

Multileaf dampers

Type JZ



Parallel blades



Opposed blades



Blade mechanism with gears

For shutting off the airflow in air conditioning systems

Rectangular multileaf dampers for volume flow and pressure control as well as for shutting off 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
- Casing air leakage to EN 1751, class C
- Aerofoil parallel or opposed action blades
- Steel and stainless steel variants: blades interconnected by external linkage (for parallel or opposed blade action)
- Aluminium variant: blades interconnected by gears (for opposed action)
- Installation with horizontal or vertical blades
- Available in standard sizes and many intermediate sizes
- Can be combined with external weather louvres

Optional equipment and accessories

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

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Variants

Product examples

Multileaf damper, variant JZ-S



Multileaf damper with quadrant stay

Multileaf damper, variant JZ-P



Multileaf damper with installation subframe and actuator

Multileaf damper, variant JZ-S-A2



Multileaf damper with actuator

Multileaf damper, variant JZ-P-A2



Multileaf damper with actuator

Multileaf damper, variant JZ-AL



Multileaf damper with actuator

Description

For detailed information on attachments see Chapter K3 – 1.3

For detailed information on accessories see Chapter K3 – 1.2

Application

- Multileaf dampers of Type JZ are used as an acting element in the volume flow and pressure control in air conditioning systems
- For shutting off ducts and openings in walls and ceiling slabs
- Parallel action blades are preferably used for opening/closing
- Opposed action blades are due to their characteristics preferably used for variable operation
- Stainless steel and powder-coated constructions with increased corrosion resistance
- Temperature resistant up to 100 °C; beyond 100 °C with brass or stainless steel bearings (steel and stainless steel construction variants)
- Steel and stainless steel variants with brass or stainless steel bearings are suitable for use in potentially explosive atmospheres (ATEX)

Variants

- JZ-S: Multileaf damper with opposed blade action, made of galvanised sheet steel
- JZ-P: Multileaf damper with parallel blade action, made of galvanised sheet steel
- JZ-S-A2: Multileaf damper with opposed blade action, made of stainless steel
- JZ-P-A2: Multileaf damper with parallel blade action, made of stainless steel
- JZ-AL: Multileaf damper with opposed blade action, made of aluminium

Nominal sizes

JZ-*, JZ-*-A2

- B: 200, 400, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000 mm (intermediate sizes: 201 – 1998 mm in increments of 1 mm)
- Width subdivided (BM): 2001 – 4150 mm, in increments of 1 mm
- H: 180, 345, 510, 675, 840, 1005, 1170, 1335, 1500, 1665, 1830, 1995 mm (intermediate sizes: 183 – 1998 mm, in increments of 1 mm)
- Height subdivided (HM): 1999 – 4066 mm, in increments of 1 mm
- Any combination of B × H

JZ-AL

- B: 200, 400, 600, 800, 1000, 1200 mm (intermediate sizes: 201 – 1199 mm, in increments of 1 mm)
- H: 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1050 mm
- Any combination of B × H

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

Special features

- Aerofoil blades
- Low-maintenance, robust construction
- No parts with silicone
- Available in standard sizes and many intermediate sizes

Standards and guidelines

- Casing air leakage to EN 1751, class C

Maintenance

- Maintenance-free as construction and materials are not subject to wear
- Contamination should be removed as it may lead to corrosion and to increased closed blade air leakage

Technical data

Nominal sizes	200 × 100 mm – 2000 × 1995 mm
Volume flow rate range	200 – 40,000 l/s
Volume flow rate range	720 – 143,640 m ³ /h
Maximum static differential pressure	Up to 3500 Pa
Operating temperature	–20 to 150 °C

Function

1

Functional description

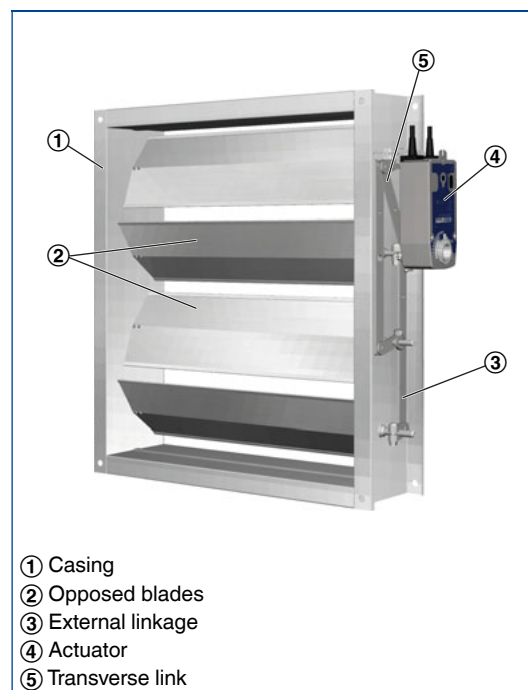
Linkage

Multileaf dampers with external linkage can have parallel action blades or 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.

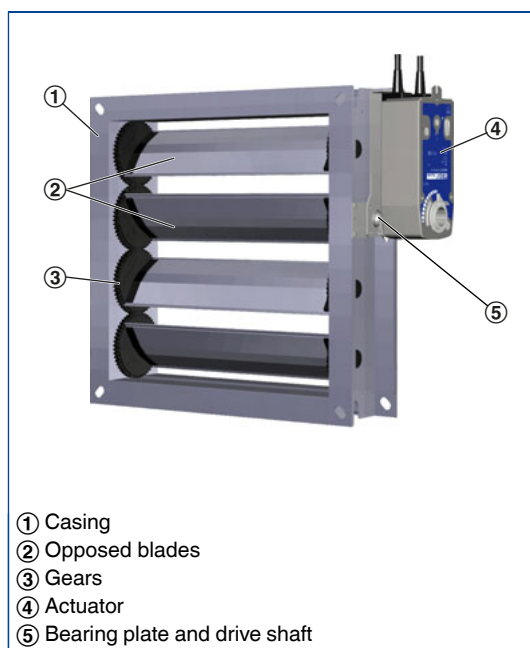
Gears

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.

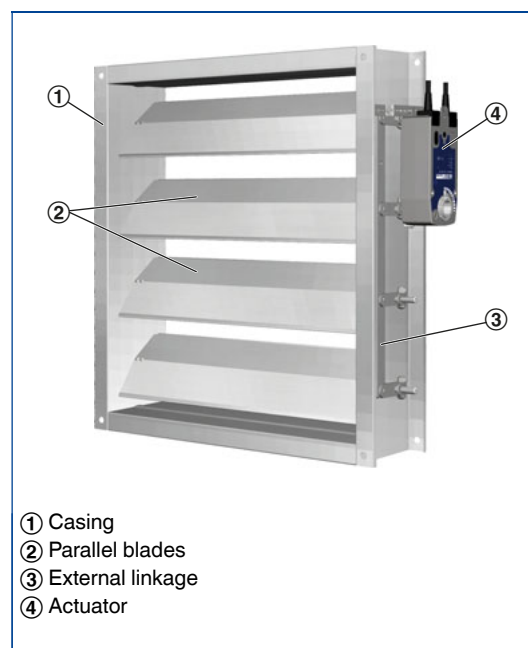
Schematic illustration of JZ-S



Schematic illustration of JZ-AL



Schematic illustration of JZ-P



Order code

JZ

JZ – P – A2 – G – M – L / 1000x1005 / ER / Z64 / NC / P1 – RAL ...									
1	2	3	4	5	6	7	8	9	10

1 Type

JZ Multileaf damper

2 Function

S Opposed (standard)
P Parallel

3 Material

No entry: galvanised steel
A2 Stainless steel

4 Construction

No entry: corner holes on both sides; plastic bearings
G Flange holes on both sides (no corner holes)
M Brass bearings
E Stainless steel bearings
M-V Brass bearings and reinforced blades (not for JZ-A2)
E-V Stainless steel bearings and reinforced blades (not for JZ-A2)
M, E, M-V, E-V can be combined with G

5 Operating side

No entry: on the right
L Left

6 Nominal size [mm]

B × H
B > 2000 = width subdivided
H > 1998 = height subdivided

7 Installation subframe

No entry: none
ER With (only for construction G)

8 Attachments

No entry: none
Z04 – Z07 Quadrant stay
Z12 – Z51 Actuators
ZF01 – ZF15 Spring return actuators
Z60 – Z77 Pneumatic actuators
Explosion-proof actuators
Z1EX, Z3EX Electric
Z60EX – Z77EX Pneumatic

9 Damper blade safety function

Only for spring return actuators or pneumatic actuators
NO Pressure off/power off to OPEN
NC Pressure off/power off to CLOSE

10 Surface

No entry: standard construction
P1 Powder-coated, RAL CLASSIC colour
PS Powder-coated, DB colour
Gloss level:
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

Order example

JZ-S-G-M-V-L/800x510/ER/Z43

Function	Opposed
Material	Galvanised steel
Construction	Flange holes on both sides, brass bearings and reinforced blades
Operating side	On the left
Nominal size	800 × 510 mm
Installation subframe	With
Attachments	Open/Close actuator NM230A
Surface	Standard construction

Order code

JZ-AL

JZ – AL / 1100×950 / ER / Z64 / NC / P1 – RAL ...

1 2 3 4 5 6 7

1 Type

JZ Multileaf damper

2 Material

AL Aluminium

3 Nominal size [mm]

B × H

4 Installation subframe

No entry: none

ER With

5 Attachments

No entry: none

Z04 – Z07 Quadrant stay

Z12 – Z51 Actuators

ZF01 – ZF15 Spring return actuators

Z60 – Z77 Pneumatic actuators

6 Damper blade safety function

Only for spring return actuators or pneumatic actuators

NO Pressure off/power off to OPEN

NC Pressure off/power off to CLOSE

7 Surface

No entry: standard construction

P1 Powder-coated, RAL CLASSIC colour

PS Powder-coated, DB colour

S3 Anodised to EURAS standard, E6-C-0

Gloss level:

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %

Order example

JZ-AL/600×850/ZF01/NO/P1-RAL7001

Material	Aluminium
Nominal size	600 × 850 mm
Installation subframe	Without
Attachments	Spring return actuator NF24A
Damper blade position	Power off to OPEN
Surface	Powder-coated, RAL 7001, silver grey

Torque

The torque for closing a multileaf damper must be such that the damper can be safely opened and closed. For closure, the torque must suffice to ensure complete shut-off by the blades. Opening is initiated without aerodynamic forces. When air flows through the damper, the aerodynamic forces of the airflow create a closing force (torque) on the blades; this happens independent of the direction of the airflow. This closing force must be countered, or overcome. The blade position, or blade angle α , for which there is the largest torque depends, among other factors, on the fan characteristics.

