

**119AV70EN**

UNDERGROUND OPERATOR  
FOR SWING GATES

Official Partner



MILANO 2015

FEEDING THE PLANET  
ENERGY FOR LIFE



Installation manual

**FROG-PM4 / FROG-PM6**



## WARNING!

### important safety instructions: READ CAREFULLY!



#### Introduction

- Use this product only for the specific purpose for which it is designed. Any other use is therefore improper and dangerous. CAME Cancelli Automatici S.p.A. is not liable for any damage due to improper, erroneous and unreasonable use
- Keep these warnings together with the installation and users' manual for the automation system.

#### Before installing

*(check what's there: if you find something wrong, proceed only after correcting the problem so the equipment is safe to use)*

- Check that the part you want to automate is in good mechanical condition, that it is balanced and aligned, and that it opens and closes properly. Make sure you have suitable mechanical stops
- If the operator will be installed less than 2.5 m from the floor or from any other access level, check whether you need additional protections and/ or warnings
- With pedestrian doors framed into the doors that will be automated, a system must be in place to block their opening during movement
- Make sure the opening of the automated door leaf does not cause any trapping situations involving any surrounding fixed parts
- Do not install the operator upside down or on any elements that may bend. If necessary, add suitable reinforcements at the fastening points
- Do not install on sloping ground (only install on flat ground)
- Check that any watering devices cannot wet the gearmotor from the bottom upwards.

#### Installation

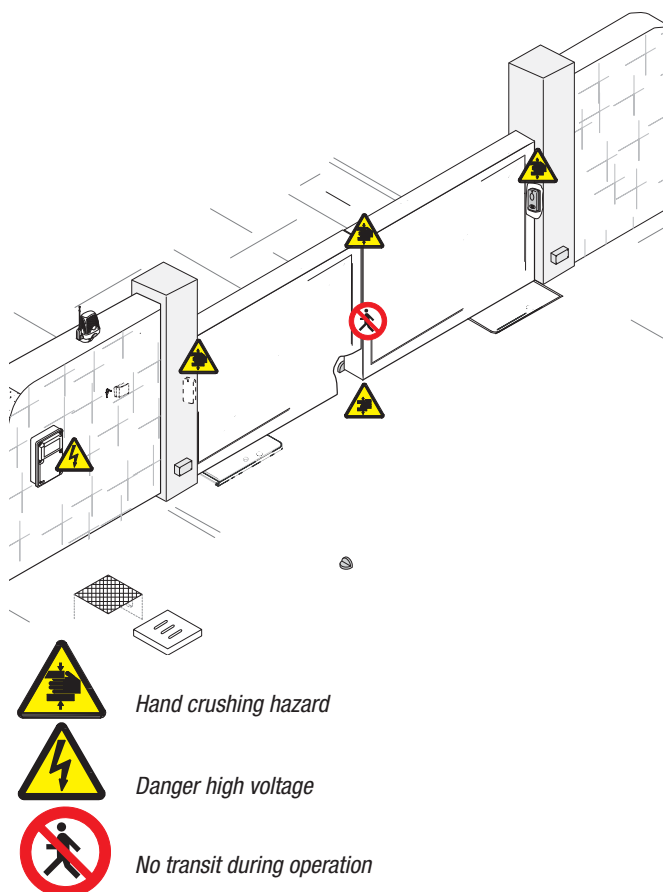
- Properly signal and demarcate the entire site prevent any careless people from entering the works area
- Be careful when handling operators that weigh more than 20 kg (see installation manual. If such is the case, make sure you have proper hoisting equipment. All opening commands (buttons, key selectors, magnetic card readers, and so on) must be installed at least 1.85 M from the gate's area of movement, or so that they are unreachable from the outside. Moreover, the direct commands (from buttons, swipe cards, and so on) must be installed 1.5 m high off the ground and must not be reachable by the public
- All "hold-to-run" commands must be placed where the operating gate leaves and transit areas are completely visible.
- Apply a permanent label that shows the position of the release device
- Before turning over the installation to the user, check that the system conforms to standards EN 12453 and EN12445 (impact testing), making sure the device has been properly adjusted and that the safety and protection and release devices function properly
- Where necessary apply the Warning Signs so that they are clearly visible (e.g. the gate plate)

#### Instructions and special recommendations for users

- Keep the barrier's areas of operations unobstructed. Check that the photocells are free of any vegetation blocking them, and that there are no obstacles to the free movement of the operator. Do not allow children to play with the fixed command devices, or in the barrier's area of operation. Keep transmitters and any other command devices away from children, to prevent the operator from being activated by mistake
- Frequently check the system, to scan for any anomalies or wear and tear in the moving structures, the operator's components, all fastening points and devices, the cables and accessible connections. Keep any jointed parts like hinges lubricated and clean of debris and the guide-sleds free of any friction
- Perform functional checks to the photocells and sensitive edges every six months. To check that the photocells work properly, wave an object in front of them during closing; if the operator inverts its direction of travel or blocks movement, then the photocells are working properly. This is the only maintenance job that can be done to the gate when it is powered up. Ensure proper cleaning of the glass on the photocells (use a slightly damp cloth); do not use any solvents or other chemical products that may ruin the devices
- Should any repairs or changes to the system settings be needed, release the operator and refrain from using it until safety conditions have been restored
- Cut the power off before releasing the operator for manual opening, to avoid any hazardous situations. Check instructions
- It is FORBIDDEN for users to perform ANY OPERATIONS THAT ARE NOT EXPRESSLY REQUESTED OF SAID USERS in the manuals. Any repairs, adjustments or extra-ordinary maintenance, EXCLUSIVELY CALL TECHNICAL ASSISTANCE
- Log any service jobs onto the periodic maintenance journal.

#### Special instructions and recommendations for everyone

- Keep away from the hinges and any moving mechanical parts
- Stay out of the operating range of the operator while it is moving
- Do not oppose the movement of the operator as this may result in danger
- Always be careful around the dangerous parts, which must be properly indicated with warning signs and black and yellow stripes
- When using a selector switch or a maintained-action mode command, keep checking that no persons come within the operating range of the moving parts, until the command is released
- The gate may move at any moment without warning. Always cut off the main electric power supply before performing any cleaning or maintenance.



**KEY**

- This symbol indicates parts to read carefully.
- This symbol indicates parts about safety.
- This symbol tells you what to say to the end users.

**REGULATORY REFERENCES**

Came Cancelli Automatici is a company with an ISO 9001-certified company quality management system and an ISO 14001-certified environmental management system.

The product complies with the regulations referred to in the declaration of conformity.

**DESCRIPTION**

The product consists of: a foundation box, a gearmotor and movement transmission arms.

**Intended use**

Designed to power swing gates for residential or condominium use.

Any installation and operation that differs from what is set out in this manual is prohibited.

**Limits of use**

Model	FROG-PM4		
Max. leaf length (m)	5.5	4.5	3.5
Max. leaf weight (kg)	700	900	1100
Model	FROG-PM6		
Max. leaf length (m)	7	5	5
Max. leaf weight (kg)	550	650	800
		1000	

We suggest you always fit an electrolock onto swing gates for a more reliable closure.

