RUSKIN®

3900 Dr. Greaves Rd. • Kansas City, MO 64030 • (816) 761-7476 • FAX (816) 765-8955

INSTALLATION INSTRUCTIONS

FSD35RA, FSD36RA, FSD60RA, FSD60-2RA COMBINATION FIRE/SMOKE DAMPERS

1½ HOUR UL CLASSIFIED RATING

APPLICATION

Ruskin FSDRA dampers are unique "install from one side" combination fire/smoke dampers designed for metal stud, or masonry wall applications. The 1½" (38) flange attaches directly to metal stud fire rated partitions either before or after the gypboard is attached. For masonry applications the factory provided unique mounting straps take the place of conventional retaining angles and are bent up the back side of the wall and around the damper flange to hold the damper in place.

FSD35RA, FSD36RA MAXIMUM UL CLASSIFIED SIZES, OPPOSED BLADE

36"w x 36"h (914 x 914).

FSD60RA, FSD60-2RA MAXIMUM UL CLASSIFIED SIZES, OPPOSED BLADE

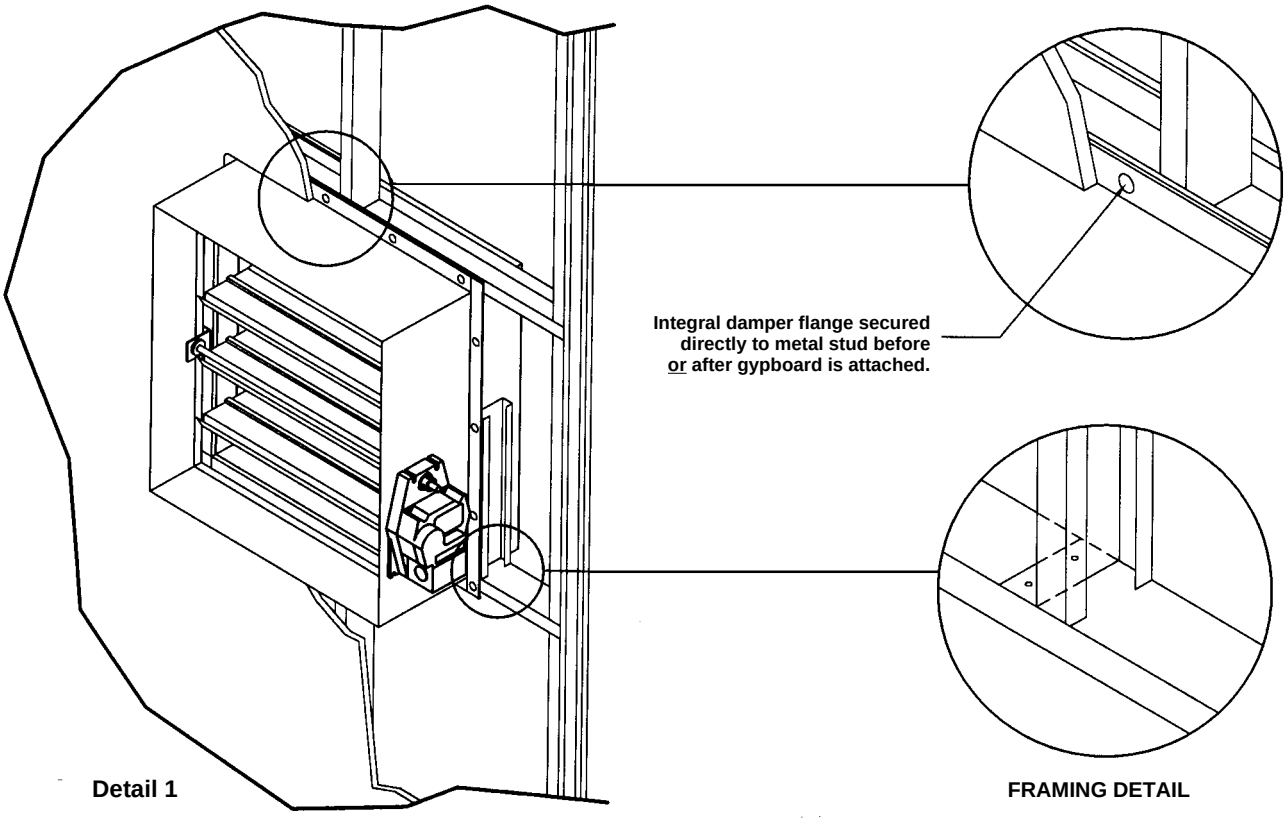
32"w x 36"h (813 x 914).

