

ACTUATOR REQUIREMENTS

- UL555S requires that all smoke dampers have factory mounted actuators in order to bear the UL label.
- Smoke dampers larger than single section may require multiple actuators. See "Smoke Damper Multiple Section Detail" spec sheet for details.
- Ruskin's smoke dampers are UL555S labeled with either electric

or pneumatic actuators mounted internal (in air stream) or external (out of air stream).

- Smoke dampers utilizing multiple actuators must have all actuators field wired to a common point for simultaneous closure. All field wiring shall be in accordance with applicable codes, ordinances and regulations.

SLEEVE TRANSITION DIMENSIONAL INFORMATION

DUCT TRANSITION CONNECTIONS

SD50 dampers may be supplied with Round, Oval and Rectangular duct connections.

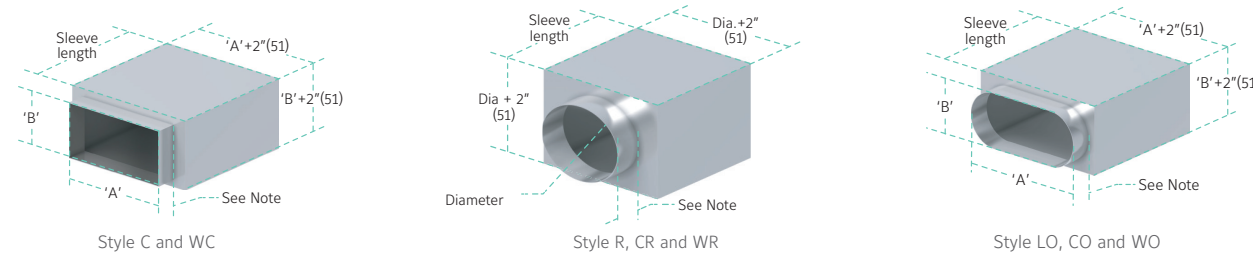
Style	Description
CR	Round Sealed (Medium Pressure)
WR	Round Welded (High Pressure)
C	Rectangular Sealed (Low and Medium Pressure)
WC	Rectangular Welded (High Pressure)
CO	Oval Sealed (Medium Pressure)
WO	Oval Welded (High Pressure)

MINIMUM and MAXIMUM SIZES

Round Transitions
 Minimum – 4" (102) diameter
 Maximum – 94" (2388) diameter
Rectangular and Oval Transitions
 Minimum – 6"w x 4"h (152 x 102)
 Maximum – 142" x 94" (3607 x 2388)
 Consult Ruskin for other available styles and sizes.

NOTES

For medium pressure units (Styles CR, C and CO) the collar extends 1 1/2" (38) beyond the sleeve length and for low pressure and high pressure units (Styles R, WR, WC and LO) the collar extends 2 1/2" (64) beyond the sleeve length.



SUGGESTED SPECIFICATION

Smoke dampers meeting or exceeding the following specifications shall be furnished and installed at locations shown on plans or as described in schedules. Product is AMCA Certified and shall be classified as Smoke Dampers in accordance with the latest version of UL555S. The leakage rating under UL555S shall be Leakage Class 1. Smoke dampers shall be produced in an ISO 9001 certified factory and warranted to be free from defects in material and workmanship for a period of 5 years after date of shipment.

Damper frame shall be 5" x 1" x .125" (minimum thickness) (127 x 25 x 3.2) 6063T6 extruded aluminum hat channel with hat mounting flanges on both sides of the frame. Each corner shall be reinforced with two die formed internal braces and machine staked for maximum rigidity.

Blades shall be airfoil type extruded aluminum (maximum 6" [152] depth) with integral structural reinforcing tube running full length of each blade. Blade edge seals shall be silicone extruded double edge design with

inflatable pocket which enables air pressure from either direction to assist in blade to blade seal off. Adhesive or clipon type blade seals are not acceptable. Jamb seals shall be stainless steel compression type. Bearings shall be stainless steel, permanently lubricated sleeve type.

