

OPERATOR  
FOR SLIDE GATES

**BX**  
SERIES



INSTALLATION MANUAL

**BX-64**  
**BX-68 / BX-68B**



# **WARNING!**

## **Important instructions for the safety of people:**

### **READ CAREFULLY!**



#### **Foreword**

• Use of the products must be restricted to its intended use (i.e. that for which it was expressly built for). Any other use is to be 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 automated system.

#### **Before installing**

*(preliminary check: in case of a negative outcome, do not proceed before having complied with the safety obligations)*

• Make sure that the parts you intend to automate are in good working order, and that they are properly balanced and aligned. Also, 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 on either an upward or downward slope (i.e. that are not on flat, level ground) • Check that any lawn watering devices will not wet the gearmotor 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 (see installation manual). In such cases, employ proper weight handling safety equipment • All opening commands (e.g. buttons, key selectors, 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 (e.g. push button, or proximity devices, etc.) must be installed at a height of at least 1.5 m and must not be accessible to the public • All 'maintained action' 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 client, verify 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. Trim any vegetation that may interfere with the photocells • 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) away from the children as well • 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. Keep glass panels constantly clean (use a slightly water-moistened cloth; do not use solvents or any other chemical products) • 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. See instructions • Users are FORBIDDEN to carry out ANY ACTIONS THAT THEY HAVE NOT BEEN EXPRESSLY ASKED TO DO OR SO INDICATED in the manuals. Any repairs, modifications to the settings and extraordinary maintenance MUST BE DONE BY THE TECHNICAL ASSISTANCE STAFF • 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 'maintained action' 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 performing maintenance.

## IMPORTANT SAFETY INSTALLATION INSTRUCTIONS

**WARNING: IMPROPER INSTALLATION MAY RESULT IN SERIOUS HARM. PLEASE FOLLOW ALL INSTALLATION INSTRUCTIONS**

**THIS MANUAL IS ONLY INTENDED FOR PROFESSIONAL INSTALLERS OR OTHER COMPETENT INDIVIDUALS**



## Legend of symbols



This symbol means parts must be read carefully.



This symbol means the parts describe safety issues.



This symbol tells you which notes to notify the user.

## 2 Conditions of use

### 2.1 Intended use

The BX-64 gearmotor is engineered to power sliding gates in homes; the BX-68/68B, however, may be also used in apartment blocks.

Any installation and use other than that specified in this manual is forbidden.



### 2.2 Limitations to use

BX-64: maximum gate weight is 400 kg.

BX-68: maximum gate weight is 800 kg; for apartment blocks is 600 kg.

## 3 Reference standards

Came Cancelli Automatici employs an ISO 9001:14001 certified quality management system and an ISO 14001 environmental management system. Came entirely engineers and manufactures in Italy.

This product is compliant with: *see statement of compliance*.

## 4 Description

### 4.1 Operator

This product is engineered and built by CAME CANCELLI AUTOMATICI S.p.A. in compliance with current applicable safety laws.

The operator is built partly with cast aluminium inside of which operates an irreversible, electro-mechanical gearmotor, and partly with an ABS plastic coating inside of which there is an electronic card with a transformer.

**Important!** Make sure that the command and safety equipment and accessories are CAME originals; this ensures that the system is easily operated and maintained.

### 4.2 Technical data

#### **BX-64 GEARMOTOR**

Power supply to control panel: 230V A.C. 50/60 Hz

Motor power supply: 230V A.C. 50/60 Hz

Maximum draw: 2.6A

Power: 200W

Maximum Torque: 24 Nm

Reduction ratio: 1/33

Thrust: 300=N

Maximum speed: 10 m/min

Duty cycle: 30%

Protection rating : IP54

Insulation class: I

Weight: 15 kg

Condenser: 20 µF

Motor heat protection: 150°C

#### **BX-68 GEARMOTOR / BX-68B**

Power supply to control panel: 230V A.C. 50/60 Hz

Motor power supply: 230V A.C. 50/60 Hz

Power draw: 2.4A

Power: 300 W

Maximum Torque: 32 Nm

Reduction ratio: 1/33

Thrust: 800=N

Maximum speed: 10 m/min

Duty cycle: 30%

Protection rating : IP54

Insulation class: I

Weight: 15 kg

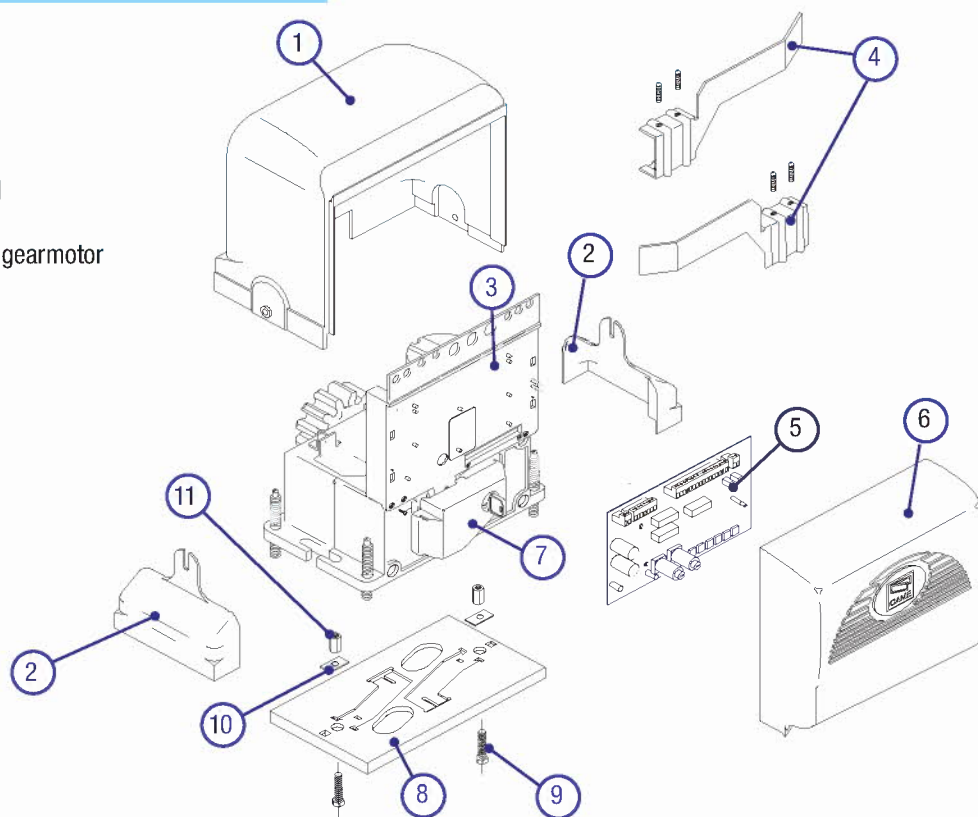
Condenser: 20 µF

Motor heat protection: 150°C

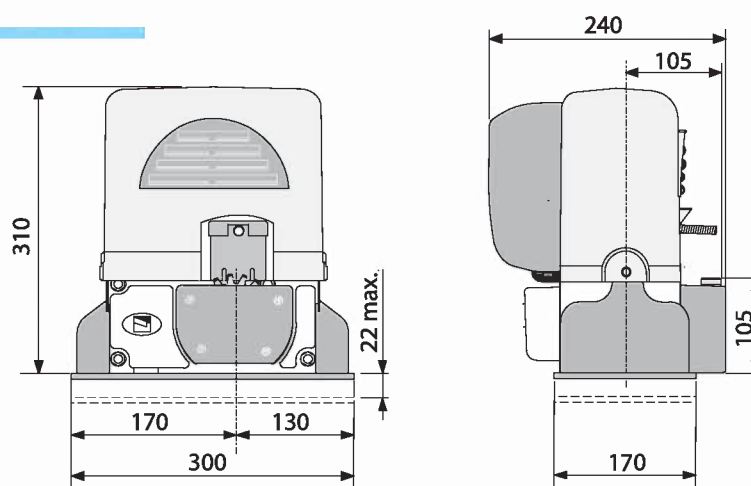


### 4.3 Description of parts

1. Top cover
2. Adjustments cover carter
3. Electronic card support
4. Endstop tabs
5. ZBX6/ZBX6B electronic board
6. Front cover of electrical panel
7. Access door for releasing the gearmotor
8. Anchoring plate
9. Fastening screws
10. Fastening screw plate
11. Nut



### 4.4 Dimensions



## 5 Installation

**⚠** Installation must be carried by skilled, qualified technicians in accordance with current regulations.

### 5.1 Preliminary checks

**⚠** Before beginning to install, the following is necessary:

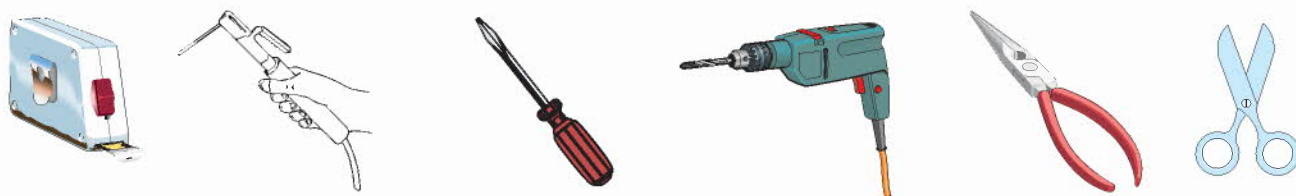
- Make sure the gate is stable, and that the castor-wheels are properly greased and in good working order.
- The floor guide must be well-fastened to the ground, completely on the surface and free of any irregularities that may obstruct the gate movement.
- The upper guide-sleds must not cause friction.
- Make sure there are opening and closing strike plates.
- Make sure that the point where the gearmotor is fastened is in an impact-free zone, and that the surface is solid;

Set up a suitable omnipolar cut-off device, with distances greater than 3 mm between contacts, wit sectioned power source;

- Check that any connections inside the container (made for continuity purposes of the protective circuit) be fitted with extra insulation compared to other internal conductive parts;
- Set up proper conduits and electric cable raceways, making sure these are protected from any mechanical damage.

## 5.2 Tools and equipment

Make sure you have all the tools and materials needed to carry out the installation in total safety and in accordance with current regulations. The figure shows some examples of the tools needed by installers.



