CAME

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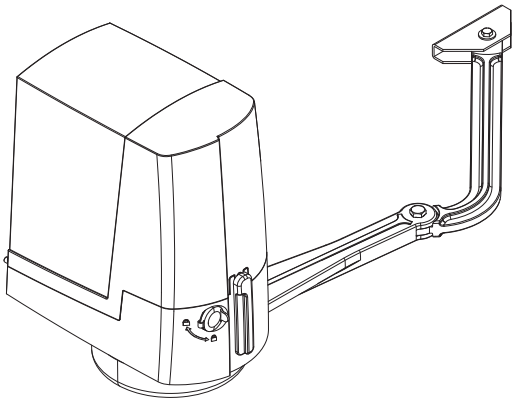
Swing-gate operator

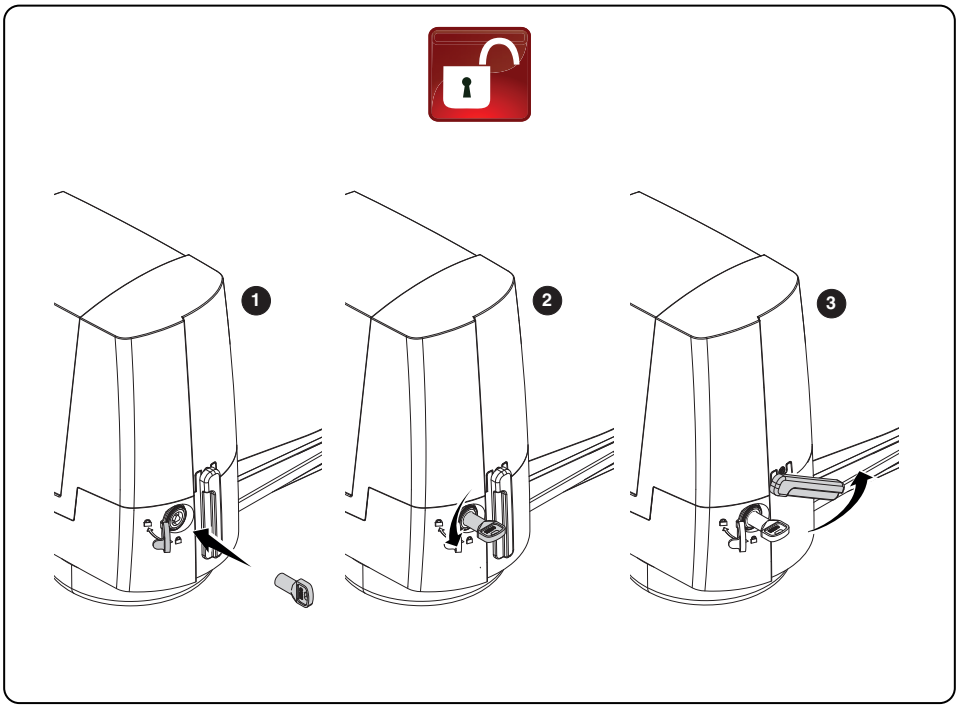
FA02031-EN



FTL20DGC

INSTALLATION MANUAL

EN English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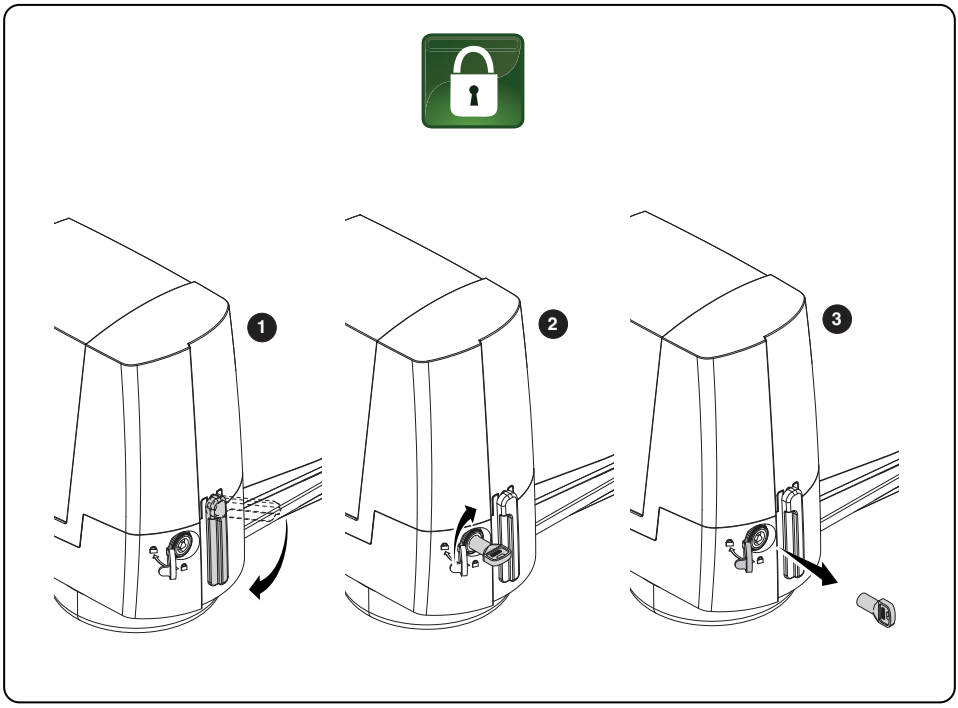
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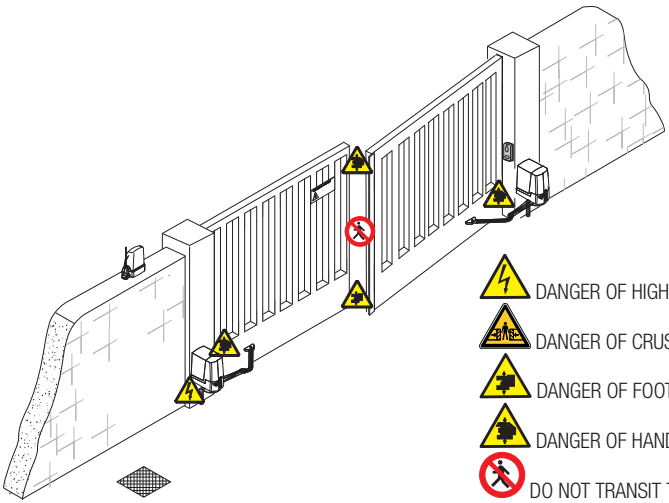
GENERAL PRECAUTIONS FOR INSTALLERS

⚠ CAUTION! Important safety instructions.
Follow all of these instructions. Improper installation can cause serious bodily harm.
Before continuing, also read the general precautions for users.

This product must only be used for its specifically intended purpose. Any other use is dangerous. Came S.P.A. is not liable for any damage caused by improper, wrongful and unreasonable use. • This manual's product is defined by machinery directive 2006/42/CE as "partly-completed machinery". Partly-completed machinery is a set that almost constitutes a machine, but which, alone, cannot ensure a clearly defined application. Partly-completed machinery is only destined to be incorporated or assembled to other machinery or other partly-completed machinery or apparatuses to build machinery that is regulated by Directive 2006/42/CE. The final installation must be compliant with European directive 2006/42/CE and current European reference standards • Given these considerations, all procedures stated in this manual must be exclusively performed by expert, qualified staff. • Laying the cables, installation and testing must follow state-of-the-art procedures as dictated by regulations Before installing the operator, check that the gate is in proper mechanical condition, that it is properly balanced and that it properly closes: if any of these conditions are not met, do not continue before having met all safety requirements. • The operator cannot be used with gates fitted with pedestrian doors, unless its operation can be activated only when the pedestrian door is in safety position. • Make sure that people cannot bet entrapped between the gate's moving and fixed parts due to the gate's movement. • Do not fit the operator upside down or onto elements that could yield to its weight. If necessary, add reinforcements to the fastening points • check that the temperature range appearing on the operator is suited to the place of installation • Do not install door or gate leaves on tilted surfaces • check that no lawn watering devices spray the operator with water from the bottom up • Suitably section off and demarcate the entire installation site to prevent unauthorized persons from entering the area, especially minors and children. • Use proper protections to prevent mechanical hazards when people are loitering around the machinery's range of action, for example avoid finger crushing hazards between the drive arm and the mechanical stops when the door is opening, and so on). • Any residual risks must be indicated clearly with proper signage affixed in visible areas. All of which must be explained to end users • Affix cautionary signs, such as the door plate, the gate plate, wherever needed and in plain sight. • All opening controls must be installed at least 1.85 m from the perimeter of the gate's working area, or where they cannot be reached from outside the gate. • If the operator is installed lower than 2.5 from the ground or from any other access level, fit any protections and signs to prevent hazardous situations. • Make sure that mechanical stops are already installed • Make sure the operator is installed onto a sturdy surface that is protected from any collisions • Unless the key-operation is functioning (for e.g. keypad selector, key-switch selector, transponder selector, and so on), any maintained-action control devices must be installed at least 1.5 m from the ground and out of reach from unauthorized users. • The manufacturer declines any liability for using non-original products; which would result in warranty loss • All switches in maintained action mode must be positioned so that the moving gates leaves, the transit areas and vehicle thru-

ways are completely visible, and yet the switches must be also away from any moving parts • Affix a permanent tag, that describes how to use the manual release mechanism, close to the mechanism. • Before handing over to users, check that the system is compliant with the 2006/42/CE uniformed Machinery Directive. Make sure the settings on the operator are all suitable and that any safety and protection devices, and also the manual release, work properly. • If the power-supply cable is damaged, it must be immediately replaced by the manufacturer or by an authorized technical assistance center, or in any case, by qualified staff, to prevent any risk • During all phases of the installation make sure you have cut off the mains power source. • The electrical cables must run through the cable glands and must not touch any heated parts, such as the motor, transformer, and so on). • 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. • Keep the section of this manual inside the technical folder along with the manuals of all the other devices used for your automation system. Remember to hand over to the end users all the operating manuals of the products that make up the final machinery.

