



## **Ditec CROSS18-19**

### Sliding gates automation

(original instructions)

IP1984 EN  
Technical Manual



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## Caption




This symbol indicates instructions or notes regarding safety issues which require particular attention.




This symbol indicates informations which are useful for correct product function.

# 1. General safety precautions

 This installation manual is intended for qualified personnel only.  
Installation, electrical connections and adjustments must be performed in accordance with Good Working Methods and in compliance with applicable regulations.

Before installing the product, carefully read the instructions.

Bad installation could be hazardous.

 The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as these are a potential source of hazard.

Before installing the product, make sure it is in perfect condition.

Do not install the product in an explosive environment and atmosphere: gas or inflammable fumes are a serious hazard risk.

Before installing the motors, make all structural changes relating to safety clearances and protection or segregation of all areas where there is risk of being crushed, cut or dragged, and danger areas in general.

Make sure the existing structure is up to standard in terms of strength and stability.

The motor manufacturer is not responsible for failure to use Good Working Methods in building the frames to be motorized or for any deformation occurring during use.


The safety devices (photocells, safety edges, emergency stops, etc.) must be installed taking into account: applicable laws and directives, Good Working Methods, installation premises, system operating logic and the forces developed by the motorized door.

The safety devices must protect any areas where the risk exists of being crushed, cut or gragged, or where there are any other risks generated by the motorized door.

Apply hazard area notices required by applicable regulations.

Each installation must clearly show the identification details of the motorized door.


When necessary, connect the motorized door to a reliable earth system made in accordance with applicable safety regulations.

 During installation, maintenance and repair, interrupt the power supply before opening the lid to access the electrical parts.  
The protective casing of the automation must be removed by qualified personnel only.

To handle electronic parts, wear earthed antistatic conductive bracelets.

The motor manufacturer declines all responsibility in the event of component parts being fitted that are not compatible with the safe and correct operation.

For repairs or replacements of products only original spare parts must be used.

 The installer shall provide all information relating to automatic, manual and emergency operation of the motorized door, and provide the user with operating instructions.

## 2. Declaration of incorporation of partly completed machinery

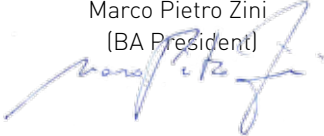
(Directive 2006/42/EC, Annex II-B)

The manufacturer Entrematic Group AB with headquarters in Lodbjursgatan 10, SE-261 44 Landskrona, Sweden declares that the automation system for Ditec CROSS18-19 sliding gates:

- has been constructed to be installed on a manual door to construct a machine pursuant to the Directive 2006/42/EC. The manufacturer of the motorized door shall declare conformity pursuant to the Directive 2006/42/EC (annex II-A), prior to the machine being put into service;
- conforms to applicable essential safety requirements indicated in annex I, chapter 1 of the Directive 2006/42/EC;
- conforms to the Low Voltage Directive 2006/95/EC;
- conforms to the Electromagnetic Compatibility Directive 2004/108/EC;
- technical documentation conforms to Annex VII-B to the Directive 2006/42/EC;
- technical documentation is managed by Marco Pietro Zini with offices in Via Mons. Banfi, 3 - 21042 Caronno Pertusella (VA) - ITALY;
- a copy of technical documentation will be provided to national competent authorities, following a suitably justified request.

Landskrona, 13-01-2013

Marco Pietro Zini  
(BA President)



### 2.1 Machinery Directive

Pursuant to Machinery Directive (2006/42/EC) the installer who motorizes a door or gate has the same obligations as the manufacturer of machinery and as such must:

- prepare the technical file which must contain the documents indicated in Annex V of the Machinery Directive; (The technical file must be kept and placed at the disposal of competent national authorities for at least ten years from the date of manufacture of the motorized door);
- draw up the EC Declaration of Conformity in accordance with Annex II-A of the Machinery Directive and deliver it to the customer;
- affix the EC marking on the motorized door in accordance with point 1.7.3 of Annex I of the Machinery Directive.

### 3. Technical data

	Ditec CROSS18	Ditec CROSS18E	Ditec CROSS18VE	Ditec CROSS19V
<b>Power supply</b>	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz	400 V~ 50 Hz
<b>Absorption</b>	3 A	3 A	3 A	1,2 A
<b>Thrust</b>	1200 N	1200 N	1200 N	1500 N
<b>Door speed</b>	0,2 m/s	0,2 m/s	0,2 m/s	0,2 m/s
<b>Max run</b>	11 m	20 m	20 m	20 m
<b>Max door weight</b>	1800 kg	1800 kg	1800 kg	1800 kg
<b>Service class</b>	4 - INTENSIVE	4 - INTENSIVE	4 - INTENSIVE	4 - INTENSIVE
<b>Min number of consecutive cycles</b>	50	50	50	50
<b>Intermittence</b>	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%	S2 = 30 min S3 = 50%
<b>Temperature</b>	min -20° C max +55° C	min -20° C max +55° C	min -20° C max +55° C	min -20° C max +55° C
<b>Degree of protection</b>	IP24D	IP24D	IP24D	IP24D
<b>Control panel</b>	E1A - LOGIC M	E1A (incorporated)	LOGICM (incorporated)	E1T