Fitting electrolocks onto reversible operators makes for anti-intrusion security.

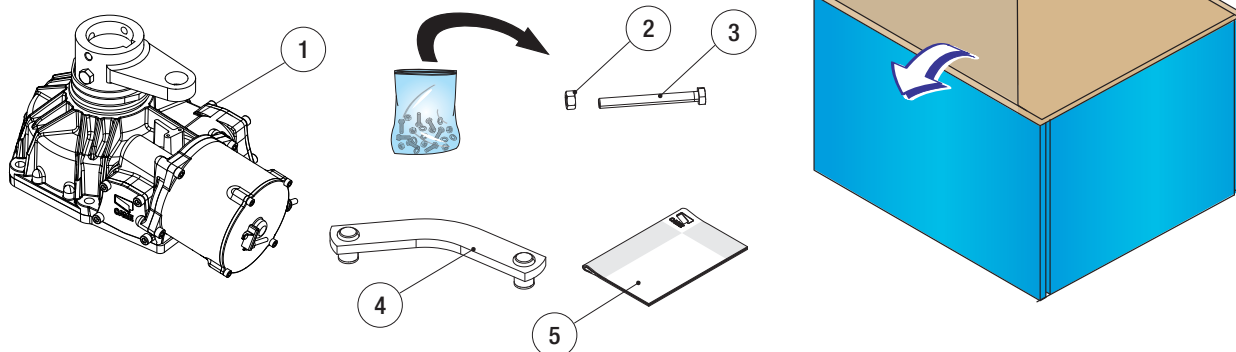
You must install electrolocks onto irreversible operators with gate leaves exceeding 2.5 m.

**Technical data**

Type	FROG-PM4	FROG-PM6
Protection rating (IP)	67	67
Power supply (V - 50/60 Hz)	230 AC	230 AC
Motor power supply (V - 50/60 Hz)	230 AC	230 AC
Power draw (A)	5.1 max.	2.6 max.
Power (W)	1200	600
Thrust (N)	800 max.	800 max.
Opening time to 90° (sec)	30	45
Duty Cycle (%)	50%	50%
Operating temperature (°C)	-20 - +55	-20 - +55
Motor thermal protection (°C)	150	150
Gear ratio	1 - 2016	1 - 2016
Insulation class	I	I
Capacitor (uF)	16	16
Weight (kg)		

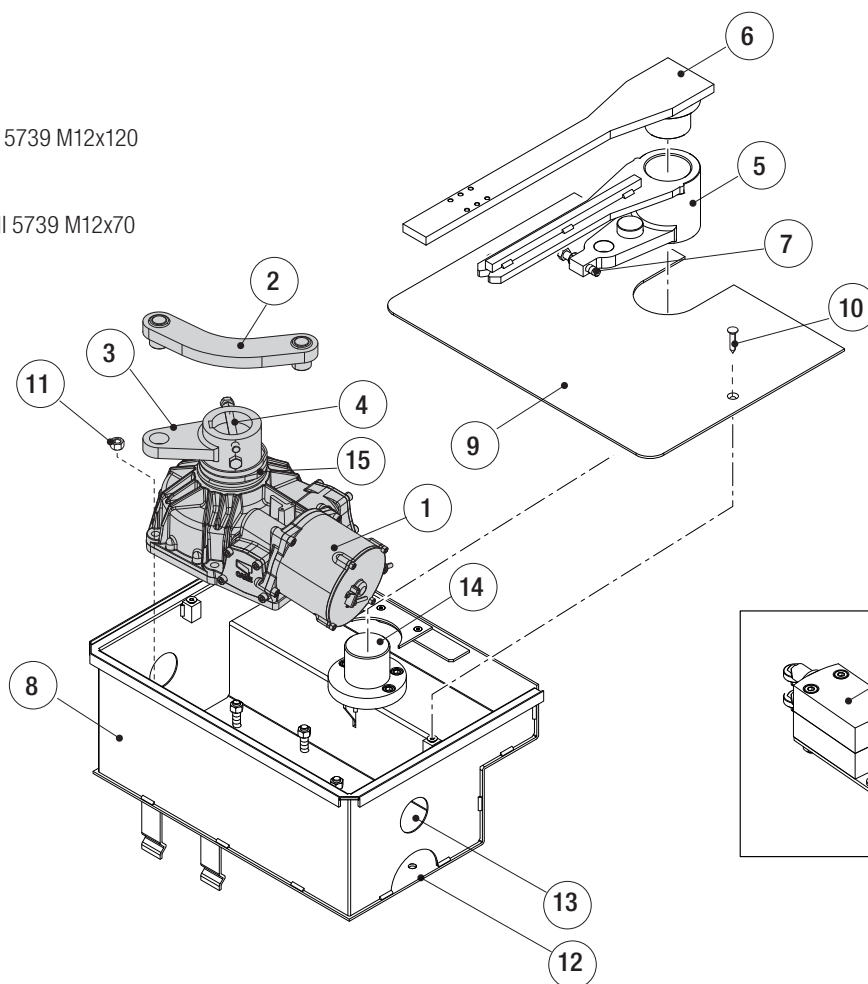
**Packing list**

- 1 x Gearmotor
- 1 x UNI 5588 M10 nut
- 1 x hex-head screw UNI 5739 M12x120
- 1 x Transmission lever
- 1 x installation manual



