MAKKA

HVAC Accessories

Smoke Damper

SD

SERIES SD

Introduction

Smoke dampers are defined as a device installed in ducts and air transfer opening of an air distribution or smoke control system designed resist the passage of air and smoke. The device operates automatically and is controlled by a smoke detection system. They can be opened or closed from a remote fire command station if required. Their primary function is to prevent the passage of smoke through the heating, ventilation, and air conditioning system, or from one side of a fire-rated separation to the other.

Smoke dampers are operated by either a factory-installed elec-tric or a pneumatic actuator. They are controlled by smoke detectors and/or fire alarms. Smoke dampers are qualified under UL Standard 555S, UL Standard for Safety for Smoke Dampers, and have two general applications:

1- As part of a “passive smoke control system” in which they close upon detection of smoke and prevent the circulation of air and smoke through a duct, transfer, or ventilation opening. As part of an “engineered smoke control system” designed to control smoke migration using
2- walls and floors as barri-ers to create pressure differences. Pressurizing the areas surrounding the fire prevents the spread of smoke into other areas.

Smoke dampers have the following installation requirements:

Location: Smoke dampers are for use in or adjacent to smoke barriers. They must be installed no more than 24 in. from the smoke barrier. Of course, smoke dampers that are used to iso-late air handlers are not limited to this distance requirement. NFPA 90A states that smoke dampers are to be used to isolate air handling units over 15,000 cfm.

Sleeves and Attachment: Smoke dampers do not necessarily have to be installed in sleeves. They can be installed directly in the duct. The installation instructions will include the approved method for attachment and spacing.

Sealing: The joints between the damper frame and the duct must be sealed to prevent unwanted air leakage. Smoke damper leakage ratings are based on leakage through the blades and inside damper frame and not on additional leakage between the damper frame and duct or sleeve.

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Construction

FRAME Gage : Gage 16 (1.5mm) 5"x1"(12 5x 2 5mm) Frame (Hat shaped) is made of Galvanized sheet steel Corners.

BLADES : Gage 16 (1.5mm) 3 GROOVED type is made of Galvanized Steel. Leakage Rating to , Class- 2, Class- 3 at 2 50°F.

JAMB SEALS : Stainless steel jamb seals.

TIP SEALS : Silicon rubber blade tip seals.

LINKAGES : Mechanical linkages concealed in Frame.

BUSHES : Fire resistant Brass-Bronze bushes

AXLE : 1/ 2"x1 / 2" Galvanized steel,12mm square,

BLADE STOP : 18 gage (1.2mm) galvanized steel angle

DRIVE SHAFT : 1/ 2"x1 / 2" Square shaft

SLEEVES : Sleeve thickness must be equal to or thicker than the duct connected to it. The sleeve shall be a minimum of 16 gage (1.6) for dampers up to 36" wide by 24" high and 14 gage for dampers exceeding 36" wide by 24" high.

FLANGES : Flange mounting sleeve type as optional .

Smoke Damper Leakage Ratings by Class

LEAKAGE CLASS	MAXIMUM LEAKAGE		MINIMUM DEGRADATION TEMPERATURE	
	(CFM/FT² at 4" W.G.)	(M³/S/M² at 0.995 kPa)	°F	°C
I	8	0.041	250	121
II	20	0.102	250	121
III	80	0.408	250	121

Silicon rubber seals blade to blade

blade to blade stopper

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Orientation

Damper is designed to operate with blades running horizontally and must be installed with center line of damper frame within the wall or floor when they are in the closed position. Use "Mount with Arrow Up" label as a guide for proper damper orientation. Horizontal mount dampers may be installed with actuator above or below the floor.

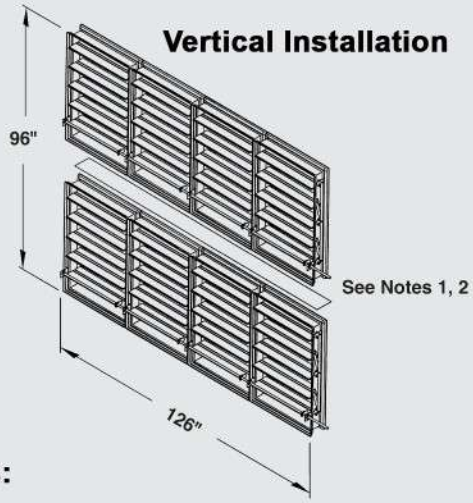
Actuator Connections

Electric and pneumatic actuators are to be connected in accordance with wiring diagrams developed in compliance with applicable codes, ordinances and regulations. Multiple section dampers utilizing more than one actuator require all actuators to be connected to a single (common) signal for simultaneous operation.

