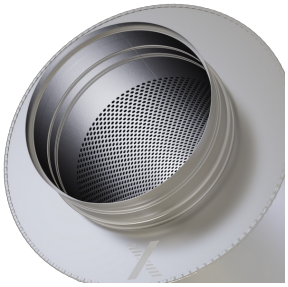
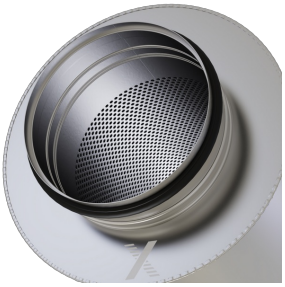
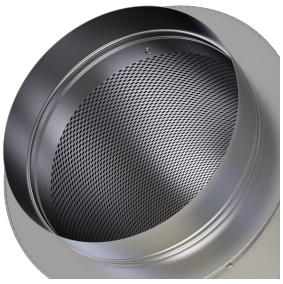
TROX® TECHNIK
The art of handling air



Spigot with groove



Spigot with lip seal



Socket-type spigot

CK

CIRCULAR SILENCERS WITH SPLITTER FOR THE REDUCTION OF NOISE IN CIRCULAR DUCTS OF VENTILATION AND AIR CONDITIONING SYSTEMS

Circular silencer with sound absorbing splitter providing increased insertion loss

- Aerodynamic splitter provides increased insertion loss
- Choice of various splitter thicknesses ensures best possible application
- 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

Application

- Circular silencer for the reduction of noise in circular ducts of ventilation and air conditioning systems
- 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 characteristics

- Insertion loss measured according to ISO 7235
- Choice of 2 splitter widths for each nominal diameter
  - Increased insertion loss with a wider splitter
  - Reduced differential pressure with a smaller splitter
- The sound absorbing material is non-combustible
- Insulation thickness 50 mm 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: 250, 315, 400, 450, 500, 560, 630, 710, 800, 900, 1000 mm
- L: 500, 1000, 1500 mm

Variants

Insulation thickness

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

Splitter width

- T: 50, 100, 150, 200, 250, 300 mm

Construction

Circular silencers

- 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
- Splitter
- Sound absorbing material

Construction features

- Circular casing
  - Outer duct: spiral duct, galvanised steel 1.0917

  - Outer duct: plain duct, stainless steel 1.4301
- Splitter
  - Aerodynamic shape, galvanised 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 800
- Max. operating pressure 2000 Pa
- Max. airflow velocity 20 m/s
- Max. operating temperature 90 °C

Material and surfaces

- Splitter made of galvanised sheet steel 1.0917 or stainless steel 1.4301
- Casing pipe as spiral duct made of galvanised steel 1.0917
- Smooth casing pipe made of stainless steel 1.4301
- Perforated inner duct made of galvanised steel 1.0917 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, 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
  - Protection against erosion from airflow velocities up to 20 m/s
    - Inner duct with non-woven fibre (fleece)
    - Splitters faced with glass fibre scrim
  - Inert to fungal and bacterial growth according to EN 846

Standards and guidelines

- Insertion loss and sound power of air-regenerated noise tested according 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 according to DIN EN 15727

Maintenance

- Low-maintenance as construction and materials are not subject to wear

TECHNICAL INFORMATION

Technical data, Quick sizing, Specification text, Order Code

Nominal sizes	250 – 1000 mm
Operating pressure	2000 Pa max.
Operating temperature	90 °C max.

The stated differential pressures for circular silencers vary, they depend on the splitter and the duct diameter.

Insulation thickness 50 mm, insertion loss D_e [dB]

Nominal size	Nominal length	Splitter width	Centre frequency f_m [Hz]							
			63	125	250	500	1000	2000	4000	8000
250	500	50	1	2	5	10	20	23	15	8
250	500	100	2	3	7	12	23	28	21	13
250	1000	50	3	5	10	19	38	44	30	15
250	1000	100	4	6	14	23	44	50	40	26
250	1500	50	4	7	15	28	50	50	43	22
250	1500	100	6	9	20	33	50	50	50	37
315	500	50	1	2	4	9	19	21	9	4
315	500	100	2	3	6	10	24	23	13	6
315	1000	50	2	4	9	17	36	40	18	8
315	1000	100	4	5	11	20	47	45	25	12
315	1500	50	3	5	12	24	50	50	25	11
315	1500	100	6	8	16	29	50	50	37	18
400	500	100	1	1	4	7	17	17	8	3
400	500	150	3	6	13	24	35	25	16	9
400	1000	100	2	3	7	14	32	32	15	6
400	1000	150	6	11	24	45	50	48	30	17
400	1500	100	3	4	10	21	46	47	22	9
400	1500	150	8	15	35	50	50	50	44	25

