

TUBEAXIAL FANS



PAINT SPRAY BOOTH
EXHAUST & SUPPLY FANS



MODEL: BTABD



Overview

BTABD



The Aerovent Model BTABD is a belt driven tubeaxial fan that is designed specifically for reliable and cost effective air movement in paint spray booth applications. Model BTABD exhaust fans are designed for applications requiring either a horizontal or a vertical airflow direction.

Typical Applications Include

Paint Spray Booth Exhaust

Configurations

Belt Driven – vertical & horizontal mounting configurations

Impeller Type

"BSA" Backswept Die Cast Aluminum Impellers

Sizes and Performance

- Arrangement 9 – belt driven
- Available in sizes from 12" to 42" diameter
- Airflow to 36,131 CFM
- Static pressures to 1.25" w.g.

Model BTABD



6-Bladed BSA Impeller

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

Construction Features

BTABD

- Aluminum non-sparking impeller dynamically balanced for quiet, vibration-free operation
- Continuously-welded, heavy-gauge, corrosion resistant, coated steel housing with pre-punched inlet and outlet flanges
- OSHA belt guards are standard
- Non-relubricable "sealed for life" ball bearings in mono-block housing to extend bearing life with perfect shaft/bearing alignment
- Designed for continuous-duty

Impeller

- Die cast aluminum construction
- Unique Backswept profile with airfoil cross section
- Adjustable pitch blades with factory set blade angles
- Uses split taper lock bushing for superior holding power on shaft
- Generates low wake turbulence for low noise emission

Housing

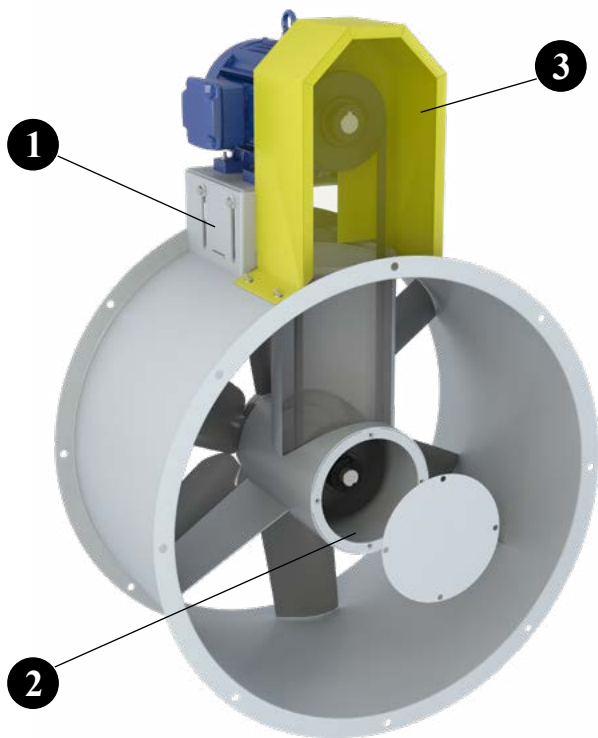
Housings are heavy-gauge, hot-rolled steel construction, continuously-welded and ground smooth to assure efficient airflow through the housing. Inlet and outlet flanges are integrally rolled and punched to allow attachment to ductwork or accessories as necessary.

Drive Isolated from Airstream

The v-belt drive assembly is enclosed in an aerodynamically designed belt tube, which maximizes fan efficiency, minimizes air blockage and reduces noise generation.



Paint Booth Application



- 1 **Motor Base** is easily and accurately adjusted to tension belts with two jack-bolts. Four hold-bolts on the side of the base secure the motor and provide rigidity to drive out vibration.
- 2 **Inner Cylinder** is aerodynamic for high airflow efficiency and low particulate build-up. Access to the fan sheave is gained through the cover plate, enabling fan speed to be adjusted to suit the paint booth performance.
- 3 **Belt Guards** protect personnel from the moving drive parts.



MOUNTING CONFIGURATIONS

Horizontal Construction

Horizontal construction is available in sizes 12 through 42.

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



HOR
Horizontal
No Mounting
Brackets

Vertical Construction

Vertical construction is available in sizes 12 through 42. Consult factory for larger sizes.

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

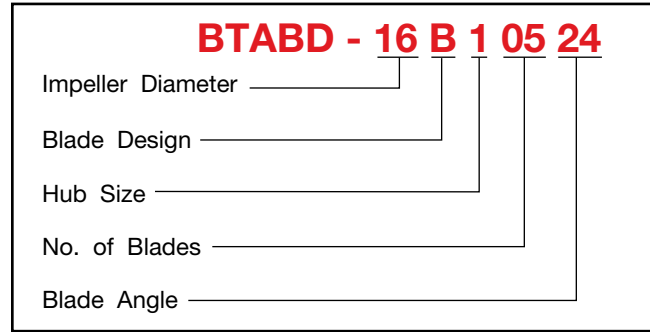


VUN
Vertical Up
No Brackets



VDN
Vertical Down
No Brackets

Model Nomenclature



To identify a specific fan for ordering or engineering specification, it is necessary to show the complete catalog number as shown at the right. All performance data is available in curve form upon request.

