

Chapter 10

Attenuators



AGRXB 590
Round
Lining 25 mm



AGRYB 590
Round
Lining 50 mm



AGR-V- 592
Round
lining 100 mm
Rigid

AGRXB / AGRYB

- ▶ Sound attenuator
- ▶ Round, flexible

Design:

outside coil:	double layered, aluminium
inside coil:	aluminium, perforated
absorption material:	glass silk, 25 or 50 mm
finish:	none

Available types:

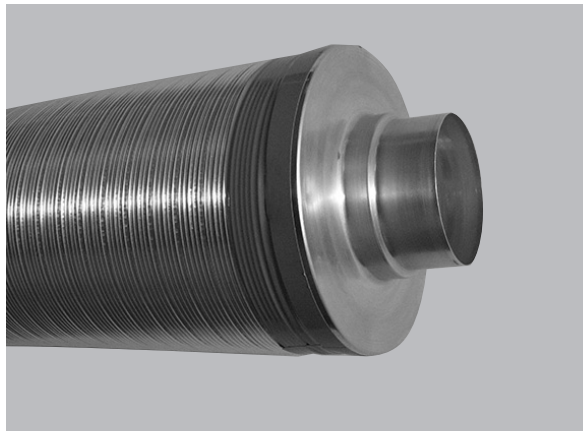
A G R - B O

A accessories
G sound attenuating
R round

- design

X lining thickness 25 mm
Y lining thickness 50 mm

B flexible
O not applicable



Application:

The round flexible sound attenuator is suitable for application of attenuators in duct branches, to absorb the sound obtained from a larger pressure drop when throttling. Also applicable as an attenuator after a round VAV controller. Since it is constructed as a double layered aluminium flexible coil pipe, the attenuator can be mounted in a bent shape. The minimum bending radius is about 2 times the outside diameter.

Features:

Attenuation: see table
 Max. air velocity: 15 m/s

Remark:

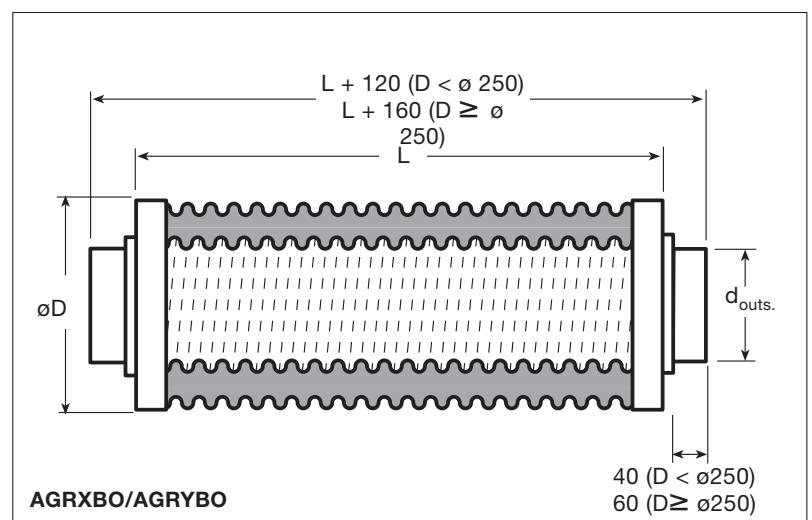
The dimensions are in mm.
 The stated width is the width of the damping part.
 Standard lengths 500 - 1000 mm.
 Type AGRYB also in 2000 and 3000 mm lengths.

Dimensional data:

model	d _{outs.}	D	
		AGRXB	AGRYB
80	78	130	180
100	98	150	200
125	123	180	224
140	138	200	250
150	148	200	250
160	158	200	250
180	178	224	280
200	198	250	300
225	223	280	315
250	248	300	355
280	278	355	400
300	298	355	400
315	313	355	400

larger dimensions on request

Dimensions:



Attenuation values :**AGRXB (absorption layer 25 mm):**

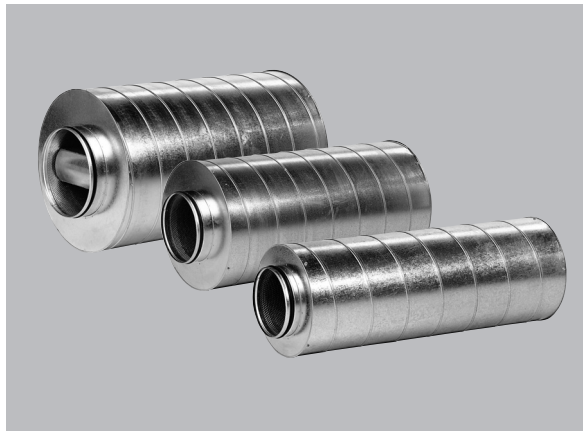
model	length	middle frequency bands					
		125	250	500	1k	2k	4k
80	1000	6	8	19	40	64	40
100	1000	3	7	15	37	68	33
125	1000	5	8	16	31	51	22
160	1000	1	4	9	24	50	18
200	1000	2	5	9	22	29	12
250	1000	1	3	8	21	18	8

