

VANEAXIAL FANS



MODELS: VW / VWBD

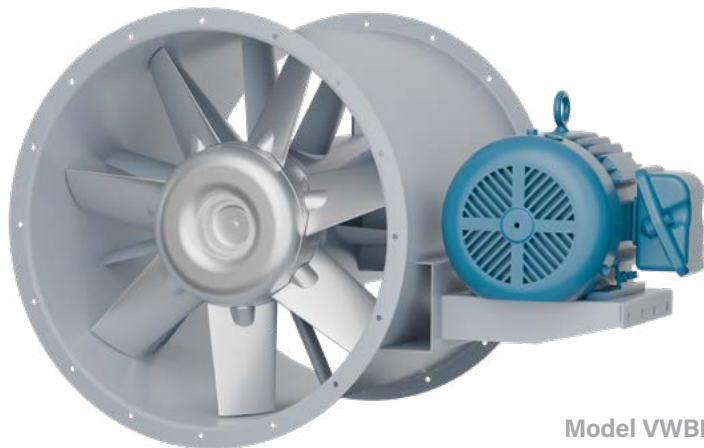


Overview

VW | VWBD



Model VW



Model VWBD

The Model VWBD and Model VW Type "W" vaneaxial fans are designed for high capacity applications requiring straight-line discharge. The seven adjustable cast-aluminum airfoil blades are held in place by a high strength, specially designed steel bolt cast into the blade and threaded into the hub. It is locked by one setscrew. This design has many practical advantages. It is easily adjustable and requires no special tools.

Typical Applications Include

Data Center Exhaust, General HVAC, Generator Room Ventilation, Swimming Pool Exhaust, Kitchen Exhaust, Dishwasher Exhaust, Elevator Shaft Exhaust/Pressurization, Emergency Smoke Exhaust, Stairwell Pressurization

Configurations

Direct and Belt Driven – vertical and horizontal mount configurations

Impeller Type

Cast-aluminum airfoil

Optional Construction

Clamshell Construction, Swingout Construction, AMCA Type B Spark Resistant

Certifications

AMCA Air and FEI



Aerovent, a Twin City Fan Company, certifies that the Model VW and VWBD Vaneaxial fans shown herein are licensed to bear the AMCA Seal. Certified performance data may be found in Aerovent's Fan Selector software.



Scan the QR code to search Aerovent's AMCA-certified products.



For complete product performance, drawings and available accessories, download our Fan Selector software at aerovent.com.

Overview

VW | VWBD

Aerovent's Model VW and VWBD vaneaxial fans are designed for use in all general applications to move relatively clean, non-corrosive air while operating within standard motor temperature limits. The highly efficient impeller, available in sizes 18"-84" (Model VW) and sizes 25"-84" (Model VWBD), delivers performances ranging from 600 to 224,700 CFM.

The motor base assembly provides maximum strength while minimizing resistance to airflow. Fan casings are flanged steel and can easily be connected to duct work. Protective coatings and aluminum, hot-dipped galvanized or stainless steel housing constructions are available upon specification. Impeller construction is cast aluminum. Motor leads are wired to an external conduit box and extended grease leads are standard when applicable.

Model VW

18" to 84" impeller diameters
Airflow to 224,700 CFM
Static pressure to 4" w.g.



Model VWBD

25" to 84" impeller diameters
Airflow to 211,000 CFM
Static pressure to 4" w.g.



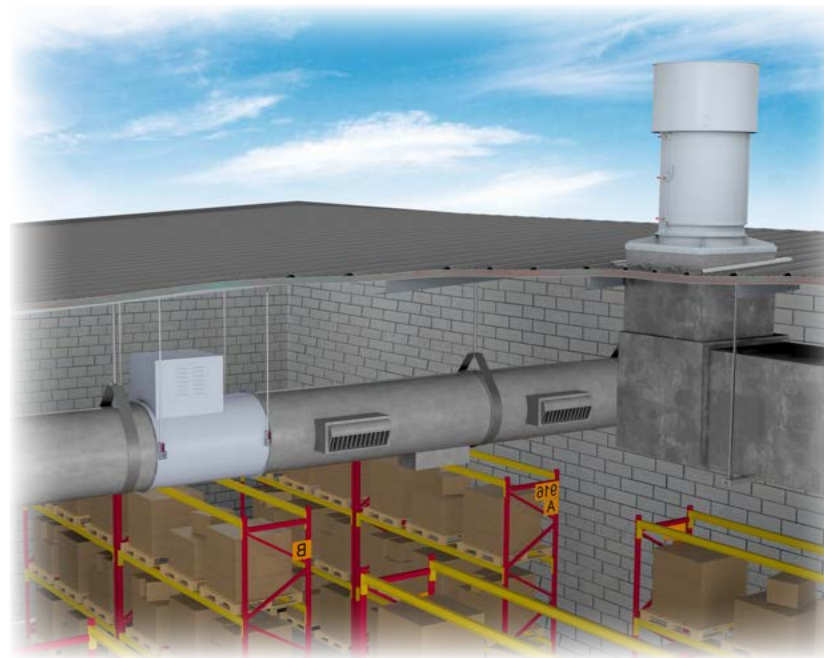
Energy Regulations

Aerovent supports energy efficiency regulations enacted by the U.S. Department of Energy (DOE) and specific states. The selection and application of fan products is a significant part of these regulations. Engineers and specifiers must understand how to apply Aerovent products to their specific applications to meet applicable DOE and state regulatory requirements. Aerovent has made significant investments in product testing and development to provide efficient products. Developments in Aerovent's Fan Selector software are in place to aid your decision in product selection to assist with meeting the efficiency requirements as stipulated in the applicable regulations.



Paintbooth Application

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Warehouse Application with VRM & HCH Fans

Housing

Housings are one-piece, heavy-gauge, hot-rolled steel construction. Flanges on both the inlet and outlet are integrally rolled and punched for attachment to ductwork or accessories as necessary. The sheet seam is continuously welded and ground smooth to assure efficient airflow through the housing.

Guide Vanes

The inner shell motor mounting and guide vanes are integrally welded to the outer housing providing a substantial all-steel weldment.

Shaft and Bearings/Inner Cylinder

Shafts for belt driven units are ground and polished steel construction machined to a suitable diameter to allow the rotating assembly to operate well below the first critical speed.

Bearings are ball or roller type selected for a minimum average life of 200,000 hours. Bearing life is determined in accordance with standards set forth by AFBMA (Anti-Friction Bearing Manufacturers Association). All bearings are provided with extended lubrication lines terminating at the housing exterior.

The complete shaft and bearing assembly is mounted within the inner cylinder, safely isolating these components from the high velocity airstream.

Belt Fairing

The V-belt drive assembly is extended through a two-piece belt fairing. The belt fairing is an aerodynamically designed tube, welded continuously to both the inner cylinder (bearing housing) and the fan housing, thus protecting the V-belts from the direct blast of the airstream.

Motor

Motors for Arrangement 9, belt driven fans are standard foot-mounted NEMA design. All of the various enclosures (open drip-proof, totally enclosed, explosion proof, etc.) can be accommodated through the use of an adjustable motor base. This motor mounting platform pivots at several locations to offer a wide range of adjustment for belt tension.

Motors for Arrangement 4, direct drive fans are foot-mounted, NEMA standard, totally enclosed fan cooled (TEFC), continuous-duty, ball bearing type with Class "F" insulation and of cast iron construction when commercially available. Motors which are equipped with grease lubricated bearings have extended lube lines to the housing exterior. For ease of wiring the motor, wiring connections are extended to an external conduit box mounted on the fan exterior. The fan housing exterior has a duplicate motor nameplate mounted adjacent to the fan nameplate.



