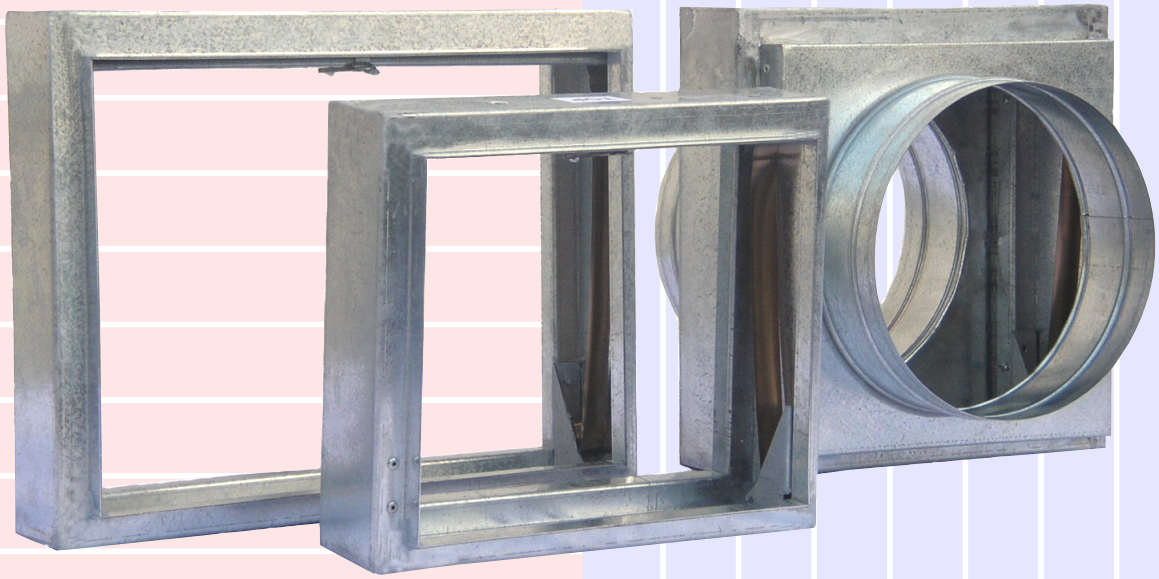
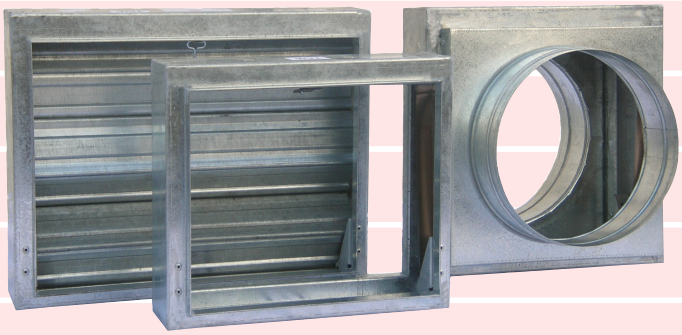
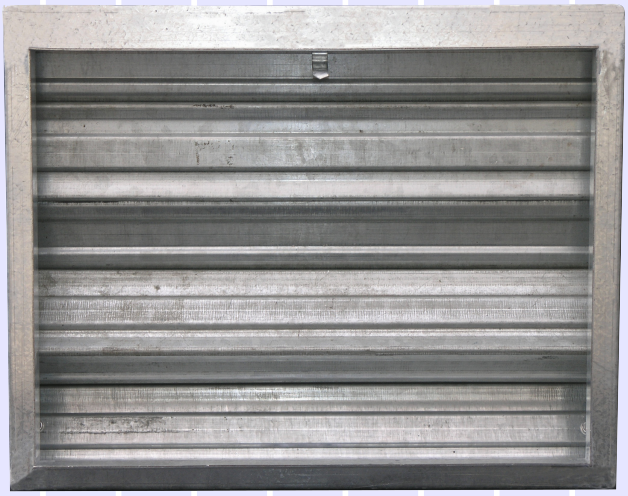
air master