Minimum torque for JZ-*, JZ-*-A2

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	1800	2000
mm	Nm									
180 – 1995	10	10	10	10	10	10	10	10	10	10

Minimum torque for JZ-AL

H	B [mm]					
	200	400	600	800	1000	1200
mm	Nm					
100 – 650	5	5	5	5	5	5
700 – 1050	10	10	10	10	10	10

Free area

Free area for steel and stainless steel multileaf dampers

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	1800	2000
mm	m ²									
180 – 344	0.03	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27	0.30
345 – 509	0.06	0.11	0.17	0.23	0.28	0.34	0.40	0.45	0.51	0.57
510 – 674	0.08	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.83
675 – 839	0.11	0.22	0.33	0.44	0.55	0.66	0.77	0.88	0.99	1.10
840 – 1004	0.14	0.27	0.41	0.55	0.69	0.82	0.96	1.10	1.23	1.37
1005 – 1169	0.16	0.33	0.49	0.66	0.82	0.98	1.15	1.31	1.47	1.64
1170 – 1334	0.19	0.38	0.57	0.76	0.95	1.14	1.33	1.52	1.72	1.91
1335 – 1499	0.22	0.43	0.65	0.87	1.09	1.30	1.52	1.74	1.96	2.17
1500 – 1664	0.24	0.49	0.73	0.98	1.22	1.47	1.71	1.95	2.20	2.44
1665 – 1829	0.27	0.54	0.81	1.08	1.36	1.63	1.90	2.17	2.44	2.71
1830 – 1994	0.30	0.60	0.89	1.19	1.49	1.79	2.08	2.38	2.68	2.98
1995	0.32	0.65	0.97	1.30	1.62	1.95	2.27	2.60	2.92	3.25

Intermediate sizes: Intermediate widths can be interpolated

JZ-S, JZ-P, JZ-A2-S, JZ-A2-P

Free area

Free area for aluminium multileaf dampers

H	B [mm]										
	200	300	400	500	600	700	800	900	1000	1100	1200
mm	m ²										
100, 150	0.014	0.022	0.030	0.038	0.047	0.055	0.063	0.071	0.079	0.087	0.095
200, 250	0.028	0.045	0.061	0.077	0.093	0.109	0.126	0.142	0.158	0.174	0.19
300, 350	0.043	0.067	0.091	0.115	0.14	0.164	0.188	0.213	0.237	0.261	0.286
400, 450	0.057	0.089	0.122	0.154	0.186	0.219	0.251	0.284	0.316	0.348	0.381
500, 550	0.071	0.111	0.152	0.192	0.233	0.273	0.314	0.354	0.395	0.435	0.476
600, 650	0.085	0.134	0.182	0.231	0.279	0.328	0.377	0.425	0.474	0.522	0.571
700, 750	0.099	0.156	0.213	0.269	0.326	0.383	0.439	0.496	0.553	0.61	0.666
800, 850	0.113	0.178	0.243	0.308	0.373	0.437	0.502	0.567	0.632	0.697	0.761
900, 950	0.128	0.20	0.273	0.346	0.419	0.492	0.565	0.638	0.711	0.784	0.857
1000, 1050	0.142	0.223	0.304	0.385	0.466	0.547	0.628	0.709	0.79	0.871	0.952

Intermediate sizes: Intermediate widths can be interpolated

JZ-AL

Maximum static differential pressure for a closed multileaf damper

Maximum static differential pressure for a closed multileaf damper

Construction	Width [mm]						
	800	1000	1200	1400	1600	1800	2000
	$\Delta p_{st \max}$ Pa						
Standard construction	2500	2000	1650	1400	1250	1100	1000
Brass bearings (-M)	3000	2500	2200	1950	1750	1600	1500
Stainless steel bearings (-E)	3000	2500	2200	1950	1750	1600	1500
Reinforced blades (-M-V, -E-V)	3500	3000	2700	2500	2300	2100	2000

JZ-S, JZ-P, JZ-A2-S, JZ-A2-P

Maximum static differential pressure for a closed multileaf damper JZ-AL

2000 Pa

Sound power level
for a closed
multileaf damper

Sound power level for a closed multileaf damper JZ-S or JZ-S-A2

Δp_{st}	Area B x H [m ²]							
	0.14	0.2	0.4	0.6	0.8	1.2	2	4
	L_{WA}							
Pa	dB(A)							
100	57	58	61	63	64	66	68	71
200	63	65	68	69	71	72	75	77
500	71	72	76	78	79	81	83	84
1000	78	80	82	84	85	88	90	>90
1500	81	83	86	88	89	>90	>90	>90
2000	84	85	89	>90	>90	>90	>90	>90

Sound power level for a closed multileaf damper JZ-P or JZ-P-A2

Δp_{st}	Area B x H [m ²]							
	0.14	0.2	0.4	0.6	0.8	1.2	2	4
	L_{WA}							
Pa	dB(A)							
100	57	58	61	63	64	64	68	71
200	63	65	68	69	71	71	75	78
500	71	72	76	78	79	79	85	87
1000	78	80	82	84	85	85	89	>90
1500	81	82	86	88	89	89	>90	>90
2000	84	86	89	>90	>90	>90	>90	>90

Sound power level for a closed multileaf damper JZ-AL

Δp_{st}	Area B x H [m ²]								
	0.04	0.09	0.16	0.25	0.36	0.64	0.81	1	1.2
	L_{WA}								
Pa	dB(A)								
100	42	45	48	50	51	54	55	56	56
200	49	53	55	57	59	>60	>60	>60	>60
500	59	>60	>60	>60	>60	>60	>60	>60	>60
1000	>60	>60	>60	>60	>60	>60	>60	>60	>60
1500	>60	>60	>60	>60	>60	>60	>60	>60	>60
2000	>60	>60	>60	>60	>60	>60	>60	>60	>60

1 Quick sizing – differential pressure and sound power level

Quick sizing tables provide a good overview of the sound power levels and differential pressures that can be expected. Approximate intermediate values can be interpolated. Precise intermediate values and spectral data can be calculated with our Easy Product Finder design programme.

The sound power levels L_{WA} apply to multileaf dampers with a cross-sectional area ($B \times H$) of 1 m^2 .

The differential pressures apply to multileaf dampers installed in ducts (installation type A).

Quick sizing – differential pressure and sound power level for JZ-S, JZ-S-A2

v	Damper blade position α									
	OPEN		20°		40°		60°		80°	
	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}
m/s	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
0.5	<5	<30	<5	<30	<5	<30	22	44	255	67
1	<5	<30	<5	<30	8	38	85	59	1010	82
2	<5	31	<5	35	28	53	335	74	>2000	>90
4	<5	46	10	50	110	68	1395	89	>2000	>90
6	<5	55	22	59	250	77	>2000	>90	>2000	>90
8	8	61	40	65	440	83	>2000	>90	>2000	>90
10	14	66	60	70	690	88	>2000	>90	>2000	>90

Quick sizing – differential pressure and sound power level for JZ-P, JZ-P-A2

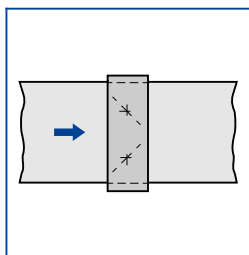
v	Damper blade position α									
	OPEN		20°		40°		60°		80°	
	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}
m/s	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
0.5	<5	<30	<5	<30	<5	<30	<5	<30	12	42
1	<5	<30	<5	<30	<5	<30	12	40	45	60
2	<5	<30	<5	30	10	41	45	57	185	77
4	<5	41	6	48	40	58	170	75	750	>90
6	<5	51	14	58	85	69	385	85	1685	>90
8	<5	58	25	65	150	76	685	>90	>2000	>90
10	<5	64	40	71	230	81	1070	>90	>2000	>90

Quick sizing – differential pressure and sound power level for JZ-AL

v	Damper blade position α									
	OPEN		20°		40°		60°		80°	
	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}	Δp_{st}	L_{WA}
m/s	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
0.5	<5	<30	<5	<30	<5	<30	22	42	245	67
1	<5	<30	<5	<30	8	35	90	58	985	83
2	<5	<30	<5	32	32	51	350	74	>2000	>90
4	<5	43	12	48	125	67	1390	90	>2000	>90
6	<5	52	24	57	275	76	>2000	>90	>2000	>90
8	10	59	45	64	490	83	>2000	>90	>2000	>90
10	14	64	70	69	765	88	>2000	>90	>2000	>90

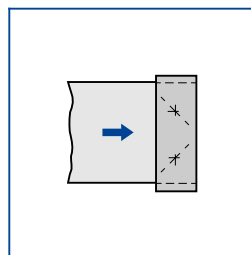
Installation types

Installation type A



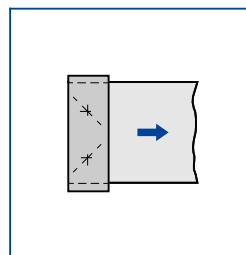
Ducts on both sides

Installation type B



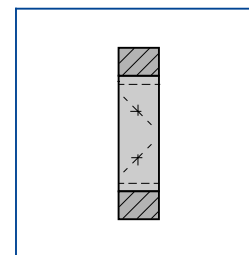
Air discharge

Installation type C



Air intake

Installation type D



Air transfer

Description



Multileaf damper, variant JZ-S

For ATEX classification see Chapter K3 – 1.3, Explosion-proof actuators

Variant

- JZ-S: Multileaf damper with opposed blade action, made of galvanised sheet steel

Construction

- Galvanised sheet steel, corner holes on both sides, plastic bearings, temperature resistant up to 100 °C
- G: Flange holes on both sides
- M: Brass bearings, temperature resistant up to 150 °C
- E: Stainless steel bearings, temperature resistant up to 150 °C (up to 200 °C while not being activated)
- V: Reinforced blades (only for -M, -E)
- BM: Width subdivided
- HM: Height subdivided

