CAME

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FA02236-EN

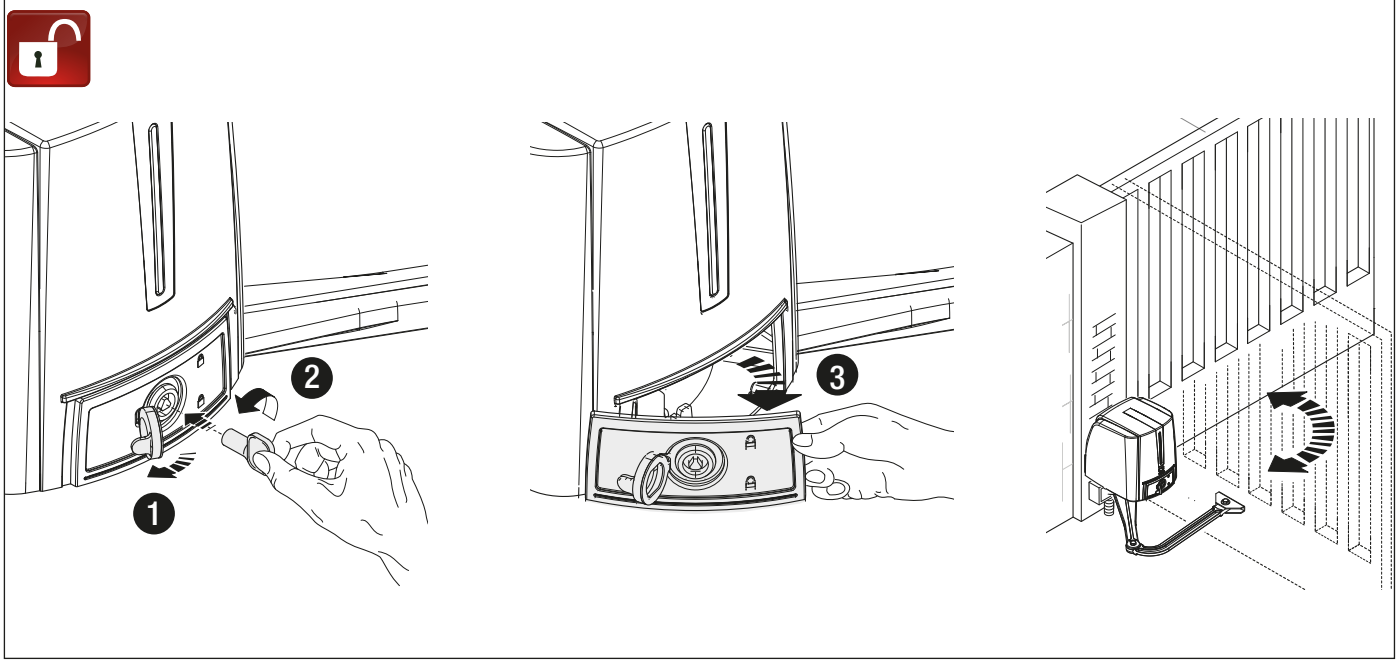
CE

Swing-gate operator

FA70230CB

INSTALLATION MANUAL

EN English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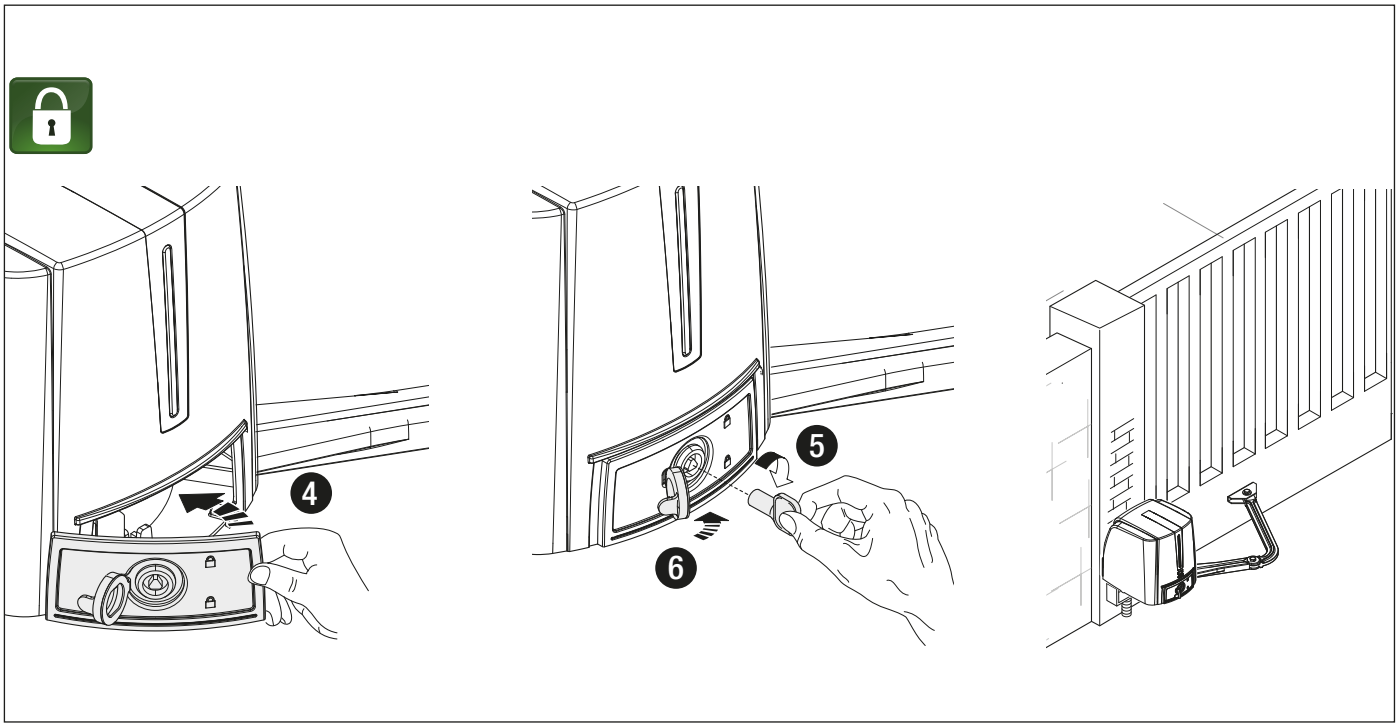
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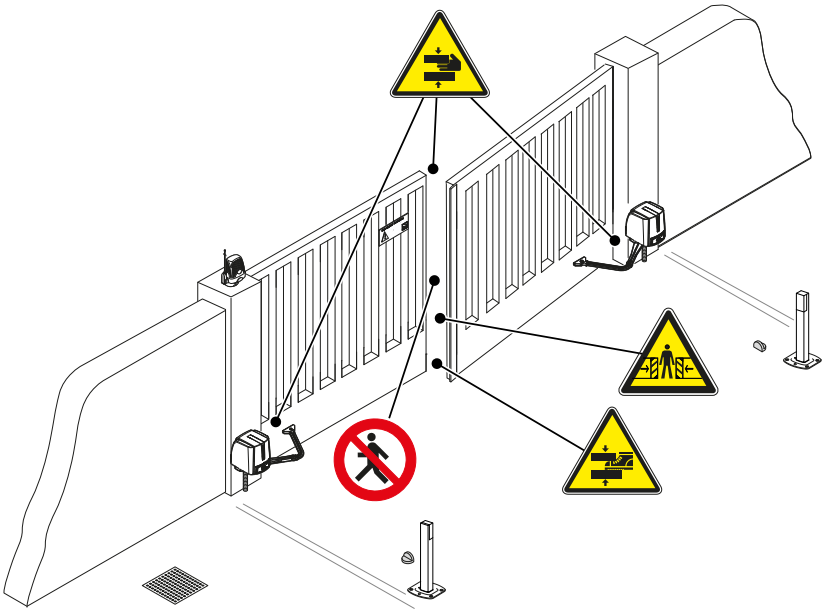
GENERAL PRECAUTIONS FOR INSTALLERS

⚠ Important safety instructions.
⚠ Please follow all of these instructions. Improper installation may cause serious bodily harm.
⚠ Before continuing, please also read the general precautions for users.

Only use this product for its intended purpose. Any other use is hazardous. • The manufacturer cannot be held liable for any damage caused by improper, unreasonable or erroneous use. • This product is defined by the Machinery Directive (2006/42/EC) as partly completed machinery. • Partly completed machinery means an assembly which is almost machinery but which cannot in itself perform a specific application. • Partly completed machinery is only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment thereby forming machinery to which the Machinery Directive (2006/42/EC) applies. • The final installation must comply with the Machinery Directive (2006/42/EC) and the European reference standards in force. • The manufacturer declines any liability for using non-original products, which would also void the warranty. • All operations indicated in this manual must be carried out exclusively by skilled and qualified personnel and in full compliance with the regulations in force. • The device must be installed, wired, connected and tested according to good professional practice, in compliance with the standards and laws in force. • All the components (e.g. actuators, photocells and sensitive edges) needed for the final installation to comply with the Machinery Directive (2006/42/EC) and with the reference harmonised technical standards are specified in the general CAME product catalogue or on the website www.came.com. • Make sure the mains power supply is disconnected during all installation procedures. • Check that the temperature ranges given are suitable for the installation site. • Do not install the operator on surfaces that could yield and bend. If necessary, add suitable reinforcements to the anchoring points. • Make sure that no direct jets of water can wet the product at the installation site (sprinklers, water cleaners, etc.). • Make sure you have set up a suitable dual-pole cut-off device along the power supply that is compliant with the installation rules. It should completely cut off the power supply according to category III surcharge conditions. • Demarcate the entire site properly to prevent unauthorised personnel from entering, especially minors. • In case of manual handling, have one person for every 20 kg that needs hoisting; for non-manual handling, use proper hoisting equipment in safe conditions. • Use suitable protection to prevent any mechanical hazards due to persons loitering within the operating range of the operator. • The electrical cables must pass through special pipes, ducts and cable glands in order to guarantee adequate protection against mechanical damage. • The electrical cables must not touch any parts that may overheat during use (such as the motor and transformer). • Before installation, check that the guided part is in good mechanical condition, and that it opens and closes correctly. • The product cannot be used to automate any guided part that includes a pedestrian gate, unless it can only be enabled when the pedestrian gate is secured. • Make sure that nobody can become trapped between the guided and fixed parts, when the guided part is set in motion. • All fixed controls must be clearly visible after installation, in a position that allows the guided part to be directly visible, but far away from moving parts. In the case of a hold-to-run control, this must be installed at a minimum height of 1.5 m from the ground and must not be accessible to the public. • If not already present, apply a permanent tag that describes how to use the manual release mechanism close to it. • Make sure that the operator has been properly adjusted and that the safety and protection devices and the manual release are working properly. • Before handing over to the final user, check that the system complies with the harmonised standards and the essential requirements of the Machinery Directive (2006/42/EC). • Any residual risks must be indicated clearly with proper signage affixed in visible areas, and explained to end users. • Put the machine's ID plate in a visible place when the installation is complete. • If the power-supply cable is damaged, it must be immediately replaced by the manufacturer or by an authorised technical assistance centre, or in any case, by qualified staff, to prevent any risk. • Keep this manual inside the technical folder along with the manuals of all the other devices used for your automation system. • Make sure to hand over to the end user all the operating manuals of the products that make up the final machinery.

Main points of danger for people



No transiting while the barrier is moving.

Risk of entrapment.

Risk of trapping hands.

Risk of trapping feet.

DISMANTLING AND DISPOSAL

CAME S.p.A. employs an Environmental Management System at its premises. This system is certified and compliant with the UNI EN ISO 14001 standard to ensure that the environment is respected and 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, etc.) can be disposed of easily as solid urban waste, separated for recycling.

Before dismantling and disposing of the product, please always check the local laws in force.

DISPOSE OF THE PRODUCT RESPONSIBLY

DISPOSING OF THE PRODUCT

Our products are made of various materials. Most of these materials (aluminium, plastic, iron and electrical cables) are classified as solid urban waste. They can be separated for recycling and disposed of at authorised waste treatment plants.

Other components (electronic boards, transmitter batteries, etc.) may contain pollutants.

These must be removed and disposed of by an authorised waste disposal and recycling firm.

It is always advisable to check the specific laws that apply in your area.

DISPOSE OF THE PRODUCT RESPONSIBLY

PRODUCT DATA AND INFORMATION

Key

📖 This symbol shows which parts to read carefully.

⚠ This symbol shows which parts describe safety issues.

☞ This symbol shows what to tell users.

The measurements, unless otherwise stated, are in millimetres.