Arrangements

Arrangement 9 Belt Driven

For applications that require the motor to be out of the airstream or the versatility of a belt driven fan, the Arrangement 9 VWBD is the perfect choice. Driven through either a fixed or adjustable V-belt drive system, the exact point of rating can be achieved. Any future change in rating can be accomplished through a simple sheave change. Good for operation up to 200°F as standard, the Arrangement 9 can be customized to handle even the most severe of conditions.

Arrangement 4 Direct Drive

Where space constraints require the use of a complete "in line" fan or the desire is for a simple, dependable fan with minimum maintenance requirements, the direct drive Arrangement 4 is the logical choice. Constructed with the fan impeller mounted directly on the motor shaft, this fan provides premium efficiency with minimal obstructions in the airstream.

Spark Resistant Construction

Fan applications may involve the handling of fumes or vapors. Such applications require careful consideration by the system designer to insure the safe handling of such gases. Aerovent offers the following classifications of spark resistant construction per AMCA Standard 99-0401. It is the specifier's or the user's responsibility to specify the type of spark resistant construction with full recognition of the potential hazards and the degree of protection required.

Type B - includes an aluminum impeller with an aluminum shaft closure plate and shaft seal.

Swingout Construction

Swingout construction provides easy access to the fan for cleaning and general maintenance without removing it from the ductwork. When quickopen clamp latches are released, the door swings out on heavy-duty hinges to provide out of the airstream access to the impeller for cleaning. For additional access to the shaft and bearings, an optional split inner cylinder is available. Available on Model VW in sizes 22-60 and Model VWBD in sizes 25-60.



Swingout
Construction

Clamshell Construction

Clamshell construction is ideal for applications needing regular cleaning. Depending on the size, one door (sizes 18-36) or two doors (sizes 38-60) are secured with quick access latches. These doors open outward and allow access to the internal components of the fan. As standard, there is an access door on the inner cylinder, allowing easy access to clean around the bearings. It is essential to follow proper safety precautions during cleaning. If bearing, shaft or impeller replacement is required, the fan should be removed from the ductwork or roof to facilitate safe replacement of parts. If replacement of these parts while ducted or on the roof is required, it is recommended to use swingout construction.



Clamshell Construction

Other Optional Construction

- ATEX Construction
- F2 Mounting Arrangement for Mounted Conduit Box (Model VWBD)
- Externally Mounted Conduit Box Mounting / Wiring of Motor

Adjustable Pitch

The Type W vaneaxial, adjustable pitch impeller is available in Design 1, sizes 18 through 43, and in Design 3, sizes 48 through 84, for direct drive fans. For belt-driven fans, Design 3 is used on all sizes. The seven adjustable cast-aluminum airfoil blades are held in place by a high strength, specially designed steel bolt cast into the blade and threaded into the hub. It is locked by one setscrew. There is a scale at the base of the blade which indicates the blade position in degrees.

This design has many practical advantages. It is easily adjustable, requiring no special tools. The angle setting cannot be thrown off when the locking setscrews are tightened. By threading the retainer bolt into the hub, prestressing of the holding device is completely avoided. The use of steel allows for a smaller hub socket and, therefore, a stronger hub rim.

The impeller is available with angle settings in four degree increments from 18 to 42 degrees. For the direct drive vaneaxial assembly, the catalog number indicates the blade angle at $\frac{3}{4}$ of the impeller radius. Impeller Design 1 has a 57.5% hub while impeller Design 3 has a 41.5% hub. The impeller is mounted to the shaft with a split tapered bushing. The bushing mounting bolts also secure the hub cover which makes removal of the impeller an easy single-step procedure.

Guide Vanes

The vaneaxial impeller is especially designed to work with guide vanes, and the overall mechanical efficiency is usually higher than the other axial flow fans. The function of the guide vanes is to improve the efficiency and the pressure characteristics by converting rotational energy at the impeller discharge into useful work.

Blade Design

Two basic blade designs were chosen for their performance characteristics. Blade Design 1 has the larger hub and is used in the direct drive fan models to 43" in diameter. The larger hub diameter allows for drive motors throughout a wide range of horsepower.

Blade Design 3 has a smaller hub. This is used in the 48" and larger direct drive models because of the advantage in weight reduction while still having sufficient space for the motor to be within the diameter of the hub.

Blade Design 3 is used on all belt-driven models because the larger air passage area has some compensation value for the restriction created by the belt tube, resulting in a broader optimum performance range.