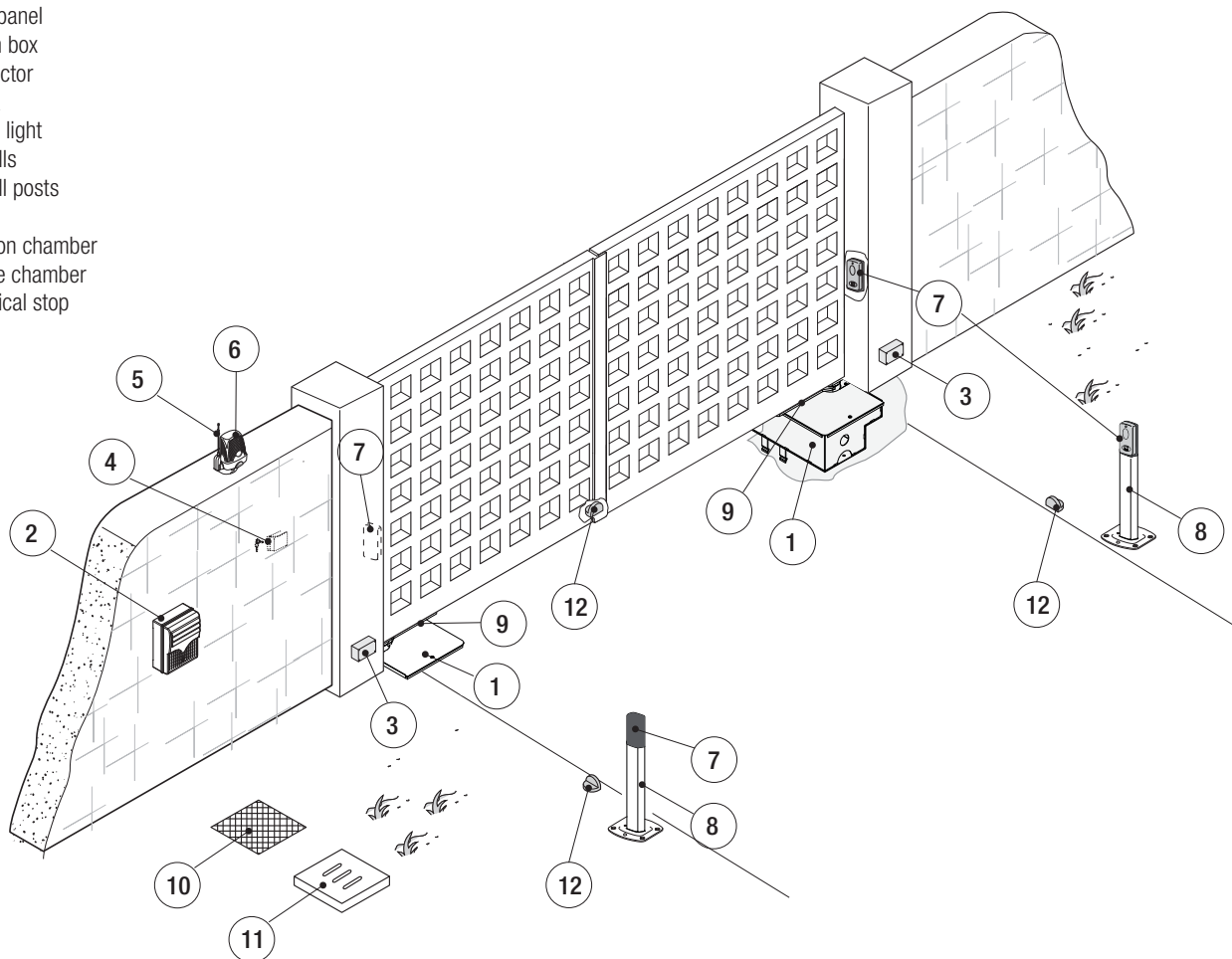
## Description of the components

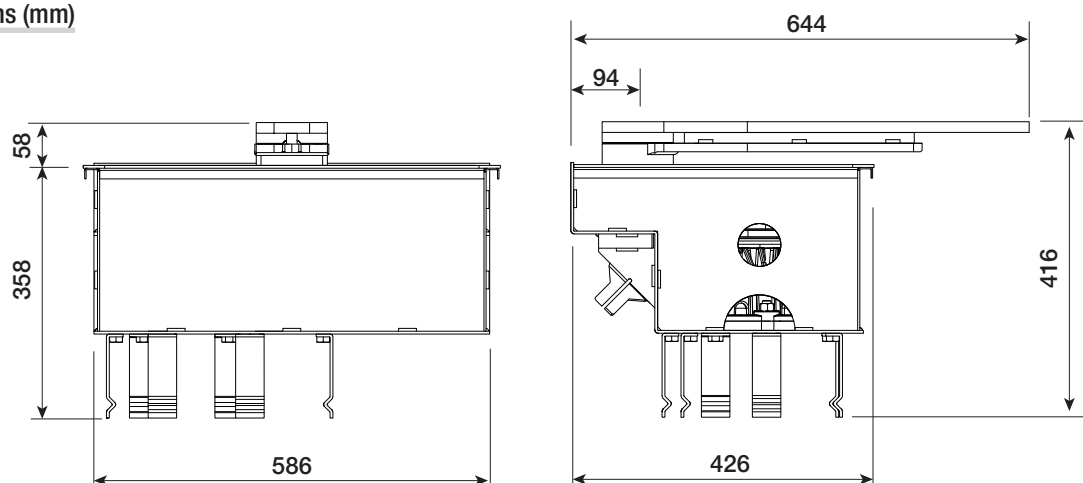
1. Gearmotor
2. Transmission lever
3. Gearmotor arm
4. Adjusting screw for closing limit switch UNI 5739 M12x120
5. Couple release lever
6. Gate mounting bracket
7. Adjusting screw for opening limit switch UNI 5739 M12x70
8. Foundation box
9. Casing cover
10. Cover fixing screw UNI 5933 M8x20
11. UNI 5588 M12 nut
12. Hole for drainage
13. Hole for cables
14. Pin
15. Cams
16. Limit switch (optional)



## Example of a system

1. Gearmotor with foundation box
2. Control panel
3. Junction box
4. Key selector
5. Antenna
6. Flashing light
7. Photocells
8. Photocell posts
9. Latch
10. Inspection chamber
11. Drainage chamber
12. Mechanical stop



**Dimensions (mm)****GENERAL INSTALLATION INSTRUCTIONS**

⚠ Installation must be carried out by qualified and experienced personnel in compliance with applicable regulations.

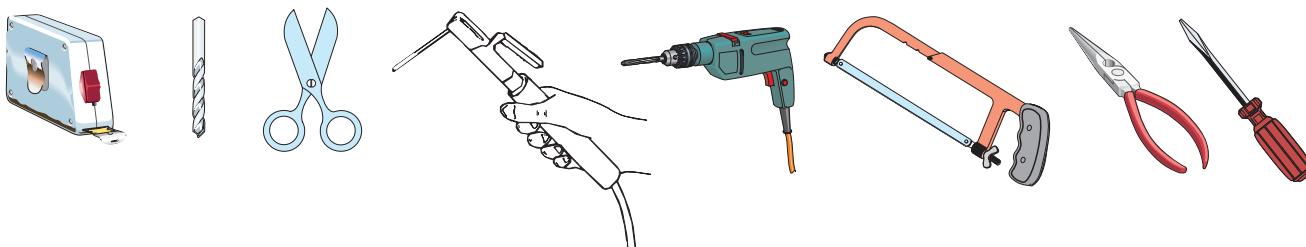
**Preliminary checks**

⚠ Before installing the operator:

- Provide a suitable single-pole disconnection device, with a maximum of 3 mm between the contacts, to disconnect the power supply;
- Prepare suitable piping and ducts for routing the electrical cables, ensuring protection against mechanical damage;
- Prepare a drain pipe to prevent stagnation that may cause oxidation;
- ⚡ Make sure that any connections within the container (made to ensure the continuity of the protection circuit) are fitted with additional insulation compared to the other internal conductor parts;
- Make sure the gate structure is sturdy enough, that the hinges are in proper working order and that there is no friction between the moving and fixed parts;
- Make sure there are opening and closing mechanical stops.

**Tools and materials**

Make sure you have all the tools and materials you will need for the installation at hand to work in total safety and compliance with current standards and regulations. The figure shows some examples of installer's tools.

