

UL 555 FIRE DAMPER & UL 555S FIRE/SMOKE DAMPER



FIRE DAMPER

AEROVAC

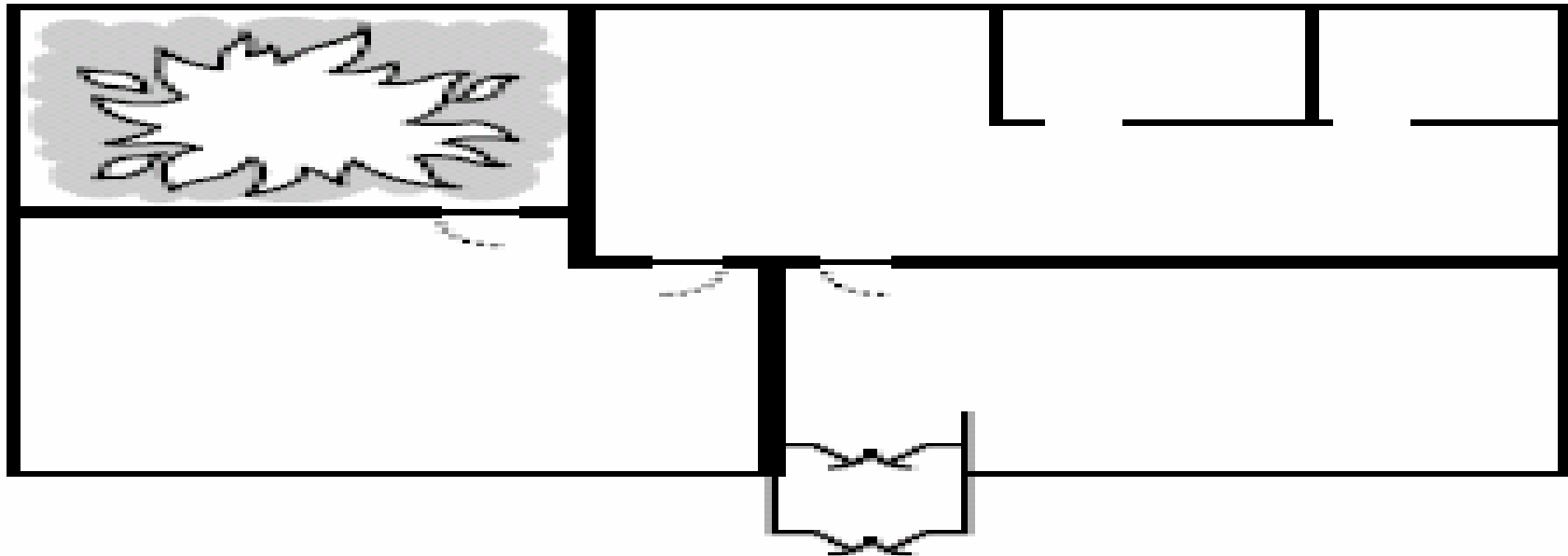


FIRE/SMOKE DAMPER

SAFE-AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

• FIRE DAMPER

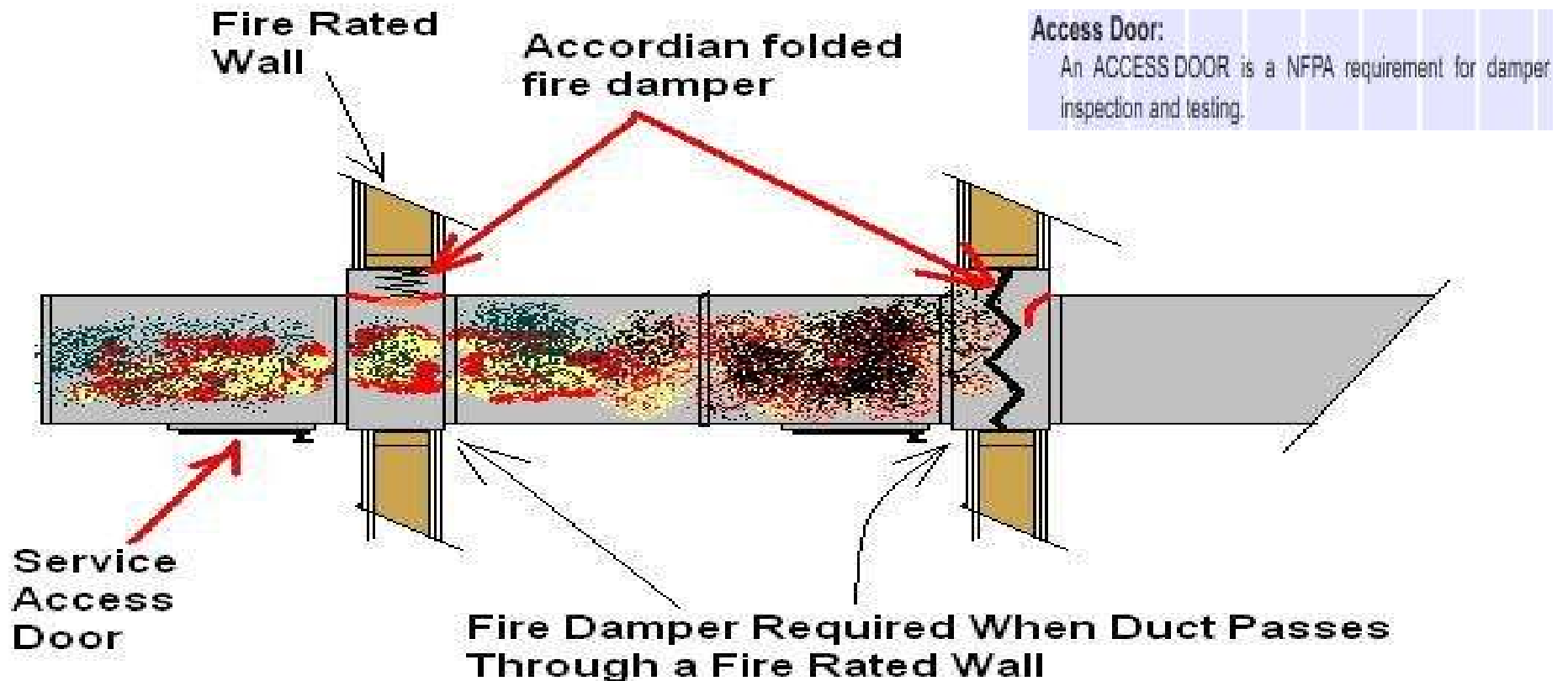
A Device used to restrict the passage of flame through the duct work of an air system. A fire damper is installed in fire rated wall or floor & closes automatically to maintain the integrity of that partition.



