



119BV10IT



GATE AUTOMATION
DIRECT

CE

OPERATOR
FOR SLIDING GATES



Installation manual

BX-324 / BX-324V



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 Cancelli Automatici 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 leaves fitted with pedestrian entrances onto which you will install an operator must have a blocking mechanism when the leaf is in motion
- Make sure that the opening of the automated leaf 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 leaves 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 case, procure the tools required for safe gate movement
- All opening commands (buttons, key selectors, magnetic readers etc.) must be installed at least 1.85 m from the perimeter of the area of turnstile movement, or where they cannot be reached from outside through the turnstile. In addition, direct controls (button, touch sensitive keys, 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

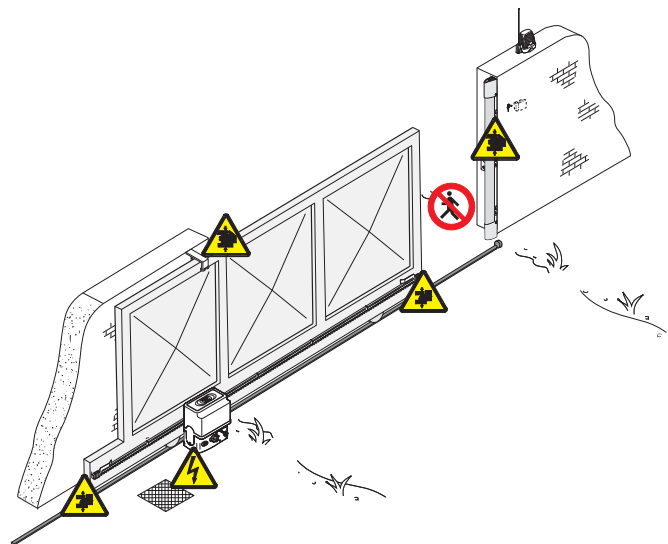
- Keep the gate's area of operation clean and clear of any obstacles. Check that there is no vegetation in the area of operation of the photocells and that there are no obstacles in the area of operation of the operator
- Do not allow children to play with the fixed command devices, or in the gate's 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 hand crushing






Danger - live parts



No transit during the manoeuvre

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 in question complies with the regulations referred to in the declaration of conformity.


DESCRIPTION

This product has been designed and built by CAME CANCELLI AUTOMATICI S.p.A. in compliance with applicable safety standards.

The operator consists of a cast aluminium part, with a non-reversible electromechanical gearmotor operating inside and an ABS container for the control board with the transformer.

Intended use

The BX-324 / BX-324V operator has been designed to power sliding gates for residential and condominium use..

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

Limits of use

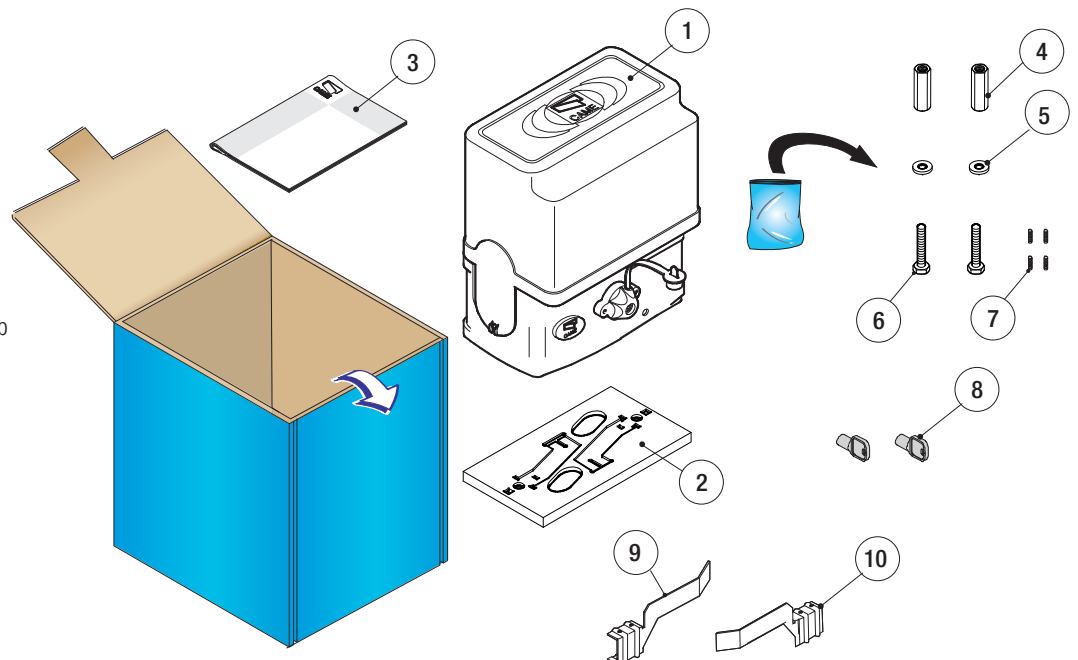
Type	BX-324 / BX-324V
Max. leaf length (m)	8.5
Max. leaf weight (kg)	300

Technical data

Type	BX-324 - BX324V
Protection rating (IP)	54
Power supply (V - 50/60 Hz)	230
Motor power supply (V)	24
Power draw (A)	7
Power (W)	170
Thrust (N)	300
Opening speed (m/min)	12 - 17
Duty cycle (%)	50
Operating temperature (°C)	-20 - +55
Gear ratio (i)	1/50
Insulation class	□
Weight (kg)	8 - 6

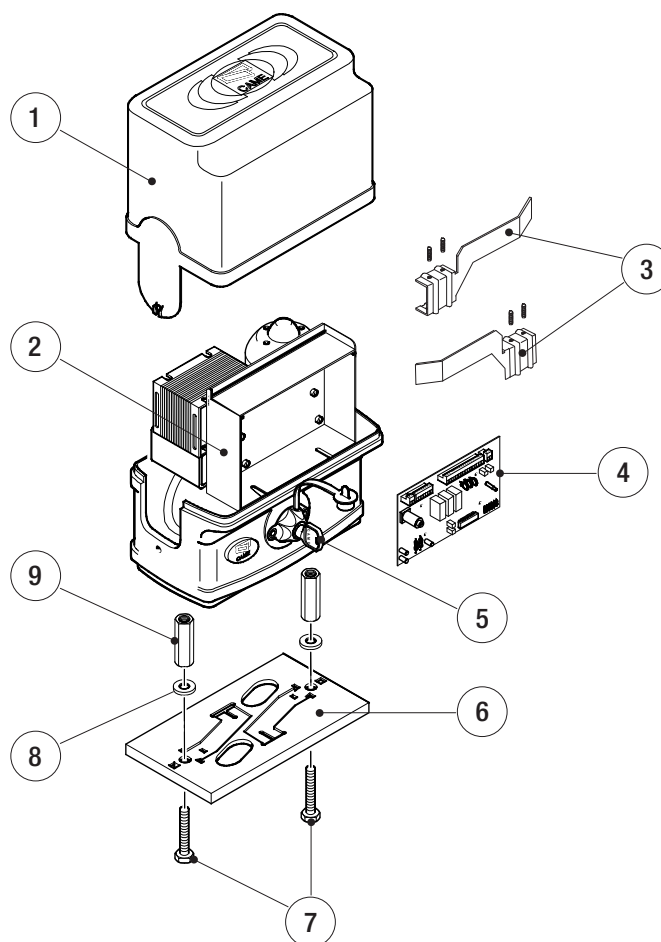
Packing list

1. 1 x Operator
2. 1 x Fixing plate
3. 1 x Installation manual
4. 2 x Nuts
5. 2 x Washers
6. 2 x Fixing screws
7. 2 x UNI5927 M6x25 end run grub screws
8. 2 x Release keys
9. 1 x Left-hand end run fin
10. 1 x Right-hand end run fin

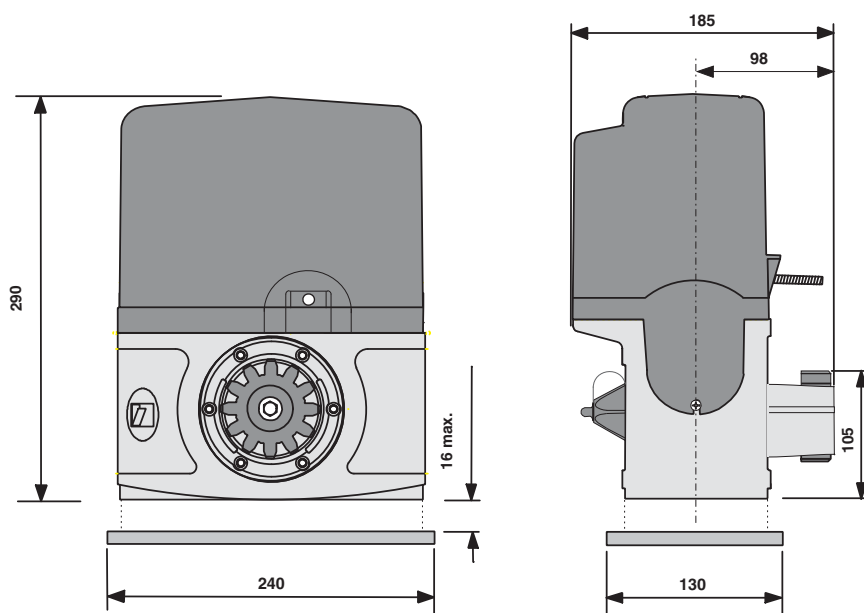


Description of the components

1. Cover
2. Control board mount
3. End run fins
4. Control board
5. Release key
6. Fixing plate
7. Fixing screws
8. Washer
9. Nut



