

### Application

Model FSD-311V is a vertical blade Class I leakage rated combination fire smoke damper. High strength airfoil blades ensure the lowest resistance to airflow in HVAC systems with velocities to 4,000 fpm (20.3 m/s) and 4 in. wg (1 kPa).

### Ratings

#### UL 555 Fire Resistance Rating

Fire Rating: 1½ hours

Dynamic Closure Rating: Actual ratings are size dependent

Velocity: Up to 4000 fpm (20.3 m/s)

Pressure: Up to 4 in. wg (1 kPa)

#### UL 555S Leakage Rating

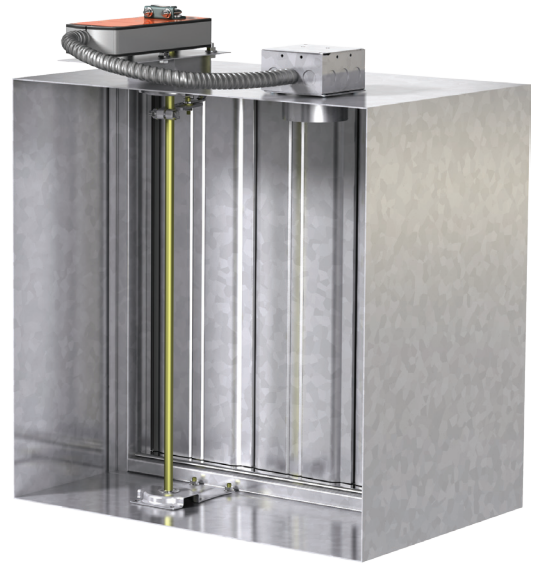
Leakage Class: I

Operational Rating: Actual ratings are size dependent

Velocity: Up to 4000 fpm (20.3 m/s)

Pressure: Up to 4 in. wg (1 kPa)

Temperature: Up to 350°F (177°C) - depending upon the actuator



\*W& H dimensions furnished approximately ¼ in. (6 mm) undersize. Add sleeve thickness for overall sleeved damper dimension.



See complete marking on product.

UL 555 & 555S Classification  
R13317

CAN/ULC S112.1

### Construction

	Standard	Optional
Frame Material	Galvanized steel	-
Frame Material Thickness	16 ga. (1.5 mm)	-
Frame Type	5 in. x 1 in. (127 mm x 25 mm) hat channel	-
Blade Action	Opposed	-
Blade Material	Galvanized steel	-
Blade Material Thickness	14 ga. (2 mm) equivalent	-
Blade Type	Airfoil	-
Linkage	Plated steel out of airstream, concealed in jamb	-
Axle Bearings	316SS	-
Axle Material	Plated steel	-
Blade Seals	Silicone	-
Jamb Seals	Stainless Steel	-
Closure Device	RRL	RRL/OCI, TOR
Closure Temperature	165°F (74°C)	212°F (100°C), 250°F (121°C) 350°F (177°C)

Model FSD-311V meets the requirements for fire dampers, smoke dampers and combination fire smoke dampers established by:

#### National Fire Protection Association

NFPA Standards 80, 90A, 92, 101 & 105

#### IBC International Building Codes

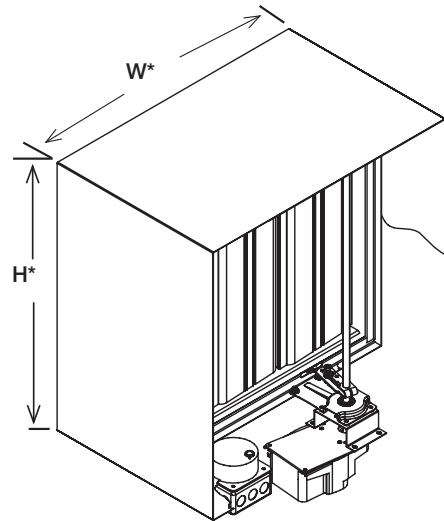
W & H	Minimum Size	Maximum Size	
		Single Section	Multiple Sections
<b>2000 fpm (10.2 m/s)</b>			
Inches	6 x 8	50 x 32	100 x 32
mm	152 x 203	1270 x 813	2540 x 813
<b>4000 fpm (20.3 m/s)</b>			
Inches	6 x 8	50 x 32	-
mm	152 x 203	1270 x 813	-

#### Note:

The frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. (432mm) wide to give more free area.

