

## SECTION 23 34 00 HVAC FANS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes
  - 1. The fan is the model scheduled with the capacities indicated. The fan shall be furnished with standard hardware, OSHA-compliant guards, and an adjustable yoke to provide efficient directional cooling in tight industrial applications.
- B. Summary of Work
  - 1. Installation of the fan, miscellaneous metal work (if required), field electrical wiring, cable, conduit, fuses and disconnect switches, other than those addressed in the installation scope of work, shall be provided by others. Factory installation services are available through Big Ass Fans. Consult the appropriate installation scope of work for information on the available factory installation options, overview of customer and installer responsibilities, and details on installation site requirements.

#### 1.2 RELATED REQUIREMENTS

- A. 23 00 00 Heating, Ventilating, and Air Conditioning (HVAC)

#### 1.3 REFERENCE STANDARDS AND ACRONYMS

- A. International Organization for Standardization (ISO)
- B. Occupational Safety and Health Administration (OSHA)
- C. National Electrical Manufacturers Association (NEMA)
- D. Air Movement and Control Association International, Inc. (AMCA)

#### 1.4 SUBMITTALS

- A. Shop Drawings: Drawings detailing product dimensions, weight, and attachment methods.
- B. Part 2 Product Data: Specification sheets specifying electrical and installation requirements and features and benefits information.
- C. Revit Files: Files provided for architectural design.
- D. Part 2 Product Documentation: A copy of all installation, operation, and maintenance instructions for the fan shall be provided. All data is subject to change without notice.
- E. Schedule

#### 1.5 PROVIDER QUALIFICATIONS

- A. The provider shall be ISO 9001-certified.
- B. The provider shall have more than 10 years of specialized experience in the field of high volume low speed industrial fans.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver product in original, undamaged packaging with identification labels intact. The fan shall be new, free from defects, and factory tested.
- B. The fan and all of its accessories must be stored in a safe, dry location until installation.

#### 1.7 PROVIDER WARRANTY

- A. The provider shall replace any products or components defective in material or workmanship for the customer free of charge (including transportation charges within the USA, FOB Lexington, KY), pursuant to the complete terms and conditions of the Big Ass Fans Warranty in accordance to the following schedule:

Main Fan Unit	3 years
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+ All reasonable costs of repair or replacement will be paid or reimbursed provided customer obtains pre-approval.

++ See the complete warranty for more details.

