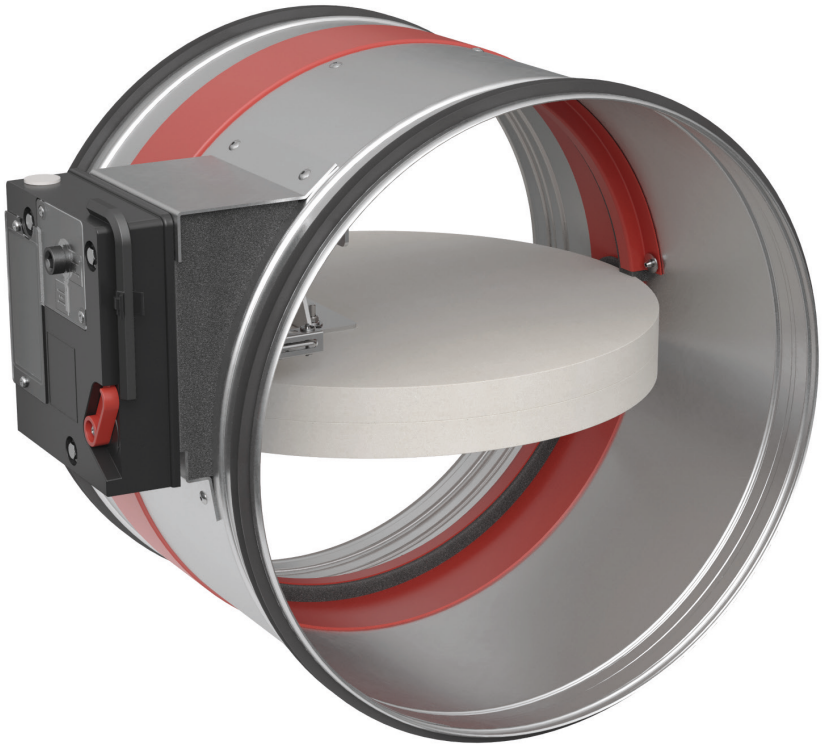
CR2

Circular fire damper for large diameters



CE 0749

Rf-t

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C1-EN-03/2025

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Explanation of the abbreviations and pictograms

Wn = nominal width
Hn = nominal height
Dn = nominal diameter
E = integrity
I = thermal insulation
S = smoke leakage
Pa = pascal
ve = vertical wall penetration
ho = horizontal floor penetration
o -> i = meets the criteria from the outside (o) to the inside (i)
i <-> o = fire side not important
V AC = Volt alternating current
V DC = Volt direct current

E.TELE = power supply magnet
E.ALIM = power supply motor
V = volt
W = watt
Auto = automatic
Tele = remote controlled
Pnom = nominal capacity
Pmax = maximum capacity
GKB (type A) / GKF (type F): "GKB" stands for standard plasterboards (type A according to EN 520) while "GKF" plasterboards offer a higher fire resistance for a similar plate thickness (type F according to EN 520)
Cal-Sil = calcium silicate
OP = option (delivered with the product)
KIT = kit (delivered separately for repair or upgrade)
PG = connection flange to the duct

Sn = free air passage
ζ [-] = pressure loss coefficient
Q = airflow
ΔP = static pressure drop
v = air speed in the duct
Lwa = A-weighted sound power level
Lw oct = sound power level per octave midband
dB(A) = A-weighted decibel value
ΔL = correction factor

	large dimensions		air tightness in accordance with EN 1751: class ATC 4 (formerly B), class ATC 3 in option (formerly C)
	suitable for built-in installation		minimal distance allowed
	sealing with fire resistant stone wool boards allowed, also for asymmetric opening		

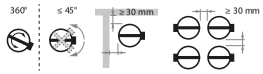
DECLARATION OF PERFORMANCE

UKCA_DoP_Rf-t_C1_EN ■ K-01/10/2024

1. Unique identification code of the product-type:	**CR2**
2. Intended use/es:	Circular fire damper to be used in conjunction with partitions to maintain fire compartments in heating, ventilating and air conditioning installations.
3. Manufacturer:	Rf-Technologies NV, Lange Ambachtstraat 40, B-9860 Oosterzele
4. System/s of AVCP:	System 1
5. Designated standard / Approved body; certificate of constancy of performance:	BS EN 15650:2010, BCCA with identification number 0749; 2822-UKCA-CPR-0054
6. Declared performance according to BS EN 15650:2010	(Fire resistance according to BS EN 1366-2 and classifications according to BS EN 13501-3)

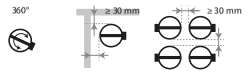
Essential characteristics					Performance
Range	**Type**	**Wall**	**Sealing**	**Installation**	**Classification**
Ø 200-630 mm	Rigid wall	Aerated concrete ≥ 100 mm	Mortar / Gypsum	1	EI 120 (v_e i ↔ o) S - (500 Pa)
			Stone wool + coating ≥ 140 kg/m³	1	EI 90 (v_e i ↔ o) S - (300 Pa)
			Stone wool Mulcol Multimastic FB1 + coating	2	EI 60 (v_e i ↔ o) S - (300 Pa)
			Stone wool Pyro-Safe® MFP + coating	2	EI 120 (v_e i ↔ o) S - (300 Pa)
	Rigid floor	Aerated concrete ≥ 125 mm	Mortar	2	EI 90 (h_o i ↔ o) S - (500 Pa)
		Aerated concrete ≥ 150 mm	Mortar	3	EI 120 (h_o i ↔ o) S - (500 Pa)
			Stone wool + coating ≥ 140 kg/m³	3	EI 120 (h_o i ↔ o) S - (300 Pa)
	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	Stone wool ≥ 40 kg/m³ + cover plates	1	EI 60 (v_e i ↔ o) S - (500 Pa)
			Gypsum	1	EI 60 (v_e i ↔ o) S - (500 Pa)
			Mortar	1	EI 60 (v_e i ↔ o) S - (300 Pa)
			Stone wool + coating ≥ 140 kg/m³	1	EI 60 (v_e i ↔ o) S - (300 Pa)
		Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Stone wool ≥ 40 kg/m³ + cover plates	1	EI 90 (v_e i ↔ o) S - (300 Pa)
			Gypsum	1	EI 120 (v_e i ↔ o) S - (500 Pa)
			Mortar	1	EI 90 (v_e i ↔ o) S - (300 Pa)
			Stone wool Mulcol Multimastic FB1 + coating	2	EI 60 (v_e i ↔ o) S - (300 Pa)
			Stone wool + coating ≥ 140 kg/m³	1	EI 90 (v_e i ↔ o) S - (300 Pa)
			Stone wool Pyro-Safe® MFP + coating	2	EI 120 (v_e i ↔ o) S - (300 Pa)
		Paroc System Panel Sandwich panel type Paroc AST S ≥ 100 mm	Hilti CFS-CT B 1S	4	EI 120 (v_e i ↔ o) S - (300 Pa)
		Eurobond sandwich panel system type Eurobond Firemaster Extra ≥ 100 mm	Hilti CFS-CT B 1S	4	EI 120 (v_e i ↔ o) S - (300 Pa)
		Gypsum blocks ≥ 70 mm	Block glue	1	EI 120 (v_e i ↔ o) S - (500 Pa)

1 Type of installation: built-in, 0-360°. Minimal distances authorised with axis till 45°.



2 Type of installation: built-in, 0-360°.

3 Type of installation: built-in, 0-360°. Minimal distances authorised.



4 Type of installation: built-in, 0/180° (CR)

Nominal activation conditions/sensitivity:	Pass	**Integrity (E)**	60, 90 and 120 minutes
Response delay (response time): closure time	Pass	**Insulation (EI)**	60, 90 and 120 minutes
Operational reliability: cycling	CFTH - 50 cycles; MANO - 300 cycles; B(L)F(T) - 10000 cycles; BFL(T) - 10000 cycles; BFN(T) - 10000 cycles; ONE - 10000 cycles; ONE-X - 10000 cycles; UNIQ - 10000 cycles; BOBI - 300 cycles	**Smoke leakage (EIS)**	60, 90 and 120 minutes
Durability of response delay:	Pass	**Mechanical stability (under E)**	n/a
Durability of operational reliability:	Pass	**Maintenance of cross section (under E)**	n/a
Protection against corrosion according to EN 60068-2-52:	Pass		
Damper casing leakage according to EN 1751:	≥ class ATC 4 (formerly B)		

Designated standard
BS EN 15650:2010

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:
Duchan Laplace, R&D Manager

Oosterzele, 01/10/2024

Product presentation CR2

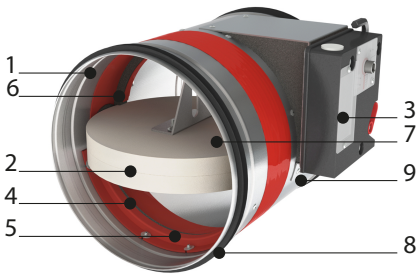
Circular fire damper available in the largest dimensions (up to a diameter of 630 mm) with a fire resistance up to 120 minutes. Its refractory tunnel is made of galvanised steel and its blade consists of asbestos-free panels, which are resistant to humidity.

Fire dampers are installed where air ducts penetrate fire-resistant compartment walls. Their role is to restore the fire resistance grade of the penetrated wall and to prevent smoke propagation. Fire dampers are distinguished by their degree of fire resistance, by their aeraulic properties as well as by their installation ease. Rf-Technologies' fire dampers are all CE marked. They can be equipped with various types of mechanisms depending on the specific needs linked to the project or to the local regulations.

☑ large dimensions

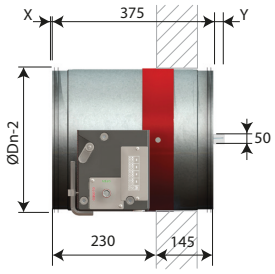
- suitable for built-in installation
- minimal distance allowed
- suitable for rigid wall, rigid floor and light wall (metal stud gypsum plasterboard wall, gypsum blocks)
- sealing with fire resistant stone wool boards allowed, also for asymmetric opening
- air tightness in accordance with EN 1751: class ATC 4 (formerly B), class ATC 3 in option (formerly C)
- tested according to EN 1366-2 up to 500 Pa
- operating mechanism outside the wall
- maintenance-free
- for indoor use
- operating temperature: max. 50°C

1. casing in galvanised steel
2. damper blade
3. operating mechanism
4. sealing cold smoke
5. blade bumper
6. intumescent strip
7. fusible link
8. rubber sealing ring
9. product identification



Range and dimensions CR2

ØDn [mm]	200	250	315	355	400	450	500	560	630



Exceeding blade: X = on the mechanism side, Y = on the wall side

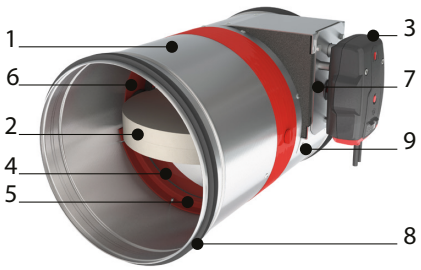
ØDn [mm]	315	355	400	450	500	560	630
x	-	-	-	-	-	15	50
y	24	44	66	91	116	146	181

Variant CR2-L500

Variant CR2-L500

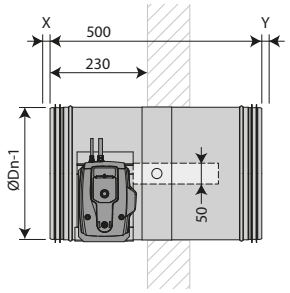
CR2 damper with a tunnel casing extension at the wall side to facilitate the connection to the duct when the supporting construction is thicker than 100 mm.

