S-BAR

S4BAR
S4BARI

Electromechanical road barrier

EN - Instructions and warnings for installation

Nice

ENGLISH

Translation of the original instructions in full

CONTENTS

1 GENERAL SAFETY WARNINGS AND PRECAUTIONS

1.1 GENERAL WARNINGS

WARNING! Important safety instructions. Observe all the instructions as improper installation may cause serious damages.

WARNING! Important safety instructions. It is important to comply with these instructions to ensure personal safety. Store these instructions carefully.

According to the latest European legislation, an automated device must be constructed in conformity to the harmonised rules specified in the current Machinery Directive, which allow for declaring the presumed conformity of the automation. Consequently, all the operations for connecting the product to the mains electricity, its commissioning and maintenance must be carried out exclusively by a qualified and expert technician.

In order to avoid any danger from inadvertent resetting of the thermal cut-off device, this appliance must not be powered through an external switching device, such as a timer, or connected to a supply that is regularly powered or switched off by the circuit.

WARNING! Please abide by the following warnings:

- Before commencing the installation, check the "Product technical specifications", in particular whether this product is suitable for automating your guided part. Should it not be suitable, do NOT proceed with the installation.
- The product cannot be used before it has been commissioned as specified in the "Testing and commissioning" chapter.
- Before proceeding with the product's installation, check that all the materials are in good working order and suited to the intended applications.
- The product is not intended for use by persons (including children) with reduced physical, sensory or mental capacities, nor by anyone lacking sufficient experience or familiarity with the product.
- Children must not play with the appliance.
- Do not allow children to play with the product's control devices. Keep the remote controls out of reach of children.
- The system's power supply network must include a disconnection device (not supplied) with a contact opening gap permitting complete disconnection under the conditions envisaged by Overvoltage Category III.
- Handle the product with care during installation, taking care to avoid crushing, denting or dropping it, or allowing contact with liquids of any kind. Keep the product away from sources of heat and naked flames. Failure to observe the above can damage the product, and increase the risk of danger or malfunction. Should this happen, stop installation immediately and contact Customer Service.

- The manufacturer declines all liability for damages to property, objects or people resulting from failure to observe the assembly instructions. In such cases, the warranty for material defects shall not apply.
- The weighted sound pressure level of the emission A is lower than 70 dB(A).
- Cleaning and maintenance reserved for the user must not be carried out by unsupervised children.
- Before intervening on the system (maintenance, cleaning), always disconnect the product from the mains power supply and from any batteries.
- Inspect the system frequently, in particular the cables, springs and supports to detect any imbalances and signs of wear or damage. Do not use the product if it needs to be repaired or adjusted, because defective installation or incorrect balancing of the automation can lead to injuries.
- The packing materials of the product must be disposed of in compliance with local regulations.
- If the gate to be automated is fitted with a pedestrian door, the system must be equipped with a control system that inhibits motor operation when the pedestrian door is open

1.2 INSTALLATION WARNINGS

- Prior to installing the drive motor, check that all mechanical components are in good working order and properly balanced, and that the automation can be manoeuvred correctly.
- If the gate being automated has a pedestrian gate, the system must be equipped with a control device that inhibits the motor's operation when the pedestrian gate is open.
- Make sure that the control elements are kept far from moving parts but nonetheless directly within sight. Unless a selector is used, the control elements must be installed at least 1.5 m above the ground and must not be accessible.
- If the opening movement is controlled by a fire-sensing system, make sure that any windows larger than 200 mm are closed using the control elements.
- Prevent and avoid any form of entrapment between the moving and fixed parts during the manoeuvres.
- Permanently affix the label concerning the manual manoeuvre near its actuating element.
- After installing the drive motor, make sure that the mechanism, protective system and all manual manoeuvres function properly.

2 PRODUCT DESCRIPTION AND INTENDED USE

S-BAR are electromechanical boom gates for residential and industrial use, which control the opening and closing of a driveway.
These barriers are equipped with an electromechanical gearmotor with a 24 V motor, an electric limit switch system and a warning light incorporated in the cover (optional accessory)..
The control unit is configured for being connected to the various devices belonging to the **Nice** Opera System and to the "Solemyo" solar power system (see paragraph "***Connecting the Solemyo solar energy system***").
The barriers work on electricity and in case of a power outage (blackout), the boom can be unlocked manually and moved by hand. Alternatively, it is possible to use the back-up battery (model PS124 - optional accessory) which ensures that certain manoeuvres can be carried out in the first few hours of a power outage. To prolong this period or increase the number of allowed manoeuvres, it is necessary to activate the "Stand-by" function (see "***Table 5***").

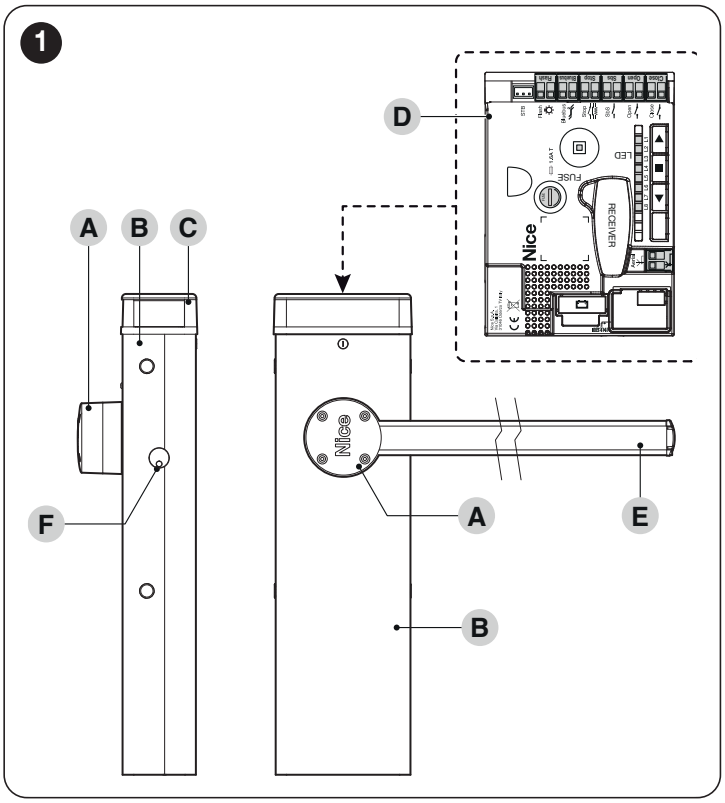
Important notes for using the manual:
- throughout this manual, the term "boom gate" refers to the product "**S-BAR**"
- the accessories mentioned in the manual are optional.

CAUTION! – Any use other than that specified herein or in environmental conditions other than those stated in this manual is to be considered improper and is strictly forbidden!

This product complies with the "Standby" regulation. The product goes into Standby Mode 5 minutes after a successfully completed operation.

2.1 LIST OF CONSTITUENT PARTS

"***Figure 1***" shows the main parts making up the **S-BAR**.



A Boom support
B Gearmotor containment box
C Cover
D Electronic control and command unit
E Boom
F Locking/unlocking key

3 INSTALLATION

3.1 PRE-INSTALLATION CHECKS

The installation must be carried out by qualified personnel in compliance with the current legislation, standards and regulations, and with the instructions provided in this manual.

Before proceeding with the product's installation, it is necessary to:
- check the integrity of the supply
- check that all the materials are in good working order and suited to the intended use
- check whether it is possible to observe the operating limits specified in the paragraph "***Product usage limits***"
- check that the installation location is compatible with the overall clearance of the product (see "***Figure 3***")
- check that the surface chosen for installing the boom gate is solid and can ensure stable anchorage
- make sure that the installation area is not subject to flooding; if necessary, the product must be installed appropriately raised above ground level
- check that the space surrounding the boom gate allows for executing the manual manoeuvres easily and safely
- check that there are no obstacles along the boom's path capable of hampering the opening and closing manoeuvres
- check that each device to be installed lies in a position that is protected against the risk of accidental impact.
- verify that the mounting positions of the various devices are protected against impacts and that the mounting surfaces are sufficiently sturdy
- prevent any parts of the automation from being immersed in water or other liquids
- keep the product away from heat sources and open flames and acid, saline or potentially explosive atmospheres; these may damage the product and cause malfunctions or dangerous situations
- connect the control unit to an electricity supply line equipped with a safety earthing system

3.2 PRODUCT USAGE LIMITS

Before proceeding with the product's installation, it is necessary to:
- check that all the values appearing in the "***TECHNICAL SPECIFICATIONS***" chapter are compatible with the intended use
- check that the estimated durability (refer to the paragraph "***Product durability***") is compatible with the intended use
- check that all limitations, conditions and warnings appearing in this manual can be fully observed.

3.2.1 PRODUCT DURABILITY

The product's durability is its average economic life value and is strongly influenced by the degree of severity of the manoeuvres: in other words, the sum of all factors that contribute to product wear.
To estimate the durability of your automated device, proceed as follows:

1. add the values of the items in "***Table 1***" relative to the system's conditions

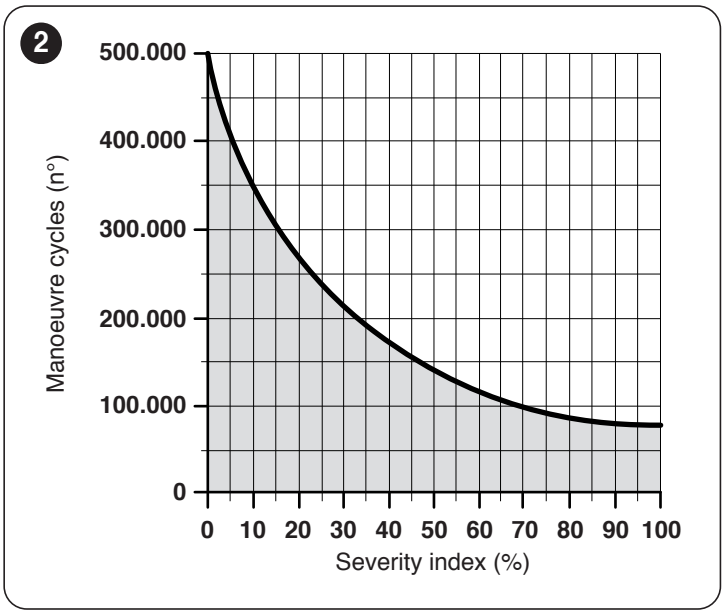
2. in the graph shown in "***Figure 2***", from the value obtained above, trace a vertical line until it intersects the curve; from this point trace a horizontal line until it intersects the line of the "manoeuvre cycles". The value obtained is the estimated lifetime of your product.

The durability values shown in the graph can only be obtained if the maintenance schedule is strictly observed – see the "***PRODUCT MAINTENANCE***" chapter. The durability is estimated on the basis of the design calculations and the results of tests effected on prototypes. Being an estimate, therefore, it offers no explicit guarantee of the product's actual useful life.

Example of durability calculation: S4BAR
"***Table 1***" shows the "severity indices" for this type of installation: 15% ("Boom with lights model XBA4"), 10% ("Presence of salt").
These indicators must be added together to obtain the overall severity index, which in this case is 25%. With the value calculated (25%), identify along the graph's horizontal axis ("severity index") the value corresponding to the number of "manoeuvre cycles" that the product can perform throughout its lifetime = roughly 240.000 cycles.

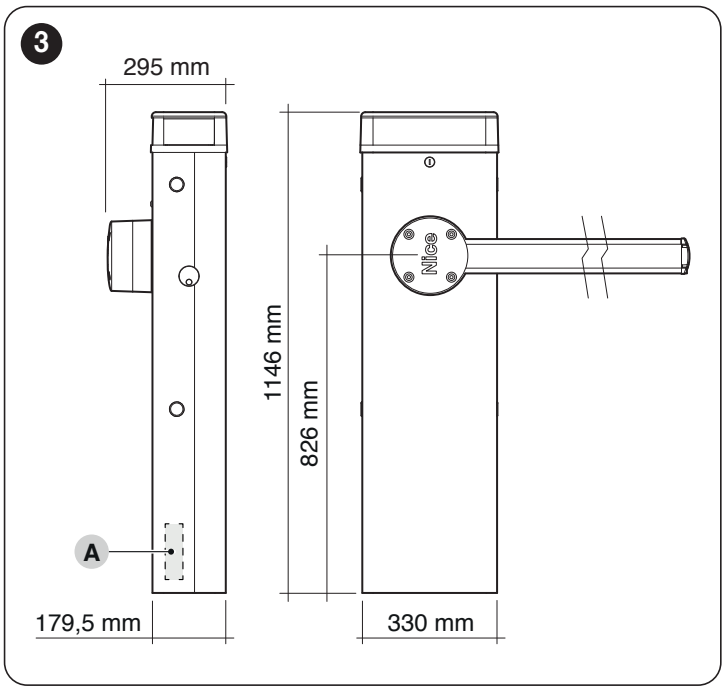
Table 1

PRODUCT DURABILITY	
	Severity index
Boom with lights model XBA4	15
Speed levels 3 and 4	5
Speed level 5	20
Manoeuvre interrupted by photocell > 10%	15
Manoeuvre interrupted by Stop > 10%	25
Braking	10
Force equal to 5 or 6	10
Force equal to 7 or 8	10
Presence of salinity	10
Presence of dust and sand	10
Ambient temperature above 40°C and below 0°C	15



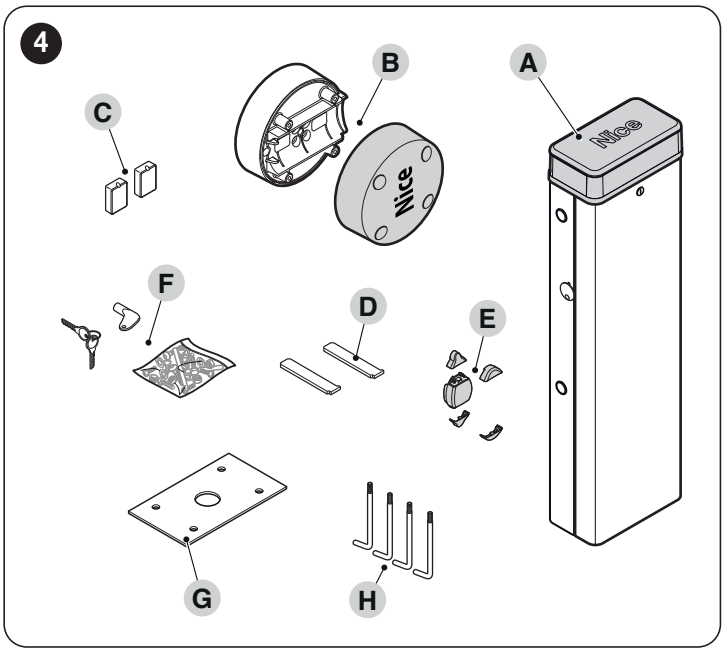
3.3 PRODUCT IDENTIFICATION AND OVERALL DIMENSIONS

The overall dimensions and the label (**A**), which allows for identifying the product, are shown in "***Figure 3***".



3.4 RECEIPT OF THE PRODUCT

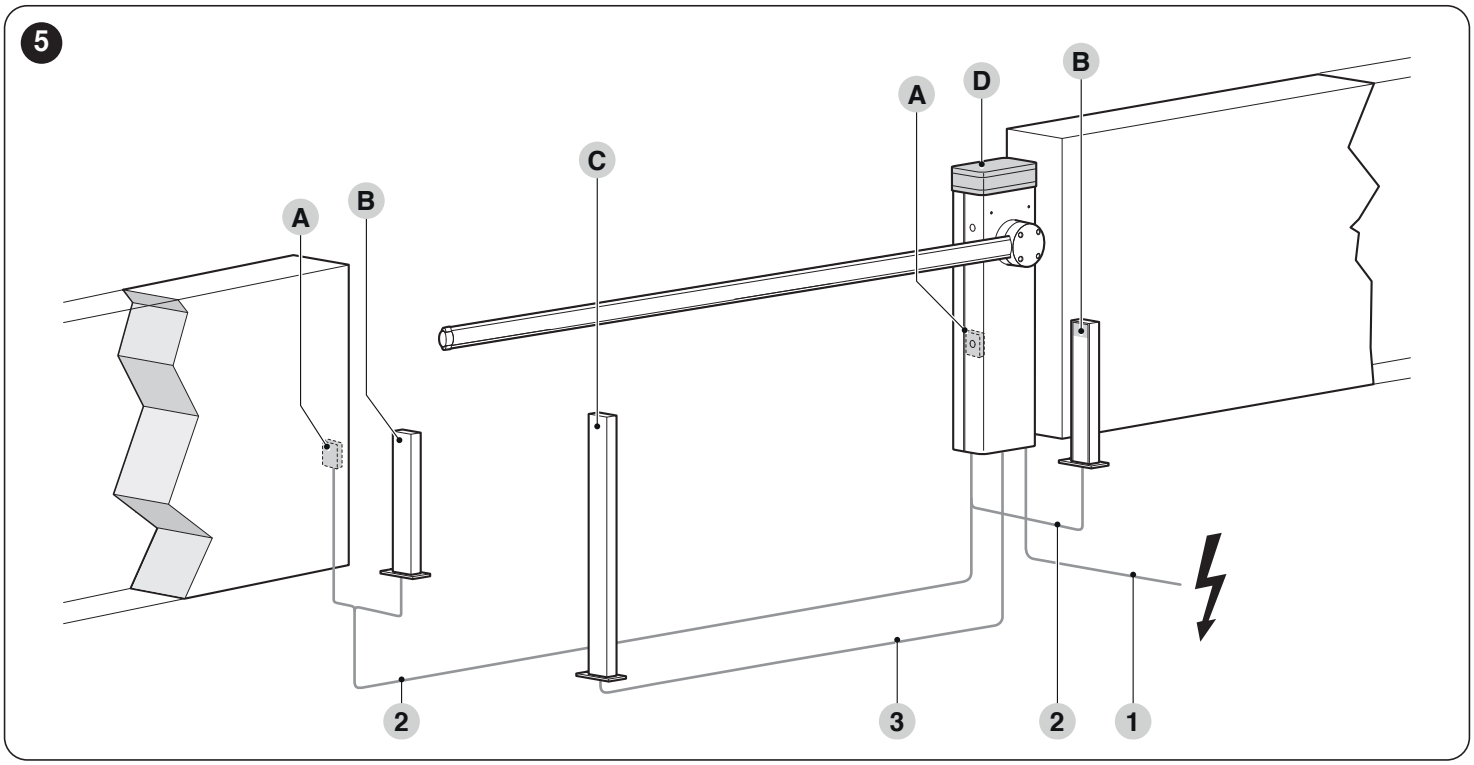
All the components contained in the product's packaging are illustrated and listed below.



A Boom gate with integrated control unit
B Boom cover and support
C 2 photocell boxes
D 2 boom supporting brackets
E Fixed boom cap; 2 connectors for rubber impact protectors; 2 connectors without rubber impact protectors
F Keys for manually locking and unlocking the boom; key for the cover lock; metal smallware (screws, washers, etc.)
G Foundation plate
H 4 anchor bolts

3.5 PRE-INSTALLATION WORKS

The figure shows an example of an automation system, constructed using **Nice** components.



A Photocells
B Photocells on column
C Key selector
D Boom gate cubicle

Table 2

TECHNICAL SPECIFICATIONS OF ELECTRICAL CABLES	
Identification no.	**Cable characteristics**
1	GEARMOTOR POWER SUPPLY cable 1 cable 3 x 1.5 mm^2 Maximum length 30 m [**note 1**]
2	BLUEBUS cable 1 cable 2 x 0.5 mm^2 Maximum length 30 m
3	KEY SELECTOR cable 1 cable 4 x 0.25 mm^2 (**note 2**) Maximum length 30 m
Other cables	OPTIONAL WARNING LIGHT cable supplied
	BOOM LIGHTS cable

These above-mentioned components are positioned according to a typical standard layout. Using the layout in "***Figure 5***" as a reference, define the approximate position in which each component of the system will be installed.

Note 1 If the power supply cable is longer than 30 m, a cable with larger cross-sectional area (3 x 2.5 mm^2) must be used and a safety earthing system must be installed near the automation.

Note 2 If, instead of the selector, an ETPB transponder card reader or EDSP digital keypad is used, a twin-lead cable will be sufficient (2 x 0.5 mm^2).

The cables used must be suited to the type of environment of the installation site.

