

INSTALLATION INSTRUCTIONS SUPPLEMENT

1½ HOUR UL CLASSIFIED DAMPERS WITH GRILLE MOUNTING ANGLES

FOR RUSKIN (D)IBD, FD AND FSD DAMPERS

APPLICATION

Style G fire and combination fire and smoke damper includes grille mounting angles for flush installation of a minimum 26 gage (.021) steel frame grille with the wall or floor. No additional mounting angles are required on the grille side of the wall or floor. The damper is offset in the damper sleeve for appropriate damper placement within the wall or floor.

CURTAIN FIRE DAMPERS

STATIC FIRE DAMPERS

Not for use in dynamic (fans on) systems.

MINIMUM SIZE

Vertical Installation – 4"w x 4"h (102 x 102).
Horizontal Installation – 6"w x 6"h (152 x 152).

MAXIMUM SIZE

Single section

Vertical Installation

IBD2 - 48"w x 30"h (1219 x 762) or
30"w x 48"h (762 x 1219).
IBD20 - 48"w x 30"h (1219 x 762) or
30"w x 48"h (762 x 1219).
IBDT - 40"w x 32"h (1016 x 813) or
32"w x 48"h (813 x 1219).

Horizontal Installation

IBD2 - 24"w x 18"h (610 x 457) or
18"w x 24"h (457 x 610).
IBD20 - 24"w x 18"h (610 x 457) or
18"w x 24"h (457 x 610).
IBDT - 24"w x 12"h (610 x 305).

Note: Dimensions shown in parentheses () indicate millimeters.

DYNAMIC FIRE DAMPERS

See label on damper for maximum air flow and pressure.

MINIMUM SIZE

Vertical Installation – 4"w x 4"h (102 x 102).
Horizontal Installation – 6"w x 6"h (152 x 152).

MAXIMUM SIZE

Single section

Vertical Installation

DIBD2 - 32"w x 36"h (813 x 914)
DIBD20 - 32"w x 36"h (13 x 914)

Horizontal Installation

DIBD2 - 24"w x 18"h (610 x 457) or
18"w x 24"h (457 x 610).
DIBD20 - 24"w x 18"h (610 x 457) or
18"w x 24"h (457 x 610).

COMBINATION FIRE/SMOKE DAMPERS AND MULTIPLE BLADE FIRE DAMPERS

MINIMUM SIZE

FSD35 – 5"w x 6"h (127 x 152).
FSD36, 37, 60, 60-2, FD35, FD60 – 8"w x 6"h (203 x 152).

MAXIMUM SIZE

FSD60, 60-2, FD60 - 32" x 48" (813 x 1219)
FSD35, 36, 37, FD35 – 32"w x 48"h (813 x 1219) or 48"w x
32"h (1219 x 813).

INSTALLATION SUPPLEMENTS

Refer to the appropriate Ruskin installation operation instructions supplements for special requirements:

- Drivemate No. 14880 Breakaway Connection
- Flanged System Breakaway Connection
- Optional Sealant of Dampers in Fire Rated Wall or Floor Openings
- Cavity Shaft Wall Metal Stud Framing
- Extension of Fire and Combination Fire and Smoke Damper Sleeves.



California State Fire Marshal Listing No. 3225-245:005
California State Fire Marshal Listing No. 3225-245:102

1. Opening Clearance

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

Use No. 10 (M5) bolts or screws, $3/16"$ (5) rivets, tack welds or spot welds and spaced as follows when fastening damper to the sleeve:

Vertical Mount (In wall)	
Galvanized steel dampers	12" (305) spacing
Stainless steel dampers	6" (152) spacing
Horizontal Mount (In floor)	
All dampers	6" (152) spacing

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) wide by 24" (610) 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 a factory installed access door. Sleeve may extend up to 16" (406) beyond the fire wall or partition on sides equipped with a factory installed access door. Sleeve shall terminate at both sides of wall within dimensions shown.

4. Damper Orientation

Damper must be installed with the blades within the wall or floor when they are in the closed position. Use "Mount With Arrow Up" labels for proper damper orientation.

5. Steel Grille

The steel grille (furnished by others) must include a minimum 26 gage frame thickness. The grille must be fastened to angles provided with damper using #10 screws. Do not fasten grille directly to wall or floor. Grille shall overlap wall a minimum of $1/2"$ (13).