Combinations are available, with one exception: M cannot be combined with E

Parts and characteristics

- Ready-to-install shut-off damper
- Blades with external linkage
- Drive arm

Construction features

- Rectangular casing, welded (P1: casing with screws), material thickness 1.25 mm
- Blades, material thickness 1 mm
- Flanges on both sides, suitable for duct connection, either flange holes or corner holes
- External linkage, robust and durable, consisting of the coupling rod and horizontal arms
- Blade shafts, Ø12 mm, with notch to indicate the blade position
- The drive arm can be fixed to every blade (by others)
- Construction and materials comply with the EU directive and guidelines for use in potentially explosive atmospheres (ATEX) for variants with brass or stainless steel bearings (-M, -E)

Materials and surfaces

- Casing and blades made of galvanised sheet steel
- Blade shafts, drive arm and external linkage made of galvanised steel
- Plain bearings made of plastic
- P1: Powder-coated, RAL CLASSIC colour
- PS: Powder-coated, NCS or DB colour

Installation and commissioning

- With horizontal or vertical blades
- With or without installation subframe
- Torsion-free installation
- For widths exceeding 2000 mm or heights exceeding 1995 mm install two multileaf dampers side by side or one above the other

Weight

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	1800	2000
mm	kg									
180	4	6	8	9	11	13	14	16	18	19
345	6	8	10	12	15	17	19	21	24	26
510	7	10	13	16	19	22	25	27	30	33
675	10	13	16	20	23	27	30	33	37	40
840	11	15	19	23	28	32	37	41	46	50
1005	11	17	22	27	32	38	43	48	53	59
1170	13	19	25	31	37	43	49	55	61	67
1335	15	22	28	35	41	48	55	61	68	74
1500	16	23	30	37	44	51	59	66	73	80
1665	17	25	33	41	49	57	65	72	80	88
1830	18	27	35	44	52	61	69	78	86	95
1995	19	29	38	47	56	66	75	84	94	103

Dimensions

1 For detailed information on corner holes and flange holes see Dimensions – Duct connection

For detailed information on drive shafts see Dimensions – Drive shafts

Dimensional drawing of JZ-S standard sizes

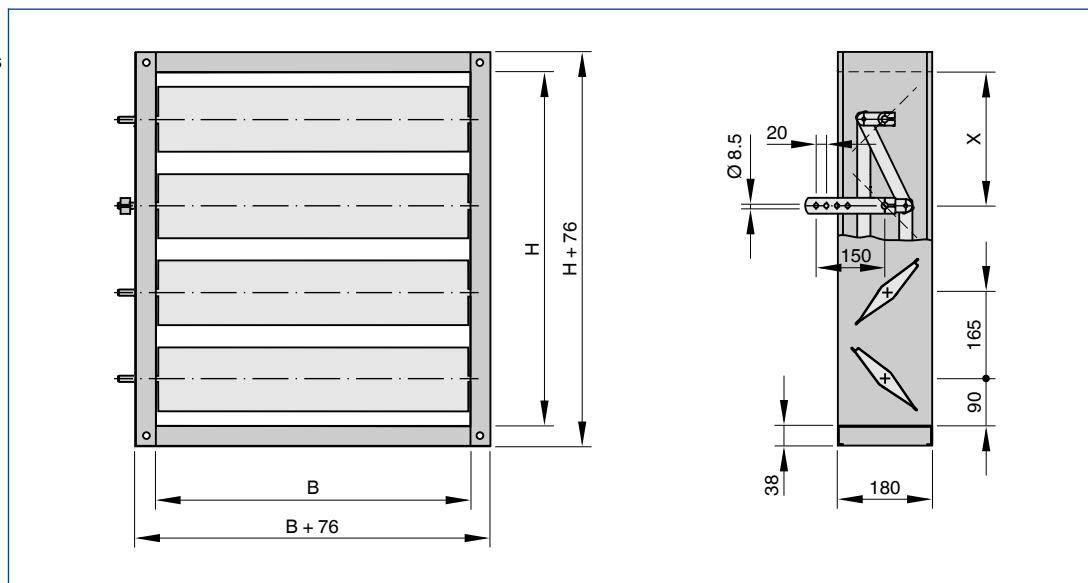


Illustration shows a multileaf damper with drive arm, operating side on the right

Dimensions

H	No. of blades	Position of drive arm	
		X	Blade
mm	–	mm	–
180	1	90	1
345	2	90	1
510	3	90	1
675	4	255	2
840	5	420	3
1005	6	420	3
1170	7	585	4
1335	8	585	4
1500	9	750	5
1665	10	750	5
1830	11	915	6
1995	12	915	6

Dimensional drawing of JZ-S intermediate sizes

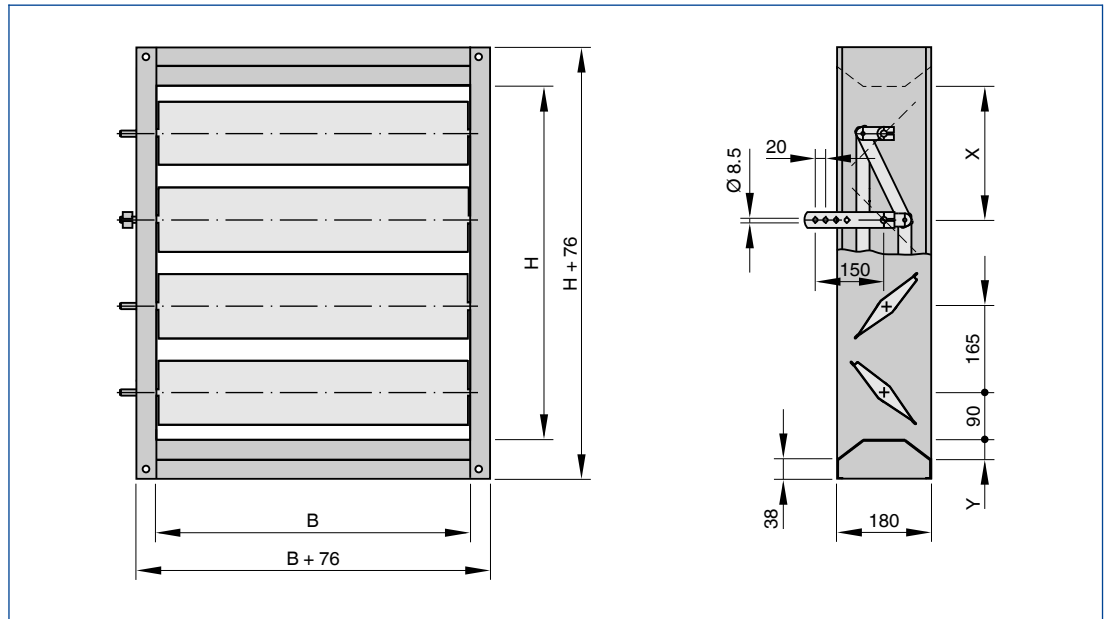


Illustration shows a multileaf damper with drive arm, operating side on the right

Dimensions

H	No. of blades	Position of drive arm		Y
		X	Blade	
mm	-	mm	-	mm
183 – 343	1	90	1	1.5 – 81.5
348 – 508	2	90	1	1.5 – 81.5
513 – 673	3	90	1	1.5 – 81.5
678 – 838	4	255	2	1.5 – 81.5
843 – 1003	5	420	3	1.5 – 81.5
1008 – 1168	6	420	3	1.5 – 81.5
1173 – 1333	7	585	4	1.5 – 81.5
1338 – 1498	8	585	4	1.5 – 81.5
1503 – 1663	9	750	5	1.5 – 81.5
1668 – 1828	10	750	5	1.5 – 81.5
1833 – 1993	11	915	6	1.5 – 81.5
1998	12	915	6	1.5

Description



Multileaf damper, variant JZ-P

For ATEX classification see Chapter K3 – 1.3, Explosion-proof actuators

Variant

- JZ-P: Multileaf damper with parallel blade action, made of galvanised sheet steel

Construction

- Galvanised sheet steel, corner holes on both sides, plastic bearings, temperature resistant up to 100 °C
- G: Flange holes on both sides
- M: Brass bearings, temperature resistant up to 150 °C
- E: Stainless steel bearings, temperature resistant up to 150 °C (up to 200 °C while not being activated)
- V: Reinforced blades (only for -M, -E)
- BM: Width subdivided
- HM: Height subdivided

Combinations are available, with one exception: M cannot be combined with E

Parts and characteristics

- Ready-to-install shut-off damper
- Blades with external linkage
- Drive arm

Construction features

- Rectangular casing, welded (P1: casing with screws), material thickness 1.25 mm
- Blades, material thickness 1 mm
- Flanges on both sides, suitable for duct connection, either flange holes or corner holes
- External linkage, robust and durable, consisting of the coupling rod and horizontal arms
- Blade shafts, Ø12 mm, with notch to indicate the blade position
- The drive arm can be fixed to every blade (by others)
- Construction and materials comply with the EU directive and guidelines for use in potentially explosive atmospheres (ATEX) for variants with brass or stainless steel bearings (-M, -E)

Materials and surfaces

- Casing and blades made of galvanised sheet steel
- Blade shafts, drive arm and external linkage made of galvanised steel
- Plain bearings made of plastic
- P1: Powder-coated, RAL CLASSIC colour
- PS: Powder-coated, NCS or DB colour

Installation and commissioning

- With horizontal or vertical blades
- With or without installation subframe
- Torsion-free installation
- For widths exceeding 2000 mm or heights exceeding 1995 mm install two multileaf dampers side by side or one above the other

Weight

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	1800	2000
mm	kg									
180	4	6	8	9	11	13	14	16	18	19
345	6	8	10	12	15	17	19	21	24	26
510	7	10	13	16	19	22	25	27	30	33
675	10	13	16	20	23	27	30	33	37	40
840	11	15	19	23	28	32	37	41	46	50
1005	11	17	22	27	32	38	43	48	53	59
1170	13	19	25	31	37	43	49	55	61	67
1335	15	22	28	35	41	48	55	61	68	74
1500	16	23	30	37	44	51	59	66	73	80
1665	17	25	33	41	49	57	65	72	80	88
1830	18	27	35	44	52	61	69	78	86	95
1995	19	29	38	47	56	66	75	84	94	103

Dimensions

For detailed information on corner holes and flange holes see Dimensions – Duct connection

