

# AEROVENT

INDUSTRIAL VENTILATION SYSTEMS



**Model CBD  
Belt Driven**



**Model CDD  
Direct Drive**

## **CENTAXIAL® TUBULAR CENTRIFUGAL FANS**

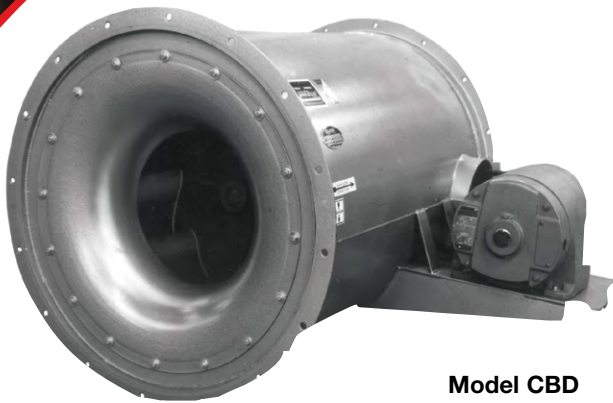
**BIA Airfoil Blade Design**

**Direct Drive & Belt Driven**

**Model CBD / CDD (Class I, II & III)**

## Models

### CBD | CDD (Class I, II, & III)



**Model CBD**  
Belt Driven



**Model CDD**  
Direct Drive

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 propeller has been used mostly in high capacity pumps. The physical design of the ordinary mixed-flow wheel made its use rather limited; however, the development of the airfoil centrifugal wheel 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 wheels in all sizes are backward curved airfoil design, providing stable performance, quiet operation and more air per horsepower.

### Sizes and Capacities

- Belt driven sizes 12" to 71"
- Direct drive sizes 12" to 44"
- Capacities to 130,000 CFM
- Static pressures to 14"

### 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



Aerovent certifies that the Centaxial® Tubular Centrifugal Fans 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 Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Refer to Catalog 338 for sound power levels.

## Construction Features

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 wheel. 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 Wheel

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

Wheel 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. An optional BI wheel is also available.

### Optional High Temperature Construction

Belt driven Centaxial fans especially designed for high temperature operations are available from size 25 to 71 in all-steel construction, in either standard "C" or "TC" types, 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" propeller 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.

### Optional Type TC Construction

A modified inlet and discharge may be added to make these areas the same as a scroll-type centrifugal fan of the same wheel size. This enables the user to directly replace a scroll fan with a Centaxial® fan.

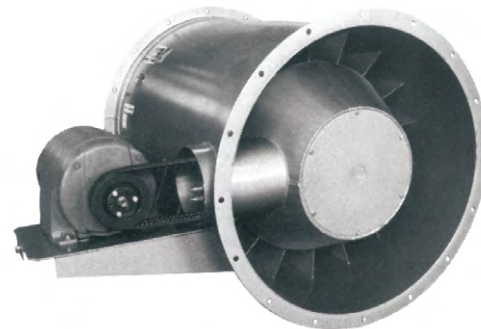
Although this fan design is slightly more expensive, it has certain advantages which make it desirable for some installations. The "TC" design will fit directly into smaller diameter duct systems at a considerable savings in installation cost. The addition of the tapered discharge cone does not appreciably decrease the efficiency of the fan. The illustration below shows the Centaxial® fan with the optional tapered discharge cone and smaller inlet connections.



BIA Wheel



High Temp Construction



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

# Accessories



Silencers



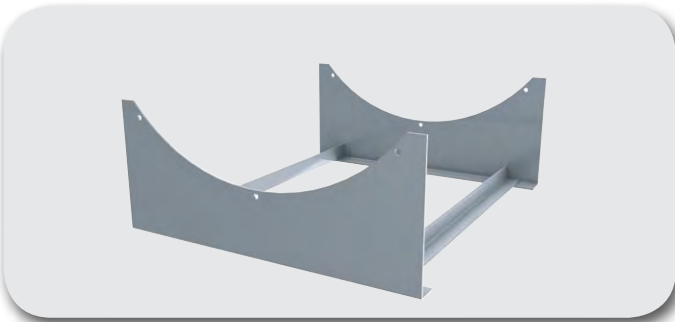
Shaft Seals



Motor Cover



Screening



Support Legs

## 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.

## Shaft Seals

Four types of friction shaft seals are available:

1. Elastomeric Rotary Seal — Recommended to protect the shaft and bearings when the fan is used for handling dirty, wet, or corrosive air. The seal rides against a heavy Teflon wear plate. This seal is suitable for operation to 300°F.
2. Ceramic Felt — Best suited for 301°F to 800°F operation. These seals minimize leakage around the shaft opening but are not gas tight. Elements are encased between the housing drive side and a metal retaining plate. Ceramic felt inserts may be easily split for field installation and maintenance.
3. Lubricated Seals — For longer seal life. Suitable to 300°F.
4. Stuffing Boxes — For maximum sealing. Specify temperature for proper packing material.

## Fan Safety Guards

OSHA safety guards are available for either the inlet or discharge end of the fan. The design may vary depending upon the diameter and functional requirement.

## Inlet Dampers

The vortex damper controls air volume while reducing horsepower. It imparts a swirl to the air in the direction of wheel rotation. The graph indicates the angle of the damper setting related to the reduction in air volume and horsepower.

## Motor Covers

OSHA motor covers are available for all models. Motor covers are vented, so it is necessary that the fan discharge arrangement be specified for proper drip-proof construction of the motor cover.

## Support Legs

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

## Ceiling Suspension Brackets

Mounting pads for use with vibration isolators are available for horizontal ceiling suspension.

## Vertical Mounting Brackets

Mounting pad sections for use with vibration isolators are available and may be provided for vertical or suspended installation.

## Belt Guards

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

## Wheel Inspection Door

Access to inspect wheel with limited space for cleaning the wheel.

## Stack Caps

For use with vertical discharge through the roof. These heads have backdraft dampers and can be furnished with protective coatings for handling corrosive fumes. A motorized unit is also available.

Minimum Outlet Velocity Required For Full Open Damper Operation:

Steel Dampers – 1700 FPM

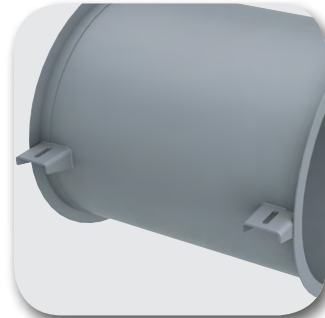
Aluminum Dampers – 1300 FPM

## Curb Bases

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.