The next figure shows the main hazard points for people.



KEY

🕮 This symbol shows which parts to read carefully.

⚠ This symbol shows which parts describe safety issues

☞ This symbol shows which parts to tell users about.

The measurements, unless otherwise stated, are in millimeters.

DESCRIPTION

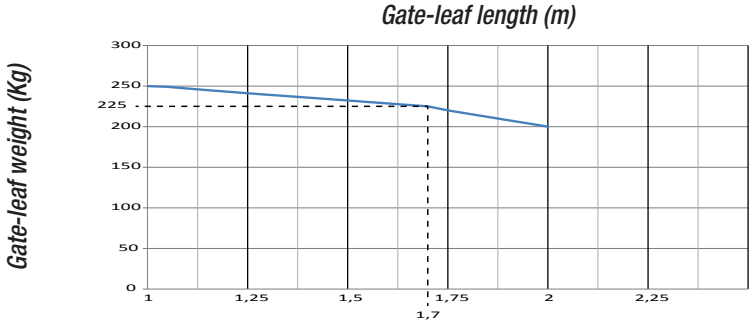
Operator complete with control board, movement control and obstruction detecting device plus mechanical endstops for swing gates with leaves up to 2 m.

Intended use

This operator is designed to power swing gates for residential and apartment block use.

🕮 Any installation other than what is detailed in this manual is prohibited.

Limits to use



⚠ 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).

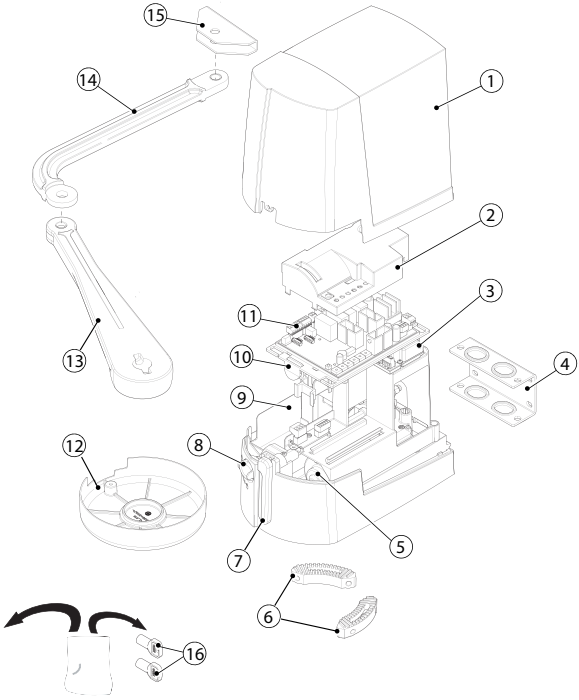
⚠ Some control panels may not have the electric lock function.

Technical data

Type	FTL20DGC
Protection rating (IP)	44
Power supply (V - 50/60 Hz)	230 AC
Input voltage motor (V)	24 DC
Max draw (A)	4
Stand-by consumption (W)	7
Consumption with RGP1 (W)	1.15
Maximum power (W)	140
Cycles/hour	40
Acoustic pressure (dBA)	≤70
Operating temperature (°C)	-20 to +55
Opening time at 90° (s)	19 ÷ 25
Apparatus class	I
Reduction ration (i)	1 / 1680
Torque (Nm)	180
Weight (Kg)	10.5

Description of parts

1. Cover
2. Board protecting cover
3. EMC02 card
4. Post brace
5. Gear motor
6. Mechanical stop
7. Release lever
8. Lock
9. Board-fitting support
10. Board-housing
11. Control board
12. Transmission arm protection
13. Transmission arm
14. Joint arm
15. Gate brace
16. Release keys

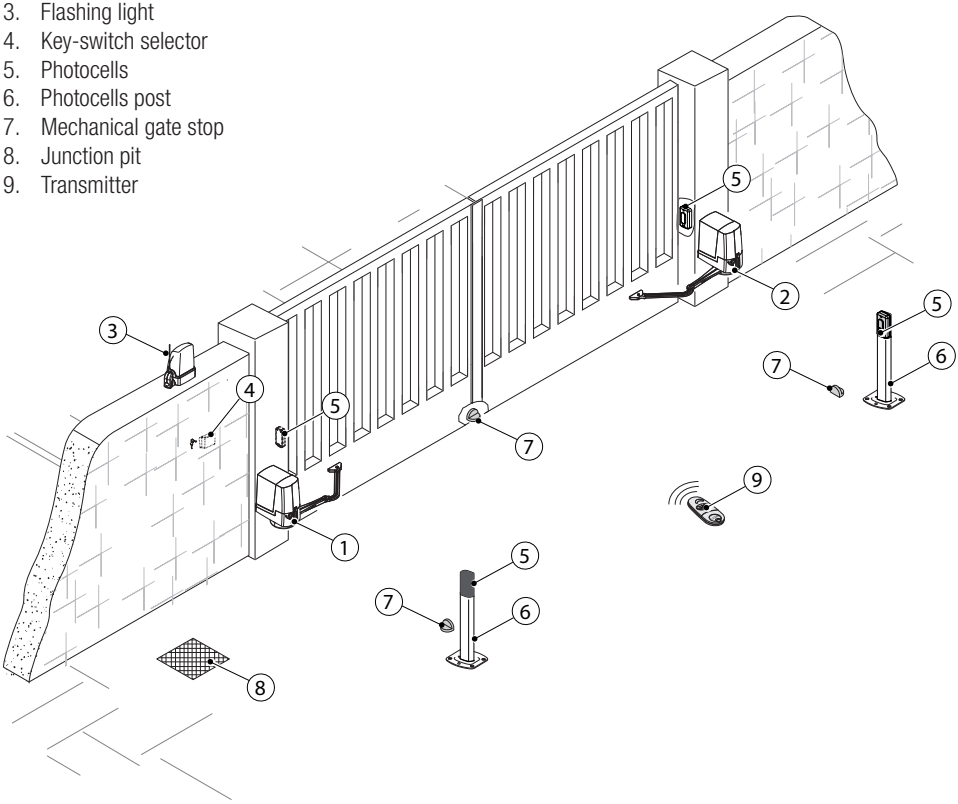


	UNI 5931 M8 x 80	2
	UNI 5931 M8 x 20	2
	UNI 5739 M10 x14	1
	UNI 5739 M6 x 10	2
	UNI 6955 3.9 x 9.5	1
	UNI 6955 3.9 x 13	1
	Ø 10 x 39	1
	UNI 6593 Ø 6	2
	UNI 6592 Ø 12	1

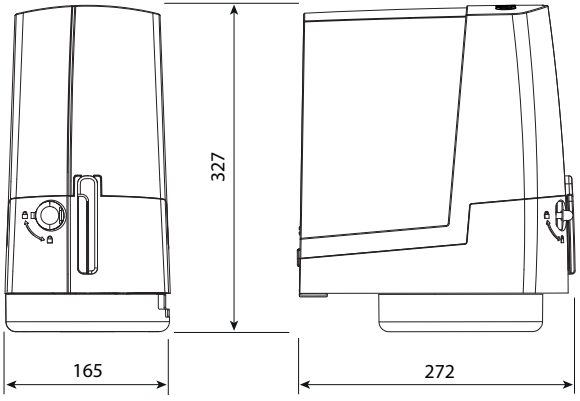
	Ø 10 x 45	1
	Ø 12 x 26	1
	UNI 7474 M8	2
	UNI 5588 M8	2

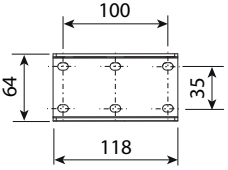
Standard installation

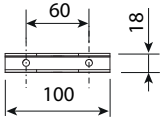
1. Operator
2. Gear motor
3. Flashing light
4. Key-switch selector
5. Photocells
6. Photocells post
7. Mechanical gate stop
8. Junction pit
9. Transmitter



Dimensions







GENERAL INSTALLATION INDICATIONS

Cable type and minimum thicknesses

Connection	cable length	
	< 20 m	20 < 30 m
Control panel power-supply	3G x 1.5 mm^2	3G x 2.5 mm^2
24 V DC gearmotor	3 x 1.5 mm^2	3 x 2.5 mm^2
Flashing light	2 x 0.5 mm^2	
Command and control devices	2 x 0.5 mm^2	
TX Photocells	2 x 0.5 mm^2	
RX photocells	4 x 0.5 mm^2	

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

📖 To connect the antenna, use the RG58 (we suggest up to 5 m).

📖 If cable lengths differ from those specified in the table, establish the cable sections depending on the actual power draw of the connected devices and according to the provisions of regulation CEI EN 60204-1.