1. casing in galvanised steel
2. damper blade
3. operating mechanism
4. sealing cold smoke
5. blade bumper
6. intumescent strip
7. fusible link
8. rubber sealing ring
9. product identification



Range and dimensions CR2-L500

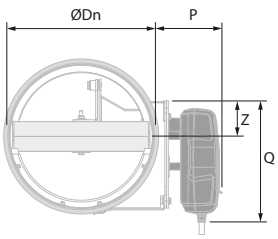
ØDn [mm]	200	250	315	355	400	450	500	560	630



Exceeding blade: X = on the mechanism side, Y = on the wall side

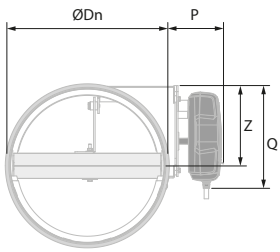
ØDn [mm]	560	630
x	15	50
y	21	56

ØDn < 315 mm



	CFTH	ONE (X)	BFL(T)
P	81	105	101
Q	182	199	110
Z	58	60	80

ØDn ≥ 315 mm

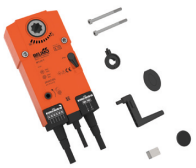
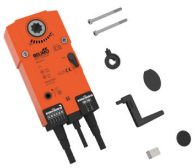


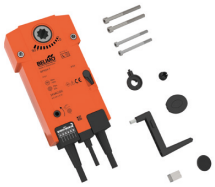
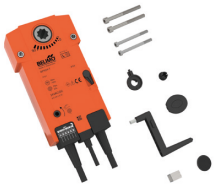
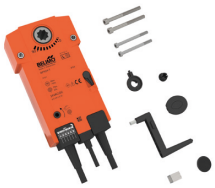
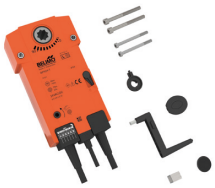
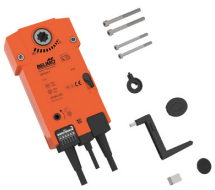
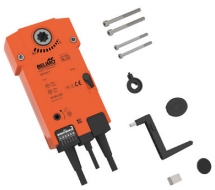
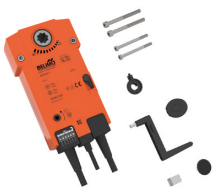
	CFTH	ONE (X)	BFL(T)	BFN(T)
P	85	105	104	104
Q	182	199	110	110
Z	156	157	179	179

Evolution - kits

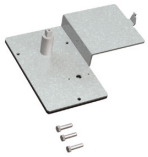
	**KIT ONE T 24 FDCB**	Spring return actuator ONE 24V (with fusible link T) + bipolar beginning- and end-of-range switch
	**KIT ONE T 24 FDCU**	Spring return actuator ONE 24V (with fusible link T) + unipolar beginning- and end-of-range switch
	**KIT ONE T 24 FDCU ST**	Spring return actuator ONE 24V (with fusible link T) + unipolar beginning- and end-of-range switch + plug (ST)
	**KIT ONE T 230 FDCB**	Spring return actuator ONE 230V (with fusible link T) + bipolar beginning- and end-of-range switch
	**KIT ONE T 230 FDCU**	Spring return actuator ONE 230V (with fusible link T) + unipolar beginning- and end-of-range switch
	**KIT ONE T 230 FDCU ST**	Spring return actuator ONE 230V (with fusible link T) + unipolar beginning- and end-of-range switch + plug (ST)
	**KIT ONE-X 24**	Spring return actuator ONE-X 24V (with fusible link T)

Evolution - kits

	**KIT ONE-X 230**	Spring return actuator ONE-X 230V (with fusible link T)
	**KIT CFTH**	Automatic unlocking mechanism CFTH with FCU and without FTH 72
	**KIT BFL24**	Spring return actuator BFL 24V
	**KIT BFL24-ST**	Spring return actuator BFL 24V with plug (ST)
	**KIT BFL230**	Spring return actuator BFL 230V
	**KIT BFLT24**	Spring return actuator BFL 24V with thermo-electric fuse (T)
	**KIT BFLT24-ST**	Spring return actuator BFL 24V with thermo-electric fuse (T) and plug (ST)
	**KIT BFLT230**	Spring return actuator BFL 230V with thermo-electric fuse (T)

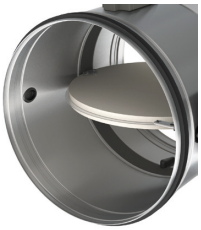
	**KIT BFLT230-ST**	Spring return actuator BFL 230V with thermo-electric fuse (T)
	**KIT BFN24**	Spring return actuator BFN 24V
	**KIT BFN24-ST**	Spring return actuator BFN 24V with plug (ST)
	**KIT BFN230**	Spring return actuator BFN 230V
	**KIT BFNT24**	Spring return actuator BFN 24V with thermo-electric fuse (T)
	**KIT BFNT24-ST**	Spring return actuator BFN 24V with thermo-electric fuse (T) and plug (ST)
	**KIT BFNT230**	Spring return actuator BFN 230V with thermo-electric fuse (T)
	**KIT BFNT230-ST**	Spring return actuator BFN 230V with thermo-electric fuse (T)

Evolution - kits

	**KIT FDC CFTH**	1 limit switch (FCU/DCU/FCB/DCB)
	**KIT SN2 BFL/BFN**	Auxiliary limit switch 'open/closed'
	**KIT FTH72**	Fusible link FTH 72°C (for CFTH)
	**KIT ZBAT 72**	Black spare part for thermo-electric fuse for BFLT/BFNT
	**FUS72 ONE**	Fusible link 72°C
	**MECT**	Testbox for mechanisms 24/48 V (magnet, motor, beginning and end of range switches)
	**KIT BPLATE ONE(-X)**	Set of base plate and mounting parts for spring return actuators ONE and ONE-X. Only applicable for fire dampers type CR2, CU2(/B), CU4, CU2-15. To be used when changing the type of mechanism if no base plate is present with the original mechanism or a different type of base plate was used. Mounting in combination with a ONE(-X) type motor kit.
	**KIT BPLATE BFL/BFN**	Set of base plate and mounting parts for spring return actuators type BFL(T) or BFN(T). Only applicable for fire dampers type CR2, CU2(/B), CU4, CU2-15. To be used when changing the type of mechanism if no base plate is present with the original mechanism or another type of base plate was used. Mounting in combination with a motor kit type BFL(T) or BFN(T).
	**KIT BPLATE BF**	Set of base plate and mounting parts for spring return actuators type BF(T). Only applicable for fire dampers type CR2, CU2(/B), CU4, CU2-15 produced before 1/7/2015.

	**EPP CR2**	Kit with 4 cover plates (gypsum plasterboard 12.5 mm) for CR2 in light wall.
	**INSPECAM**	Sturdy digital endoscope for the internal inspection of fire dampers through an optional inspection opening. The endoscope features a 1 meter long probe with a diameter of 8,2 mm equipped with a dimmable LED, a removable 4x zoom, a colour LCD monitor 3.5". Photographic capture 3MP and video capture 720P.
	**KIT UG8**	The UG8 optical smoke detector is a standalone unit for duct mounting. It samples air in the ventilation duct via the venturi-tube and analyses it in the housing situated outside of the duct. The UG8 is CE-marked product, certified according to EN54-27. It can be connected directly with a fire damper: in the event of smoke detection, the UG8 shuts off the power to the fire damper actuator and closes the damper.The UG8 is fitted with LEDs showing normal operation, smoke alarm, contamination and service alarms. The status can also be checked remotely via relay outputs.

Options - at the time of order

	**UL**	Inspection opening to visually determine the state and the position of the damper, by using an endoscope.
	**EN1751_ATC_3**	Air-tightness class ATC 3 (formerly C) (note: for CU2 H > 600 or W > 800 / for CR2 Ø > 315).

Storage and handling

Storage and handling

As this product is a safety element, it should be stored and handled with care.

Avoid:

- any kind of impact or damage
- contact with water
- deformation of the casing

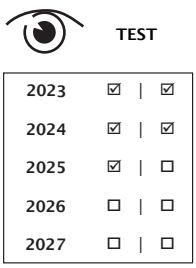
It is recommended:

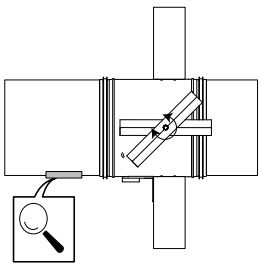
- to unload in a dry area
- not to flip or roll the product to move it
- not to use the damper as a scaffold, working table, etc.
- not to store smaller dampers inside larger ones

Installation

General points

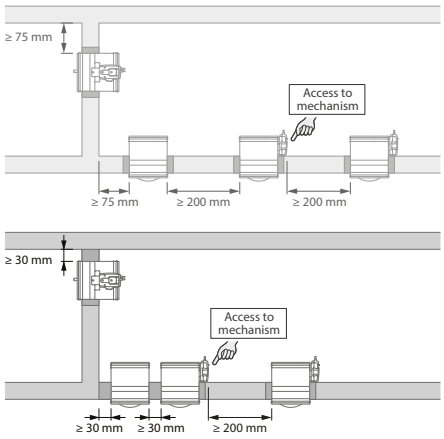
- The installation must comply with the installation manual and the classification report.
- Axis orientation: see the declaration of performance.
- Avoid obstruction of adjoining ducts.
- Product installation: always with closed damper blade.
- Verify if the blade can move freely.
- Please observe safety distances with respect to other construction elements. The operating mechanism must also remain accessible: allow for a clearance of 200 mm around the housing.
- The air tightness class will be maintained if the damper is installed according to the installation manual.
- Rf-t fire dampers are always tested in standardised constructions according to EN 1366-2. The achieved results are valid for similar supporting constructions with a fire resistance, thickness and density equal or superior to the supporting construction used during the test.
- If the wall thickness exceeds the minimum thickness specified in our installation instructions, the following conditions apply to the sealing depth:
  - For flexible walls and sandwich panel system walls, the seal must always be applied over the full depth of the wall.
  - With rigid walls, rigid floors and plaster block walls, the minimum sealing depth as indicated in our installation instructions (often equal to the minimum wall thickness) is sufficient. Apply the seal at the height of the damper blade (from the wall limit indication).
- When installing a fire damper in a flexible metal stud wall, some installation methods do not require reinforcing profiles around the wall opening from a fire protection point of view (see below). Always follow the general instructions of the manufacturer of these wall systems when building this type of wall.
- The damper must remain accessible for inspection and maintenance.
- Schedule at least 2 visual checks each year.





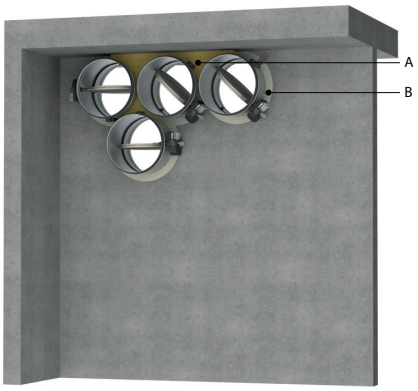
Installation at a minimal distance from another damper or from an adjacent supporting construction

1



1. Principle
According to the European test standard EN 1366-2, a fire damper must be installed at a minimum distance of 75 mm from an adjacent supporting construction (wall/floor) and 200 mm from another damper, unless the solution was tested at a shorter distance.
This range of Rf-t fire dampers has been successfully tested and can be installed in a vertical or horizontal supporting construction, at a distance below the minimum set by the standard.
For circular dampers, the minimal distance is set to 30 mm.

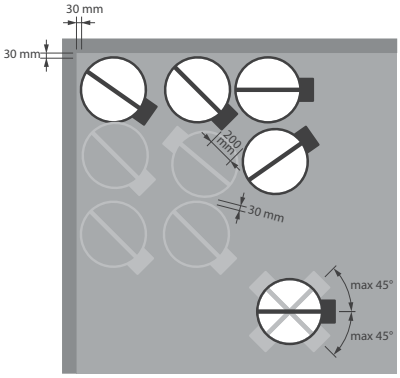
2



2. Certified solution
For the Rf-t fire dampers, the solution consists of the following elements: A: Universal sealing for minimal distance; B: Sealing compliant with existing classifications (Declaration of Performance).

A. Sealing of the opening at the side with minimal distances between damper and wall/ceiling or another fire damper: rigid stone wool panels (150 kg/m^3) are applied to a depth of min. 400 mm, of which 150 mm on the mechanism side of the wall. On the non-mechanism side of the wall, the stone wool panels must be at least flush with the wall.
The surface of this sealing is set between the axes (centres) of the dampers.
B. Sealing of the rest of the opening according to the existing classifications for the fire damper (Declaration of Performance).
This also applies to circular dampers that are mounted at a minimum distance from one another (30 to 200 mm) but at a distance greater than 75 mm from a wall/ceiling.
Detailed information for each wall/sealing combination can be found in the respective installation methods.