Dimensions (mm)



GENERAL INSTALLATION INSTRUCTIONS

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

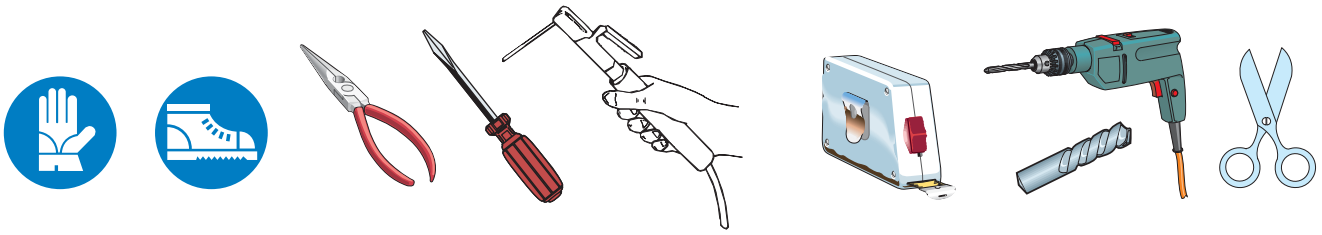
Preliminary checks

⚠ Before installing the operator:

- Check that the gate is stable, and that the sliding wheels are in good condition and greased.
- Check that the ground guide is securely fixed to the ground, completely on the surface and free from irregularities that may hinder gate movement.
- Check that the upper guide blocks do not create friction.
- Make sure there is one opening and one closing mechanical stop.
- Make sure that the mounting point for the gearmotor is in an area protected from impacts and that the anchoring surface is solid;
- Provide a suitable single-pole disconnection device, with a maximum of 3 mm between the contacts, to disconnect the power supply;
- ⚡ 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;
- Prepare suitable piping and ducts for routing the electrical cables, ensuring protection 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 current standards and regulations. The figure shows some examples of installer's tools.



Types of cables and minimum thicknesses

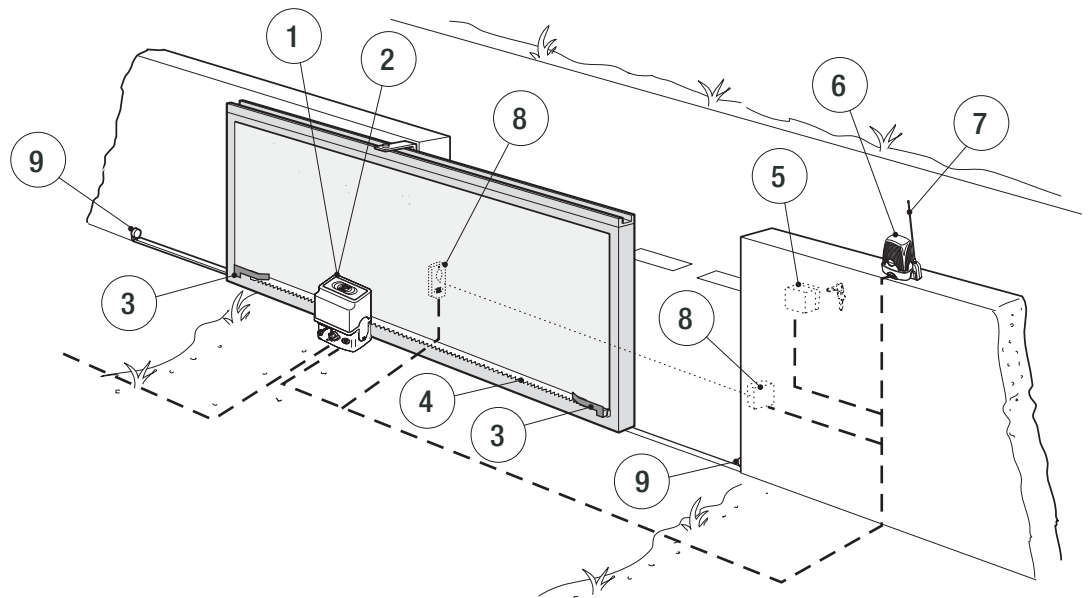
Connection	Cable type	Cable length 1 < 10 m	Cable length 10 < 20 m	Cable length 20 < 30 m
Control panel power supply 230 V	FROR CEI 20-22 IEC EN 50267-2-1	3G x 1.5 mm ²	3G x 2.5 mm ²	3G x 4 mm ²
Flashing light		2 x 0.5 mm ²	2 x 1 mm ²	2 x 1.5 mm ²
Photocell transmitters		2 x 0.5 mm ²	2 x 0.5 mm ²	2 x 0.5 mm ²
Photocell receivers		4 x 0.5 mm ²	4 x 0.5 mm ²	4 x 0.5 mm ²
Control devices		2 x 0.5 mm ²	2 x 0.5 mm ²	2 x 0.5 mm ²
Antenna connection	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.

Example of a system

1. Operator
2. Radio receiver
3. End run fins
4. Rack
5. Key selector
6. Flashing light
7. Antenna
8. Photocells
9. End run



INSTALLATION

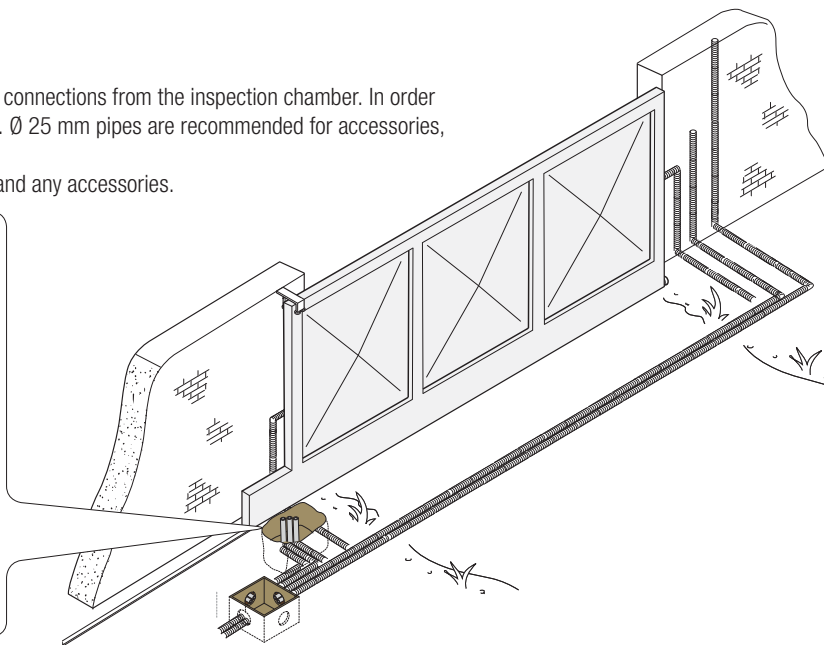
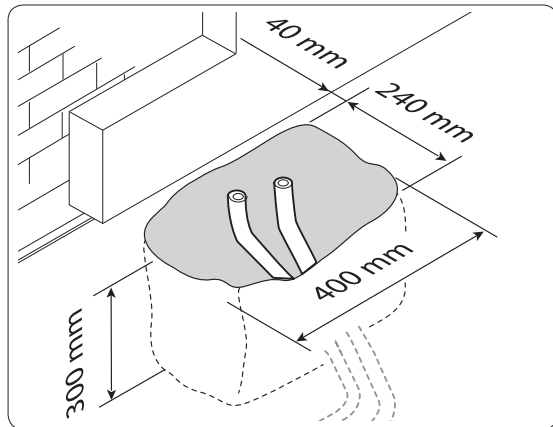
⚠ The following illustrations are only examples, given that the space for securing the operator and accessories varies depending on the overall dimensions. The installation technician is responsible for choosing the most suitable solution.

Installing corrugated tubes

Make the hole for the counterframe.

Prepare the junction boxes and corrugated tubes necessary for the connections from the inspection chamber. In order to connect the gearmotor, a $\varnothing 60$ mm corrugated tube is advisable. $\varnothing 25$ mm pipes are recommended for accessories, on the other hand.

