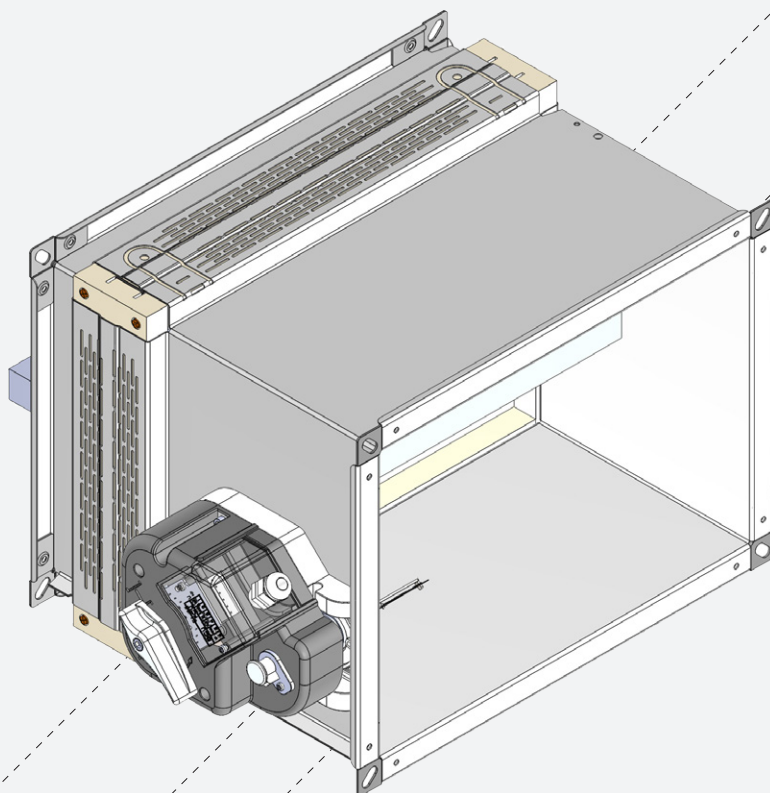


WK25



Technical Manual
English

PATENTED FIRE DAMPER
RECTANGULAR SERIES WK25 - MP3

Cert. N° 1812-CPR-1045
Installation type with fire resistance class



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OVERVIEW

Description

The WK25 fire dampers were designed for air duct installation when the air duct crosses fire resistance walls or floors. They stop fire and smoke from spreading through air ducts. Tested and classed in accordance with EN 1366-2 and EN 13501-3 regulations with 500 Pa depression.

Studied and optimized for small size ducts and reduced installation space focusing on aerualic and acoustical performance.

Equipped with various different mechanisms completely outside the wall, easily interchangeable even after installation (except compact manual).

European Standards applied

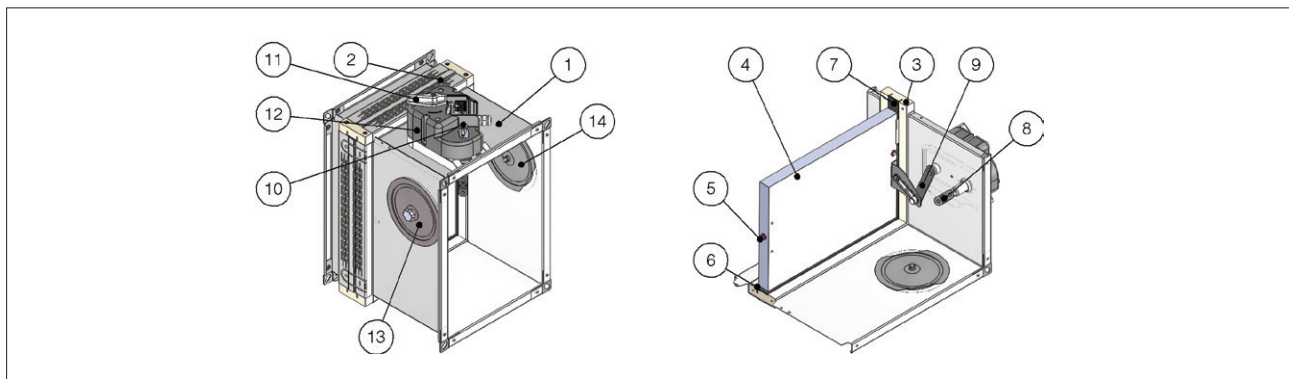
Test	EN 1366-2
Thermal fuse reliability	ISO 10294-4
Classification	EN 13501-3
Air tightness	EN 1751
Resistance to corrosive environments	EN 60068-2-52
CE certification	EN 15650

Certifications and approvals

CE Certificate of Constasy of Performance	n° 1812-CPR-1045	Efectis
German approval	n° Z-56.4212-987	DIBt
NF certification	n° 09/05.02	AFNOR
Swiss approval	n° 24547	VKF-AEAI
Swedish approval	n° SC0196-16	SP

Components

1. Casing made from galvanized carbon steel or stainless steel
2. Thermal labyrinth
3. Silicate frame
4. Damper blade made from refracting material
5. Blade pivot
6. Cold smoke air seal gasket
7. Intumescent graphite gasket on inside of casing for the hot seal of the blade once closed
8. Temperature controlled closing device (thermal fuse)
9. Blade actioning device
10. Manual closing device (Test button)
11. Manual reset lever
12. Protection box
13. OPTIONAL Inspection opening side A for base length ≥ 150 mm
14. OPTIONAL Inspection opening side C for base length ≥ 150 mm



General characteristics

- Casing made from galvanized carbon steel (or stainless steel available only for motorized version).
- Thermal labyrinth obtained from the casing.
- Intumescent sealing gasket.
- Opening/closing mechanism with IP42 protection box (IP54 for motorized version).
- 25 mm thick closing blade made with refractory material.
- Cold smoke air seal gasket
- Internal intumescent gasket for hot smoke seal.
- Internal frame made with refractory material.

Available dimensions

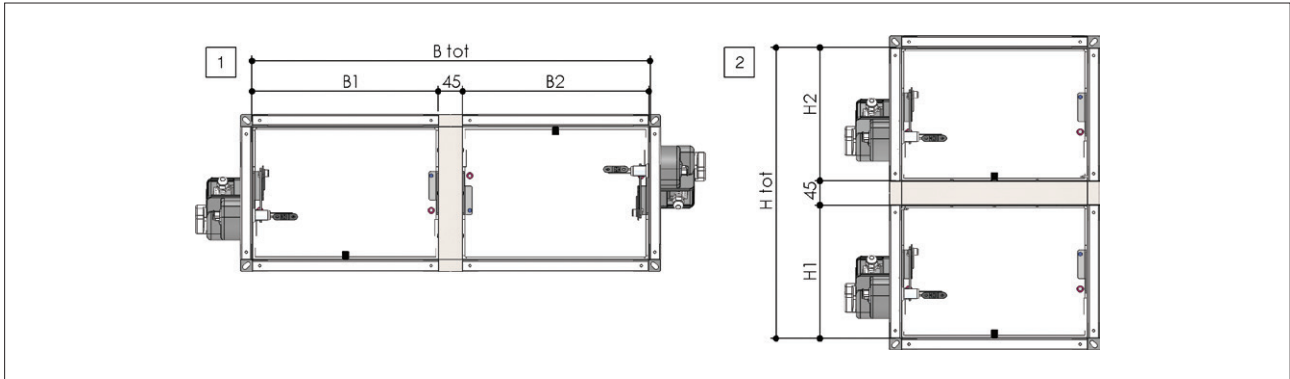
Single fire dampers

Fire dampers are available in all base-height combination indicated below

Height	mm	200	250	300	350	400	450	500	550	600						
Base	mm	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800

Fire dampers pairing for big ducts dimensions

- Side by side paired fire dampers
- Vertically paired fire dampers



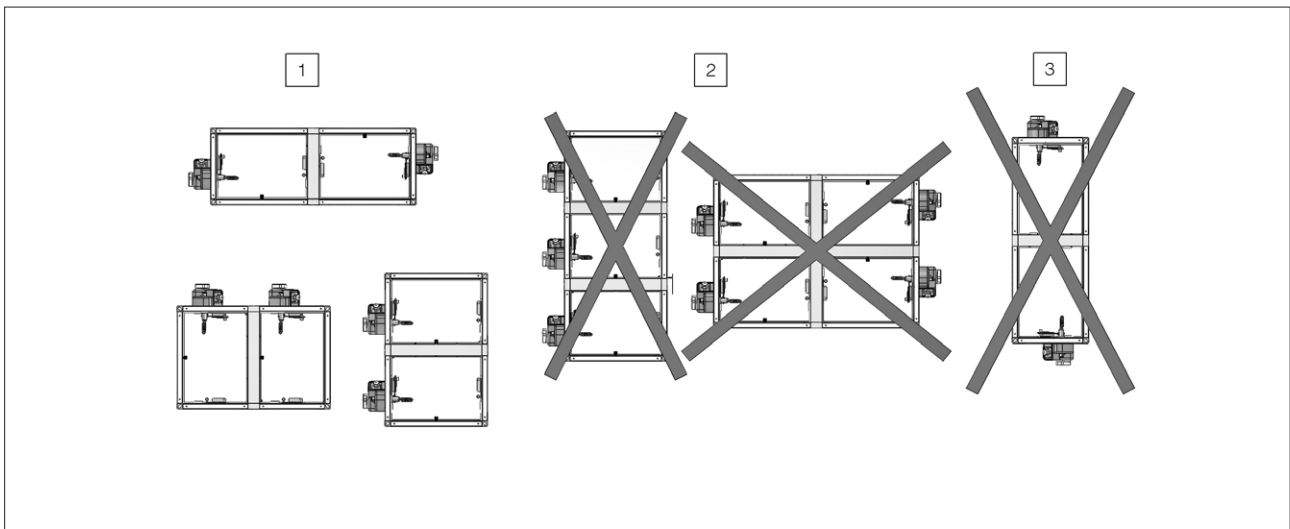
Side by side paired fire dampers																		
Required base	mm	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650
B tot	mm	845	895	945	995	1045	1095	1145	1195	1245	1295	1345	1395	1445	1495	1545	1595	1645
B1	mm	400	400	450	450	500	500	550	550	600	600	650	650	700	700	750	750	800
B2	mm	400	450	450	500	500	550	550	600	600	650	650	700	700	750	750	800	800

Vertically paired fire dampers														
Required height	mm	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
H tot	mm	645	695	745	795	845	895	945	995	1045	1095	1145	1195	1245
H1	mm	300	300	350	350	400	400	450	450	500	500	550	550	600
H2	mm	300	350	350	400	400	450	450	500	500	550	550	600	600

From the requested dimensions, it is possible to identify the closest effective achievable sizes.

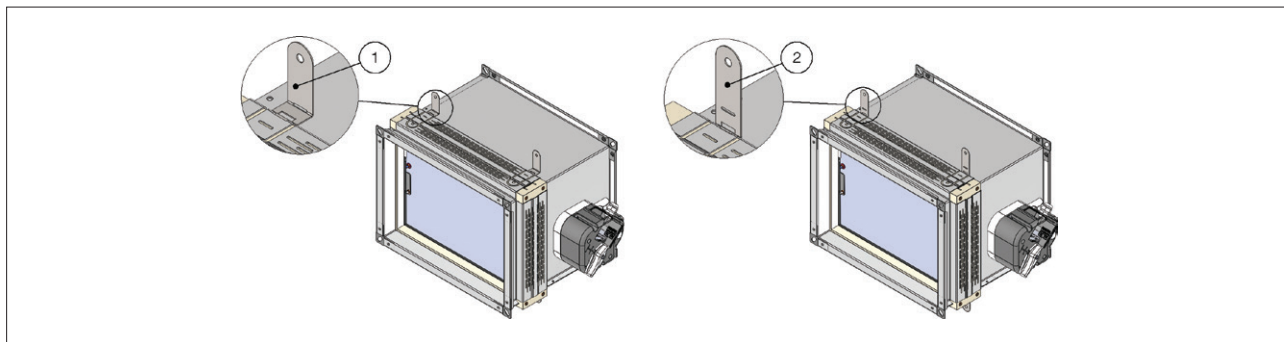
It is advisable not to exceed by more than 10 mm from the indicated sizes so as not to compromise the correct thermal insulation.

- It is allowed to pair two fire dampers. Maximum paired size: 1645x600, 1245x800, 800x1245.
- It is forbidden to pair three or more fire dampers.
- It is forbidden to vertically pair two fire dampers with vertical axis.



■ Fixing flaps

1. Bend for walls 100 mm thick or higher
2. Bend for walls 70 mm thick or higher



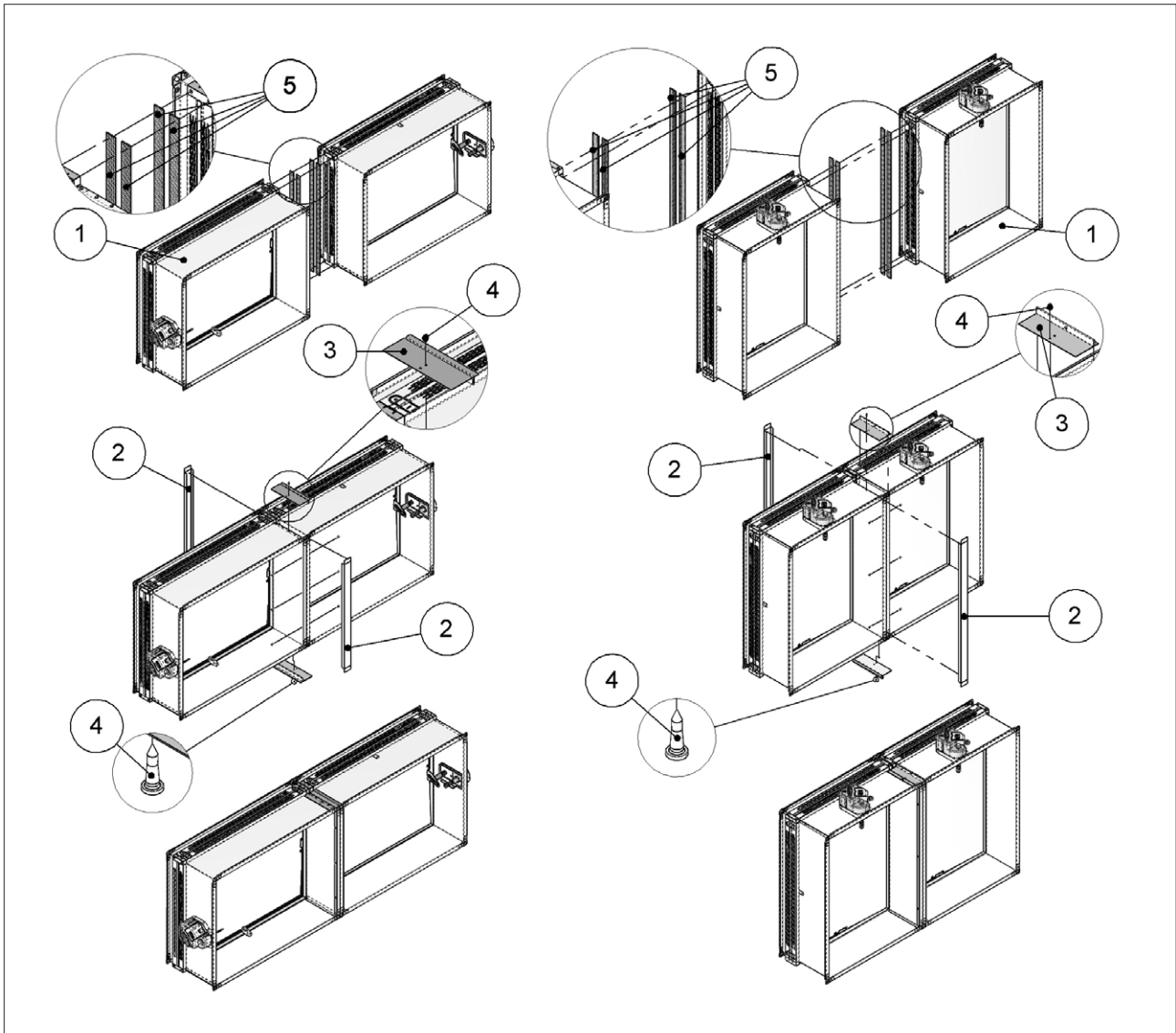
Fire dampers pairing

The patented WK25 rectangular fire dampers can be paired side-by-side or vertically (not more than two) using the custom connection kit (see section Accessories and spare

parts [p. 53](#)) which includes an intumescent gasket to be placed between the two dampers.

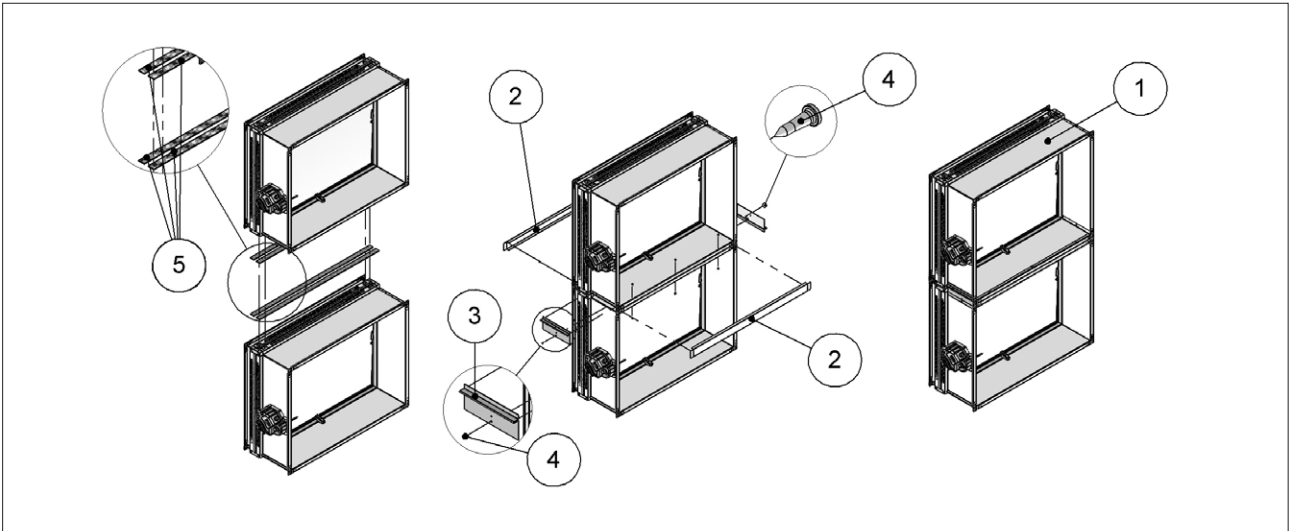
The pair of dampers, may be installed in vertical wall in the same way as a single damper.

1. WK25 Fire damper
2. Steel profile designed as a function of the pairing length
3. Steel plate
4. Fixing screws
5. Intumescent gasket long as a function of the pairing length



- It is forbidden to pair three or more fire dampers.

1. WK25 Fire damper
2. Steel profile designed as a function of the pairing length
3. Steel plate
4. Fixing screws
5. Intumescent gasket long as a function of the pairing length



- It is forbidden to pair three or more fire dampers.
- It is forbidden to vertically pair two fire dampers with vertical axis.

Performances

Performance	Reference standard	Class
Thermal fuse testing	ISO 10294-4	Compliant
Open and Close cycle reliability	EN 15650	Compliant
Resistance to corrosion in humid and saline environments	EN 60068-2-52	Degree of severity 2
Air tightness of casing	EN 1751	Class C
Blade seal	EN 1751	Class 2 minimum

Fire resistance classification according to EN 13501-3-2009

			EI 180 S (500 Pa)	EI 120 S (500 Pa)	EI 90 S (500 Pa)	EI 60 S (500 Pa)	
Rigid wall	<u>EI 120 S Installation within vertical rigid wall p. 24</u>						
	Wall minimum thickness 100 mm Wall minimum density 550 kg/m ³ Mortar or plaster putty sealing ve (i↔o)	W	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	
Rigid wall	<u>EI 120S Installation within vertical rigid wall p. 24</u>						
	Wall minimum thickness 100 mm Wall minimum density 550 kg/m ³ Plasterboard and rock wool 100 kg/m ³ sealing ve (i↔o)	D	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	
Flexible wall	<u>EI 120 S Installation within vertical light wall (plasterboard) p. 26</u>						
	Wall minimum thickness 100 mm Wall rock wool minimum density 100 kg/m ³ Plasterboard and rock wool 100 kg/m ³ sealing ve (i↔o)	D	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	
	<u>EI 120 S Installation within vertical light wall (gypsum blocks wall) p. 27</u>						
	Wall minimum thickness 100 mm Wall minimum density 995 kg/m ³ Plasterboard sealing ve (i↔o)	D	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	
Flexible wall	<u>EI 90 S Installation within vertical light wall (gypsum blocks wall) p. 27</u>						
	Wall minimum thickness 70 mm Wall minimum density 995 kg/m ³ Plasterboard sealing ve (i↔o)	D	-	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	

		El 180 S (500 Pa)	El 120 S (500 Pa)	El 90 S (500 Pa)	El 60 S (500 Pa)
Floor	<u>El 180 S Installation within floor p. 28</u>				
	Floor minimum thickness 150 mm		B x H	B x H	B x H
	Floor minimum density 2200 kg/m ³		min 100 x 200	min 100 x 200	min 100 x 200
	Mortar sealing	W	max 800 x 600	max 800 x 600	max 800 x 600
	ho (i↔o)				
	<u>El 120 S Installation within floor p. 28</u>				
	Floor minimum thickness 150 mm			B x H	B x H
	Floor minimum density 650 kg/m ³		-	min 100 x 200	min 100 x 200
	Mortar sealing	W		max 800 x 600	max 800 x 600
ho (i↔o)					
<u>El 90 S Installation within floor p. 28</u>					
Floor minimum thickness 100 mm				B x H	
Floor minimum density 650 kg/m ³				min 100 x 200	
Mortar sealing	W			max 800 x 600	
ho (i↔o)				max 800 x 600	

B x H are fire damper minimum and maximum nominal dimensions (base x height) in mm

- ve Vertical installation
 - ho Horizontal installation
 - (i↔o) Origin of fire irrelevant
 - Pa Pascal of depression
 - E Integrity
 - I Thermal insulation
 - S Smoke seal
 - W Wet method sealing
 - D Dry method sealing
- Cert. N° 1812-CPR-1045

▣ Fire Batt (Weichschott) sealings

		El 120 S (300 Pa)	El 90 S (300 Pa)	El 60 S (300 Pa)
Rigid wall	<u>El 120 S Installation within vertical rigid wall with Fire Batt (Weichschott) sealing p. 29</u>			
	Wall minimum thickness 100 mm		B x H	B x H
	Wall minimum density 550 kg/m ³	W	min 100 X 200	min 100 X 200
	Rock wool 140 kg/m ³ and endothermic varnish sealing		max 800 X 600	max 800 X 600
	ve (i↔o)			
Flexible wall	<u>El 120 S Installation within vertical light wall (gypsum blocks wall) with Fire Batt (Weichschott) sealing p. 29</u>			
	Wall minimum thickness 100 mm		B x H	B x H
	Wall rock wool minimum density 100 kg/m ³	W	min 100 X 200	min 100 X 200
	Rock wool 140 kg/m ³ and endothermic varnish sealing		max 800 X 600	max 800 X 600
	ve (i↔o)			
	<u>El 120 S Installation within vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing p. 29</u>			
Wall minimum thickness 100 mm		B x H	B x H	
Wall minimum density 995 kg/m ³	W	min 100 X 200	min 100 X 200	
Rock wool 140 kg/m ³ and endothermic varnish sealing		max 800 X 600	max 800 X 600	
ve (i↔o)				
Floor	<u>El 120 S Installation within floor with Fire Batt (Weichschott) sealing p. 30</u>			
	Floor minimum thickness 150 mm		B x H	B x H
	Floor minimum density 650 kg/m ³	W	min 100 X 200	min 100 X 200
Rock wool 140 kg/m ³ and endothermic varnish sealing		max 800 X 600	max 800 X 600	
ho (i↔o)				

▣ Installations remote from vertical wall

		El 120 S (300 Pa)	El 90 S (500 Pa)
Rigid wall	<u>El 120 S Installation remote from the vertical rigid wall p. 31</u>		
	Wall minimum thickness 100 mm		B x H
	Wall minimum density 550 kg/m ³	W	min 100 x 200
	Mortar or plaster putty sealing		max 800 x 600
	ve (i↔o)		
	<u>El 120 S Installation remote from the vertical rigid wall with Fire Batt (Weichschott) sealing p. 35</u>		
Wall minimum thickness 100 mm		B x H	B x H
Wall minimum density 550 kg/m ³	D	min 100 x 200	min 100 x 200
Rock wool 140 kg/m ³ and endothermic varnish sealing		max 800 x 600	max 800 x 600
ve (i↔o)			

