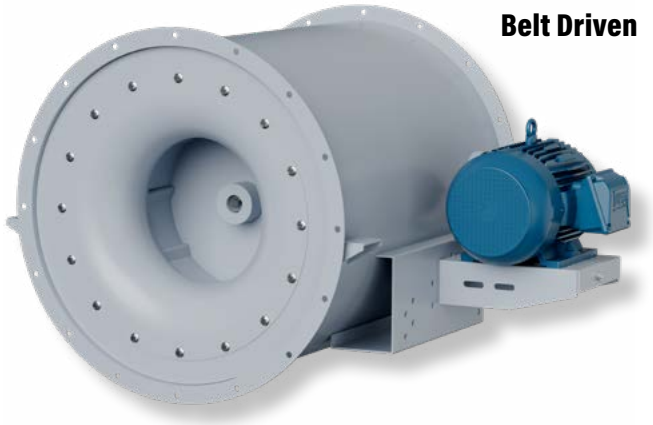
AEROVENT

INDUSTRIAL VENTILATION SYSTEMS

CENTAXIAL® TUBULAR CENTRIFUGAL FANS

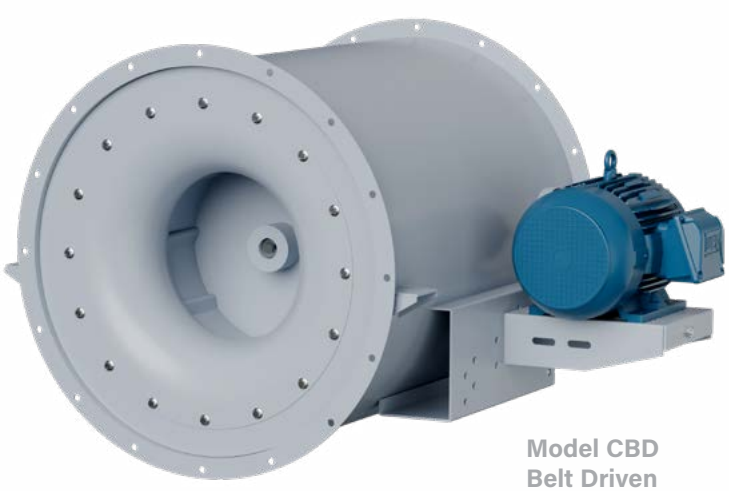


Model CBD
Belt Driven

Model CDD
Direct Drive

MODELS: CBD / CDD

CATALOG 337
MARCH 2025



Model CBD
Belt Driven

Overview

CBD | CDD

The Aerovent Centaxial® fan is a tubular centrifugal fan offering a compact design, stable performance, quiet operation and low operating cost. Its construction combines the advantages of the axial flow fan with performance and application characteristics similar to a centrifugal fan. The Centaxial® is designed to provide straight-through airflow and can be installed directly in a straight duct having the same size and shape inlet and outlet. This advanced design saves more than half the space required by a scroll-type centrifugal fan. It is lighter, making it less expensive and easier to install.

The Centaxial® is not a modification of the centrifugal fan or a variation of the vaneaxial fan. It would most adequately be described as a mixed flow fan. The common mixed flow impeller has been used mostly in high capacity pumps. The physical design of the ordinary mixed flow impeller made its use rather limited; however, the development of the airfoil centrifugal impeller has led to the design of the Centaxial® fan, in which the airflow pattern is almost the same as the flow of fluid through a mixed flow pump.

Since first offering the Centaxial® design in 1963, Aerovent research and development has brought about a significant improvement in efficiency. The impellers in all sizes are backward inclined airfoil design, providing stable performance, quiet operation and more air per horsepower.

Configurations
Vertical and Horizontal Mount

Impeller Type
Backward Inclined Airfoil

Optional Construction
Model CBD: AMCA Spark Resistant Type A, B or C; High Temperature Construction (up to 600°F), Swingout Construction, Clamshell Construction

Model CDD: Swingout Construction, Clamshell Construction

Model CBD with
Swingout Construction

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

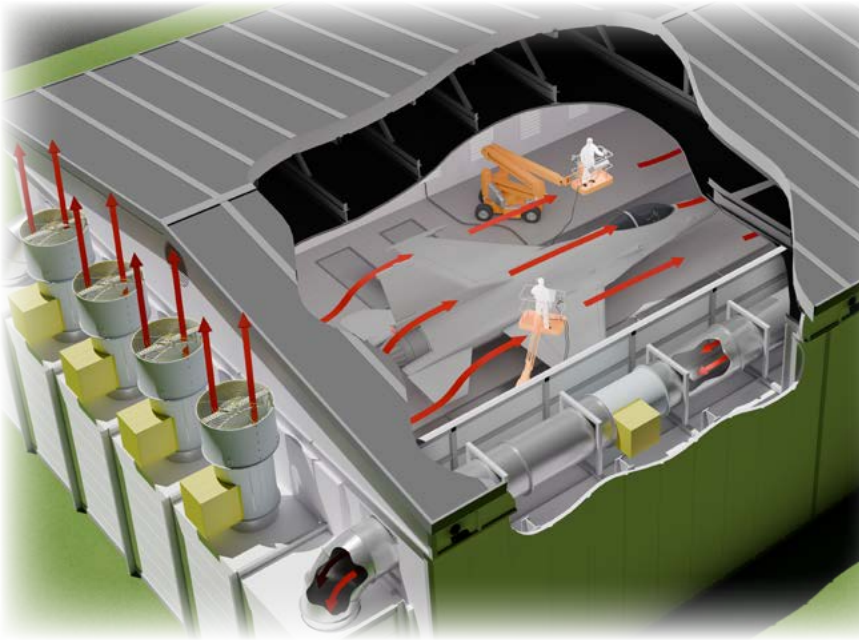
Applications

Aerovent Centaxial® fans are designed for continuous-duty in air moving systems handling clean air. Typical applications would be:

- Industrial space ventilation exhaust or supply
- Industrial fume ventilation (where a suitable coating has been applied if the fumes are corrosive)
- Air make-up
- Air conditioning
- Evaporative cooling
- Heat recovery systems
- As an exhaust fan on the clean air side of certain types of collectors and scrubbers

Sizes and Capacities

- Belt driven sizes 12" to 71"
- Direct drive sizes 12" to 44"
- Capacities to 190,000 CFM
- Static pressures to 14"



Paintbooth Exhaust

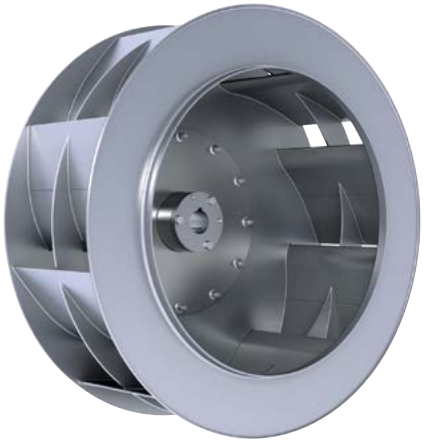
AEROVENT
INDUSTRIAL VENTILATION SYSTEMS

Office Building Exhaust

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.