## PART 2 PRODUCT

### 2.1 PROVIDER

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

### 2.2 DESCRIPTION – BIG ASS FANS SWEAT BEE®

- A. Complete Fan Assembly
1. Function: The fan shall be designed for portable use or adaptable mounting in tight industrial spaces requiring localized air movement.
  2. Size: The fan shall have a diameter of 30 inches (76 cm) or 18 inches (46 cm). The Portable Base and Swivel Mount mounting methods shall be available for the 18-inch (46 cm) fan only.
  3. Color: The fan's standard color shall be yellow. The thickness and quality of paint shall be consistent with typical industrial standards.
  4. Quality: The fan shall display good workmanship in all aspects of its construction.
- B. Motor
1. The motor for the Ø30-inch (Ø76 cm) fan shall be 1 hp, direct wired, with three-phase 230/460 VAC input.
  2. The motor for the Ø18-inch (Ø46 cm) fan shall be 1/3 hp, direct wired for single-phase 115 VAC input. The motor shall be supplied with a cord and switch.
  3. The motor shall be totally enclosed, fan cooled (TEFC) with a minimum NEMA classification of IP44. The motor shall have an operational temperature range of -25°F to 104°F (-32°C to 40°C).
  4. The Ø18-inch (Ø46 cm) fan shall have a 12-foot (3.7 m) power cord with an on/off switch. The cord and switch shall conform to all applicable NEMA and local codes for the United States and Canada.
- C. Hub: The fan hub shall be of cast aluminum design, with three (3) plastic blades.
- D. Cage and Housing
1. The fan shall be equipped with a rugged cage and housing to protect both the fan and users during operation.
  2. The inside diameter of the fan housing shall be a nominal 30 inches (76 cm) and 18 inches (46 cm) for the Ø30-inch (Ø76 cm) and Ø18-inch (Ø46 cm) fans, respectively.
  3. The fan housing shall be made from 11Ga welded carbon steel with 90° flanges on the entry and exit sides.
  4. The fan housing shall contain eight (8) holes on both flanges.
  5. The fan guards shall be made from 1/8-inch (3.1 mm) steel with zinc finish and shall be OSHA-compliant. The guards shall be easily removable for servicing and cleaning of the fan.
  6. The fan yoke shall be made from 7Ga carbon steel and shall allow the fan to pivot up 40° from level and down 40° from level.
  7. A protective rubber grommet shall be installed on the fan housing where the motor power cord enters the main fan unit.
- E. Mounting System
1. The fan shall allow multiple mounting methods to accommodate a wide variety of airflow needs and building structures.
    - a. Direct Mount: The fan yoke can be mounted directly to a horizontal structural member, such as a truss or I-beam, using customer-supplied hardware.
    - b. Wall/Column Mount: The fan can be mounted to a wall or column using the Wall/Column Mount and customer-supplied hardware. The column can be one of a variety of shapes, e.g., round, flanged, or square.
      - 1) The wall/column mounting bracket shall be constructed of 7Ga carbon steel and shall include mounting holes and a yoke attachment hole. The finish of the mounting bracket shall be the same as the main fan unit.
      - 2) The attachment hardware for securing the yoke to the mounting bracket shall be a minimum of SAE Grade 5 or equivalent.
      - 3) The main yoke attachment bolt shall be a minimum of Ø5/8" (Ø15.9 mm). Lock washers and/or nylon insert nuts shall be used.
    - c. Portable Base: The Ø18-inch (Ø46 cm) fan can be mounted to a portable base that allows the fan mobility around a workspace to create airflow where it is needed most. The portable base shall include rubber

stoppers, a handle that provides support when transporting around the workspace, and two (2) 8-inch (20 cm) shatter resistant rubber wheels for indoor and outdoor mobility.

- d. Yoke Mount: The fan can be mounted to bar joists or a horizontal I-beam using the Yoke Mount and customer-supplied hardware. I-beams must have a flange thickness between 1/8" (3.2 mm) and 1-7/16" (36.5 mm).
  - e. Swivel Mount: The Ø18-inch (Ø46 cm) fan can be mounted to a wall or vertical column for truck cooling in a shipping dock environment using the Swivel Mount and customer-supplied hardware. Big Ass Fans recommends installing a safety cable when mounting the fan above areas in which personnel are working or standing.
2. The provided mounting assembly shall be of welded construction using steel no less than 1/8" (3.2 mm) thick and shall be powder coated for appearance and resistance to corrosion.
  3. A safety cable shall be supplied for the Wall/Column Mount and the Yoke Mount. Field construction of safety cables is not permitted.
  4. Hardware used to mount the fan must be of sufficient strength and quantity to support the weight of the fan and its method of attachment. Consult the installation guide for details. For mounting hardware supplied by Big Ass Fans, no hardware substitutions, including cast aluminum, are acceptable.
- F. Performance Requirements
1. Using the AMCA 230-11 (lbs. Thrust Method) with fan guards ON, the minimum performance for the Ø30-inch (Ø76 cm) fan shall be 8,000 CFM.
  2. Using the AMCA 230-11 (lbs. Thrust Method) with fan guards ON, the minimum performance for the Ø18-inch (Ø46 cm) fan shall be 2,560 CFM.

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- A. The fan location must be free of obstacles such as lights, cables, and other building components.
- B. Refer to the installation guide for clearance requirements and electrical requirements.
- C. Structural requirements: Consult a structural engineer to determine the hardware required to safely support the fan from a wall or column. Refer to the installation guide for details.
- D. Two installation personnel may be required, along with a scissor lift or other suitable means for lifting the weight of the fan.

### **3.2 INSTALLATION**

- A. The fan shall be installed according to the provider's installation guide. Big Ass Fans recommends consulting a structural engineer for installation methods outside the provider's recommendation and a certification, in the form of a stamped print or letter, submitted prior to installation.

END OF SECTION