

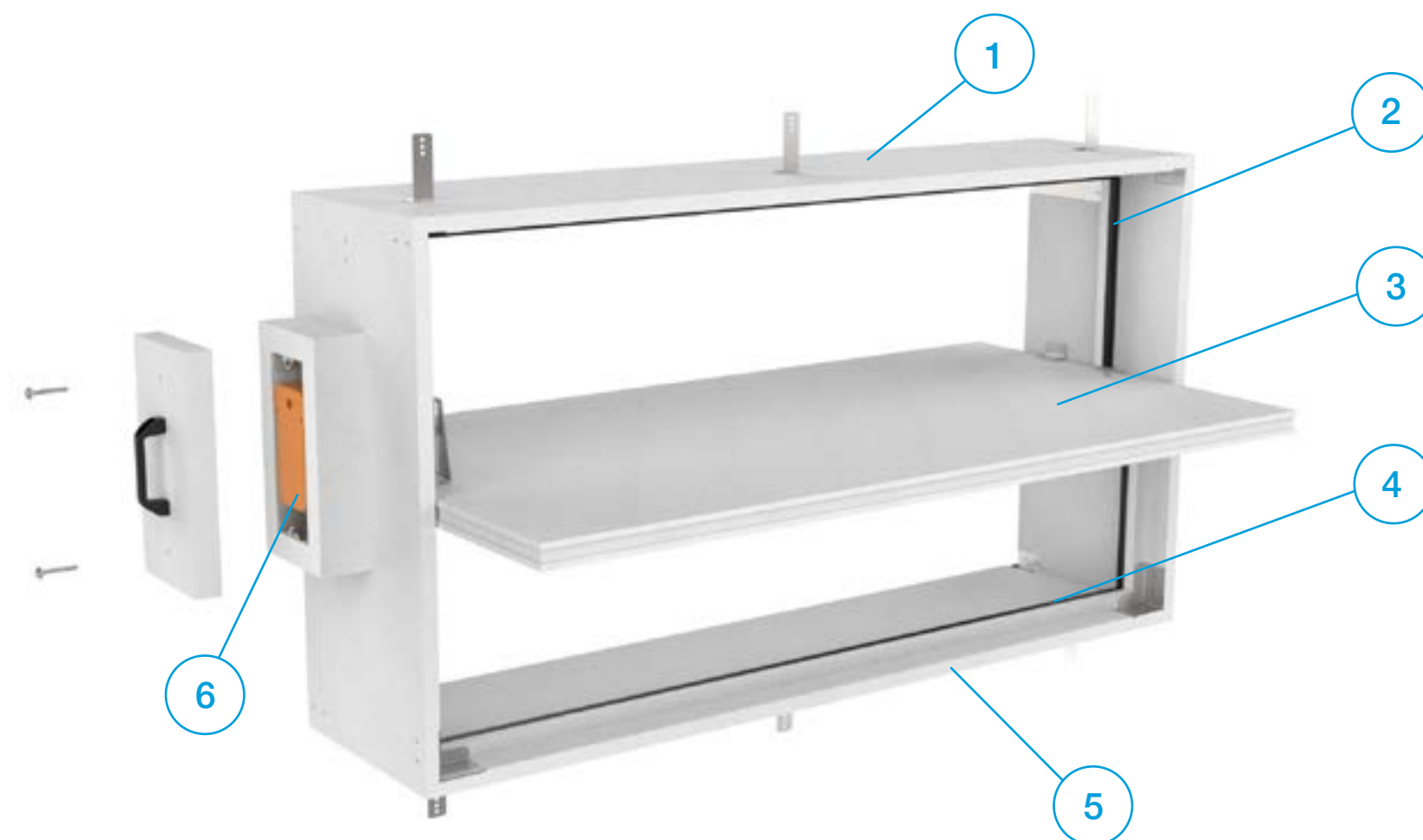


Product manual

Smoke control damper

Fire protection

Version 1.1.0
Issue Date: 28.10.2025.



1. Galvanized steel sheet casing
2. Smoke seal
3. Smoke resistant damper blade
4. Intumescent joint
5. Connection flanges
6. Actuator

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SMOKE CONTROL DAMPERS

PRODUCT OVERVIEW

Smoke control dampers SBSB are used in smoke extraction systems for extraction of smoke gases or providing supply air to one or more fire compartments. Smoke control dampers consist of calcium silicate case, calcium silicate damper blade, damper blade mechanism outside of the airflow and an electric actuator. Smoke control damper case is made out of calcium silicate casing. Calcium silicate blade is equipped with brass bearings and seals made out of silicone and graphite gasket. Smoke control dampers SBSB are produced in sizes from 200x400 till 1500x800 mm.

SBSB dampers are equipped with Belimo actuator drives in 24 V or 230 V versions.

Activation of smoke control dampers equipped with electric drives can be via smoke detector or remotely via control

signal. Rearming of the electric smoke damper can also be done remotely via control signal. All electric actuators are equipped with end switches for position signalling.

In the case of fire, there are two possible safe positions for the smoke control damper, open or closed, depending on the situation on site and smoke extraction scenario.

Smoke control dampers are designed for installation in standard rigid supporting construction at least 100 mm thick, with bulk density of at least 450 kg/m³, in flexible walls with plasterboard panels type F (EN520), with wall filling with mineral wool with a density of up to 115 kg/m³ (wall thickness at least 100 mm), and for installation in ducts that have been tested to EN1366-9 and EN1366-8.

All smoke control dampers are tested according to the EN 1751 for airtightness, class C on the casing air leakage.



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FIRE RESISTANCE CLASSIFICATION

SBSD smoke control damper is tested according to EN 1366-10 "Fire resistance tests for service installations - Smoke control dampers". Classification of the SBSD smoke control dampers is defined according to EN 13501-4 "Fire classification of construction products and building elements using data from fire resistance tests". Classification of SBSD smoke control damper is: **EI 60/90/120 (vedw i↔o) S1000/1500 Cmod AA multi**. Smoke damper should be installed according installation manual which can be found within this document.

Please consult latest Declaration of Performance on our website:



www.klimaoprema.com/SBSD/dop

For more information about certificates, visit our website:

www.klimaoprema.com/SBSD

E - Integrity
I - Insulation
60/90/120 - Classification time in minutes
ve - Damper installed in vertical position
ho - Damper installed in horizontal position
i↔o - Fire performance criteria are met on both sides
S - Smoke leakage
Cmod - 20 000 Cycles
AA - automatic intervention
MULTI- usage in compartments classified as "multi", can be used also in compartments classified as "single"





TECHNICAL DATA

Smoke control damper casing is manufactured from the galvanized steel sheet and damper blade is made of calcium silicate.