3



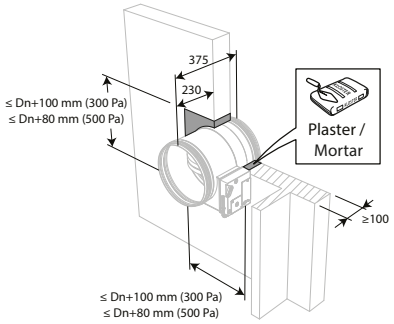
3. Restrictions
The orientation of the blade axis should be horizontal or oriented at a maximum of 45°.
A maximum of 3 circular dampers can be installed at a minimum distance from one another, both vertically and horizontally (with a maximum cluster of 4 dampers).
Note: when sealing the opening with panels of fire resistant stone wool, the maximum number of dampers also depends on the maximum “blank seal” allowed for the selected sealing material. Please refer to the manufacturer’s instructions for this information.

Installation in rigid wall

The product was tested and approved in:

Range	Wall type		Sealing	Classification
Ø 200-630 mm	Rigid wall	Aerated concrete ≥ 100 mm	Mortar / Gypsum	EI 120 (v_e i ↔ o) S - (500 Pa)
Ø 200-630 mm	Rigid wall	Aerated concrete ≥ 100 mm	Mortar / Gypsum	EI 90 (v_e i ↔ o) S - (300 Pa)

1



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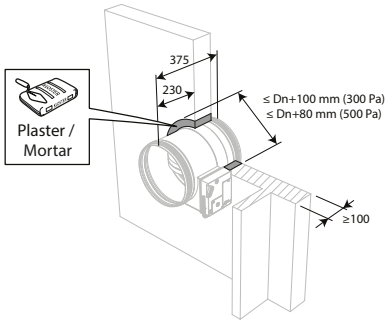
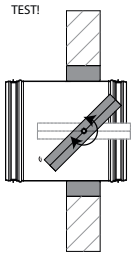


3



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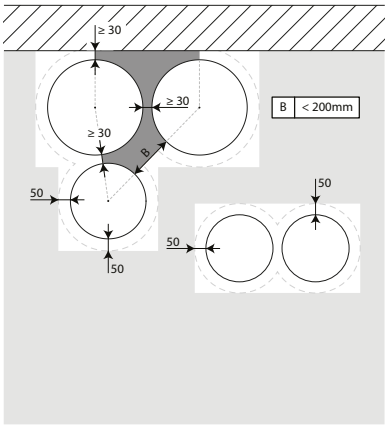
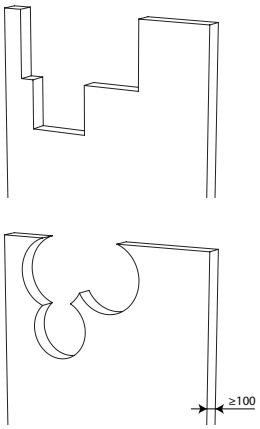


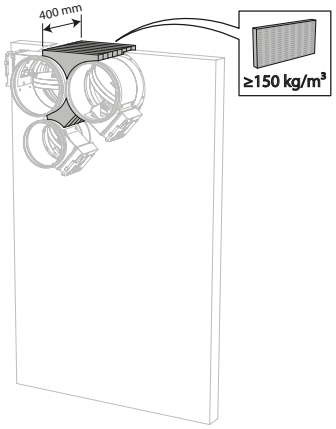
4. The dampers can be installed at a minimum distance (≥ 30 mm) from an adjacent wall or from another damper.

5



5. Make the necessary openings (≤ Dn + 100 mm) / (≤ Dn + 80 mm) in the wall.

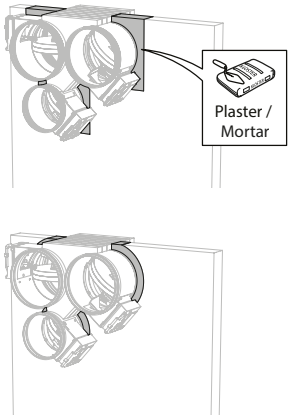
6



6. Mount the dampers in the opening.
Apply rigid stone wool panels (≥ 150 kg/m³) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.
The surface of this sealing is set between the axes (centres) of the dampers.

⚠ Caution: the opening is sealed according to the existing classification (see next point) when:
- 2 fire dampers are installed at a minimum distance from one another but at a normal distance (≥ 75 mm) from the wall or floor/ceiling.
- One single (no cluster) fire damper is located at a minimum distance (≤ 75 mm) from a wall or floor/ceiling.

7



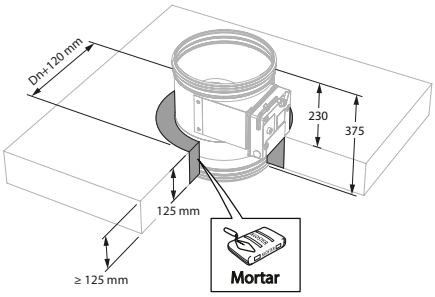
7. Seal the rest of the opening with standard mortar or gypsum.

Installation in rigid floor (125 mm)

The product was tested and approved in:

Range	Wall type		Sealing	Classification
Ø 200-630 mm	Rigid floor	Aerated concrete ≥ 125 mm	Mortar	EI 90 (h_o i ↔ o) S - (500 Pa)

1



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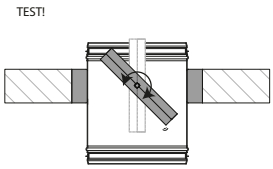
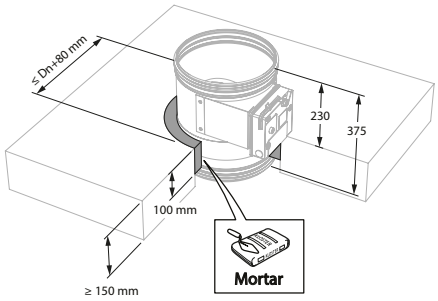


Installation in rigid floor (150 mm)

The product was tested and approved in:

Range	Wall type		Sealing	Classification
Ø 200-630 mm	Rigid floor	Aerated concrete ≥ 150 mm	Mortar	EI 120 (h_o i ↔ o) S - (500 Pa)

1



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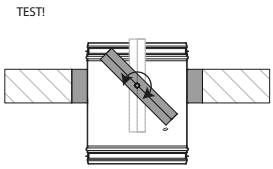
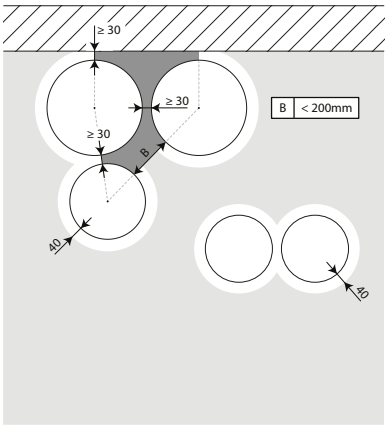
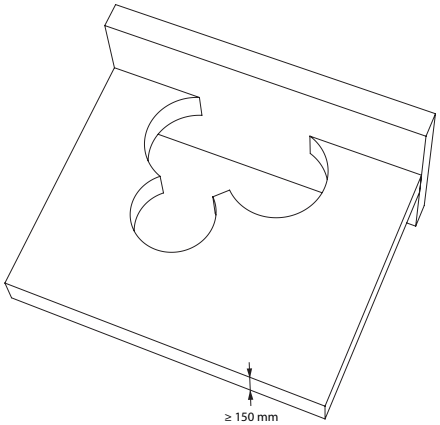


3



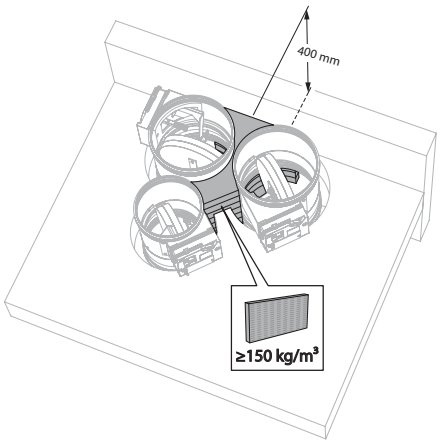
3. The dampers can be installed at a minimum distance (≥ 30 mm) from an adjacent wall or from another damper.

4



4. Make the necessary openings (≤ Dn + 80 mm) in the floor.

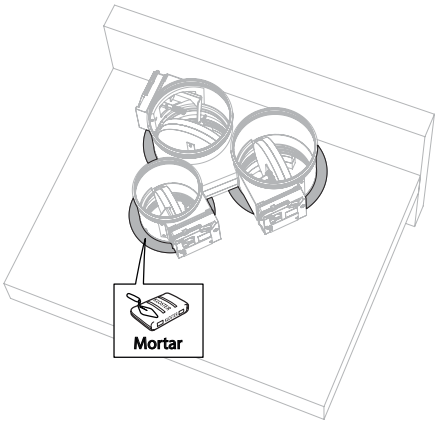
5



5. Mount the dampers in the opening.
Apply rigid stone wool panels (≥ 150 kg/m^3) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.
The surface of this sealing is set between the axes (centres) of the dampers.

⚠ Caution: the opening is sealed according to the existing classification (see next point) when:
- 2 fire dampers are installed at a minimum distance from one another but at a normal distance (≥ 75 mm) from the wall or floor/ceiling.
- One single (no cluster) fire damper is located at a minimum distance (≤ 75 mm) from a wall or floor/ceiling.

6



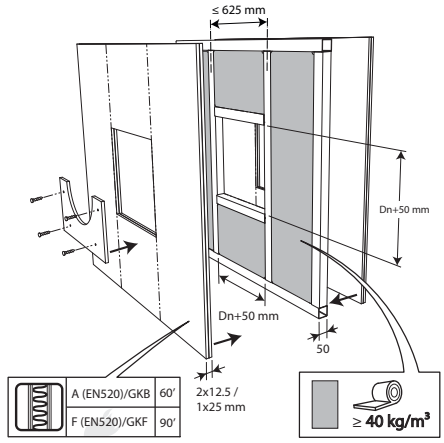
6. Seal the rest of the opening with standard mortar.

Installation in flexible wall (metal stud gypsum plasterboard wall)

The product was tested and approved in:

Range	Wall type		Sealing	Classification
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Stone wool ≥ 40 kg/m^3 + cover plates	EI 90 (v_e i ↔ o) S - (300 Pa)
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	Stone wool ≥ 40 kg/m^3 + cover plates	EI 60 (v_e i ↔ o) S - (500 Pa)

1



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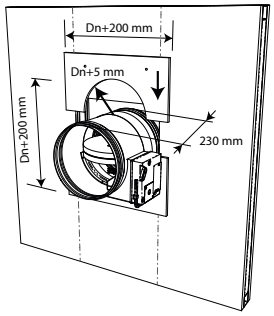

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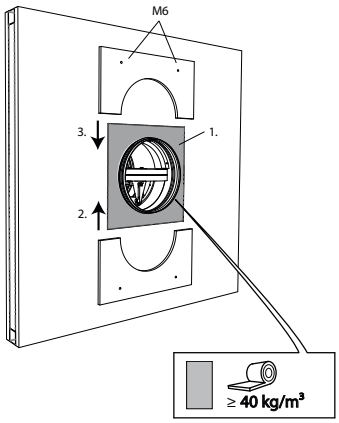

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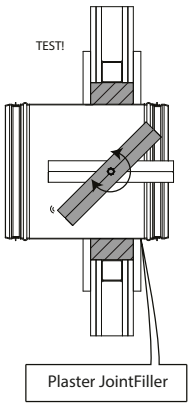

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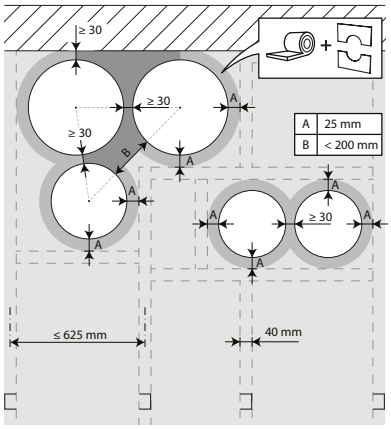
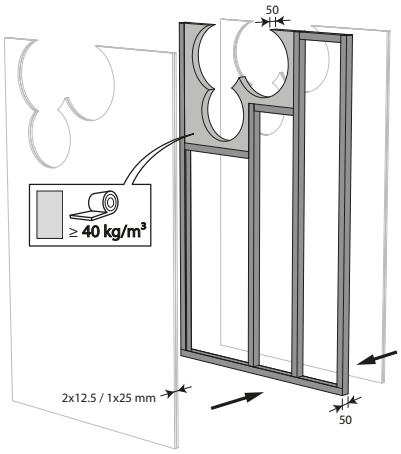


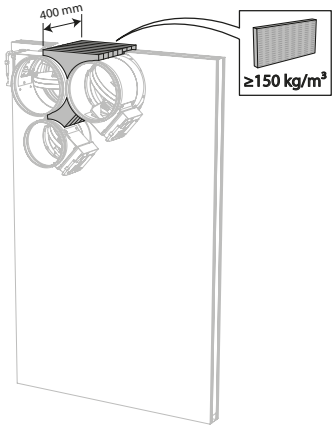
5. The dampers can be installed at a minimum distance (≥ 30 mm) from an adjacent wall or from another damper.

