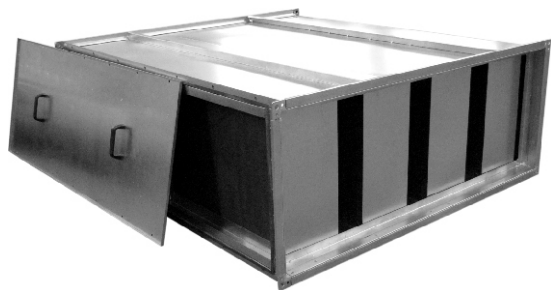




Sound attenuators with removable splitters

TAH



Sound attenuator TAH ▲
with removable splitters

Sound attenuators TAH are intended for attenuation of sounds transmitted by rectangular ductwork of a ventilation system. They are placed between the fan and the intake or exhaust ventilation ducts and before diffusers, supplying the air to the spaces with high requirements of acoustic comfort. Sound attenuators TAH are devices intended for installation in ventilation ductwork with high purity requirements.

The design of the sound attenuator allows for easy disassembly of the splitters for its periodic cleaning.

Sound attenuators TAH



Material and finish

The attenuator casing is made of galvanized steel sheet. There are splitters located inside the casing, consisting of frame made of galvanized steel sheet and infill made of non-combustible, sound absorbing material (class A1 according to DIN 4102) The surface of the absorbing infill is additionally covered with glass fibre fabric resistant to abrasion. Normally TAH are equipped with flange connections with width of 20, 30 or 40 mm. (depending on the attenuator cross-section). Making the custom sound attenuator with non-typical dimensions is possible on special request. These attenuators are marked with symbol TAHS. Every TAH and TAHS sound attenuator is equipped with access panel with allows for splitter disassembly. The access panel may be located on side A or B – this information should be specified while ordering. In stainless steel version the above mentioned components are made of stainless steel 1.4301 (according to EN 10088).

Application

TAH-X-AA – Sound attenuator with absorbing splitters covered with glass fibre fabric. Particularly suitable for attenuation of sound generated in medium and high frequencies.

TAH-X-AR - Sound attenuator with absorption and resonance splitters covered with glass fibre fabric and additionally covered in 50% with galvanized sheet steel. Particularly suitable for attenuation of sound generated in low and medium frequencies.

Air leakage class

The casing of the sound attenuator is made in air leakage class A (according to EN 1751) and allows for using TAH sound attenuators in ventilation systems operating at the pressure of 630 Pa. It is recommended to use TAH sound attenuators at air flow velocities not greater than 12 m/s.

Cleaning of splitters and interior of sound attenuator

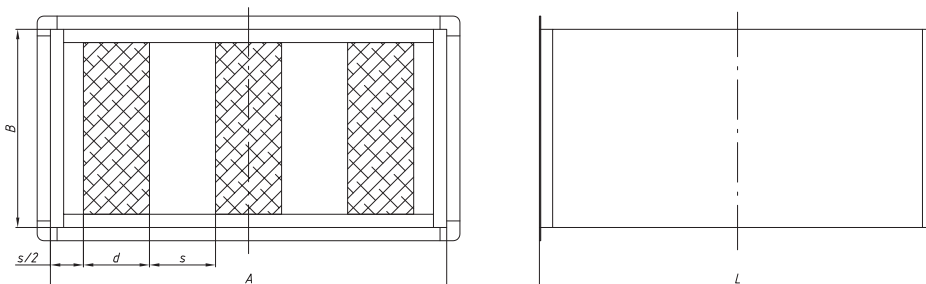
Splitters and interior of the sound attenuator should be dry cleaned with use of compressed air or with a cloth / sponge moistened with a small amount of water with an admixture of low-foaming surfactants. The splitters shall not be cleaned with use of caustic detergents or flushed with water jet. Excessive humidification may cause permanent damage and loss of attenuation and acoustic features.

Installation

Normally TAH sound attenuators may be installed in vertical and horizontal ductwork. The installation of the sound attenuators is carried out with use of suspensions.

