81	78	74	76	63	85
	.500	99	90	83	76	74	71	74	62	82
	.750	99	89	81	75	72	70	69	61	81
430	.000	99	95	88	89	85	79	81	69	91
	.250	100	95	87	85	81	77	79	67	88
	.500	100	94	86	81	78	74	77	66	86
	.750	101	94	85	79	76	73	74	65	84
430	1.000	101	94	84	77	75	72	70	64	83

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

VLBK & VTBK 54
AIR PERFORMANCE



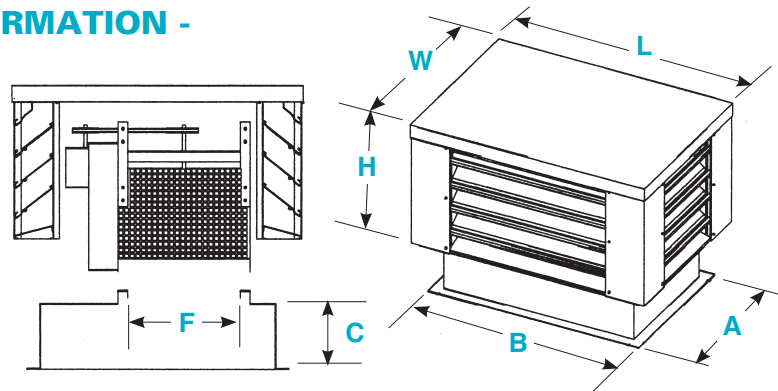
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VLBK & VTBK 54
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
190	.000	79	70	70	68	63	62	56	48	70
230	.000	86	77	74	73	69	66	62	54	75
	.375	83	75	70	66	63	59	56	52	69
260	.000	91	82	77	76	72	69	66	58	78
	.500	88	80	73	69	66	63	59	55	73
290	.000	95	86	79	79	76	71	69	62	81
	.375	94	82	75	71	70	66	63	56	76
	.625	92	83	77	72	69	66	62	58	76
320	.000	98	90	81	81	79	74	72	65	84
	.375	98	85	78	74	73	69	67	60	80
	.750	96	87	79	74	72	68	64	61	79
350	.000	100	93	83	83	81	76	75	68	87
	.500	100	88	80	76	75	71	69	62	81
	1.000	96	90	83	77	74	71	66	64	82
380	.000	101	96	86	85	83	78	77	71	89
	.500	101	93	84	79	78	74	72	65	84
	.750	101	92	84	78	77	73	70	65	84
	1.000	99	93	85	79	76	73	69	65	84

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts. Values shown are for inlet L_{wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction.

**DIMENSIONAL INFORMATION -
EXTREME WEATHER**



(Dimensions in Inches)

Carnes Fan Model	Penthouses Overall Size					Curb OD				Curb Throat	
	W	x	L	x	H	A	x	B	x		C
VLBK 06	36	x	41	x	23	27.25	x	32.25	x	C	11.25
VLBK 08	36	x	41	x	23	27.25	x	32.25	x	C	11.25
VLBK 10	36	x	44	x	23	27.25	x	35.25	x	C	13.38
VLBK 12	36	x	44	x	23	27.25	x	35.25	x	C	13.38
VLBK 15	36	x	48	x	26	27.25	x	39.35	x	C	16.25
VLBK 18	47	x	52	x	29	38.25	x	43.25	x	C	20.75
VLBK 21	50	x	61	x	30	41.25	x	52.25	x	C	23.88
VLBK 24	53	x	65	x	34	44.25	x	56.25	x	C	26.88
VLBK 30	61	x	77	x	38	52.25	x	68.25	x	C	35.88
VLBK 36	67	x	84	x	39	58.25	x	75.25	x	C	41.88
VLBK 42	75	x	92	x	43	66.25	x	83.25	x	C	49.88
VLBK 48	79	x	96	x	46	70.25	x	87.25	x	C	53.88
VLBK 54	85	x	102	x	52	76.25	x	93.25	x	C	59.88

Low Silhouette Cent. Roof

Extreme Weather - Miami-Dade County Approved Louvered Penthouses Model VLBK

Volumetric Flow Rate and Static Pressure Loss Performance Data

Dimensions of Penthouses

Square Height (Inches)		Static Pressure Loss (in W.G.)										
		0.008	0.018	0.027	0.037	0.050	0.061	0.074	0.089	0.120	0.180	0.220
		Air Velocity (fpm)										
		200	300	400	500	600	700	800	900	1000	1100	1200
12	12	288	432	576	720	864	1008	1152	1296	1440	1584	1728
	24	672	1008	1344	1680	2016	2352	2688	3024	3360	3696	4032
24	12	656	984	1312	1640	1968	2296	2624	2952	3280	3608	3936
	24	1536	2304	3072	3840	4608	5376	6144	6912	7680	8448	9216
	36	2584	3876	5168	6460	7752	9044	10336	11628	12920	14212	15504
36	12	1024	1536	2048	2560	3072	3584	4096	4608	5120	5632	6144
	24	2408	3612	4816	6020	7224	8428	9632	10836	12040	13244	14448
	36	4040	6060	8080	10100	12120	14140	16160	18180	20200	22220	24240
	48	5360	8040	10720	13400	16080	18760	21440	24120	26800	29480	32160
48	12	1400	2100	2800	3500	4200	4900	5600	6300	7000	7700	8400
	24	3272	4908	6544	8180	9816	11452	13088	14724	16360	17996	19632
	36	5504	8256	11008	13760	16512	19264	22016	24768	27520	30272	33024
	48	7288	10932	14576	18220	21864	25508	29152	32796	36440	40084	43728
	60	9592	14388	19184	23980	28776	33572	38368	43164	47960	52756	57552
60	12	1768	2652	3536	4420	5304	6188	7072	7956	8840	9724	10608
	24	4144	6216	8288	10360	12432	14504	16576	18648	20720	22792	24864
	36	6960	10440	13920	17400	20880	24360	27840	31320	34800	38280	41760
	48	9224	13836	18448	23060	27672	32284	36896	41508	46120	50732	55344
	60	12136	18204	23272	30340	36408	42476	48544	54612	60680	66748	72816
	72	14520	21780	29040	36300	43560	50820	58080	65340	72600	79860	87120
72	12	2136	3204	4272	5340	6408	7476	8544	9612	10680	11748	12816
	24	5008	7512	10016	12520	15024	17528	20032	22536	25040	27544	30048
	36	8424	12636	16848	21060	25272	29484	33696	37908	42120	46332	50544
	48	11160	16740	22320	27900	33480	39060	44640	50220	55800	61380	66960
	60	14680	22020	29360	36700	44040	51380	58720	66060	73400	80740	88080
	72	17560	26340	35120	43900	52680	61460	70240	79020	87800	96580	105360
	84	20952	31428	41904	52380	62856	73332	83808	94284	104760	115236	125712
	96	2512	3768	5024	6280	7536	8792	10048	11304	12560	13816	15072
84	24	5880	8820	11760	14700	17640	20580	23520	26460	29400	32340	35280
	36	9880	14820	19760	24700	29640	34580	39520	44460	49400	54340	59280
	48	13088	19632	26176	32720	39264	45808	52352	58896	65440	71984	78528
	60	17224	25836	34448	43060	51672	60284	68896	77508	86120	94732	103344
	72	20608	30912	41216	51520	61824	72128	82432	92736	103040	113344	123648
	84	24584	36876	49168	61460	73752	86044	98336	110628	122920	135212	147504
	96	2880	4320	5760	7200	8640	10080	11520	12960	14400	15840	17280
	24	6744	10116	13488	16860	20232	23604	26976	30348	33720	37092	40464
96	36	11344	17016	22688	28360	34032	39704	45376	51048	56720	62392	68064
	48	15024	22536	30048	37560	45072	52584	60096	67608	75120	82632	90144
	60	19768	29652	39536	49420	59304	69188	79072	88956	98840	108724	118608
	72	23648	35472	47296	59120	70944	82768	94592	106416	118240	130064	141888
	84	28216	42324	56432	70540	84648	98756	112864	126972	141080	155188	169296

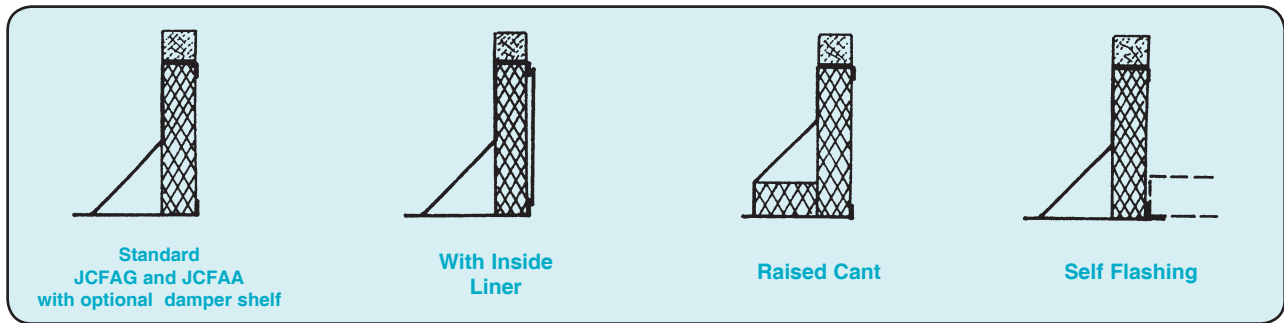
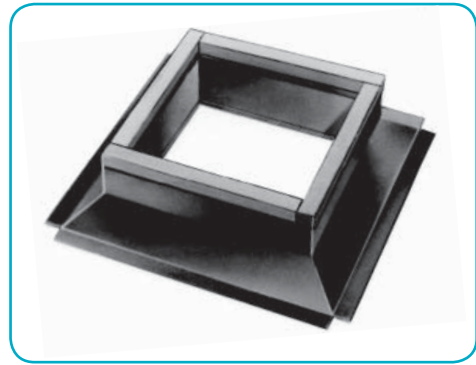
Low Silhouette Cent. Roof

ROOF CURBS

Roof curbs Models JCFAAG galvanized and JCFAA aluminum are of welded construction with 1-1/2" fiberglass insulation and wood nailer. Standard heights are 8" and 12" with custom heights available.

For pitched roofs pitched curbs are available with standard cant for minor slopes (to approximately 2" per ft.) or "self-flashing" wide flange without cant for steeper pitches.

Roof curb modifications include a metal liner to prevent contamination of the insulation, raised cant for use with insulated roof decks and a damper shelf to support a backdraft damper inside the curb.



BACKDRAFT DAMPERS

Carnes Model JDHAA automatic gravity dampers are available to prevent backflow when units are shut down. Damper frames are heavy-duty box type. Blades are aluminum with felt edges and are linked together for quiet operation. A counterbalance spring is adjustable for tension to provide minimum resistance to air flow.

Motorized operation (JDHAM) may be provided by adding the motor pack available for 115/208/230 volt operation. Transformers are available for 460 or 560 volt operation.



Low Silhouette Cent. Roof

APPROVED ANCHORING METHODS

SUBSTRATES, ANCHOR TYPES & SPACING ARE AS FOLLOWS:

A. CONCRETE DECKING

Use 3/8" dia. ITW Red Heat Tru Bolt Wedge Anchors of sufficient length to achieve minimum 3" embedment into concrete, spaced 4-1/2" maximum from each corner and 14-1/2" O.C. maximum.

B. WOOD FRAME DECKING

Use 7/16" dia. Lag Bolts of sufficient length to achieve minimum embedment into wood decking, spaced 4-1/2" maximum from each corner and 10-7/8" O.C. maximum.

C. STEEL GIRDER OR PERLIN WITH METAL DECKING

Use # 12-3 point ITW Buildex Maxiseal screws spaced 4-1/2" maximum from each corner and 4-1/2" O.C. maximum. Use 3/4" FILLET WELDS spaced 4-1/2" from each corner and 12-3/8" O.C. maximum.

ALL ROOFING DETAILS SHALL COMPLY WITH CHAPTER 15 OF THE FLORIDA BUILDING CODE. REFER TO NOA No: 04-1209.01 FOR DETAILS.

OPTIONS

- Hinged Roof
- Insect Screen
- Filters
- Anti-condensate Interior Roof
- Insulated Roof Hood
- Internal Access Ladder

CURB HEIGHTS

In addition to the standard 8" curb, heights are available in even number sizes from 10" to 24".

- Dade County Schools' minimum is 18".

FINISH OPTIONS

- Mill Finish (Standard)
- Kynar Finish *
- Enamel Finish
- Powder Coated

* Available in limited sizes, contact factory for availability.

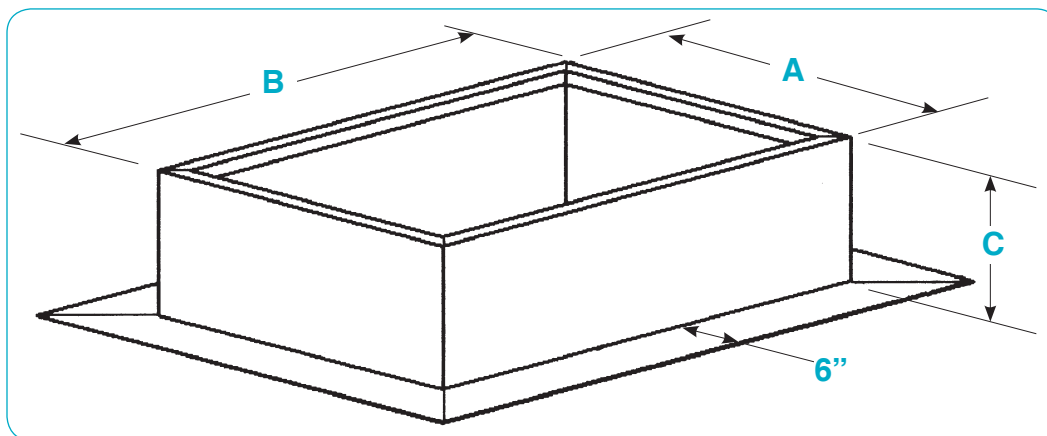
DESIGNED AND APPROVED TO MEET MIAMI DADE TEST STANDARDS

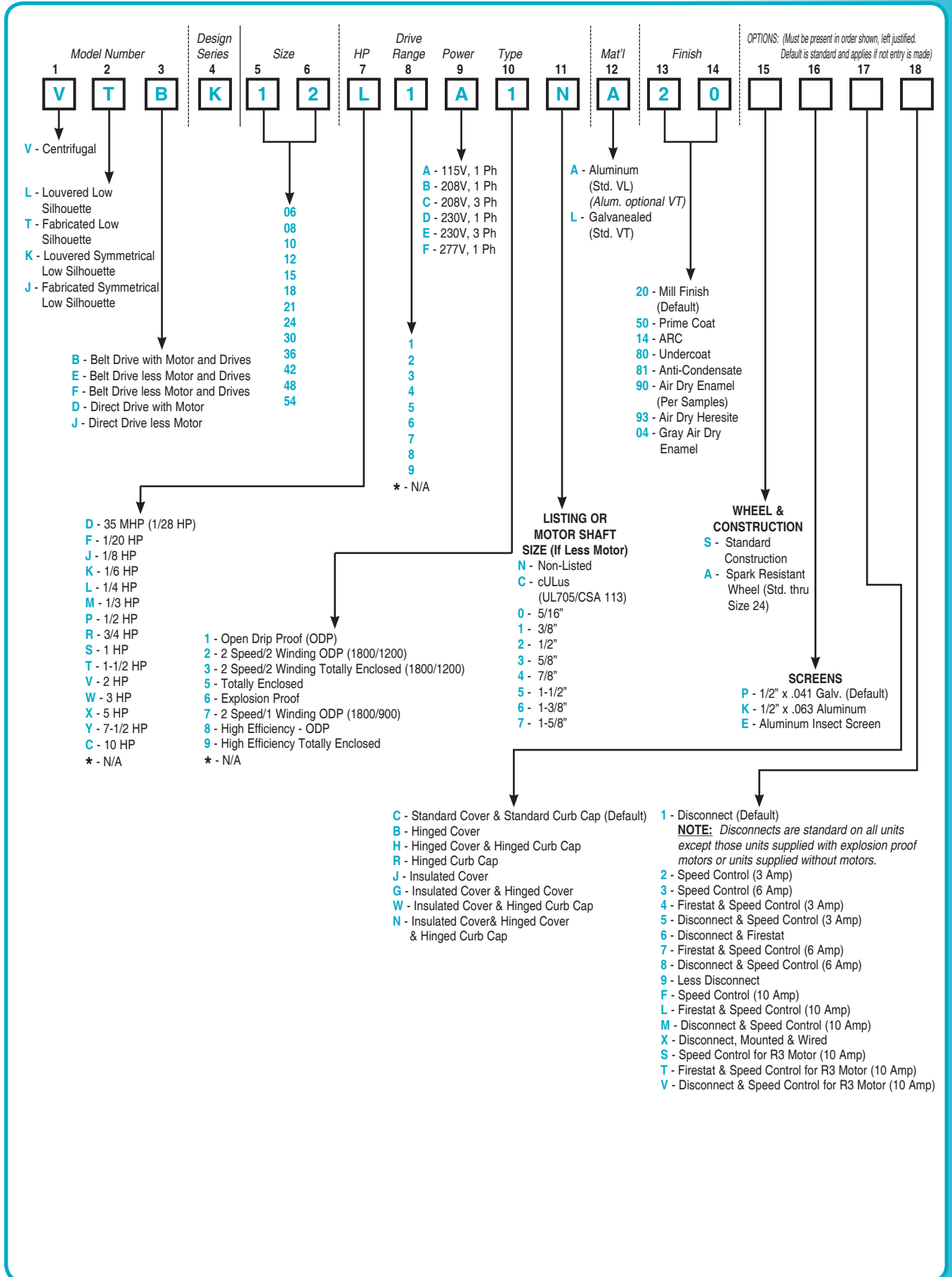
EXTREME WEATHER CURBS - MODEL JCWAG

- Fully welded construction
- 14 gauge (.047) galvanized steel
- 1-1/2" (38) thick 3 lb. density rigid fiberglass insulation
- 6" (152) wide bottom flanges
- 1-1/2" x 1-1/2" (38 x 38) vertical bracing
- Minimum height 8" (206)
- Maximum height 24" (610)

(Dimensions in Inches)

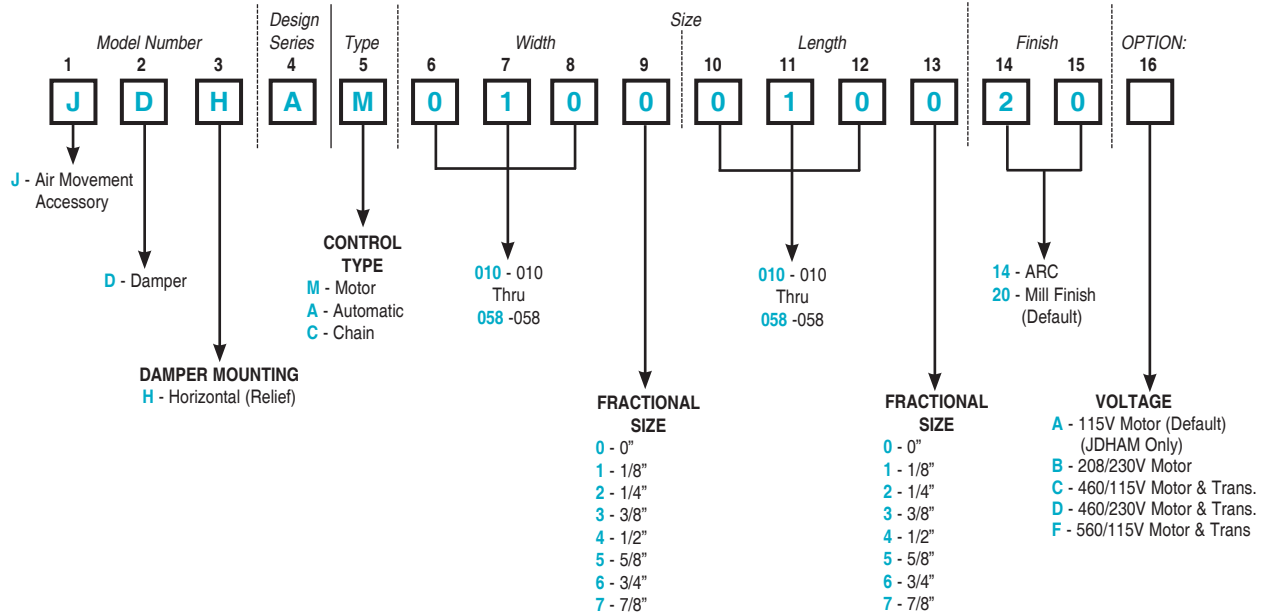
Carnes Fan Model	Curb OD					
	A	x	B	x	C	
VLBK06	27.25	x	32.25	x	C	
VLBK 08	27.25	x	32.25	x	C	
VLBK 10	27.25	x	32.25	x	C	
VLBK 12	27.25	x	32.25	x	C	
VLBK 15	27.25	x	39.25	x	C	
VLBK 18	38.25	x	43.25	x	C	
VLBK 21	41.25	x	52.25	x	C	
VLBK 24	44.25	x	56.25	x	C	
VLBK 30	52.25	x	68.25	x	C	
VLBK 36	58.25	x	75.25	x	C	
VLBK 42	66.25	x	83.25	x	C	
VLBK 48	70.25	x	87.25	x	C	
VLBK 54	76.25	x	93.25	x	C	



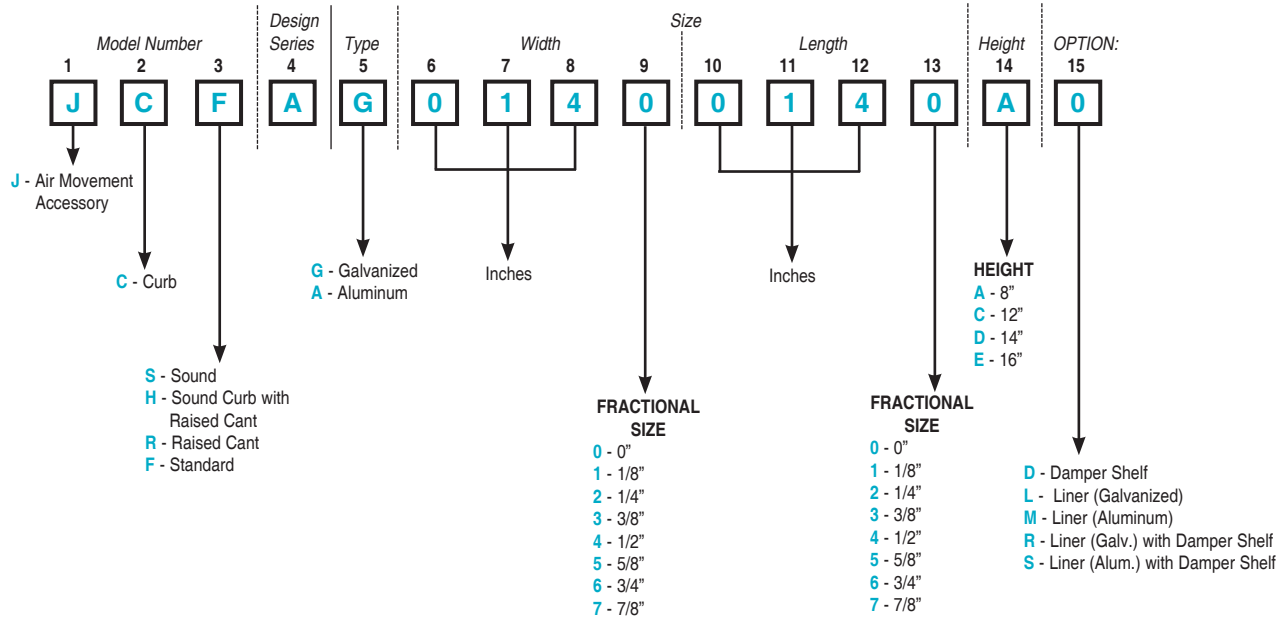


Low Silhouette Cent. Roof

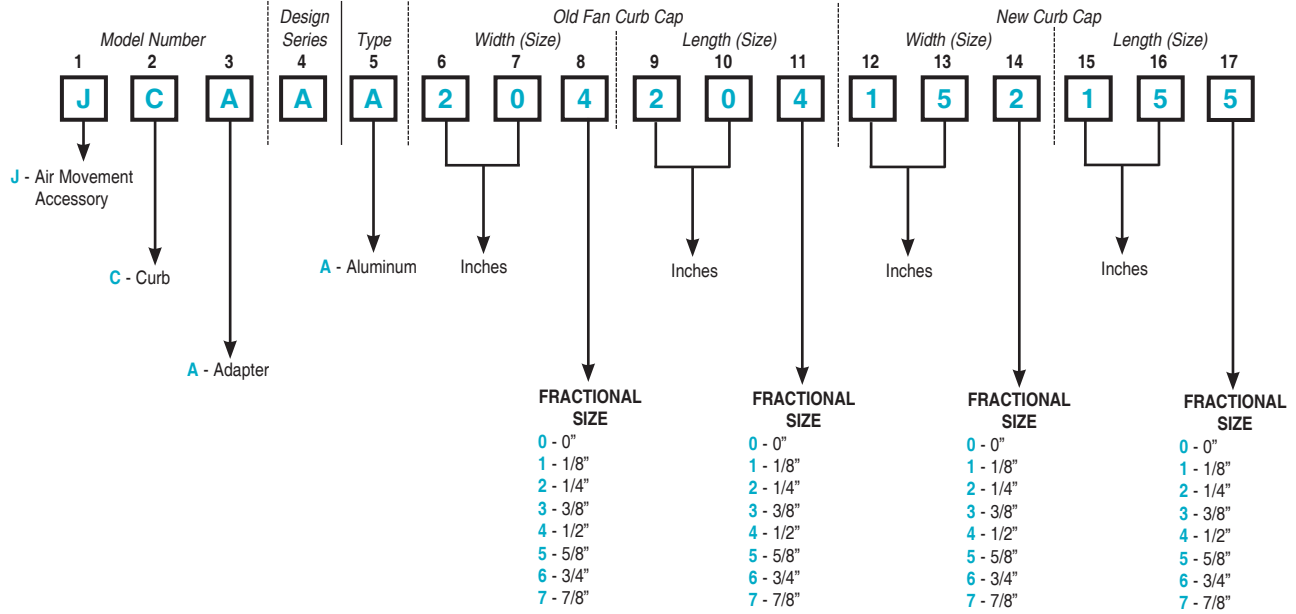
▼ Dampers



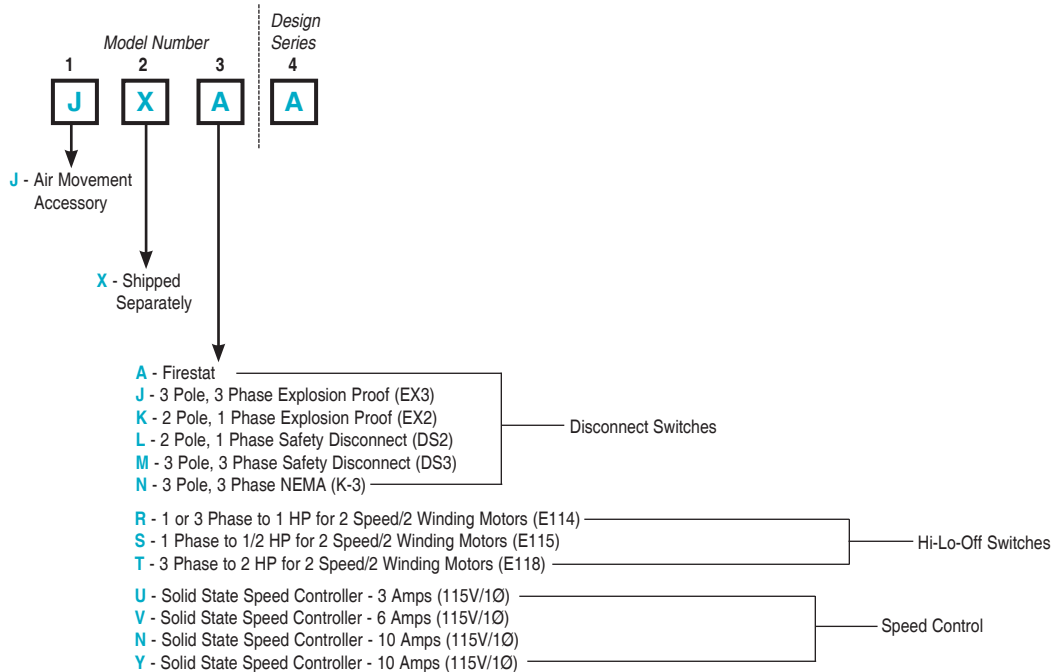
▼ Curbs



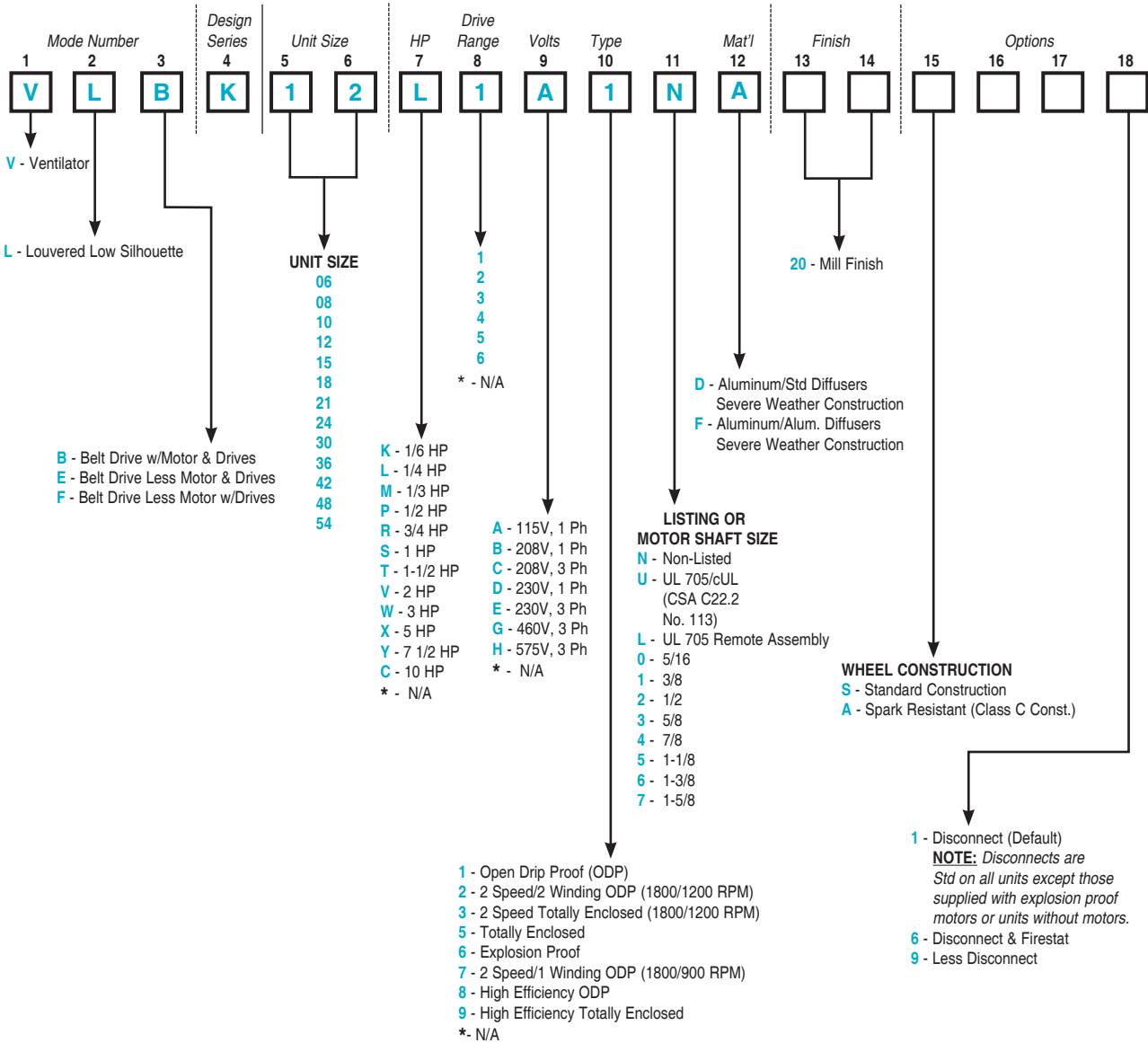
▼ **Curb Cap Adapters**



▼ **Electrical Accessories**

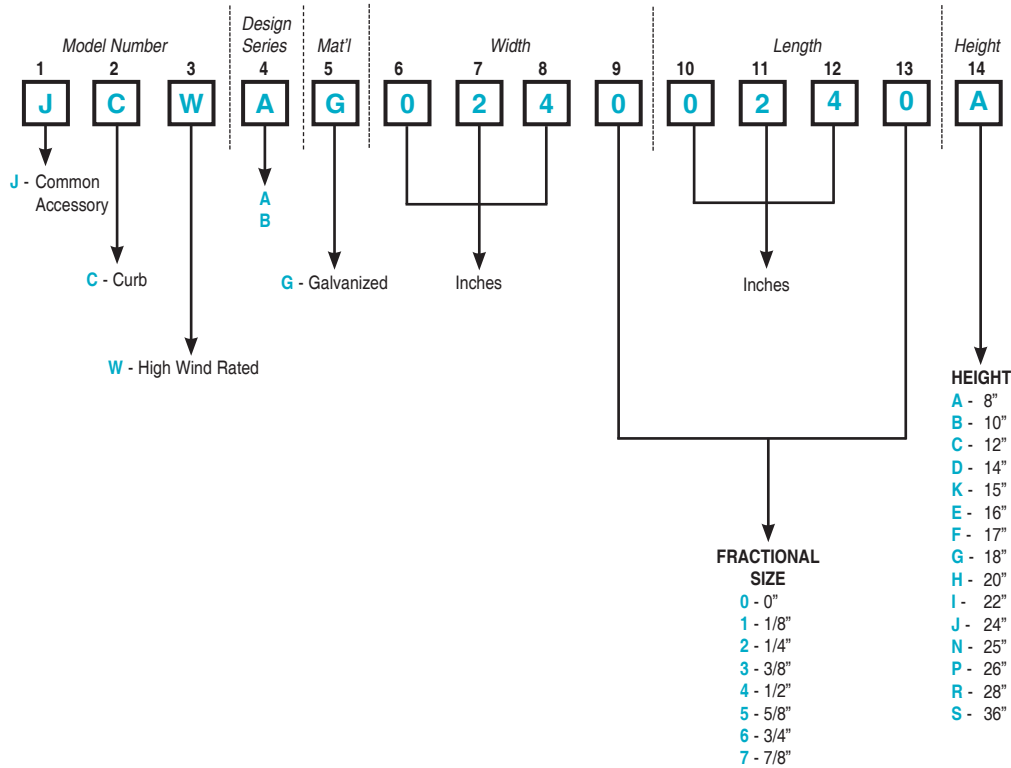
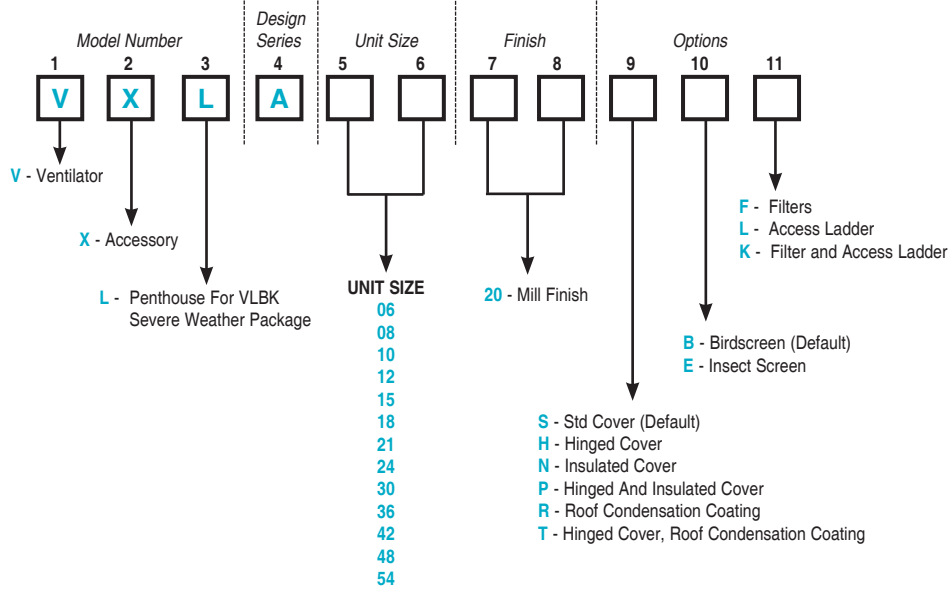


EXTREME WEATHER



Low Silhouette Cent. Roof

EXTREME WEATHER



Low Silhouette Cent. Roof

FILTERED SUPPLY CENTRIFUGAL - BELT DRIVE

Carnes Models VSBB and VHBB centrifugal filtered roof supply fans are available in six sizes - 8" through 20" with capacities from 500 CFM through 13,000 CFM, and static pressures up to 2 inches W. G.

The standard 1" aluminum filters are sized for low air velocity and high efficiency. Regular filter maintenance is facilitated by removable cover with quick release latches. 2" aluminum filters optional.

Field power wiring to the factory mounted NEMA 1 disconnect switch is easily installed through a pre-punched conduit hole in the unit bottom pan.

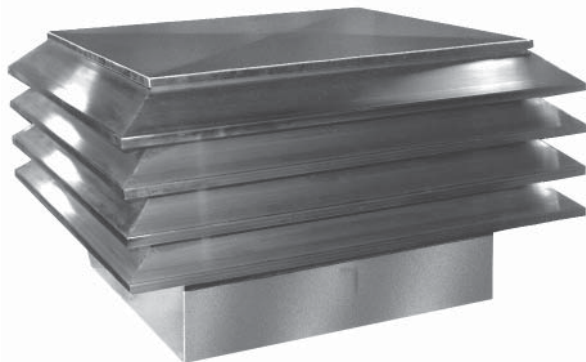
The unit base is pre-punched for securing unit to roof curb.

To prevent moisture condensation and for sound attenuation, the unit cover is insulated with 1-1/2" inch, 3 lb/ft³ density insulation.

Model VSBB



Model VHBB



The Model VSBB standard construction is heavy-gauge galvanized steel. The Model VHBB incorporates an attractive aluminum louvered hood with mitered and welded corners.

Maintenance is reduced through the use of heavy-duty, permanently lubricated and sealed ball bearings.

The blower motor assembly is mounted on internal vibration rails with rubber-in-shear vibration isolators to ensure smooth, vibration free operation.

Fans are completely assembled, with motor and drives mounted. Each fan is factory run tested to ensure proper operation at the specified fan RPM.

Cast iron sheaves, non-static, oil resistant V-belts, and adjustable motor sheave with pivoting motor base facilitate field adjustment and maintenance of proper belt tension.

UL OPTION

Models VSBB and VHBB are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



POWER VENTILATOR

COMPUTERIZED FAN SELECTION: Make the right choice with Carnes FAN-C-LECT™. The Models VSBB and VHBB, as well as the comprehensive offering of CARNES powered ventilators, are included in CARNES user friendly fan selection program.

▼ TYPICAL SPECIFICATIONS

Roof mounted, filtered supply ventilators shall be belt driven with DWDI forward curved centrifugal blower.

Model VSBB: Housing stack, hood and lid shall be heavy-gauge galvanized steel.

Model VHBB: Louvered hood, stack and lid shall be heavy-gauge aluminum. Louvers shall be extruded aluminum with mitered and welded corners. Filter racks shall be aluminum.

Unit base shall have pre-punched mounting holes. Bottom pan shall have conduit opening to facilitate field power wiring. The entire blower and motor assembly shall be mounted on rubber shear vibration isolators.

Lid shall be insulated, to prevent condensation, and shall be removable with quick release latches for easy access to filters and internal parts.

Permanent, washable 1" aluminum filters shall be mounted in full width/full height racks.

Disconnect (NEMA 1) shall be factory mounted within the unit housing.

Blower shall be DWDI-FC constructed of heavy-gauge steel, statically and dynamically balanced for vibration free operation.

Fan shaft shall be ground and polished and mounted in heavy-duty, permanently lubricated and sealed ball bearings with average life $L_{50} = 200,000$ hours at operating speed.

Drives shall be selected for minimum of 150% of motor horsepower. Sheaves shall be cast iron and keyed to motor shaft and fan shaft. Motor shall be adjustable for final system balancing.

Motors shall be permanently lubricated sealed ball bearing type and carefully matched to the specified fan performance, enclosure type and electrical specification.

Motor mounting base shall be adjustable for proper belt maintenance. Belts shall be non-static conducting, oil resistant V-belts.

Motors and drives shall be factory mounted. Unit shall be completely assembled and factory run-tested and adjusted to proper RPM.

CONSTRUCTION FEATURES

INSULATED LID
For Sound Absorption and Condensation Control

ADJUSTABLE MOTOR SHEAVE
For Final System Balancing

BEARINGS
Permanently Sealed and Lubricated Average Life $L_{50} = 200,000$ Hours

ADJUSTABLE MOTOR PLATE
Pivots For Maintaining Proper Belt Tension



Model VSBB Shown

FILTERS
Permanent/Washable 1 Inch Aluminum

DISCONNECT SWITCH
Standard On All Units
NEMA 1 Mounted

REMOVABLE HOOD LID
Secured By Quick-Release Latches For Regular Filter Maintenance

FORWARD CURVED BLOWER
DWDI For Efficient Air Flow

GALVANEALED STEEL HOUSING
Encloses Blower, Motor, Drives and Filters

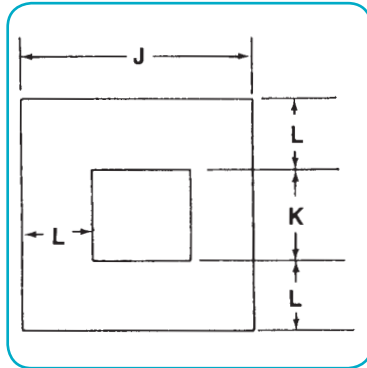
MOTORS
Heavy-duty Ball Bearing Motors Matched To The Specified Fan Load

FACTORY RUN-TESTED
Factory Mounted Motor and Drives - Factory Set RPM

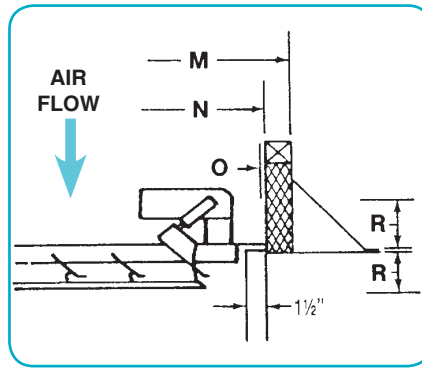
INTERNAL CONDUIT OPENING
Facilities Field Wiring

Filtered Supply Vents

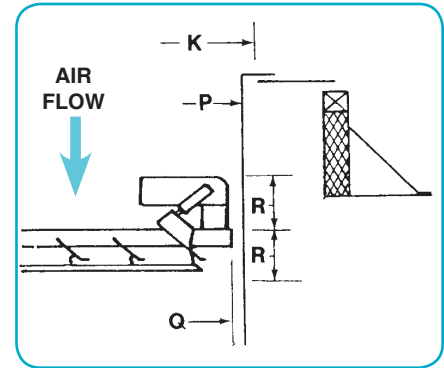
ACCESSORIES



Duct Adapter



VXGA Curb Mtd. Damper
(Requires 1-1/2" damper shelf)
Shown with optional motor pack



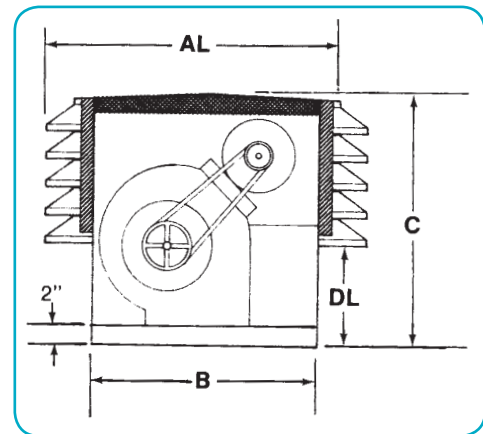
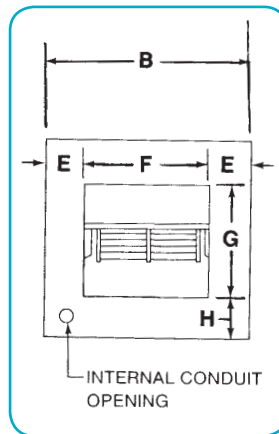
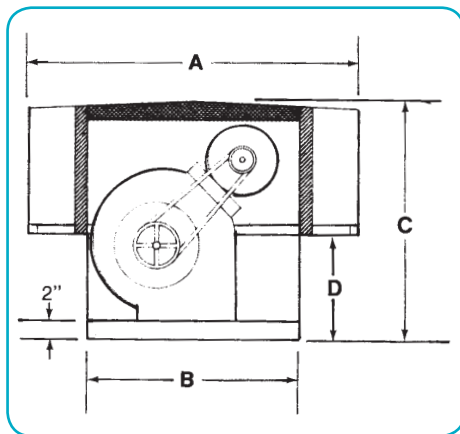
VXHA Duct Mtd. Damper
Shown with optional motor pack

DIMENSIONS LISTED IN INCHES

Unit Size	J Sq.	K Sq.	L	Roof Curb Sq.		VXGA Damper		P Duct Sq. I.D.	VXHA Damper		R Damper Clearance	1" Filters Qty.-Nominal Size
				M O.D.	N I.D.	Size	O Sq.O.D.		Size	Q Sq. O.D.		
08	18	12-1/4	2-7/8	18-1/2	15-1/2	15	14-3/4	12	12	11-3/4	7	4 - 10 x 16
10	26-1/2	14-1/4	6-1/8	27	24	23	22-3/4	14	14	13-3/4	7	4 - 16 x 25
12	26-1/2	18-1/4	4-1/8	27	24	23	22-3/4	18	18	17-3/4	7	4 - 16 x 25
15	30	20-1/4	4-7/8	30-1/2	27-1/2	27	26-3/4	20	20	19-3/4	7	4 - 16 x 25
18	34	26-1/4	3-7/8	34-1/2	31-1/2	31	30-3/4	26	26	25-3/4	7	4 - 20 x 25
20	48-1/2	30-1/4	9-1/8	49	46	45	44-3/4 ¹	30	30	29-3/4	7	8 - 20 x 20

NOTE: 1. 2 panel damper. Motorized damper requires field installed panel bracket (included) for single motor operation.

DIMENSIONS



DIMENSIONS LISTED IN INCHES

Unit Size	A Sq. Hood O. D.	AL Sq. Hood O. D.	B Sq. Cap I. D.	C Height	D Stack	DL Stack	Qty. Tiers VHBB	E	F	G	H	Weight (lbs.)	
												VSBB	VHBB
08	29	34	19-3/4	19	9	8	3	5	8-3/4	9-5/8	6-9/16	125	100
10	37	43	28-1/4	29	13	13	4	7-1/4	11-3/4	13-5/8	8-3/16	225	175
12	37	43	28-1/4	29	13	13	4	6	13-3/4	16-1/8	7-3/16	250	200
15	45	45	32-1/8	30	14	14	4	6-1/2	16-1/4	19	7-3/4	350	260
18	45	50	36-1/8	38	18	18	5	6-7/8	19-1/4	22-1/4	7	425	300
20	69	69	50-1/2	49	29	29	5	12-3/4	25-1/8	25-1/8	13-7/8	700	500

VSBB/VHBB - 08 Max. Fan RPM = 3000 Max. Motor Frame = 145T Tip Speed (Ft./Min.) = RPM x 2.10

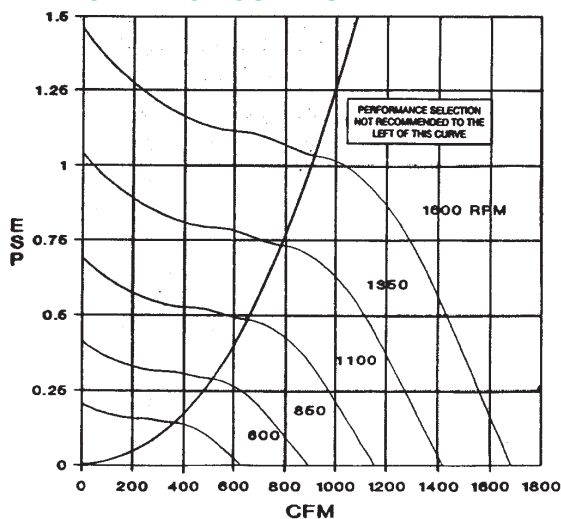
CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)								
			0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
550	1038	RPM	525	667	812						
		BHP	.03	.05	.07						
625	1179	RPM	596	726	846						
		BHP	.04	.07	.09						
700	1321	RPM	668	787	893	1006					
		BHP	.06	.09	.11	.14					
775	1462	RPM	739	851	942	1041	1148				
		BHP	.08	.12	.14	.16	.20				
850	1604	RPM	810	915	998	1089	1180	1276	1364		
		BHP	.11	.15	.17	.20	.23	.27	.31		
925	1745	RPM	882	980	1061	1138	1222	1300	1396		
		BHP	.14	.18	.21	.24	.27	.31	.35		
1000	1887	RPM	953	1046	1122	1190	1269	1345	1427	1500	1584
		BHP	.18	.22	.26	.29	.32	.35	.40	.43	.49
1075	2028	RPM	1024	1112	1184	1251	1318	1392	1460	1539	1614
		BHP	.23	.27	.31	.35	.38	.42	.45	.49	.54
1150	2170	RPM	1096	1179	1250	1312	1370	1441	1507	1572	1646
		BHP	.28	.33	.37	.41	.45	.48	.52	.55	.61
1225	2311	RPM	1168	1246	1314	1375	1432	1489	1555	1617	1678
		BHP	.34	.39	.43	.48	.52	.56	.60	.63	.67
1300	2453	RPM	1240	1312	1379	1438	1493	1500	1603	1664	
		BHP	.40	.45	.51	.55	.60	.57	.68	.72	
1375	2594	RPM	1310	1380	1446	1501	1555	1605	1653		
		BHP	.47	.52	.59	.63	.68	.73	.77		
1450	2735	RPM	1382	1448	1500	1566	1618				
		BHP	.56	.62	.66	.73	.78				
1525	2877	RPM	1453	1500	1578						
		BHP	.65	.69	.77						
1600	3019	RPM	1500	1587							
		BHP	.71	.81							

Performance certified is for installation Type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{W0} and L_{W0A} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

PERFORMANCE CURVES



SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
600	.000	72	64	59	58	55	55	50	45	61
	.125	69	61	57	54	51	50	45	40	57
	.250	68	59	54	52	49	57	42	37	55
850	.000	88	75	69	68	64	62	60	55	71
	.125	87	74	68	67	62	60	58	53	70
	.250	85	72	66	65	60	58	55	50	68
	.500	84	71	64	62	58	56	52	47	65
1100	.000	100	84	76	72	70	68	68	63	79
	.125	100	83	75	72	69	67	66	61	78
	.250	99	82	75	71	68	66	65	60	77
	.500	96	80	72	68	65	63	61	56	74
	.750	95	79	71	67	64	62	60	55	73
1350	.000	104	93	82	78	76	73	72	69	84
	.125	104	92	82	77	76	72	71	68	84
	.250	103	92	82	77	75	72	71	67	83
	.500	102	91	81	76	74	70	69	65	82
	.750	100	89	78	73	71	78	66	62	80
	1.000	99	88	78	72	70	67	65	61	79
1600	.000	107	101	88	82	81	77	76	73	90
	.125	107	101	88	82	81	77	75	73	89
	.250	106	100	88	82	81	76	75	72	89
	.500	106	99	87	81	80	76	74	71	88
	.750	105	99	87	81	80	75	73	70	88
	1.000	103	97	85	78	77	72	71	67	86

Filtered Supply Vents

VSBB/VHBB - 10 Max. Fan RPM = 2500 Max. Motor Frame = 145T Tip Speed (Ft./Min.) = RPM x 3.03

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)									
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	1.750	
1475	1418	RPM	500	574	654	724	854					
		BHP	.19	.22	.26	.30	.39					
1650	1587	RPM	532	606	678	748	870	982	1083			
		BHP	.23	.27	.32	.37	.48	.58	.68			
1825	1755	RPM	572	640	706	772	888	996	1096	1188		
		BHP	.28	.34	.39	.46	.55	.66	.80	.89		
2000	1923	RPM	616	678	740	796	912	1014	1110	1200	1285	
		BHP	.36	.41	.49	.54	.65	.78	.89	1.02	1.15	
2175	2091	RPM	662	717	772	828	936	1036	1128	1214	1298	
		BHP	.47	.52	.58	.64	.76	.90	1.03	1.17	1.29	
2350	2260	RPM	708	756	810	862	962	1060	1146	1232	1312	
		BHP	.57	.62	.69	.75	.90	1.05	1.17	1.32	1.46	
2525	2428	RPM	756	796	848	894	989	1084	1170	1250	1330	
		BHP	.69	.74	.81	.88	1.03	1.20	1.35	1.49	1.67	
2700	2596	RPM	802	838	886	932	1022	1108	1194	1272		
		BHP	.82	.88	.96	1.04	1.20	1.35	1.52	1.70		
2875	2764	RPM	850	884	926	970	1054	1134	1218			
		BHP	.98	1.04	1.12	1.21	1.38	1.55	1.74			
3050	2933	RPM	898	930	965	1008	1088	1167				
		BHP	1.17	1.23	1.31	1.40	1.57	1.75				
3225	3100	RPM	945	976	1006	1047	1123					
		BHP	1.36	1.43	1.50	1.60	1.79					
3400	3269	RPM	993	1023	1051							
		BHP	1.58	1.66	1.75							

Performance certified is for installation Type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

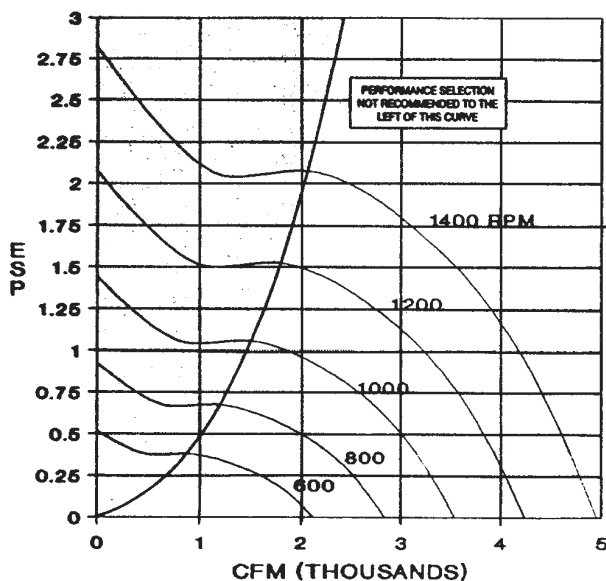
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{W0} and L_{W0A} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
600	.125	75	73	68	69	67	66	65	61	73
	.250	71	70	65	67	63	62	61	56	70
	.375	71	68	62	60	55	53	50	43	62
800	.125	84	85	76	75	75	73	73	70	81
	.250	79	82	74	74	74	72	73	69	80
	.500	75	79	71	71	69	67	68	63	75
	.625	78	77	70	67	64	62	61	55	71
1000	.125	89	91	84	81	81	79	78	76	87
	.250	86	88	83	80	80	78	78	76	86
	.500	82	85	81	78	79	76	76	74	84
	.750	79	83	79	76	76	73	73	70	81
	1.000	82	82	77	72	71	67	65	61	76
1200	.250	91	94	90	85	85	83	82	81	91
	.500	87	90	88	83	84	82	81	80	90
	.750	85	88	86	82	83	80	80	78	88
	1.000	83	86	85	81	82	78	77	76	86
	1.250	83	86	84	79	79	75	74	71	84
1400	1.500	85	86	83	77	75	70	69	65	81
	.500	92	95	94	87	87	86	85	85	94
	.750	89	92	93	86	87	86	84	84	93
	1.000	87	91	92	85	86	84	83	83	92
	1.250	86	89	91	84	85	83	81	81	90
	1.500	85	88	90	83	84	81	80	79	89
	1.750	86	89	89	82	81	78	76	75	87
2.000	88	90	88	82	78	75	73	70	85	

PERFORMANCE CURVES



Filtered Supply Vents

VSBB/VHBB - 12 Max. Fan RPM = 2140 Max. Motor Frame = 145T Tip Speed (Ft./Min.) = RPM x 3.37

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)								
			0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	1.750
1500	1027	RPM	400	489	572	650	784				
		BHP	.10	.14	.19	.23	.35				
1750	1199	RPM	437	516	590	662	793				
		BHP	.15	.19	.24	.29	.41				
2000	1370	RPM	476	549	615	680	804				
		BHP	.20	.26	.30	.36	.49				
2250	1541	RPM	520	584	646	704	816	926	1024		
		BHP	.28	.33	.39	.45	.58	.76	.88		
2500	1712	RPM	569	622	679	732	838	938	1034	1122	
		BHP	.37	.43	.49	.55	.69	.85	1.00	1.16	
2750	1883	RPM	618	661	714	766	862	954	1046	1134	
		BHP	.48	.54	.61	.68	.82	.98	1.15	1.33	
3000	2055	RPM	668	700	752	800	890	978	1060	1146	
		BHP	.62	.66	.75	.83	.97	1.14	1.31	1.51	
3250	2226	RPM	718	748	791	836	922	1002	1084	1158	
		BHP	.78	.83	.91	.99	1.15	1.31	1.51	1.69	
3500	2397	RPM	768	798	830	874	956	1032			
		BHP	.96	1.02	1.08	1.18	1.36	1.52			
3750	2568	RPM	820	846	872	913	990				
		BHP	1.18	1.23	1.29	1.39	1.59				
4000	2740	RPM	870	896	921	952					
		BHP	1.42	1.48	1.55	1.63					

Performance certified is for installation Type B - free inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

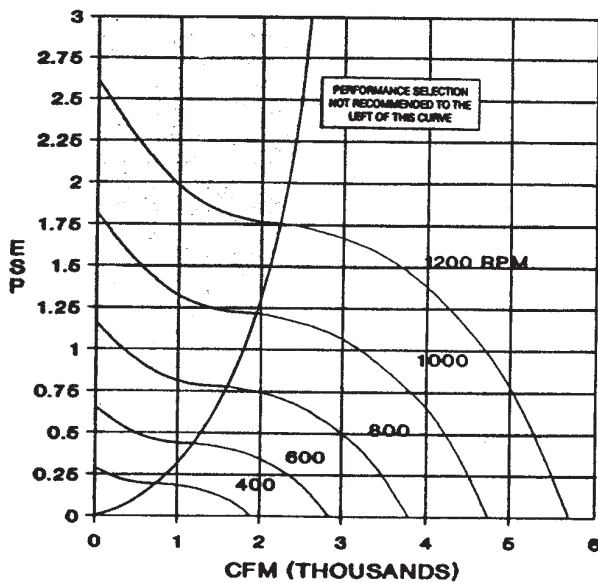
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{W0} and L_{W0A} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
400	.125	65	60	58	57	56	54	49	43	61
	.250	62	57	55	53	52	49	42	36	56
600	.125	82	74	70	69	68	67	64	60	74
	.250	80	72	68	67	66	65	61	56	71
800	.500	75	68	65	63	61	60	55	48	67
	.125	95	84	78	76	75	74	73	69	82
1000	.250	93	83	77	75	74	73	72	67	80
	.500	90	80	75	73	72	71	69	64	78
1200	.750	85	77	72	70	68	67	64	57	74
	.125	105	92	84	82	81	80	79	76	88
1000	.250	104	91	84	81	80	79	79	75	87
	.500	101	90	82	80	79	78	77	73	86
1200	.750	98	88	81	79	77	76	75	70	84
	1.000	96	86	79	77	76	74	73	68	82
1200	1.250	92	84	77	75	74	72	71	64	80
	.125	109	100	91	87	85	84	84	81	93
1200	.250	108	99	90	86	85	84	83	80	92
	.500	107	98	89	85	84	83	82	79	91
1200	.750	105	96	88	84	83	82	81	78	90
	1.000	103	95	87	83	82	81	80	76	89
1200	1.250	101	93	86	82	81	80	79	75	88
	1.500	99	92	84	81	80	78	77	72	86
1200	1.750	96	90	83	80	78	76	75	70	85

PERFORMANCE CURVES



Filtered Supply Vents

VSBB/VHBB - 15 Max. Fan RPM = 1800 Max. Motor Frame = 184T Tip Speed (Ft./Min.) = RPM x 4.06

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)										
			0.125	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000		
1900	927	RPM	303										
		BHP	.13										
2250	1098	RPM	341	396									
		BHP	.19	.25									
2600	1268	RPM	380	420									
		BHP	.28	.33									
2950	1439	RPM	424	457	546								
		BHP	.40	.45	.59								
3300	1610	RPM	466	496	563								
		BHP	.54	.60	.73								
3650	1781	RPM	510	536	590	670							
		BHP	.71	.78	.91	1.10							
4000	1951	RPM	554	578	628	688							
		BHP	.92	1.00	1.15	1.32							
4350	2122	RPM	599	620	666	710	780						
		BHP	1.17	1.25	1.42	1.56	1.79						
4700	2293	RPM	644	664	704	748	798						
		BHP	1.47	1.55	1.72	1.90	2.09						
5050	2463	RPM	688	708	744	784	823	822	942				
		BHP	1.80	1.90	2.08	2.26	2.44	2.71	2.97				
5400	2634	RPM	734	752	786	824	860	900					
		BHP	2.19	2.29	2.49	2.70	2.88	3.10					
5750	2805	RPM	778	796	828	862							
		BHP	2.62	2.74	2.94	3.16							
6100	2976	RPM	824										
		BHP	3.13										

Performance certified is for installation Type B - free inlet, ducted outlet.
 Performance ratings (bhp) does not included transmission losses.
 Performance ratings do not include the effects of accessories.

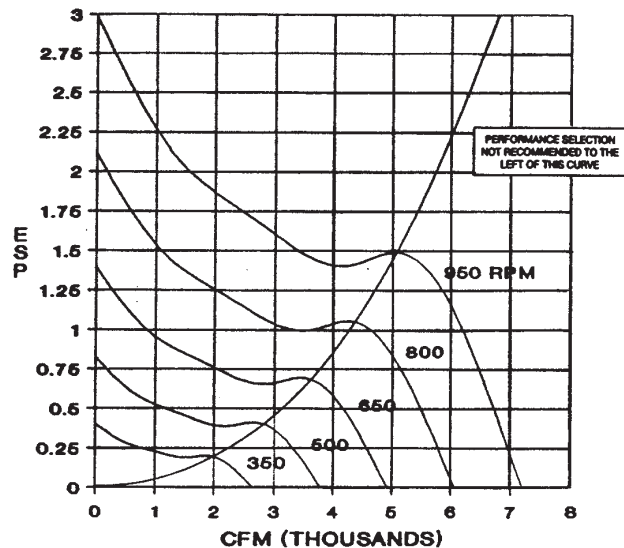
The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{W0} and L_{W0A} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS									
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA	
350	.125	69	65	62	61	59	59	52	46	65	
	.250	65	61	59	58	56	55	48	40	61	
500	.125	86	77	73	70	70	69	66	60	75	
	.250	84	75	71	68	68	67	64	57	74	
	.500	79	71	68	66	65	63	59	52	70	
650	.125	97	84	80	77	76	75	74	69	82	
	.250	97	84	79	77	76	74	73	69	82	
	.550	93	81	77	74	73	72	70	64	79	
800	.750	90	78	75	73	71	69	68	60	77	
	.125	102	93	86	82	80	80	79	75	88	
	.250	102	92	85	82	80	79	79	75	87	
	.500	101	91	85	82	79	79	78	74	87	
	.750	98	89	83	80	77	77	76	70	84	
950	1.000	95	86	80	78	75	75	73	67	82	
	1.250	94	86	80	78	75	74	73	67	82	
	.125	105	100	91	87	84	84	83	80	92	
	.250	105	100	90	87	84	84	83	80	92	
	.500	104	99	90	86	83	83	82	79	92	
950	.750	103	98	89	86	83	83	82	78	91	
	1.000	101	96	88	84	82	81	80	76	89	
	1.250	99	94	86	83	80	80	78	74	88	
	1.500	97	93	85	82	79	79	77	73	86	

PERFORMANCE CURVES



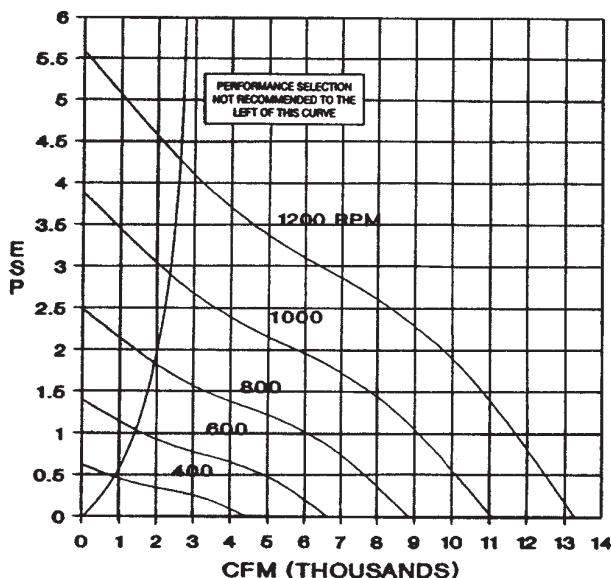
VSBB/VHBB - 18 Max. Fan RPM = 1450 Max. Motor Frame = 184T Tip Speed (Ft./Min.) = RPM x 4.84

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)								
			0.125	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000
3100	1080	RPM	350	404	508	596	670	734	790	842	892
		BHP	.33	.40	.60	.84	1.08	1.33	1.58	1.85	2.14
3650	1272	RPM	386	436	532	618	692	756	816	868	916
		BHP	.46	.56	.79	1.06	1.33	1.60	1.91	2.20	2.49
4200	1463	RPM	429	472	560	638	712	778	836	890	940
		BHP	.67	.77	1.03	1.29	1.61	1.93	2.24	2.57	2.88
4750	1655	RPM	474	514	592	666	732	798	858	912	962
		BHP	.93	1.06	1.33	1.63	1.92	2.28	2.64	3.01	3.38
5300	1847	RPM	520	556	626	696	760	818	878	932	983
		BHP	1.27	1.40	1.69	2.03	2.36	2.67	3.09	3.46	3.88
5850	2038	RPM	566	600	662	722	788	845	895	952	
		BHP	1.67	1.82	2.12	2.46	2.84	3.20	3.48	3.99	
6400	2230	RPM	613	644	702	760	818	874	926	974	
		BHP	2.15	2.31	2.64	3.00	3.40	3.81	4.22	4.60	
6950	2422	RPM	660	689	744	796	852	895	954	1000	
		BHP	2.71	2.89	3.26	3.63	4.07	4.28	4.92	5.31	
7500	2613	RPM	708	735	787	835	885	936			
		BHP	3.38	3.58	3.97	4.36	4.79	5.26			
8050	2805	RPM	756	782	830	876					
		BHP	4.15	4.37	4.78	5.20					
8600	2297	RPM	804	828							
		BHP	5.02	5.25							

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 Performance rating (bhp) does not include transmission losses.
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The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.
 Values shown are for outlet L_{WO} and L_{WOA} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

PERFORMANCE CURVES



SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS									
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA	
400	.125	74	70	69	67	66	63	58	53	70	
	.250	73	68	66	65	64	60	54	48	68	
	.500	73	66	64	62	62	58	51	43	68	
600	.125	90	81	79	79	75	75	71	66	82	
	.250	89	80	79	78	75	74	70	65	81	
	.500	89	79	77	76	73	73	68	62	79	
	.750	90	78	74	73	71	70	65	57	77	
	1.00	91	77	74	73	70	70	64	57	76	
800	.125	98	91	86	86	83	82	80	75	89	
	.250	97	90	86	85	83	82	79	74	89	
	.500	96	90	85	84	82	81	78	73	88	
	.750	95	89	85	83	81	80	77	71	87	
	1.000	96	89	83	81	80	79	75	70	86	
	1.250	98	88	82	80	78	78	74	67	85	
	1.500	98	88	81	79	77	77	73	66	84	
1.750	98	88	81	79	77	77	73	66	84		
1000	.125	102	99	92	91	90	87	86	82	95	
	.250	101	99	92	90	90	87	86	81	95	
	.500	101	98	91	90	89	86	85	81	94	
	.750	100	98	91	89	88	86	84	80	94	
	1.000	99	97	90	89	87	85	84	79	93	
	1.250	99	97	90	88	87	84	83	78	92	
	1.500	100	97	89	87	86	84	82	77	92	
	1.750	101	97	89	86	85	83	81	75	91	
1200	.125	105	106	96	95	95	91	91	87	100	
	.250	105	106	96	95	95	91	91	87	100	
	.500	104	106	96	94	94	90	90	86	99	
	.750	104	105	96	94	94	90	90	86	99	
	1.000	103	105	95	94	93	90	89	85	98	
	1.250	103	104	95	93	93	89	89	85	98	
	1.500	102	104	95	93	92	89	89	84	98	
	1.750	102	103	95	92	92	88	88	83	97	
2.000	103	104	94	92	91	88	88	83	97		

Filtered Supply Vents

VSBB/VHBB - 20 Max. Fan RPM = 1100 Max. Motor Frame = 215T Tip Speed (Ft./Min.) = RPM x 5.35

CFM	O.V.		EXTERNAL STATIC PRESSURE (Inches W. G.)								
			0.125	0.250	0.500	0.750	1.000	1.250	1.500	1.750	2.000
4450	1047	RPM	280	328	412	486	552	610	662	712	
		BHP	.39	.50	.75	1.03	1.34	1.65	1.94	2.31	
5175	1218	RPM	308	354	430	499	562	620	672	720	766
		BHP	.56	.70	.98	1.28	1.61	1.98	2.32	2.66	3.07
5900	1388	RPM	338	380	452	516	574	630	682	730	774
		BHP	.78	.94	1.25	1.59	1.92	2.31	2.71	3.11	3.47
6625	1559	RPM	370	408	476	536	592	642	692	740	784
		BHP	1.06	1.24	1.58	1.96	2.36	2.69	3.11	3.57	3.99
7350	1729	RPM	402	436	500	558	608	660	706	752	796
		BHP	1.40	1.58	1.97	2.38	2.76	3.23	3.64	4.14	4.62
8075	1900	RPM	436	468	526	582	632	676	723	766	806
		BHP	1.82	2.04	2.44	2.89	3.35	3.75	4.25	4.72	5.17
8800	2071	RPM	470	498	553	606	654	698	740	782	822
		BHP	2.32	2.53	2.98	3.46	3.93	4.41	4.90	5.40	5.92
9525	2241	RPM	504	530	582	632	678	722	762	800	840
		BHP	2.90	3.13	3.62	4.13	4.62	5.18	5.69	6.21	6.30
10250	2412	RPM	538	562	612	658	704	746	784	822	856
		BHP	3.56	3.81	4.35	4.88	5.46	6.02	6.53	7.13	7.63
10975	2582	RPM	572	596	642	686	728	770	808		
		BHP	4.32	4.61	5.17	5.75	6.30	6.93	7.51		
11700	2753	RPM	608	630	672	714	754				
		BHP	5.23	5.52	6.08	6.69	7.28				
12425	2924	RPM	642	664	704	744					
		BHP	6.19	6.54	7.15	7.78					
13150	3094	RPM	678	698							
		BHP	7.33	7.67							

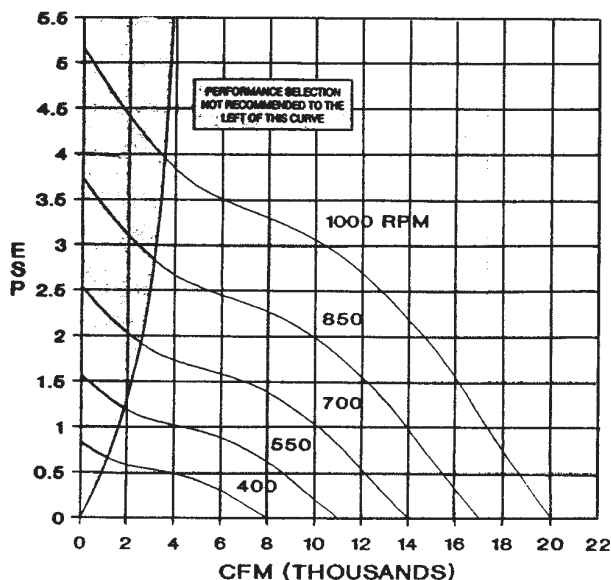
Performance certified is for installation Type B - free inlet, ducted outlet.

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The sound power level ratings shown are in decibels, referred to 10⁻¹² watts.

Values shown are for outlet L_{W0} and L_{W0A} sound power levels for installation type B free inlet, ducted outlet. Ratings include the effects of duct end correction.

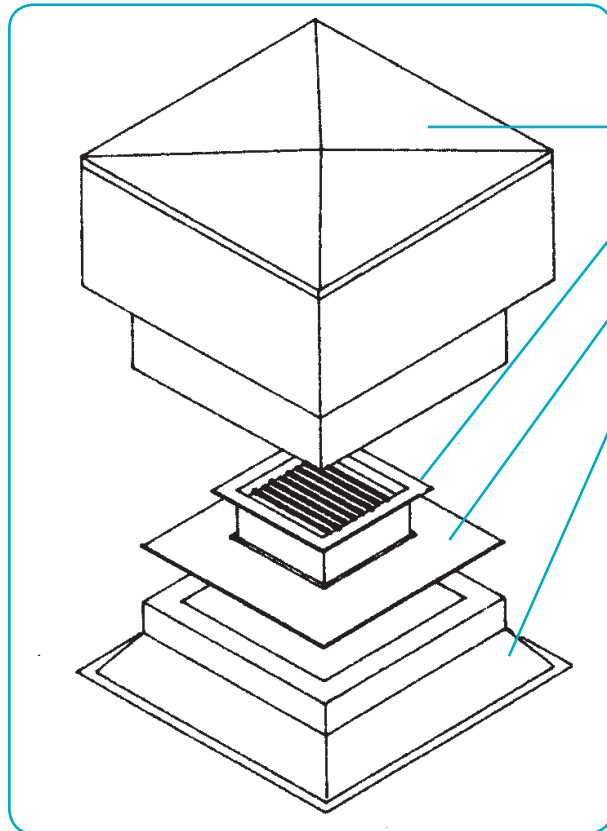
PERFORMANCE CURVES



SOUND DATA

RPM	ESP	SOUND POWER BY OCTAVE BANDS								
		LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8	LWA
400	.125	83	80	78	77	75	71	66	61	80
	.250	81	78	76	75	73	69	63	58	77
	.500	80	74	72	70	67	63	58	52	72
550	.125	94	89	86	86	84	82	77	71	89
	.250	93	88	85	85	83	80	75	70	88
	.500	91	86	83	82	80	78	72	67	85
	.750	90	84	80	79	76	74	69	63	82
700	1.00	90	84	79	78	75	73	68	62	81
	.125	100	96	93	91	90	89	84	79	95
	.250	99	95	92	91	89	88	83	78	95
	.500	98	94	91	89	88	86	82	77	93
	.750	96	93	89	88	86	84	80	75	92
	1.000	96	92	88	86	84	82	78	72	90
	1.250	96	91	86	84	82	80	76	70	88
850	1.500	96	91	85	84	81	79	75	69	87
	1.750	96	91	85	84	81	79	75	69	87
	.125	103	102	98	96	95	93	90	85	100
	.250	103	101	97	96	95	93	90	84	100
	.500	102	100	96	95	94	92	88	83	99
	.750	101	99	96	94	93	91	87	82	99
	1.000	100	99	95	93	92	90	86	81	97
	1.250	100	98	94	92	90	88	85	80	96
1000	1.500	99	98	93	91	89	87	83	78	94
	1.750	99	97	92	89	88	85	82	77	93
	2.000	99	97	91	88	86	84	80	75	92
	.125	106	107	102	100	99	97	95	90	105
	.250	106	107	102	100	99	97	95	90	104
	.500	105	106	101	99	98	96	94	89	104
	.750	104	105	100	98	98	96	93	88	103
	1.000	104	104	100	98	97	95	92	87	102
1000	1.250	103	104	99	97	96	94	91	86	101
	1.500	103	103	99	96	95	93	91	85	101
	1.750	102	103	98	96	95	92	89	84	100
	2.000	102	103	98	95	94	91	88	83	99

TYPICAL INSTALLATION



VSBB filtered supply unit with pre-punched mounting holes for securing unit to roof curb.

Supply duct (*by others*).

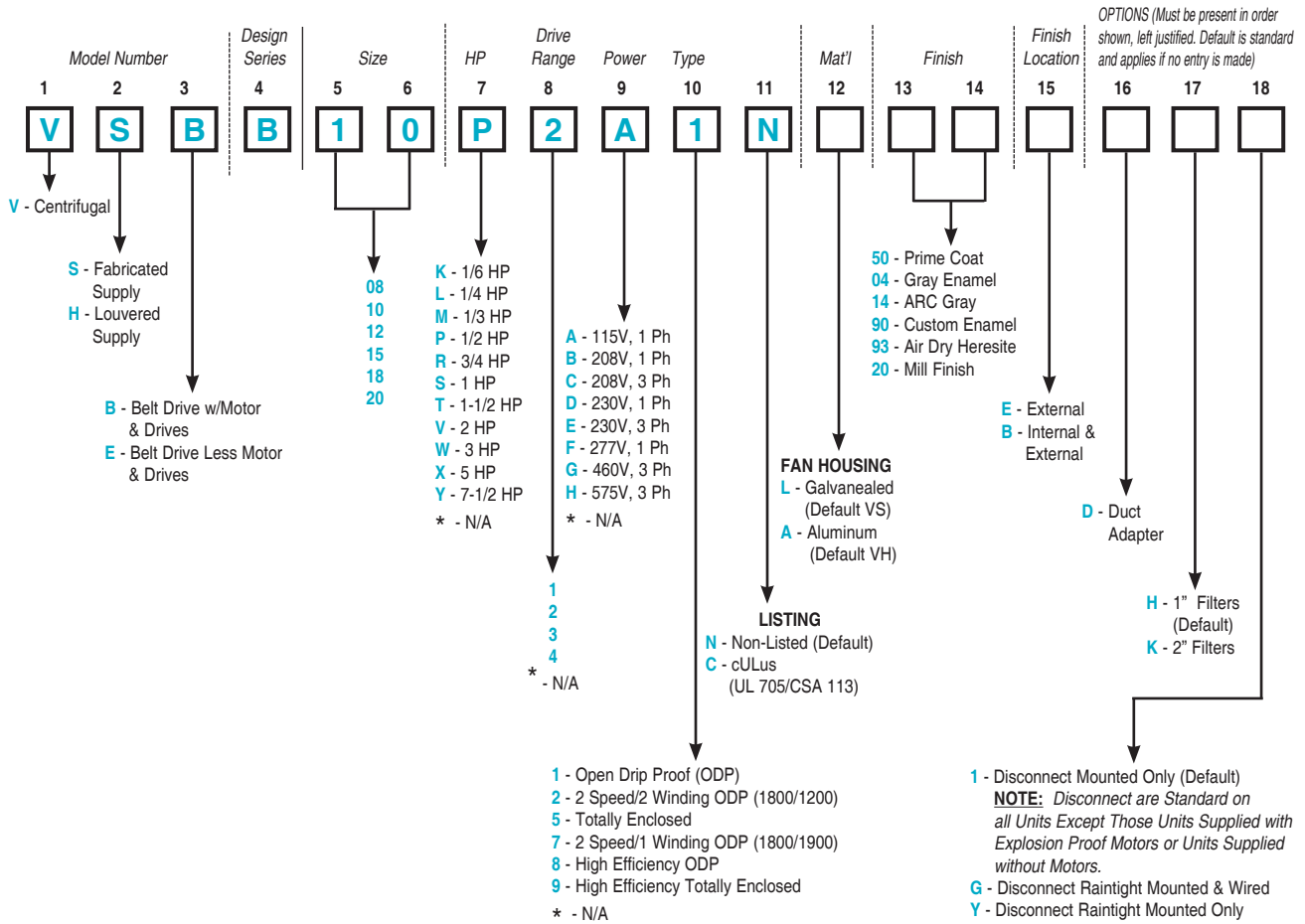
Duct adapter (*optional*) facilitates completion of supply duct prior to setting unit on curb.

Roof curb - shown without field installed roofing felts and flashing.

NOTES:

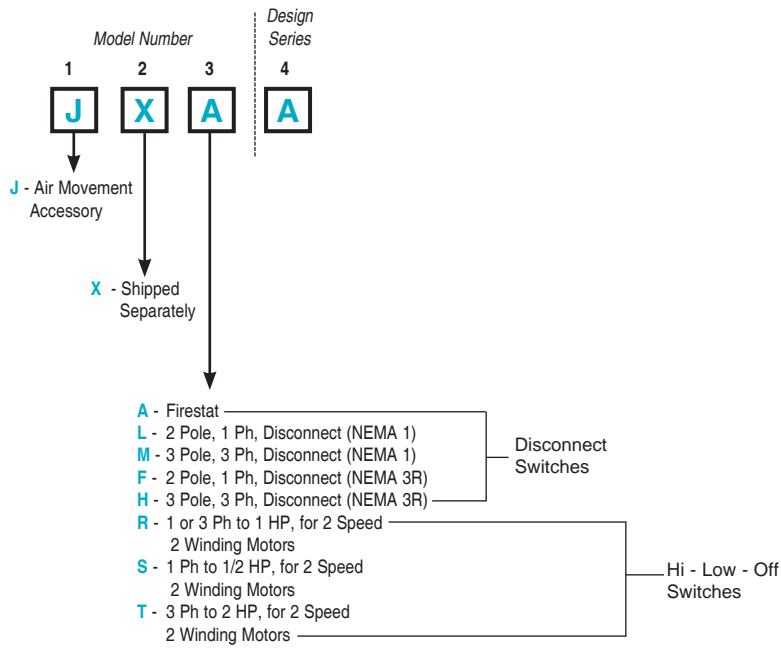
1. For locations where extreme snow depths may occur, an extended height roof curb should be specified. Also, condensate pans or ductwork drains may be required.
2. For restaurant applications (and other installations) a distance of 10 feet to the nearest exhaust fan may be required. Consult your local code authority for all installation requirements.
3. Installations with backdraft dampers require a duct access door, a roof curb extension with access panel, or other means of access to service the damper.

▼ Centrifugal Filtered Supply — Belt Drive

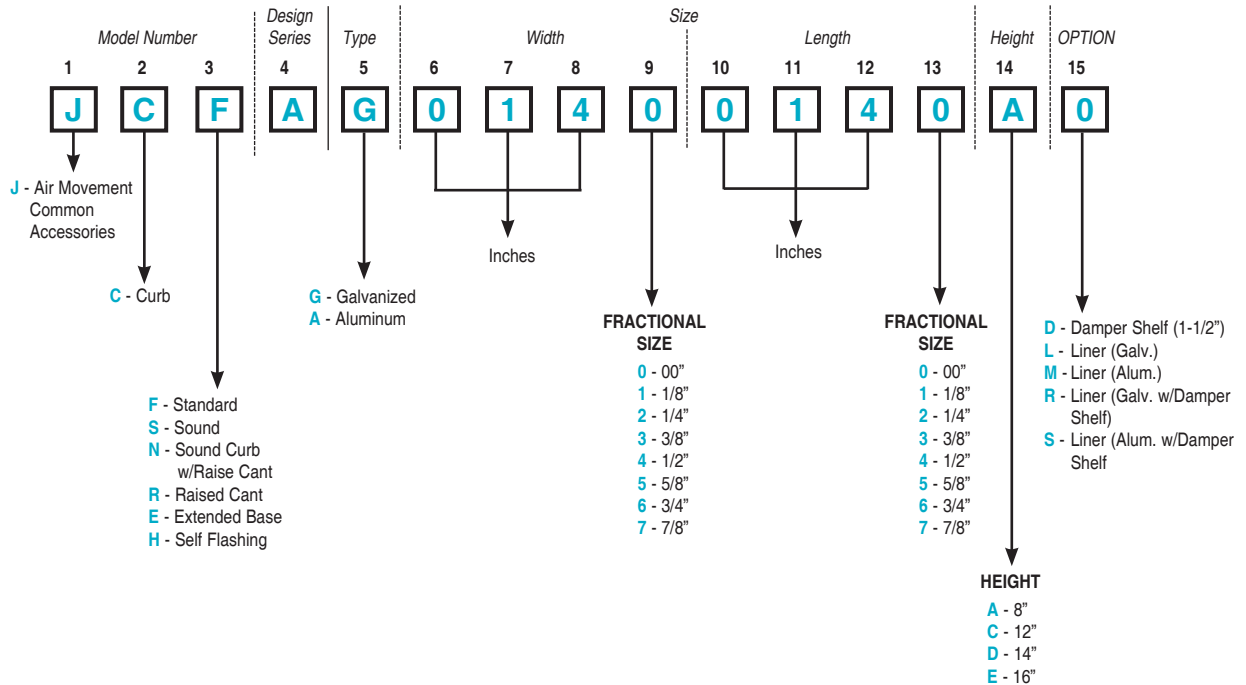


Filtered Supply Vents

▼ **Electric Accessories**

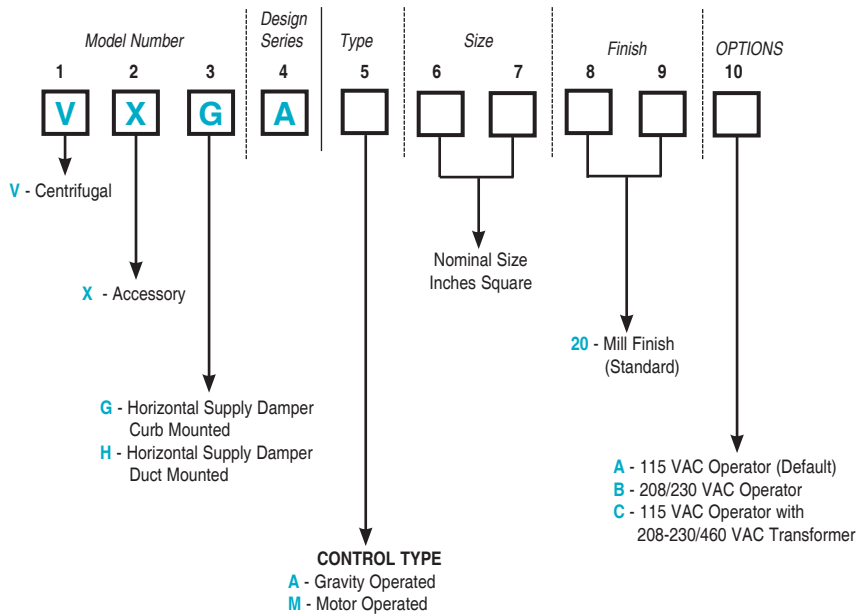


▼ **Curbs**



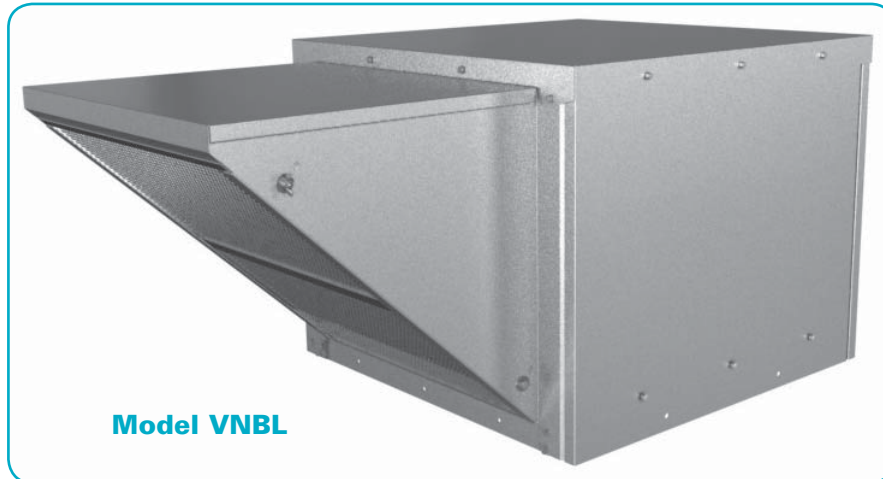
Filtered Supply Vents

▼ Dampers



Filtered Supply Vents

FILTERED SUPPLY CENTRIFUGAL - BELT DRIVE



Model VNBL

The Carnes model VNBL is a belt drive, roof mounted supply air fan designed to provide filtered, non-tempered air for a variety of applications.

- Available in sizes from 10” to 20” with CFM capabilities ranging from 1,000 to 13,000 and static pressures up to 1.5 inches W. G.
- Double width, forward curved blowers are designed to maximize efficiency.
- Washable aluminum filters are standard to provide long operational life.
- All VNBL units are licensed to bear the AMCA seal to assure accurate performance specifications. Testing is performed in an AMCA Accredited Laboratory.
- VNBL units incorporate the Carnes SLIDE-RITE design. This drastically reduces the amount of fasteners required while resulting in an easy to maintain, durable, aesthetically superior design.
- The optional UL/cUL 705 listing insures that the units meet strict manufacturing and operational safety guidelines.

▼ TYPICAL SPECIFICATIONS

- All fans bear the AMCA certified ratings seal for sound and air performance.
- Unit base has pre-punched mounting holes. Bottom pan has conduit opening to facilitate field power wiring.
- Blower and motor assembly is mounted on rubber shear vibration isolators.
- Permanent, washable 1” aluminum filters are standard.
- Disconnect (NEMA 1) is factory mounted within the unit housing.
- Blowers are DWDI-FC constructed of heavy-gauge steel, statically and dynamically balanced for vibration free operation.
- Fan shaft is ground and polished and mounted in heavy-duty, permanently lubricated and sealed ball bearings with minimum average life $L_{50} = 200,000$ hours at operating speed.
- Drives are selected for minimum of 150% of motor horsepower. Motors are adjustable for final system balancing.
- Motors are permanently lubricated sealed ball bearing type and carefully matched to the specified fan performance, enclosure type and electrical specification.
- Motor mounting base is adjustable for proper belt maintenance. Belts are non-static conducting, oil resistant V-belts.
- Motors and drives are factory mounted. All units are factory run-tested and adjusted to proper RPM.

CONSTRUCTION FEATURES

GALVANIZED STEEL HOUSING

Encloses Blower, Motor, Drives and Filters

ADJUSTABLE MOTOR PLATE

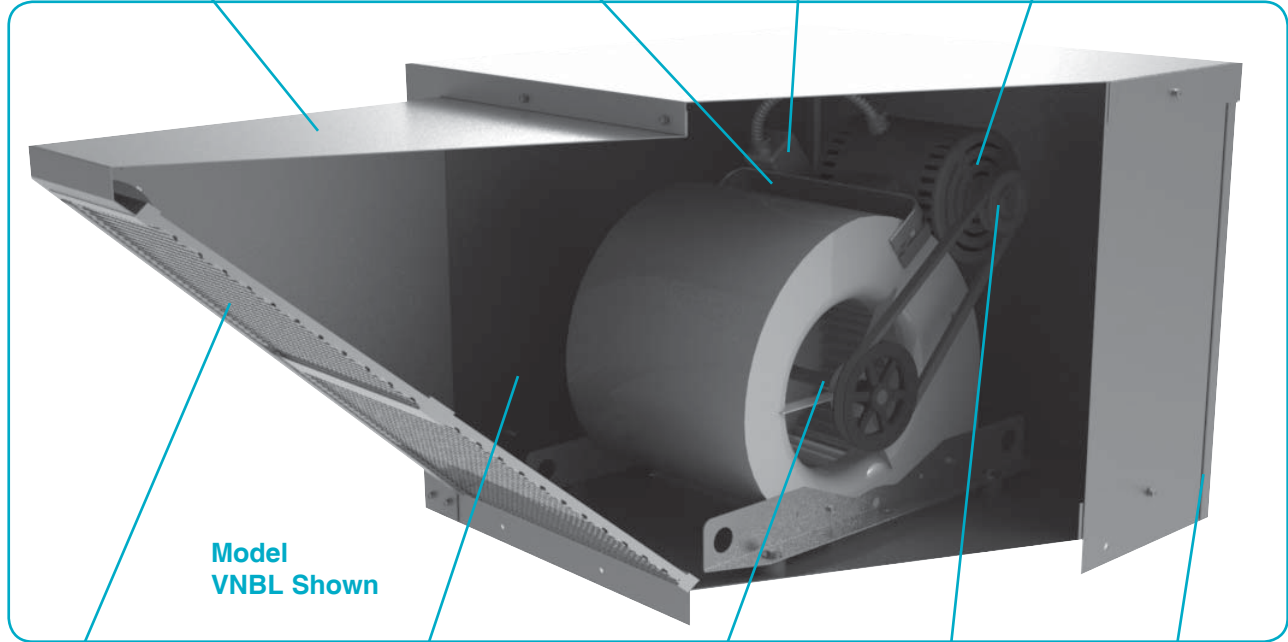
Pivots for Maintaining Proper Belt Tension

DISCONNECT SWITCH

Standard On All Units
NEMA 1 Mounted

MOTORS

Heavy-duty Ball Bearing Motors Matched To The Specified Fan Load



Model VNBL Shown

FILTERS

Permanent/Washable
1 Inch Aluminum
Easily Removable With Pivoting Rails

INTERNAL CONDUIT OPENING

Facilities Field Wiring

BEARINGS

Permanently Sealed and Lubricated Average Life
L₅₀ = 200,000 Hours

ADJUSTABLE MOTOR SHEAVE

For Final System Balancing

CARNES SLIDE-RITE DESIGN

Reduces Fasteners

Filtered Supply Vents

AMCA LICENSED AIR and SOUND DATA

Licensed to bear the AMCA Seal for both air and sound.

The Carnes Company certifies that the Model VNBL 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



UL OPTION

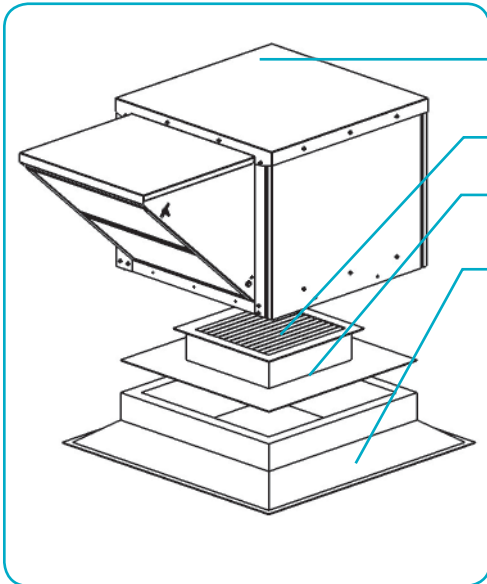
Model VNBL is listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



POWER VENTILATOR

COMPUTERIZED FAN SELECTION: Make the right choice with Carnes FAN-C-LECT™. The Model VNBL, as well as the comprehensive offering of CARNES powered ventilators, are included in CARNES user friendly fan selection program.

TYPICAL INSTALLATION

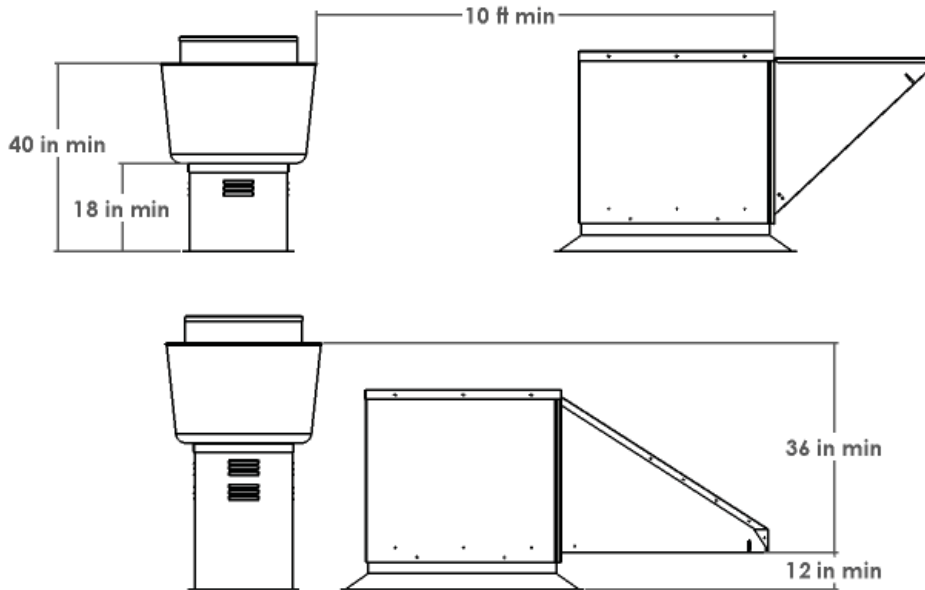


- VNBL filtered supply unit with pre-punched mounting holes for securing unit to roof curb.
- Supply duct *(by others)*.
- Duct adapter *(optional)* facilitates completion of supply duct prior to setting unit on curb.
- Roof curb - shown without field installed roofing felts and flashing.

NOTES:

1. For locations where extreme snow depths may occur, an extended height roof curb should be specified. Also, condensate pans or ductwork drains may be required.
2. Installations with backdraft dampers require a duct access door, a roof curb extension with access panel, or other means of access to service the damper.

SYSTEM DESIGN CONSIDERATIONS



When using the VNBL for kitchen supply applications it is recommended that supply CFM be 80-90% of exhaust CFM. This creates a light vacuum in the kitchen keeping odors out of the dining area.

NFPA guidelines for restaurant supply and exhaust applications:

- Outlet of exhaust fan must be minimum 40 inches from roof.
- Distance from roof to top of curb cap must be minimum 18 inches.
- Distance from outlet of exhaust to intake of supply must be a minimum of 10 feet.
 - Alternately, outlet of exhaust must be minimum 36 inches from top of supply intake.

**Consult your local code authority for all installation requirements.*

VNBL - 10

Max. Fan
RPM = 1800

Max. Motor
Frame = 145T

Tip Speed (Ft./Min.)
= RPM x 2.78

Unit Weight
(Less Motor) = 180 Lbs.

RPM Range/ Motor HP	RPM	0		0.125		0.25		0.5		0.75		1		1.25	
		CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones
K1 (1/6) L1 (1/4) M1 (1/3) P1 (1/2) R1 (3/4)	500	1577	0.16 10	1235	0.12 8.5										
	550	1735	0.21 11	1427	0.17 11	1019	0.11 8.0								
	600	1892	0.27 14	1612	0.23 13	1299	0.17 11								
	650	2050	0.35 16	1794	0.30 16	1518	0.24 14								
L2 (1/4) M2 (1/3) P2 (1/2) R2 (3/4) S2 (1) T2 (1-1/2)	700	2208	0.44 19	1971	0.39 18	1719	0.33 18								
	750	2365	0.54 21	2146	0.49 21	1913	0.42 21								
	800	2523	0.65 23	2318	0.60 23	2101	0.53 24	1576	0.37 23						
	850	2681	0.78 26	2487	0.72 26	2286	0.65 27	1845	0.49 25						
P3 (1/2) R3 (3/4) S3 (1) T3 (1-1/2) V3 (2) W3 (3)	900	2838	0.93 28	2656	0.87 29	2467	0.80 31	2069	0.63 31						
	950	2996	1.09 31	2823	1.03 32	2646	0.96 34	2272	0.79 36	1745	0.56 30				
	1000	3154	1.27 34	2990	1.20 36	2824	1.13 37	2471	0.96 42	2041	0.75 36				
	1050	3311	1.47 36	3155	1.40 39	2998	1.33 41	2665	1.15 46	2307	0.95 43				
	1100	3469	1.69 40	3320	1.62 42	3170	1.54 44	2854	1.36 51	2524	1.15 50	2037	0.88 43		
S4 (1) T4 (1-1/2) V4 (2) W4 (3)	1150	3627	1.93 43	3485	1.86 45	3341	1.78 48	3041	1.59 55	2728	1.38 57	2331	1.13 50		
	1200	3784	2.20 46	3648	2.12 49	3511	2.03 52	3225	1.84 59	2928	1.63 66	2599	1.39 59	2054	1.04 52

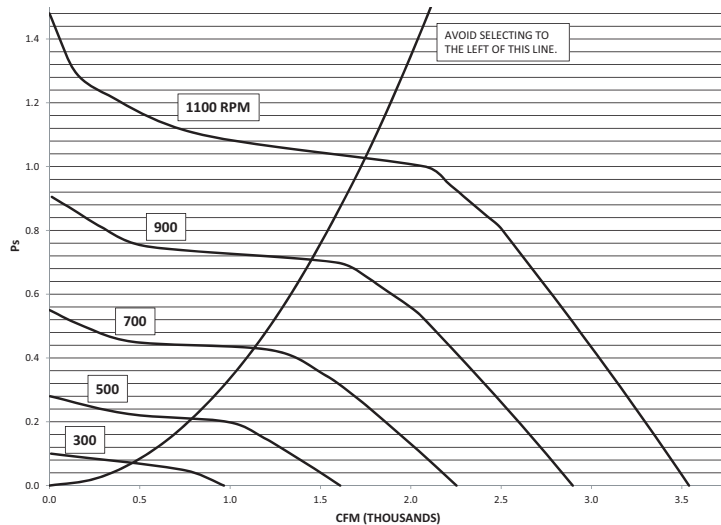
Performance and sound certification is for installation type B - free inlet, ducted outlet.

Performance ratings (bhp) do not include transmission losses.

Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in sones at 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for: installation type B: free inlet hemispherical sone levels.

PERFORMANCE CURVES



VNBL - 12

Max. Fan
RPM = 1500

Max. Motor
Frame = 145T

Tip Speed (Ft./Min.)
= RPM x 3.30

Unit Weight
(Less Motor) = 230 Lbs.

RPM Range/ Motor HP	RPM	0		0.125		0.25		0.5		0.75		1	
		CFM Sones	BHP	CFM Sones	BHP	CFM Sones	BHP	CFM Sones	BHP	CFM Sones	BHP	CFM Sones	BHP
L1 (1/4) M1 (1/3) P1 (1/2) R1 (3/4) S1 (1)	500	2505 12	0.34	2105 10	0.27	1628 7.6	0.19						
	550	2755 14	0.45	2406 12	0.38	2000 10	0.30						
	600	3005 17	0.58	2700 15	0.51	2316 13	0.41						
	650	3256 19	0.74	2975 18	0.66	2624 16	0.56	1776 12	0.34				
M2 (1/3) P2 (1/2) R2 (3/4) S2 (1) T2 (1-1/2) V2 (2)	700	3506 21	0.93	3246 20	0.84	2934 19	0.73	2243 15	0.51				
	750	3757 22	1.14	3515 23	1.05	3237 21	0.94	2647 18	0.72				
	800	4007 26	1.39	3782 25	1.29	3534 24	1.18	2970 21	0.93	2216 17	0.64		
	850	4258 29	1.66	4046 28	1.56	3826 27	1.45	3285 24	1.18	2686 20	0.90		
S3 (1) T3 (1-1/2) V3 (2) W3 (3)	900	4508 32	1.97	4309 31	1.86	4102 29	1.75	3592 27	1.45	3099 23	1.21		
	950			4571 34	2.20	4375 33	2.08	3903 30	1.78	3447 27	1.52	2825 23	1.16

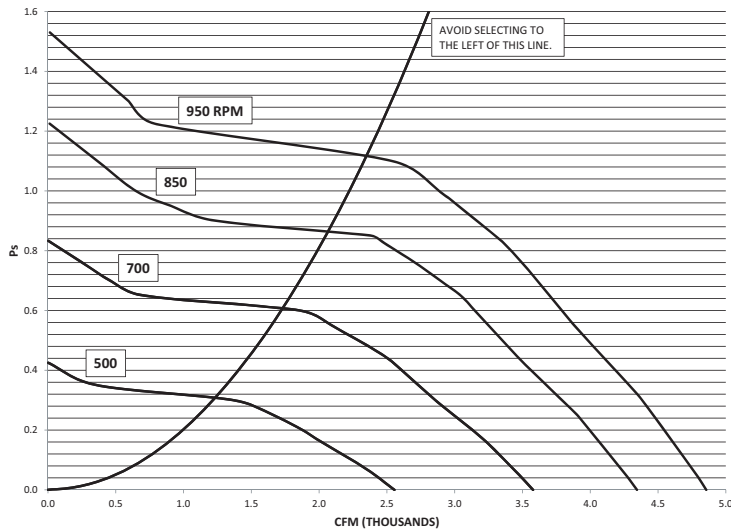
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PERFORMANCE CURVES



Filtered Supply Vents

VNBL - 15

Max. Fan
RPM = 1200

Max. Motor
Frame = 184T

Tip Speed (Ft./Min.)
= RPM x 3.93

Unit Weight
(Less Motor) = 250 Lbs.

RPM Range/ Motor HP	RPM	0		0.125		0.25		0.5		0.75		1	
		CFM Sones	BHP	CFM Sones	BHP	CFM Sones	BHP	CFM Sones	BHP	CFM Sones	BHP	CFM Sones	BHP
K1 (1/6) L1 (1/4) M1 (1/3) P1 (1/2) R1 (3/4) S1 (1)	300	2371 6.4	0.16	1510 3.9	0.09								
	350	2766 8.4	0.26	2077 6.3	0.18								
	400	3161 11	0.38	2570 8.6	0.29	1783 6.6	0.18						
	450	3556 13	0.55	3018 11	0.44	2454 10	0.34						
M2 (1/3), P2 (1/2), R2 (3/4), S2 (1), T2 (1-1/2)	500	3952 16	0.75	3455 14	0.63	2989 13	0.52						
	550	4347 18	1.00	3882 17	0.86	3491 16	0.75	2247 12	0.43				
P3 (1/2), R3 (3/4), S3 (1), T3 (1-1/2), V3 (2)	600	4742 21	1.30	4313 20	1.14	3945 19	1.02	3020 16	0.72				
	650	5137 24	1.65	4742 23	1.48	4389 22	1.34	3627 19	1.05				
S4 (1), T4 (1-1/2), V4 (2), W4 (3), X4 (5)	700	5532 27	2.06	5166 26	1.88	4824 26	1.72	4153 23	1.42	3312 19	1.02		
	750	5927 14	2.53	5586 30	2.34	5254 29	2.16	4664 27	1.86	3888 23	1.46		
T5 (1-1/2) V5 (2) W5 (3) X5 (5)	800	6322 34	3.08	6003 34	2.87	5679 30	2.67	5140 30	2.36	4484 28	1.96	3566 24	1.47
	850					6113 37	3.25	5592 36	2.91	5011 32	2.52	4289 29	2.06

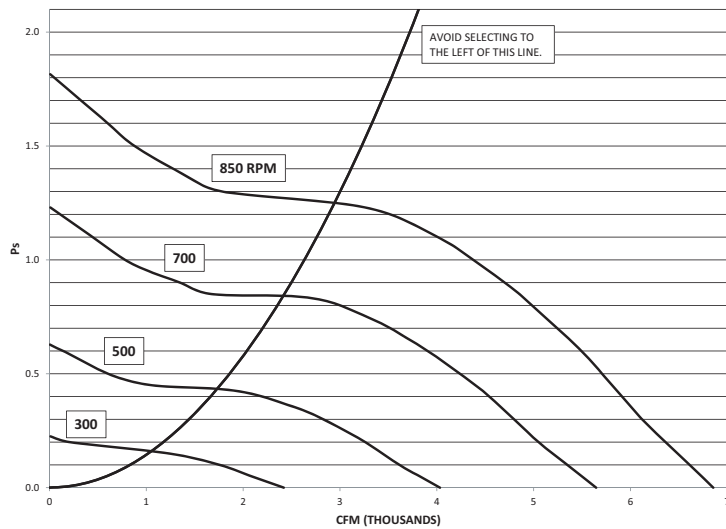
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PERFORMANCE CURVES



Filtered Supply Vents

VNBL - 18

Max. Fan
RPM = 1000

Max. Motor
Frame = 184T

Tip Speed (Ft./Min.)
= RPM x 4.72

Unit Weight
(Less Motor) = 310 Lbs.

RPM Range/ Motor HP	RPM	0		0.125		0.25		0.5		0.75		1		1.25		1.5	
		CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones
K1 (1/6) L1 (1/4) M1 (1/3) P1 (1/2) R1 (3/4) S1 (1) T1 (1-1/2)	300	3170	0.24 6.6	2307	0.17 4.5												
	350	3698	0.39 8.6	3003	0.30 7												
	400	4227	0.58 11	3622	0.48 10	2878	0.37 7.4										
	450	4755	0.82 14	4221	0.71 13	3634	0.59 11										
R2 (3/4) S2 (1) T2 (1-1/2) V2 (2)	500	5283	1.13 18	4806	1.00 17	4310	0.88 15										
	550	5811	1.50 22	5381	1.36 21	4931	1.22 19	3785	0.90 15								
S3 (1), T3 (1-1/2), V3 (2), W3 (3), X3 (5)	600	6340	1.95 25	5948	1.80 24	5536	1.64 22	4615	1.33 18								
	650	6868	2.48 30	6510	2.31 28	6130	2.15 27	5332	1.82 23	4199	1.39 18						
T4 (1-1/2), V4 (2), W4 (3), X4 (5), Y4 (7-1/2)	700	7396	3.09 32	7067	2.92 31	6714	2.74 29	6006	2.40 26	5113	1.99 21						
	750	7925	3.81 37	7620	3.62 35	7291	3.42 34	6631	3.05 31	5872	2.65 27	4838	2.13 22				
V5 (2) W5 (3) X5 (5) Y5 (7-1/2)	800	8453	4.62 43	8170	4.42 41	7862	4.21 39	7244	3.81 36	6586	3.41 33	5756	2.92 28	4592	2.24 24		
	850			8718	5.34 47	8428	5.11 45	7847	4.68 42	7263	4.27 38	6548	3.79 34	5623	3.18 29	4286	2.33 25

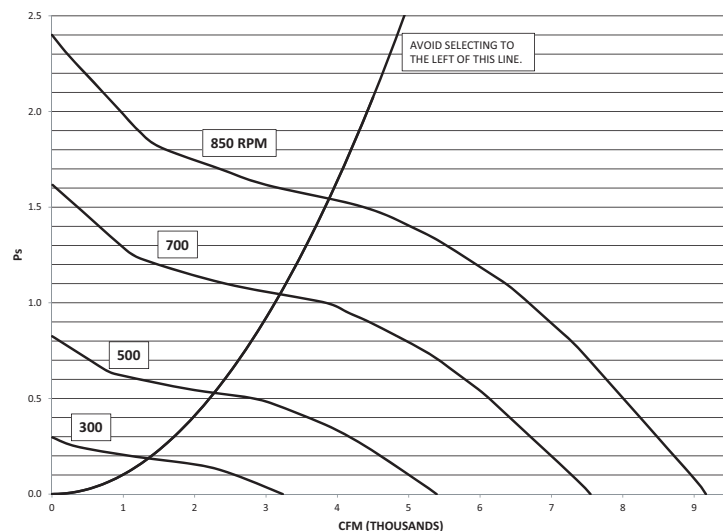
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Performance ratings do not include the effects of accessories.

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PERFORMANCE CURVES



Filtered Supply Vents

VNBL - 20

Max. Fan
RPM = 900

Max. Motor
Frame = 215T

Tip Speed (Ft./Min.)
= RPM x 5.24

Unit Weight
(Less Motor) = 550 Lbs.

RPM Range/ Motor HP	RPM	0		0.125		0.25		0.5		0.75		1		1.25		1.5	
		CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones	CFM	BHP Sones
L1 (1/4) M1 (1/3) P1 (1/2) R1 (3/4) S1 (1)	200	3602	0.19 5.1	1721	0.07 2.8												
	250	4502	0.37 7.5	3307	0.24 5.3												
	300	5403	0.64 10	4442	0.49 8.4	3214	0.32 6.9										
M2 (1/3), P2 (1/2), R2 (3/4), S2 (1), T2 (1-1/2), V2 (2)	350	6603	1.01 14	5512	0.84 12	4593	0.66 11										
	400	7204	1.51 18	6537	1.32 16	5744	1.11 15										
T3 (1-1/2) V3 (2) W3 (3) X3 (5)	450	8104	2.15 23	7515	1.94 21	6840	1.71 19	5314	1.23 17								
	500	9005	2.94 28	8479	2.71 26	7901	2.46 24	6614	1.96 22								
V4 (2) W4 (3) X4 (5) Y4 (7-1/2)	550	9905	3.92 33	9431	3.67 30	8934	3.40 28	7769	2.83 26	6476	2.25 24						
	600	10806	5.09 39	10375	4.81 36	9919	4.53 33	8883	3.90 31	7807	3.31 29	6428	2.58 28				
W5 (3) X5 (5) Y5 (7-1/2) C5 (10)	650	11706	6.47 45	11312	6.17 42	10892	5.86 39	9966	5.20 36	8976	4.54 34	7902	3.86 33	6314	2.92 30		
	700	12607	8.08 52	12245	7.76 49	11854	7.43 45	11025	6.73 41	10109	5.99 40	9185	5.32 38	8071	4.50 38	6403	3.38 34
X6 (5) Y6 (7-1/2) C6 (10)	750	13507	9.93 59	13174	9.60 55	12809	9.24 52	12065	8.52 46	11211	7.72 45	10352	6.97 43	9487	6.24 43	8352	5.29 41
	800							13074	10.56 55	12289	9.72 54	11487	8.88 52	10679	8.11 51	9789	7.26 49

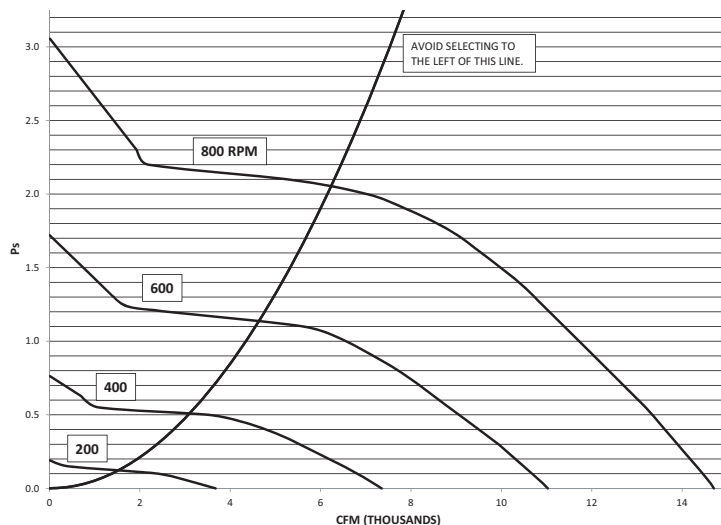
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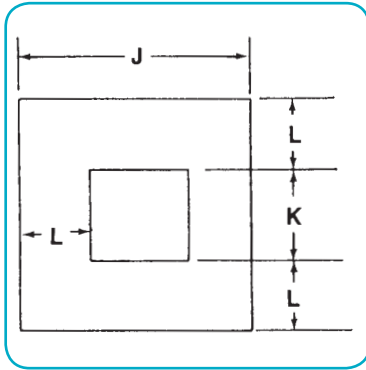
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PERFORMANCE CURVES

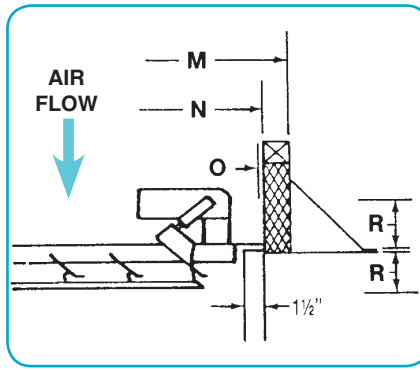


Filtered Supply Vents

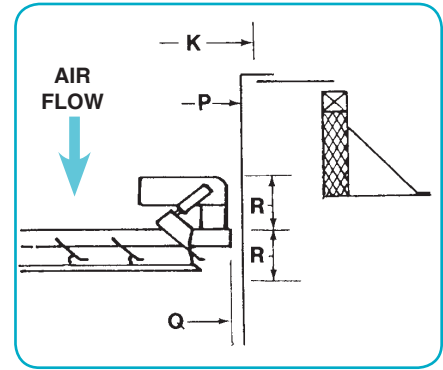
ACCESSORIES



Duct Adapter



VXGA Curb Mtd. Damper
(Requires 1-1/2" damper shelf)
Shown with optional motor pack

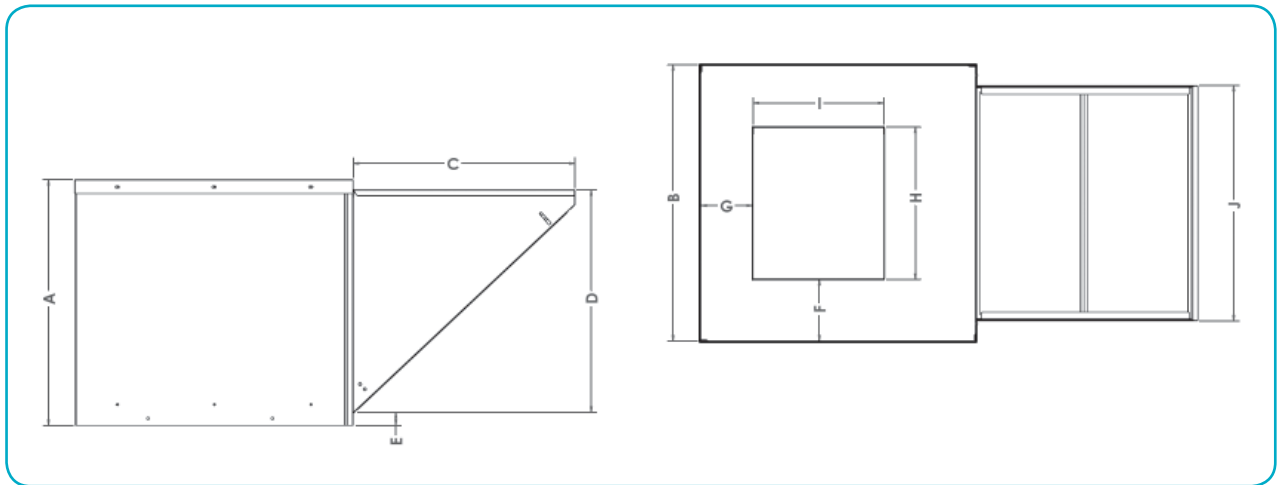


VXHA Duct Mtd. Damper
Shown with optional motor pack

DIMENSIONS LISTED IN INCHES

Unit Size	J Sq.	K Sq.	L	Roof Curb Sq.		VXGA Damper		P Duct Sq. I.D.	VXHA Damper		R Damper Clearance	1" Filters Qty. - Size
				M O.D.	N I.D.	Size	O Sq.O.D.		Size	Q Sq. O.D.		
10	28	14	7	28-1/2	25-1/2	24-1/2	24-1/4	13-3/4	14	13-1/2	7	1 - 23 x 28-1/4
12	32	16-1/2	7-3/4	32-1/2	29-1/2	28-1/2	28-1/4	16-1/4	16	16	7	2 - 19-1/4 x 27
15	32	19-1/2	6-1/4	32-1/2	29-1/2	28-1/2	28-1/4	19-1/4	19	19	7	2 - 19-1/4 x 27
18	38	25-1/2	6-1/4	38-1/2	35-1/2	34-1/2	34-1/4	25-1/4	25	25	7	3 - 14-3/16 x 33
20	44	33-1/2	5-1/4	44-1/2	41-1/2	40-1/2	40-1/4	33-1/4	33	33	7	3 - 19 x 39

DIMENSIONS

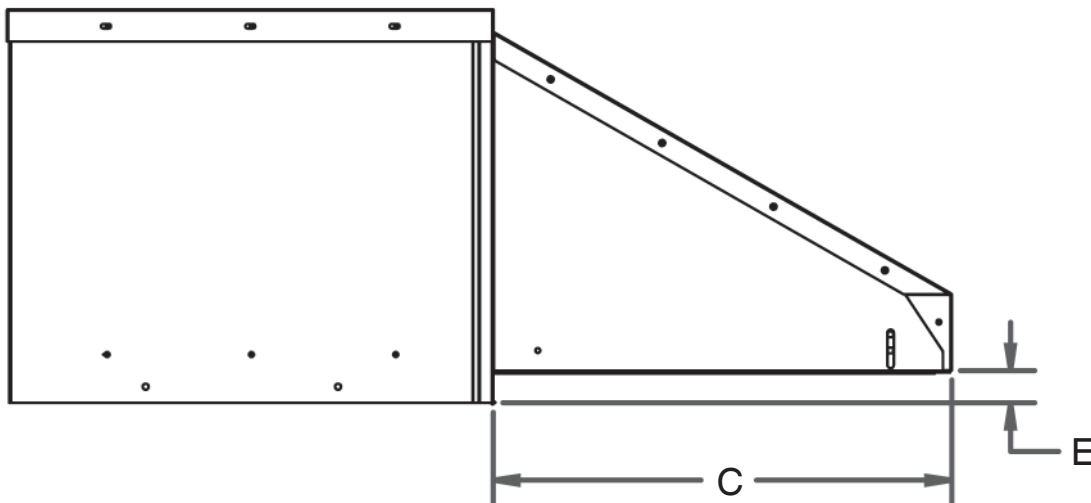


DIMENSIONS LISTED IN INCHES

Size	A	B Sq.	C	D	E	F	G	H	I	J
10	24-1/2	29-3/4	21-3/4	21-1/8	1-7/8	8-7/8	9-1/4	13-7/8	11-5/8	23-3/4
12	31-1/2	33-3/4	29	28-1/8	1-7/8	9-1/8	10-1/8	15-3/4	13-5/8	27-3/4
15	31-1/2	33-3/4	29	28-1/8	1-7/8	7-5/8	9-7/8	18-7/8	16-1/8	27-3/4
18	35-1/2	39-3/4	32-1/8	32-1/8	1-7/8	9	13-1/4	22-1/8	19-1/8	33-3/4
20	47-1/2	45-3/4	40-1/8	44-1/8	1-7/8	11-1/2	14-1/2	23	25	39-3/4

OPTIONS

90° Intake

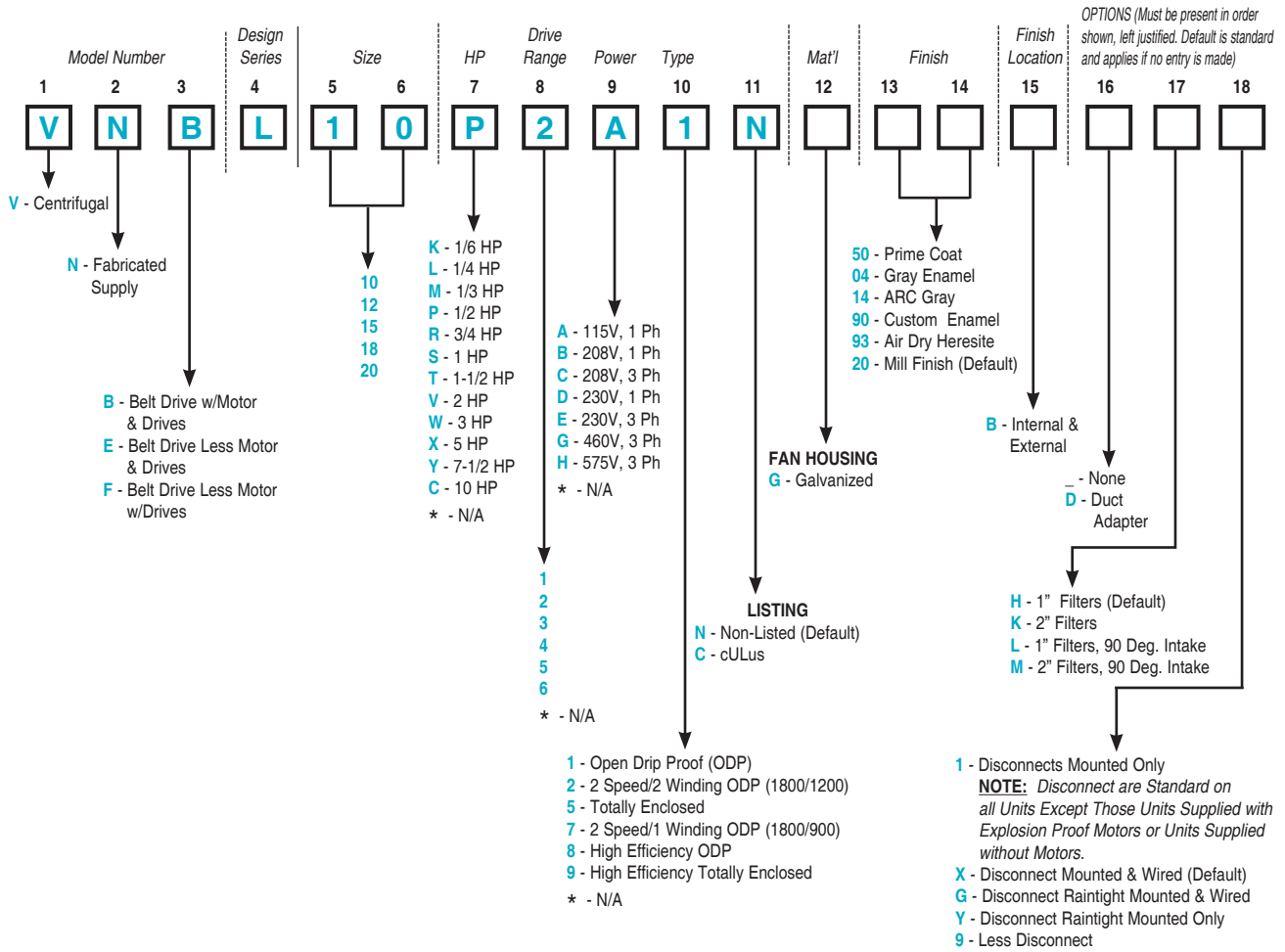


Intake must be a minimum of 12" above roof for optimum performance.

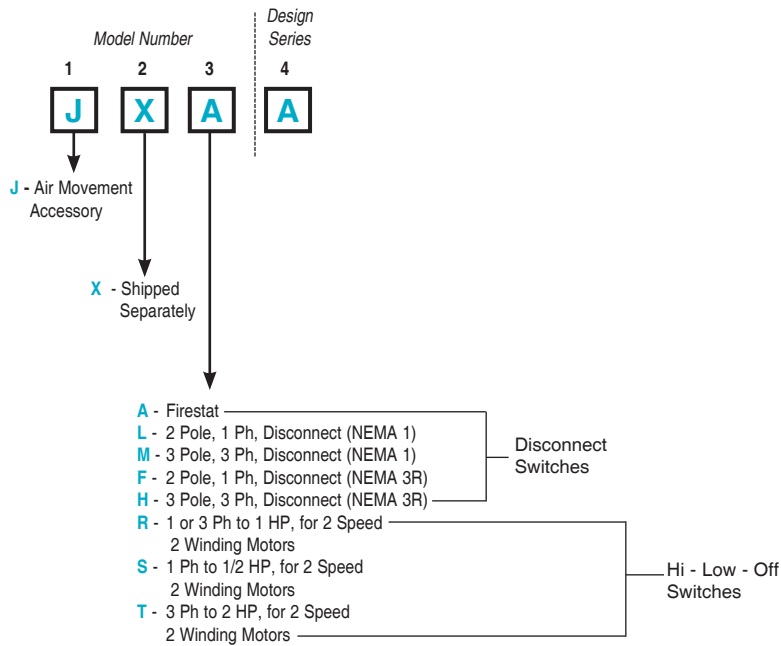
DIMENSIONS for 90° Intake

Size	C	E
10	28-5/8	1-7/8
12	38-7/8	1-7/8
15	38-7/8	1-7/8
18	42-3/4	1-7/8
20	57-1/8	1-7/8

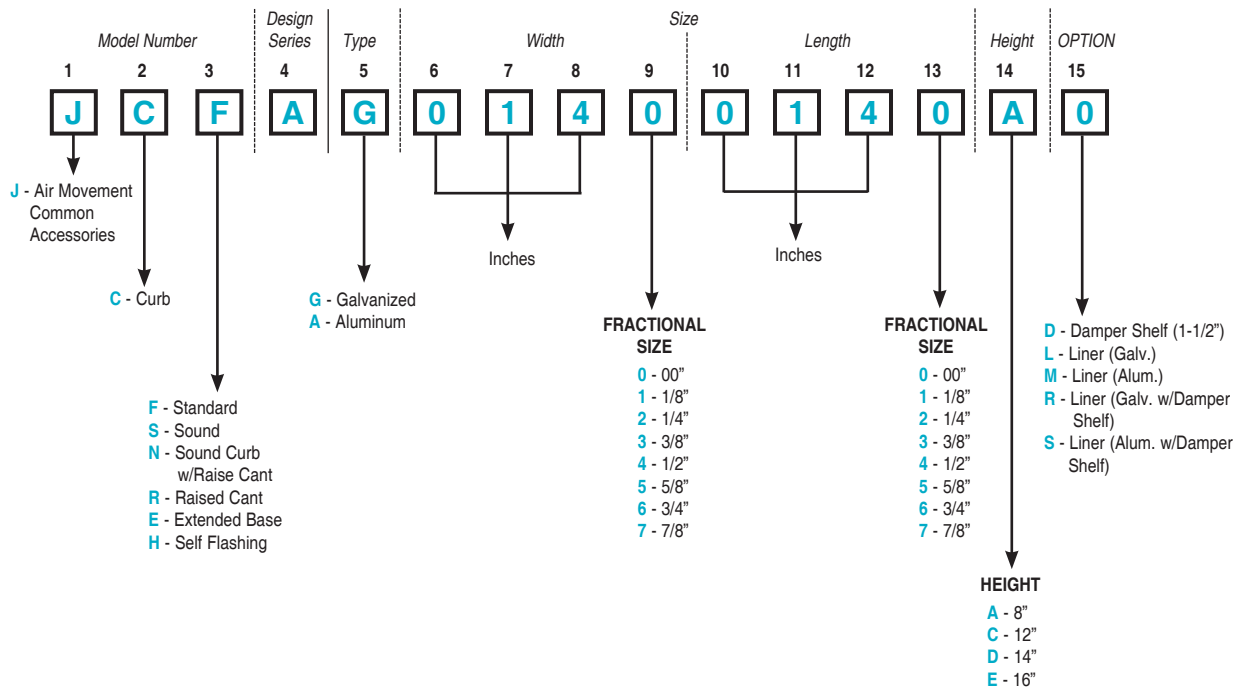
▼ Centrifugal Filtered Supply — Belt Drive



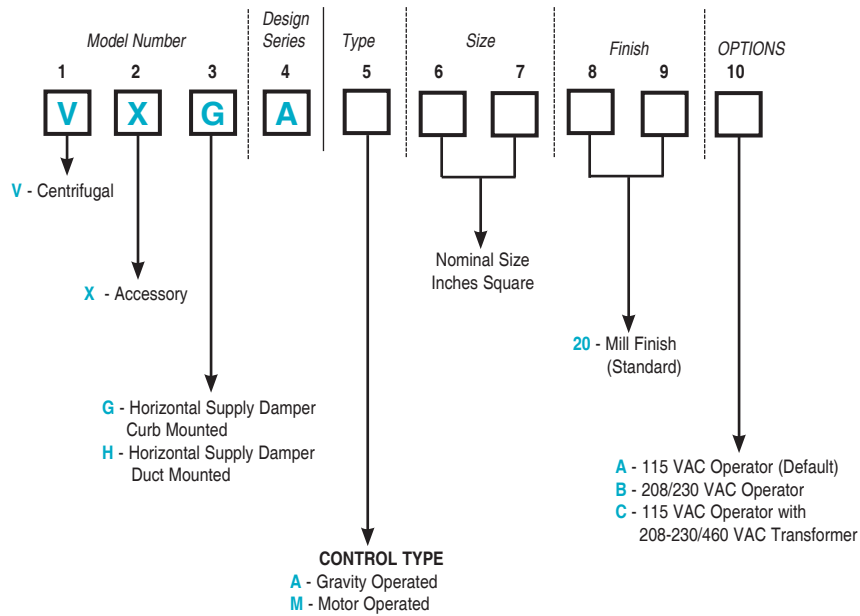
▼ Electric Accessories



▼ Curbs



▼ Dampers



IN-LINE CENTRIFUGAL DUCT FANS

Direct and Belt Driven Models VIDK and VIBK

DESIGNED AND ENGINEERED TO MEET INDUSTRY NEEDS

The Carnes Company centrifugal in-line duct fans have been developed to efficiently handle the wide range of air flows and installations that are required in today's HVAC applications.

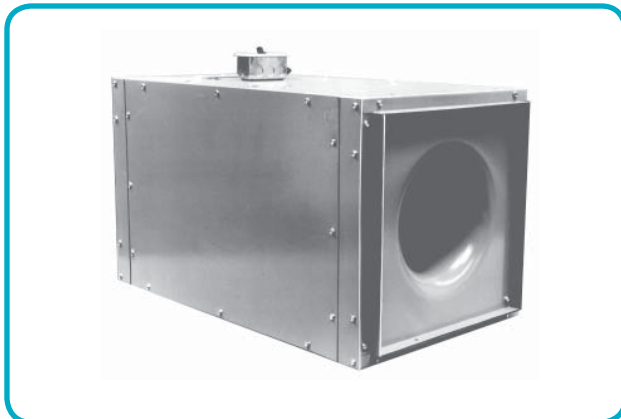
The compact square design of the VI-Series fan provides maximum air moving capacity from a minimum possible space-unit that can be tucked away in unused areas. The K-Series in-line fans feature universal mounting capabilities allowing the units to be installed horizontally, vertically or at an angle.

The K-Series in-line duct fans have been designed for easy and uncomplicated access to the fan's interior by using the removable access panels. All moving parts - motor, drives, wheel, shaft and bearings can be removed without disturbing the inlet

or outlet duct connections. Duct connections are simplified and less costly without the need for round to square transitions.

Superior aerodynamic performance is provided by the deep spun inlet combined with the backward inclined wheel. Housing sizes and internal baffling are selected for optimum performance levels. The air flow design of these centrifugal fans has been thoroughly tested at Carnes' accredited laboratories. Testing has also been conducted to ensure trouble-free start-up and to ensure product durability and dependability of operation.

In-line duct fans are designed for general indoor air handling needs and should not be used in an application requiring a leak-proof ventilator.



Model VIDK

Direct Driven - Sizes 06 through 18

Carnes direct drive in-line fans are available in six sizes with capacities from 150 to 4200 CFM. The internal compartment isolates the motor from the airstream, protecting it from contaminants that may be present. Direct drive reduces fan maintenance, and when used with the optional electronic speed control, balancing time may be decreased.

Maximum exhaust temperature for continuous operation is 150°F.

Model VIBK

Belt Driven - Sizes 06 through 42

Air flow performance is from 100 to over 25,000 CFM with the VIBK belt drive in-line duct fans. Ten sizes are available ranging from 06 to 42. The motor is located externally from the galvanized housing and the bearings and belt are in an enclosure for out of the airstream operation. Belt driven fans feature a wide range of performance and readily available motor selections.

Maximum exhaust temperature for continuous operation is 200°F.



▼ TYPICAL SPECIFICATIONS

Centrifugal in-line duct fans shall be of the centrifugal belt or direct driven type. The wheel and spun venturi shall be a centrifugal design of non-sparking construction. For maximum performance and quiet efficient operation, the wheel shall overlap the inlet venturi and have backward inclined median airfoil blades. The wheels shall be dynamically balanced to assure smooth and vibration free rotation under maximum loading. The complete drive assembly, including the motor and the wheel, shall be mounted on vibration isolators. Motor and drives shall be factory mounted. All fans shall be test run prior to shipment.

VIBK BELT DRIVE SERIES

Motors shall be isolated from the exhaust airstream. Motor shall be mounted external to the cabinet and free from discharge contaminants. Motors shall be of the heavy-duty type with permanently lubricated, sealed ball bearings. Motors shall be readily accessible for maintenance. Wheel shaft shall be ground, polished, coated with a rust inhibitive finish and mounted in heavy-duty, permanently sealed pillowblock ball bearings which are capable of 200,000 hours of life, average operation. Drives shall be sized at a minimum of 165% of driven horsepower. Drive belts shall be oil resistant, non-static and be capable of 25,000 hours of life, average operation. Sheaves shall be fully machined cast iron keyed and securely attached to the shafts. Variable pitch motor sheaves shall be standard.

VIDK DIRECT DRIVE SERIES

Motors shall be isolated from the exhaust airstream. Air for cooling the motor shall be supplied to the internal motor compartment through an air tube from a location free from discharge contaminants. Motors shall be of the heavy-duty type with permanently lubricated, sealed bearings. Wheels to be furnished with integral fitting for wheel puller. Electrical wiring shall be routed to the motor compartment through the air tube.

The motor shall be factory wired to the disconnect junction box and a disconnect switch shall be supplied. Wheel, shaft, bearings, motor and drive components shall be readily accessible for inspection, repair or replacement without disturbing inlet or outlet duct work.

Horsepower and noise levels shall not exceed the published values and oversized motors will not be acceptable. Performance ratings shall be AMCA licensed for Air and Sound.

Centrifugal in-line duct fans shall be Carnes Company Model VIBK, belt drive, sizes 06 through 42, or Model VIDK, direct drive, sizes 06 through 18, as manufactured at Carnes Company of Verona, Wisconsin.

AMCA LICENSED AIR and SOUND DATA

Licensed to bear the AMCA Seal for both air and sound.

The Carnes Company certifies that the Models VIDK and VIBK 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.



UL OPTION

Models VIDK and VIBK are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



POWER VENTILATOR

CONSTRUCTION

FAN HOUSING

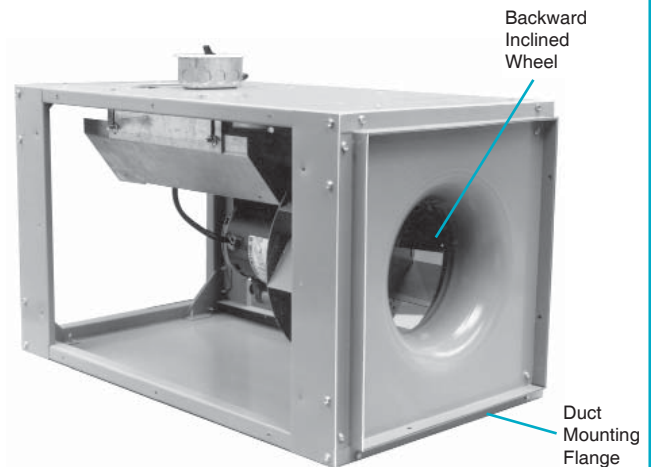
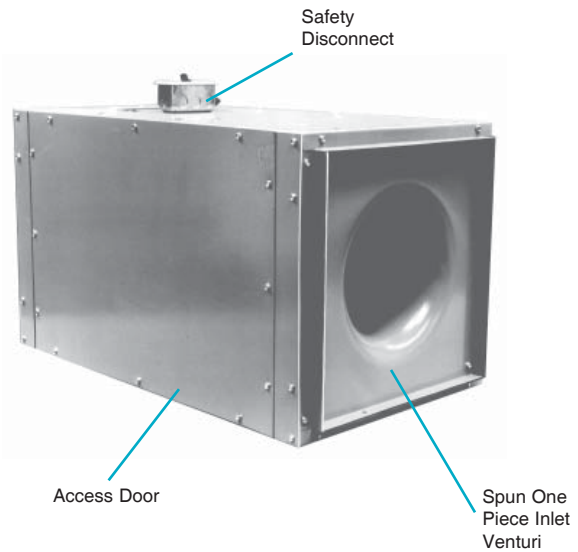
- Compact square design maximizes performance levels, minimizes installation space required.
- Constructed of heavy-gauge, coated corrosion resistant steel.
- Dual side panels for access to unit interior.
- Integral duct connections at fan inlet and discharge for ease of installation.

MOTOR/ELECTRICAL

- **UL** listing under Standard 705 available as option on most models.
- Motors are UL recognized components supplied by nationally recognized manufacturers.
- Electrical boxes mounted on belt drive, but shipped loose on direct drive.
- All motors mounted to units for ease of fan installation.

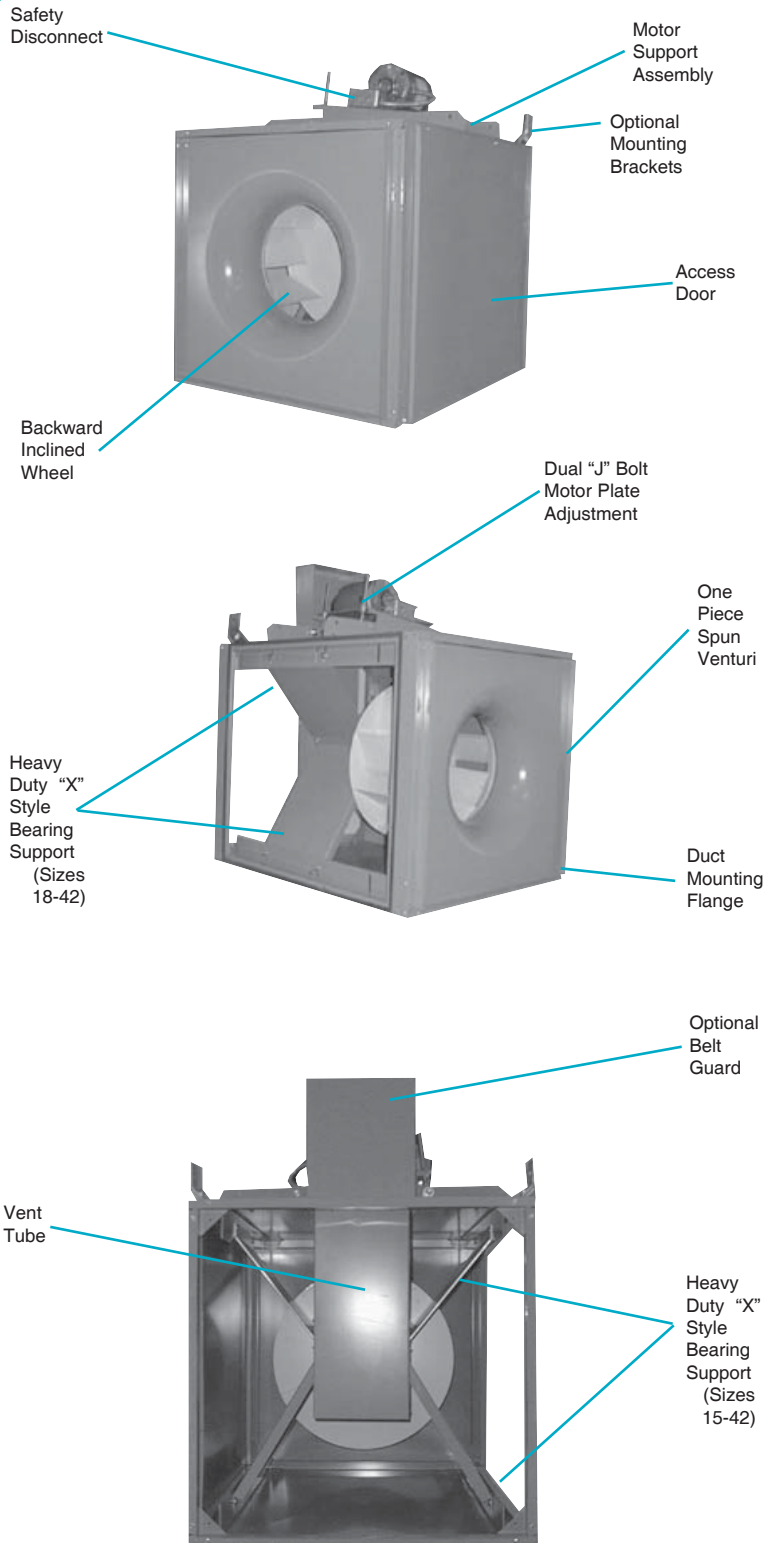
MOTOR SUPPORT ASSEMBLY

- Bolted, heavy-gauge material.
- Motor plate accommodates multiple motor frames.
- Allows horizontal and vertical adjustment of wheel.
- Electrically grounded to meet NEC and UL requirements.



Model VIDK

FEATURES



Model VIBK

BEARINGS/SHAFT

- Dual bearings utilized to properly support the fan shaft.
- Prelubricated sealed, self-aligning.
- Rated at 200,000 hours average operation.
- Polished CRS fan shaft with rust inhibitive coating.
- Heavy-duty "X" style bearing support braces (sizes 15-42).

DRIVES

- Selected for 165% of the motor horsepower.
- Adjustable V-belt drives with oil resistant non-static conducting belts.
- Two belts standard on units 5 HP and larger.
- Factory preset fan RPM.
- Adjustable sheaves allow for final air system balancing.

WHEEL

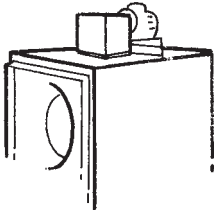
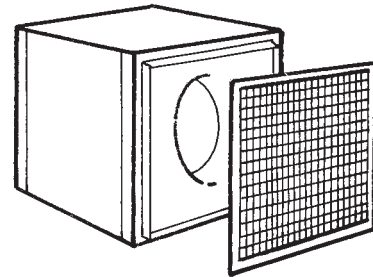
- Backward inclined wheels constructed of non-corrosive or coated heavy gauge material (size 42 is aluminum).
- Usage of cooling fins (06-18) on fan wheel backplate circulates cooling air over the motor facilitating longevity while motor remains out of the airstream.
- Self-limiting power characteristics.
- Dynamically balanced and test run in each individual unit.

FAN INLET

- Baffle reduces fan inlet swirl to promote optimum air performance.
- The deep spun venturi is precision matched to the wheel inlet to ensure maximum air flow.
- Inlet venturi spun from heavy-gauge noncorrosive material - sizes 06 through 15 formed using galvanized steel and sizes 18 through 42 are produced from aluminum.

INLET OR OUTLET GUARD

When units are installed with inlets or outlets exposed, screen guards are available to prevent people or objects from having accidental contact with the interior. Guards consist of 1/2" galvanized wire.

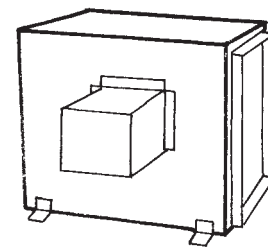


BELT GUARD

When units are installed in exposed areas, belt guards are available to prevent contact with the moving belt or sheave.

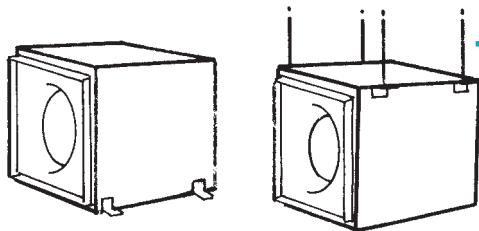
WEATHER PROTECTION PACKAGE

Units may be mounted outside and exposed to the weather when the accessory weather package is installed. Package consists of gasketed access panels and weather cover for motor and drive. Unit must be installed with the motor at the side. Additional field caulking of cabinet seams will provide a watertight unit. Optional cabinet insulation is also recommended for outdoor locations.



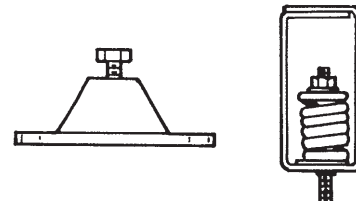
MOUNTING BRACKETS

Accessory mounting brackets are available for floor mounted, side wall mounted or ceiling hung units. Units may be hung in a vertical or horizontal position.



VIBRATION ISOLATORS

Suspension mounting isolators are available in rubber-in-shear (Sizes 06-18) and spring (Sizes 21-42). Floor mounting isolators are the rubber-in-shear type for all sizes.



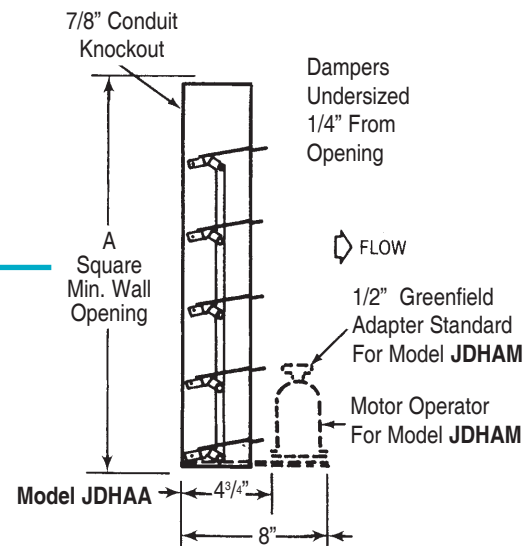
INSULATED HOUSING

Unit casings may be insulated with 1" fiberglass insulation to prevent condensation and/or reduce noise. The 1" 3 lb. density fiberglass has a heavy density exposed surface to prevent erosion. The insulation is attached with pin spot/stakes and adhesive for a permanent bond.

BACKDRAFT DAMPERS

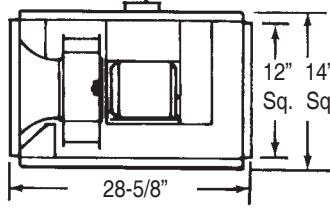
Carnes Model JDHAA automatic dampers are available to prevent backflow when units are shut down. Damper frames are heavy-duty box type. Blades are aluminum with felt edges and are linked together for quiet operation. A counterbalance spring is adjustable for tension to provide minimum resistance to air flow.

Motorized operation (JDHAM) may be provided by adding the motor pack available for 115/208/230 volt operation. Transformers are available for 460 or 560 volt operation.



VIDK 06 DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA
 Tip Speed = 2.75 x RPM
 Unit Weight = 60 Lbs.
 Outlet Velocity (FPM) = 1.000 x CFM

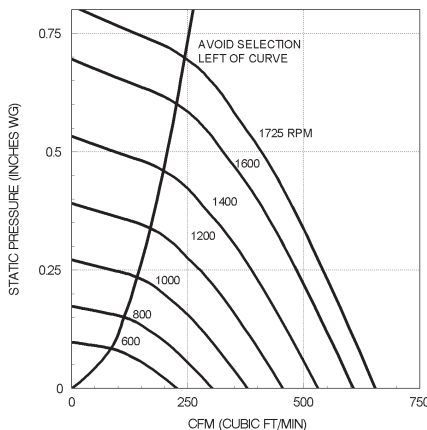
RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
F3+ 1/20	J2+ 1/8		.000 CFM BHP SONES	.125 CFM BHP SONES	.250 CFM BHP SONES	.375 CFM BHP SONES	.500 CFM BHP SONES	.625 CFM BHP SONES	.750 CFM BHP SONES	1.000 CFM BHP SONES	1.250 CFM BHP SONES
SPEED CONTROLLABLE MOTORS**		400	152 .0								
		500	189 .2								
		600	227 1.1								
		700	265 1.7								
		800	303 2.3	163 1.7							
		900	341 2.9	226 2.4							
		1000	379 3.6	280 3.0							
		1075 *	407 4.1	316 3.6	190 3.6						
		1100	417 4.3	328 3.7	208 3.8						
		1200	455 5.0	373 4.4	275 4.4						
		1300	492 5.8	418 5.2	334 5.1	217 5.2					
		1400	530 6.5	462 6.0	388 5.8	291 5.9					
		1500	568 7.3	504 6.8	437 6.5	357 6.6	249 6.6				
		1600 *	606 8.2	547 7.7	485 7.3	413 7.3	326 7.4	179 7.4			
ALL OTHER MOTORS		1140 *	432 4.6	347 4.0	237 4.0						
		1725 *	653 9.2	599 8.8	541 8.4	481 8.3	407 8.4	319 8.4			

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control. AMCA Seal for sound rating does not apply to units with speed controls. Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{W1} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VIDK 06 AIR PERFORMANCE



VIDK 06 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
1075	.000	55	55	53	54	51	52	49	45	58
	.125	55	55	51	53	50	50	45	40	56
1600	.000	67	67	65	64	62	60	59	56	68
	.250	69	66	64	62	61	59	56	51	66
	.500	70	68	65	62	61	59	56	50	66
	.625	70	68	65	62	61	59	56	50	66

VIDK 08

DIRECT DRIVE

PERFORMANCE DATA

DESIGN DATA
 Tip Speed = 2.75 x RPM
 Unit Weight = 60 Lbs.
 Outlet Velocity (FPM) = 1.000 x CFM

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.								
F3+ 1/20	J2+ 1/8		.000	.125	.250	.375	.500	.625	.750	1.000	1.250
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS**		600	293 .01 1.3								
		675	329 .01 1.7								
		750	366 .01 2.2	183 .01 1.6							
		825	403 .02 2.7	248 .02 2.2							
		900	439 .02 3.2	302 .03 2.7							
		1000	488 .03 3.8	366 .03 3.5	193 .03 3.2						
		1075 *	525 .04 4.4	412 .04 4.1	271 .04 3.8						
		1175	573 .05 5.1	472 .05 4.8	358 .06 4.5	126 .05 4.4					
		1250	610 .06 5.7	515 .07 5.4	411 .07 5.1	266 .06 4.9					
		1325	647 .07 6.3	557 .08 6.0	462 .08 5.8	340 .08 5.5					
		1400	683 .09 6.9	598 .09 6.6	509 .09 6.4	406 .09 6.1	254 .09 5.9				
		1475	720 .10 7.5	638 .11 7.2	556 .11 7.0	466 .11 6.7	342 .11 6.5				
		1550	756 .12 8.1	678 .12 7.9	601 .13 7.7	517 .13 7.4	410 .13 7.2	253 .12 7.0			
	1600 *	781 .13 8.5	705 .13 8.3	631 .14 8.1	550 .14 7.8	455 .14 7.6	327 .14 7.4				
ALL OTHER MOTORS		1140 *	556 .05 4.8	451 .05 4.6	329 .05 4.2						
		1725 *	842 .16 9.6	771 .17 9.4	705 .17 9.2	630 .18 9.0	553 .18 8.8	452 .17 8.6	326 .17 8.4		

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

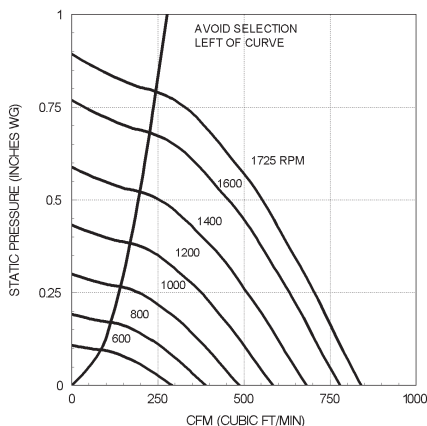
** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

- * Base Unit - As run motor speeds.
- + RPM range capable with solid state speed control. AMCA Seal for sound rating does not apply to units with speed controls.
- Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VIDK 08 AIR PERFORMANCE



VIDK 08 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
1075	.000	55	56	55	56	51	51	49	47	58
	.125	55	57	54	54	50	50	58	45	57
1600	.000	68	67	67	66	63	60	59	57	69
	.250	67	68	67	64	62	59	58	56	68
	.375	66	68	67	64	62	59	58	55	67
	.500	66	67	66	63	61	59	57	53	67
	.625	65	67	66	63	61	59	57	51	67

VIDK 10

DIRECT DRIVE

PERFORMANCE DATA

DESIGN DATA
 Tip Speed = 3.27 x RPM
 Unit Weight = 75 Lbs.
 Outlet Velocity (FPM) = .562 x CFM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W.G.											
F4+ 1/20	J3+ 1/8	M2+ 1/3	P2+ 1/2	RPM	.000 CFM BHP SONES	.125 CFM BHP SONES	.250 CFM BHP SONES	.375 CFM BHP SONES	.500 CFM BHP SONES	.625 CFM BHP SONES	.750 CFM BHP SONES	1.000 CFM BHP SONES	1.250 CFM BHP SONES
SPEED CONTROLLABLE MOTORS**				550	514 .01 1.8	226 .01 1.0							
				700	655 .03 3.2	466 .03 2.1							
				800	748 .04 4.2	583 .05 3.0	369 .05 2.8						
				825 *	771 .05 4.5	611 .05 3.3	417 .05 3.1						
				900	842 .06 5.3	694 .07 4.1	544 .07 3.7						
				975	912 .08 6.1	776 .08 4.9	640 .09 4.4	442 .09 4.4					
				1050	982 .10 6.9	856 .10 5.8	732 .11 5.0	580 .11 5.0	247 .09 5.0				
				1075 *	1005 .11 7.1	882 .11 6.1	761 .12 5.3	621 .12 5.2	385 .11 5.2				
				1175	1099 .14 8.3	986 .14 7.3	874 .15 6.5	760 .15 6.1	606 .15 6.1	285 .13 6.1			
				1275	1192 .18 9.5	1088 .18 8.5	984 .19 7.7	884 .19 7.1	773 .20 7.0	603 .19 7.0			
				1375	1286 .22 10.8	1189 .23 9.8	1093 .23 9.0	998 .24 8.2	901 .25 8.0	781 .25 7.9	618 .24 7.9		
				1500	1403 .29 12.5	1314 .30 11.6	1226 .30 10.7	1138 .31 10.0	1053 .32 9.3	960 .32 9.2	845 .32 9.2	450 .29 9.3	
				1575	1473 .34 13.6	1389 .34 12.6	1305 .35 11.8	1219 .35 11.0	1138 .36 10.3	1054 .37 10.0	964 .37 10.0	688 .36 10.1	
				1625 *	1519 .37 14.4	1438 .38 13.4	1357 .38 12.6	1276 .39 11.8	1195 .40 11.0	1115 .40 10.6	1029 .41 10.6	786 .40 10.7	
ALL OTHER MOTORS				1140 *	1066 .13 7.9	950 .13 6.9	835 .14 6.1	716 .14 5.8	538 .14 5.8				
				1725 *	1613 .44 15.9	1536 .45 14.9	1460 .45 14.1	1383 .46 13.2	1306 .47 12.6	1232 .48 11.9	1154 .48 11.7	964 .49 11.7	677 .46 11.8

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

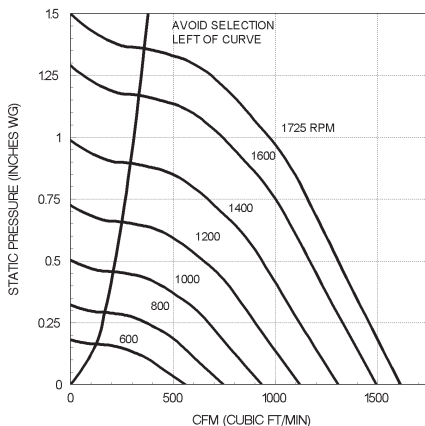
** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

+ RPM range capable with solid state speed control. AMCA Seal for sound rating does not apply to units with speed controls.