PRODUCT OVERVIEW



1

SERIAL NUMBER
29560500100001

2

3

PRODUCTION DATE
10.05.2024

4

5

4

TYPE:
FDSD – 500X300 – M230

6

7

5

DIMENSION:
500x300x350

8

9

6

ACT. MECHANISM:
M230

10

11

7

NOMINAL VOLTAGE:
AC 230

12

13

8

SIGNALISATION
Yes

14

15

16

CE
21
1396-CPR-0198

17

18

11

EN 12101 – 8:2011

19

20

12

CLASS C EN1751

21

22

13

Multicompartment

23

24

14

Smoke control damper
DoP No. 1716/07-2023

25

26

15

EI/60/90/120 (Vedw i ↔ o) S1000/1500 Cmod AA multi

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16

PRODUCT MUST BE INSTALLED BY INSTRUCTIONS SUPPLIED BY MANUFACTURER

29

30

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Barcode
29560500100001

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Product specifications

Nominal sizes SBS	200x200 - 1200x800 [mm]
Casing length	350 mm
Temperature range	-20 °C ... 50 °C
Volume flow rate range	up to 49.260 m³/h
Differential pressure ranges	up to 2.000 Pa
Casing air leakage	Class C, EN 1751
Upstream velocity	< 12 m/s
EC conformity	EN13501-4, EN1366-10, EN12101-8, EN1751, CPR no.3/2011
Declaration of performance	DoP No. 1716/2020_EN

Ordering key

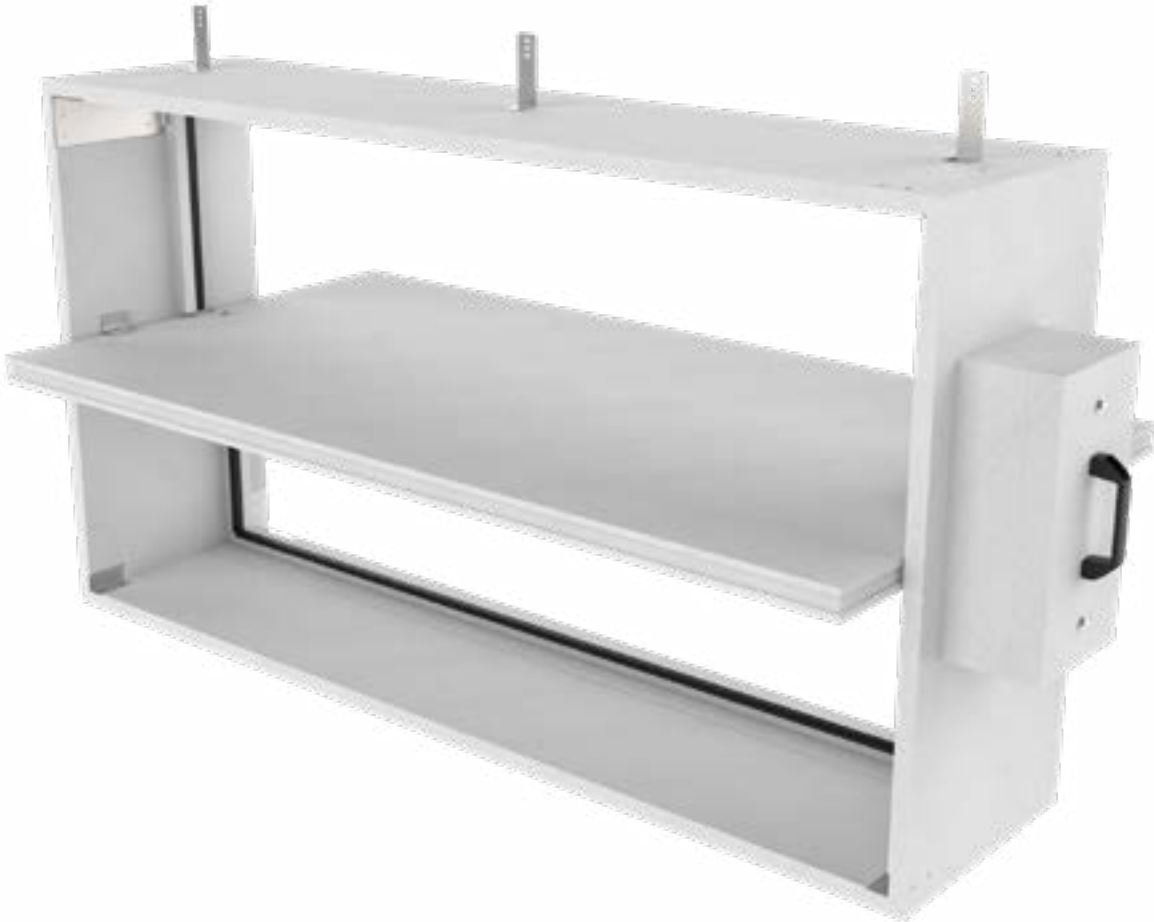
(1) Damper type	(2) Dimension	(3) Mechanism type
SBS	400x300	M230-S
(1) SBS		(3) M24-S M230-S M24-S-ST M24-SR
(2) Damper dimensions B(W) x H [mm]		- electric actuator AC/DC 24 V - electric actuator AC/DC 230 V - electric actuator AC/DC 24 V (with plug) - electric actuator AC/DC 24 V (modulating)

Rating plate

- 1 - Company logo
- 2 - Serial number
- 3 - Production date
- 4 - Type
- 5 - Dimension of the smoke control damper
- 6 - Mechanism type
- 7 - Nominal voltage
- 8 - Signalisation (end contacts)
- 9 - IP protection
- 10 - Free space
- 11 - Number of the European standard and year of its publication
- 12 - Classification according to EN 1751
- 13 - Classification according to EN 13501-4
- 14 - Barcode
- 15 - CE conformity marking symbol
- 16 - Identification number of the notified product certification body