## 5.3 Cable types and minimum thickness

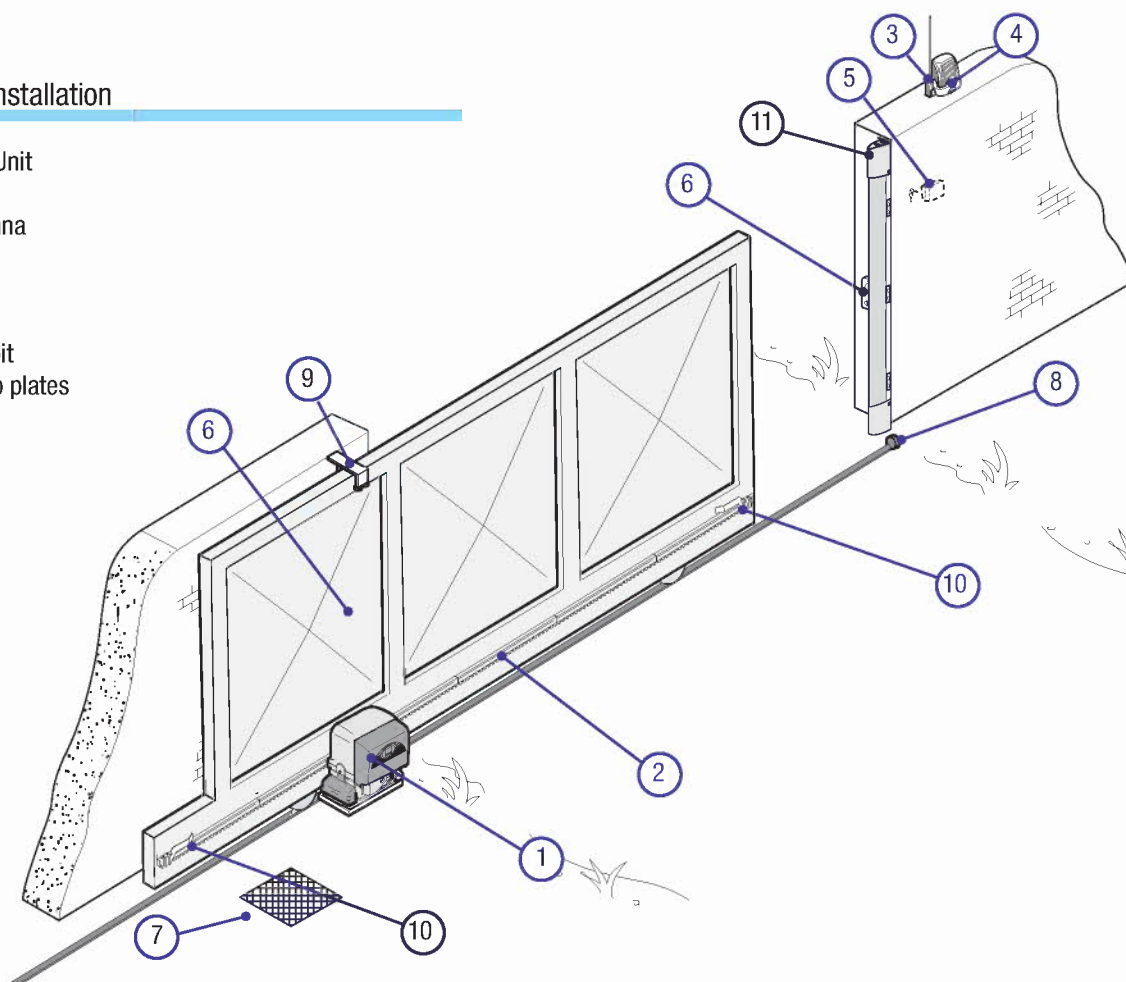
Connection for	Cable type	Cable length 1 < 10 m	Cable length 10 < 20 m	Cable length 20 < 30 m
230 V power source to control panel	FROR CEI 20-22 CEI EN 50267-2-1	3G x 1.5 mm <sup>2</sup>	3G x 2.5 mm <sup>2</sup>	3G x 4 mm <sup>2</sup>
Flashing light		2 x 0.5 mm <sup>2</sup>	2 x 1 mm <sup>2</sup>	2 x 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>
Accessories power source		2 x 0.5 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup>	2 x 1 mm <sup>2</sup>
Safety and command 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 cables are of a different length than that shown in the table, determine the cable section based on the actual draw and the number of connected devices and according to what is set forth in the CEI EN 60204-1 code of regulations.

For connections featuring several loads on the same line (i.e. sequential ones), the dimensions shown on the table must be reconsidered according to the total draw and actual distances. When connecting products not featured in this manual, only refer to the literature accompanying such products.

## 5.4 Standard installation

1. BX-64/68/68B Unit
2. Rack
3. Reception antenna
4. Flashing light
5. Key selector
6. Safety photocell
7. Cable junction pit
8. Mechanical stop plates
9. Guide sleds
10. Endstop tab
11. Sensitive edge





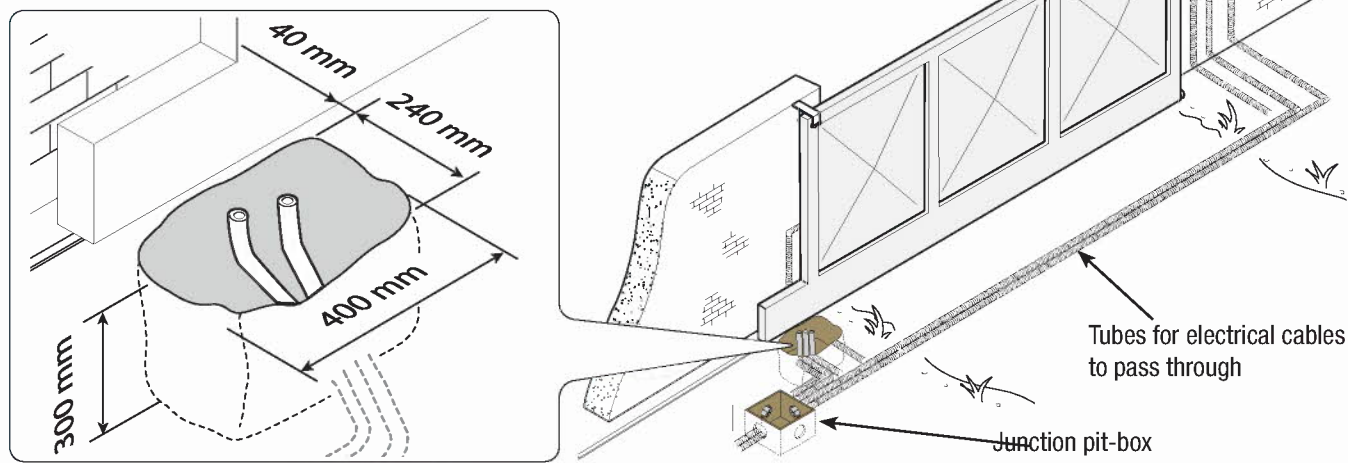
## 5.5 Fastening the plate and fitting the motor assembly

**⚠** The following illustrations are just examples, in that the space for securing the operator and accessories depends on the overall measurements it varies depending on the overall measurements. It is up to the installer to choose the most suited solution.

- Dig a pit at the end of the gate (see measurement quotas in drawing).

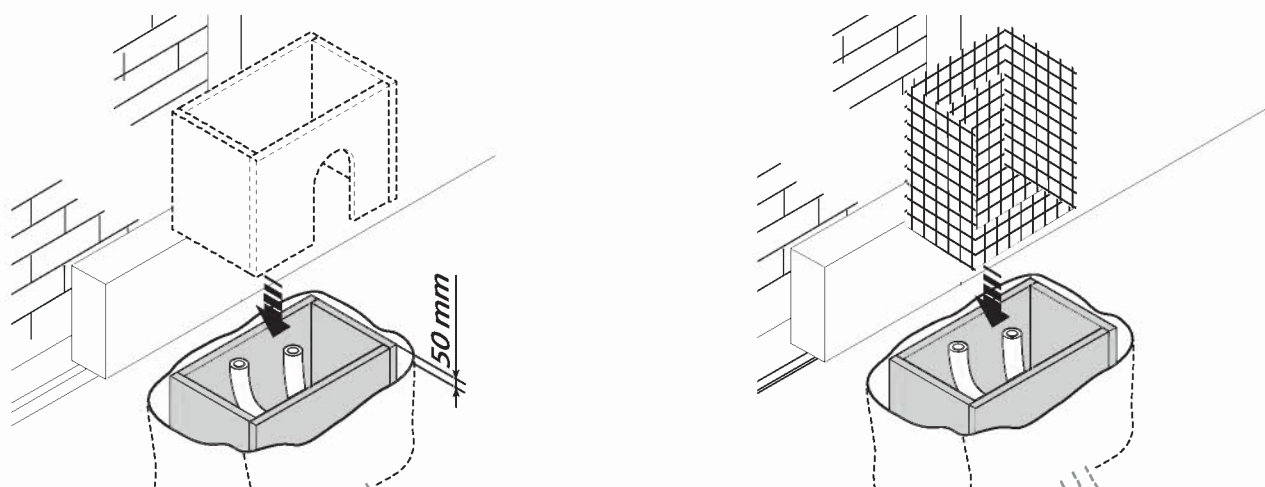
Set up the necessary corrugated tubing for connections coming from the junction pit.

N.B. the number of tubes depends on the type of installation and accessories used.



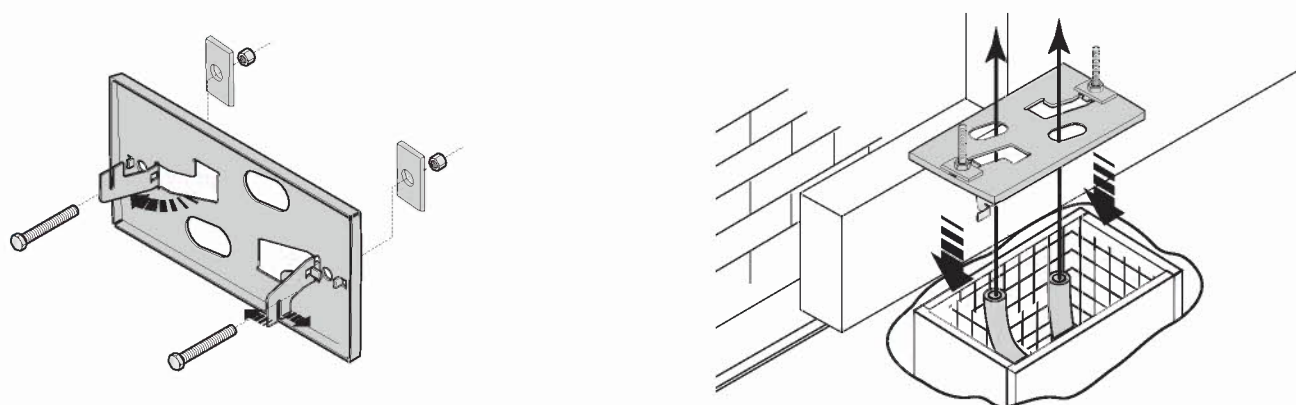
- Prepare a foundation box that is larger than the anchoring plate and fit it into the foundation box. The wooden form must protrude from the ground by at least 50 cm.

Insert an iron grille into the wooden form to reinforce the concrete.

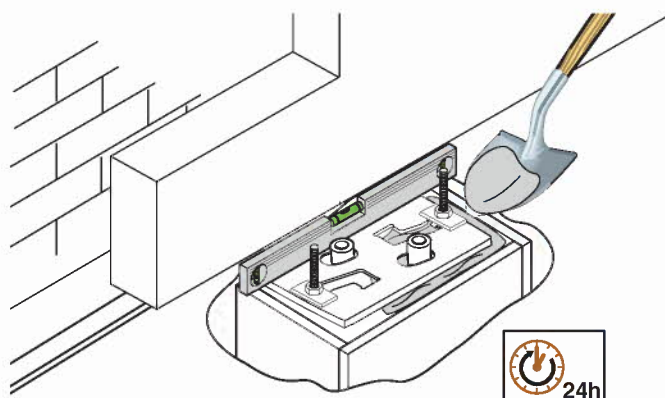
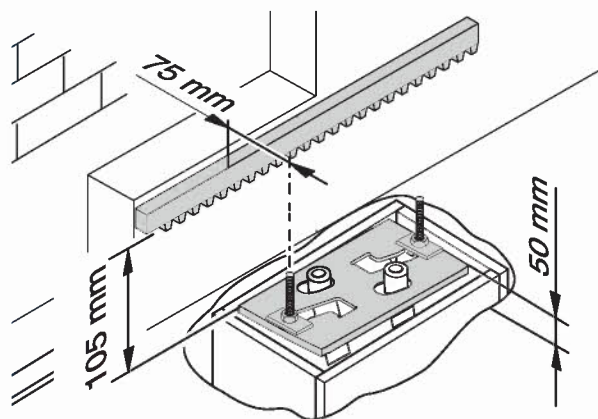


- Set up the anchoring plate, by threading the bolts and tightening them with the supplied nuts and washers. Extract the pre-shaped brackets, using a screwdriver or pliers.

