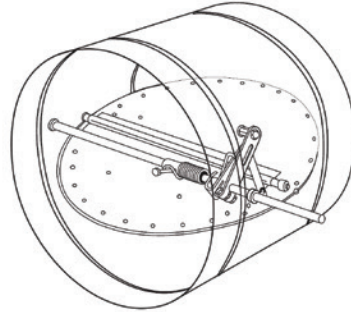


FSD-RD



FD(D)-RD



UL/ULC File: R27700

The following installation instructions are UL approved to be used with the following CVS Models: FSD-RD-211, -212, FD-RD and FDD-RD.

Application & General Notes:

These installation instructions apply to static Fire, dynamic Fire and Combination Fire/Smoke Dampers of the true round types mounted in the plane of a UL* approved fire partition. The dampers are designed for operation in the vertical or horizontal orientation with the blade running horizontal.

Safety Warning:

Read all installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.

Receiving & Handling:

Check for damage when this product is received. If damage is found, record all necessary information on the bill of lading and file a claim with the final carrier. Check to be sure that all parts of the shipment are accounted for.

*When UL is referred to in this document, it represents UL/ULC (Underwriter's Laboratories of United States and Canada).

This IOM manual is the property of the owners, and is required for future maintenance. Please leave it with the owner when the job is complete.

Installation Supplements:

- Installing Fire and Combination Fire/Smoke Dampers in a Shaft Wall
- Framing Requirements for Wood or Steel Stud Walls
- UL Approved Breakaway Duct Connections
- Optional Sealing of Dampers in Fire and Smoke Rated Walls or Floors
- Installing the Smoke Detector
- Field Modification of Factory Supplied Sleeves
- Installing Fire and Fire/Smoke Dampers in Concrete Floor with Steel Deck

Other Installation References:

- Out-of-Wall Fire and Fire/Smoke Damper IOM
- Combination Fire/Smoke Damper IOM
- Fire Damper IOM

Electrical Guidelines:

Electrical input may be needed for products discussed within this IOM. All wiring shall be done in accordance with the latest edition of the National Electrical Code ANSI/NFPA-70, any local codes that may apply and wiring diagrams developed in compliance with the job or project design and specifications.

Electrical input work should be performed by a qualified electrician. Verify power before wiring actuator. CVS is not responsible for damage to or failure of the unit caused by incorrect field wiring. Follow all instructions carefully.

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Pre-Installation Notes and Guidelines:

These notes and guidelines are formulated in order to aid in completing the damper installation in a timely and efficient manner.

- A.** Inspect damper for damage before installing.
- B.** Dampers must be installed free from twisting or racking.
- C.** DO NOT compress or stretch the damper into the opening.
- D.** DO NOT lift the damper by the blades or actuator (handle damper using frame or sleeve).
- E.** The damper must be protected from dirt, dust and foreign materials before and after installation.
- F.** When painting, wall-texturing, insulating or any other foreign material is being sprayed within 5 feet of the damper, the damper must be sufficiently covered and protected.
- G.** Suitable access inside the duct and to the damper must be created for inspection and service of the damper per NFPA 90A and local authority having jurisdiction.

Maximum & Minimum Size Smoke Dampers:

Model	Vertical	Horizontal
FSD-RD-211	8" - 24" (203-610)	8" - 24" (203-610)
FSD-RD-212	8" - 24" (203-610)	8" - 24" (203-610)
FD-RD	8" - 24" (203-610)	8" - 24" (203-610)
FDD-RD	8" - 24" (203-610)	8" - 24" (203-610)

(All dimensions in parentheses () are in millimeters.)

FIRE & FIRE/SMOKE DAMPER SLEEVES & MOUNTING CLIPS:

Damper Sleeves:

All true round fire and fire/smoke dampers must have an integral sleeve (see Figure 1).

