

Splitter sound attenuators

Type MSA



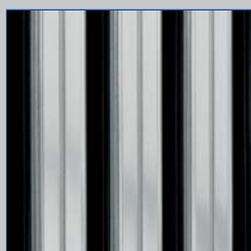
For increased insertion loss and broadband attenuation even in the low frequency range

Splitter sound attenuators with integral splitters with resonating panels, suitable for air conditioning systems

- Attenuation effect due to resonance and absorption
- Energy efficient due to aerodynamically profiled frame (radius > 15 mm)
- Acoustic data measured to ISO 7235
- Absorption material is biosoluble and hence hygienically safe
- Absorption material faced with glass fibre fabric as a protection against erosion due to airflow velocities up to 20 m/s
- Absorption material non-combustible, to EN 13501, fire rating class A1
- Intermediate sizes in increments of 1 mm
- For use in zones 1 and 2 as well as in zones 21 and 22 according to EU Directive 94/9/EC (ATEX)
- Operating temperature up to 100 °C

Optional equipment and accessories

- Additional perforated sheet metal to protect the absorption material
- Stainless steel, aluminium and PUR-coated constructions upon request



Splitter frames with folded edges



Tested to VDI 6022

Type		Page
MSA	General information	MSA – 2
	Function	MSA – 4
	Technical data	MSA – 5
	Quick sizing	MSA – 6
	Specification text	MSA – 9
	Order code	MSA – 10
	Variants	MSA – 11
	Dimensions and weight	MSA – 12
	Product details	MSA – 17
	Installation details	MSA – 19
	Basic information and nomenclature	MSA – 21

Application

Application

- Splitter sound attenuators of Type MSA used for the reduction of fan noise and air-regenerated noise in air conditioning systems
- Attenuation effect due to absorption and resonance
- Broadband attenuation even in the low frequency range of critical fan noise
- Hygiene tested and certified to VDI 6022
- For use in potentially explosive atmospheres (ATEX), zones 1, 2, 21 and 22 (outside)

Special characteristics

- Resonating panels ensure increased insertion loss in the frequency range of critical fan noise
- Up to 30 % lower differential pressure
- Energy efficient and/or space saving due to aerodynamically profiled frame
- Hygiene tested and certified
- Multi-section construction available for large dimensions

Nominal sizes

- B: 200 (only MSA100), 400, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000, 2200, 2400
- MSA100: intermediate sizes (width) 140 – 2399 mm in increments of 1 mm
- MSA200: intermediate sizes (width) 250 – 2399 mm in increments of 1 mm
- MSA230: intermediate sizes (width) 288 – 2399 mm in increments of 1 mm
- Width subdivided: 2401 – 4800 mm, in increments of 1 mm
- H: 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800 mm (intermediate sizes 150 – 1799 mm in increments of 1 mm)
- Height subdivided: 1801 – 4800 mm, in increments of 1 mm
- L: 500, 750, 1000, 1250, 1500 mm (intermediate sizes 501 – 1499 mm in increments of 1 mm)
- Length subdivided: 1501 – 2999 mm in increments of 1 mm

Description

Variants

- MSA100: splitter thickness of 100 mm
- MSA200: splitter thickness of 200 mm
- MSA230: splitter thickness of 230 mm

Construction

Surface of splitter area not covered by a resonating panel

- F: Glass fibre fabric
- L: Glass fibre fabric and additional perforated sheet metal to protect the absorption material

Duct connection

- P: Standard flange 30 mm
- W: Angle section frame 35 × 35 × 3 mm

Parts and characteristics

- Casing
- Aerodynamically profiled frame
- Absorption material and resonating panels fitted to reduce air-regenerated noise by absorption and resonance

Construction features

- Casing with grooves for increased rigidity; larger sizes are extra reinforced
- Aerodynamically profiled splitter frame (radius > 15 mm) that enables a reduction of turbulence both upstream and downstream; frame with grooves for increased rigidity
- Frame edges are folded to protect the infill
- Attenuators with width or height subdivided have an angle section frame
- Operating temperature up to 100 °C

Materials and surfaces

- Casing, splitter frames, centre mullion and resonating panels made of galvanised sheet steel
- Flange and angle section frame made of galvanised steel
- Absorption material is mineral wool

Mineral wool

- To EN 13501, fire rating class A1, non-combustible

- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EC
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

Standards and guidelines

- Insertion loss and sound power level of air-

regenerated noise tested to ISO 7235

- Meets the hygiene requirements of VDI 6022, DIN 1946, parts 1 and 2 as well as of VDI 3803
- Directive 94/9/EC: Equipment and protective systems intended for use in potentially explosive atmospheres

Maintenance

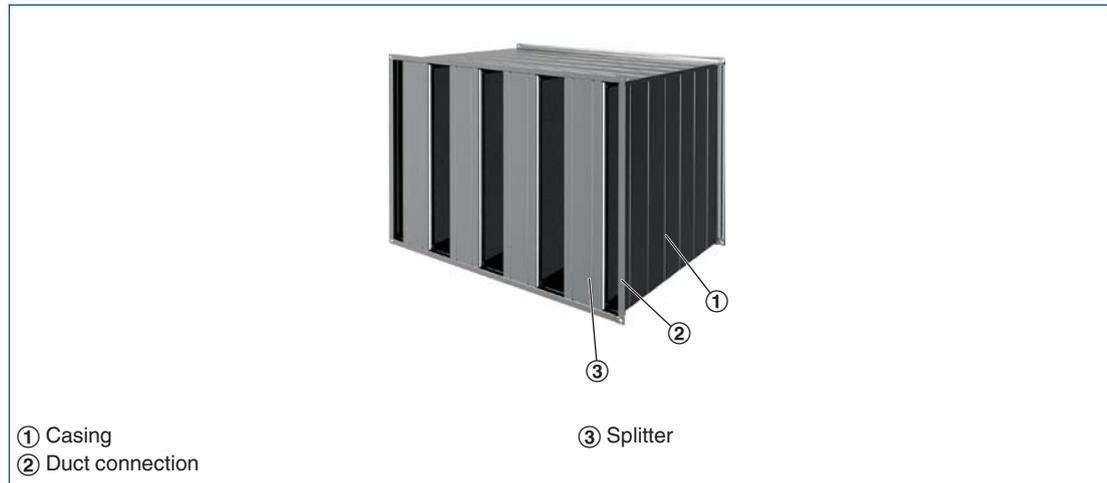
- Maintenance-free as construction and materials are not subject to wear

