

SECTION 233425 - FANS: IN-LINE CENTRIFUGAL, LIGHT DUTY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-01 Specification sections, apply to work of this section.

1.2 SCOPE

- A. Provide in-line centrifugal light duty exhaust fans of size, sound power level, and electrical characteristics indicated on drawings.

1.3 RELATION TO OTHER WORK

- A. Refer to the section, "General Mechanical Provisions", for related requirements. Refer to other sections of Division 23 and to all other applicable portions of the Drawings and Specifications.

1.4 SHOP DRAWINGS

- A. Refer to requirements of Section entitled "General Mechanical Provisions". Include complete data on: fan external static pressure, fan rpm, motor rpm, fan tip speed, fan size, fan performance tables or curves showing all possible operating selection points for each fan size (including rating certification), fan brake horsepower, motor horsepower and electrical characteristics sound level, fan accessories, and a complete schedule worked up by fan number.
- B. Exhaust air fans shall be AMCA certified as to both sound and performance ratings.

1.5 MANUFACTURER

- A. Products listed in this Section or on the plans are based on a specific manufacturer to establish the desired style, quality and type. Equivalent products, complying with the requirements of this Section and the installation requirements of the plans, by the following manufacturers are acceptable:
 - 1. Acme Engineering and Manufacturing Company
 - 2. Greenheck Fan and Ventilator Corp.
 - 3. Ilg Industries, Inc.
 - 4. Powerline, Inc.
 - 5. Penn Ventilator Company
 - 6. Loren Cook Company
 - 7. Jenn Air
 - 8. Carnes
 - 9. Captive Aire

PART 2 - PRODUCTS

2.1 FAN HOUSING

- A. Fan housing including longitudinal, traverse, and diagonal stiffeners, motor mounts, bearing and drive supports shall be constructed of steel. Entire fan housing shall be internally lined with 1/2-inch or greater, three pound per cubic foot density fiberglass acoustical duct liner with a stabilized surface. Liner shall be held in place with adhesive and mechanical fasteners. All insulation and adhesives shall meet requirements of NFPA 90A as to flame spread and smoke developed ratings. Housing, including all bracing, stiffeners and motor mounting assembly shall be factory finished with a baked on alkyd enamel finish over a corrosion resistant primer. Removable panel in bottom of housing for complete access to motor and fan. Inlet and outlet duct connections.

2.2 FAN WHEEL

- A. Shall be centrifugal type and shall be statically and dynamically balanced.

2.3 FAN MOTOR

- A. Permanently lubricated shaded pole motor mounted on resilient isolators to minimize vibration and noise.

2.4 BACKDRAFT DAMPER

- A. Mounted in throat of fan discharge.

2.5 DRIVE ASSEMBLY

- A. Drive shall be direct drive type as indicated on drawings, and shall conform with the requirements of Section entitled "General Mechanical Provisions".

2.6 DISCONNECT SWITCH

- A. Fans shall include factory mounted disconnect switches prewired to the drive motor.

2.7 SPEED CONTROL

- A. Solid state speed controller for speed reduction to 40%. Mounted on housing or as otherwise indicated.

PART 3 - EXECUTION

3.1 FAN PLACEMENT AND MOUNTING

- A. Fan locations shall be essentially as shown on drawings; however, actual wall openings and fan placement shall be verified using field measurements and data relating to equipment

approved for actual installation on this project. Mount fan in strict accordance with manufacturer's instructions.

3.2 SOUND AND VIBRATION CONTROL

- A. Refer to Section entitled "Ductwork" for air side sound control and to Section entitled "Vibration Isolation" for vibration control.

3.3 DUCT CONNECTIONS

- A. Inlet and discharge ducts shall be connected to the fan duct collars using flexible connectors. These connectors shall be installed properly so that they are not in tension and are aligned with their respective ducts.

3.4 TEST AND BALANCE

- A. All fan performance shall be certified as specified in section describing test and balance procedures.

3.5 OTHER REQUIREMENTS

- A. Remove shipping bolts and temporary supports within fans. Adjust dampers for free operation.
- B. Provide necessary anchorage and supports to prevent vibration.

END OF SECTION 233425