



Splitter sound attenuator

XS / MS / XK / MK / RK

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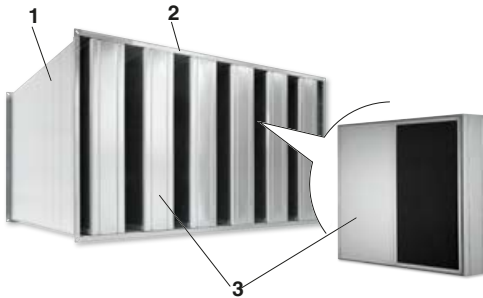
Product overview

Fig. 1: Schematic illustration of MS and MK

- 1 Sound attenuator casing MS
- 2 Connecting subframe
- 3 Splitter MK

Important notes**Safety****Correct use**

Splitter sound attenuators and sound attenuator splitters are used for the reduction of fan noise and air-regenerated noise in ventilation and air conditioning systems, for example in air handling units or ducts.

**Use in areas with potentially explosive atmospheres according to EU Directive 2014/34/EU (ATEX)**

Splitter sound attenuators XS and MS as well as sound attenuator splitters XK, MK and RK may be used in zone 1 and 2 areas as well as in zone 21 and 22 (outside) areas with potentially explosive atmospheres according to Directive 1999/92/EC.

Please note:

- Max. operating temperature 100 °C
- Max. airflow velocity 20 m/s
- Make an electrical connection between the splitter and the casing.
- Connect the splitter sound attenuator to the earth.
- Clean sound attenuators and splitters regularly to prevent accumulated dust.
- Clean attenuators and splitters in such a way that no electrostatic charge builds up.

Manufacturer's statement ⇒
www.troxtechnik.com.

Incorrect use



WARNING!

Danger of injury or risk of damage to property due to incorrect use

Incorrect use of splitter sound attenuators can lead to dangerous situations.

Do not use splitter sound attenuators:

- outdoors without sufficient protection against the effects of weather
- in rooms and systems with aggressive air (to be assessed on a case to case basis)
- in process manufacturing

Modifying the unit or using replacement parts that have not been approved by TROX is not permitted.

Staff

Qualification

The work described in this manual has to be carried out by individuals with the qualification, training, knowledge and experience described below:

HVAC technician

HVAC technicians are individuals who have sufficient professional or technical training in the field they are working in to enable them to carry out their assigned duties at the level of responsibility allocated to them and in compliance with the relevant guidelines, safety regulations and instructions. HVAC technicians are individuals who have in-depth knowledge and skills related to HVAC systems; they are also responsible for the professional completion of the work under consideration.

HVAC technicians are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to work on HVAC systems, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

Personal protective equipment

Personal protective equipment is equipment that protects the user against health or safety risks at work.

Personal protective equipment must be worn for various types of work; the protective equipment required is listed in this manual together with the description of each type of work.

Description of personal protective equipment

Industrial safety helmet



Industrial safety helmets protect the head from falling objects, suspended loads, and the effects of striking the head against stationary objects.

Protective gloves



Protective gloves protect hands from friction, abrasions, punctures, deep cuts, and direct contact with hot surfaces.

Safety shoes



Safety shoes protect the feet against crushing, falling parts, and from slipping on slippery ground.

Repair and replacement parts

Only qualified personnel must repair the products, and they have to use genuine replacement parts.

Transport, storage and packaging

Delivery check

Check delivered items immediately after arrival for transport damage and completeness. In case of any damage or an incomplete shipment, contact the shipping company and your supplier immediately.

Transport on site

Please note:

- Be careful when unloading or moving the product, and pay attention to the symbols and information on the packaging.
- If possible, take the product in its transport packaging up to the installation location.
- Use only lifting and transport gear designed for the required load.
- Always secure the load against tipping and falling.
- Do not move bulky items just by yourself. Get help to prevent injuries and damage.

Storage

Please note:

- Store the product only in its original packaging
- Protect the product from the effects of weather
- Protect the product from humidity, dust and contamination
- Storage temperature: -10 °C to 50 °C.
- Relative humidity: 95 % max., no condensation

Packaging

Properly dispose of packaging material.

Installation

General installation information

Personnel:

- HVAC technician

Protective equipment:

- Protective gloves
- Industrial safety helmet
- Safety shoes



CAUTION!

Danger of injury from sharp edges, sharp corners and thin sheet metal parts!

Sharp edges, sharp corners and thin sheet metal parts may cause cuts or grazes.

- Be careful when carrying out any work.
- Wear protective gloves, safety shoes and a hard hat.

Please note:

- Installation should be upright and without torsion.
- Duct connection on both sides, any airflow direction.
- Installation in ducts outside closed rooms requires sufficient protection against the effects of weather.
- Length (L) refers to the airflow direction.
- Installation material (e.g. screws) is not part of the supply package unless stated otherwise

Installation types

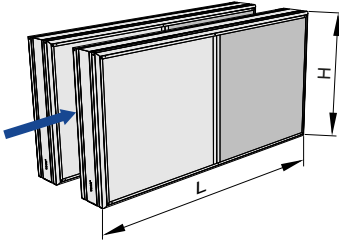


Fig. 2: Horizontal duct, splitters upright (recommended)

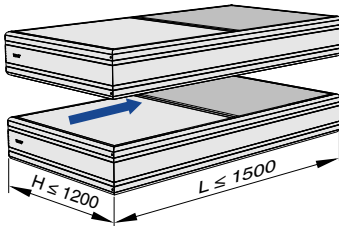


Fig. 3: Horizontal duct, splitters lying flat

Size limit for installation in horizontal ducts:

- Splitter size: H = 1200 mm L = 1500 mm,
- Weight of one splitter: 40 kg max. ↪ Chapter 6.5 'Weights – MK' on page 17

