

Standard Installation

Fire Damper Models: S3, S4 and R19

APPLICATION

This round, dynamically rated fire damper is intended to restrict the passage of flame. The installation requires that the damper is positioned so that the closed plane of the blades is within the fire rated masonry/concrete or metal framed gypsum wallboard barrier.

This damper may be mounted in the vertical (dynamically rated at 2000 fpm) or horizontal (dynamically rated at 3000 fpm) position with the damper blades running horizontally. Airflow can be from either direction. When mounted in the vertical position, the damper can only be mounted in a fire barrier constructed of masonry/concrete or metal framed gypsum wallboard materials. When mounted in the horizontal position, the damper can only be mounted in a fire barrier constructed of masonry/concrete materials.

PANEL SIZE LIMITATIONS

	Orientation	Horizontal, 3000 fpm / 4 in.wg			Vertical, 2000 fpm / 4 in. wg		
	Assembly	Max Panel	Max Assy 165°	Max Assy 212°	Max Panel	Max Assy 165°	Max Assy 212°
Model	S3	13" dia.	13" dia.	13" dia.	13" dia.	13" dia.	13" dia.
	S4	14" dia.	14" dia.	14" dia.	14" dia.	14" dia.	14" dia.
	R19	14" dia.	14" dia.	14" dia.	14" dia.	14" dia.	14" dia.

SUPPLEMENTAL INSTALLATION INSTRUCTIONS / SUBMITTAL DATA

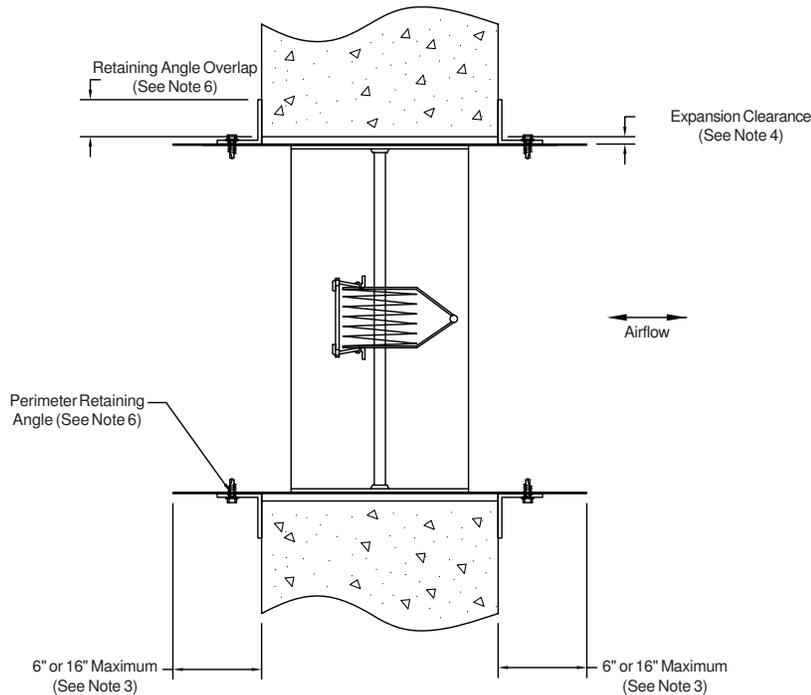
Retaining Angle Rings

INSTALLATION (Drawing on Page 2 of 4)

