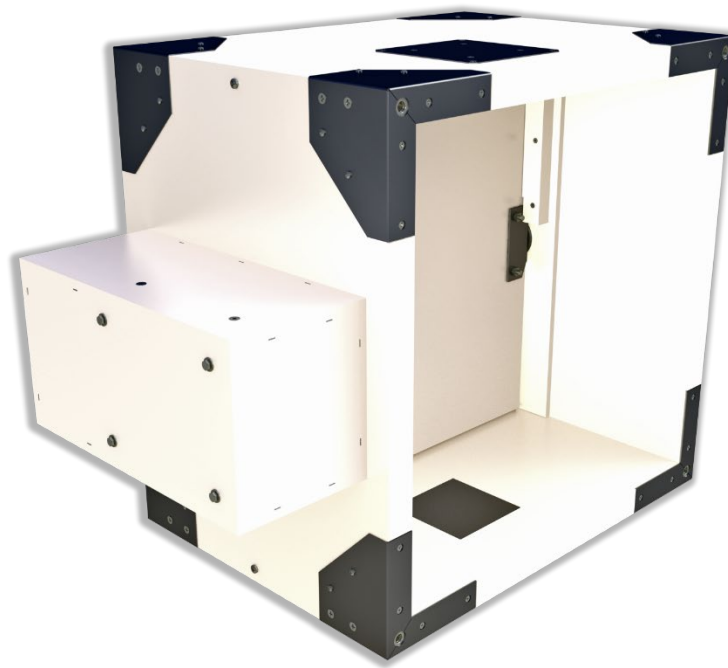


Smoke control damper

Installation guide for Halton Sec SMR



Fire resistance class:

EI 120 (v_{ed} v_{ew} h_{od} h_{ow} -i↔o) S 1000C₁₀₀₀₀ AA or MA multi

EI 90 (v_{ew} h_{ow} -i↔o) S 1500C₁₀₀₀₀ AA or MA multi

CE certificate of Constancy of Performance No: 1391-CPR-2018/0209

Declaration of Performance No: 10036-SFR-2019/01/01

Fire classification according to EN 13501-4 standard

Tested according to product standard EN 12101-8

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1 Introduction

1.1 About this document

This guide provides guidelines for installing the smoke control damper.

1.2 Document copyright and disclaimer

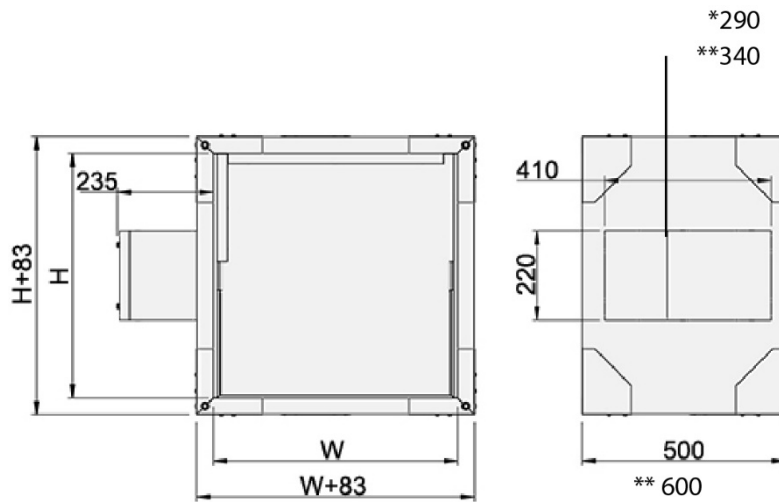
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2 Dimensions

2.1 Damper dimensions (mm)



* Space reservation for smoke control dampers

** Measures with flanges

W=Width	H=Height
200, 250, 300, 350....600, 700, 800....1600	200, 250, 300, 350....600