**Types of cables and minimum thicknesses**

Connection	Cable type	Cable length 1 < 10 m	Cable length 10 < 20 m	Cable length 20 < 30 m
Control panel power supply 230 V	FROR CEI 20-22 IEC EN 50267-2-1	3G x 1.5 mm <sup>2</sup>	3G x 1.5 mm <sup>2</sup>	3G x 2.5 mm <sup>2</sup>
Motor power supply 230 V		3G x 1.5 mm <sup>2</sup>	3G x 1.5 mm <sup>2</sup>	3G x 2.5 mm <sup>2</sup>
Flashing light		2 x 0.5 mm <sup>2</sup>	2 x 1 mm <sup>2</sup>	2 x 1.5 mm <sup>2</sup>
Photocell transmitters		2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>
Photocell receivers		4 x 0.5 mm <sup>2</sup>	4 x 0.5 mm <sup>2</sup>	4 x 0.5 mm <sup>2</sup>
Control and safety devices		2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>
Encoder	TWISTED	max. 30 m		
Antenna	RG58	max. 10 m		

N.B. : If the cables differ in length compared to what is shown in the table, the cable cross-section is determined according to the actual current draw of the devices connected and according to the provisions of the IEC EN 60204-1 standard.

For connections that require several, sequential loads, the sizes given on the table must be re-evaluated based on actual power draw and distances. When connecting products that are not specified in this manual, please refer to the documentation provided with said products.

## INSTALLATION

△ The following illustrations are only examples, given that the space for securing the operator and accessories varies depending on the overall dimensions. The installation technician is responsible for choosing the most suitable solution.

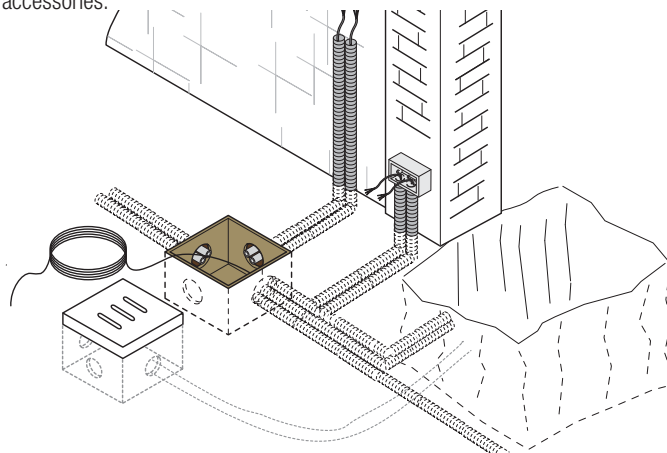
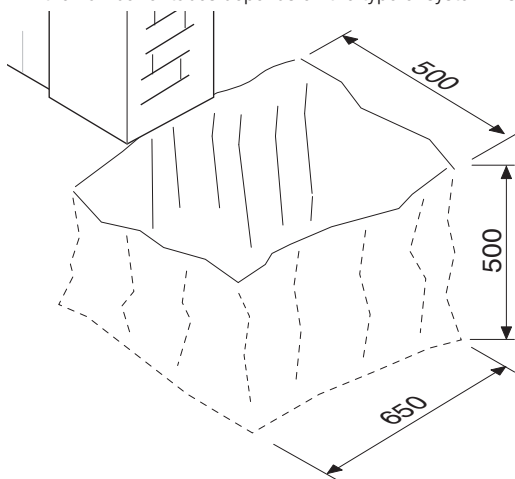
 the figures below illustrate the installation of the right-hand foundation box.

### Laying the corrugated pipes and inspection chambers

Make the hole for the box.

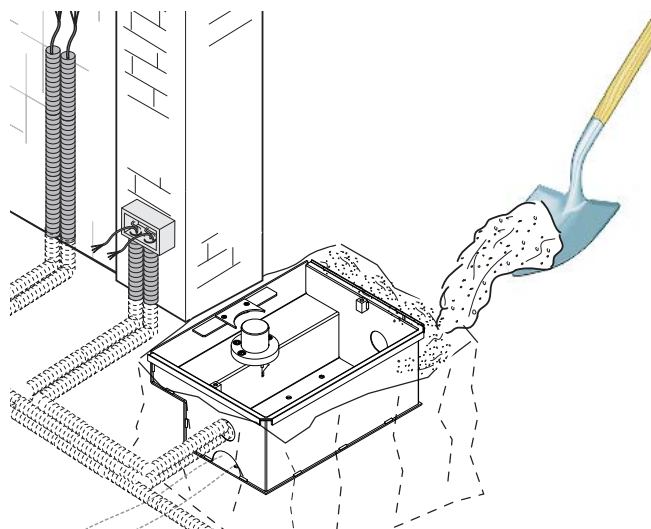
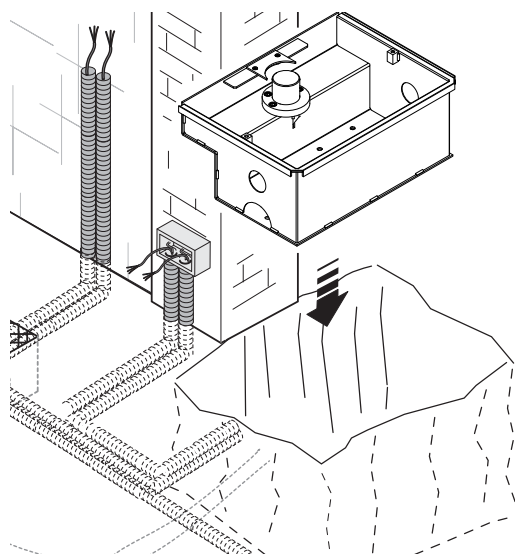
Prepare the junction boxes and corrugated pipes necessary for connection to the inspection chamber and the drain pipe.

 the number of tubes depends on the type of system installed and any accessories.

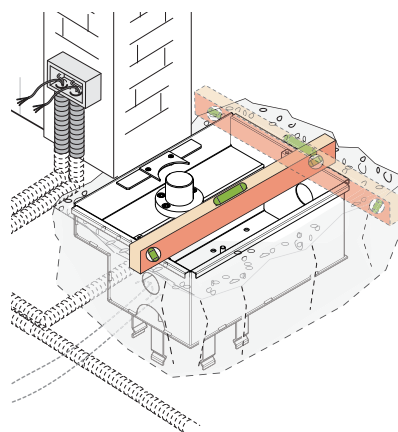
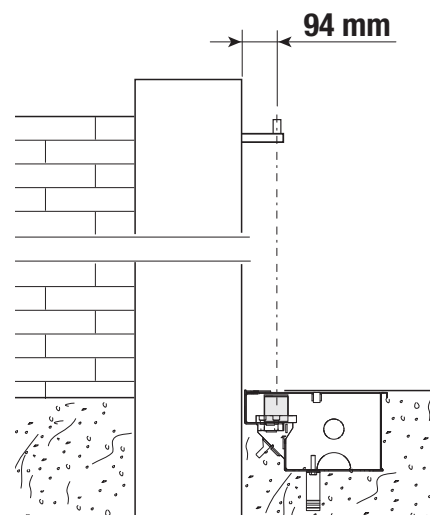


## Installing the foundation box

Lean the box against the pillar making sure that the corrugated pipes and the drain pipe pass through the designated holes. Fill the hole with concrete.