Performance ratings do not include the effects of accessories.

VIDK 10 AIR PERFORMANCE



The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{W1} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

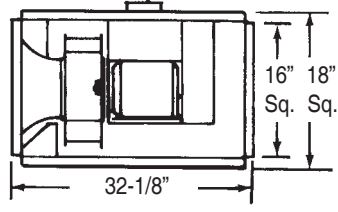
VIDK 10 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
875	.000	51	58	57	55	61	56	45	34	63
	.125	52	57	55	52	55	51	43	36	58
1075	.000	56	62	64	58	66	63	53	42	69
	.250	58	61	62	56	57	56	49	43	62
1625	.500	61	62	60	55	55	55	49	42	61
	.000	73	69	75	72	70	74	68	57	78
	.500	73	70	74	70	66	67	63	56	73
	1.000	73	72	75	69	64	65	62	55	72

VIDK 12

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA
 Tip Speed = 3.27 x RPM
 Unit Weight = 75 Lbs.
 Outlet Velocity (FPM) = .562 x CFM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W.G.											
F4+ 1/20	J3+ 1/8	M2+ 1/3	P2+ 1/2	RPM	.000 CFM BHP SONES	.125 CFM BHP SONES	.250 CFM BHP SONES	.375 CFM BHP SONES	.500 CFM BHP SONES	.625 CFM BHP SONES	.750 CFM BHP SONES	1.000 CFM BHP SONES	1.250 CFM BHP SONES
SPEED CONTROLLABLE MOTORS**				550	636 .01 2.3	300 .01 1.1							
				700	809 .03 3.6	601 .03 2.5							
				800	925 .04 4.7	748 .05 3.6	484 .05 3.1						
				825 *	953 .05 5.0	784 .05 3.9	547 .05 3.3						
				900	1040 .06 6.0	888 .07 4.9	700 .07 4.2	273 .05 3.8					
				975	1127 .08 7.2	990 .09 5.9	826 .09 5.1	580 .08 4.6					
				1050	1213 .10 8.2	1090 .11 7.0	939 .11 6.0	762 .11 5.5	383 .09 5.2				
				1075 *	1242 .11 8.5	1123 .11 7.3	976 .12 6.3	810 .12 5.8	503 .11 5.4				
				1175	1358 .14 9.7	1251 .15 8.6	1121 .15 7.6	980 .16 7.0	793 .15 6.6	434 .13 6.3			
				1275	1473 .18 11.0	1375 .19 9.9	1259 .19 9.0	1134 .20 8.3	994 .20 7.8	792 .19 7.5	402 .15 7.3		
				1375	1589 .22 12.2	1498 .23 11.3	1395 .24 10.5	1280 .25 9.7	1162 .25 9.1	1024 .25 8.8	810 .24 8.5		
				1500	1733 .29 13.9	1649 .30 13.0	1562 .31 12.2	1456 .32 11.5	1350 .32 10.8	1237 .33 10.4	1112 .33 10.0	621 .27 9.5	
				1575	1820 .33 15.3	1740 .35 14.3	1663 .36 13.5	1560 .37 12.7	1459 .37 12.0	1358 .38 11.5	1240 .38 11.2	902 .35 10.9	
				1625 *	1878 .37 16.2	1800 .38 15.3	1724 .39 14.4	1629 .40 13.6	1531 .41 12.9	1433 .41 12.3	1325 .42 11.9	1034 .40 11.7	
ALL OTHER MOTORS				1140 *	1317 .13 9.3	1209 .14 8.1	1070 .14 7.2	921 .14 6.6	708 .14 6.2				
				1725 *	1993 .44 18.2	1920 .45 17.3	1848 .47 16.4	1764 .48 15.6	1672 .48 14.8	1580 .49 14.0	1487 .50 13.6	1268 .49 12.9	897 .46 12.8

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

* Base Unit - As run motor speeds.

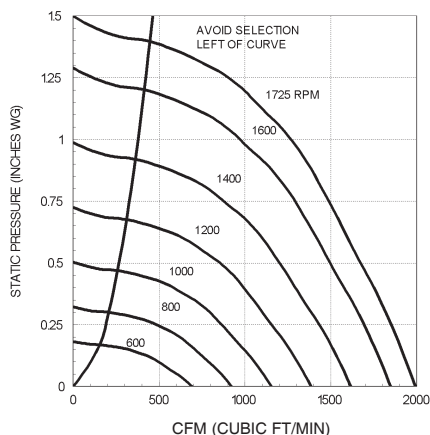
+ RPM range capable with solid state speed control. AMCA Seal for sound rating does not apply to units with speed controls.

Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wf} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VIDK 12 AIR PERFORMANCE



VIDK 12 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								LWA
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	
825	.000	55	60	58	55	59	58	44	31	63
	.125	55	58	55	52	55	52	42	32	58
1075	.000	62	65	66	61	63	67	55	42	70
	.250	62	62	63	58	60	60	51	42	65
1625	.500	64	64	62	56	56	55	49	44	61
	.000	78	75	79	75	71	74	72	59	79
	.500	77	74	76	72	68	69	67	57	76
	1.000	76	75	76	70	66	66	63	56	74

VIDK 15

DIRECT DRIVE

PERFORMANCE DATA

DESIGN DATA
 Tip Speed = 4.06 x RPM
 Unit Weight = 90 Lbs.
 Outlet Velocity (FPM) = .298 x CFM

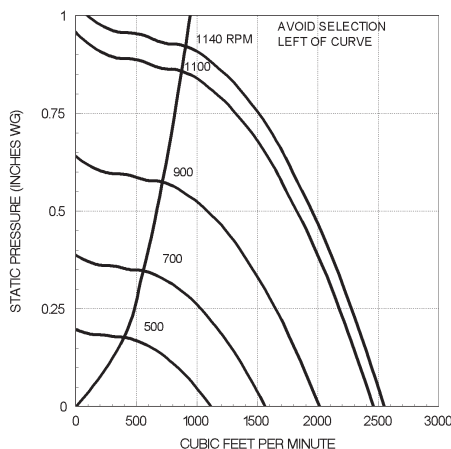
RPM Range - Motor HP			STATIC PRESSURE, INCHES W.G.									
K4+ 1/6	M3+ 1/3	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS**		450	975 .02 2.0	567 .02 1.1								
		500	1084 .03 2.5	752 .03 1.7								
		550	1192 .04 3.1	906 .05 2.3								
		600	1300 .05 3.7	1050 .06 3.0	621 .06 2.5							
		650	1409 .06 4.4	1180 .07 3.7	859 .07 3.1							
		700	1517 .08 5.1	1308 .09 4.4	1039 .09 3.8							
		750	1625 .10 5.8	1433 .11 5.1	1198 .12 4.6	853 .11 4.0						
		800	1734 .12 6.5	1556 .13 5.9	1347 .14 5.3	1067 .14 4.8						
		825 *	1788 .13 6.9	1617 .14 6.3	1420 .15 5.7	1157 .15 5.2	680 .13 4.9					
		875	1896 .16 7.7	1735 .17 7.0	1554 .18 6.5	1333 .18 6.0	1025 .18 5.4					
		925	2005 .18 8.4	1852 .20 7.8	1684 .21 7.3	1486 .22 6.7	1236 .22 6.2	819 .19 6.0				
		975	2113 .22 9.2	1968 .23 8.6	1811 .24 8.1	1635 .25 7.5	1416 .25 7.0	1131 .25 6.6				
		1025	2221 .25 10.0	2084 .27 9.4	1937 .28 8.9	1781 .29 8.4	1585 .30 7.8	1349 .29 7.4	978 .27 7.2			
		1075 *	2330 .29 10.8	2198 .30 10.2	2062 .32 9.7	1912 .33 9.2	1737 .34 8.7	1530 .34 8.2	1270 .33 7.8			
ALL OTHER MOTORS		1140 *	2471 .34 11.9	2347 .36 11.4	2222 .38 10.8	2080 .39 10.4	1930 .40 9.9	1753 .41 9.4	1540 .40 9.0			

Performance certified is for installation type A - free inlet, free outlet. Speed (RPM) is nominal. Performance is based on actual speed of test.
**** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.**
 * Base Unit - As run motor speeds.
 + RPM range capable with solid state speed control. AMCA Seal for sound rating does not apply to units with speed controls.
 Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{Wj} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

VIDK 15 AIR PERFORMANCE



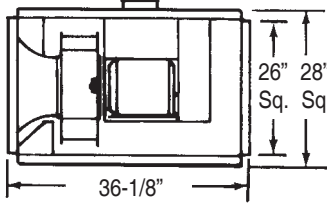
VIDK 15 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	66	64	64	64	64	57	50	43	67
	.125	65	65	64	63	61	55	49	42	65
	.250	65	65	63	60	59	53	47	41	63
	.500	64	63	60	56	56	52	47	42	60
1075	.000	75	72	71	71	70	65	58	51	74
	.250	74	72	71	69	68	63	57	50	72
	.500	73	72	70	67	65	61	55	49	70
	.750	73	71	70	64	62	59	55	49	67

VIDK 18

DIRECT DRIVE

PERFORMANCE DATA



DESIGN DATA
 Tip Speed = 4.94 x RPM
 Unit Weight = 140 Lbs.
 Outlet Velocity (FPM) = .213 x CFM

RPM Range - Motor HP		RPM	STATIC PRESSURE, INCHES W.G.										
M4+ 1/3	*R3+ 3/4		.000	.125	.250	.375	.500	.625	.750	1.000	1.250		
			CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
SPEED CONTROLLABLE MOTORS**		600	2216 .16 8.4	1907 .17 5.7	1478 .16 4.8	673 .13 4.4							
		650	2400 .20 9.5	2120 .21 7.0	1766 .21 5.8	1238 .19 5.4							
		700	2585 .25 10.8	2330 .26 8.3	2017 .27 7.1	1598 .25 6.6	888 .21 6.2						
		750	2770 .31 12.3	2536 .32 10.0	2261 .33 8.7	1899 .32 8.2	1425 .29 7.7	380 .19 7.2					
		800	2954 .37 13.8	2736 .39 11.9	2486 .40 10.8	2183 .39 10.1	1789 .37 9.5	1221 .34 8.9					
		825*	3047 .41 14.5	2835 .43 13.0	2595 .43 11.9	2309 .43 11.1	1949 .42 10.5	1474 .39 9.9	473 .27 9.3				
		875	3231 .49 16.1	3031 .51 14.5	2810 .52 13.4	2558 .52 12.6	2246 .51 12.0	1866 .49 11.3	1322 .44 10.8				
		925	3416 .58 17.9	3227 .60 16.0	3022 .61 14.9	2800 .61 13.9	2527 .61 13.3	2195 .60 12.7	1801 .55 12.2				
		975	3601 .68 19.8	3421 .70 17.6	3232 .71 16.3	3023 .72 15.3	2779 .72 14.7	2491 .71 14.1	2158 .66 13.6	1024 .55 12.5			
		1025	3785 .79 22	3614 .81 19.5	3440 .82 17.9	3241 .83 16.8	3025 .84 16.1	2778 .83 15.5	2475 .81 15.0	1694 .72 13.9			
	1075 *	3970 .91 24	3807 .93 22	3645 .95 19.5	3456 .96 18.4	3266 .97 17.4	3031 .96 16.9	2770 .95 16.4	2137 .89 15.4	778 .63 14.4			
ALL OTHER MOTORS		1140 *	4210 1.08 27	4056 1.11 24	3904 1.13 22	3732 1.14 21	3553 1.15 19.7	3353 1.15 19.1	3131 1.14 18.6	2588 1.07 17.5	1826 .99 16.5		

Performance certified is for installation type A - free inlet, free outlet.
 Speed (RPM) is nominal. Performance is based on actual speed of test.

** To be Speed Controllable, motor must have 115/1 ODP. Other voltages and enclosures are non-speed controllable.

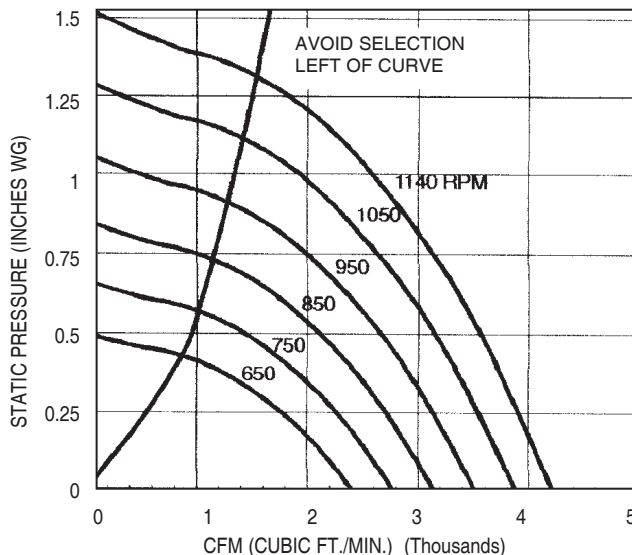
- * Base Unit - As run motor speeds.
- + RPM range capable with solid state speed control. AMCA Seal for sound rating does not apply to units with speed controls.
- Performance ratings do not include the effects of accessories.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{W1} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A, free inlet hemispherical sone levels.

*NOTE: R3 motors are specifically designed to operate through the above performance range. The motor will not be damaged or harmed at the higher BHP values.

VIDK 18 AIR PERFORMANCE



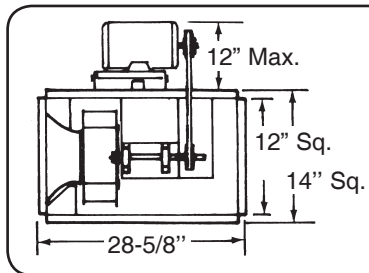
VIDK 18 SOUND PERFORMANCE

RPM	SP	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								
		1	2	3	4	5	6	7	8	LWA
825	.000	81	83	80	76	72	69	57	49	78
	.125	81	83	76	72	68	66	56	49	75
	.250	82	83	72	69	65	62	54	48	72
	.500	80	81	69	66	62	59	53	47	70
	.750	77	79	69	66	60	57	53	47	69
1075	.000	89	88	86	87	75	81	66	58	87
	.250	90	88	82	82	72	75	64	57	82
	.500	90	88	77	76	70	70	61	55	79
	.750	90	87	76	74	69	68	61	55	77
	1.000	88	85	76	74	68	66	61	55	76

VIBK 06

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = .028 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

Average Weight = 65 Lbs.
 Outlet Velocity (FPM) = 1.000 x CFM
 Tip Speed = 2.75 x RPM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	600	211 .01 1.1												
	700	246 .01 1.7												
K3 (1/6)	800	282 .01 2.3	145 .02 1.7											
	900	317 .02 2.9	203 .02 2.4											
K4 (1/6)	1000	352 .03 3.6	254 .03 3.0											
	1100	387 .04 4.3	300 .04 3.7	183 .04 3.7										
K5 (1/6)	1200	422 .05 5.0	344 .05 4.4	248 .05 4.4										
	1300	457 .06 5.8	386 .06 5.2	302 .07 5.1	189 .06 5.2									
L1 (1/4)	1400	493 .08 6.5	428 .08 6.0	353 .08 5.8	260 .08 5.8									
	1500	528 .10 7.3	469 .10 6.8	399 .10 6.5	321 .10 6.5	217 .10 6.6								
M1 (1/3)	1550	545 .11 7.7	489 .11 7.2	422 .11 6.9	348 .11 6.9	255 .11 7.0								
	1600	563 .12 8.1	509 .12 7.7	444 .12 7.3	374 .12 7.3	290 .12 7.4	149 .11 7.4							
P1 (1/2)	1650	581 .13 8.6	529 .13 8.1	466 .13 7.7	400 .13 7.7	322 .13 7.7	214 .13 7.8							
	1700	598 .14 9.0	547 .14 8.6	488 .15 8.1	425 .15 8.1	352 .15 8.1	260 .14 8.2							
	1750	616 .16 9.4	567 .16 9.0	509 .16 8.6	449 .16 8.5	380 .16 8.6	298 .16 8.6	158 .15 8.7						
	1800	633 .17 9.9	586 .17 9.4	530 .17 9.1	472 .17 8.9	407 .17 9.0	331 .17 9.1	226 .17 9.1						
	1850	651 .18 10.3	605 .18 9.9	551 .19 9.5	495 .19 9.3	433 .19 9.4	363 .19 9.5	276 .19 9.5						
	1900	669 .20 10.8	623 .20 10.4	572 .20 10.0	517 .20 9.7	459 .21 9.8	394 .20 9.9	314 .20 10.0						
	1950	686 .22 11.2	642 .22 10.9	593 .22 10.5	540 .22 10.2	485 .22 10.3	421 .22 10.4	349 .22 10.5						
	2000	704 .23 11.8	661 .23 11.4	614 .23 11.0	562 .24 10.7	508 .24 10.7	448 .24 10.8	381 .24 10.9						
	2050	721 .25 12.2	680 .25 11.9	634 .25 11.5	584 .25 11.2	532 .26 11.2	475 .26 11.2	412 .26 11.3	227 .24 11.5					
	2100	739 .27 12.7	698 .27 12.4	654 .27 12.1	605 .27 11.8	555 .28 11.7	501 .28 11.7	442 .28 11.8	285 .27 12.0					
	2150	757 .29 13.2	717 .29 12.9	675 .29 12.6	626 .29 12.3	577 .30 12.2	527 .30 12.3	469 .30 12.4	329 .29 12.5					
	2200	774 .31 13.7	736 .31 13.4	695 .31 13.1	648 .31 12.8	600 .32 12.6	551 .32 12.7	496 .32 12.8	367 .32 13.0					
	2250	792 .33 14.2	754 .33 13.9	715 .33 13.6	669 .33 13.4	622 .34 13.1	575 .34 13.2	522 .34 13.3	402 .34 13.5	186 .31 13.7				
	2300	809 .35 14.6	773 .35 14.4	734 .35 14.1	690 .36 13.9	645 .36 13.6	598 .36 13.7	549 .36 13.8	434 .36 14.0	264 .35 14.1				
	2350	827 .38 15.1	791 .38 14.8	753 .38 14.6	710 .38 14.4	666 .38 14.1	621 .39 14.1	575 .39 14.2	465 .39 14.5	322 .38 14.6				
	2400	845 .40 15.6	810 .40 15.3	773 .40 15.1	731 .40 14.8	688 .41 14.6	644 .41 14.6	599 .41 14.7	496 .41 14.9	365 .41 15.1				
	2450	862 .43 16.2	828 .43 15.9	792 .43 15.6	752 .43 15.4	709 .43 15.1	666 .44 15.0	623 .44 15.1	524 .44 15.4	403 .44 15.6				
	2500	880 .45 16.7	846 .45 16.4	811 .45 16.1	772 .46 15.9	731 .46 15.7	689 .46 15.5	646 .47 15.6	551 .47 15.8	440 .47 16.0	266 .44 16.2			

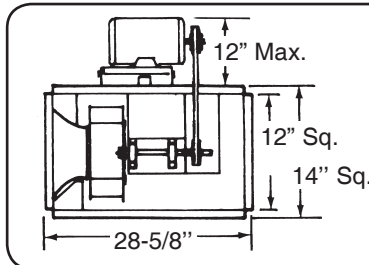
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VIBK 08

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = .035 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

Average Weight = 65 Lbs.

Outlet Velocity (FPM) = 1.000 x CFM

Tip Speed = 2.75 x RPM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.125	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	650	317 .01 1.6												
	750	366 .01 2.2	183 .01 1.6											
K3 (1/6)	850	415 .02 2.8	268 .02 2.4											
	950	464 .03 3.5	335 .03 3.1											
K4 (1/6)	1050	512 .04 4.2	397 .04 3.9	248 .04 3.5										
	1150	561 .05 4.9	457 .05 4.7	337 .05 4.3										
L1 (1/4)	1250	610 .06 5.7	515 .07 5.4	411 .07 5.1	266 .06 4.9									
	1350	659 .08 6.5	571 .08 6.2	478 .08 6.0	363 .08 5.7									
M1 (1/3)	1450	708 .10 7.3	625 .10 7.0	540 .10 6.8	447 .11 6.5	315 .10 6.3								
	1500	732 .11 7.7	652 .11 7.4	571 .11 7.2	483 .12 6.9	365 .11 6.7								
PT (1/2)	1550	756 .12 8.1	678 .12 7.9	601 .13 7.6	517 .13 7.4	410 .13 7.2	253 .12 7.0							
	1600	781 .13 8.5	705 .13 8.3	631 .14 8.1	550 .14 7.8	455 .14 7.6	327 .14 7.4							
K1 (1/6)	1650	805 .14 8.9	731 .15 8.7	661 .15 8.5	583 .15 8.3	497 .16 8.0	383 .15 7.8							
	1700	830 .16 9.3	758 .16 9.1	690 .16 9.0	614 .17 9.0	535 .17 8.5	429 .17 8.3	281 1.6 8.2						
K2 (1/6)	1750	854 .17 9.8	784 .18 9.6	719 .18 9.4	645 .18 9.2	570 .18 9.0	475 .18 8.8	355 .18 8.6						
	1800	878 .19 10.3	810 .19 10.1	747 .19 9.9	676 .20 9.7	604 .20 9.4	518 .20 9.3	413 .19 9.1						
K3 (1/6)	1850	903 .20 10.7	836 .21 10.5	774 .21 10.4	707 .21 10.2	637 .22 9.9	560 .22 9.7	459 .21 9.6						
	1900	927 .22 11.1	862 .22 11.0	802 .23 10.8	737 .23 10.7	670 .24 10.4	598 .24 10.2	504 .23 10.1						
K4 (1/6)	1950	952 .24 11.6	888 .24 11.4	829 .25 11.3	767 .25 11.1	701 .25 10.9	632 .26 10.7	549 .25 10.6	298 .23 10.4					
	2000	976 .25 12.1	914 .26 11.9	856 .27 11.7	797 .27 11.6	732 .27 11.4	666 .28 11.2	591 .28 11.1	386 .26 10.8					
L1 (1/4)	2050	1000 .27 12.6	940 .28 12.4	883 .29 12.3	827 .29 12.1	764 .29 11.9	700 .30 11.7	632 .30 11.6	444 .29 11.3					
	2100	1025 .29 13.1	966 .30 13.0	910 .31 12.8	856 .31 12.6	794 .31 12.4	733 .32 12.2	668 .32 12.1	497 .31 11.9					
M1 (1/3)	2150	1049 .32 13.6	991 .32 13.4	937 .33 13.3	884 .33 13.1	825 .34 13.0	766 .34 12.8	702 .34 12.6	542 .34 12.4	246 .30 12.4				
	2200	1074 .34 14.1	1017 .35 13.9	964 .35 13.8	912 .36 13.6	855 .36 13.5	796 .36 13.4	736 .37 13.2	588 .36 13.0	374 .34 12.8				
PT (1/2)	2250	1098 .36 14.6	1042 .37 14.4	990 .38 14.3	940 .38 14.1	885 .38 14.0	828 .39 13.8	770 .39 13.7	632 .39 13.5	448 .38 13.3				
	2300	1122 .39 15.1	1068 .39 14.9	1017 .40 14.8	967 .40 14.6	915 .41 14.5	859 .41 14.4	803 .42 14.2	674 .42 14.0	506 .41 13.8				
K3 (1/6)	2350	1147 .41 15.6	1093 .42 15.4	1043 .43 15.3	995 .43 15.1	944 .44 15.0	889 .44 14.9	836 .44 14.7	716 .45 14.5	557 .44 14.3	251 .39 14.3			
	2400	1171 .44 16.1	1119 .45 16.0	1069 .45 15.8	1022 .46 15.7	974 .46 15.5	920 .47 15.4	866 .47 15.2	754 .48 14.9	389 .44 14.7				
K4 (1/6)	2450	1196 .47 16.7	1144 .48 16.5	1095 .48 16.4	1049 .49 16.2	1003 .49 16.0	950 .50 15.9	897 .50 15.8	789 .51 15.4	648 .50 15.3	474 .48 15.1			
	2500	1220 .50 17.2	1170 .50 17.1	1121 .51 16.9	1076 .52 16.8	1031 .52 16.6	980 .53 16.5	928 .53 16.3	823 .54 16.0	694 .53 15.8	532 .52 15.6			

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VIBK 10

BELT DRIVE

PERFORMANCE DATA

DESIGN DATA

Max BHP = $.095 \times \left[\frac{\text{RPM}}{1000} \right]^3$

Average Weight = 80 Lbs.
 Outlet Velocity (FPM) = $.562 \times \text{CFM}$
 Tip Speed = $3.27 \times \text{RPM}$

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	650	608 .02 3.1											
	750	701 .04 3.8	225 .04 2.5										
L1 (1/4)	850	795 .05 4.7	461 .06 3.3										
	950	888 .07 5.9	609 .08 4.3										
M1 (1/3)	1050	982 .10 7.3	732 .11 5.2	247 .09 5.1									
	1150	1075 .13 8.8	846 .14 6.3	558 .14 6.1									
PI (1/2)	1250	1169 .17 9.2	957 .18 7.3	732 .19 6.8									
	1350	1262 .21 10.4	1067 .22 8.6	869 .23 7.7	562 .22 7.6								
R1 (3/4)	1400	1309 .24 11.1	1120 .25 9.3	932 .26 8.2	667 .25 8.1								
	1450	1356 .26 11.7	1173 .27 9.9	993 .29 8.7	760 .29 8.6								
S1 (1)	1500	1403 .29 12.4	1226 .30 10.6	1053 .32 9.2	845 .32 9.1	450 .29 9.0							
	1550	1449 .32 13.2	1279 .33 11.4	1110 .35 9.9	927 .35 9.6	625 .33 9.6							
T1 (1-1/2)	1600	1496 .35 13.9	1331 .36 12.1	1167 .38 10.6	997 .39 10.1	738 .38 10.1							
	1650	1543 .39 14.6	1382 .40 12.8	1223 .41 11.3	1060 .43 10.7	835 .42 10.7							
S1 (1)	1700	1590 .42 15.4	1434 .44 13.6	1278 .45 12.1	1123 .46 11.3	922 .47 11.2	610 .43 11.3						
	1750	1636 .46 16.1	1485 .47 14.3	1333 .49 12.8	1185 .51 11.9	1005 .51 11.9	744 .49 11.9						
S1 (1)	1800	1683 .50 16.9	1536 .52 15.2	1388 .53 13.6	1246 .55 12.5	1088 .56 12.5	847 .54 12.5						
	1850	1730 .54 17.7	1587 .56 16.0	1442 .57 14.4	1304 .59 13.2	1154 .60 13.1	943 .59 13.1	617 .54 13.2					
S1 (1)	1900	1777 .59 18.5	1637 .60 16.8	1498 .62 15.2	1361 .64 14.0	1218 .65 13.8	1029 .65 13.8	770 .62 13.8					
	1950	1823 .64 19.3	1688 .65 17.6	1552 .67 16.1	1418 .69 14.8	1281 .70 14.4	1113 .70 14.4	885 .69 14.4					
S1 (1)	2000	1870 .69 20	1738 .70 18.4	1606 .72 17.0	1474 .74 15.7	1343 .75 15.1	1196 .76 15.1	982 .74 15.0	675 .68 15.1				
	2050	1917 .74 21	1788 .76 19.3	1659 .77 17.8	1530 .79 16.6	1404 .81 15.7	1267 .82 15.7	1074 .81 15.7	825 .77 15.7				
S1 (1)	2100	1964 .80 22	1837 .81 20	1712 .83 18.6	1585 .85 17.4	1464 .87 16.4	1331 .88 16.3	1159 .88 16.3	943 .85 16.4	494 .74 16.4			
	2150	2010 .85 22	1887 .87 21	1764 .89 19.4	1640 .90 18.2	1522 .93 17.1	1394 .94 16.9	1242 .94 16.9	1041 .92 16.9	770 .88 16.9			
S1 (1)	2200	2057 .91 23	1937 .93 22	1817 .95 20	1695 .96 19.0	1579 .99 17.9	1456 1.01 17.6	1325 1.01 17.5	1137 1.00 17.5	905 .96 17.5			
	2250	2104 .98 24	1986 1.00 22	1869 1.01 21	1749 1.03 19.8	1636 1.05 18.7	1518 1.07 18.2	1393 1.08 18.2	1221 1.08 18.1	1018 1.05 18.1	674 .97 18.2		
S1 (1)	2300	2151 1.05 25	2035 1.06 23	1921 1.08 22	1806 1.09 21	1692 1.12 19.6	1580 1.14 18.9	1457 1.15 18.8	1305 1.15 18.8	1116 1.13 18.8	870 1.08 18.8		
	2350	2197 1.12 26	2085 1.13 24	1972 1.15 23	1860 1.17 22	1748 1.19 20	1639 1.22 19.5	1520 1.23 19.5	1388 1.23 19.4	1212 1.22 19.4	1004 1.18 19.4	570 1.05 19.5	
S1 (1)	2400	2244 1.19 26	2134 1.21 25	2024 1.23 24	1914 1.24 22	1803 1.26 21	1697 1.29 20	1583 1.31 20	1466 1.32 20	1296 1.31 20	1106 1.28 20	851 1.22 20	
	2450	2291 1.26 27	2183 1.28 26	2075 1.30 25	1967 1.32 23	1858 1.34 22	1754 1.37 21	1645 1.39 21	1530 1.40 21	1380 1.39 21	1204 1.37 21	986 1.32 21	

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

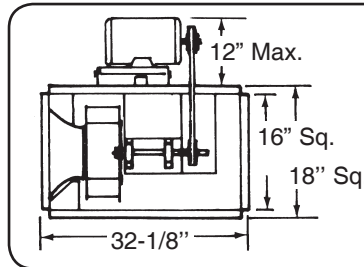
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. In-line Duct Fans

VIBK 12

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = .095 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

Average Weight = 80 Lbs.
 Outlet Velocity (FPM) = .562 x CFM
 Tip Speed = 3.27 x RPM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	600	651 .02 3.4											
	700	759 .03 4.6											
K3 (1/6)	800	867 .05 5.6	523 .05 3.2										
	900	976 .07 6.7	717 .08 4.5										
L1 (1/4)	1000	1084 .09 8.3	871 .11 6.0										
	1100	1193 .12 10.1	1005 .14 7.7	650 .13 6.3									
M1 (1/3)	1200	1301 .16 12.1	1134 .18 9.6	889 .18 7.6									
	1300	1410 .20 11.2	1260 .22 9.3	1056 .23 8.1	633 .21 7.5								
PI (1/2)	1400	1518 .25 12.5	1384 .27 10.8	1210 .29 9.4	941 .29 8.7								
	1450	1572 .28 13.2	1444 .30 11.5	1281 .32 10.1	1047 .32 9.3								
R1 (3/4)	1500	1627 .31 13.9	1503 .33 12.2	1348 .35 10.8	1148 .36 10.0	726 .32 9.5							
	1550	1681 .34 14.6	1561 .37 13.0	1413 .39 11.5	1228 .40 10.7	903 .38 10.1							
S1 (1)	1600	1735 .37 15.6	1619 .40 13.8	1479 .42 12.3	1306 .44 11.4	1047 .43 10.8							
	1650	1789 .41 16.6	1677 .44 14.8	1543 .46 13.2	1383 .48 12.2	1158 .47 11.5	674 .40 11.3						
T1 (1-1/2)	1700	1843 .45 17.5	1734 .48 15.8	1607 .50 14.1	1460 .52 13.1	1263 .52 12.3	908 .48 11.9						
	1750	1898 .49 18.6	1792 .52 16.8	1671 .54 15.2	1534 .57 13.9	1354 .57 13.2	1059 .55 12.5						
S1 (1)	1800	1952 .53 19.6	1849 .56 17.8	1734 .59 16.2	1601 .61 14.8	1434 .62 14.0	1198 .61 13.4	678 .50 13.3					
	1850	2006 .58 21	1906 .61 18.9	1796 .64 17.2	1667 .66 15.7	1512 .67 14.9	1306 .67 14.2	944 .61 13.9					
T1 (1-1/2)	1900	2060 .63 22	1963 .66 20	1859 .69 18.3	1733 .71 16.8	1589 .73 15.8	1411 .73 15.1	1111 .69 14.6					
	1950	2114 .68 23	2019 .71 21	1921 .74 19.4	1798 .76 17.8	1666 .79 16.8	1503 .79 16.0	1255 .77 15.3	779 .65 15.3				
T1 (1-1/2)	2000	2169 .73 24	2076 .76 22	1982 .80 20	1863 .82 18.9	1742 .85 17.8	1583 .85 17.0	1373 .84 16.2	1027 .77 15.9				
	2050	2223 .79 25	2132 .82 23	2042 .85 22	1927 .88 19.9	1811 .91 18.6	1662 .92 17.9	1480 .91 17.1	1194 .87 16.6				
T1 (1-1/2)	2100	2277 .85 26	2189 .88 24	2100 .92 22	1991 .94 21	1878 .97 19.5	1740 .98 18.7	1584 .99 18.0	1338 .96 17.4	938 .85 17.4			
	2150	2331 .91 27	2245 .94 25	2159 .98 23	2055 1.01 22	1944 1.03 20	1817 1.05 19.6	1669 1.06 18.9	1462 1.04 18.2	1147 .97 18.0			
T1 (1-1/2)	2200	2386 .97 28	2301 1.01 26	2217 1.05 24	2118 1.08 23	2009 1.10 21	1893 1.13 20	1749 1.14 19.8	1568 1.13 19.1	1301 1.08 18.7	795 .90 18.9		
	2250	2440 1.04 29	2357 1.08 27	2275 1.11 25	2180 1.15 24	2074 1.18 22	1968 1.20 21	1827 1.21 21	1673 1.22 20	1444 1.18 19.5	1090 1.07 19.4		
T1 (1-1/2)	2300	2494 1.11 30	2413 1.15 28	2333 1.19 26	2243 1.22 25	2139 1.25 23	2035 1.28 22	1905 1.29 22	1767 1.30 21	1566 1.28 20	1282 1.21 20		
	2350	2548 1.19 31	2469 1.23 29	2390 1.26 27	2305 1.30 26	2204 1.33 24	2102 1.36 23	1982 1.38 22	1847 1.39 22	1672 1.37 21	1427 1.32 21	1057 1.19 21	
T1 (1-1/2)	2400	2602 1.26 31	2525 1.30 30	2448 1.34 28	2367 1.38 27	2268 1.41 25	2168 1.44 24	2058 1.46 23	1926 1.47 23	1778 1.48 22	1570 1.44 22	1267 1.35 22	
	2450	2657 1.35 32	2581 1.38 31	2505 1.42 29	2429 1.46 28	2331 1.49 26	2234 1.53 25	2134 1.55 24	2004 1.57 24	1875 1.58 23	1683 1.55 22	1426 1.48 22	1021 1.31 22

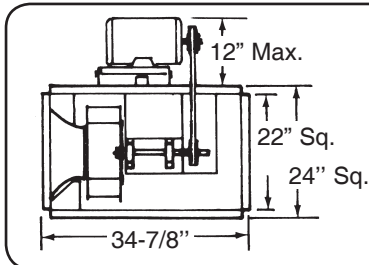
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VIBK 15

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = .263 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

Average Weight = 95 Lbs.
 Outlet Velocity (FPM) = 2.98 x CFM
 Tip Speed = 4.06 x RPM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
K1 (1/6)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
K2 (1/6)	550	1192 .04 3.1												
	600	1300 .05 3.7	621 .06 2.5											
L1 (1/4) M1 (1/3)	650	1409 .06 4.4	859 .07 3.1											
	700	1517 .08 5.1	1039 .09 3.8											
P1 (1/2)	750	1625 .10 5.8	1198 .12 4.6											
	800	1734 .12 6.5	1347 .14 5.3											
R1 (3/4)	850	1842 .14 7.3	1488 .17 6.1	888 .16 5.2										
	900	1950 .17 8.0	1619 .19 6.9	1135 .20 5.8										
S1 (1)	950	2059 .20 8.8	1748 .22 7.7	1327 .23 6.6										
	1000	2167 .23 9.6	1875 .26 8.5	1504 .27 7.4	587 .20 6.9									
T1 (1-1/2)	1050	2276 .27 10.3	2000 .30 9.3	1661 .32 8.3	1148 .30 7.5									
	1100	2384 .31 11.2	2124 .34 10.1	1812 .36 9.1	1380 .36 8.2									
V1 (2)	1150	2492 .35 12.1	2246 .39 11.0	1959 .41 10.0	1577 .41 9.1	569 .28 8.8								
	1200	2601 .40 12.9	2366 .44 11.9	2099 .46 11.0	1756 .47 10.1	1241 .44 9.5								
	1250	2709 .45 13.8	2484 .49 12.9	2230 .52 11.9	1924 .54 11.0	1505 .52 10.3								
	1300	2817 .51 14.7	2601 .55 13.8	2360 .58 12.9	2077 .60 12.0	1719 .60 11.3	969 .48 11.0							
	1350	2926 .57 15.7	2717 .61 14.8	2488 .64 14.0	2227 .67 13.1	1900 .67 12.3	1444 .64 11.7							
	1400	3034 .64 16.8	2833 .68 15.8	2615 .71 15.0	2375 .74 14.2	2078 .75 13.4	1693 .73 12.6							
	1450	3142 .71 17.9	2948 .75 16.9	2741 .79 16.0	2520 .82 15.3	2242 .84 14.5	1909 .83 13.7	1386 .76 13.5						
	1500	3251 .78 19.0	3062 .83 18.0	2866 .87 17.1	2651 .90 16.4	2395 .92 15.6	2091 .92 14.9	1705 .89 14.3						
	1550	3359 .86 20	3177 .91 19.2	2989 .95 18.3	2781 .99 17.5	2545 1.01 16.7	2269 1.02 16.0	1927 1.00 15.3	1386 .90 15.2					
	1600	3467 .95 21	3291 1.00 20	3112 1.04 19.5	2911 1.08 18.7	2693 1.11 18.0	2442 1.12 17.2	2134 1.12 16.4	1727 1.06 16.0					
	1650	3576 1.04 22	3404 1.09 22	3234 1.14 21	3039 1.18 19.8	2840 1.21 19.2	2595 1.23 18.4	2315 1.23 17.7	1975 1.20 17.0	1360 1.05 17.1				
	1700	3684 1.14 24	3518 1.19 23	3353 1.24 22	3166 1.28 21	2976 1.32 20	2747 1.34 19.5	2493 1.35 18.8	2194 1.33 18.1	1776 1.26 17.9				
	1750	3793 1.24 25	3631 1.30 24	3471 1.35 23	3292 1.39 22	3108 1.43 21	2897 1.46 21	2666 1.47 19.9	2384 1.46 19.3	2049 1.43 18.8	1440 1.25 19.0			
	1800	3901 1.35 26	3743 1.41 25	3588 1.46 24	3417 1.50 23	3238 1.55 22	3044 1.58 22	2820 1.60 21	2564 1.60 20	2270 1.58 20	1862 1.49 19.8			
	1850	4009 1.47 27	3856 1.52 26	3705 1.58 25	3542 1.63 24	3367 1.67 24	3190 1.71 23	2972 1.73 22	2741 1.74 22	2473 1.72 21	2146 1.68 21	1639 1.53 21		
	1900	4118 1.59 28	3968 1.65 27	3821 1.70 26	3665 1.75 26	3496 1.80 25	3326 1.84 24	3122 1.86 23	2910 1.88 23	2654 1.87 22	2367 1.85 22	1981 1.76 22	780 1.18 22	
	1950	4226 1.72 29	4080 1.78 28	3937 1.84 28	3788 1.89 27	3623 1.94 26	3457 1.98 25	3271 2.01 24	3064 2.03 24	2833 2.03 23	2578 2.02 23	2262 1.97 23	1786 1.81 23	
	1975	4280 1.79 30	4136 1.85 29	3995 1.90 28	3850 1.96 27	3686 2.01 27	3523 2.05 26	3344 2.09 25	3140 2.10 25	2921 2.11 24	2669 2.10 24	2373 2.06 23	1957 1.94 23	

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

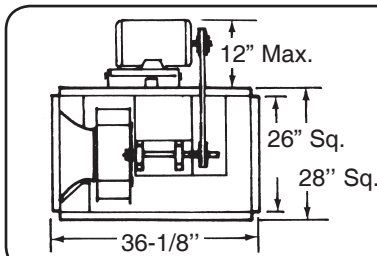
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. In-line Duct Fans

VIBK 18

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = .690 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

Average Weight = 145 Lbs.
 Outlet Velocity (FPM) = .213 x CFM
 Tip Speed = 4.94 x RPM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.																
K1 (1/6)	L1 (1/4)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750				
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP		
M1 (1/3)	P1 (1/2)	550	2043 .10 7.4	1316 .12 3.8														
		600	2229 .13 8.4	1596 .15 4.8														
		650	2414 .17 9.5	1850 .20 5.8														
		700	2600 .21 10.8	2090 .24 7.1														
		750	2786 .26 12.3	2320 .30 8.7	1680 .30 7.7													
		800	2972 .32 13.8	2536 .36 10.8	1988 .37 9.5													
		850	3157 .38 15.3	2749 .42 12.7	2266 .44 11.3	1474 .40 10.1												
		900	3343 .45 17.0	2958 .50 14.1	2522 .52 12.6	1915 .51 11.4												
		950	3529 .53 18.9	3165 .58 15.6	2766 .61 14.0	2264 .61 12.8	1269 .48 11.8											
		1000	3714 .62 21	3370 .67 17.1	3004 .71 15.4	2548 .72 14.3	1903 .68 13.2											
R1 (3/4)	S1 (1)	1050	3900 .72 23	3573 .77 18.7	3235 .82 16.8	2824 .83 15.7	2294 .81 14.7	1183 .63 13.7										
		1100	4086 .82 25	3775 .89 20	3452 .93 18.2	3078 .95 17.2	2632 .95 16.1	1933 .87 15.1										
		1150	4272 .94 27	3975 1.01 22	3666 1.05 20	3322 1.08 19.0	2916 1.09 17.9	2380 1.05 16.9	1292 .83 15.9									
		1175	4364 1.00 28	4075 1.07 23	3773 1.12 21	3442 1.15 19.9	3055 1.16 18.8	2573 1.13 17.8	1770 1.01 16.8									
		1200	4457 1.07 29	4173 1.14 24	3878 1.19 22	3562 1.23 21	3193 1.24 19.8	2764 1.22 18.7	2060 1.11 17.7									
		1225	4550 1.14 30	4272 1.21 25	3984 1.26 23	3680 1.30 22	3329 1.32 21	2915 1.31 19.7	2333 1.25 18.6									
		1250	4643 1.21 31	4370 1.28 26	4088 1.34 24	3798 1.38 23	3455 1.40 22	3058 1.40 21	2531 1.33 19.7	1548 1.11 18.6								
		1275	4736 1.28 32	4468 1.36 28	4193 1.41 25	3914 1.46 24	3578 1.48 23	3200 1.48 22	2725 1.44 21	1980 1.30 19.6								
		1300	4829 1.36 33	4566 1.44 29	4297 1.49 26	4023 1.54 25	3701 1.57 24	3340 1.57 23	2917 1.55 22	2269 1.43 21								
		1325	4922 1.44 34	4664 1.52 30	4400 1.58 27	4132 1.63 26	3822 1.66 25	3478 1.67 24	3095 1.66 22	2535 1.58 21	1419 1.24 21							
T1 (1-1/2)	V1 (2)	1350	5014 1.52 35	4762 1.60 31	4503 1.67 28	4240 1.72 27	3942 1.75 26	3615 1.77 25	3240 1.76 24	2732 1.68 23	1920 1.43 22							
		1375	5107 1.61 36	4859 1.69 32	4606 1.76 30	4347 1.81 28	4062 1.85 27	3750 1.87 26	3382 1.86 25	2927 1.80 24	2256 1.64 23							
		1400	5200 1.70 38	4956 1.78 34	4708 1.85 31	4454 1.90 29	4181 1.95 28	3875 1.97 27	3524 1.96 26	3119 1.93 25	2543 1.81 24	1329 1.44 23						
		1425	5293 1.79 39	5053 1.87 35	4810 1.95 33	4561 2.00 30	4299 2.05 29	3998 2.07 28	3663 2.07 27	3309 2.05 26	2777 1.97 25	1903 1.62 24						
		1450	5386 1.88 40	5150 1.97 37	4912 2.05 34	4667 2.10 32	4416 2.15 31	4121 2.18 30	3802 2.19 28	3452 2.18 27	2974 2.09 26	2295 1.90 25						
		1475	5479 1.98 41	5247 2.07 38	5013 2.15 36	4772 2.21 33	4532 2.26 32	4242 2.29 31	3939 2.30 30	3596 2.29 29	3168 2.23 28	2584 2.09 27	1377 1.67 26					
		1500	5572 2.09 43	5343 2.18 40	5114 2.26 37	4878 2.32 35	4641 2.37 33	4363 2.40 32	4075 2.42 31	3737 2.42 30	3360 2.37 29	2855 2.29 28	1996 1.87 27					
		1525	5664 2.19 44	5440 2.28 41	5215 2.37 39	4982 2.43 37	4750 2.49 35	4483 2.52 34	4202 2.54 33	3878 2.54 32	3545 2.53 31	3053 2.41 30	2379 2.23 29					
		1550	5757 2.30 45	5536 2.40 43	5316 2.48 40	5087 2.54 38	4858 2.60 37	4602 2.64 36	4326 2.67 34	4017 2.67 33	3690 2.66 32	3248 2.57 31	2669 2.41 30	1543 1.99 29				
		1575	5850 2.41 47	5633 2.51 44	5416 2.60 42	5191 2.66 40	4965 2.72 38	4721 2.77 37	4448 2.79 36	4155 2.80 35	3833 2.79 34	3442 2.73 33	2954 2.61 32	2097 2.19 31				

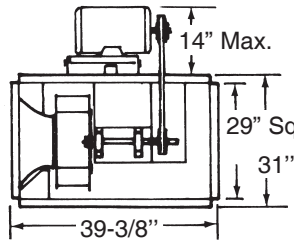
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VIBK 21

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = $1.29 \times \left[\frac{\text{RPM}}{1000} \right]^3$

Average Weight = 200 Lbs.

Outlet Velocity (FPM) = $.171 \times \text{CFM}$

Tip Speed = $5.76 \times \text{RPM}$

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.													
L1 (1/4)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750		
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	
M1 (1/3)	400	2184 .08 3.7													
	450	2457 .11 4.7	1213 .11 4.3												
	P1 (1/2)	500	2730 .15 5.7	1750 .17 5.5											
		550	3003 .21 6.8	2182 .23 6.6											
	R1 (3/4)	600	3276 .27 7.8	2558 .29 7.4	1117 .24 7.1										
		650	3548 .34 8.8	2907 .37 8.4	1876 .35 8.2										
	S1 (1)	700	3821 .42 9.9	3235 .46 9.4	2408 .46 9.3										
		750	4094 .52 11.0	3556 .56 10.6	2868 .57 10.6	1665 .49 10.2									
	T1 (1-1/2)	800	4367 .63 12.3	3872 .68 11.9	3255 .70 11.9	2341 .65 11.6									
		850	4640 .76 13.6	4183 .81 13.2	3629 .84 13.2	2881 .82 13.0	1612 .68 12.6								
		875	4777 .83 14.2	4333 .88 13.9	3813 .91 13.8	3115 .90 13.8	2058 .80 13.4								
		900	4913 .90 14.8	4481 .95 14.6	3983 .99 14.5	3344 .98 14.6	2427 .91 14.2								
925		5050 .98 15.5	4630 1.03 15.3	4150 1.07 15.2	3565 1.08 15.3	2717 1.01 14.9	995 .69 14.5								
950		5186 1.06 16.2	4777 1.12 16.0	4314 1.16 15.9	3759 1.17 16.1	2995 1.12 15.8	1795 .94 15.3								
975		5223 1.15 17.0	4924 1.20 16.8	4478 1.25 16.7	3950 1.26 16.8	3265 1.23 16.6	2251 1.09 16.1								
1000		5459 1.24 17.7	5071 1.30 17.5	4640 1.34 17.4	4139 1.36 17.5	3500 1.34 17.4	2622 1.23 17.0								
1050		5732 1.43 19.2	5362 1.49 19.0	4962 1.54 18.8	4511 1.58 18.9	3960 1.57 19.0	3214 1.49 18.7	2168 1.32 18.3							
1075		5869 1.54 19.9	5507 1.60 19.7	5121 1.65 19.4	4694 1.69 19.6	4170 1.69 19.7	3489 1.63 19.4	2570 1.48 19.1							
1100		6005 1.65 21	5652 1.71 20	5279 1.77 20	4863 1.81 20	4364 1.81 20	3744 1.77 20	2939 1.65 20	1454 1.27 20						
V1 (2)		1125	6142 1.76 21	5796 1.83 21	5436 1.89 21	5030 1.93 21	4555 1.94 21	3978 1.91 21	3240 1.81 21	2144 1.57 20					
	1150	6278 1.88 22	5940 1.95 22	5593 2.01 21	5195 2.05 21	4744 2.07 21	4209 2.05 21	3519 1.96 21	2609 1.78 21						
	1175	6415 2.01 23	6084 2.08 22	5748 2.14 22	5360 2.19 22	4931 2.21 22	4437 2.20 22	3793 2.13 22	2982 1.98 22	1507 1.53 22					
	1200	6551 2.14 23	6227 2.21 23	5903 2.28 23	5523 2.32 23	5117 2.35 23	4648 2.35 23	4054 2.29 23	3328 2.17 22	2234 1.89 22					
	1225	6688 2.27 24	6370 2.35 24	6053 2.42 23	5685 2.46 23	5301 2.50 23	4841 2.50 23	4289 2.46 23	3610 2.35 23	2723 2.14 23					
	1250	6824 2.42 25	6513 2.49 24	6202 2.56 24	5846 2.61 24	5480 2.66 24	5033 2.66 24	4521 2.62 24	3887 2.53 24	3097 2.36 24	1762 1.92 24				
	1275	6961 2.56 26	6656 2.64 25	6351 2.71 25	6006 2.77 25	5648 2.81 25	5223 2.82 25	4750 2.80 25	4161 2.73 25	3464 2.59 25	2418 2.28 24				
	1300	7097 2.72 26	6798 2.79 26	6499 2.87 26	6166 2.93 25	5814 2.97 25	5411 2.99 25	4976 2.98 25	4415 2.79 25	3752 2.79 25	2899 2.56 25				
	1325	7233 2.88 27	6940 2.96 27	6647 3.03 26	6325 3.09 26	5980 3.14 26	5597 3.17 26	5173 3.16 26	4650 3.11 26	4031 3.00 26	3272 2.81 26	2101 2.40 26			
	1350	7370 3.04 28	7082 3.12 27	6794 3.20 27	6483 3.27 27	6144 3.32 27	5782 3.35 27	5366 3.34 27	4882 3.31 27	4306 3.22 27	3640 3.06 27	2679 2.75 26			

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

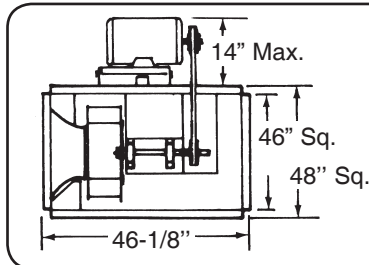
The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

Cent. In-line Duct Fans

VIBK 30

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = 8.10 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

Average Weight = 335 Lbs.

Outlet Velocity (FPM) = .068 x CFM

Tip Speed = 8.12 x RPM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.														
P1 (1/2)	RPM	.000	.250	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750			
		CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	SONES	SONES
R1 (3/4)	275	4436 .13														
	300	4840 .17														
S1 (1)	325	5243 .22	2794 .26													
	350	5646 .27	3571 .34													
T1 (1-1/2)	375	6050 .34	4248 .42													
	400	6453 .41	4824 .50													
V1 (2)	425	6856 .49	5377 .60													
	450	7259 .58	5902 .70	3622 .68												
W1 (3)	475	7663 .68	6386 .81	4467 .84												
	500	8066 .80	6863 .93	5189 .99												
X1 (5)	525	8469 .92	7333 1.07	5866 1.15	3112 .97											
	550	8873 1.06	7797 1.22	6468 1.32	4397 1.29											
V1 (7-1/2)	575	9276 1.21	8257 1.38	7031 1.49	5247 1.53											
	600	9679 1.38	8712 1.55	7582 1.68	6013 1.77											
C1 (10)	625	10083 1.56	9156 1.74	8123 1.88	6700 2.01	4620 1.76										
	650	10486 1.75	9596 1.94	8611 2.09	7371 2.27	5588 2.09										
V1 (7-1/2)	675	10889 1.96	10034 2.16	9094 2.32	7954 2.53	6425 2.41	3808 1.94									
	700	11292 2.19	10468 2.39	9571 2.56	8516 2.79	7142 2.71	5223 2.49									
V1 (7-1/2)	725	11696 2.43	10901 2.64	10043 2.83	9070 3.08	7826 3.02	6189 2.90									
	750	12099 2.69	11332 2.91	10511 3.10	9616 3.39	8496 3.36	7029 3.29	4923 2.89								
V1 (7-1/2)	775	12502 2.97	11761 3.19	10975 3.40	10136 3.71	9083 3.69	7773 3.67	6106 3.47								
	800	12906 3.27	12189 3.50	11436 3.72	10623 4.04	9648 4.03	8462 4.06	6977 3.92	4606 3.27							
V1 (7-1/2)	825	13309 3.58	12615 3.82	11893 4.06	11105 4.40	10205 4.39	9138 4.47	7813 4.39	6027 4.04							
	850	13712 3.92	13040 4.16	12348 4.41	11582 4.77	10755 4.77	9779 4.89	8544 4.84	7056 4.64							
V1 (7-1/2)	875	14116 4.28	13463 4.53	12792 4.78	12056 5.17	11297 5.17	10349 5.30	9233 5.31	7903 5.17	6113 4.72						
	900	14519 4.65	13886 4.91	13233 5.18	12526 5.59	11804 5.59	10912 5.73	9910 5.80	8722 5.73	7245 5.47						
V1 (7-1/2)	925	14922 5.05	14307 5.32	13672 5.59	12993 6.04	12290 6.02	11468 6.18	10571 6.31	9420 6.25	8098 6.06	6338 5.53					
	950	15325 5.47	14728 5.74	14109 6.02	13457 6.50	12772 6.47	12017 6.66	11144 6.79	10106 6.80	8935 6.69	7516 6.40					
V1 (7-1/2)	975	15729 5.92	15148 6.19	14545 6.48	13918 7.00	13251 6.95	12560 7.16	11709 7.30	10782 7.37	9685 7.30	8383 7.06	6679 6.47				
	1000	16132 6.38	15567 6.67	14979 6.96	14376 7.51	13725 7.46	13075 7.68	12268 7.83	11438 7.97	10377 7.91	9223 7.76	7858 7.43	5559 6.26			

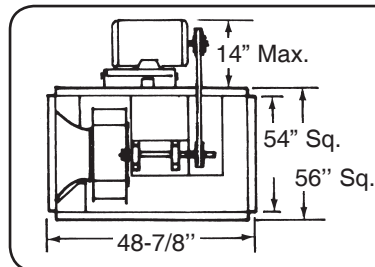
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VIBK 36

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

$$\text{Max BHP} = 21.3 \times \left[\frac{\text{RPM}}{1000} \right]^3$$

Average Weight = 450 Lbs.
 Outlet Velocity (FPM) = .049 x CFM
 Tip Speed = 9.62 x RPM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.											
RI (3/4)	RPM	.000	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	2.250
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
S1 (1)	250	7141 .30 8.3	1999 .22 3.1										
	270	7713 .37 9.3	4261 .39 4.2										
T1 (1-1/2)	290	8284 .46 10.3	5629 .50 5.4										
	310	8855 .57 11.3	6615 .63 6.6	2755 .46 5.0									
V1 (2)	330	9426 .68 12.4	7552 .77 8.0	5141 .71 6.1									
	350	9998 .82 13.5	8287 .91 9.3	6633 .88 7.3									
W1 (3)	370	10569 .96 14.6	9006 1.07 10.7	7630 1.06 8.5	4637 .93 7.1								
	390	11140 1.13 15.8	9685 1.24 12.0	8597 1.26 9.9	6933 1.20 8.4	2731 .75 7.1							
X1 (5)	410	11712 1.31 16.9	10355 1.43 13.4	9466 1.47 11.4	7955 1.42 9.7	4725 1.22 8.4							
	430	12283 1.51 18.1	11010 1.64 14.8	10199 1.69 12.9	8946 1.66 11.1	7088 1.58 9.7	3218 1.06 8.4						
Y1 (7-1/2)	450	12854 1.73 19.3	11653 1.87 16.2	10920 1.92 14.5	9911 1.93 12.7	8469 1.87 11.2	5285 1.63 9.9						
	470	13426 1.97 20	12290 2.12 17.6	11603 2.17 16.0	10803 2.22 14.3	9473 2.16 12.7	7647 2.06 11.5						
C1 (10)	490	13997 2.24 22	12922 2.39 18.9	12277 2.45 17.5	11539 2.50 15.9	10451 2.48 14.3	9127 2.40 13.0	3183 1.38 10.5					
	510	14568 2.52 23	13548 2.69 20	12943 2.74 18.9	12264 2.80 17.4	11408 2.82 15.9	10136 2.75 14.6	4885 2.16 12.2					
	530	15139 2.83 24	14158 3.00 22	13593 3.06 20	12966 3.13 18.9	12246 3.18 17.5	11121 3.12 16.0	7375 2.86 13.7					
	550	15711 3.16 26	14765 3.34 23	14235 3.41 22	13645 3.47 20	12980 3.53 18.9	12085 3.53 17.6	9651 3.36 15.2	3736 2.03 13.1				
	570	16282 3.52 27	15370 3.70 24	14873 3.78 23	14316 3.85 23	13704 3.91 22	13022 3.96 19.1	10753 3.79 16.7	5436 3.01 14.7				
	590	16853 3.91 28	15972 4.09 26	15507 4.18 24	14982 4.25 23	14409 4.32 22	13762 4.37 21	11759 4.26 17.8	7949 3.92 16.2	2232 1.74 14.3			
	610	17425 4.32 30	16572 4.51 27	16137 4.60 26	15632 4.67 25	15089 4.75 23	14492 4.81 22	12744 4.75 19.6	10238 4.53 17.7	4705 3.11 15.9			
	630	17996 4.76 31	17170 4.96 29	16757 5.06 27	16275 5.13 26	15762 5.20 25	15214 5.28 24	13711 5.29 21	11651 5.10 19.2	6667 4.26 17.5			
	650	18567 5.22 32	17767 5.43 30	17367 5.53 29	16914 5.61 28	16431 5.69 27	15911 5.77 25	14661 5.86 23	12665 5.66 21	9135 5.29 19.1	4358 3.32 17.4		
	670	19139 5.72 34	18362 5.93 31	17974 6.04 30	17549 6.13 29	17089 6.20 28	16589 6.29 27	15475 6.41 25	13660 6.27 22	11415 6.03 21	5977 4.69 19.1		
	680	19424 5.98 34	18659 6.20 32	18277 6.30 31	17866 6.40 30	17412 6.48 29	16927 6.56 28	15844 6.69 25	14150 6.58 23	12242 6.38 21	7141 5.33 19.9	2323 2.54 18.3	
	690	19710 6.25 35	18956 6.47 33	18579 6.58 32	18181 6.68 31	17735 6.75 30	17263 6.84 28	16210 6.98 26	14637 6.91 24	12757 6.70 22	8400 5.97 21	4257 3.69 19.1	
	700	19996 6.52 36	19252 6.75 34	18881 6.86 33	18496 6.96 32	18056 7.04 30	17597 7.12 29	16575 7.27 27	15120 7.24 25	13266 7.03 23	9626 6.58 22	5078 4.44 20	
	710	20281 6.81 37	19549 7.03 35	19182 7.15 33	18811 7.26 32	18376 7.33 31	17931 7.42 30	16938 7.58 28	15599 7.58 26	13771 7.38 24	10777 7.00 22	5888 5.23 21	
	720	20567 7.10 37	19844 7.33 35	19483 7.44 34	19122 7.56 33	18696 7.64 32	18263 7.72 31	17229 7.89 29	16074 7.94 27	14272 7.73 25	11914 7.43 23	6749 6.02 22	
	730	20852 7.40 38	20140 7.63 36	19784 7.75 35	19427 7.86 34	19015 7.95 33	18592 8.03 32	17658 8.21 30	16546 8.31 27	14768 8.09 25	12991 7.87 24	8020 6.73 22	4202 4.18 21
	740	21138 7.71 39	20435 7.94 37	20084 8.06 36	19732 8.18 35	19333 8.27 34	18916 8.35 33	18011 8.53 30	16966 8.66 28	15261 8.46 26	13507 8.24 25	9275 7.47 23	5185 5.09 22
	750	21424 8.02 40	20730 8.26 38	20383 8.38 37	20037 8.50 36	19650 8.60 35	19239 8.68 33	18353 8.86 31	17336 9.00 29	15750 8.85 27	14020 8.63 25	10484 8.13 23	5997 5.96 22

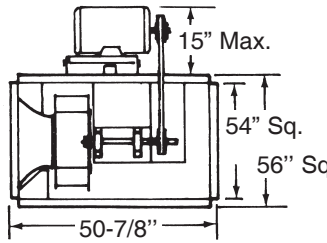
Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VIBK 42

BELT DRIVE

PERFORMANCE DATA



DESIGN DATA

Max BHP = $40.0 \times \left[\frac{\text{RPM}}{1000} \right]^3$

Average Weight = 450 Lbs.

Outlet Velocity (FPM) = .049 x CFM

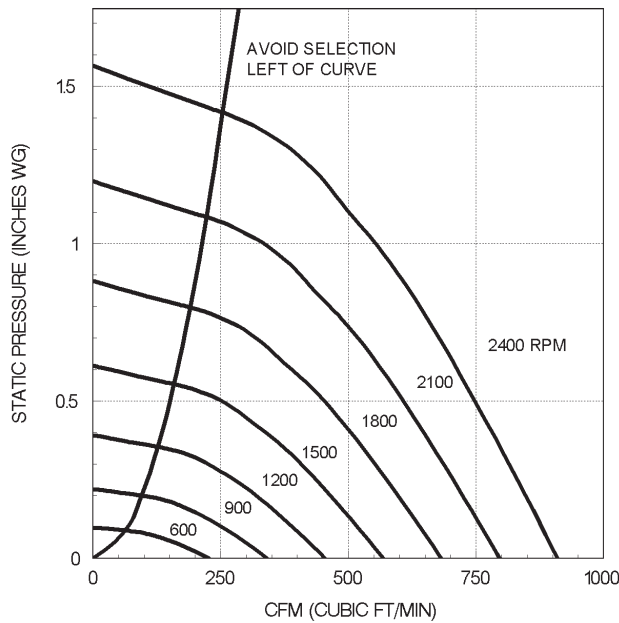
Tip Speed = 11.26 x RPM

RPM Range - Motor HP		STATIC PRESSURE, INCHES W. G.												
S1 (1)	RPM	.000	.250	.375	.500	.625	.750	1.000	1.250	1.500	1.750	2.000	2.250	
		CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES	CFM BHP SONES
T1 (1-1/2)	215	8935 0.38 6.4	1838 0.20 4.3											
	230	9559 0.46 7.1	4800 0.43 5.3											
	245	10182 0.56 7.9	6216 0.56 6.2											
	260	10806 0.67 8.6	7385 0.70 7.1											
	275	11429 0.79 9.3	8428 0.84 8.0	4989 0.68 7.0										
	290	12052 0.92 10.2	9425 1.00 8.9	6696 0.90 8.0										
	305	12676 1.07 11.0	10301 1.17 9.9	8003 1.09 9.0	2754 0.58 8.1									
	320	13299 1.24 12.0	11074 1.34 10.9	9164 1.30 10.1	6133 1.11 9.2									
	335	13923 1.42 13.2	11835 1.53 12.0	10200 1.51 11.1	7745 1.38 10.2	2092 0.64 9.4								
	350	14546 1.62 14.5	12586 1.75 13.3	11203 1.75 12.3	9069 1.65 11.4	5350 1.26 10.5								
W1 (3)	365	15169 1.84 15.8	13328 1.97 14.6	12170 2.00 13.6	10237 1.92 12.6	7722 1.73 11.7								
	380	15793 2.08 17.2	14062 2.22 16.1	12950 2.25 15.0	11315 2.20 14.0	9188 2.05 13.0	4417 1.31 12.1							
	395	16416 2.33 18.6	14769 2.49 17.6	13720 2.52 16.5	12328 2.50 15.4	10430 2.38 14.4	7975 2.15 13.4							
	410	17040 2.61 19.8	15453 2.77 18.7	14480 2.81 17.8	13321 2.82 16.7	11592 2.72 15.7	9458 2.53 14.8							
	425	17663 2.91 21	16132 3.07 19.8	15232 3.13 19.0	14238 3.16 18.0	12660 3.08 17.1	10818 2.93 16.1							
	440	18286 3.22 22	16808 3.40 21	15977 3.46 20	15016 3.50 19.3	13675 3.45 18.4	11995 3.32 17.4	5295 2.07 15.6						
	455	18910 3.57 23	17480 3.74 22	16715 3.82 22	15786 3.86 21	14671 3.85 19.7	13143 3.75 18.8	9043 3.26 17.0						
	470	19533 3.93 24	18149 4.11 23	17446 4.20 23	16547 4.24 22	15648 4.28 21	14171 4.17 20	10587 3.78 18.4						
	485	20157 4.32 25	18815 4.51 24	18145 4.60 24	17301 4.65 23	16430 4.69 22	15181 4.63 22	12033 4.32 19.9						
	500	20780 4.73 26	19479 4.93 26	18828 5.03 25	18049 5.09 25	17204 5.13 24	16174 5.11 23	13221 48.3 19.6	8791 4.03 19.6					
X1 (5)	515	21403 5.17 27	20140 5.37 27	19509 5.47 27	18790 5.55 26	17970 5.59 25	17149 5.63 24	14386 5.37 23	10803 4.83 21					
	530	22027 5.64 29	20799 5.84 28	20186 5.95 29	19526 6.04 27	18729 6.08 26	17931 6.12 26	15494 5.94 24	12278 5.48 23					
	545	22650 6.13 30	21457 6.34 29	20860 6.45 29	20257 6.55 29	19481 6.60 28	18706 6.64 27	16518 6.51 26	13673 6.15 24	9214 5.11 22				
	560	23274 6.65 31	22112 6.87 31	21531 6.98 30	20950 7.09 30	20228 7.14 30	19473 7.19 29	17527 7.12 27	14859 6.79 26	11420 6.15 24				
	575	23897 7.20 32	22766 6.42 32	22200 7.53 32	21634 7.65 32	20969 7.72 31	20234 7.77 30	18522 7.77 29	16023 7.47 27	12904 6.91 26	5867 4.18 24			
	590	24520 7.77 33	23418 8.01 33	22866 8.12 33	22315 8.24 33	21706 8.33 33	20989 8.38 32	19503 8.45 31	17146 8.18 30	14359 7.71 27	10156 6.55 26			
	605	25144 8.38 35	24069 8.62 35	23531 8.74 35	22993 8.86 35	22437 8.97 35	21739 9.02 34	20342 9.11 32	18174 8.89 31	15612 8.49 29	12348 7.76 27			
	620	25767 9.02 36	24718 9.26 36	24193 9.39 36	23669 9.51 37	23144 9.63 36	22483 9.69 36	21120 9.79 34	19188 9.64 33	16788 9.28 32	13833 8.64 29	7126 5.63 27		
	635	26391 9.69 38	25366 9.94 38	24854 10.07 38	24342 10.19 38	23829 10.31 38	23223 10.39 38	21892 10.50 36	20188 10.43 35	17946 10.11 33	15291 9.57 31	11508 8.40 29		
	650	27014 10.39 40	26013 10.65 40	25513 10.78 39	25012 10.90 40	24512 11.03 40	23958 11.13 40	22657 11.24 39	21176 11.26 37	19037 10.96 35	16588 10.49 33	13522 9.69 31	6330 5.87 29	

Performance certified is for installation type A - free inlet, free outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

The sound ratings shown are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A, free inlet hemispherical sone levels.

VIBK 06
AIR PERFORMANCE



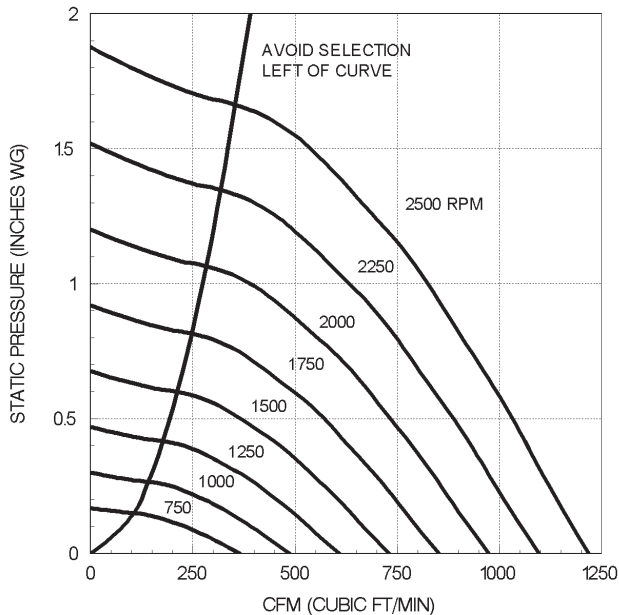
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 06
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
600	.000	36	36	39	38	39	36	33	30	43
	.125	51	52	50	51	48	48	43	37	54
1000	.000	50	52	51	52	50	50	47	43	56
	.375	64	64	60	59	57	56	52	46	63
1400	.000	59	62	61	61	58	58	56	52	64
	.375	64	64	60	59	57	56	52	46	63
1800	.000	65	70	68	66	65	63	62	59	71
	.375	69	70	68	65	64	61	60	55	69
	.750	73	71	69	65	64	62	60	54	69
2100	.000	70	75	73	70	70	66	66	63	75
	.500	74	74	73	69	68	65	64	59	73
	1.000	78	76	74	69	68	65	64	58	74
2300	.000	72	77	76	72	72	68	69	65	77
	.500	75	77	76	71	71	67	67	62	76
	1.000	79	79	77	71	71	67	67	61	76
2500	.000	73	79	78	75	74	70	70	68	79
	.500	76	80	78	74	73	69	69	65	78
	1.000	79	81	79	74	73	69	69	64	78
	1.500	82	82	80	74	73	69	69	64	78

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 08
AIR PERFORMANCE



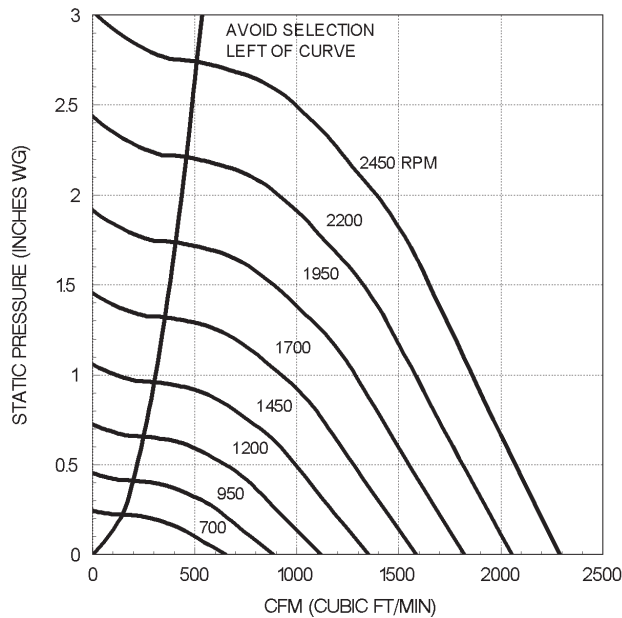
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 08
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
650	.000	39	41	43	40	40	39	37	34	46
	.250	53	56	52	53	50	49	45	40	56
1450	.000	59	64	64	63	60	58	57	54	66
	.500	60	65	62	61	58	57	54	49	64
1800	.000	66	70	70	68	66	62	62	60	72
	.500	64	71	70	67	65	62	61	57	70
	.750	65	70	70	66	65	62	60	55	70
2100	.000	70	74	75	72	71	66	66	64	76
	.500	68	75	75	71	70	65	65	62	75
	1.000	69	74	76	70	69	65	65	60	74
2300	.000	72	76	77	75	74	68	68	66	78
	.750	70	77	78	73	72	67	67	64	77
	1.250	71	76	78	72	71	67	67	62	77
2500	.000	73	78	80	77	76	71	70	68	81
	.500	72	79	80	76	75	70	70	67	80
	1.000	71	79	81	76	74	70	69	66	79
	1.500	72	78	81	75	73	70	69	64	79

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 10
AIR PERFORMANCE



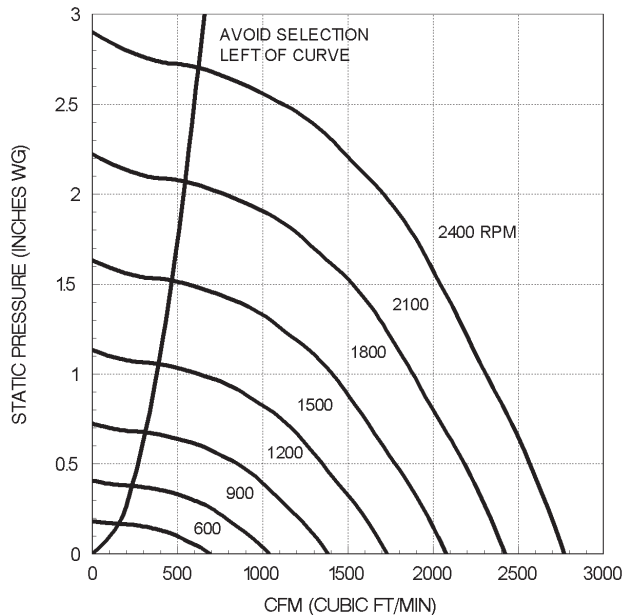
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 10
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
650	.000	49	49	51	46	56	44	35	25	57
	.500	69	65	59	57	53	53	49	42	60
1050	.000	62	67	70	67	68	70	63	52	74
	.375	65	67	69	65	63	63	58	51	69
	.750	67	69	68	64	61	61	57	51	68
1400	.000	71	71	76	74	71	76	71	60	80
	.625	72	72	75	72	67	68	65	58	75
	1.250	74	75	75	71	66	66	64	58	74
1750	.000	77	75	80	80	73	81	77	67	85
	.500	77	76	80	79	72	76	74	65	82
	1.000	78	77	79	78	71	72	70	64	80
	2.000	80	80	80	77	70	70	70	63	79
2100	.000	79	81	83	84	78	82	81	73	88
	.500	79	82	83	83	77	79	79	71	86
	1.000	80	82	83	83	76	76	76	69	84
	2.000	79	84	84	82	75	74	73	68	83
2450	.000	80	85	84	82	75	73	73	68	83
	.500	80	85	84	82	75	73	73	68	83
	1.000	80	85	84	82	75	73	73	68	83

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 12
AIR PERFORMANCE



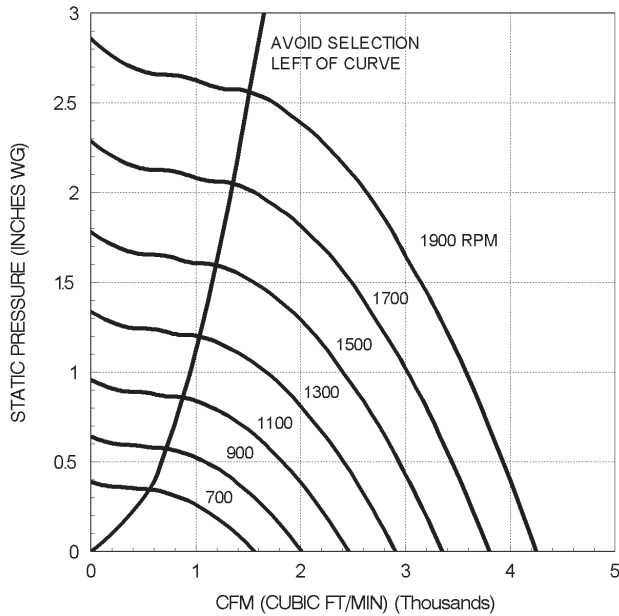
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 12
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
600	.000	51	53	52	49	57	43	37	30	58
	.500	67	67	67	64	63	64	53	46	69
1000	.000	68	72	73	70	68	71	66	53	76
	.375	67	70	70	67	65	66	61	51	72
	.750	69	71	70	65	63	62	58	51	69
1400	.000	75	77	79	77	72	75	75	62	81
	.750	74	76	76	74	69	70	68	59	77
	1.250	76	78	77	72	67	67	64	58	75
1750	.000	81	81	84	83	76	78	82	69	86
	.500	80	81	82	81	74	76	78	67	84
	1.000	79	81	81	80	73	74	74	65	82
	2.000	82	83	82	78	71	71	69	64	80
2100	.000	83	86	87	87	81	81	84	76	90
	.500	82	86	86	86	80	79	82	74	88
	1.000	81	86	86	85	79	78	79	72	87
	2.000	81	87	86	83	77	75	75	69	85
	2.750	84	88	87	83	76	74	73	68	84

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 15 AIR PERFORMANCE



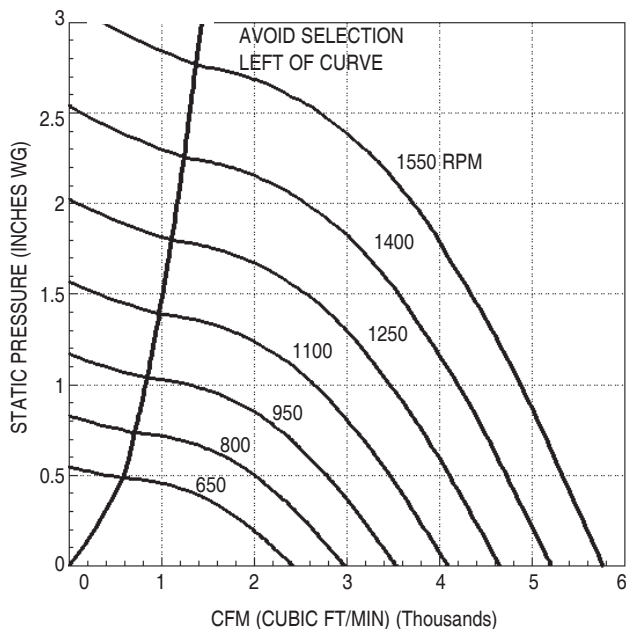
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 15 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	53	53	55	55	51	44	37	30	56
	.000	67	65	65	65	65	58	51	44	68
850	.500	65	63	61	56	56	53	48	42	61
	.000	77	74	73	72	72	67	60	53	76
1150	.500	76	74	73	70	67	63	57	52	72
	.750	75	73	71	67	64	62	57	51	70
	.000	85	81	79	78	77	75	68	61	82
1450	1.000	83	81	79	75	71	69	64	58	78
	1.500	83	80	77	73	68	67	63	58	76
	.000	91	87	84	82	81	81	74	67	87
1750	1.000	89	87	85	82	78	76	70	64	84
	1.500	89	87	84	80	75	74	70	64	83
	2.000	89	86	82	79	73	72	69	64	81
	.000	93	91	87	85	84	83	77	70	89
1950	1.000	91	90	88	85	82	80	74	68	88
	2.000	91	90	87	83	78	76	72	67	85
	2.500	91	90	86	82	76	75	72	67	84
	2.750	91	90	86	82	76	75	72	67	84

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 18 AIR PERFORMANCE



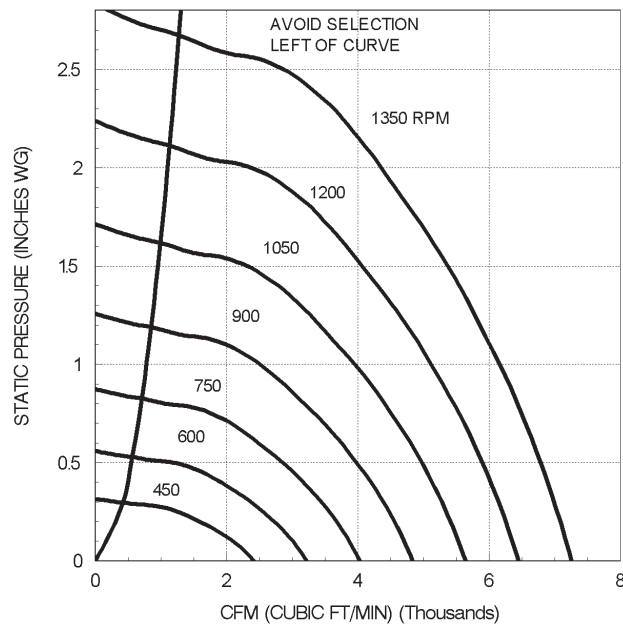
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 18 SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
550	.000	64	60	60	57	64	58	47	36	66
	.000	69	74	68	66	67	68	59	48	72
750	.625	67	70	65	63	61	60	54	46	66
	.000	73	81	74	72	70	75	67	57	79
950	.500	73	78	72	71	67	68	63	55	74
	1.000	72	77	71	69	65	66	62	54	73
	.000	75	84	80	78	73	80	74	64	83
1150	.750	76	82	78	76	71	72	69	61	79
	1.250	76	80	77	75	70	71	68	60	78
	.000	77	87	87	82	78	81	79	70	87
1350	1.000	79	85	85	80	76	75	73	67	83
	1.500	79	84	84	79	75	74	72	66	82
	2.000	78	84	84	79	75	74	72	66	82
	.000	79	89	92	84	81	82	83	74	90
1500	1.000	80	88	90	83	80	78	77	70	87
	1.750	80	87	88	82	78	76	75	69	86
	2.000	80	86	88	81	78	76	75	69	85
	2.500	80	86	88	81	78	76	75	69	85

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 21
AIR PERFORMANCE



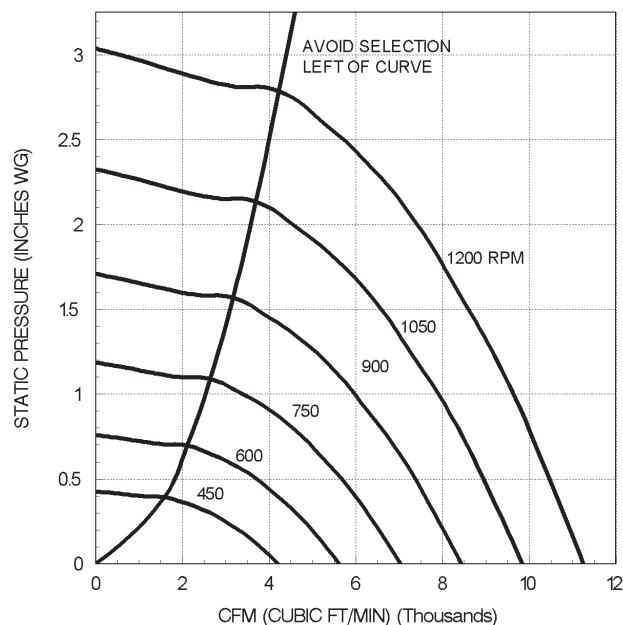
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 21
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
400	.000	62	60	55	53	53	49	41	33	58
600	.000	70	71	67	62	62	61	54	46	68
	.500	73	70	65	62	62	57	50	43	67
750	.000	74	76	73	68	66	67	62	54	73
	.375	75	76	72	68	67	66	59	50	73
	.750	78	76	72	68	67	64	57	50	73
900	.000	78	79	78	73	70	71	68	60	78
	.500	78	80	77	73	70	72	65	57	78
	1.000	81	81	77	72	70	70	64	56	77
1075	.000	81	83	83	78	73	75	73	65	82
	.500	81	84	82	78	73	76	72	63	82
	1.000	81	85	82	78	73	77	71	63	82
	1.500	85	85	82	77	74	75	69	62	82
1250	.000	84	86	87	83	78	78	77	71	86
	.750	84	87	86	82	78	79	76	68	86
	1.250	84	88	86	82	77	80	75	68	86
	1.750	86	88	86	81	78	79	74	67	86
	2.250	90	89	86	82	78	78	73	66	86

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 24
AIR PERFORMANCE



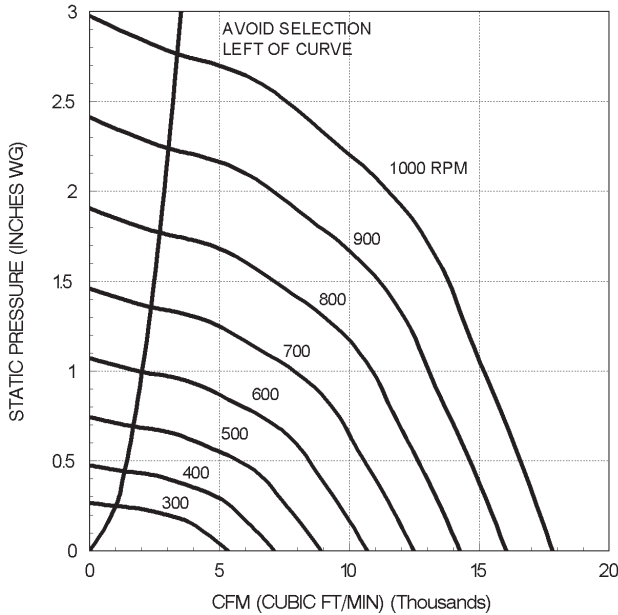
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 24
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
400	.000	66	63	59	60	67	62	47	32	69
550	.000	75	73	68	66	72	73	61	46	76
	.500	73	71	66	64	64	61	55	49	68
675	.000	80	79	75	70	74	78	70	55	81
	.250	80	79	74	70	71	73	66	54	77
	.500	79	79	74	70	69	69	62	54	75
	.750	79	77	72	68	68	67	62	55	74
800	.000	85	84	80	74	75	82	77	62	86
	.375	84	85	80	74	74	77	72	61	82
	.625	83	85	80	73	73	74	68	60	80
	1.000	84	82	78	72	72	72	67	60	78
	1.250	84	81	78	71	72	71	67	61	78
925	.000	88	89	85	78	77	86	83	69	89
	.375	87	89	85	78	76	82	78	67	86
	.625	87	89	84	77	76	80	75	66	85
	1.000	87	88	84	77	75	77	72	65	83
	1.250	87	87	83	76	75	76	72	65	82
1.500	88	86	83	75	75	75	71	65	82	

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 30
AIR PERFORMANCE



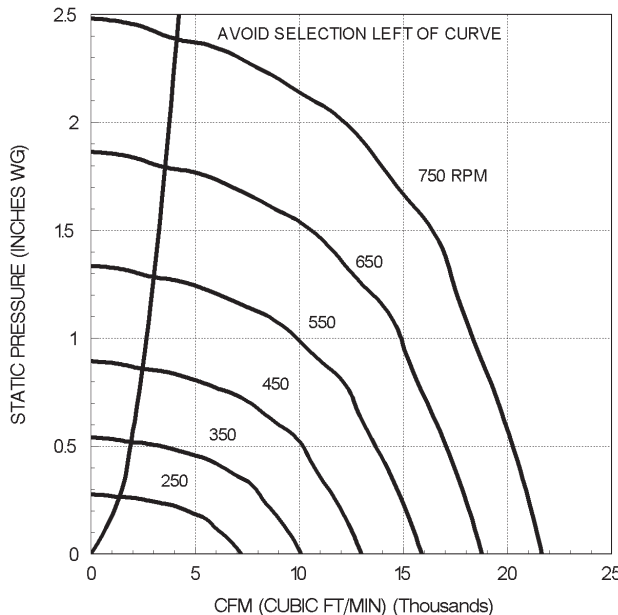
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 30
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
275	.000	59	58	58	63	63	52	46	41	65
	.375	66	65	60	60	56	54	57	59	64
375	.000	67	67	64	65	76	62	56	50	76
	.375	66	65	60	60	56	54	57	59	64
	.750	66	65	60	60	56	54	57	59	64
475	.000	73	73	71	70	77	72	63	57	79
	.375	73	71	67	66	69	64	60	58	72
	.750	75	71	67	66	65	62	60	61	70
550	.000	77	77	75	73	78	78	67	61	82
	.375	75	75	72	70	73	72	64	60	77
	.750	82	75	72	68	67	64	63	65	73
625	.000	81	81	78	76	79	83	71	65	86
	.375	79	79	76	73	76	78	68	64	82
	.625	81	79	76	72	74	74	67	64	79
	1.000	88	79	76	71	70	67	66	68	76
700	.000	84	84	81	78	80	88	75	69	90
	.375	82	83	80	76	77	84	72	67	86
	.625	81	82	79	75	76	81	70	66	84
	1.000	88	82	79	74	74	75	69	69	80
	1.250	93	82	79	74	73	70	68	70	79

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 36
AIR PERFORMANCE



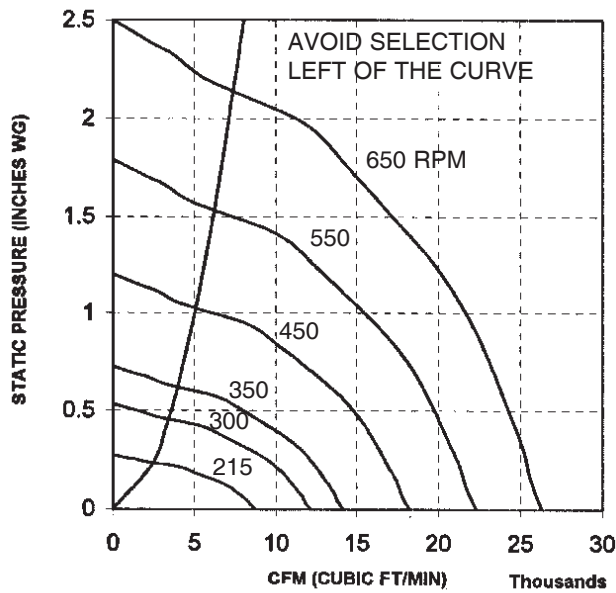
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 36
SOUND PERFORMANCE

RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
250	.000	71	68	61	57	53	61	60	59	66
	.375	72	68	65	61	56	52	47	41	63
330	.000	77	75	69	64	60	64	66	65	71
	.375	72	68	65	61	56	52	47	41	63
	.750	72	68	65	61	56	52	47	41	63
450	.000	83	84	79	73	69	67	73	72	78
	.250	81	82	78	72	68	65	70	68	77
	.500	80	80	75	71	67	63	63	59	73
530	.000	86	88	84	77	73	69	76	76	82
	.375	84	86	82	76	72	68	73	71	81
	.750	83	84	80	75	71	67	66	62	77
610	.000	88	90	88	82	77	73	78	79	87
	.375	87	89	87	81	76	72	76	76	85
	.750	86	88	85	80	76	71	72	70	82
	1.000	86	87	84	79	75	71	69	66	81
710	.000	91	93	92	87	81	77	79	83	90
	.500	90	92	91	86	81	77	78	80	89
	.750	89	91	90	85	80	76	77	78	88
	1.250	89	90	88	84	79	75	73	71	86
	1.750	91	89	85	82	78	73	69	64	84

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

VIBK 42
AIR PERFORMANCE



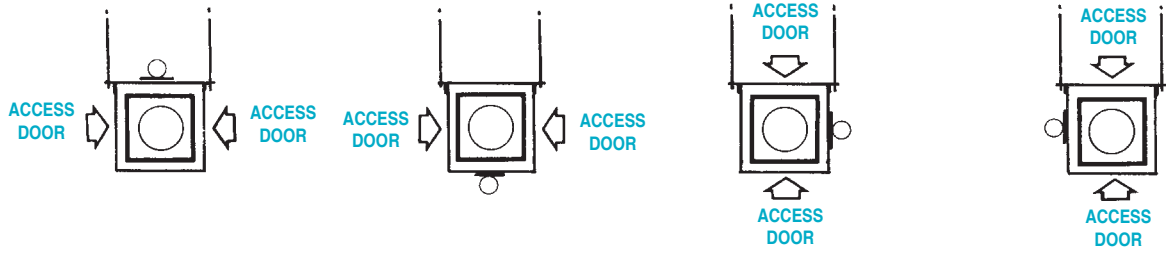
Performance certified is for installation type A - free inlet, free outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

VIBK 42
SOUND PERFORMANCE

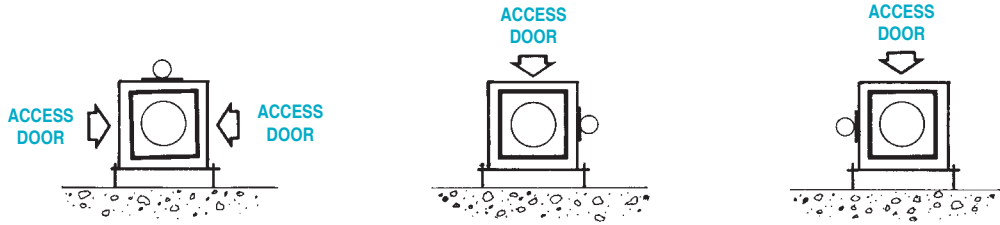
RPM	SP INCH W.G.	SOUND POWER RE 10 ⁻¹² WATTS								
		OCTAVE BANDS								LWA
		1	2	3	4	5	6	7	8	
215	.000	70	68	64	60	57	60	46	30	64
	.375	74	71	68	64	60	54	48	42	66
275	.000	82	79	76	72	68	67	66	50	75
	.250	82	77	74	71	67	66	63	51	74
	.500	79	76	73	70	65	61	54	48	72
335	.000	87	83	81	77	73	70	74	58	81
	.375	87	81	78	75	71	69	70	57	79
	.75	84	81	77	75	70	66	59	53	76
395	.000	92	88	85	82	77	74	77	65	85
	.375	93	87	84	81	77	74	75	65	84
	.750	91	85	81	79	76	73	72	63	82
	1.000	88	85	81	79	75	71	64	58	81
470	.000	98	94	91	88	84	80	80	76	91
	.500	100	94	90	87	83	80	79	74	90
	.750	99	93	88	85	82	79	78	73	88
	1.250	98	92	87	85	82	79	77	72	88
590	1.750	94	91	88	85	81	77	72	65	88

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet L_{wi} sound power levels for installation Type A free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

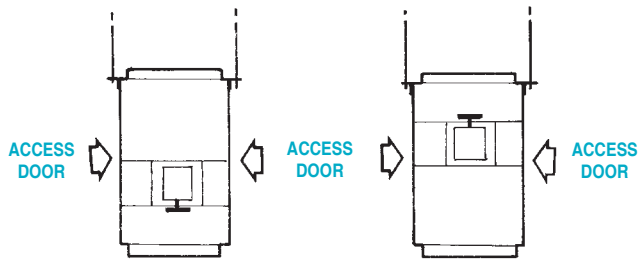
HORIZONTAL CEILING SUSPENDED



FLOOR MOUNTED

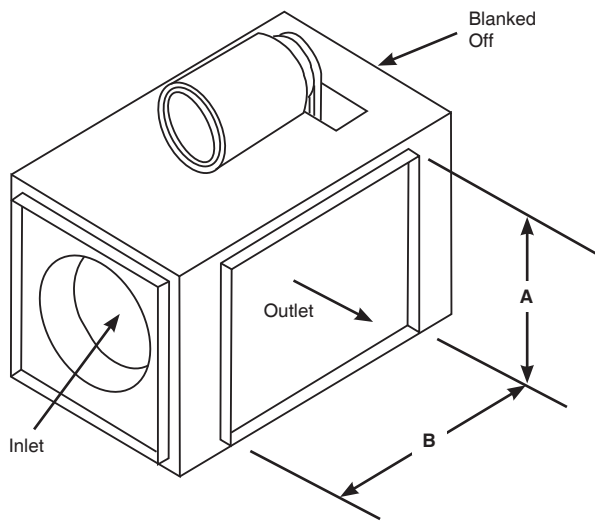


VERTICAL CEILING SUSPENDED

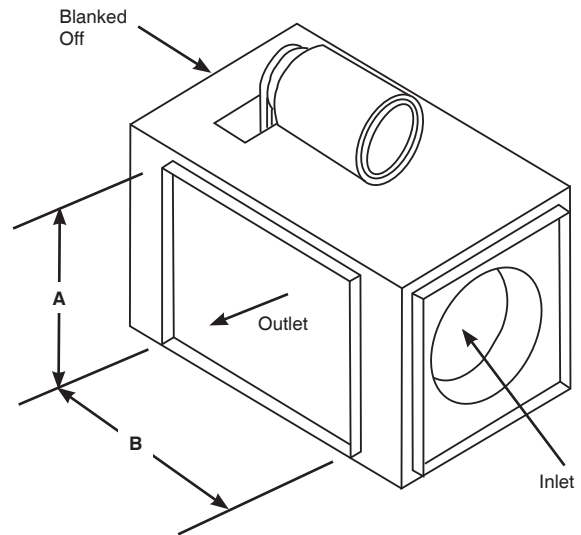


WALL MOUNTED





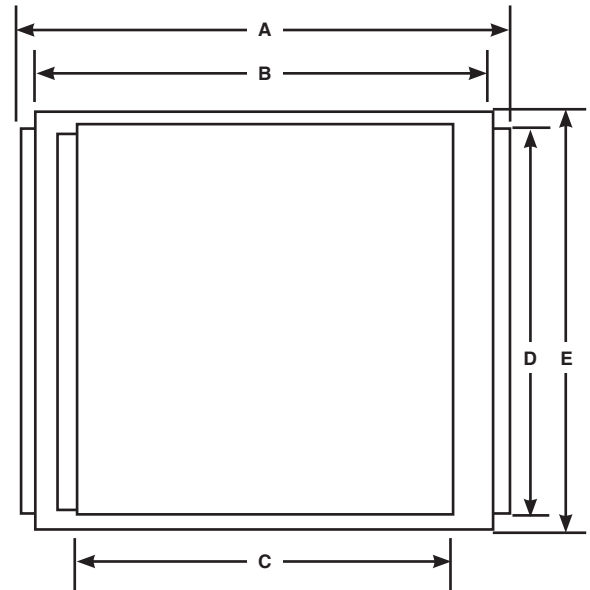
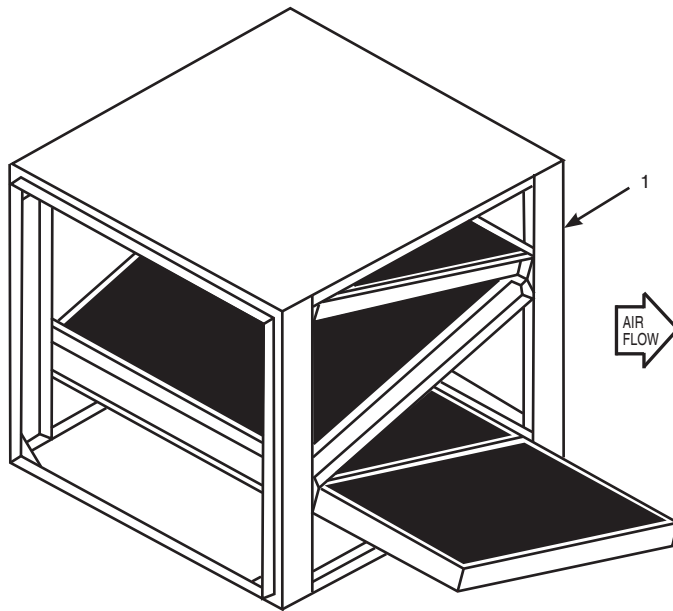
RH Discharge



LH Discharge

NOTE: Consult factory for side discharge.

Unit Size	A	B
06-08	12	21-5/8
10-12	16	25-1/8
15	22	27-7/8
18	26	29-1/8
21	29	26-3/8
24	38	29-5/8
30	46	33-1/8
36-42	54	33-5/8



Unit Size	Max. CFM	Filter Size	Filter Qty.	Filter Area	Max. Filter Face Vel.
6	900	12 x 24	1	2.00	450
8	1170	12 x 24	2	2.00	585
10	2200	16 x 25	2	5.56	396
12	2750	16 x 25	2	5.56	495
15	4150	24 x 24	2	8.00	519
18	5650	24 x 24	3	12.00	471
21	7150	12 x 24	3	15.00	477
		18 x 24	3		
24	10900	20 x 20	8	22.22	491
30	17200	16 x 25	12	33.33	518
36	21000	20 x 25	12	58.33	360
		16 x 25	6		
42	27000	20 x 25	12	58.33	463
		16 x 25	6		

DIMENSIONS LISTED IN INCHES (In Millimeters)					
Size	A	B	C	D	E
06/08	30-3/4	28-3/4	14	12	14
10/12	32-7/8	30-7/8	18	16	18
15	31-1/8	29-1/8	24	22	25-1/4
18	31-1/8	28-3/4	28	26	25-3/4
21	37-1/2	35-1/2	31	29	25-1/2
24	33-3/8	31-3/8	40	38	21-3/8
30	38	36	48	46	26
36/42	38-3/4	36-3/4	56	54	26-3/4

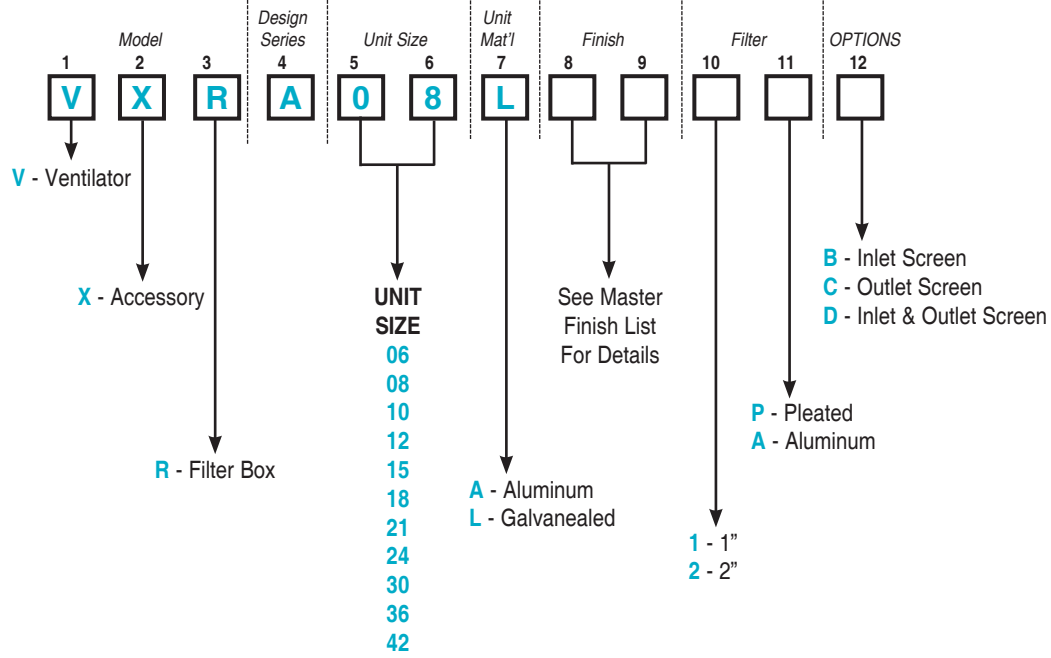
STANDARD FEATURES

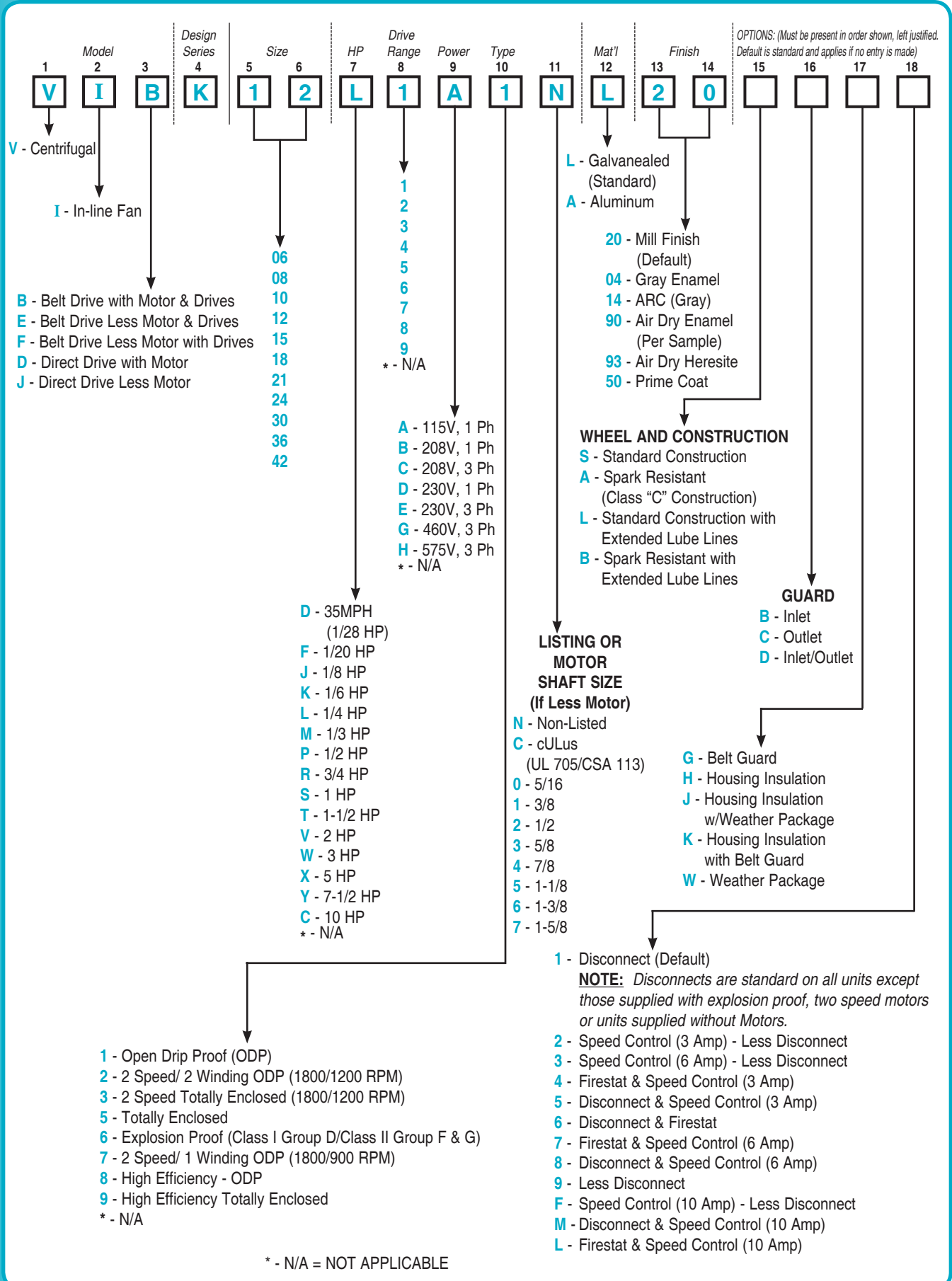
- Galvanealed construction (aluminum optional).
- Hinged dual access doors with 1/4 turn fasteners.
- Joining strips for attachment to VIBK/VIDK.

FILTERS

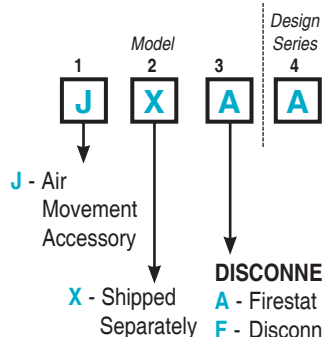
1. Aluminum 2"
2. Pleated 2"
3. No filter

▼ Filter Box





▼ **Electrical Accessories**



DISCONNECT SWITCHES

- A - Firestat
- F - Disconnect, 2 Pole, 1 Ph NEMA 3R
- H - Disconnect, 3 Pole, 3 Ph NEMA 3R
- J - Disconnect, 3 Pole, 3 Ph Explosion Proof
- K - Disconnect, 2 Pole, 1 Ph Explosion Proof
- L - Disconnect, 2 Pole, 1 Ph NEMA 1
- M - Disconnect, 3 Pole, 3 Ph NEMA 1
- N - Disconnect, 3 Pole, 3 Ph NEMA 1 with Locking Hasp
- P - Disconnect, 6 Pole, 40 AMP., for 2 Speed, 2 Winding Motors

HI-LOW-OFF SWITCHES

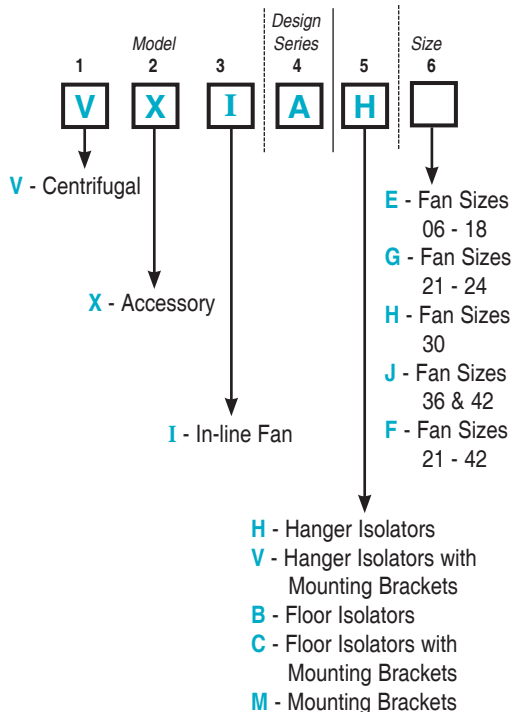
- R - 1 or 3 Ph to 1 HP, for 2 Speed, 2 Winding Motors
- S - 1 Ph to 1/2 HP, for 2 Speed, 2 Winding Motors
- T - 3 Ph to 2 HP, for 2 Speed, 2 Winding Motors

SPEED CONTROLLERS

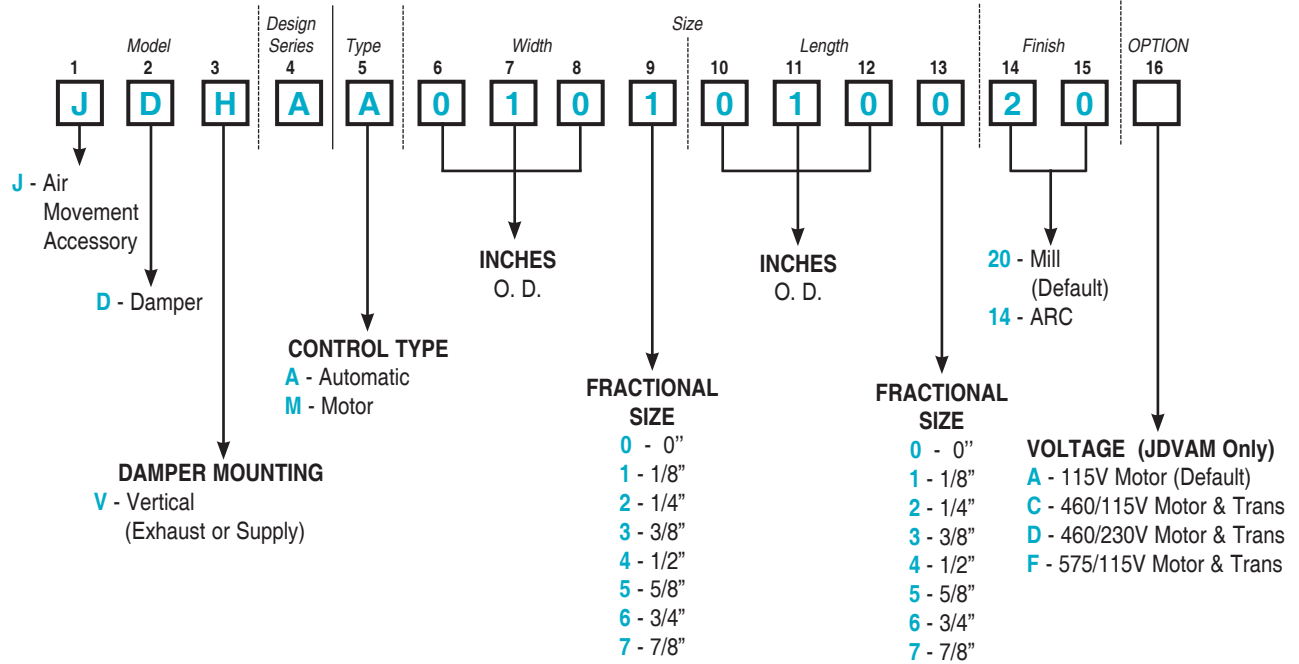
- U - Solid State Speed Controller - 3A (115V/1Ph)
- V - Solid State Speed Controller - 6A (115V/1Ph)
- W - Solid State Speed Controller - 10A (115V/1Ph)
- Y - Solid State Speed Controller - 10A (115V/1Ph) (R3 ONLY)

NOTE: Disconnect switch (NEMA 1 - Mounted) is standard on all units except those with explosion proof motors, or units without motor. Units with two speed motors are fitted with two separate standard disconnects unless ordered otherwise.

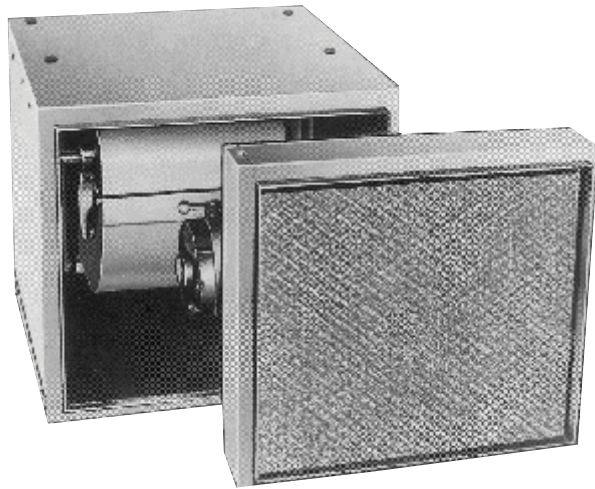
▼ **Mounting Accessories**



▼ Dampers



VDBA INDOOR SINGLE & TWIN LINE DUCT BLOWERS



Model VXDAF

OPTIONAL ACCESSORIES

- **VXDAF** filter sections are insulated and supplied with 1" framed aluminum mesh filter. All filter tracks will accommodate either 1" or 2" filters. Easily removed for servicing through end access panel.
- 1" internal fiberglass insulation to overcome condensation on cabinet when used in cooling applications.
- External vibration isolators.

FEATURES

- An economical and efficient all purpose in-line duct blower for indoor use with heating, cooling and ventilating systems.
- Quiet forward curved blower operates at a low RPM.
- Attractive green baked enamel paint finish.
- Motor receives the cooling benefits of being in the air stream for increased motor life.
- 9/16" mounting holes are provided in the top of the cabinet and through channels reinforcing the top panel.
- Heavy-duty ball bearings suitable for -65 to +250 degrees F.
- Access panels for convenient motor and drive installation and servicing from either side.

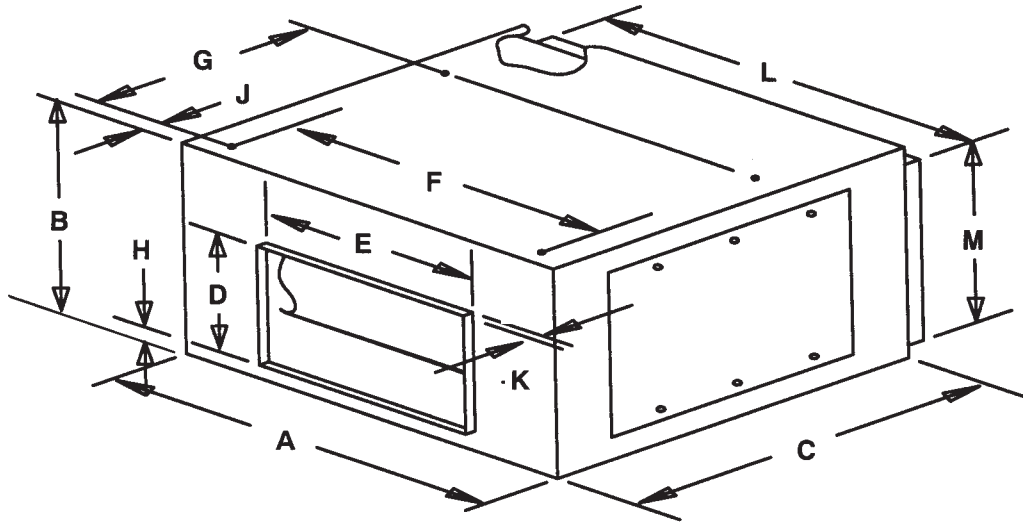
FEATURES (Continued)

- Shaft flats are standard on both ends for clockwise or counter clockwise rotation.
- Heavy-duty motor mounting bracket with motor adjusting bolt and rubber bumper is supplied on models VDBA.
- All twin units use a common shaft for balanced air supply by each blower.

SPECIAL NOTE

**To ensure optimum operating performance on any forward curved fan, Carnes recommends a review of the fan curve using the Carnes Fan-C-Lect™ Selection Software.*

VDBA Dimensions

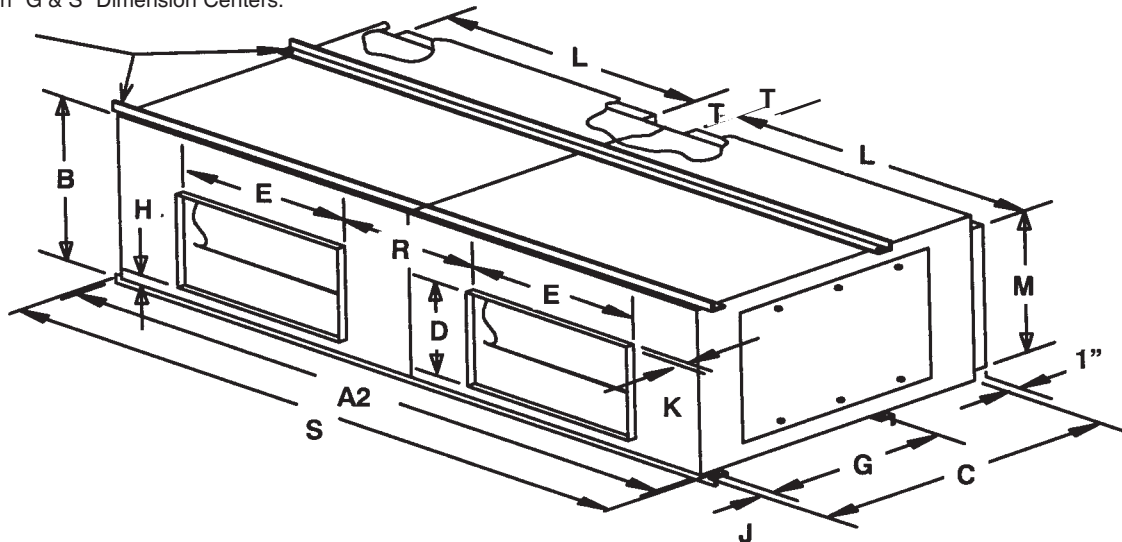


DIMENSIONS (Inches) — (Single Blower Units)

Note: Weight shown is less motor and drive

VDBA	A	B	C	D	E	F	G	H	J	K	L	M	WT. (Lbs.)
07	18	15-3/8	23	8-1/4	9-3/16	14-1/2	9-5/8	1-1/4	1-1/4	7/8	15-7/8	13-3/8	46
09	21	18	23	10-1/4	11-13/16	17-1/2	11-3/4	1-1/4	1-3/4	7/8	19	16	58
10	22-1/4	20	24-3/4	11-3/8	13-1/8	18-3/4	13-3/8	1-1/4	1-3/4	7/8	20-1/4	18	69
12	27	23	27-1/2	13-7/16	15-5/8	23-1/2	16-1/8	1-1/4	1-3/4	7/8	25	21	89
15	33-1/2	28	32	15-7/8	18-5/8	28	19-1/2	2-5/8	1-3/4	7/8	30-1/2	25	175
18	41-1/2	34	44	19-5/8	22-5/8	35	24	2-3/4	1-3/4	1-1/8	35-3/8	31-5/8	205

Structural Steel Angle Twinning Rail.
Top and Bottom with 5/8" Mounting
Holes on "G & S" Dimension Centers.

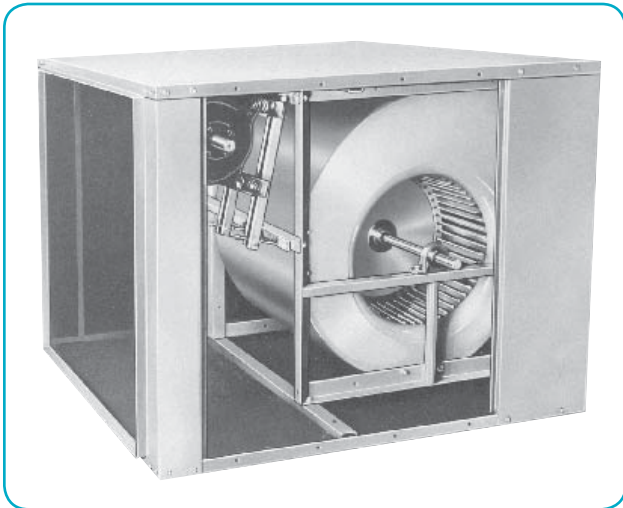


DIMENSIONS (Inches) — (Twin Blower Units)

Note: Weight shown is less motor and drive

VDBA	A2	B	C	D	E	G	H	J	K	L	M	R	S	T	WT. (Lbs.)
27	36	15-3/8	23	8-1/4	9-3/16	9-5/8	1-1/4	1-1/4	7/8	15-7/8	13-3/8	8-13/16	38-1/4	2	145
29	42	18	23	10-1/4	11-13/16	11-3/4	1-1/4	1-3/4	7/8	19	16	9-3/16	44-1/4	2	163
30	44-1/2	20	24-3/4	11-3/8	13-1/8	13-3/8	1-1/4	1-3/4	7/8	20-1/4	18	9-1/8	46-3/4	2	190
32	54	23	27-1/2	13-7/16	15-5/8	16-1/8	1-1/4	1-3/4	7/8	25	21	11-3/8	56-1/4	2	240
35	67	28	32	15-7/8	18-5/8	19-1/2	2-5/8	1-3/4	7/8	30-1/2	25	14-7/8	69-1/4	3	345

VGBA OUTDOOR SINGLE & TWIN LINE DUCT BLOWERS



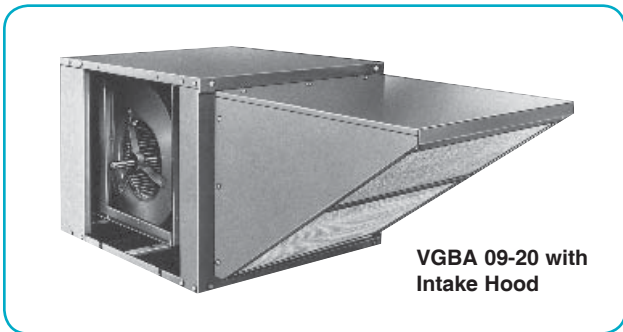
FEATURES

- All purpose heavy-duty blower with weather resistant insulated cabinet for indoor or outdoor installation.
- Quiet FC blowers operate at low RPM.
- Attractive green corrosion resistant high solids enamel paint finish on zinc coated outer panels.
- 1" fiberglass insulation to reduce cabinet condensation and energy costs.
- Access panels for convenient motor and drive installation and servicing from either side.

Motor mounting hardware as required:

- Motor mounting brackets and adjusting hardware for models **VGBA 09** and **10**.
- 1-5 HP mounting plate for **VGBA 12, 15** and **VGBA 12,15** with internal vibration isolation.
- 1-15 HP motor platform for **VGBA 18**.
- Specify 1-15 HP or 20-50 HP motor platform for model **VGBA 40**.

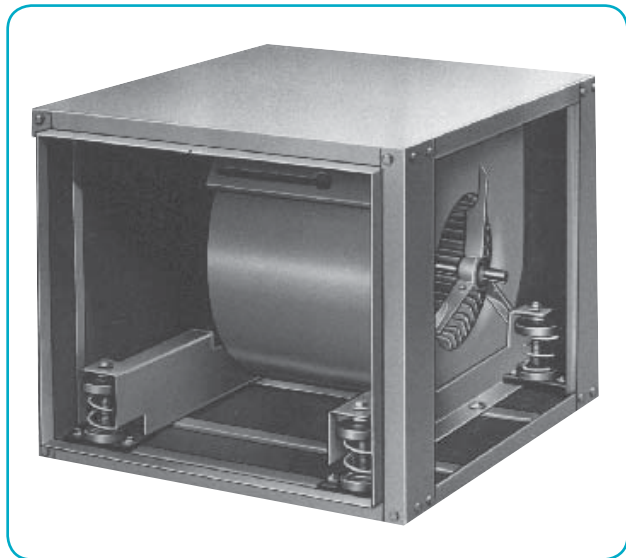
- Heavy-duty ball bearings suitable for -65 to +250 degrees F.
- Spider bearing bracket for models **VGBA 09-15**.
- Pillow block bearings for models **VGBA 18-40**.



VGBA 09-20 with Intake Hood

OPTIONAL ACCESSORIES

- **VXDAF** filter sections are insulated and supplied with 1" framed aluminum mesh filter. All filter tracks will accommodate either 1" or 2" filters. Easily removed for servicing through end access panel.
- **VXDAH 09-38** - filtered intake hood sections supplied with 1" aluminum mesh filters. **VXDAH 40** hood section has a screened inlet for use with **VXDAF 40** Filter Section. (Note: **VGBA 29-40** require two filter sections or two hood sections).
- External vibration isolators.
- Internal factory installed vibration isolation.

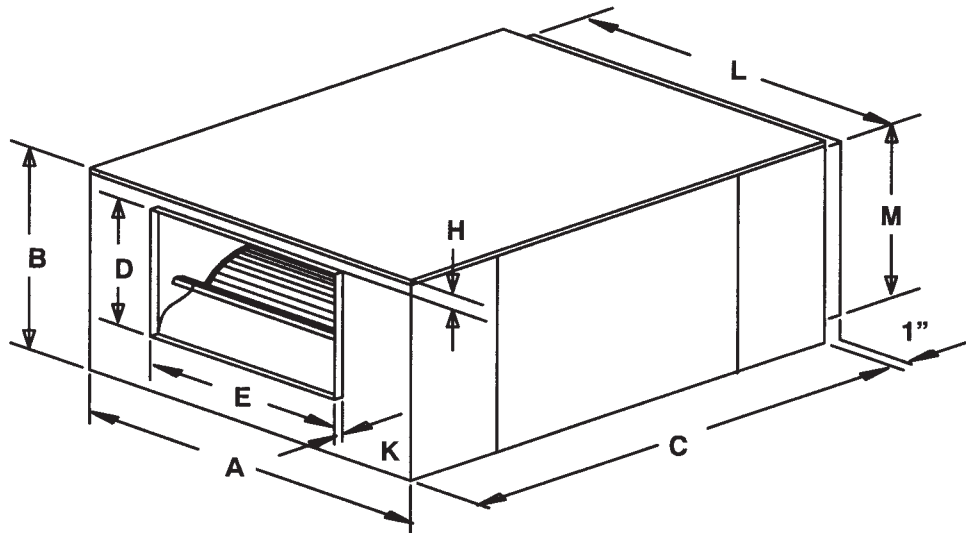


MODEL VGBA with Internal Vibration Isolation

FEATURES (Continued)

- Models **VGBA 09 & 10** have shaft flat extensions, both ends, for CW and CCW drive.
- Models **VGBA 12-40** have keywayed shaft extension, both ends, for single and multiple grooved drive.
- Blower is firmly mounted on 2 heavy steel reinforcing channels which also contain the holes necessary for hanging when unit is suspended overhead.
- Reinforcing angle frame (as illustrated) is standard on all models except **VGBA 09 & 10**.
- Twin models are tied together with angle iron runners. Blowers are driven by a common shaft for a balanced air supply by each blower.

VGBA Dimensions

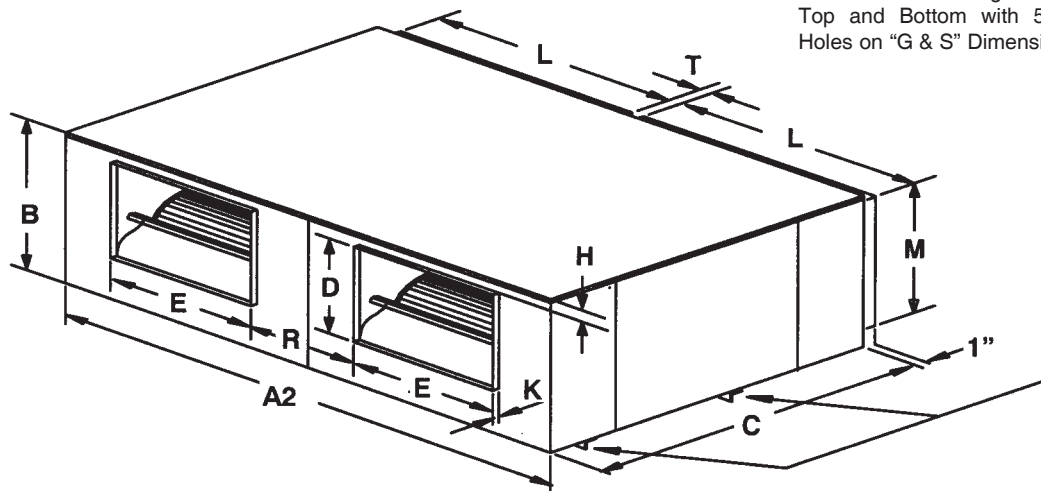


DIMENSIONS (Inches) — (Single Blower Units)

Note: Weight shown is less motor and drive

VGBA	A	B	C	D	E	H	K	L	M	WT. (Lbs.)
09	21	18	23	11-1/4	12-3/4	1	1-1/8	19	16	64
10	22-1/4	20	24-3/4	12-3/8	14-1/8	1	1-1/8	20-1/4	18	74
12	30-1/8	24-3/4	34	14-1/2	16-5/8	2-1/8	1-1/8	25-1/8	21-1/8	175
15	33-3/4	28-5/8	38-1/8	17	19-5/8	2-1/8	1-1/8	30-5/8	25-1/4	214
18	41-1/2	34	44	19-5/8	22-5/8	2-3/4	1-1/8	35-3/8	31-5/8	370
20	44-3/4	41-1/8	57-1/2	25-3/4	25-3/4	3	1-1/8	38-3/8	35-1/8	575

Structural Steel Angle Twinning Rail.
Top and Bottom with 5/8" Mounting
Holes on "G & S" Dimension Centers.

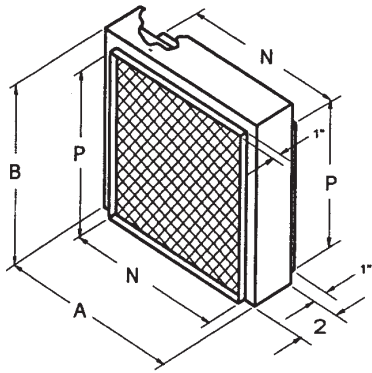


DIMENSIONS (Inches) — (Twin Blower Units)

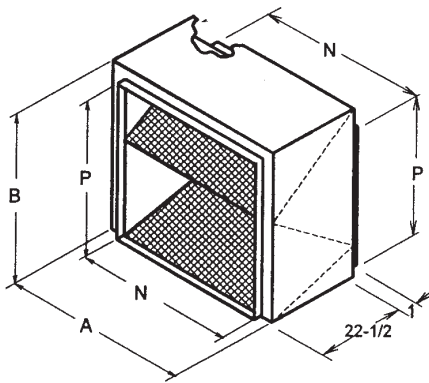
Note: Weight shown is less motor and drive

VGBA	A2	B	C	D	E	H	K	L	M	R	T	WT. (Lbs.)
29	42	18	23	11-1/4	12-3/4	1	1-1/8	19	16	9-1/4	2	171
30	44-1/2	20	24-3/4	12-3/8	14-1/8	1	1-1/8	20-1/4	18	9-1/4	2	198
32	60-1/8	24-3/4	34	14-1/2	16-5/8	2-1/8	1-1/8	25-1/8	21-1/8	13-1/4	4-3/4	390
35	67-5/8	28-5/8	38-1/8	17	19-5/8	2-1/8	1-1/8	30-5/8	25-1/4	14-1/8	2-7/8	467
38	83-3/4	34	44	19-5/8	22-5/8	2-3/4	1-1/8	35-3/8	31-5/8	19	6-1/4	750
40	89-1/2	41-1/8	57-1/2	25-3/4	25-3/4	3	1-1/8	38-3/8	35-1/8	19	6-1/8	1200

VXDAF - Filter Sections

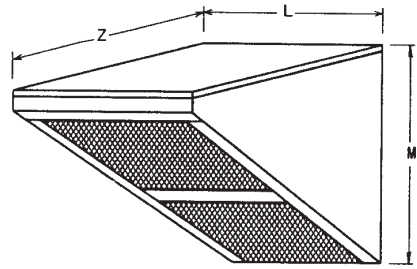


**VXDAF
FILTER SECTION**



**VXDAF (40)
FILTER SECTION**

VXDAH - Intake Hoods



**VXDAH
INTAKE HOOD**

DIMENSIONS (Inches) — VXDAF (Models VDBA & VGBA)

Size	A	B	N	P	Filter Size - Qty
07 / 27	17-3/4	15-3/8	16	13-1/2	14-1/8 x 16-5/8 (1)
09 / 29	21	18	19-1/8	16-1/8	16-3/4 x 19-7/8 (1)
10 / 30	22-1/4	20	20-3/8	18-1/8	18-3/4 x 21-1/8 (1)
12 / 32	27	23	25-1/8	21-1/8	21-3/4 x 25-7/8 (1)
15 / 35	32-1/2	26-3/4	30-5/8	25-1/8	25-3/4 x 31 (1)
18 / 38	37	33-1/4	35-1/4	31-1/2	32-1/4 x 35-7/8 (1)
40	39-3/4	37-1/4	38-1/2	35-1/4	20 x 25 (6)

ALL FILTER SECTIONS HAVE 1" ALUMINUM FILTERS.

DIMENSIONS (Inches) — VXDAH (Model VGBA)

Size	L	M	Z	Filter Size - Qty	Wt. (Lbs.)
N / A	--	--	--	--	--
09 / 29	19-1/4	16-9/16	21-1/4	16 x 24 (1)	18
10 / 30	20-1/2	18-9/16	25-3/4	15 x 20 (2)	20
12 / 32	25-3/8	21-9/16	30-3/4	20 x 25 & 16 x 25 (2)	32
15 / 35	31-3/16	25-13/16	33-1/2	20 x 28-1/2 (2)	44
18 / 38	35-5/8	32-11/16	40-1/4	20 x 25 (2) & 16 x 25 (2)	56
40	38-5/8	35-9/16	22	20 x 25 (6)	44

INTAKE HOODS (EXCEPT 40) HAVE 1" ALUMINUM FILTERS.
VXDAH 40 HAS SCREENED INLET FOR USE WITH VXDAF40 FILTER SECTION.

NOTE: TWIN DUCT BLOWERS REQUIRE TWO FILTER SECTIONS AND/OR TWO HOOD SECTIONS (Models 27-40)

PRESSURE DROP in. wg WITH 1" ALUMINUM FILTERS

CFM	FILTER SECTION						HOOD SECTION					
	07 / 27	09 / 29	10 / 30	12 / 32	15 / 35	18 / 38	40	09 / 29	10 / 30	12 / 32	18 / 38	40
300	.010	.007						.013				
400	.018	.010						.018				
600	.030	.020	.013					.030	.018			
800	.067	.026	.022	.012				.043	.025	.015		
1000	.117	.042	.028	.020				.065	.034	.019		
1200	.171	.073	.041	.023	.012			.093	.043	.023	.017	
1300		.091	.053	.025	.015			.107	.049	.027	.019	
1400		.109	.067	.029	.018			.122	.055	.030	.020	
1600		.145	.095	.038	.021	.011			.072	.035	.025	.015
1800		.182	.124	.054	.024	.013			.091	.042	.030	.017
2000			.154	.073	.026	.017			.109	.048	.034	.019
2500				.126	.042	.023				.073	.045	.025
3000				.182	.073	.028				.103	.061	.032
3500					.110	.040				.131	.082	.040
4000					.147	.057	.023				.107	.048
4500					.182	.082	.027				.130	.059
5000						.107	.032					.072
5500						.132	.036					.088
6000						.157	.040					.103
6500						.182	.046					.117
7000							.052					.131
7500							.058					
8000							.065					
8500							.074					
9000							.082					
10000							.101					
11000							.118					
12000							.137					
MAXIMUM CFM												
	1250	1800	2200	3500	4500	6700	12000	1450	2200	3500	4500	7000

PERFORMANCE DATA



Carnes Company certifies that the Models VDBA and VGBA Series Duct Blower shown herein are licensed to bear the AMCA seal. The ratings 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.

VDBA 07

3/4 HP MAXIMUM
3/4" SHAFT

TIP SPEED = 2.03 X RPM
WHEEL DIA. = 7.75"

STANDARD DRIVE RANGE
680 - 929 RPM

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
300	569	526	0.01	1.3	719	0.03	--	1026	0.06	--	1247	0.09	--	1433	0.12	--	1733	0.19	--	1980	0.26	--	2189	0.33	--
400	759	567	0.02	1.8	737	0.04	3.9	1019	0.07	--	1257	0.11	--	1448	0.15	--	1761	0.24	--	2020	0.33	--	2242	0.42	--
500	949	636	0.04	3.1	770	0.05	4.2	1027	0.09	9.3	1246	0.13	--	1450	0.18	--	1775	0.28	--	2038	0.39	--	2271	0.50	--
600	1139	719	0.06	4.3	822	0.07	6.2	1051	0.12	10.1	1255	0.16	11.8	1437	0.20	--	1777	0.32	--	2051	0.45	--	2286	0.58	--
700	1329	806	0.08	6.4	894	0.10	8.7	1086	0.15	10.8	1278	0.20	12.5	1451	0.24	14.3	1763	0.35	22.0	2052	0.50	--	2295	0.65	--
800	1519	894	0.12	8.6	975	0.14	10.1	1134	0.18	11.7	1308	0.24	12.9	1473	0.30	15.7	1768	0.41	23.0	2038	0.54	--	2292	0.71	--
900	1709	983	0.16	10.8	1062	0.19	12.1	1198	0.23	12.9	1350	0.29	13.8	1503	0.36	20.7	1785	0.48	24.0	2038	0.61	--	--	--	--
1000	1899	1073	0.21	12.6	1149	0.24	13.3	1272	0.29	14.7	1400	0.35	15.1	1540	0.43	17.6	1809	0.57	26.0	2053	0.70	--	--	--	--
1100	2089	1165	0.27	14.1	1236	0.31	14.8	1352	0.37	15.6	1465	0.43	17.7	1588	0.50	19.8	1840	0.66	29.0	--	--	--	--	--	--
1200	2279	1257	0.35	15.8	1325	0.39	16.5	1438	0.46	17.6	1539	0.52	23.0	1644	0.58	23.0	--	--	--	--	--	--	--	--	--
1300	2469	1351	0.43	17.9	1414	0.48	18.5	1526	0.56	21.0	1618	0.62	27.0	1713	0.69	27.0	--	--	--	--	--	--	--	--	--
1400	2659	1445	0.53	22.0	1505	0.53	22.0	1613	0.67	24.0	1701	0.74	26.0	--	--	--	--	--	--	--	--	--	--	--	--

VDBA 09

VDBA - 3/4 HP MAX

VGBA - 1-1/2 HP MAX

TIP SPEED = 2.65 X RPM

STANDARD DRIVE RANGE

VGBA 09

3/4" SHAFT

3/4" SHAFT

WHEEL DIA. = 10.13"

580 - 792 RPM

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
600	713	417	0.03	1.6	557	0.05	2.2	798	0.10	5.7	977	0.15	8.5	1120	0.21	10.8	1353	0.33	--	1548	0.45	--	1717	0.59	--
700	832	440	0.04	1.3	566	0.06	2.5	791	0.11	5.4	979	0.17	8.6	1128	0.23	11.1	1367	0.37	--	1564	0.50	--	1736	0.65	--
800	951	468	0.06	1.8	581	0.07	3.8	786	0.12	5.2	974	0.19	8.4	1130	0.26	11.2	1379	0.41	15.8	1578	0.56	--	1751	0.72	--
900	1070	499	0.07	2.2	601	0.10	3.1	792	0.14	5.5	964	0.21	8.1	1126	0.28	11.0	1384	0.45	16.2	1590	0.61	19.7	1764	0.79	--
1000	1189	534	0.09	2.7	625	0.12	4.1	802	0.17	5.8	964	0.23	8.1	1118	0.31	10.7	1384	0.48	16.2	1596	0.67	20.0	1777	0.85	24.0
1100	1308	573	0.12	3.4	653	0.15	6.9	816	0.20	6.7	970	0.27	8.3	1112	0.34	10.5	1379	0.52	15.8	1598	0.72	20.0	1784	0.92	24.0
1200	1427	613	0.15	4.5	682	0.18	10.3	834	0.24	8.0	979	0.30	8.6	1115	0.38	10.6	1371	0.56	15.3	1596	0.76	20.0	1787	0.98	24.0
1300	1546	654	0.19	6.1	714	0.22	5.2	856	0.28	7.0	992	0.35	8.9	1122	0.42	10.9	1362	0.60	14.8	1590	0.81	19.7	1786	1.04	24.0
1400	1665	696	0.23	7.0	750	0.26	5.9	881	0.33	7.6	1009	0.40	9.4	1132	0.48	11.3	1362	0.65	14.8	1582	0.87	19.3	1781	1.10	24.0
1500	1783	739	0.28	7.7	788	0.31	6.7	907	0.38	8.2	1028	0.46	10.1	1145	0.53	11.9	1367	0.71	15.1	1573	0.92	18.8	1775	1.17	24.0
1600	1902	782	0.34	8.3	828	0.37	7.5	936	0.44	8.9	1050	0.52	10.4	1162	0.60	13.6	1375	0.78	15.6	1573	0.99	18.8	1765	1.23	23.0
1700	2021	826	0.40	8.8	868	0.43	8.3	966	0.51	9.6	1075	0.59	11.1	1181	0.68	17.5	1385	0.86	16.2	1576	1.07	19.0	1758	1.31	23.0

VDBA 10

VDBA - 1-1/2 HP MAX

VGBA - 1-1/2 HP MAX

TIP SPEED = 2.99 X RPM

STANDARD DRIVE RANGE

VGBA 10

3/4" SHAFT

3/4" SHAFT

WHEEL DIA. = 11.44"

505 - 690 RPM

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
800	771	388	0.04	2.0	511	0.07	3.1	709	0.12	5.9	861	0.18	8.8	987	0.25	--	1196	0.41	--	1371	0.58	--	1524	0.76	--
900	868	403	0.05	2.5	520	0.08	3.7	712	0.14	6.0	866	0.21	9.0	993	0.27	11.8	1204	0.44	--	1380	0.62	--	1533	0.81	--
1000	964	422	0.06	2.4	531	0.09	4.6	713	0.15	6.1	869	0.23	9.1	998	0.31	12.0	1210	0.47	--	1387	0.66	--	1542	0.87	--
1100	1060	445	0.08	3.0	544	0.11	6.0	719	0.18	6.3	872	0.26	9.2	1002	0.34	12.2	1216	0.50	16.7	1394	0.70	--	1550	0.92	--
1200	1157	470	0.10	3.8	559	0.13	8.7	728	0.20	6.8	873	0.28	9.3	1005	0.37	12.4	1221	0.55	17.0	1400	0.74	21.0	1557	0.97	--
1300	1253	497	0.12	5.4	575	0.15	4.6	738	0.23	7.2	878	0.31	9.5	1007	0.40	12.5	1225	0.61	17.2	1405	0.79	21.0	1563	1.02	--
1400	1350	525	0.15	4.9	593	0.18	5.3	749	0.26	7.8	886	0.34	9.9	1009	0.43	12.6	1229	0.65	17.4	1410	0.86	21.0	1568	1.07	25.0
1500	1446	553	0.18	5.6	616	0.21	6.5	762	0.29	8.4	895	0.38	10.3	1013	0.47	12.8	1232	0.70	17.6	1415	0.93	22.0	1573	1.14	26.0
1600	1543	582	0.22	6.7	640	0.25	8.0	776	0.33	9.0	905	0.42	10.8	1021	0.52	13.2	1234	0.74	17.7	1419	1.00	22.0	1578	1.23	26.0
1700	1639	612	0.25	7.8	666	0.29	9.6	791	0.37	9.6	916	0.46	11.3	1030	0.57	13.7	1235	0.79	17.8	1422	1.06	22.0	1583	1.32	27.0
1800	1736	642	0.29	8.8	693	0.33	11.0	807	0.41	10.2	928	0.51	11.9	1040	0.62	14.3	1239	0.84	18.0	1424	1.12	22.0	1587	1.40	27.0
1900	1832	672	0.34	9.7	720	0.38	12.1	824	0.46	10.4	942	0.56	12.6	1051	0.68	14.9	1246	0.91	18.4	1426	1.17	22.0	1590	1.48	27.0

VDBA 12

VDBA - 1-1/2 HP MAX

VGBA - 3 HP MAX

TIP SPEED = 3.27 X RPM

STANDARD DRIVE RANGE

VGBA 12

3/4" SHAFT

1" SHAFT

WHEEL DIA. = 12.50"

447 - 611 RPM

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
1200	823	367	0.07	2.0	470	0.10	3.4	639	0.17	--	783	0.27	--	904	0.37	--	1098	0.57	--	1255	0.78	--	1390	1.02	--
1400	960	393	0.09	2.8	487	0.13	4.0	646	0.21	--	783	0.31	--	904	0.42	--	1106	0.65	--	1268	0.89	--	1407	1.13	--
1600	1097	423	0.12	4.1	507	0.17	5.0	658	0.26	10.8	786	0.35	--	905	0.47	--	1106	0.72	--	1276	0.99	--	1420	1.27	--
1800	1234	455	0.16	6.2	532	0.21	6.4	673	0.31	9.3	796	0.41	10.5	906	0.53	--	1108	0.80	--	1278	1.08	--	1427	1.39	--
2000	1371	489	0.21	5.1	559	0.26	7.7	690	0.37	9.9	809	0.49	10.4	915	0.61	--	1108	0.88	--	1279	1.19	--	1429	1.51	--
2200																									

PERFORMANCE DATA



Carnes Company certifies that the Models VDBA and VGBA Series Duct Blower shown herein are licensed to bear the AMCA seal. The ratings 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.

VDBA 15 **VDBA - 3 HP MAX** **VGBA - 5 HP MAX**
VGBA 15 **1" SHAFT** **1" SHAFT**

TIP SPEED = 3.99 X RPM **STANDARD DRIVE RANGE**
WHEEL DIA. = 15.25" **401-548 RPM**

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
1800	876	273	0.10	2.7	370	0.18	4.8	510	0.29	8.8	617	0.42	11.3	705	0.57	14.1	850	0.88	18.3	969	1.20	21.0	1071	1.52	24.0
1900	925	278	0.11	3.4	373	0.19	5.0	510	0.32	9.0	620	0.44	11.5	708	0.60	14.3	854	0.93	18.6	974	1.26	22.0	1077	1.59	25.0
2000	974	284	0.12	4.2	375	0.20	4.5	510	0.35	9.0	622	0.47	11.7	711	0.62	14.6	857	0.97	19.0	978	1.32	22.0	1083	1.67	25.0
2100	1022	290	0.14	2.9	375	0.21	4.6	510	0.38	9.0	623	0.50	11.8	714	0.65	14.9	860	1.01	19.3	982	1.37	22.0	1088	1.74	26.0
2200	1071	297	0.15	3.5	376	0.22	4.6	511	0.41	9.2	624	0.54	11.9	716	0.68	15.1	863	1.05	19.7	986	1.43	23.0	1092	1.81	27.0
2300	1120	305	0.17	4.2	378	0.23	4.7	514	0.44	10.0	624	0.58	11.9	718	0.72	15.3	866	1.09	20.0	989	1.48	23.0	1096	1.89	27.0
2400	1168	314	0.19	4.8	381	0.25	4.8	517	0.46	10.8	624	0.62	12.0	720	0.76	15.5	869	1.13	20.0	992	1.54	24.0	1100	1.96	27.0
2500	1217	323	0.21	5.5	385	0.27	5.1	521	0.49	12.0	624	0.67	12.0	721	0.81	15.5	872	1.17	21.0	995	1.59	24.0	1104	2.02	28.0
2600	1266	332	0.23	4.6	389	0.29	5.3	525	0.51	13.3	625	0.71	12.1	721	0.86	15.5	875	1.21	21.0	999	1.64	25.0	1107	2.09	29.0
2700	1314	342	0.26	5.1	394	0.32	5.6	528	0.54	14.3	626	0.76	12.2	721	0.92	15.5	877	1.26	22.0	1002	1.69	25.0	1110	2.16	29.0
2800	1363	352	0.29	5.6	400	0.34	5.9	530	0.56	9.0	629	0.80	12.6	721	0.98	15.5	879	1.31	22.0	1005	1.75	25.0	1113	2.22	29.0
2900	1412	363	0.31	6.0	406	0.37	6.2	531	0.58	9.1	632	0.84	13.0	721	1.04	15.5	881	1.37	23.0	1007	1.81	26.0	1116	2.29	29.0
3000	1461	373	0.35	6.4	413	0.40	6.5	531	0.60	9.2	636	0.87	13.8	722	1.09	15.6	882	1.44	23.0	1010	1.87	26.0	1119	2.36	30.0
3100	1509	384	0.38	6.7	420	0.43	7.1	532	0.62	9.2	640	0.91	14.5	723	1.15	15.8	883	1.51	23.0	1012	1.93	27.0	1122	2.42	30.0
3200	1558	394	0.42	7.0	427	0.46	8.8	533	0.65	9.3	643	0.95	15.0	725	1.21	15.9	883	1.59	23.0	1015	2.00	27.0	1125	2.49	31.0
3300	1607	405	0.45	7.2	436	0.50	10.3	536	0.68	9.5	646	0.98	15.6	728	1.26	16.2	883	1.68	23.0	1016	2.07	27.0	1128	2.57	32.0
3400	1655	416	0.49	7.4	445	0.54	12.0	539	0.71	9.7	649	1.01	13.6	732	1.31	16.6	883	1.77	23.0	1018	2.16	28.0	1130	2.64	32.0
3500	1704	427	0.54	7.8	454	0.58	14.1	543	0.75	10.0	650	1.04	13.7	736	1.36	16.9	883	1.86	23.0	1019	2.25	28.0	1133	2.73	32.0
3600	1753	437	0.58	8.3	463	0.62	16.4	547	0.80	10.7	651	1.08	13.8	740	1.41	17.3	883	1.94	23.0	1019	2.35	28.0	1135	2.81	32.0
3700	1801	448	0.63	8.8	473	0.67	9.4	552	0.84	11.6	651	1.10	13.8	743	1.46	17.5	884	2.03	24.0	1020	2.46	28.0	1137	2.91	33.0
3800	1850	459	0.68	9.4	483	0.72	10.0	557	0.89	12.5	652	1.14	13.9	746	1.51	17.8	886	2.12	25.0	1020	2.57	28.0	1138	3.01	33.0
3900	1899	470	0.73	9.9	493	0.78	10.8	562	0.94	13.6	653	1.18	13.9	749	1.55	17.6	888	2.20	26.0	1020	2.69	28.0	1139	3.13	33.0
4000	1948	481	0.79	10.5	503	0.83	11.9	568	0.99	14.9	655	1.23	14.1	750	1.59	17.7	891	2.29	27.0	1020	2.81	28.0	1140	3.25	33.0
4100	1996	492	0.85	11.1	513	0.89	13.1	574	1.04	16.1	658	1.28	14.3	751	1.63	17.8	894	2.36	29.0	1020	2.93	28.0	1140	3.38	33.0
4200	2045	503	0.91	11.7	523	0.95	14.2	581	1.10	12.5	661	1.33	14.5	751	1.67	17.8	898	2.44	32.0	1020	3.05	28.0	1140	3.52	33.0
4300	2094	514	0.97	12.4	534	1.02	15.4	588	1.16	13.1	665	1.39	14.9	752	1.71	17.8	902	2.52	35.0	1022	3.16	29.0	1140	3.67	33.0
4400	2142	526	1.04	12.9	544	1.09	16.6	595	1.22	13.8	670	1.46	15.8	753	1.76	17.9	906	2.59	39.0	1023	3.28	29.0	1140	3.81	33.0

VDBA 18
VGBA 18

5 HP MAXIMUM
1" SHAFT

TIP SPEED = 4.76 X RPM
WHEEL DIA. = 18.19"

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
3000	972	255	0.20	3.0	321	0.29	6.3	429	0.29	--	533	0.72	--	615	0.97	--	748	1.50	--	860	2.06	--	957	2.68	--
3200	1037	264	0.23	3.7	325	0.33	7.6	428	0.32	--	531	0.77	--	616	1.03	--	750	1.59	--	861	2.16	--	959	2.79	--
3400	1102	273	0.27	4.8	330	0.36	5.0	432	0.35	--	529	0.82	--	615	1.10	--	751	1.67	--	863	2.27	--	961	2.91	--
3600	1167	282	0.31	6.5	336	0.41	5.4	437	0.38	--	526	0.86	--	614	1.16	--	753	1.76	--	865	2.39	--	963	3.03	--
3800	1232	292	0.35	8.9	343	0.45	6.0	442	0.41	8.0	523	0.89	--	613	1.22	--	754	1.84	--	867	2.50	--	965	3.17	--
4000	1297	302	0.40	10.1	351	0.50	6.6	448	0.44	8.6	526	0.97	--	610	1.28	--	754	1.93	--	868	2.62	--	967	3.32	--
4200	1362	312	0.45	11.0	359	0.56	7.2	452	0.46	9.1	530	1.04	--	607	1.33	--	754	2.03	--	869	2.73	--	969	3.46	--
4400	1426	323	0.51	6.0	367	0.61	7.8	457	0.49	9.7	534	1.12	--	604	1.38	--	752	2.13	--	870	2.84	--	970	3.60	--
4600	1491	334	0.58	6.6	376	0.68	8.5	462	0.51	10.3	540	1.21	11.7	606	1.48	--	751	2.22	--	871	2.96	--	971	3.75	--
4800	1556	345	0.65	7.4	385	0.75	9.2	466	0.54	9.8	546	1.31	12.5	610	1.58	--	749	2.31	--	870	3.09	--	972	3.89	--
5000	1621	356	0.72	8.2	395	0.83	9.9	473	0.56	10.3	551	1.41	13.5	615	1.69	--	746	2.39	--	869	3.22	--	973	4.03	--
5200	1686	367	0.80	8.9	404	0.91	10.5	479	0.58	10.8	555	1.51	15.0	620	1.80	14.4	742	2.46	--	868	3.35	--	973	4.18	--
5400	1751	378	0.89	9.7	414	1.01	11.1	487	0.60	11.3	560	1.61	17.2	627	1.92	15.4	739	2.55	--	866	3.47	--	973	4.35	--
5600	1816	390	0.98	10.6	424	1.10	11.6	494	0.62	11.8	565	1.72	20.0	632	2.05	16.9	742	2.69	--	864	3.58	--	972	4.51	--
5800	1881	401	1.08	11.4	435	1.21	12.1	502	0.65	12.4	569	1.84	14.4	636	2.18	18.3	746	2.84	--	861	3.69	--	971	4.67	--
6000	1945	413	1.19	12.1	445	1.32	12.6	510	0.68	13.0	575	1.95	14.7	641	2.32	20.0	750	3.00	--	857	3.79	--	969	4.82	--
6200	2010	424	1.30	12.9	456	1.44	12.3	519	0.71	13.7	58	2.08	15.2	646	2.46	23.0	755	3.16	--	853	3.89	--	967	4.96	--
6400	2075	436	1.42	13.7	466	1.56	13.1	527	0.75	14.4	588	2.22	15.7	650	2.61	25.0	761	3.33	20.0	856	4.08	--	--	--	--
6600	2140	448	1.55	14.6	477	1.70	14.0	536	0.80	15.2	595	2.36	16.4	655	2.75	17.5	767	3.52	21.0	859	4.27	--	--	--	--
6800	2205	460	1.69	15.4	488	1.84	14.8	545	0.84	16.5	603	2.51	17.1	660	2.90	17.9	772	3.71	22.0	863	4.48	--	--	--	--
7000	2270	472	1.83	16.2	499	1.98	15.6	555	0.89	18.8	611	2.66	18.2	666	3.07	18.4	777	3.91	23.0	868	4.69	--	--	--	--
7200	2335	484	1.98	17.0	510	2.14	16.4	564	0.94	22.0	619	2.83	19.2	673	3.24	19.1	782	4.11	24.0	873	4.91	--	--	--	--
7400	2399	496	2.14	17.9																					

PERFORMANCE DATA



Carnes Company certifies that the Models VDBA and VGBA Series Duct Blower shown herein are licensed to bear the AMCA seal. The ratings 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.

