

INSTALLATION INSTRUCTIONS

FSD36LP, FSD37LP, FSD60LP and FSD60LP-2

COMBINATION FIRE AND SMOKE DAMPERS

1 1/2 HOUR UL555 RATED

UL555S LEAKAGE CLASS 1 AND 2

APPLICATION

The FSD60LP and FSD60LP-2 are low pressure drop, low profile combination fire smoke dampers designed to restrict the passage of flame and resist the passage of smoke. The FSD60LP and FSD60LP-2 standard installation is with the blade running horizontally and the centerline of the closed blade to be within the wall, partitions or masonry floors with ratings of less than 3 hours. For other types of installation like out of wall or floor (OW), grille access (GA) and front access (FA) installations refer to the GA OW version of the FSD60 and FSD60-2.

FSD36LP, FSD37LP, FSD60LP, FSD60LP-2 MAXIMUM UL CLASSIFIED SIZES

Parallel Blades – Single section vertical and horizontal – 36" x 14" (914 x 356).

Dimensions shown in parentheses () indicate millimeters.

INSTALLATION SUPPLEMENTS

Refer to the appropriate Ruskin installation instructions supplements for additional information or special requirements:

- Optional Sealant of Dampers in Fire Rated Wall or Floor Openings
- Transfer Openings and Duct Terminations
- Optional FireStop Material
- Extension of Fire and Combination Fire and Smoke Damper Sleeves
- Fire and Combination Fire and Smoke Damper Installation in Concrete Floor with Steel Deck
- Drivemate No. 14880 Breakaway Connection
- Flanged System Breakaway Connections
- Cavity Shaft Wall Metal Stud Framing
- TS150 FireStat for "Reopenable" Combination Fire and Smoke Dampers
- SP100 Switch Package
- EFL Electric Resettable "Fuse" Link
- EFL/SP100 Electric Resettable "Fuse" Link
- PFL Pneumatic Fuse Link
- DSDF Flow Rated Duct Smoke Detector
- DSDN No-Flow Rated Duct Smoke Detector



SEE COMPLETE MARKING
ON PRODUCT

California State Fire Marshal Listing No.
3235-0245:0129

1. Opening Clearance

The opening in the wall or floor shall be larger than the damper/sleeve assembly to permit installation or expansion. For two angle installations the opening shall be a minimum of 1/8" per foot (3 per 305) larger than the overall size of the damper/sleeve assembly. The maximum opening size shall not exceed 1/8" per foot (3 per 305) plus 2" (51), nor shall the opening be less than 1/4" (6) larger than the damper/sleeve assembly. For one angle installations, the opening shall be a minimum of 1/4" (6) to a maximum of 1" (25) larger than the overall size of the damper/sleeve assembly. The opening may be as much as 2" (51) larger than the damper/sleeve assembly if a 16 gage (1.6) mounting angle is utilized.

2. Damper Sleeve

Sleeve thickness must be equal to or thicker than the duct connected to it. 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.

3. Damper Orientation

Damper is designed to operate with blades running horizontally and must be installed with leading edge of closed blades within the wall or floor when they are in the closed position. Use "Mount With Arrow Up" label as a guide for proper damper orientation. Horizontal mount dampers may be installed with actuator above or below the floor.

4. Mounting Angles

Mounting angles shall be a minimum of 1 1/2" x 1 1/2" x 20 gage steel (38 x 38 x 1.0). For openings in metal stud, wood stud and concrete/masonry wall and concrete/masonry floors, mounting angles are only required on one side of the wall or top side of the floor and must be attached to both the damper/sleeve and the wall or floor. Mounting angles may be installed directly to the metal stud under the wallboard on metal stud wall installations only. Two angle installation the mounting angles must be attached only to the damper/sleeve. Mounting angles must overlap the partition a minimum of 1" (25). Do not weld or fasten angles together at corners of dampers. Ruskin fire/smoke dampers may be installed using Ruskin FAST angle for one angle installation or Ruskin PFMA for two angle installations.

a. Mounting Angle Fasteners

Sleeve: #10 bolts or screws **Maximum of 1/2" long (13)**, 3/16" (3) steel rivets or 1/2" (13) long welds.