All capacities shown in the performance tables that follow are for standard air conditions: 70°F at sea level (0.075 lbs./cu.ft. air density).

The tables show a representative sample of the wide range of impellers available.

BTABD | Size 12

CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
12B10521	2375	1/4	1295 0.20	1240 0.21	1171 0.22	1102 0.22	1010 0.23	900 0.24	730 0.24				
12B10521	2745	1/2	1500 0.31	1452 0.32	1394 0.33	1336 0.34	1273 0.35	1200 0.36	1107 0.37				
12B10521	3576	1	1953 0.67	1923 0.69	1879 0.71	1835 0.72	1788 0.74	0.75 1745	1700 0.76	1647 0.77			

BTABD | Size 14

CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
14B10532	2036	1/2	2478 0.45	2375 0.47	2255 0.48	2130 0.49	1930 0.50	1691 0.49					
14B10532	2258	3/4	2751 0.62	2659 0.64	2555 0.65	2447 0.67	2320 0.68	2122 0.69	1906 0.68				
14B10532	2463	1	2991 0.80	2916 0.82	2819 0.85	2723 0.86	2619 0.87	2489 0.88	2300 0.88	2104 0.88			

BTABD | Size 16

CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
16B10524	1890	1/2	2887 0.47	2769 0.42	2631 0.44	2485 0.46	2300 0.48	2071 0.48	1815 0.48				
16B10524	2145	3/4	3272 0.60	3173 0.62	3059 0.64	2934 0.69	2800 0.50	2637 0.69	2440 0.75	2237 0.71			
16B10524	2429	1	3709 0.86	3620 0.88	3516 0.91	3412 0.94	3303 0.95	3183 0.97	3050 1.00	2887 1.01	2705 1.02	2523 1.02	

BTABD | Size 18

CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
18B10525	1496	1/2	3309 0.33	3142 0.35	2918 0.37	2656 0.38	2320 0.39						
18B10525	1877	3/4	4125 0.66	4031 0.68	3867 0.71	3694 0.73	3500 0.75	3263 0.77	2980 0.77	2698 0.77			
18B10525	2064	1	4572 0.88	4463 0.90	4307 0.93	4166 0.95	4000 0.98	3815 0.99	3597 1.01	3355 1.03	3090 1.03	2754 1.01	
18B10525	2237	1 1/2	4939 1.12	4861 1.14	4728 1.17	4588 1.20	4440 1.22	4283 1.25	4104 1.28	3909 1.30	3683 1.31	3456 1.31	3200 1.25
18B10525	2566	2	5684 1.69	5618 1.71	5501 1.75	5385 1.78	5260 1.82	5135 1.85	5000 1.87	4852 1.90	4686 1.93	4519 1.95	4319 1.97

BTABD | Size 24

CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
24B30618	1427	3/4	6393 0.61	6163 0.69	5878 0.77	5574 0.85							
24B30618	1565	1	7012 0.80	6804 0.89	6551 0.99	6505 1.07	6000 1.15	5701 1.20					
24B30618	1719	1 1/2	7701 1.06	7514 1.16	7291 1.27	7046 1.37	6800 1.46	6542 1.53	6261 1.59	5969 1.63	5653 1.66		
24B30618	1856	2	8321 1.34	8146 1.44	7935 1.56	7724 1.67	7500 1.77	7256 1.86	7010 1.94	6753 2.00	6472 2.05	6203 2.08	5910 2.10
24B30618	2119	3	9488 2.00	9363 2.10	9176 2.24	8988 2.38	8785 2.51	8598 2.62	8400 2.72	8193 2.81	7958 2.90	7740 2.97	7521 3.03

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

BTABD | Size 30

CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
30B30618	1060	1	9224 0.68	8737 0.79	8220 0.89	7639 0.97	7000 1.01	6290 1.03	5537 1.02				
30B30618	1218	1 1/2	10588 1.03	10180 1.16	9741 1.29	9271 1.39	8750 1.47	8204 1.53	7608 1.56	6965 1.56	6337 1.55		
30B30618	1337	2	11610 1.37	11256 1.51	10861 1.65	10445 1.78	10000 1.88	9508 1.97	9009 2.02	8468 2.05	7886 2.06	7324 2.05	6741 2.04
30B30618	1538	3	13316 2.11	13066 2.24	12713 2.42	12359 2.57	12000 2.71	11600 2.83	11194 2.94	10778 3.02	10341 3.08	9862 3.12	9384 3.14
30B30618	1852	5	16104 3.63	15870 3.82	15589 4.03	15308 4.23	15000 4.42	14700 4.6	14372 4.77	14068 4.91	13740 5.04	13389 5.16	13038 5.26

