

INSTALLATION INSTRUCTIONS
FSD35G, FSD36G, FSD37G, FSD60G, FSD60-2G, FSD60-VG,
FSD35SSG, FSD36SSG, FSD37SSG
COMBINATION FIRE AND SMOKE DAMPER FOR GRILLE MOUNTING
1½ HOUR UL555 RATED UL555S LEAKAGE RATED CLASS 1, 2 and 3

APPLICATION

The model G combination fire and smoke damper is designed to be mounted behind a grille in the wall or floor. Model G dampers are off-set in the damper sleeve for appropriate damper placement within the wall or floor (Grilles by others). Model G dampers are designed for one side-mounting angle installation. Sleeve and/or mounting angles may be factory or field furnished. The grille may be made from ferrous or non-ferrous steel.

Model FSD35G and FSD36G Maximum Size

Single Section

Vertical or Horizontal – 36"w x 48"h (914 x 1219)

Multiple Section Assembly

Vertical or Horizontal – 90"w x 48"h (2286 x 1219) or 48"w x 90"h (1219 x 2286)

Model FSD60G, FSD60-2G and FSD37G Maximum Size

Single Section

Vertical or Horizontal – 30"w x 48"h (762 x 1219)

Multiple Section Assembly

Vertical or Horizontal – 90"w x 48"h (2286 x 1219) or 48"w x 90"h (1219 x 2286)

Model FSD60-VG Maximum Size

Single Section

Vertical – 48"w x 30"h (1219 x 762)

Model FSD35SSG, FSD36SSG Maximum Size

Single Section

Vertical or Horizontal – 30"w x 48"h (762 x 1219)

Multiple Section Assembly

Vertical or Horizontal – 90"w x 48"h (2286 x 1219)

Model FSD37SSG Maximum Size

Single Section

Vertical or Horizontal – 24"w x 32"h (610 x 813)

Multiple Section Assembly

Vertical or Horizontal – 90"w x 32"h (2286 x 813)

Notes:

1. Dimensions shown in parentheses () indicate millimeters.
2. All multiple section dampers are constructed of equal single section sizes no greater than the maximum single section sizes indicated above.

INSTALLATION SUPPLEMENTS

Refer to the appropriate Ruskin installation instruction 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



SEE COMPLETE MARKING
ON PRODUCT

California State Fire Marshal Listing No. 3225-245:005 and 3230-245:109 for FSD35, 36.

New York City BSA No. 176-82-SM for FSD35, 36.

New York City MEA No. 394-93-M for FSD37.

1. Opening Clearance

The opening in the wall or floor shall be larger than the damper/sleeve assembly to permit installation and expansion. The maximum opening size shall not exceed $\frac{1}{8}$ " (3) ($\frac{3}{16}$ " for stn. stl.) per foot (3 per 305), nor shall be less than $\frac{1}{4}$ " (6) larger than the damper/sleeve assembly. The opening shall be a maximum of 1" (25) larger than the overall size of the damper/sleeve assembly.

2. Fasteners and Multiple Section Assembly

When joining multiple damper assemblies or fastening the damper to the sleeve, dampers shall be fastened with $\frac{1}{4}$ -20 (M6) bolts, No. 10 (M5) screws, or $\frac{1}{2}$ " (13) long welds staggered intermittently on both sides. Space fasteners 6" (152) on center and a maximum 2" (51) from the ends of the joining sections or from each corner. When joining multiple damper assemblies, a continuous $\frac{1}{8}$ " (3) bead of Dow-Corning 700, Silastic 732 RTV, or GE RTV 108 sealant shall be applied on the mullion joint. Press the surface of the sealant in place to dispel any air. Another bead of the same sealant shall be applied between the damper and sleeve in the same manner. Only one side of the damper requires caulking. Note the sealant is not required when dampers are supplied for fire damper applications only and are not required to be leakage rated. Multiple section high vertical mount dampers include a 14 gage x 5" (2 x 127) wide steel mullion plate sandwiched between the damper frames where required. The mullion plate must be the same material as the dampers.

3. 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) for dampers up to 36" (914) high and 14 gage (1.9) for dampers exceeding 36" (914) wide by 24" (610) high. 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.