Construction Features



BIA Impeller

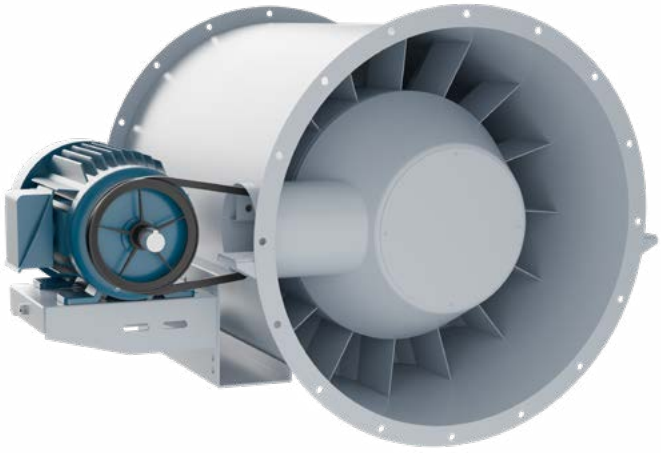
The Centaxial® fan casing is rolled welded steel with aluminum or stainless steel available as an option. The inner shell is held in place by heavy-gauge guide vanes, which also support the pillow block ball bearing mountings. The motor mount is sturdy and provides for adjustment of belt tension. Bearings and shafts are sized to cover a wide range of speed and horsepower. The entrance orifice is built into the housing to provide optimal flow into the fan impeller. Mounting flanges are capable of supporting the fan in ductwork. The mounting flanges at the inlet and outlet are the same size for easy installation in a straight-line duct system.

Aerovent Centaxial® fans are designed with the bearings selected for horizontal installation. They may or may not be suitable for vertical installation, particularly in the larger sizes utilizing spherical roller bearings (see material specifications on page 8). If the fan is to be mounted in the vertical position, contact the factory for availability and pricing. Performance characteristics and direction of airflow are required for proper selection.

BIA Impeller

The BIA impeller features a backward inclined airfoil blade design. This impeller offers the same power limiting characteristics of a BI impeller, but has the added advantage of higher operating efficiencies and lower noise levels. The BIA impeller is limited primarily to clean air applications.

Impeller sizes 12" through 25" are furnished in welded aluminum construction only. All other sizes are furnished in steel construction as standard with aluminum as an option.



Standard Construction
Note belt tube, which isolates belts from airstream. Extended grease fittings are also visible.

Clamshell Construction (Single & Double Door)

Clamshell construction is ideal for applications needing regular cleaning. Depending on the size, single door (sizes 12 to 25) or double door (sizes 28 to 39) 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.

Accessories and Options

- Steel or aluminum construction available.
- FRP plastic inlet funnels available when aluminum is not suitable for spark resistant construction.
- Removable bearing cover plate is standard on axial swingout fans.
- Special coatings are available for corrosion resistance.
- OSHA belt guard available for all swingout and clamshell fans.

High Temperature Construction

Belt driven Centaxial® fans especially designed for high temperature operations are available from sizes 25 to 71 in all-steel construction to handle air temperatures up to 600°F. Protection of the bearings and the drive is accomplished by an auxiliary forced-air cooling system, using a 9" impeller fan to ventilate the inner housing, in which the drive is completely enclosed.

Heat fans can be offered in the smaller sizes, but require special construction. Contact the factory for details.

Corrosion Resistant Construction

Corrosion problems result when the air contains one or more chemicals that are corrosive in nature. The extent of the corrosion problem, however, varies with the specific properties of the chemical involved, as well as the concentration, moisture and temperature of the mixture. Protective coatings and special construction are available to combat corrosion problems. Contact the factory for more details.

Special Materials

The Model CBD housing is constructed of steel as standard but is available in aluminum, stainless steel or special coatings.

Single Door Clamshell Construction

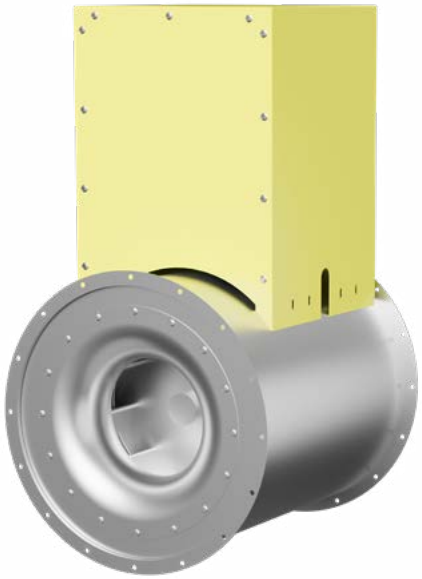
Spark Resistant Construction

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 A - All parts of the fan in contact with the airstream must be made of nonferrous material — usually aluminum and limited to 200°F.

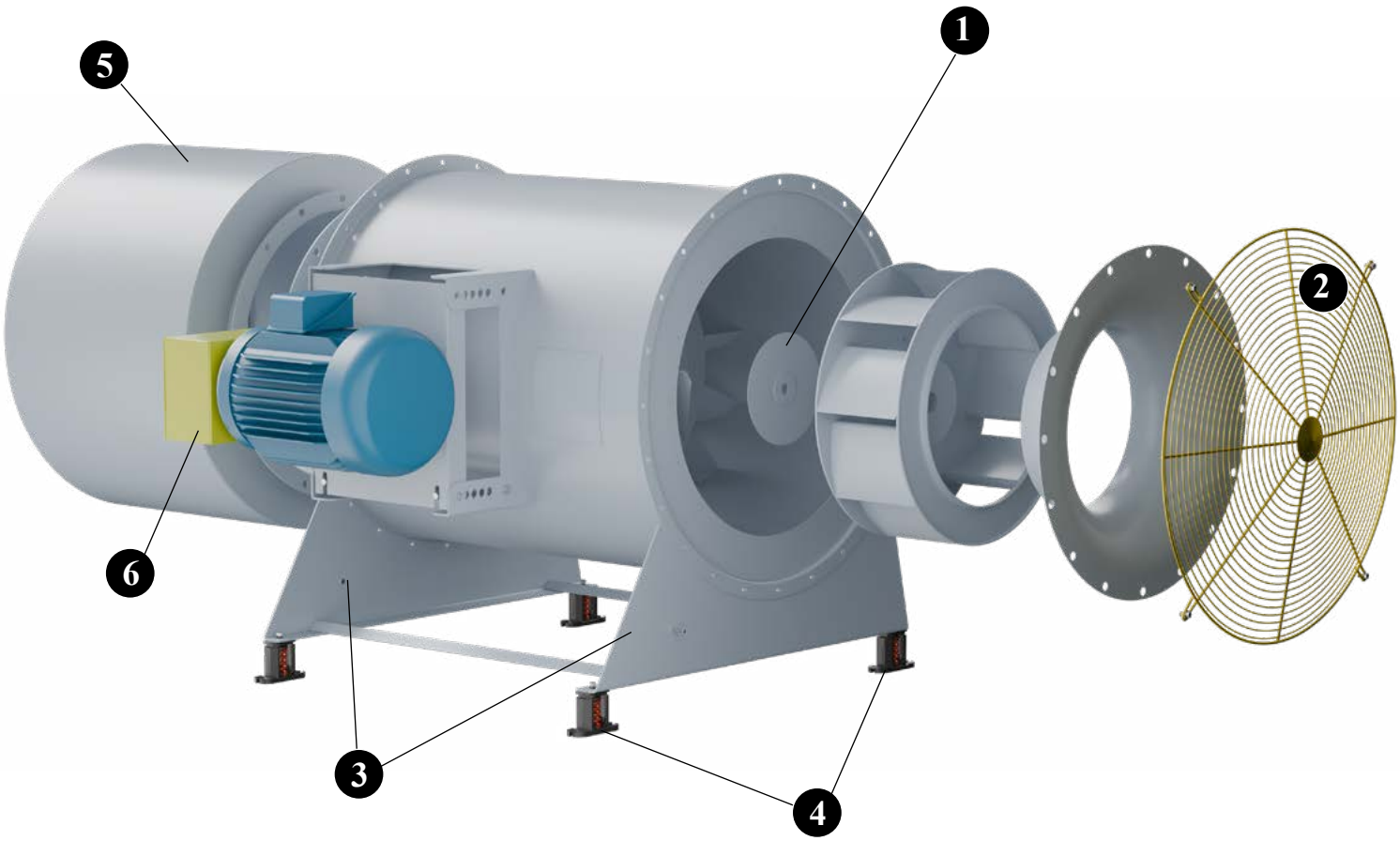
Type B - The fan shall have a nonferrous impeller and nonferrous rub ring about the opening through which the shaft passes — usually aluminum impeller and rub ring and limited to 200°F. Consult factory for availability.

