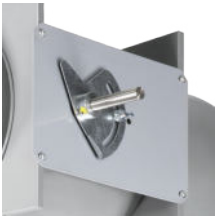




Variant with circular spigot



Variant for manual operation



Tested to VDI 6022

# Shut-off dampers

## AKK



### For contaminated air

Plastic circular shut-off dampers for shutting off aggressive media volume flows in air conditioning systems

- Maintenance-free damper blade mechanism
- Closed blade air leakage to EN 1751, class 3
- Casing air leakage to EN 1751, class B

Optional equipment and accessories

- Electric actuator
- Spring return actuator
- Pneumatic actuator
- Auxiliary switch with adjustable switching points for capturing the end positions

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## General information

### Application

- Plastic circular shut-off dampers Type AKK for shutting off or restricting the airflow in ventilation ducts of air conditioning systems
- Suitable for contaminated air

### Special features

- Damper blade can be actuated manually, electrically or pneumatically
- Low-leakage shut-off
- Safety function provided by optional spring return actuator

### Nominal sizes

- 125, 160, 200, 250, 315, 400

### Variants

- AKK: Shut-off damper
- AKK-FL: Shut-off damper with flanges on both ends

### Parts and characteristics

- Ready-to-install shut-off damper
- Damper blade with blade mechanism

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- Ready-to-install shut-off damper
- Damper blade with blade mechanism

### Attachments

- Open/Close actuators: For the opening and closing of shut-off dampers in air conditioning systems
- Auxiliary switch for capturing the end positions

### Accessories

- Matching flanges for both ends, including seals

### Technical data

- Nominal sizes: 125 – 400 mm
- Acceptable static differential pressure: 1500 Pa

### Standards and guidelines

- Meets the hygiene requirements of VDI 6022
- Closed blade air leakage to EN 1751, class 3
- Meets the general requirements of DIN 1946, part 4, with regard to the acceptable closed blade air leakage
- Casing air leakage to EN 1751, class B

### Maintenance

- Maintenance-free, as construction and materials are not subject to wear and tear