Dimensions

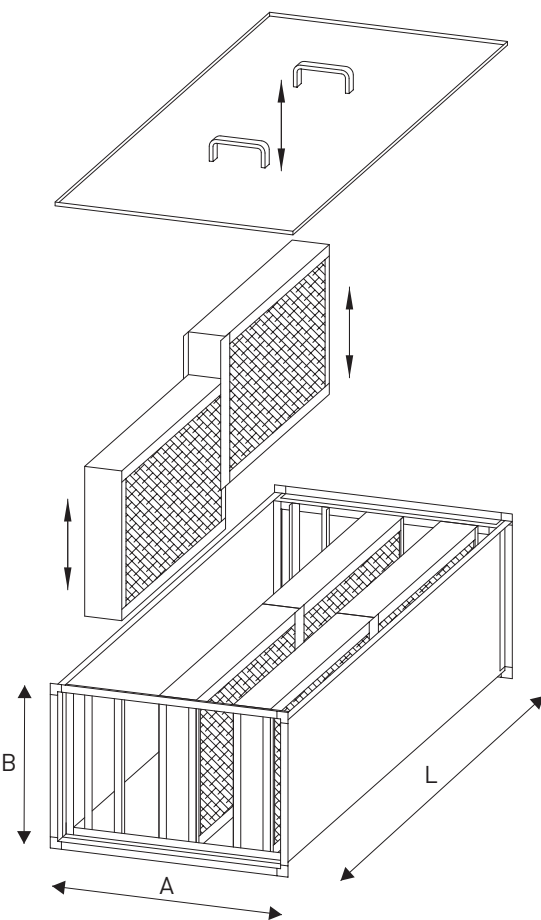
Typical dimensions of TAP sound attenuators are shown on below pages of this data sheet.