1. **General:** The installation of the damper and all duct connections to the damper sleeve shall conform to NFPA 90A and the SMACNA Fire, Smoke and Radiation Damper Installation Guide. All duct connections shall also conform to UL555.
2. **Multiple Panel / Multiple Section Assembly:** Not available.
3. **Sleeves:** Sleeves are required for the proper installation of fire rated dampers, but need not be factory mounted. Sleeves shall be the same gauge or heavier as the duct to which it is attached. Gauges shall conform to SMACNA or ASHRAE duct standards. A field supplied sleeve is attached to the damper with ³/₁₆" diameter steel rivets, ¹/₄" diameter steel bolts, #10 steel sheet metal screws, or ¹/₂" long welds. Fasteners shall be staggered on each side of the damper frame on 8" maximum centers. The sleeve shall not extend more than 6" beyond the fire barrier unless the sleeve includes an access door. If the sleeve includes an access door, the sleeve may extend up to a maximum of 16" beyond the fire barrier.
4. **Expansion Clearance:** The opening in the wall for the fire rated damper shall be sized to provide expansion between the sleeve and the opening. The opening diameter is to be ¹/₄" larger than the outside diameter of the sleeve. When 1" retaining angles are used, the opening diameter shall be a maximum of ³/₄" larger than the sleeve outside dimension. Opening differences larger than ³/₄" will require a proportionally larger retaining angle leg overlapping the opening.
5. **Damper Orientation:** Damper blades should be as horizontal as possible but can be as much as 30° above or below the horizontal. The damper can be positioned so that airflow is from either direction. Dampers mounted horizontally must be positioned so that blade locks are in uppermost position. Blade locks must always be positioned towards the access door. Blade locks are only included on sizes 13" and 14" diameter.
6. **Retaining Angles:** Secure steel mounting angle rings to the sleeve only, so as to frame both faces of the opening. Mounting angle rings shall be a minimum of 1" x 1" x 20-GA. Fasten rings to the sleeve using the same means as required for fastening the damper to the sleeve. For installations requiring flush mounting, angle rings may be mounted facing into the opening. Ends of rings can be welded or unwelded. Mounting angle rings are typically supplied by others.
7. **Caulking:** Caulk shall be one of the following: Dow Corning RTV732, Silco Sil-Bond RTV 4500, General Electric IS808, or Novagard RTV300. Caulking is allowed between the retaining angles and the damper sleeve, and between the face of the floor or wall construction. Caulking is not allowed between the damper sleeve and the wall or floor inside the opening.
8. **Duct Connections:** All connecting ducts shall not be continuous, but shall terminate at the fire damper sleeve. Duct connections can be rigid or a 4" Drawband connection can be used. For rigid type duct connections, the sleeve shall be a minimum of 16-GA. Duct connections shall conform to SMACNA or ASHRAE duct standards.

STANDARD INSTALLATION CONT.

9. **Maintenance:** Dampers shall be maintained at intervals as stated in NFPA 90A and 92A. Local codes or building conditions may require more frequent inspections and maintenance. A duct access door is to be located on one side of each damper for periodic inspection and maintenance.



ALTERNATE INSTALLATION (Round Curtain Fire Damper in Square Framed Opening)

1. **General:** These instructions illustrate the approved method of mounting the R19 round curtain fire damper into a square or rectangular framed opening incorporating a retaining plate on only one side of the opening. The installation of the damper and all duct connections to the damper sleeve shall conform to NFPA-90A and the SMACNA Fire, Smoke and Radiation Damper Installation Guide. All duct connections shall also conform to UL555.

This installation is approved for use when all of the following conditions are met:

- The damper is mounted vertically in a rated wall assembly.
- The wall is rated for less than 3 hours.
- The maximum damper size is 14" diameter.
- The wall framing must be masonry/concrete or steel.
- The closed blades must be within the fire rated barrier.

Note: The retaining plate can be on both sides of the opening but is only required on one side.

2. **Multiple Panel / Multiple Section Assembly:** Not available.
3. **Sleeves:** Sleeves are required for the proper installation of fire rated dampers, but need not be factory mounted. Sleeves shall be the same gauge or heavier as the duct to which it is attached. Gauges shall conform to SMACNA or ASHRAE duct standards. A field supplied sleeve is attached to the damper with $\frac{3}{16}$ " diameter steel rivets, $\frac{1}{4}$ " diameter steel bolts, #10 steel sheet metal screws, or $\frac{1}{2}$ " long welds. Fasteners shall be staggered on each side of the damper frame on 8" maximum centers. The sleeve shall not extend more than 6" beyond the fire barrier unless the sleeve includes an access door. If the sleeve includes an access door, the sleeve may extend up to a maximum of 16" beyond the fire barrier.
4. **Expansion Clearance:** The opening in the wall for the fire rated damper shall be sized to provide expansion between the sleeve and the opening. The clearance between the opening frame and the outside of the damper assembly must be between $\frac{1}{4}$ " and 2" total. The damper can be located anywhere in the opening and need not be centered. The retaining plate must still overlap head framing on all sides by at least 1".