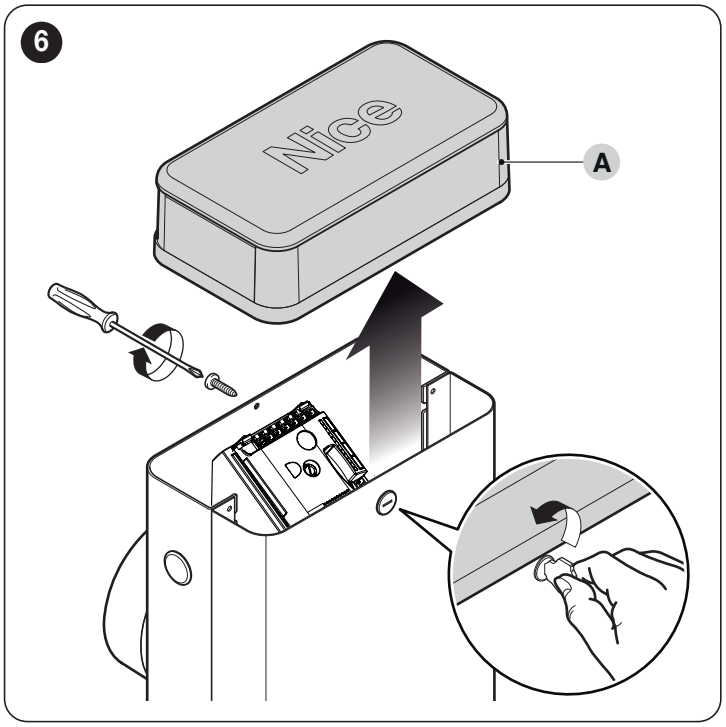
When laying the pipes for routing the electrical cables, take into account that any water deposits in the junction boxes may cause the connection pipes to form condensate inside the control unit, thus damaging the electronic circuits.

Before proceeding with the installation, prepare the required electrical cables by referring to "*Figure 5*" and to that stated in the "*TECHNICAL SPECIFICATIONS*" chapter.

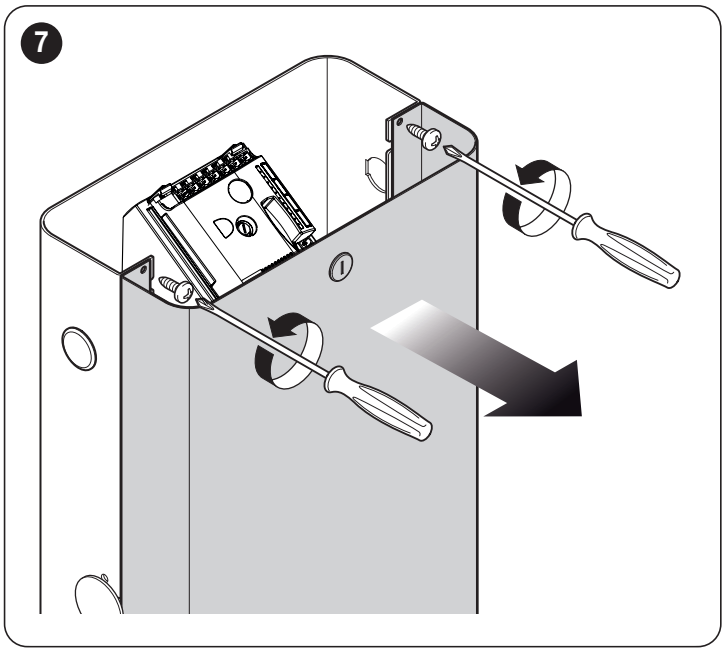
3.6 ADJUSTING THE BOOM GATE

The boom gate leaves the factory with the boom closing manoeuvre set towards the left.
To set the closing manoeuvre towards the right, proceed as follows:

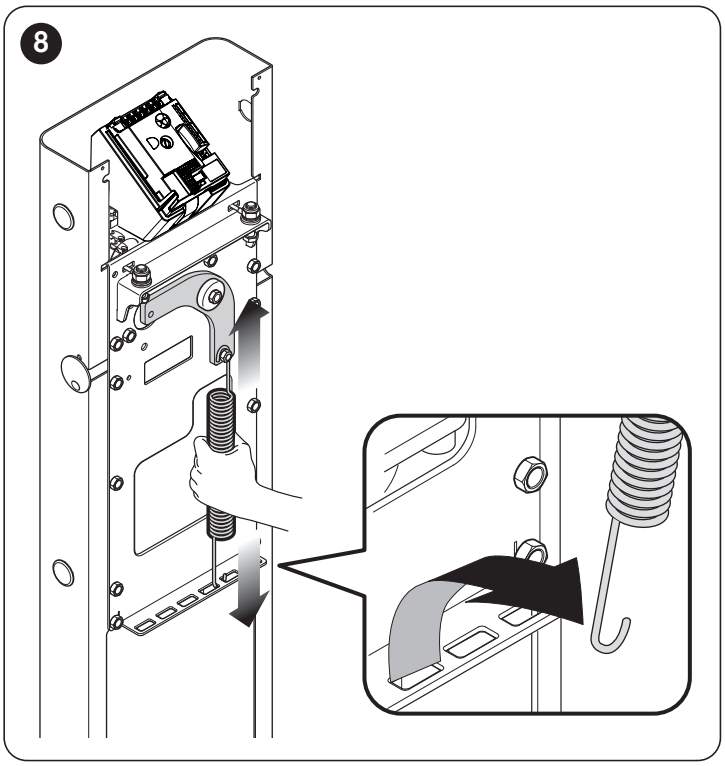
1. remove the upper cover (**A**) of the boom gate cubicle



2. loosen the two screws fastening the cubicle panel

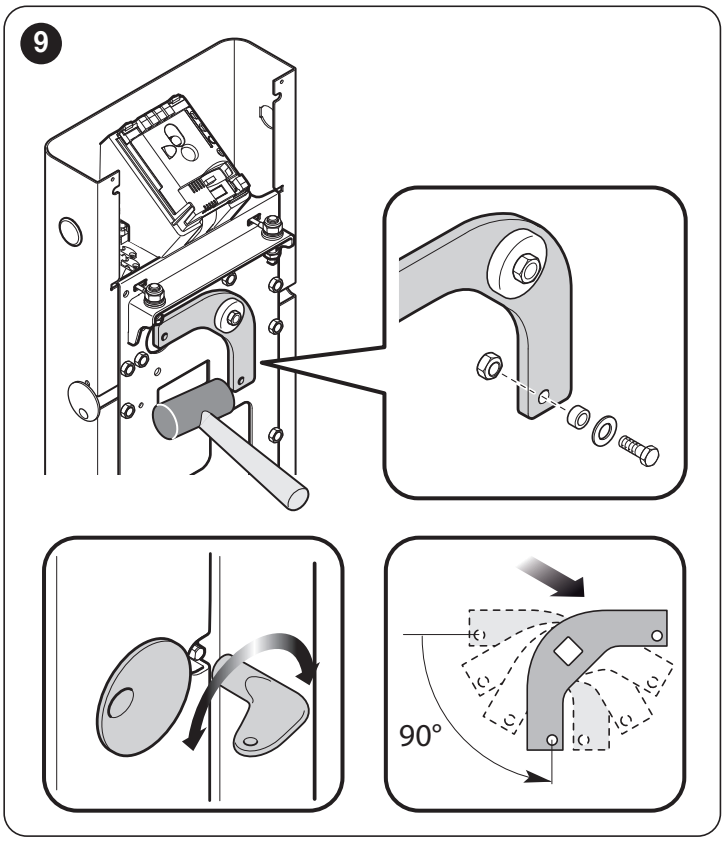


3. remove the balancing spring, by detaching it from the balancing lever

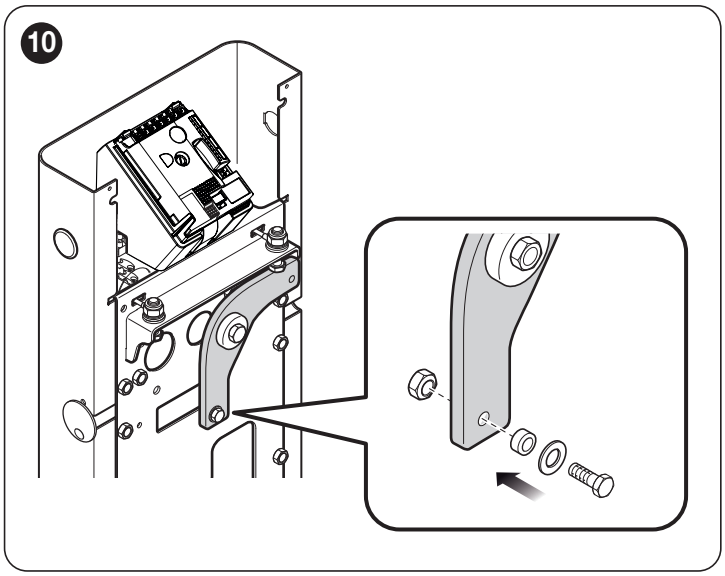


4. loosen the bolt fastening the balancing spring

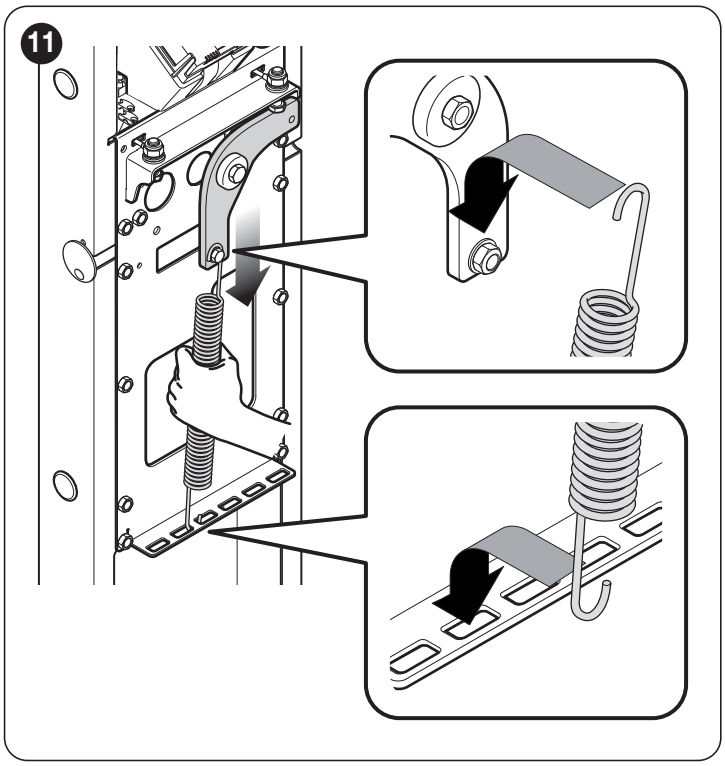
5. unlock the gearmotor (refer to the "***Manually unlocking and locking the gearmotor***" paragraph) and turn the balancing lever by 90°



6. vigorously tighten the bolt fastening the balancing spring



7. attach the balancing spring in the correct position



8. if the gearmotor was previously unlocked, lock it again.

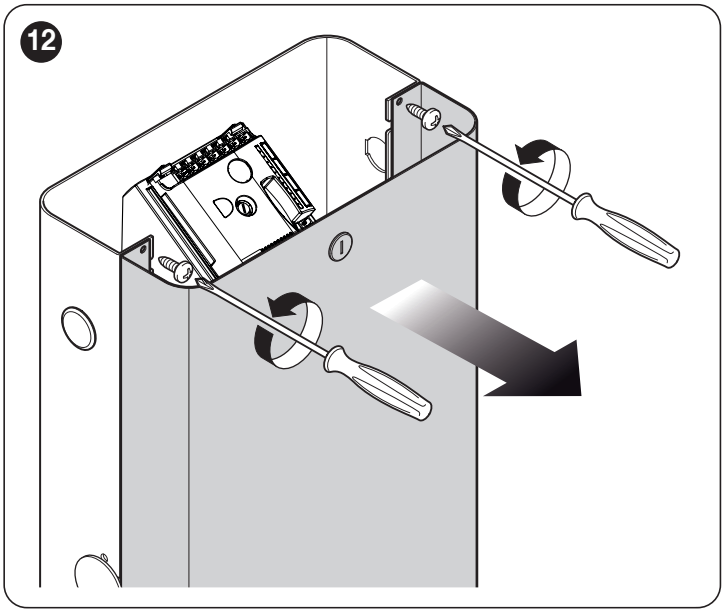
3.7 INSTALLING THE GEARMOTOR

Incorrect installation may cause serious physical injury to the person working on the system or to its future users.

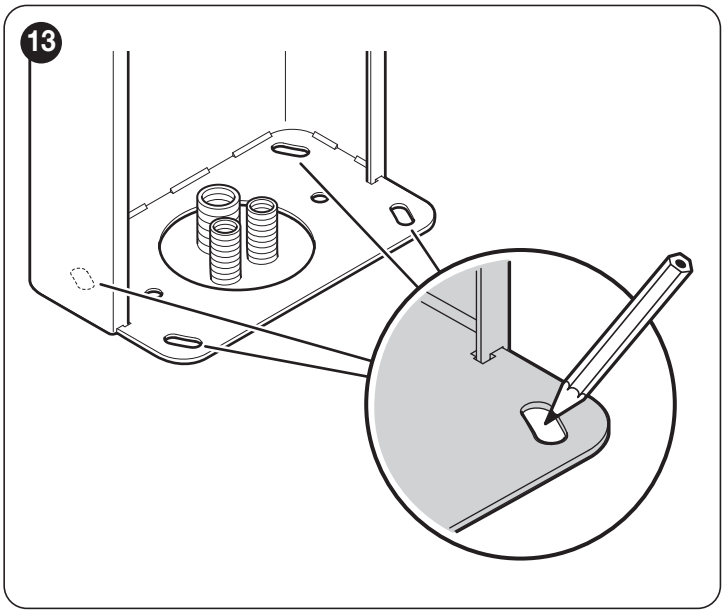
Before starting to assemble the automation, complete the preliminary checks described in the "*Pre-installation checks*" paragraph (page 4) and the "*Product usage limits*" paragraph (page 4).

If there is a support surface:

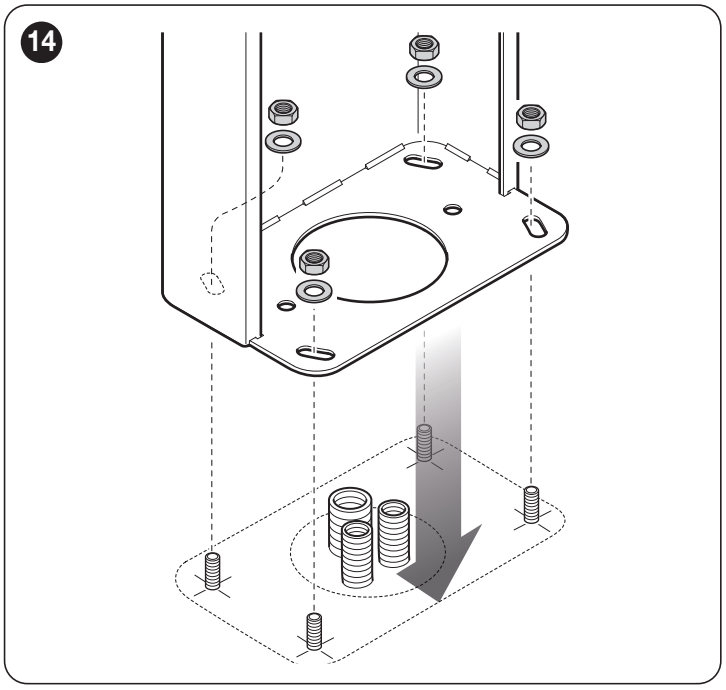
1. open the cubicle panel



2. place the cubicle on the anchoring surface and mark the points corresponding to the slots



3. move the cubicle and drill the surface through the marked points
4. insert 4 expansion bolts (not supplied)
5. arrange the cubicle properly and secure it with the appropriate nuts and washers (not supplied).



If there is no support surface:

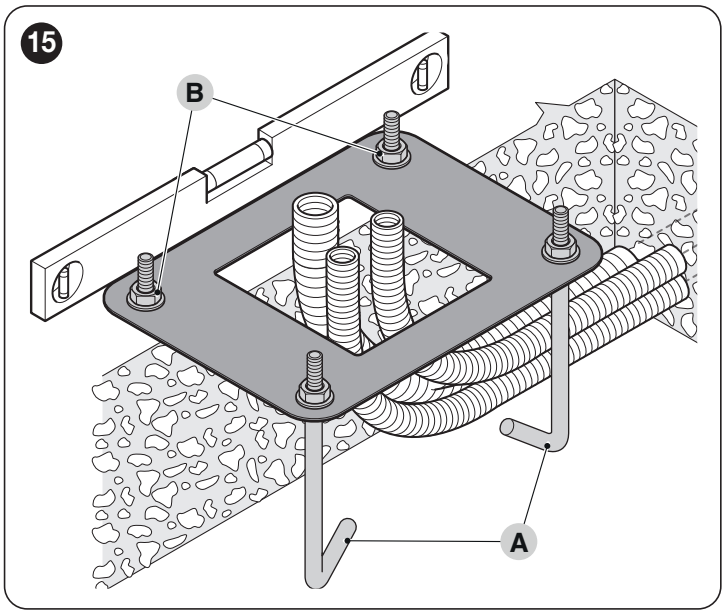
1. dig the hole to insert the foundation plate

Note The anchoring surface must be completely flat and smooth. If the surface is made of concrete, the latter must be at least 0,15 m thick and must be suitably reinforced with iron cages. The concrete must have a volume above 0.2 m^3 (a 0.25 m thickness corresponds to 0.8 m^2, that is, equal to a square base with sides each measuring roughly 0.9 m). The plate can be anchored to the concrete using the 4 expansion bolts, equipped with 12 MA screws capable of withstanding a tensile load of at least 400 kg. If the anchoring surface is made of a different material, it is necessary to verify its consistency and whether the four anchoring points can withstand a load of at least 1,000 kg. Use the 12 MA screws to fasten the plate.

2. arrange the pipes for routing the electrical cables

3. fasten the four anchor bolts (**A**) to the foundation plate, inserting a nut and washer (supplied) on each, on the upper and lower sides of the plate

The lower nut must be screwed up to the end of the thread.



4. pour the concrete and, before it starts to set, place the foundation plate flush with the surface, parallel to the boom and perfectly level

5. wait for the concrete to set completely, which generally takes two weeks

6. remove the four upper nuts and washers (**B**) from the anchor bolts

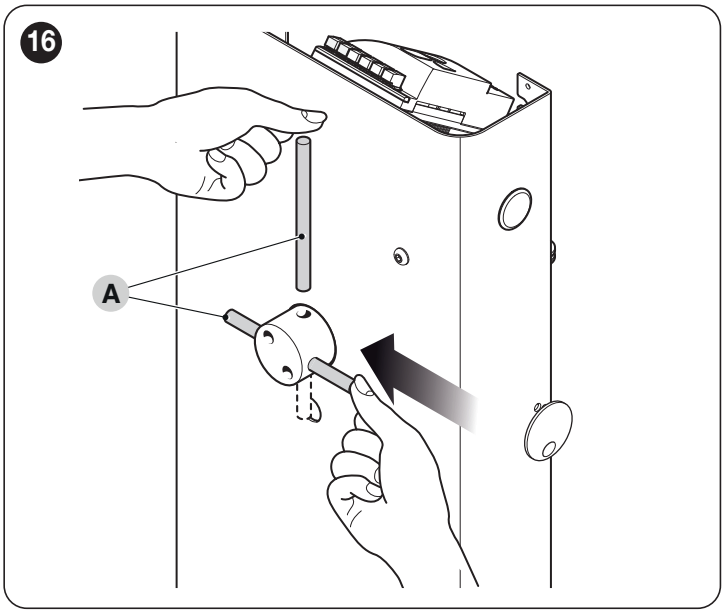
7. open the cubicle panel ("***Figure 7***")

8. arrange the cubicle properly and secure it with the appropriate nuts and washers removed previously ("***Figure 14***").

