

PRODUCT SPECIFICATION GUIDE

PART 1: GENERAL

1.1 WORK INCLUDED

The ceiling mounted, circulation fan shall be Big Ass Fans. The fan shall be the models scheduled with the capacities indicated. The fan shall be furnished with mounting hardware and variable speed controls as manufactured by Big Ass Fan Company.

1.2 RELATED WORK

Factory installation services are available through Big Ass Fans; consult the appropriate installation scope of work for more information. Installation of the fan, miscellaneous or structural metal work (if required), field electrical wiring, cable, conduit, fuses and disconnect switches other than those not addressed in the installation scope of work consulted, will be provided by others.

PART 2: PRODUCT

2.1 MANUFACTURER

Delta T Corporation, dba Big Ass Fans, PO Box 11307, Lexington, Kentucky 40575. Phone (877) 244-3267. Fax (859) 233-0139. Website: www.bigassfans.com.

2.2 HIGH VOLUME, LOW SPEED FANS – BIG ASS FANS ELEMENT MODEL

A. Complete Unit:

The fan shall be ETL certified and built pursuant to construction guidelines set forth by UL standards 507, 746C, 1004, 1917 and CSA standards 22.2 No. 4, 22.2 No. 17, 22.2 No. 113, 22.2 No. 100, 22.2 No. 156. The fan shall be designed to move an effective amount of air for cooling and destratification in commercial applications. The fan shall incorporate a direct drive system designed specifically for high volume, low speed fans to ensure silent operation. The sound levels from the fan operating at maximum speed shall not exceed 40 dBA (measured 20' or 6.1 m below the blades and 20' or 6.1 m horizontally from the center of the fan).

B. Airfoils:

The fan shall be equipped with ten (10) high volume, low speed airfoils of precision extruded aluminum alloy. Each airfoil shall be of the high performance TEC design. The airfoils shall be connected by means of two (2) locking bolts per airfoil. The airfoils shall be connected to the hub and interlocked with stainless steel retainers. As an option, airfoils may be powder coated as specified by the architect or owner.

C. Winglets:

The fan shall be equipped with ten (10) TEC winglets designed to redirect outward airflow into downward airflow, thereby enhancing the efficiency and effectiveness of the fan. The winglets shall be die cast aluminum. A winglet shall be attached at the tip of each airfoil. The standard color of the winglets shall be "Super Durable Black." As an option, winglets may be powder coated as specified by the architect or owner.

D. Trim:

The fan shall be equipped with trim inserts that nest between the hub and the inner edge of the foil. The trim inserts (10 each) shall provide a cleaner fit between the airfoils and the hub to help reduce drag, turbulence and noise. Trim inserts shall be black.

E. Motor:

The fan motor shall be a permanent magnet brushless motor rated for continuous operation at maximum speed with the capability of modulating the fan speed from 0-100% without the use of a gearbox or other mechanical means of control. The motor shall operate from any voltage ranging from 100-240 VAC, 1 φ, and 50/60 Hz, without requiring adapters or customer selection. The motor shall be a non-ventilated, heat

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sink design with the capability of continuous operation in -40°F to 131°F (-40°C to 55°C) ambient conditions.

F. Hub:

The fan hub shall be a single precision permanent mold casting of aluminum alloy for high strength and light weight. The hub shall be precision machined to achieve a well balanced and solid rotating assembly. The hub shall incorporate ten (10) safety pins made from aluminum that will secure the hub/airfoil assembly in case of shaft failure. The pins shall be attached to the body of the hub using bolts.

G. Mounting System:

The fan mounting system shall be designed for quick and secure installation from a structural support beam. All components in the mounting system shall be of welded construction using steel no less than 3/16" (0.5 cm) thick and be powder coated for appearance and resistance to corrosion. All mounting bolts shall be SAE Grade 8 or equivalent. As an option, mounting components may be colored as specified by the architect or owner.

For mounting through ceiling media, a factory supplied escutcheon (or grommet) is provided to maintain a professional, finished installation.

H. Safety Cables:

The fan shall be equipped with upper and lower safety cables. The upper safety cable shall provide an additional means of securing the fan assembly to the building structure. The lower safety cable shall provide an additional means of securing the motor unit to the mounting system. All safety cables shall be 3/16" (0.5 cm) diameter and fabricated out of 7 x 19 stranded galvanized steel. The loops must be secured with swaged Nicopress fittings, pre-loaded and tested to 3,000 lb·f (13,345 N).

Field construction of safety cables is not permitted.

I. Controller:

The controller shall be incorporated into the fan assembly. The controller shall be factory programmed to minimize starting and braking torques. The controller shall be housed in an enclosure to prevent accidental contact with the enclosed equipment and to prevent entry of unwanted substances.

J. Wall Control:

The fan shall be equipped with a remote wall control. The wall control shall be capable of mounting to a standard receptacle by means of a mounting plate (which shall be included with the wall mounted device). The wall controller shall be equipped with a 1.8" (4.6 cm) TFT-LCD screen and user interface for controlling the fan's direction, operation and speed. Communication with the fan drive and controller shall be by a standard, commercially available CAT-5 (or higher) Ethernet cable that is field installed and provided by the installer. A 5' (1.5 m) 'patch cable' shall be provided to test and verify communication signals locally prior to connecting the remote connection cable.

The wall control shall be equipped with a simple diagnostic program to identify faults in the system. Provisions must be made for retrieving fan operation and diagnostic data (fault messages) through the remote wall device.

K. Warranty:

The manufacturer shall replace any products or components defective in material or workmanship, free of charge to the customer (including transportation charges within the USA, F.O.B. Lexington, KY), pursuant to the complete terms and conditions of the Big Ass Fans Commercial, Non-Prorated Warranty in accordance to the following schedule:

- Airfoils Limited Lifetime (Parts)

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- Hub Limited Lifetime (Parts)
- Motor 10 years (Parts)[†]
- Controller 10 years (Parts)[†]
- Labor 1 year^{†,††}

[†] 10 year parts and 1 year labor warranties only valid with factory installation, 5 year parts without factory installation.

^{††} All reasonable costs of repair or replacement will be paid or reimbursed provided customer obtains pre-approval; see full warranty for details.

Further information on the terms and conditions of the warranties can be found in the Installation Guide.

PART 3: ANCILLARY

3.1 INSTALLATION

The fan shall be mounted to an angle iron or I-beam structure. Consult the Installation Guide for acceptable I-beam width, and proper sizing and placement of angle iron for a span mount. A structural engineer must be consulted for installation methods outside the manufacturer's recommendation and a certification submitted prior to installation.

To reduce the risk of injury to persons, the fan shall be installed so that the airfoils are at least 10' (3 m) above the floor. The fan installation area must be free of obstructions such as lights, cables, sprinklers or other building structures; with the airfoils at least 2' (61 cm) clear of all obstructions. The fan should not be installed where it will be continuously subjected to wind gusts or in close proximity to the outputs of HVAC systems.

If the fan is hung from an extension tube that measures 4' (1.2 m) or longer, it may be necessary to provide guy cables or struts to limit potential lateral movement of the fan. A stiffening strut braced against an additional beam may be required if there is a close clearance situation.

The design criteria for the fan mounting system shall be capable of handling 300 ft·lbs (407 N·m) of torque.

3.2 WORKMANSHIP

Good workmanship shall be evident in all aspects of construction. Field balancing of the airfoils shall not be necessary.

3.3 DOCUMENTATION

The manufacturer shall furnish a copy of all operating and maintenance instructions for the fan.