Guidelines:

1. Sleeves must be of the SAME GAUGE or heavier than the duct to which it is attached if one of the UL approved breakaway connections is used (see separate "UL Approved Breakaway Duct Connections" supplement).
2. Gauges shall conform to SMACNA or ASHRAE duct standards.
3. Sleeves shall not extend beyond the fire barrier more than 16" (406mm) on the operator side or 6" (152mm) on the opposite side.
4. The connecting duct shall terminate at the integral sleeve and is connected by using either of the following:
 - A. Minimum of 3 - #10 sheet metal screws spaced equal distance around the sleeve for 22" (559mm) and ~ smaller duct.
 - B. Minimum of 5 - #10 sheet metal screws spaced equal distance around the sleeve for greater than 22" (559mm) duct.
 - C. 4" (101mm) drawband.
5. Clearance between the damper sleeve and the round or square wall opening shall be a minimum of 1/2" (13 mm) and a maximum of 1" (25mm).

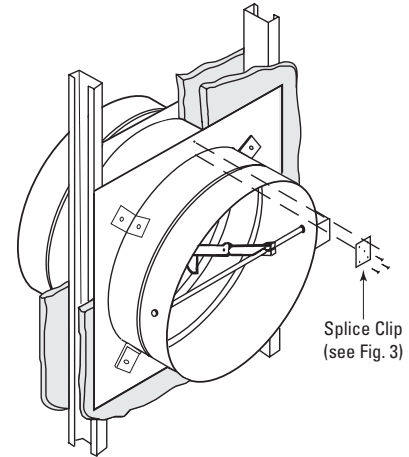
Note: When installing the round damper into a square opening, these clearances refer to the middle point of each side of the square, not the corners.
6. Damper will be factory supplied with one retaining plate secured to the damper sleeve on the operator side of the damper.

Mounting Clips:

A minimum of 4 equally spaced 20 gauge galvanized steel clip angles (see Figure 3) shall be attached to both the integral sleeve and the retaining plate (see Figures 1 and 2). The clip angles shall be attached with 1/8" (3.2mm) rivets, #10 x 1/2" (12.7mm) steel metal screws, bolts or welds.

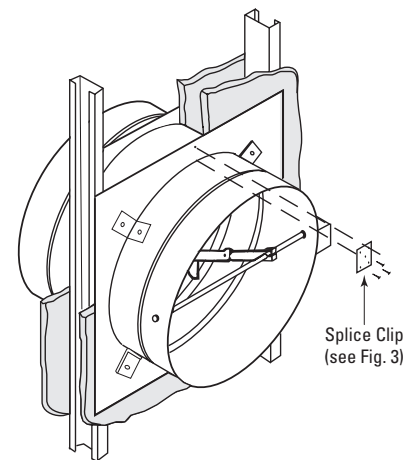
Note: In metal stud/gypsum applications, the retaining plate may be in front of or behind the gypsum, directly against the metal studs.

Figure 1: Angles on 2 Sides



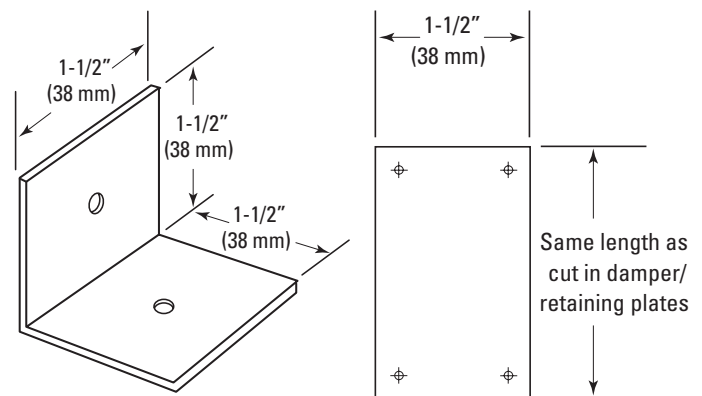
Typical stud or masonry opening. (Refer to the Framing Requirements for Wood or Steel Stud Walls For Fire and Fire/Smoke Dampers In Drywall Partitions)

Figure 2: Angle on 1 Side



Typical masonry or metal stud opening. (Refer to the Framing Requirements for Wood or Steel Stud Walls For Fire and Fire/Smoke Dampers In Drywall Partitions)

Figure 3: Mounting Clips



**Clip Angle Detail 20 Ga.
(1) Galv. Steel**

Splice Clip Detail

2 ANGLE METHOD INSTALLATION:

In this install method, the damper shall be installed in a stud/gypsum or masonry fire partition in the vertical or horizontal position (blade shaft running horizontally within the parameters of Detail A) with a retaining plate flush against both sides of the fire partition (see Figure 4).