Type C - The fan is constructed so that a shift of the impeller or shaft will not permit two ferrous parts of the fan to rub or strike.



Spark Resistant Construction

Options/Accessories



1 Shaft Seal A shaft seal reduces leakage and protects the bearings and motor from a contaminated airstream. Standard seals are compressed between a cover plate and the fan housing. The shaft seal is provided as standard on all fans with applications over 300°F. Although shaft seals minimize air leakage, they are not a gas-tight design.

2 Inlet/Outlet Screens Safety screening can be provided for installation in the fan inlet or outlet.

3 Support Legs Support legs are available for standard platform or floor mounting. The support legs are bolted to the inlet and discharge flange rings.

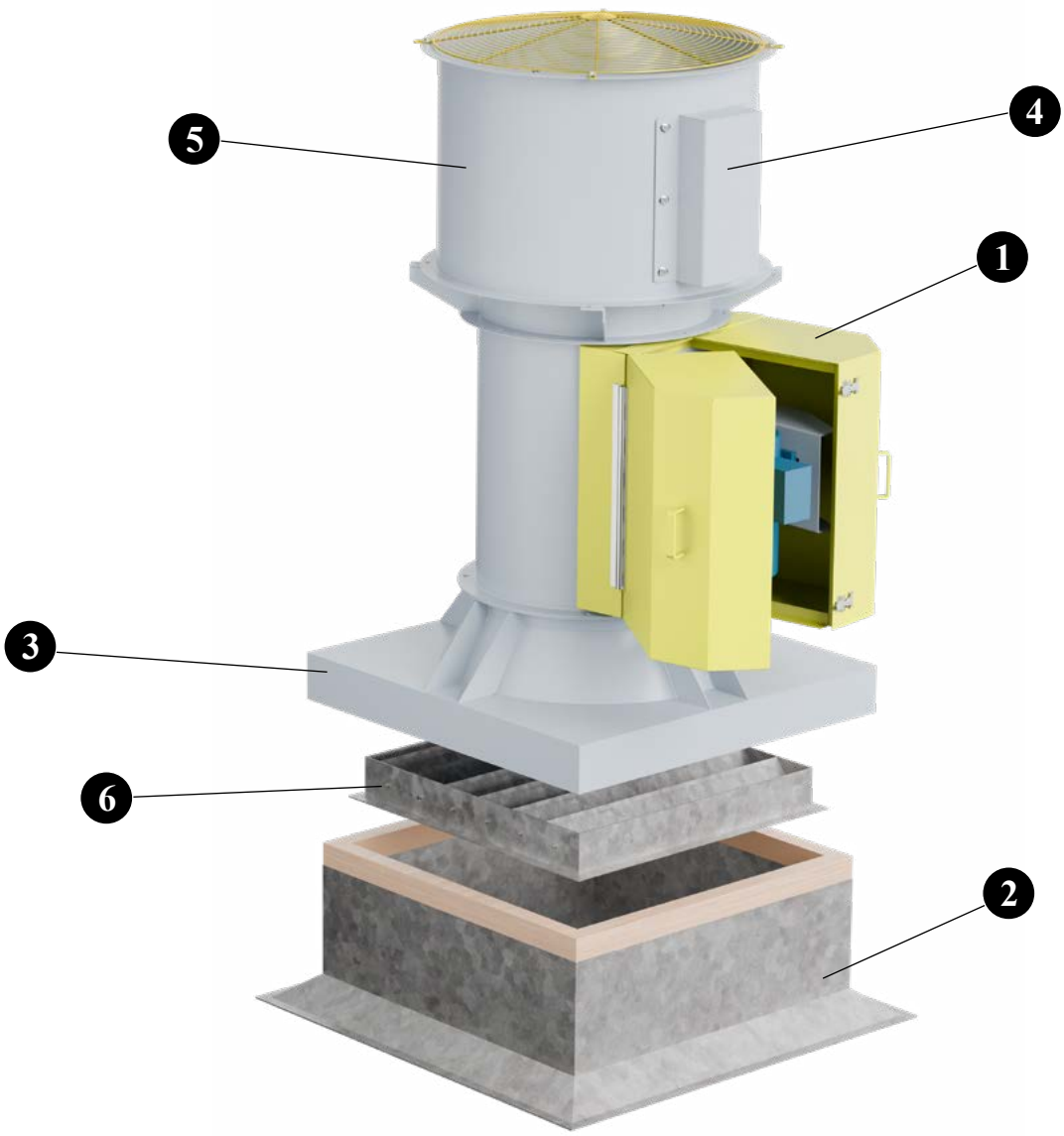
4 Vibration Isolators Rubber-in-shear or spring type vibration isolators are available for all sizes and arrangements. Individual pads will be furnished as standard. If rails or rail assemblies are required, consult the factory for specifications and pricing.

5 Silencers For particularly quiet operation, Aerovent silencers provide an aerodynamically, acoustically matched package. They significantly reduce noise and add only minor resistance to airflow. Flange connections on both inlet and outlet ends couple directly to the Centaxial® fan. Silencers may be added to inlet and discharge flanges for minimum noise. Consult factory for insertion loss (dB) and resistance data.

6 Belt Guards OSHA belt guards covering the motor sheave and belts outside the Centaxial® fan are mounted directly to the fan housing.