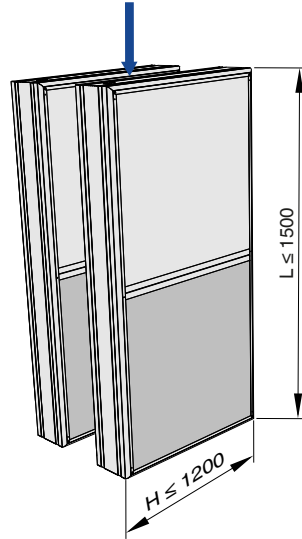


Fig. 4: Vertical duct

Size limit for installation in vertical ducts:

- Splitter size: H = 1200 mm L = 1500 mm,
- Weight of one splitter: 40 kg max. ↪ Chapter 6.5 'Weights – MK' on page 17

Installation types:

- | | |
|---------------------------------------|---|
| Splitter sound attenuator with casing | - Ducted installation (flange, angle section frame) |
| Splitter set or single splitter | - Installation in a duct |

Upstream section

! NOTICE!

Risk of damage due to turbulent airflow

A turbulent airflow may cause damage to the splitters.

This is why a straight upstream section is required upstream of the sound attenuator.

The recommended minimum upstream section depends on the change of direction, change of cross-section and splitter arrangement, see Fig. 5 to Fig. 8

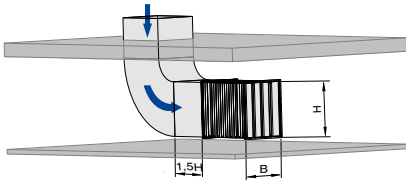


Fig. 5: Vertical/horizontal airflow, splitters upright

- B Width of the sound attenuator
- H Height of the sound attenuator and splitters

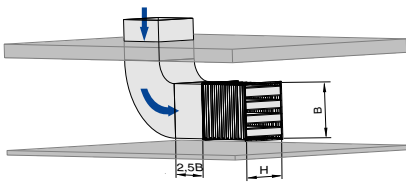


Fig. 6: Vertical/horizontal airflow, splitters lying flat

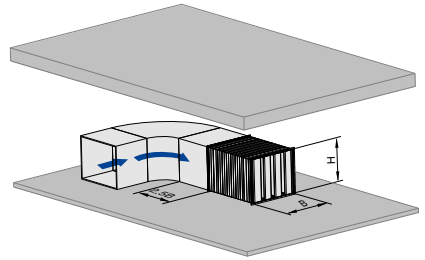


Fig. 7: Horizontal airflow, splitters upright

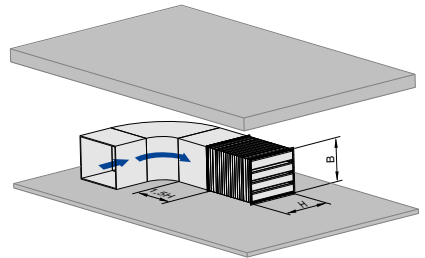


Fig. 8: Horizontal airflow, splitters lying flat

Installation details for splitter sound attenuators type MS and XS

Suspension system

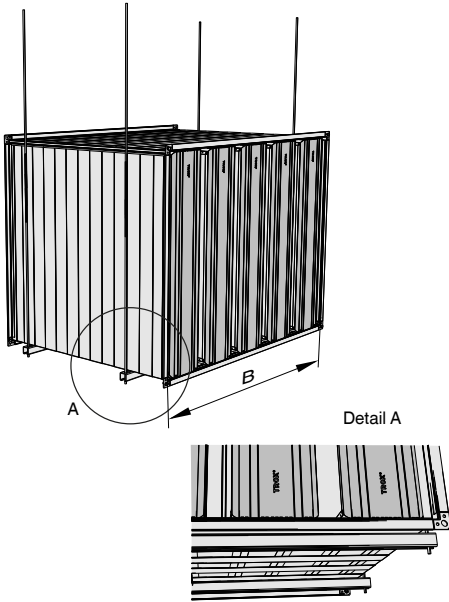


Fig. 9: full-surface support points

- When installing the sound attenuator horizontally, choose a load-bearing construction that supports the entire width of the casing (B). Two full-surface support points are required.
- The sound attenuator must not be mounted exclusively standing on the air duct profiles or vertically in the airflow direction.

Air duct profiles with flange

Use suitable fixing material to connect the profiles to the air duct, and use all available connection points. Air duct profiles have four screw holes, one per each angle. The angle section frame (W) may have a varying number of screw holes, depending on its size. Suitable matching frames are available from TROX; they are screwed onto the attenuator if ordered. Duct connection of the splitter sound attenuator requires a seal (not included).

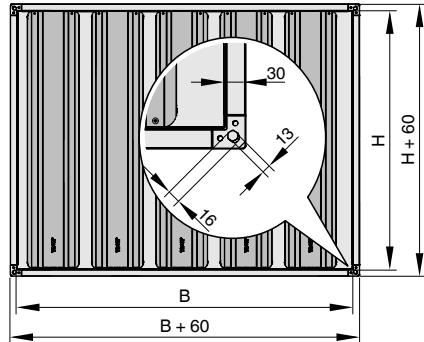


Fig. 10: Splitter sound attenuator with 30 mm air duct profile (P)

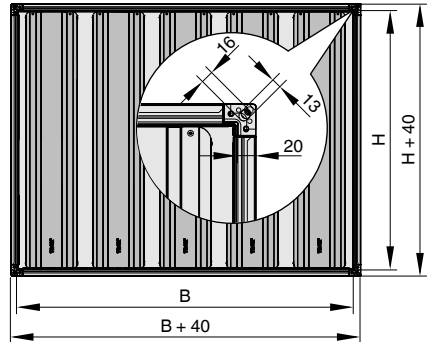


Fig. 11: Splitter sound attenuator with 20 mm air duct profile (T)

Angle section frame and connection

The angle section frame (W) consists of width profiles and height profiles that are connected to form a frame. Corner holes are only provided in the width profile (Fig. 12). Number of holes according to the table. All holes $\varnothing 9$ mm.

