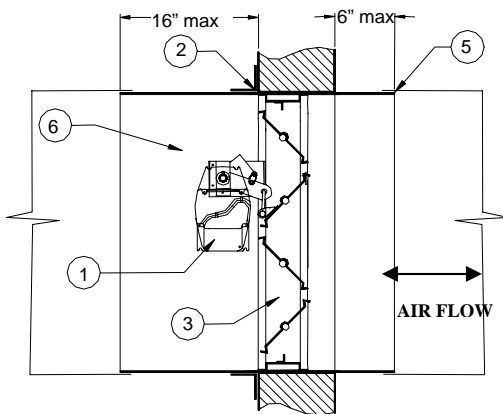
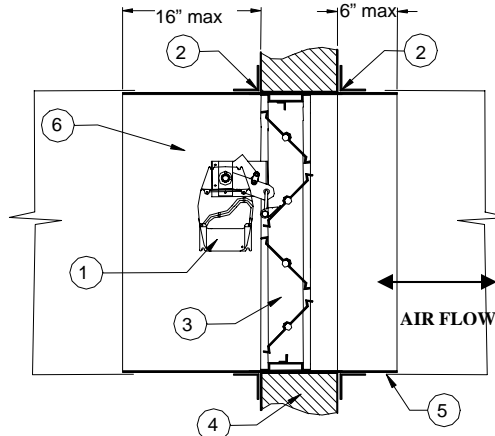


## INSTALLATION INSTRUCTIONS FOR FIRE / SMOKE DAMPERS



**One Angle Installation**

Mounting angles may be installed on either side of wall



**Two Angles Installation**

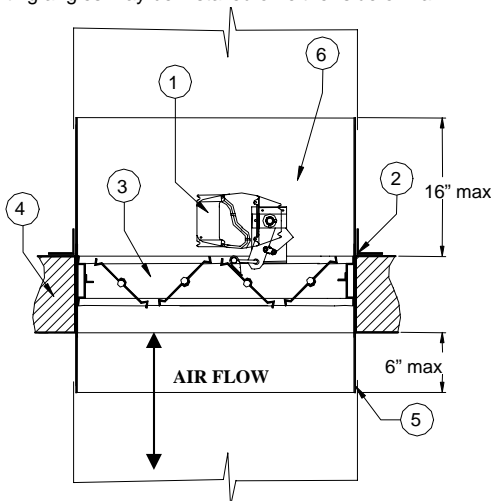
**Models:**

- 771, 771-3
- 772, 772-3
- 772M, 772M-3
- 781, 781-3
- 782, 782-3

**VERTICAL INSTALLATION**

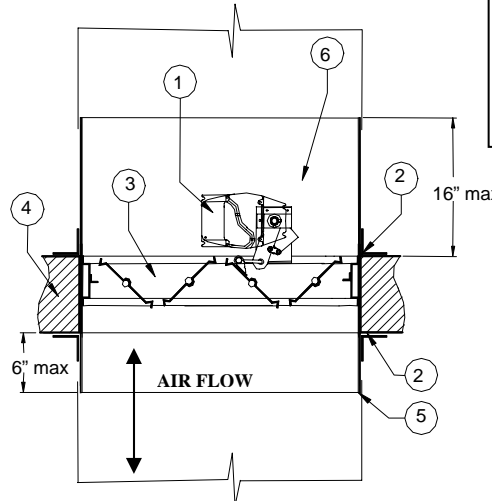
**Item Description**

- 1 – Actuator (external or internal)  
Location may vary
- 2 – Mounting / retaining Angles  
(All Around the perimeter)
- 3 – Damper Unit
- 4 – Wall / Floor Opening  
(Concrete, Metal or Wood)
- 5 – Duct / Sleeve break-away connection
- 6 – Sleeve
- 7 – Caulking



**One Angle Installation**

Mounting angles may be installed on either side of wall



**Two Angles Installation**

**HORIZONTAL INSTALLATION**

**Notes:**

Fire/Smoke damper sleeve clearance within wall opening.

