Spigot with groove

Spigot with lip seal

Socket-type spigot

Attenuators

CA

Circular silencers for the reduction of noise in circular ducts of 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

General information	2	Order code	6
Technical data	3	Dimensions and weight	7
Quick sizing	3	Installation details	9
Specification text	5	Nomenclature	10

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 1", 2" or 4"
- Leakage class D for nominal sizes up to and including 16"
- Leakage class C from nominal size 18"

Nominal sizes
- ØD: 3", 4", 5", 6", 8", 10", 12", 16", 18", 20", 22", 25", 28", 31"
- L: 20", 39", 59"

For VAV terminal units and CAV controllers
- ØD: 4", 5", 6", 8", 10", 12", 16"

Variants
- 025: Circular silencer with 1" insulation
- 050: Circular silencer with 2" insulation
- 100: Circular silencer with 4" 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: Plain outer duct made of galvanised sheet steel 1.0917 or stainless steel 1.4301
- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Lip seals up to nominal size 31
- Max. operating pressure 8 in WC
- Max. airflow velocity 3937 fpm
- Max. operating temperature 194 °F

Materials and surfaces
- Plain outer duct made of galvanised sheet steel 1.0917 or stainless steel 1.4301
- Perforated inner duct made of galvanised steel or stainless steel 1.4301
- Spigot made of galvanised 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	3" – 31"
Operating pressure	8 in WC max.
Operating temperature	194 °F 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 1", insertion loss D_e [dB]

Nominal size	Nominal length	Centre frequency f_m [Hz]							
		2	5	10	20	39	79	157	315
3	20	1	2	4	8	15	20	22	13
3	39	1	5	9	17	30	42	38	32
4	20	1	2	4	8	15	20	22	13
4	39	1	5	9	17	30	42	38	22
5	20	1	2	3	8	14	18	19	11
5	39	1	4	8	15	27	39	32	19
6	20	1	1	3	7	13	17	14	9
6	39	1	3	7	13	25	35	25	15
8	20	1	1	3	6	12	15	11	7
8	39	1	3	6	12	21	32	19	12

Insulation thickness 2", insertion loss D_e [dB]

Nominal size	Nominal length	Centre frequency fm [Hz]							
		2	5	10	20	39	79	157	315
4	20	3	5	8	14	23	28	16	13
4	39	5	8	14	26	42	48	34	23
5	20	3	4	7	12	21	24	13	11
5	39	4	7	12	23	38	41	28	20
6	20	2	3	6	11	19	19	9	8
6	39	3	5	10	20	34	33	21	16
8	20	2	3	5	9	17	14	6	6
8	39	3	4	8	17	31	25	15	12
10	20	1	2	4	8	15	10	3	4
10	39	2	3	6	14	27	18	9	9
10	59	3	4	9	20	40	26	15	13
12	20	1	1	3	7	12	8	2	3
12	39	1	2	5	12	24	12	7	6
12	59	1	3	7	18	35	16	12	9
16	20	1	1	3	5	12	6	1	3
16	39	1	2	4	10	22	10	4	5
16	59	1	2	6	15	32	13	8	7

Insulation thickness 4", insertion loss D_e [dB]

Nominal size	Nominal length	Centre frequency fm [Hz]							
		2	5	10	20	39	59	157	315
4	20	4	8	12	18	35	32	24	13
4	39	6	16	24	35	50	50	41	24
5	20	4	7	11	17	32	27	20	11
5	39	5	14	21	32	48	45	34	20
6	20	3	6	10	16	28	22	15	9
6	39	4	12	19	30	43	36	26	16
8	20	3	5	8	15	25	17	10	7
8	39	4	10	16	28	38	29	19	13
10	20	2	4	7	14	22	13	6	5
10	39	3	8	14	26	32	21	12	9
10	59	4	11	22	38	43	30	18	14
12	20	2	3	6	13	19	10	5	4
12	39	3	6	12	24	27	15	7	7
12	59	3	8	18	34	35	20	10	9
16	20	2	3	6	12	18	8	3	3
16	39	2	5	11	22	24	12	5	5
16	59	3	7	16	32	31	17	8	7
18	39	2	5	10	22	23	11	4	5
18	59	3	7	15	31	29	15	7	7
20	39	2	4	10	21	22	10	4	4
20	59	2	6	14	31	28	14	6	6
22	59	2	6	13	30	26	12	5	5
25	59	2	5	12	29	24	10	4	4
28	59	2	4	11	28	22	9	3	4
31	59	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 – 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 1", 2" or 4"
- Leakage class D for nominal sizes up to and including 16"
- Leakage class C from nominal size 18"

Materials and surfaces

- Plain outer duct made of galvanised sheet steel 1.0917 or stainless steel 1.4301
- Perforated inner duct made of galvanised steel or stainless steel 1.4301
- Spigot made of galvanised 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 3937 fpm
  - 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: 3", 4", 5", 6", 8", 10", 12", 16", 18", 20", 22", 25", 28", 31"
- Insulation thickness: 1", 2", 4"
- Nominal length: 20", 39", 59"
- Operating pressure: 8 in WC max.
- Airflow velocity: 3937 fpm max.
- Operating temperature: 194 °F max.

