



CE

119DU32EN

OPERATOR FOR SWING GATES



INSTALLATION MANUAL

**F1024**



English

**EN**



**CAUTION!**  
**important personal safety instructions:**  
**READ CAREFULLY!**



**Foreword**

- This product should only be used for the purpose for which it was explicitly designed. Any other use is considered dangerous. CAME S.p.A. is not liable for any damage resulting from improper, wrongful or unreasonable use
- Keep these warnings with the installation and use manuals issued with the automation system.

**Before installing**

*(preliminary check: in case of a negative outcome, do not proceed until you have complied with the safety requirements)*

- Check that the part you intend to automate is in good mechanical condition, balanced and aligned, and that it opens and closes properly. Make sure that proper mechanical stops are already in place
- If the operator will be installed at a height of less than 2.5 m from the ground or other access level, check whether you will need any protections and/or warnings
- Any gate leaves fitted with pedestrian entrances onto which you will install an operator must have a blocking mechanism when the gate is in motion
- Make sure that the opening of the automated gate is not an entrapment hazard as regards any surrounding fixed parts
- Do not mount the operator upside down or onto any elements that may fold under its weight. If needed, add suitable reinforcements at the points where it is secured
- Do not install onto gates not on level ground
- Check that any lawn watering devices will not wet the operator from the bottom up.

**Installation**

- Carefully section off the entire site to prevent unauthorised access, especially by minors and children
- Be careful when handling operators that weigh more than 20 kg. In such cases, use proper weight handling safety equipment
- All opening commands (e.g. buttons, key selector switches, magnetic detectors etc.) must be installed at least 1.85 m from the gate's area of operation perimeter - or where they cannot be reached from the outside of the gate. Also, the direct commands (buttons, touch commands etc.) must be installed at a height of at least 1.5 m and must not be accessible to the public
- All 'hold-to-run' commands must be placed where the moving gate leaves, transit areas and driveways are completely visible
- If missing, apply a permanent label that shows the position of the release mechanism
- Before delivering to the user, check that the system is EN 12453 (impact test) standard compliant. Make sure that the operator has been properly adjusted and that the safety and protection devices as well as the manual release are working properly
- Where necessary and in plain sight, apply the Warning Signs (e.g. gate plate)

**Special instructions and advice for users**

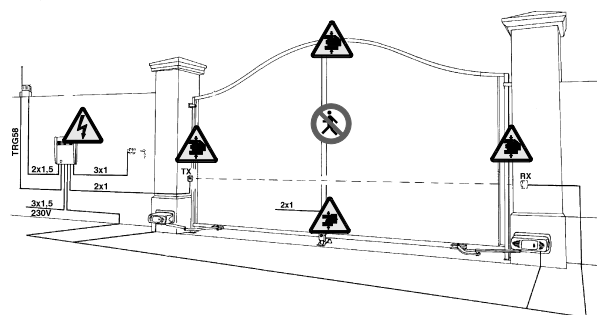
- Keep the gate's area of operation clean and clear of any obstacles. Check that there is no vegetation in the area of operation of the photocells and that there are no obstacles in the area of operation of the operator
- Do not allow children to play with the fixed command devices, or in the gate's area of operation. Keep any remote control devices (i.e. transmitters) or any control devices away from children as well, to prevent the operator from being activated accidentally
- The operator is not designed to be used by persons (including children) whose physical, sensorial or mental capacities are limited, or who are lacking in experience or knowledge, unless said persons can be supervised or given instructions regarding using the operator by a person responsible for their safety
- Frequently check the system, to see whether any anomalies or signs of wear and tear appear on the moving parts, on the component parts, on the securing points, on the cables and any accessible connections. Keep any joints (i.e. hinges) lubricated and clean, and do the same where friction may occur (i.e. slide rails)
- Perform functional tests on photocells and sensitive edges every six months. To check that the photocells work, pass an object in front of them during closing. If the operator reverses the direction of movement or comes to a halt, the photocells work correctly. This is the only maintenance operation that must be carried out while the operator is live. Ensure that the glass on the photocells is kept clean (use a cloth slightly moistened with water; do not use solvents or any other chemicals as these could damage the devices)
- If the system requires repairs or modifications, release the operator and do not use it until safety conditions have been restored
- Cut off the power supply before releasing the operator for manual openings and before any other operation, to prevent dangerous situations. Read the instructions
- If the power cable is damaged, it must be replaced by the manufacturer or

the technical assistance service or by a person with a similar qualification so as to prevent any risks

- It is **STRICTLY FORBIDDEN** for users to perform OPERATIONS THEY ARE NOT EXPLICITLY REQUIRED AND ASKED to do in the manuals. For repairs, adjustments and extraordinary maintenance, CONTACT THE SPECIALIST TECHNICAL SERVICE CENTRE
- On the periodic maintenance log, note down the checks you have done.

**Special instructions and advice for all**

- Avoid working near the hinges or moving mechanical parts
- Stay clear of the gate's area of operation when in motion
- Do not resist the direction of movement of the gate; this may present a safety hazard
- At all times be extremely careful about dangerous points that must be indicated by proper pictograms and/or black and yellow stripes
- When using a selector or command in 'hold-to-run' mode, keep checking that there are no people in the area of operation of the moving parts. Do this until you release the command
- The gate may move at any time without warning
- Always cut the power when cleaning or performing maintenance.



