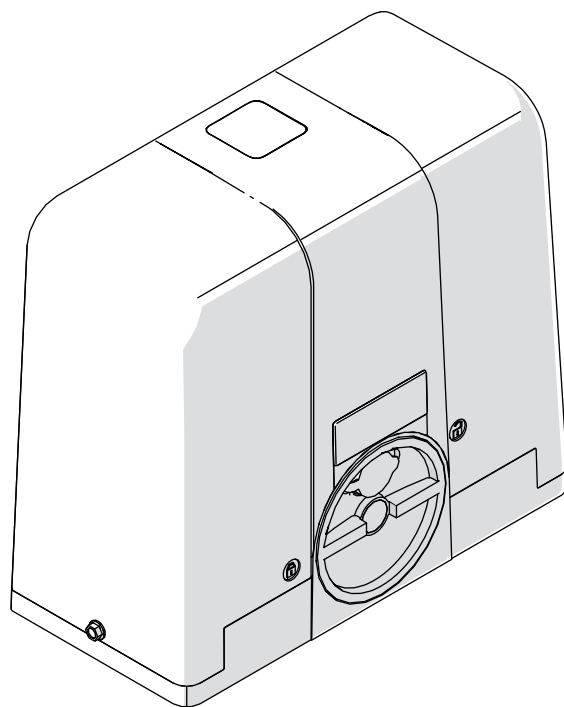


# BLIZZARD 400 C ENC BLIZZARD 800 C ENC



**G-WAY**  
BUS



**GENIUS**<sup>®</sup>

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Настоящее руководство издано в 2018

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**EU DECLARATION OF CONFORMITY**

The Manufacturer

**Company name:** FAAC S.p.A. Soc. Unipersonale  
**Address:** Via Calari, 10 - 40069 Zola Predosa BOLOGNA - ITALY

hereby declares on his sole responsibility that the following products:

**Description:** Gearmotors for sliding gates  
**Model:** BLIZZARD 400 C ENC; BLIZZARD 800 C ENC.

comply with the following applicable EU legislations:

- 2014/30/EU
- 2011/65/EU

Furthermore, the following harmonised standards have been applied:

- EN61000-6-2:2005
- EN61000-6-3:2007 + A1:2011

Bologna, Italy 08-02-2018      CEO  
 A. Marcellan 

**DECLARATION OF INCORPORATION FOR PARTLY COMPLETED MACHINERY**

(2006/42/EC ANNEX II P.1, B)

Manufacturer and person authorised to prepare the relevant technical documentation

**Company name:** FAAC S.p.A. Soc. Unipersonale  
**Address:** Via Calari, 10 - 40069 Zola Predosa BOLOGNA - ITALY

hereby declares that for the partly completed machinery:

**Description:** Gearmotors for sliding gates  
**Model:** BLIZZARD 400 C ENC; BLIZZARD 800 C ENC.

The essential requirements of the Machinery Directive 2006/42/EC (including all applicable amendments) that have been applied and fulfilled are as follows:

- 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.2.1, 1.2.3, 1.2.5, 1.2.6, 1.3.1, 1.3.2, 1.3.4, 1.3.6, 1.3.9, 1.4.1, 1.4.2.1, 1.5.1, 1.5.2, 1.5.5, 1.5.6, 1.5.7, 1.5.8, 1.5.10, 1.5.11, 1.6.1, 1.6.4, 1.7.1, 1.7.2, 1.7.3, 1.7.4.2, 1.7.4.3

and that the relevant technical documentation has been compiled in compliance with part B of Annex VII.

Furthermore, the following harmonised standards have been applied:

- EN12100:2010
- EN13849-1:2015
- EN13849-2:2012

Other standards applied:

- EN12453:2017

And also undertakes to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery by mail or e-mail.

Finally, the manufacturer declares that the above-mentioned partly completed machinery must not be put into service until the final machine in which it is to be incorporated has been declared compliant with the requirements of the above-mentioned Machinery Directive 2006/42/EC.

Bologna, Italy 08-02-2018      CEO  
 A. Marcellan 

# 1. INTRODUCTION TO THIS INSTRUCTION MANUAL

This manual provides the correct procedures and requirements for installing BLIZZARD 400-800 C ENC and maintaining it in a safe condition.

When drafting the manual, the results of the risk assessment conducted by FAAC S.p.A. on the entire product life cycle have been taken into account in order to implement effective risk reduction measures.

The following stages of the life cycle of the product have been considered:

- Delivery/handling
- Assembly and installation
- Set-up and commissioning
- Operation
- Maintenance/troubleshooting
- Disposal at the end of the product's life cycle

Risks arising from installation and using the product have been taken into consideration; these include:

- Risks for the installation/maintenance technician (technical personnel)
- Risks for the user of the automation system
- Risks to product integrity (damage)

In Europe, the automation of a gate falls under the Machinery Directive 2006/42/EC and the corresponding harmonised standards. Anyone automating a gate (new or existing) is classified as the Manufacturer of the Machine. They are therefore required by law, among other things, to carry out a risk analysis of the machine (automatic gate in its entirety) and take protective measures to fulfil the essential safety requirements specified in Annex I of the Machinery Directive.


FAAC S.p.A. recommends that you always comply with the EN 12453 standard and in particular that you adopt the safety criteria and devices indicated, without exception, including the dead-man function.

This manual also contains general information and guidelines, which are purely illustrative and not exhaustive, in order to facilitate the activities carried out by the Manufacturer of the Machine in all respects with regard to carrying out the risk analysis and drafting the instructions for use and maintenance of the machine. It should be clearly understood that FAAC S.p.A. accepts no liability for the reliability and/ or completeness of the above instructions. As such, the manufacturer of the machine must carry out all the activities required by the Machinery Directive and the corresponding harmonised standards on the basis of the actual condition of the locations and structures where the product BLIZZARD 400-800 C ENC will be installed, prior to commissioning the machine. These activities include the analysis of all the risks associated with the machine and subsequent implementation of all safety measures intended to fulfil the essential safety requirements.

This manual contains references to European standards. The automation of a gate must fully comply with any laws, standards and regulations applicable in the country where installation will take place.


 Unless otherwise specified, the measurements provided in the instructions are in mm.


## 1.1 MEANING OF THE SYMBOLS USED

 1 Symbols: notes and warnings on the instructions

 WARNING ELECTRIC SHOCK HAZARD - The operation or stage described must be performed following the supplied instructions and applicable safety regulations.

 WARNING, PERSONAL INJURY HAZARD OR RISK OF DAMAGE TO COMPONENTS - The procedure or step described must be carried out following the instructions provided and according to the applicable safety regulations.

 WARNING - Details and specifications which must be respected in order to ensure that the system operates correctly.

 RECYCLING AND DISPOSAL - The materials used in manufacturing, the batteries and any electronic components must not be sent to landfill. They must be taken to authorised recycling and disposal centres.



 FIGURE E.g.:  1-3 see Figure 1 - detail 3.

 TABLE E.g.:  1 see Table 1.

§ CHAPTER/SECTION E.g.: §1.1 see section 1.1.

 2 Symbols: safety signs and symbols (EN ISO 7010)


 GENERIC HAZARD  
Personal injury hazard or risk of damage to components.


 ELECTROCUTION HAZARD  
Risk of electric shock from live parts.

 CRUSHING HAZARD, DANGER TO THE MUSCULOSKELETAL SYSTEM  
Risk of musculoskeletal crushing - Personal injury hazard when manually lifting heavy loads.


 BURNING OR SCALDING HAZARD  
Risk of burns due to the presence of high-temperature parts.

 CRUSHING HAZARD  
Risk of crushing to the hands/feet due to the presence of heavy parts.

 CUTTING/AMPUTATION/PIERCING HAZARD  
Cutting hazard due to the presence of sharp components or the use of pointed/sharp tools (drill).

 SHEARING HAZARD  
Risk of shearing from moving parts.


 RISK OF IMPACT/CRUSHING  
Risk of impact or crushing due to moving parts.

 COLLISION WITH FORKLIFT TRUCKS HAZARD  
Risk of collision/impact with forklift trucks.

 3 Symbols: personal protective equipment

Personal protective equipment must be worn to protect against hazards (e.g. crushing, cutting, shearing etc.):


 Obligation to wear mask/goggles to protect the eyes from the risk of fragments due to the use of drill or welder.

 Obligation to wear work gloves.

 Obligation to wear safety footwear.

## 2. SAFETY RECOMMENDATIONS

This product is placed onto the market as “partly completed machinery”, therefore it cannot be commissioned until the machine in which it will be incorporated has been identified and declared to conform to the Machinery Directive 2006/42/EC by the actual Manufacturer.

 Incorrect installation and/or incorrect use of the product might cause serious harm to people. Read and comply with all the instructions before starting any activity on the product. Keep these instructions for future reference.

Perform installation and other activities adhering to the sequences provided in the instructions manual.

Always comply with all the requirements contained in the instructions and warning tables at the beginning of the paragraphs. Always comply with the safety recommendations.

Only the installer and/or maintenance technician is authorised to work on the automation components. Do not modify the original components in any way.


Close off the work site (even temporarily) and prevent access/transit. EC countries must comply with the legislation that transposes the European Construction Site Directive 92/57/EC.

