

# SMOKE DAMPER



## 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.

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 electric or a pneumatic actuator. They are controlled by smoke detectors and/or fire alarms.

Smoke dampers have two general applications:

- 1) They may be applied in a “Passive Smoke control System” where they simply close and prevent the circulation of air and smoke through a duct or ventilation opening in a smoke barrier.

2) They also may be applied as part of an “Engineered Smoke Control System” designed to control the spread of smoke using walls and floors as barriers and using the building’s HVAC system and/or dedicated fans to create pressure differences.

COSMOS model series SMD 3V groove blade smoke dampers are a ruggedly built, yet economical choice for use where a smoke barrier has been penetrated by ductwork or where a leakage rated smoke damper is required in a static or dynamic smoke control system.

Design features include a steel 3V groove style blade design that provides strength and durability, low pressure drop frame design and maintenance free concealed blade linkage out of the airstream and a rugged hat channel frame.

## FUNCTION



The COSMOS smoke damper prevents the spread of fire and smoke in rectangular ducts. The smoke damper shuts a ductwork branch off in order to prevent the propagation of flue gases in the ventilation system. In the closed position, the airflow leakage through the damper is very limited.

In the open position, the blade position is parallel to the airflow direction, resulting in negligible pressure loss. The smoke damper should be opened before starting of the fan, especially if the operating pressures are high. The spring return actuator keeps the damper in normal operation, simultaneously tensioning the return spring. If the power supply is interrupted, the spring turns the damper to closed position.

## STANDARD CONSTRUCTION

**Frame:** 16 gauge (1.6mm) galvanized steel interlocking hat section channel frame construction.

**Blade:** 16 gauge (1.6mm) galvanized 3 "V" formed.

**Sleeve:** 20 gauge (1.0mm) galvanized construction.

**Closure Devise:** Electric actuator or fusible link with closure temperature of 165 °F (74 °C).  
Others are available.

**Bearings:** Brass bushing for friction free operation.

**Axial:** 16mm dia. MS steel.

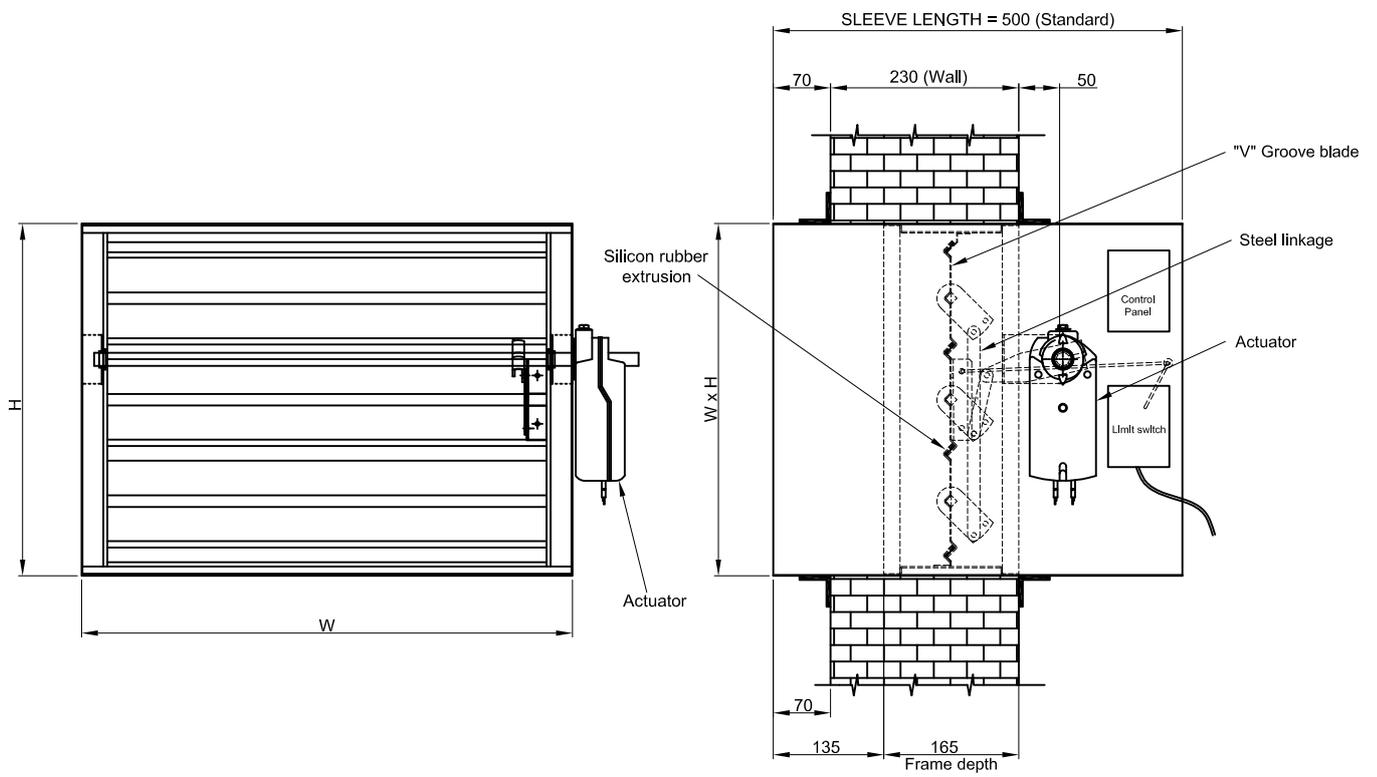
**Linkage:** Stainless steel concealed in the channel frame.