2.2 Size of installation opening

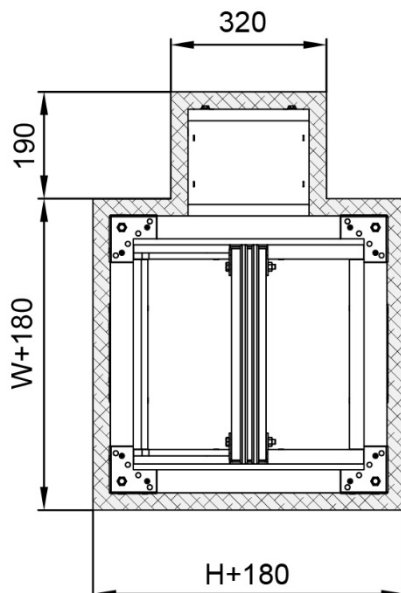


Fig. 2. Installation opening, rectangular

2.3 Minimum distances

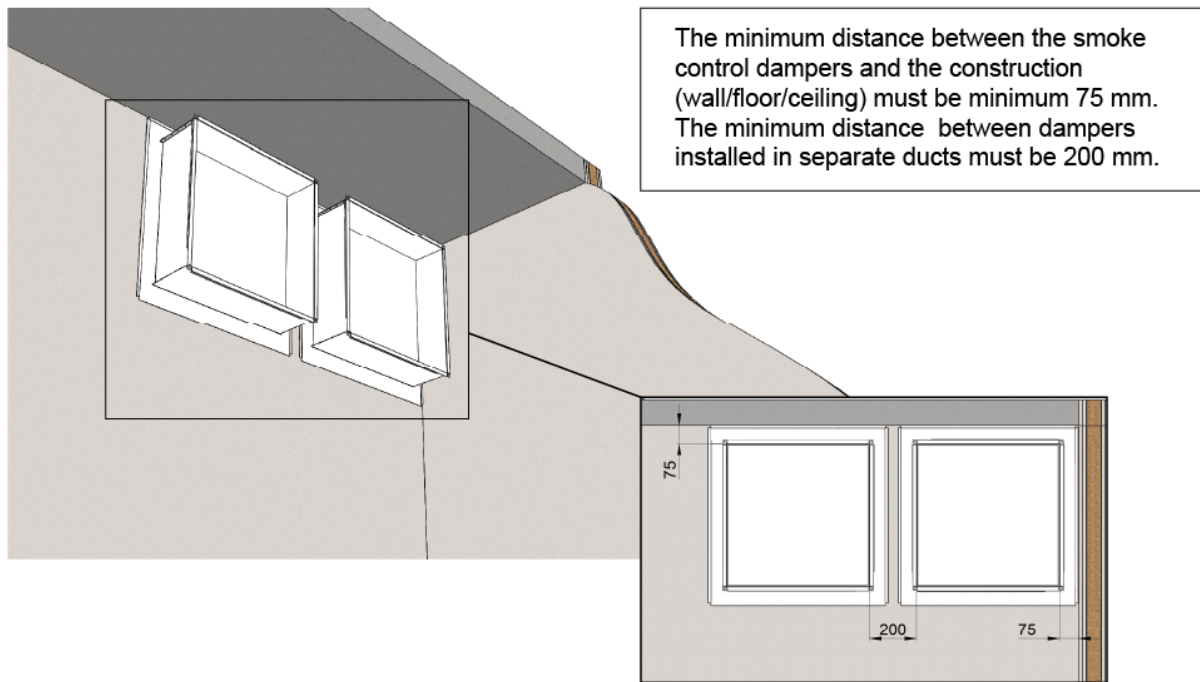


Fig. 3. The distance between the smoke control damper and construction

3 Installation

3.1 Before you start

1. Halton manufactures and supplies only the smoke control damper element of any installation method. All other components or materials mentioned in this guide must be supplied and fitted by the appropriate contractor as accepted best practice, regulation or guidelines for the country in which they are being installed.
2. Perform visual inspection of the condition of the damper before installation.
3. Operation of the damper does not depend on the direction of air circulation.
4. Spindle of the blade and the operating model can be installed in vertical or horizontal position in wall installation.
5. The blade must be in close position during installation.
6. The control mechanism must be protected against damage and pollution during installation process with e.g. plastic cover.
7. For installation of Halton smoke control dampers, all ductwork must be installed so that there is no load on the smoke control damper. Connections to ductwork should be performed as accepted best practice, regulation or guidelines for the country in which they are being installed.
8. Functionality of the damper must be tested before and after installation and after filling the gap between damper and construction.
9. Fill the gap between damper and construction with mortar or gypsum, e.g. HILTI, SIKLA, MÜPRO etc.

Note: The minimum recommended inspection period is every 6 months or according to the building code.

3.2 Mounting the smoke control damper

3.2.1 Solid wall construction (EI 120 S)

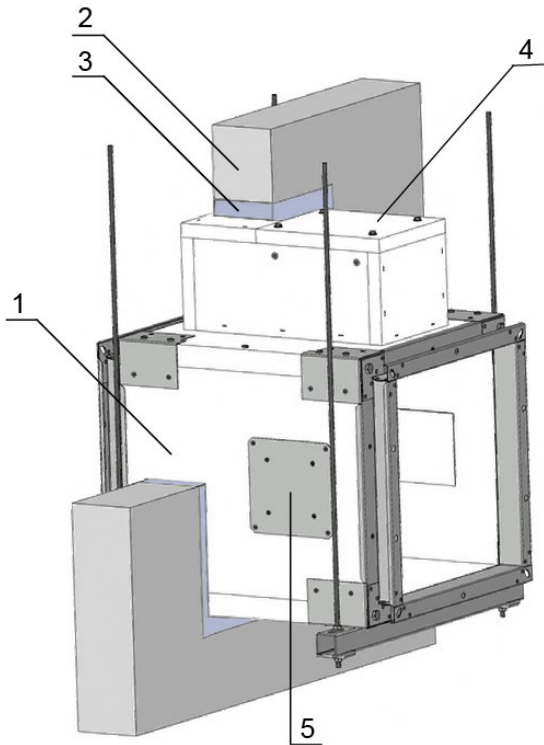


Fig. 6. Blade and spindle in vertical position.

Key:

1. Halton smoke control damper
2. Solid wall construction
3. Mortar or gypsum
4. Cover of actuating mechanism, removable after installation (actuator inside the cover)
5. Inspection hatch covering

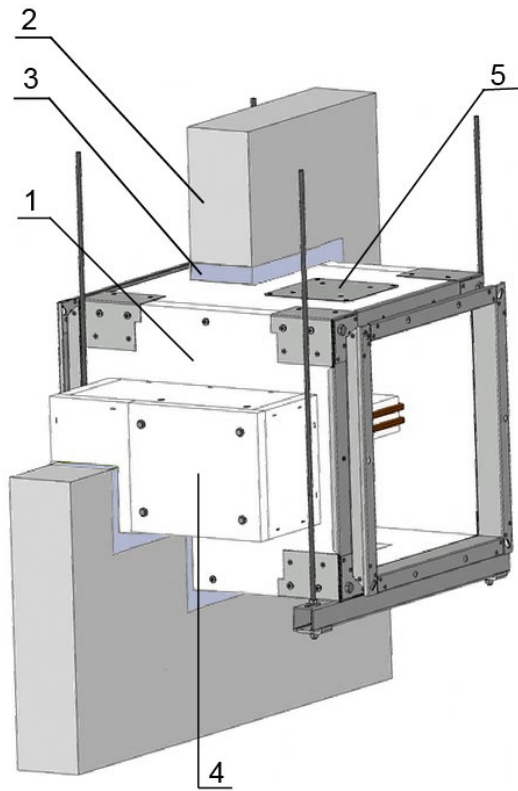


Fig. 7. Blade and spindle in horizontal position.

