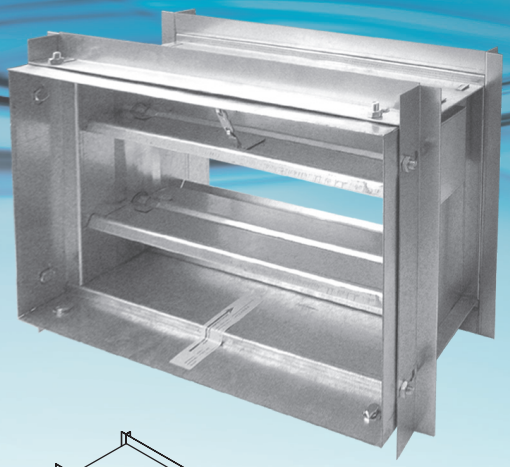
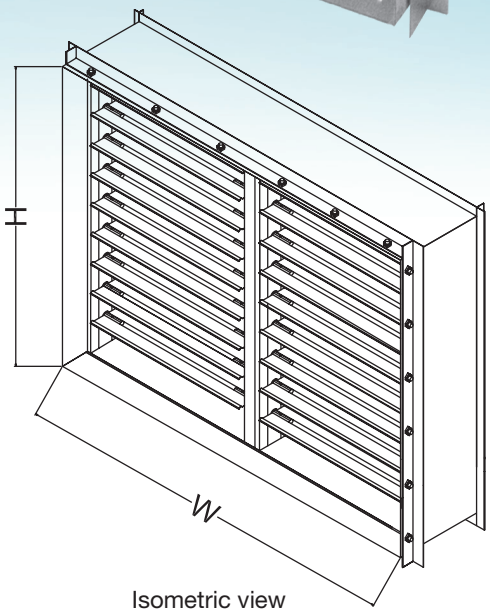
FSD60/MFSD60 Multi-blade Fire Damper

Tested and conform to BS476: Part20:1987





Isometric view

The ASLI Multi-Blade Fire Dampers have been developed to provide the versatility required for today's complex and sophisticated fire protection and safety building system. There are two types of fire dampers: Fire damper with fusible link (FSD60) and motorized fire damper (MFSD60).

Materials

Frame: Galvanized steel, 1.5mm thickness.
Blade : Galvanized steel, 1.5mm thickness.
Jamb seal: Stainless steel plate. (Optional)
Blade seal: Silicone strip. (Optional)

Surface Finish

Mill galvanized.

Axles

Hexagon bar mild steel.

Bearing

Bronze bush pressed into frame.

Blade Actions

FSD60: Parallel type
MFSD60: Parallel type

Blade Dimension Limits

Maximum blade length = 1000mm
Maximum blade width = 160mm

Fire Damper (FSD60)

During fire, the FSD60 provides the quick closure respone by means of tentioned spiral spring mounted at the side when the fusible link fuses at 74°C (165°F).

Motorized Fire Damper (MFSD60)

During fire, a signal will be sent from sensor or control unit to the actuator of MFSD60
Upon receiving the signal, MFSD60 will be closed by means of actuator.
MFSD60-1T: Actuator mounted exposed at the side of the fire damper.
MFSD60-2T: Actuator mounted in a compartment at the corner of the fire damper.
MFSD60-3T: Actuator mounted in a compartment at the side of the fire damper.
MFSD60-4T: Actuator mounted in an extrusion fitting.

FSD60/MFSD60
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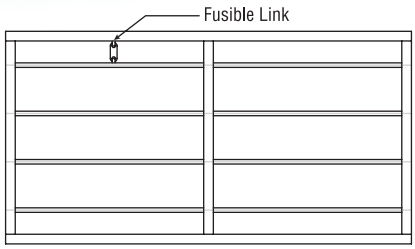
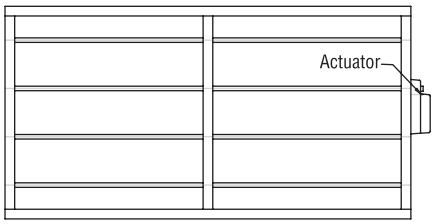
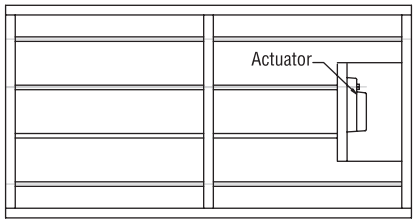


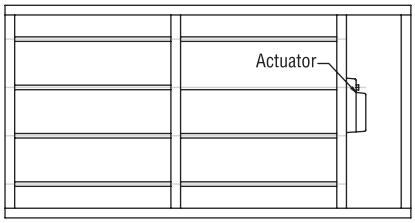
FSD 60



MFSD60 - 1T (Not applicable to wall mounting)



