



Membrane Absorber

Type MAK / MAS



SCHAKO KG
Steigstraße 25-27
D-78600 Kolbingen
Telephone +49 (0) 74 63 - 980 - 0
Fax +49 (0) 74 63 - 980 - 200
info@schako.de
www.schako.de

Membrane Absorber Model MAK / MAS

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Membrane Absorber Model MAK / MAS

Description

The membrane absorber is a **resonance absorber**. Acoustic and aerodynamic characteristic data in accordance with DIN 45646 (meets ISO / DIS 7235).

The membrane absorber **with completely smooth surface** is used for installations with extremely high hygienic requirements and in ventilation ducts with large amounts of dust and dirt or chemical stresses (e.g. ventilation and air-conditioning installations, large-scale catering, clean rooms, hospitals, etc.). **Easy cleaning** by washing or brushing. The membrane absorber shows a **good resistance to chemical and mechanical stresses** (e.g. in flow ducts, when subjected to abrasive stress). Using the membrane absorber in RLT systems for kitchens, as requested in the VDI 2052, is possible without any problems.

The membrane absorber is supplied in a hygienic design to VDI 6022. The objective of the VDI 6022 "Hygienic planning, design, operation and maintenance of air-conditioning installations" is a hygienically impeccable interior air quality, i.e., avoidance of germination of the inhaled air. Accordingly, installation components must not emit any substances, fibres or odours hazardous to health, and must not promote the growth of microorganisms.

For maintenance, service, retrofitting, etc., inspection openings in sufficient number and size must be provided on-site.

Advantages

The sound insulation baffles made of membrane absorbers offer the following advantages:

- selectively combat noise in dominant frequencies between 125 and 250 Hz.
- concentrate the silencers in a small area.
- improve their reaction to a fire in dusty media.
- save weight through lightweight construction.
- construct silencers as self-supporting components.
- guarantee a minimum flow resistance through completely smooth surfaces.
- meet the specifications according to DIN 1946, Part 4 for hospitals.

Baffles

The baffles are hermetically sealed from the surroundings. Nothing but noise can enter the baffles made entirely of aluminium. Baffles are glued with Patex.

Construction

Outside walls

- Aluminium perforated sheet membrane foil with cover membrane foil.

Inner chambers

- Aluminium support plates in honeycomb construction

Duct

- 1.0 - 1.5 aluminium and connecting flange Metu HM 30 profile.

Angle frame

- Available at an extra charge.

Model

MAK - Baffle design

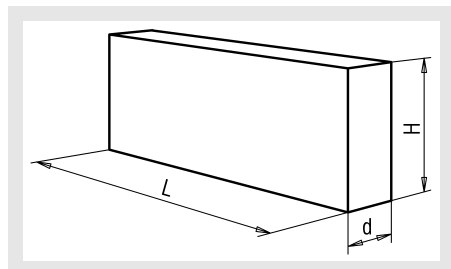
MAS - Silencer design, inner pressure to max. 1000 Pa, gap width 50 or 100 mm (baffles integrated into duct with connection flange, price on request).

Membrane Absorber Model MAK / MAS

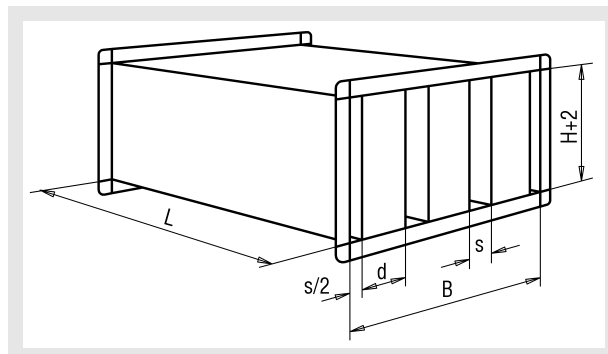
Models and dimensions

Dimensions

MAK



MAS



Available sizes MAK

H	L	d
200	600	100
300	900	
400		
500	1200	
600	1500	
700		
800	1800	
900	2100	
1000		
1100	2400	
1200	2400	
1300		
1400	2700	
1500	3000	

All combined heights and lengths available.