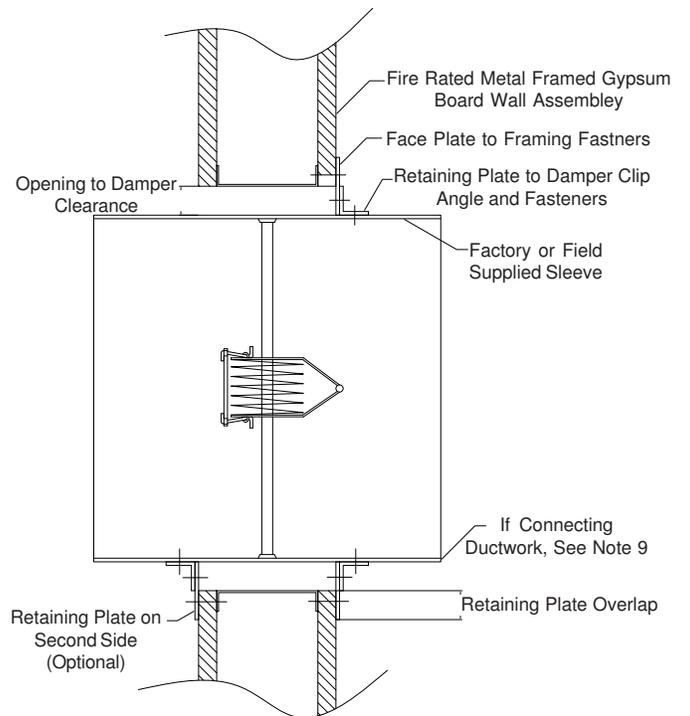
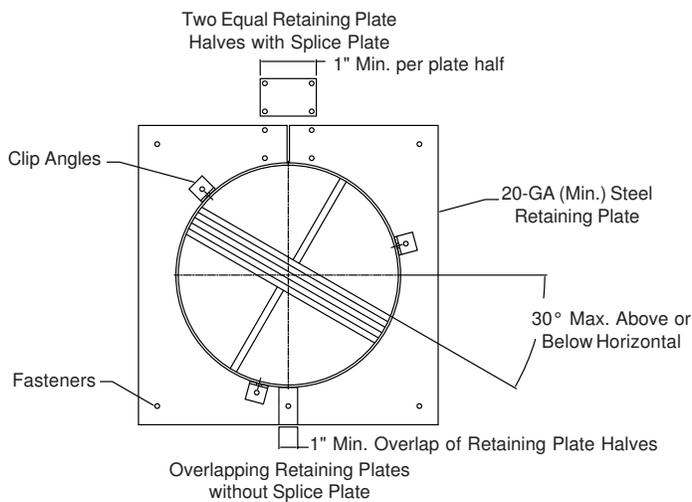
Example: A 10" diameter damper is to have a framed opening at least 10.25" and a maximum opening of 12". The damper can rest on the sill of the opening with all of the expansion clearance at the top of the opening.



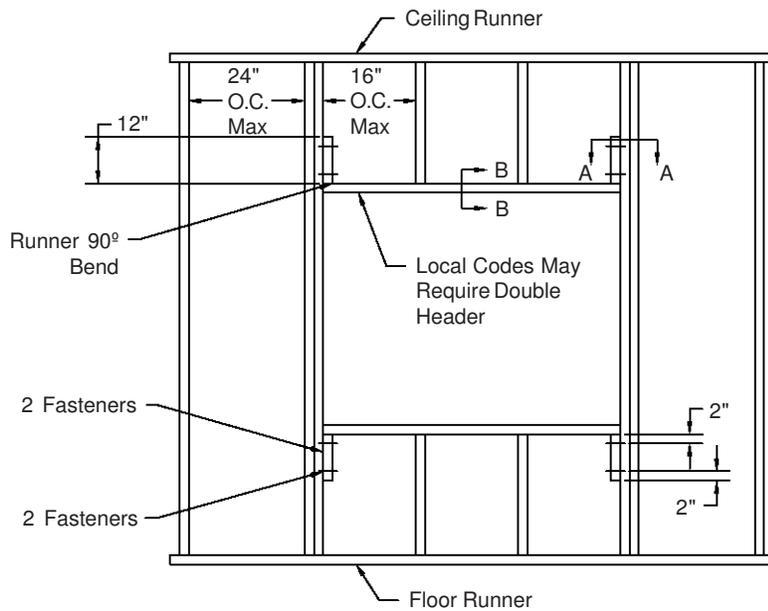
**ALTERNATE INSTALLATION CONT.
(Round Curtain Fire Damper in Square Framed Opening)**

5. **Damper Orientation:** Damper blades should be as horizontal as possible but can be as much as 30° above or below the horizontal. The damper can be positioned so that airflow is from either direction. Blade locks must always be positioned towards the access door. Blade locks are only included in sizes 13" and 14" diameter.
6. **Retaining Plate:** The retaining plate must be a minimum of 20-GA galvanized steel. The plate must overlay the wall framing by a minimum of 1" on each side such that the retaining plate attachment screws fasten into the wall framing. A minimum of 6 fasteners are required, one in each corner and one at each retaining plate splice. In masonry/concrete constructions, 3/16" diameter "tapcon" or equal fasteners with a minimum of 1" penetration are required. In metal framed openings, fine thread drywall screws with a minimum of 1" penetration into the framing are required.