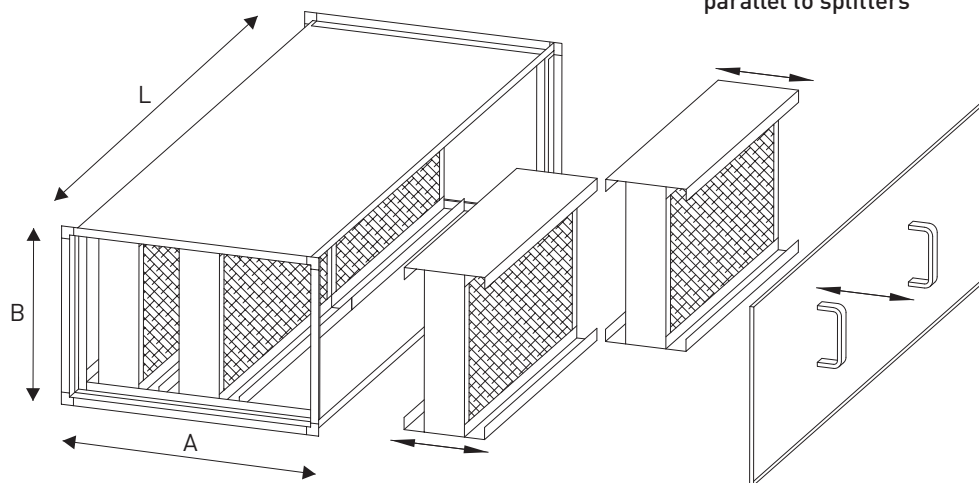
Disassembly of splitters



Sound attenuator with inspection panel on side A, perpendicular to splitters



Sound attenuator with inspection panel on side B, parallel to splitters



Dimensions, flow areas, weight of the sound attenuators TAH



Sound attenuator TAH-11 type

A \ B	200		400		600		800		1000		1200	
	Sound attenuators TAP [m ²] / Weight [kg] for 1 meter of length AA type Weight [kg] for 1 meter of length AR type											
200	0,010	15,4	0,026	28,2	0,042	36,7	0,058	49,6	0,074	64,4	0,090	82,1
		16,4		30,2		39,7		53,6		69,4		88,1
250	0,013	16,5	0,034	29,5	0,055	38,1	0,076	51,1	0,097	66,6	0,118	84,8
		17,7		31,1		41,7		55,9		72,6		92,0
300	0,016	17,6	0,042	30,9	0,068	39,5	0,094	52,8	0,120	68,9	0,146	87,5
		19,0		33,7		43,7		58,4		75,9		94,7
400	0,022	19,8	0,058	33,7	0,094	42,3	0,130	56,1	0,166	73,3	0,202	92,9
		21,7		37,5		48,0		63,7		82,8		104,3
500	0,028	22,0	0,074	36,4	0,120	45,1	0,166	59,5	0,212	77,8	0,258	98,2
		24,4		41,2		52,3		69,1		89,8		112,6
600	0,034	24,2	0,090	39,1	0,146	47,8	0,202	62,8	0,258	82,1	0,314	103,6
		27,1		44,9		56,5		74,4		96,6		121,0
800	0,046	28,7	0,122	44,7	0,198	53,4	0,274	69,4	0,350	91,0	0,426	114,4
		32,5		52,3		64,8		84,6		110,0		137,2
1000	0,058	33,0	0,154	50,2	0,250	58,8	0,346	76,0	0,442	99,8	0,538	125,0
		37,8		59,8		73,2		95,2		123,8		153,8
1200	0,070	37,5	0,186	62,4	0,302	80,5	0,418	99,6	0,534	117,7	0,650	135,8
		43,2		74,0		97,9		122,8		146,7		170,6

Sound attenuator TAH-15 type

A \ B	150		300		450		600		750		900		1050		1200	
	Sound attenuators TAP [m ²] / Weight [kg] for 1 meter of length AA type Weight [kg] for 1 meter of length AR type															
200	0,008	12,6	0,016	22,1	0,024	32,0	0,032	41,4	0,040	51,2	0,048	60,6	0,056	75,7	0,064	79,5
		13,6		24,1		35,0		45,4		56,2		66,6		82,7		86,5
250	0,011	13,7	0,021	23,4	0,031	33,6	0,042	43,2	0,052	53,4	0,063	63,0	0,073	78,6	0,084	82,4
		14,9		25,8		37,2		48,0		59,4		70,2		88,4		92,2
300	0,013	14,7	0,026	24,7	0,039	35,1	0,052	45,1	0,065	55,5	0,078	65,4	0,091	81,5	0,104	85,3
		16,1		27,5		39,3		50,7		62,5		73,8		91,3		95,1
400	0,018	16,7	0,036	27,3	0,054	38,3	0,072	48,7	0,090	59,7	0,108	70,2	0,126	87,2	0,144	91,0
		18,6		31,1		44,0		52,7		69,2		81,6		100,5		104,3
500	0,023	18,7	0,046	29,9	0,069	41,4	0,092	52,4	0,115	64,0	0,138	75,0	0,161	93,0	0,184	96,8
		21,1		34,7		48,6		62,0		76,0		89,4		109,8		113,6
600	0,028	20,8	0,056	32,5	0,084	44,5	0,112	56,1	0,140	68,2	0,168	79,8	0,196	98,7	0,224	102,5
		23,7		38,3		53,2		67,7		82,7		97,2		119,0		122,8
800	0,038	24,8	0,076	37,6	0,114	50,8	0,152	63,5	0,190	76,7	0,228	89,4	0,266	110,2	0,304	114,0
		28,6		45,2		62,2		78,7		95,7		112,2		136,8		140,6
1000	0,048	28,9	0,096	42,8	0,144	57,1	0,192	70,9	0,240	85,2	0,288	99,0	0,336	121,7	0,384	125,5
		33,7		52,4		71,5		90,1		109,2		127,8		155,3		159,1
1200	0,058	32,9	0,116	54,2	0,174	70,2	0,232	85,7	0,290	101,7	0,348	117,2	0,406	133,2	0,464	137,0
		38,7		65,8		87,6		108,9		130,7		152,0		173,8		177,6

