



Standard flange 1"



Angle section  
frame 1" × 1" × 0.1"



Aerodynamically optimised  
splitter frame

# Sound attenuators

## XS



### Splitter sound attenuator with high insertion loss, even in the high-frequency range

Splitter sound attenuator, basically a duct section with integral splitters (type XK), for ventilation and air conditioning systems

- Attenuation effect due to absorption
- Energy efficient due to aerodynamically formed frame (bullnose radius 0.8")
- Sound absorbing material is biosoluble and hence hygienically safe
- Sound absorbing material faced with glass fibre fabric as a protection against erosion due to airflow velocities up to 3937 fpm
- The sound absorbing material is non-combustible, to EN 13501, fire rating class A1
- Leakage class C and pressure class 2 according to EN 15727
- For use in areas with potentially explosive atmospheres (according to EC Directive 2014/34/EU (ATEX)), zones 1, 2, and zones 21 and 22 (outside) according to EC Directive 1999/92/EC
- Operating temperature up to 212 °F, with expanded metal (variant L) up to 572 °F for a limited period of time

Optional equipment and accessories

- Expanded metal as an additional mechanical protection for the sound absorbing material
- Stainless steel variant A2 (1.4301), with optional perforated metal facing as an additional protection for the sound absorbing material
- Other stainless steel and aluminium variants as well as PUR coating upon request



Tested to VDI 6022

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## General information

### Application

- Splitter sound attenuators used for the reduction of fan noise and air-regenerated noise in ventilation and air conditioning systems
- Attenuation effect due to absorption
- Broadband attenuation even in the high frequency range
- For use in areas with potentially explosive atmospheres (EC Directive 2014/34/EU (ATEX)), zones 1, 2, 21 and 22 (outside) according to Directive 1999/92/EC

### Special features

- Increased insertion loss even in the high-frequency range
- Leakage class C and pressure class 2 according to EN 15727
- Energy savings due to aerodynamically formed splitter frame
  - Up to 30 % lower differential pressure
- Hygiene tested and compliant with VDI 6022
- Multi-section construction available for large dimensions

### Nominal sizes

- Width B: 8", 16", 24", 31", 39", 47", 55", 63", 71", 79", 87", 94"
  - Intermediate sizes: in increments of 0.04"
    - Splitter thickness 4": 6" – 94"
    - Splitter thickness 8": 10" – 94"
    - Splitter thickness 9": 11" – 94"
    - Splitter thickness 12": 15" – 94"
  - Sizes from 95" – 189" are available with the width subdivided in increments of 0.04"
    - Even no. of splitters: centre division
    - Odd no. of splitters: off-centre division
- Height H: 12", 16", 20", 24", 28", 31", 35", 39", 43", 47", 51", 55", 59", 63", 67", 71"
  - Intermediate sizes 6" – 71" in increments of 0.04"
  - Sizes from 71" – 142" are available with the height subdivided in increments of 0.04"
    - Centre division
- Length L: 20", 30", 39", 49", 59"
  - Intermediate sizes 20" – 59" in increments of 0.04"
- Sizes from 59" – 118" are available with the length subdivided in increments of 0.04"
  - Part L1: 39", 49", 59"
  - Part L2: at least 20" and ≤ L1, in increments of 0.04"
- Width and/or height subdivided if  $B + H > 165"$
- Airway width S
  - Minimum: splitter thickness  $T \times 0.25$ , but not  $< 2"$
  - Maximum: splitter thickness  $T \times 2$

### Variants

- XS with splitter type XK
  - Splitter thickness 4"
  - Splitter thickness 8"
  - Splitter thickness 9"
  - Splitter thickness 12"

### Construction

#### Duct

- No entry: with duct
- OL: without duct (set of XK splitters only)

#### Splitter surface

- F: Glass fibre fabric
- L: glass fibre fabric faced with expanded metal as an additional mechanical protection for the sound absorbing material
  - Stainless steel construction with perforated metal facing

#### Materials and surfaces

- No entry: galvanised steel 1.0917
- A2: stainless steel 1.4301
- P1: splitters powder-coated RAL 7001, silver grey

#### Duct connection

- No entry: none (set of splitters only)
- P: flange 1", galvanised or stainless steel
- W: angle section frame 1" × 1" × 0.1", galvanised T: flange 0.8", galvanised

#### Matching frame

- No entry: none
- G: matching frame (only for angle section frame W)

### Parts and characteristics

- Duct
  - Leakage class C and pressure class 2 according to EN 15727
  - Various duct connections available
- Matching frame
  - Angle section frame with the same pattern as the requested sound attenuator
  - For installation onto a duct (duct by others)
  - Aerodynamically formed frame
    - Covers the edges of the sound absorbing material
    - Reduces the pressure loss
    - Helps to optimise the airflow, hence reducing the air-regenerated noise
    - Increased rigidity due to special profile

### Construction features

- Bent duct with grooves for increased rigidity
- Sound attenuators with angle section frame, width or height subdivided
  - Galvanised construction only
- Aerodynamically formed splitter frame (bullnose radius 0.8") that helps to reduce turbulence on both the upstream and downstream sides; frame with grooves for increased rigidity
  - Frame edges with bullnose for increased rigidity
- Operating temperature up to 212 °F; variant L up to 572 °F for 8h max.

**Materials and surfaces**

- Duct, flange in galvanised sheet steel 1.0917 or stainless steel 1.4301
- Angle section frame in galvanised L steel S235JRC2
- Splitter frame and centre mullion made of galvanised sheet steel 1.0917 or stainless steel 1.4301
  - Expanded metal facing made of galvanised steel 1.0917
  - Perforated metal facing made of stainless steel 1.4301
- Absorption material is 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 from airflow velocities of up to 3937 fpm
  - Inert to fungal and bacterial growth according to EN 846

**Standards and guidelines**

- Insertion loss and sound power level of air-regenerated noise tested to ISO 7235
- Meets the hygiene requirements of VDI 6022, VDI 3803 Part 1 and DIN 1946 Part 4
- EC Directive 2014/34/EC (ATEX): Equipment and protective systems intended for use in areas with potentially explosive atmospheres
- EC Directive 1999/92/EC (ATEX): Improvement of the safety and health protection of workers potentially at risk from explosive atmospheres
- Leakage class and pressure class according to EN 15727

