



Circular silencer

CAK**TROX GmbH**

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Product overview

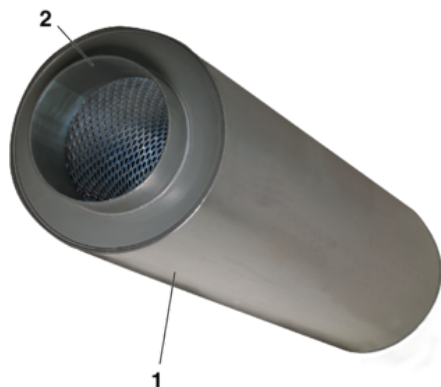


Fig. 1: Schematic illustration, CAK

- 1 Casing of the silencer
- 2 Spigot

Important notes

Safety

Correct use

Circular silencers are used to reduce noise in the circular ducts of ventilation and air conditioning systems within closed rooms.

For the reduction of air-regenerated noise of air terminal units and mechanical self-powered controllers, etc.

Do not use circular silencers in extract air systems in commercial kitchens unless the extract air has been cleaned as much as possible with high-efficiency aerosol separators; see VDI 2052.

The CAK type is particularly suitable for ventilation systems with chemically contaminated extract air, e.g., from fume cupboards.

Incorrect use

**WARNING!****Danger of injury or risk of damage to property due to incorrect use**

Incorrect use of the circular silencer can lead to dangerous situations.

Never use the circular silencer:

- outdoors without sufficient protection against the effects of weather
- in process air systems

Modifying the unit or using replacement parts that have not been approved by TROX is not permitted.

Staff

Qualification

The work described in this manual has to be carried out by individuals with the qualification, training, knowledge and experience described below:

Specialized personnel

Specialised personnel are personnel, who due to their specialized training, skills, and experience, as well as knowledge of the applicable standards and regulations, are capable of executing the tasks assigned to them, and of recognizing possible hazards and avoiding them on their own.

Personal protective equipment

Personal protective equipment is equipment that protects the user against health or safety risks at work.

Personal protective equipment must be worn for various types of work; the protective equipment required is listed in this manual together with the description of each type of work.

Description of personal protective equipment

Industrial safety helmet



Industrial safety helmets protect the head from falling objects, suspended loads, and the effects of striking the head against stationary objects.

Protective gloves



Protective gloves protect hands from friction, abrasions, punctures, deep cuts, and direct contact with hot surfaces.

Safety shoes



Safety shoes protect the feet against crushing, falling parts, and from slipping on slippery ground.

Repair and replacement parts

Only qualified personnel must repair the products, and they have to use genuine replacement parts.

Transport, storage and packaging

Delivery check

Check delivered items immediately after arrival for transport damage and completeness. In case of any damage or an incomplete shipment, contact the shipping company and your supplier immediately.

Transport on site

Please note:

- Be careful when unloading or moving the product, and pay attention to the symbols and information on the packaging.
- If possible, take the product in its transport packaging up to the installation location.
- Use only lifting and transport gear designed for the required load.
- Always secure the load against tipping and falling.
- Do not move bulky items just by yourself. Get help to prevent injuries and damage.

Storage

Please note:

- Store the product only in its original packaging
- Protect the product from the effects of weather
- Protect the product from humidity, dust and contamination
- Storage temperature: 0 °C to 100 °C.
- Relative humidity: 80 % max., no condensation

Packaging

Properly dispose of packaging material.

Installation

General installation information

Personnel:

- Specialized personnel

Protective equipment:

- Protective gloves
- Industrial safety helmet
- Safety shoes



CAUTION!

Danger of injury from sharp edges, sharp corners and thin plastic parts!

Sharp edges and sharp corners may cause cuts or grazes.

- Be careful when carrying out any work.
- Wear protective gloves, safety shoes and a hard hat.

Please note:

- Horizontal or vertical installation orientation.
- Duct connection on both sides.
- Installation in ducts outside closed rooms requires sufficient protection against the effects of weather.
- Length (L) refers to the airflow direction.
- Installation material is not part of the supply package unless stated otherwise.
- Airflow direction freely selectable.
- Torsion-free installation.

Installation information for circular silencer

General installation information

- When designing and constructing ventilation and air conditioning systems, take into account the requirements of VDI6022, in particular:
 - Hygienic, clean installation of all components and their air distribution surfaces
 - Inspection and cleaning options by planning inspection/cleaning openings in the ducting system
 - Avoidance of leaks
- Affix the circular silencer proficiently and only to load-bearing components.
- Load suspension systems only with the weight of the circular silencer. Adjacent components and connecting ducts must be supported separately.
- Only use approved and sufficiently dimensioned suspensions for fixing. Secure screw connections against self-loosening, e.g., by locking them. Fixing material is not included in the supply package.