For detailed information on drive shafts see Dimensions – Drive shafts

Dimensional drawing of JZ-P standard sizes

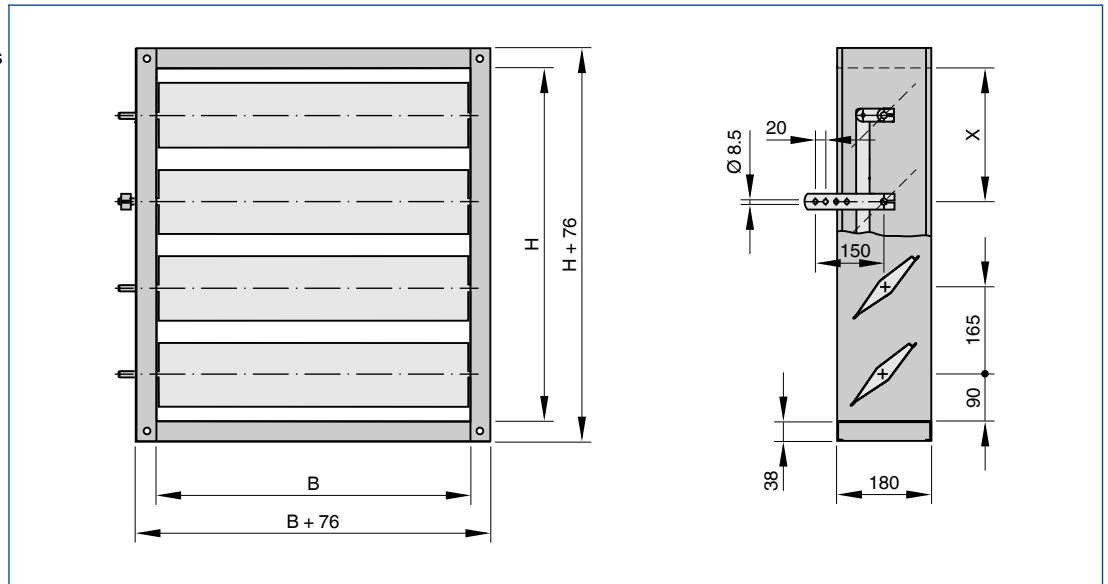


Illustration shows a multileaf damper with drive arm, operating side on the right

Dimensions

H	No. of blades	Position of drive arm	
		X	Blade
mm	-	mm	-
180	1	90	1
345	2	90	1
510	3	90	1
675	4	255	2
840	5	420	3
1005	6	420	3
1170	7	585	4
1335	8	585	4
1500	9	750	5
1665	10	750	5
1830	11	915	6
1995	12	915	6

1

Dimensional drawing of JZ-P intermediate sizes

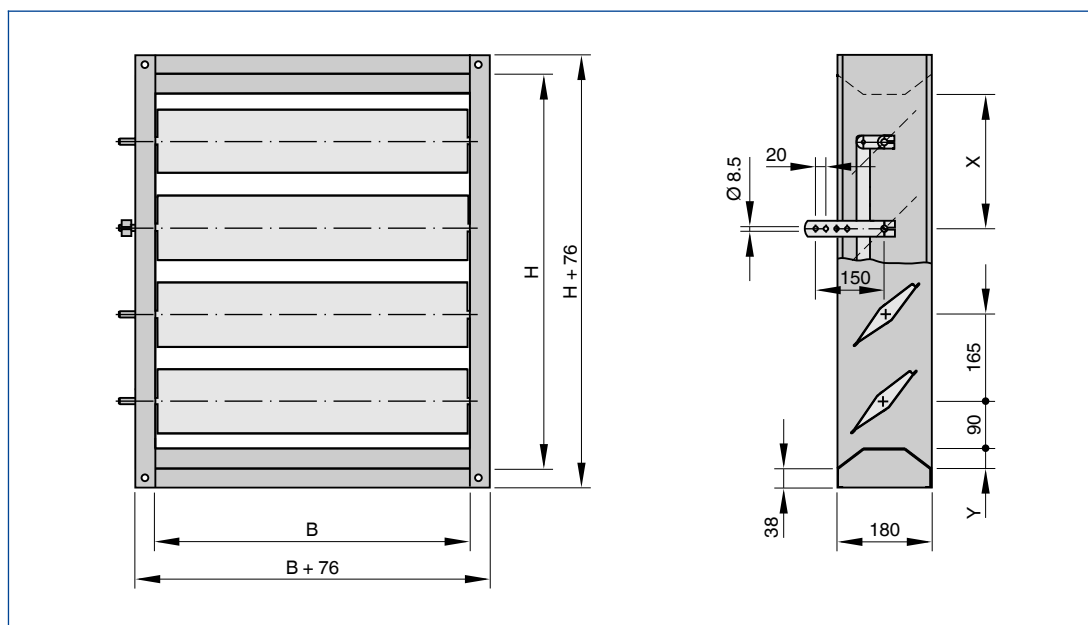


Illustration shows a multileaf damper with drive arm, operating side on the right

Dimensions

H	No. of blades	Position of drive arm		Y
		X	Blade	
mm	–	mm	–	mm
183 – 343	1	90	1	1.5 – 81.5
348 – 508	2	90	1	1.5 – 81.5
513 – 673	3	90	1	1.5 – 81.5
678 – 838	4	255	2	1.5 – 81.5
843 – 1003	5	420	3	1.5 – 81.5
1008 – 1168	6	420	3	1.5 – 81.5
1173 – 1333	7	585	4	1.5 – 81.5
1338 – 1498	8	585	4	1.5 – 81.5
1503 – 1663	9	750	5	1.5 – 81.5
1668 – 1828	10	750	5	1.5 – 81.5
1833 – 1993	11	915	6	1.5 – 81.5
1998	12	915	6	1.5

Description



Multileaf damper, variant JZ-S-A2

For ATEX classification see Chapter K3 – 1.3, Explosion-proof actuators

Variant

- JZ-S-A2: Multileaf damper with opposed blade action, made of stainless steel

Construction

- Stainless steel, corner holes on both sides, plastic bearings, temperature resistant up to 100 °C
- G: Flange holes on both sides
- M: Brass bearings, temperature resistant up to 150 °C
- E: Stainless steel bearings, temperature resistant up to 150 °C (up to 200 °C while not being activated)

Combinations are available, with one exception: M cannot be combined with E

Parts and characteristics

- Ready-to-install shut-off damper
- Blades with external linkage
- Drive arm

Construction features

- Rectangular casing, with screws, material thickness 1.25 mm
- Blades, material thickness 1 mm
- Flanges on both sides, suitable for duct connection, either flange holes or corner holes
- External linkage, robust and durable, consisting of the coupling rod and horizontal arms
- Blade shafts, Ø12 mm, with notch to indicate the blade position
- The drive arm can be fixed to every blade (by others)
- Construction and materials comply with the EU directive and guidelines for use in potentially explosive atmospheres (ATEX) for variants with brass or stainless steel bearings (-M, -E)

Materials and surfaces

- Casing, blades and external linkage made of stainless steel, material no. 1.4301
- Shafts made of stainless steel, material no. 1.4305
- Surface: pickled and passivated
- P1: Powder-coated, RAL CLASSIC colour
- PS: Powder-coated, NCS or DB colour

Installation and commissioning

- With horizontal or vertical blades
- With or without installation subframe
- Torsion-free installation
- For widths exceeding 2000 mm or heights exceeding 1995 mm install two multileaf dampers side by side or one above the other

Weight

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	1800	2000
mm	kg									
180	4	6	8	9	11	13	14	16	18	19
345	6	8	10	12	15	17	19	21	24	26
510	7	10	13	16	19	22	25	27	30	33
675	10	13	16	20	23	27	30	33	37	40
840	11	15	19	23	28	32	37	41	46	50
1005	11	17	22	27	32	38	43	48	53	59
1170	13	19	25	31	37	43	49	55	61	67
1335	15	22	28	35	41	48	55	61	68	74
1500	16	23	30	37	44	51	59	66	73	80
1665	17	25	33	41	49	57	65	72	80	88
1830	18	27	35	44	52	61	69	78	86	95
1995	19	29	38	47	56	66	75	84	94	103

Dimensions

1 For detailed information on corner holes and flange holes see Dimensions – Duct connection

For detailed information on drive shafts see Dimensions – Drive shafts

Dimensional drawing of JZ-S-A2 standard sizes

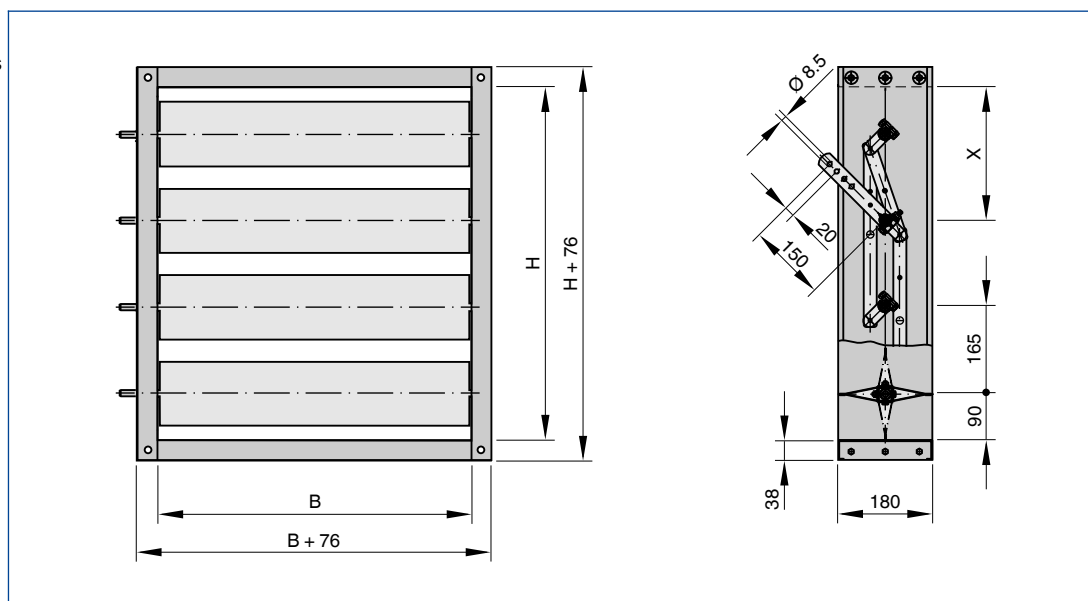


Illustration shows a multileaf damper with drive arm, operating side on the right