SMOKE CONTROL DAMPERS

SBSD

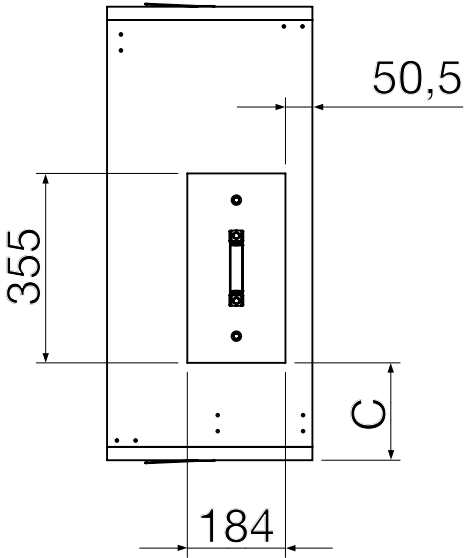
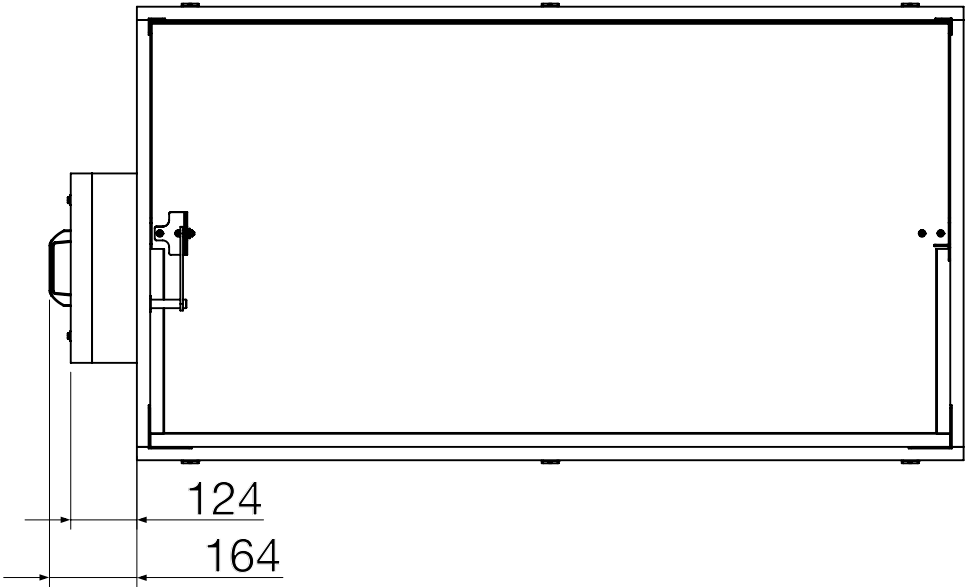


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DIMENSIONS

SMOKE CONTROL DAMPERS

Actuator	A [mm]	E [mm]	X [mm]
BEN (M)	259	449	83
BEE (M)	270	480	87

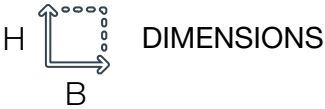


Length of damper blade outside of casing:
 $X=(H/2)-175$ [mm]

SBSD Weight [kg]																					
H/B	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
200	6,8	7,5	8,2	8,9	9,7	10,4	11,1	11,8	12,6	14,0	14,7	15,5	16,2	16,2	16,9	17,6	18,3	19,1	19,8	20,5	21,3
250	7,5	8,3	9,1	9,9	10,7	11,6	12,4	13,2	14,0	15,6	16,5	17,3	18,1	18,2	19,0	19,8	20,7	21,5	22,3	23,2	24,0
300	8,2	9,1	10,0	10,9	11,8	12,7	13,6	14,5	15,4	17,3	18,2	19,1	20,0	20,2	21,1	22,1	23,0	23,9	24,9	25,8	27,5
350	8,9	9,9	10,9	11,9	12,9	13,9	14,9	15,9	16,9	18,9	19,9	20,9	22,0	22,2	23,3	24,3	25,3	26,4	27,4	28,4	30,2
400	9,7	10,7	11,8	12,9	14,0	15,1	16,2	17,3	18,3	20,5	21,6	22,8	23,9	25,0	26,2	27,3	28,4	29,5	30,7	31,8	32,9
450	10,4	11,6	12,7	13,9	15,1	16,3	17,4	18,6	19,8	22,1	23,4	24,6	25,8	27,1	28,3	29,5	30,7	32,0	33,2	34,4	35,7
500	11,1	12,4	13,6	14,9	16,2	17,4	18,7	20,0	21,2	23,8	25,1	26,4	27,8	29,1	30,4	31,7	33,1	34,4	35,7	37,1	38,4
550	11,8	13,2	14,5	15,9	17,3	18,6	20,0	21,3	22,7	25,4	26,8	28,3	29,7	31,1	32,5	34,0	35,4	36,8	38,3	39,7	41,1
600	12,6	14,0	15,4	16,9	18,3	19,8	21,2	22,7	24,1	27,0	28,6	30,1	31,6	33,1	34,7	36,2	37,7	39,3	40,8	42,3	43,8
650		15,6	17,3	18,9	20,5	22,1	23,8	25,4	27,0	28,7	30,3	31,9	33,5	35,2	36,8	38,4	40,1	41,7	43,3	45,1	46,7
700			18,2	19,9	21,6	23,4	25,1	26,8	28,6	30,3	32,0	33,7	35,5	37,2	38,9	40,7	42,4	44,2	46,0	47,7	49,4
750				20,9	22,8	24,6	26,4	28,3	30,1	31,9	33,7	35,6	37,4	39,2	41,1	42,9	44,8	46,7	48,5	50,3	52,1
800					23,9	25,8	27,8	29,7	31,6	33,5	35,5	37,4	39,3	41,3	43,2	45,2	47,2	49,1	51,0	52,9	54,9

BEN-24/230

BEE-24/230



SMOKE CONTROL DAMPERS

SBSD Aef [m²]																											
H/B	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
400	0,072	0,090	0,108	0,126	0,144	0,162	0,180	0,198	0,216	0,234	0,252	0,270	0,288	0,306	0,324	0,342	0,360	0,378	0,396	0,414	0,432	0,450	0,468	0,486	0,504	0,522	0,540
450	0,082	0,103	0,123	0,144	0,164	0,185	0,205	0,226	0,246	0,267	0,287	0,308	0,328	0,349	0,369	0,390	0,410	0,431	0,451	0,472	0,492	0,513	0,533	0,554	0,574	0,595	0,615
500	0,092	0,115	0,138	0,161	0,184	0,207	0,230	0,253	0,276	0,299	0,322	0,345	0,368	0,391	0,414	0,437	0,460	0,483	0,506	0,529	0,552	0,575	0,598	0,621	0,644	0,667	0,690
550	0,102	0,128	0,153	0,179	0,204	0,230	0,255	0,281	0,306	0,332	0,357	0,383	0,408	0,434	0,459	0,485	0,510	0,536	0,561	0,587	0,612	0,638	0,663	0,689	0,714	0,740	0,765
600	0,112	0,140	0,168	0,196	0,224	0,252	0,280	0,308	0,336	0,364	0,392	0,420	0,448	0,476	0,504	0,532	0,560	0,588	0,616	0,644	0,672	0,700	0,728	0,756	0,784	0,812	0,840
650	0,122	0,153	0,183	0,214	0,244	0,275	0,305	0,336	0,366	0,397	0,427	0,458	0,488	0,519	0,549	0,580	0,610	0,641	0,671	0,702	0,732	0,763	0,793	0,824	0,854	0,885	0,915
700	0,132	0,165	0,198	0,231	0,264	0,297	0,330	0,363	0,396	0,429	0,462	0,495	0,528	0,561	0,594	0,627	0,660	0,693	0,726	0,759	0,792	0,825	0,858	0,891	0,924	0,957	0,990
750	0,142	0,178	0,213	0,249	0,284	0,320	0,355	0,391	0,426	0,462	0,497	0,533	0,568	0,604	0,639	0,675	0,710	0,746	0,781	0,817	0,852	0,888	0,923	0,959	0,994	1,030	1,065
800	0,152	0,190	0,228	0,266	0,304	0,342	0,380	0,418	0,456	0,494	0,532	0,570	0,608	0,646	0,684	0,722	0,760	0,798	0,836	0,874	0,912	0,950	0,988	1,026	1,064	1,102	1,140



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- REPLACEMENTS
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SMOKE CONTROL DAMPERS

INSTALLATION

The SBSD smoke control damper has been tested according to EN1366-10 in solid walls, flexible plasterboard walls and ducts tested according to EN1366-8.