## Function

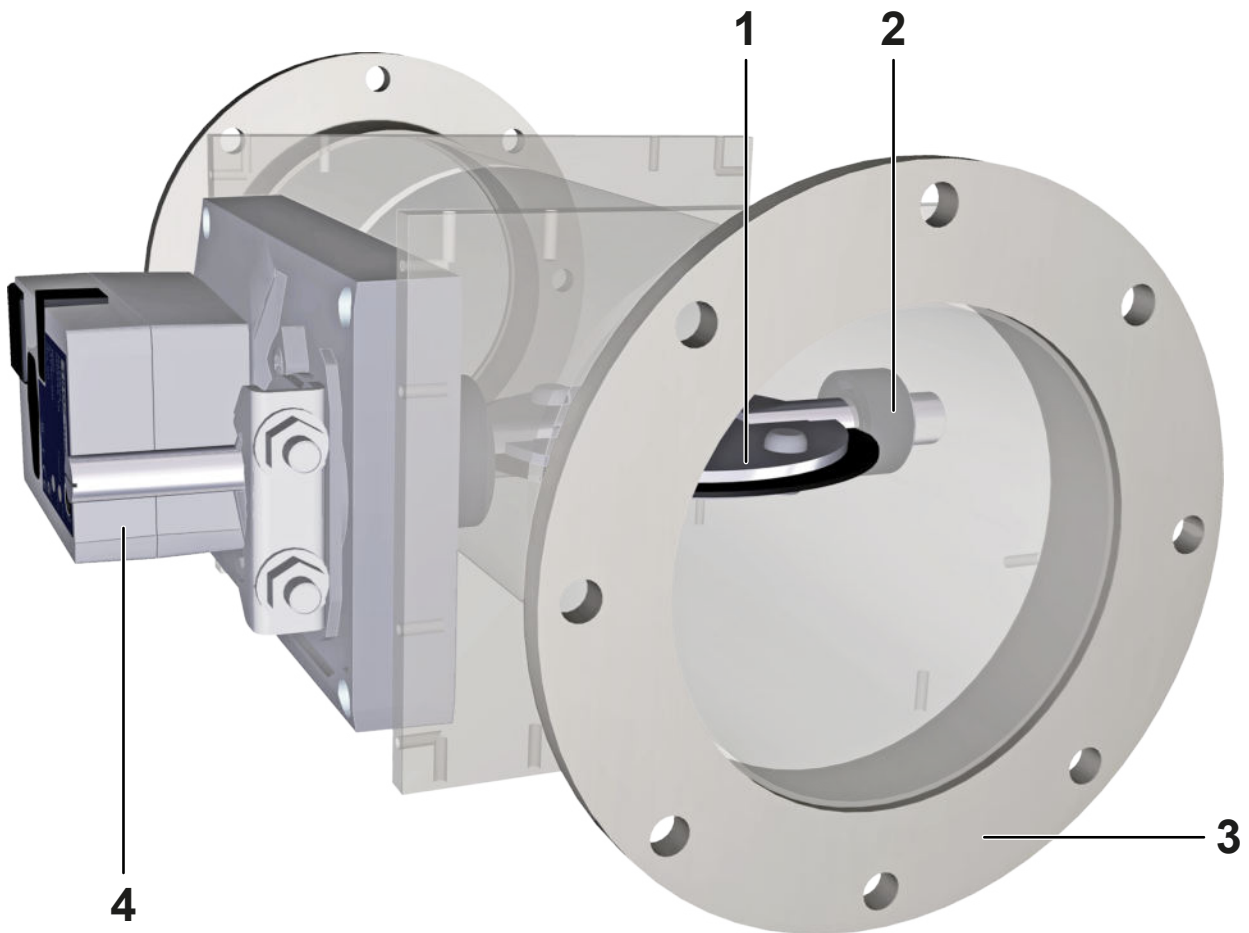
### Functional description

For airtight shut-off of volume flows in round plastic air ducts - typically for contaminated extract air in laboratories. The basic version is shut off by manually actuating the damper blade. Electrically or pneumatically operated actuators, which are available in different versions, can also be used to operate the

damper blade. The versions differ with regard to the power supply and safety position (de-energised or de-pressurised state). Actuators with auxiliary switches for electrical monitoring of the damper blade position are also available.

The actuator of a damper blade must be controlled by a customer-side circuit and then moves the damper blade to the OPEN or CLOSED position.

### AKK: schematic diagram (version with flange)



- 1 Damper blade
- 2 Plain bearings
- 3 Flange (optional)
- 4 Actuator (optional)

## Technical data

Nominal sizes	125 – 400 mm
Acceptable static differential pressure	1500 Pa
Operating temperature	10 – 50 °C
Nominal sizes	125 – 400 mm
Permissible static differential pressure	1500 Pa
Operating temperature	10 – 50 °C

## Quick sizing

Quick sizing tables provide a good overview of the room sound pressure levels that can be expected. Approximate intermediate values can be interpolated. Precise intermediate values and spectral data can be calculated with our Easy Product Finder design program.

### Quick sizing: Static differential pressure and sound pressure levels with open damper blade

NS	$q_v$ [l/s]	$q_v$ [m <sup>3</sup> /h]	Differential pressure	Air-regenerated noise
			$\Delta p_{st}$ [Pa]	$L_{PA}$ [dB(A)]
125	15	54	5	<15
	60	216	10	24
	105	378	25	36
	150	540	50	45
160	25	90	5	<15
	100	360	10	22
	175	630	20	33
	250	900	45	41
200	40	144	5	<15
	160	576	10	21
	280	1008	20	31
	405	1458	40	39
250	60	216	<5	<15
	250	900	5	19
	430	1548	15	29
	615	2214	30	38
315	100	360	<5	<15
	410	1476	5	21
	720	2592	15	34
	1030	3708	25	43
400	170	612	<5	<15
	670	2412	5	34
	1175	4230	10	50
	1680	6048	15	61

## Specification text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Circular shut-off dampers in PPs plastic for air conditioning systems, available in 6 nominal sizes. Suitable for shutting off or restricting extract air flows containing aggressive substances since all components coming into contact with the airflow are made of plastic (no interior metal parts).

Suitable for duct pressures up to 1500 Pa.

Ready-to-install unit consists of the casing with a damper blade.

Spigot, suitable for ducts according to DIN 8077.