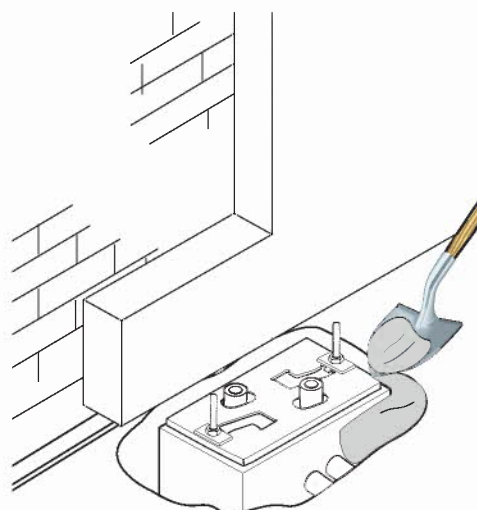
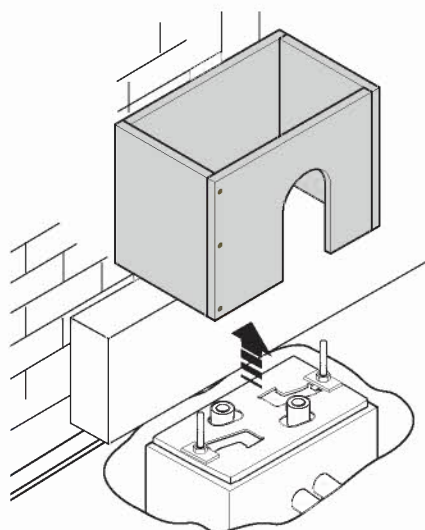
Position the plate above the grille. Warning! The tubes need to be threaded through the pre-set holes.



- For positioning the plate with respect to the rack, see and follow the instructions in the drawing.  
Fill the wooden form with concrete and wait at least 24 hrs for it to solidify.

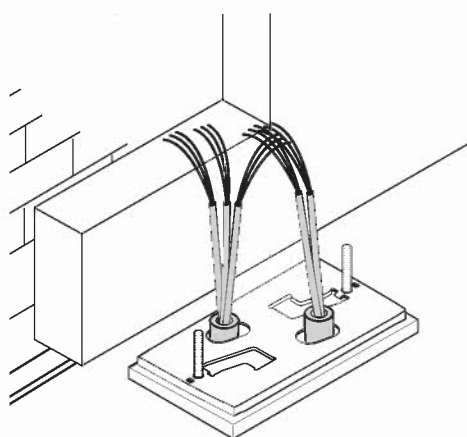
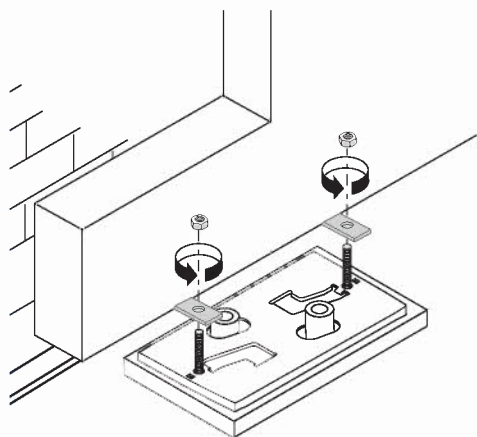


- Remove the wooden frame, use earth to fill the pit around the cement block.

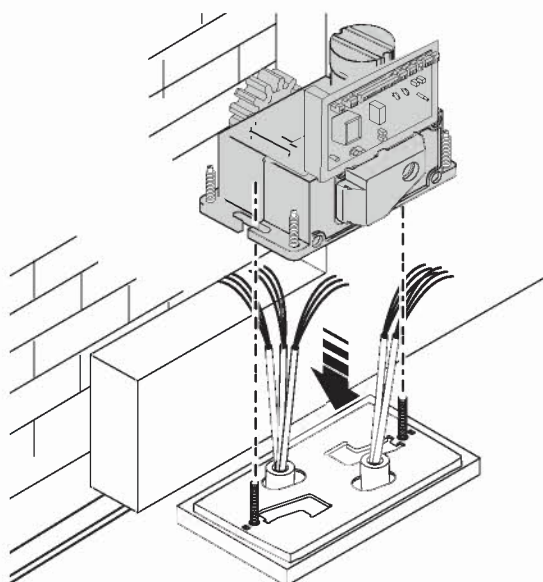
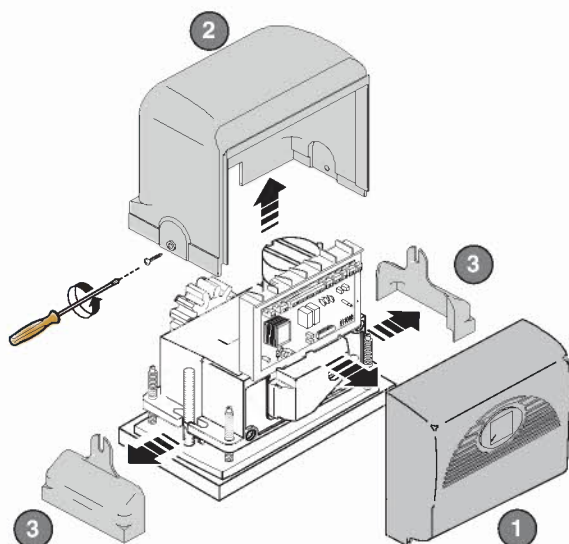


- Unscrew the washers and nuts from the bolts. The anchoring plate must be free of any debris, perfectly level and with the bolt threads completely emerged from the surface.

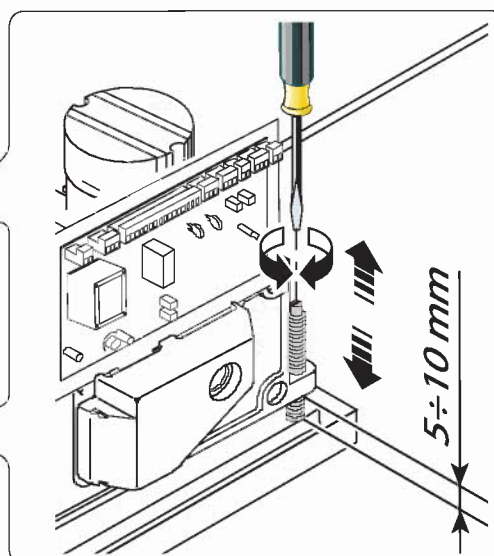
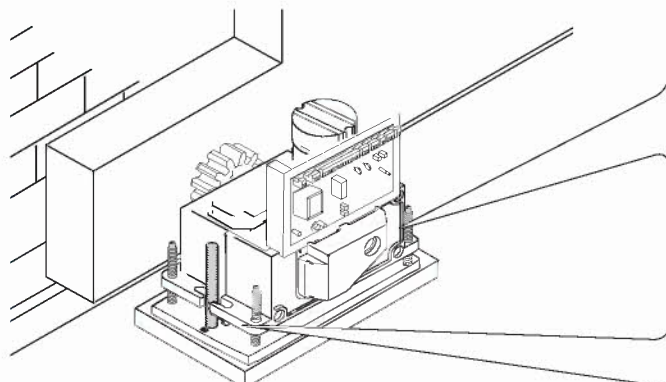
Insert the electrical cables into the tubes until they protrude by about 400 mm .



- Remove the cover of the gearmotor by turning the lateral screws. Position the gearmotor onto the plate. **Warning!** The electrical cables must pass through the inside of the gearmotor box.



- Lift the gearmotor from the anchoring base by between 5 and 10 mm by turning the threaded-steel feet to allow room any later adjustments between pinion and rack.



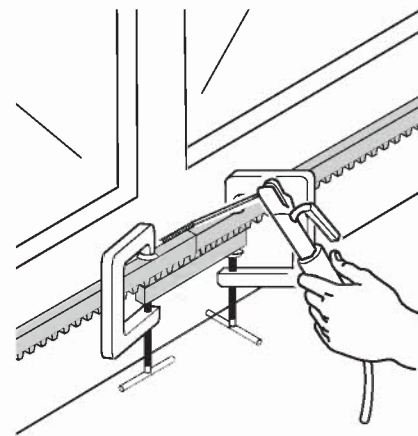
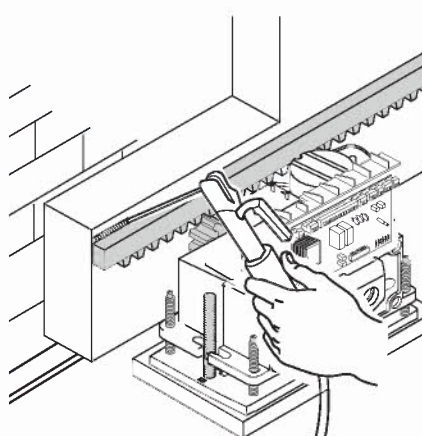
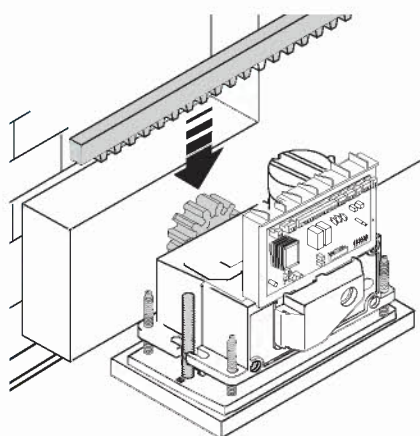
- The following illustrations for fastening the rack, are just applicative examples. It is up to the installer to choose the most suitable solution.

Release the gearmotor (see paragraph on manual release). Rest the rack onto the gearmotor pinion.

Either weld or fasten the rack along the entire length.