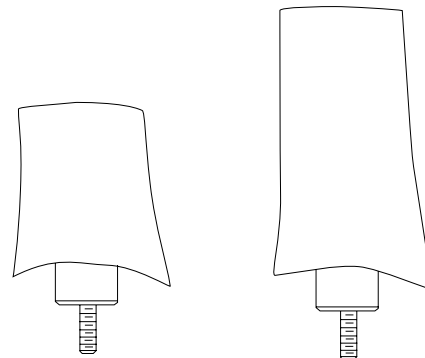


Design 1



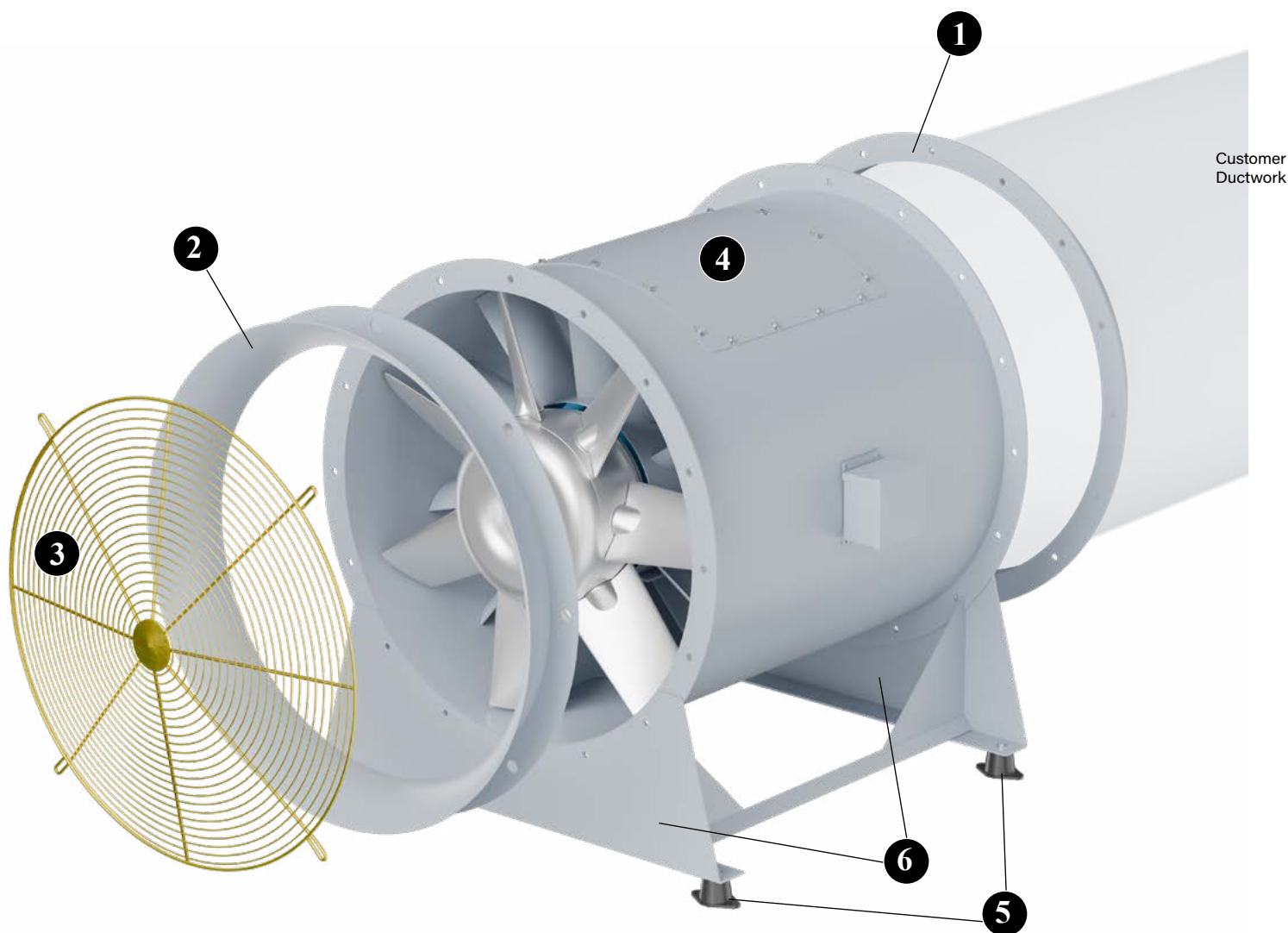
Design 3

Blade Design



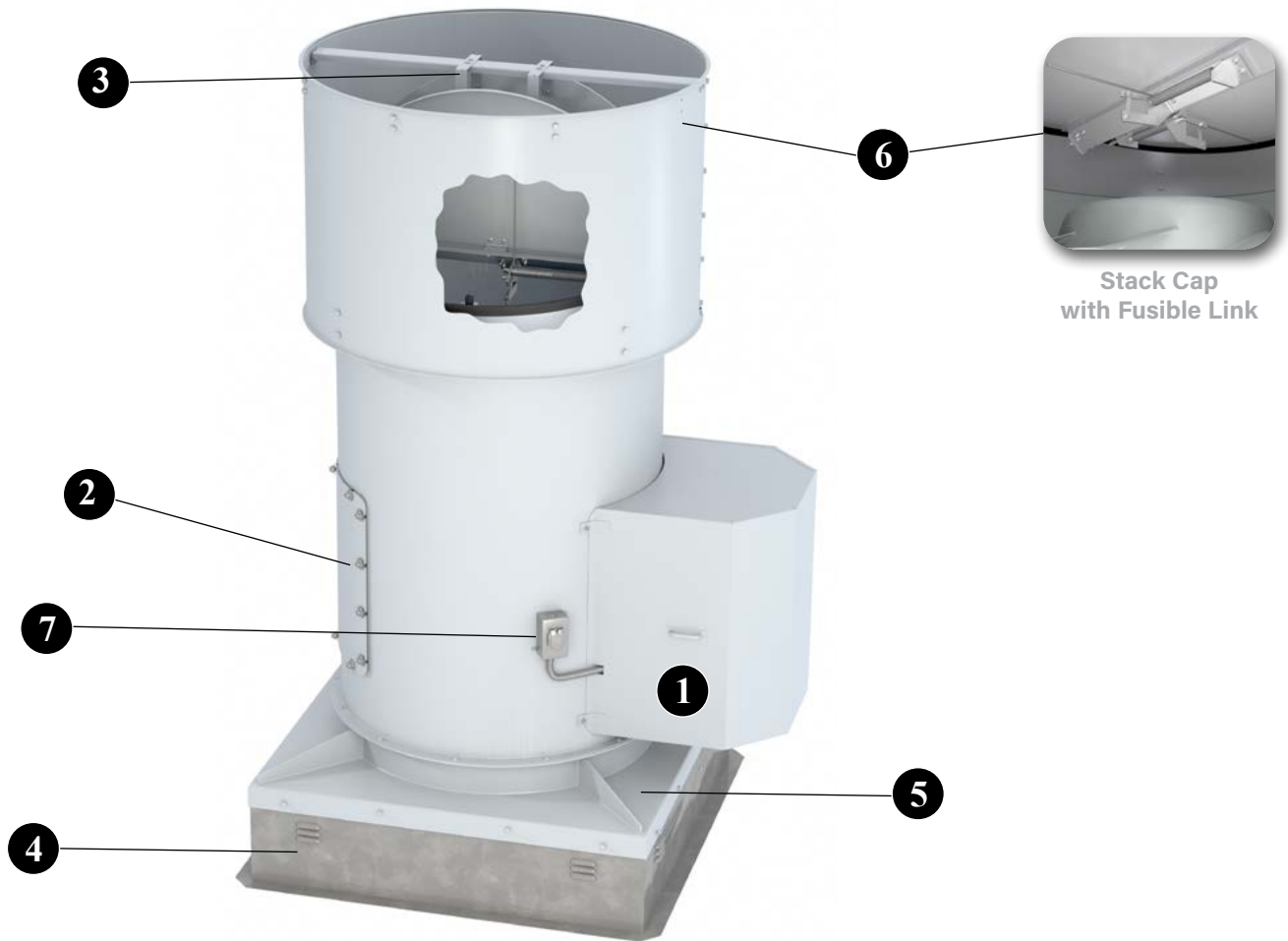
Design 1

Design 3

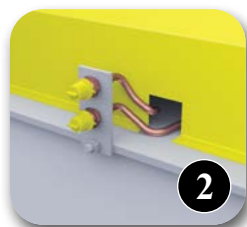


- 1 Companion Flanges** For ease of installation of adjacent ductwork, companion flanges can be provided. Flanges are rolled angle rings, drilled to match the fan's inlet or outlet flange.
- 2 Inlet Bell** An inlet bell is recommended to minimize entrance losses for installations where the inlet of the fan is nonducted. Inlet bell is flanged and punched to mate up with the standard flanged inlet.
- 3 Inlet/Outlet Screens** Safety screening can be provided for installation in the fan inlet or outlet in nonducted applications.
- 4 Access Door** For quick impeller inspection and maintenance. Access doors are specified where examination and cleaning of the fan interior is required.
- 5 Vibration Isolators Floor Mount** Rubber-in-shear type vibration isolation mounts are available to damper vibration and noise transmission in floor mounted installations. Also available in spring type construction.
- 6 Support Legs** For horizontal flow with floor mounting, support legs are welded to the fan flange with bolt holes aligned for connection of ductwork.