Fire rated partitions contain fire damage to the compartment of fire origin.

AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955



If a fire occurs and is passing through the duct a fusible link melts and drops the accordion folded door to block the fire.

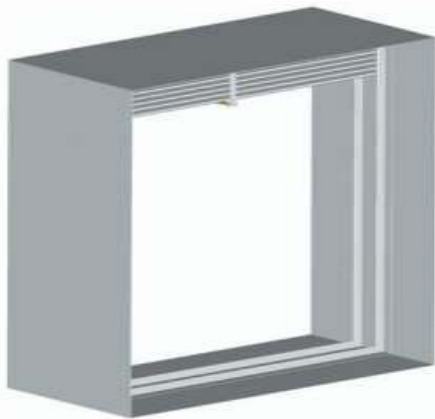
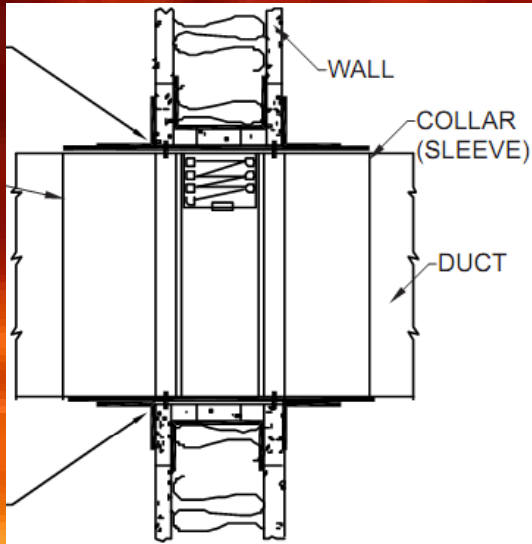
HVAC DUCTING THROUGH A FIREWALL

AEROVAC

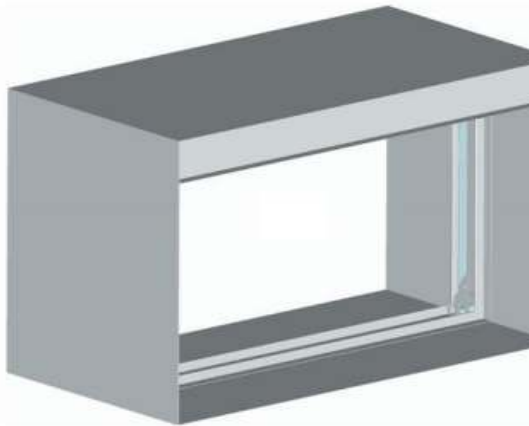
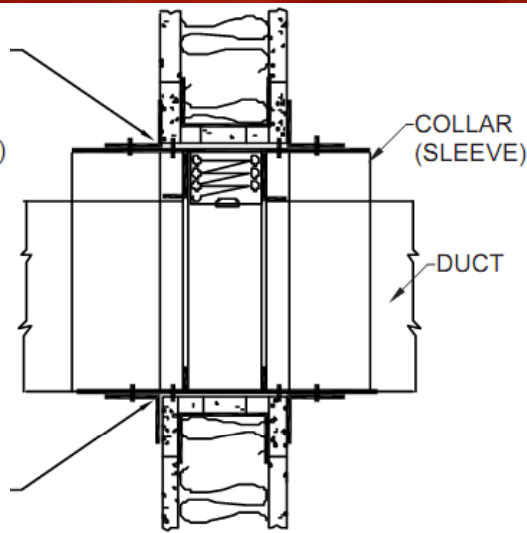
SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

TYPES OF FIRE DAMPERS

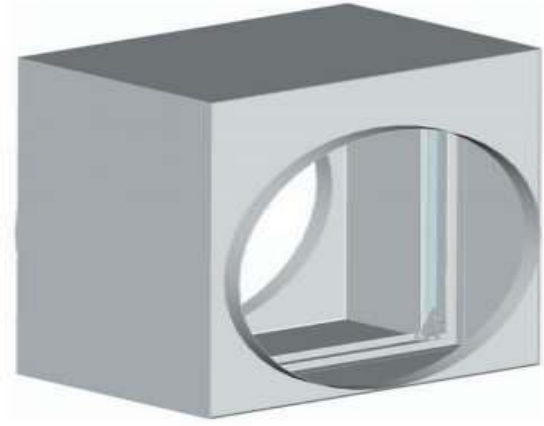
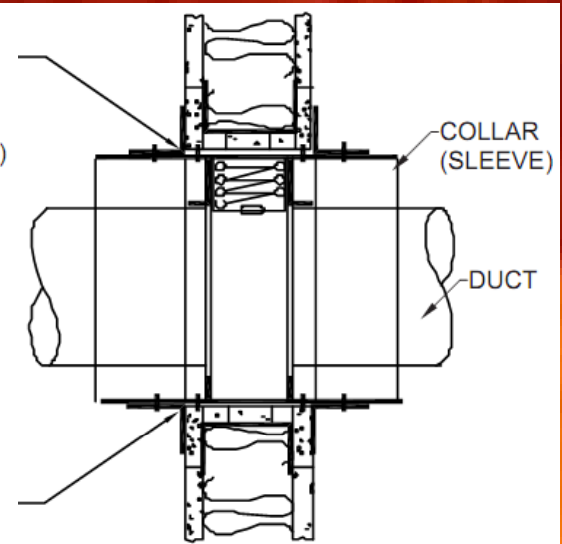
A