3.8 INSTALLING THE BOOM

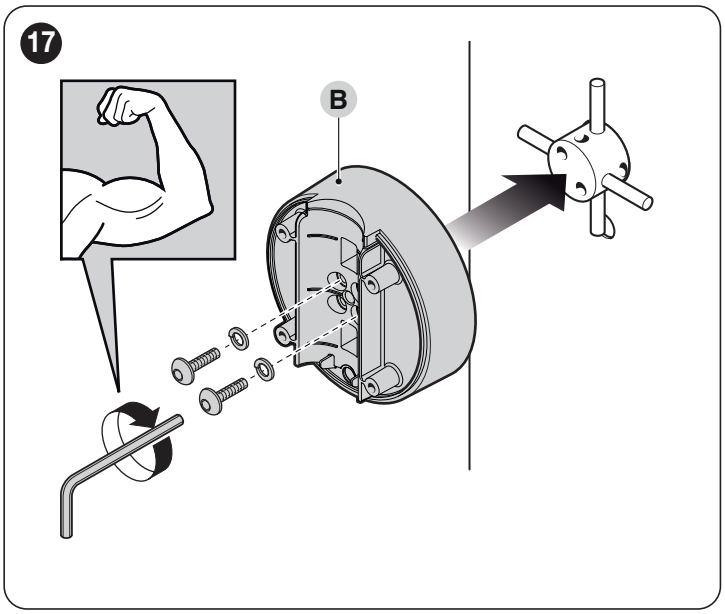
Proceed as follows to mount the boom of the gate:

1. insert the two pins (**A**) through the appropriate housings on the exit motor shaft

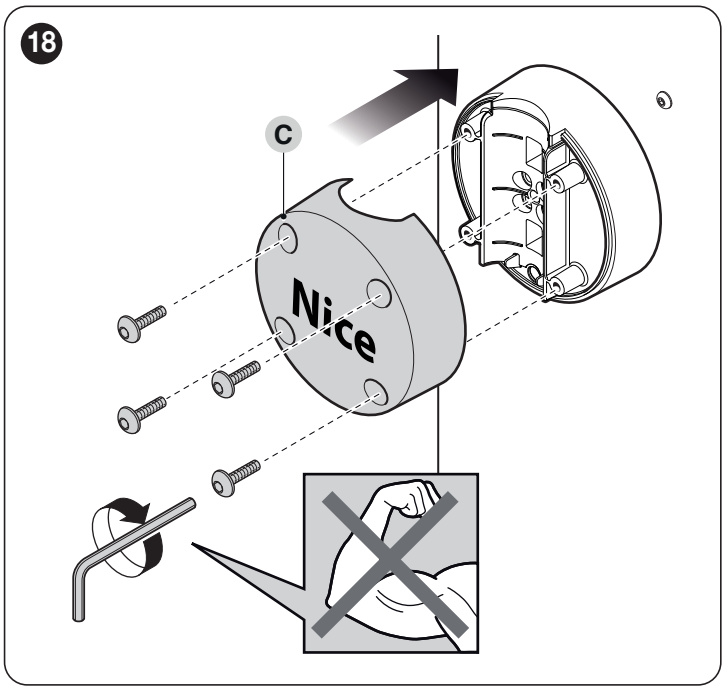


2. place the support (**B**) on the exit motor shaft, orienting it in the "vertical boom" position

3. fasten it with the appropriate screws and open Grower washers; tighten vigorously

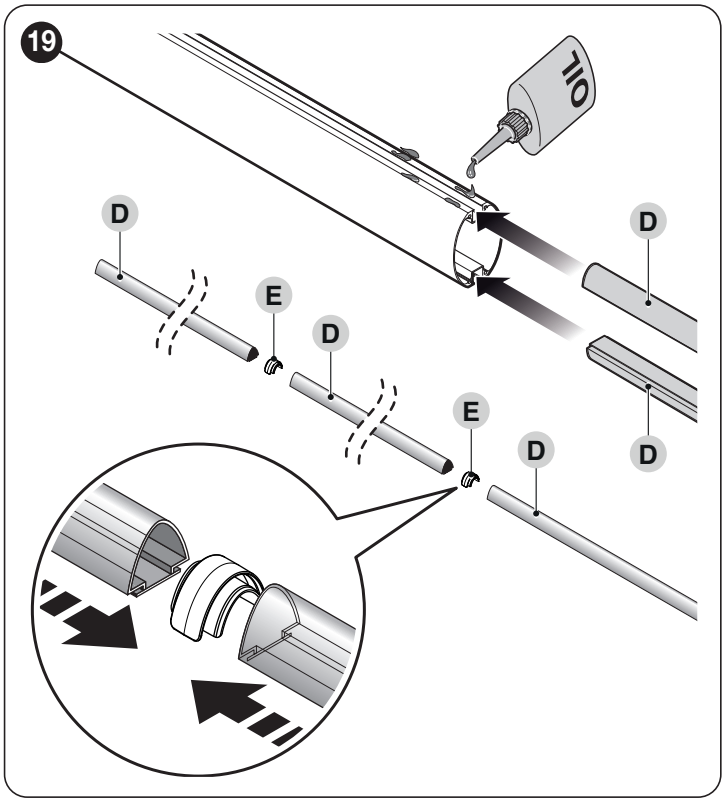


4. position the cover (**C**) of the support and fasten it with the 6 screws provided; leave the screws loose



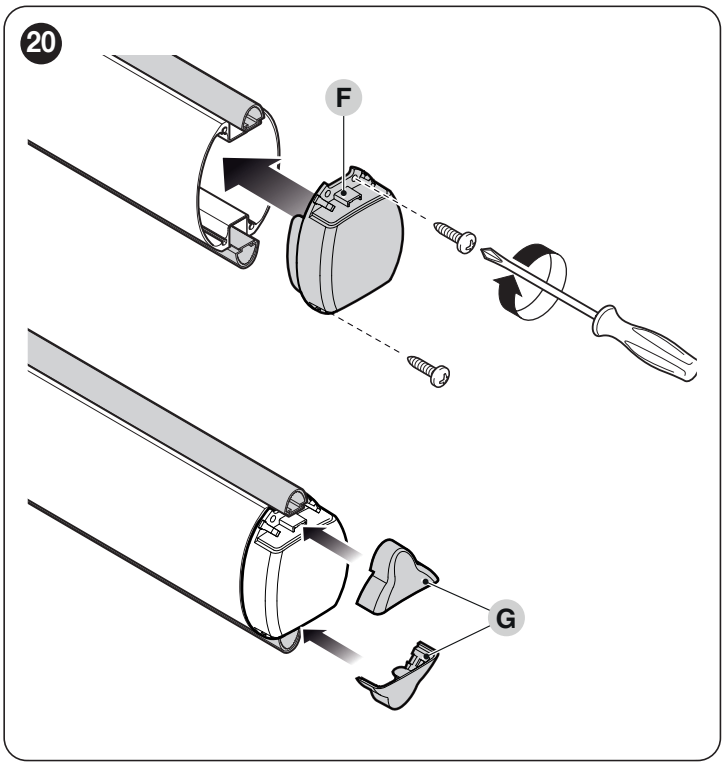
5. lightly oil the aluminium rail on both sides

6. along the entire length of the boom, insert the rubber impact protectors through the slots (**D**) alternating them with the relevant joints (**E**); the rubber protector can protrude roughly 1 cm from the end of the boom

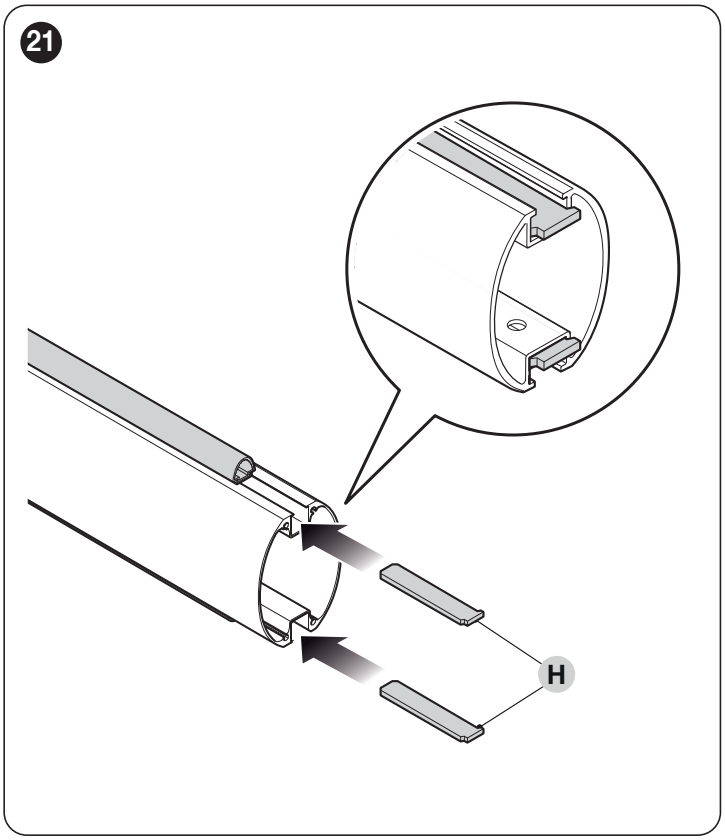


7. put on the boom cap (**F**) and secure it with the two screws

8. position and fit together the two rubber protector caps (**G**)



9. insert, through the opposite end with respect to the cap, the boom supporting plates (**H**)



10. insert the complete boom into the shell (**I**) of the support all the way to the end
11. vigorously tighten the 4 screws of the support inserted previously.

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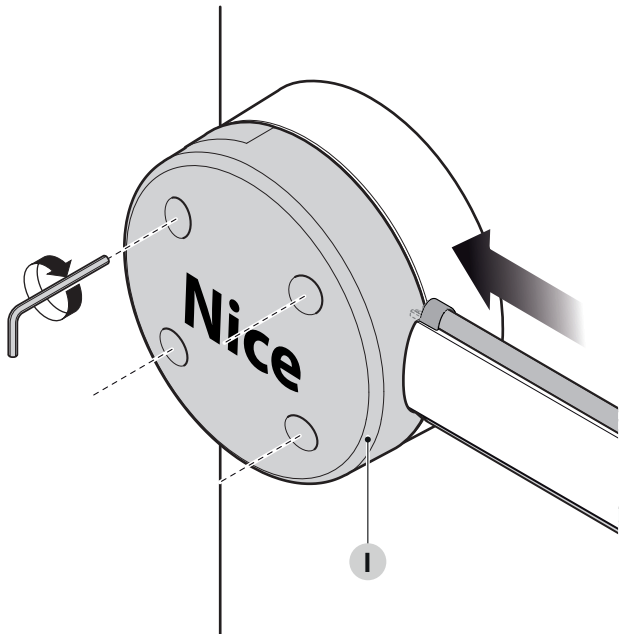

After installing the boom and the rubber impact protector, before proceeding further, the other accessories – if relevant – must be installed on the boom. To install them, refer to the respective instruction manuals.

3.9 ADJUSTING THE MECHANICAL LIMIT SWITCHES

To adjust the limit switches, proceed as follows:
1. unlock the gearmotor with the relevant key provided (refer to the "***Manually unlocking and locking the gearmotor***" paragraph)
2. manually move the boom so that it completes a full opening and closing manoeuvre
3. turn the screws of the mechanical stops (**A - B**) to adjust the boom's horizontal position, when it is closed, and its vertical position, when it is open

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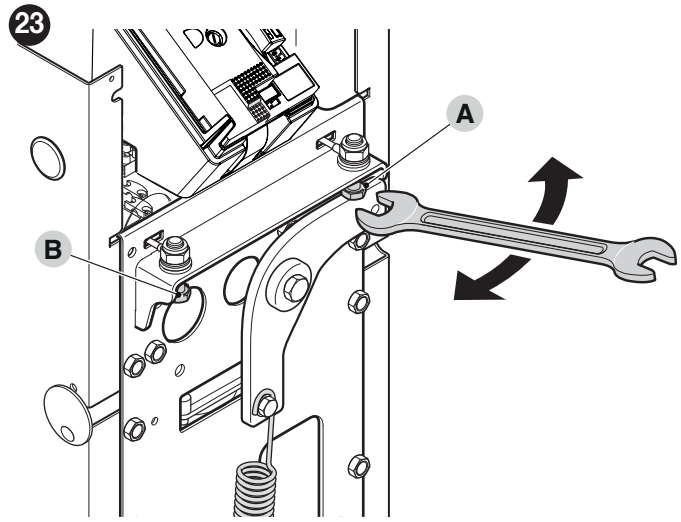

4. after making the adjustments, tighten the nuts vigorously.

3.10 BOOM BALANCING

The boom balancing operation is used to find the best balance between the overall weight of the boom, inclusive of the installed accessories, and the force opposed by the tension of the balancing spring.
To verify the spring tension, proceed as explained below.

1. unlock the gearmotor with the relevant key provided (refer to the "***Manually unlocking and locking the gearmotor***" paragraph)
2. manually move the boom to about half-way (45°) and leave it stationary
3. if the boom tends to rise, reduce the tension of the spring (**A**). On the other hand, if the boom tends to fall, increase the spring tension
4. put the boom in the maximum opening position
5. detach the balancing spring from its housing (**B**) and shift its anchoring point towards the centre, to reduce the spring tension, or towards the outside to increase the spring tension

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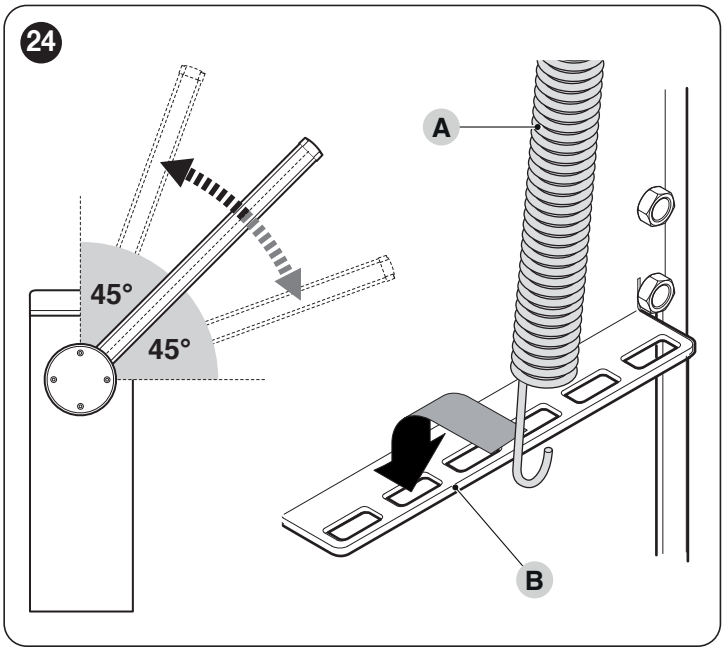


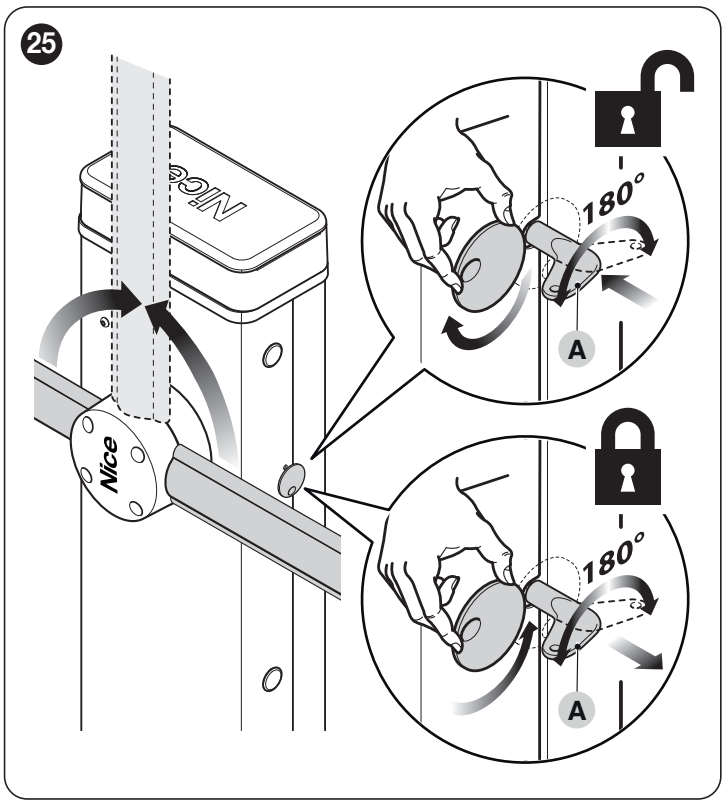
Note The imbalance is acceptable when the force required to move the boom during the opening and closing manoeuvres and in all other positions is less than or equal to half the maximum torque value (for this product, roughly 5 kg at 1 m).

6. repeat the operation by positioning the boom also at roughly 20° and 70°. If the boom remains stationary in its position, it means that it is correctly balanced; a slight imbalance is allowed, but the boom must never move substantially
7. lock the gearmotor.

3.11 MANUALLY UNLOCKING AND LOCKING THE GEARMOTOR

The gearmotor is equipped with a mechanical unlocking system that allows for opening and closing the boom manually.
These manual operations should only be performed in case of a power outage, malfunctions or during the installation phases.
To unlock the device:

1. turn the key slot cover
2. insert the key (**A**) and turn it by 180° towards the left or right



3. the gate leaf can now be moved manually to the desired position.

To lock the device:

1. turn the key (**A**) back to its initial position
2. remove the key
3. turn the key slot cover.

4 ELECTRICAL CONNECTIONS

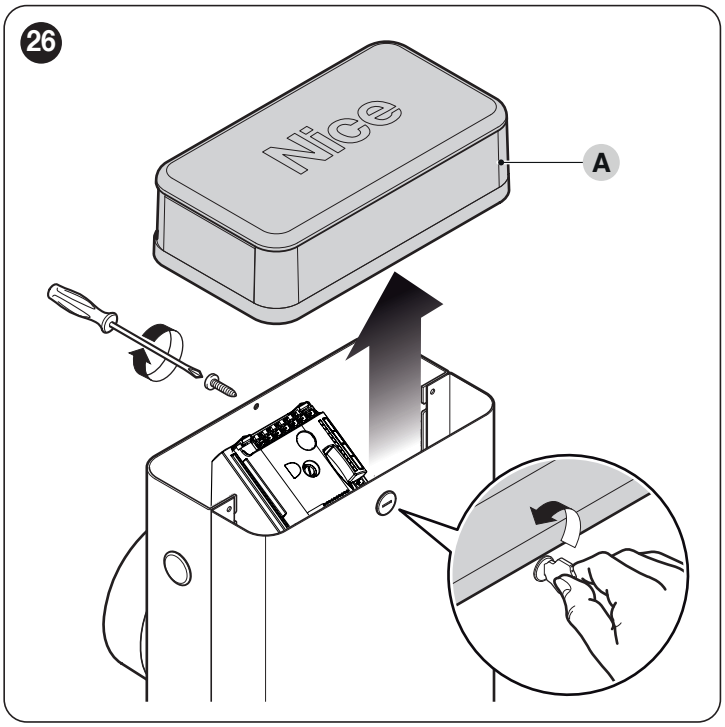
4.1 PRELIMINARY CHECKS

All electrical connections must be made with the system disconnected from the mains electricity and with the emergency power supply (if present in the automation) disconnected.

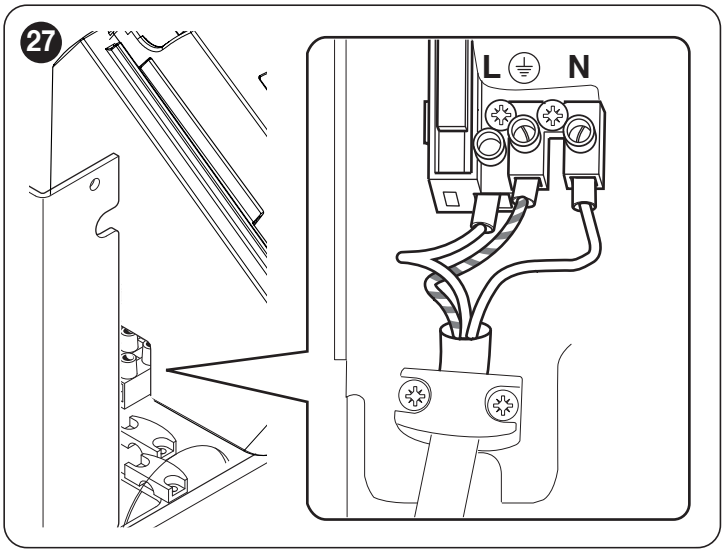
The connection operations must only be carried out by qualified personnel.

