

KAMOUFLAGE P

Aesthetic smoke evacuation shutter for ceiling mounting.



CE
1812









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Explanation of the abbreviations and pictograms

<p>Wn = nominal width Hn = nominal height Sn = free air passage E = integrity I = thermal insulation S = smoke leakage 60/120 = fire resistance time Pa = pascal o -> i = meets the criteria from the outside (o) to the inside (i) i <-> o = fire side not important AA = automatic activation multi = multi compartment 1500 = pressure level 3 (1500Pa) ved = vertical duct</p>	<p>hod = horizontal duct vew = vertical wall penetration V = volt W = watt V AC = Volt alternating current V DC = Volt direct current E.TELE = power supply magnet E.ALIM = power supply motor Auto = automatic Tele = remote controlled Pnom = nominal capacity Pmax = maximum capacity DAS MOD = modular product OP = option (delivered with the product)</p>	<p>KIT = kit (delivered separately for repair or upgrade) PG = connection flange to the duct 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 ζ [-] = pressure loss coefficient Q = air flow ΔP = static pressure drop v = air speed in the duct Lwa = A-weighted sound power level ME = motorised H = habitat</p>
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	aesthetic solution		optimal acoustic performance
	optimal free air passage and minimal pressure loss		superior air tightness (tested at 1500 Pa)
	intermediate dimensions on request		winner of the French "Janus de l'Industrie" award

DECLARATION OF PERFORMANCE

CE_DoP_Rf-t_V14_EN G-03/2019

1. Unique identification code of the product-type:	KAMOUFLAGE P
2. Intended use/s:	Smoke evacuation shutter to be used in smoke control systems, in multi-compartment applications at fire temperatures, or in single-compartment applications.
3. Manufacturer:	Rf-Technologies NV, Lange Ambachtstraat 40, B-9860 Oosterzele
4. System/s of AVCP:	System 1
5. Harmonised standard / European Assessment Document; notified body / European Technical Assessment, Technical Assessment Body, notified body, certificate of constancy of performance:	EN 12101-8:2011, Efectis with identification number 1812; Efectis_1812_CPR_1043
6. Declared performance according to EN 12101-8:2011	(fire resistance according to EN 1366-10, classification according to EN 13501-4)

Essential characteristics		Wall	Installation	Performance Classification
Range 350x385 mm ≤ Kamouflage P TV ≤ 700x775 mm; 550x1075 mm	Product Kamouflage 60 P	Shaft Promatect L500 ≥ 30 mm Shaft Geoflam ≥ 30 mm Shaft Geotec ≥ 30 mm Shaft Techriver ≥ 35 mm Shaft Glasroc F V500 ≥ 35 mm Shaft Exhamat ≥ 25 mm Shaft Desenfire HD ≥ 25 mm HD	1 1 1 1 1 1 1	EI 60 (h _{rel} , i ↔ o) S 1500 AA multi
	Kamouflage 120 P	Shaft Promatect L500 ≥ 40 mm Shaft Geoflam ≥ 35 mm Shaft Techriver ≥ 45 mm Shaft Exhamat ≥ 30 mm Shaft Desenfire ≥ 25 mm THD	1 1 1 1 1 1	EI 90 (h _{rel} , i ↔ o) S 1500 AA multi
		Shaft Promatect L500 ≥ 50 mm Shaft Geoflam ≥ 45 mm Shaft Geoflam Light ≥ 35 mm Shaft Geotec ≥ 45 mm Shaft Techriver ≥ 50 mm Shaft Glasroc F V500 ≥ 50 mm Shaft Exhamat ≥ 35 mm Shaft Desenfire HD ≥ 35 mm	1 1 1 1 1 1 1 1	EI 120 (h _{rel} , i ↔ o) S 1500 AA multi

Harmonised standard
EN 12101-8:2011

1 Type of installation: shaft-mounted 0/90°/180°/270°

Nominal activation conditions/sensitivity:	Pass - automatic activation
Response delay / (response time): closure time	Pass - automatic activation
Operational reliability: cycling	300 cycles (no load)
Durability of response delay:	Pass
Durability of operational reliability:	Pass
Approved accessories	Acrylic paint on the leaf and synthetic paint on the frame on the side not exposed to fire; ATOUT RAL 9010; KAP mounting frame
High operational temperature (HOT 400/300):	NPD (no performance determined)

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:

Mathieu Steenland, Technical Manager



Oosterzele, 03/2019



Product presentation KAMOUFLAGE P

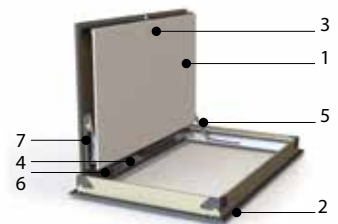
Aesthetic smoke evacuation shutter suitable for ceiling mounting into the bottom of smoke shafts.

