

INSTALLATION INSTRUCTIONS
FSD60C(LP) AND FSD36C(LP) CORRIDOR DAMPER
UL555 1 HOUR FIRE RESISTANCE AND UL555S CLASS 1 AND CLASS 2 LEAKAGE RATINGS

APPLICATION

The FSD60C AND FSD36C is a UL Classified 1 Hour Corridor damper. It is designed for installation in the ceiling penetrations of tunnel corridors. The FSD60C and FSD36C may also be installed as a "standard" 1 1/2 hour combination fire/smoke damper in walls or floors (Refer to the FSD60 and FSD36 installation instructions when installing as a "standard" 1 1/2 hour combination fire/smoke damper.) The FSD60C and FSD36C closes on loss of power.

FSD60C and FSD36C MAXIMUM UL CLASSIFIED SIZE OPPOSED BLADES

Single section horizontal – 24"w x 24"h (610 x 610).

FSD60C-LP and FSD36C-LP MAXIMUM UL CLASSIFIED SIZE OPPOSED BLADES

Single section horizontal – 24"w x 14"h (610 x 356).

Dimensions shown in parentheses () indicate millimeters.



SEE COMPLETE MARKING ON PRODUCT

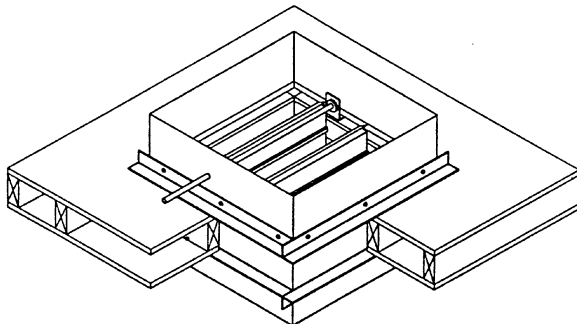
California State Fire Marshal Listing No.

FSD36C – 3225-0245:0122

FSD60C – 3230-0245:0121

APPLICATION ILLUSTRATIONS

**FSD60C(LP) AND FSD36C(LP)
C1 Installation**
Through Penetration of Corridor Ceiling
(Wood or Steel Stud Construction)



ITEM	DESCRIPTION
1.	Actuator (may be in or out of airstream)
2.	Damper Frame
3.	TS150, EFL, PFL or SP100 (location may vary)
4.	Sleeve
5.	Over-Center Link
6.	Mounting Angles See Note 5.
7.	Joint, Sleeve to Duct – Break-away Connections
8.	Caulking Material
9.	Steel or Wood Stud Construction (single studs only)

FIG. 1 - ACTUATOR ABOVE RATED CORRIDOR CEILING

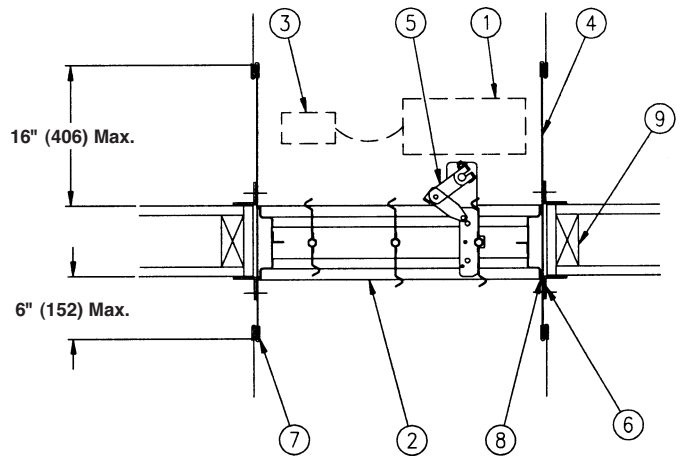
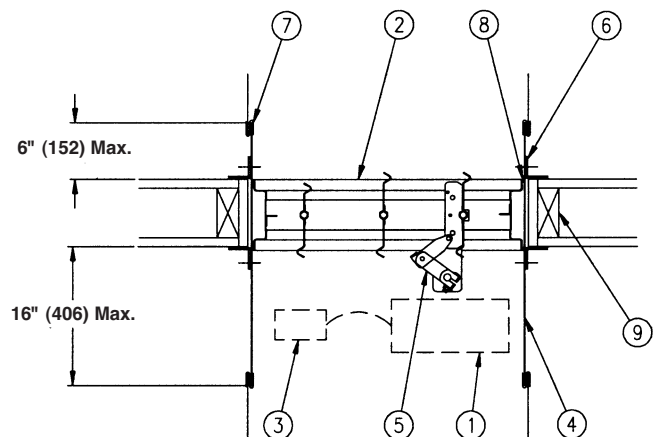


FIG. 2 - ACTUATOR BELOW RATED CORRIDOR CEILING



GENERAL INSTALLATION

1. Opening Clearance

a. C1 Installation

The opening shall be 1/4" (6) larger than the overall size of the damper and sleeve assembly.

b. C2 Installation

The opening shall be large enough to allow the grille or diffuser to overlap the bottom edges of the corridor ceiling and lay flat against the ceiling material.