Guidelines:

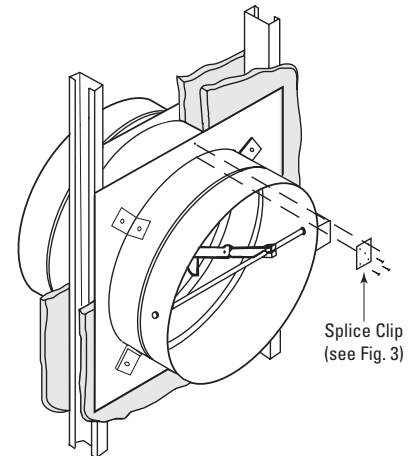
The Two Angle Method (Figure 4) is approved for the following:

- A.** Masonry/concrete or stud/gypsum partitions
- B.** 1 ½ Hour rated True Round Fire or Fire/Smoke Dampers
- C.** Vertical or horizontal orientation
- D.** All UL approved sizes shown in Table 1 on page 2 of this IOM

Installation:

1. With the factory installed retaining plate flush to the fire partition, place another retaining plate (if manufactured in the field - see Figure 5) on the opposite side of the damper sleeve and slide it forward until it becomes flush with the opposite side of the partition.
2. Place the Splice Clip (see Figure 3 on page 3) over the cut portion of the retaining plate and secure it with 4 - #10 sheet metal screws or rivets as shown in Figure 4.
3. Secure the clip angles (see Figure 3 on page 3) to the retaining plate and damper sleeve as illustrated in Figure 4, 6 and 7.

Figure 4: Angles on 2 Sides with Splice Clips



Typical masonry or metal stud opening. (Refer to the Framing Requirements for Wood or Steel Stud Walls For Fire and Fire/Smoke Dampers In Drywall Partitions).

Figure 5: Retaining Plate Detail

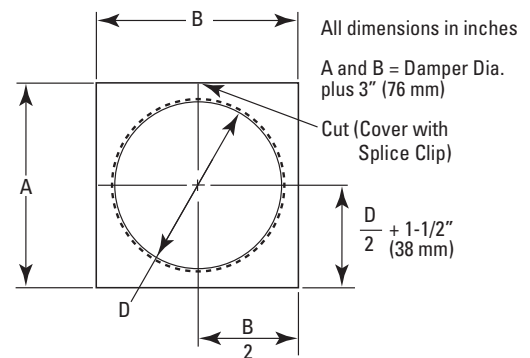


Figure 6:

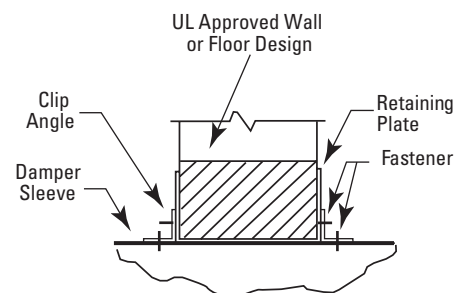
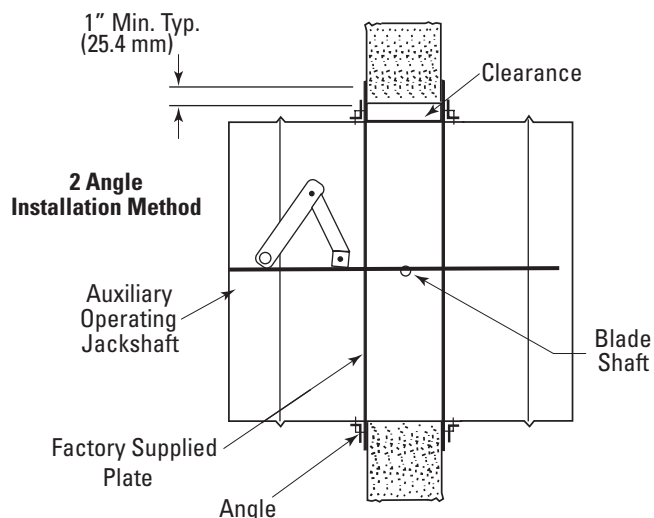
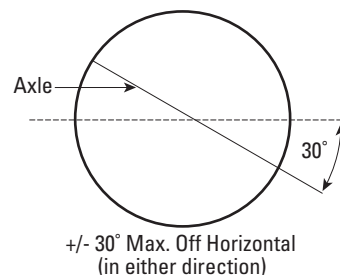