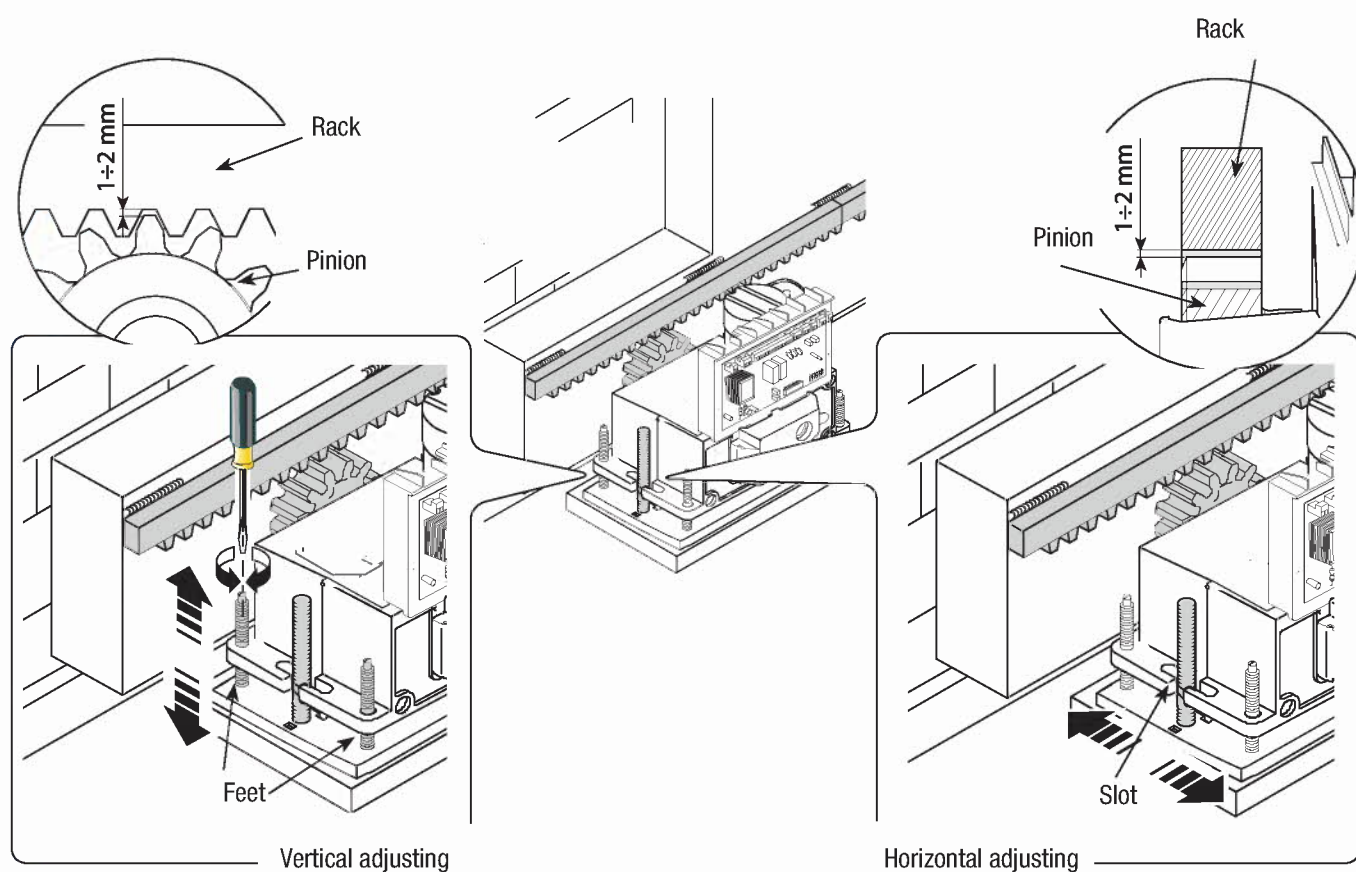
To assemble the rack modules, use a spare lenght of rack and rest it under the joining point and then lock it into place using two clamps.

Note: If the rack is already installed, proceed directly with adjusting the joining pinion-rack distance.

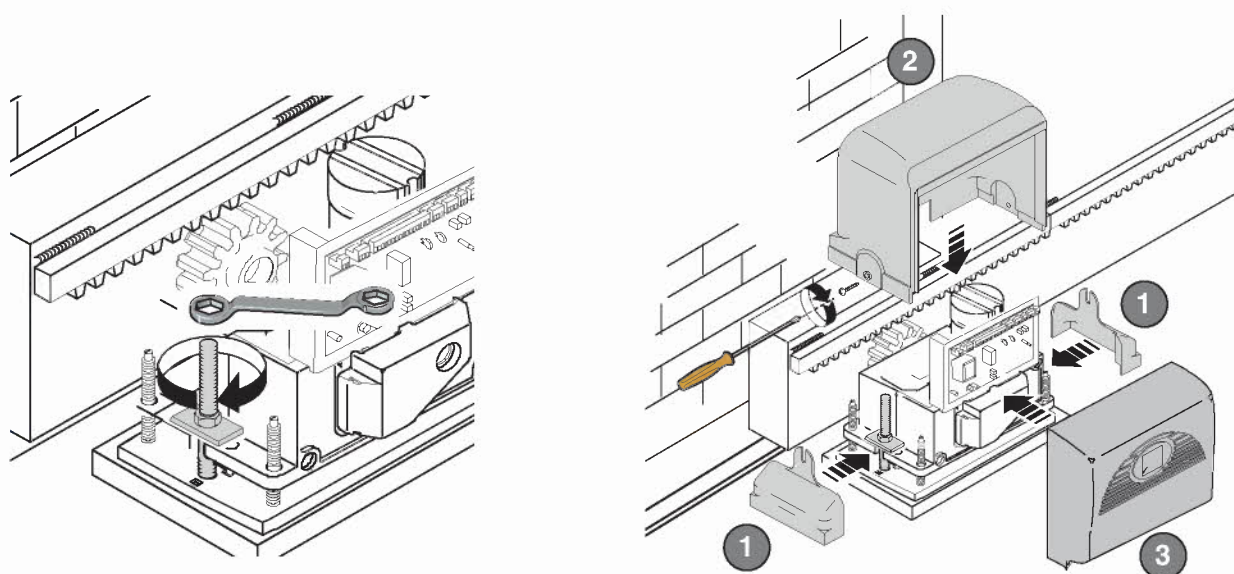




- Manually open and close the gate and adjust the distance of the pinion-rack coupling by acting on the threaded-steel feet (vertical adjustments) and the slots (horizontal adjustments). This helps prevent the weight of the gate from bearing down on the operator.



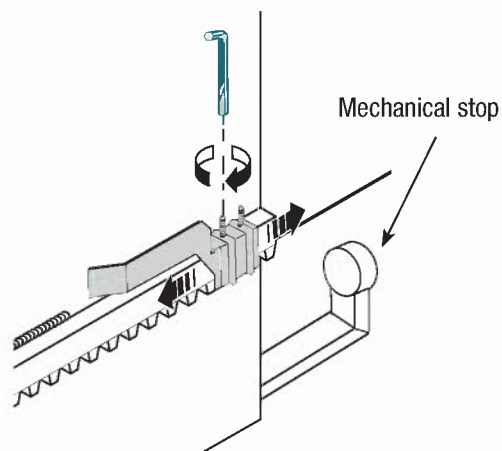
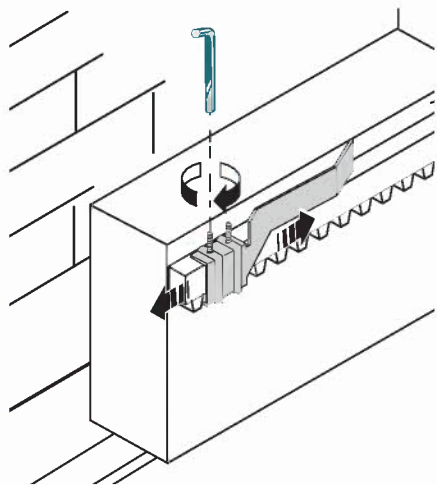
Once adjustments are complete, fasten the assembly with nuts and bolts. Add and fasten the cover after adjustments and electronic settings on card are both complete.



## 5.6 Fastening the endstop tabs.

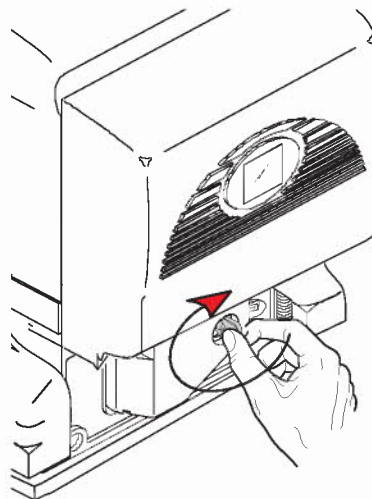
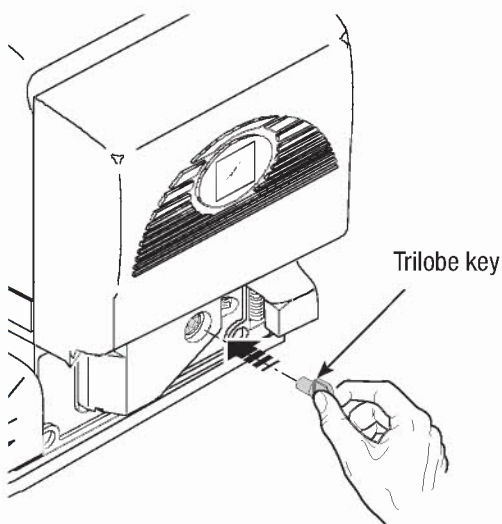
Position the endstop tabs onto the rack and fasten them with the 3 mm Allen wrench key. Their position, marks the limit of the gate runs.

Note: avoid that the gate strikes the mechanical stop, whether when closing or opening.

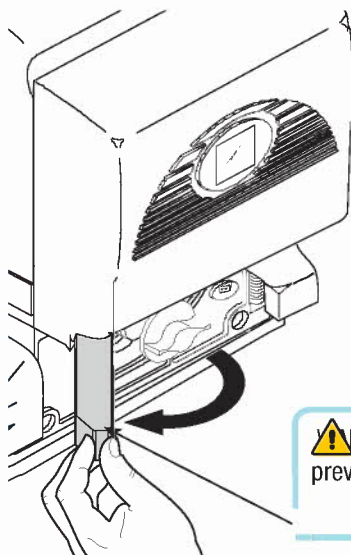


## 5.7 Manually releasing the gearmotor

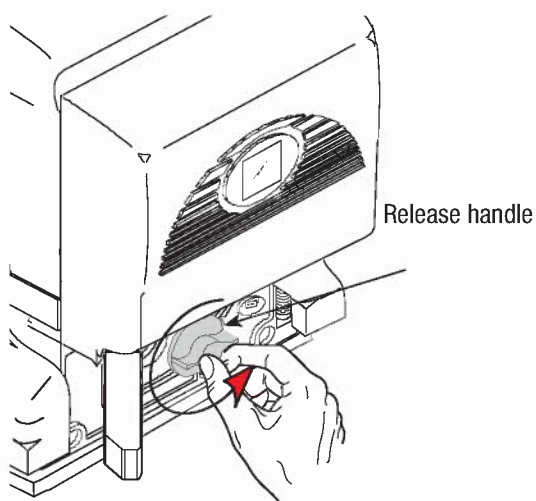
- Insert the key into the lock and turn it clockwise, ....



... open the inspection door and turn the release handle counter-clockwise.



**WARNING:** opening the release door prevents the motor from working.



## 6 - Electronic card

### 6.1 Technical sheet description

The electronic board is powered by 230V A.C., on terminals L1-L2, with a max frequency of 50/60Hz.

The command devices and accessories are powered by 24V. Warning! The accessories must not exceed 20 W overall.

The photocells may be set up for re-opening during closing (2-C1) or for total stop.

All connections are protected by quick fuses, see table.

The card provides and controls the following functions:

- automatic closing after an opening command;

The available command modes are:

opening / closing (BX-64/BX-68);

- opening / stop / closing / stop (BX-68B);

- opening/closing with maintained action;

- total stop.

Special trimmers regulate:

- the working time for automatic closing;

**⚠ WARNING:** before acting inside the equipment, cut the main power supply and disconnect the batteries (if they are connected).