B



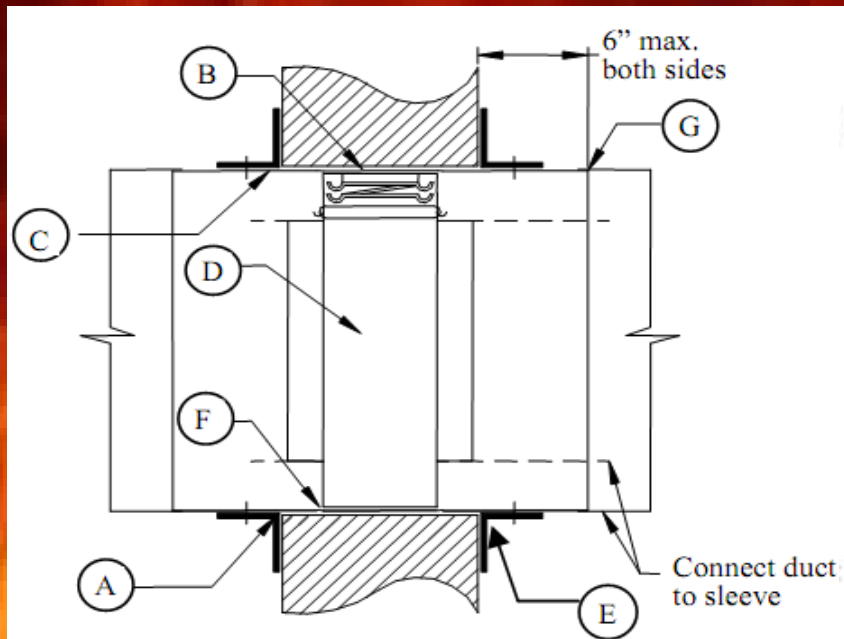
C



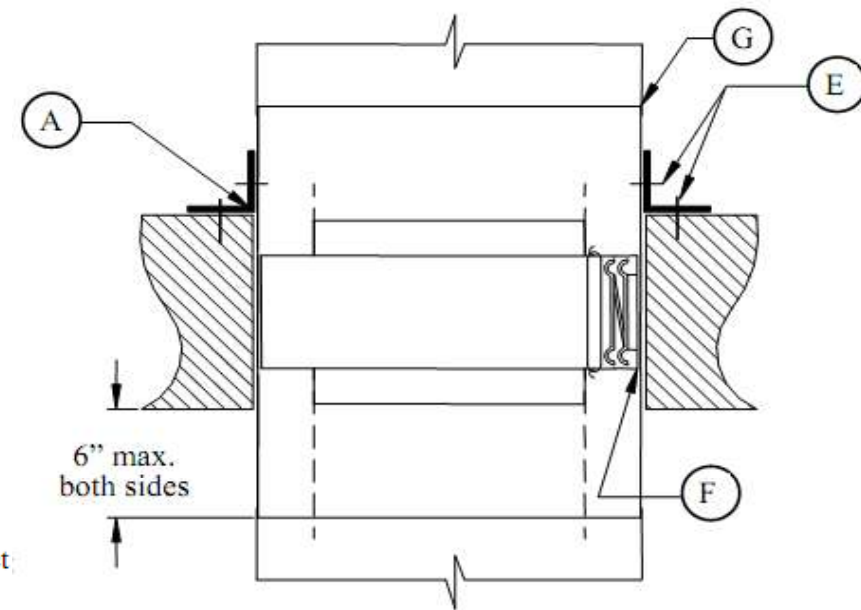
AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

INSTALLATION OF FIRE DAMPERS



Vertical/Horizontal Mount
2-sided mounting angles



Vertical/Horizontal Mount
1-sided mounting angle

- **A- Retaining angles**
- **B-Clearance: 1/8" per foot**
- **C- Steel sleeve**
- **D- Fire damper**
- **E- Secure angle**
- **F- Secure damper**
- **G- Connect duct to sleeve**

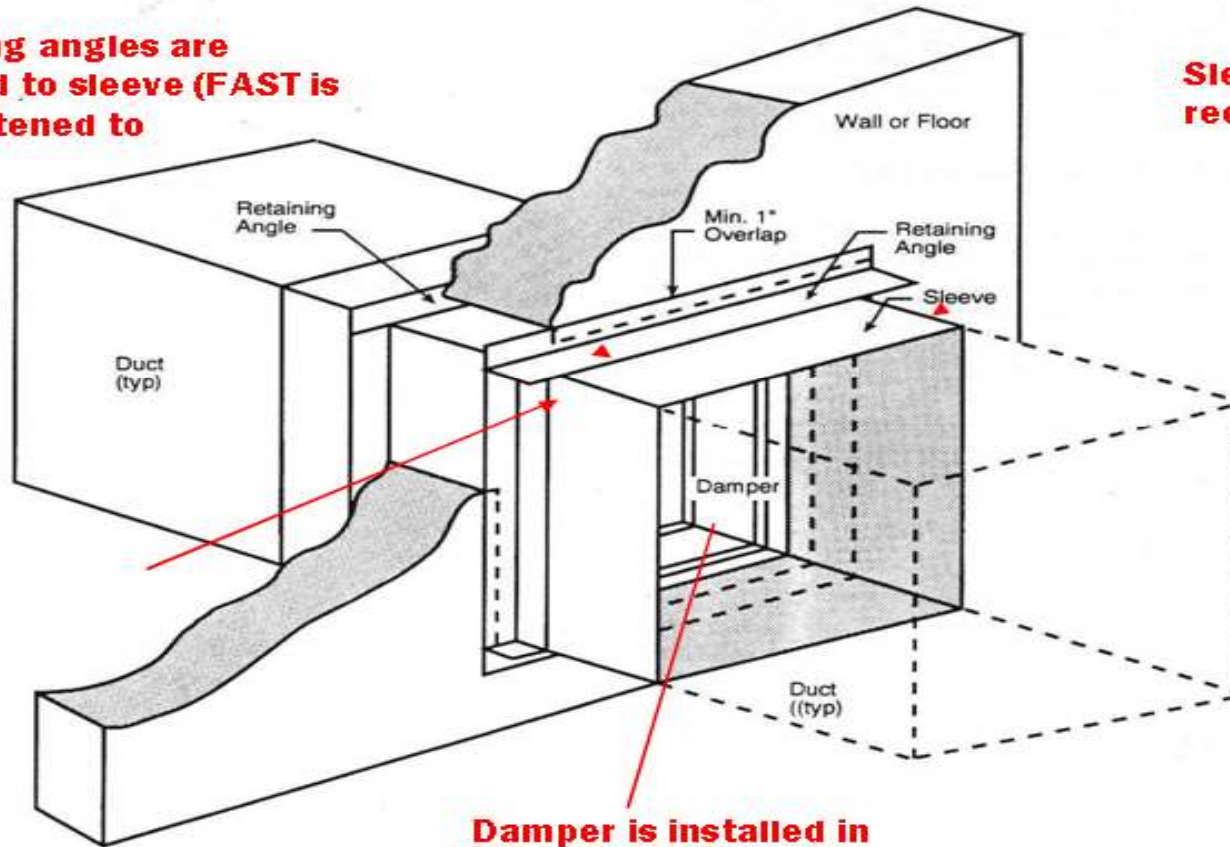
AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

Points to remember..