The installer is responsible for the installation/testing of the automation and for completing the Register of the system.

The installer must prove or declare to possess technical and professional proficiency to perform installation, testing and maintenance activities according to the requirements in these instructions.

### 2.1 INSTALLER SAFETY

Installation activities require special work conditions to reduce to the minimum the risks of accidents and serious damage. Furthermore, the suitable precautions must be taken to prevent risks of injury to persons or damage.

 The installer must be in good physical and mental condition, aware of and responsible for the hazards that may be generated when using the product.

The work area must be kept tidy and must not be left unattended.

Do not wear clothes or accessories (scarves, bracelets, etc.) that may get caught in moving parts.

Always wear the personal protective equipment recommended for the type of activity to be carried out.

The required level of workplace lighting must be equal to at least 200 lux.

Operate CE marked machinery and equipment in compliance with the manufacturer's instructions. Use work instruments in good conditions.


Use the transport and lifting equipment recommended in the instructions manual.

Use safety-compliant portable ladders of adequate size, fitted with anti-slip devices at the top and bottom, equipped with retainer hooks.


### 2.2 TRANSPORT AND STORAGE

 4 Symbols: warnings on packaging.

 Read the instructions.

 Handle with care. Presence of fragile parts.

 Up indication.

 Keep away from water and moisture.

 Maximum number of stacked packages.

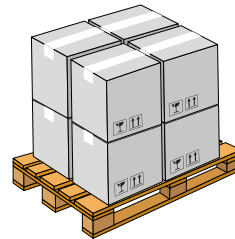
 CE marking.


#### PALLETISED SUPPLY

##### RISKS



##### PERSONAL PROTECTIVE EQUIPMENT



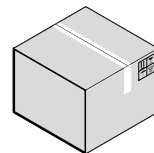
 Follow the instructions on the packaging during handling.  
Use a forklift or pallet truck, following safety regulations to avoid the risk of impacts or collisions.


#### SINGLE PACKAGE

##### RISKS



##### PERSONAL PROTECTIVE EQUIPMENT



 Follow the instructions on the packaging during handling.

#### STORAGE

Store the product in its original packaging, in closed and dry premises, protected from the sun and free from dust and aggressive substances. Protect from mechanical stress. If stored for more than 3 months, regularly check the condition of the components and the packaging.

- Storage temperature: 5°C to 30°C.
- Percentage of humidity: 30% to 70%.



## 2.3 UNPACKING AND HANDLING

### RISKS



### PERSONAL PROTECTIVE EQUIPMENT



1. Open the package.
2. Remove the magnetic limit switches and the other accessories.
3. Remove the gearmotor.
4. Unscrew the two screws that secure the cover and remove the cover.

 Check that all components are present and intact  2.

## 3. BLIZZARD 400-800 C ENC


### 3.1 INTENDED USE

The GENIUS series BLIZZARD 400-800 C ENC gearmotors are designed to move horizontal sliding gates for residential buildings/apartment complexes.

Only one gearmotor must be installed for each leaf. The gate must be moved via a rack.

Installations using the BLIZZARD 400-800 C ENC must be used for vehicular and/or pedestrian traffic.

To operate the gate manually, follow the instructions in § 5.5.

 Any other use that is not expressly specified in these instructions is prohibited and could affect the integrity of the product and/or represent a source of danger.

### 3.2 LIMITATIONS OF USE

The maximum force required to move the leaf by hand over its entire length of travel must be 225 N for residential areas and 260 N for industrial or commercial areas.

The maximum force required to start the movement must be less than the maximum thrust force of the operator indicated in the technical data.

The leaf must fall within the dimensional and weight limits indicated in the technical data.

The presence of weather conditions such as snow, ice and strong wind, even occasional, could affect the correct operation of the automation, the integrity of the components and be a potential source of danger (see § Emergency use).

BLIZZARD 400-800 C ENC is not designed to be a security (break-in protection) system.

If a pedestrian access gate is integrated in the sliding gate leaf, motorised movement must be disabled when the pedestrian gate is not closed.


The installation must be visible during the day and at night. If it is not, appropriate solutions must be provided to make the fixed and moving parts visible.

Implementing the automation requires the installation of the necessary safety devices, identified by the installer through an appropriate risk assessment of the installation site.

### 3.3 UNAUTHORISED USE

- Uses other than the intended use are prohibited.
- It is prohibited to install the automation system outside of the limits specified in the Technical Data and Installation Requirements sections.

5. Dispose of the packaging materials.


 The packaging materials (plastic, polystyrene, etc.) must not be left within reach of children as they are potential sources of danger.  
Discard the packaging after use in the appropriate containers in compliance with waste disposal regulations.

## 2.4 DISPOSAL OF THE PRODUCT

After having dismantled the product, dispose of it in compliance with the current waste disposal regulations.

 Components and structural materials, batteries and electronic components must not be disposed of together with household waste. They must be taken to authorised disposal and recycling centres.

- It is forbidden to use BLIZZARD 400-800 C ENC in a constructional configuration other than the one provided by the manufacturer.
- No component part of the product may be modified.
- It is prohibited to install the automation system on escape routes.
- It is prohibited to install the automation system to create fire doors.
- It is prohibited to install the automation system in environments in which there is a risk of explosion and/or fire: the presence of flammable gases or fumes is a serious safety hazard.
- It is prohibited to power the system with energy sources other than those specified.
- It is prohibited to integrate commercial systems and/or equipment other than those specified, or use them for purposes not intended and authorised by their respective manufacturers.
- Do not allow water jets of any type or size to come into direct contact with the gear motor.
- Do not expose the gear motor to corrosive chemicals or atmospheric agents.
- It is prohibited to use and/or install accessories which have not been specifically approved by FAAC S.p.A.
- It is prohibited to use the automation system before performing commissioning.
- It is prohibited to use the automation system in the presence of faults which could compromise safety.
- It is prohibited to use the automation system with the fixed and/or mobile guards removed or altered.
- Do not use the automation system unless the area of operation is free of persons, animals or objects.
- Do not enter/remain in the area of operation of the automation system while it is moving.
- Do not try to prevent the movement of the automation system.
- Do not climb on, hold onto or let yourself be pulled by the leaf. Do not climb onto the gear motor.
- Do not allow children to approach or play in the area of operation of the automation system.
- Do not allow the control devices to be used by anyone who is not specifically authorised and trained to do so.
- Do not allow the control devices to be used by children or persons with mental and physical deficiencies unless they are supervised by an adult who is responsible for their safety.

 During manual operation, gently guide the leaf the whole way, do not push it and let it slide freely.

## 3.4 EMERGENCY USE

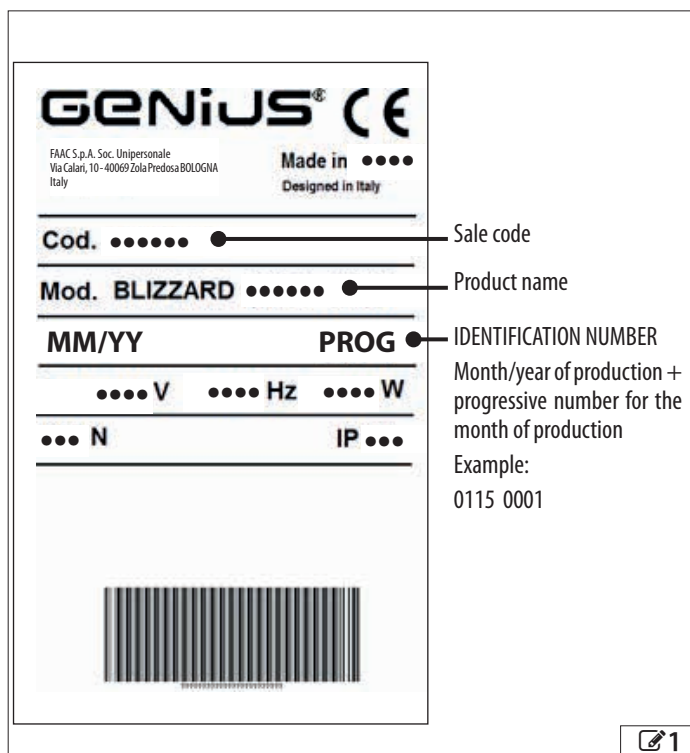
In any case the beam is not behaving properly, in emergencies or if there is a fault, turn off the power supply to the automation and disconnect the buffer batteries if there are any. If the leaf can be moved safely by hand, use the MANUAL OPERATION mode; otherwise place the automation out of service until it has been reset/repared. In the case of a breakdown, the automation must be reset/repared exclusively by the installer/maintenance technician.

## 3.5 PRODUCT WARNINGS



Risk of fingers and hands being trapped between the rack, pinion and casing (2).

## 3.6 PRODUCT IDENTIFICATION



## 3.7 TECHNICAL SPECIFICATIONS

Electromechanical grease-lubricated gearmotor, supplied with a pinion for the rack.

**Irreversible system** The integrated release device has to be used in order to move the gate manually.

**SPRINT M24 board** The built-in electronic board is equipped with a display, programming buttons and a protective plastic cover.

**Incremental encoder** The encoder integrated in the electric motor determines the position of the leaf and the speed of movement.

**Obstacle detection** The electronic board detects the presence of an obstacle via the encoder and the current supplied to the motor. The automation reverses partially or totally if an obstacle is detected during opening or closing.