The pitch is 150mm and the arrangement is determined according to the number of holes (Fig. 13 / Fig 14.)

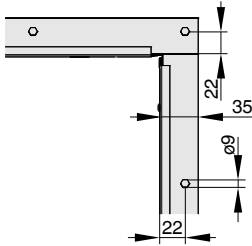


Fig. 12: Detail corner holes for angle frame (W)

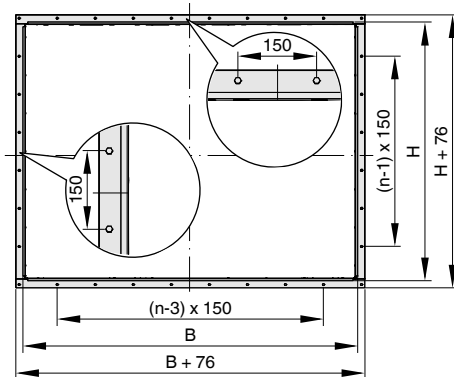


Fig. 13: Splitter sound attenuator with undivided angle frame (W), straight number of holes

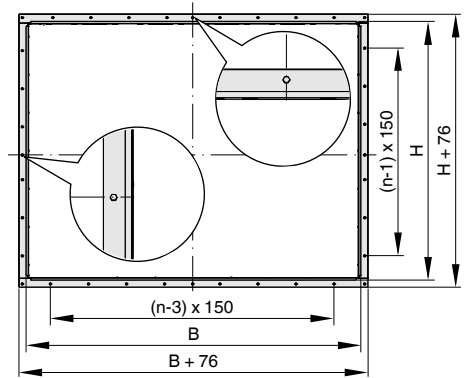


Fig. 14: Splitter sound attenuator with undivided angle frame (W), odd number of holes

Table undivided angle frame (W)

Width profile		Height profile	
B [mm]	No. of holes n	H [mm]	No. of holes n
133 - 258	3	150 - 229	1
259 - 408	4	230 - 379	2
409 - 558	5	380 - 529	3
559 - 708	6	530 - 679	4
709 - 858	7	680 - 829	5
859 - 1008	8	830 - 979	6
1009 - 1158	9	980 - 1129	7
1159 - 1308	10	1130 - 1279	8
1309 - 1458	11	1280 - 1429	9
1459 - 1608	12	1430 - 1579	10
1609 - 1758	13	1580 - 1729	11
1759 - 1908	14	1730 - 1800	12
1909 - 2058	15		
2059 - 2208	16		
2209 - 2358	17		
2359 - 2400	18		

divided angle frame

Height subdivided if $H > 1800$ mm

Width subdivided if $B > 2400$ mm
see Fig. 15

! NOTICE!
Pay attention to subdivision!
For undivided width and height profiles see Fig. 13 and Fig.14 respectively

- H subdivided: $H1$ and $H2 = H/2$
- B subdivided, even no. of splitters: $B1$ and $B2 = B/2$
- B subdivided, uneven no. of splitters: $B1 = B/2 + T/2 + S/2$
 $B2 = B - B1$
 $T =$ splitter thickness
 $n =$ number of splitters
 $S =$ airway width
 $S = (B - n \times T) / n$

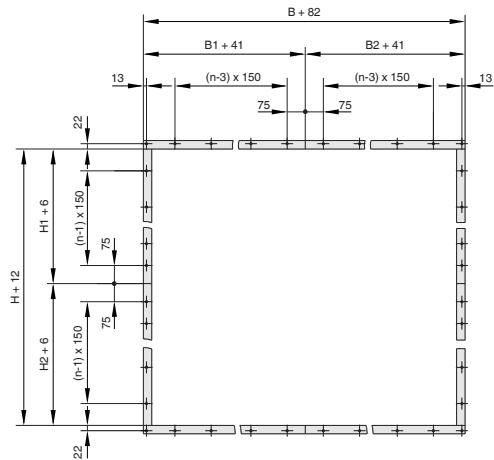


Fig. 15: subdivided angle frame in W and H dimension

Table subdivided angle frame (W)

Width profile		Height profile	
B1 / B2 [mm]	No. of holes n	H1 / H2 [mm]	No. of holes n
800 - 846	7	900.5 - 1018	6
847 - 996	8	1019 - 1168	7
997 - 1146	9	1169 - 1318	8
1147 - 1296	10	1319 - 1468	9
1297 - 1446	11	1469 - 1618	10
1447 - 1596	12	1619 - 1768	11
1597 - 1746	13	1769 - 1800	12
1747 - 1896	14		
1897 - 2046	15		
2047 - 2196	16		
2197 - 2346	17		
2347 - 2400	18		

Matching frame

Detach the matching frame from the sound attenuator. Attach the matching frame to the duct (provided on site); using suitable fixing material. Attach cover angles (provided on site) to reduce frame leakage. Recommended cover angle dimensions: total length = $B - 17$ mm, leg length of angle 10×30 mm.

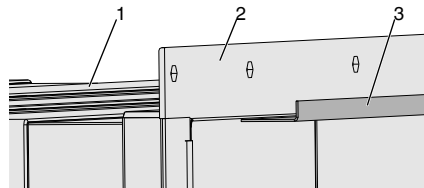


Fig. 16: Fixing the matching frame to the duct

- 1 Casing (by others)
- 2 Matching frame
- 3 Angle section (by others)

Subdivided splitter sound attenuators (MS, XS)

Splitter sound attenuators with a duct casing up to a length of 1500 mm are supplied in one piece. Larger constructions ($L > 1500$ mm to 3000 mm) are supplied in two parts and have to be assembled on site. Please note that a seal (not included) is required for the assembly of the two parts.