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

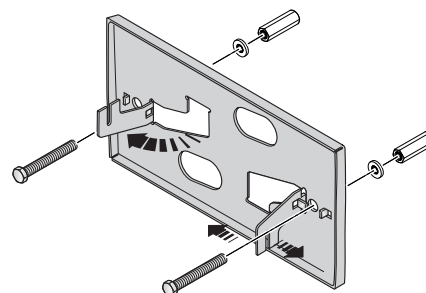
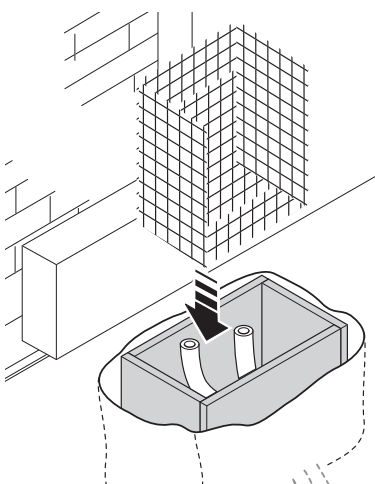
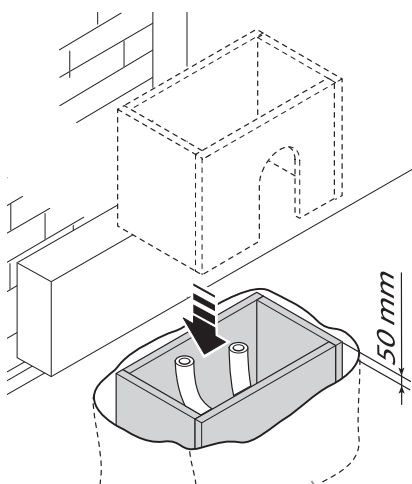


Installing the mounting plate

Prepare a counterframe that is larger than the mounting plate and place it in the hole. The counterframe must protrude 50 mm from ground level.

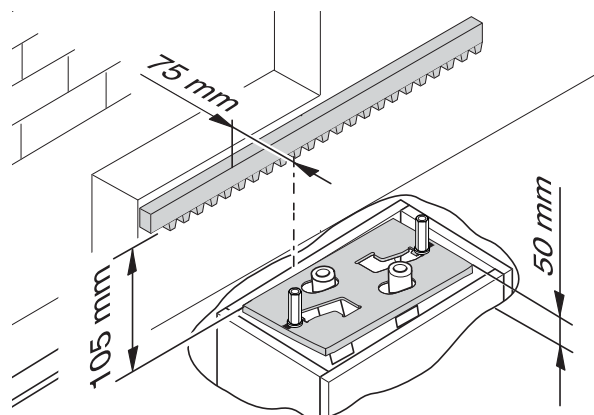
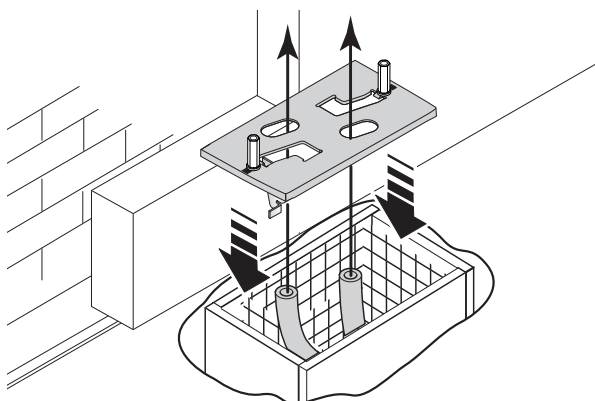
Insert an iron grid inside the counterframe to reinforce the concrete.

Secure the anchor brackets to the plate using the screws, nuts and washers supplied.



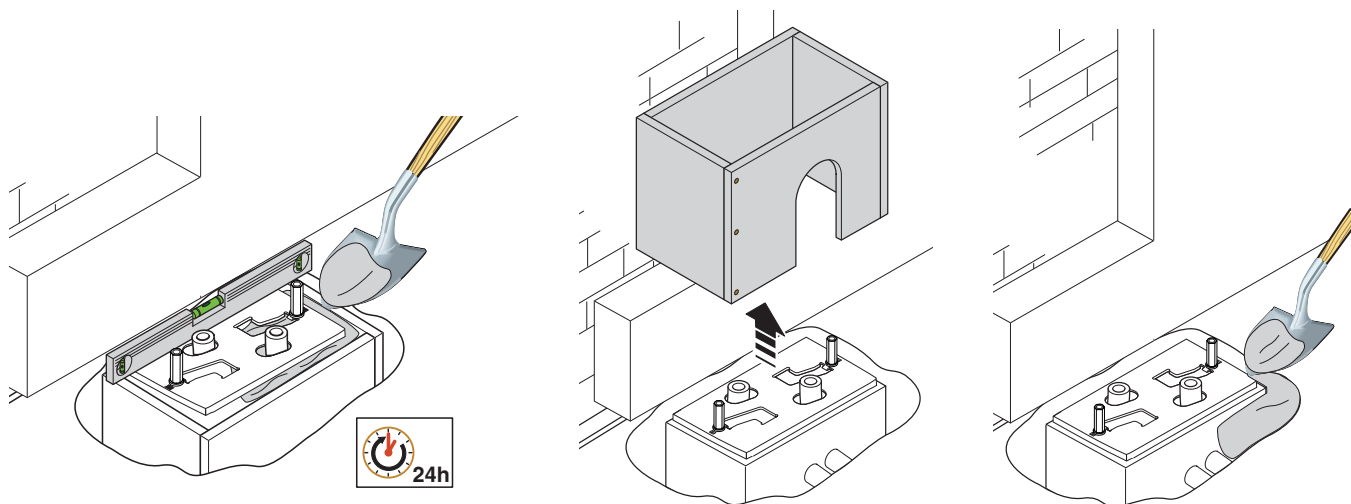
Position the mounting plate, respecting the measurements shown on the drawing, if the rack is already present.

Caution! The tube must pass through the prepared holes.



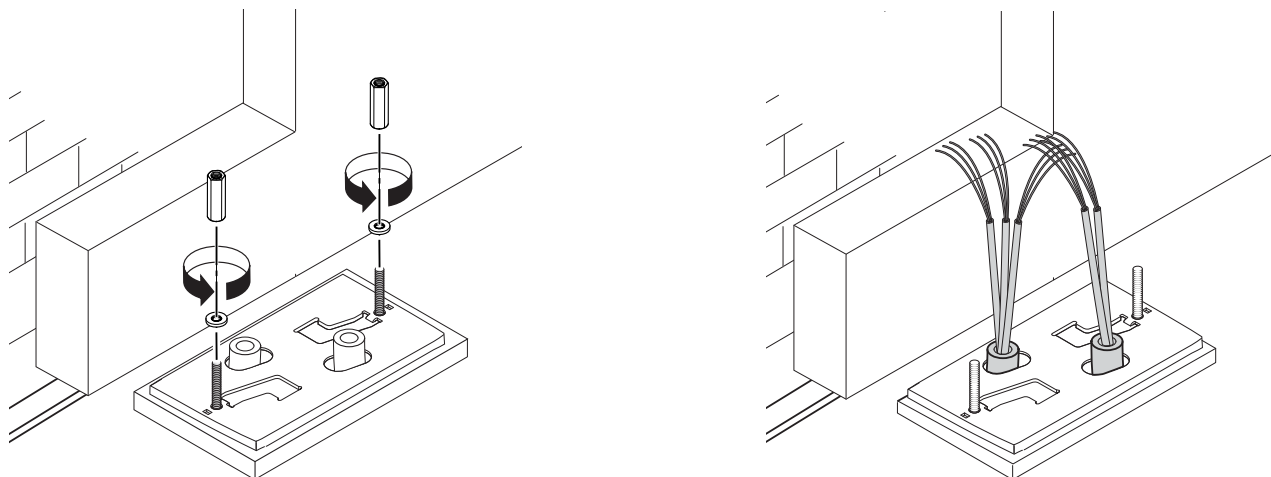
Fill the counterframe with cement. The plate must be perfectly level with the screw threads completely on the surface.
Wait at least 24 hours for it to harden.

Remove the counterframe and fill the hole around the block of cement with earth.



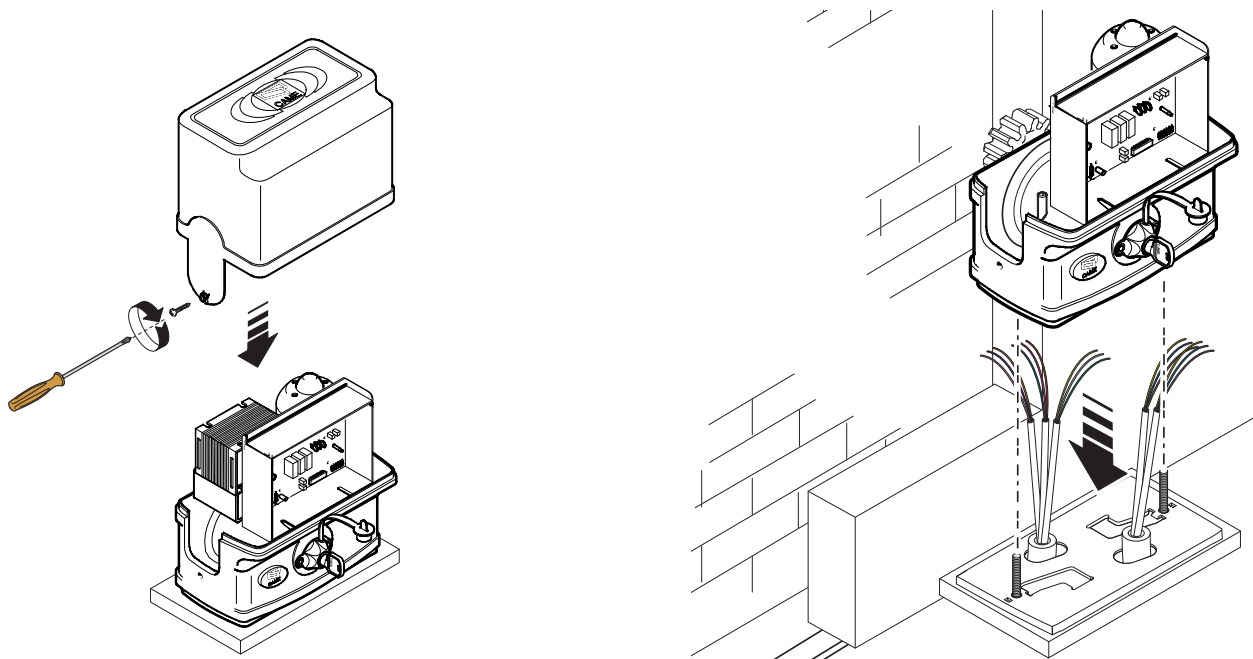
Remove the nuts and washers from the screws.