**Force limitation** The maximum force exerted by the gearmotor is regulated by the electronic board.

**Adjustable speed** The opening and closing speeds of the gate can be regulated independently.

**Magnetic limit switches** To be fixed to the rack to set the opening and closing stop positions.

**End of travel slowdown** Adjustable electronic slowdown near to the open and closed positions.

**Bus G-Way** Bus G-Way accessories can be connected to the electronic board.

**Master-Slave** It is possible to operate two opposite opening leaves. To do this, two BLIZZARD 400-800 C ENC units have to be installed in a MASTER-SLAVE configuration: the first (referred to as the MASTER) controls the second (referred to as the SLAVE).

**Radio** The radio decoding system integrated in the electronic board allows up to 256 GENIUS RC and JLC radio codes to be stored. To do this, you have to purchase the optional RQFZ radio module.

**Battery kit** An optional GENIUS battery kit can be connected in order to operate the gate if there is a mains power supply failure.



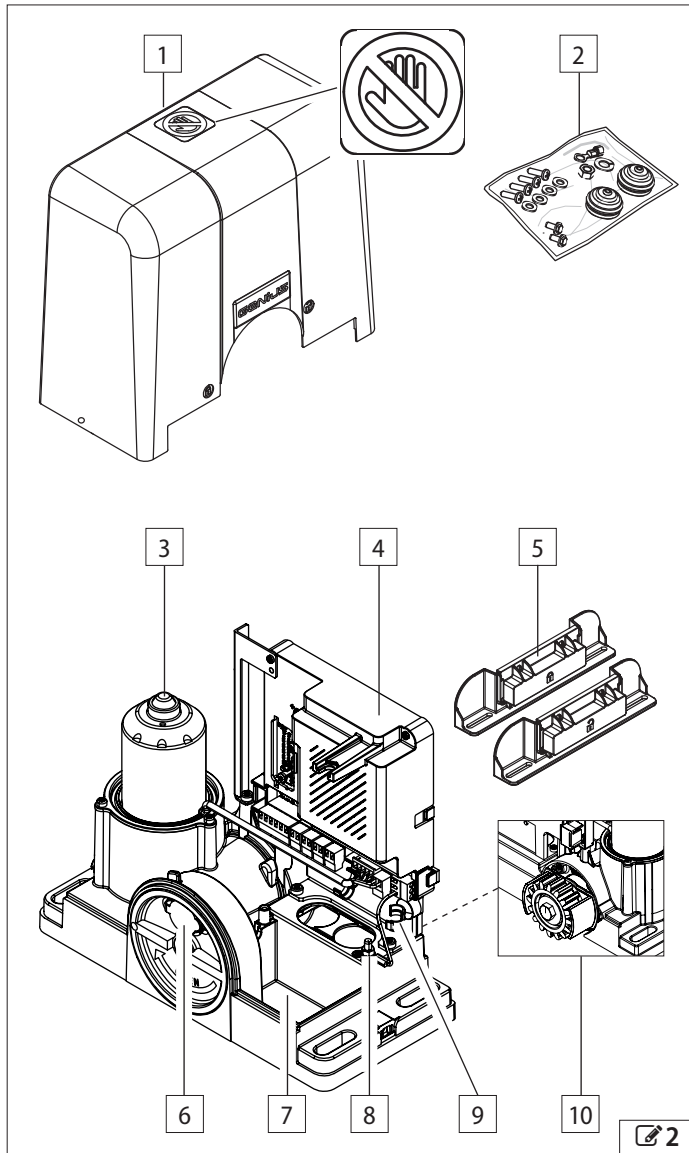
Revision 1 battery kits are not compatible: the revision number must be 1A or higher. Check the revision number on the label of the battery kit board.

### 5 Technical data

	BLIZZARD 400 C ENC		BLIZZARD 800 C ENC	
<b>Power supply voltage</b>	210-250 V~ 50/60 Hz	105-125 V~ 50/60 Hz	210-250 V~ 50/60 Hz	105-125 V~ 50/60 Hz
<b>Electric motor</b>	Brush motor 24 V===	Brush motor 24 V===	Brush motor 24 V===	Brush motor 24 V===
<b>Max power</b>	150 W	150 W	150 W	150 W
<b>Stand-by power without accessories</b>	5 W	5 W	5 W	5 W
<b>Max thrust force</b>	310 N	310 N	410 N	410 N
<b>Pinion</b>	Z16 Module 4	Z16 Module 4	Z16 Module 4	Z16 Module 4
<b>Max leaf length</b>	15 m	15 m	15 m	15 m
<b>Max leaf weight</b>	400 kg	400 kg	800 kg	800 kg
<b>Max leaf speed</b>	12 m/min	12 m/min	12 m/min	12 m/min
<b>Stopping space</b>	35 mm	35 mm	-	-
<b>Ambient operating temperature</b>	-20 °C - +55 °C	-20 °C - +55 °C	-20 °C - +55 °C	-20 °C - +55 °C
<b>Type of use</b>	Residential buildings/ Apartment complexes	Residential buildings/ Apartment complexes	Residential buildings/ Apartment complexes	Residential buildings/ Apartment complexes
<b>Continuous use time (ROT)</b>	continuous	continuous	continuous	continuous
<b>Protection rating</b>	IP44	IP44	IP44	IP44
<b>Dimensions (LxDxH)</b>	297x170x256	297x170x256	297x170x256	297x170x256
<b>Gearmotor weight</b>	7 kg	7 kg	7 kg	7 kg
<b>Electronic board</b>	SPRINT M24	SPRINT M24 115V	SPRINT M24	SPRINT M24 115V



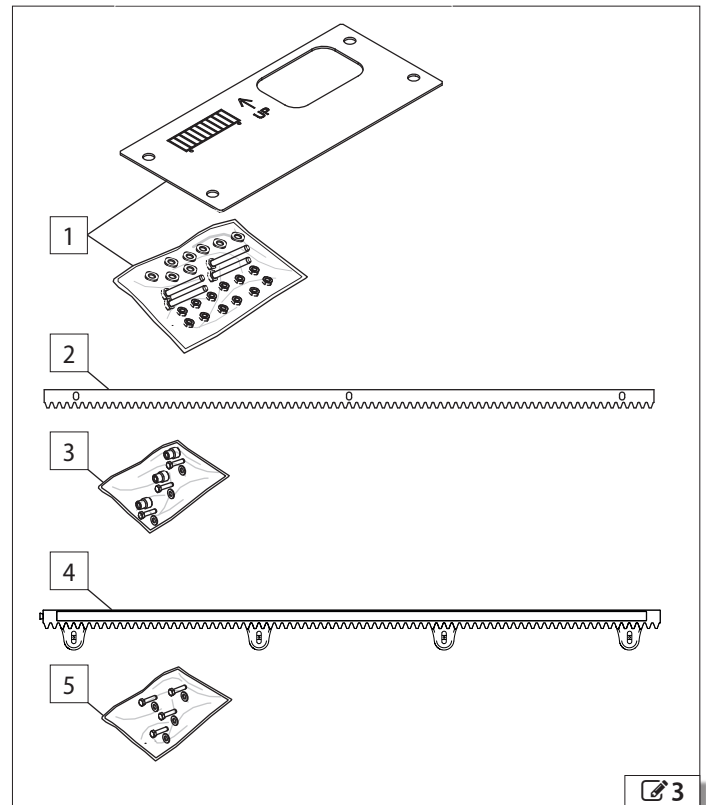
### 3.8 COMPONENT IDENTIFICATION



#### 6 Components

- 1 Casing and danger symbol
- 2 Hardware/accessories
- 3 Electric motor with integrated encoder
- 4 Electronic board SPRINT M24
- 5 Magnetic limit switches
- 6 Release device
- 7 Battery kit compartment
- 8 Earth connection
- 9 Power cable clamps
- 10 Z16 module 4 pinion

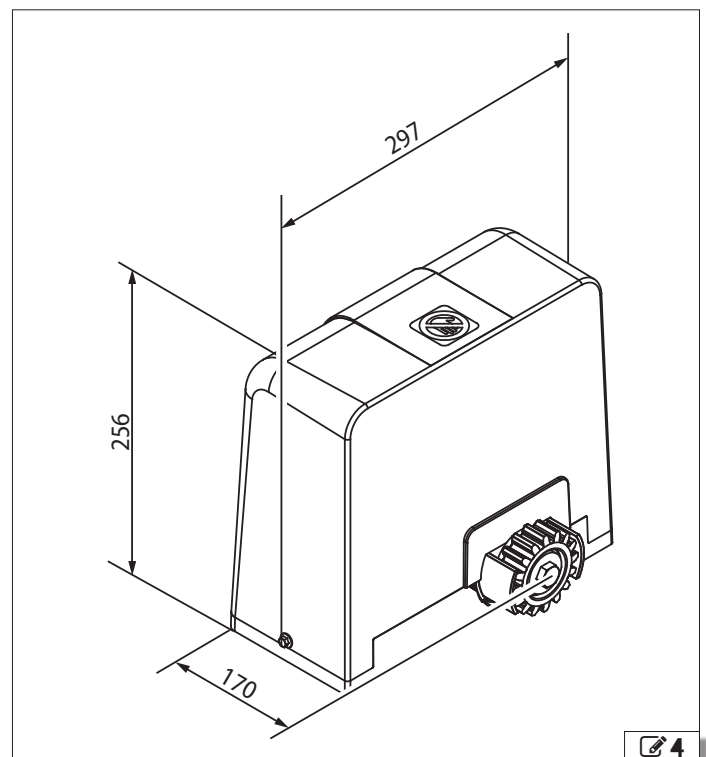
### INSTALLATION ACCESSORIES WHICH ARE NOT SUPPLIED




#### 7 Installation accessories

- 1 Foundation plate with mounting hardware
- 2 Steel rack
- 3 Spacers for steel rack (to be screwed or welded)
- 4 Nylon rack
- 5 Mounting hardware for nylon rack

### 3.9 DIMENSIONAL DRAWING



## 4. INSTALLATION REQUIREMENTS

 If installing systems that have two opposite opening leaves, two BLIZZARD 400-800 C ENC must be installed in a MASTER-SLAVE configuration. See § 10 before starting to install the product.