Other Accessories

- Ceiling Suspension Brackets
- Outlet/Inlet Companion Flange
- Vertical Support Setion
- Full Fan Access Door
- Impeller Inspection Door



1 **Clamshell Motor Cover** For outdoor installations, the weather cover completely encloses the motor and V-belt drive components from the elements. The quick action latches provide superior access for quick inspection and maintenance.

2 **Canted Roof Curb** Prefabricated roof curbs are available in heavy-duty galvanized steel or aluminum construction, in heights of 8", 12" or 18". The canted curb is provided with a factory installed wood nailer and damper tray. Curbs are provided with 1.5" of insulation as standard and feature continuously-welded seams for added rigidity and moisture protection. Prefabricated curbs are also available in self-flashing, pitched and peak models. (See page 10 for additional curb options.)

3 **Curb Cap** Roof ventilator bases for curb mounting may be used to convert the Centaxial® fan to a roof ventilator. A stack cap or other device on the discharge side is necessary for weather protection in installations of this type.

4 **Motorized Stack Cap** Motorized actuators, positioned beneath the cover on both sides of the stack cap, facilitate the precise operation of the butterfly-style damper blades, aiding in the controlled opening and closing of the stack cap.

5 **Stack Cap** For use with vertical discharge through the roof. These heads have butterfly-style dampers and can be furnished with protective coatings for handling corrosive fumes. A motorized unit is also available (#4 in image above).

Minimum Outlet Velocity Required For Full Open Damper Operation:
Steel Dampers – 1700 FPM
Aluminum Dampers – 1300 FPM

6 **Inlet Damper** A standard backdraft damper is available, which may be mounted in the roof curb for greater sealing when fan is off.

Canted Roof Curbs

- Constructed of 18-gauge 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 ($1^1/_2$") secured to top ledge
- Lined with $1^1/_2$" fiberglass fire-resistant, sound-absorbing insulation
- Damper shelf standard
- Not available on Models AMXR and AMXSH
- Options: Aluminum (16-gauge) construction, burglar security bars, metal liner (galvanized or aluminum), special heights up to 24", single- or double-pitched curbs for sloping roofs

Self-Flashing & Straight Sided Roof Curbs

- Constructed of 18-gauge galvanized steel with continuously-welded seams
- Wide base plate (flashing) to insure watertight seal to roof
- Top ledge covered with $^3/_{16}$" polystyrene gasket for weather seal and to reduce metal-to-metal conducted noise
- Lined with $1^1/_2$" 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 sized smaller to allow for field supplied cants and roofing material to be brought up to the top of the curb
- Not available on Models AMXR and AMXSH
- Options: Aluminum (16-gauge) construction, burglar security bars, metal liner (galvanized or aluminum), special heights up to 24", wood nailer ($1^1/_2$") secured to top ledge in lieu of polystyrene gasket, 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 18-gauge galvanized steel with continuous 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 heavy-gauge 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. For indoor applications.

NEMA 1
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 3R
Disconnect Switch

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.)

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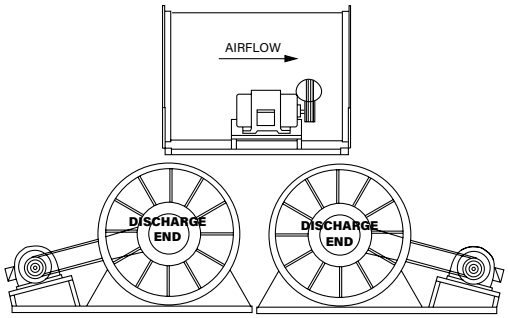
Belt Driven Arrangements (CBD)

Arrangement 1

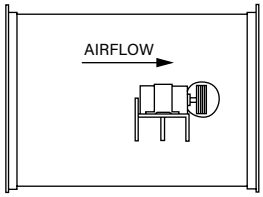
Belt driven Arrangement 1 is recommended when large horsepower motors are required. The impeller is overhung on the shaft, supported by heavy-duty bearings that are mounted within the inner shell of the fan. The motor is mounted independent of the fan housing on structural channel support legs.



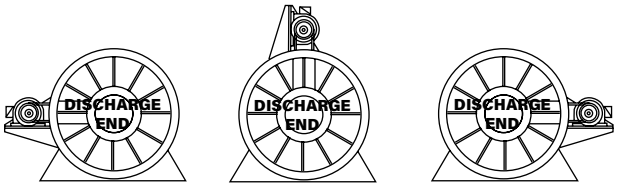
Left Hand Motor **Right Hand Motor***

Arrangement 9

Standard belt driven Arrangement 9 is recommended for most belt driven applications. The impeller is overhung on the shaft and supported by bearings mounted within the inner shell of the fan. Suitable for duct, vertical or horizontal mounting.



Horizontal Floor Positions

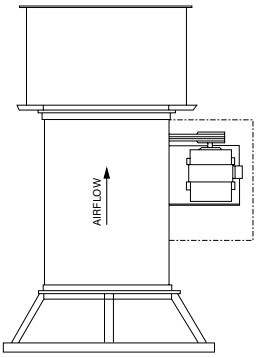


Standard Left Hand **Optional Top** **Optional Right Hand***

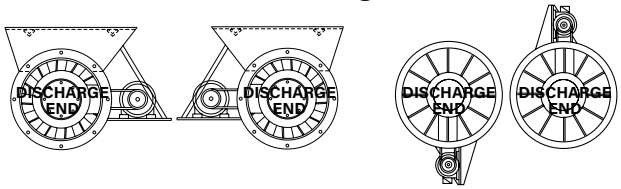
Arrangement 9RV**

Arrangement 9RV is the standard belt driven Arrangement 9 fan with a stack cap, curb cap and weather cover for the motor and drives. Available in all sizes, the Centaxial® roof ventilator is an extremely quiet and efficient roof exhauster.

**Consult the factory for vertical mounts requiring motors with frames larger than listed in the table on page 13 and on size 49 and larger Class III fans.



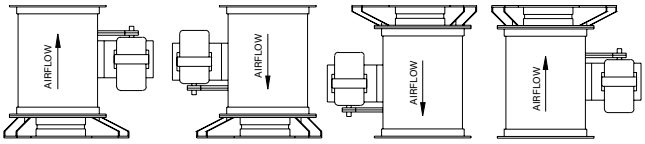
Horizontal Ceiling Positions



A9* **A10** **A11** **A12**

Vertical Floor Positions

Vertical Ceiling Positions



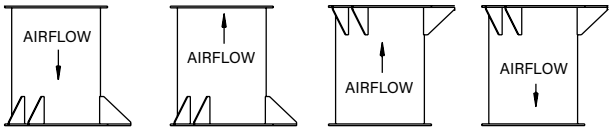
SA1 **SA2** **SA3** **SA4**

***Requires F2 motor mount.**

Direct Drive Arrangement 4 (CDD)

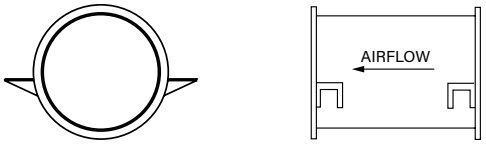
The Arrangement 4 offers compact assembly for duct mounting in tight enclosures, eliminating the motor overhang required on belt driven units.