1. Clearance requirements between sleeve and wall or floor shall be minimum of 1/8 per foot of width and height of sleeve. The maximum size of opening shall be 2" larger in width or height than the allowed minimum size. The sleeve may rest on the bottom of the opening, and need to be centered. (Fractional dimensions shall be taken as the next largest whole foot).

Example: A 30-inch x 24-inch fire damper sleeve is installed in a wall opening. The opening shall be 30-3/8 inches wide (1/8 inch x 3 feet) by 24-1/4 inches high (1/8 inch x 2 feet).

2. The sleeve is retained in the wall opening by the use of steel retaining angles (A). These must over-lap the edge of the framing by a minimum of one (1) inch over and beyond all the retaining angle would be 1-3/8 inches (good practice calls for an additional safety factor by making the angle in this case 1-1/2 inches wide).
3. The dimensions required for the opening shall be those remaining after the opening has been framed and fire resistive materials provided were required. The fire resistive materials shall be equal to the requirements for fire resistive materials used in the constructed wall so that a continuous rating exists at the wall penetration. The contractor erecting the wall is responsible for providing the fire resistive material and correct size openings to achieve the required clearance.
4. Dampers must be installed in accordance with these instructions to meet the requirements of UL 555 and UL 555S. The installation of the damper and all duct connections to the damper sleeve shall conform to the latest editions of NFPA 90A, Standard for the installation of Air Conditioning and Ventilating Systems, and the SMACNA Fire, Smoke and Radiation damper installation guide, and U.L. Classifications R7861.

**Typical installation details**

- (A) Retaining Angles: Minimum 1 1/2" x 1 1/2" x 0.054 (18ga) Retaining angles must overlap structural opening 1" minimum and cover corners of openings.
- (B) Clearance: 1/8" inch per linear foot both dimensions (see Note 1 below)
- (C) For two angles installation, secure retaining angles to sleeve only, 8" on centers with:
  - ◆ 1/2" long welds or
  - ◆ 1/4" Bolts and nuts, or
  - ◆ No. 10 steel screws, or
  - ◆ Minimum 1/16" steel rivets
- (D) For one angle installation, secure retaining angles to wall/floor opening, 8" on centers with:
  - ◆ 1/4" bolts and nuts, or
  - ◆ No. 10 sheet metal steel screws, or
  - ◆ Minimum 3/16" steel rivets



## FIRE & SMOKE AND SMOKE DAMPERS

This operation and maintenance instructions should not serve as a standard basis for all damper products and other manufacturers, but for Safeair-Dowco damper products.

All fire smoke and smoke dampers require routine maintenance procedures in order for dampers to operate as intended in any case in which fire and smoke may occur within the building. Periodic testing of all parts linked to the damper is essential to maintaining a working damper. Check that all actuators, blades, fans, etc. are functioning properly and that nothing is preventing blades or controls from operating. Be sure to check that nothing is blocking or hindering air way passage. Safeair-Dowco recommends that each routine operation and maintenance procedure follow with NFPA92A, NFPA80 and NFPA105 requirements and local authority approvals.

### MAINTENANCE:

1. Check interior and exterior sides of dampers for any major defects or material disintegration that may prevent proper functioning of damper.
  - a. In serious damage contact Safeair-Dowco <http://safeair-dowco.com/contact.php>
2. Re-tighten any loose linkage or attached equipment, such as actuator.
3. Shafts, bearings, pivot points etc. should be cleaned and lubricated with a light spray oil. Any and all access should be removed.
  - a. *Use silicone based lubricant and not petroleum based lubricant.*
  - b. *Dampers with non-metallc or carbon sleeve bearings do not require lubrication*
4. Blades should be checked for freedom of movement.
5. Blades should also be disconnected from their operators and manually checked (Blades should move freely with no binding or twisting).
6. Motors (electric or pneumatic) should be visually checked through their complete cycle for defects, binding or misalignment. Operator anchorage and fittings should also be checked.
  - a. *Damper should be operated under normal airflow conditions.*
7. If in any case actuators, blades or linkage is not properly functioning, contact Safe-Air Dowco at our given inquiry page located above to be further assisted.