Smoke evacuation shutters and dampers are suitable for use in ventilating protected lobbies, venting to shafts either naturally or mechanically. They open to evacuate smoke in emergency situations whilst maintaining fire resistant integrity in standby position.

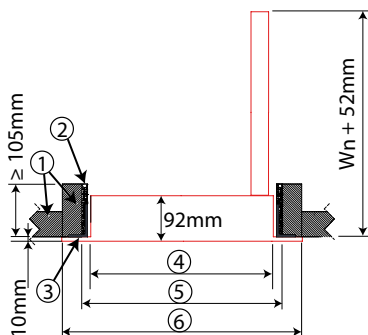
- ✓ aesthetic solution
 - ✓ modern look: either select the ready-to-install product with white laquered finish, or cover with paint or wallpaper
 - ✓ superior air tightness (tested at 1500 Pa)
 - ✓ thermal and acoustic insulation
 - ✓ optimal free air passage and minimal pressure loss
 - ✓ frame available with primer
- tested according to EN 1366-10
 - compliant with EN 12101-8
 - approved for installation in calcium-silicate, 'Staff', Tecniver and Glasroc shafts
 - maintenance-free
 - for indoor use
 - winner of the French "Janus de l'Industrie" award
 - intermediate dimensions on request



1. 1 shutter (1V)
2. frame in anodised aluminium / with primer (PRIM) / white laquered (ATOUT RAL9010)
3. lock + key
4. connection compartement
5. blocking mechanism + automatic locking at 90°
6. product identification
7. gas spring (ceiling version)






Range and dimensions KAMOUFLAGE P




1. Refractory material
2. Sealing mounting frame
3. KAP mounting frame (mandatory option)
4. Nominal dimensions shutter $W_n \times H_n$
5. Built-in dimensions with KAP mounting frame $(W_n+20) \times (H_n+20)$ mm
6. Overall (outside) dimensions of the shutter $(W_n+54) \times (H_n+54)$ mm

	\geq	\leq
$(W_n \times H_n)$ mm	350x385	600x1045

Evolution - kits

	KITS VD24-VA	Natural magnet 24 V DC
	KITS VD48-VA	Natural magnet 48 V DC
	KITS VM24-VA	Electromagnet 24 V DC (not applicable for ME model)
	KITS VM48-VA	Electromagnet 48 V DC (not applicable for ME model)
	KITS FDC-VA	Limit switches 'open/closed'
	KAP	Mounting frame (delivered separately)

Options - at the time of order

	PRIM	Frame with primer (to facilitate the application of a layer of synthetic paint on the outside of the frame). The shutter is covered with a raw gypsum-cardboard-plate.
	ATOUT 1V P RAL9010	Frame painted white and shutter covered with white metallic sheet (RAL 9010 mat)

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

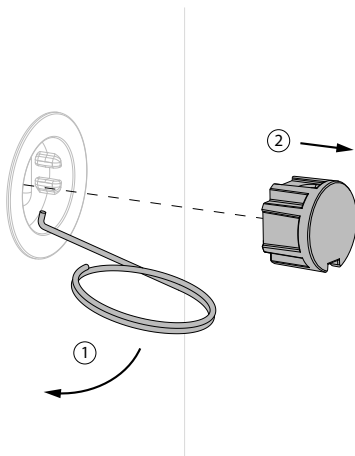
Installation

General points

- The installation must comply with the installation manual delivered with the product and the classification report.
- The installation of the shaft must comply with the classification report delivered by the shaft manufacturer.
- Axis orientation: see the declaration of performance.
- Avoid the obstruction of adjoining shafts.
- Verify if the blade can move freely.
- Rf-t smoke dampers may be applied to ducts that have been tested according to EN 1366-8 and EN 1366-9 as appropriate, constructed from similar materials with a fire resistance, thickness and density equal or superior to these of the tested materials.
 - ⚠ Caution: when fitting, the product should be handled with care and remain protected from any sealing products.
 - ⚠ Caution: before putting the installation into operation, clean off all the dust and dirt.
 - ⚠ Caution: bear in mind the blade's clearance inside the smoke evacuation duct.