		EI 120 S (300 Pa)	EI 90 S (500 Pa)
Flexible wall	EI 120 S Installation remote from the vertical light wall (plasterboard) p. 33 Wall minimum thickness 100 mm Wall rock wool minimum density 100 kg/m ³ Plasterboard and rock wool 100 kg/m ³ or mortar or plaster putty sealing ve (i↔o)	D/W min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation remote from the vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing p. 35 Wall minimum thickness 100 mm Wall rock wool minimum density 100 kg/m ³ Rock wool 140 kg/m ³ and endothermic varnish sealing ve (i↔o)	D min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation remote from the vertical light wall (gypsum blocks wall) p. 31 Wall minimum thickness 100 mm Wall minimum density 995 kg/m ³ Mortar or plaster putty sealing ve (i↔o)	W min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation remote from the vertical light wall (gypsum blocks wall) with Fire Batt (Weichschott) sealing p. 35 Wall minimum thickness 100 mm Wall minimum density 995 kg/m ³ Rock wool 140 kg/m ³ and endothermic varnish sealing ve (i↔o)	D min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	Floor	EI 120 S Installation remote from the floor p. 37 Floor minimum thickness 150 mm Floor minimum density 650 kg/m ³ Mortar or plaster putty sealing ho (i↔o)	W min 100 x 200 max 800 x 600
EI 90 S Installation remote from the floor p. 37 Floor minimum thickness 100 mm Floor minimum density 650 kg/m ³ Mortar or plaster putty sealing ho (i↔o)		W -	B x H min 100 x 200 max 800 x 600

B X H are fire damper minimum and maximum nominal dimensions (base x height) in mm

- ve Vertical installation
 - ho Horizontal installation
 - (i↔o) Origin of fire irrelevant
 - Pa Pascal of depression
 - E Integrity
 - I Thermal insulation
 - S Smoke seal
 - W Wet method sealing
 - D Dry method sealing
- Cert. N° 1812-CPR-1045

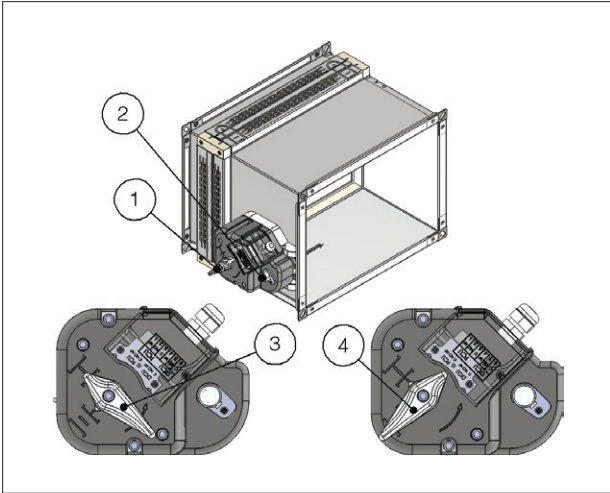
▣ Installations within vertical light wall (Shaft wall)

		EI 90 S (300 Pa)	EI 60 S (300 Pa)
Flexible wall	EI 60 S Installation within vertical light wall (Shaft wall) p. 39 Wall minimum thickness 90 mm Plasterboard and mortar or plaster putty sealing ve (i↔o)	W -	B X H min 100 X 200 max 800 X 600

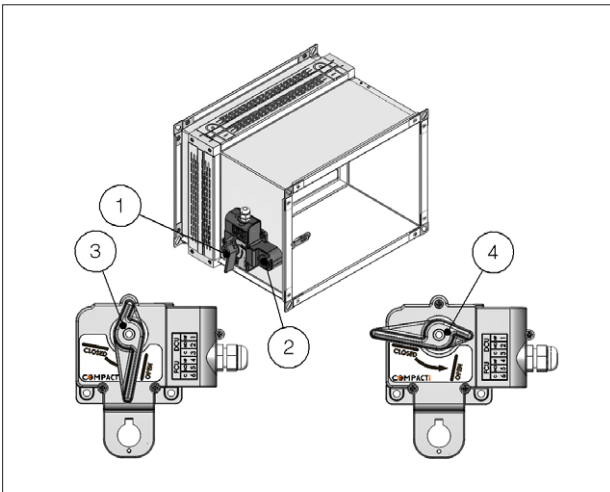
■ Mechanism type

▣ Manual and compact manual

Manual



Compact manual



1. Manual opening lever
2. Manual closing button
3. Lever position when the blade is open
4. Lever position when the blade is closed

Blade closing mode

Automatic closing with thermal fuse.

The control mechanism has a thermosensitive element that automatically closes the blade when the temperature in the duct exceeds 70°C (or 95°C for the fire damper with 95°C thermal fuse).

It is possible to close the damper by pressing the indicated button.

Blade opening mode

The damper must be opened when the ventilation system is switched off.

It is possible to open the damper blade by rotating the lever anticlockwise.

In case of closed damper as a result of the action of the thermosensitive element, it is possible to manually reopen the damper by rotating the lever counterclockwise once the element has been replaced.

Position indication microswitches

On request, the fire damper can be supplied with position microswitches (S2 optional) that signal the blade position (open or closed). Refer to the section Electrical connections p. 40 for more details.

Closing by remote control

Not available

Temperature calibration of thermosensitive element for automatic damper closing

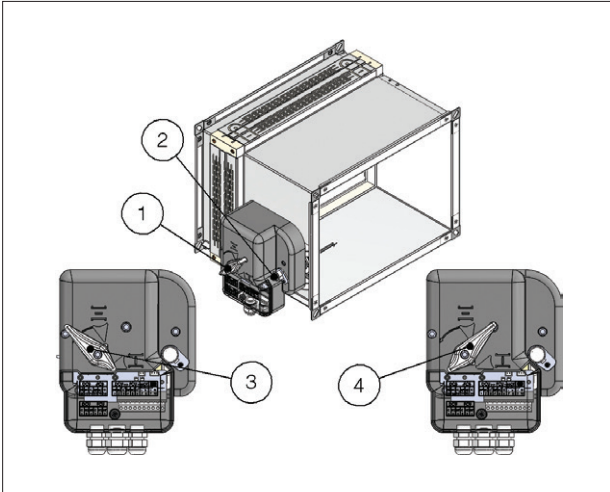
70 °C±7 °C (Standard)

95 °C±9 °C (On request).

CAUTION: The compact mechanism is not interchangeable with other types of mechanism

Manual with magnet

1. Manual opening lever
2. Manual closing button
3. Lever position when the blade is open
4. Lever position when the blade is closed



Blade closing mode

Automatic closing with thermal fuse.

The control mechanism has a thermosensitive element that automatically closes the blade when the temperature in the duct exceeds 70°C (or 95°C for the fire damper with 95°C thermal fuse).

It is possible to close the damper by pressing the indicated button.

It is possible to remotely close the fire damper.

The manual command mechanism with magnet is equipped with an electromagnet which, in case power is interrupted (interruption magnet version) or when power is supplied (input magnet version), commands the closing of the damper.

Blade opening mode

The damper must be opened when the ventilation system is switched off.

In case of closed damper by pressing the closing button or remotely by electromagnet, it is possible to manually open the fire damper blade by rotating the lever anticlockwise. In case of closed damper as a result of the action of the thermosensitive element, it is possible to manually reopen the damper by rotating the lever counterclockwise once the element has been replaced.

Position indication microswitches

It is advisable to install the fire damper with position microswitches (S2 optional) which signal the position of the blade (open or closed). Refer to the section Electrical connections [p. 40](#) for more details.

Closing by remote control

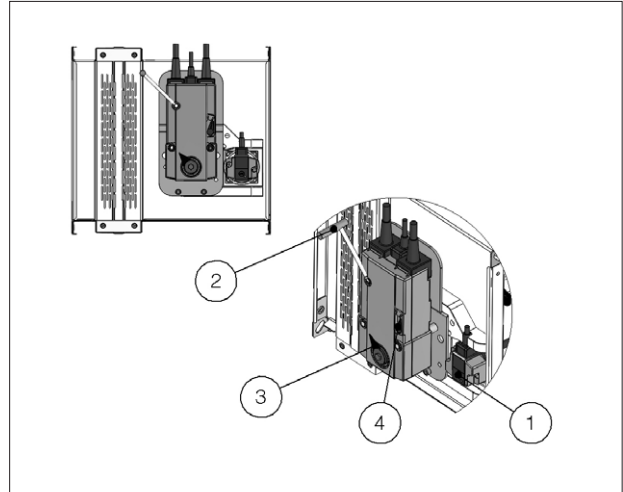
With power supply input or interruption magnet.

Temperature calibration of thermosensitive element for automatic damper closing

- 70 °C±7 °C (Standard)
- 95 °C±9 °C (On request).

Belimo motorized version

1. Manual closing switch
2. Manual opening lever
3. Position indicator
4. Blade locking lever



Blade closing mode

Automatic closing with thermal fuse.

The control mechanism has a thermosensitive element that automatically closes the blade when the temperature in the duct or in the room exceeds 72°C (or 95°C for the 95°C version).

To close the damper when the motor is connected, press the switch on the temperature sensor or cut off the power supply.

Blade opening mode

The damper must be opened when the ventilation system is switched off.

To open the damper with the electric motor driven actuator, provide power supply to the motor. Refer to the section Electrical connections [p. 40](#) for further information.

To manually open the damper, use the handle supplied and carefully rotate clockwise to the 90° indicator. To hold the damper in open position operate on the lever indicated in figure.

During the manual opening of the damper, power must not be supplied to the motor.

Position indication microswitches

The motorized versions are supplied with two microswitches to show the blade's position (open or closed). Refer to the section Electrical connections [p. 40](#) for further information.

Closing by remote control

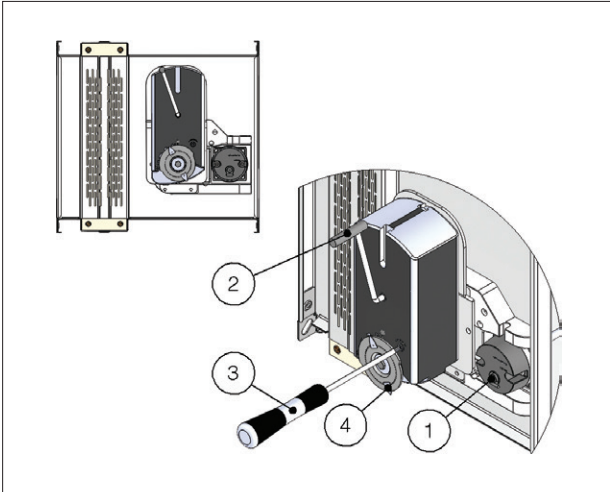
If power to the motor is cut off, the blade will close.

Temperature calibration of thermosensitive element for automatic damper closing

- 72 °C±7 °C (Standard)
- 95 °C±9 °C (On request).

▣ Siemens motorized version

1. Manual closing switch
2. Manual opening lever
3. Screwdriver
4. Position indicator



Blade closing mode

Automatic closing with thermal fuse.

The control mechanism has a thermosensitive element that automatically closes the blade when the temperature in the duct or in the room exceeds 72°C (or 95°C for the 95°C version).

To close the damper when the motor is connected, press the switch on the temperature sensor or cut off the power supply.

Blade opening mode

The damper must be opened when the ventilation system is switched off.

To open the damper with the electric motor driven actuator, provide power supply to the motor. Refer to the section [Electrical connections p. 40](#) for further information.

To manually open the damper, use the handle supplied and carefully rotate counterclockwise to the 90 °C indicator. To hold the damper in open position, rotate the screw anticlockwise as shown in the picture.

During the manual opening of the damper, power must not be supplied to the motor.

Position indication microswitches

The motorized versions are supplied with two microswitches to show the blade's position (open or closed). Refer to the section [Electrical connections p. 40](#) for further information.

Closing by remote control

If power to the motor is cut off, the blade will close.

Temperature calibration of thermosensitive element for automatic damper closing

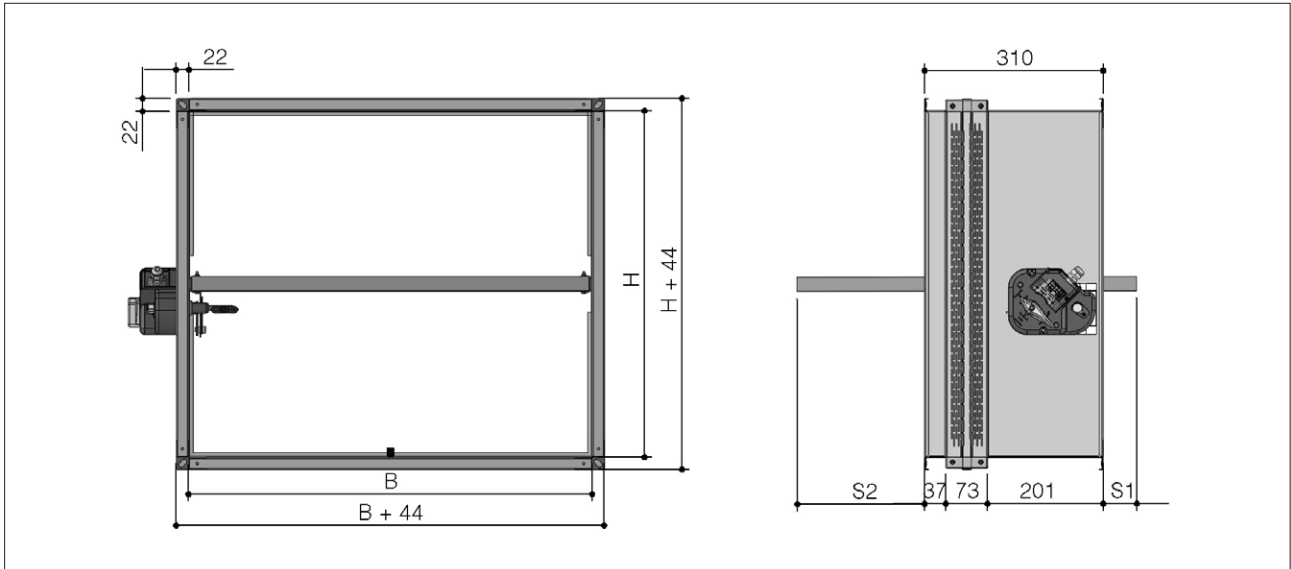
72 °C±7 °C (Standard)

95 °C±9 °C (On request).

TECHNICAL DATA

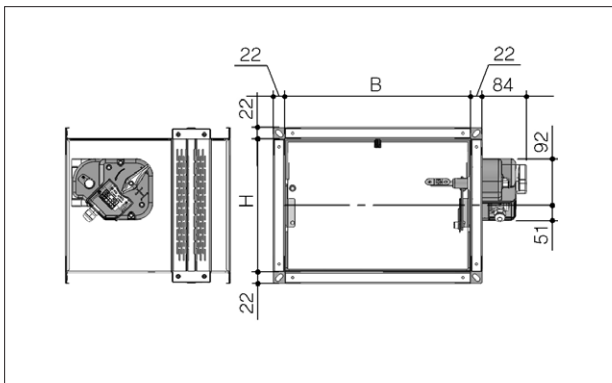
The sizes shown are in mm.

Dimension

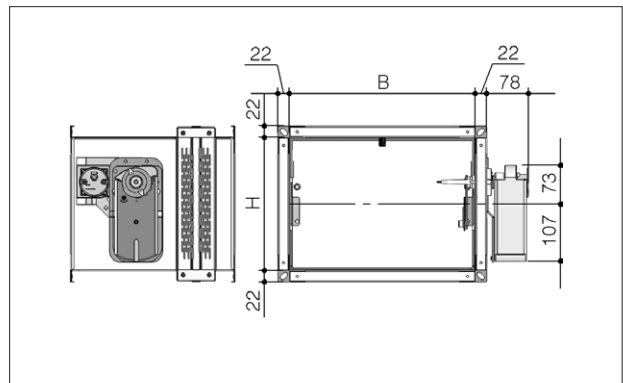


H nominal height	mm	200	250	300	350	400	450	500	550	600
S1 blade exposition	mm	0	0	0	0	0	0	7,5	32,5	57,5
S2 blade exposition	mm	21,5	46,5	71,5	96,5	121,5	146,5	171,5	196,5	221,5

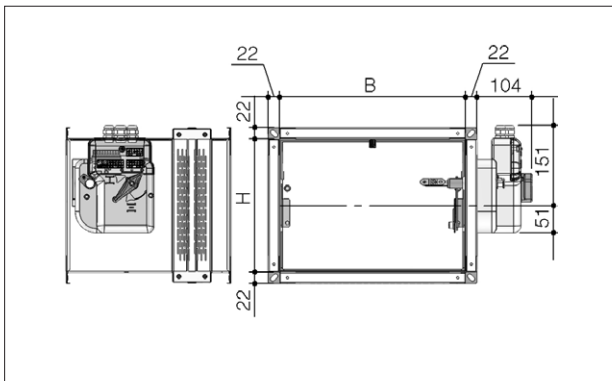
Manual



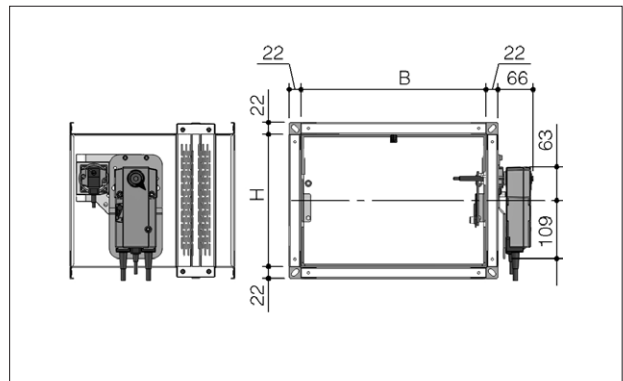
Siemens motorized version



Manual with magnet



Belimo motorized version



■ Weights

Base	Height								
	200	250	300	350	400	450	500	550	600
100	4	5	5	6	6	7	7	8	8
150	5	6	6	7	7	8	8	9	9
200	6	6	7	7	8	9	9	10	10
250	6	7	8	8	9	10	10	11	12
300	7	8	8	9	10	10	11	12	13
350	7	8	9	10	11	11	12	13	14
400	8	9	10	11	11	12	13	14	15
450	9	10	10	11	12	13	14	15	16
500	9	10	11	12	13	14	15	16	17
550	10	11	12	13	14	15	16	17	18
600	10	12	13	14	15	16	17	18	20
650	11	12	13	15	16	17	18	19	21
700	12	13	14	15	17	18	19	21	22
750	12	14	15	16	18	19	20	22	23
800	13	14	16	17	18	20	21	23	24

Weights in kg
 Manual version. Motorized version: +1 kg

INSTALLATION

The sizes shown are in mm.

Intended use

The MP3 fire dampers are “Devices for use in heating, ventilation and air conditioning (HVAC) systems at fire boundaries to maintain compartmentation and protect means of escape in case of fire” according to the 3.1 paragraph of EN 15650:2010 standard.

It is compulsory to install the fire damper according to the instructions indicated in the technical data sheet and manual to maintain the declared performances and, in particular, the fire classes.

The double test (with the mechanism inside and outside the fire area) demonstrated that there is no preferred direction for the position of the damper, both in relation to air flow and the side with the higher probability of exposure to fire, as indicated in standard EN1366-2:2015 (paragraph 6.2).

Use permitted in any civil and industrial building.

Use permitted in saline atmosphere, for example:

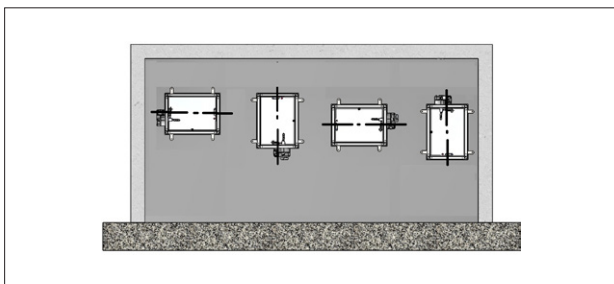
- maritime and port environments;
- fish markets;
- slaughterhouses;
- cheese makers.

Prohibited uses

- Use with installations different to those described in the technical data sheet and manual;
- use as smoke control damper;
- use as shut off damper;
- use in external environments without adequate protection from atmospheric conditions;
- use in explosive environments;
- use on board of ships;
- use in cooker extraction hoods;
- use in pneumatic conveying systems of dust or corn;
- use in ventilation systems within locations subject to chemical contamination;
- use in non inspectable environments;
- Use the damper free from air duct from one or both sides.

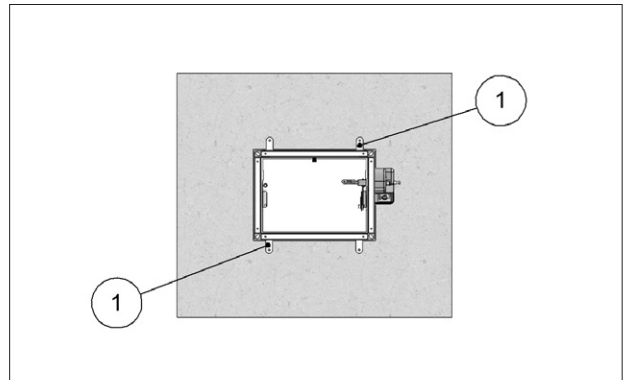
Blade rotation axis positioning

The fire damper can be installed both with the blade axis positioned vertically or horizontally.



Positioning brackets before fixing

1. Positioning brackets



Indications for the correct duct suspension and for damper connection

CAUTION: Refer anyway to law and national standardization.

Flexible connectors compensate any duct thermal expansion and wall bending in case of fire.

In general it is always appropriate the use of flexible connectors for the followings installations:

- light walls;
- Plasterboard and rock wool or Fire Batt (Weichschott) sealing;
- Applique fixing system.

Flexible connector should be normal flammability.

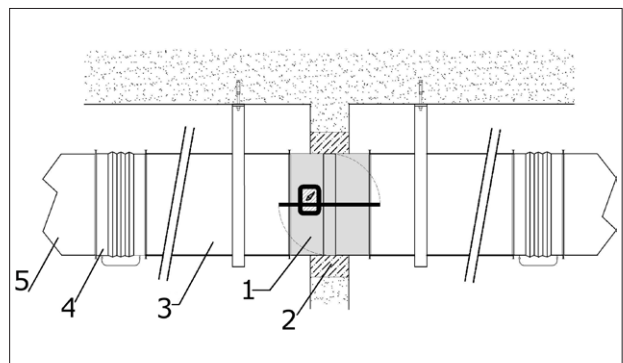
It is recommended not to compress flexible connectors in the installation phase.

Take care that the flexible connector does not interfere with opening / closing movement of the blade.

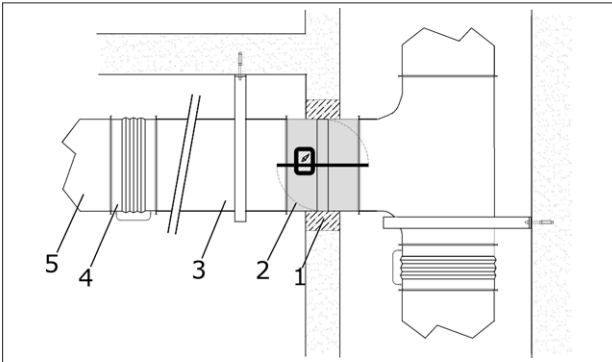
Refer to the section Technical data [p. 14](#) for blade exposition values.

Fire damper and short extension ducts have to be connected to each other and fixed at the bottom and near the damper and suspended from the ceiling.

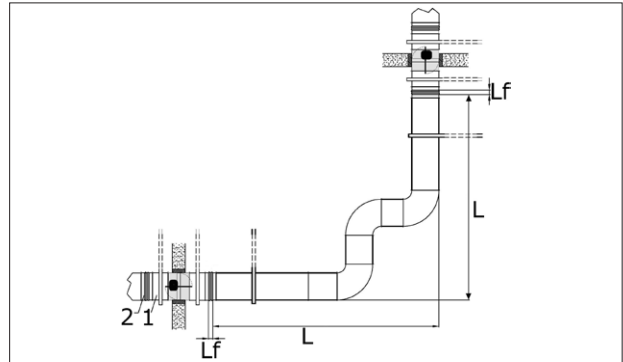
- | | |
|-------------------------|-----------------------|
| 1. Fire damper | 4. Flexible connector |
| 2. Sealing | 5. Duct |
| 3. Short extension duct | |



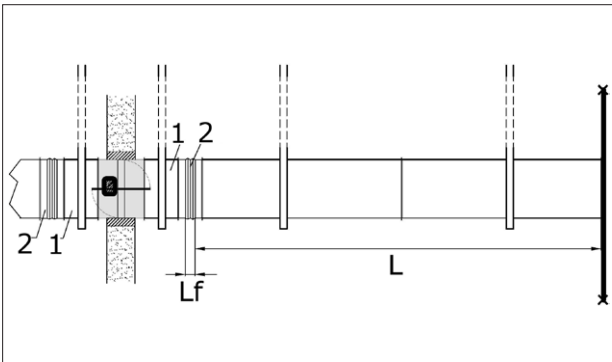
- 1. Sealing
- 2. Fire damper
- 3. Short extension duct
- 4. Flexible connector
- 5. Duct



- 1. Short extension duct
- 2. Flexible connector
- L Air duct length
- Lf Flexible part length of flexible connector



- 1. Short extension duct
- 2. Flexible connector
- L Air duct length
- Lf Flexible part length of flexible connector



The length (Lf) of the flexible element must be equal or higher to 1% of air duct length.