To make the electrical connections:

1. remove the upper cover (**A**) of the boom gate cubicle



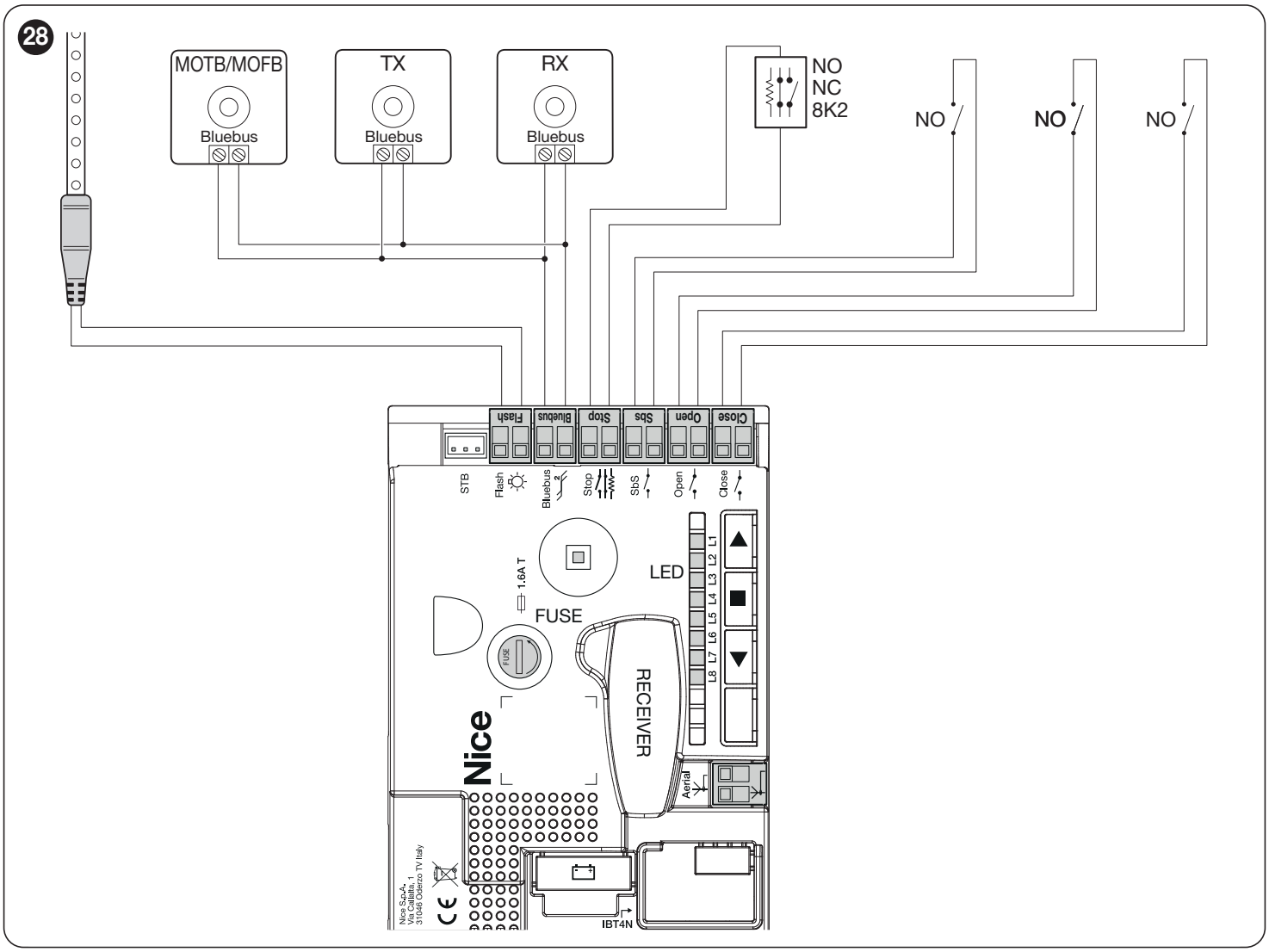
2. feed the electrical cables inside the cubicle towards the left, starting from the base and moving towards the control unit
3. feed the power supply cable through the cable clamp and connect it to the 3-contact terminal with fuse
4. tighten the screw of the cable clamp



5. connect the remaining cables, by consulting the wiring diagram in "***Figure 28***". For greater convenience, the terminals are removable.

4.2 WIRING DIAGRAM AND DESCRIPTION OF CONNECTIONS

4.2.1 WIRING DIAGRAM



4.2.2 DESCRIPTION OF CONNECTIONS

Table 3

ELECTRICAL CONNECTIONS	
Terminals	**Description**
FLASH	Output for flashing light; 12 V max 21 W lamps or a flashing light **Nice ELDC** can be connected. It can also be programmed for other functions (refer to the "***PROGRAMMING***" chapter) or reconfigured through the Oview programmer. In factory settings the output is turned off in Standby Mode.
BLUEBUS	This terminal can be used to connect compatible devices, which are all connected in parallel with only two wires carrying both the electric power and communication signals. For further information on the BlueBUS, refer to the "***Addressing of devices connected with the BlueBUS system***" paragraph.
STOP	Input for devices that suspend or even stop the current manoeuvre; "Normally Closed" and "Normally Open" contacts or fixed resistor devices can be connected by suitably configuring the input. For further information on the STOP function, refer to the "***Modifying the STOP input configuration***" paragraph.
SbS	Input for devices that control the movement in Step-by-Step mode; it is possible to connect "Normally Open" contacts.
OPEN	Input for devices that control the opening movement only; it is possible to connect "Normally Open" contacts.
CLOSE	Input for devices that control the closing movement only; it is possible to connect "Normally Open" contacts.
ANTENNA	Antenna connection input for radio receiver; antenna is incorporated on beacons **Nice ELDC**.
STB	Connector for connecting the Standby board.

If the programming of the outputs is modified, check that the connected device matches the type of voltage chosen.

4.3 ADDRESSING OF DEVICES CONNECTED WITH THE BLUEBUS SYSTEM

By means of addressing using special jumpers, the "BlueBUS" system enables the user to make the control unit recognise the photocells and assign the correct detection function.
The addressing operation must be done on both the TX and RX photocells (setting the jumpers in the same way), while making sure there are no other pairs of photocells with the same address.
A photocell addressing diagram is shown below, based on the type of photocell.

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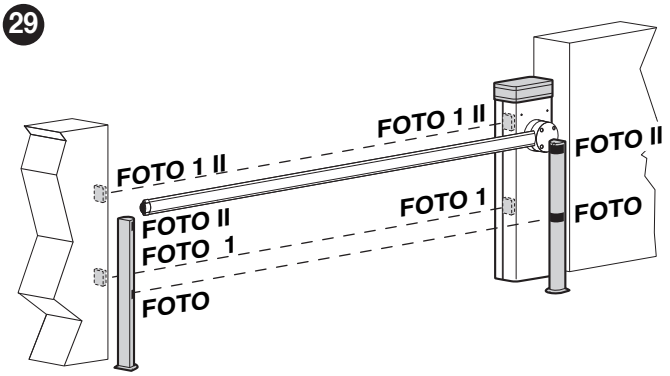
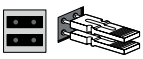
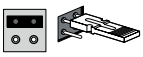
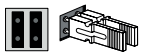
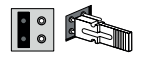
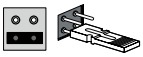
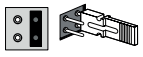
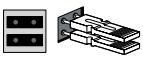
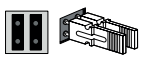


Table 4

PHOTOCELL ADDRESSES	
Photocell	**Position of the jumpers**
FOTO (PHOTO) **External photocell h = 50 activated during the closing phase (stops and reverses the gate's movement)**	
FOTO II (PHOTO II) **External photocell h = 100 activated during the closing phase (stops and reverses the gate's movement)**	
FOTO 1 (PHOTO 1) **Internal photocell h = 50 activated during the closing phase (stops and reverses the gate's movement)**	
FOTO 1 II (PHOTO 1 II) **Internal photocell h = 100 activated during the closing phase (stops and reverses the gate's movement)**	
FOTO 2 (PHOTO 2) **External photocell activated during the opening phase**	
FOTO 2 II (PHOTO 2 II) **Internal photocell activated during the opening phase**	
FOTO 3 (PHOTO 3) **Single photocell covering the entire automation**	
FA1 **Photocell for opening command (cut jumper A on the back of the TX and RX boards)**	
FA2 **Photocell for opening command (cut jumper A on the back of the TX and RX boards)**	

At the end of the installation procedure, or after photocells or other devices have been removed, it is necessary to complete the learning procedure (see the "*Device learning*" paragraph).

5 FINAL CHECKS AND START-UP

5.1 POWER SUPPLY CONNECTION

The power supply connections must only be made by qualified and experienced personnel possessing the necessary requirements and in full conformity to the laws, regulations and standards in force.

Connect the control unit to a power line equipped with a safety earthing system. Install a circuit breaker with a contact gap that ensures full disconnection in the Category III overvoltage conditions, or mount a plug and socket system.
As soon as the product is powered, a few simple checks should be carried out:

1. check that the LEDs on the control unit flash.
2. make sure that the LEDs on the photocells (both the TX and RX) also flash; the type of flashing is irrelevant, since it depends on other factors.
3. check that the device connected to the FLASH output or the LED warning light XBA7 is switched off (with factory setting).

If the above conditions are not satisfied, immediately switch off the power supply to the control unit and carefully check the electrical connections.
Further useful information on fault search and diagnosis is included in the "***Troubleshooting***" paragraph (page 23).

5.2 DEVICE LEARNING

Once the power supply has been connected, the control unit must recognise the devices connected to the "**BlueBUS**" and "**STOP**" inputs. Prior to this phase, LEDs "**L1**" and "**L2**" will flash to signal that the device learning procedure must be performed.

The learning phase must be carried out even if no device is connected to the control unit.

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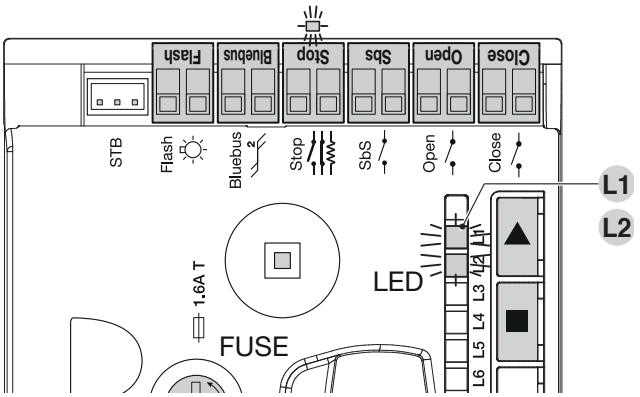


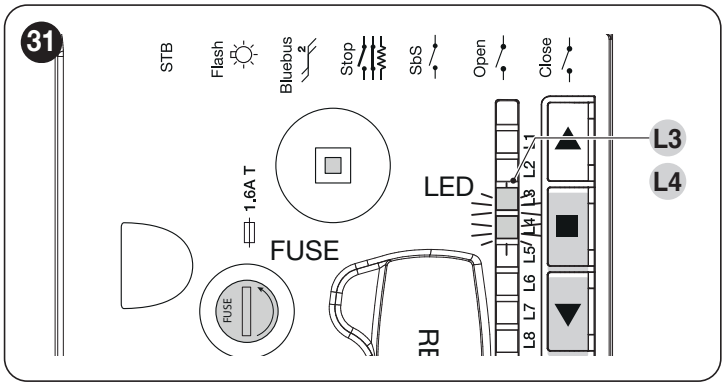
To do this:

1. simultaneously press and hold the ▲ and ■ buttons
2. release the buttons when LEDs **"L1"** and **"L2"** start flashing quickly (after roughly 3 seconds)
3. wait a few seconds until the control unit has completed the device learning phase
4. once this phase terminates, the **"Stop"** LED must be lit and LEDs **"L1"** and **"L2"** must switch off (LEDs "**L3**" and "**L4**" could start flashing).

The self-learning phase of the connected devices can be repeated at any time also after the installation, for example whenever a device must be added.

5.3 LEARNING OF THE MECHANICAL STOP POSITIONS

Once the connected devices have been learned, the mechanical stop positions must be learned (maximum opening and maximum closing).
If LEDs "**L3**" and "**L4**" flash, it means that the mechanical stop positions must be learned.



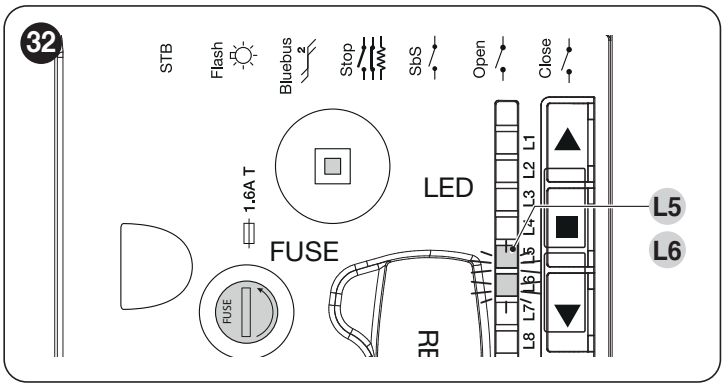
To do this:

1. unlock the gearmotor with the relevant key provided (refer to the "***Manually unlocking and locking the gearmotor***" paragraph)
2. manually move the boom to about half-way (45°) and leave it stationary
3. lock the gearmotor
4. simultaneously press and hold the ▼ and ■ buttons
5. release the buttons when the manoeuvre starts (after roughly 3 seconds)
6. wait for the control unit to complete the learning phase: boom closing, opening and closing
7. while the manoeuvres are being executed, make sure that the boom's balancing lever strikes the mechanical stops of the limit switch. If this does not occur, stop the procedure, adjust the mechanical stops of the limit switch and repeat the procedure from the beginning.

Do not interrupt the execution of the manoeuvres: if this occurs, the entire procedure must be repeated from the beginning.

5.3.1 AUTOMATIC LEARNING OF THE FORCES

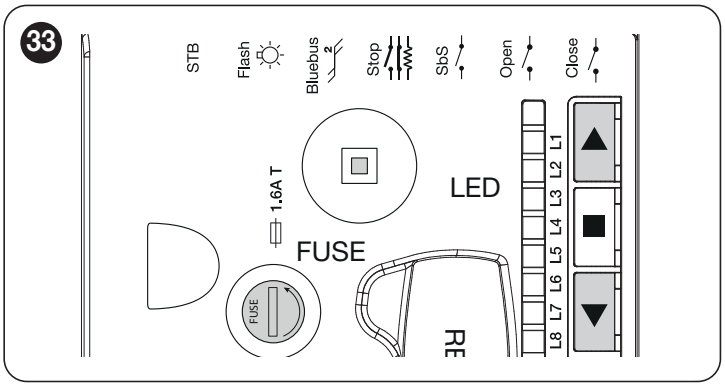
The automatic learning of the forces is necessary for the control unit to assess the forces required to move the boom and thus autonomously set the necessary parameters.
The automatic force learning procedure activates at the end of the "**Learning of the mechanical stop positions**", or whenever the following parameters are modified: **speed, slowdown positions, long/shot slowdown**.
To signal that the automatic learning of the forces has been activated and is under way, LEDs "**L5**" and "**L6**" flash simultaneously.
The automatic procedure starts when an Open command is received: The automation will independently perform **3 complete Open and Close cycles**. At the end, LEDs 'L5' and 'L6' will turn off. If the procedure is interrupted, it must be performed again. During movement, the forces are set to the maximum value.
Other LEDs may subsequently remain lit to signal that the ON/OFF functions of Level 1 are active (see paragraph "***Level 1 programming (ON-OFF)***").
During the 3 cycles, the automatic manoeuvres (e.g.: Automatic closing, Close after photo, Always close, etc.) are temporarily disabled: they will resume normal operation once the procedure terminates.



If LEDs "**L5**" and "**L6**" continue to flash, the 3 cycles must be carried out again until the LEDs switch off.

5.4 CHECKING THE BOOM'S MOVEMENT

Once the learning stage is complete, it is advisable to carry out a few manoeuvres in order to verify that the boom gate moves properly.



To do this:

1. press the ▲ button to command an "Open" manoeuvre; check that the boom starts slowing down before reaching the open position
2. press the ▼ button to command a "Close" manoeuvre; check that the boom starts slowing down before reaching the closed position
3. during the manoeuvre, check that the LED warning light, if present, flashes alternatively on and off every 0.5 seconds
4. open and close the gate several times to make sure that there are no points of excessive friction and that there are no defects in the assembly or adjustments.

After the initial opening and closing manoeuvres, the values of parameters "**L5**" and "**L6**" of the Level 2 programming menu will be automatically modified by the control unit to optimally adapt to the installation.

5.5 CONNECTING OTHER DEVICES

If the user needs to power external devices, such as a radio receiver or the light of the key selector switch, power can be tapped as shown in the figure.
The power supply voltage is 24V⎓ -30% ÷ +50% with a maximum available current of 100mA.
In calculating the consumption in Standby Mode, the energy consumption of the accessories has not been considered. Check the respective instructions for the consumption of these accessories.
WARNING: in Standby mode the power supply drops to **21V ⎓ +/-10%** with an available power of 2W.

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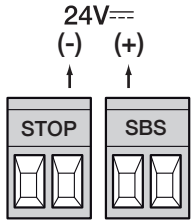

6 TESTING AND COMMISSIONING

These are the most important phases of the automation's construction, as they ensure maximum safety of the system. The test can also be used to periodically verify the devices making up the automation.

Testing and commissioning of the automation must be performed by skilled and qualified personnel, who are responsible for the tests required to verify the solutions adopted according to the risks present, and for ensuring that all legal provisions, standards and regulations are met, in particular all the requirements of the EN 12445 standard, which defines the test methods for checking gate automations.

The additional devices must undergo specific testing, both in terms of their functions and their proper interaction with the control unit. Refer to the instruction manuals of the individual devices.

6.1 TESTING

The standby function is active by default. The control unit enters Standby Mode by turning off some circuits and reducing consumption after 10 minutes from switching on if the board is not configured with the quotas and after 5 minutes if it is configured.

To run the test:

1. verify that all the instructions stated in the "***GENERAL SAFETY WARNINGS AND PRECAUTIONS***" chapter (page 2) have been strictly observed
2. check that the boom is correctly balanced (see paragraph "***Boom balancing***")
3. check that the manual unlocking device works properly (see paragraph "***Manually unlocking and locking the gearmotor***")
4. using the control devices (transmitter, control push-button, key selector, etc.), test the boom opening, closing and stopping phases, ensuring that the movement matches the specifications. Several tests should be conducted to assess the boom's movement and to check for any assembly or adjustment defects or any particular points of friction
5. check, one-by-one, that all safety devices mounted on the system (photocells, sensitive edges, etc.) work properly. Each time a device intervenes, the "**Bluebus**" LED on the control unit will emit two faster flashes to confirm the recognition
6. verify the correct operation of the photocells in the following way:
   - depending on whether one or two pairs of photocells have been installed, one or two blocks of rigid material (e.g. wooden panels) are required, measuring 70x30x20 cm. Each block must have three sides of reflective material (e.g. mirror or glossy white paint), one for each dimension, and three sides of opaque material (e.g. matt black paint). To test the photocells positioned 50 cm above the ground, the block must be placed on the ground, or raised to 50 cm when testing photocells positioned 1 m above the ground
   - if the test is on **a pair of photocells**, the testing block must be placed directly under the centre of the boom with the 20 cm sides facing the photocells and moved along the entire length of the boom

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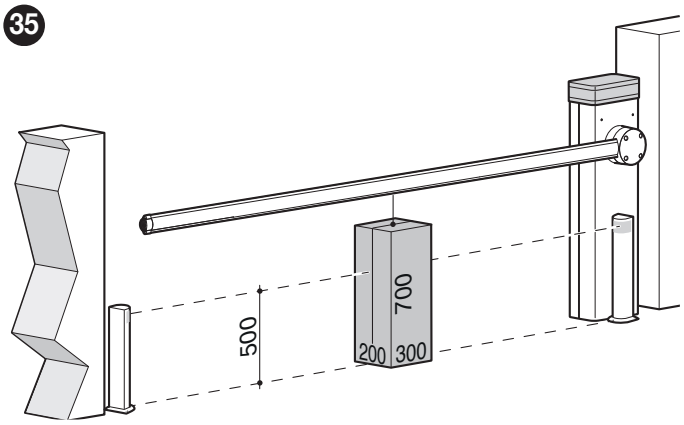
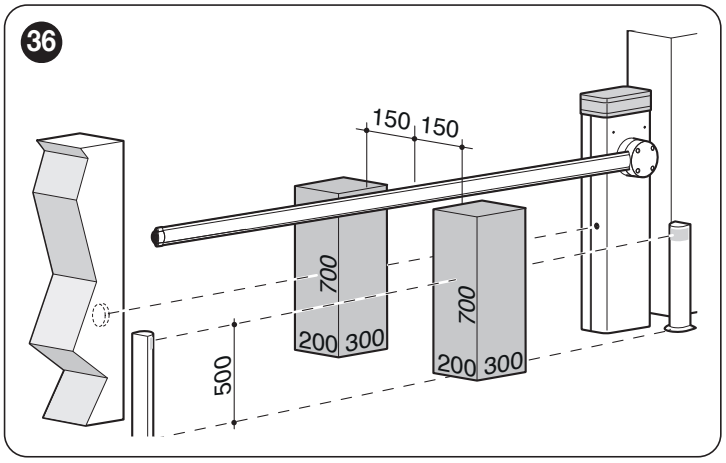
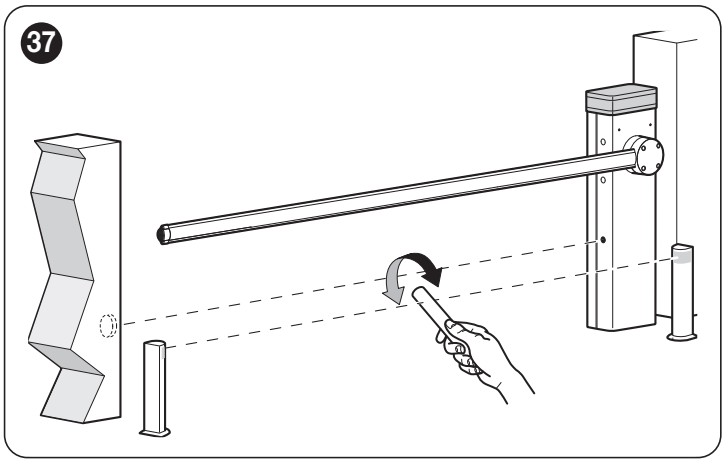


   - if the test is on **two pairs of photocells**, the test must first be performed individually for each pair of photocells using one testing block and then repeated using two testing blocks; each testing block must be positioned laterally in relation to the centre of the boom, at a distance of 15 cm and then moved along the entire length of the boom



- during these tests, the testing block must be detected by the photocells in any position it lies along the entire length of the boom

7. check that there are no interferences between the photocells and other devices:
- block the line of sight between the pair of photocells with a cylinder (diameter 5 cm, length 30 cm), by moving it close to the TX photocell first then next to the RX photocell and then at the midpoint between the two



- check that the device intervenes in all cases, switching from the active to the alarm status and vice-versa
- check that it triggers the intended action in the control unit (e.g. a reversal of the movement during the closing manoeuvre)

8. **check on the safeguard against the lifting hazard**: in automations with vertical movement it is necessary to verify that there is no lifting hazard. This test can be carried out in the following way:
- hang a 20 kg load (e.g. a sand bag) midway along the boom's length
- send an opening command and check that during the manoeuvre the boom does not exceed a height of 50 cm above its closed position
- if the boom exceeds this height, the motor force must be reduced (refer to the chapter "***PROGRAMMING***")

9. if potentially dangerous situations due to the boom's movement have been prevented by limiting the impact force, the latter must be measured according to the EN 12445 standard and, if the "motor force" control is used to aid the system in reducing the impact force, it is necessary to test various adjustments to find the one that gives the best results

10. **checking the efficiency of the unlocking system**:
- put the boom in the closed position and manually unlock it (see paragraph "***Manually unlocking and locking the gearmotor***")
- verify that this occurs smoothly
- verify that the manual force to move the boom during the opening phase does not exceed 200 N (roughly 20 kg)
- the force is measured perpendicularly to the boom at 1 m from the rotation axis

11. **verification of the power supply disconnection system:** operate the power disconnection device and disconnect any available back-up batteries; check that all the LEDs on the control unit are OFF and that the boom remains stationary when a command is sent. Check the efficiency of the locking system to prevent any unintentional or unauthorised connection.