Masonry wall or floor: #10 self-tapping concrete screws
Wood/Steel Stud Wall: #10 screws.

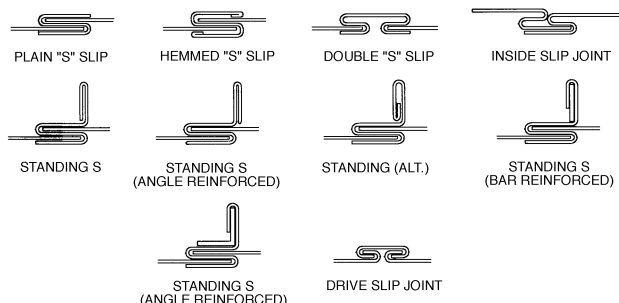
b. Mounting Angle Fastener Spacing

For one angle installations the sleeve fasteners shall be spaced at 6" (152) o.c. and the wall or floor fasteners shall be spaced at 12" (305) o.c. with a minimum of 2 fasteners on each side, top and bottom. Screw fasteners used in metal stud must engage the metal stud a minimum of 1/2" (13). Screw fasteners used in wood stud must engage the wood stud a minimum of 3/4" (19). Screw fasteners used in masonry walls or floors must engage the wall or floor a minimum of 1 1/2" (38). For two angle installations the fasteners shall be spaced at 8" (203) o.c.

5. 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 Polymerics – 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 Systems Breakaway Connections Supplement.

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

6. Actuator Connections

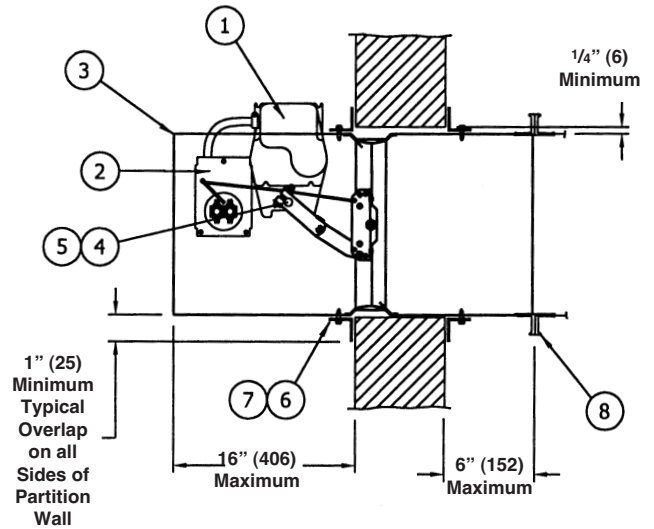
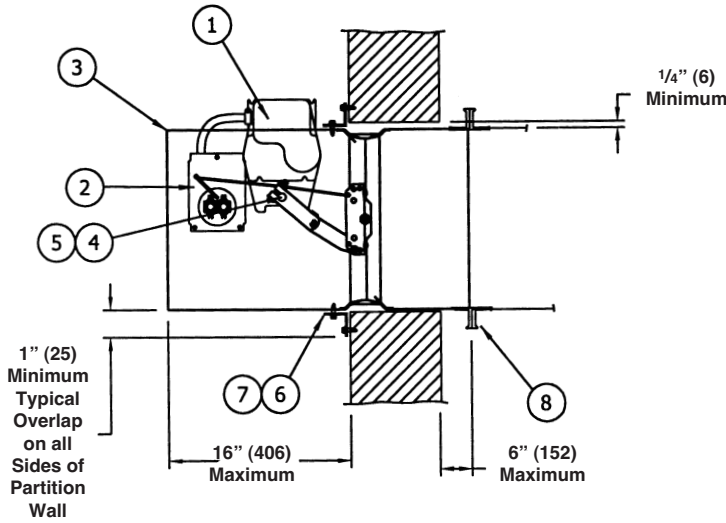
Electric and pneumatic actuators are to be connected in accordance with wiring and piping diagrams developed in compliance with applicable codes, ordinances and regulations.