Vertical Discharge Positions



Floor Down Discharge A5 **Floor Up Discharge A6** **Ceiling Up Discharge A7** **Ceiling Down Discharge A8**

Ceiling Horizontal Discharge Position



Ceiling Horizontal Discharge A13

Material Specifications

SIZE	HORIZONTAL INSTALLATION			VERTICAL INSTALLATION			HOUSING GAUGE		IMPELLER WEIGHT (LBS.)		
	CLASS I	CLASS II	CLASS III	CLASS I	CLASS II	CLASS III	INNER SHELL	OUTER SHELL	CLASS I	CLASS II	CLASS III
12	3/4"	1 3/16"	1 3/16"	3/4"	1 3/16"	1 1/2"	12 GA	14 GA	10	10	10
14	3/4"	1 3/16"	1 1/2"	1"	1 1/2"	*1 1/2"	12 GA	14 GA	14	14	14
16	1"	1 1/2"	*1 1/2"	1 3/16"	1 1/2"	*1 1/2"	12 GA	14 GA	15	15	15
18	1 3/16"	1 1/2"	*1 1/2"	1 1/2"	1 1/2"	*1 1/2"	12 GA	14 GA	23	23	23
20	1 3/16"	1 1/2"	*1 1/2"	1 1/2"	*1 1/2"	*1 1/2"	12 GA	14 GA	27	27	27
22	1 1/2"	*1 1/2"	*1 1/2"	1 1/2"	*1 1/2"	*1 1/2"	12 GA	14 GA	50	50	50
25	1 1/2"	*1 1/2"	*1 1/2"	*1 1/2"	*1 1/2"	*1 1/2"	12 GA	12 GA	56	56	59
28	1 1/2"	*1 1/2"	*1 11/16"	*1 1/2"	*1 1/2"	*1 11/16"	12 GA	12 GA	114	114	120
32	1 15/16"	*1 15/16"	*1 15/16"	*1 15/16"	*1 15/16"	*1 15/16"	10 GA	12 GA	181	181	190
35	2 3/16"	*2 3/16"	*2 3/16"	*2 3/16"	*2 3/16"	*2 3/16"	10 GA	12 GA	248	248	259
39	2 3/16"	*2 3/16"	*2 7/16"	*2 3/16"	*2 3/16"	*2 11/16"	10 GA	12 GA	386	386	400
44	2 7/16"	*2 7/16"	*2 11/16"	*2 7/16"	*2 7/16"	*3 3/16"	10 GA	10 GA	404	404	422
49	*2 7/16"	*2 7/16"	*2 15/16"	*2 7/16"	*2 11/16"	*3 3/16"	10 GA	10 GA	412	731	731
55	*2 7/16"	*2 7/16"	*3 7/16"	*2 11/16"	*3 3/16"	*3 15/16"	7 GA	10 GA	821	846	846
63	*2 15/16"	*2 15/16"	*3 15/16"	*2 15/16"	*3 15/16"	*3 15/16"	7 GA	10 GA	987	1019	1019
71	*3 7/16"	*3 7/16"	*3 15/16"	*3 7/16"	*3 15/16"	*3 15/16"	7 GA	10 GA	1506	1616	1616

*Denotes spherical roller bearings

WR^2 Factors of Impellers (moment of inertia in lb-ft²)

SIZE	CLASS I		CLASS II		CLASS III	
	ALUM.	STEEL	ALUM.	STEEL	ALUM.	STEEL
12	1	—	1	—	1	—
14	2	—	2	—	2	—
16	3	—	3	—	3	—
18	6	—	6	—	6	—
20	9	—	9	—	9	—
22	21	—	21	—	21	—
25	26	—	26	—	27	—
28	46	94	46	94	48	99
32	71	149	71	149	94	157
35	122	266	122	266	128	277
39	202	443	202	443	210	460
44	366	683	366	683	376	714
49	591	1500	609	1541	609	1541
55	855	2171	884	2237	884	2237
63	1356	3408	1404	3519	1404	3519
71	2574	6583	2771	7063	2771	7063

Maximum Safe Impeller Speed at 70°F

SIZE	CL I	CL II	CL III
*12	3338	4406	5591
*14	3006	3909	4962
*16	2668	3468	4402
*18	2371	3082	3913
*20	2135	2775	3522
*22	1906	2477	3144
25	1663	2202	2795
28	1476	1919	2435
32	1310	1671	2160
35	1164	1486	1921
39	1028	1337	1696
44	918	1194	1515
49	823	1070	1358
55	735	955	1212
63	642	835	1060
71	571	742	942

*Aluminum impellers only — all others steel as standard.

Maximum Safe Speed Factors for Alloy Impeller Construction at Elevated Temperatures

MATERIAL	-50°	70°	200°	300°	400°	500°	600°
STEEL	1.00	1.00	0.97	0.95	0.94	0.93	0.92
ALUMINUM	1.00	1.00	0.98	—	—	—	—

Note: For temperatures other than 70°F, multiply the "Maximum Safe Speed Factor" for the operating temperature by the "Maximum Safe Impeller Speed at 70°F" to determine the maximum safe RPM at the operating temperature.

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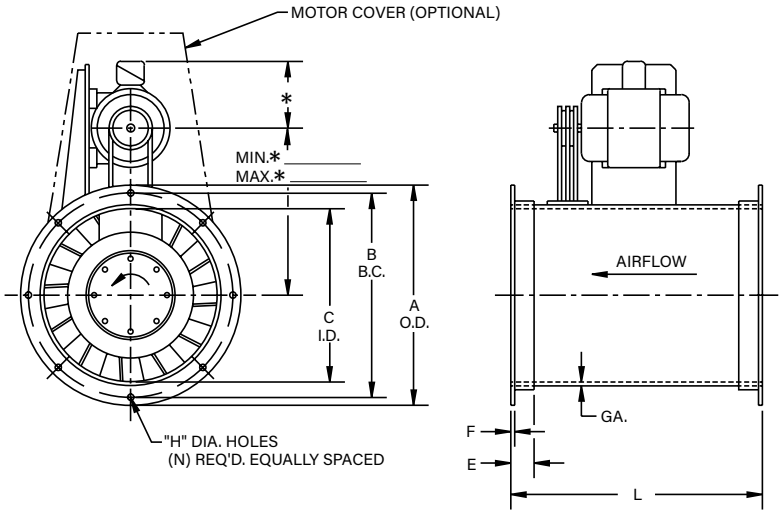
CBD Inline

Type C



*These dimensions are dependent on the motor used.