Dimensions

H	No. of blades	Position of drive arm	
		X	Blade
mm	-	mm	-
180	1	90	1
345	2	90	1
510	3	90	1
675	4	255	2
840	5	420	3
1005	6	420	3
1170	7	585	4
1335	8	585	4
1500	9	750	5
1665	10	750	5
1830	11	915	6
1995	12	915	6

Dimensional drawing of JZ-S-A2 intermediate sizes

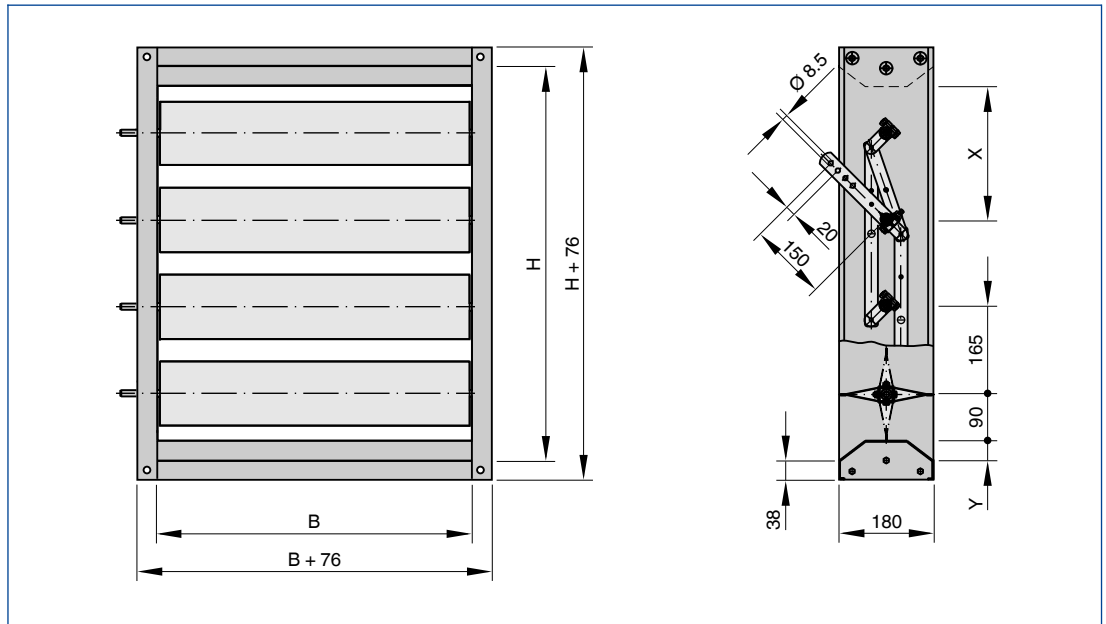


Illustration shows a multileaf damper with drive arm, operating side on the right

Dimensions

H	No. of blades	Position of drive arm		Y
		X	Blade	
mm	-	mm	-	mm
183 – 343	1	90	1	1.5 – 81.5
348 – 508	2	90	1	1.5 – 81.5
513 – 673	3	90	1	1.5 – 81.5
678 – 838	4	255	2	1.5 – 81.5
843 – 1003	5	420	3	1.5 – 81.5
1008 – 1168	6	420	3	1.5 – 81.5
1173 – 1333	7	585	4	1.5 – 81.5
1338 – 1498	8	585	4	1.5 – 81.5
1503 – 1663	9	750	5	1.5 – 81.5
1668 – 1828	10	750	5	1.5 – 81.5
1833 – 1993	11	915	6	1.5 – 81.5
1998	12	915	6	1.5

Description



Multileaf damper,
variant JZ-P-A2

For ATEX classification
see Chapter K3 – 1.3,
Explosion-proof actuators

Variant

- JZ-P-A2: Multileaf damper with parallel blade action, made of stainless steel

Construction

- Stainless steel, corner holes on both sides, plastic bearings, temperature resistant up to 100 °C
 - G: Flange holes on both sides
 - M: Brass bearings, temperature resistant up to 150 °C
 - E: Stainless steel bearings, temperature resistant up to 150 °C (up to 200 °C while not being activated)
- Combinations are available, with one exception: M cannot be combined with E

Parts and characteristics

- Ready-to-install shut-off damper
- Blades with external linkage
- Drive arm

Construction features

- Rectangular casing, with screws, material thickness 1.25 mm
- Blades, material thickness 1 mm
- Flanges on both sides, suitable for duct connection, either flange holes or corner holes
- External linkage, robust and durable, consisting of the coupling rod and horizontal arms
- Blade shafts, Ø12 mm, with notch to indicate the blade position
- The drive arm can be fixed to every blade (by others)
- Construction and materials comply with the EU directive and guidelines for use in potentially explosive atmospheres (ATEX) for variants with brass or stainless steel bearings (-M, -E)

Materials and surfaces

- Casing, blades and external linkage made of stainless steel, material no. 1.4301
- Shafts made of stainless steel, material no. 1.4305
- Surface: pickled and passivated
- P1: Powder-coated, RAL CLASSIC colour
- PS: Powder-coated, NCS or DB colour

Installation and commissioning

- With horizontal or vertical blades
- With or without installation subframe
- Torsion-free installation
- For widths exceeding 2000 mm or heights exceeding 1995 mm install two multileaf dampers side by side or one above the other

Weight

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	1800	2000
mm	kg									
180	4	6	8	9	11	13	14	16	18	19
345	6	8	10	12	15	17	19	21	24	26
510	7	10	13	16	19	22	25	27	30	33
675	10	13	16	20	23	27	30	33	37	40
840	11	15	19	23	28	32	37	41	46	50
1005	11	17	22	27	32	38	43	48	53	59
1170	13	19	25	31	37	43	49	55	61	67
1335	15	22	28	35	41	48	55	61	68	74
1500	16	23	30	37	44	51	59	66	73	80
1665	17	25	33	41	49	57	65	72	80	88
1830	18	27	35	44	52	61	69	78	86	95
1995	19	29	38	47	56	66	75	84	94	103

Dimensions

For detailed information on corner holes and flange holes see Dimensions – Duct connection

For detailed information on drive shafts see Dimensions – Drive shafts

Dimensional drawing of JZ-P-A2 standard sizes

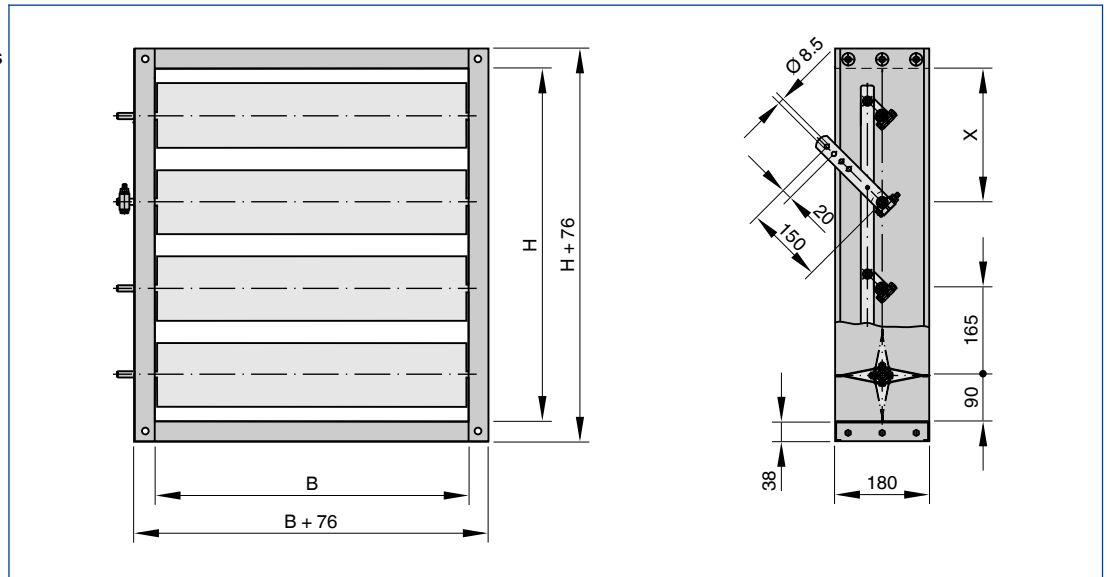


Illustration shows a multileaf damper with drive arm, operating side on the right

Dimensions

H	No. of blades	Position of drive arm	
		X	Blade
mm	–	mm	–
180	1	90	1
345	2	90	1
510	3	90	1
675	4	255	2
840	5	420	3
1005	6	420	3
1170	7	585	4
1335	8	585	4
1500	9	750	5
1665	10	750	5
1830	11	915	6
1995	12	915	6

1

Dimensional drawing of JZ-P-A2 intermediate sizes

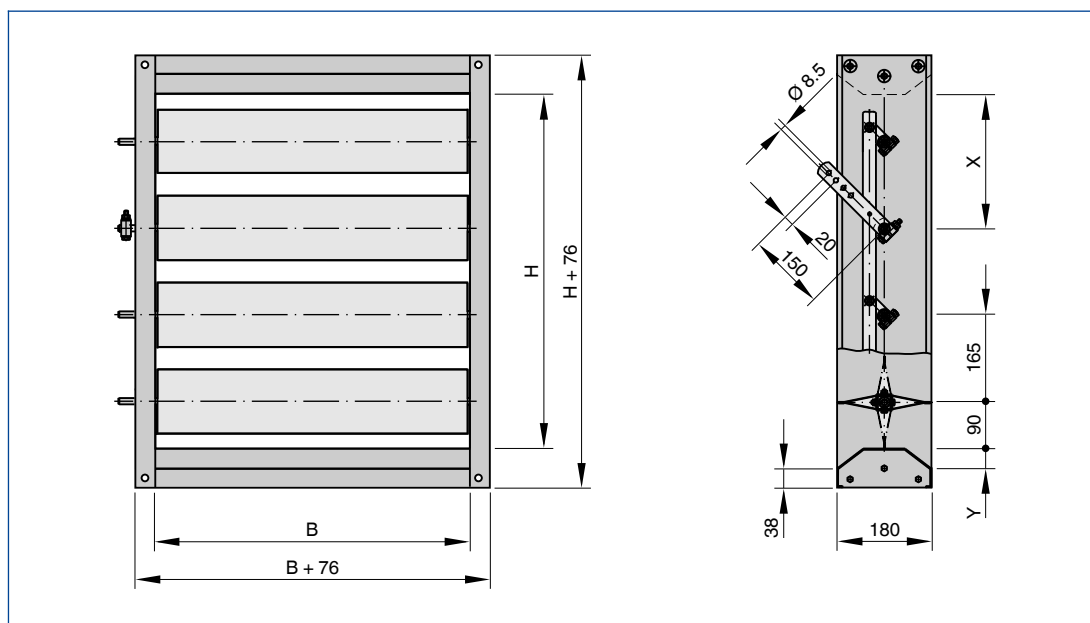


Illustration shows a multileaf damper with drive arm, operating side on the right