For type MS with subdivided length, make sure to arrange the splitters in the correct order
 ↪ 5.3 'Additional installation details for splitter sound attenuators MS-OL and XS-OL' on page 10.

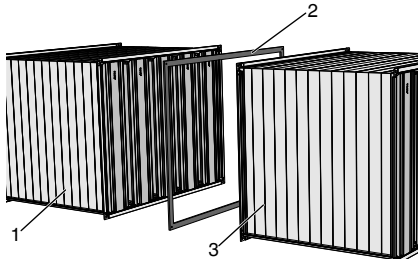


Fig. 17: Splitter sound attenuator with subdivided length

- 1 Splitter sound attenuator with air duct profile (P), part 1
- 2 Seal / sealing kit (not included)
- 3 Splitter sound attenuator with air duct profile (P), part 2

In addition to the length division, subdivisions in width (B) and/or height (H) are also possible. Each part can only be subdivided once. Splitter sound attenuators with subdivided width and/or height are designed with angle section frames (W).

Width subdivided - $B > 2400 \text{ mm}$ to 4800 mm

Height subdivided - $H > 1800 \text{ mm}$ to 3600 mm .

Before assembling attenuators with subdivided height and/or width, remove the transport protection devices (sections without holes).

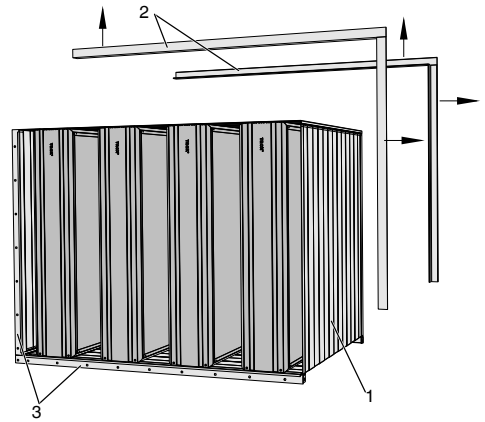


Fig. 18: Splitter sound attenuator with subdivided width and height

- 1 Splitter sound attenuator with angle section frame (W)
- 2 Transport protection devices (profiles without holes), to be removed
- 3 Angle section frame (W)

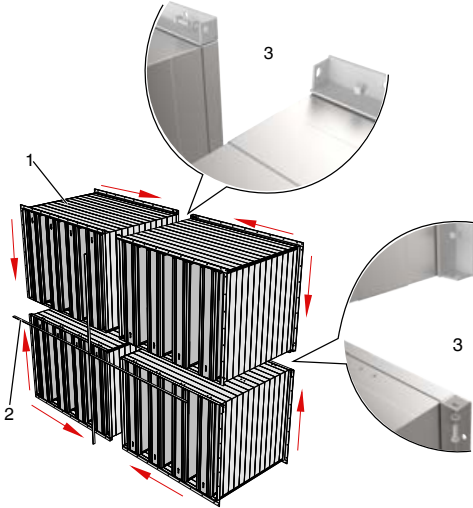


Fig. 19: Splitter sound attenuator with subdivided width and height

- 1 Splitter sound attenuator with angle section frame (W)
- 2 Seal
- 3 Screw-fix connection

Join the plain (i.e. unprofiled) casing sides together. Connect each angle section frame with one screw connection each (included) to the adjacent angle section frames.

Screw connections are supplied in a drawstring bag; including:

- 1 piece - Hexagon head screw M8x25 8.8 A2J
- 1 piece - Hexagon nuts M8-8 A2J
- 2 piece - Washers for M8

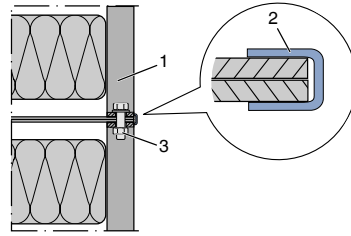


Fig. 20: Seal, detail

- 1 Splitter sound attenuators
- 2 Seal
- 3 Screw-fix connection

Fit the seals (included) over the joints between each two plain (unprofiled) casing sides.

Additional installation details for splitter sound attenuators MS-OL and XS-OL

Splitter sound attenuators without a casing are called splitter sets (OL).

A splitter set includes a certain number of splitters (depending on the order code) that can be installed in rectangular ducts (others) with plain, parallel walls.

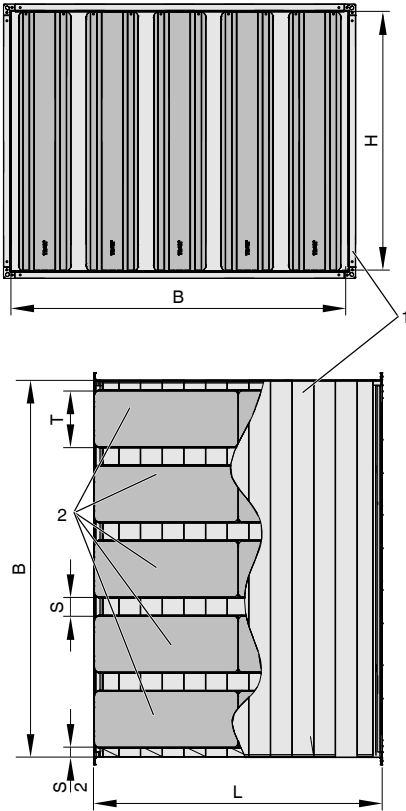


Fig. 21: Installation arrangement

- 1 Duct (by others)
- 2 Splitter set

Arrangement of splitters

Install the splitters in parallel and with the defined airway width S. Install splitters of the same length L in parallel.