SIZE	OUTLET AREA (SQ. FT)	IMPELLER DIA. (IN.)	DIMENSIONS (IN.)								HSG. GA.	MAX MOTOR FRAME
			A	B	C	E	F	H	L	N		
12	1.91	12.40	21.88	20.50	18.69	1.50	0.19	0.44	22.50	8	14	184T
14	2.37	13.98	24.03	22.66	20.88	1.50	0.19	0.44	25.00	16	14	215T
16	3.04	15.75	26.78	25.41	23.88	1.50	0.19	0.44	28.00	16	14	256T
18	3.79	17.72	29.53	28.16	26.38	1.50	0.19	0.44	32.50	16	14	256T
20	4.76	19.68	32.69	31.38	29.53	1.50	0.19	0.56	36.00	16	14	286T
22	6.11	22.05	36.63	35.31	33.47	1.50	0.19	0.56	39.50	16	14	286T
25	7.63	24.80	41.59	39.78	37.41	2.00	0.25	0.56	44.00	16	12	286T
28	9.50	27.95	45.44	44.13	41.72	2.00	0.25	0.56	50.00	16	12	326T
32	11.78	31.50	50.66	48.84	46.47	2.00	0.25	0.56	55.50	24	12	326T
35	14.73	35.43	56.16	54.41	51.97	2.00	0.25	0.56	62.00	24	12	365T
39	19.02	39.37	63.25	61.50	59.06	2.00	0.25	0.56	69.00	24	12	365T
44	23.02	44.09	69.25	67.50	64.97	2.00	0.25	0.56	76.50	24	10	405T
49	28.93	49.21	77.13	75.38	72.84	2.00	0.25	0.69	85.00	32	10	405T
55	35.88	55.12	87.38	84.69	81.09	3.00	0.31	0.69	95.50	32	10	405T
63	47.08	62.99	99.19	96.50	92.91	3.00	0.31	0.69	109.50	32	10	405T
71	59.37	70.86	110.59	107.91	104.59	3.00	0.31	0.69	122.00	32	10	405T

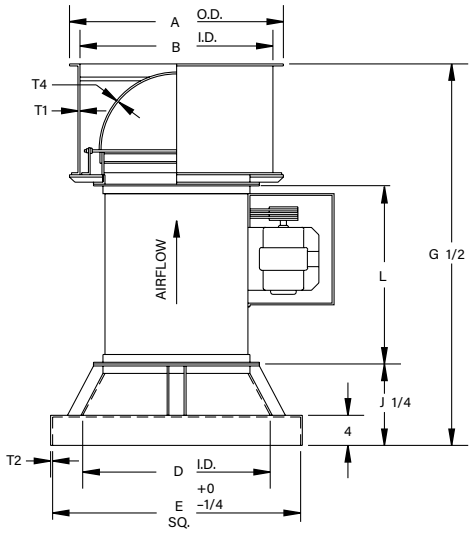
All figures are in inches unless otherwise noted.

Dimensions are not to be used for construction.

AEROVENT
INDUSTRIAL VENTILATION SYSTEMS

CBD Roof Ventilator

Roof Ventilator



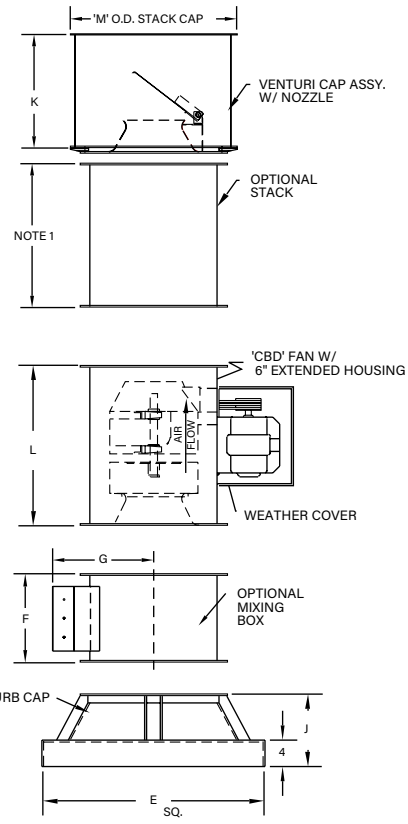
SIZE	DIMENSIONS							STEEL (GAUGE)				ALUMINUM (THICKNESS)		
	A	B	D	E	G	J	L	T1	T2	T3	T4	T1	T2/T3	T4
12	28.25	25.38	24.75	32.75	55.00	10.75	22.50	14	12	14	24	0.050	0.100	0.032
14	29.75	26.88	24.75	32.75	57.75	9.00	25.00	14	12	14	24	0.050	0.100	0.032
16	31.75	28.88	27.75	35.75	61.75	9.00	28.00	14	12	14	24	0.050	0.100	0.032
18	35.75	32.88	35.75	43.75	72.75	13.50	32.50	14	12	14	24	0.050	0.100	0.032
20	39.75	36.88	35.75	43.75	74.75	11.00	36.00	14	12	14	20	0.080	0.100	0.050
22	41.75	38.88	41.75	49.75	81.00	12.75	39.50	14	12	14	20	0.080	0.100	0.050
25	45.75	42.88	41.75	49.75	84.50	9.75	44.00	14	12	14	20	0.080	0.100	0.050
28	51.75	48.88	47.75	55.75	95.00	11.25	50.00	14	12	12	20	0.080	0.125	0.050
32	57.75	54.88	53.75	61.75	104.50	12.25	55.50	14	10	12	20	0.080	0.125	0.050
35	64.00	60.75	59.75	67.75	114.50	12.75	62.00	14	10	12	20	0.080	0.125	0.080
39	70.00	66.75	66.75	74.75	125.50	12.75	69.00	14	10	12	20	0.125	0.125	0.080
44	74.00	70.75	80.75	88.75	140.00	19.75	76.50	14	10	10	18	0.125	0.125	0.080
49	88.00	84.75	80.75	88.75	147.50	12.75	85.00	14	10	10	18	0.125	0.125	0.080
55	100.00	96.75	92.75	100.75	169.25	17.00	95.50	14	10	10	18	0.125	0.125	0.080
63	103.00	99.75	104.75	112.75	190.50	17.25	109.50	14	10	10	18	0.125	0.160	0.080
71	112.00	108.75	112.75	120.75	203.00	14.25	122.00	14	10	10	18	0.125	0.160	0.080

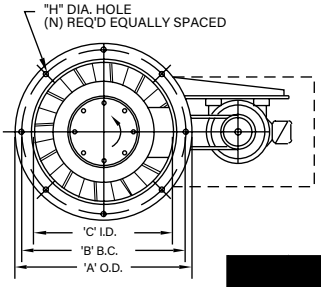
All figures are in inches unless otherwise noted.
Dimensions are not to be used for construction.