Operation: manual opening

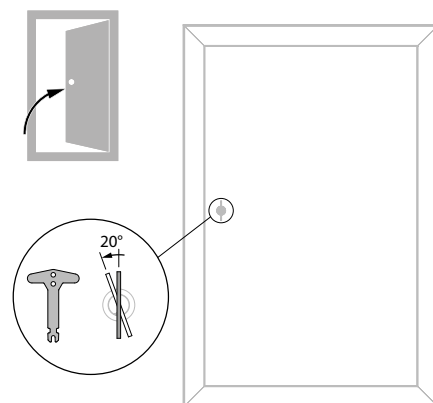
1



1. Unlocking 1V

Remove the finishing cap from the shutter. To do this, use the hook with key ring that is delivered with the product. You may attach this tool to the key through its handy key ring.

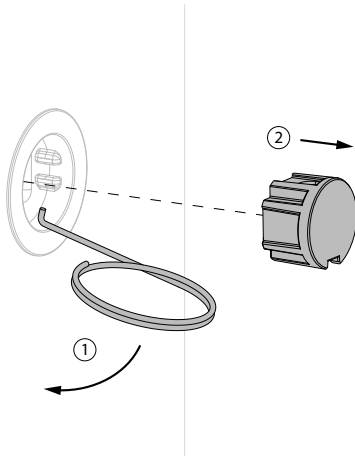
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2. Insert the key in the lock. Turn the key 20° anti-clockwise: the shutter opens. Remove the key from the lock.

Operation: manual closing

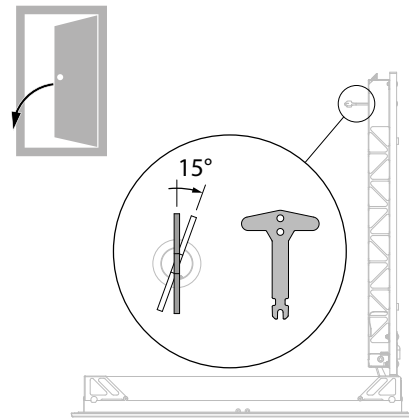
1



1. Resetting 1V

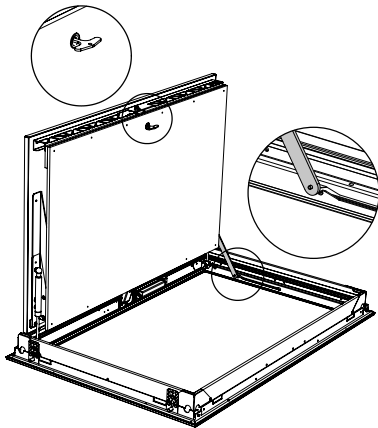
Remove the finishing cap from the shutter. To do this, use the hook with key ring that is delivered with the product. You may attach this tool to the key through its handy key ring.

2



2. Insert the key in the lock. Turn the key 15° clockwise, the key gets blocked in the lock.

3



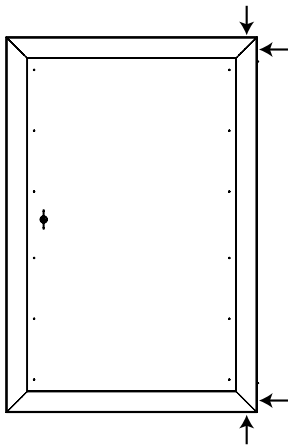
3. Press on the blocking devices.

Close the shutter by pulling at the key.

Turn the key 15° counter clock wise, the key unblocks from the lock. Withdraw the key.

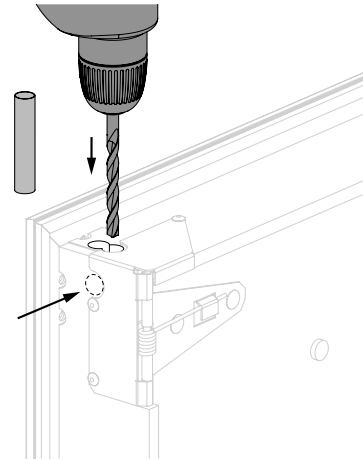
Electrical connection

1



1. You can thread the cable for the power supply through the 2 corners of the shutter, on the hinges' side.

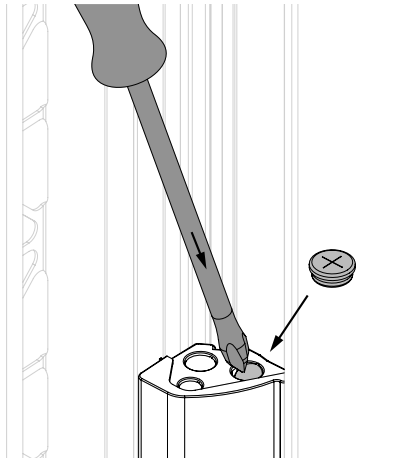
2



2. Drill a hole in the refractory material at the chosen corner(s). The galvanised part at the inside of the shutter is already indented.