Airway width S

The airway width between two splitters can be determined based on the clear width of the duct.

The gap between the outermost splitter and the duct should be $S/2$.

- S - Airway width
- B - Duct width
- T - Splitter thickness
- n - No. of splitters

$$S = (B - n \times T) / n$$

Recommended:

$$S \text{ min.} = 0.25 \times T; 40 \text{ mm min.}$$

$$S \text{ max.} = 2 \times T$$

Arrangement of resonating panels

MS-OL splitter sets and MK splitters come with resonating panels that cover half of each side; the other half is absorption material with glass fibre scrim. Depending on the splitter thickness, the resonating panels of each splitter are either opposite each other or offset.

Correct installation of MS-OL and MK 100 splitters

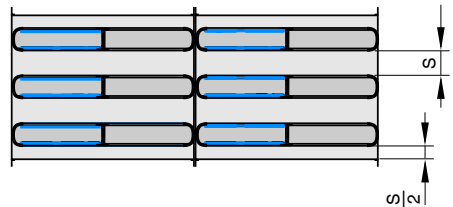


Fig. 22: Opposite resonating panels

Correct installation of MS-OL, MK 200 and MK 230 splitters

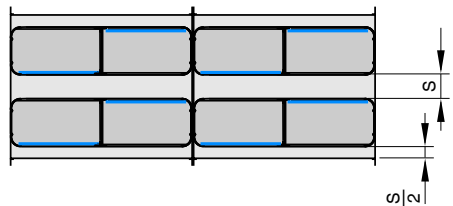


Fig. 23: Offset resonating panels

Installation with resonating panels

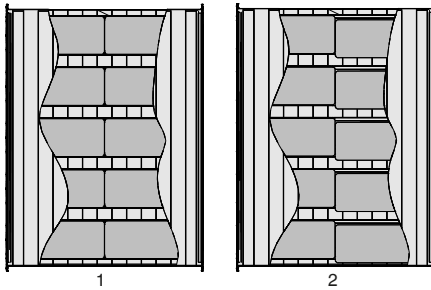


Fig. 24: Installation with the same airway width between splitters

- 1 correct
- 2 not correct

Please note:

- Dimension (H) equals the clear height of the duct.
- The length of the duct must be at least equal to the sum of the splitter lengths (L).
- Only arrange splitters of the same length (L) side by side or on top of each other.
- The arrangement of the resonating panels (Fig. 22, Fig. 23) has to be the same over the entire length.
- If splitters have to be subdivided, see § 5.2 'Installation details for splitter sound attenuators type MS and XS' on page 6.
- Use suitable fixing material to fix the splitters to the duct § 5.2 'Installation details for splitter sound attenuators type MS and XS' on page 6.
- The air must flow through the sound attenuator parallel to the splitter length (L); splitter height (H) and splitter length (L) must not be interchanged.
- The airway width must be the same over the entire splitter surfaces.
 - Increasing the airway width reduces the insertion loss.
 - Reducing the airway width increases pressure loss and air-regenerated noise.
- Do not install the splitters in a staggered arrangement as it will damage the ventilation and air conditioning system.

Installation details for sound attenuator splitters MK, RK and XK

The sound attenuator splitters are supplied undivided. You can install them (as MS-OL or XS-OL) in rectangular ducts (by others) with plain, parallel walls § Chapter 5.3 'Additional installation details for splitter sound attenuators MS-OL and XS-OL' on page 10.

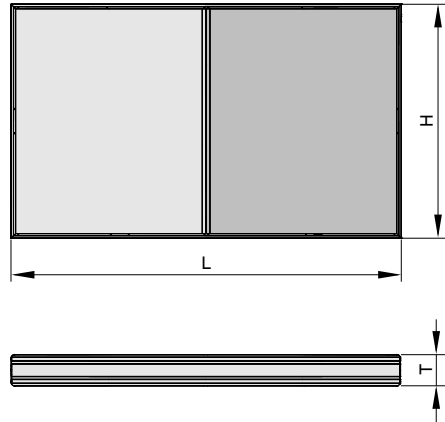


Fig. 25: Splitter MK

Additional installation information for sound attenuator splitters:

- Install the splitters so that they don't vibrate.
- Use, for example, self-drilling screws (Fig. 26), at least 4.2 x 13 (DIN 7504), to fix the splitters to a sheet metal duct.
- Seal screw-fix connections as required.
- To install splitters in concrete ducts, for example, you can use rails. Install splitters so that they do not move.
- You may install 2 splitters on top of each other (in one duct casing, for example), but the total height must not exceed 5000 mm (MK, XK). Use clamp sheets and U-sheets to connect the splitters § 5.5 'Subdivided sound attenuator splitters MK, RK and XK' on page 13.

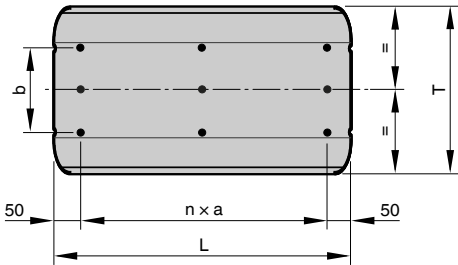


Fig. 26: Position of the screws to fix the splitters

- Recommended fixing points and distances for screw fixing. Screw-fix the splitters on both L sides. For intermediate lengths L, use the number of screws (n) for the next length and position them in the middle according to Fig. 25.

T	b
100	0 (centre only)
200	40
230	70
300	100

FL	n x a
500	1 x 400
750	2 x 325
1000	2 x 450
1250	2 x 575
1500	3 x 460
1750	3 x 550
2000	4 x 475
2250	4 x 538
2500	5 x 480

Subdivided sound attenuator splitters MK, RK and XK

Large splitters may be supplied subdivided; if so, the necessary U-sheets and clamp sheets to connect them will be supplied with the splitters.

