SECTION 23 3700 - AIR OUTLETS AND INLETS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Diffusers.

B. Registers/grilles.

C. Door grilles.

D. Louvers.

E. Roof hoods.

1.02 RELATED SECTIONS

A. Drawings and General Provisions of the Contract apply to this section.

1.03 REFERENCES

A. AMCA 500-L - Laboratory Methods of Testing Louvers for Rating; Air Movement and Control Association International, Inc.

B. ARI 890 - Standard for Air Diffusers and Air Diffuser Assemblies; Air-Conditioning and Refrigeration Institute.

C. ASHRAE Std 70 - Method of Testing for Rating the Performance of Air Outlets and Inlets; American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

D. SMACNA (DCS) - HVAC Duct Construction Standards - Metal and Flexible; Sheet Metal and Air Conditioning Contractors' National Association.

1.04 SUBMITTALS

A. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level. Submit color chart.

B. Samples: Submit one of each required air outlet and inlet type.

C. Project Record Documents: Record actual locations of air outlets and inlets.

1.05 QUALITY ASSURANCE

A. Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.

B. Test and rate louver performance in accordance with AMCA 500-L.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Carnes Company HVAC

B. Krueger

C. Price Industries

D. Titus

E. Tuttle and Bailey

2.02 RECTANGULAR CEILING DIFFUSERS

A. Type: Square and rectangular, adjustable pattern, multi-louvered diffuser to discharge air in pattern indicated on the drawings.

B. Frame: Surface mount. In plaster ceilings, provide plaster frame and ceiling frame.

C. Fabrication: Aluminum with baked enamel finish.

D. Accessories: Radial opposed blade damper and multi-louvered equalizing grid with damper adjustable from diffuser face.

2.03 CEILING SUPPLY REGISTERS/GRILLES

A. Type: Streamlined and individually adjustable curved blades to discharge air along face of grille, two-way deflection.

B. Frame: 1-1/4 inch margin with concealed mounting and gasket.

C. Fabrication: Aluminum extrusions with factory finish.

D. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

2.04 CEILING EXHAUST AND RETURN REGISTERS/GRILLES

A. Type: Streamlined blades, 3/4 inch minimum depth, 3/4 inch maximum spacing, with blades set at 45 degrees, vertical or horizontal face.

B. Frame: 1-1/4 inch margin with concealed mounting.

C. Fabrication: Steel with 20 gage minimum frames and 22 gage minimum blades, steel and aluminum with 20 gage minimum frame, or aluminum extrusions, with factory finish, color to be selected.

D. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face where not individually connected to exhaust fans.

2.05 CEILING LINEAR EXHAUST AND RETURN GRILLES

A. Type: Streamlined blades with 90 degree two-way deflection, 1/8 x 3/4 inch on 1/2 inch centers.

B. Frame: 1-1/4 inch margin, extra heavy for floor mounting, with concealed mounting.

C. Fabrication: Steel with 20 gage minimum frames and 22 gage minimum blades, steel and aluminum with 20 gage minimum frame, or aluminum extrusions, with factory finish, color to be selected.

D. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

2.06 CEILING SLOT DIFFUSERS

A. Type: Continuous 1/2 inch, 3/4 inch or 1 inch wide slot, one, two, three or four slots wide as scheduled, with adjustable vanes for left, right, or vertical discharge.

B. Fabrication: Aluminum extrusions or steel with factory finish, color to be selected.

C. Frame: 1-1/4 inch margin with countersunk screw, concealed, support clips for suspension system, or support clips for T-bar mounting and gasket, mitered end border.

D. Plenum: Integral, galvanized steel, insulated.

2.07 WALL SUPPLY REGISTERS/GRILLES

A. Type: Streamlined and individually adjustable blades, 3/4 inch minimum depth, 3/4 inch maximum spacing with spring or other device to set blades, vertical face, double deflection.

B. Frame: 1-1/4 inch margin with concealed mounting and gasket.

C. Fabrication: Steel with 20 gage minimum frames and 22 gage minimum blades, steel and aluminum with 20 gage minimum frame, or aluminum extrusions, with factory finish, color to be selected.

D. Damper: Integral, gang-operated opposed blade type with removable key operator, operable from face.

2.08 WALL SUPPLY REGISTERS/GRILLES

A. Type: Streamlined and individually adjustable curved blades to discharge air along face of grille with two-way deflection.

B. Frame: 1-1/4 inch margin with concealed mounting and gasket.

C. Fabrication: Aluminum extrusions with factory finish.

D. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

2.09 WALL EXHAUST AND RETURN REGISTERS/GRILLES

A. Type: Streamlined blades, 3/4 inch minimum depth, 3/4 inch maximum spacing, with spring or other device to set blades, vertical face.

B. Frame: 1-1/4 inch margin with concealed mounting.

C. Fabrication: Steel frames and blades, with factory finish, color to be selected.

D. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

2.10 DOOR GRILLES

A. Type: V-shaped louvers of 20 gage thick steel, 1 inch deep on 1/2 inch centers.

B. Frame: 20 gage steel with auxiliary frame to give finished appearance on both sides of door, with factory prime coat finish.

2.11 LOUVERS

A. Type: 6 inch deep with blades on 45 degree slope with center baffle and return bend, heavy channel frame, 1/2 inch square mesh screen over exhaust, and 1/2 inch square mesh screen over intake.

B. Fabrication: 16 gage thick galvanized steel welded assembly, with factory finish, color to be selected.

C. Fabrication: 12 gage thick extruded aluminum, welded assembly, with factory finish color to be selected.

D. Mounting: Furnish with exterior flat flange for installation.

2.12 ROOF HOODS

A. Fabricate air inlet or exhaust hoods in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.

B. Fabricate of galvanized steel, minimum 16 gage base and 20 gage hood, or aluminum, minimum 16 gage base and 18 gage hood; suitably reinforced; with removable hood; birdscreen with 1/2 inch square mesh for exhaust and 3/4 inch for intake, and factory finish.

C. Fabricate louver penthouses with mitered corners and reinforce with structural angles.

D. Mount unit on minimum 12 inch high curb base with insulation between duct and curb.

E. Make hood outlet area minimum of twice throat area.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.

C. Install diffusers to ductwork with air tight connection.

D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.

E. Paint ductwork visible behind air outlets and inlets matte black.

END OF SECTION 23 3700