

Reference: Client:  
 Project: Consultant:  
 Location: Contractor:  
 Date: Submitted by:



Manufacturing Excellence

**Model FDD-MB-AF**  
 Multi-Blade Dynamic Fire Damper  
 Airfoil Blade,  
 1-1/2 or 3 Hour, UL555 Classified

**Application:**

The CVS-SAFE4 model FDD-MB-AF is a multi-blade fire damper with airfoil style blades for decreased pressure drop. The FDD-MB-AF is used to prevent the spread of fire through a penetration in a fire rated barrier made by an HVAC duct or transfer. The FDD-MB-AF can be installed vertically (with blades running horizontally) or horizontally. The FDD-MB-AF is intended to be installed in dynamic systems (fans stay on in a fire) and also can be installed in static systems (fans shut off in a fire).

**MAXIMUM VELOCITY:** 2000 fpm (10.2 m/s)

**MAXIMUM PRESSURE:** 4" wg (1 kPa)

**Standard Construction:**

	Standard	Optional
<b>Frame Material</b>	20 Gauge (1) Galvanized Roll-Formed Steel hat section w/ staked corners for integral bracing	-----
<b>Blade Material and Type</b>	Airfoil-shaped, double skin galvanized steel mechanically fastened to form equivalent to 16 gauge steel	16 Gauge (1.6) "3V" Galvanized Roll-Formed Steel (see Model FDD-MB-3V)
<b>Blade Sizes</b>	Min. width of 5" (127) to max. width of 7" (178)	-----
<b>Frame Depth</b>	5" (127)	-----
<b>Dimensions</b>	Actual - 1/4" (6)	Actual
<b>Axle Bearings</b>	Bronze Oilite (press fit into frame)	-----
<b>Axle Material</b>	Square, Plated Steel	-----
<b>Linkage</b>	.125" (3.2) plated steel, Concealed in Frame	-----
<b>Sleeve</b>	-----	Wide variety of gauges and lengths available
<b>Heat Responsive Device</b>	UL Listed Fusible Link 165°F (74°C)	UL Listed Fusible Link 212°F (100°C)
<b>UL Hour Rating</b>	1-1/2 Hour	3 Hour

**Minimum & Maximum Sizes:**

Multi-Blade Model	Minimum Size		Max. Single Section		Max. Multi-Section	
	1.5 Hour	3 Hour	1.5 Hour	3 Hour	1.5 Hour	3 Hour
FDD-MB-AF (Vertical)	8x8 (203x203)		36x48 (914x1219)		108x96** (2743x2438)	72x96** (1829x2438)
FDD-MB-AF (Horizontal)					N/A	72x96** (1829x2438)

All dimensions shown in inches, parentheses ( ) indicate millimeters.

\*\*Requires the use of actuators on all multiple section units.

**Other Options:**

- 3V Blades (see Model FDD-MB-3V)
- Out-of-Wall Models (see Model FDD-OW)
- True Round Models

Consult CVS for Other Special Requirements.

1 As part of our continuous improvement program, we reserve the right to make further improvements without notice.



**LISTINGS:**

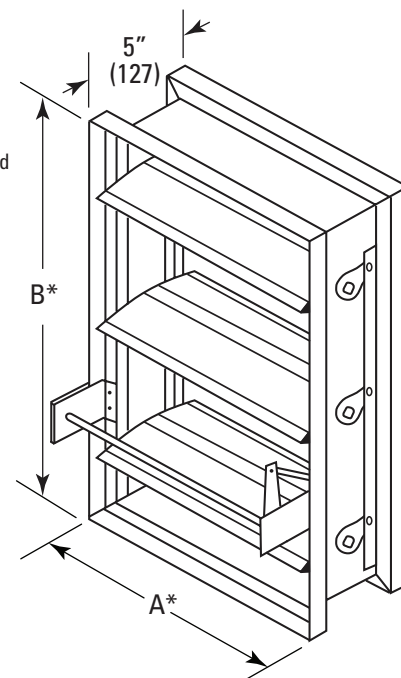
UL 555 Listing: R27700

**STANDARDS MET:**

NFPA Standards: 80, 90A, 92A, 92B and 101

Building Code Standard:

ICC International Building Code



\* Width [A dimension] and Height [B dimension] are approximately 1/4" (6) undercut.

**Optional Construction:**

**Factory Installed External Sleeve**

Gauge: 20 (1.0) 18 (1.2) 16 (1.5) 14 (2.0) 10 (3.5)

Length: \_\_\_\_\_ (16" (406) min. if actuator is req.)