### 4.1 MECHANICAL REQUIREMENTS

The mechanical structural components must comply with the requirements of EN 12604. Before installing the automation, the suitability of the mechanical requirements must be established and any work that is necessary in order to meet them carried out.

The essential mechanical requirements are as follows:



Solid ground to support the weight of the gate, the structures present and the gearmotor. Flat, horizontal paving in the area of movement of the leaf. There must be no chance of water accumulating in the installation area.

The structure (columns, guides, mechanical stops, leaf and counterweights) must be solid and there must be no risk of detachment or collapse (considering the weight of the leaf and the forces applied by the gearmotor and wind action). Perform structural calculations where necessary.

The structure must show no signs of corrosion or cracking.

The leaf must remain vertical throughout the entire length of travel, with a regular, smooth and uniform movement. The path along which the leaf slides must be perfectly horizontal (the leaf must not have a tendency to open or close spontaneously when it is released).

Appropriate devices must be installed to prevent the leaf from falling. There should be a solid surface on the leaf sufficiently large to attach the rack to.

The sliding guides must be in good condition; they must be straight and not deformed, they must be fastened securely and there must be no obstacles along their entire length. The diameter of the guide wheels must be appropriate for the weight and length of the leaf and their profile section must coincide with that of the sliding guide. The number and position of the wheels must ensure an adequate and constant distribution of the weight.

A solid guide system for the suspended leaf in the case of a cantilever gate.

Presence of upper containing guide to prevent vertical oscillation of the leaf. The leaf must not under any circumstances come out from its guides and fall. Wheels, rollers and bearings in good condition, lubricated and free from play or friction.

Presence of external mechanical limit stops to limit the travel of the leaf when opening and closing. The stops must be suitably sized and solidly fastened so that they resist any impact of the leaf in the event of improper use (leaf pushed and left to slide freely). The mechanical limit stops must be positioned at 50 mm beyond the stop position of the leaf, and must ensure that the leaf remains inside its sliding guides.

The thresholds and protrusions of the paving must be appropriately shaped in order to prevent the risk of sliding or slipping.

For the creation of detection loops, refer to the specific instructions.

Presence of a safety area between the wall (or other fixed element) and the furthest protruding part of the open leaf, to protect against the risk of persons becoming trapped/crushed. Alternatively, check that the opening force required falls within the maximum permissible limits according to applicable standards and legislation.

Presence of safety areas between the fixed and moving parts, to protect against the risk of hands being trapped. Alternatively, apply protective elements that prevent fingers from being introduced.

Presence of a safety area between the paving and lower edge of the leaf, along its entire path, providing protection from the risk of feet becoming caught in and crushed beneath the wheels. Alternatively, apply protective elements preventing the introduction of feet.

No sharp edges or protruding parts should be present to ensure there are no cutting, hooking or perforation hazards. Alternatively, eliminate or protect any sharp edges and protruding parts.

No slots or openings should be present on the sliding leaf or the fencing

to prevent the creation of a shearing hazard. Alternatively, apply protective mesh to any such openings. The mesh should be sufficiently fine to prevent introduction of body parts requiring protection, in relation to the distance between the fixed and moving parts.

For the minimum dimensions to prevent crushing/shearing of body parts, refer to EN 349. For the safety distances required to prevent danger zones being reached, refer to ISO 13857.

If the area of installation gives rise to the risk of impact by vehicles, provide an appropriate protective structure to protect the gearmotor.

### 4.2 ELECTRICAL SYSTEM



Always shut off the power supply before performing any work. If the disconnect switch is not in view, apply a warning sign stating "WARNING - Maintenance in Progress".



The electrical system must comply with applicable legislation in the country of installation.

Use components and materials with CE marking which are compliant with the Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU.

The power supply line for the automation must be fitted with a multi-pole circuit breaker, with a suitable tripping threshold, a contact opening distance of at least 3 mm and a breaking capacity that complies with current regulations.

The power supply for the automation must be fitted with a 30 mA differential switch.

The metal parts of the structure must be earthed.

Check that the protective earthing system complies with applicable regulations in the country of installation.

The electrical cables of the automation system must be of a size and insulation class that is compliant with current legislation and laid in appropriate rigid or flexible conduits, either above or below ground.

Use separate conduits for the power supply and the 12-24 V control devices / accessories cables.

In the case of a Master-Slave configuration, a cable conduit has to be installed for the cables that connect the two electronic boards.

Check buried cable plans to ensure that there are no other electrical cables in proximity to the planned digging/drilling locations to prevent the risk of electrocution.

Check that there are no pipes in the vicinity as well.

The conduit fittings and the cable glands must prevent the entry of moisture, insects and small animals.

Protect extension connections using junction boxes with an IP 67 protection rating or higher.

The overall length of the BUS cables must not exceed 100 m.

It is recommended to install a flashing light in a visible position to indicate when it is moving.

The control accessories must be positioned in areas that are always accessible and not dangerous for the user. It is recommended to position the control accessories within the field of view of the automation. This is mandatory in the case of hold-to-run controls.

If an emergency stop button has been installed, it must be EN13850 compliant.

Comply with the following heights from the ground:

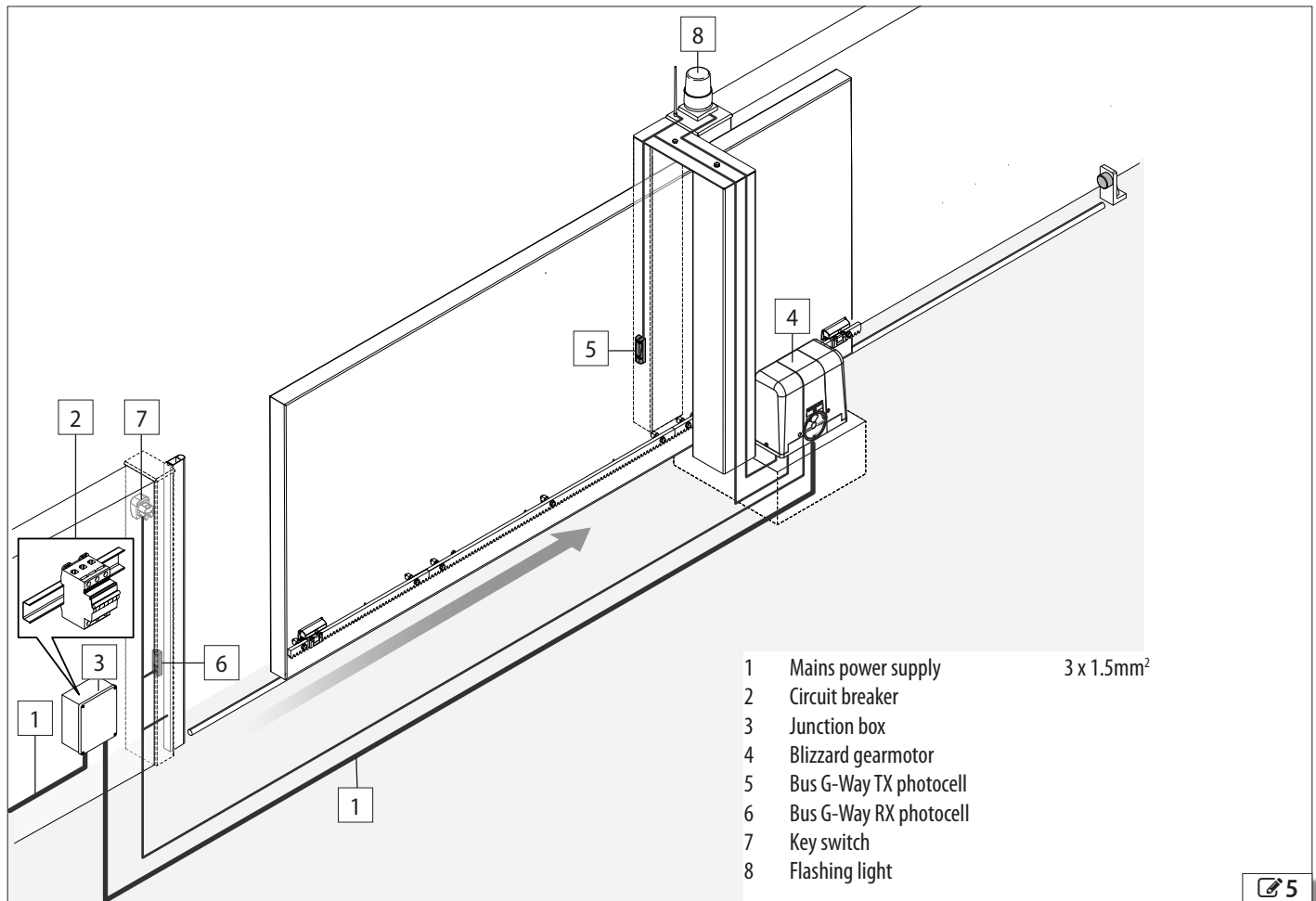
- control accessories = minimum 150 cm

- emergency buttons = maximum 120 cm

If the manual controls are intended to be used by disabled or infirm persons, highlight them with suitable pictograms and make sure that these users are able to access them.