*Danger of crushing feet*



*Danger of hand crushing*



*Danger - live parts*



*No transit during the manoeuvre*

## LEGEND OF SYMBOLS



This symbol tells you to read the section with particular care.



This symbol tells you that the sections concern safety issues.



This symbol tells you what to say to the end-users.

## INTENDED USE AND RESTRICTIONS

### Intended use



The FERNI 24V operator is specifically engineered to automate residential and condominium swing gates, even under intensive use.

The use of this product for purposes other than those described above and installation executed in a manner other than as instructed in this technical manual are prohibited.

### Restrictions

Length of gate wings: up to 4 metres. Max. angle of gate wing when open: 90°.

Gate leaf width m	Gate leaf weight kg
2.00	800
2.50	600
3.00	500
3.50	450
4.00	400

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.

## DESCRIPTION

### Gearmotor

This product is engineered and manufactured by CAME S.p.A. and complies with current safety regulations.

The gearmotor is composed of two, cast aluminium half shells inside of which rest the gearmotor and endstops – with electro blocking – and an endless screw, epicycloidal gear reduction system.

### Technical features

Control board power supply: 230 A.C. 50/60Hz

Motor power supply: 24V D.C.

Max draw: 15A

Power: 180W

Opening time (90°): adjustable Gear ratio: 1/709

Max. torque: 470 Nm

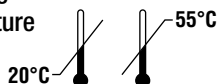
Duty Cycle: Intensive use

Protection Rating: IP54

Weight: 14 kg

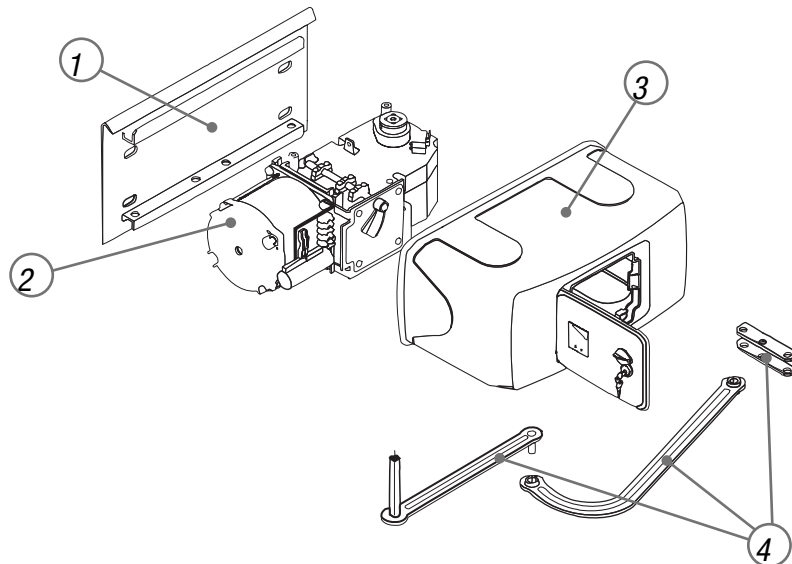
Operating

temperature

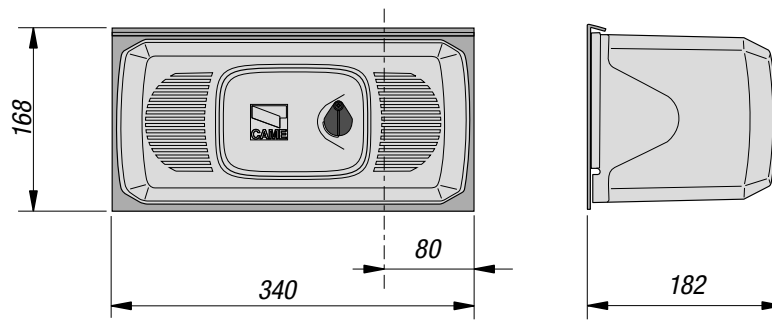


## Description of parts

- 1) Base plate
- 2) Gearmotor assembly
- 3) Motor cover
- 4) Articulated transmission arm