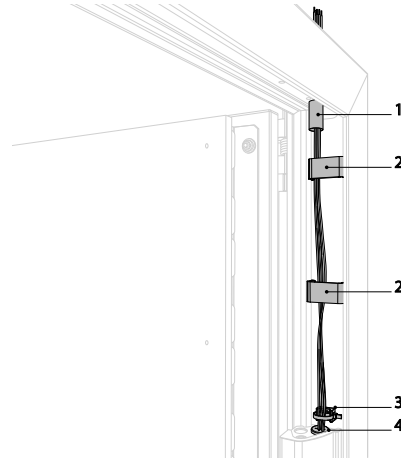
⚠ Caution: after passing and fixing the cables, it is necessary to seal the drilled hole in the refractory around the electrical supply with fire resistant adhesive sealant (BCM f.e.).

3



3. Pierce an opening in the connection box. Affix the grommet delivered with the product.

4

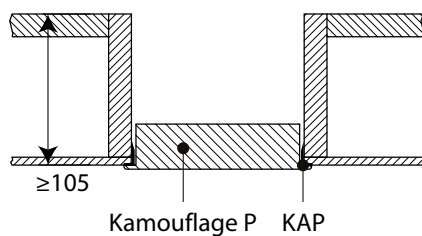


4. Lead the cables through the opening. Use the protective sleeve (1), the fixation clips (2) and the plastic cable clamp (3) to attach the cables to the frame. Lead the cables to the connection box through the grommet (4) and connect according to the electrical connection diagram.

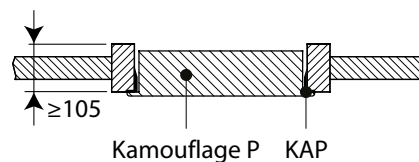
Comply with the installation rules according to article 6.1 of NF S 61-932.

Position in the shaft

1

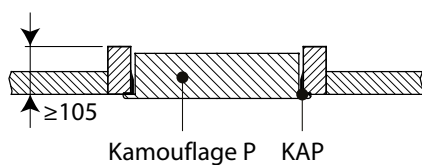


2



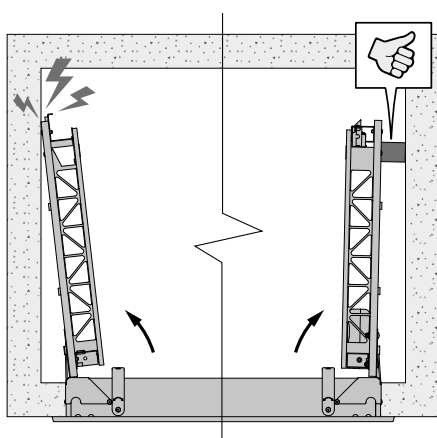
1. The shutter is affixed to the smoke evacuation shaft through a sleeve. That sleeve can be installed either in the shaft, in the axis of the shaft or outside the shaft (or shaft extension).

3

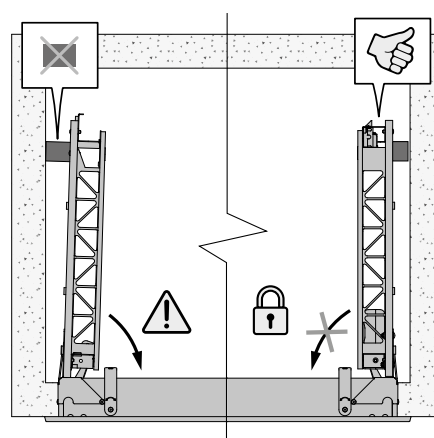


Shock absorbers for the doors

1



2

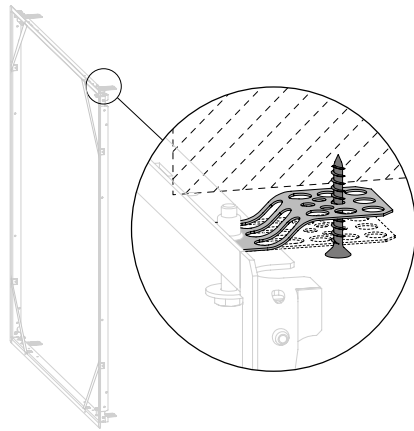


1. Shock absorbers (foam) come standard with the shutter. They can be affixed to the inner face of the door to prevent it from hitting the shaft wall when opening.

