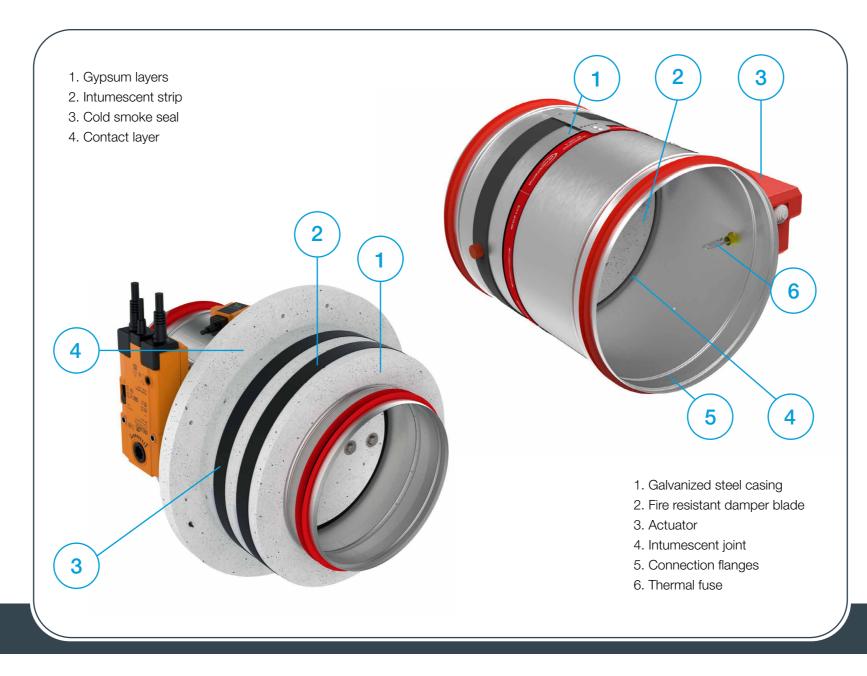




Fire protection

Version 2.0 Issue Date: 11.09.2025.





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FIRE DAMPER - FDC

PRODUCT OVERVIEW

Fire dampers FDC are used for prevention of fire spread trough the ventilation ducts and between fire sections. Fire dampers consist of steel sheet casing, calcium silicate damper blade, damper blade mechanism outside of the airflow and a manual, electromagnetic or electric actuator.

Fire damper casing is made out of galvanized steel sheet. Variants produced from stainless steel and powder coated steel are also available. Calcium silicate blade is equipped with brass bearings and seals made out of polyurethane and elastomer rubber.

Fire dampers FDC25 are produced up to size d315 and have 25 mm thick damper blade. Fire dampers FDC40 are produced in sizes from d355 till d800 and have 40 mm thick damper blade.

FDC25 fire dampers are equipped with R25 manual mechanism and FDC40 fire dampers are equipped with R40 manual mechanism.

Manual spring return mechanism is equipped with thermal fuse that is triggered automatically when the temperature inside the duct reaches 72 °C. It can also be activated manually by the push of the button on the mechanism (see page 56.). Additional equipment for manual mechanism include end contact switches for damper position signalling. Electromagnetic actuators feature spring return mechanism with electromagnet for remote activation. Additional equipment for electromagnetic mechanism include end contact switches for damper position signalling. Rearming of the electromagnetic actuator is manual.

Fire dampers with electric actuators are equipped with Belimo actuator drives in 24 V or 230 V versions. Activation of fire dampers equipped with electric drives can be via 72 °C or 95 °C thermal fuse or remotely via control signal. Rearming of the electric fire damper can also be done remotely via control signal. All electric actuators are equipped with end switches for position signalling.

ATEX rated versions of fire dampers can be delivered with Schischek 24 V / 230 V electric actuators that are rated for installation in explosive atmosphere areas.

All fire dampers are tested according to the EN 1751 for airtightness and retain class 3 leakage on the closed damper blade and class C on the casing air leakage.

mechanism.









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FIRE DAMPER - FDC

TESTS AND CERTIFICATES

All our dampers are submitted to a number of tests by official test institutes. Reports of these tests form the basis for the approvals of our dampers. Fire dampers are also suitable for installation in buildings with high hygienic demands such as hospitals, clinics and pharmaceutical areas.

To confirm this, out products are tested by an independent Institute of Hygiene, based in Gelsenkirchen, Ruhr, and comply with directives and guidelines in VDI 6022.

Our FDC damper contains an EPD certificate. EPD or Environmental Product Declaration is a document that transparently communicates the performance or impact on the environment of any product or material during its lifetime. The EPD is usually valid for five years and is produced according to the relevant standards. The EPD is made in accordance with EN 15804+A2 & ISO 14025/ ISO 21930.

FIRE RESISTANCE **CLASSIFICATION**

FDC fire resistance is tested according to EN 1366-2 "Fire Please consult latest Declaration of Performance: resistance tests for service installations- Part 2: Fire dampers". Classification of the fire dampers is defined according to EN 13501-3 Fire classification of construction products and building elements.

Installation in both, vertical and horizontal axis of rotation of the dampers blade is acceptable (with the axis angle 0 - 360°). Fire resistance of fire damper depends on classification of walls or ceilings. It is allowed to install products to walls or ceilings only according to products Declaration of Performance. Walls or ceilings with greater fire resistance can also be used. Fire damper should be installed according to the installation manual which can be found within this document.

For more information about certificates, visit our website.

E - Integrity

I - Insulation

120/90/60 - Classification time in minutes

S - Smoke leakage

ve - Damper installed in vertical compartment

ho - Damper installed in horizontal compartment

i ↔ o - Fire performance criteria are met on both sides



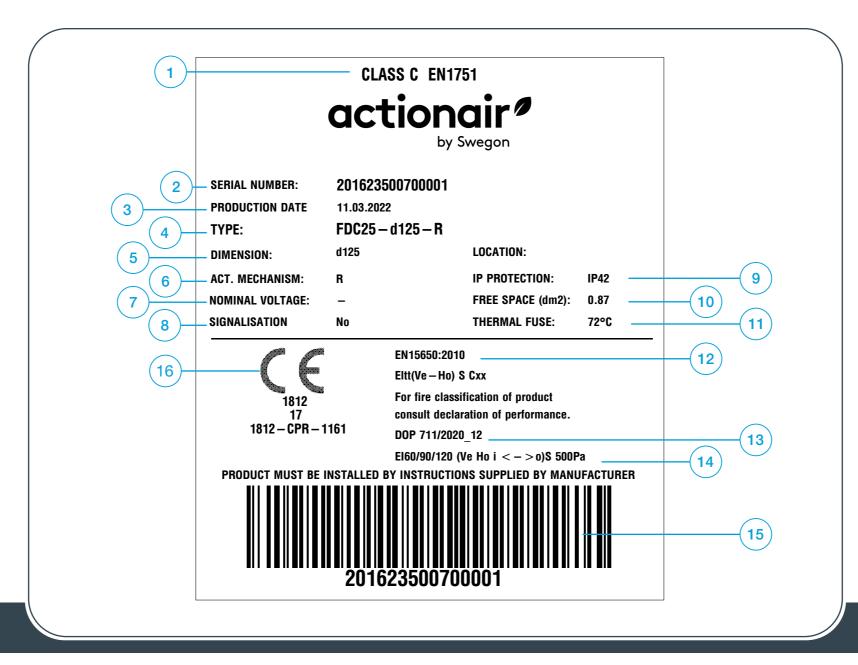


TECHNICAL DATA

Fire damper casing is manufactured from galvanized steel sheet, but on demand can be produced out of:

- Galvanized steel and powder coated
- Stainless steel EN 1.4301/EN 1.4404 (AISI 304/316L)
- Stainless steel EN 1.4301/EN 1.4404 (AISI 304/316L) and powder coated
- Stainless steel not posible with MF1, MF2, Applique

Fire damper for areas with potentially explosive atmospheres are also available



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PRODUCT OVERVIEW

Product label

- 1 Casing air leakage classification
- 2 Serial number
- 3 Production date
- 4 Type
- 5 Dimension of the fire damper
- 6 Mechanism type
- 7 Nominal voltage
- 8 Signalisation (end contacts)
- 9 IP protection
- 10 Free space
- 11 Thermal fuse temperature
- 12 Number of the European standard and year of its publication
- 13 Declaration of performance
- 14 Classification according to EN 13501-3
- 15 Barcode
- 16 CE mark

Product specifications

Nominal sizes FDC	100 - 800 [mm]
Casing length	380 mm
Temperature range	-20 °C 50 °C
Release temperature	72 °C (standard) or 95 °C (optional with electric actuator)
Volume flow rate range	up to 21700 m³/h
Differential pressure range	up to 1000 Pa
Casing air leakage	Class C, EN 1751
Closed blade air leakage	Class 3, EN 1751
Upstream velocity	< 12 m/s
EC conformity	EN 13501-3, EN 1366-2, EN 15650, EN 1751, CPR no.305/2011
Declaration of performance	DoP 711/2020_12

Pressure drop tables

Pressure drop values are described with the "Zeta" values for each size. The exact pressure drop in [Pa] is calculated using the following formula:

$\Delta p [Pa] = \zeta * v^2 * 0.6$

where ζ is Zeta value from the tables below, v is airflow velocity in [m/s]

FDC25	d100	d1	25	d160	d200	d2	250	d315
ζ	1,759	0,8	352	0,545	0,445	5,0	340	0,293
FDC40	d355	d400	d450	d500	d560	d630	d710	d800
ζ	0,428	0,389	0,344	0,325	0,312	0,232	0,206	0,179

FIRE DAMPER - FDC

Dimensional range

	Diameter [mm]	Cross section [dm²]	Net area [dm²]
-	100	0,74	0,50
	125	1,17	0,87
-	160	1,93	1,55
FDC25 -	200	3,05	2,56
-	250	4,79	4,18
-	315	7,64	6,87
	355	9,73	8,33
-	400	12,37	10,79
-	450	15,69	13,91
FDC40	500	19,39	17,41
- - -	630	30,86	28,36
	710	39,24	36,42
	800	49,86	46,68



MODELS

Casings

FDC25

Cylindrical fire damper with 25 mm damper blade and fire classification up to El120S. Sizes range from d100 till d315.

FDC40

Cylindrical fire damper with 40 mm damper blade and fire classification up to El120S. Sizes range from d355 till d800.

FDC25 - APP

Cylindrical fire damper with integrated Applique installation frame with 25 mm damper blade and fire classification up to El90S.

Sizes range from d100 till d315.

FDC25 - MF1/MF2

Cylindrical fire damper with integrated MF1 installation frame with 25 mm damper blade and fire classification up to El60S. Sizes range from d100 till d315.

FDC40 - MF2

Fire damper with integrated MF2 installation frame with 40 mm damper blade and fire classification up to El90S. Sizes range from d355 till d800.





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R (R-S)

Actuators

Manual operating mechanism, optionally with end switches (R-S). In case of fire, the fire damper closes automatically. Damper closing can be initiated either by thermal fuse melting, or by manual activation on the operating mechanism. Upon closure, damper blade is locked in closed position and can only be opened manually (see page 56.). Thermal fuse melting point is 72 °C.

EMS-S

Electromagnetic operating mechanism, comes with end switches as standard. In case of fire, the fire damper closes automatically. Damper closing can be initiated either by thermal fuse melting or remotely by triggering the electromagnet. Electromagnet is constantly under power and activates closing of the damper blade in case the power cuts out. Upon closure, damper blade is locked in closed position and can only be opened manually (see page 56.). Thermal fuse melting point is 72 °C.

M230-S

Belimo 230 V electro motor operating mechanism, comes with integrated end switches. In case of fire, the fire damper closes automatically.

Damper closing can be initiated either by thermoelectric release device or remotely by triggering the electro motor. Upon closure, damper blade is locked in closed position and can be opened by sending a signal to electro motor. Standard thermoelectric release point is 72 °C, optional 95 °C.

M24-S

Belimo 24 V electro motor operating mechanism, comes with integrated end switches. In case of fire, the fire damper closes automatically. Damper closing can be initiated either by thermoelectric release device or remotely by triggering the electro motor. Upon closure, damper blade is locked in closed position and can be opened by sending a signal to electro motor. Standard thermoelectric release point is 72 °C. optional 95 °C.

M24-S-ST

Belimo 24 V electro motor operating mechanism, comes with integrated end switches. In case of fire, the fire damper closes automatically. Damper closing can be initiated either by thermoelectric release device or remotely by triggering the electro motor. Upon closure, damper blade is locked in closed position and can be opened by sending a signal to electro motor. Standard thermoelectric release point is 72 °C, optional 95 °C. Actuator is additionally equipped with connection plug for easy connection with power supply and communication modules.

ATEX rated fire dampers are equipped with Schischek ExMax-5.10-BF actuators, ExPro-TT thermal switches and ExBox-BF plenum boxes. Optional casing can be produced in AISI 316 stainless steel.

Ordering key

(1) Damper type	(2) Dimension	(3) Mechanism type	(4)	Mounted accessories
-----------------	---------------	--------------------	-----	---------------------

FDC25 _ d250 M230-S - IH

(1) FDC25 - d100 to d315 FDC40 - d355 to d800 FDC25-APP - d100 to d315 FDC25-MF1 - d100 to d315 FDC25-MF2 - d100 to d315 FDC40-MF2 - d355 to d800

(2) Damper diameter d100 till d800

(3) R - manual drive

R-S - manual drive with limit switches M230-S - electric actuator AC/DC 230 V M24-S - electric actuator AC/DC 24 V M24-S-ST - electric actuator AC/DC 24 V with connection plug

FIRE DAMPER - FDC

EMS-S - electromagnetic drive

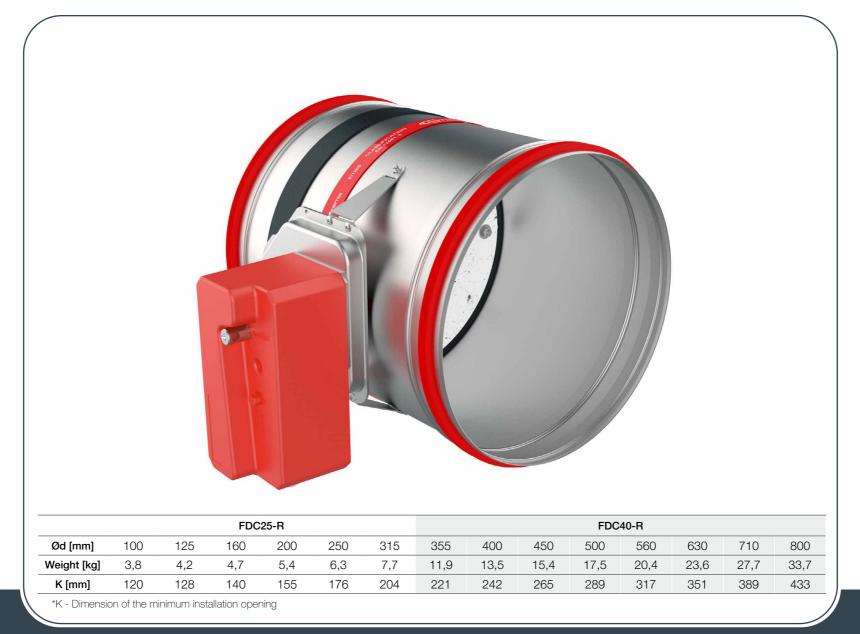
EX - electric actuator Schischek ExMax -5.10-BF +ExPro-TT+ExBox-BF

(4) IH - inspection hatch



FDC25/FDC40 - R (manual mechanism)

- Automatic closure when the temperature in the duct exceeds 72 °C
- Manual rearming
- Manual unlocking possible for periodical test of fire damper
- Optional with end position switches (-R-S)
- FDC25 fire dampers are equipped with R25 manual mechanism
- FDC40 fire dampers are equipped with R40 manual mechanism



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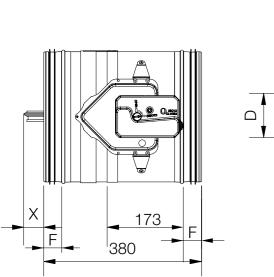
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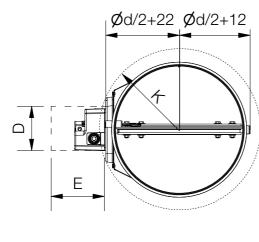
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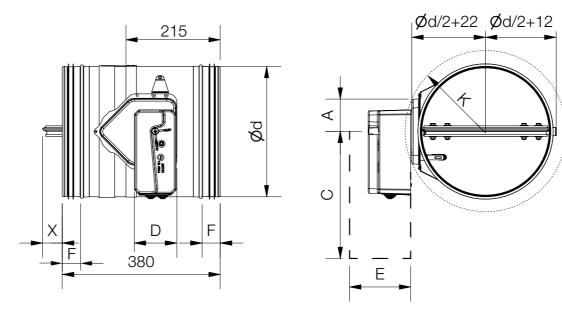
FIRE DAMPER - FDC

FDC25-R25 (up to d315)





FDC40-R40 (d355 up to d800)



Product	A [mm]	C [mm]	D [mm]	E [mm]	F [mm]
FDC 25	55	150	105	150	42
FDC 40	55	200	105	200	42

Length of damper blade outside of casing (X dimension on front side):

X=(Ød/2)-110 [mm]

*If the damper is larger than Ø540, use formula (Y dimension on back side):



FDC25/FDC40 - EMS (solenoid actuator)

- Electromagnetic actuator with integrated limit switches and thermal fuse release mechanism (72 °C)
- Manual rearming
- Remote closing with electromagnetic actuator
- Manual closing possible

DIMENSIONS

EMS - solenoid actuator is constantly under power.
 Actuating mechanism is tripped when the power is interrupted, or thermal fuse is melted.



FDC25-EMS									FDC4	0-EMS				
Ød [mm]	100	125	160	200	250	315	355	400	450	500	560	630	710	800
Weight [kg]	5,3	5,7	6,2	6,9	7,8	9,2	12,2	13,8	15,7	17,8	20,7	23,9	28	34
K [mm]	120	128	140	155	176	204	221	242	265	289	317	351	389	433

^{*}K - Dimension of the minimum installation opening





INSTALLATIONS

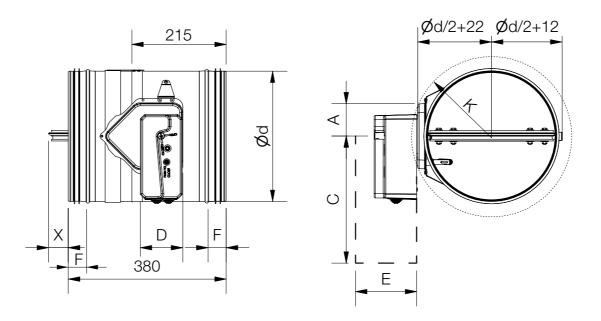
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FIRE DAMPER - FDC



Product	A [mm]	C [mm]	D [mm]	E [mm]	F [mm]
FDC 25	55	150	105	150	42
FDC 40	55	200	105	200	42

Length of damper blade outside of casing (X dimension on front side):

X=(Ød/2)-110 [mm]

*If the damper is larger than Ø540, use formula (Y dimension on back side):



FDC25/FDC40 - M (electric actuator)

- Thermoelectric release device (72 °C) with electric actuator and return spring
- Integrated end switches
- Fully automatic operation
- Optional 95 °C thermoelectric release device for warm air installations



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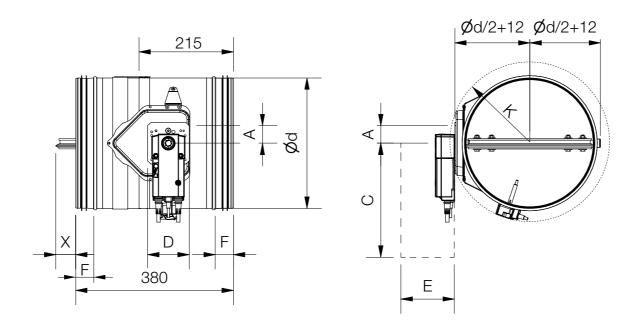
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*K - Dimension of the minimum installation opening

FIRE DAMPER - FDC



Product	A [mm]	C [mm]	D [mm]	E [mm]
BFL (M)	25	200	90	120
BFN (M)	25	225	100	120
BF (M)*	50	250	100	120

Product	F [mm]
FDC 25	42
FDC 40	42

Length of damper blade outside of casing (X dimension on front side):

X=(Ød/2)-110 [mm]

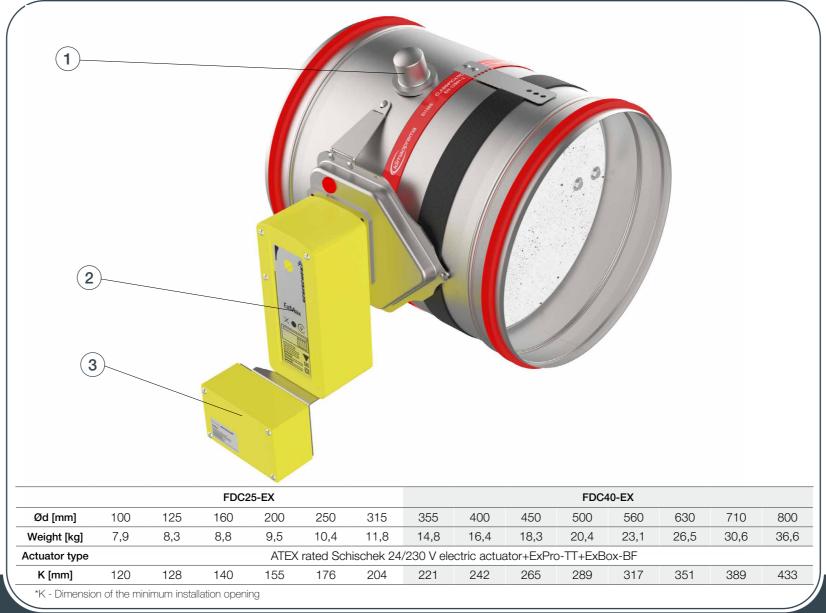
*If the damper is larger than Ø540, use formula (Y dimension on back side):



FDC25/FDC40 - EX (electric actuator)

- Thermoelectric release device (72 °C) with electric actuator and return spring
- Integrated end switches
- Fully automatic operation
- The EX version of the damper comes with:
 - 1) Safety temperature trigger Schischek ExPro-TT
 - 2) Electric actuator Schischek ExMax-5.10-BF
 - 3) Terminal box Schischek ExBox-BF

For more information see page 43.