Functional description

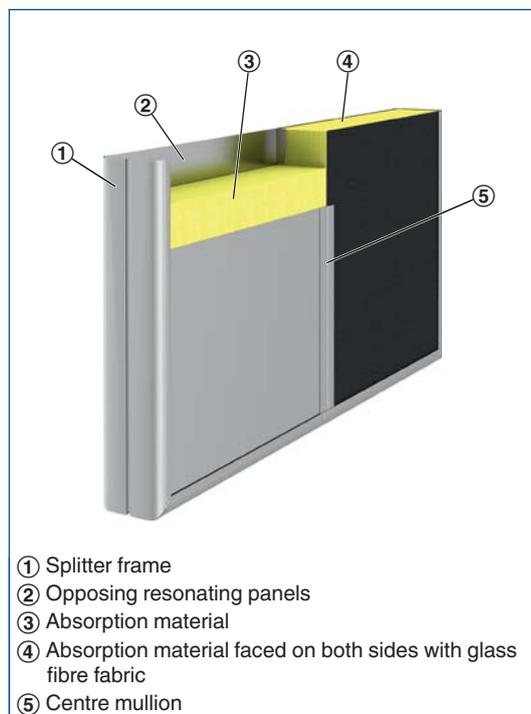
Splitter sound attenuators of Type MSA contain splitters of Type MKA. The attenuation effect of the MKA splitters is due to absorption and resonance. The splitters have a mineral wool infill as absorption material. Part of the splitter surface that runs parallel to the airflow is covered with

resonating panels. These panels start oscillating due to the sound (resonance) and hence absorb sound energy. Resonance works best in the frequency range of critical fan noise. There is a higher attenuation across a wider frequency range when compared to mere absorption splitters.

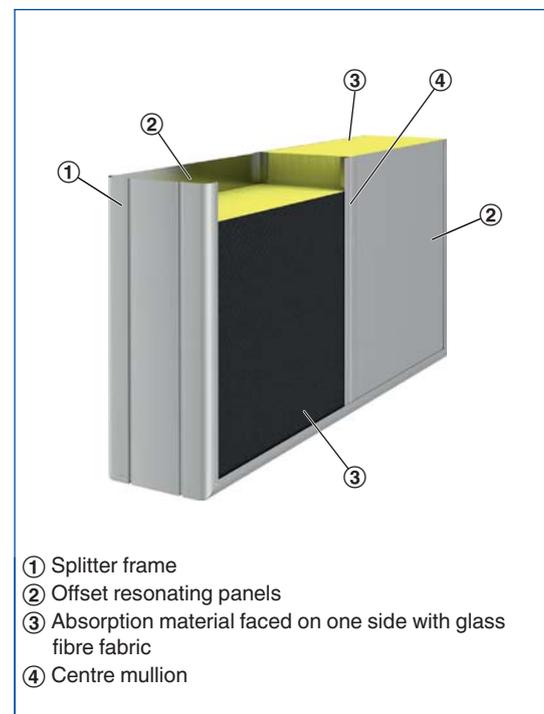
Schematic illustration of MSA, XSA



Schematic illustration of MKA100



Schematic illustration of MKA200, 230



Splitter thickness	100, 200, 230 mm
Nominal sizes	MSA100: 140 × 150 × 500 mm – 2400 × 1800 × 1500 mm, MSA200: 250 × 150 × 500 mm – 2400 × 1800 × 1500 mm, MSA230: 288 × 150 × 500 mm – 2400 × 1800 × 1500 mm
Width subdivided	2401 – 4800 mm
Height subdivided	1801 – 3600 mm
Length subdivided	1501 – 3000 mm
Intermediate sizes	In increments of 1 mm
Operating temperature	– 100 °C

The length (L) of splitter attenuators refers to the airflow direction.

Quick sizing tables provide a good overview of the insertion loss and of differential pressures for different airway widths and airflow velocities. Intermediate values can be calculated with our Easy Product Finder design programme.

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

The differential pressures apply to sound attenuators with a height of 1 m.

