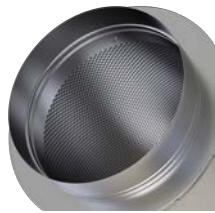




Spigot with groove



Spigot with lip seal



Socket-type spigot

# Attenuators

## CAH



### Circular silencers for the reduction of noise in circular ducts of ventilation and air conditioning systems

Circular silencer made of galvanised sheet steel or stainless steel

- Attenuation effect due to absorption
- The sound absorbing material is non-combustible mineral wool and non-hazardous to health according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EC
- Acoustic data measured to ISO 7235
- Leakage class C or D (depending on size) 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

Optional equipment and accessories

- Spigot with lip seal, for circular connecting ducts to EN 1506 or EN 13180
- Socket-type spigot suitable for circular ducts to EN 1506 or EN 13180

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## General information

### Application

- Circular silencer for the reduction of noise
- For the reduction of air-regenerated noise of air terminal units LVC, TVR, TVE and of mechanical self-powered controllers RN and VFC
- For the reduction of fan noise
- Can be used as cross talk silencer to reduce the transfer of noise through ducts between neighbouring rooms

### Special features

- Insertion loss measured according to ISO 7235
- The sound absorbing material is non-combustible
- Insulation thickness 25, 50 or 100 mm
- Leakage class D for nominal sizes up to and including 400 mm
- Leakage class C from nominal size 450 mm

### Nominal sizes

- ØD: 80, 100, 125, 160, 200, 250, 315, 400, 450, 500, 560, 630, 710, 800 mm
- L: 500, 1000, 1500 mm

For VAV terminal units and CAV controllers

- ØD: 100, 125, 160, 200, 250, 315, 400 mm

### Variants

- 025: Circular silencer with 25 mm insulation
- 050: Circular silencer with 50 mm insulation
- 100: Circular silencer with 100 mm insulation

### Construction

Circular silencer

- No entry: galvanised steel 1.0917
- A2: Stainless steel 1.4301

Type of connection:

- No entry: spigot with groove on both ends
- D2: Spigot with lip seal on both ends
- AS: Spigot with lip seal and socket-type spigot on one end

### Parts and characteristics

- Circular casing
- Perforated inner duct
- Absorption material

### Construction features

- Circular casing
  - Outer duct: spiral duct, galvanised steel 1.0917
  - Outer duct: plain duct, stainless steel 1.4301
- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Lip seals up to nominal size 800
- Max. operating pressure 2000 Pa
- Max. airflow velocity 20 m/s
- Max. operating temperature 90 °C

### Materials and surfaces

- Outer duct and perforated inner duct are spiral ducts made of galvanised sheet steel 1.0917
- Plain outer duct made of stainless steel 1.4301
- Perforated inner duct in stainless steel 1.4301
- Spigot made of galvanised sheet steel 1.0917 or stainless steel 1.4301
- Absorption material is mineral wool
  - To EN 13501-1, fire rating class A1, non-combustible
  - Non-hazardous to health according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EC
  - Inner duct with non-woven fibre (fleece) 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 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

## Technical data

Nominal sizes	80 – 800 mm
Operating pressure	2000 Pa max.
Operating temperature	90 °C max.

## Quick sizing

The stated differential pressures for circular silencers apply to plain, unprofiled ducts. Deviations, if any, are of no practical relevance. For ductwork calculation, if the length of a circular silencer is included in the total length of the ductwork, no extra length must be added.

### Insulation thickness 25 mm, insertion loss $D_e$ [dB]

Nominal size	Nominal length	Centre frequency $f_m$ [Hz]							
		63	125	250	500	1000	2000	4000	8000
80	500	1	2	4	8	15	20	22	13
80	1000	1	5	9	17	30	42	38	32
100	500	1	2	4	8	15	20	22	13
100	1000	1	5	9	17	30	42	38	22
125	500	1	2	3	8	14	18	19	11
125	1000	1	4	8	15	27	39	32	19
160	500	1	1	3	7	13	17	14	9
160	1000	1	3	7	13	25	35	25	15
200	500	1	1	3	6	12	15	11	7
200	1000	1	3	6	12	21	32	19	12

### Insulation thickness 50 mm, insertion loss $D_e$ [dB]

Nominal size	Nominal length	Centre frequency $f_m$ [Hz]							
		63	125	250	500	1000	2000	4000	8000
100	500	3	5	8	14	23	28	16	13
100	1000	5	8	14	26	42	48	34	23
125	500	3	4	7	12	21	24	13	11
125	1000	4	7	12	23	38	41	28	20
160	500	2	3	6	11	19	19	9	8
160	1000	3	5	10	20	34	33	21	16
200	500	2	3	5	9	17	14	6	6
200	1000	3	4	8	17	31	25	15	12
250	500	1	2	4	8	15	10	3	4
250	1000	2	3	6	14	27	18	9	9
250	1500	3	4	9	20	40	26	15	13
315	500	1	1	3	7	12	8	2	3
315	1000	1	2	5	12	24	12	7	6
315	1500	1	3	7	18	35	16	12	9
400	500	1	1	3	5	12	6	1	3
400	1000	1	2	4	10	22	10	4	5
400	1500	1	2	6	15	32	13	8	7