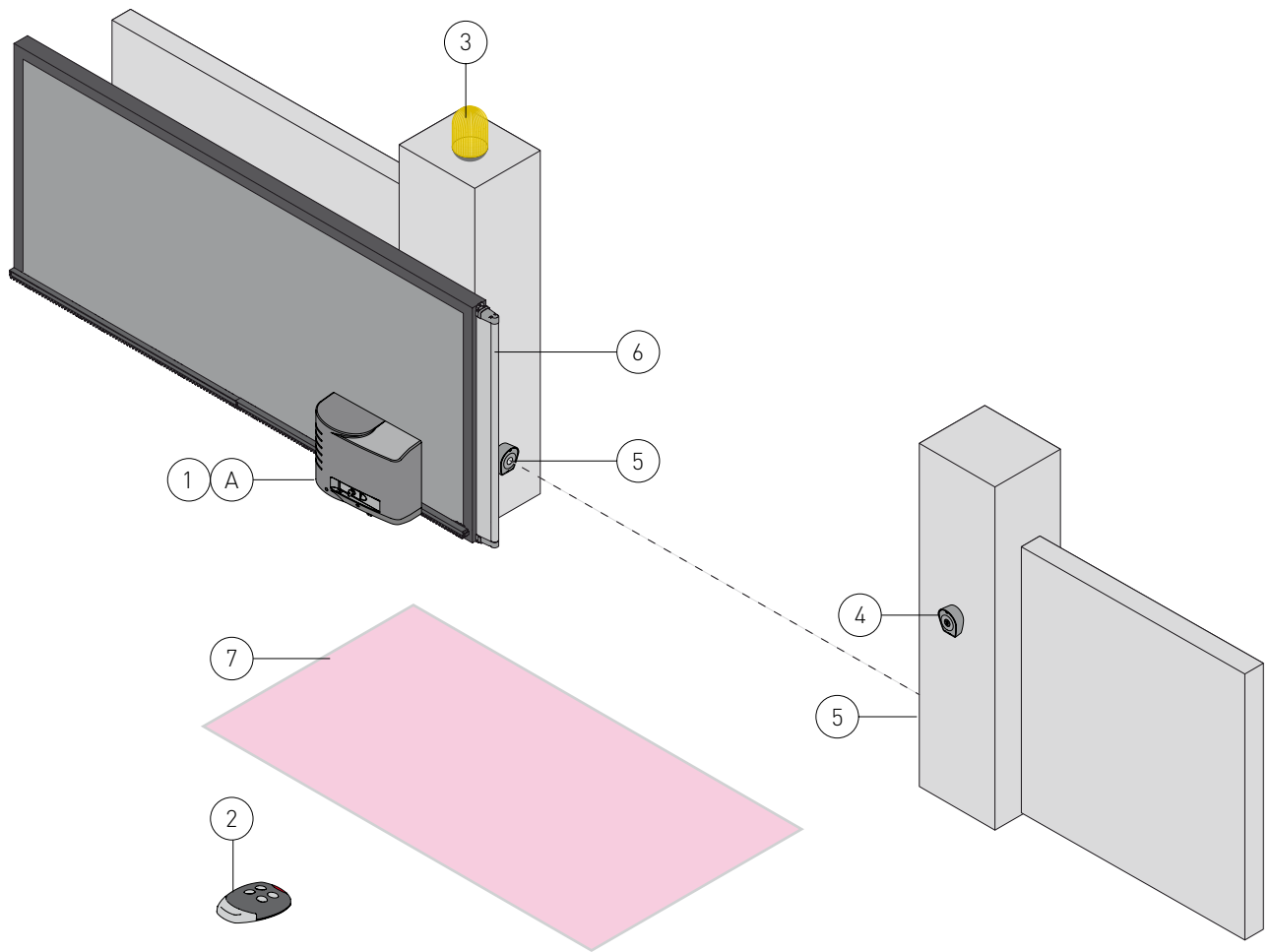
#### 3.1 Operating instructions

Service class: 4 (minimum 100 cycles a day for 10 years or 200 cycles a day for 5 years)

Use: INTENSIVE (For vehicle or pedestrian accesses to large condominiums, industrial or commercial complexes and parking lots with very frequent use).

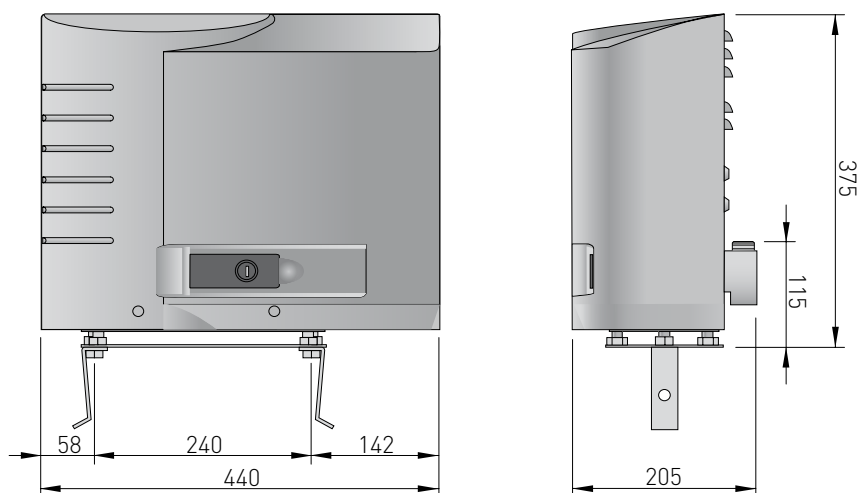
- Performance characteristics are to be understood as referring to the recommended weight (approx. 2/3 of maximum permissible weight). A reduction in performance is to be expected when the access is made to operate at the maximum permissible weight.
- Service class, running times, and the number of consecutive cycles are to be taken as merely indicative having been statistically determined under average operating conditions, and are therefore not necessarily applicable to specific conditions of use. During given time spans product performance characteristics will be such as not to require any special maintenance.
- The actual performance characteristics of each automatic access may be affected by independent variables such as friction, balancing and environmental factors, all of which may substantially alter the performance characteristics of the automatic access or curtail its working life or parts thereof (including the automatic devices themselves). When setting up, specific local conditions must be duly borne in mind and the installation adapted accordingly for ensuring maximum durability and trouble-free operation.