Figure 7: Cross Section of Damper in a Wall (Floor Similar)



Detail A



1 ANGLE METHOD INSTALLATION:

In this install method, the damper may also be installed in a steel stud/gypsum, or masonry wall, in a vertical position (blade running horizontally within the parameters of Detail B), with a retaining plate on one side of the wall.

Guidelines:

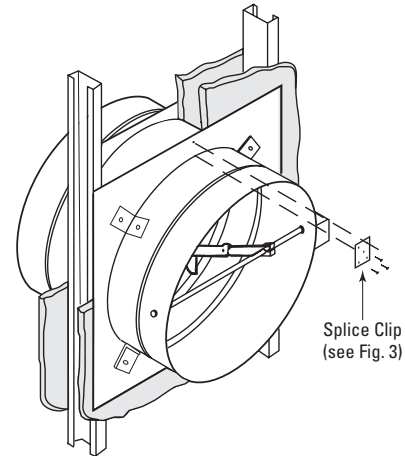
The One Angle Method (Figure 8) is approved for the following:

- A.** Masonry/concrete walls and steel stud/gypsum walls
- B.** 1 ½ Hour rated True Round Fire or Fire/Smoke Dampers
- C.** Vertical orientation
- D.** All UL approved sizes shown in Table 1 on page 2 of this IOM

Installation:

- A.** With the factory installed retaining plate flush to the fire wall, place 8 screws equal distance around the perimeter of the retaining plate per the following:
 - 1.** For steel studs use #10 sheet metal fasteners long enough to penetrate the metal stud by 1/2" (13mm) minimum
 - 2.** For masonry walls use #10 x 1-1/4" (32mm) masonry screws
- B.** Refer to Figure 9 for placement of screws. Fasteners shall be placed in each corner and halfway between the corners as shown.
- C.** Place the Splice Clip (see Figure 3 on page 3) over the cut portion of the retaining plate and secure it with 4 - #10 sheet metal screws or rivets as shown in Figure 4.
- D.** Secure the clip angles (see Figure 3 on page 3) to the retaining plate and damper sleeve as illustrated in Figure 8, 10 and 11.

Figure 8: Angle on 1 Side with Splice Clips



Typical masonry or metal stud opening. (Refer to the Framing Requirements for Wood or Steel Stud Walls For Fire and Fire/Smoke Dampers In Drywall Partitions)

Figure 9: Retaining Plate Detail

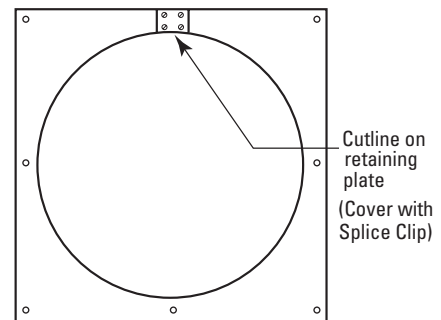
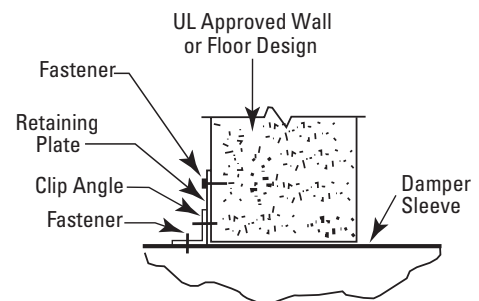