## Overall dimensions



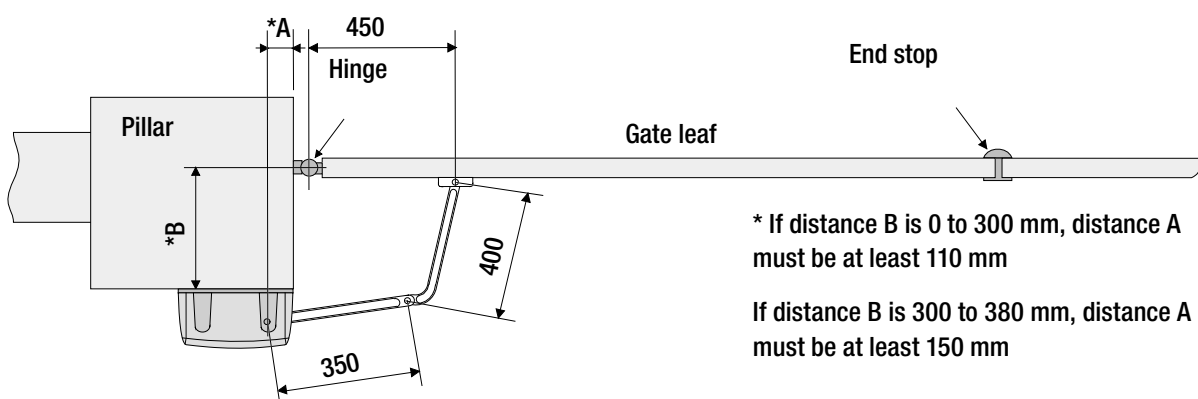
## INSTALLATION

**⚠** Installation must be carried out by expert qualified personnel and in full compliance with current regulations.

### Preliminary checks

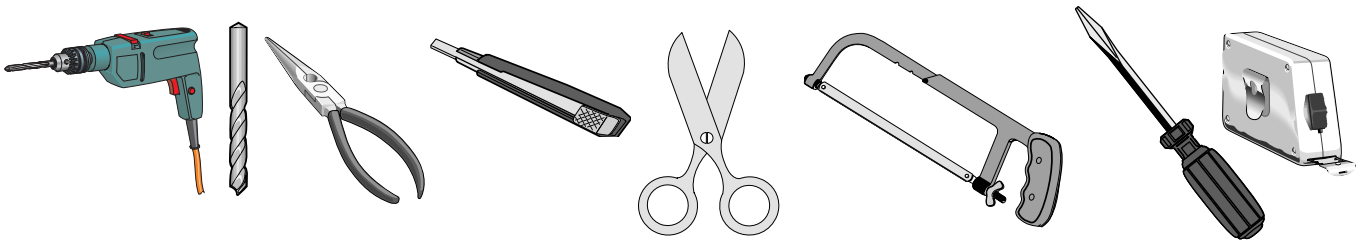
**⚠** Before installing, do the following:

- Make sure the structure of the gate is sturdy, the hinges work and that there is no friction between moving and non-moving parts;
  - Make sure the path of the electrical cables complies with the command and safety instructions;
  - That there is a (soundly secured to the ground) mechanical stop to prevent the gate leaf/gearmotor from over extending
- **⊕** You may perform internal back up circuit connections, provided you use additional insulation when compared to the other internal live parts;
- Make sure you have suitable tubing and conduits for the electrical cables to pass through and be protected against mechanical damage.



## 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 the current standards and regulations. The following figure illustrates the minimum equipment needed by the installer.

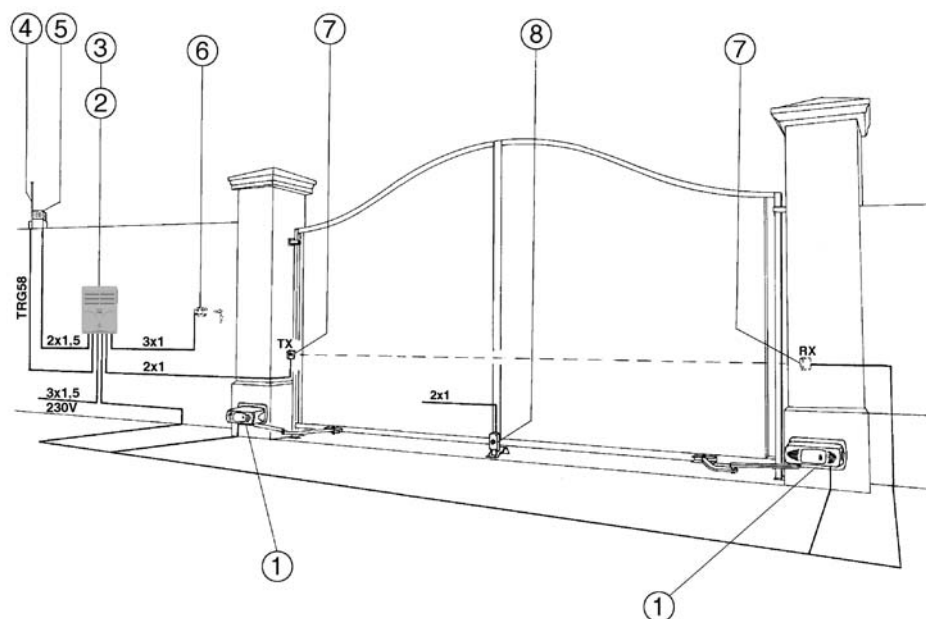


## Cable list and minimum thickness

Connection	Type of cable	Cable length 1 < 10 m	Cable length 10 < 20 m	Cable length 20 < 30 m
230 V control panel power supply	FROR CEI 20-22 CEI 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>
24 V motor power supply		2G x 1.5 mm <sup>2</sup>	2G x 1.5 mm <sup>2</sup>	2G x 2.5 mm <sup>2</sup>
Flashing light		2 x 1.5 mm <sup>2</sup>	2 x 1.5 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 1.5 mm <sup>2</sup>	4 x 1.5 mm <sup>2</sup>	4 x 1.5 mm <sup>2</sup>
Accessories power supply		2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>	2 x 1 mm <sup>2</sup>
Command 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>
Antenna connection	RG58	max. 10 m		

N.B.: If the cable length differs from that specified in the table, then you must determine the proper cable diameter in the basis of the actual power drawn by the connected devices and depending on the standards specified in CEI EN 60204-1. 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 follow the documentation provided with said products.