2. Be sure to cut these blocks to the correct dimensions so that the blocking mechanism can engage when the door opens.

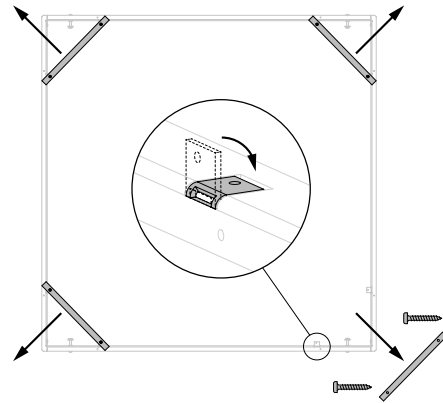
Horizontal installation with built-in mounting frame: general instructions for all types of shafts

1



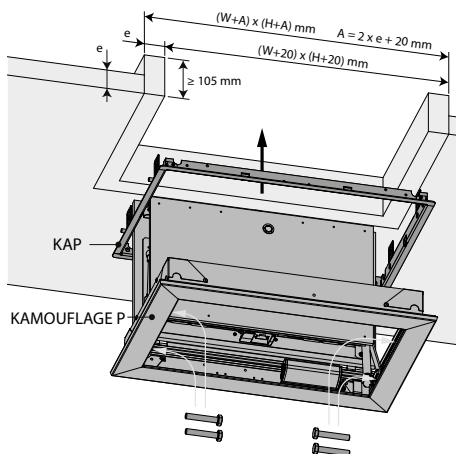
1. Make an opening with dimensions $(W+A) \times (H+A)$ mm.
 $A = 2 \times \text{thickness sleeve } (e) + 20 \text{ mm}$.
 Fit a sleeve of the same type and thickness of the duct (thickness e) of minimum 105 mm deep in the opening.
 Fasten and seal the mounting frame. See details per type of shaft hereafter.
 Screw the mounting frame with chipboard screw ($\varnothing 6 \times e$) mm to the sleeve. Two sealing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve.
 Take care not to misshape the frame during its installation. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10)$ mm.

2



2. Unscrew the 4 cross beams of the KAP mounting frame and fold the 8 plates in the frame.

3



3. Open and position the shutter in the mounting frame. If VM magnet: remove the key from the lock to open the shutter. Don't use the bolts delivered with the mounting frame, but use the ones delivered with the shutter (M6x50).

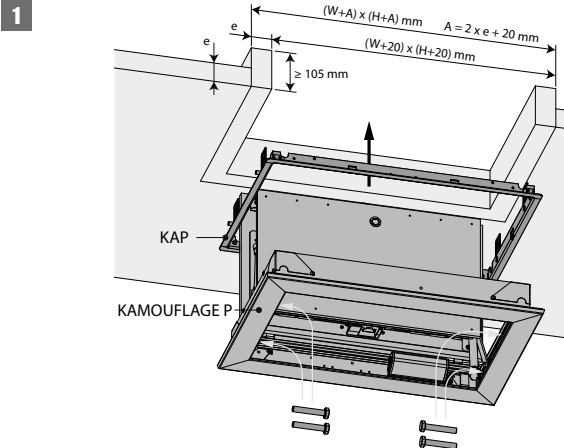
⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!

Connect the mechanism according to the wiring diagram. Check the mobility of the shutter.

Horizontal installation into shaft PROMATECT L500 with built-in mounting frame

The product was tested and approved in:

Product	Range	Wall type	Classification
Kamouflage 60 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Promatect L500 $\geq 30 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Promatect L500 $\geq 40 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Promatect L500 $\geq 50 \text{ mm}$

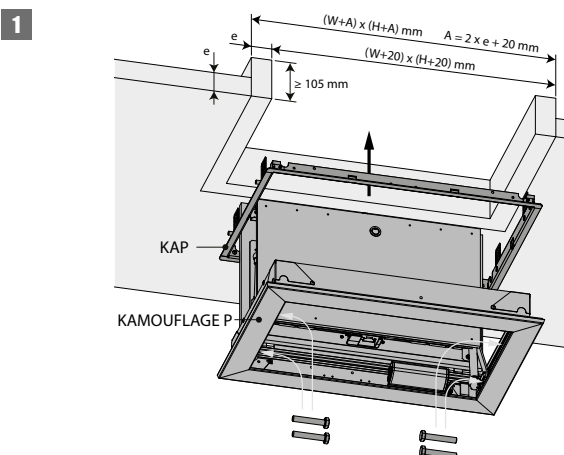


1. Assemble the sleeve with staples and affix the assembled sleeve to the shaft wall with staples.
Coat the edges of the opening with adhesive plaster type Promacol S.
Seal the mounting frame with Promacol S taking care not to misshape it.