**Flanged sleeve (requires factory installed external sleeve)**

3/4" (19) 1" (25)

**Framed Retaining Angles:** 16ga. x 1-1/2" x 1-1/2" (1.5 x 38 x 38)

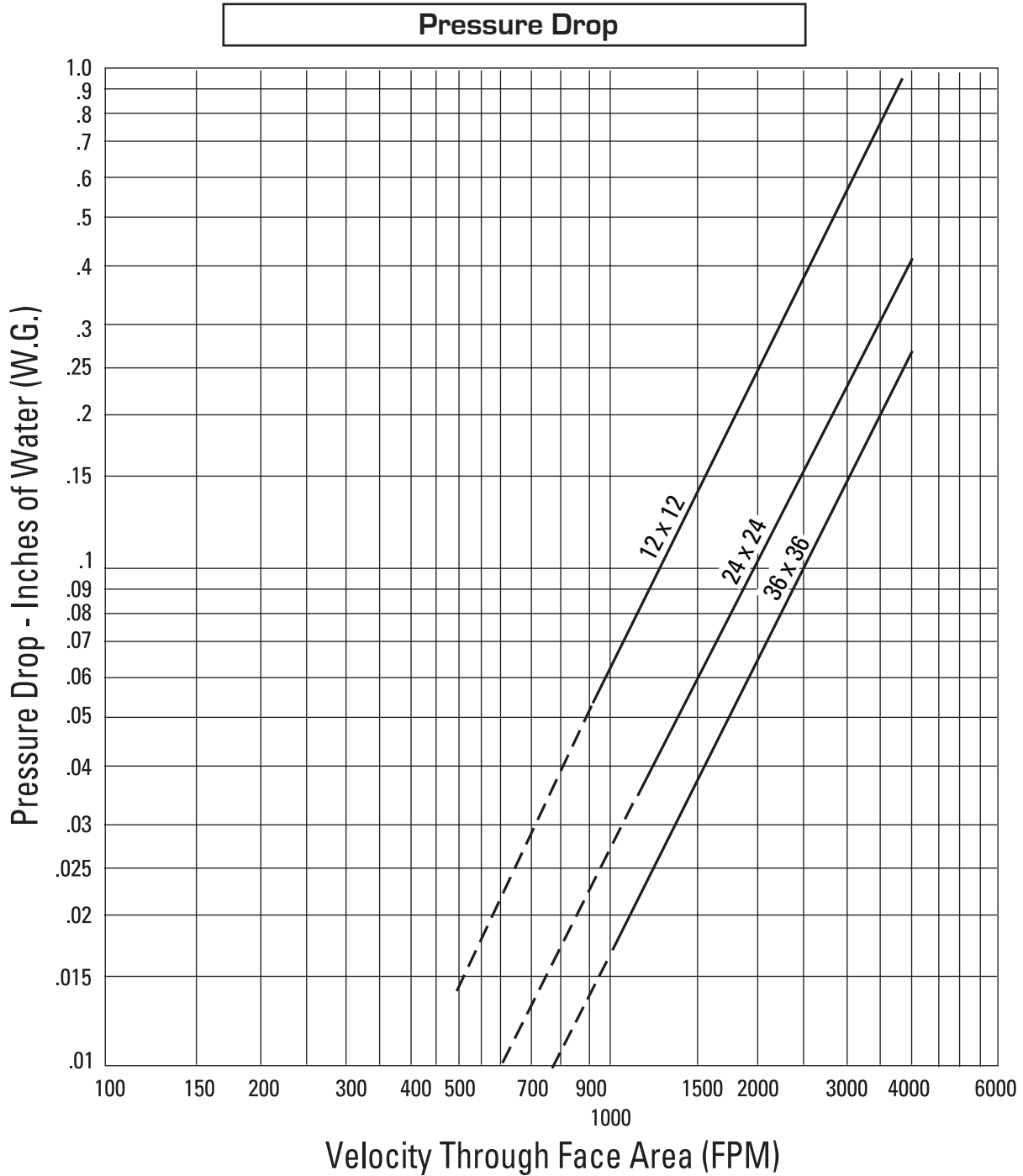
Single Side Dual Side

**Side Plate (Insert Type)**

**Actuators - Applicable for FDD-MB-AF (M) Models (Required for multiple section sizes)**

Voltage: 24V 120V 230V Pneumatic

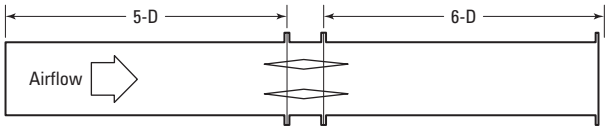
Submittal



- To determine pressure drop:**
1. Locate the applicable face velocity on the bottom of the chart.
  2. Move up the chart to the most appropriate size damper line.
  3. From the intersection point, move left to determine the pressure drop.

**AMCA Figure 5.3 - Ducted Inlet and Outlet**

Pressure drop testing was performed by an independent laboratory to the AMCA Standard 500-D, Fig. 5.3 (ductwork upstream and downstream).



**Sleeve Requirements:**

Standard suggested sleeve depth is 16" (406), which is appropriate for use with up to a 6" deep (152) wall/floor and 2-sided mounting angle installation. (See Detail to the right)

When wall/floor thickness exceeds 6" (152), **add 1" (25) for each additional inch of wall/floor thickness** to ensure sleeve fully penetrates the wall/floor. Each additional 1" (25) added will be added to the non-actuator side.