Fire Damper

Model: AFD 3





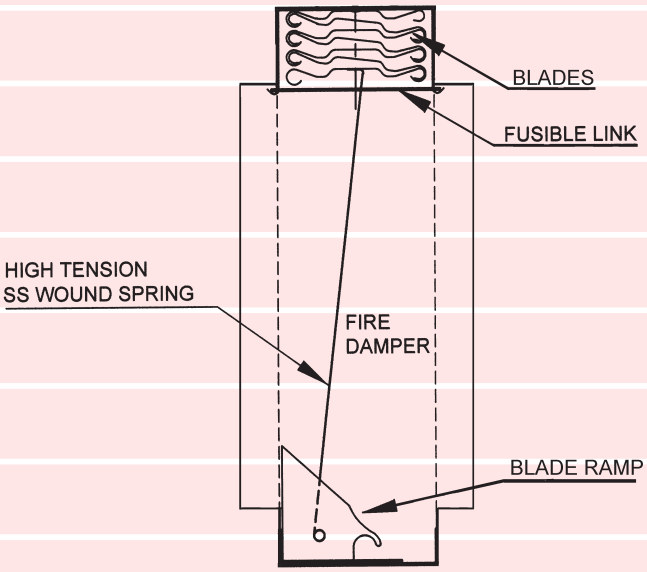


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CLASSIFIED UL

The modern era buildings incorporate highly complex and sophisticated infrastructure and design and the occurrence of a fire may bring serious loss to human life, property and wastes valuable time and effort of many people involved in the successful completion of the project. Air Master Fire dampers are designed keeping in mind the safety of human life and property. This challenging demand is the most crucial of all faced by the building planners. Fire dampers protect individual rooms or zones by sealing off any supply or extract air, thus preventing the spread of fire or smoke through the central HVAC system of the building or the walls.

Air Master fire dampers are tested by UL laboratories and are manufactured in compliance with the UL 555 standards and the company's quality control procedures. AFD-3 Fire Dampers are intended for use in HVAC duct systems passing through fire resistive walls, partitions and in air transfer opening in walls.





Construction:

- **Frame:** High quality galvanized Iron Sheet of 1.6mm thickness.
- **Blades:** Interlocking type blades roll formed from 1mm thick galvanized steel.
- **Blade Ramp:** Formed from 1.6mm thick galvanized steel with a spring holder.
- **Springs:** 2nos. constant force stainless steel springs
- **Fusible Links:** UL listed fusible links which has fire rating of 165^{O} F / 212^{O} F.

Description:

- The frame is made from 1.6mm thk. high quality galvanized iron sheet. All welded joints are rust proofed by zinc paint coating. The blades are roll formed from 1mm thk. galvanized steel. The interlocking type blades are designed with hat shaped reinforcement ridges ensuring strength and stability. The blade ramp is formed from 1.6mm thk. galvanized steel with a spring holder. The ramp is frmly secured to the frame by rivets. Constant force stainless steel springs are firmly secured to the blades and held in place on the ramp. The blades are secured by UL listed fusible links which has a fire rating of 165^{O}F / 212^{O}F and thus kept out of the airstream when not in operation.

- The heat responsive links on detection of heat beyond 165^{O}F / 212^{O}F release the blades from their position. Upon release, the blades which are connected to the springs are pulled down by the springs and get automatically locked on a latch and remains so until reset. These fire dampers are rated upto 1 $^{1}/_{2}$ hours rating with low leakage. All dampers are manufactured in compliance to the UL 555 standards and the company's quality control procedures

- Upon the termination of fire condition, the damper can be re-opened (usually an access door has to be provided for inspection) by simply pulling up the curtain blades and replacing the fusible link.

Installation Instructions:

Sleeve:

Damper sleeve must be minimum 16 gauge (1.6mm) upto a maximum 10 gauge (3.5mm) steel. Sleeve thickness must be thicker than the duct connected to it. Sleeve gauge should comply with the SMACNA Duct Connection Standard Fire, Smoke and Radiation Damper Installation Guide For HVAC Systems and with NFPA90A. Sleeve must not extend more than 152mm out of the wall. Sleeves must terminate on both sides of the wall within the dimension shown in (Fig.3, Fig.4).