2. Ceiling Construction

The minimum ceiling partition construction will consist of single 2 x 4 wood studs or metal studs on 24" (610) center to center. C3 applications are metal stud only. UL classified 5/8" (16) gypsum will be attached to the studs with 15/8" (41) drywall screws on 12" (305) centers or no. 6d nails on 7" (178) centers. Refer to the framing details included in these instructions.

3. Fasteners and Sealant

When fastening the damper to field supplied sleeves, the dampers shall be fastened with 1/4"-20 (M6) bolts, number 10 (M5) screws, or 1/2" (13) long welds staggered intermittently on both sides. Space all fasteners 6" (152) on center and a maximum 2" (51) from the ends of each corner. A bead of Dow Corning Silastic 732 RTV, Dow Corning 999 or GE RTV 108 sealant shall be applied between the damper and sleeve. Press the surface of the sealant in place to dispel the air. Only one side of the damper requires caulking.

4. Damper Sleeve

Sleeve thickness must be equal to or thicker than the duct connected to it. Sleeve gage requirements are listed in the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems and in NFPA90A. If a breakaway style duct/sleeve connection is not used, the sleeve shall be a minimum of 16 gage (1.6). Damper sleeve shall not extend more than 6" (152) beyond the fire wall or partition unless damper is equipped with an actuator and/or factory installed access door. Sleeve may extend up to 16" (406) beyond the fire wall or partition on sides equipped with actuator and/or factory installed access door. Sleeve shall terminate at both sides of wall within dimensions shown.

5. Mounting Angles

a. C1 Installation

Ruskin FAST Angle or Picture Frame Mounting Angles (PFMA) are UL tested and may be used in lieu of the following conventional mounting angles. The mounting angles shall be 1 1/2" x 1 1/2" x 20 gage (38 x 38 x 1.6) minimum and shall be fastened with minimum no. 10 (M5) bolts or screws, 3/16" (5) minimum diameter steel rivets or 1/2" (13) long tack welds. Do not fasten or weld angles together at corners of dampers. Space fasteners 12" (305) maximum on center.

b. C2 Installation

Ruskin FAST Angle or Picture Frame Mounting Angles (PFMA) may be used above the framing otherwise the mounting angle above the framing shall be 1 1/2" x 1 1/2" x 20 gage (38 x 38 x .9) minimum and shall be fastened with minimum no. 10 (M5) bolts or screws, 3/16" (5) minimum diameter steel rivets or 1/2" (13) long tack welds. Do not fasten or weld angles together at corners of dampers. Space fasteners 12" (305) maximum on center. The angle used below the framing shall be 1" x 2 1/2" x 16 gage (25 x 64 x 1.6) minimum and shall be fastened to the damper sleeve like the angle used above the framing.

c. C3 Installation

Mounting angles are required only on the topside of the framing. The mounting angles shall be fastened with minimum no. 10 (M5) bolts or screws, 3/16" (5) minimum diameter steel rivets or 1/2" (13) long tack welds. Space fasteners 12" (305) maximum on center. The mounting angles will be secured to the top of the ceiling partition with minimum no. 8 x 15/8" (M4 x 41)

screws. A minimum of one screw shall be placed at each end of the angle.

6. Duct/Sleeve Connections

a. Break-away Duct/Sleeve Connections

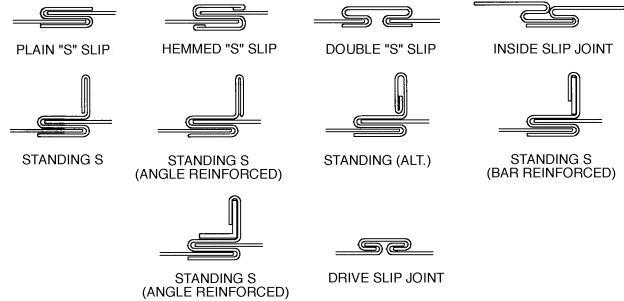
Rectangular ducts must use one or more of the connections depicted below:

A maximum of two #10 (M5) sheet metal screws on each side and the bottom, located in the center of the slip pocket and penetrating both sides of the slip pocket may be used. Connections using these slip joints on the top and bottom with flat drive slips up to 20" (508) long on the sides may also be used.

b. Round and Oval Break-away Connections

Round and flat oval break-away connections must use either a 4" (102) wide drawband or #10 (M5) sheet metal screws spaced equally around the circumference of the duct as follows:

- Duct diameters 22" (559) and smaller – maximum 3 screws.
- Duct diameters over 22" (559) and including 36" (914) – maximum 5 screws.
- Duct diameters over 36" (914) and up to and including 191" (4851) total perimeter – maximum 8 screws.