Insulation thickness 100 mm, insertion loss  $D_e$  [dB]

Nominal size	Nominal length	Centre frequency $f_m$ [Hz]							
		63	125	250	500	1000	2000	4000	8000
100	500	4	8	12	18	35	32	24	13
100	1000	6	16	24	35	50	50	41	24
125	500	4	7	11	17	32	27	20	11
125	1000	5	14	21	32	48	45	34	20
160	500	3	6	10	16	28	22	15	9
160	1000	4	12	19	30	43	36	26	16
200	500	3	5	8	15	25	17	10	7
200	1000	4	10	16	28	38	29	19	13
250	500	2	4	7	14	22	13	6	5
250	1000	3	8	14	26	32	21	12	9
250	1500	4	11	22	38	43	30	18	14
315	500	2	3	6	13	19	10	5	4
315	1000	3	6	12	24	27	15	7	7
315	1500	3	8	18	34	35	20	10	9
400	500	2	3	6	12	18	8	3	3
400	1000	2	5	11	22	24	12	5	5
400	1500	3	7	16	32	31	17	8	7
450	1000	2	5	10	22	23	11	4	5
450	1500	3	7	15	31	29	15	7	7
500	1000	2	4	10	21	22	10	4	4
500	1500	2	6	14	31	28	14	6	6
560	1500	2	6	13	30	26	12	5	5
630	1500	2	5	12	29	24	10	4	4
710	1500	2	4	11	28	22	9	3	4
800	1500	1	4	10	27	20	7	2	3

## 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.

Circular silencers for ventilation and air conditioning systems, rigid construction, available in 14 nominal sizes and with 3 insulation thicknesses

Insertion loss measured according to ISO 7235.

Casing with acoustic and thermal insulation.

Galvanised steel or stainless steel.

Various types of connection, suitable for circular ducts to EN 1506 or EN 13180.

Leakage class C or D (depending on size) to EN 15727.

### Special features

- Insertion loss measured according to ISO 7235
- The sound absorbing material is non-combustible
- Insulation thickness 25, 50 or 100 mm
- Leakage class D for nominal sizes up to and including 400 mm
- Leakage class C from nominal size 450 mm

### Materials and surfaces

- Outer duct and perforated inner duct are spiral ducts made of galvanised sheet steel 1.0917
- Plain outer duct made of stainless steel 1.4301
- Perforated inner duct in stainless steel 1.4301
- Spigot made of galvanised sheet steel 1.0917 or stainless steel 1.4301
- Absorption material is mineral wool
  - To EN 13501-1, fire rating class A1, non-combustible
  - Non-hazardous to health according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EC
  - Inner duct with non-woven fibre (fleece) 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

Circular silencer

- No entry: galvanised steel 1.0917
- A2: Stainless steel 1.4301

Type of connection:

- No entry: spigot with groove on both ends
- D2: Spigot with lip seal on both ends
- AS: Spigot with lip seal and socket-type spigot on one end

### Technical data

- Nominal size: 80, 100, 125, 160, 200, 250, 315, 400, 450, 500, 560, 630, 710, 800 mm
- Insulation thickness: 25, 50, 100 mm
- Nominal length: 500, 1000, 1500 mm
- Operating pressure: 2000 Pa max.
- Airflow velocity: 20 m/s max.
- Operating temperature: 90 °C max.

### Sizing data

- $\varnothing D$  [mm]
- L [mm]
- $L_1$  [mm]
- $q_v$  [m<sup>3</sup>/h]
- $D_e$  [dB]
- $\Delta p_{st}$  [Pa]

## Order code

CAH – A2 / D2 / 160 × 1000 / 50  
|     |     |     |     |     |  
1     2     3     4     5     6

**1 Type**

CAH Circular silencer

AS Spigot with lip seal and socket-type spigot on one end

**2 Material**

No entry: galvanised steel (1.0917)

A2 Stainless steel (1.4301)