## 4. Standard installation

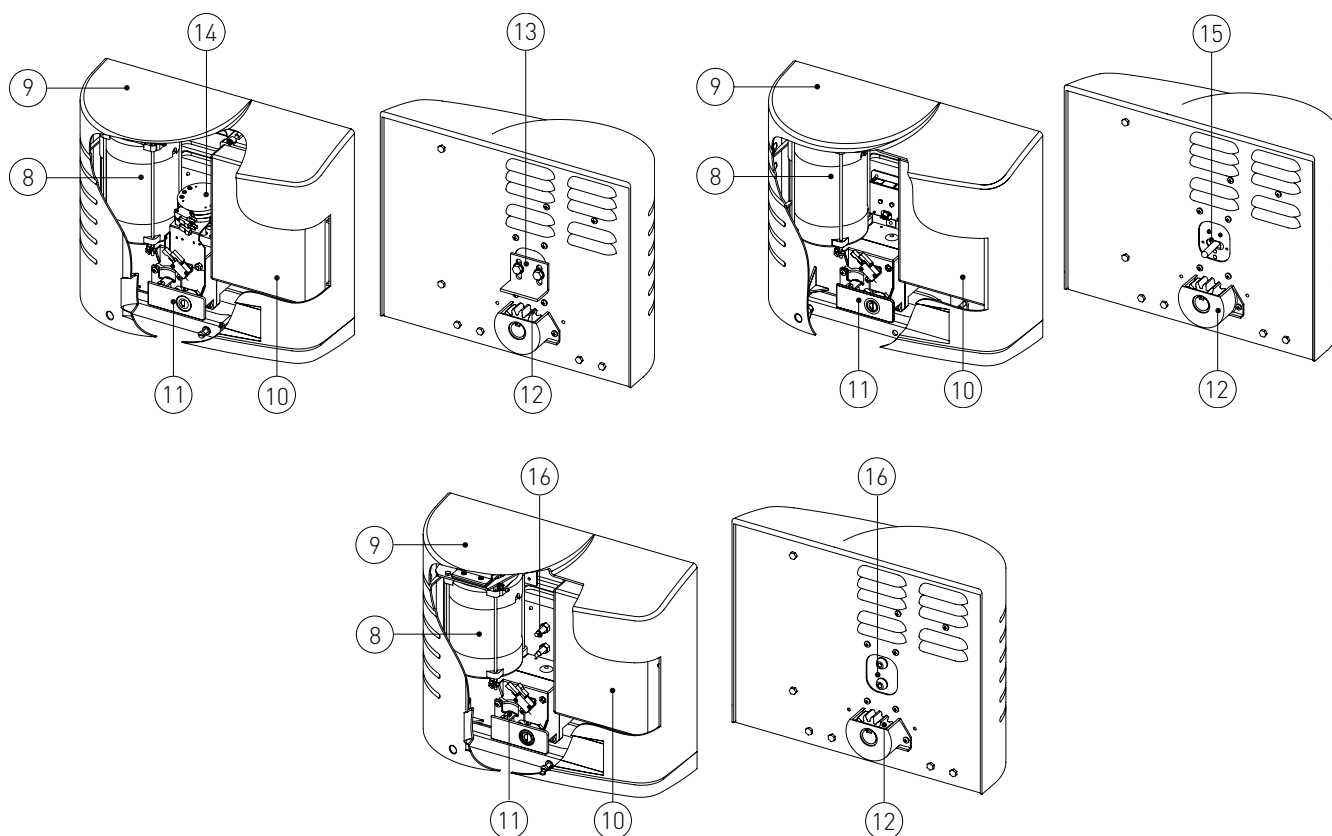


Ref.	Code	Description
1	Ditec CROSS18 Ditec CROSS18E Ditec CROSS18VE Ditec CROSS19V	230V gearmotor with rotary limit switch 230V gearmotor with lever limit switch / built-in control panel 230V gearmotor with magnetic limit switch / built-in control panel 400V gearmotor with magnetic limit switch
2	GOL4 GOL4C	Transmitter
3	LAMP	Flashing light
4	XEL5 LAN4 GOL4M	Key selector Control keyboard Codified via radio control keyboard
5	XEL2 LAB4	Photocells Photocells IP55
6	SOFA-S0FB GOPAV	Safety edge Radio system for safety edges
7	LAB9	Magnetic loop detection device for traffic monitoring
A		Connect the power supply to an approved omnipolar switch with an opening distance of the contacts of at least 3mm (not supplied). The connection to the mains must be made via an independent channel, separated from the connections to command and safety devices.

## 5. Dimensions



## 6. Main components



Ref.	Code	Description
8		Motor
9		Casing
10		Control panel
11		Manual release
12		Pinion
13		Rack stop
14		Rotary stop group
15		Lever stop group
16		Magnetic limit switch group



# 7. Installation

The given operating and performance features can only be guaranteed with the use of DITEC accessories and safety devices. Unless otherwise specified, all measurements are expressed in millimetres (mm).

## 7.1 Preliminary checks

Check the stability of the wing (derailing and lateral falls) and the sliding wheels and that the upper guides do not cause any friction. The sliding guide must be securely fixed to the ground for the full length within the doorway and must have no irregularities that could hinder the movement of the gate.

The opening and closing stops must be fitted.

If the gate has slits, make sure they are covered to prevent shearing points.

Safety device should be installed at the end of the wing to reduce the collision force.