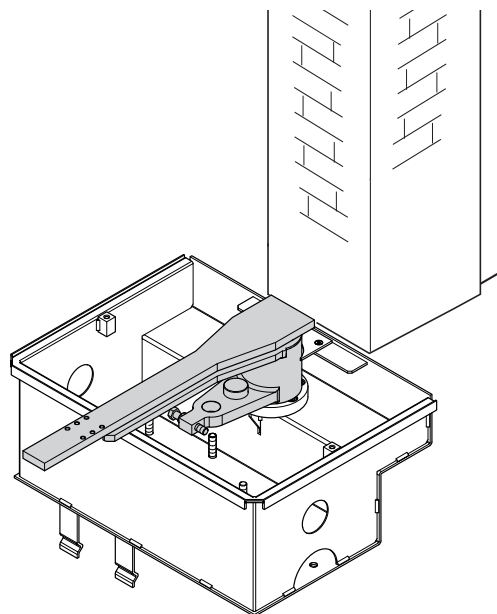
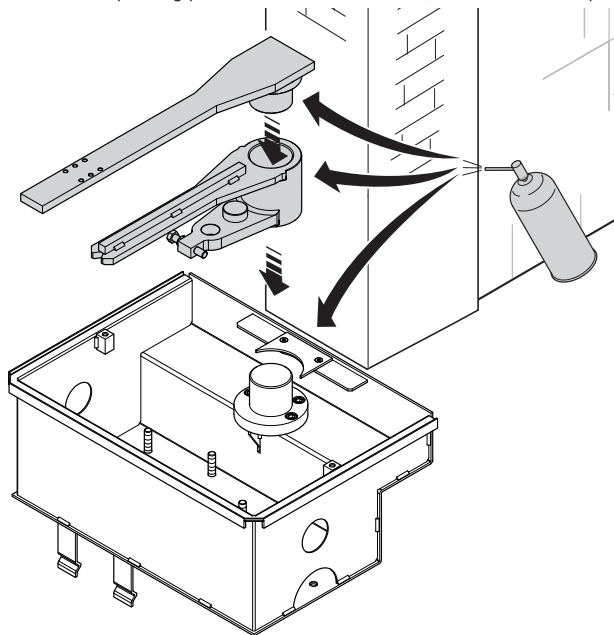
Position the box level with the ground and place the pin in line with the upper gate hinge. Leave to solidify for at least 24 hours. Clean any remaining concrete from inside the box.





 Drawing view: RH side from the inside.

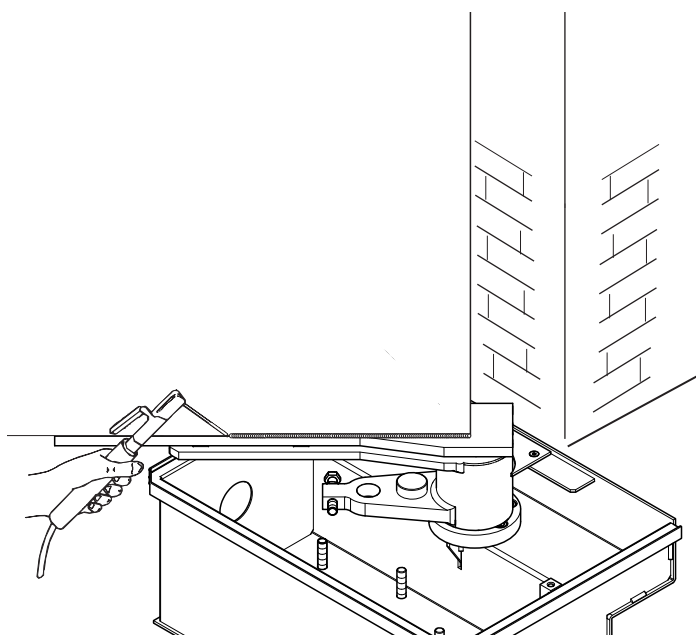
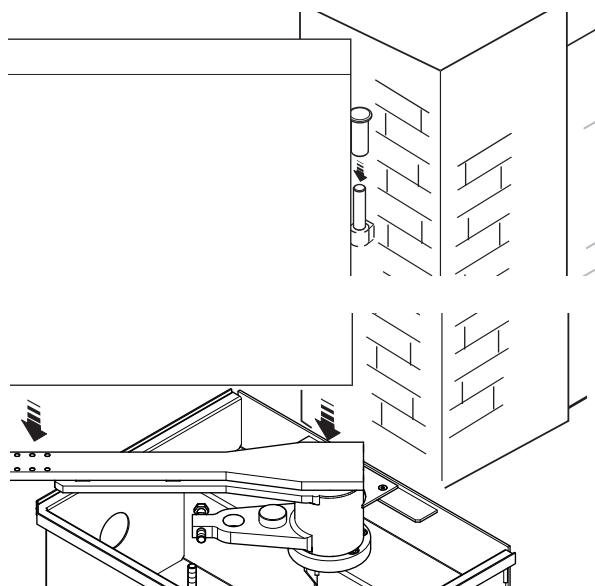
Lubricate the pivoting point of the foundation case, the latch and the pin of the gate bracket.



Install the gate leaf, inserting the upper hinge.

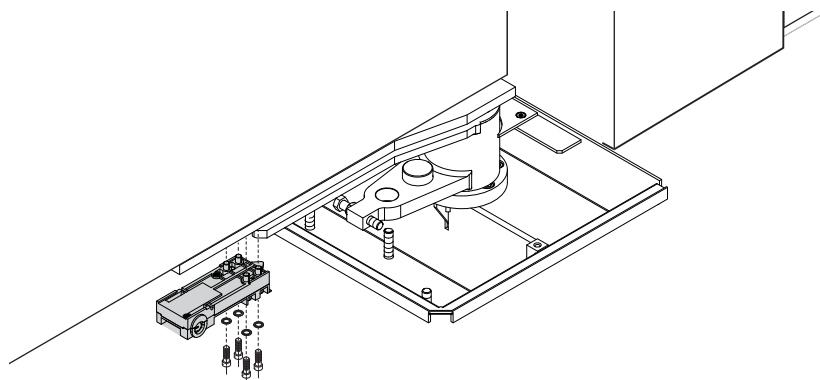
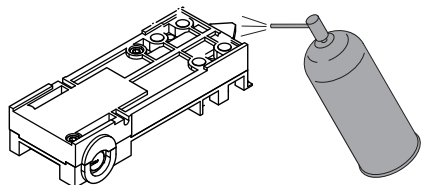
Fix or carefully weld the leaf to the fixing bracket to the gate.

Check that the leaf opens and closes without difficulty.