The minimum length (Lf) of the flexible element is equal to 250 mm for circular damper.

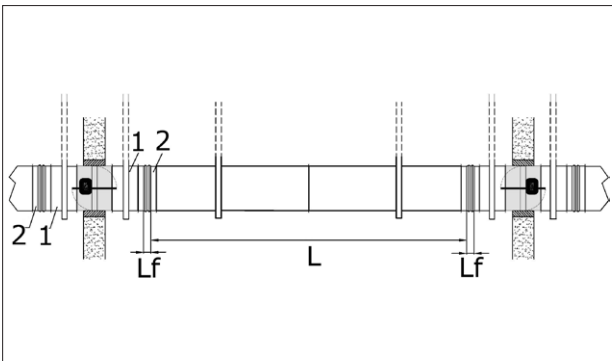
The minimum length (Lf) of the flexible element is equal to 100 mm for rectangular damper.

The length (Lf) of the flexible element must be equal or higher to 1% of air duct length.

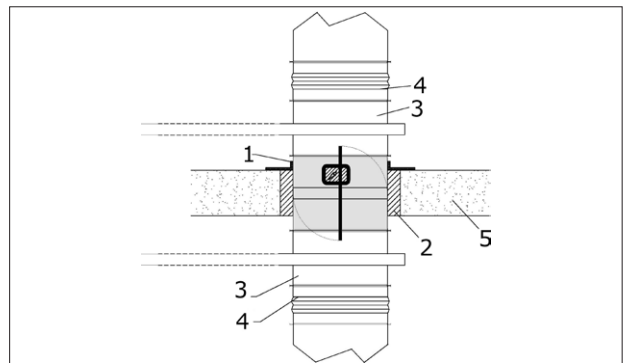
The minimum length (Lf) of the flexible element is equal to 250 mm for circular damper.

The minimum length (Lf) of the flexible element is equal to 100 mm for rectangular damper.

- 1. Short extension duct
- 2. Flexible connector
- L Air duct length
- Lf Flexible part length of flexible connector

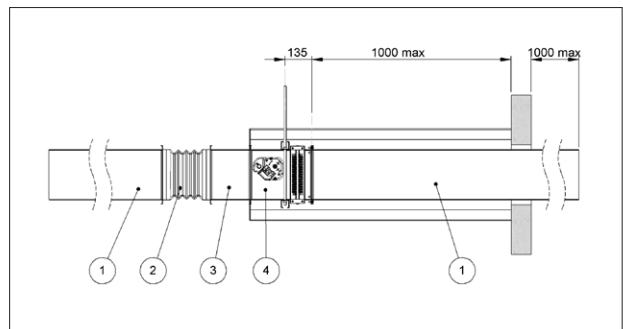


- 1. Positioning brackets
- 2. Sealing
- 3. Short extension duct
- 4. Flexible connector
- 5. Floor



Use of flexible connectors in the case of remote installation

- 1. Duct
- 2. Flexible connector
- 3. Short extension duct
- 4. Fire damper



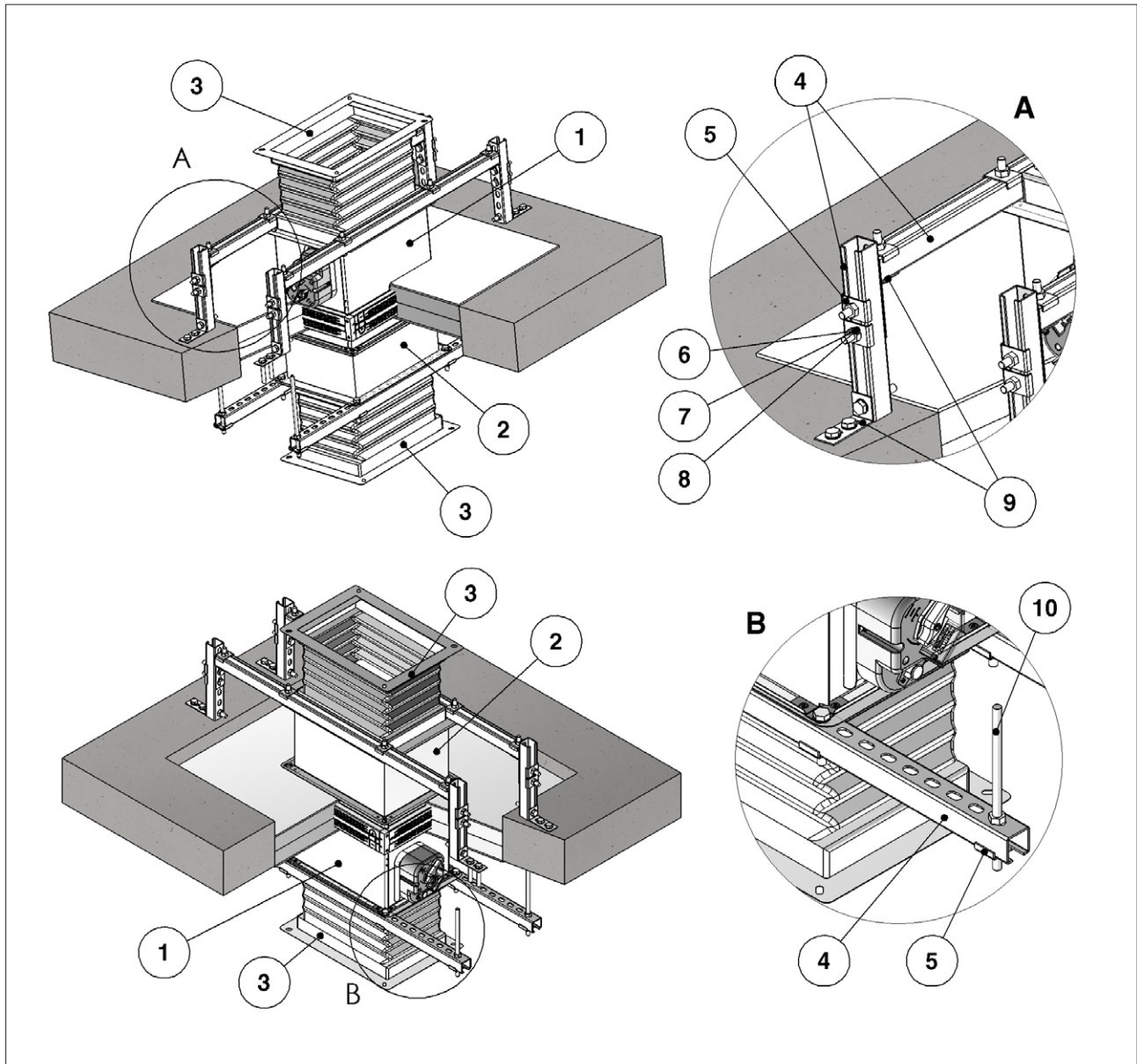
The length (Lf) of the flexible element must be equal or higher to 0.5% of air duct length.

The minimum length (Lf) of the flexible element is equal to 250 mm for circular damper.

The minimum length (Lf) of the flexible element is equal to 100 mm for rectangular damper.

Example of damper support in case of installation within floor with Fire Batt (Weichschott) sealing

- | | |
|--|--|
| 1. Fire damper | 6. M10 screw |
| 2. Short extension duct | 7. Washer |
| 3. Flexible connector | 8. M10 nut |
| 4. C-shaped profile 36 x 36 x 2,5 mm, e.g. Würth or Müpro or Hilti or equivalent | 9. Fixing bracket 90° 36 x 33 x 5 mm, e.g. Würth or Müpro or Hilti or equivalent |
| 5. Fixing bracket 38 x 30 x 2 mm, e.g. Würth or Müpro or Hilti or equivalent | 10. M10 threaded rod |

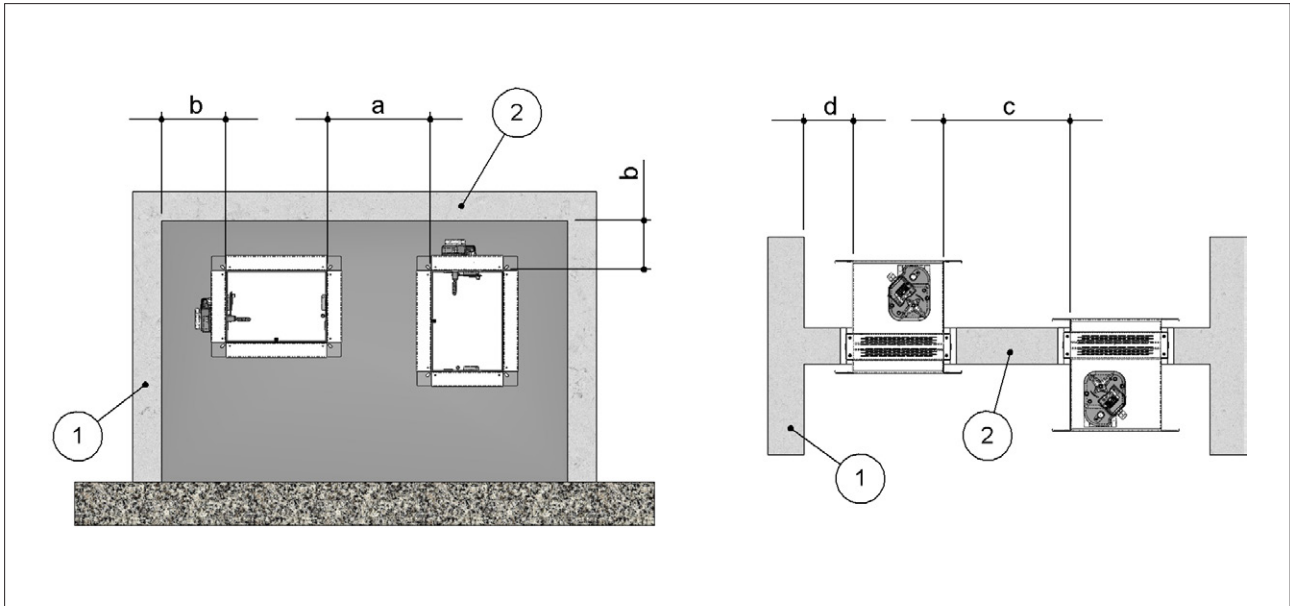


Minimum distances

It is recommended to keep enough space for using the control mechanism or for maintenance. Maintain a minimum distance of 200 mm between fire damper and any other element that crosses the wall (e.g:

doors, electrical cables, hydraulic pipes etc.) and between different fire damper models. In accordance with Articles 7 and 13 of EN 1366-2 respect the minimum distances indicated below.

- 1. Side vertical wall
- 2. Floor
- a. Distance between fire dampers installed within vertical wall
- b. Distance between fire damper and vertical lateral wall / floor
- c. Distance between fire dampers installed within floor
- d. Distance between fire damper and vertical lateral wall



Installation	Fire dampers installed within vertical wall		Fire dampers installed within floor		Paired installation
	a [mm]	b [mm]	c [mm]	d [mm]	
Rigid wall EI 120 S Installation within vertical rigid wall p. 24 Mortar or plaster putty sealing	44	75	-	-	Yes. One air duct
EI 120S Installation within vertical rigid wall p. 24 Plasterboard and rock wool 100 kg/m ³ sealing	44	75	-	-	Yes. One air duct
Flexible wall EI 120 S Installation within vertical light wall (plasterboard) p. 26 Plasterboard and rock wool 100 kg/m ³ sealing	44	75	-	-	Yes. One air duct
EI 120 S Installation within vertical light wall (gypsum blocks wall) p. 27 Plasterboard sealing	44	75	-	-	Yes. One air duct
EI 90 S Installation within vertical light wall (gypsum blocks wall) p. 27 Plasterboard sealing	200	75	-	-	No
Floor EI 180 S Installation within floor p. 28 Mortar sealing	-	-	200	75	No
EI 120 S Installation within floor p. 28 Mortar sealing	-	-	200	75	No
EI 90 S Installation within floor p. 28 Mortar sealing	-	-	200	75	No

The minimum distance between two or more paired installations is 200 mm

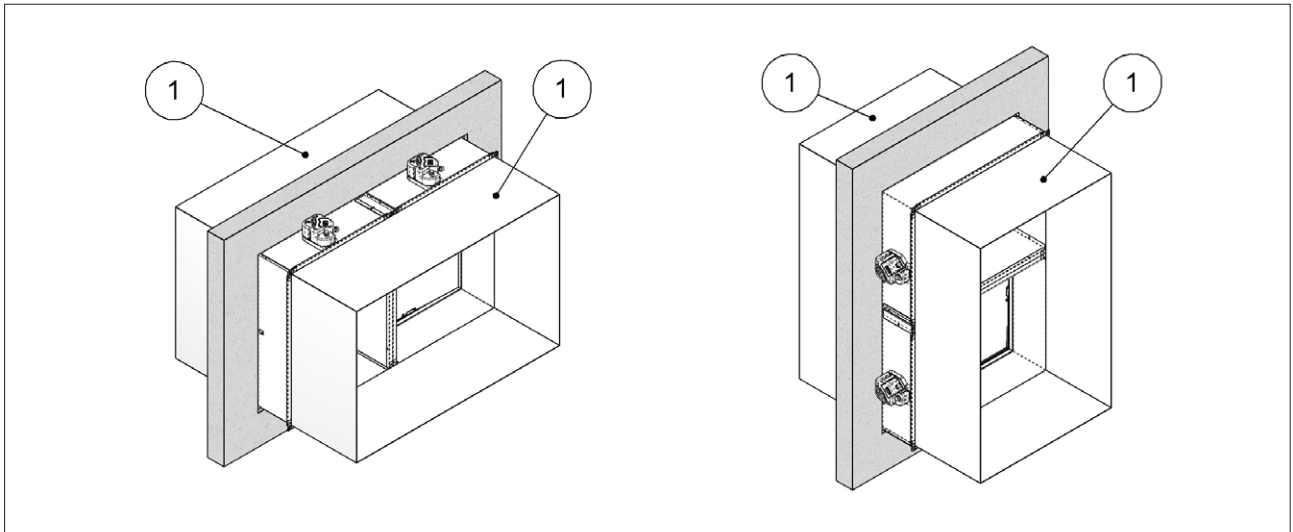
Fire Batt (Weichschott) sealings

Installation	Fire dampers installed within vertical wall		Fire dampers installed within floor		Paired installation
	a [mm]	b [mm]	c [mm]	d [mm]	
Rigid wall EI 120 S Installation within vertical rigid wall with Fire Batt (Weichschott) sealing p. 29 Rock wool 140 kg/m ³ and endothermic varnish sealing	44	75	-	-	Yes. One air duct

Installation	Fire dampers installed within vertical wall		Fire dampers installed within floor		Paired installation
	a [mm]	b [mm]	c [mm]	d [mm]	
Flexible wall EI 120 S Installation within vertical light wall (gypsum blocks wall) with Fire Batt (Weichschott) sealing p. 29 Rock wool 140 kg/m ³ and endothermic varnish sealing	44	75	-	-	Yes. One air duct
EI 120 S Installation within vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing p. 29 Rock wool 140 kg/m ³ and endothermic varnish sealing	44	75	-	-	Yes. One air duct
Floor EI 120 S Installation within floor with Fire Batt (Weichschott) sealing p. 30 Rock wool 140 kg/m ³ and endothermic varnish sealing	-	-	200	75	No

The minimum distance between two or more paired installations is 200 mm

1. One air duct



▣ Installations remote from vertical wall

Installation	Fire dampers installed within vertical wall		Fire dampers installed within floor		Paired installation
	a [mm]	b [mm]	c [mm]	d [mm]	
Rigid wall Installation remote from the vertical rigid wall p. 31 Mortar or plaster putty sealing	200	110 *	-	-	No
Installation remote from the vertical rigid wall with Fire Batt (Weichschott) sealing p. 35 Rock wool 140 kg/m ³ and endothermic varnish sealing	200	110 *	-	-	No
Flexible wall Installation remote from the vertical light wall (plasterboard) p. 33 Plasterboard and rock wool 100 kg/m ³ or mortar or plaster putty sealing	200	110 *	-	-	No
Installation remote from the vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing p. 35 Rock wool 140 kg/m ³ and endothermic varnish sealing	200	110 *	-	-	No
Installation remote from the vertical light wall (gypsum blocks wall) p. 31 Mortar or plaster putty sealing	200	110 *	-	-	No
Installation remote from the vertical light wall (gypsum blocks wall) with Fire Batt (Weichschott) sealing p. 35 Rock wool 140 kg/m ³ and endothermic varnish sealing	200	110 *	-	-	No
Floor EI 120 S Installation remote from the floor p. 37 Mortar or plaster putty sealing	-	-	200	110 *	No
EI 90 S Installation remote from the floor p. 37 Mortar or plaster putty sealing	-	-	200	110 *	No

* Due to rock wool panels thickness. See installation details.

▣ Installations within vertical light wall (Shaft wall)

	Installation	Fire dampers installed within vertical wall		Fire dampers installed within floor		Paired installation
		a [mm]	b [mm]	c [mm]	d [mm]	
Flexible wall	EI 60 S Installation within vertical light wall (Shaft wall) p. 39 Plasterboard and mortar or plaster putty sealing	200	75	-	-	No

Construction supports characteristics

The European standard for fire dampers foresees a precise correlation between the wall/floor characteristics and the fire resistance class obtained, as well as the correlation between wall/floor used for the test and wall/floor used for the actual installation.

The test results obtained on a type of wall/floor are valid also for walls/floor of the same type but with greater thickness and/or density than those used in the test.

For plasterboard walls, the test results are also valid for walls with a greater number of plasterboard layers on each side. As a result, the indicated thickness and density characteristics are to be considered as minimum values.

The wall/floor in which the fire dampers are installed must be fire class certified according to the standards foreseen for the structure.

Rigid walls

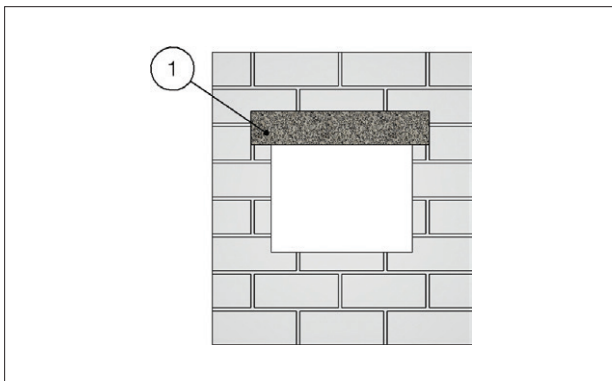
Can be made with aerated concrete blocks, poured concrete, concrete panels, perforated cell elements in concrete or brick in accordance with the following characteristics:

- minimum thickness 100 mm;
- minimum density 550 kg/m³.

The use of a reinforcing beam above the opening is recommended for walls made from concrete blocks, bricks or in concrete cell elements.

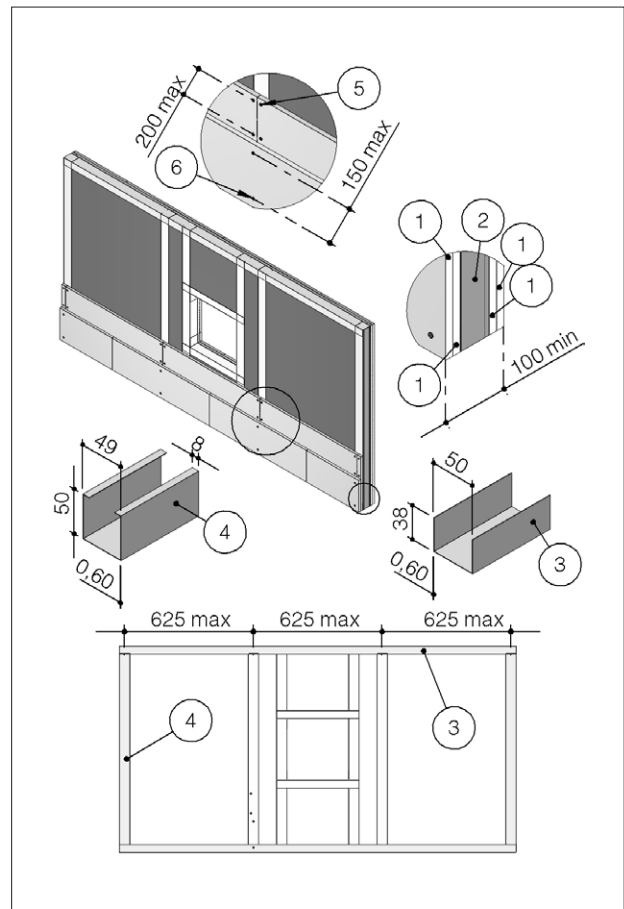
For walls built with perforated elements, it is also recommended that the area of the opening be made from full elements (for example aerated concrete blocks) to guarantee the correct adhesion of the mortar.

1. Reinforcing beam



- rock wool filling which has minimum density 100 kg/m³;
- each side is made from two plasterboard layers 12,5 mm minimum thick, unalined to avoid alignment between the joints of the layer above and below.
- the front plasterboards layers are fixed using long enough screws to pass through the lower plasterboard and attach to the steel profile underneath.

1. Plasterboard thickness 12,5 mm
2. Rock wool, 100 kg/m³
3. Horizontal U-shaped profile
4. Vertical C-shaped profile
5. Self-drilling screw Ø 3,5 X 25 mm
6. Self-drilling screw Ø 3,5 X 35 mm



Light plasterboard vertical walls

The following indications are given for the installation walls:

- U-shaped horizontal metal frame (minimum width 50 mm) and C-shaped vertical frame (minimum width 49 mm) made from sheet metal (minimum thickness 0,6 mm);
- vertical profiles placed with a maximum spacing of 625 mm between each other;
- vertical profile fixing with selfthreading screws or by clinching to the bottom horizontal profile and insertion in the top horizontal profile;
- profiles fixed using self-threading screws or by clinching on every intersection.
- installation of a frame around the damper with base and height as shown in the installation instructions;

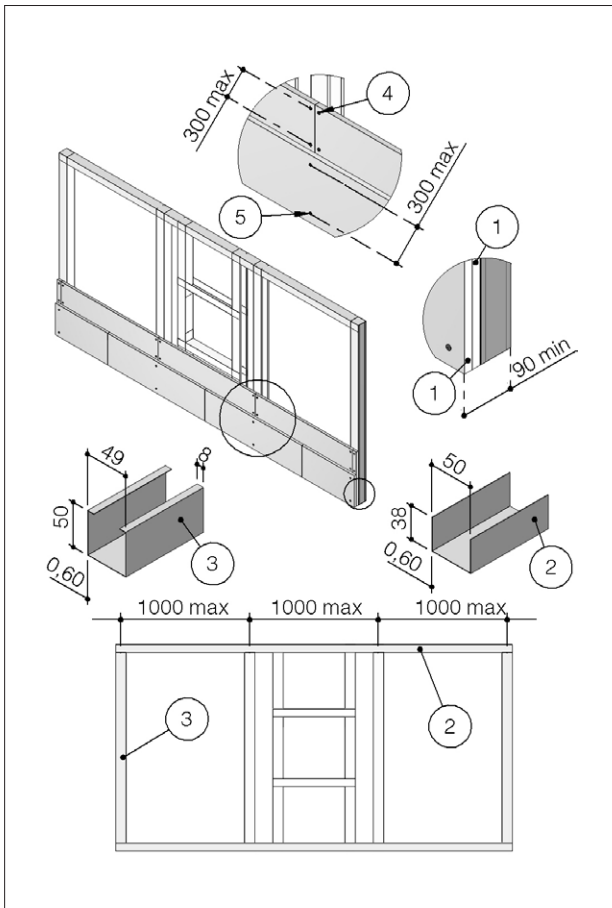
Light plasterboard vertical walls (Shaft wall)

The following indications are given for the installation walls:

- U-shaped horizontal metal frame (minimum width 50 mm) and C-shaped vertical frame (minimum width 49 mm) made from sheet metal (minimum thickness 0,6 mm);
- vertical profiles placed with a maximum spacing of 1000 mm between each other;
- vertical profile fixing with selfthreading screws or by clinching to the bottom horizontal profile and insertion in the top horizontal profile;
- profiles fixed using self-threading screws or by clinching on every intersection.
- installation of a frame around the damper with base and height as shown in the installation instructions;

- one side is made from two plasterboard layers 20 mm minimum thick, unaligned to avoid alignment between the joints of the layer above and below;
- the front plasterboards layers are fixed using long enough screws to pass through the lower plasterboard and attach to the steel profile underneath.

