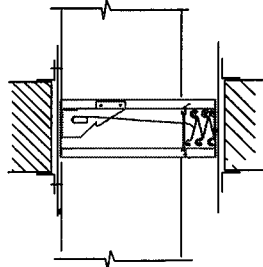
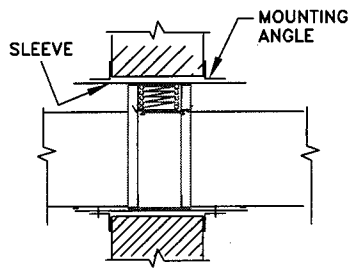
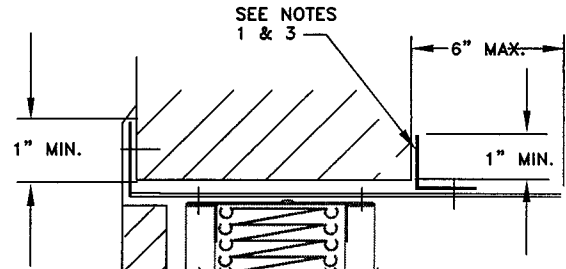


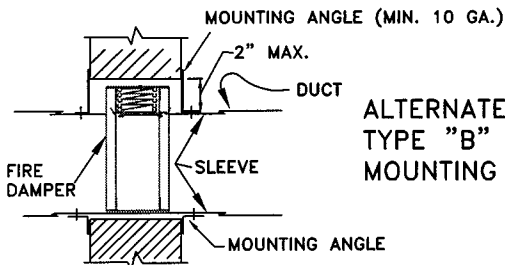
# DAMPER INSTALLATION INSTRUCTIONS



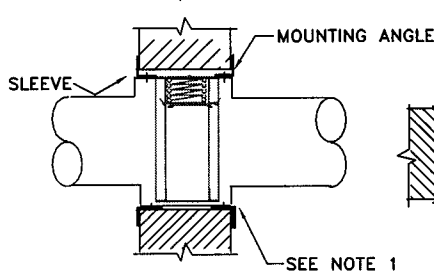
TYPE "B"



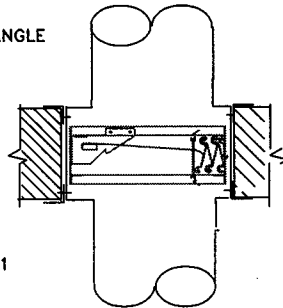
GRILLE TO BE A MINIMUM 26 GAUGE STEEL OR .025" THICK ALUMINUM



ALTERNATE TYPE "B" MOUNTING



TYPE "CR"



TYPE "C"

The factory supplied 22 GA. collar to 18 GA cap connection on type "C", "CR" dampers is a breakaway connection under the following conditions:

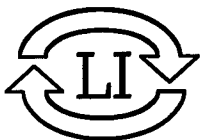
1. Round unit duct diameters are no larger than 52"
2. Oval duct sizes are no larger than 58" W x 29"H.
3. Duct gauges shall conform to the SMACNA or ASHRAE duct standard.
4. Duct diameters of 22 inches (559 mm) and smaller shall have three (3) No. 10 (4.8 mm) diameter sheet metal screws evenly spaced around the circumference of the duct.
5. Duct diameters greater than 22 inches and up shall have five (5) sheet metal screws evenly spaced around the circumference of the duct.
6. Dampers outside of these restrictions (ie) multiple dampers and special size and application dampers must use a 4" wide drawband connection as shown in the SMACNA Fire, Smoke, and Radiation Damper Installation Guide.

## DAMPER BEHIND A GRILLE

1. Perimeter mounting angles to be a minimum of 1-1/2 x 1-1/2 x 16 GA on dampers 36 x 50 and smaller. For dampers greater than 36 x 50, angles to be a minimum of 1-1/2 x 1-1/2 x 14 GA.
2. Grille to flange fasteners cannot penetrate fire wall (see note 4).
3. Secure angles to sleeve only, so as to frame the wall opening. Fasten to the sleeve only using the same means as required for fastening the damper to the sleeve.
4. Grille to flange attachment by means of 1/4" dia. pop rivets, #8 sheet metal screws or #8 bolts and nuts. Fasteners to be plated steel or stainless steel, minimum two fasteners per side.



