

TUBEAXIAL FANS



PAINT SPRAY BOOTH EXHAUST & SUPPLY FANS

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MODEL: BTABD



CATALOG 159 April 2024

Tubeaxial Fans





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

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.



For complete product performance, drawings and available accessories, download our Fan Selector software 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 monoblock housing to extend bearing life with perfect shaft/ bearing alignment
- Designed for continuous-duty

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.

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



6-Bladed BSA Impeller



Paint Booth Application

Options/Accessories



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.



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.



Belt Guards protect personnel from the moving drive parts.



Mounting Configurations

Horizontal Construction

Horizontal construction is available in sizes 12 through 42.

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

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

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

Vertical Construction

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.





SIZE	А	В	С	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.

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Typical Specifications

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 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 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.

FINISH AND COATING — The entire fan assembly, excluding the 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. Aluminum components shall be unpainted.

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.





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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