Position of the damper blade indicated externally at the shaft extension.

Closed blade air leakage to EN 1751, class 3.

Casing air leakage to EN 1751, class B.

### Special features

- Damper blade can be actuated manually, electrically or pneumatically

- Low-leakage shut-off
- Safety function provided by optional spring return actuator

### Materials and surfaces

- Casing and damper blade made of flame-resistant polypropylene (PPs)
- Plain bearings made of polypropylene (PP)
- Damper blade seals in chloroprene rubber (CR)

### Technical data

- Nominal sizes: 125 to 400 mm
- Permissible static differential pressure: 1500 Pa

### Sizing data

- $q_v$  [m<sup>3</sup>/h]

Air-regenerated noise

- $L_{PA}$  [dB(A)]

## Order code

**AKK – FL / 160 / GK / BP0 / NO**

1	2	3	4	5	6

**1 Type**
**AKK** Shut-off damper, plastic

**2 Flange**

No entry: none

**FL** Flanges on both ends

**3 Nominal size [mm]**
**125, 160, 200, 250, 315, 400**
**4 Accessories**

No entry: without accessories

**GK** Matching flanges both ends

**5 Actuator**

No entry: Shut-off damper, manually adjustable

Open/Close actuators

**B30** 24 V AC/DC, 3-point

**B32** 24 V AC/DC, 3-point, with auxiliary switch

**B40** 230 V AC, 3-point

**B42** 230 V AC, 3-point, with auxiliary switch

Open/Close actuators with safe position

**BP0** 24 V AC/DC, spring return

**BP2** 24 V AC/DC, spring return, with auxiliary switch

**BR0** 24 - 240 V AC, 24 - 125 V DC, spring return

**BR2** 24 - 240 V AC, 24 - 125 V DC, spring return, with auxiliary

switch

Modulating actuators

**B20** 24 V AC/DC, modulating, 2 – 10 V DC

**B22** 24 V AC/DC, modulating, 2 – 10 V DC, with auxiliary switch

Pneumatic actuator with safe position

**TN0** Pneumatic actuator 0.2 – 1 bar

**6 Damper blade position**

Only with spring return actuator or pneumatic actuator

**NO** pressure off/power off to OPEN (Normally Open)

**NC** pressure off/pressure off to CLOSE (Normally Closed)

**Order example: AKK-FL/160/GK/BP0/NO**

<b>Type</b>	AKK
<b>Flange</b>	Flanges on both ends
<b>Nominal size [mm]</b>	160
<b>Accessories</b>	Matching flanges both ends
<b>Actuator</b>	24 V AC/DC, spring return actuator
<b>Nominal size</b>	pressure off/power off to OPEN (Normally Open)

## Variants

Plastic shut-off damper with spigot (AKK)



AKK shut-off damper, variant with actuator



Variant without actuator, manual operation

## Attachments

### AKK, electric actuators

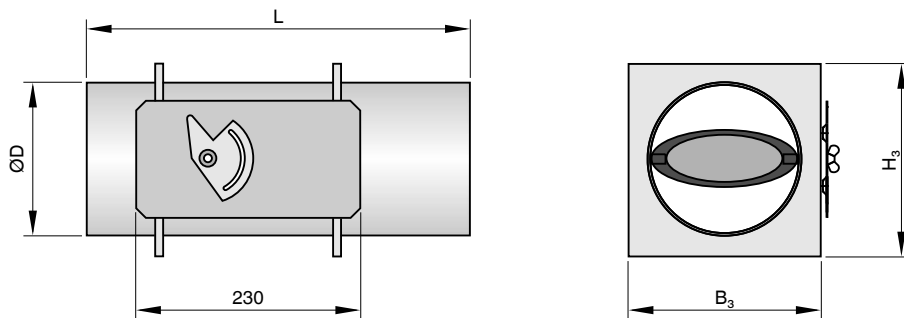
Order code detail	Actuator	Supply voltage	Auxiliary switch
Open/Close actuators			
B30	Actuator with mechanical stops TROX/Belimo	24 V AC/DC	-
B32			2
B40			-
B42			2
BP0	Spring return actuator with mechanical stops TROX/Belimo	24 V AC/DC	-
BP2			2
BR0			-
BR2			2
Modulating actuators			
B20	continuous actuator 0 - 10 V with mechanical stops	24 V AC/DC	-
B22	TROX/Belimo		2