4. 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.

5. Mounting Angles

Mounting angles shall be a minimum of $1\frac{1}{2}$ " x $1\frac{1}{2}$ " x 20 gage steel (38 x 38 x 1.0). For openings in metal stud, wood stud walls or masonry walls and floors of sizes 90" x 48" or 48" x 90" (2286 x 1219 or 1219 x 2286) and less. Mounting angles are only required on one side of the wall or topside of the floor and must be attached to both the sleeve and wall or floor. Mounting angles need to overlay the wall or floor by minimum of 1" (25). Mounting angles may be installed directly to the metal studs under the wallboard on metal stud installations only. For larger openings see "Transfer Opening and Duct Termination" Installation supplement.

a. Mounting Angle Fasteners

Sleeve: #10 bolts or screws, $\frac{3}{16}$ " (5) steel rivets or $\frac{1}{2}$ " (13) long or welds.

Masonry/Wall or Floor: #10 self-tapping concrete screws.

Wood/Steel Stud Wall: #10 screws

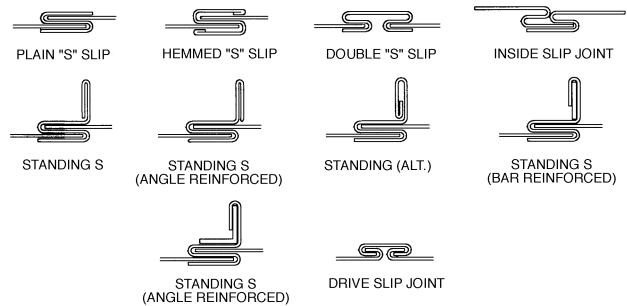
b. Mounting Angle Fastener Spacing

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 on each side, top and bottom. Screw fasteners used in metal stud must engage the metal stud a minimum of $\frac{1}{2}$ " (13). Screw fasteners used in wood stud must engage the wood a minimum of $\frac{3}{4}$ " (19). Screw fasteners used in masonry walls or floors must engage the wall a minimum of $1\frac{1}{2}$ " (38).

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:

Hardcast, Inc. – Iron Grip 601

Precision – PA2084T

Eco Duct Seal 44-52

Design Polymeric – DP 1010

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

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

TDC and TDF roll-formed flanged connections using $\frac{3}{8}$ " (10) steel bolts and nuts, and metal cleats, as tested by SMACNA, are approved break-away connections when installed as shown on the Flanged System 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 x 24" (610) high and 14 gage (2.0) for dampers 36" (914) wide x 24" (610) high.

