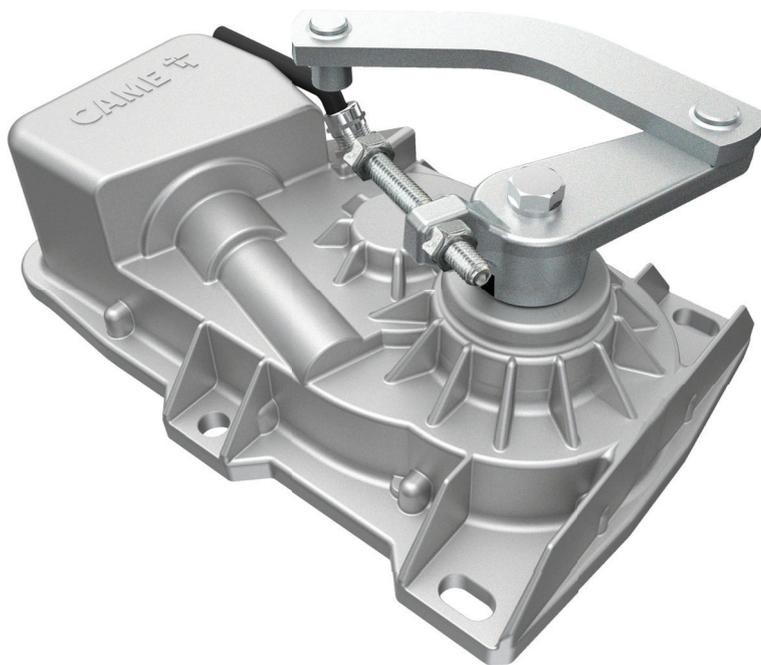


# Swing-gate operator FROG

FA01914-EN

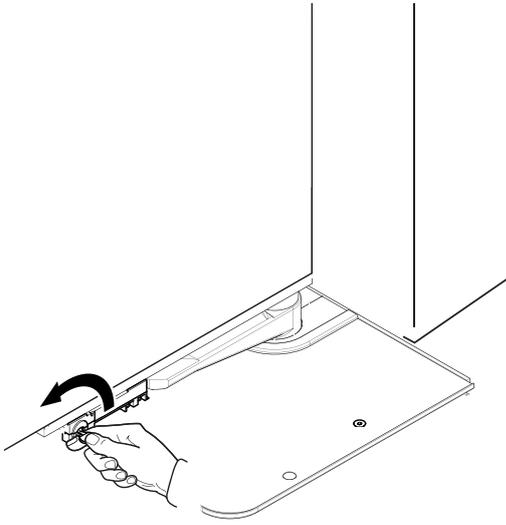


## FROG-X

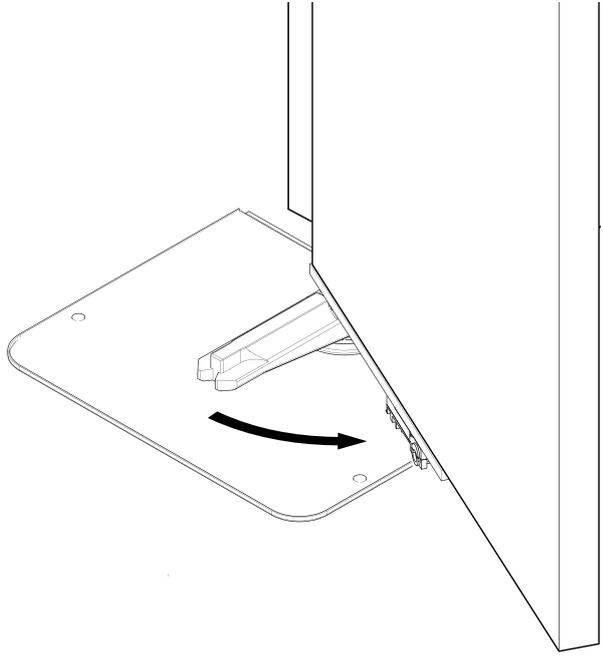
### INSTALLATION MANUAL



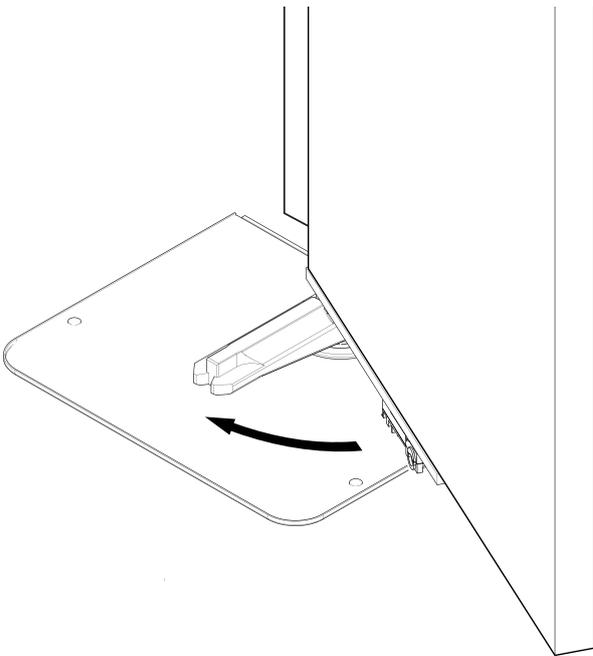
1



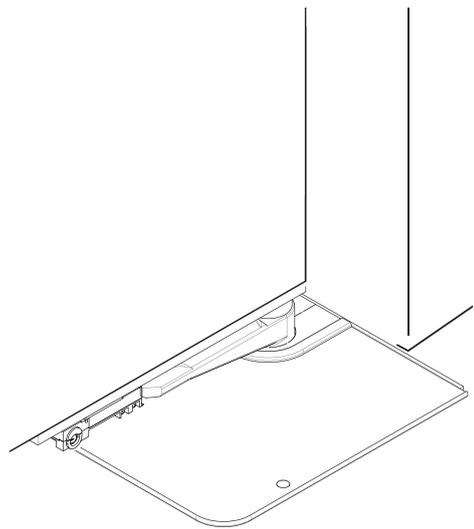
2



1



2



**⚠ 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.**

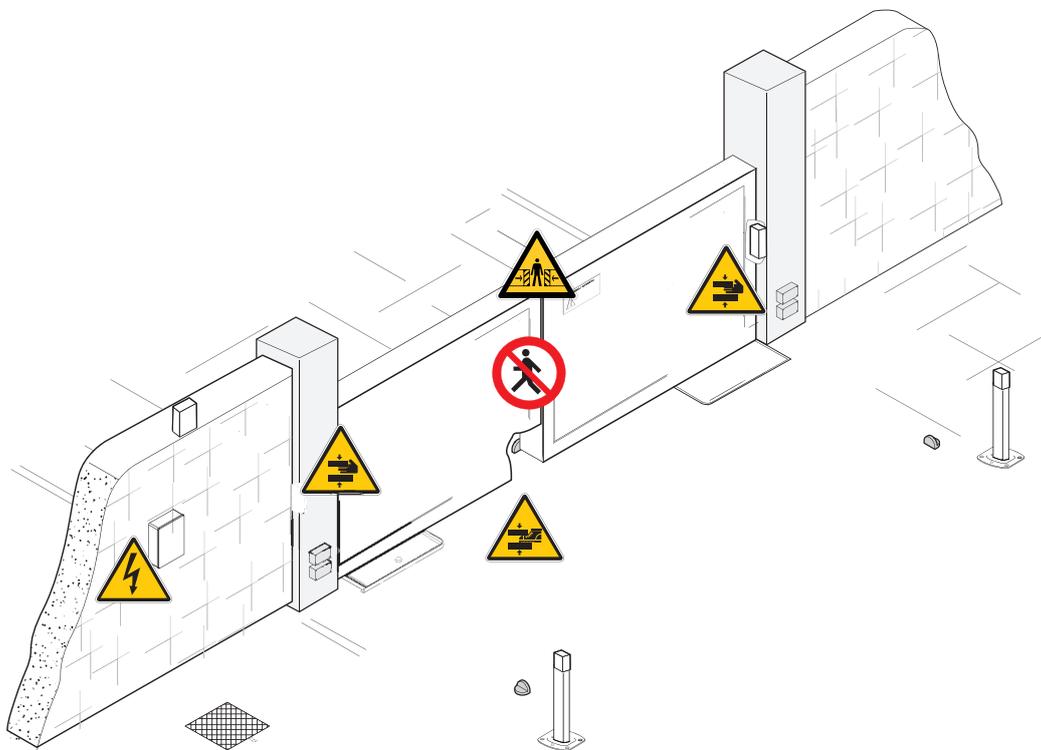
Only use this product for its intended purpose. Any other use is hazardous. • The manufacturer cannot be held liable for any damage caused by improper, unreasonable or erroneous use. • This product is defined by the Machinery Directive (2006/42/EC) as partly completed machinery. • Partly completed machinery 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](http://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. • The appliance must be powered with a voltage corresponding to the value shown on the rating plate. Power must be supplied through a very low safety voltage system. • When excavating to lay the foundation box, ensure there is sufficient drainage to prevent water from stagnating inside it. • Make sure that no jets of water can wet the foundation box where it is installed, either directly (sprinklers, pressure washers, etc.) or indirectly (taps, trench drains). • 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. • Make sure that the moving mechanical parts are suitably far away from the wiring. • 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.

- Where operated with a hold-to-run control, install a STOP button to disconnect the main power supply to the operator, to block movement of the guided part.
- 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.
- The product, in its original packaging supplied by the manufacturer, must only be transported in a closed environment (railway carriage, containers, closed vehicles).
- If the product malfunctions, stop using it and contact an authorised support centre.

📖 If the production batch is not immediately identifiable, please contact customer services.

📖 The general conditions of sale are given in the official CAME price lists.

## Main points of danger for people



 No transiting while the barrier is moving.

 Danger of crushing.

 Risk of trapping hands.

 Risk of trapping feet.

**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**

**801MI-0020**

Underground brushless irreversible 24 V gearmotor with standard encoder, Adaptive Speed & Torque Technology, movement management, obstacle detection and adjustable leaf-stop during closing, for swing gates with leaves up to 4 m in length and 400 kg in weight. FROG-X is controlled by the relevant control panel 801QA-0090.

**Intended use**

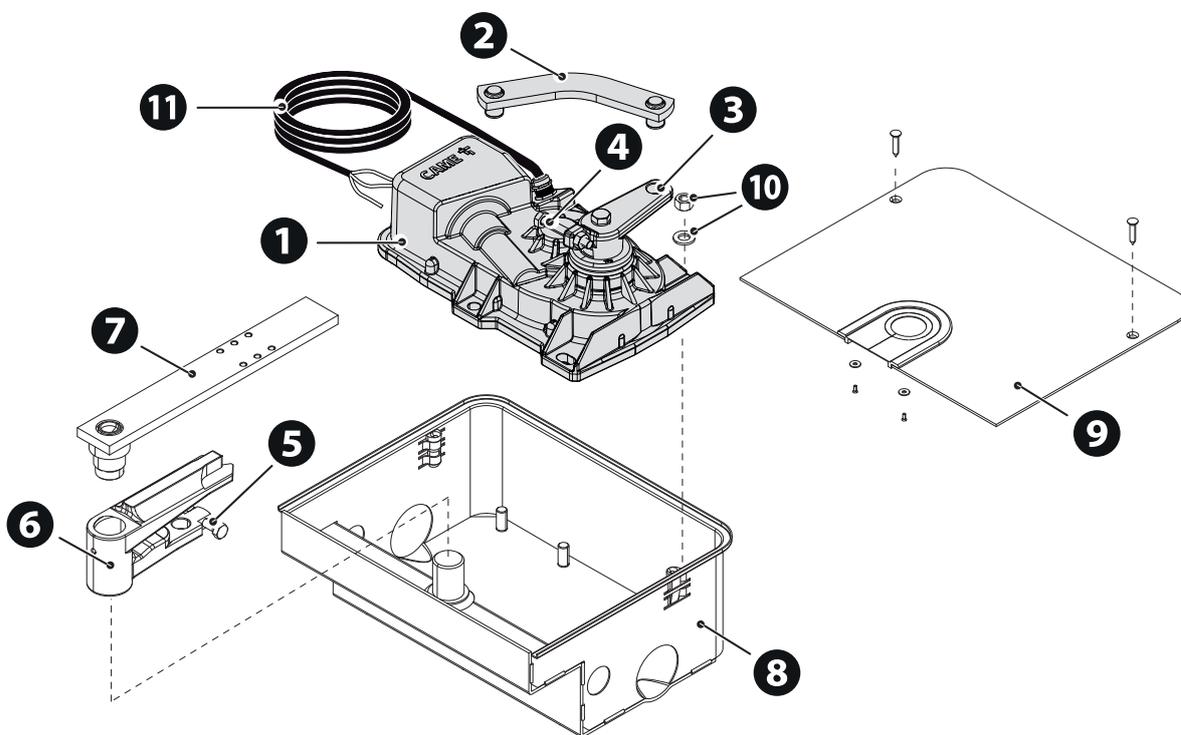
Concealed solution for use in residential and apartment block settings

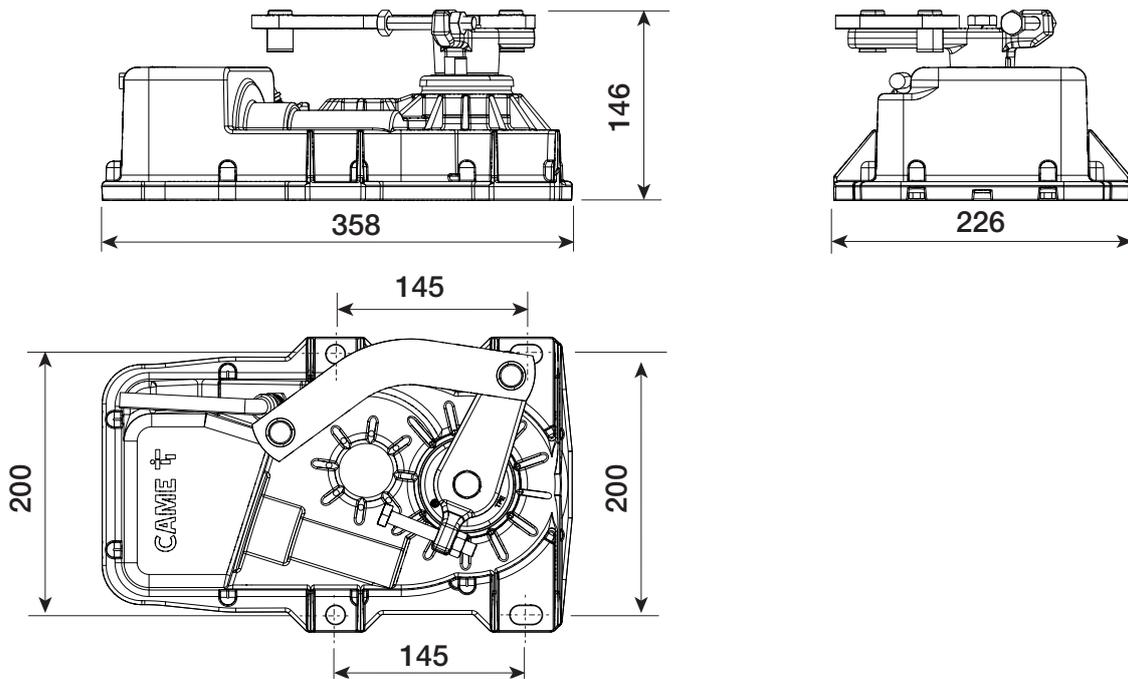
 Any installation and/or use other than that specified in this manual is forbidden.

**Description of parts**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li><b>1</b> Gearmotor</li> <li><b>2</b> Movement transmission lever</li> <li><b>3</b> Gearmotor arm</li> <li><b>4</b> Screw for adjusting the closing limit-switch point</li> <li><b>5</b> Screw for adjusting the opening limit-switch point</li> <li><b>6</b> Lever for hooking the release unit</li> </ul> | <ul style="list-style-type: none"> <li><b>7</b> Gate bracket</li> <li><b>8</b> Foundation box</li> <li><b>9</b> Cover</li> <li><b>10</b> Fixtures and fittings</li> <li><b>11</b> Gearmotor power supply cable *</li> </ul> |
|---|---|

(\*) Multipolar cable 3 x 1.5 mm<sup>2</sup> (length 2.5 m)





### Usage limitations

⚠ For leaves longer than 2.5 m, install an electric lock.

MODELS	FROG-X				
Gate-leaf length (m)	4	3,5	3	2,5	2
Leaf weight (kg)	400	500	600	700	800

### Technical data

MODELS	FROG-X
Motor power supply (V)	24 DC
Power (W)	125
Current draw (A)	15
Operating temperature (°C)	-20 ÷ +55
Torque (Nm)	300
Opening time at 90° (s)	10-18
Cycles/hour	CONTINUOUS OPERATION
Protection rating (IP)	67
Insulation class	III
Storage temperature (°C)*	-20 ÷ +70
Average life (cycles)**	250.000

(\*) Before installing the product, keep it at room temperature where it has previously been stored or transported at a very high or very low temperature.

(\*\*) The average product life specified should be understood purely as an indicative estimate. It applies to normal usage conditions and where the product has been installed and maintained in compliance with the instructions provided in the CAME technical manual. The average product life is also affected, including significantly, by other variables such as, but not limited to, climatic and environmental conditions. The average product life should not be confused with the product warranty.

### Cable types and minimum thicknesses

Cable length (m)	up to 30
Motor power supply 24 V DC	3G x 2.5 mm <sup>2</sup>

📖 When operating outdoors, use H07RN-F-type cables that are 60245 IEC 57 (IEC) compliant; when indoors, use H05VV-F-type cables that are 60227 IEC 53 (IEC) compliant.

📖 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.

### Preliminary operations

 The preliminary operations for installation concern the foundation box installation and the release devices fastening. Refer to the installation manuals for these products.

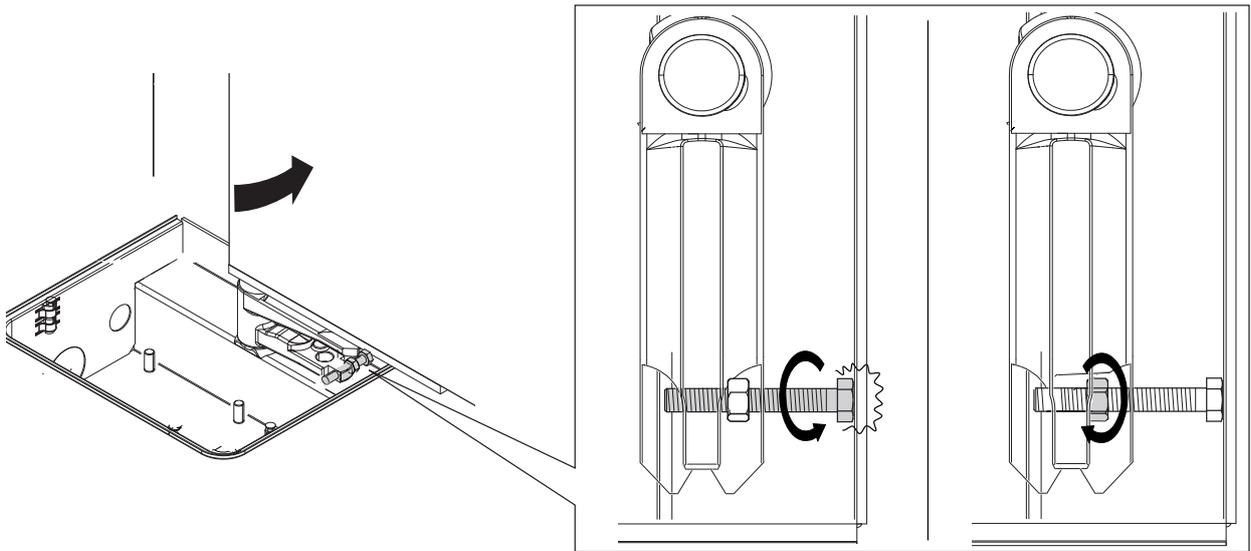
 The diagrams below refer to a standard installation with gearmotor on the right of a gate that opens inwards.

### Setting the opening travel end point

Open the leaf to the desired point.

 The leaf maximum opening is 110°.

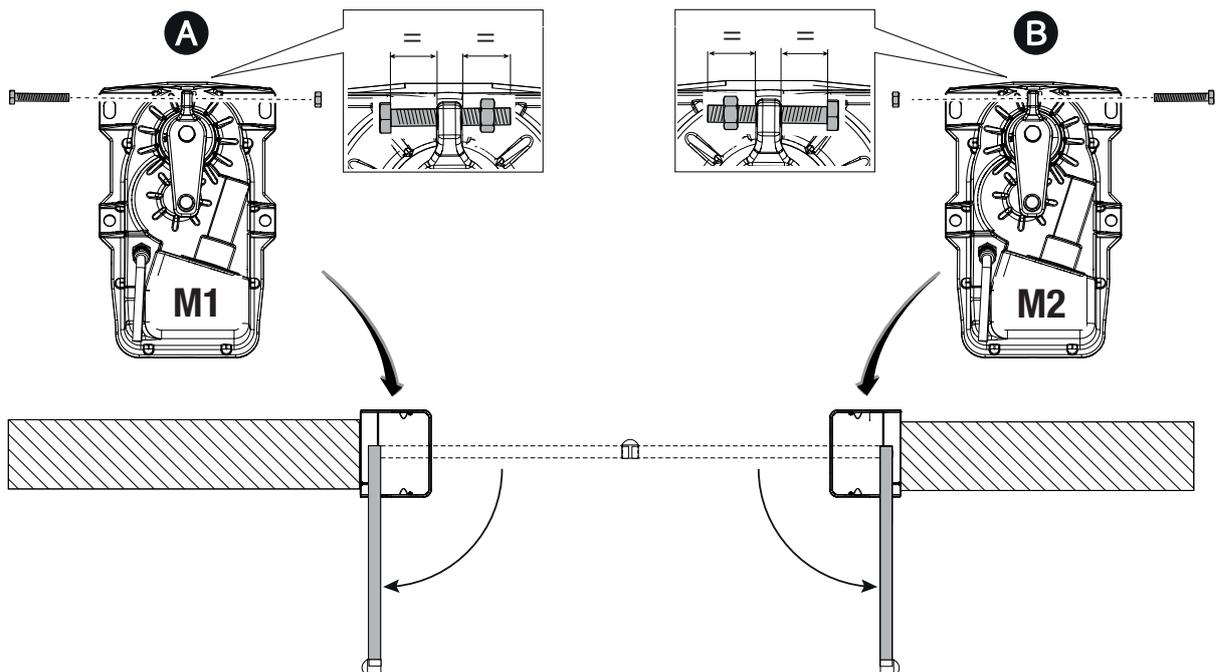
Unscrew the opening limit-switch point adjustment screw until it touches the foundation box.  
Tighten the nut to lock the screw into position.



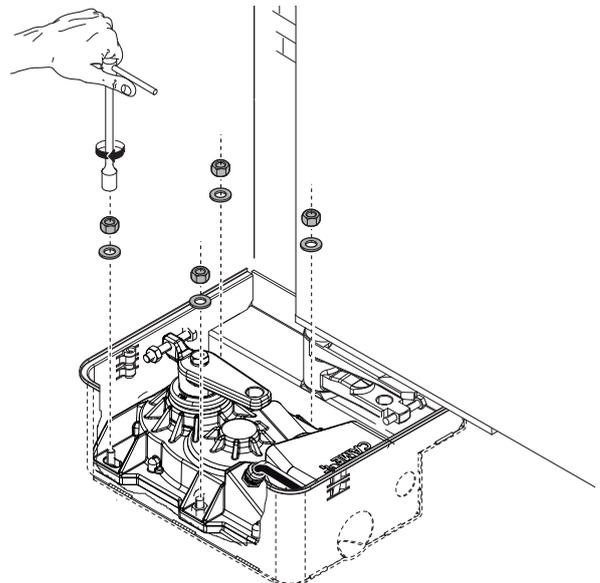
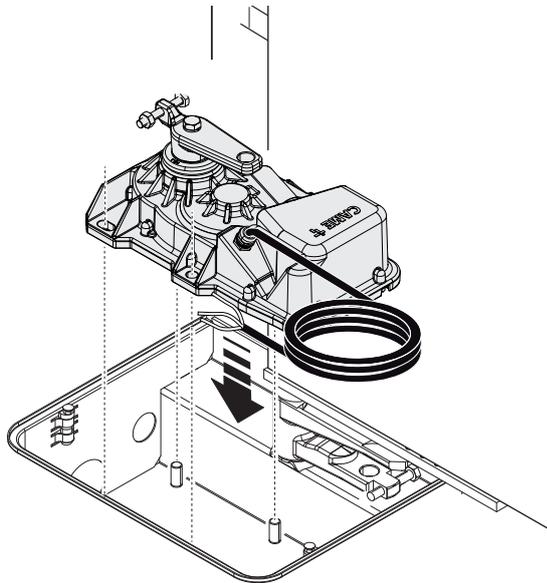
### Preparing and securing the gearmotor

Insert the closing limit switch screws and nuts into the gearmotor arms, as shown in the figure.

- A** Gearmotor installed on the left (M1)
- B** Gearmotor installed on the right (M2)



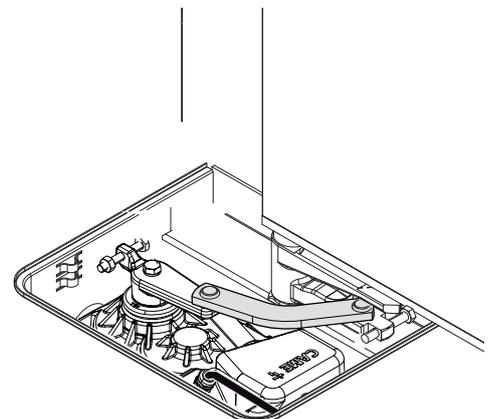
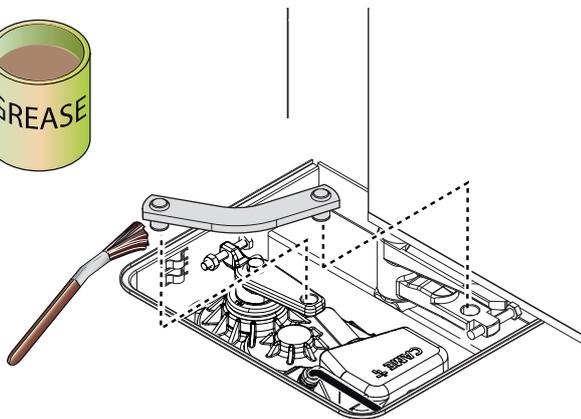
Position the gearmotor over the threaded pins of the casing and fasten it.



Lubricate the transmission lever.

Fit the transmission lever as shown in the drawings.

 The leaf must be positioned at 90° from the closing end-of-travel point.



## Electrical connections

Connect all control, safety and signalling devices to the control panel; please see the installation manual for the control panel.  
Connect the gearmotors to the control panel as shown in the figure.

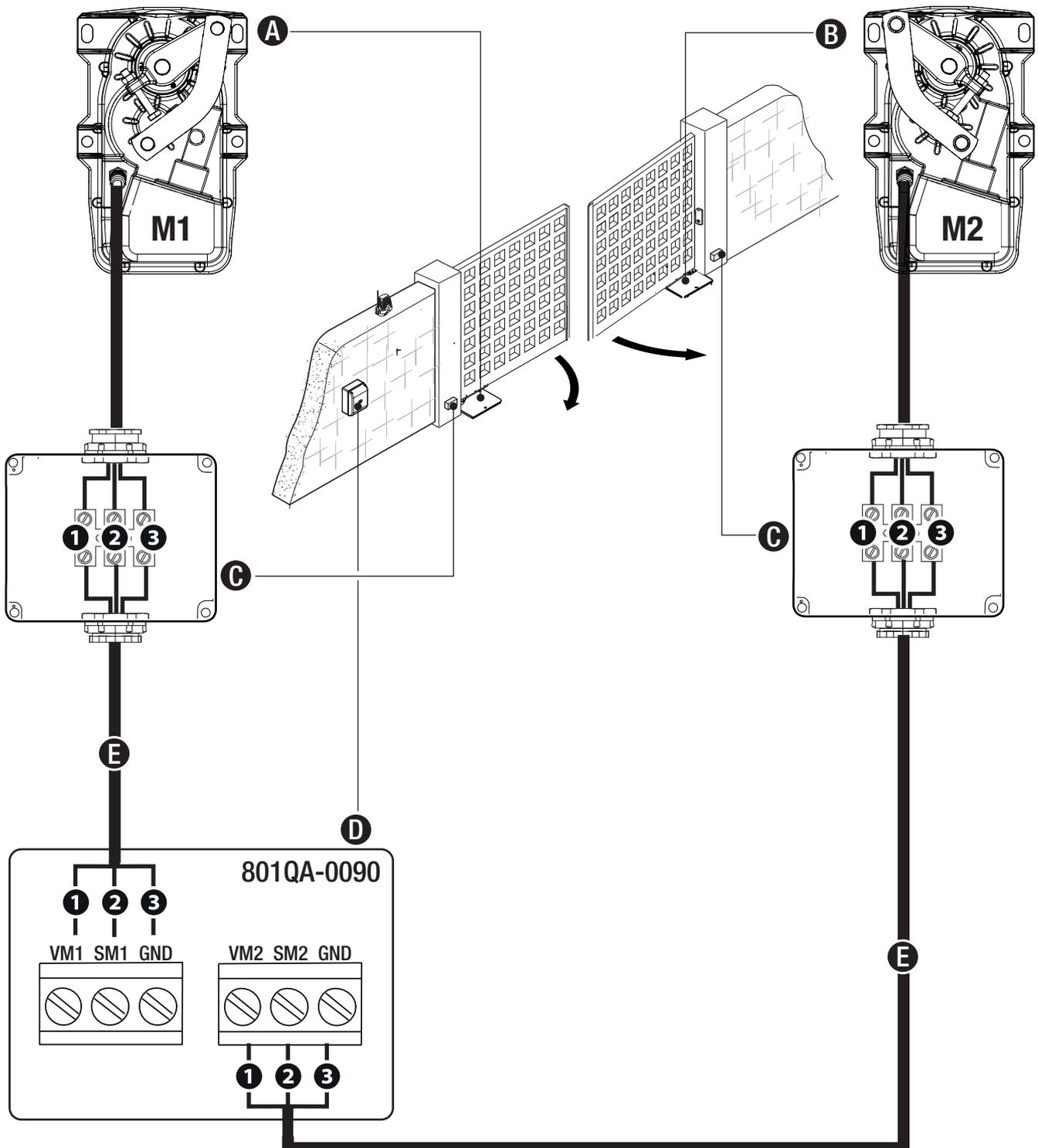
**⚠** Before working on the control panel, disconnect the mains power supply and remove the batteries, if any.

**📖** Provide IP67 junction boxes with terminal blocks for connections.

- A** Gearmotor delayed while opening (M1)
- B** Gearmotor delayed while closing (M2)
- C** Junction box
- D** Control panel 801QA-0090
- E** H07RN-F 3x2.5 mm<sup>2</sup> cable

- 1** Red cable
- 2** Grey cable
- 3** Black cable

**📖** Where there is only one gearmotor in the system, make the electrical connections on the gearmotor (M2).

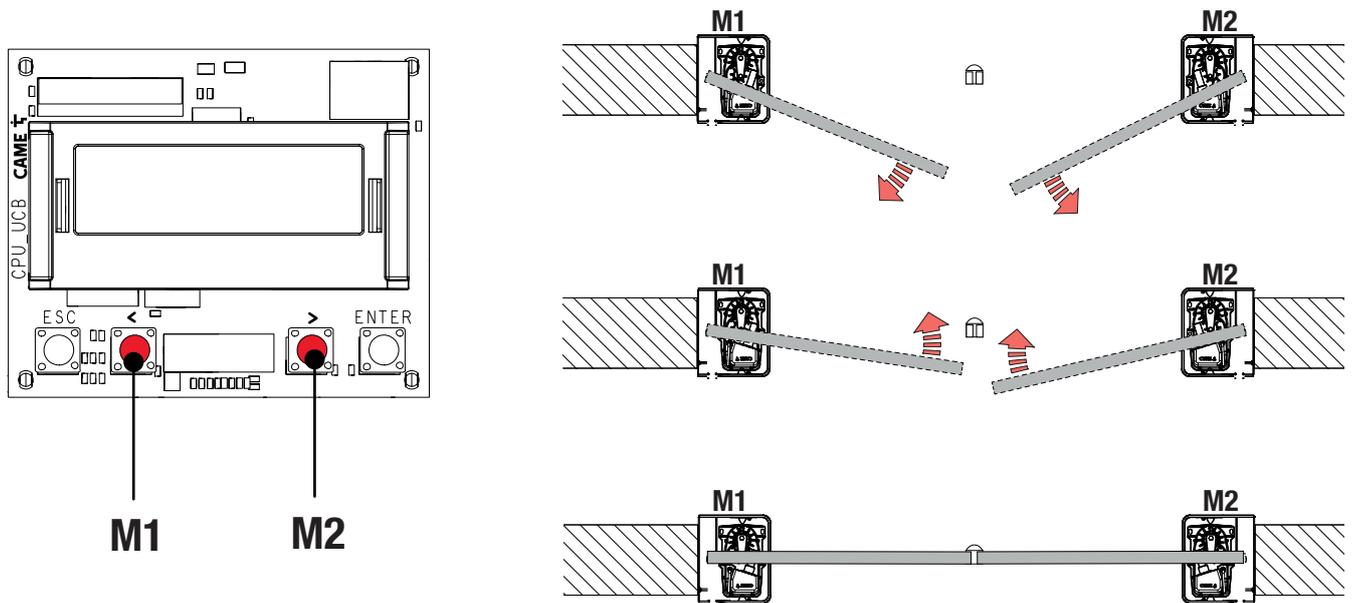


## Running the wizard and setting the closing travel end point

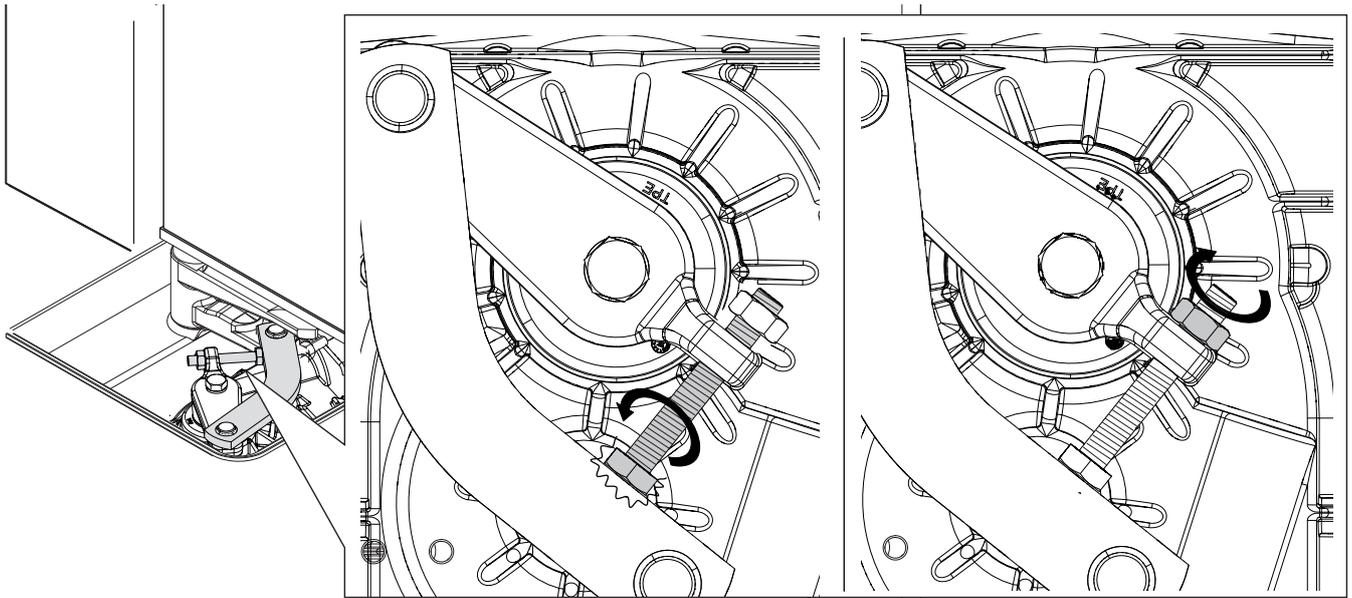
Run the wizard on the control panel, following the instructions on the display through to the motor test function.

For the motor test function, move the leaves to the closing end-of-travel position, using the < button to move the M1 gearmotor leaf and the > button to move the M2 gearmotor leaf. Press and hold the button to open the leaf; release the button to stop the leaf. Press the button again and hold to close the leaf.

 Make sure the gearmotor does not push the leaf excessively against the end-of-travel point, so as not to compromise operation of the release device. If unsure, check the release device works correctly.



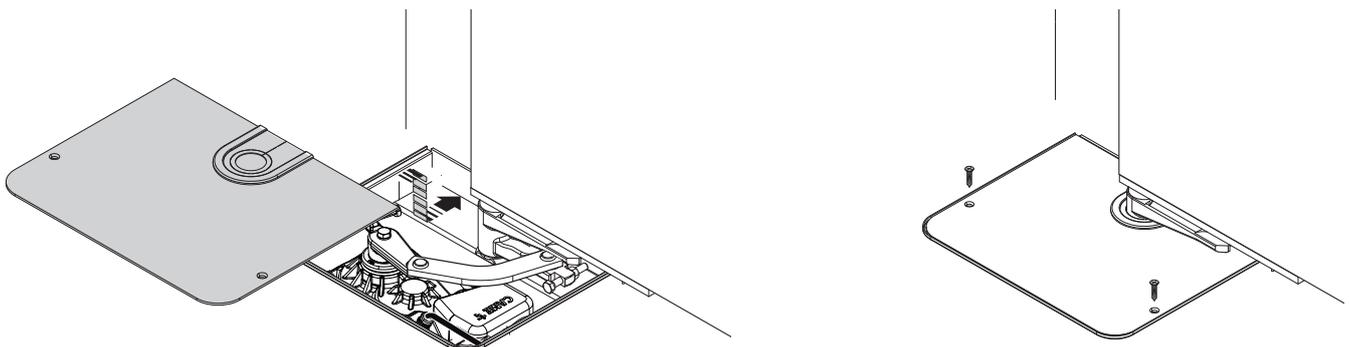
With the leaf shut, loosen the closing limit switch screw until it touches the transmission lever. Tighten the nut to lock the screw into position.



After adjusting the closing travel end point, follow the wizard to calibrate travel.

## Final operations

Fasten the cover.

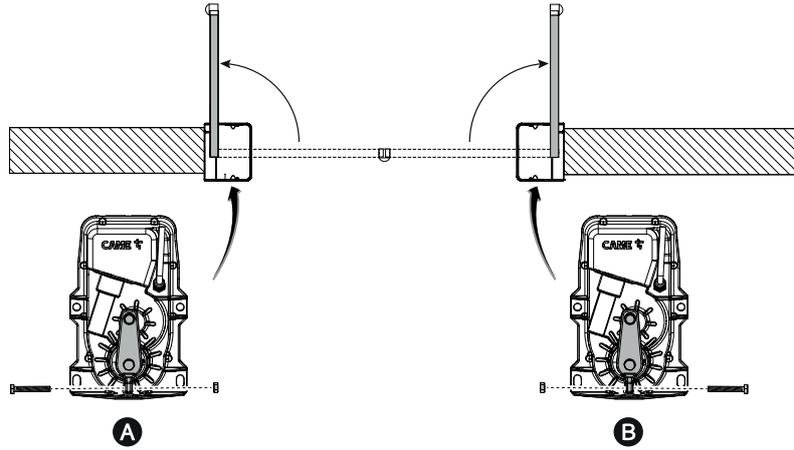


## OUTWARDS OPENING

 The operations other than the standard installation are described below.

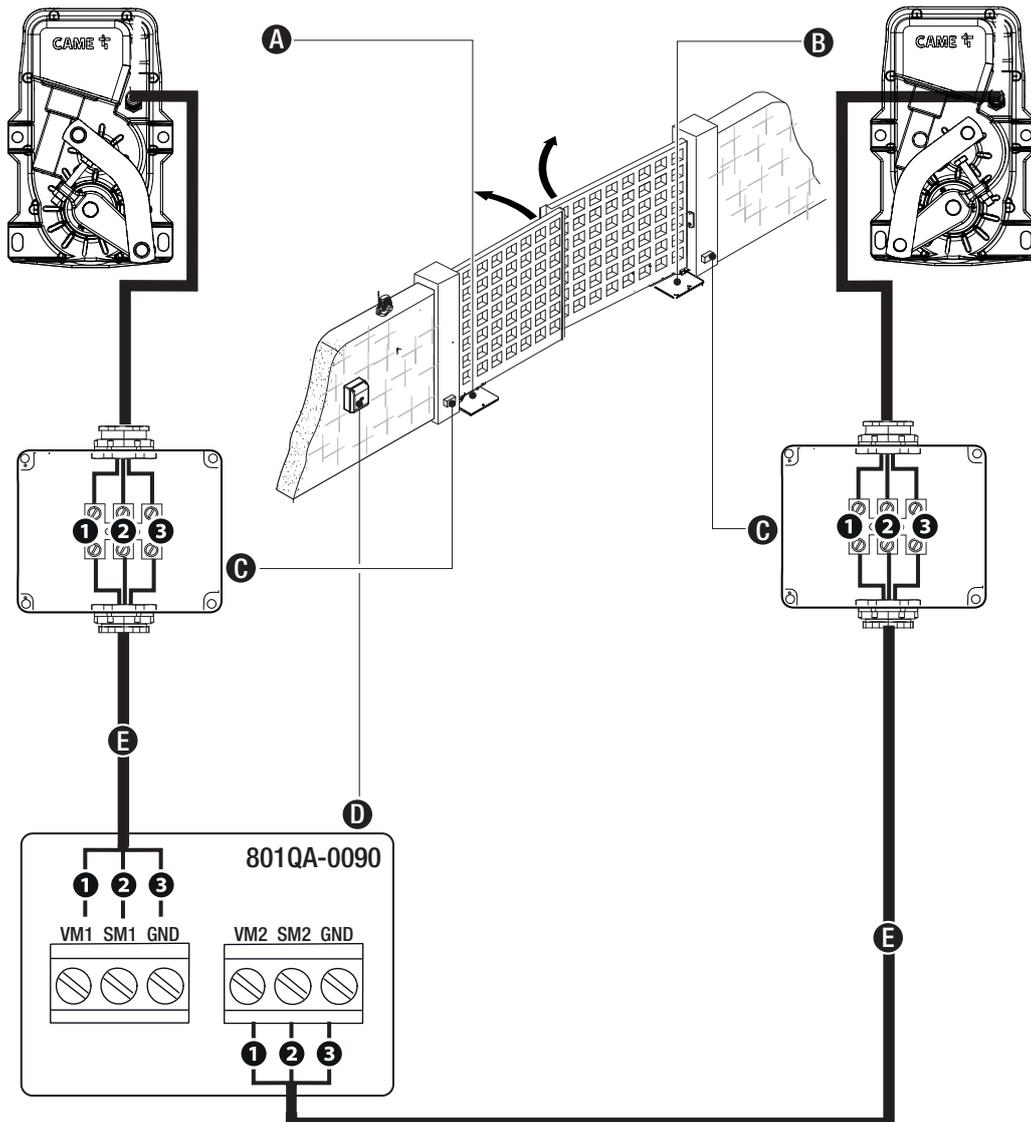
Insert the closing limit-switch point adjustment screw into the gearmotor arm.

- A** Gearmotor installed on the left
- B** Gearmotor installed on the right



- A** Gearmotor delayed while opening
- B** Gearmotor delayed while closing
- C** Junction box
- D** Control panel 801QA-0090
- E** H07RN-F 3x2.5 mm<sup>2</sup> cable

- 1** Red cable
- 2** Grey cable
- 3** Black cable



MCBF	
Models	801MI-0020
4 m - 400 kg	250.000
Full leaf	-15%
Installation in windy area	-15%
Full leaf installed in windy area	-30%

 The percentages indicate how much the number of cycles should be reduced in relation to the type and number of accessories installed.

 Before carrying out any cleaning or maintenance, or replacing any parts, disconnect the device from the power supply.

 This document informs the installer of the checks that must be carried out during maintenance.

 If the system is not used for long periods of time, e.g. for installations at sites with seasonal closures, disconnect the power supply. When the power supply is reconnected, check the system is working correctly.

 For information on correct installation and adjustments, please see the product installation manual.

 For information on choosing products and accessories, please see our product catalogue.

Every 25,000 cycles – or at least every 6 months of use – the following maintenance must be performed.

Perform a general and complete check of the tightness of the nuts and bolts.

Grease all of the moving mechanical parts.

Check the warning and safety devices are working properly.

Check for any wear on the moving mechanical parts and check that they are working properly.

Check the release mechanism is working efficiently by performing a manoeuvre with the leaf free. The gate leaf must not be obstructed.

Check the cables are intact and connected correctly.



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