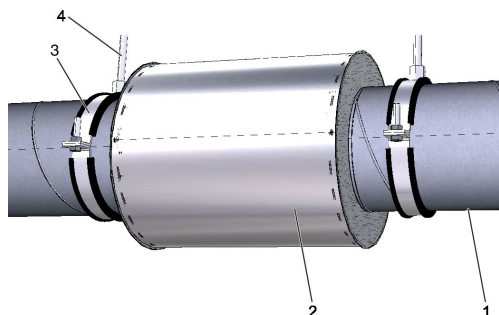


Fig. 2: Installation example for circular silencer

- 1 Duct
- 2 Circular silencers
- 3 Pipe clamp
- 4 Suspension, e.g. with threaded rod

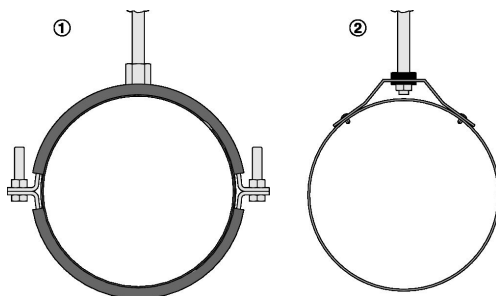


Fig. 3: Examples of fixings for circular units

- 1 Fixing to pipe clamps
 - 2 Fixing to suspension element
- When installing the circular silencer, choose a load-bearing structure that will support the entire weight of the circular silencer construction.
 - The weight of the circular silencer must not be supported by the spigots or flanges alone.
 - Tension-free assembly
 - Structure-borne sound transmission must be avoided by taking suitable measures.
 - Installation in ducts outside closed rooms requires sufficient protection against the effects of weather
 - Take standard DIN EN 12236 into consideration (suspensions and supports for air ducts)

Assembly to control components

Circular silencers without splitters can be used for the reduction of air-regenerated noise of air terminal units and mechanical self-powered controllers. Installation can be carried out without a minimum distance to the control component.

Connecting the air duct

When connecting the ducting, the customer must ensure that the connection points are installed as air-tight as possible in order to avoid negative influences from leakages such as air volume deviations, power consumption, etc. Unless otherwise stated, the connecting material is not included in the supply package.

Before connecting the ducting:

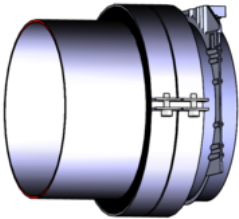
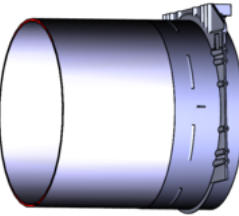
- Check the inside of the unit for damage and loose parts.
- Remove any contamination from the ducting.

Leakage classes

In order to be able to achieve the required tightness of the duct system, it is necessary that suitable sound attenuators and duct components have been selected. In addition, the following should be observed:

- Proper and expert assembly
- Provide seals
- Establish the cable fastening (suspension/support)

Circular duct – plastic

	Plastic spigot ■ Installation on ducting in accordance with DIN 8077. ■ With clamp connectors.
	Plastic spigot ■ Installation on ducting in accordance with DIN 8077. ■ By plastic welding.

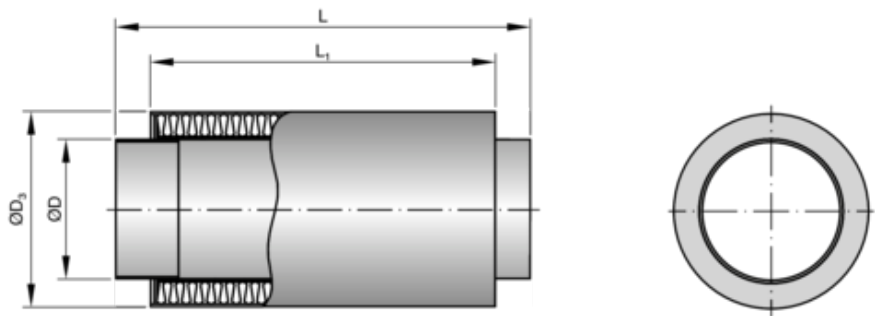
Technical data

General data

Item	Value
Nominal sizes	125 - 400 mm
Operating pressure	1000 Pa max.
Airflow velocity	≤ 20 m/s

Item	Value
Air temperature	0 °C to 100 °C
Relative humidity	≤ 80%, no condensation
Casing leakage according to EN 15727	Class D
Materials of circular silencer	PPs (flame-retardant polypropylene)

Dimensions and weights CAK



Dimensions

nominal size	ØD [mm]	ØD3
125	125	225
160	160	250
200	200	280
250	250	355
315	315	415
400	400	500