6.2 COMMISSIONING

Commissioning can only be performed after all testing phases have been successfully completed.

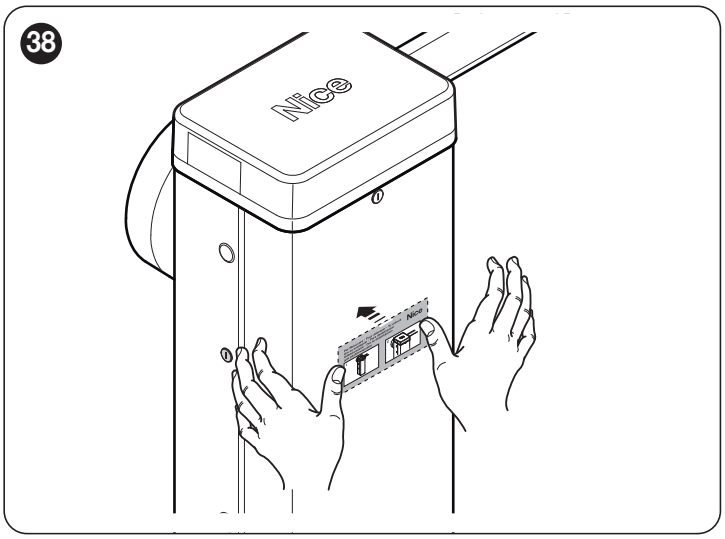
Before commissioning the automation, ensure that the owner is properly informed of all residual risks and hazards.

The gate cannot be commissioned partially or under "temporary" conditions.

To commission the automation:

1. compile the automation's technical file, which must include the following documents: overall drawing of the automation, wiring diagram, risk assessment and relative solutions adopted, the manufacturer's declaration of conformity for all devices used and the declaration of conformity compiled by the installer

2. affix a permanent label or sign on the cubicle specifying the operations for unlocking the gate and manoeuvring it manually "***Figure 38***"

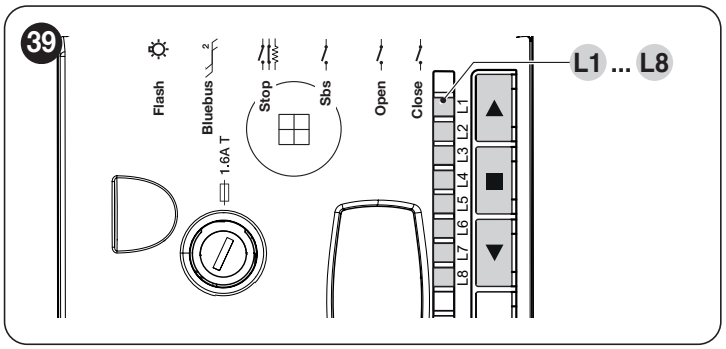


3. affix a data plate to the cubicle specifying at least the following data: type of automation, name and address of the manufacturer (responsible for commissioning), serial number, year of manufacture and CE mark
4. compile the declaration of conformity of the automation and hand it to the owner of the automation
5. compile the User Manual of the automation and hand it to the owner of the automation
6. compile and provide the owner with the automation's "Maintenance schedule", containing the maintenance instructions for all the automation's devices.

For all the above-mentioned documentation, Nice – through its technical assistance service – provides the following: instruction manuals and guides.

7 PROGRAMMING

There are 3 buttons on the control unit: ▲, ■ and ▼ ("***Figure 39***") which can be used both to command the control unit during the testing phase and to programme the available functions.



The available programmable functions are grouped into **two levels** and their operating status is signalled by eight LEDs "**L1 ... L8**" located on the control unit (LED lit = function enabled; LED off = function disabled).

7.1 USING THE PROGRAMMING BUTTONS

▲ Button for commanding the boom gate opening
Selection button during the programming phase.

■ Button used to stop a manoeuvre
If pressed for more than 5 seconds, it allows for entering the programming mode.

▼ Button for commanding the boom gate closing
Selection button during the programming phase.

7.2 LEVEL 1 PROGRAMMING (ON-OFF)

All the Level 1 functions are factory-set to "**OFF**" with the exception of parameter "**L5**" and can be modified at any time. To check the various functions, refer to "***Table 5***". Take care during modification procedures, as there is a maximum time interval of 10 seconds between pressing of different buttons; otherwise the procedure terminates automatically and stores the changes made up to that time.

7.2.1 LEVEL 1 PROGRAMMING PROCEDURE

The user has maximum 20 seconds to press the buttons consecutively during the programming procedure. After this time, the procedure terminates automatically and memorises the changes made up to that time.

To perform Level 1 programming:

1. press and hold the ■ button until LED "**L1**" starts flashing
2. release the ■ button when LED "**L1**" starts flashing
3. press the ▲ or ▼ button to move the flashing LED to the LED associated with the function to be modified
4. press the ■ button to change the status of the function:
   - short flash = **OFF**
   - long flash = **ON**
5. wait 10 seconds (maximum time) to exit the programming mode.

To set other functions to "ON" or "OFF", while the procedure is running, repeat points 2 and 3 during the phase itself.

Table 5

LEVEL 1 FUNCTIONS (ON-OFF)		
LED	**Function**	**Description**
L1	**Automatic closing**	**Function ENABLED:** after an opening manoeuvre there is a pause (equal to the set pause time), after which the control unit automatically starts a closing manoeuvre. The pause time is set by default to 30 seconds. **Function NOT ENABLED:** the system works in "semi-automatic" mode.
L2	**Close after photo**	**Function ENABLED:** the behaviour changes depending on whether the "Automatic Closing" function is enabled or not. When "Automatic Closing" is disabled: the boom gate always reaches the fully open position (even if the Photo disengages first). When Photo disengages, automatic closing is triggered with a 5-second pause. When "Automatic Closing" is enabled: the opening manoeuvre stops immediately after the photocells have disengaged. After 5 seconds, the gate will start closing automatically. The "Close After Photo" function is always disabled in manoeuvres interrupted by a Stop command. **Function DISABLED:** the pause time is that which has been programmed or automatic re-closing will not take place if the function is disabled.
L3	**Always Close**	**Function ENABLED:** in the event of a blackout, even of short duration, if the control unit detects that the door is open once the electricity is restored, it automatically starts a closing manoeuvre, preceded by a 3-second pre-flashing sequence. **Function DISABLED:** when the electricity is restored, the gate remains in the same position.
L4	**Stand-by**	This function enables/disables Standby Mode, significantly reducing power consumption. With this function on and by connecting external devices as described in "***Figure 28***", the consumption of the product is as stated in the "Power in Standby Mode" technical specifications. With this function disabled or with different connections and accessories, the consumption will be higher. **ACTIVE function:** 5 minutes after the end of the maneuver, the control unit turns off the BlueBUS output (and therefore the devices) and all the LEDs except the BlueBUS LED which will flash more slowly. When the control unit receives a command to the SbS terminal, from card keys, radio or via BiDiWiFi, it restores full operation. The function is active by default. **Function DISABLED:** there will be no reduction in consumption.
L5	**Long slowdown**	**Function ENABLED:** allows for doubling the space from which the slowdown starts, during both the opening and closing manoeuvres. **Function DISABLED:** short slowdown. **IMPORTANT:** whenever a parameter must be changed, the user must follow the indications stated in the "***Automatic learning of the forces***" procedure.
L6	**Pre-flashing**	**Function ENABLED:** a 3-second pause can be added between the switching on of the warning light and the start of the manoeuvre, to warn the user in advance of a potentially dangerous situation. **Function DISABLED:** the signalling of the warning light coincides with the start of the manoeuvre.
L7	**Sensitivity**	**Function ENABLED:** allows for considerably increasing the motor's sensitivity in detecting obstacles. If used to aid impact force detection, the "Speed" and "Motor force" parameters in the Level 2 menu must also be adjusted.
L8	**Motor rotation direction**	**Function ENABLED:** allows for inverting the motor's rotation direction in order to install the barrier to the right. **Function DISABLED:** the factory setting, with the barrier closing towards the left. **WARNING**: when this function is enabled, the "Opening" and "Closing" positions must be learned (see the "***Learning of the mechanical stop positions***" paragraph).

During normal operation, LEDs "L1 ... L8" are on/off depending on the status of the respective function; for example, "L1" is lit when the "Automatic Closing" function is enabled.

During the manoeuvre, LEDs "L1 ... L8" flash to signal the force required to move the boom at that time. If "L1" flashes, the force required is low and so forth, until LED "L8" flashes to signal the maximum force.

Please note that there is no relation between the force level indicated by the LEDs during the movement (which is an absolute value) and the level indicated by the LEDs during the force (which is a relative value) programming phase. See LEDs "L5" and "L6" in "*Table 6*".

7.3 LEVEL 2 PROGRAMMING (ADJUSTABLE PARAMETERS)

All the Level 2 parameters are factory-set as highlighted in "**GREY**" in "***Table 6***" and can be modified at any time. The parameters can be set to a scale of 1 to 8. The check the value corresponding to each LED, refer to "***Table 6***".

7.3.1 LEVEL 2 PROGRAMMING PROCEDURE

The user has maximum 20 seconds to press the buttons consecutively during the programming procedure. After this time, the procedure terminates automatically and memorises the changes made up to that time.

To perform Level 2 programming:

1. press and hold the ■ button until LED "**L1**" starts flashing
2. release the ■ button when LED "**L1**" starts flashing
3. press the ▲ or ▼ button to move the flashing LED to the "**entry LED**" associated with the parameter to be modified
4. press and hold the ■ button. With the ■ button pressed:
   - wait roughly 3 seconds, until the LED representing the current level of the parameter to be modified lights up
   - press the ▲ or ▼ button to shift the LED associated with the parameter's value
5. release the ■ button
6. wait 10 seconds (maximum time) to exit the programming mode.

To set multiple parameters during the procedure's execution, repeat the operations from point 2 to point 4 during the phase itself.

Table 6

LEVEL 2 FUNCTIONS (ADJUSTABLE PARAMETERS)				
Entry LED	**Parameter**	**LED (level)**	**Set value**	**Description**
L1*	**Pause Time**	L1	5 seconds	Adjusts the pause time, in other words, the time before automatic re-closure. It is only effective if the "Automatic Closing" function is enabled.
		L2	10 seconds	
		L3	**20 seconds**	
		L4	40 seconds	
		L5	60 seconds	
		L6	80 seconds	
		L7	120 seconds	
		L8	200 seconds	
L2**	**Step-by-Step function**	L1	Open - Stop - Close - Stop	Controls the sequence of controls associated with the SbS input or the 1st radio command.
		L2	**Open - Stop - Close - Open**	
		L3	Open - Close - Open - Close	
		L4	Condominium (more than 2 sec triggers "Stop")	
		L5	Condominium 2 (less than 2 sec triggers "Partial Open")	
		L6	Step-by-Step 2	
		L7	Hold-to-run	
		L8	Opening in "semi-automatic" mode, closing in "hold-to-run" mode	
L3*	**Motor speed**	L1	Speed 1 (30% - slow)	Adjusts the motor speed during normal manoeuvres. **IMPORTANT:** whenever a parameter must be changed, the user must follow the indications stated in the "***Automatic learning of the forces***" procedure.
		L2	Speed 2 (47%)	
		L3	Speed 3 (65%)	
		L4	**Speed 4 (82%)**	
		L5	Speed 5 (100% - fast)	
		L6	Open V3, close V2	
		L7	Open V4, close V3	
		L8	Open V5, close V4	

LEVEL 2 FUNCTIONS (ADJUSTABLE PARAMETERS)				
Entry LED	**Parameter**	**LED (level)**	**Set value**	**Description**
L4**	**FLASH output**	L1	Gate open indicator	Selects the device connected to the FLASH output.
		L2	Enabled if boom is closed	
		L3	Enabled if boom is open	
		L4	Warning light	
		L5	**Boom light warning light**	
		L6	Electric lock	
		L7	Suction cup	
		L8	Maintenance indicator	
L5*	**Motor force on opening**	L1	Force 1 (low)	Sets the system for controlling the motor force, to adapt it to the weight of the boom during the opening manoeuvre.
		L2	Force 2	
		L3	Force 3	
		L4	Force 4	
		L5	**Force 5**	
		L6	Force 6	
		L7	Force 7	
		L8	Force 8 (high)	
L6*	**Motor force on closing**	L1	Force 1 (low)	Sets the system for controlling the motor force, to adapt it to the weight of the boom during the closing manoeuvre.
		L2	Force 2	
		L3	Force 3	
		L4	**Force 4**	
		L5	Force 5	
		L6	Force 6	
		L7	Force 7	
		L8	Force 8 (high)	
L7*	**Maintenance notice**	L1	2500	Adjusts the number of manoeuvres after which the automation maintenance request is triggered (see the "***"Maintenance notice" function***" paragraph).
		L2	5000	
		L3	**10000**	
		L4	15000	
		L5	20000	
		L6	30000	
		L7	40000	
		L8	50000	
L8	**List of malfunctions**	**L1**	**Result of 1st manoeuvre (most recent)**	Allows for viewing the type of anomalies that occurred in the last 8 manoeuvres (refer to the "***Anomaly log***" paragraph). This is a read-only parameter, which means that its values cannot be modified.
		L2	Result of 2nd manoeuvre	
		L3	Result of 3rd manoeuvre	
		L4	Result of 4th manoeuvre	
		L5	Result of 5th manoeuvre	
		L6	Result of 6th manoeuvre	
		L7	Result of 7th manoeuvre	
		L8	Result of 8th manoeuvre	

All parameters can be adjusted as desired without any problems; only the "Motor force on opening" and "Motor force on closing" settings require special attention:

- high force values should not be used to compensate for points of abnormal friction affecting the boom; excessive force can jeopardise the operation of the safety system or damage the boom
- if the "Motor Force" control is used to aid the impact force reduction system, measure the force again after each adjustment in accordance with the EN 12445 standard
- wear and weather conditions may affect the boom gate's movement, therefore periodic force readjustments of the motor force may be necessary.

(*) If the value of a parameter falls between two adjacent values, the control unit will switch on intermittently the two LEDs identifying the value itself. If necessary, the values can be rounded off by pressing the ▲ or ▼ button to round off respectively to the lower or higher value among the two values highlighted by the control unit.
Example: Maintenance warning = 7000 manoeuvres - LEDs L2 and L3 will flash. Pressing the ▼ button rounds off to value L3 (10000), while pressing the ▲ button rounds off to value L2 (2500).
If the value of a parameter is below the minimum value or above the maximum value among those listed in the table, the control unit will switch on intermittently LED L1 or L8 respectively. If necessary, the values can be rounded off by pressing the ▲ or ▼ button to round off to the nearest value.
Example: Pause Time = 3 seconds - LED L1 will flash. Pressing the ▲ button rounds off to value L1 (10 s) and L1 will no longer flash because the parameter will have been rounded off to a known value.

(**) If the configuration has not been learned, when LEVEL 2 of the MENU opens up, the control unit will propose the default configuration.

7.4 SPECIAL FUNCTIONS

7.4.1 "ALWAYS OPEN" FUNCTION

The "Always open" function is a control unit feature that enables the user to always command an opening manoeuvre when the "**Step-by-Step**" command lasts longer than 2 seconds; this is useful, for example, for connecting a timer contact to the SbS terminal in order to keep the gate open for a certain time frame.
This feature is valid regardless of how the "SbS" input is programmed, unless it is programmed to perform the "Condominium 2" function. Refer to the "**Step-by-Step function**" under the "***Level 2 programming (adjustable parameters)***" paragraph.

7.4.2 "MOVE ANYWAY" FUNCTION

This function can be used to operate the automation even one or more some safety devices fail to work properly or are out of order. The automation can be controlled in "**hold-to-run**" mode by proceeding as follows:

1. send a command to operate the gate, using a transmitter or key selector, etc. If everything functions properly, the gate will move normally, otherwise proceed with point 2
2. within 3 seconds, press the control again and hold it down
3. after roughly 2 seconds, the gate will complete the requested manoeuvre in "**hold-to-run**" mode, in other words, it will continue to move so long as the control is held down.

When the safety devices fail to work, the flashing indicator will flash a few times to signal the type of problem. To verify the type of anomaly, consult the "*Signalling through warning light*" chapter (page 24).

7.4.3 "MAINTENANCE NOTICE" FUNCTION

This function notifies the user when the automation needs a maintenance check. The number of manoeuvres after which the signal is triggered can be selected among 8 levels, through the "**Maintenance notice**" adjustable parameter (see paragraph "***Level 2 programming (adjustable parameters)***").
Level 1 adjustment is "automatic" and takes into account the severity of the manoeuvres, in other words, their force and duration, while the other adjustments are defined on the basis of the number of manoeuvres.

The maintenance signal is sent through the Flash warning light or the maintenance indicator, depending on the relative settings (see paragraph "***Level 2 programming (adjustable parameters)***").

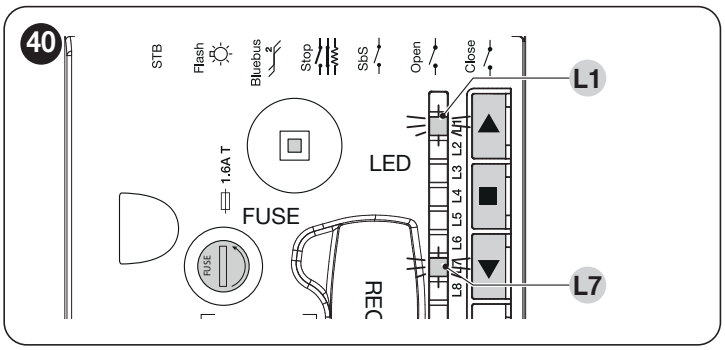
The "Flash" warning light and the maintenance indicator give the signals indicated in "*Table 7*" based on the number of manoeuvres completed with respect to the set limit.

Table 7

MAINTENANCE NOTICE THROUGH FLASH AND MAINTENANCE INDICATOR		
Number of manoeuvres	**Signal on "Flash"**	**Maintenance indicator signal**
Below 80% of the limit	Normal (0.5 sec on, 0.5 sec off)	Lit for 2 seconds at the start of the opening manoeuvre
Between 81% and 100% of the limit	Remains lit for 2 seconds at the start of the manoeuvre	Flashes for the entire duration of the manoeuvre
Exceeding 100% of the limit	Remains lit for 2 seconds at the start and end of the manoeuvre then carries on normally	Flashes always

7.5 VERIFYING THE NUMBER OF MANOEUVRES COMPLETED

The "**Maintenance notice**" function can be used to verify the number of manoeuvres completed as a percentage of the set limit.

