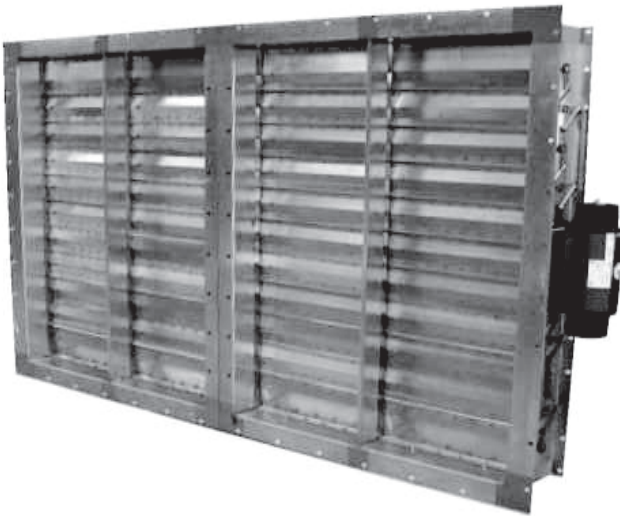


Tunnel, Industrial & Marine Volume Control / Shut Off Damper

Type JFM



- High integrity fire damper for arduous locations including tunnel, marine and industrial applications.
- Available in galvanized mild steel or stainless steel construction.
- Available with a range of pneumatic or electric actuators with spring return function and modulating function as required.
- Low leakage rate with option for high temperature seals meeting UL555S Class 1 leakage rate (less than 70 l/s/m² at 3125 Pa) for smoke containment.
- Rated for operation at 250°C for 2 hours and 400°C for 1 hour to enable smoke control.
- Designed for 30 years service life.
- 4 hour fire integrity rated in accordance with BS 476 Part 20, for both vertical and horizontal installations.
- ATEX certified for hazardous area use.
- Suitable for operation at +/- 3 kPa.
- Will withstand +/- 6 kPa pressure fluctuations (BSRIA tested for 8 million pressure cycles).

Description

The JFM damper has a long record of performance and reliability. This has been gained within arduous industrial applications including tunnel and offshore ventilation installations. The JFM is suitable for fire, isolating, balancing or smoke control/extract applications. Operation can either be pneumatic, electric or manual with ancillary control components to meet the clients' specific requirements.

Performance

1. Fire Rating

Warrington Fire Research 4 hours BS476 Part 20 1987
Horizontal & Vertical installations.

2. Smoke Control Ratings

Warrington Fire Research Functional for up to 2 hours in
250°C ambient and 400°C for 1
hour.

3. Open blade Pressure Drop

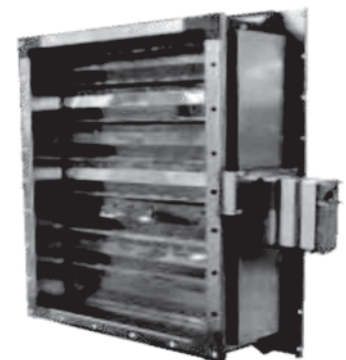
20Pa with 10 m/s air face velocity.