**4 Nominal size [mm]**

80, 100, 125, 160, 200, 250, 315, 400, 450, 500, 560, 630, 710, 800

**3 Type of connection**

No entry: spigot with groove on both ends

D2 Spigot with lip seal on both ends

**5 Nominal length [mm]**

500, 1000, 1500

**6 Insulation thickness [mm]**

25, 50, 100

**Order example: CAH–A2/D2/160×1000/50**

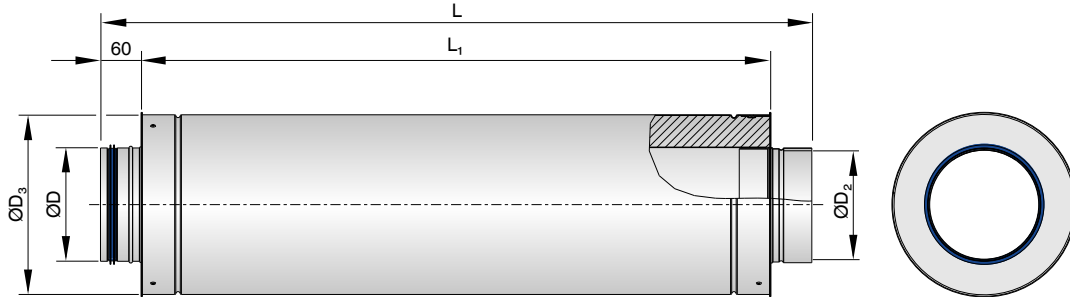
Type	CAH
Material	Stainless steel (1.4301)
Type of connection	Spigot with lip seal on both ends
Nominal size [mm]	160
Length [mm]	1000
Insulation thickness [mm]	50

**Order example: CAH/200×1000/50**

Type	CAH
Material	Galvanised steel (1.0917)
Type of connection	Spigot with groove on both ends
Nominal size [mm]	200
Length [mm]	1000
Insulation thickness [mm]	50

## Dimensions and weight

### Dimensions



Schematic illustration showing connection type AS

### Dimensions

NS	ØD	Insulation thickness 25		Insulation thickness 50		Insulation thickness 100	
		ØD <sub>2</sub>	ØD <sub>3</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>
80	79	80	129	80	184		
100	99	100	154	100	204	100	304
125	124	125	184	125	228	125	319
160	159	160	204	160	254	160	354
200	199	200	254	200	304	200	405
250	249			250	354	250	455
315	314			315	405	315	505
400	399			400	505	400	605
450	448					450	636
500	498					500	716
560	558					560	806
630	628					630	806
710	708					710	908
800	798					800	1008

No entry: spigot with groove to EN1506 ØD

**D2:** Spigot with groove to EN1506 ØD

**AS:** Spigot with lip seal ØD and socket-type spigot on one end ØD<sub>2</sub>

### Lengths

L <sub>N</sub>	L	L <sub>1</sub>
500	500	380
1000	1000	880
1500	1500	1380

**Spiral duct casing: weights [kg]**

NS	Insulation thickness 25		Insulation thickness 50			Insulation thickness 100		
	LN							
	500	1000	500	1000	1500	500	1000	1500
80	2	4	3	5				
100	3	4	3	5		5	8	
125	3	5	4	6		5	9	
160	4	6	4	7		6	10	
200	4	7	5	9		7	13	
250			6	11	15	9	15	21
315			8	14	20	10	17	24
400			10	17	25	14	25	36
450							26	37
500							31	44
560								50
630								52
710								68
800								77

**Plain casing: weights [kg]**

NS	Insulation thickness 25		Insulation thickness 50			Insulation thickness 100		
	LN							
	500	1000	500	1000	1500	500	1000	1500
80	3	4	3	6				
100	3	5	4	6		5	9	
125	3	6	4	7		6	10	
160	4	7	5	8		7	11	
200	5	8	6	10		8	13	
250			7	12	17	9	15	22
315			8	14	21	10	18	25
400			10	18	26	13	23	32
450							24	33
500							28	40
560								45
630								47
710								54
800								62



## 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
- Installation in ducts outside closed rooms requires sufficient protection against the effects of weather
- Due to its weight the silencer must be supported, e.g. by a suitable fixing system.

## Nomenclature

$\varnothing D$  [mm]

Outer diameter of the spigot

$\varnothing D_3$  [mm]

Inside diameter of the socket-type spigot

$\varnothing D_3$  [mm]

Outer diameter of circular silencers

$L_N$  [mm]

Nominal length

$L$  [mm]

Length of sound attenuator including spigot (always in airflow direction)

$L_1$

Length of acoustic cladding and acoustically effective length

$T$  [mm]

Splitter thickness

$n$  [ ]

Number of flange screw holes

$m$  [kg]

Weight

$f_m$  [Hz]

Octave band centre frequency

$L_{WA}$  [dB(A)]

A-weighted sound power level of air-regenerated noise

$D_e$  [dB]

Insertion loss

$q_v$  [m<sup>3</sup>/h]; [l/s]

Volume flow rate

$\Delta p_t$  [Pa]

Total differential pressure

### Lengths

All lengths are given in millimetres [mm] unless stated otherwise.

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.