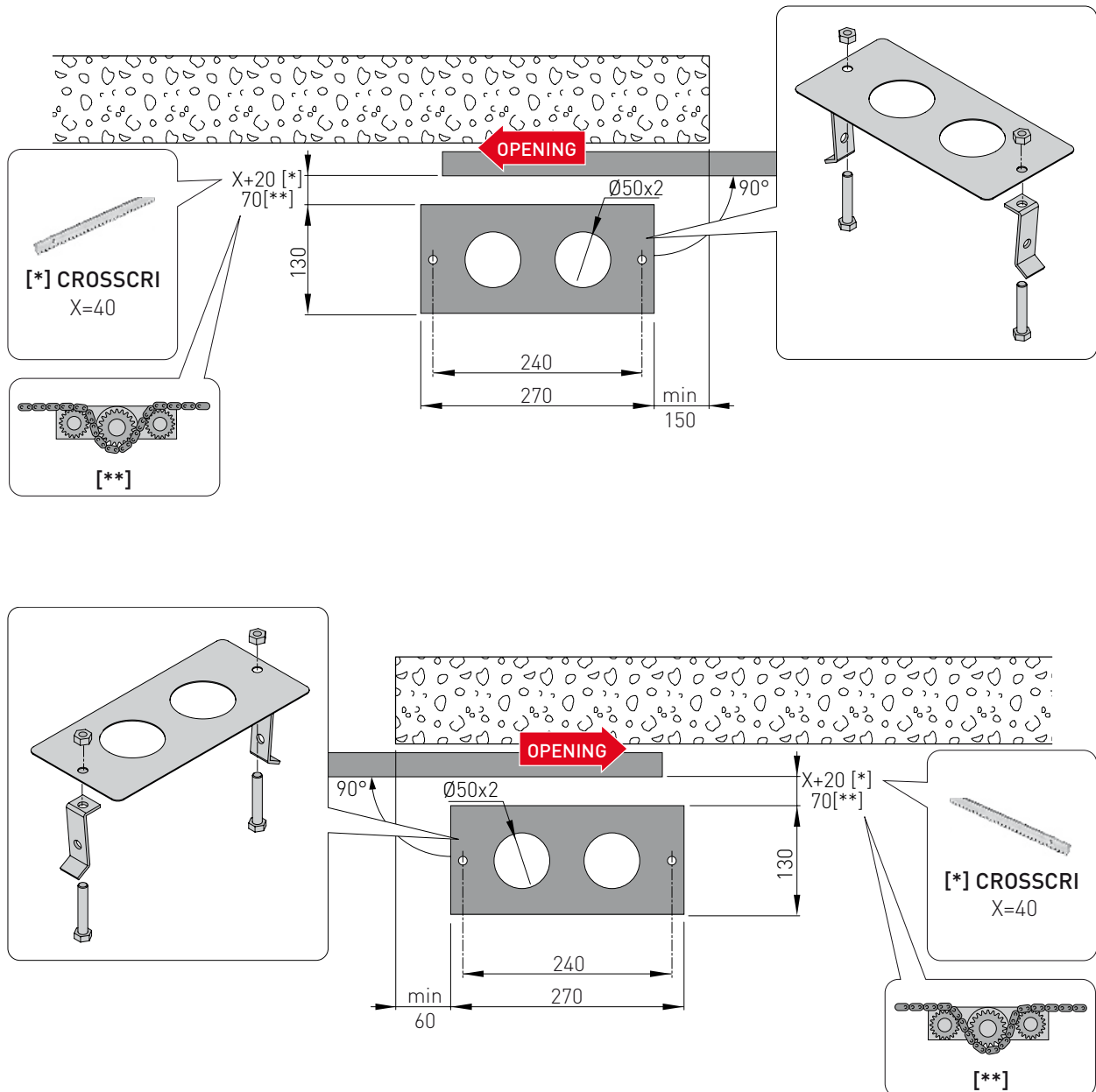


NOTE: make sure that the gate can not exit the sliding guides and fall.

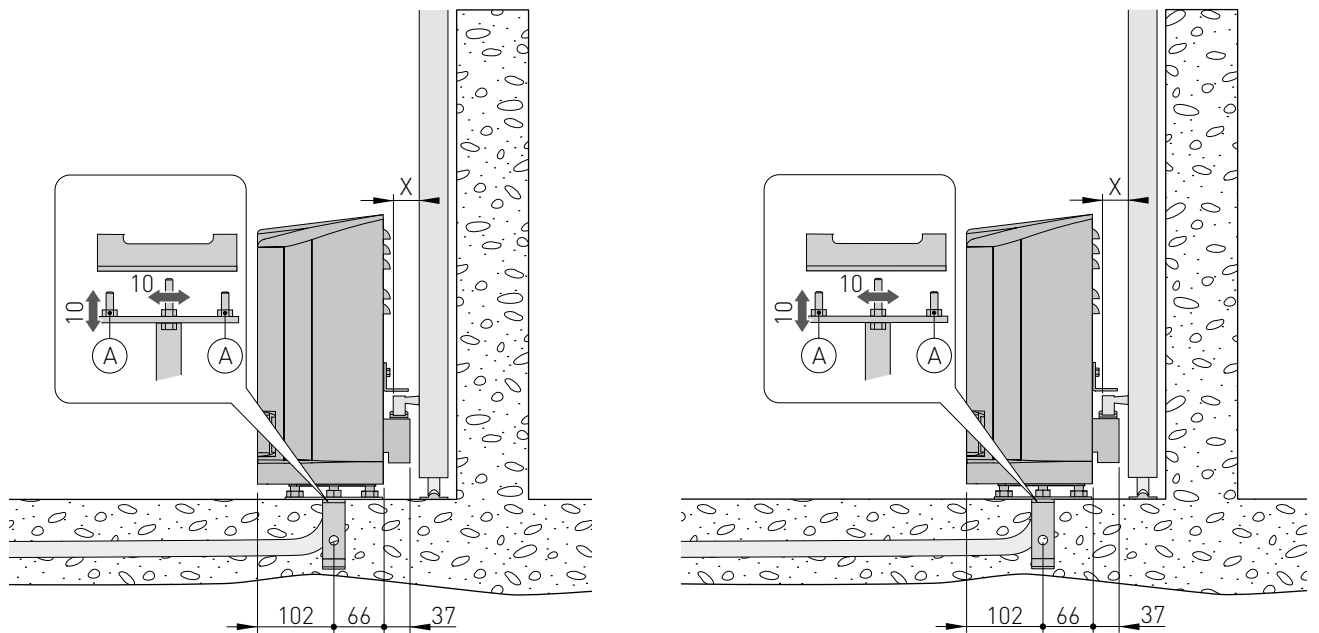
## 7.2 Base plate position

- Insert the anchor ties onto the base plate and fix them with the supplied nuts.
- Make a concrete base with the anchor ties and base plate embedded, which must be level and clean, following the measurements indicated in the diagram.

**i** NOTE: If the concrete base is already present, fix the base plate with expansion bolts M8 (not supplied) to allow height adjustment.



## 7.3 Geared motor installation



- Release the gearmotor and remove the key (see OPERATING INSTRUCTIONS). Unscrew the two front screws and remove the casing [9].
- Place the gearmotor onto the base plate.
- **Gearmotor adjustment**  
Horizontally slide the gearmotor on the slots of the anchor brackets (max 10 mm).  
Vertically with the four levelling screws [A].

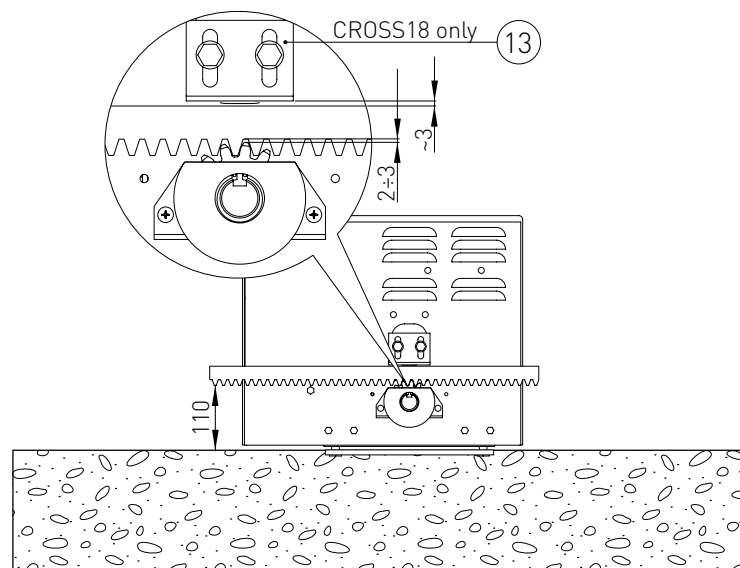


NOTA: during the vertical adjustment, keep the gearmotor slightly raised from the base plate so that the rack can be fixed and subsequent adjustments are possible.