**The damper may be installed/rotated 180° as long as the blades run horizontally.** The top of the damper is either side of the frame as long as the blades are running horizontally.

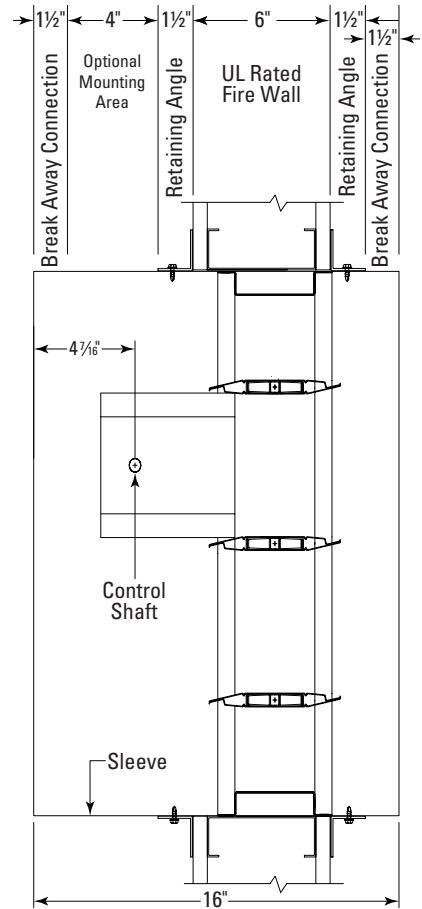
**Damper is not approved for installation with the blades running vertically.**

**The entire damper frame does not have to be installed in the plane of the wall/floor.**

The requirement is that the blade closure line (the center line of the 5" (127) damper frame) must be within the plane of the fire-rated wall/floor.

**Typical Sleeve Lengths**

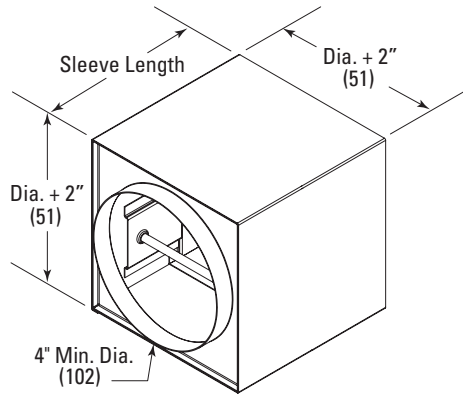
Wall Thickness	Min. Sleeve Length
6 (152)	16 (406)
8 (203)	18 (457)
12 (305)	22 (559)
16 (406)	24 (610)



Sleeve Detail for Factory Mounted Sleeve

**Duct Connections/Sleeve Transitions**

**FDD-MB-AF**

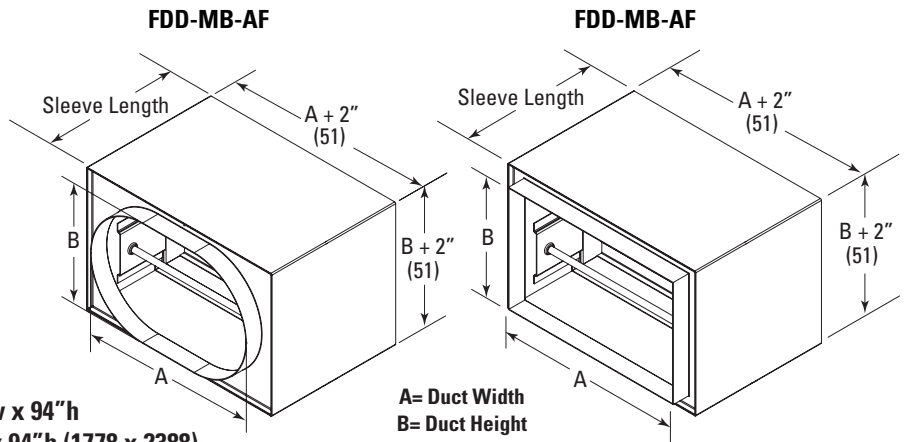


Square to Round transitions attached on both ends of the damper sleeve. Product is ordered on duct Diameter; damper will be fabricated 2" (51) larger in width and height. Collar extends 1.25" (32) beyond the sleeve length.

- **Minimum 6" (152) diameter, Maximum 94" (2388) diameter for Vertical and Horizontal 1.5 hour, 46" (1168) diameter for Vertical 3 hour, and 34" (864) for Horizontal mount 3 hour.**

Rectangular to Oval or Square/Rectangular to Square/Rectangular transitions attached on both ends of the damper sleeve. Product is ordered on width and height of duct connection required; damper will be fabricated 2" (51) larger in width and height. Collar extends 1.25" (32) beyond the sleeve length.

- **Minimum 6" w x 6" h (152 x 152), Maximum 106" w x 94" h (2692 x 2388) for Vertical 1.5 hour and max. 70" w x 94" h (1778 x 2388) for Vertical and Horizontal mount for 3 hour.**



A= Duct Width  
B= Duct Height