MSA, MKA, XSA, XKA, RKA, air-regenerated noise

v_s	m/s	4	6	8	10	12	14	16	18	20
L_{WA}	dB(A)	21	31	38	43	48	51	55	58	60

MKA100, MSA100, insertion loss and differential pressure

L	S	Centre frequency f_m [Hz]								v_s [m/s]		
		63	125	250	500	1000	2000	4000	8000	4	10	20
mm	mm	D_e								Δp_{st}		
		Hz								Pa		
500	40	4	10	11	13	21	27	24	18	5	32	>80
	60	5	13	20	23	31	38	32	26	7	44	>80
1000	40	5	11	17	19	28	32	27	21	5	33	>80
	60	6	16	30	32	42	48	40	34	9	55	>80
1500	40	6	14	25	28	38	41	33	27	6	38	>80
	60	4	10	14	19	29	28	19	14	5	29	>80
	100	8	19	39	42	50	50	49	42	11	66	>80
2000	40	7	16	32	36	47	50	40	34	7	44	>80
	60	5	12	19	25	37	35	23	16	5	32	>80
	100	3	9	10	17	25	15	9	8	4	25	>80
	200	9	22	48	50	50	50	50	50	12	77	>80
2500	40	8	19	40	45	50	50	47	40	8	50	>80
	60	6	14	24	30	45	41	27	19	6	34	>80
	100	3	12	12	21	33	19	12	11	4	26	>80
	200	10	25	50	50	50	50	50	50	14	>80	>80
3000	40	9	22	48	50	50	50	50	46	9	56	>80
	60	7	16	28	36	50	47	31	22	6	37	>80
	100	2	14	15	26	41	24	16	14	4	27	>80
	200	10	25	50	50	50	50	50	50	14	>80	>80

MKA200, MSA200, insertion loss and differential pressure

L	S	Centre frequency f_m [Hz]								v_s [m/s]		
		63	125	250	500	1000	2000	4000	8000	4	10	20
		D_e								Δp_{st}		
mm	mm	Hz								Pa		
500	50	5	7	19	21	26	22	17	14	9	58	>80
	100	2	4	12	12	15	11	9	8	5	31	>80
1000	50	6	16	33	39	41	39	26	20	11	67	>80
	100	4	10	22	23	26	19	13	11	6	35	>80
1500	200	2	7	13	12	12	10	8	6	3	21	>80
	50	9	22	44	50	50	50	34	25	12	75	>80
2000	100	5	15	32	33	37	25	16	14	6	40	>80
	200	3	9	19	18	15	12	10	7	4	23	>80
2500	400	1	6	10	8	8	6	4	4	2	15	61
	50	12	29	50	50	50	50	43	29	13	>80	>80
3000	100	6	19	42	44	47	31	19	17	7	44	>80
	200	4	12	25	23	18	15	12	9	4	25	>80
2500	400	1	8	13	10	10	8	5	5	3	17	67
	50	14	38	50	50	50	50	49	35	15	>80	>80
3000	100	8	25	50	50	50	38	23	18	8	48	>80
	200	5	16	30	29	23	16	13	10	4	28	>80
3000	400	2	10	16	13	12	9	6	5	3	18	72
	50	17	48	50	50	50	50	50	40	16	>80	>80
3000	100	10	30	50	50	50	44	26	19	8	53	>80
	200	6	19	35	35	27	17	15	11	5	30	>80
3000	400	3	13	19	15	14	10	7	6	3	19	77

MKA230, MSA230, insertion loss and differential pressure

L	S	Centre frequency f_m [Hz]								v_s [m/s]		
		63	125	250	500	1000	2000	4000	8000	4	10	20
		D_e								Δp_{st}		
mm	mm	Hz								Pa		
500	60	3	7	16	19	21	17	14	14	9	57	>80
	115	2	5	11	12	13	10	9	10	5	31	>80
1000	60	7	13	27	30	35	25	18	18	10	66	>80
	115	4	10	20	20	22	15	12	13	6	35	>80
1500	230	1	7	12	10	8	4	6	8	3	20	>80
	60	11	19	38	41	49	33	21	21	12	74	>80
2000	115	7	14	28	28	30	20	15	15	6	40	>80
	230	2	10	18	15	10	6	9	9	4	23	>80
2500	60	15	24	50	50	50	42	25	25	13	>80	>80
	115	9	19	37	36	39	26	18	18	7	44	>80
3000	230	3	13	24	19	13	8	11	10	4	25	>80
	460	0	7	10	3	0	0	3	3	3	16	64
2500	60	19	30	50	50	50	50	29	28	15	>80	>80
	115	12	24	46	44	47	31	21	20	8	48	>80
3000	230	4	16	29	24	16	11	13	12	4	27	>80
	460	0	9	13	4	0	0	5	3	3	17	69
3000	60	24	36	50	50	50	50	32	32	16	>80	>80
	115	14	28	50	50	50	36	24	23	8	52	>80
3000	230	4	19	35	29	18	13	15	13	5	29	>80
	460	0	11	16	6	0	0	7	3	3	19	74

Sizing example

Given data

Duct B = 800 mm, H = 900 mm
 $\dot{V} = 2900$ l/s (10440 m³/h)

$D_e = 30 \text{ dB at } 250 \text{ Hz}$

Quick sizing

MSA200 L = 1000 mm, S = 50 mm

Calculation procedure

$$A = 0.800 \times 0.9 = 0.72 \text{ m}^2$$

$$v = \dot{V}/A = 2900/0.72 (/1000) = 4.0 \text{ m/s}$$

$$\Delta p_{st} = 12 \text{ Pa}$$

$$L_{WA} = 21 \text{ dB(A)}$$

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

Splitter sound attenuators used for the reduction of fan noise and air-regenerated noise in air conditioning systems. Attenuation effect due to absorption and resonance. Energy-saving as well as hygiene tested and certified. Sound attenuators which consist of a casing with duct connections and splitters. Splitters consists of an aerodynamically profiled frame (radius > 15 mm), absorption material, and resonating panels. Frame edges are folded to protect the sound absorbing infill. Insertion loss and sound power level of the air-regenerated noise tested to ISO 7235. Meets the hygiene requirements of VDI 6022, DIN 1946, parts 2 and 4, as well as of VDI 3803.