### TESTING PROCEDURE:

1. With the thermal disc intact, heat the thermal disc with a temperate heat source,
  - a. *Make sure not to overheat and damage the thermal disc.*
2. Check that the thermal disc functions properly as it will activate the actuator to close the damper blades.
  - a. **(Be sure to keep hands out of path while blades are closing)**
3. When testing procedure is done and all parts are working collectively and properly, allow thermal disc to cool.
4. Reset the disc located on the outside of damper, which will then re-open the damper blades allowing airflow.
5. Record date of testing procedure and label on a sheet.
6. Repeat testing procedure on a set periodic routine.

## FRAME OPENINGS FOR FIRE SMOKE DAMPERS IN METAL AND WOOD STUDS

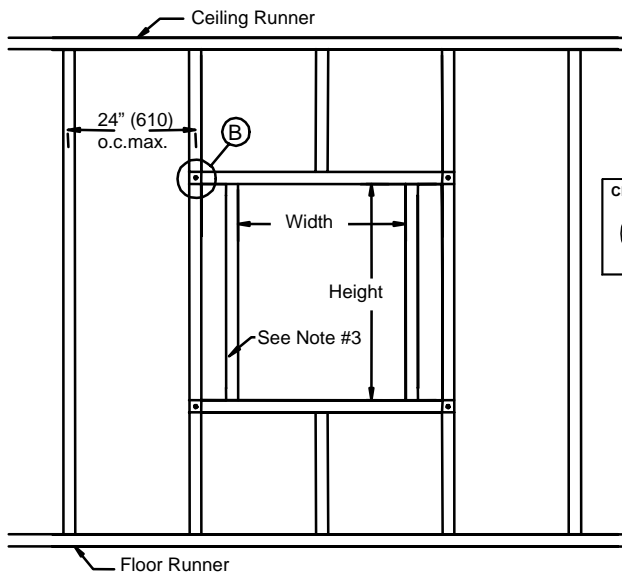
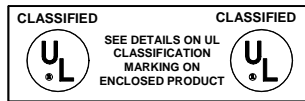


Figure - 1



**NOTES:**

1. Single stud can be used on dampers with 36" x 36" (914 x 914) opening or smaller. (Fig-1.)
2. A single mounting angles may be used, please refer to single retaining angles installation under separate sheet.
3. Framing studs next to the damper are not required to be full length if the spacing is less than the maximum stud spacing as shown in (Fig - 1.)
4. Gypsum panels screwed to all stud and runner flanges shall be 12" (305) oc. maximum surrounding opening.
5. All metal or wood studs shall be covered with gypsum wallboard.
6. Opening to be minimum 1/8" (3) per ft. larger than overall size of assembly. (min. 1/4" (6) larger than assembly.)
7. Double vertical studs are required for dampers larger than 36" x 36" (Fig - 2.)