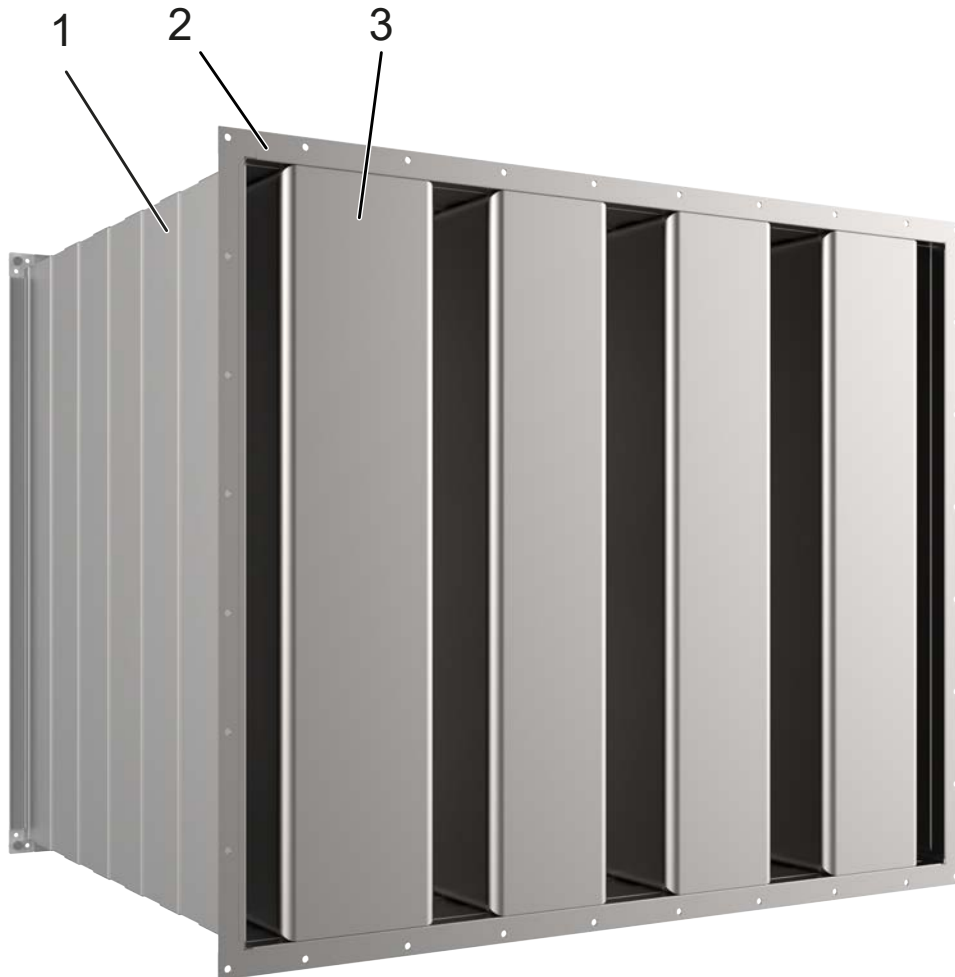
**Maintenance**

- Low-maintenance as construction and materials are not subject to wear
- Regular cleaning intervals according to VDI6022

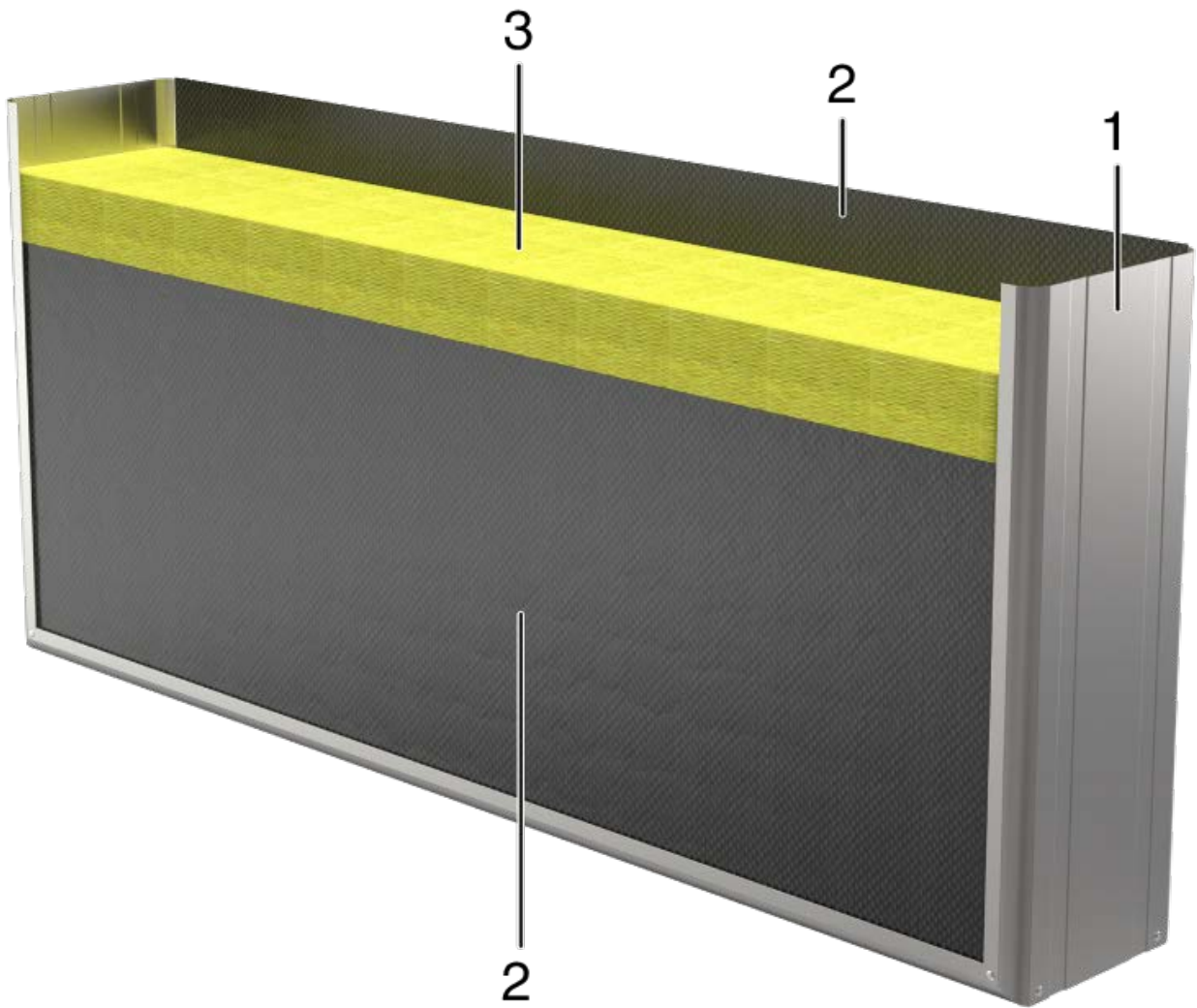
## Function

Splitter sound attenuators type XS contain splitters type XK. The attenuation effect of the XK splitters is due to absorption. The splitters have a mineral wool infill as sound absorbing material.