Special characteristics

- Resonating panels ensure increased insertion loss in the frequency range of critical fan noise
- Up to 30 % lower differential pressure
- Energy efficient and/or space saving due to aerodynamically profiled frame
- Hygiene tested and certified
- Multi-section construction available for large dimensions

Materials and surfaces

- Casing, splitter frames, centre mullion and resonating panels made of galvanised sheet steel
- Flange and angle section frame made of galvanised steel
- Absorption material is mineral wool

Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EC
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up

- to 20 m/s
- Inert to fungal and bacterial growth

Construction

Surface of splitter area not covered by a resonating panel

- F: Glass fibre fabric
- L: Glass fibre fabric and additional perforated sheet metal to protect the absorption material

Duct connection

- P: Standard flange 30 mm
- W: Angle section frame 35 × 35 × 3 mm

Technical data

- Splitter thickness: 100, 200, 230 mm
- Nominal sizes: MSA100: 140 × 150 × 500 mm – 2400 × 1800 × 1500 mm, MSA200: 250 × 150 × 500 mm – 2400 × 1800 × 1500 mm, MSA230: 288 × 150 × 500 mm – 2400 × 1800 × 1500 mm
- Width subdivided: 2401 – 4800 mm
- Height subdivided: 1801 – 3600 mm
- Length subdivided: 1501 – 3000 mm
- Intermediate sizes: in increments of 1 mm
- Operating temperature: – 100 °C

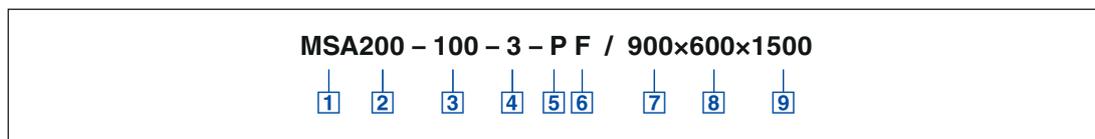
The length (L) of splitter attenuators refers to the airflow direction.

Sizing data

- B _____ [mm]
- H _____ [mm]
- L (in airflow direction) _____ [mm]
- \dot{V} _____ [m³/h]
- D_e at 250 Hz _____ [dB]
- Δp_{st} _____ [Pa]

The length (L) of sound attenuator splitters and splitter attenuators refers to the airflow direction. Remember this with regard to vertical ducting.

MSA



1 Type

MSA Splitter sound attenuator with casing

6 Splitter surface

F Glass fibre fabric

L Glass fibre fabric and perforated sheet metal

2 Splitter thickness [mm]

100

200

230

7 Nominal width B [mm]

8 Nominal height H [mm]

3 Airway width (distance between splitters) [mm]

9 Nominal length L in airflow direction [mm]

4 No. of splitters

5 Duct connection

P Standard flange 30 mm

W Angle section frame 35 × 35 × 3 mm
(required for sound attenuators with width and/or height subdivided)

Order example: MSA100-100-2-WL/400x1500x1500

Splitter thickness	100 mm
Airway width	100 mm
No. of splitters	2
Connecting subframe	Angle section frame
Splitter surface	Glass fibre fabric and perforated sheet metal
Width	400 mm
Height	1500 mm
Length (in airflow direction)	1500 mm

