RUSKIN®

3900 Dr. Greaves Rd. • Kansas City, MO 64030 • (816) 761-7476 • FAX (816) 765-8955

SD102 SMOKE DAMPER

UL555S Classified

Model SD102 smoke damper fulfills requirements for smoke dampers per building codes and engineered smoke control systems. The SD102 is a UL555S Leakage Class II classified damper and is designed for fan isolation applications. The SD102 stops the passage of smoke into the supply system by isolating fans in systems where pressures exceed 4" w.g.

STANDARD CONSTRUCTION

FRAME
10" x 2" x 12 gage (254 x 51 x 2.8) steel channel.

BLADES
7 3/4" (197) wide, .080 (2.1) thick, 6063T5 extruded aluminum airfoil blade. Parallel action is standard; opposed is optional.

LINKAGE
Side linkage out of airstream; 3/16" x 3/4" (4.8 x 19) plated steel tie bars. 3/8" (9.5) diameter stainless steel pivot pins with lock-type retainers. 10 gage (3.5) galvanized steel clevis-type arms.

AXLES
3/4" (19) diameter plated steel, D shape.

BEARINGS
Stainless steel sleeve pressed into frame.

SEALS
Blade edge is silicone rubber. Jamb is stainless steel, flexible metal compression type.

FINISH
Mill.

MOUNTING
Vertical or horizontal.

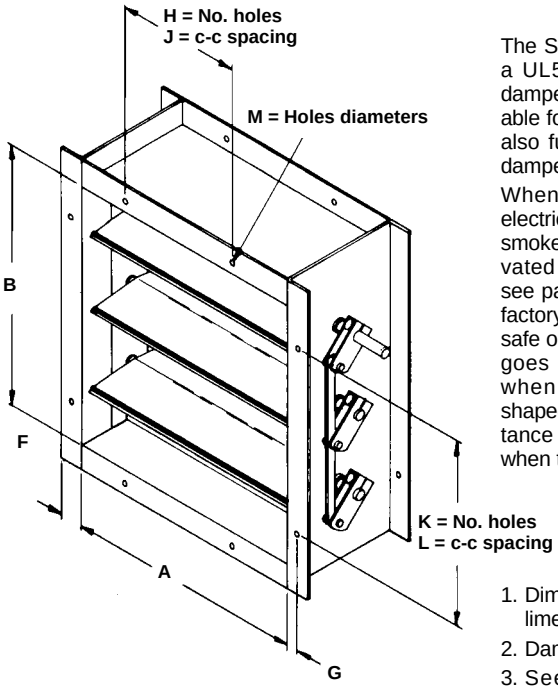
MINIMUM DAMPER SIZE
Single blade damper – 12"w x 6"h (305 x 152).
Multiple blade damper – 24"w x 14"h (610 x 356).

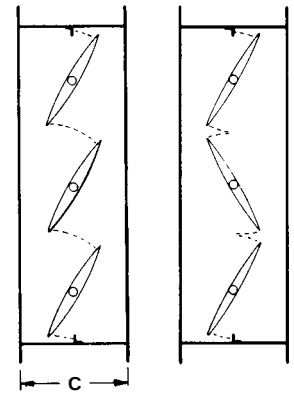
MAXIMUM UL CLASSIFIED SIZE
Single section – 36"w x 48"h (914 x 1219).
Maximum width of multiple assembled sections – 144" x 48" (3658 x 1219)..

VARIATIONS

The SD102 can be furnished with variations to meet special requirements. These variations, available at additional cost, include:

- Bolt holes in flanges
- Nonstandard flanges (1 1/2" to 3" [38 to 76])





FEATURES

The SD102 qualifies and is classified as a UL555S **Leakage Class II** smoke damper, the lowest leakage class applicable for HVAC smoke control systems. It also fulfills the requirements for smoke dampers per NFPA90A and NFPA92A.

When equipped with the appropriate electric or pneumatic actuator, the entire smoke damper assembly qualifies to elevated temperatures of 250°F (121°C) see page 3. In addition, the SD102, with factory furnished actuator, provides fail-safe operation (the damper automatically goes to the desired fail-safe position when fire interrupts power). Airfoil-shaped blades provide the lowest resistance to airflow (lowest pressure drop) when the damper is in the open position.

NOTES

1. Dimensions shown in ( ) indicate millimeters.
2. Dampers furnished actual size.
3. See manufacturer's installation instructions for complete installation details.