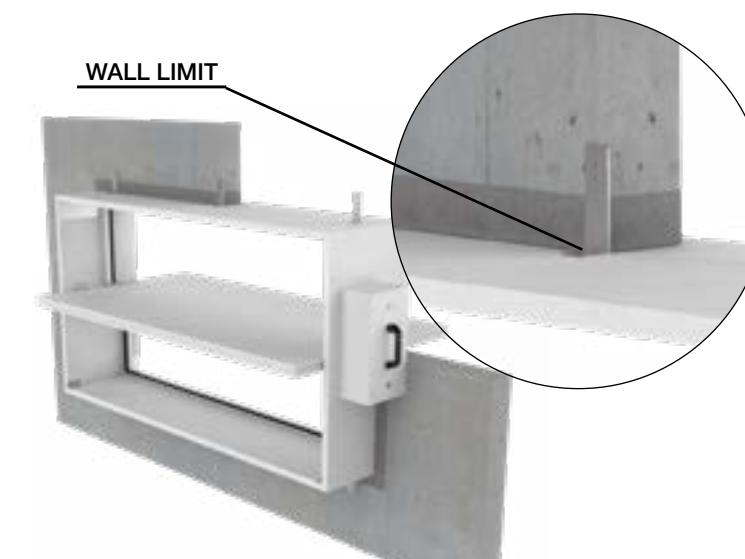
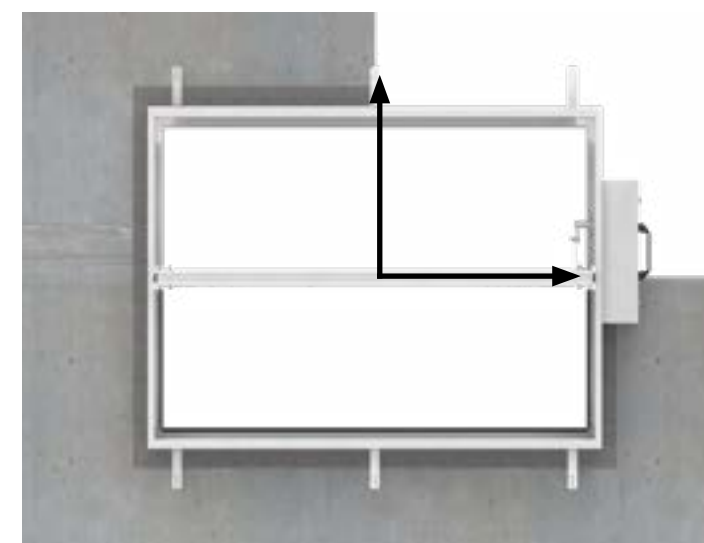
The duct connected to the smoke control damper must be supported or hung in such a way that the damper does not carry its weight. The damper must not support any part of the surrounding construction or wall which could cause damage and consequent damper failure. The damper driving mechanism can be placed on either side of the wall, however it needs to be placed so as to ensure easy access during inspection.

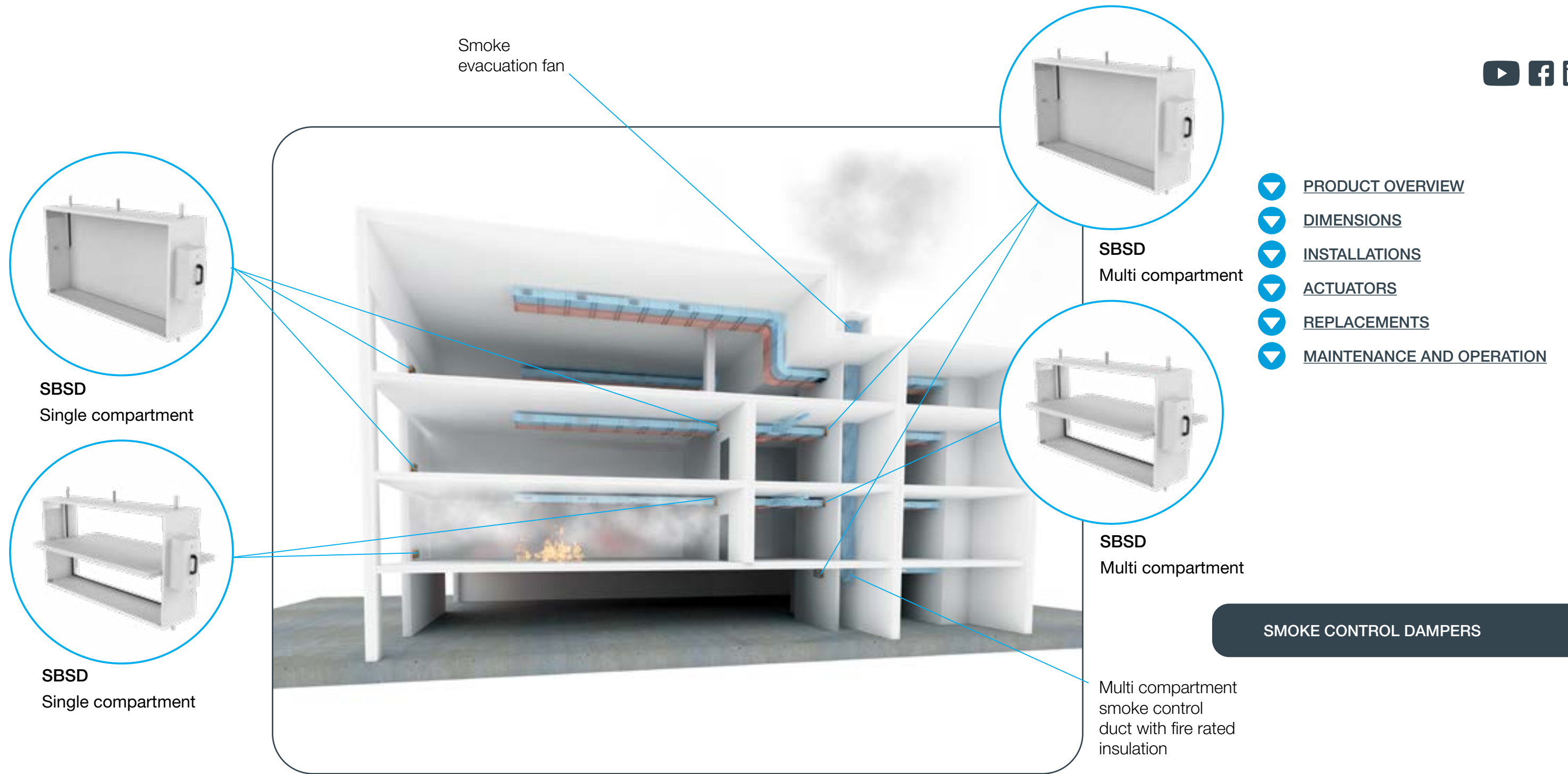
The smoke control damper must be installed into a fire partition structure in such a way that the damper blade in its closed position is located inside this structure.