Horizontal installation into shaft GEOFLAM (LIGHT) / GEOTEC with built-in mounting frame

The product was tested and approved in:

Product	Range	Wall type	Classification
Kamouflage 60 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Geoflam $\geq 30 \text{ mm}$
Kamouflage 60 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Geotec $\geq 30 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Geoflam $\geq 35 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Geoflam $\geq 45 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Geoflam Light $\geq 35 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Geotec $\geq 45 \text{ mm}$

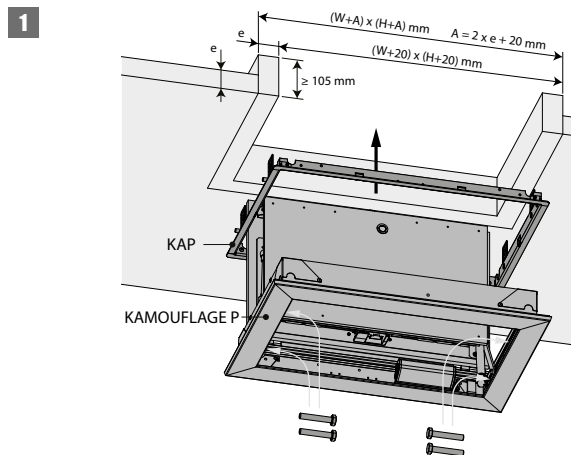


1. Coat the edges of the opening with adhesive plaster type PLACOL (in case of Geoflam) or GEOCOL (S) (in case of Geotec).
In case of Geotec you can also assemble the sleeve with glue and screws $\varnothing 5 \times (2 \times e) \text{ mm}$ and affix the assembled sleeve to the shaft wall with glue and screws $\varnothing 5 \times (2 \times e) \text{ mm}$ every 100 mm.
Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster or with GEOCOL (S) (in case of Geotec).
Two sealing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. Caulk the mounting frame to the duct with vegetable fibre or (in case of Geotec) you can also coat the opening with Geocol (S) and fasten the mounting frame with screws of $\varnothing 5 \times e \text{ mm}$. Take care not to misshape the frame. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10) \text{ mm}$.

Horizontal installation into shaft TECNIVER with built-in mounting frame

The product was tested and approved in:

Product	Range	Wall type	Classification
Kamouflage 60 P	350x385 mm ≤ Kamouflage P 1V ≤ 700x775 mm; 550x1075 mm	Shaft	Tecniver ≥ 35 mm El 60 (h _{od} i ↔ o) S 1500 AA multi
Kamouflage 120 P	350x385 mm ≤ Kamouflage P 1V ≤ 700x775 mm; 550x1075 mm	Shaft	Tecniver ≥ 45 mm El 90 (h _{od} i ↔ o) S 1500 AA multi
Kamouflage 120 P	350x385 mm ≤ Kamouflage P 1V ≤ 700x775 mm; 550x1075 mm	Shaft	Tecniver ≥ 50 mm El 120 (h _{od} i ↔ o) S 1500 AA multi

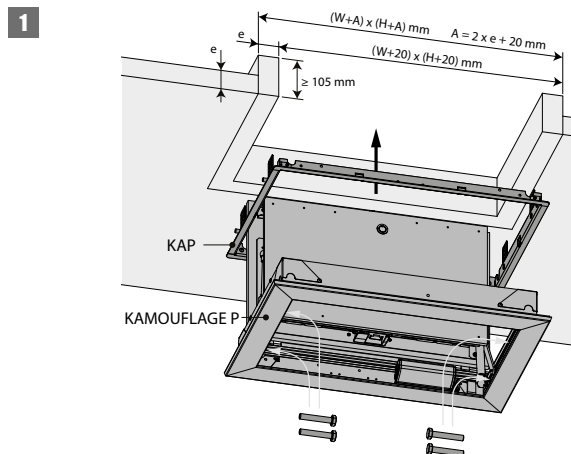


- Put glue CF GLUE on the edges of the opening and the uprights and cross pieces.
Put glue type CF GLUE on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chipboard screws Ø5 x 70mm at 150 mm intervals.
Two sealing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. First coat the opening with glue CF GLUE. Glue the mounting frame to the lining taking care not to misshape it. The finished opening must be the same size as the mounting frame (W+10) x (H+10) mm.

