

## **SECTION 23 34 23**

### **POWER VENTILATORS**

#### **TAG: Upblast Propeller**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Fan shall be a direct-drive upblast propeller roof fan.

##### **1.2 SUBMITTALS**

- A. The manufacturer assumes no liability for the use or results of use of this document. This specification is to be reviewed by the engineer to confirm requirements of the project and building codes are met.
- B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

##### **1.3 QUALITY ASSURANCE**

- A. ETL Listed and complies with UL705 (electrical) Standards and CSA Std C22.2, No 113.
- B. Fan shall bear the AMCA certified rating seal for air performance.
- C. The propeller will be balanced in accordance with AMCA standard 204.96- Balance Quality and Vibration Levels for Fans.
- D. UL793 Automatically Operated Roof Vents for Smoke and Heat) – Factory installed option. Unit will have piston operated damper arms with fusible links.

##### **1.4 WARRANTY**

- A. All units are provided with the following 2-year standard warranty.
- B. This warranty shall not apply if:
  - 1. The equipment is not installed by a qualified installer per the manufacturer's installation instructions shipped with the product.
  - 2. The equipment is not installed in accordance with Federal, State, and Local codes and regulations.
  - 3. The equipment is misused, neglected, or not maintained per the manufacturer's maintenance instructions.
  - 4. The equipment is not operated within its published capacity.
  - 5. The invoice is not paid within the terms of the sales agreement.
- C. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 2-year warranty period, upon examination by the manufacturer, such part will be repaired or replaced by the manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization. All returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL ASSEMBLY**

- A. The fan shall be factory assembled, tested, and shipped as a complete unit.
- B. The following specifications, delivering all capacities scheduled and conforming to the design indicated herein. Alternate layouts or dimensional changes will not be accepted.

### **2.2 CONSTRUCTION**

- A. The fan shall be of riveted and bolted construction utilizing corrosion-resistant fasteners.
- B. The heavy duty motor shall be mounted to a heavy gauge G90 galvanized steel motor bracket.
- C. The support frame shall be riveted, and bolted construction of heavy gauge G90 galvanized.
- D. The panel assembly shall be heavy duty G90 galvanized steel complete with a one-piece venturi for maximum efficiency.
- E. Fan shall have hinged butterfly discharge dampers of aluminum construction with a rain channel to prevent rain infiltration.
- F. The butterfly damper assembly shall be protected by a heavy duty G90 galvanized steel wind band for maximum strength and rigidity.
- G. The unit shall include lifting lugs for ease of roof placement.
- H. The fan shall bear a permanently attached nameplate displaying the model and serial number of the unit for future identification.
- I. Water gutter to drain water and melting snow and ice.

### **2.3 CURB**

- A. The curb shall be constructed of galvanized steel.
- B. The heavy duty G90 galvanized curb cap shall have fully welded corners for added strength and leak protection.
- C. Paint Option: Not Painted, Enamel, or Epoxy.
- D. Insulated
- E. Burglar Bars
- F. Electrical Knock-Out
- G. Full Bottom Corners
- H. Welded Bottom Corners
- I. 16-gauge

### **2.4 PROPELLER**

- A. Precision pitched Propeller shall be fabricated steel or cast aluminum attached to a heavy duty hub.
- B. The propeller hub shall be securely fastened to the motor shaft utilizing two set screws or split tapered bushings.

## **2.5 MOTOR SELECTION**

- A. Motor Type: Totally Enclosed Fan Cooled (TEFC) or Open Drip Proof (ODP).
- B. Motor shall be permanently lubricated and rated for continuous duty.

## **2.6 VARIABLE AIR VOLUME**

- A. VAV Package with Manual Control (VFD included).
- B. VAV Package with Static Pressure Control (VFD included).
- C. VAV Package with Preset or Reference Speeds (VFD included).

## **2.7 VFD OPTIONS**

- A. VFD: 208V or 120V Single Phase Input.
- B. Load reactor mounted in fan.
- C. VFD unit mounted.
- D. VFD mounting box.
- E. VFD factory mounted and wired in exhaust fan.

## **2.8 OPTIONS**

- A. Upblast Butterfly Dampers.
- B. Magnetic latches for Butterfly Dampers (set of 2).
- C. Insulated motor shroud and cooling tubes.
- D. Base with Access Door.
- E. Ship loose disconnect.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine all areas and conditions under which package(s) are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

### **3.2 INSTALLATION**

- A. Install the package in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.

### **3.3 CONNECTIONS**

- A. Electrical connections conform to applicable requirements in Division 26 Sections.

### **3.4 SYSTEM START-UP**

- A. System start-up is performed by a factory-trained Service Technician.