6. Grille Mounting Angles

If grille mounting angles are furnished and installed in the field, they must be $3/4" \times 3/4" \times 3"$ long 20 gage (19 x 19 x 76 x 1.0) galvanized steel. They must be attached to the damper sleeve with a minimum of two $3/16"$ (4.8) steel rivets per angle. The angles must be spaced as follows: Damper maximum size 18" x 24" or 24" x 18" (457 x 610 or 610 x 457), angles must be located on each vertical side of damper and centered at damper's height. Damper maximum size 32" x 48" or 48" x 32" (813 x 1219 or 1219 x 813), angles must be located on maximum 12" (305) spacing on vertical sides and 18" (457) on top and bottom.

7. Mounting Angles

Mounting angles shall be a minimum of $1 1/2" \times 1 1/2" \times 20$ gage steel (38 x 38 x 1.0) and must be attached only to the 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 dampers may be installed using the Ruskin FAST angle.

a. Mounting Angle Fasteners

Mounting angle fasteners shall be #10 (M5) bolts or screws, #10 self-tapping concrete anchors or concrete screws, $1/2"$ (13) long tack welds or $3/16"$ (3) diameter steel rivets.

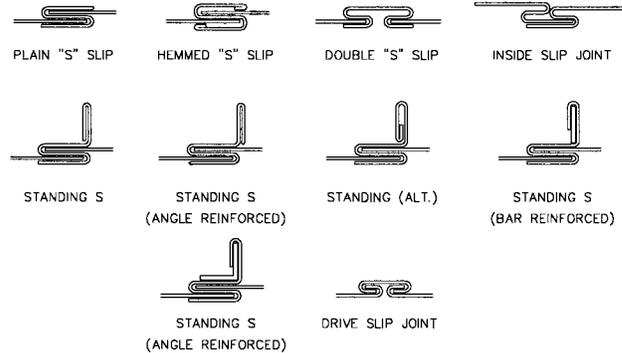
b. Mounting Angle Fastener Spacing

Fasteners shall be spaced at 6" (152) o.c.

8. 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 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 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.

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 $3/8"$ (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.

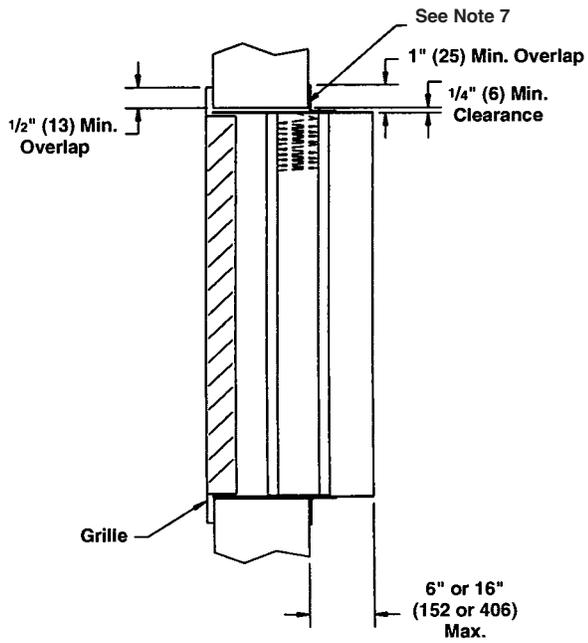
d. Non-Break-away Duct/Sleeve Connections

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.