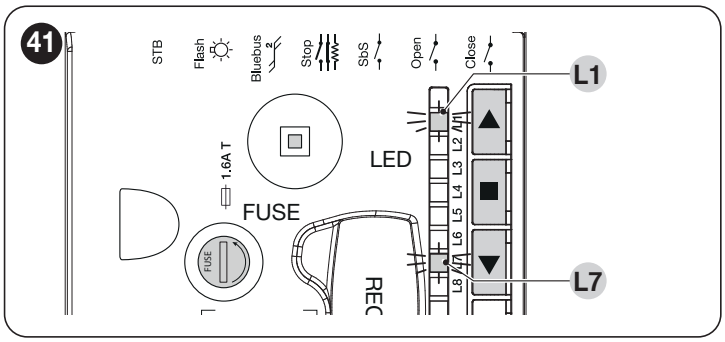


To do this:

1. press and hold the ■ button until LED "**L1**" starts flashing
2. release the ■ button when LED "**L1**" starts flashing
3. press the ▲ or ▼ button to shift the flashing LED to "**L7**", that is, the "entry LED" for the "**Maintenance notice**" parameter
4. press and hold the ■ button. With the ■ button pressed:
   - wait roughly 3 seconds until the LED representing the current level of the "**Maintenance notice**" parameter lights up
   - press and immediately release the ▲ and ▼ buttons
   - the LED corresponding to the selected level will flash a few times; the number of flashes indicates the percentage of manoeuvres performed (in multiples of 10%) with respect to the set limit. For example: with the maintenance notice set to L7 namely 40000, 10% corresponds to 4000 manoeuvres; if the visualisation LED flashes 4 times, it means that 40% of the manoeuvres has been reached (being between 16000 and 19999 manoeuvres). If 10% of the manoeuvres has not yet been reached, the LED does not flash at all.
5. release the ■ button.

7.6 MANOEUVRE COUNTER RESETTING

Once maintenance has been performed on the system, the manoeuvre counter must be reset.

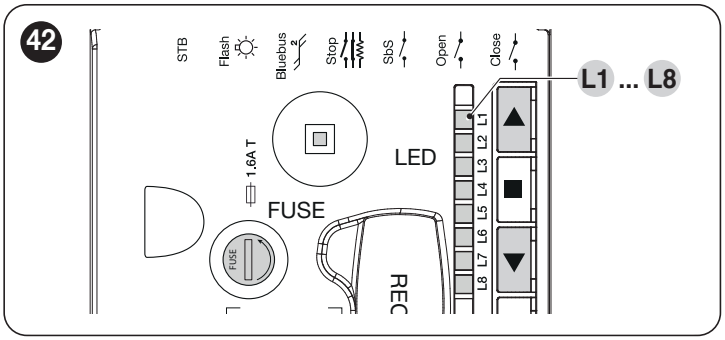


To do this:

1. press and hold the ■ button until LED "**L1**" starts flashing
2. release the ■ button when LED "**L1**" starts flashing
3. press the ▲ or ▼ button to shift the flashing LED to "**L7**", that is, the "entry LED" for the "**Maintenance notice**" parameter
4. press and hold the ■ button. With the ■ button pressed:
   - wait roughly 3 seconds until the LED representing the current level of the "**Maintenance notice**" parameter lights up
   - press and hold for at least 5 seconds the ▲ and ▼ buttons then release them. The LED corresponding to the selected level will emit a series of fast flashes to signal that the manoeuvre counter has been reset
5. release the ■ button

7.7 MEMORY DELETION

The procedure described below restores the control unit's default settings. All the custom settings will be lost.



To delete the control unit's memory and restore all the default settings, proceed as described below:

1. press and hold the ▲ and ▼ buttons until the programming LEDs "**L1 ... L8**" light up (after roughly 3 seconds)
2. release the buttons
3. if the operation was performed correctly, all the programming LEDs "**L1 ... L8**" will flash rapidly for 3 seconds
4. the control unit runs a reset procedure by loading all the default parameters
5. LEDs "**L1**" and "**L2**" will start flashing at the end of the procedure.

With this procedure it is possible to also delete any errors left in the memory.

This procedure does not cancel the parameter relative to the motor's rotation direction and the number of manoeuvres executed.

8 TROUBLESHOOTING GUIDE

8.1 TROUBLESHOOTING

The table below contains useful instructions to resolve any malfunctions or errors that may occur during installation or in case of a fault.

Table 8

TROUBLESHOOTING	
Problems	**Recommended checks**
The radio transmitter does not control the gate and the LED on the transmitter does not light up	Check whether the transmitter batteries are exhausted and replace them if necessary.
The radio transmitter does not control the gate but the LED on the transmitter lights up	Check whether the transmitter has been memorised correctly in the radio receiver.
No manoeuvre starts and the "BlueBUS" LED does not flash	Check that the gearmotor is being powered with the mains voltage Check whether fuses **F1** and **F2** are blown; if they are, identify the cause of the failure then replace the fuses with others having the same current rating and characteristics, according to that indicated in "***Table 9***".
No manoeuvre starts and the warning light is off	Check that the command is actually received. If the command reaches the Step-by-Step input, the corresponding "**SbS**" LED must light up; if instead the radio transmitter is used, the "**BlueBUS**" LED must emit two quick flashes.
No manoeuvre starts and the warning light flashes a few times	Count the number of flashes and check the corresponding value in "***Table 7***".
The manoeuvre starts but is immediately followed by a reverse run	The selected force value may be too low to move the type of gate. Check whether there are any obstacles and, if necessary, select a higher force. Check whether a safety device connected to the Stop input has tripped.

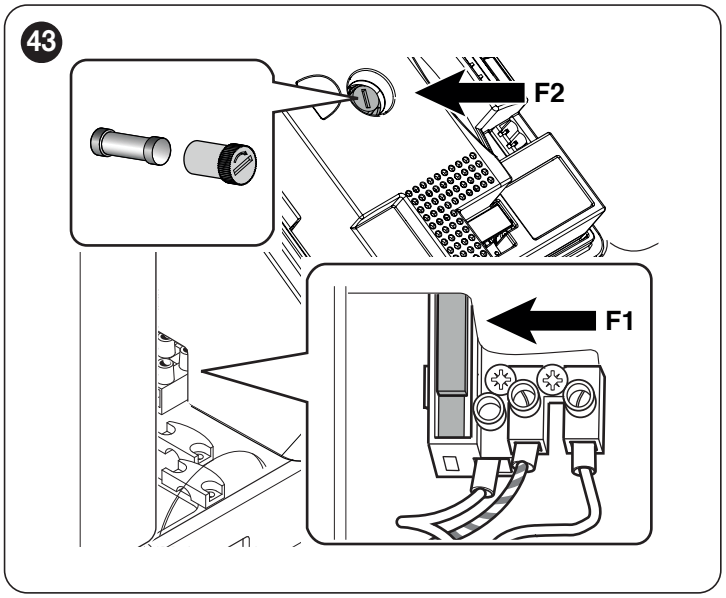
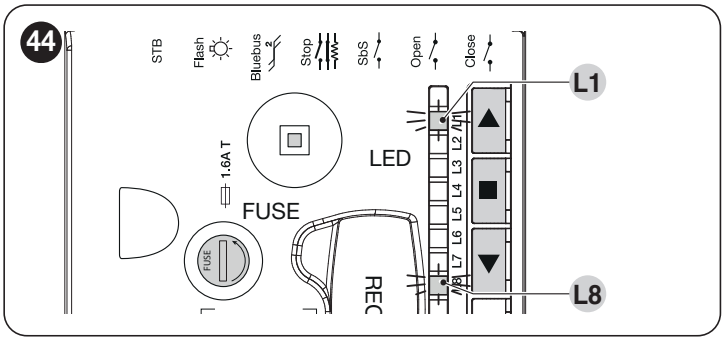


Table 9

CHARACTERISTICS OF FUSE F1	
F1	Mains power supply fuse = 1.0 A delayed
F2	Control unit fuse = 1.6 A delayed

8.2 ANOMALY LOG

The gearmotor allows for displaying any anomalies that occurred in the last 8 manoeuvres, for example, the interruption of a manoeuvre due to the intervention of a photocell or sensitive edge.



To do this:

1. press and hold the ■ button until LED "**L1**" starts flashing
2. release the ■ button when LED "**L1**" starts flashing
3. press the ▲ or ▼ button to shift the flashing LED to "**L8**", that is, the "entry LED" for the "**List of anomalies**" parameter
4. press and hold the ■ button. With the ■ button pressed:
   - wait roughly 3 seconds, after which the LEDs corresponding to the manoeuvres that had anomalies will light up. LED **L1** indicates the result of the most recent manoeuvre, while LED **L8** indicates the result of the eighth manoeuvre. If the LED is lit, it means that anomalies occurred during the manoeuvre; if the LED is off, the manoeuvre terminated without any anomalies
   - press the ▲ or ▼ button to select the desired manoeuvre: the corresponding LED will flash the same number of times as those emitted by the warning light following an anomaly (see "***Table 10***")
5. release the ■ button.

8.3 SIGNALLING THROUGH WARNING LIGHT

If a warning light (or a LED warning light is used – optional accessory) is connected to the control unit's FLASH output, it will flash once a second during manoeuvres. If any anomalies occur, the warning light will emit shorter flashes which are repeated twice with a 1-second pause between each pair. The same signals are also emitted by the LED warning light (optional accessory).

Table 10

FLASH WARNING LIGHT SIGNALS		
Fast flashes	**Cause**	**ACTION**
2 flashes **1-second pause** **2 flashes**	Intervention of a photocell	At the start of the manoeuvre, one or more photocells are blocking the movement; check whether there are any obstacles. During the manoeuvre, this is normal if an obstacle is present.
3 flashes **1-second pause** **3 flashes**	Intervention of the "Motor Force" limiter	During the gate's movement, the motors encountered more resistance; verify the cause and increase the motor force if necessary.
4 flashes **1-second pause** **4 flashes**	Intervention of the STOP input	At the start of the manoeuvre or during the movement, the STOP input intervened; identify the cause.
5 flashes **1-second pause** **5 flashes**	Error in the internal parameters of the control unit	Disconnect and reconnect the power supply. If the error persists, delete the entire memory (refer to the "***Memory deletion***" paragraph) and redo the installation. If the condition persists, there may be a serious fault or the electronic circuit board needs to be replaced.
6 flashes **1-second pause** **6 flashes**	The maximum number of manoeuvres per hour limit has been exceeded	Wait for a few minutes until the manoeuvre limiting device drops to under the maximum limit.
7 flashes **1-second pause** **7 flashes**	Error in the internal electric circuits	Disconnect all the power supply circuits for a few seconds and then try giving a command again; if the condition persists, it means that there is a serious fault on the electronic circuit board or on the motor's cabling. Carry out checks and replace parts, if required. If during the representation, the following flash quickly: L1 = check the correct position of the mechanical unlocking device L2 = check the correct movement of the boom, as the manoeuvre lasted longer than expected.

FLASH WARNING LIGHT SIGNALS		
Fast flashes	**Cause**	**ACTION**
8 flashes 1-second pause 8 flashes	A command that prevents other commands from being executed is already present	Check the type of command that is always present; for example, it could be a command from a timer on the “Open” input.
9 flashes 1-second pause 9 flashes	The automation was stopped by a “Stop automation” command	Unlock the automation by giving the “Unlock automation” command or command the manoeuvre with “High-Priority Step-by-Step”.
Start-up 3 seconds	Control unit lock	The representation activates when an “Lock Automation” command is received.
2 slow flashes	Control unit unlock	The representation activates when an “Unlock Automation” command is received.

8.4 SIGNALS ON THE CONTROL UNIT

The control unit has a series of LEDs, each of which can emit special signals both during regular operation and when an anomaly occurs.

A BlueBus LED
B Close, Open, SbS, Stop LEDs
C “**L1 ... L8**” programming LEDs

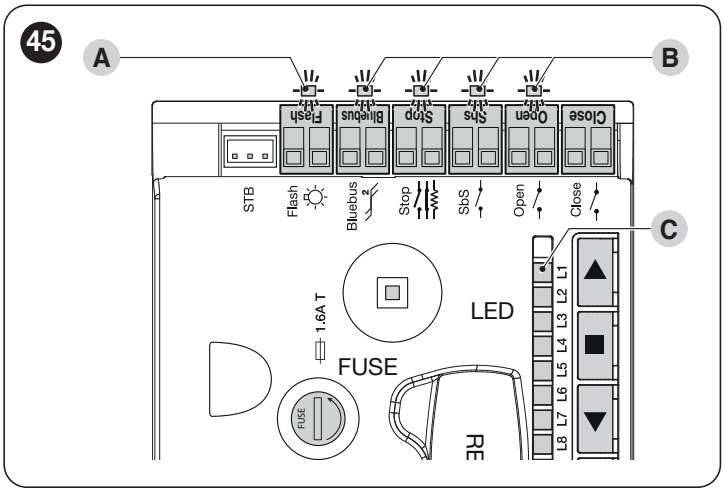


Table 11

TERMINAL LEDS ON THE CONTROL UNIT		
Status	**Meaning**	**Possible solution**
BLUEBUS LED		
OFF	Anomaly	Check for the presence of power; check that the fuses are not blown; if necessary, identify the cause of the fault then replace them with fuses having the same specifications.
On	Serious anomaly	There is a serious anomaly; try switching off the control unit for a few seconds; if the condition persists, it means that there is a fault and the electronic circuit board must be replaced.
1 green flash per second	Everything normal	Normal control unit operation.
2 quick green flashes	The status of the inputs has changed	This is normal when there is a change in one of the inputs: SBS, STOP, OPEN, CLOSE, the photocells intervene or the radio transmitter is used.
A series of flashes separated by a 1-second pause	Various	Refer to that shown in “***Table 10***”.
A series of quick and extended red flashes	Short circuit on the BlueBUS terminal clamp	Disconnect the terminal and verify the cause of the short-circuit on the BlueBUS connections. If the short-circuit is resolved, the LED will start flashing normally after about ten seconds.
Slow orange flashing	Backup batteries charging with Standby Mode running	Normal system operation. Occurs only with updated backup batteries for Standby products.
STOP LED		
OFF	Intervention of the STOP input	Check the devices connected to the STOP input.
On	Everything normal	STOP input active.
SbS LED		
OFF	Everything normal	SbS input not active.
On	Intervention of the CLOSE input	This is normal if the device connected to the CLOSE input is actually active.

TERMINAL LEDS ON THE CONTROL UNIT		
Status	**Meaning**	**Possible solution**
On	Intervention of the SbS input	This is normal if the device connected to the SbS input is actually active.
OPEN LED		
OFF	Everything normal	OPEN input not active.
On	Intervention of the OPEN input	This is normal if the device connected to the OPEN input is actually active
CLOSE LED		
OFF	Everything normal	CLOSE input not active.
On	Intervention of the CLOSE input	This is normal if the device connected to the CLOSE input is actually active.

Table 12

LEDS ON THE CONTROL UNIT BUTTONS	
LED 1	**Description**
OFF	During normal operation, this indicates that “Automatic Closing” is disabled.
On	During normal operation, this indicates that “Automatic Closing” is active.
Flashes	Function programming in progress. If it flashes together with “**L2**”, it means that the device learning phase must be carried out (refer to the “***Device learning***” paragraph).
Flashes fast	If it flashes while the diagnostics is under way with 7 flashes (***Table 10***), it means that the boom has not moved away from the limit switch, therefore check the mechanical unlock device.
LED 2	**Description**
OFF	During normal operation, it signals that the “Close after photo” mode is not active.
On	During normal operation, it signals that the “Close after photo” mode is active.
Flashes	Function programming in progress. If it flashes together with “**L1**”, it means that the device learning phase must be carried out (see the “***Device learning***” paragraph)
Flashes fast	If it flashes while the diagnostics is under way with 7 flashes (***Table 10***), it means that manoeuvre takes too long to reach the opposite limit switch. Check for possible impediments to the movement. If necessary, run the procedure described in the “***Learning of the mechanical stop positions***” paragraph.
LED 3	**Description**
OFF	During normal operation, this indicates that “Always Close” is not active.
On	During normal operation, it signals that “Always close” is active.
Flashes	Function programming in progress. If it flashes together with L4, it means that the boom opening and closing positions must be learned (refer to the “***Learning of the mechanical stop positions***” paragraph).
LED 4	**Description**
OFF	During normal operation, it signals that the “Stand-by” mode is not active.
On	During normal operation, it signals that the “Stand-by” mode is active.
Flashes	Function programming in progress. If it flashes together with L3, it means that the boom opening and closing positions must be learned (refer to the “***Learning of the mechanical stop positions***” paragraph).
LED 5	**Description**
OFF	During normal operation, it indicates that “Long slowdown” is not enabled.
On	During normal operation, it indicates that “Long slowdown” is enabled.
Flashes	Function programming in progress. If it flashes together with L6, it means that the automatic force learning procedure must be carried out (refer to the “***Automatic learning of the forces***” paragraph).
LED 6	**Description**
OFF	During normal operation, it signals that the “Pre-flashing” mode is not active.
On	During normal operation, it signals that the “Pre-flashing” mode is active.
Flashes	Function programming in progress. If it flashes together with L5, it means that the automatic force learning procedure must be carried out (refer to the “***Automatic learning of the forces***” paragraph).
LED 7	**Description**
OFF	During normal operation, it indicates that “Sensitivity” is not enabled.
On	During normal operation, it indicates that “Sensitivity” is enabled.
Flashes	Function programming in progress.
LED 8	**Description**
OFF	During normal operation, it indicates that the boom closing direction is set to the left.
On	During normal operation, it indicates that the boom closing direction is set to the right.
Flashes	Function programming in progress.

9 FURTHER DETAILS (Accessories)

9.1 MODIFYING THE STOP INPUT CONFIGURATION

STOP is the input that causes immediate stoppage of the manoeuvre followed by its brief reversal. Devices with output featuring normally open "NO" and normally closed "NC" contacts, as well as devices with 8.2 kΩ fixed resistor output, such as sensitive edges, can be connected to this input.
As with the BlueBUS, the control unit recognises the type of device connected to the STOP input during the learning phase (see the "***Device learning***" paragraph); subsequently the control unit gives a STOP command when it detects a variation with respect to the learned status.
Multiple devices, even of different types, can be connected to the STOP input if suitable arrangements are made:
- Any number of NO devices can be connected to each other in parallel.
- Any number of NC devices can be connected to each other in series.
- Two devices with 8.2 kΩ fixed resistor output can be connected in parallel; if there are more than 2 devices then they must all be connected in cascade, with a single 8.2 kΩ terminating resistor.
- It is possible to combine two NO and NC contacts by placing them in parallel, while also mounting a 8.2 kΩ resistor in series with the NC contact (this also allows for combining 3 devices: NA, NC and 8.2 kΩ).

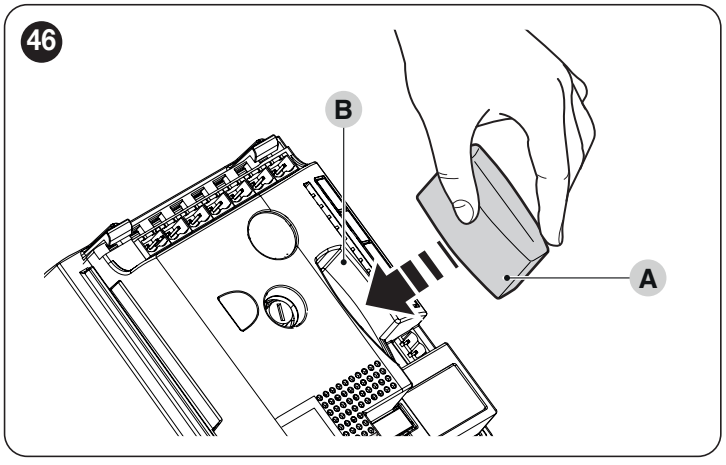
If the STOP input is used to connect devices with safety functions, only those devices with 8.2 kΩ fixed resistor guarantee Category 3 safety against faults in accordance with the EN 13849-1 standard.

9.2 CONNECTING AN SM-TYPE RADIO RECEIVER

This product has a RADIO connector on which accessory cards can be plugged for additional functions. The power consumption of accessories has not been considered in the Standby Mode consumption calculation. Check the respective instructions for the consumption of these accessories.
The control panel has a seat to accommodate SM plug-in radio receivers (optional accessories) that allow the control panel to be controlled remotely via transmitters acting on the control panel inputs.

Before installing a receiver, disconnect the power supply to the control unit.

To install a receiver ("***Figure 46***"):
1. insert the receiver (**A**) in the appropriate slot (**B**) on the control unit's electronic board.