1. Fire Damper Installation.

Retaining angles are fastened to sleeve (FAST is also fastened to



Sleeve is required by UL

Breakaway connections attach ductwork to sleeve, ensure damper integrity if ductwork collapses

Damper is installed in plane of wall

UL Approved Installation

AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

• **Combination Fire & Smoke**

Dampers combines the smoke sealing capabilities of a standard smoke damper with the high temperature capability of a fire damper. These dampers are tested in accordance to UL555 and UL555S



AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

- **Electronic reset able Heat Sensors for automatic Fire/Smoke Dampers**

- **1.5 hr and 3 hr UL rated**

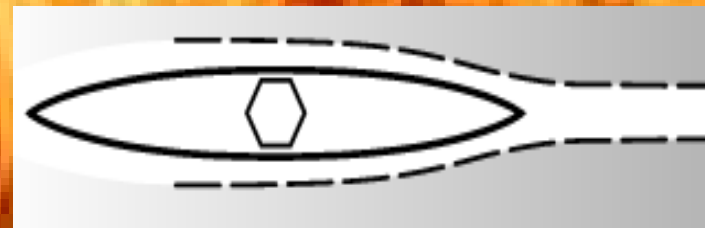
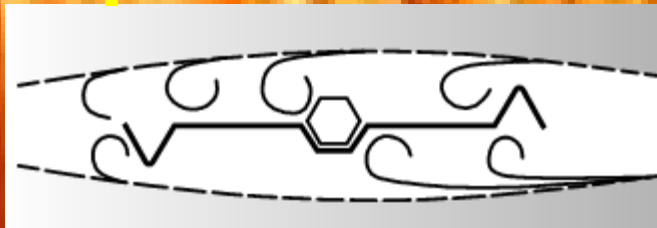
- **Optional Dual heat sensors (165F , 350F)**

- **Rated to 2,000 fpm and 4" w.g.**

- **UL Standard 555S identifies 2 leakage classes as follow:**

| Leakage Class | Maximum Leakage in CFM/Sq. Ft. | | |
|---------------|--------------------------------|----------|----------|
| | @1" w.g. | @4" w.g. | @8" w.g. |
| Class 1 | 4 | 8 | 11 |
| Class 2 | 10 | 20 | 28 |

- **Triple "V" and Airfoil blades**



AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

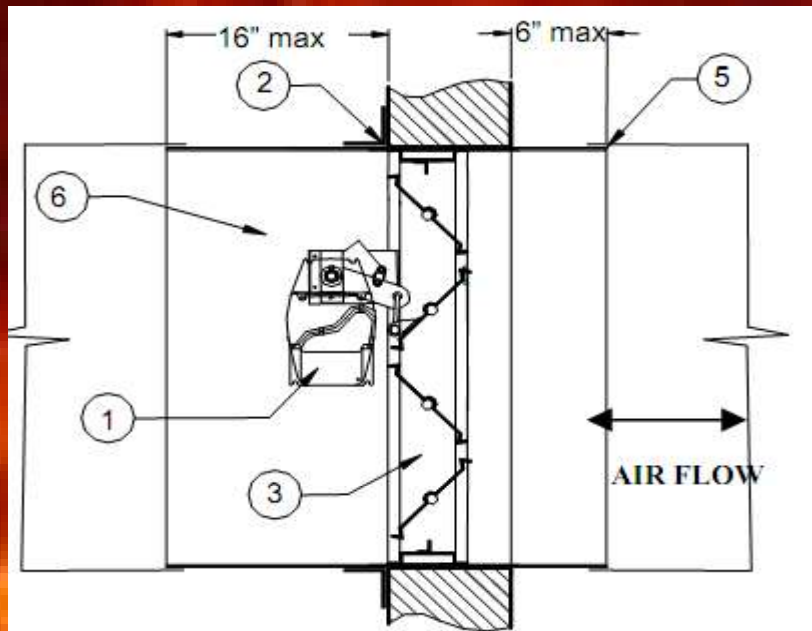


- **Heat sensor**
- **Motor**
- **Jackshaft**
- **Knee Lock**
- **Damper**
- **Sleeve**

AEROVAC

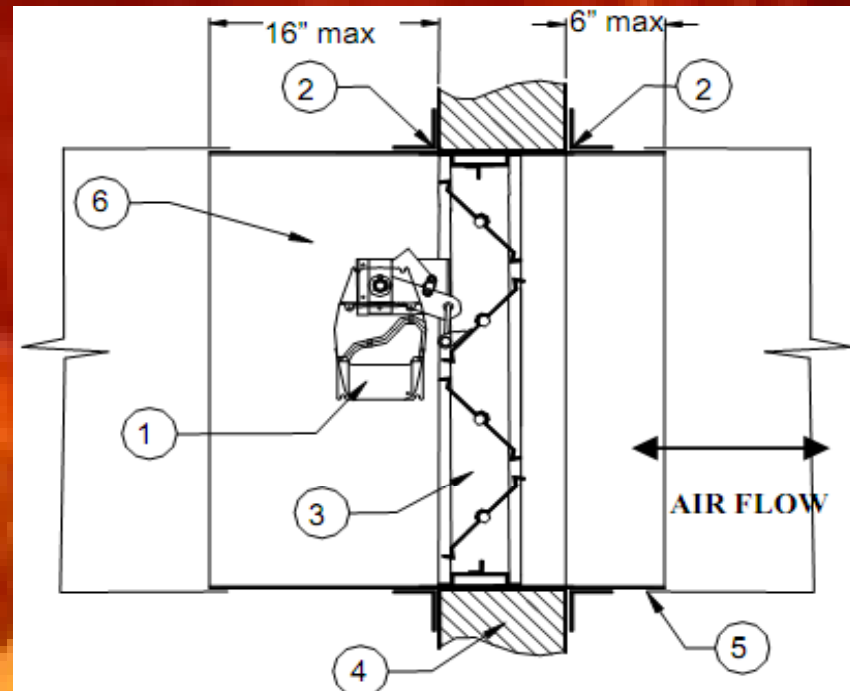
SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