Insert the electric cables in the tube until they protrude approximately 400 mm.

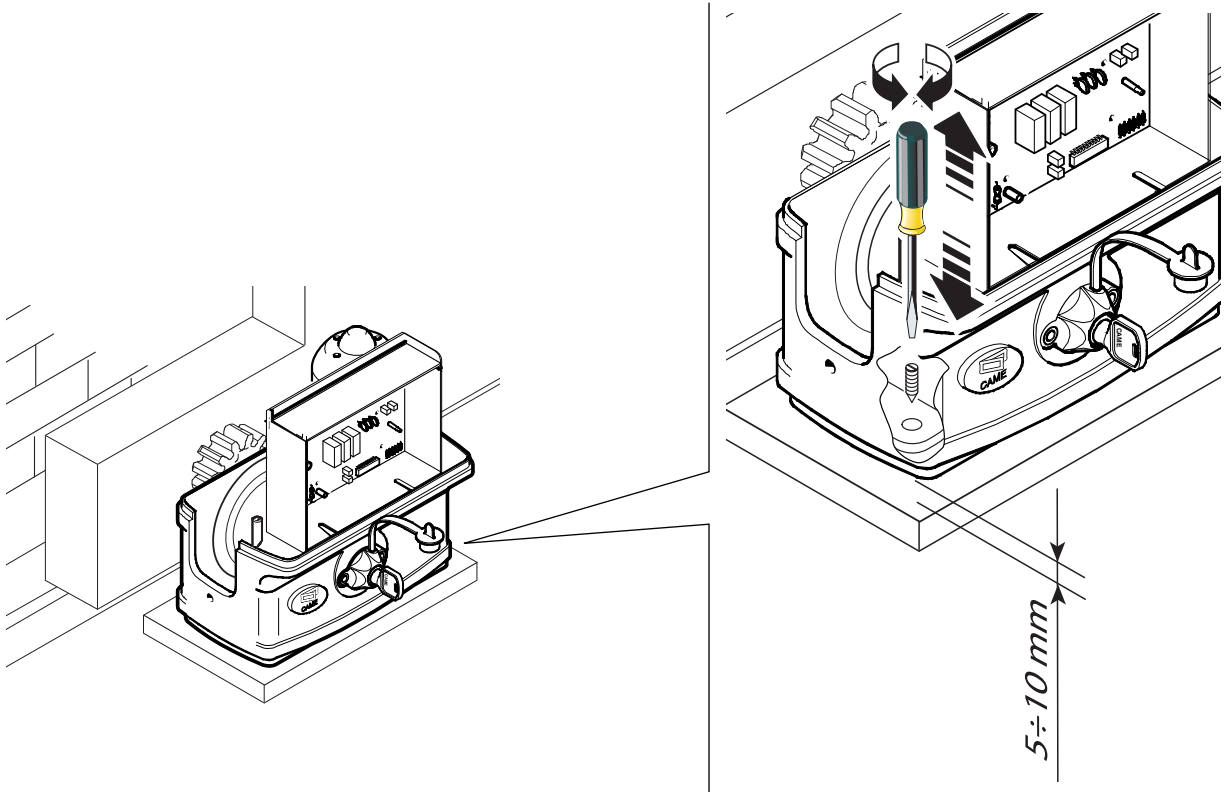


Securing the gearmotor

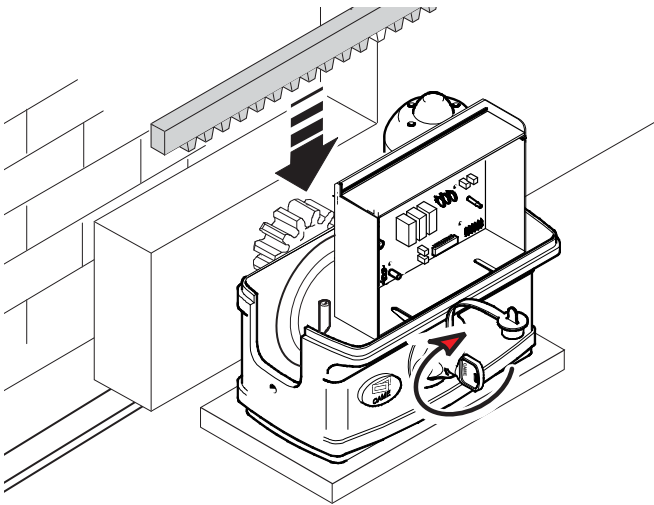
Remove the gearmotor cover by unscrewing the side screws. Position the gearmotor above the mounting plate.



Lift the gearmotor 5 to 10 mm up from the plate, using the threaded steel feet for any subsequent adjustments between the pinion and the rack.



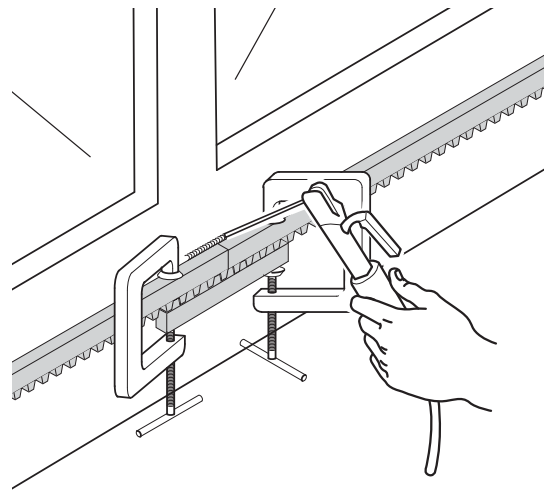
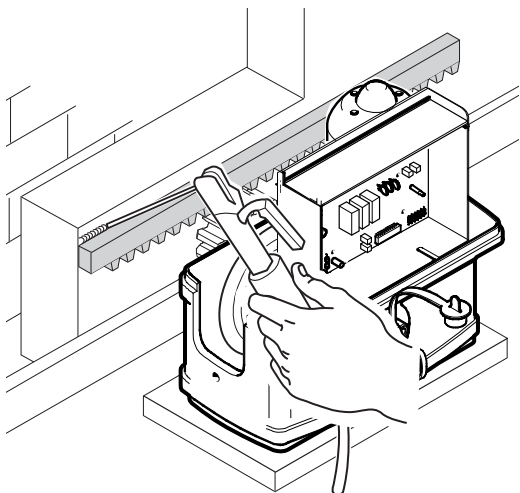
Unlock the gearmotor. Rest the rack on top of the gearmotor pinion.