For flat oval ducts, the diameter is considered the largest (major) dimension of the duct. These connections are depicted in the SMACNA Fire, Smoke, and Radiation Damper Installation Guide.

Note: When optional sealing of these joints is desired, the following sealants may be applied in accordance with the sealant manufacturer's instructions:

Design Polymeric – DP 1010 Precision – PA2084T
Hardcast, Inc. – Iron Grip 601 Eco Duct Seal 44-52

c. Flanged Break-away Style Duct/Sleeve Connections.

Flanged connection systems manufactured by Ductmate, Nexus or Ward are approved break-away when installed as shown on the Flanged System Breakaway Connections Supplement.

TDC and TDF roll-formed flanged connections using 3/8" (10) steel bolts, nuts, and metal cleats as depicted and tested by SMACNA, are approved break-away connections when installed as shown on the Flanged Systems Breakaway Connections Supplement.

d. Non-Break-away Duct/Sleeve Connections

If other duct/sleeve connections are used, the sleeve shall be a minimum of 16 gage (1.6) for dampers up to 36" (914) wide and 24" (610) high and 14 gage (2.0) for dampers exceeding 36" (914) wide x 24" (610) high.

7. Installation and Maintenance

To ensure optimum operation and performance, the damper must be installed so it is square and free from racking. Each fire damper should be maintained, cycled and tested at intervals not less than every six months and in accordance with the latest editions of NFPA 90A and local codes. Care should be exercised to ensure that such tests are performed safely and do not cause system damage.

ILLUSTRATIONS (CON'T)

**FSD60C AND FSD36C
C2 Installation
V-Frame Grille Application
(Wood or Steel Stud Construction)**

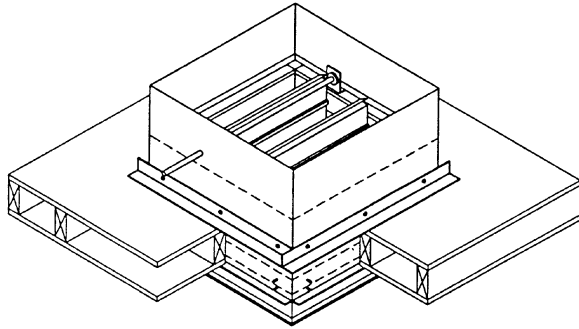
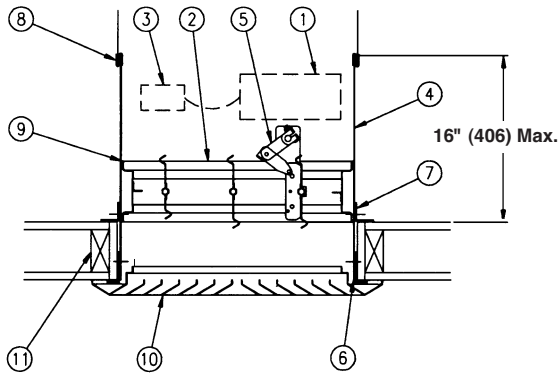
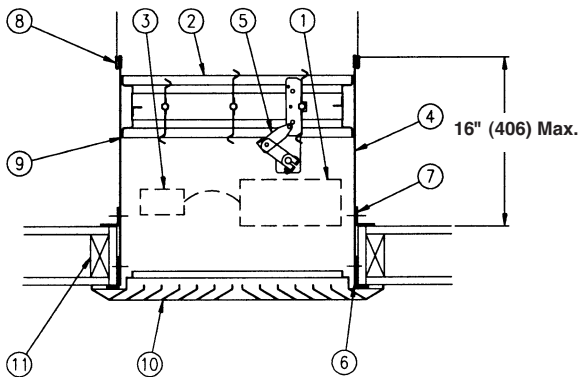


