

# Better safe than sorry. Components for preventative fire protection.

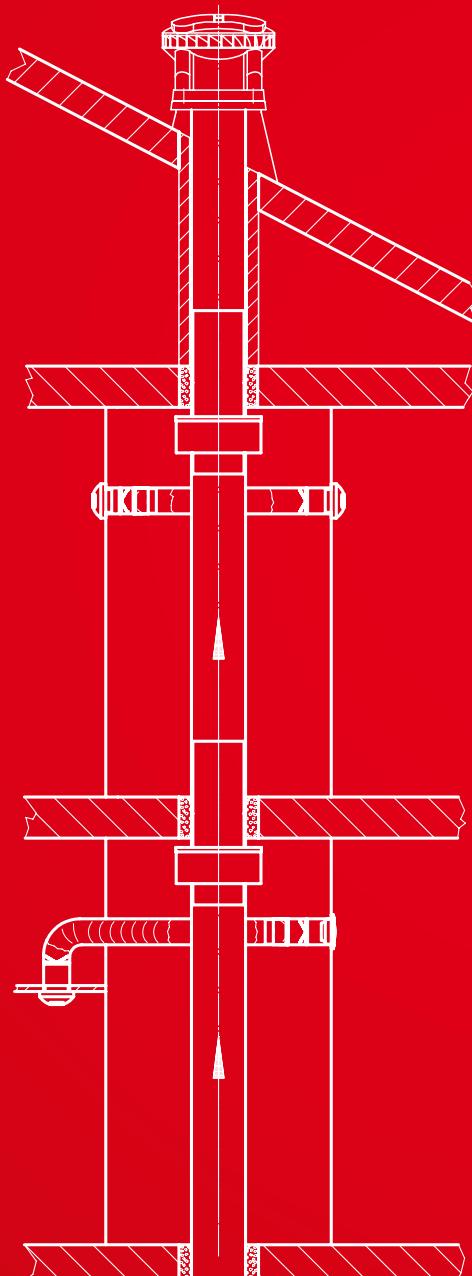


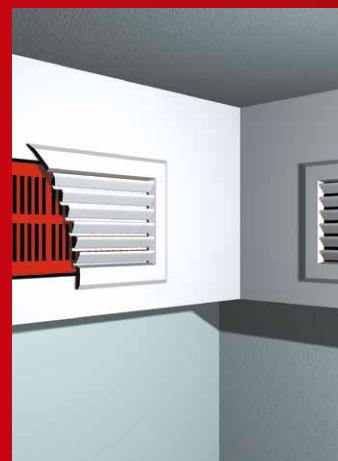
**The aim of preventative fire protection in multi-floor constructions is to prevent the spread of fire to adjacent floors and rooms.**

**Building regulations therefore divide residential units or room units into so-called utilisation units (fire sections) where the ceilings and walls must meet specific fire resistance duration requirements.**

Since supply pipes and ventilation ducts cross fire sections, their openings must be equipped with dampers in the required classification.

Whether you are looking for fire dampers, ventilation tiles or ceiling seals, Helios offers precisely the right solutions.



**■ Fire damper elements**

Fire damper elements BAE/BAK prevent the spread of fire and smoke to other fire sections through ventilation ducts or ventilation openings.

**■ Fire protection disc valves**

Dampers with volume flow throttle BTV/BTK to prevent the spread of fire and smoke through ventilation ducts or ventilation openings.

**■ Fire protection ceiling seal, cold smoke shutters**

Fire protection ceiling seal ELS-D for ventilation ducts pursuant to DIN 18017. Application eliminates the need for further dampers on air inlet or outlet openings. Ideal for mixed-use installation shafts.

Cold smoke shutters KAK for room-side duct insertion prevent the spread of cold smoke to other fire sections.

**■ Fire protection ventilation tiles**

Fire protection ventilation tiles BLS allow the static ventilation of closed rooms and chambers to be protected against the spread of fire and smoke, such as e.g. installation shafts, cable ducts, etc.

**592f****594f****596f****598f**

## BAE

Approval Z-41.3-696  
no maintenance conditions



## ■ Application

Damper element to prevent the spread of fire and smoke. For installation in ventilation shafts and ducts with the required fire resistance class K 90-18017. Suitable for insertion in spiral ducts or for installation in walls and non-fire-resistant suspended ceilings using installation sleeve EH (accessories) as well as in fire-resistant ceilings as ceiling seals.

## ■ Function

When an air temperature of +72 °C is exceeded, the integrated fusible link releases the semicircular damper blades which close abruptly by spring force. Two safety brackets lock the shutters.

## ■ Official approval

The proof of suitability of this damper element for ventilation systems according to DIN 18017 has been provided by means of appropriate tests. General technical approval from the DIBt with no. Z-41.3-696.