1. Plasterboard thickness 20 mm
2. Horizontal U-shaped profile
3. Vertical C-shaped profile
4. Self-drilling screw $\varnothing 3,5 \times 35$ mm
5. Self-drilling screw $\varnothing 3,5 \times 55$ mm



■ Gypsum blocks light walls

Gypsum blocks wall can be built with special solid gypsum blocks with interlocking shaped edges as indicated in the supplier's instructions and according to the following characteristics:

- minimum thickness 70 or 100 mm according to the type and resistance class required;
- minimum density 995 kg/m³.

It is generally advisable to first build the wall and then provide the opening for the fire damper.

■ Aerated concrete floors

Aerated concrete floors can be built during installation or with preformed slabs with interlocking shaped edges according to the following characteristics:

- minimum thickness 100 or 150 mm according to the type and resistance class required;
- minimum density 650 kg/m³

■ Poured concrete floors

Poured concrete floors can be built during installation or with preformed slabs with interlocking shaped edges according to the following characteristics:

- minimum thickness 100 or 150 mm according to the resistance class required;
- minimum density 2200 kg/m³.

■ Installations within vertical rigid wall

Refer to the section Construction supports characteristics [p. 22](#) for further information.

Comply with the minimum distances indicated on section Minimum distances [p. 19](#).

■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

In case of paired installation refer to the section Fire dampers pairing for big ducts dimensions [p. 5](#) for further information

■ Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing.

■ Filling

Fill the space between the wall and the damper as indicated in the table and in the drawing.

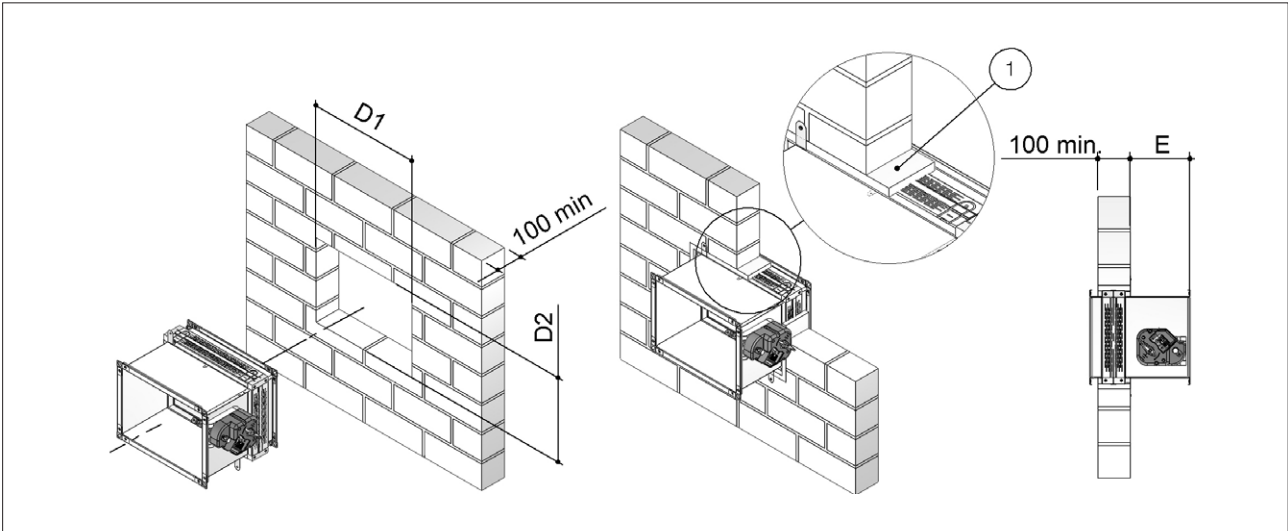
	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
EI 120 S Installation within vertical rigid wall					
Wall minimum density 550 kg/m ³	EI 120 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	185	100	Mortar or plaster putty sealing
EI 120S Installation within vertical rigid wall					
Wall minimum density 550 kg/m ³	EI 120 S (500 Pa)	From (B+50) x (H+50) to (B+70) x (H+70)	185	100	Plasterboard and rock wool 100 kg/m ³ sealing

B Nominal base of the damper
H Nominal height of the damper

EI 120 S Installation within vertical rigid wall

- D1 Hole base: see table above
- D2 Hole height: see table above

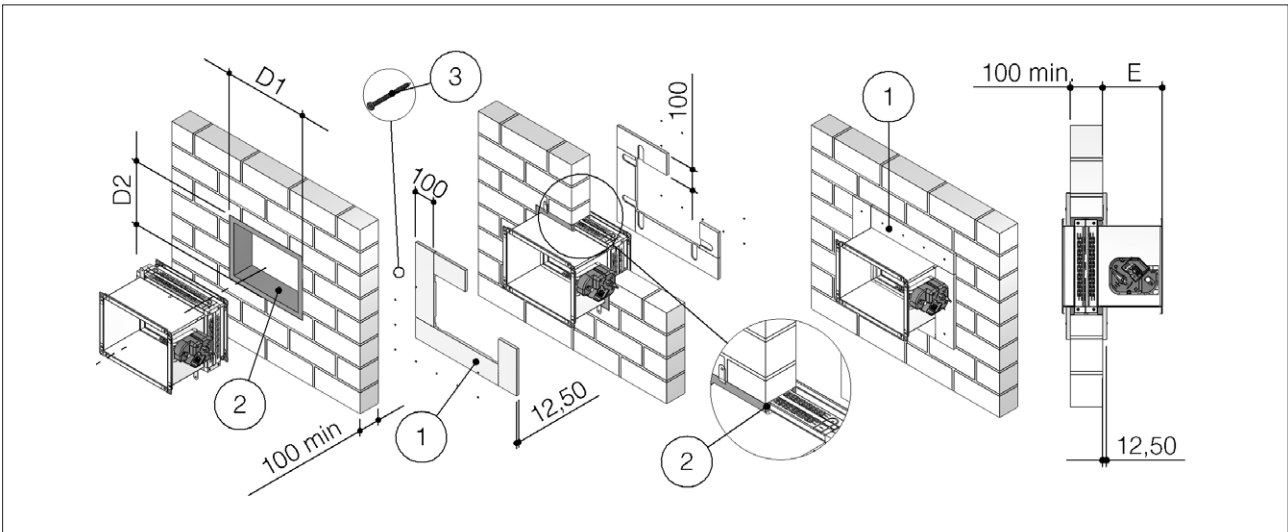
- E Damper protrusion from the wall: see table above
- 1. Mortar M-10, EN998-2 or plaster putty



EI 120S Installation within vertical rigid wall

- D1 Hole base: see table above
- D2 Hole height: see table above
- E Damper protrusion from the wall: see table above

- 1. Plasterboard infill panel, thickness 12,5 mm
- 2. Rock wool, 100 kg/m³
- 3. Self-drilling screw Ø 3,5 X 45 mm



Installation within vertical light wall (plasterboard)

Refer to the section Construction supports characteristics p. 22 for further information.
Comply with the minimum distances indicated on section Minimum distances p. 19.

Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing
In case of paired installation refer to the section Fire dampers pairing for big ducts dimensions p. 5 for further information

Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing.

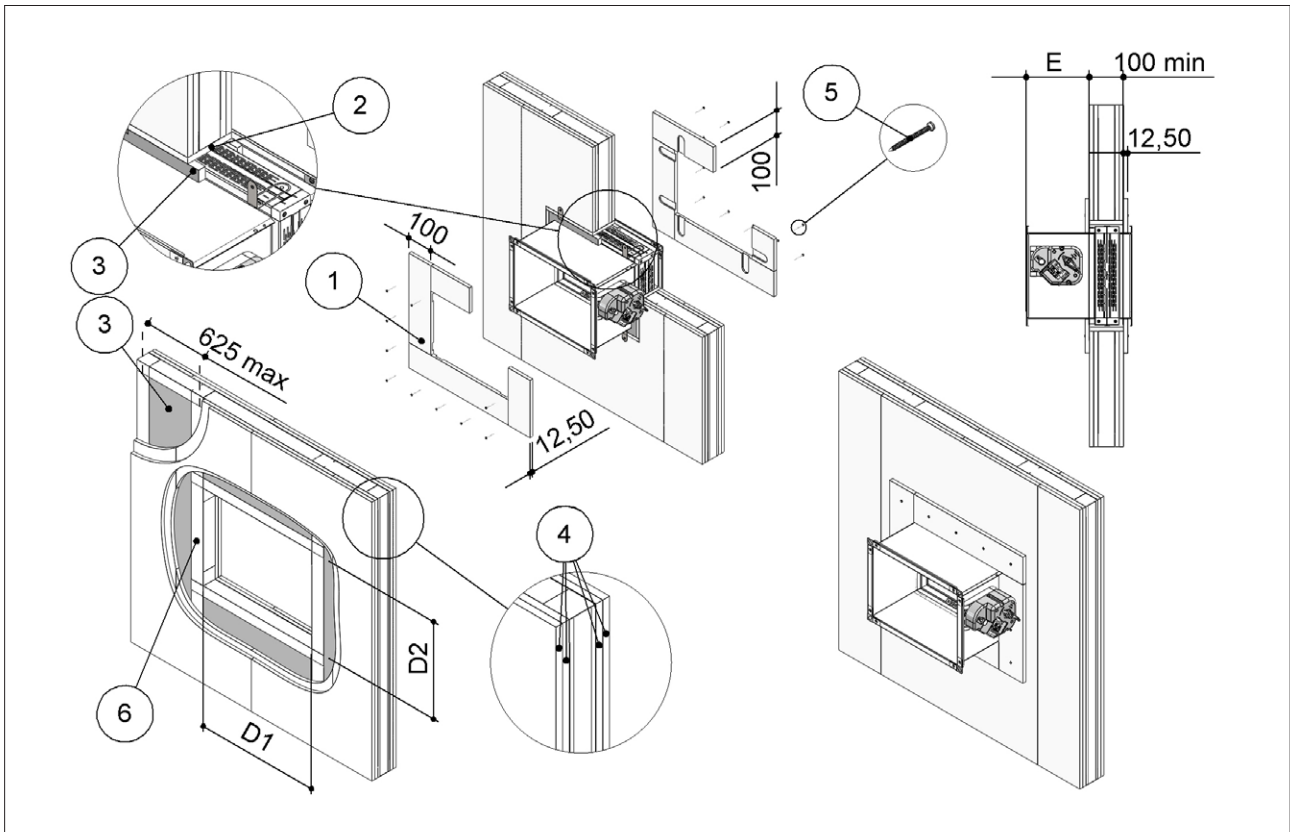
Filling

Fill the space between the wall and the damper as indicated in the table and in the drawing.
Cover the rock wool by applying on both faces of the wall a layer of plasterboard, to a total minimum thickness of 12,5 mm per side, to make a frame 100 mm wide.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
EI 120 S Installation within vertical light wall (plasterboard)					
Wall rock wool minimum density 100 kg/m ³	EI 120 S (500 Pa)	From (B+75) x (H+75) to (B+95) x (H+95)	185	100	Rock wool 100 kg/m ³ with infill plasterboard (thickness 12.5 mm)

B Nominal base of the damper
H Nominal height of the damper

- D1 Hole base: see table above
- D2 Hole height: see table above
- E Damper protrusion from the wall: see table above
- 1. Plasterboard infill panel, thickness 12,5 mm
- 2. Plasterboard infill panel, thickness 12,5 mm
- 3. Rock wool, 100 kg/m³
- 4. Plasterboard thickness 12,5 mm
- 5. Self-drilling screw Ø 3,5 X 45 mm
- 6. Metal frame



■ Installations within vertical light wall (gypsum blocks wall)

Refer to the section Construction supports characteristics p. 22 for further information.
Comply with the minimum distances indicated on section Minimum distances p. 19.

■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing
In case of paired installation refer to the section Fire dampers pairing for big ducts dimensions p. 5 for further information

■ Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing.

■ Filling

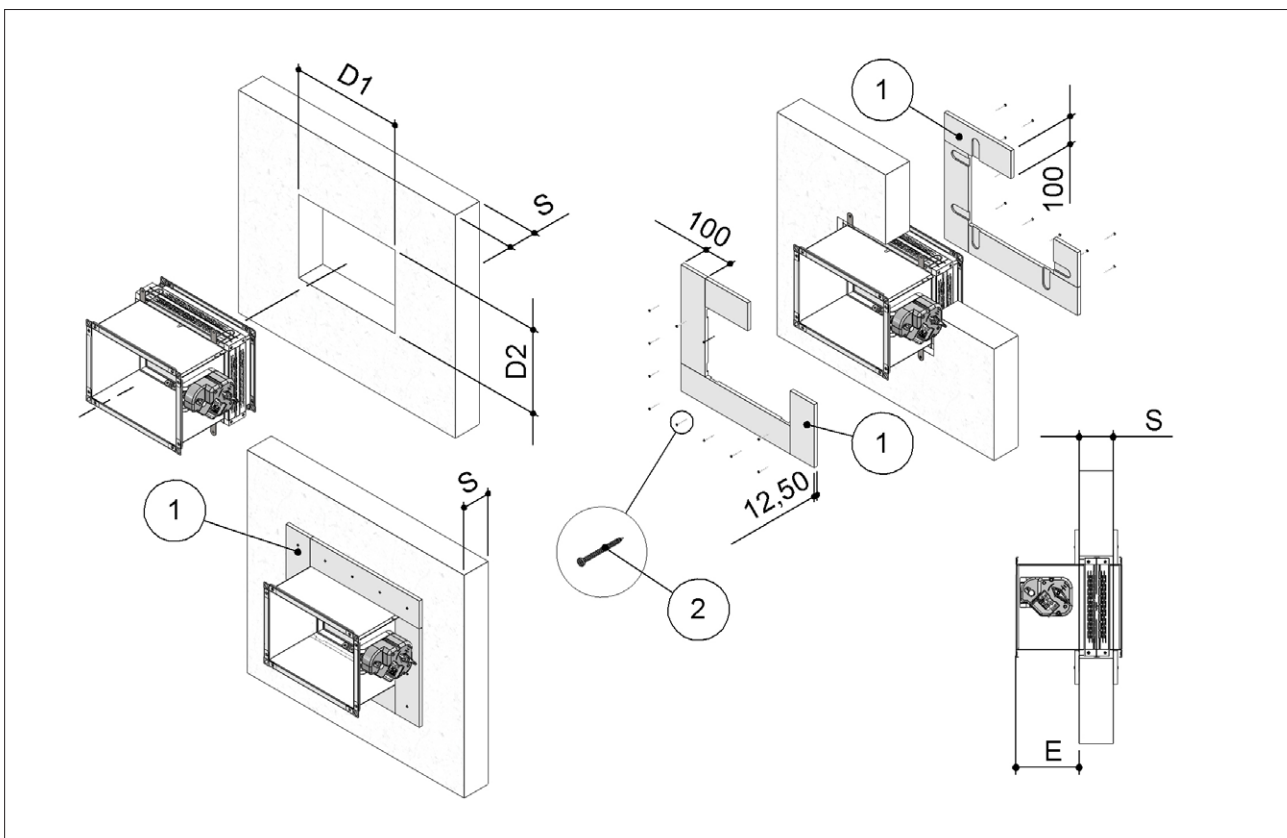
It is not necessary to insert any material, but simply cover the gap between the damper and the wall by applying on both faces of the wall a layer of plasterboard, to a total minimum thickness of 12,5 mm per side, to make a frame 100 mm wide.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
EI 90 S Installation within vertical light wall (gypsum blocks wall) <small>(paired installation not available)</small>					
Wall minimum density 995 kg/m ³	EI 90 S (500 Pa)	From (B+50) x (H+50) to (B+70) x (H+70)	202	70	Plasterboard sealing
EI 120 S Installation within vertical light wall (gypsum blocks wall)					
Wall minimum density 995 kg/m ³	EI 120 S (500 Pa)	From (B+50) x (H+50) to (B+70) x (H+70)	185	100	Plasterboard sealing

B Nominal base of the damper
H Nominal height of the damper

D1 Hole base: see table above
D2 Hole height: see table above
E Damper protrusion from the wall: see table above

S Wall minimum thickness: see table above
1. Plasterboard infill panel, thickness 12,5 mm
2. Self-drilling screw Ø 3,5 X 45 mm



Installations within floor

Refer to the section Construction supports characteristics p. 22 for further information.
Comply with the minimum distances indicated on section Minimum distances p. 19.

Floor opening

A opening must be provided in the floor as indicated in the table and in the drawing

Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing.

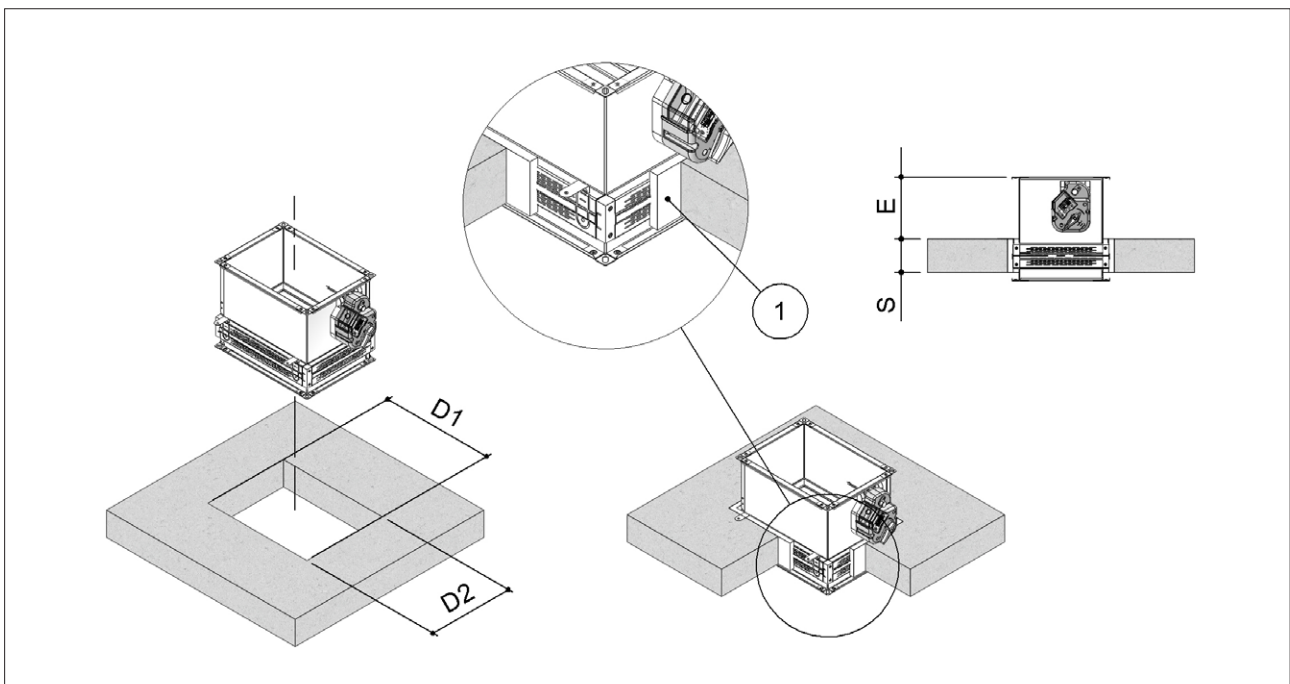
Filling

Fill the space between the floor and the damper as indicated in the table and in the drawing.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the floor "E" [mm]	Floor minimum thickness "S" [mm]	Sealing
EI 90 S Installation within floor					
Floor minimum density 650 kg/m ³	EI 90 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	185	100	Mortar sealing
EI 120 S Installation within floor					
Floor minimum density 650 kg/m ³	EI 120 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	170	150	Mortar sealing
EI 180 S Installation within floor					
Floor minimum density 2200 kg/m ³	EI 180 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	170	150	Mortar sealing

B Nominal base of the damper
H Nominal height of the damper

D1 Hole base: see table above
D2 Hole height: see table above
E Damper protrusion from the floor: see table above
S Floor minimum thickness: see table above
1. Mortar M-10, EN998-2



Installations within vertical wall with Fire Batt (Weichschott) sealing

Refer to the section Construction supports characteristics p.22 for further information.
Comply with the minimum distances indicated on section Minimum distances p.19.

Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing
In case of paired installation refer to the section Fire dampers pairing for big ducts dimensions p.5 for further information

Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing.

The fire damper has to be fixed at the bottom and suspended from the ceiling.

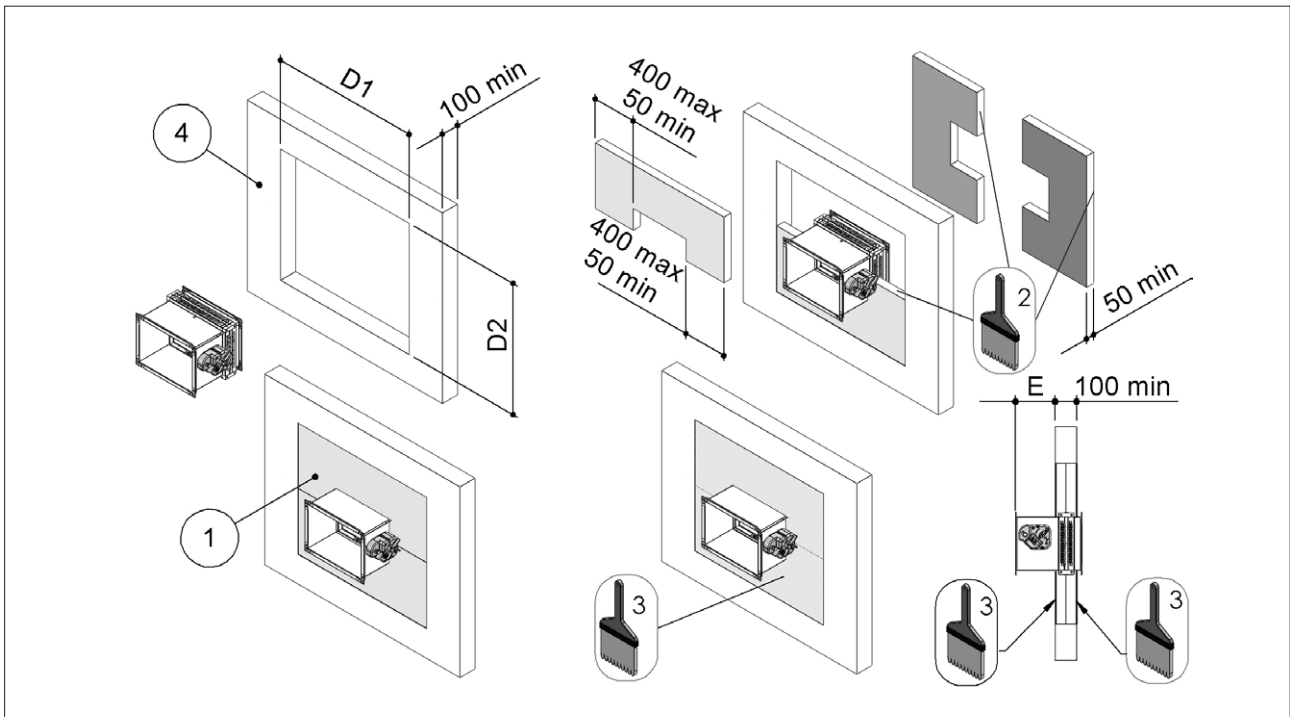
Filling

Fill the space between the damper and the wall using Fire Batt (Weichschott) sealing made from two rock wool panels with minimum thickness of 50 mm and minimum density of 140 kg/m³.
The panels must be covered on both faces of the wall with endothermic varnish type PROMASTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMASTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
Rigid wall	EI 120 S Installation within rigid vertical wall with Fire Batt (Weichschott) sealing				
	Wall minimum density 550 kg/m ³	EI 120 S (300 Pa)	(B+800 max) x (H+800 max)	185	100
Flexible wall	EI 120 S Installation within vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing				
	Wall rock wool minimum density 100 kg/m ³	EI 120 S (300 Pa)	(B+800 max) x (H+800 max)	185	100
Flexible wall	EI 120 S Installation within vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing				
	Wall minimum density 995 kg/m ³	EI 120 S (300 Pa)	(B+800 max) x (H+800 max)	185	100

B Nominal base of the damper
H Nominal height of the damper

- D1 Hole base: see table above
- D2 Hole height: see table above
- E Damper protrusion from the wall: see table above
- 1. Rock wool panel 50 mm thick with 140 kg/m³ density.
- 2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant
- 3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish
- 4. Wall indicated in the table



Installation within floor with Fire Batt (Weichschott) sealing

Refer to the section Construction supports characteristics p. 22 for further information.
Comply with the minimum distances indicated on section Minimum distances p. 19

Floor opening

A opening must be provided in the floor as indicated in the table and in the drawing

Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing.

