



## JZ - LOW LEAKAGE

### FOR LOW-LEAKAGE SHUT-OFF IN AIR CONDITIONING SYSTEMS

Rectangular multileaf dampers for volume flow and pressure control as well as for low-leakage shut-off of ducts and openings in walls and ceiling slabs

- Maximum dimensions of steel and stainless steel variants: 2000 × 1995 mm; of aluminium variant: 1200 × 1050 mm
- Closed blade air leakage to EN 1751, classes 1 - 4, depending on variant
- Casing air leakage to EN 1751, class C
- Aerofoil opposed action blades
- Closed cell side seals meet increased hygiene requirements
- Steel and stainless steel variants: blades interconnected by external linkage
- Aluminium variant: blades interconnected by gears
- Available in standard sizes and many intermediate sizes

Optional equipment and accessories

- Actuators: Open/Close actuators, modulating actuators
- Explosion-proof construction with pneumatic actuator or spring return actuator (not for JZ-\*L-AL)
- Powder-coated construction
- Aluminium variant also as anodised construction

## Application



### Application

- Multileaf dampers of Type JZ-Low leakage are used as an acting element in the volume flow and pressure control in air conditioning systems
- For low-leakage shut-off of ducts and openings in walls and ceiling slabs
- Stainless steel and powder-coated constructions with increased corrosion resistance if required
- Steel and stainless steel variants with brass or stainless steel bearings are suitable for use in potentially explosive atmospheres (ATEX)

### Special characteristics

- Aerofoil blades
- Low-maintenance, robust construction
- No parts with silicone
- Available in standard sizes and many intermediate sizes
- Closed cell side seals meet increased hygiene requirements

## Description



### Variants

- JZ-LL: Multileaf damper with opposed blade action, made of galvanised sheet steel, to EN 1751, classes 3 – 4
- JZ-HL: Multileaf damper with opposed blade action, made of galvanised sheet steel, to EN 1751, classes 1 – 2
- JZ-LL-A2: Multileaf damper with opposed blade action, made of stainless steel, to EN 1751, classes 3 – 4
- JZ-LL-AL: Multileaf damper with opposed blade action, made of aluminium, to EN 1751, class 4
- JZ-HL-AL: Multileaf damper with opposed blade action, made of aluminium, to EN 1751, class 2

### Attachments

- Quadrant stays and limit switches: Quadrant stays to adjust the damper blades (stepless adjustment) and for capturing the end positions
- Open/Close actuators: Actuators for opening and closing multileaf dampers
- Modulating actuators: Actuators for stepless blade adjustment
- Pneumatic actuators: Pneumatic actuators for opening and closing multileaf dampers
- Explosion-proof actuators: Actuators for opening and closing multileaf dampers installed in potentially explosive atmospheres

### Accessories

- Installation subframe: Installation subframe for the fast and simple installation of multileaf dampers

## TECHNICAL INFORMATION

### Functional description

#### Linkage

Low-leakage multileaf dampers with external linkage have opposed action blades.

An external linkage transfers the synchronous rotational movement from the drive arm to the individual blades. Even very large multileaf dampers can be safely opened and closed with this type of linkage.

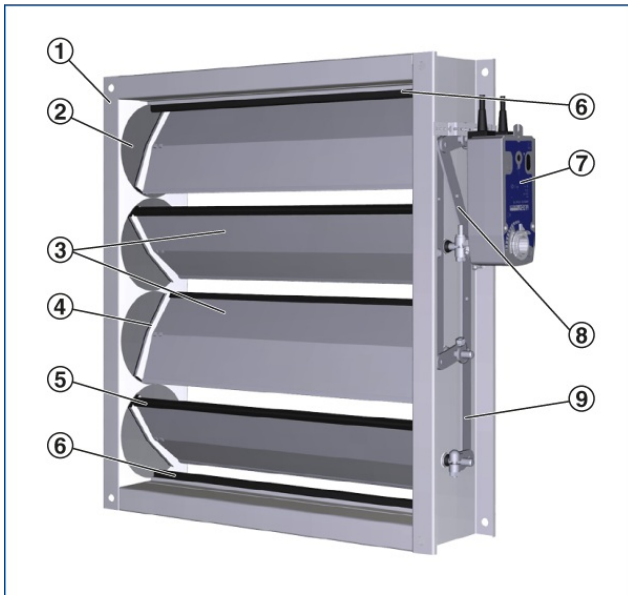
Opposed action blades close at different speeds since the linkage includes a transverse link. This facilitates the closing process and reduces the closed blade air leakage.

#### Gears

Multileaf dampers with gears can only have opposed action blades.