6



6. Build the drywall and mount horizontal and vertical studs around the opening.
In the opening around the dampers (Dn + 50 mm), the void between the gypsum boards is filled with stone wool with a minimum density of 40 kg/m^3.

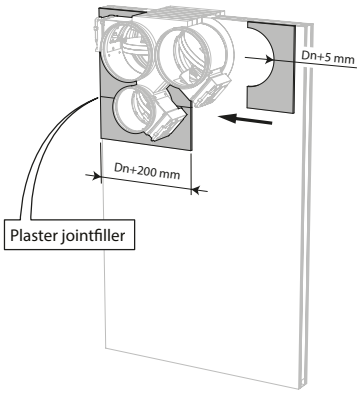
7



7. Mount the dampers in the opening.
Apply rigid stone wool panels (≥ 150 kg/m^3) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.

⚠ Caution: the opening is sealed according to the existing classification (see next point) when:
- 2 fire dampers are installed at a minimum distance from one another but at a normal distance (≥ 75 mm) from the wall or floor/ceiling.
- One single (no cluster) fire damper is located at a minimum distance (≤ 75 mm) from a wall or floor/ceiling.

8



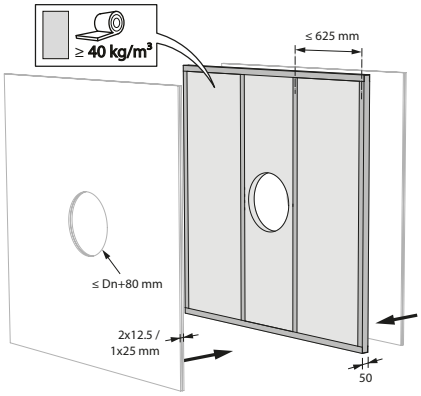
8. Apply cover plates (gypsum plasterboards) to finish the surface at both sides.
Seal off the space between the plasterboards with jointfiller.

Installation in flexible wall (metal stud gypsum plasterboard wall), sealing with gypsum

The product was tested and approved in:

Range	Wall type		Sealing	Classification
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	Gypsum	EI 60 (v_e i ↔ o) S - (500 Pa)
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Gypsum	EI 120 (v_e i ↔ o) S - (500 Pa)

1



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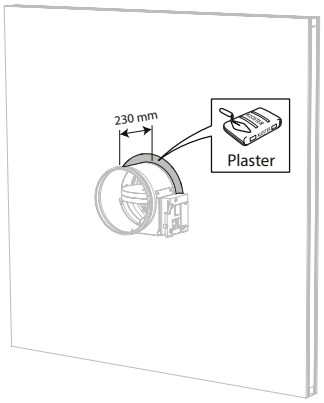
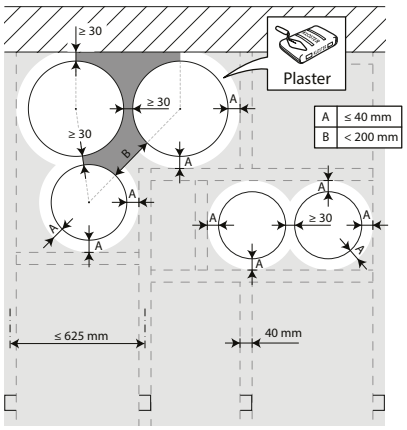
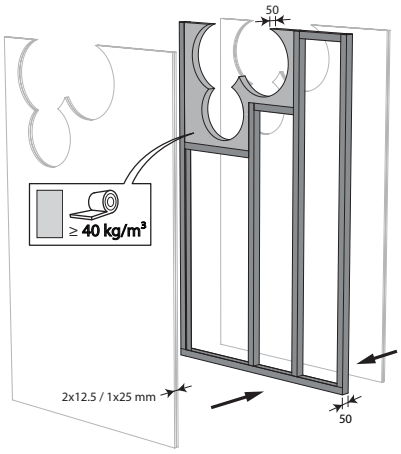


3



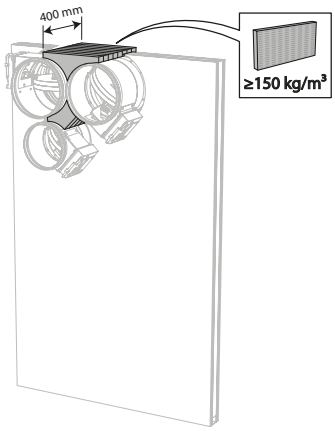
3. The dampers can be installed at a minimum distance (≥ 30 mm) from an adjacent wall or from another damper.

4



4. Build the drywall and mount horizontal and vertical studs around the opening.
When installing a single fire damper at a minimum distance from the ceiling, it is not necessary, from a fire technical point of view, to provide studs around the opening.
In the opening around the dampers, the void between the gypsum boards is partially filled (up to Dn + 80 mm) with stone wool with a minimum density of 40 kg/m^3.

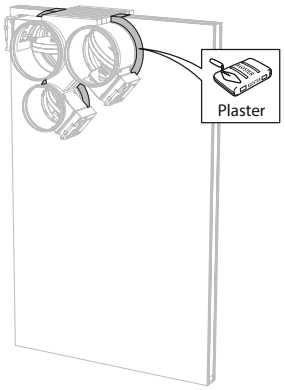
5



5. Mount the dampers in the opening.
Apply rigid stone wool panels (≥ 150 kg/m^3) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.
The surface of this sealing is set between the axes (centres) of the dampers.

⚠ Caution: the opening is sealed according to the existing classification (see next point) when:
- 2 fire dampers are installed at a minimum distance from one another but at a normal distance (≥ 75 mm) from the wall or floor/ceiling.
- One single (no cluster) fire damper is located at a minimum distance (≤ 75 mm) from a wall or floor/ceiling.

6



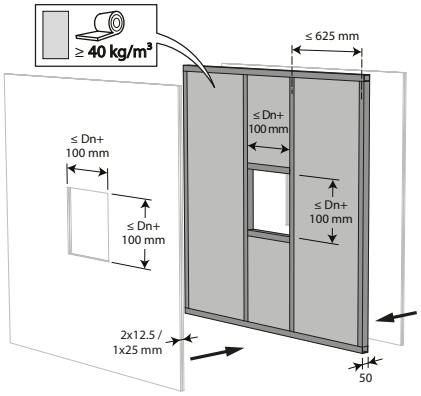
6. Seal the rest of the opening with standard gypsum across the entire wall thickness.

Installation in flexible wall (metal stud gypsum plasterboard wall), sealing with mortar

The product was tested and approved in:

Range	Wall type		Sealing	Classification
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	Mortar	EI 60 (v_e i ↔ o) S - (300 Pa)
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Mortar	EI 90 (v_e i ↔ o) S - (300 Pa)

1



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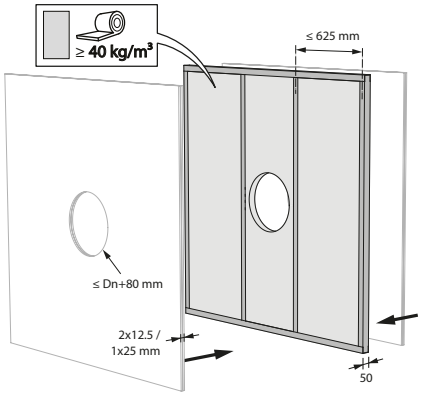

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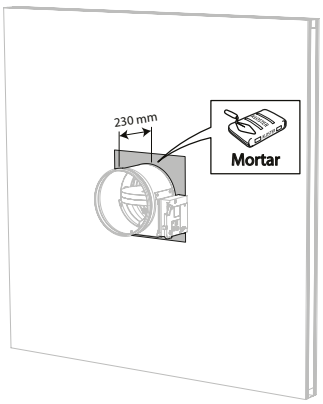

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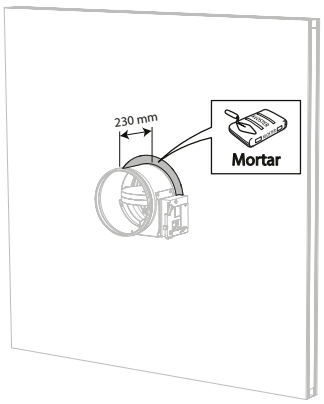

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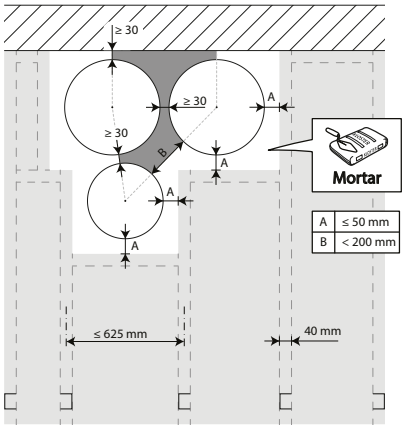

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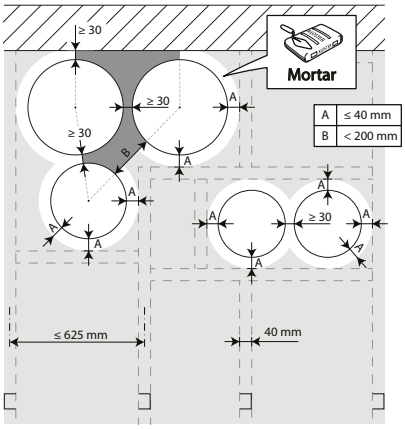
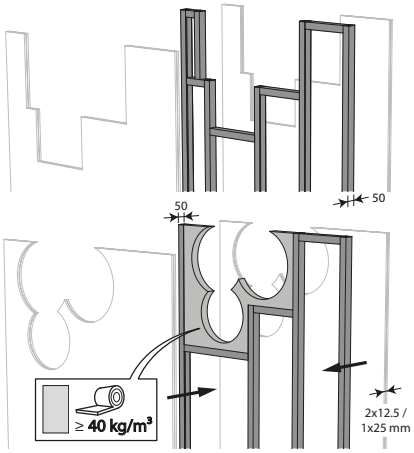


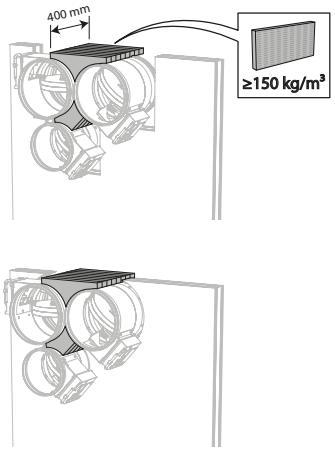
5. The dampers can be installed at a minimum distance (≥ 30 mm) from an adjacent wall or from another damper.

7



7. Build the drywall and mount horizontal and vertical studs around the opening.
When installing a single fire damper at a minimum distance from the ceiling, it is not necessary, from a fire technical point of view, to provide studs around the opening.
For a circular wall opening, the space between the plasterboard sheets is partially (up to Dn + 40 mm) filled with stone wool with a minimum density of 40kg/m^3.

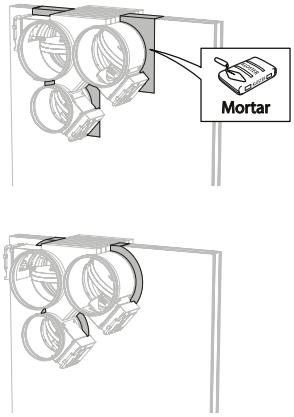
8



8. Mount the dampers in the opening.
Apply rigid stone wool panels (≥ 150 kg/m^3) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.
The surface of this sealing is set between the axes (centres) of the dampers.

⚠ Caution: the opening is sealed according to the existing classification (see next point) when:
- 2 fire dampers are installed at a minimum distance from one another but at a normal distance (≥ 75 mm) from the wall or floor/ceiling.
- One single (no cluster) fire damper is located at a minimum distance (≤ 75 mm) from a wall or floor/ceiling.