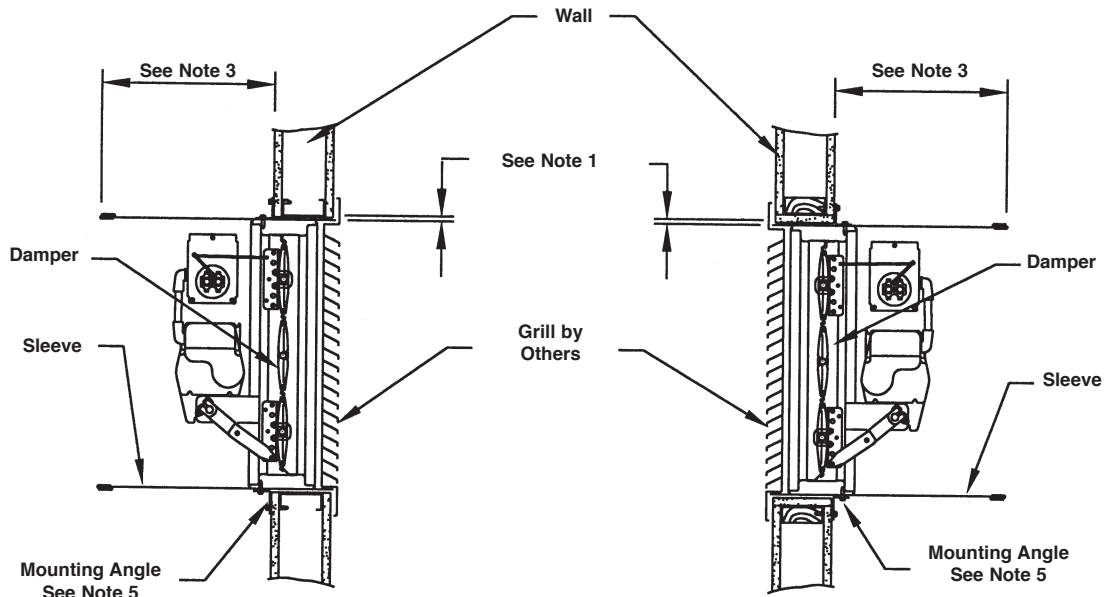
7. Actuator Connections

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

8. Installation and Maintenance

To ensure optimum operation and performance, the damper must be installed so it is square and free from racking. 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 of NFPA 90A, 92A, 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



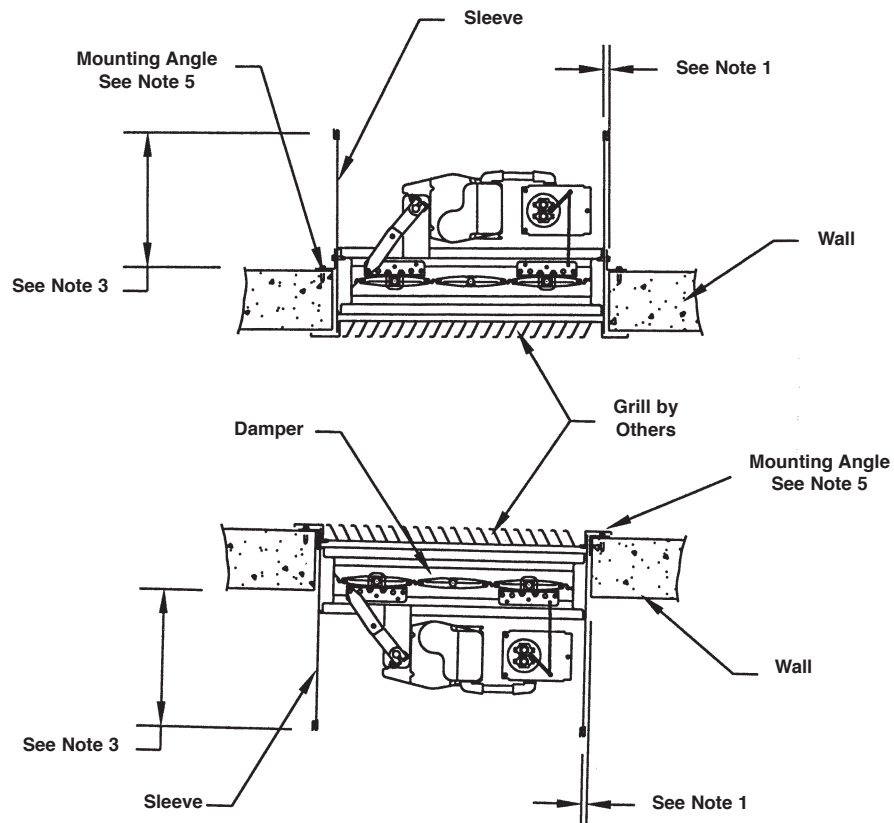
STEEL STUD or MASONRY WALLS

Mounting angle may be located on top or underneath the wallboard (See note 5).