- The installation must comply with the tests that were performed during certification
- Avoid any obstruction of the moving blade by the connected ducts
- The class of air-tightness is maintained in case the installation of the damper is made in accordance with the technical manual
- For indoor use only
- If the damper is installed in a wall of a lower fire resistance class, the damper itself will have a lower fire resistance class
- Multi compartment smoke control dampers tested on the surface of the duct may also be used in line with single or multi compartment smoke control duct (i.e. between duct sections), providing that the smoke control damper is independently provided with a duct support (support, drop rod, anchor etc. - as tested for the smoke control duct) with 100 mm of the center of the smoke control damper blade axis. The damper should not support the duct or vice versa.

All dampers have to be installed with the blade axis in a horizontal position. To help you find the suspension plane, a bendable fixing bracket is provided on the damper casing and the red tape is placed on the casing to mark the location of the wall limit

Check the operation of the smoke control damper before commencing the installation!





Multi-compartment smoke control dampers may be used with alternative duct systems meeting EN 1366-9 and EN 1366-8, provided they are made of the same material as tested, meet or exceed the tested material density and thickness, maintain consistent materials for surface protection and adhere to tested paint finishes.

Multi compartment smoke control dampers

EN 12101-8: Smoke control dampers, which are fire resisting, for use in multi compartment areas, which may be associated with multi or single compartment smoke control ductwork and/or may be installed in a fire compartment structure.

Single compartment smoke control dampers

EN 12101-9: Smoke control dampers for use in single compartment areas, which may be associated with single compartment smoke control ductwork and/or may be installed in an external wall or roof.

Range	Installation	Supporting construction	Type of installation	Wall thickness	Supporting construction details	Classification	Max. underpressure	Max. overpressure	Details
SBSD	Installation in wall	Rigid wall	Gypsum plaster	≥ 100 mm	Aerated concrete, Reinforced concrete, Gypsum blocks etc (≥ 450 kg/m³)	EI 60 (vew i↔o) S1500 C10000 AA multi EI 60 (vew i↔o) S1500 HOT400/30 AA multi	1500 Pa	500 Pa	
		Flexible wall with type F gypsum plasterboards		≥100m	Two layers of 12.5 GKF gypsum plasterboards on each side, 50mm mineral wool up to 115 kg/m³	EI 60 (vew, i↔o) S1500 C10000 AA multi	1500 Pa	500 Pa	
	Vertical on duct		Duct tested on EN 1366-8 or EN 1366-9, Promat Promatect L500		Installation in duct-own design, boards and glue	EI 120 (ved i↔o) S1500 C10000 AA multi EI 120 (ved i↔o) S1500 HOT400/30 AA multi	1500 Pa	500 Pa	



INSTALLATION



Check for more information about certificate installations in the declaration of performance:



www.klimaoprema.com/SBSD/dop



Aerated concrete (≥ 450 kg/m³) or reinforced concrete (≥ 2200 kg/m³) wall, more than 100 mm thick



Plasterboard wall, type F (EN520), more than 100 mm thick

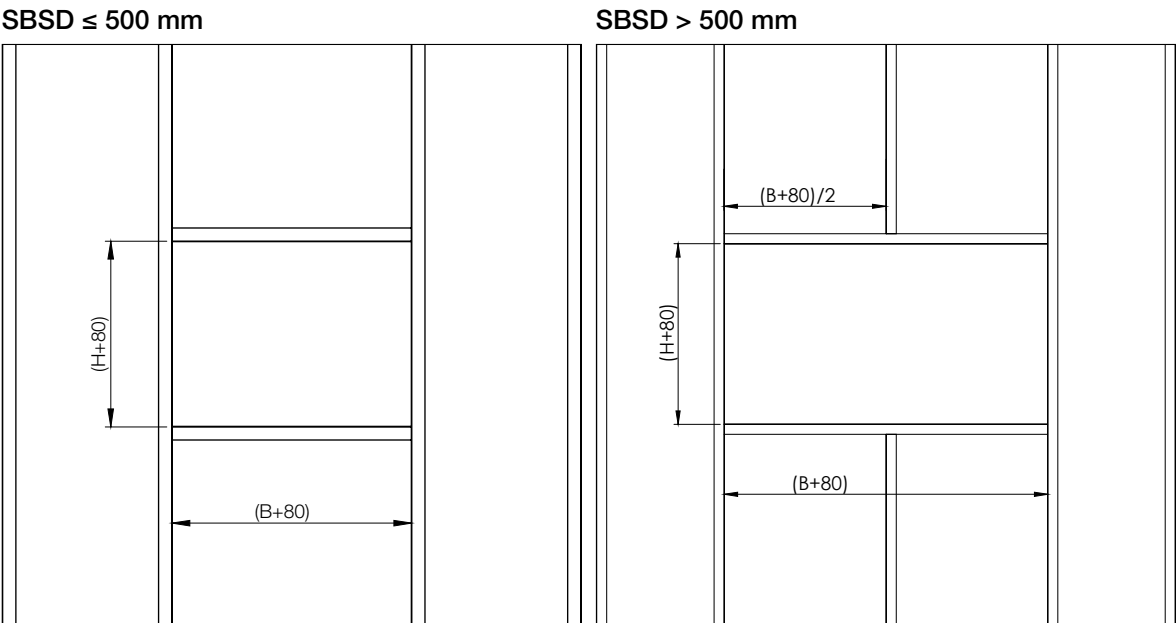


Gypsum plaster sealing

SMOKE CONTROL DAMPERS

Flexible wall subframe

When installing the smoke control dampers in the flexible walls it is necessary to make a metal subframe onto which the damper will be fixed with screws. Subframe should be prepared according to the drawings below.



Accessories

Accessories are not intended for connection to a duct!

1 Safety grill - safety grille and extension piece are assembled at the factory to form a unit and exclusively on the operation side of the damper. The free cross sectional area of the cover grille is approx. 70%.

2 Extension piece on operation side - length 350 mm.

3 Communication module bracket



Ordering key

(1) Type	(2) Accessories	(3) Dimension
SBSD-A	- SG1	- 800x600
(1) FD-A -accessories for SBSD		
(2) SG1 - Safety grill on operation side EXT1 - Extension piece on operation side		
(3) BxH nominal size of the rectangular damper		

Rigid wall installation (gypsum plaster sealing)

Rigid wall (aerated concrete, reinforced concrete, gypsum blocks, etc.) with minimum density of 450 kg/m³ and minimum thickness of 100 mm.
Installation material: gypsum plaster.