### 4.3 EXAMPLE SYSTEM

The example is purely an illustration and is only one of the possible applications of the BLIZZARD 400-800 C ENC.



ENGLISH  
Translation of the original instructions

## 5. INSTALLATION

### 5.1 TOOLS REQUIRED



Use appropriate tools and equipment in working environments which comply with applicable legislation.

8 Symbols: work tools



HEX SPANNER of size indicated

17 - 13 - 10 - 8

TORQUE WRENCH - if necessary for safety, a torque wrench and the TIGHTENING TORQUE will be specified E.g.: HEX WRENCH 6 set at 2.5 Nm



x.x Nm



2.5 Nm

6



ELECTRICIAN'S SCISSORS



HSS DRILL BIT of specified sizes

6.5 - 5.5 - 3.6



THREAD CUTTER of specified sizes (for steel rack to be screwed on)

M8



LEVEL



TAPE MEASURE



SCREW CLAMP



WELDER (for steel rack to be welded on)



ANGLE GRINDER



CALLIPER



WIRE STRIPPER/TERMINAL CRIMPER



FLAT SCREWDRIVER of the size(s) indicated

2.5



PHILLIPS SCREWDRIVER of the size(s) indicated

2.5

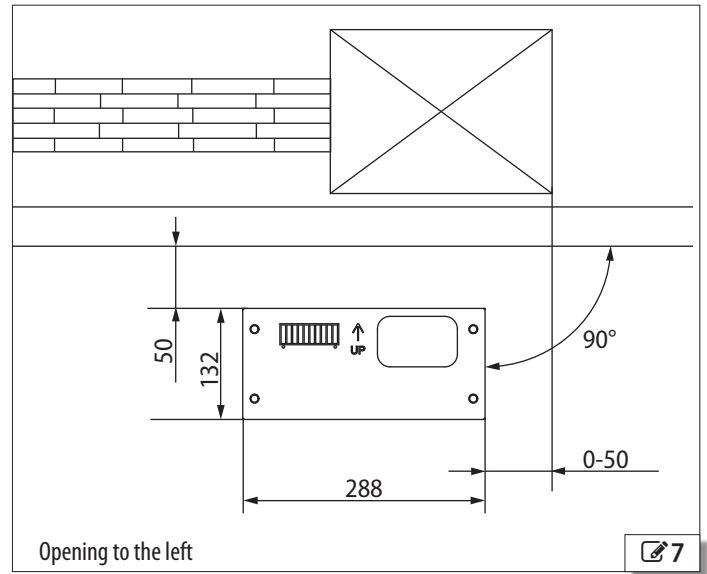
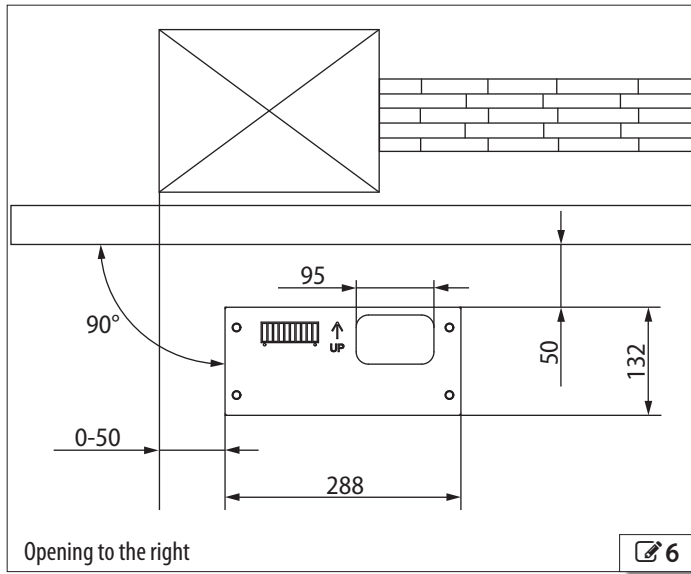


TORX SCREWDRIVER of the size(s) indicated (electronic board)