Filling

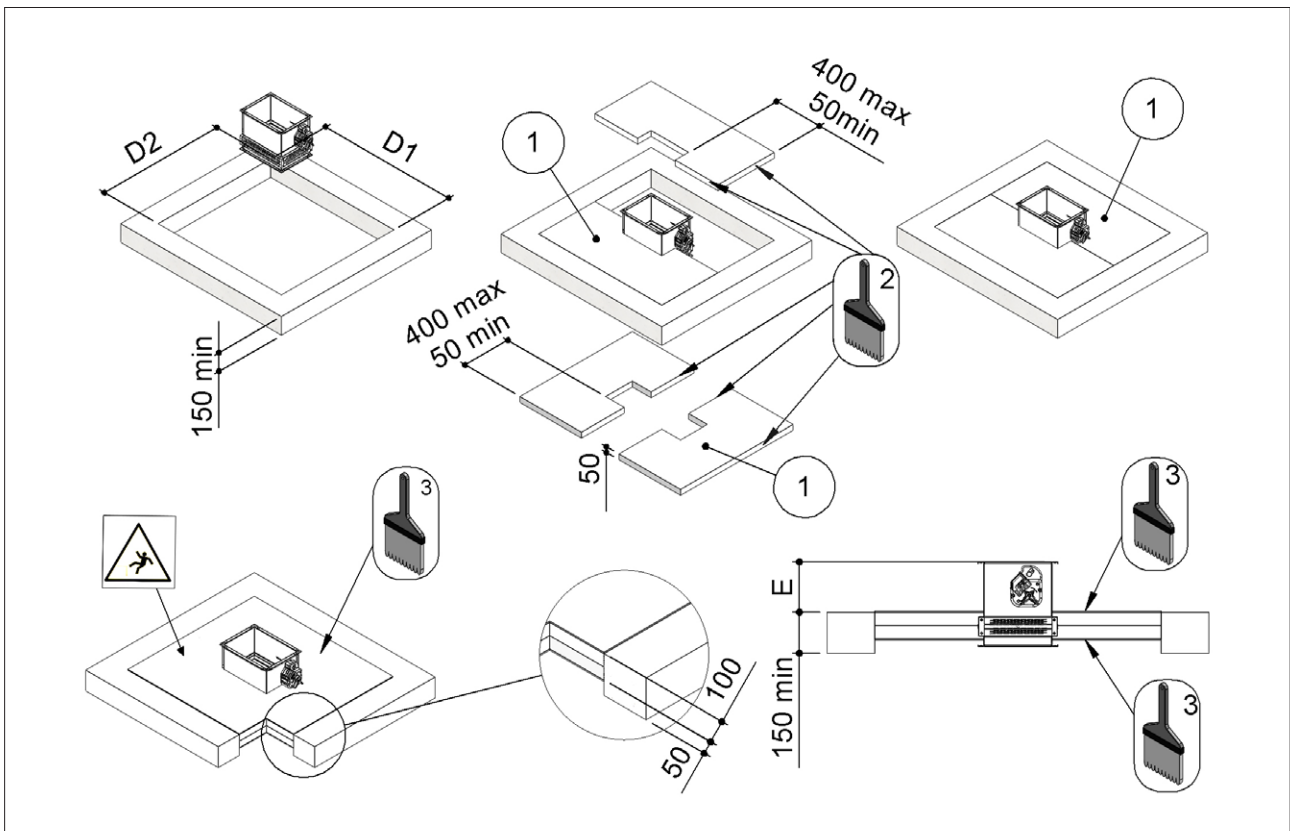
Fill the space between the damper and the floor using Fire Batt (Weichschott) sealing made from two rock wool panels with minimum thickness of 50 mm and minimum density of 140 kg/m³.

The panels must be covered on both faces of the wall with endothermic varnish type PROMASTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMASTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the floor "E" [mm]	Floor minimum thickness "S" [mm]	Sealing
EI 120 S Installation within floor and Fire Batt (Weichschott) sealing					
Floor minimum density 650 kg/m ³	EI 120 S (300 Pa)	(B+800 max) x (H+800 max)	185	150	Rock wool 140 kg/m ³ and endothermic varnish sealing

B Nominal base of the damper
H Nominal height of the damper

- | | | | |
|----|---|----|---|
| D1 | Hole base: see table above | 1. | Rock wool panel 50 mm thick with 140 kg/m ³ density. |
| D2 | Hole height: see table above | 2. | PROMASTOP E PASTE or HILTI CFS-S ACR type sealant |
| E | Damper protrusion from the floor: see table above | 3. | PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish |



■ Installations remote from the vertical rigid wall and the vertical light wall (gypsum blocks wall)

Refer to the section Construction supports characteristics p. 22 for further information.

Comply with the minimum distances indicated on section Minimum distances p. 19.

■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

■ Damper positioning

Connect fire damper to the galvanized steel duct as indicated in the drawing.

Between fire damper and wall the maximum distance is 1000 mm.

The maximum length of the part of duct connected to the damper is 2100 mm

The fire damper has to be fixed and suspended from the ceiling as indicated in the drawing.

The hanging structure is composed by:

- 2 C-shaped steel profiles 10x41x41x41x10 mm
- 2 M10 threaded rods

- 4 M10 nuts

Position the threaded rods 135 mm from the connection between fire damper and duct and at a distance of 50 mm from the side of the damper.

■ Filling

Fill the space between the wall and the damper using mortar suitable for use in fire resistant constructions, M10 class or higher or plaster putty.

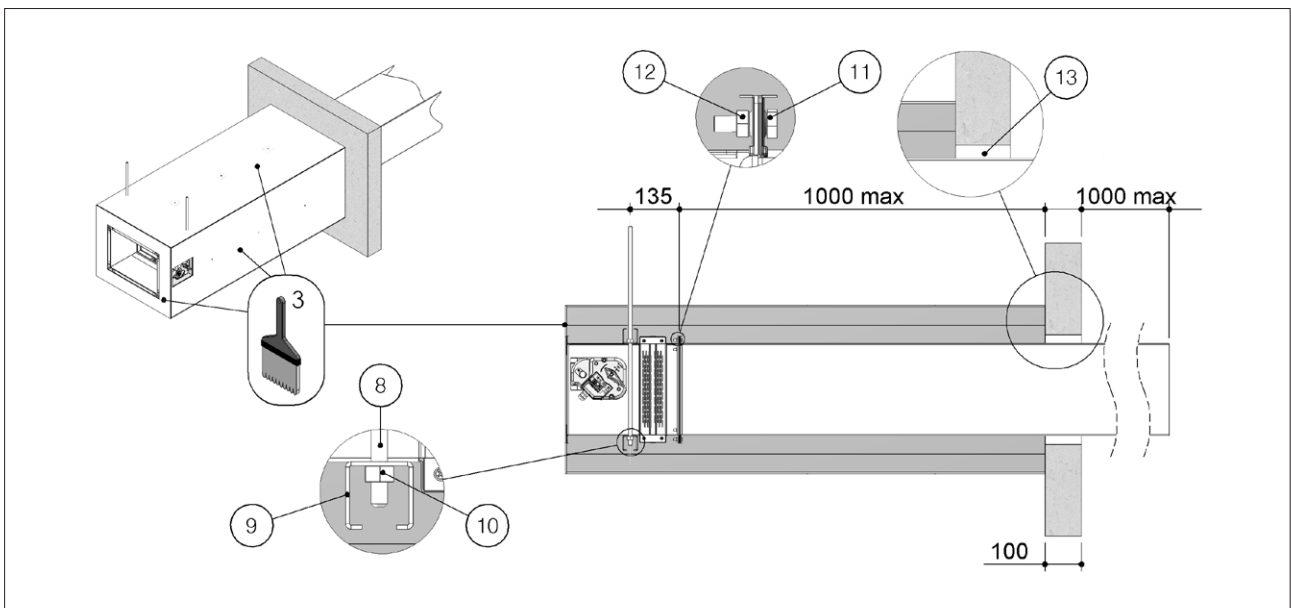
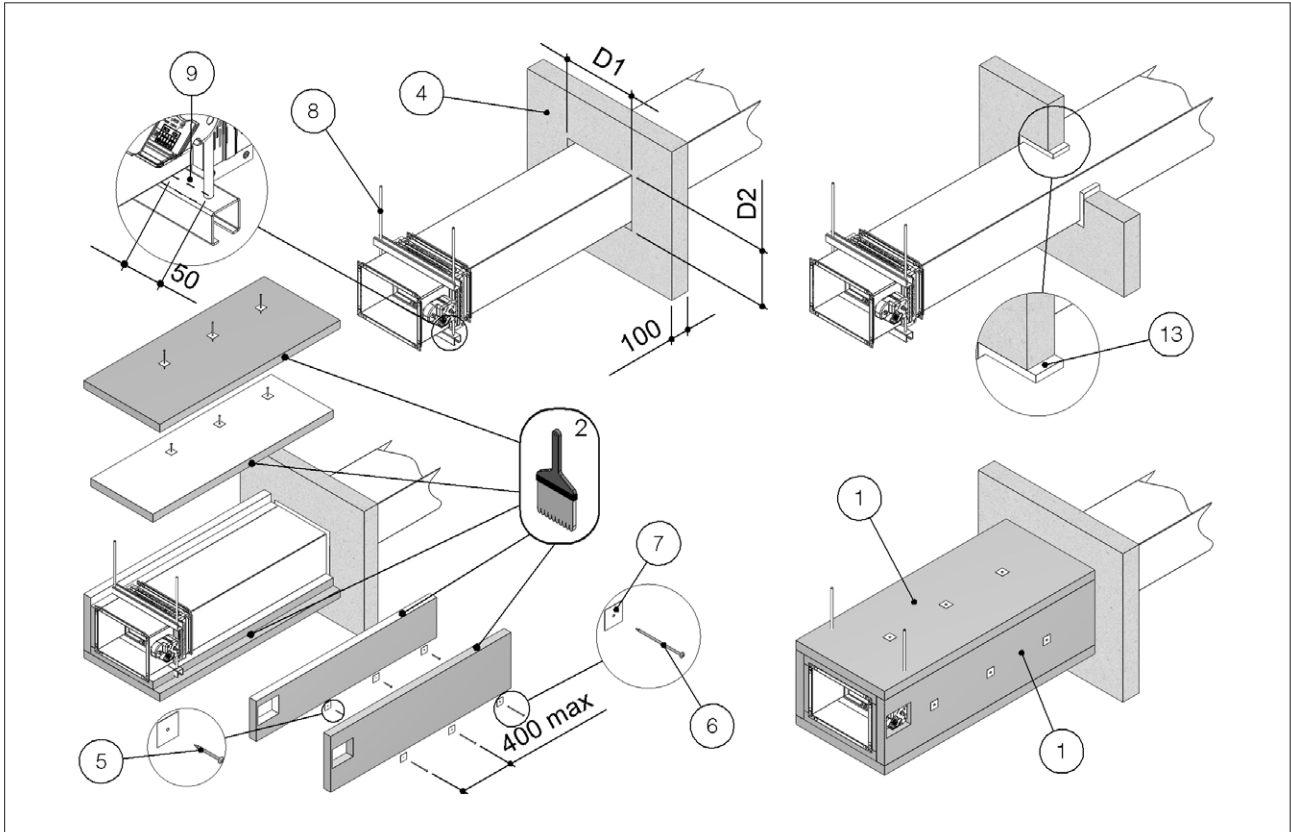
Cover the duct over its entire length and fire damper with 2 rock wool panels 50 mm thick and with a density of 140 kg/m³.

The panels must be covered externally with endothermic varnish type PROSTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMOSTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

Fix first layer of rock wool panel to the duct with screws Ø5 X 60 mm and washers 40 X 40 mm, and the second one with screws Ø5 X 120 mm and washers 40 X 40 mm.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Wall minimum thickness "S" [mm]	Sealing
Rigid wall	Installation remote from the vertical rigid wall			
	Wall minimum density 550 kg/m ³ EI 120 S (300 Pa) EI 90 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	100	Mortar or plaster putty sealing
Flexible wall	Installation remote from the vertical light wall (gypsum blocks wall)			
	Wall minimum density 995 kg/m ³ EI 120 S (300 Pa) EI 90 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	100	Mortar or plaster putty sealing

- D1 Hole base: see table above
- D2 Hole height: see table above
- 1. Rock wool panel 50 mm thick with 140 kg/m³ density.
- 2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant
- 3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish
- 4. Vertical wall
- 5. Self-drilling screw Ø 5 X 60 mm
- 6. Self-drilling screw Ø 5 X 120 mm
- 7. Washer 40 x 40 mm
- 8. M10 threaded rod
- 9. C-shaped steel profile 10x41x41x41x10 mm
- 10. M10 nut
- 11. Screw Ø 6 X 20 mm
- 12. M6 nut
- 13. Mortar M-10, EN998-2 or plaster putty



■ Installation remote from the vertical light wall (plasterboard)

Refer to the section Construction supports characteristics [p. 22](#) for further information.
Comply with the minimum distances indicated on section Minimum distances [p. 19](#).

■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

■ Damper positioning

Connect fire damper to the galvanized steel duct as indicated in the drawing.
Between fire damper and wall the maximum distance is 1000 mm.
The maximum length of the part of duct connected to the damper is 2100 mm
The fire damper has to be fixed and suspended from the ceiling as indicated in the drawing.
The hanging structure is composed by:
- 2 C-shaped steel profiles 10x41x41x41x10 mm
- 2 M10 threaded rods

- 4 M10 nuts

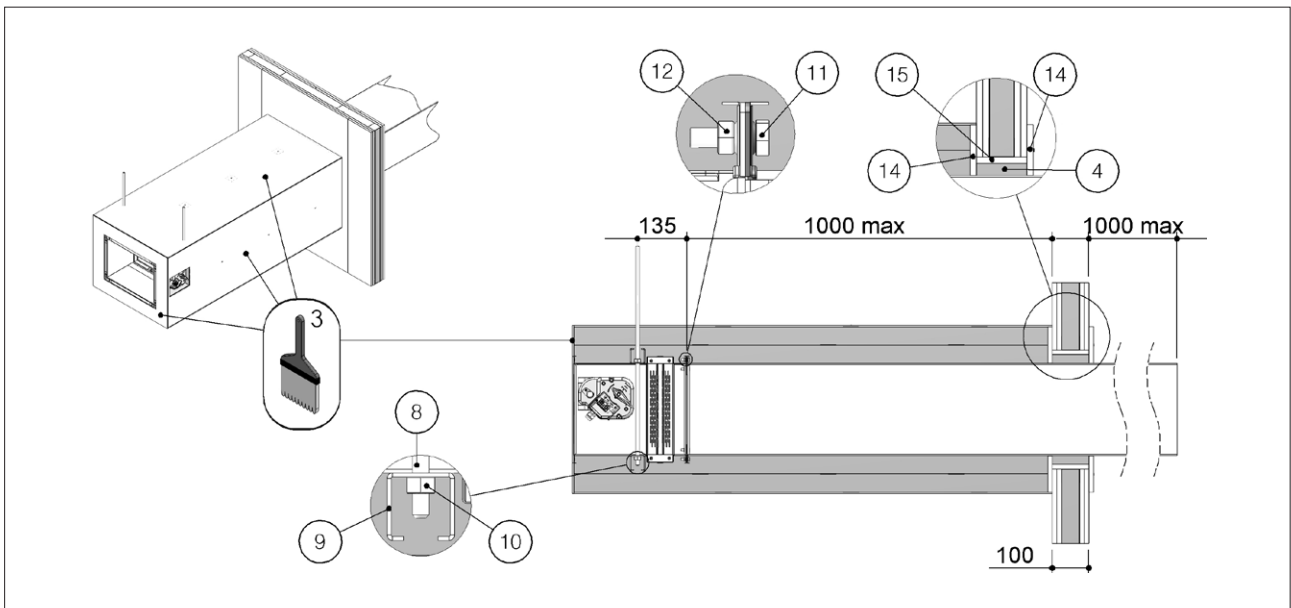
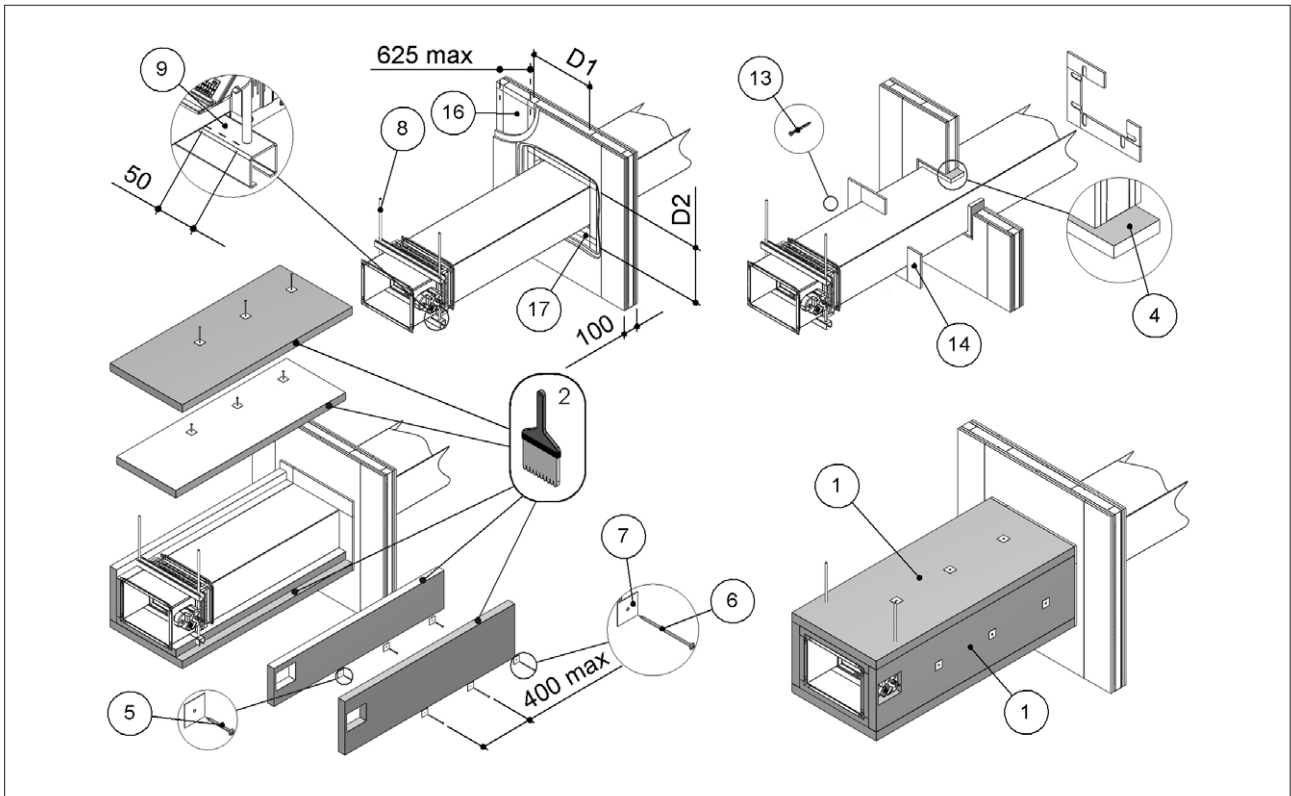
Position the threaded rods 135 mm from the connection between fire damper and duct and at a distance of 50 mm from the side of the damper.

■ Filling

Fill the space between the wall and the fire damper using rock wool which has density of 100 kg/m³.
Cover the rock wool by applying on both faces of the wall a layer of plasterboard, to a total minimum thickness of 12,5 mm per side, to make a frame 100 mm wide.
Cover the duct over its entire length and fire damper with 2 rock wool panels 50 mm thick and with a density of 140 kg/m³.
The panels must be covered externally with endothermic varnish type PROSTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMOSTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).
Fix first layer of rock wool panel to the duct with screws Ø5 X 60 mm and washers 40 X 40 mm, and the second one with screws Ø5 X 120 mm and washers 40 X 40 mm.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Wall minimum thickness "S" [mm]	Sealing
Flexible wall	Installation remote from the vertical light wall (plasterboard)			
	EI 120 S (300 Pa) EI 90 S (500 Pa) Wall rock wool minimum density 100 kg/m ³	From (B+75) x (H+75) to (B+95) x (H+95)	100	Rock wool 100 kg/m ³ or mortar or plaster putty with infill plasterboard (thickness 12.5 mm)

- | | | | |
|----|---|-----|--|
| D1 | Hole base: see table above | 9. | C-shaped steel profile 10x41x41x41x10 mm |
| D2 | Hole height: see table above | 10. | M10 nut |
| 1. | Rock wool panel 50 mm thick with 140 kg/m ³ density. | 11. | Screw Ø 6 X 20 mm |
| 2. | PROMASTOP E PASTE or HILTI CFS-S ACR type sealant | 12. | M6 nut |
| 3. | PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish | 13. | Self-drilling screw Ø 3,5 X 45 mm |
| 4. | Rock wool, 100 kg/m ³ , or mortar M-10, EN998-2 or plaster putty | 14. | Plasterboard infill panel, thickness 12,5 mm |
| 5. | Self-drilling screw Ø 5 X 60 mm | 15. | Plasterboard infill panel, thickness 12,5 mm |
| 6. | Self-drilling screw Ø 5 X 120 mm | 16. | Rock wool, 100 kg/m ³ |
| 7. | Washer 40 x 40 mm | 17. | Metal frame |
| 8. | M10 threaded rod | | |



■ Installations remote from the vertical wall with Fire Batt (Weichschott) sealing

Refer to the section Construction supports characteristics p.22 for further information.
 Comply with the minimum distances indicated on section Minimum distances p.19.

■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

■ Damper positioning

Connect fire damper to the galvanized steel duct as indicated in the drawing.
 Between fire damper and wall the maximum distance is 1000 mm.
 The maximum length of the part of duct connected to the damper is 2100 mm
 The fire damper has to be fixed and suspended from the ceiling as indicated in the drawing.
 The hanging structure is composed by:

- 2 C-shaped steel profiles 10x41x41x41x10 mm
- 2 M10 threaded rods

- 4 M10 nuts

Position the threaded rods 135 mm from the connection between fire damper and duct and at a distance of 50 mm from the side of the damper.

■ Filling

Fill the space between the damper and the wall using Fire Batt (Weichschott) sealing made from two rock wool panels with minimum thickness of 50 mm and minimum density of 140 kg/m³.