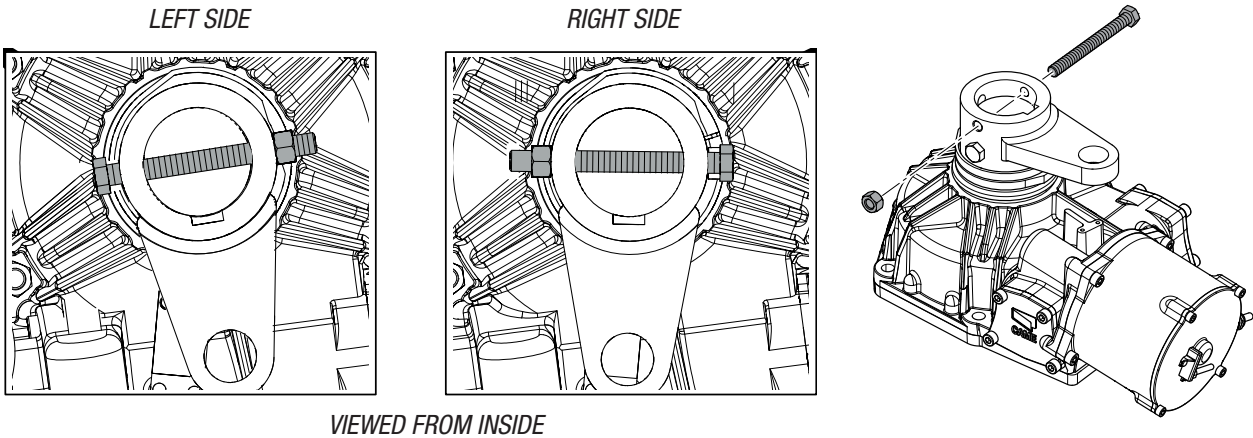
### Securing the release

It is important to lubricate the release latch, for fixing and operation, check the information entered in the manual of the device selected.

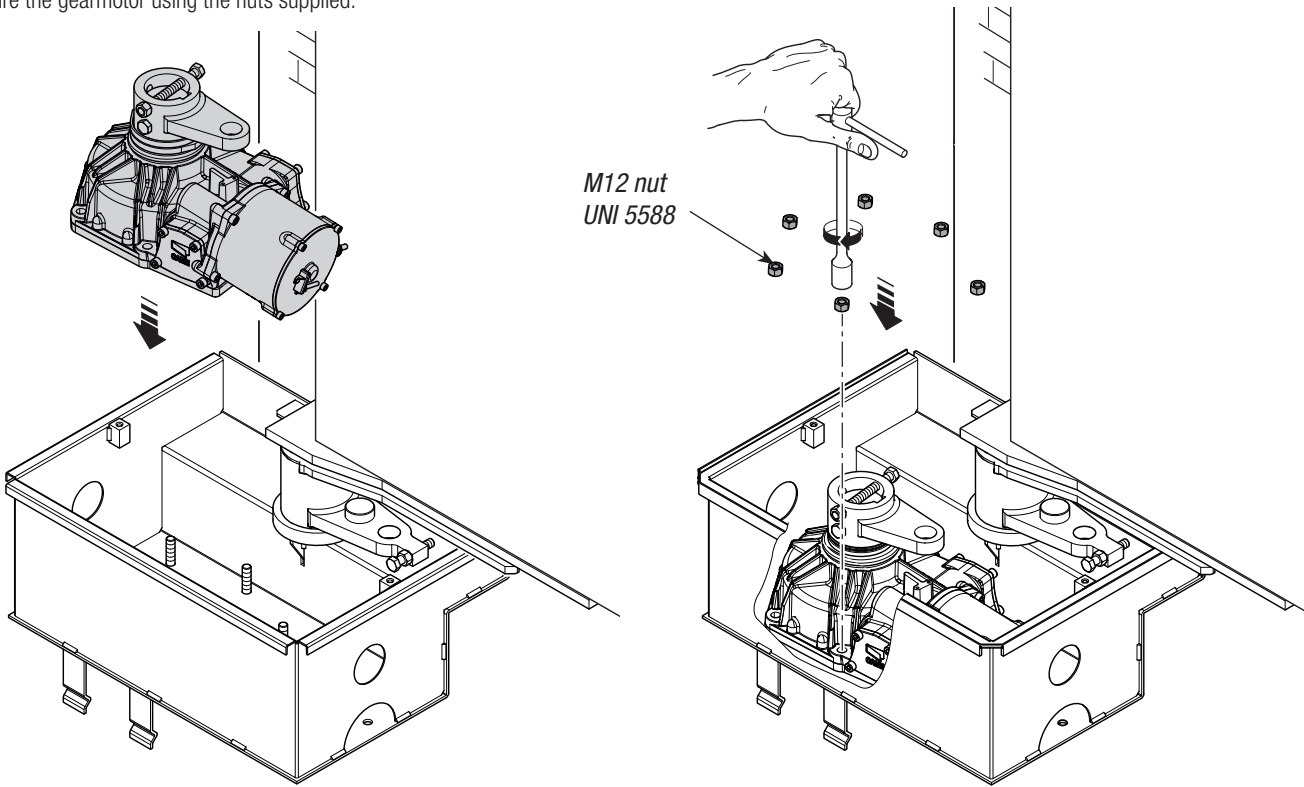


# Securing the gearmotor

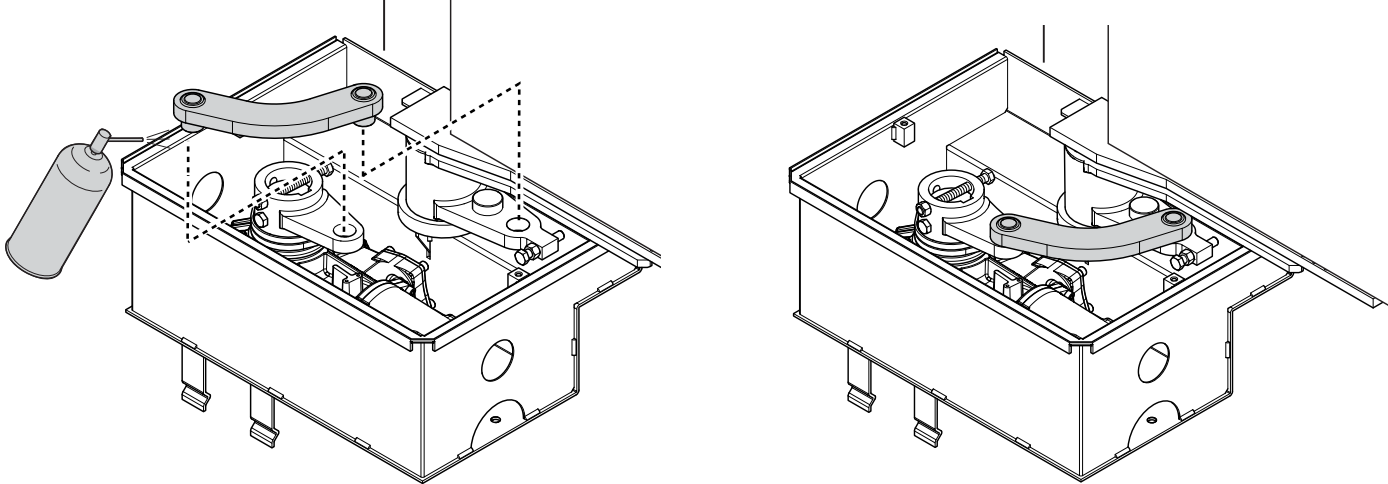
Insert the adjusting screw in the gearmotor arm. The sense in which the screw is fitted depends on the position of the automation.