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DIMENSIONS

Ex classification of product: II 2G Ex h IIC T6 Gb

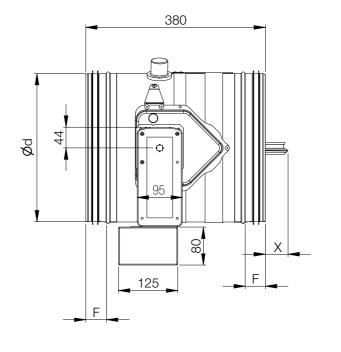


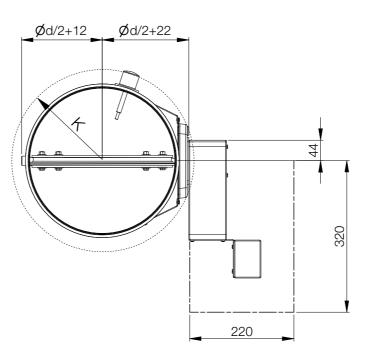
II 2D Ex h IIIC T80°C Db

For more information about Ex classification, visit website: ATEX classification!

Type Examination Certificate Number: FIDI 21 ATEX D059. Equipment complies with the essential health and safety requirements relating to the design and construction of equipment intended to use in potentially explosive atmospheres given in annex VIII of the directive ATEX 2014/34/EU.

Please consult latest Declaration of conformity on our





FIRE DAMPER - FDC

Model	F [mm]
FDC 25	42
FDC 40	42

Length of damper blade outside of casing (X dimension on front side):

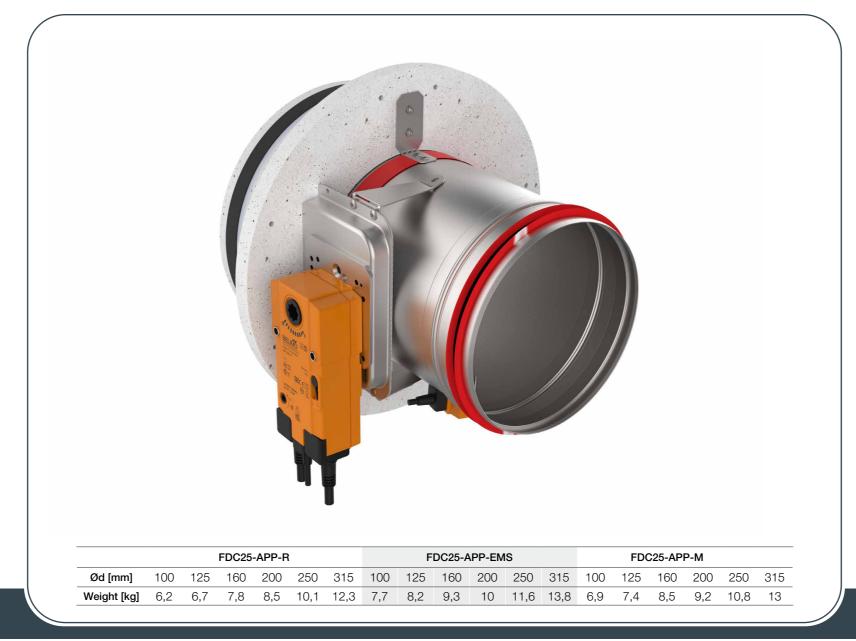
 $X=(\emptyset d/2)-110 [mm]$

*If the damper is larger than Ø540, use formula (Y dimension on back side):



FDC25 - APP Applique installation frame

- Applique kit is an installation subframe for quick and easy installation in rigid and flexible walls
- Made out of calcium silicate boards
- Quick wall mounting with screws
- Factory assembled to the fire damper



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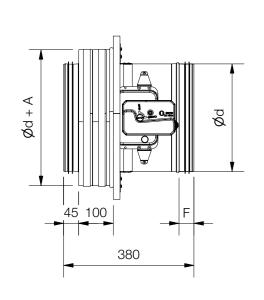
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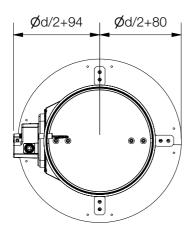


DIMENSIONS

Damper diameter Ød[mm]	Applique frame diameter Ød + A [mm]
100	Ød +105 mm
125 - 160	Ød + 95 mm
200 - 315	Ød + 80 mm

FDC25-APP-R



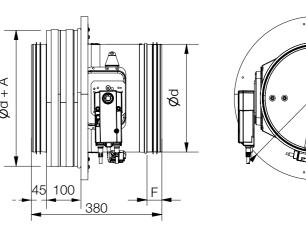


FDC25-APP-EMS Ød/2+124 Ød/2+80 45 100 380

FIRE DAMPER - FDC

Product	F [mm]
FDC 25	42
FDC 40	42

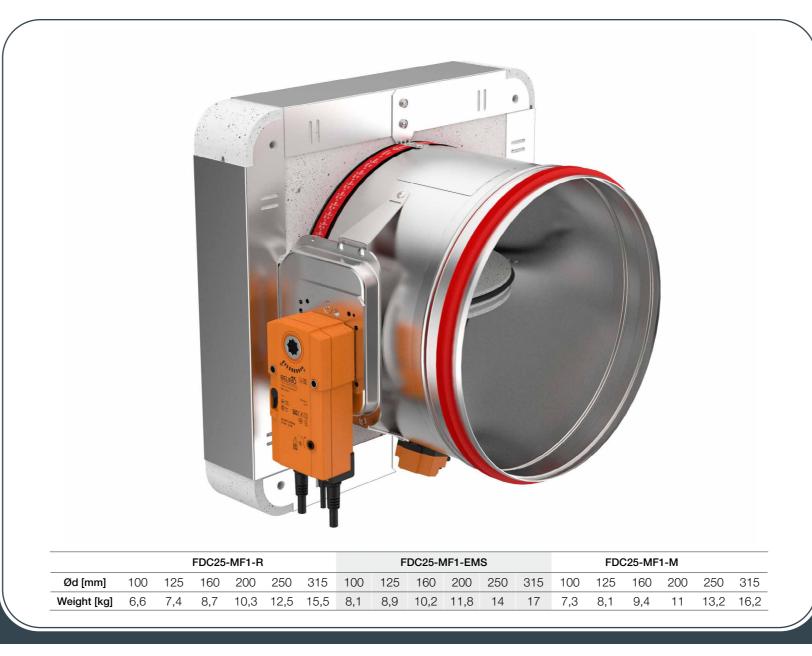
FDC25-APP-M





FDC25 - MF1 MF1 installation frame

- MF1 is an installation frame for quick and easy installation in rigid and flexible walls
- Made out of calcium silicate boards
- Quick wall mounting with screws
- Factory assembled to the fire damper



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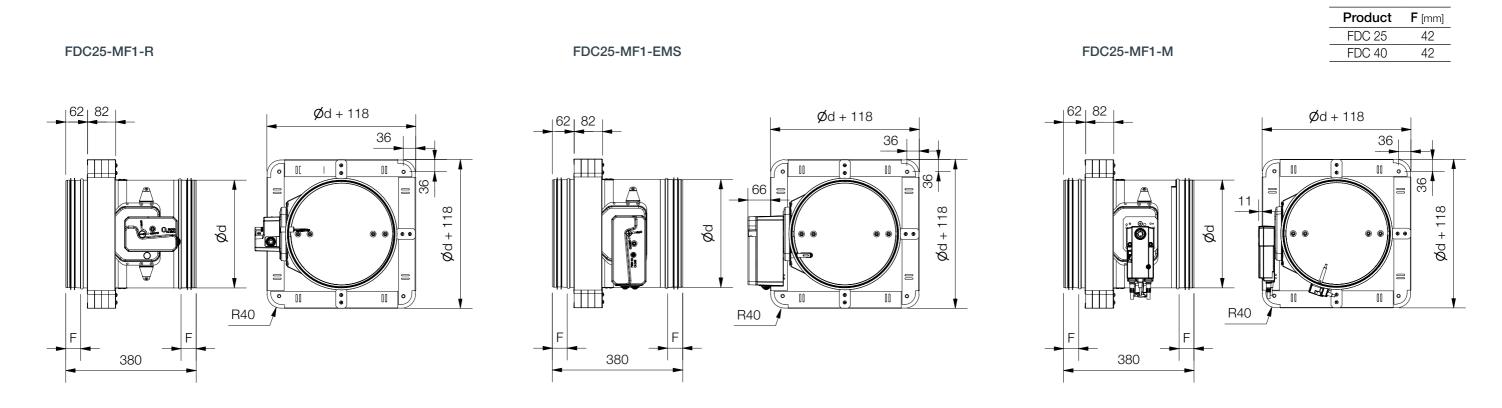
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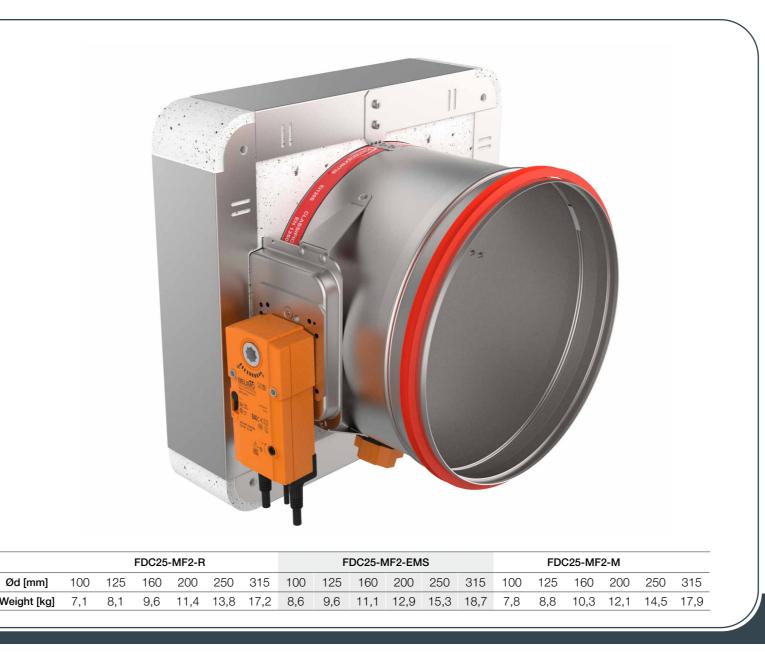
FIRE DAMPER - FDC





FDC25 - MF2 MF2 installation frame

- MF2 is an installation frame for quick and easy installation in rigid, flexible and shaft walls
- Made out of calcium silicate boards
- Quick wall mounting with screws
- Factory assembled to the fire damper



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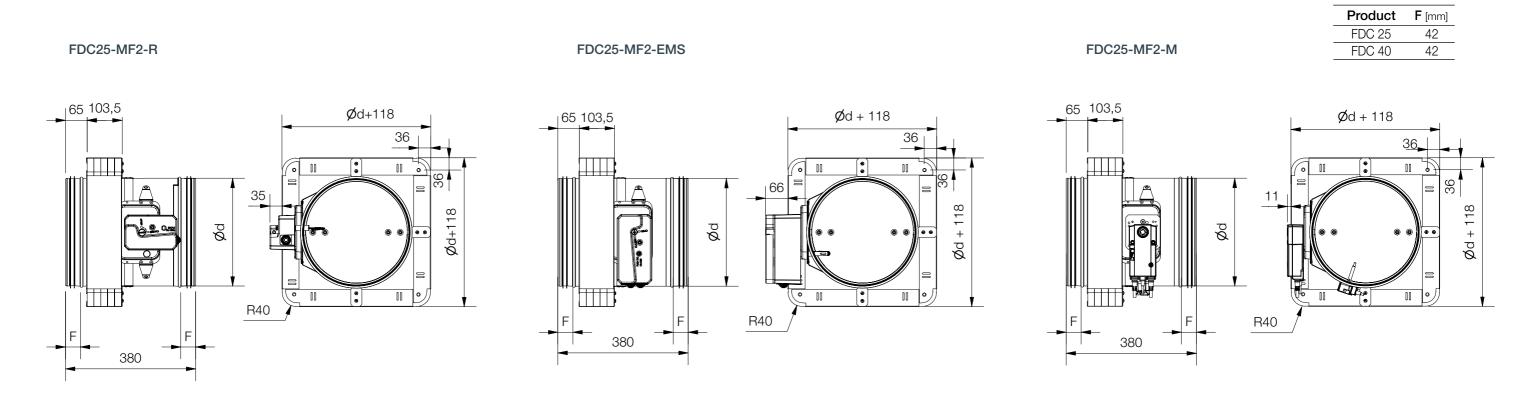
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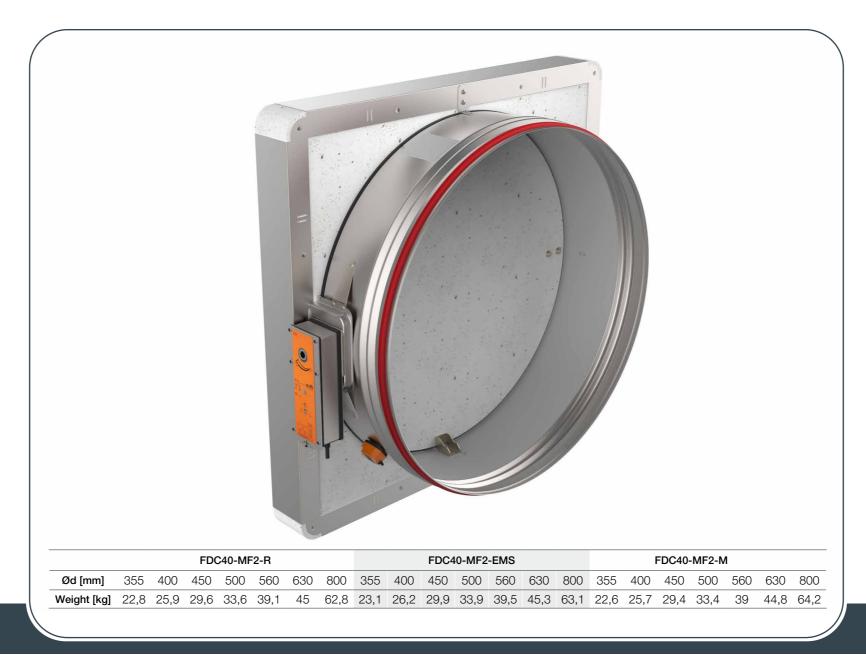
FIRE DAMPER - FDC





FDC40 - MF2 MF2 installation frame

- MF2 is an installation frame for quick and easy installation in rigid, flexible and shaft walls
- Made out of calcium silicate boards
- Quick wall mounting with screws
- Factory assembled to the fire damper



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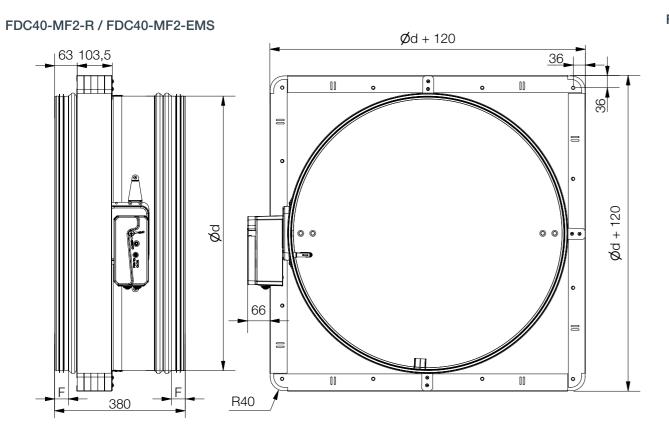
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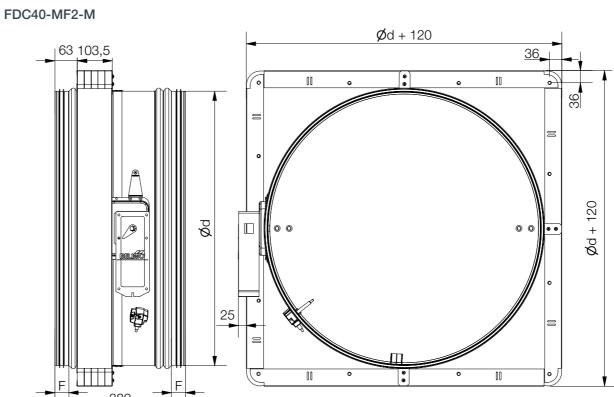
MAINTENANCE AND OPERATION



DIMENSIONS

FIRE DAMPER - FDC





 Product
 F [mm]

 FDC 25
 42

 FDC 40
 42



INSTALLATION

The FDC25/FDC40 fire damper is always tested in standardized support frames (both in a rigid wall and in a flexible wall) in accordance with EN 1366-2: 2015 table 3/4/5. The results obtained are valid for all similar support frames which have a thickness and/ or density and/or fire resistance similar or greater than the one on the test.



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INSTALLATION

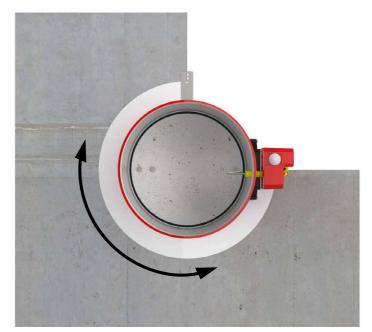
The duct connected to the fire damper must be supported or The gap in the installation opening between the fire damper The fire damper must be installed into a fire partition structure and the wall/ceiling can be increased by up to 50%, or decreased to the smallest dimension where there is sufficient room for installation of the seal!

Recommended opening dimensions:

Damper size - Ød [mm]	Gap size - A (Recommended)	Opening size - Ød+2A (Recommended)
Ød ≤ 160	42,5 mm	Ød + 85 mm
200 ≤ Ød ≤ 315	37,5 mm	Ød + 75 mm
$355 \le \emptyset d \le 450$	32,5 mm	Ød + 65 mm
Ød > 450	27,5 mm	Ød + 55 mm

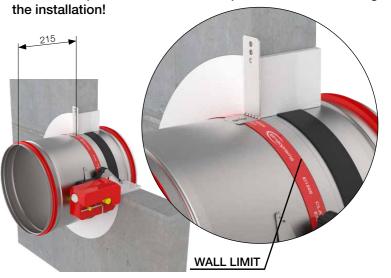
Installation in both, vertical and horizontal axis of rotation of the dampers blade is acceptable (with the axis angle 0 - 360°).

in such a way that the damper blade in its closed position is located inside this structure (except for Applique/ MF1/ MF2 kit installations).



To help you find the suspension plane, a bendable fixing bracket is provided on the damper body (the use of bendable fixing brackets is not required to meet the classification) and the red tape is placed on the casing to mark the location of the wall limit (distance from wall limit to the end of fire damper is 215 mm). This does not apply for Applique/MF1/MF2 kit installations. Check the operation of the fire damper before commencing

FIRE DAMPER - FDC



flexible connection on either end of the damper. The damper driving mechanism can be placed on either side of the wall, however it needs to be placed so that it ensures an

easy access during inspection.

• Mounting is possible with the blade axis in horizontal or in

hung in such a way that the damper does not carry its weight.

The damper must not support any part of the surrounding

construction or wall which could cause damage and consequent

damper failure. It is recommended to connect the damper to a

vertical position The installation must comply with the tests that were

performed during certification Avoid any obstruction of the moving blade by the connected

The class of air-tightness is maintained in case the installation of the damper is made in accordance with the technical manual

Operating temperature: 50 °C max

For indoor use only





FDC25 ELECTRIC ACTUATOR



FDC40 ELECTRIC ACTUATOR



FDC EX ACTUATOR



FDC-R25 MANUAL ACTUATOR



FDC-R40/EMS MANUAL ACTUATOR



FDC-R40/EMS ACTUATOR (Ød < 316)



PRODUCT OVERVIEW











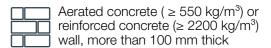
MAINTENANCE AND OPERATION

FIRE DAMPER - FDC

Range	Supporting construction	Wall thick- ness	Supporting construction details	Type of installation	Classification	Tested underpres- sure	Details	Construction type	Sealing type
		≥ 100 mm	Aerated concrete (≥ 550kg/m³) Reinforced concrete (≥ 2200kg/m³)	Gypsum plaster / Mortar	El 120 (ve i↔o)S	500Pa			
	Rigid wall			Mineral wool and cover boards	– El 90 (ve i↔o)S	500Pa			
				Fire Batt/ Weichschott		300Pa			
		≥ 70 mm	Gypsum blocks (≥ 995kg/m³)	Gypsum plaster / Mortar and cover boards	El 120 (ve i↔o)S	500Pa			
			Plasterboard type F (EN520), mineral wool up to 115 kg/m ³	Gypsum plaster / Mortar	FDC 25 El 90 (ve i↔o)S FDC 40 El 120 (ve i↔o)S	300Pa			
		≥ 100 mm	A: Plasterboard type F (EN520), mineral wool up to	Gypsum plaster / Mortar and cover boards	A: El 120 (ve i↔o)S B: El 60 (ve i↔o)S	500Pa			
E	Flexible wall		B: Plasterboard type A (EN520), mineral wool up to 60 kg/m ³	Mineral wool and cover boards	A: El 90 (ve i↔o)S B: El 60 (ve i↔o)S	500Pa			83
d100-d800 mm	0-d800 mr			Fire Batt/ Weichschott	A: El 90 (ve i↔o)S B: El 60 (ve i↔o)S	300Pa	lacktriangle		663 663 663
р		≥ 75 mm	Plasterboard type F (EN520), mineral wool up to 115 kg/m ³	Fire Batt/ Weichschott	El 45 (ve i↔o)S	300Pa			666 666 666 666
	≥ 100 n	≥ 100 mm	Cross laminated timber (480 kg/m³)	Fire Batt/ Weichschott	El 90 (ve i↔o)S	300Pa			683 683 683
			2 100 11111	Mineral wool (≥ 23 kg/m³)	Eurobond Firemaster Extra	FDC25:El 60 (i↔o)S FDC40:El 60 (i↔o)S	300Pa		
	Flexible wall	≥ 100 mm	Gypsum blocks (≥ 450 kg/m³)	Gypsum plaster / Mortar + Mineral wool (70 kg/m³)	FDC25:El 120 (ve i↔o)S FDC40:El 120 (ve i↔o)S	300Pa		H	
	+ Sliding ceiling	≥ 100 mm	Plasterboard type F (EN520)	Gypsum plaster / Mortar and cover boards + Mineral wool (115 kg/m³)	FDC25:El 90 (ve i↔o)S FDC40:El 120 (ve i↔o)S	300Pa		A	
	Floor/ceiling	> 100 mm	Aerated concrete (≥ 550kg/m³)	Gypsum plaster / Mortar	El 120 (ho i↔o)S	500Pa			
		Floor/Celling	2 TOO III(II	Reinforced concrete (≥ 2200kg/m³)	Fire Batt/ Weichschott	El 90 (ho i↔o)S	300Pa		H



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





Gypsum blocks (≥ 995 kg/m³) wall, more than 70 mm thick



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



Shaft wall, steel frame construction



Aerated concrete (≥ 550 kg/m³) or reinforced concrete (≥ 2200 kg/m³) ceiling / floor, more than 100 mm thick

FIRE DAMPER - FDC



Gypsum plaster, mortar sealing or mortar and cover boards. Mortar EN 998-2 Classes M 2.5 to M 20 or equivalent mortars that meet the requirements of the above standards, gypsum mortar or concrete.