📖 For multiple, sequential loads along the same line, the dimensions on the table need to be recalculated according to the actual power draw and distances. For connecting products that are not contemplated in this manual, see the literature accompanying said products

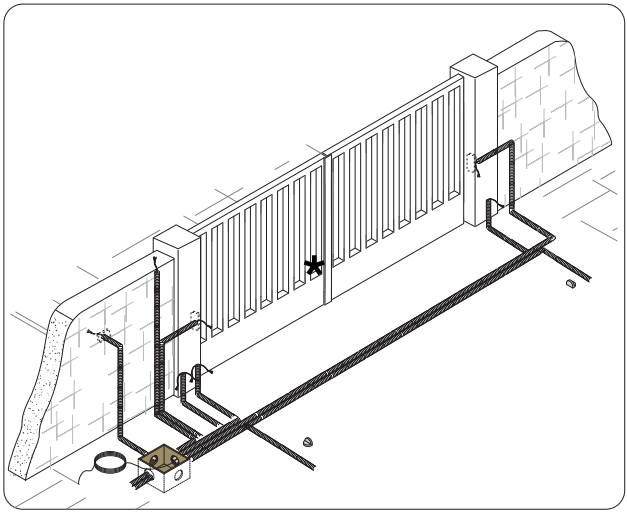
INSTALLATION

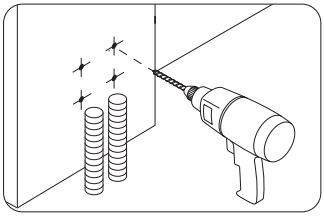
⚠ Only skilled, qualified staff must install this product.
⚠The following illustrations are mere examples in that the space for fastening the operator and accessories varies depending on the installation area. It is up to the fitter, therefore, to choose the most suitable solution.

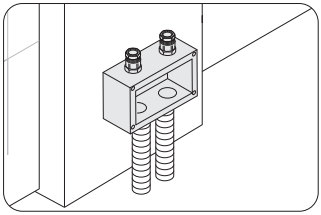
📖The following figures show a standard installation with the gearmotor and transmission arms fitted to the left of the inward-opening gate. Installing the gear motor with right-hand drive arms, is symmetrical.
⚠ For outward opening gate leaves, follow the chapter titled "INSTALLING AND CONNECTING FOR OUTWARD OPENING".

Preliminary operations

Fit junction boxes and corrugated tubing needed for the incoming connections from the distribution pit.
📖 The number of tubes depends on the type of system and the accessories you are going to fit. You need to set up at least two corrugated tubes where the operator will be installed (✱ on the gate leaf that opens first).

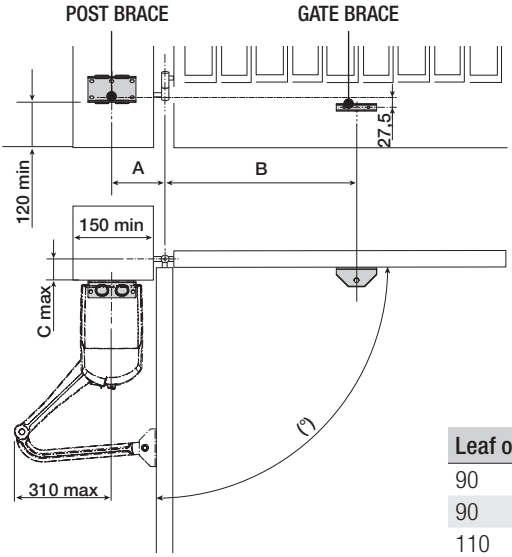


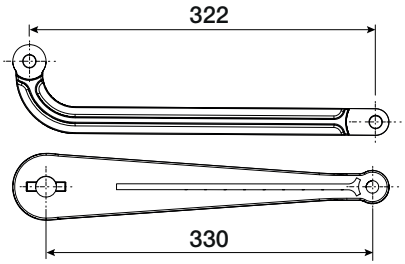




Checking measurements and applicative dimensions

Establish where you will fit the gate brace and measure where the gate-post brace will fit. Make sure to respect the quotas shown in the drawing and table.





Leaf opening arc (°)	A	B	C max
90	140	420	150
90	160 ÷ 180	380	150
110	200 ÷ 220	400	50

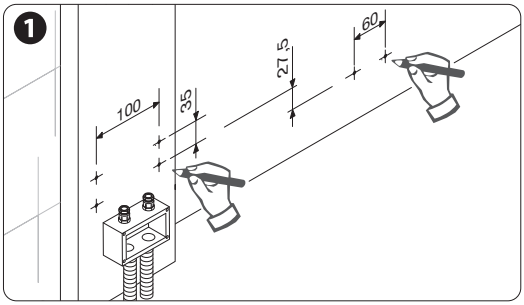
Fastening the braces

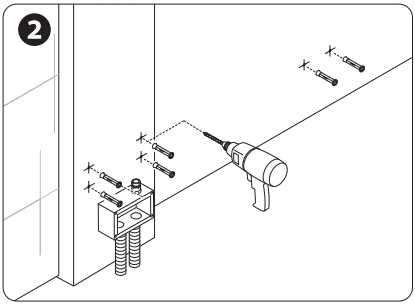
Marked the spots where the gate-post brace and gate brace will be fitted.

📖 The fastening measurements are listed in the paragraph titled CHECKING MEASUREMENTS AND APPLICATIVE DIMENSIONS.

Drill the anchoring points, fit the dowels or use plugs that will hold fast the screws.

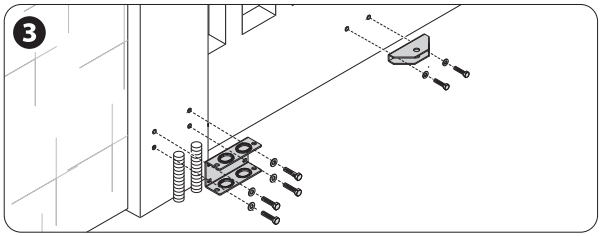
📖 The drawings are mere examples. Installers should carefully choose the most suitable set up according to the type and thickness of the gate leaf.

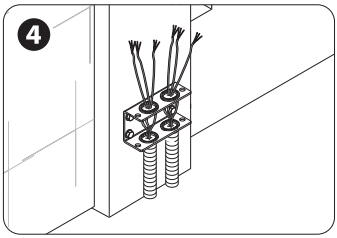




Use suitable screws to fasten the brackets.

Set up the required electrical cables and run them through the cable glands.

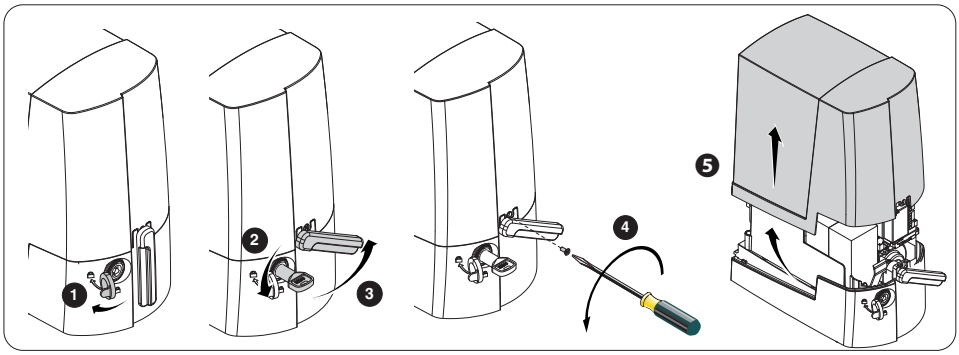




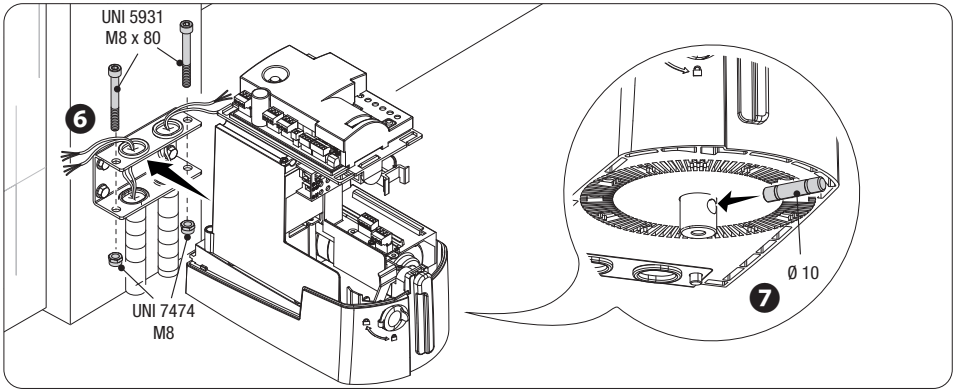
Preparingthe operator

Remove the cover of the operator in the following way: - open the protection cap on the lock, fit the trilobe key into the lock and turn it counter-clockwise;

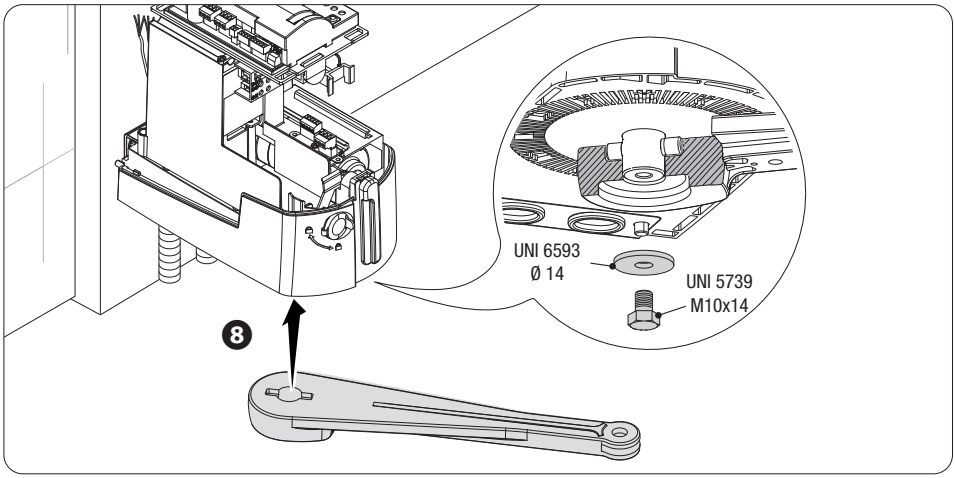
- turn the release lever and loosen the screw that fastens the cover to the gearmotor;
- lifting the cover by lightly pulling on the sides.