## 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.



Ceiling Suspension Brackets



Vertical Mounting Brackets



Belt Guards



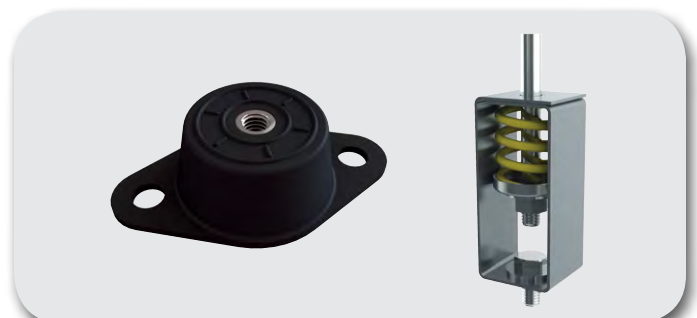
Wheel Inspection Door



Stack Cap



Curb Base



Vibration Isolators

# Optional Construction

Type	Construction Details
"A"	— All parts of the fan in contact with the air or gas being handled shall be made of nonferrous material. Steps must also be taken to ensure that the impeller, bearings, and shaft are adequately attached and/or restrained to prevent a lateral or axial shift in these components.
"B"	— The fan shall have a nonferrous impeller and nonferrous ring about the opening through which the shaft passes. Ferrous hubs, shafts, and hardware are allowed provided construction is such that a shift of impeller or shaft will not permit two ferrous parts of the fan to rub or strike. Steps must also be taken to ensure that the impeller, bearings, and shaft are adequately attached and/or restrained to prevent a lateral or axial shift in these components.
"C"	— The fan shall be so constructed that a shift of the impeller or shaft will not permit two ferrous parts of the fan to rub or strike.

## Spark Resistant Construction

Described are three classifications as defined by AMCA Standards for spark resistant construction.

### NOTES:

1. No bearings, drive components, or electrical devices shall be placed in the air or a 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 have been allowed to rust, requires special consideration. Research, by the U.S. Bureau of Mines and others, has shown that aluminum impellers rubbing on rust steel may cause high intensity sparking.

The use of the 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 a system."



## High Temperature Construction

Belt driven Centaxial fans especially designed for high temperature operations are available from size 25 to 71 in all-steel construction, in either standard "C" or "TC" types, 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" propeller 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.

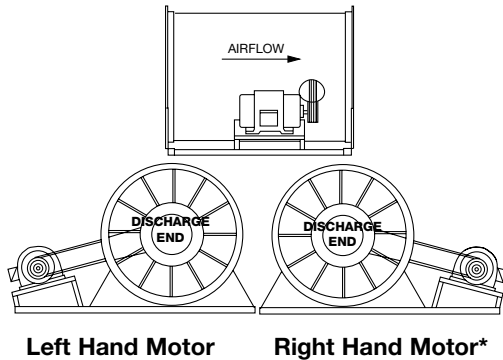


# Drive Arrangements

## Belt Driven Arrangements (CBD)

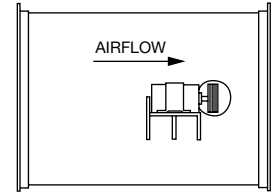
### Arrangement 1

Belt driven Arrangement 1 is recommended when large horsepower motors are required. The wheel 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.

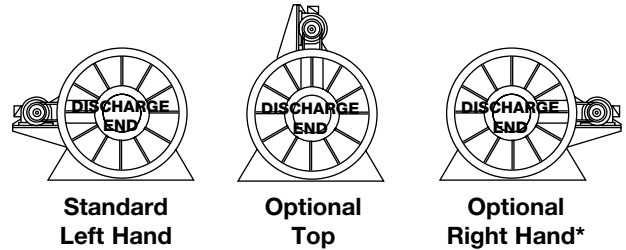


### Arrangement 9

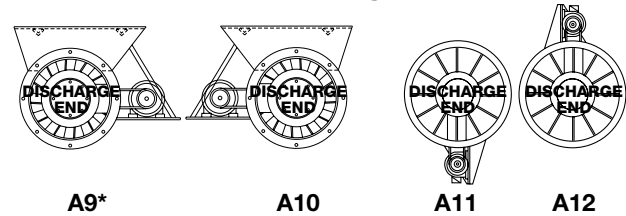
Standard belt driven Arrangement 9 is recommended for most belt driven applications. The wheel is overhung on the shaft and supported by bearings mounted within the inner shell of the fan. Suitable for duct, vertical or horizontal mounting.



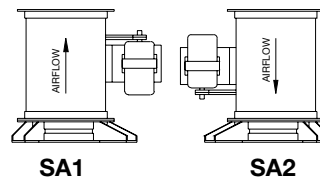
### Horizontal Floor Positions



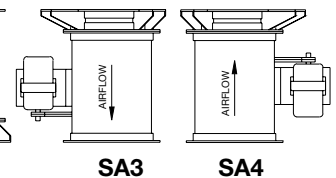
### Horizontal Ceiling Positions



### Vertical Floor Positions



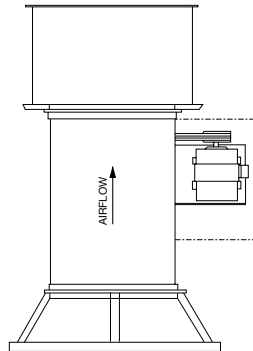
### Vertical Ceiling Positions



\*Requires F2 motor mount.

### Arrangement 9RV\*\*

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

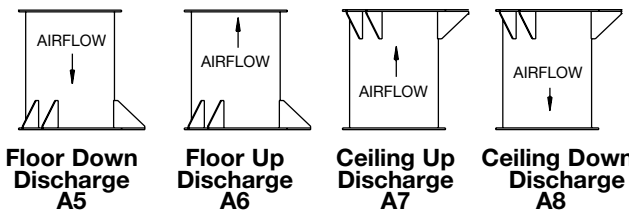


\*\*Consult the factory for vertical mounts requiring motors with frames larger than listed in the table on page 21 and on size 49 and larger Class III fans.