BTABD | Size 34

CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
34B30420	1190	2	15106 1.63	14447 1.75	13671 1.85	12824 1.92	12000 1.96	11035 1.97	10094 1.96	9176 1.94			
34B30420	1382	3	17540 2.55	17009 2.68	16322 2.83	15698 2.92	15000 3.00	14231 3.06	13420 3.08	12640 3.08	11797 3.06	10986 3.04	
34B30420	1621	5	20567 4.12	20130 4.27	19599 4.44	19069 4.58	18500 4.70	17883 4.81	17259 4.89	16635 4.94	15948 4.97	15230 4.98	14512 4.97

BTABD | Size 36

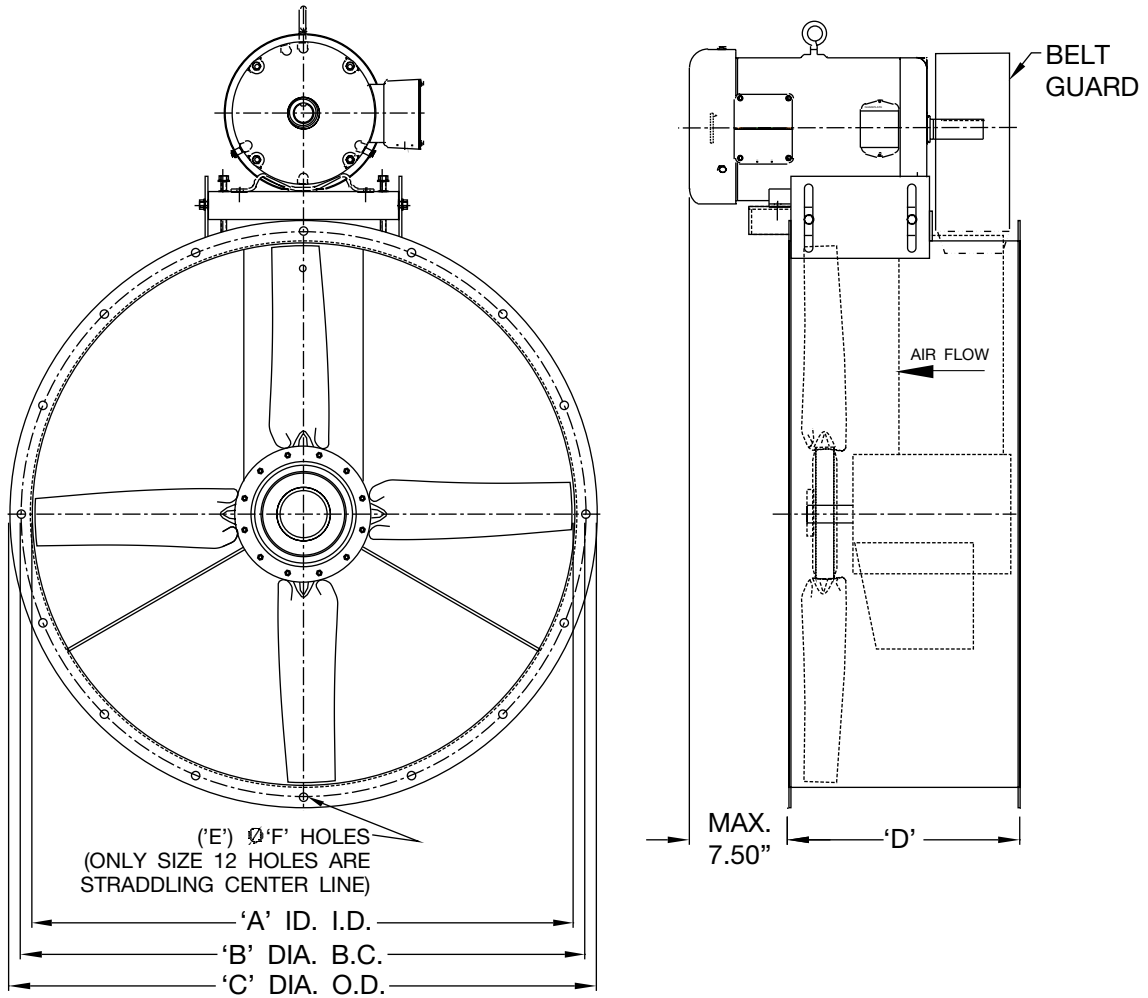
CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
36B30420	1118	2	16736 1.72	15964 1.84	15051 1.94	14068 2.01	13000 2.04	11891 2.03	10767 2.02				
36B30420	1277	3	19137 2.56	18478 2.70	17694 2.83	16878 2.93	16000 3.00	15059 3.03	14086 3.04	13114 3.02	12110 3.00		
36B30420	1511	5	22684 4.23	22101 4.41	21446 4.58	20791 4.72	20100 4.93	19371 4.93	18606 4.99	17841 5.03	17004 5.04	16166 5.02	15293 5.00