QTY.	BLADE ACTION (P OR O)	DIMENSIONS										ACTUATOR	VARIATIONS
		A	B	C	F	G	H	J	K	L	M		

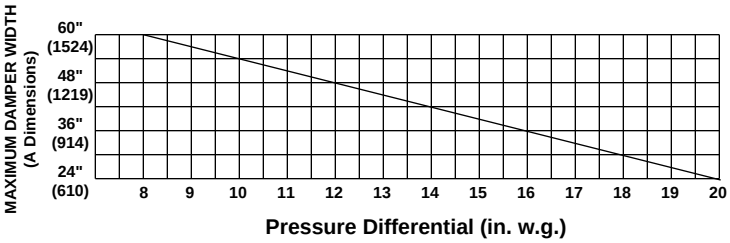
JOB **LOCATION:**

CONTRACTOR

 ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.

PERFORMANCE DATA

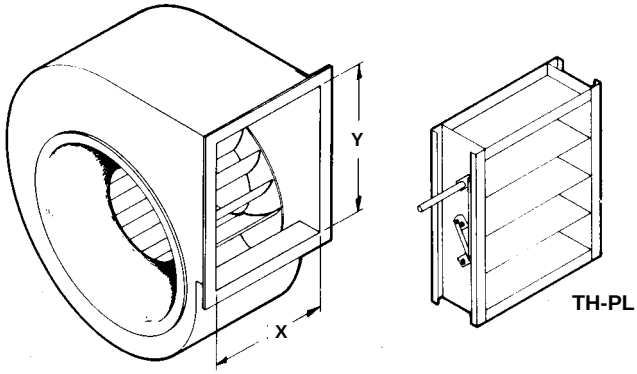
SD102 PRESSURE LIMITATIONS



Note that SD102s are not recommended for use in abrasive atmospheres due to the aluminum blade construction. Consult your Ruskin representative for a listing of Ruskin models suited to abrasive environments.

The SD102 fan outlet damper can be mounted in any position for fan discharge (see below). Ideal for medium to heavy duty commercial or industrial applications and high velocity systems.

The graph shows the maximum allowable pressure differentials across a closed SD102 damper. Dampers with a 60" (1524) width (A dimension) can withstand 8 in. w.g. Dampers with smaller widths (A dimension) can withstand higher pressures. For example, a 48" (1219) A dimension damper can withstand a maximum of 12 in. w.g. and a 36" (914) A dimension damper can withstand a maximum of 16 in. w.g.



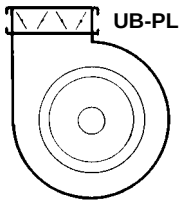
DISCHARGE POSITIONS

The SD102 can be constructed for any of the several discharge position installations shown.

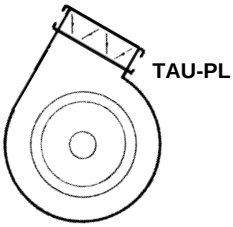
The illustration at left shows a top horizontal discharge position with blades parallel to the fan shaft (TH-PL).

Clearly identify the damper you desire by providing the fan outlet dimension (X x Y) and blade action (PB or OB).

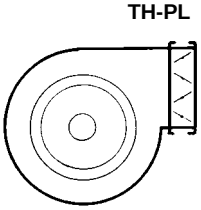
TOP HORIZONTAL



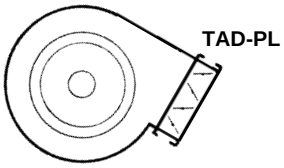
UP BLAST (UB)



TOP ANGULAR UP (TAU)

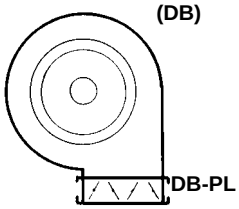


TOP HORIZONTAL (TH)

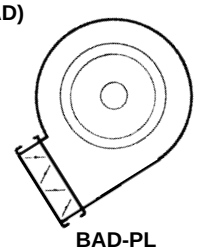


TOP ANGULAR DOWN (TAD)

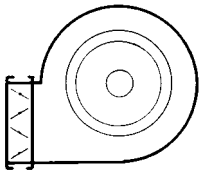
DOWN BLAST (DB)



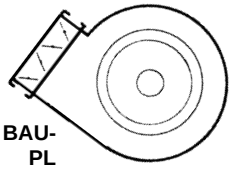
BOTTOM ANGULAR DOWN (BAD)



BOTTOM HORIZONTAL (BH)



BOTTOM ANGULAR UP (BAU)



DAMPER ACTUATORS

Typical actuator installation is shown at right. Actual installation may vary according to damper size.