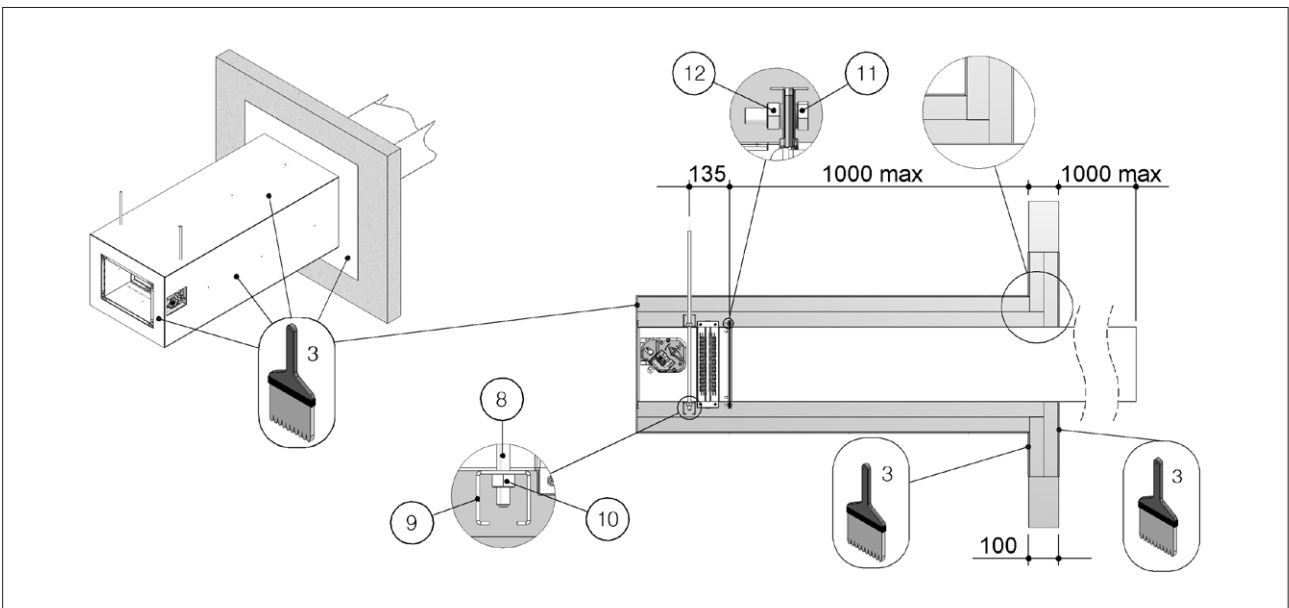
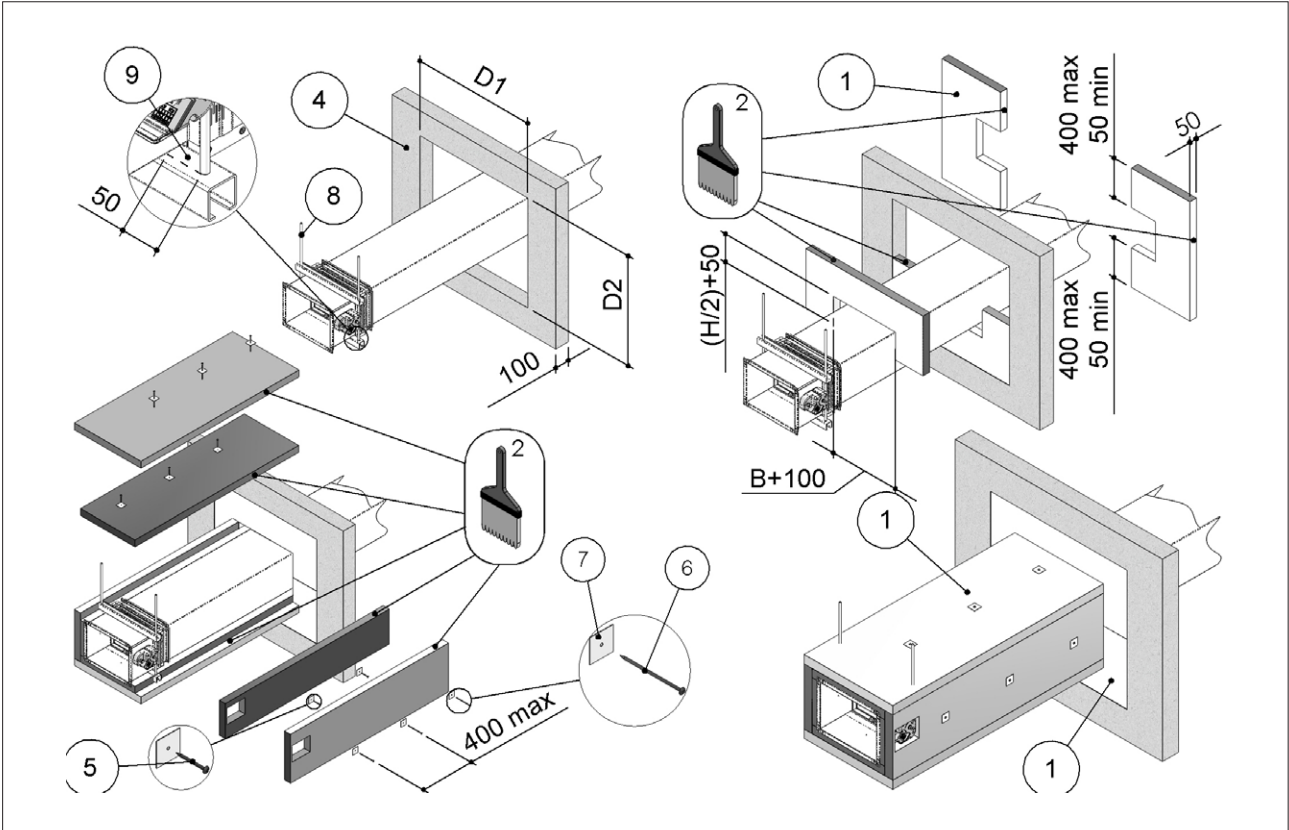
Cover the duct over its entire length and fire damper with 2 rock wool panels 50 mm thick and with a density of 140 kg/m³.

The panels must be covered externally with endothermic varnish type PROSTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMOSTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

Fix first layer of rock wool panel to the duct with screws Ø5 X 60 mm and washers 40 X 40 mm, and the second one with screws Ø5 X 120 mm and washers 40 X 40 mm.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Wall minimum thickness "S" [mm]	Sealing	
Rigid wall	Installation remote from the vertical rigid wall with Fire Batt (Weichschott) sealing				
	Wall minimum density 550 kg/m ³	EI 120 S (300 Pa) EI 90 S (500 Pa)	(B+800 max) x (H+800 max)	100	Rock wool 140 kg/m ³ and endothermic varnish sealing
Flexible wall	Installation remote from vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing				
	Wall rock wool minimum density 100 kg/m ³	EI 120 S (300 Pa) EI 90 S (500 Pa)	(B+800 max) x (H+800 max)	100	Rock wool 140 kg/m ³ and endothermic varnish sealing
	Installation remote from vertical light wall (gypsum blocks) with Fire Batt (Weichschott) sealing				
	Wall minimum density 995 kg/m ³	EI 120 S (300 Pa) EI 90 S (500 Pa)	(B+800 max) x (H+800 max)	100	Rock wool 140 kg/m ³ and endothermic varnish sealing

- D1 Hole base: see table above
- D2 Hole height: see table above
- 1. Rock wool panel 50 mm thick with 140 kg/m³ density.
- 2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant
- 3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish
- 4. Vertical wall
- 5. Self-drilling screw Ø 5 X 60 mm
- 6. Self-drilling screw Ø 5 X 120 mm
- 7. Washer 40 x 40 mm
- 8. M10 threaded rod
- 9. C-shaped steel profile 10x41x41x41x10 mm
- 10. M10 nut
- 11. Screw Ø 6 X 20 mm
- 12. M6 nut



Installations remote from the floor

Refer to the section Construction supports characteristics p.22 for further information.
Comply with the minimum distances indicated on section Minimum distances p.19.

Floor opening

A opening must be provided in the floor as indicated in the table and in the drawing

Damper positioning

Connect fire damper to the galvanized steel duct as indicated in the drawing.
Install the damper with the mechanism facing away from the floor as indicated in the drawing.
Between fire damper and floor the maximum distance is 1000 mm.
The maximum length of the part of duct connected to the damper is 2150 mm
The fire damper has to be fixed and suspended from the ceiling as indicated in the drawing.
The fire damper must be positioned just above the floor as indicated in the drawing.
The hanging structure is composed by:

- 4 Angle connectors 105x105x90 mm
- Screws M8 x 40 mm
- Washers 15 x 9 mm
- Flush anchors M8 x 40 mm

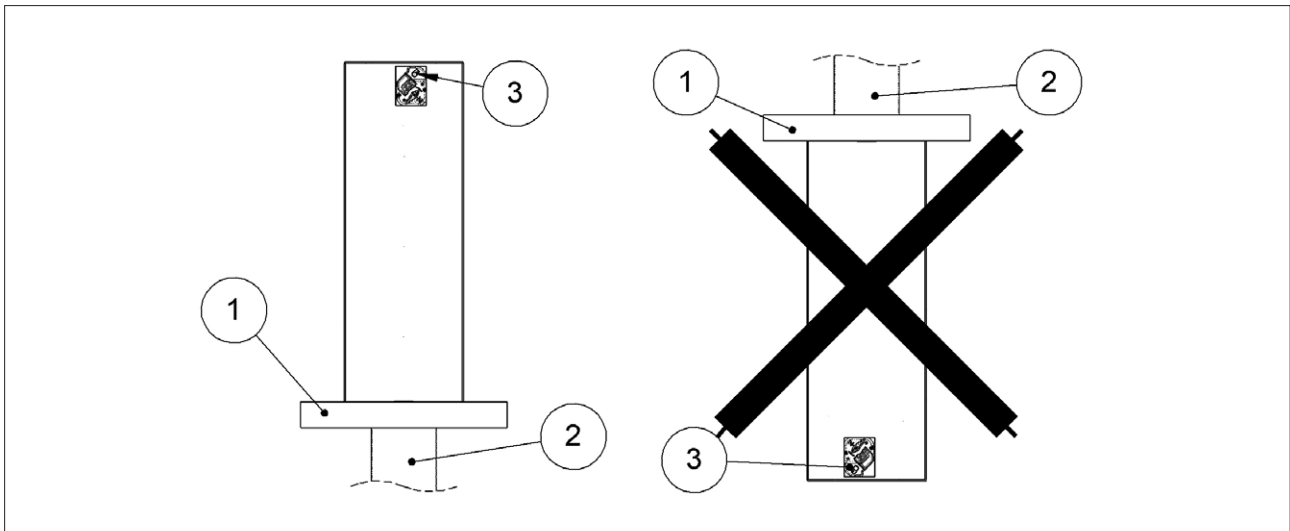
Filling

Fill the space between the floor and the damper using mortar suitable for use in fire resistant constructions, M10 class or higher or plaster putty.
Cover the duct over its entire length and fire damper with 2 rock wool panels 50 mm thick and with a density of 140 kg/m³.
Fix first layer of rock wool panel to the duct with screws Ø5 X 60 mm and washers 40 X 40 mm, and the second one with screws Ø5 X 120 mm and washers 40 X 40 mm.
Fill the space between rock wool panels and the the damper with one rock wool panel with minimum thickness of 50 mm and minimum density of 140 kg/m³.
The panels must be covered externally with endothermic varnish type PROSTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMOSTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

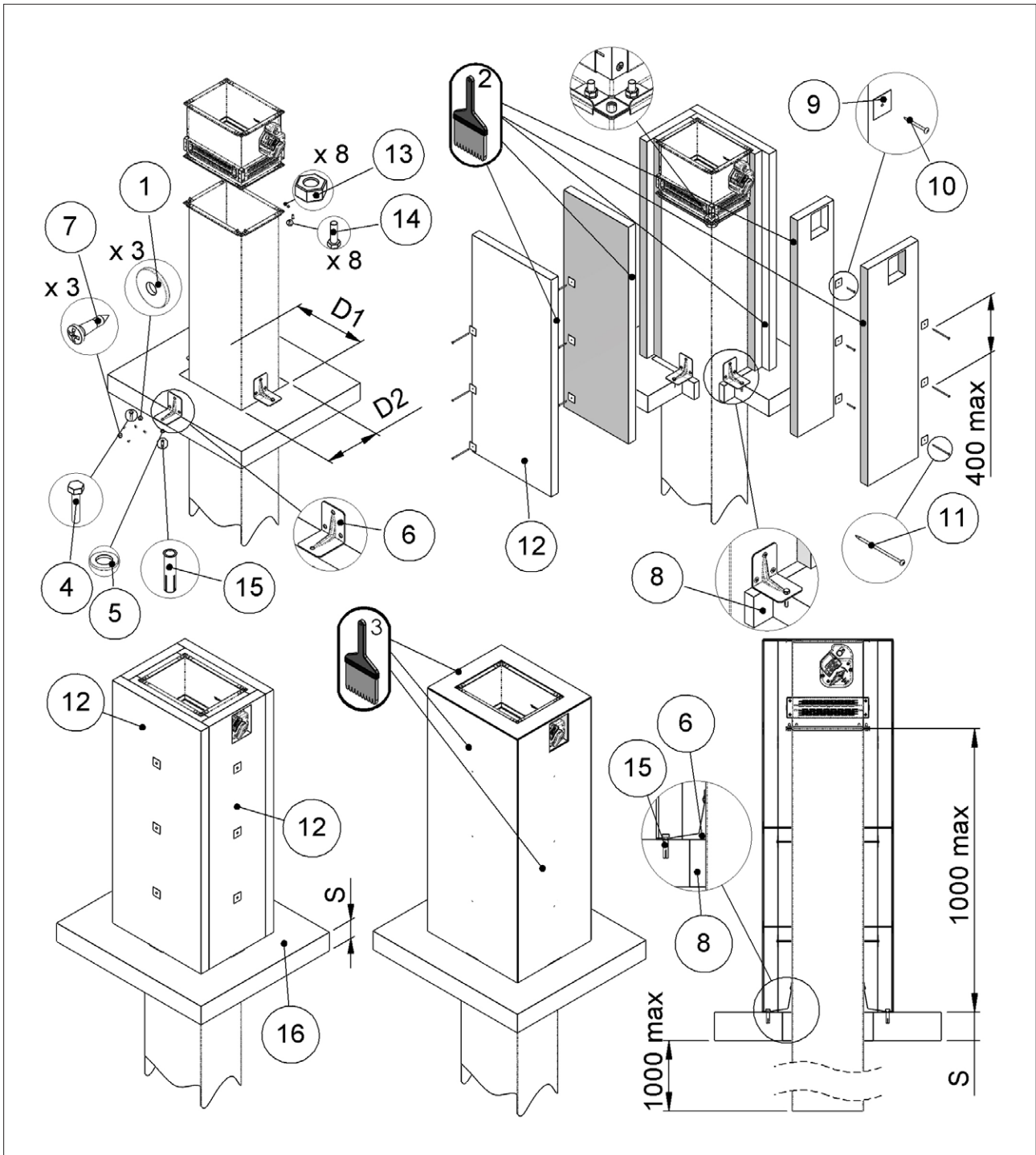
	Fire resistance classification	Hole size "D1 x D2" [mm]	Wall minimum thickness "S" [mm]	Sealing
EI 90 S Installation remote from the floor				
Floor minimum density 650 kg/m ³	EI 90 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	100	Mortar or plaster putty sealing
EI 120 S Installation remote from the floor				
Floor minimum density 650 kg/m ³	EI 120 S (300 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	150	Mortar or plaster putty sealing

The fire damper must be positioned just above the floor as indicated in the drawing.

1. Floor
2. Duct
3. Fire damper



- D1 Hole base: see table above
- D2 Hole height: see table above
- S Wall minimum thickness: see table above
- 1. Self-drilling screw Ø 4,2 X 13 mm
- 2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant
- 3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish
- 4. Screws M8 x 40 mm
- 5. Washers 15 x 9 mm
- 6. Angle connector 105 X 105 X 90 mm
- 7. Washers 15 x 5 mm
- 8. Mortar M-10, EN998-2 or plaster putty
- 9. Washer 40 x 40 mm
- 10. Self-drilling screw Ø 5 X 60 mm
- 11. Self-drilling screw Ø 5 X 120 mm
- 12. Rock wool panel 50 mm thick with 140 kg/m³ density.
- 13. Screw M6 X 20 mm
- 14. M6 nut
- 15. Flush anchors M8 x 40 mm
- 16. Floor



Installation within vertical light wall (Shaft wall)

Refer to the section Construction supports characteristics p. 22 for further information.
Comply with the minimum distances indicated on section Minimum distances p. 19.

Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing.

Filling

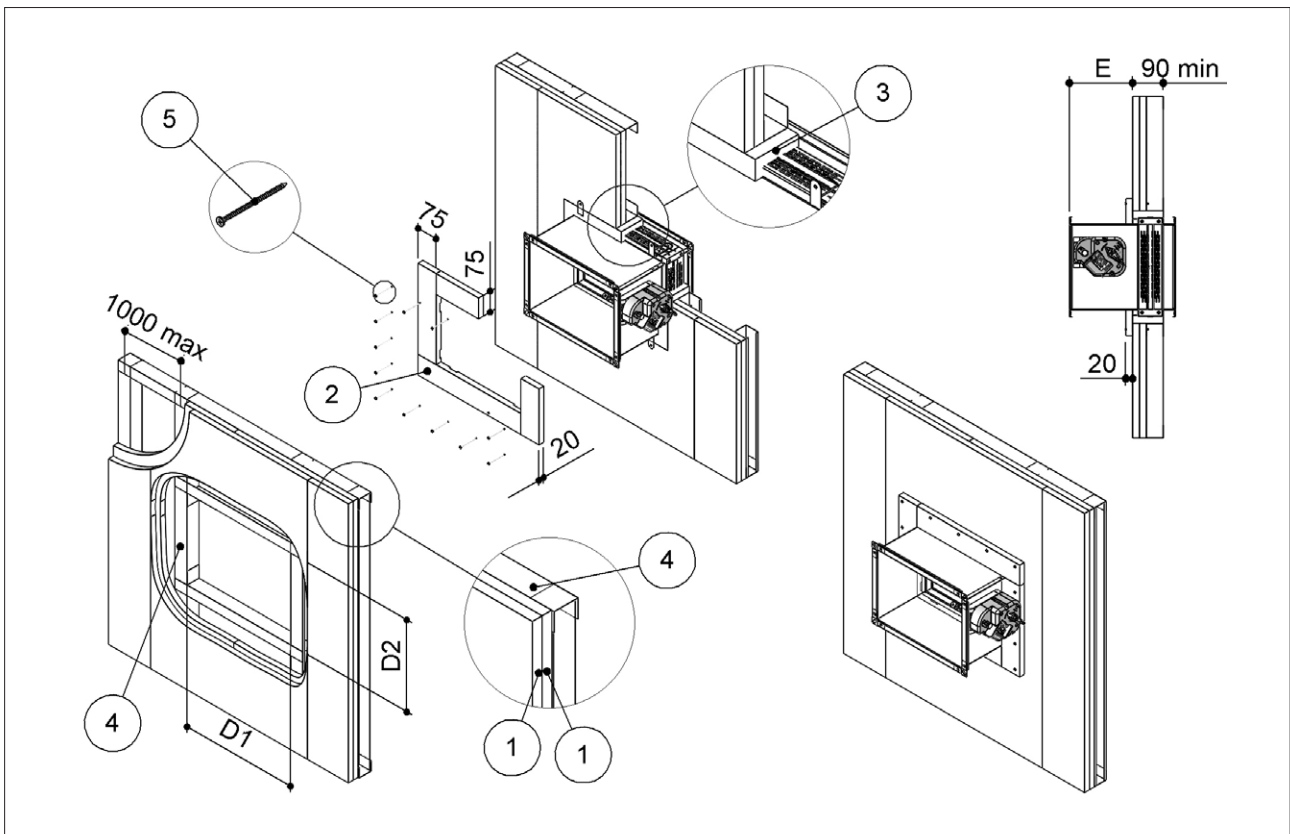
Fill the space between the wall and the damper as indicated in the table and in the drawing.
Cover the sealing by applying on face of the wall mechanism side a layer of plasterboard, to a total minimum thickness of 20 mm per side, to make a frame 75 mm wide.

Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
EI 60 S Installation within vertical light wall (Shaft wall)				
EI 60 S (300 Pa)	From (B+80) x (H+80) to (B+110) x (H+110)	185	90	Mortar or plaster putty with infill plasterboard (thickness 20 mm)

B Nominal base of the damper
H Nominal height of the damper

1. Plasterboard thickness 20 mm
2. Plasterboard infill panel, thickness 20 mm
3. Mortar M-10, EN998-2 or plaster putty
4. Metal frame

5. Self-drilling screw Ø 3,5 X 70 mm
- D1 Hole base: see table above
- D2 Hole height: see table above
- E Damper protrusion from the wall: see table above



ELECTRICAL CONNECTIONS

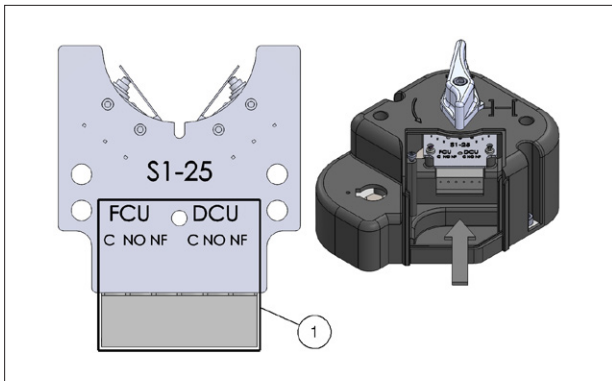
Electrical wiring

Electrical connections must be done by qualified and trained people.

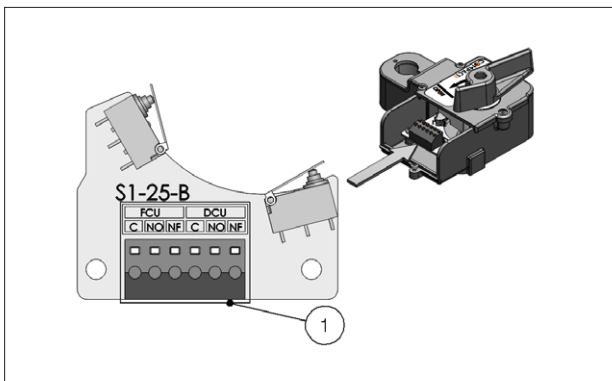
Switch off the power supply before starting any work on the electric elements. Never switch on the power supply during electrical connections.

Manual and compact manual

S1-25 electric board (S2 optional) for blade position microswitches (manual)



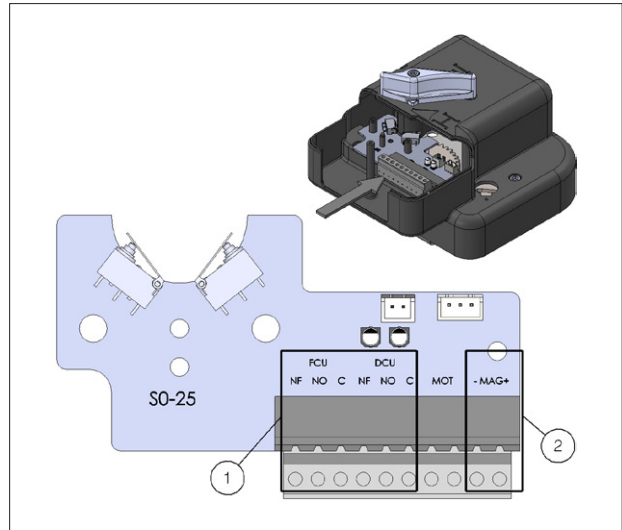
S1-25-B electric board (S2 optional) for blade position microswitches (compact manual)



- 1 Microswitch contacts for blade position
- FCU Closed blade contact
- DCU Open blade contact
- NO Normally open
- C Common
- NF Normally closed

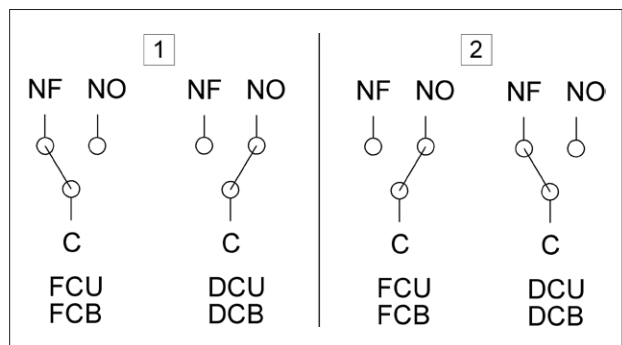
Manual with magnet - MR/MI version (the magnet is powered using 24 V DC/48 V DC through S0-25 electric board)

S0-25 electronic board (S2 optional) for 24V DC / 48V DC power supply. Blade position microswitches included



- 1 Microswitch contacts for blade position
- 2 Magnet power supply contacts. 24V DC or 48V DC. Keep to the polarity for input magnet
- MAG Magnet power supply
- FCU Closed blade contact
- DCU Open blade contact
- NO Normally open
- C Common
- NF Normally closed

S2 microswitches position for manual control and magnetic control

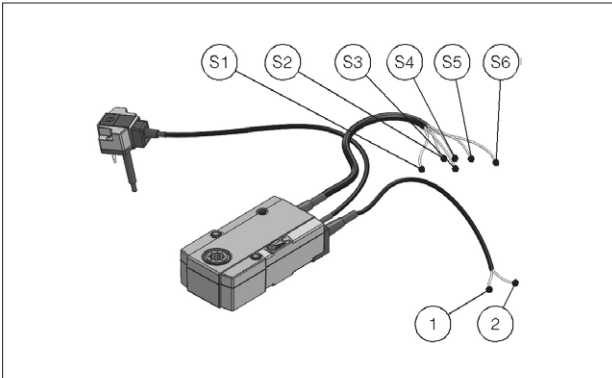


- 1. The fire damper's blade is open (the air flow is allowed)
- 2. The fire damper's blade is closed (the air flow is not allowed)
- FCU Closed blade contact
- DCU Open blade contact
- NO Normally open
- C Common
- NF Normally closed

Motorized version

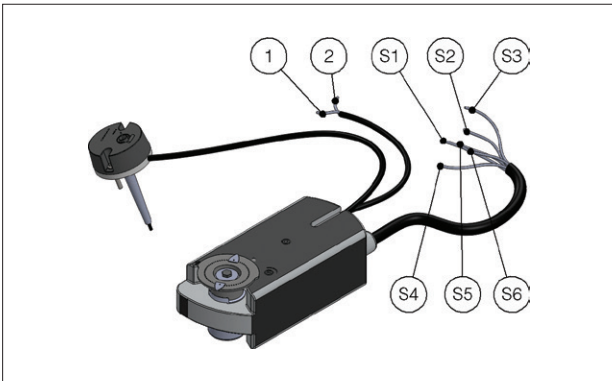
Belimo servomotor:

BFL24T, BFN24T, BF24T, BFL230T, BFN230T, BF230T.