Splitter sound attenuator, variant MSA100



Splitter thickness 100 mm

Splitter sound attenuator, variant MSA200



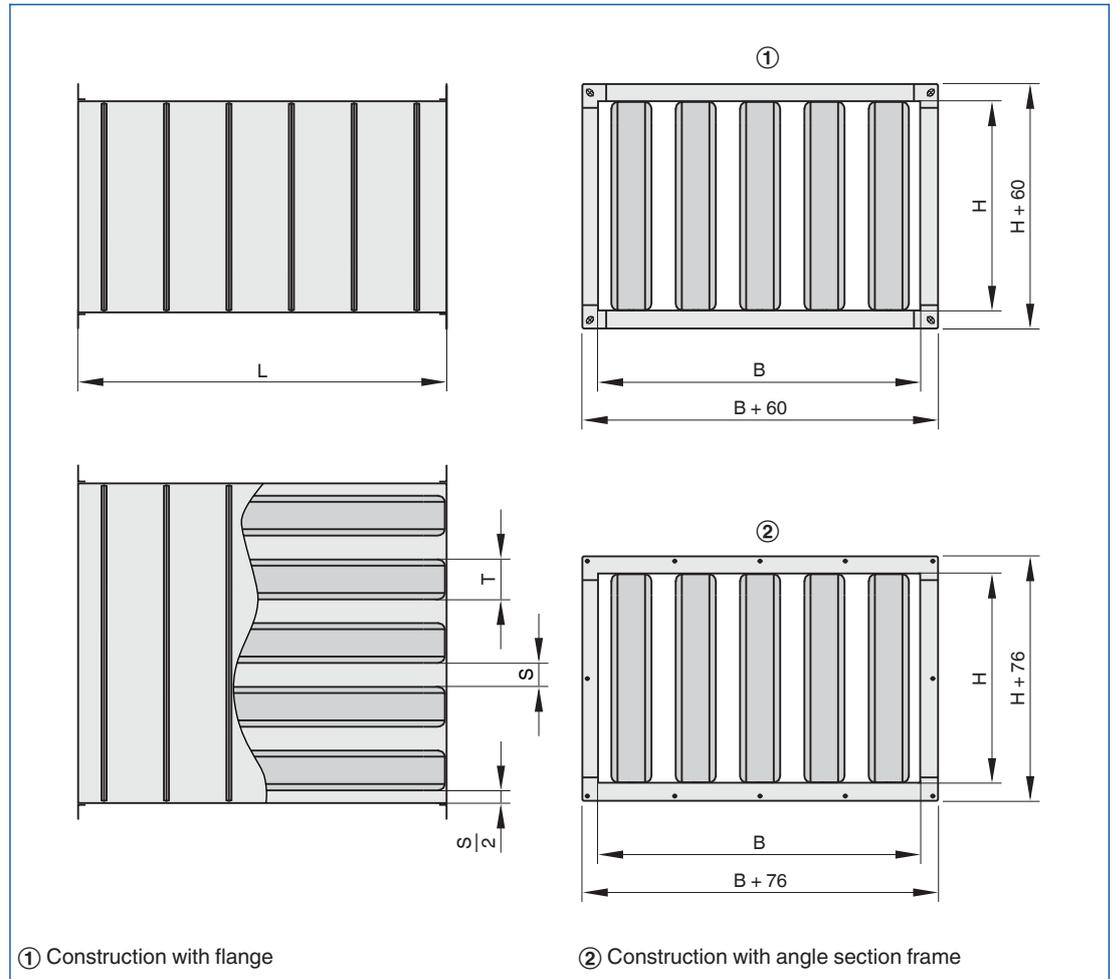
Splitter thickness 200 mm

- B: 200 (only MSA100), 400, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000, 2200, 2400
- MSA100: intermediate sizes 140 – 2399 mm in increments of 1 mm
- MSA200: intermediate sizes 250 – 2399 mm in increments of 1 mm
- MSA230: intermediate sizes 288 – 2399 mm in increments of 1 mm
- Width subdivided: 2401 – 4800 mm, in increments of 1 mm
- H: 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800 mm (intermediate sizes 150 – 1799 mm in increments of 1 mm)
- Height subdivided: 1801 – 4800 mm, in increments of 1 mm
- L: 500, 750, 1000, 1250, 1500 mm (intermediate sizes 501 – 1499 mm in increments of 1 mm)
- Length subdivided: 1501 – 2999 mm in increments of 1 mm

The total weight of a splitter sound attenuator is the combined weight of the casing (with standard flange or angle section frame) and all splitters. The total weight for intermediate sizes can be generated with our Easy Product Finder design programme.

For details on corner holes and flange holes see Product Details

MSA



Sound attenuator casing, nominal length

L	mm	500	750	1000	1250	1500
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Sound attenuator casing, nominal height

H	mm	300	600	900	1200	1500	1800
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Sound attenuator casing, nominal width

B	MSA100			MSA200			MSA230		
	T	n	S	T	n	S	T	n	S
	mm	-	mm	mm	-	mm	mm	-	mm
200	100	1	100	-	-	-	-	-	-
400	100	2	100	200	1	200	230	1	85
600	100	2-4	50-200	200	2	100	230	2	70
800	100	3-5	60-167	200	2-3	67-200	230	2	170
1000	100	4-7	43-150	200	3-4	50-133	230	3	103
1200	100	4-8	50-200	200	3-5	40-200	230	3-4	70-170
1400	100	5-10	40-180	200	4-5	80-150	230	3-5	50-237
1600	100	6-11	46-200	200	4-7	57-200	230	4-5	90-170
1800	100	6-12	50-200	200	5-8	50-160	230	4-6	70-220
2000	100	7-14	43-186	200	5-8	50-200	230	5-7	56-170
2200	100	7-15	47-200	200	6-9	44-167	230	5-7	84-186
2400	100	8-16	50-200	200	6-10	40-200	230	6-8	70-170

Sound attenuator casing with standard flange, L = 500, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	6	8	10	12	14	16	18	20	24	28
600	9	11	13	15	17	19	21	23	27	31
900	12	14	16	18	20	22	24	26	30	34
1200	15	17	19	21	23	25	27	29	33	37
1500	18	20	22	24	26	28	30	32	36	40
1800	21	23	25	27	29	31	33	35	39	43

Sound attenuator casing with standard flange, L = 750, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	8	10	13	16	19	22	25	27	33	38
600	13	15	18	21	24	26	29	31	36	42
900	17	19	22	25	28	30	33	35	40	46
1200	21	23	26	29	32	34	37	39	44	50
1500	25	27	30	33	36	38	41	43	48	54
1800	29	31	34	37	40	42	45	47	52	58

Sound attenuator casing with standard flange, L = 1000, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	10	14	17	20	24	27	30	34	41	48
600	15	19	22	25	29	32	35	39	46	53
900	20	24	27	30	34	37	40	44	51	58
1200	25	29	32	35	39	43	46	50	57	63
1500	30	34	37	40	44	48	51	55	62	68
1800	35	39	42	45	49	53	56	60	67	73

Sound attenuator casing with standard flange, L = 1250, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	13	17	21	25	29	33	37	41	49	58
600	19	23	27	31	35	39	43	47	54	64
900	25	29	33	37	41	45	49	53	60	70
1200	31	35	39	43	47	51	55	59	66	76
1500	37	41	45	49	53	58	62	65	72	82
1800	43	47	51	55	59	64	68	71	78	88

Sound attenuator casing with standard flange, L = 1500, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	15	19	24	29	33	39	44	48	58	68
600	22	26	31	36	40	46	51	55	65	75
900	30	34	39	44	48	53	58	62	72	82
1200	37	41	46	51	55	60	65	69	79	89
1500	44	48	53	58	62	68	73	77	87	97
1800	51	55	59	65	69	75	80	84	93	104

Sound attenuator casing with angle section frame, L = 500, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	9	13	16	19	23	25	28	32	39	45
600	14	18	21	24	28	30	33	37	44	50
900	18	22	25	28	32	35	38	42	49	55
1200	23	27	30	33	37	40	43	47	54	59
1500	28	32	35	38	42	45	48	52	59	64
1800	33	37	40	43	47	50	53	57	64	69