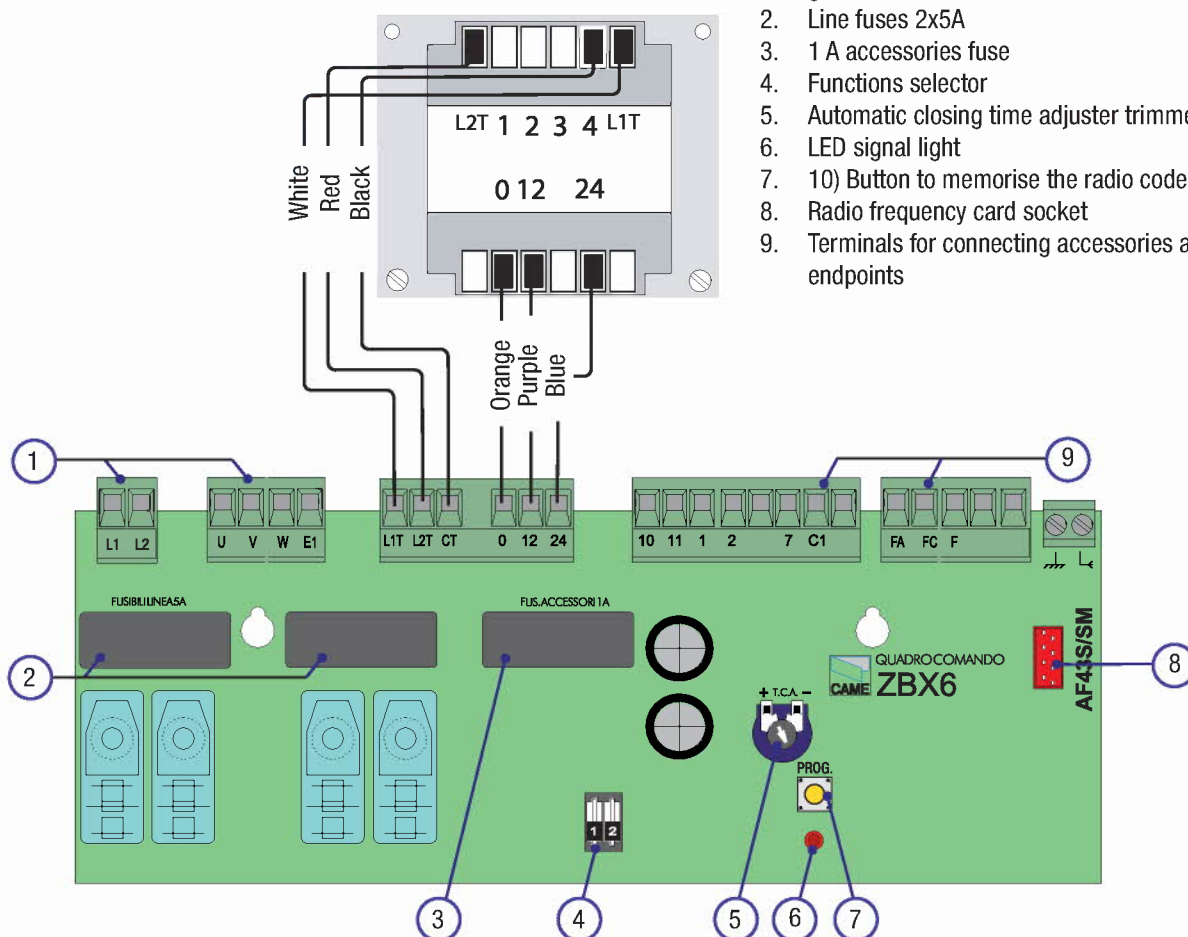
#### TECHNICAL DATA

Power supply voltage	230 V - 50/60 Hz
Maximum allowed power load	200 W (BX64) 300 W (BX68-BX68B)
Power draw when idle	2.6A (BX64) 2.4A (BX68-BX68B)
maximum power for 24 V accessories	20W

#### FUSE TABLE

to protect:	fuses for:
Electronic board (line)	5 A-F
Accessories	1 A-F

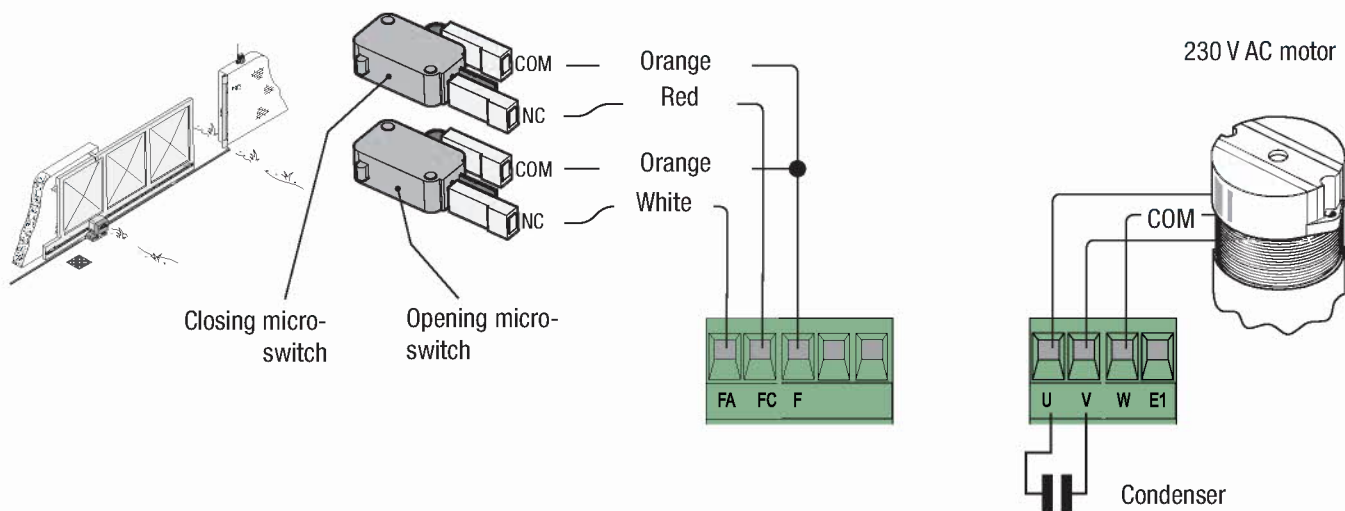
### 8.2 Main components



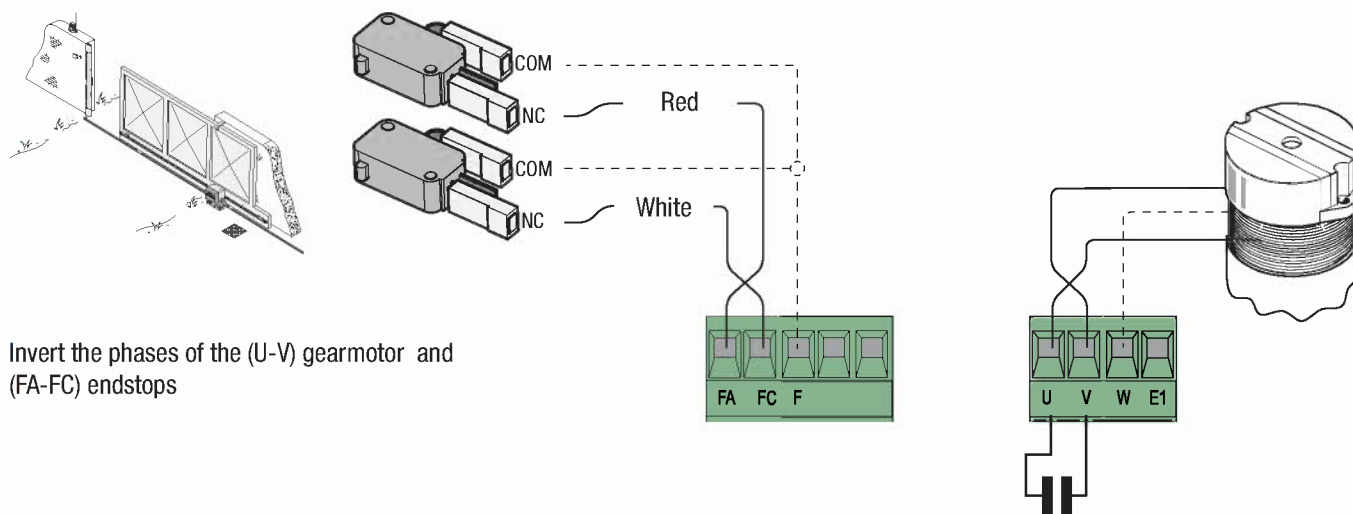
## 6 Electrical connections

### Gearmotor and endstops

Description of electrical connections which are already established for left-hand installation



Changes to electrical connections for installing on the right-hand side.



Invert the phases of the (U-V) gearmotor and (FA-FC) endstops

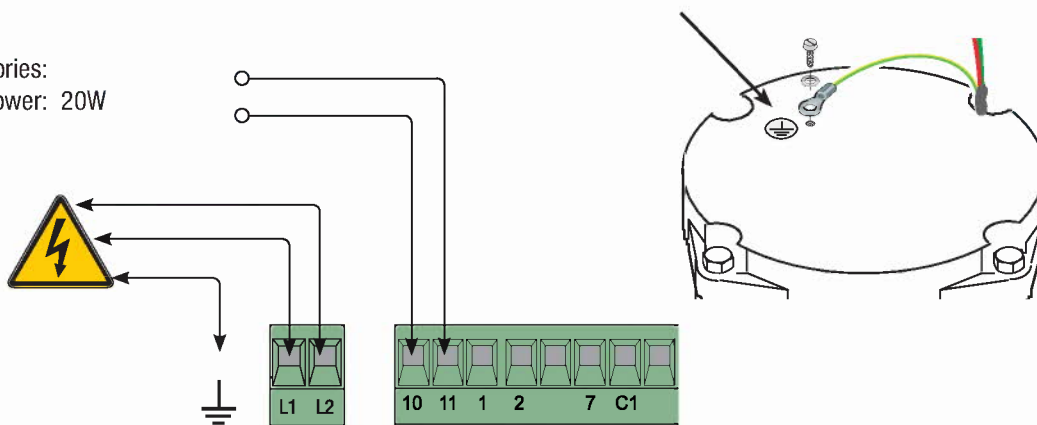
### Power source and accessories

Eyelet terminal with screw and washer for ground connection

Terminals for powering accessories:

- a. 24V A.C. Overall allowed power: 20W

230 V AC powered, 50 / 60 Hz frequency

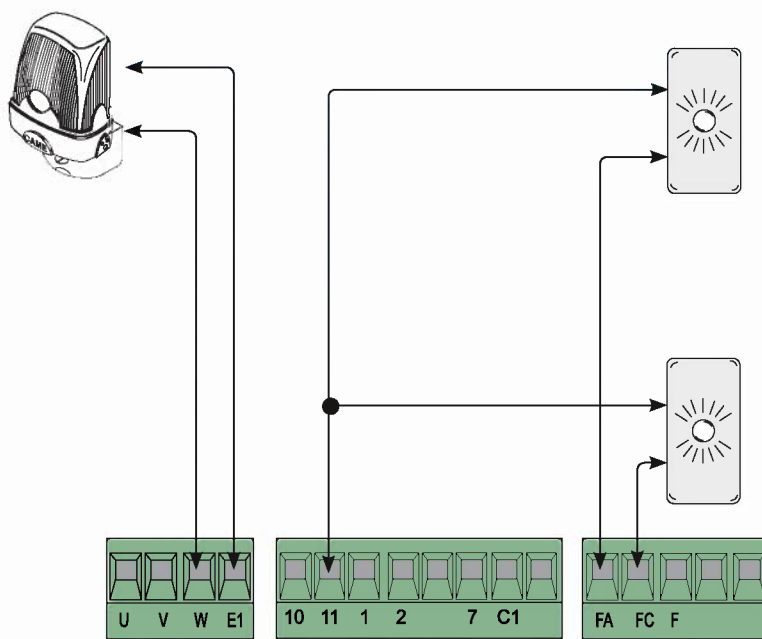




## Warning devices

**Movement flashing**

**light** Contact rated for:  
230 V - 25 W Max.)  
Flashes while gate  
opens and closes.

**Gate close indicator light**

Contact rated for:  
24 V - 3 W Max.).

Signals the closed gate position.  
Switches off when the gate is  
open.

**Gate open indicator-light**

Contact rated for:  
24 V - 3 W Max.).

Signals the position of the  
open gate.  
It switches off when the  
gate is closed.

## Command devices

Stop button (N.C. contact.) .

- Button to stop gate with exclusion of automatic closing cycle. to resume movement pres command button or trasmitter key.