Description

Irreversible gearmotor 230 V complete with electronic board and articulated transmission arm for swing gates with max. C 200 mm with leaf up to 2.3 m and 200 kg.

Intended use

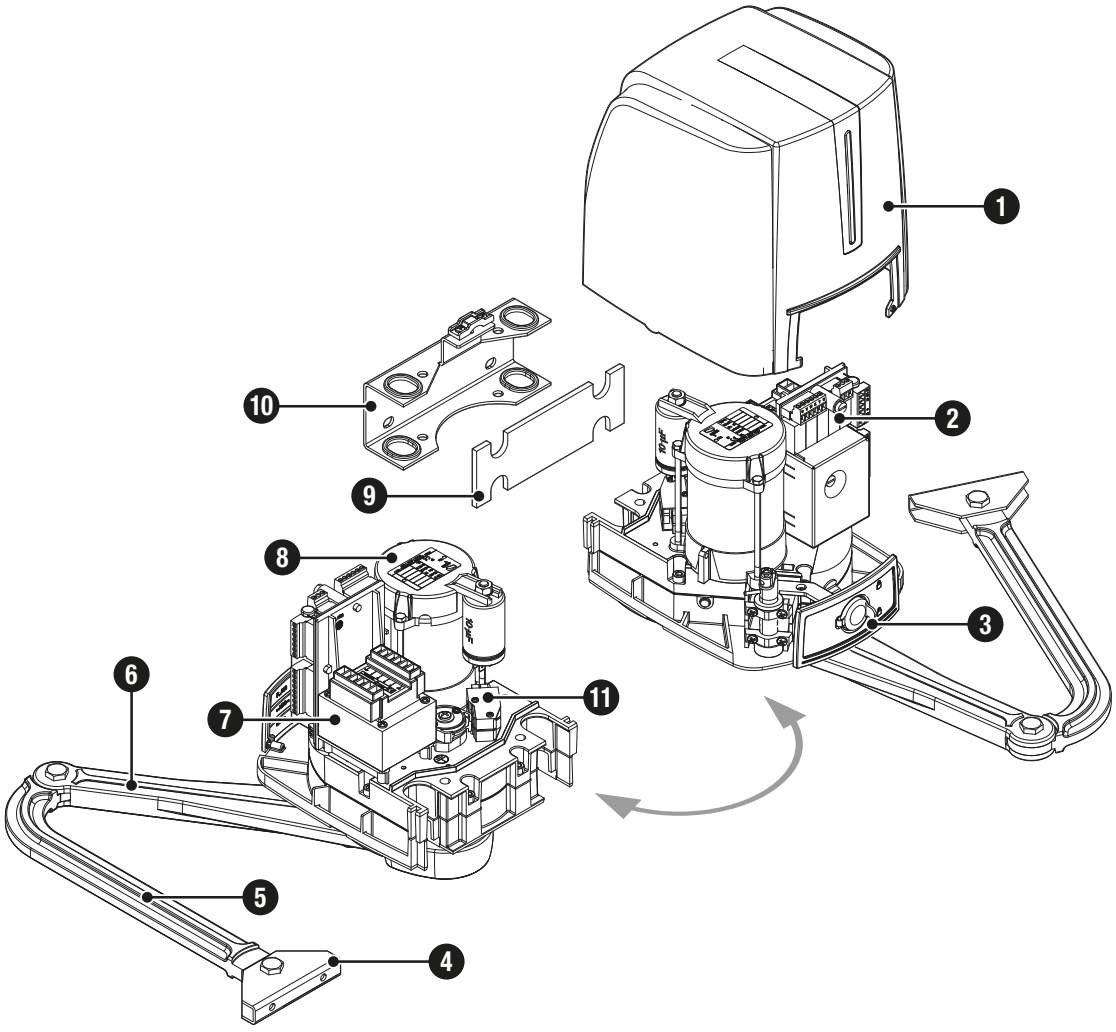
📖 Any installation and/or use other than that specified in this manual is forbidden.

📖 After the Green Power module has been connected to the operator, the product complies with Regulation (EU) 2023/826 regarding ecodesign requirements for energy consumption in standby and off mode for household and office equipment.

Description of parts

Gearmotor

1. Cover
2. Control board
3. Release hatch
4. Gate bracket
5. Joint arm
6. Transmission arm
7. Transformer
8. Gearmotor
9. Rubber shim
10. Pillar bracket
11. Limit-switch microswitch



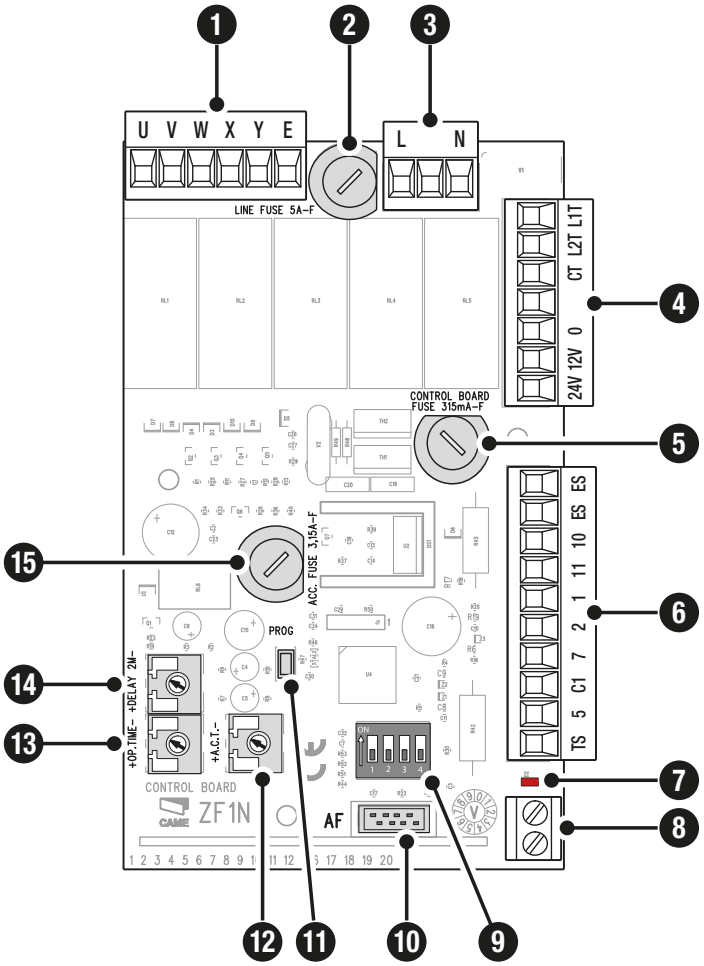
Control board

📖 All connections are protected by quick fuses.

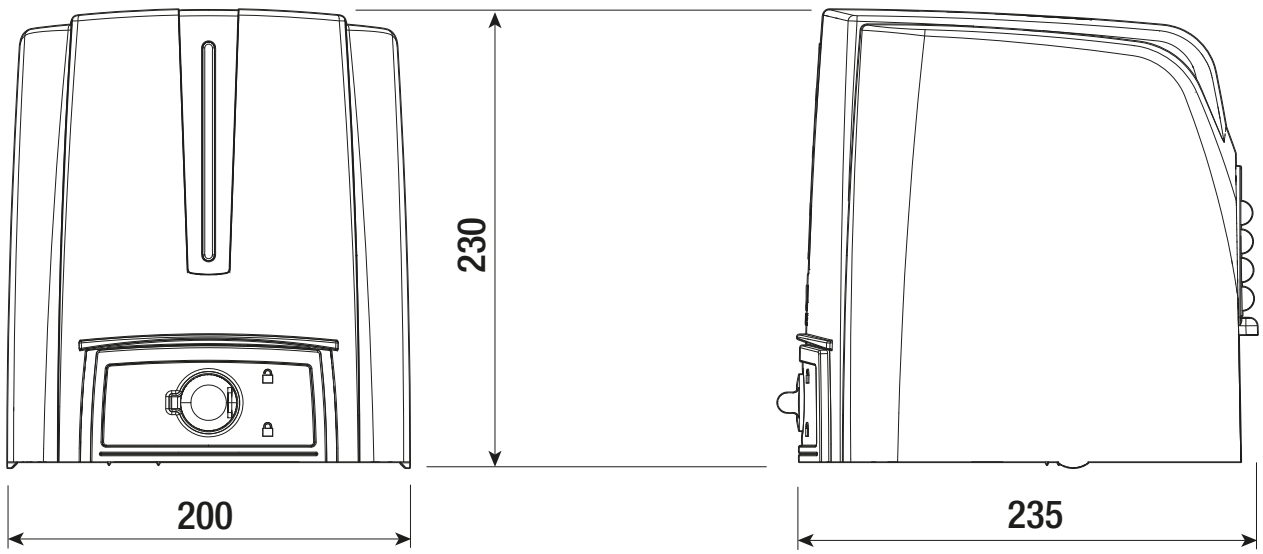
⚠ For the system to work properly, before fitting any plug-in card, DISCONNECT THE MAIN POWER SUPPLY and remove any batteries.

⚠ Before working on the control panel, disconnect the mains power supply and remove the batteries, if any.

❶ Terminal boards for gearmotors
❷ Line fuse
❸ Power supply terminal board
❹ Terminal board for connecting the transformer
❺ Control board fuse
❻ Terminal board for connecting control and safety devices
❼ Programming status warning LED
❽ Terminal board for connecting the antenna
❾ Connector for plug-in radio frequency card (AF)
❿ DIP for programming
⓫ ACT Trimmer: automatic closing time adjustment
⓬ Trimmer OP.TIME: adjustment of gearmotor working time
⓭ Trimmer DELAY 2M: adjustment of the M2 motor closing delay time
⓮ Button for programming
⓯ Accessories fuse



Size



Usage limitations

MODELS	FA70230CB				
Gate-leaf length (m)	2,3	2	1,5	1	-
Leaf weight (kg)	200	215	250	300	-

⚠ For swing gates, installing an electric lock is always recommended. This is to ensure the leaves close reliably and to protect the gearmotor parts.For reversible gearmotors, electric locks are required to ensure the leaves close. The installer is responsible for installing an electric lock, taking into account the size and type of leaf (e.g. panelled) and the installation area (e.g. windy location).

⚠ Some control panels may not have the electric lock function.

Technical data

MODELS	FA70230CB
Power supply (V - 50/60 Hz)	230 AC
Motor power supply (V)	230 AC
Board power supply (V)	24 AC
Standby consumption (W)	5,5
Power (W)	160
Capacitor (µF)	10
Current draw (A)	1,4
Operating temperature (°C)	-20 ÷ +55
Torque (Nm)	180
Opening time at 90° (s)	15
Operating time (s)	14 ÷ 120
Duty cycle (%)	30
Sound pressure level (dB A)	≤70
Protection rating (IP)	54
Insulation class	I
Reduction ratio (i)	735
Weight (kg)	12,7

Fuse table

MODELS	FA70230CB
Line fuse	5 A F
Control-board fuse	315 mA F
Accessories fuse	3.15 A F

Cable types and minimum thicknesses

Cable length (m)	up to 20	from 20 to 30
Power supply 230 V AC	3G x 1.5 mm2	3G x 2.5 mm2
Motor power supply 230 V AC	3G x 1.5 mm2	3G x 2.5 mm2
TX Photocells	2 x 0.5 mm2	2 x 0.5 mm2
RX photocells	4 x 0.5 mm2	4 x 0.5 mm2
12 V DC electric lock	2 x 1 mm2	2 x 1.5 mm2
Command and control devices	* no. x 0.5 mm2	* no. x 0.5 mm2

* no. = see product assembly instructions - Warning: the cable cross-section is indicative and varies according to the motor power and cable length.

📖 When operating at 230 V and outdoors, use H05RN-F cables compliant with 60245 IEC 57 (IEC); when operating indoors, use H05VV-F cables compliant with 60227 IEC 53 (IEC). For power supplies up to 48 V, you can use FROR 20-22 II cables compliant with EN 50267-2-1 (CEI).

📖 To connect the antenna, use RG58 cable (we suggest up to 10 m).

📖 If the cable lengths differ from those specified in the table, define the cable cross-sections according to the actual power draw of the connected devices and in line with regulation CEI EN 60204-1.

📖 For multiple, sequential loads along the same line, recalculate the values in the table according to the actual power draw and distances. For information on connecting products not covered in this manual, please see the documentation accompanying the products themselves.

INSTALLATION

🕮 The following illustrations are examples only. The space available for fitting the operator and accessories varies depending on the area where it is installed. It is up to the installer to find the most suitable solution.

🕮 The drawings refer to a gearmotor installed on the left-hand side.