Available sizes MAS

H	L	d	B	Number of baffles		
				s=50	s=75	s=100
200	600	100	200	-	-	1
			300	2	-	-
300	900		350	-	2	-
			400	-	-	2
400	1200		450	3	-	-
			525	-	3	-
500	1500		600	4	-	3
			700	-	4	-
600	1800		750	5	-	-
			800	-	-	4
700	2100		875	-	5	-
			900	6	-	-
800	2400		1000	-	-	5
			1050	7	6	-
900	2700		1200	8	-	6
		1225	-	7	-	
1000	3000	1350	9	-	-	
		1400	-	8	7	
1100		1500	10	-	-	
		1575	-	9	-	
1200		1600	-	-	8	

All combined heights, lengths and widths available.

s (mm) = Gap width
 - = not available

Baffles type MAK with $L > 1800$ mm or $H > 900$ mm are delivered in two or several pieces.

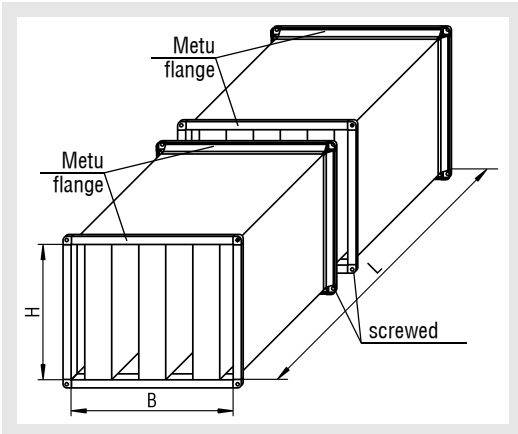
Silencers type MAS with $L > 1800$ mm, $H > 900$ mm or $B > 1800$ mm are delivered in two or several pieces.

Membrane Absorber Model MAK / MAS

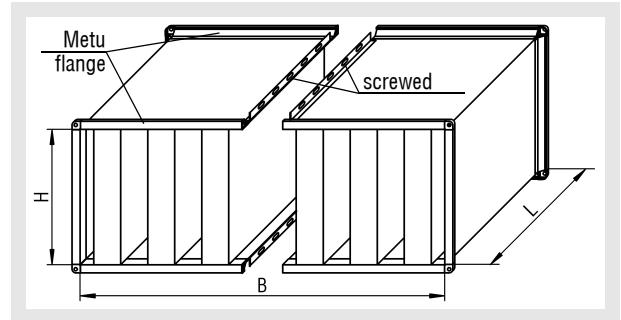
Silencers in divided design

When using divided designs of silencer and baffles, a stable installation must be ensured on-site, since the components cannot adopt any load-bearing function.

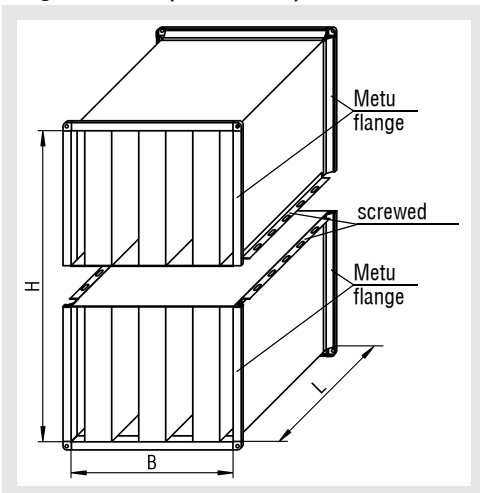
Length divided ($L > 1800$ mm)



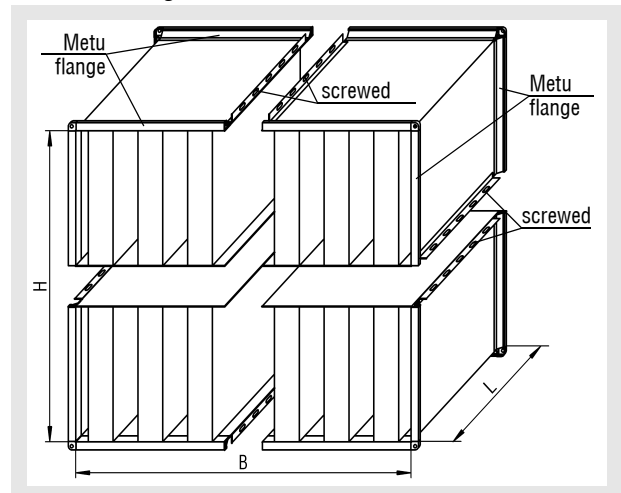
Width divided ($B > 1800$ mm)