SEE COMPLETE MARKING ON PRODUCT

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
- 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 and Switch Package
- PFL Pneumatic Fuse Link
- DSDF Flow Rated Duct Smoke Detector
- DSDN No-Flow Rated Duct Smoke Detector



Detail 1

FRAMING DETAIL

GENERAL INSTALLATION

1. Opening Clearance

The opening shall be at least 1/4" (6) larger to a maximum of 1" (25) larger than any damper size. No clearance is required when the damper assembly is installed with the flange within the cavity of the metal stud (refer to detail 6).

2. Opening Construction

For dampers installed with flange within the cavity of the metal stud (refer to detail 6) the opening shall be constructed with the open side of stud channels facing the fire damper. For other metal stud installations refer to the other details herein and the **Metal Stud Framing For Fire Dampers in Drywall Partitions** installation supplement.

3. Fasteners and Mounting Straps

a. For masonry installations:

No fasteners are required. Utilize the mounting straps (provided with the damper) in place of traditional retaining angles. Prior to installing the damper, bend the straps in the shape of a "U" with one leg 3" (76) long. The "U" shall be the same width as the wall depth. The straps shall be inserted into the opening so the 3" (76) leg is on the same side of the wall as the damper flange (refer to detail 2). Insert the damper into the opening so the flange sits snug against the 3" (76) leg of the strap. Bend down the 3" (76) leg of the strap to capture the damper flange (refer to detail 3). Two straps should be placed on top and two on the bottom of the damper. The straps should be spaced 1/4 the width of the damper from the ends (refer to detail 2). Example: A 24" x 24" (610 x 610) damper would require a strap within 6" (152) of each end of the damper width (width / 4 = inches from side).

b. For metal stud installations:

Use the straps described above or the 1 1/2" (38) flange of the damper may be fastened directly to the metal stud itself or to the metal stud through the gypsum wallboard (refer to detail 4 or 5). Use #10 (M5) bolts, minimum 1/2" (13) sheet metal screws, 1/2" (13) long tack welds or 3/16" (5) diameter steel rivets. Use a minimum of two fasteners per side. For dampers over 21" (533) wide, use three fasteners at top and bottom sides.

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) for dampers under 24" (610) wide and 14 gage for dampers over 24" (610) wide. Damper sleeve shall not extend more than 6" (152) beyond the wall unless damper is equipped with an actuator and/or factory installed access door. Sleeve may extend up to 16" (406) beyond the wall on sides equipped with an actuator and/or factory installed access door.

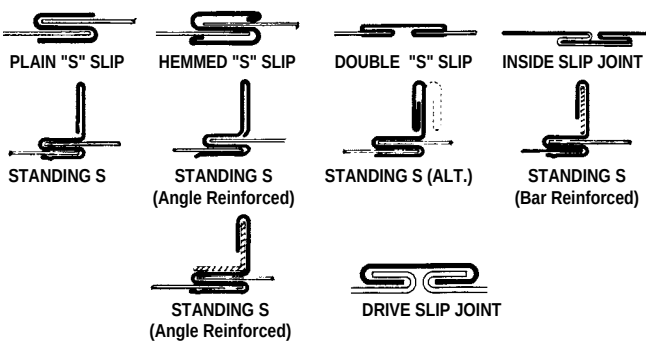
5. Damper Orientation

Damper is designed to operate with the blades running horizontally and must be installed free from racking. Use "Mount With Arrow Up" label as a guide for proper damper orientation.