Preliminary operations

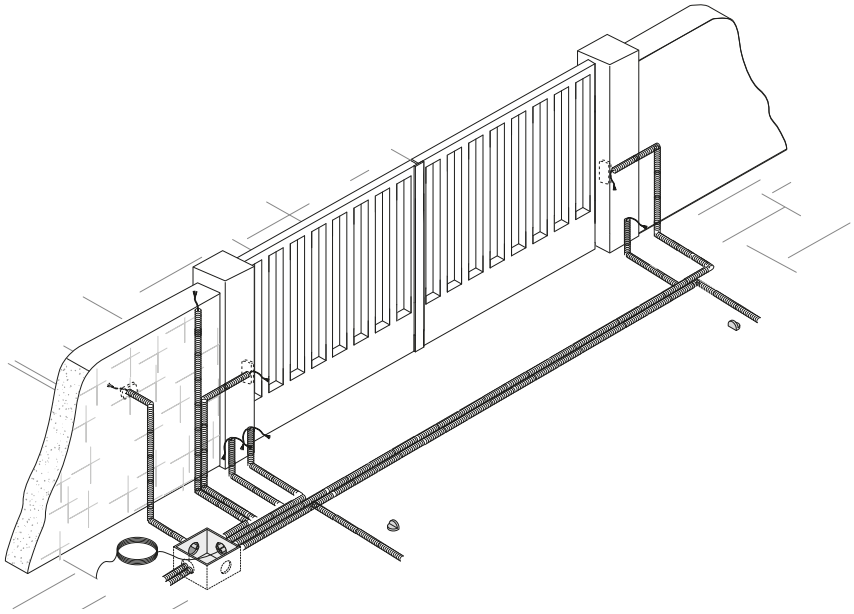
Prepare the junction boxes and corrugated tubes you need for the connections from the junction pit.

🕮 An operator (FA70230CB) and a gearmotor (FA70230) must be installed on two-leaf gates .

FA70230CB must be installed on the leaf that must start the opening maneuver first.

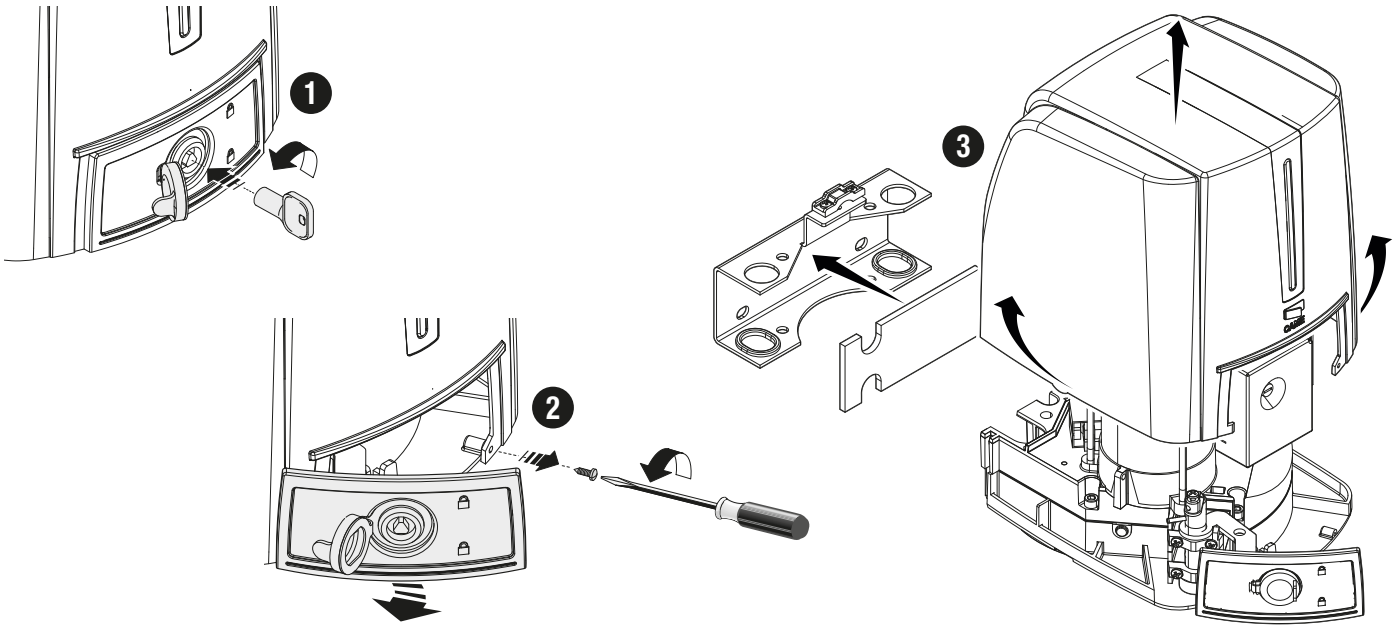
FA70230 must be installed on the leaf that must start the opening maneuver subsequently.

🕮 The number of tubes depends on the type of system and the accessories that are going to be fitted.



Setting up the gearmotor

⚠ Carefully remove the gearmotor cover.

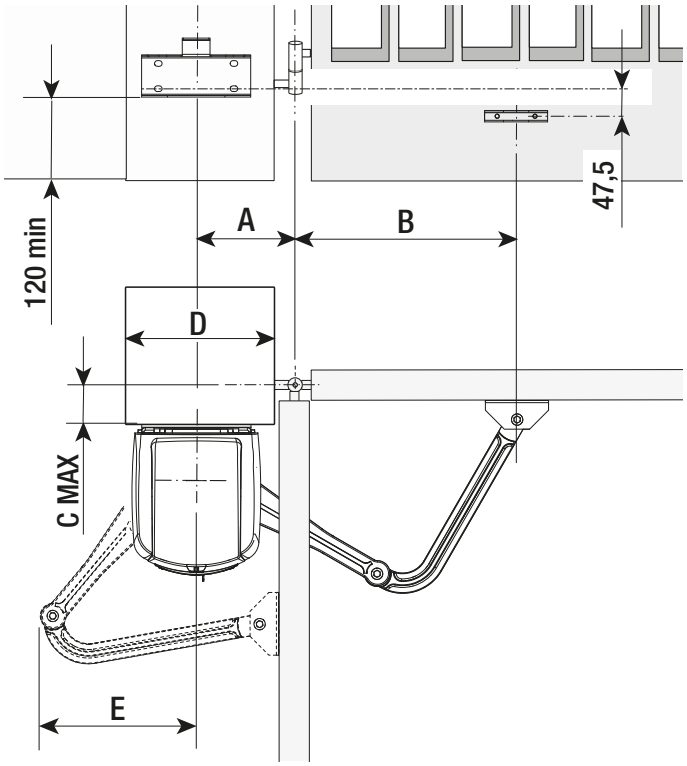


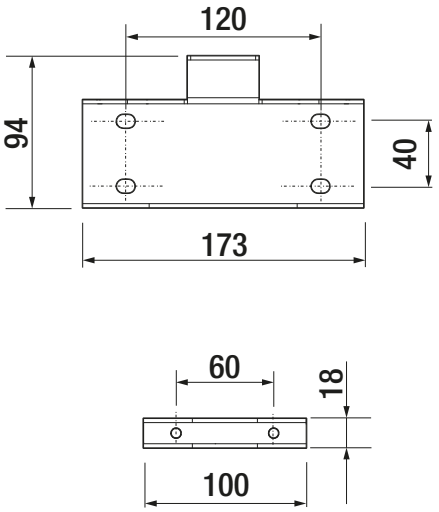
Deciding where to fasten the brackets

First determine where the gate bracket needs to be positioned, then where the post bracket needs to be positioned.

📖 Respect the values indicated in the table.

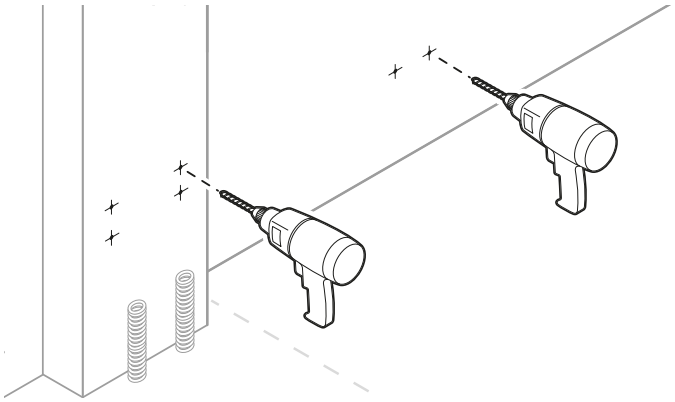
Gate-leaf opening (°)	To	B	D	E	Max. C
90°	140	420 (490 with item 801XC-0070)	Min. 200	260 (350 with item 801XC-0070)	200 (300 with item 801XC-0070)
90°	160	380 (460 with item 801XC-0070)	Min. 220	240 (320 with item 801XC-0070)	200 (300 with item 801XC-0070)
90°	180	380 (460 with item 801XC-0070)	Min. 240	240 (320 with item 801XC-0070)	200 (300 with item 801XC-0070)
110°	220	380 (450 with item 801XC-0070)	Min. 280	310 (400 with item 801XC-0070)	50 (50 with item 801XC-0070)
110°	240	380 (450 with item 801XC-0070)	Min. 300	310 (400 with item 801XC-0070)	50 (50 with item 801XC-0070)

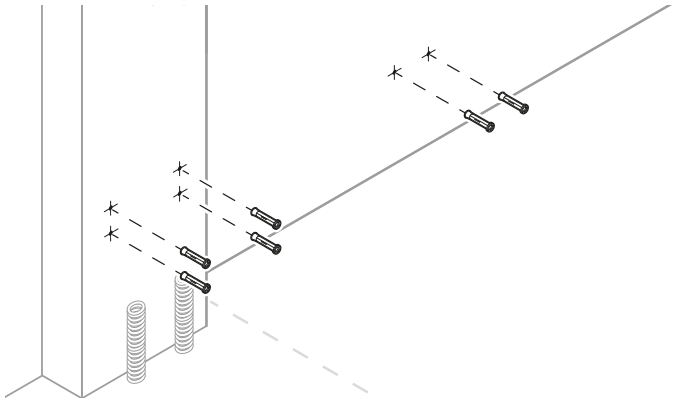




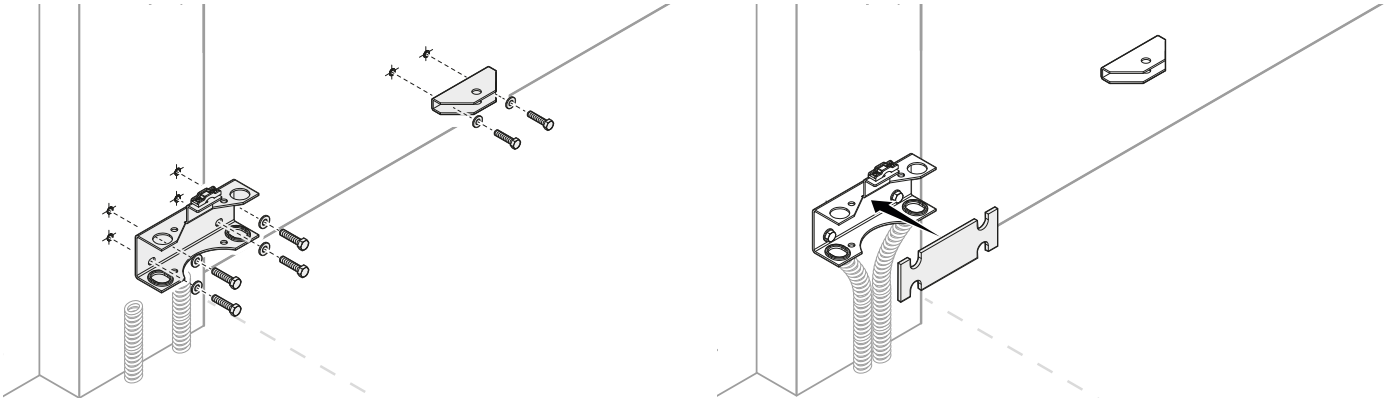
Fastening the brackets

Drill the fastening points.