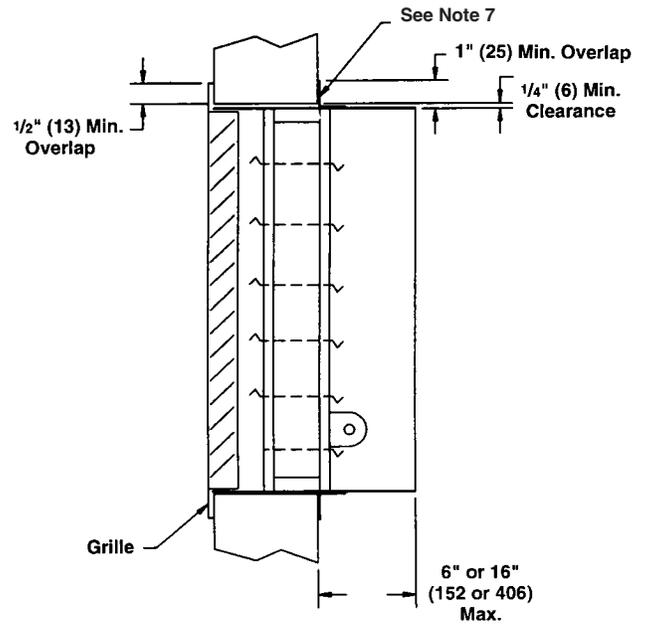
9. Installation and Maintenance

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 and tested on a regular basis 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.

**CURTAIN TYPE FIRE DAMPER
VERTICAL INSTALLATION**

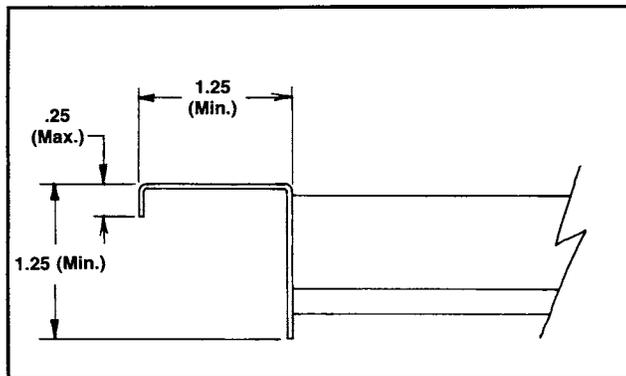


**COMBINATION FIRE AND SMOKE DAMPER
VERTICAL INSTALLATION**

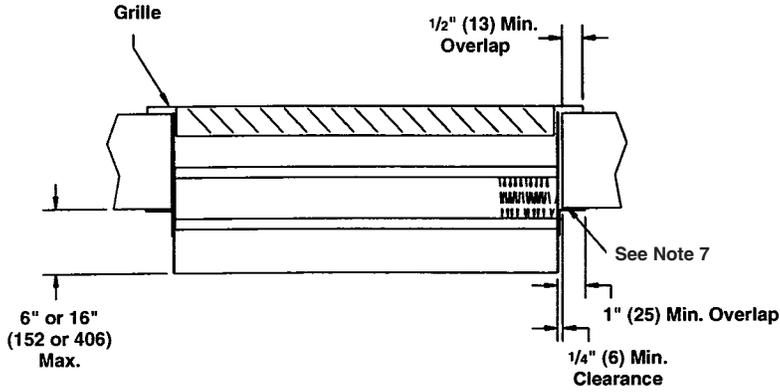


GRILLE DETAIL

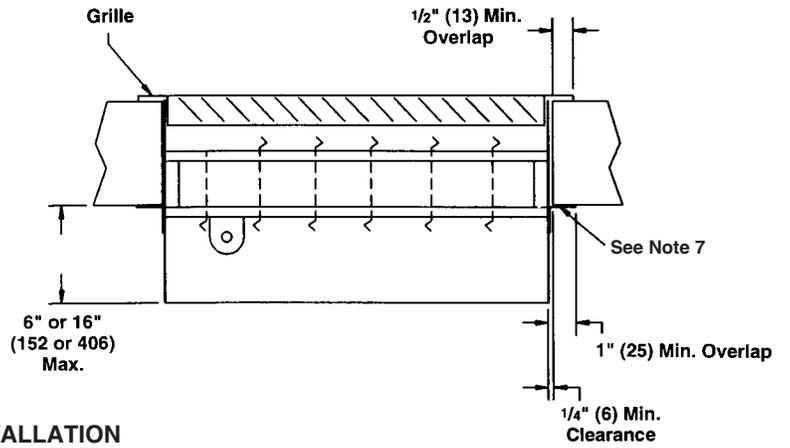
Grille must be minimum 26 ga. steel.



