Tube Axial Inline Fans Models TDI & TBI-CA Level 3 with Cast Aluminum Propeller

Direct & Belt Drive • Clean Air or Fume Exhaust





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Tube Axial Inline Fans

Greenheck's tube axial fans are the ideal choice for ducted or non-ducted installations. Tube axials are not only economical to purchase, but the inherent "straight-through airflow" provides high mechanical efficiencies resulting in low operating costs.

Greenheck's versatile tube axial design can be used in most commercial and industrial applications.

Typical applications include:

- · General exhaust, supply or return air
- Industrial space ventilation
- Fume hood exhaust
- Paint booth exhaust

TDI Features:

- Direct drive construction
- Sizes from 18 to 48 inch propeller diameters
- CFM Range: 3,000 to 49,000 cfm (5,100 to 83,300 m³/hr)
- Static Pressure: Up to 1.1 inches wg (270 Pa)
- Temperature: Up to 110°F (43°C)

TBI-CA Features:

- Spark resistant construction
- · Belt drive with motor and drives out of airstream
- Sizes from 18 to 60 inch propeller diameters
- CFM Range: 1,300 to 78,000 (2,200 to 132,523 m³/hr)
- Static Pressure: Up to 1.25 inches wg (311 Pa)
- Temperature: Up to 180°F (82°C)

Both the TDI and TBI-CA models feature a welded housing for airtight construction and integral punched inlet and outlet flanges.

Cast Aluminum Propellers

The TDI and TBI-CA use heavyduty, cast aluminum airfoil propellers that are designed to meet a large range of capacity and pressure requirements.

All TDI and TBI-CA propellers are dynamically balanced to assure vibration free operation. All propellers are tightly secured to the fan or motor shaft with taperlock bushings.

Enjoy Greenheck's extraordinary service, before, during and after the sale.

Greenheck offers added value to our wide selection of top performing, energy-efficient products by providing several unique service programs.



- Our Quick Delivery program ensures shipment of in-stock products within 24 hours of placing your order. Our Quick Build made-to-order products are manufactured in 1-3-5-10-15-20 or 25-day production cycles, depending upon its complexity.
- eCAPS[®] online selection guides you to choose the best value product for your building projects. It includes fan, louver, make-up air and dedicated outdoor air systems (DOAS) selection, as well as a damper guide, and toolbox.
- Greenheck's free computer aided product selection program CAPS[®], rated by many as the best in the industry, helps you conveniently and efficiently select the right products for the challenge at hand.
- Our 3D service allows you to download, at no charge, easy-to-use AutoDesk[®] Revit[®]
 3D drawings for many of our ventilation products.

Find out more about these special services at greenheck.com



AMCA Licensed Air Data/UL Listing

All sizes and configurations of the TDI and TBI-CA have AMCA licensed air data. In addition, the entire offering is available with a UL and cUL 705 Listed for electrical. The following decals will ensure that your fan will operate safely and at the performance levels specified.



Greenheck Fan Corporation certifies that the models TDI and TBI-CA tube axial inline 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 comply with the requirements of the AMCA Certified Ratings Program.







Electrostatic Powder Paint

Powder coating offers a uniform, durable, and highquality finish. This is a one-coat process applied over a phosphatized surface that meets or exceeds the corrosion resistance of a comparable wet paint.

Greenheck offers a number of proprietary coatings applied via "electrostatic powder." The standard coating, Permatector™, is excellent for indoor or outdoor applications and has resistance to many common chemicals.

Maintenance/Serviceable

The TBI-CA incorporates the following value added features that allow for quick and easy field service.

- Bearing lubrication is performed through extended grease fittings located on the outside of the fan housing.
- An adjustable motor base is provided for tightening the fan belts.
- Propellers are removed easily with the use of taper lock bushings.

For best access to the propeller and internal fan components for field service, see the "Easy Access Construction" option in the Accessories section.



Complete Assembly and Testing

The TDI and TBI-CA are completely assembled and tested before shipment. Our inspectors ensure that the fan is vibration free and is electrically safe for field operation.

Compact Size

Both the TDI and TBI-CA are designed for compact spaces. Keeping size to a minimum is important when fitting into a tight space, moving around corners, or through doorways.

Easy to Install and Operate

Flexibility in a motor's location is important for easier access and can determine where the unit will fit. Last minute design changes or unexpected obstacles during installation are no longer a problem. Greenheck's tube axials include integral connection flanges and are available with optional Universal Mounting hardware.





Belt Guard

Belt guards provide protection from rotating pulleys and belts. Belt guards meet OSHA standards.