Sealing with mineral wool and cover boards



Sealing with mineral wool and fireproof coating - FireBatt / Weichschott



Applique kit installation



MF1/MF2 kit installation

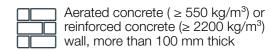


Remote from wall installation

FRAME	Rigid wall	≥ 100 mm	Aerated concrete (≥ 550kg/m³) Reinforced concrete (≥ 2200kg/m³)	APPLIQUE (installation frame)	El 90 (ve i↔o)S	500Pa		
APP INSTALLATION FRAME d100-d315 mm		≥ 70 mm	Gypsum blocks (≥ 995kg/m³)	APPLIQUE (installation frame)	El 90 (ve i↔o)S	500Pa		
APP INS	Flexible wall	≥ 100 mm	Plasterboard type F (EN520)	APPLIQUE (installation frame)	El 90 (ve i↔o)S	500Pa	•	
	Rigid wall	≥ 100 mm	Aerated concrete (≥550kg/m³)	MF1/MF2 (installation frame)	FDC25:El 60 (ve i↔o)S	500Pa		
W			Reinforced concrete (≥ 2200kg/m³)		FDC40:El 90 (ve i↔o)S			
N FRA 15 mm 00 mm		≥ 70 mm	Gypsum blocks	MF1/MF2 (installation frame)	FDC25:El 60 (ve i↔o)S	500Pa		
INSTALLATION FRAN MF1 d100-d315 mm MF2 d355-d800 mm	Flexible wall		(≥ 995kg/m³)	1711 17171 2 (Installation name)	FDC40:El 90 (ve i↔o)S	0001 a		
	i lexible wall	≥ 100 mm	Plasterboard A:type A (EN520)	MF1/ MF2 (installation frame)	A:FDC25:El 60 (ve i↔o)S	500Pa		
-1 / MF2 FDC25 FDC40		2 100 11111	B:type F (EN520)	Wii 17 Wii 2 (installation frame)	B:FDC40:El 90 (ve i↔o)S	3001 a		
M	Floor/ooiling	> 100 mm	Aerated concrete (≥ 550kg/m³)	ME1/MEQ (installation frame)	FDC25:El120 (ho i↔o)S	300Pa		
	Floor/ceiling	2 100 11111	Reinforced concrete (≥ 2200kg/m³)	MF1/MF2 (installation frame)	FDC40:El 90 (ho i↔o)S	300Fa		
NSTALLATION FRAME 5 MF2 d100-d315 mm 0 MF2 d355-d800 mm	Flexible wall	≥ 75 mm	Shaft wall	MF2 (installation frame)	FDC25:EI 60 (ve i↔o)S FDC40:EI 60 (ve i↔o)S	300Pa		
MF2 INSTALI FDC25 MF2 FDC40 MF2		≥ 90 mm	(steel frame)	,	FDC25:El 90 (ve i↔o)S FDC40:El 90 (ve i↔o)S			
ISOVER d100-d315 mm d355-d630 mm	Flexible wall	- 400	Plasterboard type F (EN520)	_ REMOTE FROM WALL	F1 00 (2222		
ISOVER FDC25 d100-d3 FDC40 d355-d	Rigid wall	¯≥ 100 mm ¯	Aerated concrete (≥ 550kg/m³) Reinforced concrete (≥ 2200kg/m³)	(Isover)	El 60 (ve i↔o)S	300Pa		



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





Gypsum blocks (≥ 995 kg/m³) wall, more than 70 mm thick



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



Shaft wall, steel frame construction



Aerated concrete (≥ 550 kg/m³) or reinforced concrete (≥ 2200 kg/m³) ceiling / floor, more than 100 mm thick

FIRE DAMPER - FDC



Gypsum plaster, mortar sealing or mortar and cover boards



Sealing with mineral wool and cover boards



Sealing with m fireproof coatin Weichschott Sealing with mineral wool and fireproof coating - FireBatt /



Applique kit installation



MF1/MF2 kit installation



Remote from wall installation

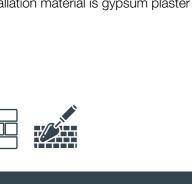


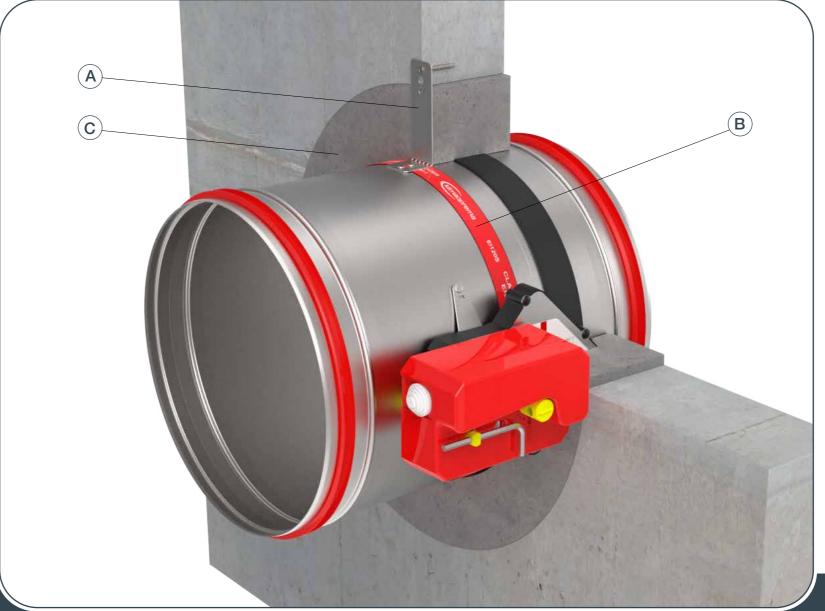
Rigid wall installation (mortar sealing)

The wall is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm. Installation material is gypsum plaster or mortar (C).











DIMENSIONS

INSTALLATIONS

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ACCESSORIES

REPLACEMENTS

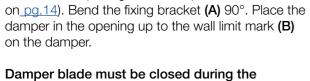
MAINTENANCE AND OPERATION

Possible damper orientations



FIRE DAMPER - FDC

Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

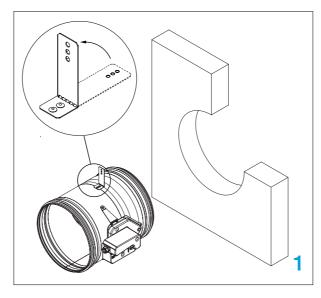


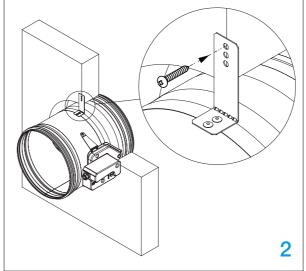
1. Create an opening in the wall (minimal dimensions

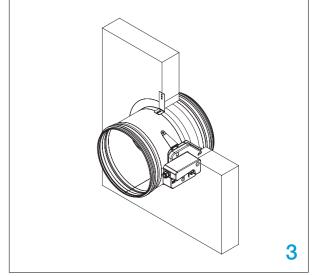
installation!

- 2. Fix the damper to the wall using screws. Bracket screw hole is 6 mm in diameter.
- 3. Fill the space between the damper and the wall with gypsum plaster or mortar (C).
- *Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!







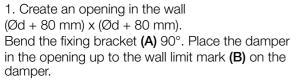


Rigid wall installation (mineral wool sealing)

The wall is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm. Installation material is mineral wool **(C)** (minimum density of 100 kg/m³) covered with plasterboard cover boards **(D)**.



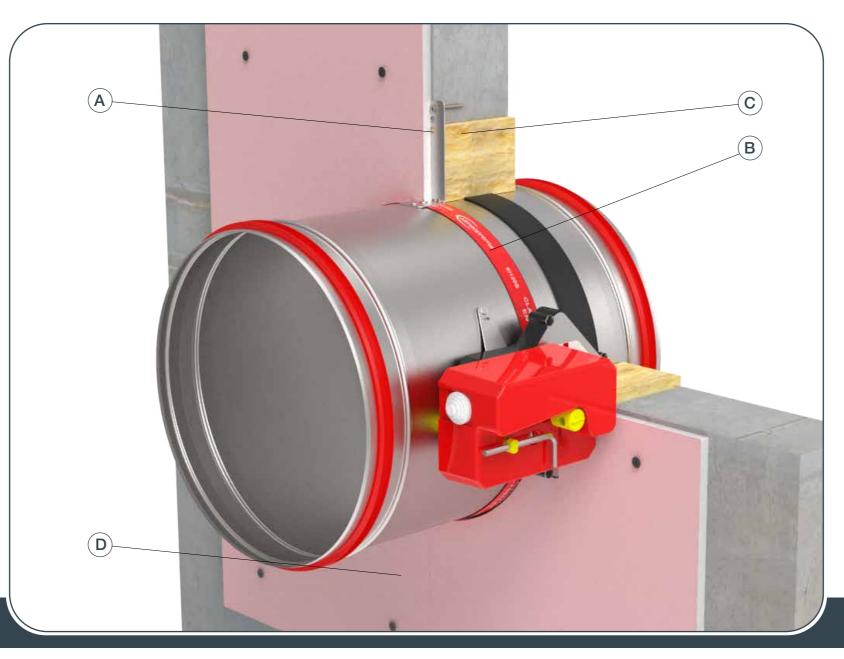




Damper blade must be closed during the installation!

- 2. Fix the damper to the wall using screws. Bracket screw hole is 6 mm in diameter.
- 3. Fill the space between the damper and the wall with mineral wool **(C)**. Cover the mineral wool with GKF gypsum boards **(D)** (12,5 mm thick), fix them with screws.
- *Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!



PRODUCT OVERVIEW

DIMENSIONS

<u>INSTALLATIONS</u>

<u>ACTUATORS</u>

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REPLACEMENTS

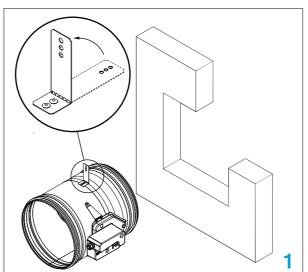
MAINTENANCE AND OPERATION

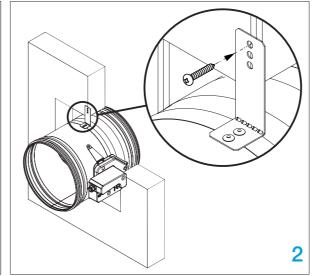
Possible damper orientations

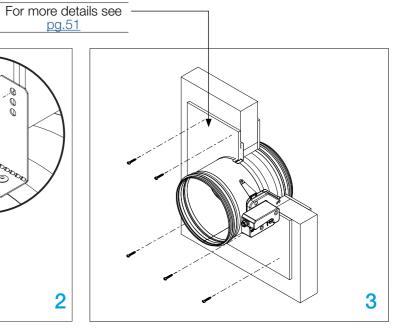


FD-A-CSP-BxH

FIRE DAMPER - FDC









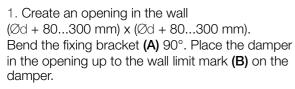
Rigid wall installation (Fire Batt/ Weichschott)

The wall is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm. Installation material: Mineral wool **(C)** (minimum density of 140 kg/m³), fire protection coating **(D)**.





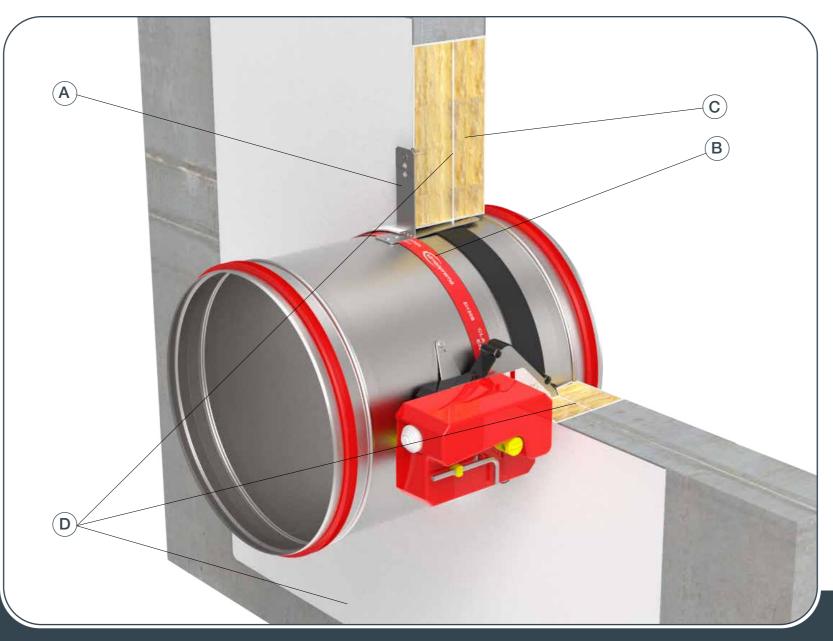




Damper blade must be closed during the installation!

- 2. Close the space between casing and wall with two layers of mineral wool **(C)** (50 mm thick, coated on one side).
- 3. Seal the connections of mineral wool with intumescent fire resistant sealant **(D)**. Mineral wool and damper casing must be coated with 2 mm thick fire protection coating. Damper casing should be coated up to profile protrusions.
- *Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!



PRODUCT OVERVIEW

DIMENSIONS

<u>INSTALLATIONS</u>

<u>ACTUATORS</u>

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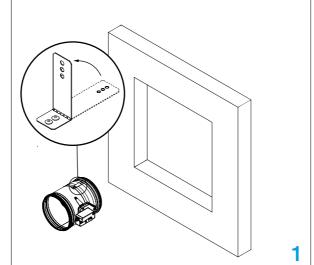
REPLACEMENTS

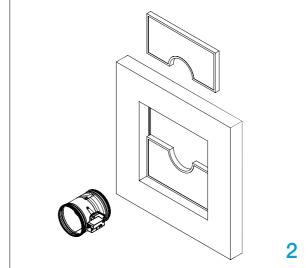
MAINTENANCE AND OPERATION

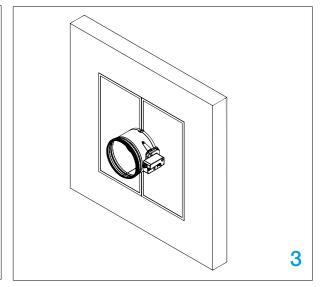
Possible damper orientations



FIRE DAMPER - FDC









Gypsum blocks wall installation (mortar sealing)

The wall is composed of gypsum blocks (minimum density of 995 kg/m³), with minimum thickness of 70 mm. Installation material is gypsum plaster or mortar **(C)** covered with plasterboard cover boards **(D)**.



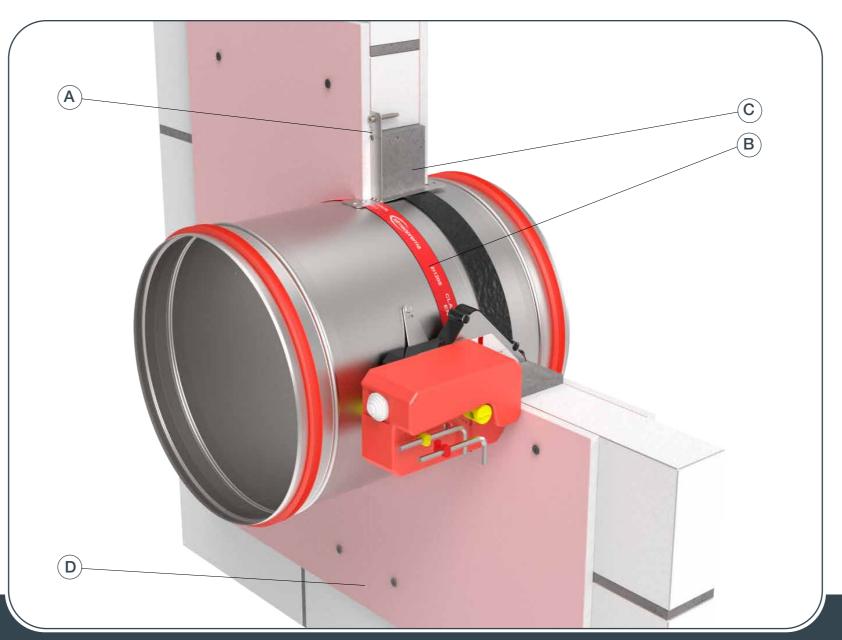




INSTALLATION

- 1. Create an opening in the wall (minimal dimensions on pg.14). Cover the hole with GKF gypsum boards **(D)** (12,5 mm thick) on the one side, fix them with self-tapping screws \emptyset 3,5x45 mm.
- 2. Bend the fixing bracket (A) 90°. Place the damper in the opening up to the wall limit mark (B) on the damper. Fix the damper to the wall using screws (bracket screw hole is 6 mm in diameter). Damper blade must be closed during the installation!
- 3. Fill the space between the damper and the wall with mortar **(C)**. Cover the mortar with GKF gypsum boards **(D)** (12,5 mm thick), fix them with self-tapping screws Ø3,5x45 mm.
- *Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!

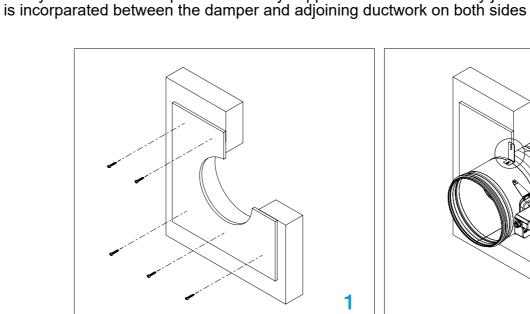


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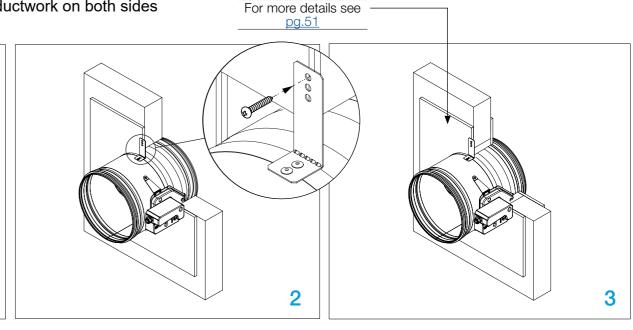
Possible damper orientations



FIRE DAMPER - FDC



Always ensure the damper is sufficently supported and a breakaway joint



FD-A-CSP-BxH



Flexible wall installation (mortar sealing)

The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. Installation material: gypsum plaster or mortar (**C**) covered with type F(**EI 120**) or type A(**EI 60**) cover boards (**D**). The minimum thickness of the wall is 100 mm.

El 120 (ve i↔o)S

The wall is made out of type F (EN520) gypsum plaster boards. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool **(E)** with density up to 100 kg/m³ can be used).

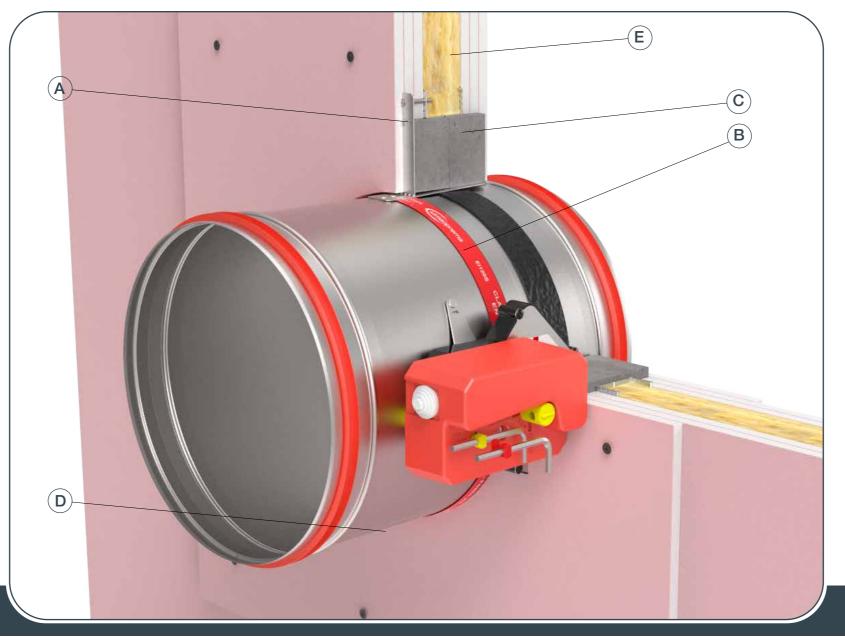
El 60 (ve i↔o)S

The wall is made out of type A (EN520) gypsum plaster boards. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall





(mineral wool **(E)** with density up to 60 kg/m³ can be used).

