Height divided ($H > 900$ mm)



Width and height divided

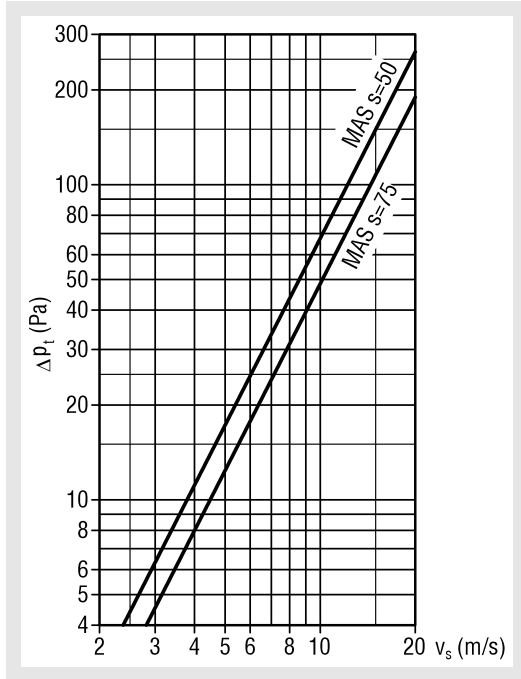


Membrane Absorber Model MAK / MAS

Technical Data

Pressure loss and noise level

to DIN 45 646 (ISO / DIS 7235)



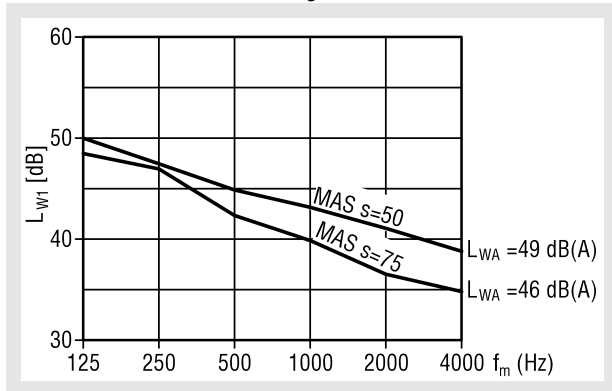
Length correction factor

L (mm)	600	900	1200	1500	1800	2100	2400	2700	3000
ΔP_t (Pa)	x0,91	x1,00	x1,18	x1,26	x1,34	x1,42	x1,50	x1,58	x1,66

Flow generated noise

to DIN 45 646 (ISO / DIS 7235)

relative to a gap velocity of $v_s = 10$ m/s



The sound power level L_{W1} , relative to 1 m^2 of inflow area.

Correction factor for other flow areas

A (m ²)	0,05	0,10	0,20	0,30	0,50	0,80	1,00	1,50	2,00	2,50
CF (-)	-13	-10	-7	-5	-3	-1	0	2	3	4

$$L_W = L_{W1} + KF$$

Insertion loss

Octave centre frequency (Hz) to DIN 45 646 (ISO / DIS 7235)

MAS s=50

L (mm)	f_m (Hz)							
	63	125	250	500	1000	2000	4000	8000
600	1,7	4,1	17,3	13,0	7,1	5,7	6,1	6,7
900	2,1	7,4	16,7	15,3	8,1	6,4	6,7	7,4
1200	2,1	9,4	22,0	19,3	10,4	7,4	7,7	8,1
1500	2,7	12,4	27,0	20,7	12,0	8,1	8,1	8,4
1800	3,4	14,3	30,9	27,6	13,4	9,0	9,0	9,4
2100	3,8	15,1	34,8	31,1	16,7	12,4	13,0	14,0
2400	3,8	16,9	39,6	34,7	18,7	13,3	13,9	14,6
2700	4,3	19,6	44,1	36,0	20,2	14,0	14,2	14,9
3000	4,9	22,3	48,6	37,3	21,6	14,6	14,6	15,1

D_e [dB/Oct]