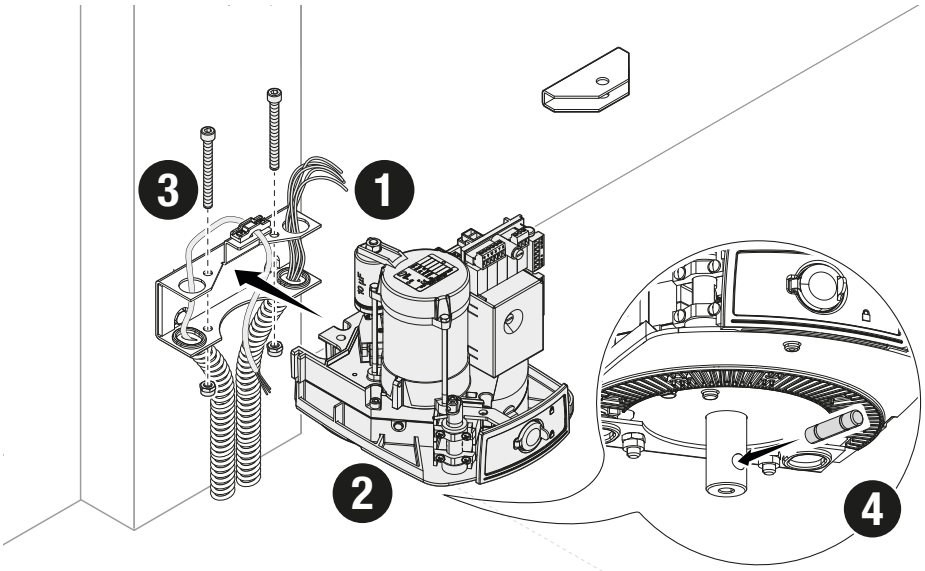
Fasten the braces using suitable dowels and screws.
Fit the rubber shim into the gate-post brace.



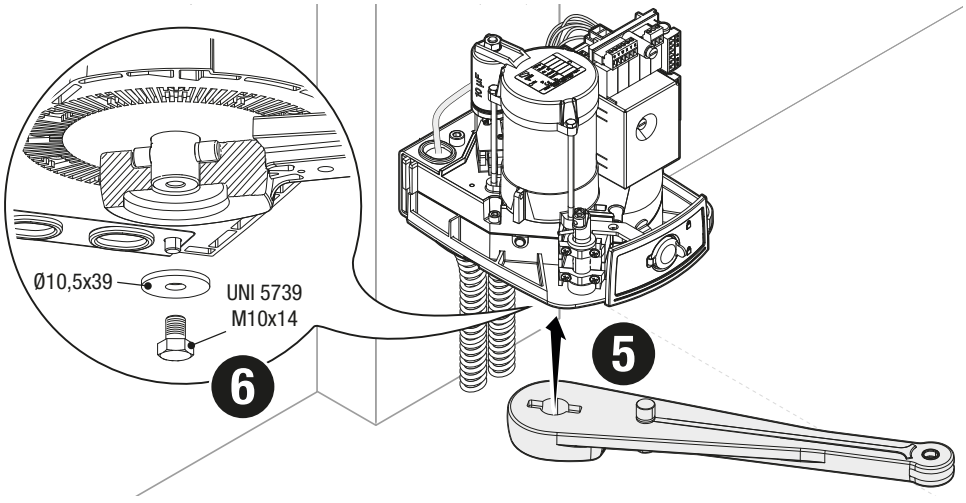
Fastening the gearmotor

Release the gearmotor.

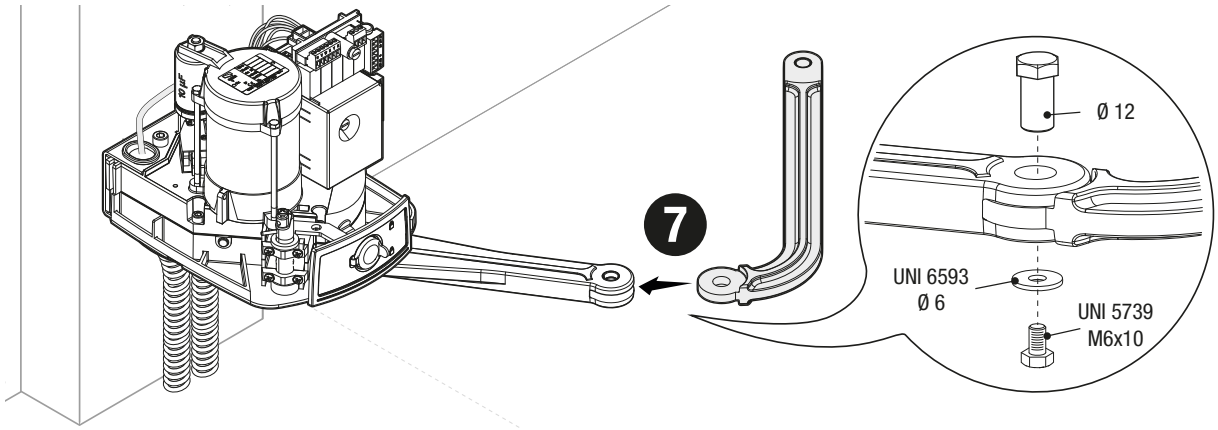
❶ Lay the cables needed for making the connection.
❷ Fit the gearmotor into the brace.
❸ Fasten the gearmotor to the brace using the nuts and bolts supplied.
❹ Fit the plug into the gearmotor shaft hole.

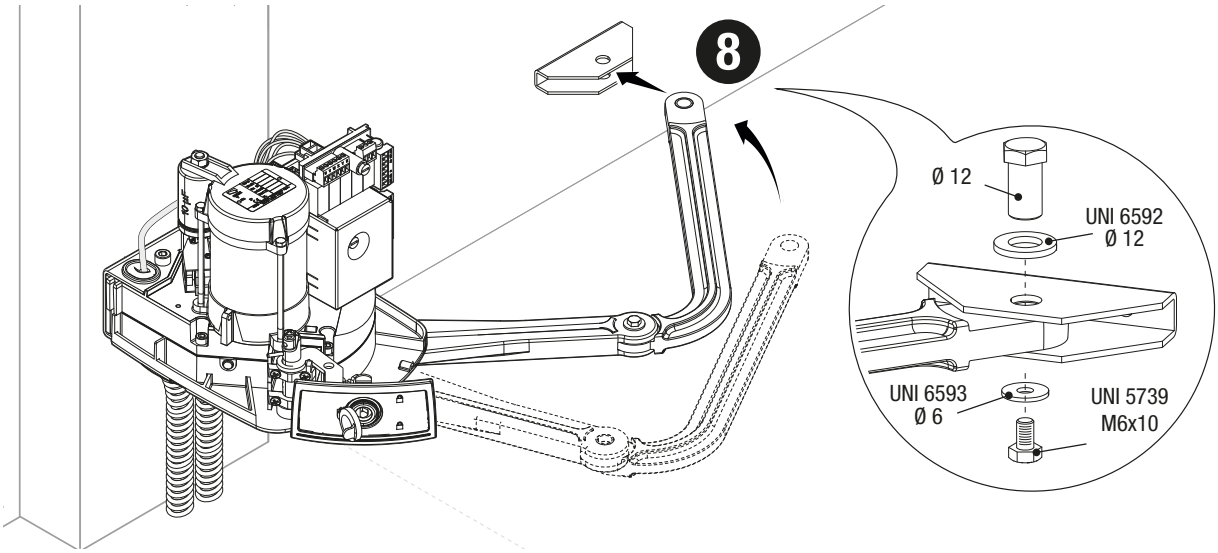


❹Fit the plug into the gearmotor shaft hole.
❺ Fit the transmission arm into the gearmotor shaft.
❻ Fasten the transmission arm using the washer and screw supplied.



❼ Fasten the driven-arm to the transmission arm using the pin, washer and screw supplied.
❽ Fasten the driven-arm to the gate brace using the pin, washer and screw supplied.



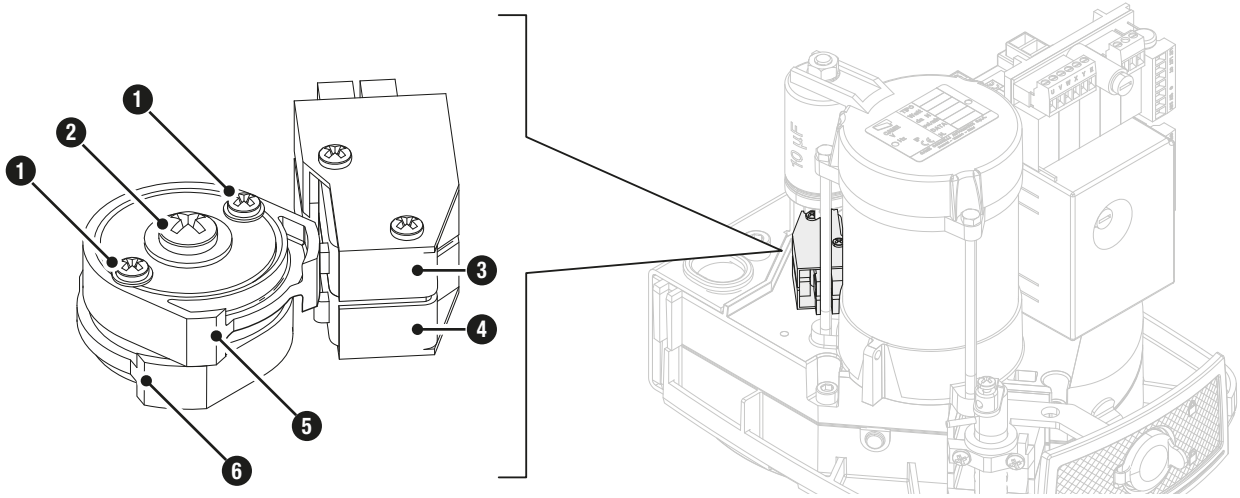


Establishing the limit-switch points

🕮 If the system is already fitted with opening and closing strike plates, there is no need to adjust the limit switches.

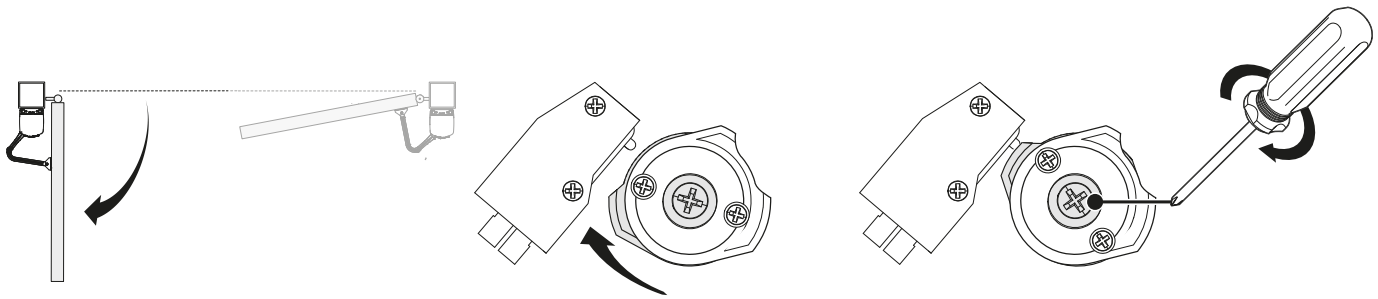
Contrarily, adjust the limit switches

❶ Upper-cam fastening screw
❷ Lower-cam fastening screw
❸ Limit-switch microswitch
❹ Limit-switch microswitch
❺ Upper cam
❻ Lower cam

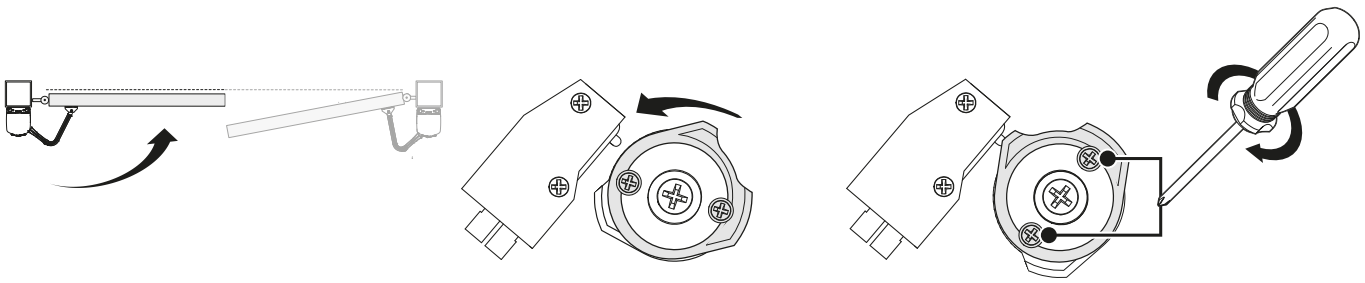


Operator fitted on the left

Release the gearmotor.
Entirely open the gate leaf.
Turn the lower cam counter-clockwise until the micro-switch activates.
Fasten the cam by tightening the center screw.