## Standard installation

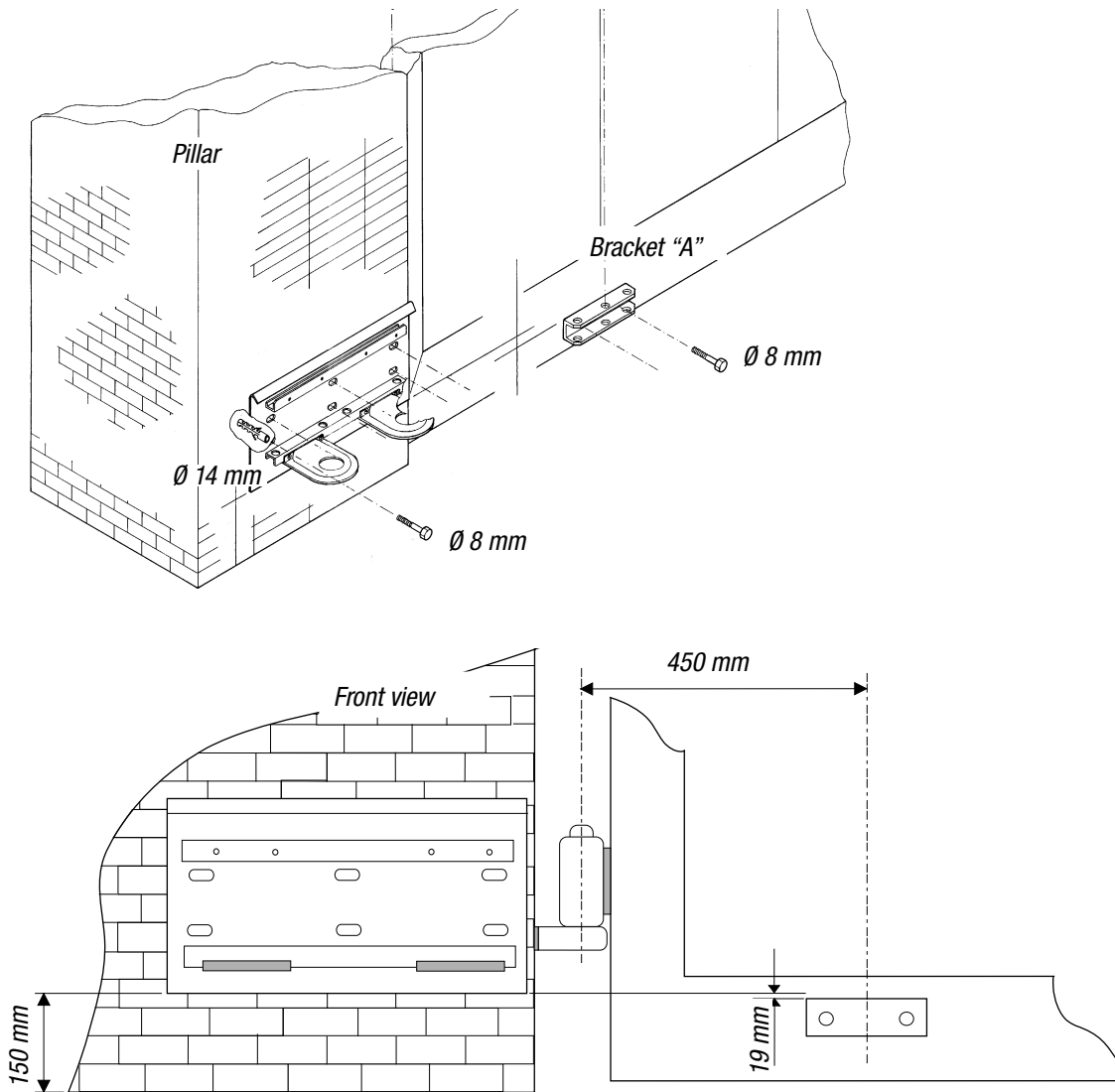


- 1 - Operator
- 2 - Control panel
- 3 - Radio receiver
- 4 - Antenna

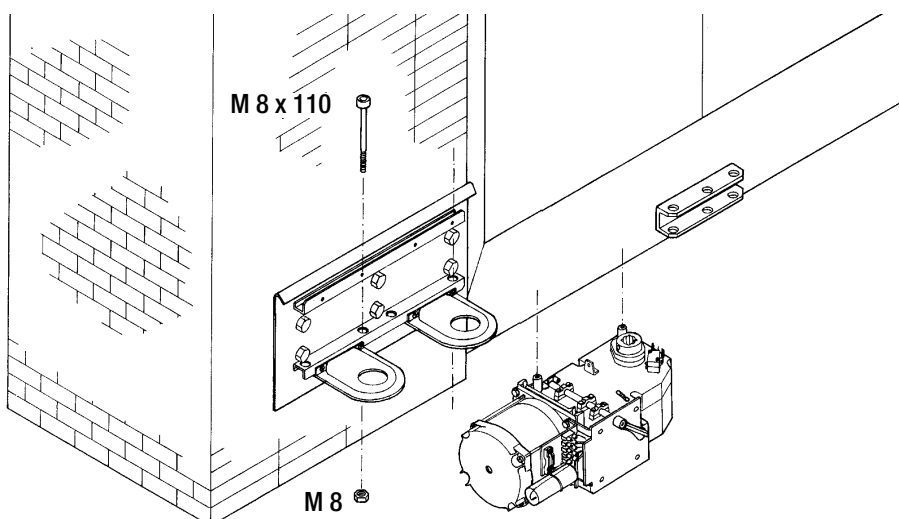
- 5 - Flashing light
- 6 - Selector switch
- 7 - Photocells
- 8 - Electric lock

## Mounting

- Secure the base plate to the pillar using  $\varnothing 8$  screws and  $\varnothing 14$  moulded inserts making sure the minimum distance of 150mm from the ground is met.
- Secure the A bracket (using  $\varnothing 8$  screws or by welding) to the gate leaf making sure the 450mm and 19mm distances measurements and are met.