The association between the radio receiver output and the command executed by the motor is shown in "***Table 13***":

Table 13

SMXI / SMXIS	
Receiver output	**Command**
Output No. 1	"Step-by-Step"
Output No. 2	"Partial opening"
Output No. 3	"Open"
Output No. 4	"Close"

If the OXI radio receiver used in "EXTENDED MODE" is installed, it may send the commands shown in "***Table 14***".

Table 14

OXI / OXIFM /OXIT / OXITFM IN MODE 2 EXTENDED		
No.	**Command**	**Description**
1	**Step-by-Step**	"SbS" (Step-by-Step) command
2	**Partial opening**	"Partial opening" command
3	**Open**	"Open" command
4	**Close**	"Close" command
5	**Stop**	Stops the manoeuvre
6	**Condominium Step-by-Step**	Command in condominium mode
7	**High priority Step-by-Step**	Commands also with the automation locked or the commands enabled
8	**Unlock and Open**	Unlocks the locked automation and carries out an opening manoeuvre
9	**Unlock and Close**	Unlocks the locked automation and carries out a closing manoeuvre
10	**Opens and locks the automation**	Triggers an opening manoeuvre and, once this terminates, locks the automation; the control unit will not accept any command other than "High priority Step-by-Step" and automation "Unlock", or (only from Oview) the following commands: "Unlock and close" and "Unlock and open"
11	**Closes and locks the automation**	Triggers a closing manoeuvre and, once this terminates, locks the automation; the control unit will not accept any command other than "High priority Step-by-Step" and automation "Unlock", or (only from Oview) the following commands: "Unlock and close" and "Unlock and open"
12	**Lock automation**	Triggers the stoppage of the manoeuvre and locks the automation; the control unit will not accept any command other than "High priority Step-by-Step" and automation "Unlock", or (only from Oview) the following commands: "Unlock and close" and "Unlock and open"
13	**Release automation**	Triggers unlocking of the automation and restores normal operation
14	**On Timer Courtesy light**	The courtesy light output switches on with timer-based switching off
15	**On-Off Courtesy light**	The courtesy light output switches on and off in Step-by-step mode

9.3 EDSP DIGITAL SELECTOR AND PROXIMITY READER FOR ETPB TRANSPONDER CARDS

The "**Bluebus**" system allows for connecting up to four EDSP digital selectors or four ETPB transponder card readers.
With EDSP it is possible to command the automation by entering on the keyboard one of the memorised numerical combinations.
With ETPB it is possible to command the automation by simply moving the memorised transponder card close to the sensor.
These devices are equipped with a unique code that it learned and memorised by the control unit during the learning phase of all the connected devices (see paragraph "***Device learning***").
This prevents any fraudulent attempt to replace a device and any unauthorised person from commanding the automation. For further information, consult the EDSP and ETPB instruction manual.

9.4 CONNECTING THE BOOM LIGHTS (OPTIONAL ACCESSORY)

To perform the installation:

1. put the boom in the vertical position
2. loosen the 4 screws that fasten the boom cover (**A**)

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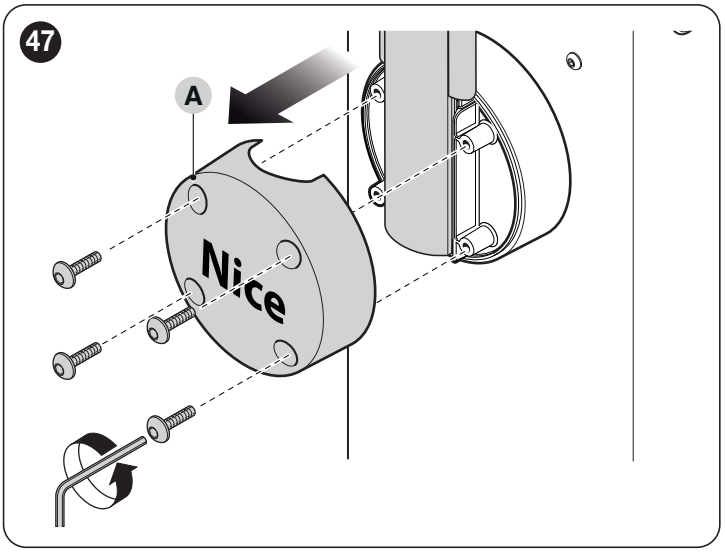
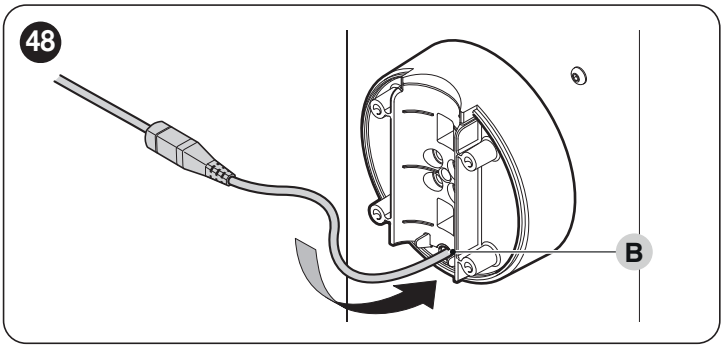


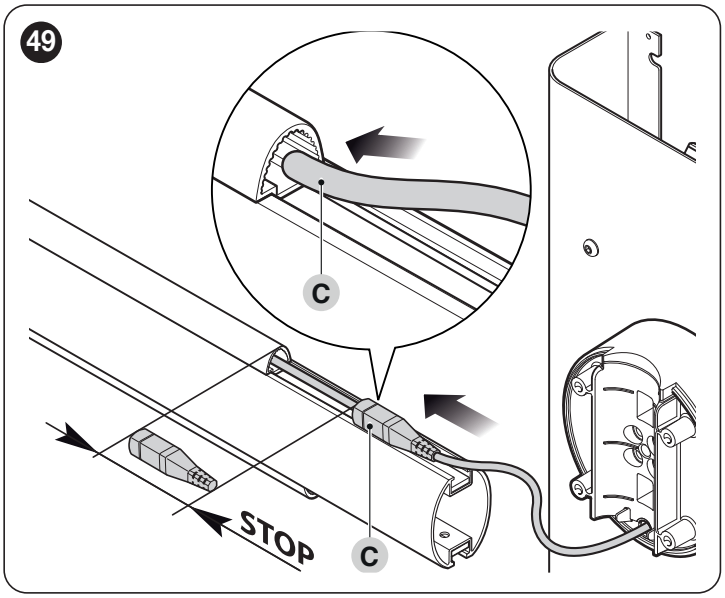
3. remove the boom temporarily
4. insert the cable grommet through the specially configured hole (**B**)

48



5. feed the lights cable (**C**) through the rubber impact protector and, if necessary, use a fish tape to facilitate the operation

49



6. if necessary, shorten the lights cable by cutting it only in one of the points indicated by an appropriate mark. After cutting the cable, the cap of the cut end must be shifted to close the new end
7. insert the wiring cable first through the hole on the boom support then through the hole in the cubicle

leave a bit of cable inside the boom support, so that the boom can be rotated without causing any tension along the cable.

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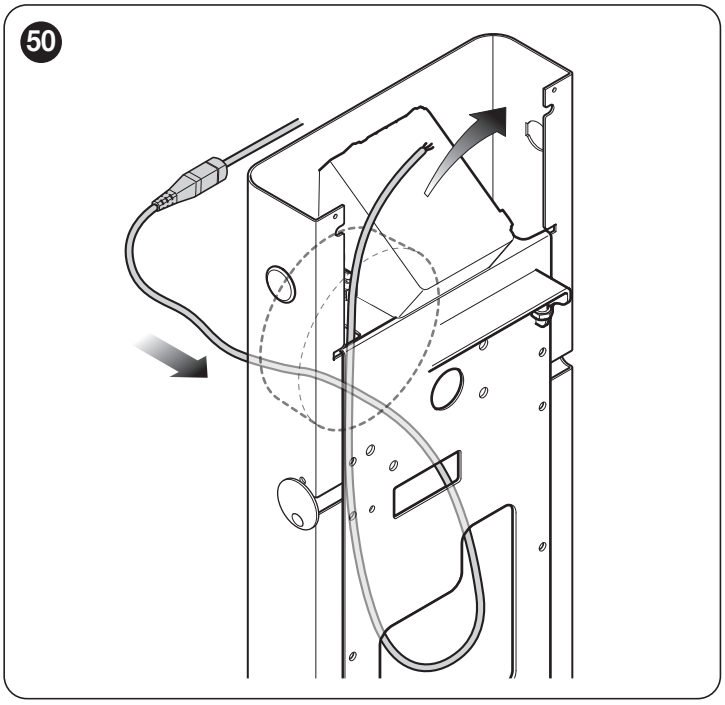
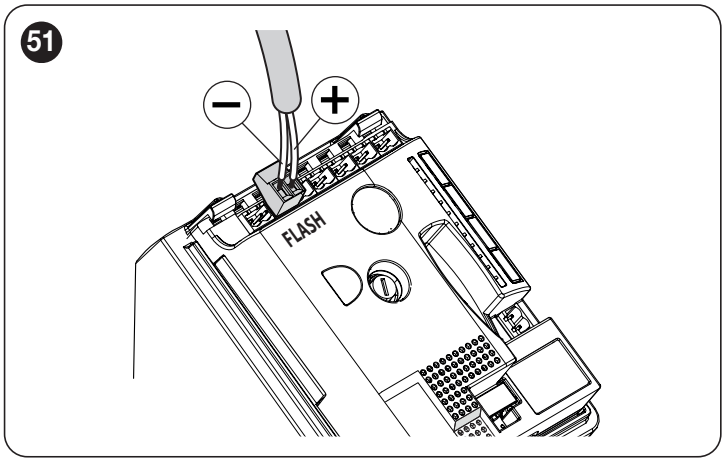


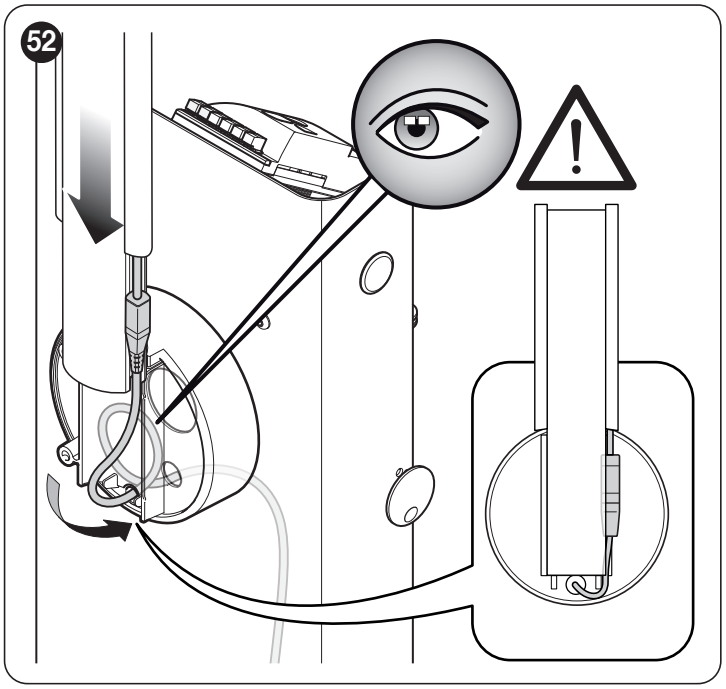
8. connect the lights cable to the "FLASH" terminal on the control unit

the "FLASH" output has poles: if the lights fail to switch on according to the settings, the cables connected to the terminal must be inverted.

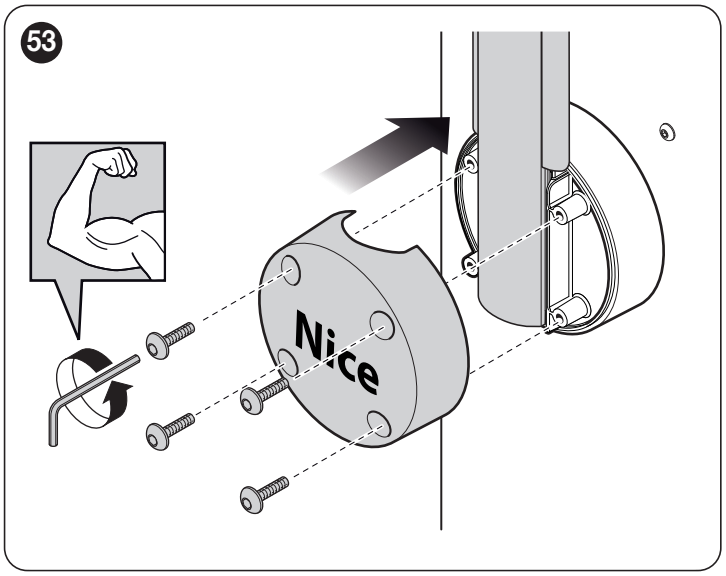
In Standby Mode, the flash output is turned off. Turn off Standby Mode to use the rod lights connected to the Flash output.



9. position and lock the connector inside the slot on the boom



10. insert the boom and lock it with its cover, by vigorously tightening the 4 screws and being careful not to pinch the cable.



9.5 CONNECTING THE WARNING LIGHT OR TRAFFIC LIGHT

On the boom cover it is possible to insert a LED warning light model XBA7 or a traffic light with red and green LEDs model XBA8.
The operation modes of these flashes can be changed through the **Oview** programmer, **BiDiWiFi** or with appropriate programming of the control panel. For further information, consult the instruction manuals of the two products.

9.6 CONNECTING AND INSTALLING THE EMERGENCY POWER SUPPLY

The electrical connection of the battery to the control unit must be made only after completing all the installation and programming stages, as the battery is an emergency power supply.

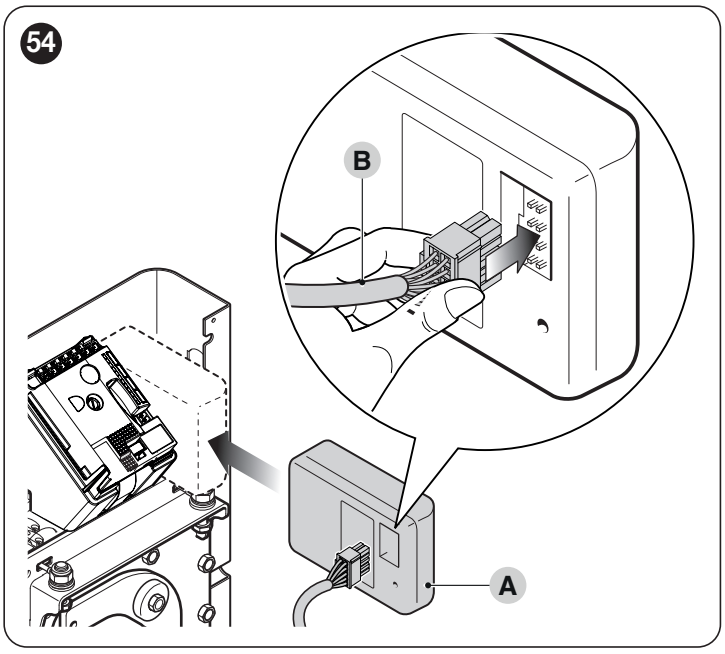
This product can be equipped with an emergency power supply system that ensures operation even in the absence of mains power. The emergency power supply is through batteries that must be kept in the charged state. The battery charging function is one of the main functions of this product; the Standby Mode will be activated only when the battery charging function is completed.
Check the instructions of the emergency power system for the maximum time required for the batteries to be fully charged.

Before installing a back-up battery, disconnect the power supply to the control unit.

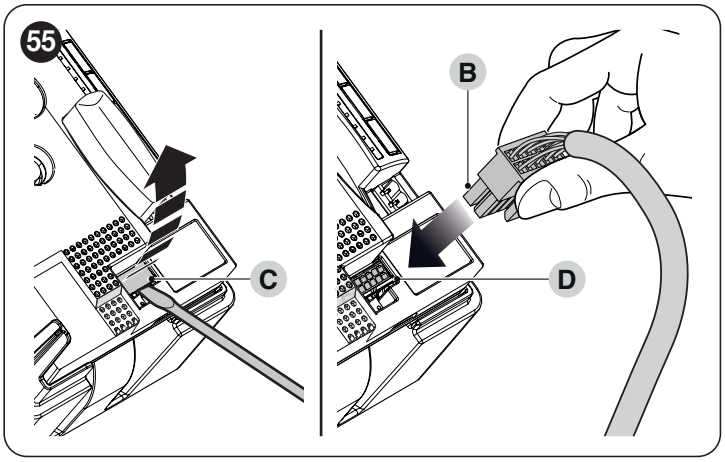
WARNING

Use the pre-addressed backup battery pack for operation with Standby (PSS124) power packs. If the PS124 battery pack is used instead, it is necessary to disable the Standby Mode for proper operation.

To install and connect the battery:
1. position the back-up battery (A)
2. connect the appropriate cable (B) to the back-up battery connector



3. remove the membrane (C) present on the control unit
4. connect the appropriate cable (B) to the control unit connector (D)



5. activate the mains power supply.

9.7 WI-FI CONNECTION

S-BAR is set up for WiFi connectivity to allow:
- remote control of the automation (through the MyNice app)
- the installer: configuration of the automation (through the MyNice Pro app)

In particular, Wi-Fi connectivity is available with two modes:
- The BiDi-Wifi interface supplied on request as an accessory
- The Proview interface (only for the MyNice Pro app) supplied on request as an accessory

The application of the BiDi-Wi-Fi interface to the busT4 port present on the automation must be regarded as alternative to the BiDi-ZWave interface.

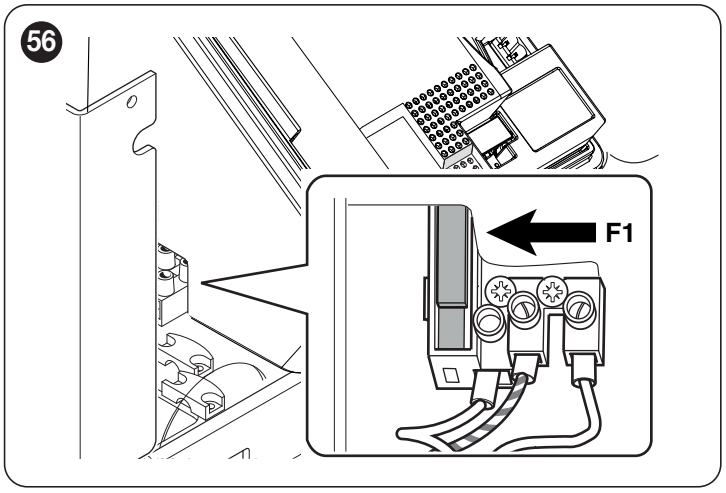
To use the automation's Wi-Fi connectivity in the available modes, it is necessary to:
- Install, depending on the desired use, the MyNice app or the MyNice Pro app (reserved for the installer) available on Google Play Store and Apple App Store
- Power the automation and verify that the available Wi-Fi device switches on normally
- Launch the installed app and configure the Wi-Fi device from the "Wi-Fi interface or Accessories" menu

For further details relative to the functions linked to the MyNice Pro and MyNice apps, consult the website www.niceforyou.com.

9.7.1 BIDI-WI-FI INTERFACE

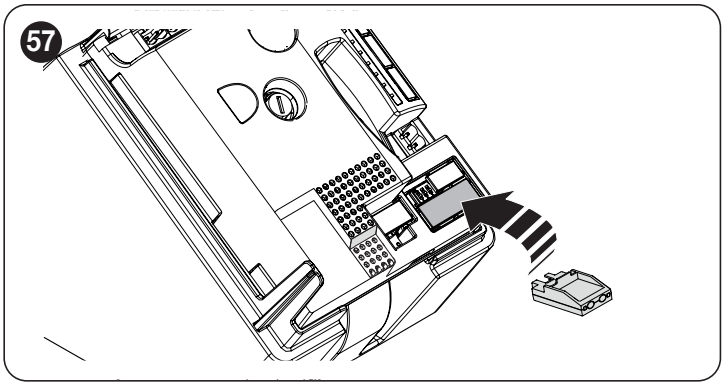
To connect the BiDi-Wi-Fi interface:

1. Disconnect the power supply to the control unit by removing the fuse F1 and, if necessary, the emergency power supply



2. Verify that all the control unit LEDs are switched off before proceeding

Insert the BiDi-Wi-Fi interface in the BUS T4 connector of the control unit



Warning! If it is not correctly inserted, the BiDi-Wi-Fi interface could get damaged or permanently damage the control unit.

3. Insert fuse F1 to switch the control unit on again
4. Wait for the **Date** LED to start flashing
5. Configure the interface through the app
6. Wait until the **Date** LED switches on and the green light stays steady lit. At this point the configuration will have been completed.

For further details relative to the functions linked to the BiDi-Wi-Fi interface, consult the website www.niceforyou.com.