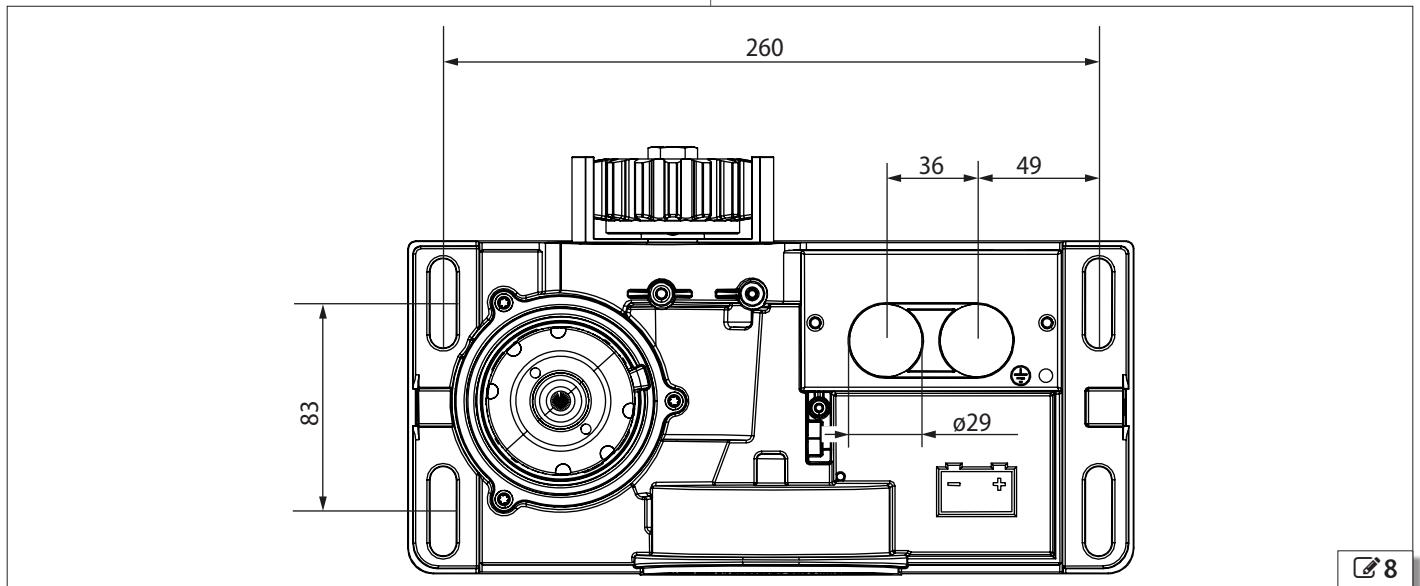
T20 - T15

**5.2 INSTALLATION DIMENSIONS**

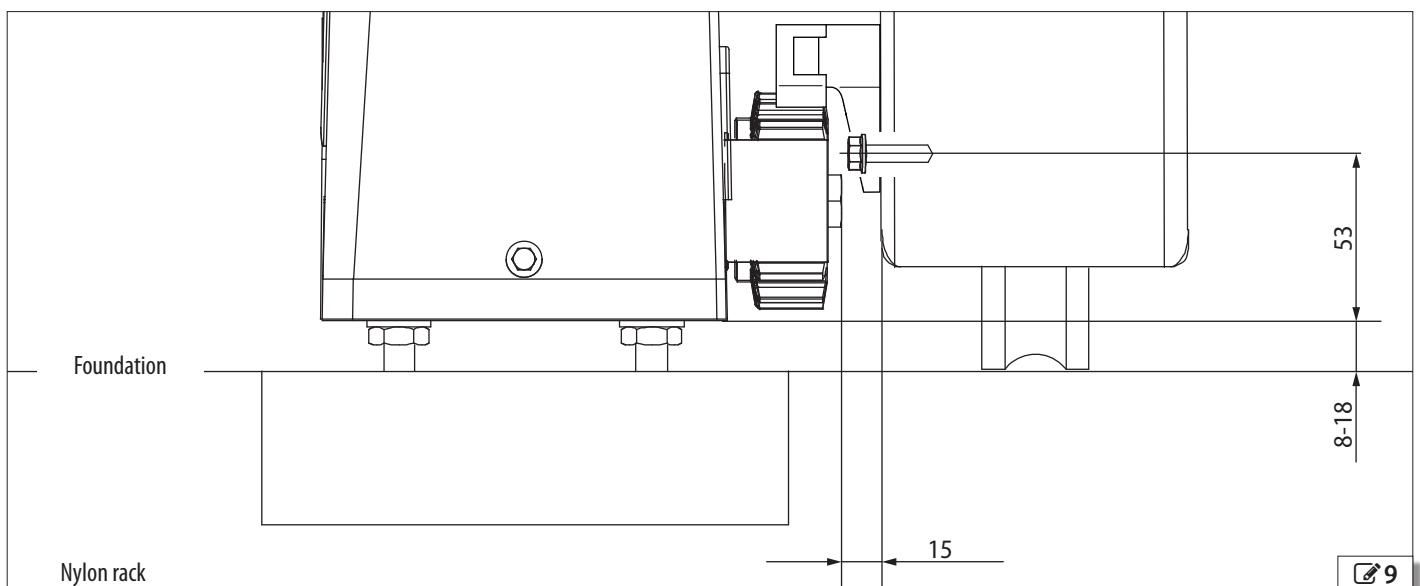
**POSITIONING THE FOUNDATION PLATE**



**CENTRELINE DISTANCES**

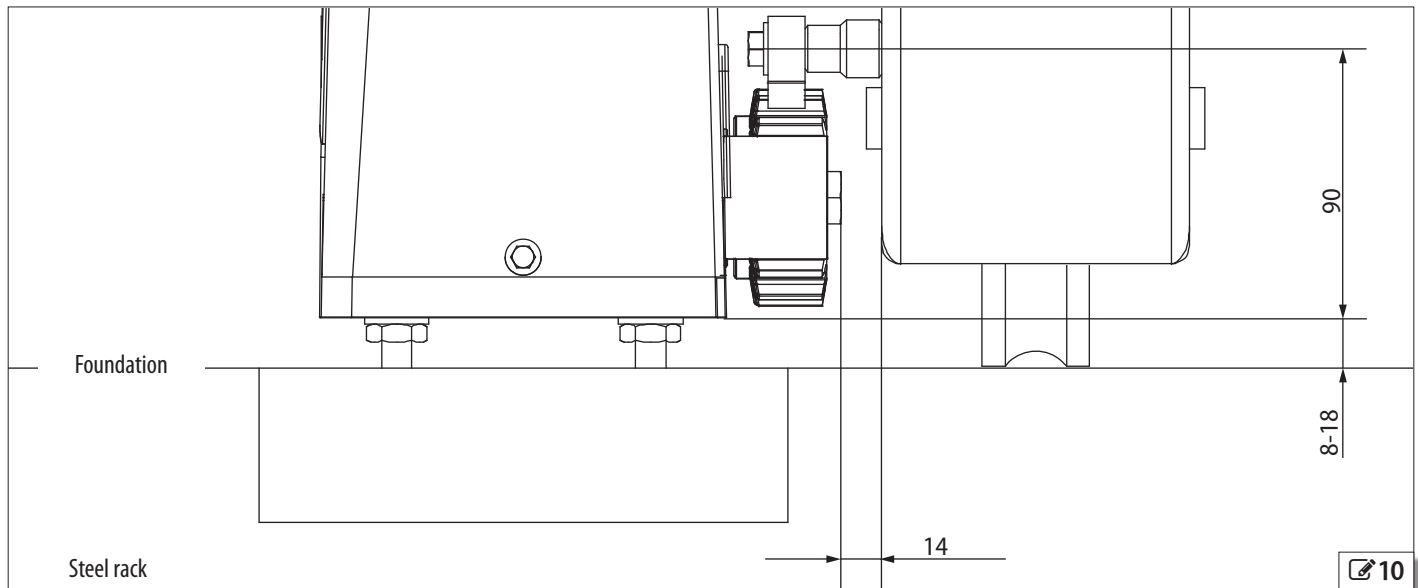


**POSITIONING THE NYLON RACK**



ENGLISH  
Translation of the original instructions

POSITIONING THE STEEL RACK



5.3 FOUNDATION PLATE

RISKS



PERSONAL PROTECTIVE EQUIPMENT



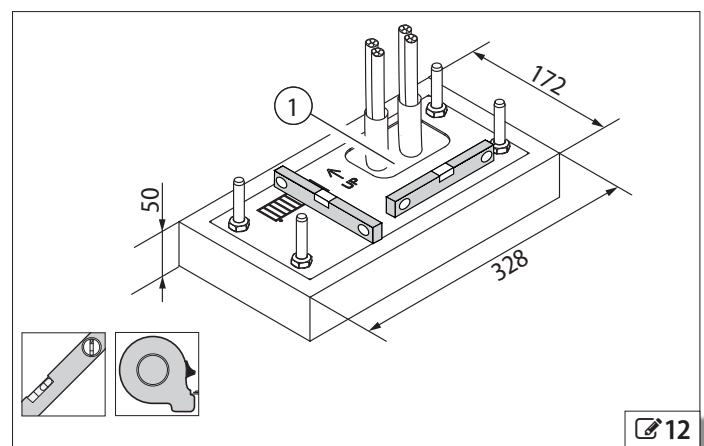
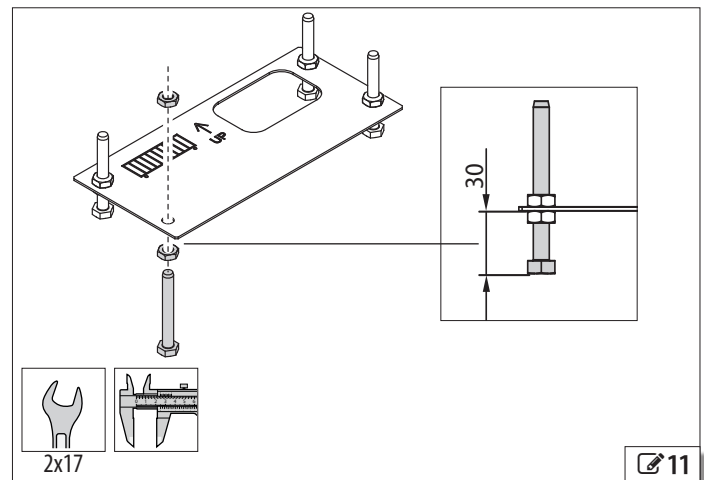
**i** Before proceeding, check that the necessary cable glands have been installed (§ 4.3).

The foundation plate and corresponding hardware are accessories which are not included.

1. Assemble the foundation plate as shown in 11; tighten the M10 nuts and lock nuts supplied, using two hex spanners.
2. Make a plinth, with reference to § 5.2 and 12.
3. Pass the cable glands through the hole ( 12-1) and install the foundation plate.

**i** Do not bury the foundation plate in the concrete.

4. Use a spirit level, check that the plinth is horizontal and make any adjustments before the concrete sets ( 12).



## 5.4 FASTENING THE GEARMOTOR

### RISKS



### PERSONAL PROTECTIVE EQUIPMENT



**!** Lift the gearmotor, holding it by the base.

**i** Wait for the concrete to set completely before proceeding.

1. Pass the cables through the two holes on the gearmotor (☞ 13-1).
2. Position the gearmotor, lining up the slots and the screws on the plate (☞ 13-2).
3. Pass the cables through the plastic cable glands provided, then insert the cable glands in the holes (☞ 13-3).

**!** If one of the two holes will not have cables running through it, insert the plastic cable gland whole.

4. Position the base of the gearmotor 18mm from the foundation plate by adjusting the four support nuts (☞ 14-1).
5. Fit four M10 lock nuts and four washers, supplied together with the foundation plate, as shown in ☞ 14-2.
6. Make sure there is a distance of 13.5mm between the pinion and the leaf (§ 5.2).
7. Use a spirit level to check that the gearmotor is horizontal (☞ 14): make any adjustments by regulating the support nuts (☞ 14-1).
8. Provisionally tighten the four lock nuts using two hex spanners (☞ 14-1-2).

## 5.5 MANUAL OPERATION

**!** Shut off the power to the system and ensure that the automation system is stopped before performing manual movement operations and restoring automatic operation.

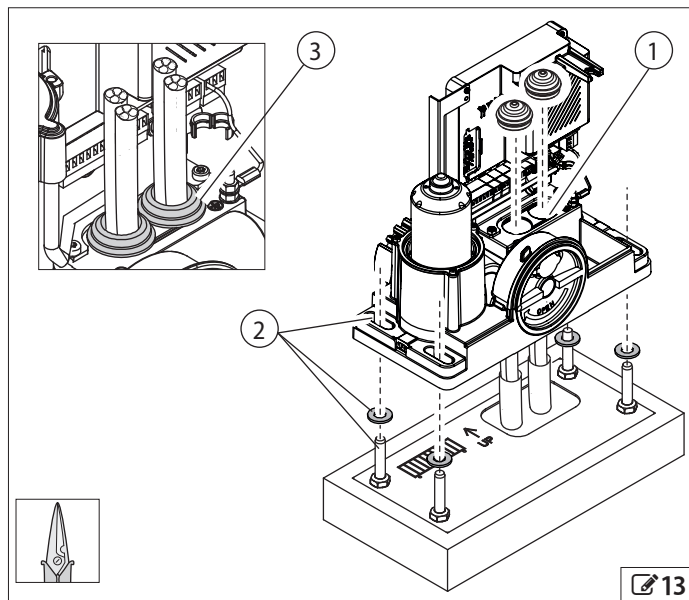
A lock with personalised key is available as an optional accessory.