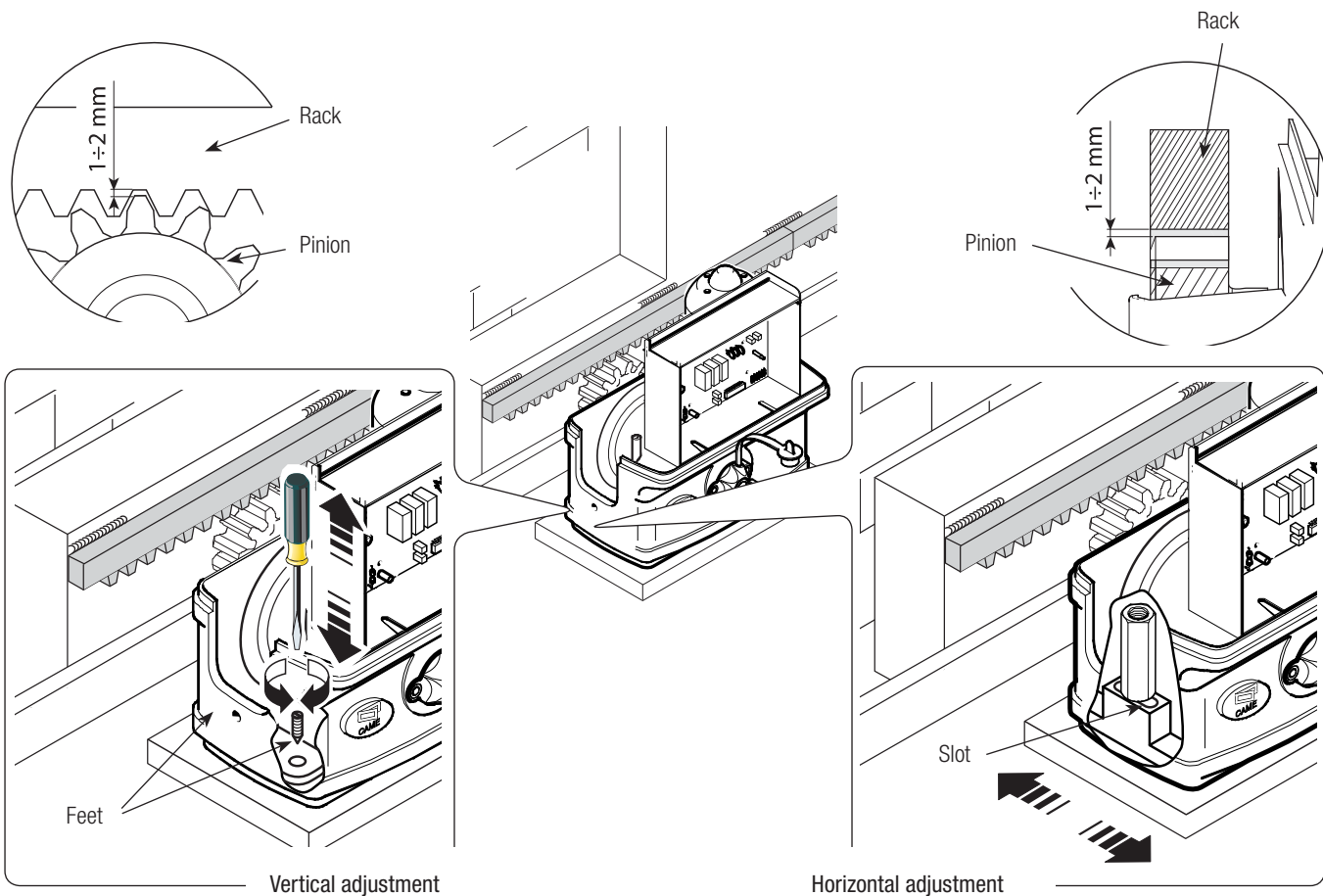
Weld or secure the rack to the gate along its entire length.

To assemble the rack modules, use a piece of scrap and place it under the join point, securing it using two terminals.

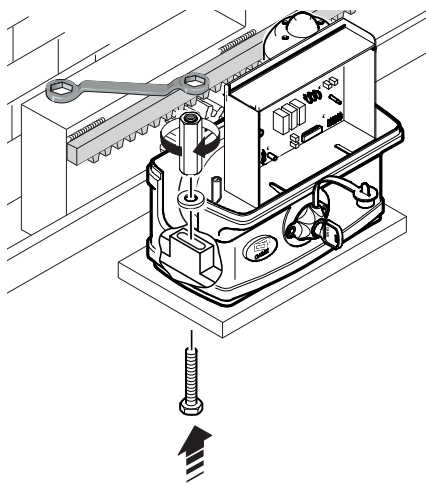
N.B. if the rack is already present, proceed directly with adjusting the pinion/rack coupling distance.



Open and close the gate manually and adjust the pinion/rack coupling distance using the threaded feet (vertical adjustment) and the slots (horizontal adjustment). This prevents the weight of the gate bearing upon the operator.

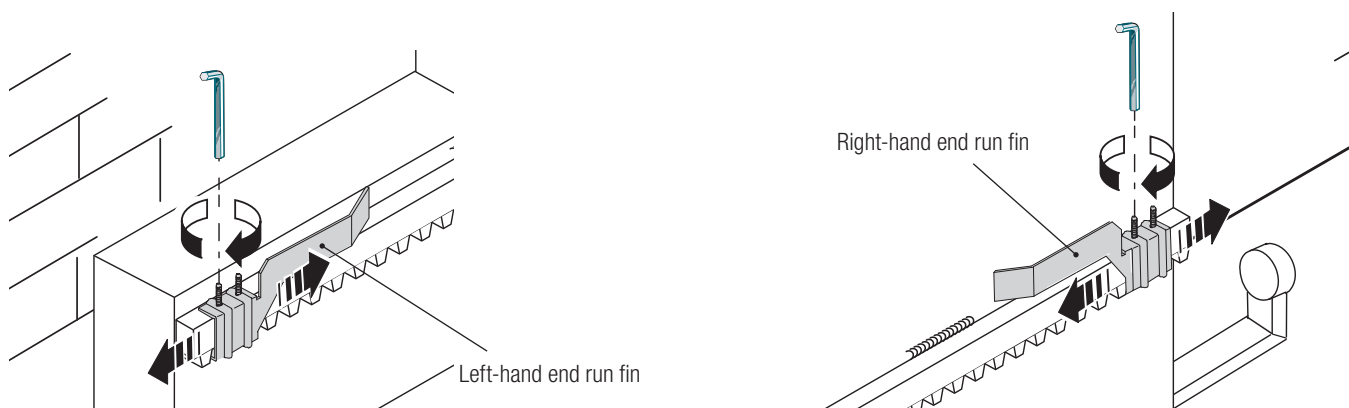


When adjustment is complete, secure the gearmotor to the plate using the washers and nuts.



Determining the end run points

Position the end run fins on the rack and secure them using the 3 mm hex key. Their position limits the gate run. N.B. ensure that the gate does not strike against the mechanical stop during opening or closing.



ELECTRICAL CONNECTIONS

⚠ **Caution! Before intervening on the control panel, disconnect mains power.**

Control board power supply: 230 V AC, with 50-60 Hz frequency

Control device power supply: 24 VAC.

⚠ The total power of the accessories should not exceed 40 W.

The functions must be set using the dip switches and the adjustments using the trimmers.

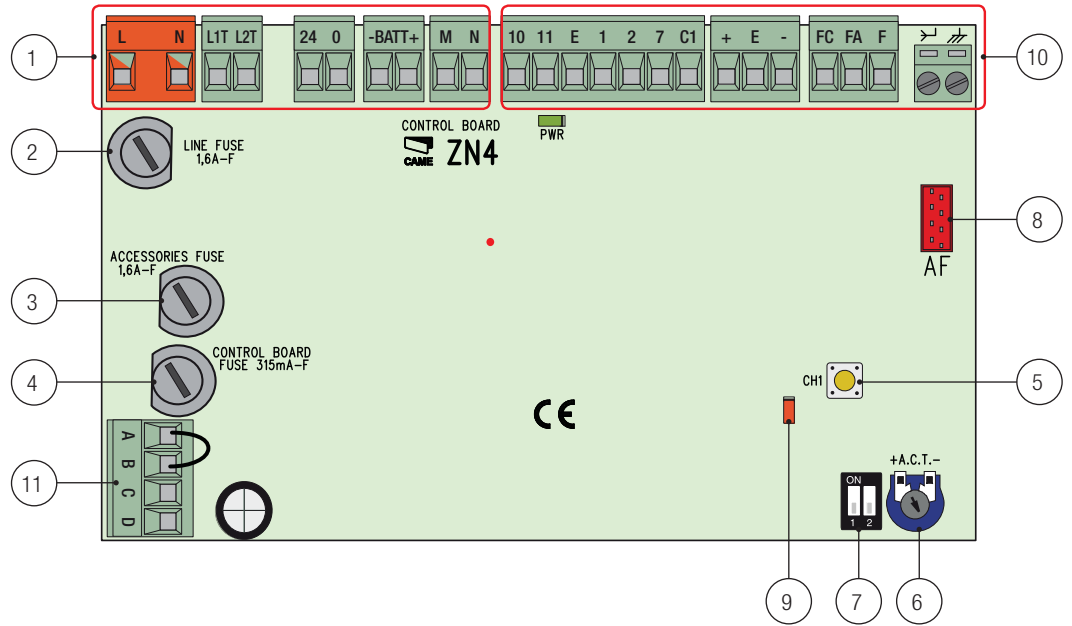
All the connections are protected by quick fuses.

FUSE TABLE

Line fuses	1.6 A-F
Panel fuse	315 mA-F
Accessory fuse	1.6 A-F

Description of the components

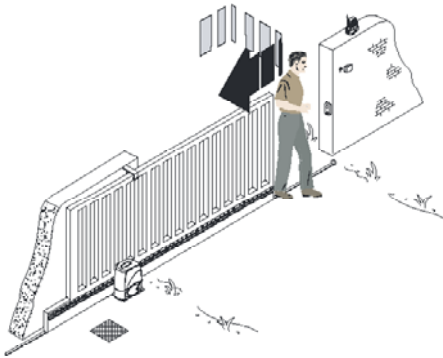
1. Power supply and gearmotor connection terminal block
2. Line fuse
3. Accessory fuse
4. Panel fuse
5. Radio code memorisation buttons
6. ACT trimmer: adjusting the automatic closing time
7. Function select DIP
8. Connector for AF card
9. Indicator LED
10. Accessory, encoder and end-run connection terminal block
11. Emergency batteries connection board terminal block.