VGBA 20

15 HP MAXIMUM
1-7/16" SHAFT

TIP SPEED = 5.35 X RPM
WHEEL DIA. = 20.44"

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
6000	1303	336	0.84	13.3	373	1.00	9.1	446	1.35	7.6	511	1.75	10.0	569	2.14	11.8	674	2.99	16.6	765	3.86	20.0	845	4.75	23.0
6250	1357	347	0.94	14.7	382	1.10	9.8	453	1.46	8.0	517	1.87	10.3	574	2.28	12.1	678	3.15	17.1	768	4.06	20.0	848	4.95	24.0
6500	1411	358	1.04	14.4	392	1.21	10.5	461	1.58	8.5	523	2.00	10.6	580	2.43	12.4	682	3.31	18.1	772	4.26	21.0	852	5.19	24.0
6750	1465	370	1.15	14.1	402	1.33	11.2	468	1.71	8.9	530	2.13	10.5	585	2.58	12.7	685	3.47	18.7	776	4.46	21.0	855	5.43	24.0
7000	1520	381	1.27	13.8	412	1.46	11.8	476	1.85	9.4	536	2.28	10.9	591	2.74	13.2	690	3.66	19.8	780	4.67	21.0	859	5.68	25.0
7250	1574	392	1.40	13.6	423	1.59	12.3	484	1.99	9.8	543	2.42	11.4	597	2.90	13.7	695	3.86	21.0	783	4.88	22.0	863	5.93	25.0
7500	1628	404	1.54	13.5	433	1.73	12.7	492	2.14	10.3	551	2.58	11.9	604	3.07	14.5	700	4.06	22.0	787	5.09	22.0	867	6.19	25.0
7750	1683	415	1.68	13.3	444	1.88	13.2	500	2.30	10.7	558	2.75	12.3	610	3.25	14.0	705	4.28	24.0	791	5.31	22.0	871	6.45	26.0
8000	1737	427	1.84	13.3	455	2.05	13.3	509	2.47	11.2	565	2.94	12.8	617	3.44	14.5	711	4.50	25.0	795	5.55	23.0	874	6.71	26.0
8250	1791	439	2.00	13.3	465	2.22	13.3	518	2.65	11.8	573	3.13	13.4	624	3.63	15.0	716	4.72	27.0	800	5.81	23.0	878	6.97	26.0
8500	1845	450	2.18	13.3	476	2.40	13.3	528	2.84	12.4	581	3.33	14.0	631	3.84	15.5	722	4.96	29.0	805	6.08	24.0	882	7.24	27.0
8750	1900	462	2.36	13.3	487	2.59	13.4	537	3.05	12.9	588	3.54	14.5	638	4.05	16.0	728	5.20	31.0	810	6.36	25.0	885	7.51	27.0
9000	1954	474	2.56	13.3	498	2.79	13.5	547	3.26	13.5	596	3.76	15.1	646	4.29	16.7	735	5.45	33.0	815	6.64	26.0	890	7.83	27.0
9250	2008	486	2.77	13.4	510	3.00	13.6	557	3.48	14.1	604	3.99	15.7	653	4.53	17.3	741	5.71	36.0	821	6.94	27.0	895	8.15	28.0
9500	2063	498	2.98	13.5	521	3.22	13.7	567	3.72	14.8	613	4.23	16.8	661	4.79	18.0	748	5.98	20.0	827	7.24	28.0	900	8.49	28.0
9750	2117	509	3.21	13.6	532	3.46	14.0	577	3.97	15.7	622	4.48	18.0	668	5.05	19.1	754	6.26	21.0	833	7.55	29.0	905	8.84	29.0
10000	2171	521	3.45	13.7	543	3.71	14.5	587	4.22	17.0	631	4.75	19.5	676	5.33	20.0	761	6.55	21.0	839	7.87	31.0	910	9.19	29.0
10250	2226	533	3.70	14.0	555	3.96	15.1	598	4.49	18.9	640	5.04	21.0	684	5.62	22.0	768	6.85	22.0	845	8.20	32.0	916	9.56	30.0
10500	2280	545	3.96	14.6	566	4.23	15.7	608	4.78	21.0	650	5.33	23.0	692	5.91	23.0	776	7.16	22.0	851	8.54	33.0	921	9.93	30.0
10750	2234	557	4.23	15.2	578	4.52	16.6	619	5.07	24.0	659	5.64	26.0	700	6.22	24.0	783	7.48	23.0	858	8.90	34.0	927	10.32	31.0
11000	2388	568	4.52	15.8	589	4.81	18.2	629	5.38	27.0	669	5.96	29.0	709	6.55	25.0	790	7.84	24.0	864	9.26	26.0	933	10.71	31.0
11250	2443	580	4.82	16.9	601	5.12	20.0	640	5.70	31.0	679	6.29	34.0	718	6.89	27.0	798	8.21	24.0	871	9.63	27.0	939	11.12	32.0
11500	2497	592	5.13	18.7	613	5.45	23.0	651	6.04	36.0	689	6.64	36.0	727	7.25	28.0	805	8.59	25.0	878	10.01	27.0	946	11.53	33.0
11750	2551	604	5.46	21.0	624	5.78	26.0	662	6.38	41.0	699	7.00	38.0	736	7.62	29.0	813	8.98	26.0	885	10.41	28.0	952	11.96	33.0
12000	2606	616	5.08	24.0	636	6.13	29.0	673	6.75	48.0	709	7.37	39.0	746	8.01	30.0	820	9.38	26.0	892	10.81	29.0	958	12.40	34.0

NOTES: Performance certified is for installation Type B - Free Inlet, Ducted Outlet, without filter section. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5mm) in a hemispherical free field calculated per AMCA Standard 301. Installation Type B: free inlet hemispherical sone levels. Sone values not documented in unlisted areas. Twin unit data is derived from tests of single width fans.



Carnes Company certifies that the Models VDBA and VGBA Series Duct Blower shown herein are licensed to bear the AMCA seal. The ratings 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.

PERFORMANCE DATA

VDBA 27

**1-1/2 HP MAXIMUM
3/4" SHAFT**

**TIP SPEED = 2.03 X RPM
WHEEL DIA. = 7.75"**

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
600	569	526	0.03	1.9	719	0.05	3.8	1026	0.11	11.1	1247	0.18	--	1433	0.24	--	1733	0.38	--	1980	0.51	--	2189	0.67	--
800	759	567	0.05	2.5	737	0.07	4.9	1019	0.14	10.8	1257	0.22	14.1	1448	0.30	16.8	1761	0.48	27.0	2020	0.65	--	2242	0.83	--
1000	949	636	0.07	3.9	770	0.11	5.3	1027	0.18	11.2	1246	0.25	13.7	1450	0.36	17.0	1775	0.57	28.0	2038	0.79	--	2271	1.00	--
1200	1139	719	0.11	5.3	822	0.15	7.6	1051	0.23	12.1	1255	0.31	14.0	1437	0.40	16.3	1777	0.64	28.0	2051	0.90	--	2286	1.16	--
1400	1329	808	0.17	7.9	894	0.20	10.5	1086	0.30	12.9	1278	0.39	15.0	1451	0.49	17.1	1763	0.71	27.0	2052	1.00	--	2295	1.29	--
1600	1519	894	0.24	10.6	975	0.28	12.1	1134	0.37	14.0	1308	0.49	15.4	1473	0.60	18.8	1768	0.82	28.0	2038	1.08	--	2292	1.42	--
1800	1709	983	0.32	13.0	1062	0.37	14.5	1198	0.47	15.5	1350	0.59	16.5	1503	0.72	25.0	1785	0.97	29.0	2038	1.22	--	--	--	--
2000	1899	1073	0.43	15.1	1149	0.49	16.0	1272	0.59	17.6	1400	0.70	18.1	1540	0.85	21.0	1809	1.13	32.0	2053	1.40	--	--	--	--
2200	2089	1165	0.55	16.8	1236	0.63	17.7	1352	0.74	18.7	1465	0.85	21.0	1588	1.00	24.0	1840	1.32	35.0	--	--	--	--	--	--
2400	2279	1257	0.70	18.9	1325	0.79	19.7	1438	0.91	21.0	1539	1.03	28.0	1644	1.17	28.0	--	--	--	--	--	--	--	--	--
2600	2469	1351	0.87	21.0	1414	0.97	22.0	1526	1.12	25.0	1618	1.24	--	1713	1.38	33.0	--	--	--	--	--	--	--	--	--
2800	2659	1445	1.07	26.0	1505	1.17	27.0	1613	1.35	29.0	1701	1.49	--	--	--	--	--	--	--	--	--	--	--	--	--

**VDBA 29
VGBA 29**

**1-1/2 HP MAXIMUM
3/4" SHAFT**

**TIP SPEED = 2.65 X RPM
WHEEL DIA. = 10.13"**

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
1200	713	417	0.06	2.3	557	0.09	2.9	798	0.19	6.8	977	0.30	10.3	1120	0.41	13.0	1353	0.65	--	1548	0.90	--	1717	1.17	--
1400	832	440	0.08	1.8	566	0.12	3.0	791	0.22	6.6	979	0.34	10.3	1128	0.47	13.4	1367	0.73	--	1564	1.01	--	1736	1.30	--
1600	951	468	0.11	2.4	581	0.15	3.8	786	0.25	6.4	974	0.37	10.2	1130	0.52	13.5	1379	0.81	18.9	1578	1.12	--	1751	1.43	--
1800	1070	499	0.14	2.9	601	0.19	3.9	792	0.29	8.6	964	0.41	9.8	1126	0.56	13.3	1384	0.89	19.3	1590	1.23	24.0	--	--	--
2000	1189	534	0.19	3.5	625	0.24	5.0	802	0.34	7.0	964	0.47	9.8	1118	0.62	12.9	1384	0.97	19.3	1596	1.33	24.0	--	--	--
2200	1308	573	0.24	4.3	653	0.29	8.5	816	0.40	8.1	970	0.53	10.0	1112	0.68	12.6	1379	1.03	18.9	1598	1.44	24.0	--	--	--
2400	1427	613	0.30	5.6	682	0.36	12.4	834	0.48	9.7	979	0.61	10.3	1115	0.76	12.7	1371	1.11	18.3	--	--	--	--	--	--
2600	1546	654	0.38	7.4	714	0.43	6.3	856	0.56	8.4	992	0.69	10.8	1122	0.85	13.1	1362	1.20	17.7	--	--	--	--	--	--
2800	1665	696	0.46	8.4	750	0.52	7.1	881	0.66	9.2	1009	0.80	11.4	1132	0.95	13.6	1362	1.31	17.8	--	--	--	--	--	--
3000	1783	739	0.56	9.4	788	0.62	8.1	907	0.77	9.9	1028	0.92	12.1	1145	1.06	14.4	1367	1.43	18.1	--	--	--	--	--	--
3200	1902	782	0.67	10.1	828	0.73	9.0	936	0.88	10.8	1050	1.05	12.5	1162	1.20	16.3	--	--	--	--	--	--	--	--	--
3400	2021	826	0.80	10.6	868	0.86	10.0	966	1.02	11.5	1075	1.19	13.5	1181	1.36	21.0	--	--	--	--	--	--	--	--	--

**VDBA 30
VGBA 30**

**1-1/2 HP MAXIMUM
3/4" SHAFT**

**TIP SPEED = 2.99 X RPM
WHEEL DIA. = 11.44"**

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
1600	771	388	0.08	2.7	511	0.13	3.9	709	0.25	7.2	861	0.36	10.7	987	0.51	--	1196	0.82	--	1371	1.16	--	--	--	--
1800	868	403	0.10	3.2	520	0.16	4.6	712	0.28	7.3	866	0.42	11.0	993	0.55	14.3	1204	0.88	--	1380	1.24	--	--	--	--
2000	964	422	0.13	3.1	531	0.18	5.6	713	0.31	7.4	869	0.47	11.1	998	0.61	14.5	1210	0.94	--	1387	1.32	--	--	--	--
2200	1060	445	0.16	3.7	544	0.22	7.3	719	0.35	7.7	872	0.51	11.3	1002	0.69	14.8	1216	1.00	20.0	1394	1.40	--	--	--	--
2400	1157	470	0.20	4.7	559	0.26	10.6	728	0.40	8.2	873	0.55	11.4	1005	0.75	15.0	1221	1.10	20.0	1400	1.49	--	--	--	--
2600	1253	497	0.25	6.6	575	0.30	5.7	738	0.45	8.8	878	0.61	11.7	1007	0.80	15.1	1225	1.21	21.0	--	--	--	--	--	--
2800	1350	525	0.30	6.0	593	0.35	6.5	749	0.51	9.4	886	0.69	12.1	1009	0.86	15.2	1229	1.31	21.0	--	--	--	--	--	--
3000	1446	553	0.36	6.8	616	0.42	7.9	762	0.58	10.1	895	0.76	12.6	1013	0.95	15.4	1232	1.40	21.0	--	--	--	--	--	--
3200	1543	582	0.43	8.0	640	0.49	9.7	776	0.65	10.9	905	0.84	13.1	1021	1.04	15.8	1234	1.48	21.0	--	--	--	--	--	--
3400	1639	612	0.51	9.3	666	0.57	11.5	791	0.73	11.6	916	0.93	13.7	1030	1.14	16.4	--	--	--	--	--	--	--	--	--
3600	1736	642	0.59	10.6	693	0.66	13.3	807	0.82	12.4	928	1.02	14.4	1040	1.25	17.0	--	--	--	--	--	--	--	--	--
3800	1832	672	0.68	11.7	720	0.77	14.5	824	0.91	12.7	942	1.13	15.2	1051	1.35	17.8	--	--	--	--	--	--	--	--	--

NOTES: Performance certified is for installation Type B - Free Inlet, Ducted Outlet, without filter section. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5mm) in a hemispherical free field calculated per AMCA Standard 301. Installation Type B: free inlet hemispherical sone levels. Sone values not documented in unlisted areas. Twin unit data is derived from tests of single width fans.

PERFORMANCE DATA



Carnes Company certifies that the Models VDBA and VGBA Series Duct Blower shown herein are licensed to bear the AMCA seal. The ratings 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.

VDBA 32
VGBA 32

VDBA - 1-1/2 HP MAXIMUM
3/4" SHAFT

VGBA - 3 HP MAXIMUM
1" SHAFT

TIP SPEED = 3.27 X RPM
WHEEL DIA. = 12.50"

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
2400	823	367	0.13	2.7	470	0.20	4.2	639	0.35	--	783	0.54	--	904	0.73	--	1098	1.15	--	1255	1.56	--	1390	2.05	--
2800	960	393	0.18	3.5	487	0.26	5.0	646	0.42	--	783	0.61	--	904	0.83	--	1106	1.30	--	1268	1.78	--	1407	2.26	--
3200	1097	423	0.25	5.0	507	0.33	6.2	658	0.51	8.0	786	0.71	--	905	0.94	--	1106	1.43	--	1276	1.98	--	1420	2.53	--
3600	1234	455	0.33	7.5	532	0.42	7.8	673	0.62	8.7	796	0.83	12.7	906	1.60	--	1108	1.60	--	1278	2.17	--	1427	2.79	--
4000	1371	489	0.43	6.2	559	0.53	9.4	690	0.74	9.5	809	0.97	12.6	915	1.21	--	1108	1.75	--	1279	2.38	--	--	--	--
4400	1508	524	0.54	7.3	588	0.65	10.7	711	0.89	10.4	824	1.13	13.4	927	1.38	16.1	1109	1.93	--	1279	2.59	--	--	--	--
4800	1646	562	0.69	8.7	620	0.80	12.0	734	1.06	11.5	840	1.31	14.2	941	1.59	16.7	1118	2.16	--	1278	2.79	--	--	--	--
5200	1783	601	0.86	10.1	653	0.98	12.9	759	1.25	12.6	860	1.53	15.2	956	1.81	17.4	1129	2.41	--	--	--	--	--	--	--
5600	1920	640	1.06	11.3	687	1.18	12.0	786	1.46	13.9	882	1.76	16.2	973	2.06	18.2	1142	2.70	22.0	--	--	--	--	--	--
6000	2057	680	1.29	12.6	722	1.40	13.4	815	1.70	15.3	906	2.02	17.4	993	2.34	19.2	--	--	--	--	--	--	--	--	--
6400	2194	721	1.55	14.0	758	1.66	14.8	846	1.98	17.0	932	2.31	19.2	1015	2.66	20.0	--	--	--	--	--	--	--	--	--
6800	2331	762	1.85	15.6	796	1.96	16.1	877	2.28	19.9	959	2.63	22.0	1039	3.00	23.0	--	--	--	--	--	--	--	--	--

VDBA 35
VGBA 35

VDBA - 3 HP MAXIMUM
1" SHAFT

VGBA - 5 HP MAXIMUM
1 SHAFT

TIP SPEED = 3.99 X RPM
WHEEL DIA. = 15.25"

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
3600	876	273	0.20	3.5	370	0.35	5.8	510	0.59	10.2	617	0.84	13.2	705	1.14	16.2	850	1.77	20.0	969	2.40	24.0	1071	3.04	27.0
3800	925	278	0.22	4.2	373	0.38	6.0	510	0.64	10.5	620	0.89	13.6	708	1.19	16.5	854	1.85	21.0	974	2.52	24.0	1077	3.19	28.0
4000	974	284	0.25	5.0	375	0.40	5.6	510	0.70	10.5	622	0.94	13.8	711	1.25	16.8	857	1.93	21.0	978	2.63	25.0	1083	3.34	28.0
4200	1022	290	0.28	3.8	375	0.42	5.7	510	0.76	10.5	623	1.00	13.9	714	1.31	17.1	860	2.01	22.0	982	2.75	25.0	1088	3.49	29.0
4400	1071	297	0.31	4.5	376	0.44	5.7	511	0.82	10.8	624	1.07	14.0	716	1.37	17.3	863	2.09	22.0	986	2.86	26.0	1092	3.63	30.0
4600	1120	305	0.34	5.2	378	0.47	5.8	514	0.87	11.5	624	1.16	14.0	718	1.44	17.5	866	2.17	22.0	989	2.96	26.0	1096	3.77	30.0
4800	1168	314	0.38	5.8	381	0.50	6.0	517	0.93	12.4	624	1.24	14.0	720	1.52	17.7	869	2.25	23.0	992	3.07	26.0	1100	3.91	31.0
5000	1217	323	0.42	6.5	385	0.54	6.2	521	0.98	13.6	624	1.33	14.0	721	1.61	17.8	872	2.33	23.0	995	3.18	27.0	1104	4.05	31.0
5200	1266	333	0.47	5.8	389	0.59	6.5	525	1.03	14.8	625	1.42	14.1	721	1.72	17.8	875	2.42	24.0	999	3.28	28.0	1107	4.18	32.0
5400	1314	342	0.52	6.3	394	0.63	6.8	528	1.07	15.8	626	1.51	14.2	721	1.83	17.8	877	2.52	24.0	1002	3.39	28.0	1110	4.31	32.0
5600	1363	352	0.57	6.8	400	0.68	7.1	530	1.11	10.8	629	1.59	14.6	721	1.95	17.8	879	2.63	25.0	1005	3.50	28.0	1113	4.44	33.0
5800	1412	363	0.63	7.3	406	0.74	7.5	531	1.15	10.9	632	1.67	15.2	721	2.07	17.8	881	2.75	26.0	1007	3.61	29.0	1116	4.58	33.0
6000	1461	373	0.69	7.7	413	0.80	7.8	531	1.19	11.0	636	1.75	15.9	722	2.19	18.0	882	2.88	26.0	1010	3.73	29.0	1119	4.71	34.0
6200	1509	384	0.76	8.1	420	0.86	8.5	532	1.24	11.0	640	1.82	16.6	723	2.30	18.0	883	3.02	26.0	1013	3.86	30.0	1122	4.84	34.0
6400	1558	394	0.83	8.4	428	0.93	10.2	533	1.29	11.1	643	1.89	17.1	725	2.42	18.2	883	3.18	26.0	1015	4.00	30.0	1125	4.98	35.0
6600	1607	405	0.91	8.7	436	1.00	11.8	536	1.36	11.4	647	1.96	17.8	728	2.52	18.5	883	3.35	26.0	1017	4.15	31.0	--	--	--
6800	1655	416	0.99	9.0	445	1.08	13.5	539	1.43	11.7	649	2.03	15.8	732	2.63	18.9	883	3.53	26.0	1018	4.31	31.0	--	--	--
7000	1704	427	1.07	9.5	454	1.16	15.5	543	1.51	12.0	650	2.09	15.9	736	2.73	19.3	883	3.71	26.0	1019	4.50	32.0	--	--	--
7200	1753	437	1.16	10.0	463	1.25	17.8	547	1.59	12.6	650	2.15	16.0	740	2.83	19.7	883	3.89	26.0	1019	4.70	32.0	--	--	--
7400	1801	448	1.26	10.5	473	1.34	11.4	552	1.68	13.5	651	2.21	16.0	743	2.92	20.0	884	4.07	27.0	1020	4.91	32.0	--	--	--
7600	1850	459	1.36	11.1	483	1.44	12.0	557	1.78	14.5	652	2.28	16.1	746	3.01	20.0	886	4.24	28.0	--	--	--	--	--	--
7800	1899	470	1.47	11.8	493	1.55	12.8	562	1.88	15.6	653	2.36	16.2	749	3.10	20.0	888	4.41	29.0	--	--	--	--	--	--
8000	1948	481	1.58	12.4	503	1.66	13.9	568	1.98	17.0	655	2.45	16.3	750	3.18	20.0	891	4.57	31.0	--	--	--	--	--	--
8200	1996	492	1.69	13.1	513	1.78	15.1	574	2.09	18.1	658	2.55	16.5	751	3.26	17.8	894	4.73	32.0	--	--	--	--	--	--
8400	2045	503	1.82	13.7	523	1.90	16.3	581	2.20	14.9	661	2.66	16.8	751	3.34	17.8	898	4.88	35.0	--	--	--	--	--	--
8600	2094	514	1.95	14.4	534	2.03	17.5	588	2.32	15.5	665	2.78	17.2	752	3.43	17.8	--*10	--	--	--	--	--	--	--	--
8800	2142	526	2.08	15.0	544	2.17	19.0	595	2.45	16.2	670	2.91	17.6	753	3.52	20.0	--	--	--	--	--	--	--	--	--

NOTES: Performance certified is for installation Type B - Free Inlet, Ducted Outlet, without filter section. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5mm) in a hemispherical free field calculated per AMCA Standard 301. Installation Type B: free inlet hemispherical sone levels. Sone values not documented in unlisted areas. Twin unit data is derived from tests of single width fans.

PERFORMANCE DATA



Carnes Company certifies that the Models VDBA and VGBA Series Duct Blower shown herein are licensed to bear the AMCA seal. The ratings 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.

VGBA 38

**10 HP MAXIMUM
1-3/16" SHAFT**

**TIP SPEED = 4.76 X RPM
WHEEL DIA. = 18.19"**

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
6000	972	255	0.40	3.8	321	0.58	7.6	429	0.95	--	533	1.45	--	615	1.95	--	748	3.00	--	860	4.12	--	957	5.36	--
6400	1037	264	0.46	4.7	325	0.65	9.1	428	1.02	--	531	1.54	--	616	2.06	--	750	3.17	--	861	4.31	--	959	5.59	--
6800	1102	273	0.53	5.9	330	0.73	6.1	432	1.12	--	529	1.63	--	615	2.19	--	751	3.34	--	863	4.54	--	961	5.82	--
7200	1167	282	0.61	7.9	336	0.81	6.6	437	1.23	--	526	1.71	--	614	2.32	--	753	3.51	--	865	4.77	--	963	6.06	--
7600	1232	292	0.70	10.7	343	0.90	7.2	442	1.35	9.7	523	1.79	--	613	2.44	--	754	3.68	--	867	5.00	--	965	6.35	--
8000	1297	302	0.80	12.1	351	1.00	8.0	448	1.48	10.4	526	1.93	--	610	2.55	--	754	3.86	--	868	5.23	--	967	6.64	--
8400	1362	312	0.91	13.3	359	1.11	8.8	452	1.61	11.0	530	2.09	--	607	2.66	--	754	4.06	--	869	5.46	--	969	6.92	--
8800	1426	323	1.03	7.3	367	1.23	9.5	457	1.75	11.7	534	2.25	--	604	2.77	--	752	4.25	--	870	5.68	--	970	7.21	--
9200	1491	334	1.15	8.1	376	1.36	10.3	462	1.90	12.3	540	2.42	--	606	2.96	--	751	4.44	--	871	5.92	--	971	7.49	--
9600	1556	345	1.29	8.9	385	1.50	11.1	466	2.05	12.0	546	2.61	15.1	610	3.16	--	749	4.61	--	870	6.18	--	972	7.78	--
10000	1621	356	1.44	9.9	395	1.66	11.9	473	2.21	12.6	551	2.81	16.2	615	3.37	--	746	4.78	--	869	6.44	--	973	8.05	--
10400	1686	367	1.60	10.8	404	1.83	12.6	479	2.39	13.2	555	3.02	17.9	620	3.60	--	742	4.93	--	868	6.69	--	973	8.37	--
10800	1751	378	1.78	11.8	414	2.01	13.3	487	2.58	13.8	560	3.23	21.0	627	3.84	18.5	739	5.10	--	866	6.93	--	973	8.70	--
11200	1816	390	1.96	12.8	424	2.21	14.0	494	2.78	14.4	565	3.45	25.0	632	4.10	20.0	742	5.38	--	864	7.16	--	972	9.02	--
11600	1881	401	2.16	13.7	435	2.42	14.7	502	2.99	15.0	569	3.67	17.0	636	4.37	22.0	746	5.68	--	861	7.38	--	971	9.33	--
12000	1945	413	2.38	14.7	445	2.64	15.2	510	3.21	15.6	575	3.91	17.5	641	4.64	24.0	750	5.99	--	857	7.58	--	969	9.63	--
12400	2010	424	2.60	15.5	456	2.87	14.9	519	3.45	16.4	581	4.16	18.1	646	4.92	27.0	755	6.32	--	853	7.78	--	967	9.92	--
12800	2075	436	2.84	16.5	466	3.12	15.8	527	3.70	17.2	588	4.43	18.9	650	5.21	30.0	761	6.67	--	856	8.16	--	--	--	--
13200	2140	448	3.10	17.4	477	3.39	16.7	536	3.96	18.2	595	4.72	19.6	655	5.50	21.0	767	7.03	25.0	859	8.55	--	--	--	--
13600	2205	460	3.37	18.4	488	3.67	17.7	545	4.25	19.7	603	5.02	20.0	660	5.81	21.0	772	7.42	26.0	863	8.96	--	--	--	--
14000	2270	472	3.66	19.4	499	3.97	18.7	555	4.57	23.0	611	5.33	22.0	666	6.14	22.0	777	7.81	27.0	868	9.38	--	--	--	--
14400	2335	484	3.97	20.0	510	4.28	19.7	564	4.90	26.0	619	5.65	23.0	673	6.48	23.0	782	8.22	29.0	873	9.83	--	--	--	--
14800	2399	496	4.29	21.0	520	4.61	21.0	574	5.25	32.0	627	5.99	24.0	680	6.85	24.0	786	8.63	31.0	--	--	--	--	--	--
15200	2464	508	4.63	22.0	533	4.96	22.0	584	5.62	36.0	635	6.35	26.0	687	7.22	24.0	791	9.06	32.0	--	--	--	--	--	--

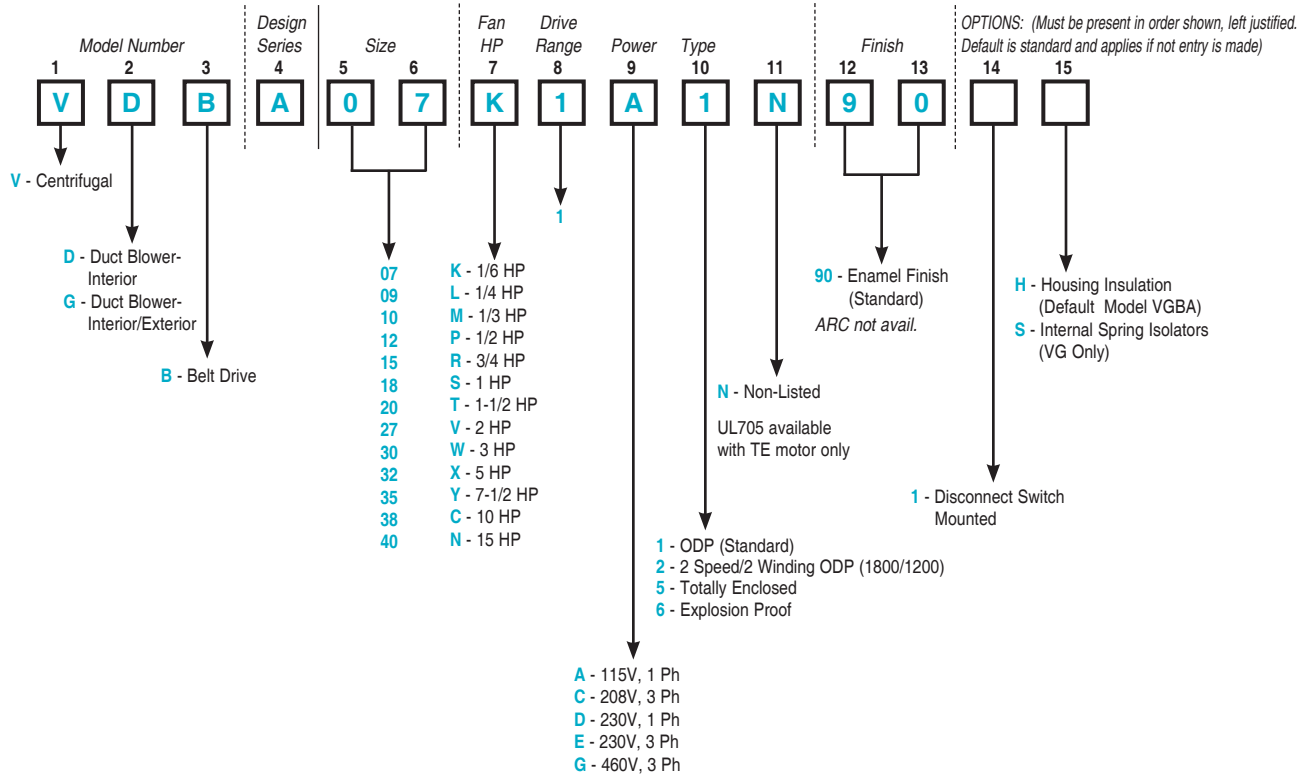
VGBA 40

**40 HP MAXIMUM
2-1/4" SHAFT**

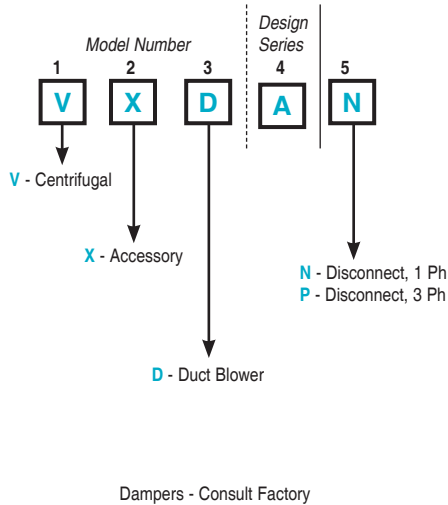
**TIP SPEED = 5.35 X RPM
WHEEL DIA. = 20.44"**

CFM	Outlet Velocity FPM	1/8" SP			1/4" SP			1/2" SP			3/4" SP			1" SP			1-1/2" SP			2" SP			2-1/2" SP		
		RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones	RPM	BHP	Sones
12000	1303	336	1.69	16.0	373	2.00	11.0	446	2.70	9.2	511	3.50	12.1	569	4.29	14.4	674	5.99	19.8	765	7.72	24.0	845	9.50	28.0
12500	1357	347	1.88	17.9	382	2.21	11.8	453	2.92	9.6	517	3.74	12.5	574	4.57	14.7	678	6.30	20.0	768	8.11	24.0	848	9.89	29.0
13000	1411	358	2.09	17.3	392	2.43	12.6	461	3.16	10.3	523	4.00	12.9	580	4.86	15.0	682	6.62	22.0	772	8.52	25.0	852	10.38	29.0
13500	1465	370	2.31	16.9	402	2.66	13.3	468	3.42	10.8	530	4.27	13.0	585	5.16	15.4	685	6.95	22.0	776	8.92	25.0	855	10.87	29.0
14000	1250	381	2.55	16.6	412	2.91	14.1	476	3.69	11.3	536	4.55	13.3	591	5.47	15.9	690	7.32	24.0	780	9.34	25.0	859	11.36	30.0
14500	1574	392	2.80	16.3	423	3.18	14.7	484	3.97	11.9	543	4.85	13.9	597	5.80	16.5	695	7.72	25.0	783	9.76	26.0	863	11.87	30.0
15000	1628	404	3.08	16.2	433	3.47	15.3	492	4.27	12.5	551	5.16	14.5	604	6.15	17.3	700	8.13	27.0	787	10.10	26.0	867	12.38	31.0
15500	1683	415	3.37	16.1	444	3.77	15.8	500	4.59	13.1	558	5.50	15.0	610	6.51	16.9	705	8.55	29.0	791	10.62	27.0	871	12.89	31.0
16000	1737	427	3.68	15.9	455	4.09	15.9	509	4.94	13.7	565	5.87	15.5	617	6.88	17.4	711	8.99	31.0	795	11.10	27.0	874	13.42	31.0
16500	1791	439	4.01	15.7	465	4.43	15.9	518	5.30	14.3	573	6.26	16.2	624	7.27	17.9	716	9.45	33.0	800	11.62	28.0	878	13.95	32.0
17000	1845	450	4.36	15.9	476	4.79	16.0	528	5.69	15.1	581	6.66	16.8	631	7.67	18.6	722	9.92	35.0	805	12.16	29.0	882	14.48	32.0
17500	1900	462	4.73	15.9	487	5.17	16.1	537	6.09	15.7	588	7.08	17.4	638	8.09	19.2	728	10.40	38.0	810	12.71	30.0	885	15.02	32.0
18000	1954	474	5.12	16.0	498	5.58	16.2	547	6.52	16.4	596	7.52	18.1	646	8.57	20.0	735	10.91	41.0	815	13.28	31.0	890	15.65	33.0
18500	2008	486	5.53	16.1	510	6.00	16.4	557	6.97	17.1	603	7.97	18.9	653	9.06	21.0	741	11.43	43.0	821	13.87	33.0	895	16.31	33.0
19000	2063	498	5.97	16.2	521	6.45	16.6	567	7.44	18.0	615	8.45	20.0	661	9.58	22.0	748	11.97	24.0	827	14.48	34.0	900	16.98	34.0
19500	2117	509	6.42	16.4	532	6.92	17.1	577	7.93	18.9	622	8.97	22.0	668	10.11	23.0	754	12.53	25.0	833	15.10	36.0	905	17.67	34.0
20000	2171	521	6.90	16.6	543	7.41	17.7	587	8.45	20.0	631	9.51	23.0	676	10.66	24.0	761	13.10	25.0	839	15.75	37.0	910	18.38	35.0
20500	2226	533	7.40	17.1	555	7.93	18.3	598	8.99	22.0	640	10.07	25.0	684	11.24	26.0	768	13.70	26.0	845	16.41	33.0	916	19.11	36.0
21000	2280	545	7.92	17.8	566	8.47	19.0	608	9.55	25.0	650	10.66	28.0	692	11.83	28.0	776	14.32	27.0	851	17.09	40.0	921	19.86	36.0
21500	2334	557	8.47	18.4	578	9.03	20.0	619	10.14	29.0	659	11.28	31.0	700	12.45	29.0	783	14.96	28.0	858	17.79	42.0	927	20.63	37.0
22000	2388	568	9.04	19.1	589	9.63	21.0	629	10.76	33.0	669	11.92	36.0	709	13.10	30.0	790	15.68	28.0	864	18.52	31.0	933	21.42	38.0
22500	2443	580	9.64	20.0	601	10.25	24.0	640	11.40	38.0	679	12.58	41.0	718	13.79	32.0	798	16.41	29.0	871	19.26	32.0	939	22.23	39.0
23000	2497	592	10.26	22.0	613	10.89	28.0	651	12.07	43.0	689	13.28	44.0	727	14.50	34.0	805	17.17	30.0	878	20.03	33.0	946	23.07	40.0
23500	2551	604	10.91	25.0	624	11.57	31.0	662	12.77	50.0	699	14.00	47.0	736	15.25	35.0	813	17.96	31.0	885	20.82	34.0	952	23.92	40.0
24000	2606	616	11.59	28.0	636	12.27	36.0	673	13.50	59.0	709	14.75	49.0	746	16.02	37.0	820	18.76	32.0	892	21.63	34.0	958	24.80	41.0

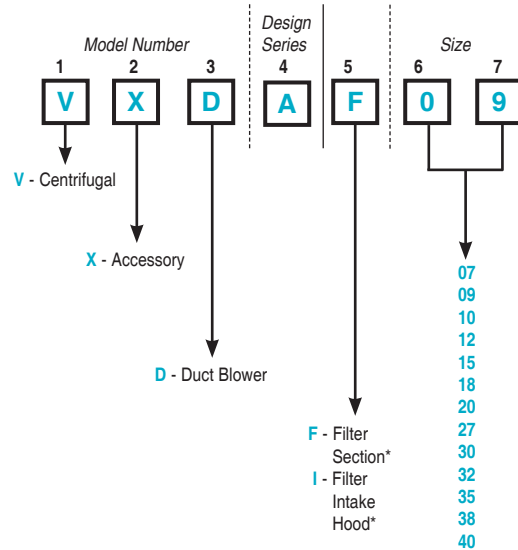
▼ Duct Blowers



▼ Safety Disconnect

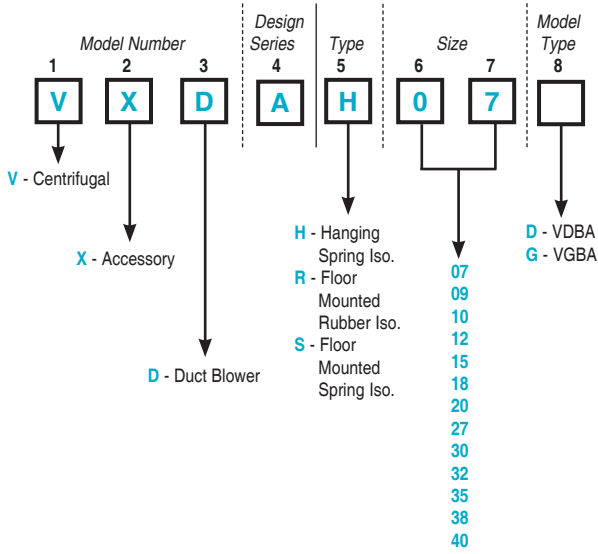


▼ Rain Hood and Filter Section



*NOTE: 2 Filter sections & intake hoods are included on models 27-40. (Please do not "double up" sections or hoods.)

▼ Isolators



Model LIDA

DIRECT DRIVE TUBEAXIAL FANS

Application

Carnes Company tubeaxial fans offer one of the widest ranges of sizes, horsepower and performance in the industry. Models LIDA are high capacity tubeaxial fans rated from 945 to 43,000 CFM, with static pressure capability up to 1-1/4". They are used to exhaust air from or supply air to such typical commercial and industrial applications as general building ventilation, enclosed garages and other applications where air is moved through a duct system against moderate static pressure.

Direct drive Models LIDA are best used for exhausting or supplying relatively clean ambient temperature air. They are available in smaller sizes for areas with reduced air flow needs and require practically no maintenance.

Construction/Specification Checklist

Fan Housing

- Heavy-gauge rolled steel construction.
- Rolled steel flange reinforcement on each end.
- Continuous welded seams.

Propeller (Sizes 12 - 21)

- Die formed steel blades.
- Steel hub plate/bushing.
- Heavy-duty construction.
- Statically and dynamically balanced.
- Aluminum blades are optional.

Propeller (Sizes 24 - 48)

- Three, four or six wing airfoil aluminum or heavy gauge steel blades.
- Steel or aluminum hub plate with steel taper lock bushing.
- Blades are pitched for optimum efficiency.
- Statically and dynamically balanced.

Motors

- One year motor warranty.
- Brands are nationally recognized and locally serviced.
- Open drip-proof construction is standard.
- Premium-efficiency, explosion proof, totally enclosed fan cooled (TEFC) and corrosion duty motors can be specified.

Entire Fan Unit

- Factory assembled and tested prior to shipment for quality assurance.

Options/Accessories

Pedestal Base: Supports fan for vertical or horizontal mounting.

Ceiling Brackets: For suspending fan in ceiling mounted installations. Hanging vibration isolation is available.

Inlet/Outlet Guard: Prevents objects from entering the fan inlet or outlet.

Access Panel: Allows access to interior of fan housing for inspection. Location must be specified.

Companion Flanges: Inlet and/or outlet flanges are available for duct connection.

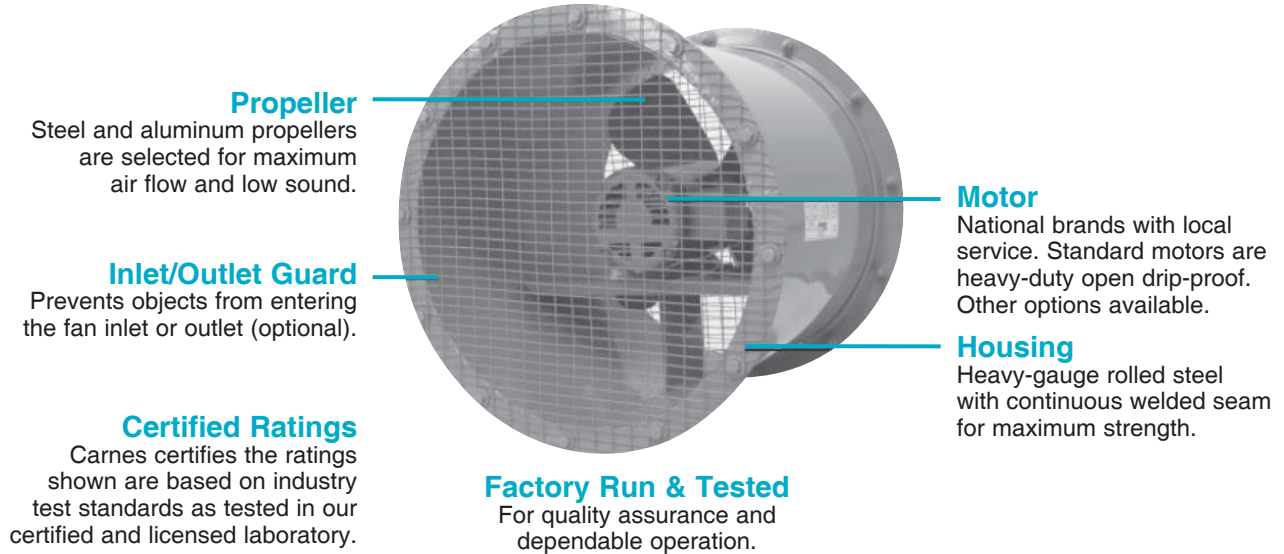
Disconnect Switch: Non-fused safety disconnect available for all motor sizes and enclosures. Specify prewired if desired. (Wiring not available on explosion proof motors.)

Spark-Resistant Construction: For use in hazardous locations. Includes explosion proof motor.

Epoxy Finish: For use in an alkaline type atmosphere (not for use in acetic and nitric acids). Epoxy forms an excellent hard heavy film barrier against chemical attack as well as physical damage from direct impact and abrasion.

Model LIDA

CONSTRUCTION FEATURES - Direct Drive



Propeller

Steel and aluminum propellers are selected for maximum air flow and low sound.

Inlet/Outlet Guard

Prevents objects from entering the fan inlet or outlet (optional).

Certified Ratings

Carnes certifies the ratings shown are based on industry test standards as tested in our certified and licensed laboratory.

Motor

National brands with local service. Standard motors are heavy-duty open drip-proof. Other options available.

Housing

Heavy-gauge rolled steel with continuous welded seam for maximum strength.

Factory Run & Tested

For quality assurance and dependable operation.

AVAILABLE ACCESSORIES

- ACCESS PANEL
- CEILING BRACKET
- PEDESTAL BASE
- GUARDS
- BASE/HANGING ISOLATION
- PAINT COATINGS
- DISCONNECT SWITCH
- SPARK RESISTANT CONSTRUCTION
- ALUMINUM CONSTRUCTION (24" - 48")
- CURB BASE
- MAN COOLER PACKAGE

Models LIBA / LIDA

BELT DRIVE / DIRECT DRIVE TUBEAXIAL DUCT FANS

Application

Carnes Company tubeaxial line offers the widest range of sizes, horsepower and performance in the industry. Models LIBA are high capacity tubeaxial fans rated from 1,320 to 58,253 CFM, with static pressure capability up to 1-1/4". Models LIDA are high capacity tubeaxial fans rated from 390 to 43,000 CFM, with static pressure capability up to 1-1/4". Both Models LIBA and LIDA are used to exhaust air from or supply air to such typical commercial and industrial applications as general building ventilation, enclosed garages, paint spray booths, heat and smoke ventilation systems and other applications where air is moved through a duct system against moderate static pressure.

Model LIBA - Belt drive Models LIBA are especially suited to handle fumes, vapors, steam, dust, smoke and contaminated or heated air to 200°F. They are available in larger, higher capacity sizes and offer ease in adjustment of fan performance by reducing the fan RPM with adjustable motor sheaves. (Optional on 5 HP and larger.)

Total access to the bearings and shaft is possible with the LIBA's unique removable cover. This cover can be removed for optimum performance when clean and untempered air is present.

Model LIDA - Direct drive Models LIDA are best used for exhausting or supplying relatively clean ambient temperature air. They are available in smaller sizes for areas with reduced air flow needs and require practically no maintenance.

Construction/Specification Checklist

Fan Housing

- Heavy-gauge rolled steel construction.
- Rolled steel flange reinforcement on each end.
- Continuous welded seams.
- Belt and bearing enclosure (LIBA only).
- Removable belt and bearing cover for ease of maintenance (LIBA only).

Propeller (Sizes 12 - 21)

- Die formed steel blades.
- Steel hub plate/bushing.
- Heavy-duty construction.
- Statically and dynamically balanced.
- Aluminum blades are optional.

Propeller (LIBA Sizes 24 - 54) (LIDA Sizes 24 - 48)

- Three, four or six wing airfoil aluminum or heavy gauge steel blades.
- Steel or aluminum hub plate with steel taper lock bushing.
- Blades are pitched for optimum efficiency.
- Statically and dynamically balanced (LIBA).
- Statically balanced (LIDA).

Drives

- Sized for minimum 150% of drive horsepower.

- Single belt adjustable pitch sheaves through 3 HP.
- Multiple belt fixed pitch sheaves through 15 HP.
- Adjustable pitch sheaves are optional above 3 HP.
- Adjustable tension rods for belt adjustment.
- Non-static oil resistant V-belts.
- Keyed, turned, ground and polished shafts with an anti-rust coating.

Bearings (LIBA)

- Bearings designed for min. 200,000 hour life (L50).
- Cast iron self-aligning pillow block ball bearings.
- Bearings are sealed and pre-lubricated.

Motors

- One year motor warranty.
- Open drip-proof construction is standard.
- Premium-efficiency, explosion proof, totally enclosed fan cooled (TEFC) and corrosion duty motors can be specified.

Entire Fan Unit

- Factory assembled and tested prior to shipment for quality assurance.

Options/Accessories

Pedestal Base: Supports fan for vertical or horizontal mounting.

Ceiling Brackets: For suspending fan in ceiling mounted installations. Hanging vibration isolation is available.

Inlet/Outlet Guard: Prevents objects from entering the fan inlet or outlet.

Access Panel: Allows access to interior of fan housing for inspection. Location must be specified.

Companion Flanges: Inlet and/or outlet flanges are available for duct connection.

Disconnect Switch: Non-fused safety disconnect available for all motor sizes and enclosures. Specify prewired if desired. (Wiring not available on explosion proof and two speed motors.)

Spark-Resistant Construction: For use in hazardous locations.

Belt Guard: Encloses belt and motor sheave on exterior of fan (LIBA only).

Motor Cover: Protects motor in outdoor applications (LIBA only).

Adjustable Sheave: Can be specified for 5 HP and larger units (standard through 3 HP) (LIBA only).

Shaft Seal: Protects bearings and belts when fan is handling dirty or contaminated air (LIBA only).

cULus Standard 705 (LIBA only): Available with all standard motors.

Epoxy Finish: For use in an alkaline type atmosphere (not for use in acetic and nitric acids). Epoxy forms an excellent hard heavy film barrier against chemical attack as well as physical damage from direct impact and abrasion.

Other Finishes: Heresite and polyester resin are also available when special coatings are required.



Model LIBA

TUBEAXIAL IN-LINE BELT DRIVE DUCT FAN

Model Features

- Rated up to 75,490 CFM in static pressure applications up to 1-1/2" w.g.
- 12 sizes ranging from 12 to 54" propeller diameters.
- Motor and drives are located outside of the airstream.
- Belt drives permit easy performance adjustments when needed.
- Continuously welded and epoxy painted steel housing.
- cULus Listed.

Model Overview

Carnes tubeaxial line offers the widest range of sizes, horsepower and performance in the industry. Models LIBA are high capacity belt drive tubeaxial fans rated from 900 to 58,253 CFM, with static pressure capability up to 1-1/2". They are used to exhaust air from or supply air to such typical commercial and industrial applications as general building ventilation, enclosed garages, paint spray booths, heat and smoke ventilation systems and other applications where air is moved through a duct system against moderate static pressure.

Belt drive Models LIBA are especially suited to handle fumes, vapors, steam, dust, smoke and contaminated or heated air to 200°F. They are available in larger, higher capacity sizes and offer ease in adjustment of fan performance by reducing the fan RPM with adjustable motor sheaves. (Optional on 7-1/2 HP and larger.)

Total access to the bearings and shaft is possible with the LIBA unique removable cover.

CONSTRUCTION FEATURES - Belt Drive

Drives
Sized for a minimum 150% of motor horsepower. Drives are variable pitch as standard through 5 HP.

Motor
National brands with local service. Standard motors are heavy-duty open drip-proof. Other options available.

Motor Base
Adjustable steel motor base is designed for strength and ease of belt tensioning.

Integral Inlet and Outlet Flanges
With mounting holes.


Propeller
Aluminum propellers are selected for maximum air flow and low sound.

Bearings
Heavy-duty, ball bearing cast pillow blocks are designed for minimum 200,000 hours of operation, L50.

Mounting Supports
Eight (8) mounting supports are welded to each fan to allow for universal mounting.

Housing
Heavy-gauge rolled steel with continuous welded seam and epoxy coating for maximum strength.

Factory Run & Tested
For quality assurance and dependable operation.

cULus 705 Listed
For electrical reliability. 

2 year fan housing warranty, 1 year motor warranty

Model LIBA

TUBEAXIAL FANS

Construction/Specification

Fan Housing

- Heavy-gauge rolled steel construction.
- Integral inlet and outlet flanges with mounting holes.
- Continuous welded and epoxy coated.
- Belt and bearing tube.
- Removable bearing cover for ease of maintenance.
- Eight mounting supports welded to each fan.
- Adjustable motor base for belt tensioning.
- Extended lube lines.

Propeller

- Aluminum airfoil propeller.
- Blades are pitched for optimum efficiency.
- Statically balanced.

Drives

- Sized for minimum 150% of drive horsepower.
- Single belt adjustable pitch sheaves through 5 HP.
- Multiple belt fixed pitch sheaves 7-1/2 HP and above.
- Adjustable tension rods for belt adjustment.
- Nonstatic oil resistant V-belts.
- Keyed, turned, ground and polished shafts.

Bearings

- Bearings are designed for minimum 200,000 hour life (L50).
- Cast iron self-aligning pillow block ball bearings.
- Bearings are sealed and prelubricated.

Motors

- One year motor warranty.
- Brands are nationally recognized and locally serviced.
- NEMA base-mounted motors are standard.
- Open drip-proof construction is standard.
- Premium-efficiency, explosion proof, totally enclosed fan cooled (TEFC) and corrosion duty motors can be specified.

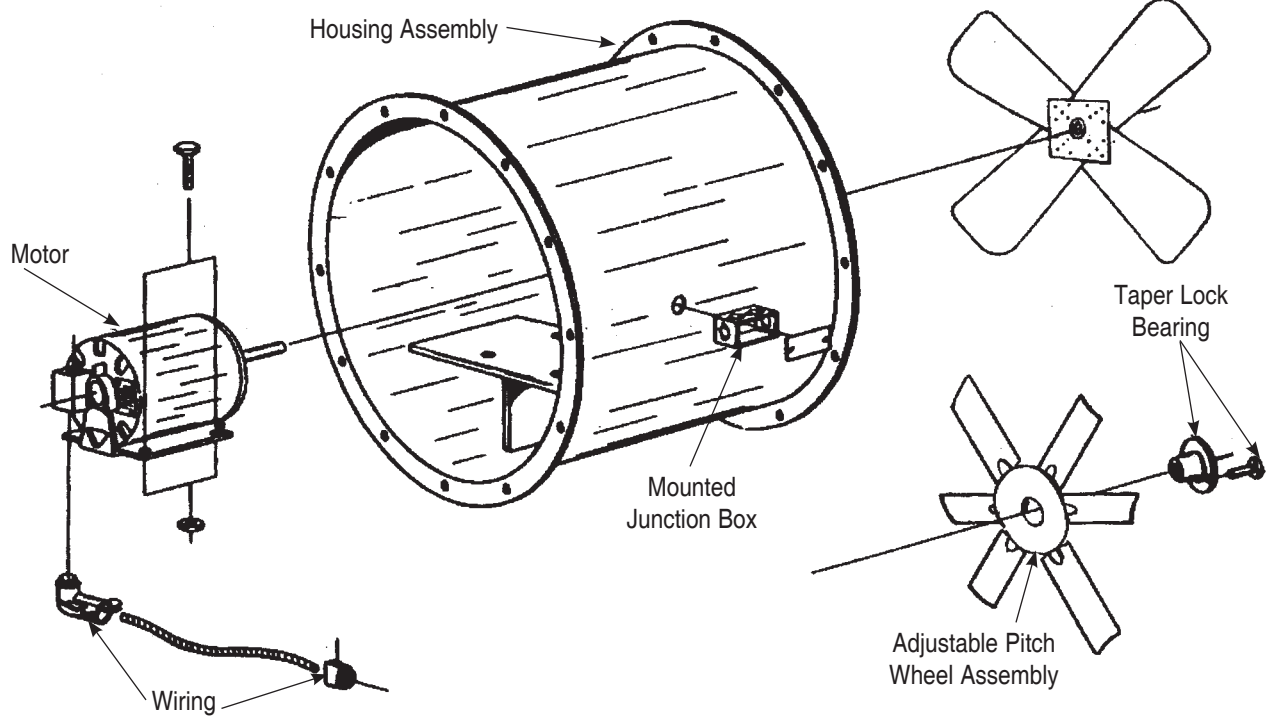
Certifications

- cULus 705 Listed.

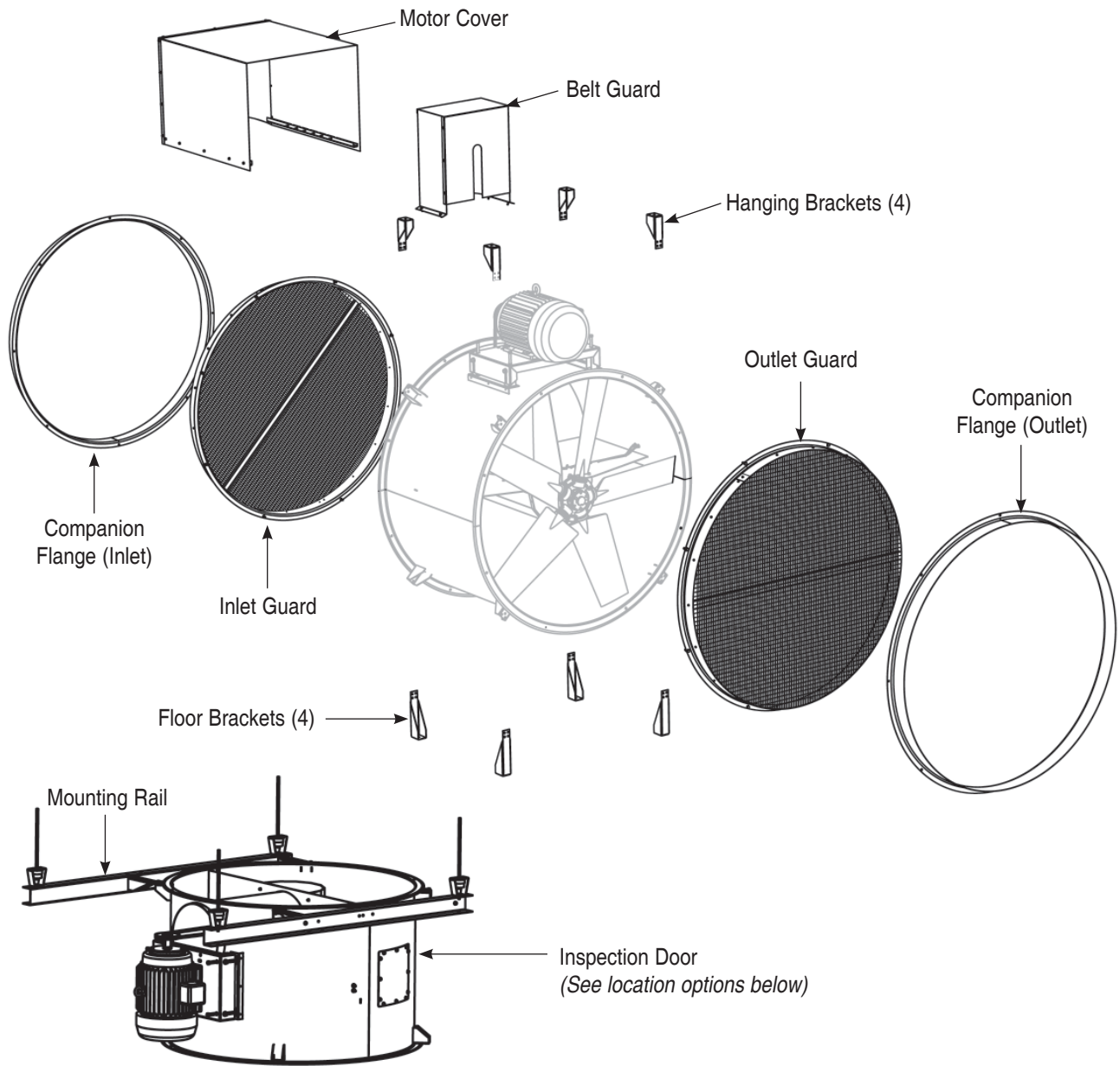
Entire Fan Unit

- Factory assembled and tested prior to shipment for quality assurance.





EXPLODED VIEWS MODEL LIDA — Direct Drive



OPTIONS/ACCESSORIES
MODEL LIBA — Belt Drive



Floor or Hanging Isolator Options

-  Rubber Isolator (Floor)
-  Spring Isolator (Floor)
-  Rubber Isolator (Hanging)
-  Spring Isolator (Hanging)

Model LIBA

TUBEAXIAL FANS

Options/Accessories

Hanging & Floor Brackets: For base or ceiling mounting. Neoprene and spring isolators are available.

Mounting Rails: Designed for vertical and horizontal mounting. Rail kits include mounting brackets.

Inlet/Outlet Guard: Prevents objects from entering the fan inlet or outlet. Includes companion flange.

Inspection Door: For inspection and blade service/cleaning. Bolted. Not available on sizes 12 and 16.

Companion Flanges: Inlet and/or outlet flanges are available for duct connection.

Belt Guard: Encloses belt and motor sheave on exterior of fan.

Motor Cover: Three sided guard that covers motor, sheave and belt. Motor may extend past cover on sizes 12, 16 and 18.

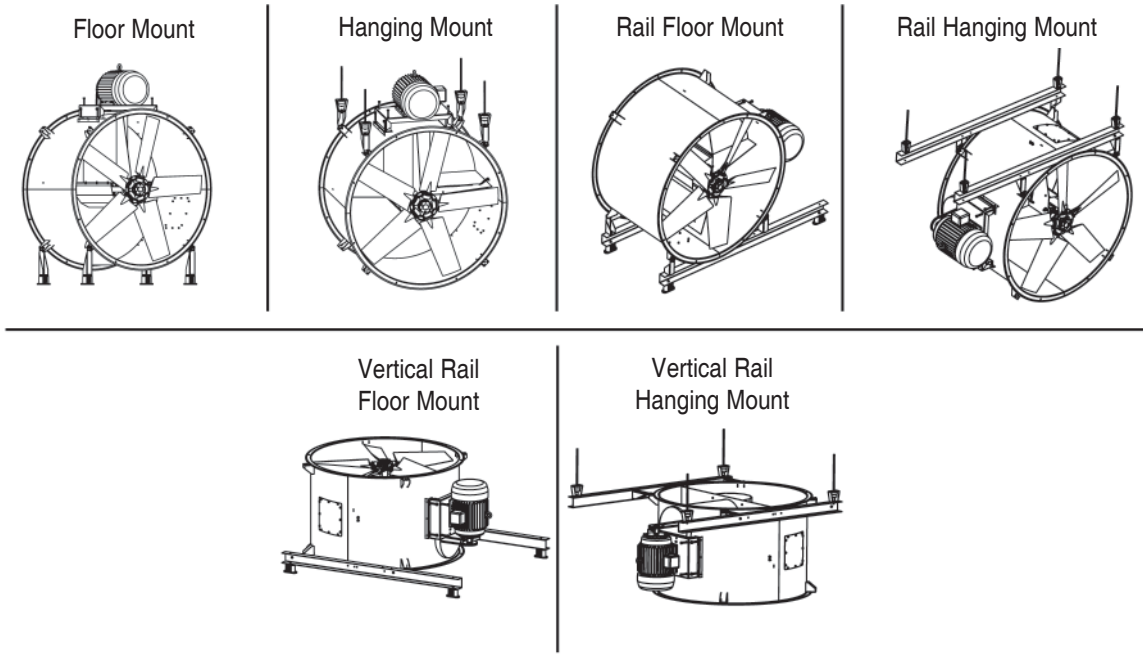
Adjustable Sheave: Can be specified for 7-1/2 HP and larger units (standard through 5 HP).

Shaft Seal: Protects bearings and belts when fan is handling dirty or contaminated air.

Disconnect Switch: Nonfused safety disconnect available for all motor sizes and enclosures. Specify prewired if desired. (Wiring not available on explosion proof and two speed motors.)

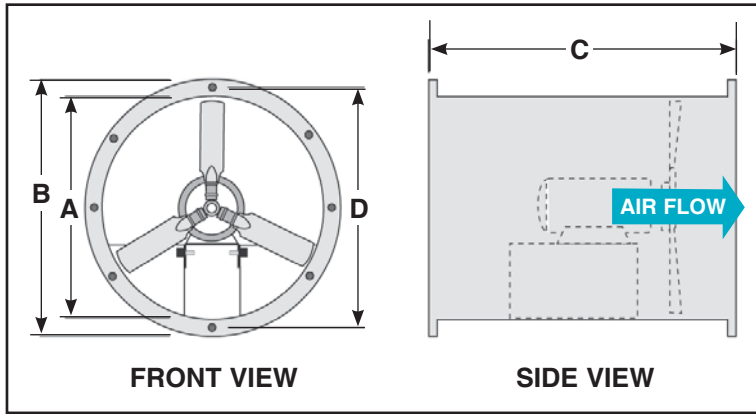
Special Coatings (Epoxy Coating is Standard): For protective and decorative purposes. Available coatings include: Synthetic Resin and Heresite (air-dried phenolic). Contact your representative or the factory for more information on available coatings and colors.

Mounting Configurations



PERFORMANCE DATA

Models LIDA - Sizes 12 - 24



Sizes	12	16	18	21	24
Max. Motor Frame	56	56	143T	145T	213T
Housing Gauge	14	14	14	14	12
Approx. Weight	60	65	75	90	130
Flange Holes:8				
Diameter Flange Holes:	1/2"				
Finish:	Galvanized				

Size	A	B	C	D*
12	13-1/32	16-3/16	15	15
16	17-1/32	20-3/16	19	19
18	19-1/32	22-3/16	19	20-3/4
21	22-1/32	25-3/16	19	23-3/4
24	25-1/8	29-1/8	30	27-1/8

A = ID B = OD C = Width
D = Flange Hole Center

Model	HP	RPM	CFM @ Static Pressure								
			0	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4
LIDA 12											
L2	1/4	1140	945	670	390	-	-	-	-	-	-
L3	*1/4	1750	1295	1210	1115	820	668	573	466	-	-
P2	*1/2	3450	2340	2280	2245	2188	2141	2092	2039	1955	-

Model	HP	RPM	CFM @ Static Pressure								
			0	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4
LIDA 16											
L2	1/4	1140	2220	1840	1210	525	-	-	-	-	-
P3	*1/2	1725	2700	2484	2269	2050	1829	1683	1192	946	-

Model	HP	RPM	CFM @ Static Pressure								
			0	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4
LIDA 18											
M2	*1/3	1140	2895	2549	1788	1184	844	-	-	-	-
R2	*3/4	1725	4550	4235	3920	3693	3458	3228	2170	1758	-
S2	1	1725	4740	4423	4290	3884	3424	3007	2391	1018	-

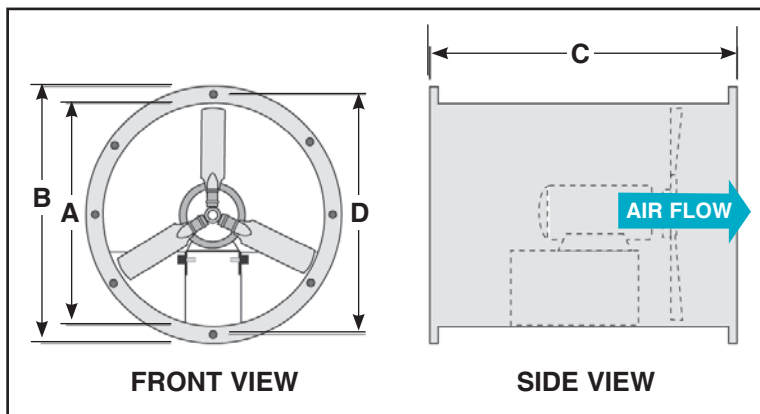
Model	HP	RPM	CFM @ Static Pressure								
			0	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4
LIDA 21											
P4	*1/2	1140	4681	4442	4174	3782	3265	2438	1998	1668	-
R2	*3/4	1725	4925	4694	4464	4236	4009	3808	3050	2678	2330
S2	1	1725	5998	5631	5331	5001	4634	4215	3835	-	-

Model	HP	RPM	CFM @ Static Pressure								
			0	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4
LIDA 24											
M4	1/3	1160	5644	5002	4177	2806	-	-	-	-	-
P5	1/2	1160	6952	6257	5403	4352	-	-	-	-	-
R3	3/4	1160	7943	7365	6453	5643	-	-	-	-	-
S3	1	1160	8236	7954	7262	6705	5200	-	-	-	-
R2	3/4	1725	7337	6968	5905	5344	4923	3500	-	-	-
S2	1	1725	8464	7993	6568	6252	5974	5105	4700	-	-
T2	1-1/2	1725	9365	8826	8356	7926	7486	6902	6456	-	-
V2	2	1725	10653	10104	9983	9583	9125	8623	8104	7326	5894
W2	3	1725	12804	11902	11505	11005	10457	10004	9703	7955	6108

Performance shown for Model LIDA is with inlet and outlet ducts.
*Standard propeller for these models is aluminum construction.

PERFORMANCE DATA

Models LIDA - Sizes 30 and 36



Max. Motor Frame:.....215T
 Housing Gauge:.....12
 Approx. Weight:30" = 195 lbs.
36" = 250 lbs.
 Flange Holes:.....8
 Diameter Flange Holes: 30"=1/2"
 36"=1/2"
 Finish:Galvanized

Size	A	B	C	D*
30	31-1/8	35-1/8	30	33-1/8
36	37-1/8	41-1/8	30	39-1/8

A = ID B = OD C = Width
 D = Flange Hole Center

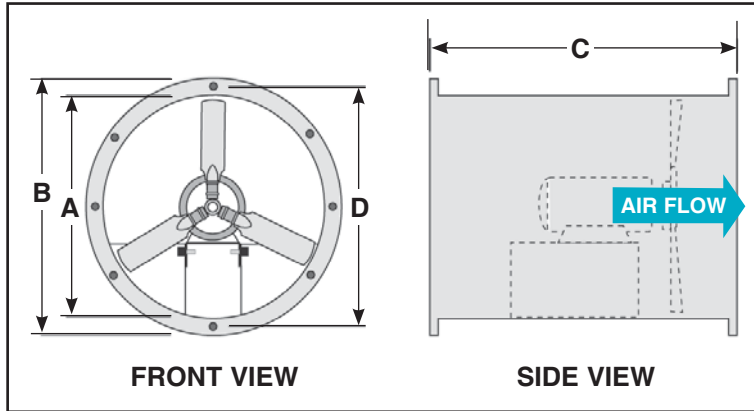
Model LIDA 30	HP	RPM	CFM @ Static Pressure								
			0	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4
S4	1	870	11698	10451	8895	6290	-	-	-	-	-
R3	3/4	1160	8995	8791	7498	5700	-	-	-	-	-
S3	1	1160	10591	10063	9897	9478	9005	7908	6549	-	-
T3	1-1/2	1160	12891	11895	10906	9841	9398	8749	7325	-	-
V3	2	1160	14462	13571	12467	11349	9841	8291	6744	-	-
V2	2	1725	13831	13293	12286	11395	10414	8612	-	-	-
W2	3	1725	16138	15641	14869	13590	12740	11450	10743	9355	-
X2	5	1725	20883	18493	17986	17487	16838	16147	15338	13547	8211

Model LIDA 36	HP	RPM	CFM @ Static Pressure								
			0	1/8	1/4	3/8	1/2	5/8	3/4	1	1-1/4
P6	1/2	870	10738	8839	6168	-	-	-	-	-	-
R4	3/4	870	12994	10930	8411	6809	-	-	-	-	-
S4	1	870	13941	11846	10276	8295	6834	-	-	-	-
T4	1-1/2	870	16383	14993	13267	11890	7984	-	-	-	-
V4	2	870	18653	16849	15671	12928	9603	-	-	-	-
W4	3	870	21196	19839	18186	15981	12980	9663	8633	-	-
R3	3/4	1160	11535	9994	8185	6289	-	-	-	-	-
S3	1	1160	13561	12281	10794	8891	6561	-	-	-	-
T3	1-1/2	1160	15998	14561	13814	11216	9271	-	-	-	-
V3	2	1160	17741	16630	14841	13411	11735	10218	8556	-	-
W3	3	1160	20876	19765	18693	17312	15971	14375	12630	9361	-
V2	2	1725	15314	14360	13890	11007	10517	9357	8563	-	-
W2	3	1725	18768	17665	16983	15612	13971	12571	11663	9147	-
X2	5	1725	23618	22276	21573	20213	19537	18657	17556	15616	12192

Performance shown for Model LIDA is with inlet and outlet ducts.
 *Standard propeller for these models is aluminum construction.

PERFORMANCE DATA

Models LIDA - Sizes 42 and 48



Max. Motor Frame:256T
Housing Gauge:42" = 12
48" = 10
Approx. Weight:42" = 400 lbs.
48" = 510 lbs.
Flange Holes:16
Diameter Flange Holes:1/2"
Finish:Galvanized

Size	A	B	C	D*
42	43-1/8	47-1/8	32	45-1/8
48	49-1/8	53-1/8	32	51-1/8

A = ID B = OD C = Width
 D = Flange Hole Center

Model	LIDA 42	HP	RPM	CFM @ Static Pressure							
				0	1/8	1/4	3/8	1/2	5/8	3/4	1
X3	5	1160	28291	27402	25870	24938	22841	20958	18956	13717	9819
Y2	7-1/2	1160	24260	33917	32745	30270	28357	26440	24306	19478	16110

Model	LIDA 48	HP	RPM	CFM @ Static Pressure							
				0	1/8	1/4	3/8	1/2	5/8	3/4	1
C3	10	860	46749	44837	42480	39817	36991	32040	27603	20176	-
C2	10	1160	43917	42111	40050	39119	37872	35941	33191	28221	-

Performance shown for Model LIDA is with inlet and outlet ducts.
 *Standard propeller for these models is aluminum construction.

SOUND CHARACTERISTICS

Size 12

RPM	Sound Performance Sones / LwA (Inches W.G.)				
	0	0.125	0.25	0.375	0.5
1550	18.1 / 80	16.3 / 78	-	-	-
1600	18.9 / 80	17.1 / 79	15.7 / 78	-	-
1650	19.8 / 81	18.1 / 80	16.7 / 79	-	-
1700	21 / 82	19 / 81	17.6 / 80	-	-
1725	21 / 83	19.5 / 81	18.1 / 80	-	-
1775	22 / 83	20 / 82	19.1 / 82	-	-
1825	23 / 85	22 / 83	20 / 83	-	-
1875	24 / 86	23 / 85	21 / 84	-	-
1925	25 / 87	24 / 86	23 / 85	22 / 84	-
2000	28 / 88	26 / 87	25 / 86	24 / 85	-
2075	30 / 90	29 / 89	27 / 88	26 / 87	-
2150	33 / 91	32 / 90	30 / 89	29 / 89	-
2200	35 / 92	34 / 91	32 / 90	30 / 90	-
2275	39 / 94	37 / 93	35 / 92	33 / 91	32 / 90
2350	43 / 96	40 / 95	38 / 94	36 / 93	35 / 92
2425	47 / 97	44 / 96	42 / 95	40 / 94	38 / 93

Size 16

RPM	Sound Performance Sones / LwA (Inches W.G.)									
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	1.25
1100	13.7 / 75	12.3 / 73	10.8 / 72	-	-	-	-	-	-	-
1175	16.1 / 77	14.7 / 76	13.3 / 74	-	-	-	-	-	-	-
1225	17.8 / 79	16.4 / 78	15 / 76	13.7 / 75	-	-	-	-	-	-
1275	19.7 / 81	18.1 / 79	16.8 / 78	15 / 76	-	-	-	-	-	-
1300	21 / 82	19.1 / 80	17.7 / 79	15.8 / 77	-	-	-	-	-	-
1350	23 / 83	21 / 82	19.6 / 81	17.8 / 79	16.7 / 79	-	-	-	-	-
1375	24 / 84	22 / 83	21 / 82	18.7 / 80	17.4 / 79	-	-	-	-	-
1425	27 / 86	25 / 85	23 / 83	21 / 82	19 / 80	-	-	-	-	-
1475	29 / 88	27 / 86	26 / 85	23 / 84	21 / 82	19.8 / 81	-	-	-	-
1525	32 / 89	30 / 88	28 / 86	26 / 85	23 / 83	21 / 82	-	-	-	-
1575	33 / 90	31 / 88	29 / 87	27 / 86	25 / 84	23 / 83	22 / 83	-	-	-
1625	35 / 90	32 / 89	31 / 88	29 / 87	26 / 86	24 / 84	23 / 84	-	-	-
1675	36 / 91	34 / 90	32 / 89	30 / 88	28 / 87	26 / 85	24 / 85	23 / 85	-	-
1750	38 / 92	36 / 91	34 / 90	33 / 89	31 / 88	28 / 87	26 / 86	25 / 86	-	-
1825	41 / 93	39 / 92	37 / 91	35 / 90	33 / 90	31 / 88	29 / 87	27 / 87	27 / 87	-
1875	42 / 93	40 / 92	38 / 92	36 / 91	35 / 90	32 / 89	30 / 88	29 / 88	28 / 88	-
1925	43 / 94	41 / 93	39 / 92	37 / 92	36 / 91	34 / 90	32 / 89	30 / 88	29 / 89	-
1975	44 / 94	42 / 94	40 / 93	39 / 92	37 / 92	36 / 91	34 / 90	32 / 89	31 / 89	31 / 90
2025	45 / 95	43 / 94	41 / 94	40 / 93	39 / 93	37 / 92	35 / 91	33 / 90	32 / 90	32 / 91
2075	46 / 96	44 / 95	43 / 94	41 / 94	40 / 93	39 / 93	37 / 92	35 / 91	33 / 91	33 / 91

The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

SOUND CHARACTERISTICS
Size 18

RPM	Sound Performance Sones / LwA (Inches W.G.)								
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1
1000	11.4 / 72	11 / 70	-	-	-	-	-	-	-
1050	12.3 / 73	11.9 / 72	12.1 / 72	-	-	-	-	-	-
1100	13.2 / 74	12.7 / 73	12.7 / 73	-	-	-	-	-	-
1125	13.7 / 75	13.2 / 74	13 / 73	-	-	-	-	-	-
1150	14.1 / 75	13.7 / 74	13.4 / 74	-	-	-	-	-	-
1200	15.1 / 77	14.6 / 75	14.2 / 74	15.2 / 77	-	-	-	-	-
1225	15.6 / 77	15.1 / 76	14.7 / 75	15.6 / 77	-	-	-	-	-
1275	16.7 / 78	16.2 / 77	15.8 / 76	16.3 / 78	-	-	-	-	-
1300	17.3 / 79	16.7 / 78	16.3 / 77	16.6 / 78	-	-	-	-	-
1350	18.4 / 80	17.9 / 79	17.3 / 78	17.4 / 78	-	-	-	-	-
1400	19.6 / 81	19.1 / 80	18.6 / 79	18.2 / 79	19 / 81	-	-	-	-
1450	21 / 82	20 / 81	19.9 / 80	19.5 / 80	19.7 / 81	-	-	-	-
1500	22 / 83	22 / 82	21 / 82	21 / 81	20 / 82	21 / 83	-	-	-
1550	23 / 84	23 / 83	22 / 82	22 / 82	21 / 82	22 / 84	-	-	-
1600	24 / 85	24 / 84	23 / 83	23 / 83	22 / 83	23 / 84	-	-	-
1650	25 / 85	25 / 85	24 / 84	24 / 83	23 / 83	23 / 84	25 / 86	-	-
1675	25 / 86	25 / 85	25 / 85	24 / 84	24 / 83	24 / 85	25 / 86	-	-
1725	26 / 87	26 / 86	26 / 85	25 / 85	25 / 84	24 / 85	26 / 87	-	-
1775	27 / 87	27 / 87	27 / 86	26 / 86	26 / 85	25 / 85	26 / 87	28 / 88	-
1825	28 / 88	28 / 88	28 / 87	27 / 86	27 / 86	26 / 86	27 / 87	29 / 89	-
1850	29 / 88	29 / 88	28 / 87	28 / 87	27 / 86	27 / 86	27 / 87	29 / 89	-
1925	31 / 90	30 / 89	30 / 89	29 / 88	29 / 88	29 / 87	28 / 88	30 / 89	31 / 90
2000	33 / 91	32 / 90	32 / 90	31 / 89	30 / 89	30 / 88	30 / 88	31 / 89	33 / 91
2075	35 / 92	35 / 91	34 / 91	33 / 91	32 / 90	32 / 90	32 / 89	32 / 90	34 / 91

The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

SOUND CHARACTERISTICS

Size 21

RPM	Sound Performance Sones / LwA (Inches W.G.)									
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	1.125
1050	13.6 / 76	12.8 / 75	-	-	-	-	-	-	-	-
1100	14.9 / 77	14.2 / 77	-	-	-	-	-	-	-	-
1125	15.6 / 78	14.9 / 77	13.9 / 77	-	-	-	-	-	-	-
1150	16.2 / 79	15.6 / 78	14.7 / 77	-	-	-	-	-	-	-
1175	16.9 / 79	16.2 / 79	15.4 / 78	-	-	-	-	-	-	-
1225	18.2 / 81	17.6 / 80	16.9 / 79	-	-	-	-	-	-	-
1275	19.7 / 82	19 / 81	18.3 / 81	17.4 / 80	-	-	-	-	-	-
1300	20 / 82	19.8 / 82	19 / 81	18 / 81	-	-	-	-	-	-
1325	21 / 83	21 / 83	19.8 / 82	18.7 / 81	-	-	-	-	-	-
1375	23 / 84	22 / 84	21 / 83	20 / 83	19.9 / 83	-	-	-	-	-
1400	24 / 85	23 / 84	22 / 84	21 / 83	21 / 83	-	-	-	-	-
1450	25 / 86	25 / 85	24 / 85	23 / 84	22 / 84	-	-	-	-	-
1525	28 / 87	27 / 87	26 / 86	25 / 86	24 / 85	-	-	-	-	-
1575	29 / 88	28 / 88	27 / 87	27 / 87	26 / 86	25 / 86	-	-	-	-
1625	30 / 89	30 / 89	29 / 88	28 / 88	27 / 87	26 / 87	-	-	-	-
1675	32 / 90	31 / 90	30 / 89	29 / 89	28 / 88	27 / 88	27 / 88	-	-	-
1700	32 / 90	32 / 90	31 / 90	30 / 89	29 / 89	28 / 88	28 / 88	-	-	-
1775	34 / 91	34 / 91	33 / 91	32 / 90	31 / 90	30 / 90	29 / 89	30 / 90	-	-
1850	36 / 93	36 / 92	35 / 92	34 / 92	34 / 91	33 / 91	31 / 91	31 / 91	-	-
1925	39 / 94	38 / 94	37 / 93	37 / 93	36 / 93	35 / 92	34 / 92	33 / 92	34 / 92	-
1950	40 / 94	39 / 94	38 / 94	38 / 93	37 / 93	36 / 93	35 / 92	34 / 92	35 / 92	-
2000	42 / 95	41 / 95	40 / 94	40 / 94	39 / 94	38 / 94	37 / 93	36 / 93	36 / 93	-
2050	44 / 96	43 / 96	42 / 95	42 / 95	41 / 95	40 / 94	39 / 94	38 / 94	38 / 94	38 / 94
2075	45 / 96	44 / 96	43 / 96	43 / 95	42 / 95	41 / 95	40 / 95	39 / 94	38 / 94	39 / 94

The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

SOUND CHARACTERISTICS**Size 24**

RPM	Sound Performance Sones / LwA (Inches W.G.)								
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1
800	12.8 / 75	11.9 / 74	-	-	-	-	-	-	-
850	14.3 / 77	13.4 / 76	12.6 / 75	-	-	-	-	-	-
900	15.8 / 78	14.9 / 77	14 / 77	-	-	-	-	-	-
950	17.3 / 80	16.5 / 79	15.5 / 78	-	-	-	-	-	-
975	18.1 / 81	17.3 / 80	16.3 / 79	16.1 / 79	-	-	-	-	-
1025	19.6 / 82	18.8 / 81	18 / 81	17.6 / 80	-	-	-	-	-
1075	21 / 84	21 / 83	19.7 / 82	19.1 / 82	-	-	-	-	-
1125	23 / 85	22 / 84	22 / 84	21 / 83	21 / 83	-	-	-	-
1150	24 / 86	23 / 85	23 / 84	22 / 84	22 / 84	-	-	-	-
1200	26 / 87	25 / 86	25 / 86	24 / 85	23 / 85	-	-	-	-
1225	27 / 88	26 / 87	26 / 86	25 / 86	24 / 85	-	-	-	-
1250	28 / 88	28 / 88	27 / 87	26 / 86	25 / 86	25 / 86	-	-	-
1275	29 / 89	29 / 88	28 / 88	27 / 87	26 / 87	26 / 87	-	-	-
1325	32 / 90	31 / 90	30 / 89	29 / 88	28 / 88	28 / 88	-	-	-
1375	34 / 91	33 / 91	32 / 90	31 / 90	30 / 89	30 / 89	-	-	-
1425	36 / 92	35 / 92	34 / 91	33 / 91	32 / 90	31 / 90	31 / 90	-	-
1450	37 / 93	36 / 92	35 / 92	34 / 91	33 / 91	32 / 90	32 / 90	-	-
1500	39 / 94	38 / 93	37 / 93	36 / 92	35 / 92	34 / 91	34 / 91	34 / 91	-
1525	40 / 94	39 / 94	38 / 93	37 / 93	36 / 92	35 / 92	35 / 92	35 / 92	-
1550	41 / 94	41 / 94	40 / 94	38 / 93	37 / 93	36 / 92	36 / 92	36 / 92	-
1625	45 / 96	44 / 96	43 / 95	42 / 95	41 / 94	40 / 94	39 / 93	39 / 93	38 / 93
1675	47 / 97	47 / 97	46 / 96	44 / 96	43 / 95	42 / 95	41 / 94	41 / 94	41 / 94
1725	50 / 98	49 / 97	48 / 97	47 / 97	46 / 96	45 / 96	44 / 95	43 / 95	43 / 95
1775	52 / 98	52 / 98	51 / 98	50 / 98	49 / 97	48 / 97	46 / 96	45 / 96	45 / 96

The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

SOUND CHARACTERISTICS
Size 30

RPM	Sound Performance Sones / LwA (Inches W.G.)									
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	1.25
600	11.8 / 73	10.1 / 71	-	-	-	-	-	-	-	-
650	13.5 / 75	12 / 74	-	-	-	-	-	-	-	-
700	15.2 / 77	13.9 / 76	12.8 / 75	-	-	-	-	-	-	-
750	16.9 / 79	15.9 / 78	14.8 / 77	-	-	-	-	-	-	-
775	17.8 / 80	16.9 / 79	15.8 / 78	-	-	-	-	-	-	-
800	18.6 / 81	17.8 / 80	16.8 / 79	-	-	-	-	-	-	-
825	19.6 / 82	18.8 / 81	17.8 / 80	-	-	-	-	-	-	-
850	21 / 83	19.7 / 82	18.8 / 81	18.1 / 80	-	-	-	-	-	-
875	22 / 84	21 / 83	19.8 / 82	19.1 / 81	-	-	-	-	-	-
900	23 / 85	22 / 84	21 / 83	20 / 82	-	-	-	-	-	-
925	24 / 86	23 / 85	22 / 84	21 / 83	-	-	-	-	-	-
950	25 / 87	24 / 86	23 / 85	22 / 84	22 / 83	-	-	-	-	-
975	27 / 87	26 / 87	24 / 85	23 / 84	23 / 84	-	-	-	-	-
1025	29 / 89	28 / 88	27 / 87	26 / 86	25 / 86	-	-	-	-	-
1075	32 / 90	31 / 90	29 / 89	28 / 88	27 / 87	-	-	-	-	-
1100	34 / 91	33 / 91	31 / 89	29 / 89	29 / 88	28 / 88	-	-	-	-
1125	35 / 92	34 / 91	32 / 90	31 / 89	30 / 89	29 / 88	-	-	-	-
1150	37 / 93	36 / 92	34 / 91	32 / 90	31 / 89	30 / 89	-	-	-	-
1175	38 / 93	37 / 93	35 / 92	34 / 91	32 / 90	31 / 90	-	-	-	-
1200	39 / 94	38 / 93	37 / 92	35 / 91	33 / 91	32 / 90	32 / 90	-	-	-
1225	41 / 94	40 / 94	38 / 93	36 / 92	35 / 91	34 / 91	33 / 91	-	-	-
1275	43 / 95	42 / 95	41 / 94	39 / 93	38 / 93	36 / 92	36 / 92	-	-	-
1325	46 / 96	45 / 96	44 / 95	42 / 95	41 / 94	39 / 93	38 / 93	38 / 93	-	-
1375	49 / 97	48 / 97	47 / 96	45 / 96	44 / 95	42 / 95	41 / 94	41 / 94	-	-
1400	50 / 98	50 / 98	48 / 97	47 / 96	45 / 96	44 / 95	43 / 95	42 / 96	-	-
1475	55 / 99	54 / 99	53 / 99	51 / 98	50 / 98	49 / 97	48 / 97	46 / 96	46 / 96	-
1550	59 / 101	59 / 101	58 / 100	57 / 100	55 / 99	54 / 99	53 / 98	52 / 98	51 / 97	-
1600	63 / 101	63 / 101	61 / 101	60 / 101	59 / 100	58 / 100	56 / 99	55 / 99	54 / 98	53 / 98

The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

SOUND CHARACTERISTICS
Size 36

RPM	Sound Performance Sones / LwA (Inches W.G.)										
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	1.25	1.5
650	18.3 / 80	17.2 / 80	-	-	-	-	-	-	-	-	-
675	19.5 / 81	18.3 / 81	17.6 / 81	-	-	-	-	-	-	-	-
700	21 / 82	19.5 / 82	18.7 / 82	-	-	-	-	-	-	-	-
725	22 / 83	21 / 83	19.8 / 83	-	-	-	-	-	-	-	-
750	23 / 84	22 / 84	21 / 83	21 / 84	-	-	-	-	-	-	-
775	24 / 85	23 / 85	22 / 84	22 / 84	-	-	-	-	-	-	-
800	26 / 86	25 / 86	23 / 85	23 / 85	-	-	-	-	-	-	-
825	27 / 87	26 / 87	25 / 86	24 / 86	24 / 86	-	-	-	-	-	-
875	30 / 89	29 / 89	27 / 88	27 / 88	26 / 88	-	-	-	-	-	-
900	32 / 90	30 / 90	29 / 89	28 / 89	28 / 89	-	-	-	-	-	-
925	33 / 91	32 / 90	31 / 90	30 / 89	29 / 89	-	-	-	-	-	-
950	35 / 92	34 / 91	32 / 91	31 / 90	31 / 90	30 / 90	-	-	-	-	-
975	36 / 92	35 / 92	34 / 91	33 / 91	32 / 91	32 / 91	-	-	-	-	-
1000	38 / 93	37 / 93	36 / 92	35 / 92	34 / 92	33 / 92	-	-	-	-	-
1025	40 / 94	39 / 94	38 / 93	36 / 93	36 / 92	35 / 92	35 / 92	-	-	-	-
1050	42 / 95	41 / 94	40 / 94	38 / 93	37 / 93	36 / 93	36 / 93	36 / 93	-	-	-
1100	45 / 96	44 / 96	43 / 95	42 / 95	41 / 94	40 / 94	39 / 94	39 / 94	-	-	-
1125	47 / 97	46 / 96	45 / 96	44 / 95	42 / 95	41 / 95	41 / 95	40 / 95	-	-	-
1150	49 / 97	48 / 97	47 / 96	45 / 96	44 / 96	43 / 96	42 / 96	42 / 96	-	-	-
1175	51 / 98	50 / 98	49 / 97	47 / 97	46 / 96	45 / 96	44 / 96	44 / 96	43 / 96	-	-
1225	55 / 99	54 / 99	53 / 98	51 / 98	50 / 98	49 / 97	48 / 97	47 / 97	47 / 97	-	-
1275	59 / 100	58 / 100	57 / 100	55 / 99	54 / 99	52 / 99	52 / 98	51 / 98	50 / 98	51 / 99	-
1350	66 / 102	65 / 102	63 / 101	62 / 101	60 / 101	59 / 100	58 / 100	57 / 100	56 / 100	55 / 100	-
1400	70 / 103	70 / 103	68 / 102	66 / 102	65 / 102	63 / 101	62 / 101	61 / 101	60 / 101	59 / 101	-
1450	75 / 104	74 / 104	73 / 103	71 / 103	69 / 103	68 / 102	66 / 102	65 / 102	65 / 102	64 / 102	-
1500	80 / 105	79 / 105	78 / 104	76 / 104	74 / 104	73 / 104	71 / 103	70 / 103	69 / 103	68 / 103	67 / 103
1550	85 / 106	85 / 106	83 / 105	81 / 105	79 / 105	78 / 105	76 / 104	75 / 104	74 / 104	73 / 104	72 / 104
1600	90 / 107	90 / 107	88 / 106	87 / 106	85 / 106	83 / 106	81 / 105	80 / 105	78 / 105	77 / 105	76 / 105

The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

SOUND CHARACTERISTICS

Size 42

RPM	Sound Performance Sones / LwA (Inches W.G.)										
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	1.25	1.5
480	17 / 80	16.5 / 79	-	-	-	-	-	-	-	-	-
520	19.4 / 82	18.9 / 82	17.2 / 80	-	-	-	-	-	-	-	-
560	22 / 84	21 / 84	21 / 83	-	-	-	-	-	-	-	-
600	24 / 86	24 / 86	23 / 85	-	-	-	-	-	-	-	-
640	27 / 88	27 / 88	26 / 87	24 / 86	-	-	-	-	-	-	-
660	29 / 89	28 / 89	28 / 88	26 / 87	-	-	-	-	-	-	-
680	30 / 90	30 / 89	29 / 89	28 / 88	-	-	-	-	-	-	-
700	32 / 91	31 / 90	31 / 90	30 / 89	-	-	-	-	-	-	-
720	33 / 91	33 / 91	32 / 91	31 / 90	29 / 88	-	-	-	-	-	-
740	35 / 92	34 / 92	34 / 92	33 / 91	31 / 90	-	-	-	-	-	-
760	37 / 93	36 / 93	35 / 92	35 / 92	33 / 91	-	-	-	-	-	-
800	40 / 94	40 / 94	39 / 94	38 / 93	37 / 93	-	-	-	-	-	-
820	42 / 95	42 / 95	41 / 95	40 / 94	39 / 94	37 / 92	-	-	-	-	-
840	44 / 96	44 / 96	43 / 95	42 / 95	41 / 95	39 / 94	-	-	-	-	-
860	46 / 96	46 / 96	45 / 96	44 / 96	43 / 95	42 / 95	-	-	-	-	-
900	49 / 98	49 / 97	49 / 97	48 / 97	47 / 97	46 / 96	44 / 95	-	-	-	-
940	53 / 99	53 / 99	52 / 98	51 / 98	50 / 98	50 / 98	48 / 97	46 / 96	-	-	-
980	57 / 100	57 / 100	56 / 100	55 / 99	54 / 99	54 / 99	53 / 99	50 / 98	-	-	-
1020	61 / 101	61 / 101	60 / 101	59 / 100	59 / 100	58 / 100	57 / 100	55 / 99	-	-	-
1060	65 / 102	65 / 102	65 / 102	64 / 102	63 / 101	62 / 101	61 / 101	61 / 101	58 / 100	-	-
1100	70 / 103	70 / 103	69 / 103	68 / 103	68 / 102	67 / 102	66 / 102	65 / 102	64 / 101	-	-
1140	75 / 104	75 / 104	74 / 104	73 / 104	73 / 103	72 / 103	71 / 103	70 / 103	69 / 103	-	-
1180	80 / 105	80 / 105	79 / 105	79 / 105	78 / 104	77 / 104	76 / 104	75 / 104	74 / 104	-	-
1200	82 / 105	82 / 105	82 / 105	81 / 105	80 / 105	80 / 105	79 / 105	78 / 104	77 / 104	74 / 103	-
1240	88 / 106	88 / 106	87 / 106	86 / 106	86 / 106	85 / 106	84 / 106	83 / 105	82 / 105	80 / 105	-
1260	90 / 107	90 / 107	90 / 107	89 / 106	88 / 106	88 / 106	87 / 106	86 / 106	85 / 106	83 / 105	-
1300	96 / 107	96 / 107	96 / 107	95 / 107	94 / 107	93 / 107	93 / 107	92 / 107	91 / 107	89 / 106	86 / 106

The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

SOUND CHARACTERISTICS
Size 48

RPM	Sound Performance Sones / LwA (Inches W.G.)										
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	1.25	1.5
460	21 / 82	20 / 82	19.8 / 81	-	-	-	-	-	-	-	-
480	23 / 84	22 / 83	22 / 83	-	-	-	-	-	-	-	-
500	24 / 85	24 / 84	23 / 84	-	-	-	-	-	-	-	-
520	27 / 86	26 / 86	26 / 85	25 / 85	-	-	-	-	-	-	-
540	29 / 87	29 / 87	28 / 86	27 / 86	-	-	-	-	-	-	-
560	32 / 88	32 / 88	30 / 87	29 / 87	-	-	-	-	-	-	-
580	35 / 89	34 / 89	33 / 89	32 / 88	30 / 88	-	-	-	-	-	-
600	38 / 90	38 / 90	36 / 90	34 / 89	33 / 89	-	-	-	-	-	-
620	41 / 91	41 / 91	39 / 91	37 / 90	36 / 90	-	-	-	-	-	-
640	43 / 92	43 / 92	42 / 92	40 / 91	38 / 91	-	-	-	-	-	-
660	45 / 93	45 / 93	44 / 93	42 / 92	41 / 92	39 / 92	-	-	-	-	-
680	47 / 94	47 / 94	46 / 93	44 / 93	43 / 93	42 / 92	41 / 92	-	-	-	-
720	52 / 95	52 / 95	51 / 95	49 / 95	48 / 95	46 / 94	45 / 94	-	-	-	-
760	57 / 97	57 / 97	56 / 97	54 / 97	53 / 96	52 / 96	51 / 96	50 / 96	-	-	-
780	59 / 98	59 / 98	59 / 98	57 / 97	56 / 97	54 / 97	54 / 97	53 / 97	-	-	-
820	64 / 99	64 / 99	64 / 99	63 / 99	61 / 99	60 / 99	60 / 98	59 / 98	58 / 98	58 / 98	-
860	70 / 101	70 / 101	70 / 101	69 / 100	68 / 100	67 / 100	66 / 100	66 / 100	65 / 100	64 / 99	64 / 99
880	73 / 101	73 / 101	73 / 101	72 / 101	71 / 101	71 / 101	70 / 101	69 / 101	68 / 100	67 / 100	67 / 100
900	77 / 102	77 / 102	77 / 102	76 / 102	75 / 102	75 / 102	74 / 101	73 / 101	72 / 101	71 / 101	70 / 101
940	85 / 103	85 / 103	85 / 103	84 / 103	83 / 103	82 / 103	81 / 103	80 / 103	79 / 103	79 / 102	78 / 102
960	89 / 104	89 / 104	89 / 104	89 / 104	88 / 104	87 / 104	86 / 104	85 / 103	84 / 103	83 / 103	82 / 103
980	94 / 105	94 / 105	94 / 105	93 / 105	92 / 105	91 / 104	90 / 104	89 / 104	88 / 104	87 / 104	86 / 104
1000	99 / 105	99 / 105	99 / 105	98 / 105	97 / 105	96 / 105	94 / 105	93 / 105	92 / 105	91 / 104	90 / 104

The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

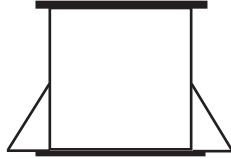
SOUND CHARACTERISTICS
Size 54

RPM	Sound Performance Sones / LwA (Inches W.G.)										
	0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1	1.125	1.5
460	29 / 87	27 / 86	25 / 85	-	-	-	-	-	-	-	-
480	31 / 88	29 / 87	28 / 87	-	-	-	-	-	-	-	-
500	33 / 89	32 / 89	30 / 88	29 / 87	-	-	-	-	-	-	-
520	36 / 90	34 / 90	33 / 89	31 / 88	-	-	-	-	-	-	-
560	42 / 93	40 / 92	38 / 92	37 / 91	-	-	-	-	-	-	-
580	44 / 93	43 / 93	41 / 93	39 / 92	-	-	-	-	-	-	-
600	47 / 95	45 / 94	44 / 94	42 / 93	41 / 93	-	-	-	-	-	-
620	50 / 96	48 / 95	47 / 95	45 / 94	44 / 94	-	-	-	-	-	-
660	56 / 97	55 / 97	53 / 97	51 / 96	50 / 96	48 / 95	-	-	-	-	-
680	60 / 98	58 / 98	56 / 97	55 / 97	53 / 97	51 / 96	-	-	-	-	-
700	63 / 99	62 / 99	60 / 98	58 / 98	56 / 98	55 / 97	-	-	-	-	-
720	66 / 100	65 / 100	63 / 99	62 / 99	60 / 99	58 / 98	57 / 98	-	-	-	-
740	70 / 101	68 / 101	67 / 100	65 / 100	64 / 100	62 / 99	60 / 99	-	-	-	-
760	74 / 102	72 / 101	71 / 101	69 / 101	67 / 100	66 / 100	64 / 100	-	-	-	-
780	78 / 102	76 / 102	75 / 102	73 / 101	71 / 101	69 / 101	68 / 101	66 / 100	-	-	-
800	82 / 103	80 / 103	78 / 103	76 / 102	75 / 102	74 / 102	72 / 101	70 / 101	-	-	-
840	90 / 105	89 / 104	87 / 104	85 / 104	84 / 104	82 / 103	80 / 103	79 / 103	77 / 102	-	-
860	95 / 105	93 / 105	91 / 105	89 / 104	88 / 104	86 / 104	85 / 104	83 / 104	81 / 103	79 / 103	-
880	99 / 106	97 / 106	96 / 105	94 / 105	93 / 105	91 / 105	89 / 105	87 / 104	86 / 104	84 / 104	-
900	104 / 106	103 / 107	100 / 106	98 / 106	97 / 106	96 / 106	94 / 105	92 / 105	90 / 105	89 / 105	87 / 104

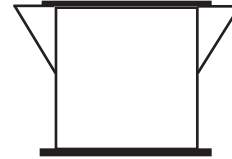
The sound ratings shown are loudness values in fan sones at 1.5 m (5 ft.) in hemispherical free field calculated per AMCA International Standard 301. Values shown are for: Installation Type A: free inlet hemispherical sone levels.

TUBEAXIAL ARRANGEMENTS

I. VERTICAL HANGING MOUNT

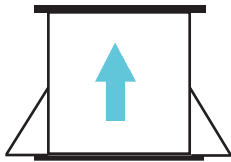


BASE

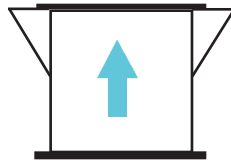


CEILING MOUNT

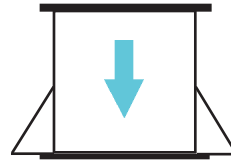
DIRECTIONS FOR ORDERING: *Vertical hanging mount must be ordered with isolation options unless field provided.*



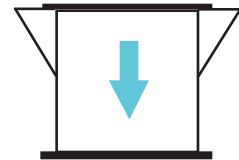
EXHAUST
BASE
MOUNT
(EBM)



EXHAUST
CEILING
MOUNT
(ECM)

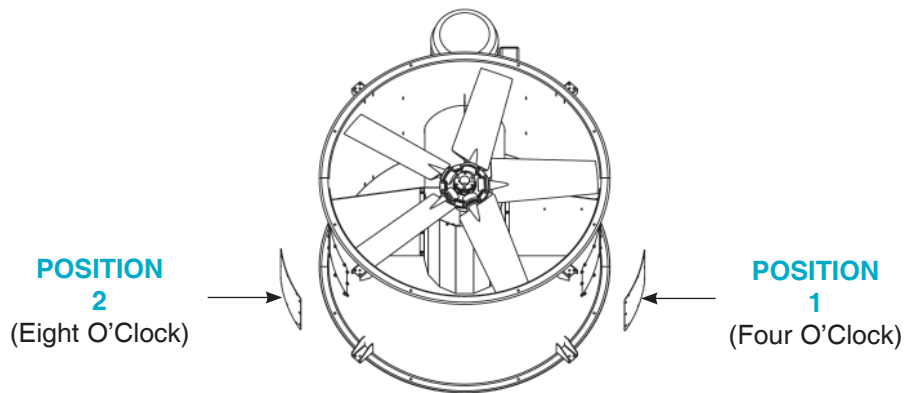


SUPPLY
BASE
MOUNT
(SBM)



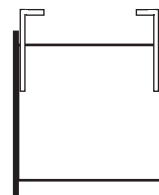
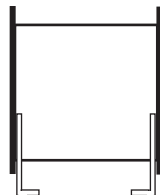
SUPPLY
CEILING
MOUNT
(SCM)

II. ACCESS DOOR POSITIONS: Facing Blade (Exhaust End)

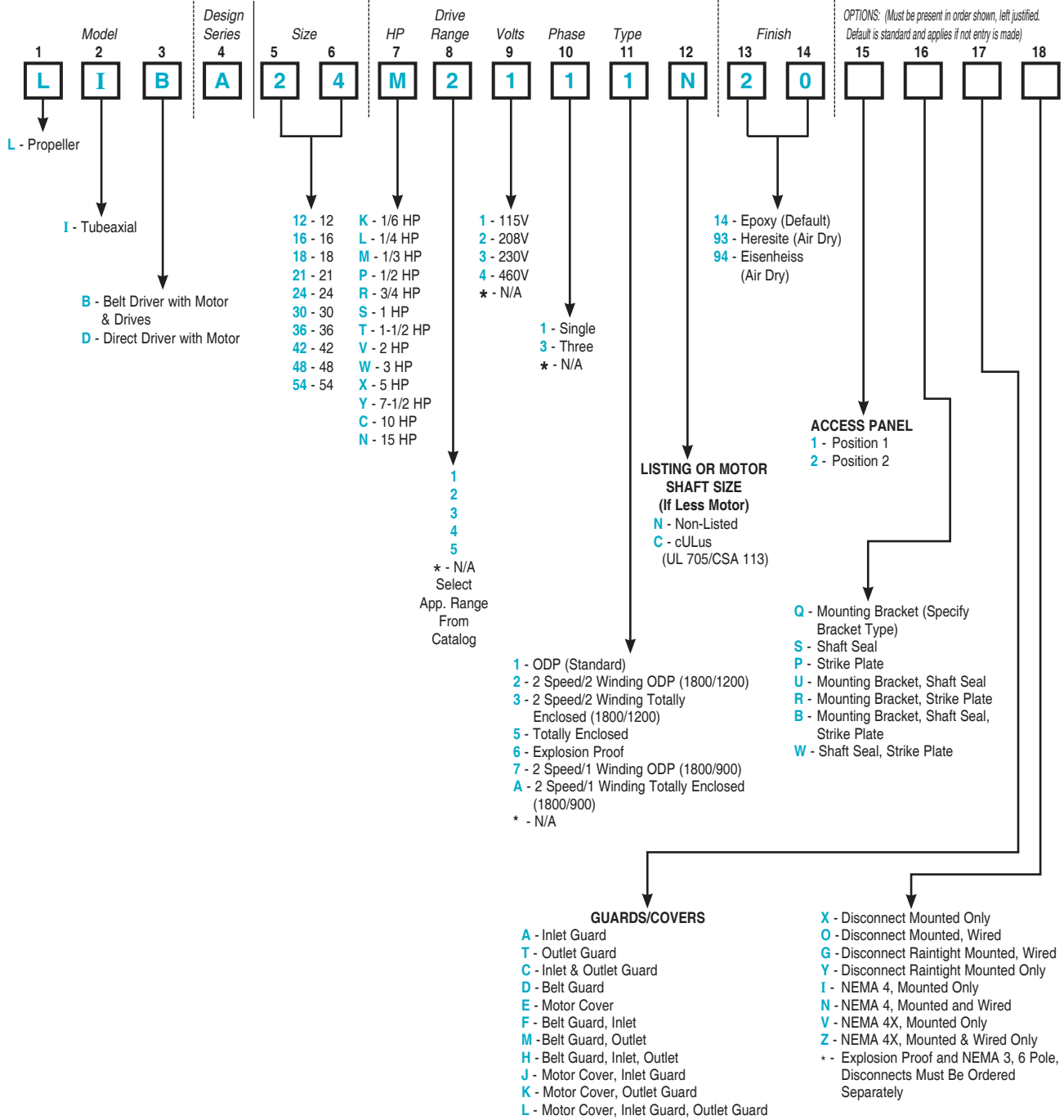


III. PEDESTAL MOUNT: For horizontal mounting floor or ceiling.

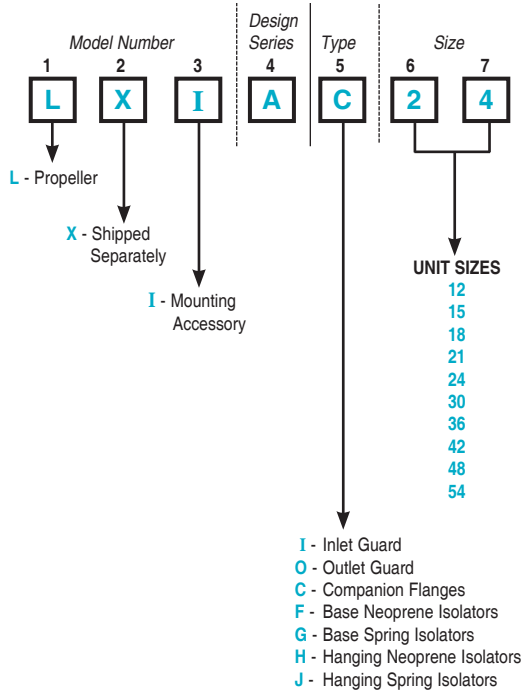
Note: Isolation hangers must be ordered w/pedestal base unless field supplied.



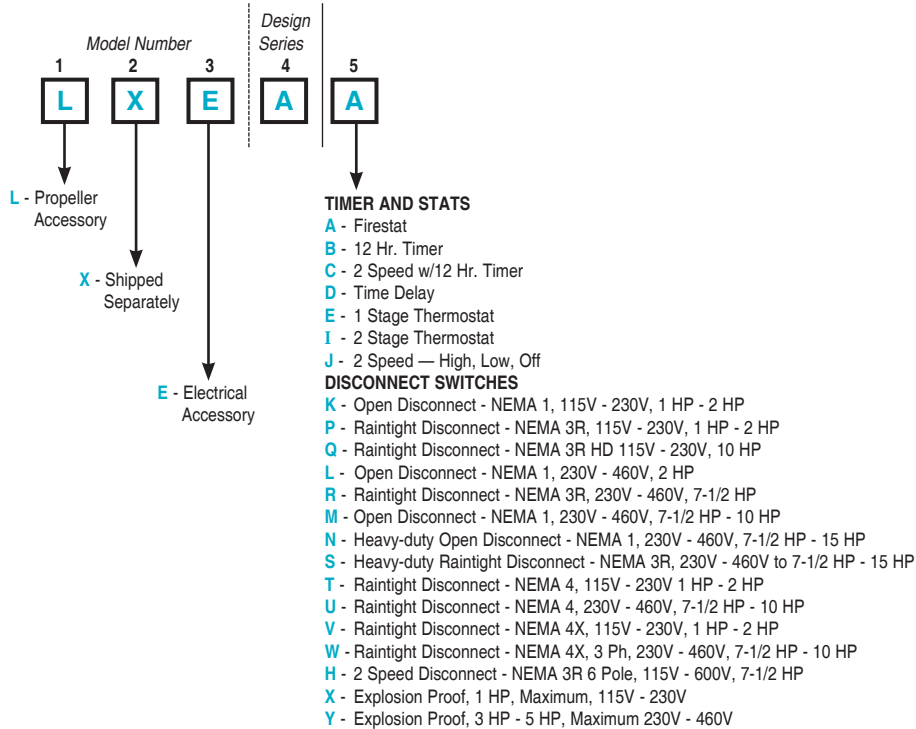
▼ Tubeaxial Fans



▼ **Accessories**



▼ **Electrical Accessories**



CARNES CEILING FANS — Features

Carnes Models VCDD and VCDK Ceiling Ventilators have been designed to give quality conscious architects, design engineers, builders and specifiers the ultimate in heavy-duty, quiet ventilation.

Available from 100 to 3500 CFM, all units use centrifugal blower wheels and low RPM motors on resilient mounts. Most have acoustic insulation inside a rugged, heavy-duty housing for further sound reduction.

Perfect for offices, conference rooms, bathrooms, hospital rooms... anywhere quiet, high-capacity ventilation is needed.

Their features include:

- Available in standard ceiling fan models and dedicated in-line models.
- Low RPM motors mounted on resilient mounts for quiet, vibration-free operation.
- Motors designed for continuous operation permanently lubricated.
- Acoustic insulation inside rugged, heavy-gauge galvanized steel housing (except sizes 005C and 008C and in-line units).
- May be installed in ceiling or wall (size permitting).
- Balanced blower wheels for extremely low sound levels.
- Attractive, low profile grilles.
- May be ducted horizontally, vertically or as an in-line blower.
- Quiet, built-in backdraft dampers.
- AMCA Licensed.
- UL and cUL Listed.

Available Accessories Include:

- Radiation Dampers.
- Wall Caps.
- Roof Caps.
- In-line Adapters.
- Vibration Isolators.
- Brick Vents.
- Speed Controllers.
- Time Delay Switches.

Model VCDD 005C



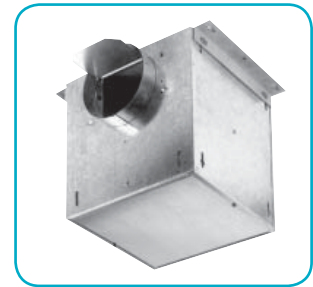
Model VCDD 009C



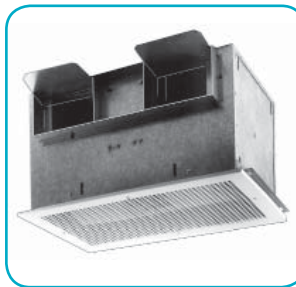
Models VCDD 010-030C



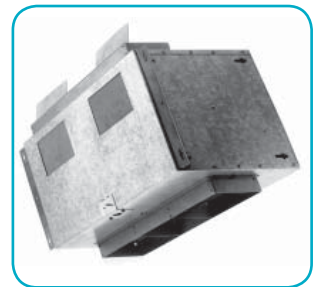
Models VCDD 010-030I



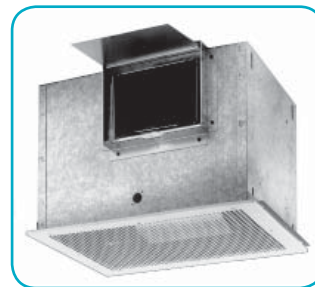
Models VCDD 040-070C



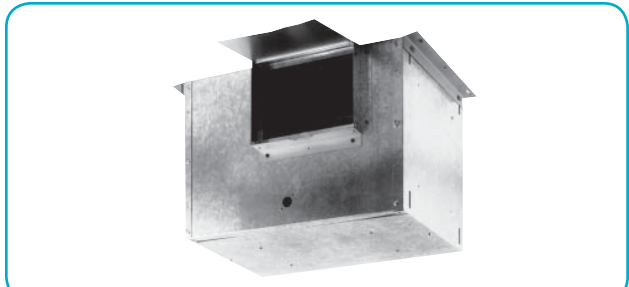
Models VCDD 040-070I



Models VCDD 090-150C



Models VCDD 090-150I



CARNES CEILING FANS — Performance Data

Standard Ceiling Fan Arrangement - VCDD

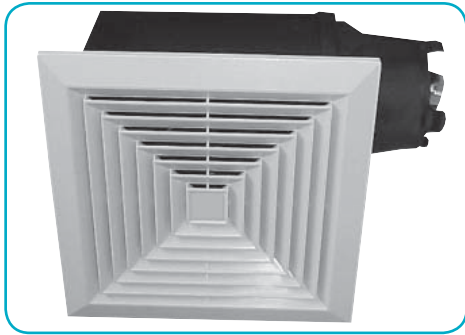
CFM/SONES — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage	Standard Arrangement	0.0" P _s	.10" P _s	.125" P _s	.250" P _s	.375" P _s	.50" P _s	.625" P _s	.750" P _s	.875" P _s	1.0" P _s	Nom. RPM	Amps @ 60 Hz	Watts
VCDD005C	120 VAC	CFM Horizontal	52	49	47	42	29						1870	0.7	48
		SONES Horz.	3.9	4.3	4.4	4.6	5.5								
VCDD010C	120 VAC	CFM Horizontal	136	115	109	93	80	65	44	12			640	1.1	77
		SONES Horz.	0.5	0.8	0.9	1.3	1.8	2.3	3.0	3.2					
VCDD015C	120 VAC	CFM Horizontal	181	161	157	141	132	124	114	94	62		710	1.4	102
		SONES Horz.	1.3	1.4	1.5	2.2	2.6	3.1	3.6	4.1	4.6				
VCDD020C	120 VAC	CFM Horizontal	231	214	210	196	186	177	165	144	113	51	740	1.8	131
		SONES Horz.	1.6	1.8	1.7	2.3	2.9	3.5	4.1	4.9	5.3	5.3			
VCDD025C	120 VAC	CFM Horizontal	272	261	259	250	242	233	218	201	165	99	830	2.2	169
		SONES Horz.	2.1	2.3	2.2	2.9	3.3	3.9	4.4	4.8	5.5	5.8			
VCDD030C	120 VAC	CFM Horizontal	312	309	308	303	296	287	273	254	219	125	905	2.7	207
		SONES Horz.	2.8	2.9	2.9	3.3	3.5	3.9	4.3	4.7	5.1	5.6			
VCDD040C	120 VAC	CFM Horizontal	480	442	434	388	344	299	229	182	114	33	735	1.6	171
		SONES Horz.	2.0	2.4	2.3	2.8	3.3	3.8	4.5	4.8	5.4	5.6			
VCDD050C	120 VAC	CFM Horizontal	538	520	514	491	463	434	389	339	282	186	810	2.2	221
		SONES Horz.	3.0	3.1	3.3	3.6	4.0	4.4	5.0	5.7	6.2	6.7			
VCDD070C	120 VAC	CFM Horizontal	722	704	701	667	640	607	571	534	453	333	960	2.8	300
		SONES Horz.	4.5	4.6	4.7	4.8	5.0	5.2	5.6	6.2	7.1	7.2			
VCDD090C	120 VAC	CFM Horizontal	918	905	901	877	842	793	725	636	536	390	650	2.7	289
		SONES Horz.	3.8	4.0	4.1	4.0	4.2	4.3	4.4	4.9	4.5	5.3			
VCDD150C	120 VAC	CFM Horizontal	1578	1526	1513	1438	1371	1285	1198	1103	1000	816	955	6.0	613
		SONES Horz.	8.6	8.4	8.4	8.1	7.5	7.0	6.7	6.2	5.8	5.8			

Performance ratings include the effect of inlet grille and backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance certified is for installation type B: Free inlet, Ducted outlet.

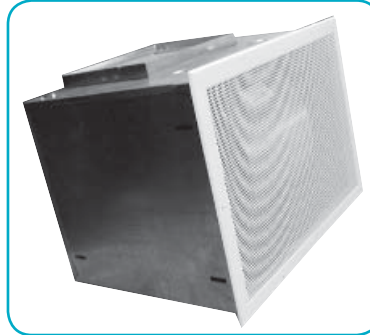
Carnes Company certifies that the models shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311, and comply with the requirements of the AMCA Certified Ratings Program.



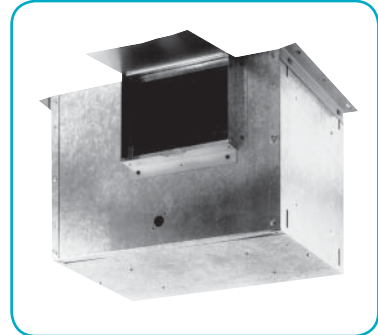
Models VCDK 005C-009C



Models VCDK 090-170C



Models VCDK 090-170I



Standard Ceiling Fan Arrangement - VCDK

CFM — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage	Standard Arrangement	*HVI sones	0.0" P _s	0.10" P _s	0.125" P _s	0.250" P _s	0.375" P _s	0.50" P _s	0.625" P _s	0.750" P _s	Nom. RPM	Amps @ 60 Hz	Watts	Energy Star Rated
VCDK005C	120 VAC	CFM Horz.	1.0	61	51	49	40	26	12			1300	.23	27	Yes
		SONES Horz.	2.0	2.0	2.1	2.1	2.7	3.8							
VCDK008C	120 VAC	CFM Horz.	1.0	84	74	72	60	41	27			1500	.29	35	Yes
		SONES Horz.	2.1	2.2	2.2	2.6	3.3	4.1							
VCDK009C	120 VAC	CFM Horz.	1.0	115	104	101	88	74	59			1330	.38	45	Yes
		SONES Horz.	2.1	2.1	2.1	2.3	3.1	3.9							

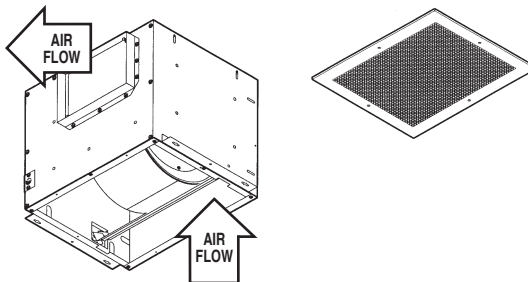
Performance ratings include the effects of inlet grille and backdraft damper in the airstream. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Sound values shown are for installation type B: free inlet fan sone levels. Performance certified is for installation type B: Free inlet, Ducted outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test.

*HVI SONE VALUES have been tested in accordance to the standard HVI test criteria by an independent, AMCA certified lab. The sone values are measurements listed in 0.5 multiples. ie. 0.7 sone is listed at 0.5 and 0.8 sone is listed at 1.0 sone.

CFM/SONES — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage	Standard Arrangement	0.0" P _s	.10" P _s	.125" P _s	.250" P _s	.375" P _s	.50" P _s	.625" P _s	.750" P _s	.875" P _s	1.0" P _s	Nom. RPM	Amps @ 60 Hz	Watts
VCDK090C	120 VAC	CFM Horizontal	908	893	890	872	854	836	816	736	646	489	1012	7.7	384
		SONES Horz.	5.1	5.3	5.4	5.6	5.8	5.9	6.0	6.1	6.4	6.6			
VCDK130C	120 VAC	CFM Horizontal	1392	1364	1357	1323	1288	1254	1192	1106	963	780	1059	7.7	668
		SONES Horz.	8.8	8.8	8.9	8.9	8.9	8.7	8.4	8.1	7.7	7.2			
VCDK170C	120 VAC	CFM Horizontal	1809	1762	1750	1691	1632	1549	1463	1309	1133	935	1105	7.7	902
		SONES Horz.	13.3	12.9	12.8	12.3	11.8	11.1	10.4	9.6	8.8	8.1			

Performance ratings include the effects of inlet grille and backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: free inlet hemispherical sone levels. Performance certified is for installation type B: Free inlet, Ducted outlet.

- Standard ceiling fan arrangement.
- Grille located in ceiling.
- Air intakes vertically.
- Air discharge horizontally.
- Unit may be wall mounted.



Carnes Company certifies that the models 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.



Standard In-Line Fan Arrangement - VCDD

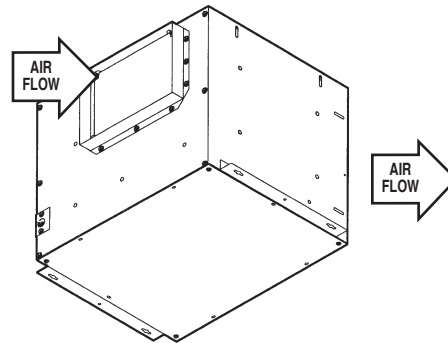
CFM/SONES — AT STATIC PRESSURE (P _S - Inches of H ₂ O)															
Model No.	Nom. Voltage	Standard Arrangement	0.0" P _S	.10" P _S	.125" P _S	.250" P _S	.375" P _S	.50" P _S	.625" P _S	.750" P _S	.875" P _S	1.0" P _S	Nom. RPM	Amps @ 60 Hz	Watts
VCDD010I	120 VAC	CFM Std. Thr.	121	108	106	97	93	86	70	44	17		760	1.1	87
		SONES Std. Thr.	.5	.7	.7	1.1	1.4	1.8	2.1	2.4	2.6				
VCDD015I	120 VAC	CFM Std. Thr.	153	148	147	140	134	125	111	91	54	18	920	1.3	100
		SONES Std. Thr.	.9	1.0	1.1	1.4	1.6	1.9	2.1	2.2	2.4	2.6			
VCDD020I	120 VAC	CFM Std. Thr.	205	196	195	190	185	175	158	135	96	47	865	1.8	127
		SONES Std. Thr.	1.7	1.9	1.9	2.1	2.3	2.4	3.0	3.3	3.4	3.4			
VCDD025I	120 VAC	CFM Std. Thr.	248	245	245	241	235	224	208	183	141	84	1005	2.1	166
		SONES Std. Thr.	2.0	2.3	2.3	2.6	2.8	3.2	3.4	3.6	3.9	3.8			
VCDD030I	120 VAC	CFM Std. Thr.	300	294	293	285	274	259	243	214	168	113	1145	2.6	212
		SONES Std. Thr.	2.9	3.0	3.1	3.3	3.4	3.5	3.6	3.7	4.0	3.9			
VCDD040I	120 VAC	CFM Std. Thr.	450	415	406	360	313	271	223	167	90	6	775	1.4	146
		SONES Std. Thr.	1.4	1.6	1.6	1.9	2.2	2.6	2.9	3.4	3.6	3.9			
VCDD050I	120 VAC	CFM Std. Thr.	546	526	519	496	472	447	407	364	306	232	890	2.2	232
		SONES Std. Thr.	2.4	2.4	3.4	3.7	3.9	3.8	3.9	4.0	4.3	4.3			
VCDD070I	120 VAC	CFM Std. Thr.	704	686	681	656	631	604	575	533	480	412	1090	2.9	313
		SONES Std. Thr.	3.6	3.8	3.7	3.9	4.0	4.2	4.3	4.4	4.9	5.0			
VCDD090I	120 VAC	CFM Std. Thr.	930	902	894	853	807	754	685	587	442	300	810	3.0	306
		SONES Std. Thr.	3.7	3.8	3.8	3.8	3.7	3.8	3.9	4.0	4.0	4.1			
VCDD150I	120 VAC	CFM Std. Thr.	1275	1228	1214	1152	1092	1029	958	871	764	631	1065	5.0	468
		SONES Std. Thr.	6.8	6.8	6.7	6.5	6.3	6.0	6.8	6.0	6.0	6.1			

Performance ratings include the effects of backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: Ducted inlet, Ducted outlet. Ratings do not include the effect of duct end correction. Performance ratings include the effects of 18 feet of round inlet duct and, if needed, a rectangular to round duct transition in the airstream. Values shown are for installation type D: free inlet hemispherical sone levels. Performance certified is for installation type D: Ducted inlet, Ducted outlet.

VCDD210I	120 VAC	CFM Std. Thr.	1891	1803	1791	1657	1508	1347	1165	808	284		965	5.8	567
		SONES Std. Thr.	10.3	9.8	9.4	9.0	8.6	9.1	8.9	7.0	6.7				
VCDD330I	240 VAC	CFM Std. Thr.	3605	3498	3452	3278	3073	2893	2679	2429	2093	1693	1105	5.4	1161
		SONES Std. Thr.	15.3	14.8	14.5	14.1	13.1	12.8	12.1	11.8	11.9	10.8			

Performance ratings do not include the effects of accessories. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are for loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: Ducted inlet, Ducted outlet. Ratings do not include the effect of duct end correction. Values shown are for installation type D: free inlet hemispherical sone levels. Performance certified is for installation type D: Ducted inlet, Ducted outlet.

- Standard in-line fan arrangement.
- Unit comes factory assembled as an in-line fan.
- Air intakes and discharges in the same direction.
- Unit may be mounted in a variety of ways.



Carnes Company certifies that the models 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.

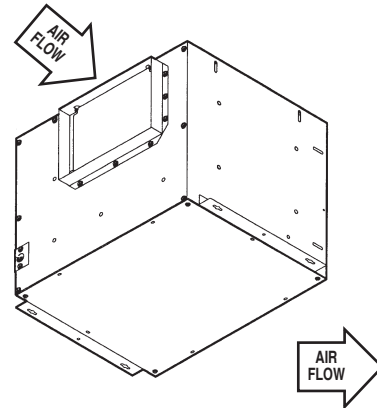


Standard In-Line Fan Arrangement - VCDK

CFM/SONES — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage	Standard Arrangement	0.0" P _s	.10" P _s	.125" P _s	.250" P _s	.375" P _s	.50" P _s	.625" P _s	.750" P _s	.875" P _s	1.0" P _s	Nom. RPM	Amps @ 60 Hz	Watts
VCDK090I	120 VAC	CFM Std. Thr.	819	808	806	792	779	766	753	683	578	456	1026	7.7	451
		SONES Std. Thr.	4.8	5.2	5.3	5.7	6.2	6.7	6.9	7.1	7.4	7.6			
VCDK130I	120 VAC	CFM Std. Thr.	1279	1248	1241	1203	1164	1104	1037	957	854	660	1100	7.7	642
		SONES Std. Thr.	10.5	10.3	10.3	10.0	9.8	9.5	9.3	9.1	8.8	8.6			
VCDK170I	120 VAC	CFM Std. Thr.	1495	1447	1436	1376	1310	1237	1156	1063	952	775	1140	7.7	694
		SONES Std. Thr.	12.9	12.5	12.4	11.9	11.5	11.0	10.5	10.1	9.6	9.2			

Performance ratings include the effects of backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: Ducted inlet, Ducted outlet. Ratings do not include the effect of duct end correction. Performance ratings include the effects of 18 feet of round inlet duct and, if needed, a rectangular to round duct transition in the airstream. Values shown are for installation type D: free inlet hemispherical sone levels. Performance certified is for installation type D: Ducted inlet, Ducted outlet.

- Standard in-line fan arrangement.
- Unit comes factory assembled as an in-line fan.
- Air intakes and discharges in the same direction.
- Unit may be mounted in a variety of ways.



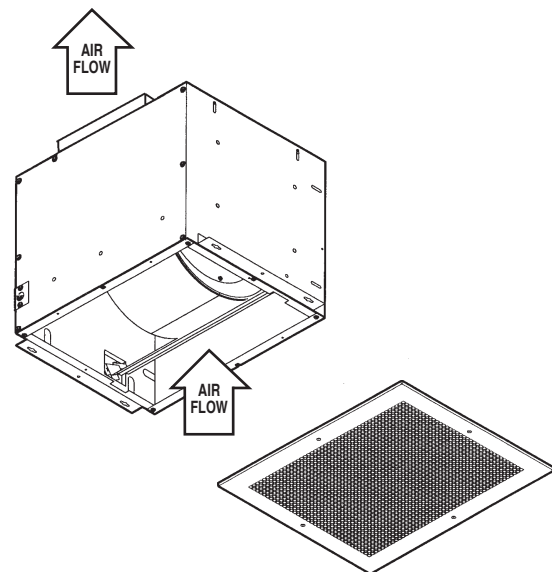
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Standard Ceiling Fan Field Converted to Vertical Discharge - VCDD

CFM/SONES — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage		0.0" P _s	.10" P _s	.125" P _s	.250" P _s	.375" P _s	.50" P _s	.625" P _s	.750" P _s	.875" P _s	1.0" P _s	Nom. RPM	Amps @ 60 Hz	Watts
VCDD010C	120 VAC	CFM Vertical SONES Vert.	138 0.7	117 0.9	112 1.0	94 1.3	80 1.8	67 2.2	46 2.8	13 3.0			650	1.1	77
VCDD015C	120 VAC	CFM Vertical SONES Vert.	179 1.4	163 1.6	160 1.6	149 2.0	142 2.5	133 3.0	122 3.3	105 3.6	73 3.9	23 4.2	750	1.4	102
VCDD020C	120 VAC	CFM Vertical SONES Vert.	224 1.5	210 1.8	207 2.0	197 2.3	187 2.7	179 3.4	167 4.0	144 4.5	99 5.1	41 5.2	760	1.8	132
VCDD025C	120 VAC	CFM Vertical SONES Vert.	269 2.3	261 2.6	259 2.7	253 3.0	248 3.3	239 3.7	224 4.2	203 4.7	171 5.4	101 5.6	860	2.3	172
VCDD030C	120 VAC	CFM Vertical SONES Vert.	319 2.6	314 2.9	313 3.0	306 3.4	299 3.6	288 3.8	274 4.4	251 4.7	219 5.0	120 5.5	940	2.7	207
VCDD040C	120 VAC	CFM Vertical SONES Vert.	467 2.3	428 2.6	416 2.6	378 3.0	335 3.5	291 4.0	237 5.1	170 5.5	85 5.7	8 5.9	755	1.6	165
VCDD050C	120 VAC	CFM Vertical SONES Vert.	539 2.9	517 3.1	512 3.2	481 3.4	451 3.8	418 4.2	367 4.8	319 5.9	247 6.3	137 6.4	865	2.1	218
VCDD070C	120 VAC	CFM Vertical SONES Vert.	708 5.2	691 5.0	687 5.0	658 5.7	628 5.8	597 6.1	560 6.4	515 7.4	444 7.1	312 7.6	985	2.9	315
VCDD090C	120 VAC	CFM Vertical SONES Vert.	909 3.8	892 3.4	885 3.4	850 3.5	807 3.6	756 3.7	695 3.9	568 4.2	440 4.3	282 4.4	650	2.6	281
VCDD150C	120 VAC	CFM Vertical SONES Vert.	1590 8.5	1519 8.4	1502 8.4	1423 8.1	1340 7.9	1259 7.5	1176 7.2	1069 7.1	954 6.9	689 6.5	955	6.2	622

Performance ratings include the effects of inlet grille and backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values are shown for installation type B: free inlet hemispherical sone levels. Performance certified is for installation type B: Free inlet, Ducted outlet.

- Unit ordered as a standard ceiling fan and converted in the field to vertical discharge.
- Air intakes and discharges in the same direction.
- Grille located in the ceiling.
- Unit may be wall mounted.



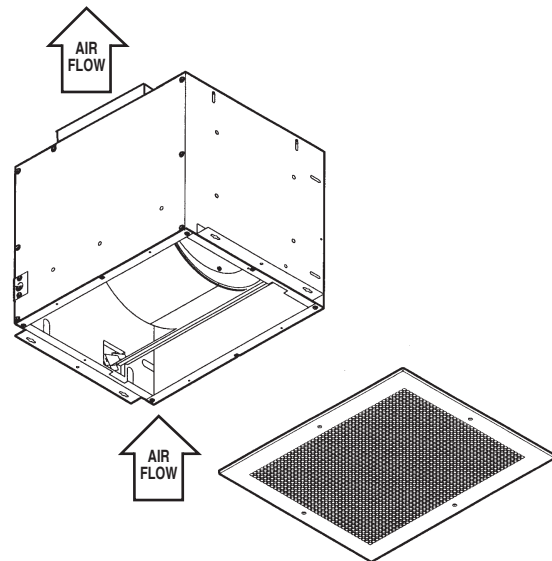
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Standard Ceiling Fan Field Converted to Vertical Discharge - VCDK

CFM/SONES — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage		0.0" P _s	.10" P _s	.125" P _s	.250" P _s	.375" P _s	.50" P _s	.625" P _s	.750" P _s	.875" P _s	1.0" P _s	Nom. RPM	Amps @ 60 Hz	Watts
VCDK090C	120 VAC	CFM Horizontal	908	893	890	872	854	836	816	736	646	489	1012	7.7	384
		SONES Horz.	5.1	5.3	5.4	5.6	5.8	5.9	6.0	6.1	6.4	6.6			
VCDK130C	120 VAC	CFM Horizontal	1392	1364	1357	1323	1288	1254	1192	1106	963	780	1059	7.7	668
		SONES Horz.	8.8	8.8	8.9	8.9	8.9	8.7	8.4	8.1	7.7	7.2			
VCDK170C	120 VAC	CFM Horizontal	1809	1762	1750	1691	1632	1549	1463	1309	1133	935	1105	7.7	902
		SONES Horz.	13.3	12.9	12.8	12.3	11.8	11.1	10.4	9.6	8.8	8.1			

Performance ratings include the effects of inlet grille and backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance certified is for installation type B: Free inlet, Ducted outlet.

- Unit ordered as a standard ceiling fan and converted in the field to vertical discharge.
- Air intakes and discharges in the same direction.
- Grille located in the ceiling.
- Unit may be wall mounted.



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Standard In-Line Fan Field Converted to Vertical Discharge - VCDD

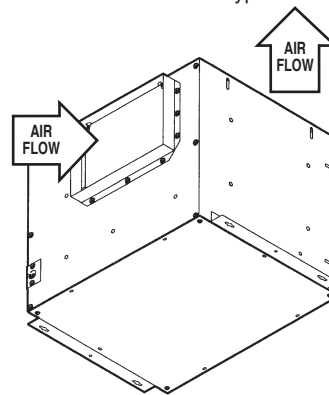
CFM/SONES — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage	Right Arrangement	0.0" P _s	.10" P _s	.125" P _s	.250" P _s	.375" P _s	.50" P _s	.625" P _s	.750" P _s	.875" P _s	1.0" P _s	Nom. RPM	Amps @ 60 Hz	Watts
VCDD010I	120 VAC	CFM Rt. Ang.	109	98	96	88	82	78	67	48	16		780	1.1	87
		SONES Rt. Ang.	.5	.8	.8	1.2	1.6	2.0	2.3	2.5	2.8				
VCDD015I	120 VAC	CFM Rt. Ang.	144	138	137	131	123	114	102	83	54	17	950	1.3	100
		SONES Rt. Ang.	1.2	1.4	1.4	1.6	1.9	2.1	2.4	2.5	2.7	2.9			
VCDD020I	120 VAC	CFM Rt. Ang.	183	177	176	170	163	152	137	121	96	51	930	1.8	127
		SONES Rt. Ang.	1.6	1.6	1.6	1.9	2.3	2.7	2.9	3.1	3.4	3.6			
VCDD025I	120 VAC	CFM Rt. Ang.	229	224	222	214	204	193	177	157	132	95	1115	2.1	166
		SONES Rt. Ang.	2.4	2.5	2.6	2.8	3.0	3.2	3.4	3.7	3.8	3.8			
VCDD030I	120 VAC	CFM Rt. Ang.	270	261	259	248	234	220	200	174	146	104	1285	2.6	212
		SONES Rt. Ang.	3.7	3.7	3.7	3.7	3.9	3.9	4.0	4.2	4.4	4.0			
VCDD040I	120 VAC	CFM Rt. Ang.	442	415	408	372	336	296	239	193	111	28	875	1.4	146
		SONES Rt. Ang.	1.6	1.7	1.7	2.0	2.4	2.6	3.1	3.4	3.9	4.1			
VCDD050I	120 VAC	CFM Rt. Ang.	528	516	513	494	470	446	415	389	334	247	990	2.2	232
		SONES Rt. Ang.	2.9	3.8	3.4	3.7	3.5	3.6	3.9	4.0	4.2	4.4			
VCDD070I	120 VAC	CFM Rt. Ang.	680	667	663	664	621	594	557	513	440	342	1205	2.9	313
		SONES Rt. Ang.	5.0	5.0	5.0	5.3	5.2	5.1	5.3	5.5	5.4	5.5			
VCDD090I	120 VAC	CFM Rt. Ang.	795	778	772	743	709	668	613	527	432	291	755	3.0	306
		SONES Rt. Ang.	4.3	4.5	4.4	4.6	4.4	4.2	4.1	4.3	4.2	4.3			
VCDD150I	120 VAC	CFM Rt. Ang.	1160	1117	1106	1051	998	928	856	769	657	499	1020	5.0	468
		SONES Rt. Ang.	7.9	7.8	7.9	7.4	7.1	6.8	6.3	5.9	5.4	5.4			

Performance ratings include the effects of backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: Ducted inlet, Ducted outlet. Ratings do not include the effect of duct end correction. Performance ratings include the effects of 18 feet of round inlet duct and, if needed, a rectangular to round duct transition in the airstream. Values shown are for installation type D: free inlet hemispherical sone levels. Performance certified is for installation type D: Ducted inlet, Ducted outlet.

VCDD210I	120 VAC	CFM Rt. Ang.	2070	1931	1898	1769	1609	1424	1314	795	228		1020	5.8	608
		SONES Rt. Ang.	11.1	10.3	10.1	9.7	9.4	9.2	8.5	7.0	6.7				
VCDD330I	240 VAC	CFM Rt. Ang.	3868	3714	3696	3537	3356	3168	2951	2671	2384	2005	1110	5.4	1160
		SONES Rt. Ang.	14.6	14.2	14.2	13.3	12.8	12.5	11.6	11.4	11.4	13.4			

Performance ratings do not include the effects of accessories. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are for loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: Ducted inlet, Ducted outlet. Ratings do not include the effect of duct end correction. Values shown are for installation type D: free inlet hemispherical sone levels. Performance certified is for installation type D: Ducted inlet, Ducted outlet.

- Unit ordered as a standard ceiling fan and converted in the field to vertical discharge.
- Air intakes horizontally.
- Air discharge vertically.
- Unit may be mounted in a variety of ways.



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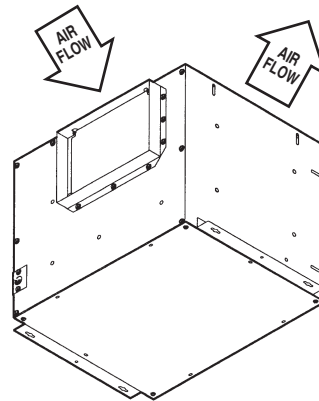


Standard In-Line Fan Field Converted to Vertical Discharge - VCDK

CFM/SONES — AT STATIC PRESSURE (Ps - Inches of H2O)															
Model No.	Nom. Voltage	Standard Arrangement	0.0" Ps	.10" Ps	.125" Ps	.250" Ps	.375" Ps	.50" Ps	.625" Ps	.750" Ps	.875" Ps	1.0" Ps	Nom. RPM	Amps @ 60 Hz	Watts
VCDK090I	120 VAC	CFM Std. Thr.	819	808	806	792	779	766	753	683	578	456	1026	7.7	451
		SONES Std. Thr.	4.8	5.2	5.3	5.7	6.2	6.7	6.9	7.1	7.4	7.6			
VCDK130I	120 VAC	CFM Std. Thr.	1279	1248	1241	1203	1164	1104	1037	957	854	660	1100	7.7	642
		SONES Std. Thr.	10.5	10.3	10.3	10.0	9.8	9.5	9.3	9.1	8.8	8.6			
VCDK170I	120 VAC	CFM Std. Thr.	1495	1447	1436	1376	1310	1237	1156	1063	952	775	1140	7.7	694
		SONES Std. Thr.	12.9	12.5	12.4	11.9	11.5	11.0	10.5	10.1	9.6	9.2			

Performance ratings include the effects of backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: Ducted inlet, Ducted outlet. Ratings do not include the effect of duct end correction. Performance ratings include the effects of 18 feet of round inlet duct and, if needed, a rectangular to round duct transition in the airstream. Values shown are for installation type D: free inlet hemispherical sone levels. Performance certified is for installation type D: Ducted inlet, Ducted outlet.

- Unit ordered as a standard ceiling fan and converted in the field to vertical discharge.
- Air intakes horizontally.
- Air discharge vertically.
- Unit may be mounted in a variety of ways.



Carnes Company certifies that the models 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.



VCDD Performance with Field Installed Metal Grille Option (Standard Air Discharge)

CFM/SONES — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage	Standard Arrangement	0.0" P _s	.10" P _s	.125" P _s	.250" P _s	.375" P _s	.50" P _s	.625" P _s	.750" P _s	.875" P _s	1.0" P _s	Nom. RPM	Amps @ 60 Hz	Watts
VCDD010C	120 VAC	CFM Horizontal	144	121	115	97	83	68	46	12			630	1.1	77
		SONES Horz.	0.5	0.8	0.9	1.2	1.8	2.4	3.0	3.3					
VCDD015C	120 VAC	CFM Horizontal	184	165	161	148	141	135	126	108	74	19	710	1.4	103
		SONES Horz.	1.1	1.4	1.4	1.9	1.9	2.3	3.2	3.8	4.1	4.5			
VCDD020C	120 VAC	CFM Horizontal	237	218	215	199	190	180	167	144	108	47	715	1.8	131
		SONES Horz.	1.4	1.8	1.9	2.4	3.0	3.6	4.2	5.1	5.6	5.5			
VCDD025C	120 VAC	CFM Horizontal	280	267	265	254	246	238	224	209	172	105	805	2.2	170
		SONES Horz.	2.1	2.5	2.5	2.9	3.4	3.9	4.3	4.6	5.6	5.9			
VCDD030C	120 VAC	CFM Horizontal	323	317	316	312	305	298	283	266	235	153	860	2.6	212
		SONES Horz.	3.0	2.8	3.0	3.2	3.5	3.9	4.3	4.8	5.2	5.7			

*Standard ceiling fan arrangement with optional metal grille.

VCDD Performance with Field Installed Metal Grille Option (Field Convertible to Vertical Air Discharge)

CFM/SONES — AT STATIC PRESSURE (P _s - Inches of H ₂ O)															
Model No.	Nom. Voltage	Standard Arrangement	0.0" P _s	.10" P _s	.125" P _s	.250" P _s	.375" P _s	.50" P _s	.625" P _s	.750" P _s	.875" P _s	1.0" P _s	Nom. RPM	Amps @ 60 Hz	Watts
VCDD010C	120 VAC	CFM Vertical	142	119	115	95	80	67	45	13			640	1.1	77
		SONES Vert.	0.5	0.8	0.9	1.4	1.8	2.3	2.9	3.1					
VCDD015C	120 VAC	CFM Vertical	183	165	162	151	143	135	124	107	76	26	725	1.4	104
		SONES Vert.	1.4	1.6	1.6	2.0	2.5	3.0	3.3	3.6	4.0	4.4			
VCDD020C	120 VAC	CFM Vertical	228	213	209	198	190	182	168	145	105	56	730	1.8	133
		SONES Vert.	1.5	1.7	1.8	2.3	2.8	3.4	4.1	4.6	5.1	5.2			
VCDD025C	120 VAC	CFM Vertical	275	263	262	255	250	241	229	210	178	105	830	2.3	172
		SONES Vert.	2.2	2.6	2.7	3.0	3.4	3.8	4.3	4.8	5.5	5.8			
VCDD030C	120 VAC	CFM Vertical	322	315	314	308	302	292	278	259	227	119	885	2.6	212
		SONES Vert.	2.4	2.7	2.8	3.3	3.5	3.9	4.3	4.7	5.1	5.5			

*Standard ceiling fan field modified for vertical discharge with optional metal grille.

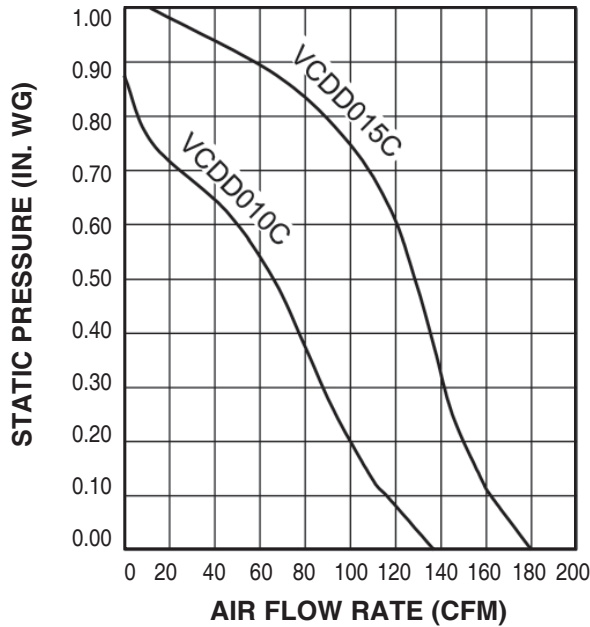
* NOTE: In many cases, metal grille options provide improved air flow performance over the standard grille.

Performance ratings include the effect of inlet grille and backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance certified is for installation type B: Free inlet, Ducted outlet.

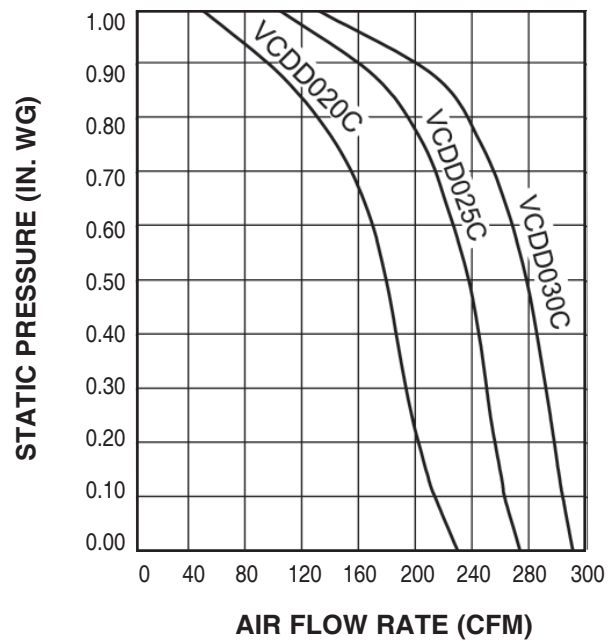
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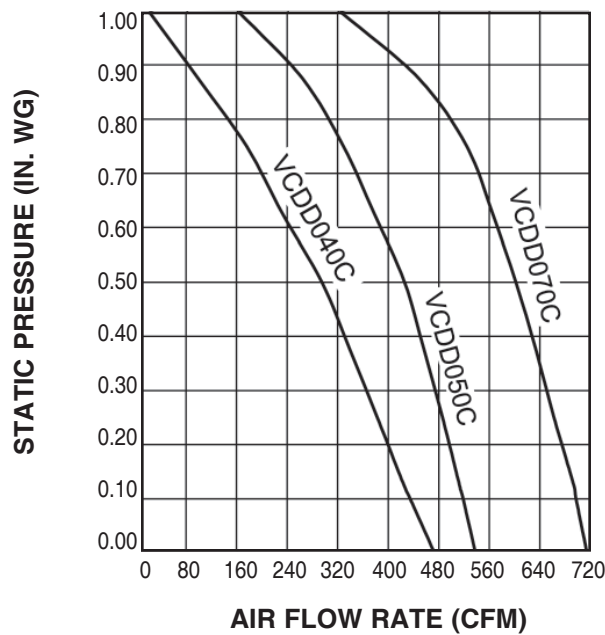
VCDD 010C and 015C



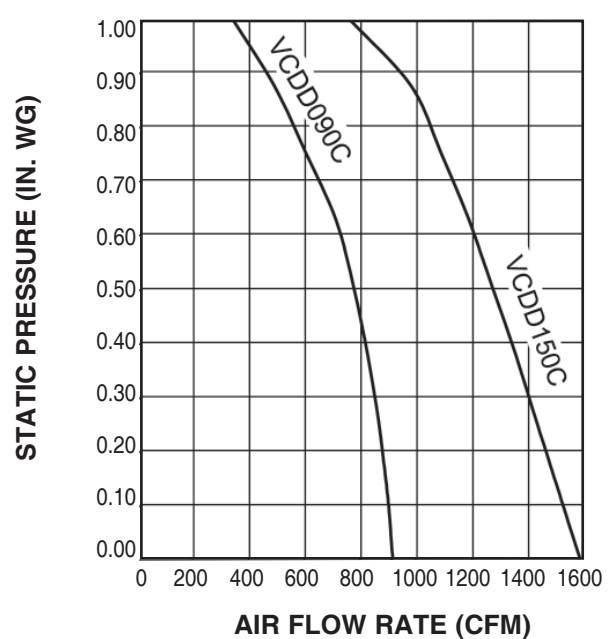
VCDD 020C, 025C and 030C



VCDD 040C, 050C and 070C



VCDD 090C and 150C

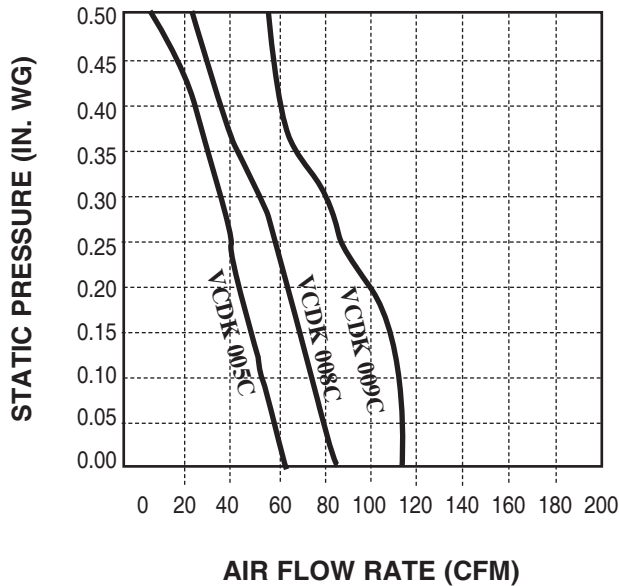


Performance ratings include the effect of inlet grille and backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance certified is for installation type B: Free inlet, Ducted outlet.

