

## FSDR25 COMBINATION FIRE SMOKE DAMPER

UL555 and UL555S Leakage Class 1 Classified  
FOR USE IN DYNAMIC AND STATIC SYSTEMS

### APPLICATION

The FSDR25 is a "true round" Class 1 leakage rated combination fire and smoke damper designed for use in metal, wood or concrete fire and smoke rated partitions and concrete floors. The FSDR25 is the ideal choice when round duct is used on a project. The damper is rated for maximum velocity of 3,000 fpm and 4" (102) static pressure. The integral frame and unique "cinch plate" design provide a low cost, easy to install, high performing damper.

### STANDARD CONSTRUCTION

#### FRAME/SLEEVE

20 gage (.9) galvanized steel, standard 17" (432) long.

Frame/sleeves available up to 36" (914) in length. See minimum sleeve length chart on page 2 for assistance in choosing correct frame/sleeve length.

#### BLADES

Two-piece 14 gage (1.9) equivalent thickness galvanized steel.

#### BEARINGS

Stainless steel sleeve, pressed into frame.

#### BLADE SEALS

Silicone edge type sandwiched between two piece blade. Full circumference smoke seal to 450°F (232°C).

#### LINKAGE

Jackshaft to blade.

#### AXLE

1/2" (13) diameter.

#### CONTROLLED CLOSURE DEVICE (HEAT-ACTUATED)

EFL (Electric Fuse Link) – 165°F (74°C) standard. 212°F (100°C), 250°F (121°C), or 350°F (177°C) are options.

PFL (Pneumatic Fuse Link) – 165°F (74°C) standard. 212°F (100°C) or 285°F (141°C) are options.

### DAMPER SIZES

#### MINIMUM SIZE

6" diameter (152).

#### MAXIMUM SIZE

Vertical / Horizontal Installation – 24" diameter (610).  
See page 2 for dimensional information.

### OPTIONS

- **FM Approvals** as Specification Tested Product.
- **TS150 FireStat** for reopenable operation in dynamic smoke management systems.
- **DSDF** Flow Duct Smoke Detector – Consult Ruskin.
- **SP100 Switch Package** to remotely indicate damper blade position.
- **Sleeve/Frame** of various lengths to insure field compliance with UL installation requirements.
- **Access Door** factory mounted in common sleeve to insure compliance with UL installation requirements.
- **MCP** control panels for test purposes or smoke management systems.
- **Insulation Stops** for connection to 1" (25) or 2" (51) double wall spiral duct.

### NOTES

1. Units furnished approximately 1/8" (3) smaller than given size.
2. Dimensions shown in parentheses ( ) indicate millimeters.

Model FSDR25 meets the requirements for fire, smoke and combination fire/smoke dampers established by:

- **National Fire Protection Association** NFPA Standards 90A, 92A, 92B and 101
- **ICC International Building Codes**
- **CSFM California State Fire Marshal** 3235-0245:0128  
Formerly: Fire Damper Listing 3225-0245:107 and Smoke Damper Listing 3230-0245:108
- **New York City** (BSA Listing #176-82-SM)

### UL CLASSIFIED

UL555 Listing R5531, UL555S Listing R5531



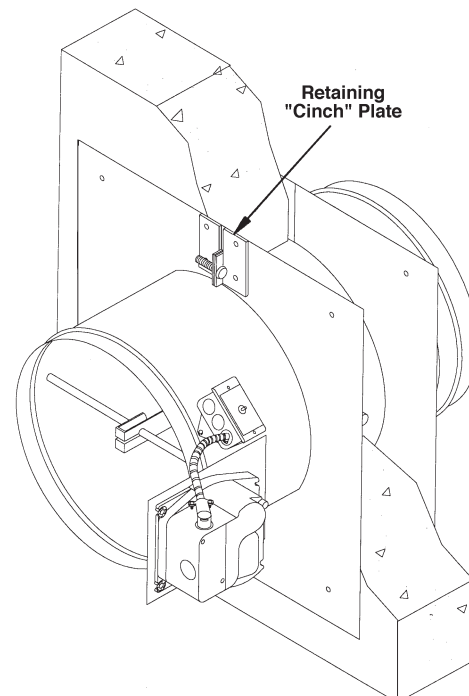
SEE COMPLETE  
MARKING  
ON PRODUCT

**FM Approvals**  
Specification Tested Product  
(Option)

### FEATURES

The FSDR25 offers:

- EFL (Electric Fuse Link) or PFL (Pneumatic Fuse Link) heat-actuated release devices permit controlled (rather than instantaneous) closure through the damper actuator. The EFL and PFL allow the damper to automatically reopen after a test, smoke detection or power failure condition.
- EFL is standard on dampers with electric actuators.
- PFL is standard on dampers with pneumatic actuators.
- EFL's may be ordered on dampers with pneumatic actuators but require an additional EP switch.