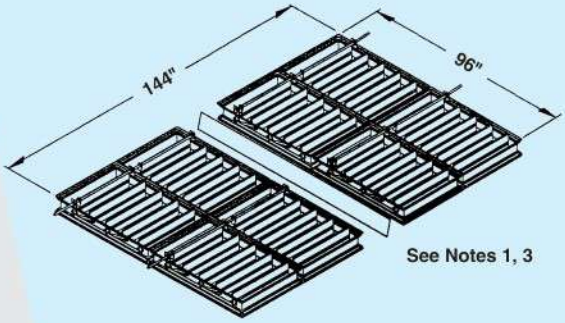
Sizes and Installation

Single section vertical – 32"w x 48"h
Single section horizontal – 30"w x 48"h
Multiple sections vertical – 120"w x 96"h
Multiple sections horizontal – 144"w x 96"h

Vertical Installation



Horizontal Installation

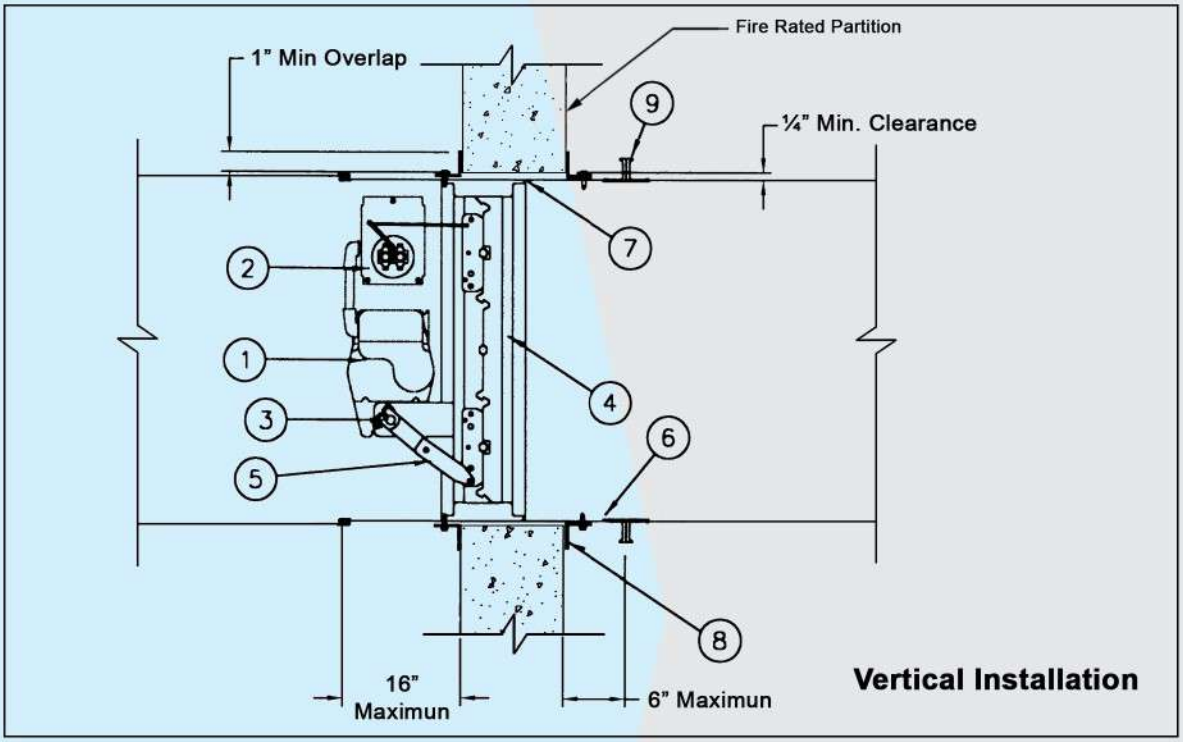


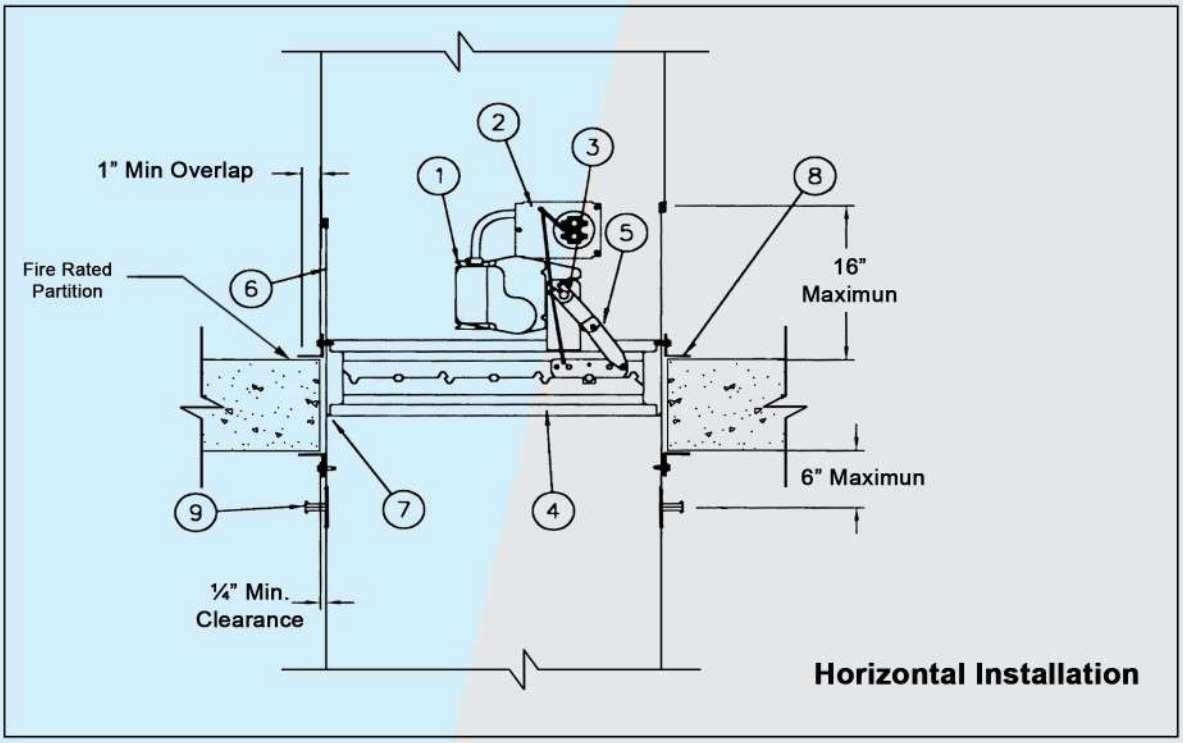
Notes:

1- All multiple section dampers are constructed of equal single section sizes no greater than the maximum single section sizes indicated above.
2- Two section high dampers require a 14 gage reinforcing plate unless overall height is less than 91" and width is less than 32". When using two individually sleeved units, the sleeve acts as the reinforcing plate, therefore no plate is required.