Key:

1. Halton smoke control damper
2. Solid wall construction
3. Mortar or gypsum
4. Cover of actuating mechanism, removable after installation (actuator inside the cover)
5. Inspection hatch covering

3.2.2 Solid wall construction, face of the wall (EI 120 S)

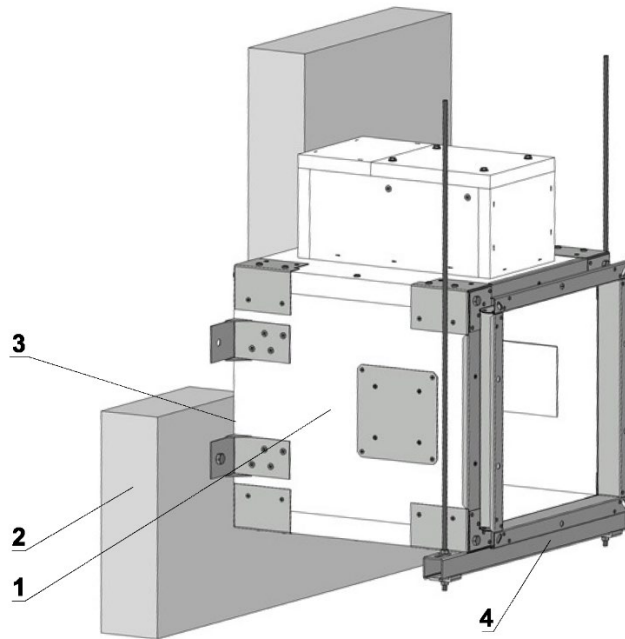


Fig. 4. Blade and spindle in vertical position.

Key:

1. Halton smoke control damper
2. Solid wall construction
3. Ceramic paper*
4. Hinges

* Promat: ALSIFLEX[®] -1260 paper (thickness 8mm) is placed between damper and solid wall construction

Note: Ceramic paper and hinges are not included in the delivery.

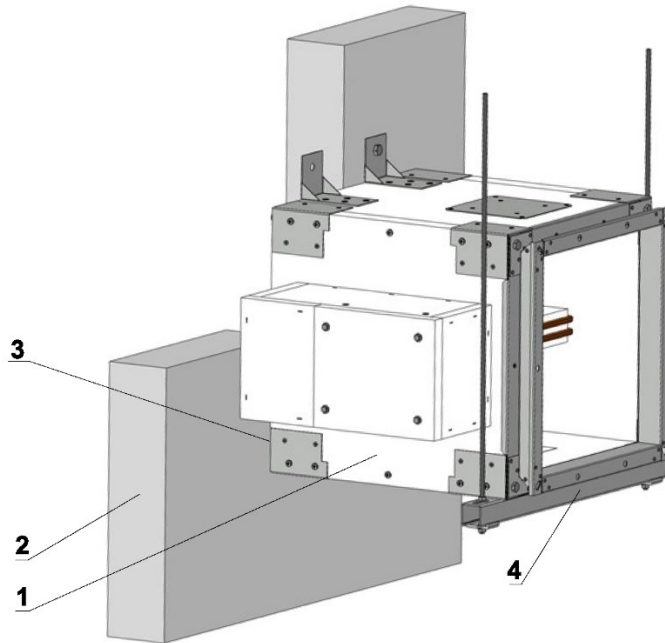


Fig. 5. Blade and spindle in horizontal position.

Key:

1. Halton smoke control damper
2. Solid wall construction
3. Ceramic paper*
4. Hinges

* Promat: ALSIFLEX[®] -1260 paper (thickness 8mm) is placed between damper and solid wall construction

Note: Ceramic paper and hinges are not included in the delivery.

3.2.3 Lightweight wall construction (EI 120 S)

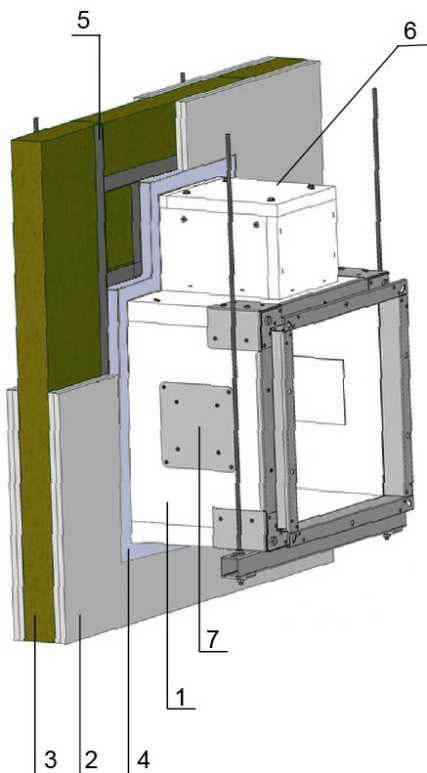


Fig. 8. Blade and spindle in vertical position.

Key:

1. Halton smoke control damper
2. Gypsum plate
3. Fire resistant insulation
4. Mortar or gypsum
5. Steel profile
6. Cover of actuating mechanism, removable after installation (actuator inside the cover)
7. Inspection hatch covering

3.2.4 Solid floor construction (EI 120 S)

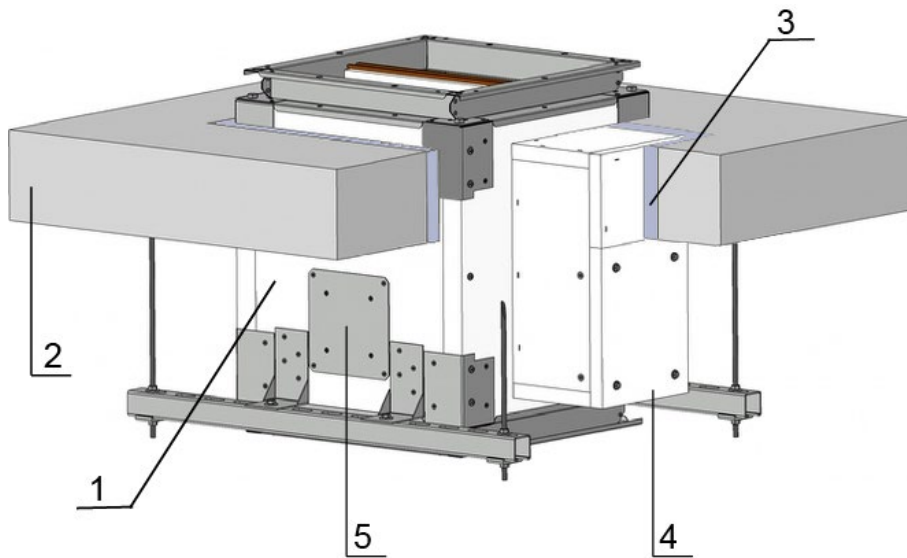


Fig. 9. Actuating mechanism below the floor construction.