Damper must be secured inside the sleeve by 1”x1”x14gauge GI sub-frame, and the sub-frame to be fastened to sleeve by 5mm steel rivets or M5 bolts spaced at 150mm at the center and 50mm from the corners.

Duct-Sleeve Connections:

The connecting ducts shall not be continuous, and shall terminate at the sleeve.
Duct - Sleeve connections listed in UL555 STANDARD FOR FIRE DAMPERS

Fasteners may be used as follows
(a) Joints using connections shown in (Fig.1) with a maximum of two #10 sheet metal screws on each side and on the bottom located in the center of the slip pocket and penetrating both sides of the slip pocket.
(b) Joints using connectors of the type shown in (Fig.1) on the top and the bottom and using flat drive slips (Fig.2) not exceeding 508mm duct height on the sides.

Retaining Angle:

Angle must be minimum $1^1/_2$”x$1^1/_2$“x14 gauge (38x38x2mm) steel and must overlap wall opening 1” (25mm) minimum and cover corners of openings. Retaining angles must be provided on both sides of the wall. Angles are fastened to sleeve by either M5 bolts or 5mm dia 20mm long steel rivets spaced at a maximum of 150mm at the centre and 50mm from the end.
Retaining angles must not be fixed to each other or to the wall.

Damper Orientation:

Vertical and Horizontal.

Expansion Clearance:

Fire damper sleeve clearance within wall opening must be $^1/_4$” larger than the damper size for damper sizes up to 24” and additional $^1/_8$” per linear foot increase in the size of the damper.

Maximum rated size (Single section):

Vertical: 27” Width x 41” Height (672x1026mm)
Horizontal: 36" Width x 36" Height (914.4x914.4mm)

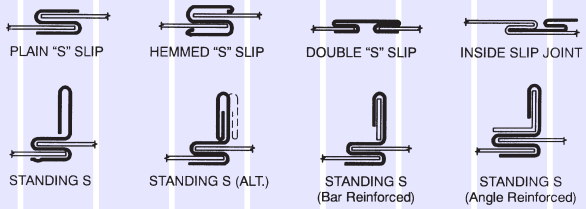


Fig. 1



Fig. 2

Airflow:

Direction of airflow is indicated by the arrow on the damper. The “AIR FLOW” direction arrow must be adhered to during installation.

Access Door:

An ACCESS DOOR is a NFPA requirement for damper inspection and testing.

Fusible Link:

Vertical: UL Listed 165^{O}F / 212^{O}F fusible link as standard.
Horizontal: UL Listed 165^{O}F fusible link as standard.