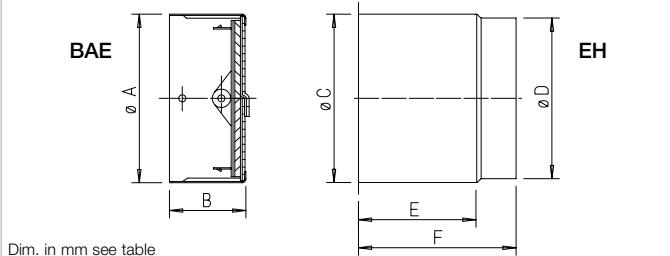
## ■ Special features

- No maintenance conditions.
- Cleaning and inspection together with the associated ventilation system.
- Insertion in spiral ducts without additional brickwork frame.

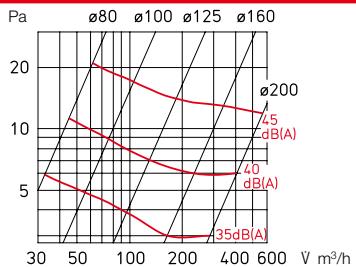
## Order data

Type	Ref. no.	Dim. in mm Ø A	Weight apx. kg	Accessories:				
				Installation sleeve	Ref. no.	Dimensions in mm		
BAE 80	02624	78	60	0.17				
BAE 100	02625	98	60	0.23	EH 100	02639	100	98
BAE 125	02626	123	60	0.30	EH 125	02640	125	123
BAE 160	02627	158	60	0.40	EH 160	02641	160	158
BAE 200	02628	198	60	0.55	EH 200	02642	200	198

## Dimensions BAE



## Pressure loss and acoustics



## ■ Accessories

## End switch

For BAE monitoring and signalling the operating status to the central building management system. Attachable to all ND, simple snap-in installation.

**BA-S** Ref. no. 02585  
Switch as changeover contact IP67  
Max. load 5–250 V / 6 A (2 A ind.)  
Connect. cable 50 cm long / 3 x 0.34 mm<sup>2</sup>  
Wiring diagram no. 830

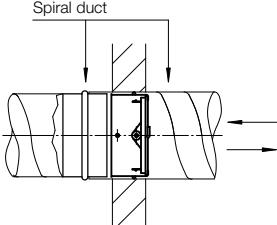


## ■ Installation examples

## □ Duct installation

The element is installed by simple insertion (e.g. in spiral ducts) and fixed in the wall together with the duct. Installation is possible on both sides, regardless of the air flow direction.

## Duct installation

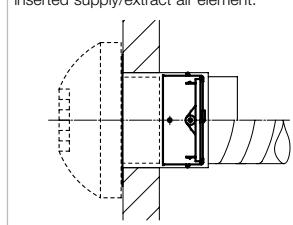


## □ Wall installation

With installation sleeve EH (accessories) in walls made from brickwork, aerated concrete or plasterboard, shaft partition walls in F 90 and F 30 or system-tested walls over 40 mm thick. Installation is possible on both sides, regardless of the air flow direction.

## Wall installation

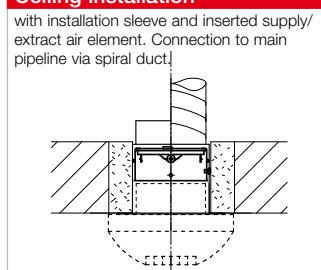
with installation sleeve or spiral duct and inserted supply/extract air element.



## □ Ceiling installation

- Possible in non-fire-resistant suspended ceilings.
- In fire-resistant ceilings as ceiling seal if no free cross-section is required.

## Ceiling installation



**BAK**

EU Certificate of  
Constancy of Performance  
0749-CPR-BC1-606-0464-15650.69-2517



EU Certificate of Constancy of Performance  
0749-CPR-BC1-606-0464-15650.69-2517

**Fire dampers are construction products according to the European Construction Products Regulation.**

They have an official Certificate of Constancy of Performance and a Declaration of Performance according to European construction law.

**Application**

Fire damper to prevent the spread of fire and smoke. For installation in walls, ceilings or ventilation shafts which serve as fire sections with the required fire resistance class EI 90 S. Suitable for wall and ceiling installation or as overflow openings. Can be inserted in spiral ducts. Installation sleeve EH (accessories) recommended for one-sided duct connection.

**Function**

When an air temperature of +72 °C is exceeded, the integrated fusible link releases the semi-circular damper blades which close abruptly by spring force. Two safety brackets lock the shutters.

**European certification**

Declaration of Performance according to European Construction Products Regulation 305/2011.

- Tested according to EN 1366-2.
- Classification according to EN 13501-3: EI 90 (ve, ho, i↔o) S – (300 Pa).
- Room closure and insulation 90 min., vertical, horizontal, applicable in both directions, sealed against 300 Pa, even during fire.
- Complies with European product standard DIN EN 15650.