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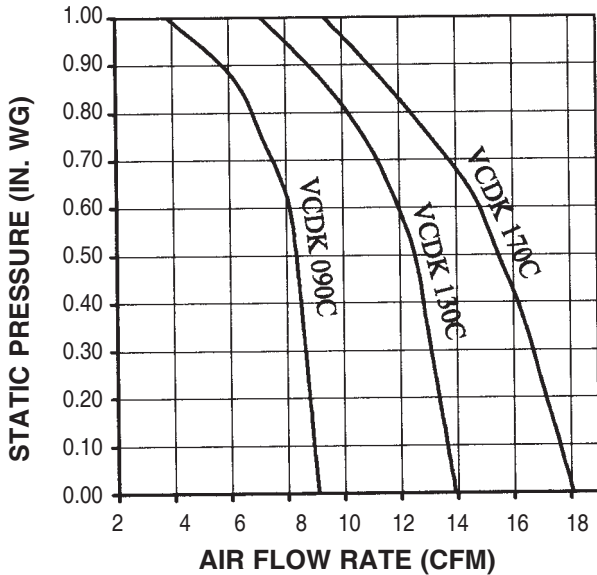


VCDK 005C, 008C and 009C



Performance ratings include the effect of inlet grille and backdraft damper in the airstream. Performance certified is for installation type B: Free inlet, Ducted outlet.

VCDK 090C, 130C and 170C

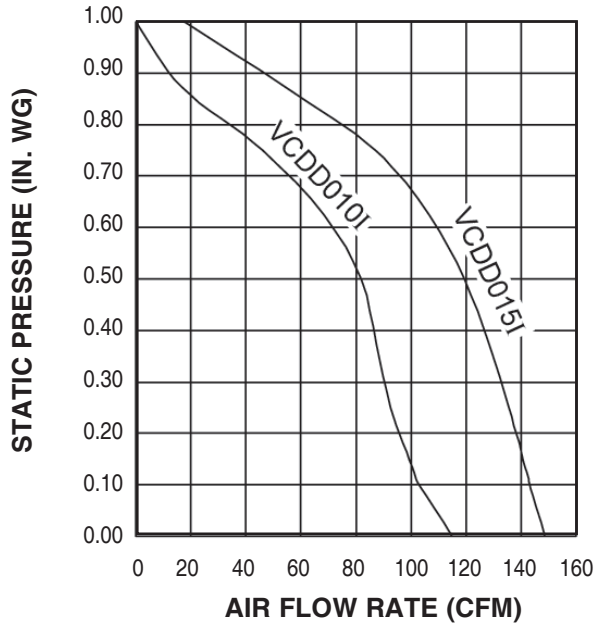


Performance ratings include the effect of inlet grille and backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance certified is for installation type B: Free inlet, Ducted outlet.

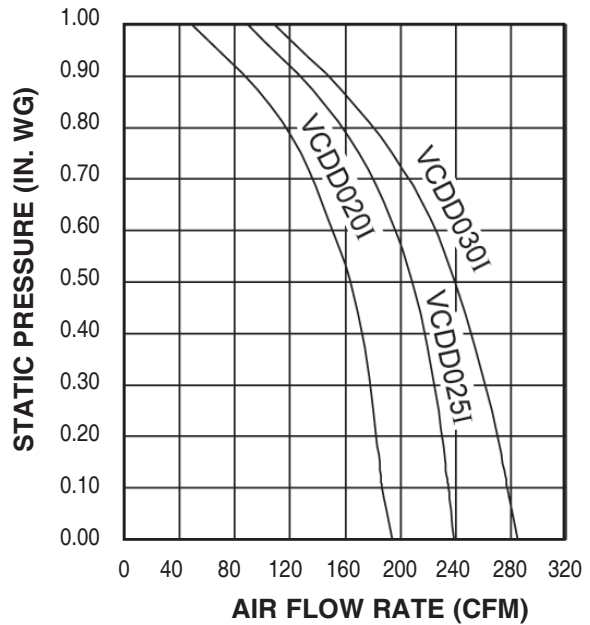
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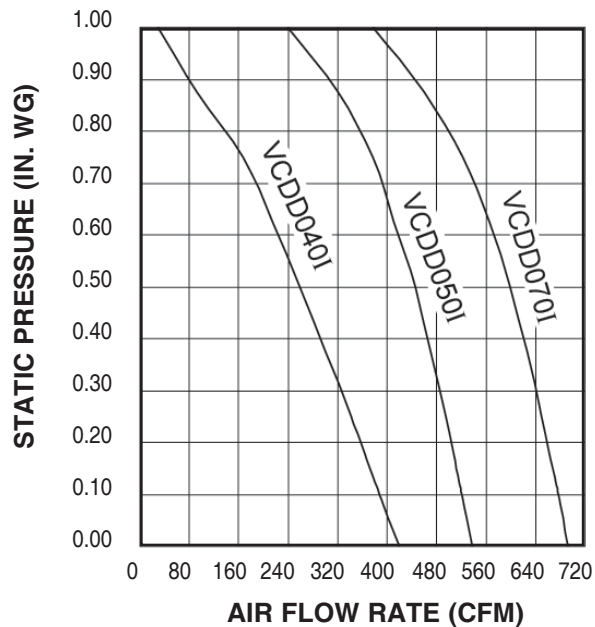
VCDD 010I and 015I



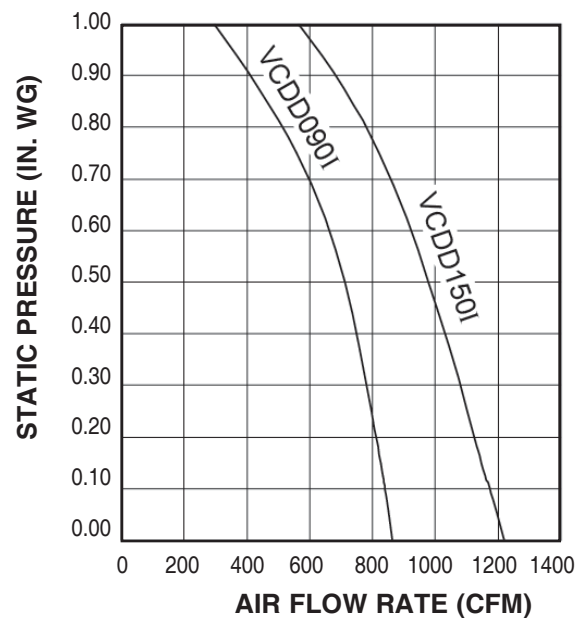
VCDD 020I, 025I and 030I



VCDD 040I, 050I and 070I



VCDD 090I and 150I

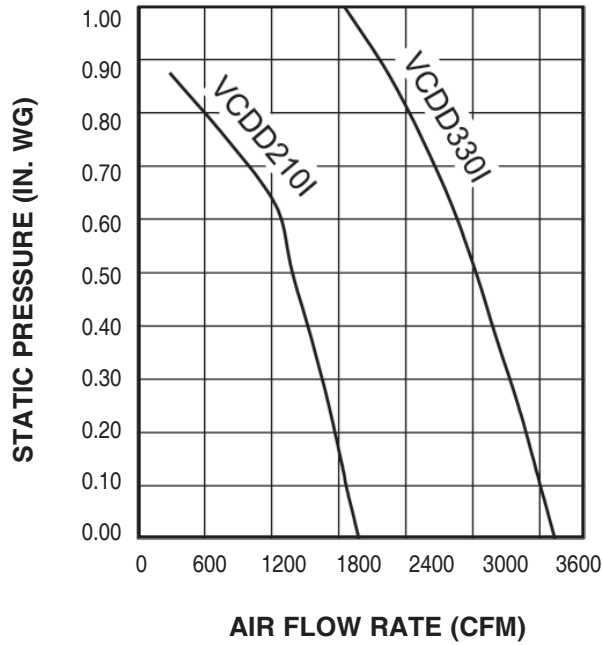


Performance ratings include the effects of backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan zones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: Ducted inlet, Ducted outlet. Ratings do not include the effect of duct end correction. Performance ratings include the effect of 18 feet or round inlet duct and, if needed, a rectangular to round duct transition in the airstream. Values shown are for installation type D: free inlet hemispherical zone levels. Performance certified is for installation type D: Ducted inlet, Ducted outlet.

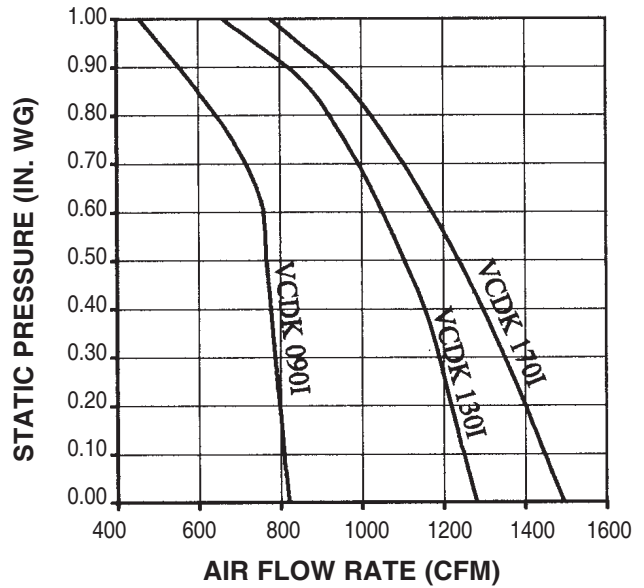
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VCDD 210I and 330I



VCDK 090I 130I and 170I

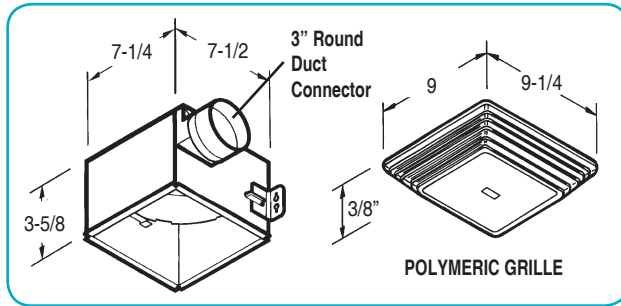


Performance ratings include the effects of backdraft damper in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan zones at 5' (1.5m) in a hemispherical free field calculated per AMCA Std. 301. Values shown are for installation type D: Ducted inlet, Ducted outlet. Ratings do not include the effect of duct end correction. Performance ratings include the effect of 18 feet or round inlet duct and, if needed, a rectangular to round duct transition in the airstream. Values shown are for installation type D: free inlet hemispherical sone levels. Performance certified is for installation type D: Ducted inlet, Ducted outlet.

Carnes Company certifies that the models 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.



CARNES CEILING FANS — VCDD Dimensional Data

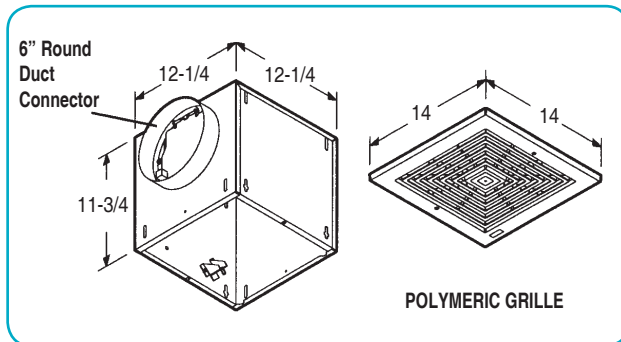
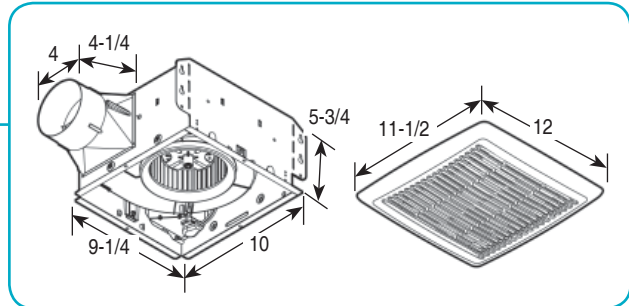


Model VCDD 005C

- 120 VAC.
- 3" round duct connector.
- Low profile white polymeric grille.
- Single, impact resistant centrifugal blower wheel.

Model VCDD 009C

- 120 VAC.
- 4" round duct connector.
- Low profile white polymeric grille.
- Single, impact resistant centrifugal blower wheel.



Models VCDD 010-015C

- 120 VAC.
- 6" round duct connector.
- Low profile white polymeric grille.
- Single, impact resistant centrifugal blower wheel.

Models VCDD 010-015I

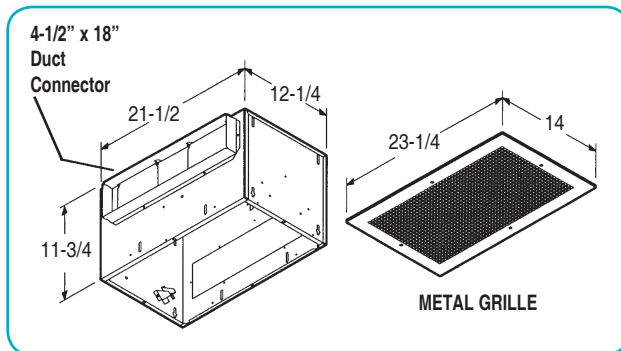
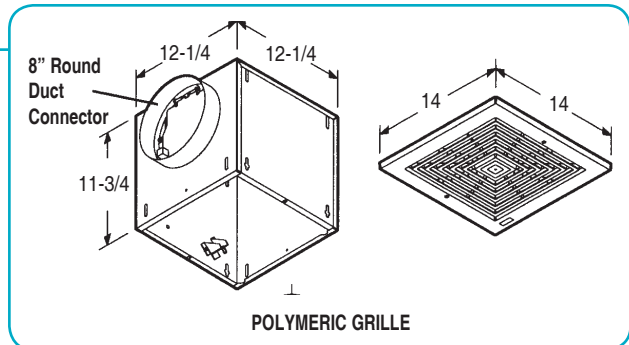
- 120 VAC.
- Two 6" round duct connectors.
- Removable access panel.
- Single, impact resistant centrifugal blower wheel.

Models VCDD 020-030C

- 120 VAC.
- 8" round duct connector.
- Low profile white polymeric grille.
- Single, impact resistant centrifugal blower wheel.

Models VCDD 020-030I

- 120 VAC.
- Two 8" round duct connectors.
- Removable access panel.
- Single, impact resistant centrifugal blower wheel.



Models VCDD 040-070C

- 120 VAC.
- 4-1/2" x 18-1/2" duct connector.
- Low profile white metal grille finished with painted white enamel.
- Two impact resistant centrifugal blower wheels.

Models VCDD 040-070I

- 120 VAC.
- Two 4-1/2" x 18-1/2" duct connectors.
- Removable access panel.
- Two impact resistant centrifugal blower wheels.

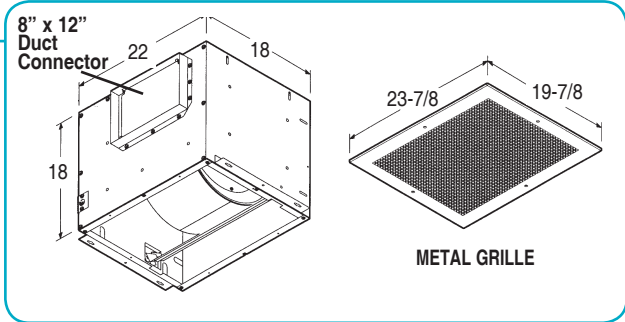
CARNES CEILING FANS — VCDD Dimensional Data

Models VCDD 090-150C

- 120 VAC.
- 8" x 12" duct connector.
- Sturdy, low profile white metal grille finished with painted white enamel.

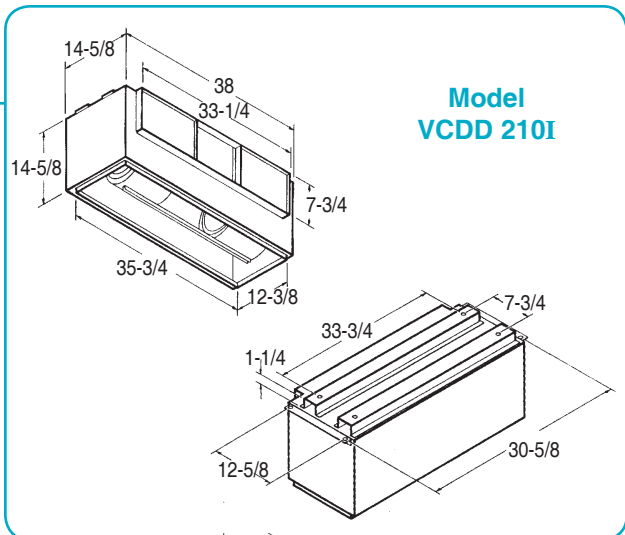
Models VCDD 090-150I

- 120 VAC.
- Two 8" x 12" duct connectors.
- Removable access panel.
- Single impact resistant centrifugal blower wheels.



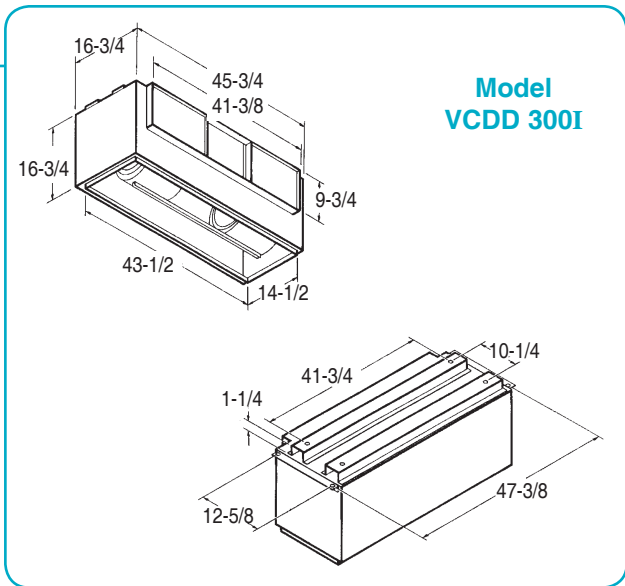
Model VCDD 210I

- 120 VAC.
- Fits 7-3/4" x 33-3/4" duct.
- Twin double-inlet blower wheels; 8" dia. x 7-7/8" deep.
- Use Metal Grille Kit for ceiling applications.
- Use Damper Kit for applications where unit will be ducted to outside—twin damper flaps prevent back-drafts.

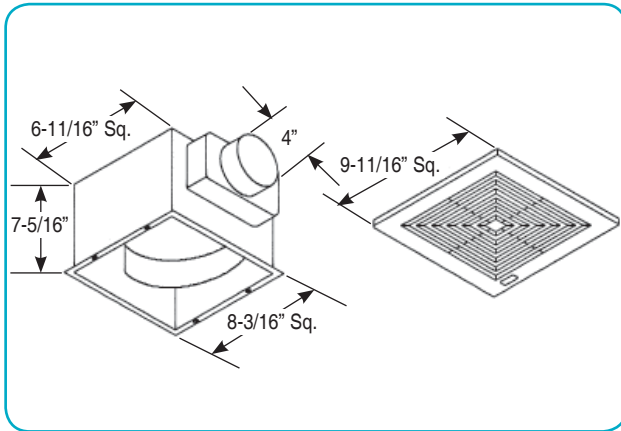


Model VCDD 330I

- 240 VAC.
- Fits 9-3/4" x 41-3/4" duct.
- Twin double-inlet blower wheels; 9" dia. x 8-3/4" deep.
- Use Metal Grille Kit for ceiling applications.
- Use Damper Kit for applications where unit will be ducted to outside—twin damper flaps prevent back-drafts.



CARNES CEILING FANS — VCDK Dimensional Data

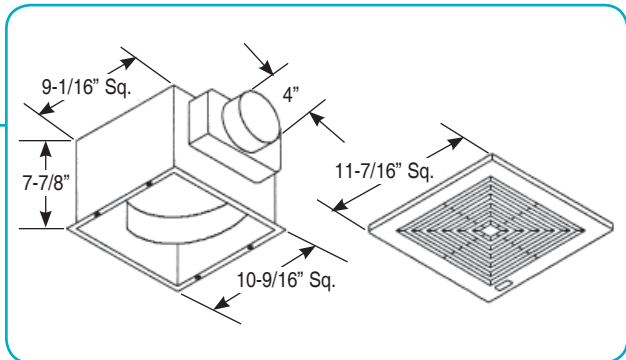


Model VCDK 005C

- 120 VAC.
- 4" round duct connector.
- Low profile white polymeric grille.
- Single, impact resistant centrifugal blower wheel.

Models VCDK 008C-009C

- 120 VAC.
- 4" round duct connector.
- Low profile white polymeric grille.
- Single, impact resistant centrifugal blower wheel.



Ceiling & Cabinet Fans

CARNES CEILING FANS — Dimensional Data & Specifications

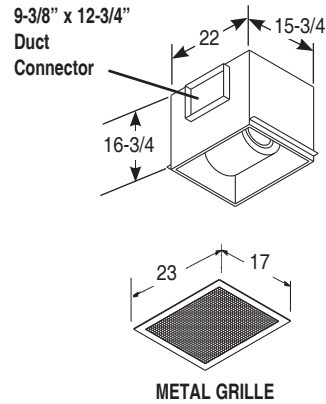
Models VCDK 090-170C

- 120 VAC.
- 9-3/8" x 12-3/4" duct connector.
- Sturdy, low profile metal grille finished with white enamel.

Models VCDK 090-170I

- 120 VAC.
- Two 9-3/8" x 12-3/4" duct connectors.
- Removable access panel.
- Single impact resistant blower.

Models VCDK 090-170C



SPECIFICATIONS

VCDK and VCDD Ceiling Fan Typical Specifications (Sizes 005-030)

Ceiling mounted exhaust fans shall be of the centrifugal direct drive type. The wheel shall be of the forward curved design, balanced for extremely low sound levels. The motor shall be of a low rpm design and permanently lubricated and include integral automatic backdraft dampers. Grilles shall be of a durable, low profile design with a white finish. Units shall be provided with integral mounting flanges to allow for ceiling and wall installations. Cabinets shall be constructed of heavy-gauge steel, painted for corrosion resistance. VCDD sizes 010-030 shall include an acoustical lining.

VCDK and VCDD Ceiling Fan Typical Specifications (Sizes 040-170)

Ceiling mounted exhaust fans shall be of the centrifugal direct driven type. The wheel shall be of the forward curved design, balanced for extremely low sound levels. The motor shall be a low rpm and permanently lubricated for continuous operation. The motor shall be resilient mount to help reduce vibration. Duct connectors shall be provided and will include built in automatic backdraft dampers. Grilles shall be of a durable, low profile design with a white finish. 8-way adjustable mounting brackets will be provided to permit a variety of mounting options. Cabinets shall be constructed of heavy-gauge galvanized steel and shall include an acoustic lining.

VCDK and VCDD In-Line Fan Typical Specifications (Sizes 040-170)

In-line cabinet fans shall be of the centrifugal direct driven type. The wheel shall be of the forward curved design. Balanced for extremely low sound levels. The motor shall be a low rpm and permanently lubricated for continuous operation. The motor shall be a resilient mount to help reduce vibration. Two duct connectors of the same duct size shall be factory installed. The discharge duct connector shall include a built in automatic backdraft damper. 8-way adjustable mounting brackets will be provided to permit a variety of mounting options. Cabinets shall be constructed of heavy-gauge galvanized steel.

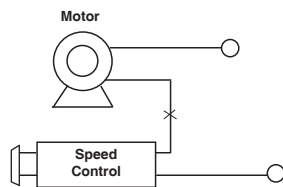
CARNES CEILING FANS — Accessories



Model VXCBT TIME DELAY SWITCH

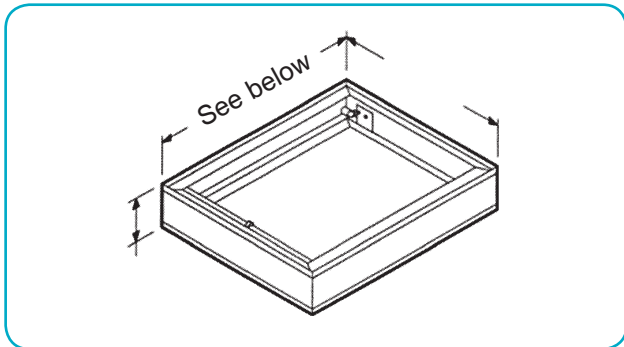
Adjustable from 5-60 minutes.

Solid State Variable Speed Switch



- **Model JXUA** — 3 amp
- **Model JXVA** — 6 amp
- **Model JXEA** — 8 amp
- **Model VXCBS** — 6 amp, 240 volt
- **Model VXCMB** — 6 amp, 277 volt
- **Model JTSA** — for use on VCDD010-090 (ceiling and in-line)

Model JXUA
Model JXVA
Model JXEA
Model VXCBS
Model VXCMB

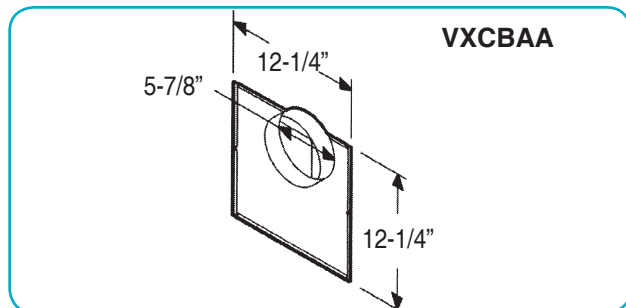


Radiation Dampers

- UL Listed — classified for use in a 4-hour fire-rated ceiling.
- Galvanized steel.
- High temperature, non-asbestos, reinforced fiber thermal fabric.
- 165° fusible link.

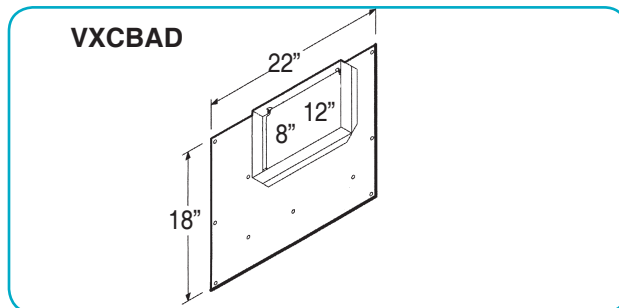
- **VXCBQA** (12-1/4"x12-1/4") fits VCDD 010C-030C.
- **VXCBQB** (21-1/2"x18") fits VCDD 040C-070C.
- **VXCBQC** (22"x18") fits VCDD 090C & VCDD 150C.
- **VXCBQE** (22"x15-3/4") fits VCDK 090C-170C.
- **VXCBQG** (8-3/16" Sq.) fits VCDK 005C.
- **VXCBQH** (10-9/16" Sq.) fits VCDK 008C-009C.

CARNES CEILING FANS — Accessories



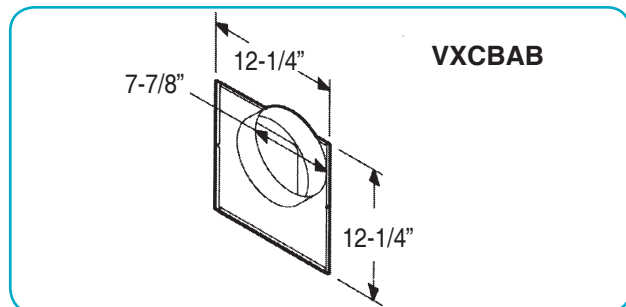
VXCBA In-Line Adapter Kit

- Galvanized steel.
- Fits VCDD 010C & 015C.
- 6" round duct connection.
- Mounting hardware included.



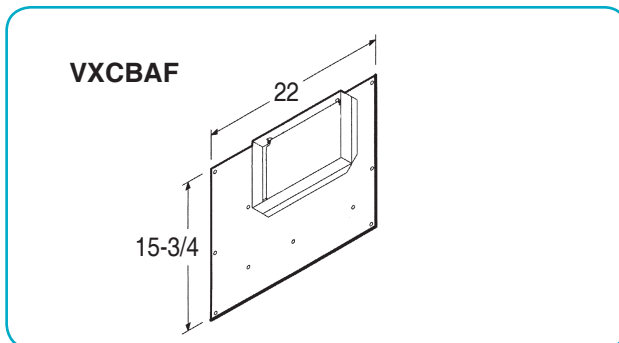
VXCBA In-Line Adapter Kit

- Galvanized steel.
- Fits VCDD 090C & 150C.
- 8" x 12" duct connection.
- Mounting hardware included.



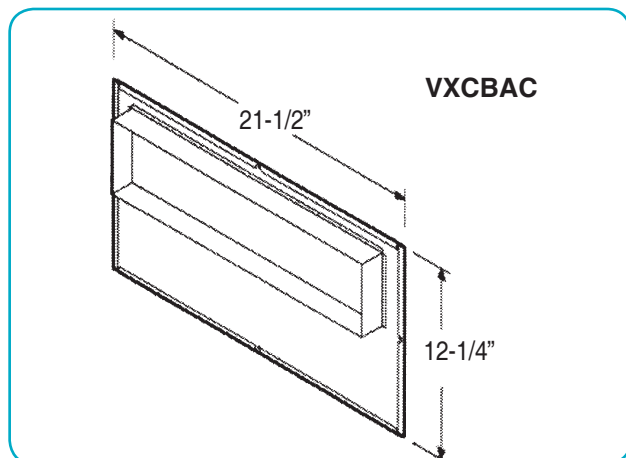
VXCBA In-Line Adapter Kit

- Galvanized steel.
- Fits VCDD 020C, 025C & 030C.
- 8" round duct connection.
- Mounting hardware included.



VXCBA In-Line Adapter Kit

- Galvanized steel.
- Fits VCDK 090C, 130C & 170C.
- 9-3/8" x 12-3/4" duct connection.
- Mounting hardware included.



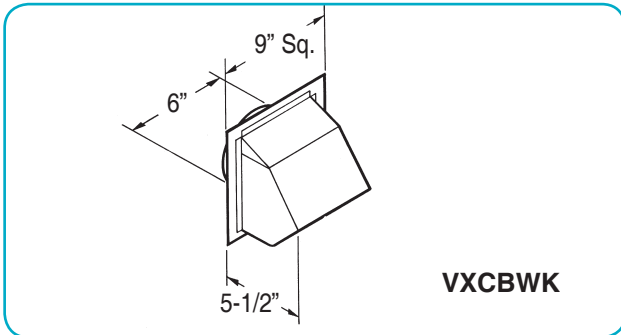
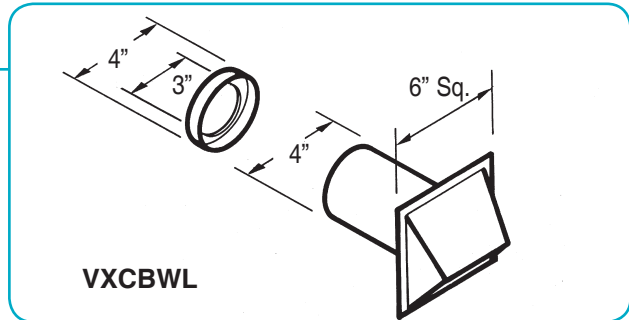
VXCBA In-Line Adapter Kit

- Galvanized steel.
- Fits VCDD 040C, 050C & 070C.
- 4-1/2" x 8-1/2" duct connection.
- Mounting hardware included.

CARNES CEILING FANS — Accessories

VXCBWL

- Aluminum - natural finish.
- Built-in backdraft damper.
- For 4" round duct (4" to 3" transition included).
- For use with VCDD and VCDK 005-009.

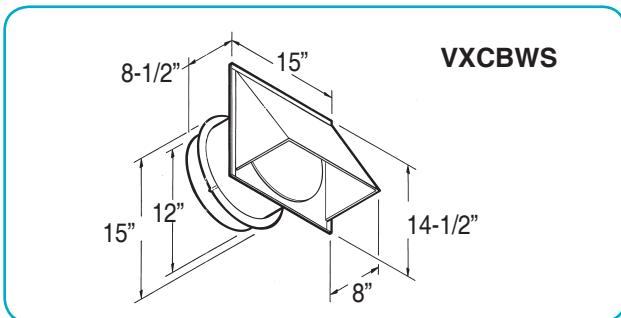
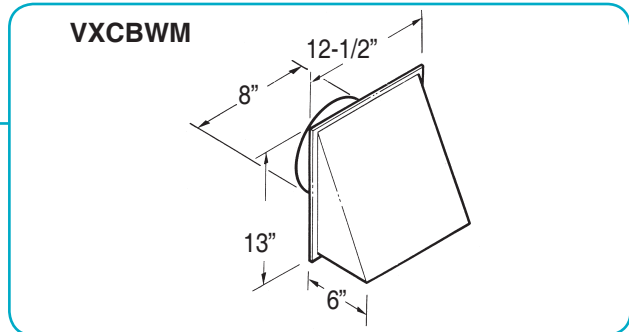


VXCBWK

- Aluminum - natural finish.
- Built-in backdraft damper and birdscreen.
- For 6" round duct.
- For use with VCDD and VCDK 010-015.

VXCBWM

- Aluminum - natural finish.
- Built-in backdraft damper.
- For 8" round duct.
- For use with VCDD 020-030.

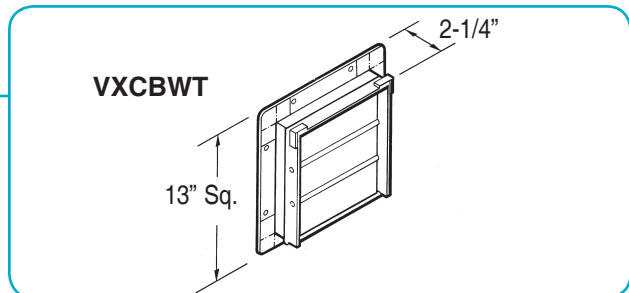


VXCBWS

- Aluminum - natural finish.
- Built-in backdraft damper and birdscreen.
- VCDD and VCDK 040-170. (Transition may be required.)

VXCBWT

- Steel frame with aluminum louvers.
- 10" round duct connection.
- VCDD and VCDK 040-170. (Transition may be required.)



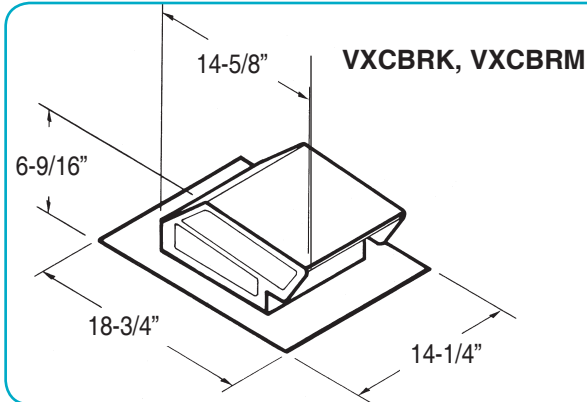
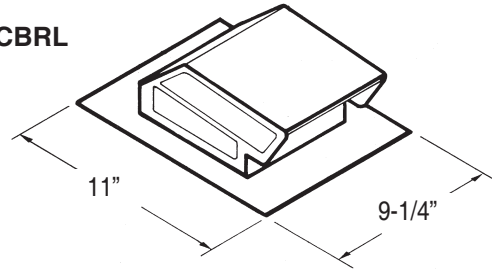
Ceiling & Cabinet Fans

CARNES CEILING FANS — Accessories

VXCBRL

- Steel black electrically bonded epoxy finish.
- Built-in backdraft damper and birdscreen.
- For 3" or 4" round duct.
- For use with VCDD and VCDK 005-009.

VXCBRL



VXCBRK

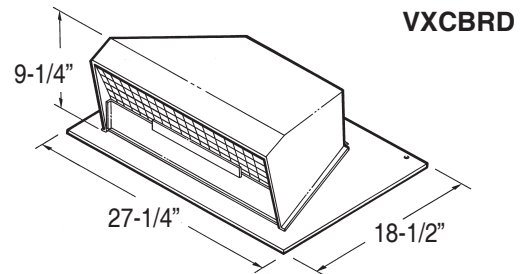
- Steel black electrically bonded epoxy finish.
- Built-in backdraft damper and birdscreen.
- For 6" round duct.
- For use with VCDD and VCDK 010-015.

VXCBRM

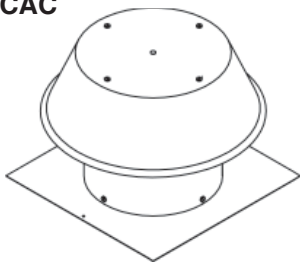
- Steel black electrically bonded epoxy finish.
- Built-in backdraft damper and birdscreen.
- For 3-1/4"x10" or up to 8" round duct.
- For use with VCDD 020-030.

VXCBRD

- Steel black electrically bonded epoxy finish.
- Built-in backdraft damper and birdscreen.
- High capacity design - up to 1200 CFM.
- For 10-3/4" x 10-3/4" or up to 10" round duct.
- For use with VCDD and VCDK 040-090.



VXCAF, VXCAC

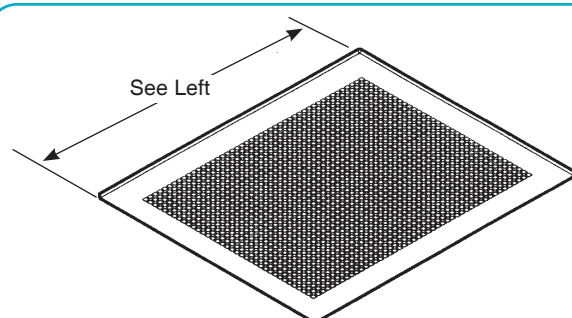


**VXCAF (Flat Roof Cap)
VXCAC (Curb Mounted Roof Cap)**

- Natural aluminum finish.
- Spun aluminum cover.
- Integral birdscreen.
- Four sizes available - 8", 12", 16" and 20".
- For use with VCDD 005-210 and VCDK 005-170.
- See Carnes Submittal Sheet 26016 for dimensional details (also in gravity vent section).

Metal Grille Kit

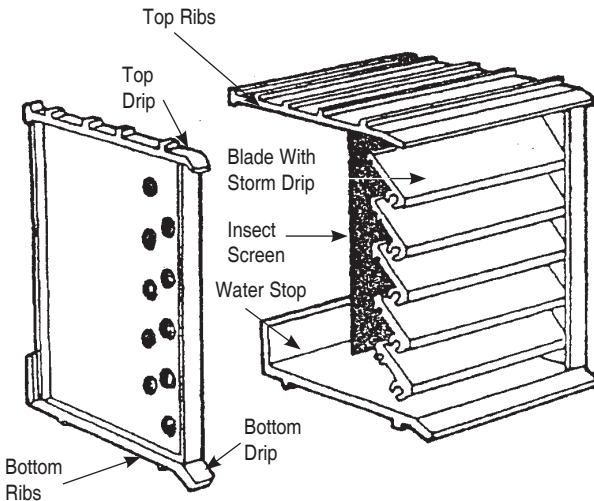
- Aluminum, painted white.
- Mounting clips included.
- **VXCBLH** (9-11/16" Sq.) fits VCDK 005C.
- **VXCBLK** (11-7/16" Sq.) fits VCDK 008C-009C.
- **VXCBGS** (10-1/4" Sq.) fits VCDD 005C-009C.
- **VXCBGF** (14" Sq.) fits VCDD 010C-030C.
- **VXCBKQ** (16-1/4" x 39-5/8") fits VCDD 210I.
- **VXCBKP** (18-3/8" x 47-1/4") fits VCDD 330I.



CARNES CEILING FANS — Accessories

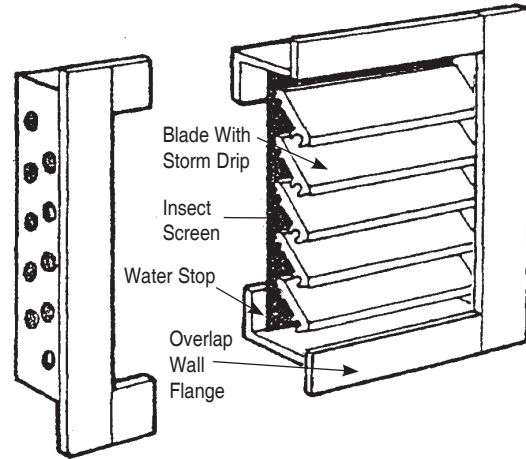
BRICK VENTS

**Standard Unit
Model VXCCB (4" Deep)**



ADD 1/4" To Nominal Height For Ribs

**Flanged Unit
Model VXCCB
(1-1/2" Deep with 1" Face Flange)**



**ADD 1/4" To Nominal Width For
Mechanical Fasteners**

Standard Features

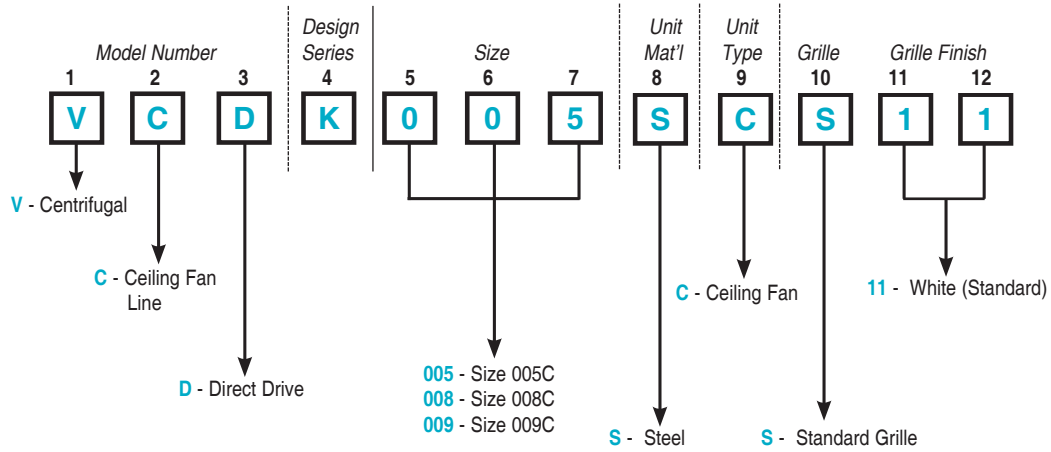
- Blades are 1" deep, 1" spaced, 45° angle.
- Frame and blades are aluminum extrusions, minimum .125" thick.
- Two frame styles available.
- Custom sizes available.
- Provides maximum protection against water entering building.
- All units are provided with 204-R1 clear anodized finish as standard. Medium or dark bronze anodized or baked enamel are available.
- Aluminum insect screen, 18" x 16" aluminum mesh is standard.

4" Deep (Standard) Model and Number	Flange Model and Number	Nominal Sizes Width x Height*** (See notes below)
VXCCB10051S	VXCCB10051F	8-1/8" x 2-3/8"
VXCCB11051S	VXCCB11051F	8-1/8" x 4-3/4"
VXCCB12051S	VXCCB12051F	8-1/8" x 7-3/4"
VXCCB13051S	VXCCB13051F	12" x 2-3/8"
VXCCB14051S	VXCCB14051F	12" x 4-3/4"
VXCCB15051S	VXCCB15051F	12" x 7-3/4"
VXCCB16051S	VXCCB16051F	12" x 11-3/4"
VXCCB17051S	VXCCB17051F	15-5/8" x 7-3/4"
VXCCB18051S	VXCCB18051F	15-5/8" x 15-3/4"
VXCCB19051S	VXCCB19051F	16-1/2" x 2-3/8"
VXCCB20051S	VXCCB20051F	16-1/2" x 4-3/4"
VXCCB21051S	VXCCB21051F	16-1/2" x 7-3/4"
VXCCB22051S	VXCCB22051F	16-1/2" x 15-3/4"
VXCCB23051S	VXCCB23051F	24" x 2-3/8"
VXCCB24051S	VXCCB24051F	24" x 4-3/4"
VXCCB25051S	VXCCB25051F	24" x 7-3/4"
VXCCB26051S	VXCCB26051F	32" x 7-3/4"
VXCCB27051S	VXCCB27051F	48" x 7-3/4"

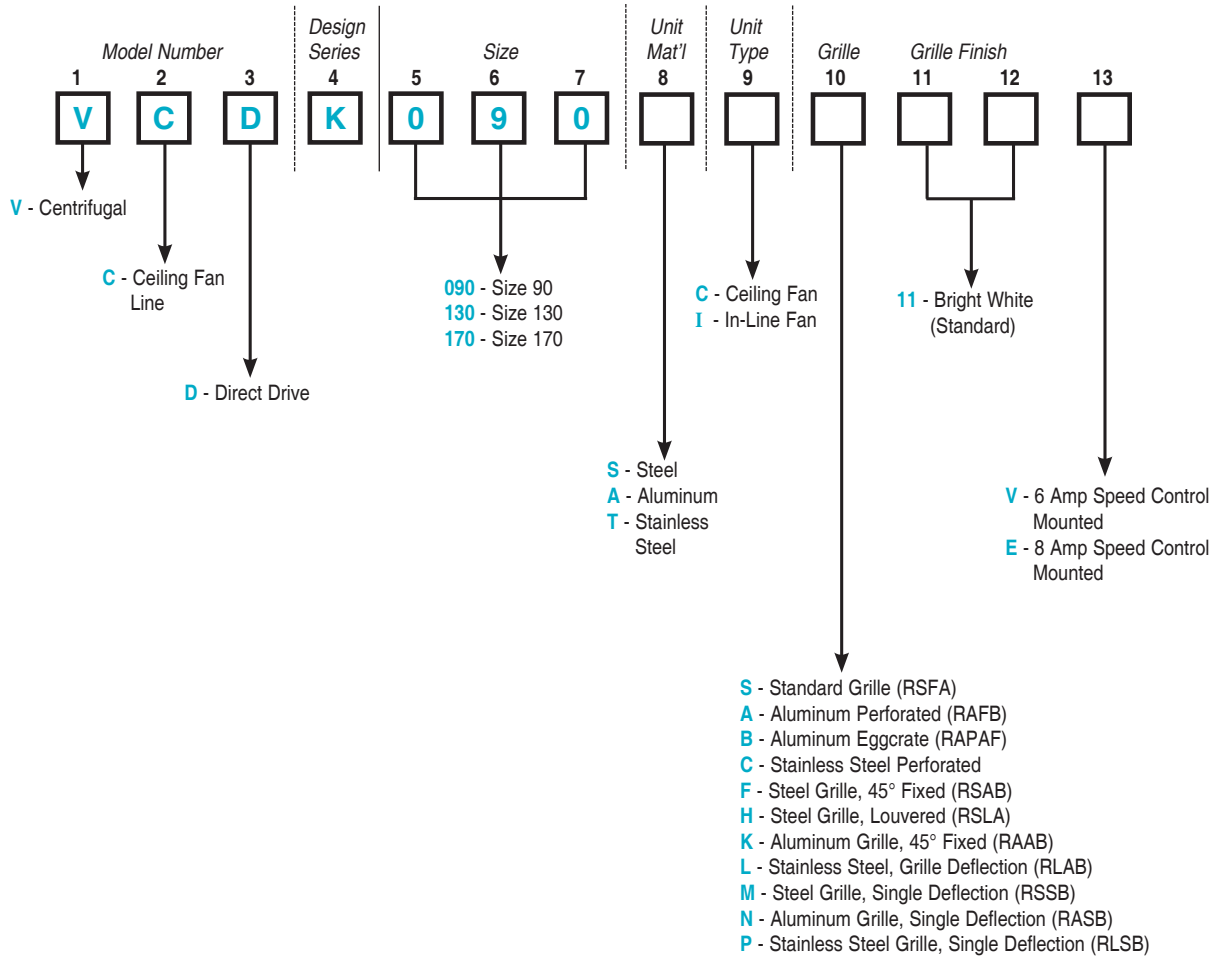
*****NOTES:** 1. 4" deep, Model **VXCCB** with standard frame will finish 1/4" higher than nominal height listed due to structural ribs on top and bottom.
 2. Flange vent, Model **VXCCB** with flange frame, is 1-1/2" deep with 1" front flange on four sides. Will finish 1/4" wider than nominal width listed due to mechanical fastener heads on sides.

Ceiling & Cabinet Fans

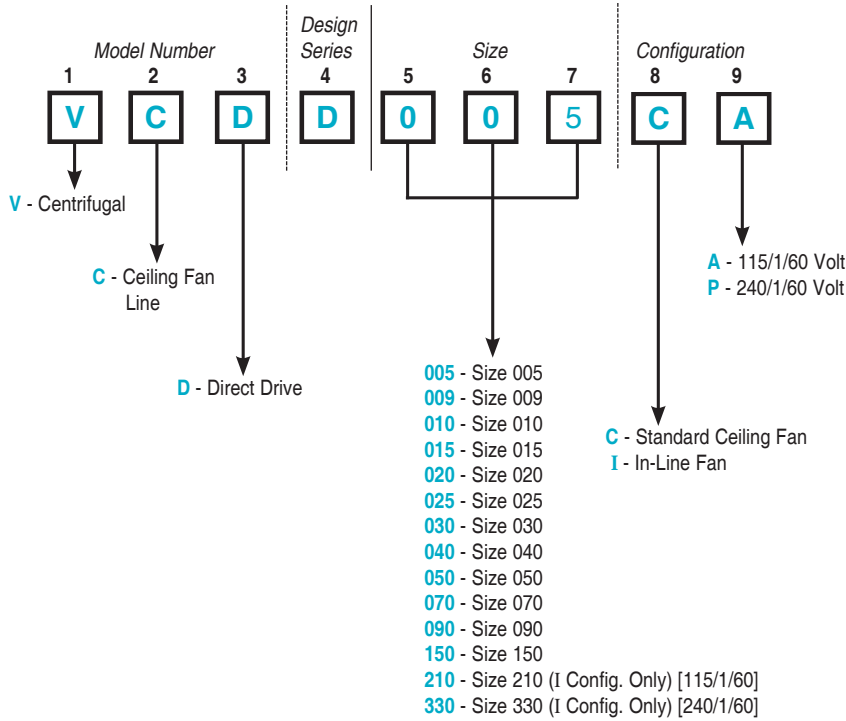
▼ Ceiling Fans — VCDK 005 - 009



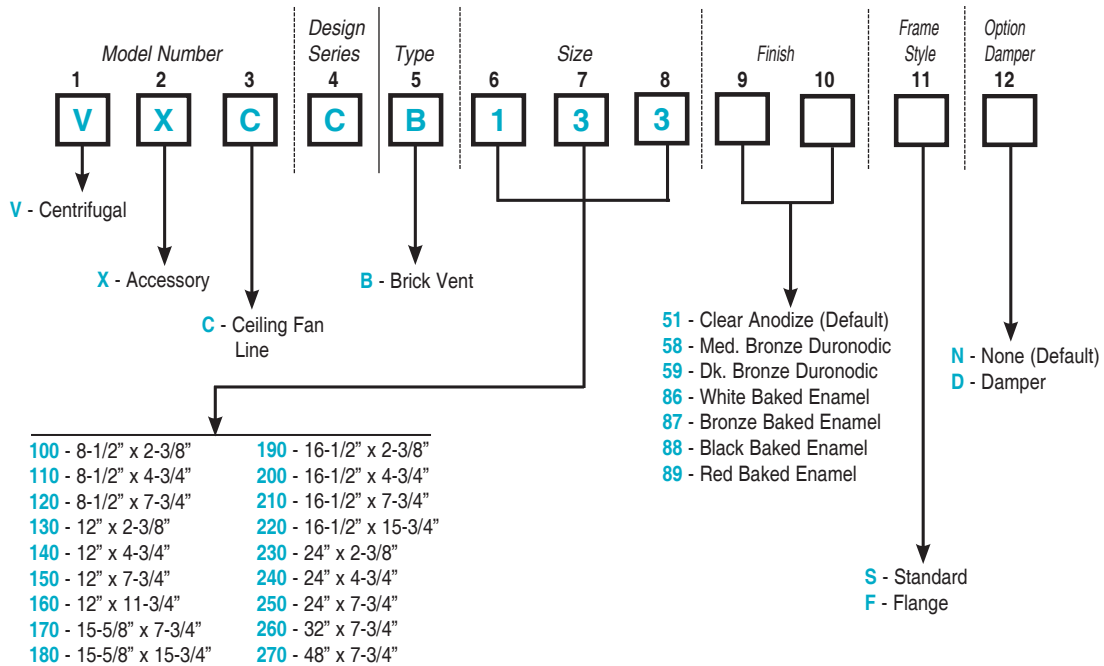
▼ Ceiling Fans — VCDK 090 - 170



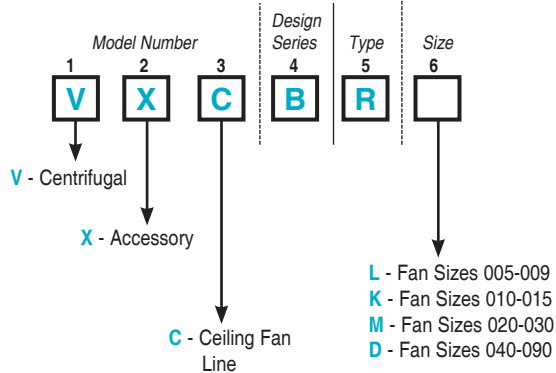
▼ **Ceiling Fans**



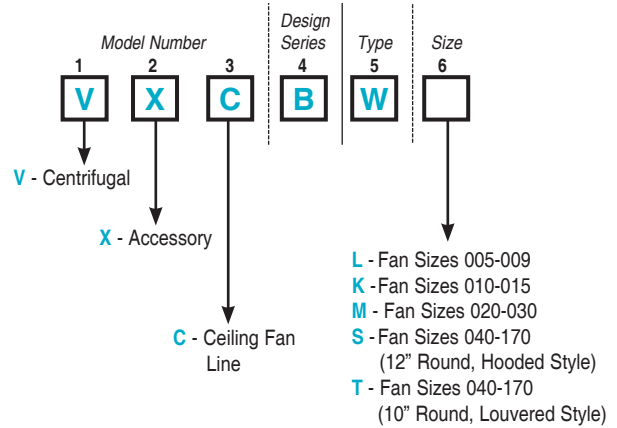
▼ **Brick Vents**



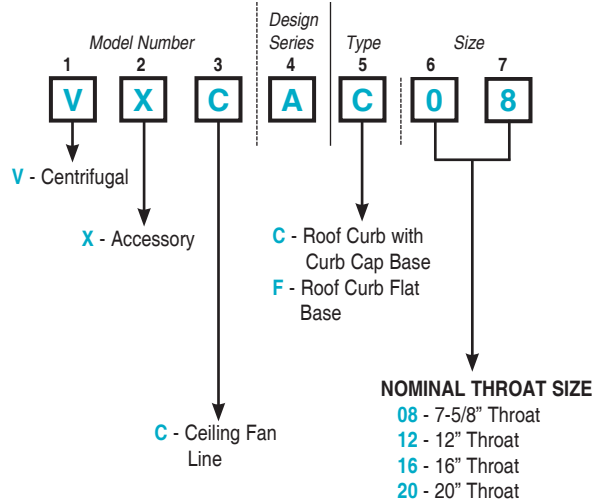
▼ Roof Jack Cap



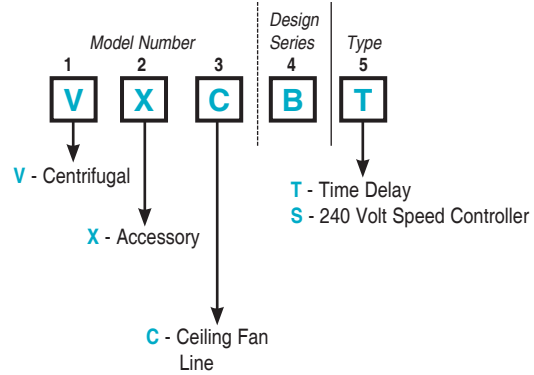
▼ Wall Cap



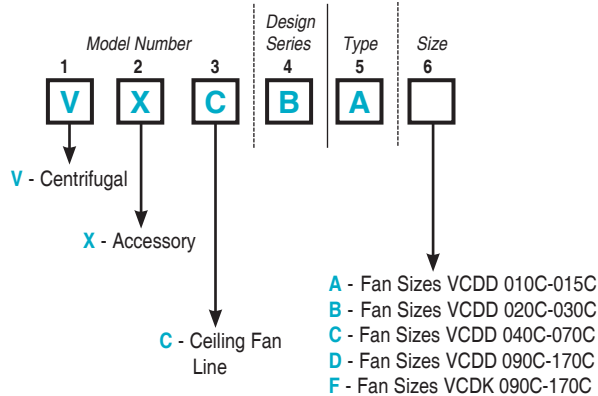
▼ Spun Roof Cap



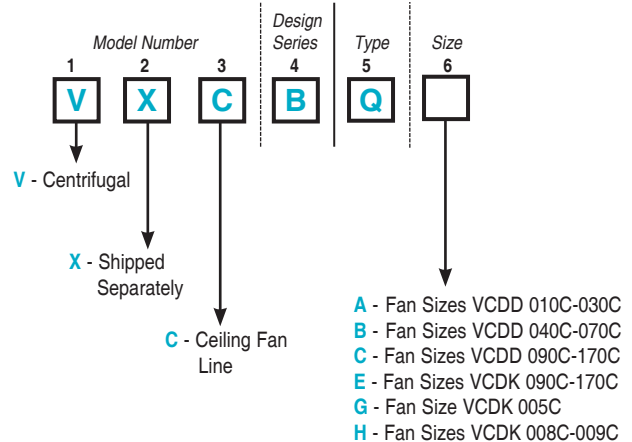
▼ Time Delay/Speed Controller



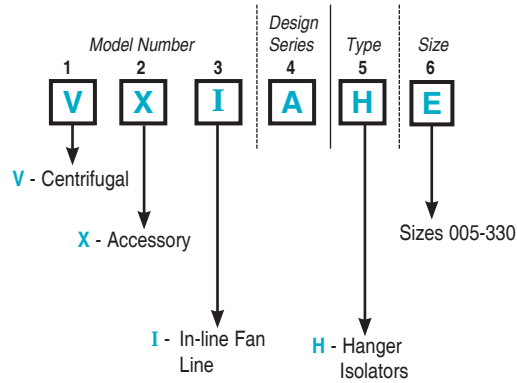
▼ In-line Adapter



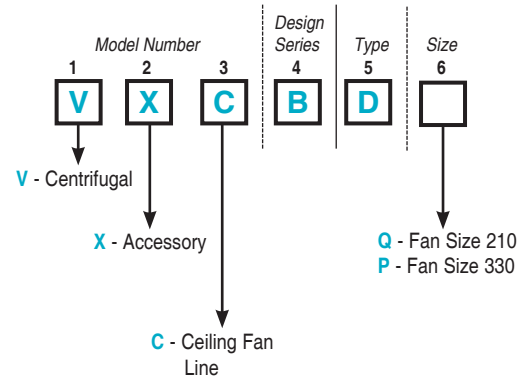
▼ Radiation Dampers



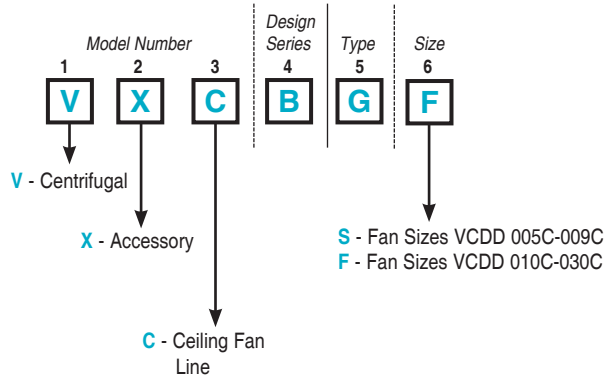
▼ **Isolators**



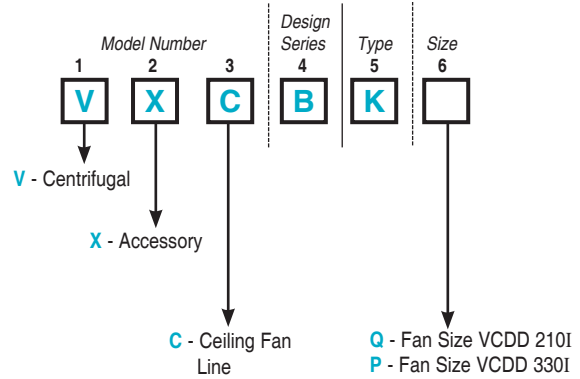
▼ **Damper Kit**



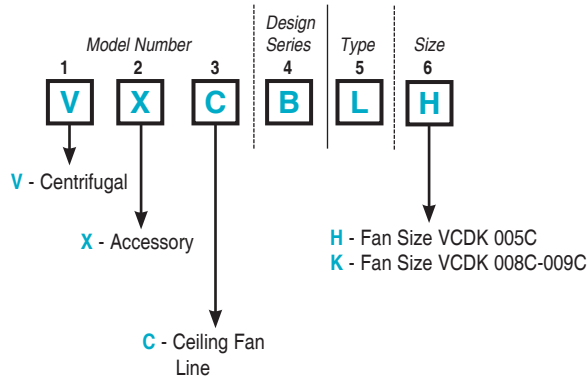
▼ **Metal Grille Kit**



▼ **Time Delay/Speed Controller**



▼ **Metal Grille Kit**



Utility Sets Standard Design Features

Standard design features common to all Class I and Class II fans

Shaft

- AISI 1045, turned ground and polished for accuracy.
- Designed to provide first critical speed of at least 1.43 times the maximum class speed.

Bearings

- Heavy-duty grease lubricated pillow block bearings selected for minimum average life (AFBMA L-50) of at least 200,000 hours at maximum class speed.

Drive

- Adjustable pitch, 1.2 or 1.5 service factor V-belt drives with cast iron sheaves and V-belts designed to be oil and heat resistant, and to dissipate static electricity.

Motor

- Available in various sizes, voltages, enclosures and efficiencies to meet the needs of any application.

Shutter

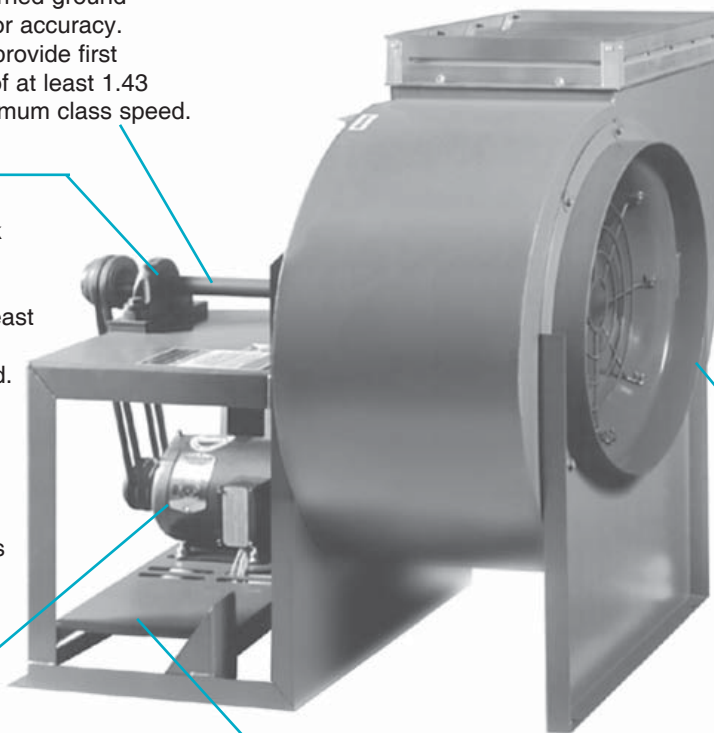
- Optional discharge gravity shutter.

Housing

- Rugged, all-welded construction.
- Rotatable to 8 standard discharge positions.

Inlet Cone

- Deep-spun cone, aerodynamically designed for smooth air entry into wheel, shown here with optional inlet screen.



Motor/Bearing Pedestal

- Large open motor compartment allows complete access to motor and motor base for quick and easy servicing and belt tension adjustment.

Construction Features

Class I	Class II
Rotatable to size 36	
Static Pressures to 5"	Static Pressures to 8"
Capacities to 26,000 CFM	Capacities to 33,000 CFM
Wheel Diameters from 12.25" to 36.50"	
Temperatures to 500°F	Temperatures to 600°F
Maximum Motor Frame Size 256T (20HP)	Maximum Motor Frame Size 326T (50HP)
Full AMCA Class Rated Performance	

Performance Ratings



Carnes Company certifies that the Type VBBB fans shown herein are licensed to bear the AMCA Seal for Sound and Air. 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.



Carnes Company certifies that the Type VFBB fans shown herein are licensed to bear the AMCA Seal for Air. 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.



Class I VBB Fans are available as listed under UL 705 and Canadian cUL 705
Class I VBB Fans are also available as listed under UL 762 for restaurant & grease laden air applications. Consult your local Carnes Representative.



Class II Design Features

In addition to the standard design features, the Class II vent sets are also equipped with the following features:

Shaft Cooler, Seal and Guard

- Included with the optional high temperature package. This assembly provides greater thermal protection for the shaft and bearings.

Outlet Flange

- Standard on sizes 20 and larger.

Class II Rated Wheel

- Constructed of all welded steel for heavy-duty applications.

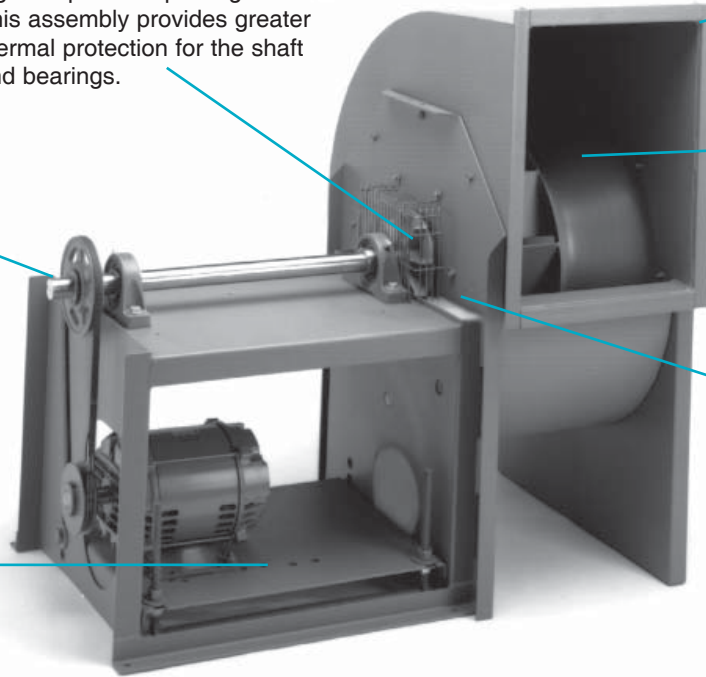
Heat Gap

- Separation between the fan housing and motor/bearing pedestal. For operating temperatures above 300°F, this gap is insulated to provide additional protection to the motor, bearings and V-belt.

Shaft and Bearings

- Heavy-duty Class II shaft and bearings.

- Extra-large motor/bearing pedestal accommodates all motor sizes required for full Class II performance.

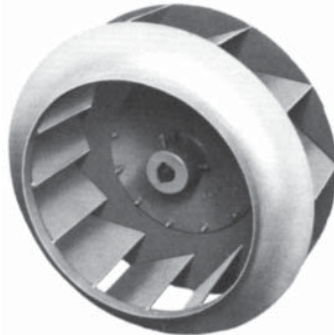


Impeller Selection



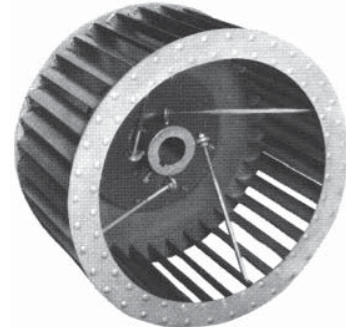
Aluminum BI

- Wheels for VBB Class I sizes 12 through 27 are constructed in riveted aluminum. For operating temperatures over 250° a welded steel wheel is provided.



Steel BI

- Wheels for VBB Class I sizes 30 through 36, as well as all VBB Class II sizes, are constructed in welded steel.



Steel FC

- All VFB fans are equipped with riveted steel wheels.

▼ Typical Specifications

Fans shall be Type **VBB** Backward Inclined or Type **VFB** Forward Curved Ventilating Sets, as manufactured by Carnes Company, Verona, Wisconsin.

PERFORMANCE — Fans shall be tested in accordance with AMCA 211 and AMCA 311 test codes for air moving devices and shall be guaranteed by the manufacturer to deliver rated published performance levels. **VBB** fans shall be licensed to bear the AMCA Certified Ratings Seal for both sound and air. **VFB** shall be licensed to bear the AMCA Certified Ratings Seal for air.

HOUSING — Fan housings shall be heavy-gauge, continuously welded construction. Housings with lock seams or partially welded construction are not acceptable. Housings shall be suitably braced to prevent vibration or pulsation. Housings shall have tapered spun, aerodynamically designed inlet cones or shrouds providing stable flow and high rigidity. Housings shall be of the rotatable design, convertible to eight standard discharge configurations.

WHEELS — **VBB** backward inclined wheels shall be single thickness plate type designed for maximum efficiency and quiet operation and shall be of the non-overloading type. Class I wheels, sizes 12 through 27, shall be constructed of aluminum, with blades riveted and welded to the spun wheel cone and backplate. Class I wheels, sizes 30 through 36, and all Class II wheels shall be constructed of heavy-gauge steel with welded (not riveted) blades.

VBB forward curved wheels shall be constructed of heavy-gauge steel and riveted to a steel shroud and backplate.

All wheels shall be statically and dynamically balanced.

SHAFT — Shafts shall be AISI 1040 or 1045 hot rolled steel, accurately turned, ground, polished and ring gauged for accuracy. Shafts shall be sized for the first critical speed of at least 1.43 times the maximum speed.

BEARINGS — Bearings shall be heavy-duty, grease lubricated, anti-friction ball, self-aligning, pillow block type and selected for a minimum average bearing life (AFBMA L-50) in excess of 200,000 hours at the maximum fan RPM.

DRIVE — Motor sheaves shall be cast iron, and supplied as either variable pitch or fixed pitch. Drives and belts shall be rated for a minimum of 120% of the required motor HP.

FINISH AND COATING — The entire fan assembly, excluding the shaft, shall be thoroughly degreased and deburred before application of a rust-preventative primer. After the fan is completely assembled, a finish coat of paint shall be applied to the entire assembly. The fan shaft shall be coated with a petroleum-based protectant. Aluminum components shall be unpainted.

ACCESSORIES — When specified, accessories such as belt guards, weather covers, access doors, variable inlet vanes, outlet shutters, inlet screens, etc., shall be provided by Carnes Company to maintain one source responsibility.

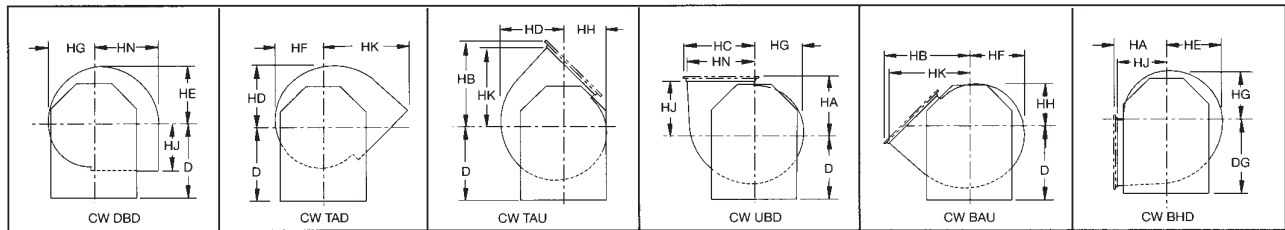
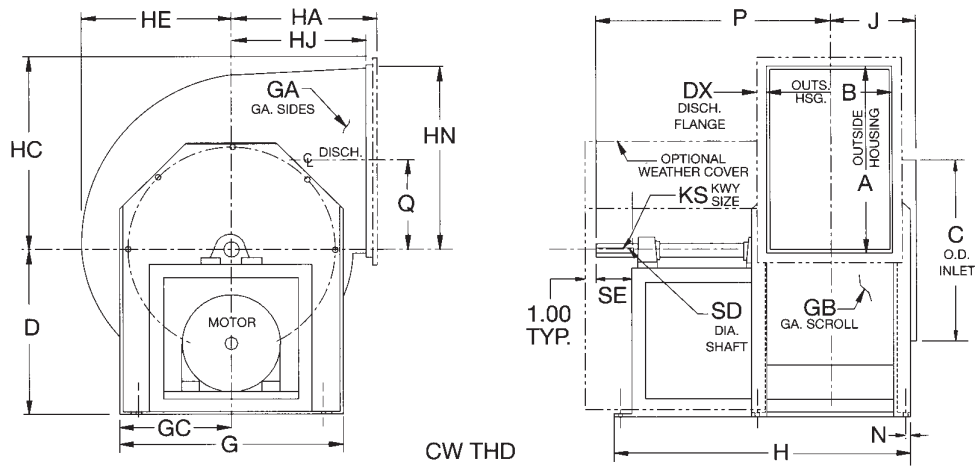
UL 705 LISTING — **VBB** fans shall be listed under UL 705 for power ventilators. **VBB** fans shall include a UL listed motor, B-belt drive, special weather cover with additional cooling louvers and UL 705 label. Disconnect switches or other electrical devices (not including motor) shall be field mounted and wired in accordance with all local and national codes.

UL 762 LISTING — **VBB** fans shall be listed under UL 762 for power ventilators used in restaurant exhaust service (grease laden air). **VBB** fans shall include a UL listed motor, V-belt drive, special weather cover with additional cooling louvers, bolted access door, drain connection, wheel backplate fins and UL 762 label. **VBB** fans shall be upblast or top angular up discharge and shall be a discharge height of at least 40" above the roof line. They are to be installed in accordance with NFPA 96. Disconnect switches or other electrical devices (not including motor) shall be field mounted and wired in accordance with all local and national codes.

FACTORY RUN TEST — All fans prior to shipment shall be completely assembled and test run as a unit at operating speed or maximum RPM allowed for the particular construction type. Each wheel shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-06 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. Balance readings shall be taken by electronic type equipment in the axial, vertical and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for a least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first.

DIMENSIONAL DATA — Models VFBB and VBBB



NOTES:

1. FLANGED OUTLET IS OPTIONAL ON SIZES 12 -20 . FLANGED OUTLET IS STANDARD ON SIZES 22 -36 (EXCEPT ON TAD & DBD).
2. "CW" ROTATION IS SHOWN. "CCW" ROTATION IS SIMILAR BUT OPPOSITE.
3. SHAFT DIAMETER IS INCREASED TO 1.187 ON HI-TEMP. FANS WHICH REQUIRE SHAFT COOLERS.
4. ALL UNITS ARE ROTATABLE TO ALL POSITIONS (EXCEPT SIZES 30 -36 WITH "D" CENTERLINE HEIGHT ARE NOT ROTATABLE TO BHD).

SIZE	A	B	C	D		DG		DX	G	GA	GB	GC	H		HA	HB	HC	HD	HE	HF
				CL I	CL II	CL I	CL II						CL I	CL II						
12	13.00	9.75	13.25	14.50	17.63	14.50	17.63	1.00	16.00	14	14	8.00	24.50	32.00	9.75	16.75	13.94	11.19	10.56	9.94
13	14.31	10.81	14.56	15.75	19.13	15.75	19.13	1.00	17.50	14	14	8.75	25.63	34.81	10.75	18.38	15.25	12.31	11.63	10.94
15	15.88	11.94	16.19	17.75	19.38	17.75	19.38	1.00	19.00	14	14	9.50	28.75	36.00	11.94	20.31	16.81	13.75	12.88	12.13
16	17.44	13.19	17.75	19.00	19.38	19.00	19.38	1.00	20.50	14	14	10.25	30.13	37.31	13.13	22.25	18.38	15.06	14.13	13.31
18	19.38	14.56	19.50	21.00	21.88	21.00	21.88	1.25	22.50	12	14	11.25	34.38	43.44	14.50	24.81	20.56	16.69	15.69	14.75
20	21.19	15.94	21.38	22.75	22.75	22.75	22.75	1.25	25.00	12	14	12.50	35.75	44.81	15.81	27.00	22.38	18.38	17.31	16.25
22	23.56	17.69	23.75	25.50	25.50	25.50	25.50	1.25	27.25	12	14	13.63	40.75	47.13	17.69	30.00	24.75	20.44	19.06	17.94
24	25.94	19.44	26.06	28.00	28.00	28.00	28.00	1.25	29.75	12	14	14.88	43.50	48.81	19.50	33.00	27.13	22.38	21.00	19.75
27	28.63	21.38	28.50	30.50	30.50	30.50	30.50	1.50	33.00	12	14	16.50	47.38	53.00	21.44	36.44	30.06	24.69	23.19	21.81
30	31.81	23.81	31.63	34.25	34.25	34.25	34.25	1.50	36.13	10	12	18.06	52.88	56.00	23.81	40.31	33.25	27.44	25.75	24.25
33	35.13	26.06	34.75	37.25	37.25	37.25	37.25	1.50	38.88	10	12	19.44	56.13	61.75	26.25	44.44	36.56	30.13	28.38	26.69
36	38.75	28.88	38.50	41.00	41.00	41.00	41.00	1.50	43.75	10	12	21.88	64.56	64.56	29.00	48.88	40.13	33.50	31.50	29.63

SIZE	HG	HH	HJ	HK	HN	J	KS		L		N	P		Q		SD		SE		MAX. MTR.	
							CL I	CL II	CL	CL II		CL I	CL II	CL I	CL II	CL I	CL II	CL I	CL II		
12	9.31	8.69	9.25	15.69	12.94	7.44	25x.13	25x.13	12.00	18.50	0.50	19.75	26.50	6.44	1.000	1.187	2.75	2.75	145T	184T	
13	10.25	9.56	10.25	17.31	14.25	8.00	25x.13	25x.13	12.00	20.25	0.50	20.31	29.56	7.13	1.000	1.187	2.75	3.38	145T	215T	
15	11.38	10.63	11.44	19.25	15.81	9.06	25x.13	25x.13	13.88	20.25	0.50	23.13	30.13	7.88	1.000	1.187	3.25	3.38	184T	215T	
16	12.50	11.69	12.63	21.19	17.38	9.69	25x.13	25x.13	13.88	20.00	0.63	23.75	30.75	8.69	1.000*	1.187	3.25	3.38	184T	215T	
18	13.81	12.88	14.00	23.56	19.31	10.88	25x.13	38x.19	16.75	24.75	0.63	27.94	36.81	9.63	1.187	1.437	3.75	4.00	215T	256T	
20	15.19	14.13	15.31	25.75	21.13	11.56	38x.19	38x.19	16.75	24.63	0.63	28.63	37.50	10.56	1.437	1.437	3.75	4.00	215T	256T	
22	16.81	15.69	17.19	28.75	23.50	12.44	38x.19	38x.19	19.00	23.88	0.88	27.63	38.38	11.75	1.437	1.437	3.75	4.00	215T	256T	
24	18.50	17.25	19.00	31.75	25.88	13.31	38x.19	38x.19	20.00	23.88	0.88	29.00	39.25	12.94	1.437	1.687	3.75	4.00	215T	256T	
27	20.44	19.06	20.94	35.00	28.56	14.25	38x.19	38x.19	22.00	26.13	0.88	31.69	43.13	14.25	1.437	1.687	4.00	4.63	215T	286T	
30	22.75	21.25	23.31	38.94	31.75	15.50	50x.25	50x.25	24.00	25.38	1.13	40.38	44.44	15.81	1.937	1.937	3.75	4.63	215T	286T	
33	25.00	23.31	25.75	43.00	35.06	16.63	50x.25	50x.25	25.00	28.88	1.13	42.50	49.69	17.50	1.937	2.187	3.75	5.25	256T	326T	
36	27.75	25.88	28.50	47.44	39.63	18.00	50x.25	63x.31	28.88	28.88	1.13	50.56	51.06	19.25	1.937	2.437	4.75	5.25	286T	326T	

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

Fan Accessories



Outlet Shutters

Interconnected blade style shutters, of either gravity or motor operated type. Fabricated with die-formed and felted edges, they are noiseless in operation and completely weathertight. For volume control, Heavy-duty center-pivoted dampers can be installed at the discharge side of these ventilating sets.

Belt Guard

Standard belt guards are of the open back style, and are readily removable for belt or pulley adjustments. For OSHA-style belt guards, see notes on weather cover.

Screens

Inlet guards of heavy-gauge wire are available for protection with a minimal resistance to air flow. Outlet screens of galvanized hardware cloth are also available for installation to outlets, with or without discharge shutter.

Weather Cover

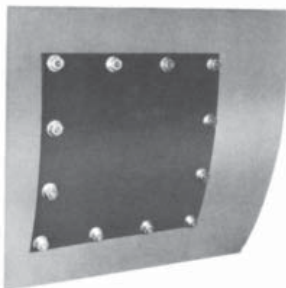
An easily removable weather cover is available for either Class I or Class II fans. The weather cover provides complete protection for the motor, fan bearings, and V-belt drive. If any OSHA-style belt guard is specified on vent sets, a weather cover will be supplied.



Variable Inlet Vanes

Variable inlet vanes provide economical, stable and efficient air volume control for manual or motorized operation. Low maintenance, easy assembly and disassembly, and long life are prime features of this vane design. Blades are supported by needle roller bearings riding on fatigue-resistant steel shafts, hardened to minimize wear. Bearings are lubricated for life with high grade moisture-resistant grease and protected with quality seals. The vane bearing housings are welded in position and stiffened with a welded support ring. The welded structure eliminates flutter and vibration while still utilizing the efficiency of cantilevered design.

We offer two types of inlet vanes, depending on fan size. Inlet vanes for sizes 12, 13 and 15 are external type, bolted to the fan inlet flange. Inlet vanes for sizes 16 and larger are supplied as nested type, with inlet vane blades nested within the inlet cone and all linkages internal to the fan. (Nested-style inlet vanes shown at right.)



Access Doors

Two types of access doors are available: a bolted or quick-opening type. Access doors are often specified where examination and cleaning of the fan interior is required.



Additional Accessories Include:

Inlet Flange, Outlet Flange, Drain Connection, Disconnect Switch, Vibration Isolation Pads, Rails and Hangers.

Special Materials and Protective Coatings

Optional Finishes		Available Materials	
• Epoxy	• Synthetic Resin	• 304 Stainless	• Monel
• Air-dried Phenolic (Heresite)	(Sanitile)	• 316 Stainless	• Aluminum
• Baked Phenolic			

High-Temperature Applications

Temp (°F)	Derating Factors For High Temp.		
	Aluminum	Steel	Stainless
70	1.00	1.00	1.00
200	1.00	.98	0.95
250	1.00	.97	0.93
300	—	.96	0.91
400	—	.95	0.88
500	—	.90	0.84
600	—	.86	0.81

When high temperatures are encountered, maximum RPMs for the class must be derated by the factors in this table.

Maximum RPM at 70°F

Size	VBBB		VFBB	
	Class I	Class II	Class I	Class II
12	3167	4119	1559	1871
13	2874	3738	1415	1698
15	2587	3364	1273	1528
16	2352	3058	1157	1389
18	2118	2729	1046	1256
20	1932	2490	955	1146
22	1737	2238	858	1030
24	1577	2033	780	935
27	1397	1803	707	849
30	1257	1623	637	764
33	1143	1475	579	694
36	995	1283	523	628

High Temperature Construction Requirements			
Temp. Range	Wheel Mat'l	Lubrication	Other Requirements
-20 to 250°F	12 - 27 VBBB Class I is riveted aluminum; all others steel.	Grease	Standard Fan
251 to 300°F	Steel	Grease	Standard Fan
301 to 500°F	Steel	High-Temp Grease	Shaft Cooler, Shaft Seal, Expansion & Non-Expansion Bearings; Class II: Insulated Heat Gap
501 to 600°F (Class II Only)	Steel	High-Temp Grease	Shaft Cooler, Shaft Seal, Expansion & Non-Expansion Bearings, High-Temp. Alum. Paint, Insulated Heat Gap

Spark Resistant Construction

AMCA Type	Temperature Limit	Fan Construction
A	To 250° F	All airstream parts are aluminum (wheel, housing, and shaft seal).
B	To 250°F	Aluminum wheel and rubbing plate.
C	To 250°F	12 to 27 VBBB Class I: Aluminum wheel and rubbing plate.
	251 To 500°F	12 to 27 VBBB, Class I&II: Steel wheel, alum. inlet cone, and rubbing plate.
	All Others To 500°F	Aluminum inlet cone and rubbing plate.

NOTES:

1. No bearings, drive components or electrical device shall be placed in the air or gas stream, unless they are constructed or enclosed in such a manner that failure of that component cannot ignite the surrounding gas stream.
2. The user shall electrically ground all fan parts.
3. For this standard, nonferrous material shall be any material with less than 5% iron or any other material with demonstrated ability to be spark resistant.
4. The use of aluminum or aluminum alloys in the presence of steel that has been allowed to rust requires special consideration. Research by the U.S. Bureau of Mines, and others, has shown that aluminum impellers rubbing on rusty steel may cause high intensity sparking.

The use of the above standard in no way implies a guarantee of safety for any level of spark resistance. "Spark resistant construction also does not protect against ignition of explosive gases caused by catastrophic failure or from any airstream material that may be present in the system."

Performance Data — VFBB

VFBB 12

Outlet Area - 0.86 ft² Wheel Dia. - 12.25 Inches Tip Speed - 3.21 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
688	800	435	0.05																				
860	1000	461	0.08	604	0.13																		
1032	1200	492	0.11	623	0.17																		
1204	1400	530	0.15	649	0.21	853	0.36																
1376	1600	572	0.21	680	0.28	871	0.43	<u>1041</u>	<u>0.60</u>														
1548	1800	620	0.28	714	0.35	894	0.52	1050	0.70														
1720	2000	673	0.37	753	0.44	921	0.62	1071	0.81	1207	1.02												
1892	2200	728	0.47	795	0.55	952	0.74	1095	0.95	1224	1.16	1348	1.40										
2064	2400	784	0.60	840	0.67	984	0.88	1121	1.10	1247	1.33	1363	1.57	1476	1.82								
2236	2600	842	0.76	891	0.83	1020	1.04	1151	1.27	1271	1.51	1384	1.77	1490	2.03	1595	2.31	1700	2.61				
2408	2800	900	0.94	944	1.01	1059	1.22	1182	1.46	1299	1.72	1408	1.99	1511	2.26	1609	2.55	1706	2.85	1803	3.16		
2580	3000	958	1.14	998	1.21	1100	1.42	1216	1.69	1328	1.95	1434	2.23	1534	2.52	1629	2.82	1720	3.12	1811	3.44		
2752	3200	1017	1.37	1054	1.45	1143	1.65	1252	1.93	1360	2.21	1462	2.50	1559	2.80	1653	3.12	1741	3.43	1826	3.75		
2924	3400	1076	1.63	1111	1.72	1190	1.91	1292	2.20	1393	2.50	1492	2.80	1586	3.11	1677	3.44	1764	3.77	1847	4.10		
3096	3600	1136	1.93	1168	2.02	1240	2.21	1332	2.50	1428	2.81	1524	3.13	1616	3.46	1703	3.79	1788	4.13	1870	4.49		
3268	3800	1196	2.27	1226	2.35	1292	2.55	1374	2.83	1466	3.15	1557	3.49	1647	3.83	1732	4.17	1814	4.53				

MAXIMUM RPM: Class I — 1559 Class II — 1871

VFBB 13

Outlet Area - 1.05 ft² Wheel Dia. - 13.50 Inches Tip Speed - 3.53 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
840	800	395	0.07																				
1050	1000	419	0.10	548	0.16																		
1260	1200	448	0.14	566	0.20																		
1470	1400	482	0.19	590	0.26	774	0.43																
1680	1600	520	0.25	618	0.34	791	0.53	<u>945</u>	<u>0.74</u>														
1890	1800	565	0.34	650	0.43	812	0.63	954	0.85														
2100	2000	613	0.45	685	0.54	837	0.76	973	1.00	1096	1.25												
2310	2200	663	0.58	723	0.67	865	0.91	995	1.16	1112	1.42	1223	1.70										
2520	2400	715	0.74	765	0.83	895	1.08	1019	1.35	1133	1.63	1238	1.92	1340	2.23	1442	2.56						
2730	2600	767	0.93	811	1.02	928	1.28	1046	1.56	1155	1.85	1258	2.17	1353	2.48	1447	2.82	1542	3.18				
2940	2800	820	1.15	860	1.24	964	1.50	1075	1.80	1180	2.11	1279	2.44	1373	2.78	1461	3.12	1548	3.48	1637	3.87		
3150	3000	874	1.41	910	1.49	1001	1.75	1106	2.07	1208	2.40	1303	2.74	1394	3.09	1480	3.45	1562	3.82	1644	4.20		
3360	3200	927	1.69	961	1.79	1041	2.03	1139	2.37	1236	2.71	1329	3.07	1417	3.44	1501	3.82	1582	4.21	1659	4.60		
3570	3400	982	2.02	1013	2.12	1084	2.36	1175	2.70	1267	3.07	1357	3.44	1442	3.82	1524	4.22	1603	4.62	1678	5.03		
3780	3600	1036	2.38	1065	2.49	1129	2.72	1212	3.07	1299	3.45	1386	3.84	1469	4.24	1548	4.65	1625	5.07				
3990	3800	1090	2.79	1118	2.90	1177	3.14	1251	3.48	1334	3.88	1416	4.28	1497	4.69	1574	5.11	1649	5.55				

MAXIMUM RPM: Class I — 1415 Class II — 1698

VFBB 15

Outlet Area - 1.29 ft² Wheel Dia. - 15.00 Inches Tip Speed - 3.93 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1032	800	355	0.08																				
1290	1000	376	0.12	493	0.19																		
1548	1200	402	0.17	509	0.25																		
1806	1400	433	0.23	530	0.32	696	0.53																
2064	1600	467	0.31	555	0.41	711	0.64	<u>850</u>	<u>0.90</u>														
2322	1800	506	0.41	583	0.53	730	0.77	858	1.05														
2580	2000	550	0.55	615	0.66	752	0.93	874	1.22	986	1.53												
2838	2200	595	0.71	649	0.82	777	1.11	894	1.42	1000	1.75	1101	2.09										
3096	2400	641	0.91	687	1.01	804	1.32	916	1.65	1018	1.99	1113	2.35	1205	2.73								
3354	2600	688	1.14	728	1.24	833	1.56	940	1.91	1038	2.27	1131	2.66	1217	3.04	1302	3.46	1388	3.91				
3612	2800	735	1.40	771	1.51	865	1.83	966	2.20	1061	2.59	1150	2.99	1234	3.40	1314	3.82	1393	4.27	1473	4.75		
3870	3000	783	1.71	816	1.82	899	2.14	993	2.53	1085	2.93	1171	3.35	1253	3.79	1331	4.23	1405	4.68	1479	5.16		
4128	3200	831	2.06	861	2.17	934	2.48	1023	2.90	1111	3.32	1194	3.75	1274	4.22	1350	4.68	1422	5.15	1492	5.64		
4386	3400	879	2.45	907	2.57	972	2.87	1055	3.30	1138	3.75	1219	4.20	1296	4.68	1370	5.17	1441	5.66	1509	6.16		
4644	3600	928	2.90	954	3.02	1013	3.32	1088	3.75	1167	4.22	1245	4.70	1320	5.19	1391	5.68	1461	6.21	1528	6.74		
4902	3800	977	3.40	1001	3.52	1055	3.82	1122	4.24	1198	4.74	1272	5.23	1345	5.74	1415	6.27	1482	6.80				

MAXIMUM RPM: Class I — 1273 Class II — 1528

Performance certified is for installation Type B & D: Free or ducted inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

Class I fans are shown in regular face type.
 Class II fans are shown in **boldface** type.
 Underlined figures indicate maximum static efficiencies.

Performance Data — VFBB

VFBB 16

Outlet Area - 1.57 ft² Wheel Dia. - 16.50 Inches Tip Speed - 4.32 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1256	00	324	0.10																				
1570	1000	343	0.14	448	0.23																		
1884	1200	366	0.20	464	0.31																		
2198	1400	395	0.28	483	0.39	634	0.65																
2512	1600	426	0.38	506	0.51	647	0.79	<u>773</u>	<u>1.10</u>														
2826	1800	462	0.51	532	0.65	665	0.95	780	1.27														
3140	2000	502	0.67	561	0.81	685	1.14	796	1.49	897	1.86												
3454	2200	543	0.87	592	1.01	708	1.36	814	1.74	910	2.13	1001	2.55										
3768	2400	585	1.11	627	1.24	733	1.62	834	2.01	927	2.44	1013	2.87	1096	3.33	<u>1180</u>	<u>3.84</u>						
4082	2600	628	1.39	664	1.52	760	1.91	856	2.33	946	2.78	1029	3.24	1107	3.71	<u>1184</u>	<u>4.21</u>	1262	4.76				
4396	2800	672	1.73	704	1.85	789	2.25	880	2.69	966	3.16	1047	3.65	1123	4.15	<u>1196</u>	<u>4.67</u>	<u>1267</u>	<u>5.20</u>	<u>1339</u>	<u>5.78</u>		
4710	3000	715	2.10	745	2.24	820	2.62	905	3.09	988	3.58	1066	4.09	1141	4.63	<u>1211</u>	<u>5.16</u>	<u>1279</u>	<u>5.72</u>	<u>1345</u>	<u>6.29</u>		
5024	3200	760	2.54	787	2.68	852	3.04	933	3.55	1012	4.06	1088	4.60	1160	5.15	<u>1229</u>	<u>5.72</u>	<u>1294</u>	<u>6.28</u>	<u>1357</u>	<u>6.87</u>		
5338	3400	804	3.02	829	3.17	887	3.52	962	4.05	1037	4.59	1110	5.14	1180	5.71	<u>1247</u>	<u>6.31</u>	<u>1312</u>	<u>6.92</u>	<u>1373</u>	<u>7.52</u>		
5652	3600	848	3.57	872	3.72	925	4.08	992	4.59	1063	5.16	1134	5.74	1202	6.34	1267	6.95	1330	7.59				
5966	3800	893	4.18	915	4.34	964	4.70	1024	5.20	1092	5.80	1159	6.41	1225	7.02	1288	7.65	1349	8.30				

MAXIMUM RPM: Class I — 1157 Class II — 1389

VFBB 18

Outlet Area - 1.92 ft² Wheel Dia. - 18.25 Inches Tip Speed - 4.78 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1536	800	293	0.11																				
1920	1000	313	0.16	406	0.26																		
2304	1200	339	0.23	421	0.34	<u>566</u>	<u>0.60</u>																
2688	1400	368	0.33	441	0.44	574	0.73																
3072	1600	399	0.46	466	0.58	587	0.88	697	1.22														
3456	1800	432	0.62	494	0.76	605	1.06	708	1.43	804	1.82												
3840	2000	466	0.81	524	0.97	626	1.28	722	1.66	812	2.08												
4224	2200	501	1.04	555	1.22	651	1.56	740	1.93	825	2.37	906	2.84	984	3.33								
4608	2400	536	1.31	587	1.51	677	1.87	761	2.26	842	2.71	918	3.20	992	3.72	<u>1064</u>	<u>4.25</u>	<u>1133</u>	<u>4.80</u>				
4992	2600	572	1.63	620	1.84	706	2.24	785	2.65	861	3.10	934	3.61	1004	4.15	<u>1072</u>	<u>4.71</u>	<u>1138</u>	<u>5.27</u>	<u>1203</u>	<u>5.87</u>		
5376	2800	609	2.01	654	2.23	736	2.67	811	3.10	883	3.56	952	4.06	1019	4.62	<u>1084</u>	<u>5.21</u>	<u>1147</u>	<u>5.81</u>	<u>1209</u>	<u>6.42</u>		
5760	3000	646	2.43	689	2.68	767	3.15	838	3.60	906	4.07	972	4.58	1036	5.14	<u>1099</u>	<u>5.76</u>	<u>1159</u>	<u>6.38</u>	<u>1291</u>	<u>7.04</u>		
6144	3200	683	2.91	724	3.18	799	3.69	867	4.17	932	4.67	995	5.19	1056	5.75	<u>1116</u>	<u>6.36</u>	<u>1174</u>	<u>7.00</u>	<u>1231</u>	<u>7.68</u>		
6528	3400	721	3.46	760	3.75	831	4.28	897	4.80	959	5.32	1019	5.86	1078	6.44	<u>1135</u>	<u>7.04</u>	<u>1191</u>	<u>7.69</u>	<u>1246</u>	<u>8.39</u>		
6912	3600	759	4.08	796	4.38	864	4.94	928	5.51	987	6.04	1045	6.61	1101	7.19	<u>1156</u>	<u>7.81</u>	<u>1210</u>	<u>8.46</u>				
7296	3800	797	4.76	832	5.07	898	5.68	959	6.27	1017	6.85	1072	7.43	1126	8.03	<u>1179</u>	<u>8.66</u>	<u>1230</u>	<u>9.30</u>				

MAXIMUM RPM: Class I — 1046 Class II — 1256

VFBB 20

Outlet Area - 2.30 ft² Wheel Dia. - 20.00 Inches Tip Speed - 5.24 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1840	800	268	0.13																				
2300	1000	286	0.19	371	0.31																		
2760	1200	309	0.28	384	0.41	<u>517</u>	<u>0.72</u>																
3220	1400	335	0.40	402	0.53	523	0.87																
3680	1600	364	0.55	425	0.70	535	1.05	636	1.46														
4140	1800	394	0.74	450	0.90	551	1.26	645	1.70	733	2.18												
4600	2000	424	0.96	477	1.15	571	1.53	659	1.99	741	2.49	819	3.02										
5060	2200	456	1.24	505	1.45	593	1.86	675	2.31	753	2.85	827	3.41	898	3.99								
5520	2400	488	1.57	535	1.80	617	2.23	694	2.71	767	3.23	838	3.84	905	4.45	<u>970</u>	<u>5.08</u>	<u>1034</u>	<u>5.75</u>				
5980	2600	521	1.95	565	2.20	643	2.67	716	3.17	785	3.71	852	4.32	916	4.97	<u>978</u>	<u>5.64</u>	<u>1038</u>	<u>6.31</u>	<u>1097</u>	<u>7.02</u>		
6440	2800	554	2.39	596	2.67	671	3.19	739	3.70	805	4.26	868	4.86	929	5.52	<u>989</u>	<u>6.24</u>	<u>1047</u>	<u>6.96</u>	<u>1103</u>	<u>7.69</u>		
6900	3000	588	2.90	627	3.19	699	3.76	764	4.30	826	4.87	886	5.48	945	6.15	<u>1002</u>	<u>6.88</u>	<u>1057</u>	<u>7.63</u>	<u>1112</u>	<u>8.42</u>		
7360	3200	622	3.48	659	3.79	728	4.40	790	4.97	849	5.56	907	6.20	963	6.87	<u>1017</u>	<u>7.59</u>	<u>1071</u>	<u>8.39</u>	<u>1123</u>	<u>9.20</u>		
7820	3400	656	4.12	692	4.47	757	5.11	817	5.72	874	6.35	929	7.00	982	7.67	<u>1035</u>	<u>8.42</u>	<u>1086</u>	<u>9.19</u>	<u>1136</u>	<u>10.02</u>		
8280	3600	691	4.86	724	5.21	787	5.90	845	6.56	900	7.23	952	7.88	1004	8.60	<u>1054</u>	<u>9.33</u>	<u>1103</u>	<u>10.10</u>				
8740	3800	725	5.66	758	6.06	818	6.78	874	7.49	926	8.16	977	8.87	1026	9.59	<u>1074</u>	<u>10.33</u>	<u>1122</u>	<u>11.14</u>				

MAXIMUM RPM: Class I — 955 Class II — 1146

Performance certified is for installation Type B & D: Free or ducted inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

Class I fans are shown in regular face type.
 Class II fans are shown in **boldface** type.
 Underlined figures indicate maximum static efficiencies.

Ventilating Sets BI & FC

Performance Data — VFBB

VFBB 22

Outlet Area - 2.85 ft² Wheel Dia. - 22.25 Inches Tip Speed - 5.83 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2280	800	241	0.16																				
2850	1000	257	0.24	333	0.39																		
3420	1200	278	0.35	345	0.50	<u>465</u>	<u>0.89</u>																
3990	1400	302	0.50	362	0.66	470	1.07																
4560	1600	327	0.68	382	0.86	481	1.30	572	1.81														
5130	1800	354	0.91	405	1.12	496	1.57	580	2.11	659	2.70												
5700	2000	382	1.20	429	1.43	513	1.90	592	2.46	666	3.09	736	3.73										
6270	2200	410	1.54	455	1.80	533	2.30	607	2.87	677	3.53	743	4.22	807	4.94								
6840	2400	439	1.94	481	2.23	555	2.77	624	3.35	690	4.02	753	4.76	814	5.53	872	6.30	929	7.12				
7410	2600	469	2.43	508	2.73	579	3.33	644	3.94	706	4.60	766	5.35	823	6.15	879	6.98	934	7.84	<u>986</u>	<u>8.69</u>		
7980	2800	499	2.98	536	3.31	603	3.95	665	4.60	724	5.28	780	6.01	835	6.84	889	7.73	941	8.62	991	9.51		
8550	3000	529	3.60	564	3.96	629	4.67	687	5.33	743	6.05	797	6.80	850	7.64	901	8.53	951	9.48	999	10.42		
9120	3200	560	4.33	593	4.71	655	5.47	711	6.19	764	6.92	815	7.68	866	8.53	915	9.43	963	10.40	1009	11.38		
9690	3400	591	5.14	622	5.53	681	6.34	735	7.11	786	7.88	835	8.68	883	9.52	930	10.41	976	11.38	1021	12.41		
10260	3600	622	6.05	652	6.48	708	7.32	760	8.14	809	8.95	856	9.78	903	10.67	948	11.58	992	12.54				
10830	3800	653	7.05	682	7.52	736	8.42	786	9.29	833	10.13	878	10.98	923	11.91	966	12.82	1009	13.81				

MAXIMUM RPM: Class I — 858 Class II — 1030

VFBB 24

Outlet Area - 3.45 ft² Wheel Dia. - 24.50 Inches Tip Speed - 6.41 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2760	800	218	0.20																				
3450	1000	233	0.29	302	0.47																		
4140	1200	252	0.42	313	0.61	<u>422</u>	<u>1.08</u>																
4830	1400	274	0.60	328	0.79	427	1.30																
5520	1600	297	0.82	347	1.05	437	1.57	519	2.19														
6210	1800	321	1.10	367	1.35	450	1.89	527	2.56	598	3.26												
6900	2000	346	1.45	389	1.72	466	2.30	538	2.98	605	3.74	669	4.53										
7590	2200	372	1.86	413	2.18	484	2.78	551	3.47	614	4.26	675	5.11	733	5.99								
8280	2400	399	2.36	436	2.69	504	3.36	567	4.07	626	4.85	684	5.76	739	6.69	792	7.63	844	8.62				
8970	2600	425	2.92	461	3.30	525	4.01	584	4.75	641	5.57	695	6.46	748	7.46	798	8.44	848	9.49	<u>896</u>	<u>10.54</u>		
9660	2800	452	3.58	486	3.99	547	4.76	603	5.54	657	6.38	708	7.27	758	8.27	807	9.35	854	10.42	900	11.51		
10350	3000	480	4.35	512	4.79	570	5.62	623	6.43	674	7.30	724	8.24	771	9.21	818	10.32	863	11.46	907	12.60		
11040	3200	508	5.23	538	5.69	594	6.59	645	7.47	693	8.35	740	9.29	786	10.31	830	11.38	874	12.57	916	13.77		
11730	3400	536	6.20	564	6.68	618	7.66	667	8.59	713	9.51	758	10.49	802	11.53	845	12.63	886	13.77	927	15.02		
12420	3600	564	7.29	591	7.81	642	8.83	690	9.85	734	10.81	777	11.82	819	12.87	860	13.98	900	15.13				
13110	3800	592	8.50	618	9.06	667	10.14	713	11.21	756	12.25	797	13.28	838	14.41	877	15.51	916	16.71				

MAXIMUM RPM: Class I — 780 Class II — 935

VFBB 27

Outlet Area - 4.19 ft² Wheel Dia. - 27.00 Inches Tip Speed - 7.07 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3352	800	191	0.23																				
4190	1000	203	0.33	265	0.54																		
5028	1200	219	0.47	273	0.70																		
5866	1400	237	0.66	286	0.91	375	1.51																
6704	1600	257	0.90	301	1.18	382	1.81	456	2.52														
7542	1800	278	1.20	318	1.50	392	2.17	462	2.96	525	3.75												
8380	2000	301	1.59	337	1.91	406	2.63	470	3.44	531	4.32	587	5.21										
9218	2200	324	2.04	357	2.38	421	3.16	480	3.98	538	4.93	593	5.92	643	6.87								
10056	2400	347	2.57	378	2.95	438	3.78	493	4.64	547	5.61	599	6.65	649	7.73	695	8.77						
10894	2600	371	3.21	400	3.61	455	4.46	508	5.40	558	6.38	607	7.45	655	8.60	701	9.77	744	10.91				
11732	2800	395	3.94	422	4.36	474	5.27	525	6.30	572	7.31	617	8.35	663	9.56	707	10.78	750	12.05	790	13.27	830	14.56
12570	3000	419	4.77	445	5.24	493	6.16	541	7.22	587	8.33	630	9.43	673	10.63	715	11.90	756	13.21	796	14.55	834	15.87
13408	3200	444	5.74	468	6.21	514	7.21	559	8.30	603	9.47	644	10.61	684	11.80	724	13.09	764	14.49	803	15.92	841	17.37
14246	3400	469	6.83	492	7.34	535	8.36	577	9.46	620	10.74	660	11.97	698	13.19	736	14.50	773	15.85	810	17.29	847	18.82
15084	3600	494	8.04	515	8.54	557	9.67	596	10.77	637	12.09	676	13.41	713	14.71	749	16.03	784	17.38	820	18.89		
15922	3800	519	9.39	539	9.92	579	11.10	617	12.29	655	13.58	693	14.99	729	16.37	763	17.70	797	19.12	831	20.61		

MAXIMUM RPM: Class I — 707 Class II — 849

Performance certified is for installation Type B & D: Free or ducted inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

Class I fans are shown in regular face type.
 Class II fans are shown in **boldface** type.
 Underlined figures indicate maximum static efficiencies.

Performance Data — VFBB

VFBB 30

Outlet Area - 5.17 ft² Wheel Dia. - 30.00 Inches Tip Speed - 7.85 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4136	800	172	0.28																				
5170	1000	183	0.41	239	0.67																		
6204	1200	197	0.58	246	0.86																		
7238	1400	213	0.81	257	1.12	337	1.85																
8272	1600	231	1.11	271	1.46	344	2.24	410	3.11														
9306	1800	250	1.48	286	1.85	353	2.69	416	3.65	473	4.64												
10340	2000	271	1.96	303	2.34	365	3.24	423	4.24	478	5.33	<u>528</u>	<u>6.41</u>										
11374	2200	291	2.51	321	2.93	379	3.90	432	4.91	484	6.07	<u>533</u>	<u>7.27</u>	579	8.49								
12408	2400	312	3.17	340	3.63	394	4.66	444	5.74	492	6.91	539	8.20	584	9.53	626	10.85						
13442	2600	334	3.97	359	4.42	410	5.53	457	6.66	502	7.87	546	9.18	589	10.58	631	12.06	670	13.48				
14476	2800	355	4.84	380	5.39	426	6.48	472	7.75	514	8.98	556	10.35	596	11.75	636	13.29	675	14.87	711	16.37	747	17.96
15510	3000	377	5.88	400	6.44	444	7.62	487	8.92	528	10.27	567	11.64	605	13.07	643	14.65	681	16.35	717	18.00	751	19.62
16544	3200	399	7.05	421	7.66	462	8.87	503	10.24	543	11.71	580	13.12	616	14.59	652	16.18	687	17.83	722	19.59	757	21.44
17578	3400	422	8.42	442	9.01	481	10.29	519	11.66	557	13.18	594	14.77	628	16.26	662	17.86	696	19.58	729	21.34	762	23.20
18612	3600	444	9.89	464	10.58	501	11.91	537	13.33	573	14.89	608	16.51	642	18.17	674	19.78	706	21.49	738	23.31		
19646	3800	467	11.58	485	12.24	521	13.69	555	15.14	589	16.72	623	18.44	656	20.19	687	21.87	717	23.56	748	25.45		

MAXIMUM RPM: Class I — 637 Class II — 764

VFBB 33

Outlet Area - 6.26 ft² Wheel Dia. - 33.00 Inches Tip Speed - 8.64 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5008	800	156	0.34																				
6260	1000	166	0.49	217	0.80																		
7512	1200	179	0.70	224	1.05																		
8764	1400	194	0.99	234	1.36	307	2.25																
10016	1600	210	1.34	247	1.78	312	2.69	373	3.77														
11268	1800	228	1.81	261	2.27	321	3.25	378	4.42	430	5.62												
12520	2000	246	2.36	276	2.86	332	3.93	384	5.11	434	6.43	<u>480</u>	<u>7.76</u>										
13772	2200	265	3.05	292	3.56	345	4.74	393	5.96	440	7.35	485	8.83	526	10.26								
15024	2400	284	3.85	309	4.39	358	5.63	404	6.97	447	8.35	490	9.93	531	11.54	569	13.13						
16276	2600	304	4.82	327	5.38	372	6.65	416	8.10	457	9.56	497	11.15	536	12.85	574	14.63	609	16.32				
17528	2800	323	5.88	345	6.50	387	7.83	429	9.37	468	10.92	505	12.49	542	14.24	579	16.16	614	18.03	647	19.88	679	21.74
18780	3000	343	7.13	364	7.81	403	9.18	443	10.82	480	12.43	515	14.05	550	15.83	585	17.78	619	19.78	652	21.81	683	23.78
20032	3200	363	8.55	383	9.29	420	10.73	457	12.37	493	14.12	527	15.86	560	17.67	593	19.62	625	21.63	657	23.78	688	25.94
21284	3400	384	10.22	402	10.92	438	12.52	472	14.13	507	16.02	540	17.88	571	19.69	602	21.64	633	23.74	663	25.87	693	28.12
22536	3600	404	12.00	422	12.82	455	14.38	488	16.12	521	18.04	553	20.02	583	21.93	613	23.98	642	26.03	671	28.23		
23788	3800	425	14.06	441	14.82	474	16.60	505	18.38	536	20.30	567	22.40	596	24.40	625	26.54	652	28.55	680	30.81		

MAXIMUM RPM: Class I — 579 Class II — 694

VFBB 36

Outlet Area - 7.66 ft² Wheel Dia. - 36.50 Inches Tip Speed - 9.56 x RPM

CFM	OV	0.25"		0.5"		1"		1.5"		2"		2.5"		3"		3.5"		4"		4.5"		5"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6128	800	141	0.41																				
7660	1000	150	0.60	196	0.98																		
9192	1200	162	0.86	202	1.28																		
10724	1400	175	1.20	211	1.66	277	2.74																
12256	1600	190	1.65	223	2.16	283	3.33	337	4.60														
13788	1800	206	2.21	236	2.78	290	3.97	342	5.42	389	6.89												
15320	2000	223	2.92	249	3.47	300	4.80	347	6.25	393	7.91	434	9.50										
16852	2200	240	3.75	264	4.35	312	5.81	355	7.28	398	9.01	438	10.77	476	12.59								
18384	2400	257	4.72	279	5.35	324	6.91	365	8.51	404	10.20	443	12.14	480	14.12	514	16.02						
19916	2600	275	5.90	296	6.61	337	8.19	376	9.90	413	11.69	449	13.62	484	15.67	519	17.90	550	19.91				
21448	2800	292	7.19	312	7.96	350	9.58	388	11.48	423	13.35	457	15.33	490	17.42	523	19.71	555	22.05	585	24.33	614	26.62
22980	3000	310	8.72	329	9.55	365	11.29	400	13.18	434	15.21	466	17.24	498	19.46	529	21.76	559	24.12	589	26.63	617	29.03
24512	3200	329	10.54	346	11.33	380	13.16	413	15.12	446	17.31	477	19.48	506	21.58	536	23.99	565	26.46	594	29.10	622	31.73
26044	3400	347	12.48	364	13.42	396	15.32	427	17.32	458	19.55	488	21.85	516	24.06	544	26.44	572	29.00	600	31.74	627	34.49
27576	3600	365	14.65	381	15.62	412	17.67	441	19.70	471	22.06	500	24.50	527	26.82	554	29.30	580	31.78	606	34.43		
29108	3800	384	17.17	399	18.17	428	20.24	456	22.40	484	24.75	512	27.30	539	29.88	565	32.46	590	35.02	615	37.73		

MAXIMUM RPM: Class I — 523 Class II — 628

Performance certified is for installation Type B & D: Free or ducted inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

Class I fans are shown in regular face type.
 Class II fans are shown in **boldface** type.
 Underlined figures indicate maximum static efficiencies.

Performance Data — VBBB

VBBB 12

Outlet Area - 0.86 ft² Wheel Dia. - 12.25 Inches Tip Speed - 3.21 x RPM Max. BHP = 0.076 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
688	800	869	0.05	1044	0.08	1335	0.17																
860	1000	994	0.07	1152	0.12	<u>1413</u>	<u>0.21</u>	1642	0.31														
1032	1200	1123	0.11	1271	0.16	1512	0.26	<u>1720</u>	<u>0.37</u>	1911	0.49												
1204	1400	1256	0.15	1397	0.21	1622	0.32	1816	0.45	<u>1992</u>	<u>0.58</u>	2317	0.87										
1376	1600	1396	0.20	1525	0.27	1738	0.40	1922	0.54	2088	0.68	<u>2390</u>	<u>0.98</u>	2671	1.33								
1548	1800	1539	0.27	1655	0.34	1861	0.49	2035	0.64	2193	0.79	2480	1.12	<u>2741</u>	<u>1.48</u>	2989	1.87						
1720	2000	1685	0.36	1790	0.43	1988	0.60	2154	0.76	2305	0.93	2578	1.27	<u>2827</u>	<u>1.65</u>	<u>3059</u>	<u>2.05</u>	3283	2.48	3500	2.94		
1892	2200	1834	0.46	1929	0.54	2116	0.72	2277	0.90	2421	1.08	2683	1.45	<u>2922</u>	<u>1.84</u>	<u>3144</u>	<u>2.26</u>	3355	2.71	3559	3.18	3758	3.67
2064	2400	1984	0.58	2072	0.66	2245	0.86	2403	1.06	2542	1.25	2794	1.65	3023	2.06	3238	2.50	3440	2.96	3633	3.44	3821	3.95
2236	2600	2135	0.72	2216	0.81	2377	1.01	2531	1.23	2667	1.44	2909	1.87	3131	2.31	3337	2.77	3533	3.25	3719	3.75	3898	4.27
2408	2800	2287	0.88	2363	0.98	2512	1.19	2659	1.42	2793	1.66	3028	2.11	3243	2.58	3442	3.06	3631	3.56	3812	4.08	3985	4.61
2580	3000	2439	1.07	2511	1.17	2650	1.40	2789	1.64	2921	1.89	3151	2.38	3358	2.88	3552	3.39	3735	3.90	3910	4.44	4079	5.00
2752	3200	2593	1.28	2660	1.39	2791	1.63	2922	1.88	3049	2.15	3276	2.68	3477	3.20	3665	3.74	3843	4.28	4013	4.83		
2924	3400	2746	1.52	2810	1.64	2934	1.89	3057	2.15	3179	2.43	3402	2.99	3599	3.55	3781	4.11	3955	4.69				
3096	3600	2901	1.79	2961	1.92	3078	2.17	3194	2.45	3310	2.74	3530	3.34	3723	3.93	3901	4.52	4070	5.12				
3268	3800	3055	2.09	3112	2.22	3224	2.49	3334	2.78	3444	3.08	3658	3.71	3849	4.34	4023	4.96						

MAXIMUM RPM: Class I — 3167 Class II — 4119 Selections above 4000 RPM not recommended. Consult Factory

VBBB 13

Outlet Area - 1.05 ft² Wheel Dia. - 13.50 Inches Tip Speed - 3.53 x RPM Max. BHP = 0.124 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
840	800	791	0.06	949	0.10	1213	0.20																
1050	1000	905	0.09	1048	0.14	<u>1285</u>	<u>0.25</u>	<u>1491</u>	<u>0.38</u>														
1260	1200	1022	0.13	1157	0.19	1375	0.32	<u>1563</u>	<u>0.45</u>	<u>1736</u>	<u>0.60</u>												
1470	1400	1144	0.18	1272	0.25	1475	0.40	1651	0.54	<u>1811</u>	<u>0.70</u>	2105	1.06										
1680	1600	1272	0.25	1388	0.33	1582	0.49	1748	0.65	1899	0.83	<u>2172</u>	<u>1.20</u>	2426	1.62								
1890	1800	1403	0.33	1508	0.42	1695	0.60	1851	0.78	1995	0.97	2254	1.37	<u>2490</u>	<u>1.80</u>	2715	2.28						
2100	2000	1537	0.44	1631	0.53	1810	0.73	1960	0.93	2097	1.14	2344	1.56	<u>2570</u>	<u>2.02</u>	<u>2780</u>	<u>2.50</u>	2982	3.03	3178	3.58		
2310	2200	1672	0.56	1758	0.66	1927	0.88	2073	1.10	2203	1.32	2441	1.78	<u>2657</u>	<u>2.26</u>	<u>2858</u>	<u>2.77</u>	3048	3.30	3233	3.87	3413	4.48
2520	2400	1809	0.71	1888	0.82	2045	1.05	2188	1.29	2314	1.53	2542	2.02	<u>2750</u>	<u>2.53</u>	<u>2944</u>	<u>3.06</u>	3126	3.62	3301	4.20	3472	4.82
2730	2600	1946	0.88	2020	1.00	2165	1.24	2304	1.51	2428	1.77	2647	2.29	2848	2.83	3035	3.39	3212	3.97	3380	4.57	3542	5.21
2940	2800	2085	1.09	2154	1.21	2289	1.47	2422	1.75	2543	2.03	2756	2.59	2950	3.16	3131	3.75	3302	4.35	3466	4.98	3622	5.64
3150	3000	2224	1.32	2289	1.45	2415	1.72	2541	2.02	2660	2.32	2868	2.92	3056	3.53	3231	4.14	3397	4.78	3555	5.42	3708	6.10
3360	3200	2364	1.58	2425	1.72	2544	2.00	2662	2.31	2777	2.64	2982	3.28	3164	3.92	3335	4.58	3496	5.24	3649	5.91		
3570	3400	2505	1.88	2562	2.02	2674	2.32	2785	2.64	2895	2.98	3098	3.68	3276	4.35	3441	5.04	3598	5.74				
3780	3600	2646	2.21	2700	2.36	2806	2.68	2910	3.01	3015	3.36	3214	4.10	3389	4.82	3550	5.54	3703	6.27				
3990	3800	2787	2.58	2838	2.74	2939	3.07	3038	3.41	3138	3.78	3331	4.56	3504	5.32	3661	6.08						

MAXIMUM RPM: Class I — 2874 Class II — 3738

VBBB 15

Outlet Area - 1.29 ft² Wheel Dia. - 15.00 Inches Tip Speed - 3.93 x RPM Max. BHP = 0.211 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1032	800	710	0.08	853	0.13	1091	0.20																
1290	1000	812	0.11	941	0.17	<u>1154</u>	<u>0.31</u>	1341	0.47														
1548	1200	917	0.16	1038	0.23	1235	0.39	<u>1405</u>	<u>0.56</u>	<u>1561</u>	<u>0.74</u>												
1806	1400	1026	0.22	1141	0.31	1325	0.49	1483	0.67	<u>1627</u>	<u>0.86</u>	1893	1.31										
2064	1600	1140	0.31	1245	0.40	1420	0.60	1570	0.80	<u>1706</u>	<u>1.01</u>	<u>1952</u>	<u>1.48</u>	2181	1.99								
2322	1800	1257	0.41	1352	0.51	1521	0.74	1662	0.96	1791	1.19	2026	1.68	<u>2238</u>	<u>2.21</u>	2441	2.80						
2580	2000	1377	0.53	1462	0.65	1624	0.90	1759	1.14	1882	1.39	2106	1.91	<u>2309</u>	<u>2.47</u>	<u>2499</u>	<u>3.08</u>	2682	3.72	2858	4.41		
2838	2200	1498	0.69	1576	0.81	1728	1.08	1860	1.35	1978	1.62	2192	2.18	<u>2387</u>	<u>2.77</u>	<u>2568</u>	<u>3.40</u>	2740	4.06	2907	4.76	3070	5.51
3096	2400	1621	0.87	1692	1.00	1834	1.28	1963	1.58	2077	1.88	2283	2.48	2470	3.10	2645	3.76	2809	4.44	2967	5.17	3121	5.93
3354	2600	1744	1.08	1811	1.22	1942	1.52	2067	1.85	2178	2.17	2376	2.81	2557	3.47	2726	4.15	2886	4.87	3037	5.62	3183	6.39
3612	2800	1868	1.32	1930	1.47	2052	1.79	2172	2.14	2282	2.49	2474	3.18	2649	3.88	2812	4.60	2966	5.34	3114	6.12	3255	6.92
3870	3000	1993	1.60	2051	1.76	2165	2.10	2279	2.46	2386	2.84	2574	3.58	2743	4.32	2902	5.08	3051	5.86	3194	6.66	3331	7.49
4128	3200	2118	1.92	2173	2.09	2280	2.44	2387	2.82	2491	3.22	2676	4.02	2840	4.80	2994	5.61	3139	6.42	3278	7.25		
4386	3400	2244	2.29	2295	2.46	2397	2.83	2497	3.22	2597	3.65	2779	4.49	2940	5.33	3089	6.17	3231	7.03				
4644	3600	2370	2.69	2419	2.88	2515	3.26	2609	3.67	2704	4.11	2884	5.02	3041	5.90	3186	6.78	3324	7.68				
4902	3800	2496	3.14	2543	3.34	2634	3.74	2724	4.17	2814	4.62	2988	5.57	3144	6.51	3286	7.44		</				

Performance Data - VBBB

VBBB 16

Outlet Area - 1.57 ft² Wheel Dia. - 16.50 Inches Tip Speed - 4.32 x RPM Max. BHP = 0.339 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1256	800	648	0.09	777	0.15	992	0.30																
1570	1000	741	0.14	858	0.21	<u>1051</u>	<u>0.38</u>	<u>1220</u>	<u>0.57</u>														
1884	1200	837	0.20	947	0.29	1125	0.47	<u>1279</u>	<u>0.68</u>	1421	0.90												
2198	1400	937	0.27	1041	0.38	1208	0.59	1351	0.81	<u>1482</u>	<u>1.05</u>	1722	1.59										
2512	1600	1041	0.37	1137	0.49	1295	0.73	1431	0.98	1554	1.24	<u>1778</u>	<u>1.80</u>	1985	2.42								
2826	1800	1149	0.50	1234	0.63	1387	0.90	1516	1.17	1633	1.45	1845	2.05	<u>2038</u>	<u>2.70</u>	2222	3.40						
3140	2000	1258	0.66	1335	0.79	1482	1.10	1604	1.39	1716	1.70	1919	2.33	<u>2103</u>	<u>3.01</u>	<u>2275</u>	<u>3.74</u>	2441	4.53	2601	5.36		
3454	2200	1369	0.84	1440	0.99	1577	1.32	1697	1.65	1803	1.98	1998	2.66	<u>2174</u>	<u>3.37</u>	<u>2339</u>	<u>4.14</u>	<u>2495</u>	<u>4.94</u>	<u>2646</u>	<u>5.80</u>	2793	6.69
3768	2400	1481	1.06	1546	1.22	1674	1.57	1791	1.94	1894	2.29	2081	3.03	2250	3.78	<u>2409</u>	<u>4.57</u>	<u>2559</u>	<u>5.41</u>	<u>2702</u>	<u>6.29</u>	<u>2841</u>	<u>7.21</u>
4082	2600	1594	1.33	1654	1.49	1773	1.86	1887	2.26	1987	2.65	2167	3.43	2331	4.23	<u>2484</u>	<u>5.06</u>	<u>2629</u>	<u>5.93</u>	<u>2766</u>	<u>6.84</u>	<u>2899</u>	<u>7.79</u>
4396	2800	1707	1.63	1764	1.81	1874	2.19	1983	2.62	2082	3.04	2256	3.88	<u>2415</u>	<u>4.73</u>	<u>2563</u>	<u>5.61</u>	<u>2702</u>	<u>6.50</u>	<u>2836</u>	<u>7.45</u>	<u>2964</u>	<u>8.42</u>
4710	3000	1822	1.97	1874	2.16	1977	2.57	2080	3.01	2177	3.47	2348	4.37	<u>2501</u>	<u>5.28</u>	<u>2645</u>	<u>6.20</u>	<u>2780</u>	<u>7.14</u>	<u>2910</u>	<u>8.12</u>	<u>3035</u>	<u>9.13</u>
5024	3200	1936	2.37	1986	2.57	2083	3.00	2179	3.46	2273	3.95	<u>2441</u>	<u>4.91</u>	<u>2590</u>	<u>5.87</u>	<u>2730</u>	<u>6.85</u>	<u>2862</u>	<u>7.84</u>	<u>2987</u>	<u>8.84</u>		
5338	3400	2051	2.81	2098	3.03	2190	3.48	2280	3.95	<u>2370</u>	<u>4.46</u>	<u>2536</u>	<u>5.50</u>	<u>2682</u>	<u>6.52</u>	<u>2817</u>	<u>7.54</u>	<u>2945</u>	<u>8.58</u>				
5652	3600	2166	3.31	2211	3.54	2298	4.01	<u>2383</u>	<u>4.50</u>	<u>2469</u>	<u>5.04</u>	<u>2631</u>	<u>6.13</u>	<u>2774</u>	<u>7.21</u>	<u>2906</u>	<u>8.29</u>	<u>3031</u>	<u>9.38</u>				
5966	3800	2282	3.87	2324	4.11	<u>2407</u>	<u>4.60</u>	<u>2488</u>	<u>5.11</u>	<u>2569</u>	<u>5.66</u>	<u>2727</u>	<u>6.82</u>	<u>2869</u>	<u>7.97</u>	<u>2997</u>	<u>9.09</u>						

MAXIMUM RPM: Class I — 2352 Class II — 3058

VBBB 18

Outlet Area - 1.92 ft² Wheel Dia. - 18.25 Inches Tip Speed - 4.78 x RPM Max. BHP = 0.552 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1536	800	569	0.10	695	0.17																		
1920	1000	651	0.15	757	0.24	<u>951</u>	<u>0.42</u>	1126	0.64														
2304	1200	741	0.22	831	0.32	1002	0.53	<u>1160</u>	<u>0.76</u>	<u>1306</u>	<u>1.02</u>												
2688	1400	835	0.31	914	0.42	1066	0.66	1208	0.91	<u>1342</u>	<u>1.19</u>												
3072	1600	933	0.43	1003	0.55	1138	0.81	1267	1.09	1391	1.39	<u>1621</u>	<u>2.03</u>										
3456	1800	1032	0.57	1096	0.71	1217	1.00	1335	1.30	1449	1.62	<u>1663</u>	<u>2.30</u>	1864	3.06								
3840	2000	1133	0.75	1191	0.91	1302	1.22	1409	1.55	1514	1.88	1714	2.61	1903	3.40	2081	4.24	2252	5.15				
4224	2200	1235	0.96	1288	1.13	1391	1.48	1489	1.83	1586	2.20	1773	2.96	1950	3.78	<u>2120</u>	<u>4.67</u>	<u>2282</u>	<u>5.60</u>	2437	6.58		
4608	2400	1338	1.22	1387	1.40	1482	1.78	1573	2.16	1663	2.55	1838	3.36	2005	4.22	<u>2165</u>	<u>5.13</u>	<u>2320</u>	<u>6.11</u>	<u>2469</u>	<u>7.13</u>	2612	8.18
4992	2600	1441	1.51	1487	1.71	1576	2.12	1661	2.53	1744	2.94	1908	3.81	2066	4.71	2218	5.66	<u>2365</u>	<u>6.67</u>	<u>2507</u>	<u>7.72</u>	<u>2645</u>	<u>8.81</u>
5376	2800	1545	1.85	1588	2.07	1671	2.50	1751	2.94	1829	3.39	1982	4.30	<u>2132</u>	<u>5.25</u>	<u>2276</u>	<u>6.25</u>	<u>2416</u>	<u>7.28</u>	<u>2553</u>	<u>8.38</u>	<u>2685</u>	<u>9.51</u>
5760	3000	1650	2.25	1689	2.47	1768	2.94	1843	3.41	1917	3.88	2061	4.86	<u>2202</u>	<u>5.85</u>	<u>2340</u>	<u>6.89</u>	<u>2473</u>	<u>7.97</u>	<u>2604</u>	<u>9.09</u>		
6144	3200	1754	2.69	1792	2.94	1865	3.43	1937	3.93	2007	4.43	<u>2143</u>	<u>5.46</u>	<u>2276</u>	<u>6.51</u>	<u>2407</u>	<u>7.59</u>	<u>2535</u>	<u>8.72</u>	<u>2660</u>	<u>9.88</u>		
6528	3400	1859	3.19	1895	3.46	1964	3.98	2032	4.50	2099	5.04	<u>2227</u>	<u>6.12</u>	<u>2354</u>	<u>7.23</u>	<u>2479</u>	<u>8.36</u>	<u>2601</u>	<u>9.53</u>	<u>2720</u>	<u>10.73</u>		
6912	3600	1965	3.76	1998	4.03	2064	4.59	2129	5.15	<u>2192</u>	<u>5.71</u>	<u>2315</u>	<u>6.85</u>	<u>2435</u>	<u>8.01</u>	<u>2554</u>	<u>9.20</u>	<u>2670</u>	<u>10.40</u>				
7296	3800	2070	4.39	2102	4.68	<u>2165</u>	<u>5.26</u>	<u>2226</u>	<u>5.85</u>	<u>2287</u>	<u>6.45</u>	<u>2404</u>	<u>7.64</u>	<u>2518</u>	<u>8.85</u>	<u>2631</u>	<u>10.09</u>						

MAXIMUM RPM: Class I — 2118 Class II — 2729

VBBB 20

Outlet Area - 2.30 ft² Wheel Dia. - 20.00 Inches Tip Speed - 5.24 x RPM Max. BHP = 0.872 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1840	800	519	0.12	634	0.21																		
2300	1000	593	0.18	690	0.28	<u>868</u>	<u>0.51</u>	1027	0.77														
2760	1200	675	0.27	758	0.38	914	0.63	<u>1058</u>	<u>0.91</u>	<u>1191</u>	<u>1.22</u>												
3220	1400	761	0.37	833	0.51	971	0.78	1102	1.09	<u>1224</u>	<u>1.42</u>												
3680	1600	849	0.51	914	0.66	1037	0.97	1155	1.30	1268	1.66	<u>1479</u>	<u>2.44</u>										
4140	1800	940	0.68	998	0.85	1109	1.20	1217	1.56	1321	1.94	<u>1517</u>	<u>2.76</u>	1700	3.66								
4600	2000	1031	0.89	1085	1.08	1186	1.46	1284	1.85	1380	2.25	1563	3.12	1735	4.07	1899	5.09	2054	6.17				
5060	2200	1124	1.15	1173	1.35	1267	1.77	1357	2.19	1445	2.62	1616	3.54	1778	4.53	<u>1933</u>	<u>5.59</u>	<u>2081</u>	<u>6.71</u>	2223	7.89		
5520	2400	1218	1.45	1263	1.67	1350	2.12	1433	2.58	1515	3.05	1675	4.02	1828	5.05	<u>1975</u>	<u>6.15</u>	<u>2116</u>	<u>7.32</u>	<u>2252</u>	<u>8.54</u>	2383	9.81
5980	2600	1312	1.80	1354	2.04	1435	2.53	1513	3.02	1589	3.52	1739	4.55	1883	5.64	<u>2022</u>	<u>6.78</u>	<u>2157</u>	<u>7.99</u>	<u>2287</u>	<u>9.25</u>	<u>2413</u>	<u>10.56</u>
6440	2800	1407	2.21	1446	2.47	1522	2.99	1595	3.52	1666	4.05	1806	5.14	<u>1943</u>	<u>6.28</u>	<u>2075</u>	<u>7.48</u>	<u>2203</u>	<u>8.72</u>	<u>2328</u>	<u>10.03</u>	<u>2449</u>	<u>11.39</u>
6900	3000	1502	2.68	1538	2.95	1610	3.51	1679	4.07	1746	4.64	1878	5.81	<u>2007</u>	<u>7.00</u>	<u>2133</u>	<u>8.25</u>	<u>2255</u>	<u>9.54</u>	<u>2374</u>	<u>10.88</u>	<u>2490</u>	<u>12.28</u>
7360	3200	1597	3.21	1631	3.50	1699	4.10	1764	4.69	1828	5.30	<u>1952</u>	<u>6.52</u>	<u>2074</u>	<u>7.78</u>	<u>2194</u>	<u>9.08</u>	<u>2311</u>	<u>10.43</u>	2425	1.8		
7820	3400	1692	3.81	1725	4.12	1789	4.75	1851	5.38	1911	6.02	<u>2029</u>	<u>7.31</u>	<u>2145</u>	<u>8.65</u>	<u>2259</u>	<u>10.00</u>	<u>2371</u>	<u>11.40</u>	2480	2.84		
8280	3600	1788	4.48	1819	4.81	1879	5.47	<u>1938</u>	<u>6.14</u>	<u>1996</u>	<u>6.82</u>	<u>2108</u>	<u>8.18</u>	<u>2218</u>	<u>9.57</u>	<u>2327</u>	<u>11.00</u>	<u>2434</u>	<u>12.45</u>				
8740	3800	1884	5.23	1913	5.58	<u>1971</u>	<u>6.28</u>	<u>2027</u>	<u>6.98</u>	<u>2082</u>	<u>7.69</u>	<u>2189</u>	<u>9.12</u>	<u>229</u>	<u>10.58</u>	<u>2398</u>	<u>12.08</u>						

MAXIMUM RPM: Class I — 1932 Class II — 2490

Performance certified for installation Type B & D: Free or ducted inlet, ducted outlet.
Performance ratings (bhp) do not include transmission losses.
Performance ratings do not include the effects of accessories.

Class I fans are shown in regular face type.
Class II fans are shown in **boldface** type.
Underlined figures indicate maximum static efficiencies.

Performance Data - VBBB

VBBB 22

Outlet Area - 2.85 ft² Wheel Dia. - 22.25 Inches Tip Speed - 5.83 x RPM Max. BHP = 1.49 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2280	800	466	0.15	570	0.26																		
2850	1000	533	0.23	621	0.35	<u>780</u>	<u>0.63</u>	923	0.95														
3420	1200	607	0.33	681	0.47	<u>822</u>	<u>0.78</u>	<u>951</u>	<u>1.13</u>	<u>1071</u>	<u>1.52</u>												
3990	1400	685	0.46	749	0.63	<u>874</u>	<u>0.97</u>	<u>991</u>	<u>1.35</u>	<u>1101</u>	<u>1.76</u>												
4560	1600	764	0.63	822	0.82	933	1.21	1039	1.62	1140	2.05	<u>1330</u>	<u>3.02</u>										
5130	1800	846	0.85	898	1.06	998	1.49	1094	1.93	1188	2.40	<u>1364</u>	<u>3.42</u>	<u>1528</u>	<u>4.53</u>								
5700	2000	928	1.11	976	1.34	1067	1.81	1155	2.29	1241	2.79	1405	3.87	1560	5.04	1707	6.30	1847	7.64				
6270	2200	1012	1.43	1055	1.68	1139	2.19	1220	2.71	1300	3.26	1453	4.39	1599	5.61	1738	6.92	1871	8.31	1999	9.78		
6840	2400	1096	1.80	1136	2.07	1214	2.63	1289	3.20	1363	3.78	1506	4.98	1644	6.27	1775	7.62	1902	9.06	2024	10.57	2142	12.15
7410	2600	1181	2.24	1218	2.53	1291	3.13	1361	3.74	1429	4.36	1564	5.64	1693	6.98	1818	8.40	1939	9.89	2056	11.46	2169	13.08
7980	2800	1266	2.75	1301	3.06	1369	3.71	1435	4.36	1499	5.02	1625	6.38	1747	7.78	1866	9.27	1981	10.81	2093	12.43	2202	14.12
8550	3000	1351	3.32	1384	3.67	1448	4.35	1510	5.05	1571	5.76	1689	7.20	1805	8.68	1918	10.22	2028	11.83	2135	13.50		
9120	3200	1437	3.99	1468	4.35	1528	5.08	1587	5.82	1644	6.56	1756	8.09	1866	9.66	1973	11.25	2078	12.93	2180	14.64		
9690	3400	1523	4.73	1552	5.11	1609	5.89	1665	6.68	1720	7.47	1825	9.07	1929	10.72	2032	12.40	2132	14.13	2230	15.92		
10260	3600	1609	5.57	1637	5.98	1691	6.79	1744	7.62	1796	8.46	1897	10.15	1995	11.87	2093	13.64	2189	15.43				
10830	3800	1696	6.50	1722	6.93	1773	7.79	1824	8.67	1874	9.55	1970	11.33	2064	13.14	2157	14.98						

MAXIMUM RPM: Class I — 1737 Class II — 2238

VBBB 24

Outlet Area - 3.45 ft² Wheel Dia. - 24.50 Inches Tip Speed - 6.41 x RPM Max. BHP = 2.40 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2760	800	423	0.18	517	0.31																		
3450	1000	484	0.27	563	0.42	<u>708</u>	<u>0.76</u>	838	1.15														
4140	1200	551	0.40	618	0.57	<u>746</u>	<u>0.95</u>	<u>863</u>	<u>1.37</u>	<u>972</u>	<u>1.84</u>												
4830	1400	621	0.56	680	0.76	<u>793</u>	<u>1.18</u>	<u>899</u>	<u>1.63</u>	<u>999</u>	<u>2.13</u>												
5520	1600	693	0.77	746	0.99	846	1.46	943	1.96	1035	2.49	<u>1207</u>	<u>3.65</u>										
6210	1800	767	1.03	815	1.28	905	1.79	993	2.33	1078	2.90	<u>1288</u>	<u>4.13</u>	<u>1388</u>	<u>5.49</u>								
6900	2000	842	1.34	885	1.62	968	2.19	1048	2.77	1126	3.38	1276	4.69	1416	6.10	<u>1550</u>	<u>7.63</u>	1677	9.25				
7590	2200	917	1.72	957	2.03	1034	2.65	1107	3.28	1180	3.94	1319	5.32	1452	6.80	1578	8.38	1699	10.07	1815	11.84		
8280	2400	994	2.18	1031	2.51	1101	3.17	1170	3.87	1237	4.57	1367	6.02	1492	7.58	1612	9.23	1727	10.97	1838	12.80	1945	14.71
8970	2600	1071	2.71	1105	3.06	1171	3.79	1235	4.53	1297	5.28	1419	6.82	1537	8.46	1651	10.18	1760	11.97	1867	13.88	1969	15.83
9660	2800	1148	3.32	1180	3.70	1242	4.48	1301	5.26	1360	6.07	1474	7.71	1586	9.43	1694	11.22	1798	13.07	1900	15.04	1999	17.08
10350	3000	1225	4.01	1255	4.42	1313	5.25	1370	6.10	1425	6.96	1532	8.70	1638	10.49	1741	12.37	1840	14.30	1938	16.33	2032	18.41
11040	3200	1303	4.81	1331	5.25	1386	6.13	1440	7.04	1492	7.94	1593	9.78	1693	11.67	1791	13.62	1886	15.64	1979	17.73		
11730	3400	1381	5.71	1408	6.18	1460	7.12	1510	8.06	1560	9.03	1656	10.97	1751	12.97	1844	15.00	1935	17.09	2024	19.26		
12420	3600	1459	6.72	1484	7.21	1534	8.21	1582	9.21	1629	10.22	1721	12.27	1810	14.35	1899	16.48	1986	18.65				
13110	3800	1538	7.85	1561	8.36	1608	9.41	1654	10.46	1699	11.53	1787	13.69	1872	15.87	1957	18.11						

MAXIMUM RPM: Class I — 1577 Class II — 2033

VBBB 27

Outlet Area - 4.19 ft² Wheel Dia. - 27.00 Inches Tip Speed - 7.07 x RPM Max. BHP = 4.05 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3352	800	380	0.22	457	0.36	592	0.72																
4190	1000	437	0.33	504	0.50	621	0.89	726	1.33														
5028	1200	498	0.48	557	0.69	661	1.11	<u>755</u>	<u>1.59</u>	<u>843</u>	<u>2.12</u>												
5866	1400	561	0.68	614	0.91	709	1.40	795	1.92	875	2.48	1026	3.75										
6704	1600	627	0.93	674	1.20	761	1.75	840	2.32	914	2.91	<u>1051</u>	<u>4.21</u>	1184	5.74								
7542	1800	693	1.24	736	1.54	816	2.15	890	2.78	959	3.43	1088	4.82	1206	6.32	1324	8.05	1449	10.16				
8380	2000	761	1.63	800	1.96	874	2.63	943	3.33	1007	4.02	1128	5.49	1241	7.08	<u>1346</u>	<u>8.77</u>	1452	10.68	1564	12.93		
9218	2200	829	2.08	865	2.45	934	3.19	998	3.94	1059	4.70	1174	6.30	1280	7.95	1381	9.72	1476	11.58	1572	13.64	1672	15.99
10056	2400	898	2.63	932	3.04	995	3.83	1056	4.65	1113	5.47	1222	7.17	1323	8.93	1419	10.77	1511	12.72	1598	14.74	1686	16.95
10894	2600	968	3.28	999	3.71	1058	4.57	1115	5.45	1169	6.33	1272	8.14	1369	10.02	1461	11.95	1549	13.97	1633	16.07	1714	18.25
11732	2800	1038	4.02	1066	4.47	1122	5.41	1176	6.35	1227	7.29	1325	9.22	1418	11.22	1506	13.26	1590	15.36	1671	17.53	1750	19.82
12570	3000	1108	4.87	1135	5.36	1187	6.36	1238	7.37	1287	8.38	1380	10.42	1469	12.53	1553	14.68	1634	16.88	1712	19.14	1788	21.49
13408	3200	1178	5.83	1203	6.35	1253	7.42	1301	8.50	1348	9.58	1437	11.75	1521	13.95	1602	16.21	1681	18.56	1756	20.91		
14246	3400	1248	6.91	1272	7.47	1320	8.62	1365	9.75	1409	10.88	1495	13.19	1576	15.53	1654	17.90	1729	20.32	1802	22.81		
15084	3600	1319	8.14	1342	8.74	1387	9.94	1430	11.14	1472	12.34	1554	14.77	1632	17.22	1707	19.72	1779	22.23				
15922	3800	1390	9.51	1412	10.14	1454	11.39	1495	12.65	1536	13.94	1614	16.48	1689	19.05	1762	21.70						

MAXIMUM RPM: Class I — 1397 Class II — 1803

Performance Data - VBBB

VBBB 30

Outlet Area - 5.17 ft² Wheel Dia. - 30.00 Inch Tip Speed - 7.85 x RPM Max. BHP = 6.86 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4136	800	342	0.27	411	0.45	533	0.89																
5170	1000	393	0.41	453	0.62	558	1.09	653	1.64														
6204	1200	448	0.59	501	0.84	595	1.38	680	1.96	758	2.61												
7238	1400	505	0.84	552	1.12	638	1.73	715	2.36	787	3.05	923	4.63										
8272	1600	564	1.15	606	1.47	684	2.15	756	2.86	823	3.60	946	5.20	1065	7.08								
9306	1800	624	1.53	662	1.90	734	2.65	801	3.44	863	4.24	979	5.94	1085	7.79	1192	9.95	1304	12.53				
10340	2000	685	2.01	720	2.42	786	3.24	848	4.09	906	4.96	1015	6.78	1117	8.75	1212	10.84	1307	13.18	1408	15.98		
11374	2200	746	2.57	778	3.02	840	3.93	898	4.86	953	5.80	1056	7.76	1152	9.81	1242	11.98	1329	14.31	1415	16.84	1505	19.75
12408	2400	808	3.24	838	3.74	895	4.72	950	5.73	1002	6.76	1099	8.84	1190	11.00	1277	13.29	1359	15.67	1438	18.18	1517	20.90
13442	2600	871	4.04	898	4.56	952	5.64	1003	6.71	1052	7.81	1145	10.05	1232	12.36	1314	14.73	1394	17.24	1470	19.85	1543	22.55
14476	2800	933	4.94	959	5.51	1010	6.68	1058	7.84	1104	8.99	1192	11.37	1276	13.84	1355	16.36	1430	18.92	1504	21.64	1575	24.46
15510	3000	996	5.99	1021	6.61	1068	7.84	1114	9.09	1158	10.33	1242	12.87	1321	15.43	1397	18.09	1470	20.82	1540	23.59	1609	26.51
16544	3200	1060	7.20	1083	7.85	1127	9.15	1171	10.49	1212	11.79	1293	14.49	1369	17.22	1442	20.02	1512	22.87	1580	25.79		
17578	3400	1123	8.53	1145	9.23	1187	10.62	1228	12.02	1268	13.43	1345	16.27	1418	19.15	1488	22.08	1556	25.08	1621	28.12		
18612	3600	1187	10.05	1207	10.77	1247	12.24	1286	13.72	1324	15.21	1398	18.21	1468	21.23	1536	24.33	1601	27.44				
19646	3800	1250	11.71	1270	12.50	1308	14.05	1345	15.60	1382	17.20	1452	20.32	1520	23.52	1585	26.75						

MAXIMUM RPM: Class I — 1257 Class II — 1623

VBBB 33

Outlet Area - 6.26 ft² Wheel Dia. - 33.00 Inches Tip Speed - 8.64 x RPM Max. BHP = 11.05 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5008	800	311	0.33	374	0.54	484	1.07																
6260	1000	357	0.49	412	0.75	508	1.33	594	1.99														
7512	1200	407	0.72	455	1.02	541	1.67	618	2.37	690	3.17												
8764	1400	459	1.01	502	1.36	580	2.09	650	2.86	716	3.70	839	5.60										
10016	1600	513	1.39	551	1.78	622	2.60	688	3.47	748	4.35	860	6.30	968	8.56								
11268	1800	567	1.85	602	2.30	668	3.22	728	4.16	785	5.14	890	7.19	987	9.45	1083	12.02	1186	15.19				
12520	2000	623	2.43	655	2.93	715	3.93	771	4.96	824	6.01	923	8.21	1015	10.57	1102	13.13	1188	15.95	1280	19.34		
13772	2200	679	3.12	708	3.66	764	4.77	817	5.89	867	7.04	960	9.39	1047	11.86	1130	14.53	1208	17.31	1286	20.37	1368	23.89
15024	2400	735	3.93	762	4.52	814	5.72	864	6.95	911	8.18	1000	10.72	1082	13.32	1161	16.09	1236	18.99	1308	22.04	1379	25.29
16276	2600	792	4.89	817	5.53	866	6.84	912	8.13	957	9.47	1041	12.17	1120	14.96	1195	17.84	1267	20.85	1336	24.00	1403	27.31
17528	2800	849	6.00	873	6.70	918	8.08	962	9.49	1004	10.89	1084	13.77	1160	16.75	1232	19.81	1301	22.95	1367	26.17	1432	29.61
18780	3000	906	7.26	929	8.02	972	9.52	1013	11.01	1053	12.51	1129	15.56	1202	18.73	1271	21.95	1337	25.23	1401	28.61	1463	32.10
20032	3200	964	8.72	985	9.51	1025	11.08	1065	12.71	1103	14.31	1176	17.56	1245	20.86	1311	24.23	1375	27.70	1437	31.25		
21284	3400	1022	10.36	1041	11.17	1080	12.88	1117	14.57	1153	16.26	1223	19.70	1290	23.22	1353	26.73	1415	30.38	1474	34.05		
22536	3600	1079	12.16	1098	13.06	1135	14.86	1170	16.64	1205	18.46	1271	22.04	1335	25.71	1397	29.48	1456	33.25				
23788	3800	1137	14.19	1155	15.14	1190	17.04	1224	18.94	1257	20.84	1321	24.65	1382	28.47	1441	32.37						

MAXIMUM RPM: Class I — 1143 Class II — 1475

VBBB 36

Outlet Area - 7.66 ft² Wheel Dia. - 36.50 Inches Tip Speed - 9.56 x RPM Max. BHP = 19.42 (RPM ÷ 1000)³

CFM	OV	0.25"		0.5"		1"		1.5"		2"		3"		4"		5"		6"		7"		8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6128	800	271	0.38	326	0.65	430	1.27																
7660	1000	312	0.57	359	0.89	445	1.58	527	2.37														
9192	1200	357	0.84	397	1.20	472	1.99	543	2.86	610	3.77												
10724	1400	404	1.19	439	1.60	505	2.48	567	3.41	628	4.44	744	6.63										
12256	1600	453	1.65	483	2.09	542	3.07	598	4.09	653	5.20	758	7.57	859	10.14								
13788	1800	502	2.21	529	2.70	582	3.77	633	4.89	683	6.08	779	8.62	871	11.33	961	14.26						
15320	2000	552	2.91	577	3.46	625	4.61	671	5.82	717	7.09	805	9.79	890	12.68	972	15.70	1053	18.93				
16852	2200	603	3.76	625	4.34	669	5.58	712	6.90	754	8.26	836	11.14	915	14.20	992	17.44	1066	20.75	1139	24.23	1215	28.13
18384	2400	654	4.76	674	5.38	715	6.73	754	8.11	793	9.58	869	12.62	943	15.85	1015	19.26	1085	22.79	1153	26.39	1221	30.22
19916	2600	705	5.94	724	6.62	761	8.02	798	9.52	835	11.10	906	14.34	975	17.72	1042	21.26	1108	24.97	1173	28.83	1236	32.73
21448	2800	756	7.29	774	8.03	809	9.54	843	11.10	877	12.75	944	16.20	1009	19.76	1073	23.51	1135	27.37	1196	31.37	1256	35.49
22980	3000	808	8.86	824	9.62	857	11.24	889	12.89	921	14.63	984	18.27	1045	22.00	1106	25.94	1165	29.99	1222	34.09	1279	38.39
24512	3200	859	10.62	875	11.46	906	13.17	936	14.91	966	16.73	1025	20.53	1083	24.47	1140	28.53	1197	32.81	1252	37.15		
26044	3400	911	12.63	926	13.52	955	15.32	984	17.18	1012	19.07	1068	23.06	1123	27.20	1177	31.44	1231	35.86	1283	40.32		
27576	3600	963	14.89	977	15.82	1005	17.74	1032	19.67	1059	21.67	1112	25.83	1164	30.15	1216	34.64	1266	39.11				
29108	3800	1015	17.40	1028	18.37	1054	20.35	1080	22.39	1106	24.51	1157	28.87	1206	33.33	1255	37.97						

MAXIMUM RPM: Class I — 995 Class II — 1283

Performance certified is for installation Type B & D: Free or ducted inlet, ducted outlet.
 Performance ratings (bhp) do not include transmission losses.
 Performance ratings do not include the effects of accessories.

Class I fans are shown in regular face type.
 Class II fans are shown in boldface type.
 Underlined figures indicate maximum static efficiencies.

VBBB Sound Calculations

The sound power levels published here have been determined by laboratory tests in accordance with AMCA Standard 300-96 and carry the AMCA Seal for VBBB fans. The sound power levels shown are decibel (dB) levels referred to 10⁻¹² watts. We have listed sound power levels for the eight octave bands with frequency range as shown below.

OCTAVE BAND	1	2	3	4	5	6	7	8
FREQUENCY	45 to	90 to	180 to	355 to	710 to	1400 to	2800 to	5600 to
CENTER	90	180	355	710	1400	2800	5600	11200
CTR. FREQUENCY	63	125	250	500	1000	2000	4000	8000

Sound power levels (SPL) of the fans can be easily obtained using Carnes Fan-C-Lect software selection. The SPL can also be obtained using specific sound power level method described below:

Sound Power Level of a fan = Specific Sound Power Level (L_{WK}) + Capacity Function (M)

Use of this method will be illustrated by the following example:

Calculate sound power levels for

Size..... VBBB36, SWSI Elevation..... 3000 ft.
 CFM..... 15500 RPM..... 893
 SP 2.5" w.g. OV 2024
 Temp 300°

1. How to determine L_{WK}

We have published values for L_{WK} at various speeds and operating points on pages C-315 through C-317. The operating point is a ratio of design CFM to the wide open volume (WOV). The WOV equals CFM for a given RPM at zero static pressure. WOV can be calculated by multiplying fan RPM by the factors (Rf) shown in the table. Thus, WOV volume for 893 RPM = 29.05 x 893 = 25,942 CFM.

Size	Rf for - VBBB SWSI
12	1.090
13	1.459
15	2.001
16	2.664
18	3.580
20	4.712
22	6.488
24	8.661
27	11.64
30	15.96
33	21.25
36	29.05

Therefore, operating point falls at 60% (15500 ÷ 25942) of the WOV. Referring to the L_{WK} table for Size VBBB 36, the specific sound power levels can be read as follows:

L_{WK} = 38 37 35 29 26 22 17 12

2. How to determine M

The value of M can be taken from the tables on page C-318 once Total Pressure (TP) is calculated.

Total Pressure (TP) = Static Pressure (SP) + Velocity Pressure (VP) (All pressure operating density.)

VP = (Outlet Velocity) ÷ 4005)² x density factor.

In our example VP = (2024 ÷ 4005)² x 0.625 = 0.16.

Therefore, TP = 2.5 + 0.16 = 2.66.

Thus, for 15500 CFM and 2.66" TP, M works out to be 51.

M can also be calculated using the formula, M = 10 log CFM + 20 log TP.