Sizing data

- ØD [in]
- ØL [in]
- $ØL_1$ [in]
- q_v [cfm]
- D_e [dB]
- Δp_{st} [in WC]

Order code

CA – A2 / D2 / 6 × 39 / 2
1 2 3 4 5 6

1 Type
CA Circular silencer

2 Material
No entry: galvanised steel (1.0917)
A2 Stainless steel (1.4301)

3 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

4 Nominal size [in]
3, 4, 5, 6, 8, 10, 12, 16, 18, 20, 22, 25, 28, 31

5 Nominal length [in]
20, 39, 59

6 Insulation thickness [in]
1, 2, 4

Order example: CA–A2/D2/6×39/2

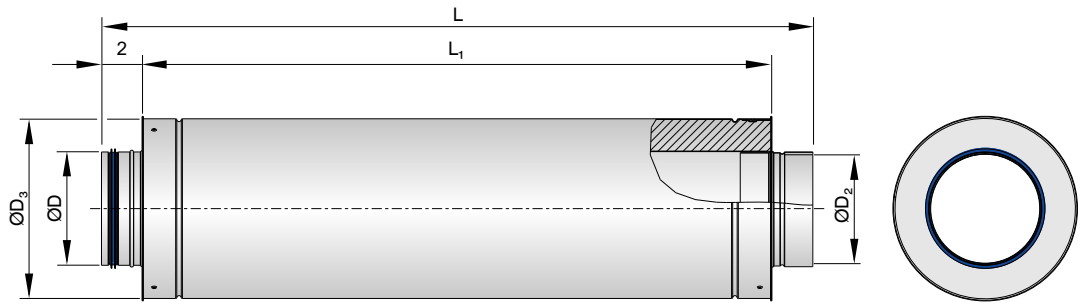
Type	CA
Material	Stainless steel (1.4301)
Type of connection	Spigot with lip seal on both ends
Nominal size [in]	6
Length [in]	4
Insulation thickness [in]	2

Order example: CA/8×39/2

Type	CA
Material	Galvanised steel (1.0917)
Type of connection	Spigot with groove on both ends
Nominal size [in]	8
Length [in]	39
Insulation thickness [in]	2

Dimensions and weight

Dimensions



Schematic illustration showing connection type AS

Dimensions

NS	ØD	Insulation thickness 1		Insulation thickness 2		Insulation thickness 4	
		$ØD_2$	$ØD_3$	$ØD_2$	$ØD_3$	$ØD_2$	$ØD_3$
3	3	3	5	3	7		
4	4	4	6	4	8	5	12
5	5	5	7	5	9	5	13
6	6	6	8	6	10	6	14
8	8	8	10	8	12	8	16
10	10			10	14	10	18
12	12			12	16	12	20
16	16			16	20	16	24
18	18					18	25
20	20					20	28
22	22					22	32
25	25					25	32
28	28					28	36
31	31					31	40

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 $ØD_2$

Lengths

L_N	L	L_1
20	20	15
39	39	35
59	59	54

Plain casing: weights [lbs]

NS	Insulation thickness 1		Insulation thickness 2			Insulation thickness 4		
	LN							
	20	39	20	39	59	20	39	59
3	7	9	7	13				
4	7	11	9	13		11	20	
5	7	13	9	15		13	22	
6	9	15	11	18		15	24	
8	11	18	13	22		18	29	
10			15	26	37	20	33	49
12			18	31	46	22	40	55
16			22	40	57	29	51	71
18							53	73
20							62	88
22								99
25								104
28								119
31								137

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

ØD [in]
Outer diameter of the spigot

ØD$_3$ [in]
Inside diameter of the socket-type spigot

ØD$_3$ [in]
Outer diameter of circular silencers

L_N [in]
Nominal length

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

L_1
Length of acoustic cladding and acoustically effective length

T [in]
Splitter thickness

n [ ]
Number of flange screw holes

m [lbs]
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 [cfm]
Volume flow rate

p_t [in WC]
Total differential pressure

Lengths
All lengths are given in inches [in] 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.