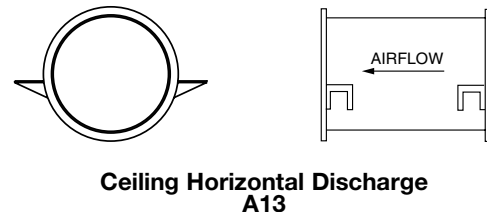
## Direct Drive Arrangement 4 (CDD)

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

### Vertical Discharge Positions



### Ceiling Horizontal Discharge Position



## Material Specifications

SIZE	HORIZONTAL INSTALLATION			VERTICAL INSTALLATION			HOUSING GAUGE		WHEEL 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<sup>2</sup> Factors of BIA and BI Wheels (moment of inertia in lb-ft<sup>2</sup>)

SIZE	BIA WHEELS						BI WHEELS					
	CLASS I		CLASS II		CLASS III		CLASS I		CLASS II		CLASS III	
	ALUM.	STEEL	ALUM.	STEEL	ALUM.	STEEL	ALUM.	STEEL	ALUM.	STEEL	ALUM.	STEEL
12	1	—	1	—	1	—	1	2	1	2	1	3
14	2	—	2	—	2	—	2	4	2	4	2	4
16	3	—	3	—	3	—	2	5	2	5	3	6
18	6	—	6	—	6	—	4	10	4	10	5	11
20	9	—	9	—	9	—	7	16	7	16	7	17
22	21	—	21	—	21	—	15	34	15	34	17	38
25	26	—	26	—	27	—	23	53	23	53	25	56
28	46	94	46	94	48	99	34	78	34	78	36	83
32	71	149	71	149	94	157	65	154	79	177	79	177
35	122	266	122	266	128	277	114	260	123	280	123	280
39	202	443	202	443	210	460	217	504	231	533	231	533
44	366	683	366	683	376	714	365	717	403	820	403	820
49	591	1500	609	1541	609	1541	595	1458	623	1547	623	1547
55	855	2171	884	2237	884	2237	861	2110	907	2250	907	2250
63	1356	3408	1404	3519	1404	3519	1439	3570	1439	3570	1439	3570
71	2574	6583	2771	7063	2771	7063	2544	6316	2544	6316	2544	6316

## Maximum Safe Speed Factors for BIA and BI Alloy Wheel 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	—	—	—	—
304 S.S. (BI ONLY)	1.00	1.00	0.88	0.82	0.78	0.75	0.73
316 S.S. (BI ONLY)	1.00	1.00	0.95	0.92	0.89	0.86	0.84
347 S.S. (BI ONLY)	1.00	1.00	0.95	0.93	0.90	0.90	0.90

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

Stainless steel wheels are available in BI only.

## Maximum Safe BIA & BI Wheel Speed at 70°F

SIZE	BIA WHEELS			BI WHEELS		
	CL I	CL II	CL III	CL I	CL II	CL III
*12	3338	4406	5591	3080	4005	5083
*14	3006	3909	4962	2732	3554	4511
*16	2668	3468	4402	2425	3153	4002
*18	2371	3082	3913	2156	2802	3557
*20	2135	2775	3522	1941	2523	3202
*22	1906	2477	3144	1732	2252	2858
25	1663	2202	2795	1540	2002	2541
28	1476	1919	2435	1367	1777	2255
32	1310	1671	2160	1213	1576	2000
35	1164	1486	1921	1078	1402	1779
39	1028	1337	1696	970	1261	1600
44	918	1194	1515	866	1126	1429
49	823	1070	1358	776	1009	1281
55	735	955	1212	693	901	1143
63	642	835	1060	606	788	1000
71	571	742	942	539	701	889

\*Aluminum wheels only for BIA — all others steel as standard.



# Model CBD

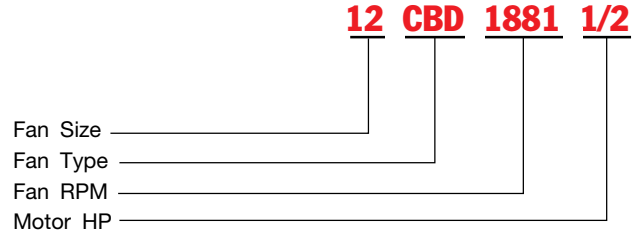
Capacities shown in the performance tables that follow are for standard air conditions: 70°F at sea level (.075 lbs./cu. ft. air density).

Safe operating speed limits for various temperature conditions are shown in the tables on page 8.

The performance tables shown are given in English units.

## Model Nomenclature

To identify a specific fan for ordering or engineering specification, it is necessary to show the complete catalog number as outlined in the example below.



## Size 12 CBD Belt Driven Centaxial

Wheel Diameter: 12.40"      Inlet Diameter: 18.69"  
 Tip Speed, FPM = 3.25 x Fan RPM      Inlet Area: 1.91 ft<sup>2</sup>  
 Max. BHP = 0.055 x (RPM ÷ 1000)<sup>3</sup>      Outlet Area: 1.91 ft<sup>2</sup>

LEGEND	
Class I fans	(Max. 3388 RPM)
Class II fans	(Max. 4406 RPM)
Class III fans	(Max. 5591 RPM)

CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
760	400	1266	0.11	1549	0.20	1808	0.31												
950	500	1420	0.14	1689	0.26	1911	0.38	2117	0.51	2324	0.66								
1140	600	1578	0.19	1844	0.33	2050	0.46	2237	0.61	2410	0.76	2582	0.93	2754	1.10				
1330	700	1754	0.24	1997	0.40	2203	0.56	2378	0.72	2541	0.89	2693	1.07	2840	1.25	2988	1.44	3282	1.84
1520	800	1939	0.32	2152	0.48	2359	0.67	2531	0.85	2685	1.04	2830	1.23	2967	1.42	3098	1.62	3356	2.05
1710	900	2128	0.41	2321	0.58	2510	0.78	2687	0.99	2839	1.20	2977	1.41	3108	1.62	3235	1.84	3471	2.28
1900	1000	2319	0.52	2499	0.71	2668	0.91	2839	1.14	2995	1.38	3132	1.61	3258	1.84	3378	2.07	3608	2.55
2090	1100	2513	0.64	2684	0.85	2838	1.06	2993	1.30	3147	1.56	3288	1.82	3414	2.08	3531	2.33	3750	2.84
2292	1200	2721	0.80	2883	1.03	3028	1.26	3167	1.50	3310	1.77	3449	2.06	3579	2.34	3697	2.62	3911	3.17
2470	1300	2906	0.96	3061	1.21	3199	1.46	3330	1.71	3460	1.98	3592	2.27	3721	2.58	3842	2.89	4057	3.49
2660	1400	3105	1.15	3252	1.43	3385	1.70	3509	1.96	3629	2.24	3751	2.53	3874	2.86	3994	3.19	4214	3.85
2850	1500	3305	1.38	3445	1.67	3574	1.96	3692	2.24	3805	2.53	3918	2.83	4031	3.15	4146	3.50	4366	4.21
3056	1600	3524	1.65	3656	1.96	3780	2.28	3894	2.59	4002	2.89	4107	3.20	4211	3.52	4318	3.87	4530	4.62
3420	1800	3912	2.22	4033	2.58	4148	2.93	4256	3.28	4357	3.62	4454	3.96	4548	4.30	4641	4.65	4830	5.42
3800	2000	4321	2.95	4431	3.35	4537	3.74	4638	4.13	4734	4.52	4825	4.90	4913	5.28	4999	5.65	5167	6.43
4180	2200	4731	3.84	4833	4.28	4931	4.71	5025	5.14	5116	5.57	5203	6.00	5287	6.42	5367	6.83	5523	7.66