9.8 CONNECTING THE SOLEMYO SOLAR ENERGY SYSTEM

When the automation is powered by the "Solemyo" system, IT MUST NOT BE POWERED by the electricity grid at the same time.

For information on the "Solemyo" system, consult the relevant instruction manual.

To connect the "**Solemyo**" system:

1. remove the plastic protection (**A**) with the aid of a screwdriver

2. insert the relative connector (**B**) on the control unit.

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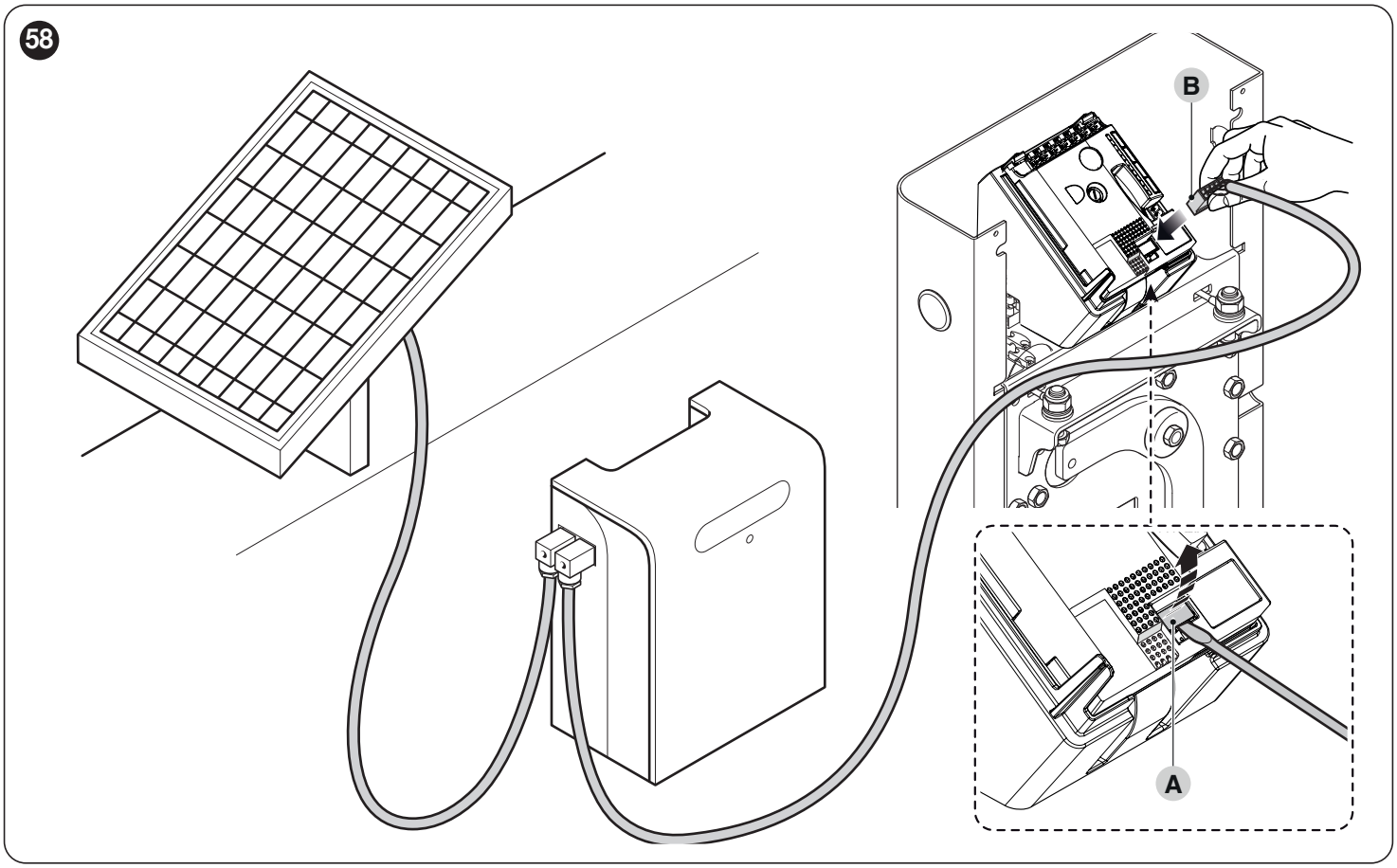


10 PRODUCT MAINTENANCE

The automation must be subjected to regular maintenance to keep its safety level constant and guarantee long-lasting operation; to this aim, **S-BAR** has a manoeuvre counter and maintenance warning system; refer to the "***"Maintenance notice" function***" paragraph.

Maintenance must be carried out strictly in compliance with the safety provisions provided in this manual and in accordance with the laws and regulations in force.

To carry out maintenance on the gearmotor:

1. Schedule maintenance interventions within maximum 6 months or after maximum 20.000 manoeuvres from the previous maintenance intervention
2. disconnect all power supply sources, including any emergency power supplies
3. check for any deterioration in the materials making up the automation, with special emphasis on erosion or oxidation of the structural parts; replace any parts that are not to standard
4. check the state of wear of moving parts: pinion, rack and all gate leaf components; replace any worn parts
5. connect the power supplies again and run all the tests and checks described in the "***Testing***" paragraph (page 16).

11 PRODUCT DISPOSAL

This product is an integral part of the operator and must therefore be disposed of with it.

As with the installation, only qualified personnel must dismantle the product at the end of its life.
This product is composed of different types of materials. Some of these materials can be recycled; others must be disposed of. Please enquire about the recycling or disposal systems in place in your local area for this type of product.

WARNING

Some parts of the product may contain polluting or dangerous substances. If not disposed of correctly, these substances may have a damaging effect on the environment and human health.

As indicated by the symbol shown here, this product must not been disposed of with household waste. Separate the waste for disposal and recycling, following the methods stipulated by local regulations, or return the product to the seller when purchasing a new product.

WARNING

Local regulations may impose heavy penalties if this product is not disposed of in compliance with the law.

12 TECHNICAL SPECIFICATIONS

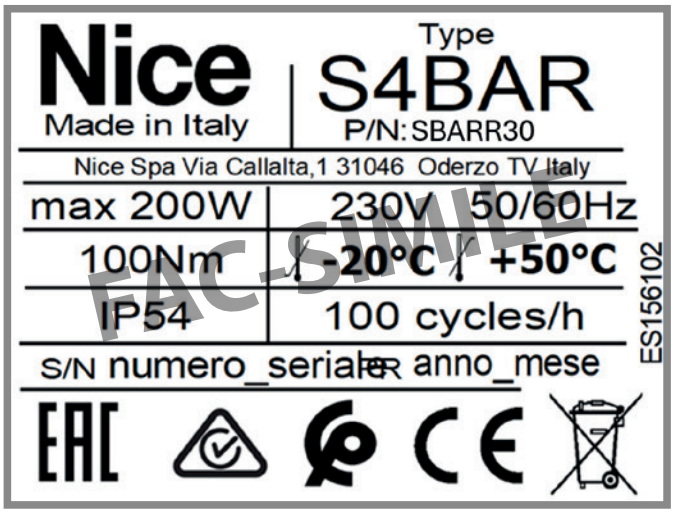
All technical specifications stated in this section refer to an ambient temperature of 20°C (± 5°C). Nice S.p.A. reserves the right to apply modifications to the product at any time when deemed necessary, without altering its functions and intended use.

Table 15

TECHNICAL SPECIFICATIONS	
Description	**Technical specification**
	S4BAR - S4BARI
Product type	Boom gate for residential use inclusive of electronic control unit
Clear opening (m)	4
Start peak torque (Nm)	100
Start peak torque (Nm)	25
Opening time (sec)	≥4 – >5 (with the XBA4 accessory)
Maximum frequency of operating cycles/hour (at nominal torque)	100 – 80 (with the XBA4 accessory)
Durability	Refer to the "***Product durability***" paragraph
Power supply	230V≂ 50/60Hz
Power supply voltage /V1	230V≂ 50/60Hz
Maximum power draw at peak (W)	300
Maximum power at nominal torque (W)	200
Standby Mode Power (W)	< 0,3
Insulation class	1
Emergency power supply	With optional accessory PS124
Photovoltaic power supply	With optional accessory SYKCE
FLASH output	for 1 ELDC flashing beacon
Courtesy light	with optional accessories LED warning light **XBA7**
BLUEBUS output	One output with maximum load of 12 BlueBus units
STOP input	For normally closed or normally open contacts or for 8.2 kΩ fixed resistor contacts with self-learning (any variation from the memorised status triggers the STOP command)
SbS input	For normally open contacts
OPEN input	For normally open contacts
CLOSE input	For normally open contacts
HP SbS input	For normally open contacts
Radio connector	SM connector for OXIBD receivers
Radio ANTENNA input	50 Ω for RG58-type cable or similar
Programmable functions	Refer to the "***PROGRAMMING***" chapter and additional settings via the Oview Programming and Control Unit
Self-learning functions	Self-learning of the devices connected to the BlueBus output Self-learning of the type of "STOP" device (Normally Open, Normally Closed contact or 8.2 kΩ resistor) Learning of the door opening and closing positions
Stand-By mode	Automatic: 5 minutes after the end of the main functions
Operating temperature	-20°C ÷ 50°C
Use in highly acid, saline or potentially explosive atmosphere	No
Protection rating	IP44
Dimensions and weight	330x179,5x1146h mm; 35 kg

EU Declaration of Conformity
and declaration of incorporation of “partly completed machinery”

The EU declaration of conformity can be downloaded from the website www.niceforyou.com



NOTES

WARNING!

Your automation is a machine that faithfully executes commands imparted by the user. Negligence and improper use may lead to dangerous situations:

- do not manoeuvre the gate if there are people, animals or objects within its range of operation
- it is strictly forbidden to touch parts of the automation while the boom is moving
- the photocells are not a safety device but only an auxiliary aid to safety. They are built using highly reliable technology but, in extreme conditions, may malfunction or even become defective. In certain cases, the defect may not be clearly evident. For these reasons, it is important to follow all the instructions given in this manual when using the automation
- periodically check that the photocells work properly.

IT IS STRICTLY FORBIDDEN to transit while the boom is moving! Transit is allowed only if the boom is fully open and stationary.

CHILDREN

An automation system guarantees a high degree of safety. With its detection systems, it can control and guarantee the gate's movement in the presence of people or objects. It is nonetheless advisable to forbid children from playing near the automation and not to leave remote controls near them to prevent any unwanted activation of the system. The automation is not a toy!

The product is not intended for use by persons, including children, with limited physical, sensory or mental capacities, or who lack experience or knowledge, unless supervised or trained in the use of the product by a person responsible for their safety.

Anomalies: if the automation shows any signs of anomalous behaviour, disconnect the power supply to the system and manually unlock the motor (see instructions at the end of the chapter) to manoeuvre the boom manually. Do not attempt any repairs personally but contact your trusted installer.

Do not modify the system or the programming and adjustment parameters of the control unit: your installer is exclusively responsible for these operations.

Failure or lack of power supply: while waiting for the installer to intervene or the electricity to be restored, if the system is not equipped with back-up batteries, the automation can nonetheless be used by manually unlocking the motor (consult the instructions at the end of the chapter) and moving the boom manually.

Safety devices out of order: the automation can also be used when one or more safety devices are defective or out of order. The gate can be operated in the "**Hold-to-run**" mode in the following way:

1. send a command to operate the boom using a transmitter or key selector, etc. If everything works normally, the boom will move regularly, otherwise the warning light will flash a few times and the manoeuvre will not start (the number of flashes depends on the reason for which the manoeuvre cannot start)
2. in this case, within 3 seconds press the control again and hold it down
3. after roughly 2 seconds, the boom will complete the requested manoeuvre in "**Hold-to-run**" mode, in other words, it will continue to move so long as the control is held down.

If the safety devices are out of order, have the system repaired as soon as possible by a qualified technician.

The test, periodic maintenance and any repairs must be documented by the person carrying out the work and the documents must be stored by the owner of the automation. The only interventions the user may carry out periodically include cleaning of the photocell glass components (use a soft and slightly damp cloth) and removing any leaves or stones that may obstruct the automation.

Before carrying out any maintenance operations, the user of the automation must manually unlock the motor to prevent anyone from accidentally triggering the boom's movement (consult the instructions at the end of the chapter).

Maintenance: in order to ensure constant levels of safety and the longest useful life for the automation, routine maintenance must be carried out (at least every 6 months).

Only qualified personnel is authorised to carry out checks, maintenance operations and repairs.

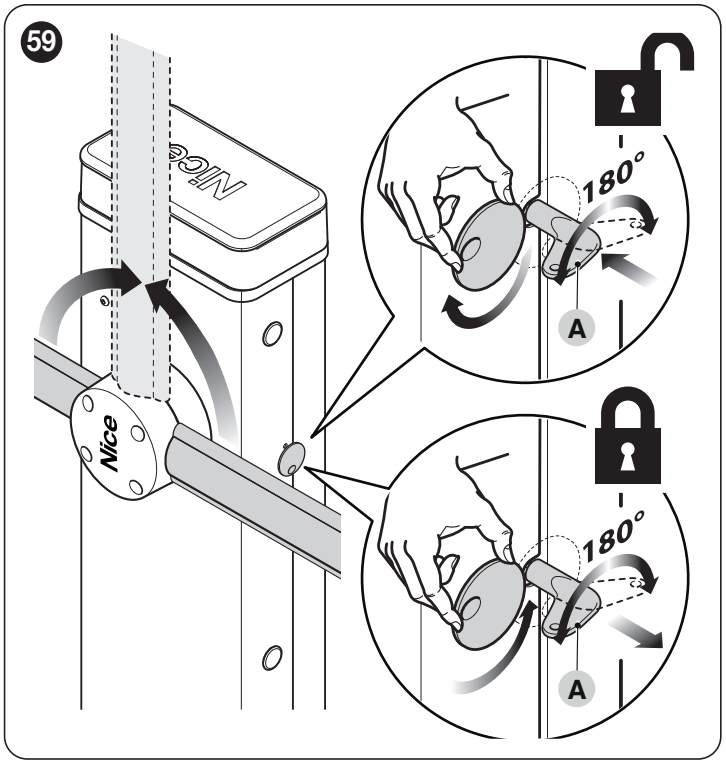
Disposal: at the end of its useful life, the automation must be dismantled by qualified personnel and the materials must be recycled or disposed of in compliance with the local regulations in force.

Replacing the remote control battery: if your remote control appears to be working poorly after some time, or stops working altogether, it may simply depend on flat batteries (depending on how much the device is used, the batteries may last from several months to over a year). You will notice this by the fact that the indicator light signalling the transmission fails to light up, is weak or lights up only for a short time. Before contacting the installer, try replacing the battery with that of another transmitter that works properly: if the anomaly is resolved, simply replace the flat battery with one of the same type.

Unlocking and manual movement

To unlock the device:

1. insert the key (**A**) and turn it by 180° towards the left or right



2. the gate leaf can now be moved manually to the desired position.

To lock the device:

1. turn the key (**A**) back to its initial position
2. remove the key
3. turn the key slot cover.

MAINTENANCE SCHEDULE (to be handed to the end user)

This maintenance register must be passed on to the new owner of the automation, after having filled in the relevant sections.

This register must contain a list of all the maintenance activities, repair work and alterations to the automation. The register must be updated every time work is carried out and must be stored carefully so that it is available for any inspections that may be required by the relative authorities.

This "Maintenance register" refers to the following automation:

model **S4BAR** - serial no. ..... - installed on ..... - at .....

The following attached documents are part of the Maintenance Register:

1) - Maintenance schedule
2) - .....
3) - .....
4) - .....
5) - .....
6) - .....

According to the enclosed document "Maintenance Schedule", maintenance operations must be performed at the following intervals: **every 6 months** or **every 10% of the expected durability in terms of manoeuvre cycles** , depending on the event that occurs first.

MAINTENANCE SCHEDULE

Warning! – All maintenance work on this system must be carried out by qualified technical personnel, in full compliance with the safety standards provided for by the laws in force and the safety instructions specified in the "*GENERAL SAFETY WARNINGS AND PRECAUTIONS*" chapter, at the beginning of this manual.

In general, this boom gate mechanism does not require special maintenance; however, regular checks over time will ensure system efficiency and correct operation of the safety systems installed.
For maintenance of devices added to the boom gate mechanism, follow the provisions laid down in the respective maintenance schedules.
As a general rule, we recommend running a periodic check every 6 months or, more specifically, the maintenance period can be calculated based on the following considerations:

- if **S-BAR** is adjusted for high speeds; with high force levels or with the boom weighed down by accessories, more frequent checks are required.
- **in general**, to define the number of cycles for maintenance purposes, it is necessary to estimate the durability according to Table 4 and schedule an intervention at least every 10% of the resulting manoeuvres; e.g., if the durability were 500,000, maintenance must be performed every 50,000 cycles.

Warning! – The balancing system is based on the use of a spring. The duration of this spring exceeds 500,000 cycles on average, but to ensure an adequate safety margin, we recommend replacing the spring before this amount is reached.

Bear in mind that should the spring break, the boom gate will nonetheless conform to the requirement set out in section 4.3.4 of the EN 12604:2000 standard.

The boom balancing system must be checked at least 2 times a year, preferably when the seasons change.

These checks and replacements must be performed at the scheduled maintenance intervals:

1. disconnect all power supplies
2. check for any deterioration of the components which form the barrier mechanism, paying particular attention to corrosion or oxidation of the structural parts; replace any parts that are below the required standard
3. check that there is no clearance between the balancing lever and the exit shaft. If necessary, fully tighten the central screw
4. check that the manual unlocking device works properly
5. place the boom in the vertical position and verify that the pitch between the coils of the balancing spring is constant without any deformation
6. unlock and check the correct balancing of the boom and for any obstacles during manual opening and closing
7. relock the boom and run the testing procedure.
8. verify the correct operation of all the safety devices present, one-by-one (photocells, sensitive edges, etc.). Whenever a device intervenes, the "BlueBus" on the control unit will emit 2 quicker flashes to confirm the recognition.
9. check the correct operation of the photocells by proceeding as follows: depending on whether one or two pairs of photocells have been installed, one or two blocks of rigid material (e.g. wooden panels) are required, measuring 70 x 30 x 20 cm. Each block must have three sides of reflective material (e.g. mirror or glossy white paint), one for each dimension, and three sides of opaque material (e.g. matt black paint). To test the photocells positioned at 50 cm from the ground, the block must be placed on the ground or raised to 50 cm to test the photocells positioned at 1 m from the ground. If the test is on a pair of photocells, the testing block must be placed directly under the centre of the boom with the 20 cm sides facing the photocells and moved along the entire length of the boom. If the test is on two pairs of photocells, the test must first be performed individually for each pair of photocells using 1 testing block and then repeated using 2 testing blocks. Every testing block must be positioned laterally in relation to the centre of the boom, at a distance of 15 cm and then moved along the entire length of the boom. During these tests, the testing block must be detected by the photocells in any position it lies.

10. check that there is no interference between the photocells and other equipment by blocking the line of sight between the pair of photocells with a cylinder (diameter 5 cm, length 30 cm): move the cylinder close to the TX photocell first, then next to the RX photocell and then at the mid-point between them. Ensure that in all cases the device engages, changing from the enabled status to the alarm status and vice-versa; lastly, ensure that it triggers the expected action in the control unit (for example, reversal of movement in the closing manoeuvre).
11. **Verification of the safeguard against the risk of lifting:** on automations with vertical movement, it is necessary to check that there is no lifting danger. This test can be carried out as follows: hang a 20 kg load (e.g. a sand bag) halfway along the length of the boom then command an opening manoeuvre and check that during the manoeuvre the boom does not exceed a height of 50 cm above its closed position. If the boom exceeds this height, the motor force must be reduced (refer to the "***PROGRAMMING***" paragraph).
12. If potentially dangerous situations due to the boom's movement have been prevented by limiting the impact force, the latter must be measured according to the EN 12445 standard and, if the "motor force" control is used to aid the system in reducing the impact force, it is necessary to test various adjustments to find the one that gives the best results.
13. **Checking the efficiency of the unlocking system:** place the boom in the "closed" position and manually unlock the gearmotor (refer to the "***Manually unlocking and locking the gearmotor***" paragraph), making sure that this occurs without difficulty. Check that the manual force for moving the boom to the "open" position does not exceed 200 N (approximately 20 kg); the force is measured perpendicular to the boom and at 1 m from the axis of rotation. Lastly, check that the manual release key is available near the automation.
14. **Check the power supply disconnection system:** operate the power disconnection device and disconnect any available back-up batteries; check that all the LEDs on the control unit are OFF and that the boom remains stationary when a command is sent. Check the efficiency of the locking system to prevent any unintentional or unauthorised connection.

Table 16

TABLE ON INTERVENTIONS

Date	Description of intervention performed (Description of checks, adjustments, repairs, modifications, etc.)	Signature of Technician	Signature of Owner
	All the phases envisaged in the maintenance schedule have been carried out ___YES ___NO		

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