Open the door to facilitate the placement of the gearmotor in the foundation case and its anchoring.  
Secure the gearmotor using the nuts supplied.



Lubricate the transmission lever and fit it into the hole of the gearmotor arm and case lever.

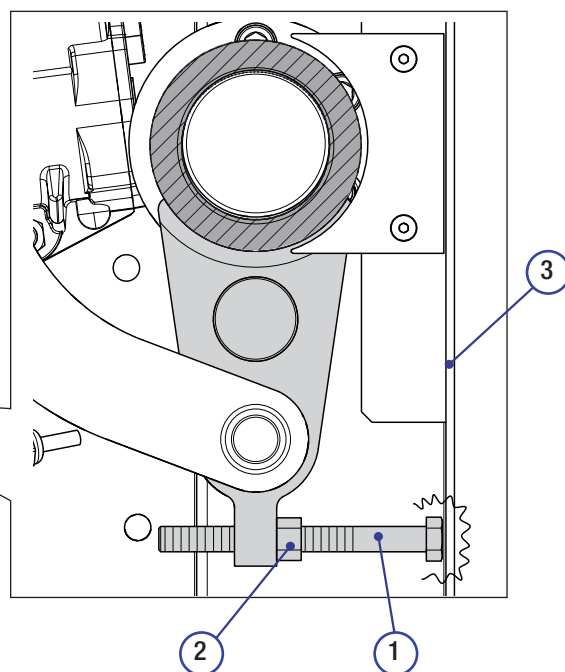
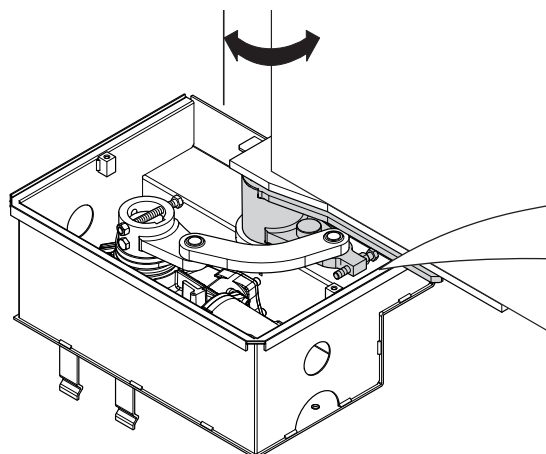




## Determining the end run points

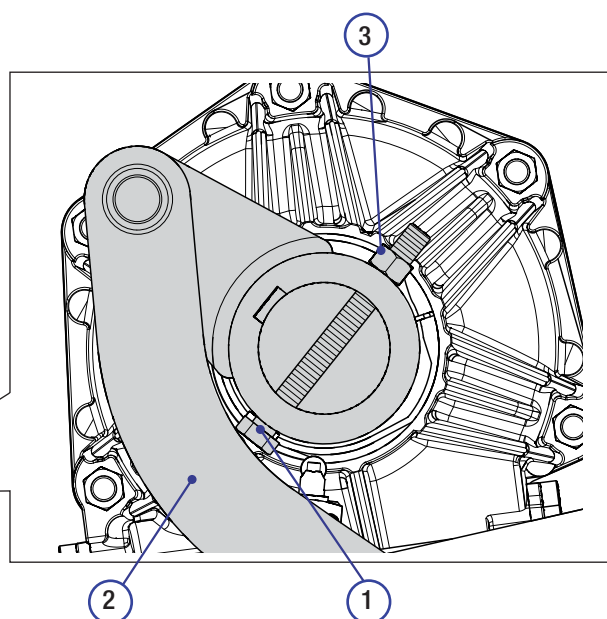
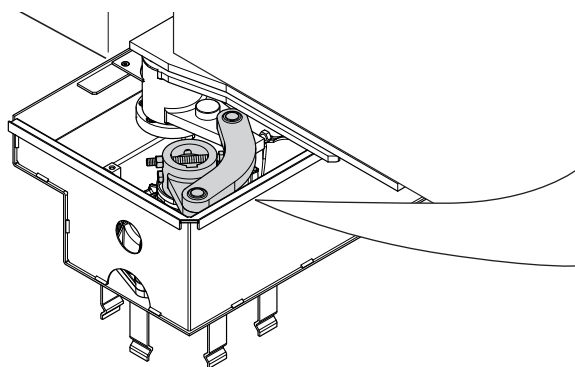
During opening:

- Fully open the leafs (the maximum aperture is 110 °);
- loosen the screw (1) until it makes contact with the body (3);
- tighten the nut (2) to lock the position of the screw.



During closing:

- close the leaves completely;
- loosen the screw (1) until it makes contact with the transmission arm (2);
- tighten the nut (3) to lock the position of the screw.



## ELECTRICAL CONNECTIONS

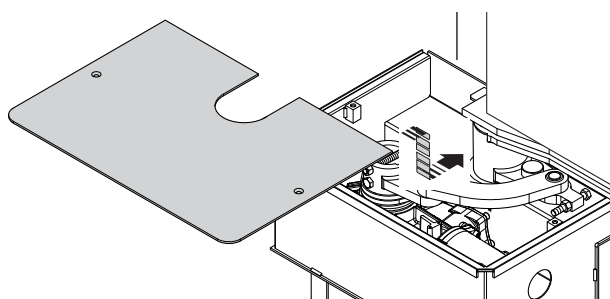
For electrical connection operations, see the control panel technical documentations.