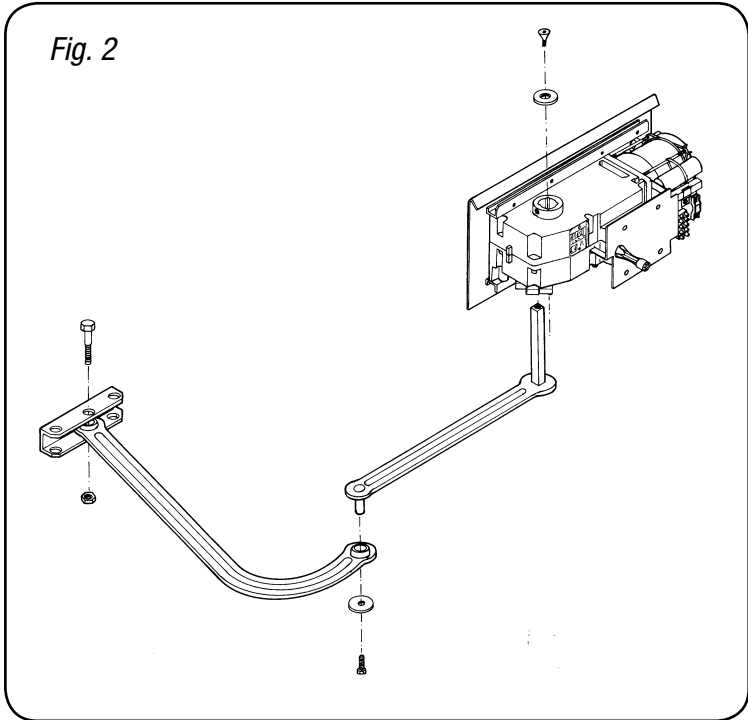
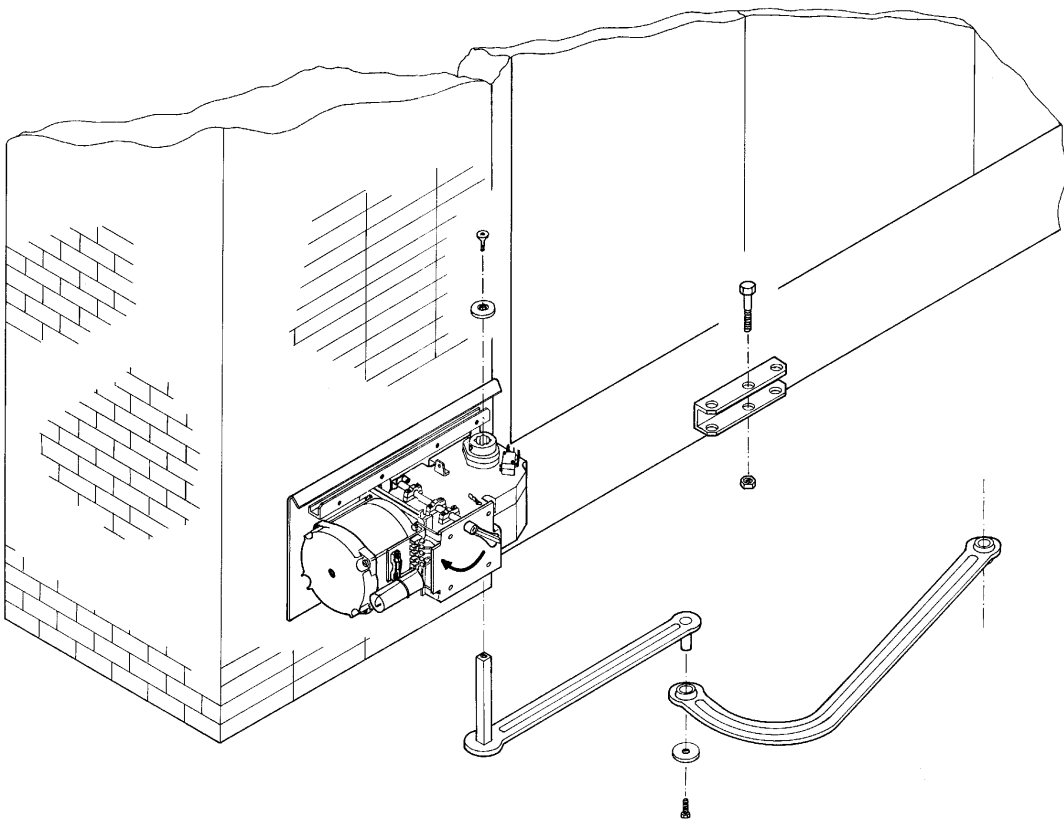


- Insert the gearmotor into the base plate and secure it using the two supplied M8x110 screws and M8 nuts.



- Insert the straight semi-arm into the motor shaft. Apply the flared washer, the M6x20 screw and lock the semi-arm using the two grub screws.