CFM	OV	6" SP		7" SP		8" SP		9" SP		10" SP		11" SP		12" SP		13" SP		14" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1520	800	3615	2.50																
1710	900	3700	2.75	3931	3.25	4160	3.77												
1900	1000	3821	3.04	4028	3.56	4235	4.10	4442	4.67	4647	5.25								
2090	1100	3959	3.37	4154	3.91	4342	4.47	4530	5.05	4719	5.66	4907	6.28						
2292	1200	4110	3.74	4301	4.31	4482	4.91	4656	5.51	4827	6.13	4998	6.77						
2470	1300	4251	4.09	4435	4.70	4613	5.32	4782	5.95	4945	6.60	5104	7.25						
2660	1400	4407	4.49	4585	5.13	4756	5.79	4922	6.45	5082	7.13	5236	7.82						
2865	1500	4576	4.95	4753	5.64	4919	6.33	5079	7.03	5234	7.74	5386	8.48						
3056	1600	4730	5.39	4911	6.14	5076	6.87	5232	7.61	5382	8.35	5528	9.11						
3420	1800	5021	6.25	5204	7.11	5375	7.96	5531	8.79										
3820	2000	5354	7.34	5526	8.25														
4180	2200																		

Performance shown is for installation type B: Free inlet, ducted outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream.



















# Size 71 CBD Belt Driven Centaxial

Wheel Diameter: 70.86"

Inlet Diameter: 104.34"

Tip Speed, FPM = 18.55 x Fan RPM

Inlet Area: 59.37 ft<sup>2</sup>

Max. BHP = 388 x (RPM ÷ 1000)<sup>3</sup>

Outlet Area: 59.37 ft<sup>2</sup>

LEGEND	
Class I fans	(Max. 571 RPM)
Class II fans	(Max. 742 RPM)
Class III fans	(Max. 942 RPM)

CFM	OV	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
23748	400	189	2.62																
29685	500	208	3.43	256	6.43														
35622	600	230	4.38	273	7.90	312	11.59												
41559	700	253	5.52	292	9.51	328	13.70	362	18.14	394	22.74								
47496	800	278	7.00	314	11.38	346	15.99	377	20.79	407	25.88	435	31.00	463	36.44				
53433	900	304	8.82	337	13.48	367	18.66	395	23.85	423	29.37	449	34.88	475	40.76	500	46.72		
59370	1000	330	10.93	360	15.84	389	21.48	415	27.24	441	33.21	466	39.29	490	45.47	513	51.73	558	64.81
65307	1100	357	13.45	385	18.77	412	24.65	437	30.97	461	37.46	484	43.89	506	50.31	528	57.02	571	71.12
71244	1200	384	16.34	411	22.21	435	28.14	459	34.81	482	41.88	504	48.99	525	55.97	546	63.19	586	77.81
77181	1300	411	19.62	437	26.03	460	32.40	482	39.15	504	46.61	525	54.30	545	61.91	564	69.30	603	85.13
83118	1400	438	23.32	463	30.27	485	37.06	506	44.14	527	51.86	546	59.62	566	68.10	584	76.06	621	92.81
89055	1500	466	27.64	490	35.15	511	42.41	531	49.85	550	57.52	569	65.81	588	74.67	605	83.11	640	100.85
94992	1600	493	32.29	516	40.29	537	48.23	556	56.03	574	63.96	593	72.77	610	81.46	627	90.60	661	109.76
106866	1800	549	43.62	570	52.61	590	61.73	608	70.57	625	79.42	641	88.28	657	97.56	673	107.37	704	127.97
118740	2000	606	57.67	625	67.58	643	77.52	660	87.41	676	97.19	691	106.84	706	116.85	721	127.26	750	148.94
130614	2200	662	74.18	680	85.23	697	96.24	713	107.16	729	118.37	743	128.88	757	139.66	771	150.77	797	172.85

CFM	OV	6" SP		7" SP		8" SP		9" SP		10" SP		11" SP		12" SP		13" SP		14" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
47496	800																		
53433	900																		
59370	1000																		
65307	1100	612	85.61																
71244	1200	625	93.19	662	108.68														
77181	1300	640	101.25	675	117.46	710	134.59	745	152.57										
83118	1400	656	109.57	690	126.84	723	144.55	755	162.50	788	181.91								
89055	1500	674	118.80	706	136.54	738	155.24	769	174.24	799	193.37	829	213.25	860	234.62				
94992	1600	693	128.48	724	147.31	755	166.97	785	186.93	814	207.05	842	227.16	870	247.96	898	269.43	927	292.43
106866	1800	734	149.28	763	170.51	791	191.56	818	212.50	845	234.14	872	256.61	898	279.03	924	302.18		
118740	2000	777	171.20	804	194.60	831	218.68	857	242.36	882	265.70	907	289.64	931	313.28				
130614	2200	823	196.51	849	221.88	873	246.89	897	272.60	921	298.70								

Performance shown is for installation type B: Free inlet, ducted outlet. Power rating (BHP) does not include drive losses. Performance ratings do not include the effects of appurtenances in the airstream.







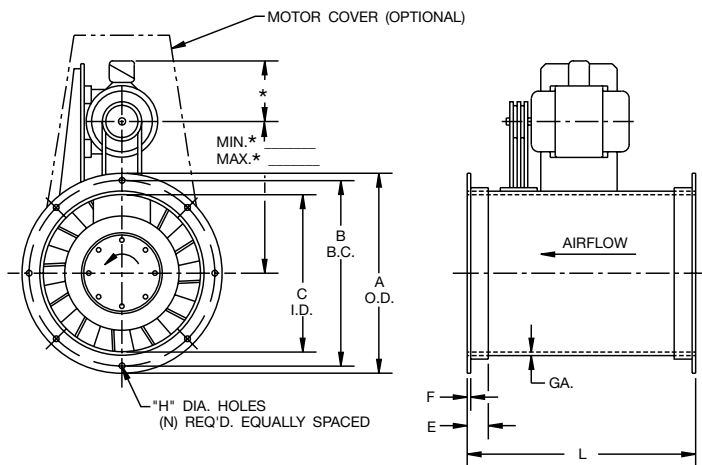






# CBD Inline

## Type C



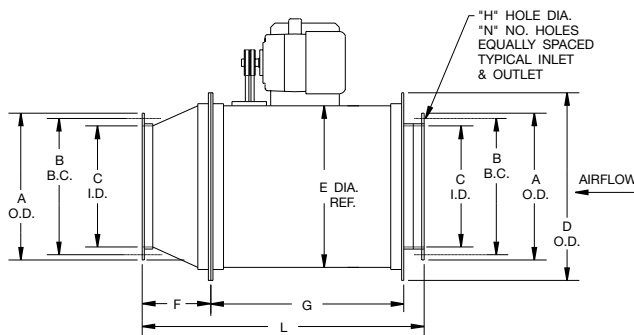
\*These dimensions are dependent on the motor used.