### MANUAL RELEASE

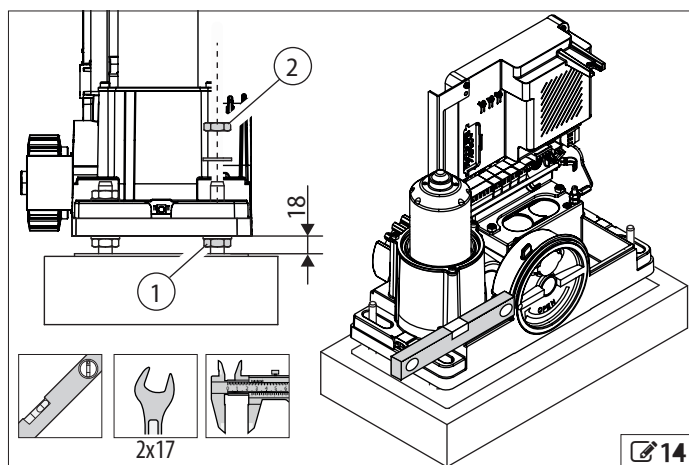
1. Open the plastic cap on the release device (☞ 15-1).
2. Turn the lock clockwise using a coin or the personalised key (☞ 15-1).
3. Turn the knob clockwise (☞ 15-2).

### RESTORING AUTOMATIC OPERATION

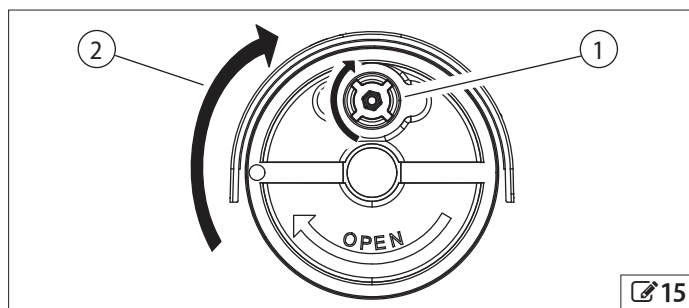
1. Turn the knob anticlockwise.
2. Turn the lock anticlockwise.
3. Manually move the gate until the mechanical system engages.



☞ 13



☞ 14



☞ 15



## 5.6 INSTALLING THE RACK

### RISKS



### PERSONAL PROTECTIVE EQUIPMENT



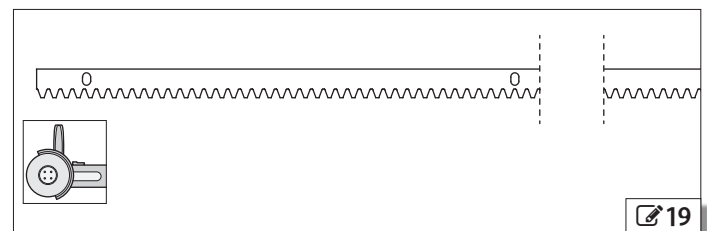
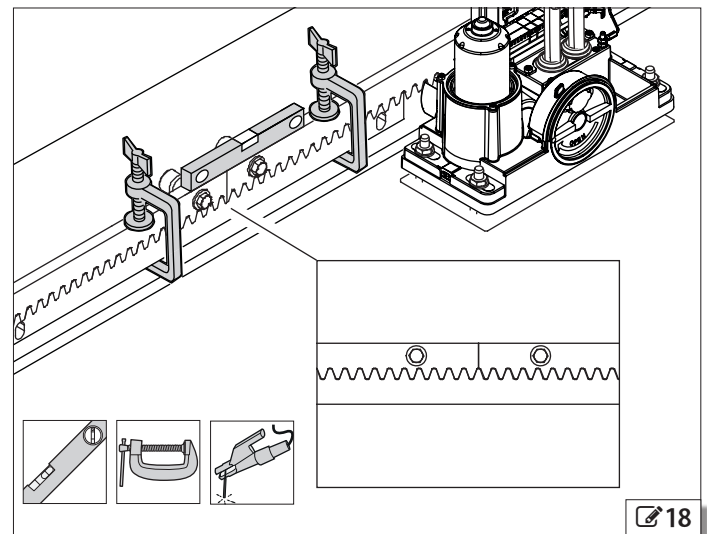
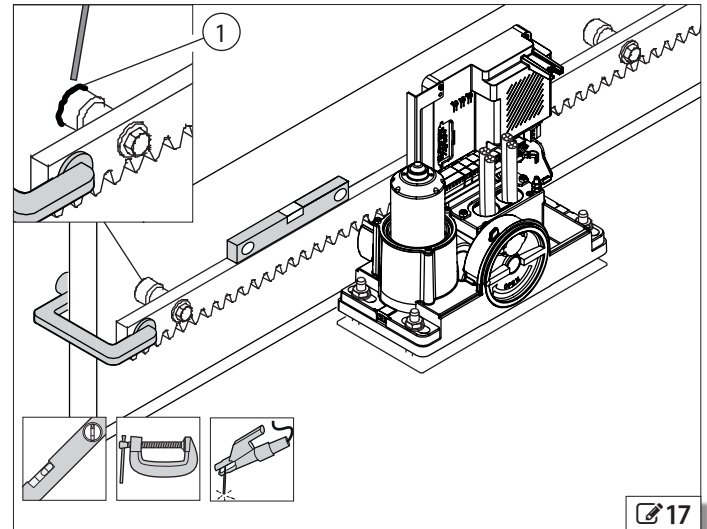
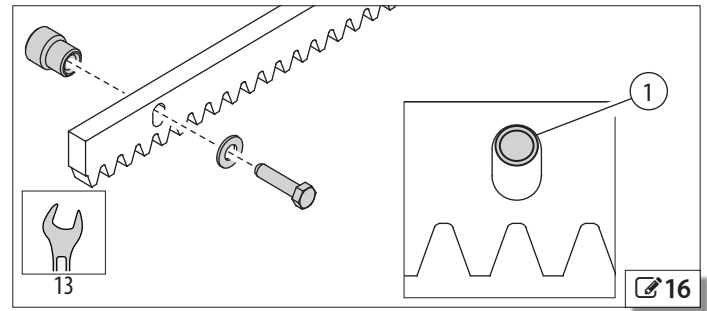
- DO NOT weld the spacers onto the racks.
- DO NOT weld the elements of the rack together.
- DO NOT apply grease or other lubricants to the racks.

Mounting the rack involves moving the leaf manually several times.

### STEEL RACK - WELD-ON FASTENINGS

Welding must be carried out in a workmanlike manner. Safety may be affected if it is carried out badly.

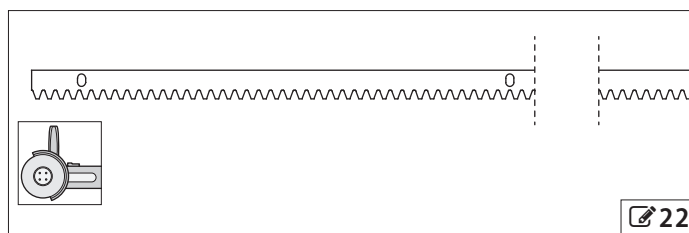
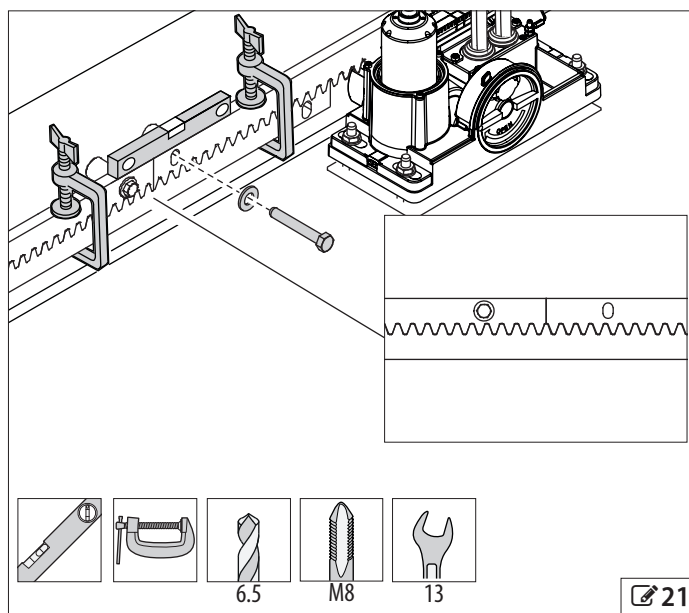
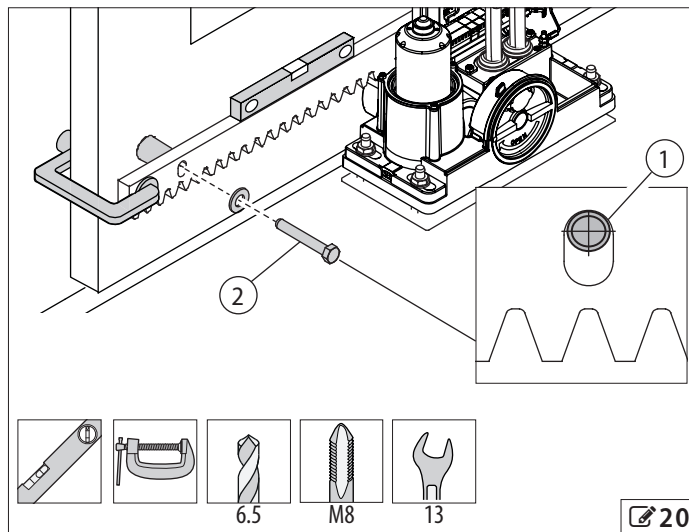
1. Prepare all the elements of the rack that are required for the length of the leaf ():
  - screw 3 spacers onto each element of the rack
  - position the spacers so that they touch the top of the slots, this will allow future adjustments if the guide were to move downwards (
  - if an element of the rack needs to be shortened, cut it using an angle grinder away from the slot (
2. Open the leaf manually.
3. Rest an element of the rack on the pinion. Make sure that it is level using a spirit level and fasten it to the leaf using a screw clamp (
4. Weld the first spacer to the leaf () , then move the leaf with the rack resting on the pinion. Make sure that it is horizontal and weld on the other spacers.
- Protect the gearmotor from weld spatter. DO NOT connect the earth of the welder to the gearmotor.
5. Move the leaf. Rest the next element of the rack on the pinion so that it touches the previous element.
  - Line up the teeth by resting them on an element of the rack and assemble temporarily using screw clamps (
6. Make sure that it is horizontal using a spirit level. Weld the spacers (as in step 4). Remove the screw clamps.
7. Repeat from step 5 for all elements of the rack.