### Schematic illustration of MS/XS



- 1 Duct
- 2 Duct connection
- 3 Splitter



- 1 Splitter frame
- 2 Glass fibre fabric (facing)
- 3 Sound absorbing material

### Technical data

Splitter thickness	4", 8", 9", 12"
Nominal sizes (B × H × L)	Type XS 4: 6" × 6" × 20" – 94" × 71" × 59" Type XS 8: 10" × 6" × 20" – 94" × 71" × 59" Type XS 9: 11" × 6" × 20" – 94" × 71" × 59" Type XS 12: 15" × 6" × 20" – 94" × 71" × 59"
Width subdivided	95" – 189"
Height subdivide	71" – 142"
Length subdivided	59" – 118"
Intermediate sizes	In increments of 0.04"
Operating temperature	Up to 212 °F, variant L up to 572 °F for 8 h max.

### Quick sizing

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 program.

The differential pressures apply to sound attenuators with a height of 3'.

#### XK4, XS4, insertion loss $D_s$ [dB] and differential pressure $\Delta p_i$ [in WC]

L	Airway width	Centre frequency $f_m$ [Hz]								$v_s$ [fpm]		
		2	5	10	20	39	79	157	315	0.2	0.4	0.6
20	2	4	8	6	18	35	40	27	22	1969	5709	11024
20	4	4	4	4	15	27	22	15	10	1575	4528	8858
39	2	6	10	14	28	44	48	35	29	2559	7283	14173
39	3	5	7	10	24	38	38	27	20	1969	5512	10827
39	4	5	5	8	23	36	33	23	15	1772	5118	10039
59	2	7	13	21	38	> 50	> 50	43	37	3150	8661	17126
59	3	6	9	16	33	48	48	35	26	2362	6299	12402
59	4	6	7	13	30	45	45	31	21	1969	5709	11024
79	2	8	16	29	48	> 50	> 50	> 50	45	3740	10236	20079
79	3	7	10	21	41	> 50	> 50	43	33	2559	7087	13780
79	4	7	8	18	38	> 50	> 50	39	27	2165	6299	12205
98	2	10	18	36	> 50	> 50	> 50	> 50	> 50	4331	11811	23228
98	3	8	12	27	49	> 50	> 50	> 50	39	2756	7874	15354
98	4	8	9	22	45	> 50	> 50	48	33	2362	6693	13189
118	2	11	21	44	> 50	> 50	> 50	> 50	> 50	4724	13386	26181
118	3	10	14	33	> 50	> 50	> 50	> 50	45	3150	8661	16732
118	4	9	10	27	> 50	> 50	> 50	> 50	38	2559	7283	14370

**XK8, XS8, insertion loss  $D_e$  [dB] and differential pressure  $\Delta p$ , [in WC]**

L	Airway width	Centre frequency $f_m$ [Hz]								$v_s$ [fpm]		
		2	5	10	20	39	79	157	315	0.2	0.4	0.6
20	2	4	9	14	27	42	38	25	19	4134	11417	22441
20	4	2	5	10	19	28	24	16	12	2165	6102	12008
39	2	5	14	21	43	> 50	> 50	36	25	4724	13189	25787
39	3	4	10	18	35	46	41	27	19	2953	8465	16535
39	4	4	9	16	32	41	35	23	16	2559	6890	13583
59	2	7	19	29	> 50	> 50	> 50	47	31	5315	14764	28937
59	3	6	14	24	49	> 50	> 50	35	23	3346	9449	18504
59	4	5	12	22	44	> 50	46	30	19	2756	7874	15354
79	2	9	24	36	> 50	> 50	> 50	> 50	37	5906	16339	32283
79	3	7	19	31	> 50	> 50	> 50	44	27	3740	10433	20669
79	4	6	16	28	> 50	> 50	> 50	37	23	3150	8661	16929
79	8	3	9	19	40	44	31	16	9	1772	4921	9843
98	2	11	29	44	> 50	> 50	> 50	> 50	42	6496	18110	35433
98	3	9	23	37	> 50	> 50	> 50	> 50	32	4134	11614	22638
98	4	8	20	34	> 50	> 50	> 50	44	27	3346	9449	18504
98	8	4	11	24	49	> 50	38	19	11	1969	5512	10630
118	2	13	34	> 50	> 50	> 50	> 50	> 50	48	7087	19685	38780
118	3	10	27	44	> 50	> 50	> 50	> 50	36	4528	12598	24803
118	4	9	23	40	> 50	> 50	> 50	> 50	30	3740	10433	20276
118	8	5	13	29	> 50	> 50	45	22	12	2165	5906	11614

**XK9, XS9, insertion loss  $D_e$  [dB] and differential pressure  $\Delta p$ , [in WC]**

L	Airway width	Centre frequency $f_m$ [Hz]								$v_s$ [fpm]		
		2	5	10	20	39	79	157	315	0.2	0.4	0.6
20	3	3	6	11	22	30	22	16	15	2953	8465	16535
20	4	3	5	10	19	26	19	14	14	2559	6890	13583
39	3	4	10	18	32	42	34	23	19	3543	9646	19094
39	4	4	9	17	29	38	30	20	17	2756	7874	15354
39	8	3	6	12	20	23	17	11	10	1575	4528	8661
59	3	5	14	25	41	> 50	47	30	22	3937	11024	21457
59	4	5	13	23	38	49	41	26	20	3150	8858	17323
59	8	4	8	18	27	32	23	14	12	1772	4921	9646
79	3	6	18	32	> 50	> 50	> 50	37	26	4331	12205	23819
79	4	6	16	30	47	> 50	> 50	32	23	3543	9843	19291
79	8	4	11	23	35	40	28	17	14	1969	5512	10630
98	3	7	22	39	> 50	> 50	> 50	43	29	4921	13386	26378
98	4	7	20	37	> 50	> 50	> 50	38	26	3937	10827	21260
98	8	5	13	28	42	48	34	20	16	2165	5906	11614
118	3	8	26	46	> 50	> 50	> 50	50	32	5315	14567	28740
118	4	8	24	43	> 50	> 50	> 50	44	29	4331	11811	23031
118	8	6	16	33	50	> 50	40	24	18	2362	6496	12598