Splitters are supplied subdivided if

MK / XK - H and L > 1500 mm, or H + L > 4000 mm

Height subdivided

Subdivided into only two parts, upright installation in a horizontal duct.

MK, XK - > 2500 to 5000 mm

H 1500 mm max. - if L >= 1500 mm

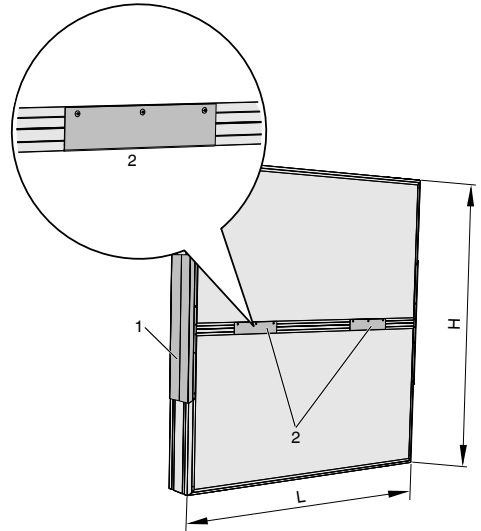


Fig. 27: Splitter sound attenuator with the height subdivided

- U-sheet
- No. of clamp sheets ↪ 'Installation material' on page 14

Length subdivided

Subdivided into only two parts, but any number of splitters can be installed one after the other in a horizontal duct.

MK, XK - > 2500 to 5000 mm

L 1500 mm max. - if H >= 1500 mm

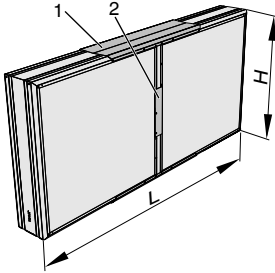


Fig. 28: Splitter sound attenuator with the length subdivided

- 1 U-sheet
- 2 No. of clamp sheets ☞ 'Installation material' on page 14

Installation material

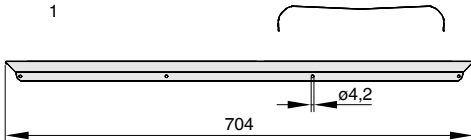


Fig. 29: U-sheet

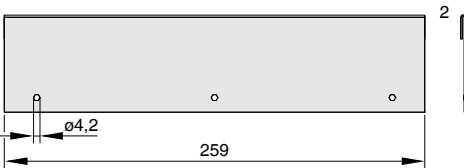


Fig. 30: Clamp sheet

H or L [mm]	No. of clamp sheets (on each side)
to 750	–
751 - 1000	1
> 1000	2

Assembly

☞ 5.3 'Additional installation details for splitter sound attenuators MS-OL and XS-OL' on page 10

1. ▶ Attach the splitters to each other with 2 U-sheets, placed in the middle. Fixing material by others. Rivet connection recommended, holes in splitter frames by others.
2. ▶ Attach clamp sheets on both sides of the splitters (fixing material by others). For number see ☞ Table on page 14. Attach the clamp sheets in the middle. If 2 clamp sheets are required on each side, their positions should be offset and ideally 500 mm apart.

Technical data

General technical data

Item	Value
Air temperature	-30 °C to 100 °C / (RK and MK/XK with expanded metal construction: 300 °C for 8 h max.)
Airflow velocity	≤ 20 m/s
Relative humidity	≤ 80%, no condensation
Sound attenuator casing material*	<ul style="list-style-type: none"> ■ Galvanised steel (1.0917) ■ Stainless steel V2A (1.4301) ■ Stainless steel V4A (1.4571)** ■ Aluminium (EN AW-5754)**

* No corrosion resistance according to ISO 12944-2 has been specified for the splitter sound attenuators

** Splitters without aerodynamically profiled frames

Weights – sound attenuator casing

Sound attenuator casing with flange (-P), L = 500, weights [kg]

H [mm]	B [mm]									
	400	600	800	1000	1200	1400	1600	2000	2400	
300	7	8	10	12	14	16	18	21	25	
600	9	11	13	14	16	18	20	23	27	
900	13	15	17	19	21	23	25	29	33	
1200	15	18	19	21	23	25	27	31	35	

H [mm]	B [mm]								
	400	600	800	1000	1200	1400	1600	2000	2400
1500	18	20	22	24	26	28	29	33	37
1800	21	22	24	26	28	30	32	35	39

**Sound attenuator casing with flange (-P),
L = 1000, weights [kg]**

H [mm]	B [mm]								
	400	600	800	1000	1200	1400	1600	2000	2400
300	12	16	19	22	25	29	32	39	46
600	16	19	23	26	29	32	35	42	48
900	21	25	28	31	35	38	41	48	55
1200	27	30	34	37	40	44	47	54	61
1500	31	34	37	41	44	47	50	56	63
1800	36	40	43	46	49	53	56	63	69

**Sound attenuator casing with flange (-P),
L = 1500, weights [kg]**

H [mm]	B [mm]								
	400	600	800	1000	1200	1400	1600	2000	2400
300	16	21	26	30	35	40	44	54	63
600	23	28	32	37	42	46	51	60	70
900	30	35	39	44	49	53	58	67	76
1200	37	41	46	51	55	60	64	73	83
1500	44	48	53	57	62	66	71	80	89
1800	52	57	61	66	71	76	81	90	100

**Sound attenuator casing with angle section
frame (-W), L = 500, weights [kg]**

H [mm]	B [mm]								
	400	600	800	1000	1200	1400	1600	2000	2400
300	10	13	16	19	22	25	28	33	39
600	14	17	20	23	26	28	31	37	43
900	20	23	26	29	32	35	38	45	50
1200	24	27	30	33	36	39	42	48	54
1500	28	31	34	37	40	43	46	52	58
1800	32	35	38	41	44	47	50	55	61