**Special features**

- Installation directly in spiral duct in the room-closing component.
- Any air flow direction, i.e. for supply air and extract air.
- Low flow resistance, even at high air flow rates.
- Simple fixation with installation sleeve EH (accessories).

**Design**

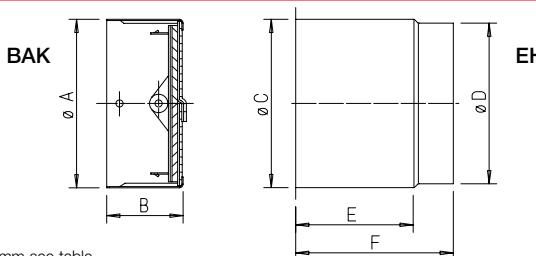
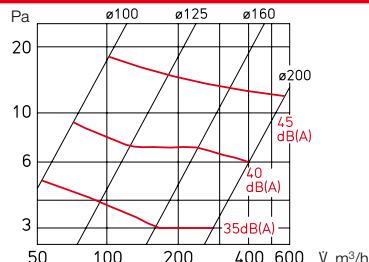
Cylindrical duct sleeve with butterfly valve and integrated fusible link.

**Delivery**

Individually shrink-wrapped in plastic film.

**Installation and setting**

- The installation and operating instructions contain exact specifications with regard to application and installation.
- The specifications in the related approval must be observed.

**Dimensions BAK**

**Pressure loss and acoustics**

**Accessories**
**End switch**

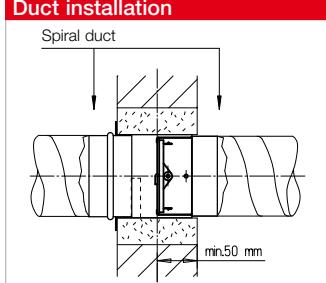
For BAK monitoring and signalling the operating status to the central building management system. Attachable to all ND, simple snap-in installation.

**BA-S** Ref. no. 02585
 

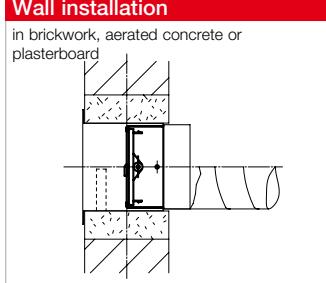
Switch as changeover contact IP 67  
Max. load 5–250 V / 6 A (2 A ind.)  
Connect. cable 50 cm long / 3 x 0.34 mm<sup>2</sup>  
Wiring diagram no. 830


**Installation examples**
**Duct installation in walls or ceilings**

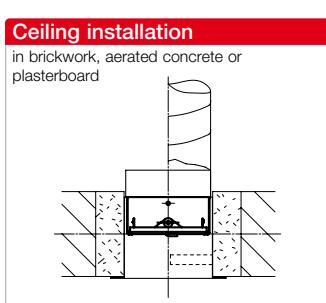
The element is installed by simple insertion in the spiral duct or in the installation sleeve EH (accessories) and then fixed in the wall, ceiling or shaft wall. Installation is possible regardless of the air flow direction. Subsequent one-sided or double-sided duct connection.


**Wall or ceiling installation**

With installation sleeve EH (accessories) in walls made from brickwork, aerated concrete or plasterboard or system-tested walls over 100 mm thick. Installation is possible on both sides, regardless of the air flow direction.


**Overflow opening**

Without one-sided or double-sided duct connection, as overflow opening, can only be installed where there is no reason to fear smoke overflow below the trigger temperature. Approval required from building inspection authority in individual cases.


**Order data**
**Accessories:**

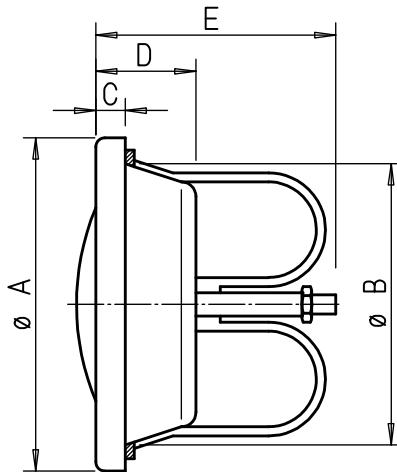
Type	Ref. no.	Dim. in mm Ø A	Dim. in mm B	Weight apx. kg	Installation sleeve	Ref. no.	Dimensions in mm Ø C	Ø D	E	F
BAK 100	02620	98	60	0.24	EH 100	02639	100	98	110	140
BAK 125	02621	123	60	0.32	EH 125	02640	125	123	110	140
BAK 160	02622	158	60	0.46	EH 160	02641	160	158	110	140
BAK 200	02623	198	60	0.64	EH 200	02642	200	198	110	140

**BTV**

Approval Z-41.3-694  
No maintenance conditions



**Dimensions BTV**



Dim. in mm see table

**Application**

Damper element to prevent the spread of fire and smoke. Suitable for installation in ventilation shafts and ducts with the required fire resistance class K 90-18017. For insertion in spiral ducts or for installation in walls and non-fire-resistant suspended ceilings using mounting ring (included in delivery).