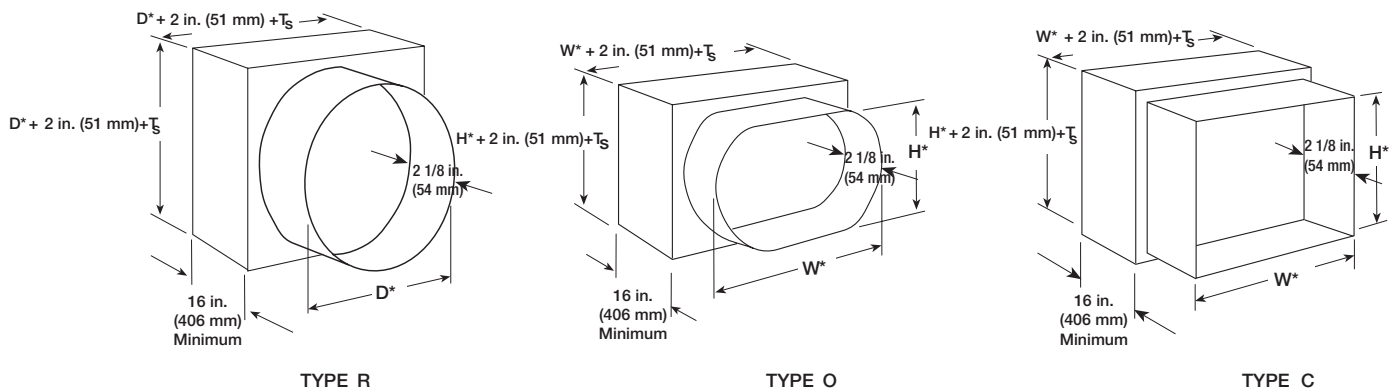
## Options and Accessories

- Breakaway connections
- Clean wrap
- Greenheck test switches (GTS)
- Grille tabs
- Momentary switches
- Retaining angles
- RRL/OCI
- Security bars
- Sealed transitions and sleeve
- Smoke detectors
- TOR
- Transitions: C, O, R



## Transitioned Damper Dimensions

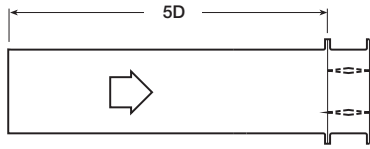
When a combination fire smoke damper is being used in conjunction with round and oval ductwork, the FSD-311V can be supplied in a factory sleeve with round or oval transitions on both ends of the sleeve. Dampers should be ordered to the duct dimensions.



\* These dimensions are furnished approximately 1/4 in. (6mm) undersize, except round and oval dimensions which are approximately 1/8 in. (3mm) undersize.

# Pressure Drop

AMCA Figure 5.2



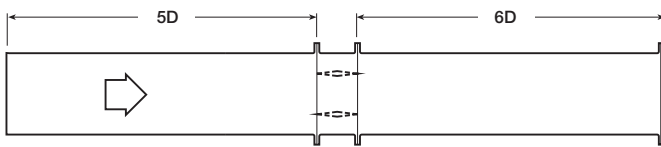
12 in. x 12 in. (305 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.11
1500	0.24
2000	0.42
2500	0.66
3000	0.95
3500	1.30
4000	1.70

24 in. x 24 in. (610 mm x 610 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.06
1500	0.12
2000	0.22
2500	0.34
3000	0.49
3500	0.67
4000	0.87

AMCA Figure 5.3



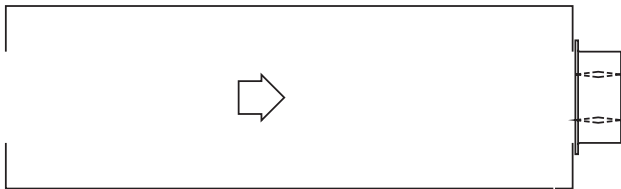
12 in. x 12 in. (305 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.06
1500	0.13
2000	0.23
2500	0.37
3000	0.53
3500	0.73
4000	0.95

24 in. x 24 in. (610 mm x 610 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.06
2000	0.10
2500	0.16
3000	0.23
3500	0.32
4000	0.42

AMCA Figure 5.5



12 in. x 12 in. (305 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.04
1000	0.18
1500	0.42
2000	0.75
2500	1.17
3000	1.68
3500	2.29
4000	2.09