MAS s=75

L (mm)	f_m (Hz)							
	63	125	250	500	1000	2000	4000	8000
600	1,4	3,1	12,7	9,0	4,4	5,1	5,4	4,7
900	1,4	5,4	14,0	11,4	5,1	5,4	6,1	5,4
1200	1,4	7,1	18,0	12,4	6,7	6,1	6,4	5,7
1500	2,1	9,4	24,7	15,3	8,1	6,7	7,1	6,1
1800	2,1	10,7	25,3	18,0	9,4	7,1	7,4	6,4
2100	2,5	11,3	28,8	21,4	10,6	10,4	11,3	10,0
2400	2,5	12,8	32,4	22,3	12,1	11,0	11,5	10,3
2700	3,2	14,9	38,4	24,9	13,3	11,5	12,2	10,6
3000	3,8	16,9	44,5	27,5	14,6	12,1	12,8	11,0

D_e [dB/Oct]

MAS s=100

L (mm)	f_m (Hz)							
	63	125	250	500	1000	2000	4000	8000
600	1,1	2,1	8,1	5,0	1,7	4,5	4,7	2,7
900	0,7	3,4	11,3	7,5	2,1	4,4	5,5	3,4
1200	0,7	4,8	14,0	5,5	3,0	4,8	5,1	3,3
1500	1,5	6,4	22,4	9,9	4,2	5,3	6,1	3,8
1800	0,8	7,1	19,7	8,4	5,4	5,2	5,8	3,4
2100	1,3	7,4	22,8	9,9	4,6	8,3	9,5	6,0
2400	1,3	8,6	25,2	11,7	5,4	8,6	9,2	5,9
2700	2,0	10,1	32,8	13,9	6,5	9,1	10,1	6,4
3000	2,7	11,5	40,3	17,8	7,6	9,5	11,0	6,8

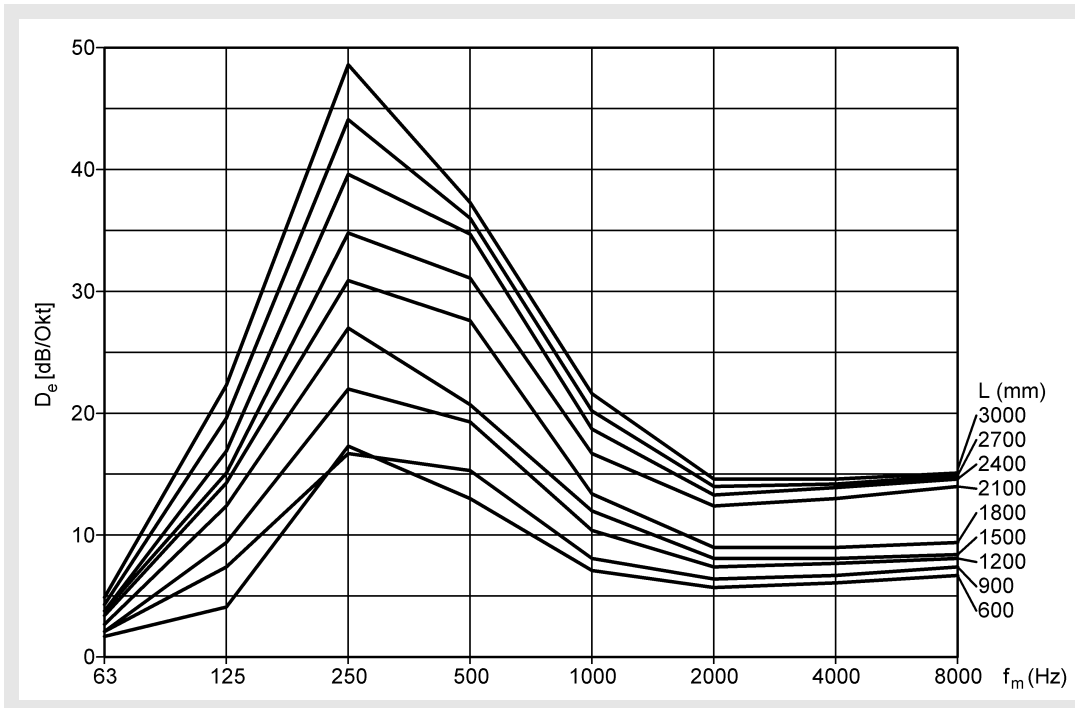
D_e [dB/Oct]

Membrane Absorber Model MAK / MAS

Insertion loss

Octave centre frequency (Hz) to DIN 45 646 (ISO / DIS 7235)