AGRYB, (absorption layer 50 mm):

model	length	middle frequency bands					
		125	250	500	1k	2k	4k
80	1000	11	16	40	55	65	52
100	1000	6	13	23	44	62	41
125	1000	7	13	26	44	51	29
150	1000	5	11	25	44	40	25
160	1000	3	11	25	43	40	20
200	1000	4	10	21	43	25	14
250	1000	3	9	20	39	15	9
315	1000	1	5	14	30	11	6

Pressure loss per metre length:**AGRXB and AGRYB:**

model	duct velocity in m/s													
	2		3		4		5		7		10		15	
	Ps	m ³ /h	Ps	m ³ /h	Ps	m ³ /h	Ps	m ³ /h	Ps	m ³ /h	Ps	m ³ /h	Ps	m ³ /h
80	1	36	3	54	6	72	9	90	17	127	35	181	78	271
100	1	57	3	85	5	113	7	141	14	198	28	283	63	424
125	1	88	2	132	4	177	6	221	11	309	23	442	51	662
160	1	145	2	217	3	289	4	362	8	506	17	723	38	1085
200	0	226	1	339	2	452	3	565	6	791	12	1130	27	1696
250	0	353	1	530	1	707	2	883	4	1236	8	1766	19	2649
315	0	561	1	841	1	1122	2	1402	3	1963	7	2804	16	4206



AGR-V-

- ▶ **Sound attenuator**
- ▶ **Round, rigid**

Design:

outside coil:	steel
inside coil:	sendzimir perforated steel
absorption material:	mineral wool, 50 or 100 mm
finish:	none
connection:	complete with rubber seal

Available types:

- A G R - V -**
- A** accessories
 - G** sound attenuation
 - R** round, outside coil
- **design**
- Y** lining thickness 50 mm
 - Z** lining thickness 100 mm
- V** rigid construction
- **pod**
- O** none
 - K** pod (only at $d > 315$ and lining 100 mm)

Application:

The rigid, round sound attenuator AGR-V is suitable for applications requiring attenuation in duct branches. It is especially useful when high attenuation is required. The unit is available with either 50mm or 100mm lining and can be supplied in various lengths as standard. For additional performance a pod can also be fitted. A special layer is applied to the internal lining to prevent migration of lining particles into the air stream.

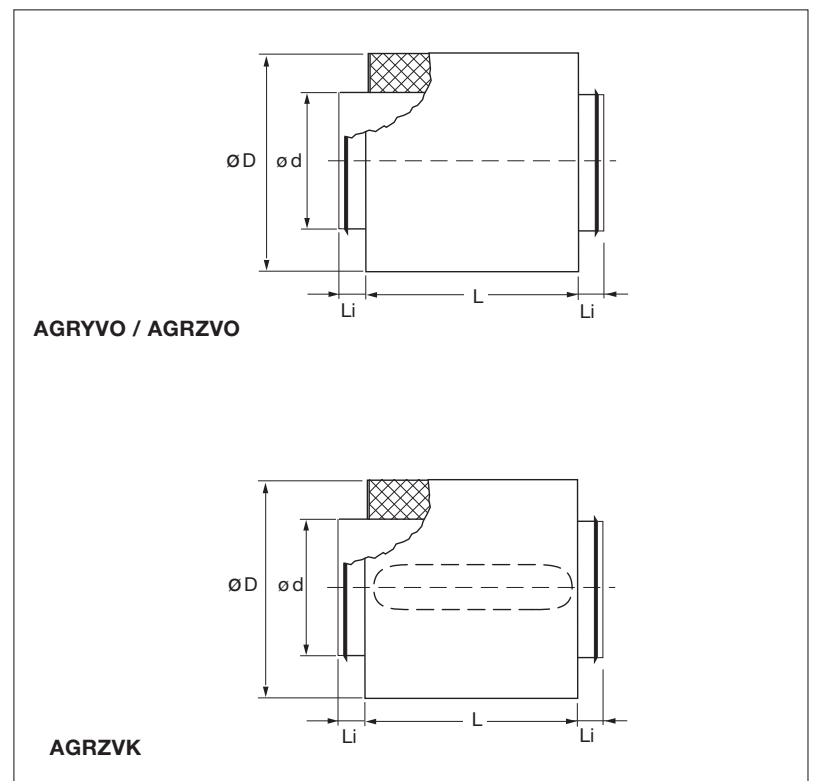
Features:

Sound damping: see table.
Max. air velocity: 15 m/s.

Remarks:

The dimensions are in mm.
The stated length L is the length of the attenuating part.
Standard lengths 600, 900 and 1200 mm.