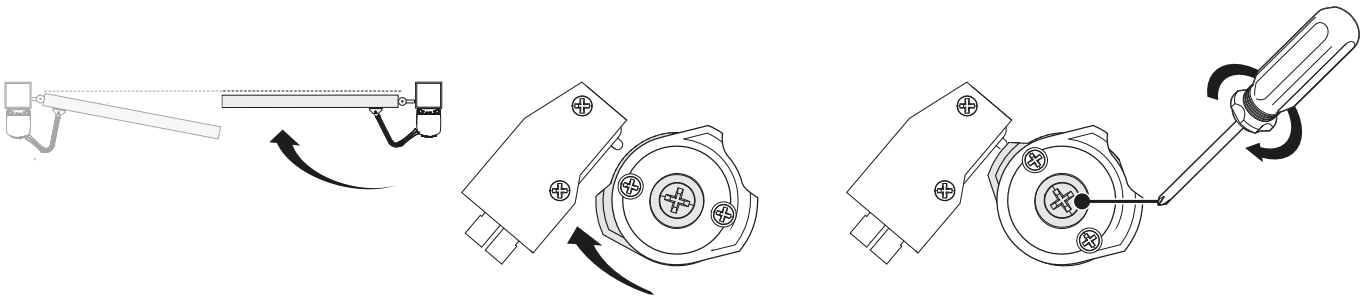


Fully close the leaf.
Turn the upper cam counter-clockwise until the micro-switch activates.
Fasten the cam by tightening the center screws.

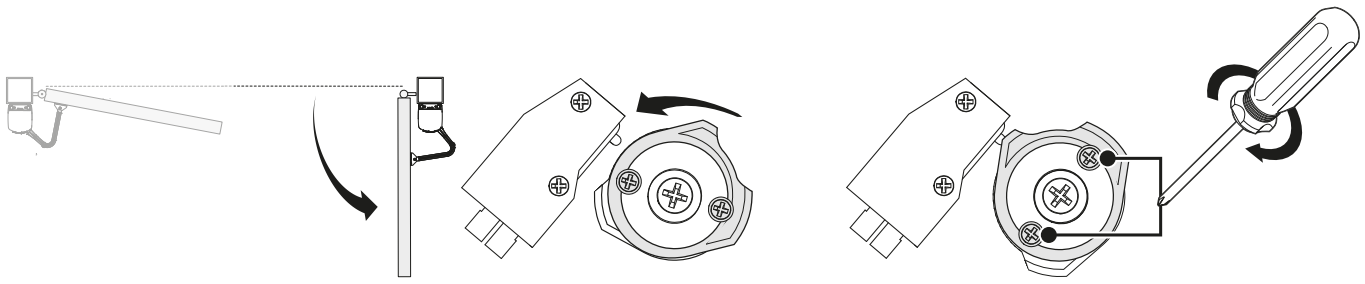


Operator fitted on the right.

Release the gearmotor.
Fully close the leaf.
Turn the lower cam counter-clockwise until the micro-switch activates.
Fasten the cam by tightening the center screw.



Entirely open the gate leaf.
Turn the upper cam counter-clockwise until the micro-switch activates.
Fasten the cam by tightening the center screws.



ELECTRICAL CONNECTIONS

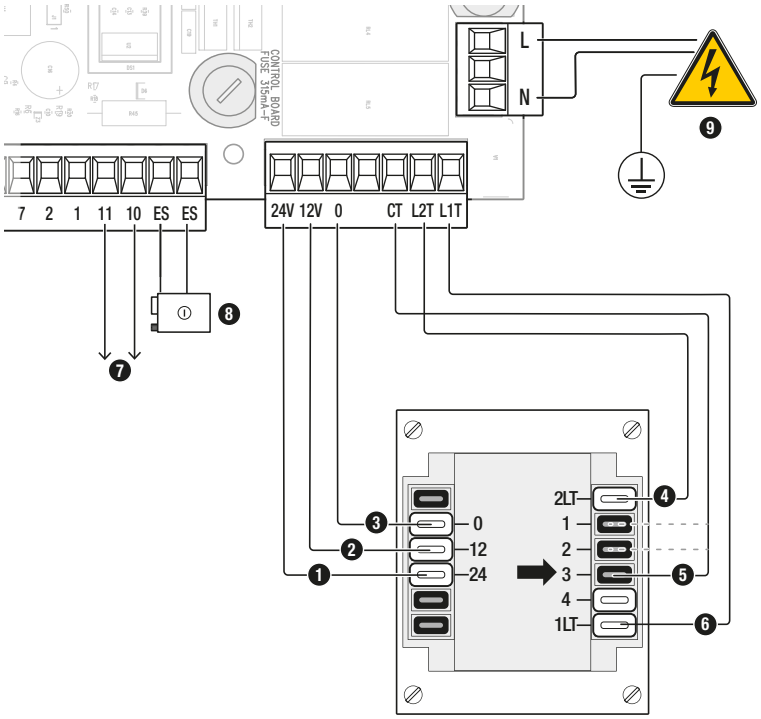
⚠ Before working on the control panel, disconnect the mains power supply and remove the batteries, if any.

🕮 Remove the protective cover to access the terminal block.

Power supply

❶ Blue cable
❷ Purple cable
❸ Orange cable
❹ Red cable
❺ Black cable
❻ White cable

🕮 To vary the motor torque, move the corresponding Faston terminal to one of the four positions; from 1 (minimum) to 4 (maximum).



Power supply output for accessories 24 V

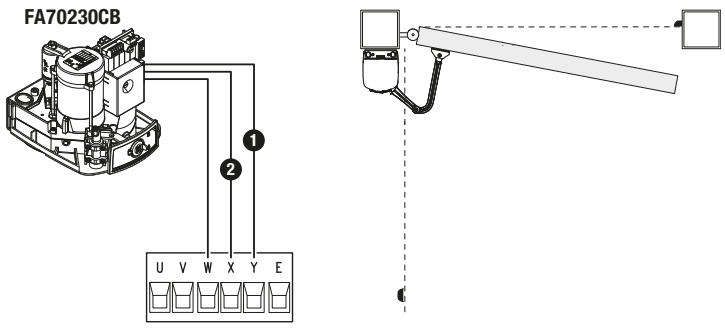
❼ The output normally delivers 24 V AC.
Maximum power 20 W.
❽ Electric lock 12 V - 15 W max
❾ 230 V AC - 50-60 HZ power supply input

Connecting up the gearmotor

🕮 The operator is designed to be fitted on the left.

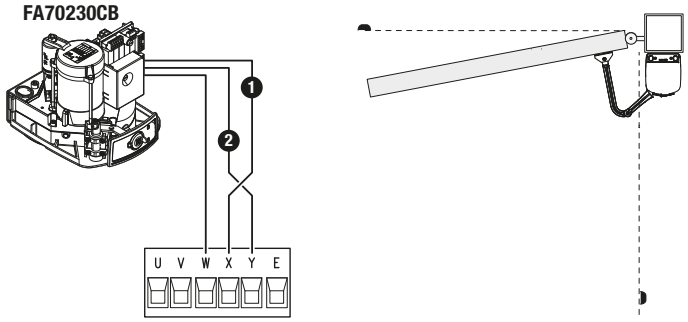
❶ Red cable
❷ White cable

FA70230CB



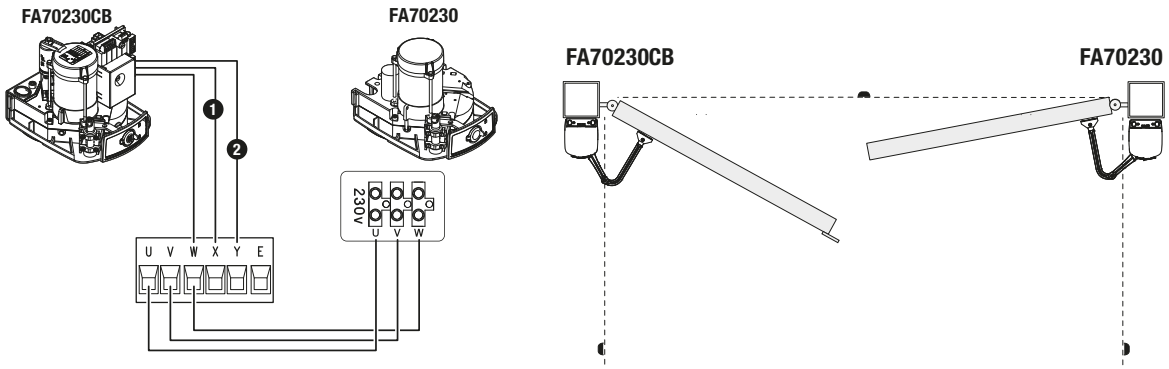
❶ Red cable
❷ White cable

FA70230CB

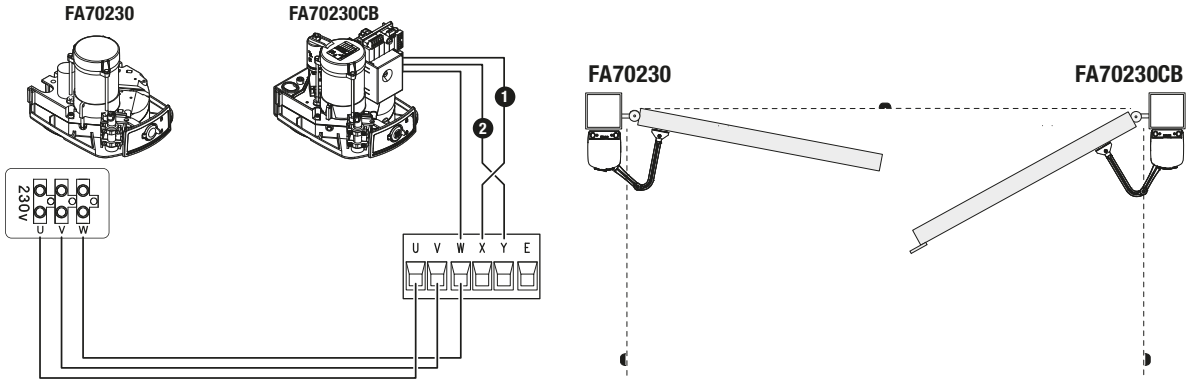


Operator and gearmotor connection

❶ Red cable
❷ White cable



❶ Red cable
❷ White cable



Maximum capacity of contacts

Device	Output	Power supply (V)	Power (W)
Accessories	10 - 11	24 AC	20
Flashing beacon	W - E	230 AC	25
Operator status warning light	10 - 5	24 AC	3

📖 The sum of the power draw for the connected accessories must not exceed 20 W.

Signalling devices

❶ Flashing beacon

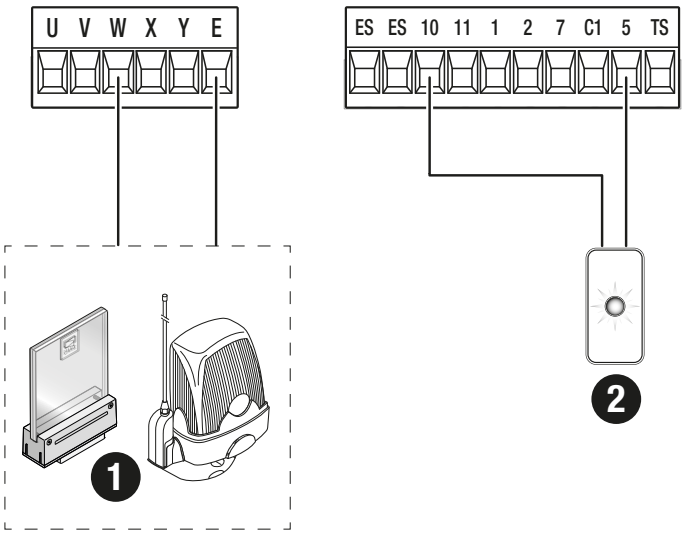
It flashes when the operator opens and closes.

⚠ W - E contact maximum capacity (230 V AC - 25 W)

❷ Operator status warning light

It notifies the user of the operator status.

⚠ Maximum contact capacity 10 - 5 (24 V AC - 3 W)



Command and control devices

❶ STOP button (NC contact)

This stops the gate and excludes automatic closing. Use a control device to resume movement.