SIZE	OUTLET AREA (SQ. FT)	WHEEL DIA. (IN.)	DIMENSIONS (IN.)								GA	MAX MOTOR FRAME
			A	B	C	E	F	H	L	N		
12	1.91	12.40	21 7/8	20 1/2	18 11/16	1 1/2	3/16	7/16	22 1/2	8	14	184T
14	2.37	13.98	24 1/32	22 21/32	20 7/8	1 1/2	3/16	7/16	25	16	14	215T
16	3.04	15.75	26 25/32	25 19/32	23 3/8	1 1/2	3/16	7/16	28	16	14	256T
18	3.79	17.72	29 17/32	28 5/32	26 3/8	1 1/2	3/16	7/16	32 1/2	16	14	256T
20	4.76	19.68	32 11/16	31 3/8	29 17/32	1 1/2	3/16	9/16	36	16	14	286T
22	6.11	22.05	36 5/8	35 5/16	33 15/32	1 1/2	3/16	9/16	39 1/2	16	14	286T
25	7.63	24.80	41 19/32	39 25/32	37 13/32	2	1/4	9/16	44	16	12	286T
28	9.50	27.95	45 15/16	44 1/8	41 23/32	2	1/4	9/16	50	16	12	326T
32	11.78	31.50	50 21/32	48 27/32	46 15/32	2	1/4	9/16	55 1/2	24	12	326T
35	14.73	35.43	56 5/32	54 13/32	51 31/32	2	1/4	9/16	62	24	12	365T
39	19.02	39.37	63 3/4	61 1/2	59 1/16	2	1/4	9/16	69	24	12	365T
44	23.02	44.09	69 1/4	67 1/2	64 31/32	2	1/4	9/16	76 1/2	24	10	405T
49	28.93	49.21	77 1/8	75 3/8	72 27/32	2	1/4	11/16	85	32	10	405T
55	35.88	55.12	87 3/8	84 11/16	81 3/32	3	5/16	11/16	95 1/2	32	10	405T
63	47.08	62.99	99 3/16	96 1/2	92 29/32	3	5/16	11/16	109 1/2	32	10	405T
71	59.37	70.86	110 19/32	107 29/32	104 11/32	3	5/16	11/16	122	32	10	405T

All figures are in inches unless otherwise noted.

Dimensions are not to be used for construction.

## Type TC



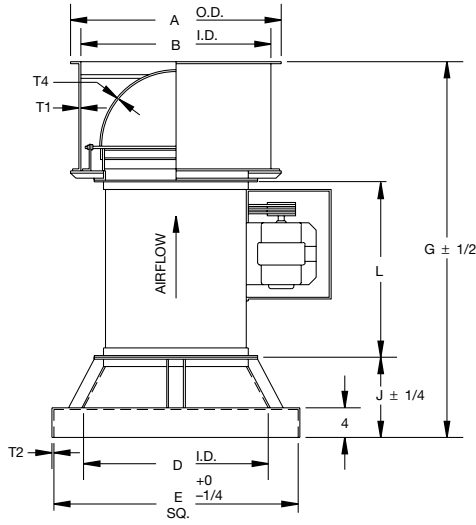
SIZE	A	B	C	D	E	F	G	H	L	N
12	17 1/8	15 7/8	14 1/8	21 7/8	18 27/32	8	22 1/2	5/16	32 7/8	8
14	18 29/32	17 5/8	15 29/32	24 1/32	21 1/32	8 5/8	25	5/16	36	8
16	20 7/8	19 19/32	17 7/8	26 25/32	23 25/32	9 3/8	28	7/16	42 1/8	8
18	22 27/32	21 9/16	19 27/32	29 17/32	26 17/32	10 1/8	32 1/2	7/16	47 3/8	16
20	25 3/16	23 15/16	22 3/16	32 11/16	29 11/16	10 7/8	36	7/16	51 5/8	16
22	27 31/32	26 11/16	24 31/32	36 5/8	33 5/8	11 7/8	39 1/2	7/16	56 1/8	16
25	31 1/8	29 27/32	28 1/8	41 19/32	37 3/8	13 1/2	44	7/16	62 1/4	16
28	34 21/32	33 3/8	31 21/32	45 15/16	41 15/16	14 3/4	50	9/16	69 1/2	16
32	39 19/32	37 27/32	35 19/32	50 21/32	46 11/16	16 5/8	55 1/2	9/16	77 3/4	16
35	43 17/32	41 25/32	39 17/32	56 5/32	52 3/16	18 1/4	62	9/16	85 5/8	16
39	48 5/16	46 17/32	44 5/16	63 1/4	59 9/32	19 3/4	69	9/16	94 3/4	24
44	53 13/32	51 21/32	49 13/32	69 1/4	65 1/4	21 5/8	76 1/2	9/16	103 3/4	24
49	59 5/16	57 9/16	55 5/16	77 7/8	73 3/8	23 3/4	85	9/16	114 3/8	24
55	67 9/32	65 1/2	63 9/32	87 3/8	81 1/8	27 1/8	95 1/2	9/16	126	24
63	75 5/32	73 3/8	71 5/32	99 3/16	93 3/16	30 1/4	109 1/2	11/16	143 3/8	32
71	85	82 1/2	79	110 3/16	104 5/8	34 3/8	122	11/16	161 3/4	32

All figures are in inches unless otherwise noted.

Dimensions are not to be used for construction.