Key:

1. Halton smoke control damper
2. Solid floor construction
3. Mortar or gypsum
4. Cover of actuating mechanism, removable after installation (actuator inside the cover)
5. Inspection hatch covering

Note: Thickness of floor min. 110 mm – concrete / min. 125 mm – aerated concrete

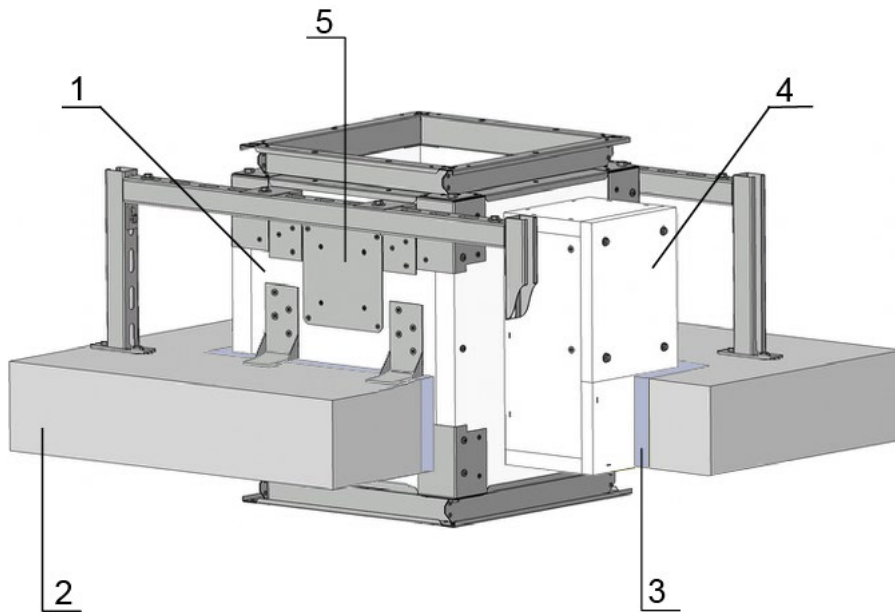


Fig. 10. Actuating mechanism above the floor construction.

Key:

1. Halton smoke control damper
2. Solid floor construction
3. Mortar or gypsum
4. Cover of actuating mechanism, removable after installation (actuator inside the cover)
5. Inspection hatch covering

Note: Thickness of floor min. 110 mm – concrete / min. 125 mm – aerated concrete

3.2.5 Horizontal smoke control duct (EI 120 S)

Connection to the smoke control duct must be performed according to recommendation of the smoke control duct supplier.

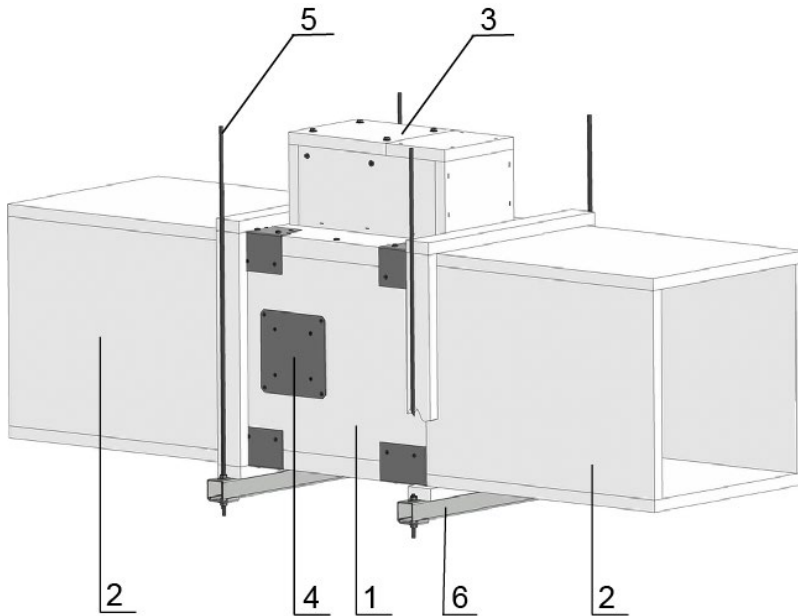


Fig. 11. Installation to horizontal duct with blade and spindle in vertical position.

Key:

1. Halton smoke control damper
2. Smoke control duct (fire resistance asbestos free board, made of mineral fibres)
3. Cover of actuating mechanism, removable after installation (actuator inside the cover)
4. Inspection hatch covering
5. Threaded rod
6. Mounting rail

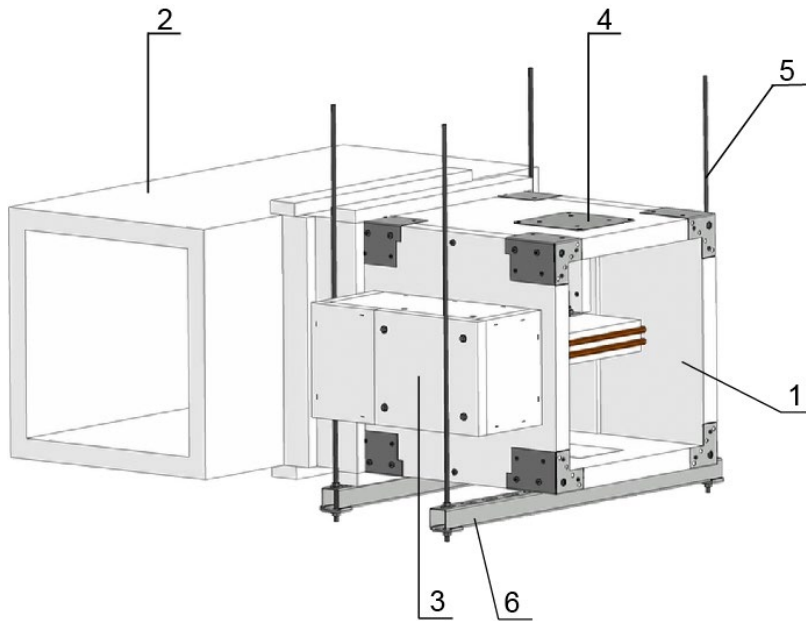


Fig. 12. Installation to the side of horizontal duct with blade and spindle in horizontal position.