INSTALLATION OF FIRE/SMOKE DAMPERS



One Angle Installation

Mounting angles may be installed on either side of wall



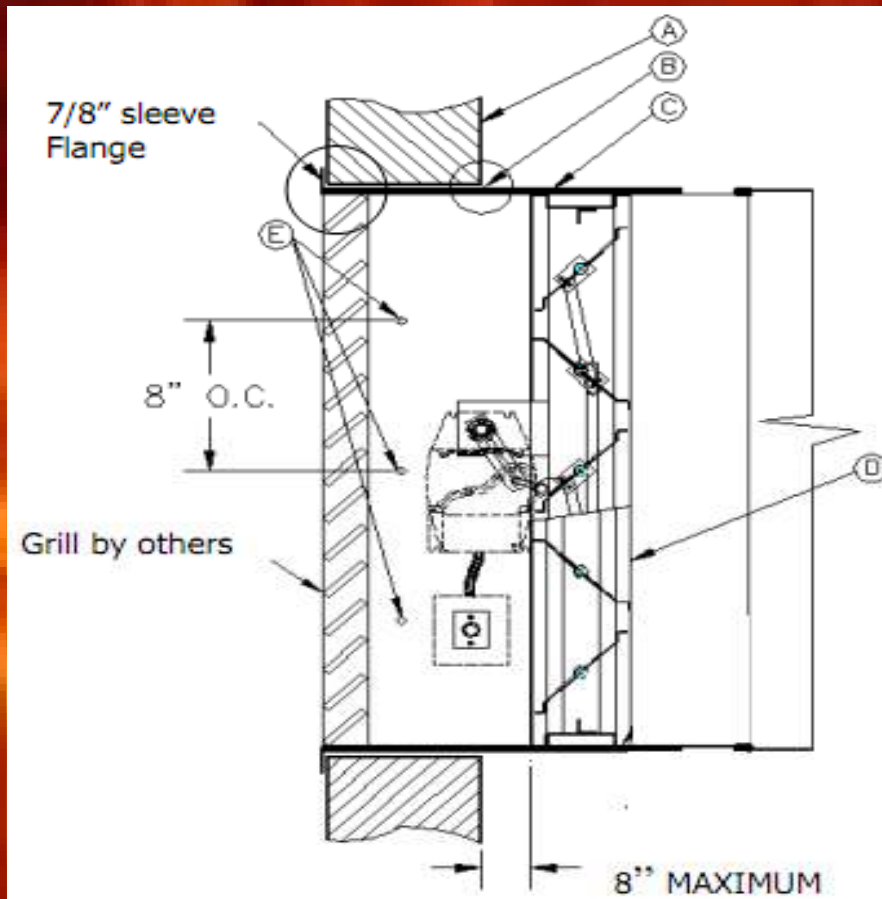
Two Angles Installation

- **1- Motor (internal or external)**
- **2- Retaining Angles**
- **3- Damper Unit**
- **4- Wall/Floor Opening**
- **5- Duct/Sleeve break-away**
- **6- Sleeve**
- **Air flow (bi-directional)**

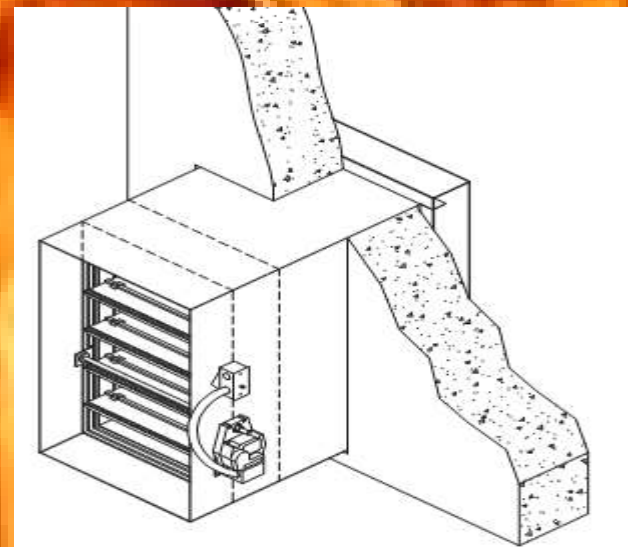
AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

INSTALLATION OF FIRE/SMOKE DAMPERS for out of the wall



- **A - Wall Opening**
- **B - Clearance: 1/8" per foot**
- **C - Sleeve**
- **D - Damper unit**
- **E - Secure damper**



AEROVAC

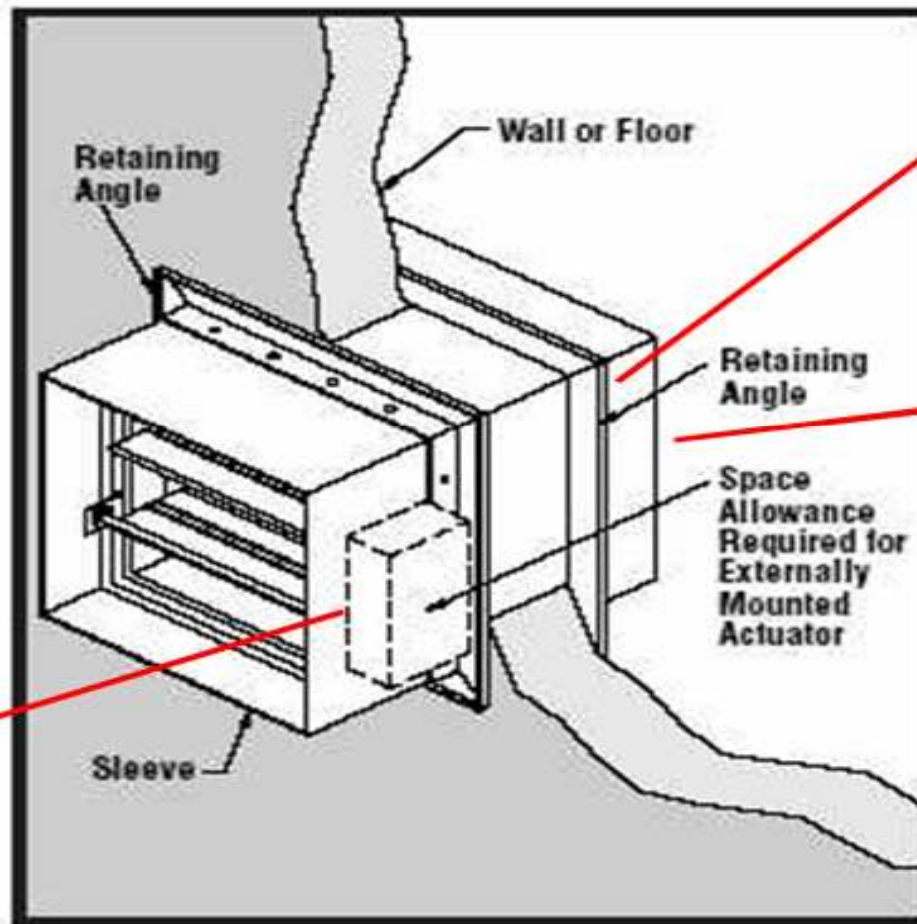
SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