**XK12, XS12, insertion loss  $D_e$  [dB] and differential pressure  $\Delta p_t$  [in WC]**

L	Airway width	Centre frequency $f_m$ [Hz]								$v_s$ [m/s]		
		2	5	10	20	39	79	157	315	0.2	0.4	0.6
20	3	3	7	15	22	29	26	18	12	4134	11417	22244
20	4	3	6	13	20	26	23	16	11	3346	9055	17913
39	3	5	12	23	34	42	37	24	16	4528	12795	25000
39	4	4	11	21	31	38	33	22	14	3543	10039	19882
39	8	3	8	16	22	25	21	13	10	1969	5315	10433
59	3	6	17	32	45	> 50	47	30	20	5118	14173	27756
59	4	5	16	29	42	50	42	27	18	3937	11024	21850
59	8	3	12	22	29	33	27	17	11	2165	5709	11220
79	3	7	23	40	> 50	> 50	> 50	36	23	5512	15551	30315
79	4	6	21	37	> 50	> 50	> 50	32	21	4431	12205	23819
79	8	4	15	28	37	41	33	20	13	2165	6102	12008
98	3	9	28	49	> 50	> 50	> 50	42	27	6102	16929	33071
98	4	8	26	45	> 50	> 50	> 50	37	24	4724	13189	25787
98	8	5	19	34	45	50	39	24	15	2362	6496	12795
118	3	10	34	> 50	> 50	> 50	> 50	48	30	6496	18307	35827
118	4	9	31	> 50	> 50	> 50	> 50	43	27	5118	14173	27756
118	8	6	23	40	> 50	> 50	45	27	17	2559	6890	13583

## Specification text

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

### Specification text

Splitter sound attenuators used for the reduction of fan noise and air-regenerated noise in ventilation and air conditioning systems. Attenuation effect due to absorption. Energy-saving as well as hygiene tested and certified. Splitter sound attenuator that consist of a duct with connections and integral type XK splitters or a splitter set. Splitters consist of an aerodynamically formed frame (bullnose radius 0.8") and absorbing material. The splitter frame reduces pressure losses and air-regenerated noise. The profiled frame with bullnose edges increase the rigidity of the splitter. Insertion loss and sound power level of air-regenerated noise measured according to EN ISO 7235. For requirements in areas with potentially explosive atmospheres (ATEX), zones 1, 2, 21 and 22 (outside) according to Directive 1999/92/EC. The duct meets leakage class C and pressure class 2 according to EN 15727.

### Special features

- Increased insertion loss even in the high-frequency range
- Leakage class C and pressure class 2 according to EN 15727
- Energy savings due to aerodynamically formed splitter frame
  - Up to 30 % lower differential pressure
- Hygiene tested and compliant with VDI 6022
- Multi-section construction available for large dimensions

### Materials and surfaces

- Duct, flange in galvanised sheet steel 1.0917 or stainless steel 1.4301
- Angle section frame in galvanised L steel S235JRC2
- Splitter frame and centre mullion made of galvanised sheet steel 1.0917 or stainless steel 1.4301
  - Expanded metal facing made of galvanised steel 1.0917
  - Perforated metal facing made of stainless steel 1.4301
  - Absorption material is 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 from airflow velocities of up to 3937 fpm
    - Inert to fungal and bacterial growth according to EN 846

### Construction

#### Duct

- No entry: with duct
- OL: without duct (set of XK splitters only)

#### Splitter surface

- F: Glass fibre fabric
- L: glass fibre fabric faced with expanded metal as an additional mechanical protection for the sound absorbing material
  - Stainless steel construction with perforated metal facing

#### Materials and surfaces

- No entry: galvanised steel 1.0917
- A2: stainless steel 1.4301
- P1: splitters powder-coated RAL 7001, silver grey

#### Duct connection

- No entry: none (set of splitters only)
- P: flange 1", galvanised or stainless steel
- W: angle section frame 1" × 1" × 0.1", galvanised T: flange 0.8", galvanised

#### Matching frame

- No entry: none
- G: matching frame (only for angle section frame W)

### Technical data

- Splitter thickness: 4", 8", 9", 12"
- Dimensions B × H × L: XS 4: 6" × 6" × 20", XS 8: 10" × 6" × 20", XS 9: 11" × 6" × 20", XS 12: 15" × 6" × 20"
- Undivided construction up to 94" × 71" × 59"
- Width subdivided: 95" – 189"
- Height subdivided: 71" – 142"
- Length subdivided: 59" – 118"
- Intermediate sizes: in increments of 0.04"
- Operating temperature: up to 212 °F, variant L up to 572 °F for 8 h max.

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

### Sizing data

- B [in]
- H [in]
- L (in airflow direction) [in]
- $q_v$  (cfm)
- $D_e$  at 250 Hz [dB]
- $\Delta p$  [in WC]

Order code

XS - - F - A2 / 35 × 24 × 59 / 3 × 8 / P / G  
 | | | | | | | | | | |  
 1 2 3 4 5 6 7 8 9 10 11

**1 Type**

**XS** Splitter sound attenuator

**2 Air duct**

No entry required: with air duct

**OL** Without air duct (only set of splitters Type XK)

**3 Splitter surface**

**F** Glass fibre fabric

**L** Glass fibre fabric and expanded metal

**4 Material of air duct and splitters**

No entry required: galvanised steel 1.0917

**A2** Stainless steel 1.4301

**P1** Powder-coated in RAL 7001 (only splitters, not the duct casing)

**5 Width B [in]**

6" – 189" (with duct casing)

6" – 3937" (without duct casing)

**6 Height H [in]**

6" – 142"

**Order example: XS-L/35×59×39/3×9/P**

<b>Air duct</b>	With air duct
<b>Splitter surface</b>	Glass fibre fabric and expanded metal
<b>Material</b>	galvanised steel 1.0917
<b>Width</b>	35"
<b>Height</b>	59"
<b>Length</b>	39"
<b>No. of splitters</b>	3
<b>Splitter thickness</b>	9"
<b>Duct connection</b>	Standard flange 1"

**Order example: XS-OL-L-A2/31×59×59/3×8**

<b>Air duct</b>	Without air duct (only set of splitters Type XK)
<b>Splitter surface</b>	Glass fibre fabric and perforated sheet metal
<b>Material</b>	Stainless steel 1.4301
<b>Width</b>	31"
<b>Height</b>	59"
<b>Length</b>	59"
<b>No. of splitters</b>	3
<b>Splitter thickness</b>	8"

**Order Example: XS-OL-L-A2/31×59×59/3×8**

<b>Air duct</b>	Without air duct (only set of splitters Type XK)
<b>Splitter surface</b>	Glass fiber fabric and perforated sheet metal
<b>Material</b>	Stainless steel 1.4301
<b>Width</b>	31"
<b>Height</b>	59"
<b>Length</b>	59"
<b>No. of splitters</b>	3
<b>Splitter thickness</b>	8"

**7 Length L in airflow direction [in]**  
 20" – 118" (with duct casing)  
 6" – 197" (without duct casing)

**8 No. of splitters**

**9 Splitter thickness T [in]**  
 4, 8, 9, 12

**10 Duct connection**

No entry: none (set of XK splitters only)