Minimum Outlet Velocity Required For Full Open Damper Operation:

Steel Dampers – 1700 FPM
Aluminum Dampers – 1300 FPM

Fume Hood Exhauster



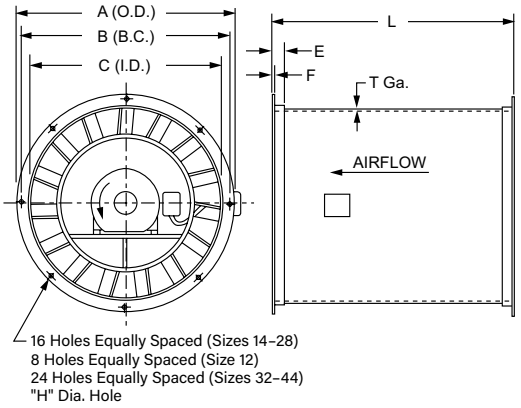


AVAILABLE NOZZLE SIZES																
SIZE	6	7	8	10	11	12	13	15	16	18	20	22	24	27	30	33
12	x	x	x	x	x	x	x									
14				x	x	x	x	x	x							
16				x	x	x	x	x	x	x						
18				x	x	x	x	x	x	x	x					
20							x	x	x	x	x	x				
22									x	x	x	x	x			
25											x	x	x	x		
28												x	x	x	x	
32													x	x	x	x

SIZE	A	B	C	E	F	G	H	J	K	L	M	N
12	21.88	20.50	18.69	32.75	16.50	19.50	0.44	10.75	19.25	28.50	29.00	8
14	24.03	22.50	20.88	32.75	23.50	20.50	0.44	9.00	22.50	31.00	33.00	16
16	26.78	25.41	23.63	35.75	23.50	21.88	0.44	9.00	24.50	34.00	36.00	16
18	29.53	28.16	26.38	43.75	28.00	23.25	0.44	13.50	27.00	38.50	37.00	16
20	32.69	31.38	29.53	43.75	30.50	24.88	0.56	11.00	29.50	42.00	40.00	16
22	36.63	35.31	33.47	49.75	33.50	26.88	0.56	12.75	32.50	45.50	43.00	16
25	41.59	39.78	37.41	49.75	36.50	28.88	0.56	9.75	35.50	50.00	46.00	16
28	45.94	44.13	41.72	55.75	40.00	31.00	0.56	11.25	38.75	56.00	50.00	16
32	50.66	48.84	46.47	61.75	45.00	33.50	0.56	12.25	42.50	61.50	53.00	24

NOTES:
1. Optional stack length will vary in length to make overall height 10' tall.

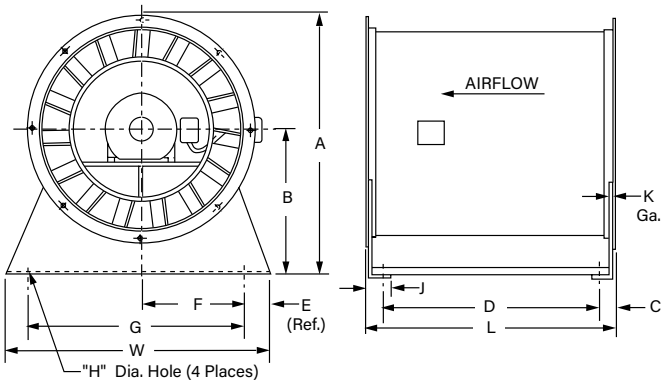
CDD Inline



SIZE	MAX MOTOR FRAME	IMPELLER DIA. (IN.)	OUTLET AREA (FT^2)	A	B	C	E	F	H	L	T
12	145T	12.41	1.91	21.88	20.50	18.69	–	12 GA.	0.56	23	12 GA.
14	184T	14.00	2.37	24.03	22.66	20.88	–	12 GA.	0.56	26	12 GA.
16	215T	15.75	3.04	26.78	25.41	23.63	–	12 GA.	0.56	29	12 GA.
18	254T	17.72	3.79	29.53	28.16	26.38	–	12 GA.	0.56	34	12 GA.
20	184T	19.69	4.76	32.69	31.38	29.53	–	12 GA.	0.56	30	12 GA.
22	184T	22.06	6.11	36.63	35.31	33.47	–	12 GA.	0.56	31	12 GA.
25	215T	24.81	7.63	41.59	39.78	37.41	–	10 GA.	0.56	35	10 GA.
28	254T	27.97	9.50	45.94	44.13	41.72	–	10 GA.	0.69	40	10 GA.
32	286T	31.50	11.78	50.66	48.84	46.47	–	10 GA.	0.69	48	10 GA.
35	326T	35.44	14.73	56.16	54.41	51.97	–	7 GA.	0.69	53	7 GA.
39	326T	39.38	19.02	63.25	61.50	59.06	2	0.25 GA.	0.69	56	12 GA.
44	365T	44.09	23.02	69.25	67.50	64.97	2	0.25 GA.	0.69	62	10 GA.

Dimensions are in inches unless otherwise indicated.
Dimensions are not to be used for construction.

Support Legs – Floor or Ceiling Hung



SIZE	A	B	C	D	E	F	G	H	J	L	W	K GA.
12	26.06	15.13	0.88	21.25	0.75	10.25	20.50	0.56	1.69	23	22	10
14	28.06	16.06	0.88	24.25	0.75	11.25	22.50	0.56	1.69	26	24	10
16	31.06	17.69	1.13	26.75	1.00	12.50	25.00	0.56	2.19	29	27	10
18	34.06	19.31	1.75	30.50	1.50	13.50	27.00	0.56	3.19	34	30	10
20	37.19	20.84	1.75	26.50	1.50	15.00	30.00	0.56	3.19	30	33	7
22	41.19	22.88	1.75	27.50	1.50	17.00	34.00	0.56	3.19	31	37	7
25	46.25	25.44	1.75	31.50	1.50	19.50	39.00	0.56	3.25	35	42	7
28	50.25	27.28	1.75	36.50	1.50	21.50	43.00	0.56	3.25	40	46	7
32	54.81	29.50	1.75	44.50	1.50	24.00	48.00	0.56	3.25	48	51	7
35	51.25	33.19	1.75	49.50	1.50	26.50	53.00	0.56	3.25	53	56	7
39	68.25	36.63	2.25	51.50	2.00	29.50	59.00	0.56	4.25	56	63	7
44	74.25	39.63	2.25	57.50	2.00	32.50	65.00	0.56	4.25	62	69	7

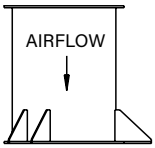
Dimensions are in inches unless otherwise indicated.
Dimensions are not to be used for construction.

NOTE: Totally enclosed air-over motors are not available due to insufficient flow of air over motor needed for proper cooling.

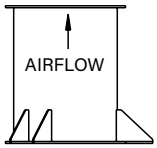
AEROVENT
INDUSTRIAL VENTILATION SYSTEMS

Mounting Positions

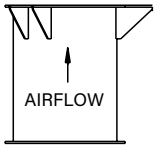
Vertical Discharge Positions



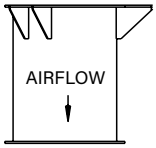
FLOOR DOWN DISCHARGE A5



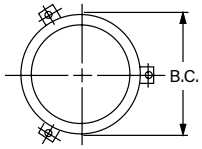
FLOOR UP DISCHARGE A6



CEILING UP DISCHARGE A7



CEILING DOWN DISCHARGE A8

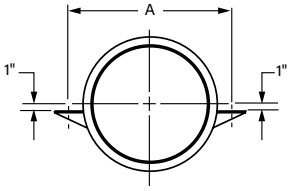


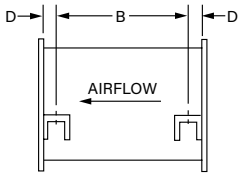
TOP VIEW

NOTE: All sizes of the vertical discharge positions have three pads.