Possible damper orientations



FD-A-CSP-BxH

For more details see

0-90°-180°-270°

FIRE DAMPER - FDC



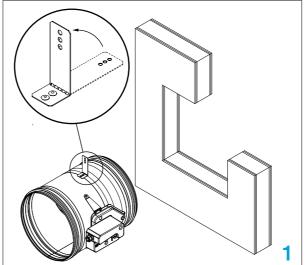
1. Create an opening in the wall $(\emptyset d + 80 \text{ mm}) \times (\emptyset d + 80 \text{ mm})$ and build the subframe according to the drawing, see page 46. Bend the fixing bracket **(A)** 90°. Place the damper in the opening up to the wall limit mark **(B)** on the damper.

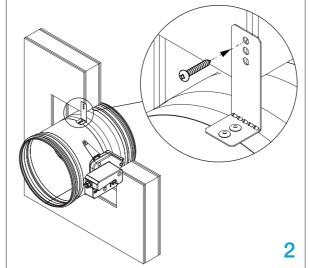
Damper blade must be closed during the installation!

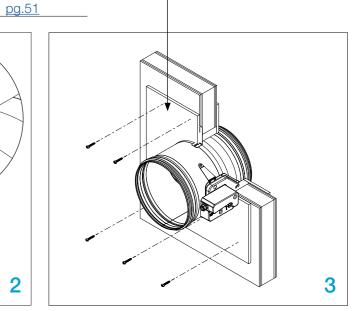
- 2. Fix the damper to the wall using screws (bracket screw hole is 6 mm in diameter).
- 3. Fill the space between the damper and the wall with mortar **(C)**. Cover the mortar with GKF gypsum boards **(D)** (12,5 mm thick), fix them with self-tapping screws Ø3,5x45 mm.
- *Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!

Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides







22



Flexible wall installation (mortar sealing without cover boards)

The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. Installation material: gypsum plaster or mortar (**C**). The minimum thickness of the wall is 100 mm.

El 120 (ve i↔o)S - FDC 40

The wall is made out of type F (EN520) gypsum plaster boards. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool **(E)** with density up to 100 kg/m³ can be used).

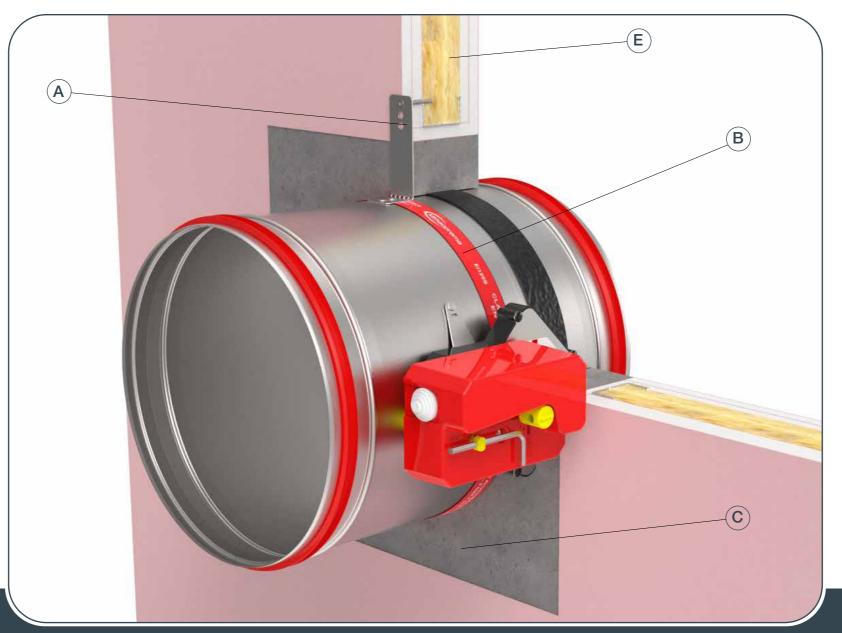
El 60 (ve i↔o)S - FDC 25

The wall is made out of type A (EN520) gypsum





plaster boards. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool **(E)** with density up to 60 kg/m³ can be used).

















Possible damper orientations



) 0-90°-180°-270°

FIRE DAMPER - FDC

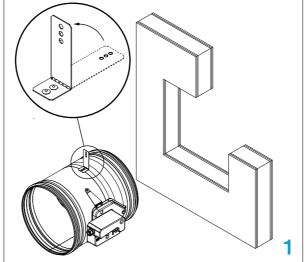


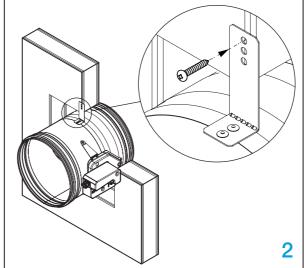
1. Create an opening in the wall FDC25 (\emptyset d + 105 mm) x (\emptyset d + 105 mm) FDC25 (\emptyset d + 120 mm) x (\emptyset d + 120 mm) and build the subframe according to the drawing, see page 46. Bend the fixing bracket (A) 90°. Place the damper in the opening up to the wall limit mark (B) on the damper.

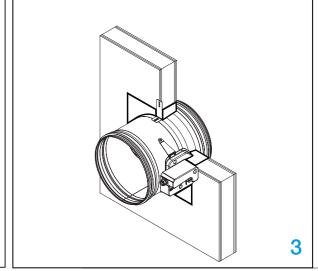
Damper blade must be closed during the installation!

- 2. Fix the damper to the wall using screws (bracket screw hole is 6 mm in diameter).
- 3. Fill the space between the damper and the wall with mortar **(C)**.
- *Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!









Flexible wall installation (mineral wool sealing)

The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. Installation material: mineral wool (**C**) (minimum density of 100 kg/m³) covered with type F (**EI 90**) or type A (**EI 60**) cover boards (**D**).

The minimum thickness of the wall is 100 mm.

El 90 (ve i↔o)S

The wall is made out of type F (EN520) gypsum plaster boards. To fulfill the classification it is NOT mandatory to use the mineral wool inside the wall (mineral wool (E) with density up to 100 kg/m³ can be used).

EI 60 (ve i↔o)S

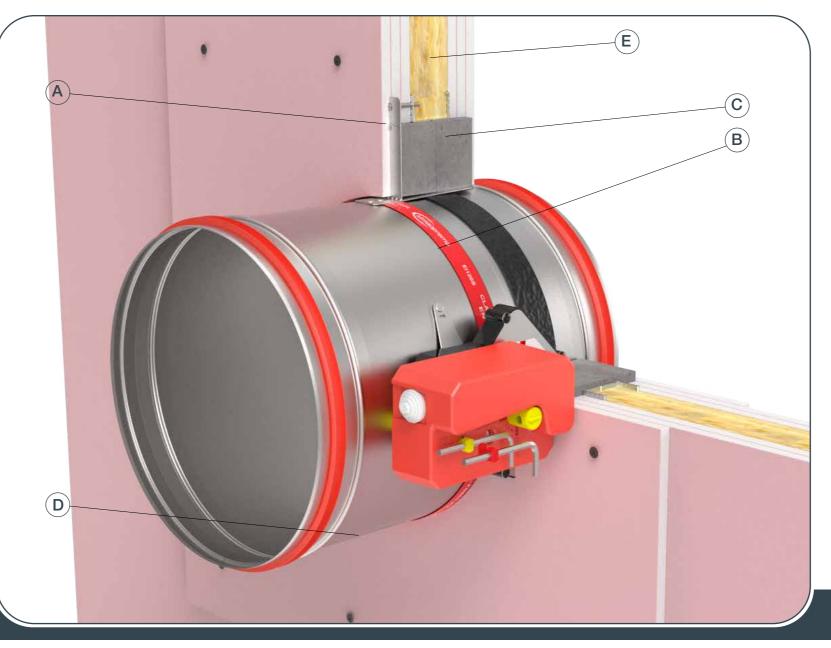
The wall is made out of type A (EN520) gypsum plaster boards. To fulfill the classification it is NOT mandatory to use the mineral wool inside the wall





use the mineral wool inside the wall (mineral wool (**E**) with density up to 40 kg/m³ can be used).



















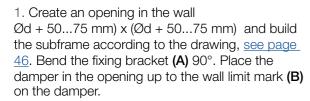
Possible damper orientations



FD-A-CSP-BxH

0-90°-180°-270°

FIRE DAMPER - FDC

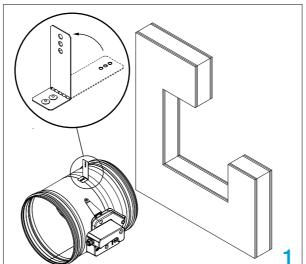


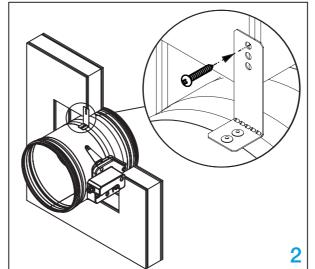
Damper blade must be closed during the installation!

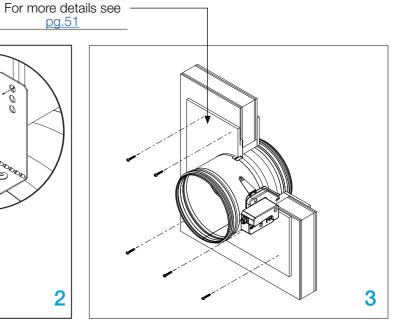
INSTALLATION

- 2. Fix the damper to the wall using screws (bracket screw hole is 6 mm in diameter).
- 3. Fill the space between the damper and the wall with mineral wool **(C)**. Cover the mineral wool with GKF gypsum boards **(D)** (12,5 mm thick), fix them with self-tapping screws Ø3,5x45 mm.
- *Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!









Flexible wall installation (Fire Batt/Weichschott)

The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction.

El 90 (ve i↔o)S

The wall is made out of type F (EN520) gypsum plaster boards. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool **(E)** with density up to 100 kg/m^3 can be used). Installation material: mineral wool **(C)** (minimum density of 140 kg/m^3) and fire protection coating **(D)**. The minimum thickness of the wall is 100 mm.

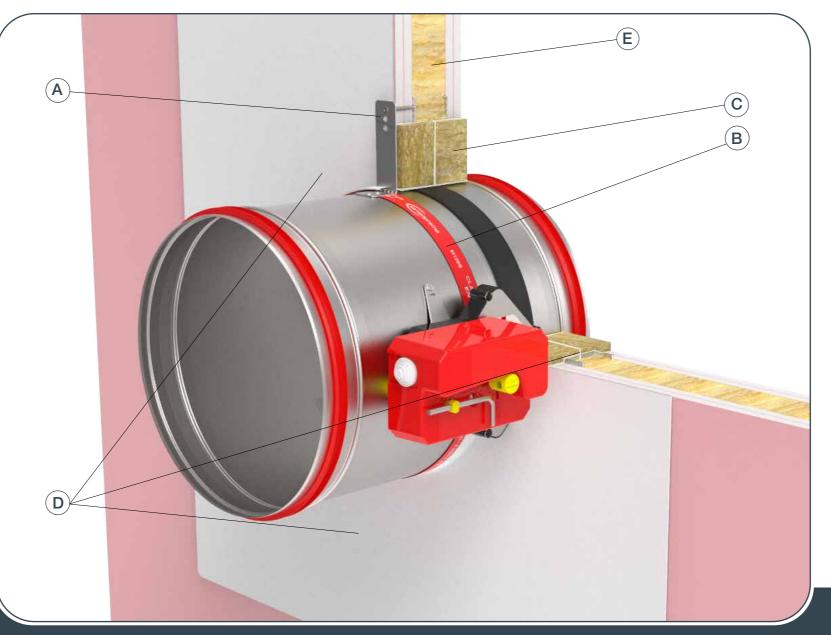
El 60 (ve i↔o)S

The wall is made out of type A (EN520) gypsum plaster boards. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool **(E)** with density up to 60 kg/m^3 can be used). Installation material: mineral wool **(C** (minimum density of 140 kg/





m³) and fire protection coating **(D)**. The minimum thickness of the wall is 100 mm.



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Possible damper orientations



0-90°-180°-270°

FIRE DAMPER - FDC

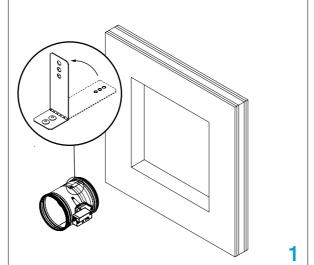


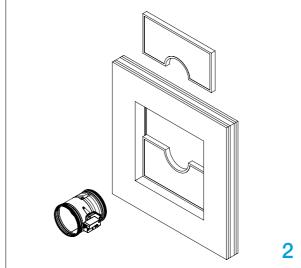
- 1. Create an opening in the wall (\emptyset d + 80...300 mm) x (\emptyset d + 80...300 mm) and build the subframe according to the drawing, see page 46. Bend the fixing bracket **(A)** 90°.
- 2. Place the damper in the opening up to the wall limit mark **(B)** on the damper.

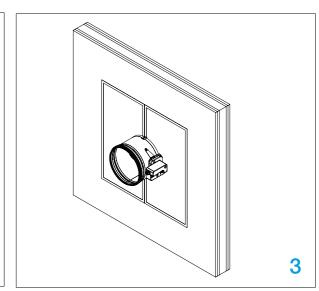
Damper blade must be closed during installation!

- 3. Close the space between casing and wall with two layers of mineral wool **(C)** (50 mm thick, coated on one side). Seal the connections of mineral wool with intumescent fire resistant sealant **(D)**. Mineral wool and damper casing must be coated with 2 mm thick fire protection coating. Damper casing should be coated up to profile protrusions.
- *Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!







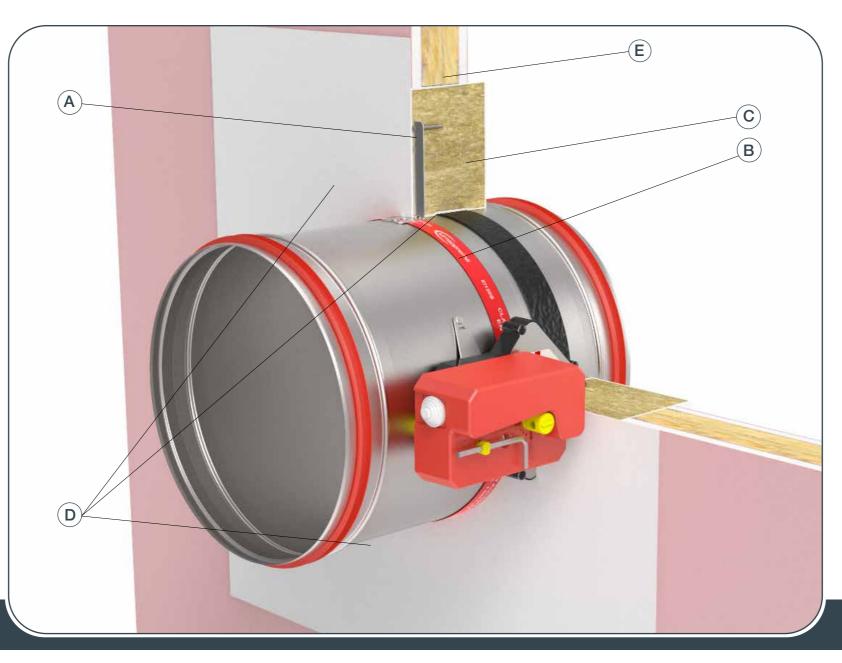


Flexible wall installation- 75 mm (Fire Batt/Weichschott)

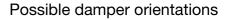
The wall is composed of 1x1 plasterboard boards, 12,5 mm thick, installed on a steel frame construction.

El 45 (ve i↔o)S

The wall is made out of type F (EN520) gypsum plaster boards. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool **(E)** with density up to 115 kg/m³ can be used). Installation material: mineral wool **(C)** (minimum density of 140 kg/m³) and fire protection coating **(D)**. The minimum thickness of the wall is 75 mm.



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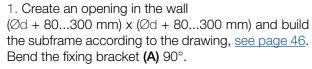




FIRE DAMPER - FDC







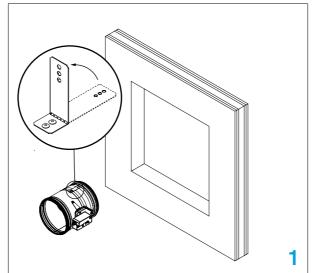
2. Place the damper in the opening up to the wall limit mark **(B)** on the damper.

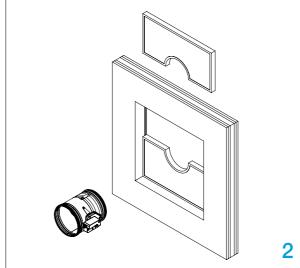
Damper blade must be closed during installation!

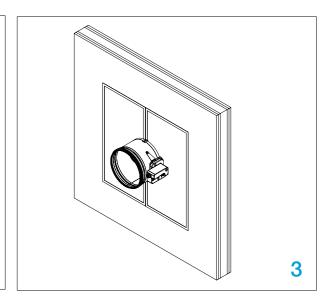
3. Close the space between casing and wall with two layers of mineral wool **(C)** (50 mm thick, coated on one side). On the side opposite the driveway, leave the wool 25 mm outside the wall. Seal the connections of mineral wool with intumescent fire resistant sealant **(D)**. Mineral wool and damper casing must be coated with 2 mm thick fire protection coating. Damper casing should be coated up to profile protrusions.

*Multiple fire dampers can be installed next to each other or ceiling/wall with the minimal distance of 30 mm between them, see page 45.

Test the operation of the damper blade!









Flexible wall installation CLT wall (Fire Batt/ Weichschott)

Fire dampers are mounted in CLT (Cross laminated timber) wooden wall with density 480 kg/m³. Wall is made of 3 layers (30 – 40 – 30mm).

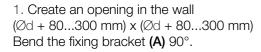
El 90 (ve i⇔o)S

Installation material: Mineral wool (minimum density of 140 kg/m³, fire protection coating.







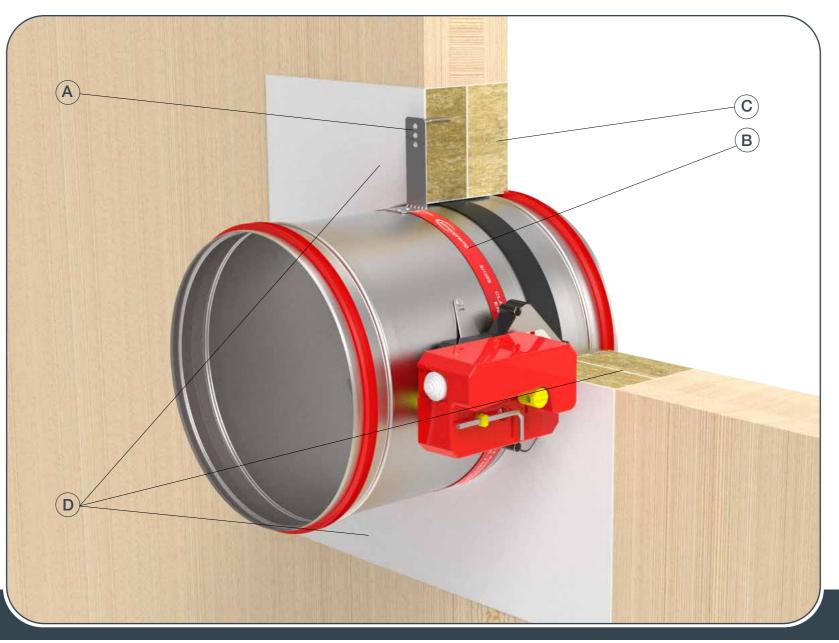


2. Place the damper in the opening up to the wall limit mark **(B)** on the damper.

Damper blade must be closed during installation!

3. Close the space between casing and wall with two layers of mineral wool **(C)** (50 mm thick, coated on one side). Seal the connections of mineral wool with intumescent fire resistant sealant **(D)**. Mineral wool and damper casing must be coated with 2 mm thick fire protection coating. Damper casing should be coated up to profile protrusions.

Test the operation of the damper blade!















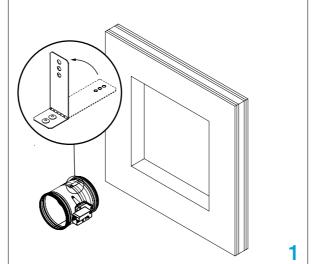


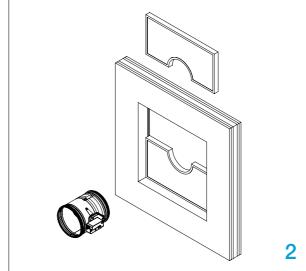
Possible damper orientations

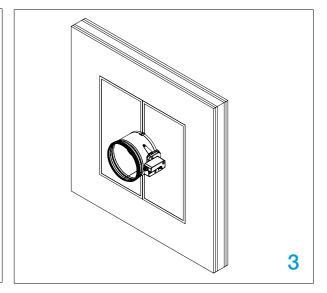


0-90°-180°-270°

FIRE DAMPER - FDC









Flexible wall installation Eurobond

The wall is composed of Eurobond Firemaster boards, in 100 mm thicknes, installed in a steel frame construction.

FDC 25 EI 60 (i↔o)S FDC 40 EI 60 (i↔o)S

Sealing between dampers and wall is 2 layers of Rockwool Firepro 50 mm tick sealed with intumescent fire resistant sealant.