Insulation thickness 100 mm, insertion loss D_e [dB]

Nominal size	Nominal length	Splitter width	Centre frequency f_m [Hz]							
			63	125	250	500	1000	2000	4000	8000
250	500	50	1	5	9	16	22	24	17	10
250	500	100	2	6	11	18	26	29	25	17
250	1000	50	3	9	17	30	43	46	33	19
250	1000	100	4	11	20	35	50	50	49	33
250	1500	50	4	13	25	44	50	50	48	28
250	1500	100	6	16	29	50	50	50	50	48
315	500	50	1	4	8	15	18	20	9	5
315	500	100	2	5	9	16	23	22	13	7
315	1000	50	2	8	15	28	34	38	18	9
315	1000	100	4	10	17	31	44	43	26	14
315	1500	50	3	11	21	41	50	50	26	14
315	1500	100	6	14	25	45	50	50	37	20
400	500	100	1	3	6	12	21	15	8	5
400	500	150	2	4	8	16	24	18	12	8
400	1000	100	2	5	12	23	40	29	16	10
400	1000	150	4	7	16	32	46	35	23	15
400	1500	100	3	7	18	33	50	42	23	15
400	1500	150	6	11	24	46	50	50	33	21
450	500	100	1	2	5	11	18	12	6	4
450	500	150	2	2	6	13	21	15	8	5
450	1000	100	2	3	10	22	35	22	12	8
450	1000	150	4	4	12	25	41	28	16	10
450	1500	100	3	4	15	31	50	32	17	12
450	1500	150	5	6	17	36	50	41	23	15
500	500	150	1	2	6	12	18	13	7	5
500	500	200	2	3	7	14	20	15	9	7
500	1000	150	2	4	11	23	35	24	14	10
500	1000	200	4	5	13	26	38	29	18	13
500	1500	150	3	6	16	33	50	35	21	15
500	1500	200	5	7	18	38	50	42	26	19
560	500	150	1	3	6	12	14	10	6	5
560	500	200	2	4	7	13	16	13	7	6
560	1000	150	2	6	12	23	28	20	11	9
560	1000	200	4	7	13	25	31	24	14	11
560	1500	150	3	9	18	33	40	29	16	13
560	1500	200	5	10	19	36	45	35	20	16
630	500	200	1	2	6	12	14	9	6	5
630	500	250	2	3	7	14	16	11	8	6
630	1000	200	2	4	11	24	27	17	12	10
630	1000	250	3	5	13	26	31	21	15	12
630	1500	200	3	6	16	34	39	25	18	15
630	1500	250	5	8	19	38	45	30	21	18
710	500	200	1	2	5	12	12	7	5	5
710	500	250	2	2	6	13	13	8	6	5
710	1000	200	2	3	10	23	23	14	10	9
710	1000	250	3	4	11	25	25	16	11	10
710	1500	200	3	5	14	33	34	20	15	13
710	1500	250	5	6	17	36	37	23	16	15
800	500	250	1	2	6	12	11	7	5	5
800	500	300	2	3	7	12	13	7	6	5
800	1000	250	2	4	12	23	22	13	10	9
800	1000	300	3	5	13	24	25	14	11	10
800	1500	250	2	6	17	33	32	18	15	13
800	1500	300	5	8	19	35	36	20	16	15
900	500	250	1	2	6	11	9	6	4	4
900	500	300	2	2	6	12	10	6	5	4
900	1000	250	2	4	11	21	18	11	8	8
900	1000	300	3	4	12	23	20	11	9	8
900	1500	250	2	5	16	31	26	16	12	11
900	1500	300	4	6	18	33	28	17	13	12

Nominal size	Nominal length	Splitter width	Centre frequency f [Hz]							
			63	125	250	500	1000	2000	4000	8000
1000	500	300	1	2	6	11	8	5	5	4
1000	1000	300	3	4	12	20	16	10	9	7
1000	1500	300	4	6	18	29	24	14	13	11

Differential pressure Δp_t[Pa]