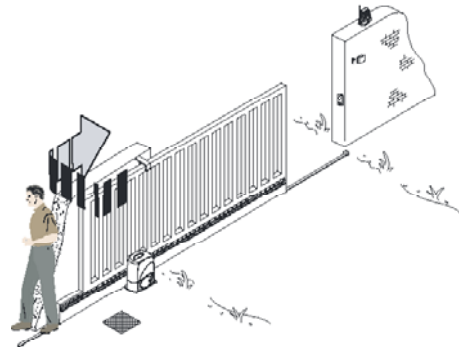
General description

The card has an amperometric device that continuously monitors the engine thrust. When the gate encounters an obstacle, the amperometric sensor immediately detects an overload in the drive and acts on gate movement by reversing its direction:

- reopens it when closing ⁽¹⁾

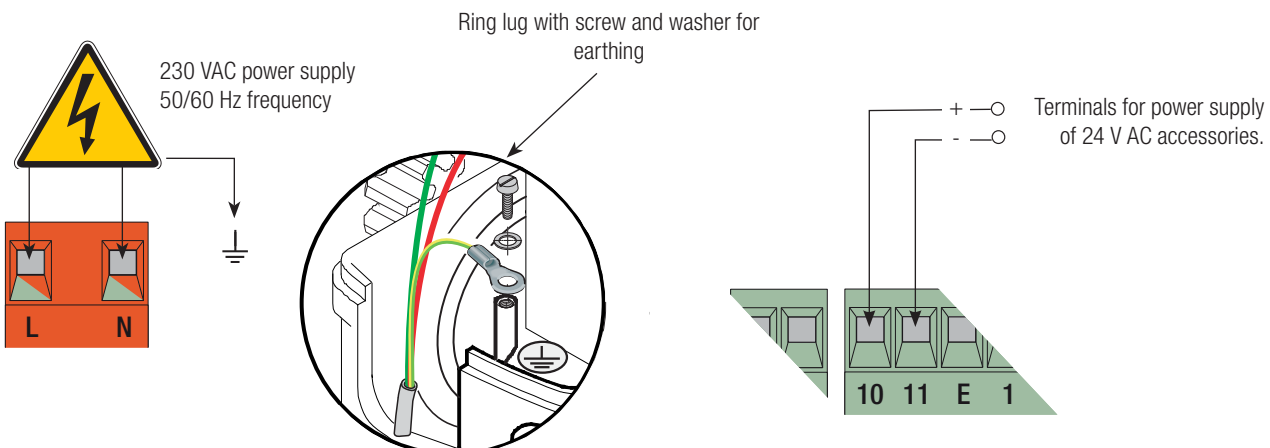


- recloses it when opening ⁽¹⁾



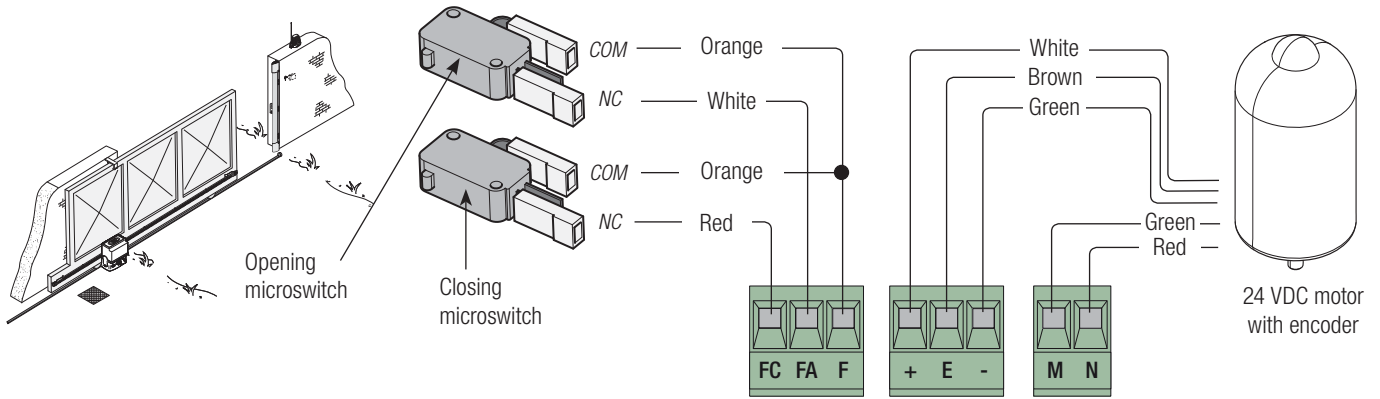
⚠ ⁽¹⁾ Caution: during closing, after 3 consecutive obstacles have been detected, the gate stops during opening and automatic closing is disabled. To resume movement, press the command button or use the transmitter.

Power supply

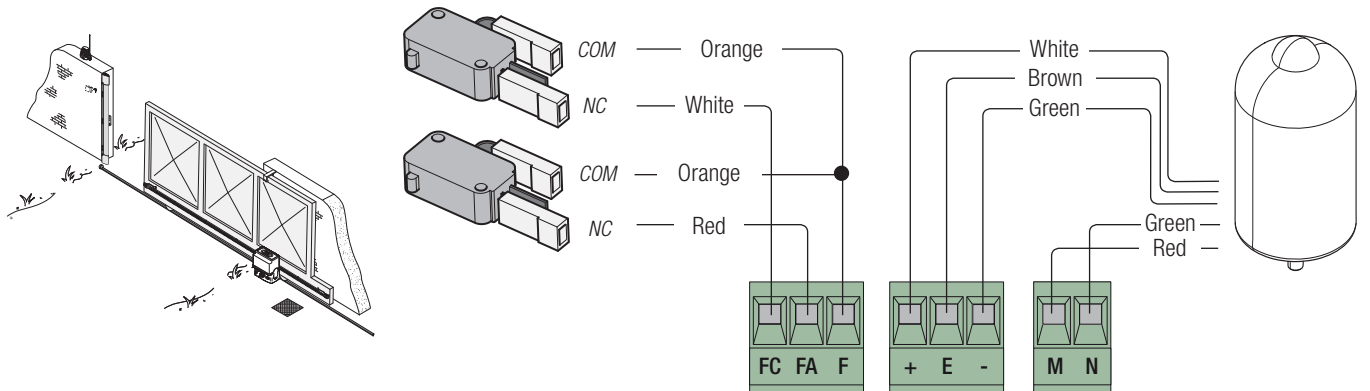


Connecting the gearmotor and end run

The motor is designed to be installed on the left, inside view.



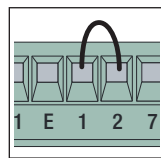
If installing on the right, inside view, reverse the motor and end run terminals on the control panel.



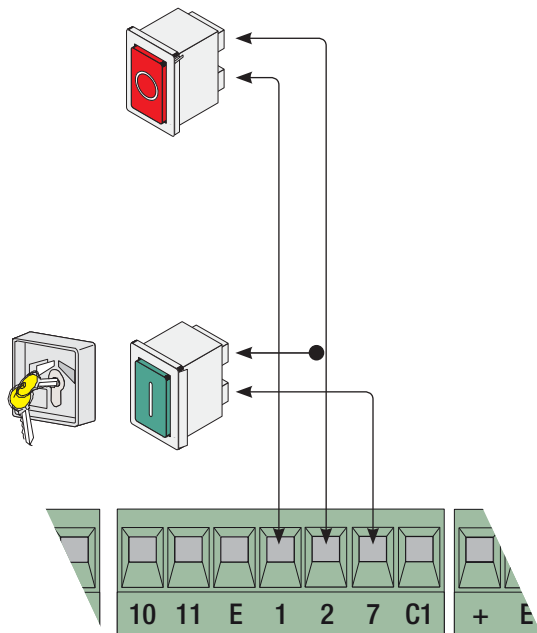
Control devices

Stop button (NC contact) Stops the gate with the exclusion of automatic closing. To resume movement, press the control button or other control device.

NB: if not used, short 1 and 2.

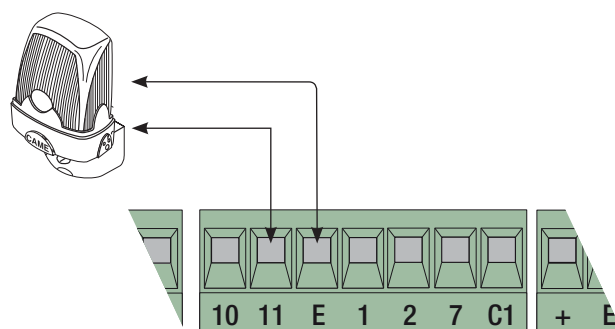


OPEN-STOP-CLOSE-STOP (sequential) function / OPEN-CLOSE (step-by-step) from the control device (N.O. contact) See dip switch 2 function selection.