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 Polymerics – 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 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

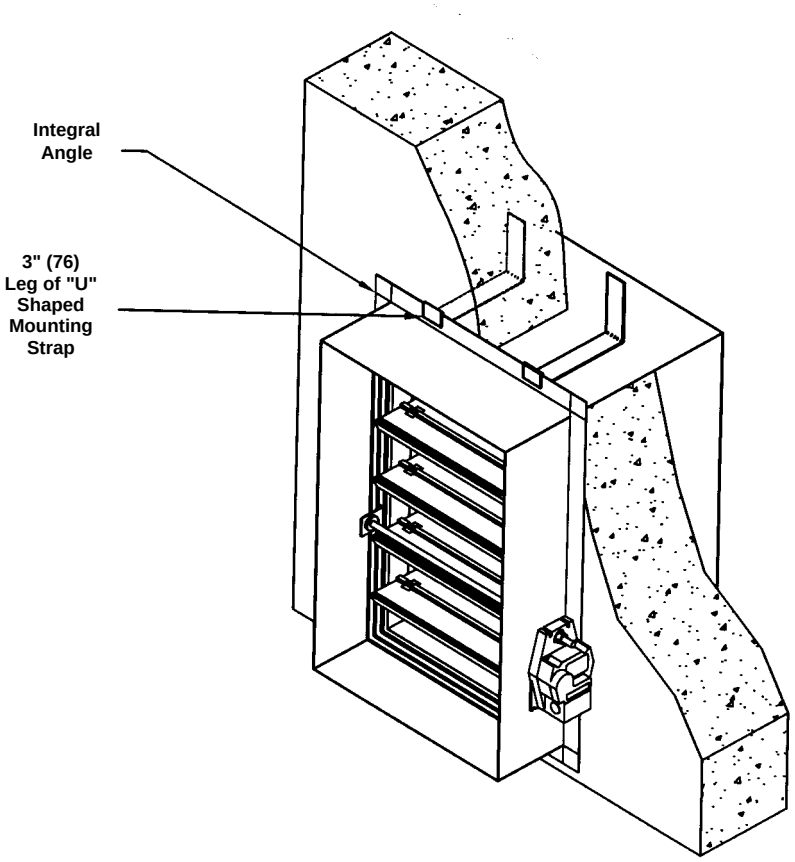
If other duct/sleeve connections are used, the sleeve shall be a minimum of 16 gage (1.6) for dampers up to 36" (914) wide x 24" (610) high and 14 gage (2.0) for dampers exceeding 36" (914) wide x 24" (610) high.

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.

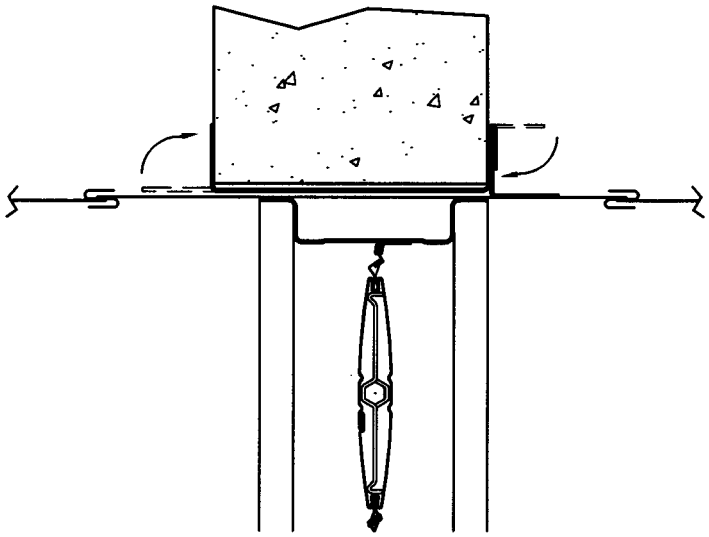
8. Installation and Maintenance

To ensure optimum operation and performance, the damper must be installed so it is square and free from racking. Do not compress or stretch the damper frame into the duct or opening. Lift or handle the damper using sleeve or frame. Do not lift damper using blades or actuators. Each fire/smoke damper should be examined on a regular basis to ensure it is not rusted or blocked. It is recommended the damper be operated (the actuator cycled) at least once every 6 months or in accordance with actuator manufacturers requirements. Care should be exercised to ensure that such tests are performed safely and do not cause system damage.