Nominal size	Splitter width	q_v		Nominal length		
		l/s	m^3/h	500	1000	1500
250	50	194	700	9	10	10
250	100	194	700	37	42	44
250	50	333	1200	25	28	29
250	100	333	1200	109	121	127
315	50	333	1200	3	4	4
315	100	333	1200	4	4	5
315	50	1000	3600	26	29	31
315	100	1000	3600	32	35	37
400	100	389	1400	12	13	14
400	150	389	1400	19	21	22
400	100	833	3000	54	60	63
400	150	833	3000	85	94	99
450	100	611	2200	18	20	21
450	150	611	2200	26	29	30
450	100	1111	4000	60	66	70
450	150	1111	4000	84	93	98
500	150	778	2800	10	11	11
500	200	778	2800	21	23	25
500	150	1556	5600	38	42	44
500	200	1556	5600	84	93	98
560	150	1000	3600	10	11	11
560	200	1000	3600	18	20	21
560	150	2222	8000	45	50	52
560	200	2222	8000	86	95	100
630	200	1250	4500	14	16	17
630	250	1250	4500	30	34	35
630	200	2083	7500	39	43	45
630	250	2083	7500	84	93	98
710	200	1556	5600	11	12	13
710	250	1556	5600	17	19	20
710	200	3472	12500	54	60	63
710	250	3472	12500	83	92	96
800	250	2000	7200	9	10	10
800	300	2000	7200	17	19	20
800	250	4500	16200	43	48	50
800	300	4500	16200	84	93	98
900	250	2500	9000	11	12	13
900	300	2500	9000	16	18	19
900	250	5833	21000	57	63	67
900	300	5833	21000	86	95	100
1000	300	3125	11250	19	22	23
1000	300	6667	24000	87	96	101

Circular silencers with integral splitter for better acoustic performance, rigid construction, for ventilation and air conditioning systems, available in 11 nominal sizes and with 2 insulation thicknesses.

Insertion loss measured according to ISO 7235.

Casing with acoustic and thermal insulation.

Galvanised steel or stainless steel.

Optimised differential pressure upstream and downstream of the integral splitter due to the aerodynamic shape.

Choice of splitter widths for optimised differential pressure or increased insertion loss.

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 characteristics

- Insertion loss measured according to ISO 7235
- Choice of 2 splitter widths for each nominal diameter
  - Increased insertion loss with a wider splitter
  - Reduced differential pressure with a smaller splitter
- The sound absorbing material is non-combustible
- Insulation thickness 50 mm or 100 mm
- Leakage class D for nominal sizes up to and including 400 mm
- Leakage class C from nominal size 450 mm

Material and surfaces

- Splitter made of galvanised sheet steel 1.0917 or stainless steel 1.4301
- Casing pipe as spiral duct made of galvanised steel 1.0917
- Smooth casing pipe made of stainless steel 1.4301
- Perforated inner duct made of galvanised steel 1.0917 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, 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
  - Protection against erosion from airflow velocities up to 20 m/s
    - Inner duct with non-woven fibre (fleece)
    - Splitters faced with glass fibre scrim
  - Inert to fungal and bacterial growth according to EN 846

Construction

Circular silencers

- 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: 250, 315, 400, 450, 500, 560, 630, 710, 800, 900, 1000 mm
- Insulation thickness: 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

- ØD [mm]
- L [mm]
- L_1 [mm]
- qv [m³/h]
- De [dB]
- Δpst [Pa]

CK	–	A2	/	D2	/	315	×	1500	/	100	–	50
1		2		3		4		5		6		7

1 Type
CK Circular silencer with splitter
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 [mm]
250, 315, 400, 450, 500, 560, 630, 710, 800, 900, 1000
5 Nominal length [mm]
500, 1000, 1500
6 Insulation thickness [mm]
50, 100
7 Splitter thickness [mm]
50, 100, 150, 200, 250, 300

Order example: CK–A2/D2/315×1500/100–50

Material	Galvanised steel (1.0917)
Material	Stainless steel (1.4301)
Type of connection	Spigot with lip seal on both ends
Nominal size [mm]	315
Length [mm]	1500
Insulation thickness [mm]	100
Splitter width [mm]	50

Order example: CK/250×1500/100–100

Type	CK
Material	Galvanised steel (1.0917)
Type of connection	Spigot with lip seal on both ends
Nominal size [mm]	250
Length [mm]	1500
Insulation thickness [mm]	100
Splitter width [mm]	100

Kombinationen Halbbild

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Installation details

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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.

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