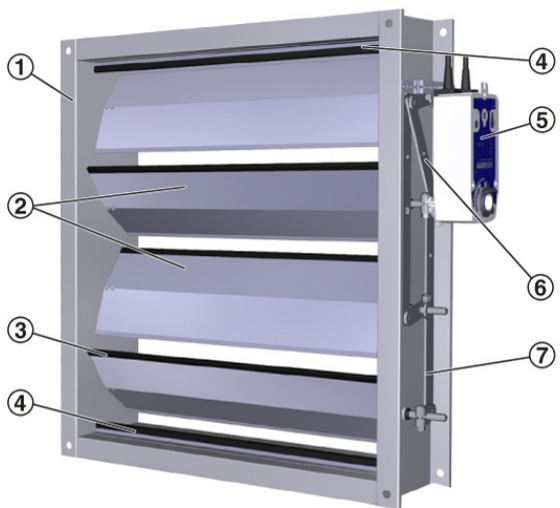
The internal gears transfer the synchronous rotational movement from the drive arm to the individual blades.

## Schematic illustration of JZ-LL and JZ-LL-A2



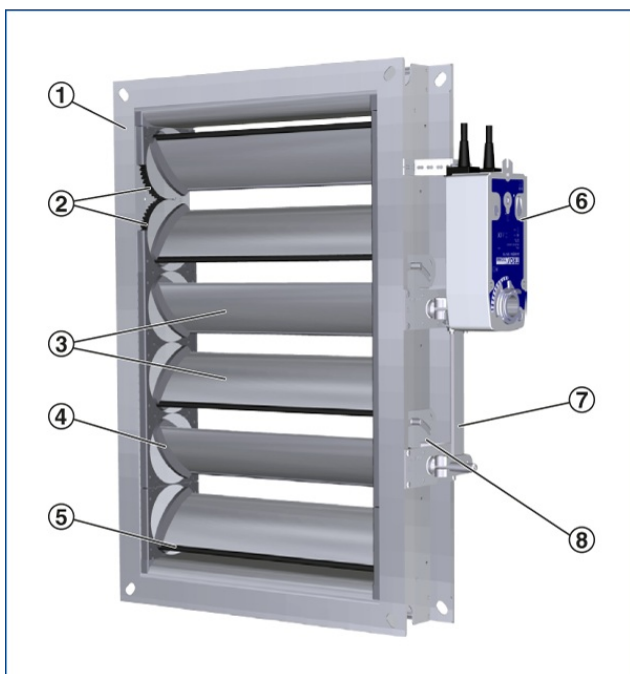
- ① Casing
- ② Slide disc
- ③ Opposed blades
- ④ Side seal
- ⑤ Blade tip seal
- ⑥ Travel stop (angle section with seal)
- ⑦ Actuator
- ⑧ Transverse link
- ⑨ External linkage

## Schematic illustration of JZ-HL



- ① Casing
- ② Opposed blades
- ③ Blade tip seal
- ④ Travel stop (angle section with seal)
- ⑤ Actuator
- ⑥ Transverse link
- ⑦ External linkage

## Schematic illustration of JZ-LL-AL



- ① Casing
- ② Encased gears
- ③ Opposed blades
- ④ Side seal
- ⑤ Blade tip seal
- ⑥ Actuator
- ⑦ External linkage (from = 600 mm)
- ⑧ Bearing plate with quadrant stay

## Schematic illustration of JZ-HL-AL



- ① Casing
- ② Blade tip seal
- ③ Opposed blades
- ④ Gears
- ⑤ Bearing plate with quadrant stay
- ⑥ Actuator

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Nominal sizes                        | 200 x 100 mm – 2000 x 1995 mm   |
| Volume flow rate range               | 200 – 40,000 l/s                |
| Volume flow rate range               | 720 – 143,640 m <sup>3</sup> /h |
| Maximum static differential pressure | Up to 3500 Pa                   |
| Operating temperature                | 0 – 100 °C                      |

### Quick sizing – differential pressure and sound power level for JZ-LL, JZ-LL-A2 and JZ-HL

| v   | Damper blade position $\alpha$ |                   |                       |                   |                       |                   |                       |                   |                       |                   |
|-----|--------------------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|
|     | OPEN                           |                   | 20°                   |                   | 40°                   |                   | 60°                   |                   | 80°                   |                   |
|     | $\Delta p_{st}$<br>Pa          | $L_{WA}$<br>dB(A) | $\Delta p_{st}$<br>Pa | $L_{WA}$<br>dB(A) | $\Delta p_{st}$<br>Pa | $L_{WA}$<br>dB(A) | $\Delta p_{st}$<br>Pa | $L_{WA}$<br>dB(A) | $\Delta p_{st}$<br>Pa | $L_{WA}$<br>dB(A) |
| 0.5 | <5                             | <30               | <5                    | <30               | <5                    | 7.5               | 22                    | 34                | 250                   | 63                |
| 1   | <5                             | <30               | <5                    | <30               | 8                     | 26                | 85                    | 53                | 1000                  | 83                |
| 2   | <5                             | <30               | <5                    | <30               | 30                    | 46                | 345                   | 73                | >2000                 | >90               |
| 4   | <5                             | 41                | 10                    | 44                | 120                   | 65                | 1385                  | >90               | >2000                 | >90               |
| 6   | <5                             | 52                | 24                    | 56                | 270                   | 77                | >2000                 | >90               | >2000                 | >90               |
| 8   | 10                             | 60                | 42                    | 64                | 480                   | 85                | >2000                 | >90               | >2000                 | >90               |
| 10  | 14                             | 67                | 65                    | 70                | 750                   | >90               | >2000                 | >90               | >2000                 | >90               |