4. Closed-blade leakage rate

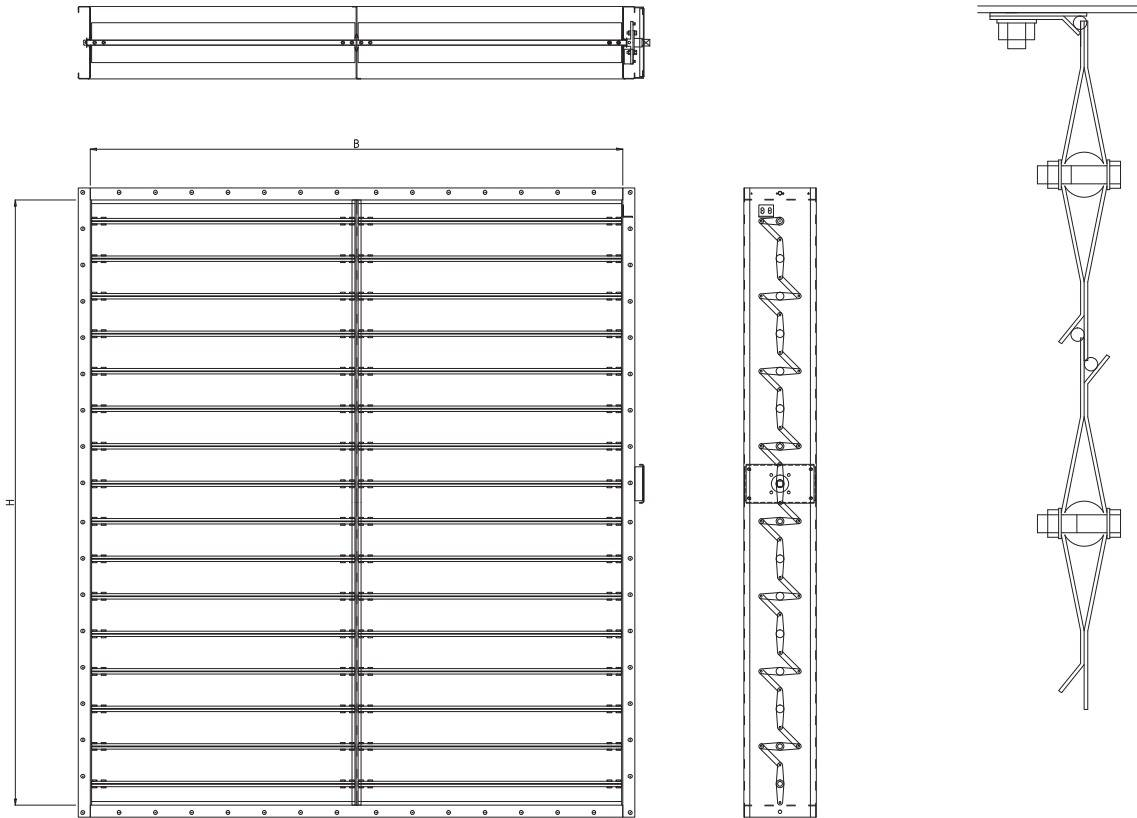
<70 l/s/m²@3125 Pa with
kerlane blade tip seals (UL555S
Class 1 leakage rating).

5. Pressure rating

6kPa pressure differential across
closed blades



Type JFM Construction



Material Specification Type JFM

Linkage

Heavy duty-opposed action with linkage bearings.

Blade Side Seals

Roll formed from 75 x 0.3 mm hardened and ground grade 316 stainless steel. Forming gives an approximate 8 mm convex profile compressed by the blades which seals the gap between the blade and the inside of the case.

Actuator Mounting Angles

Formed angle sections welded to damper case, pre-punched for actuator mounting plate.

Bearings

Flanged oilite/oil impregnated sintered bronze bearing as standard. Other bearings can be provided upon request.

Shafts

Shafts \varnothing 20 mm through blade and bearings. Bolted to blades with nuts and spring lock washers.

Finish

Generally natural. All welds on damper face to be ground flush. Welds and cut edges zinc rich painted for galvanized mild steel construction.

Guards

Fitted over the external drive linkage as an option for all motorized dampers.

Case

2 or 3 mm thick-formed channel section, 300 mm or 210 mm deep with 50 mm flanges. Case sections are fully welded externally. Mullions fitted into case above 1100 mm wide are stitch welded.

Blades

1.2 or 2.0 mm thick formed sections spot welding together resulting in a double skin aerofoil section fitted over \varnothing 20 mm shaft. Opposed action linkage geometry allows blades to interlock forming a fireproof barrier. Blades are bolted to shafts.

Landing Angles

15 mm x 40 mm x 3 mm full width bolted to case and adjustable to ensure tight seal after damper installation.

Drilling

Standard drilling patterns available, other flanges drillings available upon request.

Material

Damper can be manufactured from:

- Hot Dipped Galvanized Mild Steel to BS EN 10327:2004 Z27
- Stainless steel grade 304 to ASTMA
- Stainless steel grade 316L to ASTMA
- Other materials at customer's request

Actuation

Available with a variety of actuators and accessories:

- Pneumatic, semi-rotary spring return type
- Electric semi rotary spring return type
- Pneumatic, semi-rotary, double acting type
- Electric, semi-rotary, double acting type
- Fusible link rated at 68°C
- Micro switches or Proximity switches for open and closed position indication
- Positioners suitable for modulating control with potentiometer feedback

Table 1: Dimensions in mm (standard sizes – fire rated)

Infinitely variable between stated limits.

Above these sizes multiple modules are offered.

Standard Size (Fire Rated)	Single Module	Double module driven by one actuator
Minimum B	150 mm	2201 mm
Maximum B	2200 mm	4550 mm
Minimum H	150 mm	150 mm
Maximum H	2500 mm	2500 mm

Table 2: Dimensions in mm (standard sizes – non fire rated)

Infinitely variable between stated limits.