### AKK, pneumatic actuators

Order code detail	Actuator	Control pressure	Auxiliary switch
TN0	Pneumatic actuator TROX	0.2 – 1.0 bar	-

## Dimensions and weights

### Plastic shut-off damper with spigot (AKK)

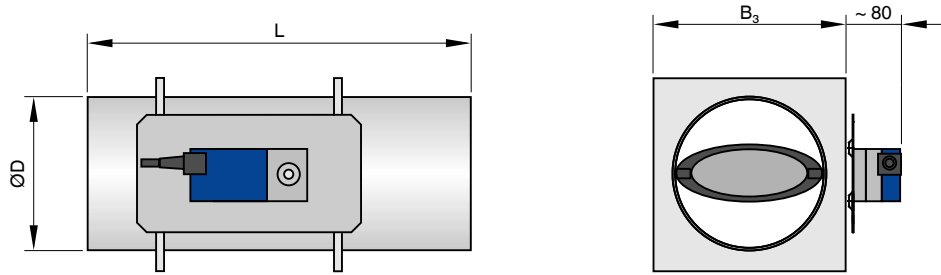


### AKK

NS	ØD	L	B <sub>3</sub>	H <sub>3</sub>	m [kg]
125	125	394	195	145	1.2
160	160	394	230	180	1.5
200	200	394	270	220	1.9
250	250	594	320	270	3.1
315	315	594	385	335	5
400	400	594	470	420	7.2



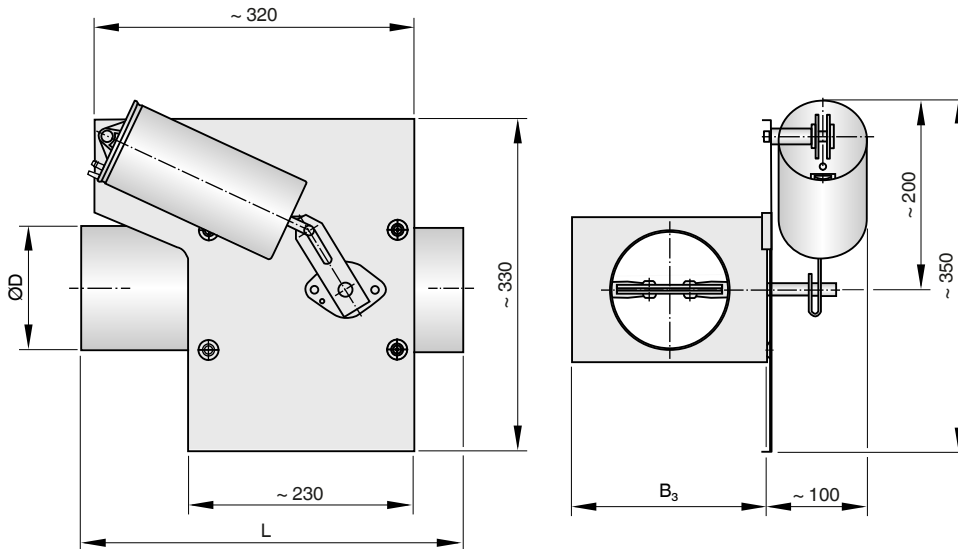
**Plastic shut-off damper with spigot - electric actuator  
(AKK / ... / B\*\*)**



**AKK/.../B\*\***

NS	ØD	L	B <sub>3</sub>	H <sub>3</sub>	m [kg]
125	125	394	195	145	3.1
160	160	394	230	180	3.4
200	200	394	270	220	3.8
250	250	594	320	270	5
315	315	594	385	335	6.9
400	400	594	470	420	9.1