MOUNTING PAD SIZE
7 GA. for sizes 12 through 22.
1/4 PLT for sizes 25 and 28.
All pads are 4" x 5".
All pads have 11/16" diameter bolt holes.

Ceiling Horizontal Discharge Position - A13





NOTE: All sizes of the ceiling horizontal discharge position have four pads.

SIZE	A	B	B.C.	D
12	22.88	17.63	25.91	2.69
14	25.13	20.63	28.13	2.69
16	27.88	23.63	30.75	2.69
18	30.63	28.63	33.59	2.69
20	33.75	24.63	36.69	2.69
22	37.63	25.63	40.66	2.69
25	41.63	29.50	45.63	2.75
28	46.00	34.50	49.94	2.75
32	50.75	42.50	54.69	2.75
35	56.25	47.50	60.19	2.75
39	63.38	50.50	67.25	2.75
44	69.25	56.50	73.25	2.75

Dimensions are in inches unless otherwise indicated.
Dimensions are not to be used for construction.

AEROVENT
INDUSTRIAL VENTILATION SYSTEMS

Typical Specifications

Model
CBD

Fans shall be of the CBD Belt Driven, Backward Inclined Airfoil, Centaxial® (Tubular Inline Centrifugal) type, as manufactured by Aerovent, Minneapolis, Minnesota, and shall be of the size and capacity as indicated in the fan schedule. Fans shall be tested in accordance with ANSI/ASHRAE 51-1985 and ANSI/AMCA 210 test codes and guaranteed by the manufacturer to deliver at the rated published performance levels. In addition, each unit shall be factory run tested prior to shipment.

HOUSINGS — Housings shall be designed to meet Class I/Class II/Class III construction. Housings shall be constructed of heavy-gauge rolled steel with continuous seam type welding, angle ring flanges and side angle reinforcement. The inner shell and guide vanes shall be integrally welded with the outer fan casing providing a substantial weldment. The inlet funnel shall be built into the fan casing to provide optimal airflow into the fan impeller. Flanges at the inlet and outlet of the fan casing are to be the same size for easy mounting of the fan into the ductwork. An adjustable motor base plate assembly shall be welded to the outside of the fan housing to provide belt tension adjustment. Housing material shall be constructed of the following optional metal:

□ Steel □ Aluminum

IMPELLERS — Impellers shall be statically and dynamically balanced and shall be attached to the shaft with a split taper lock bushing. Some larger impellers are furnished with straight bore hubs. The blades on the BIA impeller shall be backward curved, double thickness airfoil type, welded to a flat impeller cone and back plate. BIA impeller sizes 12 through 25 shall be constructed from heavy-gauge aluminum only. BIA sizes 28 and larger shall have impellers that are constructed from heavy-gauge steel with aluminum as an option.

BEARINGS — Bearings shall be pillow block design, oversized to ensure maximum bearing life and shall have a minimum L-10 life as defined by AFBMA of at least 40,000 hours (200,000 hours average life).

DRIVES — The V-belt drive package shall consist of cast iron sheaves and static conducting belts. The bearings and belts shall be enclosed in an air insulated housing for protection. The belts and sheaves furnished by the manufacturer shall be selected to provide a minimum 1.4 service factor when measured against motor horsepower.

MOTORS — Fan motors shall be foot mounted NEMA Design B, standard industrial, continuous-duty ball bearing variable torque type suitable for operation on voltage, phase and hertz, as listed in the fan schedule. Motor bearings shall have a minimum L-10 life, as defined by AFBMA, of at least 40,000 hours (200,000 hours average life).

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 — The units shall be furnished complete with:

- □ OSHA Type Inlet Guard
- □ OSHA Type Outlet Guard
- □ Acoustical Silencer
- □ Impeller Inspection Door
- □ Access Door
- □ Manually Operated Inlet Vortex Damper
- □ Ceiling Vibration Isolators (RIS/Spring)
- □ Floor Vibration Isolators (RIS/Spring)
- □ Support Legs
- □ Horizontal Ceiling Mounting Brackets
- □ Vertical Mounting Brackets
- □ Spark Resistant Construction (Type A, B, C)
- □ High Temperature Construction
- □ Elastomeric Shaft Seal
- □ OSHA Type Motor Cover
- □ OSHA Type Belt Guard
- □ Stack Cap
- □ Curb Cap

Model

CDD

Fans shall be of the CDD Direct Drive Backward Inclined Airfoil Centaxial® (Tubular Inline Centrifugal) type, as manufactured by Aerovent, Minneapolis, Minnesota, and shall be of the size and capacity as indicated in the fan schedule. Centaxial® fans shall be tested in accordance with ANSI/ASHRAE 51-1985 and ANSI/AMCA 210-85 test codes and 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 — The fan casing shall be constructed of heavy-gauge rolled steel with continuous seam type welding and angle ring flanges. The guide vanes and motor base plate support shall be integrally welded with the outer fan casing providing a substantial weldment. The inlet funnel shall be built into the fan casing to provide optimal airflow into the fan impeller. Flanges at the inlet and outlet of the fan casing are to be the same size for easy mounting of the fan into ductwork. Housing material shall be constructed of the following optional metal:

□ Steel □ Aluminum

IMPELLER — The BIA impeller features continuously-welded backward curved double thickness airfoil blades. Impeller sizes 12 through 25 shall be constructed from heavy-gauge aluminum only. Sizes 28 and larger shall be furnished in heavy-gauge steel construction as standard with aluminum as an option. Blades shall be precision welded to flat impeller cones and staggered on each side of the center plate. The impeller shall be dynamically and statically balanced and shall be attached to the shaft with a split taper lock bushing or furnished with straight bore hubs.

MOTORS — Fan motors shall be foot mounted, NEMA Design B, standard industrial, continuous-duty, ball bearing, variable torque type suitable for operation on voltage, phase and hertz, as listed in the fan schedule. Motor bearings shall have a minimum L-10 life, as defined by AFBMA, of at least 40,000 hours (200,000 hours average life). Units shall be supplied with motor wiring connections extended through liquid tight conduit to outside the fan housing. If motors have regreasable bearings, extended grease lines shall be supplied for lubrication of the motor bearings.

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 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 — The units shall be furnished complete with:

- □ OSHA Type Inlet Guard
- □ OSHA Type Outlet Guard
- □ Acoustical Silencer
- □ Impeller Inspection Door
- □ Access Door
- □ Manually Operated Inlet Vortex Damper
- □ Ceiling Mounted Vibration Isolators (RIS/Spring)
- □ Floor Mounted Vibration Isolators (RIS/Spring)
- □ Horizontal Ceiling Mounting Brackets
- □ Vertical Mounting Brackets
- □ Optional Construction Materials — Steel, Aluminum,
- □ Companion Flanges
- □ Ceiling Suspension Brackets
- □ Support Legs

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