**Sound attenuator casing with angle section
frame (-W), L = 1000, weights [kg]**

H [mm]	B [mm]								
	400	600	800	1000	1200	1400	1600	2000	2400
300	16	20	25	29	33	38	43	52	60
600	21	26	30	34	39	43	47	55	64
900	28	33	37	41	46	50	55	63	72
1200	35	40	44	49	53	58	62	71	80
1500	41	45	49	54	58	62	67	75	84
1800	48	52	57	61	65	70	74	83	91

**Sound attenuator casing with angle section
frame (-W), L = 1500, weights [kg]**

H [mm]	B [mm]								
	400	600	800	1000	1200	1400	1600	2000	2400
300	20	26	31	37	43	49	54	66	77
600	28	34	40	46	51	57	63	74	85
900	37	42	48	54	60	65	71	82	93
1200	45	51	57	62	68	73	79	90	102
1500	54	59	65	71	76	82	87	98	110
1800	63	69	75	81	87	93	99	110	122

Weights – RK-A, RK-C

RK-A, RK-C, weights [kg]

H [mm]	RK-A					RK-C				
	L [mm]					L [mm]				
	500	750	1000	1250	1500	500	750	1000	1250	1500
300	4	6	8	9	11	7	10	12	15	18
600	7	10	13	16	19	12	17	22	28	33
900	10	14	18	22	27	17	25	32	40	48
1200	13	18	23	29	35	23	32	42	53	63
1500	16	22	29	36	42	28	40	53	65	77
1800	20	28	36	43	51	35	49	64	79	X

X = construction not available

Weights – XK

XK100, weight [kg] of one splitter or one sound attenuator casing

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)									Glass fibre fabric and perforated sheet metal (-L-A2)								
	L [mm]									L [mm]									L [mm]								
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500
500	3	3	4	5	6	7	8	9	9	4	5	7	8	9	11	12	14	15	5	7	10	12	14	16	18	20	22
750	3	4	5	6	7	9	10	11	12	5	7	9	11	13	15	17	19	21	7	10	13	16	19	23	26	29	32
1000	4	5	7	8	10	11	13	14	15	7	9	11	14	18	20	22	25	27	10	13	17	21	26	30	34	38	41
1250	5	6	8	10	12	14	15	19	20	8	11	14	18	21	24	27	32	35	12	16	21	27	32	37	41	48	53
1500	6	7	10	12	14	16	20	22	23	9	13	17	21	24	28	34	38	41	14	19	26	32	37	43	52	57	63
1750	7	9	11	14	16					11	15	20	24	28					16	23	30	37	43				
2000	8	10	13	15	17	subdivided construction				13	17	22	27	32	subdivided construction				18	26	34	41	49	subdivided construction			
2250	9	11	14	16	19	subdivided construction				14	19	25	30	35	subdivided construction				21	29	38	46	55	subdivided construction			
2500	9	12	15	18	21	subdivided construction				15	21	27	33	38	subdivided construction				23	32	41	51	60	subdivided construction			

XK200, weight [kg] of one splitter or one sound attenuator casing

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)									Glass fibre fabric and perforated plate (-L-A2)								
	L [mm]									L [mm]									L [mm]								
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500
500	4	6	7	9	10	12	13	15	16	6	8	10	12	14	16	18	20	22	7	10	13	15	18	21	24	27	30
750	6	8	10	12	13	16	18	20	22	8	10	13	16	19	22	25	28	31	10	14	18	21	25	30	34	38	41
1000	7	10	12	14	18	20	23	25	27	10	13	17	20	25	29	32	36	39	13	18	22	28	34	39	44	49	54
1250	9	12	14	18	21	24	27	32	35	12	16	20	26	30	35	39	45	50	15	21	28	35	41	47	53	62	68
1500	10	13	18	21	24	28	34	37	40	14	19	25	30	35	41	48	53	58	18	25	33	41	48	56	66	73	80
1750	12	16	20	24	28					16	23	29	35	41					22	30	39	47	56				
2000	14	18	23	27	31	subdivided construction				18	25	32	39	46	subdivided construction				24	34	44	53	63	subdivided construction			
2250	15	20	25	30	35	subdivided construction				21	28	36	43	51	subdivided construction				27	38	49	59	70	subdivided construction			
2500	17	22	27	33	38	subdivided construction				23	31	39	47	56	subdivided construction				30	42	54	66	77	subdivided construction			

XK230, weight [kg] of one splitter or one sound attenuator casing

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)									Glass fibre fabric and perforated plate (-L-A2)								
	L [mm]									L [mm]									L [mm]								
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500
500	5	7	8	10	12	14	15	17	19	6	8	11	13	15	18	20	22	24	8	11	14	16	19	23	26	29	32
750	7	9	11	13	15	18	20	22	25	8	11	14	18	21	24	27	30	33	11	15	19	23	27	32	36	40	44
1000	8	11	14	16	20	23	26	28	31	11	14	18	22	27	31	35	39	43	14	19	24	29	36	41	47	52	57

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)									Glass fibre fabric and perforated plate (-L-A2)									
	L [mm]									L [mm]									L [mm]									
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	
1250	10	13	16	21	24	28	31	36	39	13	18	22	28	33	38	43	49	54	16	23	29	37	44	51	57	66	72	
1500	12	15	20	24	28	32	38	42	46	15	21	27	33	38	44	52	58	63	19	27	36	44	51	60	70	78	85	
1750	14	18	23	28	32	subdivided construction				18	25	31	38	44	subdivided construction				23	32	41	51	60	subdivided construction				
2000	16	21	26	31	36					20	28	35	43	50					26	36	47	57	67					
2250	17	23	28	34	39					23	31	39	47	55					29	41	52	64	75					
2500	19	25	31	37	43	25	34	43	52	61	32	45	57	70	83													