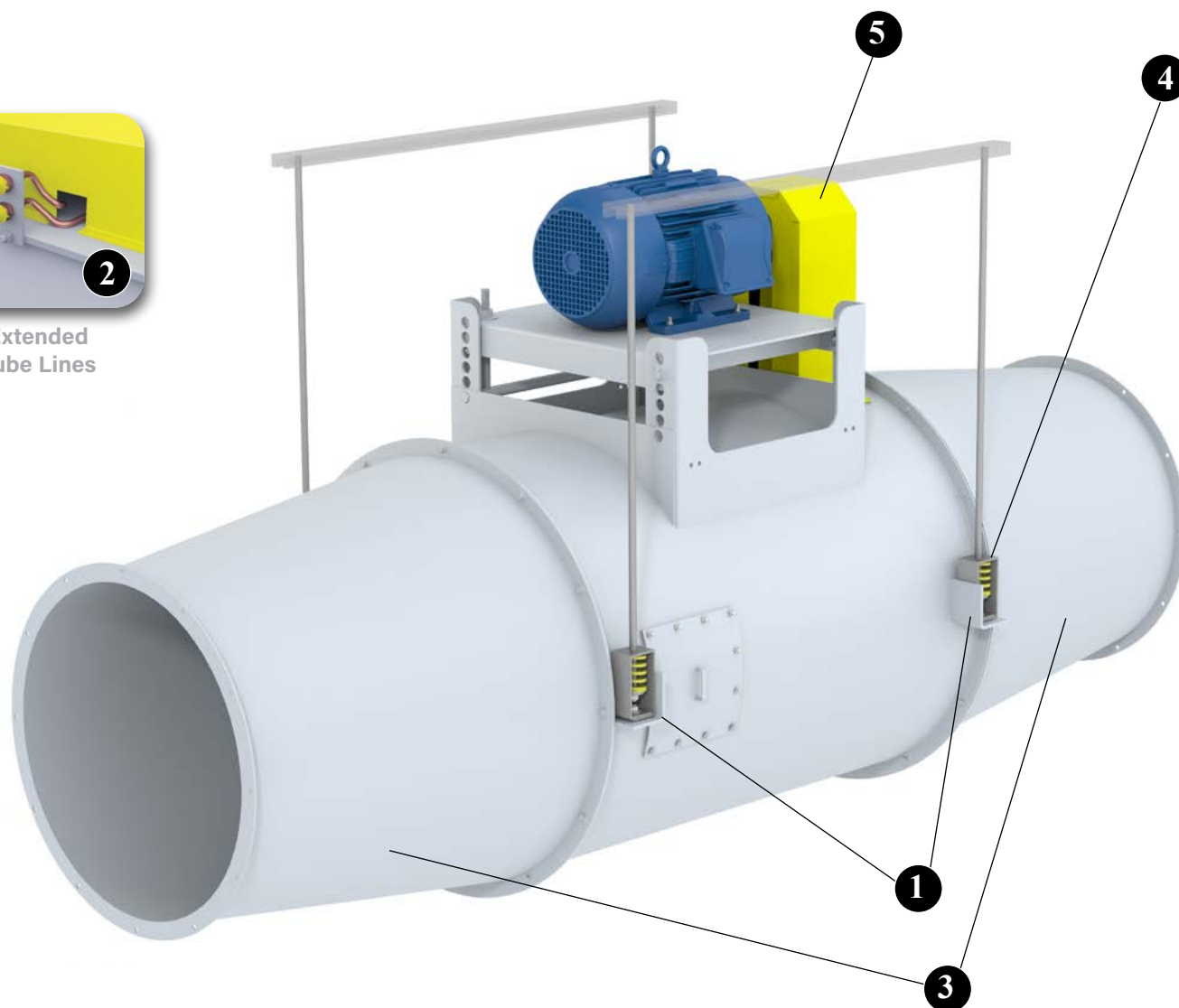
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- 1 Weather Cover** For outdoor installations, the weather cover completely encloses the motor and V-belt drive from the elements and is provided with slots for ventilation. Weather covers are available for either horizontal or vertical flow fans. Standard accessory on vertical roof mounted configuration.
- 2 Bolted Access Door** Bolted access door allows for inspection and maintenance of internal fan components. Provided as standard.
- 3 Magnetic Damper Latches** Magnetic latches are available to hold stack cap butterfly dampers closed when not in operation.
- 4 Vented Roof Curb** Self-flashing style curbs with ventilation louvers allow ambient air in to cool and dilute grease- or smoke-laden airstreams.
- 5 Curb Cap** Attached to the fan's inlet flange for curb mounting. Standard accessory on vertical roof mounted configuration.
- 6 Stack Cap w/ Fusible Link** Units can be provided with a stack cap for rooftop mounting. Stack caps are designed for vertical discharge with butterfly type dampers to seal out the weather when the fan is shut off and minimal flow obstruction when the fan is operating. Butterfly dampers open with airflow (see *Stack Cap Limits* table on page 12). Stack caps meet snow load tests set forth by UL, IRI and SBCCI. Stack caps meet UL 793 requirements, providing a fusible link and spring assembly that forces the discharge butterfly dampers open when the fuse melts at 165°F. This provides gravity ventilation in case electricity to the ventilator is interrupted in a fire.
- 7 NEMA 3R Disconnect Switch** Disconnect switches offer superior environmental protection. From waterproofing to hazardous environments, know that you and your equipment are safe. Positive electrical shutoff during fan cleaning or maintenance provides additional safety and peace of mind. For more information about disconnect switches, see page 12.



Extended
Lube Lines



1 Suspension Clips For horizontal flow with ceiling mounting, four clips of formed angle are welded to the fan housing for suspension via tie rods to the ceiling support structure.

2 Extended Lube Lines Allow for easy lubrication of bearings on belt driven units without disassembly by extending polyethylene lines from fan bearings to exterior of the guard.

3 Inlet/Outlet Transition Cone A round-to-round transition bolted to the inlet or discharge flange of the fan housing provides a smooth connection of the fan to larger or smaller ductwork. Cones are flanged on both ends and drilled to mate with the fan's flange. Cones are available with an access door if required. Outlet cones can be utilized to affect performance and transform velocity pressure into static pressure.

4 Vibration Isolators Spring type vibration isolation mounts are available to dampen vibration and noise transmission in floor mounted installations. Also available in rubber-in-shear type construction.

5 Belt Guard For Arrangement 9 belt driven fans, the belt guard encloses the motor sheave and V-belts. The guard is easily removable for inspection and maintenance.

Other Accessories Include:

- Minimum Two-Groove Drive
- Shaft Seal
- Waterproof Silencer
- Vertical Support Sections

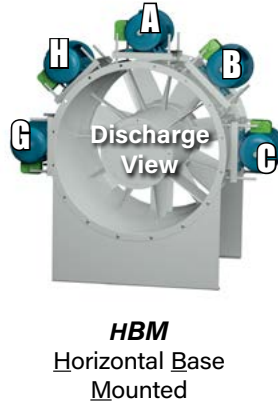
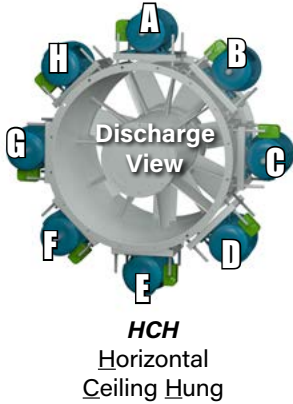
Mounting Configurations

Horizontal Construction

Horizontal Base Mounted (HBM) — Support legs are provided at each end of the fan for floor mounting.

Horizontal Ceiling Hung (HCH) — For duct mounted fans, four suspension clips are welded to the fan casing to allow ceiling suspension using rod hangers.

Horizontal (HOR) — For mounting configurations where support legs and suspension clips are not required.