3. Combining L_{WK} and M gives sound power levels.

Thus, Octave Band

	1	2	3	4	5	6	7	8
SPL =	38	37	35	29	26	22	17	12
	<u>51</u>	<u>51</u>	<u>51</u>	<u>51</u>	<u>51</u>	<u>51</u>	<u>51</u>	<u>51</u>
	89	88	86	80	77	73	68	63

L_{wk} Value for Model VBBB - SWSI

Size 12 & 13

Sizes 15 & 16

RPM	% WOV	OCTAVE BAND							
		1	2	3	4	5	6	7	8
4200	90	36	45	47	50	48	46	44	38
	80	33	42	43	46	44	41	39	33
	70	31	41	42	45	42	39	37	31
	60	31	41	42	44	41	38	36	30
3900	90	37	46	47	50	48	46	44	37
	80	34	43	44	46	43	41	38	32
	70	32	42	42	45	42	39	36	29
	60	32	41	42	44	40	38	36	29
3600	90	38	46	48	50	47	46	43	36
	80	35	43	44	46	43	40	38	30
	70	33	42	43	45	41	38	36	28
	60	33	41	42	44	40	38	35	28
3300	90	39	46	48	50	47	46	42	35
	80	36	43	45	46	42	40	37	29
	70	35	42	43	45	40	38	35	27
	60	35	41	43	44	39	37	34	27
3000	90	41	46	49	50	46	45	42	34
	80	37	43	45	46	41	40	36	28
	70	36	42	44	45	39	38	34	26
	60	36	41	43	44	39	37	34	25
2700	90	43	47	50	50	47	46	42	34
	80	40	44	47	46	42	41	37	28
	70	39	42	45	44	40	39	35	26
	60	39	42	44	43	39	39	35	26
2400	90	46	48	51	50	48	48	43	34
	80	43	44	48	45	43	43	38	28
	70	41	43	46	43	41	41	36	26
	60	41	43	45	42	40	40	35	26
2100	90	48	49	51	50	49	49	43	33
	80	45	45	47	45	44	44	38	28
	70	43	44	46	43	42	42	36	26
	60	43	44	45	42	42	42	36	25
1800	90	49	51	51	50	51	49	42	32
	80	46	47	47	45	46	45	38	27
	70	44	46	45	43	44	43	36	25
	60	44	45	45	42	43	43	36	25
1500	90	50	52	50	51	52	49	41	31
	80	46	48	46	45	48	45	37	26
	70	45	47	44	43	46	44	35	24
	60	45	47	43	42	45	43	35	23
1200	90	51	53	51	53	54	49	39	29
	80	47	50	46	48	49	45	35	24
	70	46	48	43	45	48	44	33	22
	60	46	48	43	45	47	43	33	21
900	90	52	52	52	54	52	45	35	24
	80	48	47	46	49	49	41	30	19
	70	47	46	44	47	47	40	29	17
	60	47	45	43	46	47	39	28	17
900	90	52	52	52	54	52	45	35	24
	80	48	47	46	49	49	41	30	19
	70	47	46	44	47	47	40	29	17
	60	47	45	43	46	47	39	28	17
900	90	52	52	52	54	52	45	35	24
	80	48	47	46	49	49	41	30	19
	70	47	46	44	47	47	40	29	17
	60	47	45	43	46	47	39	28	17
900	90	52	52	52	54	52	45	35	24
	80	48	47	46	49	49	41	30	19
	70	47	46	44	47	47	40	29	17
	60	47	45	43	46	47	39	28	17
900	90	52	52	52	54	52	45	35	24
	80	48	47	46	49	49	41	30	19
	70	47	46	44	47	47	40	29	17
	60	47	45	43	46	47	39	28	17
900	90	52	52	52	54	52	45	35	24
	80	48	47	46	49	49	41	30	19
	70	47	46	44	47	47	40	29	17
	60	47	45	43	46	47	39	28	17

RPM	% WOV	OCTAVE BAND							
		1	2	3	4	5	6	7	8
3900	90	44	41	42	49	46	43	41	40
	80	44	40	39	44	41	38	35	34
	70	44	39	38	43	40	37	35	33
	60	44	39	38	42	38	36	34	32
3600	90	44	41	44	49	46	43	41	40
	80	43	39	40	44	40	38	35	34
	70	43	39	39	43	39	37	34	33
	60	43	39	38	42	38	35	33	32
3300	90	43	41	45	49	45	43	41	40
	80	43	39	41	44	39	37	35	34
	70	43	39	40	43	38	36	34	33
	60	43	39	39	42	37	35	33	32
3000	90	43	41	46	49	44	43	41	40
	80	42	39	42	44	39	37	35	34
	70	42	38	41	43	38	36	34	33
	60	42	38	40	42	37	35	33	32
2700	90	42	41	47	49	45	43	41	39
	80	41	38	42	44	39	38	36	34
	70	41	38	42	43	39	37	35	33
	60	41	38	40	41	37	36	34	32
2400	90	42	41	47	48	45	44	41	39
	80	40	38	42	43	40	39	36	34
	70	40	37	42	42	39	38	36	33
	60	40	37	40	41	38	37	35	32
2100	90	41	41	47	47	46	45	41	38
	80	39	38	42	42	41	40	37	33
	70	39	38	41	42	40	39	36	32
	60	39	37	40	40	39	38	35	31
1800	90	41	42	47	47	46	45	41	36
	80	39	39	42	42	42	41	36	31
	70	38	38	41	42	41	40	35	30
	60	38	38	40	40	40	39	35	29
1500	90	41	43	48	48	47	45	40	34
	80	38	39	43	43	43	41	35	29
	70	38	38	42	42	42	40	34	28
	60	38	38	41	41	41	40	33	27
1200	90	41	43	48	47	47	44	37	31
	80	38	39	44	44	44	41	33	26
	70	38	38	43	43	43	40	32	25
	60	38	38	42	42	43	39	31	24
900	90	41	45	48	47	47	41	34	28
	80	39	42	44	44	44	37	30	23
	70	38	41	43	43	43	37	29	22
	60	38	40	42	42	42	36	28	22
900	90	41	45	48	47	47	41	34	28
	80	39	42	44	44	44	37	30	23
	70	38	41	43	43	43	37	29	22
	60	38	40	42	42	42	36	28	22
900	90	41	45	48	47	47	41	34	28
	80	39	42	44	44	44	37	30	23
	70	38	41	43	43	43	37	29	22
	60	38	40	42	42	42	36	28	22
900	90	41	45	48	47	47	41	34	28
	80	39	42	44	44	44	37	30	23
	70	38	41	43	43	43	37	29	22
	60	38	40	42	42	42	36	28	22

Values shown are for inlet L_{wkI} specific sound power levels for: Installation Type B; free inlet, ducted outlet. Ratings do not include the effects of duct end correction.

Ventilating Sets BI & FC

L_{wk} Value for Model VBBB - SWSI

Size 18 & 24

Sizes 27 & 33

RPM	% WOV	OCTAVE BAND							
		1	2	3	4	5	6	7	8
3600	90	43	42	41	44	45	40	37	31
	80	41	40	38	39	41	36	33	27
	70	41	40	38	39	40	35	32	26
	60	41	40	37	38	39	33	30	24
	50	41	40	36	36	38	30	27	22
3300	90	43	42	41	44	45	40	37	30
	80	40	39	38	40	41	36	32	26
	70	40	39	38	40	40	35	31	25
	60	41	39	37	38	39	32	29	23
	50	41	39	36	37	38	29	26	21
3000	90	42	42	41	45	45	39	36	29
	80	40	39	38	40	40	35	31	25
	70	40	39	37	40	40	34	31	24
	60	41	39	37	39	38	32	28	22
	50	41	39	35	37	37	29	26	20
2700	90	42	42	41	45	44	39	35	28
	80	40	39	38	41	39	35	31	23
	70	40	39	37	40	39	34	30	23
	60	40	38	36	39	37	31	28	21
	50	41	38	35	38	35	29	25	19
2400	90	42	41	42	45	43	38	35	26
	80	40	38	38	41	38	34	30	22
	70	40	38	38	40	38	33	29	22
	60	40	38	36	39	36	31	27	20
	50	40	38	35	38	34	28	24	18
2100	90	43	42	43	45	42	38	34	25
	80	41	39	39	41	38	34	29	21
	70	41	39	39	40	37	33	28	21
	60	41	39	38	39	35	31	26	20
	50	41	38	37	37	32	28	24	18
1800	90	44	43	44	45	41	38	32	24
	80	41	40	40	41	37	33	28	20
	70	41	40	40	40	36	33	27	20
	60	41	39	39	38	34	31	25	19
	50	41	39	38	37	31	28	23	18
1500	90	45	44	45	44	41	37	30	22
	80	42	41	41	40	37	32	26	19
	70	42	41	40	40	36	32	26	18
	60	42	40	39	38	34	30	24	18
	50	42	40	38	35	31	28	23	17
1200	90	45	45	44	43	40	35	28	20
	80	43	41	40	39	36	31	25	17
	70	43	41	40	39	35	30	24	16
	60	43	41	39	36	33	29	23	16
	50	43	40	37	34	31	27	22	15
900	90	46	45	44	43	39	33	26	17
	80	43	41	40	39	34	29	22	13
	70	43	41	40	38	34	28	22	13
	60	43	40	38	36	32	27	21	13
	50	43	40	35	33	30	26	20	12
600	90	46	45	44	41	36	29	21	12
	80	42	41	40	36	31	25	17	8
	70	42	40	39	36	31	25	17	8
	60	42	39	37	34	29	24	16	8
	50	41	37	34	31	28	23	16	7

RPM	% WOV	OCTAVE BAND							
		1	2	3	4	5	6	7	8
3000	90	50	48	46	46	39	39	37	32
	80	45	44	43	43	35	35	32	28
	70	45	43	42	42	34	34	31	26
	60	42	40	40	40	30	30	27	22
	50	41	39	39	40	29	28	25	20
2700	90	50	47	46	46	39	39	37	31
	80	45	43	43	42	35	35	32	27
	70	45	42	42	42	34	33	30	25
	60	42	39	40	40	30	29	26	21
	50	41	38	39	39	29	28	24	19
2400	90	50	46	46	45	39	39	36	30
	80	45	42	43	41	35	34	31	26
	70	45	41	42	40	34	33	30	24
	60	42	39	40	38	30	29	25	20
	50	41	38	40	36	29	27	24	19
2100	90	50	46	46	43	39	39	35	29
	80	45	42	43	39	35	34	30	24
	70	45	41	42	38	34	33	29	23
	60	42	38	40	35	30	29	24	19
	50	41	37	40	34	29	27	23	18
1800	90	49	46	46	41	39	38	34	27
	80	45	42	43	37	35	33	29	23
	70	44	41	42	36	34	32	28	22
	60	41	39	40	33	30	28	23	18
	50	40	38	40	31	29	26	22	17
1500	90	48	46	47	40	39	37	32	25
	80	44	43	43	36	35	32	28	21
	70	43	42	42	35	34	31	26	20
	60	40	40	41	31	30	27	22	17
	50	39	39	40	29	28	25	21	16
1200	90	47	47	46	41	39	36	30	23
	80	43	44	42	38	35	32	26	20
	70	43	43	41	36	34	31	25	19
	60	41	42	39	33	30	27	22	17
	50	40	41	38	31	29	26	20	15
900	90	47	47	45	41	38	34	27	21
	80	44	44	42	38	34	30	24	19
	70	44	44	41	37	33	29	24	18
	60	43	42	38	33	30	27	21	16
	50	42	42	37	32	29	25	20	16
600	90	49	48	45	40	38	30	26	20
	80	45	44	41	35	33	27	22	16
	70	45	44	40	35	33	26	22	16
	60	44	42	38	32	31	24	20	14
	50	44	41	36	31	29	23	19	14
300	90	48	45	40	38	30	26	20	14
	80	44	41	35	33	27	22	16	10
	70	44	40	35	33	26	22	16	10
	60	42	38	32	31	24	20	14	9
	50	41	36	31	29	23	19	14	8

Values shown are for inlet L_{wk1} specific sound power levels for: Installation Type B; free inlet, ducted outlet. Ratings do not include the effects of duct end correction.

L_{wk} Value for Model VBBB - SWSI

Size 36

RPM	% WOV	OCTAVE BAND							
		1	2	3	4	5	6	7	8
2100	90	45	44	42	46	41	39	34	28
	80	40	39	37	41	36	33	29	22
	70	39	38	35	40	35	32	27	21
	60	38	36	32	36	31	28	23	18
	50	38	36	32	36	31	28	23	18
1800	90	45	43	43	46	40	38	33	26
	80	40	37	38	41	35	33	27	21
	70	39	37	37	40	33	31	26	20
	60	38	35	34	36	29	27	22	17
	50	38	35	34	36	29	27	22	17
1500	90	45	41	45	45	39	37	31	24
	80	39	36	41	41	34	31	26	19
	70	39	35	39	39	33	30	24	18
	60	38	32	36	36	29	26	20	15
	50	38	32	36	36	29	26	20	15
1200	90	45	41	46	43	39	35	29	21
	80	39	36	41	38	34	30	24	17
	70	39	35	40	37	32	28	22	16
	60	37	31	36	33	28	24	19	14
	50	37	31	36	33	28	24	19	14
900	90	46	46	45	39	37	32	26	18
	80	41	41	41	34	31	27	20	14
	70	40	40	40	33	30	26	20	13
	60	38	37	35	29	26	22	17	12
	50	38	37	35	29	26	22	17	12
600	90	48	47	42	37	34	28	21	14
	80	44	42	37	32	29	23	17	10
	70	43	41	36	30	28	22	16	10
	60	40	37	31	27	25	20	14	9
	50	40	37	31	27	25	20	14	9
300	90	47	41	37	34	28	21	15	8
	80	42	37	31	29	23	17	11	4
	70	41	35	30	28	22	16	10	4
	60	37	31	27	25	20	14	9	4
	50	37	31	27	25	20	14	9	4
100	90	38	35	31	24	17	11	4	-3
	80	33	29	25	19	13	7	0	-6
	70	32	28	24	19	13	6	0	-6
	60	28	25	22	17	12	6	1	-4
	50	28	25	22	17	12	6	1	-4

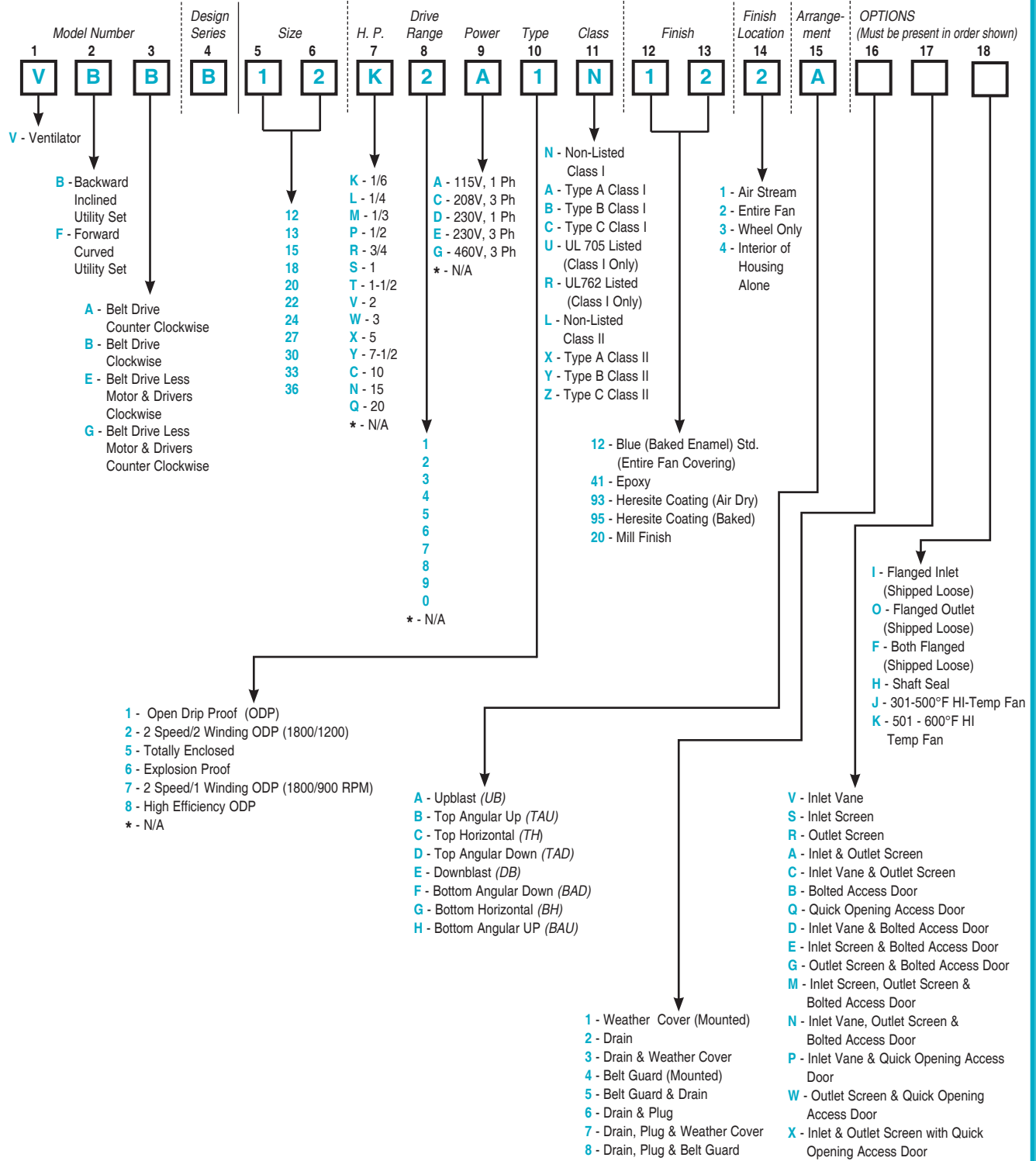
Values shown are for inlet L_{wkI} specific sound power levels for: Installation Type B; free inlet, ducted outlet. Ratings do not include the effects of duct end correction.

M Capacity Fraction

CFM	TOTAL PRESSURE AT DENSITY																		
	1/4	3/8	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	4-1/2	5	5-1/2	6	6-1/2
100	8	11	14	16	18	19	20	22	24	26	28	30	31	32	33	34	35	36	36
150	10	13	16	18	19	21	22	24	25	28	30	31	33	34	35	36	37	37	38
200	11	14	17	19	21	22	23	25	27	29	31	33	34	35	36	37	38	39	39
300	13	16	19	21	22	24	25	27	28	31	33	34	36	37	38	39	40	40	41
500	15	18	21	23	24	26	27	29	31	33	35	37	38	39	40	41	42	43	43
750	17	20	23	25	26	28	29	31	32	35	37	38	40	41	42	43	44	44	45
1000	18	21	24	26	28	29	30	32	34	36	38	40	41	42	43	44	45	48	46
1500	20	23	26	28	29	31	32	34	35	38	40	41	43	44	45	46	47	47	48
2000	21	24	27	29	31	32	33	35	37	39	41	43	44	45	46	47	48	49	49
3000	23	26	29	31	32	34	35	37	38	41	43	44	46	47	48	49	59	59	51
5000	25	28	31	33	34	36	37	39	41	43	45	47	48	49	50	51	52	53	53
7500	27	30	33	35	36	38	39	41	42	45	47	48	50	51	52	53	54	54	55
10000	28	31	34	36	38	39	40	42	44	46	48	50	51	52	52	54	55	56	56
15000	30	33	36	38	39	41	42	44	45	48	50	51	53	54	55	56	57	57	58
20000	31	34	37	39	41	42	43	45	47	49	51	53	54	55	56	57	58	59	59
30000	33	36	39	41	42	44	45	47	48	51	53	54	56	57	58	59	60	60	61
50000	35	38	41	43	44	46	47	49	51	53	55	57	58	59	60	61	62	63	63
75000	37	40	43	45	46	48	49	51	52	55	57	58	60	61	62	63	64	64	65
100000	38	41	44	46	48	49	50	52	54	56	58	60	61	62	63	64	65	66	66
150000	40	43	46	48	49	51	52	54	55	58	60	61	63	64	65	66	67	67	68
200000	41	44	47	49	51	52	53	55	57	59	61	63	64	65	66	67	68	69	69

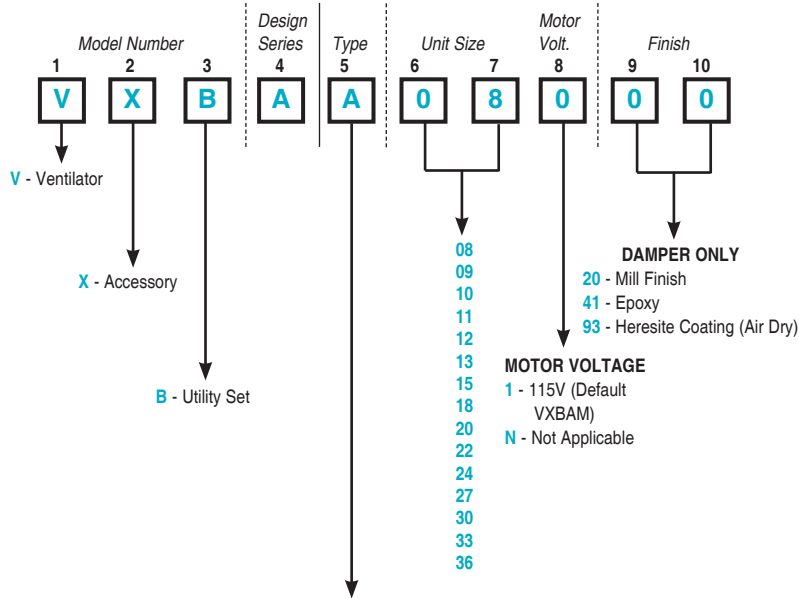
CFM	TOTAL PRESSURE AT DENSITY																		
	7	8	9	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
100	37	38	39	40	42	43	44	45	46	47	48	48	49	50	50	51	51	52	52
150	39	40	41	42	43	45	46	47	48	49	49	50	51	51	52	52	53	53	54
200	40	41	42	43	45	46	47	48	49	50	51	51	52	53	53	54	54	55	55
300	42	43	44	45	46	48	49	50	51	52	52	53	54	54	55	55	56	56	57
500	44	45	46	47	49	59	51	52	53	54	55	55	56	57	57	58	58	59	59
750	46	47	48	49	50	52	53	54	55	56	56	57	58	58	59	59	60	60	61
1000	47	48	49	50	52	53	54	55	56	57	58	58	59	60	60	61	61	62	62
1500	49	50	51	52	53	55	56	57	58	59	59	60	61	61	62	62	63	63	64
2000	50	51	52	53	55	56	57	58	59	60	61	61	62	63	63	64	64	65	65
3000	52	53	54	55	56	58	59	60	61	62	62	63	64	64	65	65	66	66	67
5000	54	55	56	57	59	60	61	62	63	64	65	65	66	67	67	68	68	69	69
7500	56	57	58	59	60	62	63	64	65	66	66	67	68	68	69	69	70	70	81
10000	57	58	59	60	62	63	64	65	66	67	68	68	69	70	70	71	71	72	72
15000	59	60	61	62	63	65	66	67	68	69	69	70	71	71	72	72	73	73	74
20000	60	61	62	63	65	66	67	68	69	70	71	71	72	73	73	74	74	75	75
30000	62	63	64	65	66	68	69	70	71	72	72	73	74	74	75	75	76	76	77
50000	64	65	66	67	69	70	71	72	73	74	75	75	76	77	77	78	78	79	79
75000	66	67	68	69	70	72	73	74	75	76	76	77	78	78	79	79	80	80	81
100000	67	68	69	70	72	73	74	75	76	77	78	78	79	80	80	81	81	82	82
150000	69	70	71	72	73	75	76	77	78	79	79	80	81	81	82	82	83	83	84
200000	70	71	72	73	75	76	77	78	79	80	81	81	82	83	83	84	84	85	85

Utility Sets



Ventilating Sets BI & FC

▼ Accessories



- A - Damper (Std.) —Automatic
- M - Damper (Std.) — Motorized
- R - Vibration Pads R-I-S
- S - Vibration Pads Spring
- G - Vibration Rails R-I-S
- H - Vibration Rails Spring
- C - Companion Flange Inlet
- F - Companion Flange Outlet
- N - Disconnect, 1 Phase, NEMA 1
- P - Disconnect, 3 Phase, NEMA 2
- V - Disconnect, 1 Phase, NEMA 3R
- W - Disconnect, 3 Phase, NEMA 3R
- B - Damper (HD) — Auto
- L - Damper (HD) — Motorized
- D - RIS Hangers
- E - Spring Hangers
- K - Weather Cover
- J - Belt Guard

K SERIES SIDEWALL PROPELLER FANS

The Carnes Sidewall Propeller Fan series Models LW/LM and LR/LN have been designed for quiet and efficient air flow performance with the lowest possible sound levels. Quality materials, components and manufacturing methods guarantee high standards of reliability and durability for commercial and light industrial applications.

For LW/LM sizes range from 20" through 48" diameter propellers with air flow capacities from 500 CFM to over 40,000 CFM and static pressures to 1" W.C. LR/LN sizes range from 24" through 60" diameter propeller with air flow capacities from 2,000 CFM to 70,000 CFM and static pressure to 1.25" W.C. All sizes are available in either exhaust or supply configurations.

ACCESSORIES AND OPTIONS

Carnes complete line of accessories enables a simple installation that will be attractive and reliable. Optional accessory packages should be specified for safety and weather protection. Corrosion resistant coatings and electrical accessories are also available. For the ultimate in ease of installation, factory assembly of the fan and most accessories is available. For specific information and pressure loss due to accessories, please refer to the accessories section near the end of this section. For complete details and specifications, please refer to the Carnes Submittal Sheets.

COMPUTERIZED PRODUCT SELECTION

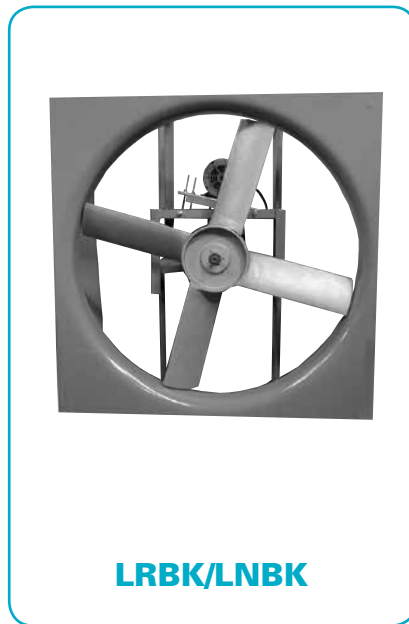
Carnes Fan-C-Lect™ is the user friendly product selection program that is the most efficient and effective method for selecting a fan. Complete fan performance ratings, as well as additional sound data and fan curves are conveniently viewed or printed.

Make the right choice with Carnes Fan-C-Lect™.

AMCA LICENSED RATINGS

All Carnes Models LWBK, LMBK, LRBK and LNBK propeller fans are licensed to bear the AMCA Certified Ratings Seal for sound and air performance. You may rest assured that cataloged performance is accurate and reliable.

The Carnes Company certifies that the Models LW, LM, LR, and LN 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.



FANS — Belt Drive Exhaust and Supply

MOTOR SERVICE FACTOR

Carnes sidewall propeller fans are designed with the motor located in the exhaust (or supply) airstream. This continuous flow of cooling air allows for operation above the name plate horsepower without damage due to overheating. For applications with Totally Enclosed or Explosion Proof motors, or with elevated airstream temperatures, lower motor loading is recommended.

SAFETY AND RELIABILITY

Each motorized unit is run-tested at the factory for assurance of quality and reliability. Optional UL-705 listing and Canadian cUL listing are available to further ensure electrical safety and reliability. Protective guards are strongly recommended and are required when the fan is within reach of occupants or personnel. The appropriate guards should be specified and ordered with the fan (or must be provided by the installer).

Please consult and comply with all applicable codes, guidelines and safe installation practices.

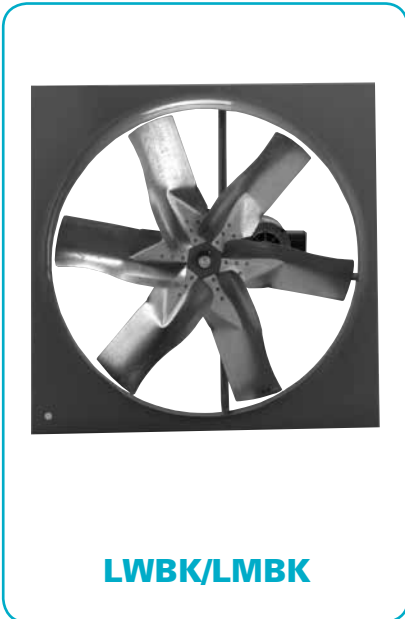
WARRANTY (General)

Carnes guarantees this equipment to be free from defects in material and workmanship for a period of one year from the date of shipment. Any parts which prove defective during the warranty period may, at our option, be repaired or replaced.

The motor is guaranteed by the motor manufacturer for a period of one year. Should the motor prove defective during this period, it should be returned to the nearest authorized motor warranty service station.

Carnes will not be responsible for any costs associated with removal, installation or freight.

For a complete statement of Carnes Warranty Terms and Conditions, please refer to the back side of your Carnes Invoice or Acknowledgement or contact Carnes or your local Carnes Representative.



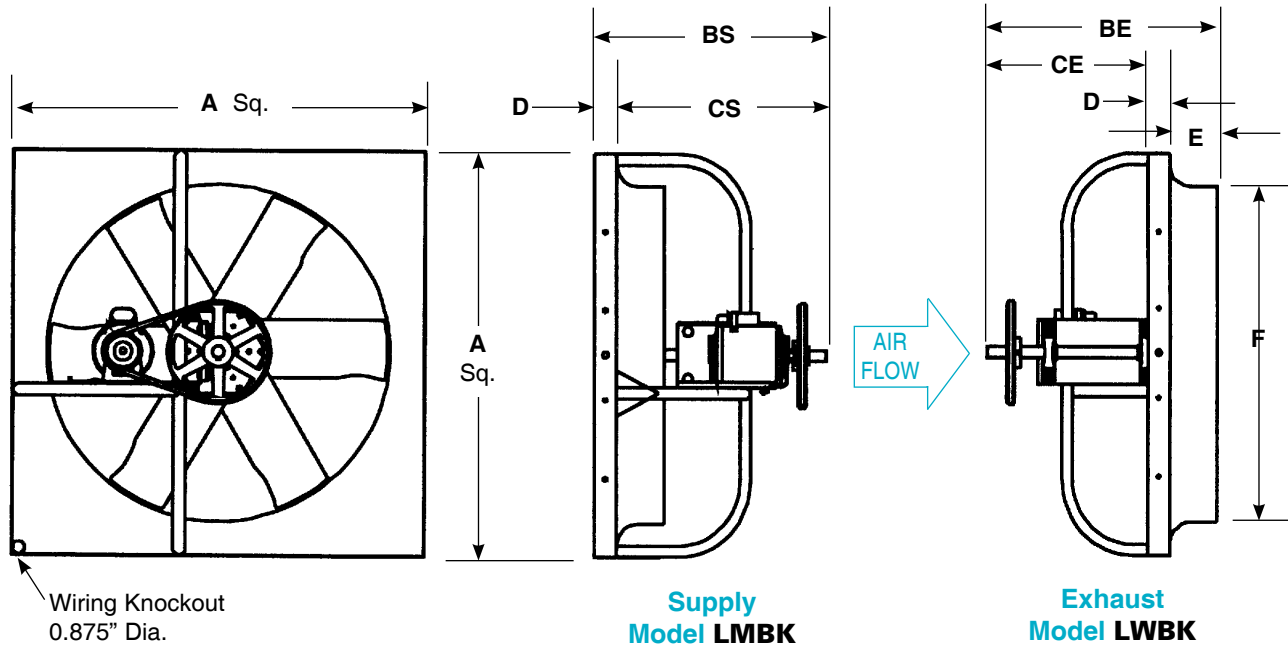
SIDEWALL PROPELLER FANS — Models LWBK, LMBK, LRBK, LNBK

CONSTRUCTION AND SPECIFICATIONS

LW/LM PROPELLER	Die formed galvanized steel blades (aluminum is optional) are fastened to a heavy steel hub which is keyed to the shaft. The assembled propeller is statically balanced for smooth operation.
LR/LN PROPELLER	The hub and blades are cast aluminum with airfoil shaped blades.
BEARINGS	Cast iron self aligning pillow block ball bearings with factory installed grease fittings have a minimum average life of two hundred thousand hours (L50 = 200,000 hrs).
SHAFT	Precision turned, ground and polished steel is keyed to the propeller and to the drive pulley. A corrosion inhibiting coating is applied after assembly.
PANEL	Single piece fan panel and venturi construction of galvanized material with welded corners has pre-punched mounting holes and electrical wiring knockout.
DRIVE FRAME	LWBK, LMBK
	All welded schedule 40 steel pipe frame construction.
	LRBK, LNBK
	All welded and bolted structural steel angle frame.
MOTOR PLATE	LWBK, LMBK
	The motor mounting plate and bearing support are formed from a single piece of heavy-gauge steel which is welded to the drive frame.
	LRBK, LNBK
	The motor mounting plate is heavy-gauge steel with dual “J” bolt adjustments to ensure consistent and proper drive belt tension.
MOTORS	Heavy-duty sealed ball bearing motors from nationally recognized manufactures. Open drip-proof (ODP) is standard. Two speed, explosion proof, totally enclosed and high efficiency motors are also available.
DRIVES	Cast iron construction, sized for a minimum of 150% of the installed motor HP and keyed to both the motor and the fan shaft. The motor sheave is adjustable for final system balancing. Belts are oil resistant, static free and are designed for a minimum of 25,000 hours average life. Two groove sheaves are standard for 3 HP and larger.
FACTORY RUN TEST	Every motorized unit is pre-set for the specified fan RPM and a factory run test is performed for quality assurance and reliability.
U.L. LISTED	For electrical safety and reliability - specify the optional UL-705 or Canadian cUL listing. Supply fans require the use of a totally enclosed motor for UL/cUL listing.
AMCA LICENSED	All units are licensed to bear the AMCA Certified Ratings Seal for sound and air performance.
PACKAGING	A fine product can be useless if it is damaged before it reaches its destination. Sturdy wood crating is utilized to help protect the buyer’s investment during shipment and handling.

Sidewall Propeller Fans

▼ DIMENSIONAL DATA



DIMENSIONS LISTED IN INCHES

Fan Size	A Panel Sq.	BE	BS	CE	CS	D	E	F Dia.	Weight (Lbs.) Less Motor
20	26	23-5/8	20	18	17-7/8	2-1/8	3-1/2	20-1/2	30
24	30	23-5/8	20	18	17-7/8	2-1/8	3-1/2	24-1/2	36
30	36	27-5/8	23	21	20-7/8	2-1/8	4-1/2	30-1/2	60
36	42	29-5/8	25	23	22-7/8	2-1/8	4-1/2	36-1/2	75
42	48	29-7/8	25	23	22-7/8	2-1/8	4-3/4	42-1/2	96
48	54	29-7/8	25	23	22-7/8	2-1/8	4-3/4	48-1/2	116

MATERIAL GAUGES & SHIPPING WEIGHT

Fan Size	Material Gauges						Drive Frame Pipe	Shaft Diameter (Inches)	Max. Motor Frame	Approx. Ship Weight (Lbs.)
	Panel Venturi	Bearing Mount	Motor Plate	Propeller						
				Hub Spider	Blades					
				Steel	Alum.					
20	16	10	10	12	—	.063	1" Dia. Sched. 40	0.75	145T	60
24	16	10	10	10	18	.063	1" Dia. Sched. 40	0.75	145T	75
30	16	10	10	10	18	.063	1" Dia. Sched. 40	1.00	145T	100
36	16	10	10	7	16	.080	1" Dia. Sched. 40	1.00	215T	120
42	16	10	10	7	14	.080	1" Dia. Sched. 40	1.00	215T	160
48	16	10	10	7	14	.080	1" Dia. Sched. 40	1.00	215T	195

Model LWBK/LMBK Size 20 - Belt Drive



SIDEWALL PROPELLER FAN
EXHAUST — LWBK
SUPPLY — LMBK

TIP SPEED = RPM x 5.23

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)															
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750					
1/6	K1	500	4.8	2062	777	420													
				0.05	0.06	0.06													
		550	5.2	2268	1101	804													
				0.06	0.07	0.08													
		625	6.0	2577	1565	1292	472												
				0.09	0.10	0.11	0.12												
		700	6.9	2886	2048	1757	1048	538											
				0.13	0.14	0.15	0.16	0.17											
		750	7.6	3093	2328	2077	1388	929	452										
				0.16	0.18	0.18	0.19	0.20	0.22										
1/4	L1	775	7.9	3196	2455	2239	1541	1117	654										
				0.18	0.19	0.20	0.21	0.22	0.23										
		800	8.2	3299	2580	2401	1690	1296	850										
				0.19	0.21	0.21	0.23	0.24	0.25										
		820	8.5	3381	2679	2508	1807	1437	1005										
				0.21	0.23	0.23	0.24	0.25	0.27										
		840	8.9	3464	2777	2611	1936	1561	1158	518									
				0.23	0.24	0.25	0.26	0.27	0.28	0.31									
		860	9.2	3546	2875	2712	2063	1683	1303	680									
				0.24	0.26	0.26	0.28	0.29	0.30	0.32									
1/3	M1	870	9.4	3587	2923	2762	2126	1744	1375	760	555								
				0.25	0.27	0.27	0.28	0.30	0.31	0.33	0.34								
		890	9.8	3670	3020	2862	2251	1863	1516	917	717								
				0.27	0.29	0.29	0.30	0.31	0.33	0.34	0.35								
		910	10.1	3752	3116	2962	2374	1981	1647	1071	875								
				0.29	0.30	0.31	0.32	0.33	0.35	0.37	0.37								
		930	10.5	3835	3214	3060	2504	2106	1771	1227	1030								
				0.31	0.32	0.33	0.34	0.35	0.37	0.39	0.39								
		950	10.9	3917	3312	3158	2636	2234	1892	1374	1185								
				0.33	0.34	0.35	0.36	0.37	0.39	0.41	0.41								
1/2	P1	970	11.2	4000	3410	3255	2765	2360	2012	1518	1338	598							
				0.35	0.37	0.37	0.39	0.39	0.41	0.43	0.44	0.47							
		1005	11.9	4144	3579	3424	2993	2578	2217	1764	1591	881							
				0.39	0.40	0.41	0.43	0.43	0.44	0.47	0.48	0.51							
		1035	12.5	4268	3723	3569	3161	2768	2411	1950	1802	1114							
				0.42	0.44	0.45	0.46	0.47	0.48	0.50	0.51	0.54							
		1065	13.1	4391	3867	3717	3315	2964	2601	2133	1990	1347							
				0.46	0.48	0.48	0.50	0.51	0.52	0.54	0.55	0.58							
		1095	13.7	4515	4009	3863	3467	3159	2788	2311	2173	1572	754						
				0.50	0.52	0.52	0.54	0.55	0.56	0.58	0.59	0.63	0.67						
3/4	R1	1120	14.3	4618	4127	3984	3592	3323	2941	2458	2323	1752	956						
				0.53	0.55	0.56	0.58	0.59	0.60	0.62	0.63	0.66	0.70						
		1160	15.3	4783	4314	4176	3791	3549	3206	2713	2558	2034	1268						
				0.59	0.61	0.62	0.64	0.65	0.65	0.66	0.68	0.72	0.76						
		1200	16.2	4948	4500	4367	3987	3753	3464	2966	2815	2282	1579	830					
				0.66	0.67	0.68	0.70	0.72	0.73	0.74	0.75	0.78	0.83	0.88					
		1240	17.1	5113	4685	4556	4181	3955	3723	3213	3067	2524	1872	1151					
				0.72	0.74	0.75	0.77	0.79	0.80	0.81	0.82	0.85	0.90	0.94					
		1280	18.1	5278	4869	4744	4373	4154	3935	3472	3315	2761	2156	1461					
				0.80	0.81	0.82	0.85	0.86	0.87	0.89	0.90	0.92	0.98	1.02					

CFM
BHP

Sidewall Propeller Fans

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Model LWBK/LMBK Size 24 - Belt Drive



SIDEWALL PROPELLER FAN
EXHAUST — LWBK
SUPPLY — LMBK

TIP SPEED = RPM x 6.28

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)														
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750				
1/4	L1	450	4.8	3111	1543	1285												
				0.09	0.09	0.10												
		520	6.1	3595	2608	1858	966											
				0.14	0.15	0.14	0.15											
		590	7.7	4079	3376	3021	1802	1192										
0.20	0.22			0.22	0.22	0.22												
655	9.3	4528	3918	3735	2329	1976	1417											
		0.27	0.29	0.30	0.29	0.30	0.30											
1/3	M1	675	9.8	4667	4082	3904	2896	2142	1700	689								
				0.30	0.32	0.32	0.33	0.32	0.33	0.35								
		695	10.3	4805	4245	4072	3165	2306	1973	1098								
				0.32	0.35	0.35	0.36	0.35	0.36	0.37								
		715	10.9	4943	4406	4238	3429	2467	2143	1361	1096							
0.35	0.38			0.38	0.39	0.38	0.39	0.40	0.40									
725	11.1	5012	4486	4320	3557	2546	2227	1491	1229									
		0.37	0.39	0.40	0.41	0.39	0.40	0.41	0.42									
1/2	P1	750	11.8	5185	4686	4526	3867	3100	2434	1834	1555							
				0.41	0.44	0.44	0.45	0.44	0.44	0.45	0.45							
		775	12.5	5358	4884	4729	4174	3511	2636	2185	1900							
				0.45	0.48	0.48	0.50	0.50	0.48	0.50	0.50							
		800	13.2	5531	5073	4931	4476	3842	2835	2401	2251	1234						
0.49	0.52			0.53	0.54	0.55	0.52	0.54	0.55	0.56								
825	14.0	5704	5260	5131	4694	4158	3523	2610	2470	1564								
		0.54	0.57	0.58	0.59	0.60	0.60	0.59	0.59	0.61								
3/4	R1	855	14.9	5911	5483	5370	4948	4526	3927	2855	2720	1960						
				0.60	0.64	0.64	0.66	0.67	0.67	0.65	0.65	0.67						
		885	15.7	6118	5705	5601	5199	4892	4320	3095	2965	2386	1200					
				0.67	0.70	0.71	0.73	0.73	0.75	0.71	0.72	0.74	0.77					
		915	16.7	6326	5926	5826	5448	5185	4693	3661	3205	2699	1652					
0.74	0.77			0.78	0.80	0.81	0.82	0.80	0.79	0.81	0.83							
1	S1	945	17.7	6533	6146	6049	5695	5440	5061	4244	3781	2950	2040					
				0.81	0.85	0.86	0.88	0.89	0.90	0.90	0.88	0.89	0.90					
		960	18.2	6637	6255	6160	5817	5566	5245	4444	4168	3074	2250	1099				
				0.85	0.89	0.90	0.92	0.93	0.94	0.95	0.94	0.93	0.95	0.95	0.99			
		990	19.1	6844	6474	6382	6060	5817	5575	4837	4570	3319	2675	1647				
0.93	0.97			0.98	1.01	1.02	1.02	1.05	1.04	1.01	1.04	1.04	1.06					
1020	20	7052	6693	6603	6302	6066	5830	5212	4964	3559	2992	2040						
		1.02	1.06	1.07	1.10	1.11	1.12	1.14	1.14	1.14	1.09	1.13	1.15					
1050	21	7259	6910	6823	6542	6313	6084	5578	5340	3977	3244	2442						
		1.11	1.16	1.17	1.19	1.20	1.22	1.23	1.24	1.24	1.20	1.22	1.24					
1-1/2	T1	1085	22	7501	7164	7079	6820	6599	6377	6004	5768	4818	3533	2937				
				1.23	1.27	1.28	1.32	1.33	1.34	1.35	1.36	1.36	1.33	1.37				
		1120	23	7743	7416	7334	7089	6882	6667	6345	6194	5284	3816	3300				
				1.35	1.40	1.41	1.44	1.45	1.47	1.48	1.49	1.51	1.45	1.49				
		1155	25	7985	7668	7589	7351	7163	6955	6642	6538	5734	4095	3594				
1.48	1.53			1.54	1.58	1.59	1.60	1.62	1.63	1.66	1.58	1.62						
1190	26	8227	7919	7842	7612	7442	7240	6937	6836	6166	5059	3882						
		1.62	1.67	1.68	1.72	1.74	1.75	1.77	1.77	1.80	1.79	1.76						

CFM
BHP

Sidewall Propeller Fans

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Model LWBK/LMBK Size 30 - Belt Drive



SIDEWALL PROPELLER FAN
EXHAUST — LWBK
SUPPLY — LMBK

TIP SPEED = RPM x 7.85

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)																	
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750							
1/4	L1	400	6.1	5445	3339	2296															
				0.16	0.17	0.16															
		430	7.0	5854	4243	3162	1335														
				0.19	0.21	0.21	0.21														
455	7.7	480	8.5	6194	4793	3984	2094														
				0.23	0.25	0.25	0.24														
1/3	M1	495	9.0	6534	5317	4726	2483	1458													
				0.27	0.29	0.29	0.28	0.30													
		510	9.4	6739	5563	5060	2709	2120													
				0.30	0.32	0.32	0.30	0.32													
525	9.9	540	10.5	6943	5808	5387	3018	2362	959												
				0.32	0.35	0.35	0.33	0.34	0.36												
1/2	P1	555	11.0	7147	6050	5710	3436	2596	1561												
				0.35	0.38	0.38	0.36	0.37	0.39												
		575	11.6	7351	6290	6000	3867	2827	2225												
				0.38	0.41	0.41	0.40	0.39	0.42												
3/4	R1	640	14.1	7555	6529	6246	4370	3051	2529												
				0.42	0.44	0.45	0.45	0.42	0.45												
		660	14.9	7828	6844	6571	5023	3509	2842	1266											
				0.46	0.49	0.50	0.51	0.47	0.48	0.52											
680	15.6	8100	7157	6893	5657	4061	3149	2103	1353												
		0.51	0.55	0.55	0.56	0.52	0.53	0.56	0.57												
1	S1	715	17.0	8372	7467	7212	6153	4703	3447	2737	2193										
				0.57	0.60	0.60	0.62	0.61	0.57	0.61	0.62										
		735	17.9	8713	7852	7607	6704	5523	4126	3133	2904										
				0.64	0.68	0.68	0.69	0.70	0.65	0.67	0.68										
755	18.7	8985	8157	7920	7136	6161	4690	3441	3221	1303											
		0.70	0.74	0.74	0.75	0.76	0.73	0.72	0.74	0.79											
1-1/2	T1	775	19.5	9257	8454	8231	7538	6710	5361	3741	3529	2115									
				0.77	0.81	0.81	0.82	0.83	0.84	0.78	0.79	0.84									
		805	21	9597	8822	8617	7949	7264	6176	4320	3904	3079									
				0.86	0.90	0.91	0.92	0.92	0.94	0.86	0.86	0.92									
2	V1	895	25	9734	8969	8771	8112	7483	6496	4598	4092	3238									
				0.89	0.94	0.94	0.95	0.96	0.97	0.90	0.90	0.95									
		920	26	10006	9262	9077	8436	7916	7125	5145	4653	3556									
				0.97	1.01	1.02	1.04	1.04	1.05	1.01	0.98	1.02									
2	V1	945	27	10278	9554	9374	8757	8341	7576	5819	5202	3865	2140								
				1.05	1.10	1.11	1.12	1.13	1.14	1.14	1.07	1.09	1.16								
		970	28	10550	9845	9669	9076	8671	8017	6479	5851	4169	3017								
				1.14	1.18	1.19	1.21	1.22	1.23	1.25	1.22	1.16	1.24								
2	V1	805	21	10959	10279	10110	9551	9161	8668	7440	6840	4734	3712								
				1.27	1.32	1.33	1.35	1.36	1.37	1.39	1.39	1.28	1.36								
		830	22	11299	10640	10476	9943	9564	9186	8155	7640	5430	4104	2464							
				1.40	1.45	1.46	1.48	1.49	1.50	1.52	1.52	1.41	1.46	1.54							
2	V1	855	23	11639	10999	10840	10332	9965	9597	8711	8373	6155	4487	3569							
				1.53	1.58	1.59	1.62	1.63	1.63	1.65	1.66	1.61	1.57	1.66							
		880	24	11980	11358	11203	10719	10362	10005	9259	8930	6992	4861	4037							
				1.66	1.72	1.73	1.76	1.77	1.78	1.79	1.80	1.82	1.68	1.77							
2	V1	895	25	12184	11572	11420	10950	10599	10248	9583	9260	7485	5151	4274							
				1.75	1.80	1.82	1.85	1.86	1.87	1.88	1.89	1.92	1.76	1.85							
		920	26	12524	11929	11781	11333	10992	10650	10118	9803	8289	5851	4662							
				1.90	1.96	1.97	2.01	2.02	2.03	2.04	2.05	2.08	1.92	1.97							
2	V1	945	27	12865	12285	12141	11708	11382	11050	10551	10340	9077	6536	5043							
				2.06	2.12	2.13	2.17	2.19	2.19	2.21	2.21	2.24	2.11	2.10							
		970	28	13205	12640	12500	12078	11770	11446	10960	10799	9676	7355	5414							
				2.23	2.29	2.30	2.34	2.36	2.37	2.38	2.39	2.42	2.40	2.24							

CFM
BHP

Sidewall Propeller Fans

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Model LWBK/LMBK Size 36 - Belt Drive



SIDEWALL PROPELLER FAN
EXHAUST — LWBK
SUPPLY — LMBK

TIP SPEED = RPM x 9.42

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)																				
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750										
1/3	M1	350	7.4	7975	5711	3954	1984																	
				0.23	0.26	0.25	0.30																	
		365	7.8	8317	6184	4635	2618																	
				0.26	0.30	0.28	0.33																	
		380	8.3	8659	6648	5837	3298	1757																
0.30	0.33			0.34	0.36	0.39																		
390	8.7	8887	6953	6344	3726	2162																		
				0.32	0.36	0.37	0.38	0.41																
		9342	7553	6974	4221	3015	1685																	
1/2	P1	410	9.4	0.38	0.41	0.42	0.42	0.47	0.50															
				9798	8101	7590	4702	3915	2487															
		430	10.2	0.43	0.47	0.48	0.47	0.52	0.55															
				10254	8633	8194	5171	4514	3343															
		450	11.1	0.50	0.54	0.54	0.52	0.57	0.62															
10710	9158			8769	6811	5000	4243	2325	1814															
0.57	0.61			0.61	0.63	0.62	0.68	0.73	0.76															
3/4	R1	485	12.8	11051	9548	9171	7613	5358	4748	2962	2386													
				0.62	0.67	0.67	0.70	0.67	0.72	0.79	0.80													
		495	13.3	11279	9806	9437	8078	5593	4995	3383	2807													
				0.66	.071	0.71	0.75	0.70	0.75	0.83	0.84													
		505	13.8	11507	10063	9701	8395	5825	5239	3824	3232													
0.70	0.75			0.76	0.79	0.73	0.79	0.87	0.89															
11735	10319			9964	8708	6370	5481	4277	3651															
1	S1	530	15.1	12077	10701	10356	9174	7859	5839	4943	4332	2202												
				0.81	0.86	0.87	0.90	0.91	0.87	0.96	0.99	1.07												
		545	15.9	12418	11081	10746	9634	8657	6191	5376	5000	2774												
				0.88	0.93	0.94	0.97	1.00	0.93	1.02	1.05	1.13												
		560	16.7	12760	11459	11133	10088	9240	6538	5746	5481	3419												
0.96	1.01			1.02	1.05	1.08	0.99	1.08	1.11	1.21														
13102	11835			11517	10538	9712	8308	6109	5852	4049														
1-1/2	T1	600	18.7	13672	12458	12153	11239	10486	9640	6703	6457	5177	2746											
				1.18	1.24	1.25	1.28	1.30	1.33	1.25	1.29	1.42	1.54											
		625	19.8	14241	13076	12784	11907	11246	10486	7284	7048	6101	3775											
				1.33	1.40	1.41	1.44	1.46	1.49	1.37	1.41	1.55	1.69											
		650	21	14811	13690	13410	12567	11994	11263	9673	7833	6717	4847	2731										
1.50	1.56			1.58	1.61	1.63	1.66	1.68	1.56	1.68	1.86	1.98												
15381	14301			14032	13220	12678	12027	10972	10187	7318	5974	3722												
2	V1	690	23	168	1.75	1.76	1.80	1.82	1.85	1.90	1.88	1.82	2.01	2.14										
				15722	14666	14403	13609	13079	12480	11447	10983	7674	6602	4363										
		705	24	1.79	1.86	1.88	1.91	1.94	1.96	2.01	2.02	1.91	2.11	2.27										
				16064	15030	14773	13996	13477	12929	11918	11582	8025	6976	4991										
		720	24	1.91	1.98	2.00	2.04	2.06	2.09	2.14	2.15	2.01	2.20	2.39										
16406	15394			15141	14381	13873	13366	12385	12055	8372	7345	5672												
2.03	2.11			2.13	2.17	2.19	2.21	2.27	2.28	2.10	2.31	2.50												
735	25	16748	15756	15509	14764	14267	13770	12847	12524	10049	7710	6347												
		2.16	2.24	2.26	2.30	2.32	2.35	2.40	2.42	2.37	2.41	2.61												

CFM
BHP

Sidewall Propeller Fans

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Model LWBK/LMBK Size 42 - Belt Drive



SIDEWALL PROPELLER FAN
EXHAUST — LWBK
SUPPLY — LMBK

TIP SPEED = RPM x 10.99

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)																			
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750									
1/3	M1	275	7.3	9926	6463	4887																	
				0.32	0.32	0.32																	
		285	7.6	10287	7045	5494	1853																
				0.35	0.36	0.35	0.38																
		290	7.7	10467	7331	5918	2128																
				0.37	0.38	0.37	0.39																
295	7.9	10648	7614	6337	2400																		
		0.39	0.40	0.40	0.41																		
1/2	P1	310	8.4	11189	8416	7375	3488																
				0.46	0.47	0.46	0.47																
		320	8.8	11550	8918	7954	4436	2147															
				0.50	0.51	0.51	0.51	0.53															
		330	9.3	11911	9412	8523	5206	2693															
				0.55	0.56	0.56	0.56	0.57															
340	9.8	12272	9900	9075	5757	3414																	
		0.60	0.61	0.62	0.60	0.62																	
3/4	R1	355	10.7	12813	10610	9832	6563	4673	2597														
				0.68	0.70	0.70	0.68	0.70	0.72														
		365	11.4	13174	11051	10328	7332	5600	3182														
				0.74	0.76	0.76	0.74	0.76	0.77														
		375	11.9	13535	11487	10819	8170	6156	3929														
				0.81	0.82	0.82	0.81	0.81	0.83														
390	12.9	14076	12135	11545	9205	6970	5235	2523															
		0.91	0.92	0.93	0.92	0.91	0.93	0.97															
1	S1	400	13.6	14437	12564	12000	9787	7507	6143	3072	2450												
				0.98	0.99	1.00	1.00	0.99	1.00	1.03	1.05												
		410	14.3	14798	12989	12439	10360	8359	6700	3703	3003												
				1.05	1.07	1.07	1.08	1.06	1.07	1.09	1.11												
		420	14.9	15159	13412	12875	10926	9196	7246	4447	3564												
				1.13	1.15	1.15	1.16	1.14	1.14	1.16	1.18												
430	15.6	15520	13833	13308	11476	9936	7784	5223	4314														
		1.22	1.23	1.24	1.25	1.23	1.21	1.24	1.25														
1-1/2	T1	445	16.7	16062	14459	13952	12234	10814	8807	6744	5488												
				1.35	1.37	1.37	1.38	1.37	1.35	1.37	1.38												
		460	17.7	16603	15081	14591	12981	11675	10066	7579	6988	3445											
				1.49	1.51	1.51	1.52	1.52	1.50	1.50	1.52	1.57											
		475	18.8	17144	15699	15224	13717	12520	11118	8394	7823	4393											
				1.64	1.66	1.66	1.67	1.68	1.67	1.64	1.65	1.69											
490	19.8	17686	16298	15852	14444	13300	11992	9203	8639	5503													
		1.80	1.82	1.82	1.84	1.84	1.83	1.82	1.80	1.84													
2	V1	500	20	18047	16687	16269	14915	13802	12566	10057	9173	6395	3062										
				1.91	1.93	1.94	1.95	1.96	1.95	1.91	1.91	1.95	2.05										
		515	21	18588	17268	16891	15576	14548	13416	11313	10268	7853	3890										
				2.09	2.11	2.12	2.13	2.13	2.14	2.11	2.09	2.13	2.20										
		525	22	18949	17654	17303	16013	15040	13972	12072	11110	8411	4455										
				2.21	2.23	2.24	2.25	2.26	2.27	2.25	2.23	2.24	2.30										
539	23	19454	18193	17877	16621	15722	14682	12895	12269	9180	5503												
		2.40	2.42	2.42	2.44	2.44	2.45	2.44	2.43	2.41	2.46												
3	W1	555	24	20032	18807	18501	17311	16493	15483	13820	13220	10042	6729	3759									
				2.62	2.64	2.64	2.66	2.67	2.67	2.67	2.66	2.61	2.67	2.78									
		575	26	20754	19571	19276	18165	17380	16470	14955	14376	11413	8735	4872									
				2.91	2.93	2.94	2.95	2.96	2.97	2.97	2.97	2.91	2.96	3.02									
		595	27	21476	20333	20047	19011	18253	17443	16029	15510	13090	9847	6364									
				3.22	3.25	3.25	3.27	3.28	3.29	3.30	3.30	3.26	3.25	3.31									
615	29	22197	21092	20816	19851	19117	18383	17036	16580	14457	10933	8106											
		3.56	3.58	3.59	3.61	3.62	3.63	3.64	3.64	3.62	3.56	3.63											

CFM
BHP

Sidewall Propeller Fans

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Sound ratings are loudness values in fan sones at 5 feet (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: Free inlet hemispherical sone levels. For additional sound data and for selections at other static pressures, please refer to the Carnes Fan-C-Lect computerized selection program.

Model LWBK/LMBK Size 48 - Belt Drive



SIDEWALL PROPELLER FAN
EXHAUST — LWBK
SUPPLY — LMBK

TIP SPEED = RPM x 12.57

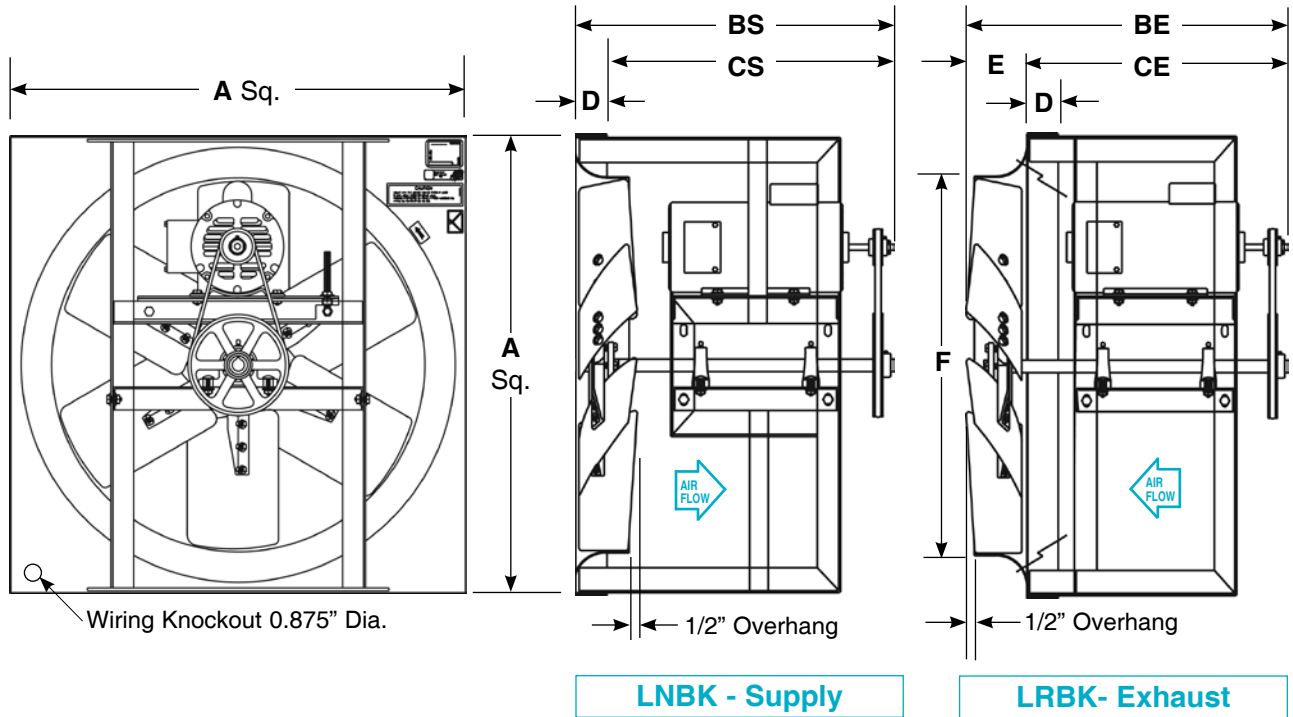
Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)															
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750					
1/2	P1	250	7.9	13413	8235	5337													
				0.39	0.41	0.43													
		265	8.5	14218	10242	7815	2536												
				0.46	0.49	0.49	0.56												
3/4	R1	275	8.9	14755	11017	8780	3017												
				0.52	0.55	0.55	0.61												
		285	9.4	15291	11742	9911	3485												
				0.58	0.61	0.61	0.67												
1	S1	290	9.6	15560	12101	10599	3999	2526											
				0.61	0.64	0.65	0.70	0.75											
		300	10.0	16096	12810	11769	5098	3016											
				0.67	0.71	0.72	0.76	0.81											
1-1/2	T1	310	10.7	16633	13510	12503	6126	3493											
				0.74	0.78	0.79	0.82	0.88											
		315	11.1	16901	13855	12866	6628	3727	2633										
				0.78	0.82	0.83	0.86	0.91	0.96										
2	V1	325	11.8	17437	14501	13584	8356	4557	3127										
				0.86	0.90	0.91	0.92	0.98	1.04										
		335	12.6	17974	15141	14293	9865	5656	3609										
				0.94	0.98	0.99	0.99	1.06	1.11										
3	W1	345	13.4	18510	15775	14994	10833	6689	4080										
				1.02	1.07	1.08	1.08	1.14	1.20										
		355	14.2	19047	16404	15673	11782	7691	4878	3085									
				1.12	1.17	1.17	1.18	1.22	1.28	1.37									
5	X1	370	15.4	19852	17340	16638	13839	10584	6516	3818	3352								
				1.26	1.32	1.33	1.34	1.34	1.42	1.51	1.54								
		380	16.3	20388	17958	17275	14926	11561	7536	4294	3840								
				1.37	1.43	1.43	1.46	1.45	1.52	1.61	1.64								
5	X1	390	17.1	20925	18573	17907	15660	12520	8535	4760	4318								
				1.48	1.54	1.55	1.57	1.57	1.62	1.72	1.75								
		400	18.0	21461	19184	18535	16386	13592	10960	5798	4787								
				1.60	1.66	1.67	1.69	1.70	1.69	1.83	1.86								
5	X1	415	19.3	22266	20095	19469	17461	15653	12541	7422	6197	3813							
				1.78	1.85	1.86	1.88	1.90	1.89	2.00	2.03	2.17							
		425	20	22803	20698	20087	18168	16698	13503	8441	7290	4301							
				1.91	1.98	1.99	2.02	2.04	2.03	2.12	2.15	2.30							
5	X1	435	21	23339	21299	20702	18869	17433	14451	9440	8319	4779							
				2.05	2.13	2.14	2.17	2.18	2.18	2.25	2.28	2.43							
		445	22	23876	21897	21313	19563	18160	15834	11433	9326	5249							
				2.20	2.27	2.28	2.32	2.33	2.33	2.35	2.42	2.57							
5	X1	465	23	24949	23056	22528	20852	19594	18250	14120	13089	7040	4313						
				2.51	2.59	2.60	2.63	2.65	2.67	2.65	2.65	2.86	3.05						
		485	25	26022	24207	23732	22126	21002	19714	16030	15042	9164	5279						
				2.85	2.93	2.95	2.98	3.00	3.02	3.02	3.01	3.17	3.37						
5	X1	500	26	26827	25067	24627	23071	22032	20795	18043	16470	10673	5983	4261					
				3.12	3.20	3.23	3.26	3.28	3.30	3.31	3.31	3.42	3.63	3.83					
		515	28	27632	25922	25496	24009	23000	21862	20043	18443	13632	7330	5000					
				3.41	3.50	3.52	3.56	3.58	3.60	3.62	3.62	3.62	3.63	3.90	4.11				
5	X1	540	30	28973	27343	26936	25557	24595	23613	21878	21300	16601	10016	6194					
				3.93	4.02	4.04	4.09	4.12	4.14	4.17	4.17	4.16	4.38	4.61					
		565	32	30314	28756	28367	27089	26169	25250	23677	23124	19127	12525	8124					
				4.50	4.60	4.62	4.68	4.70	4.73	4.76	4.77	4.78	4.91	5.15					
5	X1	590	35	31656	30163	29791	28606	27725	26845	25443	24913	22556	17224	10815					
				5.12	5.22	5.25	5.31	5.34	5.37	5.41	5.41	5.45	5.42	5.72					
		610	37	32729	31285	30925	29810	28959	28107	26830	26323	24275	19162	12836					
				5.66	5.77	5.79	5.87	5.89	5.92	5.96	5.97	6.01	6.00	6.22					

CFM
BHP

Sidewall Propeller Fans

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories. Sound ratings are loudness values in fan sones at 5 feet (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: Free inlet hemispherical sone levels. For additional sound data and for selections at other static pressures, please refer to the Carnes Fan-C-Lect computerized selection program.

▼ DIMENSIONAL DATA — Models LNBK and LRBK



DIMENSIONS LISTED IN INCHES

Fan Size	A Panel Sq.	BE	CS	CE	BS	D	E	F Dia.	Weight (Lbs.) Less Motor
24	30	22	22	18-1/2	19-7/8	2-1/8	3-1/2	24-1/2	100
30	36	22	22	17-1/2	19-7/8	2-1/8	4-1/4	30-1/2	112
36	42	22	22	17-1/2	19-7/8	2-1/8	4-1/4	36-1/2	126
42	48	26	26	21-1/4	23-7/8	2-1/8	4-3/4	42-1/2	136
48	54	29	29	24-1/4	26-7/8	2-1/8	4-3/4	48-1/2	161
54	60	32-1/2	32-1/2	27	34-5/8	2-1/8	5-1/2	55	N/A
60	66	33-1/4	33-1/4	27-1/4	35-3/8	2-1/8	6	61	N/A

MATERIAL GAUGES & SHIPPING WEIGHT

Fan Size	Material Gauges			Drive Frame Angle	Shaft Diameter (Inches)	Max. Motor Frame	Approx. Ship Weight (Lbs.)
	Panel Venturi	Bearing Mount	Motor Plate				
24	16	10	10	10	1.00	184T	140
30	16	10	10	10	1.00	184T	150
36	16	10	10	10	1.00	215T	170
42	16	10	10	10	1.00	254T	200
48	16	10	10	10	1.1875	254T	240
54	16	10	10	10	1.1875	254T	N/A
60	16	10	10	10	1.4375	254T	N/A

Model LRBK/LNBK

Size 24 - Belt Drive



SIDEWALL PROPELLER FAN
 EXHAUST — LRBK
 SUPPLY — LNBK

TIP SPEED = RPM x 6.28
[Tip Speed Based on FPM]

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)															
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750	1.00	1.25			
1/4	L1	880	10.1	4275 .18	3645 .19	3425 .19	2720 .20	2127 .19											
		950	11.6	4615 .22	4035 .24	3867 .24	3232 .25	2778 .25	2191 .24										
		985	12.5	4785 .25	4228 .27	4082 .27	3478 .27	3050 .27	2538 .27										
		1020	13.3	4955 .27	4419 .29	4278 .30	3720 .30	3312 .30	2877 .30	1960 .29	1575 .29								
1/3	M1	1055	14.1	5125 .30	4608 .32	4472 .33	3955 .33	3563 .34	3155 .34	2378 .33	2060 .32								
		1090	14.9	5295 .33	4797 .36	4665 .36	4183 .37	3810 .37	3425 .37	2726 .37	2460 .36								
		1125	15.8	5465 .37	4983 .39	4856 .39	4408 .40	4053 .41	3684 .41	3068 .41	2809 .40								
1/2	P1	1160	16.7	5635 .40	5168 .43	5047 .43	4630 .44	4292 .45	3934 .45	3375 .45	3151 .45	1891 .41							
		1180	17.2	5732 .42	5273 .45	5155 .45	4756 .46	4425 .47	4075 .47	3532 .47	3343 .47	2314 .45							
		1230	18.5	5975 .48	5534 .51	5424 .51	5068 .52	4750 .53	4423 .53	3915 .53	3735 .53	2864 .52							
		1280	19.7	6218 .54	5795 .57	5689 .58	5354 .59	5070 .59	4764 .60	4278 .60	4116 .60	3358 .60	2002 .56						
		1320	21	6435 .54	6001 .58	5888 .58	5542 .60	5277 .61	5012 .62	4566 .62	4416 .62	3718 .62	2650 .60						
		1345	21	6557 .57	6132 .61	6021 .62	5687 .64	5427 .64	5167 .65	4737 .66	4590 .66	3923 .66	3014 .64						
3/4	R1	1395	23	6800 .64	6392 .68	6285 .68	5964 .71	5723 .72	5473 .72	5074 .73	4932 .73	4325 .74	3462 .73	2219 .69					
		1445	24	7044 .71	6650 .75	6548 .76	6238 .78	6017 .79	5775 .80	5405 .81	5268 .82	4718 .82	3898 .81	2888 .78					
		1520	26	7410 .83	7035 .87	6940 .88	6645 .90	6449 .92	6222 .93	5877 .94	5761 .95	5243 .95	4517 .95	3720 .94					
		1540	26	7507 .86	7138 .90	7045 .91	6753 .94	6559 .95	6340 .96	5999 .98	5885 .98	5380 .99	4678 .99	3896 .98					
1	S1	1600	28	7800 .96	7444 1.01	7355 1.02	7076 1.04	6889 1.06	6691 1.07	6363 1.09	6254 1.09	5786 1.11	5153 1.11	4416 1.11					
		1660	29	8092 1.08	7749 1.12	7664 1.14	7396 1.16	7216 1.18	7036 1.19	6722 1.21	6617 1.22	6185 1.23	5590 1.24	4907 1.24	3205 1.18				
1-1/2	T1	1720	31	8300 1.17	7983 1.21	7904 1.22	7659 1.25	7490 1.27	7322 1.28	7031 1.30	6930 1.31	6527 1.34	5979 1.36	5426 1.37	4011 1.34				
		1740	32	8397 1.21	8083 1.26	8005 1.27	7764 1.30	7597 1.31	7430 1.33	7147 1.35	7048 1.35	6650 1.38	6117 1.41	5562 1.42	4193 1.39	2485 1.36			
		1790	33	8638 1.32	8333 1.36	8257 1.38	8025 1.41	7863 1.42	7700 1.44	7437 1.46	7341 1.47	6954 1.49	6458 1.53	5900 1.54	4641 1.53	2765 1.44			
		1890	36	9120 1.55	8832 1.60	8760 1.61	8543 1.65	8390 1.67	8236 1.68	8006 1.71	7919 1.72	7553 1.74	7095 1.78	6590 1.81	5515 1.82	4039 1.85			
		1940	38	9362 1.68	9081 1.73	9010 1.74	8800 1.78	8652 1.80	8502 1.81	8278 1.84	8203 1.85	7848 1.88	7402 1.91	6933 1.95	5941 1.98	4639 1.93			
2	V1	1960	38	9458 1.73	9180 1.78	9110 1.79	8902 1.83	8757 1.85	8609 1.87	8386 1.90	8312 1.90	7966 1.93	7524 1.97	7069 2.00	6086 2.04	4820 2.00			
		2020	40	9748 1.90	9478 1.95	9410 1.96	9208 2.00	9069 2.02	8926 2.04	8710 2.07	8638 2.08	8316 2.11	7887 2.14	7459 2.18	6496 2.22	5178 2.13			
		2060	42	9941 2.01	9676 2.06	9610 2.08	9411 2.11	9277 2.14	9136 2.16	8925 2.19	8854 2.20	8548 2.23	8128 2.27						
		2100	43	10134 2.13	9874 2.18	9809 2.20	9614 2.24	9484 2.26	9346 2.28										

CFM
BHP

Sidewall Propeller Fans

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For additional sound data and for selections at other static pressures, please refer to the Carnes Fan-C-Let computerized selection program.

Model LRBK/LNBK Size 30 - Belt Drive



SIDEWALL PROPELLER FAN
EXHAUST — LRBK
SUPPLY — LNBK

TIP SPEED = RPM x 7.85
[Tip Speed Based on FPM]

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)																		
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750	1.00	1.25						
1/3	M1	660	10.7	6579 .23	5367 .26	5008 .26	3557 .26	2245 .25														
		695	11.4	6928 .27	5798 .30	5461 .30	4244 .30	3040 .30	1971 .31													
		765	13.6	7626 .36	6642 .39	6335 .40	5375 .40	4534 .41	3412 .40													
1/2	P1	800	14.8	7974 .42	7047 .45	6762 .45	5861 .46	5143 .46	4177 .46	2591 .45	2233 .47											
		820	15.5	8174 .45	7272 .48	7004 .49	6134 .49	5483 .50	4606 .50	3019 .49	2572 .49											
		840	16.2	8373 .48	7496 .52	7244 .52	6404 .53	5794 .53	5002 .54	3473 .53	2959 .52											
		880	17.6	8772 .55	7942 .59	7715 .60	6919 .61	6354 .61	5696 .62	4356 .61	3865 .61											
3/4	R1	900	18.3	8971 .59	8163 .63	7942 .64	7172 .65	6629 .65	6030 .66	4790 .66	4306 .66	2592 .67										
		920	19.0	9171 .63	8383 .67	8167 .68	7423 .69	6901 .70	6345 .70	5217 .70	4742 .70	2929 .69										
		945	20	9420 .68	8657 .73	8447 .73	7734 .75	7237 .75	6696 .76	5695 .76	5279 .76	3443 .74										
		970	21	9669 .74	8931 .78	8725 .79	8042 .81	7558 .81	7043 .82	6130 .82	5777 .83	4011 .81										
		1020	23	10080 .82	9372 .86	9195 .87	8560 .90	8123 .91	7687 .92	6874 .92	6611 .93	5353 .93	3182 .92									
1	S1	1040	23	10278 .87	9583 .91	9409 .92	8796 .95	8367 .96	7939 .97	7607 .98	6902 .98	5752 .99	3589 .96									
		1070	24	10574 .94	9899 .99	9730 1.00	9147 1.03	8730 1.04	8314 1.05	7607 1.06	7344 1.06	6341 1.08	4252 1.05									
		1130	26	11167 1.11	10528 1.16	10368 1.17	9842 1.20	9447 1.22	9053 1.23	8462 1.25	8215 1.25	7238 1.26	5740 1.26	3744 1.24								
1-1/2	T1	1160	27	11464 1.20	10841 1.25	10685 1.26	10186 1.30	9802 1.32	9417 1.33	8841 1.35	8642 1.35	7677 1.36	6376 1.37	4349 1.33								
		1180	28	11661 1.27	11049 1.32	10896 1.33	10415 1.36	10036 1.38	9658 1.40	9092 1.42	8904 1.42	7970 1.43	6771 1.45	4857 1.41								
		1210	29	11958 1.37	11361 1.42	11211 1.43	10755 1.47	10387 1.49	10018 1.51	9466 1.52	9282 1.53	8412 1.54	7297 1.56	5605 1.53								
		1270	31	12551 1.58	11982 1.63	11840 1.65	11413 1.69	11080 1.71	10729 1.73	10202 1.75	10027 1.76	9279 1.78	8190 1.79	6971 1.80	3608 1.79							
		1300	32	12847 1.69	12292 1.75	12153 1.76	11736 1.80	11424 1.83	11081 1.85	10566 1.88	10395 1.88	9705 1.90	8628 1.91	7562 1.93	4226 1.89							
2	V1	1320	33	13045 1.77	12498 1.83	12361 1.84	11950 1.88	11652 1.91	11314 1.93	10807 1.96	10638 1.97	9964 1.99	8921 2.00	7910 2.02	4631 1.97							
		1380	35	13638 2.03	13114 2.08	12983 2.10	12591 2.14	12329 2.17	12009 2.19	11524 2.23	11362 2.24	10717 2.26	9801 2.28	8807 2.30	6046 2.26							
		1440	38	14048 2.21	13540 2.28	13413 2.30	13032 2.35	12766 2.37	12499 2.40	12099 2.43	11966 2.44	11411 2.48	10675 2.51	9752 2.54	7499 2.55							
3	W1	1500	40	14633 2.50	14146 2.57	14024 2.59	13658 2.64	13407 2.67	13151 2.70	12767 2.73	12639 2.74	12126 2.79	11420 2.83	10612 2.86	8469 2.89	5812 2.82						
		1520	41	14828 2.60	14347 2.67	14227 2.69	13866 2.75	13620 2.78	13367 2.80	12988 2.84	12861 2.85	12356 2.90	11666 2.94	10894 2.97	8825 3.01	6340 2.95						
		1595	45	15560 3.00	15101 3.08	14987 3.10	14643 3.16	14414 3.20	14173 3.22	13811 3.26	13691 3.27	13209 3.32	12577 3.37	11913 3.41	10133 3.46	8147 3.47						
		1645	47	16048 3.29	15603 3.37	15492 3.39	15159 3.45	14936 3.49	14706 3.52	14356 3.56	14239 3.58	13772 3.63	13177 3.69	12533 3.73	10983 3.79	8934 3.82						
5	X1	1720	52	16779 3.77	16354 3.85	16248 3.87	15929 3.93	15717 3.97	15502 4.01	15167 4.05	15055 4.07	14608 4.12	14050 4.19	13449 4.24	12082 4.31	10230 4.35						
		1740	53	16974 3.90	16554 3.98	16449 4.00	16134 4.07	15924 4.11	15713 4.15	15382 4.19	15271 4.21	14830 4.26	14277 4.33	13691 4.38	12366 4.46	10580 4.50						
		1760	54	17170 4.04	16754 4.12	16650 4.14	16339 4.21	16131 4.25	15923 4.29	15597 4.33	15487 4.35	15051 4.40	14505 4.47	13931 4.53	12648 4.61	10928 4.66						
		1780	55	17365 4.17	16954 4.26	16851 4.28	16543 4.35	16338 4.39	16132 4.43	15811 4.42	15703 4.49	15271 4.55	14731 4.62	14171 4.68	12929 4.76	11273 4.81						
		1800	57	17560 4.32	17154 4.40	17052 4.43	16747 4.49	16544 4.53	16341 4.58	16025 4.63	15918 4.64	15491 4.70	14957 4.77	14410 4.83	13208 4.92	11615 4.97						

CFM
BHP

Sidewall Propeller Fans

Model LRBK/LNBK

Size 36 - Belt Drive



SIDEWALL PROPELLER FAN
 EXHAUST — LRBK
 SUPPLY — LNBK

TIP SPEED = RPM x 9.42
[Tip Speed Based on FPM]

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)																
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750	1.00	1.25				
3/4	R1	620	15.0	11777	10067	9608	8011	5946												
		645	15.8	12252	10618	10177	8703	7122												
		670	16.7	12727	11163	10739	9367	8128	5422											
1	S1	720	18.7	13677	12239	11846	10662	9699	8397											
		740	19.5	14057	12665	12283	11131	10232	9122											
		765	20	14532	13195	12825	11711	10889	9984	7570										
1-1/2	T1	790	21	15006	13721	13363	12285	11536	10659	8724	7814									
		810	22	15386	14140	13791	12740	12038	11192	9571	8744									
		820	23	15576	14349	14004	12967	12273	11457	9934	9194									
		860	24	16336	15181	14852	13864	13202	12498	11290	10732									
		890	26	16906	15792	15483	15428	13890	13250	12098	11709	9066								
2	V1	910	27	17286	16196	15901	14968	14344	13719	12630	12249	9974								
		920	27	17359	16280	16015	15207	14638	14018	12962	12529	10556								
		960	29	18114	17079	16824	16061	15516	14971	13984	13652	12002								
3	W1	1000	31	18868	17873	17629	16896	16385	15862	14974	14655	13181								
		1040	33	19623	18666	18430	17725	17246	16743	15949	15642	14334	12224	7969						
		1060	33	20000	19062	18829	18138	17674	17180	16431	16130	14902	12955	8769						
		1100	36	20755	19851	19625	18959	18515	18048	17334	17095	15935	14209	11927						
5	X1	1140	38	21510	20637	20419	19775	19347	18909	18219	17990	16929	15373	13418						
		1180	40	22265	21421	21210	20587	20173	19759	19096	18875	17909	16516	14826						
		1200	41	22642	21813	21605	20992	20585	20178	19532	19314	18395	17065	15418	9175					
		1260	45	23901	23180	22999	22459	22098	21709	21091	20884	20060	18847	17593	14169					
		1300	47	24659	23961	23786	23262	22912	22553	21953	21754	20954	19837	18622	15762					
7-1/2	Y1	1340	49	25418	24740	24571	24062	23723	23384	22811	22617	21841	20815	19637	17067	10728				
		1360	50	25798	25130	24963	24462	24128	23794	23237	23046	22282	21301	20139	17669	12864				
		1430	55	27125	26490	26331	25855	25537	25219	24721	24539	23813	22904	21876	19667	16694				
		1500	60	28453	27848	27696	27242	26939	26636	26182	26018	25326	24460	23580	21474	19137				
10	C1	1550	63	29402	28816	28669	28229	27936	27643	27204	27057	26397	25559	24721	22743	20634				

CFM
BHP

Sidewall Propeller Fans

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Sound ratings are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: Free inlet hemispherical sone levels. For additional sound data and for selections at other static pressures, please refer to the Carnes Fan-C-Let computerized selection program.

Model LRBK/LNBK

Size 48 - Belt Drive



SIDEWALL PROPELLER FAN

EXHAUST — LRBK

SUPPLY — LNBK

TIP SPEED = RPM x 12.57
[Tip Speed Based on FPM]

Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)															
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750	1.00	1.25			
1	S1	450	15.5	19005.90	16314.96	15621.98	12757.00	9918.02	6727.04										
		460	16.2	19427.96	16798.103	16120.104	13390.107	10913.109	7323.109										
		480	17.4	20272.109	17753.116	17110.117	14635.121	12565.123	9183.123										
1-1/2	T1	490	18.0	20694.116	18227.123	17600.125	15276.128	13307.130	10485.132										
		500	18.6	21116.124	18699.130	18088.132	15930.136	14038.138	11622.141										
		520	19.9	21961.139	19636.146	19055.148	17218.152	15239.154	13307.156	8577.157	7788.160								
		540	21	22806.156	20567.163	20007.165	18283.170	16568.172	14814.174	10705.176	9059.175								
2	V1	560	23	23650.174	21492.181	20952.183	19296.188	17874.191	16186.193	13078.197	11355.196								
		570	23	24073.183	21952.191	21422.193	19799.198	18521.201	16815.203	13926.207	12646.208								
		590	25	24917.203	22868.211	22356.213	20795.219	19738.222	18055.224	15548.228	14493.229	9189.230							
3	W1	620	27	26184.236	24235.244	23747.246	22272.252	21266.256	20005.259	17710.262	16846.263	11898.266							
		640	28	27029.259	25140.268	24668.270	23246.277	22272.280	21288.284	18970.287	18270.288	14487.295							
		650	29	27451.272	25592.280	25127.283	23730.289	22771.293	21811.297	19591.301	18903.302	9735.312							
		670	30	28218.302	26577.311	26144.313	24840.318	23878.322	22892.325	21160.328	20460.328	17172.335	11522.337						
		690	32	29060.330	27472.339	27052.341	25790.346	24874.350	23936.355	22410.358	21730.358	18987.364	13125.370						
5	X1	720	34	30323.374	28803.385	28407.387	27197.392	26353.396	25458.401	24057.405	23582.406	20985.409	16027.419	11482.417					
		730	35	30744.390	29245.401	28857.403	27664.408	26843.412	25960.417	24588.422	24119.423	21641.425	17129.436	12301.435					
		750	36	31587.423	30127.434	29755.436	28594.442	27817.446	26957.450	25642.456	25815.458	22933.460	19298.470	13912.474					
	X2	770	38	32429.458	31007.469	30650.472	29520.477	28766.481	27948.486	26686.493	26241.494	24204.497	21131.506	15491.515					
		800	40	33693.514	32324.525	31982.528	30900.534	30175.538	29420.542	28212.550	27807.552	26079.558	23134.562	18799.574					
	Y1	820	42	34535.553	33200.565	32866.568	31816.574	31108.578	30395.582	29216.590	28823.593	27171.599	24445.602	20970.615	12316.614				
		830	42	34956.574	33637.585	33307.588	32273.595	31573.599	30874.603	29715.611	29327.614	27705.621	25094.623	22039.636	13144.638				
7-1/2	Y2	860	45	36287.616	34992.627	34668.630	33696.639	33048.644	32401.650	31297.657	30922.660	29419.670	27348.679	25081.687	16900.698				
		900	49	37975.706	36737.718	36428.721	35499.730	34880.736	34261.742	33266.750	32907.752	31471.763	29605.774	27535.782	21802.798	13135.839			
		920	51	38819.754	37608.766	37305.769	36397.778	35791.784	35186.790	34241.799	33890.802	32486.812	30718.825	28693.833	23692.851	14502.878			
		940	53	39663.805	38478.817	38181.820	37292.829	36700.835	36107.842	35212.851	34869.853	33494.864	31776.878	29838.887	25160.904	15847.917			
		960	55	40507.857	39346.870	39056.873	38186.882	37605.888	37025.895	36154.904	35842.907	34496.918	32814.932	30975.943	26608.960	18637.971			
10	C1	970	56	40929.884	39780.897	39493.900	38631.910	38057.916	37843.922	36621.932	36327.935	34995.946	33330.960	31539.971	27326.989	20342.101			
		1000	60	42195.969	41080.982	40802.985	39966.995	39409.101	38852.108	38016.110	37738.112	36483.121	34868.133	33216.147	29451.161	23690.1095			
		1030	63	43460.1059	42379.1072	42108.1075	41297.1086	40756.1092	40215.1099	39404.1109	39133.1112	37960.1125	36392.1140	34824.1155	31256.1174	26592.1194			
		1050	66	44304.1121	43243.1135	42978.1139	42182.1149	41651.1156	41121.1163	40325.1173	40060.1176	38938.1190	37400.1205	35862.1220	32420.1241	28060.1261			

CFM
BHP

Sidewall Propeller Fans

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Sound ratings are loudness values in fan sones at 5 feet (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: Free inlet hemispherical sone levels. For additional sound data and for selections at other static pressures, please refer to the Carnes Fan-C-Let computerized selection program.

**Model LRBK/LNBK
Size 54 - Belt Drive**

TIP SPEED = RPM x 14.14
[Tip Speed Based on FPM]

SIDEWALL PROPELLER FAN
EXHAUST — LRBK
SUPPLY — LNBK



Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)															
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750	1.00	1.25			
1	S1	395	17.0	23025.91	19521.98	18638.100	15184.104	10413.102	6797.110										
		410	18.1	23900.102	20526.109	19675.111	16702.115	13071.116	8250.118										
		425	19.1	24774.113	21521.121	20701.123	17917.128	15186.130	9973.127										
1-1/2	T1	440	20	25648.126	22508.134	21716.136	19111.141	16808.143	12722.142	7440.152									
		450	21	26231.134	23162.143	22388.145	19898.151	17862.153	14469.159	8417.165	7275.165								
		460	22	26814.144	23813.152	23055.154	20676.161	18805.163	16025.165	9377.172	8230.172								
		480	23	27980.163	25107.172	24381.174	22201.182	20419.184	18194.186	12054.183	10151.186								
2	V1	490	24	28563.174	25749.182	25038.185	22903.192	21214.195	19256.197	13882.196	11375.195								
		500	24	29146.184	26388.193	25693.196	23601.204	22002.207	20280.209	15636.210	13238.228	7890.228							
		510	25	29729.196	27025.205	26345.207	24294.215	22783.219	21095.221	17362.224	15031.222	8781.236							
		530	27	30895.220	28293.229	27641.232	25667.240	24326.245	22702.247	19627.251	18377.252	10717.254							
3	W1	550	28	32060.245	29554.255	28927.258	27026.266	25758.272	24281.275	21757.279	20552.280	13124.276							
		560	29	32643.259	30181.269	29566.272	27700.280	26455.286	25601.290	22755.294	21621.295	14982.292	8899.319						
		580	30	33809.288	31432.298	30838.301	29039.310	27837.316	26603.321	24377.325	23634.326	18516.328	10774.341						
		610	33	35558.335	33298.346	32733.349	31027.357	29883.364	28740.370	26761.376	26055.377	22448.382	13749.375	9477.415					
5	X1	630	35	36724.369	34535.380	33988.383	32339.392	31232.399	30125.405	28321.413	27638.414	24586.420	17463.416	11281.441					
		640	36	37307.387	35152.398	34614.401	32992.410	31902.417	30812.423	29094.432	28421.433	25639.439	19227.439	12252.454					
	X2	660	38	38450.418	36432.431	35927.435	34391.445	33276.451	32161.457	30443.465	29817.468	27313.476	22749.482	14436.481					
		680	40	39615.457	37656.471	37166.475	35697.485	34617.491	33535.498	31912.507	31319.509	28888.518	24995.526	17159.523					
		700	42	40780.498	38877.513	38401.517	36974.527	35949.534	34898.540	33322.550	32796.553	30443.563	27015.572	21478.573					
		720	44	41945.542	40095.557	39633.561	38245.572	37272.579	36251.586	34718.596	34207.599	31978.609	28999.621	2447.625					
	730	45	42528.565	40703.580	40247.584	38878.596	37931.603	36923.609	35411.619	34908.623	32738.634	29908.646	25852.652						
	7-1/2	Y1	760	48	44275.638	42523.654	42085.658	40770.669	39894.677	38928.684	37476.695	36992.698	34996.711	32277.724	28910.733	16409.735			
790			51	46023.716	44337.733	43916.737	42651.749	41808.757	40914.765	39517.776	39052.779	37189.794	34604.807	31893.820	21483.821				
Y2		810	54	47188.772	45544.789	45133.793	43889.806	43077.814	42230.822	40867.833	40413.837	38596.852	36134.867	33584.880	25060.889				
		830	56	48353.831	46749.848	46347.852	45114.865	44341.874	43538.882	42209.894	41765.898	39992.913	37649.929	35159.943	28058.958				
10	C1	840	57	48936.861	47350.879	46954.883	45765.896	44972.905	44179.913	42876.925	42438.929	40687.944	38400.962	35941.975	29537.994				
		860	59	50169.919	48589.937	48193.942	47008.955	46217.964	45427.973	44184.986	43766.990	42095.106	39985.106	37553.104	31733.103	19615.1057			
		880	62	51336.984	49791.1003	49405.1008	48246.1022	47474.1031	46701.1040	45500.1053	45092.1057	43459.1074	41417.1095	39098.1111	33751.1137	23210.1132			
		910	65	52503.1053	50992.1072	50615.1077	49482.1091	48726.1101	47971.1110	46809.1124	46410.1128	44813.1145	42817.1166	40627.1184	35741.1214	26921.1215			
15*	N1	940	69	53086.1089	51592.1108	51219.1113	50098.1127	49351.1137	48604.1146	47462.1160	47067.1164	45488.1182	43513.1203	41387.1222	36726.1254	28585.1258			
		970	73	54836.1318	53390.1339	53028.1344	51944.1359	51220.1370	50497.1380	49411.1395	49029.1400	47500.1419	45588.1442	43646.1464	39196.1500	33277.1524			
	N2	1000	78	56586.1445	55185.1466	54834.1471	53783.1487	53082.1497	52382.1508	51330.1524	50978.1529	49496.1548	47644.1572	45792.1596	41565.1635	36340.1666			
		1025	81	58337.1556	56977.1577	56637.1583	55617.1599	54938.1610	54258.1621	53238.1637	52898.1642	51478.1663	49682.1687	47885.1711	43902.1711	39343.1711			
		1035	83	59795.1602	58469.1624	58137.1629	57142.1645	56479.1656	55816.1667	54821.1684	54489.1689	53120.1710	51367.1710	49615.1710					

CFM
BHP

*Fans with 15 HP motors are not available with UL Listing

Sidewall Propeller Fans

Model LRBK/LNBK
Size 60 - Belt Drive

TIP SPEED = RPM x 15.71
[Tip Speed Based on FPM]

SIDEWALL PROPELLER FAN
EXHAUST — LRBK
SUPPLY — LNBK



Motor HP	Drive Range	Fan RPM	Sones (0.125" SP)	STATIC PRESSURE (INCHES W.G.)															
				0.000	0.100	0.125	0.200	0.250	0.300	0.375	0.400	0.500	0.625	0.750	1.00	1.25			
1	S1	350	15.9	26627.93	21978.100	20604.102	14771.104	9062.107											
		360	16.7	27388.101	22890.109	21620.111	16417.114	10438.114											
		370	17.5	28149.110	23794.118	22602.120	17777.123	12352.123	8051.130										
1-1/2	T1	380	18.2	28910.119	24692.127	23531.129	19114.134	14265.132	9451.138										
		390	19.0	29670.129	25583.137	24452.139	20429.144	16255.144	10838.146										
		410	21	31192.150	27348.158	26272.160	22665.166	19379.168	14433.166										
2	V1	430	22	32714.173	29093.182	28066.184	24755.190	22050.193	18355.195	11284.198	9670.203								
		440	23	33474.184	29958.194	28955.197	25785.203	23357.207	19982.208	12661.208	11083.214								
		450	24	34235.198	30819.208	29838.210	26804.217	24448.220	21346.222	14515.221	12469.225								
		470	26	35757.226	32511.236	31591.238	28774.245	26560.249	24017.252	18386.250	16007.251								
3	W1	490	28	37278.256	34165.266	33327.269	30625.276	28630.281	26467.285	22074.287	19904.285	12119.296							
		500	29	38039.272	34988.282	34189.285	31541.293	29651.297	27531.302	23443.305	21877.310	13512.310							
		520	31	39561.306	36627.317	35893.319	33357.327	31659.333	29630.337	26128.342	24701.343	16836.341							
		540	33	41388.337	38556.351	37848.354	35531.363	33862.367	32099.372	29331.380	28178.381	21137.382	12067.396						
5	X1	560	34	42921.375	40190.390	39507.394	37333.403	35723.408	34093.413	31424.420	30535.423	25451.426	15332.431						
		570	35	43688.396	41004.411	40333.414	38227.425	36646.429	35065.434	32458.442	31584.445	27041.449	17046.450						
	X2	590	37	45221.439	42628.454	41980.458	40005.469	38477.474	36950.479	34501.487	33657.490	29706.497	20877.498	13037.518					
		610	39	46754.485	44246.501	43619.505	41738.517	40291.522	38813.528	36515.535	35698.538	32315.549	24497.550	16199.558					
		630	41	48287.534	45858.551	45251.555	43430.567	42089.574	40658.579	38503.587	37712.590	34549.602	29248.606	19753.607					
		640	42	49053.560	46663.577	46065.581	44273.594	42982.601	41574.606	39461.614	38709.617	35596.629	30599.635	21671.636					
7-1/2	Y1	660	44	50586.614	48268.632	47689.636	45951.649	44759.657	43393.663	41345.671	40662.674	37666.686	33259.696	25589.697					
		680	47	52119.672	49869.690	49307.694	47620.708	46495.716	45197.723	43209.731	42546.734	39709.746	35870.760	29922.762	14904.794				
		700	49	53652.733	51466.751	50920.756	49281.770	48189.779	46988.786	45056.795	44413.798	41726.810	38168.826	33373.831	17945.846				
		730	53	55804.831	53667.849	53133.853	51531.867	50462.876	49334.884	47561.896	46970.900	44606.915	41119.930	37104.942	23236.952				
10	C1	740	54	56568.866	54461.884	53934.888	52353.902	51299.911	50203.920	48454.932	47871.935	45538.951	42168.967	38402.981	25158.990				
		760	57	58097.938	56045.956	55532.961	53993.975	52966.984	51933.994	50230.1006	49662.1010	47391.1026	44246.1044	40820.1059	28940.1068	18283.1148			
		780	60	59626.1014	57626.1033	57127.1038	55627.1052	54627.1062	53627.1071	51994.1084	51441.1088	49228.1105	46301.1124	42962.1140	33492.1156	21531.1223			
		790	61	60391.1053	58416.1073	57923.1078	56442.1092	55455.1102	54467.1111	52872.1125	52326.1129	50141.1146	47320.1166	44023.1182	35732.1202	23129.1262			
		800	62	61155.1094	59205.1113	58718.1118	57256.1133	56281.1143	55306.1153	53747.1166	53208.1170	51051.1187	48333.1209	45078.1225	37159.1246	24783.1302			
15*	N1	820	65	62684.1178	60782.1198	60306.1203	58880.1218	57928.1228	56977.1238	55491.1253	54965.1257	52860.1274	50229.1296	47170.1314	39831.1339	28634.1396			
		840	69	64213.1266	62356.1287	61892.1292	60499.1307	59571.1318	58642.1328	57225.1343	56711.1348	54656.1365	52088.1388	49239.1407	42462.1436	32424.1494			
		860	72	65742.1359	63928.1380	63475.1385	62114.1401	61207.1412	60301.1422	58940.1438	58448.1443	56441.1461	53933.1484	51286.1505	45055.1538	36979.1604			
		880	75	67271.1456	65498.1478	65055.1483	63726.1499	62839.1510	61953.1521	60624.1537	60176.1542	58215.1561	55764.1584	53312.1608	47396.1643	40947.1717			
		900	78	68799.1557	67066.1580	66633.1585	65333.1602	64467.1613	63600.1624	62300.1640	61867.1646	59979.1665	57582.1689	55185.1713					
		915	81	69946.1637	68241.1659	67815.1665	66537.1682	65684.1693	64832.1704	63554.1721									

CFM
BHP

*Fans with 15 HP motors are not available with UL Listing

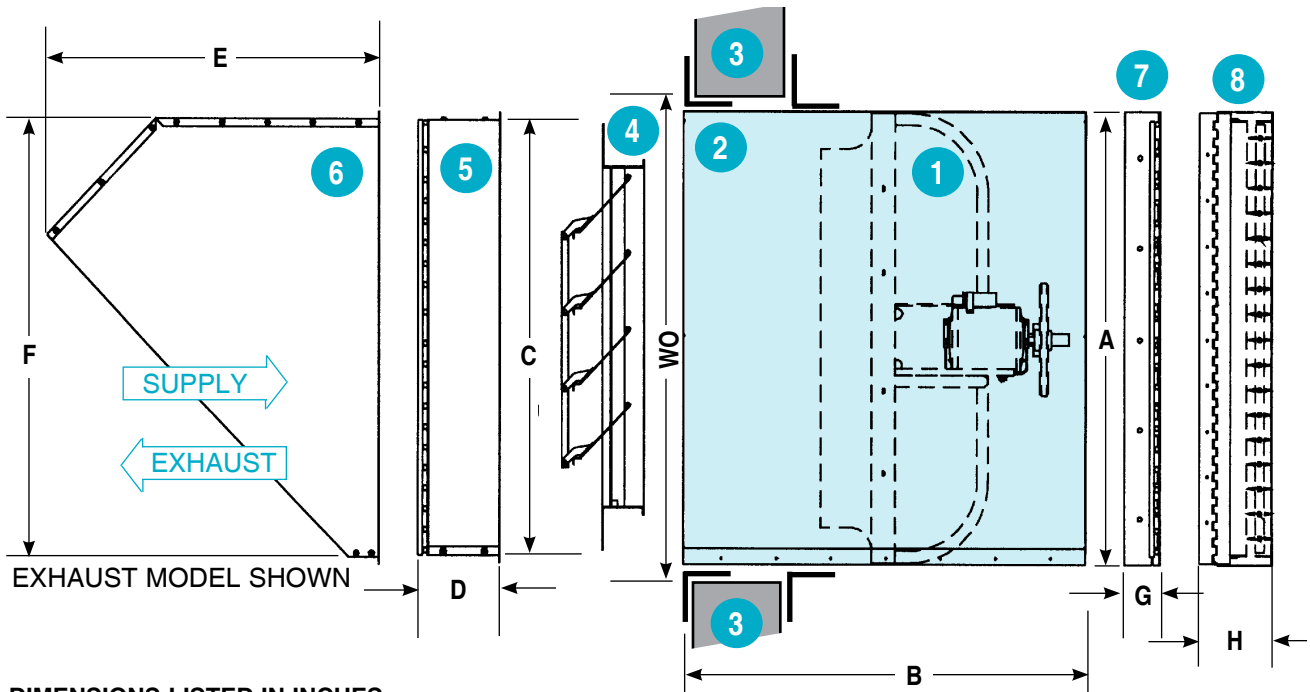
Sidewall Propeller Fans

SIDEWALL PROPELLER FANS TYPICAL INSTALLATIONS _____ **WALL BOX**

The wall box (wall housing) provides a safe and sturdy platform for mounting the Models LWBK, LMBK, LRBK, LNBK Sidewall Propeller Fans and the complete selection of optional accessories shown here. The wall box allows for the exhaust or supply fan to be mounted in the wall opening and projects either into the building or outside the exterior wall. Normally, the fan and wall box are installed so that the motor and drive side of the fan are accessible from inside the building. When access is required from outside, the fan and wall box assembly may be reversed; in this case the standard exhaust Model LWBK and LRBK would function as a supply fan when reverse mounted. The heavy-gauge galvanized steel construction provides corrosion resistance. Heavy-duty center pivot motorized backdraft dampers or end pivot backdraft shutters attach to the pre-punched wall box flanges ensuring adequate clearance between the fan blades and damper. The heavy-duty OSHA style damper guard completely encloses the exterior wall opening, protects the damper from damage and prevents the entrance of birds and other unwanted animals. When additional weather protection is desired for either exhaust or supply installations, a rainhood should be installed in place of the damper guard. Rainhoods are strongly recommended for all supply applications. Rotating fan parts should always be adequately guarded. A hinged and lockable OSHA style motorside guard should be specified for safety and allows quick and easy access to the fan for routine inspection and maintenance. For supply applications, an airfoil 4-way adjustable industrial grille may be substituted for the motorside guard to efficiently direct the air flow in four directions.

Please remember that all accessories ship loose and knocked down (KD) unless specified and ordered factory assembled.

▼ **DIMENSIONAL DATA** _____ **WALL BOX and ACCESSORIES**



DIMENSIONS LISTED IN INCHES

1 FAN SIZE	2 WALL BOX		3 WALL OPENING	4 DAMPER		5 DAMPER GUARD	6 WEATHER HOOD			7 OSHA GUARD		8 SUPPLY GRILLE
	A	B	WO	C	SIZE	D	E	F	WIDTH	A	G	H
20	26-1/4	37-1/2	27-1/2	24	20	7-1/4	22-1/8	26	26	24	2-1/4	9
24	30-1/4	37-1/2	31-1/2	28	24	7-1/4	25	30	30	28	2-1/4	9
30	36-1/4	39-1/2	38	34	30	7-1/4	29-1/8	36	36	34	2-1/4	9
36	42-1/4	43-1/4	44	40	36	7-1/4	33-3/8	42	42	40	2-1/4	9
42	48-1/4	45-1/2	50	46	42	7-1/4	37-5/8	48	48	46	2-1/4	9
48	54-1/4	47-3/4	56	52	48	7-1/4	42	54	54	52	2-1/4	9
54	60-1/4	47-3/4	62	58	54	7-1/4	47	58-1/2	58-1/2	58	2-1/4	9
60	66-1/4	47-3/4	68	64	60	7-1/4	51-1/4	64-1/2	64-1/2	64	2-1/4	9

For more complete dimensional data, weights and material specifications - please refer to the Carnes Submittal Sheets.

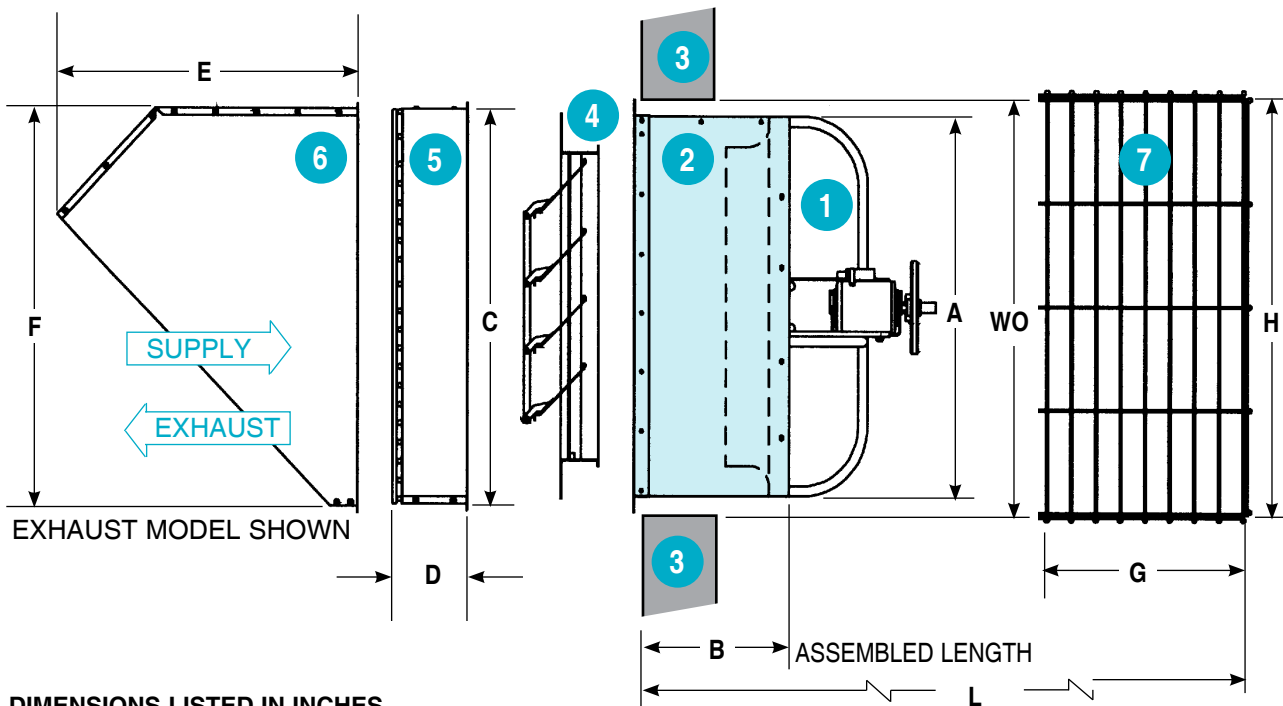
**SIDEWALL PROPELLER FANS
TYPICAL INSTALLATIONS**

MOUNTING COLLAR

The wall mounting collar provides an alternate choice for mounting the Models LWBK, LMBK, LRBK, LNBK Sidewall Propeller Fans and the selection of accessories shown here. The mounting collar allows for the exhaust or supply fan to be mounted within the wall opening and must be flush with the exterior wall surface - extending entirely inside the building. The materials and construction are similar to the wall box. Rotating fan parts should always be adequately guarded. Factory designed fan guards provide protection while allowing easy access for routine inspection and maintenance of the fan, motor, bearings and drives. The basket style motorside guard attaches to the mounting collar and completely encloses the motor and drive side of the fan. For OSHA requirements, the wall box arrangement with guard must be specified and ordered. When factory supplied guards are not specified and ordered, proper fan guards must be provided by others and installed. Also, for supply applications where the adjustable 4-way airfoil grille is desired, the wall box must be used in lieu of the mounting collar. Backdraft dampers and damper guards or rainhoods can be mounted in a similar fashion as described for the wall box.

Please remember that all accessories ship loose and knocked down (KD) unless specified and ordered factory assembled.

▼ DIMENSIONAL DATA MOUNTING COLLAR and ACCESSORIES

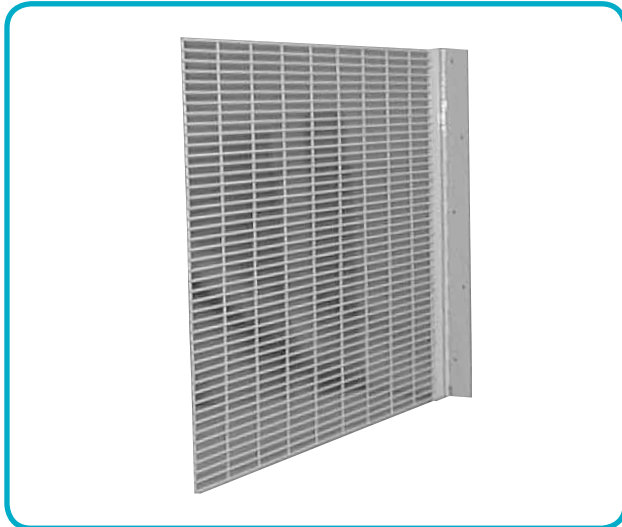


DIMENSIONS LISTED IN INCHES

1 FAN SIZE	2 WALL COLLAR		3 WALL OPENING	4 DAMPER		5 DAMPER GUARD	6 WEATHER HOOD			7 MOTOR SIDE GUARD		ASS'Y LENGTH L
	A	B	WO	C	SIZE	D	E	F	WIDTH	G	H	
20	26-1/4	17-1/2	27-1/2	24	20	7-1/4	22-1/8	26	26	22	27	33-1/2
24	30-1/4	17-1/2	31-1/2	28	24	7-1/4	25	30	30	22	31	33-1/2
30	36-1/4	17-1/2	38	34	30	7-1/4	29-1/8	36	36	25	37	39-1/2
36	42-1/4	18-1/2	44	40	36	7-1/4	33-3/8	42	42	27	43	43-1/2
42	48-1/4	20-3/4	50	46	42	7-1/4	37-5/8	48	48	27	49	45-1/2
48	54-1/4	22-3/4	56	52	48	7-1/4	42	54	54	27	55	47-3/4
54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

For more complete dimensional data, weights and material specifications - please refer to the Carnes Submittal Sheets.

Most sidewall propeller fan installations require one or more of the accessories shown. The factory designed wall box or mounting collar provide the most effective platform for mounting the fan and accessories. Ease of installation, safety, reliability and weather protection are among the many reasons to specify and purchase these factory fabricated accessories. Please remember that all accessories ship loose and knocked down for field assembly unless specified and ordered to be factory assembled. For complete specifications and details - please refer to the Carnes Submittal Sheets.

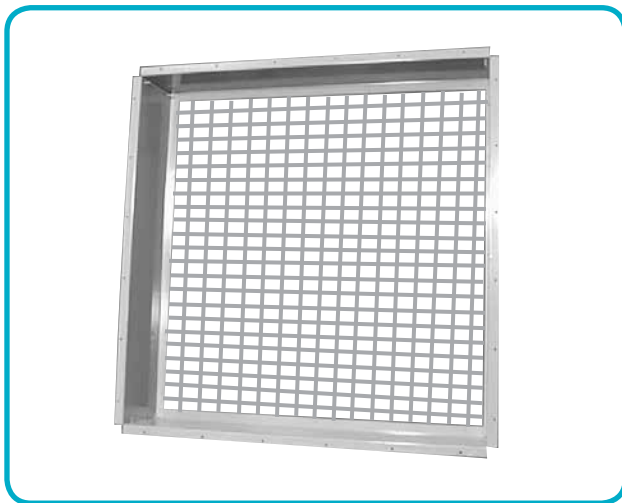
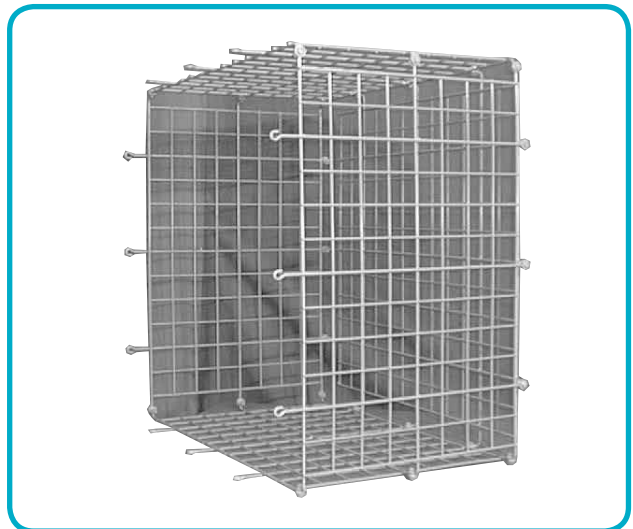


HINGED MOTOR SIDE GUARD - OSHA STYLE

Attaches to the wall box on the motor and drive side and may be used for exhaust or supply. This protective heavy-duty guard is welded to a full length steel piano hinge which allows easy access to the fan, motor, bearings and drives for routine maintenance and service. The welded steel guard is coated with gray enamel paint then baked for a durable general service finish.

MOTOR SIDE GUARD - BASKET STYLE

Attaches to the mounting collar completely enclosing the motor and drives and may be used for exhaust or supply applications. The welded steel sections are bolted together allowing easy removal for access to the fan, motor, bearings and drives for routine maintenance and service. The standard finish is gray baked enamel paint.



DAMPER GUARD

Attaches to either the wall box or mounting collar on the propeller side of the fan. The heavy-duty steel guard meets OSHA requirements and completely encloses the damper and exterior wall opening. The pre-punched mounting flanges simplify installation. The standard finish is gray baked enamel paint. The damper guard may not be used with the weather hood.

WEATHER HOOD

Attaches to either the wall box or mounting collar and may be used with gravity or motorized dampers, but not with the damper guard. The weather hood shields the wall opening from rain and snow and is recommended for supply applications and for all applications where additional weather protection is desired. The mounting flanges are pre-punched for easy installation. The optional heavy-duty style flat guard may be substituted for the standard galvanized mesh birdscreen.



SPECIFY THE WEATHER HOOD FOR ALL SUPPLY FAN INSTALLATIONS.



EXTRUDED ALUMINUM OPERABLE LOUVER

Attaches to either the wall box or mounting collar. The extruded aluminum louver/damper combination incorporates Carnes exclusive “S” design blade with every other blade fully adjustable from open to close. With the operable blades in the open position, the louver is provided with 2” blade spacing; when the operable blades are closed, the remaining fixed blades appear to be a 4” spaced louver. However the operable blades are closed off, serving as a damper. Damper blades feature full-length gaskets to assure quiet operation and maximum closure when the operable blades are shut. Mill finish aluminum construction is standard, and a variety of custom finishes are also available. Two position power open spring close (POSC) electric operators are available for 24, 115, 230 or 460 volts.

AIRFOIL INDUSTRIAL SUPPLY GRILLE

Attaches to the wall box on the motor side of the supply fan. Horizontal and vertical aluminum airfoil blades are individually adjustable to quietly and efficiently direct the supply air flow in any of four directions. The heavy-duty welded frame is hinged to allow quick and easy access to the fan, motor, bearings and drives for routine maintenance and service. The standard finish is gray electrocoat baked enamel paint.



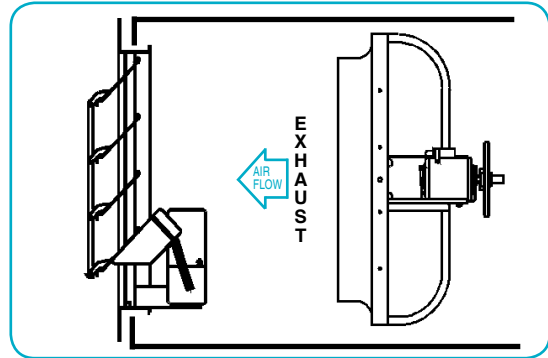
SPECIAL PAINTS and COATINGS — A wide selection of decorative paints and corrosion resistant coatings including enamel, epoxy and Heresite are available for factory application to the fan and accessories. Please contact Carnes or your local Carnes Representative for selection assistance and details.

UL LISTING — To further ensure electrical safety and reliability, specify the UL-705 listing and Canadian cUL listing. Please check with your local code authority and comply with all applicable codes.

The aluminum backdraft dampers and wall shutters can significantly reduce the infiltration of outside air (or loss of inside conditioned air) when the fan is not operating. Dampers may be mounted on the optional wall box housing or wall mounting collar or may be used alone with provisions for adequate clearance from the fan blades. Motorized dampers provide better weather protection (especially for intake applications) and prevent blade chatter due to air velocity, wind or building pressure variations. **For complete information, please refer to the Carnes Submittal Sheets.**

END PIVOT - EXHAUST GRAVITY OR MOTORIZED — EXHAUST

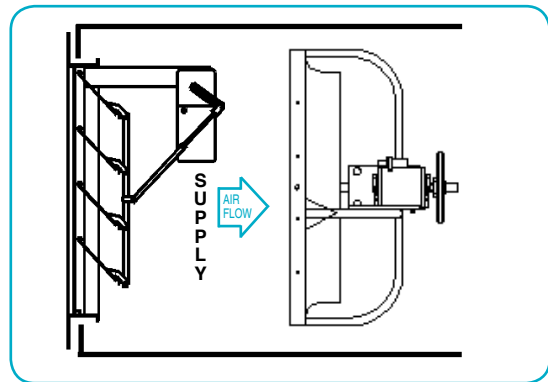
The Model LXVBA Gravity Operated Backdraft Shutter and Model LXVBM Motorized Shutter are constructed with all aluminum blades and frame. The pre-punched flanged frames recess the damper body and optional electric actuator into the wall opening for a neat and clean flush exterior appearance. Adequate clearance must be maintained between shutter and fan blades to prevent damage to the fan or shutter. When used in conjunction with the factory wall box or mounting collar, the proper clearance is guaranteed.



Damper shown with optional motor kit.

END PIVOT - SUPPLY GRAVITY OR MOTORIZED — SUPPLY

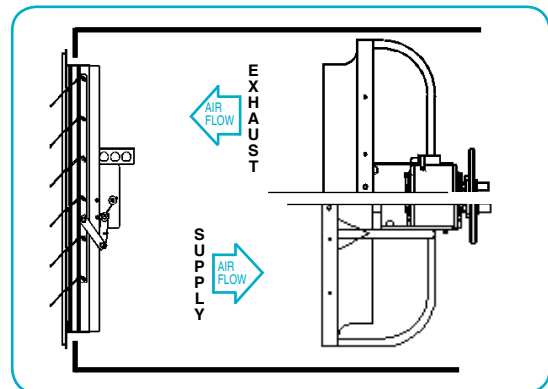
The Model LXXBA Gravity Operated Backdraft Shutter and Model LXXBM Motorized Shutter are constructed with all aluminum blades and frame. The pre-punched flanged frames recess the damper body and optional electric actuator into the wall opening for a neat and clean flush exterior appearance. Adequate clearance must be maintained between shutter and fan blades to prevent damage to the fan or shutter. When used in conjunction with the factory wall box or mounting collar, the proper clearance is guaranteed. The motorized option provides superior weather protection and is recommended for supply applications.



Damper shown with optional motor kit.

CENTER PIVOT MOTORIZED — EXHAUST and SUPPLY

The Model LXCMB Center Pivot Backdraft Damper is constructed with all aluminum blades and frame. The blade pivots in the center which eliminates binding and provides increased damper free area thereby reducing pressure drop. The flanged frame recesses the damper body into the wall opening for a flush exterior appearance. When used in conjunction with the factory wall box or mounting collar, the proper minimum clearance is maintained between the damper and the fan blades. Please note that center pivot backdraft dampers must be motorized and are not suitable for gravity operation.



ACTUATORS ELECTRIC DAMPER OPERATORS

The power open-spring close (POSC) damper motors are available in 24, 115, 230 or 460 volts. Transformers are also available for voltage reduction. The stall type motor draws a maximum 0.5 amps at 115/60/1 power supply. Typically, the electric actuator with complete hardware and linkage kit ships loose for field attachment to the damper. For the installers' convenience, a conduit J-box or Greenfield adapter is provided to simplify the power connection. In order to protect the damper blades from damage when the fan is first energized, a 'Delay-On' timer should be provided and installed by others (usually in the control circuit) which will permit the damper to open prior to allowing fan operation.

To ensure that the actual fan air flow matches the specified air flow, good fan selection practice accounts for the pressure losses due to the fan accessories. The performance graphs on this page assist you in quickly sizing and selecting the proper fan with confidence.

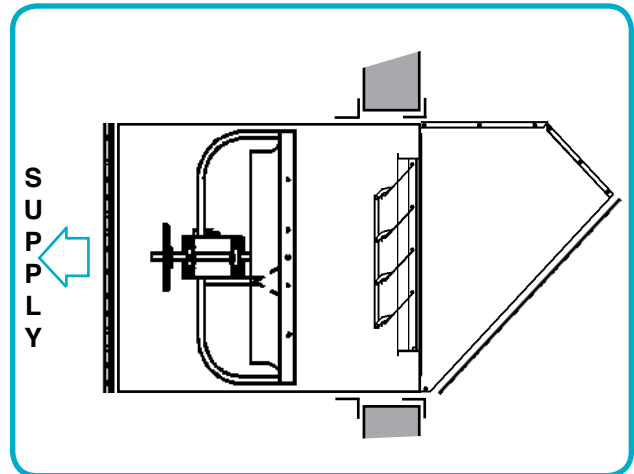
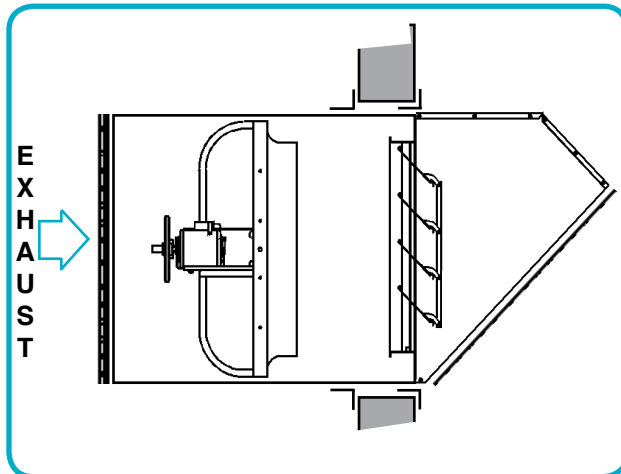
CARNES®
PERFORMANCE DATA

SIDEWALL PROPELLER FAN
EXHAUST — LWBK
SUPPLY — LMBK

SELECTION PROCEDURE

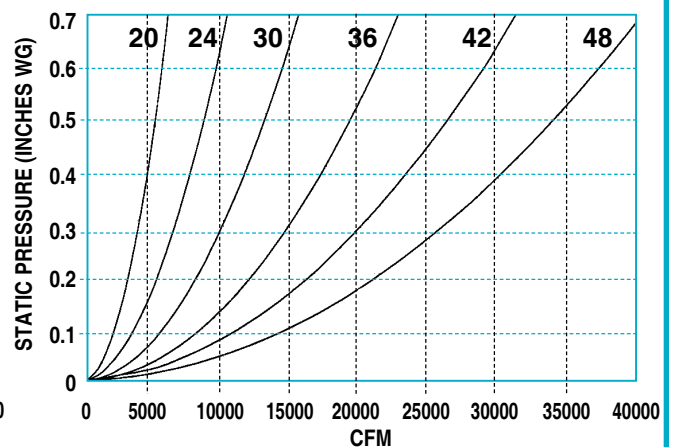
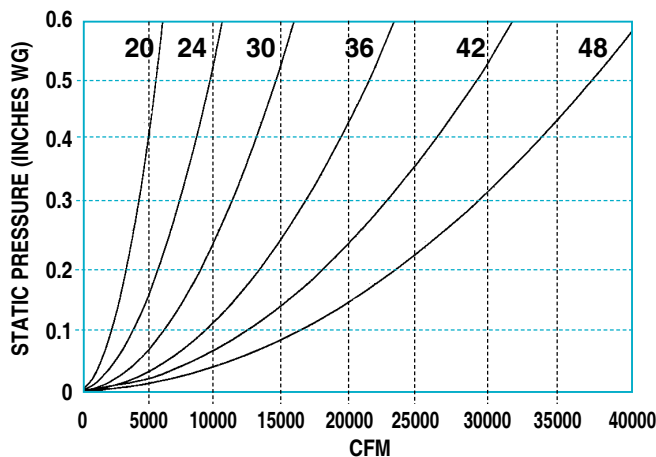
1. Determine the air flow and system external static pressure from the design conditions.
2. Locate the proper performance graph below for exhaust or supply installation.
3. From the CFM desired, move vertically up to the intersection of a fan curve, then horizontally left to read the pressure loss due to the accessory package. It is good practice to make your selection well below 0.4" w. g. (internal static pressure) for this step.
4. Add this accessory pressure loss to the system design external static pressure loss to arrive at the total static pressure for use in the fan selection.
5. Use the fan performance tables in this catalog or the Carnes Fan-C-Lect program, to determine the fan size, RPM, motor Hp and sound level that best satisfies the application.

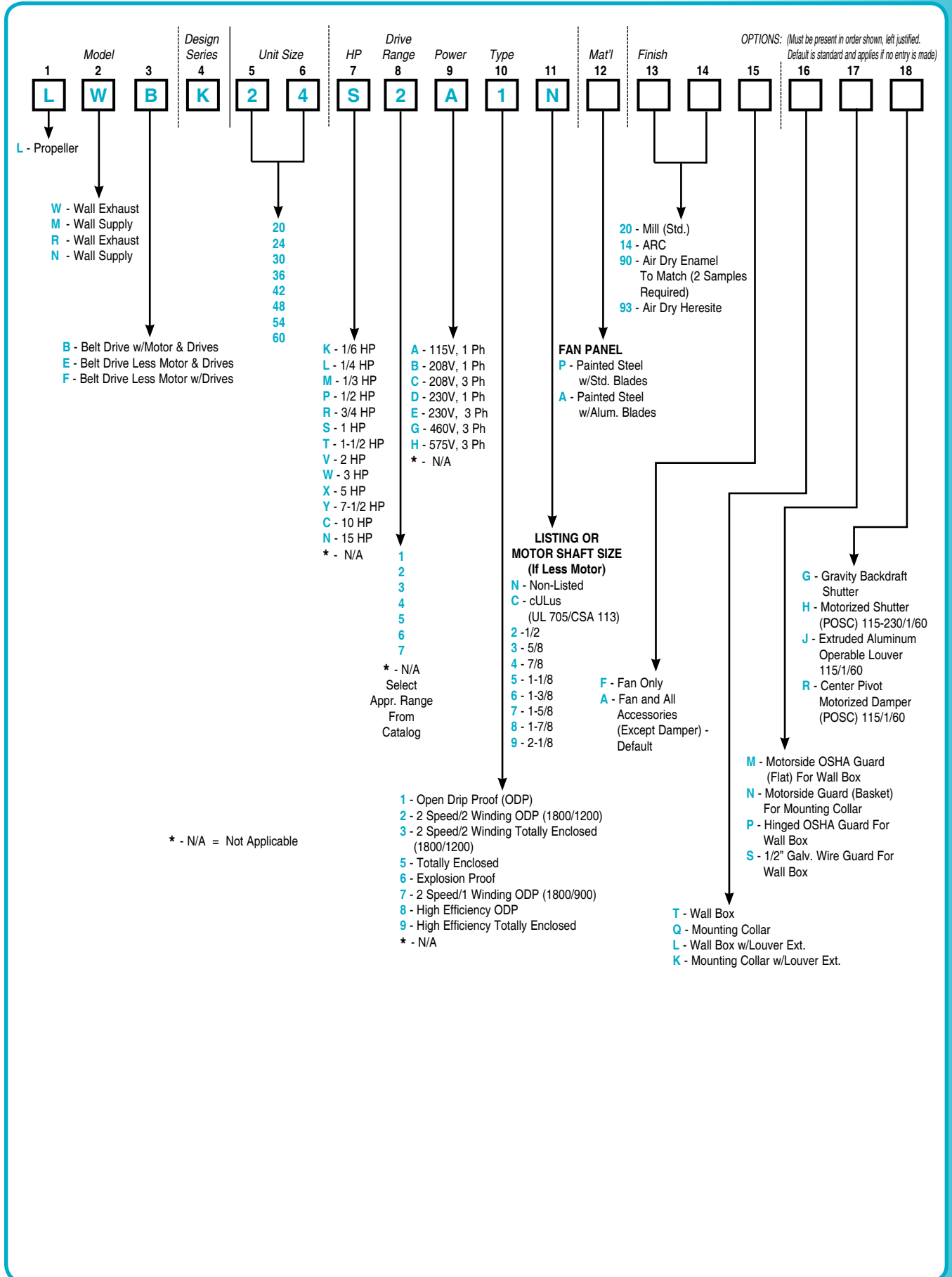
For estimating the pressure loss due to accessory combinations not shown, a good rule of thumb is that for the two arrangements below, approximately 50% of the pressure loss is due to the damper while the OSHA guard and the rainhood account for about 25% each.



**PROP FAN ACCESSORIES
STATIC PRESSURE LOSS - EXHAUST**

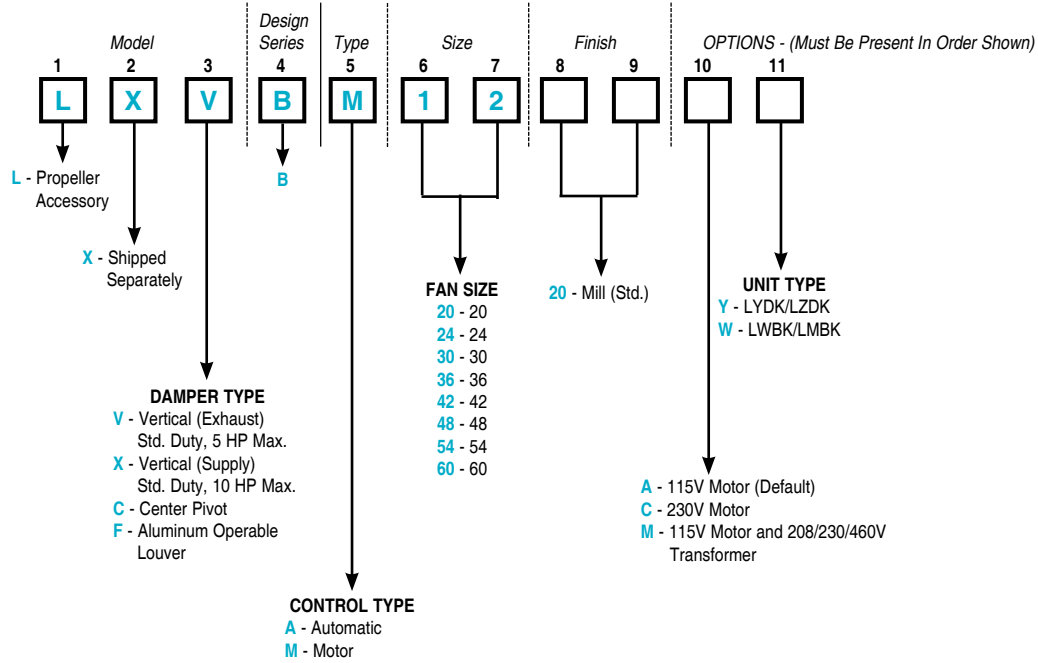
**PROP FAN ACCESSORIES
STATIC PRESSURE LOSS - SUPPLY**



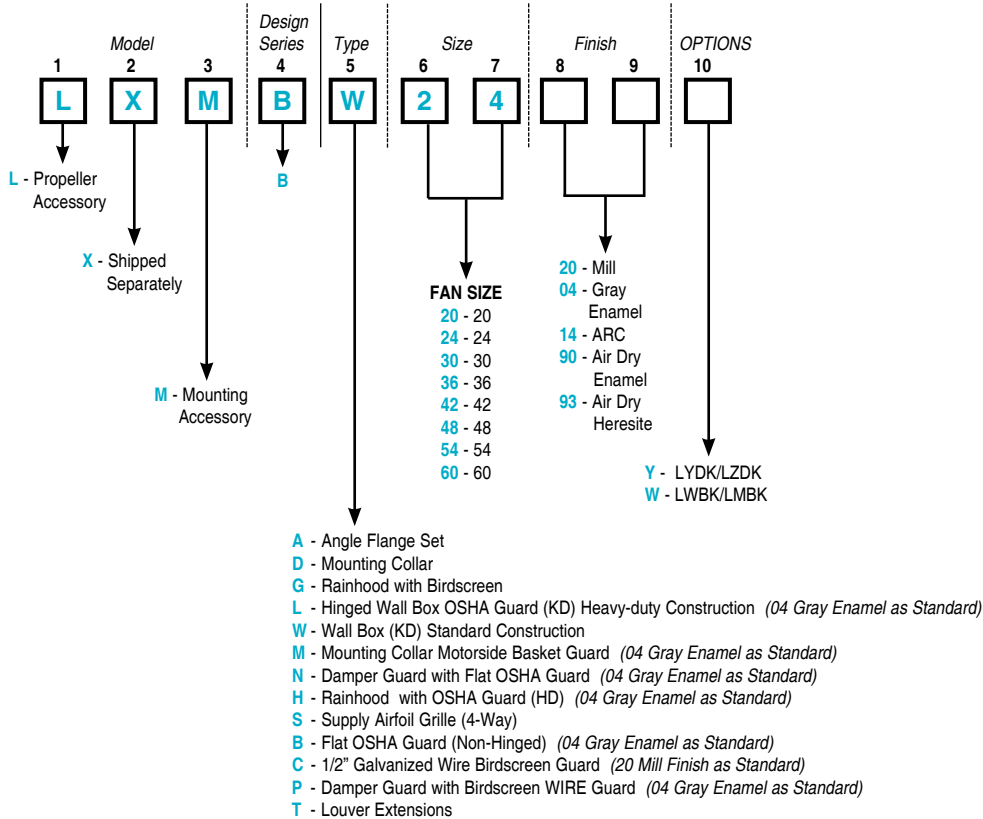


Sidewall Propeller Fans

▼ Dampers



▼ Mounting Accessories



LJDL & LKDL WALL PROPELLER FANS

Models LJDL/LKDL are direct driven units. Direct drive units have the advantage of offering increased efficiency, less frequent maintenance and reduced operating costs.

Models LJDL Exhaust and LKDL Supply

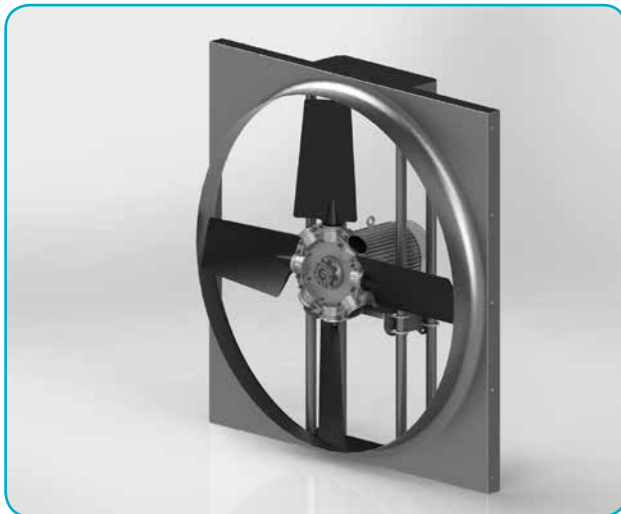
Available in sizes 10” through 54” with aluminum or glass reinforced polypropylene blades, these fans are manufactured for durability and economy. The all welded pipe frame motor support will accommodate a wide range of motor types. Capacities range from 300 to 39,000 CFM and up to 1.25” static pressure.

Features:

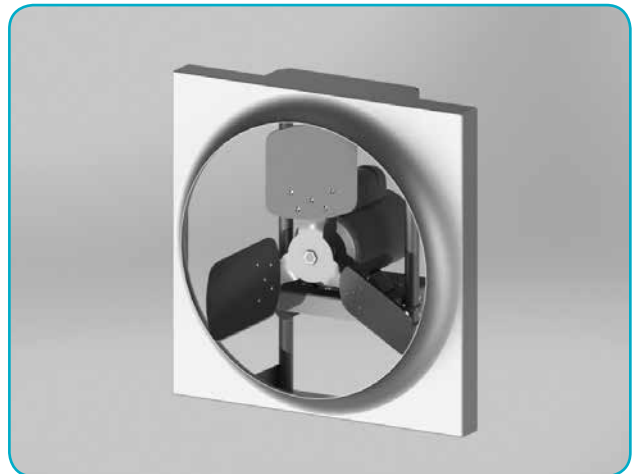
- One piece galvanized steel fan panel.
- Precision spun orifice.
- Aluminum or glass reinforced polypropylene blades.

Options:

- Wall Box
- Wall Collar
- OSHA Guard (Hinged or Flat)
- Motorside Guard
- Weather hood



Size 24 - 54 with Glass Reinforced Polypropylene Blades Standard, Aluminum Option Available



Size 10 - 20 with Cast Aluminum Propeller Blades

AMCA LICENSED AIR and SOUND DATA

Licensed to bear the AMCA Seal for air.

The Carnes Company certifies that the Model VNBL 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



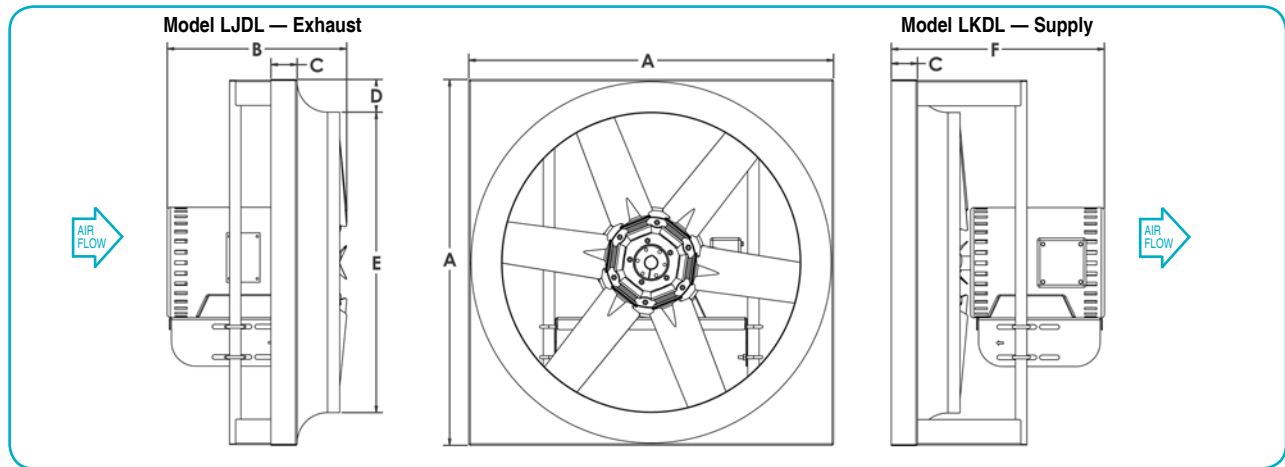
UL OPTION

Models LJDL and LKDL are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.



**POWER
VENTILATOR**

COMPUTERIZED FAN SELECTION: Make the right choice with Carnes FAN-C-LECT™. The Model LJ/LKDL, as well as the comprehensive offering of CARNES powered ventilators, are included in CARNES user friendly fan selection program.



SIZE	DIMENSIONS LISTED IN INCHES						METAL GAUGE			
	A	MAX. B	C	D	E	MAX. F	MAIN PANEL	MOTOR MOUNT	BRACKETS	PIPE
10	16	12.5	1.50	2.875	10.25	15	16	12	14	3/4" SCH. 40
12	16	12.5	1.50	1.875	12.25	15	16	12	14	
16	20	15.0	1.50	1.875	16.25	17	16	12	14	
18	24	17.0	1.50	2.875	18.25	19	16	12	14	
20	24	17.0	1.50	1.875	20.25	19	16	12	14	
24	30	17.0	2.00	2.75	24.5	25	16	12	14	3/4" SCH. 40
30	36	17.0	2.00	2.5	31.0	25	16	12	14	1" SCH. 40
36	42	20.0	2.00	2.75	36.5	25	16	12	14	
42	48	20.0	2.00	2.75	42.5	25	16	12	14	1 1/4" SCH. 40
48	54	22.0	2.00	2.75	48.5	25	16	10	12	
54	60	22.0	2.75	2.25	55.0	25	16	10	12	

Typical Specification

Direct driven sidewall propeller fans shall be Carnes Company Model **LJDJL** for exhaust and **LKDL** for supply as shown on the plans and schedules. Fan panels shall be heavy gauge galvanized steel.

Motors shall be permanently lubricated, sealed bearing type carefully matched to fan load and furnished at the specified voltage, phase and enclosure. Motors shall be mounted on a welded pipe frame motor support.

Propellers shall be deep pitched aluminum or polypropylene and shall be statically and dynamically tested for balance, alignment and smooth operation.

Model LJDL/LKDL Size 10 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

3 BLADES — 35 DEGREES																	
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.														
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
1	0.17 (K)	600	265	0.01													
		650	287	0.01													
		700	309	0.01													
		750	332	0.01													
		800	354	0.01													
		850	376	0.02													
		860	380	0.02													
2	0.17 (K)	900	398	0.02													
		950	420	0.02													
		1000	442	0.03	222	0.03	167	0.03									
		1050	483	0.03	270	0.03	213	0.03									
		1100	505	0.03	304	0.03	250	0.03									
		1150	528	0.03	337	0.03	285	0.03									
		1160	533	0.03	343	0.03	292	0.03									
3	0.17 (K)	1200	551	0.03	369	0.04	320	0.04									
		1250	574	0.04	400	0.04	353	0.04									
		1300	597	0.04	434	0.04	386	0.04									
		1350	602	0.04	464	0.04	392	0.04									
		1400	624	0.04	495	0.05	422	0.05	225	0.06							
		1450	646	0.05	525	0.05	482	0.05	255	0.06							
		1500	668	0.05	555	0.06	513	0.06	285	0.07							
		1550	691	0.06	585	0.06	544	0.06	313	0.07							
		1600	713	0.06	614	0.07	575	0.07	342	0.08							
		1650	742	0.06	638	0.07	602	0.07	363	0.08							
		1700	765	0.07	664	0.07	631	0.07	391	0.08	255	0.10					
		1725	776	0.07	677	0.08	646	0.08	405	0.08	270	0.10					
		1750	787	0.08	691	0.08	660	0.08	425	0.09	286	0.10					

Shaded area's indicate ECM motors.

Aluminum blades standard.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 12 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

3 BLADES — 36 DEGREES																		
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.															
			0.000		0.100		0.125		0.250		0.375		0.500		0.625			
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP		
1	0.17 (K)	600	474	0.01														
		650	514	0.01														
		700	553	0.01														
		750	593	0.01														
		800	632	0.01														
		850	672	0.02														
		860	680	0.02														
2	0.17 (K)	900	711	0.02	371	0.02	251	0.03										
		950	751	0.02	451	0.03	326	0.03										
		1000	790	0.03	529	0.03	404	0.03										
		1050	830	0.03	605	0.04	485	0.04										
		1100	869	0.03	678	0.04	564	0.04										
		1150	909	0.04	732	0.04	640	0.05										
		1160	917	0.04	742	0.05	655	0.05										
3	0.17 (K)	1200	948	0.04	782	0.05	714	0.05										
		1250	988	0.05	830	0.06	783	0.06										
		1300	1027	0.06	878	0.06	833	0.06										
		1350	1067	0.06	926	0.07	882	0.07	471	0.09								
		1400	1106	0.07	973	0.08	931	0.08	548	0.09								
		1450	1146	0.08	1020	0.09	979	0.09	630	0.10								
		1500	1185	0.09	1066	0.09	1026	0.10	710	0.11								
		1550	1225	0.10	1112	0.10	1074	0.10	789	0.12								
		1600	1264	0.10	1157	0.11	1120	0.11	866	0.13	497	0.15						
		1650	1317	0.11	1217	0.12	1181	0.12	906	0.13	579	0.15						
		1700	1357	0.12	1260	0.13	1228	0.13	980	0.14	652	0.16						
		1725	1377	0.12	1281	0.13	1251	0.13	1016	0.14	689	0.16						
1750	1397	0.13	1302	0.14	1274	0.14	1052	0.15	726	0.17								

Shaded area's indicate ECM motors.

Aluminum blades standard.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 16 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

3 BLADES — 37 DEGREES

DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																							
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1	0.17 (K)	600	1138	0.03	517	0.036	269	0.040																		
		650	1233	0.04	681	0.04	505	0.05																		
		700	1328	0.04	834	0.05	676	0.06																		
		750	1423	0.06	980	0.06	833	0.07																		
		800	1518	0.07	1121	0.07	984	0.08																		
		850	1612	0.08	1266	0.09	1129	0.09																		
		860	1631	0.08	1297	0.09	1157	0.09																		
2	0.25 (L)	900	1707	0.10	1419	0.10	1270	0.11	647	0.12																
		950	1802	0.11	1563	0.12	1414	0.12	821	0.14																
		1000	1897	0.13	1683	0.14	1568	0.14	989	0.16																
		1050	2030	0.14	1757	0.15	1685	0.15	1087	0.17																
		1100	2127	0.16	1868	0.17	1799	0.17	1238	0.19	731	0.22														
		1150	2224	0.18	1978	0.19	1911	0.20	1384	0.21	900	0.24														
		1160	2243	0.18	2001	0.20	1934	0.20	1413	0.22	933	0.25														
3	1.00 (S)	1200	2320	0.20	2092	0.22	2023	0.22	1527	0.24	1063	0.26														
		1250	2417	0.23	2205	0.25	2133	0.25	1666	0.27	1221	0.29	766	0.33												
		1300	2514	0.26	2317	0.28	2244	0.28	1802	0.30	1375	0.32	946	0.35												
		1350	2660	0.29	2468	0.30	2417	0.31	2038	0.32	1546	0.34	1126	0.38	617	0.43										
		1400	2758	0.33	2574	0.34	2526	0.34	2215	0.36	1719	0.37	1291	0.42	825	0.46										
		1450	2857	0.37	2680	0.38	2634	0.38	2354	0.39	1874	0.41	1426	0.45	1027	0.49	553	0.54								
		1500	2956	0.40	2784	0.41	2740	0.42	2488	0.43	2026	0.45	1577	0.49	1223	0.53	765	0.58								
		1550	3054	0.45	2889	0.46	2846	0.46	2606	0.47	2175	0.49	1754	0.52	1401	0.57	970	0.62								
		1600	3153	0.49	2993	0.50	2951	0.50	2724	0.52	2321	0.54	1928	0.56	1537	0.61	1171	0.66	741	0.71						
		1650	3224	0.52	3116	0.54	3055	0.54	2796	0.55	2520	0.58	2068	0.61	1686	0.64	1341	0.69	992	0.74						
		1700	3322	0.57	3219	0.59	3168	0.59	2913	0.60	2647	0.63	2215	0.66	1854	0.69	1501	0.73	1172	0.79	749	0.86				
		1725	3371	0.59	3270	0.62	3224	0.62	2970	0.63	2710	0.65	2289	0.68	1937	0.72	1580	0.76	1260	0.81	917	0.88				
		1750	3420	0.62	3321	0.64	3280	0.64	3027	0.66	2773	0.68	2368	0.71	2019	0.74	1658	0.78	1343	0.83	1010	0.90				

Shaded area's indicate ECM motors.

Aluminum blades standard.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 18 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

3 BLADES — 36 DEGREES

DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																								
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250		
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
1	0.17 (K)	600	1618	0.04	850	0.05	645	0.05																			
		650	1753	0.05	1121	0.06	862	0.06																			
		700	1888	0.06	1350	0.07	1083	0.07																			
		750	2022	0.08	1506	0.09	1399	0.09																			
		800	2157	0.09	1689	0.10	1564	0.11																			
		850	2292	0.11	1908	0.12	1719	0.13	919	0.15																	
		860	2319	0.12	1951	0.13	1749	0.13	963	0.15																	
2	0.33 (M)	900	2427	0.13	2112	0.14	1913	0.15	1137	0.17																	
		950	2562	0.16	2262	0.16	2132	0.17	1349	0.19	700	0.22															
		1000	2696	0.18	2412	0.19	2346	0.20	1596	0.21	940	0.24															
		1050	2864	0.22	2571	0.22	2485	0.22	1868	0.24	1148	0.27															
		1100	3000	0.25	2729	0.25	2639	0.25	2124	0.27	1397	0.30															
		1150	3137	0.28	2886	0.29	2798	0.29	2323	0.31	1646	0.33	986	0.37													
		1160	3164	0.29	2918	0.29	2830	0.30	2362	0.32	1695	0.34	1051	0.38													
3	1.50 (T)	1200	3273	0.32	3042	0.33	2957	0.33	2517	0.35	1887	0.37	1263	0.41													
		1250	3409	0.36	3197	0.37	3115	0.37	2688	0.39	2122	0.41	1510	0.44	864	0.50											
		1300	3546	0.41	3350	0.41	3272	0.41	2859	0.43	2356	0.45	1763	0.49	1195	0.53											
		1350	3702	0.43	3473	0.44	3418	0.45	3081	0.47	2531	0.50	2018	0.51	1496	0.56	853	0.63									
		1400	3839	0.48	3623	0.50	3563	0.50	3248	0.53	2774	0.55	2204	0.57	1755	0.60	1166	0.67									
		1450	3977	0.53	3772	0.55	3708	0.55	3414	0.58	2964	0.61	2387	0.62	1996	0.65	1468	0.71									
		1500	4114	0.59	3920	0.61	3855	0.61	3588	0.64	3152	0.67	2619	0.69	2221	0.70	1757	0.76									
		1550	4251	0.65	4068	0.67	4005	0.67	3763	0.70	3364	0.73	2878	0.75	2408	0.77	2002	0.81									
		1600	4388	0.72	4215	0.74	4154	0.74	3917	0.76	3573	0.79	3124	0.82	2592	0.84	2242	0.87									
		1650	4500	0.77	4332	0.79	4279	0.80	4001	0.82	3726	0.85	3378	0.87	2790	0.90	2367	0.94	2045	0.99	1532	1.05					
		1700	4636	0.84	4472	0.87	4424	0.87	4168	0.89	3884	0.92	3570	0.95	3046	0.98	2530	1.01	2284	1.05	1844	1.11					
		1725	4704	0.88	4543	0.91	4497	0.91	4249	0.93	3963	0.96	3662	0.99	3172	1.02	2624	1.04	2368	1.09	1994	1.15					
		1750	4772	0.92	4613	0.95	4570	0.95	4324	0.97	4041	1.00	3754	1.03	3315	1.06	2756	1.09	2451	1.13	2117	1.18					

Shaded area's indicate ECM motors.

Aluminum blades standard.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 20 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

3 BLADES — 30 DEGREES																										
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																							
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1	0.17 (K)	600	2080	0.05	1230	0.06	874	0.06																		
		700	2426	0.07	1887	0.09	1596	0.09																		
		800	2773	0.11	2345	0.12	2189	0.13																		
		860	2981	0.13	2597	0.15	2466	0.16	1317	0.18																
2	0.50 (P)	900	3119	0.15	2758	0.17	2647	0.18	1606	0.20																
		1000	3466	0.21	3155	0.23	3059	0.24	2338	0.26	1250	0.29														
		1100	3731	0.29	3480	0.29	3399	0.30	2889	0.33	1927	0.35														
		1160	3935	0.33	3698	0.34	3633	0.34	3188	0.37	2345	0.40	1438	0.44												
3	1.50 (T)	1200	4071	0.37	3843	0.38	3781	0.38	3362	0.41	2642	0.44	1745	0.47												
		1300	4410	0.47	4203	0.48	4146	0.48	3779	0.52	3298	0.54	2423	0.57	1632	0.62	871	0.68								
		1400	4815	0.55	4587	0.58	4516	0.58	4212	0.61	3833	0.65	3200	0.67	2368	0.71	1579	0.77	923	0.85						
		1500	5159	0.68	4954	0.71	4888	0.72	4597	0.74	4294	0.78	3820	0.82	3126	0.84	2323	0.89	1626	0.96	1012	1.04				
		1600	5503	0.83	5318	0.87	5256	0.87	4974	0.89	4711	0.93	4349	0.97	3805	1.00	3105	1.03	2344	1.09	1715	1.16	1143	1.25		
		1700	5862	0.98	5662	1.03	5615	1.04	5390	1.07	5115	1.10	4767	1.14	4279	1.18	3684	1.21	2949	1.26	2250	1.32	1725	1.40	1224	1.48
		1750	6034	1.07	5839	1.12	5794	1.13	5571	1.17	5323	1.19	5010	1.23	4556	1.28	4048	1.30	3334	1.35	2620	1.41	2049	1.48	1539	1.56

3 BLADES — 38 DEGREES																										
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																							
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
4	0.25 (L)	600	2342	0.07	1535	0.08	1274	0.08																		
		700	2732	0.11	2091	0.12	1883	0.12																		
		800	3123	0.17	2612	0.18	2431	0.18	1370	0.21																
		860	3357	0.21	2922	0.22	2744	0.23	1876	0.24																
5	0.75 (R)	900	3513	0.24	3128	0.25	2949	0.26	2130	0.27																
		1000	3903	0.33	3610	0.34	3466	0.35	2720	0.36	1871	0.40														
		1100	4311	0.43	3977	0.44	3875	0.45	3300	0.47	2335	0.50	1364	0.55												
		1160	4547	0.50	4241	0.52	4137	0.52	3602	0.55	2741	0.57	1861	0.63	1059	0.68										
6	2.00 (V)	1200	4703	0.56	4415	0.57	4314	0.57	3805	0.61	3015	0.62	2181	0.68	1326	0.73										
		1300	5095	0.71	4847	0.73	4755	0.73	4319	0.76	3801	0.78	2900	0.82	2106	0.88	1357	0.94								
		1400	5540	0.88	5319	0.90	5271	0.90	4843	0.93	4326	0.96	3743	0.97	3107	1.03	2182	1.08	1416	1.16	742	1.26				
		1500	5936	1.08	5721	1.11	5683	1.11	5298	1.14	4909	1.15	4374	1.19	3688	1.20	3059	1.28	2271	1.34	1545	1.43	894	1.53		
		1600	6332	1.31	6123	1.35	6087	1.35	5755	1.37	5401	1.39	4897	1.44	4453	1.45	3792	1.49	3070	1.57	2403	1.62	1721	1.72	1075	1.83
		1700	6707	1.57	6562	1.60	6513	1.60	6185	1.62	5864	1.66	5378	1.68	4970	1.71	4460	1.75	3884	1.80	2971	1.87	2209	1.96	1769	2.05
1750	6904	1.71	6763	1.74	6723	1.74	6405	1.77	6093	1.80	5640	1.83	5235	1.86	4792	1.89	4232	1.94	3563	2.00	2506	2.08	2076	2.18		

Shaded area's indicate ECM motors.