Above these sizes multiple modules are offered.

Standard Size (Non Fire Rated)	Single Module	Double module driven by one actuator
Minimum B	150 mm	3151 mm
Maximum B	3150 mm	6450 mm
Minimum H	150 mm	150 mm
Maximum H	2500 mm	2500 mm

Specification Text

Generation Construction

The dampers shall be of opposed blade multi-leaf design with the blades being encased in a fabricated channel frame. The damper shall be suitable for operation in the vertical or horizontal orientation with the airflow in either direction. The damper frame sections shall be minimum of 210 mm deep, with flanges for mounting to ductwork or structural openings.

The frame section shall be continuously welded at corners to form a rigid frame in which the blades are housed. The rigidity shall be such that the blades are correctly aligned so that there is no chattering or binding resulting in dependable operation. Flanges will be 50 mm wide as standard.

The damper blades shall be opposed blade action and shall be manufactured to provide a double skin aerofoil section with intermeshing tip-to-tip configuration. Blades shall be fitted with Kerlane tip seal.

Mullions shall be fitted into the damper case to limit the blade length to a maximum of 1100 mm.

The blade width dimension shall be such that when fully open it shall not extend beyond the damper case, and when closed there will be a minimum of 8 mm blade-to-blade overlap.

The blades shall be bolted to the shaft. Shaft diameter shall be 20 mm diameter. The clearance between blade ends and inside case sides shall be sealed using stainless steel sprung side seals.

The shaft ends shall be housed in oilite/oil impregnated sintered bronze bearings. The bearings at each end of the blade shall be contained within the casing. The bearings shall be removable.

Principal welds should be continuously welded except where unacceptable distortion would occur.

All external flange face welds are to be ground flush.

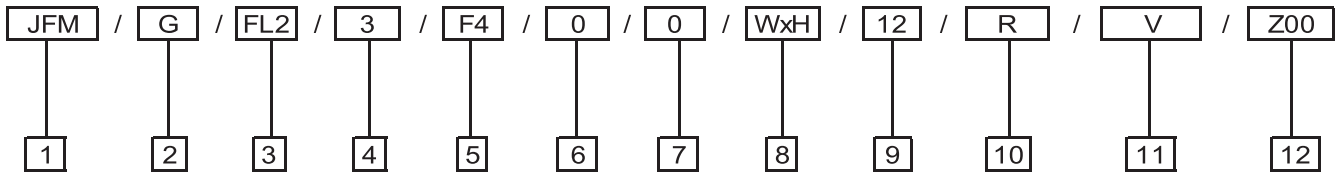
Each damper shall incorporate lifting points in the case.

The damper manufacturer shall be registered to Quality Assurance Standard ISO 9001: 2008 and accept responsibility for mechanical testing of the units before leaving the factory to the satisfaction of the clients inspector.

Control and Operation – Actuated

Each damper shall be suitable for being driven by an electric or pneumatic actuator via an extended drive shaft. The actuator shall be supplied, fitted and tested by the damper manufacturer.

Order Code



1 Product Type

2 Material Variants

- G – All galvanized mild steel construction
- E – Stainless steel grade 304 construction
- E2 – Stainless steel grade 316 construction

3 Mode Variants

- FL1 – Fire rated without blade seals
- FL2 – Fire rated with Kerlane tip seals
- L1 – Non fire rated without blade seals
- L2 – Non fire rated with Kerlane tip seals

4 Case Material Thickness

- 3 – 2 mm case
- 6 – 3 mm case

5 Flange Variants

- F1 – 30
- F2 – 40
- F3 – 40
- F4 – 50
- F5 – 50
- F6 – 65
- F7 – 75
- F8 – 80

6 Extend Flange One Side

- 0 – No extended Flange
- 50 – 50 mm extended flange
- 80 – 80 mm extended flange
- 100 – 100 mm extended flange
- 150 – 150 mm extended flange

7 Drilling Details

- 0 – Undrilled
- G1 – 40 Flange
- G2 – 50 Flange
- Others – Special

8 Duct Size

W x H mm

9 Blade Material Thickness

- 12 – 1.2 mm
- 20 – 2.0 mm

10 Actuator Position

- R – Right
- L – Left
- T – Top
- B – Base
- F – Face

11 Damper Orientations

- V – Vertical
- H – Horizontal

12 Controls

- Z00 - Manual
- Z01 – Pneumatic
Spring Return
- Z02 – Pneumatic
Double Acting
- Z03 – Electric Spring
Return
- Z04 – Electric
Double Acting