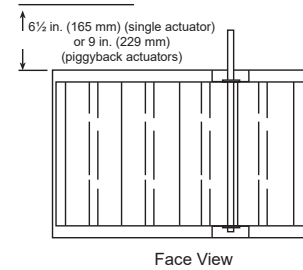
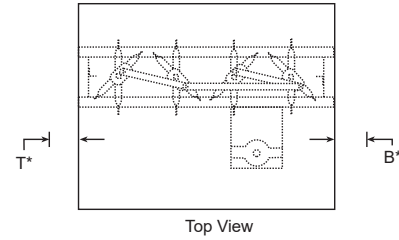
24 in. x 24 in. (610 mm x 610 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.13
1500	0.29
2000	0.52
2500	0.81
3000	1.17
3500	1.60
4000	2.14

# Space Envelopes

Externally mounted actuators always require space outside of the damper sleeve. The “S” dimension illustrates the clearance required for various available actuators.

Worst case space envelopes shown below. Exact dimensions may vary based on specific damper configuration. Consult factory for specific space envelope if necessary.

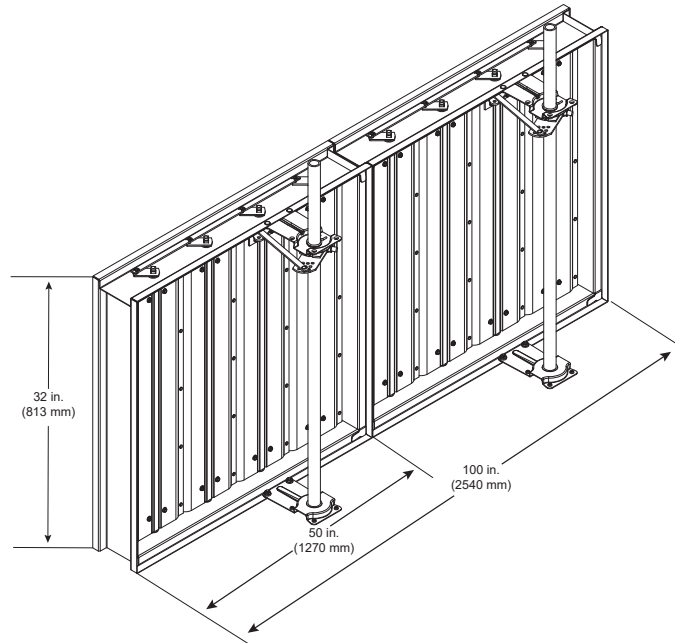


Actuator Type/Model	B*	T*	S	
	With RRL, RRL/OCI, or TOR	With RRL, RRL/OCI, or TOR	Piggyback	
			No	Yes
Belimo				
FSAFB24-SR (-S)	1 1/2 in (38 mm)	9 1/4 in. (235 mm)	6 in. (152 mm)	9 in. (229 mm)
FSLF series	8 in. (203 mm)	1 1/2 in (38 mm)	6 1/2 in. (165 mm)	NA
FSNF series	1 1/2 in (38 mm)	9 1/4 in. (235 mm)	6 in. (152 mm)	9 in. (229 mm)
FSTF Series	8 in. (203 mm)	1 1/2 in (38 mm)	6 1/2 in. (165 mm)	NA
Siemens				
GJD Series	7 in. (178 mm)	1 1/2 in (38 mm)	6 1/2 in. (165 mm)	NA
GRD Series	1 1/2 in (38 mm)	7 1/2 in (191 mm)	6 1/2 in. (165 mm)	NA
GXVD Series	1 1/2 in (38 mm)	9 1/4 in. (235 mm)	6 in. (152 mm)	9 in. (229 mm)
Honeywell				
MS4103, MS8103 Series	8 3/4 in. (222 mm)	1 1/2 in (38 mm)	6 1/2 in. (165 mm)	NA
MS4104, MS4604, MS8104 Series	1 1/2 in (38 mm)	8 1/2 in (216 mm)	6 1/2 in. (165 mm)	NA
MS4109, MS4609, MS8109 Series	1 1/2 in (38 mm)	8 1/2 in (216 mm)	6 1/2 in. (165 mm)	NA
MS4120, MS4620, MS8120 Series	1 1/2 in (38 mm)	9 1/2 in. (241 mm)	6 in. (152 mm)	9 in. (229 mm)

\* For dampers 18 in. (457 mm) or more in width these dimensions are 0 in.

## Multiple Section Dampers

Dampers larger than maximum single section size are supplied as a factory assembly of two or more sections of equal size. The following figures show maximum damper section size and assembly configurations for multi-section dampers.



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