BTABD | Size 42

CATALOG NUMBER			CUBIC FEET PER MINUTE & HORSEPOWER AT STATIC PRESSURE										
FAN SIZE	RPM	HP	0" SP	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1 1/8" SP	1 1/4" SP
			CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP	CFM BHP
42B30420	1032	3	23376 2.43	22190 2.59	20817 2.71	19506 2.77	18000 2.79	16447 2.78	14918 2.75				
42B30420	1246	5	28213 4.29	27256 4.48	26216 4.65	25134 4.77	24000 4.86	22804 4.91	21514 4.92	20224 4.90	18934 4.87	17727 4.84	
42B30420	1359	7 1/2	30793 5.56	29909 5.77	28973 5.96	27984 6.12	27000 6.24	25904 6.33	24811 6.37	23667 6.39	22419 6.37	21274 6.34	20078 6.30
42B30420	1636	10	36131 9.01	35399 9.26	34614 9.49	33830 9.70	33000 9.88	32105 10.04	31216 10.16	30327 10.25	29386 10.30	28392 10.33	27399 10.34

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





SIZE	A	B	C	D	E	F	MAX. MTR FRAME
12	12.25	13.88	14.88	12.00	8	.44	145T
14	14.25	15.88	16.88	12.00	8	.44	145T
16	16.25	17.88	19.00	12.00	8	.44	145T
18	18.25	19.88	21.00	12.00	8	.44	145T
24	24.25	25.88	27.13	15.50	8	.56	184T
30	30.38	31.88	33.25	15.50	8	.56	184T
34	34.38	35.75	37.38	15.50	8	.56	184T
36	36.38	37.88	39.38	15.50	16	.56	184T
42	42.50	44.13	45.50	15.50	16	.56	215T

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

R33867

Model BTABD



Fans, where indicated on drawings and schedules, shall be Model BTABD, Arrangement 9, V-belt driven, axial flow type as manufactured by Aerovent, Minneapolis, Minnesota, and shall be of the size and capacity as indicated in the fan schedules. Model BTABD fans have been tested in an AMCA registered laboratory in accordance with AMCA 210 and AMCA 300 test codes for both air and sound. In addition each unit shall be factory run tested and final trim balanced prior to shipment.

CONSTRUCTION — Fan casings shall be welded of ASTM A-1011 low carbon, commercial quality 12-gauge hot rolled steel in sizes through 20" diameter, 10-gauge hot rolled steel from 24" diameter through 28" diameter, and 7-gauge hot rolled steel on sizes greater than 30" in diameter. Inlet and outlet flanges shall be integrally rolled mechanically from fan casing sheet steel to ensure concentricity and alignment. Accuracy and uniformity of the fan casing shall be ensured through the use of welding jigs and fixtures. The motor base plate shall be fabricated of minimum $\frac{3}{16}$ " steel plate and supports welded to the exterior of the fan casing.

IMPELLERS — Impellers shall be constructed of spark resistant (non-ferrous) die cast aluminum hubs and blades. Fan blade pitch angle shall be preset at the factory. Impellers shall be secured to the fan shaft with a taper lock bushing.

SHAFT & BEARINGS — All fans shall be supplied with a shaft of AISI C-1045 steel material that has been properly turned, ground and polished for accuracy. The shaft shall be supported by a matched set of non-relubricable bearings that are housed in a cast aluminum monoblock. All fan bearings are to have an L-10 minimum life as defined by AFBMA of at least 60,000 hours.

DRIVES — Fan drives shall include cast iron sheaves and non-static conducting belts. Sheaves and belts are isolated from the airstream. Fans equipped with motors up to and including five horsepower will be furnished with a variable pitch type drive sheave to allow for minor speed adjustment of the fan impeller during system balance. Fans equipped with larger motors will be furnished with a fixed drive sheave. A belt guard is to be provided to afford personnel safety and general traffic protection.

MOTORS — Fan motors shall be manufactured in accordance with current applicable standards of IEEE and NEMA. They shall be foot-mounted, NEMA standard frame, TEFC or ODP, continuous-duty, ball bearing with class "B" insulation. Motors are located out of the airstream.

BALANCING — The impeller assembly shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-05 "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/Sec)	Flexibly Mounted (In/Sec)
BV-3	0.15	0.20

Final test room vibration levels in the axial, vertical and horizontal planes shall be recorded and a written copy shall be available upon request.

FINISH — After fabrication, the fan housing shall be cleaned with a three-stage wash system and powder coated inside and out with a durable polyester coating.



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



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