**P** Standard flange 1", galvanised steel or stainless steel

**W** Angle section frame 1" × 1" × 0.1", galvanised steel only  
 S235JRC2 (for sound attenuators with width and/or height subdivided constructions, only angle section frame)

**T** Standard flange 0.8", steel galvanised only

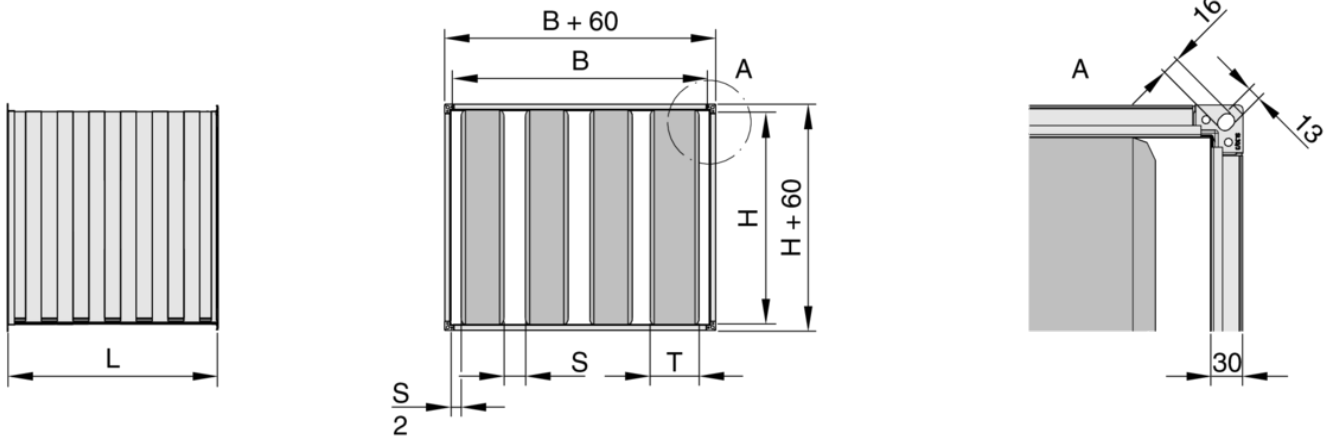
**11 Matching frame**

No entry required: none

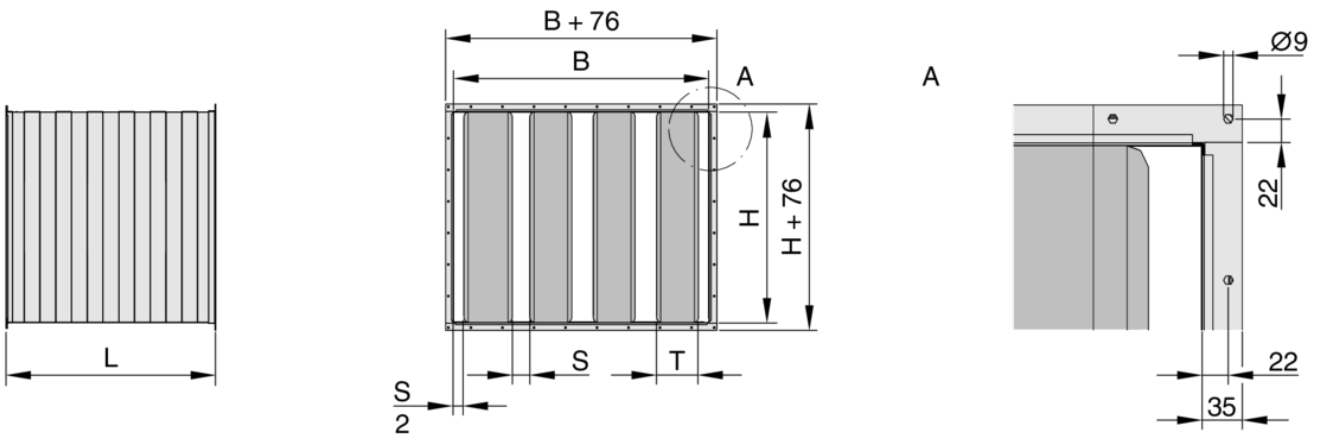
**G** Matching frame (only with angle section frame)

## Dimensions

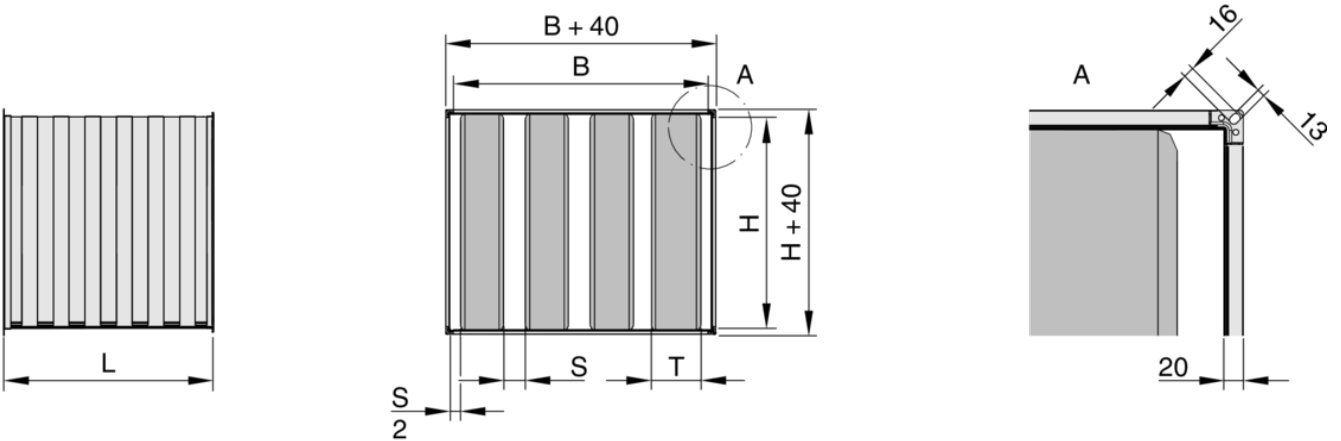
### Flange 1" (P), undivided construction



