TROX® TECHNIK
The art of handling air

STANDARD FLANGE 30MM

Standard flange 30 mm

ANGLE SECTION FRAME

Angle section frame
35 × 35 × 3 mm

AERODYNAMICALLY OPTIMISED SPLITTER FRAME

Aerodynamically optimised splitter frame

TESTED TO VDI 6022

Tested to VDI 6022

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 20 mm)
- 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 20 m/s
- 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 100 °C, with expanded metal (variant L) up to 300 °C 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

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 characteristics

- 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: 200, 400, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000, 2200, 2400 mm
  - Intermediate sizes: in increments of 1 mm
    - Splitter thickness 100 mm: 150 – 2399 mm
    - Splitter thickness 200 mm: 250 – 2399 mm
    - Splitter thickness 230 mm: 288 – 2399 mm
    - Splitter thickness 300 mm: 375 – 2399 mm
  - Sizes from 2401 – 4800 mm are available with the width subdivided in increments of 1 mm
    - Even no. of splitters: centre division
    - Odd no. of splitters: off-centre division
- Height 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

    - Sizes from 1801 – 3600 mm are available with the height subdivided in increments of 1 mm
      - Centre division
- Length L: 500, 750, 1000, 1250, 1500 mm
  - Intermediate sizes 501 – 1499 mm in increments of 1 mm
- Sizes from 1501 – 3000 mm are available with the length subdivided in increments of 1 mm
  - Part L1: 1000, 1250, 1500 mm
  - Part L2: at least 501 mm and ≤ L1, in increments of 1 mm
- Width and/or height subdivided if B + H > 4200 mm
- Airway width S
  - Minimum: splitter thickness T × 0.25, but not < 40 mm
  - Maximum: splitter thickness T × 2

Variants

- XS with splitter type XK
  - Splitter thickness 100 mm
  - Splitter thickness 200 mm
  - Splitter thickness 230 mm
  - Splitter thickness 300 mm

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 cover for additional mechanical protection of 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

Air duct connection

- No entry: without air duct profile (set of splitters only)
- P: air duct profile 30 mm, galvanised steel or stainless steel
- W: angle section frame 35 × 35 × 3 mm, galvanised steel
- T: air duct profile 20 mm, galvanised steel

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 20 mm) 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 100 °C; variant L up to 300 °C for 8h max.

Material 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 cover made of galvanised steel 1.0917
  - Perforated metal facing made of stainless steel 1.4301
  - Sound absorbing material mineral wool
    - According to EN 13501, fire rating class A1, non-combustible
    - RAL quality mark RAL-GZ 388
    - Non-hazardous thanks to high biosolubility according to the German Ordinance on Hazardous Substances and Note Q of the European Regulation (EC) No. 1272/2008
    - Faced with glass fibre fabric, as a protection against erosion from airflow velocities of up to 20 m/s
    - Inert to fungal and bacterial growth according to EN 846

Standards and guidelines

- Insertion loss and sound power of air-regenerated noise tested according 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

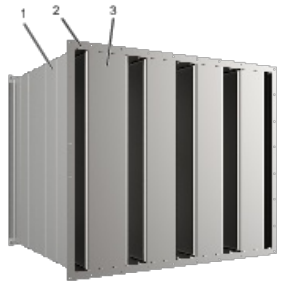
Maintenance

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

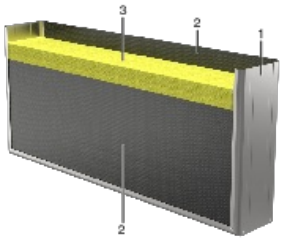
TEKNIK BILGILER

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

Splitter thickness	100, 200, 230, 300 mm
Nominal sizes (B × H × L)	Type XS 100: 150 × 150 × 500 mm – 2400 × 1800 × 1500 mm Type XS 200: 250 × 150 × 500 mm – 2400 × 1800 × 1500 mm Type XS 230: 288 × 150 × 500 mm – 2400 × 1800 × 1500 mm Type XS 300: 375 × 150 × 500 mm – 2400 × 1800 × 1500 mm
Width subdivided	2401 – 4800 mm
Height subdivide	1801 – 3600 mm
Length subdivided	1501 – 3000 mm
Intermediate sizes	In increments of 1 mm
Operating temperature	Up to 100 °C, variant L up to 300 °C for 8 h max.

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 1 m.