Key:

1. Halton smoke control damper
2. Smoke control duct (fire resistance asbestos free board, made of mineral fibres)
3. Cover of actuating mechanism, removable after installation (actuator inside the cover)
4. Inspection hatch covering
5. Threaded rod
6. Mounting rail

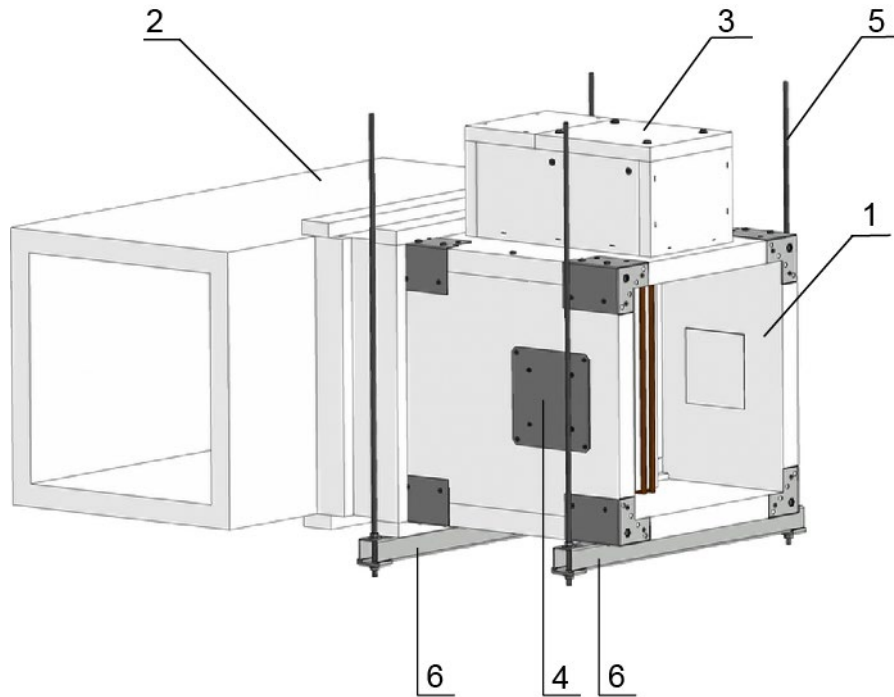


Fig. 13. Installation to the side of horizontal duct with blade and spindle in vertical position.

Key:

1. Halton smoke control damper
2. Smoke control duct (fire resistance asbestos free board, made of mineral fibres)
3. Cover of actuating mechanism, removable after installation (actuator inside the cover)
4. Inspection hatch covering
5. Threaded rod
6. Mounting rail

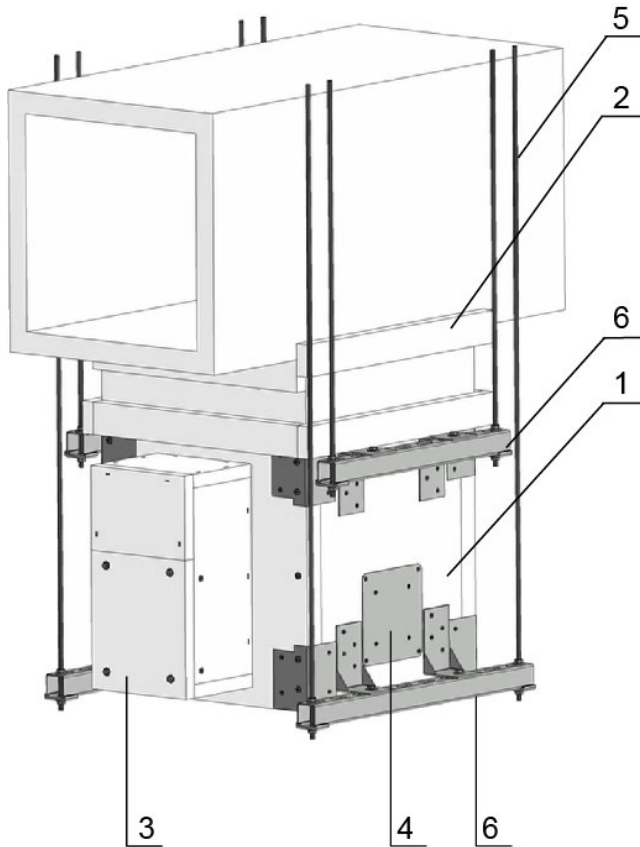


Fig. 14. Installation below the horizontal duct with blade and spindle in horizontal position.

Key:

1. Halton smoke control damper
2. Smoke control duct (fire resistance asbestos free board, made of mineral fibres)
3. Cover of actuating mechanism, removable after installation (actuator inside the cover)
4. Inspection hatch covering
5. Threaded rod
6. Mounting rail

3.2.6 Vertical smoke control duct (EI 120 S)

Connection to the smoke control duct must be performed according to recommendation of the smoke control duct supplier.

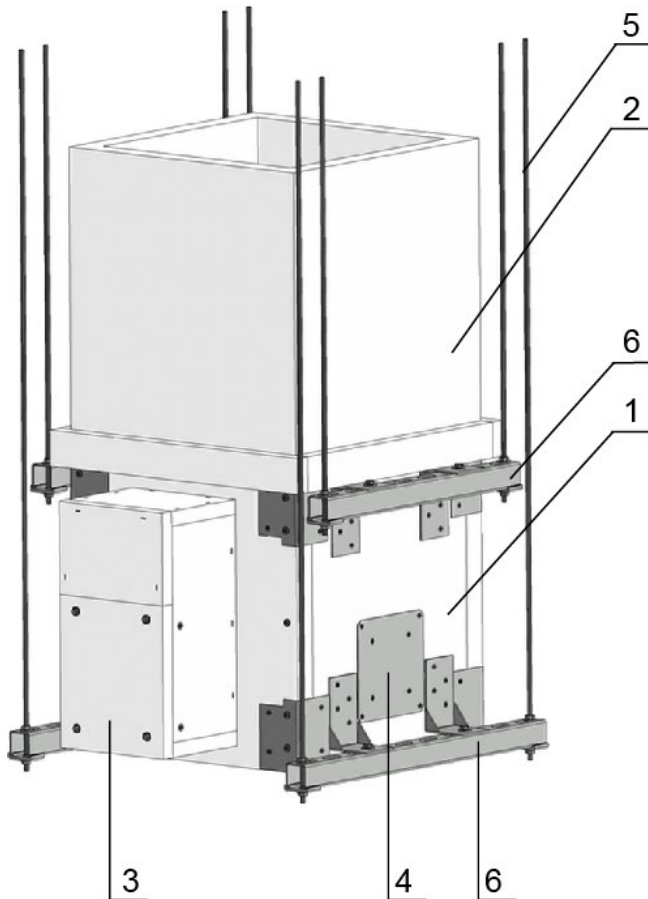


Fig. 15. Installation to the end of vertical duct with blade and spindle in horizontal position.