INSTALLATION

1. Recommended wall opening for the damper installation is B (H) + 80 mm. Insert damper into wall to the wall limit mark on the damper and bend the fixing bracket **(1)** 90°.

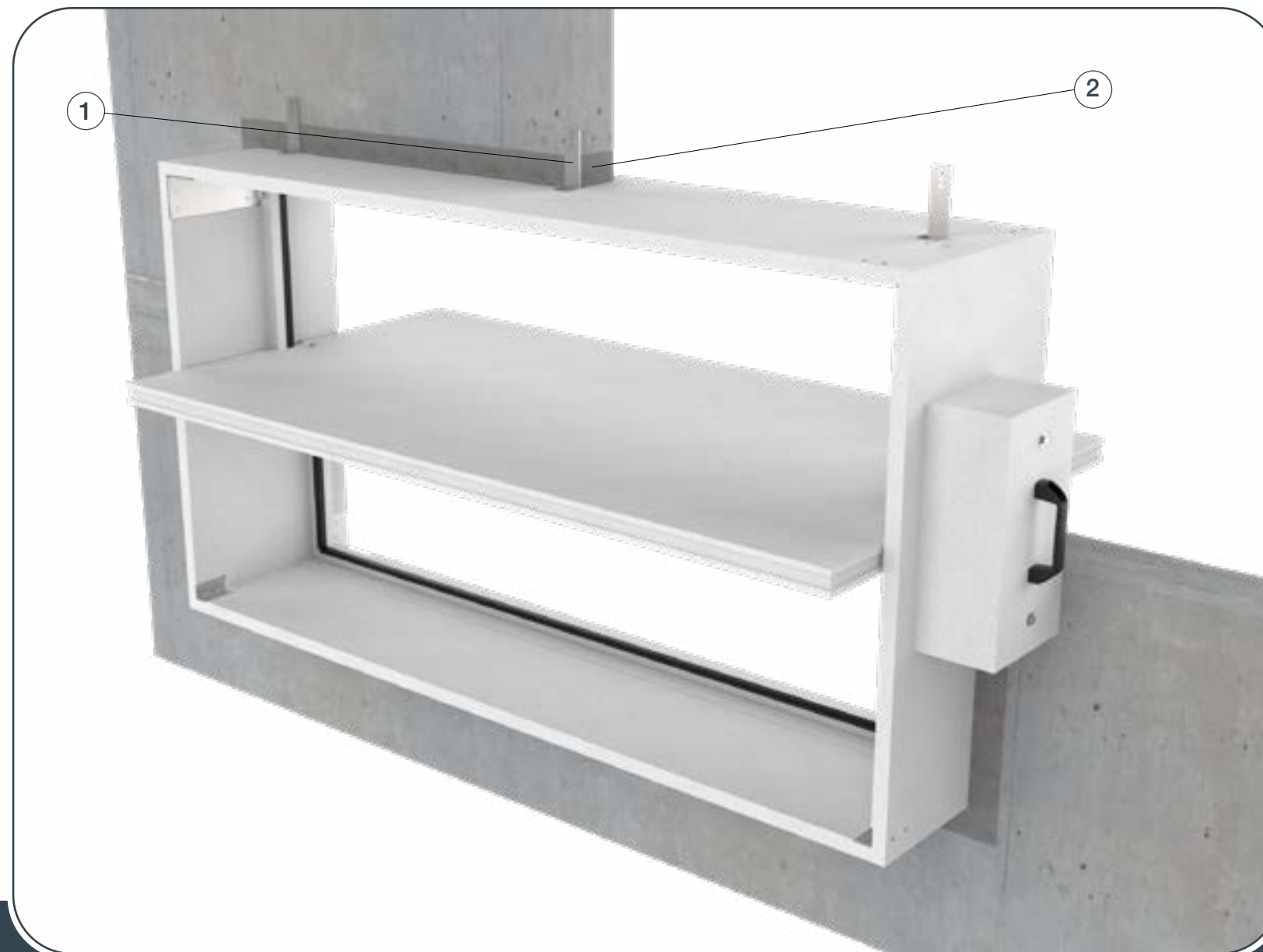
Damper blade must be closed during the installation!

2. Fix the damper to the wall with the screws. Bracket screw hole is 6 mm in diameter.

3. Fill the space between the damper and the wall with gypsum plaster **(2)**.

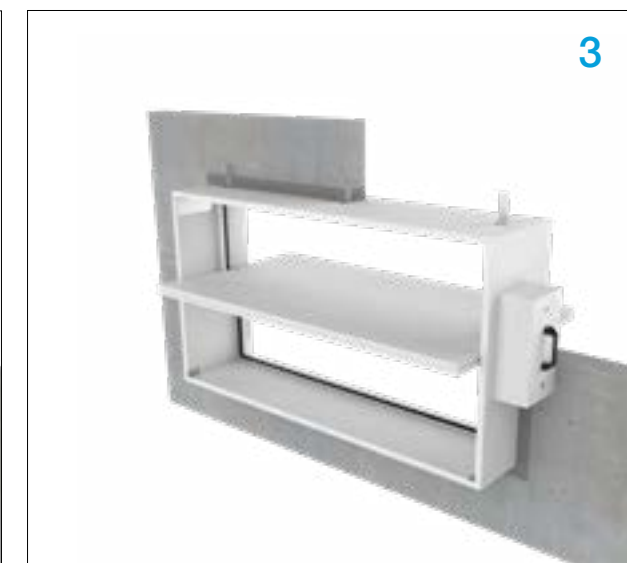
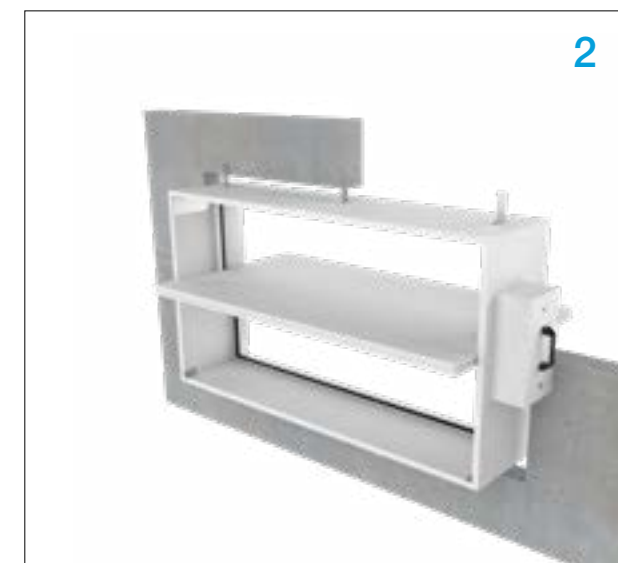
* Build the support for installation according to the drawing, [see page 10](#).

Test the operation of the damper blade!