- Simple adjustment, which cannot be changed by unauthorised persons, reduces the work load.
- Easily removable for inspection and cleaning, without unauthorised adjustment being possible.
- Large operating range.
- Application in residential and commercial areas, e.g. internal toilets, kitchenettes, etc.

**Design**

Sheet steel construction with white powder coating. Aerodynamically optimal design with inner cone and inlet ring.

**Delivery**

Includes mounting ring made of galvanised steel sheet; each valve in a separate polybag.

**Installation and setting**

- The installation and operating instructions contain exact specifications with regard to application and installation.
- Can be inserted by hand due to bayonet closure. Associated wall ring included in delivery.
- The specifications in the related approval must be observed.
- Volume flow settings according to adjacent diagrams.
- Settings remain fixed and cannot be changed by unauthorised persons or without dismantling the fan.
- High damping value.
- Attractive, functional design.

**Function**

When an air temperature of +72 °C is exceeded, the fusible link responds. The built-in pressure spring automatically closes the valve.

**Official approval**

The proof of suitability of these damper elements with throttle device for ventilation systems according to DIN 18017 has been provided by means of appropriate tests and resulted in the approval from the DiBT, Z-41.3-694.

**Special features**

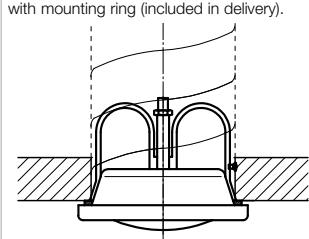
- No maintenance conditions.
- Cleaning and inspection together with the associated ventilation system.
- Officially tested fire protection disc valve with low air noise in case of high pressure drop.
- Installation in spiral ducts, shaft walls or non-fire-resistant ceilings.
- High damping value.
- Attractive, functional design.

**Order data**

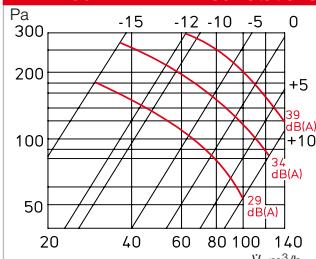
Mounting ring included in delivery

Type	Ref. no.	Dimensions in mm					Weight approx. kg
		Ø A	Ø B	C	D	E	
<b>BTV 100</b>	02634	135	99	17	67	91	0.38
<b>BTV 125</b>	02635	161	124	18	68	103	0.48
<b>BTV 160</b>	02636	191	160	18	68	107	0.64
<b>BTV 200</b>	02637	242	199	17	67	124	0.77

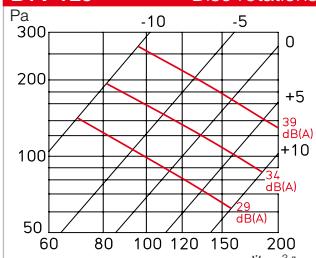
**Installation in walls and non-fire-resistant ceilings**  
with mounting ring (included in delivery).



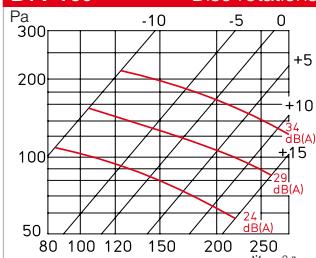
**BTV 100** Disc rotations



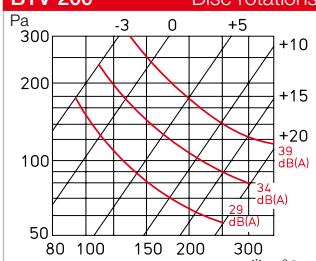
**BTV 125** Disc rotations



**BTV 160** Disc rotations



**BTV 200** Disc rotations



**BTK**

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They have an official Certificate of Constancy of Performance and a Declaration of Performance according to European construction law.

**Application**

Fire damper to prevent the spread of fire and smoke. For installation in walls, ceilings or ventilation shafts which serve as fire sections with the required fire resistance class EI 90 S. Suitable for wall and ceiling installation or as overflow openings. Can be inserted in spiral ducts. Installation sleeve EH (accessories) recommended for one-sided duct connection.

**Function**

When an air temperature of +72 °C is exceeded, the fusible link responds. The built-in pressure spring automatically closes the valve.

**European certification**

Declaration of Performance according to European Construction Products Regulation 305/2011.  
 Tested according to EN 1366-2.  
 Classification according to EN 13501-3: EI 90 (ve, ho, i↔o) S – (300 Pa). Room closure and insulation 90 min., vertical,

horizontal, applicable in both directions, sealed against 300 Pa, even during fire.

Complies with European product standard DIN EN 15650.