Dimensions, flow areas, weight of the sound attenuators TAH



Sound attenuator TAH-21 type

A \ B	300		600		900		1200	
	Sound attenuators TAP [m ²] /				Weight [kg] for 1 meter of length AA type Weight [kg] for 1 meter of length AR type			
200	0,010	19,8	0,026	35,9	0,042	52,0	0,058	74,1
		20,8		37,9		55,0		78,1
250	0,013	21,1	0,034	37,8	0,055	54,4	0,076	77,1
		22,3		40,2		58,0		81,9
300	0,016	22,4	0,042	39,7	0,068	56,8	0,094	80,2
		23,8		42,5		61,0		85,8
400	0,022	25,1	0,058	43,3	0,094	61,6	0,130	86,4
		27,0		47,1		67,3		94,0
500	0,028	27,8	0,074	47,0	0,120	66,3	0,166	92,6
		30,2		51,8		73,5		102,2
600	0,034	30,5	0,090	50,8	0,146	71,0	0,202	98,7
		33,4		56,6		79,7		110,3
800	0,046	35,8	0,122	58,2	0,198	80,6	0,274	111,1
		39,6		65,8		92,0		126,3
1000	0,058	41,3	0,154	65,6	0,250	90,0	0,346	123,4
		46,1		75,2		104,4		142,6
1200	0,070	52,8	0,186	80,5	0,302	108,2	0,418	135,8
		58,6		92,1		125,6		159,0

Sound attenuator TAH-11 type

A \ B	350		700		1050	
	Sound attenuators TAP [m ²] /				Weight [kg] for 1 meter of length AA type Weight [kg] for 1 meter of length AR type	
200	0,018	24,7	0,042	44,6	0,066	64,5
		25,7		46,6		67,5
250	0,024	26,2	0,056	46,7	0,088	67,1
		27,4		49,1		70,7
300	0,029	27,8	0,068	48,7	0,107	69,7
		29,2		51,5		73,9
400	0,040	30,9	0,094	52,9	0,148	74,8
		32,8		56,7		80,5
500	0,051	33,9	0,120	56,9	0,189	79,9
		36,3		61,7		87,1
600	0,062	37,0	0,146	61,0	0,230	85,1
		39,9		66,8		93,8
800	0,084	43,2	0,198	69,2	0,312	95,3
		47,0		76,8		106,7
1000	0,106	49,3	0,250	77,5	0,394	105,6
		54,1		87,1		120,0
1200	0,128	55,5	0,302	85,6	0,476	115,9
		61,3		97,2		133,3

Dimensions, flow areas, weight of the sound attenuators TAH



Sound attenuator TAH-22 type

A \ B	400		800		1200	
	Sound attenuators TAP [m ²] /		Weight [kg] for 1 meter of length AA type		Weight [kg] for 1 meter of length AR type	
200	0,026	27,3	0,058	49,8	0,090	72,3
		28,3		51,8		75,3
250	0,034	28,9	0,076	51,8	0,118	74,9
		30,1		54,2		78,5
300	0,042	30,4	0,094	53,9	0,146	77,4
		31,8		56,7		81,6
400	0,058	33,4	0,130	58,0	0,202	82,6
		35,3		61,8		88,3
500	0,074	36,5	0,166	62,1	0,258	87,7
		38,9		66,9		94,9
600	0,090	39,6	0,202	66,2	0,314	92,9
		42,5		72,0		101,6
800	0,122	45,7	0,274	74,5	0,426	103,1
		49,5		82,1		114,5
1000	0,154	51,9	0,346	82,6	0,538	113,3
		56,7		92,2		127,7
1200	0,186	58,0	0,418	90,9	0,650	123,7
		63,8		102,5		141,1

Selection of sound attenuators TAH

Local loss of pressure

Type of sound attenuator	Length of sound attenuator [mm]	V [m/s]			
		5,0	8,0	10,0	12,0
		Δp [Pa]			
TAH - 11	500	6	18	26	37
	1000	9	20	30	42
	1500	10	22	33	47
	2000	11	24	37	52
TAH - 15	500	10	24	36	50
	1000	13	31	48	68
	1500	16	39	60	85
	2000	19	47	72	102
TAH - 21	500	10	24	37	52
	1000	12	28	42	59
	1500	13	31	47	67
	2000	14	34	52	74
TAH - 215	500	8	18	26	37
	1000	9	20	30	42
	1500	10	22	33	47
	2000	11	24	36	51
TAH - 22	500	7	15	22	30
	1000	8	16,5	24	34
	1500	8	18	27	37
	2000	9	19	29	41

Selection of sound attenuators TAH



The attenuation value in center frequency for sound attenuators with absorbing splitters AA [dB]

TAH – 11 AA								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	2	3	4	10	22	20	11	8
1000	3	4	9	16	31	31	20	13
1500	5	5	13	23	40	44	29	18
2000	6	6	18	32	46	48	38	25

