

SECTION 233423
POWER VENTILATORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Roof exhausters.
- B. Cabinet fans.
- C. Ceiling exhaust fans.

1.2 RELATED SECTIONS

- A. Section 23 05 13 - Motors.
- B. Section 23 05 48 - Vibration Isolators.
- C. Section 23 31 00 - Ductwork.
- D. Section 23 33 00 - Duct Accessories: Backdraft dampers.
- E. Section 23 34 01 - Centrifugal Fans.
- F. Section 23 34 02 - Axial Fans
- G. Section 26 05 05 - Equipment Wiring Systems: Electrical characteristics and wiring connections.

1.3 REFERENCES

- A. AMCA 99 - Standards Handbook.
- B. AMCA 210 - Laboratory Methods of Testing Fans for Rating Purposes.
- C. AMCA 261 - Directory of Products Licensed to Bear the AMCA Certified Ratings Seal.
- D. AMCA 300 - Test Code for Sound Rating Air Moving Devices.
- E. AMCA 301 - Method of Publishing Sound Ratings for Air Moving Devices.
- F. NEMA MG1 - Motors and Generators.
- G. NFPA 96 - Installation of Equipment for the Removal of Smoke and Grease Vapors from Commercial cooking Equipment.
- H. UL 705 - Power Ventilators.

1.4 SUBMITTALS

- A. Submit under the provisions of Division 01.

- B. Product Data: Provide data on fans and accessories including fan curves with specified operating point clearly plotted, power, RPM, sound power levels at rated capacity, and electrical characteristics and connection requirements.
- C. Manufacturer's Instructions: Indicate installation instructions.

1.5 SUBMITTALS AT PROJECT CLOSEOUT

- A. Submit under the provisions of Division 01.
- B. Maintenance Data: Include instructions for lubrication, motor and drive replacement, spare parts list, and wiring diagrams.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with a minimum of five (5) years' experience.

1.7 REGULATORY REQUIREMENTS

- A. Kitchen Range Hood Exhaust Fans: Comply with requirements of NFPA 96.
- B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.1 ROOF VENTILATORS

- A. Manufacturers:
 1. ACME.
 2. Greenheck.
 3. Cook.
 4. Substitutions: Refer to Division 01- Material and Equipment.
- B. Product Requirements:
 1. Performance Ratings: Conform to AMCA 210 and bear the AMCA Certified Rating Seal.
 2. Sound Ratings: AMCA 301, tested to AMCA 300, and bear AMCA Certified Sound Rating Seal.
 3. Fabrication: Conform to AMCA 99.
 4. UL Compliance: UL listed and labeled, designed, manufactured, and tested in accordance with UL 705.
- C. Fan Unit: V-belt or direct driven as indicated, with spun aluminum or upblast spun aluminum with grease tray housing; resilient mounted motor; 1/2-inch mesh, 0.62-inch-thick aluminum wire birdscreen; square base to suit roof curb with continuous curb gaskets.
- D. Roof Curb: 16 inches of galvanized steel with continuously welded seams, one inch insulation and curb bottom, hinged curb adapter, and factory installed nailer strip.
- E. Disconnect Switch: Factory wired, non-fusible, in housing for thermal overload protected motor multiple speed switch or solid-state speed controller.
- F. Backdraft Damper: Gravity actuated, aluminum multiple blade construction, felt edged with offset hinge pin, nylon bearings, blades linked.

- G. Sheaves: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheave selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

2.2 CABINET AND CEILING EXHAUST FANS

- A. Manufacturers:
 - 1. ACME.
 - 2. Greenheck.
 - 3. Cook.
 - 4. Substitutions: Refer to Division 01- Material and Equipment.
- B. Centrifugal Fan Unit: V-belt or direct driven with galvanized steel housing, resilient mounted motor, gravity backdraft damper in discharge.
- C. Disconnect Switch: Cord and plug in housing for thermal overload protected motor multiple speed switch or solid-state speed controller.
- D. Grille: Aluminum with baked white enamel finish.
- E. Sheaves: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheaves selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with the manufacturer's instructions.
- B. Secure roof exhausters with cadmium plated steel lag screws to roof curb.
- C. Extend ducts to roof exhausters into roof curb. Counterflash duct to roof opening.
- D. Hung Cabinet Fans:
 - 1. Install fans with resilient mountings and flexible electrical leads. Refer to Section 23 05 48.
 - 2. Install flexible connections specified in Section 23 33 00 between fan and ductwork. Ensure metal bands of connectors are parallel with minimum one inch flex between ductwork and fan while running.
- E. Provide sheaves required for final air balance.
- F. Install backdraft dampers on inlet to roof exhausters.
- G. Provide backdraft dampers on outlet from cabinet and ceiling exhaust fan and as indicated.
- H. Do not operate fans until ductwork is clean, filters are in place, and bearings are lubricated.

END OF SECTION