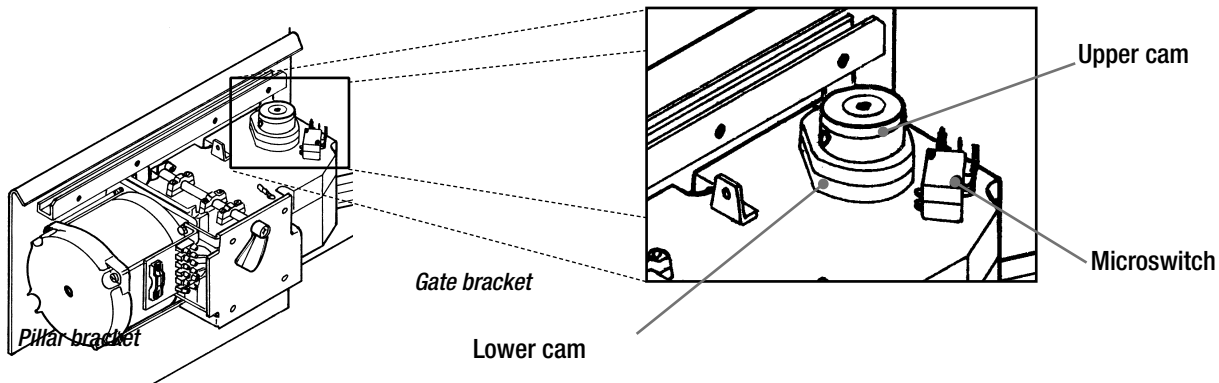
Join and secure the two arms using the washer and M8x16 screw. Release the motor (see p. 7) and secure the curved semi-arm to the "A" bracket using the M12X50 screw and the M12 nut making sure it runs freely. For right-hand application see fig. 2.



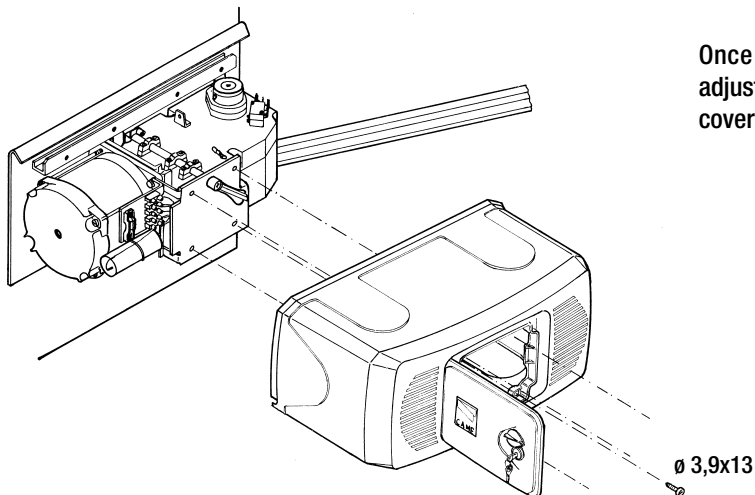
## Adjusting the opening Stop and closing Slowdown microswitches

**Opening:** release the gearmotor and move the door to the open position desired. Turn the upper cam until the microswitch is inserted and tighten the screw found on the cam.

**Closing:** release the gearmotor and lead the gate leaf 500 mm from the fully closed position. Turn the lower cam until the microswitch is inserted and tighten the screw found on the cam.



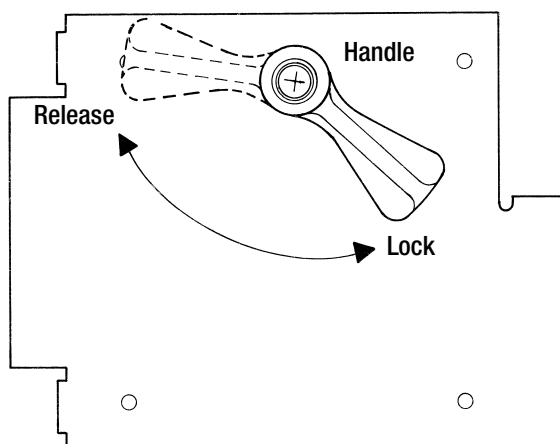
When performing the next, required, electronic adjustment of the closing space, please consult the technical documentation of the installed CAME control panel.



Once finished with mounting, electrical connections and adjustments, lock the motor back into place and replace the cover securing it with the 4 issued screws.