Lengths

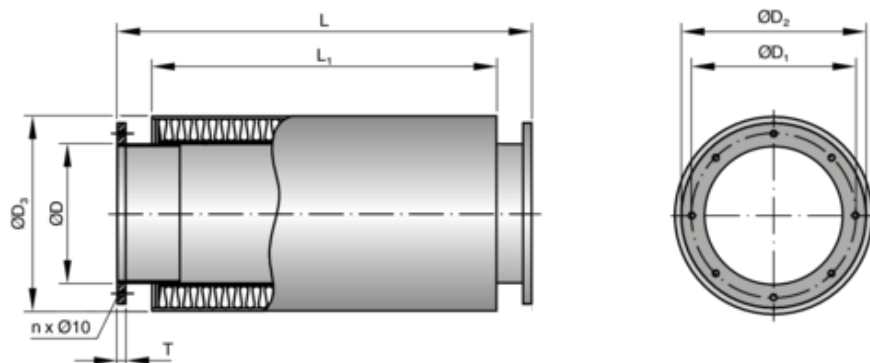
Nominal length	L	L1
	[mm]	
500	595	495

Nominal length	L	L1
	[mm]	
1000	1095	995
1500	1595	1495

Weights

nominal size	500	1000	1500
	m [kg]		
125	2.2	4.1	5.9
160	2.6	4.7	6.8
200	3.2	5.8	8.5
250	4.3	7.6	10.9
315	4.6	8.6	12.5
400	5.2	9.3	13.4

CAK/.../VF2



Dimensions

nom- inal size	ØD	ØD3	ØD1	ØD2	T	n
	[mm]					
125	125	225	165	185	8	8
160	160	250	200	230	8	8
200	200	280	240	270	8	8
250	250	355	290	320	8	12
315	315	415	350	395	10	12
400	400	500	445	475	10	16

Lengths

Nominal length	L	L1
	[mm]	
500	595	495

Commissioning

Commissioning and operation

Personnel:

- Specialized personnel
 - ▶ Before you start commissioning:
 - Check proper installation of the circular silencers.
 - Ensure that all sound attenuators are clean and free from residues and foreign matter.

Nominal length	L	L1
	[mm]	
1000	1095	995
1500	1595	1495

Weights

nominal size	500	1000	1500
	m [kg]		
125	2.5	4.4	6.2
160	3.0	5.1	7.2
200	3.6	6.2	8.9
250	4.9	8.2	11.5
315	5.3	9.3	13.7
400	6.8	10.9	15.0

Commissioning

Code of good practice for commissioning

Commissioning is governed by the standard "DIN EN 12599 Testing and measuring procedures for the transfer of installed ventilation and air conditioning systems", and, if applicable, contractually agreed services between HVAC contractors, system owners and installation engineers. The standard describes the essential commissioning steps of the completeness check, function check, function measurement as well as report generation and handover.

Operation

Once commissioning has been completed, the circular silencer will operate in a self-powered manner and require no intervention from the system owner.

Depending on the area of application of the circular silencer, test specifications and intervals may have to be observed.

Maintenance

System owner's responsibility

WARNING!

Only authorised specialist personnel are allowed to perform the described maintenance measures.

The system owner is responsible for maintenance. The system owner is responsible for creating a maintenance plan, for defining the maintenance goals, and for the functional reliability of the equipment.

The legal regulations must be observed during maintenance, e.g. the system owner is responsible for hygienic operation in accordance with VDI 6022.

Maintenance

The circular silencers are low-maintenance in terms of wear, but they must be included in the regular cleaning of the ventilation system. Regular care and maintenance ensure long service life of the circular silencer.

Inspection measures

1. ▶ Remove contamination that affects the function of the circular silencer.
2. ▶ Check all screws for firm seating and retighten them, if necessary.
3. ▶ Document the maintenance work.

Repair

Repair work is only allowed to be carried out by specialist personnel or by the manufacturer. Only genuine replacement parts must be used.

Disposal



ENVIRONMENT!

Risk of harm to the environment due to incorrect disposal of goods and packaging!

Incorrect disposal can harm the environment.

- Be sure to comply with the relevant national guidelines and regulations.
- If you are not sure how to dispose of anything in an environmentally friendly manner, contact your local authorities or a specialist disposal company.

Note: The sound attenuator has to be disassembled for disposal.

If no take back (disposal) agreement with TROX GmbH is in place, we recommend disposing of the various materials as described below:

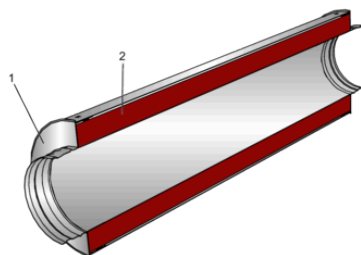


Fig. 4: Schematic illustration of the circular silencer

No.	Part	Material/ waste dis- posal code	Disposal
1	Casing, inner duct and spigot	Plastic EAK 170203	According to EAK
2	Absorption material	Mineral wool EAK 170604	According to EAK
EWC European Waste Catalogue			