Smoke dampers and their actuators shall be qualified in accordance with UL555S to an elevated temperature of 250°F (121°C). Appropriate electric or pneumatic actuators (specifier select one) shall be installed by the damper manufacturer at time of damper fabrication. Electric actuators, factory installed on dampers, shall have been tested for prolonged periods of holding (minimum 1 year with no evidence of reduced spring return performance). Each damper shall be rated for leakage and airflow in either direction through the damper. In addition to the leakage ratings already specified, the dampers shall be AMCA licensed for Air Performance.

Smoke dampers shall be Ruskin model SD50.



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SD50 Aluminum Airfoil Blade Smoke Damper UL555S Leakage Class I Classified



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APPLICATION

The SD50 is an ultra low leakage rated smoke damper used in ducts that penetrate smoke rated barriers. One-piece extruded aluminum airfoil blades insure lowest resistance to airflow with velocities up to 4000 fpm (20.3 m/s) and 8 in w.g. (2 kPa). The SD50 may be installed vertically (with blades running horizontal) or horizontally and is rated for airflow and leakage in either direction.

STANDARD CONSTRUCTION

Description	SD50
Frame	5" x 1" (127 x 25) 6063T5 extruded aluminum, hat shaped channel, .125" (3) minimum wall thickness.
Blades	One-piece 6063T5 extruded aluminum, airfoil shape, 6" (152) wide. Blades are approximately 6" (152) on center.
Bearings	Stainless steel sleeve type, pressed into frame.
Jamb Seals	Silicone edge type for smoke seal to 450°F (232°C) mechanically fastened to the blade edge.
Linkage	Concealed in frame.



UL555S Classification
R5531

DAMPER SIZES

Sizes listed below are for ratings of 2000 fpm (10.2 m/s) and 4 in. wg (1 kPa). See page 4 for extended operational ratings.

MINIMUM SIZE

8" w x 6" h (203 x 152).

MAXIMUM SIZE

Single Section
48" w x 72" h (1219 x 1829).
Multiple Section*
144" w x 96" h (3658 x 2438), 288" w x 48" h (7315 x 1219) or 72" w x 192" h (1829 x 4877).

*Multiple section assemblies consist of 36" x 48" (914 x 1219) max single section sizes.

NOTES

- Dampers furnished approximately 1/4" (6) smaller than given opening dimensions.
- Dimensions shown in () indicate millimeters.

MAXIMUM OPERATIONAL RATINGS

Description	SD50
UL555S Leakage Rating	Class I
Maximum Velocity	4000 FPM (20.3 m/s)
Maximum Pressure	8 in. wg. (2kPa)
Jamb Seals	250°F (121°C)

OPTIONS

- DTS-SD (Damper Test Switch) test switch for cycle testing.
- SP100 Switch Package to allow remote indication damper of damper blade position.
- Factory Sleeves of various lengths and thicknesses to ensure field compliance with UL installation requirements..