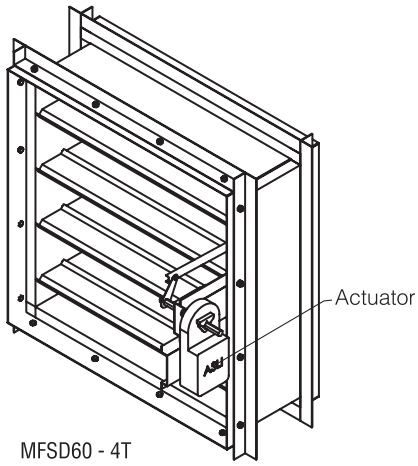
MFSD60 - 2T



MFSD60 - 3T (Recommended to wall mounting)

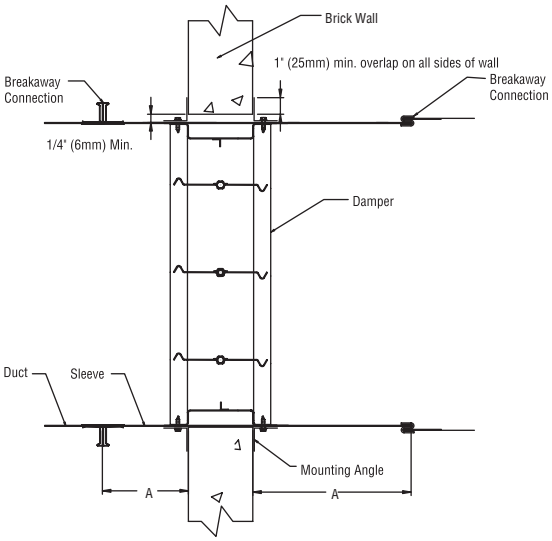
FSD60/MFSD60 Features

- Quick closure response (FSD60).
- Stainless steel side seal at each side of the frame.
- Rigid “triple-vee” blade design.
- Easy to install.
- Fire damper can be installed in the wall (vertically) or on the ceilling (horizontally).
- Fire damper can be installed with the blade running horizontally or vertically.
- Linkages are concealed in the frame to prevent malfunctioning caused by improper installation.



MFSD60 - 4T

Recommended Fire Damper Installation



Note: Installation details above are based on SMACNA Damper Installation Guide as reference.

A: 6” (152mm) on each side for dampers intended for use without an actuator or a factory installed access door.

A: 6” (152mm) on one side and 16” (304mm) on the opposite side for damper intended for use with an actuator and/or a factory access door, on the longer side.

A: 16” (304mm) on each side for damper intended for use with an actuator on one side and a factory installed access door on the other side.

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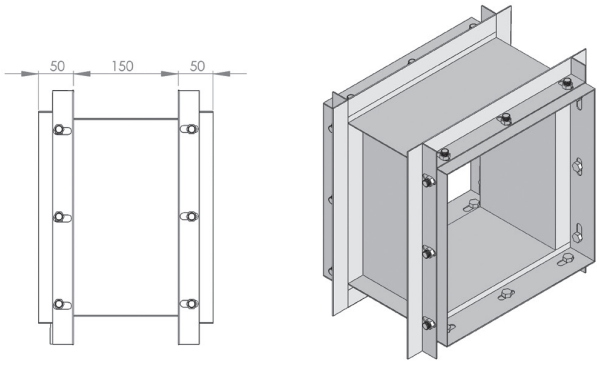
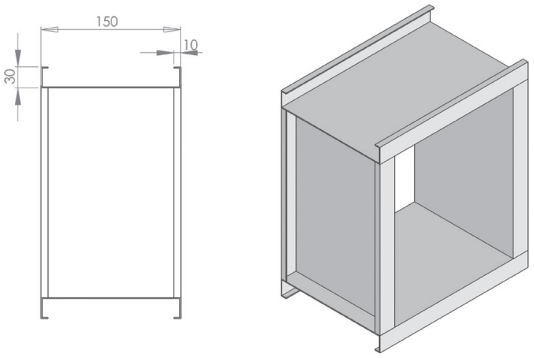
Connection Type

- Angle bar (A) as standard.
- Flange joint for TDC (T), Flat joint (F), L Joint (L) as optional.
- Flange connection can be a combination of A,T,F,L; for example: LA indicates one side L Joint (L) and the other side Angle Bar (A) connection.
- Dimension shown on the following drawings just for reference.

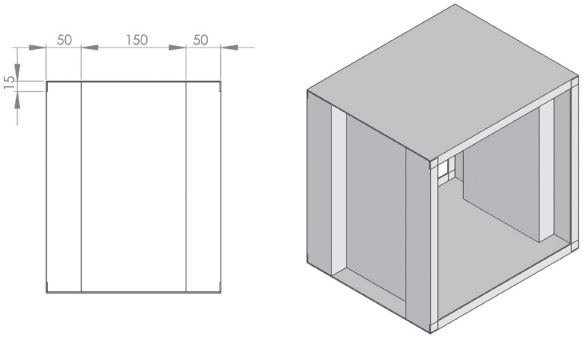
Construction Illustration of Flange Connections