Key:

1. Halton smoke control damper
2. Smoke control duct (fire resistance asbestos free board, made of mineral fibres)
3. Cover of actuating mechanism, removable after installation (actuator inside the cover)
4. Inspection hatch covering
5. Threaded rod
6. Mounting rail

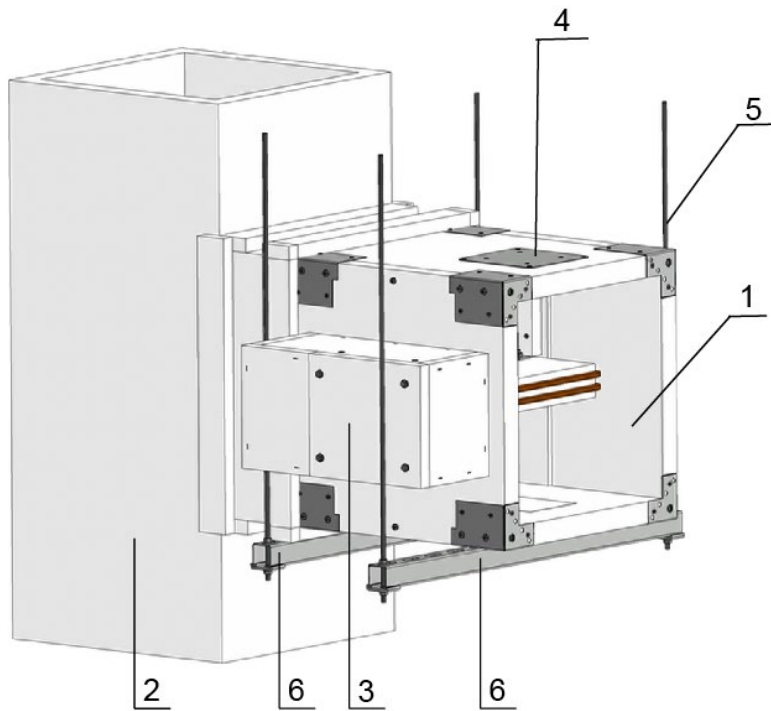


Fig. 16. Installation to the side of vertical duct with blade and spindle in horizontal position.

Key:

1. Halton smoke control damper
2. Smoke control duct (fire resistance asbestos free board, made of mineral fibres)
3. Cover of actuating mechanism, removable after installation (actuator inside the cover)
4. Inspection hatch covering
5. Threaded rod
6. Mounting rail

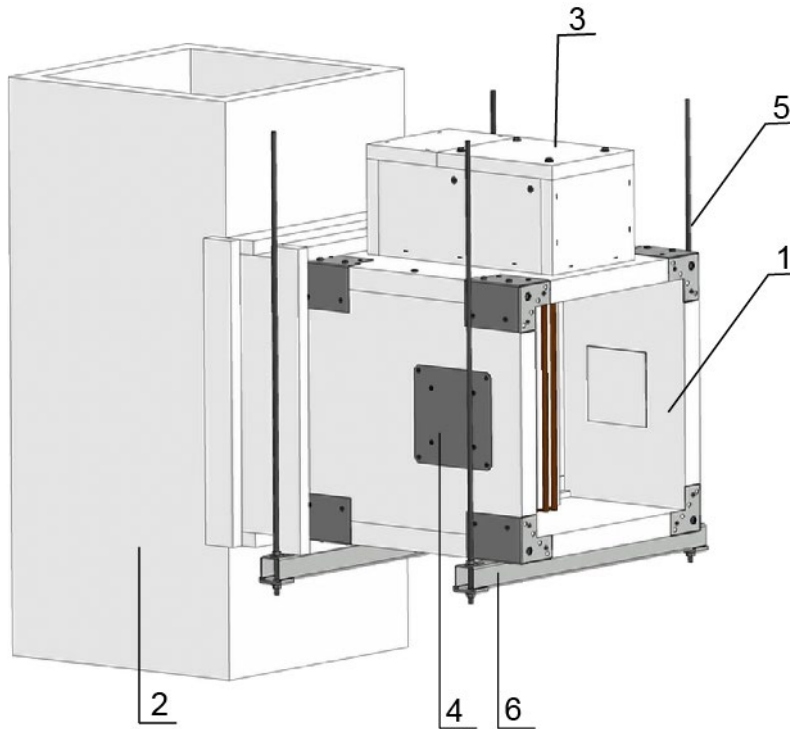


Fig. 17. Installation to the side of vertical duct with blade and spindle in vertical position.

Key:

1. Halton smoke control damper
2. Smoke control duct (fire resistance asbestos free board, made of mineral fibres)
3. Cover of actuating mechanism, removable after installation (actuator inside the cover)
4. Inspection hatch covering
5. Threaded rod
6. Mounting rail

3.3 Fastening the smoke control damper to the duct

Connection to the smoke control duct must be performed according to recommendation of the smoke control duct supplier.