Dimensions:



Dimensional data:

AGRYVO

model	d _{outs}	D	Li L=600	Li L=900	Li L=1200
80	78	200	40	n.a.	n.a.
100	98	200	40	n.a.	n.a.
125	123	224	40	40	n.a.
160	158	260	40	40	40
200	198	300	40	40	40
250	248	355	40	40	40
315	313	400	40	40	40

n.a.: not available

AGRZVO

model	d _{outs}	D	Li L=900	Li L=1200
125	123	315	40	n.a.
160	158	355	40	40
200	198	400	40	40
250	248	450	40	40
315	313	500	40	40
400	398	630	40	65
500	498	710	40	65
630	628	800	40	65

AGRZVK

model	d _{outs}	D	Li
315	313	500	40
400	398	630	65
500	498	710	65
630	628	800	65

Attenuation values :
AGRYVO (lining 50 mm):

model	middle frequency bands								
	length	63	125	250	500	1k	2k	4k	8k
80	600	5	10	17	30	40	45	47	28
100	600	4	8	14	26	34	41	45	25
	900	8	11	21	33	48	50	50	28
125	600	3	6	12	22	28	37	38	22
	900	5	9	18	30	40	48	43	24
160	600	2	5	10	18	23	33	30	19
	900	3	8	16	27	36	47	37	21
200	600	1	4	9	17	22	29	25	18
	900	2	7	13	24	31	44	31	20
	1200	3	7	14	30	37	46	31	21
250	600	0	4	8	15	21	24	20	17
	900	1	6	11	21	27	39	25	19
	1200	2	6	12	27	32	40	26	20
315	600	0	3	7	14	20	20	17	16
	900	0	5	9	18	23	32	20	18
	1200	1	5	10	24	28	34	20	19

AGRZVO (lining 100 mm):

model	middle frequency bands								
	length	63	125	250	500	1k	2k	4k	8k
100	900	13	18	26	35	46	55	54	31
	1200	15	23	33	42	48	51	49	29
125	600	7	11	16	20	25	37	38	22
	900	11	15	23	30	40	51	45	26
	1200	13	19	30	37	46	49	46	26
160	600	5	8	14	17	23	26	30	19
	900	9	11	20	26	35	46	35	20
	1200	10	15	27	32	44	46	44	22
200	600	4	7	12	15	21	31	25	18
	900	7	10	17	21	31	41	30	20
	1200	9	13	23	27	39	45	35	21
250	600	3	5	9	12	18	26	20	17
	900	6	8	14	17	27	36	24	20
	1200	8	10	18	21	34	44	26	20
315	600	2	4	8	9	16	22	16	15
	900	5	7	11	14	25	28	21	18
	1200	7	9	15	18	30	35	23	18
400	900	3	5	8	11	23	19	17	15
	1200	6	7	11	14	25	23	19	15
500	900	3	5	7	10	18	17	16	14
	1200	5	6	10	13	21	20	17	14
630	900	2	4	6	10	13	14	14	13
	1200	4	5	9	13	17	17	14	13

Attenuation values:**AGRZVK** (lining 100 mm, with pod):

model	length	middle frequency bands							
		63	125	250	500	1k	2k	4k	8k
315	900	5	7	14	23	33	41	30	22
	1200	9	10	18	31	43	47	39	24
400	900	5	6	13	21	30	38	27	20
	1200	7	8	16	28	40	44	33	22
500	900	4	6	12	19	28	32	23	19
	1200	6	7	15	25	36	38	27	20
630	900	4	5	11	17	26	27	19	17
	1200	5	6	14	21	32	31	20	18

Discharge sound and pressure loss:**AGRZVK** (lining 100 mm, with pod):

model				middle frequency bands								Lw
	m/s	m ³ /h	Pa	63	125	250	500	1k	2k	4k	8k	
315	2	561	4	18	10	6	8	9	4	0	0	15
	4	1122	16	33	25	21	23	24	19	4	10	30
	6	1682	36	41	33	29	31	32	27	12	18	38
	8	2243	64	47	39	35	37	38	33	18	24	44
	10	2804	100	52	44	40	42	43	38	23	29	49
400	2	904	4	19	11	7	9	10	5	0	0	16
	4	1809	15	34	26	22	24	25	20	5	11	31
	6	2713	33	42	34	30	32	33	28	13	19	39
	8	3617	58	49	41	37	39	40	35	20	26	46
	10	4522	91	53	45	41	43	44	39	24	30	50
500	2	1413	3	20	12	8	10	11	6	0	0	17
	4	2826	14	35	27	23	25	26	21	6	12	32
	6	4239	31	43	35	31	33	34	29	14	20	40
	8	5652	55	49	41	37	39	40	35	20	26	46
	10	7065	86	54	46	42	44	45	40	25	31	51
630	2	2243	3	22	14	10	12	13	8	0	0	19
	4	4487	13	37	29	25	27	28	23	8	14	34
	6	6730	30	45	37	33	35	36	31	16	22	42
	8	8973	54	51	43	39	41	42	37	22	28	48
	10	11216	84	56	48	44	46	47	42	27	33	53