CLLOYD-52-REV-C



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# SLEEVE INSTALLATION INSTRUCTIONS

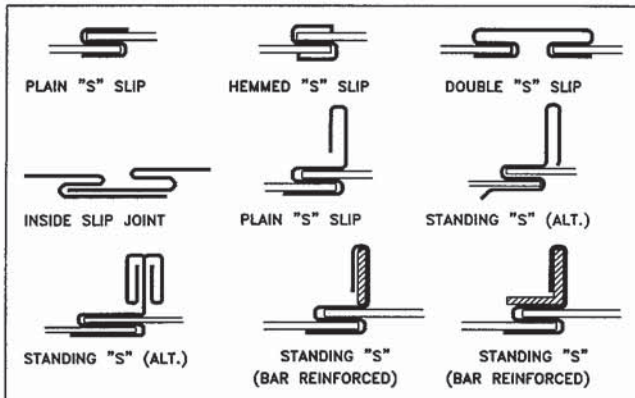
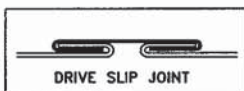
## BREAKAWAY CONNECTIONS

### Breakaway Style Transverse Joints

• Transverse joints illustrated at right have always been approved as breakaway connections. SMACNA testing has also approved the following variations as breakaway connections.

• Standing "S" joints can be applied with no. 10 sheetmetal screws (through joint and duct) subject to the following limitations: Maximum 2 screws in each side and in bottom joint.

Transverse joints illustrated can be applied as top and bottom joints with Drive Slip - side joints in duct heights up to 20 inches.



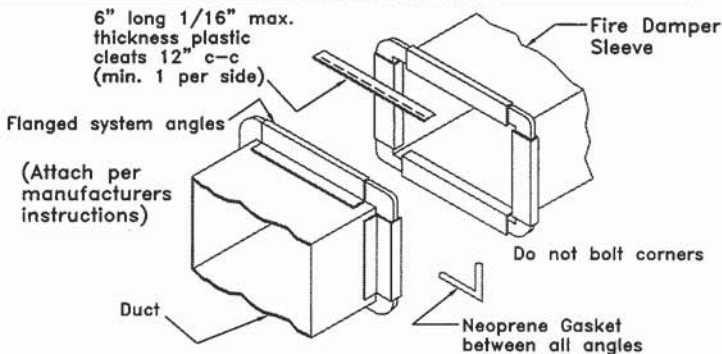
### Round and Oval Duct Breakaway Connections

Round or flat oval ducts connected to type R, CR or CO damper collars may use no. 10 sheetmetal screws as follows:  
 Ducts to 22" wide (or dia.) and smaller may use 3 screws.  
 Ducts larger than 22" wide (or dia.) may use 5 screws.

NOTE: All breakaway connections described may have duct sealant applied in accordance with SMACNA recommendations.

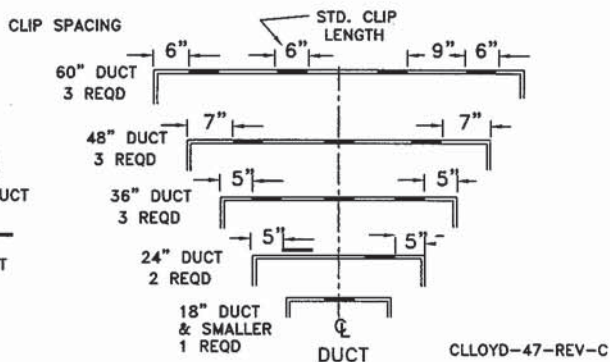
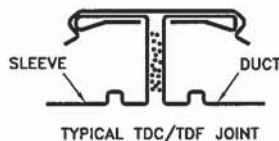
### Manufactured Flanged System Breakaway Connections

Flanged connection systems manufactured by Ductmate, Ward, and Nexus are approved as breakaway connections when installed as illustrated.