Horizontal installation into shaft GLASROC F V500 with built-in mounting frame

The product was tested and approved in:

Product	Range	Wall type	Classification
Kamouflage 60 P	350x385 mm ≤ Kamouflage P 1V ≤ 700x775 mm; 550x1075 mm	Shaft	Glasroc F V500 ≥ 35 mm El 60 (h _{od} i ↔ o) S 1500 AA multi
Kamouflage 120 P	350x385 mm ≤ Kamouflage P 1V ≤ 700x775 mm; 550x1075 mm	Shaft	Glasroc F V500 ≥ 50 mm El 120 (h _{od} i ↔ o) S 1500 AA multi

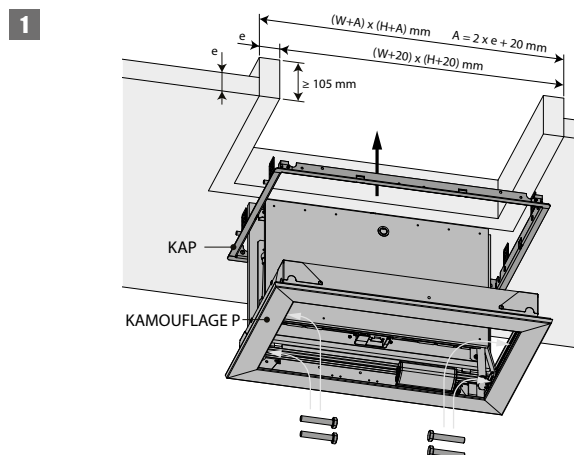


- Put glue GLASROC F V500 on the edges of the opening and the uprights and cross pieces.
Put glue type GLASROC F V500 on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chipboard screws Ø5 x 70 mm at 150 mm intervals.
Two sealing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. First coat the opening with glue GLASROC F V500. Glue the mounting frame to the lining taking care not to misshape it. The finished opening must be the same size as the mounting frame (W+10) x (H+10) mm.

Horizontal installation into shaft DESENFIRE (HD) with built-in mounting frame

The product was tested and approved in:

Product	Range	Wall type	Classification
Kamouflage 60 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Desenfire HD $\geq 25 \text{ mm HD}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Desenfire $\geq 25 \text{ mm THD}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Desenfire HD $\geq 35 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Desenfire $\geq 45 \text{ mm}$



1. Coat the edges of the opening with adhesive plaster, type FACILIS.

Fit a sleeve of the same type and thickness of the duct (thickness e) of minimum 105 mm deep in the opening.

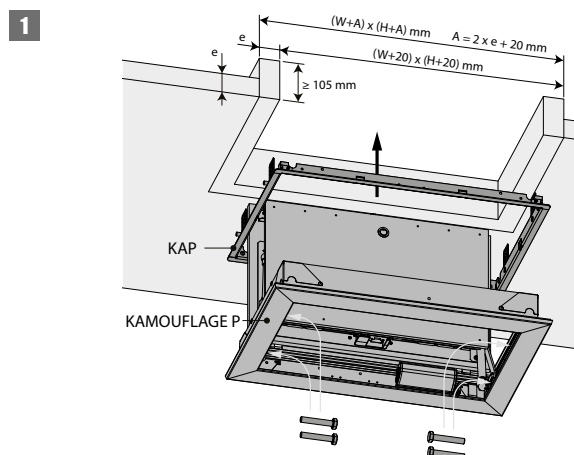
Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.

Two sealing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. Caulk the mounting frame to the duct with vegetable fibre and taking care not to misshape it. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10) \text{ mm}$.

Horizontal installation into shaft EXTHAMAT with built-in mounting frame

The product was tested and approved in:

Product	Range	Wall type	Classification
Kamouflage 60 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Exthamat $\geq 25 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Exthamat $\geq 30 \text{ mm}$
Kamouflage 120 P	$350 \times 385 \text{ mm} \leq \text{Kamouflage P 1V} \leq 700 \times 775 \text{ mm}; 550 \times 1075 \text{ mm}$	Shaft	Exthamat $\geq 35 \text{ mm}$



1. Put gypsum glue on the edges of the opening.

Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.