AMCA LICENSED PERFORMANCE DATA

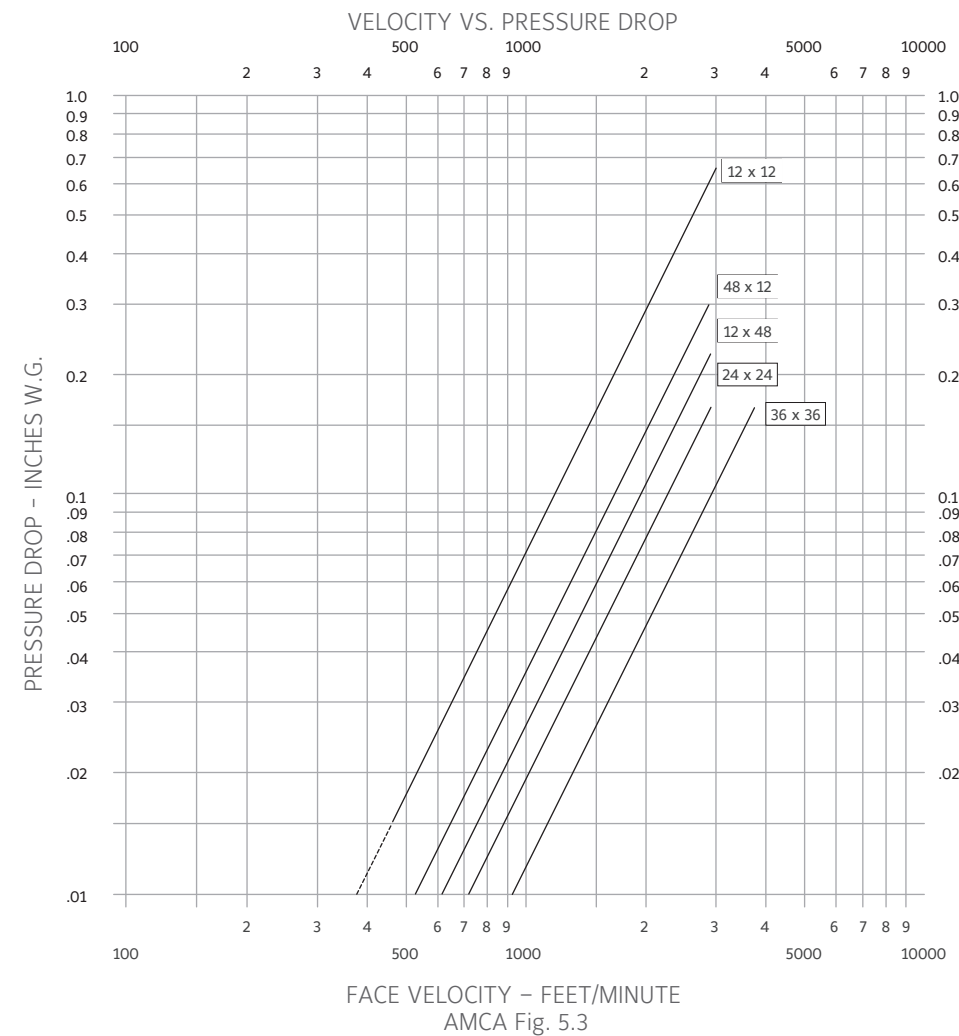


Ruskin Titus Gulf certifies that the SD50 shown hereon is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings seal applies to air performance for the SD50.

Pressure Drop Data SD50 air performance testing is performed in accordance with AMCA Standard 500-D configuration 5.3. All data are corrected to standard air density of .075 lb/ft³ (1.201 kg/m³).

To determine the AMCA Licensed air performance:

Locate the applicable feet per minute face velocity on the bottom of the velocity vs. pressure drop chart below. Move up the chart to the most appropriate size damper line. From the intersection point, move left to determine the pressure drop on the left side of the chart. For other damper sizes refer to Air Performance Data For All Smoke Dampers spec sheet.