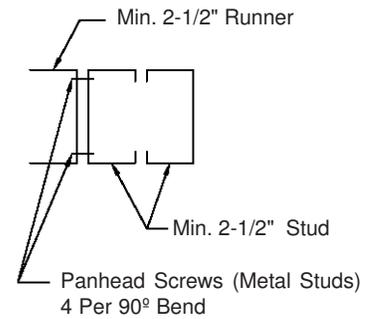
Retaining plate halves must be attached using one of the following methods:
 1. The plate halves overlap a minimum of 1" and are fastened directly to one another. A minimum of 1 #10 steel or stainless steel sheet metal screw fastener at each end is required.
 2. The plate halves are joined by a splice plate, so that it overlaps each half a minimum of 1". A minimum of 2 #10 steel or stainless steel sheet metal screw fasteners per plate at each end are required.
7. **Clip Angles:** A minimum of three equally spaced 1" x 1" x 20-GA steel clip angles 1/2" long connect the damper to the retaining plate. Fasteners used to mount the damper to the plate must be a minimum #10 steel. Fasteners must not interfere with blade closure.
8. **Caulking:** Caulk shall be one of the following: Dow Corning RTV732, Silco Sil-Bond RTV 4500, General Electric IS808, or Novagard RTV300. Caulking is allowed between the retaining plate and the damper sleeve, and between the face of the wall construction. Caulking is not allowed between the damper sleeve and the wall inside the opening.
9. **Duct Connections:** All connecting ducts shall not be continuous, but shall terminate at the fire damper sleeve. Duct connections can be rigid or a 4" Drawband connection can be used. For rigid type duct connections, the sleeve shall be a minimum of 16-GA. Duct connections shall conform to SMACNA or ASHRAE duct standards.
10. **Maintenance:** Dampers shall be maintained at intervals as stated in NFPA 90A and 92A. Local codes or building conditions may require more frequent inspections and maintenance. A duct access door is to be located on one side of each damper for periodic inspection and maintenance.



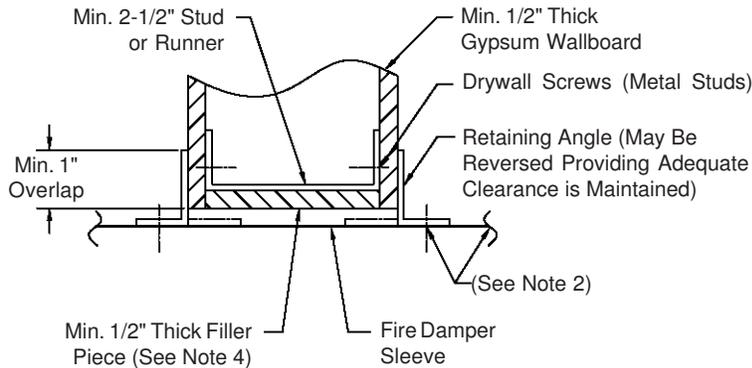
FRAMING DETAILS (METAL 1 HOUR AND 2 HOUR RATED BARRIERS)



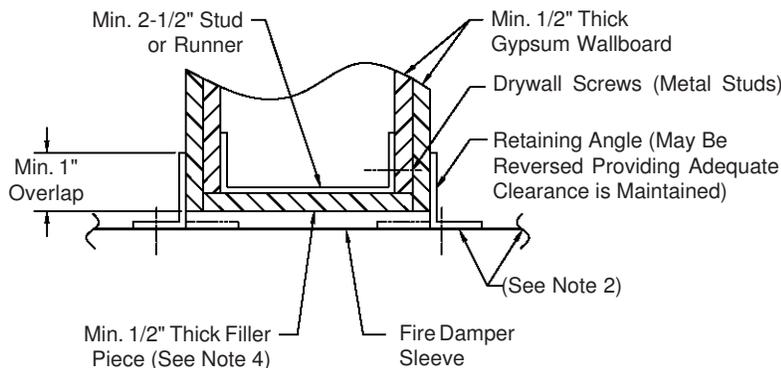
Section A-A



**Section B-B
(1 Hour Rated Fire Barrier)**



**Section B-B
(2 Hour Rated Fire Barrier)**



NOTES:

1. These illustrated partition designs have successfully been tested in conjunction with 1-1/2 hour classified fire dampers, for additional designs, reference Underwriters Laboratories, Inc. Fire Resistance Directory. Specific framing requirements of openings may vary with the Local Authority that has jurisdiction. Specific framing requirements should be provided in the architectural and structural drawings.
2. Reference the damper's installation instructions regarding the approved method of attaching the damper to the sleeve, attaching the retaining angles to the sleeve, required expansion clearances, sleeve gauge, etc. Type of framing does not affect the stated required expansion clearance.
3. Gypsum panels surrounding the opening are to be fastened to all stud and runner flanges, 12" o.c. maximum.
4. Filler pieces are optional when metal studs are used (consult local codes to determine if filler pieces are required). Filler pieces are to be double screwed on 12" max. centers to the web of runners and studs.
5. Double jamb studding shown. Single jamb studding acceptable through maximum opening size allowed for this product.