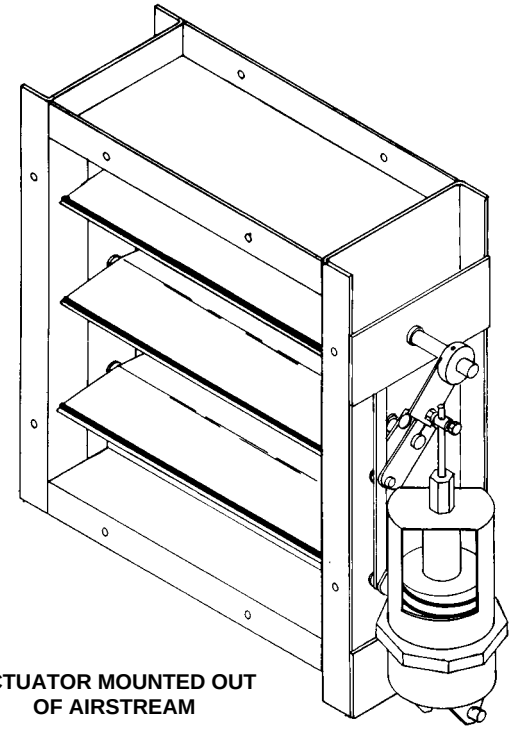
Damper actuators available from Ruskin are listed in the table on this page.

Actuator damper size limitations shown are based on initial testing to UL Standard 555S. Further testing is projected to qualify additional actuators, and may expand actuator limits shown herein. Dampers shipped with factory installed actuators qualify at elevated temperatures of 250°F (121°C).

SD102 DAMPER ACTUATORS

MODEL	TEMPERATURE	MAXIMUM DAMPER SIZE (MAX. 6" SP)
331-3060 20 psig	250°F (121°C)	12 sq. ft. and 36" x 48"* (914 x 1219) max.
GGD221 120 VAC	250°F (121°C)	12 sq. ft. and 36" x 48"* (914 x 1219) max.

*A or B dimension cannot exceed sizes shown.



ACTUATOR MOUNTED OUT OF AIRSTREAM

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. Frame shall be a minimum of 12 gage (2.8) galvanized steel formed into a structural channel reinforced at corners for added strength. The blades shall be aluminum airfoil shaped .080 min. thickness double-skin type with internal structural support. Blade action shall be parallel or opposed **(specifier select one)**. Bearings shall be stainless steel sleeve turning in an extruded hole in the frame for long life. (Galvanized bearings shall not be acceptable.) Blade edge seals shall be silicone rubber mechanically locked into blade edge (adhesive or clip fastened seals shall not be acceptable) and shall withstand a minimum of 450°F (232°C). Jamb seals shall be non-corrosive stainless steel flexible metal compression type to further ensure smoke management.

Damper shall be designed for fan isolation application to prevent smoke migration into supply system.

Each smoke damper shall be classified by Underwriters Laboratories as a Leakage Rated Damper for use in smoke control systems in accordance with the latest version of UL555S and bear a UL label attesting to same. Damper manufacturer shall have tested and qualified with UL, a complete range of damper sizes covering all dampers required by this specification. **Testing and UL qualifying a single damper size is not acceptable.** The leakage rating under UL555S shall be leakage **Class II**.

As part of the UL qualification, smoke dampers shall have demonstrated a capacity to operate (to open and close) under HVAC system operating conditions, with pressures up to 8" w.g. in the closed position, and 4,000 fpm air velocity in the open position.

In addition to the leakage ratings already specified herein, the smoke dampers and their actuators shall be qualified under UL555S to an elevated temperature of 250°F (121°C). Appropriate electric/pneumatic actuators shall be installed by the damper manufacturer at time of damper fabrication. Damper and actuator shall be supplied as a single entity which meets all applicable UL555S qualifications for both dampers and actuators. Damper and actuator assembly shall be factory cycled 10 times to assure operation.

The damper shall be equivalent (airflow, pressure drop and leakage performance) to Ruskin Model SD102.

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