Sound attenuator casing with angle section frame, L = 750, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	8	12	16	20	24	25	29	33	41	45
600	13	17	21	25	29	30	34	38	46	50
900	17	21	25	29	33	35	39	43	51	55
1200	22	26	30	34	38	40	44	48	56	59
1500	27	31	35	39	43	45	49	53	61	64
1800	32	36	40	44	48	50	54	58	66	69

Sound attenuator casing with angle section frame, L = 1000, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	14	18	23	28	32	37	42	46	56	65
600	21	25	30	35	39	44	49	53	63	72
900	28	32	37	42	46	51	56	60	70	79
1200	35	39	44	49	53	58	63	67	77	86
1500	42	46	51	56	60	65	70	74	84	93
1800	49	53	58	63	67	72	77	81	91	100

Sound attenuator casing with angle section frame, L = 1250, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	15	21	26	31	37	42	47	53	63	75
600	23	29	34	39	45	51	56	62	72	83
900	31	37	42	47	53	59	64	70	80	91
1200	40	46	51	56	62	67	73	79	89	99
1500	48	54	59	64	70	75	80	86	96	107
1800	56	62	67	72	78	83	88	94	104	115

Sound attenuator casing with angle section frame, L = 1500, weights

H	B [mm]									
	200	400	600	800	1000	1200	1400	1600	2000	2400
mm	kg									
300	18	24	30	36	42	48	54	60	72	85
600	27	33	39	45	51	57	63	69	81	94
900	36	42	48	54	60	66	72	78	90	103
1200	45	51	57	63	69	76	82	88	100	112
1500	54	60	66	72	78	85	91	97	109	122
1800	63	69	75	81	87	94	100	106	118	131

MKA100, weights

H	Glass fibre fabric (-F)					Glass fibre fabric and perforated sheet metal (-L)				
	L [mm]									
	500	750	1000	1250	1500	500	750	1000	1250	1500
mm	kg									
300	2	3	4	5	6	3	4	5	6	8
600	4	5	7	8	10	5	7	9	11	13
900	5	7	9	11	13	7	10	13	16	18
1200	7	10	12	15	17	9	13	16	20	24
1500	8	12	15	18	21	11	16	20	25	29
1800	10	14	19	23	27	14	19	25	31	36

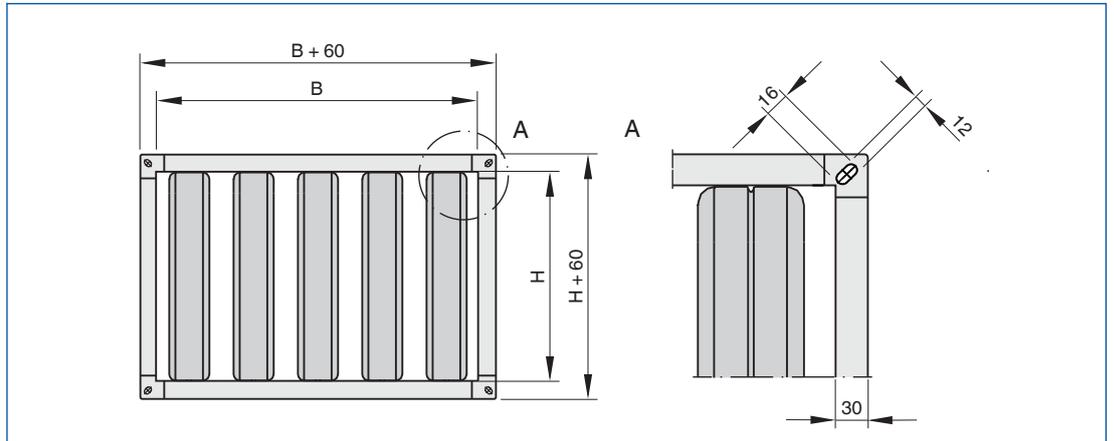
MKA200, weights

H	Glass fibre fabric (-F)					Glass fibre fabric and perforated sheet metal (-L)				
	L [mm]									
	500	750	1000	1250	1500	500	750	1000	1250	1500
mm	kg									
300	4	5	6	7.5	9	4	6	7	9	11
600	6	8	10	12	15	7	10	12	15	18
900	8	11	14	17	20	10	14	17	21	25
1200	10	14	18	22	26	13	18	22	27	32
1500	13	17	22	27	31	15	21	27	33	40
1800	16	22	28	34	40	19	27	34	42	50