Gearmotor	Control panel
FROG-PM4	ZM3EP
FROG-PM6	ZM3EP

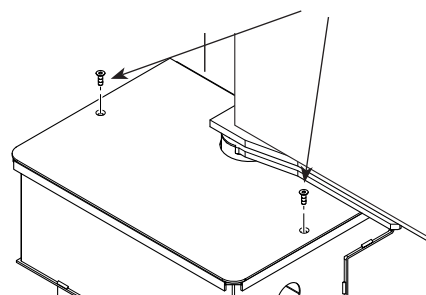
## FINAL OPERATIONS

### Securing the cover

Rest the cover on the foundation box and secure using the screws (supplied)

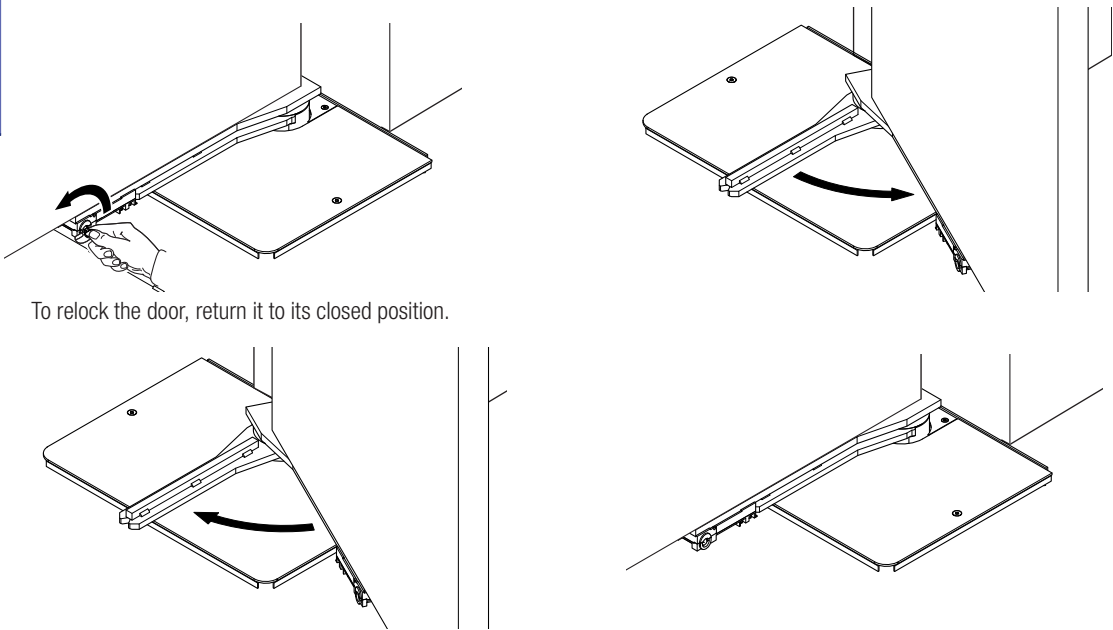


M8x20 screws  
UNI 5933



Manual release of the leaf

Insert the key/lever into the release lock and turn it counter-clockwise. Open the leaf until end run



To relock the door, return it to its closed position.

7 Maintenance

Periodic maintenance

Before doing any maintenance, cut off the power supply, to prevent any hazardous situations caused by accidentally activating the operator.

Periodic maintenance log kept by users (every six months)

Date	Notes	Signature

Extraordinary maintenance

- The following table is for logging any extraordinary maintenance jobs, repairs and improvements performed by specialized contractors.
- Any extraordinary maintenance jobs must be done only by specialized technicians.

Extraordinary maintenance log

Installer's stamp	Name of operator
	Job performed on (date)
	Technician's signature
	Requester's signature
Job performed _____	
_____	
_____	

Installer's stamp	Name of operator
	Job performed on (date)
	Technician's signature
	Requester's signature
Job performed _____	
_____	
_____	

## TROUBLESHOOTING

MALFUNCTIONS	POSSIBLE CAUSES	CHECKS AND REMEDIES
The gate does not open or close	<ul style="list-style-type: none"> <li>• No power supply</li> <li>• The gearmotor is unlocked</li> <li>• The transmitter battery is flat</li> <li>• The transmitter is broken</li> <li>• The stop button is stuck or broken</li> <li>• The opening/closing button or the key selector switch are stuck</li> </ul>	<ul style="list-style-type: none"> <li>• Check for mains power</li> <li>• Lock the gearmotor</li> <li>• Replace the batteries</li> <li>• Contact service</li> <li>• Contact service</li> <li>• Contact service</li> </ul>
The gate opens but does not close	<ul style="list-style-type: none"> <li>• The photocells are engaged</li> </ul>	<ul style="list-style-type: none"> <li>• Make sure that the photocells are clean and work correctly</li> <li>• Contact service</li> </ul>
The flashing light does not work	<ul style="list-style-type: none"> <li>• The bulb has blown</li> </ul>	<ul style="list-style-type: none"> <li>• Contact service</li> </ul>

## Phasing out and disposal

 CAME S.p.A. employs a UNI EN ISO 14001 certified and compliant environmental protection system at its plants, to ensure that environmental safeguarding.

We ask you to keep protecting the environment, as CAME deems it to be one of the fundamental points of its market operations strategies, by simply following these brief guidelines when disposing:

### DISPOSING THE PACKING MATERIALS

The packing components (cardboard, plastic, etc.) are solid urban waste and may be disposed of without any particular difficulty, by simply separating them so that they can be recycled.

Before actions it is always advisable to check the pertinent legislation where installation will take place.

**DO NOT DISPOSE OF IN NATURE!**

### DISPOSING OF THE PRODUCT

Our products are made using different types of materials. The majority of them (aluminium, plastic, iron, electric cables) can be considered to be solid urban waste. They may be recycled at authorised firms.


Other components (electrical circuit board, remote control batteries etc.) may contain hazardous waste.

They must, thus, be removed and turned in to licensed firms for their disposal.

Before acting always check the local laws on the matter.

**DO NOT DISPOSE OF IN NATURE!**

## DECLARATION OF CONFORMITY

**Declaration**  CAME S.p.A. declares that this device conforms to the essential, pertinent requirements provided by directives 2006/42/CE, 2004/108/CE.

*An original copy of the declaration of conformity is available on request.*



**IT** • Per ogni ulteriore informazione su azienda, prodotti e assistenza nella vostra lingua:

**EN** • For any further information on company, products and assistance in your language:

**FR** • Pour toute autre information sur la société, les produits et l'assistance dans votre langue :

**DE** • Weitere Infos über Unternehmen, Produkte und Kundendienst bei:

**ES** • Por cualquier información sobre la empresa, los productos y asistencia en su idioma:

**NL** • Voor meer informatie over het bedrijf, de producten en hulp in uw eigen taal:

**PT** • Para toda e qualquer informação acerca da empresa, de produtos e assistência técnica, em sua língua:

**PL** • Wszystkie inne informacje dotyczące firmy, produktów oraz usług i pomocy technicznej w Waszym języku znajdują się na stronie:

**RU** • Для получения дополнительной информации о компании, продукции и сервисной поддержке на вашем языке:

**HU** • A vállalatra, termékeire és a műszaki szervizre vonatkozó minden további információért az Ön nyelvén:

**HR** • Za sve dodatne informacije o poduzeću, proizvodima i tehničkoj podršci:

**UK** • Для отримання будь-якої іншої інформації про компанію, продукцію та технічну підтримку:



English - Manual code: **119AV70EN** ver. **5** 01/2015 © CAME S.p.A.  
The data and information provided in this manual are subject to change at any time without prior notice by CAME Cancelli Automatici S.p.a.



**CAME Cancelli Automatici S.p.a.**

Via Martiri Della Libertà, 15

31030 **Dossan Di Casier** (Tv)

☎ (+39) 0422 4940

📠 (+39) 0422 4941

**Assistenza Tecnica/Numero Verde 800 295830**