3.3.1 With flange

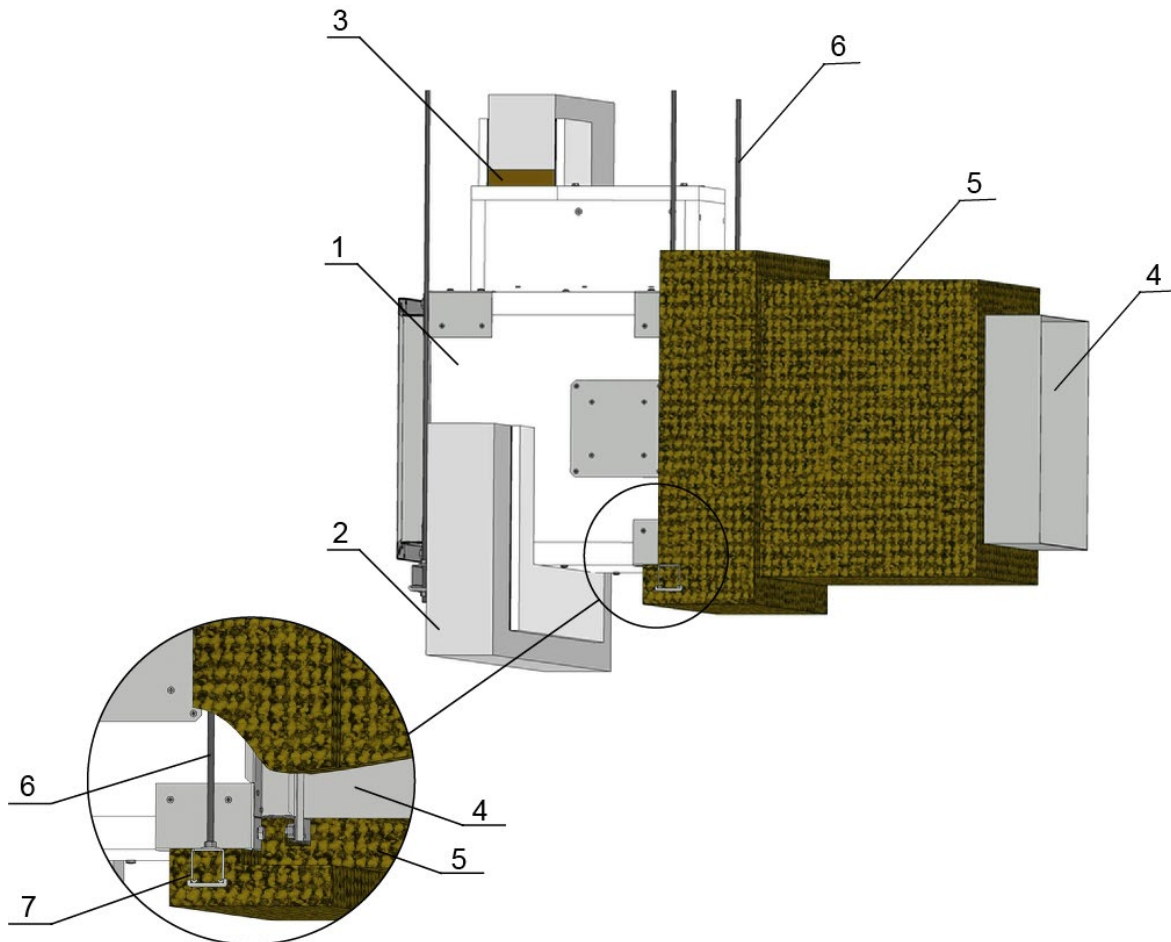


Fig. 18.

Key:

1. Halton smoke control damper
2. Solid wall construction
3. Rockwool (density 140 kg/m³)
4. Smoke control duct (steel)
5. Rockwool (insulated in accordance with local regulations)
6. Threaded rod

3.3.2 Without flange

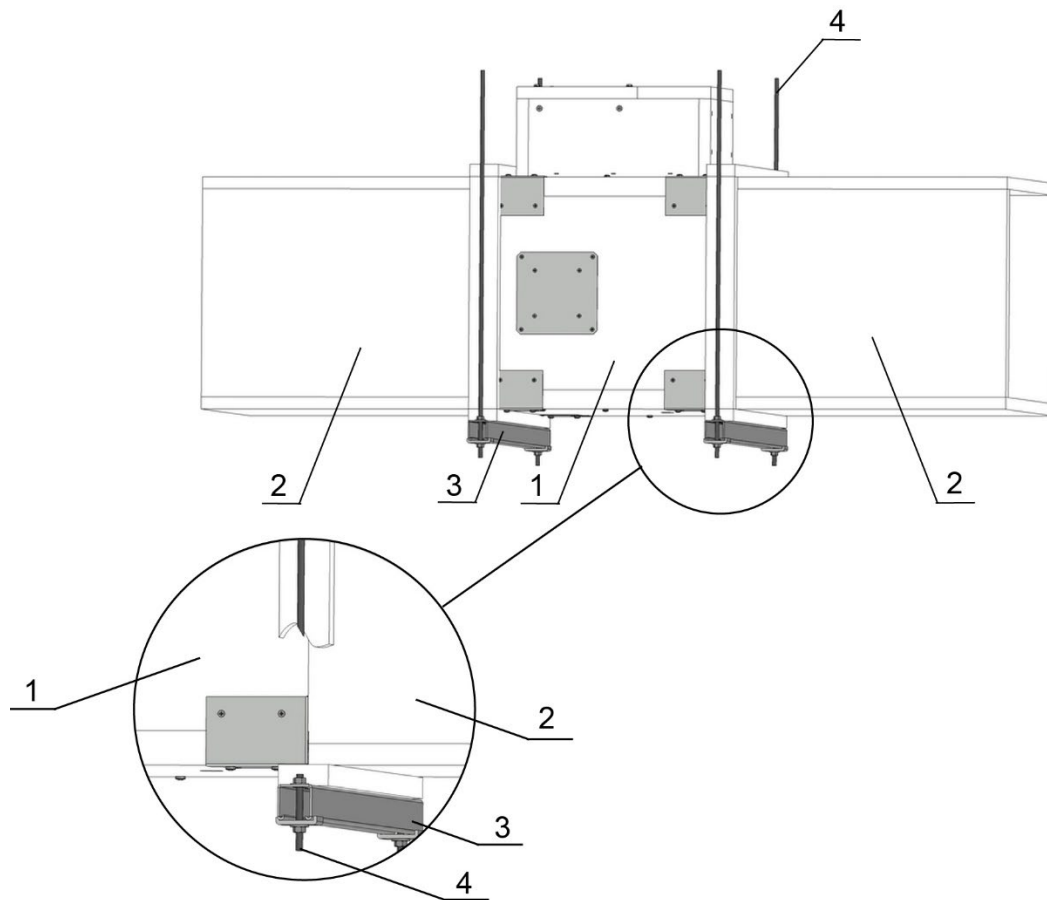


Fig. 19.