9



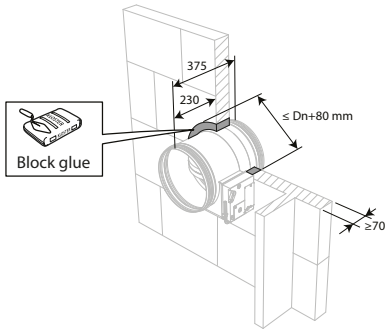
9. Seal the rest of the opening with standard mortar across the entire wall thickness.

Installation in gypsum block wall

The product was tested and approved in:

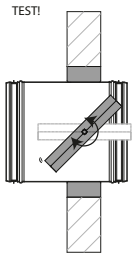
Range	Wall type		Sealing	Classification
Ø 200-630 mm	Flexible wall	Gypsum blocks ≥ 70 mm	Block glue	EI 120 (v_e i ↔ o) S - (500 Pa)

1

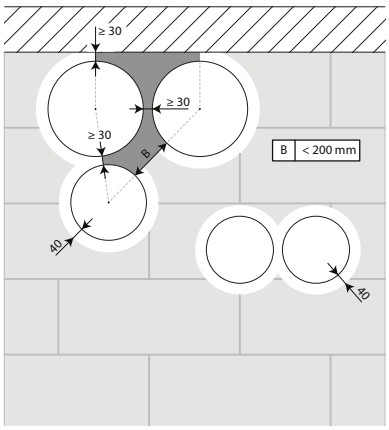


1. Seal the fire damper with a gypsum-based block glue.

2

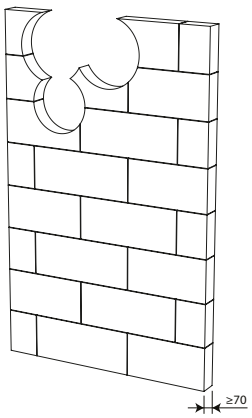


3



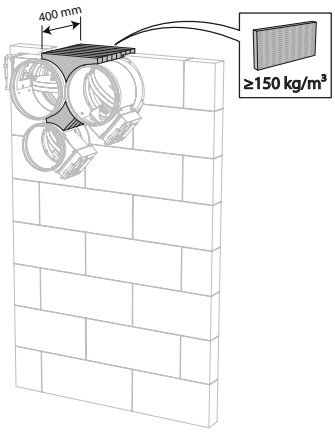
3. The dampers can be installed at a minimum distance from an adjacent wall or from another damper.

4



4. Make the necessary openings (≤ Dn + 80 mm) in the wall.

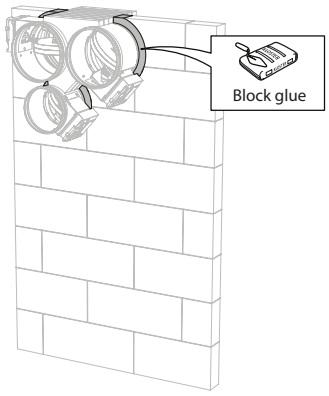
5



5. Mount the dampers in the opening.
Apply rigid stone wool panels (≥ 150 kg/m^3) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.
The surface of this sealing is set between the axes (centres) of the dampers.

⚠ Caution: the opening is sealed according to the existing classification (see next point) when:
- 2 fire dampers are installed at a minimum distance from one another but at a normal distance (≥ 75 mm) from the wall or floor/ceiling.
- One single (no cluster) fire damper is located at a minimum distance (≤ 75 mm) from a wall or floor/ceiling.

6



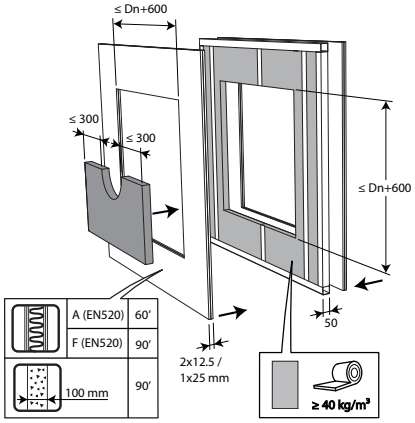
6. Seal the rest of the opening with block glue across the entire wall thickness.

Installation in flexible and rigid wall, sealing with rigid stone wool boards with coating

The product was tested and approved in:

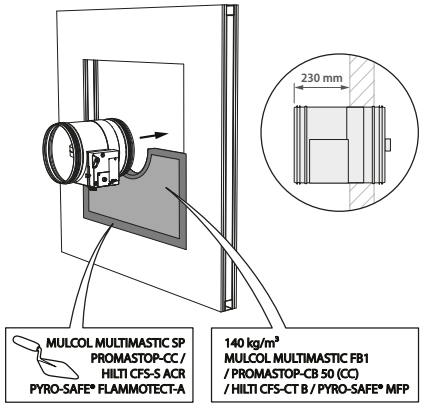
Range	Wall type		Sealing	Classification
Ø 200-630 mm	Rigid wall	Aerated concrete ≥ 100 mm	Stone wool + coating ≥ 140 kg/m³	EI 90 (v_e i ↔ o) S - (300 Pa)
Ø 200-630 mm	Rigid wall	Aerated concrete ≥ 100 mm	Stone wool Mulcol Multimastic FB1 + coating	EI 60 (v_e i ↔ o) S - (300 Pa)
Ø 200-630 mm	Rigid wall	Aerated concrete ≥ 100 mm	Stone wool Pyro-Safe® MFP + coating	EI 120 (v_e i ↔ o) S - (300 Pa)
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	Stone wool + coating ≥ 140 kg/m³	EI 60 (v_e i ↔ o) S - (300 Pa)
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Stone wool + coating ≥ 140 kg/m³	EI 90 (v_e i ↔ o) S - (300 Pa)
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Stone wool Mulcol Multimastic FB1 + coating	EI 60 (v_e i ↔ o) S - (300 Pa)
Ø 200-630 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Stone wool Pyro-Safe® MFP + coating	EI 120 (v_e i ↔ o) S - (300 Pa)

1



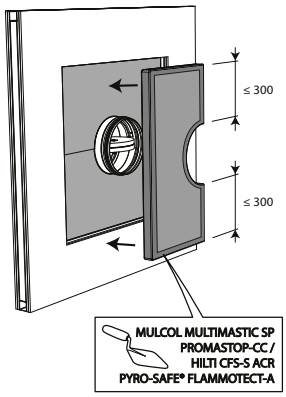
1. For flexible walls, provide horizontal and vertical studs around the opening. Exception: for fire resistance EI60S/EI90S and if sealing with Promastop or Hilti type boards, it is not necessary, from a fire technical point of view, to provide studs around the opening.

2



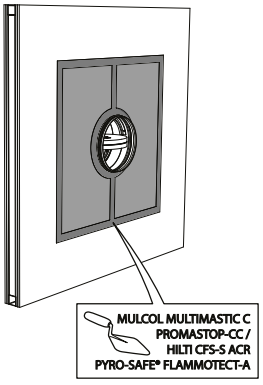
2. The opening around the damper is sealed with 2 layers of 50 mm-thick mineral wool panels with fire resistant coating on one side (type PROMASTOP-CB 50 / PROMASTOP-CB/CC 50 / HILTI CFS-CT B / Mulcol Multimastic FB1 / PYRO-SAFE® MFP).

3

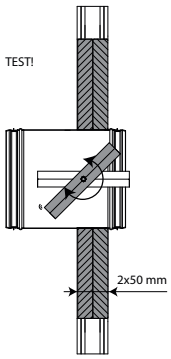


3. The joints on these 2 layers must be installed staggered and covered all around the edge with coating (type PROMASTOP-CC / HILTI CFS-S-ACR / Mulcol Multimastic SP / PYRO-SAFE® FLAMMOTECT-A).

4



5



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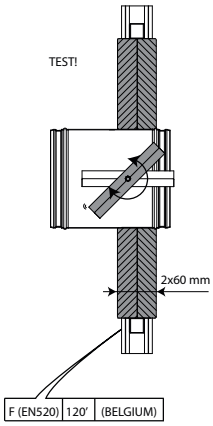
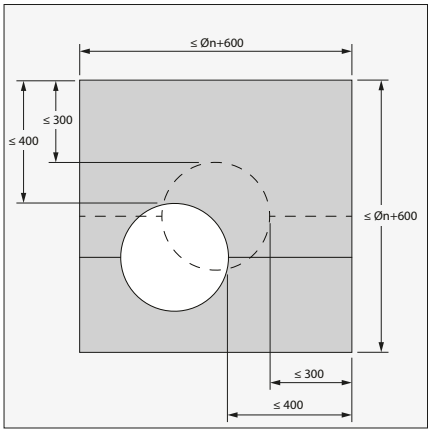
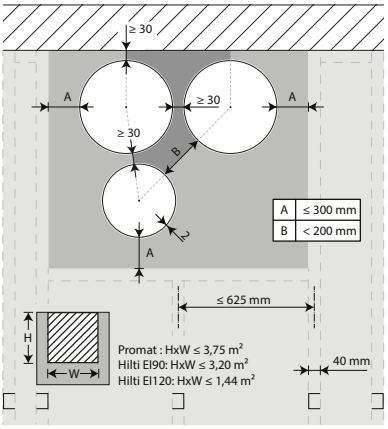


7



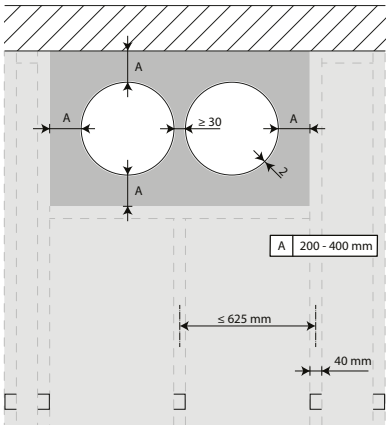
7. The damper does not need to be centered in the opening (with max dimensions fire damper + 600 mm). The maximal distance between the damper and the edge of the opening is 400 mm.

8

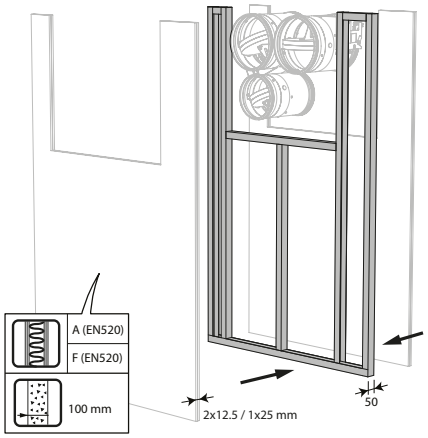


8. The dampers can be installed at a minimum distance (≥ 30 mm) from an adjacent wall or from another damper.

9

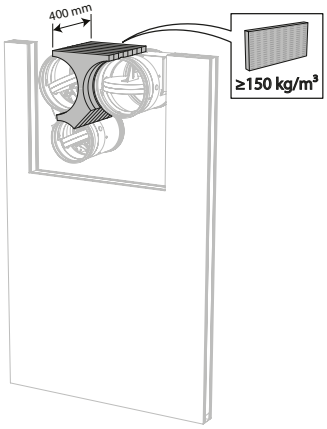


10



10. Build the drywall and mount horizontal and vertical studs around the opening.
When installing a single fire damper at a minimum distance from the ceiling, it is not necessary, from a fire technical point of view, to provide studs around the opening in case of desired fire resistance EI60S/EI90S.
Mount the dampers in the opening.

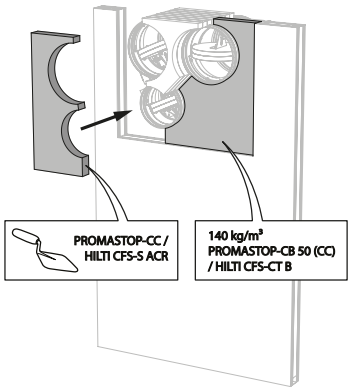
11



11. Apply rigid stone wool panels (≥ 150 kg/m³) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.

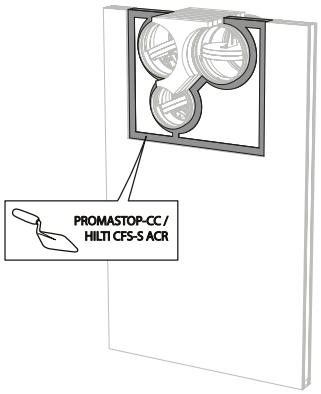
⚠ Caution: the opening is sealed according to the existing classification (see next point) when:
- 2 fire dampers are installed at a minimum distance from one another but at a normal distance (≥ 75 mm) from the wall or floor/ceiling.
- One single (no cluster) fire damper is located at a minimum distance (≤ 75 mm) from a wall or floor/ceiling.