### PROPRIETARY FLANGE SYSTEM BREAKAWAY CONNECTIONS (TDC by Lockformer, TDF by Engle)

TDC and TDF systems are approved as breakaway connections when installed as described in the TDC or TDF addendum to the SMACNA Duct construction Standards except the corners may not be bolted. Standard 6" metal clip may be used with spacing as shown in diagram.



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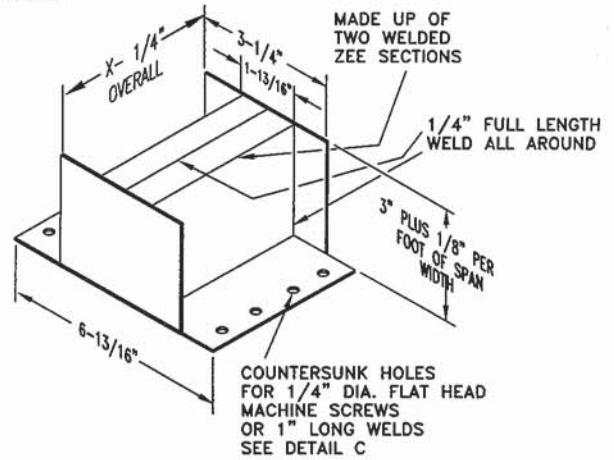
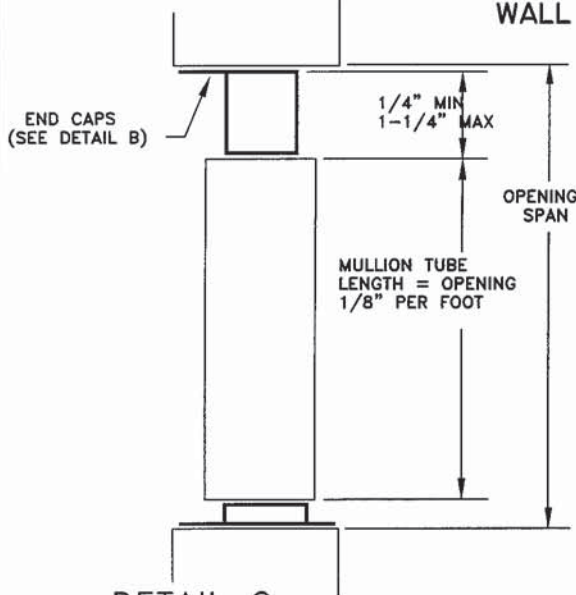
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# DAMPER INSTALLATION INSTRUCTIONS

## MULLION INSTALLATION INSTRUCTIONS FOR FIRE DAMPERS INSTALLED OVERSIZED WALL OPENINGS

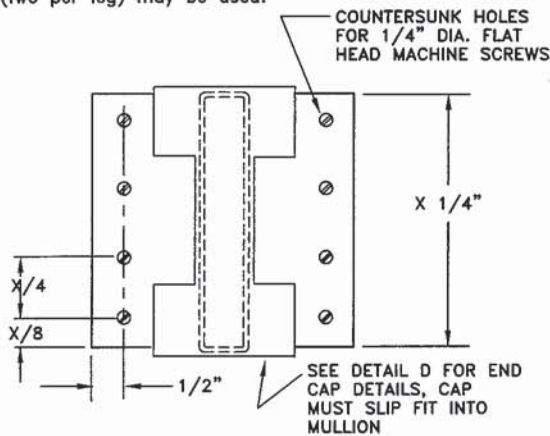


**DETAIL D**

Top, bottom or side end caps  
12 GA galvanized steel

**DETAIL C**  
The end caps are attached by means of 1" long x 3/8" dia. steel expansion anchors embedded into the opening with 1/4" dia. flat head machine screws, eight per end cap. If a steel lintel is used, four 1" long welds per end cap (two per leg) may be used.