Aluminum blades standard.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 24 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

6 BLADES — 27 DEGREES																										
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																							
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1	0.33 (M)	600	2807	0.07	2168	0.09	1947	0.09																		
		700	3275	0.11	2785	0.14	2600	0.14	1402	0.16																
		800	3743	0.17	3363	0.20	3222	0.21	2410	0.22	1308	0.24														
		860	4024	0.21	3669	0.24	3583	0.25	2832	0.28	1736	0.29	1029	0.31												
2	0.75 (R)	900	4211	0.24	3871	0.28	3788	0.28	3106	0.32	2100	0.32	1334	0.34												
		1000	4679	0.33	4371	0.37	4297	0.38	3737	0.42	3096	0.44	2053	0.45	1445	0.47										
		1100	5211	0.37	4900	0.40	4814	0.41	4350	0.46	3850	0.49	3067	0.50	2132	0.50	1607	0.53	1034	0.57						
3	2.00 (V)	1160	5495	0.43	5204	0.47	5122	0.48	4694	0.53	4219	0.56	3593	0.59	2745	0.59	1975	0.60	1558	0.63						
		1200	5685	0.48	5406	0.51	5327	0.52	4918	0.58	4461	0.62	3931	0.65	3141	0.66	2283	0.66	1809	0.68	1363	0.72				
		1300	6158	0.61	5908	0.64	5834	0.65	5461	0.72	5053	0.76	4630	0.80	4043	0.83	3298	0.83	2507	0.83	2040	0.86	1668	0.90		
		1400	6596	0.71	6370	0.77	6328	0.78	5974	0.84	5591	0.89	5207	0.95	4719	0.97	4227	1.00	3535	1.00	2882	1.00	2339	1.03	1902	1.07
		1500	7068	0.88	6848	0.94	6809	0.95	6508	1.01	6149	1.07	5791	1.13	5396	1.18	4937	1.20	4478	1.23	3813	1.23	3181	1.23	2674	1.25
		1600	7539	1.07	7325	1.13	7288	1.14	7035	1.21	6697	1.28	6362	1.34	6027	1.40	5622	1.44	5191	1.47	4761	1.50	4136	1.49	3507	1.49
3	2.00 (V)	1700	7986	1.32	7837	1.37	7793	1.39	7601	1.46	7257	1.53	6979	1.60	6685	1.67	6390	1.73	6096	1.78	5576	1.80	5016	1.82	4370	1.82
		1750	8221	1.44	8077	1.49	8035	1.51	7853	1.58	7517	1.66	7253	1.73	6967	1.80	6681	1.86	6395	1.92	6000	1.95	5456	1.97	4911	1.99

6 BLADES — 36 DEGREES																										
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																							
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
4	0.50 (P)	600	3752	0.11	3101	0.13	2815	0.13																		
		700	4378	0.18	3820	0.20	3680	0.20	2313	0.21																
		800	5003	0.27	4516	0.29	4393	0.29	3460	0.31	2103	0.34	1184	0.40												
		860	5378	0.33	4925	0.35	4811	0.36	4102	0.39	2866	0.40	1626	0.45	1089	0.52										
5	1.50 (T)	900	5629	0.38	5196	0.40	5087	0.41	4517	0.44	3342	0.45	2114	0.50	1361	0.57										
		1000	6254	0.52	5874	0.54	5767	0.55	5277	0.59	4457	0.61	3396	0.62	2280	0.68	1588	0.76	1165	0.84						
		1100	6854	0.69	6482	0.73	6389	0.74	5895	0.79	5382	0.82	4595	0.83	3110	0.83	2195	0.90	1656	1.01	1218	1.11				
6	3.00 (W)	1160	7227	0.81	6876	0.85	6787	0.86	6327	0.91	5853	0.95	5193	0.97	4292	0.97	2701	0.99	2127	1.09	1644	1.21	1251	1.31		
		1200	7477	0.90	7137	0.94	7051	0.95	6611	1.00	6143	1.05	5582	1.07	4833	1.08	3306	1.07	2473	1.16	1958	1.27	1506	1.39	1179	1.48
		1300	8100	1.14	7786	1.19	7707	1.20	7314	1.26	6877	1.31	6471	1.34	5836	1.36	5145	1.37	3648	1.37	2789	1.44	2286	1.56	1863	1.70
		1400	8704	1.41	8439	1.44	8365	1.44	7995	1.51	7623	1.58	7229	1.62	6683	1.65	6069	1.68	5108	1.65	3976	1.65	3060	1.74	2618	1.88
		1500	9326	1.73	9083	1.76	9014	1.77	8668	1.83	8324	1.91	7963	1.96	7580	2.00	7032	2.04	6421	2.07	5509	2.03	4461	2.02	3415	2.09
		1600	9948	2.10	9725	2.13	9659	2.14	9334	2.20	9012	2.28	8684	2.36	8339	2.40	7887	2.45	7420	2.49	6825	2.51	5973	2.47	5004	2.44
		1700	10643	2.53	10434	2.59	10373	2.61	10069	2.70	9749	2.78	9393	2.85	9100	2.89	8797	2.94	8448	2.98	7917	3.01	7327	3.06	6634	3.02
6	3.00 (W)	1725	10800	2.64	10595	2.71	10535	2.72	10235	2.81	9924	2.90	9569	2.97	9276	3.01	8988	3.06	8644	3.10	8165	3.14	7598	3.19	6942	3.18
		1750	10956	2.76	10755	2.82	10696	2.84	10401	2.93	10098	3.02	9748	3.09	9452	3.14	9168	3.19	8839	3.23	8412	3.27	7866	3.32	7246	3.33

Shaded area's indicate ECM motors.

Glass reinforced polypropylene blades standard. Cast aluminum blades optional.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJD/LKDL Size 30 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJD
SUPPLY — LKDL

3 BLADES — 34 DEGREES

DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																											
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250					
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP		
1	0.50 (P)	600	5483	0.14	3719	0.15	2835	0.14																						
		700	6397	0.22	5062	0.23	4584	0.23																						
		800	7311	0.32	6222	0.34	5867	0.34	3209	0.36																				
		850	7768	0.39	6760	0.40	6453	0.41	4040	0.41																				
		860	7859	0.40	6867	0.42	6569	0.42	4247	0.43																				
2	1.50 (T)	900	8225	0.46	7290	0.48	7017	0.48	5058	0.49	2687	0.55																		
		1000	9139	0.63	8331	0.65	8085	0.66	6628	0.68	4234	0.68	2463	0.79																
		1100	9885	0.75	9055	0.79	8823	0.79	7704	0.81	6083	0.81	3653	0.85	2338	0.98														
		1160	10424	0.88	9652	0.92	9426	0.93	8393	0.94	6996	0.95	4494	0.96	3250	1.08	1853	1.21												
3	3.00 (W)	1200	10784	0.97	10047	1.02	9824	1.03	8819	1.04	7588	1.06	5202	1.04	3732	1.14	2479	1.28												
		1300	11682	1.23	11027	1.28	10821	1.29	9864	1.32	8861	1.34	7482	1.34	5077	1.34	3915	1.47	2741	1.62	1521	1.79								
		1400	12542	1.57	11961	1.61	11843	1.62	10885	1.65	9967	1.69	8620	1.69	7270	1.69	5473	1.72	4023	1.85	2841	2.03	2005	2.23						
		1500	13438	1.93	12881	1.97	12771	1.99	11935	2.01	11049	2.07	9924	2.08	8762	2.08	7394	2.07	5687	2.12	4350	2.27	3247	2.46						
		1600	14334	2.35	13796	2.38	13693	2.40	12989	2.44	12109	2.50	11327	2.53	10096	2.52	8967	2.53	7555	2.51	6014	2.58	4746	2.73	3711	2.94				
		1700	15293	2.69	14864	2.77	14731	2.78	13945	2.89	13236	2.92	12454	2.95	11658	2.97	10587	2.96	9374	2.96	7675	2.94	5907	3.05	4987	3.19				
		1750	15743	2.94	15318	3.02	15203	3.03	14439	3.15	13757	3.18	13004	3.21	12232	3.23	11272	3.23	10178	3.22	8827	3.22	6697	3.25	5667	3.39				

6 BLADES — 37 DEGREES

DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																											
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250					
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP		
4	1.00 (S)	600	6832	0.25	5906	0.28	5566	0.29																						
		700	7971	0.39	7235	0.44	6997	0.45	5098	0.47																				
		800	9109	0.58	8485	0.64	8316	0.65	7032	0.70	4497	0.68	2799	0.76	1431	0.89														
		860	9793	0.73	9218	0.78	9062	0.80	8045	0.85	6296	0.86	3872	0.87	2542	0.99														
5	3.00 (W)	900	10248	0.83	9704	0.89	9555	0.91	8645	0.97	7079	1.00	4642	0.98	3222	1.07	2040	1.21												
		1000	11387	1.14	10907	1.20	10773	1.22	10029	1.31	8971	1.36	7406	1.36	5071	1.35	3764	1.44	2700	1.60	1516	1.77								
		1100	12519	1.49	11965	1.57	11839	1.59	11223	1.68	10463	1.73	9268	1.77	7711	1.74	5667	1.74	4195	1.85	3426	2.01	2624	2.18	1810	2.35				
		1160	13202	1.74	12671	1.84	12552	1.85	11966	1.94	11296	2.02	10320	2.07	9078	2.07	7193	2.00	5383	2.07	4266	2.20	3537	2.38	2774	2.55				

Shaded area's indicate ECM motors.

Glass reinforced polypropylene blades standard. Cast aluminum blades optional.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 36 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

6 BLADES — 27 DEGREES																										
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																							
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1	0.75 (R)	400	4317	0.05	2319	0.07	1552	0.06																		
		500	5396	0.10	3902	0.12	3463	0.13																		
		600	6475	0.17	5271	0.20	4957	0.21	2966	0.22																
		700	7554	0.26	6530	0.31	6266	0.32	4783	0.35	2829	0.34														
		800	8634	0.39	7743	0.45	7515	0.46	6308	0.51	4920	0.53	3105	0.51	1715	0.50										
		860	9281	0.49	8456	0.55	8244	0.56	7172	0.62	5901	0.65	4456	0.65	2785	0.62										
2	1.50 (T)	900	9713	0.56	8927	0.62	8724	0.64	7701	0.70	6533	0.74	5281	0.76	3580	0.73	2304	0.71								
		1000	10792	0.77	10090	0.84	9907	0.86	8990	0.93	8020	0.99	6926	1.02	5798	1.04	4225	1.01	2979	0.97	1951	0.98				
		1100	11588	1.04	10935	1.10	10769	1.12	10108	1.18	9154	1.26	8309	1.31	7395	1.34	6228	1.36	4773	1.32	3647	1.29	2564	1.29		
		1160	12220	1.22	11602	1.28	11443	1.30	10827	1.37	9991	1.45	9097	1.52	8301	1.55	7313	1.58	6056	1.58	4800	1.54	3737	1.51	2711	1.51

6 BLADES — 35 DEGREES																										
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																							
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250	
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
4	1.00 (S)	400	6147	0.10	3885	0.12	2985	0.12																		
		500	7684	0.19	6087	0.23	5540	0.23																		
		600	9220	0.33	7988	0.38	7582	0.39	5289	0.41																
		700	10757	0.52	9694	0.58	9434	0.59	7663	0.64	5398	0.65	2908	0.70												
		800	12294	0.77	11356	0.84	11129	0.86	9805	0.93	8057	0.97	5970	0.98	3753	1.03										
5	3.00 (W)	900	13831	1.10	12989	1.18	12788	1.20	11720	1.29	10408	1.34	8804	1.38	6852	1.39	4781	1.42	3100	1.55						
		1000	15367	1.51	14603	1.60	14422	1.62	13515	1.72	12394	1.81	11081	1.86	9712	1.89	7949	1.90	6002	1.92	4405	2.03	2954	2.20		
		1100	16758	2.04	16203	2.16	16058	2.19	15150	2.32	14086	2.42	13221	2.47	11923	2.51	10387	2.52	8189	2.55	6765	2.64	5541	2.74	4317	2.84
		1160	17673	2.39	17146	2.52	17012	2.55	16221	2.68	15187	2.80	14303	2.87	13323	2.93	11971	2.95	10386	2.96	8174	3.00	7014	3.11	5853	3.21

Shaded area's indicate ECM motors.

Glass reinforced polypropylene blades standard. Cast aluminum blades optional.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 42 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

3 BLADES — 34 DEGREES																											
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																								
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250		
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
1	3.00 (W)	400	9145	0.17	6399	0.21	5510	0.21																			
		475	10860	0.28	8690	0.34	8043	0.35																			
		500	11431	0.32	9401	0.39	8815	0.40	4281	0.44																	
		600	13718	0.56	12088	0.64	11638	0.66	9047	0.72	4788	0.78															
		700	16004	0.89	14650	0.99	14273	1.01	12256	1.10	9810	1.15	5794	1.22	3774	1.43											
		800	18290	1.32	17122	1.45	16813	1.48	15129	1.58	13210	1.67	11020	1.72	7163	1.80	5172	1.99	3537	2.25	2095	2.52					
2	5.00 (X)	900	20577	1.89	19555	2.04	19280	2.07	17832	2.19	16257	2.31	14490	2.38	12528	2.44	9421	2.52	6697	2.66	5238	2.96	3773	3.24	2479	3.55	
		1000	22863	2.59	21960	2.76	21713	2.80	20446	2.95	19095	3.08	17630	3.20	15998	3.28	14244	3.34	11827	3.41	8562	3.55	6947	3.75	5661	4.10	
		1100	24889	3.34	24023	3.51	23805	3.54	22694	3.76	21533	3.93	20206	4.07	18834	4.17	17423	4.27	15827	4.35	13938	4.43	10943	4.55	8657	4.71	
		1160	26246	3.92	25426	4.10	25219	4.13	24172	4.35	23079	4.56	21877	4.71	20590	4.83	19290	4.94	17886	5.03	16352	5.12	14488	5.20	11564	5.33	

3 BLADES — 28 DEGREES																											
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																								
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250		
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
4	5.00 (X)	400	10463	0.26	7438	0.30	6223	0.32																			
		500	13078	0.51	10977	0.56	10290	0.57	5597	0.67																	
		600	15694	0.87	14081	0.96	13575	0.97	10404	1.05	6390	1.17	4057	1.42													
		700	18309	1.39	16993	1.49	16620	1.51	14308	1.58	11200	1.72	7649	1.85	5592	2.12	3548	2.39									
		800	20925	2.07	19791	2.20	19488	2.22	17666	2.31	15442	2.40	12445	2.57	9201	2.72	7269	2.96	5614	3.34	3750	3.62					
		860	22495	2.58	21451	2.71	21169	2.74	19554	2.84	17616	2.92	15198	3.08	11854	3.25	9469	3.43	7713	3.70	6173	4.11	4457	4.42			

Shaded area's indicate ECM motors.

Glass reinforced polypropylene blades standard. Cast aluminum blades optional.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 48 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

3 BLADES — 25 DEGREES																											
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																								
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250		
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
1	3.00 (W)	400	9829	0.17	6325	0.21	5208	0.22																			
		450	11058	0.24	8004	0.30	7168	0.30																			
		500	12287	0.33	9657	0.40	8847	0.41	4714	0.44																	
		550	13516	0.44	11222	0.52	10504	0.54	6706	0.57																	
		600	14744	0.57	12737	0.67	12086	0.68	8768	0.73	5238	0.76															
		650	15973	0.72	14170	0.83	13615	0.85	10603	0.91	7226	0.95	4124	1.01													
		700	17202	0.90	15554	1.01	15095	1.04	12278	1.13	9319	1.17	6376	1.21	3432	1.30											
		750	18430	1.11	16918	1.22	16490	1.26	13941	1.37	11342	1.42	8322	1.46	5620	1.50	3057	1.64									
		800	19659	1.35	18268	1.46	17866	1.50	15572	1.64	13120	1.70	10417	1.75	7824	1.79	5221	1.86	2893	2.02							
		860	21133	1.67	19870	1.79	19497	1.83	17447	2.00	15126	2.09	12857	2.14	10192	2.19	7927	2.23	5461	2.33	3286	2.50					

3 BLADES — 30 DEGREES																											
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																								
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250		
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
4	5.00 (X)	400	11894	0.26	8470	0.31	7269	0.32																			
		450	13380	0.37	10511	0.44	9588	0.45																			
		500	14867	0.50	12358	0.59	11634	0.60	6744	0.65																	
		550	16354	0.67	14131	0.77	13489	0.79	9464	0.82	5427	0.93															
		600	17841	0.87	15847	0.98	15280	1.00	11996	1.07	7717	1.13	4588	1.30													
		650	19327	1.10	17531	1.23	17008	1.25	14132	1.34	10277	1.38	6974	1.49	4111	1.73											
		700	20814	1.38	19173	1.52	18704	1.55	16185	1.65	12958	1.70	9227	1.79	6522	1.95	3905	2.22									
		750	22301	1.69	20775	1.85	20376	1.88	18055	2.01	15350	2.08	11836	2.12	8864	2.24	6347	2.47	3912	2.78							
		800	23787	2.05	22363	2.22	21995	2.26	19882	2.40	17472	2.50	14537	2.54	11071	2.64	8725	2.76	6372	3.04	4092	3.38					
		860	25571	2.55	24254	2.73	23911	2.77	22009	2.94	19924	3.06	17464	3.14	14442	3.16	11417	3.31	9232	3.45	7041	3.75	4916	4.10			

Shaded area's indicate ECM motors.

Glass reinforced polypropylene blades standard. Cast aluminum blades optional.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

Model LJDL/LKDL Size 54 - Direct Drive



SIDEWALL PROPELLER FAN
EXHAUST — LJDL
SUPPLY — LKDL

4 BLADES — 22 DEGREES																												
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																									
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250			
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP		
1	5.00 (X)	400	15056	0.41	12258	0.51	11384	0.52	6370	0.56																		
		450	16938	0.59	14507	0.69	13832	0.72	9714	0.79	5362	0.78																
		500	18820	0.81	16696	0.92	16081	0.95	12618	1.05	8456	1.10	4738	1.04														
		550	20702	1.08	18810	1.20	18277	1.24	15289	1.37	11823	1.44	8052	1.45	4604	1.38												
		600	22584	1.40	20871	1.54	20410	1.57	17840	1.74	14761	1.83	11301	1.89	8097	1.86	4875	1.78										
		650	24466	1.78	22906	1.93	22480	1.97	20181	2.15	17484	2.28	14590	2.37	11225	2.41	8425	2.36	5388	2.27								
		700	26348	2.22	24921	2.38	24525	2.42	22426	2.62	20086	2.79	17447	2.90	14598	2.98	11467	3.01	8973	2.95	6156	2.85	3844	2.81				
		750	28230	2.73	26897	2.91	26550	2.95	24634	3.16	22604	3.37	20160	3.50	17660	3.60	14866	3.68	12017	3.70	9695	3.63	7108	3.52	4803	3.47		
		800	30112	3.32	28861	3.50	28552	3.55	26807	3.78	24894	4.00	22769	4.17	20470	4.30	18098	4.41	15373	4.48	12739	4.48	10559	4.41	8208	4.31		
		860	32370	4.12	31204	4.32	30917	4.37	29341	4.62	27585	4.85	25803	5.09	23672	5.24	21518	5.37	19309	5.48	16758	5.56	14229	5.58	12146	5.52		

4 BLADES — 27 DEGREES																											
DRIVE RANGE	MAX MOTOR HP*	RPM	STATIC PRESSURE, INCHES W.G.																								
			0.000		0.100		0.125		0.250		0.375		0.500		0.625		0.750		0.875		1.000		1.125		1.250		
			CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
4	7.50 (Y)	400	18534	0.62	15826	0.74	14975	0.76	9261	0.79																	
		450	20851	0.88	18491	1.01	17845	1.04	13437	1.12	7824	1.11															
		500	23167	1.21	21082	1.35	20509	1.39	17065	1.52	12261	1.54	7489	1.52													
		550	25484	1.61	23593	1.77	23113	1.81	20250	1.98	16369	2.05	11575	2.05	7654	2.01	4351	2.08									
		600	27801	2.09	26072	2.26	25632	2.31	23176	2.52	20047	2.64	16076	2.67	11609	2.66	8184	2.61	5121	2.68							
		650	30118	2.66	28526	2.84	28120	2.89	25969	3.13	23388	3.31	20060	3.38	16214	3.39	12146	3.37	8995	3.32	6078	3.37	3630	3.56			
		700	32434	3.32	30957	3.51	30584	3.56	28630	3.83	26359	4.05	23644	4.19	20342	4.23	16726	4.24	12955	4.21	10026	4.16	7239	4.17	4896	4.35	
		750	34751	4.09	33371	4.28	33029	4.34	31248	4.63	29255	4.89	26973	5.09	24161	5.18	20946	5.20	17485	5.21	13982	5.18	11234	5.12	8605	5.11	
		800	37068	4.96	35772	5.16	35452	5.23	33810	5.53	32015	5.82	29950	6.06	27627	6.23	24870	6.30	21789	6.32	18521	6.32	15184	6.29	12586	6.23	
		860	39848	6.16	38640	6.37	38343	6.44	36823	6.77	35206	7.09	33435	7.38	31445	7.61	29143	7.76	26547	7.83	23689	7.85	20718	7.85	17354	7.84	

Shaded area's indicate ECM motors.

Glass reinforced polypropylene blades standard. Cast aluminum blades optional.

Performance certified is for wall ventilators for installation type A: Free inlet, Free outlet. Performance ratings (bhp) do not include transmission losses. Performance ratings do not include the effects of accessories.

WEATHER HOOD

Attaches to either the wall box or mounting collar and may be used with gravity or motorized dampers, but not with the damper guard. The weather hood shields the wall opening from rain and snow and is recommended for supply applications and for all applications where additional weather protection is desired. The mounting flanges are prepunched for easy installation. The optional heavy duty style flat guard may be substituted for the standard galvanized mesh birdscreen.



SPECIFY THE WEATHER HOOD FOR ALL SUPPLY FAN INSTALLATIONS.



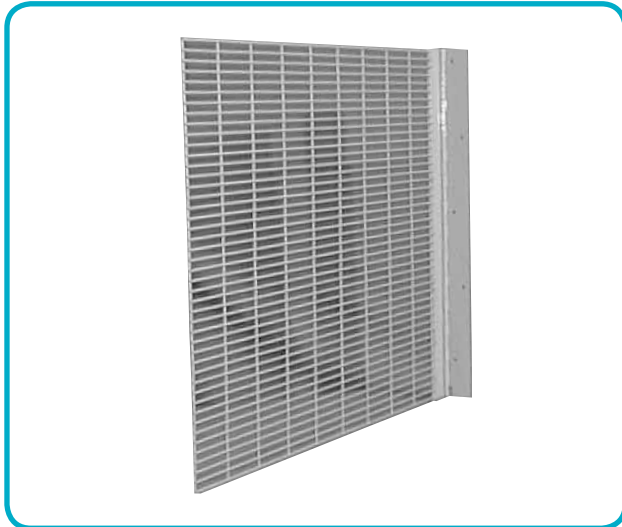
EXTRUDED ALUMINUM OPERABLE LOUVER

Attaches to either the wall box or mounting collar. The extruded aluminum louver/damper combination incorporates Carnes exclusive “S” design blade with every other blade fully adjustable from open to close. With the operable blades in the open position, the louver is provided with 2” blade spacing; when the operable blades are closed, the remaining fixed blades appear to be a 4” spaced louver. However the operable blades are closed off, serving as a damper. Damper blades feature full-length gaskets to assure quiet operation and maximum closure when the operable blades are shut. Mill finish aluminum construction is standard, and a variety of custom finishes are also available. Two position power open spring close (POSC) electric operators are available for 24, 115, 230 or 460 volts.

SPECIAL PAINTS and COATINGS — A wide selection of decorative paints and corrosion resistant coatings including enamel, epoxy and Heresite are available for factory application to the fan and accessories. Please contact Carnes or your local Carnes Representative for selection assistance and details.

UL LISTING — To further ensure electrical safety and reliability, specify the UL 705 listing and Canadian cUL listing. Please check with your local code authority and comply with all applicable codes.

Most sidewall propeller fan installations require one or more of the accessories shown. The factory designed wall box or mounting collar provide the most effective platform for mounting the fan and accessories. Ease of installation, safety, reliability, and weather protection are among the many reasons to specify and purchase these factory fabricated accessories. Please remember that all accessories ship loose and knocked down for field assembly unless specified and ordered to be factory assembled. For complete specifications and details - please refer to the Carnes Submittal Sheets.

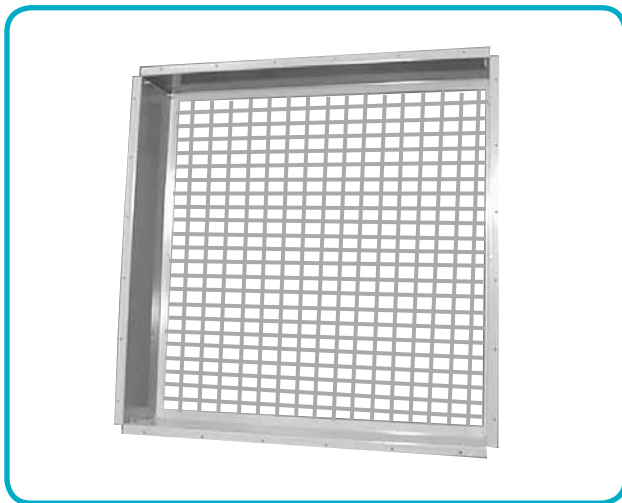
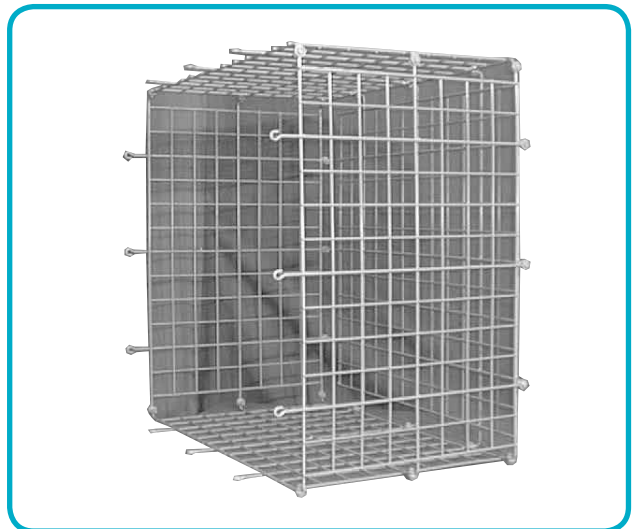


HINGED MOTOR SIDE GUARD - OSHA STYLE

Attaches to the wall box on the motor and drive side and may be used for exhaust or supply. This protective heavy duty guard is welded to a full length steel piano hinge which allows easy access to the fan, motor, bearings and drives for routine maintenance and service. The welded steel guard is coated with gray enamel paint then baked for a durable general service finish.

MOTOR SIDE GUARD - BASKET STYLE

Attaches to the mounting collar completely enclosing the motor and drives and may be used for exhaust or supply applications. The welded steel sections are bolted together allowing easy removal for access to the fan, motor, bearings and drives for routine maintenance and service. The standard finish is gray baked enamel paint.



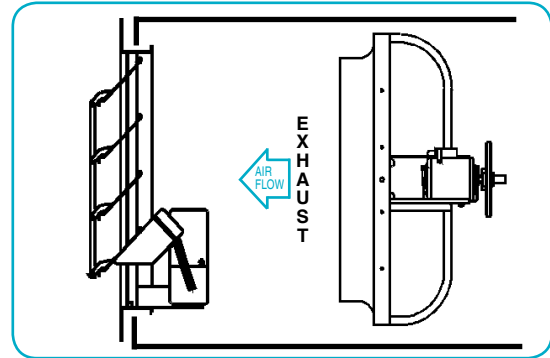
DAMPER GUARD

Attaches to either the wall box or mounting collar on the propeller side of the fan. The heavy duty steel guard meets OSHA requirements and completely encloses the damper and exterior wall opening. The prepunched mounting flanges simplify installation. The standard finish is gray baked enamel paint. The damper guard may not be used with the weather hood.

The aluminum backdraft dampers and wall shutters can significantly reduce the infiltration of outside air (or loss of inside conditioned air) when the fan is not operating. Dampers may be mounted on the optional wall box housing or wall mounting collar or may be used alone with provisions for adequate clearance from the fan blades. Motorized dampers provide better weather protection (especially for intake applications) and prevent blade chatter due to air velocity, wind or building pressure variations. **For complete information, please refer to the Carnes Submittal Sheets.**

END PIVOT - EXHAUST GRAVITY OR MOTORIZED — EXHAUST

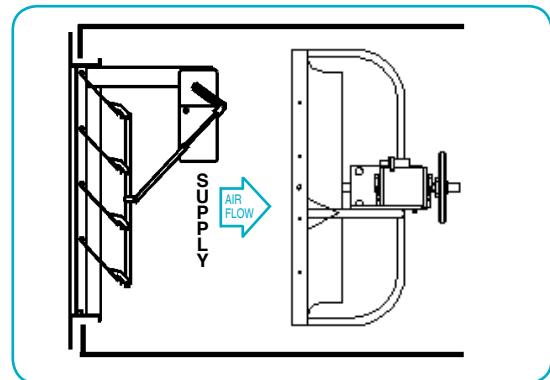
The Model LXVBA Gravity Operated Backdraft Shutter and Model LXVBM Motorized Shutter are constructed with all aluminum blades and frame. The pre-punched flanged frames recess the damper body and optional electric actuator into the wall opening for a neat and clean flush exterior appearance. Adequate clearance must be maintained between shutter and fan blades to prevent damage to the fan or shutter. When used in conjunction with the factory wall box or mounting collar, the proper clearance is guaranteed.



Damper shown with optional motor kit.

END PIVOT - SUPPLY GRAVITY OR MOTORIZED — SUPPLY

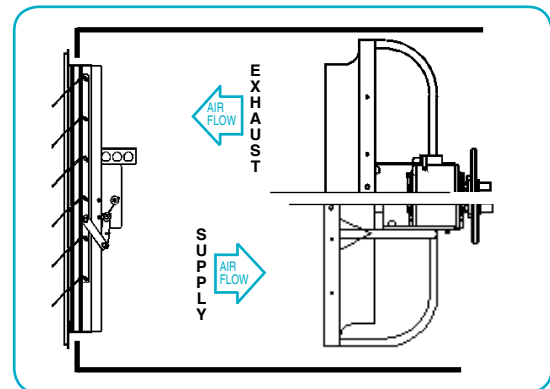
The Model LXXBA Gravity Operated Backdraft Shutter and Model LXXBM Motorized Shutter are constructed with all aluminum blades and frame. The pre-punched flanged frames recess the damper body and optional electric actuator into the wall opening for a neat and clean flush exterior appearance. Adequate clearance must be maintained between shutter and fan blades to prevent damage to the fan or shutter. When used in conjunction with the factory wall box or mounting collar, the proper clearance is guaranteed. The motorized option provides superior weather protection and is recommended for supply applications.



Damper shown with optional motor kit.

CENTER PIVOT MOTORIZED — EXHAUST and SUPPLY

The Model LXCMB Center Pivot Backdraft Damper is constructed with all aluminum blades and frame. The blade pivots in the center which eliminates binding and provides increased damper free area thereby reducing pressure drop. The flanged frame recesses the damper body into the wall opening for a flush exterior appearance. When used in conjunction with the factory wall box or mounting collar, the proper minimum clearance is maintained between the damper and the fan blades. Please note that center pivot backdraft dampers must be motorized and are not suitable for gravity operation.



ACTUATORS ELECTRIC DAMPER OPERATORS

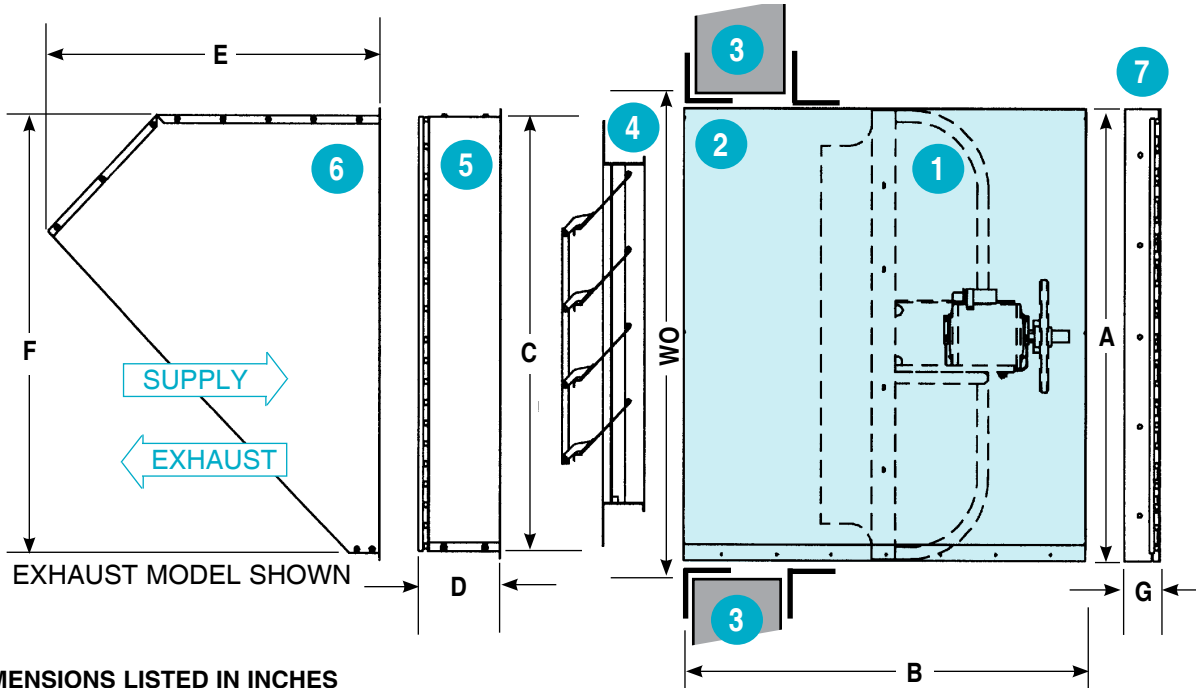
The power open-spring close (POSC) damper motors are available in 24, 115, 230 or 460 volts. Transformers are also available for voltage reduction. The stall type motor draws a maximum 0.5 amps at 115/60/1 power supply. Typically, the electric actuator with complete hardware and linkage kit ships loose for field attachment to the damper. For the installers' convenience, a conduit J-box or Greenfield adapter is provided to simplify the power connection. In order to protect the damper blades from damage when the fan is first energized, a 'Delay-On' timer should be provided and installed by others (usually in the control circuit) which will permit the damper to open prior to allowing fan operation.

SIDEWALL PROPELLER FANS TYPICAL INSTALLATIONS _____ **WALL BOX**

The wall box (wall housing) provides a safe and sturdy platform for mounting the Models LJDL, LKDL Sidewall Propeller Fans and the complete selection of optional accessories shown here. The wall box allows for the exhaust or supply fan to be mounted in the wall opening and projects either into the building or outside the exterior wall. Normally, the fan and wall box are installed so that the motor and drive side of the fan are accessible from inside the building. When access is required from outside, the fan and wall box assembly may be reversed; in this case the standard exhaust Model LJDL, and LKDL would function as a supply fan when reverse mounted. The heavy gauge galvanized steel construction provides corrosion resistance. Heavy duty center pivot motorized backdraft dampers or end pivot backdraft shutters attach to the prepunched wall box flanges ensuring adequate clearance between the fan blades and damper. The heavy duty OSHA style damper guard completely encloses the exterior wall opening, protects the damper from damage, and prevents the entrance of birds and other unwanted animals. When additional weather protection is desired for either exhaust or supply installations, a rainhood should be installed in place of the damper guard. Rainhoods are strongly recommended for all supply applications. Rotating fan parts should always be adequately guarded. A hinged and lockable OSHA style motorside guard should be specified for safety and allows quick and easy access to the fan for routine inspection and maintenance. For supply applications, an airfoil 4-way adjustable industrial grille may be substituted for the motorside guard to efficiently direct the air flow in four directions.

Please remember that all accessories ship loose and knocked down (KD) unless specified and ordered factory assembled.

▼ **DIMENSIONAL DATA** _____ **WALL BOX and ACCESSORIES**



DIMENSIONS LISTED IN INCHES

1 FAN SIZE	2 WALL BOX		3 WALL OPENING WO	4 DAMPER		5 DAMPER GUARD D	6 WEATHER HOOD			7 OSHA GUARD	
	A	B		C	SIZE		E	F	WIDTH	A	G
10	16-1/4	24	17-1/2	15-1/4	10	7-1/4	14	14	15-1/2	14	2-1/4
12	16-1/4	24	17-1/2	15-1/4	10	7-1/4	14	14	15-1/2	14	2-1/4
16	20-1/4	24	21-1/2	19-1/4	16	7-1/4	18	18	19-1/2	18	2-1/4
18	24-1/4	24	25-1/2	23-1/4	18	7-1/4	20	22	23-1/2	22	2-1/4
20	24-1/4	24	25-1/2	23-1/4	18	7-1/4	20	22	23-1/2	22	2-1/4
24	30-1/4	37-1/2	31-1/2	28	24	7-1/4	25	30	30	28	2-1/4
30	36-1/4	39-1/2	38	34	30	7-1/4	29-1/8	36	36	34	2-1/4
36	42-1/4	43-1/4	44	40	36	7-1/4	33-3/8	42	42	40	2-1/4
42	48-1/4	45-1/2	50	46	42	7-1/4	37-5/8	48	48	46	2-1/4
48	54-1/4	47-3/4	56	52	48	7-1/4	42	54	54	52	2-1/4
54	60-1/4	47-3/4	62	58	54	7-1/4	47	58-1/2	58-1/2	58	2-1/4

For more complete dimensional data, weights and material specifications - please refer to the Carnes Submittal Sheets.

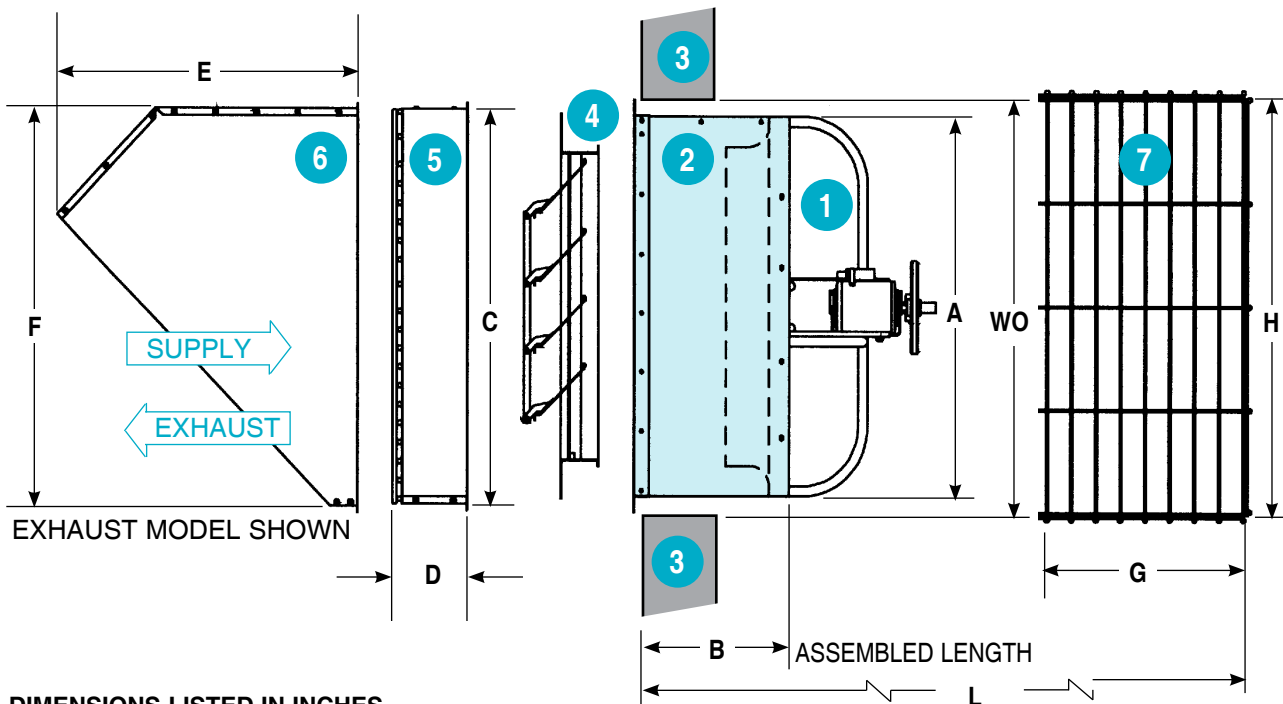
**SIDEWALL PROPELLER FANS
TYPICAL INSTALLATIONS**

MOUNTING COLLAR

The wall mounting collar provides an alternate choice for mounting the Models LJDL, LKDL Sidewall Propeller Fans and the selection of accessories shown here. The mounting collar allows for the exhaust or supply fan to be mounted within the wall opening and must be flush with the exterior wall surface - extending entirely inside the building. The materials and construction are similar to the wall box. Rotating fan parts should always be adequately guarded. Factory designed fan guards provide protection while allowing easy access for routine inspection and maintenance of the fan, motor, bearings and drives. The basket style motorside guard attaches to the mounting collar and completely encloses the motor and drive side of the fan. For OSHA requirements, the wall box arrangement with guard must be specified and ordered. When factory supplied guards are not specified and ordered, proper fan guards must be provided by others and installed. Also, for supply applications where the adjustable 4-way airfoil grille is desired, the wall box must be used in lieu of the mounting collar. Backdraft dampers and damper guards or rainhoods can be mounted in a similar fashion as described for the wall box.

Please remember that all accessories ship loose and knocked down (KD) unless specified and ordered factory assembled.

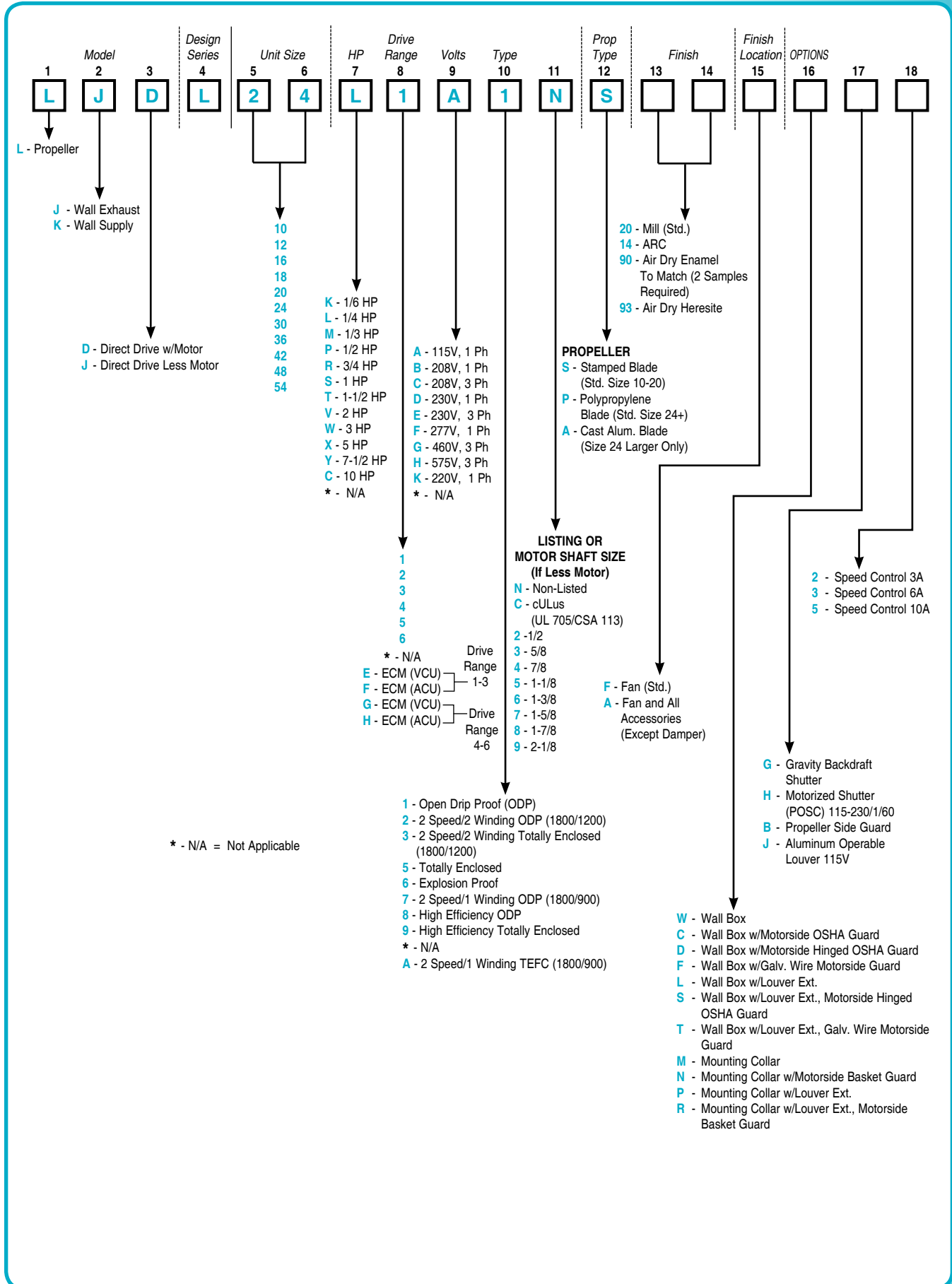
▼ DIMENSIONAL DATA MOUNTING COLLAR and ACCESSORIES



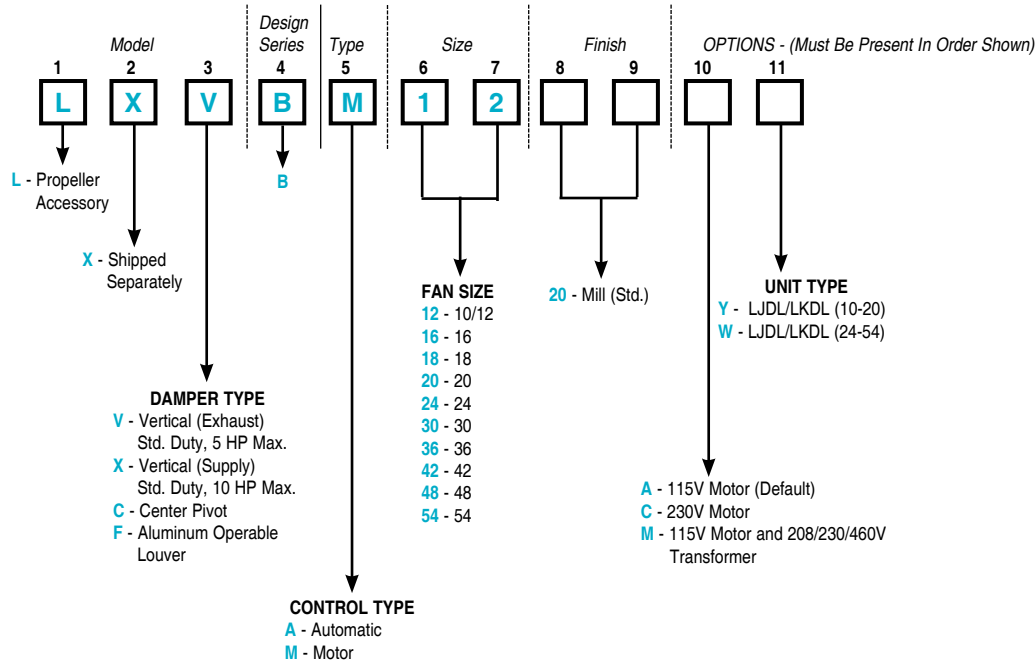
DIMENSIONS LISTED IN INCHES

1 FAN SIZE	2 WALL COLLAR		3 WALL OPENING WO	4 DAMPER		5 DAMPER GUARD D	6 WEATHER HOOD			7 MOTOR-SIDE GUARD		ASS'Y LENGTH L
	A	B		C	SIZE		E	F	WIDTH	G	H	
10	16-1/4	16	17-1/2	15-1/4	10	7-1/4	14	14	15-1/2	18	17	34
12	16-1/4	16	17-1/2	15-1/4	10	7-1/4	14	14	15-1/2	18	17	34
16	20-1/4	16	21-1/2	19-1/4	16	7-1/4	18	18	19-1/2	18	21	34
18	24-1/4	16	25-1/2	23-1/4	18	7-1/4	20	22	23-1/2	20	25	36
20	24-1/4	16	25-1/2	23-1/4	18	7-1/4	20	22	23-1/2	20	25	36
24	30-1/4	17-1/2	31-1/2	28	24	7-1/4	25	30	30	22	31	39-1/2
30	36-1/4	17-1/2	38	34	30	7-1/4	29-1/8	36	36	25	37	42-1/2
36	42-1/4	18-1/2	44	40	36	7-1/4	33-3/8	42	42	27	43	45-1/2
42	48-1/4	20-3/4	50	46	42	7-1/4	37-5/8	48	48	27	49	47-3/4
48	54-1/4	22-3/4	56	52	48	7-1/4	42	54	54	27	55	49-3/4
54	60-1/4	47-3/4	62	58	54	7-1/4	47	58-1/2	58-1/2	—	—	—

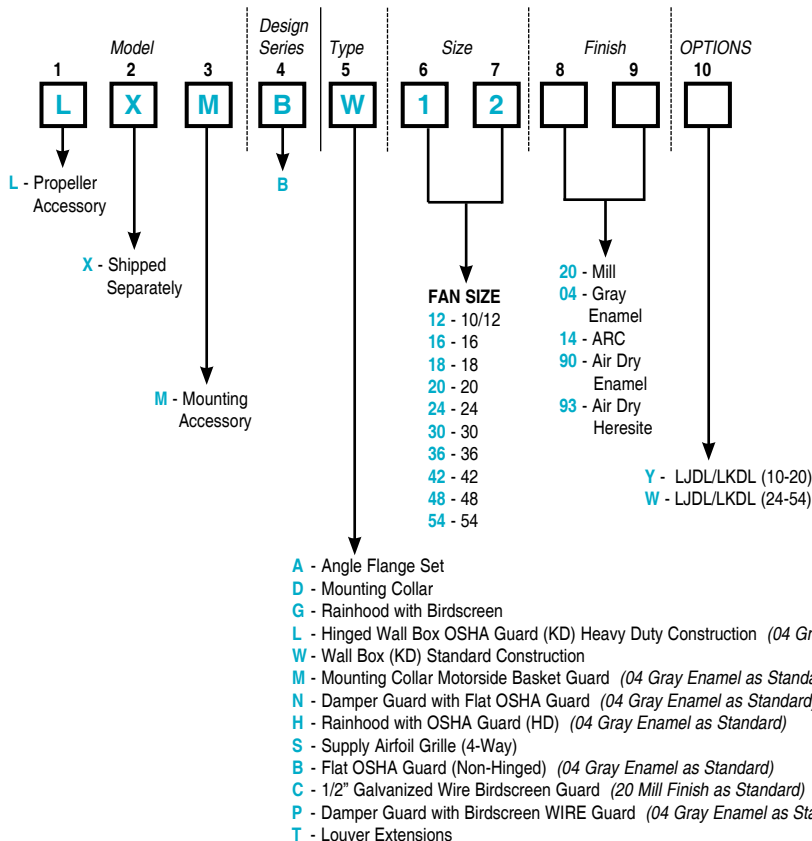
For more complete dimensional data, weights and material specifications - please refer to the Carnes Submittal Sheets.



▼ Dampers



▼ Mounting Accessories



K SERIES DIRECT DRIVE SIDEWALL PROPELLER FANS

SPECIFICATIONS

Fans shall be direct drive propeller type with integral motorside OSHA style guard.

Propeller construction shall be of die formed aluminum blades riveted to steel hub. Propeller assembly shall be statically and dynamically balanced. Hub shall be securely attached to motor shafts with set screws.

Motors shall be permanently lubricated, speed controllable heavy-duty permanent split capacitor type, carefully matched to the fan load and furnished at the specified voltage, phase and enclosure. Motors shall be factory wired to a factory mounted wiring/conduit box. Fan/motor assembly shall be factory run-tested.

The single piece fan panel shall be minimum 16 gauge galvanized steel construction with pre-punched mounting holes, formed flanges and a deep spun venturi. Motorside guard shall be coated with an electrocoat baked enamel to provide a long lasting finish. Motor support/integral motorside guard shall be heavy-gauge welded wire and shall meet OSHA specifications. The motor and guard assembly shall be resiliently mounted to the fan panel with neoprene vibration mounts.

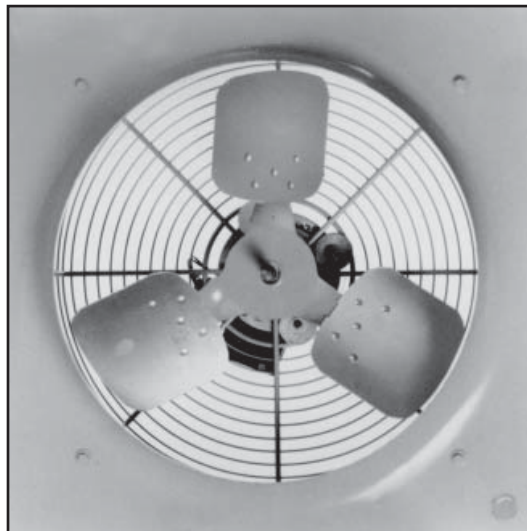
The axial exhaust and supply fan shall bear the AMCA certified ratings seal for air and sound performance.

Fans shall be Model LYDK for exhaust and LZDK for supply by Carnes Company of Verona, Wisconsin.

CONSTRUCTION & FEATURES

Model LYDK/LZDK

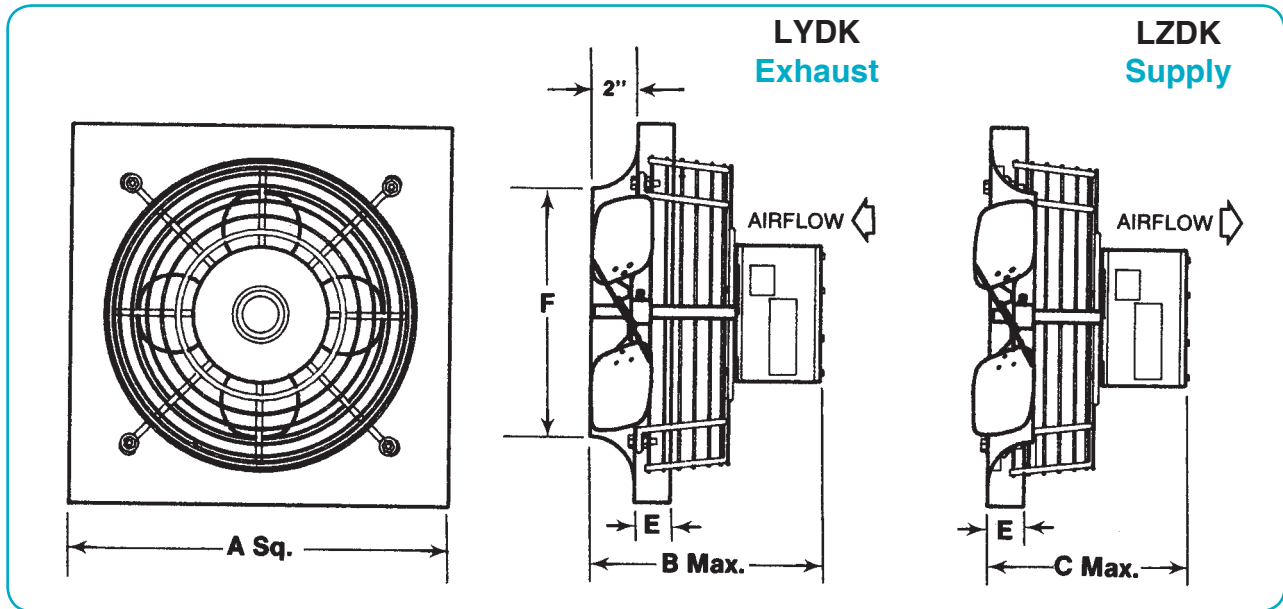
- PANEL**
16 ga. Galv. Steel
Single Piece Construction
- RESILIENT MOUNTS**
For Vibration Isolation
- MOTOR**
Speed Controllable
Permanent Split Capacitor
Open Drip-Proof
- TERMINAL BOX**
Factory Wired for
Easy Field Power
Connection
- CONDUIT KNOCKOUT**
For Field Wiring
Damper Motor
- MOTORSIDE GUARD**
Welded Steel Wire
Meets OSHA Specifications
Electrocoat Baked Enamel Finish



EXHAUST MODEL LYDK SHOWN

- PROPELLER**
Die Formed Alum. Blades
Steel Hub with Set Screws
Statically & Dynamically
Balanced 3 or 4 Blade Assembly
- VENTURI**
Deep Spun for
High Performance
- FORMED FLANGES**
For A Strong, Rigid Panel
Pre-Punched Mounting Holes
Formed Toward Motor Side for
Easy Mounting
- AMCA LICENSED**
Ratings Seal for
Air Performance and Sound
- FACTORY RUN TESTED**
For Dependable Operation

Size	A Sq.	B	C	D	E	F	Weight (Lbs.)
9-10	16	11	10	2	1-1/2	10-1/4	20
11-12	16	11	10	2	1-1/2	12-1/4	20
13	20	12	11	2	1-1/2	14-1/4	25
15-16	20	13	12	2	1-1/2	16-1/4	30
17-18	24	13	12	2	1-1/2	18-1/4	35
19-21	24	13	12	2	1-1/2	20-1/4	40



- *SPECIAL FINISHES* - epoxy, enamel or heresite.

Performance Ratings

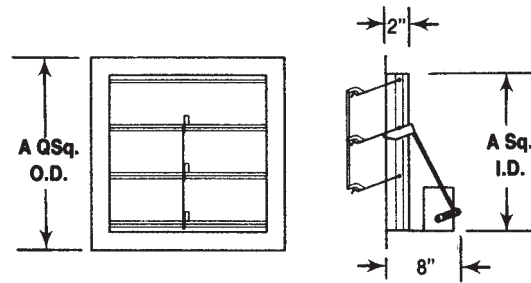


Carnes Company certifies that the Type LYDK and LZDK fans shown herein are licensed to bear the AMCA Seal for Sound and Air. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

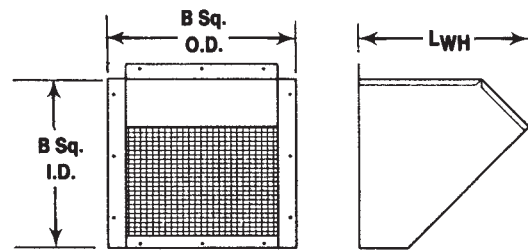


Models LYDK and LZDK are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.

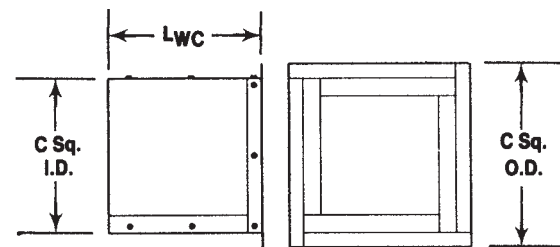
SHUTTERS - Flanged frames recess the aluminum damper and optional motor pack into the wall opening for weather protection and a neat, clean appearance that is flush with the exterior wall. Standard construction includes aluminum frame, aluminum blades, polyurethane seal on sill and felt blade seals.



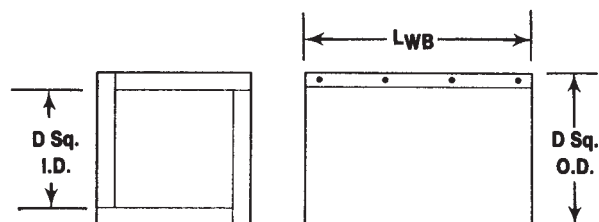
WEATHER HOOD - Provides weather protection for supply and exhaust applications (strongly recommended for supply). Flanged and pre-punched for easy mounting. Includes galvanized 1/2" x .042 wire mesh birdscreen. Standard material is 18 ga. galvanized steel (aluminum optional).



WALL COLLAR - Allows for the exhaust or supply fan to be mounted within the wall opening flush with exterior wall surface. Pre-punched mounting holes are located for easy attachment of fan panel, shutter and weather hood. Standard material is 18 ga. galvanized steel (aluminum is optional).



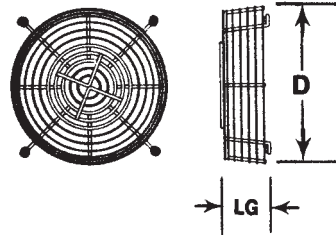
WALL BOX - Allows for the exhaust or supply fan to be mounted in the wall opening and extending either into or outside the exterior wall. Pre-punched mounting holes are located for easy attachment of fan panel, shutter and weather hood. Standard material is 18 ga. galvanized steel (aluminum and painted finishes are optional).



Models LYDK and LZDK

ACCESSORIES

PROPELLER GUARD - In addition to the standard motorside guard, the propeller-side guard provides protection where the propeller side of the fan is exposed. This heavy-gauge welded wire guard is bolted to the fan panel. The standard finish is baked enamel (gray). Meets OSHA specifications.



ELECTRONIC SPEED CONTROL -

Enables continuously variable capacity control from full motor nominal RPM to approximately 50%. 3 sizes available - 3 amp, 6 amp and 10 amp. Compatible with standard 115/1/60 and PSC motors. Ships loose for field installation and wiring.

DISCONNECT SWITCH -

NEMA 1 or NEMA 3 (raintight) ships loose for field installation.

MOUNTING ANGLES -

Angle flanges cut to length provide a convenient method of attaching wall box to wall. Ships loose for field drilling and installation.

ALUMINUM CONSTRUCTION -

For additional corrosion resistance - the fan panel, weather hood, wall box or wall collar can be specified with aluminum construction.

UL 705 LISTING -

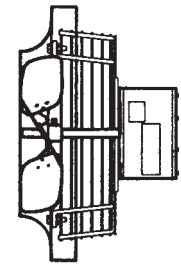
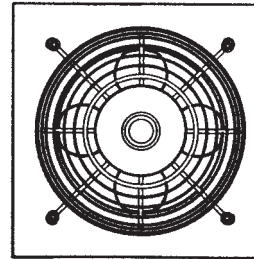
The standard units can be specified with **UL 705** listing for electrical safety and reliability.

DIMENSIONS AND WEIGHTS

FAN SIZE	SHUTTER			WEATHER HOOD				WALL COLLAR				WALL BOX				PROP GUARD		
	A SQ. OD	A SQ. ID	WT. LBS.	L _{WH}	B SQ. OD	B SQ. ID	WT. LBS.	L _{WC}	C SQ. OD	C SQ. ID	WT. LBS.	L _{WB}	D SQ. OD	D SQ. ID	WT. LBS.	LG	D	WT. LBS.
9-12	15-1/4	12-1/4	2	14	15-1/2	14	11	16	19-1/4	16-1/4	16	24	16-1/4	13-1/4	20	4	15	2
13,15-16	19-1/4	16-1/4	4	18	19-1/2	18	15	16	23-1/4	20-1/4	19	24	20-1/4	17-1/4	24	4	19	3
17-21	23-1/4	20-1/4	6	20	23-1/2	22	20	16	27-1/4	24-1/4	23	24	24-1/4	21-1/4	29	4	23	4

LYDK - EXHAUST
LZDK - SUPPLY

DIRECT DRIVE
PANEL FAN



PERFORMANCE DATA WITH SPEED CONTROL

CFM BHP
SONES

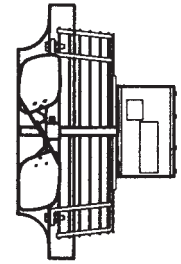
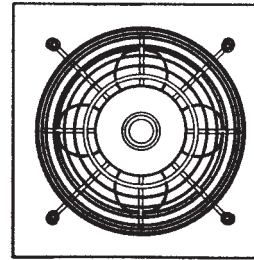
FAN SIZE	MOTOR HP	FAN RPM	TIP SPEED (Ft./Min.)	STATIC PRESSURE (Inches, W.G.)							
				0.000	0.125	0.250	0.375	0.500	0.625	0.750	
9H3	1/12	700	1833	328 2.0							
		800	2094	375 2.6							
		900	2356	421 3.1	89 3.6						
		1000	2618	468 3.7	178 4.2						
		1075*	2814	503 4.1	232 4.6						
10K2	1/6	1050	2749	493 2.1	176 4.3						
		1200	3142	563 3.0	303 4.8						
		1350	3534	634 3.8	369 5.4	108 7.6					
		1500	3927	704 4.7	468 6.0	264 7.9					
		1700*	4451	798 5.9	671 6.9	429 8.6	182 10.7				
11H3	1/12	700	2199	582 2.8							
		800	2513	661 3.5	130 4.7						
		900	2827	756 4.3	314 5.2						
		1000	3142	837 5.0	455 5.7						
		1075*	3377	930 5.5	530 6.0	40 8.2					
12K2	1/6	1050	3299	934 3.8	546 4.6						
		1200	3770	1067 4.9	746 5.1	307 8.0					
		1350	4241	1201 6.1	1036 6.0	534 8.2					
		1500	4712	1334 7.5	1204 7.2	798 8.5	422 11.4				
		1700*	5341	1512 9.5	1398 9.3	1059 9.5	740 11.6	439 14.6			
13K3	1/6	700	2566	1010 3.3	372 5.5						
		800	2932	1155 4.1	637 6.4						
		900	3299	1299 5.0	819 7.9	287 9.4					
		1000	3665	1443 5.9	976 9.3	553 10.6					
		1075*	3940	1551 6.6	1137 10.1	769 11.5	278 12.9				

- NOTES:**
1. Performance certified is for installation type A - Free inlet, Free outlet.
 2. Performance ratings include the effects of the motorside guard in the airstream.
 3. *Indicates motor RPM without speed control.
 4. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A: free inlet hemispherical sone levels.

COMPUTERIZED FAN SELECTION: Make the right choice with CARNES FAN-C-LECT™. The Models LYDK and LZDK, as well as the comprehensive offering of CARNES powered ventilators, are included in CARNES user friendly fan selection program.

LYDK - EXHAUST
LZDK - SUPPLY

DIRECT DRIVE
PANEL FAN



PERFORMANCE DATA WITH SPEED CONTROL

CFM BHP
SONES

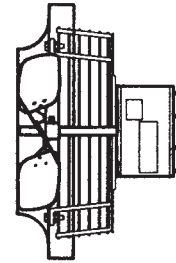
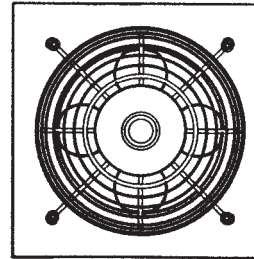
FAN SIZE	MOTOR HP	FAN RPM	TIP SPEED (Ft./Min.)	STATIC PRESSURE (Inches, W.G.)							
				0.000	0.125	0.250	0.375	0.500	0.625	0.750	
15K3	1/6	700	2932	1498 0.03 3.9	459 0.05 4.9						
		800	3351	1711 0.05 4.9	902 0.06 6.0						
		900	4189	2139 0.10 7.3	1660 0.11 8.1	694 0.14 9.2					
		1000	4490	2293 0.12 8.3	1880 0.14 9.0	1014 0.16 10.3					
		1075*	4503	2300 0.12 8.3	1888 0.14 9.0	1027 0.16 10.3					
16R2	3/4	1050	4398	2282 0.12 8.0	1873 0.13 8.8	916 0.15 11.6					
		1200	5027	2608 0.18 10.2	2269 0.19 10.6	1567 0.19 13.0	758 0.24 15.9				
		1350	5655	2934 0.25 12.4	2645 0.27 12.8	2069 0.26 14.6	1366 0.30 17.2	708 0.35 20			
		1500	6283	3260 0.35 14.6	3000 0.36 15.0	2689 0.38 16.2	2021 0.37 18.5	1357 0.43 21	747 0.48 24		
		1700*	7121	3694 0.50 17.9	3465 0.52 18.3	3216 0.54 18.8	2759 0.53 21	2226 0.55 23	1604 0.62 25	1085 0.67 28	
17L3	1/4	700	3299	1940 0.05 4.3	1039 0.06 5.6						
		800	3770	2217 0.07 5.5	1523 0.08 6.3	555 0.10 9.2					
		900	4241	2494 0.10 6.7	1965 0.11 7.5	1113 0.13 9.6					
		1000	4712	2771 0.14 8.1	2306 0.15 8.9	1507 0.16 10.4	790 0.20 13.1				
		1075*	5066	2771 0.18 9.1	2552 0.19 9.9	1793 0.19 11.1	1247 0.22 13.6				
18R2	3/4	1050	4948	3039 0.18 9.4	2546 0.20 9.9	1865 0.21 12.2	825 0.26 15.5				
		1200	5655	3473 0.26 11.8	3098 0.29 12.3	2409 0.28 13.7	1782 0.33 16.4				
		1350	6362	3907 0.38 14.3	3574 0.40 14.8	3205 0.43 15.2	2521 0.42 17.7	1861 0.48 20	1026 0.55 24		
		1500	7069	4341 0.52 16.8	4041 0.54 17.3	3722 0.57 17.7	3076 0.55 19.1	2693 0.60 22	2029 0.67 24	1271 0.74 27	
		1700*	8011	4920 0.75 20	4655 0.78 21	4390 0.82 21	4088 0.85 22	3417 0.81 23	3097 0.86 26	2538 0.94 28	

- NOTES:**
1. Performance certified is for installation type A - Free inlet, Free outlet.
 2. Performance ratings include the effects of the motorside guard in the airstream.
 3. *Indicates motor RPM without speed control.
 4. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A: free inlet hemispherical sone level.

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LYDK - EXHAUST
LZDK - SUPPLY

DIRECT DRIVE
PANEL FAN



PERFORMANCE DATA WITH SPEED CONTROL

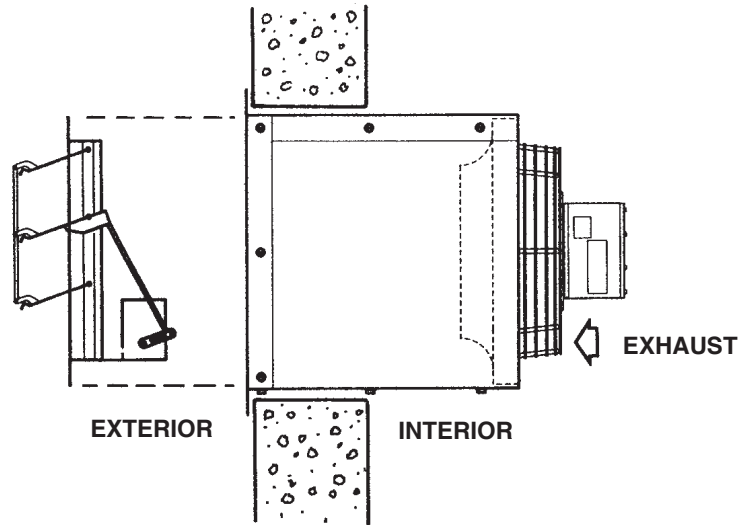
CFM BHP
SONES

FAN SIZE	MOTOR HP	FAN RPM	TIP SPEED (Ft./Min.)	STATIC PRESSURE (Inches, W.G.)						
				0.000	0.125	0.250	0.375	0.500	0.625	0.750
19L3	1/4	700	3665	2122 0.04 3.9	1118 0.05 5.8					
		800	4189	2425 0.06 5.1	1784 0.08 6.6	525 0.10 8.8				
		900	4712	2728 0.08 6.3	2266 0.11 7.5	1069 0.13 9.9				
		1000	5236	3032 0.11 7.6	2629 0.14 8.4	1628 0.20 10.6	756 0.16 12.8			
		1075*	5629	3259 0.14 8.5	2894 0.17 9.2	1984 0.18 11.3	1165 0.23 13.8	418 0.27 14.4		
20R2	3/4	1050	5498	3183 0.13 8.2	2806 0.16 8.9	1855 0.17 11.1	1030 0.22 13.7			
		1200	6283	3638 0.19 10.2	3319 0.23 10.6	2934 0.26 12.5	1878 0.28 14.7	1121 0.33 17.3		
		1350	7069	4093 0.28 12.4	3809 0.31 12.7	3487 0.35 14.1	2823 0.36 16.1	1979 0.41 18.4	1299 0.46 21	707 0.52 21
		1500	7854	4547 0.38 14.6	4292 0.42 15.0	4022 0.46 16.1	3707 0.50 17.8	2690 0.49 19.7	2154 0.56 22	1538 0.62 24
		1700*	8901	5154 0.55 18.1	4928 0.60 18.4	4704 0.64 19.0	4438 0.69 20	4161 0.73 22	3140 0.70 24	2670 0.78 26
21P3	1/2	700	3665	2823 0.10 6.2	1813 0.11 7.6					
		800	4189	3277 0.15 7.7	2493 0.16 8.5	836 0.19 11.9				
		900	4712	3630 0.21 9.4	3026 0.22 9.7	1750 0.24 12.7				
		1000	5236	4033 0.29 11.3	3502 0.30 11.5	2636 0.31 13.9	1184 0.36 17.3			
		1075*	5629	4336 0.36 12.9	3850 0.37 13.0	3153 0.38 14.9	1892 0.42 18.0	722 0.48 22		

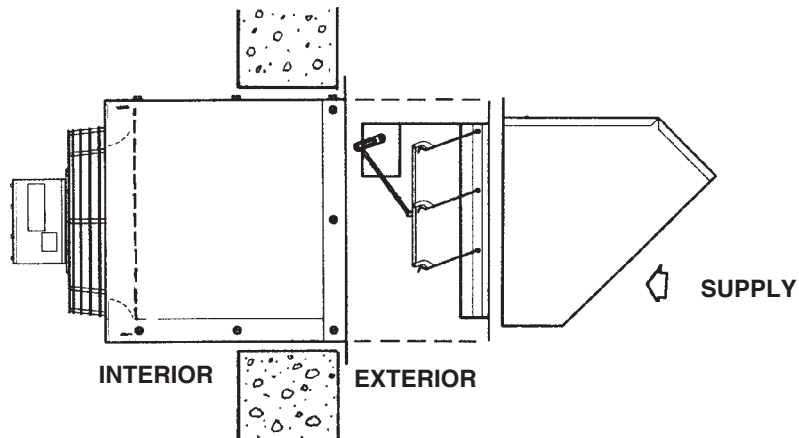
- NOTES:**
1. Performance certified is for installation type A - Free inlet, Free outlet.
 2. Performance ratings include the effects of the motorside guard in the airstream.
 3. *Indicates motor RPM without speed control.
 4. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A: free inlet hemispherical sone levels.

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TYPICAL INSTALLATION _____ **Models LYDK and LZDK**



Model LYDK - Exhaust fan is shown mounted in an exterior wall opening. The fan panel is fastened from the motorside, to an optional wall mounting collar. The optional shutter (gravity or motorized) is fastened to the wall mounting collar and is recessed into the wall opening, flush with the exterior wall surface. An optional weather hood can be added for additional weather protection.

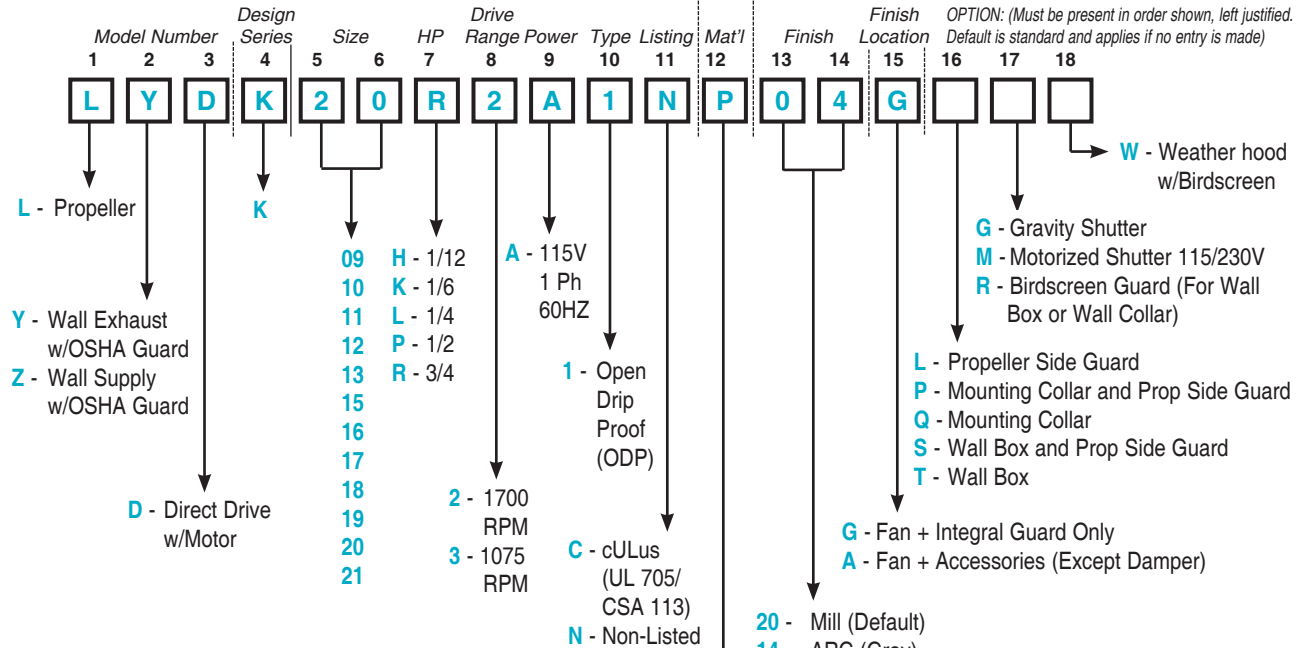


Model LZDK - Supply fan is shown mounted in an exterior wall opening. The fan panel is fastened from the motor side, to an optional wall mounting collar. The optional shutter (gravity or motorized) is fastened to the wall mounting collar and is recessed into the wall opening, flush with the exterior wall surface. An optional weather hood is recommended for all supply applications.

NOTES FOR ACCESSORIES - Models LYDK/LZDK

- A. UL-705** listing for electrical safety and reliability and **CUL-710** listing mark for Canada.
- B. Speed controls** ship loose for field installation and wiring. Includes control, J-box and cover plate.
- C. Disconnect switches** ship loose for field installation and wiring. Includes 2-pole switch, J-box and cover plate.
- D. Shutters** and motor kits ship separate for field installation. Flanged frame styles recess the damper body into the wall opening. Motor kits are 115/230 VAC standard. Other voltages (24V, 460V and 575V) are available at an additional cost.
- E. Transformer** ships loose for field installation and wiring. Primary 460V, secondary 115V, size 120 VA. For use with the standard damper motor kits.
- F. Propeller side guard** - OSHA style guard attaches to the panel opposite the standard motorside guard. Recommended when the propeller side of the fan is exposed. Construction and finish are the same as the motorside guard.
- G. Mounting collar** - ships knocked down (with fasteners) for field assembly. Standard finish is gray enamel. (Birdscreen/guard is recommended when no damper or weather hood is used.) Allows installation flush with the exterior wall and convenient attachment of accessories.
- H. Wall box** - ships knocked down (with fasteners) for field assembly. Allows installation (of fan and accessories) extending into or outside of the building, and convenient attachment of accessories.
- I. Weather hood** - ships knocked down (with fasteners) for field assembly. Attaches to the mounting collar or wall box. Provides weather protection and is recommended for supply applications. Inlet birdscreen (1/2" x .041 galvanized wire mesh) is standard.
- J. Mounting angles** are cut to length but require field drilling for installation. Provides a convenient method of attaching wall box to wall.
- K. Birdscreen** 1/2" x .041 galvanized wire mesh may be used with mounting collar or wall box when no damper or rainhood is used. Ships loose for field installation.
- L. Aluminum construction** - ADD this price to the standard unit price or standard accessory price.
- M. Finish** prices include prime coat plus one finish coat. **No special finishes are applied to motor, damper or birdscreen.**
ARC - Acid Resistant Coating - Gray air dry epoxy.
HERESITE - Air dry phenolic - Gray.
PAINT TO MATCH ENAMEL - Enamel finish, to match a color sample.
- N. Factory assembly** - Add this to the base price of each accessory (but not the fan). Accessories are factory assembled (in lieu of knocked down). Components are then attached together and shipped as a "packaged" unit. When a motorized damper is ordered, the damper and motor kit are installed and the wiring is extended through the fan panel knockout for easy field power connection. Mounting angles and all electrical accessories ship loose.

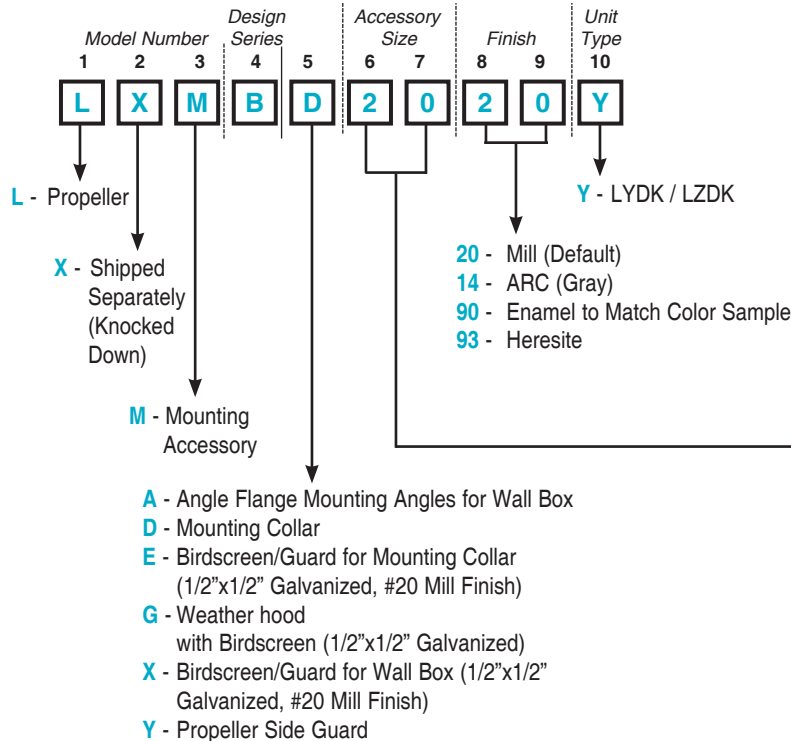
▼ Propeller Wall Fans and Factory Assembled Accessories



NOTE: Include ONLY factory assembled accessories in the PID. For accessories knocked down (KD) or shipped loose, order them separately as shown below. Mounting collar (Q) or wall box (T) is required when options 17 or 18 are ordered.

FAN PANEL
 P - Painted Steel (Default for Fan & Guard Only)
 A - Aluminum

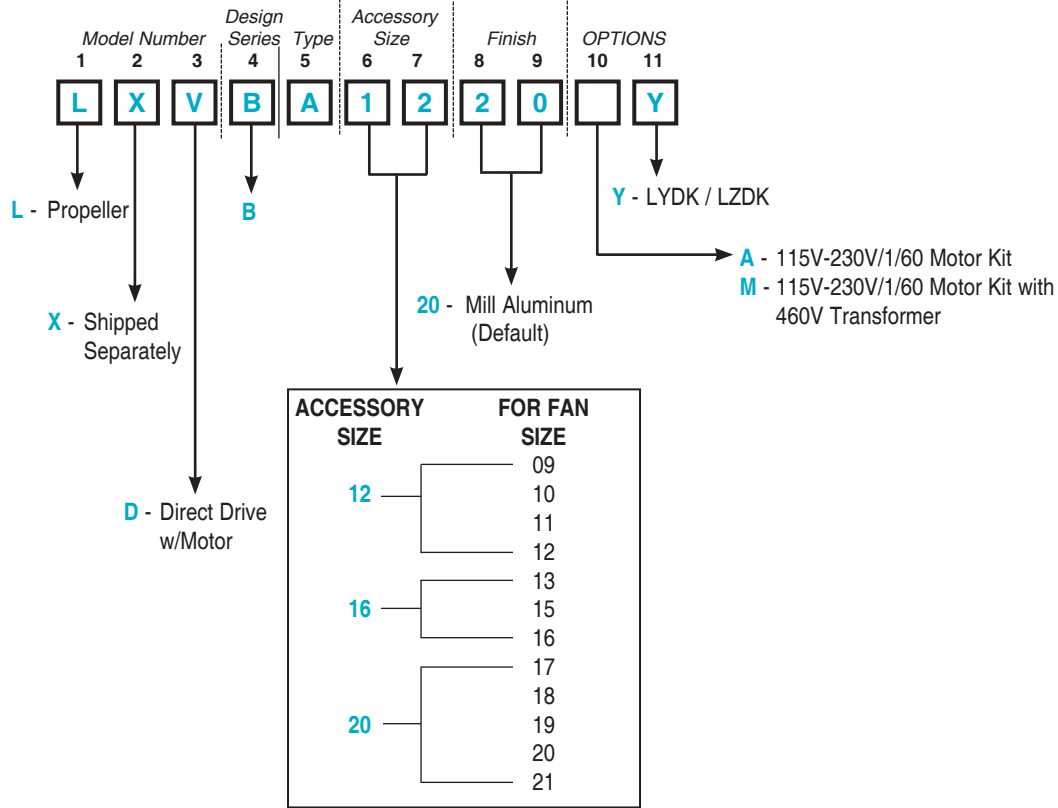
▼ Mounting Accessories (Ship Loose)



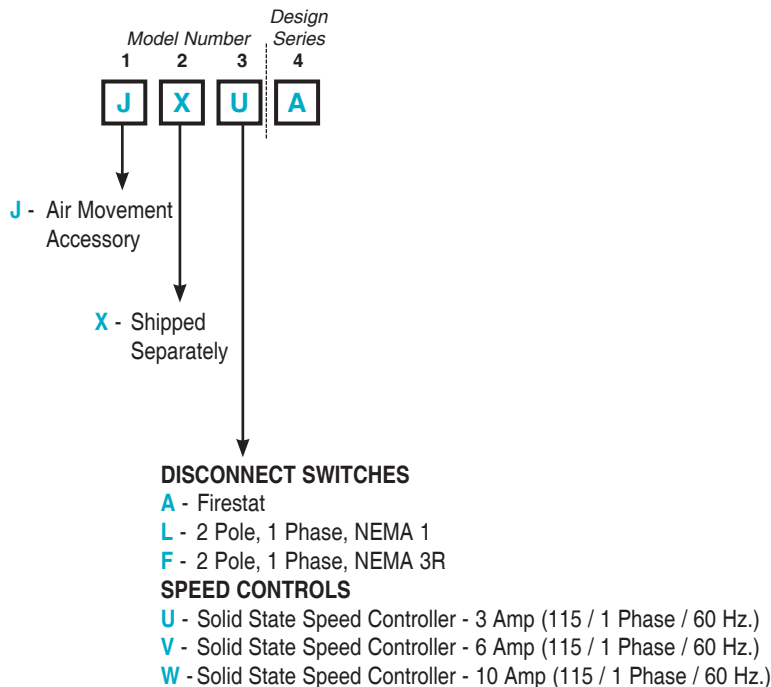
ACCESSORY SIZE	FOR FAN SIZE
12	09
	10
	11
	12
16	13
	15
	16
	17
20	18
	19
	20
	21

Note: Birdscreens are available with Mill Finish only.

▼ **Backdraft Dampers (Ship Loose)**



▼ **Electrical Accessories (Ship Loose)**



MODEL LUBK (Belt Drive) UPBLAST PROPELLER ROOF EXHAUSTERS

Application

Model LUBK is a high capacity roof mounted exhauster rated from 3,560 to 42,000 CFM. It is a general ventilation unit designed to economically remove large volumes of air, fumes and vapors from commercial and industrial buildings such as warehouses, manufacturing and assembly plants, chemical plants, foundries and paper mills.

Straight-through air flow design results in maximum exhaust efficiency. During operation, high air flow velocity opens butterfly dampers and prevents rain or snow from entering. Dampers close and cover the venturi opening when unit is not in use.

The roof mounted location eliminates interference with processes and equipment inside the building. It also permits locating the exhauster over a source of heated or contaminated air, allowing direct upward venting to the outside, unlike wall mounted exhausters which may move contaminated air through adjacent work spaces.

Construction/Specification Checklist

Panel Assembly

- Heavy-gauge galvanized steel panel on all sizes.
- One piece venturi for maximum efficiency.
- All welded support structure of 10 gauge angle.
- Motor/bearing plates of minimum 10 gauge galvanized steel.

Windband/Butterfly Dampers

- Heavy-gauge galvanized steel windband.
- Aluminum dampers standard.
- Galvanized rain channel drains water from damper area onto roof.
- Galvanized damper shaft rotates in aluminum hinges.

Propeller

- Three and four cast/airfoil aluminum blades.
- Steel hub plate with steel taper lock bushing.

Drives (Belt Drive Models)

- Sized for minimum 150% of drive horsepower.
- Single belt adjustable pitch sheaves through 5 HP.
- Two belt adjustable pitch sheaves through 10 HP.
- Non-static oil resistant V-belts.
- Keyed, turned, ground and polished shafts.

Bearings

- Bearings designed for minimum 200,000 hour life.
- Cast iron self-aligning pillow block ball bearings.
- Bearings are sealed, prelubricated with relube fittings.

Motors

- Brands are nationally recognized and locally serviced.
- Open drip-proof construction is standard.
- High efficiency, explosion proof, totally enclosed fan cooled (TEFC) and corrosion duty motors are optional.

Options/Accessories

Roof Curb: Prefabricated heavy-gauge galvanized steel. Welded construction, 8" high with 1-1/2" treated wood nailer. Options include burglar bars, single and double pitch construction.

Disconnect Switch: Non-fused safety disconnects are available for all motor sizes in raintight or open enclosures. Explosion proof, NEMA 4 and NEMA 4X are also available.

Magnetic Latches: Help reduce damper chatter when the units are not in operation.

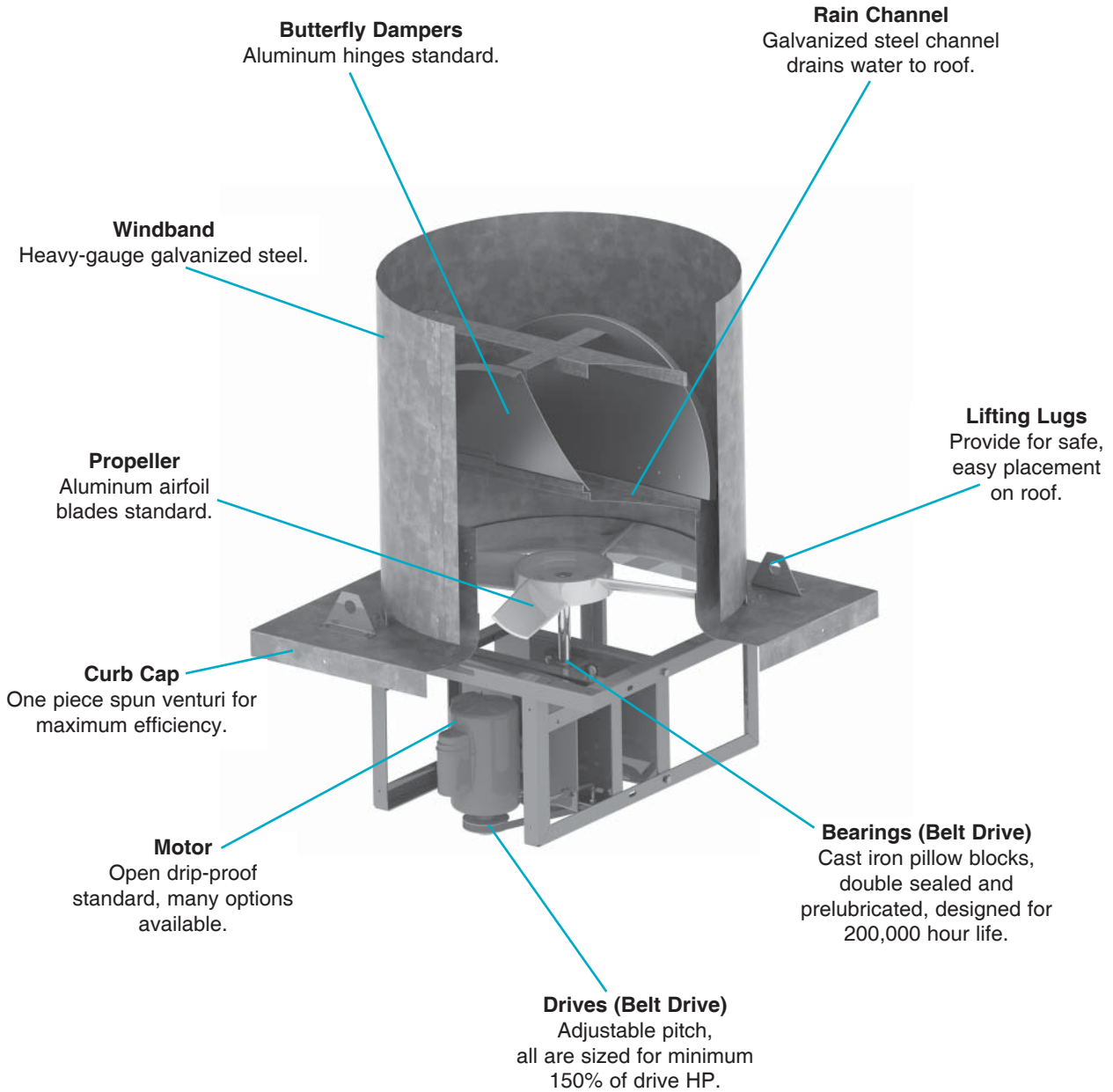
Fusible Link: Opens damper doors when temperature exceeds 165°F. Allows heat and smoke to escape building without use of fan power.

Outlet Guard: 1/2" x 1" wire mesh guard will prevent birds and other objects from entering the fan.

Air Dry Heresite: Phenolic coating resulting in a hard, durable surface which is resistant to saltwater, chemical fumes and moisture temperature to 150°F.

ARC: A modified epoxy-polyamid coating, presents a smooth chemically resistant finish, exceptional hardness and durability, that is easily cleaned and maintained. Temperature to 275°F dry heat continuous and 320°F surges of periodic steam cleaning.

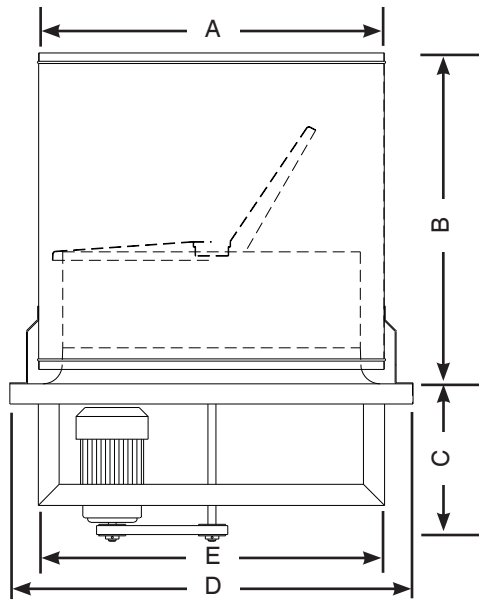
CONSTRUCTION FEATURES



Upblast Propeller Fans



Factory Run and Tested
For quality assurance and dependable operation.



MODEL LUBK

Model LUBK	Dimensions In Inches							Avg. Wt.
	A	B	C	D	E	F	G	
24	29	28-1/2	16	36	30	34	31	145
30	35-1/2	31-1/2	16	42	36	40	37	170
36	41	34-1/2	16	48	42	46	43	200
42	47	37-1/2	20	54	48	52	49	225
48	53	40-1/2	20	60	54	58	55	270

Dimension:

- A — Outside diameter of wind band.
- B — Height of unit above curb cap.
- C — Maximum depth of unit below top of curb, actual depth varies with motor size.
- D — Inside dimension of square curb cap.

- E — Minimum inside dimension of curb opening required for adequate clearance of fan frame.
- F — Outside dimension of factory built pre-fab curb.
- G — Recommended roof opening (inside dimension of factory built pre-fab curb).

PERFORMANCE DATA
Model LUBK24 - Belt Drive

Model LUBK24	RPM	Sones (.125" P _s)	P _s (in. H ₂ O)								
			0.000	0.125	0.250	0.375	0.500	0.625	0.750	1.000	1.250
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
1/4 L1	825	12.8	3561 0.13	2448 0.14	1143 0.13						
	925	14.5	3993 0.18	3041 0.20	1670 0.18						
	1025	16.7	4424 0.25	3605 0.27	2334 0.25	1475 0.25					
1/3 M1	1050	17.4	4532 0.27	3738 0.29	2546 0.27	1602 0.27	898 0.29				
	1100	18.7	4748 0.31	3994 0.33	2958 0.32	1861 0.30	1233 0.32				
	1150	20	4964 0.35	4247 0.38	3359 0.38	2141 0.34	1529 0.36				
1/2 P1	1175	21	5072 0.37	4372 0.40	3513 0.40	2277 0.36	1659 0.38				
	1250	23	5396 0.45	4745 0.48	3961 0.49	2813 0.44	2037 0.45	1511 0.46			
	1325	26	5719 0.54	5111 0.57	4397 0.58	3442 0.55	2456 0.52	1912 0.54			
3/4 R1	1350	27	5827 0.57	5233 0.60	4540 0.61	3646 0.59	2593 0.55	2040 0.57	1529 0.59		
	1425	29	6151 0.67	5594 0.70	4962 0.72	4217 0.72	3089 0.65	2430 0.66	1958 0.68		
	1500	31	6475 0.78	5952 0.81	5364 0.84	4668 0.84	3726 0.79	2848 0.76	2341 0.78		
1 S1	1525	32	6583 0.82	6071 0.85	5492 0.88	4816 0.88	3933 0.84	2984 0.79	2466 0.82	1541 0.86	
	1600	34	6907 0.94	6421 0.98	5874 1.01	5254 1.02	4541 1.00	3513 0.92	2881 0.93	2023 0.97	
	1700	37	7338 1.13	6881 1.17	6375 1.21	5824 1.23	5199 1.22	4356 1.16	3427 1.09	2542 1.14	1689 1.20
1-1/2 T1	1725	38	7446 1.18	6995 1.22	6499 1.26	5964 1.29	5349 1.28	4562 1.23	3608 1.14	2668 1.19	1856 1.24
	1800	41	7770 1.34	7338 1.39	6868 1.42	6378 1.46	5791 1.45	5166 1.44	4252 1.35	3060 1.33	2321 1.38
	1875	43	8094 1.52	7679 1.56	7234 1.60	6764 1.64	6225 1.65	5658 1.64	4877 1.57	3479 1.48	2711 1.54
2 V1	1900	44	8202 1.58	7792 1.63	7356 1.67	6892 1.71	6368 1.71	5809 1.70	5081 1.65	3617 1.54	2838 1.60
	2000	48	8633 1.84	8244 1.89	7838 1.93	7397 1.98	6933 2.00	6401 1.99	5870 1.98	4237 1.79	3350 1.84
	2100	52	9065 2.14	8695 2.18	8316 2.23	7896 2.27	7476 2.32	6981 2.31	6475 2.30	5091 2.15	3910 2.08

NOTES:

1. Performance certified is for installation type A: free inlet, free outlet.
2. Performance ratings (bhp) do not include transmission losses.
3. Performance ratings do not include the effects of accessories.
4. The sound ratings are shown loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field. Values are for installation type A: free inlet hemispherical sone levels.

PERFORMANCE DATA
Model LUBK30 - Belt Drive

Model LUBK30	RPM	Sones (.125" P _s)	P _s (in. H ₂ O)								
			0.000	0.125	0.250	0.375	0.500	0.625	0.750	1.000	1.250
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
1/3 M1	660	13.6	6043 0.22	3797 0.22	1845 0.25						
	720	14.5	6593 0.258	4724 0.30	2561 0.31						
	780	15.4	7142 0.36	5477 0.38	3177 0.37	1857 0.42					
1/2 P1	840	16.4	7692 0.45	6192 0.48	3757 0.43	2645 0.50	1310 0.56				
	900	17.9	8241 0.55	6851 0.59	4780 0.54	3335 0.59	2134 0.65				
3/4 R1	960	19.8	8790 0.67	7498 0.71	5815 0.69	3937 0.68	2934 0.75	1668 0.81			
	1025	22	9386 0.82	8186 0.87	6767 0.87	4565 0.79	3700 0.88	2669 0.94			
1 S1	1080	24	9889 0.96	8760 1.01	7460 1.02	5390 0.93	4263 0.99	3361 1.07	2271 1.13		
	1140	26	10439 1.13	9379 1.19	8170 1.20	6523 1.14	4853 1.12	4068 1.22	3157 1.28		
1-1/2 T1	1200	28	10988 1.31	9983 1.38	8890 1.41	7521 1.37	5427 1.26	4691 1.36	3884 1.45		
	1260	30	11537 1.52	10581 1.59	9550 1.62	8347 1.61	6494 1.48	5285 1.52	4585 1.63		
	1300	32	11904 1.67	10976 1.74	9984 1.78	8852 1.77	7254 1.67	5671 1.63	4993 1.75		
2 V1	1360	34	12453 1.91	11567 1.98	10629 2.03	9597 2.04	8262 1.97	6240 1.81	5591 1.93	4178 2.14	
	1425	37	13048 2.20	12202 2.28	11318 2.33	10388 2.36	9256 2.32	7599 2.16	6222 2.15	4948 2.39	
3 W1	1480	39	13552 2.46	12737 2.54	11896 2.60	11002 2.63	9956 2.62	8561 2.49	6743 2.35	5551 2.61	4177 2.80
	1560	43	14284 2.89	13512 2.97	12727 3.04	11879 3.08	10954 3.08	9885 3.03	8304 2.83	6353 2.93	5143 3.17
	1640	46	15017 3.35	14282 3.44	13547 3.53	12743 3.56	11930 3.59	10945 3.56	9692 3.42	7132 3.29	6056 3.58
5 X1	1700	49	15566 3.73	14857 3.82	14148 3.92	13383 3.96	12605 3.99	11700 3.97	10684 3.91	7702 3.57	6664 3.87
	1750	52	16024 4.07	15335 4.17	14646 4.26	13912 4.31	13156 4.35	12319 4.35	11397 4.31	8513 3.91	7161 4.13
	1800	55	16482 4.43	15812 4.53	15143 4.62	14437 4.69	13703 4.72	12931 4.74	12034 4.70	9561 4.35	7650 4.40

NOTES:

1. Performance certified is for installation type A: free inlet, free outlet.
2. Performance ratings (bhp) do not include transmission losses.
3. Performance ratings do not include the effects of accessories.
4. The sound ratings are shown loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field. Values are for installation type A: free inlet hemispherical sone levels.

PERFORMANCE DATA
Model LUBK36 - Belt Drive

Model LUBK36	RPM	Sones (.125" P _s)	P _s (in. H ₂ O)								
			0.000	0.125	0.250	0.375	0.500	0.625	0.750	1.000	1.250
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
3/4 R1	620	15.7	10331 0.63	8275 0.65	4648 0.64	2375 0.77	322 0.92				
	700	19.1	11664 0.91	9941 0.94	6535 0.85	4418 1.00	2324 1.13	534 1.30			
1 S1	750	21	12497 1.12	10952 1.15	8790 1.15	5505 1.15	3614 1.33	1767 1.46	152 1.66		
	800	24	13330 1.36	11944 1.40	9964 1.40	6495 1.31	4894 1.51	3055 1.66	1413 1.83		
1-1/2 T1	850	26	14163 1.63	12887 1.67	11104 1.68	7794 1.52	6031 1.70	4335 1.91	2651 2.04		
	900	29	14996 1.94	13794 1.98	12194 2.00	9659 1.86	7035 1.91	5612 2.13	3956 2.32	1044 2.71	
2 V1	950	31	15829 2.28	14694 2.33	13238 2.35	11509 2.33	8085 2.14	6736 2.37	5238 2.60	2266 2.96	
	1000	34	16662 2.66	15586 2.71	14264 2.74	12668 2.73	9527 2.46	7742 2.63	6498 2.88	3552 3.28	1010 3.75
3 W1	1045	37	17412 3.03	16385 3.08	15174 3.12	13689 3.13	11546 2.98	8621 2.88	7467 3.15	4715 3.62	2122 4.02
	1090	40	18162 3.44	17180 3.50	16073 3.54	14675 3.55	13126 3.52	9850 3.21	8373 3.43	5868 3.96	3225 4.33
	1140	44	18995 3.94	18059 3.99	17062 4.05	1575 4.06	14290 4.04	11271 3.62	9353 3.76	7138 4.33	4545 4.79
5 X1	1190	48	19828 4.48	18934 4.54	18005 4.60	16759 4.61	15431 4.61	13997 4.58	10674 4.18	8281 4.71	5817 5.28
	1240	52	20661 5.07	19807 5.13	18915 5.19	17779 5.22	16550 5.23	15175 5.19	12099 4.67	9297 5.12	7109 5.73
	1290	56	21494 5.71	20676 5.77	19819 5.83	18788 5.87	17606 5.88	16331 5.86	14826 5.76	10287 5.55	8364 6.20
	1340	61	22328 6.40	21542 6.46	20717 6.53	19786 6.58	18648 6.59	17467 6.59	16194 6.55	11330 6.02	9454 6.68
7-1/2 Y1	1380	65	22994 6.99	22234 7.05	21433 7.12	20577 7.18	19473 7.19	18363 7.21	17127 7.17	12496 6.51	10266 7.09
	1420	69	23661 7.61	22924 7.68	22145 7.75	21363 7.82	20290 7.84	19216 7.85	18047 7.82	13638 7.03	11063 7.51
	1460	73	24327 8.28	23613 8.34	22856 8.42	22098 8.49	21100 8.51	20056 8.53	18956 8.52	15110 7.76	11847 7.95
	1500	77	24994 8.98	24301 9.05	23564 9.12	22827 9.19	21904 9.23	20888 9.24	19855 9.25	17580 9.16	12722 8.44

NOTES:

1. Performance certified is for installation type A: free inlet, free outlet.
2. Performance ratings (bhp) do not include transmission losses.
3. Performance ratings do not include the effects of accessories.
4. The sound ratings are shown loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field. Values are for installation type A: free inlet hemispherical sone levels.

Uplast Propeller Fans

PERFORMANCE DATA
Model LUBK42 - Belt Drive

Uplast Propeller Fans

Model LUBK42	RPM	Sones (.125" P _s)	P _s (in. H ₂ O)								
			0.000	0.125	0.250	0.375	0.500	0.625	0.750	1.000	1.250
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
3/4 R1	510	15.7	14029 0.68	10830 0.71	5692 0.70						
	550	17.8	15130 0.85	12219 0.89	7088 0.82	3962 1.03					
1 S1	580	19.4	15955 1.00	13204 1.04	9733 1.02	5231 1.13	2273 1.34				
	610	21	16780 1.16	14173 1.20	11071 1.20	6421 1.23	3440 1.47				
1-1/2 T1	650	23	17881 1.40	15446 1.45	12718 1.46	7868 1.40	5232 1.65				
	700	26	19256 1.75	17010 1.81	14553 1.83	9569 1.62	7244 1.88	4665 2.15			
2 V1	740	29	20356 2.07	18244 2.13	15981 2.16	13247 2.14	8715 2.09	6396 2.38			
	770	31	21182 2.33	19156 2.39	17021 2.43	14557 2.43	9756 2.26	7602 2.55	5254 2.85		
3 W1	820	34	22570 2.82	20655 2.88	18665 2.93	16463 2.94	13754 2.89	9485 2.87	7387 3.19		
	880	38	24207 3.48	22435 3.55	20599 3.60	18639 3.63	16414 3.62	11558 3.31	9740 3.62		
5 X1	920	42	25308 3.98	23612 4.05	21868 4.11	20055 4.15	18014 4.15	15523 4.08	11153 3.95	7431 4.68	
	960	45	26408 4.52	24783 4.60	23124 4.66	21407 4.71	19492 4.72	17308 4.68	12527 4.31	9059 5.04	5232 5.75
	1000	49	27508 5.11	25949 5.19	24368 5.26	22720 5.31	20944 5.33	19049 5.33	16650 5.23	10636 5.41	7049 6.20
	1040	53	28609 5.75	27109 5.83	25601 5.91	24017 5.96	22371 6.00	20565 6.00	18446 5.94	12096 5.84	8779 6.67
7-1/2 Y1	1080	57	29709 6.44	28265 6.52	26820 6.61	25299 6.66	23774 6.71	22038 6.72	20200 6.70	13490 6.29	10395 7.12
	1120	61	30809 7.18	29417 7.27	28024 7.36	26569 7.42	25098 7.47	23486 7.49	21810 7.49	14852 6.78	11968 7.59
	1160	66	31910 7.97	30565 8.07	29220 8.16	27828 8.23	26407 8.28	24913 8.32	23295 8.32	19466 8.18	13426 8.12
	1200	71	33010 8.83	31710 8.93	30410 9.02	29076 9.10	27703 9.16	26321 9.21	24757 9.21	21260 9.12	14825 8.68

NOTES:

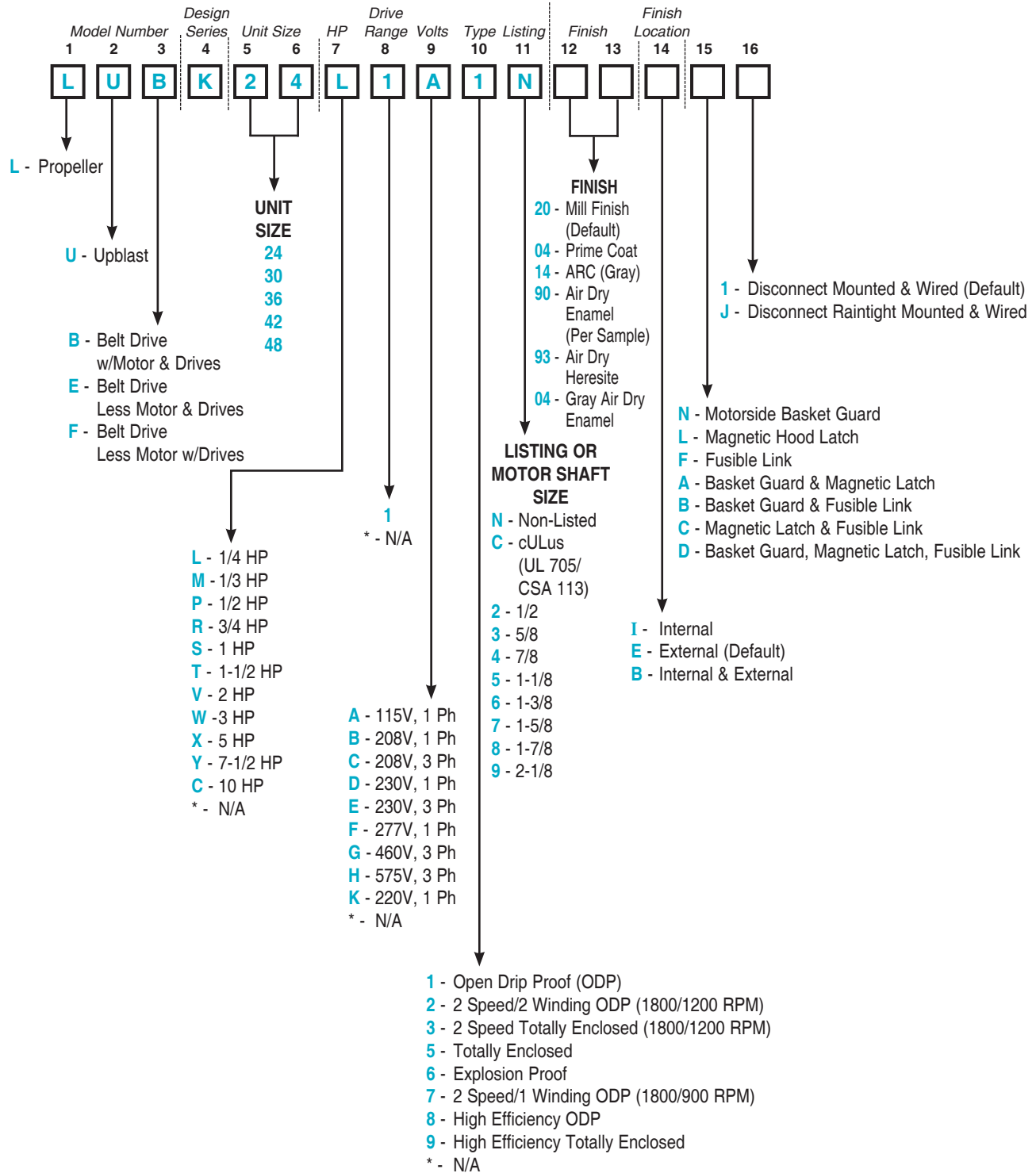
1. Performance certified is for installation type A: free inlet, free outlet.
2. Performance ratings (bhp) do not include transmission losses.
3. Performance ratings do not include the effects of accessories.
4. The sound ratings are shown loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field. Values are for installation type A: free inlet hemispherical sone levels.

PERFORMANCE DATA
Model LUBK48 - Belt Drive

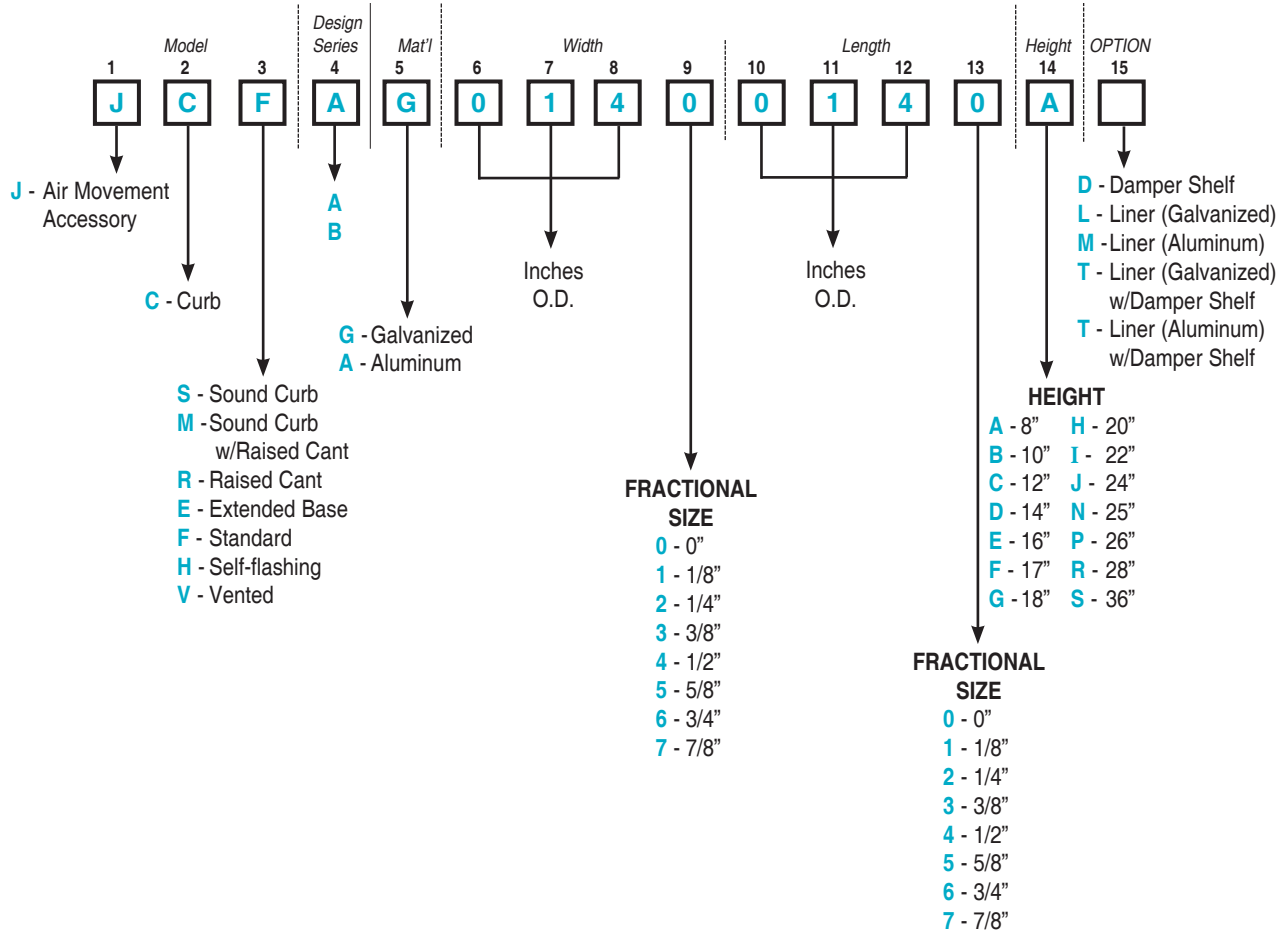
Model LUBK48	RPM	Sones (.125" P _s)	P _s (in. H ₂ O)								
			0.000	0.125	0.250	0.375	0.500	0.625	0.750	1.000	1.250
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
1 S1	450	17.9	18039 0.84	13774 0.90	7952 0.92	3130 1.14					
	490	19.9	19643 1.09	15881 1.17	9731 1.10	6155 1.33					
1-1/2 T1	520	22	20845 1.30	17346 1.39	11949 1.33	8178 1.50					
	560	25	22449 1.63	19260 1.72	15008 1.72	10141 1.74	6705 2.01				
2 V1	590	28	23652 1.90	20670 2.01	16935 2.03	11476 1.94	8750 2.23				
	620	31	24854 2.21	22063 2.32	18590 2.36	13352 2.23	10491 2.46				
3 W1	660	35	26458 2.66	23888 2.79	20742 2.85	16397 2.75	12311 2.80	9807 3.12			
	710	41	28462 3.32	26073 3.45	23296 3.54	20035 3.54	14963 3.34	12504 3.61			
5 X1	750	46	30065 3.91	27804 4.05	25236 4.15	22257 4.17	17991 4.00	14301 4.05	12414 4.41		
	790	52	31669 4.57	29522 4.72	27145 4.83	24426 4.88	21076 4.81	16435 4.59	14253 4.90		
	840	60	33673 5.49	31654 5.65	29494 5.79	27072 5.88	24263 5.86	20227 5.62	16476 5.57		
7-1/2 Y1	880	67	35277 6.32	33350 6.48	31349 6.64	29041 6.73	26464 6.74	23317 6.64	19127 6.38	14985 7.02	
	920	74	36880 7.22	35037 7.39	33185 7.56	30977 7.66	28621 7.71	26056 7.70	22143 7.39	16810 7.68	
	960	82	38484 8.20	36717 8.38	34951 8.56	32887 8.68	30739 8.77	28281 8.75	25238 8.60	18589 8.39	15627 9.34
10 C1	990	89	39686 8.99	37973 9.18	36260 9.37	34306 9.50	32254 9.60	29921 9.60	27504 9.58	20067 9.01	17036 9.93
	1020	96	40889 9.83	39226 10.03	37564 10.22	35713 10.37	33721 10.48	31539 10.51	29226 10.49	22382 9.95	18406 10.55
	1050	104	42092 10.73	40477 10.93	38861 11.13	37110 11.29	35175 11.40	33138 11.47	30891 11.45	24648 10.94	19752 11.20

NOTES:

1. Performance certified is for installation type A: free inlet, free outlet.
2. Performance ratings (bhp) do not include transmission losses.
3. Performance ratings do not include the effects of accessories.
4. The sound ratings are shown loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field. Values are for installation type A: free inlet hemispherical sone levels.

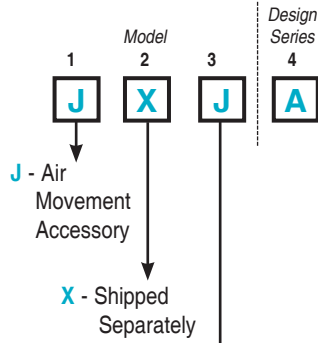


▼ Curbs LUBK (Standard)



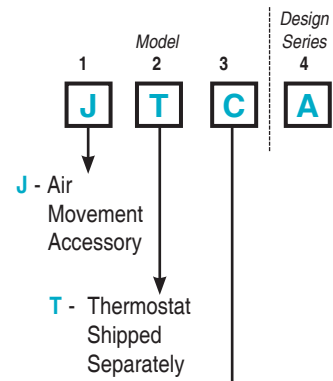
Upblast Propeller Fans

▼ Electrical Accessories



DISCONNECT SWITCHES

- J - 3 Pole, 3 Ph Explosion Proof (EX3)
- K - 2 Pole, 1 Ph Explosion Proof (EX3)
- L - 2 Pole, 1 Ph Safety Disconnect (DS2)
- M - 3 Pole, 3 Ph Safety Disconnect (DS3)
- N - 3 Pole, 3 Ph NEMA 1 (K-3) with Lock Out
- P - 2 Speed, 6 Pole NEMA 3R Non-Fusible
- F - Raintight - NEMA 3R - 2 Pole, 1 ϕ , 120-230V, 1/2 - 2 HP
- H - Raintight - NEMA 3R - 3 Pole, 3 ϕ , 208-460V



- C - Line Voltage Thermostat w/Coiled Capillary
- D - Line Voltage Thermostat w/22" Capillary and Remote Bulb

MODEL LUBA (Belt Drive) and LUDA (Direct Drive) UPBLAST PROPELLER ROOF EXHAUSTERS

Application

Models LUBA and LUDA are high capacity roof mounted exhausters rated from 5,900 to 78,000 CFM. They are general ventilation units designed to economically remove large volumes of air, fumes and vapors from commercial and industrial buildings such as warehouses, manufacturing and assembly plants, chemical plants, foundries and paper mills.

Straight-through air flow design results in maximum exhaust efficiency. During operation, high air flow velocity opens butterfly dampers and prevents rain or snow from entering. Dampers close and cover the venturi opening when unit is not in use.

The roof mounted location eliminates interference with processes and equipment inside the building. It also permits locating the exhauster over a source of heated or contaminated air, allowing direct upward venting to the outside, unlike wall mounted exhausters which may move contaminated air through adjacent work spaces.

Belt drive units usually operate more quietly and afford easier performance adjustments while direct drive models require less maintenance.

Construction/Specification Checklist

Panel Assembly

- Heavy-gauge galvanized steel panel on all sizes.
- One piece venturi for maximum efficiency.
- LUBA/LUDA, all welded support structure of schedule 40 galvanized pipe; LUBK 10 gauge angle.
- Motor/bearing plates of minimum 10 gauge galvanized steel.

Windband/Butterfly Dampers

- Heavy-gauge galvanized steel windband.
- Steel dampers standard.
- Translucent fiberglass dampers available on sizes 54, 60, 72.
- Galvanized rain channel drains water from damper area onto roof.
- Galvanized damper shafts rotates in brass hinges.

Propeller

- Three and four cast/airfoil aluminum blades.
- Steel hub plate with steel taper lock bushing.
- Adjustable pitch for optimum efficiency.
- Die formed steel blades are optional where required on sizes 54, 60, 72.

Drives (Belt Drive Models)

- Sized for minimum 150% of drive horsepower.
- Single belt adjustable pitch sheaves through 5 HP.
- Two belt adjustable pitch sheaves through 10 HP.
- Adjustable tension rods for belt adjustment on sizes 54, 60, 72.
- Non-static oil resistant V-belts.
- Keyed, turned, ground and polished shafts.

Bearings

- Bearings designed for minimum 200,000 hour life.
- Cast iron self-aligning pillow block ball bearings.
- Bearings are sealed, prelubricated with relube fittings.

Motors

- Brands are nationally recognized and locally serviced.
- Open drip-proof construction is standard.
- High efficiency, explosion proof, totally enclosed fan cooled (TEFC) and corrosion duty motors are optional.

Options/Accessories

Roof Curb: Prefabricated heavy-gauge galvanized steel. Welded construction, 8" high with 1-1/2" treated wood nailer. Options include burglar bars, single and double pitch construction, and additional curb heights.

Disconnect Switch: Non-fused safety disconnects are available for all motor sizes in raintight or open enclosures. Explosion proof, NEMA 4 and NEMA 4X are also available.

Magnetic Latches: Help reduce damper chatter when the units are not in operation.

Heat/Smoke Vent: Opens damper doors when temperature exceeds 165°F. Allows heat and smoke to escape building without use of fan power.

Outlet Guard: 1/2" x 1" wire mesh guard will prevent birds and other objects from entering the fan.

Extended Grease Lines: Extended grease lines allow motor and/or fan bearings to be relubricated from the exterior.

Aluminum Construction: Optional aluminum construction available on windbands, curb caps, panel and blades.

Epoxy Finish: For use in an alkaline type atmosphere (exceptions are acetic and nitric acids). Epoxy forms an excellent hard, heavy film barrier against chemical as well as physical damage from direct impact and abrasion.

Vinyl Finish: For acid type atmospheres that do not exceed 160°F.

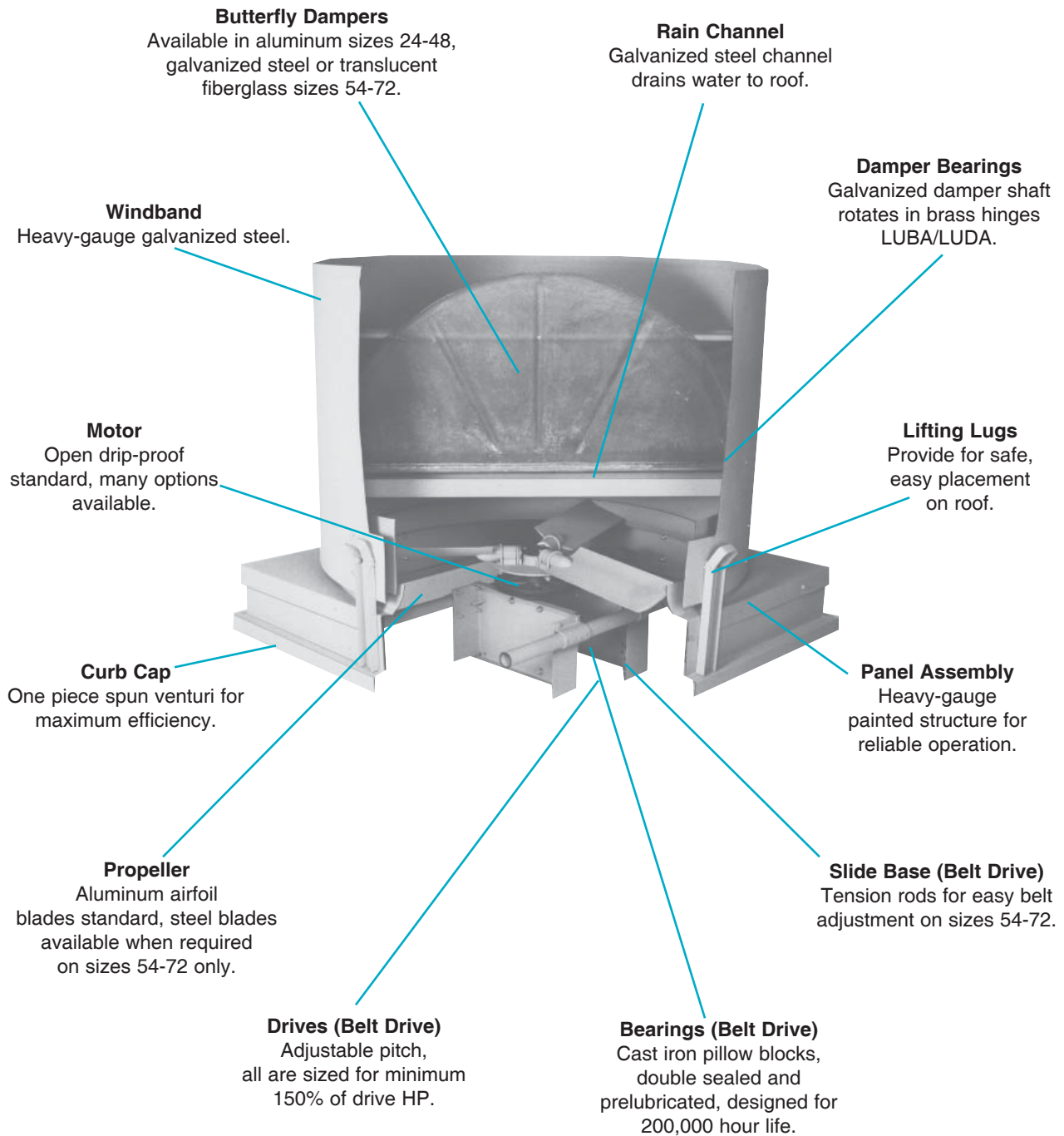
Air Dry Heresite: Phenolic coating resulting in a hard, durable surface which is resistant to saltwater, chemical fumes, and moisture temperature to 150°F.

ARC: A modified epoxy-polyamid coating, presents a smooth chemically resistant finish, exceptional hardness and durability, that is easily cleaned and maintained. Temperature to 275°F dry heat continuous and 320°F surges of periodic steam cleaning.

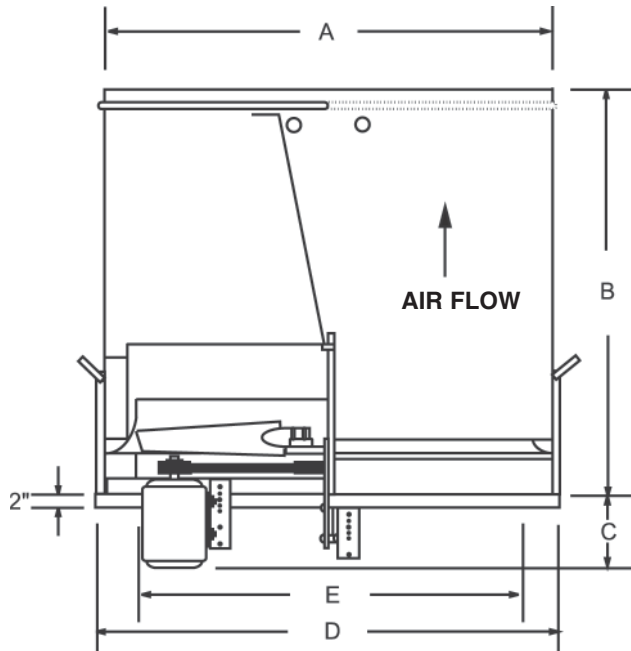
Uplblast Propeller Fans

CONSTRUCTION FEATURES

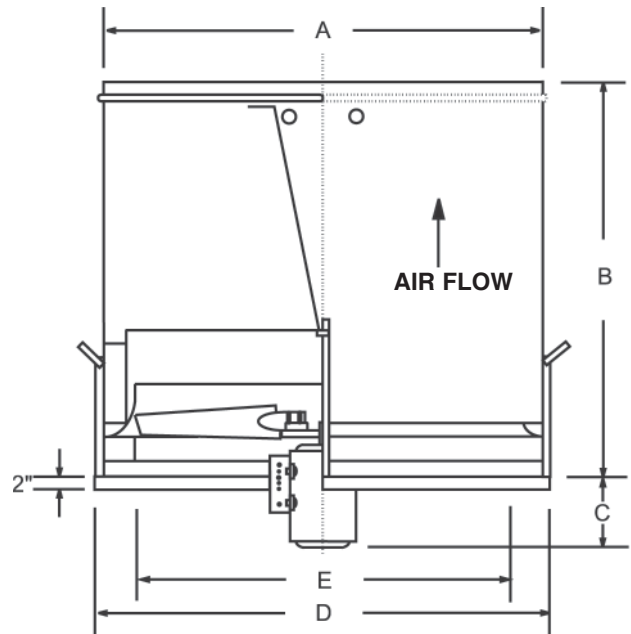
Uplast Propeller Fans



Factory Run and Tested
For quality assurance and dependable operation.



MODEL LUBA (54, 60, 72 only) — Belt Drive



MODEL LUDA — Direct Drive

	Model LUBA/ LUDA	Dimensions In Inches							Metal Gauges			Avg. Wt.
		A	B	C	D	E	F	G	Wind Shroud	Curb Cap	Fan Panel	
LUDA	24	30	33	16	32	24	30	27	18	14	16	310
	30	36	36	17	38	30	36	33	18	14	16	340
	36	42	37	17	44	36	42	39	18	14	16	430
	42	48	41	18	50	42	48	45	18	14	16	490
	48	54	44	22	56	48	54	51	18	14	14	640
LUBA	54	60	47	22	62	54	60	57	18	14	14	840
	60	66	50	22	68	60	66	63	18	14	14	1000
	72	80	80	31	82	72	80	77	18	12	11	1550

Dimension:

- A** — Outside diameter of wind band.
- B** — Height of unit above curb cap.
- C** — Maximum depth of unit below top of curb, actual depth varies with motor size.
- D** — Inside dimension of square curb cap.

- E** — Minimum inside dimension of curb opening required for adequate clearance of fan frame.
- F** — Outside dimension of factory built pre-fab curb.
- G** — Recommended roof opening (inside dimension of factory built pre-fab curb).



The Carnes Company certifies that the Model LUBA shown herein are licensed to bear the AMCA Seal. The ratings shown are based on test and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

PERFORMANCE DATA

Model LUBA54, 60, 72 - Belt Drive

Uplast Propeller Fans

Model LUBA	HP	RPM	Sone @ 5 ft.	Max. BHP	CFM @ Static Pressure					No. of Blades	
					0	1/8	1/4	3/8	1/2		
54	W2	3	545	28	3.39	35000	30200	24200			3
	X1	5	640	40	5.49	41200	36900	32500	27000		3
	Y1	7-1/2	735	50	8.32	47200	43700	39800	35700	30900	3
	C1	10	805	58	10.92	51800	48500	45000	41300	37400	3
60	X1	5	550	38	5.50	48200	42600	36000	27800		3
	Y1	7-1/2	630	51	8.27	55200	50300	45000	38800		3
	C1	10	695	60	11.10	61000	56600	51900	46700	40700	3
72	X1	5	410	31	5.47	61700	51900	40500			3
	Y1	7-1/2	470	42	8.24	70700	62300	53200			3
	C1	10	520	50	11.15	78200	70800	52800	53300		3

NOTES:

1. Performance certified is for installation type A: free inlet, free outlet.
2. Performance ratings (bhp) do not include transmission losses.
3. Performance ratings do not include the effects of accessories.
4. The sound ratings are shown loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: free inlet hemispherical sone levels. The AMCA ratings sound seal applies to sone ratings only.



The Carnes Company certifies that the Model LUDA shown herein are licensed to bear the AMCA Seal. The ratings shown are based on test and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

PERFORMANCE DATA
Model LUDA - Direct Drive

Model LUDA	HP	RPM	Sone @ 5 ft.	Max. BHP	CFM @ Static Pressure					No. of Blades	
					0	1/8	1/4	3/8	1/2		
24	P2	1/2	870	15	0.54	5900	5200				6
	P3	1/2	1160	18	0.55	6300	5400				2
	R3	3/4	1160	22	0.81	6900	6300	5600			3
	S3	1	1160	23	1.10	7400	6900	6400	5700		6
	R4	3/4	1750	30	0.82	6600	6100	5500	4900		2
	S4	1	1750	32	1.09	7500	7100	6500	5900	5200	2
	T4	1-1/2	1750	36	1.63	9100	8500	7900	7300	6600	2
	V4	2	1750	45	2.20	9500	9100	8700	8200	7800	3
	W4	3	1750	54	3.30	11200	10800	10400	10000	9700	4
30	R2	3/4	870	21	0.83	10100	8700				4
	S2	1	870	22	1.11	10600	9400	7900			6
	R3	3/4	1160	27	0.81	9800	8500				2
	S3	1	1160	30	1.08	10900	9600	8300			2
	T3	1-1/2	1160	34	1.62	12300	11300	10100	8600		3
	V3	2	1160	37	2.20	13800	12900	11900	10700		4
	T4	1-1/2	1750	44	1.65	10800	10000	9100	8200	7890	2
	V4	2	1750	48	2.19	12800	12000	11200	10400	9500	2
	W4	3	1750	58	3.30	15800	15000	14100	13200	12300	2
	X4	5	1750	70	5.51	18600	17900	17200	16500	15600	3
36	S2	1	870	23	1.10	14200	12000				2
	T2	1-1/2	870	25	1.64	15900	14300	12500			4
	V2	2	870	33	2.17	17700	16200	14300	12400		4
	W2	3	870	36	3.24	18900	17700	16300	14800	12700	6
	T3	1-1/2	1160	36	1.65	15700	14200	12400			2
	V3	2	1160	38	2.19	17600	16000	14300	12200		2
	W3	3	1160	42	3.32	20000	18400	16700	14900	12700	2
	X3	5	1160	58	5.40	23000	22000	20700	19400	18000	4
	W4	3	1750	75	3.26	17900	16700	15500	14300	13100	2
	X4	5	1750	77	5.60	23700	22800	21700	20700	19500	2
Y4	7-1/2	1750	78	8.20	27400	26500	25300	24200	23100	2	

NOTES:

1. Performance certified is for installation type A: free inlet, free outlet. Performance ratings (bhp) do not include transmission losses.
2. Performance ratings do not include the effects of accessories.
3. The sound ratings are shown loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: free inlet hemispherical sone levels. The AMCA ratings sound seal applies to sone ratings only.

Uplast Propeller Fans



The Carnes Company certifies that the Models LUDA shown herein are licensed to bear the AMCA Seal. The ratings shown are based on test and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

PERFORMANCE DATA

Model LUDA - Direct Drive

(Continued)

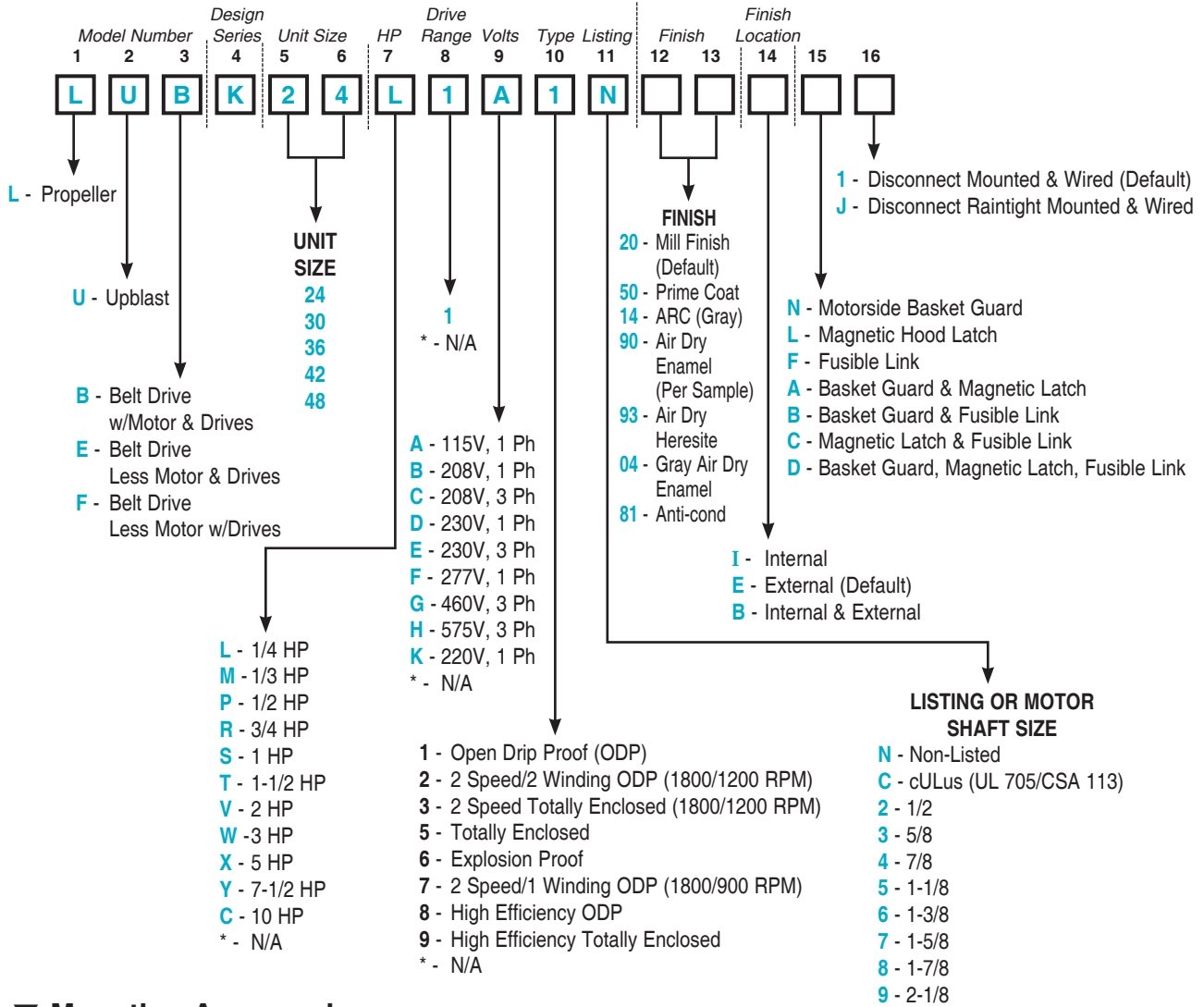
Uplblast Propeller Fans

Model LUDA	HP	RPM	Sone @ 5 ft.	Max. BHP	CFM @ Static Pressure					No. of Blades	
					0	1/8	1/4	3/8	1/2		
42	T1	1-1/2	680	25	1.65	20300	17800	14800			4
	V1	2	680	26	2.18	22400	20000	16900			4
	T2	1-1/2	870	28	1.60	20400	17800	14000			2
	V2	2	870	31	2.24	22800	19800	16700			2
	W2	3	870	33	3.27	25400	23500	21400	19100	15900	4
	V3	2	1160	42	2.23	20800	18700	16200	13300		2
	W3	3	1160	44	3.18	25200	23200	20900	18300	15000	2
	X3	5	1160	50	5.58	30800	28300	26000	23600	21500	2
	Y3	7-1/2	1160	58	8.20	34600	33300	31800	30200	28500	4
Y4	7-1/2	1750	92	8.15	32800	31500	30000	28500		2	
48	V1	2	680	28	2.20	26200	22700	18100			3
	V2	2	870	33	2.17	26200	22800	19700			2
	W2	3	870	38	3.35	30800	27200	23200	18600		2
	X2	5	870	42	5.60	36300	33500	30500	27000	21500	3
	Y2	7-1/2	870	48	8.27	40300	37700	34800	31800	27600	3
	W3	3	1160	49	3.40	27900	25000	22100	19700		2
	X3	5	1160	57	5.55	35900	33500	31000	28900	24300	2
	Y3	7-1/2	1160	67	8.23	41800	39300	36500	33900	30700	2
	C3	10	1160	69	11.10	45800	43000	40200	37400	34500	2
54	V1	2	680	31	2.22	32200	26700	19500			2
	W2	3	870	47	3.28	35700	31600	26700	19400		2
	X2	5	870	54	5.55	43900	39200	34600	29300	21900	2
	Y2	7-1/2	870	59	8.32	48900	45500	41900	38100	33300	3
	X3	5	1160	68	5.55	38500	35200	31800	28300	25000	2
	Y3	7-1/2	1160	75	8.40	49200	46400	43000	39700	35700	2
	C3	10	1160	77	11.20	55600	52500	49200	46400	41900	2
60	V1	2	680	36	2.26	35200	28700				2
	W2	3	870	51	3.21	36800	31100	25100			2
	X2	5	870	59	5.58	49300	44600	39200	32400		2
	Y2	7-1/2	870	64	8.30	57200	52600	47500	41800	35100	2
72	X1	5	680	55	5.40	59800	51400	41000			2
	Y1	7-1/2	680	61	8.30	72400	64800	56700	46000	42400	2
	C1	10	680	63	10.97	78900	71700	63700	46900		2
	Y2	7-1/2	870	78	8.24	65500	59000	52000	44000		2

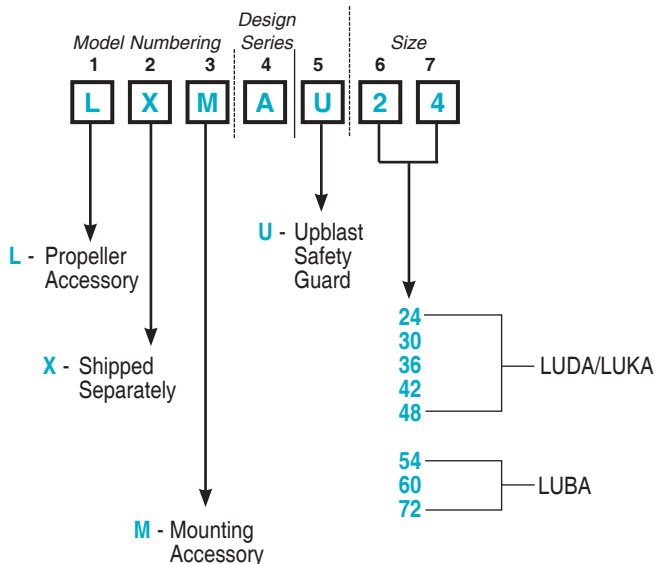
NOTES:

1. Performance certified is for installation type A: free inlet, free outlet performance ratings (bhp) do not include transmission losses.
2. Performance ratings do not include the effects of accessories.
3. The sound ratings are shown loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: free inlet hemispherical sone levels. The AMCA ratings sound seal applies to sone ratings only.

▼ **Upblast Propeller Roof Ventilators**

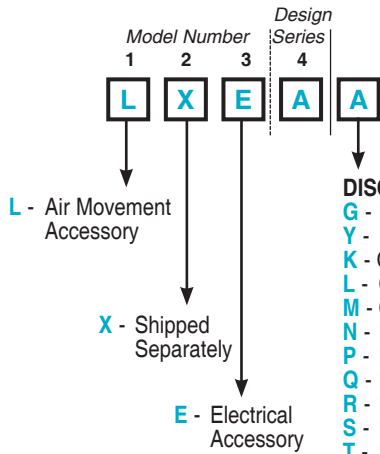


▼ **Mounting Accessories**



Upblast Propeller Fans

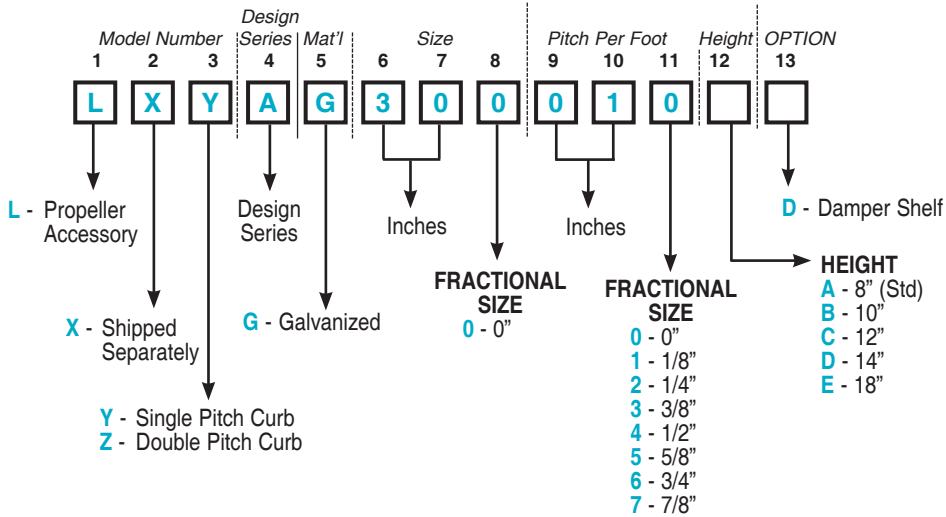
▼ Electrical Accessories



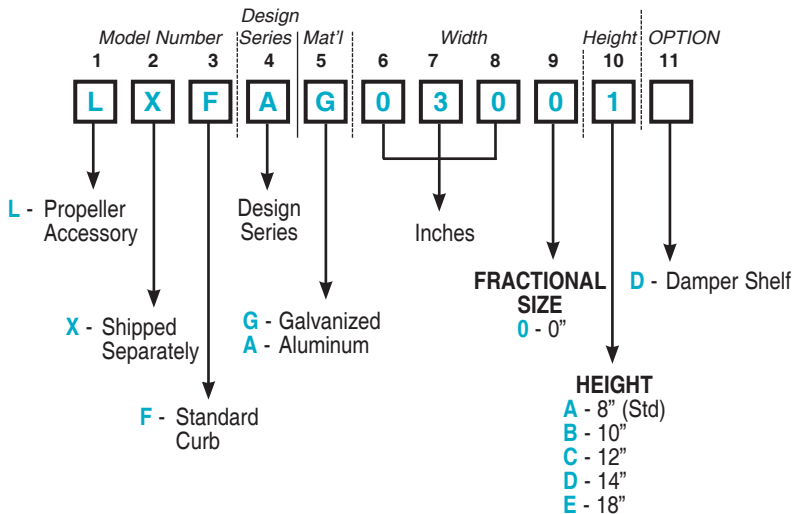
DISCONNECT SWITCHES

- G - Raintight Disconnect - NEMA 3 (6 Pole) 1 or 3 Phase, 115V-600V to 7-1/2 HP Max
- Y - Explosion Proof Disconnect - NEMA 7 and 9, 230V-460V 3 HP to 5 HP
- K - Open Disconnect - NEMA 1, 1 Phase, 115V - 230V to 1 HP - 2 HP
- L - Open Disconnect - NEMA 1, 3 Phase, 208V, 230V - 460V to 1 HP - 2 HP
- M - Open Disconnect - NEMA 1, 3 Phase, 208V, 230V - 460V to 7-1/2 HP - 10 HP
- N - Raintight Disconnect - NEMA 3, 1 Phase, 115V - 230V to 1 HP to 2 HP
- P - Raintight Disconnect - NEMA 3, 1 Phase, 115V - 230V to 1 HP - 2 HP
- Q - Raintight Disconnect - NEMA 3, 1 Phase, 115V - 230V to 10 HP
- R - Raintight Disconnect - NEMA 3, 3 Phase, 208V, 230V - 460V to 7-1/2 HP - 10 HP
- S - Raintight Disconnect - NEMA 3, 3 Phase, 208V, 230V - 460V to 7-1/2 HP - 15 HP
- T - Raintight Disconnect - NEMA 4, 1 Phase, 115V - 230V to 1 HP to 2 HP
- W - Raintight Disconnect - NEMA 4X, 3 Phase, 230V - 460V to 7-1/2 to 10 HP
- X - Explosion Proof Disconnect - NEMA 7 and 9, 1 Phase, 115V - 230V to 1 HP
- U - Raintight Disconnect - NEMA 4, 3 Phase, 230V-460V to 7-1/2 HP to 10 HP
- V - Raintight Disconnect - NEMA 4X, 1 Phase, 115V-230V to 1 HP to 2 HP

▼ Pitched Curbs



▼ Curbs



MODEL LUKA REMOTE DRIVE UPBLAST PROPELLER ROOF EXHAUSTERS

Application

Model LUKA units are high capacity belt driven roof mounted exhausters rated from 4,500 to 72,000 CFM. The motor and drives are located outside of the exhaust airstream, making these units especially suited for the removal of heated or contaminated air from commercial and industrial buildings or processes where these conditions exist. All models are capable of continuous operation exhausting air to 200°F.

The remote drive construction allows for easy rooftop belt and motor access for maintenance. For increased air performance (in clean conditions) with the same easy maintenance access, the LUKA is available without the belt and bearing enclosures. See the LUBA performances herein.

Straight-through air flow design results in maximum exhaust efficiency. During operation, high air flow velocity opens butterfly dampers and prevents rain or snow from entering. Dampers close and cover the venturi opening when unit is not in use.

The roof mounted location eliminates interference with processes and equipment inside the building. It also permits locating the exhauster over a source of heated or contaminated air, allowing direct upward venting to the outside, unlike wall mounted exhausters which may move contaminated air through adjacent work spaces.

Construction/Specification Checklist

Panel Assembly

- Heavy-gauge galvanized steel panel, sizes 24-72.
- One piece spun venturi for maximum efficiency and strength.
- All welded support structure of schedule 40 galvanized pipe (minimum).
- Motor/bearing plates of minimum 10 gauge galvanized steel.

Windband/Butterfly Dampers.

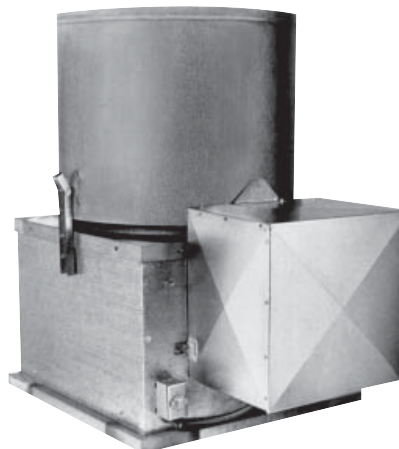
- Heavy-gauge galvanized steel windband.
- Steel dampers standard.
- Translucent fiberglass dampers available on all sizes.
- Galvanized rain channel drains water from damper area of roof.
- Galvanized damper shafts rotate in bronze bushing.

Propeller

- Two, three, four or six airfoil aluminum blades.
- Steel hub plate with steel taper lock bushing.
- Adjustable pitch for optimum efficiency.
- Die formed steel blades are optional where required.

Drives

- Shielded from airstream by galvanized steel enclosure.
- Sized for minimum 150% of drive horsepower.
- Single belt adjustable pitch sheaves through 3 HP.
- Two belt fixed pitch sheaves through 10 HP.
- Adjustable pitch sheaves are optional above 3 HP.
- Adjustable tension rods for belt adjustment.
- Non-static oil resistant V-belts.
- Keyed, turned, ground and polished shafts.



Bearings

- Bearings designed for minimum 200,000 hour life.
- Cast iron self-aligning pillow block ball bearings.
- Bearings are sealed, prelubricated with relube fittings.

Motors

- Located outside airstream under weather cover.
- Brands are nationally recognized and locally serviced.
- Open drip-proof construction is standard.
- High efficiency, explosion proof, totally enclosed fan cooled (TEFC) and corrosion duty motors are optional.

Options/Accessories

Fan Curb: Prefabricated heavy-gauge galvanized steel. Welded construction, 8" high with 1-1/2" treated wood nailer. Options include burglar bars, single and double pitch construction and additional curb heights.

Disconnect Switch: Non-fused safety disconnects are available for all motor sizes in raintight or open enclosures. Explosion proof, NEMA 4 and NEMA 4X are also available.

Magnetic Latches: Helps reduce damper chatter when the units are not in operation.

Heat/Smoke Vent: Opens damper doors when temperature exceeds 165°F. Allows heat and smoke to escape building without use of fan power.

Outlet Guard: 1/2" x 1" wire mesh guard will prevent birds and other objects from entering the fan.

Extended Grease Lines: Extended copper grease lines allow motor and/or fan bearings to be relubricated from the exterior.

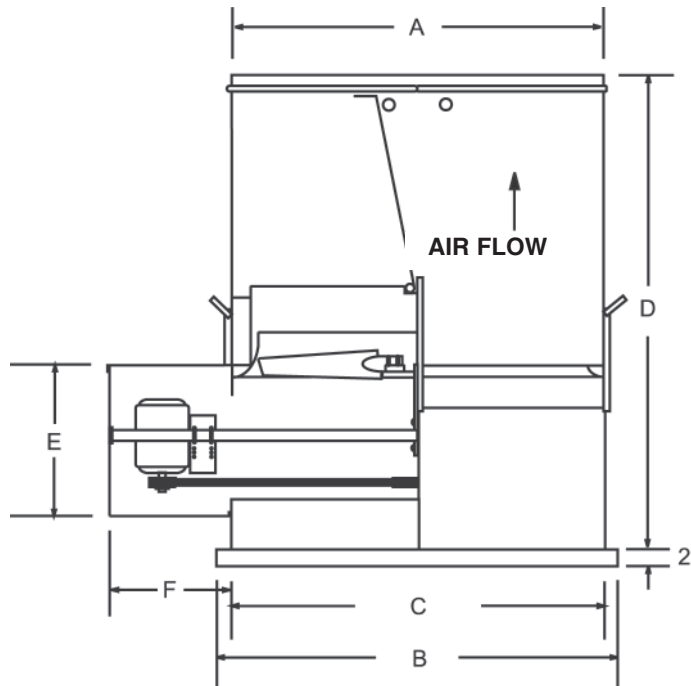
Aluminum Construction: Optional aluminum construction available on windbands, curb caps, panel and blades. (Sizes 24-54.)

Epoxy Finish: For use in an alkaline type atmosphere (exceptions are acetic and nitric acids). Epoxy forms an excellent hard, heavy film barrier against chemical attack as well as physical damage from direct impact and abrasion.

Vinyl Finish: For acid type atmospheres that do not exceed 160°F.

DRAWINGS/DIMENSIONS

Model LUKA



MODEL LUKA

Model LUKA	Dimensions In Inches						
	A	B	C	D	E	F	G
24	30	32	30	50	22	16	31
30	36	38	36	54	22	16	37
36	42	44	42	56	22	16	43
42	48	50	48	59	22	16	49
48	54	56	54	68	22	22	55
54	60	62	60	70	22	22	61
60	66	68	66	74	22	22	67
72	80	82	80	86	22	22	81

- Legend:**
- A — Outside diameter of wind band.
 - B — Inside dimension of square curb cap.
 - C — Inside dimension of square fan base.
 - D — Height of unit above curb.
 - E — Height of motor cover.
 - F — Length of motor cover.
 - G — Outside dimension of factory built pre-fab curb.