Two sealing lugs are provided at the bottom and at the top of the mounting frame: fold these against the sleeve. Caulk the mounting frame to the duct with vegetable fibre and taking care not to misshape it. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10) \text{ mm}$.

Finishing

1

1. The upper face of the shutter consists of a sheet of plasterboard, which you can decorate to match the wall in which the shutter is installed (paint or wallpaper).

A coat of paint can be applied on the unexposed face of the shutter and the frame; wallpaper can be applied to the shutter. Covering plate of plasterboard: fill the holes of the screws with a suitable filler. Let it dry and sand. Apply a primer paint suitable for plasterboard.

Profile of anodised aluminium: apply a primer suitable for metal. With the option PRIM, the frame is already prepared with a primer, ready to be painted.

Once the primer is dry, proceed with the finishing (paint or wallpaper).

⚠ Caution : don't fill / cover the joint between the covering plate and the aluminium profile in order to guarantee that the shutter can open.

The options ATOUT RAL9010 / ALU (ALU not available on ceiling (P) model) and PRIM facilitate the finishing phase. With option ATOUT RAL9010 / ALU the shutter is supplied with a finished aspect, laquered white or aluminium. With option PRIM the profile is pre-painted with a primer.

Maintenance

- No specific maintenance required.
- Schedule at least two running checks each year.
- Remove dust and all other particles before start-up.
- Follow the local maintenance regulations (i.e. BS9999 Annex V; NF S 61-933) and EN13306.

Operation and mechanisms

Operation and mechanisms

Operation: general points

- See under 'Installation'.
- ⚠ Caution : please note dampers must be fully open before starting supply and/or extract fans.



VA MEC Remote controlled unlocking by a magnet.

Remote controlled unlocking by an electric impulse (VD) or by interruption (VM) of the magnet's power supply.



Options - at the time of order

VD24	Natural magnet 24 V DC
VD48	Natural magnet 48 V DC
VM24	Electromagnet 24 V DC (not applicable for ME and H model)
VM48	Electromagnet 48 V DC (not applicable for ME and H model)
FDCU	Limit switch 'open/closed' (incl. exc. for H model)
FDCB	Auxiliary limit switch 'open/closed'

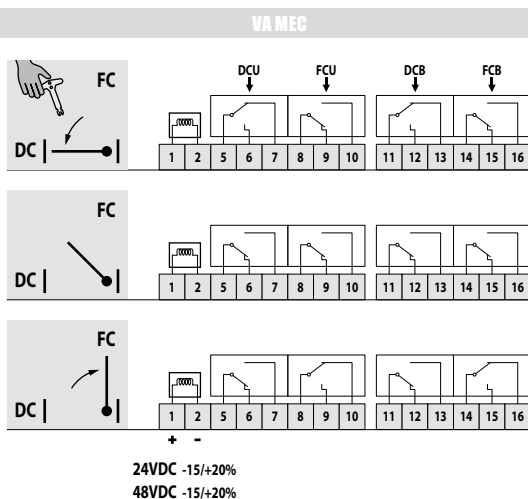
Unlocking

- manual unlocking:** with the key (delivered in the bag together with the installation guidelines)
- automatic unlocking:** n/a
- remote unlocking:** by electrical impulse (VD) or interruption (VM) of current to the magnet.

Resetting

- manual resetting:** with the key (delivered in the bag together with the installation guidelines)

Electrical connection



DC : Switch closed position smoke evacuation shutter

FC : Switch open position smoke evacuation shutter

MEC	Nominal voltage motor	Nominal voltage magnet	Power consumption (stand-by)	Power consumption (operating)	Standard switches	Protection class
VA MEC	N/A	24/48 V DC	VM: 1,5W / VD: -	VM: - / VD: 3,5W	1mA...6A, DC 5V...AC 250V	IP 42

Sample order

KAMOUFLAGE P	1V	120	400	685	VD24	FDCB	ATOUT RAL 9010
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1. product
2. 1 shutter (1V)
3. fire resistance of 60 or 120 minutes
4. width
5. height
6. option: type magnet and voltage
7. option: bipolar end of range switch (FDCU included)
8. option: frame painted white, shutter covered with white metallic sheet

Approvals and certificates

All our products are submitted to a number of tests by official test institutes. Reports of these tests form the basis for the approvals of the products.



Efectis_1812_CPR_1043



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