12



12. Seal the rest of the opening with 2 layers of 50 mm-thick coated rigid mineral wool panels (see above).

13

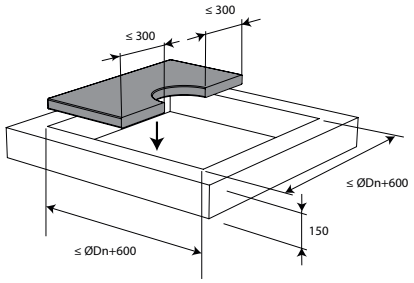


Installation in rigid floor, sealing with rigid stone wool boards with coating

The product was tested and approved in:

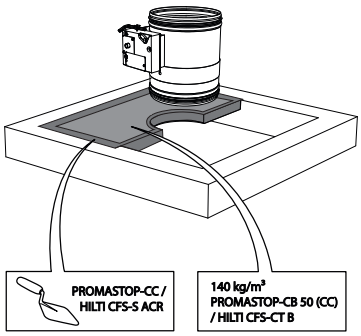
Range	Wall type		Sealing	Classification
Ø 200-630 mm	Rigid floor	Aerated concrete ≥ 150 mm	Stone wool + coating ≥ 140 kg/m^3	EI 120 (h_o i ↔ o) S - (300 Pa)

1

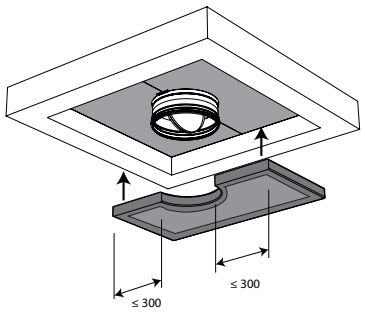


1. The opening around the damper is sealed with 2 layers of 50 mm-thick mineral wool panels with fire resistant coating on one side (type PROMASTOP-CB 50 / PROMASTOP-CB/CC 50 / HILTI CFS-CT B).

2

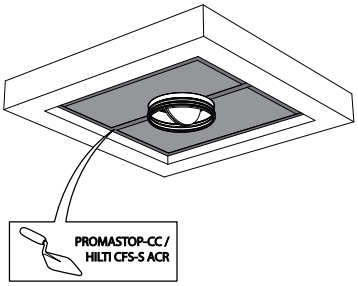


3

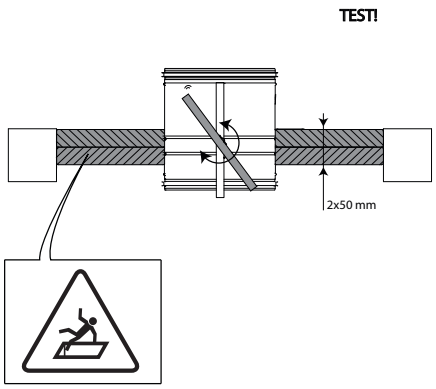


3. The joints on these 2 layers must be installed staggered and covered all around the edge with coating (type PROMASTOP-CC / HILTI CFS-S-ACR).

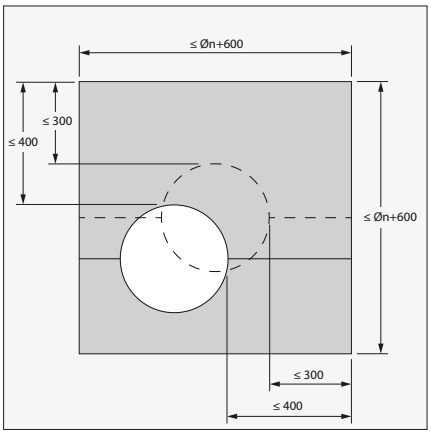
4



5

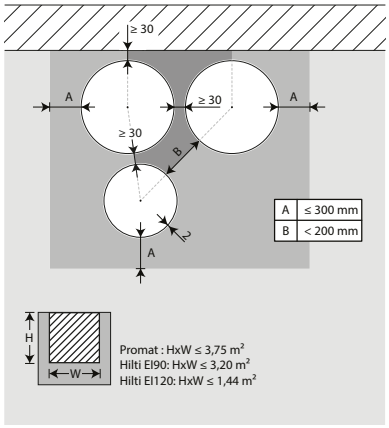


6



6. The damper does not need to be centered in the opening (with max dimensions fire damper + 600 mm). The maximal distance between the damper and the edge of the opening is 400 mm.

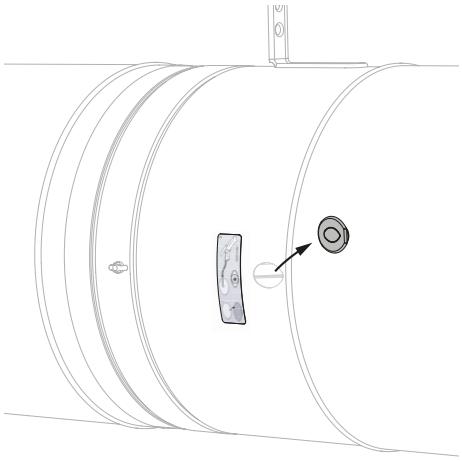
7



7. The dampers can be installed at a minimum distance (≥ 30 mm) from an adjacent wall or from another damper. For details, please refer to 'Installation in flexible and rigid wall, sealing with rigid rock wool boards with coating'

Inspection of the damper via UL option or via the fusible link opening of the ONE mechanism

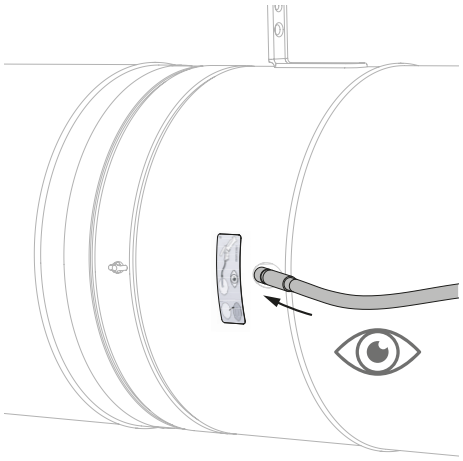
1



1. An inspection opening (only available when ordering the 'UL' option) allows the position and condition of the damper to be visually determined with an endoscope. For fire dampers equipped with the ONE mechanism, it is also possible to carry out this camera inspection through the opening of the fusible link.

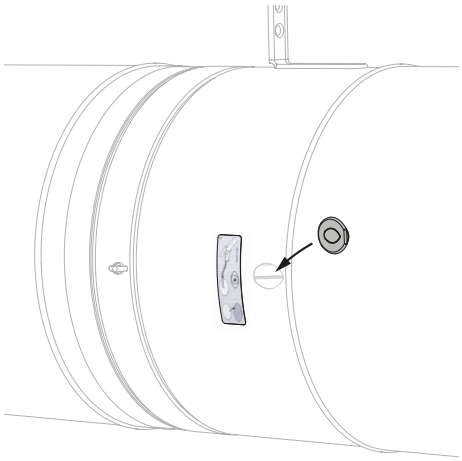
Option UL:
Remove the air-tight plug from the damper.

2



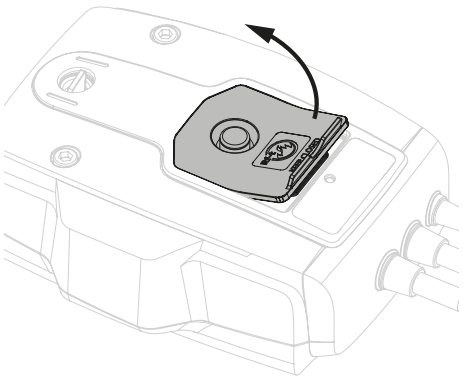
2. Insert the camera of the endoscope (for example Inspecam Rf-t) through the opening and inspect the inside of the damper.

3



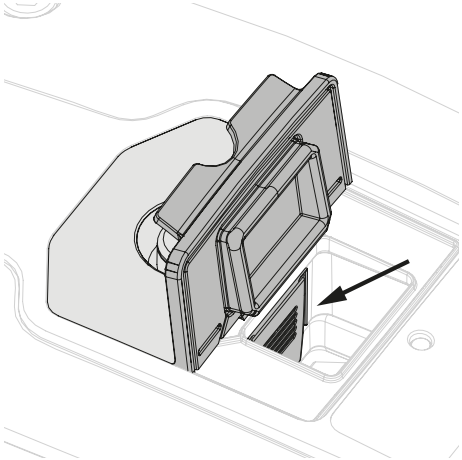
3. After inspection, replace the air-tight plug thoroughly on the damper opening. The position is crucial in order to maintain the air-tightness of the fire damper.

4



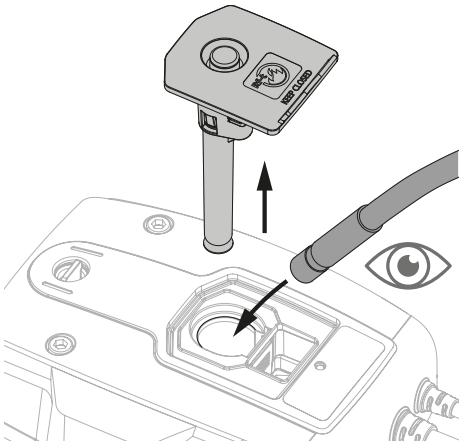
4. ONE mechanism:
Open the battery compartment.

5



5. Press the flexible button inside the battery compartment.

6



6. Pull the fusible link and the rubber cover simultaneously out of the mechanism.
Insert the camera of the endoscope (for example Inspecam Rf-t) through the opening and inspect the inside of the damper.
Slide the fusible link back into the mechanism until it clicks into place. Close the cover of the battery compartment.

Maintenance

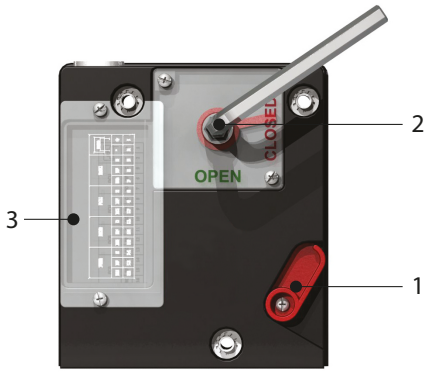
- No specific maintenance required.
- Schedule at least 2 visual checks each year.
- Remove dust and all other particles before use.
- Follow local maintenance regulations (i.e. BS9999 Annex V; NF S 61-933) and EN13306.
- Read the maintenance instructions on our website:
  https://www.rft.eu/assets//PIM/DOCUMENTS/BROCHURE%20KITS/BRO_K139_MAINTENANCE_C.pdf
- Use the damper at up to 95% humidity, non-condensing.
- The fire damper can be cleaned with a dry or slightly damp cloth. It is forbidden to use abrasive cleaners or mechanical cleaning techniques (brush).

Operation and mechanisms

CFTH Mechanism with fusible link

The unlocking mechanism CFTH automatically unlatches the damper blade when the temperature in the duct rises above 72°C. The damper can also be unlocked and reset manually.

1. unlocking button
2. resetting handle
3. cable entrance



Options - at the time of order

FCU	Limit switch 'closed'
FDCU	Unipolar limit switch 'open/closed'
FDCB	Bipolar auxiliary limit switch 'open/closed'

Unlocking

- **manual unlocking**: use the unlocking button (1).
- **automatic unlocking**: when the fusible link melts at 72° C.
- **remote unlocking**: n/a

Resetting

- **manual resetting**: use the enclosed Hex key and turn clockwise(2).
- **motorised resetting**: n/a

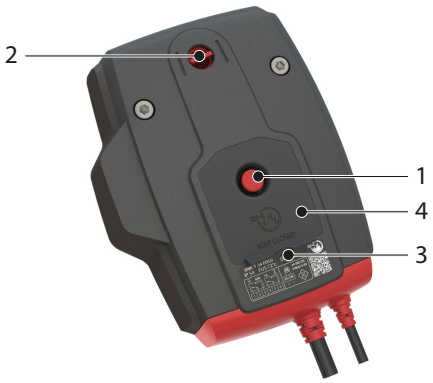
Caution:

⚠ The mechanism may never be tested on its own, without being attached to the damper. Such a test might damage the mechanism or the operator might be injured.