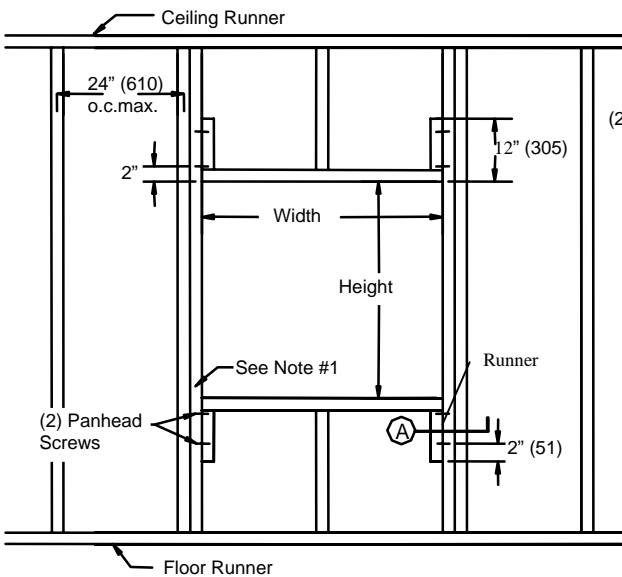
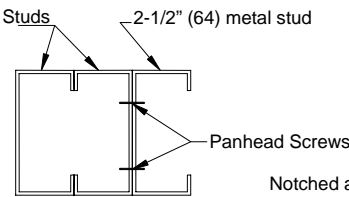
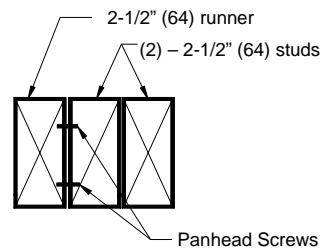


Figure - 2

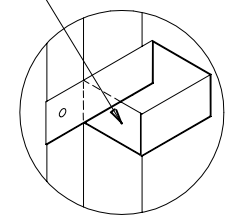
(2) - 2-1/2" (64) Studs



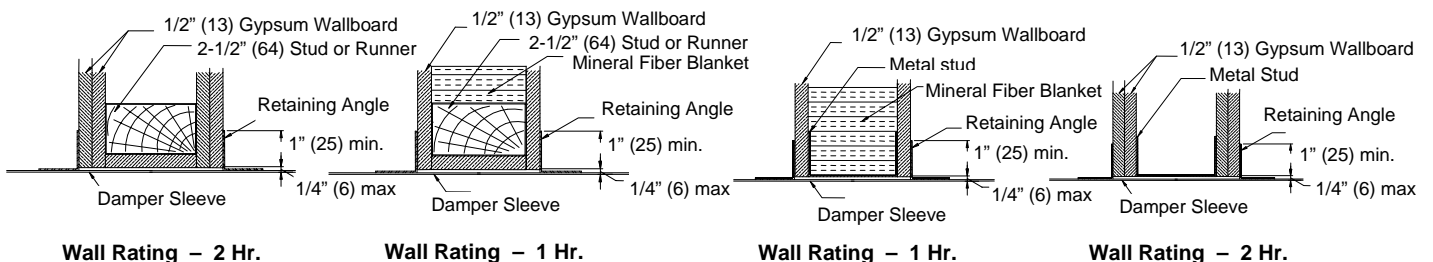
SECTION - A



SECTION - A



DETAIL - B



Wall Rating - 2 Hr.

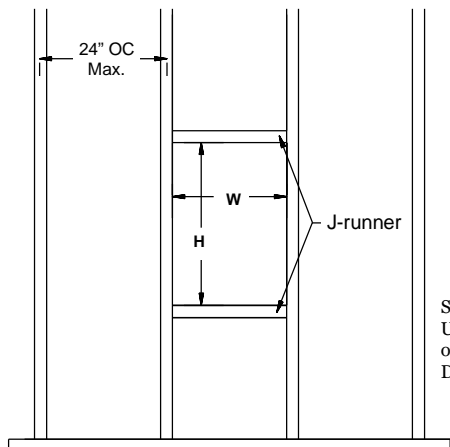
Wall Rating - 1 Hr.

Wall Rating - 1 Hr.

Wall Rating - 2 Hr.