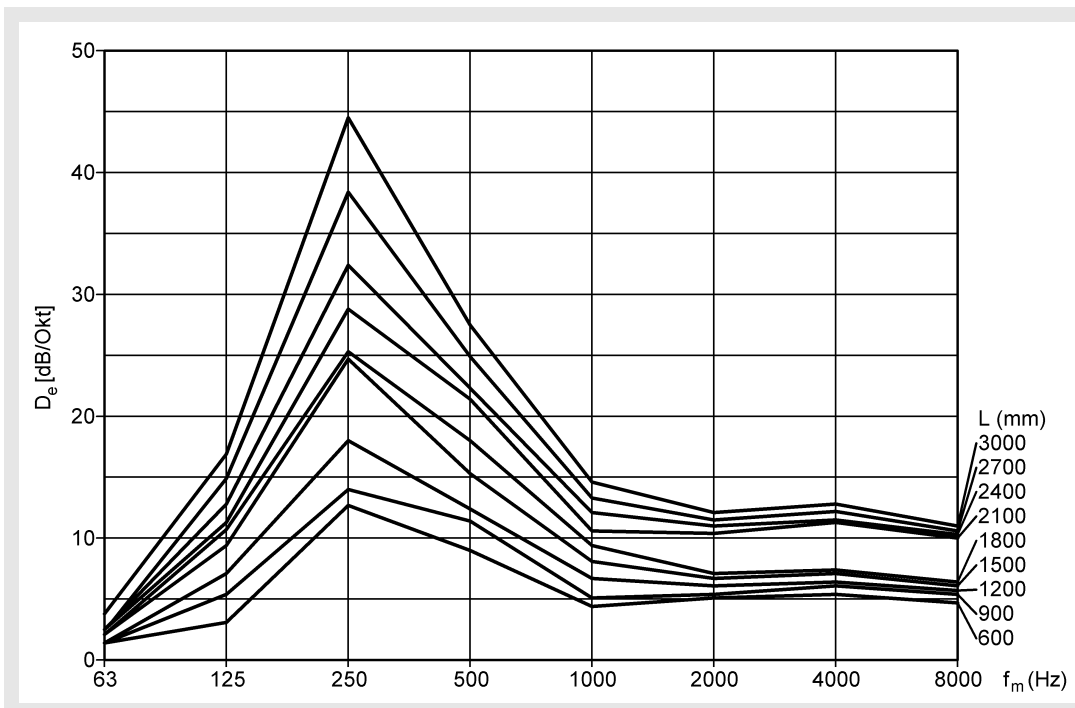
MAS s=50



Insertion loss

Octave centre frequency (Hz) to DIN 45 646 (ISO / DIS 7235)