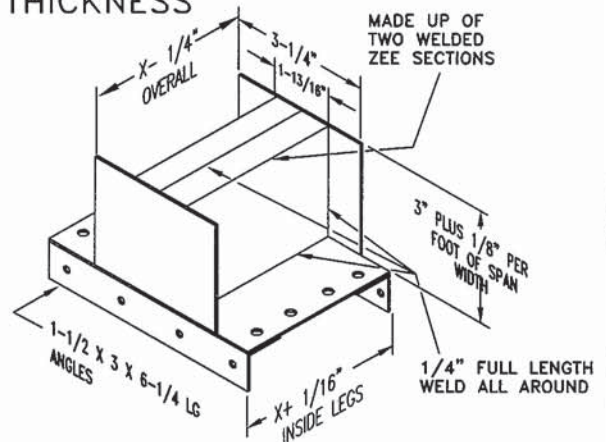
X = WALL THICKNESS



**DETAIL E**

END CAP INSERTED INTO MULLION

All horizontal and vertical mullion tubes must be terminated with an end cap. These end caps may not be fastened to the mullion tube and must slide freely inside the mullion tube.



**DETAIL F**

Horizontal to vertical end cap 12 ga. galvanized steel

Attach the horizontal mullion end caps to the vertical mullion tube by means of (12) 3/16" dia. blind rivets or by 1/8" full length weld.



CLLOYD-57-REV-C



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# SLEEVE INSTALLATION INSTRUCTIONS

## ATTACHING FIRE DAMPERS TO SLEEVES

Fire dampers must be attached to sleeves as shown in fig. 1. All four sides of the damper frame must be attached to the sleeve with one row of attachments on each side of the blade channel.

Attachments must be spaced a maximum of 6" on centers and a maximum of 2" from corners. A minimum of 4 attachments (2 on each side of the blade channel) per side (16 per damper) are required. One of the methods of attachment shown below must be used.

- tack or spot welds
- No.10 sheet metal screws
- 1/4" bolts and nuts
- 3/16" steel pop rivets

## SECURING FIRE DAMPER AND SLEEVES TO WALL AND FLOOR OPENINGS

Fire damper and sleeve assemblies must be installed in wall and floor openings using retaining angles on each side of the wall or floor as described below:

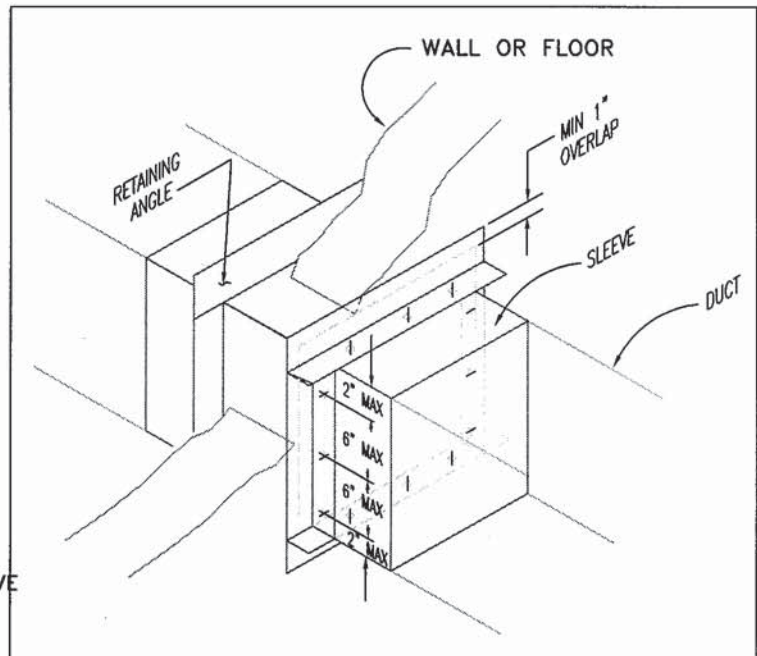
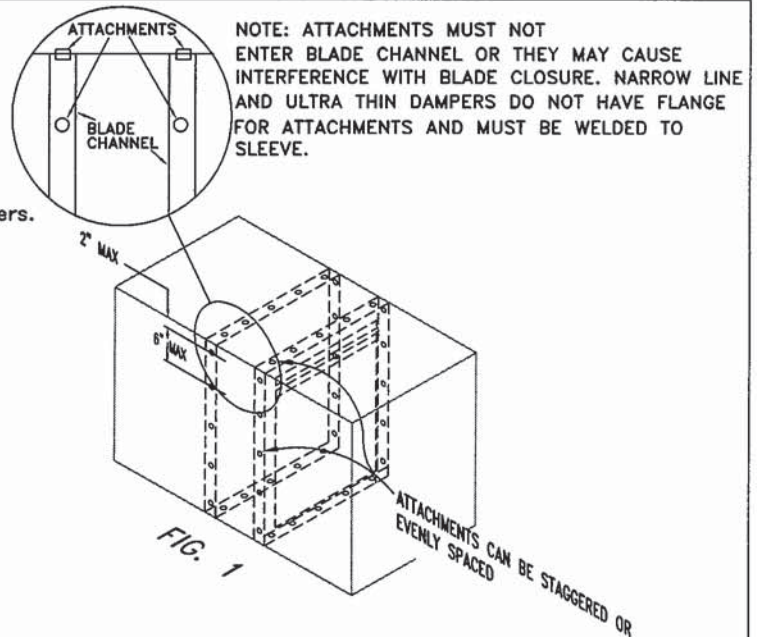
- Retaining angles must be a minimum of 16 gauge steel and have a minimum of 1-1/2" x 1-1/2" legs.
- Retaining angles must be attached to the sleeve using the procedures and methods described in section 3. The angles must be attached to all 4 sides of the sleeve with butt joints at each corner. A minimum of two attachments are required on each side, top and bottom. The angles need not be attached to each other at the corners.
- Retaining angles must completely cover the clearance space between the sleeve and the wall / floor opening, plus overlap the wall / floor a minimum of 1". This coverage includes all corners (fig. 2).
- Retaining angles should not be fastened to the wall / floor material. The angles should only sandwich the wall / floor and allow for damper / sleeve expansion during periods of intense heat.
- For grille installation, angle legs may be reversed and one leg inserted into the wall / floor opening providing the required clearance is maintained between angle leg fasteners and the wall / opening.

## CONNECTING DUCTS TO FIRE DAMPER SLEEVE

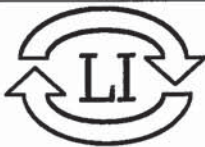
Any duct connection other than breakaway is considered rigid. The connections shown on page 3 are considered breakaway. Factory furnished duct collars on type R and CR fire dampers are also considered breakaway. See Fig. 3.

## MULTIPLE SECTION FIRE DAMPERS

When multiple sections are shipped unassembled, installer shall fasten dampers together.



