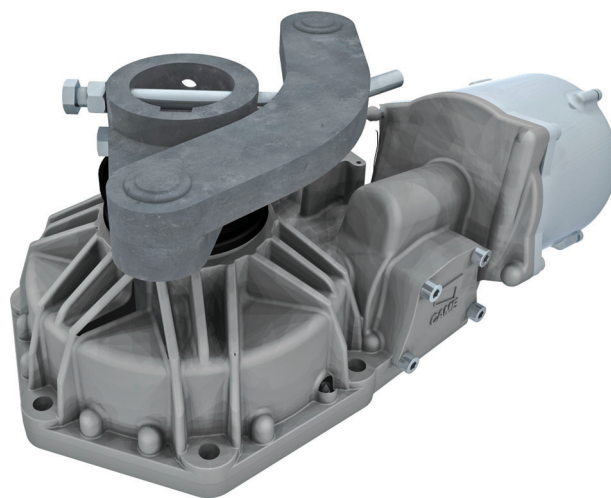


# Swing-gate operator FROG PLUS

FA01648-EN



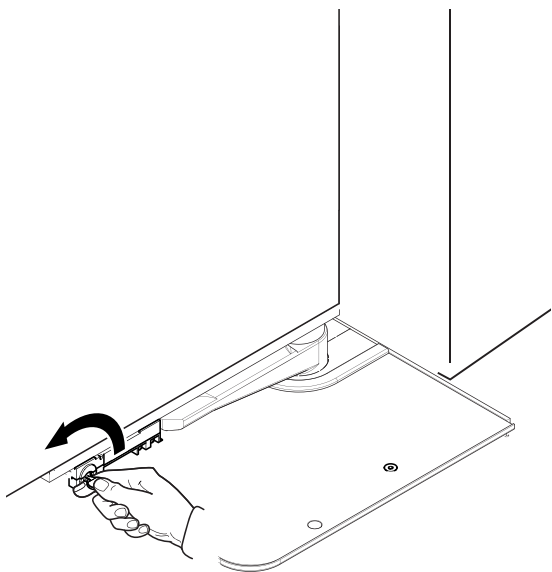
**FROG-PM4**

**FROG-PM6**

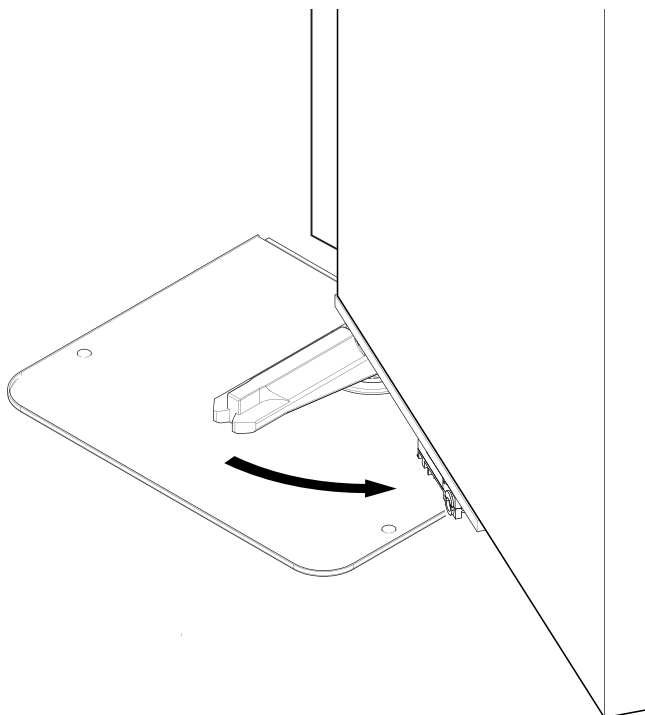
**INSTALLATION MANUAL**



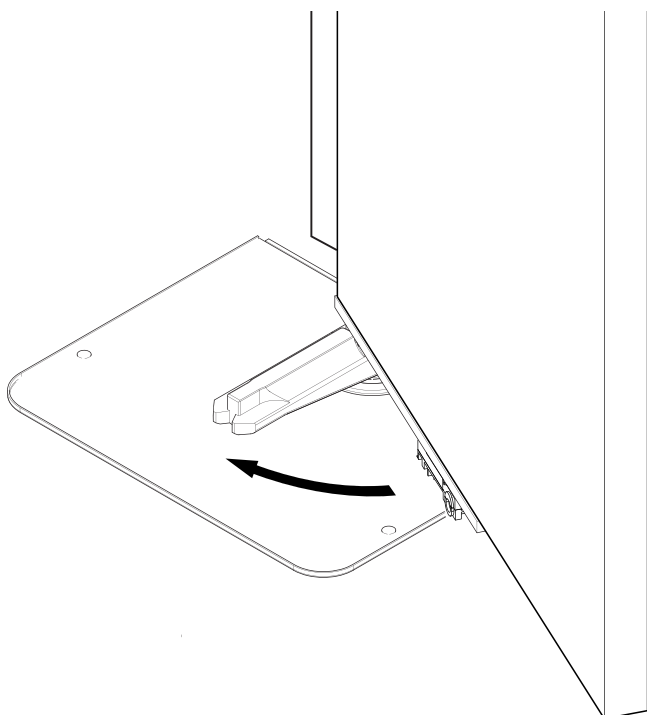
1



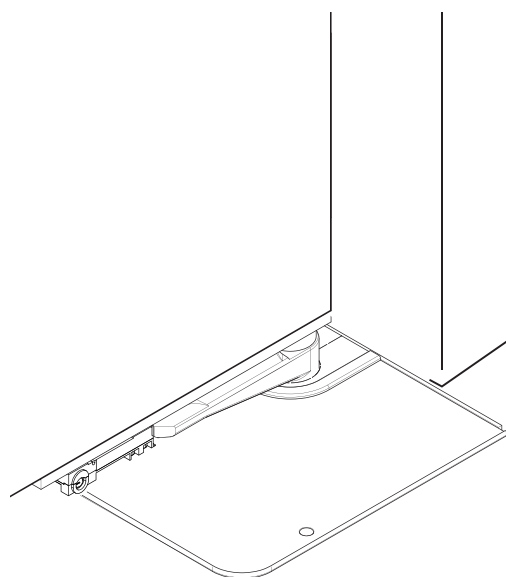
2



1



2



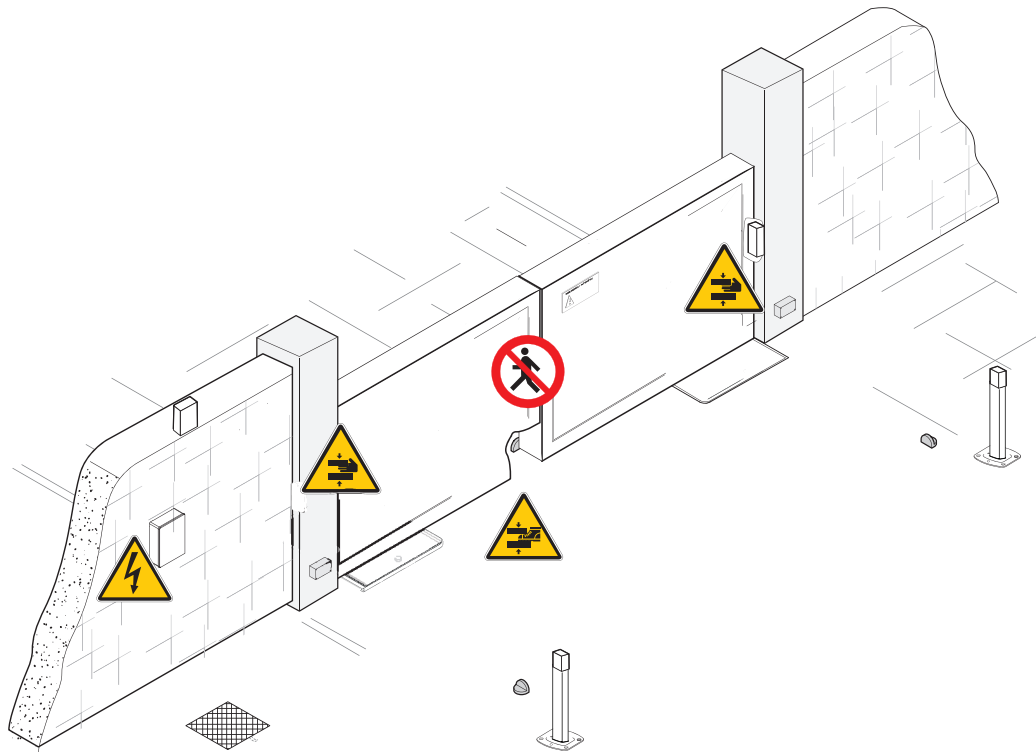
**⚠ Important safety instructions.****⚠ Please follow all of these instructions. Improper installation may cause serious bodily harm.****⚠ Before continuing, please also read the general precautions for users.**


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.
- 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.

- 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.


## 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**

**FROG-PM4**


Underground irreversible 230 V gearmotor with encoder and adjustable leaf-stop during closing, for swing gates with leaves up to 5.5 m in length and 700 kg in weight.

**FROG-PM6**

Underground irreversible 230 V gearmotor with encoder and adjustable leaf-stop during closing, for swing gates with leaves up to 7 m in length and 550 kg in weight.

**Intended use**

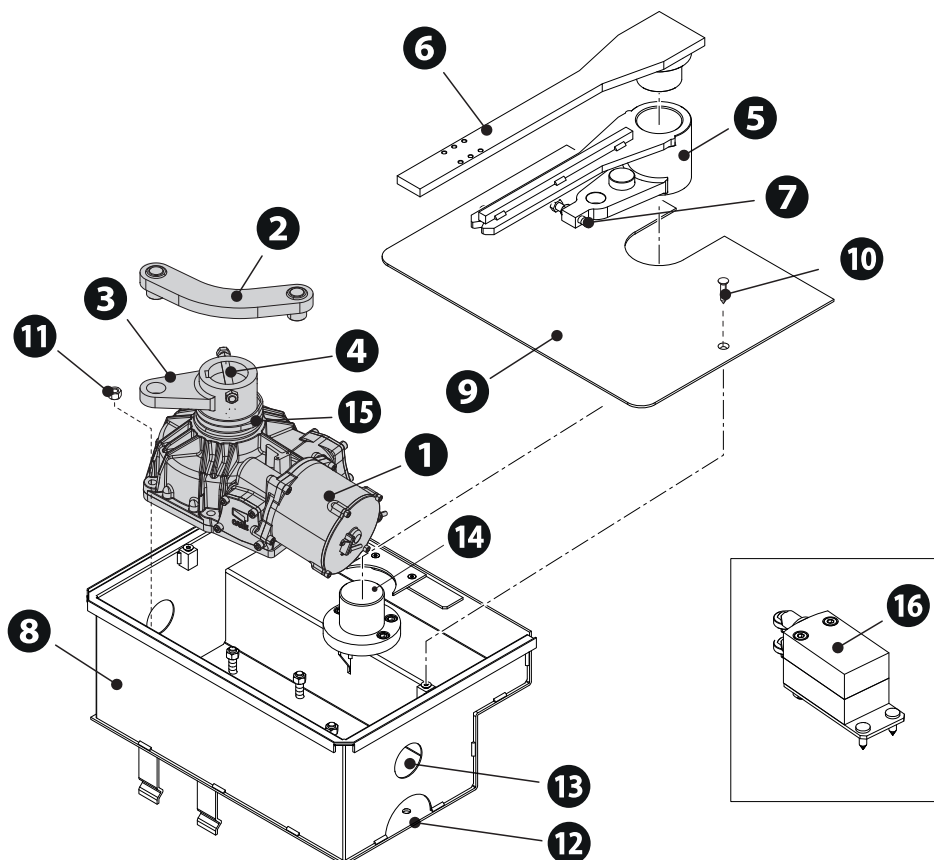
Concealed solution for use in residential and apartment block settings

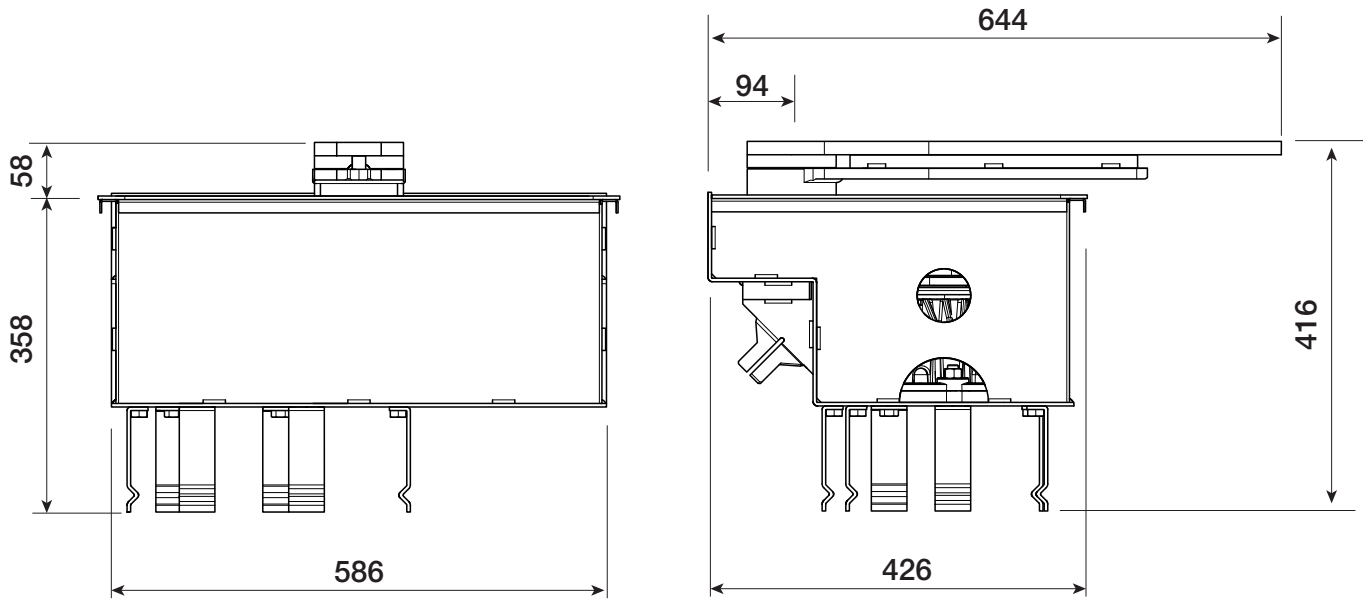
 Any installation and/or use other than that specified in this manual is forbidden.

**Description of parts**

- |   |                                   |
|---|-----------------------------------|
| <b>1</b> Gearmotor  | <b>9</b> Cover                    |
| <b>2</b> Movement transmission lever                        | <b>10</b> Countersunk screw M8x20 |
| <b>3</b> Gearmotor arm                                      | <b>11</b> Nut UNI5588 M12         |
| <b>4</b> Screw for adjusting the closing limit-switch point | <b>12</b> Drain hole              |
| <b>5</b> Lever for hooking the release unit                 | <b>13</b> Wiring hole             |
| <b>6</b> Gate bracket                                       | <b>14</b> Foundation box pin      |
| <b>7</b> Screw for adjusting the opening limit-switch point | <b>15</b> Cams                    |
| <b>8</b> Foundation box                                     | <b>16</b> Micro limit switches *  |

(\*) Optional accessory.





### Usage limitations

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

MODELS	FROG-PM4					FROG-PM6			
Gate-leaf length (m)	5.5	4.5	3.5	2.5	7	6	5	4	
Gate-leaf weight (Kg)	700	900	1100	1400	550	650	800	1000	

### Technical data

MODELS	FROG-PM4	FROG-PM6
Power supply (V - 50/60 Hz)	230 AC	230 AC
Motor power supply (V)	230 AC	230 AC
Power (W)	500	500
Capacitor (µF)	16	16
Current draw (mA)	2,1	2,1
Operating temperature (°C)	-20 ÷ +55	-20 ÷ +55
Torque (Nm)	800	800
Opening time at 90° (s)	30	45
Cycles/hour	10	6
Motor thermal protection (°C)	150	150
Protection rating (IP)	67	67
Weight (kg)	38	38

### Cable types and minimum thicknesses

Cable length (m)	up to 20	from 20 to 30
Motor power supply 230 V AC	4G x 1.5 mm <sup>2</sup>	4G x 2.5 mm <sup>2</sup>


📖 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).


📖 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.

📖 To connect the encoder, use a FROR 300/500 V shielded cable (3 x 0.5 mm<sup>2</sup>).

## 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 the right-side gearmotor.

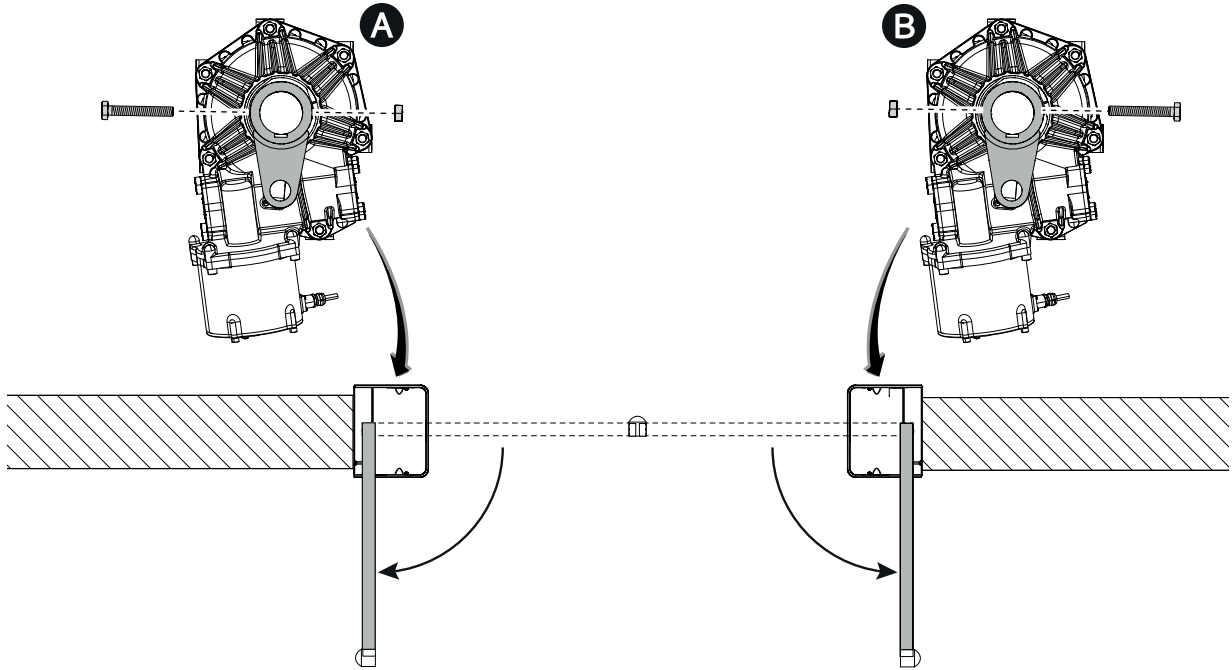
### Preliminary operations

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

### Setting up the gearmotor

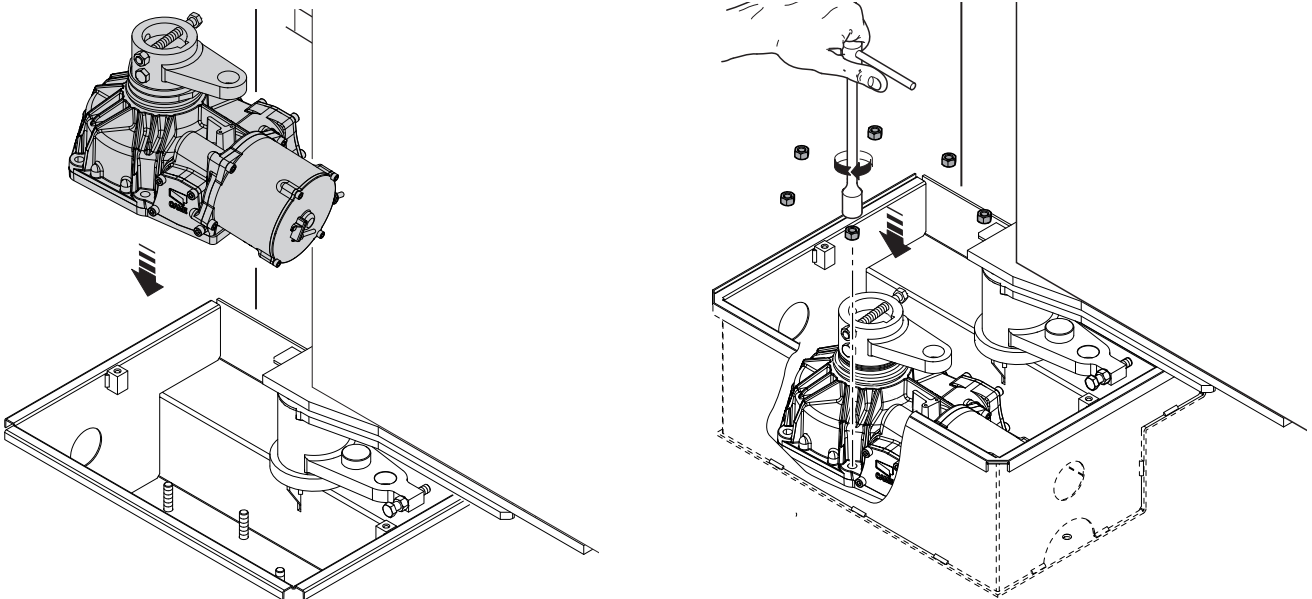
Insert the closing limit-switch point adjustment screw into the gearmotor arm.

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

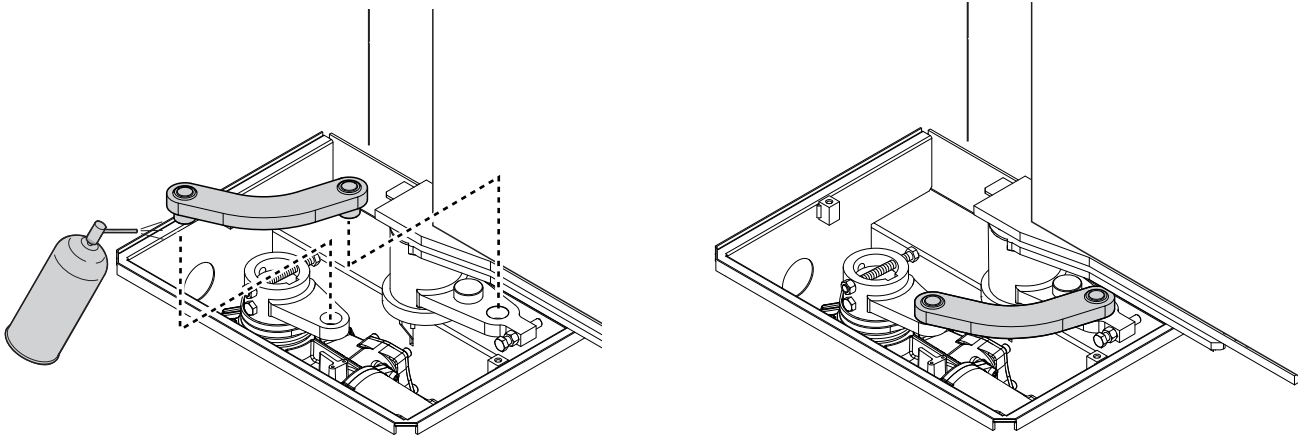


### Fastening the gearmotor

Manually open the leaf.  
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.



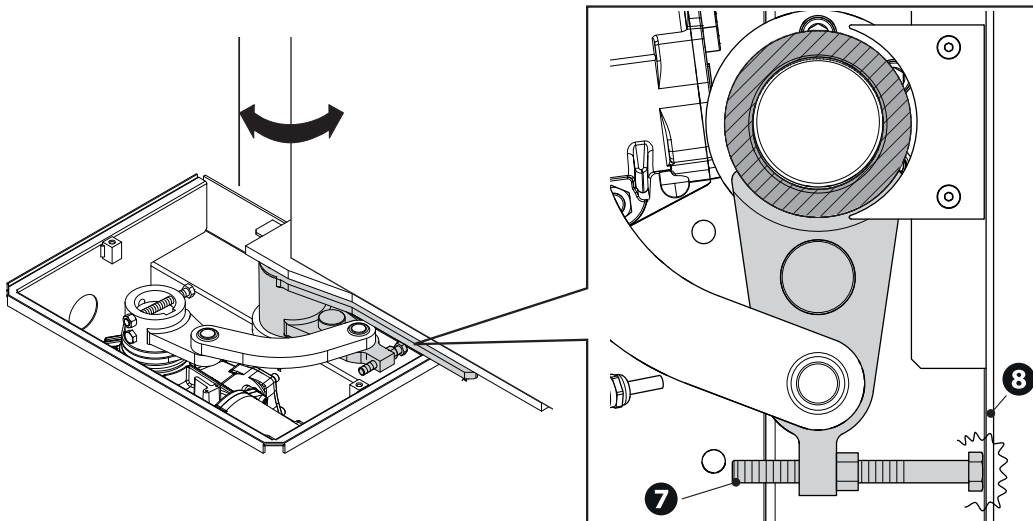
### Determining the travel end points with mechanical limit switches

Manually 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.

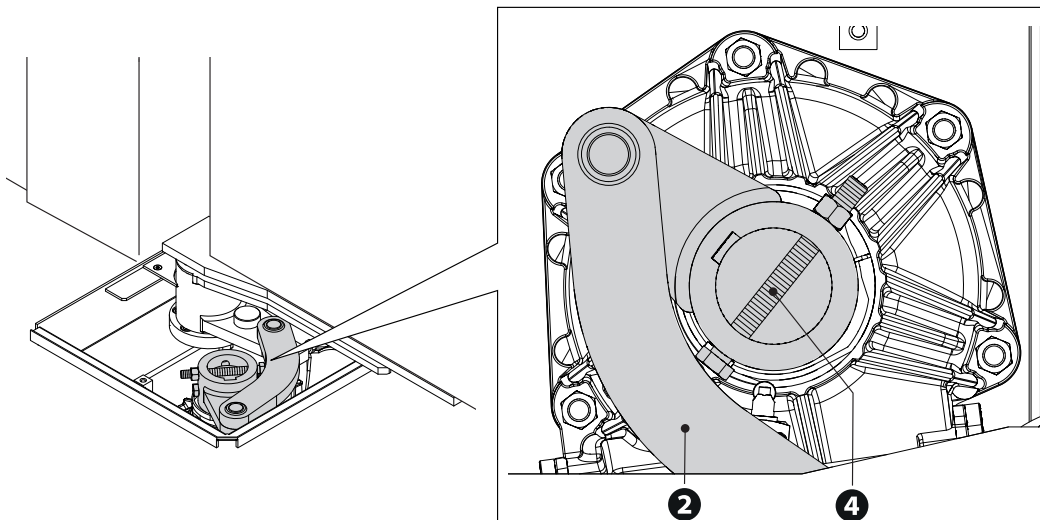
Tighten the nut to lock the screw into position.



Close the gate manually.


Loosen the adjusting screw of the closing limit-switch point until it touches the transmission lever.

Tighten the nut to lock the screw into position.





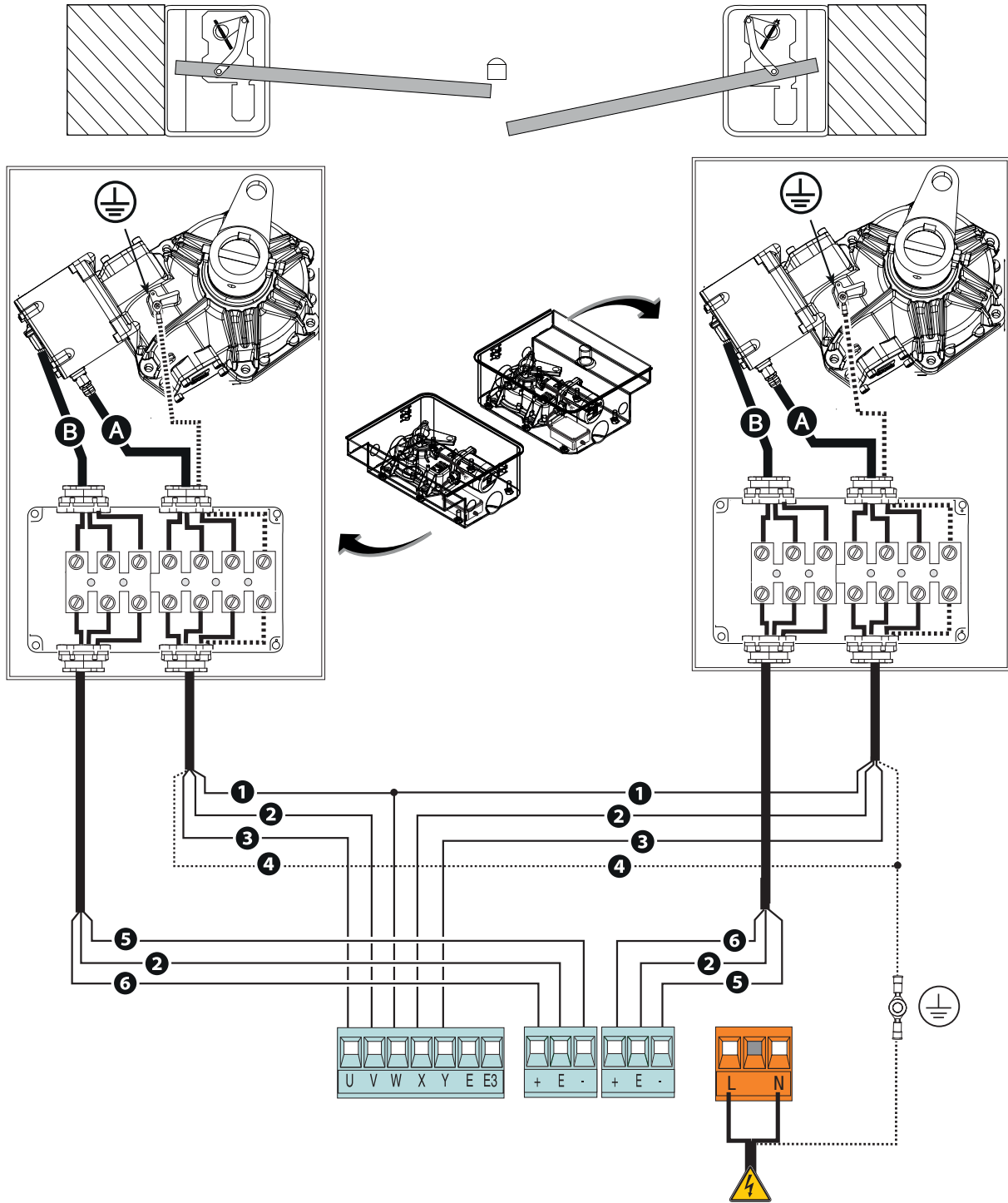
## ELECTRICAL CONNECTIONS


 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.

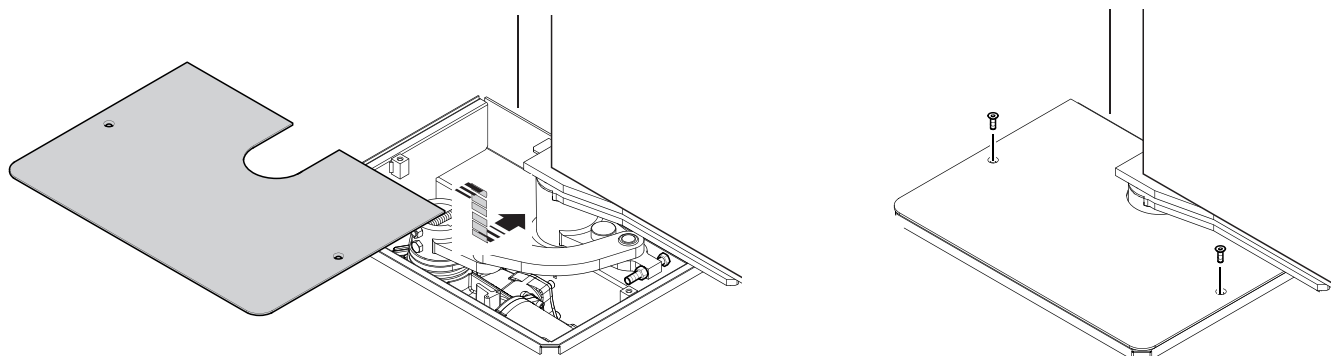
- ① Blue cable
- ② Brown cable
- ③ Black cable
- ④ Yellow/green cable
- ⑤ Green cable
- ⑥ White cable

- Ⓐ Power supply cable
- Ⓑ Encoder cable




 Check the correct direction of rotation of the gearmotor and, if necessary, invert the connection of the brown and black cables.

## FINAL OPERATIONS



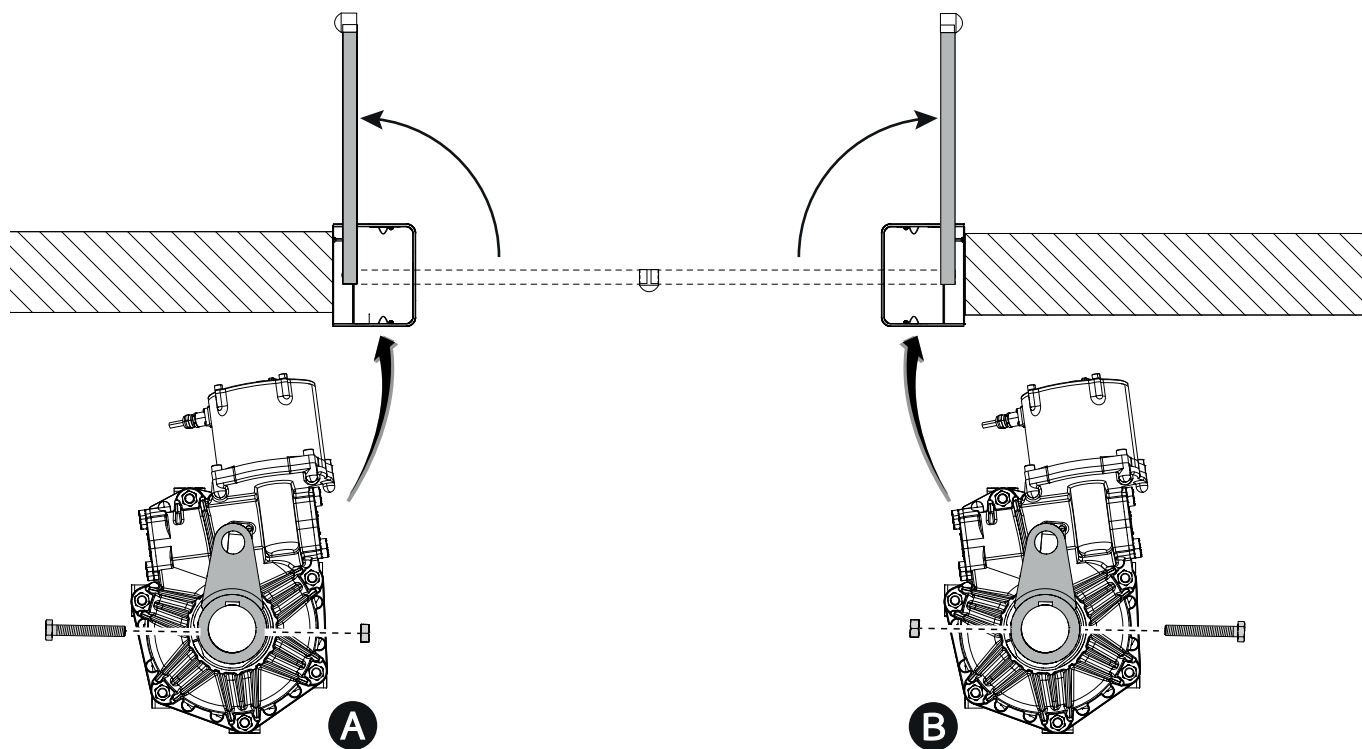
## OUTWARDS OPENING

 The only operation that is different from the standard installation is described below.

### Setting up the gearmotor

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

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







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