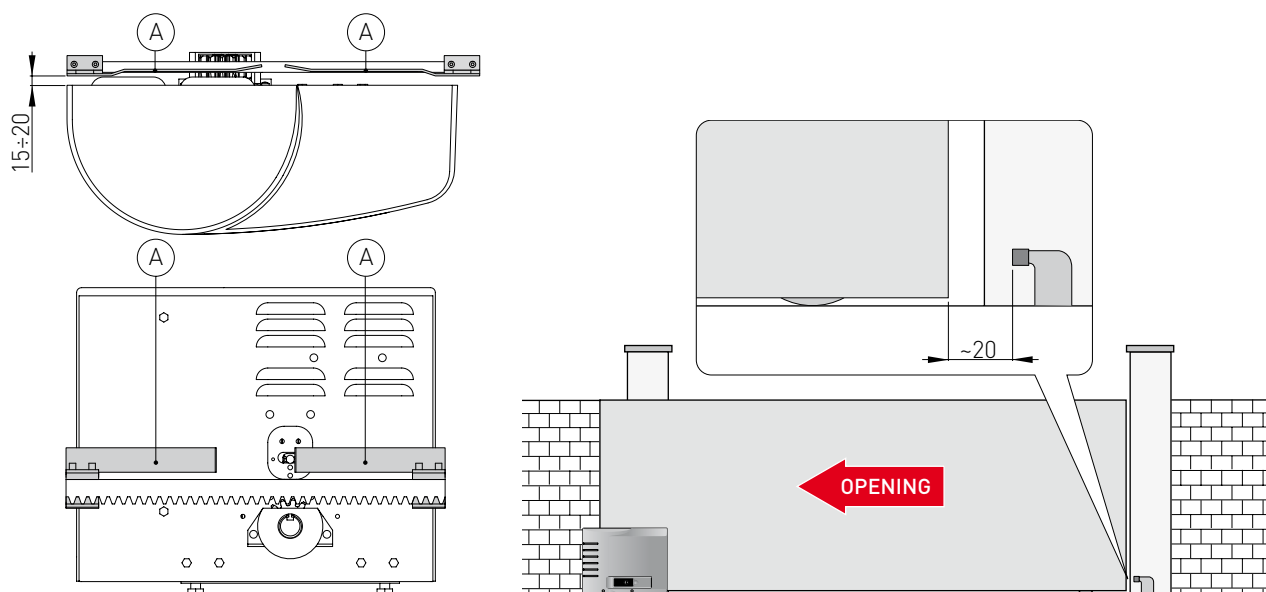
WARNING: the gearmotor must be suitably raised from the ground to avoid flooding.

## 7.4 Rack installation



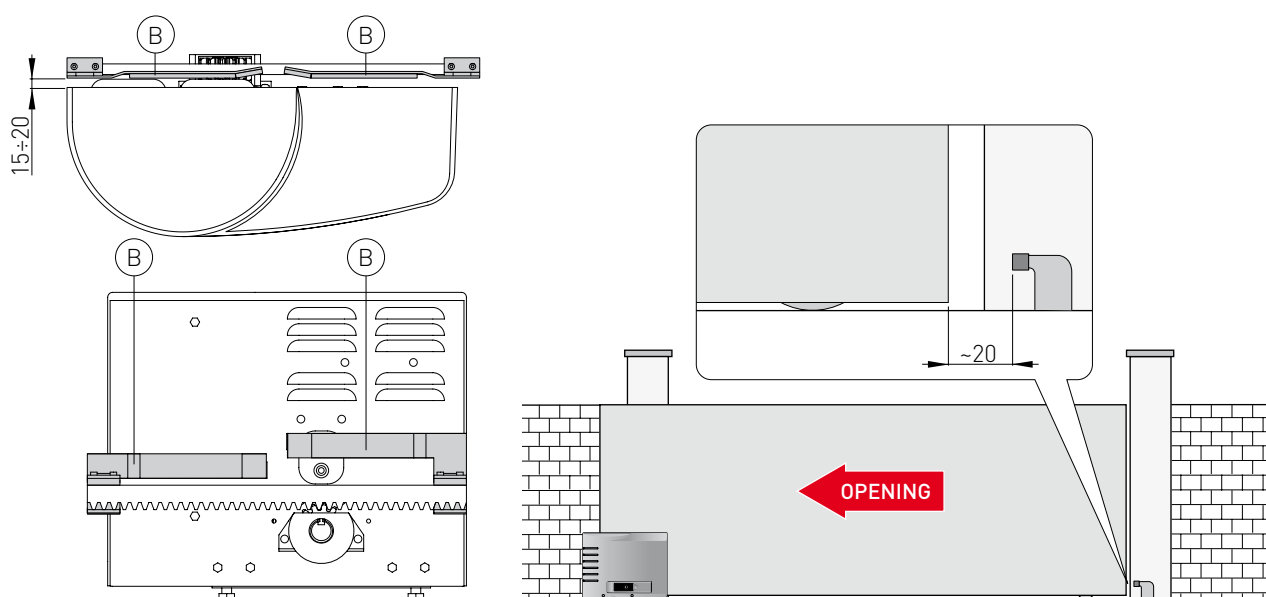
- Release the gearmotor (see OPERATING INSTRUCTIONS) and open the gate.
- Rest the rack onto the pinion and manually sliding the gate, fix it throughout its entire length.
- Once fixing is complete, vertically adjust the gearmotor to give a play of 2-3 mm between the rack and the pinion.
- **CROSS18 only.** Between the rack and the rack stop must be a play of 3 mm.
- Secure the gearmotor with the nuts.
- Slightly lubricate the rack and pinion after assembly.  
Manually check that the gate slides evenly and without friction.