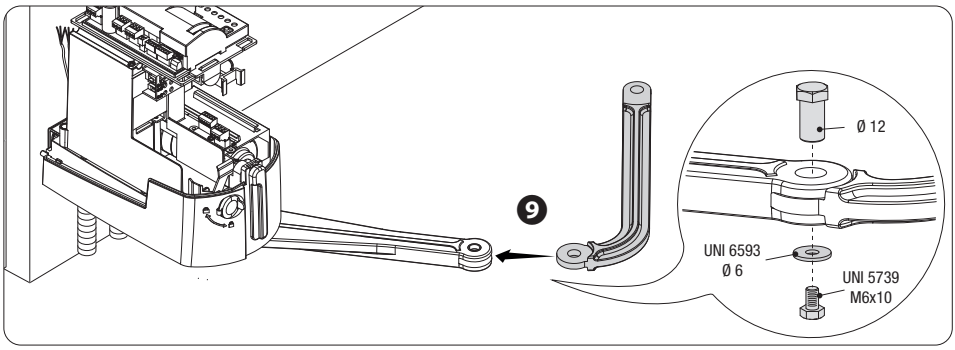
Fit the gearmotor into the gate-post brace and tighten the nuts and bolts.
Fit the plug into the gearmotor's drive-shaft hole.



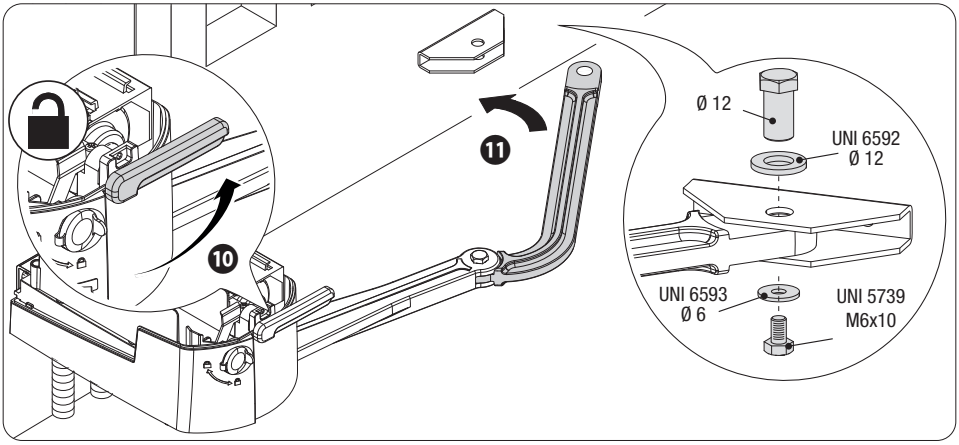
Fasten the transmission arm to the shaft using the slow shaft washer and the screw.



Fasten the driven-arm to the transmission arm by using the pin, the bolt and the washer.



Release the gear motor and fasten the driven-arm to the gate-post brace as shown in the drawing.



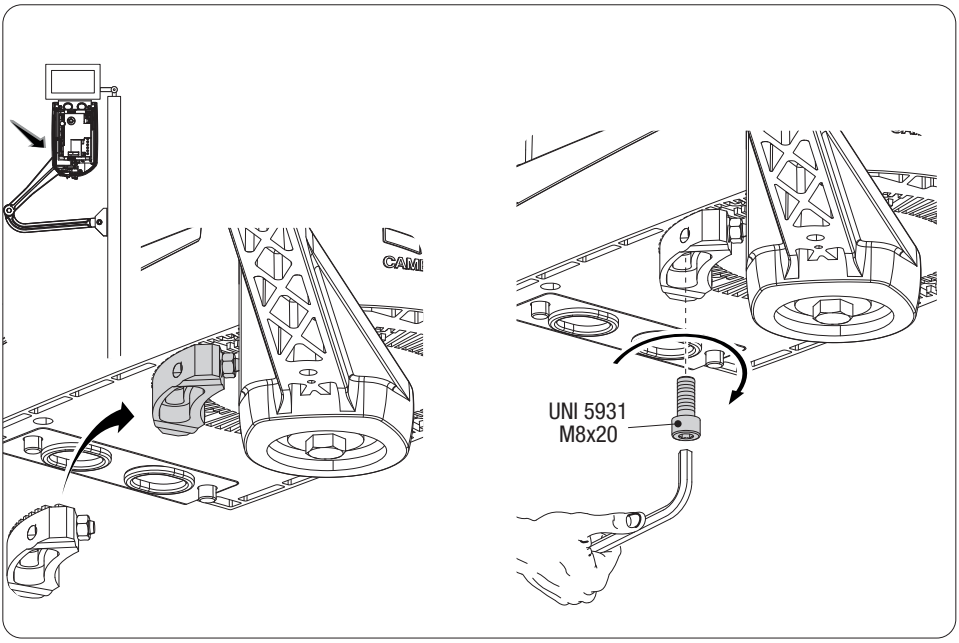
⚠ If there are no ground stops, you must fit mechanical stops.

Fastening the mechanical stops

Release the gearmotor.

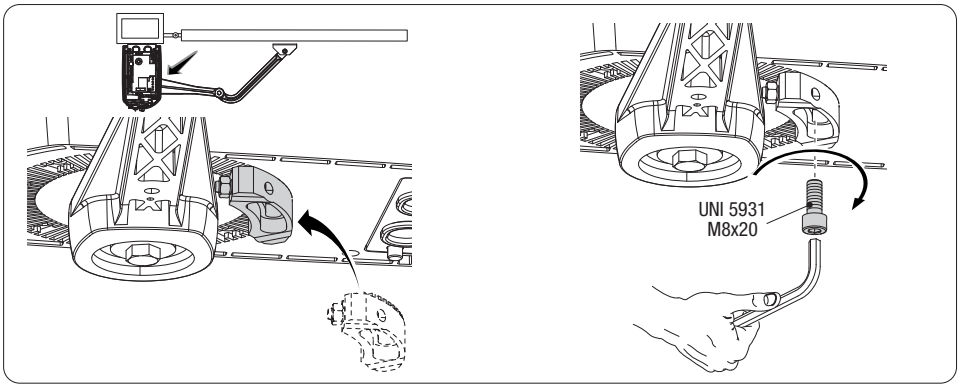
When opening.

Entirely open the gate leaf. Fit the stop under the casing, against the transmission arm and fasten it with the bolt.



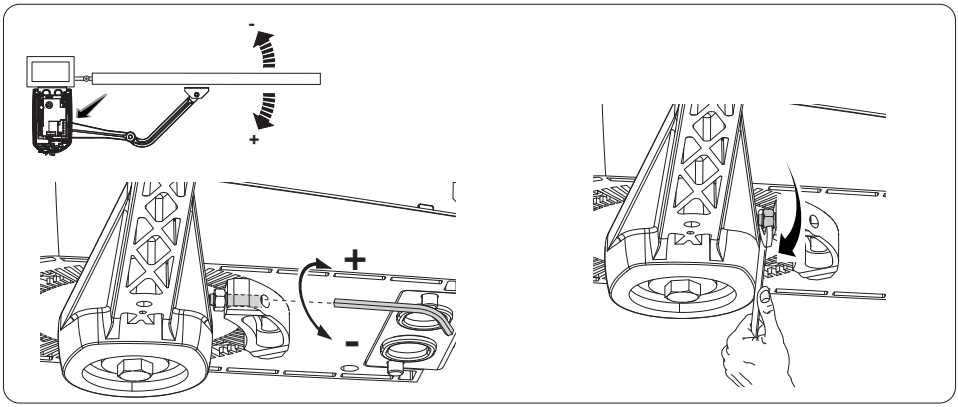
When closing.

Close the leaf. Fit the second stop against the opposite side of the arm and fasten it with the bolt.

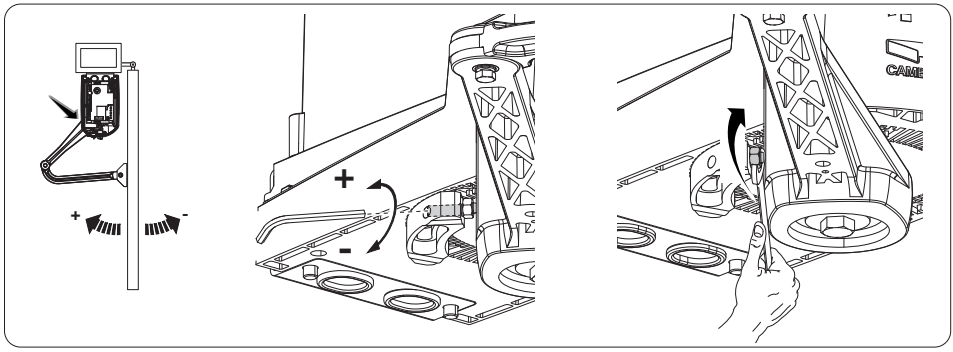


Establishing the limit-switch points

With the gearmotor released and the gate-leaf closed, adjust the closing limit-switch grub screw by turning it clockwise or counterclockwise. Tighten the nut to fasten the grub-screw.



Likewise, adjust the endstop by turning the endless screw on the other endstop.



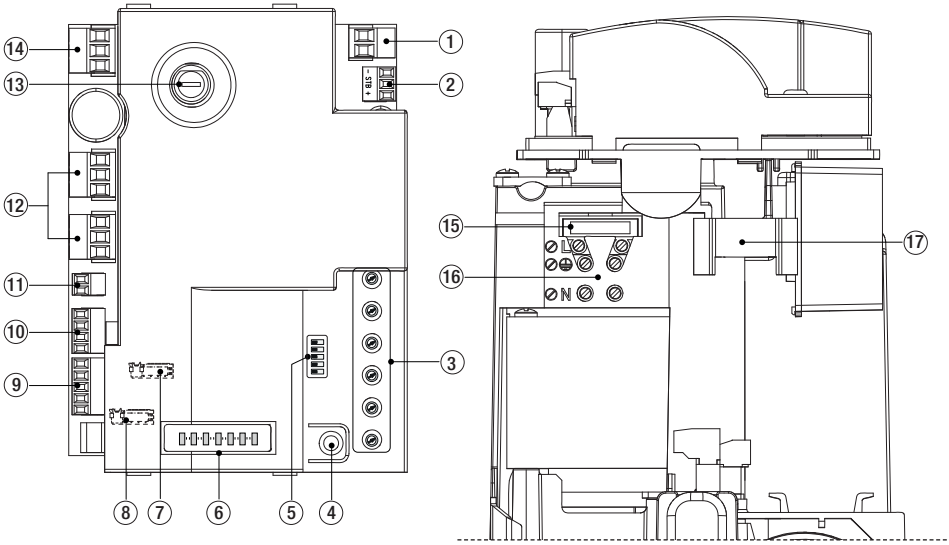
CONTROL CARD

⚠ **Before working on the control panel, cut off the mains power supply and remove any batteries.**
All wiring connections are quick-fuse protected.

Fuses	ZL60
HD Analog	2 A-F = 230 V
Accessories / control board	2 A-F

Description of parts

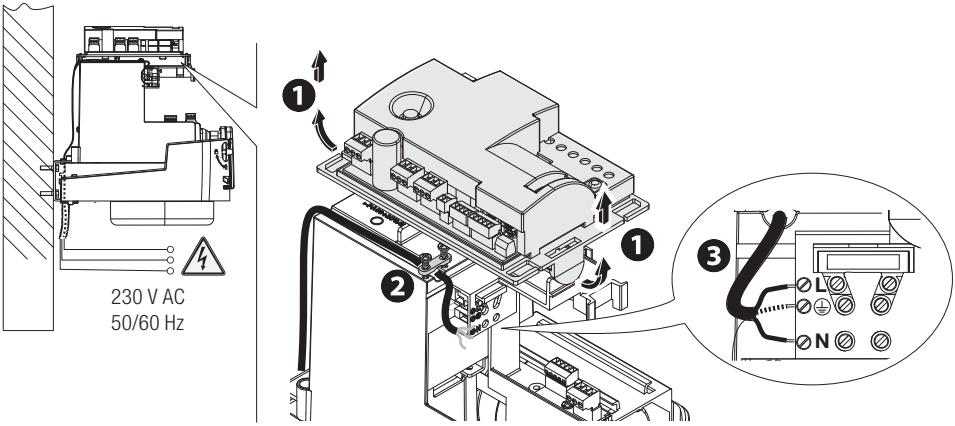
1. Transformer terminals
2. RGP1 module terminal
3. Trimmer
4. Programming button
5. DIP-SWITCH
6. Alert LED
7. R800 card connector
8. AF card connector
9. Safety-device terminals
10. Control devices terminals
11. Keypad selector terminal
12. Terminal boards gearmotors
13. Accessories / board fuse
14. Warning device terminals
15. Line fuse
16. Power supply terminal board
17. Housing for the RGP1 module

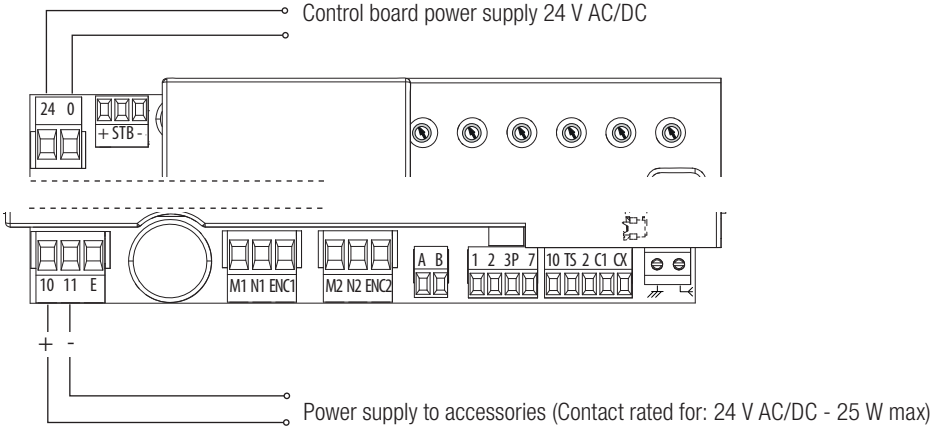


ELECTRICAL CONNECTIONS

⚠ The electrical cables must not touch any heated parts such as the motor, transformer, and so on.

Input voltage

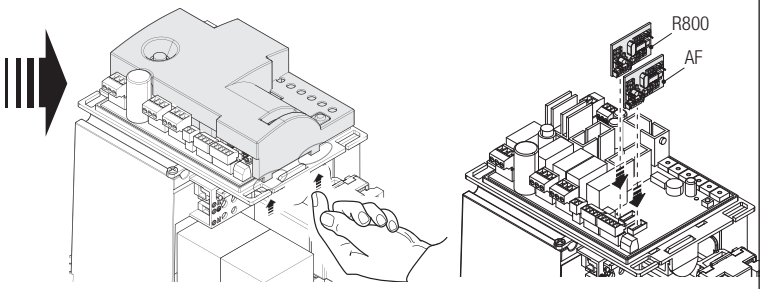


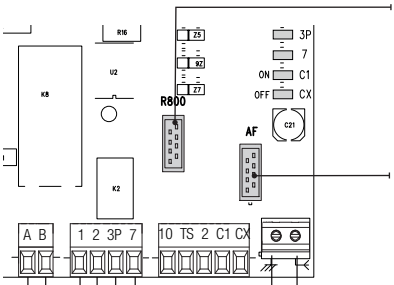


Command and control devices

⚠ For the system to work properly, before fitting any snap-in card (e.g. the AF R800), you MUST CUT OFF THE MAIN POWER SUPPLY and remove any batteries.

To be able to snap in the cards into the dedicated connectors, raise the card cover.





Connector for the R800 card (the R800 card is for using the keypad selector)

Connector for AF card (AF868 or AF43S) for remote control.

Antenna RG58 cable for remote control

OPEN-CLOSE-INVERT function (step-step) from control device (NO contact). Alternatively, from functions programming you can activate the OPEN-STOP-CLOSE-STOP command.

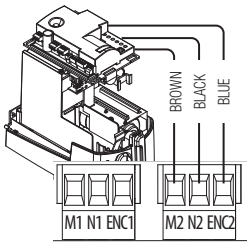
PARTIAL/PEDESTRIAN OPENING feature activated from control device (contact NO)

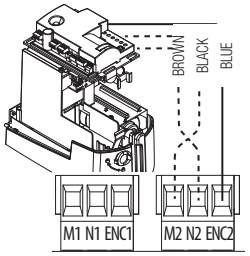
STOP STOP(N.C. contact). For stopping the gate while excluding automatic closing. To resume movement press the control button or use another control device.
If unused, it should be deactivated during programming.

Keypad selector.

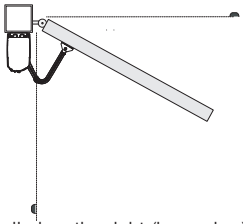
Operator

For one-leaf swing gates.

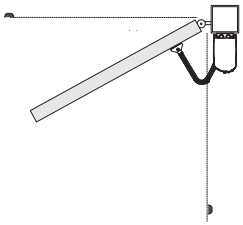




Operator installed on the left (outer view).
(Default setting)

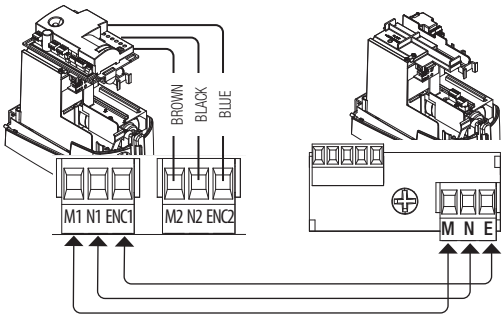


Operator installed on the right (inner view).

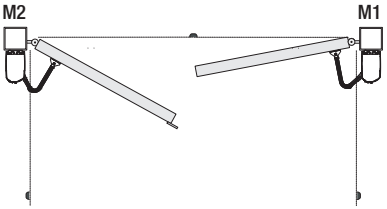


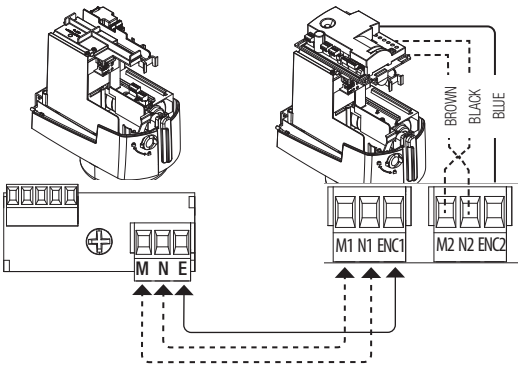
Operator with gear motor

For two-leaf swing gates.

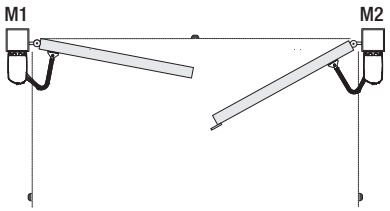


Operator installed on the left and gearmotor installed on the right (inner view) with operator delayed when closing.
(Default setting)

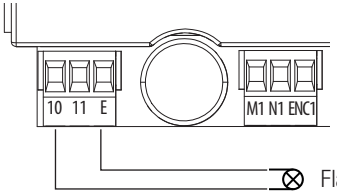




Gearmotor installed on the left and operator installed on the right (inner view) with operator delayed when closing.

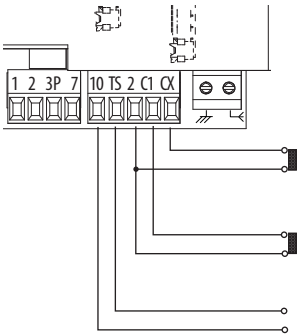


Signaling devices



Flashing light connection (contact rated for: 24 V AC/DC - 25 W max)

Safety devices



Photocells connection (NC contact), see the functions programming section.

Reopening during closing photocells connection (NC contact) see functions programming.

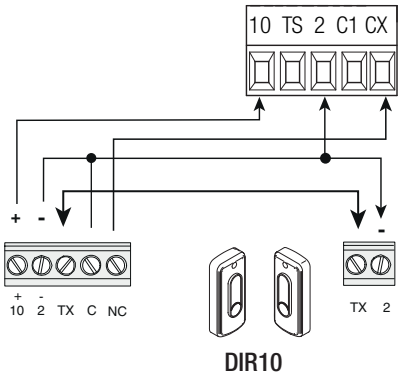
Photocells safety connection (services test)

Photocells

Configure contact C1 or CX (NC), input for safety devices such as photocells.
See functions programming of input C1 or CX in:

- **C1** reopening while closing. While the gate leaves are closing, opening the contact causes the inversion of movement until they are completely open;
- **CX** partial stop, gate leaves stop if they are moving, triggering the automatic closing time; if the automatic closing time is enabled);
- **CX** obstruction wait, gate leaves stop is they are moving. They resume movement once the obstruction is removed.

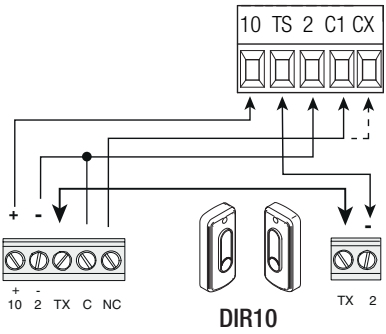
If unused, contacts CX and C1 should be deactivated during programming.



DIR10

Connecting the safety devices (i.e. the safety test)

At each opening and closing command, the control board checks the efficacy of the safety devices (such as, photocells).
Any anomalies will inhibit all commands.
Enable this function when programming.



FUNCTIONS PROGRAMMING

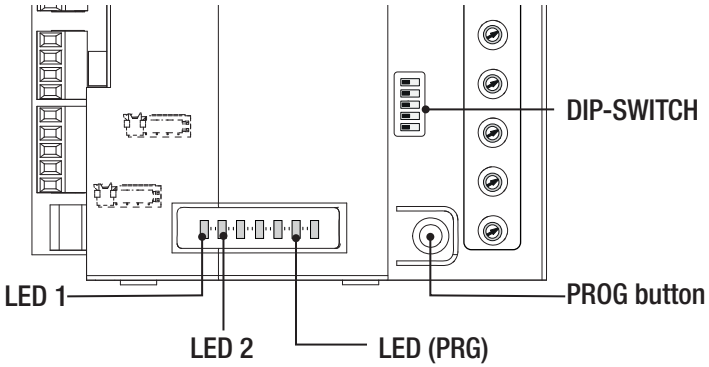
⚠ **Only program functions when the operator is stopped.**

When programming is finished, set all Dip-switches to OFF.

🕮 You can save up to 25 users.

🕮 To check whether a function is enabled or disabled, set the DIP switches in the position that corresponds to the function and check which of the two LEDs is blinking.

LED 1 - the function is disabled.
LED 2 - the function is enabled.



📖 **First of all, program the following functions first: Type of motor, Number of motors, TOTAL STOP and Self-learning.**

DIP-SWITCH	Description of functions
	**Motor type** By default,the control panel controls OPP001 and FTL20DGC-series gear motors. For controlling OPS001, BXL04AGS-series gear motors. select the DIP switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds off for 1 second. To return to the default setting, press PROG again The LED blinks and the buzzer sounds off 2 times
	**Number of motors** By default,two motors are configured. To configure a single motor: select the DIP switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds off for 1 second. To return to the default setting, press PROG again The LED blinks and the buzzer sounds off 2 times
	**TOTAL STOP from button (contact 1-2)** By default, the feature is enabled. To disable it: select the DIP switches as shown and press the PROG key on the control board. The LED blinks and the buzzer sounds off 2 times. To return to the default setting, press PROG again. he LED stays on and the buzzer sounds for 1 second.
	**Self-learningof the gate travel (see the Self-learning paragraph)** Select the DIP-switches as shown and press the PROG key on the control board. The operator will perform a series of maneuvers to establish the limit-switch points. To establish the slow-down staring points - when opening and closing - press PROG when the gate leaves reach the desired position. When calibrating, the PRG LED blinks. When the calibration is complete, the buzzer sounds off for 1 second. If the calibration is not successful, the LED blinks quickly and the buzzer sounds off 7 times. You can interrupt the gate travel's self-learning operation by pressing the STOP button (if enabled).
	**Reopening during closing (contact 2-C1)** By default, the feature is disabled. To enable it: select the DIP-switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds for 1 second. To return to the default setting, press PROG again The LED blinks and the buzzer sounds off 2 times
	**Input on contact 2-CX** By default, the feature is disabled. To enable it: select the DIP-switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds for 1 second. To return to the default setting, press PROG again The LED blinks and the buzzer sounds off 2 times
	**Partial stop or obstruction wait (contact 2-CX)** This functionis default-set to partial stop. To enable theOBSTRUCTIONWAIT: Select the DIP-switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds off for 1 second. To return to the default setting, press PROG again The LED blinks and the buzzer sounds off 2 times

OPEN-CLOSE-INVERT or OPEN-STOP-CLOSE-STOP with button (contact 2-7)

By default, the feature is OPEN-CLOSE-INVERT.
To enable it to OPEN-STOP-CLOSE-STOP:
select the DIP-switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds for 1 second.
To return to the default setting, press PROG again The LED blinks and the buzzer sounds off 2 times

Partial opening or pedestrian opening (contact 2-3P)

By default, the opening is set to pedestrian mode.
To enable in partial opening:
select the DIP-switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds for 1 second.
To return to the default setting, press PROG again The LED blinks and the buzzer sounds off 2 times

Obstruction detection with motor stopped

By default, this function is enabled.
To disable it:
select the DIP-switches as shown and press the PROG button on the control board. The LED blinks and the buzzer sounds off 2 times.
To return to the default setting, press PROG again. The LED stays on and the buzzer sounds off for 1 second.

Excluding the Encoder

By default, the Encoder is enabled.
The enable the exclusion:
select the DIP-switches as shown and press the PROG button on the control board. The LED blinks and the buzzer sounds of 1 time.
To return to the default setting, press PROG again. The LED stays lit and the buzzer sounds off 2 times.

Timed slow-downs (with Encoder disabled)

By default, the feature is disabled.
To enable it:
select the DIP-switches as shown and press the PROG button on the control board. The LED stays on and the buzzer sounds off for 1 second.
To return to the default setting, press PROG again. The LED blinks and the buzzer sounds off 2 times.

☞ Set the OP TIME trimmer to its maximum setting, the SENS trimmer to half, and save the trimmer value.

Automatic closing

By default, the feature is disabled.
To enable it:
select the DIP-switches as shown and press the PROG button on the control board. The LED stays on and the buzzer sounds off for 1 second.
To return to the default setting, press PROG again. The LED blinks and the buzzer sounds off 2 times.
The wait before the automatic closing starts when the opening limit-switch point is reached - for a time that is settable on the A.C.T. trimmer.

⚠ 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.

Automatic closing after either partial or pedestrian opening

By default, the feature is disabled.
To enable it:
Select the DIP-switches as shown and press the PROG key on the control board. THE PRG LED stays lit and the buzzer sounds off for 1 second.
To return to the default setting, press the PROG key again. The LED blinks and the buzzer sounds off 2 times.

⚠ The automatic closing time is permanently set to 10 seconds.

Pre-flashing (pre-flashing duration: 5 s)

By default, the feature is disabled.
To enable it:
select the DIP switches as shown and press the PROG key on the board. The PRG LED stays on and the buzzer sounds off for 1 second.
To return to the default setting, press PROG again The LED blinks and the buzzer sounds off 2 times

Closing thrust

By default, the feature is disabled.
To enable it:
select the DIP switches as shown and press the PROG key on the control board. The PRG LED stays on and the buzzer sounds off for 1 second.
To return to the default setting, press PROG again. The LED blinks and the buzzer sounds off 2 times

Saving the trimmer value

Use the trimmers to set the automatic closing time (A.C.T.), the opening and closing latching points, the second motor's closing-delay speed, the slow-down speed (SDS) and the sensitivity (SENS.).
To save the values:
select the DIP switches as shown and press the PROG key on the control board. The PRG LED stays on and the buzzer sounds off for 1 second.

Services test

By default, the feature is disabled.
To enable it:
Select the DIP switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds for 1 second.
To return to the default setting, press PROG again. The LED blinks and the buzzer sounds off 2 times

Button-activated maintained action

By default, the feature is disabled.
To enable it:
select the DIP-switches as shown and press the PROG key on the control board. The LED stays on and the buzzer sounds for 1 second.
To return to the default setting, press PROG LED button pressed The LED blinks and the buzzer sounds off 2 times
⚠ The gate opens and closes when the button is kept pressed.
Opening button connected on 2-3P (contact NO) and closing button connected on 2-7 (contact NO)
All other control devices, even radio-based ones, are excluded.

Partial opening

Select the DIP-switches as shown and press the PROG button for one second. The PRG LED blinks. Within 20 seconds, enter a code form the keypad selector or press any button on the transmitter that you want to save.

Once saving is finished the PROG LED turns on and the buzzer sounds off for one second.

If the transmitter has been previously saved or the maximum number of registered users is exceeded the LED blinks quickly and the buzzer sounds off 7 times.

Open only

Select the DIP switches are shown and press the PROG button for 1 second. The PROG blinks. Within 20 seconds, enter the code on the keypad selector or press a button on the transmitter you want saved.

Once saving is finished the PROG LED stays lit and the buzzer sounds off for one second.

If the transmitter has been previously saved or the maximum number of registered users exceeded, the LED blinks quickly and the buzzer sounds off 7 times.

OPEN-CLOSE-INVERT

Select the DIP switches are shown and press the PROG button for 1 second. The PROG blinks. Within 20 seconds, enter the code on the keypad selector or press a button on the transmitter you want memorized.

Once saving is finished the PROG LED stays lit and the buzzer sounds off for one second.

If the code has been previously saved or the maximum number of registered users exceeded, the LED blinks quickly and the buzzer sounds off 7 times.

OPEN-STOP-CLOSE-STOP

Select the DIP switches are shown and press the PROG button for 1 second. The PROG blinks. Within 20 seconds, enter the code on the keypad selector or press a button on the transmitter you want memorized.

Once saving is complete, the PRG LED stays on and the buzzer sounds off for 1 second.

If the code has been previously saved or the maximum number of registered users exceeded, the LED blinks quickly and the buzzer sounds off 7 times.

Deleting all users

Select the DIP switches as shown and press the PROG key on the control board, for 5 seconds.

Once deletion is complete, the PRG LED stays lit and the buzzer sounds off for 1 second.

Resetting parameters

Select the DIP-switches as shown and press the PROG button for 5 seconds.

Once deletion is complete, the PRG LED stays lit and the buzzer sounds off for 1 second.

This function does not delete any users.

Self-learning of the gate-leaf travel

With the Encoder enabled (the default setting)

- Select the Dip-switch and press the PROG button the control board as explained in the functions programming section.

The operator will perform a series of maneuvers to establish the starting slow-down and limit-switch points.
Ⓐ = 25% of the movement area at slowed down speed when opening.

Ⓑ = 25% of the movement area at slowed down speed when closing.

Resetting the opening and closing slow-down starting points

- Close the gate leaves.
- Perform a self-learning run of the leaf travel. When M2 reaches the closing slow-down starting point, during an opening maneuverB (10/45 %), press the PROG button.
- Again press the PROG button when M2 reaches the opening slow-down starting point, during the same maneuver A (55/90 %).

Repeat the procedure for M1.

Timed slow-downs with Encoder disabled

📖 Set the OP TIME trimmer to maximum, set the SENS trimmer to half, save the trimmers' values, disable the Encoder, enable the timed slow-down function.

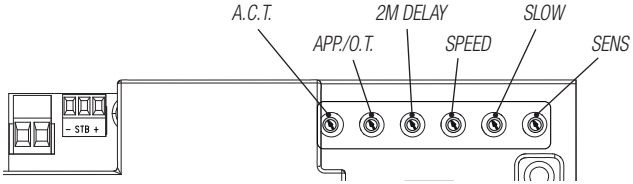
- Perform a self-learning run of the leaf travel.

The operator will perform a series of maneuvers to establish the starting slow-down and limit-switch points.
Ⓐ = 25% of the operating time at slowed down speed when opening.
Ⓑ = 25% of the operating time at slowed down speed when closing.

With Encoders and timed slow-downs disabled

📖 If the Encoder and timed Slow down features are both disabled, the gate leaves will perform a complete travel at a constant speed of 50% of the maximum speed.

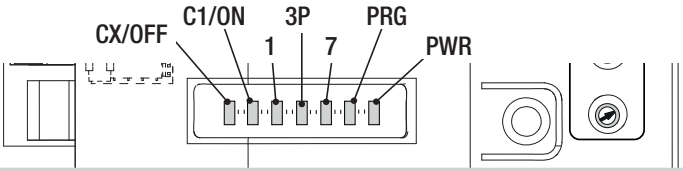
Adjusting the trimmers



Trimmer	Description of functions
A.C.T.	**Automatic Closing Time** It sets the open gate's waiting time. Once this time elapses, the shutter automatically closes. The wait time can be adjusted to between 1 and 180 seconds.
APP./O.T.	**Latching point - with Encoder enabled - or operating time - with Encoder disabled.** It adjusts the motors final resting point before the opening and closing endstops. The starting final resting point is calculated as a percentage of the gate leave's complete travel, from 1% to 10%. When the Encoder is disabled, the trimmer is used to set the operating time from 5 to 120 seconds.
2M DELAY	**M2 closing delay time** 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 25 seconds.
SPEED	**Travel speed** It adjusts the speed of the gearmotors during the manuevers. The speed can be adjusted from 30% (-) to 100% (+). When the Encoder and the timed slow-downs are disabled, the top speed is 50%.
SLOW	**Slow-down speed** It adjusts the gearmotors' speed when slowing down. The speed may be adjusted from 30% (-) to 60% (+) of the maximum speed. If the slow down speed is greater than the travel speed, the travel speed is automatically limited.
SENS.	**Sensibility** It adjusts the obstruction detection sensitivity during the gate movement. Minimum sensitivity (-) or maximum sensitivity (+).

📖 **After adjusting the trimmers, select the DIPs and press the PROG key on the board as shown in functions programming section.**

Alert LED

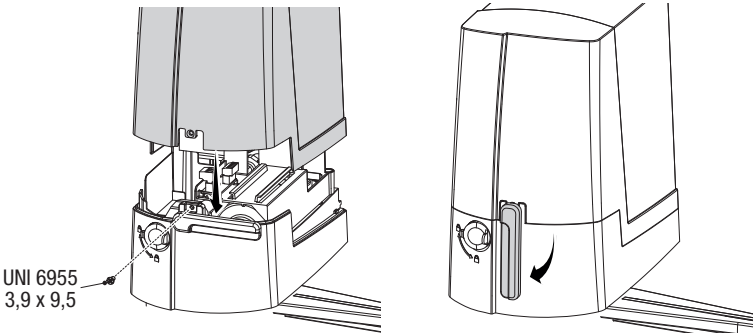


LEDs	Description
PWR *(Green)*	It warns about the voltage running through the control control board.
PROG *(Red)*	It warns about the functions' programming phases, the automatic closing waiting time and of any errors/malfunctions. .
1 *(Yellow)*	It warns that contact 1-2 (NC) is open (STOP button).
3P *(Yellow)*	It warns that contact 2-3P (NO) is closed (partial opening button).
7 *(Yellow)*	It warns that contact 2-7 (NO) is closed (command button).
C1/ON *(Yellow)*	It warns that contact 2-C1 (NC) is open (photocells) / Function enabled.
CX/OFF (*Yellow)*	It warns that contact 2-CX (NC) is open (photocells) / Function disabled.

FINAL OPERATIONS

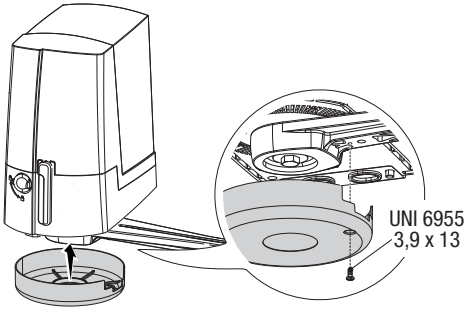
Fastening the cover

Once the electrical connections and set up are done, fit the cover and fasten it using the supplied screws, then reposition the release lever.



Fastening the transmission arm protection

Fit the protection under the operator and fasten it to the transmission arm using the screw.

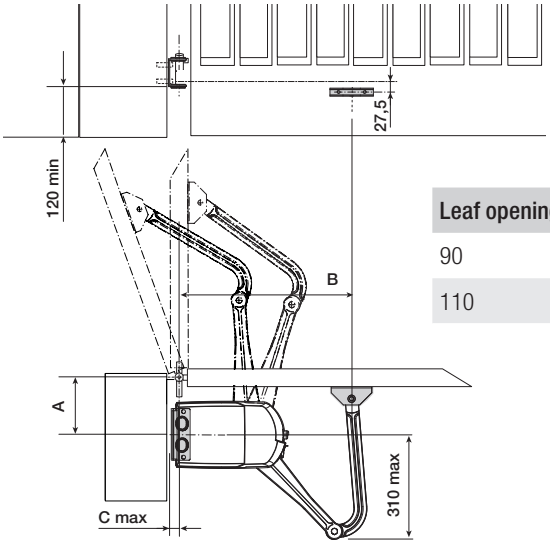


INSTALLING AND CONNECTIONS FOR OUTER OPENING

Following, are the only things that change compared to a standard installation:

Fastening the braces and applicative dimensions

Establish where you will fit the gate brace and measure where the gate-post brace will fit. Make sure to respect the quotas shown in the drawing and table.



Leaf opening arc (°)	A	B	C max
90	140	420	60
110	140	420	60

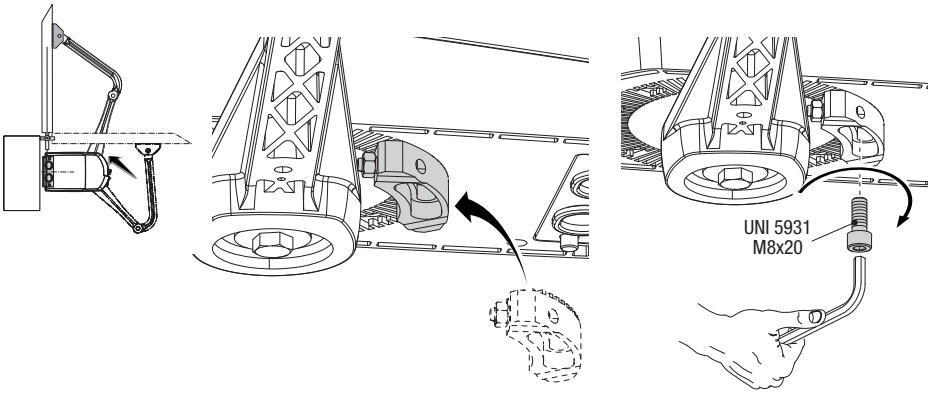
⚠ Warning! If no end stops are fitted, you must fasten the stops.

Fastening the mechanical stops

Release the gearmotor.

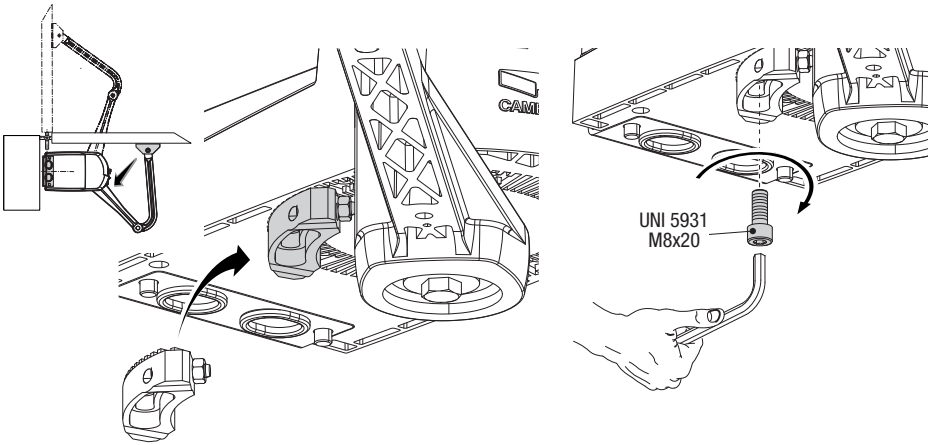
When opening.

Entirely open the gate leaf. Fit the stop under the casing, against the transmission arm and fasten it with the bolt.



When closing.

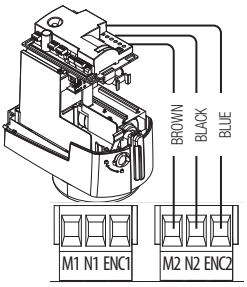
Close the leaf. Fit the second stop against the opposite side of the arm and fasten it with the bolt.



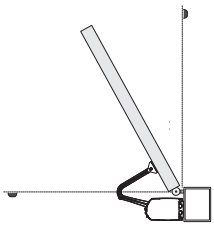
Establishing the limit-switch points

Please refer to the chapter on opening inwards.

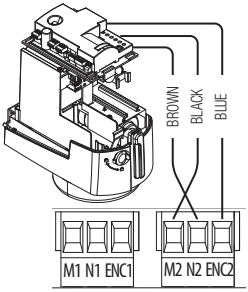
Operator



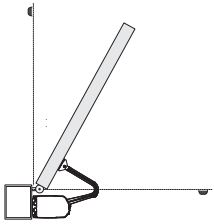
Operator installed on the right (inner view).



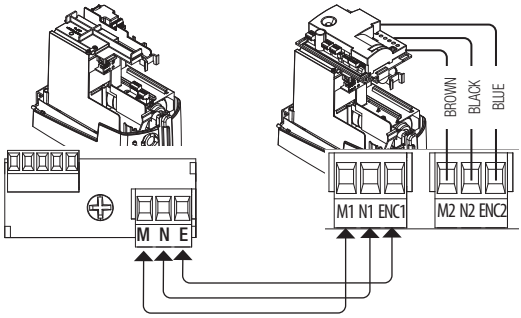
For one-leaf swing gates.



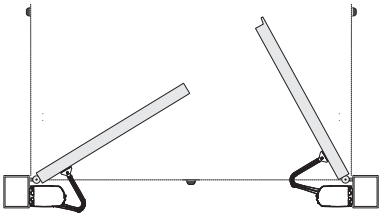
Operator installed on the left (outer view).



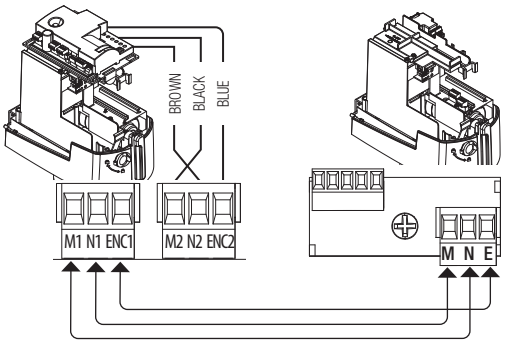
Operator and gearmotor connection



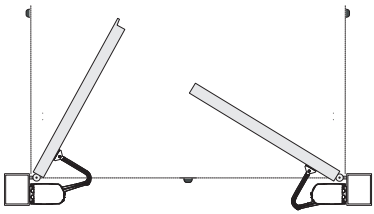
Gearmotor installed on the left and operator installed on the right (inner view) with operator delayed when closing.



For two-leaf swing gates.



Operator installed on the left and gearmotor installed on the right (inner view) with operator delayed when closing.



DISMANTLING AND DISPOSAL

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

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

♻ DISPOSING OF THE PACKAGING

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

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

DISPOSE OF RESPONSIBLY!

♻ DISMANTLING AND DISPOSAL

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

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

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

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

DISPOSE OF RESPONSIBLY!

WHAT TO DO IF ...

ISSUES	POSSIBLE CAUSES	POSSIBLE FIXES
The operator opens but will not close	• Power supply is missing • The gear motor is stuck • The transmitter emits a weak signal or no signal • Inspection hatch is open • Button/s and/or selectors stuck	• Check main power supply • Lock the gear motor • Replace the batteries • Check that the inspection hatch is closed and locked • Check that the devices and the electric cables are in proper working conditions
The operator opens but will not close.	• The photocells are working	• Check that there are no obstructions in the range of operation of the photocells

⚠ ***If the problem cannot be solved by following the fixes in the table or if any malfunctions, anomalies, noises, vibrations or suspicious and unexpected behavior is experienced on the system, call for qualified assistance.***

The contents of this manual may change, at any time, and without notice.

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