XK100, XS100, insertion loss De [dB] and differential pressure Δpt [Pa]

L	Airway width	Centre frequency f_m [Hz]								v_s [m/s]		
		63	125	250	500	1000	2000	4000	8000	6	10	14
500	50	4	8	6	18	35	40	27	22	10	29	56
500	100	4	4	4	15	27	22	15	10	8	23	45
1000	50	6	10	14	28	44	48	35	29	13	37	72
1000	80	5	7	10	24	38	38	27	20	10	28	55
1000	100	5	5	8	23	36	33	23	15	9	26	51
1500	50	7	13	21	38	> 50	> 50	43	37	16	44	87
1500	80	6	9	16	33	48	48	35	26	12	32	63
1500	100	6	7	13	30	45	45	31	21	10	29	56
2000	50	8	16	29	48	> 50	> 50	> 50	45	19	52	102
2000	80	7	10	21	41	> 50	> 50	43	33	13	36	70
2000	100	7	8	18	38	> 50	> 50	39	27	11	32	62
2500	50	10	18	36	> 50	> 50	> 50	> 50	> 50	22	60	118
2500	80	8	12	27	49	> 50	> 50	> 50	39	14	40	78
2500	100	8	9	22	45	> 50	> 50	48	33	12	34	67
3000	50	11	21	44	> 50	> 50	> 50	> 50	> 50	24	68	133
3000	80	10	14	33	> 50	> 50	> 50	> 50	45	16	44	85
3000	100	9	10	27	> 50	> 50	> 50	> 50	38	13	37	73

XK200, XS200, insertion loss De [dB] and differential pressure Δpt [Pa]

L	Airway width	Centre frequency f_m [Hz]								v_s [m/s]		
		63	125	250	500	1000	2000	4000	8000	6	10	14
500	50	4	9	14	27	42	38	25	19	21	58	114
500	100	2	5	10	19	28	24	16	12	11	31	61
1000	50	5	14	21	43	> 50	> 50	36	25	24	67	131
1000	80	4	10	18	35	46	41	27	19	15	43	84
1000	100	4	9	16	32	41	35	23	16	13	35	69
1500	50	7	19	29	> 50	> 50	> 50	47	31	27	75	147
1500	80	6	14	24	49	> 50	> 50	35	23	17	48	94
1500	100	5	12	22	44	> 50	46	30	19	14	40	78
2000	50	9	24	36	> 50	> 50	> 50	> 50	37	30	83	164
2000	80	7	19	31	> 50	> 50	> 50	44	27	19	53	105
2000	100	6	16	28	> 50	> 50	> 50	37	23	16	44	86
2000	200	3	9	19	40	44	31	16	9	9	25	50
2500	50	11	29	44	> 50	> 50	> 50	> 50	42	33	92	180
2500	80	9	23	37	> 50	> 50	> 50	> 50	32	21	59	115
2500	100	8	20	34	> 50	> 50	> 50	44	27	17	48	94
2500	200	4	11	24	49	> 50	38	19	11	10	28	54
3000	50	13	34	> 50	> 50	> 50	> 50	> 50	48	36	100	197
3000	80	10	27	44	> 50	>50	> 50	> 50	36	23	64	126
3000	100	9	23	40	> 50	> 50	> 50	> 50	30	19	53	103
3000	200	5	13	29	> 50	> 50	45	22	12	11	30	59

XK230, XS230, insertion loss De [dB] and differential pressure Δpt [Pa]

L	Airway width	Centre frequency f_m [Hz]								v_s [m/s]		
		63	125	250	500	1000	2000	4000	8000	6	10	14
500	80	3	6	11	22	30	22	16	15	15	43	84
500	100	3	5	10	19	26	19	14	14	13	35	69
1000	80	4	10	18	32	42	34	23	19	18	49	97
1000	100	4	9	17	29	38	30	20	17	14	40	78
1000	200	3	6	12	20	23	17	11	10	8	23	44
1500	80	5	14	25	41	> 50	47	30	22	20	56	109
1500	100	5	13	23	38	49	41	26	20	16	45	88
1500	200	4	8	18	27	32	23	14	12	9	25	49
2000	80	6	18	32	> 50	> 50	> 50	37	26	22	62	121
2000	100	6	16	30	47	> 50	> 50	32	23	18	50	98
2000	200	4	11	23	35	40	28	17	14	10	28	54
2500	80	7	22	39	> 50	> 50	> 50	43	29	25	68	134
2500	100	7	20	37	> 50	> 50	> 50	38	26	20	55	108
2500	200	5	13	28	42	48	34	20	16	11	30	59
3000	80	8	26	46	> 50	> 50	> 50	50	32	27	74	146
3000	100	8	24	43	> 50	> 50	> 50	44	29	22	60	117
3000	200	6	16	33	50	> 50	40	24	18	12	33	64

XK300, XS300, insertion loss De [dB] and differential pressure Δpt [Pa]