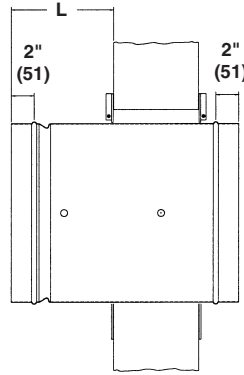


## DIMENSIONAL INFORMATION

### MINIMUM SLEEVE LENGTH

Wall/Floor Thickness	Min. Sleeve Length
4" (102)	17" (432)
5" (127)	17" (432)
6" (152)	20" (508)
7" (178)	20" (508)
8" (203)	20" (508)
9" (229)	22" (559)
10" (254)	22" (559)
11" (279)	23" (584)
12" (305)	24" (610)
Over 12" (305) Thru 24" (609)	Add 1" (25) for every inch of wall/floor depth

Note: 36" (914) maximum sleeve length.



The "L" dimension is the dimension the sleeve, on the actuator side of the damper, can extend beyond the wall or floor in a standard installation. The "L" dimension is designed to provide the installer with information to make installation easier. The table below provides a range for the "L" dimension.

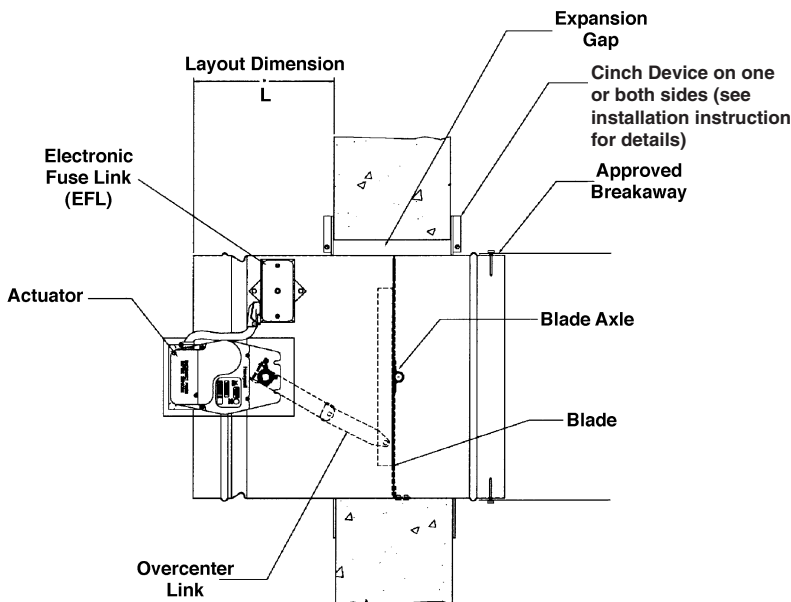
### "L" DIMENSIONS

	WALL THICKNESS						
	4" (102)	5" (127)	6" (152)	7" (178)	8" (203)	9" (229)	10" (254)
Minimum	8 1/4"	8 1/4"	8 1/4"	8 1/4"	8 1/4"	8 1/4"	8 1/4"
Standard	9"	9"	9"	9"	9"	9"	9"
Maximum	10"	10"	10"	10"	10"	10"	10"

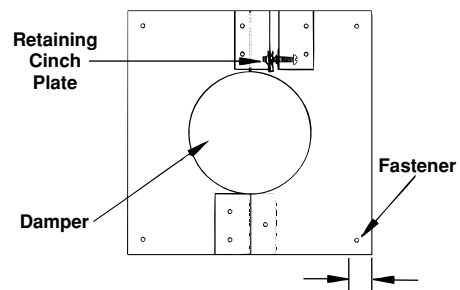
**NOTE:** The 2" (51) dimension is for duct connections. The "L" dimension includes the 2" (51) for duct connection.

## GENERAL INSTALLATION INFORMATION

### METAL/WOOD/MASONRY WALL OR CONCRETE FLOOR INSTALLATION

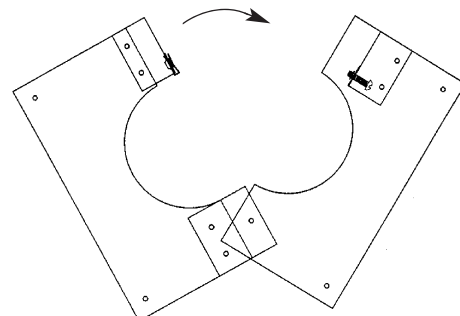


### RETAINING "CINCH" PLATE



**Note:**  
Diameter + 6"  
(152) = plate size

1/2" (13)  
Minimum Overlap  
of Wall/Floor  
Opening



A **square** opening in wood or metal stud walls or masonry walls and floors shall be a minimum of 1" (25) and a maximum of 2 1/2" (64) larger than the damper diameter. See wood stud and metal stud framing for fire dampers installation instructions supplement for complete framing details. A **round** opening in masonry walls or floors shall be a minimum of 1" (25) and a maximum of 2 1/2" (64) larger than the damper diameter.