CLLOYD-48-REV-C



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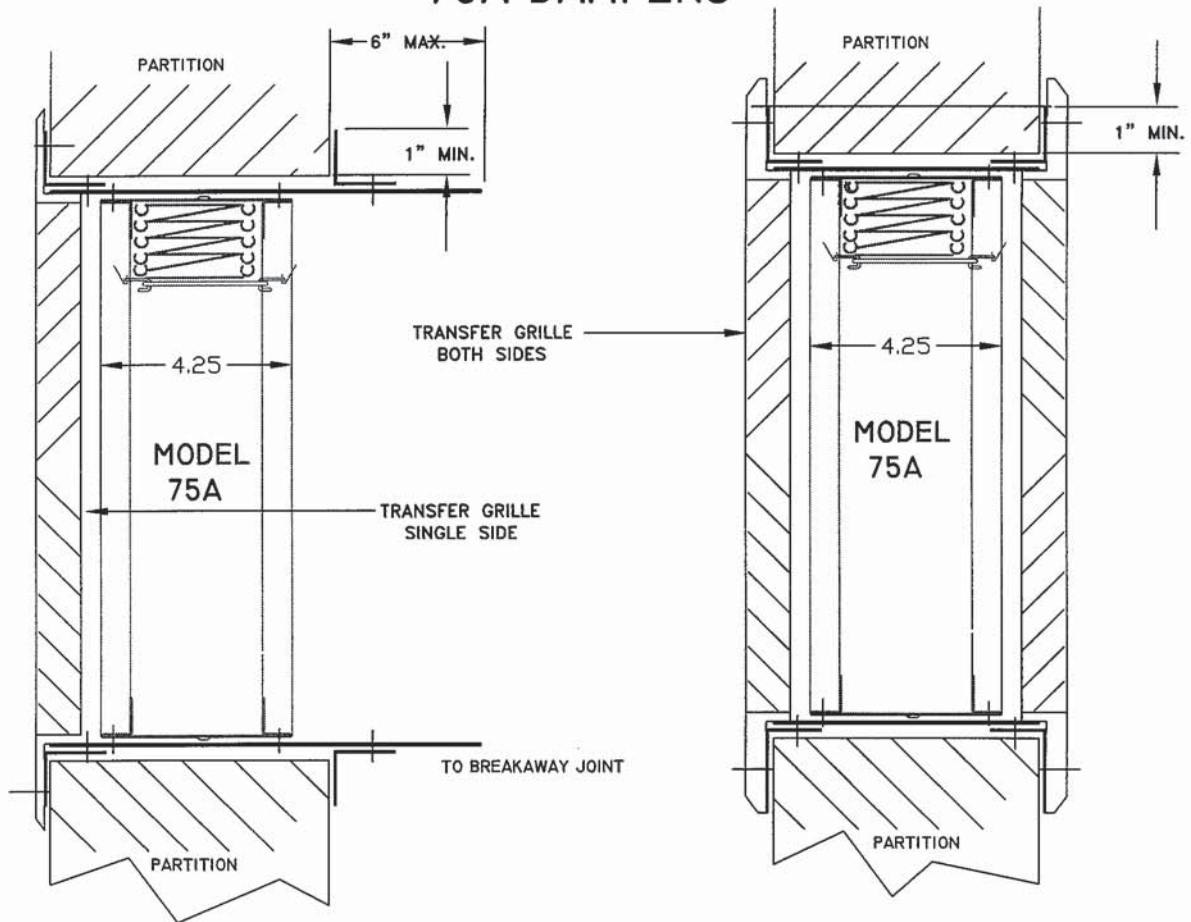
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# DAMPER INSTALLATION INSTRUCTIONS

## TRANSFER OPENINGS AND DUCT TERMINALS FOR 1-1/2 HOUR AND 3 HOUR CURTAIN FIRE DAMPERS

### 75A DAMPERS

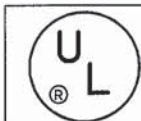


1. Perimeter mounting angles to be a minimum of 1-1/2 x 1-1/2 x 16 GA on dampers 36 x 50 and smaller. For dampers greater than 36 x 50, angles to be a minimum of 1-1/2 x 1-1/2 x 14 GA.

2. Grille to flange fasteners cannot penetrate the fire wall.

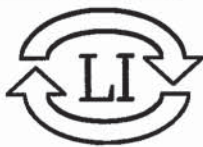
3. Secure angles to sleeve only, so as to frame the wall opening. Fasten to the sleeve only using the same means as required for fastening the damper to the sleeve.

4. Grille to flange attachment by means of 1/4" dia. pop rivets, #8 sheet metal screws or #8 bolts and nuts. Fasteners to be plated steel or stainless steel, minimum two fasteners per side.



SEE DETAILS ON UNDERWRITERS LABORATORY CLASSIFICATIONS ON THE ENCLOSED LLOYD INDUSTRIES PRODUCT AND THE PRODUCT INSTALLATION SHEETS.