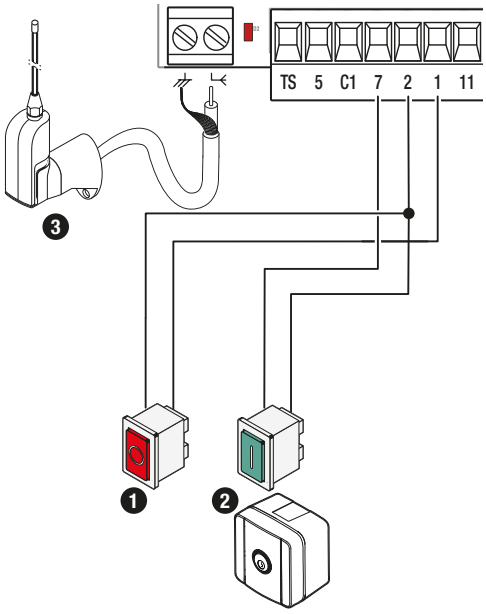
📖 If the contact is not used it must be short circuited.

📖 The contact can be programmed for the hold-to-run function.

❷ Control device (NO contact)

OPEN ONLY function
For opening only.

❸ Antenna with RG58 cable



Photocells

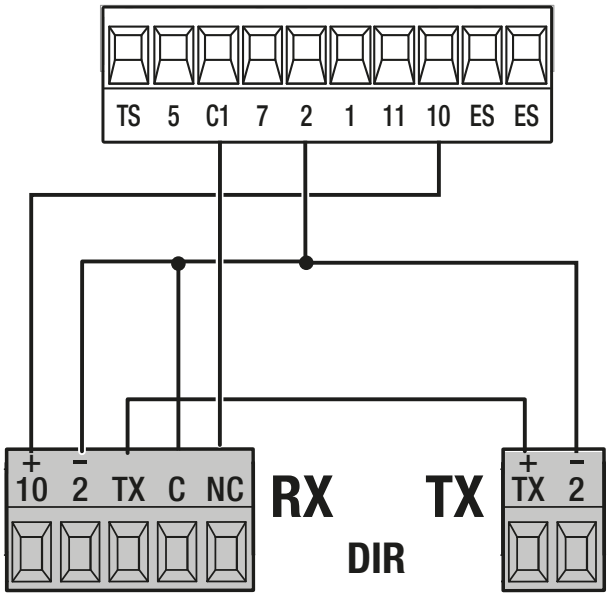
Connect the devices to the C1 input (NC contact).
During programming, configure the type of action that must be performed by the device connected to the input.

📖 For systems with multiple pairs of photocells, please see the manual for the relevant accessory.

DIR photocells

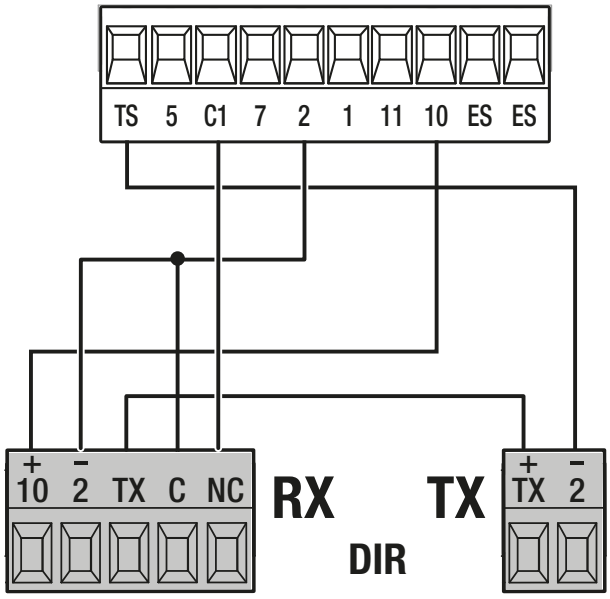
Standard connection

📖 If the photocells are left unused, short-circuit contact 2-C1.



Connection with safety test

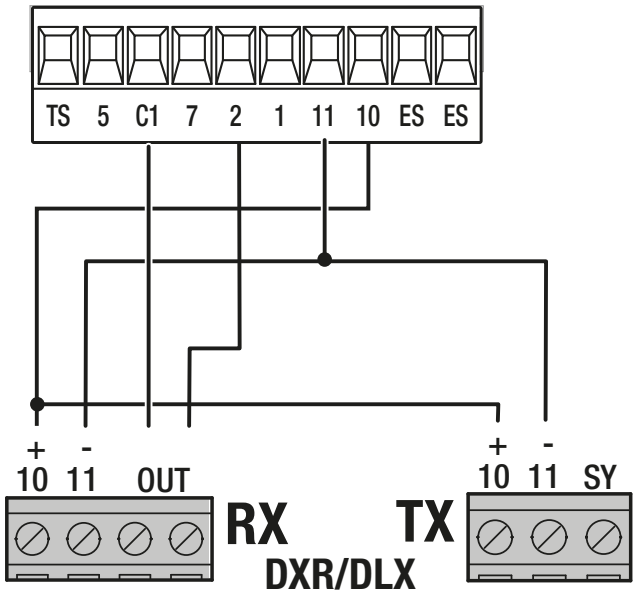
📖 See [Safety devices test] function.



DXR / DLX photocells

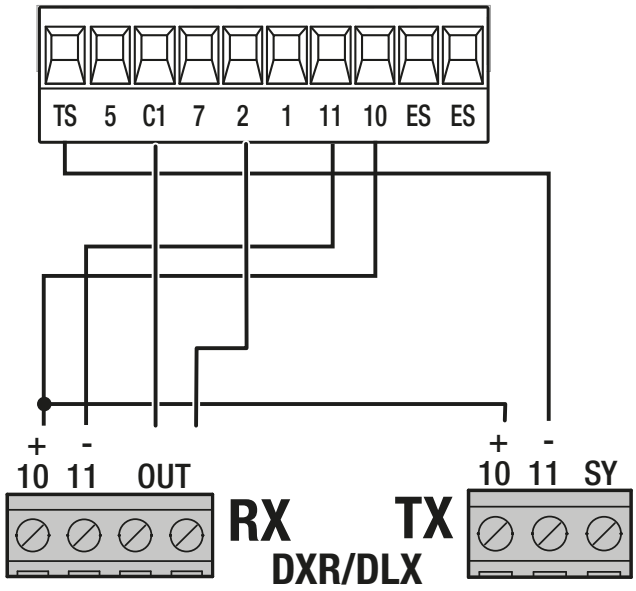
Standard connection

🕮 If the photocells are left unused, short-circuit contact 2-C1.



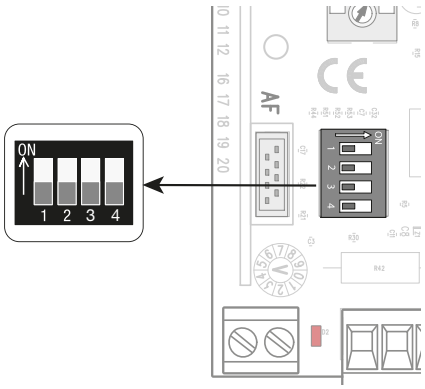
Connection with safety test

🕮 See [Safety devices test] function.



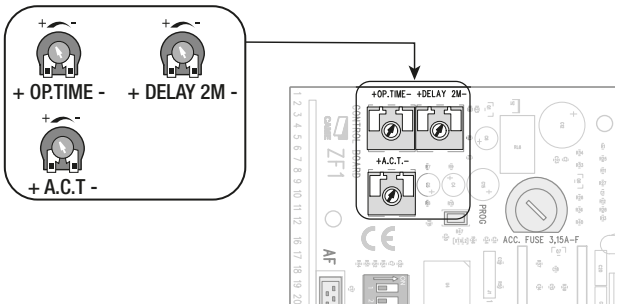
PROGRAMMING

Selecting the functions



DIP-switch 1 ON	AUTOMATIC CLOSING function
DIP-switch 2 ON	OPEN-STOP-CLOSE-STOP (sequential) function from control device (NO contact) and from radio transmitter fitted with AF card
DIP-switch 2 OFF	OPEN-CLOSE-INVERT (step-step) function from control device (NO contact) and from radio transmitter fitted with AF card
DIP-switch 3 ON	SAFETY TEST function At every opening or closing command, the board will check whether the photocells are working properly
DIP-switch 4 ON	DELETING USERS function

Adjusting the functions



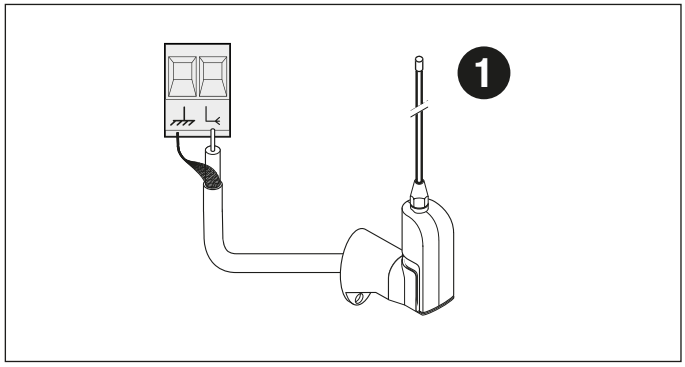
TRIMMER OP.TIME	Setting the working time from 15 seconds to 120 seconds. 📖 Setting the time to its minimum engages the maintained action function and disengages the transmitters.
TRIMMER DELAY 2M	After a closing command or after an automatic closing, the leaf of gearmotor (M2) starts with a delay compared to gearmotor (M1) for an adjustable time of between 3 and 10 seconds.
TRIMMER A.C.T	Setting the automatic closing time from 1 second to 120 seconds. 📖 The automatic closing does not activate if the safety devices are triggered due to obstacle detection, after a total STOP or if the power supply is missing

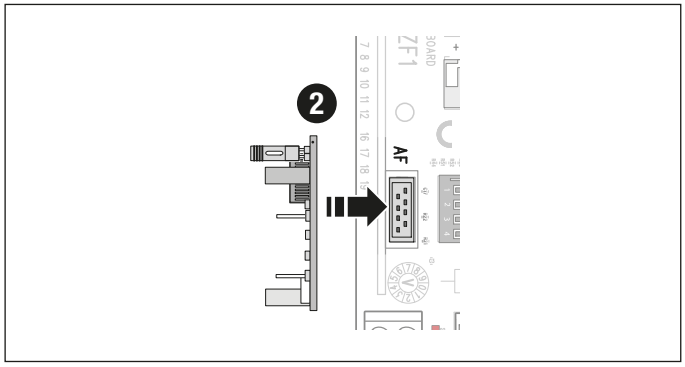
MANAGING USERS BY RADIO CONTROL

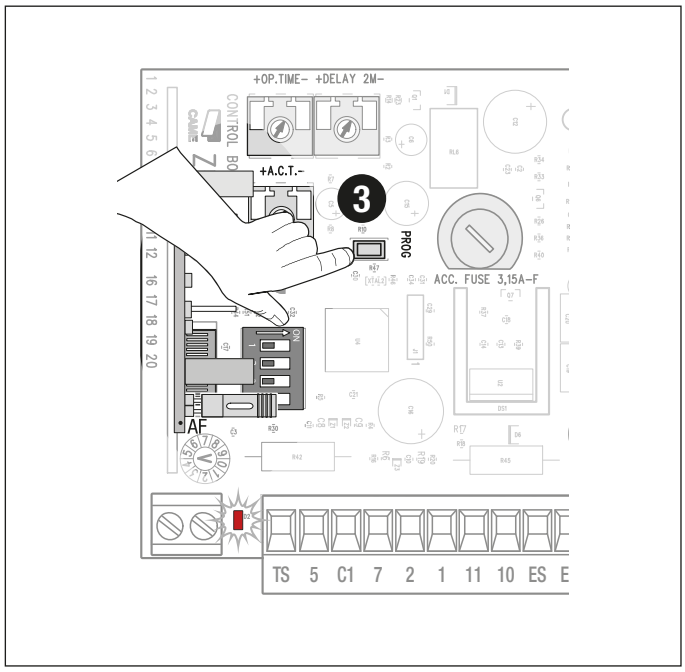
Enabling the radio control

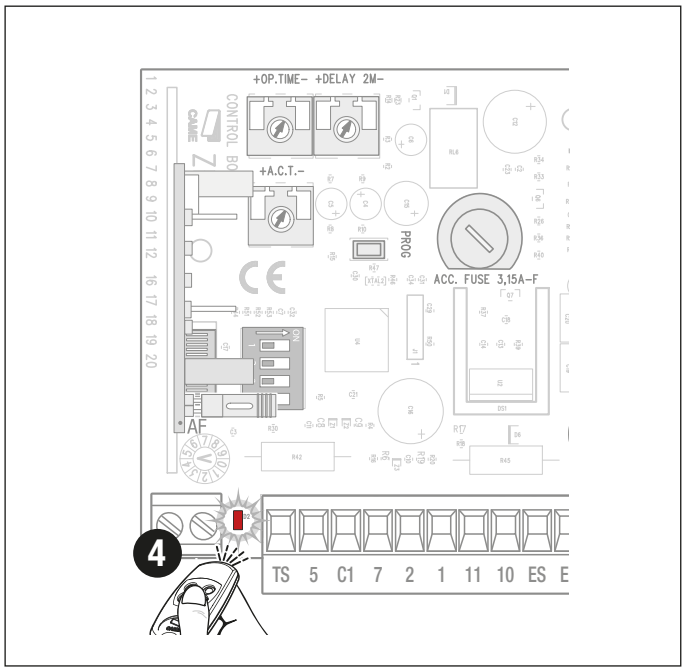
1. Connect the RG58 cable to the terminals.
2. Fit the AF card into the control board.
3. Keep pressed the PROG button on the control board.
4. Press any key on the transmitter you want to memorize.