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SMOKE CONTROL DAMPERS



Flexible wall with type F gypsum plasterboards installation

The wall is made of 2x2 gypsum plasterboards, 12.5 mm thick, mounted on a steel structure. The wall is made of type F (EN520) gypsum plasterboards. The interior of the wall is uninsulated or with mineral wool with a density of up to 115 kg/m³. The installation material is gypsum lime plaster. Minimum wall thickness: 100 mm

* Create a substructure for the damper, [page 10](#).



INSTALLATION

1. Recommended wall opening for the damper installation is B (H) + 80 mm. Insert damper into wall to the wall limit mark **(7)** on the damper and bend the fixing bracket **(1)** 90°.

Damper blade must be closed during the installation!

2. Fix the damper to the wall using 3.5x35 drywall screws, the hole in the bracket is 6 mm in diameter.

3. Fill the space between the damper and the wall with gypsum plaster **(2)**.

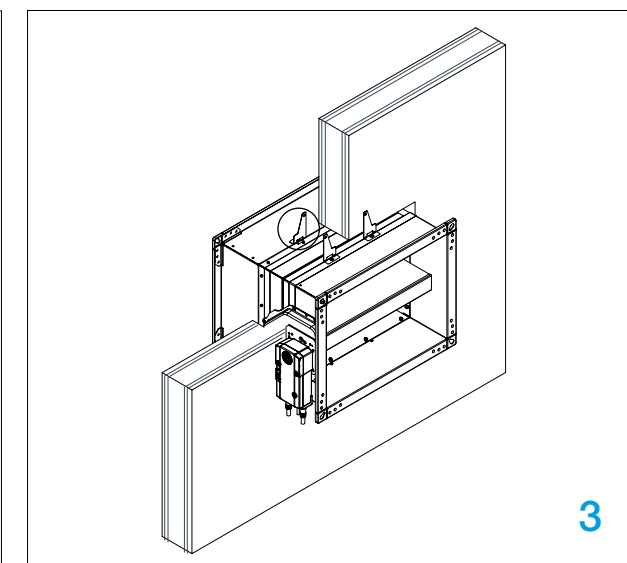
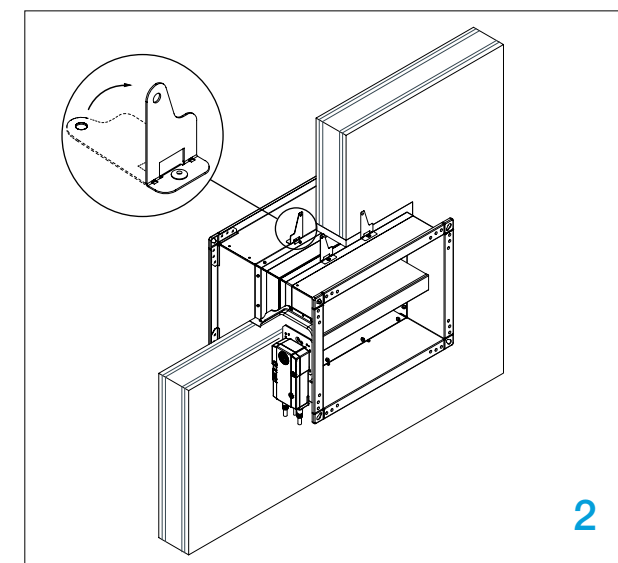
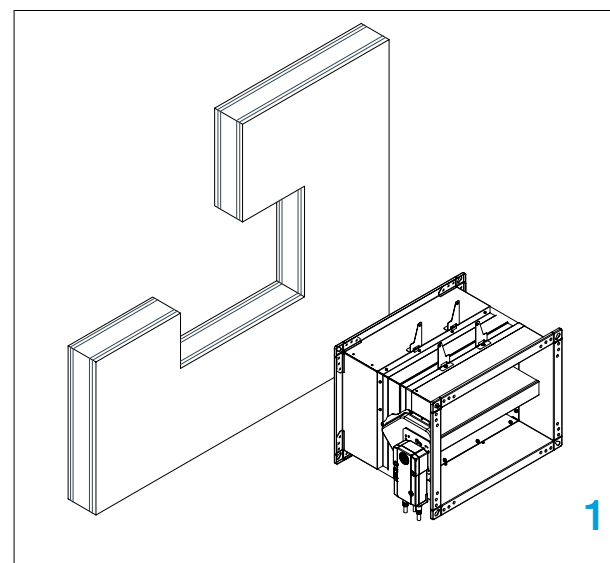
* Build the support for installation according to the drawing, [see page 10](#).

Test the operation of the damper blade!



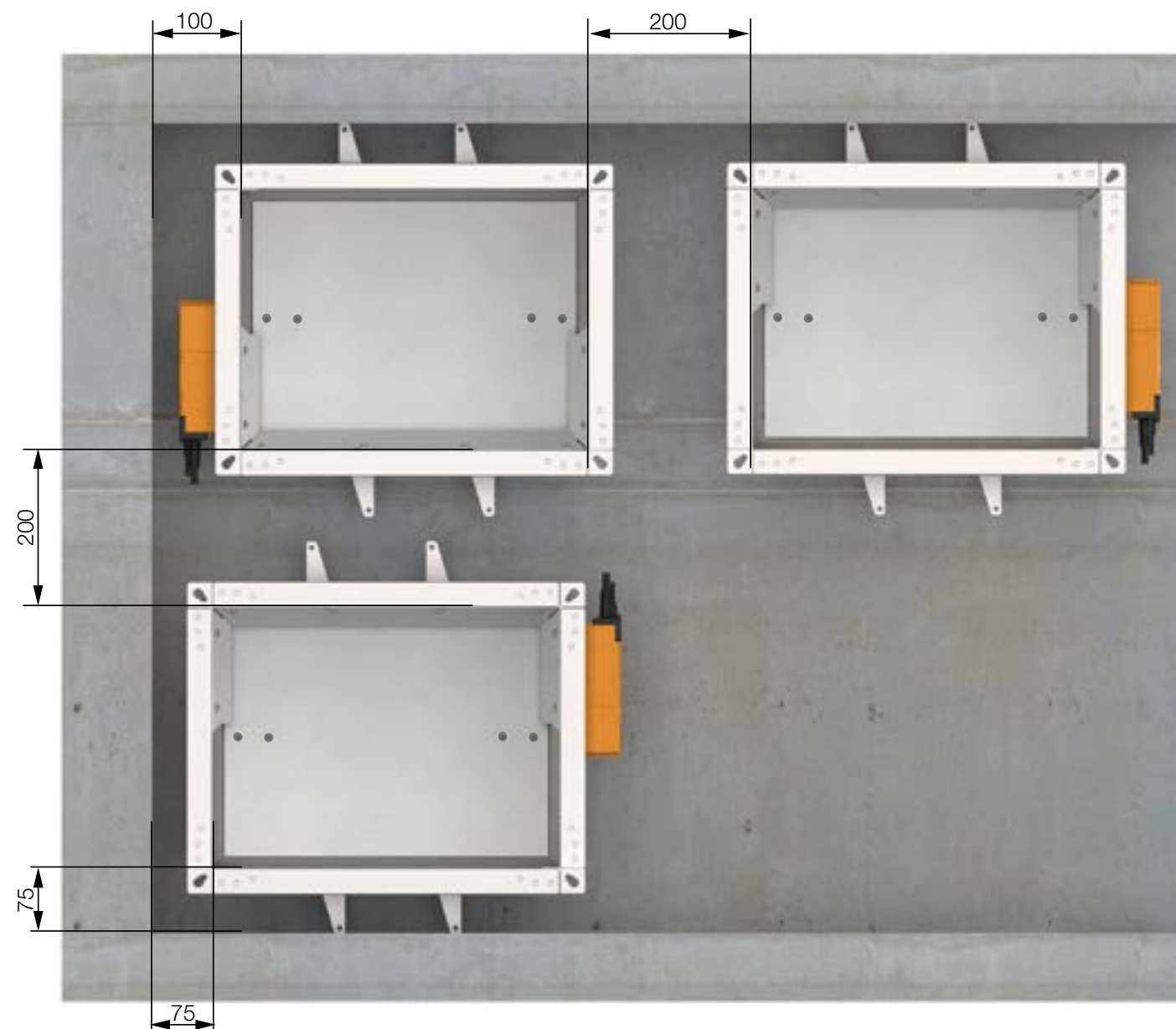
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SMOKE CONTROL DAMPERS