**Special features**

Installation directly in spiral duct in the room-closing component.  
 Officially tested fire protection disc valve with low air noise in case of high pressure drop.  
 High damping value.  
 Attractive, functional design.  
 Simple adjustment, which cannot be changed by unauthorised persons, reduces the work load.  
 Easily removable for inspection and cleaning, without unauthorised adjustment being possible.  
 Large operating range.

**Design**

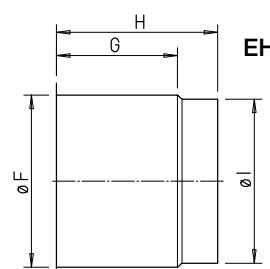
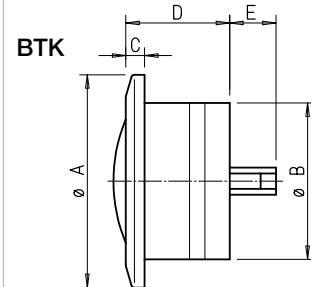
Valve body made of plastic, aerodynamically optimal design with inner cone and inlet ring. Cylindrical duct sleeve with butterfly valve and integrated fusible link.

**Delivery**

Individually shrink-wrapped in plastic film.

**Installation and setting**

The installation and operating instructions contain exact specifications with regard to application and installation.  
 The specifications in the related approval must be observed.

**Dimensions BTK**


Dim. in mm see table

**Installation examples**
**Duct installation in walls or ceilings**

The element is installed by simple insertion in the spiral duct or in the installation sleeve EH (accessories) and then fixed in the wall, ceiling or shaft wall. Installation is possible regardless of the air flow direction. Subsequent one-sided duct connection.

**Overflow opening**

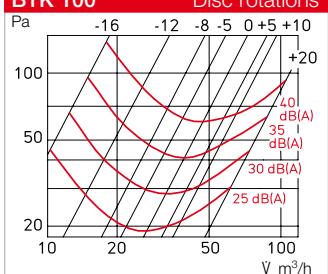
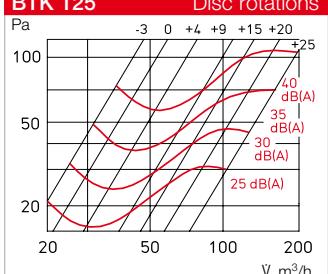
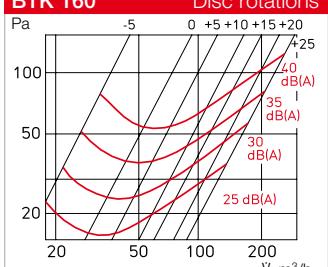
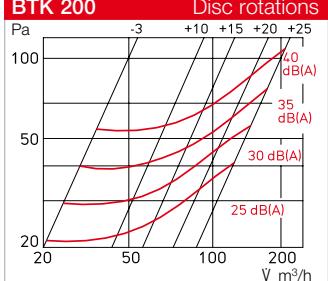
Without one-sided or double-sided duct connection, as overflow opening, can only be installed where there is no reason to fear smoke overflow below the trigger temperature. Approval required from building inspection authority in individual cases.

**Accessories**
**End switch**

For BTK monitoring and signalling the operating status to the central building management system. Attachable to all ND, simple snap-in installation.

**BA-S**

Ref. no. 02585  
 Switch as changeover contact IP 67  
 Max. load 5–250 V / 6 A (2 A ind.)  
 Connect. cable 50 cm long / 3 x 0.34 mm<sup>2</sup>  
 Wiring diagram no. 830


**BTK 100**
**Disc rotations**

**BTK 125**
**Disc rotations**

**BTK 160**
**Disc rotations**

**BTK 200**
**Disc rotations**

**Order data**
**Accessories:**

Type	Ref. no.	Dimensions in mm					Weight apx. kg	Installation sleeve	Ref. no.	Dimensions in mm				
		Ø A	Ø B	C	D	E				Ø F	G	H	Ø I	
<b>BTK 100</b>	02633	150	98	19	129	20	0.45	<b>EH 100</b>	02639	100	110	140	98	
<b>BTK 125</b>	02630	165	123	19	129	33	0.60	<b>EH 125</b>	02640	125	110	140	123	
<b>BTK 160</b>	02631	220	158	19	129	51	0.85	<b>EH 160</b>	02641	160	110	140	158	
<b>BTK 200</b>	02632	245	198	19	129	71	1.20	<b>EH 200</b>	02642	200	110	140	198	

**ELS-D**



Approval Z-41.3-368  
No maintenance conditions



In accordance with building regulations, ventilation which vertically cross more than two full floors must be protected against fire and smoke. Traditionally, this requirement has been met by placing the ventilation duct in a fire-proof shaft. This involved: High investment costs, large space requirements, longer construction period and, above all, the cost of two shafts (distinction between mixed-use installation shaft and ventilation shaft).