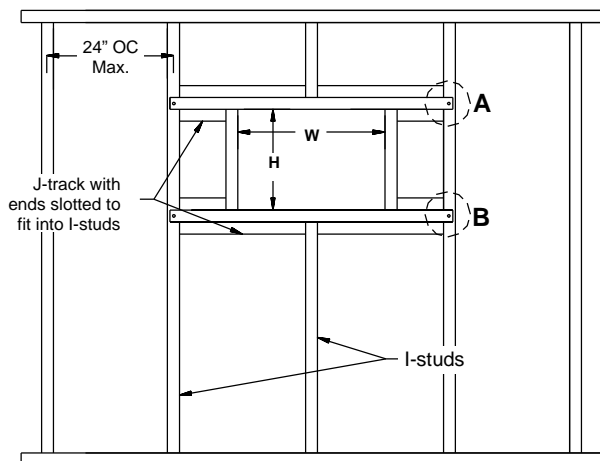
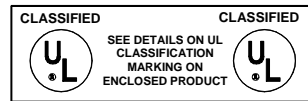
**WOOD STUD FRAMING**

**METAL STUD FRAMING**

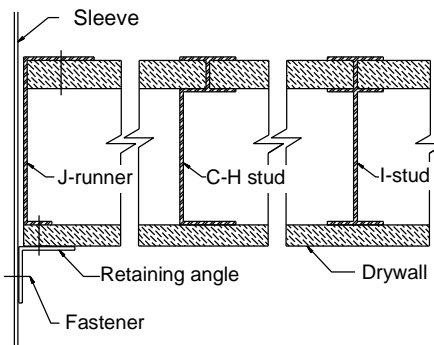


**Opening Preparation**

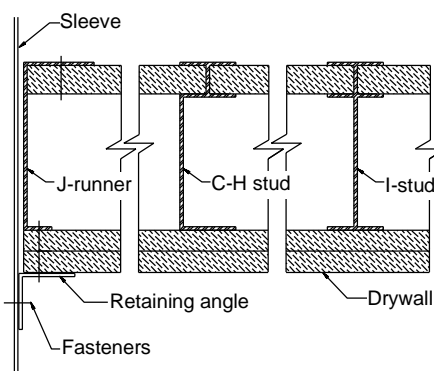
See submittal sheets for UL maximum allowable opening size per Fire Damper Model



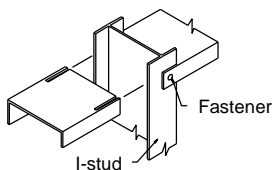
**Opening Preparation for I-stud Assembly**



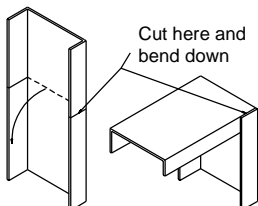
**Wall with One Layer of Drywall**



**Wall with Double Layers of Drywall**



**Det. "A", J-track to I-stud connection**



**Det. "B", Forming J-track**

**NOTES:**

1. Drywall panels must be screwed 12" on center maximum to all stud and runner flanges surrounding opening.
2. Retaining mounting angles shall be a minimum of 3/4" x 1-1/2" tall x 20 gauge. For opening sizes 80" wide x 96" high retaining angles are only required on one side of the partition and must be attached to the sleeve and the partition. For larger openings, 1-1/2 x 1-1/2 x 16 gauge retaining angles are required on both sides of the partition and must be attached to the sleeve. Attachment to the sleeve shall be with #10 screws or 3/16" dia. steel rivets, quick-lock joints or welds, at 1/2" oc. maximum. Attachment to partition/opening shall be with min. #10 fasteners with a minimum length as follows. For metal stud and angles under the drywall, the fasteners must a minimum 1/2" long. For metal stud and the angles over the drywall the fasteners must be a min. 1/2" longer than the thickness of the drywall. i.e. if the partition has one layer of 5/16" drywall on the attachment side, the screws must be 1/2" + 5/8" = 1-3/8" long. The fasteners in the partition should be located such that they are 1/2" below the top of the 1-1/2" flange of the retaining angles. Fasteners in the partition should be spaced 12" oc. max.
3. A minimum of two connections per side, top and bottom. A minimum 3/4" x 20 gauge flange termination may be used in lieu of mounting angles. Make sure that when mounting retaining angle does not interfere with the operation of the damper and the free movement of the damper blades.
4. See standard damper installation instruction sheets for additional information.