Minimal installation distances

Smoke control damper can be installed with minimal distance of 75 mm between wall/ceiling and 200 mm from other dampers.



*Minimal distances from another damper or wall/ceiling.

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SMOKE CONTROL DAMPERS

ELECTRIC ACTUATOR

BEN 24, BEN 24-SR
BEN 230, BEE 24,
BEE 24-SR, BEE 230

Damper is delivered in closed position. The actuator features 2-wire open/close control. Actuator is overload proof and can remain energized at the end stops. Safety position lock enables the actuator to hold the damper in the defined safety position in case of fire.

Two microswitches with fixed settings are installed in the actuator for indicating the damper end positions. It should be noted in this application, however that the contacts can no longer be used in the milliamperere range after larger currents have been applied to them, even if this has taken place only once. The position of the damper blade can be read off on a mechanical position indication. Manual operation is possible with the hand crank that is provided with the actuator.

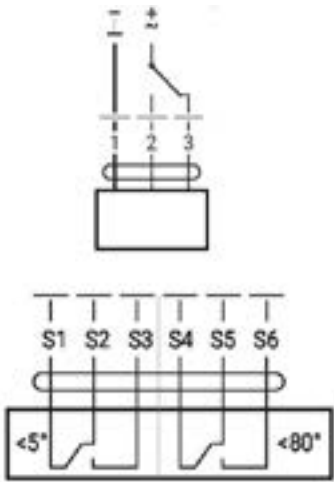


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Wiring diagram BEN 24/ BEN 230/ BEE 230

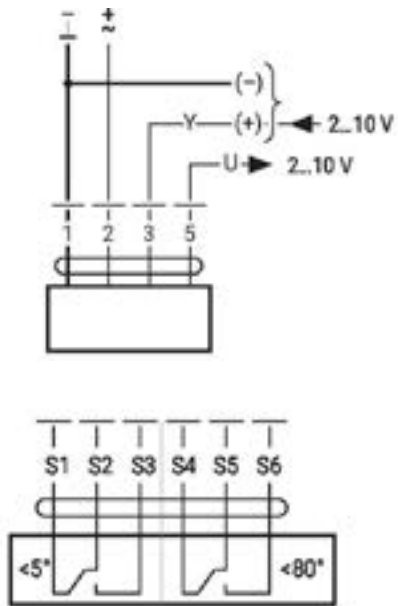
Technical specifications

Type of Belimo actuator	BEN 24 / BEN 24-SR	BEN 230	BEE 24 / BEE 24-SR	BEE 230	
Torque	15 Nm	15 Nm	25 Nm	25 Nm	
Nominal voltage / power consumption	voltage	AC/DC 24V 50/60 Hz	AC 230 V 50/60 Hz	AC/DC 24V 50/60 Hz AC 230 V 50/60 Hz	
	operation	3 W	4 W	2,5 W / 3 W	3,5 W
	rest position	0,1 W / 0,3 W	0,4 W	0,1 W / 0,3 W	0,4 W
	Angle of Rotation	95°	95°	95°	95°
Running time	< 30 s / 90°		< 60 s / 90°		
Mechanical interface	Form fit 12x12 mm				
Control	Open-close, modulating				



1	black
2	red
3	white
S1	violet
S2	red
S3	white
S4	orange
S5	pink
S6	grey

Wiring diagram BEE 24-SR/ BEN 24-SR



1	blue
2	brown
3	white
S1	violet
S2	red
S3	white
S4	orange
S5	pink
S6	grey



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MAINTENANCE

SMOKE CONTROL DAMPERS

TRANSPORT

After arrival, check the smoke control damper for transport damage and shortcomings. In case of any damage or shortcomings, immediately contact your supplier.

STORAGE

If the damper is not installed immediately

- Remove any wrapping.
- Protect damper from dust and contamination.
- Do not expose the product to the effects of weather - store smoke control damper in dry place.
- Do not store the unit below -20 °C or above 50 °C.

Please properly dispose of packaging material!

WARNING!

Danger of electric shock! Do not touch any live components! Electrical equipment carries a dangerous electrical voltage. Switch off the power supply before working on any electrical equipment!

MAINTENANCE AND CLEANING

SBSD is maintenance free. Our smoke control dampers can be wiped (dust, ...) with a wet or dry cloth and additionally vacuumed with an industrial vacuum cleaner, except for electronic parts. To avoid damage to the blades and bearings, use soft cloths.

Never use chlorine-based corrosive agents!

COMMISSIONING

Carefully unpack SBSD smoke control damper - be careful of sharp edges and do not use excessive force for unpacking. Wear protective gloves, safety shoes and a hard hat.

- Inspect the product - check the smoke damper for damage
- Installation of the smoke control damper - according to the installation instructions.

FUNCTIONS

Functional reliability must be controlled or tested every six months. If two consecutive tests are successful, the next functional test can be performed in one year.

Functionality testing must be carried out in accordance with the following norms:

- EN 12101-8
- EN 13306
- EN 15423
- According to the norms represented in the country of installation

Never use the smoke control damper:

- in areas with potentially explosive atmospheres
- outdoors without sufficient protection against the effects of weather and outside of temperature limits
- in atmospheres where chemical reactions, whether planned or unplanned, may cause damage to the smoke control damper or lead to corrosion



SMOKE CONTROL DAMPERS

Images are for informational purposes only and may differ from the actual product.
Follow the latest versions of the catalog on the website.



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