Indicator and lighting devices

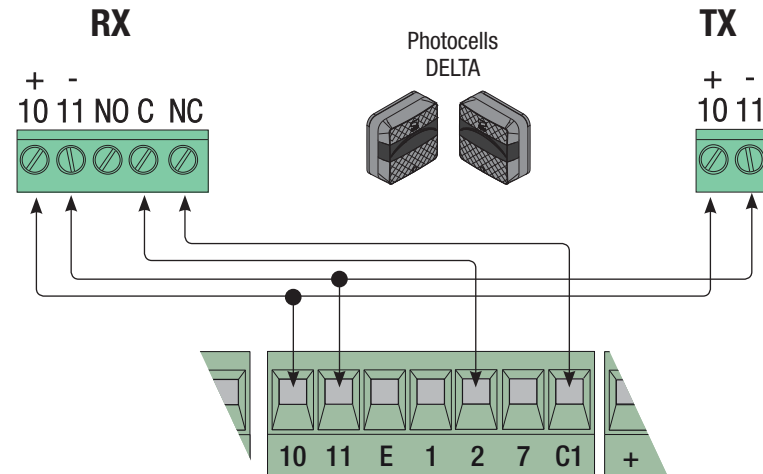
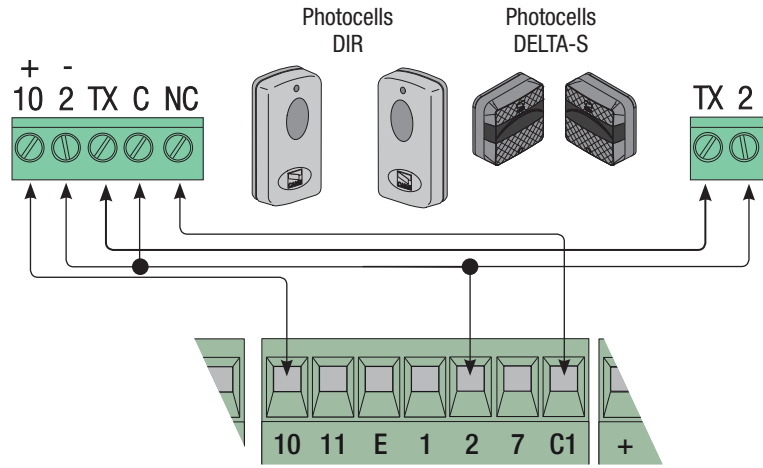
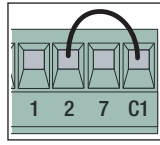
Flashing light (Contact rated for: 24 V AC / DC - 25 W max.).
Flashes during gate opening and closing.



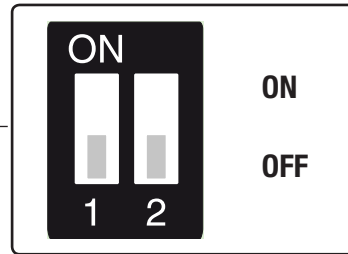
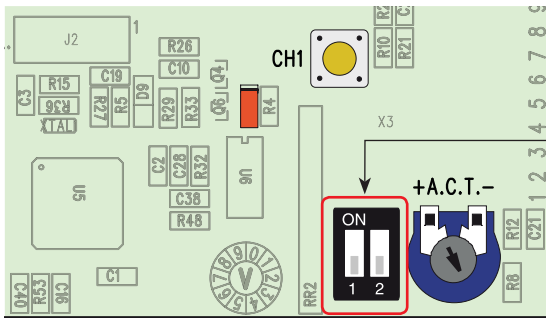
Safety devices

C1 = Contact (N.C.) of reopening when closing.
 Input for safety devices such as photocells, sensitive edges and other devices compliant with the EN 12978 standard.
 While the operator is closing, the opening of the contact causes the reversal of the direction of movement until completely open.

If C1 is not used, short 2 and C1.

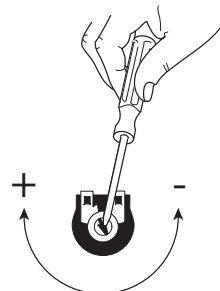
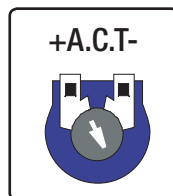
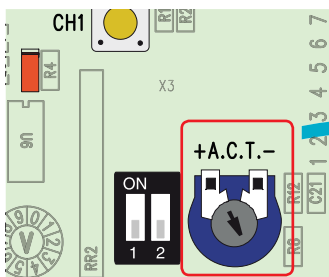


Selecting the functions



- 1 ON - AUTOMATIC CLOSING function activated
- 2 ON - OPEN-STOP-CLOSE-STOP function from the transmitter and/or the button (2-7) activated
- 2 OFF - OPEN-CLOSE function from the transmitter and/or the button (2-7) activated

Adjustments



- A.C.T. Trimmer - Adjustment of the AUTOMATIC CLOSING time: from a minimum of 1 second to a maximum of 120 seconds.

Activating the radio control

Connect the RG58 cable of the antenna **1**.

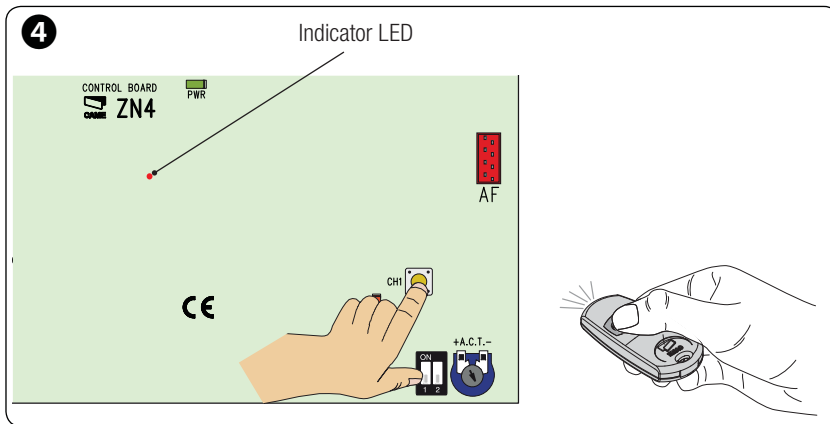
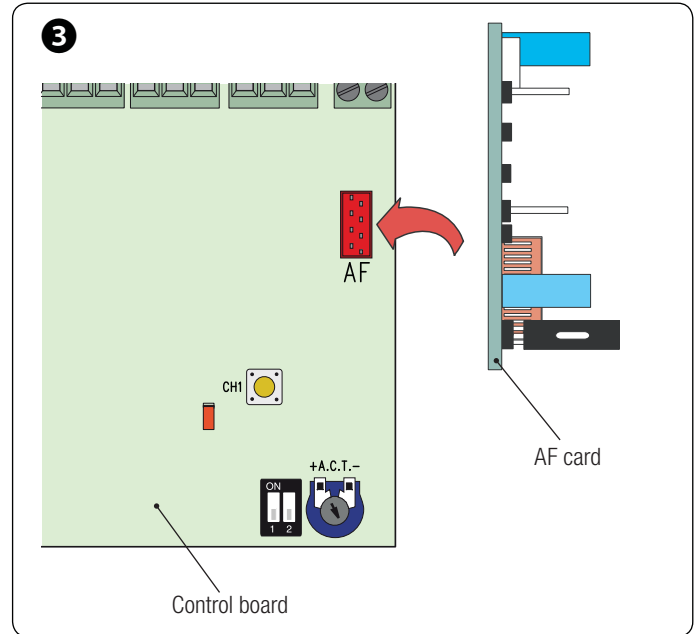
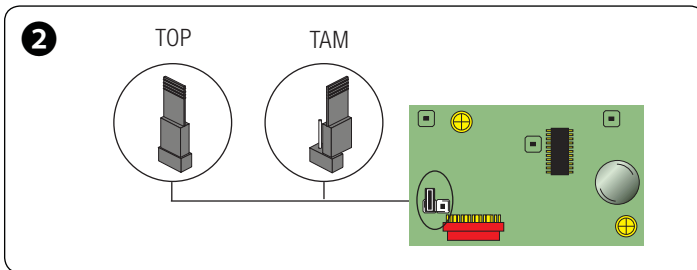
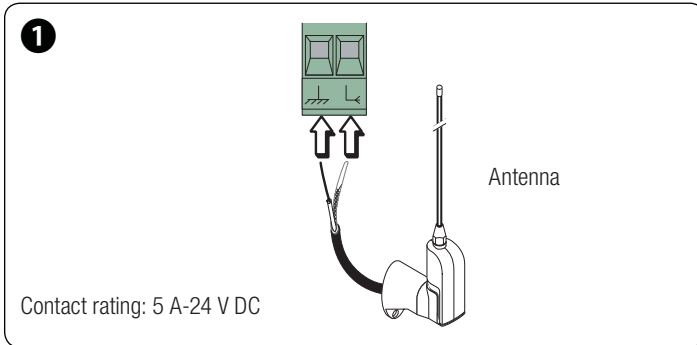
For the AF43S / AF43SM, radiofrequency cards only, position the jumper as shown according to the series of transmitters used **2**.

DISCONNECT POWER AND REMOVE THE BATTERIES, IF PRESENT. Insert the AF card on the control board.

N.B. the control board only recognises the AF card when the operator is powered again **3**.

Hold down the CH1 key on the control board: the LED indicator flashes. Press a key on the transmitter to send the code. The LED will remain lit to indicate that memorisation has taken place **4**.

