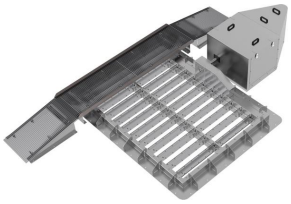
TROX® TECHNIK
The art of handling air

TUNNEL DAMPER TYPE JF-S



DAMPER FOR CEILING INSTALLATION, WITH INSTALLATION SUBFRAME, THERMALLY INSULATED PROTECTIVE ACTUATOR ENCLOSURE, AND BRIDGE

DAMPER FOR WALL INSTALLATION, WITH INTEGRAL ENCASED ACTUATOR

TUNNEL DAMPER WITH LINKAGE AND OPPOSED ACTION BLADES

TUNNEL DAMPER WITH CENTRE MULLION (FROM B > 1000 MM)

FOR THE VENTILATION OF AND SMOKE EXTRACT FROM UNDERGROUND TRANSPORT SYSTEMS

Tunnel dampers are safety components specially designed for underground transport systems and meet the requirements of the German Guideline for the Equipping and Operation of Roadway Tunnels (Richtlinie für die Ausstattung und den Betrieb von Straßentunneln, RABT) and of the Austrian Guidelines and Provisions for Road Traffic (Richtlinien und Vorschriften für das Straßenwesen, RVS)

- Certified construction and production according to ISO 9001
- Temperature resistance of 120 minutes at 400 °C
- Excellent low leakage performance even at high pressure
- Galvanised steel, powder-coated, or stainless steel construction
- Side seals made of sprung stainless steel compensate for the longitudinal expansion of the blades at high temperatures
- Parallel or opposed action blades
- Low pressure drop due to aerofoil blades
- With electric actuators encased in thermally insulated protective enclosures

Optional equipment and accessories

- Installation subframe for installation into intermediate concrete ceilings
- Support structure for installation of multiple dampers into walls

Application

Application

- TROX tunnel dampers of Type JF are specially designed safety components that meet the RABT and RVS requirements
- For opening and closing smoke extract ducts
- Used in ventilation and smoke extract systems in underground transport systems
- Can also be used as shut-off dampers for fans
- Installation usually either above the roadway in an intermediate concrete ceiling or in the ventilation plant room
- Bespoke solutions upon request

Special characteristics

- Excellent low leakage performance of 0.1 m^3/s per m^2 at a differential pressure of 3000 Pa
- For high operating pressure of up to 5000 Pa
- Low pressure drop
- Maximum corrosion and temperature resistance
- Excellent fire resistance of 120 minutes at 400 °C
- Remote control with actuator

Classification

- Machinery Directive 2006/42/EG, Declaration of incorporation
- Test report no. 210004049 – MPA NRW (Germany)
- Stability report no. 7317/06 – Afiti Licof (Spain)
- Test report no. 2007-757.01 – MA 39 VFA (Austria)
- Test report no. 210005454 – MPA NRW (Germany)

Nominal sizes

- B = 400 – 2,200 mm, in 100 mm increments as standard; H = 440 – 2,175 mm, in 195 mm increments as standard
- Available also in intermediate sizes (B and H) of 1 mm increments
- Sizes outside of the stated ranges are available upon request
- For larger sizes several dampers can be combined and fitted on a support structure

Description

Variants

- JF-S: Tunnel damper with opposed action blades
- JF-P: Tunnel damper with parallel action blades

Construction

- Galvanised sheet steel, flange holes on both sides, brass bearings, seals made of stainless steel
- A4: Stainless steel sheet, flange holes on both sides, stainless steel bearings, seals made of stainless steel

Parts and characteristics

- Electric open/close actuator or spring return actuator including limit switches
- Thermally insulated protective enclosure for the actuator, made of galvanised sheet steel or stainless steel sheet and faced rockwool mats
- Aerofoil blades with side seals and longitudinal tip seals

Optional equipment

- Installation subframe
- Baffle plates
- Walk-on grilles as bridges
- Support structure

Accessories

- Actuator
- Thermally insulated enclosure
- Quadrant stay with position indicator

Construction features

- TROX tunnel dampers of Type JF-S/P-TD consist basically of a casing, movable blades and linkage
- Casing made from four C-sections of sheet steel, welded at the joints
- From B > 1000 mm the blades are divided by a centre mullion
- The H sides are fitted with special side seals made of stainless steel
- Blades are double skin steel sections, screwed together, with longitudinal blade tip seals made of stainless steel, for opposed or parallel action
- Remote control with an actuator which may require a thermally insulated protective enclosure (depending on application)
- Enclosure can be fitted with baffle plates in order to reduce the aerodynamic drag in the smoke extract duct

Materials and surfaces

Stainless steel construction:

- KM: (only with stainless steel construction) All gaps, threads, and joints of corrosion-resistant steel are treated with a varnish for corrosion protection and preservation.
- Frame and blades: Stainless steel sheet, AISI 316Ti (1.4571)
- Shafts: Stainless steel, Ø 20 mm, AISI 316Ti (1.4571), surface treated with Kolsterising process
- Bearings: AISI 316Ti (1.4571)
- Linkage: AISI 316Ti (1.4571)
- Longitudinal blade tip seals: Stainless steel sheet, AISI 316Ti (1.4571)
- Side seals: Stainless steel sheet, AISI 316Ti (1.4571)
- Connecting elements: A4

Galvanised construction:

- Frame and blades: Galvanised sheet steel, DX51D+Z150-200NAC to EN 10327
- Shafts: Stainless steel, Ø 20 mm, AISI 303 (1.4305)
- Bearings: Brass CuZn40Pb2 (CW617N)
- Linkage: Stainless steel, AISI 304 (1.4301)
- Longitudinal blade tip seals: Stainless steel sheet, AISI 301 (1.4310)
- Side seals: Stainless steel sheet, AISI 301 (1.4310)
- Connecting elements: Galvanised

P1 Powder-coated construction:

- Frame and blades: Galvanised sheet steel, DX51D+Z150-200NAC to EN 10327
- Shafts: Stainless steel, Ø 20 mm, AISI 303 (1.4305)
- Bearings: Brass CuZn40Pb2 (CW617N)
- Linkage: Stainless steel, AISI 304 (1.4301)
- Longitudinal blade tip seals: Stainless steel sheet, AISI 316Ti (1.4571)
- Side seals: Stainless steel sheet, AISI 316Ti (1.4571)
- Powder coating: RAL (coating thickness 60 µm)

Maintenance

- Low maintenance; operational reliability is ensured even after extended stand-by use; long service life
- Maintenance-free bearings
- Regular inspection is required in spite of robust construction and highly corrosion-resistant materials. Service as required, e.g. removing contamination that impairs the function or causes corrosion