10171-REV-A-2



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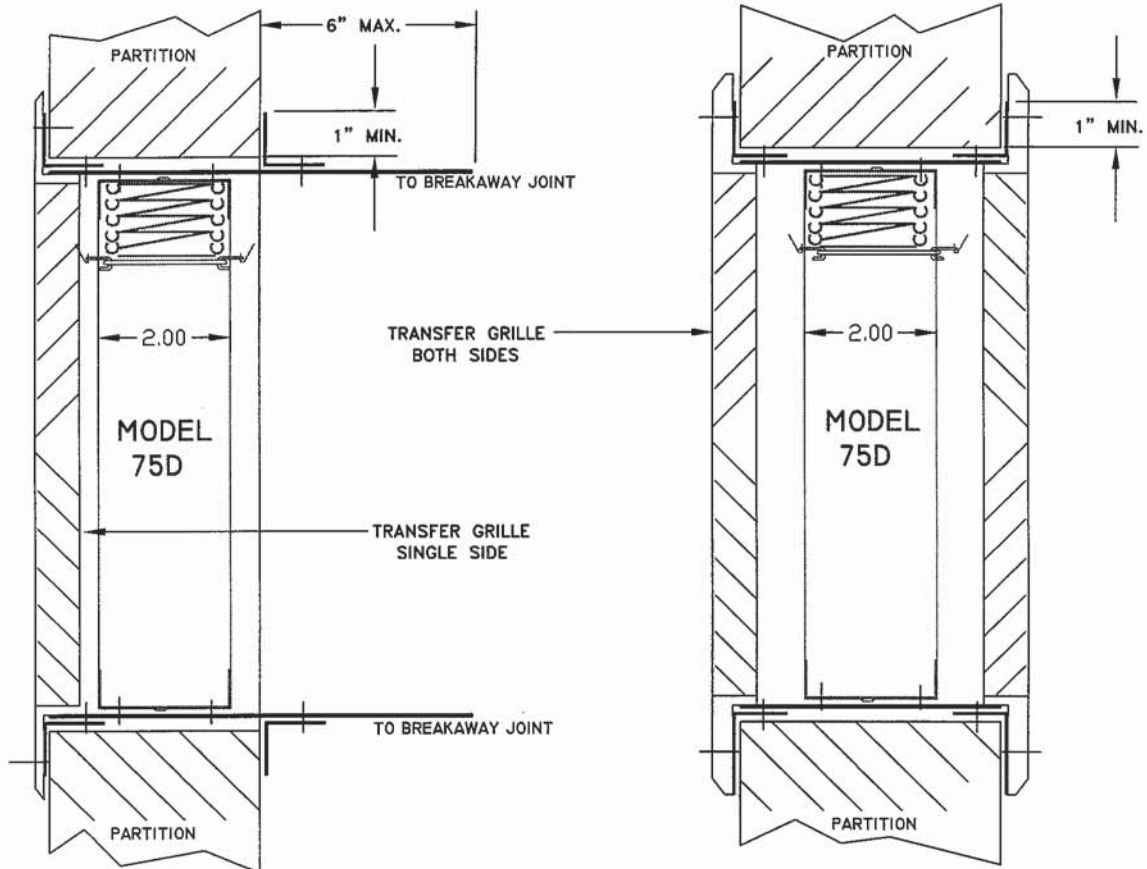
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# DAMPER INSTALLATION INSTRUCTIONS

## TRANSFER OPENINGS AND DUCT TERMINALS FOR 1-1/2 HOUR AND 3 HOUR CURTAIN FIRE DAMPERS

### 75D DAMPERS

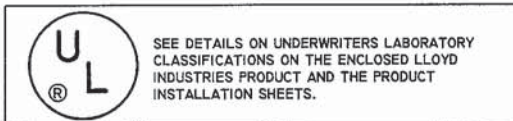


1. Perimeter mounting angles to be a minimum of 1-1/2 x 1-1/2 x 16 GA on dampers 36 x 50 and smaller. For dampers greater than 36 x 50, angles to be a minimum of 1-1/2 x 1-1/2 x 14 GA.

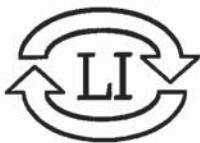
2. Grille to flange fasteners cannot penetrate the fire wall.

3. Secure angles to sleeve only, so as to frame the wall opening. Fasten to the sleeve only using the same means as required for fastening the damper to the sleeve.

4. Grille to flange attachment by means of 1/4" dia. pop rivets, #8 sheet metal screws or #8 bolts and nuts. Fasteners to be plated steel or stainless steel, minimum two fasteners per side.



10171-REV-A-1



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