ONE Spring return actuator for remote control

The spring-return actuator ONE is designed to easily operate Rf-t fire dampers of all sizes, automatically or remotely. Six models are available, 24 or 230 volt, with FDCU or FDCB position switches; and optionally with plug (ST).

1. unlocking button
2. blade position indicator
3. LED
4. battery compartment to reset motor



Unlocking

- **manual unlocking**: shortly press the unlocking button (1) once.
- **automatic unlocking**: the fusible link reacts as soon as the temperature in the duct reaches 72°C.
- **remote unlocking**: by interrupting the power supply.

Resetting

- **manual resetting**: open the battery compartment (4) and press a 9V battery against the contact springs. Hold this position until the LED (3) emits a continuous light.
  Check whether the indicator (2) shows that the damper blade is in the open position.
  Remove the battery, the LED fades away.
  Close the battery compartment.
- **motorised resetting**: switch off the power supply for at least 5 sec. Power the actuator (respect the prescribed voltage) for at least 75 sec. The resetting stops automatically when the end of range is reached (damper open).

Caution:

- ⚠ If the LED (3) flickers fast (3x/sec.), the battery is discharged: use a new battery.
- ⚠ If the LED (3) flickers slowly (1x/sec), the resetting is in progress.
- ⚠ If the LED (3) is continuously on, the resetting is complete and the motor is powered.
- ⚠ If the actuator detects voltage on the power cable, a brief contact of the battery is enough to start the resetting process.
- ⚠ The power supply of this actuator cannot be individually replaced. If the cable is damaged, the whole unit must be discarded and replaced.
- ⚠ The housing of the mechanism contains a temperature sensor. When the temperature in the housing exceeds 72°C, the mechanism unlocks. The LED flashes twice per second. When the temperature drops below 72°C, the mechanism can only be reset in a motorised manner after a manual reset (with a battery).
- ⚠ The end of range switches need 1 second after operation to adopt a stable position.
- ⚠ Make sure the thermal trigger device is present in the actuator. The actuator might not function properly if this is not the case.

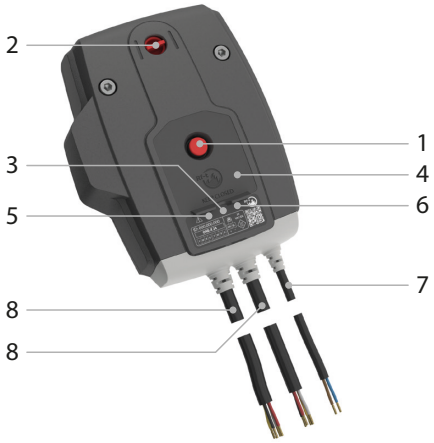
	prod. < 1/7/2015				prod. ≥ 1/7/2015			
	CR60(1s) CR120	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200	CR60(1s) CR120(1s)	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200
Kit ONE	●	●	●		●	●	●	●

Operation and mechanisms

ONE-X Spring return actuator with integrated communication module.

The ONE-X is a spring return actuator with integrated communication module designed to simply operate Rf-t fire dampers of all sizes, automatically or remotely. The ONE-X is available in two versions: 24 V and 230 V.

1. unlocking button
2. blade position indicator
3. LED red: status
4. battery compartment
5. LED blue: communication
6. LED orange: error message
7. supply
8. bus cable



Unlocking

- **manual unlocking**: shortly press the unlocking button (1) once.
- **automatic unlocking**: the fusible link reacts as soon as the temperature in the duct reaches 72°C.
- **remote unlocking**: via ZENiX controller

Resetting

- **manual resetting**: Open the battery compartment (4) and press a 9V battery against the contact springs. Hold this position until the red LED (3) emits a continuous light. Control whether the indicator (2) indicates that the damper blade is open. Remove the battery. Close the battery compartment.
- **motorised resetting**: via ZENiX controller. By applying voltage during first use.

Caution:

- ⚠ If the ONE-X detects voltage on the power cable, a brief contact of the battery is enough to start the resetting process, provided the ZENiX controller has sent the damper to open position or the ONE-X is being operated for the first time.
- ⚠ The power supply of this actuator cannot be individually replaced. If the cable is damaged, the whole unit must be discarded and replaced.
- ⚠ The housing of the mechanism contains a temperature sensor. When the temperature in the housing exceeds 72°C, the mechanism unlocks. The LED flashes twice per second. When the temperature drops below 72°C, the mechanism can only be reset in a motorised manner after a manual reset (with a battery).
- ⚠ The end of range switches need 1 second after operation to adopt a stable position.

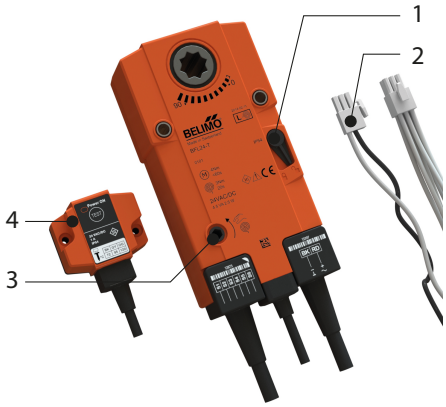
Safety regulations:

- ⚠ Do not use the ONE-X for any application other than the specified applications, in particular not in aircraft or other airborne vehicles.
- ⚠ The company that purchases and/or installs the ONE-X is fully responsible for the correct operation of the entire system. Only authorised specialists may perform the installation. All rules and regulations, including statutory regulations, must be observed during installation.
- ⚠ This device contains electrical or electronic components and must not be disposed of as household waste. All locally applicable regulations and requirements must be strictly observed.

BFL(T) Remotely controlled spring return actuator

The spring return actuator BFL(T) is especially designed to operate fire dampers remotely. The BFL(T) variant is intended for fire dampers with smaller dimensions (CR60, CR120, CR2 with ø ≤ 400 mm, CRS60 with ø ≤ 315 mm, CU2 / CU2-15 / CU4 with W+H ≤ 1200 mm or for CU-LT and CU-LT-1s). For Markage FD with H = 200 mm or H = 2200 mm (in combination with BFT motor).

1. locking button
2. plug (ST)
3. access for manual resetting
4. thermo-electric tripping device (T)



Options - at the time of order

SN2 BFL/BFN Auxiliary limit switch 'open/closed'

Unlocking

- **manual unlocking**: place the locking button on "unlock". (In case of BFLT: the damper can alternatively be unlocked by pushing the "test" button on the thermo-electric fuse)
- **automatic unlocking**: the thermo-electric fuse reacts as soon as the temperature reaches 72°C (type BFLT).
- **remote unlocking**: by interrupting the power supply.

Caution:

⚠ The thermo-electric fuse will not move the damper into its safety position (when the temperature reaches 72°C) if the motor is not powered.

Resetting

- **manual resetting**: turn the enclosed handle anti-clockwise. To block the motor, place the locking button on "lock"
- **motorised resetting**: switch off the power supply for at least 10 seconds. Supply the actuator (respect the prescribed voltage) for at least 75 seconds. The resetting stops automatically when the end of range is reached (damper open) - it takes about 60 seconds to reset the damper - or when the power supply is interrupted.

Caution:

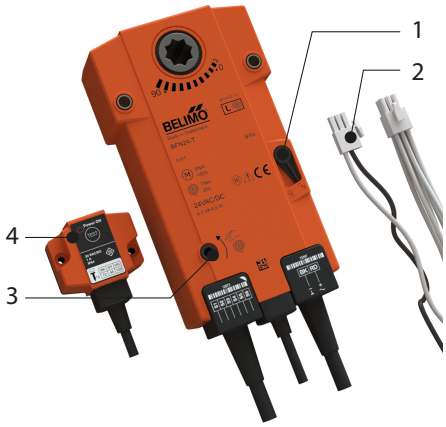
⚠ Do not use a drill or powered screwdriver.
⚠ Stop as soon as the motor is completely rearmed (end of range).

	prod. < 1/7/2015				prod. ≥ 1/7/2015			
	CR60(1s) CR120	CU-LT CU-LT-1S	CR2≤400 CU2≤1200	CR2>400 CU2>1200	CR60(1s) CR120 (1s)	CU-LT CU-LT-1S	CR2≤400 CU2≤1200	CR2>400 CU2>1200
Kit BFL					•	•	•	
Kit BFN	•	•	•					•
Kit BF				•				

BFN(T) Remotely controlled spring return actuator

The spring return actuator BFN(T) is especially designed to operate fire dampers remotely. The BFN(T) variant is intended for fire dampers with large dimensions (CRE60, CR2 with ø > 400 mm, CRS60 with ø > 315 mm or CU2, CU2-15, CU4 with W+H > 1200 mm. For Markage FD with H of 400 and 600 mm or with H = 1200 mm (2 pcs) and with H = 2400 mm (in combination with BFT motor).

1. locking button
2. plug (ST)
3. access for manual resetting
4. thermo-electric tripping device (T)



Options - at the time of order

SN2 BFL/BFN Auxiliary limit switch 'open/closed'

Unlocking

- **manual unlocking**: place the locking button on "unlock". (In case of BFNT: the damper can alternatively be unlocked by pushing the "test" button on the thermo-electric fuse)
- **automatic unlocking**: the thermo-electric fuse reacts as soon as the temperature reaches 72°C (type BFNT).
- **remote unlocking**: by interrupting the power supply.

Caution:

⚠ The thermo-electric fuse will not move the damper into its safety position (when the temperature reaches 72°C) if the motor is not powered.

Resetting

- **manual resetting**: turn the enclosed handle anti-clockwise. To block the motor, place the locking button on "lock"
- **motorised resetting**: switch off the power supply for at least 10 seconds. Supply the actuator (respect the prescribed voltage) for at least 75 seconds. The resetting stops automatically when the end of range is reached (damper open) - it takes about 60 seconds to reset the damper - or when the power supply is interrupted.

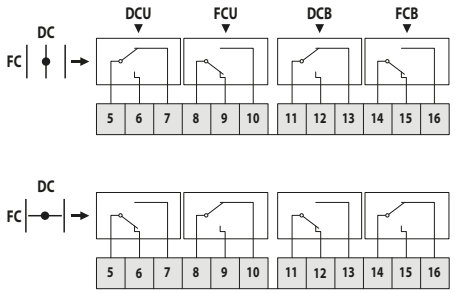
Caution:

⚠ Do not use a drill or powered screwdriver.
⚠ Stop as soon as the motor is completely rearmed (end of range).

	prod. < 1/7/2015				prod. ≥ 1/7/2015			
	CR60(1s) CR120	CU-LT CU-LT-1S	CR2≤400 CU2≤1200	CR2>400 CU2>1200	CR60(1s) CR120 (1s)	CU-LT CU-LT-1S	CR2≤400 CU2≤1200	CR2>400 CU2>1200
Kit BFL					•	•	•	
Kit BFN	•	•	•					•
Kit BF				•				

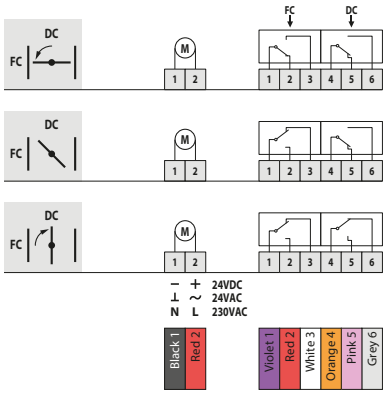
Electrical connection

CFTH



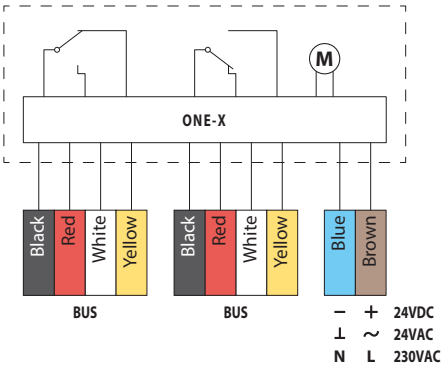
DC : Switch open position fire damper
FC : Switch closed position fire damper