**N.B.:** if contact is unused, short circuit on terminals 1-2.

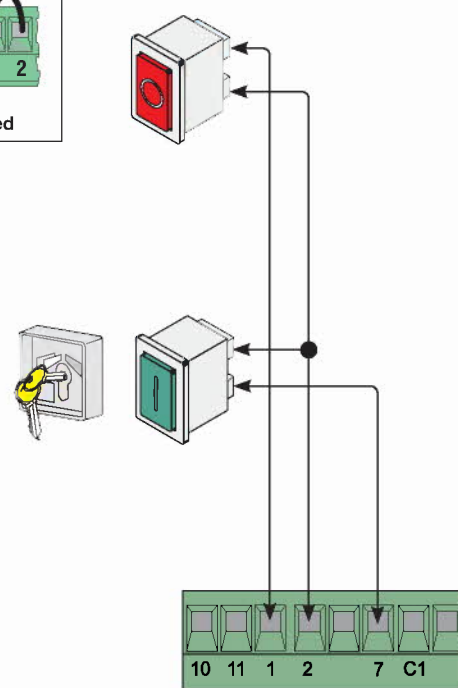


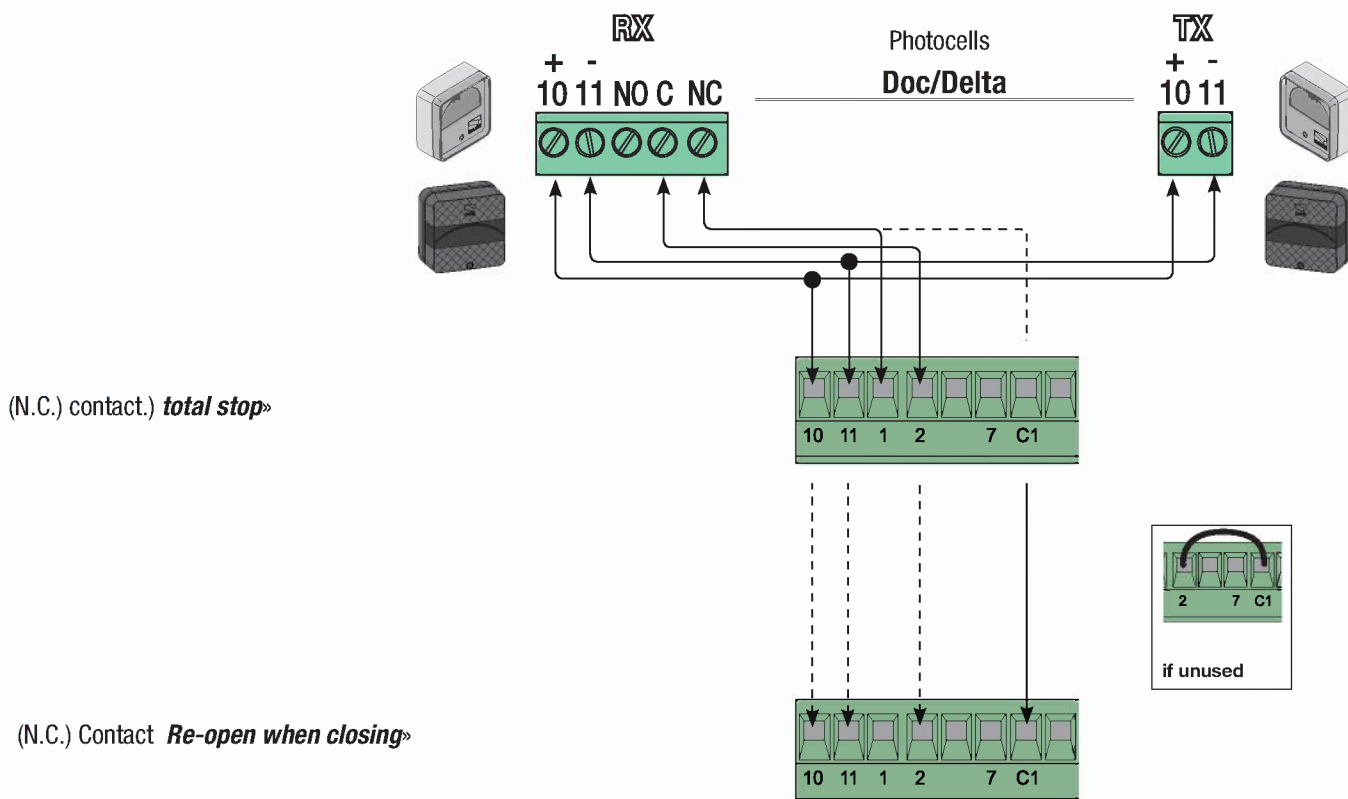
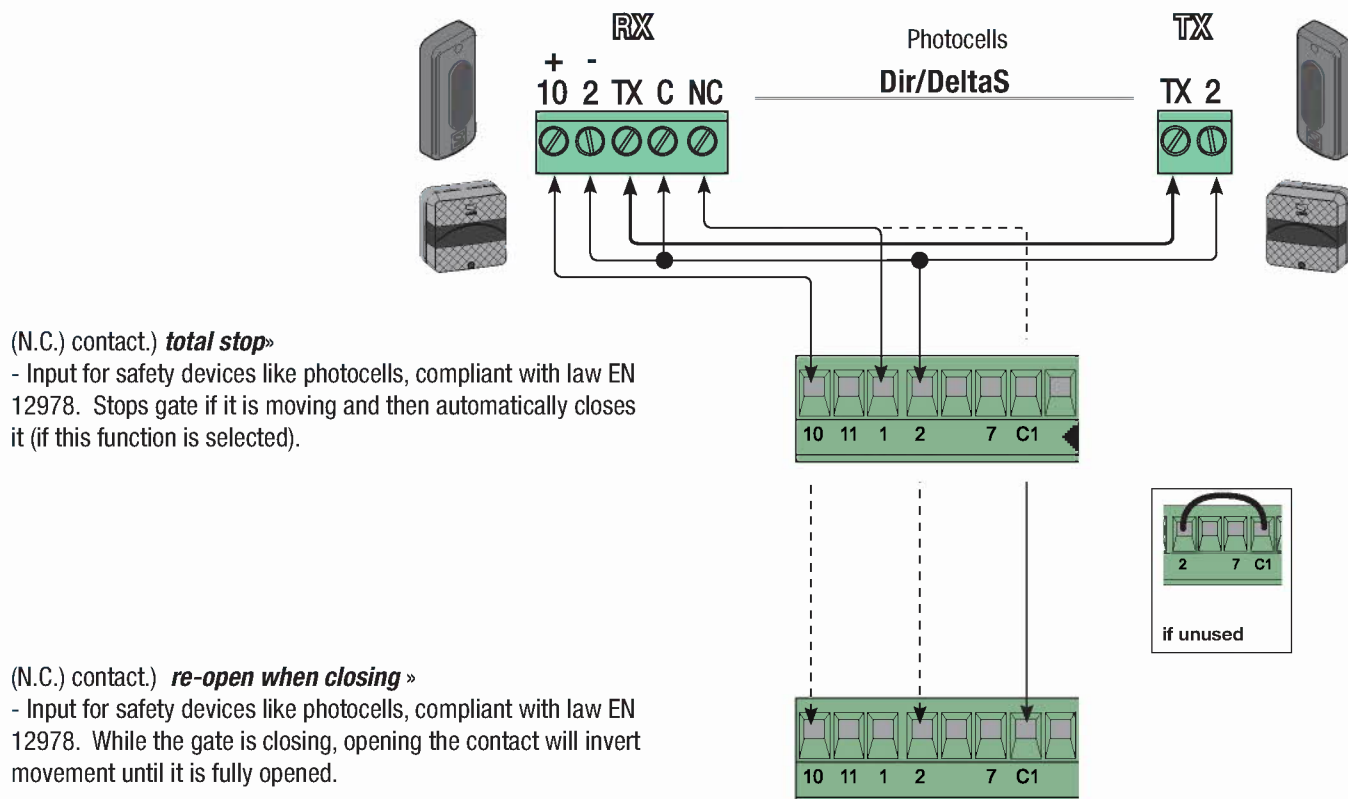
**BX-64/BX-68** = Key switch selector and/or command button  
OPENS-CLOSES (NO contact).

- Gate opening and closing commands; during movement, any new commands (even from transmitters) invert the direction

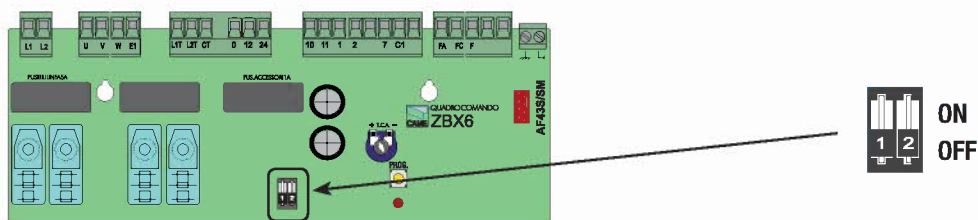
**BX-68B** = Key switch selector and/or command button  
OPEN-STOP-CLOSE-STOP (contatto NO).

- Gate opening and closing commands; during movement, any new commands (even from tramistters) stop the gate and the next command inverts the direction of travel.



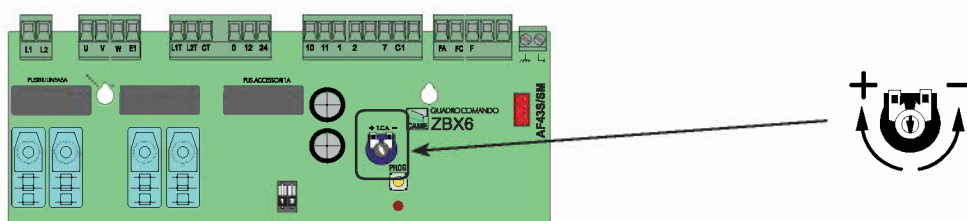


## 6.4 Selecting functions



- 1 ON - Maintained action - The gate works only by keeping pressed an opening or closing button on terminals 2-7 (excludes functioning with radio command).
- 2 ON - Automatic closing - The automatic closing timer activates at the closing endpoint. The preset time is adjustable, and is anyway subordinated by any safety accessories and is excluded after a total "stop" action or when the power goes out.

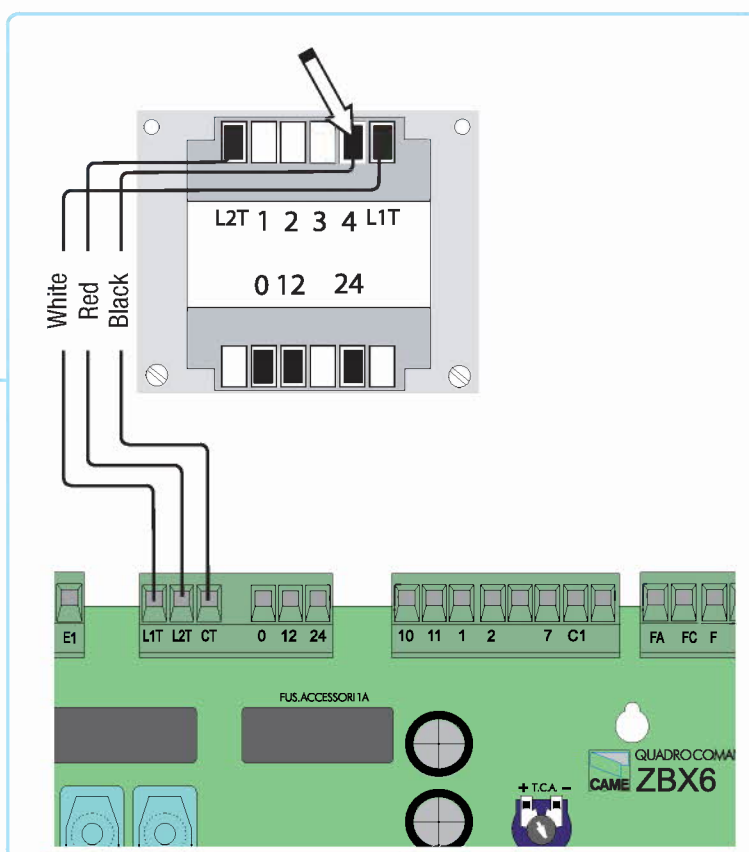
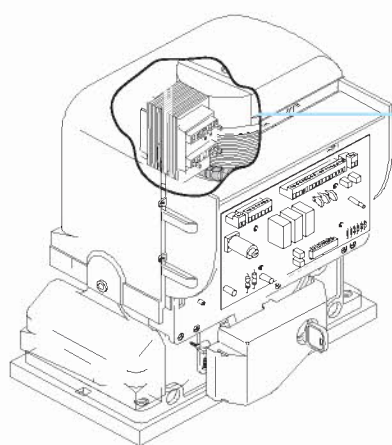
## 6.5 Adjusting the trimmers



**Trimmer T.C.A.** = Automatic closing time. Adjusts opening waiting time; Once the time is elapsed, a closing run is automatically activated. The waiting time can be adjusted to between 1 and 120 seconds.