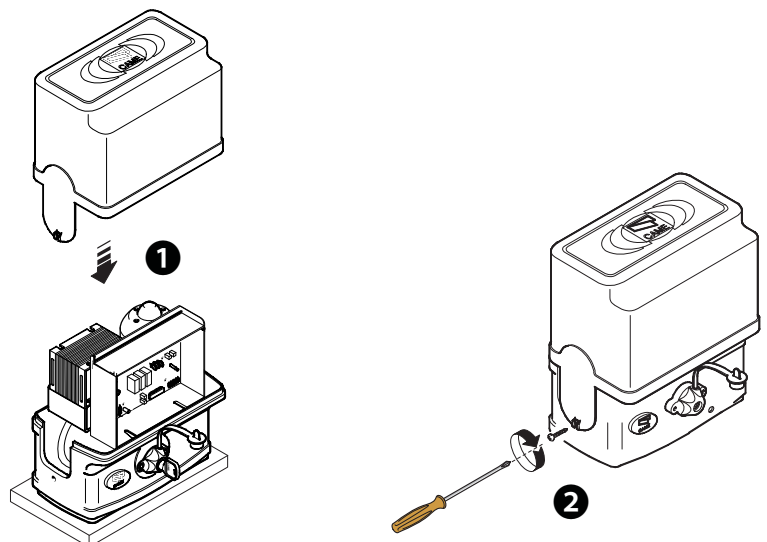
CH1 = channel for direct control of a panel function (OPEN-CLOSE or OPEN-STOP-CLOSE-STOP, according to the selection made on DIP 2).



FINAL OPERATIONS

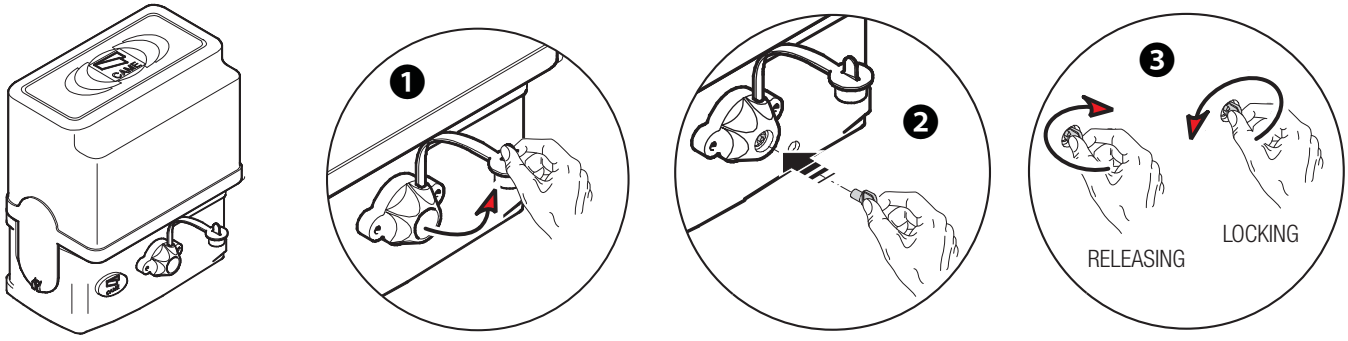
Securing the cover

After making the electrical connections and selecting the functions and adjustments, insert the cover on the gearmotor and secure it.



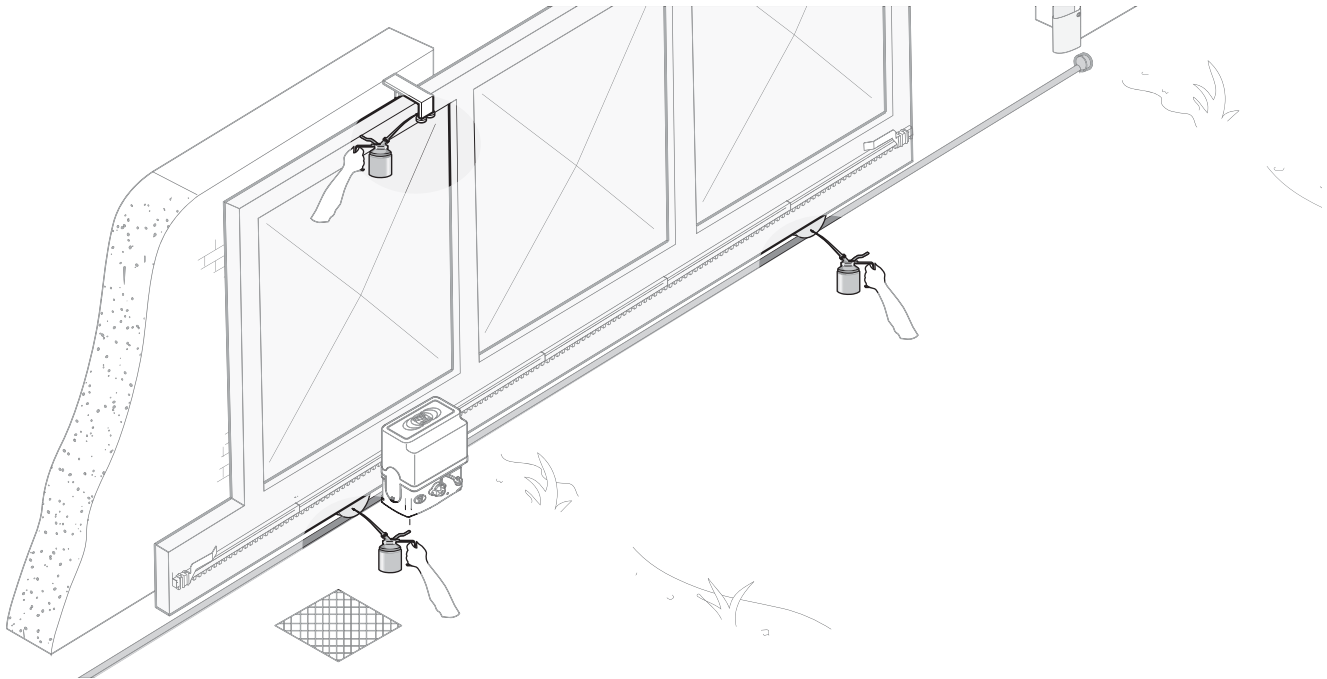
Releasing the gearmotor

⚠ The operation must be carried out while the power is off.



MAINTENANCE

👉 Before any maintenance, disconnect power to prevent any possible dangerous situations that can be caused by accidental movement of the operator. Lubricate the rotation points with grease whenever abnormal vibrations or squeaking occurs, as shown below.



Periodic maintenance

Periodic maintenance log to be completed by the user (every six months)

Date	Notes	Signature

Extraordinary maintenance

- △ The table below is used to note any extraordinary maintenance, repairs or improvements carried out by specialist companies.
- △ Extraordinary maintenance must be carried out by specialist technicians.

Extraordinary maintenance log

Installation technician stamp	Operator name
	Date of intervention
	Technician signature
	Customer signature
Intervention carried out _____ _____ _____	

Installation technician stamp	Operator name
	Date of intervention
	Technician signature
	Customer signature
Intervention carried out _____ _____ _____	

TROUBLESHOOTING

MALFUNCTIONS	POSSIBLE CAUSES	CHECKS AND REMEDIES
The gate does not open or close	<ul style="list-style-type: none"> • No power • The gearmotor is unlocked • The transmitter battery is flat • The transmitter is broken • The stop button is stuck or broken. • The opening/closing button or the key selector switch are stuck • Photocells are in partial stop 	<ul style="list-style-type: none"> • Check for mains power • Lock the gearmotor • Replace the batteries • Contact service • Contact service • Contact service • Contact service
The gate opens but does not close	<ul style="list-style-type: none"> • The photocells are engaged • Sensitive edge triggered 	<ul style="list-style-type: none"> • Check that the photocells are clean and work correctly • Contact service
The gate closes but does not open	<ul style="list-style-type: none"> • Sensitive edge triggered 	<ul style="list-style-type: none"> • Contact service

DISMANTLING AND DISPOSAL

☞ CAME CANCELLI AUTOMATICI S.p.A. implements an UNI EN ISO 14001-certified and compliant Environmental Management System at its plants, to ensure environmental protection.

Please continue our efforts to protect the environment, something that CAME considers to be one of the foundations in developing its business and market strategies, simply by observing brief recommendations as regards disposal:

DISPOSAL OF PACKAGING

Packaging components (cardboard, plastic, etc.) can be disposed of together with normal household waste without any difficulty, by simply separating the different types of waste and recycling them.

Before proceeding, it is always advisable to check specific regulations in force in the place of installation.

DISPOSE OF PROPERLY!

DISPOSAL OF THE PRODUCT

Our products are made with different materials. Most of them (aluminium, plastic, iron, electrical cables) can be disposed of together with normal household waste. They can be recycled if collected, sorted and sent to authorised centres.

Other components (control boards, transmitter batteries etc.), on the other hand, may contain pollutants.

They should therefore be removed and handed over to companies authorised to recover and recycle them.

Before proceeding, it is always advisable to check specific regulations in force in the place of disposal.

DISPOSE OF PROPERLY!

DECLARATION OF CONFORMITY

Declaration - Came Cancelli Automatici S.p.A. declares that this device complies with the essential requirements and other relevant provisions established in Directives 2006/42/CE and 2004/108/CE.

Reference code for requesting a true copy: *DDI B IT B001*