MAS s=75

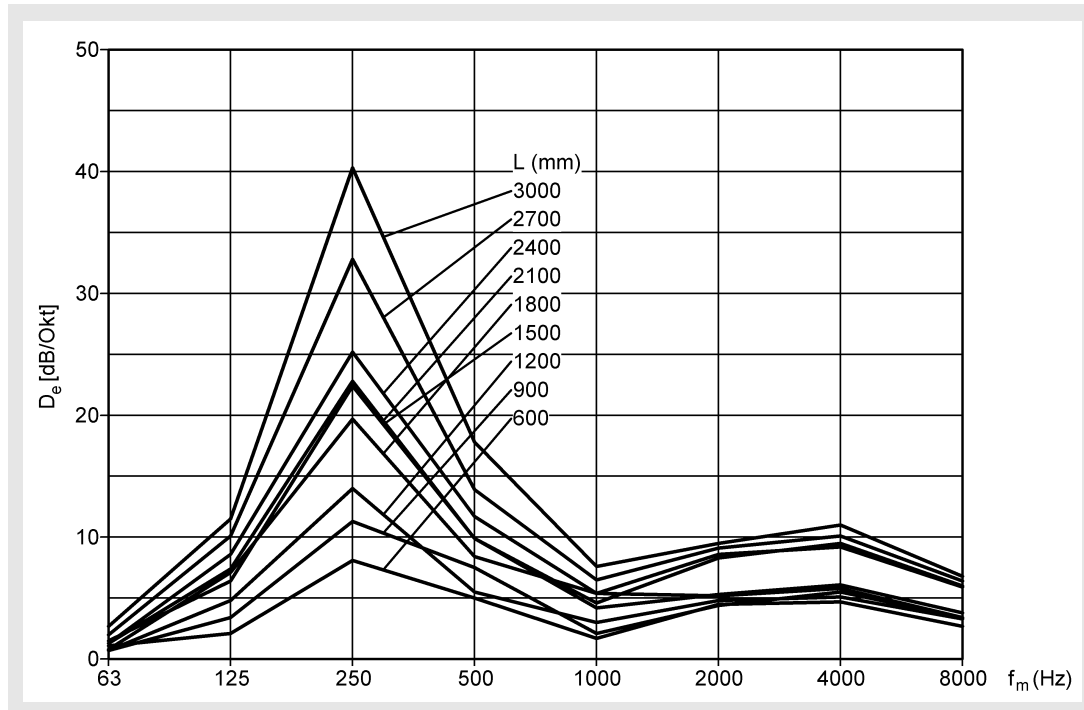


Membrane Absorber Model MAK / MAS

Insertion loss

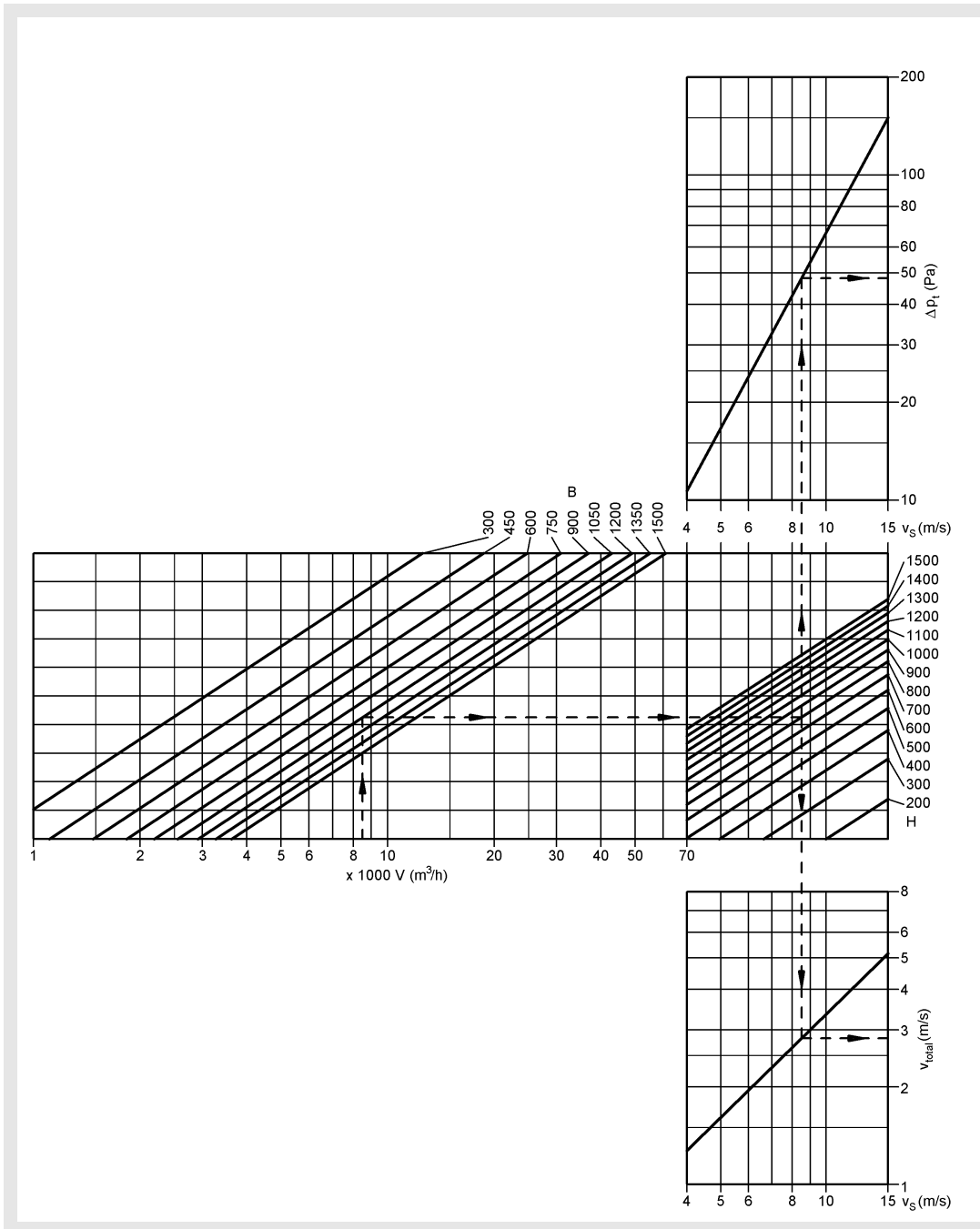
Octave centre frequency (Hz) to DIN 45 646 (ISO / DIS 7235)