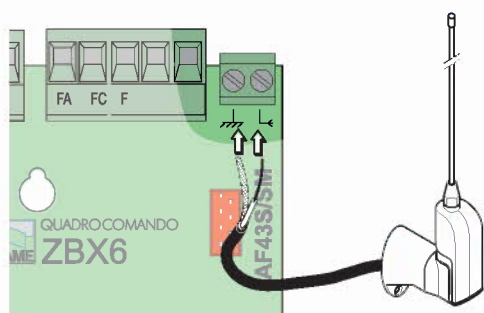
## 6.8 Motor torque limiter

To change motor torque, move the faston (the one with the black wire) to one of the four settings: 1 min ÷ 4 max.



## 7 Activating the radio command

### Antenna

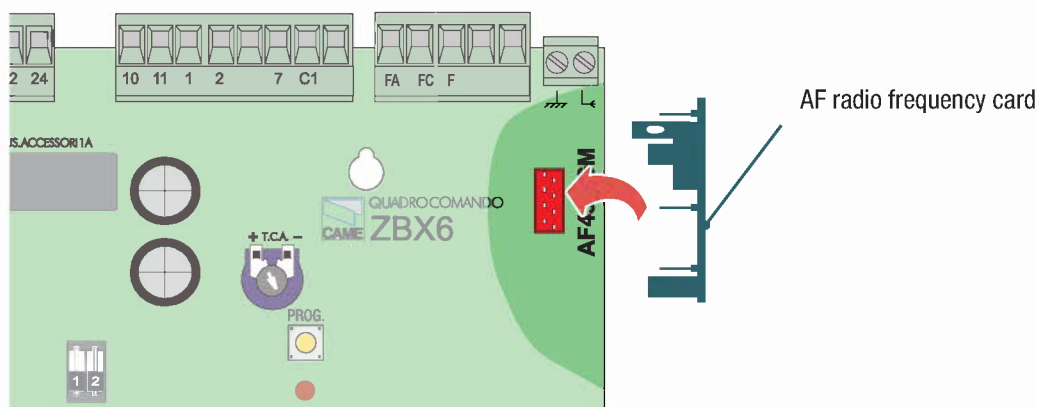


Connect RG58 antenna cable to the apposite terminals.

### Radio frequency card

Plug in the radio-frequency card onto the electronic board AFTER CUTTING OFF THE MAIN POWER SUPPLY (or disconnecting the emergency batteries).

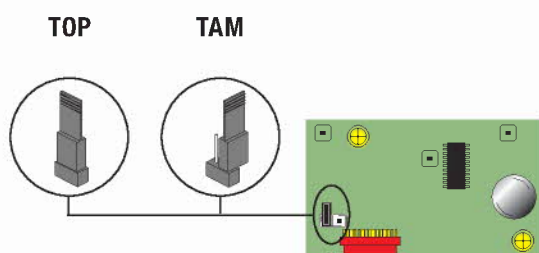
N.B.: The electronic card recognises the radio-frequency card only when it is powered up.



### Radio frequency card

Only for the AF43S / AF43SM radi-frequency cards.

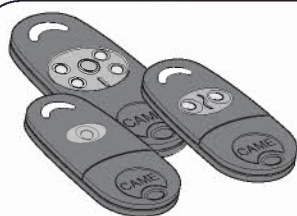
- position jumper as shown depending on the series of transmitters you are using.



Frequency MHz	Card Radio-frequency	Series transmitters
FM 26.995	AF130	TFM
FM 30.900	AF150	TFM
AM 433.92	AF43S / AF43SM	TAM / TOP
AM 433.92	AF43SR	ATOMO
AM 863.35	AF868	TOP



## Trasmettitori

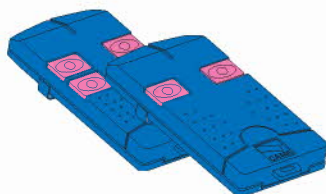


**ATOMO**  
AT01 • AT02  
AT04

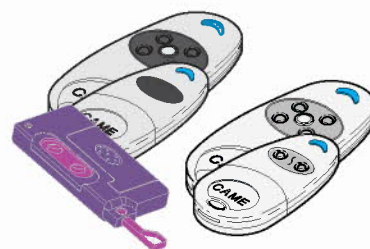
see instruction sheet in the packaging  
of the AF43SR radi-frequency card

see instructions on box

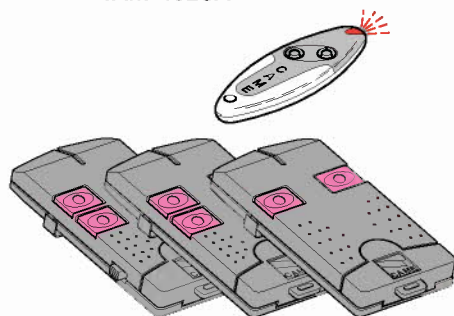
**TOP**  
TOP-432A • TOP-434A



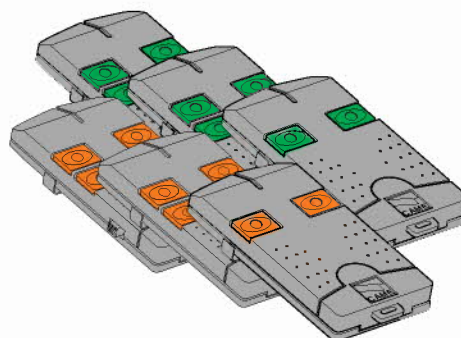
**TOP**  
TOP-432NA • TOP-434NA  
TOP-862NA • TOP 864NA  
TOP-432S



**TAM**  
T432 • T434 • T438  
TAM-432SA



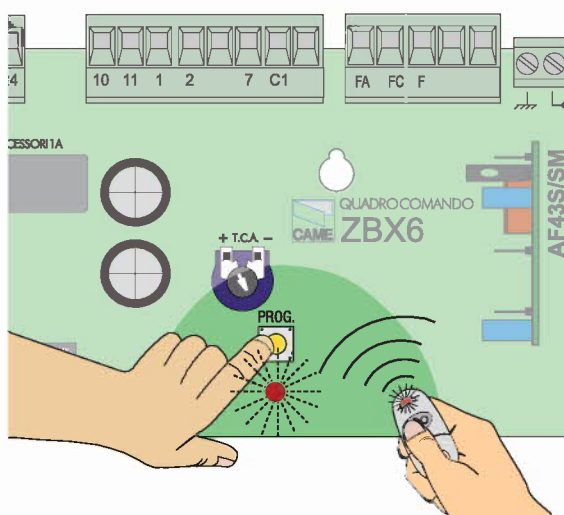
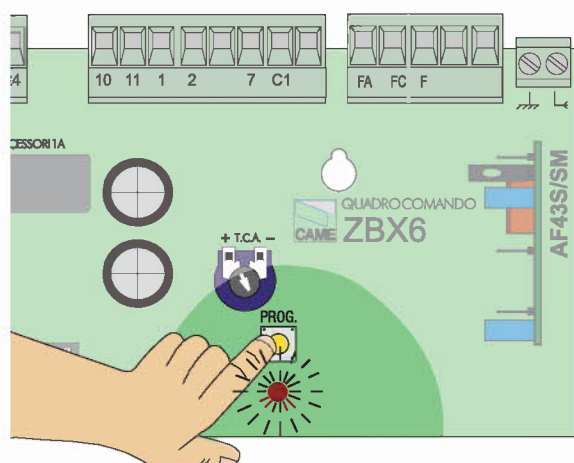
**TFM**  
T132 • T134 • T138  
T152 • T154 • T158



## Memorisation

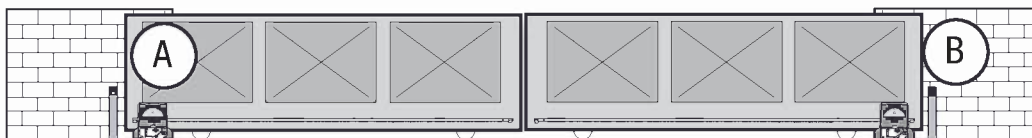
- Keep button pressed **PROG** on the electronic card. The LED flashes ON and OFF.

- Press the button on the transmitter to be memorised. The LED will stay ON to confirm memorisation is OK.

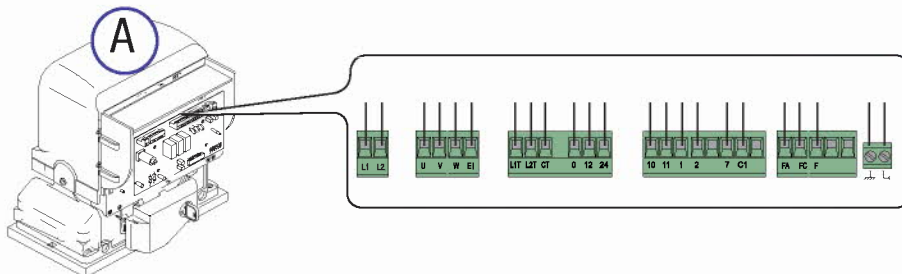


## 8 Connecting two gearmotors coupled by one command

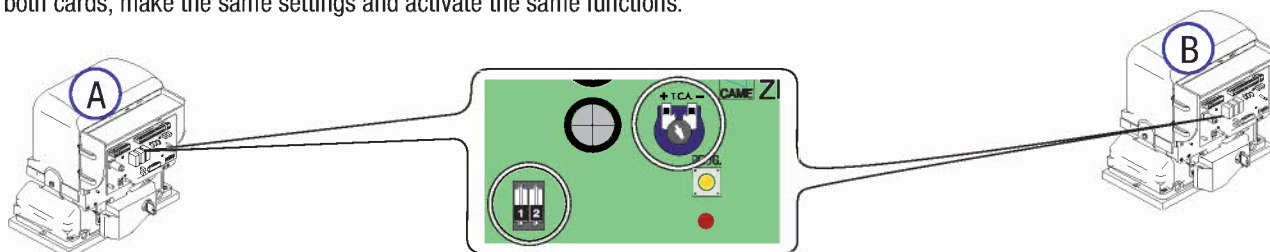
1) Coordinate the direction of travel for gearmotor "A" and "B", by changing the rotation of motor "B" (see p. 11 connecting the gearmotor-endstop).