INSTALLATIONS



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Possible damper orientations



0-90°-180°-270°

FIRE DAMPER - FDC

Create the wall, see Technical drawing

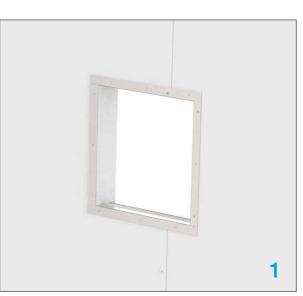
- 1. Make the opening in the wall $\emptyset d + 100 \text{ mm}$ on the connection of two boards. The opening is re-inforced with L profiles 30x30x2mm and screws 6,3x25 on one sides and 6,3x120mm on other side. The opening must be coated with 2 mm thick fire protection coating.
- 2. Bend the fixing bracket **(A)** 90°. Place the damper in the opening up to the wall limit mark **(B)** on the damper.

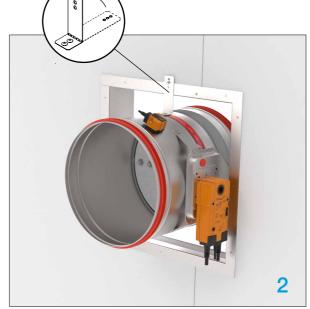
Damper blade must be closed during installation!

3. Close the space between casing and wall with two layers of mineral wool **(C)** (50 mm thick, coated on one side). Seal the connections of mineral wool with intumescent fire resistant sealant. Mineral wool and damper casing must be coated with 2 mm thick fire protection coating **(D)**. Damper casing should be coated up to profile protrusions.

Test the operation of the damper blade!

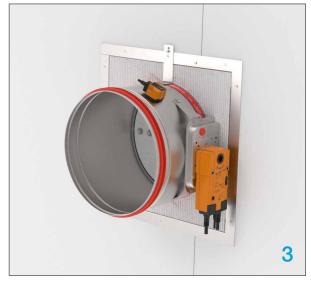
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on <u>both</u> sides





B

(C)



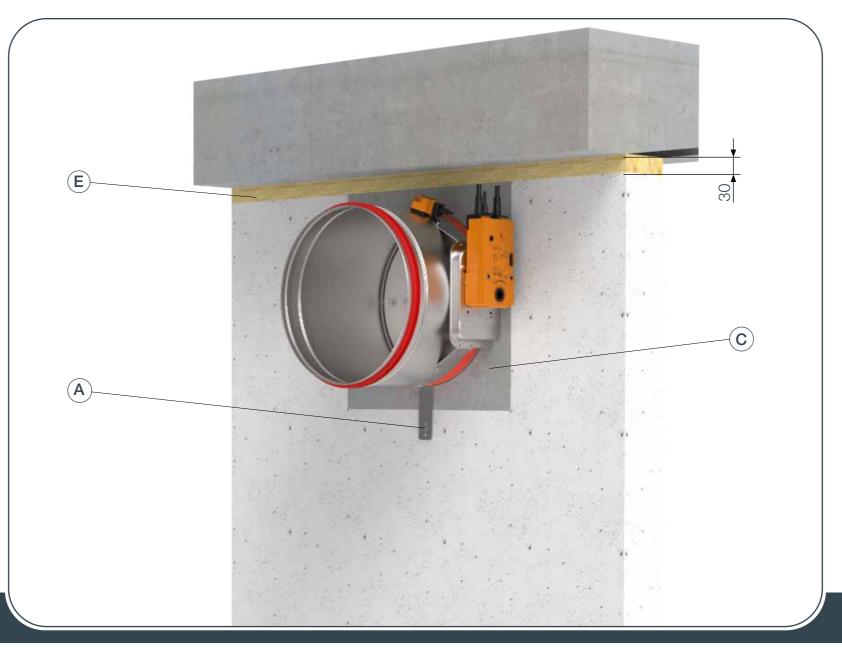


Flexibile ceiling joint Gypsum blocks flexibile wall

The wall is composed out of gypsum blocks (minimum density of 450 kg/m³) and with minimum thickness of 100 mm. Installation material is gypsum plaster (**C**) and mineral wool (70 kg/m³) (**E**), thickness of the wool is 40 mm.







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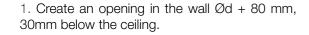
MAINTENANCE AND OPERATION

Possible damper orientations



FIRE DAMPER - FDC

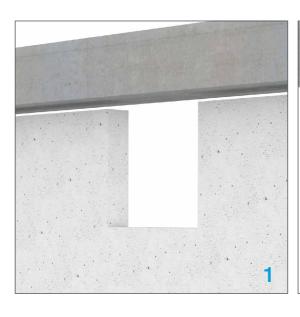
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

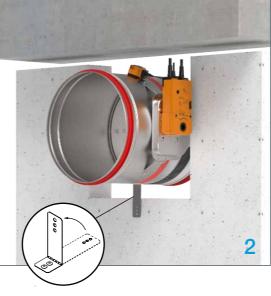


- 2. Bend the fixing bracket **(A)** 90° . Insert the fire damper into the opening and fix the mounting bracker with salf taping screw $(3.5 \times 35 \text{ mm})$
- 3. Fill the space between the damper and the wall with gypsum plaster/ mortar.
- 4. Fill the space between the ceiling and the wall with mineral wool (70 kg/m³, thickness 40 mm).

Damper blade must be closed during installation!

Test the operation of the damper blade!











Flexibile ceiling joint Plasterboard type F flexibile wall

The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool with density up to 100 kg/m³ can be used). The minimum thickness of the wall is 100 mm.

Installation material is gypsum plaster (C) and mineral





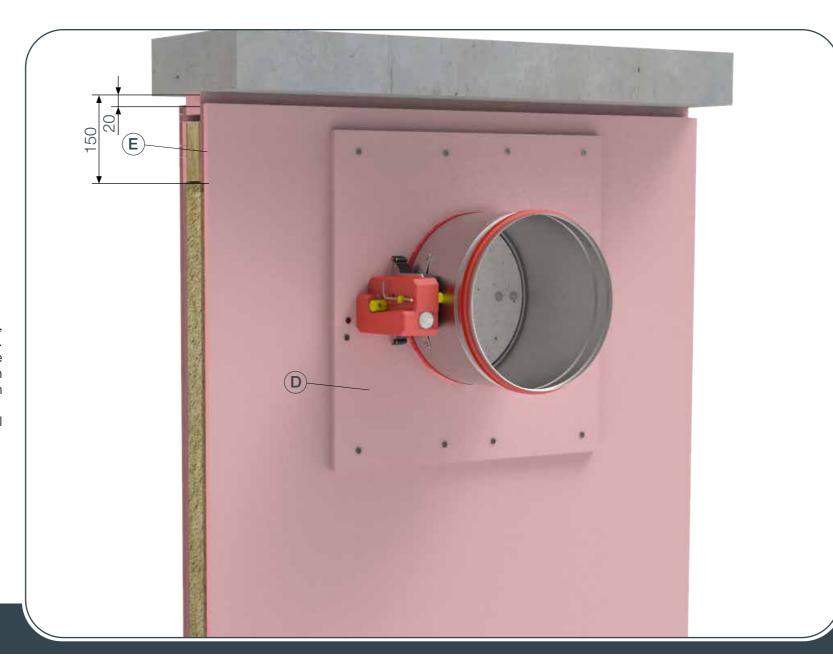


INSTALLATION

- 1.Prepare subconstruction and cladding of the wall with gypsum boards acc. to technical drawing. Take care that cladding of the wall is not connected to profile connected to the ceiling so it could pcompensate movement of the ceiling without impact to the wall." Fill the space between the ceiling segment and the wall with mineral wool. Create an opening in the wall \emptyset d + 80 mm.
- 2. Bend the fixing bracket 90°. Insert the fire damper into the opening and fix the mounting bracker with salf taping screw (3,5 x 35 mm)
- 3. Fill the space between the damper and the wall with gypsum plaster/ mortar.
- 4. Cover the mineral wool with GKF gypsum boards **(D)** (12,5 mm thick), fix them with self-tapping screws Ø3,5x45 mm.

Damper blade must be closed during installation!

Test the operation of the damper blade!















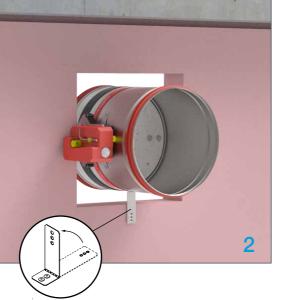


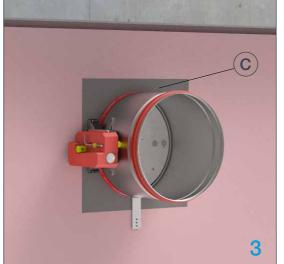
Possible damper orientations



FIRE DAMPER - FDC









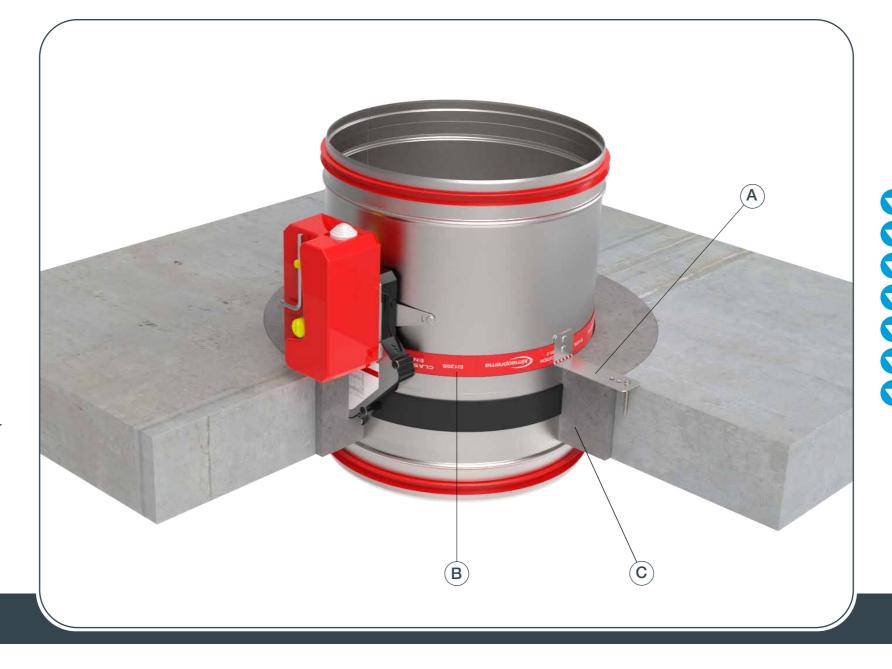


Rigid floor/ceiling installation (mortar sealing)

The floor/ceiling is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm. Installation material is gypsum plaster or mortar **(C)**.







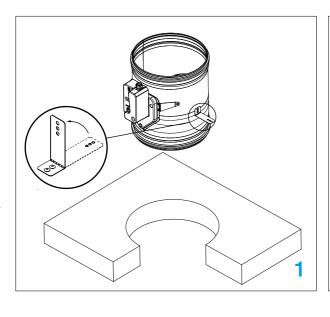
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

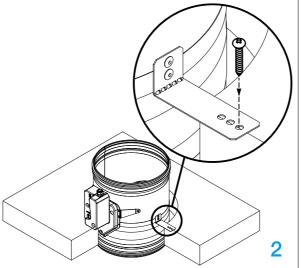
1. Create an opening in the floor/ceiling (minimal dimensions on pg.14) and bend the fixing bracket (A) 90°. Place the damper in the opening up to the wall limit mark (B) on the damper.

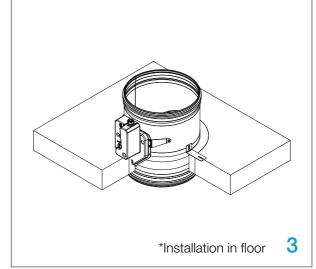
Damper blade must be closed during installation!

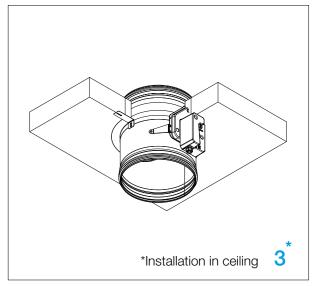
- 2. Fix the damper to the slab using screws (bracket screw hole is 6 mm in diameter).
- 3/3*. Fill the space between the damper and the slab with mortar **(C)** or gypsum plaster.

Test the operation of the damper blade!









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FIRE DAMPER - FDC

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Rigid floor/ceiling installation (Fire Batt/ Weichschott)

The floor/ceiling is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm. Installation material: Mineral wool (C) (minimum density of 140 kg/m³), fire protection coating (D).





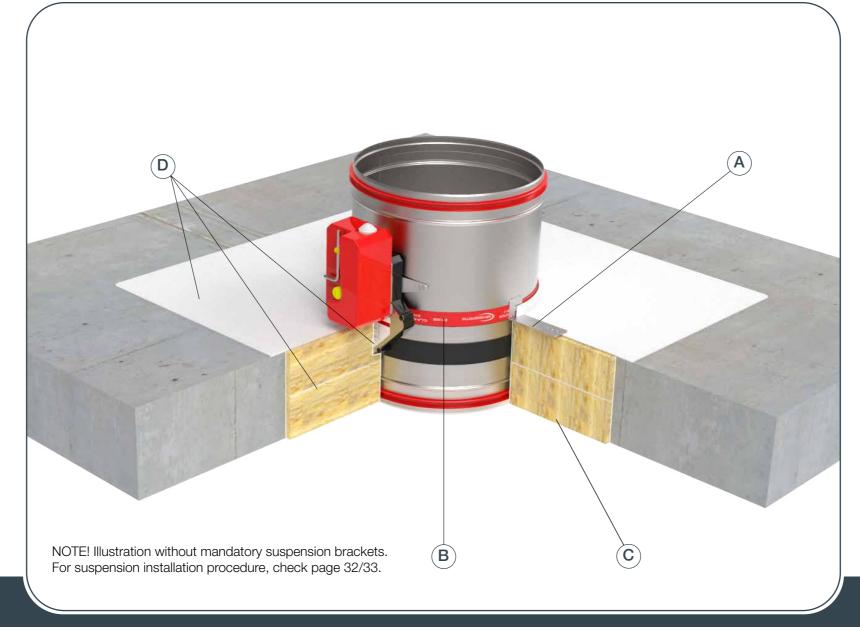




- 1. Create an opening in the floor/ceiling $(\emptyset d + 80...300 \text{ mm}) \times (\emptyset d + 80...300 \text{ mm}).$ Bend the fixing bracket (A) 90°.
- 2. Place the damper in the opening up to the wall limit mark (B) on the damper. Close the space between casing and floor/ceiling with two layers of mineral wool (C) (50 mm thick, coated on one side).

Damper blade must be closed during installation!

3/3*. Connections of mineral wool should be sealed with intumescent fire resistant sealant (D). Mineral wool and damper casing must be coated with 2 mm thick fire protection coating. Damper casing should be coated up to profile protrusions.



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- **MAINTENANCE AND OPERATION**

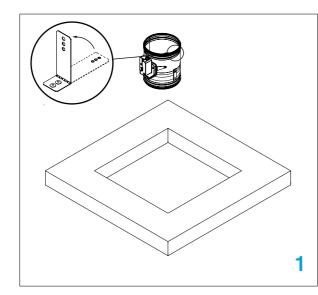
Possible damper orientations

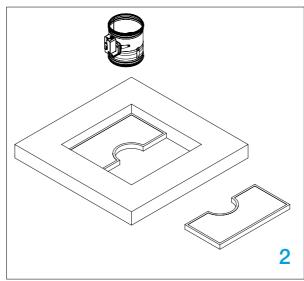


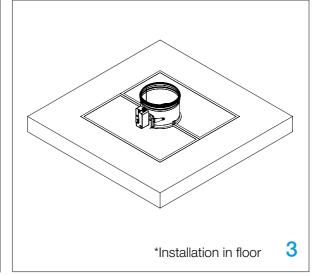
FIRE DAMPER - FDC

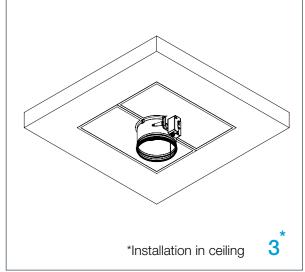
*Fire Batt floor/ceiling installations require a suspension for the fire damper. For more details, see page 33 rigid floor / page 34 ceiling.

Test the operation of the damper blade!











Suspension for rigid floor installation

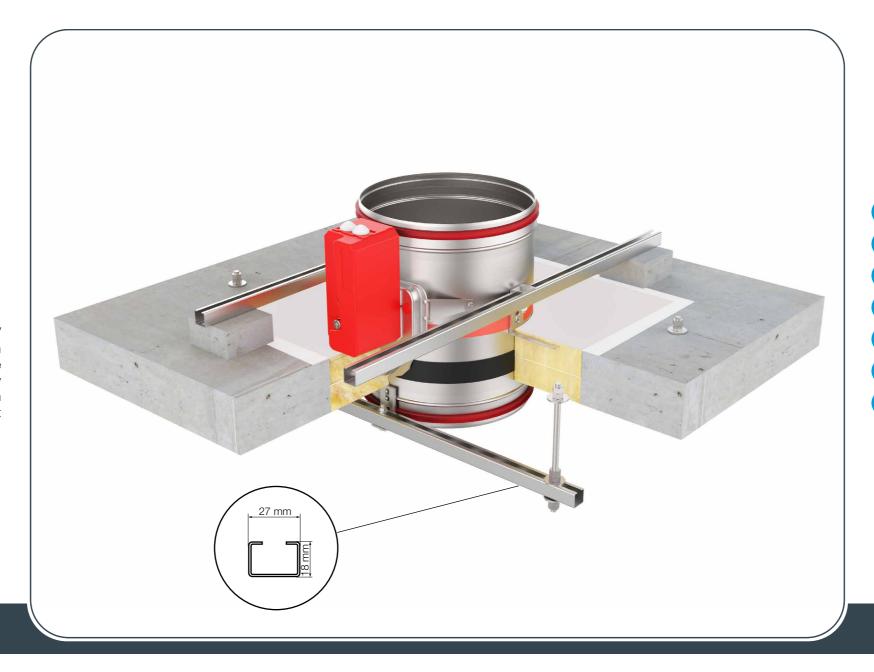
Suspension systems are required for the Fire Batt/ Weichschott installation of the fire damper with mineral wool in floor slabs. Fire dampers can be suspended from solid ceiling slabs using adequately sized threaded rods. Load the suspension system only with the weight of the fire damper. Ducts must be suspended separately.





- 1. Suspension strut should be connected with drop rods (8/10 mm) to the floor slab above. It is used to support the damper and ease the installation.
- 2. When using L profile fixation, support steel C profile with 50 mm high peace of aerated concrete or similar rigid material. Not necessary if connecting rods directly to damper.
- 3. Damper casing is fixed to suspended and supported steel C profiles by two self tapping screws 4,8x16 (make sure that it doesn't interfere with damper blade) with L profile hanger (detail A) fixed to steel C profiles by M8 screw and nut. Position of self-tapping screws is trough the middle of damper casing.
- 4. To finish the installation please follow the steps (2.-4.) from page 32.

Damper blade must be closed during installation! Test the operation of the damper blade!



(A) 0.00°

Possible damper orientations

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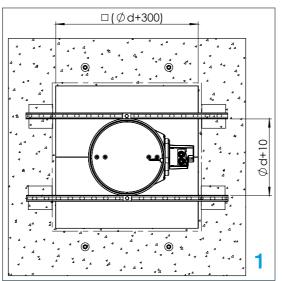
ACCESSORIES

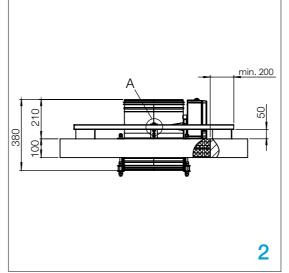
REPLACEMENTS

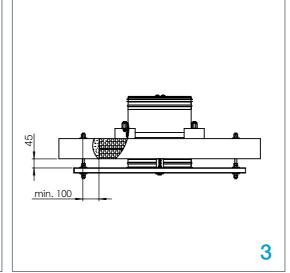
INSTALLATIONS

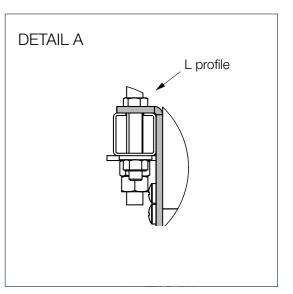


FIRE DAMPER - FDC











Suspension for rigid ceiling installation

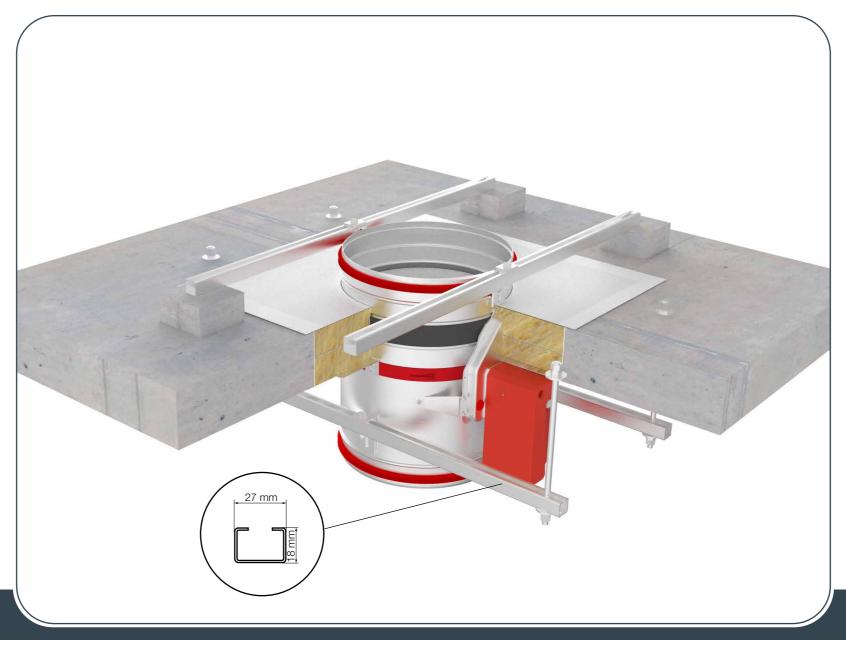
Suspension systems are required for the Fire Batt/ Weichschott installation of the fire damper with mineral wool in ceiling slabs. Fire dampers can be suspended from solid ceiling slabs using adequately sized threaded rods. Load the suspension system only with the weight of the fire damper. Ducts must be suspended separately.