## 7.5 Lever stop installation and adjustment



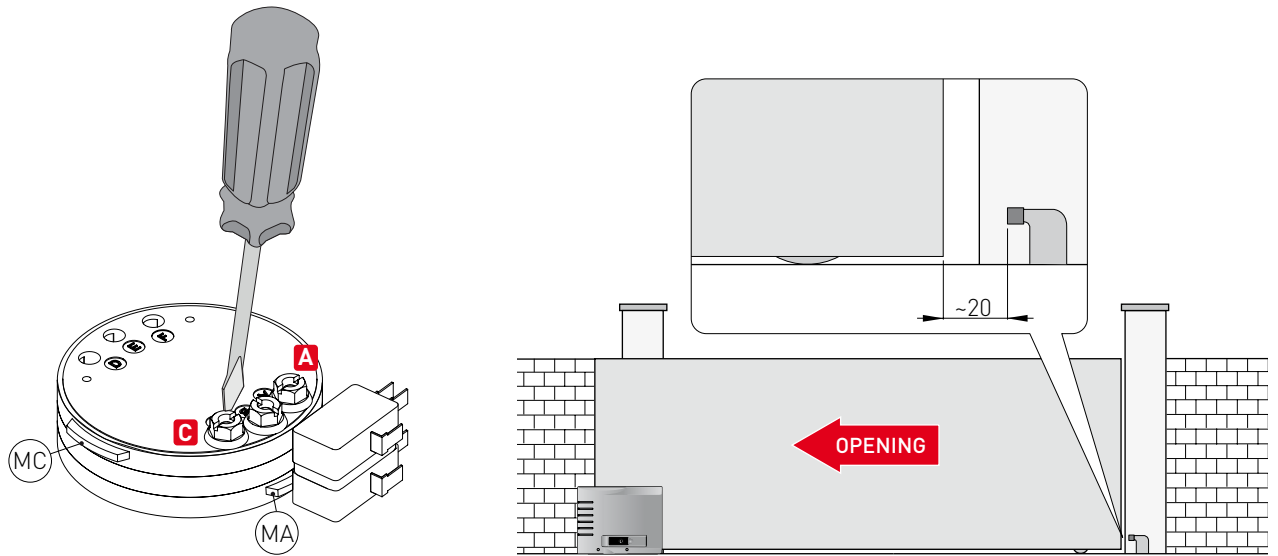
- Manually place the wing in the completely open position and fix the stop bracket [A] onto the rack so that the upper lever stop exceed for  $2/3$  times the length of the bracket. Repeat the operation with the wing fully closed.
- After having carried out a few manoeuvres, adjust the position of the limit switch bracket [A] so that the gate stops about 20 mm before the opening and closing stop.

## 7.6 Magnetic limit switches installation and adjustment



- Manually place the wing in the completely open position and fix the limit switch bracket [B] onto the rack so that the upper lever stop exceed for  $2/3$  times the length of the bracket. Repeat the operation with the wing fully closed.
- After having carried out a few manoeuvres, adjust the position of the limit switch bracket [B] so that the gate stops about 20 mm before the opening and closing stop

## 7.7 Rotary stop adjustment

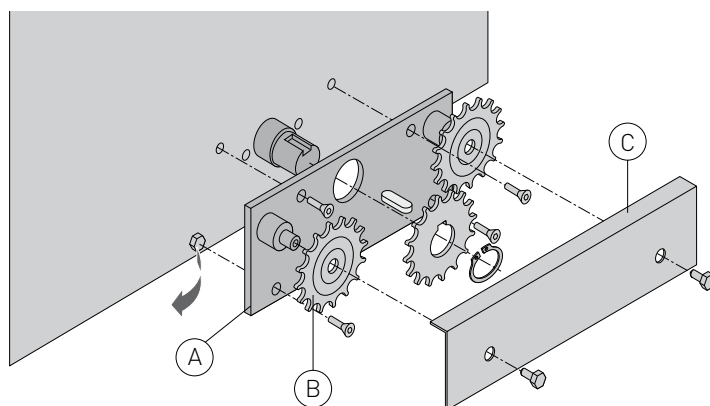


- With the gate open, turn the screw [A] so that cam [MA] activates the opening microswitch.
- With the gate closed, turn the screw [C] so that cam [MC] activates the closing microswitch.  
NOTE: with the gate opened to the left (gearmotor side view) the microswitches are inverted [A] for closing [C] and opening.
- Adjust [A] and [C] so that the activation of the limit switch stops the gate approximately 20 mm before the stop.



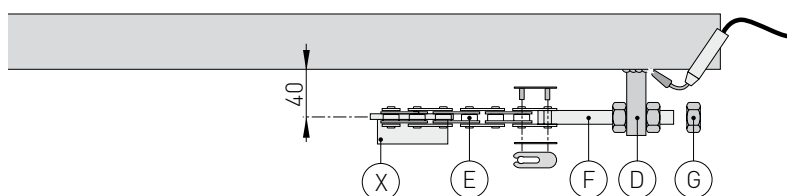
NOTE: make sure this occurs after having performed several operations.

## 7.8 Chain drive kit installation

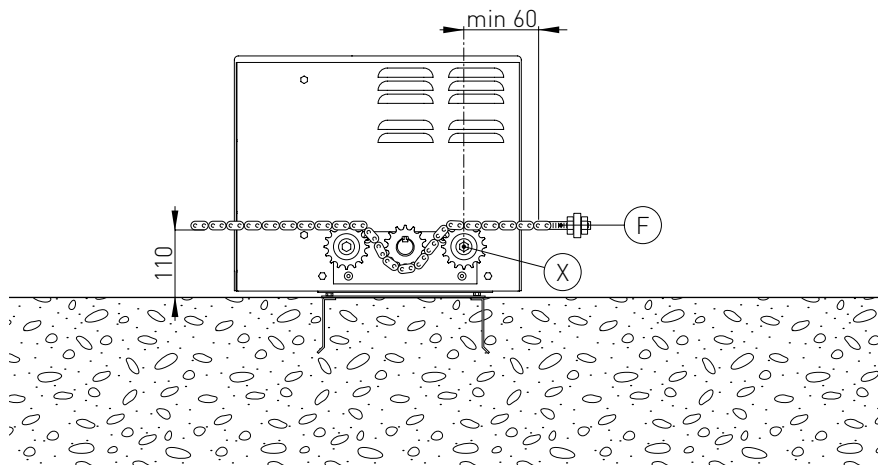


N.B.: Install the chain traction kit before securing the gearmotor to the base plate.

- Release the gearmotor (see OPERATING INSTRUCTIONS).
- Remove pinion for rack.
- Fix the pinion supporting plate [A] to the gearmotor.
- Insert the pinion [B] as illustrated in the diagram.
- Manually pass the chain between the pinions.
- Fix the cover plate [C].