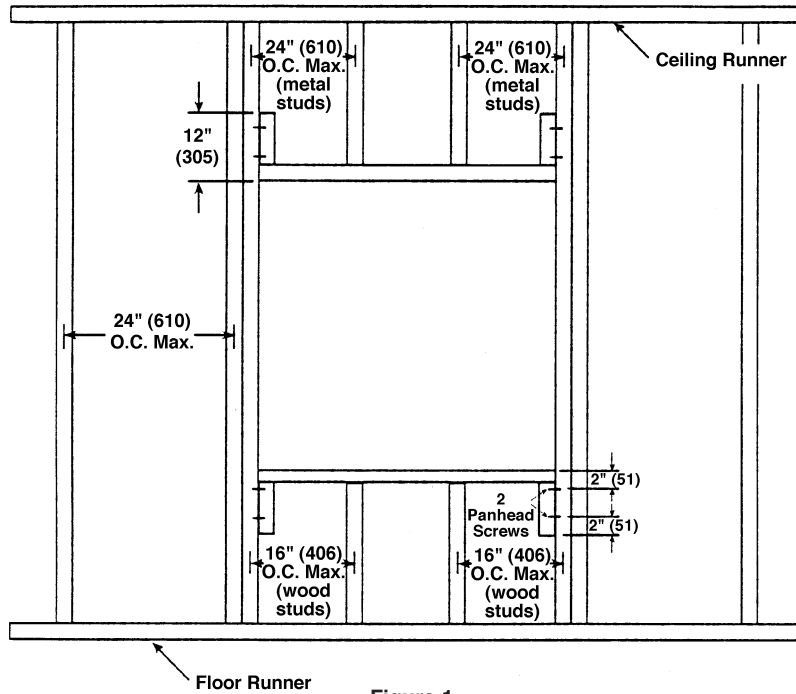
WOOD STUD

Mounting angle to be mounted on top of wallboard (See note 5).

HORIZONTAL INSTALLATION



RECOMMENDED FRAMING FOR OPENINGS IN WOOD AND METAL STUD WALLS



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.

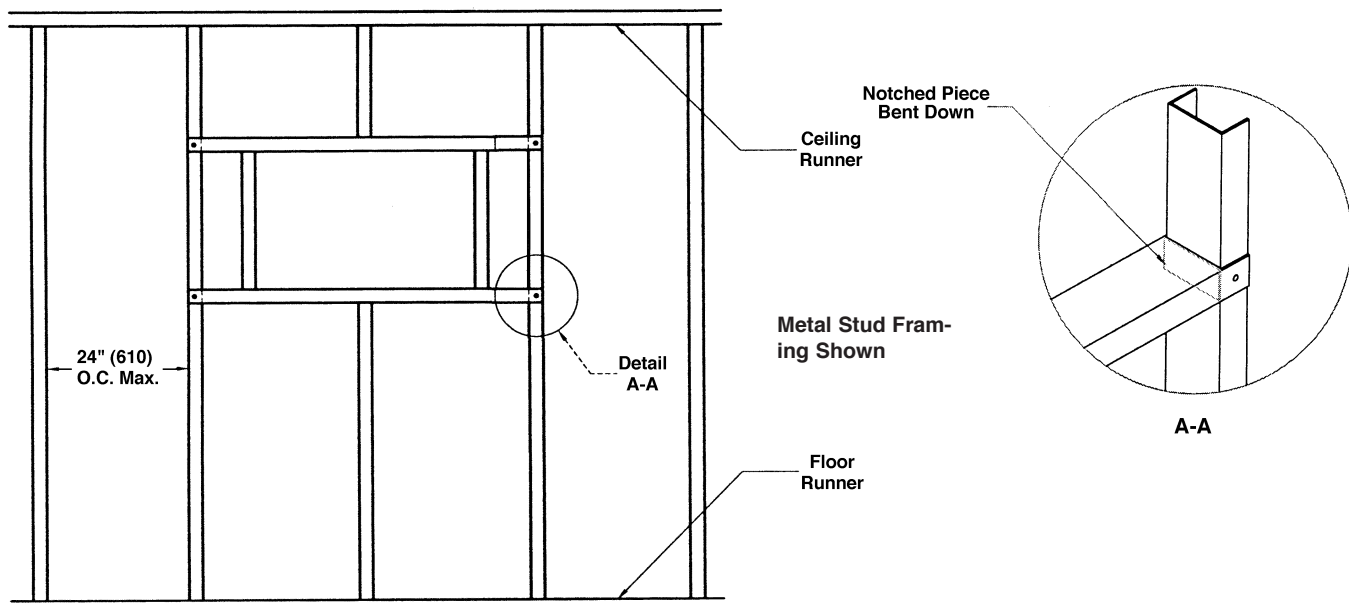


Figure 2