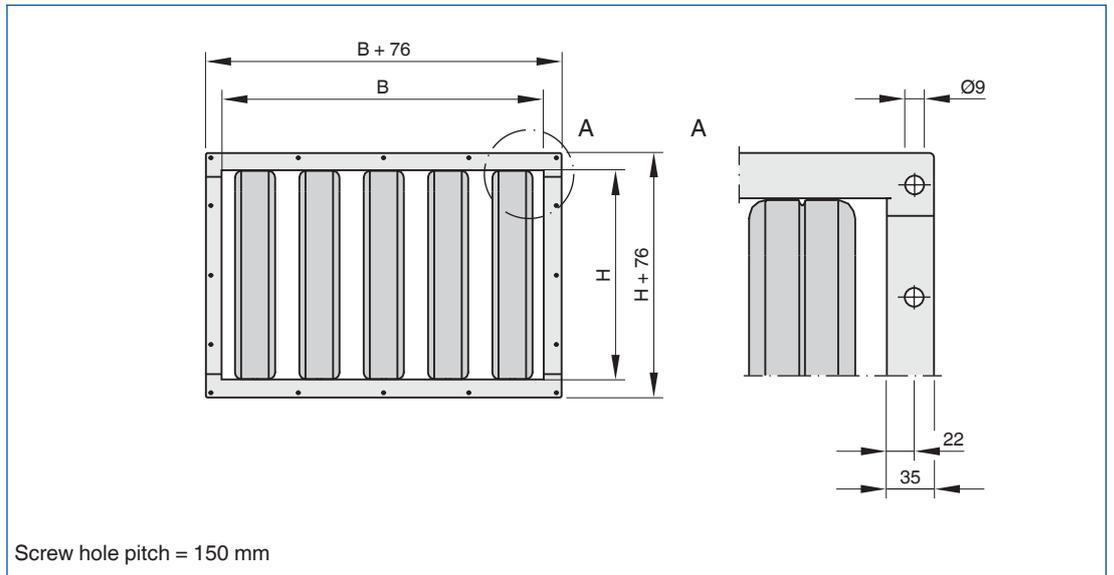
MKA230, weights

H	Glass fibre fabric (-F)					Glass fibre fabric and perforated sheet metal (-L)				
	L [mm]									
	500	750	1000	1250	1500	500	750	1000	1250	1500
mm	kg									
300	4	5	7	8	10	5	6	8	10	12
600	6	9	11	14	16	8	11	13	16	19
900	9	12	16	19	22	11	15	19	23	27
1200	11	16	20	24	28	14	19	24	30	35
1500	14	19	24	29	34	17	23	30	36	43
1800	18	24	31	37	44	21	29	37	45	54

Splitter sound attenuator with standard flange



Splitter sound attenuator with angle section frame



No. of flange holes per side of the angle section frame – width

B	No. of holes	
	n	
mm	-	
200 – 259		3
260 – 409		4
410 – 559		5
560 – 709		6
710 – 859		7
860 – 1009		8
1010 – 1159		9
1160 – 1309		10
1310 – 1459		11
1460 – 1609		12
1610 – 1759		13
1760 – 1909		14
1910 – 2059		15
2060 – 2209		16
2210 – 2359		17
2360 – 2400		18

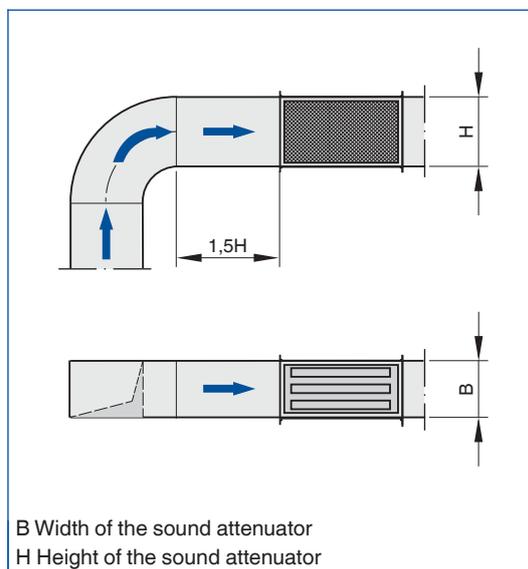
No. of flange holes per side of the angle section frame – height

H	No. of holes	
	n	
mm	-	
150 – 299		1
300 – 449		2
450 – 599		3
600 – 749		4
750 – 899		5
900 – 1049		6
1050 – 1199		7
1200 – 1349		8
1350 – 1499		9
1500 – 1649		10
1650 – 1799		11
1800		12

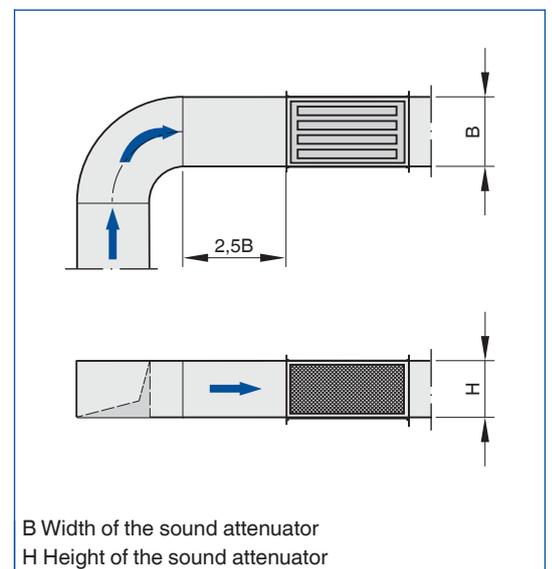
Installation and commissioning

- Follow the installation information and comply with the general codes of good practice in order to achieve the given performance data
- Up to height $H = 1200$ mm: any installation orientation, but we recommend upright installation of splitters
- From height $H = 1201$ mm: upright installation only
- The length (L) of sound attenuator splitters and splitter sound attenuators refers to the airflow direction; be sure to note how width, height and length are defined, particularly in case of a vertical airflow
- Installation in ducts outside of closed rooms requires sufficient protection against the effects of weather

Upstream conditions after bends, junctions or a narrowing or widening of the duct, vertical upstream section, splitters upright