EXTENDED OPERATIONAL RATINGS

EXTENDED RATINGS FOR FAIL CLOSE

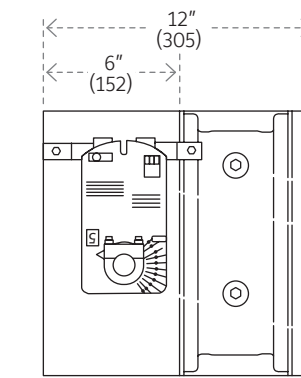
Size	Static Pressure	Temperature
2,000 FPM (10.2 m/s)		
144" x 96" (3658 x 2438) 288" x 48" (7315 x 1219) 72" x 192" (1829 x 4877)	4" (102) w.g. (1 kPa)	250°F (121°C)
180" x 64" (4572 x 1625) 360" x 32" (9144 x 813) 90" x 128" (2286 x 3251)	6" (152) w.g. (1.5 kPa)	250°F (121°C)
48" x 48" (1219 x 1219) 96" x 24" (2438 x 610) 24" x 96" (610 x 2438)	8" (203) w.g. (2 kPa)	250°F (121°C)
3,000 FPM (15.2 m/s)		
64" x 72" (1625 x 1829) 128" x 36" (3251 x 914)	4" (102) w.g. (1 kPa)	250°F (121°C)
64" x 64" (1625 x 1625) 128" x 32" (3251 x 813)	4" (102) w.g. (1 kPa)	250°F (121°C)
180" x 64" (4572 x 1625) 360" x 32" (9144 x 813) 90" x 128" (2286 x 3251)	6" (152) w.g. (1.5 kPa)	250°F (121°C)
48" x 48" (1219 x 1219) 96" x 24" (2438 x 610) 24" x 96" (610 x 2438)	8" (203) w.g. (2 kPa)	250°F (121°C)
4,000 FPM (20.3 m/s)		
48" x 48" (1219 x 1219) 96" x 24" (2438 x 610) 24" x 96" (610 x 2438)	8" (203) w.g. (2 kPa)	250°F (121°C)

The UL555S Test Standard requires all smoke dampers to prove their operation (Close to Open and Open to Close) against heated air flow with minimum temperature of 250°F (121°C), minimum velocity of 2,000 feet per minute (10.2 m/s) and minimum static pressure of 4 inches of water (1 kPa). UL555S extended ratings allow the temperature to be increased at 100°F (37.8°C), 2 inches of water (0.5 kPa) and 1000 feet per minute (5.1 m/s) increments. The SD50 smoke damper exceeds the minimum UL555S requirements on selected sizes. See chart for sizes and ratings. Consult Ruskin for the appropriate actuator model and quantities.

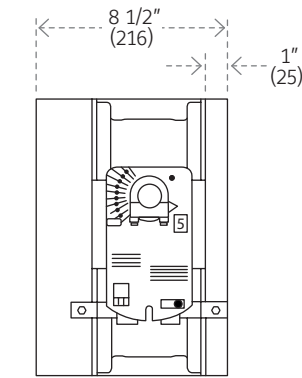
EXTENDED RATINGS FOR FAIL OPEN

Size	Static Pressure	Temperature
2,000 FPM (10.2 m/s) Fail Open Operation		
72" x 96" (1829 x 2438) 144" x 48" (3658 x 1219) 36" x 192" (914 x 4877)	4" (102) w.g. (1 kPa)	250°F (121°C)
3,000 FPM (15.2 m/s)		
72" x 64" (1892 x 1625) 144" x 32" (3658 x 813) 36" x 128" (914 x 3251)	4" (102) w.g. (1 kPa)	250°F (121°C)
4,000 FPM (20.3 m/s)		
48" x 48" (1219 x 1219) 96" x 24" (2438 x 610) 24" x 96" (610 x 2438)	8" (203) w.g. (2 kPa)	250°F (121°C)

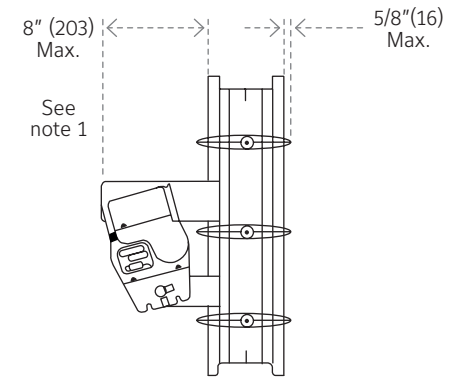
TYPICAL ACTUATOR MOUNTING



Multiple Section with Side Plate



Single Section with Side Plate



Typical Internal Mount

NOTES

- 8" (203) actuator depth shown varies upon the damper height and actuator selection.
- External mount actuators may extend above or below the damper height.