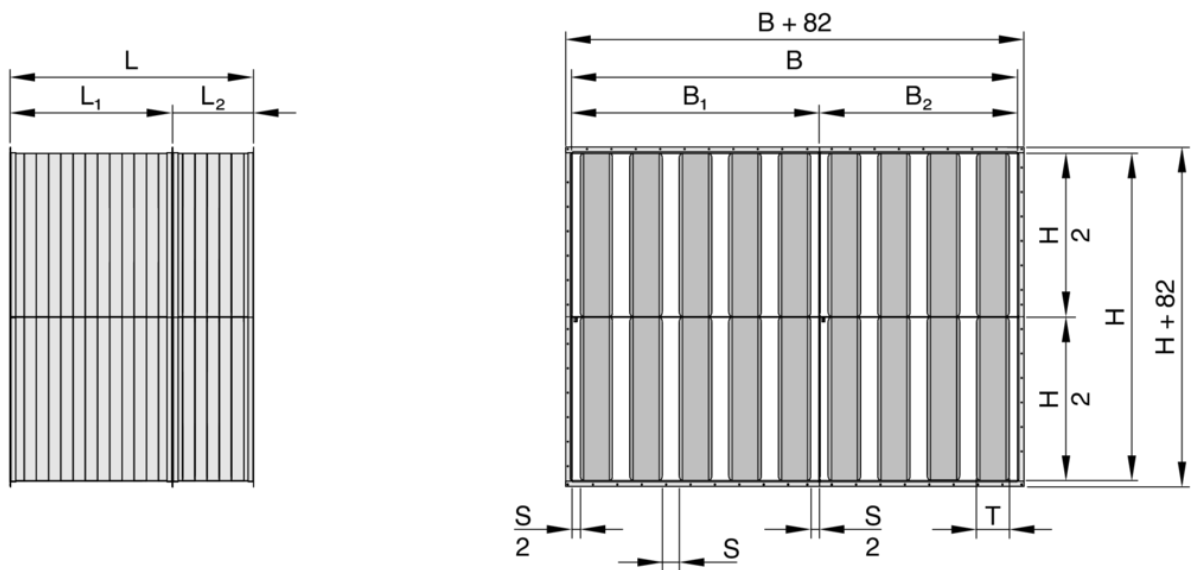
### Angle section frame 1" x 1" x 0.1" (W), undivided construction



### Flange 0.8" (T), undivided construction



**Angle section frame 1" × 1" × 0.1" (W), for constructions with the width or height subdivided**



**Nominal sizes**

- Width B: 8", 16", 24", 31", 39", 47", 55", 63", 71", 79", 87", 94"
  - Intermediate sizes: in increments of 0.04"
    - Splitter thickness 4": 6" – 94"
    - Splitter thickness 8": 10" – 94"
    - Splitter thickness 9": 11" – 94"
    - Splitter thickness 12": 15" – 94"
  - Sizes from 95" – 189" are available with the width subdivided in increments of 0.04"
    - Even no. of splitters: centre division
    - Odd no. of splitters: off-centre division
- Height H: 12", 16", 20", 24", 28", 31", 35", 39", 43", 47", 51", 55", 59", 63", 67", 71"
  - Intermediate sizes 6" – 71" in increments of 0.04"
  - Sizes from 71" – 142" are available with the height subdivided in increments of 0.04"
    - Centre division
- Length L: 20", 30", 39", 49", 59"
  - Intermediate sizes 20" – 59" in increments of 0.04"
- Sizes from 59" – 118" are available with the length subdivided in increments of 0.04"
  - Part L1: 39", 49", 59"
  - Part L2: at least 20" and  $\leq L_1$ , in increments of 0.04"
- Width and/or height subdivided if  $B + H > 165$ "
- Airway width S
  - Minimum: splitter thickness  $T \times 0.25$ , but not  $< 2$ "
  - Maximum: splitter thickness  $T \times 2$

## Weights

The weight of a splitter sound attenuator is determined by the number and construction of the splitters and ducts.

Weight [lbs] = (weight of splitter x no. of splitters) + duct

### Duct with flange (-P), L= 20

H	B								
	16	24	31	39	47	55	63	79	94
12	15	18	22	26	31	35	40	46	55
24	20	24	29	31	35	40	44	51	60
35	29	33	37	42	46	51	55	64	73
47	33	40	42	46	51	55	60	68	77
59	40	44	49	53	57	62	64	73	82
71	46	49	53	57	62	66	71	77	86

### Duct with flange (-P), L= 30

H	B								
	16	24	31	39	47	55	63	79	94
12	20	26	33	37	44	49	55	66	79
24	29	33	40	44	51	55	62	71	84
35	37	44	51	55	62	68	73	86	97
47	46	51	57	62	68	73	79	90	101
59	55	62	68	73	79	86	90	104	115
71	62	68	75	79	86	90	97	108	119

### Duct with flange (-P), L= 39

H	B								
	16	24	31	39	47	55	63	79	94
12	26	35	42	49	55	64	71	86	101
24	35	42	51	57	64	71	77	93	106
35	46	55	62	68	77	84	90	106	121
47	60	66	75	82	88	97	104	119	134
59	68	75	82	90	97	104	110	123	139
71	79	88	95	101	108	117	123	139	152

### Duct with flange (-P), L= 49

H	B								
	16	24	31	39	47	55	63	79	94
12	31	37	46	55	64	73	82	99	117
24	44	51	60	68	77	86	95	112	130
35	57	66	75	84	93	99	108	126	143
47	71	79	88	97	106	115	123	141	159
59	84	93	101	110	119	128	137	154	172
71	97	106	115	123	132	141	150	170	185

### Duct with flange (-P), L= 59

H	B								
	16	24	31	39	47	55	63	79	94
12	35	46	57	66	77	88	97	119	139
24	51	62	71	82	93	101	112	132	154
35	66	77	86	97	108	117	128	148	168
47	82	90	101	112	121	132	141	161	183
59	97	106	117	126	137	146	157	176	196
71	115	126	134	146	157	168	179	198	220

**Duct with angle section frame (-W), L= 20**

H	B								
	16	24	31	39	47	55	63	79	94
12	22	29	35	42	49	55	62	73	86
24	31	37	44	51	57	62	68	82	95
35	44	51	57	64	71	77	84	99	110
47	53	60	66	73	79	86	93	106	119
59	62	68	75	82	88	95	101	115	128
71	71	77	84	90	97	104	110	121	134

**Duct with angle section frame (-W), L= 30**

H	B								
	16	24	31	39	47	55	63	79	94
12	29	37	44	53	62	68	77	95	110
24	40	46	55	64	71	79	86	101	119
35	53	62	71	77	86	95	101	119	134
47	64	71	79	88	95	104	112	128	143
59	77	86	95	101	110	119	128	143	161
71	88	97	104	112	121	128	137	152	168

**Duct with angle section frame (-W), L= 39**

H	B								
	16	24	31	39	47	55	63	79	94
12	35	44	55	64	73	84	95	115	132
24	46	57	66	75	86	95	104	121	141
35	62	73	82	90	101	110	121	139	159
47	77	88	97	108	117	128	137	157	176
59	90	99	108	119	128	137	148	165	185
71	106	115	126	134	143	154	163	183	201