■ The use of ELS-D ceiling seal has many advantages, such as e.g.:

- Placement of the ventilation duct in mixed-use installation shaft with simple, 12.5 mm thick plasterboard cladding.
- ELS-D have no maintenance requirements. Additional fire dampers with possible maintenance requirements are not necessary.
- Certified mono tube ventilation units without fire protection cladding or fire dampers may be connected via Aluflex pipes.
- Disc valves or volume flow-regulating extract air elements made of plastic can be used for central systems. These cold smoke shutters (type KAK) should be added to prevent the spread of cold smoke.

- The connection of extract air from domestic kitchens is permitted.
- The structural and functional advantages of plasterboard installations or elements can be fully realised.
- An approximate reduction of the space requirement to the ND of the main pipeline is possible through axial rotation during installation (either wide or narrow side forward or diagonal).
- The passage cross-section of the ventilation duct is fully maintained and there is no additional pressure loss. Cleaning and inspection are not affected.

General technical approval from the DIBt with no. Z-41.3-368.  
Fire resistance class: K 90-18017 (three-floor test).

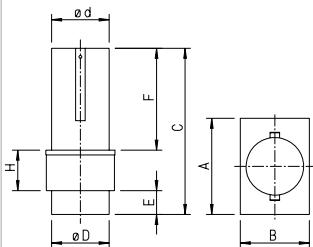
■ Description

Casing made of galvanised steel sheet with integrated connectors at top and bottom. The upper connector also serves as a ceiling outlet.

■ Two-stage function

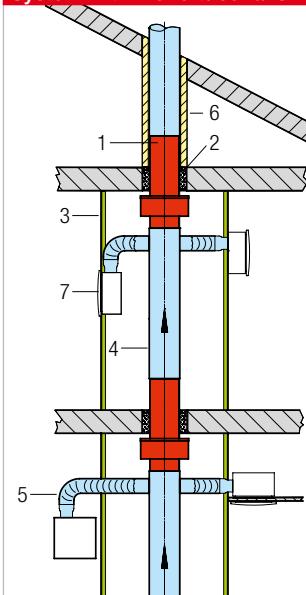
- The dampers initially close the air flow opening at approx. 90 °C and prevent the introduction of high temperatures on other floors.
- The integrated foam actuator packages completely seal the

**Dimensions ELS-D**

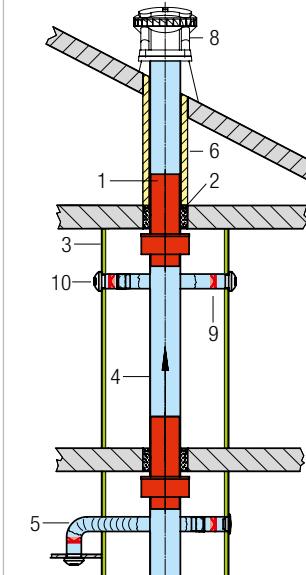


Dim. in mm

**System with mono tube fans**



**System with central fan**



<b>Legend</b>	1 Ceiling seal ELS-D 2 Ceiling grouting 3 Installation shaft cladding e.g. 12.5 mm plasterboard 4 Main duct (spiral duct) 5 Connection duct (Aluflex) 6 Insulation against condensation 7 ELS ind. vent. units flush or surface without fire protection requirements 8 Central fan, e.g. Type DV EC (see page 80 ff.) 9 Cold smoke shutter KAK 10 Extract air element AE or disc valve (KTVA or MTVA)
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**Order data**

Type	Ref. no.	Dimensions in mm								Weight approx. kg
		A	B	C	Ø d	Ø D	E	F	H	
ELS-D 100	00270	183	123	385	99	102	50	250	85	2.5
ELS-D 125	00185	208	148	394	124	127	50	250	94	3.4
ELS-D 140	00186	233	163	403	139	142	50	250	103	4.0
ELS-D 160	00187	258	183	413	159	162	50	250	113	5.0
ELS-D 180	00188	283	203	424	179	182	50	250	124	6.0
ELS-D 200	00271	308	223	434	199	202	50	250	134	7.2

■ Reference

Other sizes and product details regarding the use of cold smoke shutters KAK.

See page 597

**KAK**


**The Model Building Regulation and various regional building regulations require the following: The spread of fire and smoke must be prevented!**

This requirement is met by the automatic Helios cold smoke shutters with magnetic closure. They seal supply air and extract air openings against the ingress of cold smoke according to regulations.