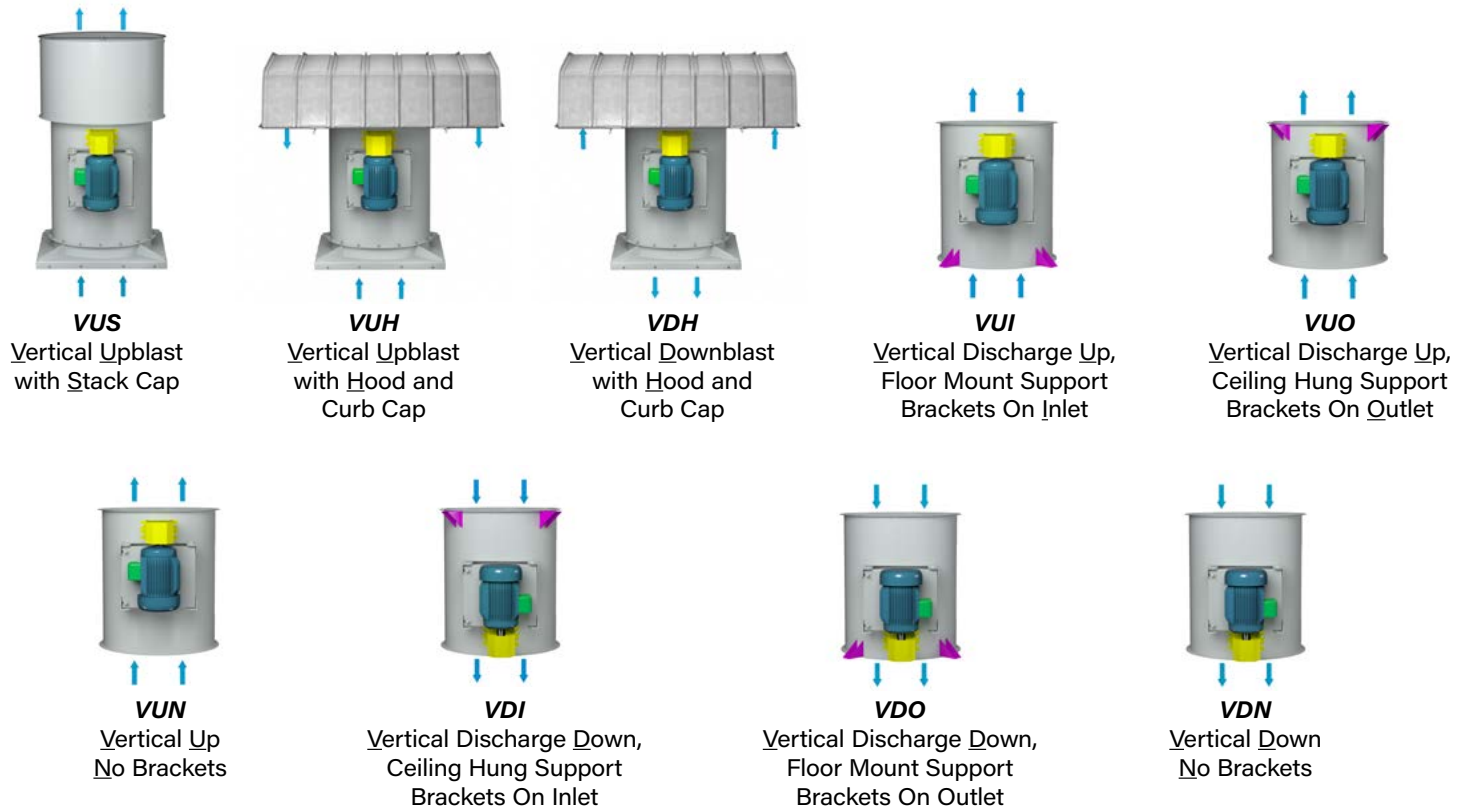


Vertical Construction

Floor or Ceiling Mounted (VUI/VUO/VDI/VDO) — Four vertical brackets are welded to either end of the fan housing. Bracket location is determined by airflow direction and support details (see below).

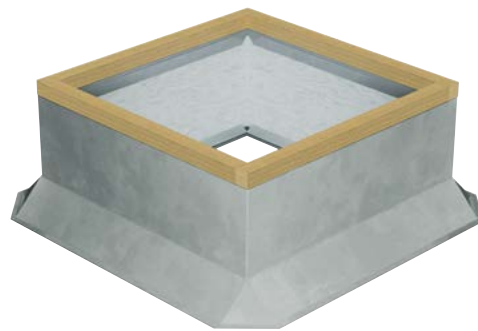
Roof Mounted (VRM) — A curb cap provides weathertight seal for roof curb mounted fans. A stack cap and weather cover are also available for the upblast style roof ventilator.

Vertical (VUN/VDN) — For mounting configurations where support brackets are not required.



Canted Roof Curbs

- Constructed of galvanized steel with continuously-welded seams
- Large 3" built-in 45° cant to accommodate roofing material to top of curb. Cant is beveled at corners for better support of roofing material
- Wood nailer (1½") secured to top ledge
- Lined with 1½" fiberglass fire-resistant, sound-absorbing insulation
- Damper shelf standard
- Options: Aluminum construction, burglar security bars, metal liner (galvanized or aluminum), special heights up to 24".



Self-Flashing & Straight-Sided Roof Curbs

- Constructed of galvanized steel with continuously-welded seams
- Wide base plate (flashing) to ensure watertight seal to roof
- Top ledge covered with 3/16" polystyrene gasket (self-flashing) for weather seal and to reduce metal-to-metal conducted noise
- Wood nailer secured to top ledge (straight-sided)
- Lined with 1½" fiberglass fire-resistant, sound-absorbing insulation
- Damper shelf standard
- Straight-sided roof curbs are constructed with the same features as the self-flashing curbs, but are one dimensional to allow for field supplied cants and roofing material to be brought up to the top of the curb
- Options: Aluminum construction, burglar security bars, metal liner (galvanized or aluminum), special heights up to 24", single- or double-pitched curbs for sloping roofs



Self-Flashing Vented Roof Curbs

For High Temperature Applications

- Completely assembled unit, easier to install and less expensive than a field constructed curb
- Constructed of galvanized steel with continuously-welded seams and wide base flashing for watertight seal to roof
- Meets NFPA-96 code requirements
- Top ledge covered with 3/16" polystyrene gasket
- Furnished with ventilation slots



Curb Adapters

- Constructed of galvanized steel with continuously-welded seams
- Top ledge covered with 3/16" polystyrene gasket to reduce metal-to-metal conducted noise and act as a weather seal
- Available in enlarger or reducer (shown) models



Disconnect switches provide positive electrical shutoff during fan cleaning or maintenance.

NEMA 1 Disconnect Switch

A NEMA 1 disconnect switch is available shipped loose for field mounting and wiring or factory mounted and wired with ODP or TEFC motors.



NEMA 1
Disconnect Switch



NEMA 3R
Disconnect Switch

NEMA 3R Disconnect Switch

A NEMA 3R, rain proof, disconnect is available shipped loose for field mounting and wiring or factory mounted and wired externally.

NEMA 4 Disconnect Switch

A NEMA 4, water and dust tight, disconnect is available shipped loose for field mounting and wiring or factory mounted and wired externally.



NEMA 4
Disconnect Switch

NEMA 7/9 Disconnect Switch

A NEMA 7/9 disconnect switch is recommended on fans with explosion proof motors. The NEMA 7/9 switch is designed for use with fans operating in hazardous environments. Available shipped loose for field mounting and wiring. (Not shown.)

Engineering Data

Stack Cap Limits

FAN SIZE	MINIMUM CFM TO OPEN		MAXIMUM CFM*
	STEEL/STAINLESS	ALUMINUM	
18W7	3058	2339	5577
22W7	4565	3491	8324
24W7	5426	4150	9895
25W7	5942	4544	10835
27W7	6792	5194	12385
29W7	7898	6040	14403
30W7	8449	6461	15407
33W7	10290	7869	18764
36W7	12184	9317	22218
38W7	13610	10408	24819
42W7	16650	12732	30361
43W7	17444	13339	31809
48W7	21709	16601	39587
54W7	27404	20956	49972
60W7	33779	25831	61597
66W7	40936	31304	74648
72W7	48739	37271	88877
84W7	66181	50609	120683

NOTE: The terminal velocity of rain is approximately 2,000 feet per minute. Selections below this point are not recommended if rain entry into the building is a concern.