Rectangular multileaf dampers for volume flow and pressure control as well as for low-leakage shut-off of ducts and openings in walls and ceiling slabs.

Suitable for duct pressures up to 1000 Pa.

Ready-to-operate unit which consists of the casing, aerofoil blades and the blade mechanism.

Flanges on both sides, suitable for duct connection.

The blade position is indicated externally by a notch in the blade shaft extension.

Closed blade air leakage to EN 1751, class 4.

Casing air leakage to EN 1751, class C.

Special characteristics

- Aerofoil blades
- Low-maintenance, robust construction
- No parts with silicone
- Available in standard sizes and many intermediate sizes
- Closed cell side seals meet increased hygiene requirements

Technical data

- Nominal sizes: 200 × 100 mm – 2000 × 1995 mm
- Differential pressure range: 5 – 3500 Pa
- Operating temperature: 0 to 100 °C

#### JZ-LL, JZ-HL

|           |             |             |            |            |            |            |                    |             |              |             |             |                  |
|-----------|-------------|-------------|------------|------------|------------|------------|--------------------|-------------|--------------|-------------|-------------|------------------|
| <b>JZ</b> | <b>- HL</b> | <b>- A2</b> | <b>- G</b> | <b>- E</b> | <b>- V</b> | <b>- L</b> | <b>/ 1000x1005</b> | <b>/ ER</b> | <b>/ Z64</b> | <b>/ NC</b> | <b>/ P1</b> | <b>- RAL ...</b> |
| 1         | 2           | 3           | 4          | 5          | 6          | 7          | 8                  | 9           | 10           |             |             |                  |

|                            |  |                                       |   |
|----------------------------|--|---------------------------------------|---|
| <b>1 Type</b>              | <b>JZ</b> Multileaf damper   | <b>7 Installation subframe</b>        | No entry: none<br><b>ER</b> With (only for construction G)  |
| <b>2 Classification</b>    | Closed blade air leakage to EN 1751<br><b>LL</b> Classes 3 – 4<br><b>HL</b> Classes 1 – 2  | <b>8 Attachments</b>                  | No entry: none<br><b>Z04 – Z07</b> Quadrant stay<br><b>Z12 – Z51</b> Actuators<br><b>ZF01 – ZF15</b> Spring return actuators<br><b>Z60 – Z77</b> Pneumatic actuators<br>Explosion-proof actuators<br><b>Z1EX, Z3EX</b> Electric<br><b>Z60EX – Z77EX</b> Pneumatic |
| <b>3 Material</b>          | No entry: galvanised steel<br><b>A2</b> Stainless steel (only for classification LL)   | <b>9 Damper blade safety function</b> | Only for spring return actuators or pneumatic actuators<br><b>NO</b> Pressure off/power off to OPEN<br><b>NC</b> Pressure off/power off to CLOSE  |
| <b>4 Construction</b>      | No entry: corner holes on both sides; plastic bearings<br><b>G</b> Flange holes on both sides (no corner holes)<br><b>M</b> Brass bearings<br><b>E</b> Stainless steel bearings<br><b>M-V</b> Brass plain bearings and reinforced blades (not for JZ-LL-A2)<br><b>E-V</b> Stainless steel plain bearings and reinforced blades (not for JZ-LL-A2)<br>M, E, M-V, E-V can be combined with G | <b>10 Surface</b>                     | No entry: standard construction<br><b>P1</b> Powder-coated, RAL CLASSIC colour<br><b>PS</b> Powder-coated, DB colour<br>Gloss level<br>RAL 9010 50 %<br>RAL 9006 30 %<br>All other RAL colours 70 %   |
| <b>5 Operating side</b>    | No entry: on the right<br><b>L</b> Left side   |                                       |   |
| <b>6 Nominal size [mm]</b> | B × H<br>B > 2000 = width subdivided<br>H > 1998 = height subdivided   |                                       |   |

#### Attachments

- Type Quadrant stays and limit switches
- Type Open/Close actuators
- Type Modulating actuators
- Type Pneumatic actuators
- Type Explosion-proof actuators

#### Accessories

- Type Installation subframes