Dimensions

H	No. of blades	Position of drive arm		Y
		X	Blade	
mm	-	mm	-	mm
183 – 343	1	90	1	1.5 – 81.5
348 – 508	2	90	1	1.5 – 81.5
513 – 673	3	90	1	1.5 – 81.5
678 – 838	4	255	2	1.5 – 81.5
843 – 1003	5	420	3	1.5 – 81.5
1008 – 1168	6	420	3	1.5 – 81.5
1173 – 1333	7	585	4	1.5 – 81.5
1338 – 1498	8	585	4	1.5 – 81.5
1503 – 1663	9	750	5	1.5 – 81.5
1668 – 1828	10	750	5	1.5 – 81.5
1833 – 1993	11	915	6	1.5 – 81.5
1998	12	915	6	1.5

Description



Multileaf damper, variant JZ-AL

Variant

- JZ-AL: Multileaf damper with opposed blade action, made of aluminium

Construction

- Aluminium

Parts and characteristics

- Ready-to-install shut-off damper
- Blades with gears
- Drive arm with drive shaft and bearing plate
- Temperature resistant up to 90 °C

Construction features

- Rectangular casing, with screws, material thickness 1.5 mm
- Blades, material thickness 1.25 mm
- Flanges on both sides, suitable for duct connection, with corner holes
- Gears on both blade ends
- Blade shafts, Ø12 mm, with notch to indicate the blade position
- Bearings with ring seals

Materials and surfaces

- Casing and blades made of extruded aluminium profile
- Shafts, bearing plate and position indicator made of galvanised steel
- Gears made of special anti-static plastic
- P1: Powder-coated, RAL CLASSIC colour
- PS: Powder-coated, NCS or DB colour
- S3: Anodised to EURAS standard, E6-C-0

Installation and commissioning

- With horizontal or vertical blades
- With or without installation subframe
- Torsion-free installation

Weight

H	B [mm]										
	200	300	400	500	600	700	800	900	1000	1100	1200
mm	kg										
100	2	2	2	3	3	3	4	4	4	5	5
200	2	2	3	3	3	4	4	5	5	5	6
300	3	3	4	4	5	5	5	6	6	7	7
400	4	4	5	5	6	6	7	7	8	8	9
500	4	4	5	5	6	7	7	8	9	9	10
600	5	5	6	7	7	8	9	9	10	11	11
700	6	6	7	8	8	9	10	11	11	12	13
800	6	7	8	9	9	10	11	12	13	13	14
900	7	7	8	9	10	11	12	13	14	15	16
1000	6	7	9	10	11	12	13	14	15	16	17

Dimensions

For detailed information on corner holes and flange holes see Dimensions – Duct connection

For detailed information on drive shafts see Dimensions – Drive shafts

Dimensional drawing of JZ-AL standard sizes

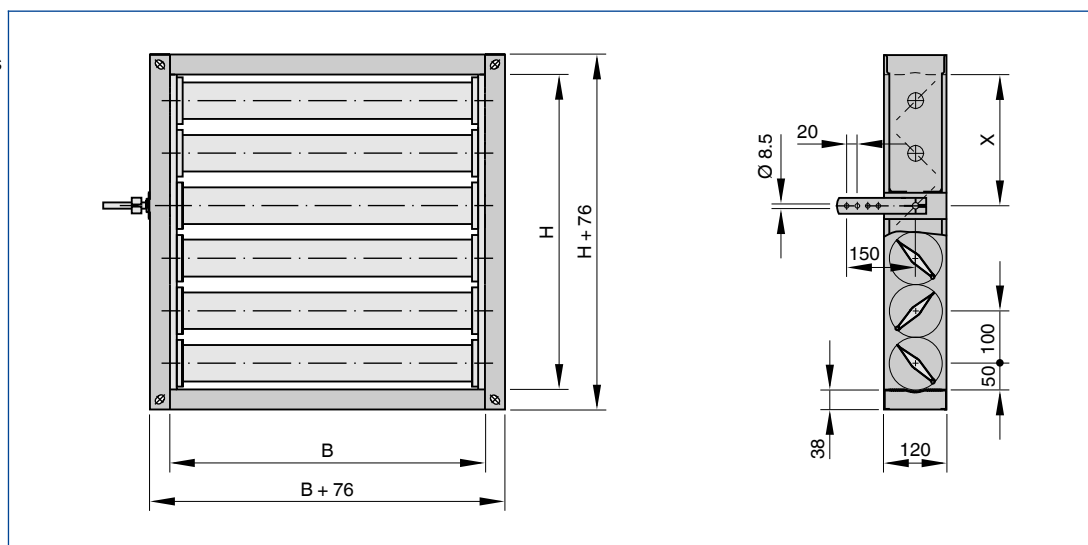


Illustration shows a multileaf damper with drive arm

Dimensions

H	No. of blades	Position of drive arm	
		X	Blade
mm	-	mm	-
100	1	50	1
200	2	50	1
300	3	50	1
400	4	250	3
500	5	250	3
600	6	250	3
700	7	250	3
800	8	250	3
900	9	250	3
1000	10	250	3

Dimensional drawing of JZ-AL intermediate sizes

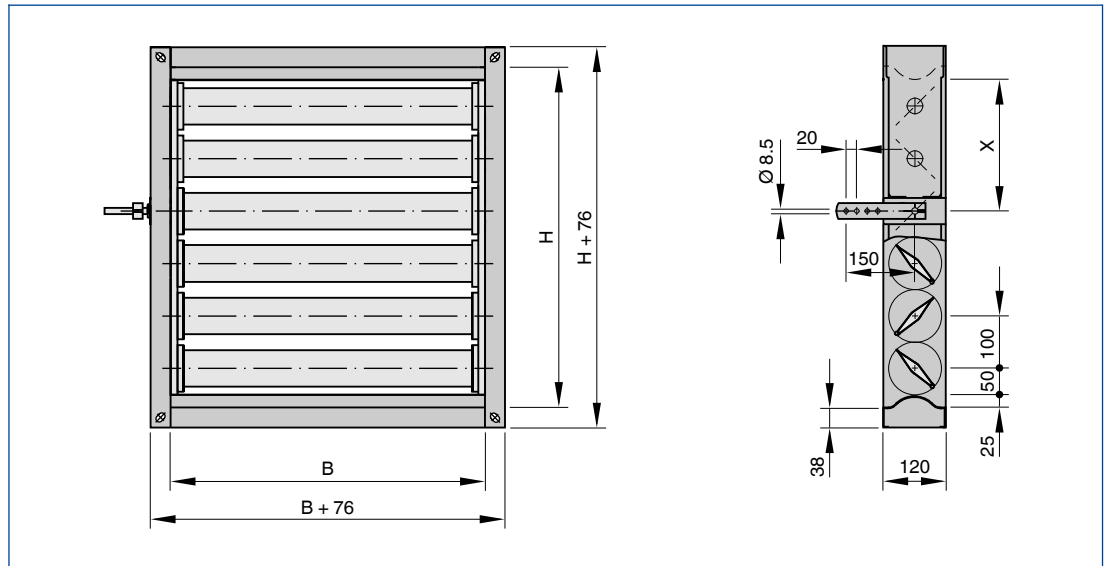


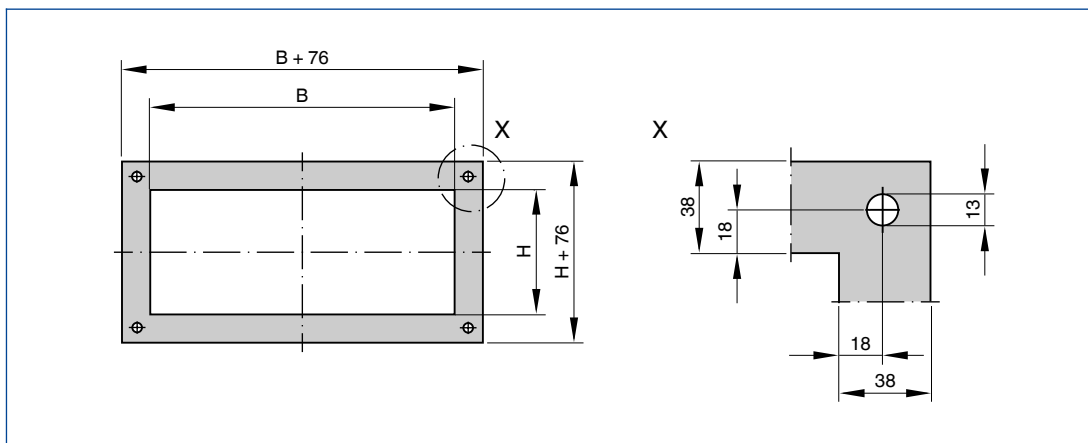
Illustration shows a multileaf damper with drive arm

Dimensions

H	No. of blades	Position of drive arm	
		X	Blade
mm	-	mm	-
150	1	50	1
250	2	50	1
350	3	50	1
450	4	250	3
550	5	250	3
650	6	250	3
750	7	250	3
850	8	250	3
950	9	250	3
1050	10	250	3