Installation Of Fire/Smoke Damper

Leading edge of blade must be installed within the plane of the wall or floor

Sleeve is required by UL

Access to the actuator must be provided for testing & maintenance



Retaining angle is fastened to sleeve.

Duct to sleeve connections can be rigid or breakaway type

AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

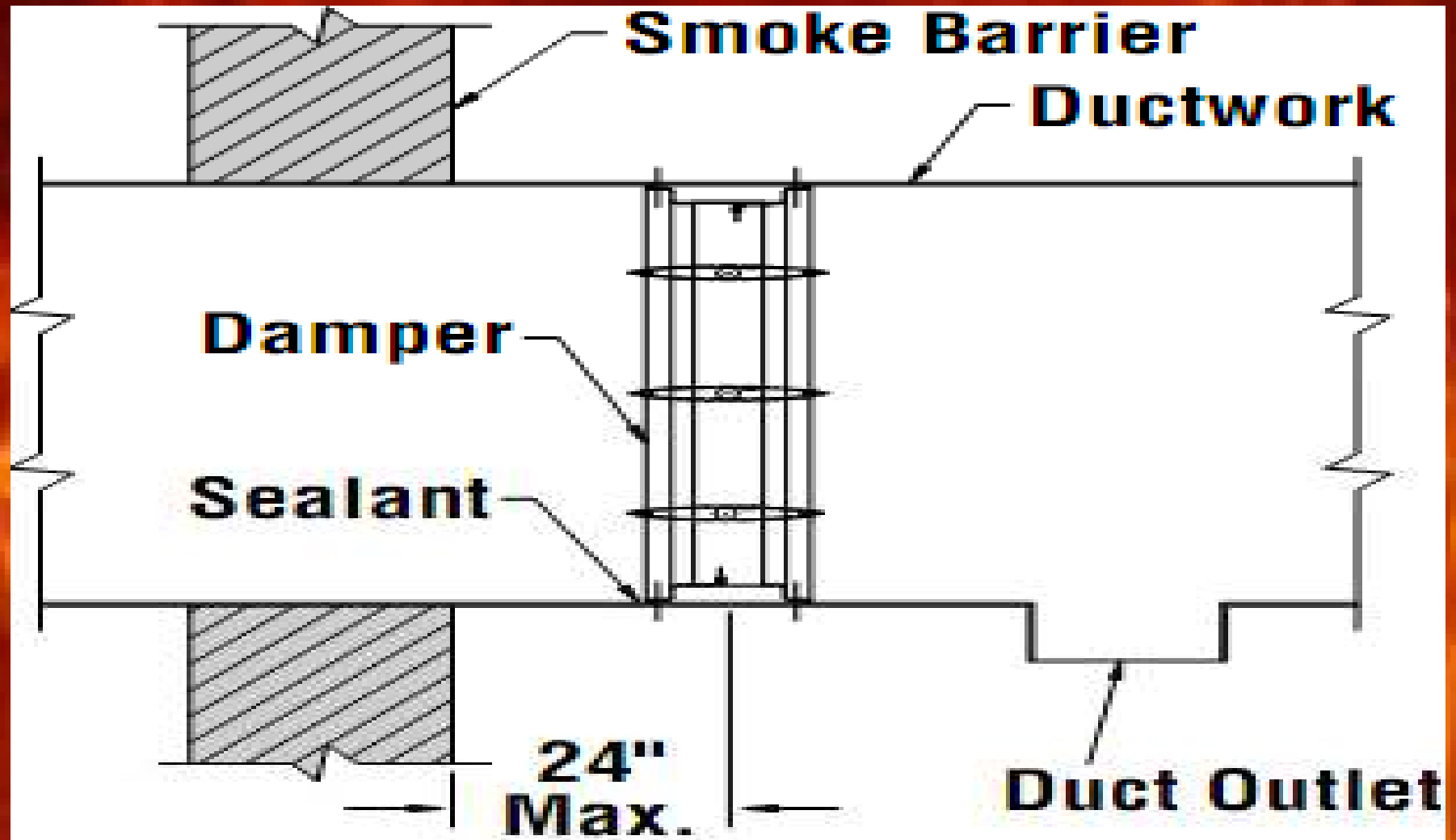
SMOKE DAMPERS

- **Smoke dampers are motorized with either an electric or pneumatic actuator. They are controlled by smoke or heat detector signal, fire alarm or some other building control system.**

AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

INSTALLATION OF SMOKE DAMPERS

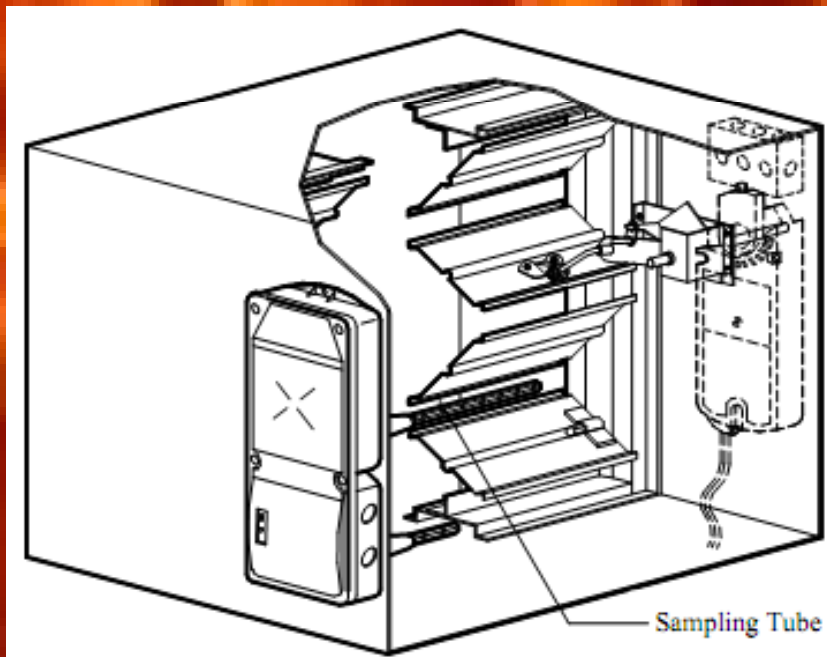


AEROVAC

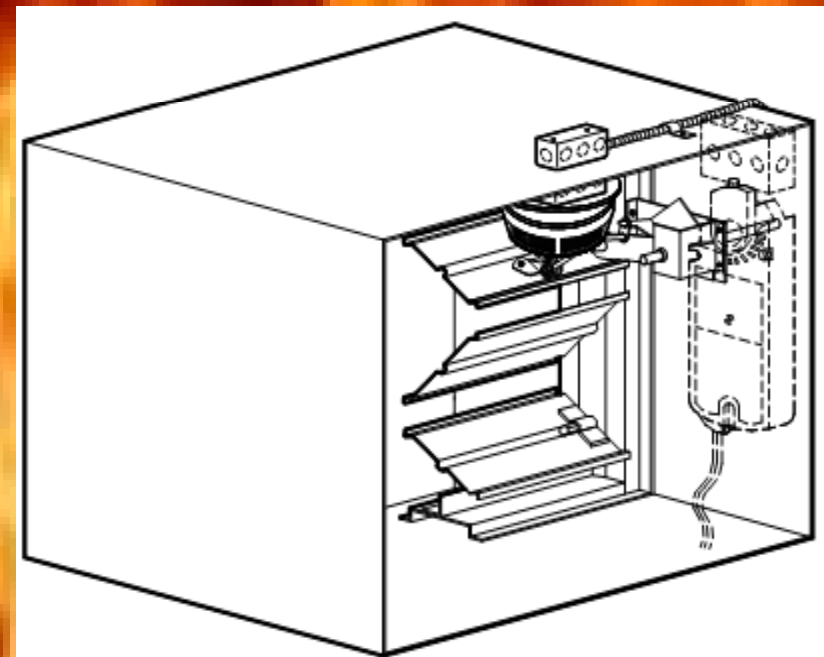
SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

TYPES OF SMOKE DETECTORS

Photoelectric low-flow



Photoelectric



AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

BREAK AWAY CONNECTIONS



PLAIN "S" SLIP



HEMMED "S" SLIP



DOUBLE "S" SLIP



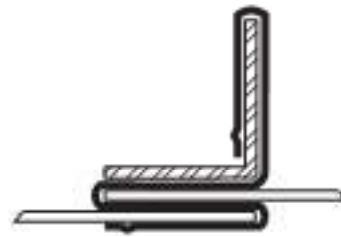
INSIDE SLIP JOINT



STANDING "S" SLIP



STANDING "S" SLIP
(ALT. BAR)



STANDING "S" SLIP
(ANGLE REINFORCED)



STANDING "S" SLIP
(BAR REINFORCED)

BREAK AWAY CONNECTION TEST

AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

Fire Endurance / Hose Test

- The damper is exposed to a prescribed and regulated fire for either 1-1/2 or 3 hours to determine hose the hourly classification of the damper assembly. Immediately after the fire exposure, the damper is hose down with a heavy stream of water. This provides an extreme shock to the damper ensuring it will withstand the severity of all fire conditions.



AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

UL TESTING-DONE IN NORTHBROOK- USA

AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

UL CERTIFICATION



ONLINE CERTIFICATIONS DIRECTORY

EMME.R25348 Dampers for Fire Barrier and Smoke Applications

Page Bottom

Dampers for Fire Barrier and Smoke Applications

See General Information for Dampers for Fire Barrier and Smoke Applications

PRIME AIR-CONDITIONING INDUSTRIES L L C
AL QUOZ INDUSTRIAL AREA-4
GATE NO 35
PO BOX 76345
DUBAI, UNITED ARAB EMIRATES

R25348

Fire Dampers for Use in Static Systems

| Model | Hr Class | Damper Mounting Position | Single Section Damper Size, in. | | Multiple Section Damper Size, in. | |
|---------------|----------|--------------------------|---------------------------------|----|-----------------------------------|---|
| | | | W | H | W | H |
| Aerovac FD-11 | 3 | V | 36 | 36 | — | — |

Fire Dampers for Use in Static Systems

| Model | Hr Class | Damper Mounting Position | Single Section Damper Size In. | | Multiple Section Damper Size In. | |
|----------|----------|--------------------------|--------------------------------|----|----------------------------------|----|
| | | | W | H | W | H |
| 150, 151 | 1-1/2 | V | 60 | 60 | 120 | 80 |
| | | H | 48 | 48 | 97 | 42 |
| 300 | 3 | V | 24 | 24 | 48 | 48 |
| | | V | 36 | 16 | — | — |
| | | H | 48 | 48 | 72 | 72 |
| 770 | 1-1/2 | H, V | 36 | 48 | 144 | 96 |
| 780 | 1-1/2 | H, V | 36 | 48 | 144 | 96 |

Fire Dampers for Use in Dynamic Systems

Dampers rated 2000 fpm / 4.0 in. WC:

| Model | Hr Class | Damper Mounting Position | Single Section Damper Size In. | | Multiple Section Damper Size In. | |
|-------|----------|--------------------------|--------------------------------|----|----------------------------------|---|
| | | | W | H | W | H |
| D-175 | 1-1/2 | H, V | 36 | 36 | — | — |