Detail 2

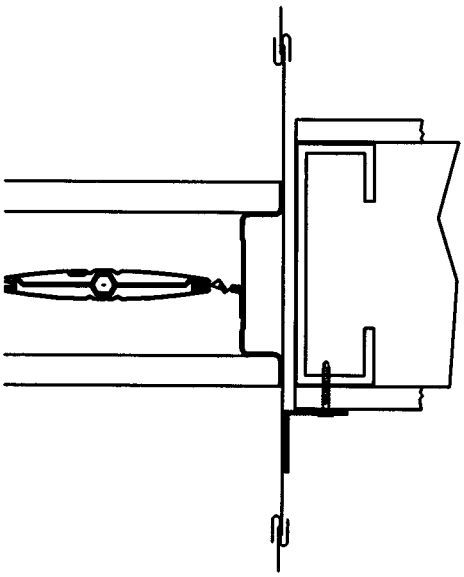
**Masonry (side view)
or Metal Stud**



Detail 3

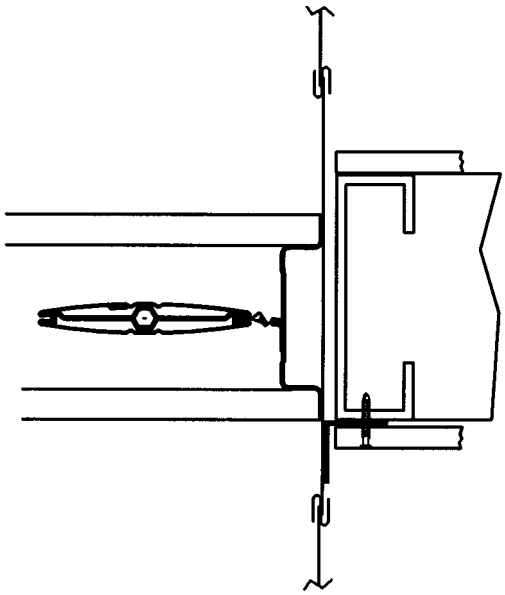
GENERAL INSTALLATION

Metal Stud
(Top View)



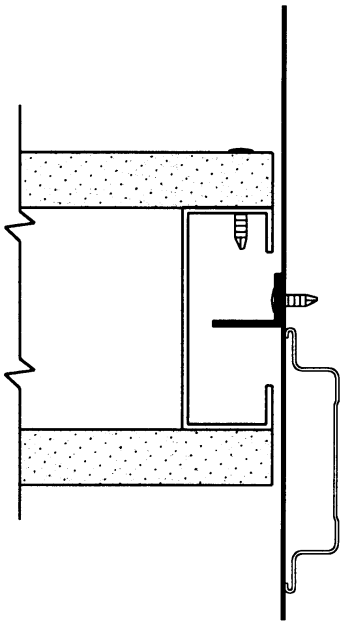
Detail 4

Metal Stud
(Top View)



Detail 5

Metal Stud
(Top View)