* Ask about our extra heavy-duty stack cap if your CFM exceeds the maximum CFM.



Present methods of testing fans provide accurate, dependable performance data; however, information available for designing systems is necessarily based on averages. Therefore, a certain amount of "rounding off" of design figures is a reasonable approach and will produce a practical air handling system design. Most engineers prefer the static pressure or friction loss method of calculation.

The fan is usually located somewhere within the system; therefore, it is only necessary to figure the entrance loss and the duct friction loss, then select the fan directly from the tables. This method assumes that the duct size from the outlet of the fan to where the air is released to atmosphere is essentially the same as the diameter of the fan.

- If the fan is at the beginning of the duct, then an inlet bell should be used and no entrance loss is calculated.
- If the fan is at the end of the duct, then the entrance loss and duct friction are calculated and this is the fan static pressure.
- If an outlet cone is used and there is a static regain, the regain can be added to the static pressure. For information on how to calculate the static pressure regain, see outlet cones in the accessory section.

Some systems are designed using total pressure (TP). Using the following formulas, the total pressure can be calculated.

Fan Selection Formulas

$VP = \left(\frac{CFM}{AREA \times 4005} \right)^2$	NOTE: This formula is used only for density at standard air, 0.075 lbs./ft ³ , 70°F and sea level.	Where: VP = Velocity pressure, IWG SP = Static pressure, IWG TP = Total pressure, IWG OV = Fan outlet velocity, FPM AREA = Fan outlet area, Ft ²
$VP = \left(\frac{CFM}{AREA \times 1096.7} \right)^2 \times \text{Density in lbs.per ft}^3$	NOTE: This formula is used when density is other than standard.	
TP = VP + SP		
$OV = \left(\frac{CFM}{AREA} \right)$		

Motor Selection

Motors furnished on direct drive and belt driven fans standardly have a T-frame, 1.15 service factor and are good for applications up to 105°F. Many enclosures are available such as open drip-proof, totally enclosed fan cooled and explosion proof.

For direct drive fans, motors have an increased service factor due to the high air velocity over the motor. However, it is good practice when selecting motor horsepower (MHP) that the required brake horsepower (BHP) not exceed MHP x 1.10. If the required BHP exceeds MHP x 1.10, the next higher MHP should be selected.

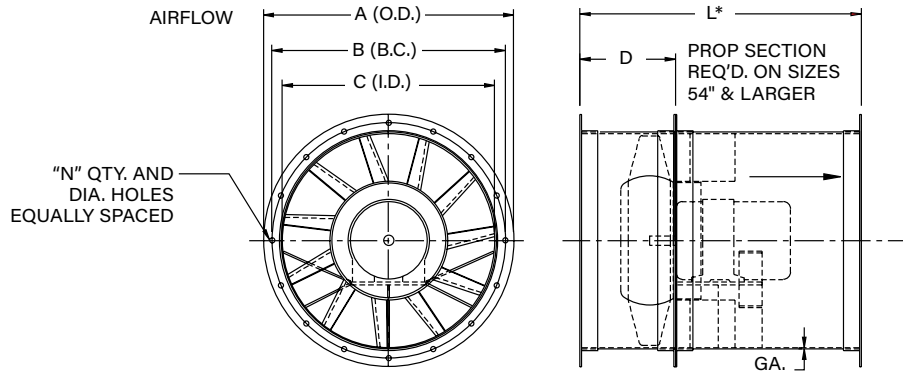
Example A: If the required fan BHP is 10.2, first check a 10 HP motor. Since 10 HP x 1.10 (= 11.0) is greater than 10.2, then a 10 HP motor could be used.

Example B: If the required fan BHP is 11.1, first check a 10 HP motor. Since 10 HP x 1.10 (= 11.0) is less than 11.1, then the next higher horsepower should be selected, a 15 HP.

For belt driven fans, open drip-proof motors can be safely loaded within the service factor (i.e., MHP x 1.10). However, totally enclosed motors should be selected so the required brake horsepower is within the nominal motor horsepower rating (i.e., BHP < MHP).



Direct Drive Type W



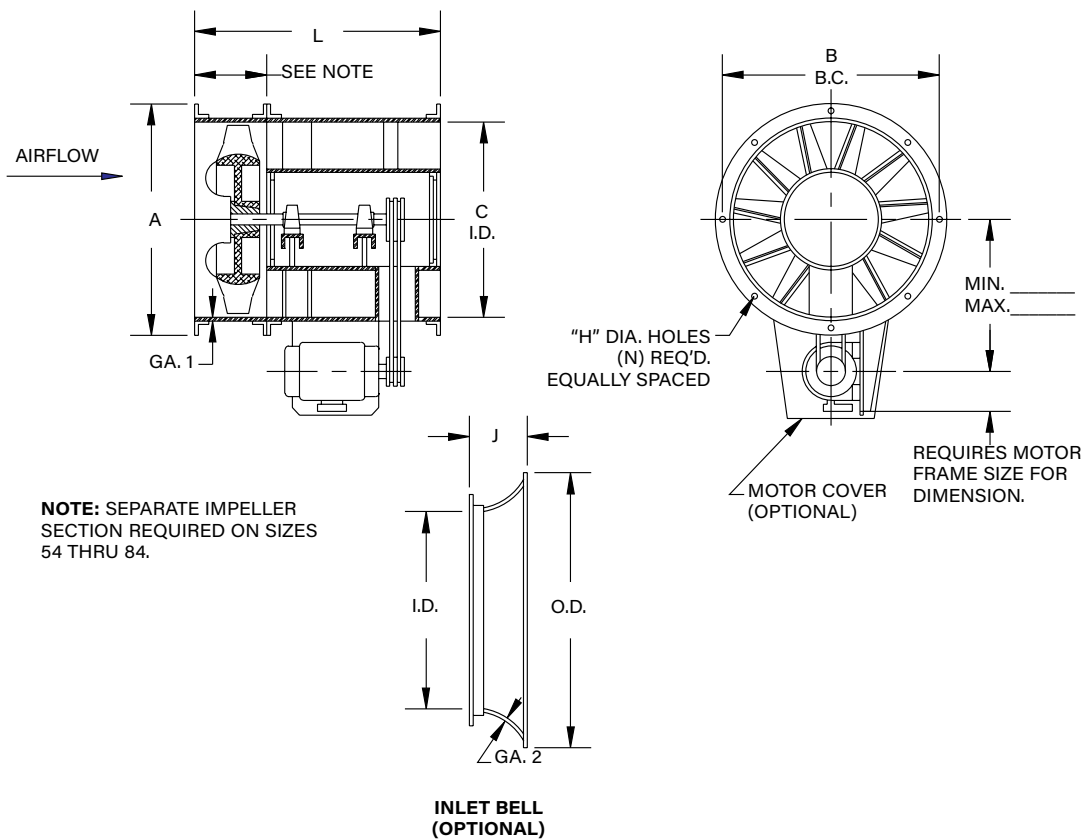
NOTE: Motors may be foot mounted, C-flange mount or both, depending on motor frame size and fan size.

*Based on nominal NEMA motor lengths. Special motors may require longer housings.