FIG. 3 - DAMPER WITH ACTUATOR MOUNTED EXTERNALLY



**FIG. 4 - DAMPER WITH ACTUATOR MOUNTED INTERNALLY
(Allows access to the actuator through the grille)**



**FSD60C AND FSD36C
C3 Installation
Flat-Frame Diffuser Application
(Steel Stud Construction Only)**

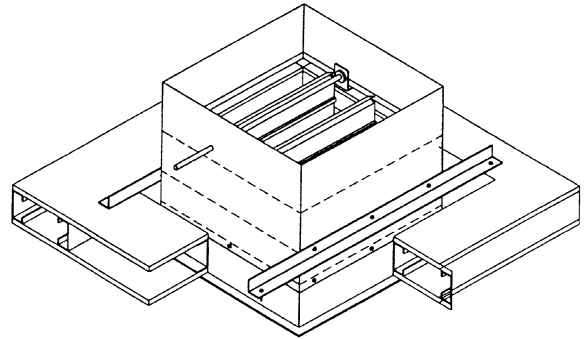
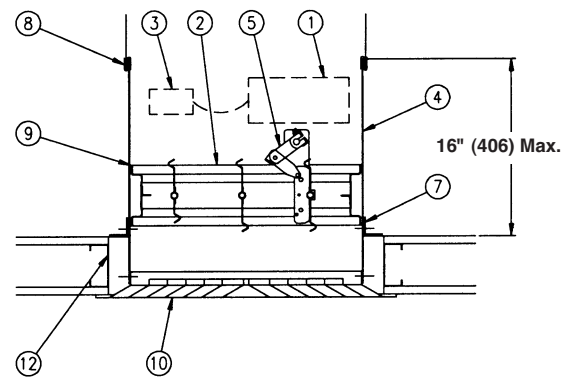
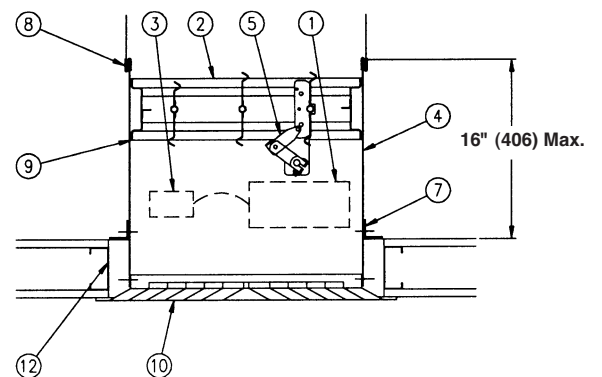


FIG. 5 - DAMPER WITH ACTUATOR MOUNTED EXTERNALLY



**FIG. 6 - DAMPER WITH ACTUATOR MOUNTED INTERNALLY
(Allows access to the actuator through the diffuser)**

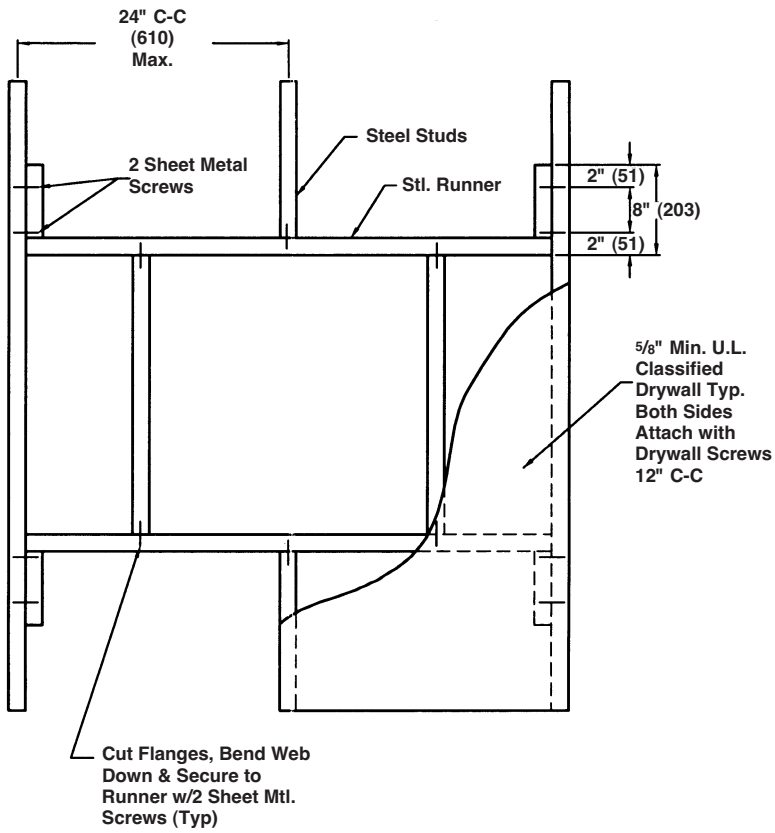


ITEM	DESCRIPTION
1.	Actuator (may be in or out of airstream)
2.	Damper Frame
3.	TS150, EFL, PFL (location may vary)
4.	Sleeve
5.	Over-Center Link
6.	Mounting Angles See Note 5.

ITEM	DESCRIPTION
7.	Mounting Angles 1 1/2 x 1 1/2 x 16 gage min.
8.	Joint, Sleeve to Duct – Break-away Connections
9.	Caulking Material
10.	Steel Grille/Diffuser (by others)
11.	Steel or Wood Stud Construction (single studs only)
12.	Steel Construction only

FRAMING DETAILS (STANDARD)

Steel Stud Construction



Wood Stud Construction