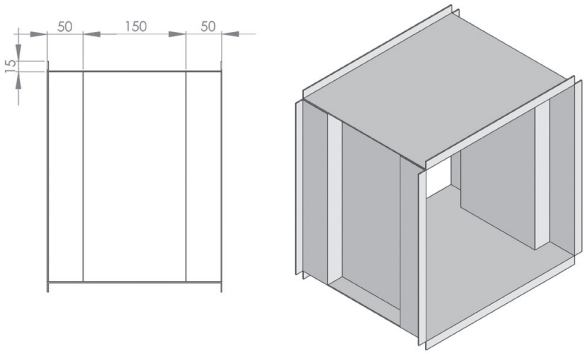
Angle bar (A) connection as standard for wall and ductwork installation



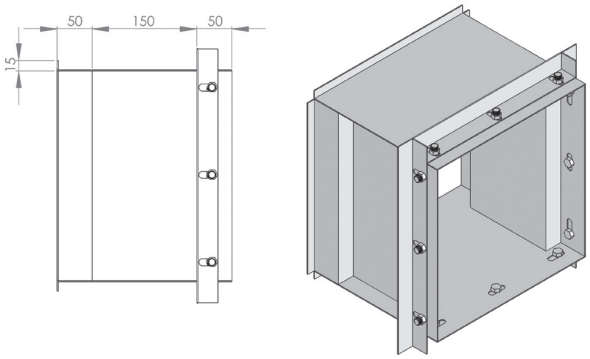
Flange joint for TDC (T) connection (optional) for ductwork installation



Flat joint (F) connection (optional) for wall/ductwork installation slot-in type



L joint (L) connection (optional) to be coupled with louvers



L joint and angle bar (LA) connection (optional) to be coupled with louver and joined to ductwork on the other side

FSD60/MFSD60
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FSD60/MFSD60 Leakage Performance Data

Static Presure Drop	Leakage
Pa	L/s
250	150
500	236
750	315
1000	407
1250	454

Above performance data were tested for size 1200mm x 1200mm in accordance with AS 1682.1-1990

To determine pressure drop

1. Select the damper free area (ft^2) based on width (W) and height (H) from the table below.
2. Given the air velocity and damper size, substitute the free area (ft^2) into the formula below and get the pressure drop value. Please take note on the unit of parameters.

Height H (mm)	Width, W (mm)										
	200	300	400	500	600	700	800	900	1000	1100	1200
200	0.20	0.34	0.47	0.61	0.74	0.87	1.01	1.14	1.28	1.41	1.55
300	0.34	0.57	0.79	1.02	1.24	1.47	1.70	1.92	2.15	2.37	2.60
400	0.50	0.83	1.17	1.50	1.84	2.17	2.50	2.84	3.17	3.50	3.84
500	0.64	1.06	1.49	1.91	2.34	2.76	3.19	3.61	4.04	4.46	4.69
600	0.78	1.29	1.81	2.33	2.84	3.36	3.88	4.39	4.91	5.43	5.94
700	0.94	1.56	2.19	2.81	3.43	4.06	4.68	5.31	5.93	6.56	7.18
800	1.07	1.79	2.51	3.22	3.94	4.65	5.37	6.08	6.80	7.52	8.23
900	1.24	2.06	2.88	3.71	4.53	5.35	6.18	7.00	7.82	8.65	9.47
1000	1.37	2.29	3.20	4.12	5.03	5.95	6.86	7.78	8.69	9.61	10.52
1100	1.23	2.25	3.27	4.29	5.32	6.34	7.36	8.39	9.41	10.43	11.45
1200	1.34	2.45	3.57	4.68	5.79	6.91	8.02	9.14	10.25	11.36	12.48

$$\Delta P = 2.75 \left(\frac{\frac{Q}{\text{Free Area}}}{4005} - V \right)^2$$

ΔP = Pressure drop (inch w.g.)
V = Duct Air velocity (fpm)
Q = Air flow rate (CFM) = Duct Area (ft2) X Duct Air Velocity (fpm)
* All data has been corrected to represent standard air at a density of 0.075 lb/ft^3.
* All data has been generated in which the damper blades are fully open.

Example:
Given : Duct Air Velocity = 1000fpm
Duct Size = Damper Size = 500mm (W) X 500mm (H)
Duct Area = 2.69 ft^2
Find: Pressure Drop
Q = Duct Area (ft^2) X Duct Air Velocity (fpm)
= 2.69 X 1000
= 2690 CFM
Refer to the table above, free area for damper size 500mm(W) X 500mm (H) = 1.91 ft^2

$$\Delta P = 2.75 \left(\frac{\frac{2690}{1.91}}{4005} - 1000 \right)^2$$

ΔP = 0.0286inch w.g.
ΔP = 7.12 Pa

FSD60/MFSD60 Order Code *Unit : mm*

Mode	Neck Size (W X H X D)	Connection Type (Left)	Connection Type (Right)
FSD 60 MFSD 60	1000mm X 1000mm X 150mm	Angle bar (A) Slip Joint (S) Flat Joint (F) Flange Joint for TDC (T)	Angle bar (A) Slip Joint (S) Flat Joint (F) Flange Joint for TDC (T)

Example: FSD60-1000mmX1000mmX150mm-AA