The warning LED flashes during the procedure and stays on with steady light once the saving is complete.







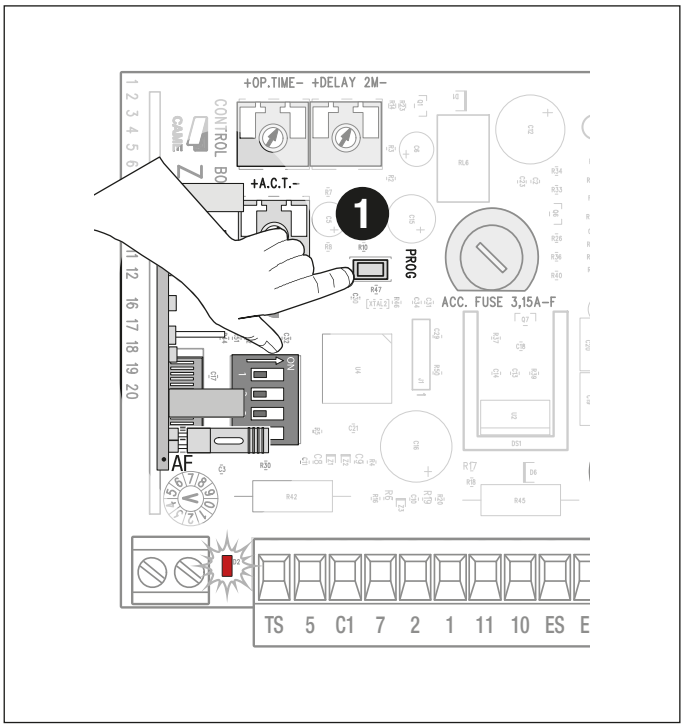


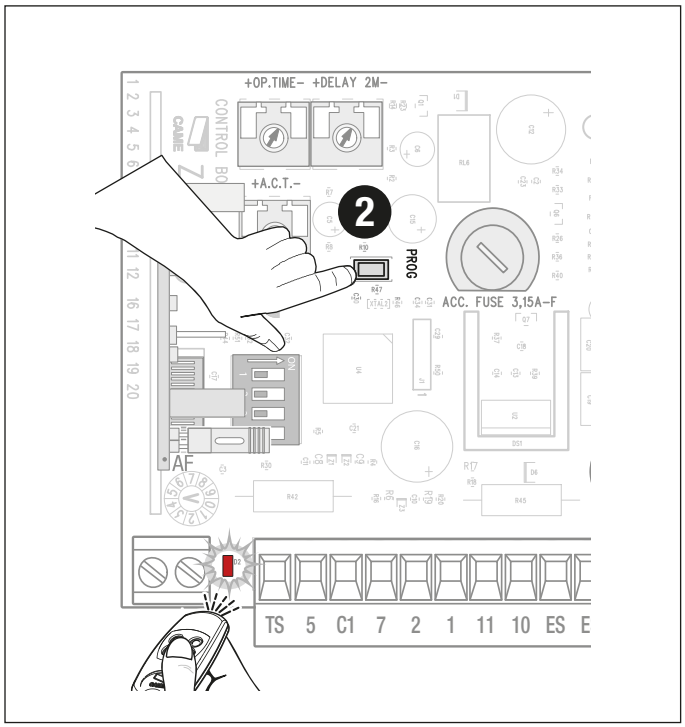
Entering users

You can register up to 50 users.

1. Keep pressed the PROG button on the control board.
2. Press any key on the transmitter you want to memorize.

The warning LED flashes during the procedure and stays on with steady light once the saving is complete.





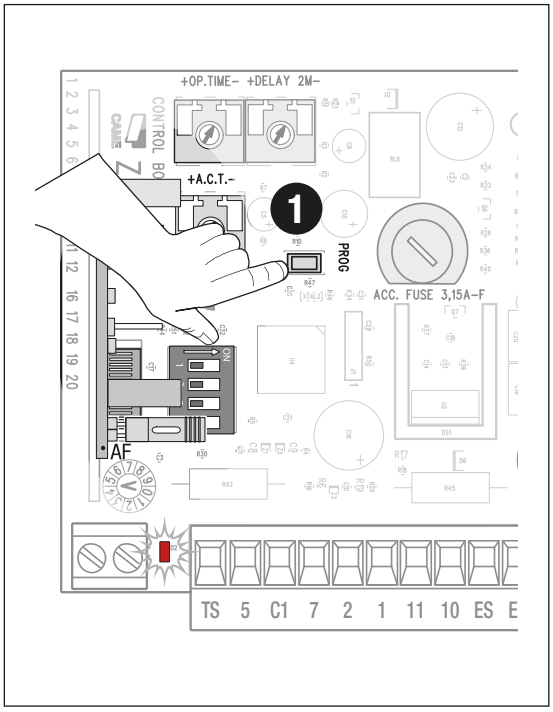
Deleting a single user

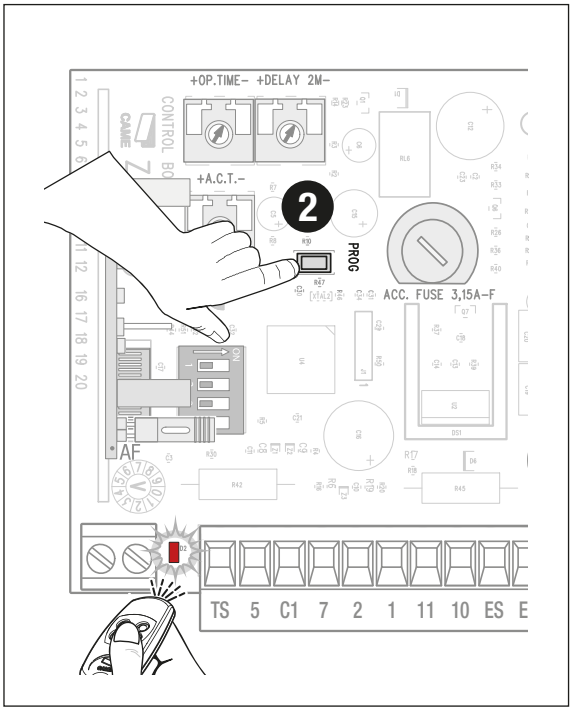
DIP-switch 4 must be set to ON.

1. Keep pressed the PROG button on the control board.
2. Press the button on the transmitter of the user you wish to delete within 5 seconds.

The warning LED flashes quickly during the procedure and turns off once the deletion is completed.

Reset DIP-switch 4 to OFF.





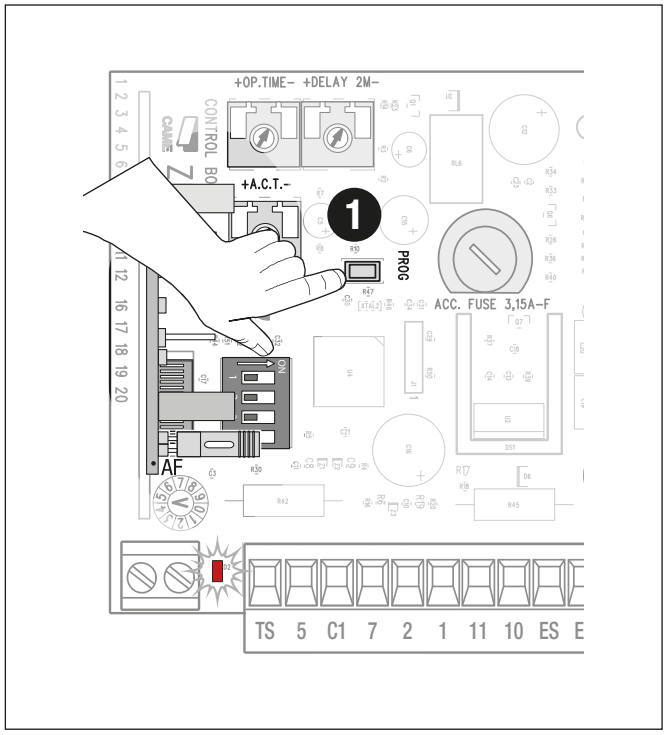
Deleting all users

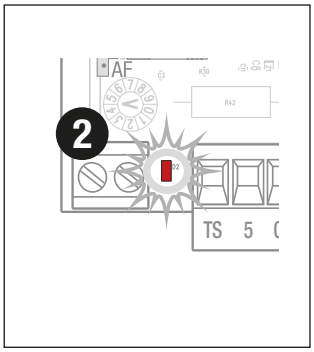
DIP-switch 4 must be set to ON.

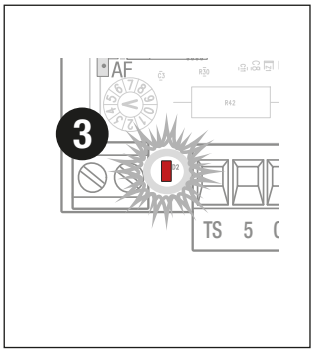
❶ Keep pressed for 10 seconds the PROG button on the control board.

The warning LED flashes during the procedure and turns off once the deletion is completed.

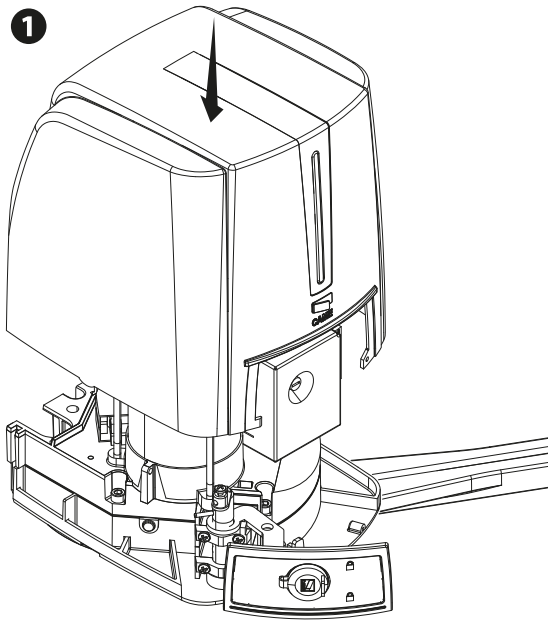
Reset DIP-switch 4 to OFF.