Key:

1. Halton smoke control damper
2. Smoke control duct (fire resistance asbestos free board, made of mineral fibres)
3. Mounting rail
4. Threaded rod

3.4 More details

3.4.1 Inspection hatch details

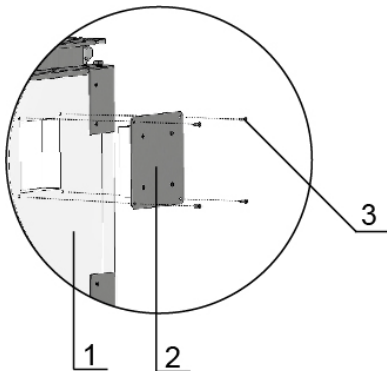


Fig. 20.

Key:

1. Halton smoke control damper
2. Inspection hatch covering
3. Screw

3.4.2 Connecting holes for wires

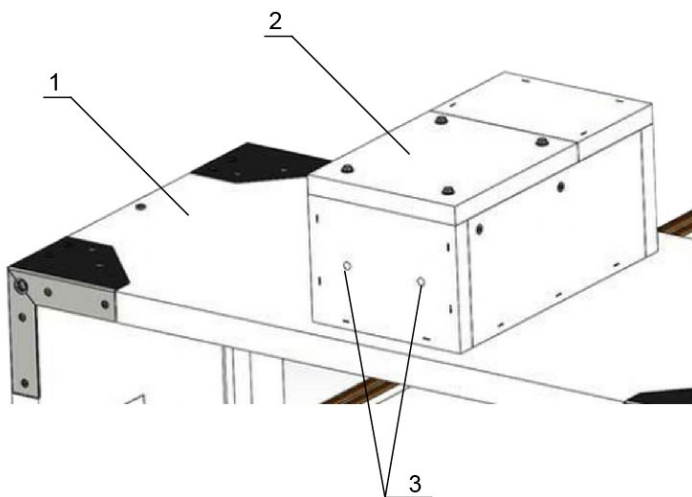


Fig. 21.

Key:

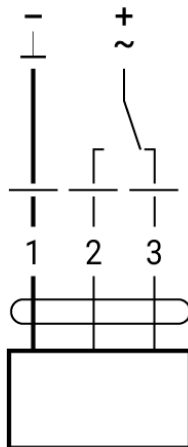
1. Halton smoke control damper
2. Cover of actuating mechanism, removable after installation (actuator inside the cover)
3. Drill two connecting holes $\text{Ø}10\text{mm}$ for heat resistant cable

4 Key technical data

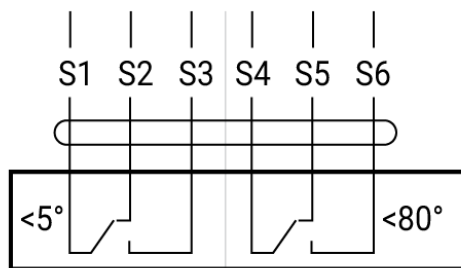
4.1 Wiring

4.1.1 Belimo, AC/DC 24 V, open-close

AC/DC 24 V, open/close



Auxiliary switch



Wire colours:

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

Electrical installation

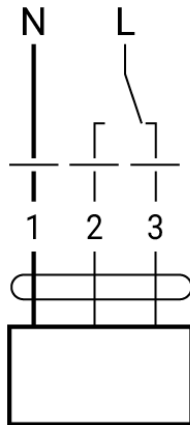


Notes

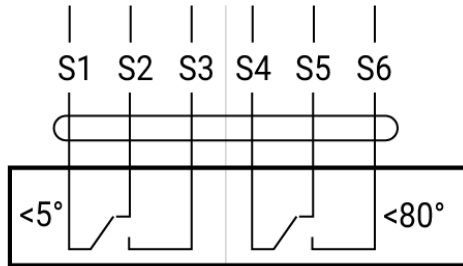
- Connection via safety isolating transformer
- Parallel connection of other actuators possible. Observe the performance data.
- Combination of power supply voltage and safety extra-low voltage not permitted at the both auxiliary switches.

4.1.2 Belimo, AC 230 V, open-close

AC 230 V, open/close



Auxiliary switch



Wire colours:

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

Electrical installation



Notes

- Caution: Power supply voltage!
- The actuator must be protected by a fuse that does not exceed 16 A.
- Parallel connection of other actuators possible. Observe the performance data.
- Combination of power supply voltage and safety extra-low voltage not permitted at the both auxiliary switches.

4.2 Actuators

Actuating mechanism, Belimo	BEN 230	BEN 24
Nominal voltage	AC 230 V 50/60 Hz	AC/DC 24 V 50/60 Hz
Power consumption - in operation - at rest	4 W 0,4 W	3 W 0,1 W
Power consumption for wire sizing note	7 VA (I _{max} 3 A @ 5 ms)	6 VA (I _{max} 8,2 A @ 5 ms)
Protection class	II	III
Degree of protection IEC/EN	IP 54	
Running time for 95°	< 30 s	
Ambient temperature range	- 30 °C...55 °C	
Non-operating temperature	- 40 °C...80 °C	
Connecting - in operation - auxiliary switch	Cable 1 m, 3 x 0,75 mm ² (halogen-free) Cable 1 m, 6 x 0,75 mm ² (halogen-free)	

Actuating mechanism, Belimo	BE 230-12	BE 24-12 (-ST)
Nominal voltage	AC 230 V 50/60 Hz	AC 24 V 50/60 Hz DC 24 V
Power consumption - in operation - at rest	8 W 0,5 W	12 W 2 W
Power consumption for wire sizing note	15 VA (I _{max} 7,9 A @ 5 ms)	18 VA (I _{max} 8,2 A @ 5 ms)
Protection class	II	III
Degree of protection IEC/EN	IP 54	
Running time for 95°	< 60 s	
Ambient temperature range Non-operating temperature	- 30 °C...50 °C - 40 °C...80 °C	
Connecting - in operation - auxiliary switch	Cable 1 m, 2 x 0,75 mm ² (halogen-free) Cable 1 m, 6 x 0,75 mm ² (halogen-free) (BE 24-ST) with plug-in connectors	