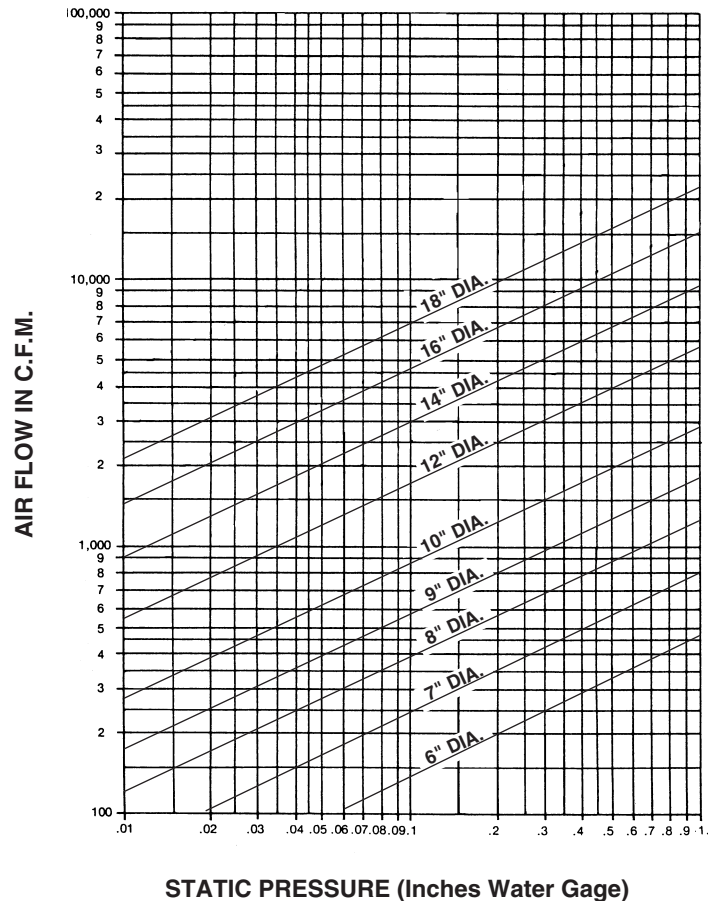
Factory supplied retaining "cinch" plates hold the damper within the wall opening. The plates must overlap the opening a minimum of 1/2" (13). The plate fits snugly around the integral sleeve. The plates are fastened directly to the wall or floor.

**REFER TO THE FSDR25 INSTALLATION INSTRUCTIONS FOR COMPLETE INSTALLATION DETAILS.**

## PERFORMANCE DATA

### To determine the pressure drop:

1. Select the damper size.
2. Determine the airflow in CFM.
3. The pressure drop is the point at which the horizontal, airflow line intersects the diagonal, damper size line. For example, a 12" (305) damper with an airflow of 2000 CFM will have a pressure drop of .15 inches w.g.



## SUGGESTED SPECIFICATION

Furnish and install at locations shown on plans, or as described in schedules, round combination fire/smoke dampers meeting or exceeding the following specifications. Frames shall be a minimum of 20 (.9) gage galvanized steel and the blade shall be two piece, equivalent to 14 (1.9) gage minimum galvanized. Bearings shall be stainless steel sleeve turning in an extruded hole in the frame. (Galvanized bearings shall not be acceptable). Blade seals shall be silicone edge designed to withstand 450°F (232°C) mechanically fastened and fully encompassing blade edge. Damper must have an integral 20 (.9) gage sleeve and 20 (.9) gage retaining plate for damper mounting. Square to round transitions are unacceptable.

Each combination fire/smoke damper shall be classified for use for fire resistance ratings of less than 3 hours, in accordance with UL standard 555, and shall further be classified by Underwriters Laboratories as a Smoke Damper for use in smoke control systems in accordance with the latest version of UL555S, and bear a UL label attesting to the same. The leakage rating under UL555S shall be leakage Class 1 (8 cfm/sq. ft. at 4" w.g.).

In addition to the leakage ratings already specified herein, the dampers and their actuators shall be qualified under UL555S to an elevated temperature of 250°F (121°C) or 350°F (177°C) depending upon the actuator. Appropriate electric/pneumatic actuators (**specifier select one**) shall be installed by the damper manufacturer at time of damper fabrication. Electric actuators shall be rated for energized hold open position periods of 6 months or more. Damper and actuator shall be supplied as a single entity which meets all applicable UL555 and UL555S qualifications for both dampers and actuators.

Each combination fire/smoke damper shall be equipped with a "controlled closure" quick detect heat-actuated release device to prevent duct and HVAC component damage. Instantaneous damper closure is unacceptable.

Dampers shall be Ruskin model FSDR25.

(Consult Ruskin for detailed CSI *MasterFormat* Specification.)

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