# CBD Roof Ventilator

## Roof Ventilator



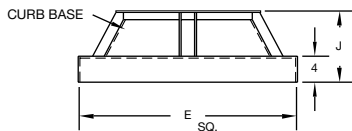
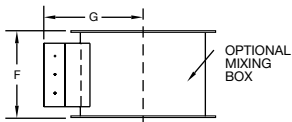
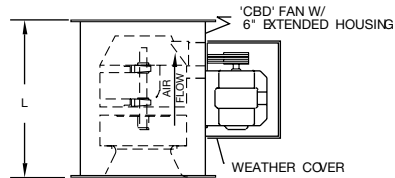
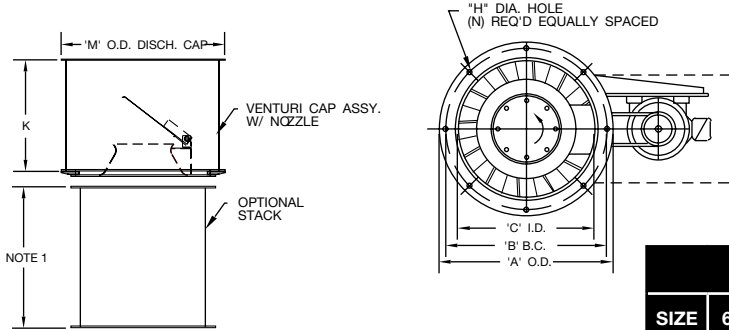
SIZE	DIMENSIONS							STEEL (GAUGE)				ALUMINUM (THICKNESS)		
	A	B	D	E	G	J	L	T1	T2	T3	T4	T1	T2/T3	T4
12	28 1/4	25 3/8	24 3/4	32 3/4	55	10 3/4	22 1/2	14	12	14	24	0.050	0.100	0.032
14	29 1/4	26 1/8	24 3/4	32 3/4	57 3/4	9	25	14	12	14	24	0.050	0.100	0.032
16	31 3/4	28 7/8	27 3/4	35 3/4	61 3/4	9	28	14	12	14	24	0.050	0.100	0.032
18	35 3/4	32 7/8	35 3/4	43 3/4	72 3/4	13 1/2	32 1/2	14	12	14	24	0.050	0.100	0.032
20	39 3/4	36 7/8	35 3/4	43 3/4	74 3/4	11	36	14	12	14	20	0.080	0.100	0.050
22	41 3/4	38 7/8	41 3/4	49 3/4	81	12 3/4	39 1/2	14	12	14	20	0.080	0.100	0.050
25	45 3/4	42 7/8	41 3/4	49 3/4	84 1/2	9 3/4	44	14	12	14	20	0.080	0.100	0.050
28	51 3/4	48 7/8	47 3/4	55 3/4	95	11 1/4	50	14	12	12	20	0.080	0.125	0.050
32	57 3/4	54 7/8	53 3/4	61 3/4	104 1/2	12 1/4	55 1/2	14	10	12	20	0.080	0.125	0.050
35	64	60 3/4	59 3/4	67 3/4	114 1/2	12 3/4	62	14	10	12	20	0.080	0.125	0.080
39	70	66 3/4	66 3/4	74 3/4	125 1/2	12 3/4	69	14	10	12	20	0.125	0.125	0.080
44	74	70 3/4	80 3/4	88 3/4	140	19 3/4	76 1/2	14	10	10	18	0.125	0.125	0.080
49	88	84 3/4	80 3/4	88 3/4	147 1/2	12 3/4	85	14	10	10	18	0.125	0.125	0.080
55	100	96 3/4	92 3/4	100 3/4	169 1/4	17	95 1/2	14	10	10	18	0.125	0.125	0.080
63	103	99 3/4	104 3/4	112 3/4	190 1/2	17 1/4	109 1/2	14	10	10	18	0.125	0.160	0.080
71	112	108 3/4	112 3/4	120 3/4	203	14 1/4	122	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	x		
28												x	x	x	x	
32													x	x	x	x

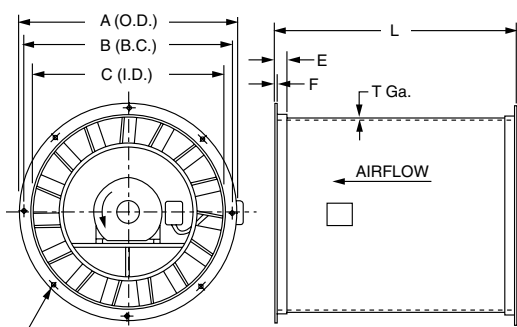
SIZE	A	B	C	E	F	G	H	J	K	L	M	N
12	21 1/8	20 1/2	18 11/16	32 3/4	16 1/2	19 1/2	7/16	10 3/4	19 1/4	28 1/2	29	8
14	24 1/8	22 1/2	20 7/8	32 3/4	23 1/2	20 1/2	7/16	9	22 1/2	31	33	16
16	26 25/32	25 13/32	23 5/8	35 3/4	23 1/2	21 7/8	7/16	9	24 1/2	34	36	16
18	29 17/32	28 5/32	26 3/8	43 3/4	28	23 1/4	7/16	13 1/2	27	38 1/2	37	16
20	32 11/16	31 3/8	29 17/32	43 3/4	30 1/2	24 7/8	9/16	11	29 1/2	42	40	16
22	36 5/8	35 5/16	33 15/32	49 3/4	33 1/2	26 7/8	9/16	12 3/4	32 1/2	45 1/2	43	16
25	41 19/32	39 25/32	37 13/32	49 3/4	36 1/2	28 7/8	9/16	9 3/4	35 1/2	50	46	16
28	45 15/16	44 1/8	41 23/32	55 3/4	40	31	9/16	11 1/4	38 3/4	56	50	16
32	50 21/32	48 27/32	46 15/32	61 3/4	45	33 1/2	9 9/16	12 1/4	42 1/2	61 1/2	53	24

**NOTES:**

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



# CDD Inline

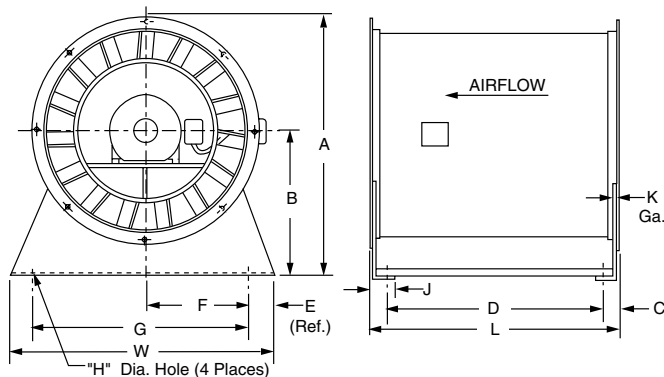


16 Holes Equally Spaced (Sizes 14–28)  
 8 Holes Equally Spaced (Size 12)  
 24 Holes Equally Spaced (Sizes 32–44)  
 "H" Dia. Hole