- Manually move the wing into the open position and fix the brackets [D] onto the wing as illustrated in the figure.
  - Connect chain [E], which was previously assembled on the gearmotor, to tie rod [F] and fix it to bracket [D].
  - Fix bracket [D] on the opposite side of the gate. Connect the chain [E] to the tie rod [F] and fix it to bracket [D] (cut the excess chain).
- NOTE: make sure that the distance between the pinion centre [X] and tie rod [F] is correct when the gate is fully open and closed.
- Secure the gearmotor with the nuts [G].
  - Tighten the chain [E] with the tie rods [F].
  - Slightly lubricate the chain [E] and pinions after assembly.



# 8. Electrical connections



NOTE: the electrical connections and starting of the gearmotor are illustrated in the control panel installation manual.

	CROSS18	CROSS18E	CROSS18VE	CROSS19V
Control panel	E1A - LOGICM	E1A	LOGIC M	E1T



Before connecting the power supply, make sure the plate data correspond to that of the mains power supply.

An omnipolar disconnection switch with minimum contact gaps of 3 mm must be included in the mains supply.

Check that upstream of the electrical installation there is an adequate residual current circuit breaker and a suitable overcurrent cutout.

Use a H05RN-F 3G1,5 or H05RR-F 3G1,5 type electric cable and connect to the terminals L (brown), N (blue) in the automation. Connect the yellow-green earth wire to the appropriate terminal  $\oplus$  already connected to the motor.

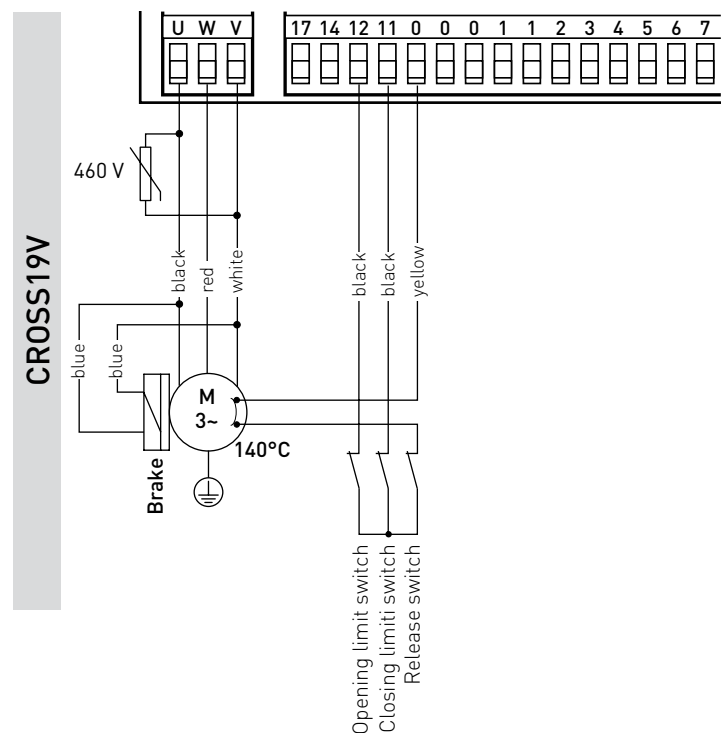
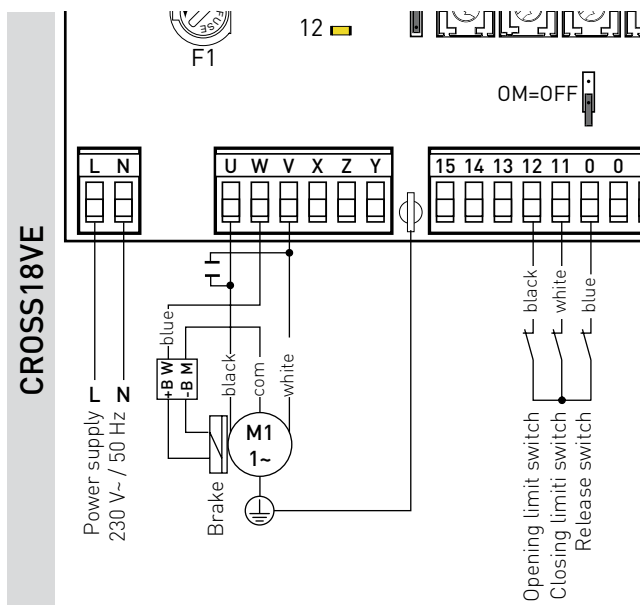
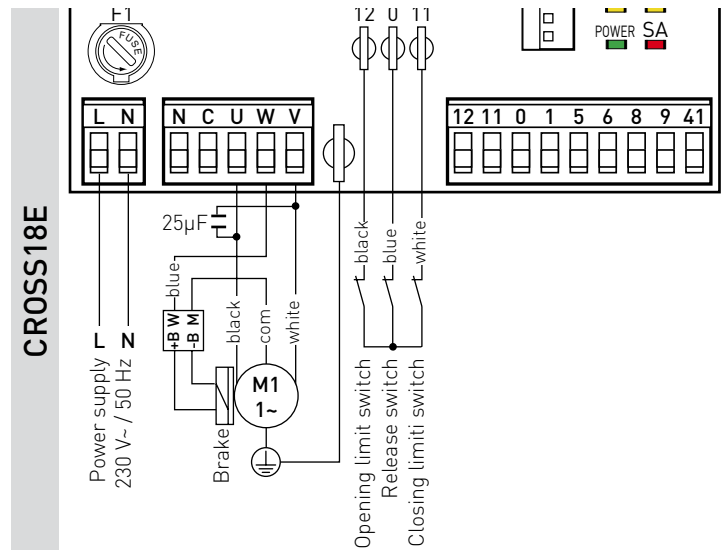
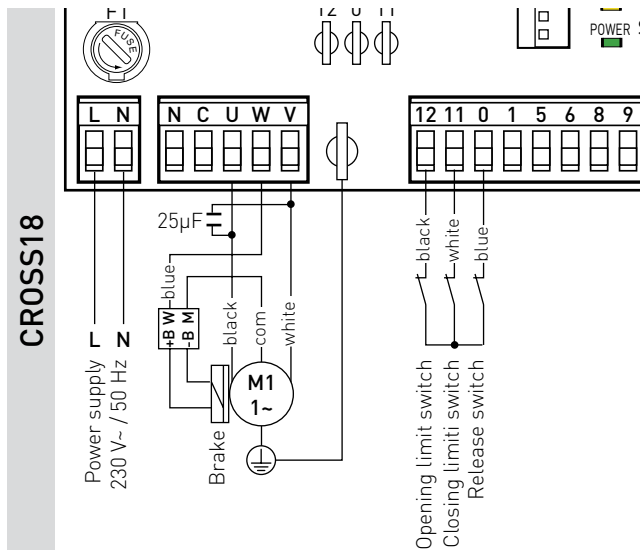
Secure the cable using the special cable clamp and remove the outer sheath near the terminal only.