**Blade Seal:** Silicon on "V" groove blade.

**Jamb Seal:** Stainless steel.

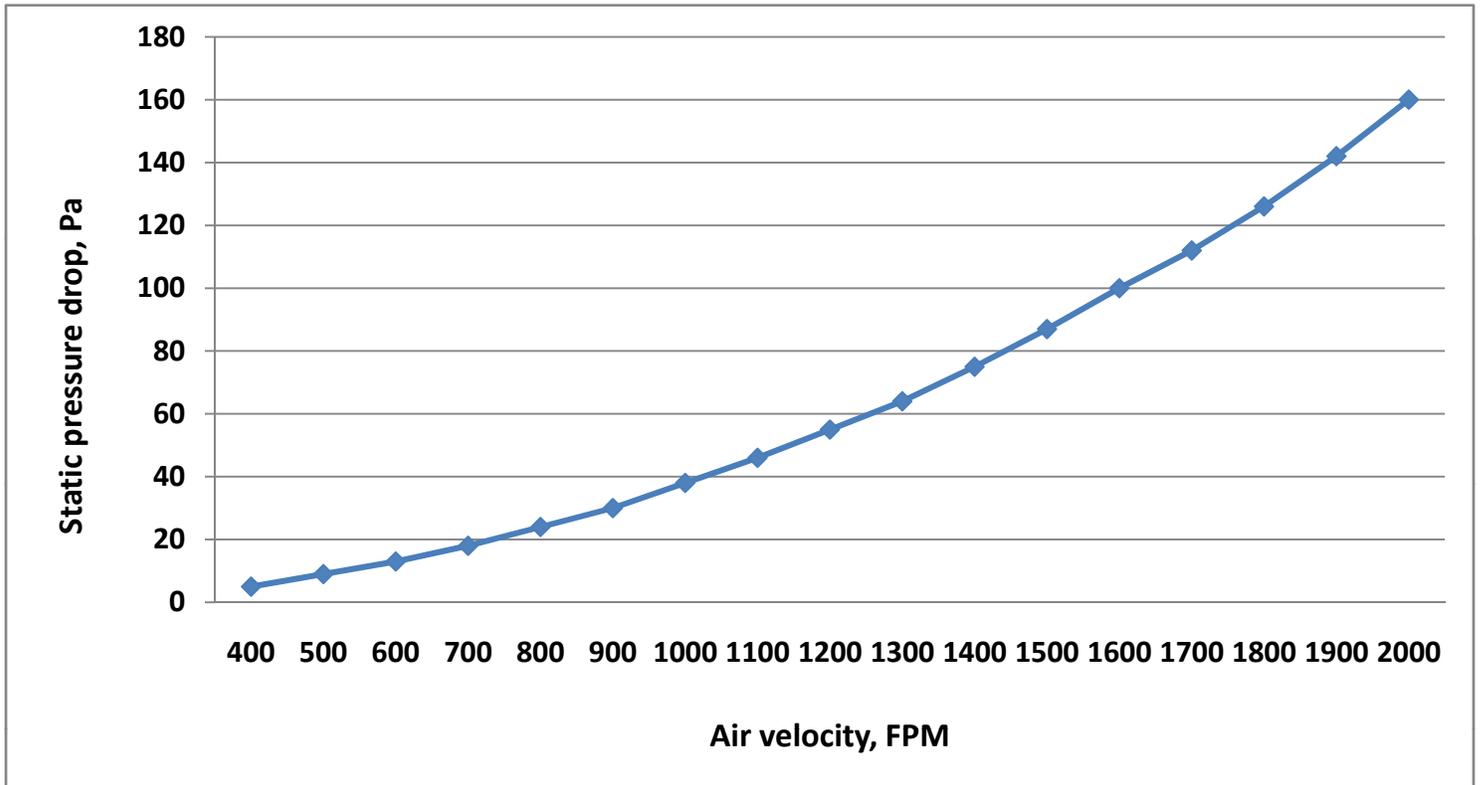
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Dimensional data  
**SMOKE DAMPER**



## Pressure Drop Data:

Smoke Damper size: 300 X 300



Smoke Damper size: 600 X 600