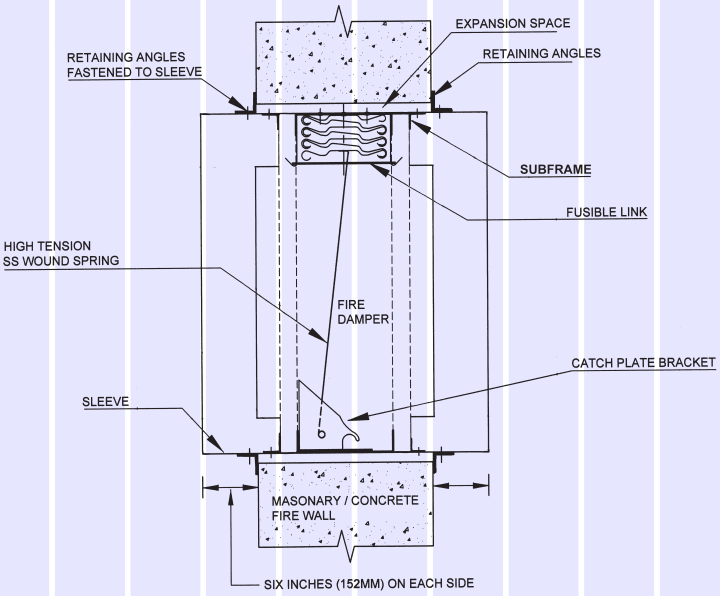


Fig.3 Vertical Installation

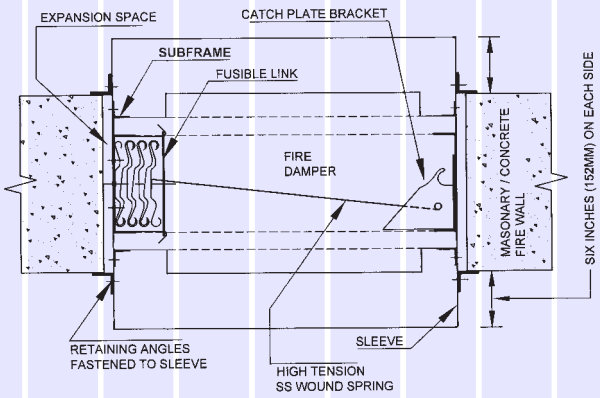
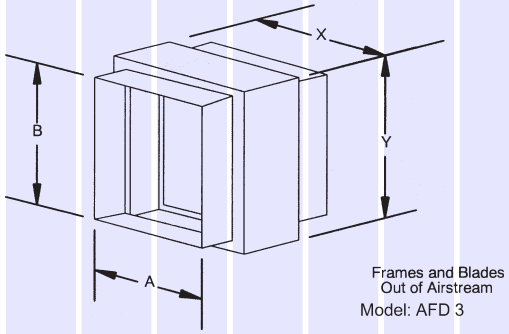


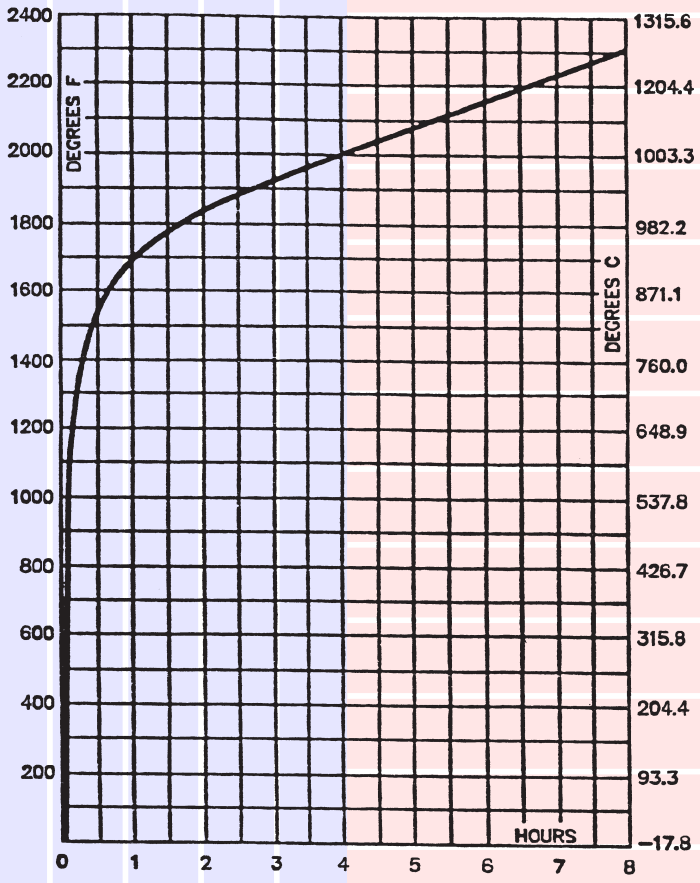
Fig.4 Horizontal Installation

Model Reference:
AFD 3 - Constructed with GI blades



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Time - Temperature Curve

The fire damper has been tested by UL Laboratories, USA. according to UL555 standard. The Time / Temperature curve required by this fire test procedure is shown above.