XK300, weight [kg] of one splitter or one sound attenuator casing

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)									Glass fibre fabric and perforated plate (-L-A2)									
	L [mm]									L [mm]									L [mm]									
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	
500	6	8	10	13	15	17	19	21	23	7	10	13	15	18	21	24	27	29	9	12	16	19	23	26	30	33	37	
750	8	11	14	17	19	23	26	28	31	10	14	17	21	25	29	33	36	40	12	17	22	27	31	37	41	46	51	
1000	10	14	17	21	26	29	33	36	40	13	17	22	27	33	37	42	47	51	16	22	28	34	41	48	54	60	66	
1250	13	17	21	26	30	35	39	45	50	15	21	27	33	39	45	51	59	64	19	27	34	42	50	58	65	75	82	
1500	15	19	25	30	35	41	48	53	58	18	25	32	39	46	53	62	69	75	23	31	41	50	59	68	80	89	97	
1750	18	23	29	35	41	subdivided construction				22	30	37	45	53	subdivided construction				27	37	48	58	68	subdivided construction				
2000	20	26	33	39	46					24	33	42	51	60					30	42	54	65	77					
2250	22	29	36	43	50					27	37	47	57	66					34	47	60	73	86					
2500	24	32	40	47	55	30	41	51	62	73	37	52	66	80	95													

Weights – MK

MK100, weight [kg] of one splitter or one sound attenuator casing

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)									Glass fibre fabric and perforated plate (-L-A2)									
	L [mm]									L [mm]									L [mm]									
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	
500	3	5	6	7	8	10	11	12	13	4	5	7	8	10	12	13	15	16	5	7	8	10	12	14	16	18	20	
750	5	6	8	9	11	13	15	16	18	5	8	10	12	14	16	18	20	22	7	9	12	14	17	20	23	25	28	
1000	6	8	10	12	15	17	19	21	23	7	10	12	15	19	21	24	26	29	8	12	15	18	23	26	30	33	36	
1250	7	9	12	15	18	20	23	27	30	8	12	15	19	22	26	29	34	37	10	14	18	24	28	32	36	42	46	
1500	8	11	15	18	21	24	29	32	35	10	14	18	22	26	30	36	40	44	12	17	23	28	33	38	45	50	55	
1750	10	13	17	20	24	subdivided construction				12	16	21	26	30	subdivided construction				14	20	26	32	38	subdivided construction				
2000	11	15	19	23	27					13	19	24	29	34					16	23	30	36	43					

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)						Glass fibre fabric and perforated plate (-L-A2)											
	L [mm]									L [mm]						L [mm]											
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500
2250	12	17	21	25	30					15	21	26	32	38					18	25	33	40	48				
2500	13	18	23	28	32					16	23	29	35	41					20	28	36	44	52				

MK200, weight [kg] of one splitter or one sound attenuator casing

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)						Glass fibre fabric and perforated plate (-L-A2)											
	L [mm]									L [mm]						L [mm]											
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500
500	5	7	9	11	13	15	17	18	20	6	8	10	12	14	17	19	21	23	7	9	12	14	16	19	22	24	27
750	7	10	12	14	17	20	23	25	28	8	11	14	17	20	23	26	29	32	9	13	16	19	23	27	31	34	38
1000	9	12	15	18	23	26	29	32	35	10	14	17	21	26	30	34	37	41	12	16	21	25	31	35	40	44	48
1250	11	14	18	23	27	31	35	41	45	12	17	21	27	32	36	41	48	52	14	19	25	31	37	43	48	56	61
1500	13	17	22	27	32	36	43	48	52	14	20	26	31	37	43	51	56	61	16	23	30	37	43	50	59	66	72
1750	15	20	26	31	36					17	24	30	36	43					20	27	35	43	50				
2000	17	23	29	35	41					19	26	34	41	48					22	31	40	48	57				
2250	19	25	32	39	45					21	29	37	45	53					25	34	44	54	63				
2500	21	28	35	42	50					24	32	41	50	59					27	38	48	59	70				

MK230, weight [kg] of one splitter or one sound attenuator casing

H [mm]	Glass fibre fabric (-F)									Glass fibre fabric and expanded metal (-L)						Glass fibre fabric and perforated plate (-L-A2)											
	L [mm]									L [mm]						L [mm]											
	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500	500	750	1000	1250	1500	1750	2000	2250	2500
500	6	8	10	12	14	16	18	20	22	6	9	11	13	16	18	21	23	25	7	10	13	15	18	21	24	26	29
750	8	11	13	16	19	22	25	28	30	9	12	15	18	21	25	28	32	35	10	14	17	21	25	29	33	37	40
1000	10	13	17	20	25	28	32	35	39	11	15	19	23	29	33	37	41	45	13	17	22	27	33	38	43	47	52
1250	12	16	20	25	30	34	39	45	49	13	18	23	29	34	40	44	52	56	15	21	27	34	40	46	52	60	66
1500	14	19	25	30	35	40	48	53	57	16	21	28	34	40	46	55	61	66	18	25	33	40	47	54	64	70	77
1750	17	23	28	34	40					19	26	33	40	46					21	30	38	46	54				
2000	19	25	32	39	45					21	29	37	44	52					24	33	43	52	61				
2250	21	28	35	43	50					23	32	41	49	58					27	37	47	58	68				
2500	23	31	39	47	55					26	35	45	54	64					29	41	52	63	75				

Commissioning

Initial commissioning

Personnel:

- HVAC technician

Before you start commissioning:

- Make sure that the splitter sound attenuators or splitters are properly installed in the duct (duct by others).
- Ensure that all sound attenuators are clean and free from residues and foreign matter.