- 1. Suspension strut should be connected with drop rods (8/10 mm) to the ceiling slab above. It is used to support the damper and ease the installation.
- 2. If using L profile fixation, support steel C profile with 50 mm high peace of aerated concrete or similar rigid material. Not necessary if connecting rods directly to damper.
- 3. Damper casing is fixed to suspended and supported steel C profiles by two self tapping screws 4,8x16 (make sure that it doesn't interfere with damper blade) with L profile hanger (detail A) fixed to steel C profiles by M8 screw and nut. Position of self-tapping screws is trough the middle of damper casing.
- 4. To finish the installation please follow the steps (2.-4.) from page 32.

Damper blade must be closed during installation! Test the operation of the damper blade!





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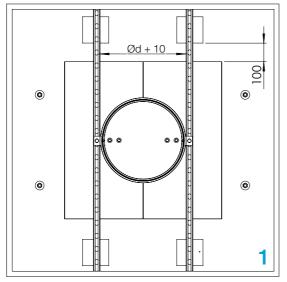
REPLACEMENTS

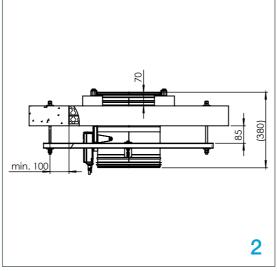
MAINTENANCE AND OPERATION

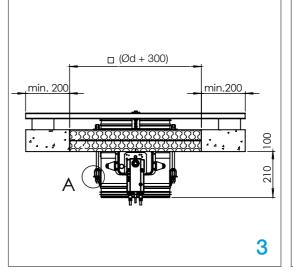
Possible damper orientations

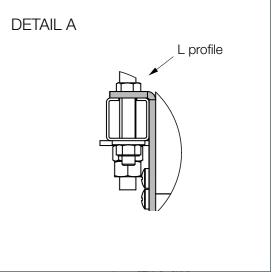


FIRE DAMPER - FDC











Rigid wall installation Applique installation frame

The wall is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm.









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FIRE DAMPER - FDC

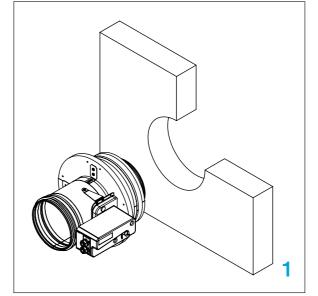
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

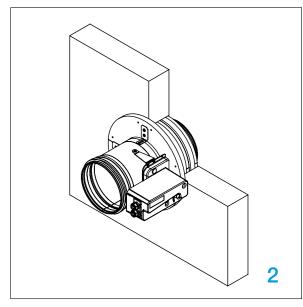
- 1. Create a wall opening according to the dimensions in the table below.
- 2. Insert fire damper into wall and fasten with screws (8 pcs, 4,8x60 mm).

Damper blade must be closed during installation!

Test the operation of the damper blade!

Wall opening dimensions	
Applique frame diameter Ød[mm]	Wall opening [mm]
Ød + 105 mm	Ød + 115 mm
Ød + 95 mm	Ød + 105 mm
Ød + 80 mm	Ød + 90 mm
	Applique frame diameter Ød[mm] Ød + 105 mm Ød + 95 mm







Gypsum blocks wall installation Applique installation frame

The wall is composed of gypsum blocks (minimum density of 995 kg/m³), and with minimum thickness of 70 mm.









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FIRE DAMPER - FDC

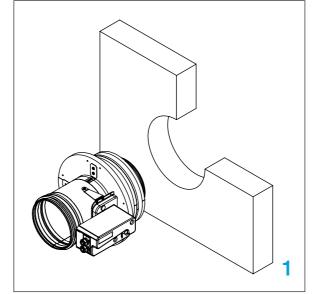
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

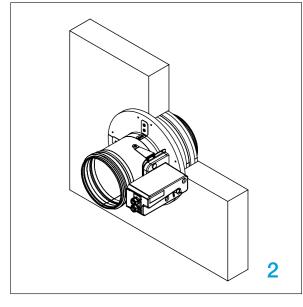
- 1. Create a wall opening according to the dimensions in the table below.
- 2. Insert fire damper into wall and fasten with screws (8 pcs, 4,8x60 mm).

Damper blade must be closed during installation!

Test the operation of the damper blade!

Wall opening dimensions	
Applique frame diameter Ød[mm]	Wall opening [mm]
Ød + 105 mm	Ød + 115 mm
Ød + 95 mm	Ød + 105 mm
Ød + 80 mm	Ød + 90 mm
	Applique frame diameter Ød[mm] Ød + 105 mm Ød + 95 mm







Flexible wall installation

Applique installation frame

The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool with density up to 100 kg/m^3 can be used). The minimum thickness of the wall is 100 mm.







INSTALLATION





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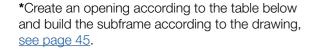
MAINTENANCE AND OPERATION

Possible damper orientations



FIRE DAMPER - FDC

Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

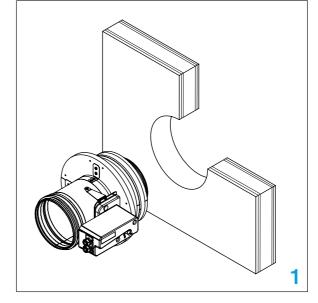


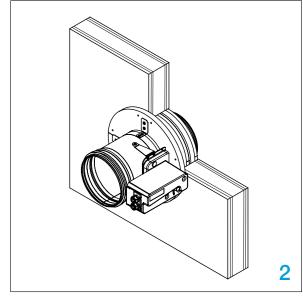
1. Place the fire damper in the opening.

Damper blade must be closed during installation!

2. Fasten the fire damper with screws (8 pcs, 4,8x60 mm).

	Wall opening dimensions	
Damper diameter Ød [mm]	Applique frame diameter Ød [mm]	Wall opening [mm]
100	Ød + 105 mm	Ød + 115 mm
125-180	Ød + 95 mm	Ød + 105 mm
200-315	Ød + 80 mm	Ød + 90 mm







Rigid wall installation MF1/MF2 installation frame

The wall is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm.







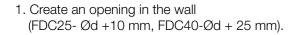
- PRODUCT OVERVIEW
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Possible damper orientations



FIRE DAMPER - FDC

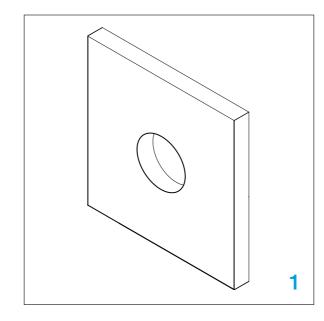
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

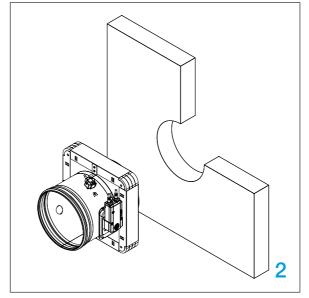


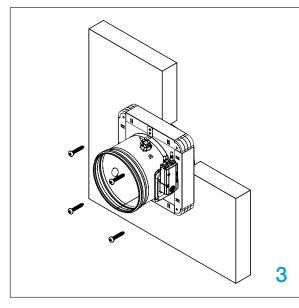
2. Place the damper in the opening.

Damper blade must be closed during installation!

3. Fasten the fire damper with screws FDC25- 4 pcs, 6x140 mm, FDC40- 12 pcs, 6x140 mm.









Gypsum blocks wall MF1/MF2 installation frame

The wall is composed of gypsum blocks (minimum density of 995 kg/m³) and with minimum thickness of 70 mm.







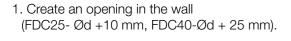
- PRODUCT OVERVIEW
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Possible damper orientations



FIRE DAMPER - FDC

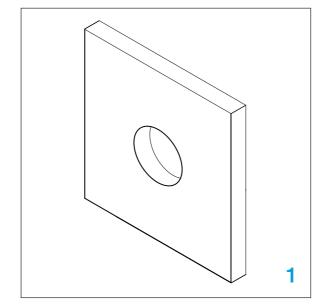
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

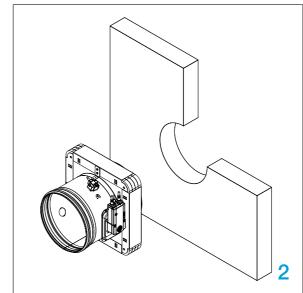


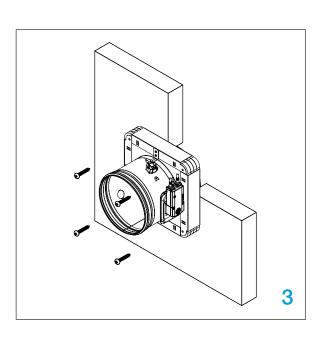
2. Place the damper in the opening.

Damper blade must be closed during installation!

3. Fasten the fire damper with screws FDC25- 4 pcs, 6x140 mm, FDC40- 12 pcs, 6x140 mm.









Flexible wall installation MF1/MF2 installation frame

MF1 (El 60 (ve i↔o)S)

The wall is made out of type A (EN520) gypsum plaster boards. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool with density up to 60 kg/m³ can be used). The minimum thickness of the wall is 100 mm.

MF2 (EI 90 (ve i↔o)S)

The wall is made out of type F (EN520) gypsum plaster boards, installed on a steel frame construction. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool with density up to 100 kg/m³ can be used).

The minimum thickness of the wall is 100 mm.







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Possible damper orientations



0-90°-180°-270°

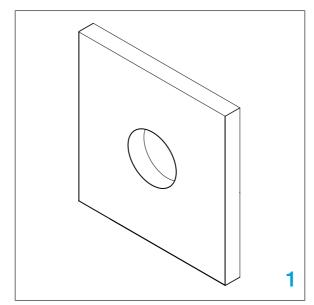
FIRE DAMPER - FDC

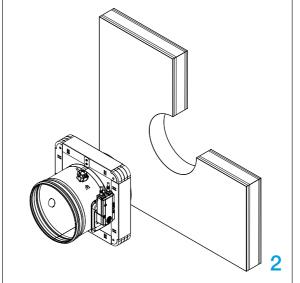
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

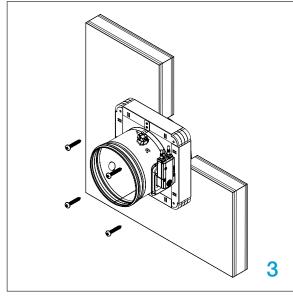


2. Place the fire damper in the opening. Damper blade must be closed during installation!

3. Fasten the fire damper with screws FDC25- 4 pcs, 6x140 mm, FDC40- 12 pcs, 6x140 mm.









Rigid floor/ceiling installation MF1/MF2 installation frame

The floor/ceiling is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm.





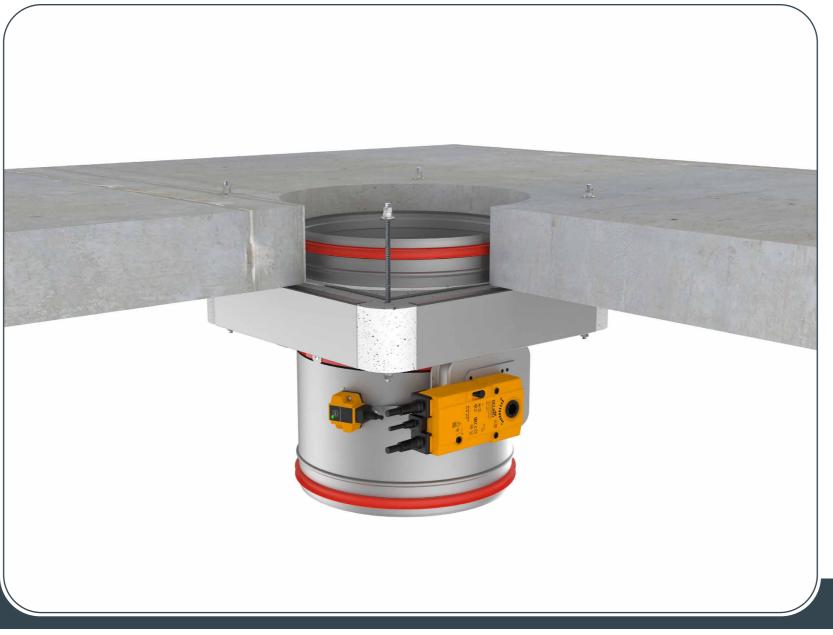


INSTALLATION

- 1. Create an opening in the floor/ceiling (FDC25- \varnothing d +10 mm, FDC40- \varnothing d + 25 mm). Insert the fire damper into the opening and mark the places for drilling holes.
- 2. Remove the fire damper and drill the marked places (8 mm).
- 3. Mount 4/12 sets of pre-cut threaded rods, washer, nut and counternut on one side. Place pre-assembled threaded rods in holes in floor/ceiling, and place the damper in the opening. Tighten the tightening sets from oposite side with washer, nut and counternut.

Damper blade must be closed during installation!

Test the operation of the damper blade!





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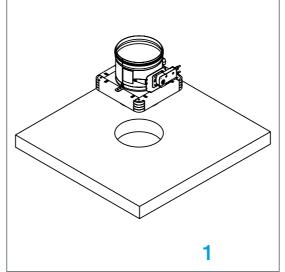
MAINTENANCE AND OPERATION

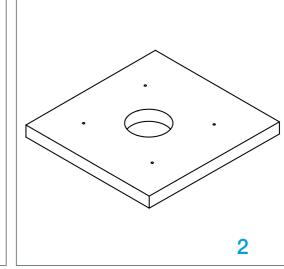
Possible damper orientations

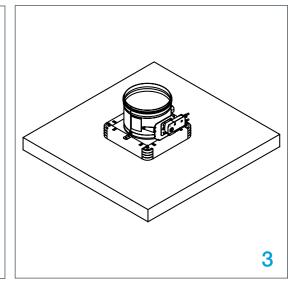


FIRE DAMPER - FDC

Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides









Shaft wall installation MF2 installation frame

The wall is composed of 1x2 plasterboard boards, 12,5 mm / 20 mm thick, installed on a steel frame construction.

FDC25/FDC40 MF2 (El 60 (ve i \leftrightarrow o)S) - 12,5 mm - GKF/Piano

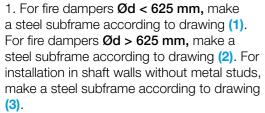
FDC25/FDC40 MF2 (El 90 (ve i \leftrightarrow o)S) - 20 mm - Fireboard











2. Place the fire damper in the opening. **Damper blade must be closed during installation!**

3. Insert fire damper into wall and fasten with screws (12pcs, 6x160 mm).

Test the operation of the damper blade!

* Dimension G depending of the damper type is: G=10 mm for FDC25

G=25 mm for FDC40



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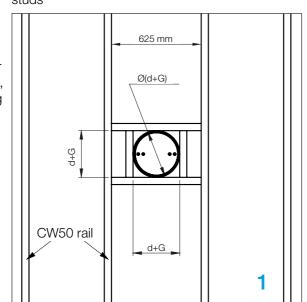
Possible damper orientations



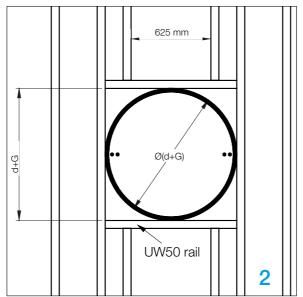
FIRE DAMPER - FDC

Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

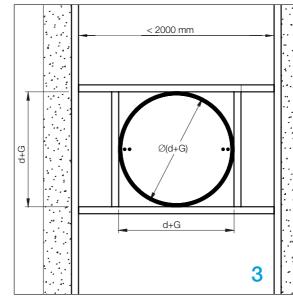
FDC-MF2 Fire damper (Ød < 625 mm) installation in 75/90 mm shaft wall with metal studs



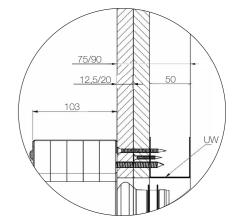
FDC-MF2 Fire damper (Ød > 625 mm) installation in 75/90 mm shaft wall with metal studs



FDC-MF2 Fire damper installation in 90 mm shaft wall without metal studs (maximum wall width 2000 mm)



FDC25, FDC40 - side cross section





Installation remote from flexible/rigid wall FDC 25

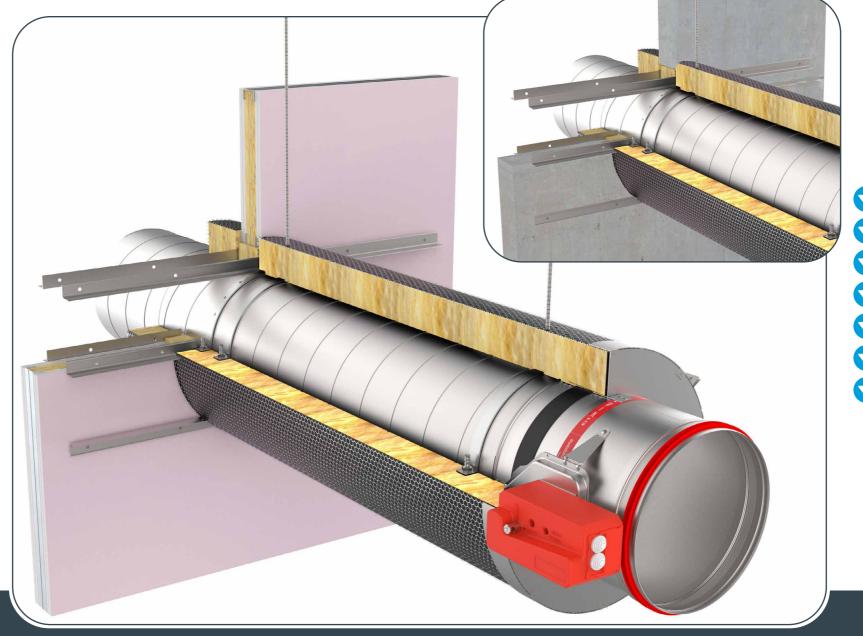
Flexible wall: The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. To fulfill the classification it is **NOT** mandatory to use the mineral wool inside the wall (mineral wool with density up to 115 kg/m³ can be used). The minimum thickness of the wall is 100 mm.

Rigid wall: The wall is composed of concrete blocks (minimum density of 450 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm.





- 1. Place the damper in an opening according to the picture. Place ventilation duct trough wall (thickness of threaded rod for suspension should be M10)
- 2. Install fire damper and secure it with self-tapping screws 4,2x9,5 to duct (every 300 mm max). Fill space between duct and wall with mineral wool (Isover U protect Wired Mat Alu 1, min. 80 mm thickness). Additionally paint wool with Isover BSF in thickness of 2 mm on both sides.
- 3. Close installation with L profiles 30x30x3 mm. Additionally fix profiles to duct with self-tapping screws, and screw them to wall with 4,5x50 screws with 200 mm distance between them. On connection wool-wall apply glue Isover BSK in thickness of 2 mm. Repeat the same procedure on the other side. Place the wool on ventilation duct in length of 80 mm



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Possible damper orientations



4,2 x 9,5

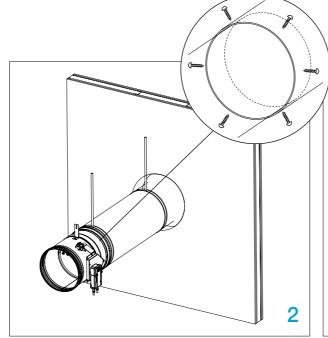
FIRE DAMPER - FDC

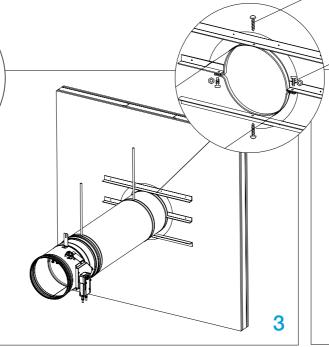
Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides

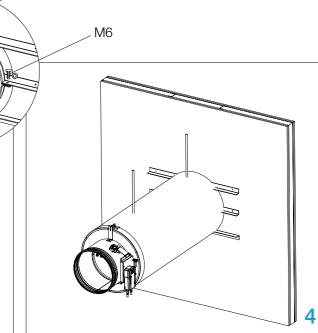
4. Place steel protection on place where insulation on **Test the operation of the damper blade!** damper ends (80x80 mm, 1 mm thick metal sheet cover) **Damper blade must be closed during**

installation!

*Use MWC accessories kit for installation!









Installation remote from flexible/rigid wall FDC 40

Flexible wall: The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. To fulfill the classification it is NOT mandatory to use the mineral wool inside the wall (mineral wool with density up to 60 kg/m³ can be used). The minimum thickness of the wall is 100 mm.

Rigid wall: The wall is composed of concrete blocks (minimum density of 550 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm.



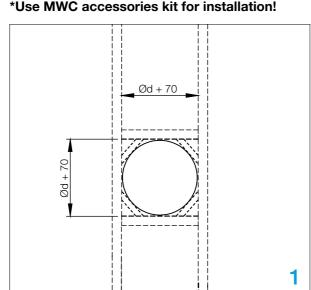


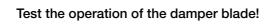
- 1. Place the damper in an opening according to the picture. Place ventilation duct trough wall (thickness of threaded rod for suspension should be M12)
- 2. Install fire damper and secure it with self-tapping screws 4,3x10 to duct (every 300 mm max). Fill space between duct and wall with mineral wool (Isover U protect Wired Mat Alu 1, min. 80 mm thickness). Additionally paint wool with Isover BSF in thickness of 2 mm on both sides.
- 3. Close installation with L profiles 30x30x3 mm. Additionally fix profiles to duct with self-tapping screws, and screw them to wall with 4,5x50 screws with 200 mm distance between them. On connection wool-wall apply glue Isover BSK in thickness of 2 mm. Repeat the same procedure on the other side. Place the wool on ventilation duct in length of 80 mm

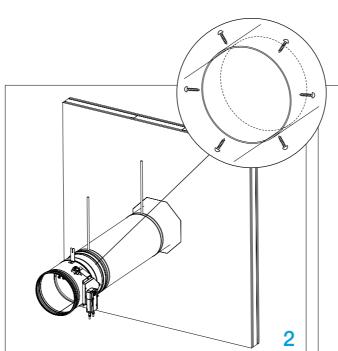
4. Place steel protection on place where insulation on **Test the operation of the damper blade!** damper ends (80x80 mm, 1 mm thick metal sheet cover)

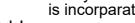
Damper blade must be closed during installation!