**Duct with angle section frame (-W), L= 49**

H	B								
	16	24	31	39	47	55	63	79	94
12	37	49	60	71	82	93	104	126	148
24	55	66	77	88	99	110	121	143	165
35	73	84	95	106	117	128	139	161	183
47	88	99	110	121	132	146	157	179	201
59	106	117	128	139	150	161	172	196	218
71	123	134	146	157	168	179	190	214	236

**Duct with angle section frame (-W), L= 59**

H	B								
	16	24	31	39	47	55	63	79	94
12	44	57	68	82	95	108	119	146	170
24	62	75	88	101	112	126	139	163	187
35	82	93	106	119	132	143	157	181	205
47	99	112	126	137	150	161	174	198	225
59	119	130	143	157	168	181	192	216	243
71	139	152	165	179	192	205	218	243	269

**XK 4 – Glass fibre fabric (-F)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	7	7	9	11	13	15	18	20	20	
30	7	9	11	13	15	20	22	24	26	
39	9	11	15	18	22	24	29	31	33	
49	11	13	18	22	26	31	33	42	44	
59	13	15	22	26	31	35	44	49	51	
69	15	20	24	31	35	X	X	X	X	
79	18	22	29	33	37	X	X	X	X	
89	20	24	31	35	42	X	X	X	X	
98	20	26	33	40	46	X	X	X	X	

X = subdivided construction

**XK 4 – Glass fibre fabric and expanded metal (-L)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	9	11	15	18	20	24	26	31	33	
30	11	15	20	24	29	33	37	42	46	
39	15	20	24	31	40	44	49	55	60	
49	18	24	31	40	46	53	60	71	77	
59	20	29	37	46	53	62	75	84	90	
69	15	20	24	31	35	X	X	X	X	
79	18	22	29	33	37	X	X	X	X	
89	20	24	31	35	42	X	X	X	X	
98	20	26	33	40	46	X	X	X	X	

X = subdivided construction

**XK 4 – Glass fibre fabric and perforated sheet metal (-L-A2)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	9	11	15	22	26	31	35	40	44	
30	11	15	22	29	35	42	51	57	64	
39	15	22	29	37	46	57	66	75	84	
49	18	26	35	46	60	71	82	90	106	
59	20	31	42	57	71	82	95	115	126	
69	35	51	66	82	95	X	X	X	X	
79	40	57	75	90	108	X	X	X	X	
89	46	64	84	101	121	X	X	X	X	
98	51	71	90	112	132	X	X	X	X	

X = subdivided construction

**XK 8 – Glass fibre fabric (-F)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	9	13	15	20	22	26	29	33	35	
30	13	18	22	26	29	35	40	44	49	
39	15	22	26	31	40	44	51	55	60	
49	20	26	31	40	46	53	60	71	77	
59	22	29	40	46	53	62	75	82	88	
69	26	35	44	53	62	X	X	X	X	
79	31	40	51	60	68	X	X	X	X	
89	33	44	55	66	77	X	X	X	X	
98	37	49	60	73	84	X	X	X	X	

X = subdivided construction

**XK 8 – Glass fibre fabric and expanded metal (-L)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	13	18	22	26	31	35	40	44	49	
30	18	22	29	35	42	49	55	62	68	
39	22	29	37	44	55	64	71	79	86	
49	26	35	44	57	66	77	86	99	110	
59	31	42	55	66	77	90	106	117	128	
69	35	51	64	77	90	X	X	X	X	
79	40	55	71	86	101	X	X	X	X	
89	46	62	79	95	112	X	X	X	X	
98	51	68	86	104	123	X	X	X	X	

X = subdivided construction

**XK 8 – Glass fibre fabric and perforated sheet metal (-L-A2)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	15	22	29	33	40	46	53	60	66	
30	22	31	40	46	55	66	75	84	90	
39	29	40	49	62	75	86	97	108	119	
49	33	46	62	77	90	104	117	137	150	
59	40	55	73	90	106	123	146	161	176	
69	49	66	86	104	123	X	X	X	X	
79	53	75	97	117	139	X	X	X	X	
89	60	84	108	130	154	X	X	X	X	
98	66	93	119	146	170	X	X	X	X	

X = subdivided construction

**XK 9 – Glass fibre fabric (-F)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	11	15	18	22	26	31	33	37	42	
30	15	20	24	29	33	40	44	49	55	
39	18	24	31	35	44	51	57	62	68	
49	22	29	35	46	53	62	68	79	86	
59	26	33	44	53	62	71	84	93	101	
69	31	40	51	62	71	X	X	X	X	
79	35	46	57	68	79	X	X	X	X	
89	37	51	62	75	86	X	X	X	X	
98	42	55	68	82	95	X	X	X	X	

X = subdivided construction

**XK 9 – Glass fibre fabric and expanded metal (-L)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	13	18	24	29	33	40	44	49	53	
30	18	24	31	40	46	53	60	66	73	
39	24	31	40	49	60	68	77	86	95	
49	29	40	49	62	73	84	95	108	119	
59	33	46	60	73	84	97	115	128	139	
69	40	55	68	84	97	X	X	X	X	
79	44	62	77	95	110	X	X	X	X	
89	51	68	86	104	121	X	X	X	X	
98	55	75	95	115	134	X	X	X	X	

X = subdivided construction

**XK 9 – Glass fibre fabric and perforated sheet metal (-L-A2)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	18	24	31	35	42	51	57	64	71	
30	24	33	42	51	60	71	79	88	97	
39	31	42	53	64	79	90	104	115	126	
49	35	51	64	82	97	112	126	146	159	
59	42	60	79	97	112	132	154	172	187	
69	51	71	90	112	132	X	X	X	X	
79	57	79	104	126	148	X	X	X	X	
89	64	90	115	141	165	X	X	X	X	
98	71	99	126	154	183	X	X	X	X	

X = subdivided construction

**XK 12 – Glass fibre fabric (-F)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	13	18	22	29	33	37	42	46	51	
30	18	24	31	37	42	51	57	62	68	
39	22	31	37	46	57	64	73	79	88	
49	29	37	46	57	66	77	86	99	110	
59	33	42	55	66	77	90	106	117	128	
69	40	51	64	77	90	X	X	X	X	
79	44	57	73	86	101	X	X	X	X	
89	49	64	79	95	110	X	X	X	X	
98	53	71	88	104	121	X	X	X	X	

X = subdivided construction

**XK 12 – Glass fibre fabric and expanded metal (-L)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	15	22	29	33	40	46	53	60	64	
30	22	31	37	46	55	64	73	79	88	
39	29	37	49	60	73	82	93	104	112	
49	33	46	60	73	86	99	112	130	141	
59	40	55	71	86	101	117	137	152	165	
69	49	66	82	99	117	X	X	X	X	
79	53	73	93	112	132	X	X	X	X	
89	60	82	104	126	146	X	X	X	X	
98	66	90	112	137	161	X	X	X	X	