TAH – 15 AA								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	3	4	8	16	32	36	24	18
1000	4	7	15	24	40	44	32	25
1500	5	9	22	34	47	47	40	32
2000	7	12	29	43	50	48	47	40

TAH – 21 AA								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	3	3	8	20	24	20	15	10
1000	3	7	14	28	42	35	22	15
1500	4	11	20	44	50	49	30	18
2000	6	14	27	50	51	50	38	23

TAH – 215 AA								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	2	3	7	12	16	14	9	6
1000	2	5	11	22	28	23	14	9
1500	3	8	16	32	40	32	20	12
2000	4	10	22	45	47	41	23	14

TAH – 22 AA								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	2	2	6	12	13	11	7	5
1000	2	4	10	20	23	17	10	7
1500	3	7	15	29	33	23	13	8
2000	4	9	19	39	43	29	16	10

Sound power level L_w [dB_(A)]

V [m/s]	Air flow area A_{eff} [m ²]				
	0,2	0,4	0,6	0,8	1,0
5,0	27	30	31	32	34
8,0	36	37	39	40	42
10,0	41	43	44	46	48
12,0	46	47	49	50	52

In case of non-typical sound attenuators, the acoustic parameters shall be determined on the basis of the typical sound attenuator TAH with similar dimensions.

Selection of sound attenuators TAH



The attenuation value in center frequency for sound attenuators with absorption and resonance splitters AR [dB]

TAH - 11 AR								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	2	3	4	7	12	14	10	8
1000	3	7	9	12	20	20	14	10
1500	4	10	13	18	27	27	18	13
2000	5	12	18	24	35	33	22	15

TAH - 15 AR								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	3	8	9	11	19	24	21	16
1000	5	11	16	19	27	32	27	21
1500	6	14	25	27	37	42	34	28
2000	7	17	33	37	47	50	42	36

TAH - 21 AR								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	2	4	11	11	14	11	10	8
1000	4	9	20	20	25	19	12	10
1500	5	13	30	29	34	24	15	13
2000	6	16	40	39	45	30	18	16

TAH - 215 AR								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	1	3	7	7	10	8	6	5
1000	2	6	13	14	16	12	9	7
1500	3	10	21	21	21	16	11	8
2000	4	13	28	28	27	20	13	11

TAH - 22 AR								
L [mm]	Center frequency [Hz]							
	63	125	250	500	1000	2000	4000	8000
500	1	3	6	6	6	5	4	3
1000	1	6	11	11	11	9	7	6
1500	3	9	17	16	15	12	9	7
2000	4	11	22	22	18	15	11	8

Accessories and order code



While ordering, please provide the information using the following method:

TAH<X> - <TK> - <A>xx<L> - <PP> - <P.> (for typical sound attenuator)

TAHS - <TK> - <A>xx<L> - (<GR>x<SZ>)x<IK> - <PP> - <P.> (for non-typical sound attenuator)

Where:

- <X>** - Sound attenuator type:
 - 11 – splitter thickness 100mm, distance between splitters 100mm
 - 15 – splitter thickness 100mm, distance between splitters 50mm
 - 21 – splitter thickness 200mm, distance between splitters 100mm
 - 215 – splitter thickness 200mm, distance between splitters 150mm
 - 22 – splitter thickness 200mm, distance between splitters 200mm

- <TK>** - Splitter type:*
 - AA – absorbing splitters**
 - AR – absorption and resonance splitters

- <A>** - Width of clear opening in [mm]
- ** - Height of clear opening in [mm]
- <L>** - Length of sound attenuator in [mm]
- <GR>** - Thickness of splitter in [mm]
- <SZ>** - Distance between splitters in [mm]*
- <IK>** - number of splitters
- <PP>** - inspection panel position:
 - X - Inspection panel placed on side parallel to splitters
 - Y - Inspection panel placed on side perpendicular to splitters

- <P>** - material:*
 - S0 = galvanized steel**
 - SN = stainless steel

* optional values - default values will be used if optional values are not specified

Order example:

TAH22 – AA – 1200x1000x1000 - X (for typical sound attenuator)

TAHS – AR – 1150x1000x1000 – (200x87)x4 - Y (for non-typical sound attenuator)