MAS s=100



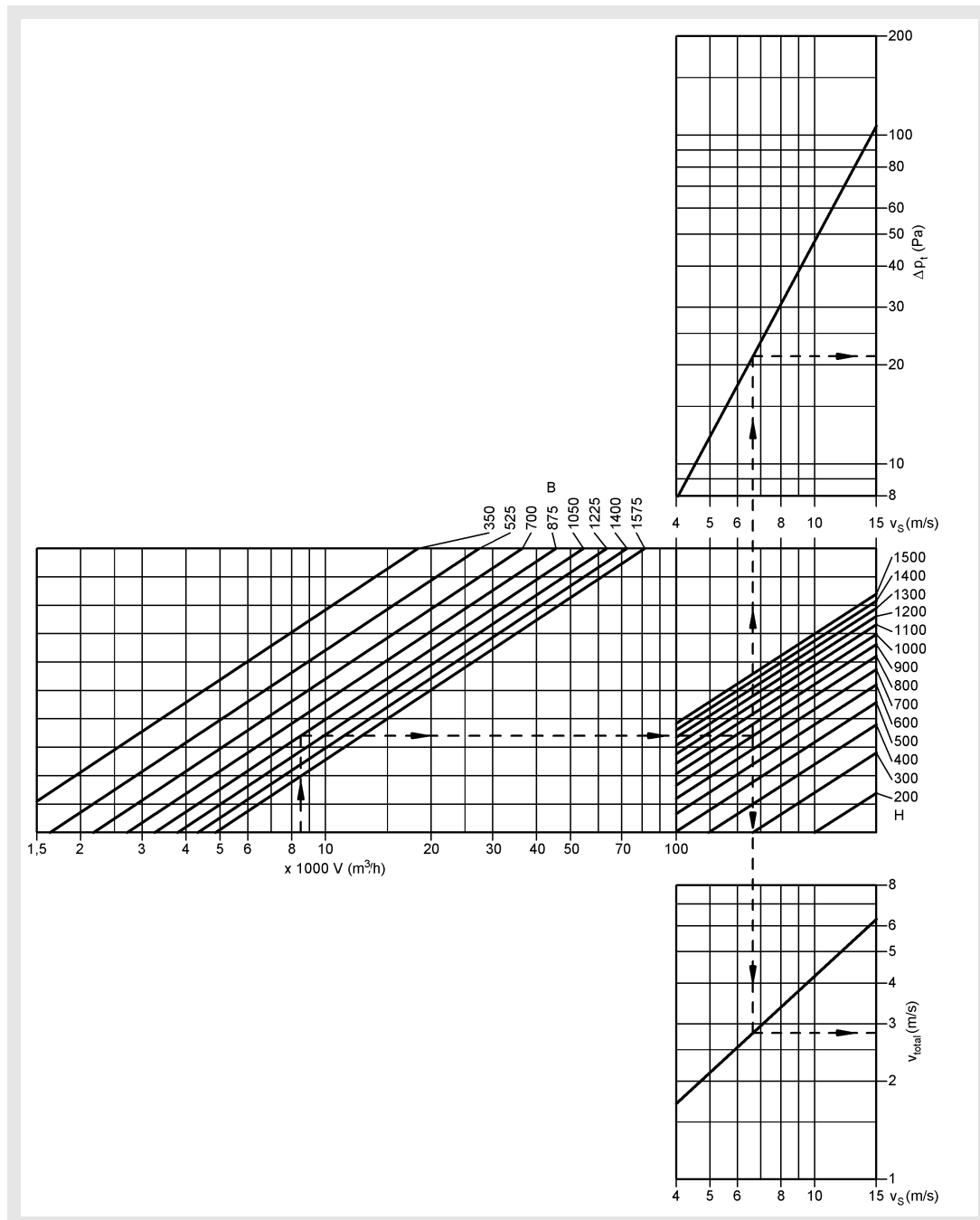
Membrane Absorber Model MAK / MAS

Selection diagram
MAS s=50



Membrane Absorber Model MAK / MAS

Selection diagram
MAS s=75



Membrane Absorber Model MAK / MAS

Quick selection

MAS s=50

relative to a gap velocity of $v_S = 10$ m/s

B (mm)	300	450	600	750	900	1050	1200	1350	1500	
n	2	3	4	5	6	7	8	9	10	
H (mm)	200	720	1080	1440	1800	2160	2520	2880	3240	3600
	300	1080	1620	2160	2700	3240	3780	4320	4860	5400
	400	1440	2160	2880	3600	4320	5040	5760	6480	7200
	500	1800	2700	3600	4500	5400	6300	7200	8100	9000
	600	2160	3240	4320	5400	6480	7560	8640	9720	10800
	700	2520	3780	5040	6300	7560	8820	10080	11340	12600
	800	2880	4320	5760	7200	8640	10080	11520	12960	14400
	900	3240	4860	6480	8100	9720	11340	12960	14580	16200
	1000	3600	5400	7200	9000	10800	12600	14400	16200	18000
	1100	3960	5940	7920	9900	11880	13860	15840	17820	19800
	1200	4320	6480	8640	10800	12960	15120	17280	19440	21600
	1300	4680	7020	9360	11700	14040	16380	18720	21060	23400
	1400	5040	7560	10080	12600	15120	17640	20160	22680	25200
	1500	5400	8100	10800	13500	16200	18900	21600	24300	27000
	V (m³/h)									

MAS s=75

relative to a gap velocity of $v_S = 10$ m/s

B (mm)	350	525	700	875	1050	1225	1400	1575	
n	2	3	4	5	6	7	8	9	
H (mm)	200	1082	1622	2163	2704	3245	3785	4326	4867
	300	1622	2433	3245	4056	4867	5678	6489	7300
	400	2163	3245	4326	5408	6489	7571	8652	9734
	500	2704	4056	5408	6759	8111	9463	10815	12167
	600	3245	4867	6489	8111	9734	11356	12978	14600
	700	3785	5678	7571	9463	11356	13248	15141	17034
	800	4326	6489	8652	10815	12978	15141	17304	19467
	900	4867	7300	9734	12167	14600	17034	19467	21900
	1000	5408	8111	10815	12519	16223	18926	21630	24334
	1100	5948	8922	11897	14871	17845	20819	23793	26767
	1200	6489	9734	12978	16223	19467	22712	25956	29201