Detail 6

RECOMMENDED FRAMING FOR OPENINGS IN METAL STUD WALLS

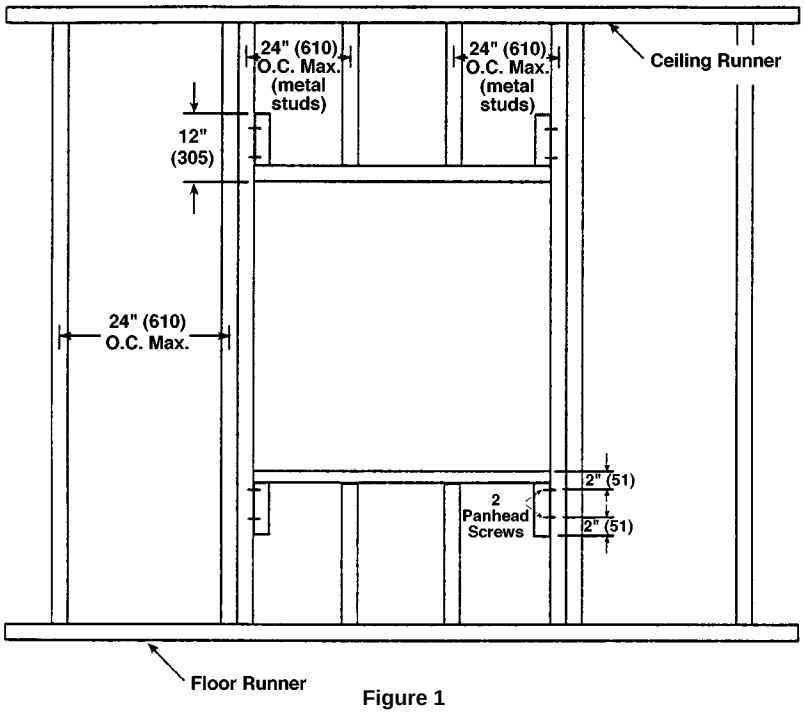


Figure 1

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.

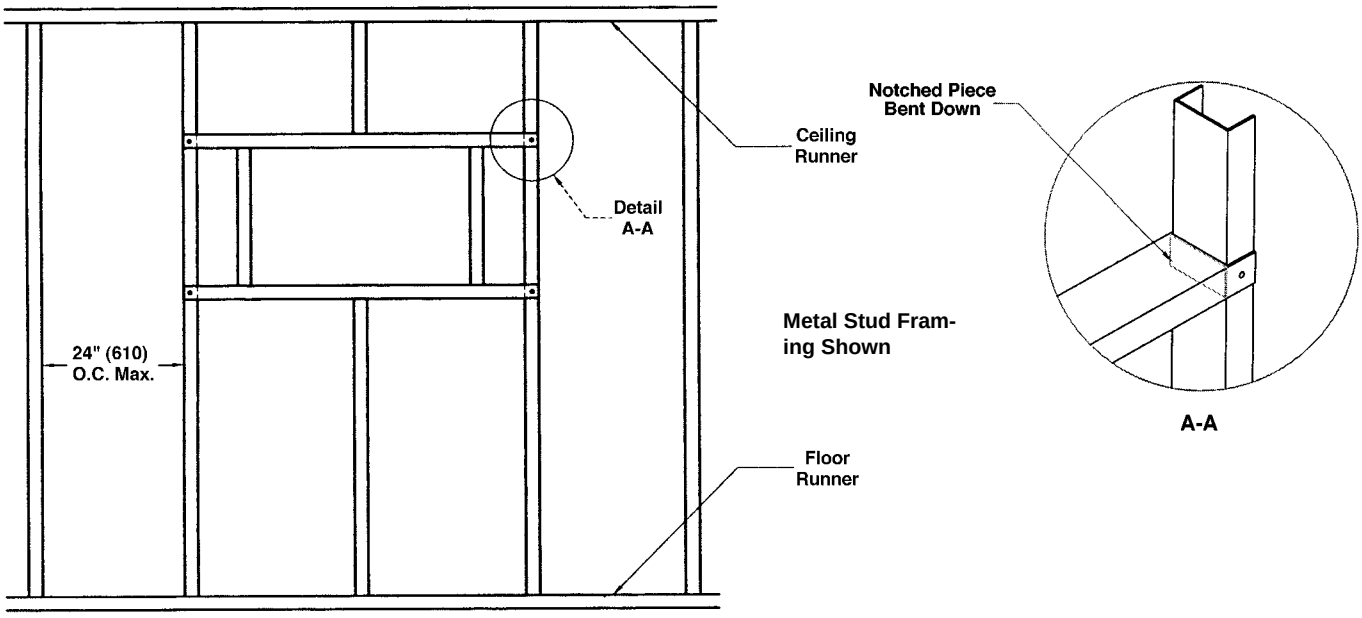


Figure 2

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