<http://database.ul.com/cgi-bin/XYV/template/LISEXT/IFRAME/showpage.html?name=E...> 4/12/2010

AEROVAC



| | | | | | | |
|---------|-------|------|----|----|---|---|
| D-175-3 | 3 | H, V | 36 | 36 | — | — |
| D-150 | 1-1/2 | V | 24 | 24 | — | — |
| D-300 | 3 | V | 24 | 24 | — | — |

Smoke Dampers

Dampers rated 2000 fpm / 4.0 in. WC:

| Model | Leakage Class | Damper Mounting Position | Single Section Damper Size In. | | | | Multiple Section Damper Size In. | |
|-------|---------------|--------------------------|--------------------------------|-----|-----|-----|----------------------------------|----|
| | | | W | | H | | W | H |
| | | | Min | Max | Min | Max | | |
| 621 | I-350 | H, V | 6 | 36 | 6 | 48 | 144 | 48 |
| 622 | II-350 | H, V | 6 | 36 | 6 | 48 | 144 | 48 |
| 661 | II-350 | H, V | 8 | 32 | 8 | 48 | — | — |
| 682 | II-350 | H, V | 8 | 32 | 8 | 48 | 128 | 48 |

Combination Fire and Smoke Dampers

Dampers rated 2000 fpm / 4.0 in. WC:

| Model | Hr Class | Leakage Class | Damper Mounting Position | Single Section Damper Size In. | | | | Multiple Section Damper Size In. | |
|--------|----------|---------------|--------------------------|--------------------------------|-----|-----|-----|----------------------------------|----|
| | | | | W | | H | | W | H |
| | | | | Min | Max | Min | Max | | |
| 771 | 1-1/2 | I-350 | H, V | 8 | 36 | 6 | 48 | 144 | 96 |
| | | II-350 | H, V | 6 | 36 | 6 | 48 | 144 | 96 |
| 771-OP | 1-1/2 | I-350 | V | 8 | 36 | 6 | 42 | 144 | 42 |
| 771-3 | 3 | I-350 | H, V | 8 | 36 | 6 | 36 | 144 | 36 |
| | | II-350 | H, V | 6 | 36 | 6 | 48 | 144 | 36 |
| 772 | 1-1/2 | II-250 | H, V | 8 | 36 | 6 | 48 | 144 | 96 |
| | | II-350 | H, V | 12 | 36 | 6 | 48 | 144 | 96 |
| 772M | 1-1/2 | II-350 | H, V | 8 | 36 | 6 | 48 | 144 | 48 |
| 772-OP | 1-1/2 | II-350 | V | 8 | 36 | 6 | 42 | 144 | 42 |
| 772-3 | 3 | II-250 | H, V | 8 | 36 | 6 | 36 | 144 | 36 |
| | | II-350 | H, V | 12 | 36 | 6 | 36 | 144 | 36 |
| 772-3M | 3 | II-350 | H, V | 8 | 36 | 6 | 36 | 144 | 36 |
| 781 | 1-1/2 | I-250 | V | 12 | 32 | 8 | 48 | 128 | 96 |
| | | I-250 | H | 12 | 32 | 8 | 36 | 128 | 96 |
| 781-3 | 3 | I-250 | V | 12 | 32 | 8 | 48 | 128 | 48 |
| | | I-250 | H | 12 | 32 | 8 | 36 | 128 | 48 |

<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=E...> 4/12/2010




DEPENDABLE PRODUCTS SINCE 1955

Dampers rated 2000 fpm / 4.0 in. WC:

| Model | Hr Class | Leakage Class | Damper Mounting Position | Single Section Damper Size In. | |
|-------|----------|---------------|--------------------------|--------------------------------|----|
| | | | | W | H |
| 471 | 1 | I-350 | V, H | 24 | 24 |
| 472 | 1 | II-250 | V, H | 24 | 24 |

The following Combination Fire and Smoke Dampers have been found suitable for volume control use:

Model 772M - Single section sizes up to 36 in. wide by 48 in. high; Model 772M-3 - Single section sizes up to 36 in. wide by 36 in. high.

Note: Only certain damper and operator combinations have been evaluated and found suitable for volume control use. As such, only dampers marked "Also Suitable For Use As Volume Control Damper" should be considered suitable for volume control applications.

Last Updated on 2010-03-25

[Questions?](#)

[Print this page](#)

[Notice of Disclaimer](#)

[Page Top](#)

Copyright © 2010 Underwriters Laboratories Inc.®

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Listed and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Designs and/or Listings (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from Underwriters Laboratories Inc." must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "Copyright © 2010 Underwriters Laboratories Inc.®"

An independent organization working for a safer world with integrity, precision and knowledge.



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=E...> 4/12/2010

AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955

BENEFITS OVER OTHER STANDARDS

Benefits

| UL | Other international standard |
|--|---|
| Two different standards UL 555, & UL 555S. | One standard for Fire, Smoke & passage of gases. |
| Only Smoke dampers also can be evaluated as per UL 555S. | Only Smoke dampers can not be evaluated as per this standard. |
| Latest standard is 2006 for UL 555 and UL555S | Latest standard is 1996 |
| Fire & Hose stream test done together. | Only Fire Endurance Test done. |
| Facility available for small size (36 x 36 in) to cover both horizontal & vertical in one shot | Horizontal dampers has to be tested separately that vertical mount dampers. |
| Dampers can be tested on both dry gypsum wall or masonry wall. | Does not talk of damper installation in dry wall construction |
| Fire test is followed by hose stream test. (Cooling, Erosion & Impact) | No hose stream test required. |

Benefits

| UL | Other international standard |
|---|--|
| Strict requirement of clearance during fire endurance and after hose stream test for acceptance. | No requirement for clearance as passing criteria. |
| After Cycling test on combination dampers is put in temp degradation for 30 min | No temp degradation test required. |
| Combination Fire & Smoke damper can be rated at different air velocities and pressure. | Range of air velocity & pressure not available. |
| To rate the damper for one velocity and pressure safety factor is included for testing and test is done at higher values. | No such safety factor. |
| Damper opening / closing time is also criteria of acceptance. | No such opening/closing time is criteria for acceptance. |

Thank You

Any questions?

AEROVAC

SAFE AIR
DOWCO
DEPENDABLE PRODUCTS SINCE 1955