	1300	7030	10545	14060	17574	21089	24604	28119	31634
	1400	7571	11356	15141	18926	22712	26497	30282	34067
	1500	8111	12167	16223	20278	24334	28289	32445	36501
	V (m³/h)								

Membrane Absorber Model MAK / MAS

Legend

V_{ZU}	(m ³ /h)	= Supply air volume
V_{ZU}	[l/s]	= Supply air volume
v_S	(m/s)	= Gap velocity
v_{Total}	(m/s)	= Velocity in the inflow area (B x H)
f_m	(Hz)	= Octave centre frequency
L_W	[dB]	= Sound power level
L_{W1}	[dB]	= Sound power level, relative to 1 m ² of inflow area.
L_{WA1}	[dB(A)]	= A-weighted sound power level
D_e	(dB/Okt)	= Insertion loss
Δp_t	(Pa)	= Pressure loss
CF	(-)	= Correction factor
n	(-)	= Number of baffles
A	(m ²)	= Inflow area
B	(mm)	= Width
H	(mm)	= Height
L	(mm)	= Length
s	(mm)	= Gap width

Specification texts

Membrane absorber in baffle design with completely smooth surface for use in installations with extremely high hygienic requirements to VDI 6022, VDI 2052 or in ventilation ducts with large amounts of dust or dirt or chemical stresses. Inner chambers in honeycomb form made of aluminium support plates. Outside walls made of aluminium perforated sheet membrane foil with cover membrane foil.

Product: SCHAKO **type MAK** ... x ... (H x L)

Membrane absorber in silencer design with completely smooth surface for use in installations with extremely high hygienic requirements to VDI 6022, VDI 2052 or in ventilation ducts with large amounts of dust or dirt or chemical stresses. Inner chambers in honeycomb form made of aluminium support plates. Outside walls made of aluminium perforated sheet membrane foil with cover membrane foil.

Ducts made of aluminium with saddle joints and connecting flanges Metu HM 30.

Product: SCHAKO **type MAS** ... x ... x ... (H x L x B).

Order details