PERFORMANCE DATA

Model LUKA

Model LUKA	HP	RPM	Sone @ 5 ft.	Max. BHP	CFM @ Static Pressure					No. of Blades	
					0	1/8	1/4	3/8	1/2		
24	R2	3/4	1210	20	0.82	6605	5980	5262	4416		3
	S2	1	1335	23	1.11	7286	6715	6081	5410		3
	T2	1-1/2	1525	30	1.65	8353	7866	7323	6752	6127	3
	V2	2	1680	35	2.21	9200	8740	8280	7774	7268	3
30	S2	1	960	23	1.15	10230	9114	7812			3
	T2	1-1/2	1090	31	1.69	11625	10602	9579	8370		3
	V2	2	1200	37	2.25	12741	11904	10881	9858	8742	3
	W2	3	1370	44	3.35	14508	13764	12927	12090	11160	3
36	S2	1	700	19	1.10	12861	10752				3
	T2	1-1/2	795	25	1.57	14688	12768	10656			3
	V2	2	895	30	2.30	16512	14880	12960	10848		3
	W2	3	1020	35	3.48	18816	17280	15744	14112	12192	3
42	T2	1-1/2	640	23	1.68	18414	15624				3
	V2	2	710	28	2.30	20553	17949	14880			3
	W2	3	805	35	3.35	23250	21018	18414	15624		3
	X1	5	950	43	5.51	27261	25668	23529	21390	18879	3
48	V2	2	575	23	2.31	24196	20700	16192			3
	W2	3	655	32	3.41	27784	24564	20884	16376		3
	X1	5	770	43	5.54	32660	29900	27048	23736	19780	3
	Y1	7-1/2	880	52	8.27	37352	34960	32476	29992	26956	3
	C1	10	970	58	11.07	41216	39100	36892	34500	32016	3
54	W2	3	545	26	3.39	33250	28690	22990			3
	X1	5	640	38	5.49	39140	35055	30875	25650		3
	Y1	7-1/2	735	48	8.32	44840	41515	37810	33915	29355	3
	C1	10	805	56	10.92	49210	46075	42750	39235	35530	3
60	X1	5	550	36	5.50	44826	39618	33480	25854		3
	Y1	7-1/2	630	49	8.27	51336	46779	41850	36084		3
	C1	10	695	58	11.10	56730	52638	48267	43431	37851	3
72	X1	5	410	29	5.47	57381	48267	37665			3
	Y1	7-1/2	470	40	8.24	65751	57939	49476			3
	C1	10	520	48	11.15	72726	65844	58404	49569		3

NOTES:

1. Model LUKA is not licensed to bear the AMCA Seal.

Upblast Propeller Fans

TUBEAXIAL UPBLAST EXHAUSTERS

Application

Carnes Model LQBA is designed for high capacity industrial and commercial roof exhaust applications. The remote drive configuration of the LQBA is especially suited for the removal of fumes, vapors, steam, dust, smoke and contaminated or heated air. Belt drive models are available for continuous operation in air temperatures of 200°F. For temperature ratings to 1000°F and/or IRI requirements refer to Model LQBA with steel prop.

Capacities range from 7,180 to 78,800 CFM and up to 1" static pressure. Fan selections are available in 24, 30, 36, 42, 48, 54 and 60 inch sizes. Horsepowers range from 3/4 to 20 HP. Blade selections are available in aluminum, steel or fiberglass reinforced polypropylene (see performance charts for capacities). Every unit is completely assembled and factory tested for quality assurance prior to shipment.

Construction

The LQBA series is built with heavy-gauge steel to provide years of reliable service. Sizes 24" - 60" tubes are G-90 galvanized steel. Sizes 24" - 60" have rolled 2" flanged ends.

Upblast fans include a heavy-gauge galvanized steel wind band with pressure operated damper doors. A galvanized channel section drains water out of the fan area when the damper doors are closed.

All fans are available with epoxy, vinyl or anti-condensate coatings. Custom colors are also available. Contact your representative for the cost and finish best suited for your application.

Blades

For versatility, blades are offered in special high-strength, adjustable-pitch aluminum airfoil or adjustable-pitch fiberglass reinforced Polypropylene. These styles were selected to provide optimum performance and strength at low to moderate noise levels. Refer to the performance tables for the best selection.

The adjustable pitch aluminum airfoil propeller performs over a wide range of static pressures. This blade's strength is derived from matching T6-6061 extruded aluminum airfoil sections to a heavy steel plate hub. All blades are statically and dynamically balanced.

The highly corrosive resistant polypropylene blade's efficiency is due to the uniform twisting of the airfoil section over its entire length, resulting in less turbulence. The operating parameters are -40°F to +185°F ambient temperatures. Hubs are produced from die cast aluminum resulting in a light weight, high strength factory adjustable pitch blade.

Drive Mechanism

This belt drive model comes with 200,000 hour re-lubricable pillow block bearings and remote grease lines as standard features. Bearings and drives are isolated from the airstream by heavy-gauge galvanized belt tubes and bearing covers. Belt drive models through 3 HP ship with variable pitch pulleys; over 3 HP have fixed pulleys. The motor base slides for easy belt adjustment. All units are factory assembled and test run for quality assurance.



Model LQBA

Motors

Motors used with the LQBA series are heavy-duty, nationally recognized, with nationwide service centers. Standard motors are open drip proof (ODP). High efficiency, totally-enclosed fan cooled (TEFC), explosion proof and corrosive duty motors are also available.

Typical Specifications

Upblast roof exhausters shall be belt driven.

Fan tubes shall be heavy-gauge, galvanized steel for 24" through 60" sizes (15 HP maximum). Sizes 24" - 60" tubes shall be welded one-piece with 2" flanged ends for maximum strength. Bearing plates shall be minimum 10 gauge, galvanized steel, welded in place and protected from the airstream by welded, heavy-gauge galvanized steel.

Propellers shall be high strength adjustable-pitch aluminum airfoil, heavy-gauge steel or high density, adjustable pitch nylon reinforced polypropylene. (See fan schedule for best selection.)

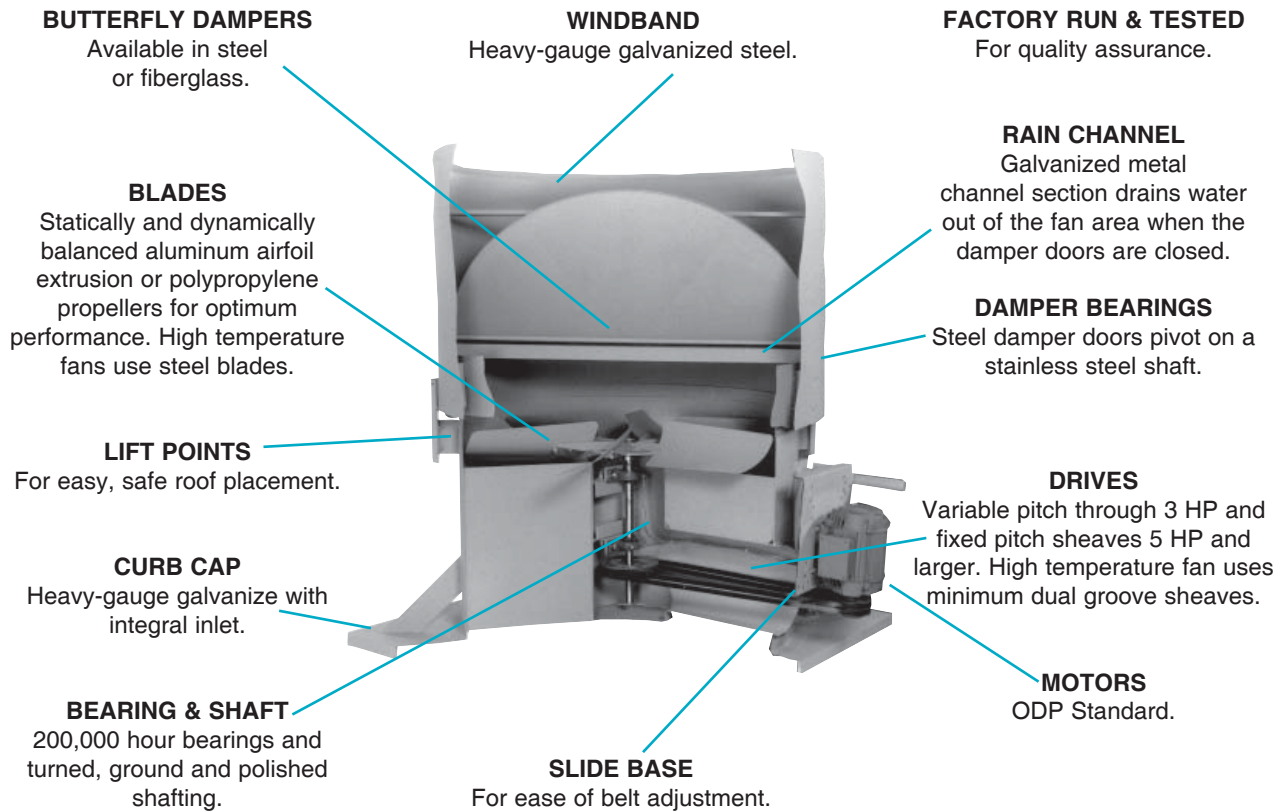
Motors shall be permanently lubricated, sealed ball-bearing type by nationally recognized manufacturers. Belt tensioning of the non-static, oil resistant V-belt is to be accomplished with adjustable tension rods.

Motors, bearings and belts shall be shielded from the airstream by a sheet metal enclosure. Drives shall be sized for a minimum 150% of drive horsepower. Drives shall be single-belt, fixed belt, adjustable sheaves through 3 HP, double-belt, fixed sheaves on 15 HP. High temp upblast shipped with two belts through 10 HP, three-belt, fixed sheaves on 15 HP and four-belt, fixed sheaves on 20 HP. (Adjustable sheaves are optional on two and three-belt drives.)

Bearings shall be heavy-duty cast-iron, pillow block, ball bearing type with remote grease lines and re-lubricable fittings. Bearings shall be self-aligning, double-sealed and factory prelubricated. Standard bearings shall be designed for minimum 200,000 hour life.

Fan shafts shall be turned, ground and polished steel coated with an anti-rust compound to resist corrosion.

CONSTRUCTION FEATURES Model LQBA



ACCESSORIES

Roof Curbs: Curbs are prefabricated in heavy-gauge galvanized steel welded construction, 8" high with a 1-1/2" wood nailer. Options include burglar bars, single and double pitch construction and additional curb heights. Refer to current submittal drawing for details.

Outlet Guard: Wire mesh guard will prevent birds and other objects from entering the fan.

Access Door: For inspection and blade service/cleaning.

Magnetic Latches: Helps reduce damper chatter when the unit is not in operation.

Heat/Smoke Vent: Opens damper doors when the temperatures exceed 165°F. Allows heat and smoke to escape building without use of fan power. (Standard on Hi-Temp Model.)

Disconnects: Safety disconnects are available for all motor sizes in raintight or open enclosures. Stock units are non-fused. Explosion proof, NEMA 4 and Nema 4X also available.

Motors: ODP standard, 2 speed, TEFC, corrosion duty and explosion proof are also available.

PAINT FINISHES

Epoxy: For use in an alkaline type atmosphere (exceptions are acetic and nitric acids). Epoxy forms an excellent hard, heavy film barrier against chemical attack as well as physical damage from direct impact and abrasion.

Vinyl: For acid type atmospheres that do not exceed 160°F.

All specifications are subject to change without notice unless approved in submittal by CARNES.

TUBEAXIAL UPBLAST

**Model LQBA - Belt Drive - Aluminum Blade (200°F Max.)
PERFORMANCE DATA**

Model LQBA	HP	RPM	No. of Blades	Max. BHP	CFM @ STATIC PRESSURE									Sones @ 5 Ft.
					0	1/8	1/4	3/8	1/2	5/8	3/4	1		
24	R2	3/4	1200	3	.83	6,210	5,807	5,171	4,321					19
	S2	1	1315	3	1.09	6,805	6,443	5,948	5,201	4,415				24
	T2	1-1/2	1515	3	1.65	7,840	7,537	7,162	6,651	5,979	5,306	4,519		29
	V2	2	1675	3	2.22	8,668	8,398	8,081	7,688	7,156	6,544	5,936	4,531	38
30	R2	3/4	915	3	.83	9,035	8,175	6,911						23
	S2	1	1010	3	1.11	9,973	9,213	8,219	6,789					24
	T2	1-1/2	1155	3	1.65	11,405	10,755	9,989	8,955	7,664	6,304			32
	V2	2	1275	3	2.21	12,590	12,009	11,351	10,554	9,495	8,312	7,079		38
	W2	3	1450	3	3.22	14,318	13,813	13,262	12,642	11,903	10,974	9,935	7,778	45
36	R2	3/4	740	3	.82	12,579	10,986	8,694						19
	S2	1	815	3	1.10	13,854	12,440	10,596						20
	T2	1-1/2	935	3	1.66	15,894	14,689	13,275	11,404	9,161				26
	V2	2	1025	3	2.19	17,424	16,337	15,110	13,611	11,713	9,660			30
	W2	3	1160	3	3.14	19,719	18,769	17,734	16,568	15,162	13,476	11,652		36
	X2	5	1400	3	5.47	23,798	23,021	22,201	21,324	20,373	19,306	18,074	15,197	68
	Y2	7-1/2	1590	3	7.97	27,028	26,347	25,639	24,897	24,114	23,277	22,371	20,220	89
42	R2	3/4	550	4	.84	14,588								22
	S2	1	605	4	1.04	16,046	14,024	11,621						23
	T2	1-1/2	690	4	1.57	18,300	16,539	14,632	12,265					24
	V2	2	760	4	2.11	20,157	18,561	16,898	14,949	12,723				29
	W2	3	870	4	3.28	23,074	21,682	20,029	18,749	16,978	15,038	12,727		36
	X1	5	1030	4	5.17	29,694	26,140	24,961	23,751	22,474	21,049	19,441	15,994	45
	Y2	7-1/2	1310	3	7.87	32,037	30,976	29,849	28,647	27,358	25,974	24,473	21,207	57
48	S2	1	500	4	1.12	20,266	16,694							24
	T2	1-1/2	570	4	1.67	23,104	20,044	16,726						25
	V2	2	630	4	2.25	25,536	22,821	19,815	16,733					26
	W2	3	720	4	3.33	29,184	26,863	24,237	21,647	18,899	14,356			35
	X1	5	855	4	5.51	34,656	32,749	30,623	28,375	26,210	23,907	21,375		43
	Y1	7-1/2	975	4	7.88	39,519	37,871	36,068	34,141	32,163	30,271	28,304	23,692	51
	C1	10	1175	3	10.87	45,327	43,576	41,742	39,672	37,424	35,052	32,652	28,246	73
54	W2	3	600	4	3.09	31,028	26,996	23,045	19,851					33
	X1	5	710	4	5.32	38,951	35,127	30,055	26,760	24,164	18,353			44
	Y1	7-1/2	850	3	7.91	44,741	41,411	37,455	32,829	29,414	26,206	20,758		54
	C1	10	935	3	10.89	49,215	46,040	42,878	38,781	34,681	31,975	29,019	18,913	62
60	W2	3	485	3	3.15	33,008	22,992							38
	X1	5	575	3	5.18	39,133	31,577	24,734						39
	Y1	7-1/2	660	3	8.15	44,918	38,963	30,343	27,344	19,516				51
	C1	10	725	3	10.93	49,342	44,124	36,563	31,592	28,304				59

NOTES:

1. Contact factory for alternate selections if required.
2. Brake horsepower does not include drive losses.
3. Values are installation Type A, free inlet hemispherical sone levels.
4. Performance shown are for types and units without inlet or outlet ducts.
5. The sound ratings shown are loudness values in fan sones at 5 ft. (3.0m) in a hemispherical free field calculated per AMCA Standard 301.
6. Model LQBA is not AMCA Licensed.

Tubexial Upblast Exhauster

TUBEAXIAL UPBLAST

Model LQBA - Belt Drive - Polypropylene Blade (185°F Max)
PERFORMANCE DATA

Model LQBA	HP	RPM	No. of Blades	Max. BHP	CFM @ STATIC PRESSURE								Sones @ 10 Ft.	
					0	1/8	1/4	3/8	1/2	5/8	3/4	1		
24	R2	3/4	1275	6	.75	6,350	5,962	5,491	4,980					17
	S2	1	1390	6	1.00	6,998	6,680	6,180	5,755	5,268	4,595			20
	T2	1-1/2	1615	6	1.50	8,265	7,943	7,615	7,267	6,873	6,421	5,382		26
	V2	2	1800	6	2.00	9,246	8,996	8,697	8,408	8,190	7,731	6,942	5,924	36
	W2	3	2050	6	3.00	10,626	10,323	10,121	9,875	9,619	9,342	8,731	8,042	39
30	R2	3/4	975	6	.75	8,697	7,942	6,919						19
	S2	1	1080	6	1.00	9,775	9,121	8,323	7,321					20
	T2	1-1/2	1250	6	1.50	11,515	10,920	10,321	9,646	8,797	7,870			24
	V2	2	1375	6	2.00	12,821	12,222	11,727	11,224	10,523	9,719	7,823		26
	W2	3	1550	6	3.00	14,525	14,029	13,623	13,124	12,628	12,031	10,741	8,914	34
	X2	5	1850	6	5.00	17,514	17,112	16,694	16,301	15,913	15,491	14,631	13,585	52
36	T2	1-1/2	930	6	1.50	14,809	13,921	12,488	11,222	8,630				24
	V2	2	1040	6	2.00	16,823	16,002	14,911	13,692	12,481	10,275			28
	W2	3	1180	6	3.00	19,331	18,540	17,681	16,791	15,710	14,722	11,081		34
	X2	5	1385	6	5.00	22,940	22,026	21,560	20,890	20,018	19,230	17,450	15,008	39
	Y2	7-1/2	1585	6	7.50	26,230	25,850	25,120	24,562	23,900	23,243	21,900	20,144	50
	C1	10	1750	6	10.00	29,020	28,671	28,028	27,670	27,016	26,560	25,048	24,010	71
42	T2	1-1/2	750	6	1.50	17,451	15,670	13,561	10,019					20
	V2	2	825	6	2.00	19,563	17,981	16,195	14,986	10,126	8,126			32
	W2	3	950	6	3.00	22,893	21,562	20,128	18,673	16,892	14,457			33
	X1	5	1130	6	5.00	27,670	26,551	25,253	24,030	22,968	21,616	18,018	12,775	39
	Y2	7-1/2	1300	6	7.50	31,120	30,830	30,039	29,130	28,312	27,022	24,790	21,100	50
	C1	10	1420	6	10.00	34,310	33,537	32,610	31,674	30,880	29,868	27,986	25,708	53
	N1	15	1625	6	15.00	39,712	38,968	38,028	37,324	36,764	35,861	34,257	32,056	76
48	T2	1-1/2	620	8	1.50	20,303	18,249	15,126						24
	V2	2	650	8	2.00	21,414	19,321	16,364						26
	W2	3	750	8	3.00	25,236	23,381	21,684	19,291	16,061				28
	X1	5	890	8	5.00	30,791	29,108	27,464	25,852	24,142	22,122	15,276		36
	Y1	7-1/2	1015	8	7.50	35,748	34,126	32,561	31,213	29,792	28,382	24,298	18,203	50
	C1	10	1120	8	10.00	39,574	38,235	36,780	35,453	34,243	33,033	30,691	26,405	55
	N1	15	1285	8	15.00	45,670	44,394	43,334	42,224	41,014	39,694	37,637	35,432	72
54	W2	3	600	6	3.00	31,896	28,991	24,252						26
	X1	5	730	8	5.00	34,454	33,006	31,283	28,892	25,962	22,632			33
	Y1	7-1/2	835	8	7.50	40,051	38,596	37,383	35,663	33,543	31,323	25,762		39
	C1	10	925	8	10.00	44,750	43,544	42,334	41,124	39,504	37,683	33,343	28,192	43
	N1	15	1040	8	15.00	51,252	50,115	49,105	48,094	46,974	45,764	42,334	38,593	56
60	X1	5	640	6	5.00	44,454	40,914	37,683	33,704	28,292				36
	Y1	7-1/2	735	6	7.50	52,235	49,105	46,274	43,344	40,015	35,963			39
	C1	10	810	6	10.00	58,295	55,465	52,735	50,015	47,484	44,354			50
	N1	15	926	8	15.00	60,116	58,695	57,185	55,565	54,055	52,535	49,205	45,164	56
	Q1	20	1025	6	20.00	75,267	73,060	72,187	68,796	66,576	64,456	60,316	55,465	71

NOTES:

1. Contact factory for alternate selections if required.
2. Brake horsepower does not include drive losses.
3. Values are installation Type A, free inlet hemispherical sone levels.
4. Performance shown are for types and units without inlet or outlet ducts.
5. The sound ratings shown are loudness values in fan sones at 10 ft. (3.0m) in a hemispherical free field calculated per AMCA Standard 301.
6. Model LQBA is not AMCA Licensed.

TUBEAXIAL UPBLAST UL LISTED FOR HEAT & SMOKE REMOVAL**Model LQBA “High Temp”****Application**

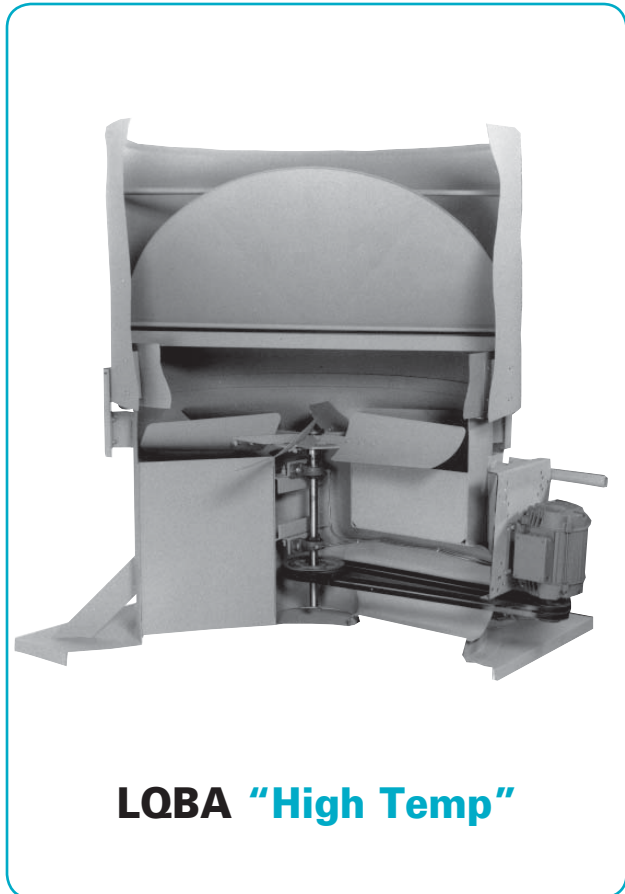
Carnes Model LQBA (“High-Temp”) has been designed and tested for emergency heat and smoke removal. This design also lends itself to everyday, non-emergency, high capacity industrial and commercial roof exhaust applications. Model LQBA (“High-Temp”) successfully passed heat test of 1000°F for fifteen (15) minutes and 500°F for over four (4) hours by an independent testing agency. Model LQBA (“High-Temp”) exceeds I. R. I. (Industrial Risk Insurers) guidelines.

The heavy-gauge design allows for years of standard commercial use and the dependability required in a fire emergency. The upblast configuration exhaust heat and smoke high above the roof line aiding in the access and capabilities of fire fighters. Unlike complete design dependence on gravity vents which are sometimes limited by air temperature and wind velocity, the LQBA (“High-Temp”) in conjunction with gravity vents, will more effectively remove smoke, hot air and gases when used in a properly designed system. In the event of electrical failure, the 165°F fusible link will activate the spring assisted damper doors to provide gravity ventilation. Fan CFM sizing and location for both exhaust and supply air are an important part of the overall heat and smoke venting building needs. Refer to I.R.I. (Industrial Risk Insurers), NFPA (National Fire Protection Agency) and local fire codes for help in proper system design. Final approval for the complete system design should be authorized by the local authority having jurisdiction.

Fan selections are available in 24, 30, 36, 42, 48, 54 and 60 inch sizes. Horsepower and CFM range to 57,000 CFM and 15 HP units are tested in accordance with AMCA Standard 301 (sound) and AMCA 210 (air) in an AMCA Accredited Laboratory. Every unit is completely assembled and factory tested for quality assurance prior to shipment.

Construction/Specification Checklist:

1. Successfully heat tested by independent laboratory for
 - (a) 1000°F for 15 minutes.
 - (b) 500°F for minimum 4 hours.
2. All ferrous construction in air stream.
3. 165°F fusible link in damper mechanism (heat & smoke vent).
4. Motor out-of-air stream design.
5. Belt & bearings enclosed in ventilated housing.
6. Minimum dual groove drive / belt combination.
7. Shaft heat slinger.
8. Motor operated dampers not available.

**LQBA “High Temp”****Drive Mechanism**

Motors, bearings and belt are shielded from the air stream by a sheet metal enclosure, with cooling provided by fresh outside air. Drives are sized for a minimum 150% of drive horsepower. Drives are minimum dual groove sheaves through 10 horsepower and three belt on 15 HP. Adjustable sheaves are available as an option. Bearings are heavy-duty cast iron, pillow block with re-lubricable fittings. Standard bearings are fitted with remote lubricable fittings and designed for minimum 200,000 hour life. All shafts are turned, ground and polished steel coated with an anti-rust compound to resist corrosion.

Electrical Power

Electrical power should be independent of the general building. Wiring requires special, heat resistant qualities as determined by local fire codes. Switching should always be arranged so that automatic start-up can be achieved through safety devices such as, but not limited to, sprinkler systems and smoke or heat sensors.

HIGH-TEMP TUBEAXIAL UPBLAST

Model LQBA - Belt Drive - Steel Blade
PERFORMANCE DATA

Model LQBA		HP	Max. RPM	BHP	CFM @ STATIC PRESSURE						Sones @ 5 Ft.	
					0	1/8	1/4	3/8	1/2	5/8		3/4
24	R2	3/4	1215	.78	6,255	5,297	4,821	4,035				21
	S2	1	1335	1.08	6,975	6,494	5,328					27
	T2	1-1/2	1530	1.53	7,896	7,272	6,601	6,216	5,814	5,248		31
	V2	2	1750	2.05	8,693	8,109	7,688	7,265	6,276	5,409		40
30	S2	1	1180	1.06	9,631	8,703	6,835	6,478				26
	T2	1-1/2	1155	1.57	11,324	10,716	9,408	7,755	6,574			29
	V2	2	1550	2.09	11,952	11,272	10,694	9,776	8,405	7,824		35
	W2	3	1325	3.08	13,871	13,059	12,491	11,234	10,295	8,173		34
	X2	5	1560	5.13	16,225	15,983	15,120	14,730	12,761	10,576	8,568	42
36	T2	1-1/2	1015	1.61	14,173	13,128	11,822	10,471				28
	V2	2	1160	2.11	15,114	14,353	13,243	11,988	10,514	8,772	7,444	32
	W2	3	1140	3.05	18,020	16,740	16,186	14,342	10,549	9,510	7,865	38
	X2	5	1245	5.12	20,849	20,157	19,368	18,978	16,490	14,118	11,362	53
42	V2	2	930	2.01	18,628	17,503	15,264	12,855	11,606			29
	W2	3	1140	3.13	22,193	20,384	18,866	17,337	15,643	13,574		38
	X1	5	1140	5.07	25,960	24,822	23,667	22,374	20,839	19,521	18,043	48
	Y2	7-1/2	1140	7.81	29,490	28,518	28,186	26,569	24,926	23,934	19,623	58
48	V2	2	1060	2.13	23,071	20,547	17,036	14,446	9,318			31
	W2	3	745	3.08	27,001	25,050	22,614	18,159	12,350			32
	X1	5	920	5.12	32,214	30,087	28,244	24,584	21,171	17,307		41
	Y1	7-1/2	1220	7.61	37,275	35,069	34,092	31,881	29,474	24,436	20,370	56
	C1	10	1030	10.81	41,738	39,120	38,422	36,114	34,990	27,506	25,067	66
54	W2	3	760	3.04	28,569	25,768	22,833	18,300				28
	X1	5	780	5.16	36,440	34,307	32,085	28,209	21,065			37
	Y1	7-1/2	900	7.55	42,632	40,823	38,562	36,009	29,864	23,065		48
	C1	10	860	10.08	47,064	45,427	43,602	41,604	38,006	30,622		52
	N1	15	780	15.71	49,325	48,358	47,390	45,974	42,307	37,941	34,800	62
60	W2	3	530	3.11	35,718	32,721	24,429	19,438				28
	X1	5	640	5.18	42,487	40,061	35,933	30,065	25,302	22,050		35
	Y1	7-1/2	800	7.59	48,378	45,938	43,009	38,690	35,690	30,406		47
	C1	10	845	10.13	54,617	50,622	48,428	45,938	37,363	29,993		53
	N1	15	675	15.61	57,143	54,850	52,557	50,264	47,971	42,759	35,297	62

NOTES:

1. Contact factory for alternate selections if required.
2. Brake horsepower does not include drive losses.
3. Values are installation Type A, free inlet hemispherical sone levels.
4. Performance shown are for types and units without inlet or outlet ducts.
5. The sound ratings shown are loudness values in fan sones at 5 ft. (3.0m) in a hemispherical free field calculated per AMCA Standard 301.
6. Model LQBA is not AMCA Licensed.

Tubeaxial Upblast Exhauster

TUBEAXIAL UPBLAST FOR HEAT & SMOKE REMOVAL



UL LISTED POWER VENTILATOR FOR SMOKE CONTROL SYSTEMS

Model LQBA with steel blades provides emergency heat and smoke removal with capacity to 57,000 CFM (96,850 CMH). The standard fan construction is UL Listed "Power Ventilator for Smoke Control Systems", meet IRI requirements of 500°F for 4 hours and SBCCI "Standard Fire Prevention Code" for 1000°F for 15 minutes and UL-793 Snow Load Test.

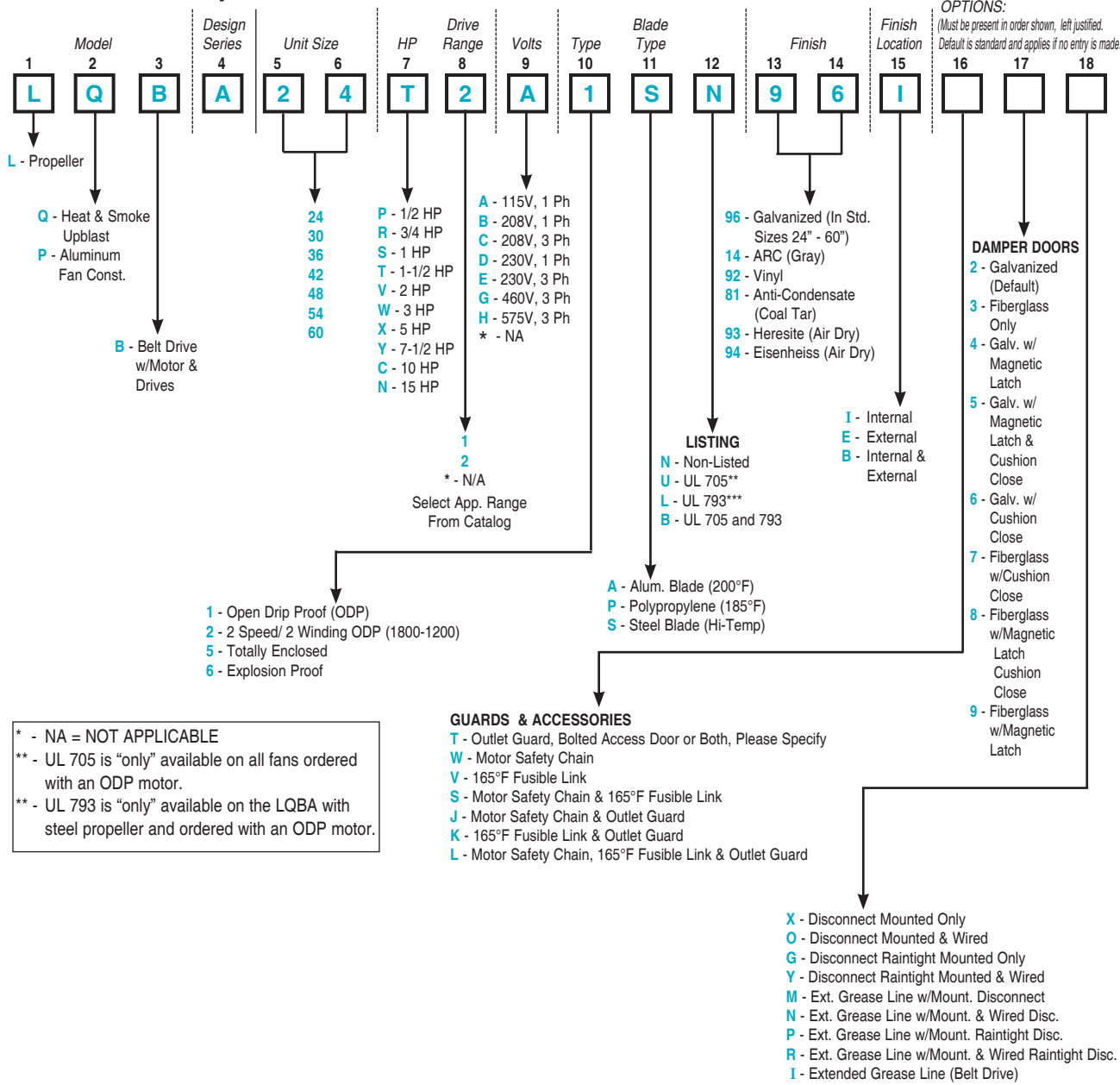
Outstanding features include robust galvanized steel construction, fusible link damper lifters, dual belt drives, heavy-duty steel propeller, extended lubrication lines, EPACT high efficiency motors and spring retaining safety bolt for shipping hold-down and security during service.

The rugged and reliable damper door design with thermally activated torsion springs provide heat and smoke ventilation even in the absence of electrical power.

UL LISTED POWER VENTILATOR

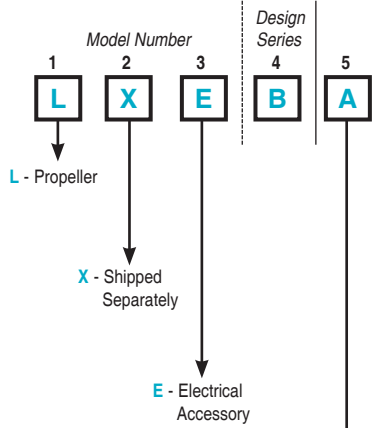
UL Standard 705 details the requirements by Underwriters Laboratories, Inc., under its follow-up service for the category of Power Ventilators. The UL 705 listing ensures that the approved ventilator employs materials and forms of construction which comply with the requirements of the standard. The UL requirements are based upon sound engineering principles, research, records of installation and consultation with manufacturers and users.

▼ Tube Axial Upblast Exhausters



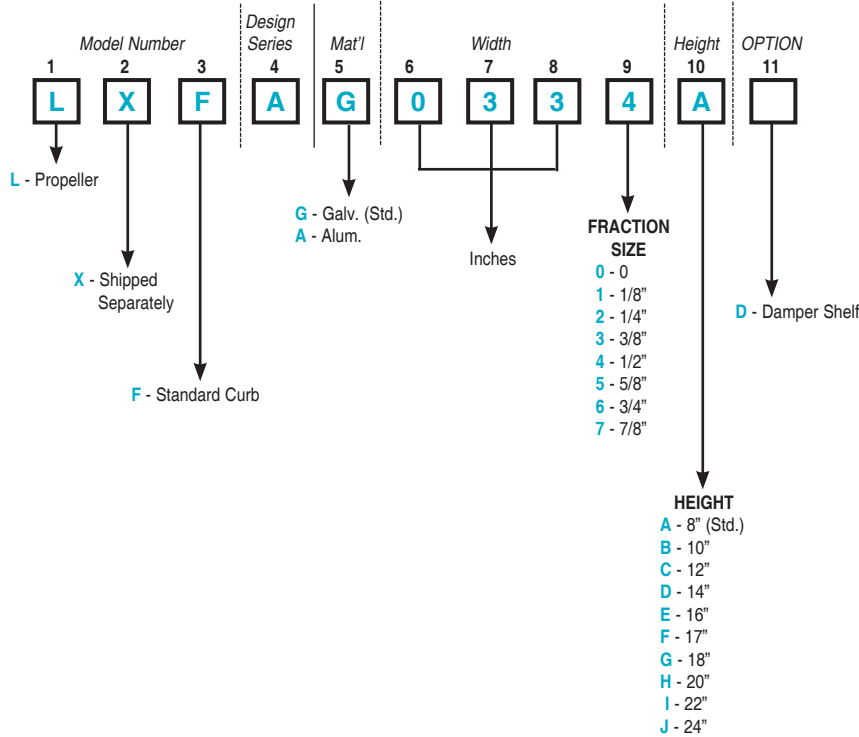
Tubeaxial Upblast Exhauster

▼ Electrical Accessories

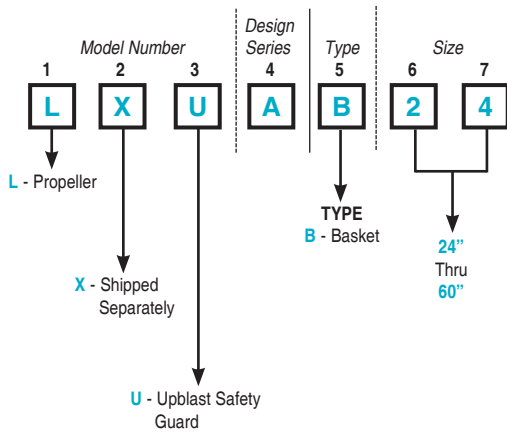


- K** - Open Disconnect, NEMA 1, 115-230V, 1-2 HP
- L** - Open Disconnect, NEMA 1, 230-460V, 1-2 HP
- M** - Open Disconnect, NEMA 1, 230-460V, 7-1/2-10 HP
- N** - Heavy-duty Open Disconnect, NEMA 1, 230-460V, 7-1/2-15 HP
- P** - Raintight Disconnect, NEMA 3, 115-230V, 1-2 HP
- Q** - Heavy-duty Raintight Disconnect, NEMA 3, 115-230V, 10 HP
- R** - Raintight Disconnect, NEMA 3, 230-460V, 7-1/2-10 HP
- S** - Heavy-duty Raintight, NEMA 3, 230-460V, 7-1/2-15 HP
- T** - Raintight Disconnect, NEMA 4, 115-230V, 1-2 HP
- U** - Raintight Disconnect, NEMA 4, 230-460V, 7-1/2-10 HP
- V** - Raintight Disconnect, NEMA 4X, 115-230V, 1-2 HP
- W** - Raintight Disconnect, NEMA 4X, 230-460V, 7-1/2-10 HP
- X** - Explosion Proof, 1 HP Max., 115-230V
- Y** - Explosion Proof, 3-5 HP Max., 230-460V
- H** - 2 Speed Disconnect, NEAM 3R, 6 Pole, 115-600V, 7-1/2 HP

▼ Propeller Accessories Curbs



▼ Upblast Safety Guard



Tubexial Upblast Exhauster

Low Silhouette — Power Roof Ventilator Propeller

Contemporary Styling

Carnes line of low silhouette power roof ventilators are ideal for installations requiring high performance and a clean, modern appearance. The low profile presented by these units provides the inconspicuous yet functional look popular with many architects, engineers and building owners.

Application Flexibility

These units are available for exhaust, supply or filtered supply applications. Their similar design allows varied functions to be accomplished and still retain a uniform and uncluttered roof design. A choice of direct and belt drive models allow for optimum selection.

▼ Specifications

Model LT: Exhaust Ventilator

Direct and Belt Drive

The Model LT is configured for exhaust applications and is available in both belt drive, LTBA, and direct drive, LTDA, versions. This model is available in seven sizes from 24" to 60" with air movement capabilities to 40,000 cubic feet per minute.

The Carnes Model LT provides efficient and economical building exhaust and should be specified for medium pressure applications where its low profile proves advantageous.

Model LG: Supply Ventilator

Direct and Belt Drive

Carnes Model LG is similar in construction to the Model LT, utilizing the identical fan selection inverted for supply or make-up air situations. In this configuration air volumes of up to 54,000 cubic feet per minute are possible. Model LGBA is belt driven while Model LGDA is direct driven.

Specify Carnes Model LG for economical supply air requirements and uniform appearance.

Model LF: Filtered Supply

Direct and Belt Drive

For filtered supply or make-up air applications requiring a low silhouette, the Model LF is an excellent choice. Utilizing 2 inch thick, aluminum permanent filters, the Model LF can provide over 38,000 cubic feet per minute of filtered ventilation. Maintenance is greatly enhanced by the hinged hood allowing fast replacement of filters.

The Model LF should be considered for all clean air make-up and low profile applications.

CONSTRUCTION FEATURES
Model LTBA and LTDA

All galvanized and welded construction.

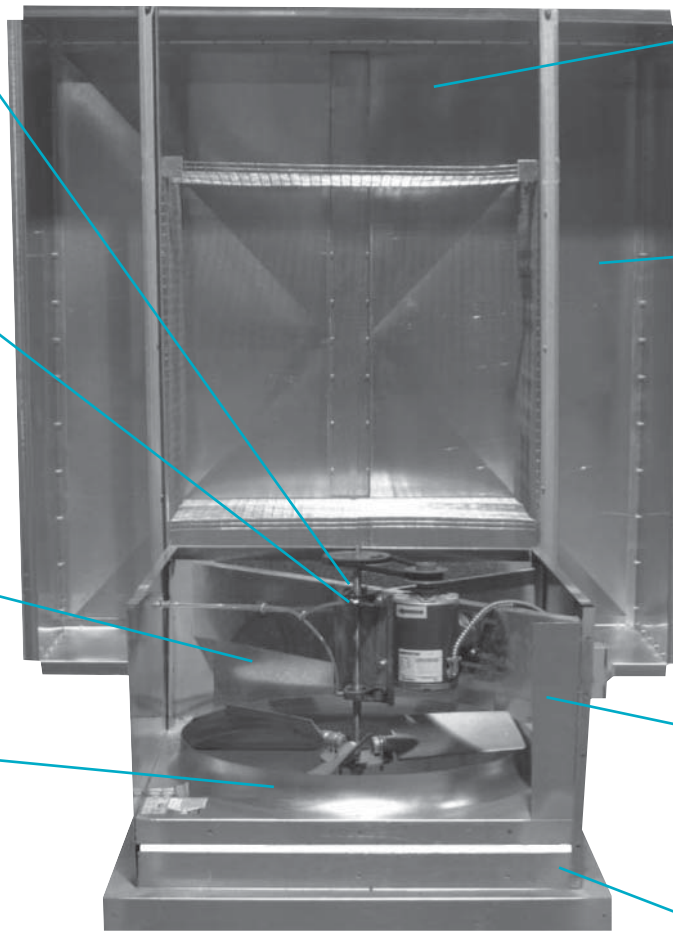
Drives (Belt Drive)
 Adjustable pitch through 3 HP, sized for minimum 150% of drive HP with outboard drives for ease of maintenance.

Bearings (Belt Drive)
 Cast iron pillow blocks, double sealed and prelubricated, designed for 200,000 hour life.

Propeller
 Adjustable pitch aluminum airfoil blades.

Panel Assembly
 All welded, heavy-duty spun galvanized structure for reliable and efficient operation.

AMCA Seal
 Assures rating of Air and Sound performance.



Hood
 Heavy-gauge galvanized steel pivots for access to fan.

Hood
 Heavy-gauge galvanized steel (aluminum optional) pivots for access to fan - removal is not necessary.

Rain Gutter
 To prevent water entrainment.

Access Panel
 Removable side panel for fan and damper access.

Stack/Curb Cap
 All galvanized heavy-duty steel (aluminum optional).

Factory Run & Tested
 Assures dependable operation.

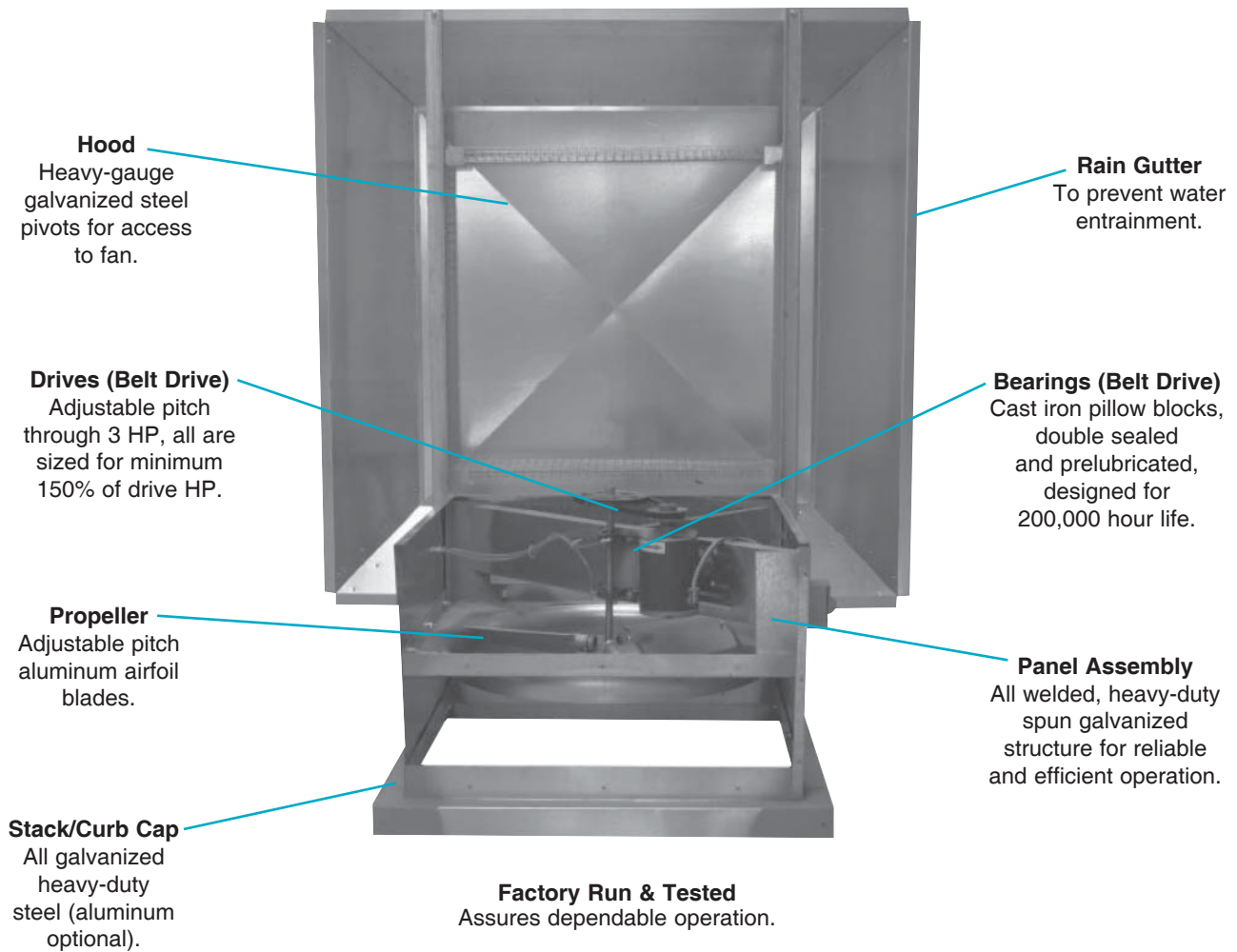


UL Standard 705 (optional)
 Listing assures electrical safety and reliability. Not available on LTDA units.

Low Silhouette

CONSTRUCTION FEATURES

Model LGBA and LGDA



UL Standard 705 (optional)
Listing assures electrical reliability. Not available on LGDA units.

Belt Drive

Belt drive models feature totally enclosed or open drip proof motors, and pillow block bearings with grease fittings for lubrication purposes.

Propellers are special high strength, aluminum airfoil extrusions, selected for optimum performance at low noise levels.



Direct Drive

Direct drive models provide economical operation and low maintenance. High strength aluminum airfoil blades enhance efficient operation.



Features

Easily Convertible

The Model LT (Exhaust) or LG (Supply) are easily field convertible by inverting the fan section.

Rugged Construction

Standard construction is of galvanized steel. Welded frames add to overall stability, reliability and performance.

Integral hood gutters carry water to roof corners providing additional protection against moisture entrainment and also increase hood rigidity.

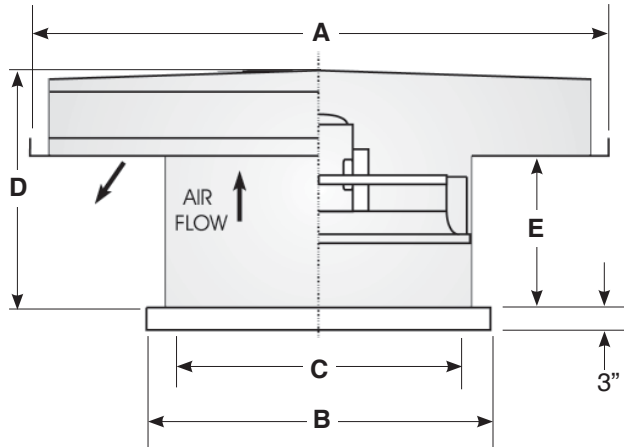
Direct Drive

Hinged hoods are standard on all LT, LG and LF Models for simplified maintenance. In addition, an access panel is also standard allowing even greater serviceability.

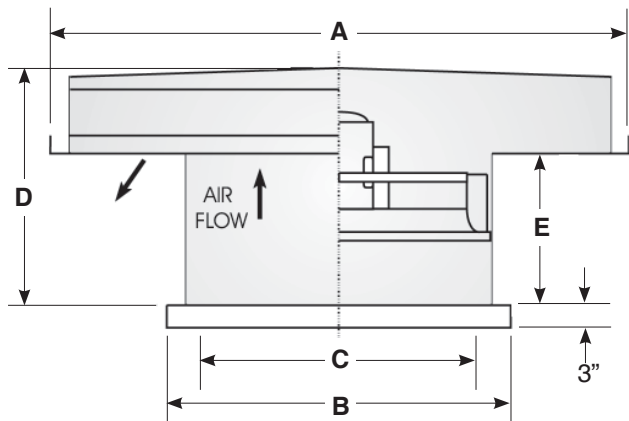
Patented Blade Attachment

The unique blade attachment allows for all radial and axial stresses to be carried by the strongest element — the extrusion itself.

Models LT (Shown)



MODEL LTBA: BELT DRIVE
(Hoods on 42" - 60" KD) ⁽²⁾
Specify assembled if required



MODEL LTDA: DIRECT DRIVE
(Hoods on 42" - 60" KD) ⁽²⁾
Specify assembled if required

DIMENSIONS LISTED IN INCHES

Model LTBA LTDA	A Sq. O. D. Hood ⁽²⁾	B ID Curb Cap	C Min. ID Opening	D Height	E Stack	Prefab Curb O. D.	Metal Gauges ⁽¹⁾			Avg. Wt. (Lbs.)
							Crown/Side Hood	Stack	Cap	
24	58	35	30	44	23	33-1/4	18/18	18	14	423
30	66	41	36	44	23	39-1/4	18/18	18	14	550
36	78	47	42	44	23	45-1/4	18/18	18	14	700
42	87	53	48	51	30	51-1/4	18/18	16	14	800
48	99	59	54	51	30	57-1/4	18/18	16	14	1100
54	111	65	60	51	30	63-1/4	18/16	16	14	1300
60	111	71	66	51	30	69-1/4	18/16	16	14	1550
60	123	71	66	51	30	69-1/4	18/16	16	14	1690

- NOTES:**
1. All materials are G90 galvanized steel.
 2. Due to shipping limitations, 87" and larger hoods may ship separate requiring field attaching. Specify if factory attaching is required and consult factory.
 3. Hoods will hinge and front panel is removable for access to fan and optional damper.
 4. Propellers are 2, 3, 4 or 6-bladed adjustable pitch, airfoil aluminum. (Fixed pitch steel and aluminum are also available.)
 5. Dampers mount on accessory flanges inside curbs due to space restrictions. Factory supplied curbs have shelf included.
 6. Delay switch required on models 10 HP and larger.

ACCESSORIES

BIRDSCREEN — Galvanized steel wire is available on Models LT and LG. Typically installed vertically, horizontal application is available.

FINISHES — Two part epoxy and vinyl coating are available for increased exterior and interior protection.

ANTI-CONDENSATE — A special cork asphalt coating may be applied to the hood interior to prevent condensation from forming.

ALUMINUM CONSTRUCTION — Hood and throat material may be aluminum for reduced weight and increased weather resistance, LB - Exhaust, LH - Supply and LD - Filtered Supply.

DISCONNECT SWITCHES — A service switch may be provided in a NEMA 1 enclosure under the hood. Factory wiring is also available.

BACKDRAFT DAMPERS — Automatic or motor operated dampers are available. Typical mounting is at the base of the roof curb.

PREFABRICATED CURBS — Prefabricated curbs in 18 gauge galvanized-welded construction, 1-1/2" thick insulation, 8" high and wood nailer. The following are options:

- Aluminum.
- Single and double pitch.
- Additional height curbs.

PERFORMANCE DATA

Model LTBA

Belt Drive: EXHAUST

Blade Dia.	HP/ Drive	H. P.	RPM	Max. B. H. P.	Sones @ 5 Feet	CFM @ STATIC PRESSURE							No. of Blades	Estimated Shipping Weight
						.000 S.P.	.125 S.P.	.250 S.P.	.375 S.P.	.500 S.P.	.625 S.P.	.750 S.P.		
24	M2	1/3	970	.42	14.9	5,702	4,678	3,661	2,480	1,159			3	340
	P2	1/2	1110	.63	18.3	6,525	5,613	4,764	3,792	2,730	1,582		3	350
	R2	3/4	1270	.90	23	7,466	6,653	5,914	5,153	2,471	3,399	2,240	3	360
	S2	1	1400	1.20	26	8,230	7,482	6,806	6,134	5,417	4,592	3,809	3	370
	T2	1-1/2	1585	1.74	32	9,318	8,647	8,038	7,450	6,850	6,220	5,501	3	380
	V2	2	1760	2.39	38	10,347	9,735	9,176	8,641	8,113	7,569	7,003	3	390
30	M2	1/3	680	.40	13.2	7,209	5,018	3,176					3	440
	P2	1/2	780	.61	16.3	8,269	6,517	4,594	3,076				3	450
	R2	3/4	890	.91	20	9,435	7,802	6,092	4,715	3,378			3	460
	S2	1	980	1.21	24	10,389	8,811	7,407	5,963	4,761	3,524		3	480
	T2	1-1/2	1120	1.81	29	11,874	10,351	9,420	7,876	6,728	5,675	4,619	3	490
	V2	2	1235	2.42	34	13,093	11,601	10,764	9,647	8,292	7,287	6,332	3	500
	W2	3	1415	3.64	44	15,001	13,542	12,783	12,052	10,959	9,741	8,829	3	510
36	M2	1/3	580	.39	13.3	8,786	6,104	2,134					3	500
	P2	1/2	665	.59	16.5	10,073	7,683	5,107					3	510
	R2	3/4	765	.91	20	11,588	9,473	7,492	4,732				3	530
	S2	1	840	1.19	23	12,724	10,811	9,014	6,896	3,781			3	540
	T2	1-1/2	960	1.79	29	14,542	12,808	11,215	9,677	7,717	5,057		3	560
	V2	2	1055	2.37	33	15,981	14,338	12,909	11,537	9,985	8,167	5,613	3	570
	W2	3	1210	3.58	42	18,329	16,799	15,675	14,345	12,167	11,855	10,286	3	590
42	P2	1/2	500	.60	14.9	12,466	8,498	3,210					3	650
	R2	3/4	570	.89	18.1	14,211	10,756	7,172					3	660
	S2	1	630	1.20	21	15,707	12,613	9,405	5,533				3	680
	T2	1-1/2	720	1.79	26	17,951	15,283	12,444	9,640	5,864			3	690
	V2	2	795	2.41	30	19,821	17,431	14,861	12,333	9,694	5,655		3	700
	W2	3	910	3.62	37	22,688	20,627	18,414	16,163	13,965	11,091	8,937	3	710
	R2	3/4	450	.91	16.3	15,781	12,968	9,524					6	875
48	S2	1	495	1.20	18.9	17,360	14,879	11,860	8,269				6	885
	T2	1-1/2	565	1.76	23	19,814	17,669	15,126	12,415	9,098			6	900
	V2	2	625	2.38	27	21,919	19,977	17,838	15,433	12,834	9,694		6	930
	W2	3	715	3.59	32	25,075	23,364	21,654	19,566	17,502	15,250	12,688	6	950
	X1	5	850	6.10	43	29,809	28,351	26,957	25,466	23,707	21,940	20,147	6	980
	Y1	7-1/2	965	8.94	53	33,842	32,546	31,316	30,072	28,720	27,168	25,584	6	1000
	C1	10	1065	12.02	62	37,349	36,166	35,044	33,932	32,782	31,524	30,116	6	1100
	V2	2	530	2.32	28	28,075	24,746	21,152	17,397	13,225			6	1200
54	W2	3	610	3.59	34	32,312	29,421	27,975	23,156	19,939	16,352		6	1230
	X1	5	715	5.79	44	37,874	35,407	32,940	30,341	27,494	24,714	21,912	6	1250
	Y1	7-1/2	815	8.57	55	43,171	41,007	38,843	36,670	34,336	31,840	29,337	6	1280
	C1	10	900	11.55	66	47,674	45,714	43,754	41,794	39,797	37,648	35,385	6	1300
60	V2	2	450	2.26	26	28,479	23,920	19,370	13,910				6	1430
	W2	3	525	3.68	33	33,225	29,133	25,508	21,380	16,669	10,364		6	1460
	X1	5	605	5.60	41	38,288	34,526	31,547	28,288	24,575	20,563	15,845	6	1500
	Y1	7-1/2	700	8.70	53	44,301	40,836	38,290	35,595	32,709	29,610	26,232	6	1550
	C1	10	765	11.37	62	48,414	45,118	42,732	40,389	37,818	35,137	32,275	6	1600

NOTES: Performance shown is for propeller roof ventilators without ducts.
 Performance certified is for installation type A, free inlet, free outlet.
 Performance ratings do not include the effects of accessories.
 Performance ratings (bhp) do not include transmission losses.



PERFORMANCE DATA
Model LTDA
Direct Drive: EXHAUST

Blade Dia.	HP/ Drive	H. P.	RPM	Max. B. H. P.	Sones @ 5 Feet	CFM @ STATIC PRESSURE							No. of Blades	Estimated Shipping Weight
						.000 S.P.	.125 S.P.	.250 S.P.	.375 S.P.	.500 S.P.	.625 S.P.	.750 S.P.		
24	R3	3/4	1160	.98	23	7,394	6,553	5,687	4,861	3,981	2,755	1,715	3	390
	S3	1	1160	1.26	24	8,361	7,480	6,758	6,041	5,084	3,481	2,323	4	400
	S2	1	1750	1.11	31	7,115	6,567	5,995	5,406	4,802	4,138	3,369	3	395
	T2	1-1/2	1750	1.73	43	9,535	8,870	8,189	7,487	6,759	5,990	5,159	2	400
	V2	2	1750	2.35	37	10,288	9,673	9,112	8,574	8,042	7,494	6,924	3	430
30	R4	3/4	870	.90	19.7	8,885	7,507	6,113	5,385	4,050	2,400		4	515
	S3	1	1160	1.27	29	10,694	9,425	7,878	6,528	4,881	2,873		2	525
	T3	1-1/2	1160	1.93	30	12,020	10,870	9,633	8,269	7,103	6,316	5,272	3	550
	V3	2	1160	2.55	33	12,847	11,665	10,635	9,601	8,715	7,782	6,963	4	560
	T2	1-1/2	1750	1.91	45	11,188	10,321	9,469	8,618	7,767	6,726	6,050	2	520
	V2	2	1750	2.54	46	12,938	12,151	11,337	10,304	9,364	8,331	7,503	3	540
	W2	3	1750	3.90	54	15,195	14,454	13,595	12,668	11,692	10,813	9,858	2	550
36	R4	3/4	870	.85	22	10,708	9,073	7,377	5,612				3	610
	S4	1	870	1.20	26	12,730	11,041	9,168	7,346	5,061			3	620
	T4	1-1/2	870	1.75	30	13,685	12,339	10,479	8,588	6,455	3,906		3	615
	V4	2	870	2.41	28	16,374	14,844	13,309	11,779	10,037	7,407	4,676	4	660
	W4	3	870	3.47	32	18,199	16,805	15,502	14,102	12,081	9,540	6,836	4	680
	T3	1-1/2	1160	1.90	34	14,053	12,929	11,650	10,402	9,167	7,833	6,471	3	620
	V3	2	1160	2.22	35	14,679	13,505	12,290	10,972	9,636	8,405	7,148	3	630
	W3	3	1160	3.58	37	17,582	16,319	15,067	13,775	12,491	11,275	9,950	3	675
	X3	5	1160	5.77	47	21,936	20,539	19,232	17,980	16,773	15,581	14,152	3	685
	W2	3	1750	3.55	74	15,035	14,138	13,355	12,613	11,869	11,060	10,171	3	610
	X2	5	1750	5.91	75	20,465	19,705	18,927	18,129	17,312	16,476	15,609	3	620
Y2	7-1/2	1750	8.72	81	24,839	24,078	23,262	22,392	21,480	20,544	19,609	3	675	
42	T4	1-1/2	870	1.61	33	16,570	14,167	11,262	7,973				2	730
	V4	2	870	2.31	37	19,940	17,744	15,655	13,058	10,682			3	780
	W4	3	870	3.42	44	22,773	20,341	17,842	15,424	13,535	10,973		3	800
	V3	2	1160	2.47	57	19,172	16,971	15,337	13,305	11,137	8,864		2	740
	W3	3	1160	3.52	58	21,966	20,500	18,953	17,344	15,718	14,022	12,180	3	790
	X3	5	1160	5.83	59	26,310	24,753	23,272	21,656	19,945	18,332	16,737	3	805
	X2	5	1750	5.75	93	20,253	19,103	17,959	16,823	15,703	14,611	13,403	3	780
48	V4	2	870	2.42	41	20,688	19,025	16,940	15,074	13,092	10,681	7,827	4	1000
	W4	3	870	3.48	44	25,857	23,353	20,843	18,197	15,375	12,299	8,647	3	1010
	X4	5	870	5.76	48	30,637	28,009	25,382	22,872	20,457	17,925	14,299	3	1050
	Y4	7-1/2	870	8.66	50	34,585	33,085	31,514	29,874	28,175	26,449	24,689	6	1075
	X3	5	1160	5.89	71	30,735	28,107	25,346	22,591	19,994	17,423	14,714	2	1010
	Y3	7-1/2	1160	8.26	79	34,476	32,589	30,723	28,848	26,934	24,944	22,873	3	1050
	C3	10	1160	11.92	99	38,005	35,927	34,081	32,323	30,562	28,647	26,258	3	1075
54	W4	3	870	3.54	43	27,942	25,431	22,691	19,504	16,154	12,685	9,565	3	1130
	X4	5	870	5.32	58	37,098	34,410	31,722	29,013	26,232	23,290	20,389	4	1180
	Y4	7-1/2	870	8.86	67	44,330	41,565	38,801	36,024	33,088	29,922	26,445	4	1200
	X3	5	1160	5.86	87	27,088	25,568	23,941	22,218	20,425	18,586	16,718	4	1175
	Y3	7-1/2	1160	8.96	92	36,365	34,710	33,103	31,500	29,856	28,086	26,063	4	1195
60	X4	5	870	5.77	66	35,503	32,460	29,353	26,221	23,041	19,648	15,435	3	1350
	Y4	7-1/2	870	8.90	72	43,092	40,226	36,882	33,231	29,364	25,142	20,427	3	1390

NOTE: Performance shown is for propeller roof ventilators without ducts.
 Performance certified is for installation type A, free inlet, free outlet.
 Performance ratings do not include the effects of accessories.

Low Silhouette

PERFORMANCE DATA

Model LGBA
Belt Drive: SUPPLY

Blade Dia.	HP/ Drive	H. P.	RPM	Max. B. H. P.	Sones @ 5 Feet	CFM @ STATIC PRESSURE							No. of Blades	Estimated Shipping Weight
						.000 S.P.	.125 S.P.	.250 S.P.	.375 S.P.	.500 S.P.	.625 S.P.	.750 S.P.		
24	M2	1/3	930	.38	15	4,724	4,043	2,979					3	325
	P2	1/2	1060	.58	19	5,444	4,844	4,022	3,000				3	330
	R2	3/4	1215	.85	24	6,171	5,648	5,049	4,244	3,315			3	335
	S2	1	1335	1.13	28	6,781	6,302	5,841	5,121	4,374	3,493		3	340
	T2	1-1/2	1530	1.70	34	7,771	7,354	6,946	6,467	5,830	5,189	4,436	3	345
	V2	2	1680	2.25	41	8,533	8,153	7,777	7,412	6,881	6,298	5,715	3	345
30	M2	1/3	660	.37	13	7,099	5,557	3,085					3	380
	P2	1/2	775	.58	16	8,194	6,922	5,008					3	385
	R2	3/4	865	.85	21	9,304	8,246	6,822	4,979				3	390
	S2	1	950	1.15	24	10,310	9,369	8,175	6,585				3	395
	T2	1-1/2	1090	1.70	30	11,724	10,915	9,991	8,841	7,402			3	400
	V2	2	1200	2.27	36	12,908	12,173	11,373	10,448	9,266	7,946		3	400
	W2	3	1370	3.44	45	14,669	13,780	12,876	11,851	10,820	9,824	8,804	3	420
36	M2	1/3	495	.38	11	9,903	6,558						3	425
	P2	1/2	565	.58	14	11,381	8,600						3	430
	R2	3/4	645	.85	18	12,993	10,696	7,433					3	435
	S2	1	710	1.14	21	14,302	12,333	9,637					3	440
	T2	1-1/2	815	1.73	27	16,417	14,783	12,589	10,000				3	445
	V2	2	895	2.29	31	18,029	16,541	14,686	12,604				3	445
	W2	3	1025	3.44	39	20,647	19,348	17,959	16,131	14,300	11,940		3	465
42	P2	1/2	445	.58	13	14,503	9,169						3	540
	R2	3/4	510	.85	16	16,525	12,079						3	545
	S2	1	560	1.15	19	18,251	14,350						3	550
	T2	1-1/2	640	1.72	24	20,858	17,815	13,510					3	555
	V2	2	705	2.30	35	22,977	20,268	16,414	12,245				3	555
	W2	3	805	3.43	46	26,236	23,863	20,873	17,540	13,601			3	575
48	R2	3/4	405	.86	14	19,542	11,487						3	665
	S2	1	445	1.14	17	21,742	14,137						3	665
	T2	1-1/2	500	1.72	21	24,493	17,864	10,164					3	670
	V2	2	560	2.30	25	27,161	22,026	15,327					3	670
	W2	3	640	3.40	30	30,881	26,694	20,675	15,035				3	690
	X1	5	760	5.71	40	36,671	33,145	28,874	23,792	19,200			3	710
	Y1	7-1/2	870	8.55	53	46,322	38,899	35,818	31,144	26,982	23,220		3	820
	C1	10	960	11.49	64	49,979	43,530	40,739	37,344	32,782	29,339	25,924	3	835
54	V2	2	465	2.09	23	29,628	23,717	14,745					3	775
	W2	3	530	3.10	28	33,769	29,093	22,202					3	805
	X1	5	630	4.99	37	39,709	35,990	31,085	25,359				3	815
	Y1	7-1/2	720	7.47	47	45,382	42,128	38,469	33,640	28,551	21,662		3	920
	C1	10	795	10.07	58	50,109	47,162	44,215	40,031	35,603	30,935		3	930
	V2	2	390	2.02	20	30,739	25,920						3	865
60	W2	3	450	3.05	26	35,284	31,586	23,994					3	885
	X1	5	530	4.99	35	41,557	38,758	34,372					3	915
	Y1	7-1/2	610	7.59	44	47,830	45,398	42,206	37,327	29,300			3	1010
	C1	10	670	10.07	52	52,534	50,320	47,771	44,348	38,702			3	1030

NOTES: Performance shown is for propeller roof ventilators without ducts.
 Performance certified is for installation type A, free inlet, free outlet.
 Performance ratings do not include the effects of accessories.
 Performance ratings (bhp) do not include transmission losses.

The sound ratings shown are loudness in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301 @ free air. Values shown are installation Type A, free inlet hemispherical sone levels.

Low Silhouette

PERFORMANCE DATA

Model LGDA
Direct Drive: SUPPLY

Blade Dia.	HP/ Drive	H. P.	RPM	Max. B. H. P.	Sones @ 5 Feet	CFM @ STATIC PRESSURE							No. of Blades	Estimated Shipping Weight
						.000 S.P.	.125 S.P.	.250 S.P.	.375 S.P.	.500 S.P.	.625 S.P.	.750 S.P.		
24	L4	1/4	870	.27	13	4,160	3,384	2,174					3	280
	P4	1/2	870	.57	17	4,645	4,210	3,779	3,286	2,509			3	280
	M3	1/3	1160	.38	17	4,455	3,793	2,703					2	270
	P3	1/2	1160	.56	19	5,433	4,766	3,747					2	275
	R3	3/4	1160	.86	21	6,336	5,750	5,077	4,202	3,203			3	285
	S3	1	1160	1.13	22	6,756	6,091	5,460	4,730	3,978	3,168		4	295
	S2	1	1750	1.14	30	6,232	5,838	5,348	4,705	3,942	3,175		2	275
	T2	1-1/2	1750	1.71	34	7,709	7,308	6,880	6,322	5,619	4,786		2	280
	V2	2	1750	2.26	38	8,646	8,212	7,722	7,157	6,486	5,650		2	280
	W2	3	1750	3.34	42	9,447	9,023	8,599	8,208	7,811	7,340	6,917	4	300
30	P4	1/2	870	.58	17	8,261	6,920	4,465					2	330
	R4	3/4	870	.84	19	9,272	8,232	6,830	5,009				3	340
	S4	1	870	1.13	29	10,276	9,223	8,132	6,732	5,191			4	350
	R3	3/4	1160	.85	23	8,691	7,744	6,428	4,459				2	325
	S3	1	1160	1.14	25	10,150	9,275	8,152	6,209				2	330
	T3	1-1/2	1160	1.71	29	11,973	11,016	9,766	8,085	5,714			2	340
	V3	2	1160	2.28	33	13,020	12,213	11,322	10,281	9,004	7,572	6,106	3	360
	V2	2	1750	2.30	43	11,269	10,688	9,930	9,101	7,924	6,719	5,504	2	330
	W2	3	1750	3.41	47	14,249	13,723	13,109	12,374	11,661	10,595	9,225	2	350
	X2	5	1750	5.65	58	17,790	17,198	16,557	15,818	14,918	14,219	13,147	2	360
36	S5	1	680	1.14	19	14,217	11,919	8,747					3	460
	T5	1-1/2	680	1.72	21	17,324	15,520	13,614	10,589				4	465
	R4	3/4	870	.85	21	12,436	10,693	7,806					2	405
	S4	1	870	1.13	23	14,185	12,501	10,031					2	405
	T4	1-1/2	870	1.73	26	16,237	14,884	13,175	11,021	8,499			3	410
	V4	2	870	2.34	29	18,084	16,439	14,310	11,982				3	420
	T3	1-1/2	1160	1.73	32	15,289	14,160	12,700	10,280				2	400
	V3	2	1160	2.29	33	17,594	16,478	14,962	13,317	10,332			2	430
	W3	3	1160	3.41	37	20,753	19,552	18,052	16,345	13,852			2	460
	X3	5	1160	5.66	49	24,253	23,000	21,746	20,165	18,307	16,643	14,526	3	490
42	X2	5	1750	5.70	65	22,388	21,666	20,886	19,790	18,910	17,717	16,129	2	430
	Y2	7-1/2	1750	8.46	70	27,417	26,691	25,942	25,145	24,055	23,018	22,187	2	505
	S5	1	680	1.15	18	18,160	15,132						2	470
	T5	1-1/2	680	1.73	23	20,757	17,344						2	480
	V5	2	680	2.30	26	22,873	19,806	15,303	10,405				3	490
	S4	1	870	1.13	27	15,924	13,504	9,568					2	500
	T4	1-1/2	870	1.74	28	20,258	18,236	15,266	10,310				2	510
	V4	2	870	2.25	29	22,642	20,590	17,805					2	530
	W4	3	870	3.43	35	26,128	23,792	20,453	15,603				2	555
	V3	2	1160	2.27	43	18,942	17,133	14,621	11,562	7,988			2	510
48	W3	3	1160	3.34	43	24,423	22,947	21,061	18,816	15,600			2	545
	X3	5	1160	5.71	48	30,979	29,471	27,836	25,605	23,318	19,844	15,452	2	555
	X2	5	1750	5.72	92	21,071	19,517	17,487	15,477	13,897	11,833		2	580
	Y2	7-1/2	1750	8.49	91	30,329	29,285	28,177	26,703	25,307	23,501	21,555	2	610
	S5	1	680	1.13	23	19,172	14,905						2	550
	T5	1-1/2	680	1.70	24	23,378	20,013	13,975					2	560
	V5	2	680	2.29	26	26,407	22,763	16,577					2	570
	V4	2	870	2.32	34	24,151	21,396	17,029					2	550
	W4	3	870	3.40	35	29,404	26,778	23,214	18,540				2	570
	X4	5	870	5.71	41	35,765	32,909	29,547	24,033	18,298			2	700
54	Y4	7-1/2	870	8.55	49	41,979	38,899	35,818	31,144	26,982	23,220	18,390	3	810
	X3	5	1160	5.64	57	32,705	30,685	28,585	25,121	21,863	17,961		2	670
	Y3	7-1/2	1160	8.46	59	40,052	38,113	36,090	33,945	30,299	26,778	23,119	2	800
	C3	10	1160	11.40	64	45,047	43,029	40,906	38,618	35,611	31,538	27,579	2	820
	T5	1-1/2	680	1.51	28	24,856	19,528	11,747					2	740
	V5	2	680	2.07	29	29,759	25,278	18,639					2	750
	V4	2	870	2.09	42	22,216	16,431	11,185					2	730
	W4	3	870	3.00	43	30,680	26,741	21,701	15,541				2	750
	X4	5	870	5.03	45	40,916	37,281	33,916	28,589	22,590			2	820
	Y4	7-1/2	870	7.70	49	48,263	44,578	40,654	35,983	29,521			2	890
60	X3	5	1169	4.97	73	29,622	25,570	21,185	17,668				2	810
	Y3	7-1/2	1160	7.70	71	43,139	40,158	37,454	33,863	29,948	26,098	20,042	2	880
	C3	10	1160	10.02	72	50,109	47,343	44,544	42,270	38,346	34,362	30,282	2	900
	V5	2	680	2.03	34	32,449	26,076	17,980					2	775
	X4	5	870	5.01	54	45,982	40,467	36,597	30,818	22,737			2	775
	Y4	7-1/2	870	7.54	55	56,591	51,552	47,212	43,054	36,833			2	1010

NOTE: Performance shown is for propeller roof ventilators without ducts. Performance certified is for installation type A, free inlet, free outlet. Performance ratings do not include the effects of accessories. The sound ratings shown are loudness in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301 @ free air. Values shown are installation Type A, free inlet hemispherical sone levels.

Low Silhouette

PERFORMANCE DATA

Model LFBA

Belt Drive: FILTERED SUPPLY

Blade Dia.	HP/ Drive	H. P.	RPM	Max. B. H. P.	Sones @ 5 Feet	CFM @ STATIC PRESSURE							No. of Blades	Estimated Shipping Weight
						.000 S.P.	.125 S.P.	.250 S.P.	.375 S.P.	.500 S.P.	.625 S.P.	.750 S.P.		
24	M2	1/3	930	.381	15	4,327	3,650	2,716					3	340
	P2	1/2	1060	.575	19	4,984	4,430	3,645	2,754				3	345
	R2	3/4	1215	.848	24	5,653	5,211	4,555	3,863	3,042			3	350
	S2	1	1335	1.155	28	6,277	5,891	5,344	4,698	4,052	3,270		3	355
	T2	1-1/2	1530	1.738	34	7,194	6,857	6,434	5,909	5,352	4,797	4,153	3	360
	V2	2	1680	2.300	41	7,899	7,592	7,244	6,807	6,287	5,789	5,282	3	360
30	P2	1/2	755	.582	16	7,242	6,003	4,432					3	400
	R2	3/4	865	.850	21	8,226	7,196	5,894	4,445				3	405
	S2	1	950	1.134	24	9,034	8,128	6,988	5,739	4,244			3	410
	T2	1-1/2	1090	1.713	30	10,366	9,599	8,675	7,624	6,530	5,257		3	410
	V2	2	1200	2.283	36	11,412	10,715	9,917	9,009	8,027	7,023	5,867	3	415
	W2	3	1370	2.398	45	13,028	12,418	11,782	11,024	10,211	9,350	8,483	3	435
36	P2	1/2	565	.579	14	9,637	7,192	4,033					3	445
	R2	3/4	645	.856	18	11,002	8,881	6,416					3	450
	S2	1	710	1.147	21	12,110	10,205	8,056	5,552				3	455
	T2	1-1/2	815	1.737	27	13,901	12,276	10,515	8,501	6,284			3	460
	V2	2	895	2.295	31	15,266	13,792	12,203	10,056	8,620	6,434		3	460
	W2	3	1025	3.457	39	17,483	16,196	14,851	13,452	11,915	10,281	8,550	3	480
42	R2	3/4	510	.868	16	13,841	10,120	5,578					3	565
	S2	1	560	1.147	19	15,198	11,764	8,009					3	570
	T2	1-1/2	640	1.720	24	17,369	14,370	11,270	7,653				3	575
	V2	2	705	2.296	35	19,133	16,415	13,766	10,577				3	575
	W2	3	805	3.415	46	21,846	19,467	17,070	14,716	11,851			3	595
48	S2	1	445	1.152	17	17,949	12,146						3	690
	T2	1-1/2	510	1.734	21	20,571	15,261	9,820					3	695
	V2	2	560	2.295	25	22,587	17,713	12,771					3	695
	W2	3	640	3.428	30	25,814	21,489	17,701	12,978				3	715
	X1	5	760	5.739	40	30,654	27,000	23,498	20,506	16,124	12,188		3	725
	Y1	7-1/2	870	8.610	53	35,091	31,899	28,757	25,802	23,302	19,238	16,118	3	945
	C1	10	960	11.570	64	38,721	35,828	32,935	30,200	27,684	25,195	21,506	3	860

NOTES: Performance shown is for propeller roof ventilators without ducts.
 Performance certified is for installation type A, free inlet, free outlet.
 Performance ratings do not include the effects of accessories.
 Performance ratings (bhp) do not include transmission losses.

The sound ratings shown are loudness in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301 @ free air. Values shown are installation Type A, free inlet hemispherical sone levels.

Low Silhouette

PERFORMANCE DATA

Model LFDA

Direct Drive: FILTERED SUPPLY

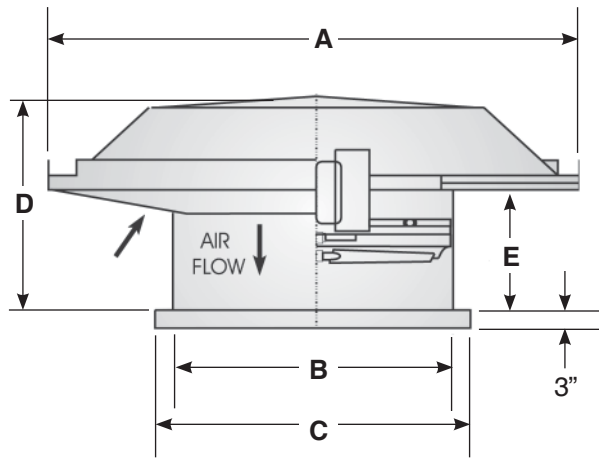
Blade Dia.	HP/ Drive	H. P.	RPM	Max. B. H. P.	Sones @ 5 Feet	CFM @ STATIC PRESSURE							No. of Blades	Estimated Shipping Weight
						.000 S.P.	.125 S.P.	.250 S.P.	.375 S.P.	.500 S.P.	.625 S.P.	.750 S.P.		
24	R3	3/4	1160	.853	21	5,274	5,215	4,523	3,773	2,889			3	295
	S3	1	1160	1.115	22	6,204	5,713	5,141	4,541	3,945	3,395	2,860	4	305
	S2	1	1750	1.149	30	5,932	5,527	5,090	4,466	3,692	2,891		2	285
	T2	1-1/2	1750	1.720	34	7,164	6,778	6,335	5,919	5,262	4,434	3,593	2	280
	V2	2	1750	2.352	38	7,988	7,544	7,057	6,567	6,002	5,256	4,429	2	280
	W2	3	1750	3.408	42	8,779	8,476	8,173	7,821	7,463	7,091	6,726	4	310
30	R4	3/4	870	.865	19	8,273	7,251	5,961	4,530				3	355
	S4	1	870	1.152	21	9,111	8,130	6,737	5,324	3,664			4	365
	R3	3/4	1160	.865	23	7,919	7,012	5,841	4,468				2	340
	S3	1	1160	1.154	25	9,019	8,119	7,087	5,733	4,094			2	345
	T3	1-1/2	1160	1.728	29	10,319	9,275	8,126	6,799	5,451			2	355
	V3	2	1160	2.306	33	11,489	10,703	9,835	8,888	7,839	6,751	5,513	3	375
	V2	2	1750	2.340	43	10,360	9,677	9,024	8,212	7,360	6,614	5,540	2	345
	W2	3	1750	3.403	47	12,739	12,155	11,560	10,934	10,224	9,351	8,439	2	365
	X2	5	1750	5.657	58	15,375	14,701	14,027	13,304	12,562	11,818	10,915	2	375
	Y2	7-1/2	1750	8.437	70	23,366	22,527	21,689	20,853	20,022	19,089	18,090	2	525
36	R4	3/4	870	.866	21	10,814	9,160	7,004					2	425
	S4	1	870	1.144	23	12,029	10,298	8,210	5,682				2	425
	T4	1-1/2	870	1.740	26	13,467	11,303	8,919	6,739				2	430
	V4	2	870	2.313	29	15,229	13,606	11,915	10,099	8,115			2	440
	T3	1-1/2	1160	1.712	32	13,211	11,941	10,567	8,903	7,115			2	420
	V3	2	1160	2.338	33	15,197	13,942	12,667	11,097	9,432	7,374		2	450
	W3	3	1160	3.442	37	17,216	15,783	14,320	12,708	10,951	9,433		2	480
	X3	5	1160	5.749	49	20,545	19,284	18,023	16,724	15,468	14,160	12,528	3	510
	X2	5	1750	5.726	65	19,654	18,794	17,943	17,155	16,187	15,117	14,010	2	450
	Y2	7-1/2	1750	8.437	70	23,366	22,527	21,689	20,853	20,022	19,089	18,090	2	525
42	S4	1	870	1.147	27	13,965	11,651	8,971	5,239				2	525
	T4	1-1/2	870	1.703	28	16,958	14,787	12,347	9,265				2	535
	V4	2	870	2.307	29	18,835	16,487	14,046	11,171				2	555
	W4	3	870	3.396	35	20,709	17,795	14,729	11,692	8,483			2	580
	V3	2	1160	2.332	43	16,755	14,814	12,823	10,921	8,346	5,653		2	535
	W3	3	1160	3.453	43	21,129	19,444	17,914	15,994	13,897	11,351		2	570
	X3	5	1160	5.739	48	25,471	23,668	21,893	20,074	18,041	15,847	13,556	2	580
	X2	5	1750	5.761	92	17,235	14,835	13,023	12,125	11,406	9,989	8,651	2	605
	Y2	7-1/2	1750	8.425	91	26,240	24,928	23,677	22,653	21,293	19,916	18,551	2	635
48	V4	2	870	2.344	34	21,205	18,422	15,525	10,623				2	580
	W4	3	870	3.397	35	24,860	22,013	19,430	16,007				2	600
	X4	5	870	5.724	41	28,822	25,302	21,915	18,436	13,330			2	730
	Y4	7-1/2	870	8.610	49	35,091	31,899	28,757	25,802	23,302	19,238	16,118	3	840
	X3	5	1160	5.709	57	28,661	26,447	24,563	22,522	20,057	16,080	12,406	2	700
	Y3	7-1/2	1160	8.473	59	33,747	31,570	29,480	27,547	25,436	22,954	19,494	2	830
	C3	10	1160	11.337	64	36,844	34,454	32,078	29,866	27,653	25,141	22,274	2	850

NOTE: Performance shown is for propeller roof ventilators without ducts.
 Performance certified is for installation type A, free inlet, free outlet.
 Performance ratings do not include the effects of accessories.

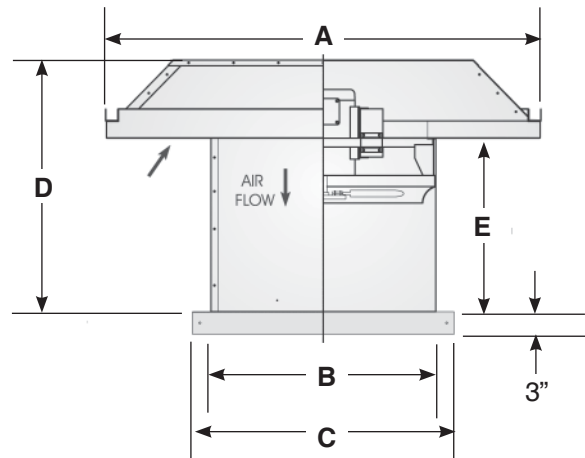
The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA Standard 301@ free air. Values shown are installation Type A, free inlet hemispherical sone levels.

Low Silhouette

SUPPLY FAN DRAWINGS - Submittal Data



Models LGBA/LGDA - Belt/Direct Drive



Models LFBA/LFDA - Filtered

DIMENSIONS LISTED IN INCHES

Model LGBA LGDA	A Sq. O. D. Hood	B Sq. Min. I. D. Opening	C Sq. I. D. Curb Cap	D Height	E Stack	O. D. Sq. Prefab Curb	Metal Gauges			Damper Size
							Crown/ Side Hood	Stack	Curb Cap	
24	58	30	35	31	23	33-1/4	18/18	18	14	26
30	66	36	41	32	23	39-1/4	18/18	18	14	32
36	78	42	47	34	23	45-1/4	18/18	18	14	38
42	87	48	53	43	30	51-1/4	18/18	18	14	44
48	99	54	59	44	30	57-1/4	18/18	16	14	50
54	111	60	65	45	30	63-1/4	18/18	16	14	56
60	111	66	71	46	30	69-1/4	18/16	16	14	62

DIMENSIONS LISTED IN INCHES

Model LFBA LFDA	HP	A ² Sq. O. D. Hood	B Sq. Min. I. D. Opening	C Sq. I. D. Curb Cap	D Height	E Stack	Prefab Curb O. D.	Standard Filter ⁶		Damper Size
								Size (Nominal)	Quantity	
24	1-1/2	↓ 58	24	35	31	23	33-1/4	15 x 20 x 2	8	26
	2	↑ 66	24	35	31	23	33-1/4	19 x 22 x 2	8	26
30	1-1/2	↓ 66	30	41	32	23	39-1/4	16 x 25 x 2	8	32
	2	↑ 78	30	41	32	23	39-1/4	19 x 22 x 2	12	32
36	2	↓ 78	36	47	34	23	45-1/4	19 x 29-3/4 x 2	8	38
	3	↑ 87	36	47	34	23	45-1/4	16-1/8 x 23-1/2 x 2	16	38
42	1-1/2	↓ 87	42	53	43	30	51-1/4	20 x 25 x 2 / 16 x 20 x 2	8 / 4	44
	2	↑ 99	42	53	43	30	51-1/4	18-3/8 x 26-1/2 x 2	16	44
48	2	↓ 99	48	59	44	30	57-1/4	19-1/8 x 23-1/2 x 2	16	50
	3-5	111	48	59	44	30	57-1/4	16-1/2 x 29-1/2 x 2	20	50
	7-1/2	↑ 123	48	59	44	30	57-1/4	17-3/4 x 35-1/2 x 2	20	50

↓ Denotes stated HP and below.
 ↑ Denotes stated HP and above.

- NOTES:**
1. All material is G90 galvanized steel.
 2. Due to shipping limitations, 87" and larger hoods may ship separate requiring field attaching. Specify if factory attaching is required and consult factory.
 3. Hoods hinge and side panels are removable for access to fan components.
 4. Propellers are 2, 3, 4 or 6-bladed adjustable pitch, airfoil aluminum (fixed pitch steel and aluminum are also available).
 5. Dampers mount on accessory flanges inside curbs due to space restrictions. Factory supplied curbs have shelf included.
 6. Filters are 2" cleanable, aluminum and may ship for field installation. Specify if factory installation is required and consult factory.

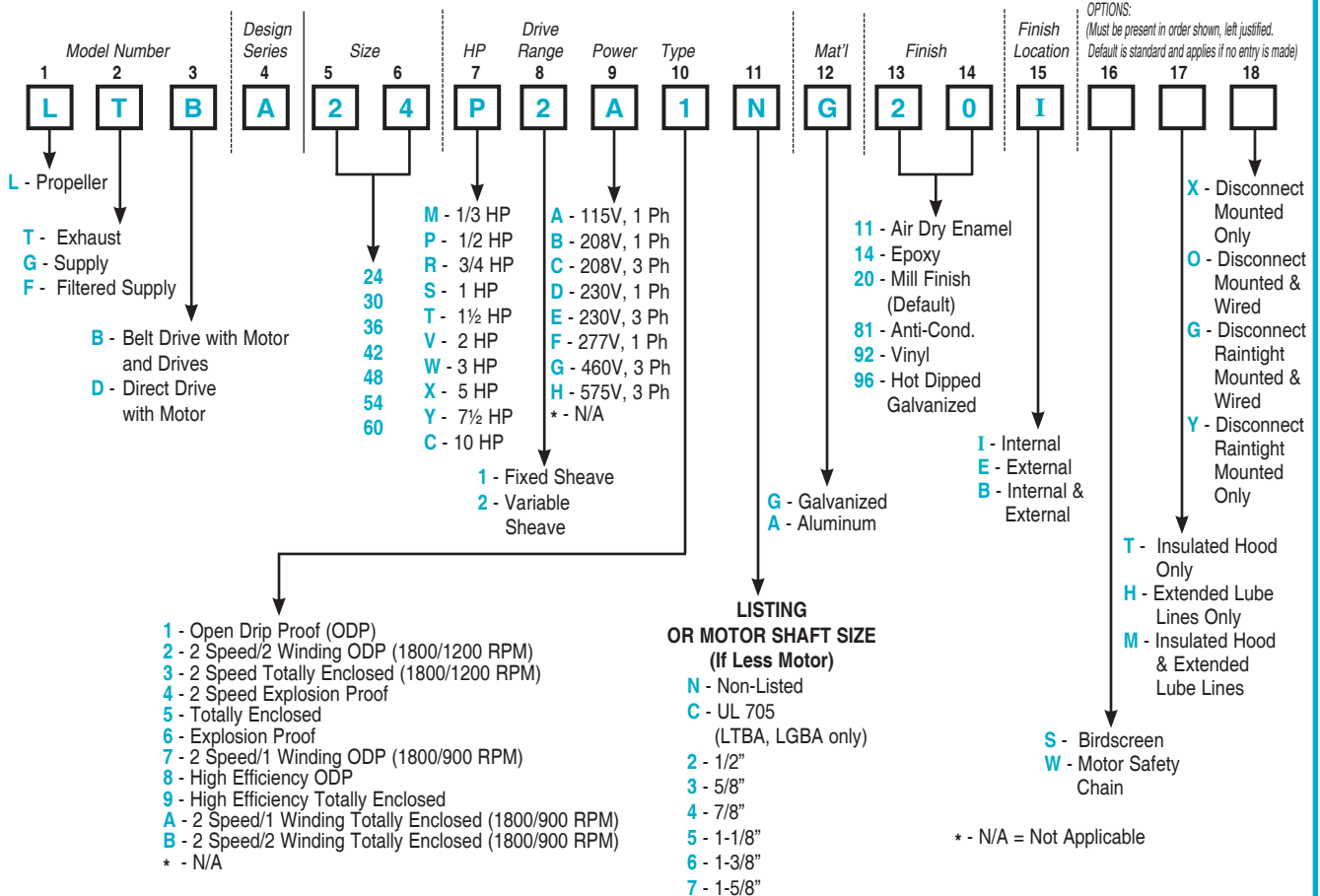
▼ Variable Pitch Sheaves

Enclosure	Phase	Voltage	Maximum H. P.	Shipped *
				Loose Model
Open NEMA 1	1	115-230	1-2	LXEBC
	3	208, 230-460	1-2	LXEBC
	3	208, 230-460	7½-10	LXEBM
	3	208, 230-460	7½-15	LXEBCN
Rain Tight NEMA 3	1	115-230	1-2	LXEBCP
	1	115-230	10-10	LXEBCQ
	3	208, 230-460	7½-10	LXEBCR
	3	208, 230-460	7½-15	LXEBCS
Rain Tight NEMA 4	1	115-230	1-2	LXEBC T
	3	230-460	7½-10	LXEBC U
Rain Tight NEMA 4X	1	115-230	1-2	LXEBC V
	3	230-460	7½-10	LXEBC W
Explosion Proof NEMA 7&9	1	115-230	1-1	LXEBC X
	3	208, 230-460	3-5	LXEBC Y

HP	# Grooves	
5	2	X
7-1/2	2	Y
10	2	C
15	3	N

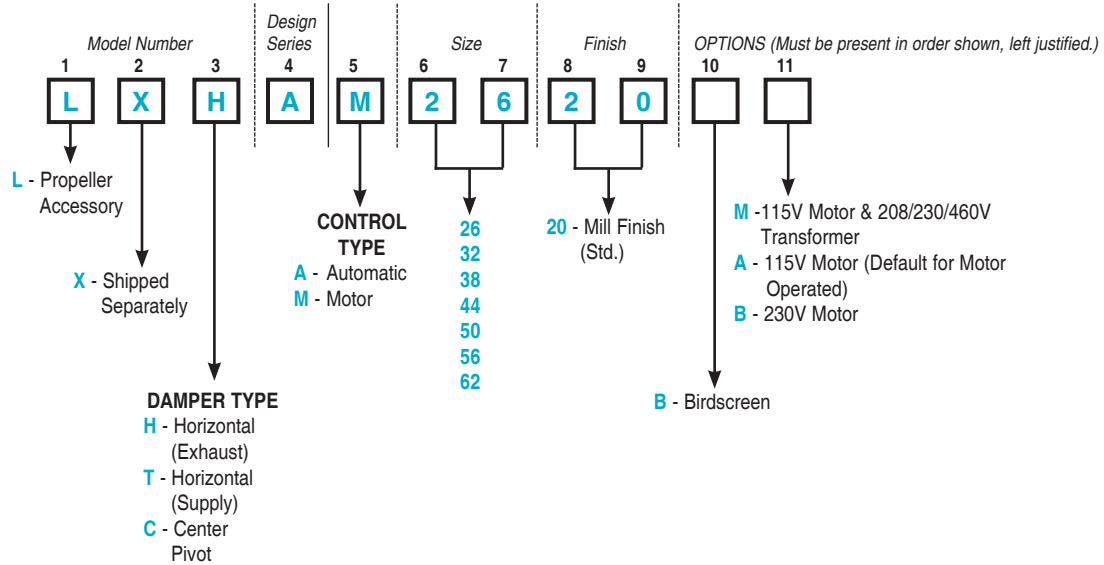
* For 2-speed motors, 2 disconnects are required.

▼ Low Silhouette Propeller Roof Ventilator

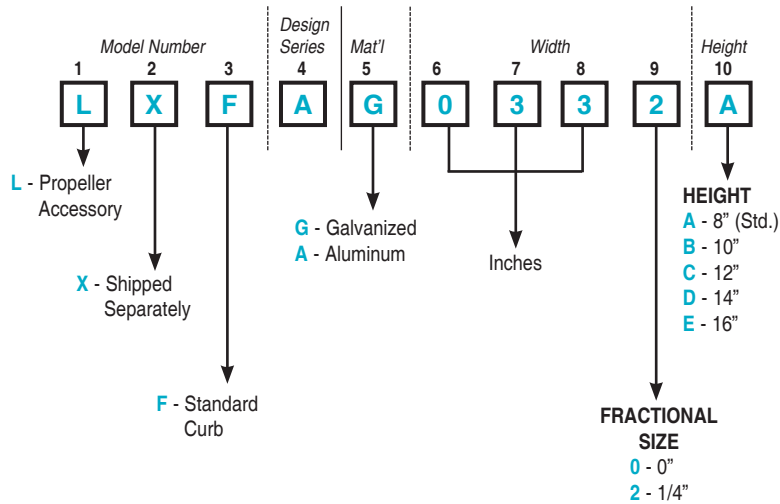


Low Silhouette

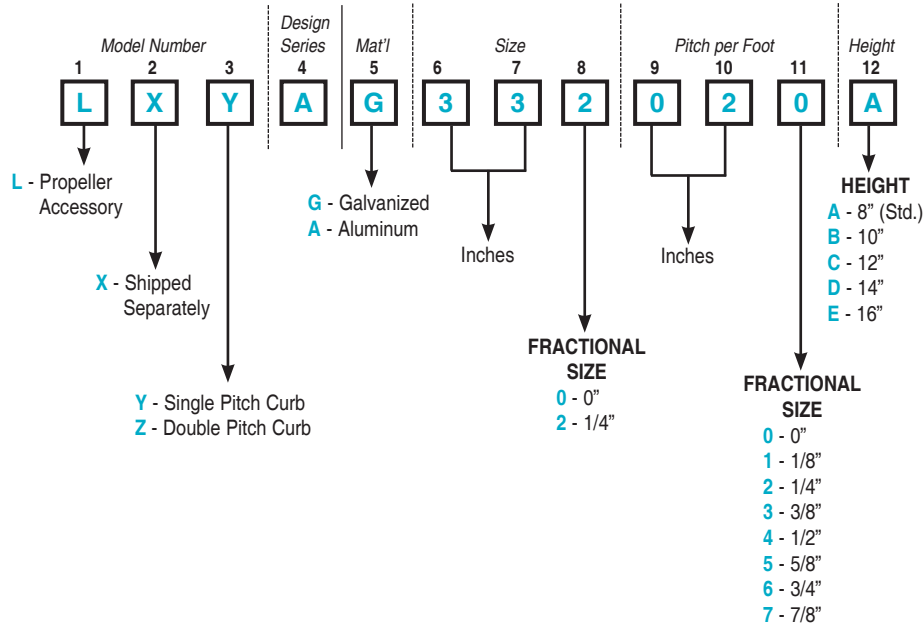
▼ Dampers



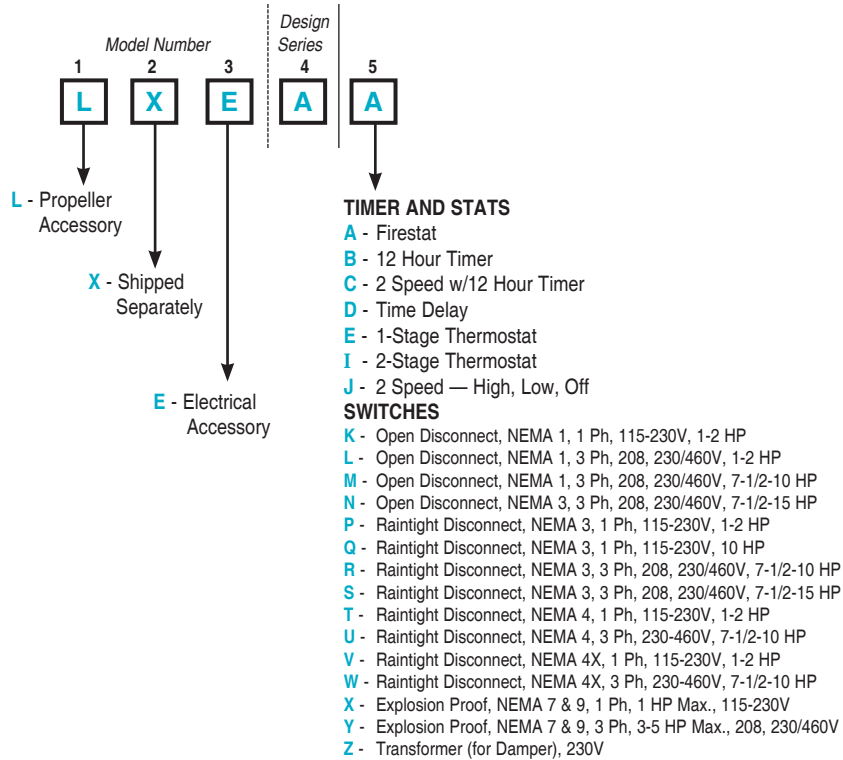
▼ Curbs



▼ Pitched Curb



▼ Electrical Accessories



▼ **Hooded Fan Accessories Footnotes**

- (1) **BIRDSCREEN** — 1/2" x 1" galvanized wire. Mounted vertically. Horizontal no longer available.
- (2) **INSULATED HOOD** — 1/2" fiberglass covers inner crown of hood. Helps prevent condensation. For supply units.
- (3) **MOTOR SAFETY CHAIN** — Safety feature for servicing or changing motor.
- (4) **SAFETY GUARD BASKET** — Basket type guard extends into curb. Must be installed before PRV. Recommended as a safety precaution for personnel working below.
- (5) **EXTENDED GREASE LINE (direct drive)** — 1 phase not available. 3 phase on 2 HP 1200 RPM and larger (180T and larger). See following notes on 6.
- (6) **EXTENDED GREASE LINE (belt drive)** — 1 phase not available. 3 phase available on 2 HP 1200 RPM and larger (180T and larger). Some motors only have 1 or 2 bearings that can be greased. A single grease line will be run from the motor if both are not available.
- (7) **PREFAB CURB** — Ships FOB supplier. See curb submittal for details. All welded construction, 18 gauge galvanized steel, 1" semi-rigid thermal insulation, 2" x 2" wood nailer. Damper shelf standard.
- (8) **MAXIMUM CFM FOR STANDARD DAMPERS** — **DO NOT EXCEED THIS CFM** with our standard damper. Dampers must mount in bottom curb on damper tray for proper clearances (1/3 diameter of fan). Damper trays must be used when furnishing own curbs. Warranty will be voided if above conditions are not met. H. D. dampers are rated for all products with proper clearances. Refer to submittal for details.
- (9) **CENTER PIVOTED DAMPERS** — Must be used in reversible applications. Ships FOB supplier. Specify voltage needed (standard voltage is 115). Units are motorized. Refer to submittal. Dampers good for 15 HP max. Must be mounted in bottom of curb on damper tray for warranty clearance distance.
- (10) **DELAY SWITCH** — Required on motorized supply dampers 5 HP and larger and exhaust motorized dampers 10 HP and larger. Allows damper to open before fan starts.
- (11) **TRANSFORMER** — Converts 208/230/460V to 115V. Ships separate only.
- (12) **DAMPER FINISHES** — Use 30% of fan coating price, consult factory for finishes on center pivot dampers.
- (13) **SINGLE GROOVE, VARIABLE PITCH SHEAVES** — Standard on 3 HP and below.
- (14) **ALUMINUM** — Consists of hood, stack and curb cap. Fan panel is galvanized and blade hub is steel.

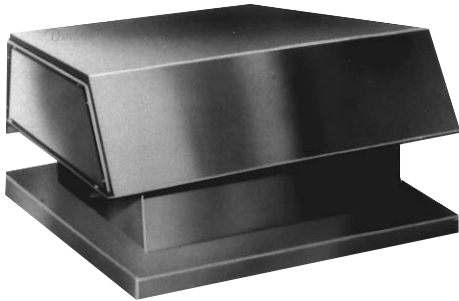
Size	Exh./Sup. (All Sizes)	Filtered Supply	Hood Size
24"	58"	1/3 - 1½ HP	58"
		2 HP	66"
30"	66"	1/2 - 1½ HP	66"
		2 - 3 HP	78"
36"	78"	1/2 - 2 HP	78"
		3 HP	87"
42"	87"	3/4 - 1½ HP	87"
		2 -3 HP	99"
48"	99"	1 - 2 HP	99"
		3 - 5 HP	111"
		7½ - 10 HP	123"
54"	111"	ALL	123"
60"	111"	ALL	123"

- (15) **REMOTE DRIVE** — Motor is removed from stack and covered out of the airstream.

COATINGS:

- (16) **EPOXY COATING** — For use in alkaline type atmosphere (exceptions are acetic and nitric acids). Epoxy forms an excellent hard, heavy film barrier against chemical attack as well as physical damage from direct impact and abrasion. Heat resistant up to 250 degrees F. **OUTSIDE ONLY.**
- (17) **VINYL COATING** — For acid type atmospheres that do not exceed 160 degrees F.
- (18) **COAL TAR** — Helps reduce condensation and acts as a general maintenance coating for corrosive conditions where conditions are too severe for ordinary paint. Applied to the interior and exterior of unit. Not applied to blade.
- (19) **USE PAINT LIST X 1.3** — For interior and exterior price. List price printed may be used for interior only, or exterior only.

GRAVITY INTAKE AND EXHAUST ROOF VENTILATORS



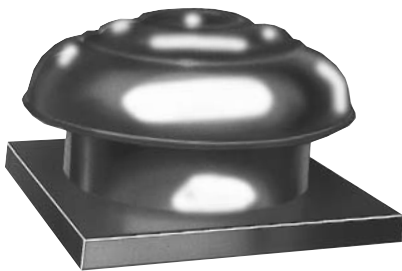
Series GE and GI Low Silhouette

This attractive low silhouette design is available in specific versions for intake and exhaust applications. The series GE models are normally used in exhaust applications. The GI series feature increased hood dimensions that allow lower inlet velocities that reduce moisture entrainment for intake applications. These units are available in either aluminum or galvanized steel.



Series GL Extruded Aluminum Louvered

The series GL, louvered penthouse, features a low profile that blends attractively with modern architectural design. These units are available in a wide variety of sizes and are suitable for either exhaust or intake applications. The GL is furnished completely assembled with fully welded mitered corners providing a simple-to-install and durable unit.



Series GS Spun Aluminum

The series GS series provides low silhouette design in attractive spun aluminum. These units are suitable for either intake or exhaust applications when properly selected. The GS features heavy-gauge, maintenance free aluminum construction that will provide years of attractive service.



Series VXC Spun Aluminum Roof Cap

This spun aluminum roof cap provides an economical intake or exhaust roof opening for small air flows. Available for curb cap mounting or flanged for direct roof mounting in round throat sizes from 8 to 20 inches. The single piece, spun aluminum cover is mounted on an aluminum throat with integral aluminum birdscreen.

Models GI - Gravity Intake Ventilator GE - Gravity Exhaust Ventilator

Model GI gravity intake ventilators are designed for supplying air via a “pull thru” method into the space or building.

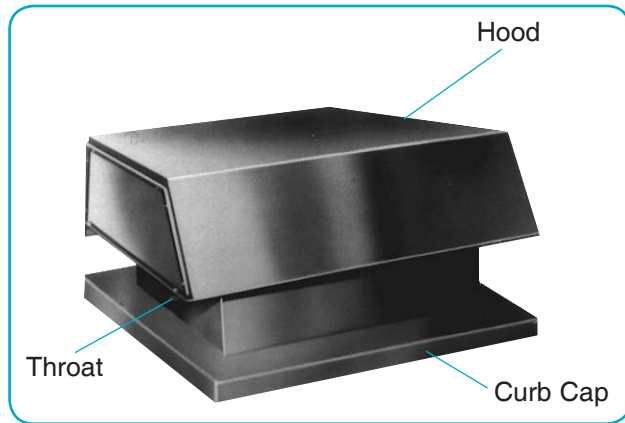
The hood free area is double the throat free area, creating a 2:1 hood to throat ratio (Overall ratio is 3:1). The oversized hood makes this unit ideal for intake applications. These hoods should be sized with an approximate intake velocity of 600 fpm and with a corresponding throat velocity of 1200 fpm to help reduce moisture entrainment thru the hood.

These hoods are available in either galvanealed construction (Model GIGB) or aluminum construction (Model GIAB).

Model GE gravity exhaust ventilators are designed for exhausting air via “push thru” method from a space or building.

The hood free area and throat free area are equal, making this hood ideally suited for exhaust applications. If this hood is used for intake applications, it should be sized using an approximate intake/throat velocity of 600 fpm to help reduce moisture entrainment thru the hood.

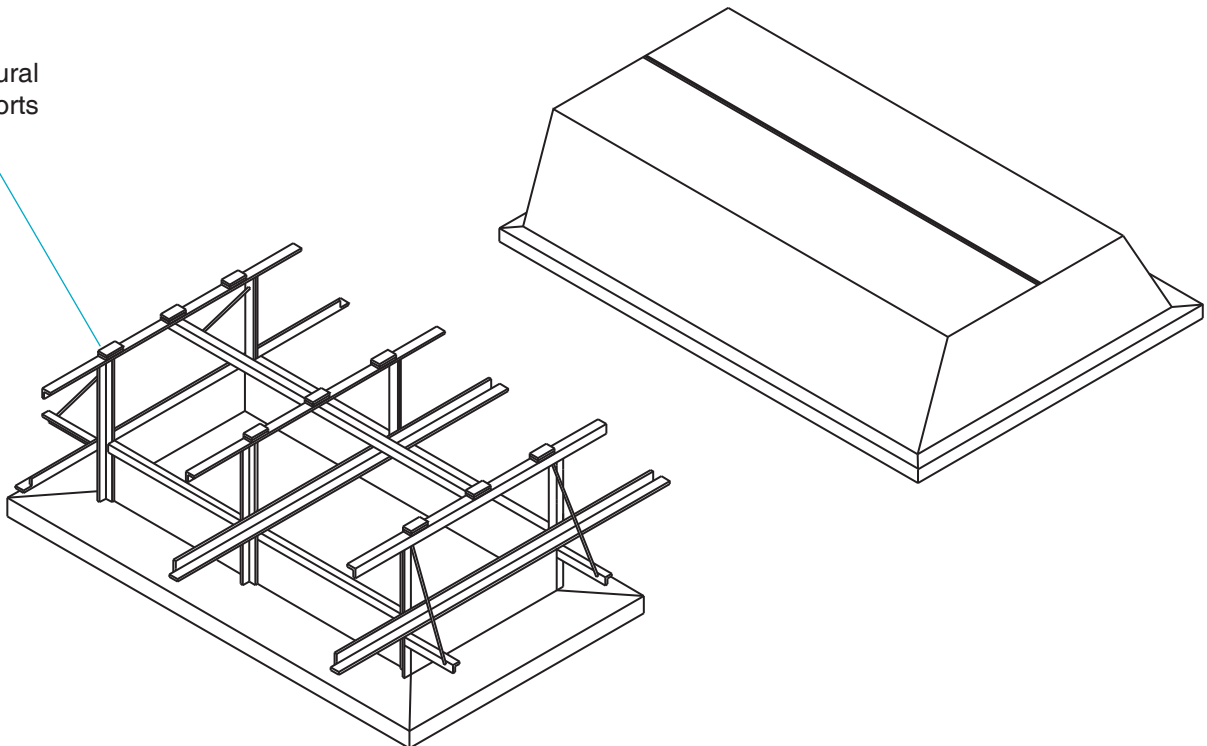
These hoods are available in either galvanealed steel construction (Model GEGB) or aluminum construction (Model GEAB)



FEATURES

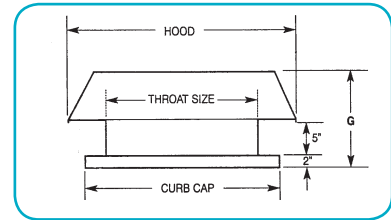
- Aluminum or steel construction.
- Integral galvanized birdscreen.
- Welded curb and throat seams.
- GI units feature enlarged hood.
- Gauges of construction vary with size of unit.

Structural Supports



Model: GI

Dimensions (Inches)

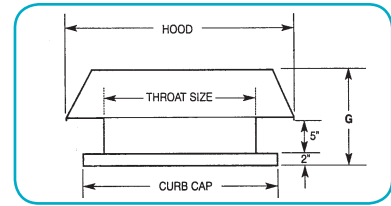


Performance Data (CFM)

Throat Size	Throat Area	Curb Cap	Hood A x B	G	INTAKE/THROAT VELOCITY (fpm)							
					400	500	600	700	800	900	1000	1200
12 x 12	1.00	20 x 20	21 x 21	10	400	500	600	700	800	900	1000	1200
12 x 18	1.50	20 x 26	22 x 28	10	600	750	900	1050	1200	1350	1500	1800
12 x 24	2.00	20 x 32	25 x 37	10	800	1000	1200	1400	1600	1800	2000	2400
12 x 30	2.50	20 x 38	25 x 43	10	1000	1250	1500	1750	2000	2250	2500	3000
12 x 36	3.00	20 x 44	25 x 51	10	1200	1500	1800	2100	2400	2700	3000	3600
12 x 42	3.50	20 x 50	27 x 57	10	1400	1750	2100	2450	2800	3150	3500	4200
12 x 48	4.00	20 x 56	27 x 63	10	1600	2000	2400	2800	3200	3600	4000	4800
14 x 14	1.36	22 x 22	25 x 25	11	544	681	817	953	1089	1225	1361	1633
14 x 18	1.75	22 x 26	26 x 30	11	700	875	1050	1225	1400	1575	1750	2100
14 x 24	2.33	22 x 32	27 x 37	11	933	1167	1400	1633	1867	2100	2333	2800
14 x 30	2.92	22 x 38	27 x 43	11	1167	1458	1750	2042	2333	2625	2917	3500
14 x 36	3.50	22 x 44	30 x 52	11	1400	1750	2100	2450	2800	3150	3500	4200
14 x 42	4.08	22 x 50	30 x 58	11	1633	2042	2450	2858	3267	3675	4083	4900
14 x 48	4.67	22 x 56	32 x 66	11	1867	2333	2800	3267	3733	4200	4667	5600
16 x 16	1.78	24 x 24	28 x 28	12	711	889	1067	1244	1422	1600	1778	2133
16 x 18	2.00	24 x 26	28 x 30	12	800	1000	1200	1400	1600	1800	2000	2400
16 x 24	2.67	24 x 32	31 x 39	12	1067	1333	1600	1867	2133	2400	2667	3200
16 x 30	3.33	24 x 38	31 x 45	12	1333	1667	2000	2333	2667	3000	3333	4000
16 x 36	4.00	24 x 44	34 x 54	12	1600	2000	2400	2800	3200	3600	4000	4800
16 x 42	4.67	24 x 50	34 x 60	12	1867	2333	2800	3267	3733	4200	4667	5600
16 x 48	5.33	24 x 56	35 x 67	12	2133	2667	3200	3733	4267	4800	5333	6400
16 x 54	6.00	24 x 62	35 x 73	12	2400	3000	3600	4200	4800	5400	6000	7200
18 x 18	2.25	26 x 26	32 x 32	12	900	1125	1350	1575	1800	2025	2250	2700
18 x 20	2.50	26 x 28	32 x 34	12	1000	1250	1500	1750	2000	2250	2500	3000
18 x 24	3.00	26 x 32	33 x 39	12	1200	1500	1800	2100	2400	2700	3000	3600
18 x 30	3.75	26 x 38	36 x 48	12	1500	1875	2250	2625	3000	3375	3750	4500
18 x 36	4.50	26 x 44	36 x 54	12	1800	2250	2700	3150	3600	4050	4500	5400
18 x 42	5.25	26 x 50	38 x 62	12	2100	2625	3150	3675	4200	4725	5250	6300
18 x 48	6.00	26 x 56	38 x 68	12	2400	3000	3600	4200	4800	5400	6000	7200
18 x 54	6.75	26 x 62	40 x 76	12	2700	3375	4050	4725	5400	6075	6750	8100
18 x 60	7.50	26 x 68	40 x 82	12	3000	3750	4500	5250	6000	6750	7500	9000
20 x 20	2.78	28 x 28	35 x 35	13	1111	1389	1667	1944	2222	2500	2778	3333
20 x 22	3.06	28 x 30	35 x 37	13	1222	1528	1833	2139	2444	2750	3056	3667
20 x 24	3.33	28 x 32	37 x 41	13	1333	1667	2000	2333	2667	3000	3333	4000
20 x 30	4.17	28 x 38	37 x 47	13	1667	2083	2500	2917	3333	3750	4167	5000
20 x 36	5.00	28 x 44	40 x 56	13	2000	2500	3000	3500	4000	4500	5000	6000
20 x 42	5.83	28 x 50	40 x 62	13	2333	2917	3500	4083	4667	5250	5833	7000
20 x 48	6.67	28 x 56	42 x 70	13	2667	3333	4000	4667	5333	6000	6667	8000
20 x 54	7.50	28 x 62	42 x 76	13	3000	3750	4500	5250	6000	6750	7500	9000
20 x 60	8.33	28 x 68	44 x 84	13	3333	4167	5000	5833	6667	7500	8333	10000
20 x 66	9.17	28 x 74	44 x 90	13	3667	4583	5500	6417	7333	8250	9167	11000
20 x 72	10.00	28 x 80	46 x 98	13	4000	5000	6000	7000	8000	9000	10000	12000
20 x 84	11.67	28 x 92	46 x 110	13	4667	5833	7000	8167	9333	10500	11667	14000
22 x 22	3.36	30 x 30	39 x 39	14	1344	1681	2017	2353	2689	3025	3361	4033
22 x 24	3.67	30 x 32	39 x 41	14	1467	1833	2200	2567	2933	3300	3667	4400
22 x 30	4.58	30 x 38	43 x 51	14	1833	2292	2750	3208	3667	4125	4583	5500
22 x 36	5.50	30 x 44	43 x 57	14	2200	2750	3300	3850	4400	4950	5500	6600
22 x 42	6.43	30 x 50	43 x 63	14	2567	3208	3850	4492	5133	5775	6417	7700
22 x 48	7.33	30 x 56	46 x 72	14	2933	3667	4400	5133	5867	6600	7333	8800
22 x 54	8.25	30 x 62	46 x 78	14	3300	4125	4950	5775	6600	7425	8250	9900
22 x 60	9.17	30 x 68	48 x 86	14	3667	4583	5500	6417	7333	8250	9167	11000
22 x 66	10.08	30 x 74	48 x 92	14	4033	5042	6050	7058	8067	9075	10083	12100
22 x 72	11.00	30 x 80	48 x 98	14	4400	5500	6600	7700	8800	9900	11000	13200
22 x 84	12.83	30 x 92	49 x 111	14	5133	6417	7700	8983	10267	11550	12833	15400
24 x 24	4.00	32 x 32	44 x 44	15	1600	2000	2400	2800	3200	3600	4000	4800
24 x 30	5.00	32 x 38	44 x 50	15	2000	2500	3000	3500	4000	4500	5000	6000
24 x 36	6.00	32 x 44	46 x 58	15	2400	3000	3600	4200	4800	5400	6000	7200
24 x 42	7.00	32 x 50	46 x 64	15	2800	3500	4200	4900	5600	6300	7000	8400
24 x 48	8.00	32 x 56	49 x 73	15	3200	4000	4800	5600	6400	7200	8000	9600
24 x 54	9.00	32 x 62	49 x 79	15	3600	4500	5400	6300	7200	8100	9000	10800
24 x 60	10.00	32 x 68	51 x 87	15	4000	5000	6000	7000	8000	9000	10000	12000
24 x 66	11.00	32 x 74	51 x 93	15	4400	5500	6600	7700	8800	9900	11000	13200
24 x 72	12.00	32 x 80	52 x 100	15	4800	6000	7200	8400	9600	10800	12000	14400
24 x 84	14.00	32 x 92	52 x 113	15	5600	7000	8400	9800	11200	12600	14000	16800
24 x 96	16.00	32 x 104	54 x 126	15	6400	8000	9600	11200	12800	14400	16000	19200

Model: GI (Continued)

Dimensions (Inches)

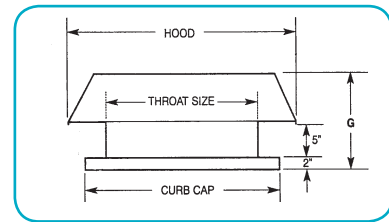


Performance Data (CFM)

Throat Size	Throat Area	Curb Cap	Hood A x B	G	INTAKE/THROAT VELOCITY (fpm)							
					400	500	600	700	800	900	1000	1200
30 x 30	6.25	38 x 38	52 x 52	17	2500	3125	3750	4375	5000	5625	6250	7500
30 x 36	7.50	38 x 44	54 x 60	17	3000	3750	4500	5250	6000	6750	7500	9000
30 x 42	8.75	38 x 50	57 x 69	17	3500	4375	5250	6125	7000	7875	8750	10500
30 x 48	10.00	38 x 56	57 x 75	17	4000	5000	6000	7000	8000	9000	10000	12000
30 x 54	11.25	38 x 62	60 x 84	17	4500	5625	6750	7875	9000	10125	11250	13500
30 x 60	12.50	38 x 68	60 x 90	17	5000	6250	7500	8750	10000	11250	12500	15000
30 x 66	13.75	38 x 74	62 x 98	17	5500	6875	8250	9625	11000	12375	13750	16500
30 x 72	15.00	38 x 80	62 x 104	17	6000	7500	9000	10500	12000	13500	15000	18000
30 x 84	17.50	38 x 92	63 x 117	17	7000	8750	10500	12250	14000	15750	17500	21000
30 x 96	20.00	38 x 104	65 x 131	17	8000	10000	12000	14000	16000	18000	20000	24000
30 x 108	22.50	38 x 116	67 x 145	17	9000	11250	13500	15750	18000	20250	22500	27000
30 x 120	25.00	38 x 128	68 x 158	17	10000	12500	15000	17500	20000	22500	25000	30000
36 x 36	9.00	44 x 44	62 x 62	20	3600	4500	5400	6300	7200	8100	9000	10800
36 x 42	10.50	44 x 50	65 x 71	20	4200	5250	6300	7350	8400	9450	10500	12600
36 x 48	12.00	44 x 56	65 x 77	20	4800	6000	7200	8400	9600	10800	12000	14400
36 x 54	13.50	44 x 62	69 x 87	20	5400	6750	8100	9450	10800	12150	13500	16200
36 x 60	15.00	44 x 68	69 x 93	20	6000	7500	9000	10500	12000	13500	15000	18000
36 x 66	16.50	44 x 74	70 x 100	20	6600	8250	9900	11550	13200	14850	16500	19800
36 x 72	18.00	44 x 80	71 x 107	20	7200	9000	10800	12600	14400	16200	18000	21600
36 x 84	21.00	44 x 92	74 x 122	20	8400	10500	12600	14700	16800	18900	21000	25200
36 x 96	24.00	44 x 104	76 x 136	20	9600	12000	14400	16800	19200	21600	24000	28800
36 x 108	27.00	44 x 116	78 x 150	20	10800	13500	16200	18900	21600	24300	27000	32400
36 x 120	30.00	44 x 128	79 x 163	20	12000	15000	18000	21000	24000	27000	30000	36000
42 x 42	12.25	50 x 50	74 x 74	22	4900	6125	7350	8575	9800	11025	12250	14700
42 x 48	14.00	50 x 56	74 x 80	22	5600	7000	8400	9800	11200	12600	14000	16800
42 x 54	15.75	50 x 62	78 x 90	22	6300	7875	9450	11025	12600	14175	15750	18900
42 x 60	17.50	50 x 68	78 x 96	22	7000	8750	10500	12250	14000	15750	17500	21000
42 x 66	19.25	50 x 74	80 x 104	22	7700	9625	11550	13475	15400	17325	19250	23100
42 x 72	21.00	50 x 80	81 x 111	22	8400	10500	12600	14700	16800	18900	21000	25200
42 x 84	24.5	50 x 92	83 x 125	22	9800	12250	14700	17150	19600	22050	24500	29400
42 x 96	28.00	50 x 104	86 x 140	22	11200	14000	16800	19600	22400	25200	28000	33600
42 x 108	31.50	50 x 116	88 x 154	22	12600	15750	18900	22050	25200	28350	31500	37800
42 x 120	35.00	50 x 128	90 x 168	22	14000	17500	21000	24500	28000	31500	35000	42000
48 x 48	16.00	56 x 56	84 x 84	25	6400	8000	9600	11200	12800	14400	16000	19200
48 x 54	18.00	56 x 62	84 x 90	25	7200	9000	10800	12600	14400	16200	18000	21600
48 x 60	20.00	56 x 68	87 x 99	25	8000	10000	12000	14000	16000	18000	20000	24000
48 x 66	22.00	56 x 74	88 x 108	25	8800	11000	13200	15400	17600	19800	22000	26400
48 x 72	24.00	56 x 80	90 x 114	25	9600	12000	14400	16800	19200	21600	24000	28800
48 x 84	18.00	56 x 92	93 x 129	25	11200	14000	16800	19600	22400	25200	28000	33600
48 x 96	32.00	56 x 104	96 x 144	25	12800	16000	19200	21400	25600	28800	32000	38400
48 x 108	36.00	56 x 116	98 x 158	25	14400	18000	21600	25200	28800	32400	36000	43200
48 x 120	40.00	56 x 128	100 x 172	25	16000	20000	24000	28000	32000	36000	40000	48000
54 x 54	20.25	62 x 62	94 x 94	27	8100	10125	12150	14175	16200	18225	20250	24300
54 x 60	22.50	62 x 68	96 x 102	27	9000	11250	13500	15750	18000	20250	22500	27000
54 x 66	24.75	62 x 74	98 x 110	27	9900	12375	14850	17325	19800	22275	24750	29700
54 x 72	27.00	62 x 80	99 x 117	27	10800	13500	16200	18900	21600	24300	27000	32400
54 x 84	31.50	62 x 92	103 x 133	27	12600	15750	18900	22050	25200	28350	31500	37800
54 x 96	36.00	62 x 104	105 x 147	27	14400	18000	21600	25200	28800	32400	36000	43200
54 x 108	40.50	62 x 116	108 x 162	27	16200	20250	24300	28350	32400	36450	40500	48600
54 x 120	45.00	62 x 128	110 x 175	27	18000	22500	27000	31500	36000	40500	45000	54000
60 x 60	25.00	68 x 68	104 x 104	29	10000	12500	15000	17500	20000	22500	25000	30000
60 x 66	27.50	68 x 74	106 x 112	29	11000	13750	16500	19250	22000	24750	27500	33000
60 x 72	30.00	68 x 80	108 x 120	29	12000	15000	18000	21000	24000	27000	30000	36000
60 x 84	35.00	68 x 92	112 x 136	29	14000	17500	21000	24500	28000	31500	35000	42000
60 x 90	40.00	68 x 104	115 x 151	29	16000	20000	24000	28000	32000	36000	40000	48000
60 x 108	45.00	68 x 116	117 x 165	29	18000	22500	27000	31500	36000	40500	45000	54000
60 x 120	50.00	68 x 128	120 x 180	29	20000	25000	30000	35000	40000	45000	50000	60000
66 x 66	30.25	74 x 74	114 x 114	32	12100	15125	18150	21175	24200	27225	30250	36300
66 x 72	33.00	74 x 80	116 x 122	32	13200	16500	19800	23100	26400	29700	33000	39600
66 x 84	38.50	74 x 92	120 x 138	32	15400	19250	23100	26950	30800	34650	38500	46200
66 x 96	44.00	74 x 104	124 x 154	32	17600	22000	26400	30800	35200	39600	44000	52800
66 x 108	49.50	74 x 116	127 x 169	32	19800	24750	29700	34650	39600	44550	49500	59400
66 x 120	55.00	74 x 128	129 x 183	32	22000	27500	33000	38500	44000	49500	55000	66000
72 x 72	36.00	80 x 80	125 x 125	34	14400	18000	21600	25200	28800	32400	36000	43200
72 x 84	42.00	80 x 92	129 x 141	34	16800	21000	25200	29400	33600	37800	42000	50400
72 x 96	48.00	80 x 104	129 x 153	34	19200	24000	28800	33600	38400	43200	48000	57600
72 x 108	54.00	80 x 116	135 x 171	34	21600	27000	32400	37800	43200	48600	54000	64800
72 x 120	60.00	80 x 128	135 x 183	34	24000	30000	36000	42000	48000	54000	60000	72000

Model: GE

Dimensions (Inches)

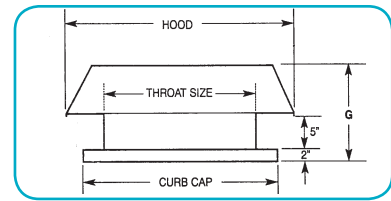


Performance Data (CFM)

Throat Size	Throat Area	Curb Cap	Hood A x B	G	INTAKE/THROAT VELOCITY (fpm)							
					400	500	600	700	800	900	1000	1200
12 x 12	1.00	20 x 20	17 x 17	9	400	500	600	700	800	900	1000	1200
12 x 18	1.50	20 x 26	18 x 24	9	600	750	900	1050	1200	1350	1500	1800
12 x 24	2.00	20 x 32	19 x 31	9	800	1000	1200	1400	1600	1800	2000	2400
12 x 30	2.50	20 x 38	19 x 37	9	1000	1250	1500	1750	2000	2250	2500	3000
12 x 36	3.00	20 x 44	20 x 44	9	1200	1500	1800	2100	2400	2700	3000	3600
12 x 42	3.50	20 x 50	20 x 50	9	1400	1750	2100	2450	2800	3150	3500	4200
12 x 48	4.00	20 x 56	20 x 56	9	1600	2000	2400	2800	3200	3600	4000	4800
14 x 14	1.36	22 x 22	20 x 20	9	544	681	817	953	1089	1225	1361	1633
14 x 18	1.75	22 x 26	21 x 25	9	700	875	1050	1225	1400	1575	1750	2100
14 x 24	2.33	22 x 32	21 x 31	9	933	1167	1400	1633	1867	2100	2333	2800
14 x 30	2.92	22 x 38	23 x 39	9	1167	1458	1750	2042	2333	2625	2917	3500
14 x 36	3.50	22 x 44	23 x 45	9	1400	1750	2100	2450	2800	3150	3500	4200
14 x 42	4.08	22 x 50	23 x 51	9	1633	2042	2450	2858	3267	3675	4083	4900
14 x 48	4.67	22 x 56	23 x 57	9	1867	2333	2800	3267	3733	4200	4667	5600
16 x 16	1.78	24 x 24	23 x 23	10	711	889	1067	1244	1422	1600	1778	2133
16 x 18	2.00	24 x 26	23 x 25	10	800	1000	1200	1400	1600	1800	2000	2400
16 x 24	2.67	24 x 32	24 x 32	10	1067	1333	1600	1867	2133	2400	2667	3200
16 x 30	3.33	24 x 38	25 x 39	10	1333	1667	2000	2333	2667	3000	3333	4000
16 x 36	4.00	24 x 44	25 x 45	10	1600	2000	2400	2800	3200	3600	4000	4800
16 x 42	4.67	24 x 50	26 x 52	10	1867	2333	2800	3267	3733	4200	4667	5600
16 x 48	5.33	24 x 56	26 x 58	10	2133	2667	3200	3733	4267	4800	5333	6400
16 x 54	6.00	24 x 62	27 x 65	10	2400	3000	3600	4200	4800	5400	6000	7200
18 x 18	2.25	26 x 26	26 x 26	11	900	1125	1350	1575	1800	2025	2250	2700
18 x 20	2.50	24 x 28	26 x 28	11	1000	1250	1500	1750	2000	2250	2500	3000
18 x 24	3.00	24 x 32	27 x 33	11	1200	1500	1800	2100	2400	2700	3000	3600
18 x 30	3.75	24 x 38	27 x 39	11	1500	1875	2250	2625	3000	3375	3750	4500
18 x 36	4.50	24 x 44	29 x 47	11	1800	2250	2700	3150	3600	4050	4500	5400
18 x 42	5.25	24 x 50	29 x 53	11	2100	2625	3150	3675	4200	4725	5250	6300
18 x 48	6.00	24 x 56	29 x 59	11	2400	3000	3600	4200	4800	5400	6000	7200
18 x 54	6.75	24 x 62	30 x 66	11	2700	3375	4050	4725	5400	6075	6750	8100
18 x 60	7.50	24 x 68	30 x 72	11	3000	3750	4500	5250	6000	6750	7500	9000
20 x 20	2.78	28 x 28	29 x 29	12	1111	1389	1667	1944	2222	2500	2778	3333
20 x 22	3.06	28 x 30	29 x 31	12	1222	1528	1833	2139	2444	2750	3056	3667
20 x 24	3.33	28 x 32	29 x 33	12	1333	1667	2000	2333	2667	3000	3333	4000
20 x 30	4.17	28 x 38	31 x 41	12	1667	2083	2500	2917	3333	3750	4167	5000
20 x 36	5.00	28 x 44	31 x 47	12	2000	2500	3000	3500	4000	4500	5000	6000
20 x 42	5.83	28 x 50	31 x 53	12	2333	2917	3500	4083	4667	5250	5833	7000
20 x 48	6.67	28 x 56	32 x 60	12	2667	3333	4000	4667	5333	6000	6667	8000
20 x 54	7.50	28 x 62	32 x 66	12	3000	3750	4500	5250	6000	6750	7500	9000
20 x 60	8.33	28 x 68	33 x 73	12	3333	4167	5000	5833	6667	7500	8333	10000
20 x 66	9.17	28 x 74	33 x 79	12	3667	4583	5500	6417	7333	8250	9167	11000
20 x 72	10.00	28 x 80	34 x 86	12	4000	5000	6000	7000	8000	9000	10000	12000
20 x 84	11.67	28 x 92	34 x 98	12	4667	5833	7000	8167	9333	10500	11667	14000
22 x 22	3.36	30 x 30	32 x 32	12	1344	1681	2017	2353	2689	3025	3361	4033
22 x 24	3.67	30 x 32	32 x 34	12	1467	1833	2200	2567	2933	3300	3667	4400
22 x 30	4.58	30 x 38	33 x 41	12	1833	2292	2750	3208	3667	4125	4583	5500
22 x 36	5.50	30 x 44	33 x 47	12	2200	2750	3300	3850	4400	4950	5500	6600
22 x 42	6.43	30 x 50	35 x 55	12	2567	3208	3850	4492	5133	5775	6417	7700
22 x 48	7.33	30 x 56	35 x 61	12	2933	3667	4400	5133	5867	6600	7333	8800
22 x 54	8.25	30 x 62	25 x 67	12	3300	4125	4950	5775	6600	7425	8250	9900
22 x 60	9.17	30 x 68	36 x 74	12	3667	4583	5500	6417	7333	8250	9167	11000
22 x 66	10.08	30 x 74	36 x 80	12	4033	5042	6050	7058	8067	9075	10083	12100
22 x 72	11.00	30 x 80	37 x 87	12	4400	5500	6600	7700	8800	9900	11000	13200
22 x 84	12.83	30 x 92	37 x 99	12	5133	6417	7700	8983	10267	11550	12833	15400
24 x 24	4.00	32 x 32	35 x 35	13	1600	2000	2400	2800	3200	3600	4000	4800
24 x 30	5.00	32 x 38	35 x 41	13	2000	2500	3000	3500	4000	4500	5000	6000
24 x 36	6.00	32 x 44	37 x 40	13	2400	3000	3600	4200	4800	5400	6000	7200
24 x 42	7.00	32 x 50	37 x 55	13	2800	3500	4200	4900	5600	6300	7000	8400
24 x 48	8.00	32 x 56	37 x 61	13	3200	4000	4800	5600	6400	7200	8000	9600
24 x 54	9.00	32 x 62	39 x 69	13	3600	4500	5400	6300	7200	8100	9000	10800
24 x 60	10.00	32 x 68	39 x 75	13	4000	5000	6000	7000	8000	9000	10000	12000
24 x 66	11.00	32 x 74	39 x 81	13	4400	5500	6600	7700	8800	9900	11000	13200
24 x 72	12.00	32 x 80	39 x 87	13	4800	6000	7200	8400	9600	10800	12000	14400
24 x 84	14.00	32 x 92	40 x 100	13	5600	7000	8400	9800	11200	12600	14000	16800
24 x 96	16.00	32 x 104	41 x 113	13	6400	8000	9600	11200	12800	14400	16000	19200

Model: GE (Continued)

Dimensions (Inches)



Performance Data (CFM)

Throat Size	Throat Area	Curb Cap	Hood A x B	G	INTAKE/THROAT VELOCITY (fpm)							
					400	500	600	700	800	900	1000	1200
30 x 30	6.25	38 x 38	42 x 42	15	2500	3125	3750	4375	5000	5625	6250	7500
30 x 36	7.50	38 x 44	45 x 51	15	3000	3750	4500	5250	6000	6750	7500	9000
30 x 42	8.75	38 x 50	45 x 57	15	3500	4375	5250	6125	7000	7875	8750	10500
30 x 48	10.00	38 x 56	45 x 63	15	4000	5000	6000	7000	8000	9000	10000	12000
30 x 54	11.25	38 x 62	47 x 71	15	4500	5625	6750	7875	9000	10125	11250	13500
30 x 60	12.50	38 x 68	47 x 77	15	5000	6250	7500	8750	10000	11250	12500	15000
30 x 66	13.75	38 x 74	47 x 83	15	5500	6875	8250	9625	11000	12375	13750	16500
30 x 72	15.00	38 x 80	49 x 91	15	6000	7500	9000	10500	12000	13500	15000	18000
30 x 84	17.50	38 x 92	49 x 103	15	7000	8750	10500	12250	14000	15750	17500	21000
30 x 96	20.00	38 x 104	50 x 116	15	8000	10000	12000	14000	16000	18000	20000	24000
30 x 108	22.50	38 x 116	50 x 128	15	9000	11250	13500	15750	18000	20250	22500	27000
30 x 120	25.00	38 x 128	51 x 141	15	10000	12500	15000	17500	20000	22500	25000	30000
36 x 36	9.00	44 x 44	52 x 52	17	3600	4500	5400	6300	7200	8100	9000	10800
36 x 42	10.50	44 x 50	52 x 58	17	4200	5250	6300	7350	8400	9450	10500	12600
36 x 48	12.00	44 x 56	54 x 66	17	4800	6000	7200	8400	9600	10800	12000	14400
36 x 54	13.50	44 x 62	54 x 72	17	5400	6750	8100	9450	10800	12150	13500	16200
36 x 60	15.00	44 x 68	56 x 80	17	6000	7500	9000	10500	12000	13500	15000	18000
36 x 66	16.50	44 x 74	56 x 96	17	6600	8250	9900	11550	13200	14850	16500	19800
36 x 72	18.00	44 x 80	56 x 92	17	7200	9000	10800	12600	14400	16200	18000	21600
36 x 84	21.00	44 x 92	57 x 105	17	8400	10500	12600	14700	16800	18900	21000	25200
36 x 96	24.00	44 x 104	58 x 118	17	9600	12000	14400	16800	19200	21600	24000	28800
36 x 108	27.00	44 x 116	59 x 131	17	10800	13500	16200	18900	21600	24300	27000	32400
36 x 120	30.00	44 x 128	60 x 144	17	12000	15000	18000	21000	24000	27000	30000	36000
42 x 42	12.25	50 x 50	58 x 58	19	4900	6125	7350	8575	9800	11025	12250	14700
42 x 48	14.00	50 x 56	61 x 67	19	5600	7000	8400	9800	11200	12600	14000	16800
42 x 54	15.75	50 x 62	61 x 73	19	6300	7875	9450	11025	12600	14175	15750	18900
42 x 60	17.50	50 x 68	63 x 87	19	7000	8750	10500	12250	14000	15750	17500	21000
42 x 66	19.25	50 x 74	63 x 87	19	7700	9625	11550	13475	15400	17325	19250	23100
42 x 72	21.00	50 x 80	63 x 93	19	8400	10500	12600	14700	16800	18900	21000	25200
42 x 84	24.50	50 x 92	65 x 107	19	9800	12250	14700	17150	19600	22050	24500	29400
42 x 96	28.00	50 x 104	66 x 120	19	11200	14000	16800	19600	22400	25200	28000	33600
42 x 108	31.50	50 x 116	67 x 133	19	12600	15750	18900	22050	25200	28350	31500	37800
42 x 120	35.00	50 x 128	68 x 148	19	14000	17500	21000	24500	28000	31500	35000	42000
48 x 48	16.00	56 x 56	69 x 69	21	6400	8000	9600	11200	12800	14400	16000	19200
48 x 54	18.00	56 x 62	69 x 75	21	7200	9000	10800	12600	14400	16200	18000	21600
48 x 60	20.00	56 x 68	71 x 83	21	8000	10000	12000	14000	16000	18000	20000	24000
48 x 66	22.00	56 x 74	71 x 89	21	8800	11000	13200	15400	17600	19800	22000	26400
48 x 72	24.00	56 x 80	71 x 95	21	9600	12000	14400	16800	19200	21600	24000	28800
48 x 84	18.00	56 x 92	73 x 109	21	11200	14000	16800	19600	22400	25200	28000	33600
48 x 96	32.00	56 x 104	75 x 123	21	12800	16000	19200	22400	25600	28800	32000	38400
48 x 108	36.00	56 x 116	76 x 136	21	14400	18000	21600	25200	28800	32400	36000	43200
48 x 120	40.00	56 x 128	77 x 149	21	16000	20000	24000	28000	32000	36000	40000	48000
54 x 54	20.25	62 x 62	76 x 76	23	8100	10125	12150	14175	16200	18225	20250	24300
54 x 60	22.50	62 x 68	79 x 85	23	9000	11250	13500	15750	18000	20250	22500	27000
54 x 66	24.75	62 x 74	79 x 91	23	9900	12375	14850	17325	19800	22275	24750	29700
54 x 72	27.00	62 x 80	80 x 98	23	10800	13500	16200	18900	21600	24300	27000	32400
54 x 84	31.50	62 x 92	81 x 111	23	12600	15750	18900	22050	25200	28350	31500	37800
54 x 96	36.00	62 x 104	83 x 125	23	14400	18000	21600	25200	28800	32400	36000	43200
54 x 108	40.50	62 x 116	84 x 138	23	16200	20250	24300	28350	32400	36450	40500	48600
54 x 120	45.00	62 x 128	85 x 151	23	18000	22500	27000	31500	36000	40500	45000	54000
60 x 60	25.00	68 x 68	86 x 86	25	10000	12500	15000	17500	20000	22500	25000	30000
60 x 66	27.50	68 x 74	86 x 92	25	11000	13750	16500	19250	22000	24750	27500	33000
60 x 72	30.00	68 x 80	87 x 99	25	12000	15000	18000	21000	24000	27000	30000	36000
60 x 84	35.00	68 x 92	89 x 113	25	14000	17500	21000	24500	28000	31500	35000	42000
60 x 90	40.00	68 x 104	90 x 126	25	16000	20000	24000	28000	32000	36000	40000	48000
60 x 108	45.00	68 x 116	92 x 140	25	18000	22500	27000	31500	36000	40500	45000	54000
60 x 120	50.00	68 x 128	93 x 153	25	20000	25000	30000	35000	40000	45000	50000	60000
66 x 66	30.25	74 x 74	93 x 93	26	12100	15125	18150	21175	24200	27225	30250	36300
66 x 72	33.00	74 x 80	95 x 101	26	13200	16500	19800	23100	26400	29700	33000	39600
66 x 84	38.50	74 x 92	97 x 115	26	15400	19250	23100	26950	30800	34650	38500	46200
66 x 96	44.00	74 x 104	98 x 128	26	17600	22000	26400	30800	35200	39600	44000	52800
66 x 108	49.50	74 x 116	100 x 142	26	19800	24750	29700	34650	39600	44550	49500	59400
66 x 120	55.00	74 x 128	101 x 155	26	22000	27500	33000	38500	44000	49500	55000	66000
72 x 72	36.00	80 x 80	102 x 102	28	14400	18000	21600	25200	28800	32400	36000	43200
72 x 84	42.00	80 x 92	104 x 116	28	16800	21000	25200	29400	33600	37800	42000	50400
72 x 96	48.00	80 x 104	106 x 130	28	19200	24000	28800	33600	38400	43200	48000	57600
72 x 108	54.00	80 x 116	108 x 144	28	21600	27000	32400	37800	43200	48600	54000	64800
72 x 120	60.00	80 x 128	110 x 158	28	24000	30000	36000	42000	48000	54000	60000	72000

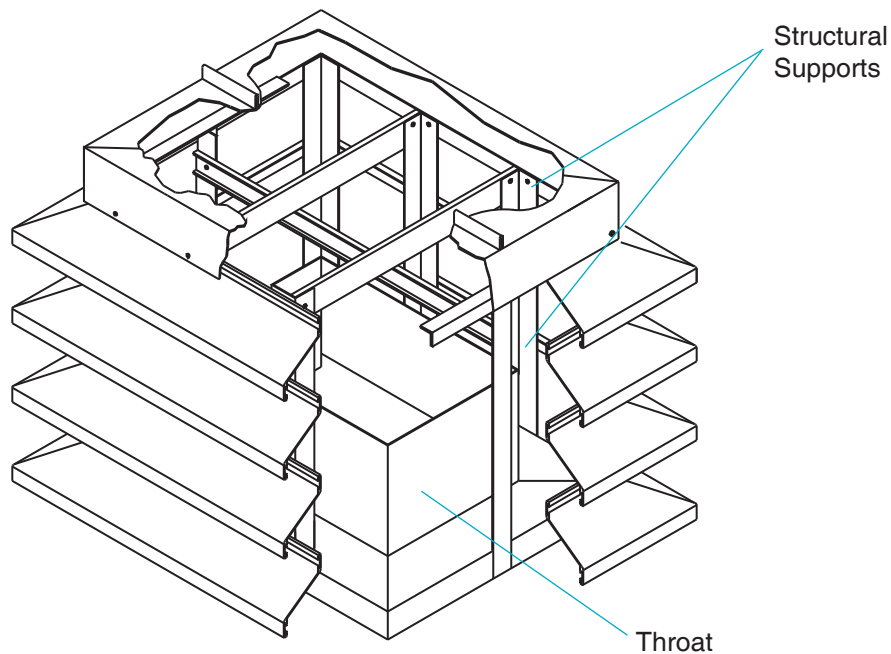
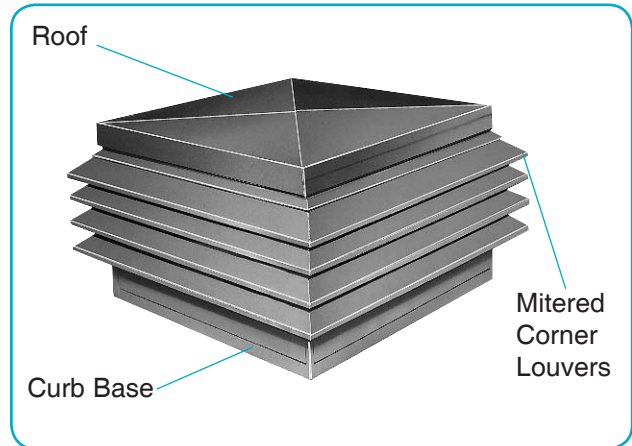
Model GLAB - Extruded Aluminum Louvered Intake or Exhaust Ventilator

The Model GLAB gravity hoods feature an extruded aluminum louvered construction with fully welded mitered corners and integral birdscreen.

These hoods are designed for either intake or exhaust and feature 1:1 intake/throat ratio. When used for intake applications, it should be sized using an approximate intake/throat velocity of 600 fpm to help prevent moisture entrainment through the louvers.

FEATURES

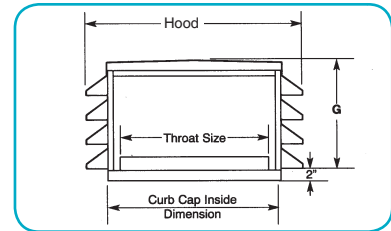
- Extruded aluminum construction.
- Fully welded mitered corners.
- Integral birdscreen.
- Integral curb base.