SIZE	MAXIMUM MOTOR FRAME	DIMENSIONS (INCHES)						GAUGE
		A	B	C	D	L*	N	
18	184T	21 7/16	20	18 3/16	N/A	20	(8) 7/16	10
22	215T	25 7/16	24	22 3/16	N/A	24	(8) 7/16	10
24	184T	27 5/16	25 7/8	24 1/16	N/A	24	(8) 7/16	10
	256T	27 5/16	25 7/8	24 1/16	N/A	28	(8) 7/16	10
25	184T	28 9/16	27 1/8	25 5/16	N/A	24	(8) 7/16	10
	256T	28 9/16	27 1/8	25 5/16	N/A	28	(8) 7/16	10
27	215T	30 5/16	28 15/16	27 1/16	N/A	26	(8) 7/16	10
29	215T	32 9/16	31 3/16	29 3/16	N/A	26	(16) 7/16	3/16
30	256T	34 5/16	32 3/16	29 15/16	N/A	32	(16) 7/16	3/16
33	256T	37 11/16	35 1/4	33 5/16	N/A	32	(16) 7/16	3/16
36	324T	40 7/16	38 3/8	36 1/16	N/A	38	(16) 7/16	3/16
38	324T	42 11/16	40 1/4	38 5/16	N/A	38	(16) 7/16	3/16
42	326T	46 7/16	44 5/16	42 1/16	N/A	36	(16) 7/16	3/16
	365T	46 7/16	44 5/16	42 1/16	N/A	42	(16) 7/16	3/16
43	326T	47 3/4	45 5/16	43 3/8	N/A	36	(16) 7/16	3/16
	365T	47 3/4	45 5/16	43 3/8	N/A	42	(16) 7/16	3/16
48	286T	52 15/16	50 13/16	48 9/16	N/A	36	(16) 7/16	3/16
	364T	52 15/16	50 13/16	48 9/16	N/A	42	(16) 7/16	3/16
54	326T	59	56 13/16	54 1/2	13	40	(24) 7/16	1/4
	405T	59	56 13/16	54 1/2	13	46	(24) 7/16	1/4
60	365T	65	62 13/16	60 1/2	13	42	(24) 7/16	1/4
	445T	65	62 13/16	60 1/2	13	50	(24) 7/16	1/4
66	365T	72 1/4	70	66 3/4	18	48	(24) 9/16	1/4
	445T	72 1/4	70	66 3/4	18	56	(24) 9/16	1/4
72	365T	79 1/4	76 5/8	72 3/4	18	48	(24) 9/16	1/4
	445T	79 1/4	76 5/8	72 3/4	18	56	(24) 9/16	1/4
84	445T	91 3/8	88 3/4	84 7/8	20	58	(24) 9/16	1/4

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION.

Belt Driven Type W



SIZE	DIMENSIONS (INCHES)							O.D.	I.D.	GA. 1	GA. 2	MAX MTR. FRAME
	A	B	C	H	J	L	N					
25	28 9/16	27 1/8	25 5/16	7/16	3 1/4	32	8	28 1/2	25 1/4	10	14	215T
29	32 9/16	31 3/16	29 3/16	7/16	3 1/4	36	16	32 1/2	29 1/4	7	14	256T
33	37 11/16	35 1/4	33 5/16	7/16	5 1/8	36	16	38 1/16	33 5/16	7	14	256T
38	42 11/16	40 1/4	38 5/16	7/16	5 1/8	42	16	43 1/16	38 5/16	7	14	286T
43	47 3/4	45 5/16	43 3/8	7/16	5 1/8	42	16	48 1/8	43 3/8	7	14	326T
48	52 15/16	50 13/16	48 9/16	7/16	5 1/8	48	16	53 3/4	48 1/4	7	14	364T
54	59	56 13/16	54 1/2	7/16	6 3/4	60	24	62	55	1/4	14	364T
60	65	62 13/16	60 1/2	7/16	6 3/4	60	24	68	61	1/4	14	365T
66	72 1/4	70	66 3/4	9/16	8 1/8	66	24	75 1/2	67 1/4	1/4	14	404T
72	79 1/4	76 5/8	72 3/4	9/16	9 3/4	72	24	83 1/4	73 1/4	1/4	14	404T
84	91 3/8	88 3/4	84 7/8	9/16	9 3/4	84	24	95 3/8	85 3/8	1/4	14	405T

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION.



Model VW

Vaneaxial fans, where indicated on drawings and schedules, shall be Direct Drive Type W as manufactured by Aerovent, Minneapolis, Minnesota and shall be of the size and capacity as indicated in the fan schedule. Type W vaneaxial fans shall be rated based on tests and procedures performed in accordance with AMCA Publication 211 and shall comply with the requirements of the AMCA Certified Ratings Program. The Type W fans shall be guaranteed by the manufacturer to deliver at the rated published performance levels. In addition, each unit shall be factory run tested prior to shipment.

CONSTRUCTION — All fan housings shall have heavy-gauge steel, continuously-welded seam construction. Inlet and outlet flanges are standard.

IMPELLER — The impeller shall be of cast aluminum with adjustable blades that are attached to a cast aluminum hub and are dynamically and statically balanced. The impeller shall have a streamlined hub cover and be attached to the shaft with a split taper lock bushing.

MOTORS — Direct drive units shall be supplied with motor wiring connections extended through liquid-tight conduit to conduit box located outside the fan housing.

BALANCING — The impeller assembly shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. In addition, direct drive fan impellers shall be balanced on the motor shaft after final assembly in the fan casing, in the manufacturing facility, to the following peak velocity values, filter-in, at the fan test speed:

Fan Application Category	Rigidly Mounted (in./s)	Flexibly Mounted (in./s)
BV-3	0.15	0.20

FINISH — The entire fan assembly, excluding the impeller and shaft, shall be properly washed and pretreated before application of a rust-preventative primer, if called out on the order. After the fan is completely assembled, a finish coat of paint shall be applied to the entire assembly, if called out on the order. The fan shaft shall be coated with a petroleum-based rust protectant.

ACCESSORIES — Unit shall be furnished completed with:

- OSHA Type Inlet Guard
- OSHA Type Outlet Guard
- Companion Flanges (Steel) (Aluminum) (Stainless Steel)
- Support Legs - Horizontal
- Vertical Mounting Clips
- Horizontal Ceiling Clips
- Ceiling Mounted Vibration Isolators (Rubber-In-Shear) (Spring)
- Floor Mounted Vibration Isolators (Rubber-In-Shear) (Spring)
- Swingout Arrangement (to size 22-60)
- Clamshell Construction (size 18-60)
- Impeller Access Section
- Inlet Bell
- Inlet Cone
- Outlet Cone
- Acoustical Silencer
- Stack Cap
- Curb Cap

Model

VWBD



Vaneaxial fans, where indicated on drawings and schedules, shall be Belt Driven Type W as manufactured by Aerovent, Minneapolis, Minnesota and shall be of the size and capacity as indicated in the fan schedule. Type W vaneaxial fans shall be rated based on tests and procedures performed in accordance with AMCA Publication 211 and shall comply with the requirements of the AMCA Certified Ratings Program. The Type W fans shall be guaranteed by the manufacturer to deliver at the rated published performance levels. In addition, each unit shall be factory run tested prior to shipment.

CONSTRUCTION — All fan housings shall have heavy-gauge steel, continuously-welded seam construction. Inlet and outlet flanges are standard.

IMPELLER — The impeller shall be of cast aluminum with adjustable blades that are attached to a cast aluminum hub and are dynamically and statically balanced. The impeller shall have a streamlined hub cover and be attached to the shaft with a split taper lock bushing.