7. Installation and Maintenance

To ensure optimum operation and performance; the damper must be installed so it is square and free from racking. Do not compress or stretch the damper frame into the duct or opening. Do not lift damper using blades or actuators. Each fire/smoke damper should be maintained, cycled and tested at intervals not less than every six months and in accordance with the latest editions or NFPA 80, 90A, 92A, 92B, 105 and UL864, local codes and in accordance with actuator manufacturer recommendations. Care should be exercised to ensure that such tests are performed safely and do not cause system damage.

VERTICAL INSTALLATION

Damper may be installed with actuator on either side of the partition.



FAST ANGLE (ONE ANGLE) INSTALLATION
Angle may be installed on either side of the partition.

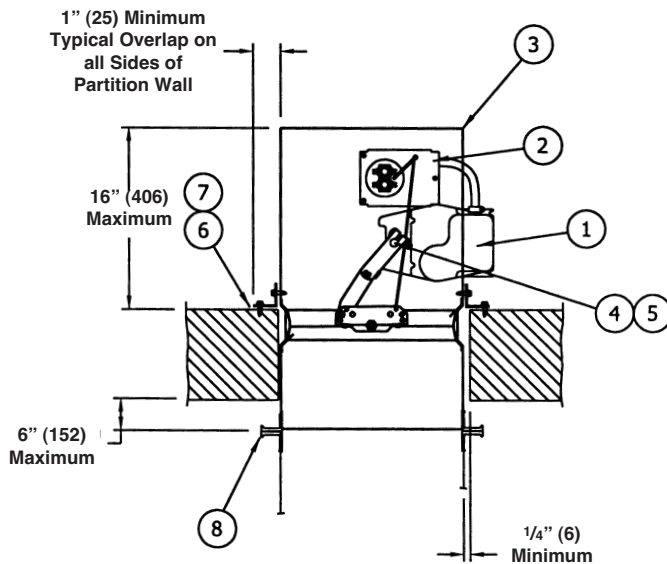
TWO ANGLE INSTALLATION
Angles are required on both sides of the partition.

- | ITEM | DESCRIPTION |
|------|-------------------------------|
| 1. | Actuator (location may vary). |
| 2. | Optional FireStat or SP-100. |
| 3. | Damper |
| 4. | Auxiliary Operating Jackshaft |
| 5. | Over-Center Link |

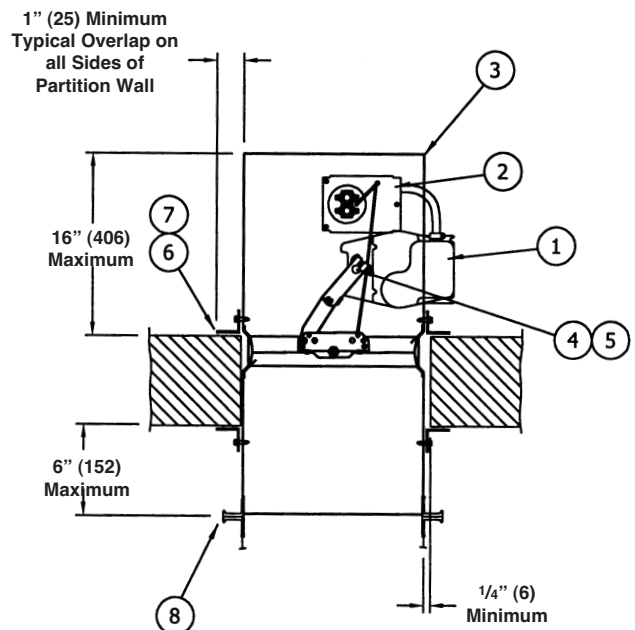
- | ITEM | DESCRIPTION |
|------|--|
| 6. | Mounting Angles (FAST, PFMA or Conventional) |
| 7. | Mounting Angle Fasteners
(Fasteners in the damper must be 1/2" (13) long or shorter). |
| 8. | Duct/sleeve connection. |

HORIZONTAL INSTALLATION

Damper may be installed with actuator above or below floor.



UNITS WITH ANGLE ONE SIDE IN A PARTITION WALL
Angle must be installed on top of floor.