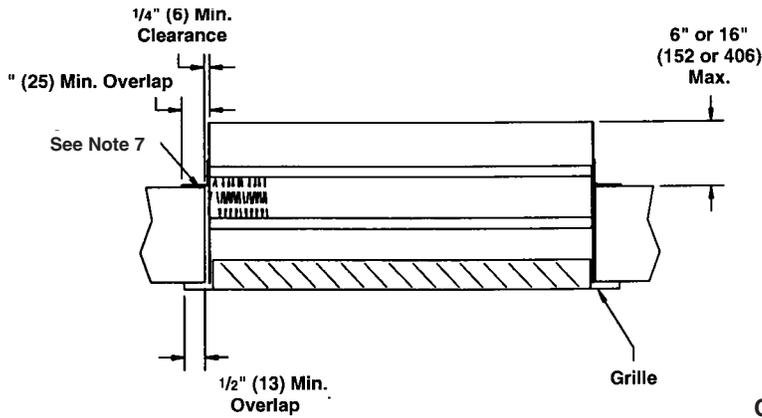
CURTAIN TYPE FIRE DAMPER HORIZONTAL INSTALLATION



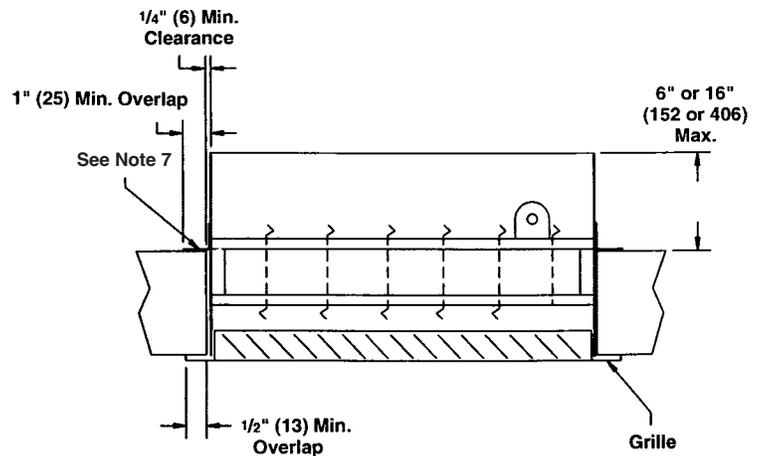
COMBINATION FIRE AND SMOKE DAMPER HORIZONTAL INSTALLATION



CURTAIN TYPE FIRE DAMPER HORIZONTAL INSTALLATION



COMBINATION FIRE AND SMOKE DAMPER HORIZONTAL INSTALLATION



RECOMMENDED FRAMING FOR OPENINGS IN WOOD AND METAL STUD WALLS