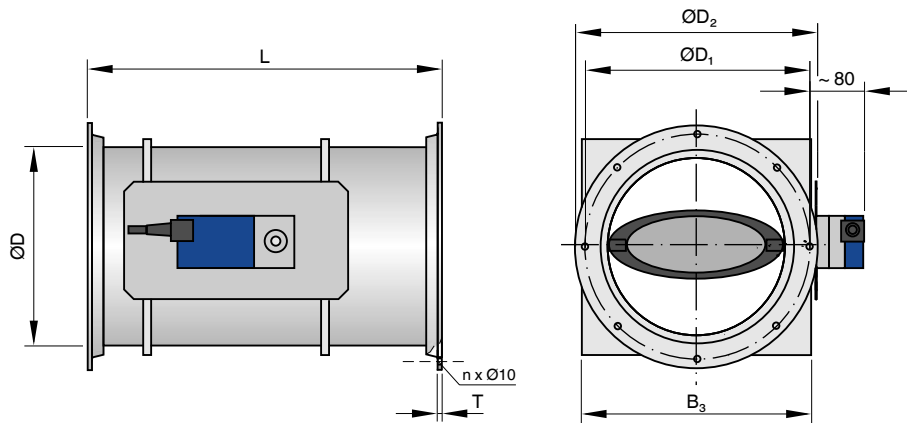
**Plastic shut-off damper with spigot - pneumatic actuator  
(AKK / ... / TN0)**



**AKK/.../TN0**

NS	ØD	L	B <sub>3</sub>	H <sub>3</sub>	m [kg]
125	125	394	195	145	2.9
160	160	394	230	180	3.2
200	200	394	270	220	3.6
250	250	594	320	270	4.8
315	315	594	385	335	6.7
400	400	594	470	420	8.9

Plastic shut-off damper with flange (AKK-FL)



AKK-FL

NS	AKK-FL	AKKFL/... /B**	AKKFL/... /TN0	ØD	L	B <sub>3</sub>	H <sub>3</sub>	ØD <sub>1</sub>	ØD <sub>2</sub>	n	T
		m [kg]									
125	1.5	3.4	3.2	125	400	195	145	165	185	8	8
160	1.9	3.8	3.6	160	400	230	180	200	230	8	8
200	2.4	4.3	4.1	200	400	270	220	240	270	8	8
250	3.7	5.6	5.4	250	600	320	270	290	320	12	8
315	6	7.9	7.7	315	600	385	335	350	395	12	10
400	8.5	10.4	10.2	400	600	470	420	445	475	16	10

**Product details**

**Installation and commissioning**

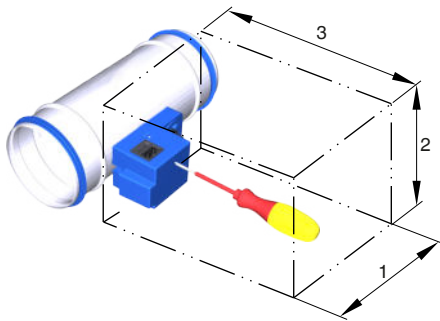
- Any installation orientation

**Space required for commissioning and maintenance**

In order to complete the work for commissioning and maintenance, sufficient installation space in the area of the attachments needs to be provided.

If necessary, inspection openings in sufficient sizes are required so that the attachments are easily accessible.

**Access to attachments**



Schematic illustration of required installation space

**Space required**

Attachments	1	2	3
Without actuator	250	150	200
With electric actuator	300	200	300
With pneumatic actuator	400	350	300

## Explanation

**ØD** [mm]

Shut-off and butterfly valves made of sheet steel:

- Outer diameter of the spigot

Shut-off damper made of plastic:

- Inner diameter of the connecting spigot

**ØD<sub>1</sub>** [mm]

Pitch circle diameter of flanges

**ØD<sub>2</sub>** [mm]

Outer diameter of flanges

**ØD<sub>4</sub>** [mm]

Inside diameter of the screw holes of flanges

**L** [mm]

Length of unit including connecting spigot

**L<sub>1</sub>** [mm]

Length of casing or acoustic cladding

**n** [ ]

Number of flange screw holes

**T** [mm]

Flange thickness

**m** [kg]

Unit weight including the minimum required attachments

**L<sub>PA</sub>** [dB(A)]

A-weighted sound pressure level of air-regenerated noise of the shut-off or flow adjustment damper, system attenuation taken into account

All sound pressure levels are based on 20 µPa.

**q<sub>v</sub>** [m<sup>3</sup>/h]; [l/s]

Volume flow rate

**Δp<sub>st</sub>** [Pa]

Static differential pressure

**Lengths** [mm]; [in]

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