ONE

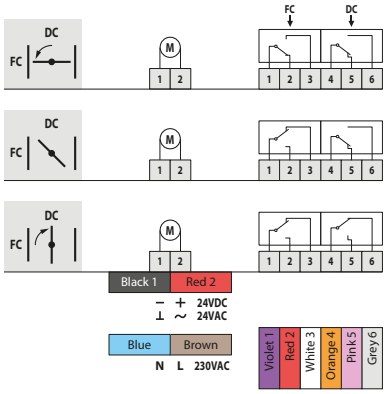


DC : Switch open position fire damper
FC : Switch closed position fire damper

ONE-X

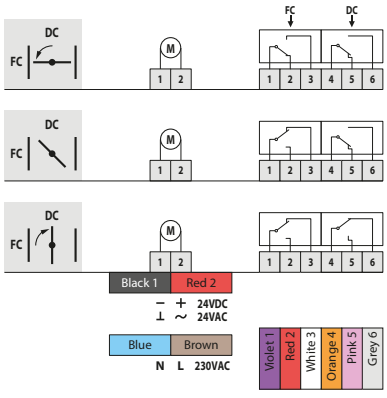


BFL(T)



DC : Switch open position fire damper
FC : Switch closed position fire damper

BFN(T)



DC : Switch open position fire damper
FC : Switch closed position fire damper

Electrical connection

MEC	Nominal voltage motor	Nominal voltage magnet	Power consumption (stand-by)	Power consumption (operating)	Standard switches	Resetting time motor	Running time spring
CFTH	N/A	N/A	N/A	N/A	1mA...6A, DC 5V...AC 250V	N/A	1 s
ONE T 24 FDCU	24 V AC/DC (-10/+20%)	N/A	0,28 W	4,2 W	1mA…1A 60VDC or 1mA…100mA 230VAC	< 75 s (cabled) / <85 s (battery)	< 30 s
ONE T 24 FDCU ST	24 V AC/DC (-10/+20%)	N/A	0,28 W	4,2 W	1mA…1A 60VDC or 1mA…100mA 230VAC	< 75 s (cabled) / <85 s (battery)	< 30 s
ONE T 230 FDCU	230 V AC (-15/+15%)	N/A	0,57 W	4,2 W	1mA…1A 60VDC or 1mA…100mA 230VAC	< 75 s (cabled) / <85 s (battery)	< 30 s
ONE T 230 FDCU ST	230 V AC (-15/+15%)	N/A	0,57 W	4,2 W	1mA…1A 60VDC or 1mA…100mA 230VAC	< 75 s (cabled) / <85 s (battery)	< 30 s
ONE T 24 FDCB	24 V AC/DC (-10/+20%)	N/A	0,28 W	4,2 W	1mA…1A 60VDC	< 75 s (cabled) / <85 s (battery)	< 30 s
ONE T 230 FDCB	230 V AC (-15/+15%)	N/A	0,57 W	4,2 W	1mA…1A 60VDC	< 75 s (cabled) / <85 s (battery)	< 30 s
ONE-X 24	24 V AC/DC (-10/+20%)	N/A	0,28 W	4,2 W		< 75 s (cabled) / <85 s (battery)	< 30 s
ONE-X 230	230 V AC (-15/+15%)	N/A	0,57 W	4,2 W		< 75 s (cabled) / <85 s (battery)	< 30 s
BFL24	24 V AC/DC	N/A	0,7 W	2,5 W	1mA...3A, AC 250V	< 60 s	20 s
BFL24-ST	24 V AC/DC	N/A	0,7 W	2,5 W	1mA...3A, AC 250V	< 60 s	20 s
BFL230	230 V AC	N/A	0,9 W	3 W	1mA...3A, AC 250V	< 60 s	20 s
BFLT24	24 V AC/DC	N/A	0,8 W	2,5 W	1mA...3A, AC 250V	< 60 s	20 s
BFLT24-ST	24 V AC/DC	N/A	0,8 W	2,5 W	1mA...3A, AC 250V	< 60 s	20 s
BFLT230	230 V AC	N/A	1,1 W	3,5 W	1mA...3A, AC 250V	< 60 s	20 s
BFLT230-ST	230 V AC	N/A	1,1 W	3,5 W	1mA...3A, AC 250V	< 60 s	20 s
BFN24	24 V AC/DC	N/A	1,4 W	4 W	1mA...3A, AC 250V	< 60 s	20 s
BFN24-ST	24 V AC/DC	N/A	1,4 W	4 W	1mA...3A, AC 250V	< 60 s	20 s
BFN230	230 V AC	N/A	2 W	4,5 W	1mA...3A, AC 250V	< 60 s	20 s
BFNT24	24 V AC/DC	N/A	1,4 W	4 W	1mA...3A, AC 250V	< 60 s	20 s
BFNT24-ST	24 V AC/DC	N/A	1,4 W	4 W	1mA...3A, AC 250V	< 60 s	20 s
BFNT230	230 V AC	N/A	2,1 W	5 W	1mA...3A, AC 250V	< 60 s	20 s
BFNT230-ST	230 V AC	N/A	2,1 W	5 W	1mA...3A, AC 250V	< 60 s	20 s

MEC	Noise level motor	Noise level spring	Cable supply / control	Cable auxiliary switch	Protection class
CFTH	N/A	N/A			IP 42
ONE T 24 FDCU	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
ONE T 24 FDCU ST	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
ONE T 230 FDCU	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
ONE T 230 FDCU ST	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
ONE T 24 FDCB	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	(2x) 1 m, 6 x 0,75 mm² (halogen-free)	IP 54
ONE T 230 FDCB	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	(2x) 1 m, 6 x 0,75 mm² (halogen-free)	IP 54
ONE-X 24	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	bus cable: (2x) 1 m, 4 x 0,75 mm² (halogen-free)	IP 54
ONE-X 230	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	bus cable: (2x) 1 m, 4 x 0,75 mm² (halogen-free)	IP 54
BFL24	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFL24-ST	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFL230	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFLT24	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFLT24-ST	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFLT230	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFLT230-ST	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFN24	≤ 55 dB (A)	ca. 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFN24-ST	≤ 55 dB (A)	ca. 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFN230	≤ 55 dB (A)	ca. 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFNT24	≤ 55 dB (A)	ca. 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFNT24-ST	≤ 55 dB (A)	ca. 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFNT230	≤ 55 dB (A)	ca. 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BFNT230-ST	≤ 55 dB (A)	ca. 67 dB (A)	1 m, 2 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54

Weights

CR2 + CFTH

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	6,9	8,0	11,0	13,0	16,0	18,0	21,0	24,0	28,0	

CR2 + ONE

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	7,7	8,8	11,8	13,8	16,8	18,8	21,8	24,8	28,8	

CR2 + BFL

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	7,0	8,1	11,1	13,1	16,1	-	-	-	-	

CR2 + BFLT

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	7,1	8,2	11,2	13,2	16,2	-	-	-	-	

CR2 + BFN

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	-	-	-	-	-	18,4	21,4	24,4	28,4	

CR2 + BFNT

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	-	-	-	-	-	18,5	21,5	24,5	28,5	

CR2-L500 + CFTH

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	8,1	9,5	13,0	15,3	18,6	21,5	25,0	28,5	33,1	

CR2-L500 + ONE

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	8,9	10,3	13,8	16,1	19,4	22,3	25,8	29,3	33,9	

CR2-L500 + BFL

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	8,2	9,6	13,0	15,3	18,7	-	-	-	-	

CR2-L500 + BFLT

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	8,3	9,7	13,1	15,4	18,8	-	-	-	-	

CR2-L500 + BFN

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	-	-	-	-	-	21,9	25,3	28,8	33,5	

Selection data

CR2-L500 + BFNT

ØDn [mm]	200	250	315	355	400	450	500	560	630	
kg	-	-	-	-	-	22,0	25,4	28,9	33,6	

Selection data

$$\Delta p\ [Pa] = \zeta * v^2 * 0{,}6$$

ØDn [mm]	200	250	315	355	400	450	500	560	630	
ζ [-]	7,42	3,96	2,17	1,62	1,21	0,92	0,72	0,56	0,43	

Example

Data
Dn = 315 mm, v = 4 m/s

Calculation
$\Delta p = 2.17 * (4\ m/s)^2 * 0.6 = 20.83\ Pa$

CR2 - A-weighted sound power level Lwa in the room

ØDn [mm]	200	250	315	355	400	450	500	560	630		
Sn [m²]	0,0129	0,0253	0,0472	0,0640	0,0859	0,1139	0,1459	0,1895	0,2474		
Sn [%]	41,54	51,89	60,94	64,99	68,67	71,94	74,60	77,19	79,62		
Q [m³/h]	363	674	1.250	1.710	2.332	3.159	4.137	5.523	7.446		45 dB
Δp [Pa]	45,88	34,57	25,84	22,39	19,29	16,80	14,80	13,03	11,36		
Q [m³/h]	301	560	1.038	1.420	1.936	2.622	3.434	4.585	6.182		40 dB
Δp [Pa]	31,62	23,82	17,81	15,43	13,29	11,58	10,20	8,98	7,83		
Q [m³/h]	250	465	861	1.179	1.607	2.177	2.851	3.806	5.132		35 dB
Δp [Pa]	21,79	16,42	12,27	10,63	9,16	7,98	7,03	6,19	5,39		
Q [m³/h]	208	386	715	978	1.334	1.807	2.367	3.160	4.260		30 dB
Δp [Pa]	15,02	11,31	8,46	7,33	6,31	5,50	4,84	4,27	3,72		
Q [m³/h]	172	320	594	812	1.107	1.500	1.965	2.623	3.536		25 dB
Δp [Pa]	10,35	7,80	5,83	5,05	4,35	3,79	3,34	2,94	2,56		

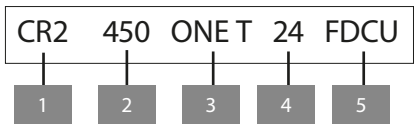
Every air flow lower than the above mentioned maximum value, will meet the listed A-weighted sound power level for the respective dimension. More information on sound power can be found in the product information on our website (documents).

CR2-L500 - A-weighted sound power level Lwa in the room

ØDn [mm]	200	250	315	355	400	450	500	560	630		
Sn [m²]	0,0129	0,0253	0,0472	0,0640	0,0859	0,1139	0,1459	0,1895	0,2474		
Sn [%]	41,54	51,89	60,94	64,99	68,67	71,94	74,60	77,19	79,62		
Q [m³/h]	363	674	1.250	1.710	2.332	3.159	4.137	5.523	7.446		45 dB
Δp [Pa]	45,88	34,57	25,84	22,39	19,29	16,80	14,80	13,03	11,36		
Q [m³/h]	301	560	1.038	1.420	1.936	2.622	3.434	4.585	6.182		40 dB
Δp [Pa]	31,62	23,82	17,81	15,43	13,29	11,58	10,20	8,98	7,83		
Q [m³/h]	250	465	861	1.179	1.607	2.177	2.851	3.806	5.132		35 dB
Δp [Pa]	21,79	16,42	12,27	10,63	9,16	7,98	7,03	6,19	5,39		
Q [m³/h]	208	386	715	978	1.334	1.807	2.367	3.160	4.260		30 dB
Δp [Pa]	15,02	11,31	8,46	7,33	6,31	5,50	4,84	4,27	3,72		
Q [m³/h]	172	320	594	812	1.107	1.500	1.965	2.623	3.536		25 dB
Δp [Pa]	10,35	7,80	5,83	5,05	4,35	3,79	3,34	2,94	2,56		

Every air flow lower than the above mentioned maximum value, will meet the listed A-weighted sound power level for the respective dimension. More information on sound power can be found in the product information on our website (documents).

Sample order



1. product
2. diameter
3. mechanism type
4. option: type voltage
5. option: uni/bipolar switches

Approvals and certificates

Approvals 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.

CE 0749

BCCA-0749-CPR-BC1-606-0464-15650.01-2517

NF 537
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The NF-label guarantees: conformity with the standard NF S 61-937 Parts 1 and 5: "Systèmes de Sécurité Incendie Dispositifs Actionnés de Sécurité"; conformity with the national decree of March 22, 2004, changed on 14 March 2011 for the classification of fire resistance; the values of the characteristics mentioned in this document. Organisme Certificateur: AFNOR Certification, 11 Rue Francis de Pressensé, F93571 La Plaine Saint-Denis Cedex; Website: http://www.afnor.org and http://www.marque-nf.com; Phone: +33 (0)1.41.62.80.00, Fax: +33 (0)1.49.17.90.00, Email: certification@afnor.org