*Use MWC accessories kit for installation!









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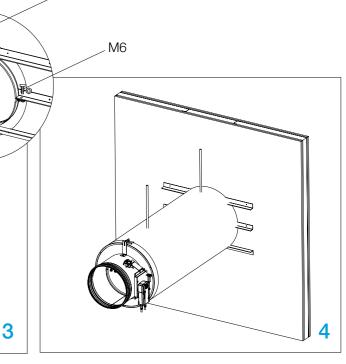
Possible damper orientations



 $4,2 \times 9,5$

FIRE DAMPER - FDC

Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides





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Minimal installation distances

- Material in width of supporting constructions compliant with the classification from <u>DOP</u>
- *Coated mineral wool 240 mm wide (140 kg/m³) only in case of weichschott/firebatt

Damper blade must be closed during installation!

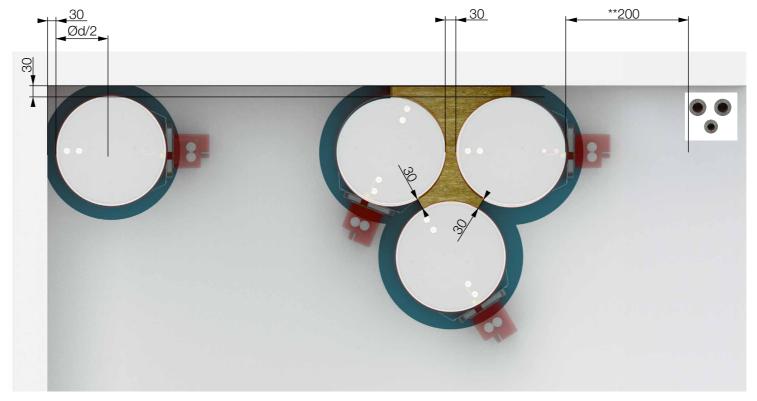
Weichschott/Firebatt - Mineral wool

1*. Prepare opening in the wall according to the installation type. (Weichschott/Firebatt installation- build the subframe according to the drawing, see page 40).

Mortar - Gypsum blocks

- 1. Prepare opening in the wall according to the <u>page 14.</u>
 Fire damper can be installed with minimal distance of 30 mm between wall/ceiling and 30 mm from other dampers.
- 2. Insert the fire dampers into the wall and fill the space between the dampers and between dampers and wall with material specified in DOP.
- *3. In case of weichschott/firebatt installation fill the space between the dampers and between the dampers and ceiling with coated mineral wool up to flanges.
- 4. Complete the installation according to the DOP.

 Mineral wool and damper casing must be coated with 2 mm thick fire protection coating. Damper casing should be coated up to profile protrusions.



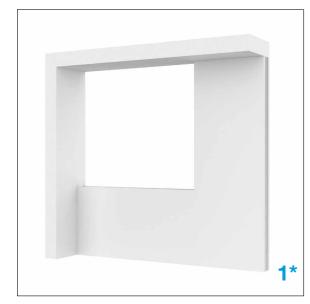
*Minimal distances from another damper or wall/ceiling.

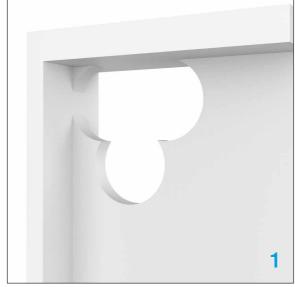
** Minimal distances from any other penetration through the wall.

FIRE DAMPER - FDC

NSTALLATION

Always ensure the damper is sufficently supported and a breakaway joint is incorparated between the damper and adjoining ductwork on both sides















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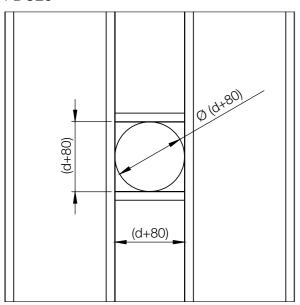


FIRE DAMPER - FDC

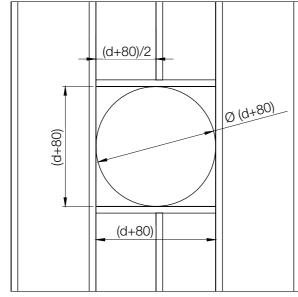
Flexible wall subframe

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

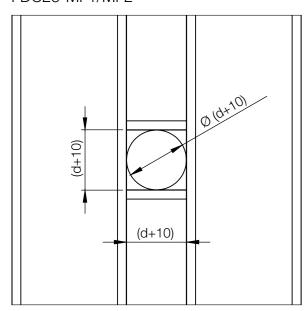
FDC25



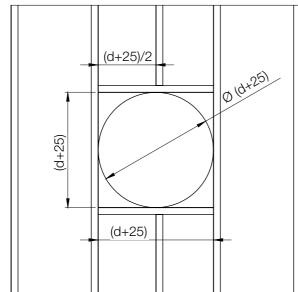
FDC40



FDC25-MF1/MF2



FDC40-MF2





MANUAL ACTUATORS R, R-S

Manual operating mechanism, optionally with end switches (R-S). In case of fire, the fire damper closes automatically.

Damper closing can be initiated either by thermal fuse melting, or by manual activation on the operating mechanism. Upon closure, damper blade is locked in closed position and can only be opened manually. Thermal fuse melting point is 72 °C.



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FIRE DAMPER - FDC

R25

R25 manual actuator is installed on FDC25 fire dampers up to size d315. It is available in version with (R-S) and without (R) end switches. End switches and thermal fuse are easily replaceable and available as service parts. To upgrade to EMS, upgrade of R25 to R40 is required.

R40

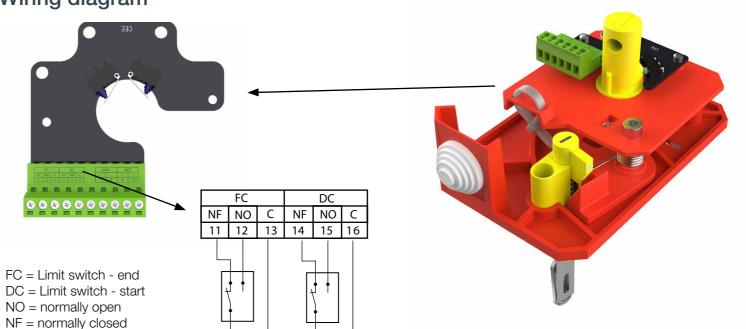
R40 manual actuator is installed on FDC40 fire dampers up to size d800. It is available in version with (R-S) and without (R) end switches. Iln case remote activation is needed, R40 actuator is easily upgradeable to electromagnetic EMS-S actuator with installation of the electromagnet. End switches , thermal fuse and electromagnet are easily replaceable and available as service parts.

Technical specifications

Nominal voltage	N/A
Power	N/A
Switching capacity	1 mA500 mA, 5VDC48 VDC
Blade closing time	Spring: 1 second
Blade opening time	Manual
Manual activation	Release button on the casing
Degree of protection	IP 42
Ambient temperature range	min30 °C, max. 50 °C
Ambient humidity	95% r.h., non-condensing
Service life	Min. 30,000 cycles
Maintenance	Maintenance-free
Weight R25/R40	0,5 kg / 1.7 kg

Wiring diagram

C = common





SOLENOID ACTUATOR EMS-S

Electromagnetic operating mechanism, comes with end switches as standard. In case of fire, the fire damper closes automatically. Damper closing can be initiated either by thermal fuse melting or remotely by triggering the electromagnet.

Electromagnet is constantly under power and activates closing of the damper blade in case the power cuts out. Upon closure, damper blade is locked in closed position and can only be opened manually. Thermal fuse melting point is 72 °C. EMS-S mechanism is the same for FDC25/FDC40 fire dampers.



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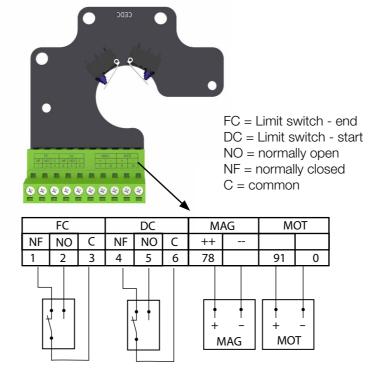


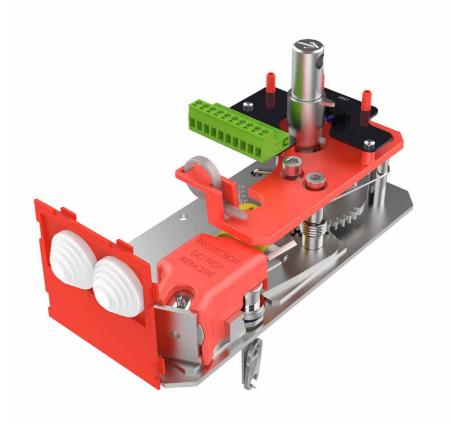
FIRE DAMPER - FDC

Technical specifications

Solenoid: 24/ 48 VDC
Dual voltage SOLENOID: Break of current: Pnom = 1.6 W
1 mA500 mA, 5 VDC48 VDC
Spring: 1 second
Manual
Release button on the casing
IP 42
min30 °C, max. 50 °C
95% r.h., non-condensing
Min. 30,000 cycles
Maintenance-free
2,2 kg

Wiring diagram







ELECTRIC ACTUATOR M24-S, M230-S, M24-S-ST

Damper is delivered in closed position. When electric actuator is connected to the power supply, damper blade will open. When the damper reaches the end position (damper open), the electro motor will stop. Closing fire damper takes place automatically when a power failure occurs. Thermal tripping device that comes with fire damper causes power circuit break at a temperature of 72 °C (optional 95 °C). If checking is needed for proper functioning of fire damper, pushing the switch on the thermal tripping device will close damper.



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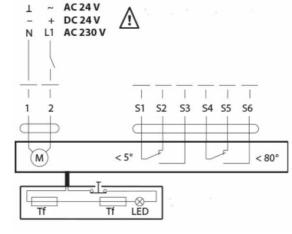
When switch on tripping device is released, the damper will open. Damper can be opened without connecting to a voltage with enclosed handle by turning it in the direction of the arrow on electric actuator (clockwise). Damper can be locked in the desired position by fast turning handle a quarter of a turn (counterclockwise) for Belimo BF, and by puling brake on Belimo BFL and BFN.

To unlock the electro motor, turn handle clockwise for a quarter of a turn for Belimo BF, or release brake for Belimo BFL and BFN. After release, damper will be closed by return spring. When damper is opened manually, electric actuator will not move the damper into closed position in case of power failure.

Technical specifications

Type of actu		BFL24-T	BFN24-T	BFL230-T	BFN230-T	BF24-T	BF230-T
Nominal	voltage	AC/DC 24 V, 50/60 Hz	AC 24 V, 50/60 Hz	AC 230 V, 50/60 Hz	AC 230 V, 50/60 Hz	AC/DC 24 V, 50/60 Hz	AC 230 V, 50/60 Hz
voltage / - power	opening	2,5 W	4 W	3,5 W	5 W	7 W	8.5 W
con-	holding	0,8 W	1,4 W	1,1 W	2,1 W	2 W	3 W
sumption -	for wire sizing	4 VA	6 VA	6,5 VA	10 VA	10 VA	11 VA
End s	witch	1 mA3 A (0,5 A), DC 5 V AC 250V	1 mA3 A (0.5 A), DC 5 VAC 250 V	1 mA3 A (0.5 A), DC 5 VAC 250 V	1 mA3 A (0.5 A), DC 5 VAC 250 V	1 mA6 A (3 A), DC 5 V AC 250 V	1 mA3 A (0.5 A), DC 5 VAC 250 V
Running -	motor	< 60 s	< 60 s	< 60 s	< 60 s	< 120 s	< 120 s
time	spring return	~20 s	~20 s	~20 s	~20 s	~16 s	~16 s
Ambient t			n	nin30 °C,	, max. 50 °C		

Wiring diagram



- negative (direct-current) or neutral (alternating current)
 positive (direct-current) or faze (alternating current)
 common micro switch closed damper
 normally closed micro switch closed damper
- S3 normally open micro switch closed damperS4 common micro switch open damper

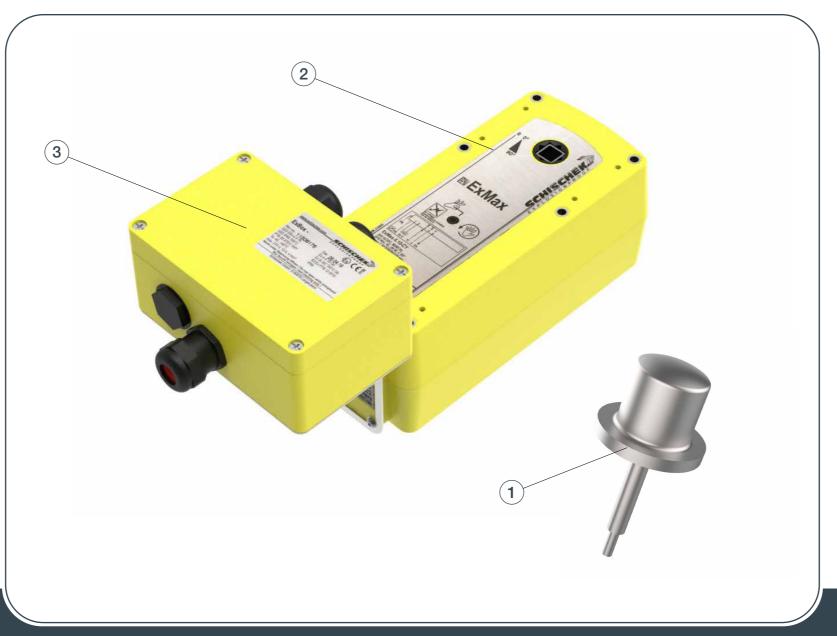
FIRE DAMPER - FDC

- S5 normally closed micro switch open damper
- S6 normally open micro switch open damper
- Tf temperature sensor on the outer side of the duct (ambient temperature) max. 72 °C



ELECTRIC ACTUATORSCHISCHEK ExMax

Damper is delivered in closed position. When electric actuator is connected to the power supply damper will open. When the damper reaches the end position(damper open), in which is it blocked, the electric actuator will stop. Closing fire damper takes place automatically when a power failure occurs. Thermal tripping device that comes with fire damper causes power circuit break at a temperature of 72 °C (inside or outside duct). If checking is needed for proper functioning of fire damper, pushing the switch on the thermal tripping device will close damper. When switch on tripping device is released, the damper will open.



















Damper can be opened without connecting to a voltage with enclosed Allen key, by turning in the direction of the arrow on electric actuator (clockwise). After release of Allen key, damper will go to closed position.

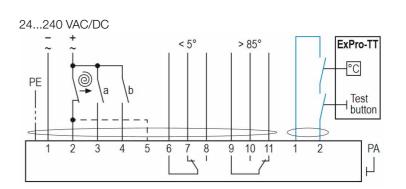
- 1) <u>Tecnical documentation Safety temperature</u> <u>trigger Schischek ExPro-TT</u>
- 2) <u>Tecnical documentation electric actuator</u> <u>Schischek ExMax-5.10-BF</u>
- 3) <u>Tecnical documentation Ex-e terminal box</u> <u>ExBox-BF</u>

Technical specifications

Туре	ExMax -5.10-BF
Torque	5/10 Nm
Power Supply	24-230 V AC/DC
Running time	3/15/30/60/120 s / 90°
Spring return	3 or 10s / 90°
Control mode	On-Off, 3 position
Feedback	2 x aux switches + Ex. tripping device
Ambient temperature range	min40 °C, max. 40 °C
Ambient humidity	0-90% r.h., non-condensing
Service life	Min. 10,000 cycles @ 10 s, min 1000 cycles @ 1s
Maintenance	Maintenance-free
Weight	3,5 kg

FIRE DAMPER - FDC

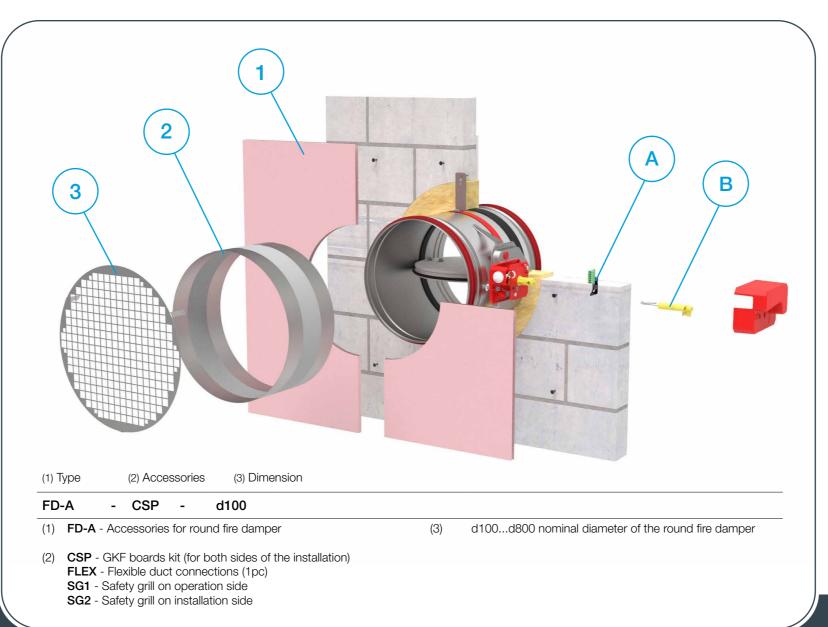
Wiring diagram





ACCESSORIES

- 1 GKF boards GKF boards are used in dry and wet installations as wool or mortar cover. It keeps the installation material in place and provides for better fire penetration characteristics of the whole installation. Kit dimensions- \emptyset + 300 mm.
- 2 Flexible duct connections Flexible duct connectors are used in HVAC systems for isolation from structure-borne noise, expansion compensation and fire damper connections (total length 150mm, flexible 60mm).
- 3 Safety grilles Fire damper, safety grille and, if applicable, extension piece are assembled at the factory to form a unit. The free cross sectional area of the cover grille is approx. 70%.



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For safety reasons, parts need to be changed by a trained personnel or the manufacturer.

WARNING! Install the original parts only!

- A Double contact S kit (CEE board) FD-A-R25S-KIT
- A*Double contact S kit (CEDC board) FD-A-R40S-KIT see page 41.
- B Fuse kit FD-A-THERM-72
- C Solenoid current emission kit FD-A-EMS-KIT
- D Inspection hatch FDC-A-IH (Not available with MF, App frame)
- E Communication module bracket FD-A-CMB
- F Belimo thermal fuse 72 °C FD-A-BAT72
- G Belimo thermal fuse 95 °C FD-A-BAT95
- H Thermal fuse blanking plate FD-BP-KIT
- I Kit A FDC-A-KIT-A Upgrade to electric actuator (Belimo BFL)
- J Kit B FDC-A-KIT-B Upgrade to electric actuator (Belimo BFN)
- K Kit C FD-A-KIT-C- upgrade to electric actuator (Belimo BF)
- L R40 manual mechanism FD-A-R40 see page 40.
- M Smoke sensor see page 45.
- N Mineral wool cover (for remote installation)- MWC see page 38.



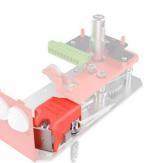
























SMOKE SENSOR ASSEMBLY FDC-SSA

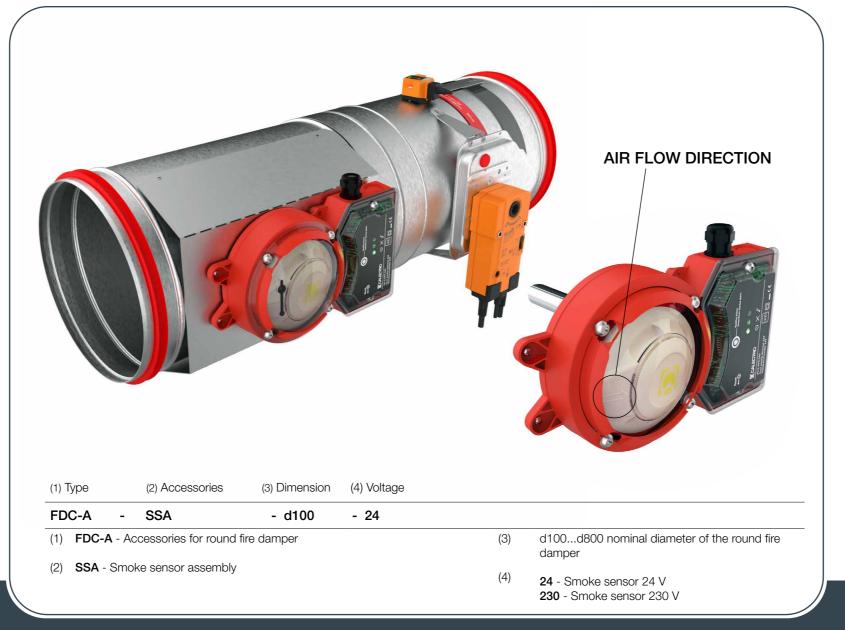
Smoke sensor assembly is developed to detect smoke in ventilation ducts and combines a smoke detector and an adaptor system where both tube and housing are specially designed for optimum airflow through the smoke detector. Smoke sensor provides the signal for the fire damper which is activated when smoke is detected. Smoke sensor assembly consists of casing (length: FDC25=380 mm, FDC40=390 mm), smoke sensor and specially designed venturi pipe inside the duct.