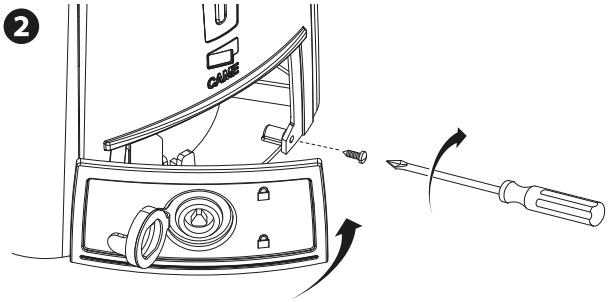


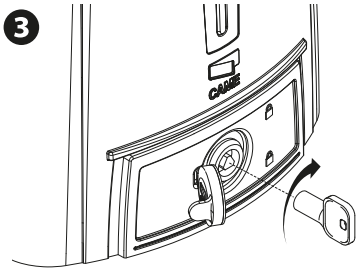




FINAL OPERATIONS





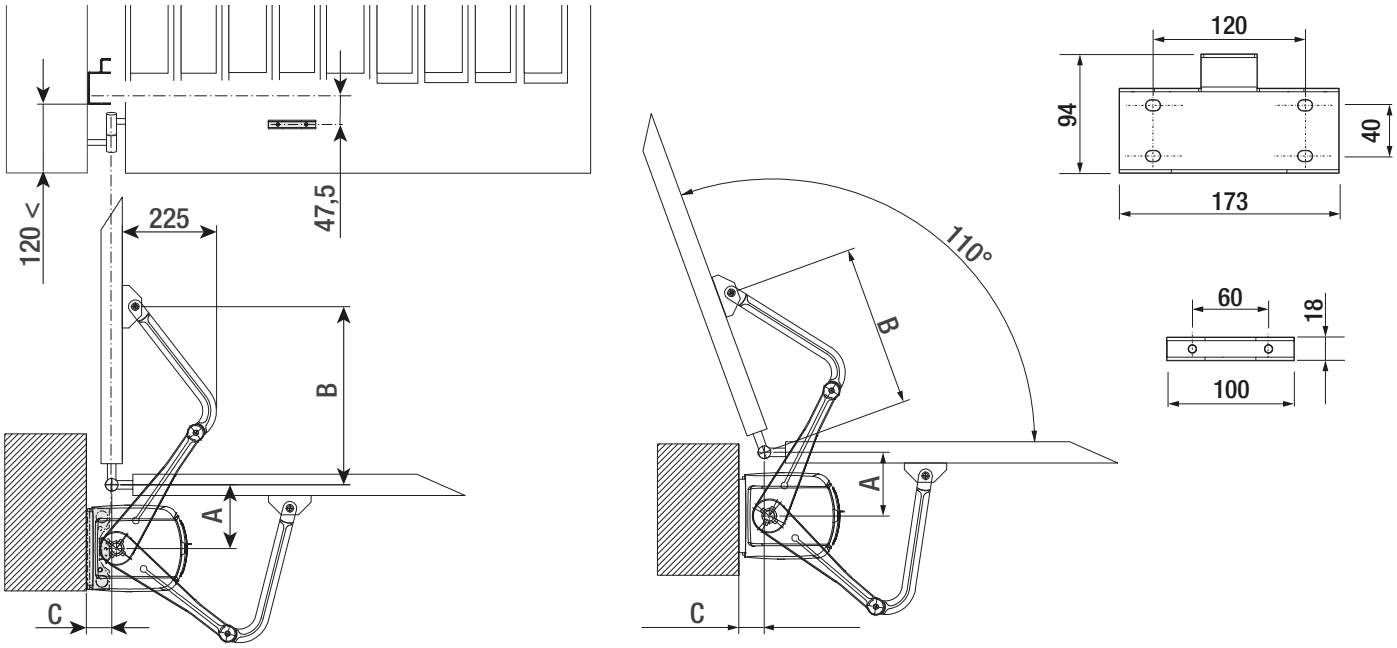


OUTWARDS OPENING

Deciding where to fasten the brackets

First determine where the gate bracket needs to be positioned, then where the post bracket needs to be positioned.

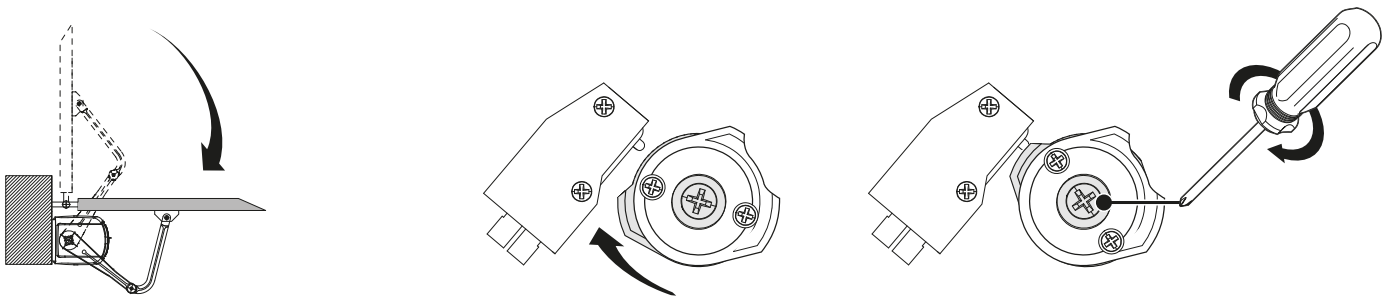
Respect the values indicated in the table.



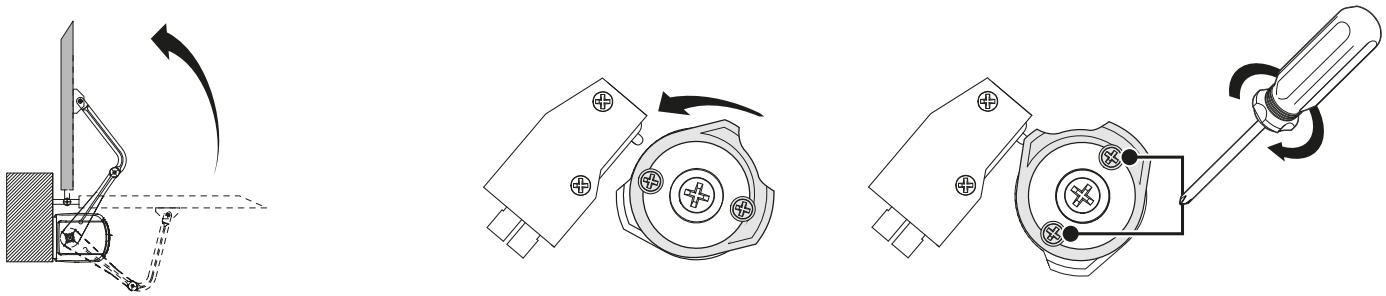
Gate-leaf opening (°)	To	B	Max. C
90°	150	420	60
110°	150	380	60

Operator fitted on the left

Release the gearmotor.
Fully close the leaf.
Turn the lower cam counter-clockwise until the micro-switch activates.
Fasten the cam by tightening the center screw.

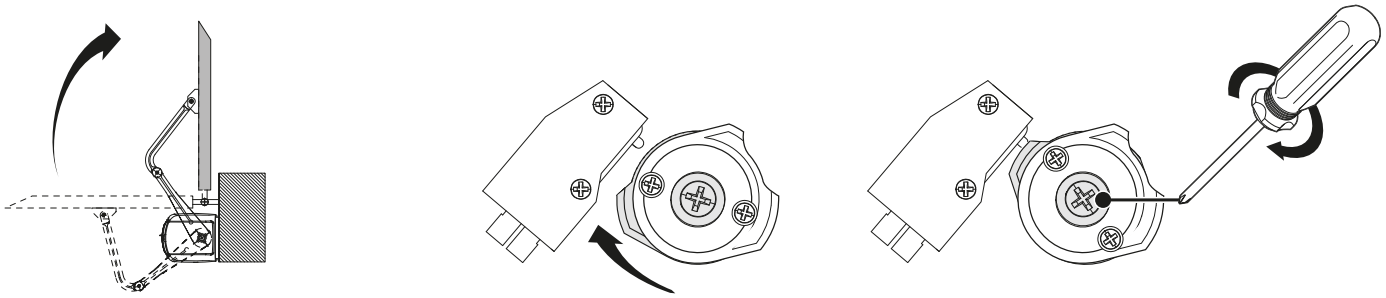


Entirely open the gate leaf.
Turn the upper cam counter-clockwise until the micro-switch activates.
Fasten the cam by tightening the center screws.

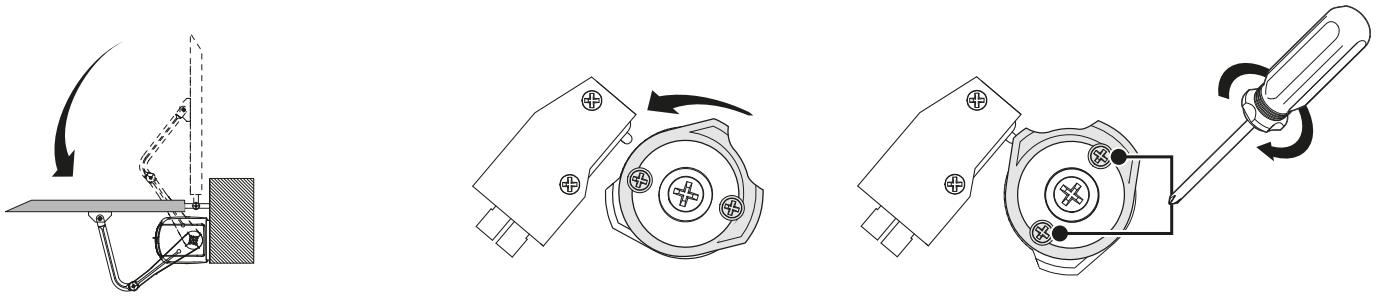


Operator fitted on the right.

Release the gearmotor.
Entirely open the gate leaf.
Turn the lower cam counter-clockwise until the micro-switch activates.
Fasten the cam by tightening the center screw.



Fully close the leaf.
Turn the upper cam counter-clockwise until the micro-switch activates.
Fasten the cam by tightening the center screws.

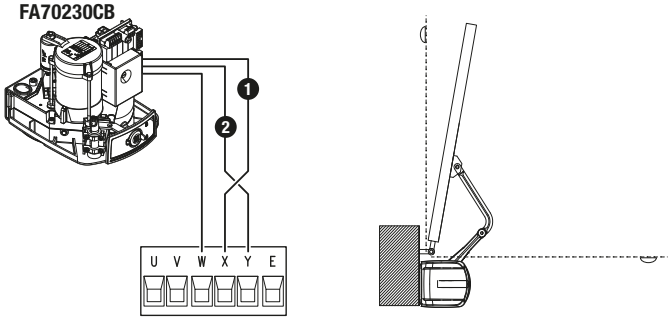


Connecting up the gearmotor

📖 The operator is designed to be fitted on the left.

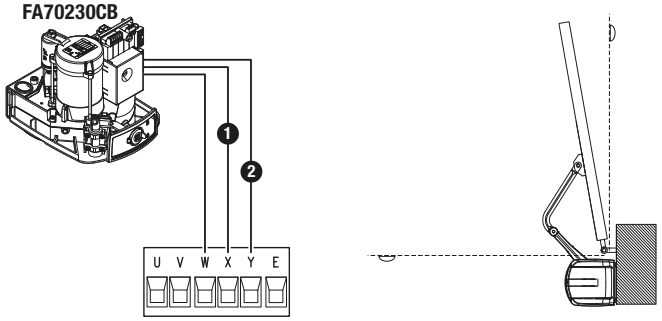
❶ Red cable
❷ White cable

FA70230CB

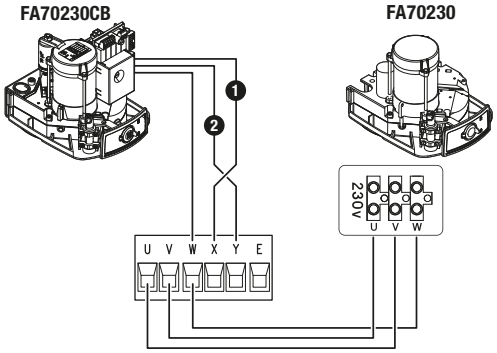


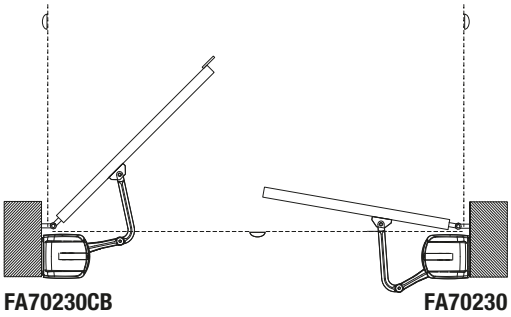
❶ Red cable
❷ White cable

FA70230CB

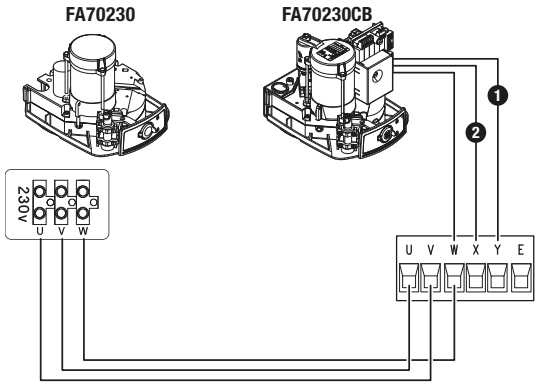


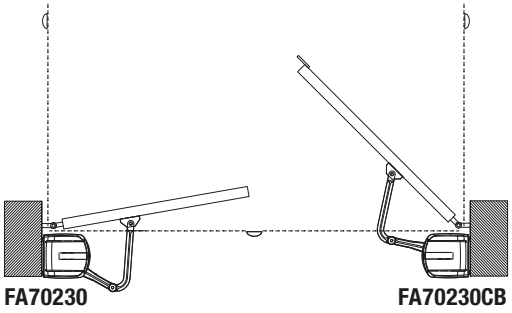
❶ Red cable
❷ White cable





❶ Red cable
❷ White cable





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