BEARINGS — Type W belt driven units shall be supplied with sealed pillow block type bearings with grease line brought forward to the outside of the unit for ease of servicing. Sheaves are cast iron with static conducting belts. Bearings and belts are enclosed in an air insulated housing for protection.

DRIVE — All drive selections on Type W belt driven fans shall be designed with a 1.2 service factor, unless otherwise specified. Sheaves shall be cast iron with static conducting belts. Belt adjustment shall be accomplished with an adjustable motor slide rail base.

MOTORS — Belt driven fan motors shall be NEMA Design B, standard industrial, continuous-duty, ball bearing, variable torque and shall be provided with the enclosure type, voltage, phase and hertz as listed in the fan schedule.

BALANCING — The impeller assembly shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. In addition, belt driven fan impellers shall be balanced on the fan shaft after final assembly in the fan casing, in the manufacturing facility, to the following peak velocity values, filter-in, at the fan test speed:

Fan Application Category	Rigidly Mounted (in./s)	Flexibly Mounted (in./s)
BV-3	0.15	0.20

FINISH — The entire fan assembly, excluding the impeller and shaft, shall be properly washed and pretreated before application of a rust-preventative primer, if called out on the order. After the fan is completely assembled, a finish coat of paint shall be applied to the entire assembly, if called out on the order. The fan shaft shall be coated with a petroleum-based rust protectant.

ACCESSORIES — Unit shall be furnished completed with:

- OSHA Type Inlet Guard
- OSHA Type Outlet Guard
- OSHA Type Belt Guard
- Companion Flanges (Steel) (Aluminum) (Stainless Steel)
- Support Legs – Horizontal
- Vertical Mounting Clips
- Horizontal Ceiling Clips
- Ceiling Mounted Vibration Isolators (RIS) (Spring)
- Floor Mounted Vibration Isolators (RIS) (Spring)
- Swingout Arrangement (size 25-60)
- Clamshell Construction (size 18-60)
- Impeller Access Section
- Inlet Bell
- Inlet Cone
- Outlet Cone
- Motor Cover
- Shaft Seal
- Acoustical Silencer
- Stack Cap
- Curb Cap
- Vertical Support Section



VJ / VJBD

Airflow to 233,000 CFM
Static pressure to 6 inches

Adjustable pitch bladed fan. Applications include industrial processes, textile industry, air conditioning, heating and ventilating, pressurizing and wind tunnels. Applications include industrial processes, textile industry, air conditioning, heating and ventilating, pressurizing and wind tunnels.

Additional information can be found in [Catalog 476](#).



VP / VPBD

Airflow to 103,000 CFM
Static pressure to 7 inches

The Type "P" Tubeaxial and Vaneaxial Fans from Aerovent are designed to handle a wide range of requirements, from general ventilation to process air supply. Its mounting flexibility, which allows it to be mounted as part of the ductwork, makes it ideal for many industrial and commercial applications.

The Type "P" Tubeaxial includes all of the design advantages of the Vaneaxial Fan, except that guide vanes are not provided.

Additional information can be found in [Catalog 414](#).



VSBD

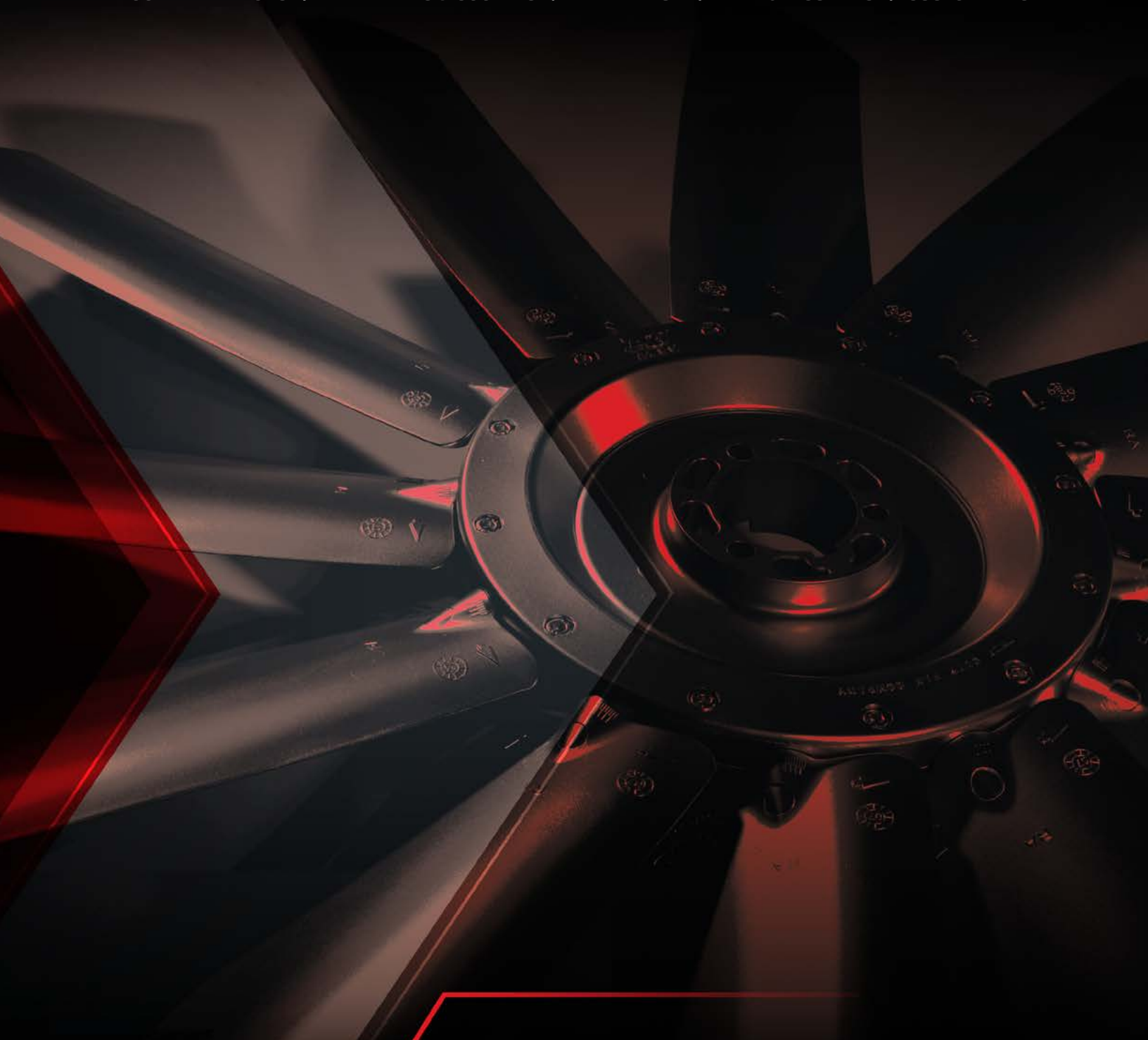
Airflow to 80,000 CFM
Static pressure to 4 inches

The Model VSBD vaneaxial fan is designed for highly corrosive environments and high temperature applications where an aluminum impeller is not suitable. Standard construction can accommodate operation to 200°F (93°C) and can be customized to handle up to 500°F (260°C). Steel construction is standard on this unit. The VSBD is also available in stainless steel.

Additional information can be found in [Catalog 482](#).



WALL MOUNTED FANS | TUBEAXIAL & VANEAXIAL FANS | CENTRIFUGAL FANS & BLOWERS
ROOF VENTILATORS | AIR HEATERS & COOLERS | AIR MAKE-UP | FIBERGLASS FANS | CUSTOM FANS



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