L	Airway width	Centre frequency f_m [Hz]								v_s [m/s]		
		63	125	250	500	1000	2000	4000	8000	6	10	14
500	80	3	7	15	22	29	26	18	12	21	58	113
500	100	3	6	13	20	26	23	16	11	17	46	91
1000	80	5	12	23	34	42	37	24	16	23	65	127
1000	100	4	11	21	31	38	33	22	14	18	51	101
1000	200	3	8	16	22	25	21	13	10	10	27	53
1500	80	6	17	32	45	> 50	47	30	20	26	72	141
1500	100	5	16	29	42	50	42	27	18	20	56	111
1500	200	3	12	22	29	33	27	17	11	11	29	57
2000	80	7	23	40	> 50	> 50	> 50	36	23	28	79	154
2000	100	6	21	37	> 50	> 50	> 50	32	21	22	62	121
2000	200	4	15	28	37	41	33	20	13	11	31	61
2500	80	9	28	49	> 50	> 50	> 50	42	27	31	86	168
2500	100	8	26	45	> 50	> 50	> 50	37	24	24	67	131
2500	200	5	19	34	45	50	39	24	15	12	33	65
3000	80	10	34	> 50	> 50	> 50	> 50	48	30	33	93	182
3000	100	9	31	> 50	> 50	> 50	> 50	43	27	26	72	141
3000	200	6	23	40	> 50	> 50	45	27	17	13	35	69

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 20 mm) 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 characteristics

- 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

Material 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 cover made of galvanised steel 1.0917
  - Perforated metal facing made of stainless steel 1.4301
  - Sound absorbing material mineral wool
    - According to EN 13501, fire rating class A1, non-combustible
    - RAL quality mark RAL-GZ 388
    - Non-hazardous thanks to high biosolubility according to the German Ordinance on Hazardous Substances and Note Q of the European

Regulation (EC) No. 1272/2008
- Faced with glass fibre fabric, as a protection against erosion from airflow velocities of up to 20 m/s
- 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 cover for additional mechanical protection of 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

Air duct connection

- No entry: without air duct profile (set of splitters only)
- P: air duct profile 30 mm, galvanised steel or stainless steel
- W: angle section frame 35 × 35 × 3 mm, galvanised steel
- T: air duct profile 20 mm, galvanised steel

Matching frame

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

Technical data

- Splitter thickness: 100, 200, 230, 300 mm
- Dimensions B × H × L: XS 100: 150 × 150 × 500 mm, XS 200: 250 × 150 × 500 mm, XS 230: 288 × 150 × 500 mm, XS 300: 375 × 150 × 500 mm
- Undivided construction up to 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: up to 100 °C, variant L up to 300 °C for 8 h max.

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

Sizing data

- B [mm]
- H [mm]
- L (in airflow direction) [mm]
- q_v (m³/h)
- D_e at 250 Hz [dB]
- Δp_t [Pa]

XS	–		–	F	–	A2	/	900	×	600	×	1500	/	3	×	200	/	P	/	G
1		2		3		4		5		6		7		8		9		10		11

1 Type
XS Splitter sound attenuator

2 Duct
No entry: with duct
OL Without duct (set of XK splitters only)

3 Splitter surface
F Glass fibre fabric
L Glass fibre fabric and expanded metal

4 Material - duct and splitters
No entry: galvanised steel (1.0917)
A2 Stainless steel (1.4301)
P1 Powder-coated RAL 7001, silver grey (with duct OL)

5 Width [mm]
150 – 4800 (with duct casing)
150 – 100000 (without duct casing)

6 Height [mm]
150 – 3600 (with duct casing)
150 – 5000 (without duct casing)

7 Length in airflow direction [mm]
500 – 3000 (with duct casing)
150 – 5000 (without duct casing)

8 No. of splitters
Specify

9 Splitter thickness [mm]
100, 200, 230, 300

10 Duct connection
No entry: none (set of XK splitters only)
P Flange, 30 mm, galvanised steel or stainless steel
W Angle section frame, 35 × 35 × 3 mm, galvanised steel S235JRC2 only (sound attenuators with the width or height subdivided have to have an angle section frame)
T Flange, 20 mm, galvanised steel only

11 Matching frame
No entry: none
G Matching frame (only for angle section frame)

Order example: XS-L/900×1500×1000/3×230/P

Air duct	With air duct
Splitter surface	Glass fibre fabric and expanded metal
Material	galvanised steel 1.0917
Width	900 mm
Height	1500 mm
Length	1000 mm
No. of splitters	3
Splitter thickness	230 mm
Duct connection	Standard flange 30 mm

Order example: XS-OL-L-A2/800×1500×1500/3×200

Air duct	Without air duct (only set of splitters Type XK)
Splitter surface	Glass fibre fabric and perforated sheet metal
Material	Stainless steel 1.4301
Width	800 mm
Height	1500 mm
Length	1500 mm
No. of splitters	3
Splitter thickness	200 mm