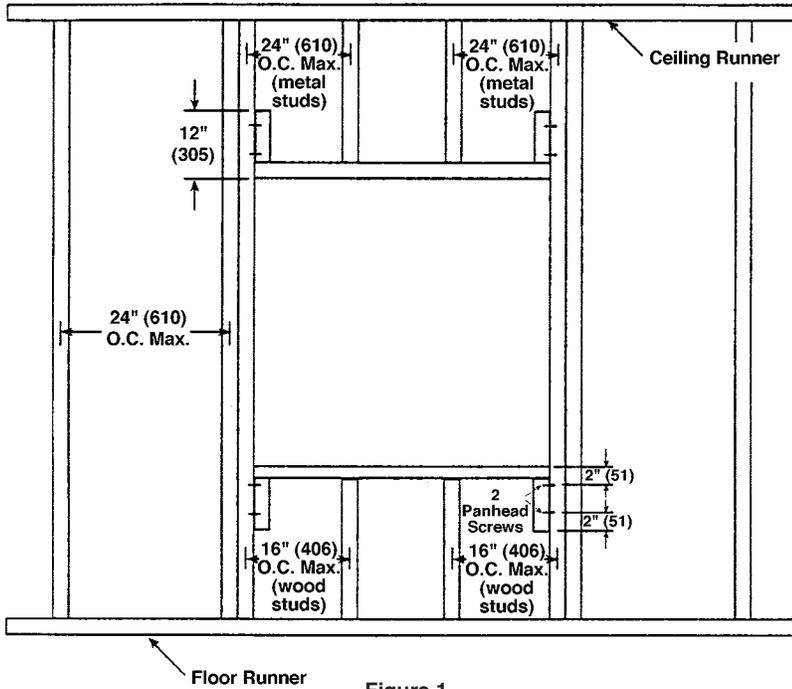


Figure 1

INSTRUCTIONS

1. Frame wall openings as shown in figure 1 or 2.
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.

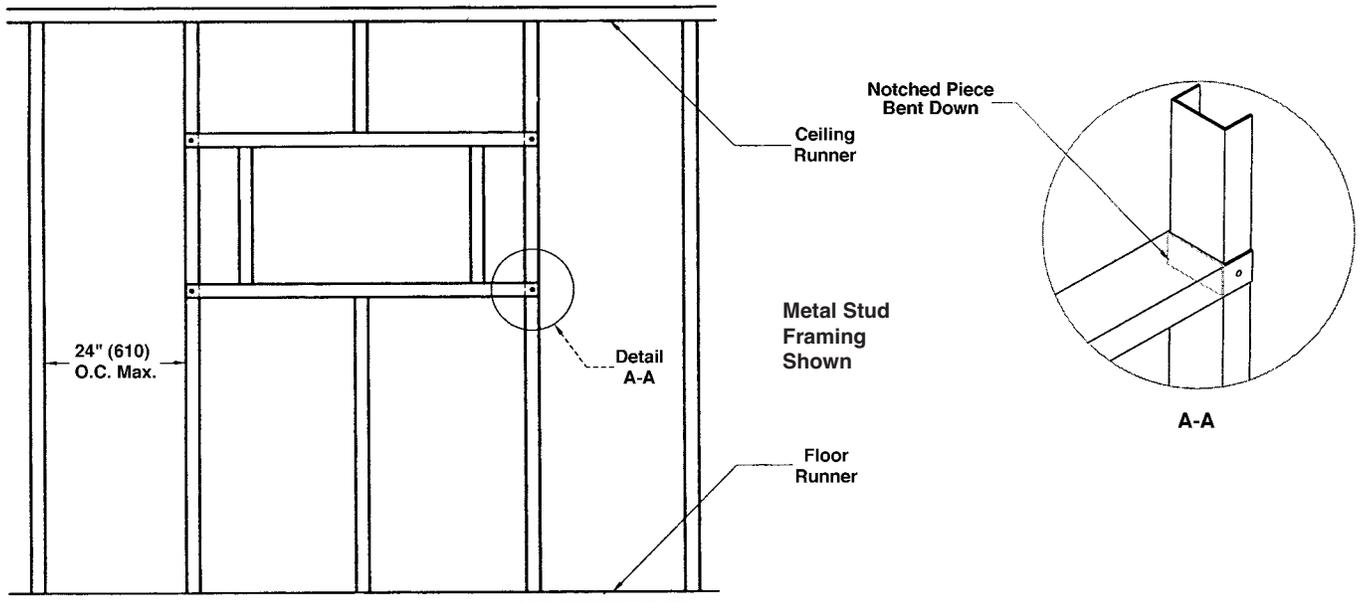
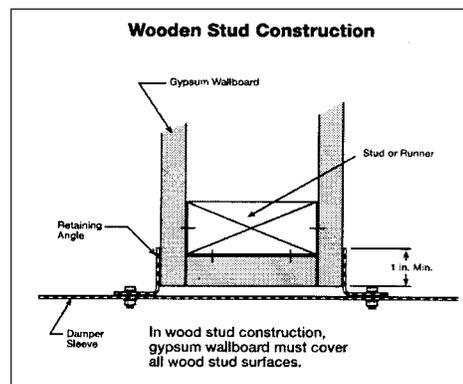
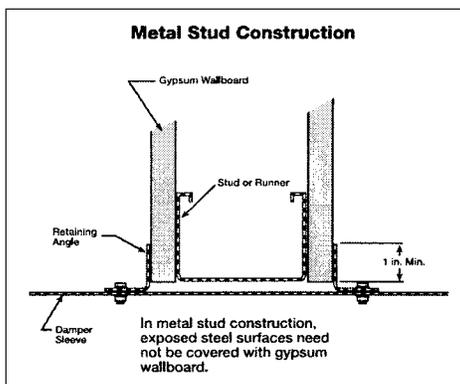


Figure 2



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