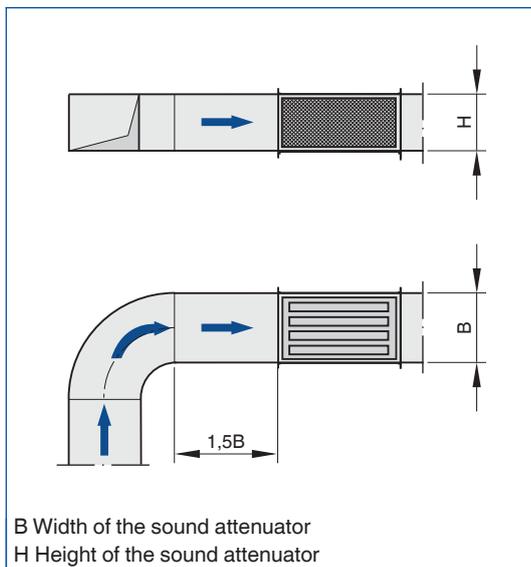


Upstream conditions after bends, junctions or a narrowing or widening of the duct, vertical upstream section, splitters horizontal

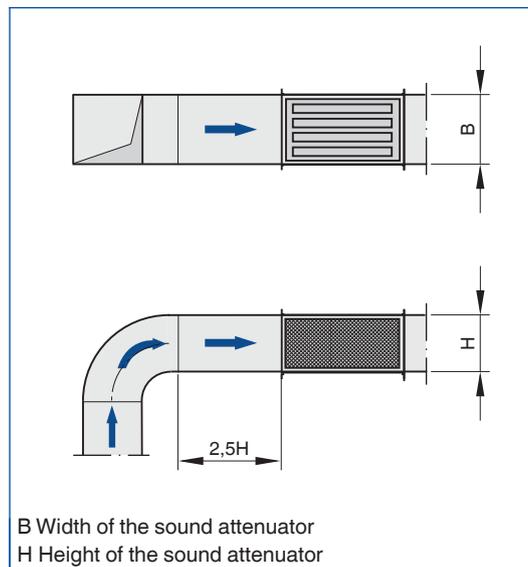


Horizontal installation only for splitters up to height 1200 mm

Upstream conditions after bends, junctions or a narrowing or widening of the duct, horizontal upstream section, splitters upright

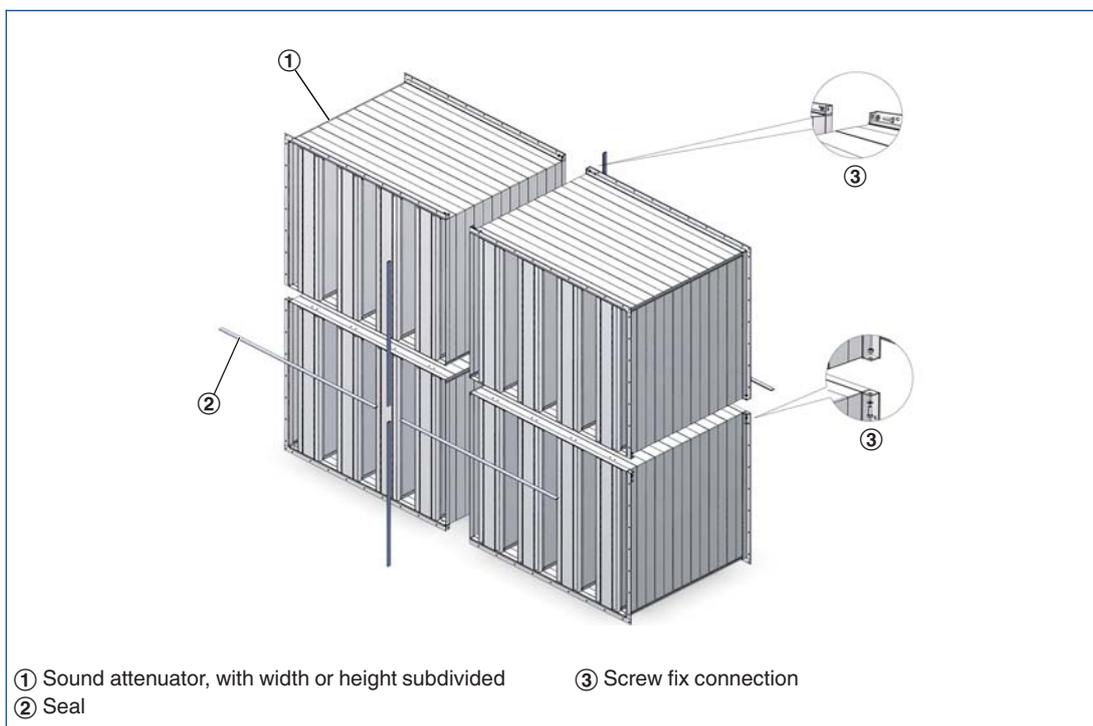


Upstream conditions after bends, junctions or a narrowing or widening of the duct, horizontal upstream section, splitters horizontal



Horizontal installation only for splitters up to height 1200 mm

Schematic illustration of subdivided sound attenuators



Principal dimensions

ØD [mm]

Outer diameter of the spigot

ØD₃ [mm]

Outer diameter of circular silencers

L [mm]

Length of attenuator/silencer including spigot (in airflow direction)

L₁ [mm]

Length of acoustic cladding and acoustically effective length

B [mm]

Attenuator width and duct width (upright splitters)

H [mm]

Attenuator height and duct height (upright splitters)

T [mm]

Splitter thickness

S [mm]

Airway width

n []

Number of flange screw holes

m [kg]

Weight

Nomenclature

f_m [Hz]

Octave band centre frequency

L_{WA} [dB(A)]

A-weighted sound power level of air-regenerated noise

D_e [dB]

Insertion loss

Ḃ [m³/h] and [l/s]

Volume flow rate

Δp_{st} [Pa]

Static differential pressure

All sound power levels are based on 1 pW.

All values were measured in a TROX lab and to EN ISO 7235. Intermediate values may be achieved by interpolation.

Lab measurements exceeding 50 dB are indicated as 50 dB, in line with common practice.