Motor Cover

Weatherproof motor covers shield the motor and drive components from dust, dirt, and moisture for indoor/outdoor installations. Motor covers meet OSHA standards.

Inspection Section

Inspection sections are an easily removable length of duct and are recommended to improve serviceability. Inspection sections are available with a full diameter removable access panel or an inspection door allowing quick inspections inside the ductwork.

Inspection Door

Bolted or hinged, an inspection door provides access through the fan tube for cleaning or inspection of the propeller, bearings, and drives.

Inlet and Outlet Guards

Removable inlet and outlet guards provide protection for personnel and equipment in ducted or non-ducted installations. Inlet and outlet guards meet OSHA standards.

Inlet Bell with Inlet Guard

Inlet bells minimize entry losses in non-ducted applications by providing a more uniform airflow into the propeller blades. Inlet bells with inlet guards meet OSHA standards.

Companion Flanges

Companion inlet and outlet flanges with pre-punched holes are available for all fan sizes.

Shaft Seal

Shaft seals prohibit leakage of air into the bearing compartment of the fan.

Extended Wiring (Direct Drive)

Motor wiring is extended to the exterior of the fan casing for easy installation of the unit in the field.

Mounting Rails

Mounting rails are required for horizontal mounting of TBI-CA belt-driven fans when the motor is to be located in the 3 or 9 o'clock position or for all vertical applications. Universal mounting brackets are required.

Isolators

Both base-mount or hanging isolators are available in either neoprene or spring mounts. The isolators are furnished in sets of four and are sized to match the weight of each fan.

Special Coatings

Special coatings are available for protective purposes. Coatings are applied before assembly so that each manufactured component is coated inside and out. Painting the exterior a specified color for appearance is also an option.

Disconnect Switches

Toggle type and heavy-duty disconnect switches are available for positive electrical shut-off and safety in servicing fans. Switches can be factory mounted or shipped loose for field mounting.

- NEMA-1 General purpose
- NEMA-3R Rainproof
- NEMA-4 Watertight
- NEMA-7 & 9 Class 1 and Class 2 hazardous locations

Greenheck will not factory mount NEMA-7 & 9 disconnect switches.

Universal Mounting Brackets

Universal mounting brackets include all hardware necessary to position the fan horizontally or vertically either for base mounting or ceiling hanging.

Options

Easy Access Construction

The easy access option is highly recommended to provide inspection, cleaning, and service of internal fan components. This option allows for the removal of the fan shaft and bearings through the housing without removing the fan from the duct. For service or removal of the propeller, the inspection section with removable access panel is recommended.

Aluminum Construction

The TBI-CA and TDI are available in all aluminum construction. Consult the factory for details.



Accessories





Standard Construction



Housing

Housings are welded to prevent air leakage. All steel constructed units are provided with Permatector[™] coating.

Inlet & Outlet Flanges

Integral inlet and outlet flanges with mounting holes are provided for an airtight ductwork connection.

Bearings (Belt Drive)

Bearings are air handling quality, grease lubricated, pillow block type. Bearings are selected with a basic rating fatigue life (L_{10}) in excess of 80,000 hours at each fan's maximum operating speed when mounted in a horizontal configuration.

Belt & Bearing Tube (Belt Drive)

Belts, bearings, and drives are protected from the airstream by a heavy gauge steel belt tube and bearing cover.



Horizontal and Vertical Mounting Configurations (Brackets Optional)

All tube axial fans can be mounted horizontally or vertically. For ease of installation, eight mounting brackets are welded on each fan. These brackets along with standard mounting supports provide for Greenheck's universal mounting system.

Fig. 1 Horizontal Base Mount

Each fan is shipped as standard in this arrangement. Motor at 12 o'clock is standard, as shown above in Fig. 1.

Fig. 2 Horizontal Base Mount with motor at 3 or 9 o'clock

A set of optional mounting rails are required for this installation. This is the base mounting position required with the easy access option.

Fig. 3 Horizontal Ceiling Hung

In this installation the supports can be positioned for mounting the motor at either 6 or 12 o'clock.

Adjustable Motor Bases (Belt Drive)

for belt tensioning.

Extended Lube Lines

Drives (Belt Drive)

and oil resistant.

explosion proof.

Motors

lubrication from the fan exterior.

Rigid structural steel motor bases are welded to the

fan housing and include heavy-duty adjustment screws

Extended lube lines with grease fittings allow bearing

Greenheck offers either constant or adjustable speed

drives for fan speed adjustments. Belts are static free

NEMA base-mounted motors are standard. Motors are available in open drip proof, totally enclosed, or

Fig. 4 Horizontal Ceiling Hung with motor at 3 or 9 o'clock A set of optional mounting rails are required.

Fig. 5 Vertical Mount

All TDI and TBI-CA fans can be mounted vertically (ceiling hung or base-mount) for either upward or downward airflow. Optional mounting rails are recommended for belt driven fans.

NOTE: All fans are shown with optional mounting brackets and vibration isolators. See the appropriate submittal drawings or installation manual for complete dimensional data.

Model Number Code The model number system is designed to completely identify the fan.





Model TDI Tube Axial Inline Specification – Direct Drive

Inline fans shall be of the tube axial type with cast aluminum airfoil propellers.

The housing shall be constructed of welded steel and include integral punched inlet and outlet flanges to prevent air leakage.

The housing and motor mount shall be constructed of heavy gauge steel to prevent vibration.

All inline fans shall be capable of field transitions from horizontal to vertical for either base-mounted or ceiling hung configurations.

Propellers shall be cast aluminum airfoil design. A tapered bushing shall lock the propeller to the motor shaft. Propellers to be dynamically balanced. Hubs shall be two piece aluminum castings that securely lock the blades in place.

Steel housings and structural components to be coated with Permatector[™], an electrostatically applied thermosetting polyester urethane. Minimum dry film thickness to be 2 mils.

Fan performance shall be based on tests conducted in accordance with AMCA Standard 210. All fans shall be licensed to bear the AMCA Certified Ratings Seal for Air Performance.

Fans shall be model TDI as manufactured by Greenheck Fan Corporation of Schofield, Wisconsin, USA.

Model TBI-CA Tube Axial Inline Specification – Belt Drive

Inline fans shall be of the tube axial type with cast aluminum airfoil propellers.

The housing shall be constructed of welded steel and include integral punched inlet and outlet flanges to prevent air leakage.

The housing, bearing support, and motor base shall be constructed of heavy gauge steel to prevent vibration and rigidly support the shaft, bearings, and motor.

All inline fans shall be capable of field transitions from horizontal to vertical for either base-mounted or ceiling hung configurations.

Propellers shall be cast aluminum airfoil design. A tapered bushing shall lock the propeller to the fan shaft. Propellers to be dynamically balanced. Hubs shall be two piece aluminum castings that securely lock the blades in place.

Bearings shall be cast iron pillow block, grease lubricated, and selfaligning. Bearings shall be air handling quality and tested for reduced swivel torque, bore size, noise, and vibration. Bearings shall be selected for an L_{10} life, per ABMA standards, in excess of 80,000 hours (L_{50} -400,000 hours) for horizontal applications or an L_{10} life of 40,000 hours (L_{50} - 200,000 hours) for vertical applications.

Turned, precision ground and polished steel shafts shall be sized so the first critical speed is at least 25% over the maximum operating speed for each level of construction.

Steel housings and structural components to be coated with Permatector[™], an electrostatically applied thermosetting polyester urethane. Minimum dry film thickness to be 2 mils.

Fan performance shall be based on tests conducted in accordance with AMCA Standard 210. All fans shall be licensed to bear the AMCA Certified Ratings Seal for Air Performance.

Fans shall be model TBI-CA as manufactured by Greenheck Fan Corporation of Schofield, Wisconsin, USA.





Tube Axial Family



For higher pressure applications or inline emergency smoke applications, see Greenheck's TBI-FS. The TBI-FS uses a fabricated steel impeller and is capable of pressures through 4 inches wg (996 Pa). The TBI-FS is recommended for continuous high temperature process applications and is listed as a UL Power Ventilator for Smoke Control.

- Continuous Operation up to 400°F (204°C)
- Emergency Smoke Exhaust Options
 - 500°F (260°C) for 4 hours 752°F (400°C) for 2 hours
 - 572°F (300°C) for 1 hour 1000°F (538°C) for 1 hour

TBI-FS fans without high temperature options can operate continuously up to 180°F (82°C).

Stack caps are available for mounting on a field fabricated stack extension. Stack caps are available with and without curb caps.



Greenheck has a full line of tube axial roof upblast fans that include curb caps and windband sections. In addition, Greenheck has a complete offering of roof curbs to make roof mounting quick and easy. Contact your Greenheck representative for details.

Building Value in Air

Greenheck delivers value to mechanical engineers by helping them solve virtually any air quality challenges their clients face with a comprehensive selection of top quality, innovative airrelated equipment. We offer extra value to contractors by providing easy-to-install, competitively priced, reliable products that arrive on time.

And building owners and occupants value the energy efficiency, low maintenance and quiet dependable operation they experience long after the construction project ends.

Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Product warranties can be found online at Greenheck.com, either on the specific product page or in the literature section of the website at Greenheck.com/Resources/Library/Literature.

