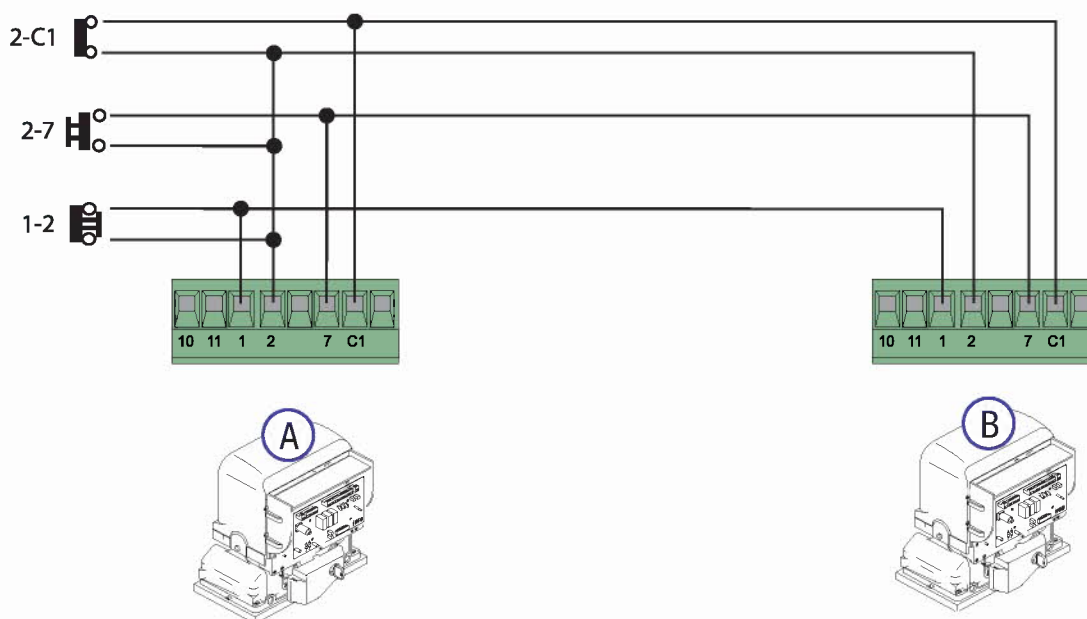
2) Make the electrical connection on the command card of motor "A" as shown in paragraph 6.3 electrical connections.



3) On both cards, make the same settings and activate the same functions.



4) Perform necessary connections between two command cards as shown in the figure.



N.B. With coupled connections, the radio command cannot be used directly. If necessary, use the outer (REccc, RBxxx) radio receiver connected to terminals 2-7.

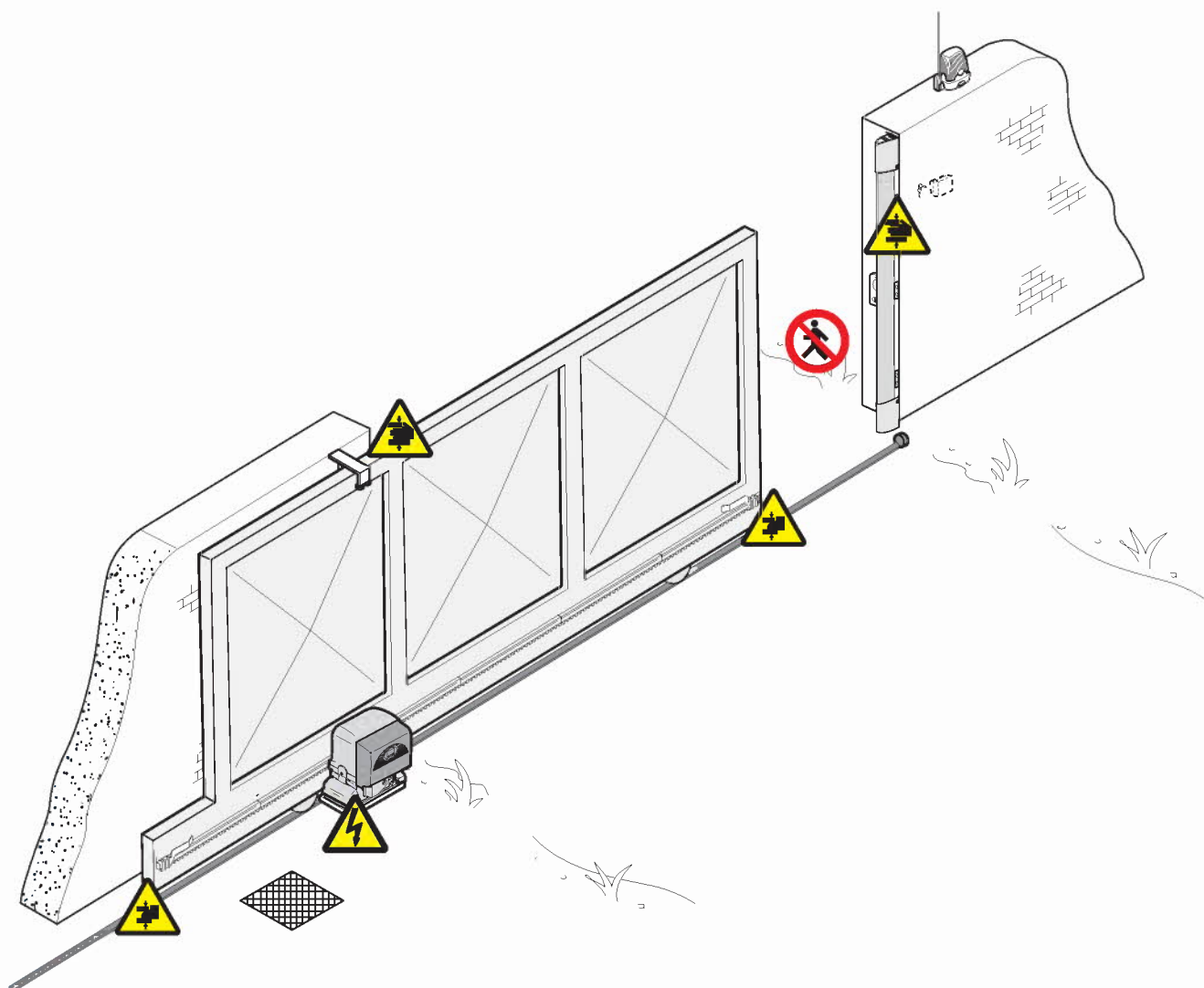
## 9 Safety instructions

### Important general safety instructions

This product is only intended to be used for the purpose it was designed. Any other use is therefore improper and dangerous. The manufacturer is not liable for any damage caused by improper, wrongful or unreasonable use.

Work well away from the gate hinges or mechanical moving parts. Stay out of the working range of the moving operator.

Do not oppose the movement of the operator as this may result in danger.



Do not allow children to play or loiter within the working range of the operator. Keep transmitters and any other command devices away from children, to prevent the operator from being activated by mistake.

Immediately stop using the operator if any anomaly is manifested.



Danger of hand crushing



Danger high voltage




Danger of foot crushing



Transit forbidden during operation

## 10 Maintenance

### 11.1 Periodic maintenance

 Periodic servicing **performed by end-user** are wiping clean the photocell's glass front pieces and checking for proper working state of safety devices and that the operator is free of any obstacles.

We also suggest to periodically check the state of lubrication and tightness of screws on the operator.

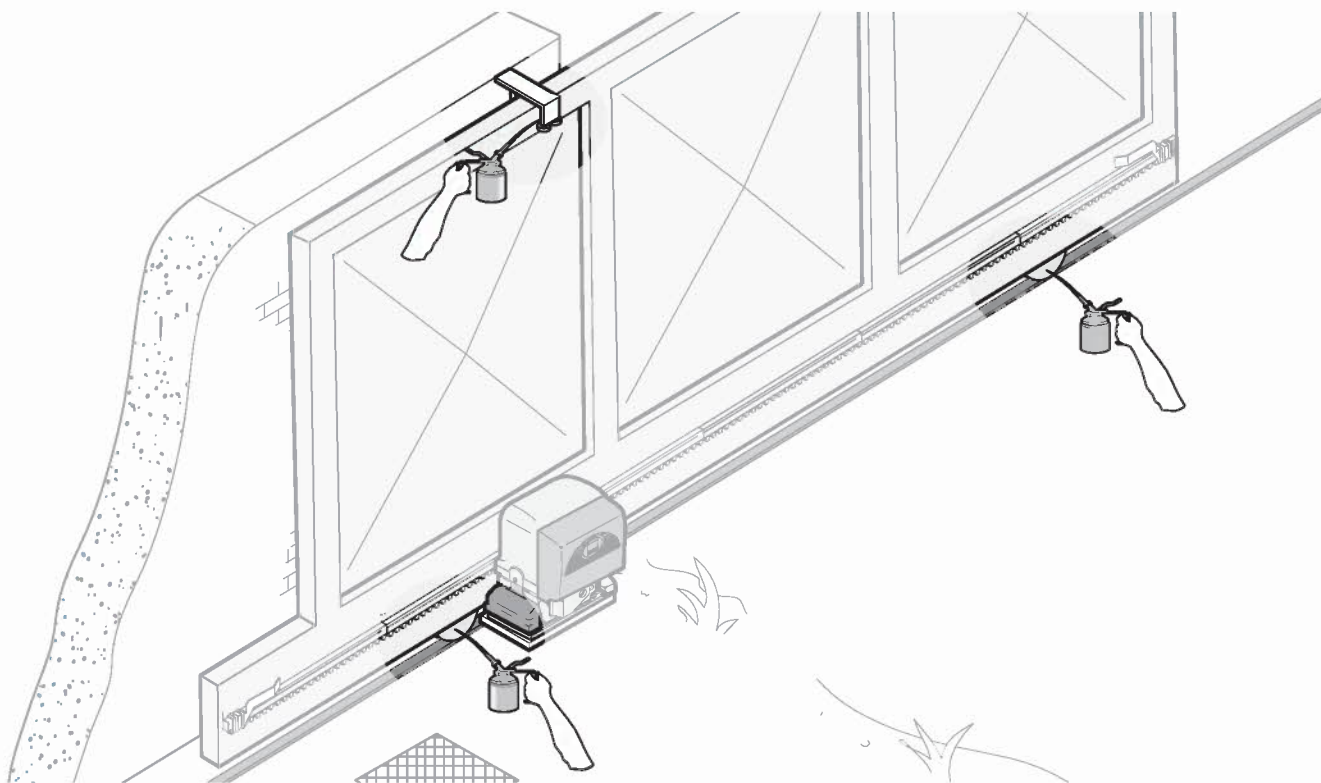
To check the efficiency of the safety devices, wave an object in front of the photocells during closing cycle, if the operator inverts or halts its movement, the photocells are working properly. This is the only maintenance job that can be done with the door when it is powered up.

Before performing any job we highly recommend to cut off the main power, to prevent any dangerous situations from possible accidental movements by the door.

-To wipe clean the photocell glass, use a slightly damp cloth, and do not use any solvents or other chemical products that may ruin the device.

Lubricate all joints with grease, any time strange vibrations or noises are manifested, as shown below.

- Check that the photocells are free of any vegetation blocking them, and that there are no obstacles to the free movement of the door.



### 10.2 Troubleshooting

DISFUNCTIONS	POSSIBLE CAUSES	CHECKS AND FIXES
The gate neither opens nor closes	No power supply The gearmotor is released The transmitter battery is run down The transmitter is out of order • Stop button is stuck or broken down The opening/closing button or key-switch selector are broken. Photocells are in partial stop	Check if network is up • Block the gearmotor Replace the batteries • Call for assistance • Call for assistance • Call for assistance • Call for assistance
The gate opens but does not close	The photocells are engaged Sensitive edge is engaged	• Check that photocells are clean and in proper working order • Call for assistance
The gate closes but does not open	Sensitive edge is engaged	• Call for assistance
The flashing light does not work	Burned out bulb	• Call for assistance