SIZE	MAX MOTOR FRAME	WHEEL DIA. (IN.)	OUTLET AREA (FT <sup>2</sup> )	A	B	C	E	F	H	L	T
12	145T	12 <sup>13</sup> / <sub>32</sub>	1.91	21 <sup>7</sup> / <sub>8</sub>	20 <sup>1</sup> / <sub>2</sub>	18 <sup>11</sup> / <sub>16</sub>	–	12 GA.	<sup>9</sup> / <sub>16</sub>	23	12 GA.
14	184T	14	2.37	24 <sup>1</sup> / <sub>2</sub>	22 <sup>21</sup> / <sub>32</sub>	20 <sup>7</sup> / <sub>8</sub>	–	12 GA.	<sup>9</sup> / <sub>16</sub>	26	12 GA.
16	215T	15 <sup>3</sup> / <sub>4</sub>	3.04	26 <sup>25</sup> / <sub>32</sub>	25 <sup>13</sup> / <sub>32</sub>	23 <sup>3</sup> / <sub>8</sub>	–	12 GA.	<sup>9</sup> / <sub>16</sub>	29	12 GA.
18	254T	17 <sup>23</sup> / <sub>32</sub>	3.79	29 <sup>17</sup> / <sub>32</sub>	28 <sup>5</sup> / <sub>32</sub>	26 <sup>3</sup> / <sub>8</sub>	–	12 GA.	<sup>9</sup> / <sub>16</sub>	34	12 GA.
20	184T	19 <sup>11</sup> / <sub>16</sub>	4.76	32 <sup>11</sup> / <sub>16</sub>	31 <sup>3</sup> / <sub>8</sub>	29 <sup>17</sup> / <sub>32</sub>	–	12 GA.	<sup>9</sup> / <sub>16</sub>	30	12 GA.
22	184T	22 <sup>7</sup> / <sub>16</sub>	6.11	36 <sup>5</sup> / <sub>8</sub>	35 <sup>5</sup> / <sub>16</sub>	33 <sup>15</sup> / <sub>32</sub>	–	12 GA.	<sup>9</sup> / <sub>16</sub>	31	12 GA.
25	215T	24 <sup>13</sup> / <sub>16</sub>	7.63	41 <sup>19</sup> / <sub>32</sub>	39 <sup>25</sup> / <sub>32</sub>	37 <sup>13</sup> / <sub>32</sub>	–	10 GA.	<sup>9</sup> / <sub>16</sub>	35	10 GA.
28	254T	27 <sup>31</sup> / <sub>32</sub>	9.50	45 <sup>15</sup> / <sub>16</sub>	44 <sup>1</sup> / <sub>8</sub>	41 <sup>23</sup> / <sub>32</sub>	–	10 GA.	<sup>11</sup> / <sub>16</sub>	40	10 GA.
32	286T	31 <sup>1</sup> / <sub>2</sub>	11.78	50 <sup>2</sup> / <sub>32</sub>	48 <sup>27</sup> / <sub>32</sub>	46 <sup>15</sup> / <sub>32</sub>	–	10 GA.	<sup>11</sup> / <sub>16</sub>	48	10 GA.
35	326T	35 <sup>7</sup> / <sub>16</sub>	14.73	56 <sup>5</sup> / <sub>32</sub>	54 <sup>13</sup> / <sub>32</sub>	51 <sup>31</sup> / <sub>32</sub>	–	7 GA.	<sup>11</sup> / <sub>16</sub>	53	7 GA.
39	326T	39 <sup>3</sup> / <sub>8</sub>	19.02	63 <sup>1</sup> / <sub>4</sub>	61 <sup>1</sup> / <sub>2</sub>	59 <sup>1</sup> / <sub>16</sub>	2	<sup>1</sup> / <sub>4</sub>	<sup>11</sup> / <sub>16</sub>	56	12 GA.
44	365T	44 <sup>7</sup> / <sub>32</sub>	23.02	69 <sup>1</sup> / <sub>4</sub>	67 <sup>1</sup> / <sub>2</sub>	64 <sup>31</sup> / <sub>32</sub>	2	<sup>1</sup> / <sub>4</sub>	<sup>11</sup> / <sub>16</sub>	62	10 GA.

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

## Support Legs – Floor or Ceiling Hung



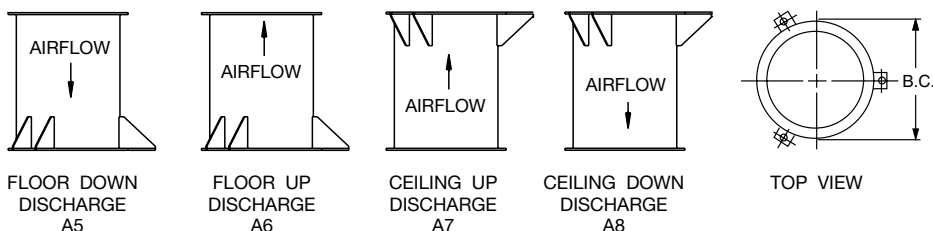
SIZE	A	B	C	D	E	F	G	H	J	L	W	K GA.
12	26 <sup>1</sup> / <sub>16</sub>	15 <sup>7</sup> / <sub>8</sub>	<sup>7</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>4</sub>	<sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>4</sub>	20 <sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	11 <sup>11</sup> / <sub>16</sub>	23	22	10
14	28 <sup>1</sup> / <sub>16</sub>	16 <sup>1</sup> / <sub>16</sub>	<sup>7</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>4</sub>	<sup>3</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>4</sub>	22 <sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	11 <sup>11</sup> / <sub>16</sub>	26	24	10
16	31 <sup>1</sup> / <sub>16</sub>	17 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	26 <sup>3</sup> / <sub>4</sub>	1	12 <sup>1</sup> / <sub>2</sub>	25	<sup>9</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	29	27	10
18	34 <sup>1</sup> / <sub>16</sub>	19 <sup>9</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	30 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub>	27	<sup>9</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	34	30	10
20	37 <sup>3</sup> / <sub>16</sub>	20 <sup>2</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>4</sub>	26 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	15	30	<sup>9</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	30	33	7
22	41 <sup>3</sup> / <sub>16</sub>	22 <sup>7</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	27 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	17	34	<sup>9</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	31	37	7
25	46 <sup>1</sup> / <sub>4</sub>	25 <sup>7</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	31 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>2</sub>	39	<sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	35	42	7
28	50 <sup>1</sup> / <sub>4</sub>	27 <sup>9</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>4</sub>	36 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	21 <sup>1</sup> / <sub>2</sub>	43	<sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	40	46	7
32	54 <sup>13</sup> / <sub>16</sub>	29 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub>	44 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	24	48	<sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	48	51	7
35	51 <sup>1</sup> / <sub>4</sub>	33 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	49 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	26 <sup>1</sup> / <sub>2</sub>	53	<sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	53	56	7
39	68 <sup>1</sup> / <sub>4</sub>	36 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	51 <sup>1</sup> / <sub>2</sub>	2	29 <sup>1</sup> / <sub>2</sub>	59	<sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	56	63	7
44	74 <sup>1</sup> / <sub>4</sub>	39 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	57 <sup>1</sup> / <sub>2</sub>	2	32 <sup>1</sup> / <sub>2</sub>	65	<sup>9</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	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.