Figure 10



Detail B

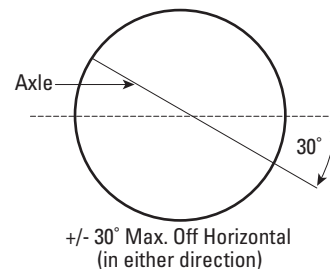
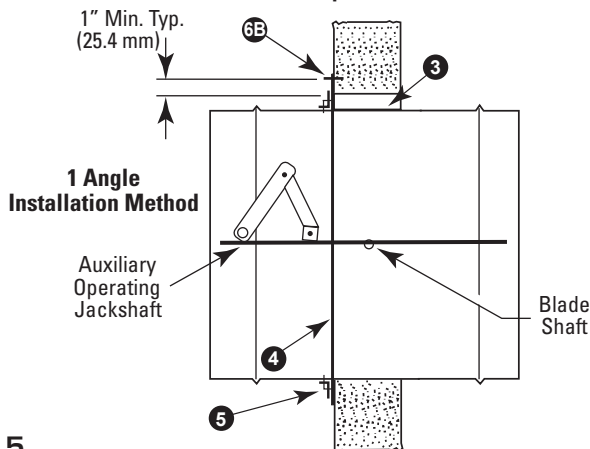


Figure 11: Cross Section of Damper in Wall



Actuator Connections (if applicable):

Electrical or pneumatic connections to damper actuators should be made in accordance with wiring and piping diagrams developed in compliance with applicable codes, ordinances and regulations. Be sure to check actuator for proper voltage and current draw. Tampering with the actuator's installation or connecting the actuator to an improper voltage and current may void the warranty.

DAMPER OPERATION, TESTING & MAINTENANCE

The procedures discussed here are intended to insure that nothing interferes with a damper's proper operation and to identify and eliminate a number of potential situations that could occur and interfere with said operation.

Fire & Fire/Smoke Damper Operation:

All CVS fire/smoke dampers are operated at the factory, however pre-installation testing of its operation should be conducted. Wire the actuator (if applicable) per correct wiring diagrams. Applying power to the actuator should drive the damper open and disconnecting power should activate the actuator's internal springs and drive closed.

WARNING: During any operating, inspection or testing of fire or fire/smoke dampers, CVS recommends the following:

1. Caution is advised when removing power from the damper's actuator or removing the fusible link. Actuators have very strong internal springs that may slam closed causing an abrupt interruption of airflow. As this could cause damage to ductwork, consideration should be given to conducting these tests without system airflow.
2. When removing power from the actuator to check damper operation, be sure to keep fingers, hands and any other body parts out of the blade travel path to prevent injury.
3. Check proper actuator operation. If defective, contact damper manufacturer for replacement procedures.

Fire & Fire/Smoke Damper Testing:

All fire and fire/smoke dampers and their actuators (if applicable) shall be visually inspected and cycled at specific time intervals in accordance with the local building codes or the latest editions of NFPA 80, 90A, 92A, 92B, 101, 105, AMCA 503-03, local codes and UL 864. Also refer to the actuator manufacturer's recommendations.

IMPORTANT NOTE: Do not apply a heat gun, flame or any heat producing device directly to the thermostat. Simply disconnecting the power to the actuator(s) shall be sufficient for testing procedures.

Fire & Fire/Smoke Damper Maintenance:

Fire and Fire/Smoke Life-Safety related dampers that are properly applied, equipped with the appropriate UL labels, appropriately installed, and demonstrated to function as intended through a building commissioning process should require no specific preventive maintenance. However, CVS recommends that obstructions, dirt build up, and any rust or corrosion be removed using mild solvents or detergents. No lubrication is required, however if it is desired, damper tracks and blade hinges may be lubricated using a dry lubricant. **Never use a petroleum based lubricant as it will attract dust and eventually impede a damper's operation.**

Message from CVS:

This installation, operation and maintenance instruction document has been reviewed and approved by the Underwriter's Laboratories.

As a part of CVS's continuous improvement program, CVS reserves the right to make further improvements or changes without notice.