For proper functioning of the smoke sensor (as it is physically connected as in the render above) a straight length of 5 times hydraulic diameter, in the size of the connecting duct, should be in front of the sensor. When the sensor is installed separate from the fire damper there are two conditions to be met:

1) Length of 5 times hydraulic diameter, in the size of the connecting duct, should be in front of the sensor.

2) Length of 3 times hydraulic diameter, in the size of the connecting duct, should be after the sensor.





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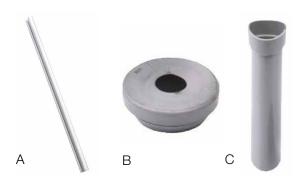
REPLACEMENTS

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FIRE DAMPER - FDC

Spare parts

Smoke sensor FD-A-UG-5-AFR-24V Smoke sensor FD-A-UG-5-AFR-230V A Sampling tube FD-A-ST5 B Rubber gasket FD-A-HFU204 C Isolation extension FD-A-HFU500



For more information, visit website:

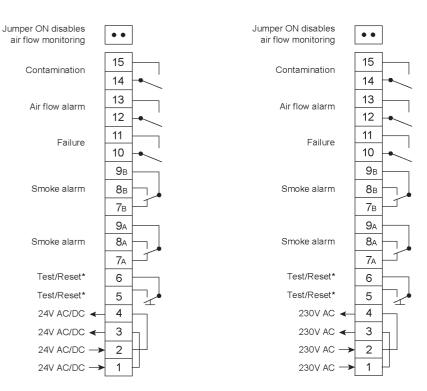
Technical specifications

	FDC-A-UG-5-AFR-24V	FDC-A-UG-5-AFR-230V
Voltage Supply	24V AC/DC -15%, +10% Not polarity sensitive	230V AC -15%, +10% Not polarity sensitive
Detector type	Optical UG-5-AFR-24V	Optical UG-5-AFR-230V
Max. power consumption	220 mA	30 mA
Operating temperature	-10°C to +55°C	C
Maximum humidity	99% rH	
Duct air velocity range	1 to 20 m/s	
Approvals	VdS CE, EN-5	54-27
Relay output	Potential free	
Smoke alarm relays	Two changing contacts 250V, 8A	
Service alarm	One breaking contact 250V, 5A	
System error alarm	One breaking contact 250V, 5A	
Low Flow alarm:	One breaking contact 250V, 5A	
LED on smoke detector:	Green - service alarm (contamination) Red - smoke alarm	
LED on PCB:	Green - normal operation Yellow - system error Yellow - Low-Flow	

Wiring diagram

FDC-A-UG-5-AFR-24V

FDC-A-UG-5-AFR-230V









Smoke sensor casing can be rotated (90°-180°-270°) in order to provide better flexibility for wiring.

To rotate smoke sensor casing, follow the below instructions.

- 1. Follow first step of smoke sensor rotation: locate and re move hex screws.
- 2. Rotate the smoke sensor casing (90° -180° -270°).
- 3. Fix the screws following the fourth step of smoke sensor rotation.

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REPLACEMENTS

FIRE DAMPER - FDC

SMOKE SENSOR ROTATION

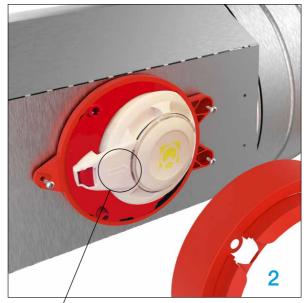
Smoke sensor assembly is supplied with standard airflow direction. *If you rotate the smoke sensor, the distance of 5 times the hydraulic duct diameter should be left before the sensor!

1. Locate hex screws, unscrew them and remove the cover.

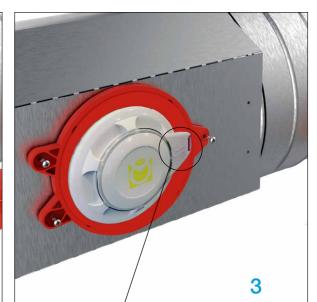
Pay attention to detail A!

- 2. Remove the casing, locate the screws and remove them.
- 3. Rotate smoke senzor (0° -180°) according to air flow direction and fix it with screws.
- 4. Put the casing back and install the cover. Pay attention to detail A!

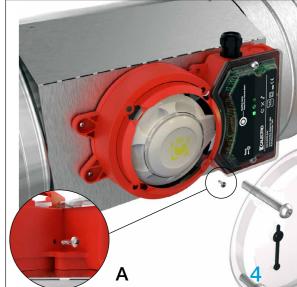




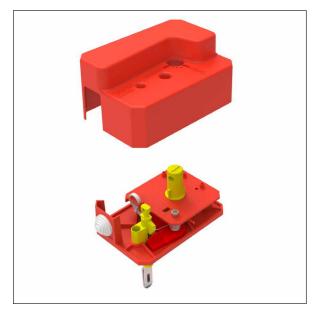




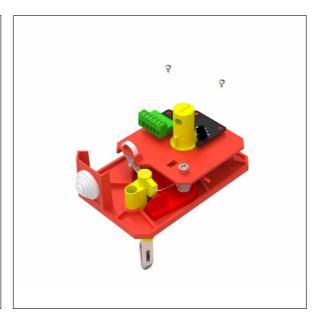




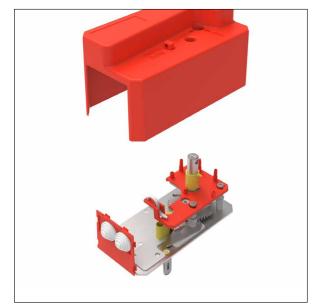
UPGRADE TO END CONTACTS (R25 → R25-S)

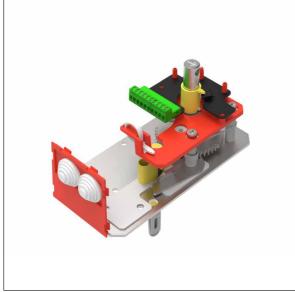


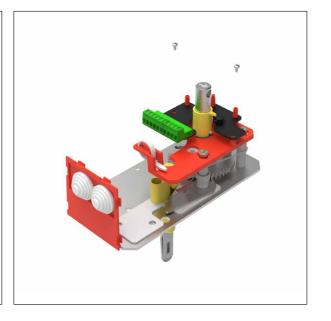




UPGRADE TO END CONTACTS (R40 → R40-S)









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FIRE DAMPER - FDC

- 1. Locate hex screw, unscrew it and remove the cover.
- 2. Insert CEE (R25)/CEDC (R40) board in the appropriate place.
- 3. Screw the board to the plate. Put the cover back in place!



UPGRADE FROM MANUAL (R40-S) TO EMS

Before upgrade R40 to EMS, it is necessary to install kit for end contacts (FD-A-R40S-KIT).

Before upgrade R25/RS25-S to EMS, it is necessary to install R40 mechanism (FD-A-R40) and kit for end contacts (FD-A-R40S-KIT).

To upgrade to EMS you need to use the EMS kit!

Service work may only be performed by authorized persons!



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FIRE DAMPER - FDC

- 1. Locate hex screw. Unscrew it and remove the cover.
- 2. Insert the EMS on the custom plate.
- 3. Screw the EMS to the plate and connect the2-pin connector into the appropriate socket onthe CEDC board.
- 4. Put the cover back in place.

Test the operation of the damper blade!





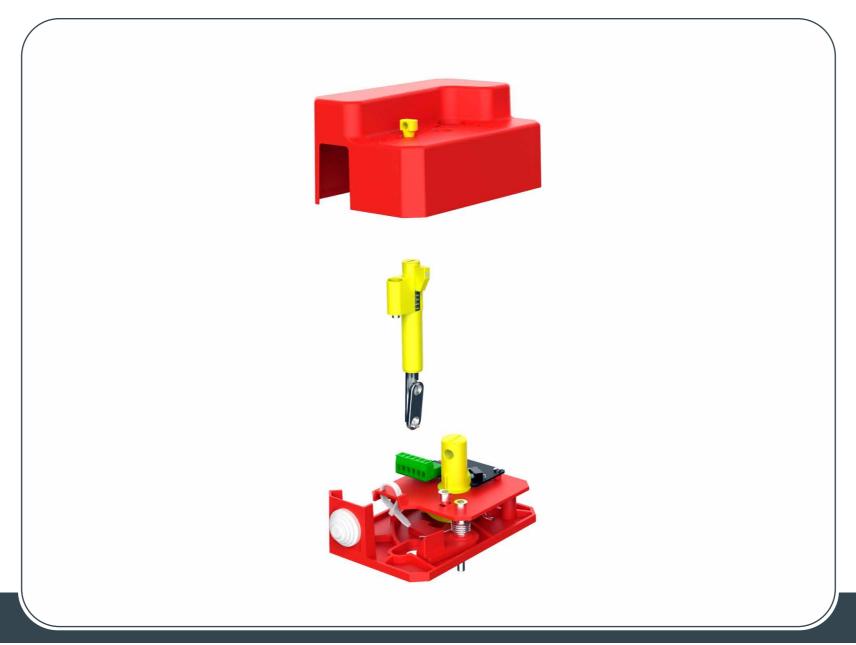




55



REPLACEMENT OF THERMAL FUSE (R25)



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FIRE DAMPER - FDC

- 1. Locate the hex screw on the cover, unscrew it and remove the screw and cover.
- 2. Locate the hex screw on the thermal fuse and unscrew it.
- 3. Remove the old thermal fuse. Insert the new thermal fuse and secure it.
- 4. Put the lid back on.



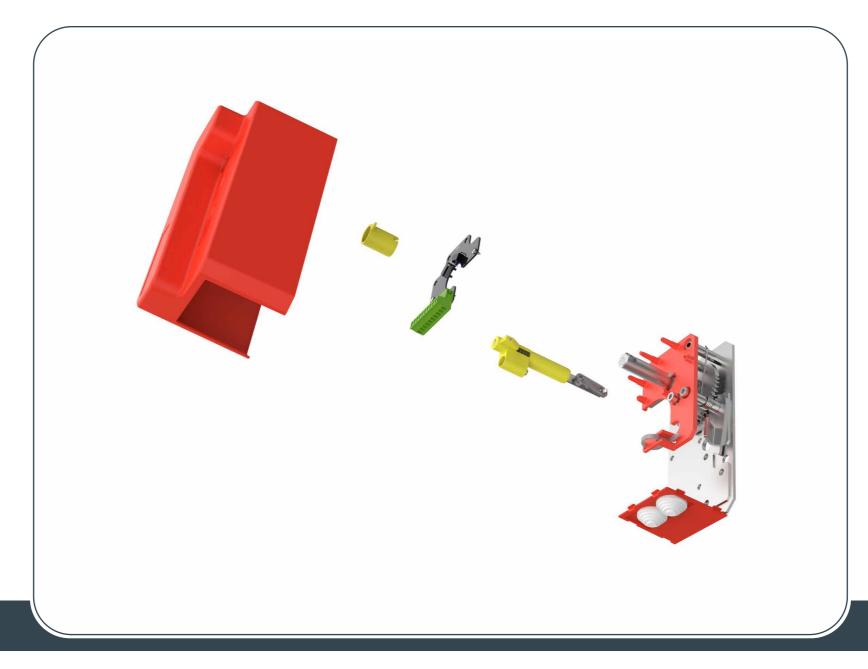








REPLACEMENT OF THERMAL FUSE (R40)



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FIRE DAMPER - FDC

- 1. Find the hex screw located on the cover, unscrew and remove the screw and the cover.
- 2. Remove the position indicator sleeve.
- 3. Locate the 3 hex screws. Unscrew them. Remove the CEDC board (if applicable).
- 4. Locate the screw on the thermal fuse. Unscrew it. Remove the old thermal fuse. Insert a new thermal fuse. Put the CEDC board and the cover back in place.











UPGRADE TO ELECTRIC ACTUATOR

Manual R25 <-> Belimo

d100-d315

The blade must be closed before replacement the mechanism.

Service work may only be performed by authorized persons!



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FIRE DAMPER - FDC

♦ REPLACEMENTS

NOTE: Use kit according to table (upgrade to electric actuator)!

- * Find the screw and remove the cover!
- 1. Find the 2 hex screws located on the board of mechanism, unscrew them and remove manual mechanism.
- 2. Find the 2 hex screws located on the mechanism (E), unscrew them and replace the manual mechanism plate (A) with BE transition plate (B) provided in the kit.

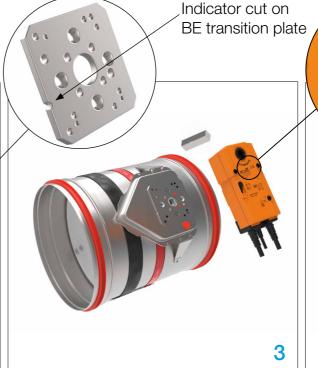
NOTE: Pay attention to the position of indication cut on the BE transition plate.

- 3. Insert the rubber plug into the opening for the thermal fuse. Install square shaft into the hole, put Belimo actuator on the shaft and fasten the actuator with screws (2 hexagon screws M6x55). *Check the rotation direction of the actuator! (Clockwise actuation, R mark on the actuator)
- 4. Drill hole (Ø16 mm) for the fuse of Belimo mechanism and fix it with self-tapping screws.

NOTE: Install the thermal fuse in a place where it will not interfere with the operation of the damper blade! **Test the operation of the damper blade!**











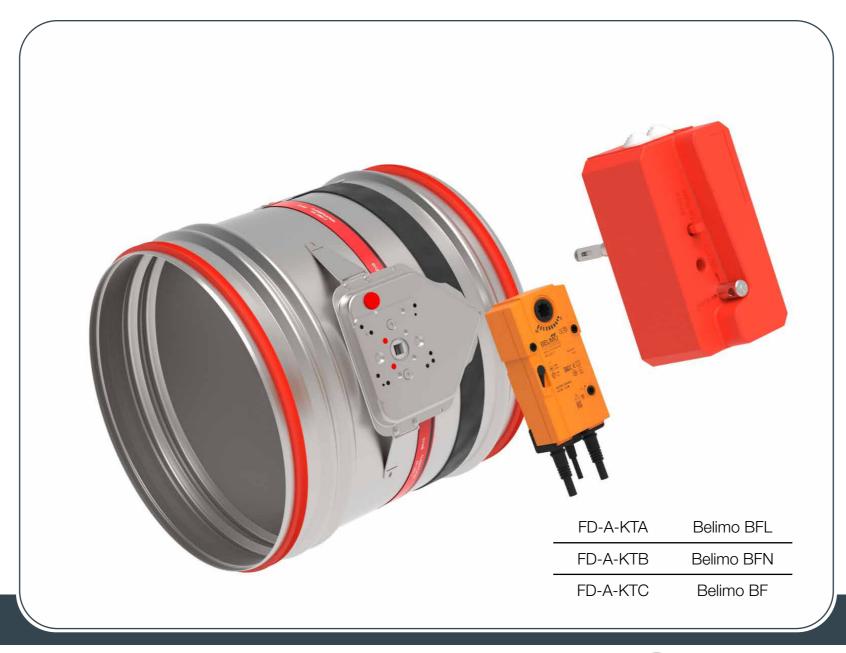
UPGRADE TO ELECTRIC ACTUATOR

R40 <-> Belimo

d355-d800

The blade must be closed before replacement the mechanism.

Service work may only be performed by authorized persons!



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FIRE DAMPER - FDC

**REPLACEMENTS

NOTE: Use kit according to table (upgrade to electric actuator)!

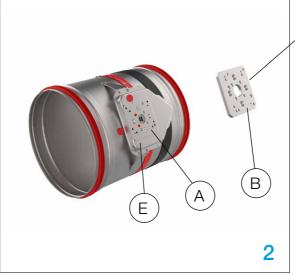
- * Find the screw and remove the cover!
- 1. Find the 3 hex screws located on the board of mechanism, unscrew them and remove manual mechanism.
- 2. Find the 2 hex screws located on the mechanism (E), unscrew them and replace the manual mechanism plate (A) with BE transition plate (B) provided in the kit.

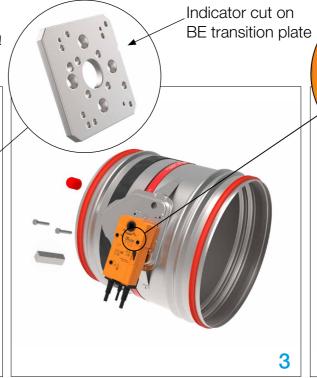
NOTE: Pay attention to the position of indication cut on the BE transition plate.

- 3. Insert the rubber plug into the opening for the thermal fuse. Install square shaft into the hole put Belimo actuator on the shaft and fasten the actuator with screws (2 hexagon screws M6x55).
- *Check the rotation direction of the actuator! (Clockwise actuation, R mark on the actuator)
- 4. Drill hole (Ø16 mm) for the fuse of Belimo mechanism and fix it with self-tapping screws.

NOTE: Install the thermal fuse in a place where it will not interfere with the operation of the damper blade! **Test the operation of the damper blade!**











HOW TO ROTATE ELECTRIC ACTUATOR (Belimo)

d100-d800

The blade must be closed before replacement the mechanism.



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FIRE DAMPER - FDC

- 1. Locate the 2 hex screws, unscrew and remove them.
- 2. Remove the Belimo electric actuator.
- 3. Find the 2 hex screws located on the transition board (B), unscrew them and rotate BE transition plate (A) 90°.

NOTE: The direction of rotation of BE transition plate and the electric actuator must be the same!

4. Fix the transition plate to the transition board and install the Belimo actuator.

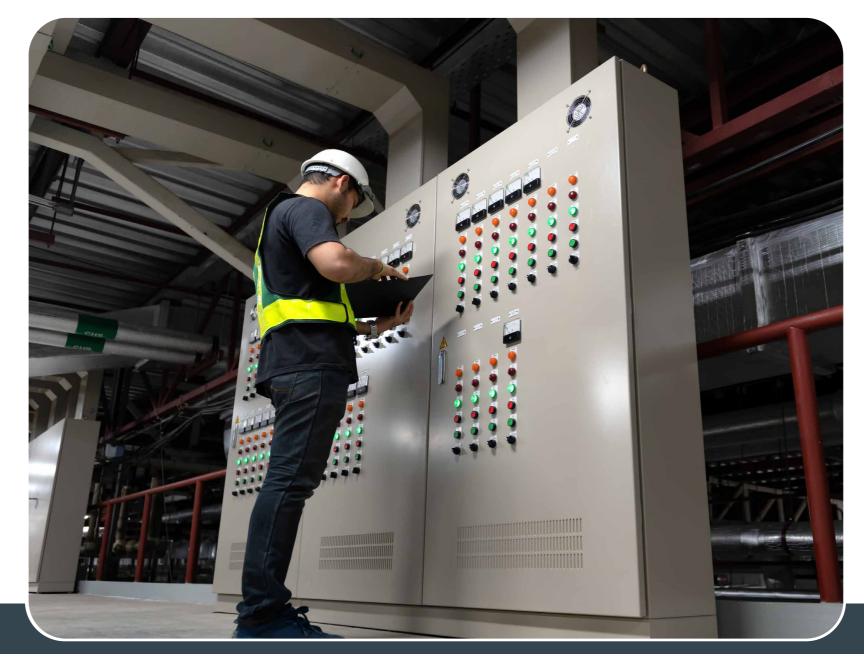












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FIRE DAMPER - FDC

TRANSPORT

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

STORAGE

If the damper is not installed immediately:

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

Please properly dispose of packaging material.

MAINTENANCE AND OPERATION

Fire dampers are designed with fully enclosed drive mechanism outside of the duct and as such do not require cleaning and regular maintenance.

However, activation mechanism should be inspected for proper operation on regular basis.

- Provide regular testing/inspection of the fire dampers.
 Inspection/test intervals should be caried out every six months or less according to the local legislature
- After each intervention, provide a systematic cleaning of dust and especially the solenoid and its movable plate
- Check the if the electrical terminals are tightened
- Cleaning instruction: clean with a sponge, with water or a mild detergent
- Disinfection instruction: spray disinfectant (desinfectant may contain alcohol which is flammable, take precaution to avoid ignition)

It is not permitted to alter the dampers in any way nor perform any changes to their structure (except for the service procedures described in this manual) without the manufacturer's consent. Provide at least one annual check of the damper. The functional test must be carried out in compliance with the basic maintenance principles of the European norms EN 13306, EN 15423 and EN15650.

COMMISSIONING

- Carefully unpack FDC fire damper be careful of sharp edges and do not use excessive force for unpacking
- Inspect the fire damper check the fire damper for damage
- Installation of the fire damper according to the installation instructions (page 14.).
- Before commissioning: check the fire damper functions.

FUNCTIONS

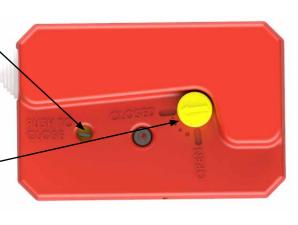
- Release mechanism:
- Damper blade can be closed and opened manually
- Signal testing the damper blade must close
- 3) Electric actuator:
- Signal testing the damper blade must close/open
- 4) Thermal fuse:
- By a button the damper blade must be closed by pressing the button

FIRE DAMPER TESTING

MANUAL ACTUATORS/ SOLENOID ACTUATOR

1. Close the damper blade by pushing the thermic actuator through the hole on the casing.

2. Open the damper blade by inserting the metal rod (i.e. screwdriver, hex wrench) max. 7 mm in diameter, into the yellow/ silver part and rotate the arrow to the open position.









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FIRE DAMPER - FDC

ELECTRIC ACTUATOR

1. Test the operation of the damper blade by pushing the test button.

2. Opening the damper blade: Insert the handle provided with the Belimo actuator into the hole. Rotate it as shown on the actuator.





FIRE DAMPER - FD

- Solution | Joseph Wilson Industrial Estate, Whitstable, CT5
- 3DU UK+44 (0) 1634
- actionair@swegon.com
- www.swegon.com/uk/