## Mounting Positions

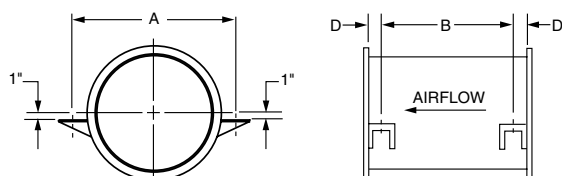
### Vertical Discharge Positions



**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 1/16" diameter bolt holes.

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

### 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 <sup>7</sup> / <sub>8</sub>	17 <sup>7</sup> / <sub>8</sub>	25 <sup>29</sup> / <sub>32</sub>	21 <sup>1</sup> / <sub>16</sub>
14	25 <sup>1</sup> / <sub>8</sub>	20 <sup>5</sup> / <sub>8</sub>	28 <sup>1</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>16</sub>
16	27 <sup>7</sup> / <sub>8</sub>	23 <sup>3</sup> / <sub>8</sub>	30 <sup>3</sup> / <sub>4</sub>	21 <sup>1</sup> / <sub>16</sub>
18	30 <sup>5</sup> / <sub>8</sub>	28 <sup>5</sup> / <sub>8</sub>	33 <sup>19</sup> / <sub>32</sub>	21 <sup>1</sup> / <sub>16</sub>
20	33 <sup>3</sup> / <sub>4</sub>	24 <sup>5</sup> / <sub>8</sub>	36 <sup>11</sup> / <sub>16</sub>	21 <sup>1</sup> / <sub>16</sub>
22	37 <sup>7</sup> / <sub>8</sub>	25 <sup>5</sup> / <sub>8</sub>	40 <sup>21</sup> / <sub>32</sub>	21 <sup>1</sup> / <sub>16</sub>
25	41 <sup>9</sup> / <sub>8</sub>	29 <sup>1</sup> / <sub>2</sub>	45 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>
28	46	34 <sup>1</sup> / <sub>2</sub>	49 <sup>15</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>
32	50 <sup>3</sup> / <sub>4</sub>	42 <sup>1</sup> / <sub>2</sub>	54 <sup>11</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>
35	56 <sup>1</sup> / <sub>4</sub>	47 <sup>1</sup> / <sub>2</sub>	60 <sup>9</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>4</sub>
39	63 <sup>3</sup> / <sub>8</sub>	50 <sup>1</sup> / <sub>2</sub>	67 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>
44	69 <sup>1</sup> / <sub>4</sub>	56 <sup>1</sup> / <sub>2</sub>	73 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>

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

## CBD

Fans shall be of the 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 210-85 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.

**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 wheel. 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
- Stainless steel
- 316 Stainless steel

**WHEELS** — Wheels shall be statically and dynamically balanced and shall be attached to the shaft with a split taper lock bushing. Some larger wheels are furnished with straight bore hubs. The blades on the BIA wheel shall be backward curved, double thickness airfoil type, continuously welded to a flat wheel cone and back plate. BIA wheel sizes 12 through 25 shall be constructed from heavy gauge aluminum only. BIA sizes 28 and larger shall have wheels 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 propeller 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 propellers 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 unit, after fabrication, shall be cleaned and chemically pretreated by a phosphatizing process and shall be painted inside and outside with an alkyd primer and finish painted with an air dry acrylic enamel. Fan shall be coated with the following optional finish:

- Air Dry Epoxy
- Quaker Koat
- Asphalt Based Coating
- Carbolene 3358/Sanitile 550
- Galvanizing
- High Temperature Aluminum Carbolene Primer/Sanitile Finish

The following coatings require a sandblast metal preparation before applying:

- Plasite 4310-Vinyl Ester
- Plasite 7122L - Air Dry Epoxy Phenolic
- Heresite VR506 - Air Dry Epoxy Phenolic
- Plasite 3066 - Baked Phenolic
- Plasite 1246 - Baked Epoxy Phenolic
- Farboil - Baked Aromatic Epoxy

**ACCESSORIES** — The units shall be furnished complete with:

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

## CDD

Fans shall be of the CDD Direct Drive Backward Inclined Airfoil Centaxial® (In-line Tubular 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 wheel. 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
- 304 Stainless Steel
- 316 Stainless Steel

**WHEEL** — The BIA wheel features continuously welded backward curved double thickness airfoil blades. Wheel 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 continuous and precision welded to flat wheel cones and staggered on each side of the center plate. The wheel 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 wheel 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 wheels 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 unit, after fabrication, shall be cleaned and chemically pretreated by a phosphatizing process and shall be painted inside and outside with an air dry enamel. Fans shall be coated with the following optional finish:

- Air Dry Epoxy
- Quaker Coat
- Asphalt Based Coating
- Carbocoat 30 (Replaces Sanitile 550 and Eisenheiss 210)
- Galvanizing
- High Temperature Aluminum

The following coatings require a sandblast metal preparation before applying:

- Plasite 4310 - Vinyl Ester
- Plasite 7122L - Air Dry Epoxy Phenolic
- Heresite VR506 - Air Dry Epoxy Phenolic
- Plasite 3066 - Baked Phenolic
- Plasite 1246 - Baked Epoxy Phenolic
- Farboil - Baked Aromatic Epoxy

**ACCESSORIES** — The units shall be furnished complete with:

- OSHA Type Inlet Guard
- Horizontal Ceiling Mounting Brackets
- OSHA Type Outlet Guard
- Vertical Mounting Brackets
- Acoustical Silencer
- Optional Construction Materials — Steel, Aluminum, 304 Stainless Steel, 316 Stainless Steel
- Wheel Inspection Door
- Companion Flanges
- Access Door
- Manually Operated Inlet Vortex Damper
- Ceiling Suspension Brackets
- Manually Operated Inlet Vortex Damper
- Ceiling Mounted Vibration Isolators (RIS/Spring)
- Floor Mounted Vibration Isolators (RIS/Spring)
- Support Legs

---

**PROPELLER FANS | TUBEAXIAL & VANEAXIAL FANS | CENTRIFUGAL FANS & BLOWERS | ROOF VENTILATORS  
INDUSTRIAL AIR HANDLERS | AIR MAKE-UP | FIBERGLASS FANS | CUSTOM FANS**



**AEROVENT**  
A Twin City Fan Company

**AEROVENT**   
INDUSTRIAL VENTILATION SYSTEMS

**[WWW.AEROVENT.COM](http://WWW.AEROVENT.COM)**

---

**5959 Trenton Lane N | Minneapolis, MN 55442 | Phone: 763-551-7500 | Fax: 763-551-7501**