**■ Application**

- Central ventilation systems according to DIN 18017-3 in multi-story buildings have a central fan which is connected to a shared main pipeline and located above or below the roof, via the connected rooms (e.g. kitchens, bathrooms, WCs) on the respective floor (fire section) are ventilated via the extract air duct.
- The main pipeline must cross multiple fire sections and therefore has to be placed in a fire-proof, i.e. F90 classified shaft. The extract air openings in the individual fire sections must be equipped with fire dampers or fire protection disc valves.
- This cost-intensive and space-consuming solution can be replaced by using certified ceiling seals. Ceiling seals are installed or embedded in the main pipeline in the ceiling area. The main pipeline can thus be integrated in the installation shaft.
- Regional building regulations and general technical approvals for damper elements and ceiling seals stipulate that an outflow into the atmosphere via the main pipelines must be guaranteed for vertically installed dampers.
- This requirement becomes relevant if, in the event of a fire, the central fan fails and smoke

enters the main pipeline due to overpressure in the fire area and it can enter areas which are not affected by the fire (other fire sections) via openings (disc valves) due to generated dynamic pressure.

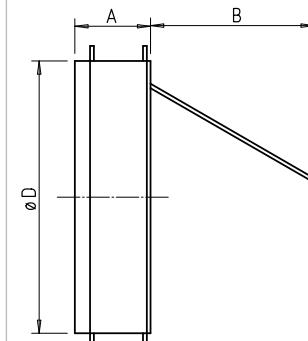
Helios cold smoke shutters with magnetic closure KAK prevent the ingress of cold smoke into other fire sections. They must be positioned in all supply air/extract air openings downstream of the disc valves or extract air elements (also in combination with BAE/BAK).

**■ Design**

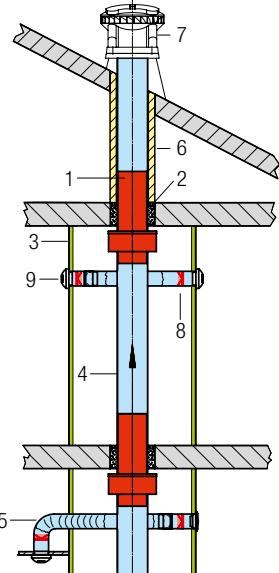
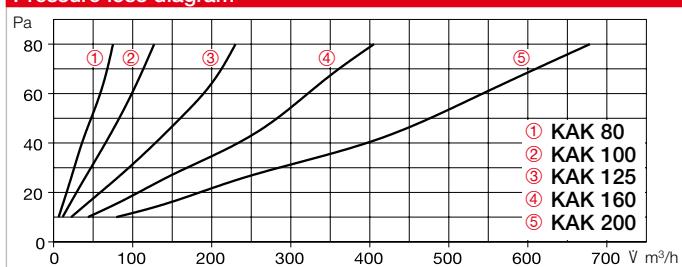
- Ready-to-install element for insertion in ducts and fittings.
- Frame with circumferential U lip seal ring made of EPDM rubber for sealing in the ventilation duct.
- Double-sided shutter frame made of plastic with metal insert covers the silicone membrane. The shutter is therefore flutter-free and quiet in the air flow.
- A permanent magnet is positioned on the thread axle in the internal frame cylinder, which tightly seals the shutter in case of falling pressure.
- The closing and opening pressure can be adapted to the installation situation.
- The very short installation depth and the asymmetric shape of the shutter frame, which allow a large opening angle, are particularly advantageous.

**■ Installation and setting**

- Insert KAK into duct on room side and note the flow direction.
- In case of vertical installation with horizontal flow, Make sure that the axis of rotation is positioned horizontally.

**Dimensions KAK**


Dim. in mm see table

**System with central fan**

**Pressure loss diagram**


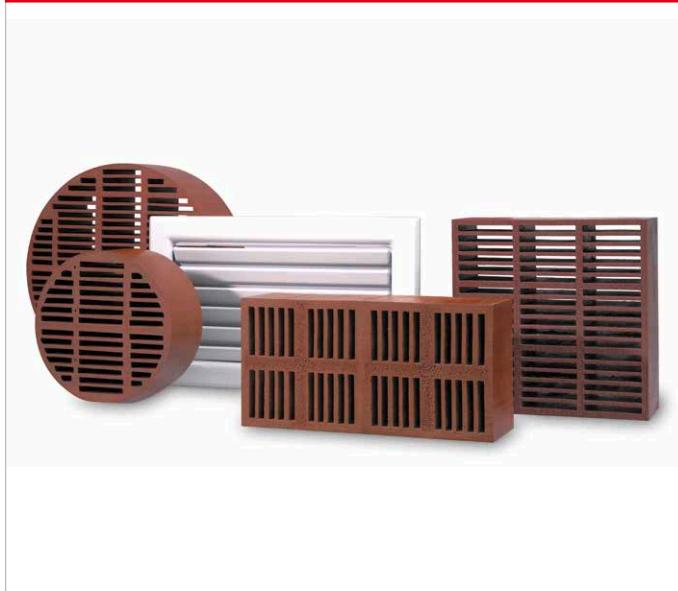
- Position directly downstream of the disc valve or air inlet/outlet element.