Model: GL

Dimensions (Inches)

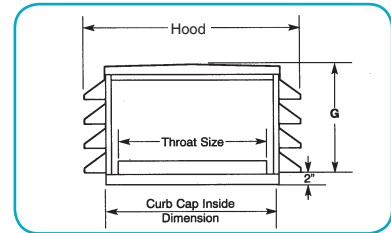
Performance Data (CFM)



Throat Size	Throat Area	Curb Cap	Hood A x B	G	INTAKE/THROAT VELOCITY (fpm)							
					400	500	600	700	800	900	1000	1200
12 x 12	1.00	20 x 20	28 x 28	9.5	400	500	600	700	800	900	1000	1200
12 x 14	1.17	20 x 22	28 x 30	9.5	467	583	700	817	933	1050	1167	1400
12 x 16	1.33	20 x 24	28 x 32	9.5	533	667	800	933	1067	1200	1333	1600
12 x 18	1.50	20 x 26	28 x 34	9.5	600	750	900	1050	1200	1350	1500	1800
12 x 20	1.67	20 x 28	28 x 36	9.5	667	833	1000	1167	1333	1500	1667	2000
12 x 22	1.83	20 x 30	28 x 38	9.5	733	917	1100	1283	1467	1650	1833	2200
12 x 24	2.00	20 x 32	28 x 40	9.5	800	1000	1200	1400	1600	1800	2000	2400
12 x 30	2.50	20 x 38	28 x 46	9.5	1000	1250	1500	1750	2000	2250	2500	3000
12 x 36	3.00	20 x 44	28 x 52	9.5	1200	1500	1800	2100	2400	2700	3000	3600
12 x 42	3.50	20 x 50	28 x 58	9.5	1400	1750	2100	2450	2800	3150	3500	4200
12 x 48	4.00	20 x 56	28 x 64	9.5	1600	2000	2400	2800	3200	3600	4000	4800
12 x 54	4.50	20 x 62	28 x 70	9.5	1800	2250	2700	3150	3600	4050	4500	5400
14 x 14	1.36	22 x 22	30 x 30	9.5	544	681	817	953	1089	1225	1361	1633
14 x 16	1.56	22 x 24	30 x 32	9.5	622	778	933	1089	1244	1400	1556	1867
14 x 18	1.75	22 x 26	30 x 34	9.5	700	875	1050	1225	1400	1575	1750	2100
14 x 20	1.94	22 x 28	30 x 36	9.5	778	972	1167	1361	1556	1750	1944	2333
14 x 22	2.14	22 x 30	30 x 38	9.5	856	1069	1283	1497	1711	1925	2139	2567
14 x 24	2.33	22 x 32	30 x 40	9.5	933	1167	1400	1633	1867	2100	2333	2800
14 x 30	2.92	22 x 38	30 x 46	9.5	1167	1458	1750	2042	2333	2625	2917	3500
14 x 36	3.50	22 x 44	30 x 52	9.5	1400	1750	2100	2450	2800	3150	3500	4200
14 x 42	4.08	22 x 50	30 x 58	9.5	1633	2042	2450	2858	3267	3675	4083	4900
14 x 48	4.67	22 x 56	30 x 64	9.5	1867	2333	2800	3267	3733	4200	4667	5600
14 x 54	5.25	22 x 62	30 x 70	14	2100	2625	3150	3675	4200	4725	5250	6300
14 x 60	5.83	22 x 68	30 x 76	14	2333	2917	3500	4083	4667	5250	5833	7000
16 x 16	1.78	24 x 24	32 x 32	9.5	711	889	1067	1244	1422	1600	1778	2133
16 x 18	2.00	24 x 26	32 x 34	9.5	800	1000	1200	1400	1600	1800	2000	2400
16 x 20	2.22	24 x 28	32 x 36	9.5	889	1111	1333	1556	1778	2000	2222	2667
16 x 22	2.44	24 x 30	32 x 38	9.5	978	1222	1467	1711	1956	2200	2444	2933
16 x 24	2.67	24 x 32	32 x 40	9.5	1067	1333	1600	1867	2133	2400	2667	3200
16 x 30	3.33	24 x 38	32 x 46	9.5	1333	1667	2000	2333	2667	3000	3333	4000
16 x 36	4.00	24 x 44	32 x 52	14	1600	2000	2400	2800	3200	3600	4000	4800
16 x 42	4.67	24 x 50	32 x 58	14	1867	2333	2800	3267	3733	4200	4667	5600
16 x 48	5.33	24 x 56	32 x 64	14	2133	2667	3200	3733	4267	4800	5333	6400
16 x 54	6.00	24 x 62	32 x 70	14	2400	3000	3600	4200	4800	5400	6000	7200
16 x 60	6.67	24 x 68	32 x 76	14	2667	3333	4000	4667	5333	6000	6667	8000
16 x 72	8.00	24 x 80	32 x 88	14	3200	4000	4800	5600	6400	7200	8000	9600
18 x 18	2.25	26 x 26	34 x 34	9.5	900	1125	1350	1575	1800	2025	2250	2700
18 x 20	2.50	26 x 28	34 x 36	9.5	1000	1250	1500	1750	2000	2250	2500	3000
18 x 22	2.75	26 x 30	34 x 38	9.5	1100	1375	1650	1925	2200	2475	2750	3300
18 x 24	3.00	26 x 32	34 x 40	9.5	1200	1500	1800	2100	2400	2700	3000	3600
18 x 30	3.75	26 x 38	34 x 46	14	1500	1875	2250	2625	3000	3375	3750	4500
18 x 36	4.50	26 x 44	34 x 52	14	1800	2250	2700	3150	3600	4050	4500	5400
18 x 42	5.25	26 x 50	34 x 58	14	2100	2625	3150	3675	4200	4725	5250	6300
18 x 48	6.00	26 x 56	34 x 64	14	2400	3000	3600	4200	4800	5400	6000	7200
18 x 54	6.75	26 x 62	34 x 72	14	2700	3375	4050	4725	5400	6075	6750	8100
18 x 60	7.50	26 x 68	34 x 76	14	3000	3750	4500	5250	6000	6750	7500	9000
18 x 72	9.00	26 x 80	34 x 88	14	3600	4500	5400	6300	7200	8100	9000	10800
20 x 20	2.78	28 x 28	36 x 36	9.5	1111	1389	1667	1944	2222	2500	2778	3333
20 x 22	3.06	28 x 30	36 x 38	9.5	1222	1528	1833	2139	2444	2750	3056	3667
20 x 24	3.33	28 x 32	36 x 40	9.5	1333	1667	2000	2333	2667	3000	3333	4000
20 x 30	4.17	28 x 38	36 x 46	14	1667	2083	2500	2917	3333	3750	4167	5000
20 x 36	5.00	28 x 44	36 x 52	14	2000	2500	3000	3500	4000	4500	5000	6000
20 x 42	5.83	28 x 50	36 x 58	14	2333	2917	3500	4083	4667	5250	5833	7000
20 x 48	6.67	28 x 56	36 x 64	14	2667	3333	4000	4667	5333	6000	6667	8000
20 x 54	7.50	28 x 62	36 x 70	14	3000	3750	4500	5250	6000	6750	7500	9000
20 x 60	8.33	28 x 68	36 x 76	14	3333	4167	5000	5833	6667	7500	8333	10000
20 x 72	10.00	28 x 80	36 x 88	14	4000	5000	6000	7000	8000	9000	10000	12000
20 x 78	10.83	28 x 86	36 x 94	14	4333	5417	6500	7583	8667	9750	10833	13000

Model: GL (Continued)

Dimensions (Inches)



Performance Data (CFM)

Throat Size	Throat Area	Curb Cap	Hood A x B	G	INTAKE/THROAT VELOCITY (fpm)							
					400	500	600	700	800	900	1000	1200
24 x 24	4.00	32 x 32	40 x 40	14	1600	2000	2400	2800	3200	3600	4000	4800
24 x 30	5.00	32 x 38	40 x 46	14	2000	2500	3000	3500	4000	4500	5000	6000
24 x 36	6.00	32 x 44	40 x 52	14	2400	3000	3600	4200	4800	5400	6000	7200
24 x 42	7.00	32 x 50	40 x 58	14	2800	3500	4200	4900	5600	6300	7000	8400
24 x 48	8.00	32 x 56	40 x 64	14	3200	4000	4800	5600	6400	7200	8000	9600
24 x 54	9.00	32 x 62	40 x 70	14	3600	4500	5400	6300	7200	8100	9000	10800
24 x 60	10.00	32 x 68	40 x 76	14	4000	5000	6000	7000	8000	9000	10000	12000
24 x 66	11.00	32 x 74	40 x 82	14	4400	5500	6600	7700	8800	9900	11000	13200
24 x 72	12.00	32 x 80	40 x 88	14	4800	6000	7200	8400	9600	10800	12000	14400
24 x 78	13.00	32 x 86	40 x 94	14	5200	6500	7800	9100	10400	11700	13000	15600
24 x 84	14.00	32 x 92	40 x 100	14	5600	7000	8400	9800	11200	12600	14000	16800
30 x 30	6.25	38 x 38	46 x 46	14	2500	3125	3750	4375	5000	5625	6250	7500
30 x 36	7.50	38 x 44	46 x 52	14	3000	3750	4500	5250	6000	6750	7500	9000
30 x 42	8.75	38 x 50	46 x 58	14	3500	4375	5250	6125	7000	7875	8750	10500
30 x 48	10.00	38 x 56	46 x 64	14	4000	5000	6000	7000	8000	9000	10000	12000
30 x 54	11.25	38 x 62	46 x 70	18.5	4500	5625	6750	7875	9000	10125	11250	13500
30 x 60	12.50	38 x 68	46 x 76	18.5	5000	6250	7500	8750	10000	11250	12500	15000
30 x 66	13.75	38 x 74	46 x 82	18.5	5500	6875	8250	9625	11000	12375	13750	16500
30 x 72	15.00	38 x 80	46 x 88	18.5	6000	7500	9000	10500	12000	13500	15000	18000
30 x 78	16.25	38 x 86	46 x 94	18.5	6500	8125	9750	11375	13000	14625	16250	19500
30 x 84	17.50	38 x 92	46 x 100	18.5	7000	8750	10500	12250	14000	15750	17500	21000
36 x 36	9.00	44 x 44	52 x 52	14	3600	4500	5400	6300	7200	8100	9000	10800
36 x 42	10.50	44 x 50	52 x 58	18.5	4200	5250	6300	7350	8400	9450	10500	12600
36 x 48	12.00	44 x 56	52 x 64	18.5	4800	6000	7200	8400	9600	10800	12000	14400
36 x 54	13.50	44 x 62	52 x 70	18.5	5400	6750	8100	9450	10800	12150	13500	16200
36 x 60	15.00	44 x 68	52 x 76	18.5	6000	7500	9000	10500	12000	13500	15000	18000
36 x 66	16.50	44 x 74	52 x 82	18.5	6600	8250	9900	11550	13200	14850	16500	19800
36 x 72	18.00	44 x 80	52 x 88	18.5	7200	9000	10800	12600	14400	16200	18000	21600
36 x 78	19.50	44 x 86	52 x 94	18.5	7800	9750	11700	13850	15600	17550	19500	23400
36 x 84	21.00	44 x 92	52 x 100	18.5	8400	10500	12600	14700	16800	18900	21000	25200
42 x 42	12.25	50 x 50	58 x 58	18.5	4900	6125	7350	8575	9800	11025	12250	14700
42 x 48	14.00	50 x 56	58 x 64	18.5	5600	7000	8400	9800	11200	12600	14000	16800
42 x 54	15.75	50 x 62	58 x 70	18.5	6300	7875	9450	11025	12600	14175	15750	18900
42 x 60	17.50	50 x 68	58 x 76	18.5	7000	8750	10500	12250	14000	15750	17500	21000
42 x 66	19.25	50 x 74	58 x 82	18.5	7700	9625	11550	13475	15400	17325	19250	23100
42 x 72	21.00	50 x 80	58 x 88	18.5	8400	10500	12600	14700	16800	18900	21000	25200
42 x 78	22.75	50 x 86	58 x 94	23	9100	11375	13650	15925	18200	20475	22750	27300
42 x 84	24.50	50 x 92	58 x 100	23	9800	12250	14700	17150	19600	22050	24500	29400
48 x 48	16.00	56 x 56	64 x 64	18.5	6400	8000	9600	11200	12800	14400	16000	19200
48 x 54	18.00	56 x 62	64 x 70	18.5	7200	9000	10800	12600	14400	16200	18000	21600
48 x 60	20.00	56 x 68	64 x 76	18.5	8000	10000	12000	14000	16000	18000	20000	24000
48 x 66	22.00	56 x 74	64 x 82	23	8800	11000	13200	15400	17600	19800	22000	26400
48 x 72	24.00	56 x 80	64 x 88	23	9600	12000	14400	16800	19200	21600	24000	28800
48 x 78	26.00	56 x 86	64 x 94	23	10400	13000	15600	18200	20800	23400	26000	31200
48 x 84	28.00	56 x 92	64 x 100	23	11200	14000	16800	19600	22400	25200	28000	33600
54 x 54	20.25	62 x 62	70 x 70	23	8100	10125	12150	14175	16200	18225	20250	24300
54 x 60	22.50	62 x 68	70 x 76	23	9000	11250	13500	15750	18000	20250	22500	27000
54 x 66	24.75	62 x 74	70 x 82	23	9900	12375	14850	17325	19800	22275	24750	29700
54 x 72	27.00	62 x 80	70 x 88	23	10800	13500	16200	18900	21600	24300	27000	32400
54 x 78	29.25	62 x 86	70 x 94	23	11700	14625	17550	20475	23400	26325	29250	35100
54 x 84	31.50	62 x 92	70 x 100	23	12600	15750	18900	22050	25200	28350	31500	37800
60 x 60	25.00	68 x 68	76 x 76	23	10000	12500	15000	17500	20000	22500	25000	30000
60 x 66	27.50	68 x 74	76 x 82	23	11000	13750	16500	19250	22000	24750	27500	33000
60 x 72	30.00	68 x 80	76 x 88	23	12000	15000	18000	21000	24000	27000	30000	36000
60 x 84	35.00	68 x 92	76 x 100	27.5	14000	17500	21000	24500	28000	31500	35000	42000
66 x 66	30.25	74 x 74	82 x 82	23	12100	15125	18150	21175	24200	27225	30250	36300
66 x 72	33.00	74 x 80	82 x 88	23	13200	16500	19800	23100	26400	29700	33000	39600
66 x 78	35.75	74 x 86	82 x 94	27.5	14300	17875	21450	25025	28600	32175	35750	42900
66 x 84	38.50	74 x 92	82 x 100	27.5	15400	19250	23100	26950	30800	34650	38500	46200

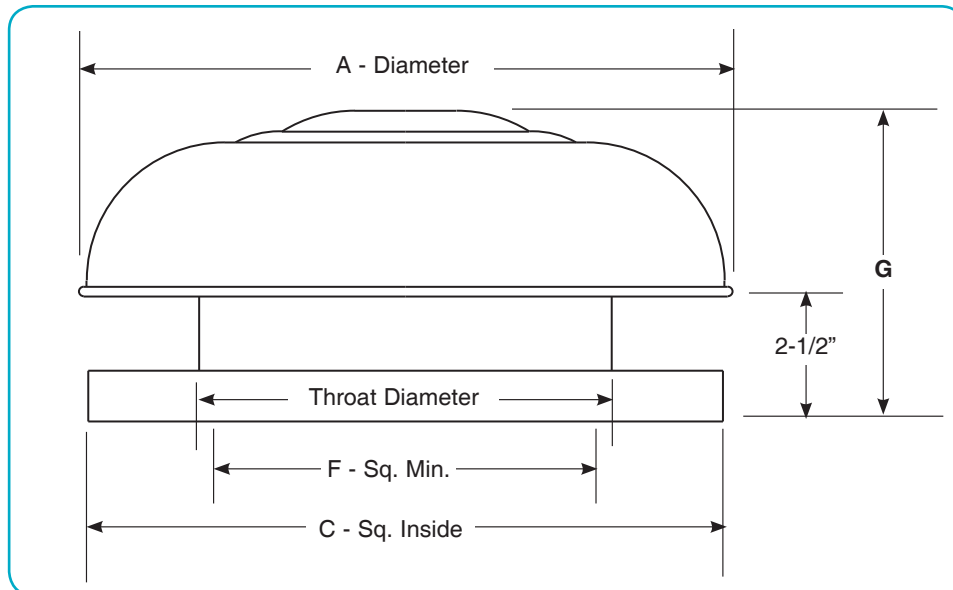
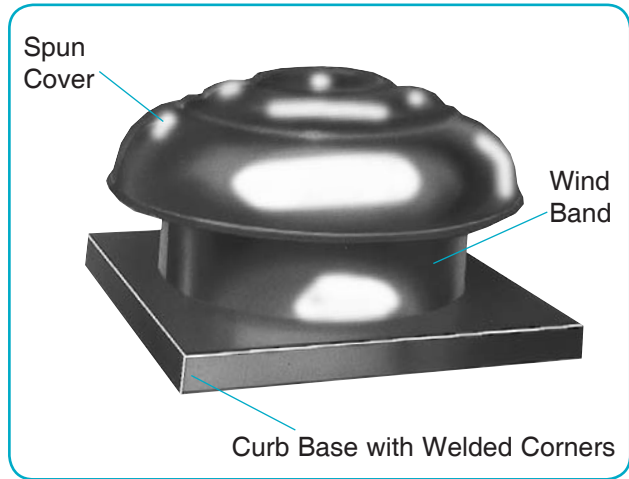
Model GS - SPUN ALUMINUM INTAKE/EXHAUST VENTILATOR

The GSAA spun aluminum gravity ventilators feature an aluminum windband, curb cap with welded corners and integral birdscreen.

These hoods are designed for either intake or exhaust and feature a 1:1 intake/throat ratio. When used for intake applications, it should be sized using an approximate intake/throat velocity of 600 fpm or less to help prevent moisture entrainment through the hood.

Features

- Spun aluminum construction.
- Integral welded curb cap.
- Integral birdscreen.



DIMENSIONS GS

Performance Data (CFM)

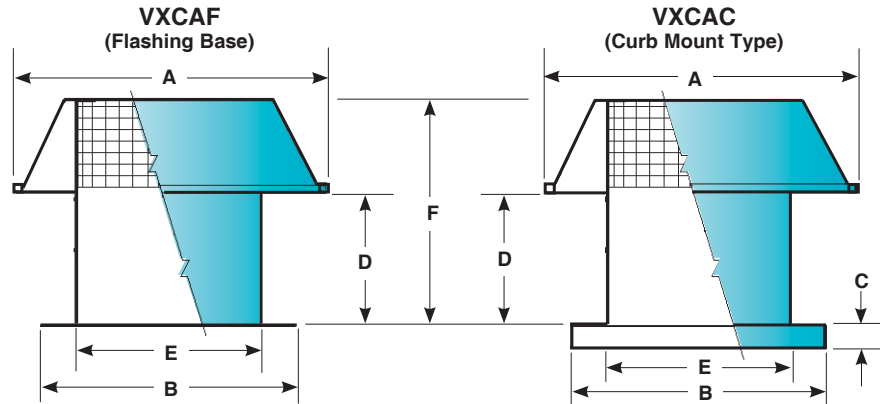
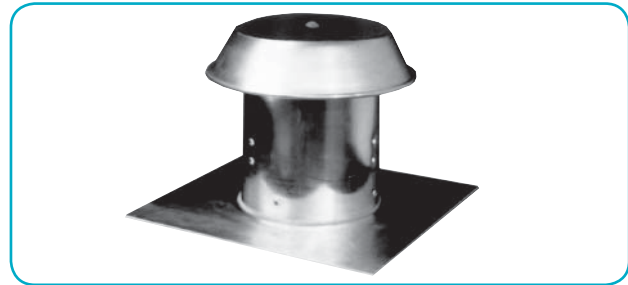
Model GSAA	Throat Dia.	Throat Area	Inlet Area	A	G	C	F	INTAKE/THROAT VELOCITY (FPM)							
								400	500	600	700	800	900	1000	1200
12	13¼	.96	1.62	21¾	8⅞	20½	16	385	480	575	670	770	870	960	1150
16	16¼	1.44	2.23	25¾	10¼	25	20	555	695	835	975	1115	1250	1390	1670
22	22	2.64	3.34	33⅞	12¼	28½	24	1055	1320	1580	1845	2110	2370	2640	3170
28	28¾	4.51	5.23	42¼	13⅝	37	32	1805	2250	2700	3155	3600	4055	4510	5410
32	32	5.58	8.19	50¼	18⅞	43	38	2230	2790	3350	3905	4465	5020	5580	6695
38	38	7.87	10.16	57½	21⅞	49	44	3150	3935	4720	5510	6295	7085	7870	9445
46	46	11.54	13.86	68¼	25½	57	52	4615	5770	6925	8080	9230	10385	11540	13850
52	52	14.75	18.86	78½	30¼	57	52	5900	7375	8850	10325	11800	13275	14750	17700
60	60	19.64	19.64	84¾	32¼	67	62	7855	9820	11785	13750	15710	17675	19640	23570

Intake selections in Bold Color will result in hood velocities in excess of 600 FPM.

Model VXCA - SPUN ALUMINUM ROOF CAP INTAKE/EXHAUST APPLICATIONS

Model VXCA spun aluminum roof caps feature all aluminum construction with an integral, stamped birdscreen and either a curb cap (VXCAC) or a self-flashing base (VXCAF).

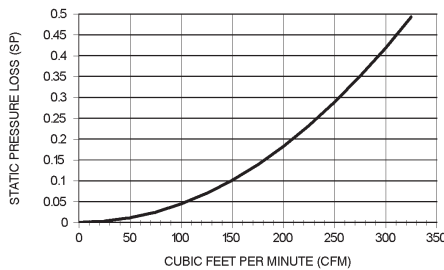
These caps are designed for either intake or exhaust applications. For intake applications, these caps should be sized using an appropriate intake velocity of 500 fpm or less to prevent moisture entrainment through the hood.



DIMENSIONS (Listed in Inches)							
Roof Cap Size	A Dia.	B Sq.	C	D	E Dia.	F	Curb Size
VXCAF 08	11	15	—	7-5/8	8-1/8	10-1/8	—
VXCAC 08	11	15-1/2	1-7/8	7-5/8	8-1/8	10-1/8	14x14
VXCAF 12	18-1/2	20	—	11-1/8	12	15-5/8	—
VXCAC 12	18-1/2	17-3/4	1-7/8	11-1/8	12	15-5/8	16x16
VXCAF 16	26	24	—	11-1/2	16	18-1/2	—
VXCAC 16	26	22	1-7/8	11-1/2	16	18-1/2	20-1/2x20-1/2
VXCAF 20	32	28	—	9-1/2	20	19-3/4	—
VXCAC 20	32	26	1-7/8	9-1/2	20	19-3/4	24-1/2x24x1/2

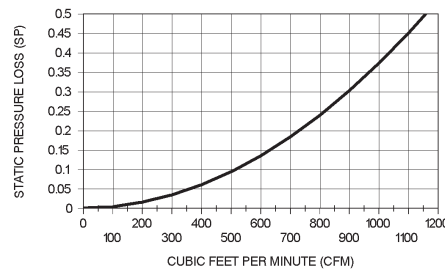
VXCAF08 & VXCAC08

AIRFLOW PERFORMANCE



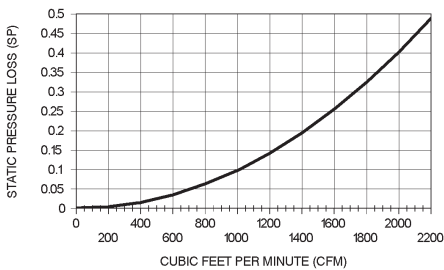
VXCAF12 & VXCAC12

AIRFLOW PERFORMANCE



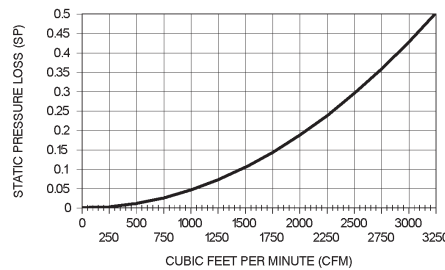
VXCAF16 & VXCAC16

AIRFLOW PERFORMANCE



VXCAF20 & VXCAC20

AIRFLOW PERFORMANCE



Air flow performance shown is static pressure drop for roof cap with inlet duct at standard air density. Test methods per ANSI/AMCA Standard 210-85 and ANSI/ASHRAE Standard 51-1985 were conducted in an AMCA Registered Laboratory.

1. Determine Required Throat Area.

$$\text{Throat Area (Sq. Ft.)} = \frac{\text{Design CFM}}{\text{Throat Velocity}}$$

To insure minimum moisture entrainment in intake applications, select inlet velocities of 500 FPM or less. Inlet velocities are shown in the performance table for each series.

2. Establish Optimum Pressure Drop.

Refer to graphs shown below to establish allowable pressure drop depending on fan requirements or pressure to be relieved and selected throat velocity. In non-ducted systems, velocity pressure should be added to establish total pressure drop.

$$P_t = P_s + P_v$$

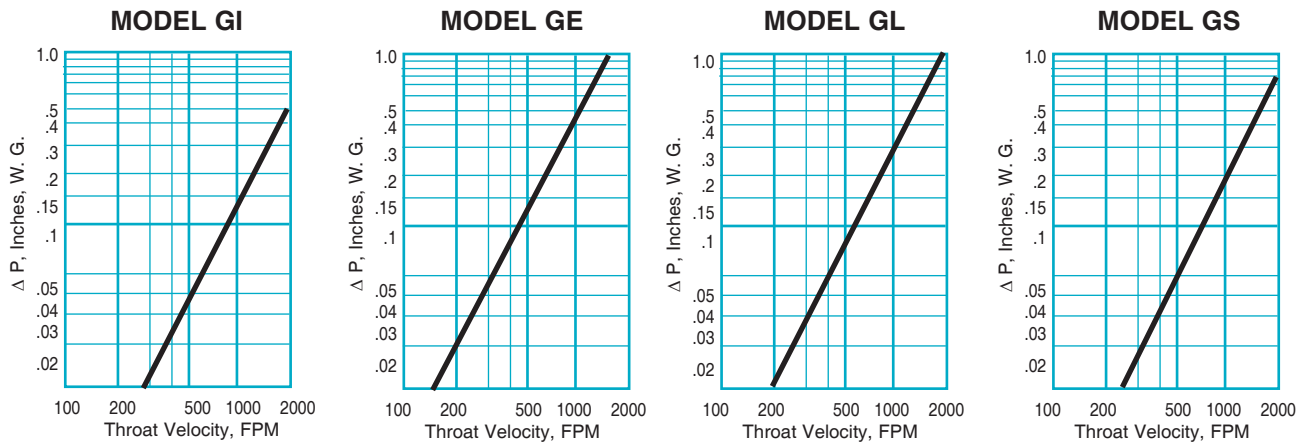
To calculate velocity pressure, use the following formula.

$$\text{Velocity Pressure} = \left[\frac{\text{Throat Velocity}}{4005} \right]^2$$

Exhaust situations operating on temperatures differential only and without building pressurization will operate at approximately .05 inches P_t .

3. Select the appropriate unit size from performance shown for each series.

Static Pressure Drop

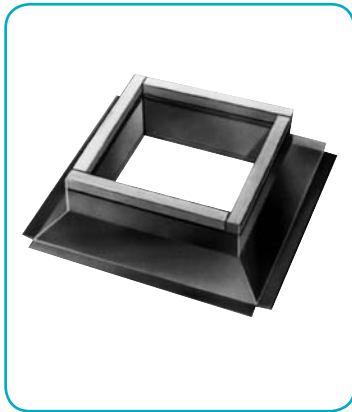


Throat Area Table

		WIDTH														
		12	14	16	18	20	22	24	30	36	42	48	54	60	66	72
LENGTH	12	1.00														
	14	1.17	1.36													
	16	1.33	1.56	1.78												
	18	1.50	1.75	2.00	2.25											
	20	1.67	1.94	2.22	2.50	2.78										
	22	1.83	2.14	2.44	2.75	3.06	3.36									
	24	2.00	2.33	2.67	3.00	3.33	3.67	4.00								
	30	2.50	2.92	3.33	3.75	4.17	4.58	5.00	6.25							
	36	3.00	3.50	4.00	4.50	5.00	5.50	6.00	7.50	9.00						
	42	3.50	4.08	4.67	5.25	5.83	6.42	7.00	8.75	10.50	12.25					
	48	4.00	4.67	5.33	6.00	6.67	7.33	8.00	10.00	12.00	14.00	16.00				
	54			6.00	6.75	7.50	8.25	9.00	11.25	13.50	15.75	18.00	20.25			
60				7.50	8.33	9.17	10.00	12.50	15.00	17.50	20.00	22.50	25.00			
66				8.25	9.17	10.08	11.00	13.75	16.50	19.25	22.00	24.75	27.50	30.25		
72					10.00	11.00	12.00	15.00	18.00	21.00	24.00	27.00	30.00	33.00	36.00	
84					11.67	12.83	14.00	17.50	21.00	24.50	28.00	31.50	35.00	38.50	42.00	
96						14.67	16.00	20.00	24.00	28.00	32.00	36.00	40.00	44.00	48.00	
108								22.50	27.00	31.50	36.00	40.50	45.00	49.50	54.00	
120								25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00	

ACCESSORIES

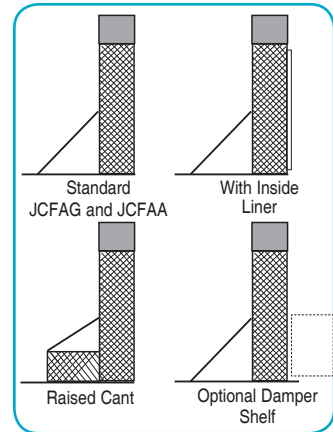
ROOF CURBS



Roof curb Models JCFAAG galvanized and JCFAA aluminum are of welded construction with 1-1/2" fiberglass insulation and wood nailer. Standard heights are 8" and 12" with custom heights available.

Pitched curbs are available with standard cant for minor slopes (to approximately 1-1/2" per ft.) or "self-flashing" wide flange without cant for steeper pitches.

Roof curb modifications include a metal liner to prevent contamination of the insulation, raised cant for use with insulated roof decks and damper shelf to support a backdraft damper inside the curb.



BACKDRAFT DAMPERS

Carnes Model JDHAA automatic gravity dampers are available to prevent backflow. Damper frames are heavy-duty box type. Blades are aluminum with felt edges and are linked together for quiet operation. A counterbalance spring is adjustable for tension to provide minimum resistance to air flow.

Motorized operation (JDHAM) may be provided by adding the motor pack available for 115 and 230 volt operation. Transformers are available for 460 and 560 volt operation.

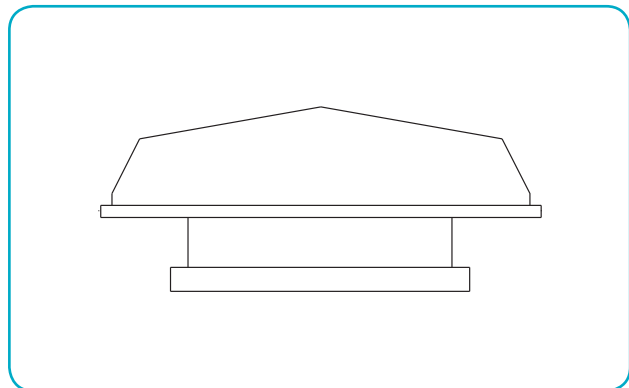


OPTIONS

Hinged covers on curb caps, insulated covers, filter racks and birdscreens.

CONSTRUCTION OPTIONS

GI & GE units are available with a pitched roof option, this option is best suited in areas where excessive snow load is a concern or it is more architecturally suitable.



▼ Roof Curbs

STANDARD CONSTRUCTION

Heavy-gauge galvanized steel, utilized full mitered corners, all seams welded, 1-1/2" thick rigid fiberglass insulation, wood nailer strip. All curbs are internally reinforced in larger size dimensions.

CURB SIZE DESIGNATION

First 3 digits "A" dimension in inches, 4th digit number of eighths in fraction (1/2" is 4 eighths). Size 24-1/2" x 36" would be:

SIZE: 0244 0360.

CURB DIMENSIONS

A = Unit Curb Cap — 1-1/2" (Curb Size O. D.)

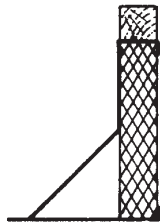
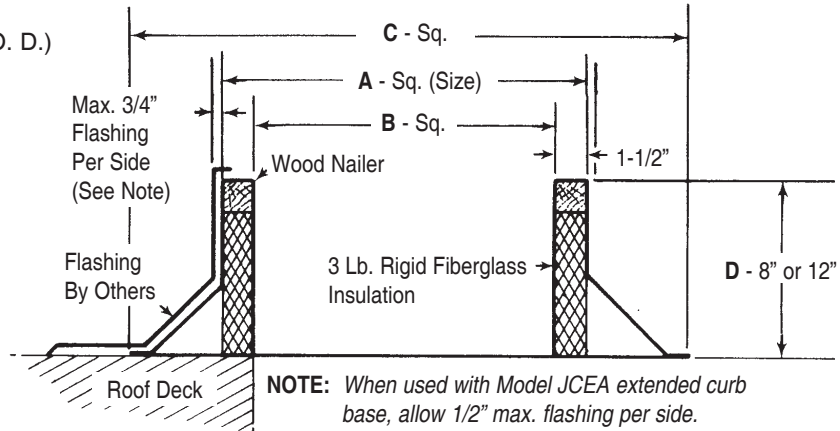
B = A - 3" (Curb I. D.)

C = A + 8" (Base O. D.)

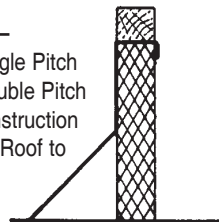
D = 8" or 12" (Curb Height) other Heights available.

Models:

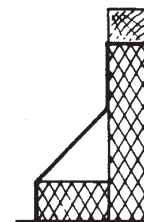
- VELK/VULK
- VEDK/VEBK
- VUDK/VUBK
- VLDK/VLBK
- VTDK/VTBK
- VRBK (Liner Needed)
- Gravity Hoods



MODELS —
JCFAG - Galvanized
JCFAA - Aluminum
 Standard Height — 8" or 12". Also available with Option L - Interior Liner.



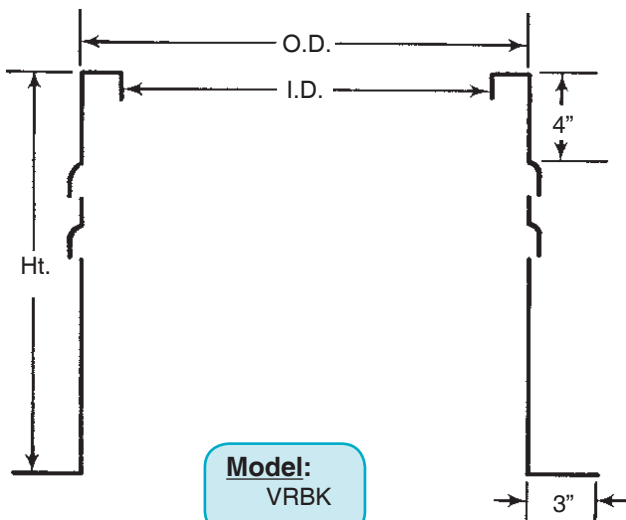
MODELS —
JCPA - Single Pitch
JCDA - Double Pitch
 Similar Construction for Pitched Roof to 9" per foot.



MODEL - JCRA
 Raised Cant
 Standard 1-1/2" Raised Cant ADDS 1-1/2" to Height

▼ Self-Flashing Roof Curbs — Model JCVB

FOR USE WITH MODEL VRBK RESTAURANT EXHAUST FAN



Model:
 VRBK

ALL DIMENSIONS LISTED IN INCHES

VRBK SIZE	CURB CAP I.D.	CURB O.D.	CURB I.D.	CURB HT.*
06	15-1/2	15	12	26
08	15-1/2	15	12	26
10	17-5/8	17	14	24
12	17-5/8	17	14	24
15	20-1/2	20	17	20
18	25	24-1/2	21-1/2	18
21	28-1/8	27-1/2	24-1/2	18
24	31-1/8	30-1/2	27-1/2	18
30	40-1/8	39-1/2	36-1/2	18
36	46-1/8	45-1/2	42-1/2	18
42	54-1/8	53-1/2	50-1/2	18
48	58-1/8	57-1/2	54-1/2	18

STANDARD CONSTRUCTION

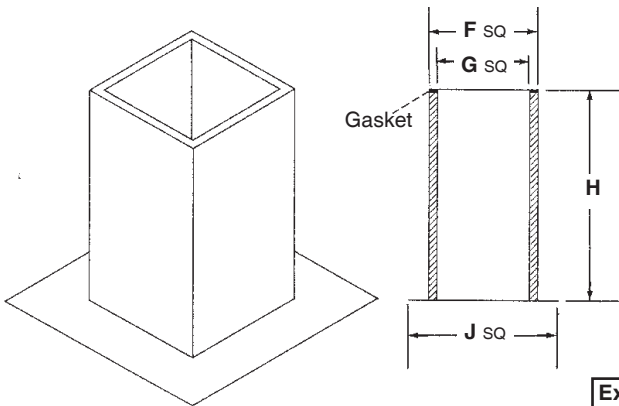
- Continuously welded 18 gauge galvanized steel.
- Neoprene gasketing (for field installation).
- 5" wide by 1" high louvered slots, 4 per side, on all sides.
- No insulation; no wood nailer.
- Aluminum construction optional.

*Curb height selected to allow 18" welded duct height and maintain 40" discharge height required per NFPA 96.

CURB SIZE DESIGNATION

First 3 digits "A" Dimension in inches, 4th digit number of eighths in fraction (1/2" is 4 eighths). Size 24-1/2" x 36" would be
 SIZE: 0244 0360.

▼ Self-Flashing Roof Curb — Model JCHAG (Galvanized), Model JCHAA (Aluminum)



CONSTRUCTION

- 18 ga. galvanized steel (*Standard*).
- 16 ga. (.050) aluminum (*Optional*).
- Continuously welded corners.
- Mitered and wedged flanges - 3-1/2" wide.
- Rubber or neoprene gasket.
- 1-1/2" 3 lb./ft.³ fiberglass insulation.

NOTE: O.D. equals fan cap minus 1/2".

DIMENSIONS LISTED IN INCHES

Exhauster Size	F Sq. Curb O.D.	G. Sq. Curb I.D.	Max. Roof Opening	J Sq. Flange O.D.	H Height
06	15	12	12	22	
08	15	12	12	22	
10	17	14	14	24	
12	17	14	14	24	
15	20	17	17	27	
18	24-1/2	21-1/2	21-1/2	31-1/2	
21	27-1/2	24-1/2	24-1/2	34-1/2	
24	30-1/2	27-1/2	27-1/2	37-1/2	
30	39-1/2	36-1/2	36-1/2	46-1/2	
36	45-1/2	42-1/2	42-1/2	52-1/2	
42	53-1/2	50-1/2	50-1/2	60-1/2	
48	57-1/2	54-1/2	54-1/2	64-1/2	
54	63-1/2	60-1/2	60-1/2	70-1/2	

Models:

- VEDK/VEBK
- VUDK/VUBK
- VRBK
- VELK/VULK
- VLDK/VLBK
- VTDK/VTBK
- VSBB/VHBB
- Gravity Hoods

▼ Curb Prefabricated Pitched — Models JCPA and JCDA

SINGLE PITCH
— JCPA

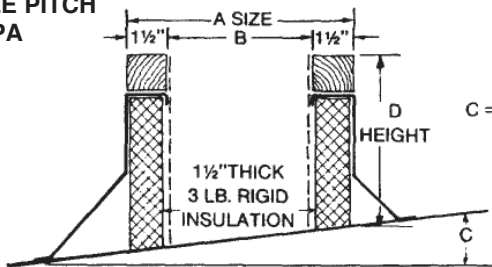


FIGURE 1. Prefabricated (Single Pitched) construction thru 9" rise per foot.

DOUBLE PITCH
— JCDA

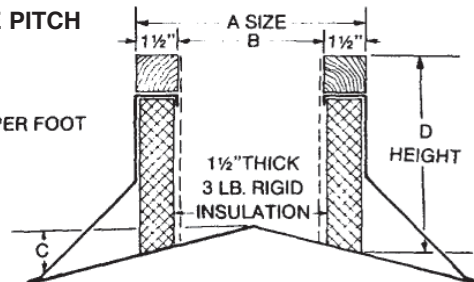


FIGURE 2. Prefabricated (Double Pitched) up thru 3" rise per foot.

STANDARD FEATURES

1. Factory installed wood nailer.
2. Welded 18 ga. galvanized steel shell and base plate.
3. 1-1/2" thick, 3 lb. rigid insulation.
4. Fully mitered 3" cant.

Models:

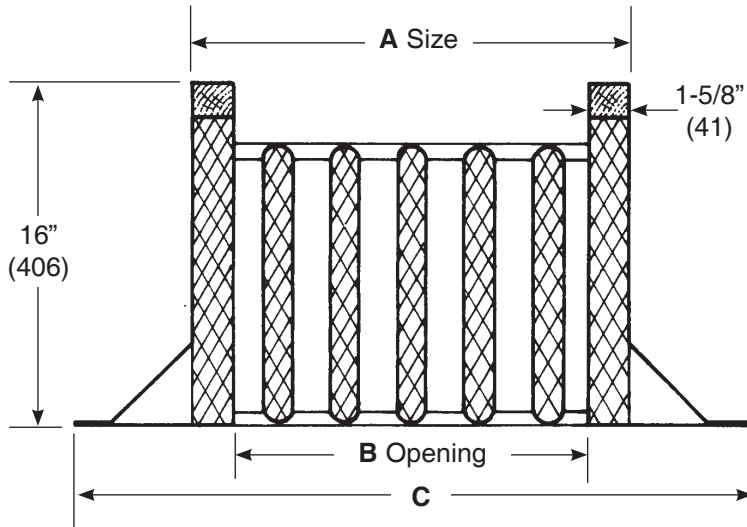
- VEDK/VEBK
- VUDK/VUBK
- VLDK/VLBK
- VTDK/VTBK
- Gravity Hoods
- VSBB/VHBB
- VRBK (*Liner Needed*)

NOTE: When used with Model JCEA extended curb, 1/2" max. flashing per side.

Used with CARNES VENTILATOR MODEL AND SIZE

VE, VU, VL, VT	GS	CURB SIZE	A	B	PITCH C	D
06-10		0140	14	11		
12		0160	16	13		
15	12	0190	19	16		
18		0230	23	20		
	16	0234	23-1/2	20-1/2		
		0244	24-1/2	21-1/2		
	22	0270	27	24		
24		0294	29-1/2	26-1/2		
	28	0354	35-1/2	32-1/2		
30		0384	38-1/2	35-1/2		
	32	0414	41-1/2	38-1/2		
36		0444	44-1/2	41-1/2		
	38	0474	47-1/2	44-1/2		
44		0524	52-1/2	49-1/2		
	46-52	0554	55-1/2	52-1/2		
54		0624	62-1/2	59-1/2		
	60	0654	65-1/2	62-1/2		

▼ Sound Curb — Model JCSA



- Models:**
 VEDK/VEBK
 VUDK/VUBK
 VLDK/VLBK
 VTDK/VTBK

APPLICATION

Select ventilator for 4% additional CFM to overcome typical performance loss over standard curb. Catalog sone ratings will be reduced approximately 40% (.6 x catalog sones = sones with JCSA Curb).

NOTES

Backdraft dampers must be mounted in duct below curb.

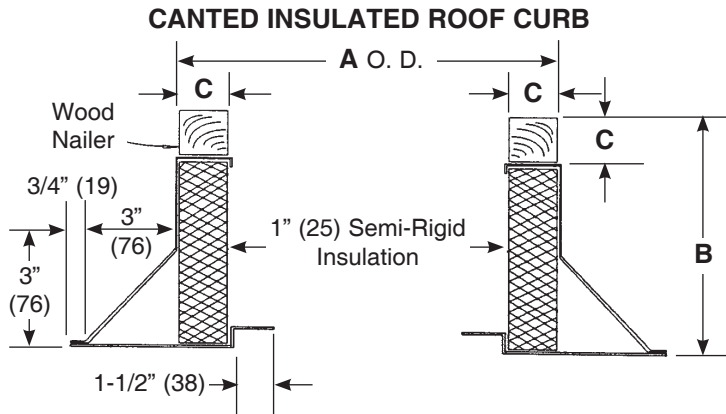
STANDARD FEATURES

- 1-1/2" (38) thick 3 lb. density rigid fiberglass insulation.
- 3" x 3" (76 x 76) cant strip.
- 18 ga. (.052) galvanized steel construction.
- 1" (25) thick 3 lb. rigid insulation baffles.
- Removable baffle assembly.
- 22 ga. galvanized baffles, 5" (127) on center.

DIMENSIONS

- "A" = Curb Cap -1/2" (38) - [Curb O.D.]
- "B" = "A" -3-1/4" (82) - [Curb I.D.]
- "C" = "A" +8" (203) - [Base O.D.]

▼ Canted Insulated Roof Curb — Model LXFAG



- Models:**
 LUDA
 LUBA
 LUKA
 LQBA
 LTBA/DA
 LGBA/DA
 LFGBA/DA

OPTIONS:

1. Insulation retainers - solid or screen type.
2. Burglar bars - 1/2" dia. on 8" centers. or 3/4" dia. on 6" centers.
3. Heights: 8, 12 or 16".
4. Single pitch, double pitch or flat style.
5. Damper tray.

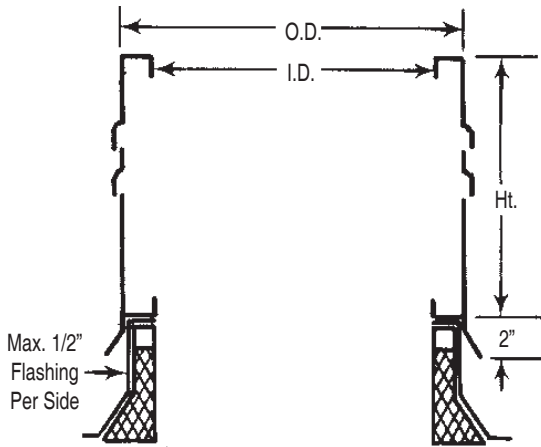
DIMENSIONS LISTED IN INCHES (Millimeters)

Fan Size	A" O. D. (Square) CURB / RF TYPE			"B" Curb Height	"C" Wood Nailer	Gauge	Weight Lbs./Kg.
	LUBA LUDA LUKA	LQBA	LGBA/DA LTBA/DA LFGBA/DA				
24	31 (787)	33-1/4 (844)	33-1/4 (844)	8 (203)	1-1/2 (38)	18	39 (18)
30	37 (939)	39-1/4 (997)	39-1/4 (997)	8 (203)	1-1/2 (38)	18	46 (21)
36	43 (1092)	45-1/4 (1149)	45-1/4 (1149)	8 (203)	1-1/2 (38)	18	54 (25)
42	49 (1244)	51-1/4 (1301)	51-1/4 (1301)	8 (203)	1-1/2 (38)	18	61 (28)
48	55 (1396)	57-1/4 (1453)	57-1/4 (1453)	8 (203)	1-1/2 (38)	18	68 (31)
54	61 (1549)	63-1/4 (1606)	63-1/4 (1606)	8 (203)	1-1/2 (38)	18	75 (34)
60	67 (1701)	69-1/4 (1758)	69-1/4 (1758)	8 (203)	1-1/2 (38)	18	82 (37)
72	81 (2056)	83-1/4 (2113)	83-1/4 (2113)	8 (203)	1-1/2 (38)	18	99 (45)

Standard construction is shown. G-90 galvanized welded steel construction.

▼ Vented Curb Extension — Model JCEB

FOR USE WITH MODEL VRBK RESTAURANT EXHAUST FAN AND STANDARD ROOF CURB



ALL DIMENSIONS LISTED IN INCHES

VRBK SIZE	CURB CAP I.D.	CURB O.D.	EXT. O.D. (SIZE)	EXT. I.D.	EXT. HT.*
06	15-1/2	14	15	12	18
08	15-1/2	14	15	12	18
10	17-5/8	16	17	14	16
12	17-5/8	16	17	14	16
15	20-1/2	19	20	17	12
18	25	23-1/2	24-1/2	21-1/2	10
21	28-1/8	26-1/2	27-1/2	24-1/2	10
24	31-1/8	29-1/2	30-1/2	27-1/2	10
30	40-1/8	38-1/2	39-1/2	36-1/2	10
36	46-1/2	44-1/2	45-1/2	42-1/2	10
42	54-1/8	52-1/2	53-1/2	50-1/2	10
48	58-1/8	56-1/2	57-1/2	54-1/2	10

Model:
VRBK

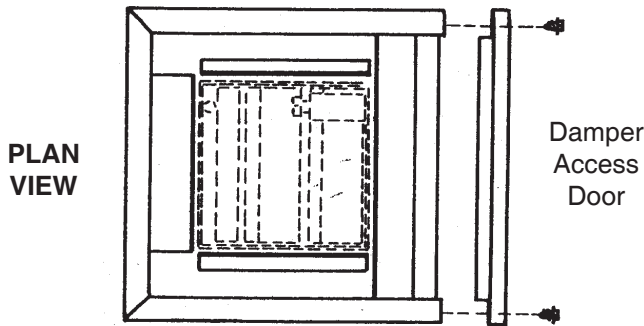
STANDARD CONSTRUCTION

- Continuously welded 18 gauge galvanized steel.
- Neoprene gasketing (for field installation).
- 5" wide by 1" high louvered slots, 4 per side, on all sides.
- No insulation; no wood nailer.
- Aluminum construction optional.

*Extension height based on use of 8" high curb. Extension height selected to allow 18" welded duct height and maintain 40" discharge height required per NFPA 96.

▼ Extended Base Curb — Model JCEA

NOTE: This Extension May Be Used With Carnes Curbs (or curbs by others)



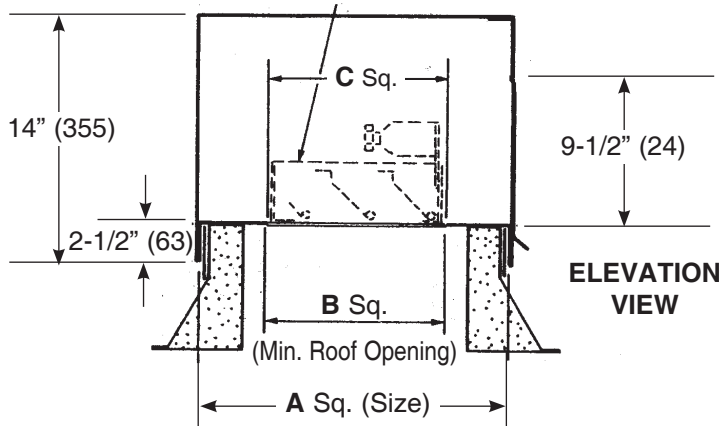
Optional JDHAA, JDHAM or JDHAC Damper

FIGURE 1: CURB — EXTENDED

- Model JCEAG—Galvanized (CXG)
- Model JCEAA—Aluminum (CXA)

Models:

- VEDK/VEBK
- VUDK/VUBK
- VTDK/VTBK
- VLDK/VLBK
- VELK/VULK
- VSBB/VHBB
- Gravity Hoods



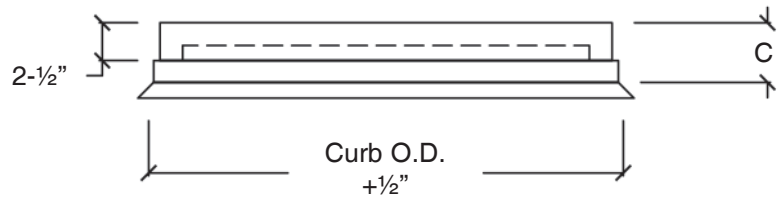
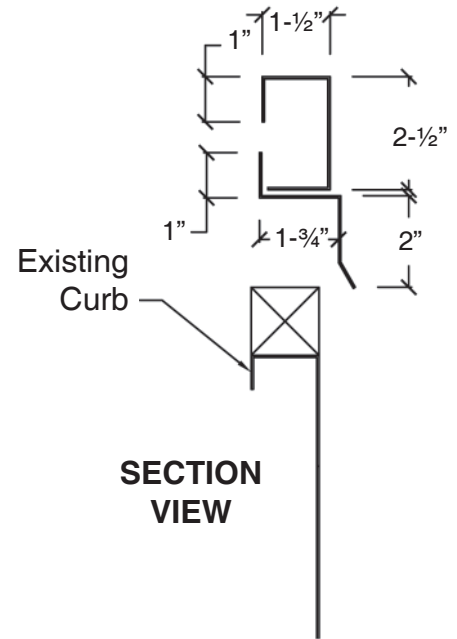
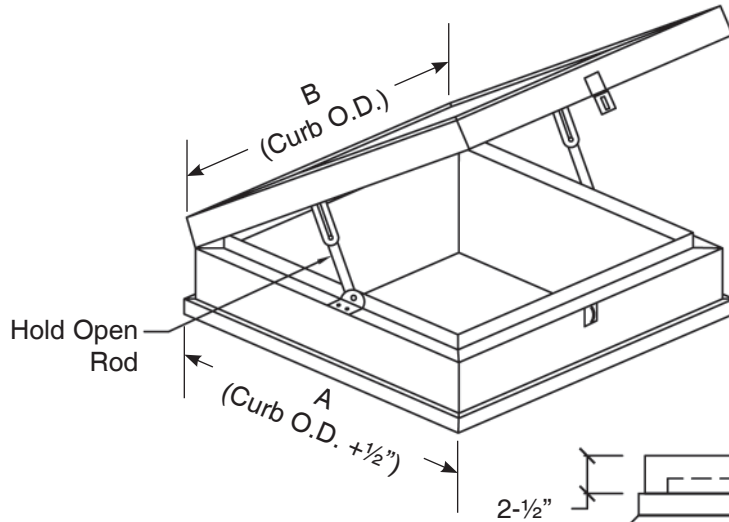
Built-Up Curb Must Be Sized To Allow For Flashing

- A = Curb O. D. plus 1-1/4" (32) [Extended Base Size]
- B = (See Unit Submittal Data)
- C = Damper Outside

▼ Hinged Curb Adapter for Vented (Model JCVB) and Self-Flashing Curbs (Model JCHA) — Model VXPB

Standard Construction:

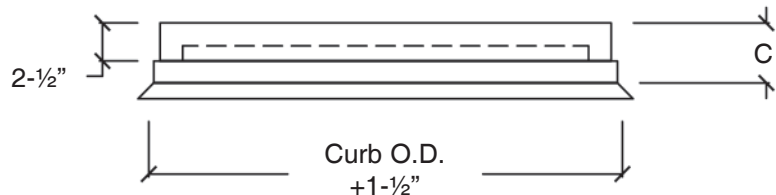
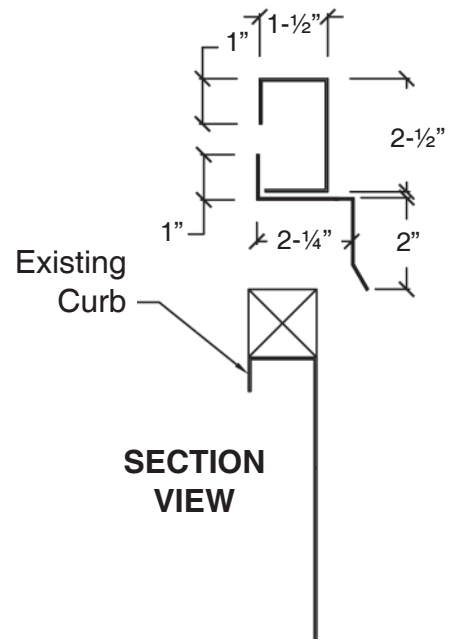
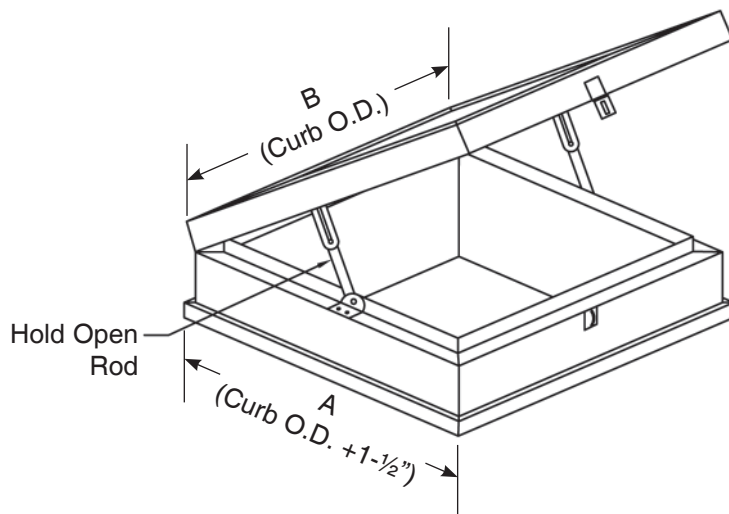
- 20" and under = 18 gauge Galvanized Steel
- 20-1/2" through 30-1/2" = 16 gauge Galvanized Steel
- Above 30-1/2" = 14 gauge Galvanized Steel



▼ Hinged Curb Adapter for Canted Curbs (Models JCEA and JCPA) — Model VXPC

Standard Construction:

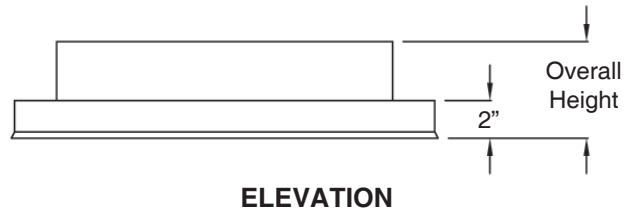
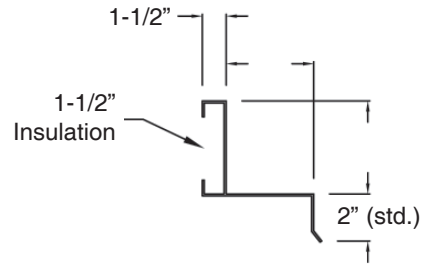
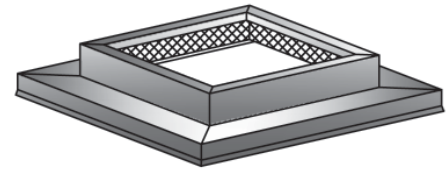
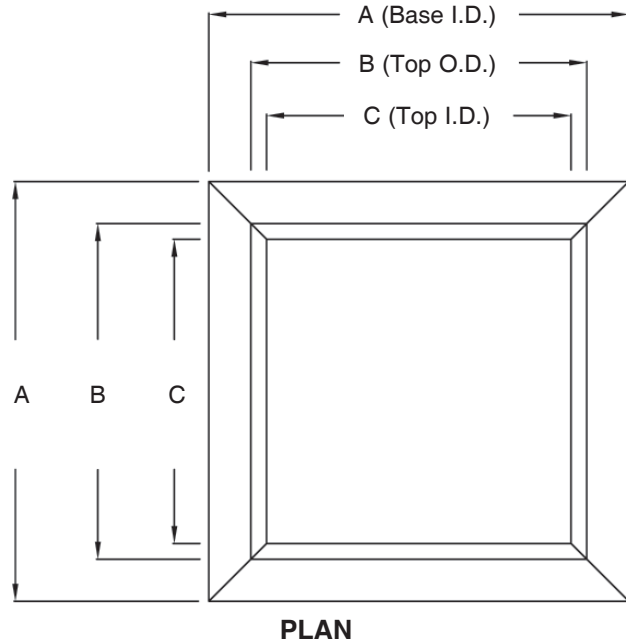
- 20" and under = 18 gauge Galvanized Steel
- 20-1/2" through 30-1/2" = 16 gauge Galvanized Steel
- Above 30-1/2" = 14 gauge Galvanized Steel



▼ Galvanized Curb Cap Adapter — Model JCAAG

Standard Construction:

Base I.D. through 43" = 18 gauge Galvanized Construction
 Base I.D. 43-1/2" through 63" = 16 gauge Galvanized Construction
 Base I.D. above 63" = 14 gauge Galvanized Construction
Features internal angle reinforcing with welded corners.



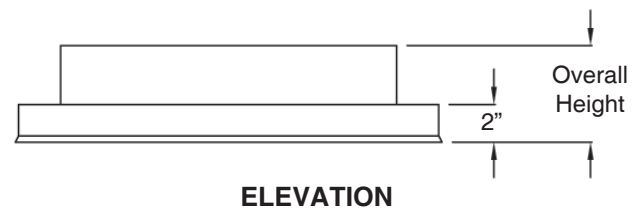
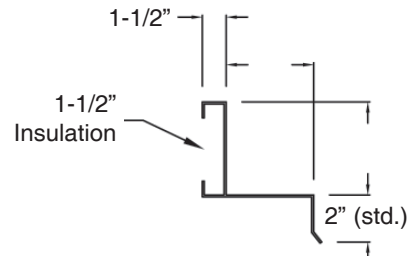
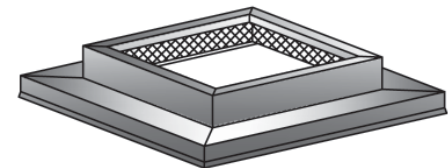
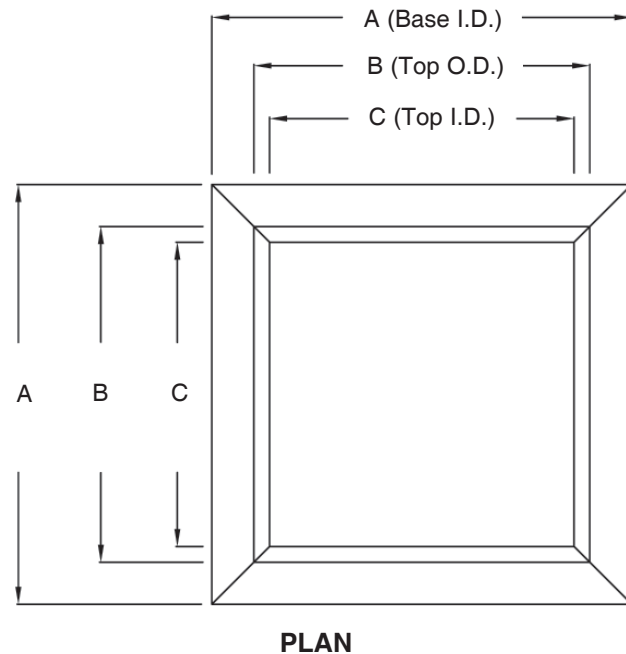
Adapter Dimensions:

A = Old Curb Cap Dimensions
 B = New Curb Cap Dimensions
 C = B - 3"

▼ Aluminum Curb Cap Adapter — Model JCAAA

Standard Construction:

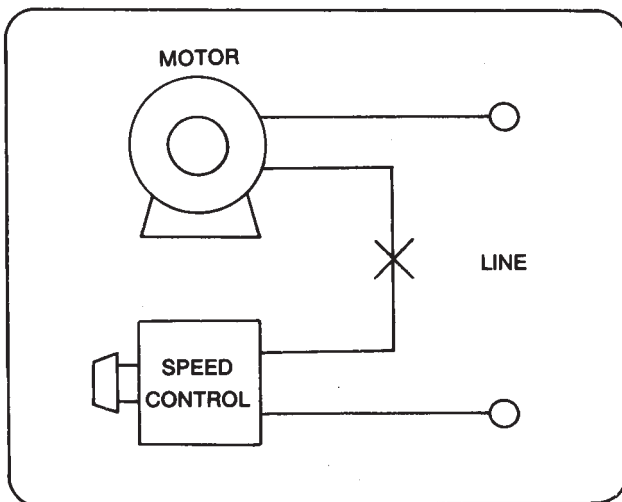
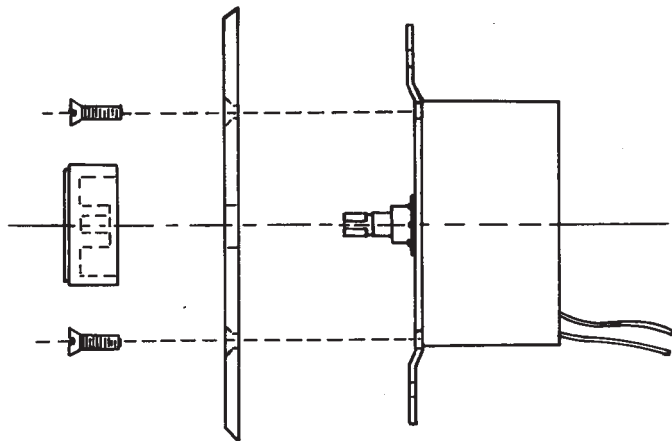
Base I.D. through 63" = .063 Aluminum Construction
 Base I.D. above 63" = .090 Aluminum Construction
Features internal angle reinforcing with welded corners.



Adapter Dimensions:

A = Old Curb Cap Dimensions
 B = New Curb Cap Dimensions
 C = B - 3"

▼ Solid State Speed Controls for Ventilators — Models JXUA, JXVA and JXWA



Models:

- VEDK
- VUDK
- VIDK
- VCDK
- VLDK/VTDK
- VWDK
- LYDK

NOTE: For use with 115/1 ODP motors only.

JXUA 120 Volt AC, 60 Cycle, 3 Amp. maximum.

JXVA 120 Volt AC, 60 Cycle, 6 Amp. maximum.

JXWA 120 Volt AC, 60 Cycle, 10 Amp. maximum.

Application: 1) Motor Type - Shaded Pole, P. S. C. and Universal.

2) Required Load - Fans, Blowers and speed dependent loads.

Wiring - Connect control in series with motor and line voltage; never connect control across line. Leads: 2

Mounting: 1) Use 2" deep standard Gem Box.

2) Secure control with outer bracket tabs.

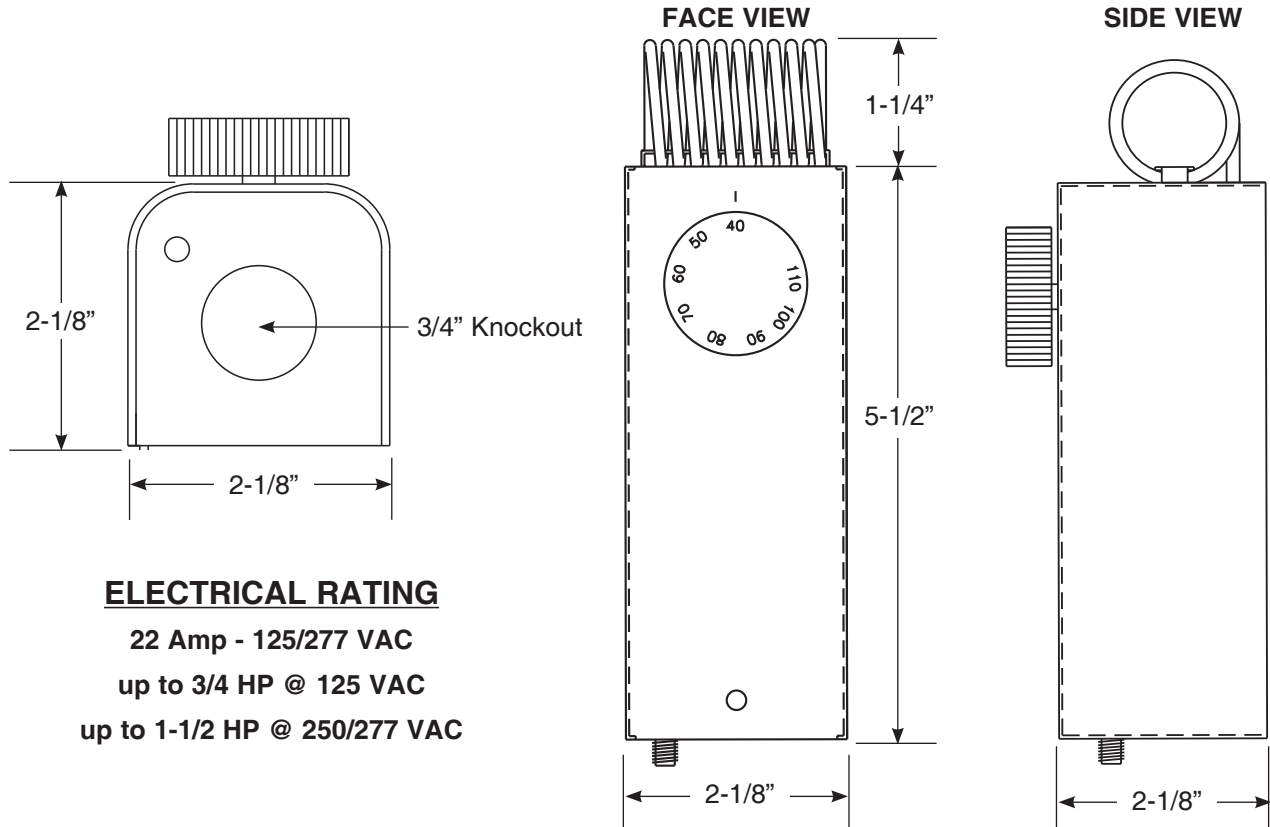
Minimum speed adjustment is factory set.

Face plate is anodized aluminum.

CAUTION: DO NOT OPERATE FAN BELOW MINIMUM CATALOG RPM!

Accessories

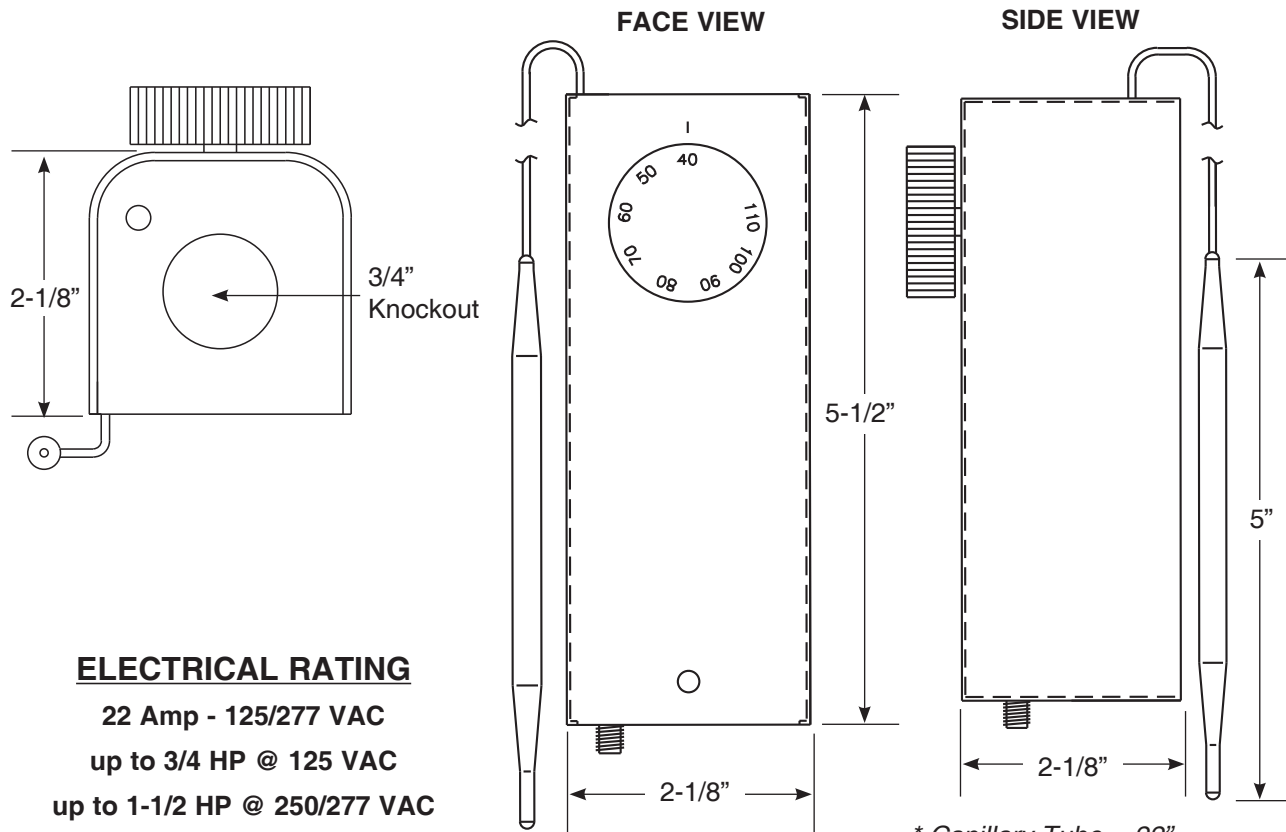
▼ 115 Volt Thermostat with Coiled Capillary Tube — Model JTCA



ELECTRICAL RATING

22 Amp - 125/277 VAC
 up to 3/4 HP @ 125 VAC
 up to 1-1/2 HP @ 250/277 VAC

▼ 115 Volt Thermostat with Capillary Tube — Model JTDA

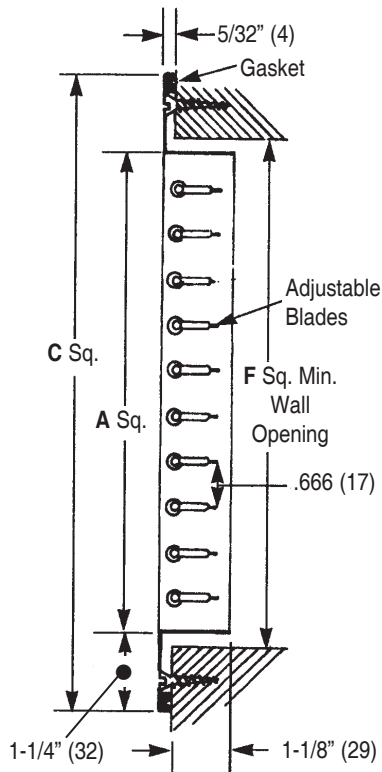


ELECTRICAL RATING

22 Amp - 125/277 VAC
 up to 3/4 HP @ 125 VAC
 up to 1-1/2 HP @ 250/277 VAC

* Capillary Tube = 22"

▼ VW Wall Grille — Model VXWAG



Models:
VWDK/VWBK

MODEL VXWAG

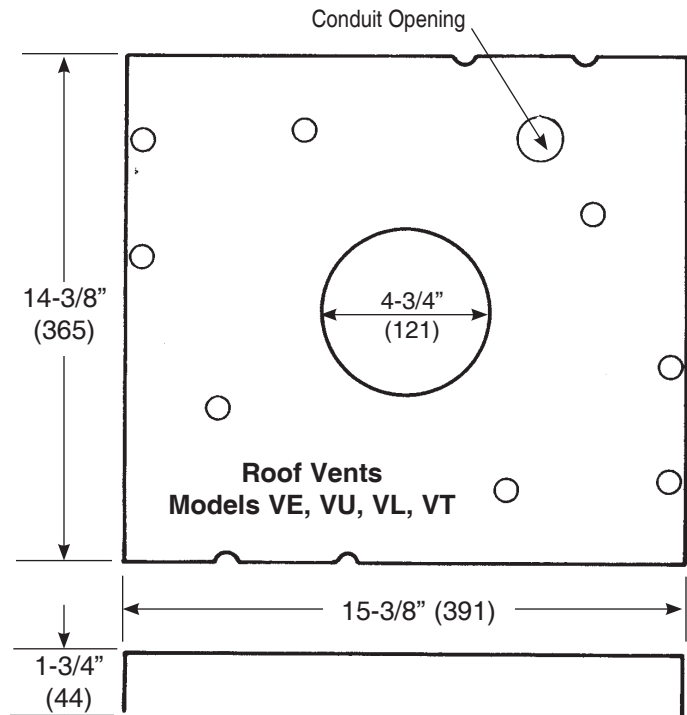
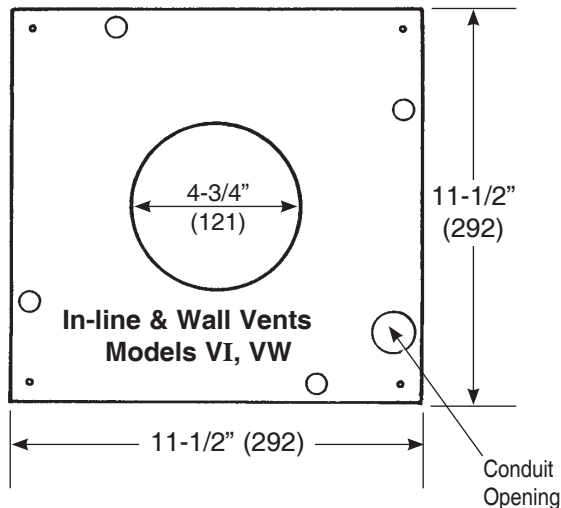
Cold Roll Steel
with Carnes Gray
Electrocoat
Paint (04)

Cold Roll Steel
with Carnes White
Electrocoat
Paint (01)

VXWAG UNIT SIZE	GRILLE SIZE	DIMENSIONS		
		A	F	C
06	12	11-1/2 (292)	12 (305)	14 (356)
08	12	11-1/2 (292)	12 (305)	14 (356)
10	14	13-1/2 (343)	14 (356)	16 (406)
12	14	13-1/2 (343)	14 (356)	16 (406)
15	17	16-1/2 (420)	17 (432)	19 (483)
18	22	21-1/2 (546)	22 (559)	24 (610)
21	25	24-1/2 (622)	25 (635)	27 (686)
24	28	30-1/2 (775)	28 (711)	30 (762)

Dimensions are listed in inches - Metric are listed in millimeters (mm).

▼ Flow Control Plate — Model VXFA
For Use With K-Series Ventilators



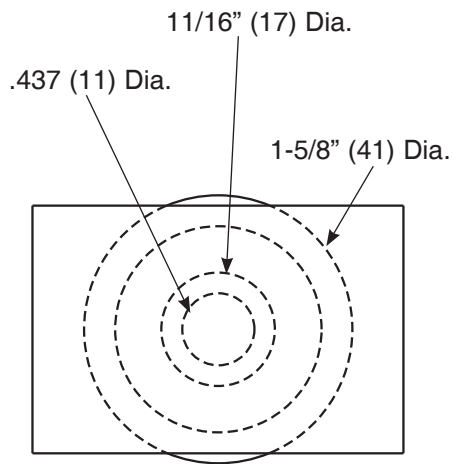
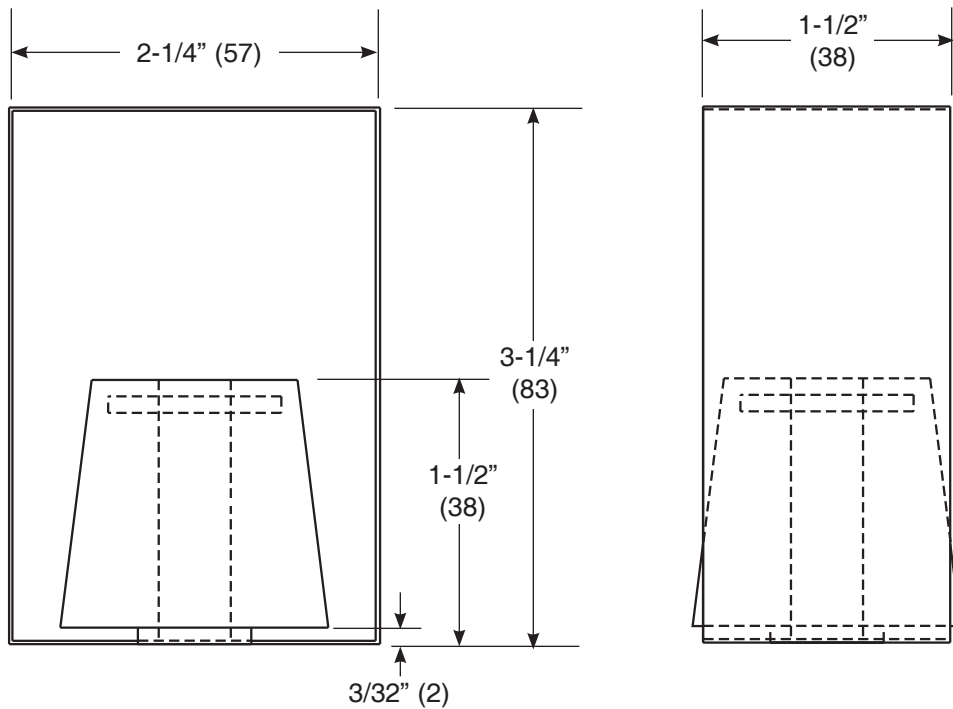
MODEL VXFAV

- Vertical mount.
- .063 aluminum.
- Mill finish.
- Mounts to inlet venturi:
Utilizes existing fasteners on in-line duct fans.
Self-tapping screws supplied for attachment to wall vents.

MODEL VXFAH

- Horizontal mount.
- .063 aluminum.
- Mill finish.
- Mounts between roof curb and ventilator. Held in position when vent is secured to roof curb.

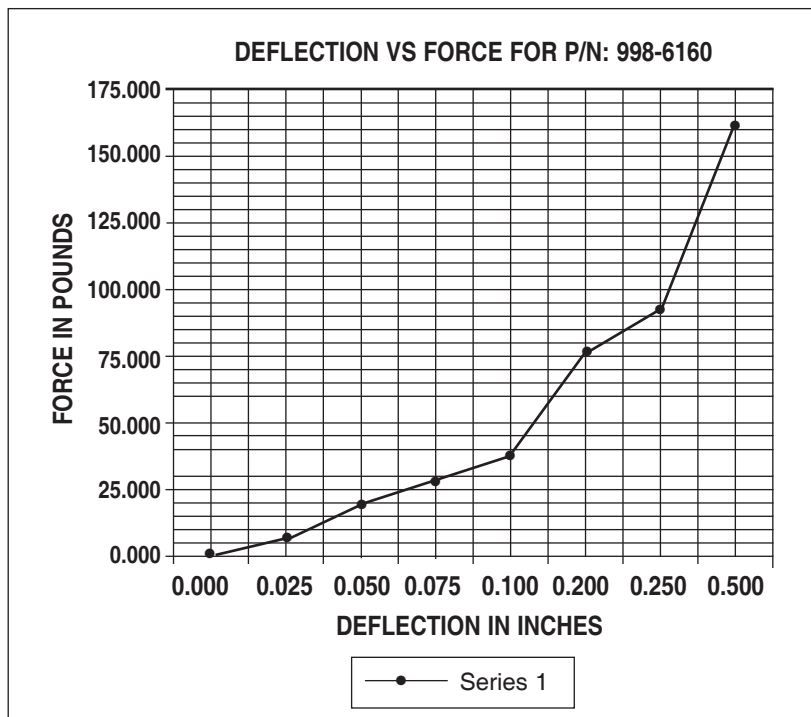
▼ Neoprene Hanging Isolator for Use With VI - Sizes 6 thru 18 and VCDD Ceiling Fans - All Sizes — Model VXIAHE



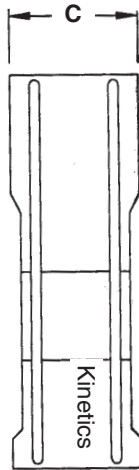
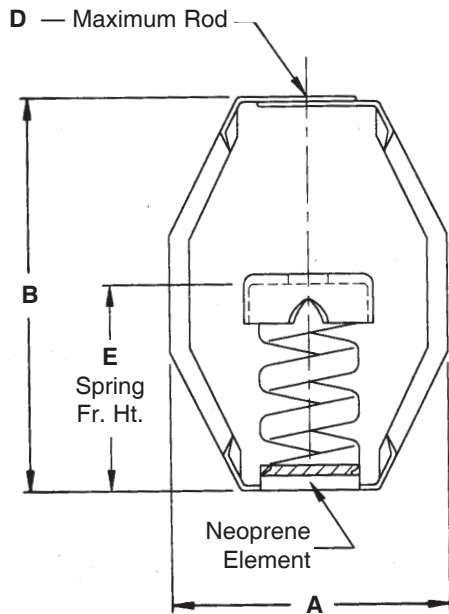
Models:
VIBK/VIDK
VCDD

Average Durometer reading = 48

Deflection in Inches	Force in Pounds
0.000	0.000
0.025	8.030
0.050	18.830
0.075	27.850
0.100	38.700
0.200	75.700
0.250	93.000
0.500	162.150



▼ Spring Hanging Isolator — Model VXIAHG - VIBK Sizes 21 thru 24
 — Model VXIAHJ - VIBK Sizes 30 thru 42



NOTES:

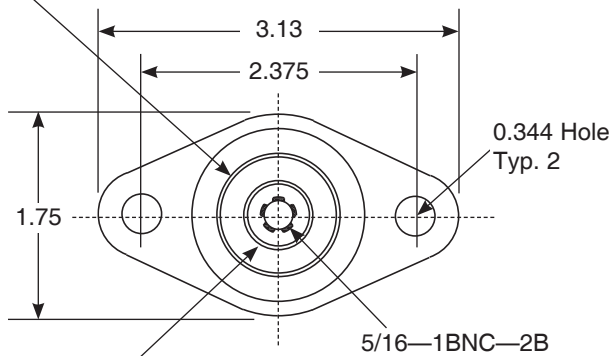
1. Isolation hangers have a minimum Kx/Ky of 1.0.
2. Spring elements are safe for solid loading.
3. Hanger brackets will carry (5) times overload without failure.
4. Hanger brackets will allow 30° rod misalignment without short circuiting.
5. Spring elements and brackets are power coated. Load plates are bright zinc plated.

Models:
VIBK Only

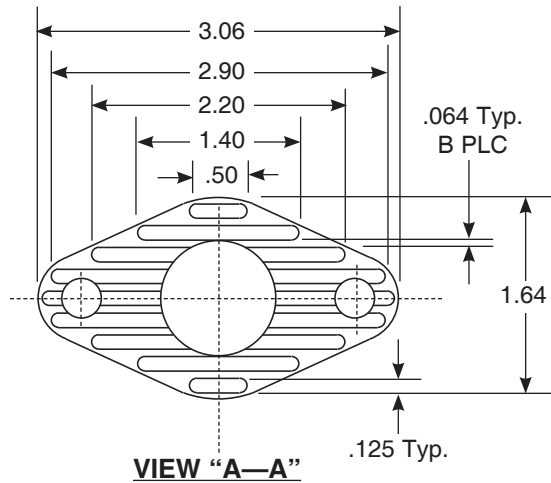
Model	Spring Color	Rated Load (Lbs.)	Rated Deflection	Dimensions Listed In Inches				
				A	B	C	D	E
VXIAHG	Gray	125	1.25	3.69	5.25	2.25	.50	3.00
VXIAHJ	Brown	245	1.19	3.69	5.25	2.25	.50	3.00

▼ Floor Mounted Vibration Isolator for VIBK/VIDK Sizes 6 thru 42 — Model VXIA

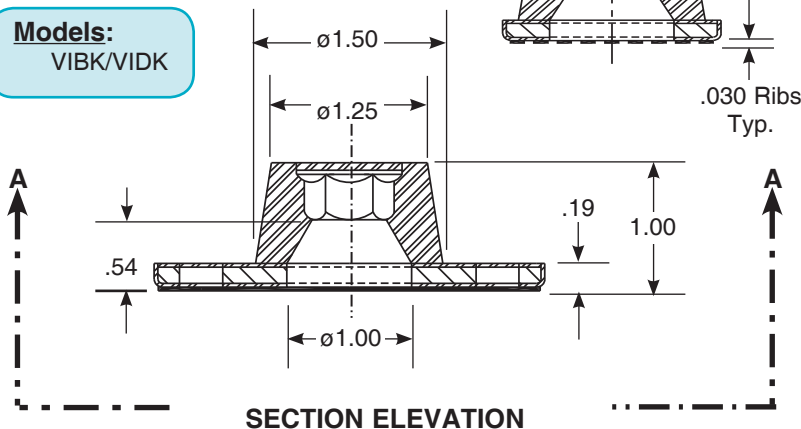
Concentric Raised Ring
1.07 O.D. x .96 I.D. x 0.3 H



Concentric Raised Ring
.60 O.D. x .49 I.D. x 0.3 H



Models:
VIBK/VIDK



Color: Black
 Durometer: 65—75
 Material: Neoprene
 Tensile Strength: 250 Lbs. (Min.)

COMPRESSION	
FORCE	MAX. DEFLECTION
90 Lbs.	.10 In.
120 Lbs.	.14 In.
150 Lbs.	.16 In.
175 Lbs.	.18 In.

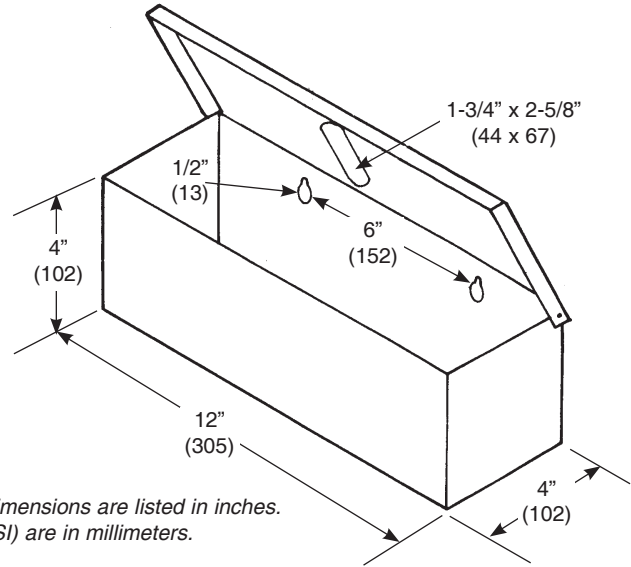
▼ Grease Trough — Model VXUAG

For Use with Model VRBK
Restaurant Exhaust Fans

STANDARD FEATURES:

- .063 (1.6) aluminum.
- Hinged cover.
- Welded, watertight corners.
- Mounts to curb cap, under drain opening.
- Ships loose.

Models:
VRBK

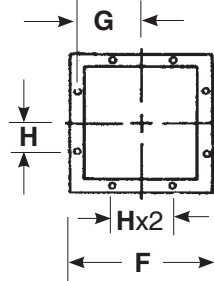


All Imperial [IP] dimensions are listed in inches.
Metric (SI) are in millimeters.

▼ Centrifugal Upblast Roof Exhausters for Commercial Kitchen Applications
— Model VRBK - Belt Drive

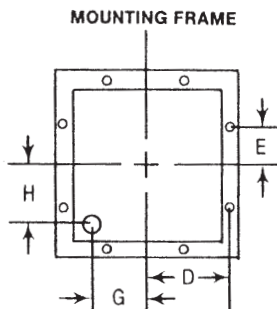
Models:
VRBK

OPTIONAL WALL MOUNTING FRAME



Optional Wall Mounting Frame				
Opening Sq.	O. D. F	Typical G	Typical H	Wall Mtg. Frame 1-1/2 x 1-1/2 [Steel Angle]
12	15-3/8	6-15/16	4-11/16	16 ga.
12	15-3/8	6-15/16	4-11/16	16 ga.
14	17-1/2	8	5-3/4	16 ga.
14	17-1/2	8	5-3/4	16 ga.
17	20-3/8	9-7/16	7-3/16	16 ga.
22	24-7/8	11-11/16	7-7/16	16 ga.
25	28	13-1/4	9	16 ga.
28	31	14-3/4	10-1/2	16 ga.

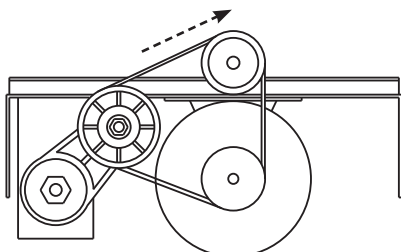
▼ Wall Frame — Models VWDK and VWBK



Unit Size	Dimensions In Inches					
	Mounting Frame 1-1/2 x 1-1/2 Angle			Wall Opening Sq. F	Conduit Location	
	O. D. Sq.	D	E		G	H
06	15-3/8	6-15/16	4-11/16	12	3-3/4	5
08	15-3/8	6-15/16	4-11/16	12	3-3/4	5
10	17-1/2	8	5-3/4	14	5-3/8	5-3/8
12	17-1/2	8	5-3/4	14	5-3/8	5-3/8
15	20-3/8	9-7/16	7-3/16	17	6-7/8	5-7/8
18	24-7/8	11-11/16	7-7/16	22	9-5/16	7-11/16

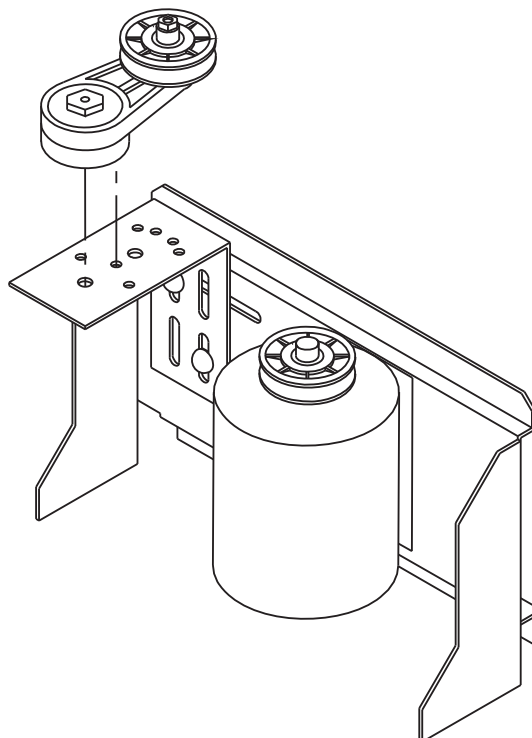
▼ Automatic Belt Tensioner for Single V-Belt Units Only — Models VEBK, VUBK, VWBK and VRBK

Sizes 6 to 18



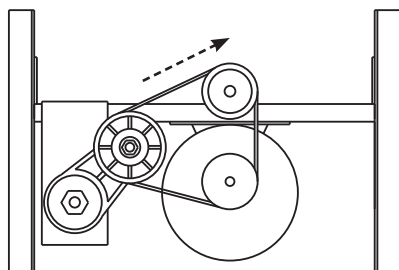
Unit Size	*Selected HP Range
6	1/6 - 1/2
8	1/6 - 1/2
10	1/6 - 3/4
12	1/6 - 3/4
15	1/6 - 2
18	1/6 - 3

*Automatic Belt Tensioner **Not Available** on Larger HP.



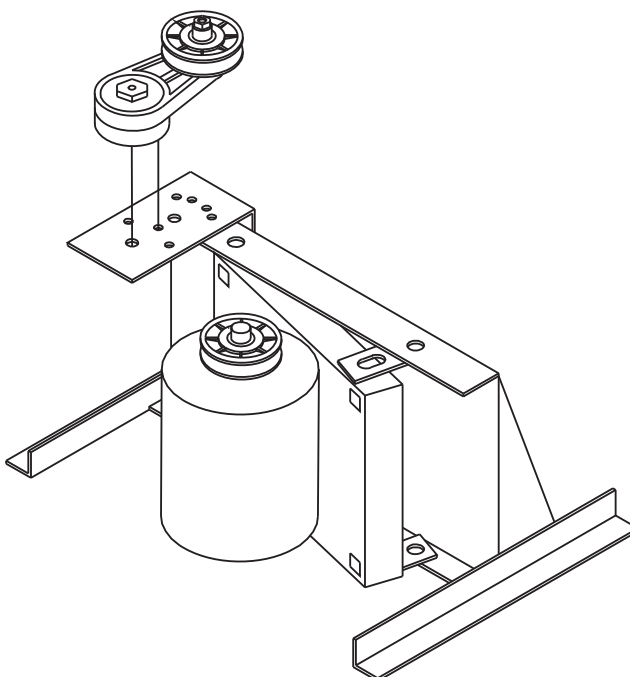
▼ Automatic Belt Tensioner for Single V-Belt Units Only — Models VEBK, VUBK, VWBK and VRBK

Sizes 21 & 24



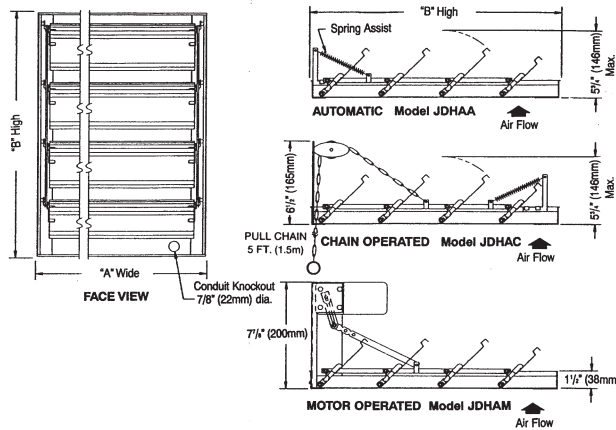
Unit Size	*Selected HP Range
21	1/4 - 3
24	1/3 - 3

*Automatic Belt Tensioner **Not Available** on Larger HP.



▼ Horizontal or Vertical Exhaust Damper — Model JDHAA - Automatic/Gravity
 — Model JDHAM - Motorized
 — Model JDHAC - Chain Operated

- Models:**
 VEDK/VEBK
 VUDK/VUBK
 VWDK/VWBK
 VIDK/VIBK
 VTDK/VTBK
 VLDK/VTBK
 Gravity Hoods



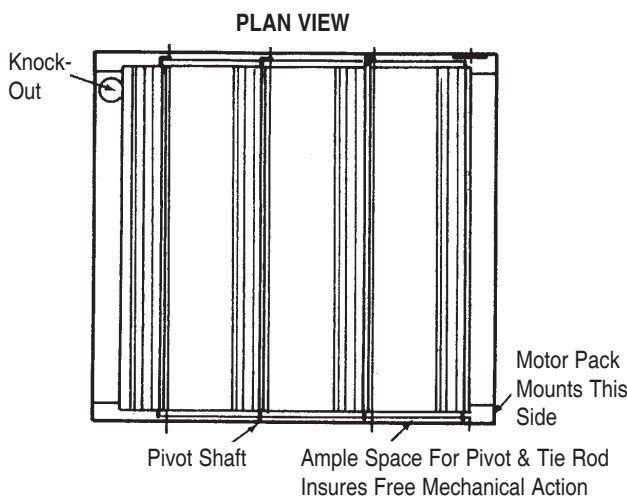
STANDARD SPECIFICATIONS

- Max. Velocity: 1500 FPM (8 M/S)
- Max. Differential Pressure: 1" W.G. (250 N/M²)
- Max. Temperature: Damper 250°F (95°C)
 Motor 130°F (55°C)
- Frame: .063" (1.6mm) 6063T6 aluminum.
- Blades: 24 ga. aluminum with double stiffening breaks.
- Bearings: Self lubricating nylon.
- Blade Pivots: 3/16" (5mm) plated steel.
- Blade Linkage: Galvanized steel. Double linkage for width exceeding 20" (508mm).
- Seals: Felt between blades and polyurethane sponge at sill.
- Maximum single piece panel size: 50" width x 72" height (1270mm x 1829mm).
- Finish: Mill aluminum.

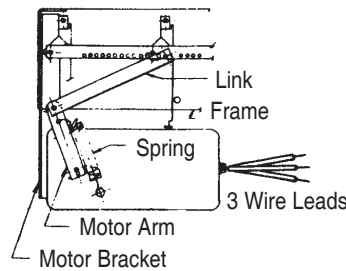
SPRING ASSIST IS FIELD INSTALLED AND IS RECOMMENDED FOR FACE VELOCITY LESS THAN 600 FPM

▼ Horizontal Intake Damper — Model JD TAA - Automatic
 — Model JD TAM - Motorized
 — Model JD TAC - Chain Operated

Model JD TAA - Automatic

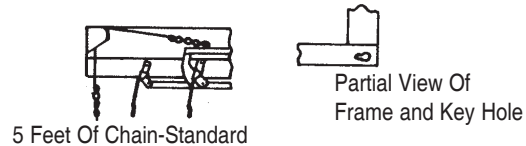


Model JD TAM - Motorized



- Continuous stall type electric motor (11 watts); single phase, 115 or 230 volts.
- Motor pack shipped separately for field mounting.
- Separate transformer supplied for 360 or 560 volt motor pack. Requires field mounting and wiring.

Model JD TAC - Chain Operated



STANDARD FEATURES:

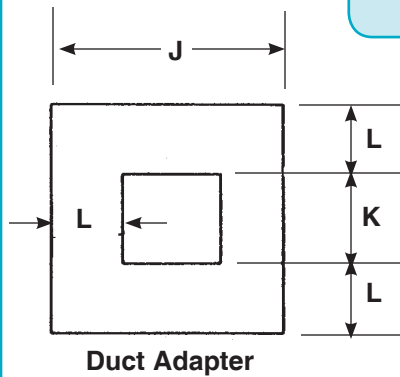
- Bronze bearings.
- Spring return.
- Aluminum blades with felt edges.
- 19 gauge CRS frame with zinc chromate prime coat.
- Dampers larger than size 500 are shipped in two or more pieces.
- Damper undersized 1/4" from nominal except when fractional dimension is specified.

- Models:**
 Gravity Hoods

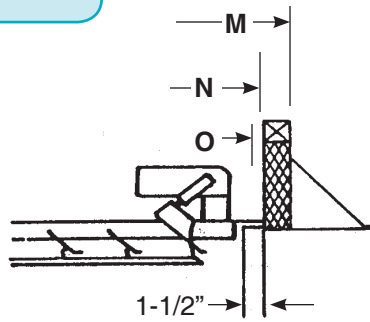
▼ **Duct Adapter — Model VXGA - Curb Mounted Damper**
 — **Model VXHA Duct Mounted Damper**

Models:

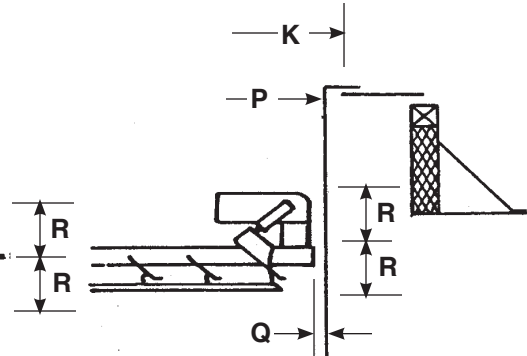
VHBB
VSBB



Duct Adapter



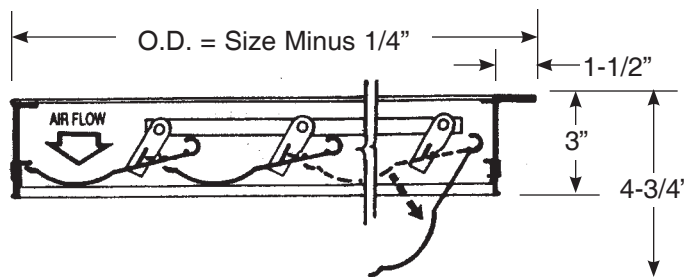
Model VXGA
Curb Mounted Damper
 [Requires 1-1/2" damper shelf]
 Shown with optional motor pack



Model VXHA
Duct Mounted Damper
 Shown with optional motor pack

DIMENSIONS LISTED IN INCHES

Unit Size	J Sq.	K Sq.	L	Roof Curb Sq.		VXGA Damper		P Duct Sq. I. D.	VXHA Damper		R Damper Clearance	1" Filters Qty. - Nom. Size
				M O.D.	N I.D.	Size	O Sq. O.D.		Size	Q Sq. O.D.		
08	18	12-1/4	2-7/8	18-1/2	15-1/2	15	14-3/4	12	12	11-3/4	7	4 - 10x16
10	26-1/2	14-1/4	6-1/8	27	24	23	22-3/4	14	14	13-3/4	7	4 - 16x25
12	26-1/2	18-1/4	4-1/8	27	24	23	22-3/4	18	18	17-3/4	7	4 - 16x25
15	30	20-1/4	4-7/8	30-1/2	27-1/2	27	26-3/4	20	20	19-3/4	7	4 - 16x25
18	34	26-1/4	3-7/8	34-1/2	31-1/2	31	30-3/4	26	26	25-3/4	7	4 - 20x25
20	48-1/2	30-1/4	9-1/8	49	46	45	44-3/4	30	30	29-3/4	7	8 - 20x20



DAMPER SPECIFICATIONS

- FRAME:** .050", 16 Ga. 6063-T5 ALUMINUM.
- BLADES:** .050", 16 Ga. 6063-T5 ALUMINUM.
- SEALS:** HEAVY-DUTY VINYL.
- MAXIMUM VELOCITY:** 2500 Ft./Min.
- MAXIMUM PRESSURE DIFFERENTIAL:** 1" W.G.
- FINISH:** MILL.
- MAXIMUM PANEL SIZE:** 36" W x 48" L.
- COUNTER BALANCED FOR INTAKE**
- HEAVY-DUTY BLADE LINKAGE**
- CONDUIT HOLE (1") FOR MOTOR PACK WIRING.**

- VXGAA** = FLANGED FRAME — GRAVITY OPERATED
- VXGAM** = FLANGED FRAME — MOTOR OPERATED
- VXHAA** = CHANNEL FRAME — GRAVITY OPERATED
- VXHAM** = CHANNEL FRAME — MOTOR OPERATED

MOTOR OPERATOR

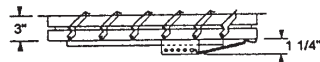
- Power Open / Spring Close [PO / SC].
- 115-230/1/60 Continuous Stall Type.
- Motor and Hardware Are Field Installed.
- Transformer [Optional] for 460 or 575 Volts.

	115 V	230 V
IDLE SPEED	1.8 RPM	1.8 RPM
IDLE AMPS	0.24	0.13
STALL AMPS	0.26	0.14

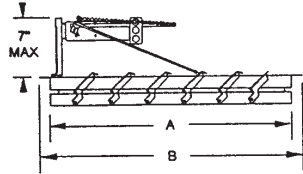
▼ Propeller Fan Accessory - Backdraft Damper

- Model LXHAA - Horizontal Roof Exhaust (Automatic)
- Model LXHAM - Horizontal Roof Exhaust (Motorized)

Models:
VHBB
VSBB

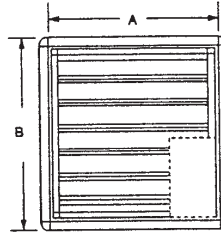


Spring Assist kit supplied with HEAVY DUTY dampers

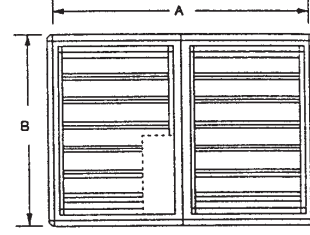


GRAVITY
↑
AIR FLOW UP

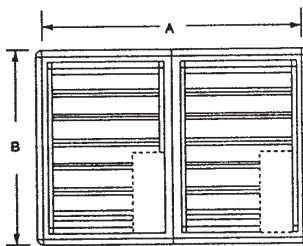
MOTORIZED



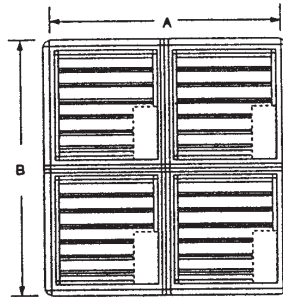
DETAIL #1



DETAIL #2



DETAIL #3



DETAIL #4

STANDARD DIMENSIONS (LISTED IN INCHES)

Fan Size	A Sq. Size	B Sq. O.D. Flange	Damper Motor		Panels (Detail)
			Type	Qty.	
24	26	28-1/2	MP2781-S	1	1
30	32	34-1/2	MP2781-S	1	1
36	38	40-1/2	MA220-S	1	1
42	44	46-1/2	MA220-S	1	2
48	50	52-1/2	MA220-S	1	2
54	56	58-1/2	MA220-S	2	3
60	62	65-1/2	MA220-S	2	3
72	76	78-1/2	MA220-S	4	4

Heavy-duty Dampers required on all units with 7-1/2 HP motors and above.

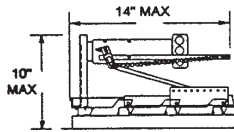
▼ LF/LG Roof Supply Propeller Fan Accessory

- Model LXTAA - Roof Supply (Automatic)
- Model LXHAM - Roof Supply (Motorized)

Models:
LFDA/LFBA
LGDA/LGBA



GRAVITY OPERATED

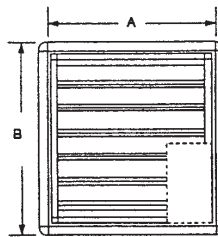


MOTOR MOUNT
MP2781

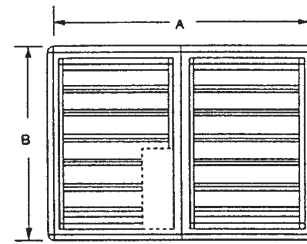


MOTOR MOUNT
MA220

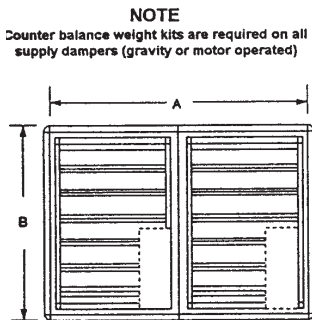
AIR FLOW
↓



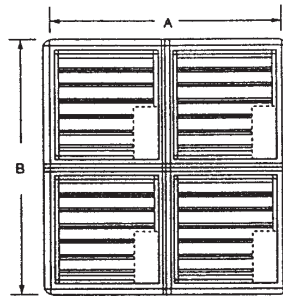
DETAIL #1



DETAIL #2



DETAIL #3



DETAIL #4

NOTE
Counter balance weight kits are required on all supply dampers (gravity or motor operated)

STANDARD DIMENSIONS (LISTED IN INCHES)

Fan Size	A Sq. Size	B Sq. O.D. Flange	Motor Type		Panels (Detail)
			Type	Qty.	
24	26	28-1/2	MP2781	1	1
30	32	34-1/2	MP2781	1	1
36	38	40-1/2	MP2781	1	1
42	44	48-1/2	MA220	1	2
48	50	52-1/2	MA220	1	2
54	56	58-1/2	MA220	1	2
60	62	65-1/2	MA220	1	2
72	76	78-1/2	MP2781	4	4

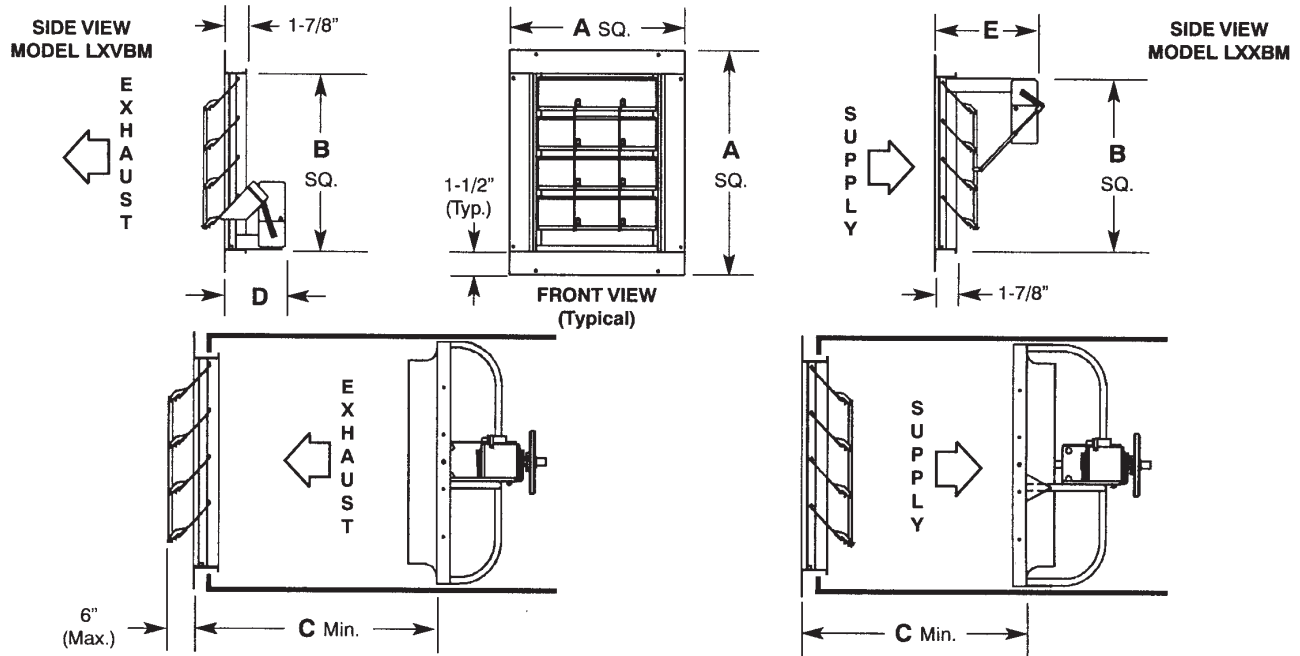
Heavy-duty Dampers required on all units with 7-1/2 HP motors and above.

▼ Propeller Fan Accessory - End Pivot Vertical Backdraft Damper

Models:

LWBK/LMBK
LRBK/LNBK

- Model LXVBA - Exhaust (Gravity)
- Model LXVBM - Exhaust (Motorized)
- Model LXXBA - Supply (Gravity)
- Model LXXBM - Supply (Motorized)



DIMENSIONS LISTED IN INCHES						
Fan Size	A Sq.	B Sq.	C ⁽¹⁾ Min.	D (Exh.)	E (Sup.)	Weight (Lbs.)
20	24	21-3/4	12-1/2	5-1/2	9-1/2	8
24	28	25-3/4	12-1/2	5-1/2	9-1/2	11
30	34	31-3/4	15-1/2	5-1/2	9-1/2	17
36	40	37-3/4	17-1/2	5-1/2	9-1/2	17
42 ⁽²⁾	46	43-3/4	19-3/4	7	10	32
48 ⁽²⁾	52	49-3/4	21-3/4	7	10	42

- (1) Minimum clearance from propeller fan to damper. Decreased clearance can damage damper or fan and will void warranty.
 (2) Two panels wide (factory joined sections) requires Carnes Motor Kit specifically designed multi-panel for multi-panel shutters.

STANDARD SPECIFICATIONS AND CONSTRUCTION

Frame: 063" 6063-T6 aluminum recesses the damper into opening.
Blades: 22 ga. (sizes 30" wide and larger) 24 ga. (sizes smaller than 30" wide).
Axles: 3/16" diameter full length plated steel rod.
Linkage: Double blade linkage with aluminum linkage bars.
Seals: Polyethylene on sill and felt seals between blades.

MOTOR CHARACTERISTICS		
	120V	240V
Idle Speed (RPM)	1.8	1.8
Idle Amps	0.244	0.137
Stall Amps	0.261	0.146

Motor kits ship loose for field installation.

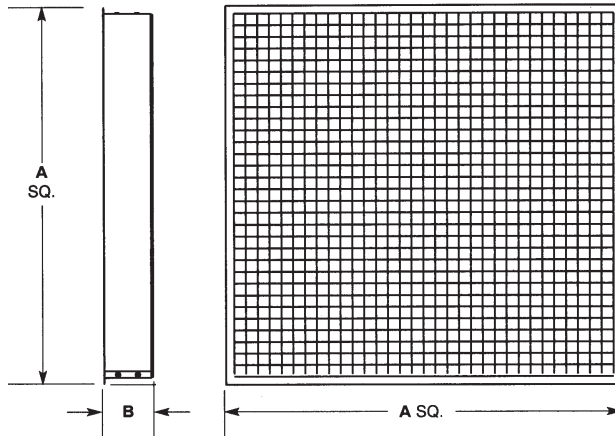
- POSC (Power Open-Spring Close)
- Standard Motor Voltage is 115-230/1/60.
- Optional 24 VAC or 575 VAC.
- Optional Transformer _____ VAC / _____ VAC.

Motor kit weight - 5lbs.

CAUTION: Motor Kits are not suitable for use in atmospheres or air flows containing explosive or flammable products.

Operator: Electric - power open spring close (POSC) ship loose for field installation. Standard voltage is 115-230/1/60 with optional 24/1/60 or 460/1/60 available.
Max. Velocity: 2500 ft./min. face velocity maximum.
Max. Pressure: 1" w.g. differential pressure maximum.
Max. Temperature: 200°F without electrical operator. 120°F with operator.

▼ Propeller Fan Accessories - Damper Guard with Birdscreen Wire Guard
— Model LXMBP



FINISHES:

Gray Electrocoat as standard.

OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant Coating (ARC, Epoxy).
- Air Dry Heresite.

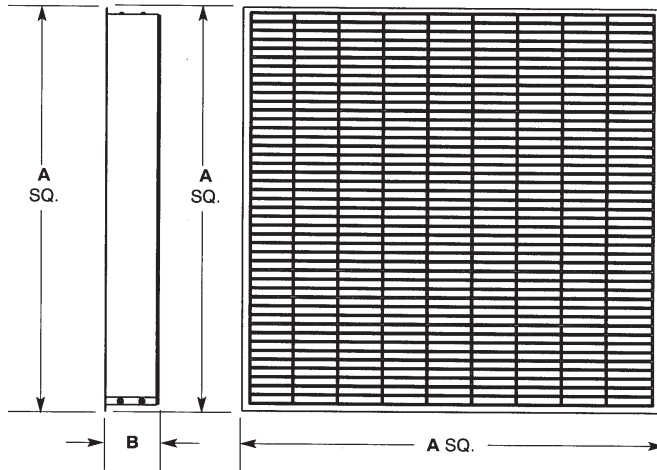
Models:

LWBK/LMBK
LRBK/LNBK

UNIT	UNIT DIMENSION							
	20	24	30	36	42	48	54	60
A Sq.	24-1/2" (623)	28-1/2" (724)	34-1/2" (877)	40-1/2" (1029)	46-1/2" (1181)	52-1/2" (1334)	58-1/2" (1486)	64-1/2" (1638)
B	7" (178)	7" (178)	7" (178)	7" (178)	7" (178)	7" (178)	7" (178)	7" (178)
Gauge	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.
Wt. Lbs. (Kg.)	16 (7.2)	18 (8.2)	22 (10)	26 (11.8)	30 (13.6)	34 (15.5)	39 (17.7)	42 (19.1)

NOTE: Damper guard may not be used with weather hood.

▼ Propeller Fan Accessories - Damper Guard with OSHA Guard
— Model LXMBN



LOUVER EXTENSION:

FINISHES:

Gray Electrocoat as standard.

OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant coating (ARC, Epoxy).
- Air Dry Heresite.

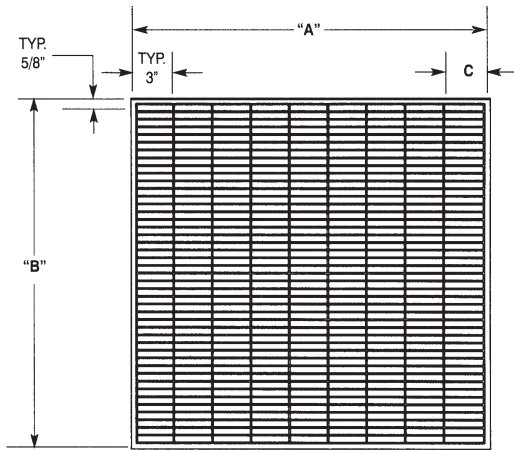
Models:

LWBK/LMBK
LRBK/LNBK

UNIT	DIMENSIONS and WEIGHT							
	20	24	30	36	42	48	54	60
A Sq.	26-1/2" (673)	28-1/2" (724)	34-1/2" (877)	40-1/2" (1029)	46-1/2" (1181)	52-1/2" (1334)	58-1/2" (1486)	64-1/2" (1638)
B	7" (178)	7" (178)	7" (178)	7" (178)	7" (178)	7" (178)	7" (178)	7" (178)
Gauge	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.
Wt. Lbs. (Kg.)	20 (9.1)	24 (10.9)	30 (13.6)	38 (17.3)	45 (20.5)	54 (24.5)	64 (29.1)	73 (33.2)

NOTE: Damper guard may not be used with weather hood.

▼ Propeller Fan Accessories - Flat OSHA Guard (Non-Hinged) — Model LXMBB



UNIT	DIMENSIONS and WEIGHT							
	20	24	30	36	42	48	54	60
A	24-1/2"	28-1/2"	34-1/2"	40-1/2"	46-1/2"	52-1/2"	58-1/2"	64-1/2"
Sq.	(623)	(724)	(877)	(1029)	(1181)	(1334)	(1486)	(1638)
B	24-3/8"	28-1/8"	34-3/8"	40"	46-1/4"	52-1/2"	58-1/8"	64-3/8"
	(619)	(715)	(873)	(1016)	(1175)	(1334)	(1476)	(1635)
C	3-1/2"	1-1/2"	1-1/2"	2-1/8"	2-1/8"	2-1/8"	2-1/8"	2-1/8"
	(89)	(38)	(38)	(54)	(54)	(54)	(54)	(54)
Gauge	.135	.135	.135	.135	.135	.135	.135	.135
Wt. Lbs.	5	7	10	13.5	18	23	28.5	35
(Kg.)	(2.3)	(3.2)	(4.5)	(6.1)	(8.2)	(10.5)	(13)	(15.9)

FLAT OSHA GUARD

FINISHES:

Gray Electrocoat as standard.

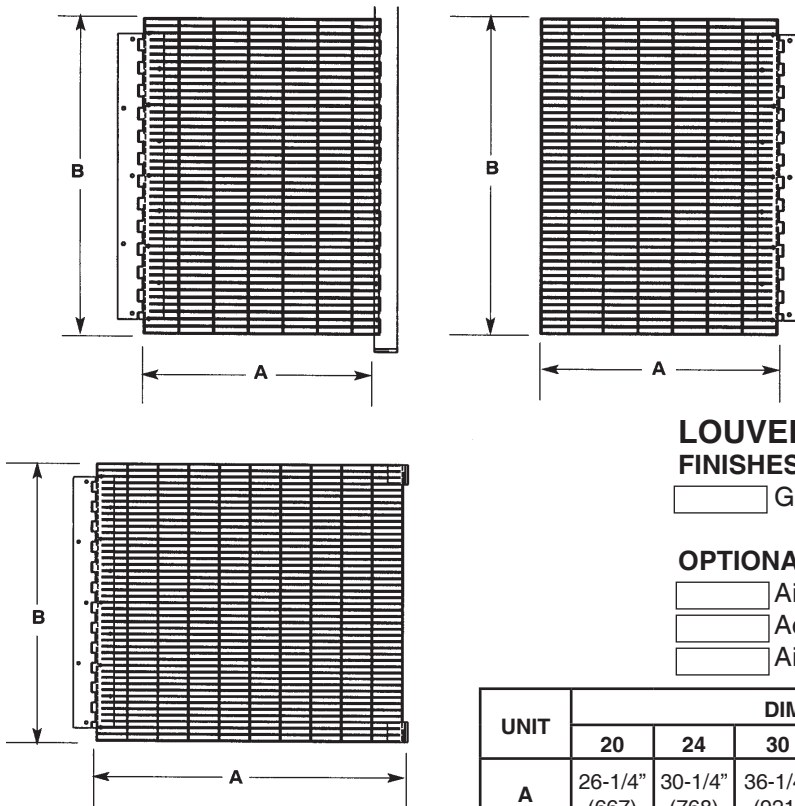
OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant coating (ARC, Epoxy).
- Air Dry Heresite.

Models:

LWBK/LMBK
LRBK/LNBK

▼ Propeller Fan Accessories - Hinged OSHA Guard — Model LXMBL



LOUVER EXTENSION:

FINISHES:

Gray Electrocoat as standard.

OPTIONAL FINISHES:

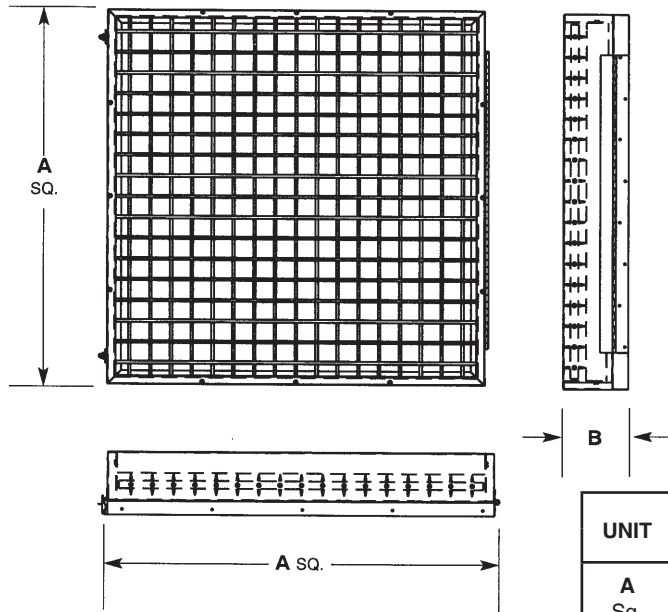
- Air Dry Enamel to match.
- Acid Resistant coating (ARC, Epoxy).
- Air Dry Heresite.

UNIT	DIMENSIONS and WEIGHT							
	20	24	30	36	42	48	54	60
A	26-1/4"	30-1/4"	36-1/4"	42-1/4"	48-1/4"	54-1/4"	60-1/4"	66-1/4"
	(667)	(768)	(921)	(1073)	(1226)	(1378)	(1530)	(1683)
B	24-3/8"	28-1/8"	34-3/8"	40"	46-1/4"	52-1/2"	58-1/8"	64-3/8"
	(619)	(715)	(873)	(1016)	(1175)	(1334)	(1476)	(1635)
Gauge	.135	.135	.135	.135	.135	.135	.135	.135
Wt. Lbs.	7	9	13	29	38	48	56	64
(Kg.)	(3.2)	(4.1)	(5.9)	(13.2)	(17.2)	(21.8)	(25.5)	(29.1)

Models:

LWBK/LMBK
LRBK/LNBK

▼ Propeller Fan Accessories - Air Foil Industrial Double Deflection Supply Grille — Model LXMBS



LOUVER EXTENSION:
FINISHES:

Gray Electrocoat as standard.

OPTIONAL FINISHES:

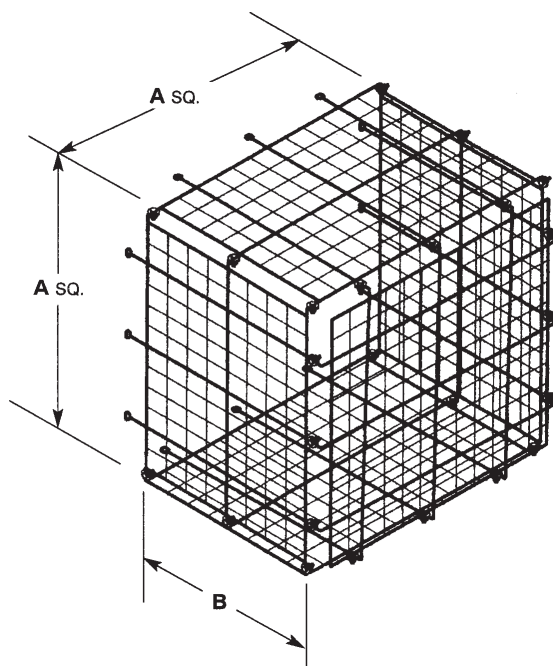
- Air Dry Enamel to match.
- Acid Resistant coating (ARC, Epoxy).
- Air Dry Heresite.

Models:

LWBK/LMBK
LRBK/LNBK

UNIT	DIMENSIONS and WEIGHT					
	20	24	30	36	42	48
A Sq.	26-11/16" (678)	30-11/16" (780)	36-11/16" (932)	42-11/16" (1084)	48-11/16" (1237)	54-11/16" (1389)
B	9" (229)	9" (229)	9" (229)	9" (229)	9" (229)	9" (229)
Gauge	16	16	16	16	16	16
Wt. Lbs. (Kg.)	50 (22.7)	50 (22.7)	75 (34.0)	94 (42.6)	115 (52.2)	138 (62.6)

▼ Propeller Fan Accessories - Motorsize Basket Guard for use with Mounting Collar — Model LXMBM



LOUVER EXTENSION:
FINISHES:

Gray Electrocoat as standard.

OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant Coating (ARC, Epoxy).
- Air Dry Heresite.

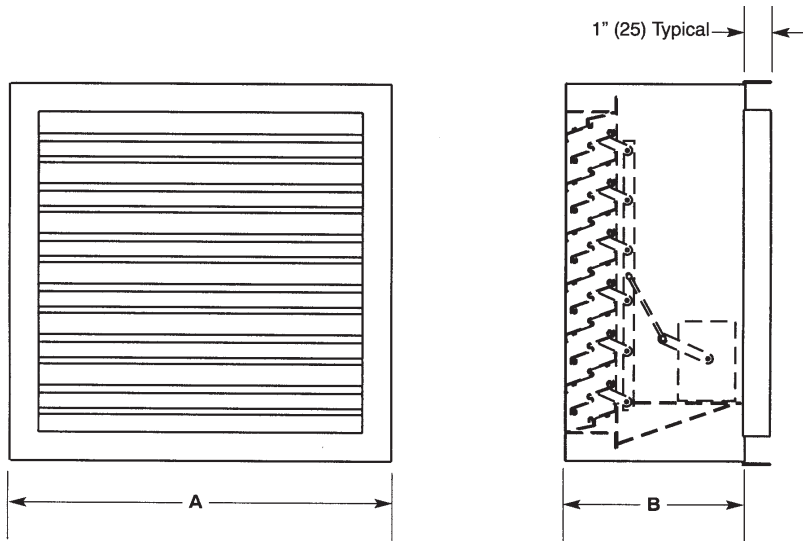
Models:

LWBK/LMBK
LRBK/LNBK

UNIT	DIMENSIONS and WEIGHT					
	20	24	30	36	42	48
A Sq.	26-1/4" (667)	30-1/4" (768)	36-1/4" (921)	42-1/4" (1073)	48-1/4" (1237)	54-1/4" (1378)
B	21-19/32" (548)	21-19/32" (548)	24-19/32" (625)	26-7/32" (625)	26-7/32" (625)	26-7/32" (625)
Gauge	1.135 & .188 wire	.135 & .188 wire	.135 & .188 wire	.135 & .188 wire	.135 & .188 wire	.135 & .188 wire
Wt. Lbs. (Kg.)	14 (6.4)	16 (7.3)	20 (9.1)	32 (14.5)	36 (16.3)	42 (19.1)

NOTE: Sizes 36 thru 48 features two piece back panel.

▼ Propeller Fan Accessories - Extruded Alum. Operable Louver— Model LXFBM



Models:
LWBK/LMBK
LRBK/LNBK

LOUVER:
FINISHES:

Mill Finish is standard.

OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant Coating.
- Air Dry Heresite.
- Natural Anodized.
- Light Bronze Anodized.
- Medium Bronze Anodized.
- Dark Bronze Anodized.
- Black Anodized.

LOUVER EXTENSION:

FINISHES:

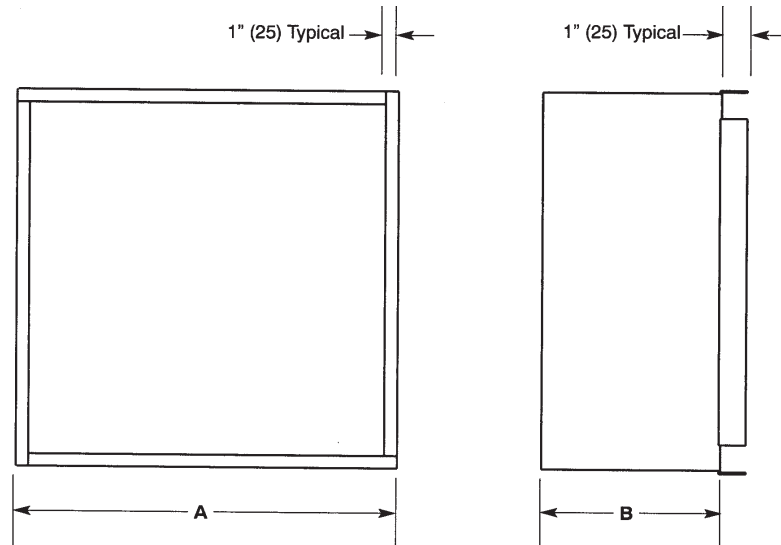
Gray Electrocoat as standard.

OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant Coating (ARC, Epoxy).
- Air Dry Heresite.

UNIT	DIMENSIONS						
	24	30	36	42	48	54	60
A Sq.	30-1/4" (768)	36-1/4" (920)	42-1/4" (1073)	48-1/4" (1225)	54-1/4" (1377)	60-1/4" (1530)	66-1/4" (1683)
B Dim.	14" (401)	14" (401)	14" (401)	14" (401)	14" (401)	14" (401)	14" (401)
Gauge	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.

▼ Propeller Fan Accessories - Louver Extensions for Louver by Others
— Model LXMBT



Models:
LWBK/LMBK
LRBK/LNBK

FINISHES:

Gray Electrocoat as standard.

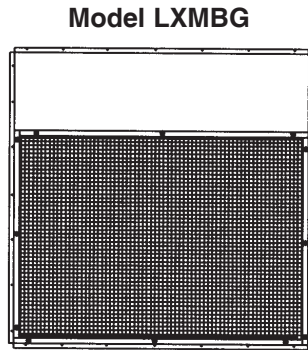
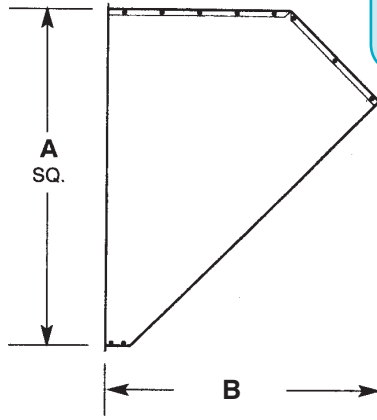
OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant Coating (ARC, Epoxy).
- Air Dry Heresite.

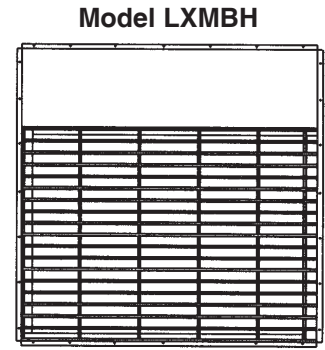
UNIT	DIMENSIONS						
	24	30	36	42	48	54	60
A Sq.	30-1/4" (768)	36-1/4" (920)	42-1/4" (1073)	48-1/4" (1225)	54-1/4" (1377)	60-1/4" (1530)	66-1/4" (1683)
B Dim.	14" (401)	14" (401)	14" (401)	14" (401)	14" (401)	14" (401)	14" (401)
Gauge	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.

▼ Propeller Fan Accessories - Weather hood — Model LXMB G/H

Models:
LWBK/LMBK
LRBK/LNBK



Unit with standard Birdscren



Unit with OSHA Guard

UNIT	DIMENSIONS and WEIGHT							
	20	24	30	36	42	48	54	60
A Sq.	26-1/4" (667)	30-1/4" (768)	36-1/4" (921)	42-1/4" (1073)	48-1/4" (1226)	54-1/4" (1378)	60-1/4" (1530)	66-1/4" (1683)
B	21-1/4" (540)	24-1/8" (613)	28-1/4" (718)	32-1/5" (826)	36-3/4" (1175)	41" (1041)	45-1/2" (1156)	44-3/4" (1635)
Gauge	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.	18 galv.
Wt. Lbs. (Kg.)	22 (10.0)	29 (13.2)	40 (18.1)	53 (24.0)	67 (30.4)	84 (38.0)	107 (48.6)	127 (57.7)

LOUVER EXTENSION:

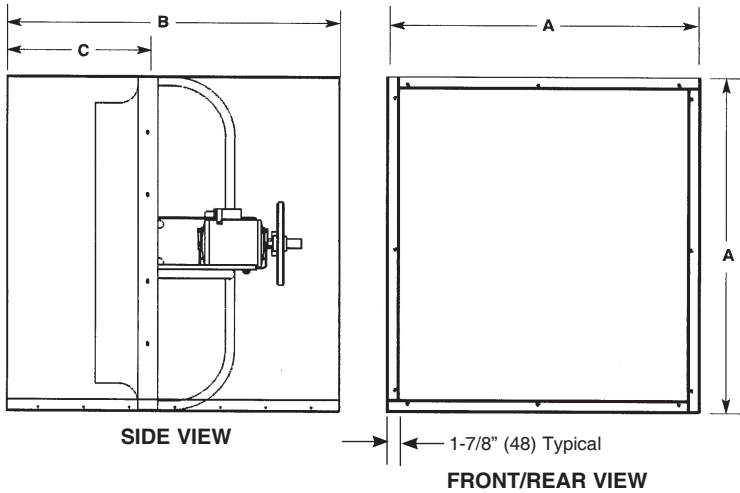
FINISHES:

Gray Electrocoat as standard.

OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant Coating (ARC, Epoxy).
- Air Dry Heresite.

▼ Wall Box — Model LXMBW



Models:
LWBK/LMBK
LRBK/LNBK

FINISHES:

Gray Electrocoat as standard.

OPTIONAL FINISHES:

- Air Dry Enamel to match.
- Acid Resistant Coating (ARC, Epoxy).
- Air Dry Heresite.

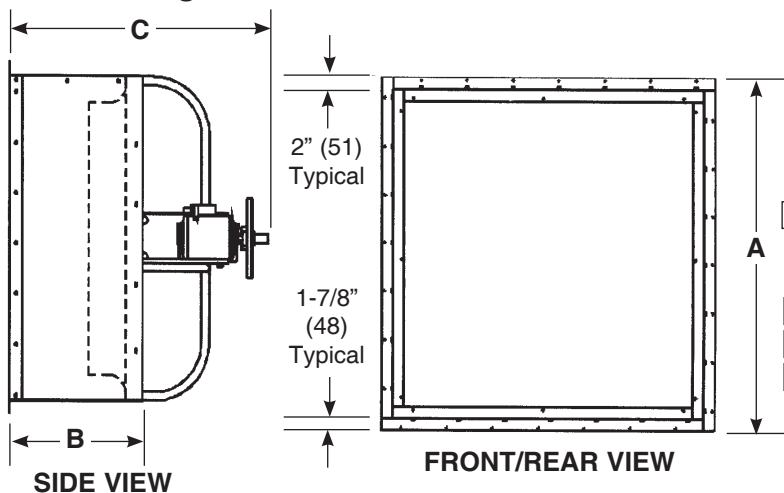
DIMENSIONS LISTED IN INCHES

Fan Size	A Sq. O. D.	B Length	C Panel Locate	Weight (lbs.)	Wall Opening
20	26-1/4	37-1/2	16-1/2	58	27-1/2
24	30-1/4	37-1/2	16-1/2	66	31-1/2
30	36-1/4	39-1/2	15-1/2	92	38
36	42-1/4	39-1/2	17-1/2	115	44
42	48-1/4	45-1/2	19-3/4	136	50
48	54-1/4	47-3/4	21-3/4	160	56
54	60-1/4	49-3/4	21-3/4	245	62
60	66-1/4	49-3/4	21-3/4	268	68

DIMENSIONS LISTED IN MILLIMETERS

Fan Size	A Sq. O. D.	B Length	C Panel Locate	Weight (Kg.)	Wall Opening
20	667	952	419	27	699
24	708	952	419	30	800
30	921	1003	394	42	965
36	1073	1003	445	52	1117
42	1226	1156	502	62	1270
48	1378	1213	552	73	1422
54	1531	1264	552	112	1575
60	1683	1264	552	122	1727

▼ Mounting Collar — Model LXMBD



Models:
LWBK/LMBK
LRBK/LNBK

LOUVER EXTENSION:

FINISHES:

Gray Electrocoat as standard.

OPTIONAL FINISHES:

Air Dry Enamel to match.

Acid Resistant Coating (ARC, Epoxy).

Air Dry Heresite.

DIMENSIONS LISTED IN INCHES

Fan Size	A Sq. O. D.	B Length	C Panel Locate	Weight (Lbs.)	Wall Opening
20	26-1/4	17-1/2	35-3/8	32	27-1/2
24	30-1/4	17-1/2	35-3/8	37	31-1/2
30	36-1/4	17-1/2	38-3/8	44	38
36	42-1/4	18-1/2	41-3/8	53	44
42	48-1/4	20-3/4	43-5/8	67	50
48	54-1/4	22-3/4	45-5/8	82	56

DIMENSIONS LISTED IN MILLIMETERS

Fan Size	A Sq. O. D.	B Length	C Panel Locate	Weight (Kg.)	Wall Opening
20	688	444	898	15	699
24	768	444	898	17	800
30	921	444	974	20	965
36	1073	470	1051	24	1117
42	1226	527	1108	31	1270
48	1378	578	1159	37	1422

Accessories

SpinMaster™ AC Micro Drive

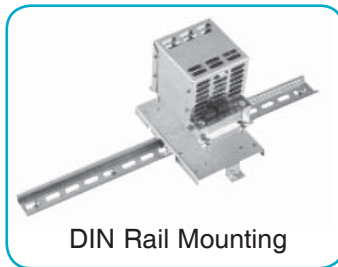


Driven to be the Best... SpinMaster™ and SpinMaster™ Plus AC Drives

REGAL-BELOIT's SpinMaster™ AC drive is designed for the most demanding industrial applications from fans and pumps to conveyors and packaging equipment. The SpinMaster™ AC drive offers superior performance with smooth acceleration and deceleration, multiple presets, digital accuracy along with easy setup and operation.

The SpinMaster™ AC drive offers advanced features such as DC injection braking, current limit with frequency foldback, slip compensation and multiple switching frequencies for quiet operation... all at an economical price.

The SpinMaster™ AC drive, depending on the drive series selected, has a horsepower range from 1/4 to 25 horsepower in 120 VAC, 208/240 VAC, 480 VAC and 575 VAC, single phase input, single or three phase input and three phase inputs. A rugged convection cooled or heatsink fan cooled IP20 enclosure with finger safe terminals offers an advantage to the OEM or panelbuilder. An optional DIN rail mounting system provides additional flexibility in maximizing panel space.



DIN Rail Mounting

When additional features are required such as load, speed or frequency scaling, analog output signals and communications, the full featured SpinMaster™ Plus offers exceptional performance at an affordable price. The SpinMaster™ Plus has eighteen isolated inputs and outputs including start, stop 0-10 VDC input, 4-20 mA input, 10 VDC supply for external potentiometer and a 12 VDC supply for an external relay. Additional options include a 1000 Hz output frequency option for very high speed applications and PI control for process applications.

The SpinMaster™ AC drive performance matched with the industry's leading motors for unparalleled performance and one of the industry's longest warranties.



EPM Programmer

Ease of Programming Saves Time and Money...

Programming the SpinMaster™ AC drive is as simple as one, two, three. The drive can be programmed via the push buttons on the drive face, the EPM programmer or via Techlink software.

The revolutionary EPM programmer provides full programming capability using "plug and play" techniques whereby the OEM can copy and download programs in seconds allowing for a fast program change. Over 30 drives programs can be stored at one time and programming is quick and easy using the 16 character English language format. The handheld battery powered EPM programmer allows the user to program the drive without power connection for increased productivity. The EPM programmer can be attached to a personal computer to upload and download drive programs using Techlink software.



When Performance Counts...

When high performance is required and reliability a must... turn to the industry leader in motion control applications... turn to REGAL-BELOIT... *"at the heart of what drives your world."*

SpinMaster™

Quality AC Micro Drive

Specifications	Features	
	SpinMaster™	SpinMaster™ Plus
Horsepower	1/3 - 5 Horsepower	1/4 - 25 Horsepower
Input Voltage	120 VAC, 208/240 VAC, 480 VAC	208/240 VAC, 480 VAC, 575 VAC
Phase	Single or Three Phase	Single or Three Phase
Carrier Frequency	4 - 10 kHz	4 - 10 kHz
Maximum Output Frequency	0 - 240 Hz	0 - 240 Hz
Programming Parameters	38	48
EPM Programmer	Yes (optional)	Yes (optional)
Push Buttons	3	3
Accel/Decel Time	0.1 - 990 seconds	0.1 - 3600 seconds
Control Voltage	12 VDC	12 VDC
Speed Scaling	User defined 0.0 - 6500	User defined 0.0 - 6500
Frequency Scaling	No	3.0 - 2000.0 Hz
Load Scaling	No	10 - 200%
High Speed Frequency	Yes (240 Hz)	Yes (240 Hz), optional 1000 Hz
Preset Speeds	7	7
Control I/O	Eleven isolated terminals	Eighteen isolated terminals
Communication	No	Modbus® Protocol
Display	Three digit	Three digit
Motor Overload Capacity	150% for 60 seconds	150% for 60 seconds
Programmable Inputs	Active high	Active low
Analog Outputs	None	2 (speed and load)
Digital Outputs	Current sourcing and relay	2 open collector
Torque Boost	0 - 30%	0 - 30%
Acceleration Boost	0 - 20%	0 - 20%
DC Injection Braking	0 - 30%	0 - 30%
Skip Frequency	2	2
PI Control	No	Yes (optional)
Cooling	Convection cooled	Convection, heatsink or fan
Enclosure	IP20	IP20
DIN Rail Mounting	Yes (optional)	Yes (optional)
Standards	UL and CSA	UL and CSA
Warranty	12/18 months	12/18 months

04 — Gray Baked Enamel:

Valspar® E-Coat (Vectrocoat - 300 Anodic Acrylic) — De-ionized Water Base Electrocoat applied in a full submersion tank then baked at 420°F for 20 minutes. Electrocoat process is similar to electroplating, but differs in that organic resins (paint) are deposited instead of metal. Customized coating for performance and appearance. Average mil finish is 1-1.2. Available in white or gray, gloss rating of 56 to 60 degree meter, pencil hardness of H, corrosive resistant for 250 hours exposure to salt spray environment ASTM Method B-117 with 1/8" maximum creepage from score line. Excellent finish coating or base coat/prime coat. Accepts dry heat temperatures to 300°F (149°C).

14 — ARC Epoxy (Acid Resistant Coating):

ARC is a modified epoxy-polyamid coating. Designed to provide high build, it has been engineered to meet the requirements of general maintenance service. It meets all FDA and USDA toxicity requirements. ARC presents a smooth, chemical resistant finish that is easily cleaned and maintained. It produces a semi-gloss, self priming finish that has exceptional hardness and durability. ARC has an excellent abrasion resistance to falling sand, rubbing, cutting and a very good rating for impact. ARC has a good rating for flexibility, passing 1/2" (13) mandrel testing. Accepts dry heat continuously to 275°F (135°C) and withstands surges to tanks, piping and equipment in the chemical industry. Resists splash and spillage of most acids, alkalies and salts. Will not promote the growth of mildew, fungus and bacterial slime. Coating for marine use where ease of application is important and resistance to erosion by fresh or salt water is required. Standard color is gray, other colors are available upon request.

Chemical Resistance:

Excellent — Resists hydrochloric acid to 20%, sulfuric acid to 15%, nitric acid to 5%, chromic acid to 5%, sodium hydroxide to 50% and ammonia to 10%.

Excellent — Resists all oil, margarine, lactic acid to 85%, phosphoric acid to 85%, oleic acid or red oil, fresh fruit juices, blood and wastes.

Excellent — Resists alcohols, aliphatic and most aromatic solvents.

50 — Prime Coat:

Same as 04 finish, accepts over coating extremely well for field paint to match with added protection. Can be either white or gray color.

80/81 — Under Coat/Anti-Condensate Coating:

Nox-Rust® AC-524 is a firm film undercoating material formulated to provide corrosion protection, sound deadening and moisture sealing properties to the underside of highway trailers, bus bodies, vehicles, commercial HVAC equipment, among others. Nox-Rust® AC-524 is composed of an abrasive free asphalt based material, dispersed in a petroleum solvent to provide a homogenous mastic type compound. This products heavy consistency allows for it to surpass salt spray testing of 500 hours. Finished mil thickness is 4-8 mil, depending on the application per Federal Specification TT-C-520-B. This is applied to ferrous, no-ferrous and galvanized material. Coating is black in color and is used on the undersides of lids, gravity hoods, motor mount plates and curb caps.

90 — Air Dry Enamel (Specify Color Number Per Carnes Color Chart):

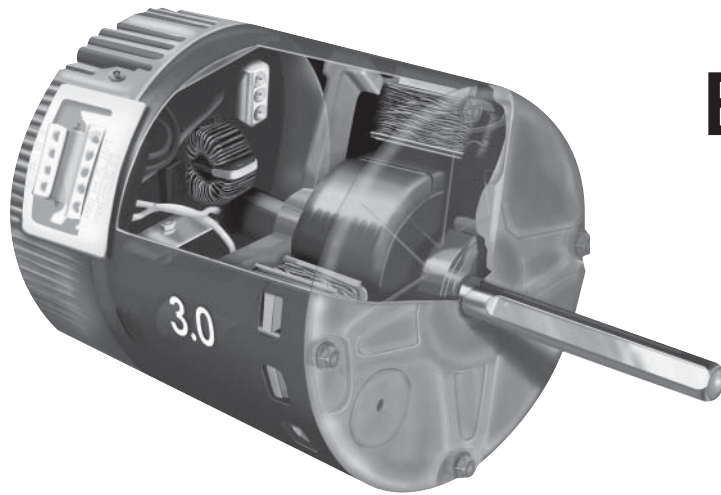
Oil based enamel, Rust Stop® is a rust preventive enamel that provides long lasting color and finish on metals and woods. Usage is for interior and exterior applications that require paint to match or standard colors (see Carnes Color Chart for standard color options). Finish coat is applied over a primer base, then is applied in a 2-3 coat spray application. Overall mil finish - total coating thickness 1.8 to 3.2 mil. 1 to 2 mil finish coat, 0.8-1.2 mil prime coat. Medium to high gloss finish with very little fade from UV and weathering. Can be used in areas with high levels of moisture and steam. Maximum dry heat temperature is 200°F (93°C).

93 — Air Dry Heresite (Standard Gray):

Heresite® VR-500 is an air dry phenolic formulated to permit application by brush, spray or roller. Properties are excellent durability, good adhesion, good film building characteristics and flexibility. This coating produces a hard corrosion resistant film which is good for exposure to splashes, spillage and fumes. Applications include, but not limited to, construction equipment, sewage disposal plant, ventilating systems, chemical plants, agricultural implementations and underground or underwater service. VR-500 Series coating accepts dry heat temperatures up to 200°F (93°C). Standard finish mil thickness - 2 to 5 mil, depending on the application requirements. Standard color is gray, other colors are available upon request.

Chemical Resistance Guide:

Exposure:	Splash and Spillage:	Fumes:
Acids (Dilute)	Good	Excellent
Alkalies (Dilute)	Good	Good
Solvents	Fair	Good
Inorganic Salts	Good	Excellent
Water	Good	Excellent



Eco-Drive ECM Motors

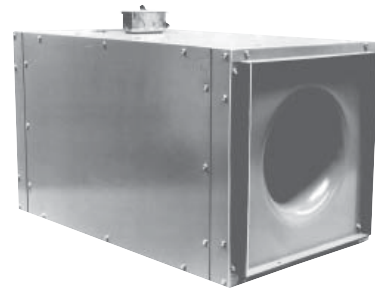
Eco-Drive (ECM) Benefits:

Verses PSC Direct Drive

- Up to 70% energy saving
- Maintain airflow + or - 5%
- Return of investment in as little as two years
- Lower sound levels than PSC motors
- Reliable Regal-Beloit motors
- Fan speed adjusted by small screw driver or by building automation system
- UL certified

Verses Belt Drive

- Low maintenance
- No energy loss due to belts & pulleys
- Easier setup and balancing
- More energy efficient



Example:

CFM	kWh Saved per Year	Utility Rate (\$/kWh)	Energy Savings per Year
At 1500 CFM	2500	0.10	\$255.00
		0.18	\$459.00
		0.26	\$663.00
At 1900 CFM	1400	0.10	\$140.00
		0.18	\$252.00
		0.26	\$364.00

Energy savings per year for a motor operating 6,000 hours per year

CFM	Percentage Energy Savings
1500	60%
1900	34%

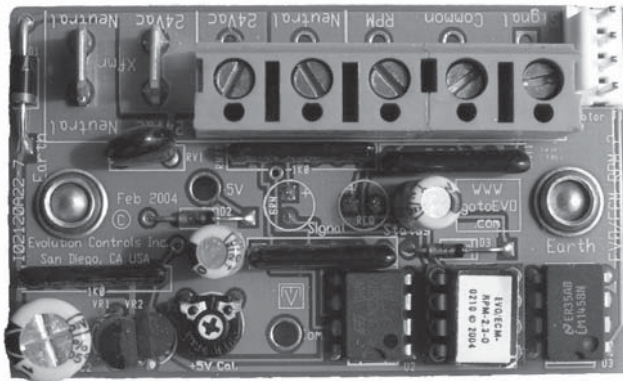
Eco-Drive ECM — Direct Drive Only

Automatic Control Unit (ACU+)

If digital controls are being used on the project it is possible to control the speed of the ECM motor with a 0-10V control signal using the EVO ACU+ unit. The on/off signal is provided at a 24V input. Another option is to turn the motor on/off with a 0-1V signal and to use the 2-10V for speed control.

The EVO/ECM-ACU+ allows remote adjustment of the output from 0% to 100% of the programmed control range. A LED on the control continuously flashes out the flow index (percent of the programmed control range), so instruments are not required to read the value.

The "P" version provides ON/OFF control by switching the motor's "GO" control when the input signal drops below the 2 volt (4 mA) operating point.



The green LED continuously indicates the flow index. After a pause, the LED flashes out the tens digit, then the units digit of a number (percent) between 1 and 99. Two extra long flashes indicate a flow index of 0%. Long flashes represent the tens digit, and short flashes represent the units digit. A flow index of 23%, flashes two longs and three shorts.

Specifications:

Power	NEC Class II Only 24 Vac ± 20% 50/60 Hz 4 W, 6 VA
Flow Index Adjustment RPM	270° rotation F Off-0-100 0-2000 RPM ± 2%
Outputs Go & Vspd ECM 2.3	24 Vdc @ 20 mA Set for Vspd Operation Set Status Flag (7) to RPM Thermal
Stability Operating	>0.01 %/°F 0°F to 130°F (-18°C to 55°C) Environment 10-80% rh
Connections	1/4 Tabs

Visual Control Unit (VCU)

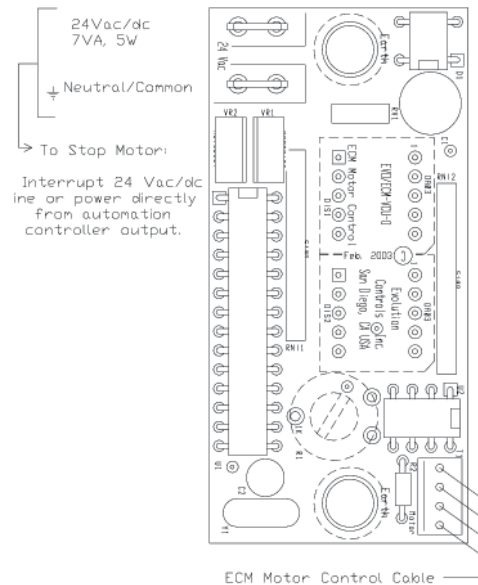
The EVO/ECM-VCU control allows accurate manual adjustment and monitor of fans using Regal-Beloit ECM Motor.

The EVO/ECM-VCU features a 4 digit LED numerical display to allow easy reading in dark spaces. Watch the display and set the flow index with a screwdriver to adjust. Twenty seconds later, the display shows the motor RPM. Then, the display periodically alternates between the flow index and motor RPM.

The EVO/ECM-VCU may also be used where automation systems only turn the fan on or off.



Front of VCU



Back of VCU Control Unit

Belt Tensioner Information	C-475
Eco-Drive ECM Motor	C-489 - C-490
GE_B	C-450 - C-451, C-454 - C-455, C-461
GI_B	C-450 - C-453, C-461
GLAB	C-450, C-456 - C-457, C-461
GSAA	C-450, C-459, C-461
JCAAA/JCAAG	C-468
JCDAA/JCDAG	C-463 - C-464
JCEAA/JCEAG	C-466
JCEBG	C-466
JCFAA/JCFAG	C-183, C-463
JCHAA/JCHAG	C-463
JCPAA/JCPAG	C-463 - C-464
JCRAA/JCRAG	C-463
JCSAA/JCSAG	C-465
JCVBG	C-463
JCWAG	C-189
JDHAA/JDHAC/JDHAM	C-183, C-476
JDTAA/JDTAC/JDTAM	C-476
JTCA/JTDA	C-470
JTSA	C-315
JXAA	C-149
JXEA	C-315
JXUA	C-315, C-469
JXVA	C-315, C-469
JXWA	C-469
LFBA Prop, Low Silhouette, Filtered Supply, Belt.....	C-434, C-437, C-443, C-445 - C-449
LFDA Prop, Low Silhouette, Filtered Supply, Direct	C-434, C-437, C-444 - C-449
LGBA Prop, Low Silhouette, Supply, Belt.....	C-434, C-436, C-441, C-445 - C-449
LGDA Prop, Low Silhouette, Supply, Direct.....	C-434, C-436, C-442, C-445 - C-449
LIBA Prop, Tubeaxial, Belt.....	C-266 - C-268, C-270 - C-271, C-275 - C-296
LIDA Prop, Tubeaxial, Direct.....	C-264 - C-266, C-269, C-272 - C-274, C-294 - C-296
LJDL Prop, Wall, Exhaust, Direct	C-371 - C-390
LKDL Prop, Wall, Supply, Direct	C-371 - C-390
LMBK Prop, Wall, Supply, Belt.....	C-341 - C-350, C-359 - C-366
LNBK Prop, Wall, Supply, Belt.....	C-345 - C-347, C-355 - C-367, C-369 - C-370
LQBA Prop, Heat & Smoke Upblast, Belt.....	C-424 - C-433
LRBK Prop, Wall, Exhaust, Belt.....	C-345 - C-347, C-355 - C-367, C-369 - C-370
LTBA Prop, Low Silhouette, Belt, Exhaust.....	C-434 - C-435, C-437 - C-439, C-446 - C-449
LTDA Prop, Low Silhouette, Direct, Exhaust.....	C-434 - C-435, C-437 - C-438, C-440, C-446 - C-449
LUBA Prop, Upblast, Belt	C-413 - C-416, C-419 - C-420
LUBK Prop, Upblast, Belt	C-402 - C-412
LUDA Prop, Upblast, Direct	C-413 - C-415, C-417 - C-420
LUKA Prop, Upblast, Motor-out-of-Stream, Belt.....	C-421 - C-423
LWBK Prop, Wall, Belt, Exhaust.....	C-345 - C-354, C-363 - C-370
LXCBM	C-367
LXFAG	C-465
LXFBM	C-483
LXHAA/LXHAM	C-478
LXMBB	C-481
LXMBD	C-485

VXCBKQ Metal Grille Kits for VCDD/VCDK Ceiling Fans C-318

VXCBLH Metal Grille Kits for VCDD/VCDK Ceiling Fans C-318

VXCBLK Metal Grille Kits for VCDD/VCDK Ceiling Fans C-318

VXCBLL Metal Grille Kits for VCDD/VCDK Ceiling Fans C-318

VXCBM C-315

VXCBT C-315

VXCBS C-315

VXCBQA Ceiling Fan Radiation Dampers C-315

VXCBQB Ceiling Fan Radiation Dampers C-315

VXCBQC Ceiling Fan Radiation Dampers C-315

VXCBQD Ceiling Fan Radiation Dampers C-315

VXCBQE Ceiling Fan Radiation Dampers C-315

VXCBQG Ceiling Fan Radiation Dampers C-315

VXCBQH Ceiling Fan Radiation Dampers C-315

VXCBQJ Ceiling Fan Radiation Dampers C-315

VXCBRD Roof Caps for VCDD/VCDK Ceiling Fans..... C-318

VXCBRK Roof Caps for VCDD/VCDK Ceiling Fans..... C-318

VXCBRL Roof Caps for VCDD/VCDK Ceiling Fans..... C-318

VXCBRM Roof Caps for VCDD/VCDK Ceiling Fans..... C-318

VXCBWK Wall Caps for VCDD/VCDK Ceiling Fans C-317

VXCBWL Wall Caps for VCDD/VCDK Ceiling Fans C-317

VXCBWM Wall Caps for VCDD/VCDK Ceiling Fans C-317

VXCBWS Wall Caps for VCDD/VCDK Ceiling Fans C-317

VXCBWT Wall Caps for VCDD/VCDK Ceiling Fans C-317

VXCCB Brick Vents C-319

VXDAF C-251, C-253, C-255

VXDAH C-253, C-255

VXFAH Flow Control Plate Information C-471

VXFAV Flow Control Plate Information C-471

VXGAA/VXGAM C-192, C-477

VXHAA/VXHAM C-192, C-477

VXIAHE C-472

VXIAHG/VXIAHJ C-473

VXPB/VXPC C-467

VXRA C-246

VXUAG C-474

VXWAG C-471

▼ NOTES

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Color Chart



#11 Bright White



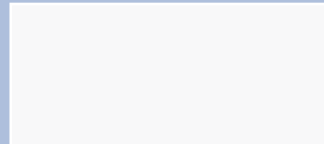
#04 Gray



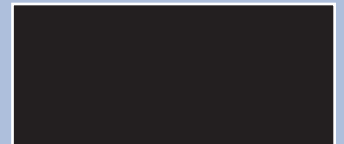
#06 Flat Black



#03 Metalescent



#01 White



#28 Gloss Black



#29 Hunter Green



#30 Sand



#31 Lemon Drop



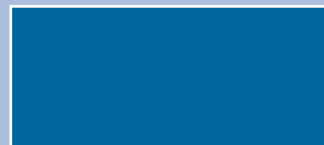
#32 Safety Blue



#33 Safety Yellow



#34 Almond



#35 Harbor Blue



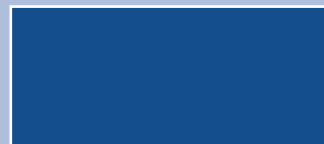
#36 Safety Red



#39 Leather Brown



#47 Cleo



**#48 International
Blue**

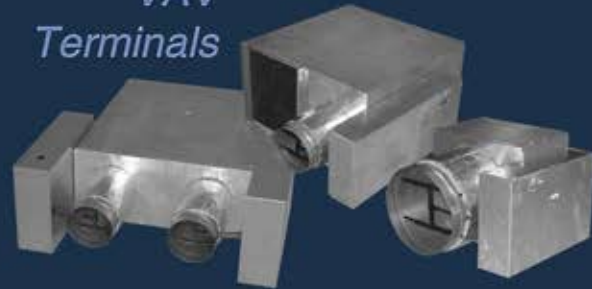
Actual color may vary slightly. Separate color chart for louvers and penthouses.

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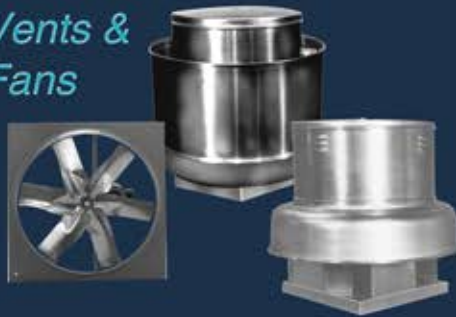
Registers, Grilles & Diffusers



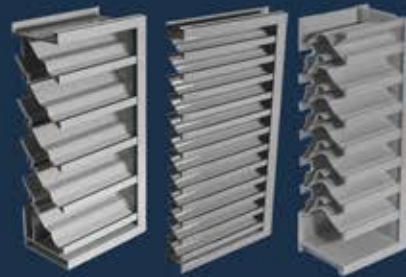
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