UNITS WITH BOTH SIDES IN A PARTITION WALL
Angles are required on both sides of the floor.

RECOMMENDED FRAMING FOR OPENINGS IN WOOD AND METAL STUD WALLS

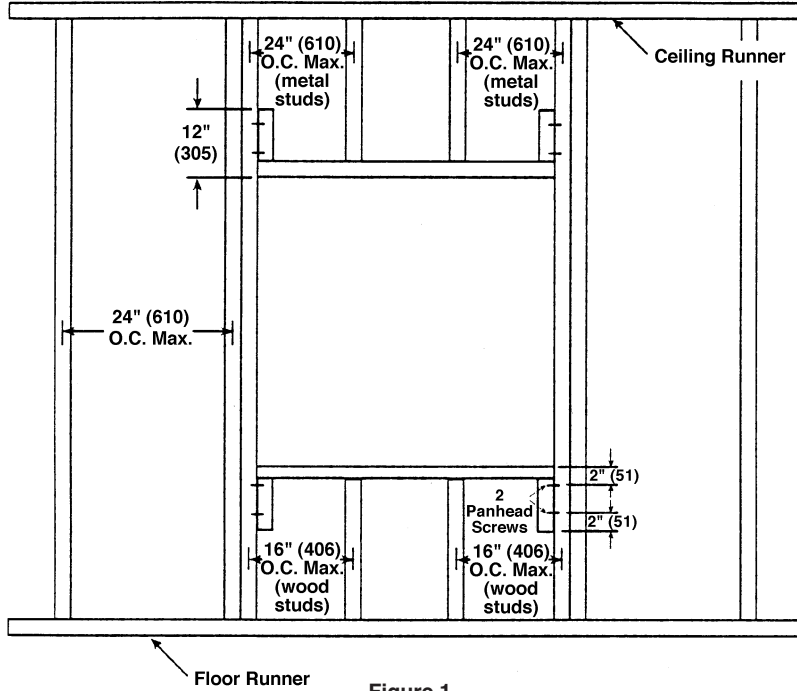


Figure 1

INSTRUCTIONS

1. Frame wall openings as shown.
2. Double vertical studs are not required for openings 36" w x 36" h (914 x 914) or smaller.
3. All construction and fasteners must meet the requirements of the appropriate wall design and/or local codes.
4. Consult the authority having jurisdiction for other acceptable framing methods.

NOTE:

The Metal Stud Construction and Wood Stud Construction figures at the bottom of the page depict mounting angles installed on both sides of the partition. A single angle may be sufficient. Refer to the instructions for single angle installation requirements.

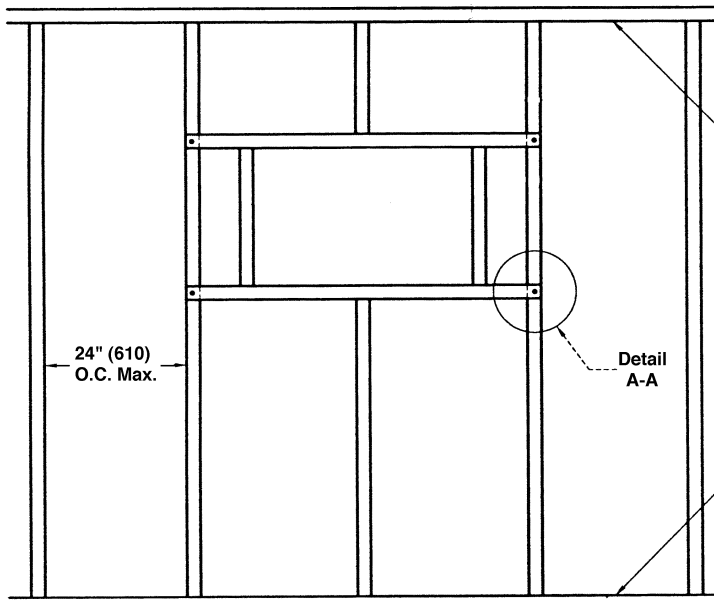


Figure 2