**Order data**

Type	Ref. no.	Dimensions in mm		
		Ø D	A	B
<b>KAK 80</b>	04096	79	12	63
<b>KAK 100</b>	04097	95	20	60
<b>KAK 125</b>	04098	120	20	83
<b>KAK 160</b>	04099	155	20	110
<b>KAK 200</b>	04100	196	20	150

<b>Legend</b>	1 Ceiling seal ELS-D
2	Ceiling grouting
3	Installation shaft cladding e.g. 12.5 mm plasterboard
4	Main duct (spiral duct)
5	Connection duct (Aluflex)
6	Insulation against condensation
7	Central fan, e.g. Type DV EC (see page 80 ff.)
8	Cold smoke shutter KAK
9	Extract air element AE or disc valve (KTVa or MTVA)

**BLS**



**Fire protection ventilation tiles for the supply and extract ventilation of closed rooms and chambers to be protected against the spread of fire and smoke, such as e.g. installation shafts and cable ducts. They allow a constant, static air exchange which prevents heat accumulation in the closed chambers.**

The tiles can also be used as inflow openings in crucial corridor walls (emergency escape routes), unless the openings are in the lower wall area.

**■ Special features**

- Fire resistance class F30 to F120 according to DIN 4102 (see box on right).
- Maintenance-free and inspection-free, no moving parts.
- Simple installation.
- Moisture-resistant, largely resistant to oils, petrol and weak acids.
- Use in individual cases on the basis of a project-related type approval (vBG).

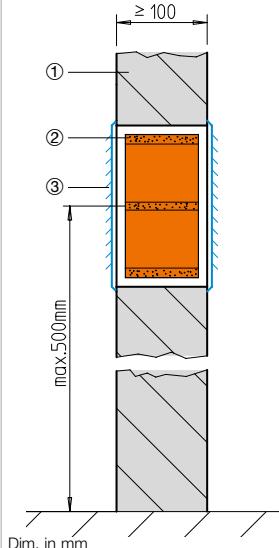
■ Installation does not affect the classification of the construction component. The ventilation tiles are made of organic intumescent material, which foams when exposed to heat, seals openings, slots and joints and thus prevents the passage of fire and smoke.

■ Each tile is delivered with two ventilation grilles made of galvanised steel sheet. After inserting the tile, the grilles are to be placed over it on one or both sides as mechanical protection and optical cladding, i.e. screwed to the building structure (wall).

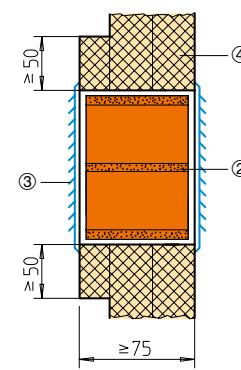
■ Rectangular fire protection ventilation tiles must be installed horizontally.

■ In case of walls of lower thickness, on-site doubling with fibre silicate frame in the BLS area.

**Installation in brickwork and concrete walls F30 – F120**



**Installation in classified partition wall and cable duct F30 and F90**



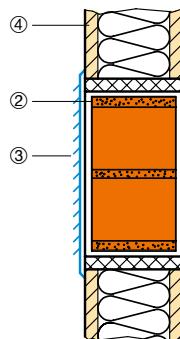
**Legend**

- ① Brickwork
- ② Ventilation tile
- ③ Ventilation grille, double-sided
- ④ Fibre silicate boards

Fire resistance class	Ventilation tile installation in	Thick. mm
F 30	Brickwork and concrete walls. Lightweight partition and shaft walls, classified cable ducts.	75
F 90 / F 120*	Brick and concrete walls. Lightweight partition, classified shaft walls and cable ducts.	75

\* Double-sided cover grille.

**Installation in classified partition wall and cable duct F30 – F120**



**Product range, dimensions in mm**

Ventilation module		Install. open.	Wgt.	Free ventilation	Cover grille				
Ref. no.	Type	Ø	D	max. i.L.	ca. kg	cross-sect. cm <sup>2</sup>	W	H	
02712	<b>BLS 100</b>	100	75	Ø 103	0.21	37	200	200	
02715	<b>BLS 125</b>	125	75	Ø 128	0.50	56	200	200	
02767	<b>BLS 150</b>	150	75	Ø 153	0.60	85	200	200	
02718	<b>BLS 160</b>	160	75	Ø 163	0.67	102	255	255	
02721	<b>BLS 200</b>	200	75	Ø 204	1.12	158	255	255	
		W	H	D			W	H	
02766	<b>BLS 100 / 100</b>	93	93	75	103 x 103	0.38	35	200	200
02724	<b>BLS 150 / 150</b>	150	150	75	153 x 153	0.80	115	255	255
02727	<b>BLS 200 / 100</b>	186	93	75	203 x 103	0.75	69	305	155
02730	<b>BLS 200 / 150</b>	200	150	75	203 x 153	1.15	153	305	200
02733	<b>BLS 300 / 150</b>	300	150	75	303 x 153	1.56	230	405	205

**■ Volume flows – Differential pressure**

