DUCT ACCESSORIES

1. GENERAL

1.1 Scope

.1 Access doors.

.2 Balancing dampers.

.3 Flexible connections.

.4 Backdraft dampers.

1.2 Quality Assurance

.1 Access doors shall be ULC labelled.

.2 Accessories shall meet the requirements of NFPA 90A, Air Conditioning and Ventilating Systems. Fabricate in accordance with ASHRAE Handbooks and SMACNA Duct Manuals.

.3 Prove all dampers to Contract Administrator at job completion.

1.3 Submittals

.1 Submit shop drawings of factory fabricated assemblies.

2. PRODUCTS

2.1 Duct Access Doors

.1 Fabricate rigid and close-fitting doors of galvanized steel with sealing gaskets and suitable quick fastening locking devices. Duct access panels with screws are not acceptable. Install minimum 25 mm (1 in) thick insulation with suitable sheet metal cover frame for insulated ductwork.

.2 Fabricated with two butt hinges and two sash locks for sizes up to 450 mm (18 in), two hinges and two compression latches with outside and inside handles for sizes up to 600 mm x 1200 mm (24 in x 48 in) and an additional hinge for larger sizes.

2.2 Balancing Dampers

.1 Fabricate of galvanized steel, minimum 1.6 mm (16 ga). Full blade-length shafts of hollow square construction with blades rigidly fastened along entire blade length.

.2 Lockable quadrant type operating mechanism with end bearings on accessible rectangular ducts up to 400 mm (16 in) deep and on accessible round ducts.

.3 Wide pitch screw operating mechanism with crank operator and end bearings on accessible rectangular ducts 425 mm (17 in) and over in depth and on all inaccessible rectangular and round ducts.

.4 On rectangular ducts up to 275 mm (11 in) deep construct of single blade (butterfly) type.

.5 On rectangular ducts 300 mm to 400 mm (12 in to 16 in) deep construct of two opposed blades mechanically interlocked with pivots at quarter points.

.6 On rectangular ducts over 425 mm (17 in) deep construct of multiple opposed blades mechanically interlocked with blades no greater than 200 mm deep and pivots equally spaced.

.7 On round ducts construct of single blade (butterfly) type. On 500 pascal (2 in wg) class and on all dampers over 300 mm (12 in) diameter fabricate with full blade-length shaft.

.8 Construct damper blades for medium and high pressure systems to block air passage 70% maximum. Provide complete with locking type handles.

.9 Provide over-ride limiting stops on all operating mechanisms.

.10 Identify the air flow direction and blade rotation and open and close positions on operating mechanism.

.11 On round ductwork install operating mechanism on a steel mounted base firmly secured to the ductwork.

.12 On externally insulated ductwork, install operating mechanisms on a steel bridge type mounting base to permit continuity of insulation under the mechanism.

2.3 Flexible Connections

.1 Fabricate of ULC approved neoprene coated flameproof glass fabric approximately 150 mm (6 in) wide tightly crimped into metal edging strip and attached to ducting and equipment by screws or bolts at 150 mm (6 in) intervals. Flexible connection airtight at 500 Pa (2 in wg).

2.4 Backdraft Dampers

.1 Construct of minimum 1.3 mm (18 ga) aluminum channel frame.

.2 Construct of minimum 0.6 mm (24 ga) aluminum blades, complete with stiffeners along trailing edge. Fabricate single blade dampers for duct sizes to 240 mm (9.5 in), multiblade dampers for ducts greater than 240 mm (9.5 in).

.3 Provide full blade-length shafts complete with brass or nylon bearings.

.4 Provide neoprene anti-clatter blade strips on pivot side of blades.

.5 Construct blade connecting linkage of minimum 2.0 mm (12 ga) aluminum rod with eyelet, pin bearings, and adjustable counter weight to assist blade opening action.

.6 Maximum blade length of 750 mm (30 in).

.7 Backdraft damper suitable for 10 m/s (2000 fpm) face velocity.

3. EXECUTION

3.1 Application

.1 Provide access door minimum 450 mm x 350 mm (18 in x 14 in) or 50 mm (2 in) smaller than duct dimension for cleaning and inspection at positions indicated by Drawings and as follows:

.1 Both sides of turning vanes in all ducts.

.2 At each fire damper location.

.3 At each side of all heating or cooling coils.

.4 At all locations of internally duct mounted devices including automatic dampers, damper motors and control sensors and devices.

.2 At each point where ducts pass through duct shall be sealed with non-combustible material.

.3 Provide balancing dampers at points on supply and exhaust systems where branches are taken from larger ducts as required for proper air balancing.

.4 Install ducts associated with fans and equipment subject to forced vibration with flexible connections, immediately adjacent to equipment and/or where indicated on Drawing.

END OF SECTION