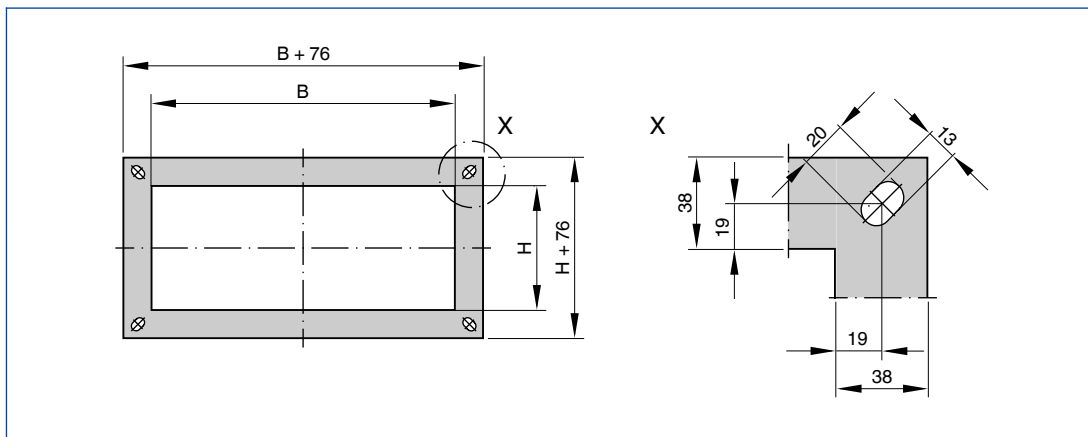
Corner holes

Corner holes – multileaf dampers made of steel or stainless steel



JZ-S, JZ-P, JZ-A2-S, JZ-A2-P

Corner holes – multileaf dampers made of aluminium



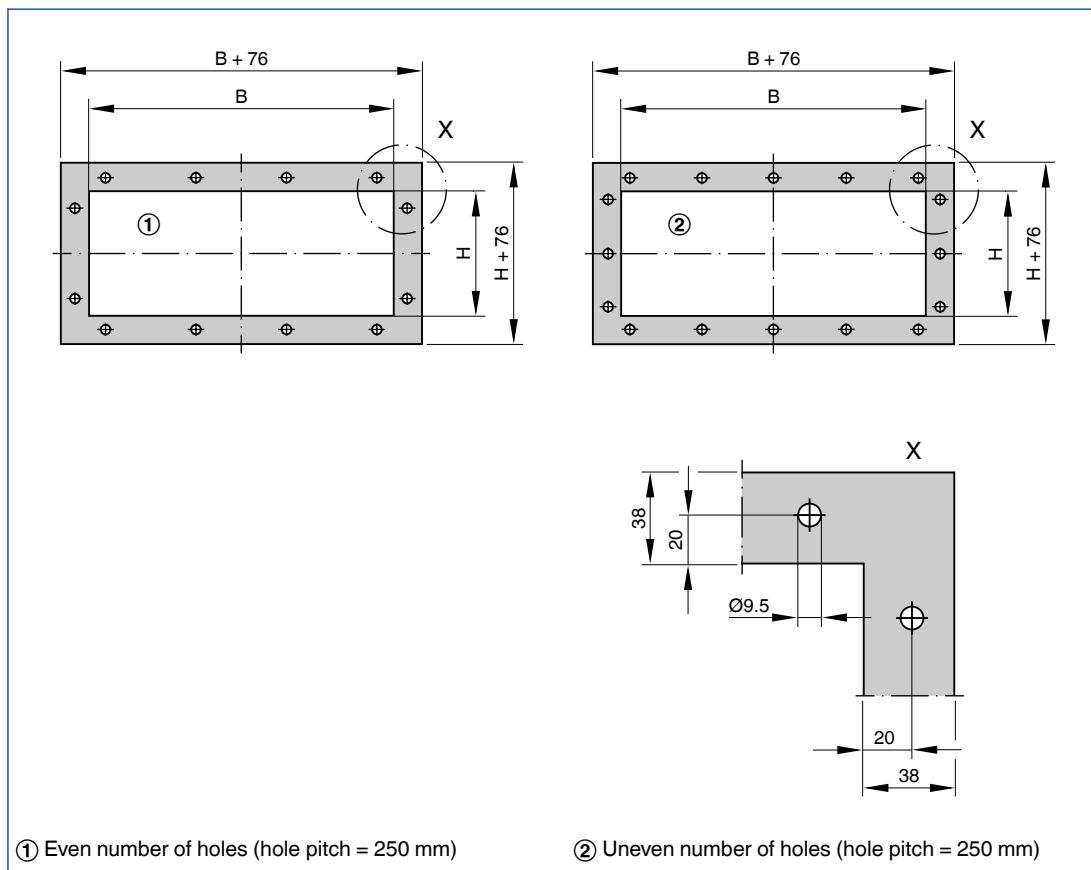
JZ-AL

Flange holes

Constructions with flange holes (-G) do not have corner holes.

Flange holes on casing sizes from width 288 mm and height 212 mm

Flange holes – multileaf dampers made of steel or stainless steel



JZ-S, JZ-P, JZ-A2-S, JZ-A2-P

No. of holes per side

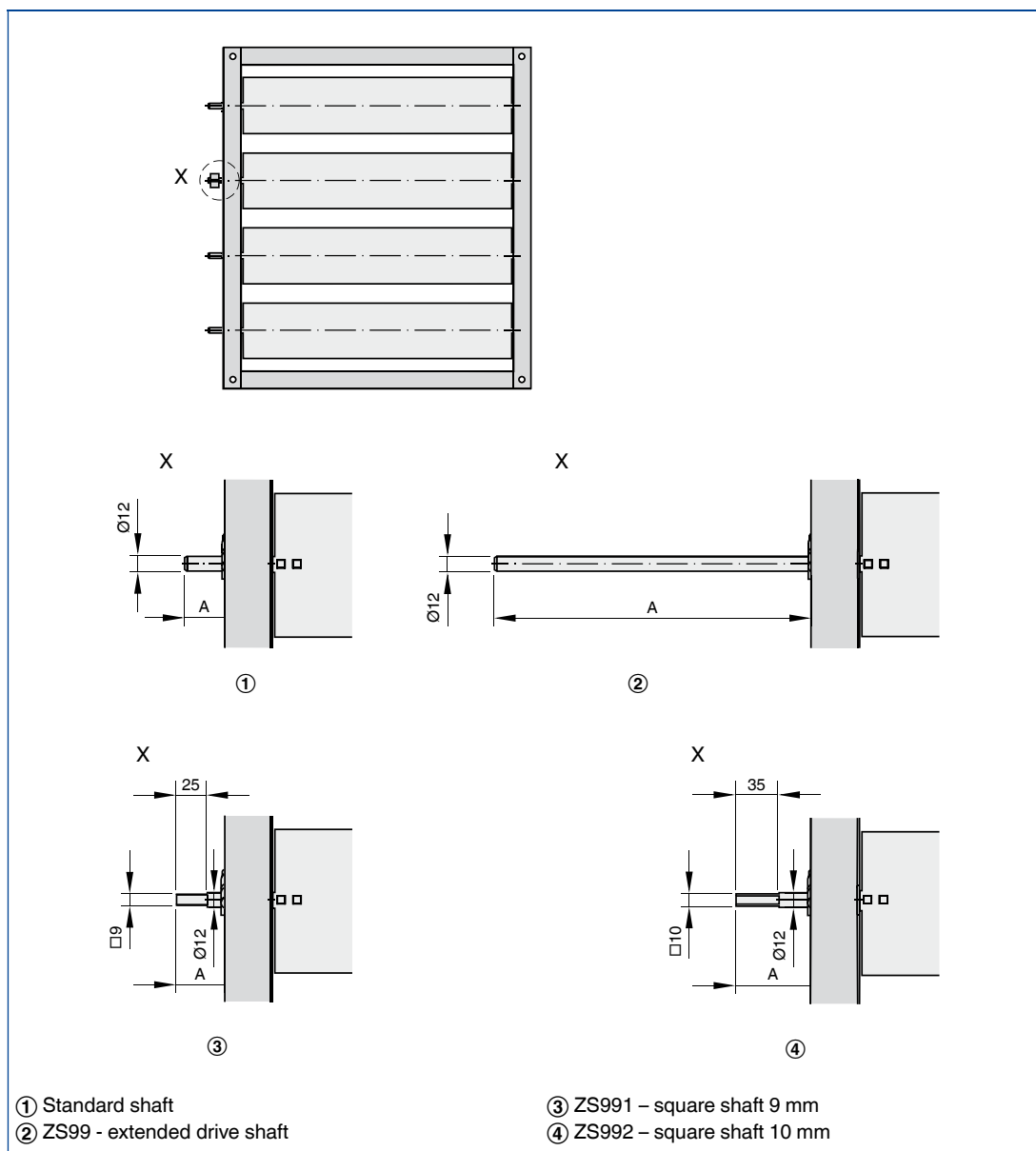
B	No. of holes	
	n	
mm	-	
288 – 537		2
538 – 787		3
788 – 1037		4
1038 – 1287		5
1288 – 1537		6
1538 – 1787		7
1788 – 2000		8

No. of holes per side

H	No. of holes	
	n	
mm	-	
212 – 461		2
462 – 711		3
712 – 961		4
962 – 1211		5
1212 – 1461		6
1462 – 1711		7
1712 – 1961		8
1962 – 1995		9