3- Horizontal dampers over 3 sections wide and 1 section high require a 14 gage reinforcing plate. When using two individually sleeved units, the sleeve acts as the

Installation

1 - Actuator (location may vary).
2 - Optional Fire Stat.
3 - Auxiliary Operating Jackshaft.
4 - Damper.
5 - Over-Center Link.
6 - Sleeve.
7 -Caulking Material on both side of frame.
8 - Mounting Angles.
9 - Duct/sleeve connection.





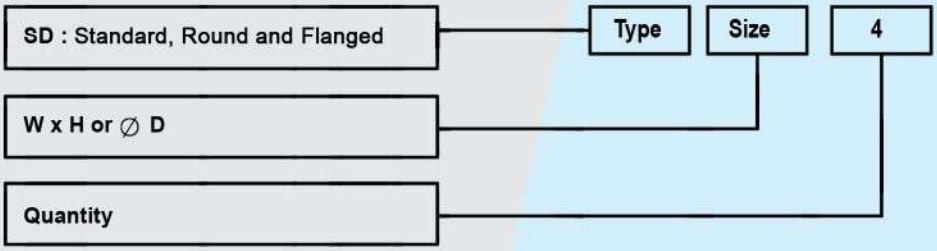
Makkah For Air Outlets

Ordering Specification

SD Standard

SD Round

SD Flanged



Recommendation :

All moving parts of the demoer must be inspected and cycled at intervals not longer than 6 months and according to NFPA 90A, 92A and local codes and actuator manufacturer.

Contacts & Address Map