X = subdivided construction

**XK 12 – Glass fibre fabric and perforated sheet metal (-L-A2)**

H	L									
	20	30	39	49	59	69	79	89	98	
20	20	26	35	42	51	57	66	73	82	
30	26	37	49	60	68	82	90	101	112	
39	35	49	62	75	90	106	119	132	146	
49	42	60	75	93	110	128	143	165	181	
59	51	68	90	110	130	150	176	196	214	
69	60	82	106	128	150	X	X	X	X	
79	66	93	119	143	170	X	X	X	X	
89	75	104	132	161	190	X	X	X	X	
98	82	115	146	176	209	X	X	X	X	

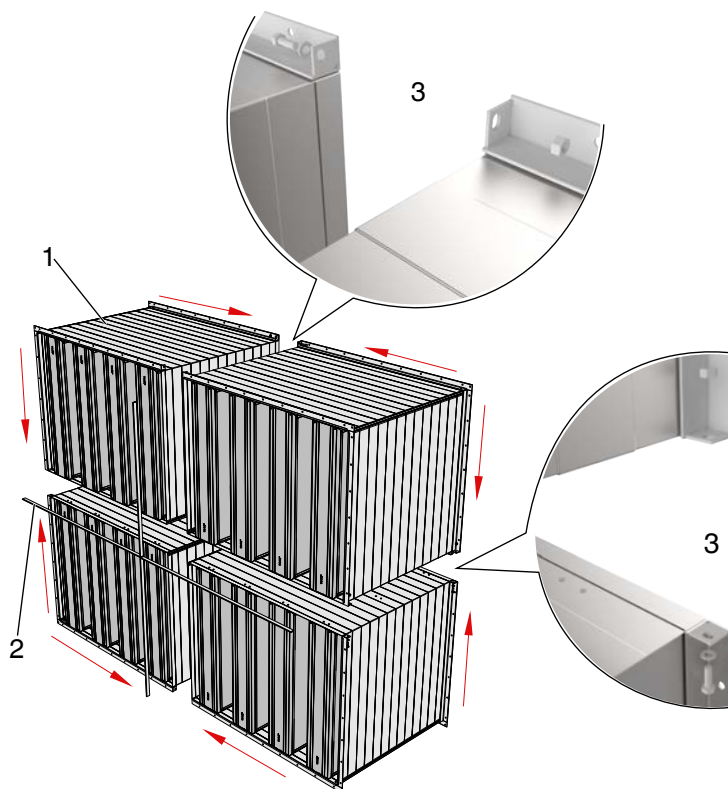
X = subdivided construction

## Installation details

### Installation and commissioning

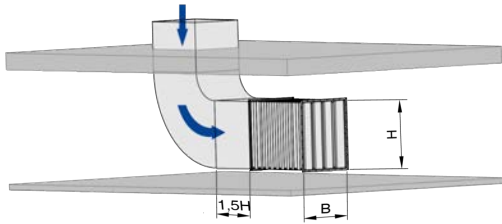
- Follow the installation manual and comply with the general codes of good practice in order to achieve the given performance data
- Up to height H = 47", length L = 59" and 88 lbs max.: any installation orientation, but we recommend upright installation of splitters  
From height H = 47": upright installation 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
- A turbulent airflow may cause damage to the splitters
  - 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
- Installation in ducts outside closed rooms requires sufficient protection against the effects of weather

### Schematic illustration of subdivided sound attenuators



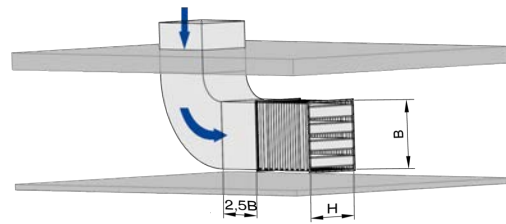
- 1 Sound attenuator, with width and height subdivided
- 2 Seal
- 3 Screw fix connection

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



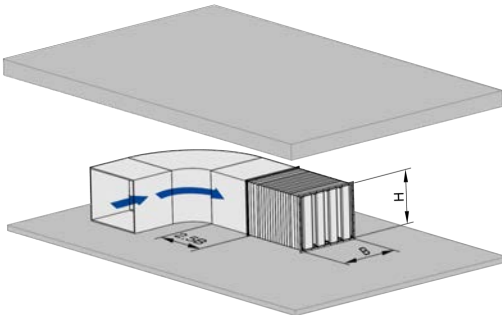
B Width of the sound attenuator  
H Height of the sound attenuator and the splitters

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



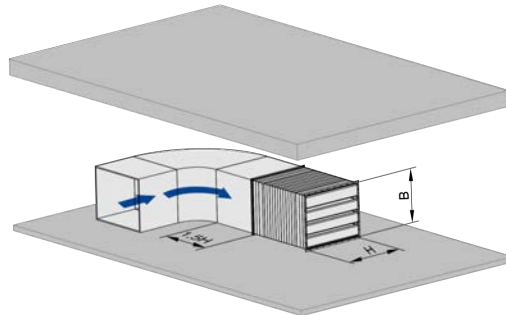
B Width of the sound attenuator  
H Height of the sound attenuator and the splitters  
Installation with the splitters lying flat only for splitters up to height 47"

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



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

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



B Width of the sound attenuator  
H Height of the sound attenuator and the splitters  
Installation with the splitters lying flat only for splitters up to height 47"

## Nomenclature

<b>L</b> [in] Length of sound attenuator including spigot (always in airflow direction)	<b>S</b> [in] Airway width
<b>L<sub>1</sub></b> [in] Length of part 1 of a splitter sound attenuator with the length subdivided	<b>m</b> [lbs] Weight
<b>L<sub>2</sub></b> [in] Length of part 2 of a splitter sound attenuator with the length subdivided	<b>f<sub>m</sub></b> [Hz] Octave band centre frequency
<b>B</b> [in] Sound attenuator width and duct width	<b>D<sub>e</sub></b> [dB] Insertion loss
<b>B<sub>1</sub></b> [in] Width of part 1 of a splitter sound attenuator with the width subdivided	<b>q<sub>v</sub></b> [cfm] Volume flow rate
<b>B<sub>2</sub></b> [in] Width of part 2 of a splitter sound attenuator with the width subdivided	<b>Δp<sub>t</sub></b> [in WC] Total differential pressure
<b>H</b> [in] Sound attenuator height and duct height (upright splitters)	<b>v<sub>s</sub></b> [fpm] Airflow velocity
<b>T</b> [in] Splitter thickness	<b>Lengths</b> All lengths are given in inches [in] unless stated otherwise.
	<b>Measured values</b> 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 given as 50 dB, based on practical conditions.