Connection to the mains power supply, in the section outside the automation, is made with independent channels and separated from the connections to the control and safety devices.

The channel must go into the automation through the holes on the base plate.

Make sure there are no sharp edges that may damage the power supply cable.

Make sure that the mains power supply (230 V) conductors and the accessory power supply (24 V) conductors are separate.



## 9. Routine maintenance plan

Perform the following operations and checks every 6 months according to intensity of use of the automation.

- Visually check that the gate, the fixing brackets and existing structure have suitable mechanical strength and are in good condition.
- Check the gate-gearmotor alignment, the distance (2-3 mm) between the throat of the pinion and the crest of the rack.
- Clean the wheel's sliding guide, the rack and pinion of the gear motor and slightly lubricate the rack and pinion of the gearmotor. Manually check that the gate slides evenly and without friction.

Connect the power supply and block the gearmotor (see RELEASE INSTRUCTIONS operations):

- Check that the limit switches are working correctly.
- Check the power adjustment.
- Check that all control and safety functions are working correctly.



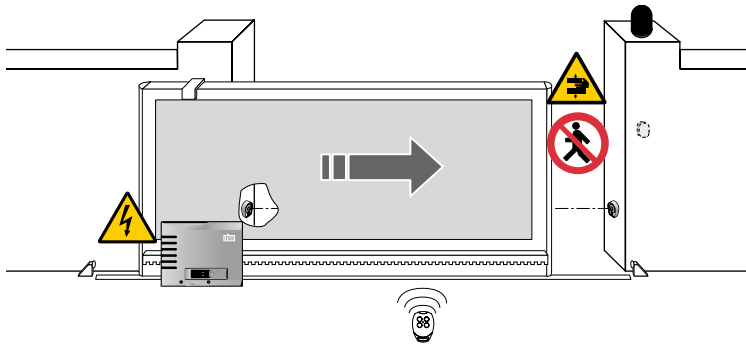
WARNING: For spare parts, see the spares price list.





# Operating instructions

## General safety precautions



DETACH AND DELIVER TO THE CUSTOMER



The following precautions are an integral and essential part of the product and must be supplied to the user.

Read them carefully since they contain important information on safe installation, use and maintenance.

These instructions must be kept and forwarded to all possible future users of the system.

This product must only be used for the specific purpose for which it was designed.

Any other use is to be considered improper and therefore dangerous.

The manufacturer cannot be held responsible for any damage caused by improper, incorrect or unreasonable use.

This product should not be used by people (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision or instructions concerning the use of the appliance by a person responsible for their safety.

Avoid operating in the proximity of the hinges or moving mechanical parts.

Do not enter within the operating range of the motorized door while it is moving.

Do not block the movement of the motorized door since this may be dangerous.

Do not allow children to play or stay within the operating range of the motorized door.

Keep remote controls and/or any other control devices out of the reach of children in order to avoid possible involuntary activation of the motorized door.

In the event of fault or malfunctioning of the product, turn off the power supply switch, do not attempt to repair or intervene directly and contact only qualified personnel.

Failure to comply with the above may cause a dangerous situation.

All cleaning, maintenance or repair work must be carried out by qualified personnel.

To ensure that the system works efficiently and correctly, the manufacturer's indications must be complied with and routine maintenance of the motorized door must be performed by qualified personnel.

In particular, regular checks are recommended in order to verify that the safety devices are operating correctly.

All installation, maintenance and repair work must be documented and made available to the user.



For the correct disposal of electric and electronic equipment, waste batteries and accumulators, the user must take such products to the designated municipal collection facilities.

# Ditec CROSS18-19

## Sliding gates

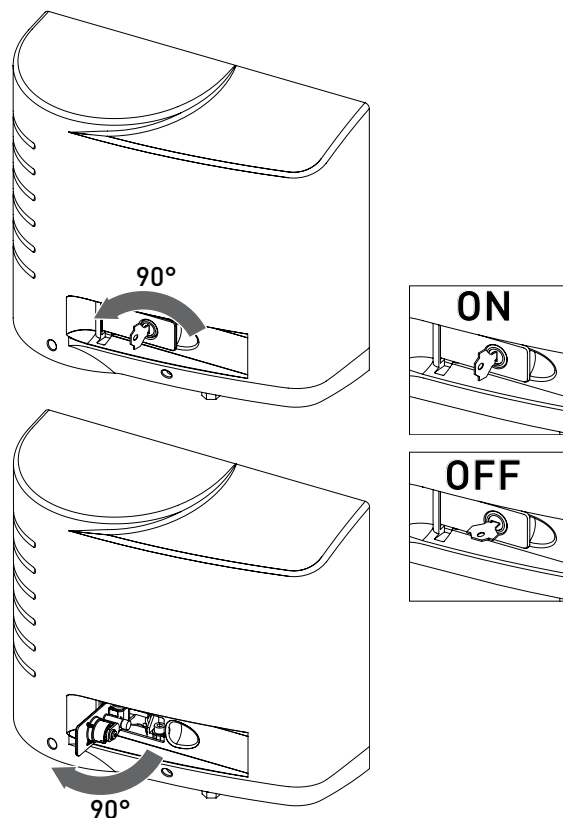



# Manual release instructions

In the event of a fault or power failure, insert the key and turn it anticlockwise and completely open the hatch. Open the gate manually. To block the gate again, close the hatch, turn the key clockwise and remove the key.

**WARNING:** the door wing block and release operations must be performed with the motor idle.

When the hatch is closed, but the key is still horizontal, the release micro remains open and all gate operations are prevented.



 For any problems and/or information, contact the support service.

Installer's stamp	Operator
	Date of intervention
	Technician's signature
	Customer's signature

Intervention: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DETACH AND DELIVER TO THE CUSTOMER

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