## Manually releasing the motor

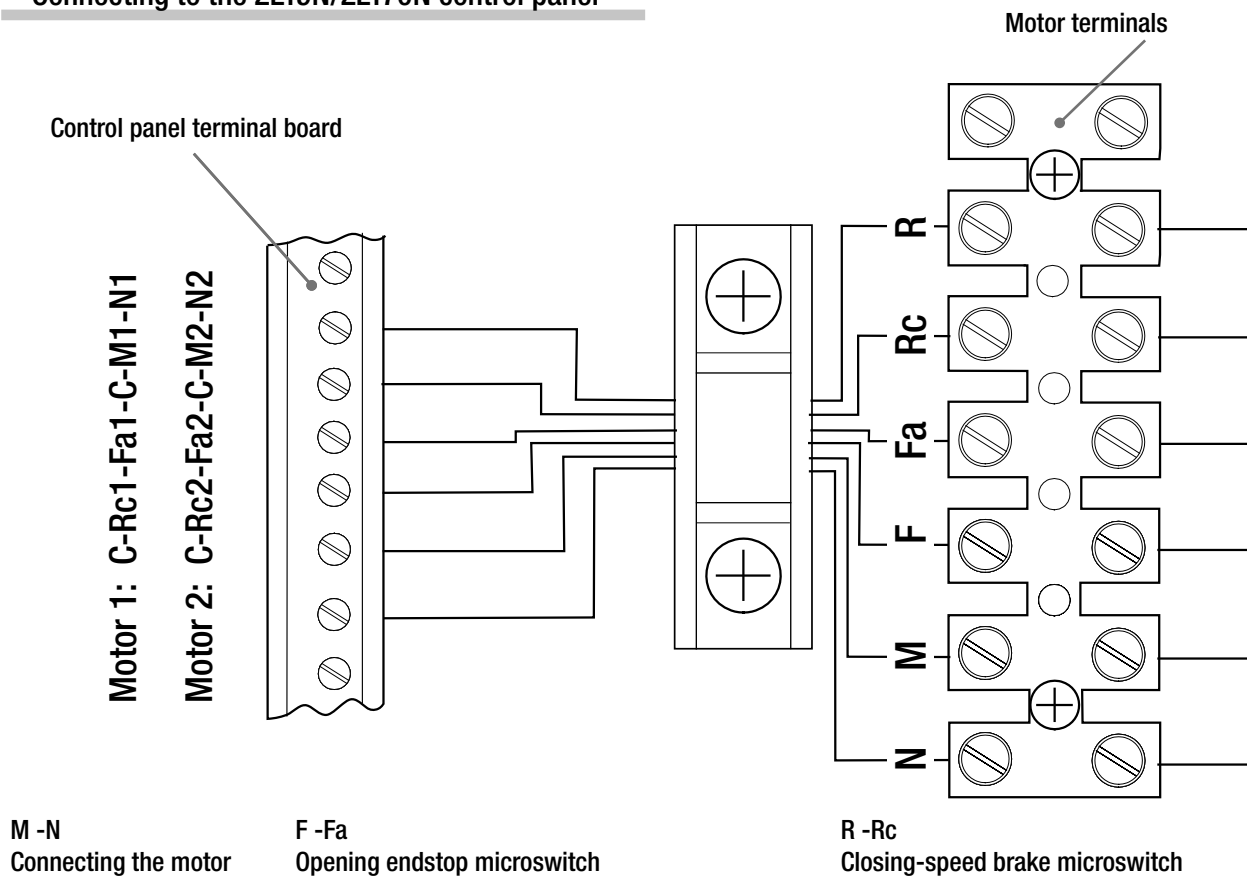
**⚠ Carry out when motor is not in operation**



In the event of power outages or breakdowns, release the gearmotor using the opposite handle.



## Connecting to the ZL19N/ZL170N control panel

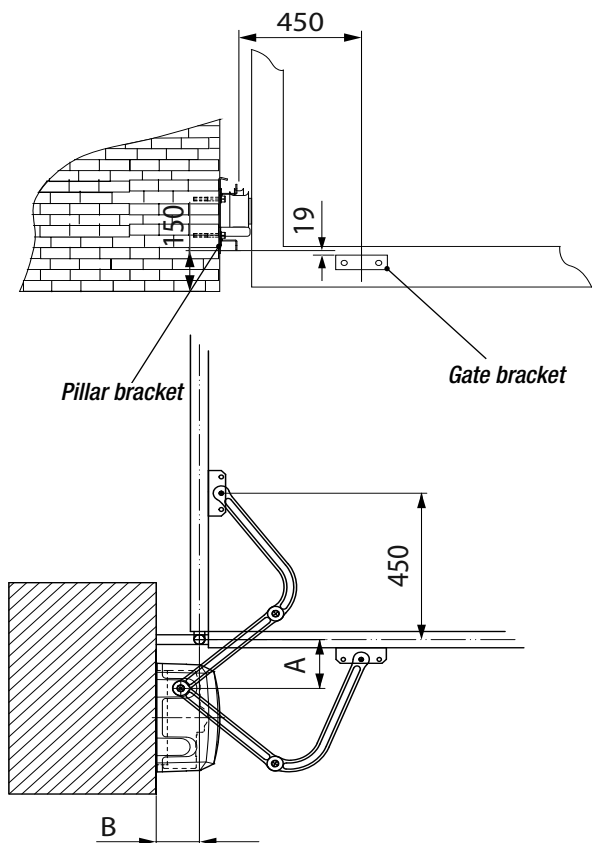


## INSTALLING AND CONNECTIONS FOR OUTWARD-OPENINGS

Below are the only procedures that vary compared to standard installations:

### Securing the brackets

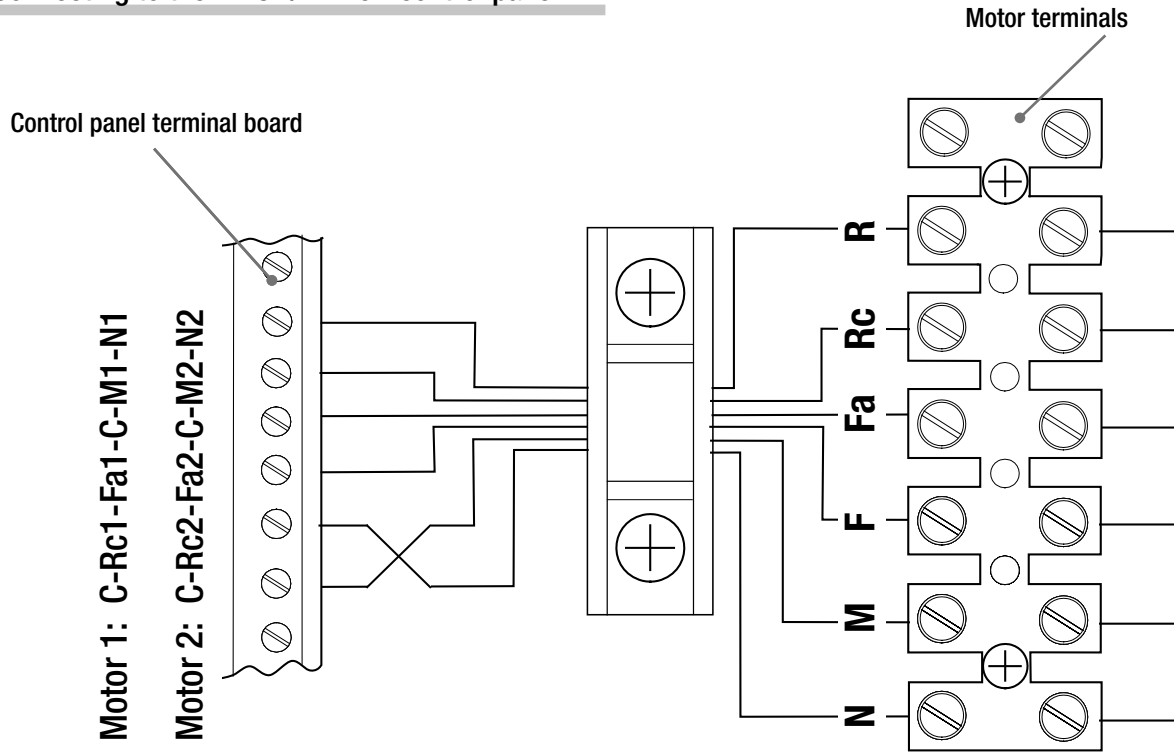
N.B. the drawings refer to installation of the left-hand gearmotor. The installation of the right-hand gearmotor is symmetrical. Determine the fixing point for the gate bracket and calculate the fixing point of the pillar bracket, respecting the values shown in the drawings and table.



### Application size

Leaf opening	A	B
90°	150	0 ÷ 120
120°	150	0 ÷ 60

## Connecting to the ZL19N/ZL170N control panel



M -N  
Connecting the motor

F -Fa  
Opening endstop microswitch

R -Rc  
Closing-speed brake microswitch

## TROUBLESHOOTING

MALFUNCTIONS	POSSIBLE CAUSES	CHECK AND REMEDIES
The gate will not open nor close	<ul style="list-style-type: none"> <li>• There is no power</li> <li>• The gearmotor is released</li> <li>• The transmitter's batteries are run down</li> <li>• The transmitter is broken</li> <li>• The stop button is either stuck or broken</li> <li>• The opening/closing button or the keyswitch are stuck</li> </ul>	<ul style="list-style-type: none"> <li>• Check that the power is up</li> <li>• Lock gearmotor (Chapt. 5.8)</li> <li>• Replace batteries</li> <li>• Call assistance</li> <li>• Call assistance</li> <li>• Call assistance</li> </ul>
The gate opens but will not close	<ul style="list-style-type: none"> <li>• The photocells are engaged</li> </ul>	<ul style="list-style-type: none"> <li>• Check that photocells are clean and in good working order</li> <li>• Call assistance</li> </ul>
The flashing light does not work	<ul style="list-style-type: none"> <li>• The bulb is burnt</li> </ul>	<ul style="list-style-type: none"> <li>• Call assistance</li> </ul>



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

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

## DISMANTLING AND DISPOSAL

☞ CAME S.p.A. applies a certified Environmental Management System at its premises, which is compliant with the UNI EN ISO 14001 standard to ensure the environment is safeguarded.

Please continue safeguarding the environment. At CAME we consider it one of the fundamentals of our operating and market strategies. Simply follow these brief disposal guidelines:

### ♻️ DISPOSING OF THE PACKAGING

The packaging materials (cardboard, plastic, and so on) should be disposed of as solid urban waste, and simply separated from other waste for recycling.

Always make sure you comply with local laws before dismantling and disposing of the product.

DO NOT DISPOSE OF IN NATURE!

### ♻️ DISMANTLING AND DISPOSAL

Our products are made of various materials. Most of these (aluminum, plastic, iron, electrical cables) is classified as solid household waste. They can be recycled by separating them before dumping at authorized city plants.

Whereas other components (control boards, batteries, transmitters, and so on) may contain hazardous pollutants.

These must therefore be disposed of by authorized, certified professional services.

Before disposing, it is always advisable to check with the specific laws that apply in your area.

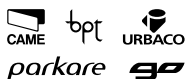
DO NOT DISPOSE OF IN NATURE!

## REFERENCE REGULATIONS

The product complies to the reference regulations in effect.

English - Manual code: 119DU32EN ver. 3 12/2016 © CAME S.p.A.  
The data and information reported in this installation manual are susceptible to change at any time and without obligation on CAME S.p.A. to notify users.

**CAME**  
safety & comfort



CAME S.p.A.

Via Martiri Della Libertà, 15

31030 **Dosson di Casier**  
Treviso - Italy

☎ (+39) 0422 4940

📠 (+39) 0422 4941

Via Cornia, 1/b - 1/c

33079 **Sesto al Reghena**  
Pordenone - Italy

☎ (+39) 0434 698111

📠 (+39) 0434 698434

**www.came.com**