1 Drive shafts
(special accessory)
upon request.

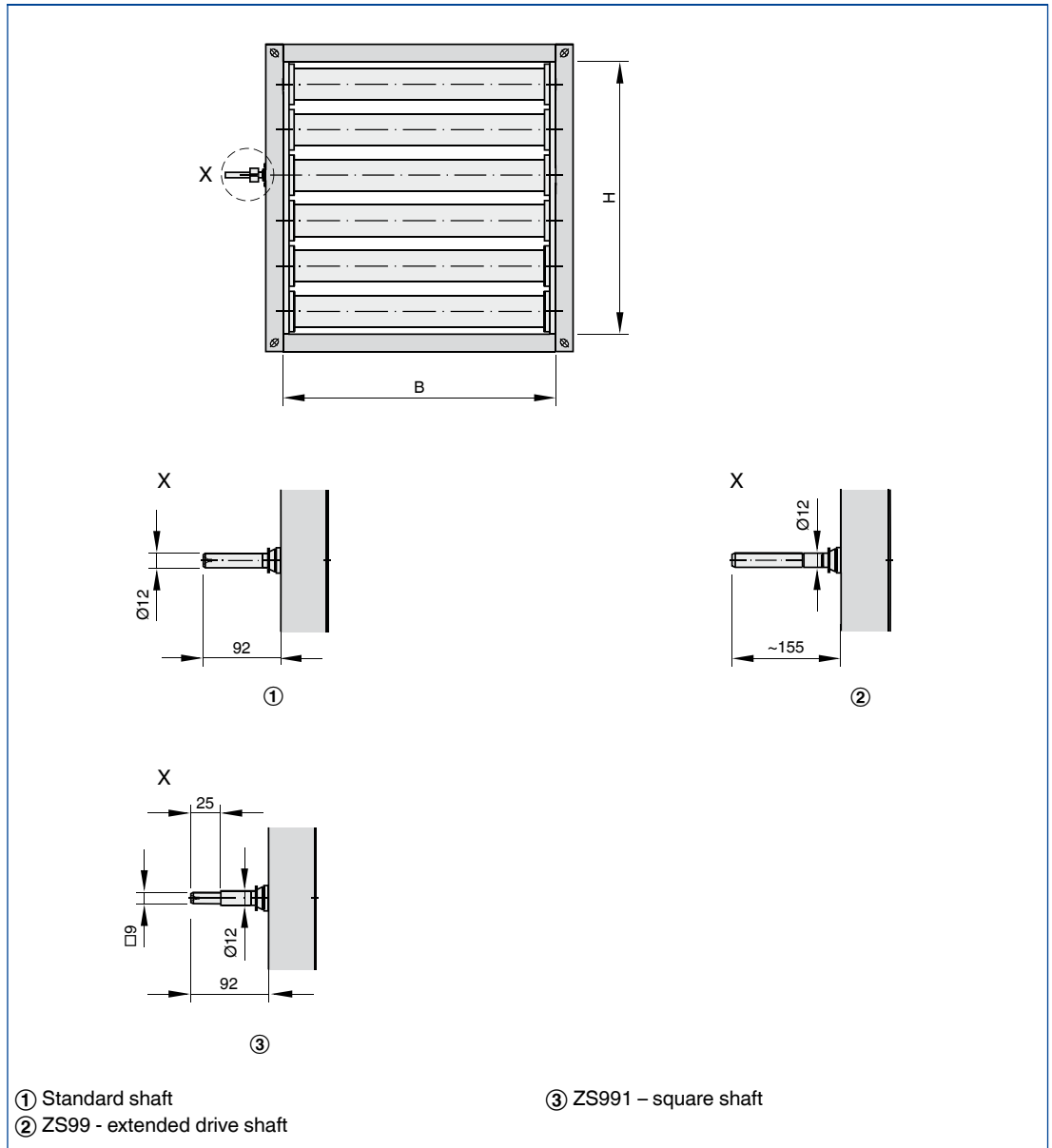
Drive shafts for JZ-*, JZ-*-A2



Shaft end projection

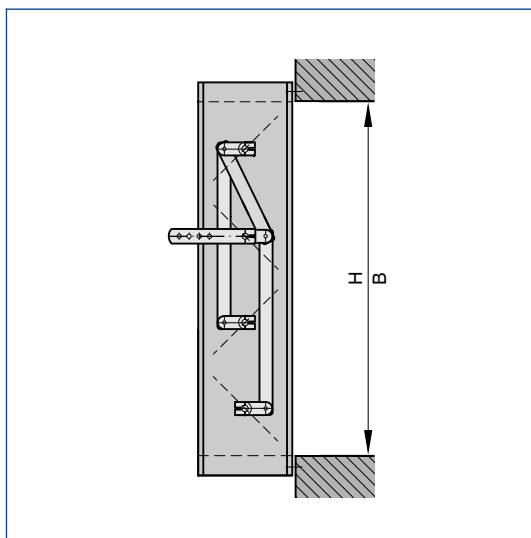
Drive shaft	Multileaf damper			
	JZ-S	JZ-P	JZ-S-A2	JZ-P-A2
	A			
	mm			
① Standard	32.5	32.5	32.5	32.5
② Extended	255	255	190	190
③ Square 9 mm	38	38	45	45
④ Square 10 mm	60	60	-	-

Drive shafts for JZ-AL

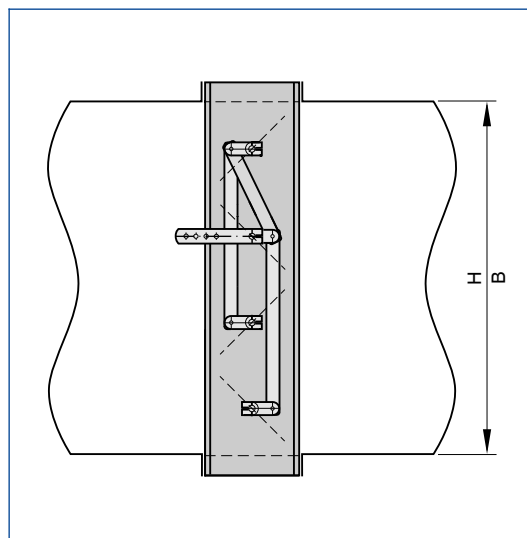


1

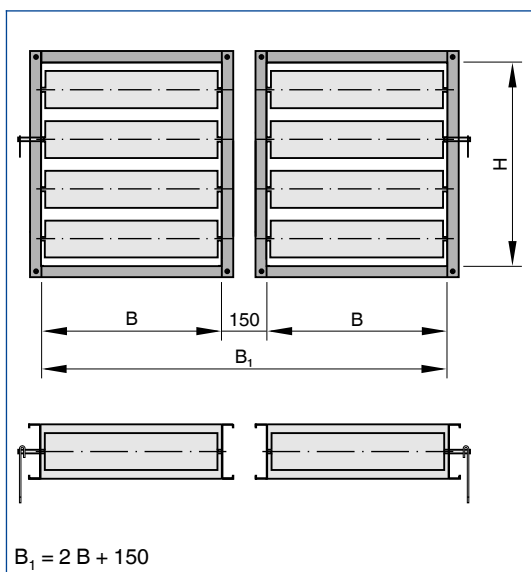
Wall installation without installation subframe



Duct installation



Width subdivided

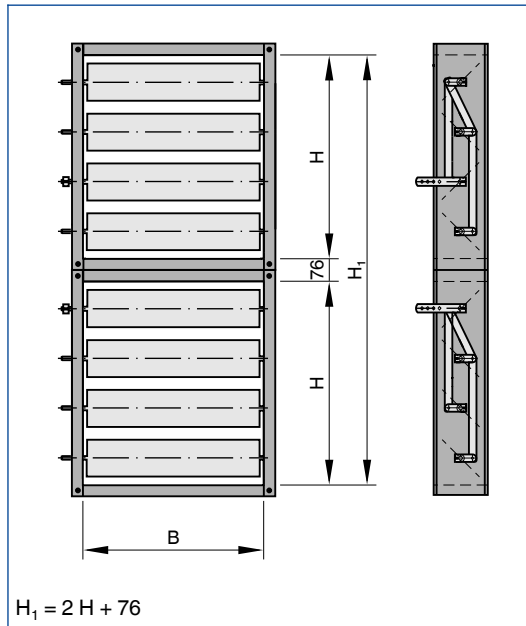


Steel and stainless steel variants only

Dimensions

B_1	B
mm	mm
2550	1200
2950	1400
3350	1600
3750	1800
4150	2000

Height subdivided



Steel and stainless steel variants only

Dimensions

H_1	H
mm	mm
2086	1005
2416	1170
2746	1335
3076	1500
3406	1665
3736	1830
4066	1995

Standard text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Rectangular multileaf dampers for volume flow and pressure control as well as for shutting off 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. Casing air leakage to EN 1751, class C.

Special features

- Aerofoil blades
- Low-maintenance, robust construction
- No parts with silicone
- Available in standard sizes and many intermediate sizes

Technical data

- Nominal sizes: 200 × 100 mm – 2000 × 1995 mm
- Volume flow rate: 200 – 40,000 l/s or 720 – 143,640 m³/h at 10 m/s
- Differential pressure range: 5 – 3500 Pa
- Operating temperature: –20 – 150 °C

Sizing data

- \dot{V} _____ [m³/h]
- Δp_{st} _____ [Pa]
- L_{PA} air-regenerated noise _____ [dB(A)]

Order options

JZ-*, JZ-*-A2

1 Type

JZ Multileaf damper

2 Function

- S** Opposed (standard)
- P** Parallel

3 Material

- No entry: galvanised steel
- A2** Stainless steel

4 Construction

- No entry: corner holes on both sides; plastic bearings
- G** Flange holes on both sides (no corner holes)
- M** Brass bearings
- E** Stainless steel bearings
- M-V** Brass bearings and reinforced blades (not for JZ-A2)
- E-V** Stainless steel bearings and reinforced blades (not for JZ-A2)
M, E, M-V, E-V can be combined with G

5 Operating side

- No entry: on the right
- L** Left

6 Nominal size [mm]

B × H
B > 2000 = width subdivided
H > 1998 = height subdivided

7 Installation subframe

- No entry: none
- ER** With (only for construction G)

8 Attachments

- No entry: none
- Z04 – Z07** Quadrant stay
- Z12 – Z51** Actuators
- ZF01 – ZF15** Spring return actuators
- Z60 – Z77** Pneumatic actuators
Explosion-proof actuators
- Z1EX, Z3EX** Electric
- Z60EX – Z77EX** Pneumatic

9 Damper blade safety function

- Only for spring return actuators or pneumatic actuators
- NO** Pressure off/power off to OPEN
- NC** Pressure off/power off to CLOSE

10 Surface

- No entry: standard construction
- P1** Powder-coated, RAL CLASSIC colour
- PS** Powder-coated, DB colour
- Gloss level:
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

JZ-AL

1 Type

JZ Multileaf damper

2 Material

AL Aluminium

3 Nominal size [mm]

B × H

4 Installation subframe

No entry: none

ER With

5 Attachments

No entry: none

Z04 – Z07 Quadrant stay

Z12 – Z51 Actuators

ZF01 – ZF15 Spring return actuators

Z60 – Z77 Pneumatic actuators

6 Damper blade safety function

Only for spring return actuators
or pneumatic actuators

NO Pressure off/power off to OPEN

NC Pressure off/power off to CLOSE

7 Surface

No entry: standard construction

P1 Powder-coated,
RAL CLASSIC colour

PS Powder-coated, DB colour

S3 Anodised to EURAS standard, E6-C-0

Gloss level:

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %