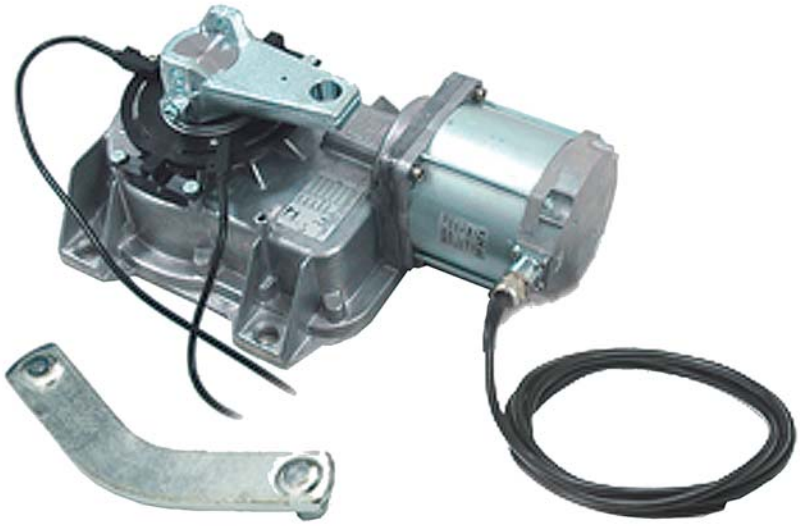
CAME

119AU35EN

GROUND-CONCEALED OPERATOR
FOR SWING GATES

Official Partner
EXPO
MILANO 2015
FEEDING THE PLANET
ENERGY FOR LIFE



Installation manual

FROG-A24 / FROG-A24E

English EN

WARNING!
important safety instructions for people:
READ CAREFULLY!

Premise

• Employ this product only for the use for which it was expressly made. Any other use is dangerous. Came S.p.A. Is not liable for any damage caused by improper, wrongful and unreasonable use • keep these warnings together with the installation and operation manuals that come with the operator.

Before installing

(Checking what's there: if your evaluation is negative, do not proceed before having complied with all safety requirements)

• Check that the automated parts are in good mechanical order, that the operator is level and aligned, and that it opens and closes properly. Make sure you have suitable mechanical stops • if the operator is to be installed at a height of over 2.5 M from the ground or other access level, make sure you have any necessary protections and/or warnings in place • if any pedestrian openings are fitted into the operator, there must also be a a system to block their opening while they are moving • make sure that the opening automated door or gate cannot entrap people against the fixed parts of the operator • do not install the operator upside down or onto elements that could yield and bend. If necessary, add suitable reinforcements to the anchoring points • do not install door or gate leaves on tilted surfaces • make sure any sprinkler systems cannot wet the operator from the ground up • make sure the temperature range shown on the product literature is suitable to the climate where it will be installed • follow all instructions as improper installation may result in serious bodily injury • it is important to follow these instructions for the safety of people. Keep these instructions.

Installing

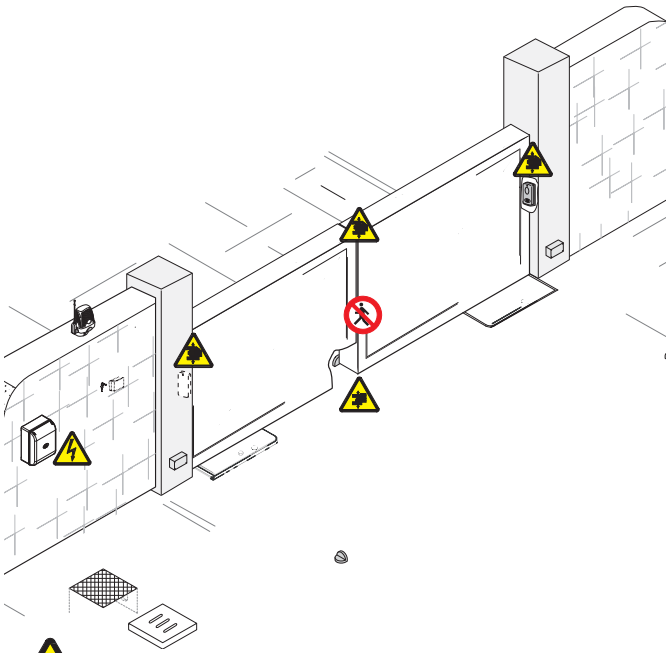
• Suitably section off and demarcate the entire installation site to prevent unauthorized persons from entering the area, especially minors and children • be careful when handling operators that weigh over 20 kg. If need be, use proper safety hoisting equipment • all opening commands (that is, buttons, key switches, magnetic readers, and so on) 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. Also, any direct commands (buttons, touch panels, and so on) must be installed at least 1.5 M from the ground and must not be reachable by unauthorized persons • all maintained action commands, must be fitted in places from which the moving gate leaves and transit and driving areas are visible • apply, if missing, a permanent sign showing the position of the release device • before delivering to the users, make sure the system is en 12453 standard compliant (regarding impact forces), and also make sure the system has been properly adjusted and that any safety, protection and manual release devices are working properly • apply warning signs (such as the gate's plate) where necessary and in a visible place

Special user-instructions and recommendations

• Keep gate operation areas clean and free of any obstructions. Make sure that the photocells are free of any overgrown vegetation and that the operator's area of operation is free of any obstructions • do not allow children to play with fixed commands, or to loiter in the gate's maneuvering area. Keep any remote control transmitters or any other command device away from children, to prevent the operator from being accidentally activated. • The apparatus may be used by children of eight years and above and by physically, mentally and sensorially challenged people, or even ones without any experience, provided this happens under close supervision or once they have been properly instructed to use the apparatus safely and about the potential hazards involved. Children must not play with the apparatus. Cleaning and maintenance by users must not be done by children, unless properly supervised • frequently check the system for any malfunctions or signs of wear and tear or damage to the moving structures, to the component parts, all anchoring points, including cables and any accessible connections. Keep any hinges, moving joints and slide rails properly lubricated • perform functional checks on the photocells and sensitive safety edges, every six months. To check whether the photocells are working, wave an object in front of them while the gate is closing; if the operator inverts its direction of travel or suddenly stops, the photocells are working properly. This is the only maintenance operation to do with the power on. Constantly clean the photocells' glass covers using a slightly water-moistened cloth; do not use any solvents or other chemical products that may ruin the devices • if repairs or modifications are required to the system, release the operator and do not use it until safety conditions have been restored • cut off the power supply before releasing the operator for manual openings and before any other operation, to prevent potentially hazardous situations. Read the instructions • if the power supply cable is damaged, it must be replaced by the manufacturer or authorized technical assistance service, or in any case, by similarly qualified persons, to prevent any risk • it is forbidden for users to perform any operations that are not expressly required of them and which are not listed in the manuals. For any repairs, modifications and adjustments and for extraordinary maintenance, call technical assistance • log the job and checks into the periodic maintenance log.

Additional special recommendations for everyone

• Keep away from hinges and mechanical moving parts • do not enter the operator's area of operation when it is moving • do not counter the operator's movement as this could result in dangerous situations • always pay special attention to any dangerous points, which have to be labeled with specific pictograms and/or black and yellow stripes • while using a selector switch or a command in maintained actions, keep checking that there are no persons within the operating range of any moving parts, until the command is released • the gate may move at any time and without warning • always cut off the power supply before performing any maintenance or cleaning.



Danger of foot crushing

Danger of hand crushing

Danger! High voltage.

No transiting while the barrier is moving

LEGEND

🕮 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

The product consists of: a foundation box, a gearmotor and movement-transmitting arms.

Intended use

Designed to power swing gates for single homes and apartment blocks.
🕮 Any installation and/or use other than that specified in this manual is forbidden.

Limits to use

Model	FROG-A24 / FROG-A24E		
Gate-leaf length (m)	3.5	2.5	2.0
Gate-leaf weight (Kg)	400	600	800

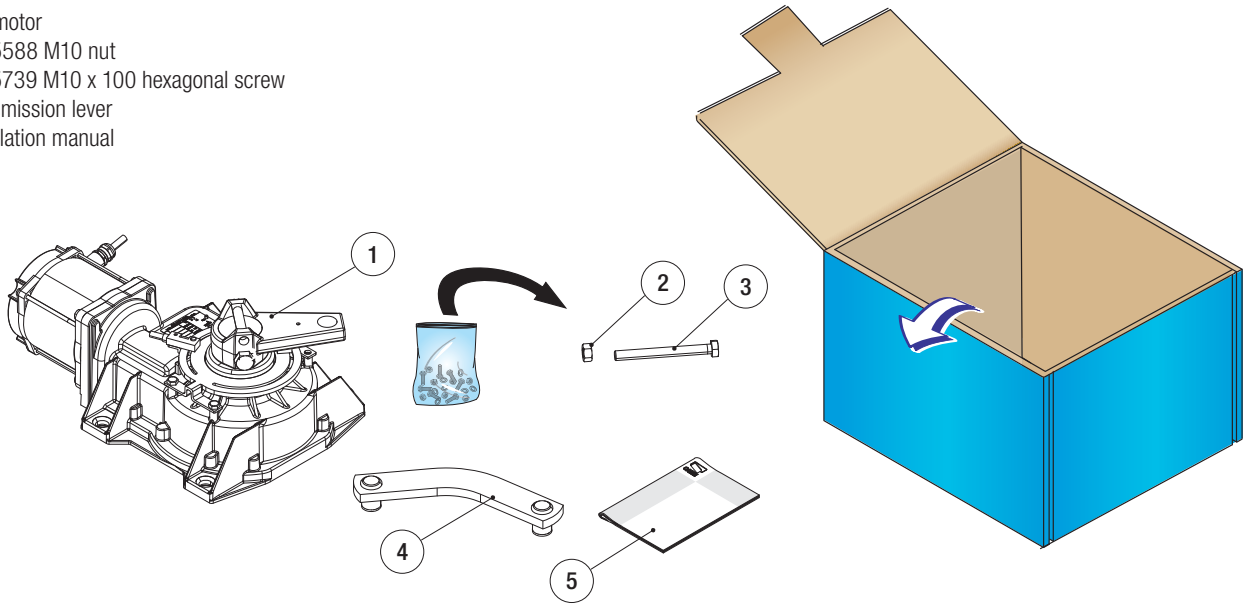
You should always fit an electric lock to swing gates. This ensures reliable closure and protects gearmotor moving parts.
But, while it is recommended with reversible operators, with irreversible ones, exceeding 2.5 m, you must fit an electric lock.

Technical data

Type	FROG-A24 / FROG-A24E
Protection rating (IP)	67
Power supply (V - 50/60 Hz)	230 AC
Power supply to motor (V - 50/60 Hz)	24 DC
Current draw (A)	15 max.
Power (W)	180
Thrust (N)	320 max.
Opening time at 90° (s)	ADJUSTABLE
Duty cycle (%)	INTENSIVE SERVICE
Operating temperature (°C)	-20 ÷ +55
Motor's thermal monitoring (°C)	-
Reduction ratio	1/1152
Insulation class	I
Weight (Kg)	11.5

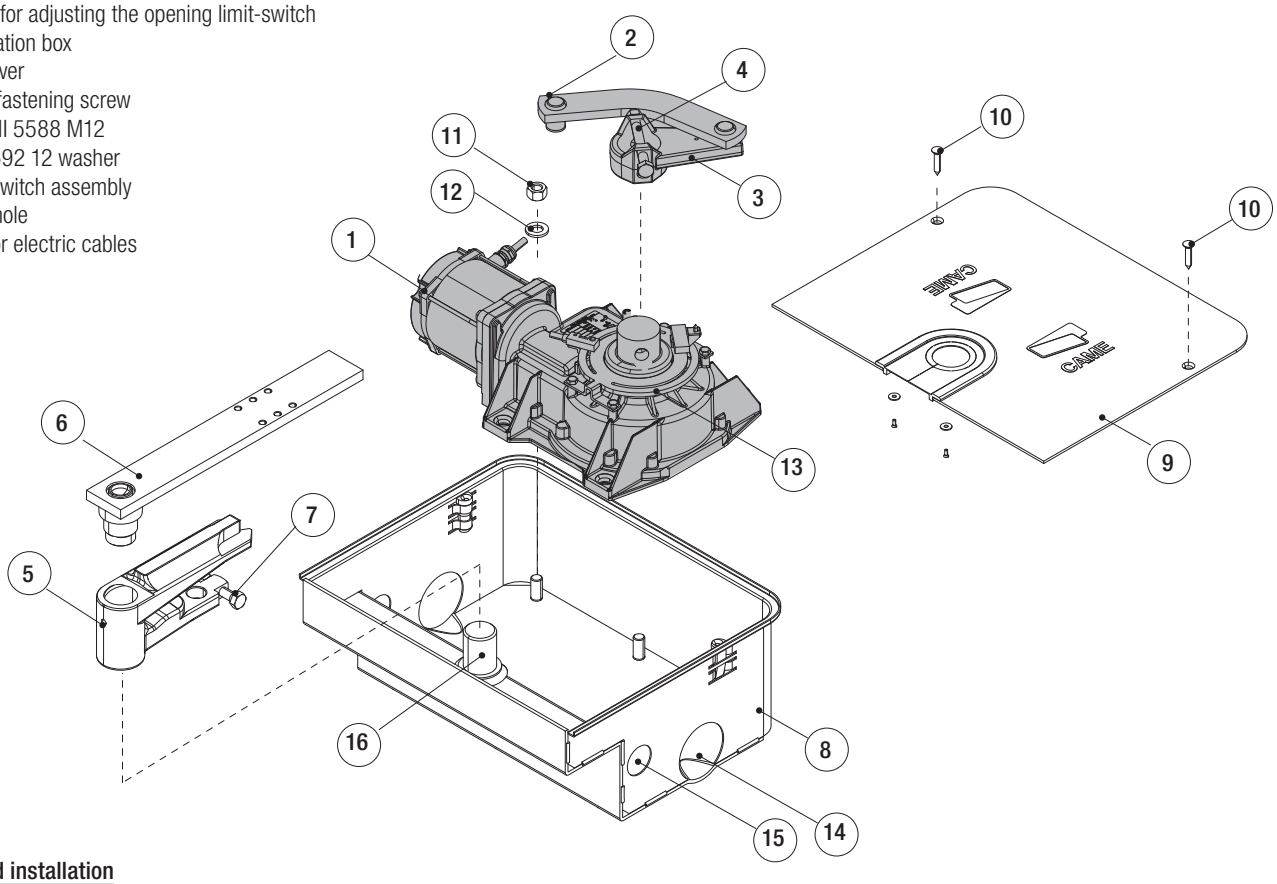
Packing list

1. 1 gearmotor
2. 1 UNI 5588 M10 nut
3. 1 UNI 5739 M10 x 100 hexagonal screw
4. 1 Transmission lever
5. 1 Installation manual



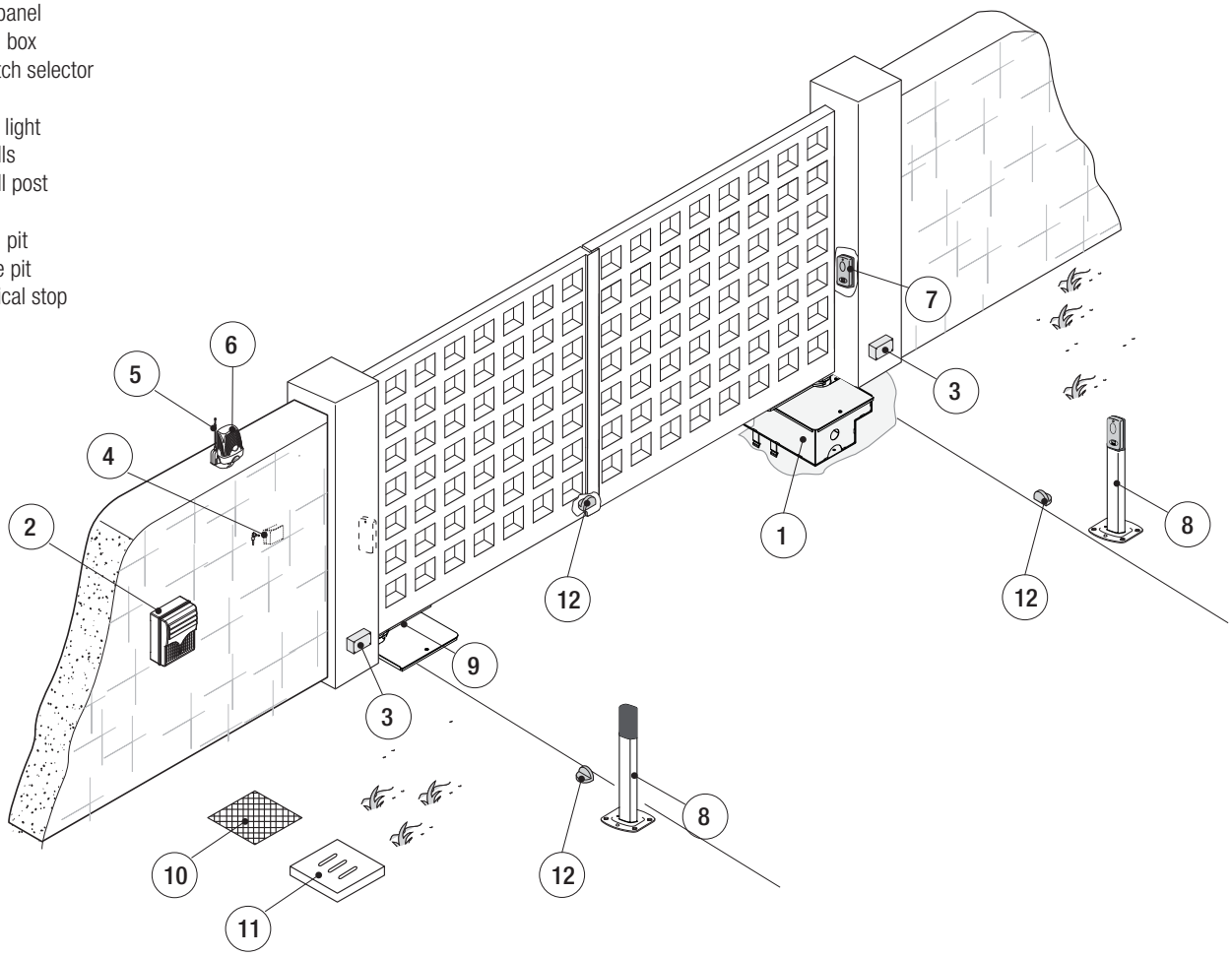
Description of parts

1. Gearmotor
2. Transmission lever
3. Gearmotor arm
4. Screw for adjusting the closing limit-switch
5. Release latching lever
6. Brace for fastening to gate
7. Screw for adjusting the opening limit-switch
8. Foundation box
9. Box cover
10. Cover fastening screw
11. Nut UNI 5588 M12
12. UNI 6592 12 washer
13. Limit-switch assembly
14. Drain hole
15. Hole for electric cables
16. Pinion

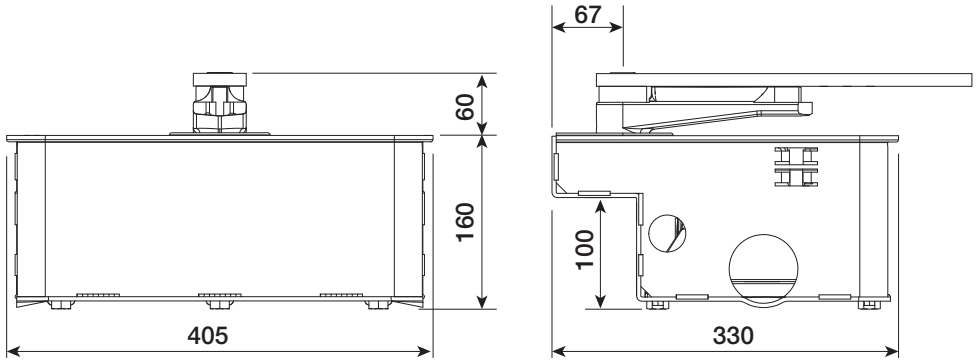


Standard installation

1. Gearmotor with foundation box
2. Control panel
3. Junction box
4. Key-switch selector
5. Antenna
6. Flashing light
7. Photocells
8. Photocell post
9. Release
10. Junction pit
11. Drainage pit
12. Mechanical stop



Dimensions



GENERAL INSTRUCTIONS FOR INSTALLING

⚠ Only skilled, qualified staff must install this product.

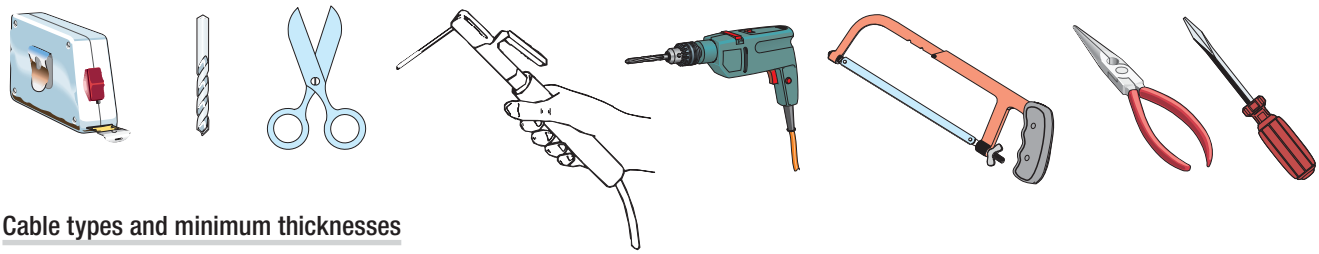
Preliminary checks

⚠ Before beginning the installation, do the following:

- Set up a dual pole cut off switch with minimum contact openings of 3 mm, and section-off the power supply;
- Set up suitable tubes and conduits for the electric cables to pass through, making sure they are protected from any mechanical damage;
- Set up a drainage tube to prevent water from building up and rusting any parts;
- ⏚ Make sure that any connections inside the container (ones that ensure continuity to the protection circuit) are fitted with additional insulation with respect to those of other electrical parts inside;
- Make sure that, the gate structure is sturdy enough, the hinges work efficiently and that there is no friction between the fixed and moving parts;
- Make sure you have fitted opening and closing mechanical gate stops;

Tools and materials

Make sure you have all the tools and materials you will need for installing in total safety and in compliance with applicable regulations. The figure shows some of the equipment installers will need.



Cable types and minimum thicknesses

Connection	Cable type	Cable length 1 < 15 m	Cable length 15 < 30 m
Control panel power-supply 230 V	H05RN-F	4G x 1.5 mm^2	3G x 2.5 mm^2
Motor power supply 24 V	FROR CEI 20-22 CEI EN 50267-2-1	2 x 1.5 mm^2	2 x 2.5 mm^2
Flashing light		2 x 0.5 mm^2	2 x 1.5 mm^2
Photocell transmitters		2 x 0.5 mm^2	2 x 0.5 mm^2
Photocell receivers		4 x 0.5 mm^2	4 x 0.5 mm^2
Command and safety device		2 x 0.5 mm^2	2 x 0.5 mm^2
Limit switch		4 x 0.5 mm^2	4 x 0.5 mm^2
Encoder	TWISTED	max. 30 m	
Antenna	the RG58 antenna	max. 10 m	

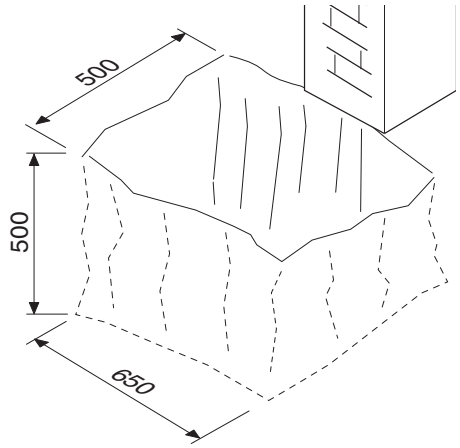
If cable lengths differ from those specified in the table, establish the cable sections depending on the actual power draw of the connected devices and according to the provisions of regulation CEI EN 60204-1.
For multiple, sequential loads along the same line, the dimensions on the table need to be 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

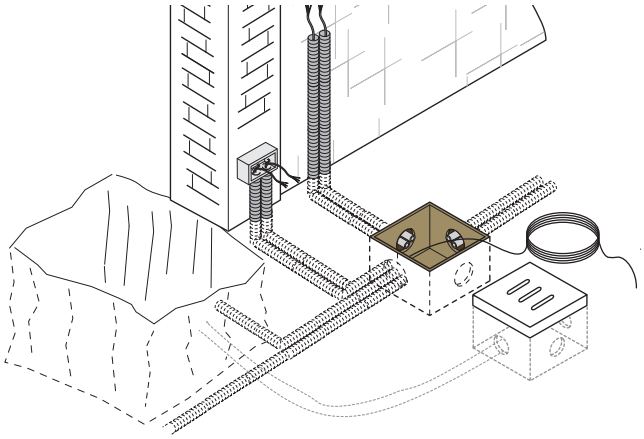
INSTALLATION

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 illustrations show a standard installation for a inner-opening gate.

Laying the corrugated tubes and fitting the junction pits

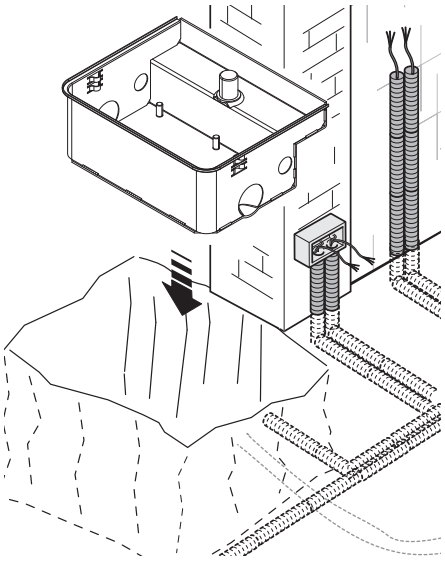
Dig the box pit.
Set up the junction boxes and corrugated tubes you will need to connect up to the junction pit and drainage tube.
🕮 The number of tubes depends on the type of system and the accessories you are going to fit.

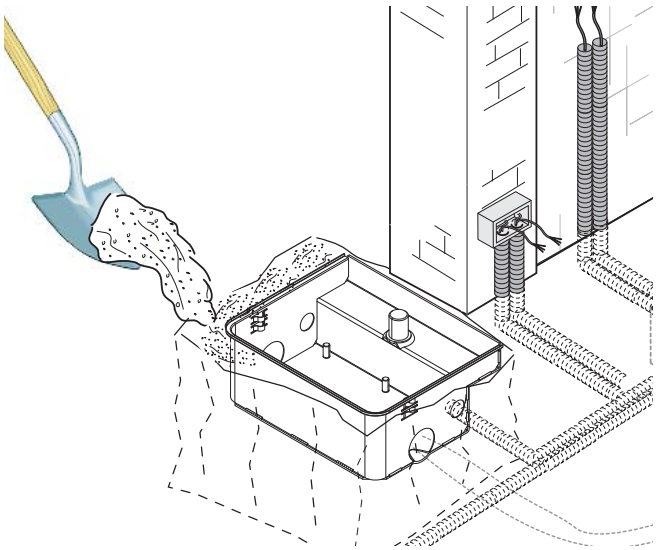




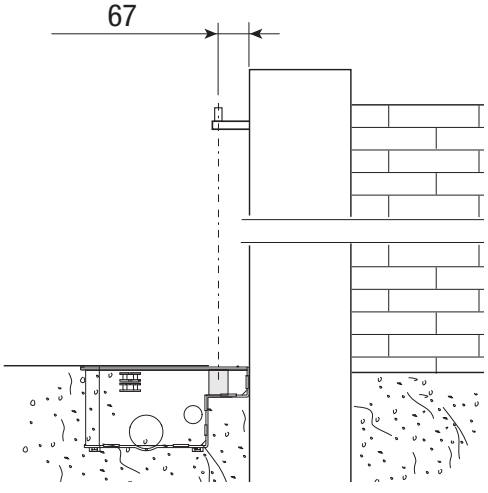
Fitting the foundation box

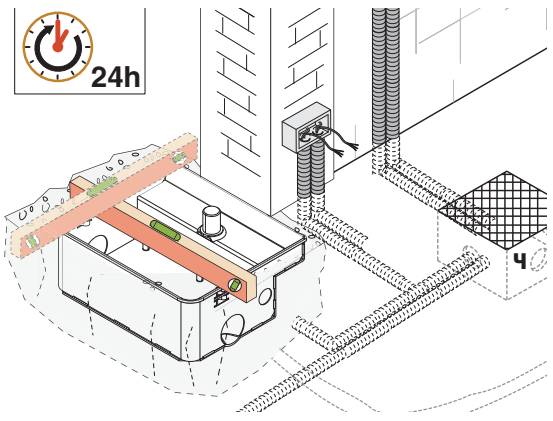
Fit the box up against the post. Make sure the corrugated tubes and the drainage tube run thought the corresponding holes.
Fill the pit with concrete.





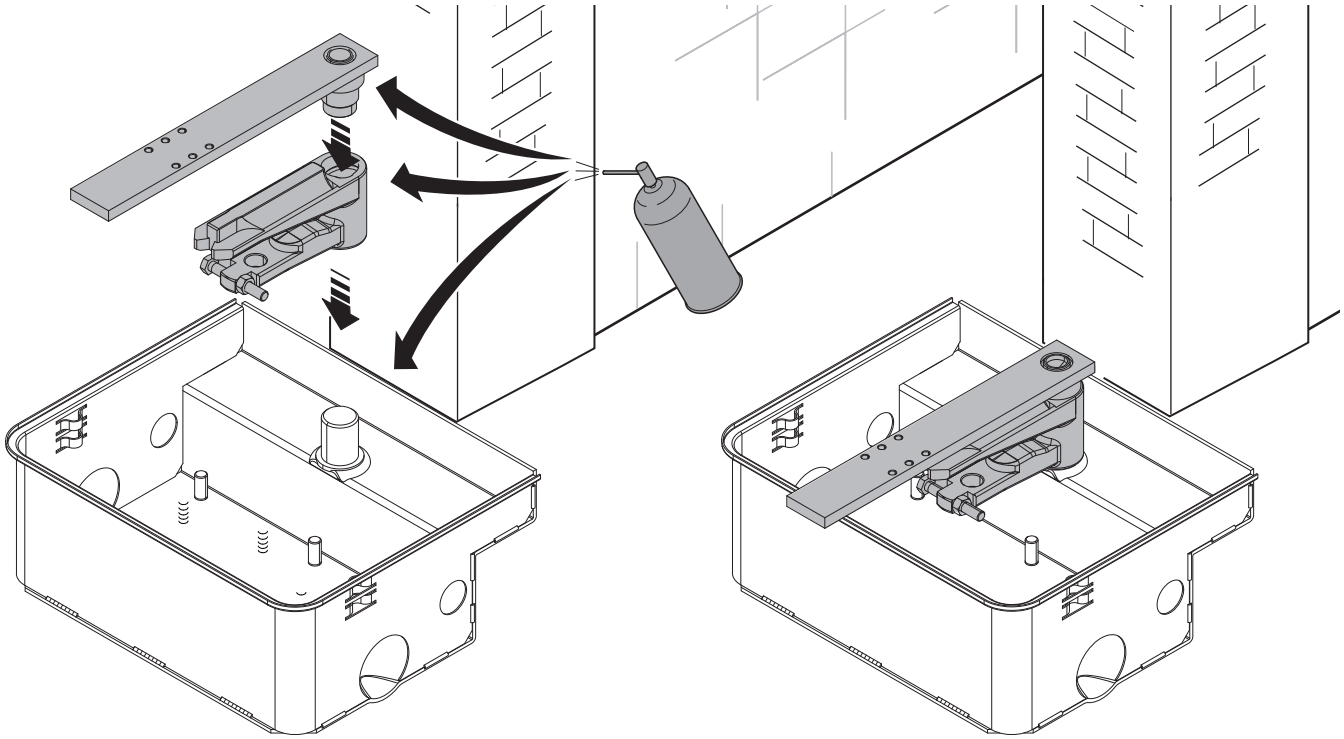
Level the box with the ground and fit the pin along the same axis as that of the gate's upper hinge. Let set for at least 24 hours.
Clean any concrete residue from inside the box.





🕮 Layout of illustrations: right side inner-view

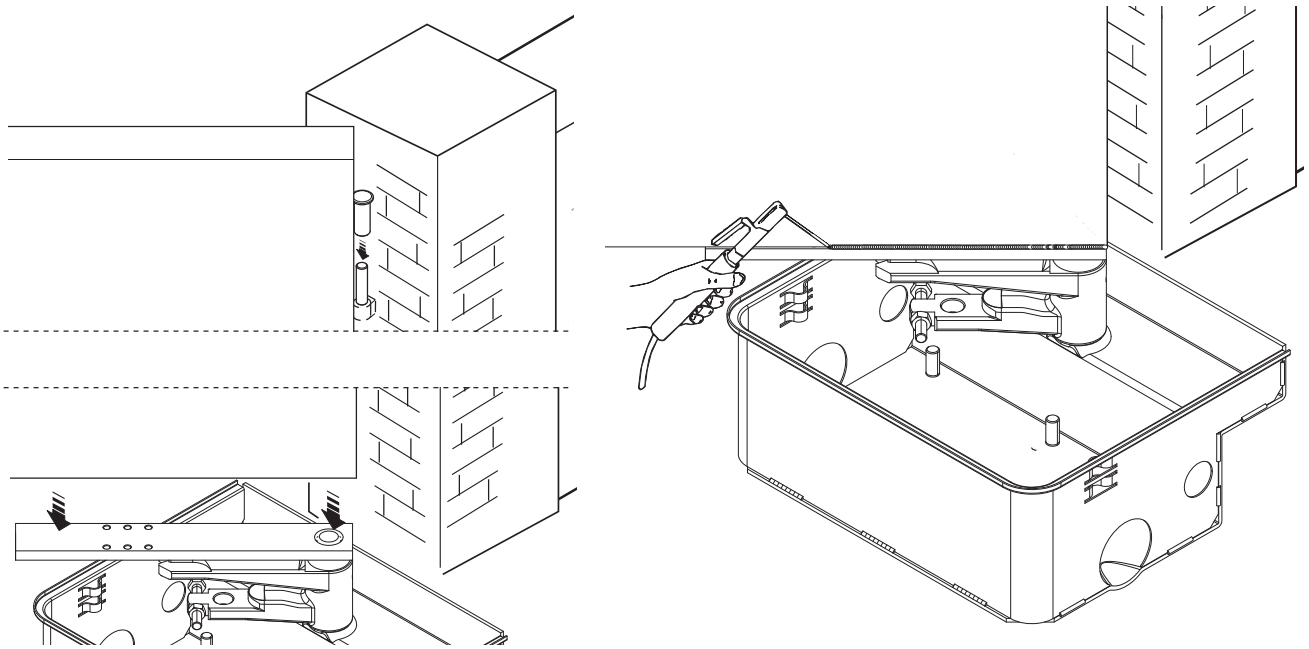
Lubricate to the foundation box pin, to the latching lever and to the gate brace.



Fit the gate leaf by fitting the upper hinge.

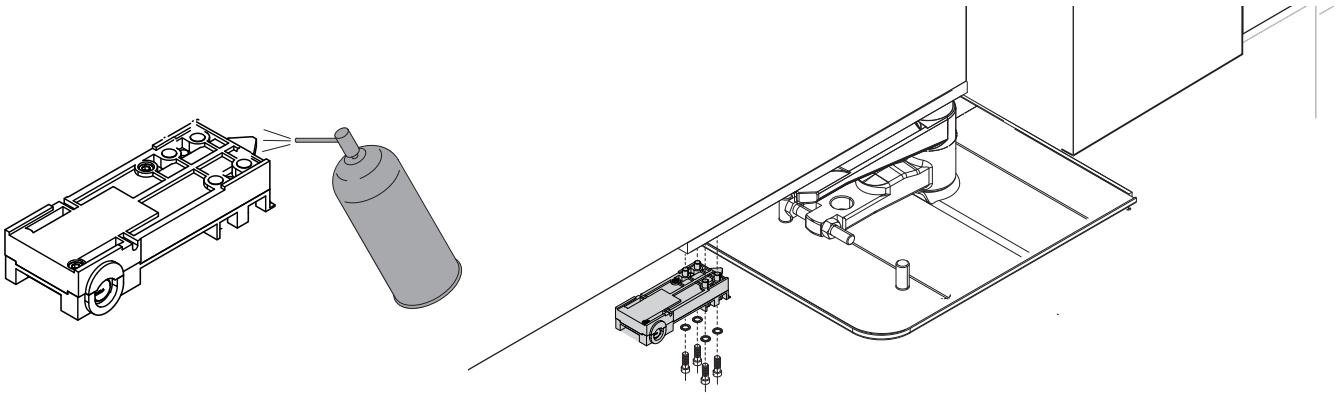
Make sure the leaf opens and closes smoothly.

Carefully fasten or weld the leaf to the gate-fastening brace.



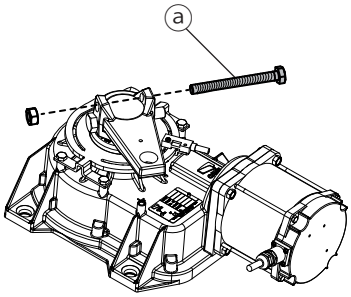
Fitting the release

You must apply grease to the release latching lever; for fitting and operation, please check the wording in the corresponding manual.

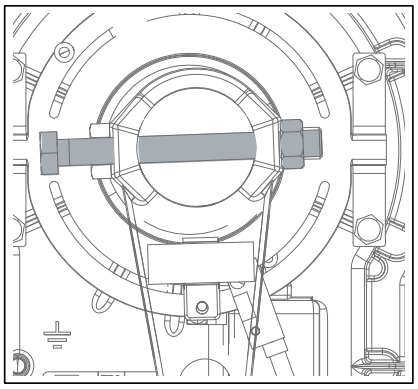


Fastening the gearmotor

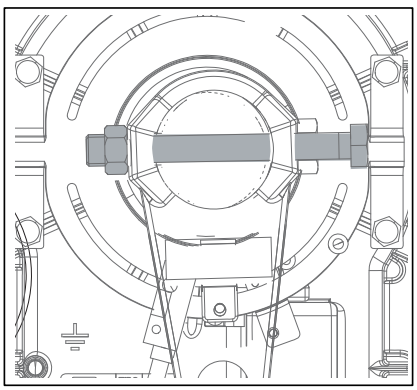
Fit the adjusting screw ⓐ to the gearmotor arm. Which side to fit the screw depends on the operator's position.

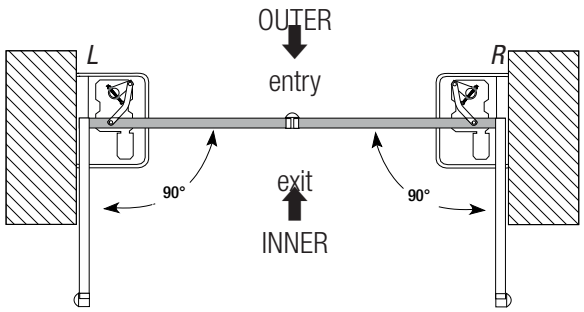


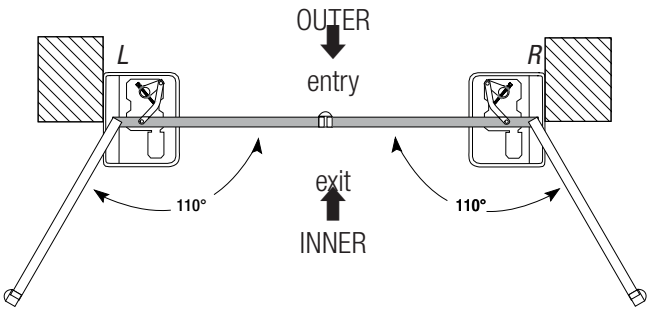
LEFT SIDE



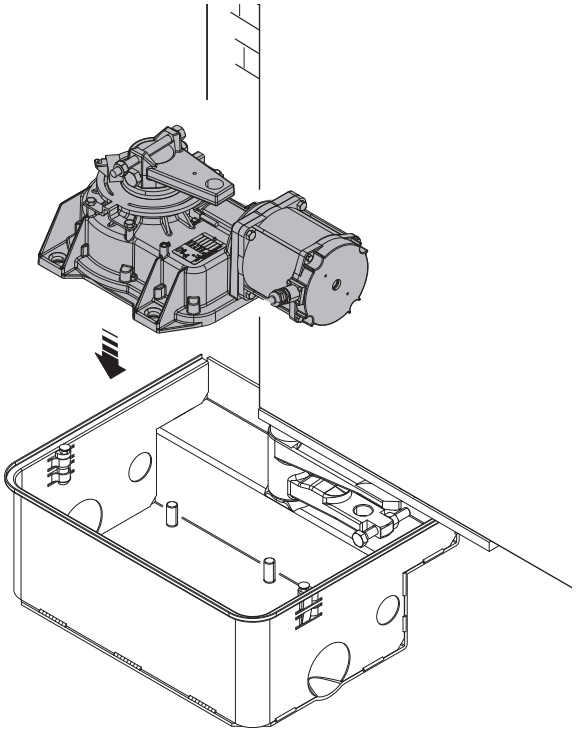
RIGHT SIDE

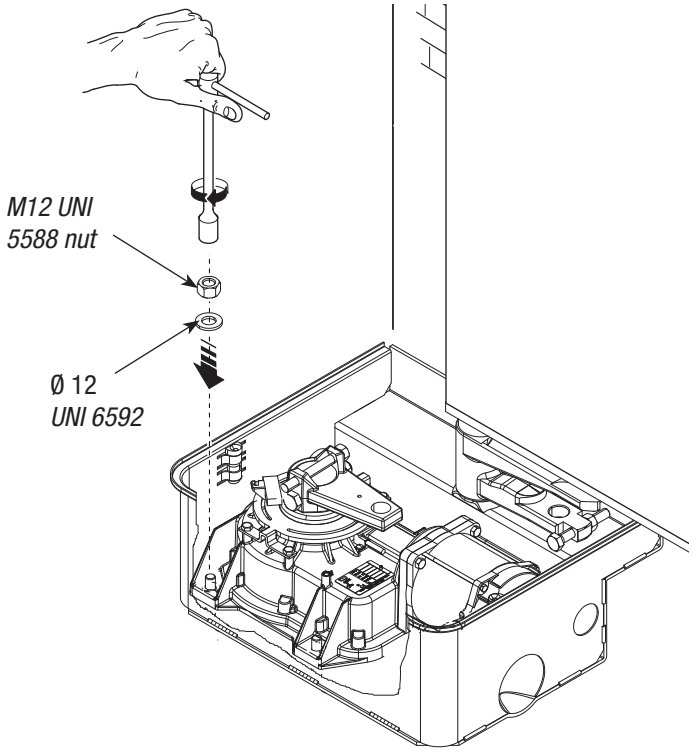




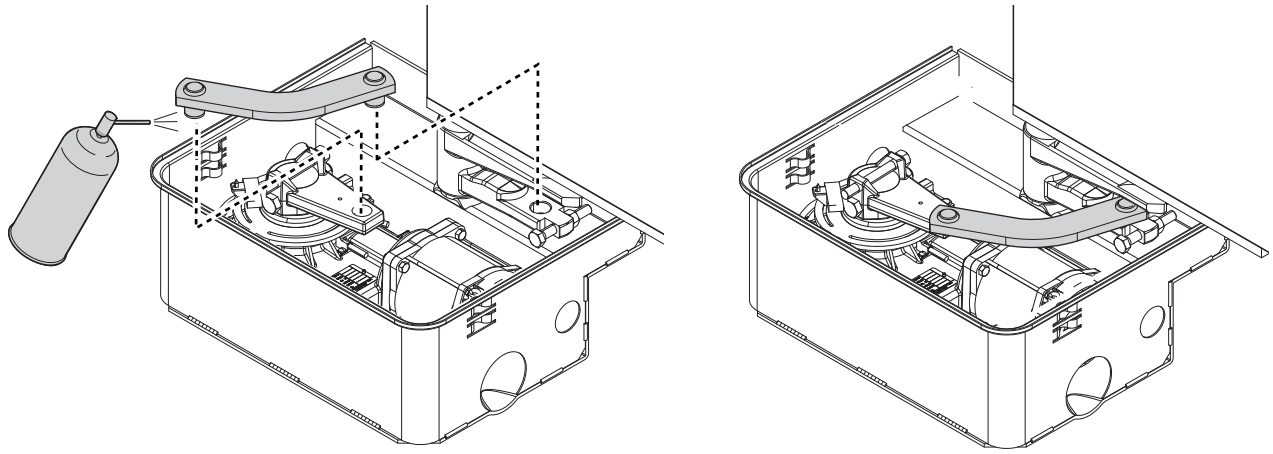


Aprire l'anta per facilitare il posizionamento del motoriduttore nella cassa di fondazione e il suo fissaggio.
Usare perni filettati e dadi (forniti).



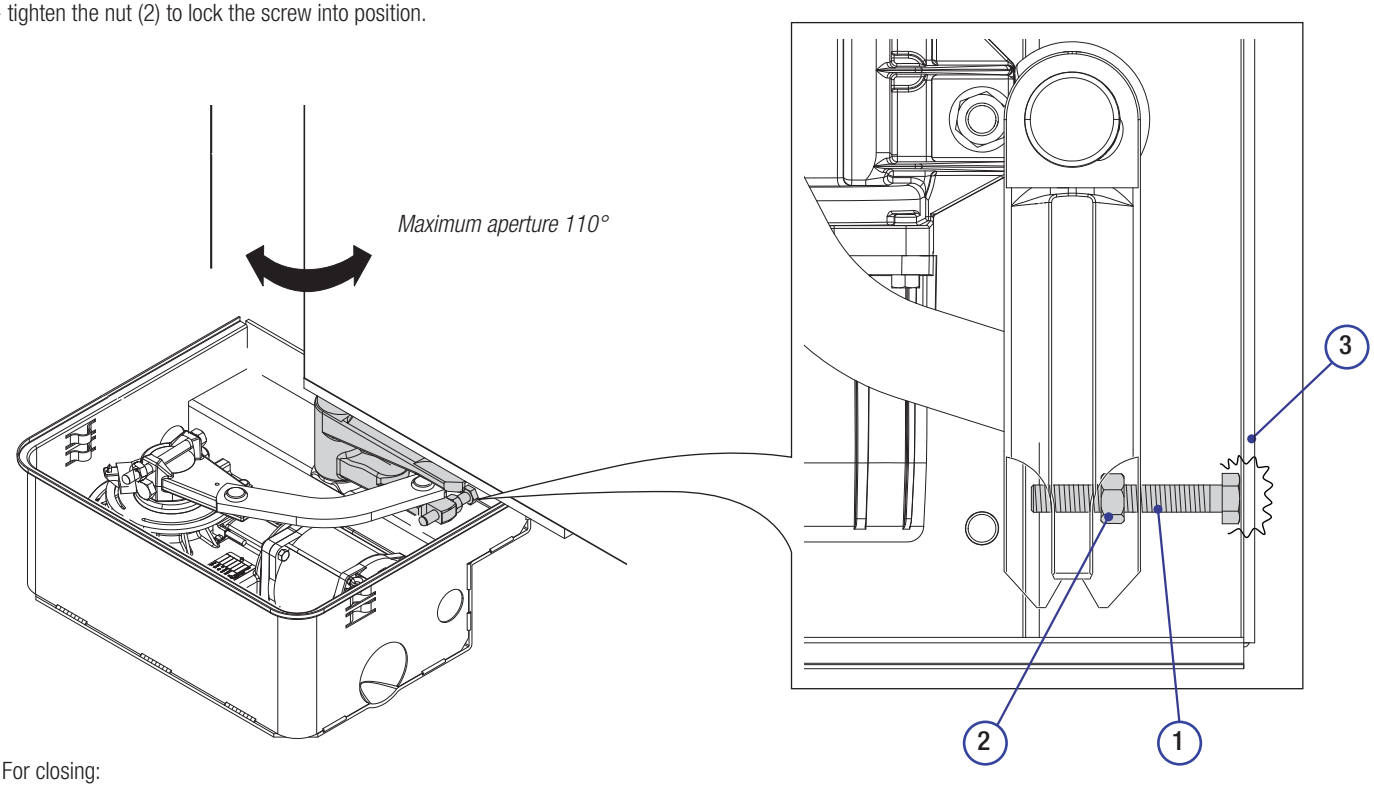


Lubricate the transmission lever and fit it onto the gearmotor hole and onto the box lever hole

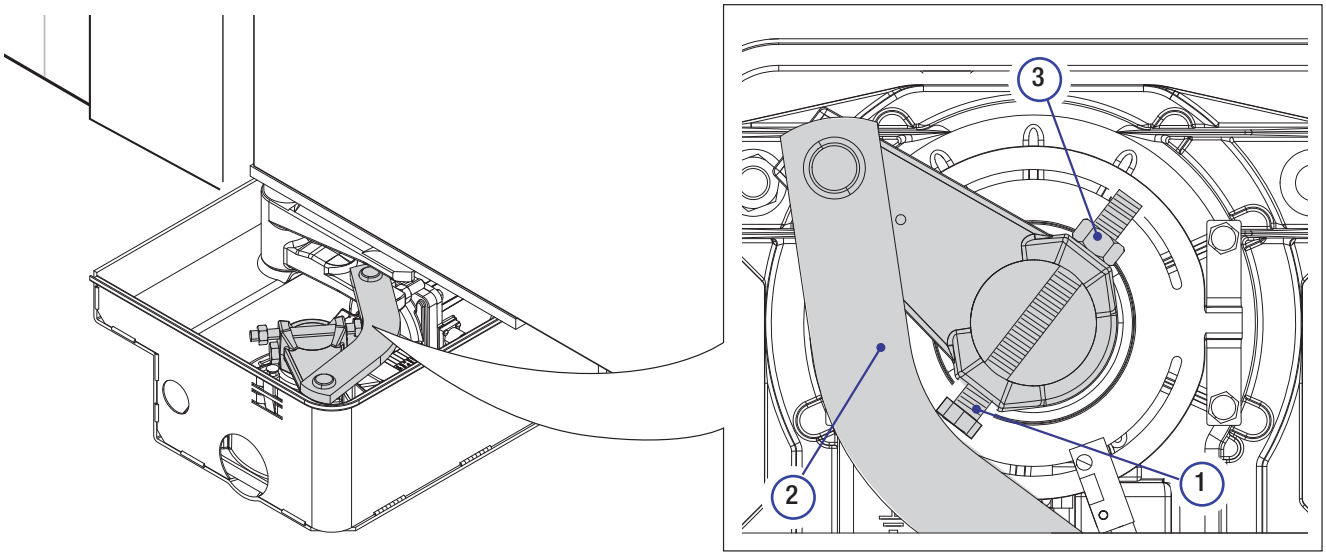


Establishing the limit-switch points

For opening:
- completely open the leaves (their maximum aperture is 110°);
- loosen the adjusting screw (1) until it touches the box (3);
- tighten the nut (2) to lock the screw into position.



For closing:
- completely close the leaves;
- loosen the adjusting screw (1) until it touches the transmission lever (2);
- tighten the nut (3) to lock the screw into position.



Connecting to the control panel

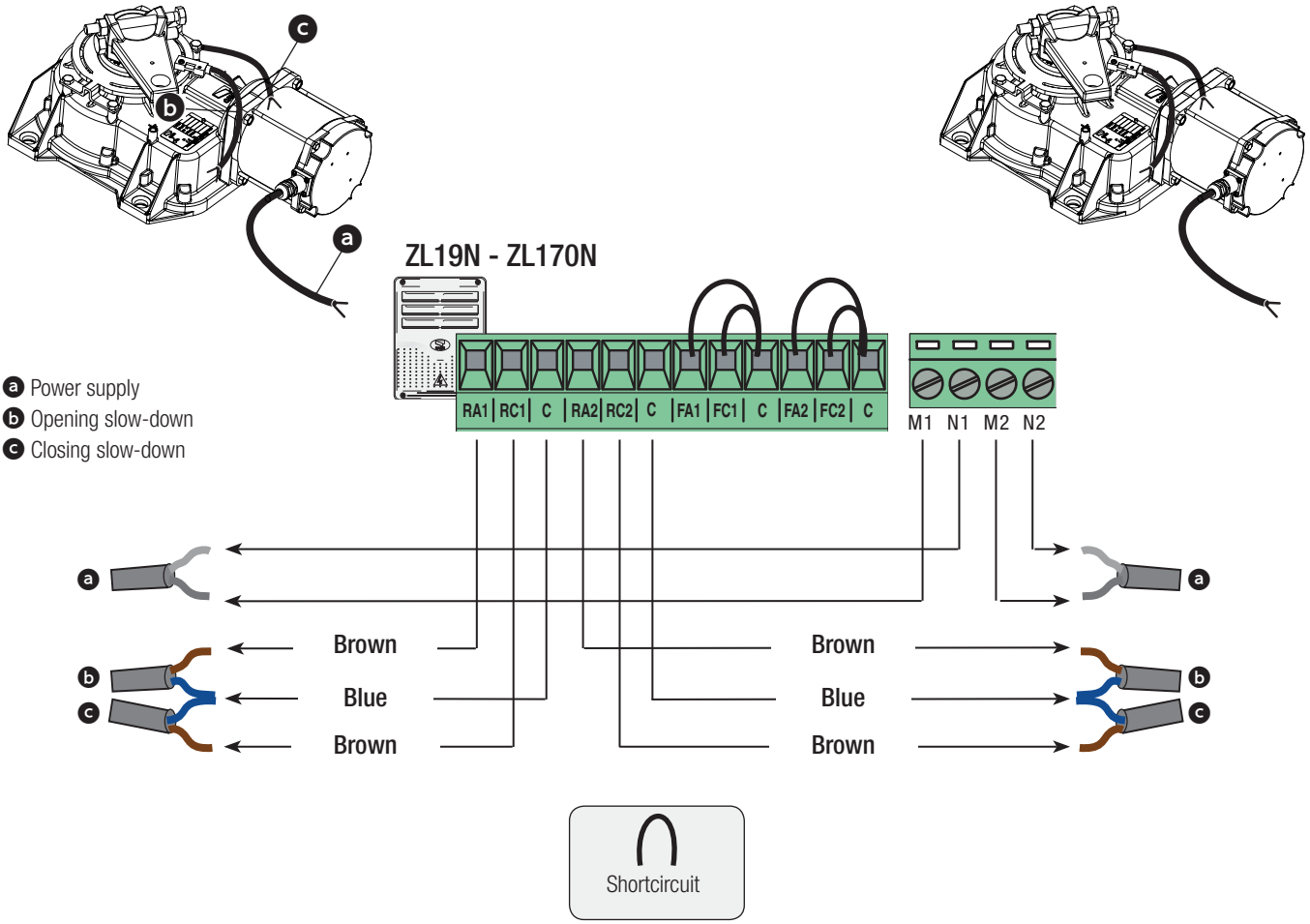
⚠ Before doing any work on the control panel, cut off the main power supply.

Motoriduttore	Quadro comando
FROG-A24	ZL19N - ZL170N
FROG-A24E	ZLJ14 - ZLJ24

2 FROG-A24 gearmotors

M1 - 24 V DC gearmotor with delayed opening.

M2 - 24 V DC gearmotor with delayed closing.

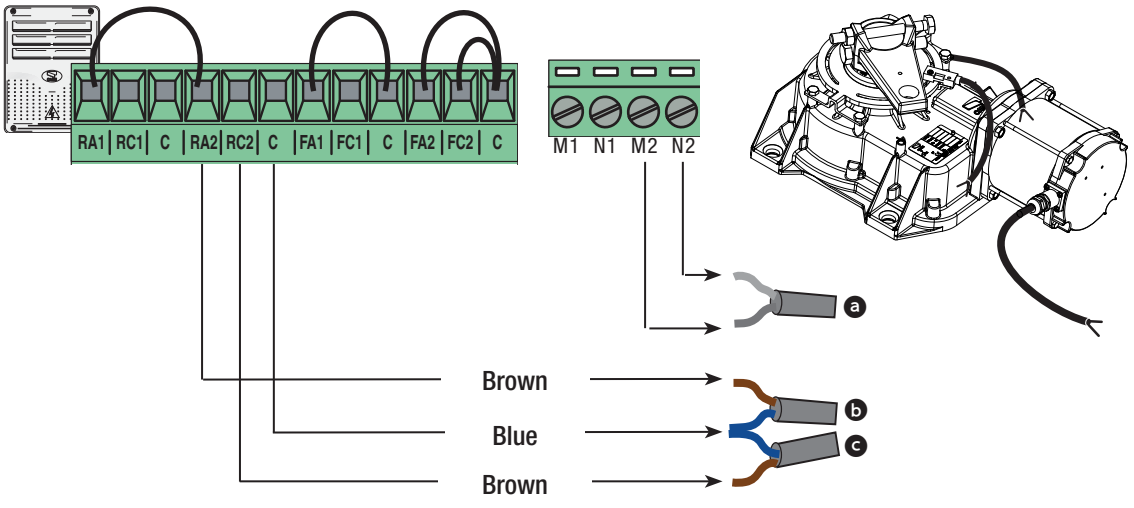


☞ If the gate doesn't open after you give it an opening command, invert cables M-N and RA-RC on the corresponding gearmotor.

1 FROG-A24 gearmotor

ZL19N - ZL170N

M2 - 24 V DC gearmotor

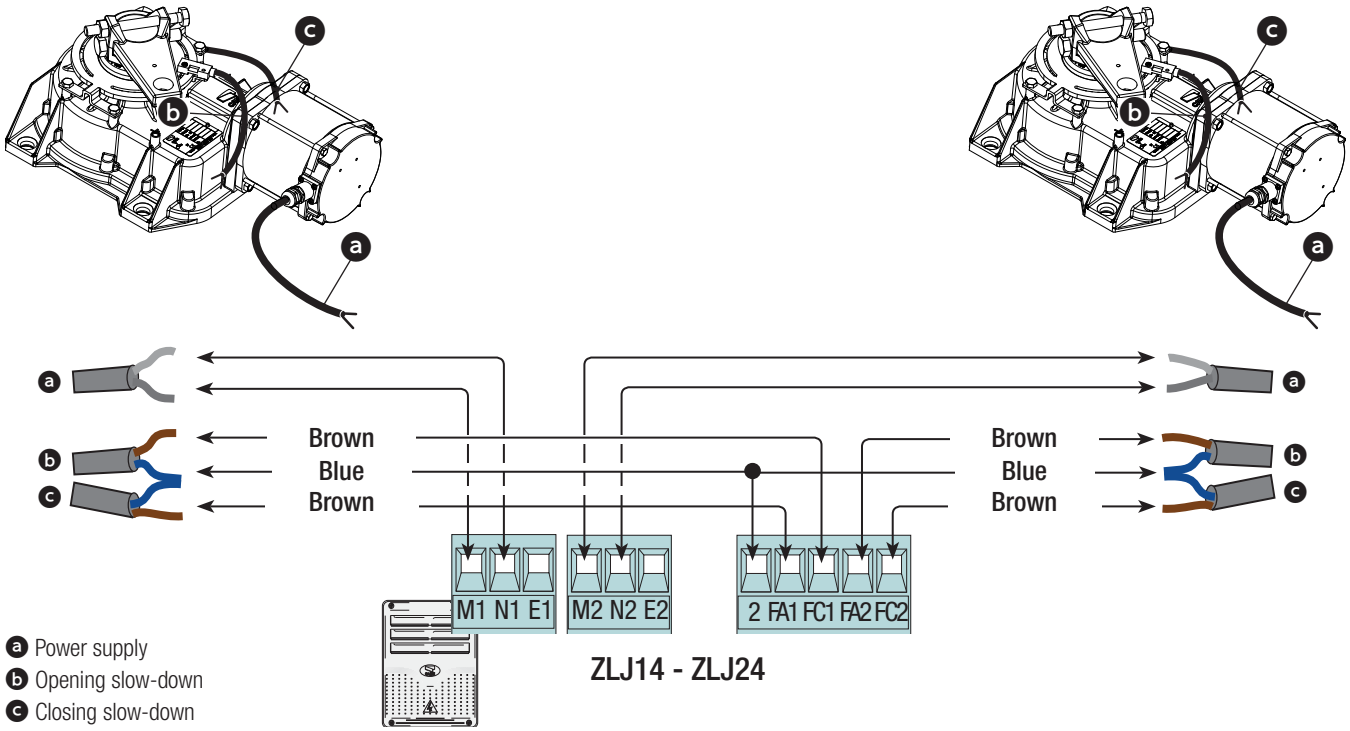


☞ If the gate doesn't open after you give it an opening command, invert cables M2-N2 and RA2-RC2

2 FROG-A24E gearmotors with limit-switch

M1 - 24 V DC gearmotor with delayed opening.

M2 - 24 V DC gearmotor with delayed closing.

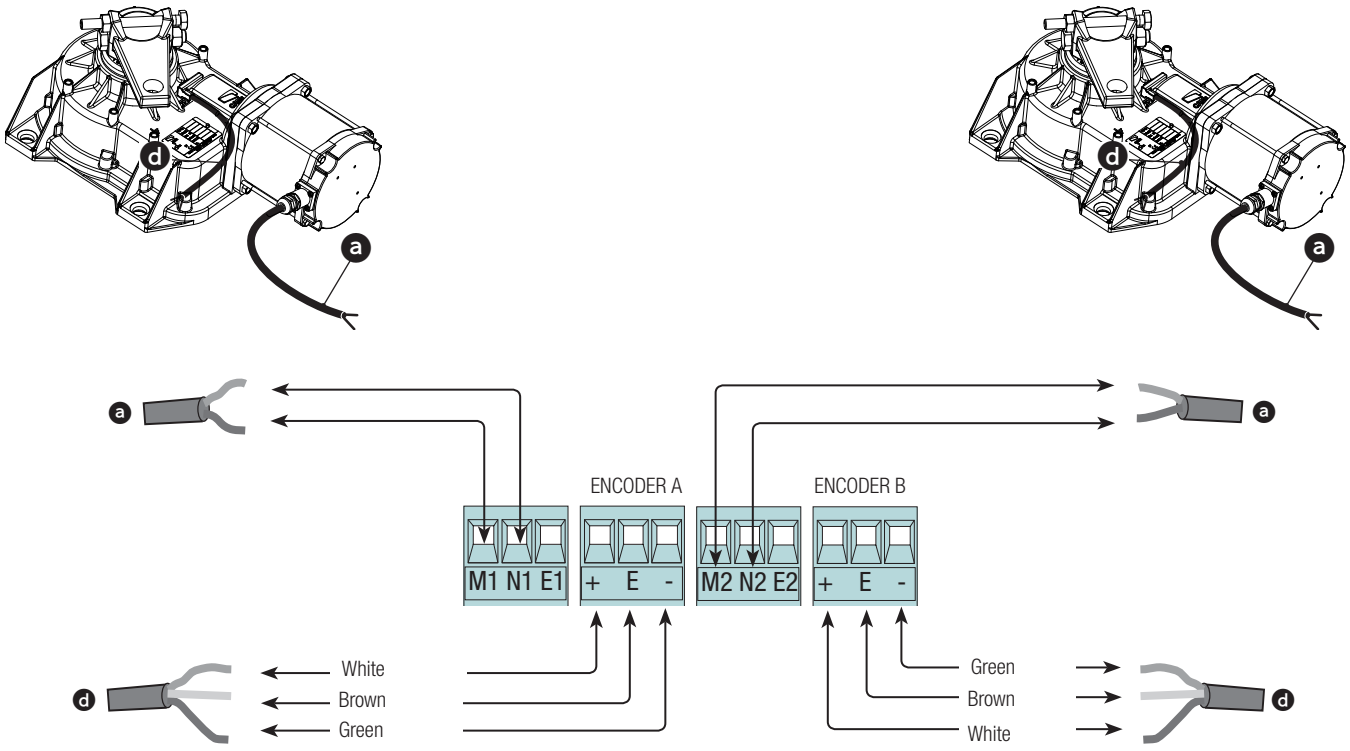


a Power supply
b Opening slow-down
c Closing slow-down

2 FROG-A24E gearmotors with encoder

M1 - 24 V DC gearmotor with delayed opening.

M2 - 24 V DC gearmotor with delayed closing.



a Power supply
d Encoder

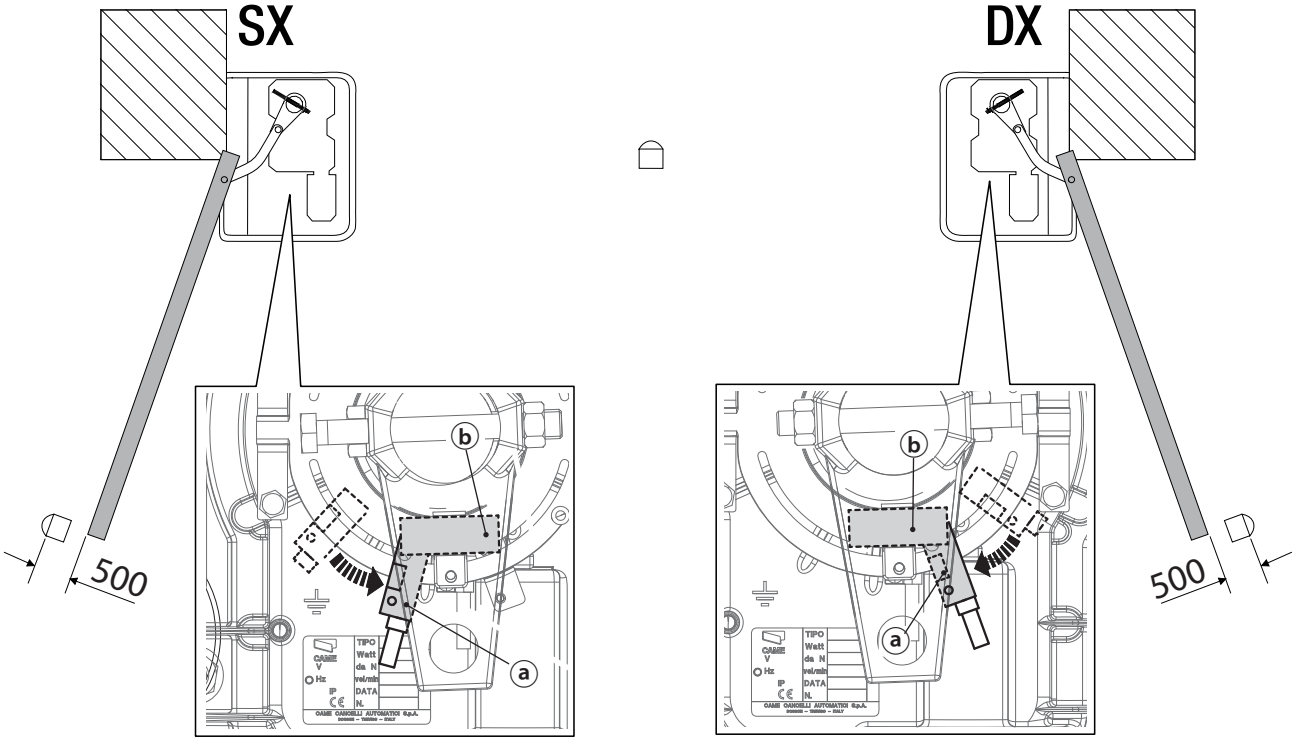
Establishing the slow-down points (only for the FROG-A24)

☞ The opening and closing slow-down starting points are established via a magnetic field.

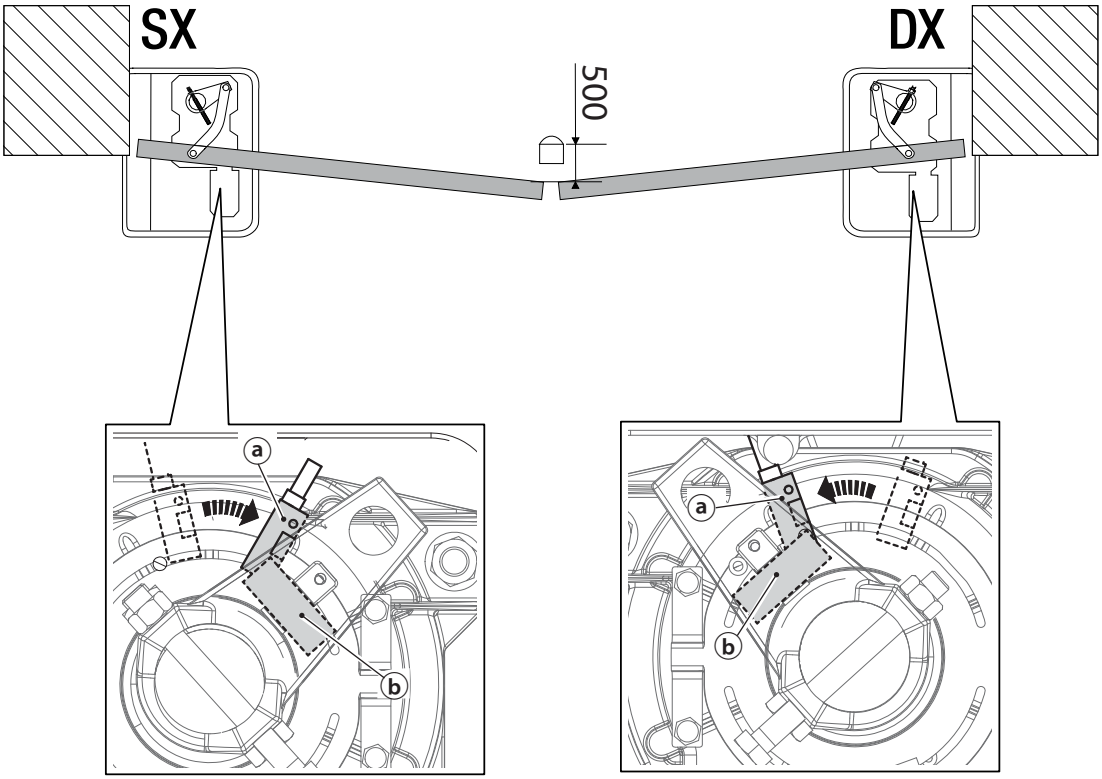
☞ Repeat this slow-down-point establishing procedure several times, until the leaves begin to slow-down 500 mm from the closing strike.

Use the gearmotor to open the leaves to about 500 mm from the opening end-strike. On both motors, set the micro-switch ⓐ close to the magnet ⓑ fitted under the motor shaft.

For opening



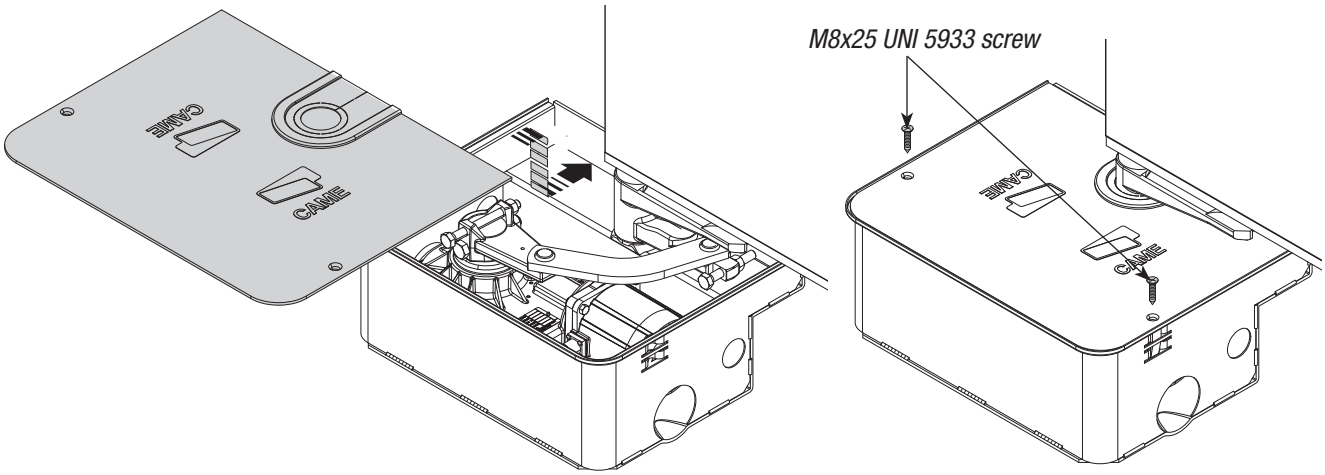
For closing



FINAL OPERATIONS

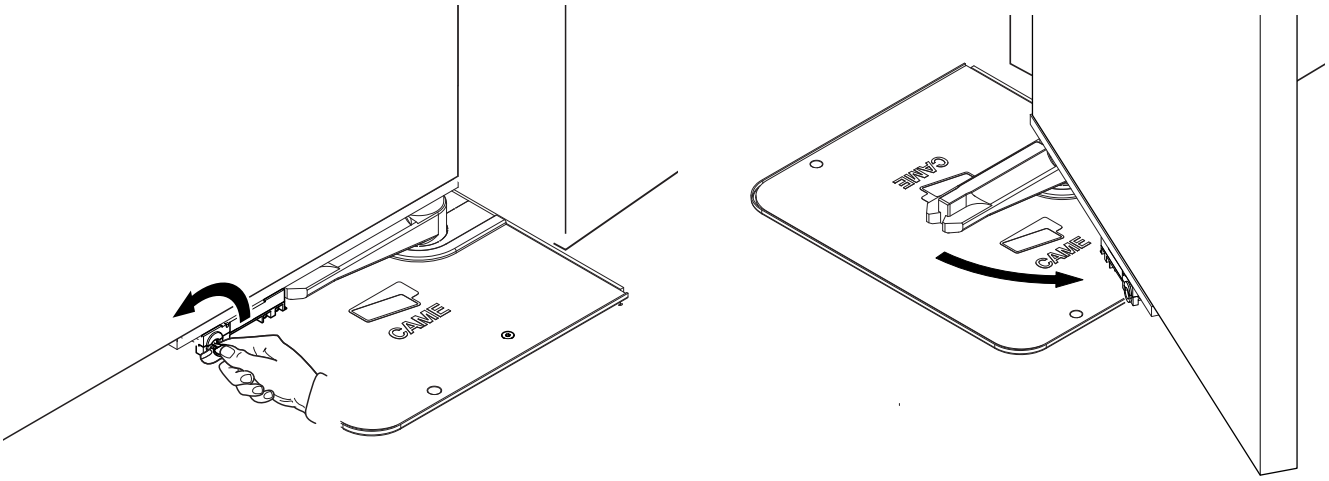
Fastening the cover

Rest the cover over the foundation box and fasten it with the supplied screws.

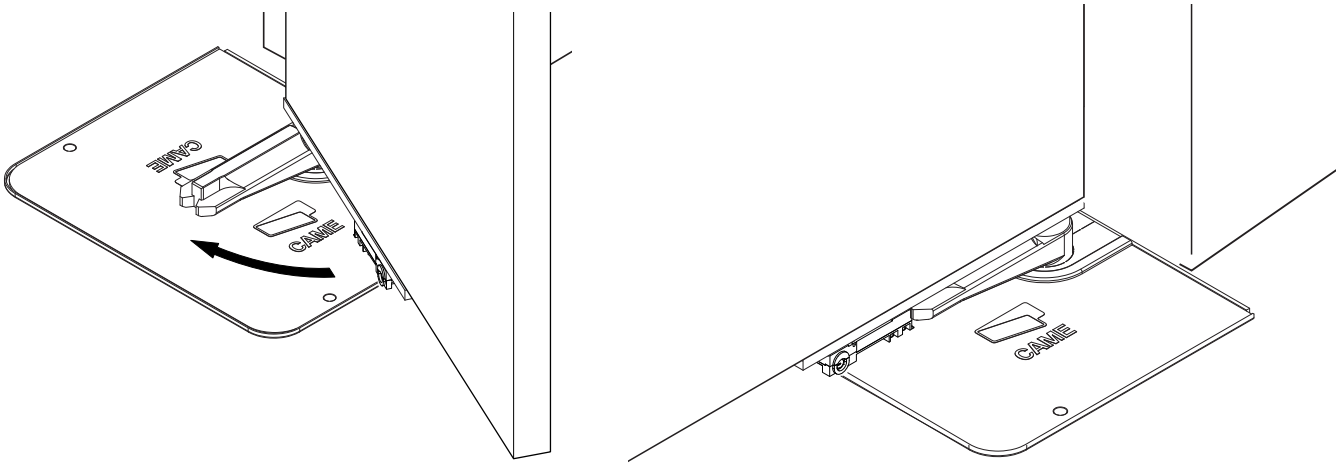


Manually releasing the leaf

Fit the key/lever into the release lock and turn it counter clockwise. Open the leaf until the end strike.



To relock the leaf, take it back to the closing position.



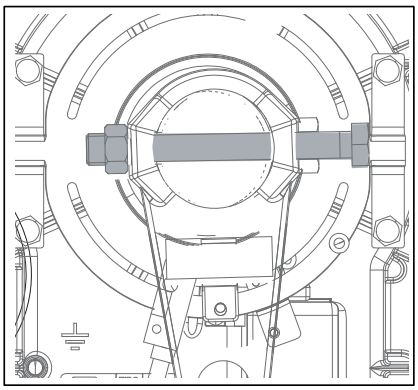
INSTALLING AND CONNECTIONS FOR OUTER OPENING

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

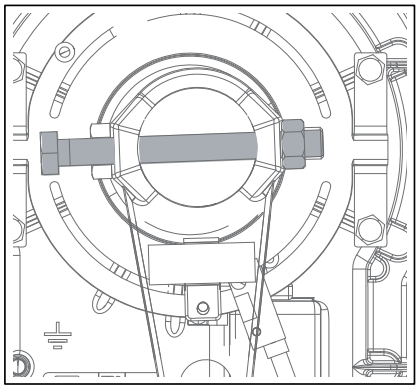
Fastening the gearmotor

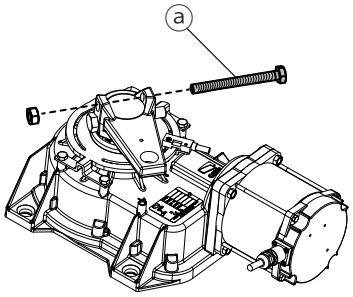
Fit the adjusting screw ⓐ to the gearmotor arm. Which side to fit the screw depends on the operator's position.

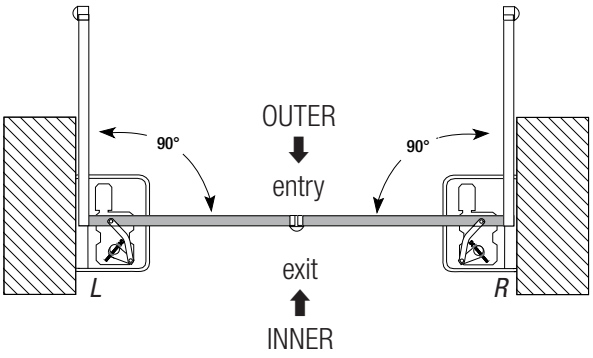
LEFT SIDE

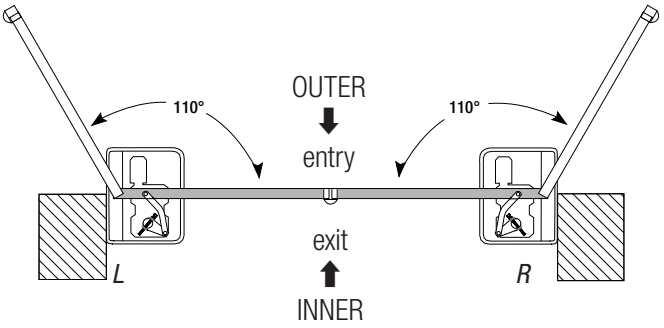


RIGHT SIDE









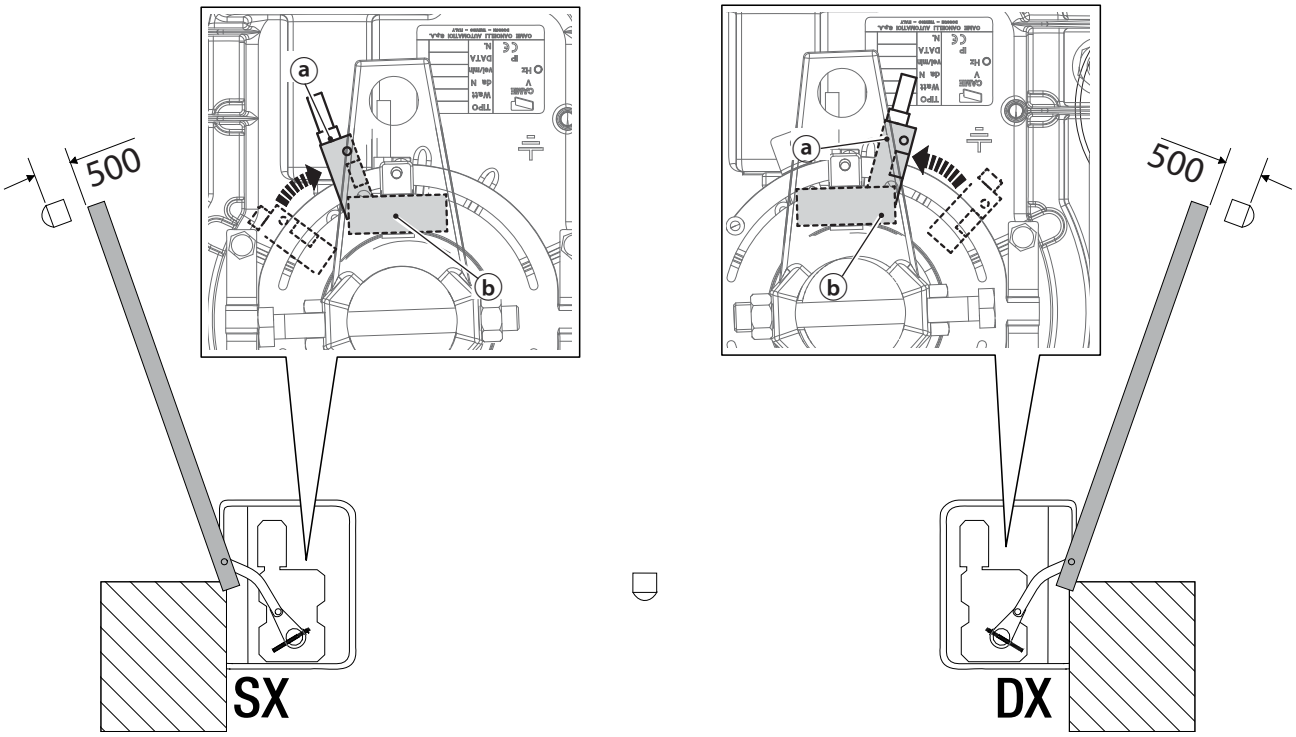
Establishing the slow-down points (only for the FROG-A24)

☞ The opening and closing slow-down starting points are established via a magnetic field.

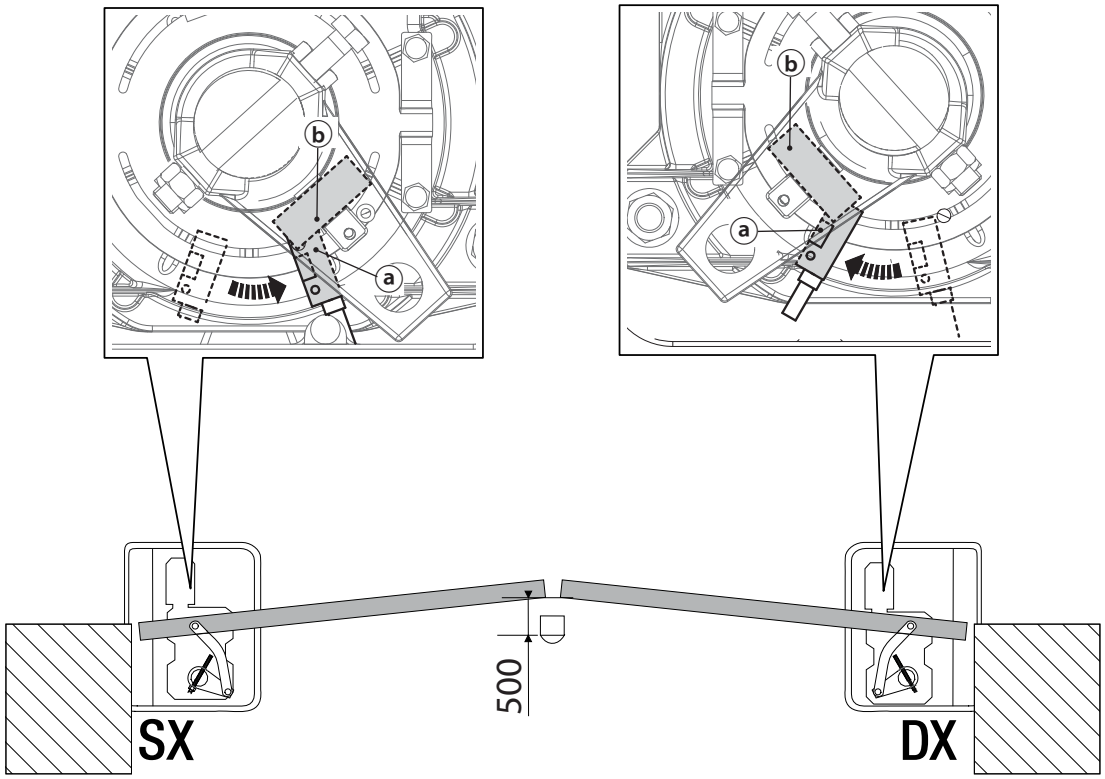
☞ Repeat this slow-down-point establishing procedure several times, until the leaves begin to slow-down 500 mm from the closing strike.

Push the leaves to about 500 mm from the opening end-strike, by using the gearmotor. On both gearmotors, set micro-switch ⓐ close to the magnet ⓑ that is fitted below the motor arm.

For opening

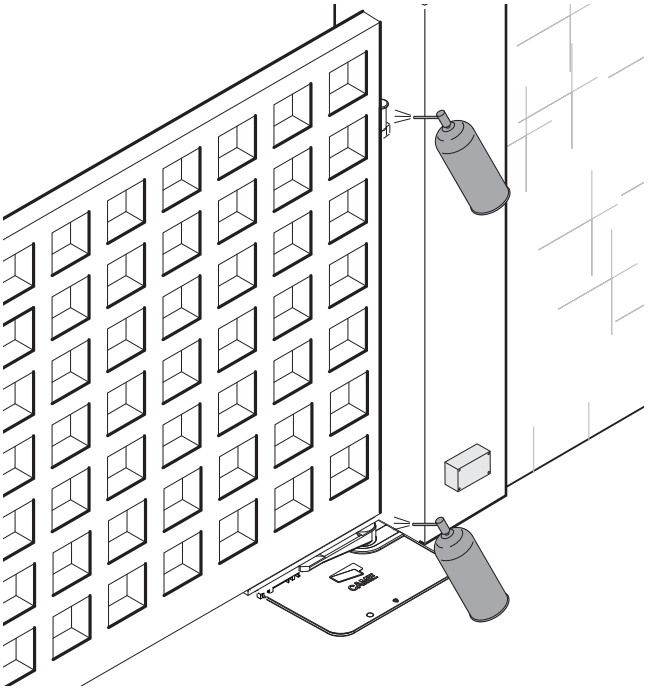


For closing



MAINTENANCE

☞ Before any maintenance jobs, cut off the mains power, to prevent possible hazards from unwanted movements by the operator.
Lubricate all joints with grease, every time any squeaks or vibrations appear, as shown in the illustration.



Periodic maintenance

Periodic maintenance log to be filled in by users every six months.

Date	Notes	Signature

Extraordinary maintenance

⚠ The following table is for logging any extraordinary maintenance jobs, repairs and improvements performed by specialized contractors.
⚠ Any extraordinary maintenance jobs must be done only by specialized technicians.

Extraordinary maintenance log

Installation technician stamp	Operator name
	Date of intervention
	Technician signature
	Customer signature
Intervention carried out ______________________________	

Installation technician stamp	Operator name
	Date of intervention
	Technician signature
	Customer signature
Intervention carried out ______________________________	

Installation technician stamp	Operator name
	Date of intervention
	Technician signature
	Customer signature
Intervention carried out ______________________________	

Installation technician stamp	Operator name
	Date of intervention
	Technician signature
	Customer signature
Intervention carried out ______________________________	

Installation technician stamp	Operator name
	Date of intervention
	Technician signature
	Customer signature
Intervention carried out ______________________________	

TROUBLESHOOTING

MALFUNCTIONS	POSSIBLE CAUSES	FIXES AND REMEDIES
It neither opens nor closes	• Power supply is missing • The gearmotor is stuck • The transmitter's battery is run down • The transmitter is broken • The stop button is either stuck or broken • The opening/closing button or the key-switch selector is stuck	• Check main power supply • Lock the gearmotor • Replacethe batteries • Call assistance • Call assistance • Call assistance
The gate opens but does not close	The photocells are engaged	• Make sure the photocells are clean and working properly • Call assistance

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 urban waste, and simply separated from other waste for recycling.
Always make sure you comply with local laws before dismantling and disposing of the product.
DO NOT DISPOSE OF IN NATURE!
⚽ DISMANTLING AND DISPOSAL
Our products are made of various materials. Most of these (aluminum, plastic, iron, electrical cables) is 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.
DO NOT DISPOSE OF IN NATURE!

DECLARATION OF CONFORMITY

Declaration CE - CAME S.p.A. declares that this device conforms to the essential, pertinent requirements provided by directives 2006/42/CE and 2004/108/CE.

An original copy is available on request.

English - *Manual code:* ***119AU35EN*** *v.* ***6*** *02/2016* © *CAME S.p.A.*
The data and information in this manual may be changed at any time and without notice.

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