SECTION 23 34 00 - HVAC FANS & HEATERS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide Fans as specified herein and shown on the Drawings.

B. Equipment capacity and size as indicated in the equipment lists on the Drawings.

C. Related Work: The requirements of Section 23 05 00, Common HVAC Materials and Methods, also apply to this section.

1.2 QUALITY ASSURANCE

A. Air Handling Equipment: Rated in accordance with AMCA certified rating procedures and AMCA labeled.

1.3 SUBMITTALS

A. Submit catalog data, construction details and performance characteristics for each fan.

B. Submit operating and maintenance data.

PART 2 - PRODUCTS

2.1 BELT DRIVEN CENTRIFUGAL ROOF SUPPLY FANS

A. General Description:
1. Base fan performance at standard conditions (density 0.075 Lb/ft3)
2. Performance capabilities up to 14,000 cubic feet per minute (cfm) and static pressure to 3.5 inches of water gauge
3. Fans are available in five sizes with nominal wheel diameters ranging from 10 inches through 20 inches (110-120 unit sizes)
4. Maximum continuous operating temperature is 130 Fahrenheit (54.4 Celsius)
5. Roof mounted applications
6. Each fan shall bear a permanently affixed manufacture's engraved metal nameplate containing the model number and individual serial number

B. Wheel:
1. Forward curved centrifugal wheel
2. Constructed of heavy gauge steel
3. Shall be a double width and double inlet
4. Statically and dynamically balanced in accordance to AMCA Standard 204-05
5. The wheel cone and fan inlet will be matched and shall have precise running tolerances for maximum performance and operating efficiency

C. Motors:

1. Motor enclosures: Open driproof.
2. Motors are permanently lubricated, heavy duty ball bearing type to match with the fan load and pre-wired to the specific voltage and phase
3. Mounted on vibration isolators, out of the airstream

D. Shafts and Bearings:
1. Fan shaft shall be ground and polished solid steel with an anti-corrosive coating
2. Permanently sealed bearings
3. Bearing shall be selected for a minimum L50 life in excess of 200,000 hours at maximum cataloged operating speed
4. Bearings are 100 percent factory tested
5. Fan Shaft first critical speed is at least 25 percent over maximum operating speed

E. Housing/Hood
1. Constructed of heavy gauge steel
2. Removable hood cover or side panels
3. Leak resistant

F. Housing Supports and Drive Frame:
1. Drive frame assemblies shall be constructed of heavy gauge steel and mounted on vibration isolators
2. Lifting lugs shall be located on the drive frame to provide easy lifting

G. Vibration Isolation:
1. Double studded true isolators or pedestal mount
2. No metal to metal contact
3. Sized to match the weight of each fan

H. Disconnect Switches:
1. NEMA 3R: outdoor application falling rain water.
2. NEMA rated: 3R
3. Positive electrical shut-off
4. Wired from fan motor to junction box installed within motor compartment

I. Drive Assembly:
1. Belts, pulleys, and keys oversized for a minimum of 150 percent of driven horsepower
2. Belts: Static free and oil resistant
3. Pulleys: Cast type, keyed, and securely attached to wheel and motor shafts
4. Motor pulleys are adjustable for final system balancing
5. Readily accessible for maintenance

J. Filters:
1. Washable aluminum one-inch filter

K. Curb Caps:
1. Includes prepunched mounting holes to ensure correct attachment to roof

L. Roof Curb

1. Types: GPS
2. Mounted onto roof with fan

3. Material: Galvanized
4. Insulation Thickness: 2 inches
5. Coating Type: None
6. Curb Seal:
    a. Rubber seal between the fan and the roof curb

M. Greenheck SAF Series or equal Carnes, Cook, Twin City, Acme, or approved.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install and arrange equipment as shown on the Drawings and as recommended by the equipment manufacturer.

3.2 AIR HANDLING INSTALLATION

A. Installation and Arrangement: Air handling equipment shall be installed and arranged as shown on the Drawings. Comply with the manufacturer's recommendations for installation connection and start-up.

B. Lubrication: All moving and rotating parts shall be lubricated in accordance with the manufacturer's recommendations prior to start-up.

C. Filters: Specified filters or approved temporary construction filters shall be installed in supply units prior to start-up or used for drying and/or temporary heat.

3.3 CONTROLS

A. Wiring: All wiring shall be in accordance with the National Electrical Code and local electrical codes.

END OF SECTION