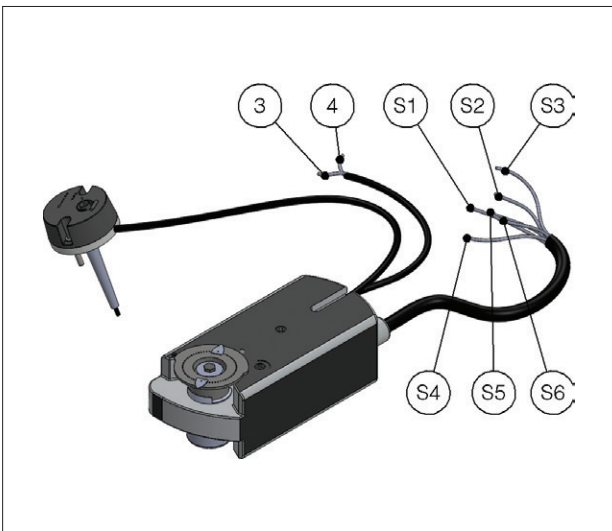
Siemens servomotor:

GRA126, GNA126, GGA126.



Siemens servomotor:

GRA326, GNA326, GGA326.



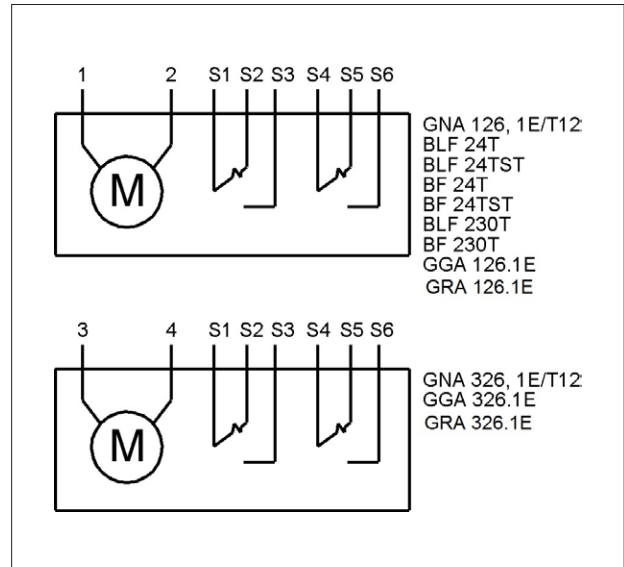
Motorized fire dampers electrical wiring

To connect the dampers to the power supply, proceed as follows:

- Check that the voltage and electrical frequency are equivalent to those of the motor of the servomotor (check the motor's information label);
- Make the connections as shown in the below diagram.

Microswitches position for motorized version

- 1 Negative (DC) or neutral (AC)
- 2 Positive (DC) or phase (AC)
- 3 Phase
- 4 Neutral
- S1 Common closed damper microswitch
- S2 Normally closed, closed damper microswitch
- S3 Normally opened, closed damper microswitch
- S4 Common open damper microswitch
- S5 Normally closed, open damper microswitch
- S6 Normally opened, open damper microswitch



■ Electrical specifications

	Manual and compact manual	Manual with magnet Belimo motorized version Siemens motorized version
Voltage and power consumption	-	Magnet (WK25MR/MI): 24/48 V DC (automatic voltage switching on S0-25 electric board for 24V magnet)
		Power interruption magnet (MR): P = 1,6 W
		Power input magnet (MI): P = 3,4 W
		Motor 24 V AC/DC (WK25VSB): Belimo BFL24T Opening: 2,5 W In stand-by: 0,8 W
		Motor 230 V AC (WK25DSB): Belimo BFL230T: Opening: 3,5 W In stand-by: 1,1 W
		Motor 24 V AC/DC (WK25VSS): Siemens GRA126 Opening: 3,5 W In stand-by: 2 W
		Motor 230 V AC (WK25DSS): Siemens GRA326 Opening: 4,5 W In stand-by: 3,5 W
Microswitches position contacts	Manual control version: 12VDC / 2A 125VAC / 0,1A	Motorized version: Siemens: AC 24V...230V / 6 (2)A Belimo: DC 5V...AC 250V / 1mA...3A (0,5A)
Blade closing time	Spring: 1 s	motor: < 30 s
Protection degree	IP42	IP42 MAGNETIC VERSION IP54 MOTORIZED VERSION

MAINTENANCE AND INSPECTIONS

The MP3 fire dampers don't need maintenance.

■ Periodic inspection

The damper inspection must be done according to national law.

The periodic inspection must be according to EN 15423 annex C and EN 15650 annex D.

When a remote control system, such as a smoke or other alarm signal, is used to close fire dampers, the correct working of such alarm signals must be tested during the periodic maintenance and check of the full fire safety system.

■ Disposal

Disposal in case of destruction must be carried out in accordance with national legislation. For electrical and electronic parts also refer to EU Directive 2011/65.

SELECTION

■ Air flow rates in relation to the diameter

Maximum frontal air speed = 12 m/s

Base (mm)	100			150			200			250		
	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow
Height (mm)	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h
200	0,020	0,014	864	0,030	0,022	1296	0,040	0,031	1728	0,050	0,039	2160
250	0,025	0,019	1080	0,038	0,029	1620	0,050	0,040	2160	0,063	0,051	2700
300	0,030	0,023	1296	0,045	0,036	1944	0,060	0,049	2592	0,075	0,063	3240
350	0,035	0,028	1512	0,053	0,043	2268	0,070	0,059	3024	0,088	0,074	3780
400	0,040	0,032	1728	0,060	0,050	2592	0,080	0,068	3456	0,100	0,086	4320
450	0,045	0,036	1944	0,068	0,057	2916	0,090	0,078	3888	0,113	0,098	4860
500	0,050	0,041	2160	0,075	0,064	3240	0,100	0,087	4320	0,125	0,110	5400
550	0,055	0,045	2376	0,083	0,071	3564	0,110	0,096	4752	0,138	0,122	5940
600	0,060	0,050	2592	0,090	0,078	3888	0,120	0,106	5184	0,150	0,134	6480

Base (mm)	300			350			400			450		
	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow
Height (mm)	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h
200	0,060	0,047	2592	0,070	0,055	3024	0,080	0,063	3456	0,090	0,071	3888
250	0,075	0,061	3240	0,088	0,072	3780	0,100	0,083	4320	0,113	0,093	4860
300	0,090	0,076	3888	0,105	0,089	4536	0,120	0,102	5184	0,135	0,115	5832
350	0,105	0,090	4536	0,123	0,106	5292	0,140	0,121	6048	0,158	0,137	6804
400	0,120	0,105	5184	0,140	0,123	6048	0,160	0,141	6912	0,180	0,159	7776
450	0,135	0,119	5832	0,158	0,140	6804	0,180	0,160	7776	0,203	0,181	8748
500	0,150	0,133	6480	0,175	0,156	7560	0,200	0,180	8640	0,225	0,203	9720
550	0,165	0,148	7128	0,193	0,173	8316	0,220	0,199	9504	0,248	0,225	10692
600	0,180	0,162	7776	0,210	0,190	9072	0,240	0,218	10368	0,270	0,247	11664

Base (mm)	500			550			600			650		
	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow
Height (mm)	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h
200	0,100	0,080	4320	0,110	0,088	4752	0,120	0,096	5184	0,130	0,104	5616
250	0,125	0,104	5400	0,138	0,115	5940	0,150	0,125	6480	0,163	0,136	7020
300	0,150	0,128	6480	0,165	0,141	7128	0,180	0,155	7776	0,195	0,168	8424
350	0,175	0,153	7560	0,193	0,168	8316	0,210	0,184	9072	0,228	0,200	9828
400	0,200	0,177	8640	0,220	0,195	9504	0,240	0,213	10368	0,260	0,232	11232
450	0,225	0,202	9720	0,248	0,222	10692	0,270	0,243	11664	0,293	0,263	12636
500	0,250	0,226	10800	0,275	0,249	11880	0,300	0,272	12960	0,325	0,295	14040
550	0,275	0,250	11880	0,303	0,276	13068	0,330	0,302	14256	0,358	0,327	15444
600	0,300	0,275	12960	0,330	0,303	14256	0,360	0,331	15552	0,390	0,359	16848

Base (mm)	700			750			800		
	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow	Front section	Net section	Maximum air flow
Height (mm)	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h	m ²	m ²	m ³ /h
200	0,140	0,112	6048	0,150	0,120	6480	0,160	0,128	6912
250	0,175	0,147	7560	0,188	0,157	8100	0,200	0,168	8640
300	0,210	0,181	9072	0,225	0,194	9720	0,240	0,207	10368
350	0,245	0,215	10584	0,263	0,231	11340	0,280	0,247	12096
400	0,280	0,250	12096	0,300	0,268	12960	0,320	0,286	13824
450	0,315	0,284	13608	0,338	0,305	14580	0,360	0,325	15552
500	0,350	0,319	15120	0,375	0,342	16200	0,400	0,365	17280
550	0,385	0,353	16632	0,413	0,379	17820	0,440	0,404	19008
600	0,420	0,387	18144	0,450	0,415	19440	0,480	0,444	20736

■ Air flow rates as a function of the pressure drop

$\Delta P = 5 \text{ Pa}$

Base (mm)	100		150		200		250		300	
Height (mm)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)
200	198	17,9	328	20,5	455	21,9	615	24,0	781	25,7
250	290	22,3	481	25,0	666	26,3	901	28,4	1144	30,2
300	396	26,0	656	28,6	908	29,9	1228	32,1	1560	33,8
350	514	29,0	852	31,7	1180	33,0	1595	35,1	2026	36,9
400	627	31,0	1038	33,7	1438	35,0	1943	37,1	2469	38,9
450	759	33,1	1257	35,8	1740	37,1	2352	39,3	2988	41,1
500	891	34,8	1476	37,5	2044	38,8	2763	41,0	3510	42,8
550	1044	36,7	1729	39,4	2394	40,7	3236	42,9	4111	44,7
600	1178	37,8	1952	40,5	2703	41,8	3654	44,0	4642	45,8

Base (mm)	350		400		450		500		550	
Height (mm)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)
200	957	27,1	1121	28,0	1308	29,1	1485	29,8	1653	30,3
250	1403	31,6	1643	32,4	1917	33,6	2177	34,3	2422	34,8
300	1913	35,2	2240	36,1	2613	37,2	2968	38,0	3302	38,4
350	2485	38,3	2910	39,2	3395	40,3	3856	41,1	4290	41,5
400	3027	40,3	3545	41,2	4136	42,4	4697	43,1	5226	43,5
450	3665	42,5	4291	43,4	5006	44,5	5686	45,3	6326	45,7
500	4305	44,2	5041	45,1	5881	46,3	6679	47,0	7431	47,5
550	5041	46,1	5903	47,0	6887	48,1	7822	48,9	8702	49,3
600	5692	47,2	6666	48,1	7776	49,3	8832	50,0	9827	50,5

Base (mm)	600		650		700		750		800	
Height (mm)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)
200	1835	30,9	2012	31,4	2193	31,9	2380	32,3	2555	32,5
250	2689	35,4	2949	35,9	3215	36,4	3488	36,8	3745	37,0
300	3666	39,0	4019	39,5	4382	40,0	4755	40,4	5105	40,7
350	4762	42,2	5222	42,6	5693	43,1	6178	43,5	6632	43,8
400	5802	44,2	6362	44,7	6936	45,2	7526	45,6	8080	45,8
450	7024	46,4	7701	46,9	8397	47,3	9111	47,8	9781	48,0
500	8250	48,1	9046	48,6	9863	49,1	10702	49,5	11490	49,7
550	9661	50,0	10593	50,5	11550	51,0	12533	51,4	13455	51,6
600	10910	51,1	11962	51,6	13042	52,1	14152	52,5	15193	52,8

$\Delta P = 10 \text{ Pa}$

Base (mm)	100		150		200		250		300	
	Q	Lw	Q	Lw	Q	Lw	Q	Lw	Q	Lw
Height (mm)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)
200	280	26,0	464	28,7	643	30,0	869	32,1	1104	33,8
250	411	30,5	680	33,2	942	34,5	1274	36,6	1618	38,4
300	560	34,2	928	36,8	1285	38,1	1736	40,3	2206	42,0
350	727	37,3	1205	39,9	1669	41,2	2256	43,4	2866	45,2
400	886	39,3	1468	42,0	2033	43,3	2748	45,4	3491	47,2
450	1073	41,5	1777	44,1	2461	45,5	3327	47,6	4226	49,4
500	1260	43,2	2088	45,9	2891	47,2	3908	49,4	4964	51,2
550	1476	45,1	2445	47,8	3386	49,1	4576	51,3	5813	53,0
600	1666	46,2	2760	48,9	3823	50,3	5168	52,5	6565	54,2

Base (mm)	350		400		450		500		550	
	Q	Lw	Q	Lw	Q	Lw	Q	Lw	Q	Lw
Height (mm)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)
200	1354	35,2	1585	36,1	1849	37,2	2101	37,9	2337	38,4
250	1984	39,7	2324	40,6	2711	41,8	3079	42,5	3426	43,0
300	2705	43,4	3168	44,3	3695	45,5	4197	46,2	4669	46,6
350	3514	46,6	4115	47,4	4801	48,6	5453	49,3	6066	49,8
400	4281	48,6	5013	49,5	5849	50,6	6643	51,4	7391	51,8
450	5182	50,8	6069	51,7	7080	52,9	8042	53,6	8947	54,1
500	6088	52,6	7129	53,5	8317	54,6	9446	55,4	10509	55,8
550	7129	54,5	8348	55,3	9739	56,5	11062	57,3	12307	57,7
600	8050	55,6	9427	56,5	10997	57,7	12491	58,4	13897	58,9

Base (mm)	600		650		700		750		800	
	Q	Lw	Q	Lw	Q	Lw	Q	Lw	Q	Lw
Height (mm)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)	m ³ /h	dB(A)
200	2595	39,0	2845	39,5	3102	40,0	3366	40,4	3613	40,6
250	3803	43,6	4170	44,0	4547	44,5	4933	44,9	5296	45,2
300	5184	47,3	5684	47,7	6198	48,2	6725	48,6	7220	48,9
350	6735	50,4	7385	50,9	8052	51,4	8737	51,8	9379	52,1
400	8205	52,5	8997	53,0	9809	53,5	10644	53,9	11427	54,1
450	9933	54,7	10891	55,2	11875	55,7	12885	56,1	13833	56,3
500	11668	56,5	12793	56,9	13948	57,4	15135	57,8	16249	58,1
550	13663	58,4	14981	58,8	16334	59,3	17724	59,8	>Qmax	--
600	15429	59,5	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--

$\Delta P = 15 \text{ Pa}$

Base (mm)	100		150		200		250		300	
	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)
200	343	30,8	569	33,4	787	34,7	1064	36,8	1352	38,6
250	503	35,3	833	37,9	1154	39,2	1560	41,4	1982	43,1
300	686	39,0	1136	41,6	1573	42,9	2127	45,1	2702	46,8
350	891	42,1	1476	44,8	2044	46,1	2763	48,2	3510	50,0
400	1085	44,1	1798	46,8	2490	48,1	3366	50,3	4276	52,1
450	1314	46,3	2177	49,0	3015	50,3	4075	52,5	5176	54,3
500	1543	48,1	2557	50,8	3541	52,1	4786	54,3	6080	56,1
550	1807	50,0	2994	52,7	4147	54,0	5605	56,2	7120	58,0
600	2041	51,1	3381	53,9	4682	55,2	6329	57,4	>Qmax	--

Base (mm)	350		400		450		500		550	
	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)
200	1658	39,9	1942	40,8	2265	42,0	2573	42,7	2862	43,1
250	2430	44,5	2846	45,4	3320	46,5	3771	47,3	4196	47,7
300	3313	48,2	3879	49,1	4526	50,3	5140	51,0	5719	51,5
350	4304	51,4	5040	52,3	5880	53,4	6678	54,2	7430	54,6
400	5243	53,4	6140	54,3	7163	55,5	8136	56,2	9052	56,7
450	6347	55,7	7433	56,6	8671	57,7	>Qmax	--	>Qmax	--
500	7456	57,5	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--
550	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--
600	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--

Base (mm)	600		650		700		750		800	
	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)	Q m ³ /h	Lw dB(A)
200	3178	43,8	3484	44,2	3799	44,7	4122	45,1	4426	45,4
250	4658	48,3	5107	48,8	5568	49,3	6042	49,7	6487	50,0
300	6349	52,1	6962	52,6	7590	53,1	8236	53,5	8842	53,7
350	8249	55,3	9044	55,7	9861	56,2	10700	56,6	11487	56,9
400	10049	57,3	11019	57,8	12014	58,3	>Qmax	--	>Qmax	--
450	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--
500	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--
550	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--
600	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--	>Qmax	--

■ Air flow rates as a function of generated sound levels

L_w = 30 dB(A)

Base (mm)	100		150		200		250		300	
	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	328	13,7	486	11,0	638	9,8	787	8,2	928	7,1
250	398	9,4	589	7,5	772	6,7	953	5,6	1124	4,8
300	465	6,9	689	5,5	903	4,9	1115	4,1	1315	3,6
350	531	5,3	787	4,3	1031	3,8	1273	3,2	1502	2,7
400	596	4,5	883	3,6	1157	3,2	1429	2,7	1686	2,3
450	660	3,8	977	3,0	1281	2,7	1582	2,3	1867	2,0
500	722	3,3	1070	2,6	1404	2,4	1733	2,0	2045	1,7
550	785	2,8	1162	2,3	1524	2,0	1882	1,7	2221	1,5
600	846	2,6	1253	2,1	1644	1,8	2029	1,5	2395	1,3

Base (mm)	350		400		450		500		550	
	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	1074	6,3	1212	5,8	1346	5,3	1482	5,0	1617	4,8
250	1301	4,3	1468	4,0	1630	3,6	1796	3,4	1959	3,3
300	1522	3,2	1717	2,9	1908	2,7	2102	2,5	2293	2,4
350	1738	2,4	1962	2,3	2179	2,1	2401	1,9	2619	1,9
400	1951	2,1	2202	1,9	2446	1,7	2695	1,6	2940	1,6
450	2160	1,7	2438	1,6	2709	1,5	2985	1,4	3256	1,3
500	2366	1,5	2671	1,4	2968	1,3	3270	1,2	3568	1,2
550	2570	1,3	2901	1,2	3224	1,1	3552	1,0	3876	1,0
600	2772	1,2	3129	1,1	3477	1,0	3831	0,9	4180	0,9

Base (mm)	600		650		700		750		800	
	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	1749	4,5	1878	4,4	2006	4,2	2140	4,0	2273	4,0
250	2119	3,1	2277	3,0	2431	2,9	2594	2,8	2755	2,7
300	2480	2,3	2664	2,2	2845	2,1	3036	2,0	3225	2,0
350	2834	1,8	3044	1,7	3251	1,6	3469	1,6	3685	1,5
400	3181	1,5	3417	1,4	3650	1,4	3894	1,3	4136	1,3
450	3523	1,3	3785	1,2	4042	1,2	4313	1,1	4581	1,1
500	3860	1,1	4147	1,1	4429	1,0	4726	1,0	5020	1,0
550	4193	0,9	4505	0,9	4812	0,9	5134	0,8	5454	0,8
600	4523	0,9	4859	0,8	5190	0,8	5538	0,8	5883	0,7

Lw = 40 dB(A)

Base (mm)	100		150		200		250		300	
Height (mm)	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	503	32,2	745	25,8	977	23,1	1206	19,3	1422	16,6
250	607	21,8	900	17,5	1179	15,7	1456	13,1	1718	11,3
300	709	16,0	1050	12,8	1376	11,5	1699	9,6	2004	8,3
350	808	12,3	1196	9,9	1568	8,8	1936	7,4	2285	6,4
400	904	10,4	1340	8,3	1757	7,5	2169	6,2	2559	5,4
450	1000	8,7	1481	6,9	1942	6,2	2397	5,2	2829	4,5
500	1093	7,5	1620	6,0	2124	5,4	2622	4,5	3095	3,9
550	1186	6,5	1757	5,2	2304	4,6	2844	3,9	3357	3,3
600	1277	5,9	1892	4,7	2481	4,2	3064	3,5	3616	3,0

Base (mm)	350		400		450		500		550	
Height (mm)	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	1645	14,8	1856	13,7	2062	12,4	2272	11,7	2478	11,2
250	1987	10,0	2242	9,3	2490	8,4	2744	7,9	2993	7,6
300	2319	7,4	2617	6,8	2907	6,2	3203	5,8	3494	5,6
350	2643	5,7	2983	5,3	3314	4,8	3651	4,5	3983	4,3
400	2961	4,8	3342	4,4	3713	4,0	4091	3,8	4463	3,6
450	3273	4,0	3694	3,7	4105	3,4	4523	3,2	4934	3,0
500	3581	3,5	4042	3,2	4491	2,9	4949	2,7	5399	2,6
550	3884	3,0	4385	2,8	4872	2,5	5369	2,4	5857	2,3
600	4184	2,7	4723	2,5	5248	2,3	5784	2,1	6310	2,1

Base (mm)	600		650		700		750		800	
Height (mm)	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	2680	10,7	2878	10,2	3073	9,8	3279	9,5	3483	9,3
250	3237	7,2	3477	7,0	3713	6,7	3962	6,4	4208	6,3
300	3779	5,3	4060	5,1	4335	4,9	4626	4,7	4913	4,6
350	4309	4,1	4629	3,9	4943	3,8	5274	3,6	5602	3,6
400	4828	3,5	5187	3,3	5539	3,2	5910	3,1	6278	3,0
450	5338	2,9	5735	2,8	6125	2,7	6536	2,6	6942	2,5
500	5841	2,5	6276	2,4	6703	2,3	7152	2,2	7597	2,2
550	6337	2,2	6809	2,1	7272	2,0	7759	1,9	8243	1,9
600	6827	2,0	7335	1,9	7835	1,8	8360	1,7	8881	1,7

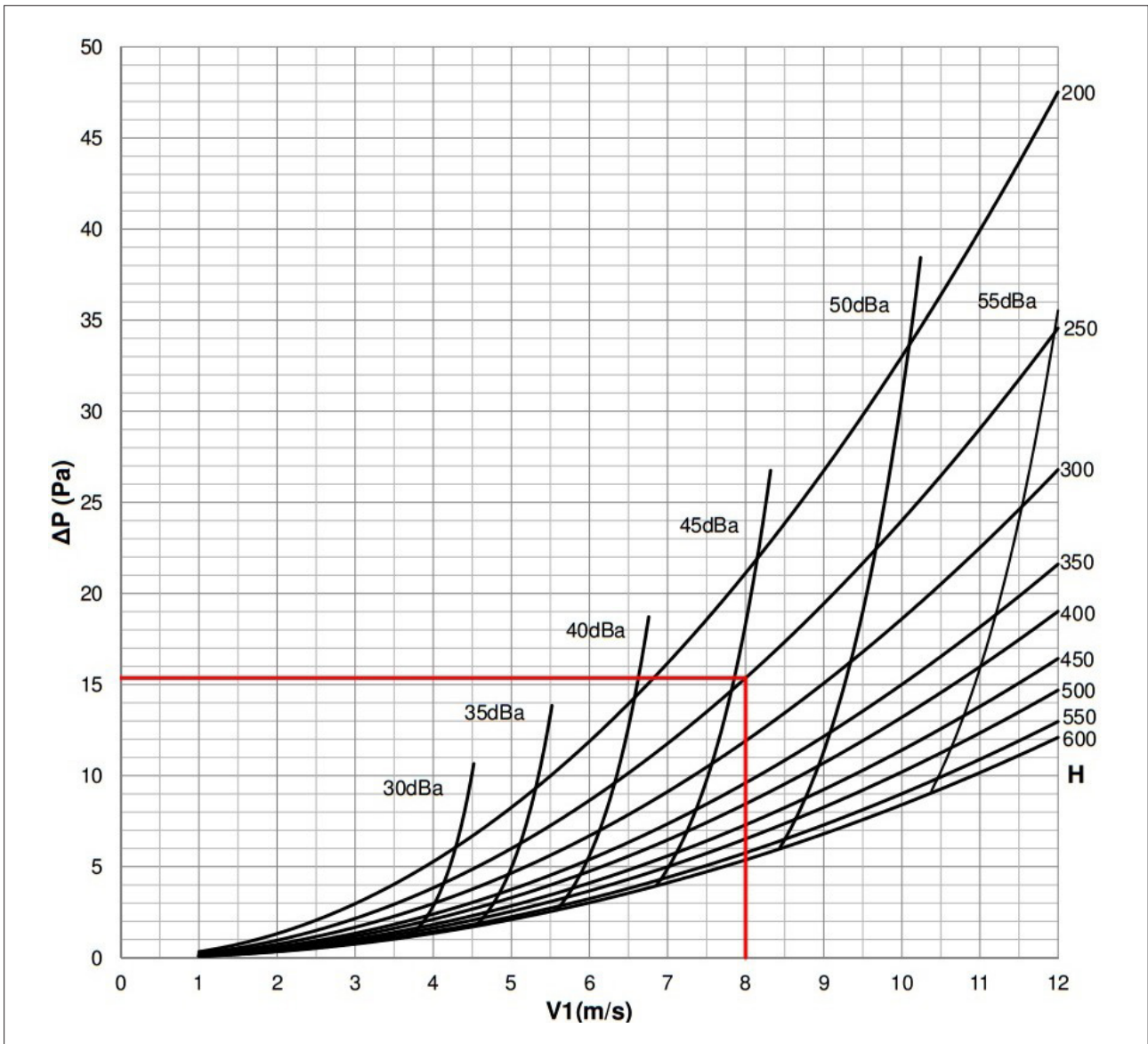
Lw = 45 dB(A)

Base (mm)	100		150		200		250		300	
Height (mm)	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	623	49,4	923	39,5	1209	35,4	1493	29,5	1761	25,4
250	751	33,4	1112	26,7	1458	23,9	1799	19,9	2123	17,2
300	875	24,4	1296	19,5	1699	17,5	2097	14,6	2474	12,6
350	996	18,7	1475	15,0	1934	13,4	2387	11,2	2817	9,7
400	1114	15,8	1650	12,6	2164	11,3	2672	9,5	3153	8,2
450	1230	13,1	1823	10,5	2390	9,4	2951	7,9	3483	6,8
500	1345	11,4	1992	9,1	2613	8,2	3226	6,8	3807	5,9
550	1458	9,8	2159	7,8	2832	7,0	3497	5,8	4127	5,0
600	1569	8,9	2324	7,1	3049	6,4	3764	5,3	4443	4,6

Base (mm)	350		400		450		500		550	
Height (mm)	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	2037	22,6	2298	21,0	2552	19,0	2812	17,9	3067	17,2
250	2456	15,3	2771	14,2	3078	12,9	3391	12,1	3699	11,7
300	2862	11,2	3230	10,4	3588	9,4	3953	8,9	4312	8,5
350	3259	8,6	3678	8,0	4086	7,2	4502	6,8	4911	6,6
400	3648	7,3	4117	6,7	4574	6,1	5040	5,8	5498	5,5
450	4029	6,0	4548	5,6	5053	5,1	5568	4,8	6074	4,6
500	4405	5,2	4972	4,9	5525	4,4	6088	4,2	6641	4,0
550	4775	4,5	5390	4,2	5989	3,8	6600	3,6	7200	3,4
600	5141	4,1	5803	3,8	6448	3,4	7106	3,2	7753	3,1

Base (mm)	600		650		700		750		800	
Height (mm)	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa	Q m ³ /h	ΔP Pa
200	3317	16,3	3563	15,7	3805	15,0	4059	14,5	4311	14,2
250	4001	11,1	4298	10,6	4589	10,2	4896	9,8	5201	9,6
300	4665	8,1	5011	7,8	5352	7,5	5710	7,2	6065	7,1
350	5313	6,2	5708	6,0	6095	5,7	6504	5,5	6908	5,4
400	5948	5,3	6390	5,0	6824	4,8	7281	4,7	7734	4,6
450	6571	4,4	7060	4,2	7540	4,0	8045	3,9	8546	3,8
500	7185	3,8	7720	3,6	8245	3,5	8797	3,4	9345	3,3
550	7790	3,3	8370	3,1	8940	3,0	9539	2,9	10133	2,8
600	8388	3,0	9013	2,8	9626	2,7	10271	2,6	10911	2,6

Pressure drop and sound level graph for base 400 mm



Example

B = Base [mm]	B = 350
H = Height [mm]	H = 250
Q = Air flow [m ³ /h]	Q = 2520 m ³ /h
V1 = Frontal air speed [m/s]	V1 = 8 m/s
ΔP = Pressure drop [Pa]	From graph: ΔP = 15x1,05=15,8 Pa
Lw = Sound level [dB(A)]	From graph: Lw = 45,5-0,3=45,2 dB(A)
F = Central frequency octave band [Hz]	

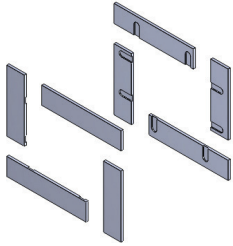
Correction for base different than 400 mm

	Correction for base different than 400 mm														
B in mm	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
ΔP x ...	2	1,64	1,52	1,3	1,16	1,05	1	0,93	0,89	0,87	0,84	0,82	0,8	0,78	0,77
Lw + ...	-1,9	-1,6	-1,2	-0,9	-0,5	-0,3	0	0,3	0,5	0,7	0,9	1,1	1,3	1,4	1,5

- Correction used to estimate the octave band spectrum (Values to be added to the noise levels in dB(A))

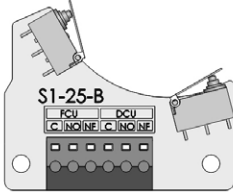
V1 (m/s)	F (Hz)							
	63	125	250	500	1000	2000	4000	8000
2	25	9	2	-4	-9	-17	-32	-19
3	20	8	1	-4	-8	-14	-27	-22
4	15	6	1	-4	-7	-11	-22	-24
5	11	5	0	-4	-6	-8	-18	-26
6	9	4	-1	-4	-5	-7	-15	-25
7	8	4	-2	-5	-5	-7	-14	-22
8	7	4	-3	-5	-5	-6	-13	-21
9	7	4	-3	-6	-5	-6	-12	-20
10	7	3	-3	-6	-5	-6	-12	-19
11	7	3	-3	-6	-5	-6	-12	-19
12	6	2	-4	-7	-4	-5	-11	-18

ACCESSORIES AND SPARE PARTS



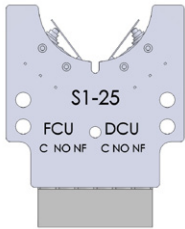
4 x plasterboard shaped sealing panels for wall installation B X H
 B = base nominal length (Eg. 100)
 H = height nominal length (Eg. 200)
 Please note: order 2 kits for each fire damper (one for each side of the wall)
 Not used for installations within vertical light wall (Shaft wall)

WKS25KIT[B][H]



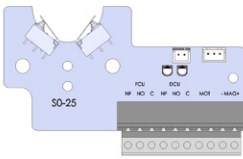
Kit microswitch S1-25-B board + 2 fixing screws, 25/23 series (compact manual)

WHKS125C



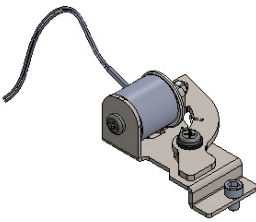
Kit microswitch S1-25 board + 2 fixing screws, 25/23 series

WHKS125



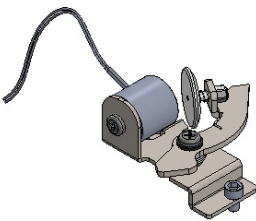
Kit microswitch S0-25 board + 2 fixing screws for manual magnetic control 25/23 series and magnet power supply 24 V DC or 48 V DC

WHKS025



Kit power supply input magnet only + 2 screws for manual magnetic mechanism, 25/23 series

WHKMAGI25



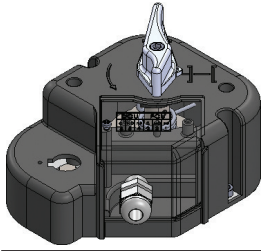
Kit power supply interruption magnet only + 2 screws for manual magnetic mechanism 25/23 series

WHKMAGR25

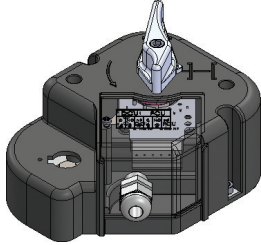


fuseholder group 25 series with fuse WK70
 fuseholder group 25 series with fuse WK70 (compact manual)

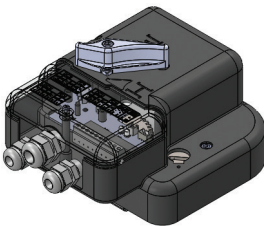
WHKDISR
 WHKDISCR



Kit mechanism manual 25 series + carter + cam and lever + 2 fixing screws (without fuseholder group) WHK25MANB

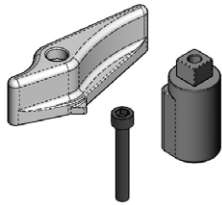


Kit mechanism manual 25 series + carter + cam and lever + elect. board S1-25 + 2 fixing screws (without fuseholder group) WHK25MANBS2



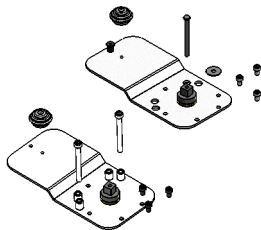
Manual mechanism for 25 series + elect. board S0-25 + interr. magnet 24 V DC or 48 V DC+ carter and screws (without fuseholder group) WHK25MANMMR

Manual mechanism for 25 series + elect. board S0-25 + input magnet 24 V DC or 48 V DC+ carter and screws (without fuseholder group) WHK25MANMMI



Reset lever for WH/WK25 (spare part for manual mechanism)

WHK25PLSLEVA

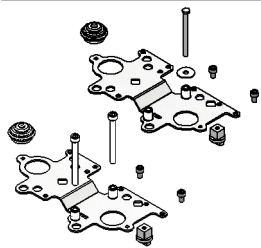


Motorized plate WK25/23 for Siemens GRA + fixing screws (motor not included)

WK25MTS

Motorized plate WK25/23 for Belimo BFL + fixing screws (motor not included)

WK25SMB

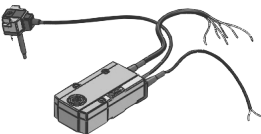


Motorized plate WK25/23 (compact) for Siemens GRA + fixing screws (motor not included)

WK25CMTS

Motorized plate WK25/23 (compact) for Belimo BFL + fixing screws (motor not included)

WK25CSMB

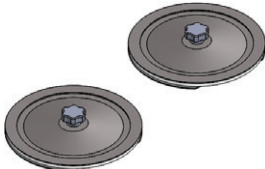


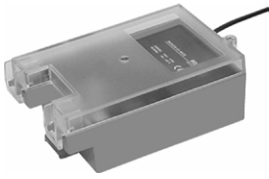
Belimo motor for dampers predisposed for use with BFL24T, 24 V AC/DC power supply, thermofuse 72 °C BFL24T

Belimo motor for dampers predisposed for use with BFL24T-ST, 24 V AC/DC power supply, thermofuse 72 °C with connection plugs for control and monitoring systems BFL24T-ST

Belimo motor Top Line series for dampers predisposed for use with BF24TLT-ST, 24 V AC/DC power supply, BF24TLT-ST thermofuse 72 °C with connection plugs for control and monitoring systems

Belimo motor for dampers predisposed for use with BFL230T, 230 V AC power supply, thermofuse 72 °C BFL230T

	<p>Siemens motor for dampers predisposed for use with GRA126, 24 V AC/DC power supply thermofuse 72 °C GRA126 Siemens motor for dampers predisposed for use with GRA326, 230 V AC power supply, thermofuse 72 °C GRA326</p>	
	<p>Pairing mounting kit L = length to approach (Eg. 200) Made from two couples of metal profiles, 14 screws and 4 intumescent gaskets</p>	<p>WKBA25-[L]</p>
	<p>Inspection opening side A Inspection opening side C Inspection opening side A+C (Available only during fire damper order for nominal base dimensions 150 mm or higher)</p>	<p>WKSPA WKSPC WKSPAC</p>
	<p>Copper mechanical thermofuse 70 °C for manual mechanism Copper mechanical thermofuse 95 °C for manual mechanism Thermofuse 72 °C for Belimo motor BFL and BFN (spare part) Thermofuse 95 °C for Belimo motor BFL and BFN (accessory) Thermofuse 72 °C for Siemens motors GRA, GNA and GGA (spare part) Thermofuse 95 °C for Siemens motors GRA, GNA and GGA (accessory)</p>	<p>WK70 WK95 WWEZBAT72 WWEZBAT95 MT-FUSASK79.4 MT-FUSASK79.5</p>
	<p>Matt black epoxy powder painting for WK25 fire damper casing</p> <ul style="list-style-type: none"> • Corrosion resistance: Excellent • Heat resistance: Very good • Resistance direct impact: ≥2Kg 5cm ISO 6272 • Resistance reverse impact: ≥2Kg 5cm ISO 6272 • Resistance umidity chamber: after 500 hrs noy blistering ISO 6270 • Resistance salt spray test: after 500 hrs creeping at cross-cut <1mm ISO 9227 	<p>WK25PAINT[B][H]</p>
	<p>Communication and control unit BKS24-1B to control and monitor 1 fire damper with Belimo motor</p>	<p>WKBKS241B</p>
	<p>Communication and control unit BKS24-9A to control and monitor up to 9 fire dampers with Belimo motor</p>	<p>WHBKS249A</p>



Communication and power supply unit: BKN230-24 for Belimo motors BFL24T-ST, BFN24T-ST e BF24T-ST WHKBKN23024

Modbus Communication and power supply unit: BKN230-24MOD for Belimo motors BFL24T-ST, BFN24T-ST and BF24T-ST WHKBKN230-24MOD

Communication and power supply unit MPBUS for BKS24-9A or gateways Belimo UK24MOD and UK24BAC: BKN230-24-C-MP for Belimo motors BFL24T-ST, BFN24T-ST and BF24T-ST WHKBKN230-24-C-MP

Modbus Communication and power supply unit: BKN230MOD for Belimo motors BFL230T, BFN230T and BF230T WHKBKN230MOD



Gateway UK24BAC Belimo for BACnet communication

WHKUK24BAC

(1) Is recommended to install the position microswitches for the manual fire dampers with magnet.

HOW TO ORDER

Motorized fire dampers

Code		
Type	WK	Rectangular fire damper
Series	25	Blade thickness 25 mm - 500 Pa air sealing
Motor type	VSB	Belimo motor BFL24T (24V)
	DSB	Belimo motor BFL230T (230V)
	TSB	Belimo motor BFL24T-ST (24V) with connection plugs for integration in control and monitoring systems
	VSS	Siemens motor GRA126 (24V)
	DSS	Siemens motor GRA326 (230V)
Base	XYZ	Nominal base dimension (mm)
Height	XYZ	Nominal height dimension (mm)

Fire damper with manual control

Code		
Type	WK	Rectangular fire damper
Series	25	Blade thickness 25 mm - 500 Pa air sealing
Command type	B	Manual command
	C	Compact manual command
	M	Manual command with magnet
Position indication microswitches	S0	Without position microswitches
	S2	With two position microswitches (always for MR/MI versions)
	M0	Without magnet (only for command type "B")
Magnet	MR	With power supply interruption magnet through electric board 24 V DC or 48 V DC and with two position microswitches
	MI	With power supply input magnet through electric board 24 V DC or 48 V DC and with two position microswitches
Base	XYZ	Nominal base dimension (mm)
Height	XYZ	Nominal height dimension (mm)
Examples		Code
WK25 fire damper with manual control, 350x250		WK25B-S0-M0-350250
WK25 fire damper with manual control and microswitches, 350x250		WK25B-S2-M0-450300
WK25 fire damper with manual control, power interruption magnet, 250x250		WK25M-S2-MR-250250
WK25 Siemens motorized 230V fire damper, 300x250		WK25DSS-300250

Electric motor driven actuators

		Base														
Siemens		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Height	600	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	550	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	500	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	450	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	400	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	350	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	300	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	250	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	200	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Belimo		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Height	600	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	550	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	500	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	450	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	400	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	350	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	300	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	250	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
	200	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
		Belimo					Siemens									
		24 V		230V			24 V		230V							
S		BFL24T		BFL230T			GRA126		GRA326							

SPECIFICATION TEXT

■ Series WK25 compact rectangular fire damper

Description

WK25 rectangular fire damper tested for fire resistance and smoke seal with 500 Pa depression (300 Pa for Weichschott sealing installations and for EI 120 S remote installations) as per EN 1366-2, classified according to EN 13501-3 and CE marked according to European Regulation UE 305/2011 and EN 15650 standard.

It provides maximum safety by preventing the spread of fires within buildings guaranteeing a perfect isolation from heat and a complete air seal from hot and cold smoke. It can be connected to fire or smoke alarm systems to close the damper's blade before the fire reaches the damper. This helps to prevent indirect damages caused by the spread of smoke and harmful combustion gasses.

Technical characteristics

- Available sizes from 100x200 mm to 800x600 mm
- Bigger sizes achievable by pairing two fire dampers
- Case made from galvanized sheet steel, with a total length of 310 mm with "thermal labyrinth" insulation. Comes with flanges for duct connection 20 mm wide with reinforced angle connections
- Closing mechanism built according to UNI 10365, with thermal fuse certified to ISO 10294-4, a test button to check the correct working of the damper, a release system to block the damper in closed position and a visual signal "open/closed". The closing mechanism can be easily interchanged and substituted:
 - with mechanical release and manual rearming
 - with mechanical release and manual rearming, can be released remotely via a magnet and electric and signal
 - with electric release and rearming, via and integrated Siemens or Belimo system tested according to EN 15650, composed by an electric thermal fuse and remote controlled servomotor via an electrical signal
- Blade made from calcium silicate insulating material
- Damper blade steel axis joined to casing with low friction bearings, for maximum performance in case of fire
- EPDM lip gasket to cold smoke sealing according to EN 1366-2
- Thermal, expanding graphite gasket
- Thermal fuse with melting point certified ISO 10294-4 at 70 °C or 95 °C (version with mechanical release) or at 72 °C (version with servo motor)
- Absence of thermal bridge between the wall of installation and the ducts before and after
- Resistance to salt spray, tested with severity 2, according to EN 60068-2-52
- Casing leakage Class C according to EN 1751

Installation

- Installation within vertical rigid walls made from aerated concrete blocks, standard concrete or masonry with a minimum thickness of 100 mm and minimum density of 550 kg/m³ (EI 120 S)

Mortar or plaster putty sealing

Plasterboard and rock wool 100 kg/m³ sealing

- Installation within light plasterboard walls with minimum thickness of 100 mm (EI 60 S)
- Installation within plasterboard walls with minimum thickness of 100 mm (EI 120 S)
- Installation within light walls made with gypsum blocks 100 mm thick and minimum density 995 kg/m³ (EI 120 S) or minimum thickness of 70 mm and minimum density 995 kg/m³ (EI 90 S)
- Installation within concrete floors with a minimum thickness of 150 mm and minimum density of 2200 kg/m³ (EI 180 S) or aerated concrete with minimum thickness 150 mm and minimum density 650 kg/m³ (EI 120 S) or aerated concrete with minimum thickness 100 mm and minimum density 650 kg/m³ (EI 90 S)
- Installation with Fire Batt (Weichschott) sealing within vertical rigid walls made from aerated concrete blocks, standard concrete or masonry with minimum thickness 100 mm and minimum density 550 kg/m³, within light plasterboard walls with minimum thickness of 100 mm, within gypsum blocks light walls with minimum thickness 100 mm and minimum density 995 kg/m³ (EI 120 S)
- Installation with Fire Batt (Weichschott) sealing within concrete floors or aerated concrete with minimum thickness 150 mm and minimum density 650 kg/m³ (EI 120 S)
- Remote installation within vertical rigid walls made from aerated concrete blocks, standard concrete or masonry with minimum thickness 100 mm and minimum density 550 kg/m³, within light plasterboard walls with minimum thickness of 100 mm, within gypsum blocks light walls with minimum thickness 100 mm and minimum density 995 kg/m³ (EI 120 S for 300 Pa depression and EI 90 S for 500 Pa depression)
- Remote installation with Fire Batt (Weichschott) sealing within vertical rigid walls made from aerated concrete blocks, standard concrete or masonry with minimum thickness 100 mm and minimum density 550 kg/m³, within light plasterboard walls with minimum thickness of 100 mm, within gypsum blocks light walls with minimum thickness 100 mm and minimum density 995 kg/m³ (EI 120 S for 300 Pa depression and EI 90 S for 500 Pa depression)
- Remote installation within concrete floors with a minimum thickness of 150 mm and minimum density of 650 kg/m³ (EI 120 S for 300 Pa) or aerated concrete with minimum thickness 100 mm (EI 90 S for 500 Pa) and minimum density 650 kg/m³
- EI 60 S Installation within vertical light wall (Shaft wall)
- Fire resistance characteristics independent from direction of the source of the fire according to EN 1366-2 article 6.2
- Installation possible with damper blade placed horizontally or vertically, with the mechanism placed in left/right or above/below

Accessories

- Motorised version with 24 V or 230 V servomotor installed on the damper

- Set of microswitches with three NO/NC position detecting connectors for open and closed damper, as per standard UNI 10365
- Immission and Interruption magnet 24/48 V DC
- Power supply and communication unit MP-Bus, Modbus, Bacnet
- Inspection doors diameter 140 mm with air sealing gasket, no tools required for opening
- Plasterboard shaped sealing panels for wall installation precut on required sizes
- Fire damper pairing kit WKBA25

REVISION INDEX

Revision n°	Date of issue	Description
14/00	2014/11	First issue
15/07	2015/07	<p>Added drawing:</p> <ul style="list-style-type: none"> • Fire dampers pairing for big ducts dimensions p. 5 <p>Added section:</p> <ul style="list-style-type: none"> • Blade rotation axis positioning p. 16 <p>Added table:</p> <ul style="list-style-type: none"> • Revision Index p. 63 <p>Updated section:</p> <ul style="list-style-type: none"> • Belimo motorized version p. 12 • Specification Text p. 60 <p>Updated table:</p> <ul style="list-style-type: none"> • Performances p. 8 • Fire resistance classification according to EN 13501-3-2009 p. 8 • Accessories and spare parts p. 53 • Motorized fire dampers p. 57 <p>General improvements</p>
16/04	2016/04	<p>Added section:</p> <ul style="list-style-type: none"> • EI 120S Installation within vertical rigid wall p. 24 • EI 120 S Installation within vertical rigid wall with Fire Batt (Weichschott) sealing p. 29 • EI 120 S Installation within vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing p. 29 • EI 120 S Installation within vertical light wall (gypsum blocks wall) with Fire Batt (Weichschott) sealing p. 29 • EI 120 S Installation within floor with Fire Batt (Weichschott) sealing p. 30 <p>Updated section:</p> <ul style="list-style-type: none"> • Fire resistance classification according to EN 13501-3-2009 p. 8 • Mechanism type p. 11 • Minimum distances p. 19 • EI 120 S Installation within vertical rigid wall p. 24 • Electrical connections p. 40 • How to order p. 57 • Specification Text p. 60 <p>Updated table:</p> <ul style="list-style-type: none"> • Accessories and spare parts p. 53 <p>General improvements</p>
16/10	2016/10	<p>Added section:</p> <ul style="list-style-type: none"> • Positioning brackets before fixing p. 16 • Indications for the correct duct suspension and for damper connection p. 16 • Installations remote from the vertical rigid wall and the vertical light wall (gypsum blocks wall) p. 31 • Installation remote from the vertical light wall (plasterboard) p. 33 • Installations remote from the vertical wall with Fire Batt (Weichschott) sealing p. 35 • Installation within vertical light wall (Shaft wall) p. 39 <p>Updated section:</p> <ul style="list-style-type: none"> • Fire resistance classification according to EN 13501-3-2009 p. 8 • Minimum distances p. 19 • Construction supports characteristics p. 22 • How to order p. 57 • Mechanism type p. 11 • Electrical connections p. 40 • Fire dampers pairing p. 7 • Specification Text p. 60 <p>Updated table:</p> <ul style="list-style-type: none"> • Accessories and spare parts p. 53 <p>General improvements</p>

Revision n°	Date of issue	Description
17/04	2017/04	<p>Added section:</p> <ul style="list-style-type: none"> • Installations remote from the floor p.37 <p>Updated section:</p> <ul style="list-style-type: none"> • Indications for the correct duct suspension and for damper connection p.16 • Installation within vertical light wall (plasterboard) • Installations within vertical wall with Fire Batt (Weichschott) sealing p.29 • Installation within floor with Fire Batt (Weichschott) sealing p.30 • Installation remote from the vertical light wall (plasterboard) p.33 • Installations remote from the vertical wall with Fire Batt (Weichschott) sealing p.35 • Installations remote from the vertical rigid wall and the vertical light wall (gypsum blocks wall) p.31 • Installation within vertical light wall (Shaft wall) p.39 • Maintenance and inspections p.43 <p>Updated table:</p> <ul style="list-style-type: none"> • Accessories and spare parts p.53 • Fire resistance classification according to EN 13501-3-2009 p.8 • Minimum distances p.19 <p>General improvements</p>

As the manufacturer is constantly improving its products, the aesthetic or dimensional features, the technical data, the equipment and accessories indicated could be subject to variations.



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