## STEEL RACK - SCREW-ON FASTENINGS

**i** The rack installation accessories contain screws for aluminium or steel leaves. Use specific screws for other materials.

1. Open the leaf manually.
2. Rest an element of the rack on the pinion.
3. Place a spacer between the rack and the leaf. Make sure that it is horizontal using a spirit level. Mark the hole to be drilled on the leaf (☞ 20).
  - Position the spacers so that they touch the top of the slots, this will allow future adjustments if the guide were to move downwards (☞ 20-1).
4. Drill the hole and make a thread in it (☞ 20).
5. Fasten using the screw and washer (☞ 20).
6. Move the leaf with the rack resting on the pinion. Repeat steps 3 ... 5 for the other fixing points.
7. Move the leaf. Rest the next element of the rack on the pinion so that it is touching the previous element.
  - Line up the teeth by resting them on an element of the rack and assemble temporarily using screw clamps (☞ 21).
8. Repeat steps 3 ... 6 for the other fixing points. Remove the screw clamps.
9. Repeat from step 7 for all elements of the rack that are required for the length of the leaf.
  - If an element of the rack needs to be shortened, cut it with an angle grinder away from the slot (☞ 22).

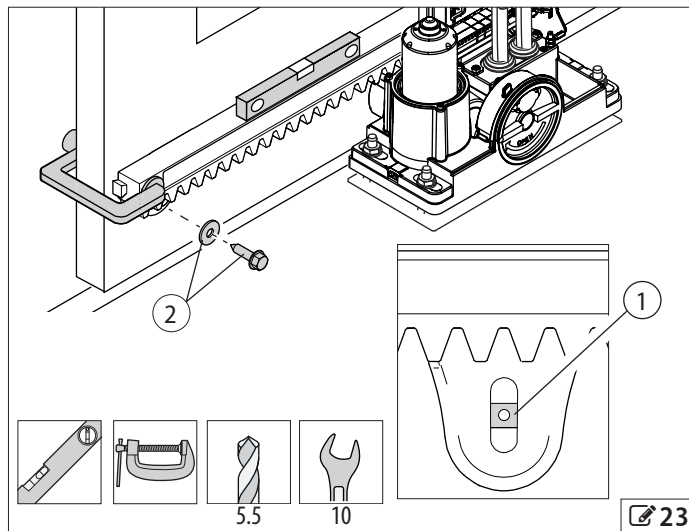



## NYLON RACK

1. Rest a rack section on the pinion (☞ 23).
2. Use a screw clamp to fasten the assembly to the leaf, then use a spirit level to check it is level (☞ 23).
3. Drill holes at the centre of the slots (☞ 23-1). Fasten using suitable screws and washers.



Use fixing screws that are specific for the material from which the leaf is made. Self-tapping screws and washers are available for aluminium or steel and should be ordered separately (☞ 23-2).



 Move the leaf manually. Assemble the next interlocking element at the end of the previous one and rest it on the pinion (🔗 24). Make sure that it is horizontal using a spirit level.

4. Drill holes at the centre of the slots. Fasten using suitable screws and washers.
5. Repeat steps 4 and 5 for all elements of the rack that are required for the length of the leaf.
  - If an element needs to be shortened, cut it with an angle grinder away from the slot (🔗 25).


### 5.7 ADJUSTMENTS AND CHECKS

#### RISKS

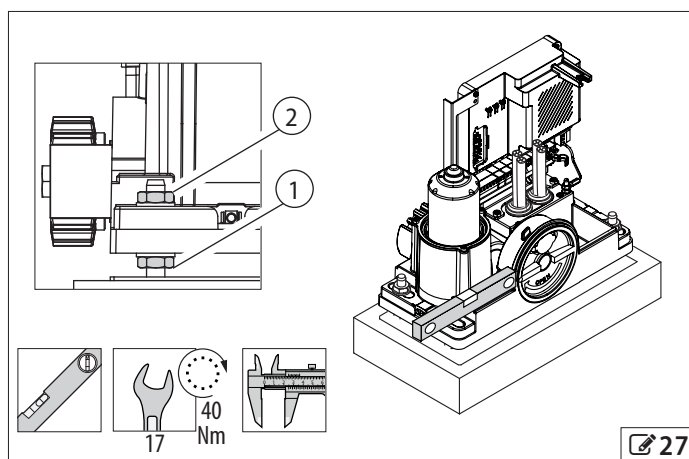
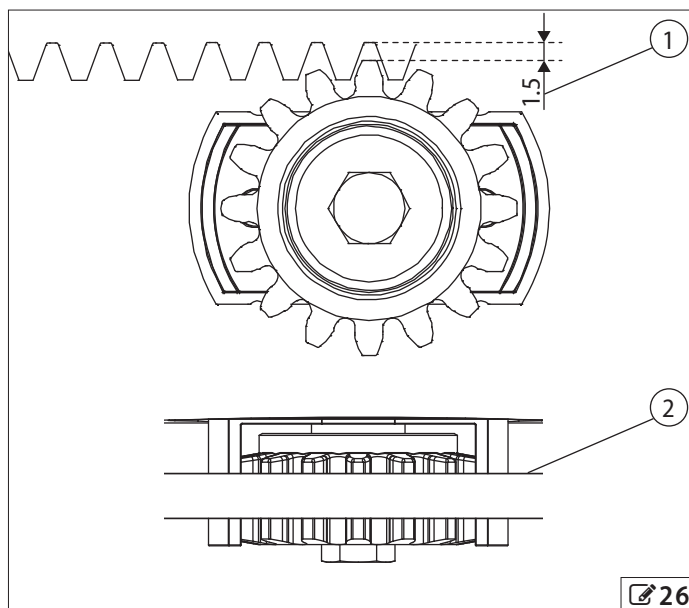
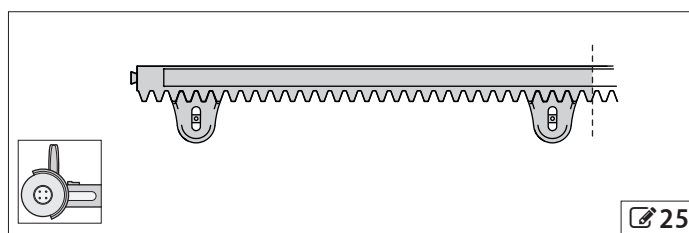
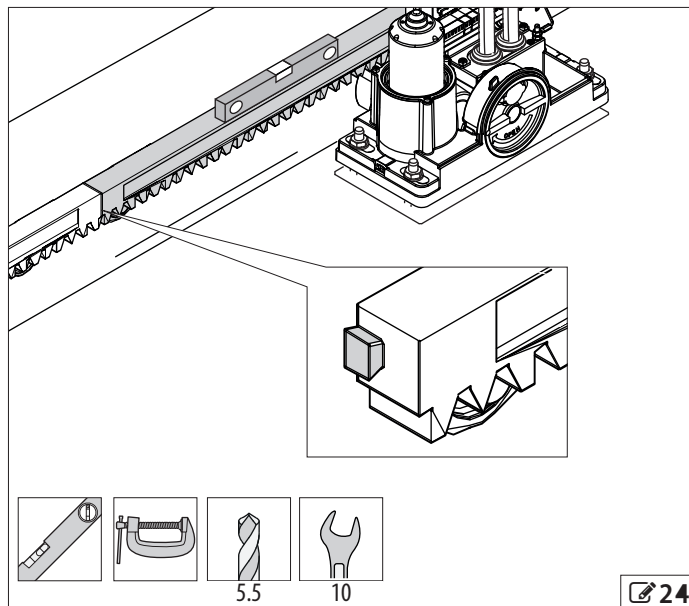


#### PERSONAL PROTECTIVE EQUIPMENT

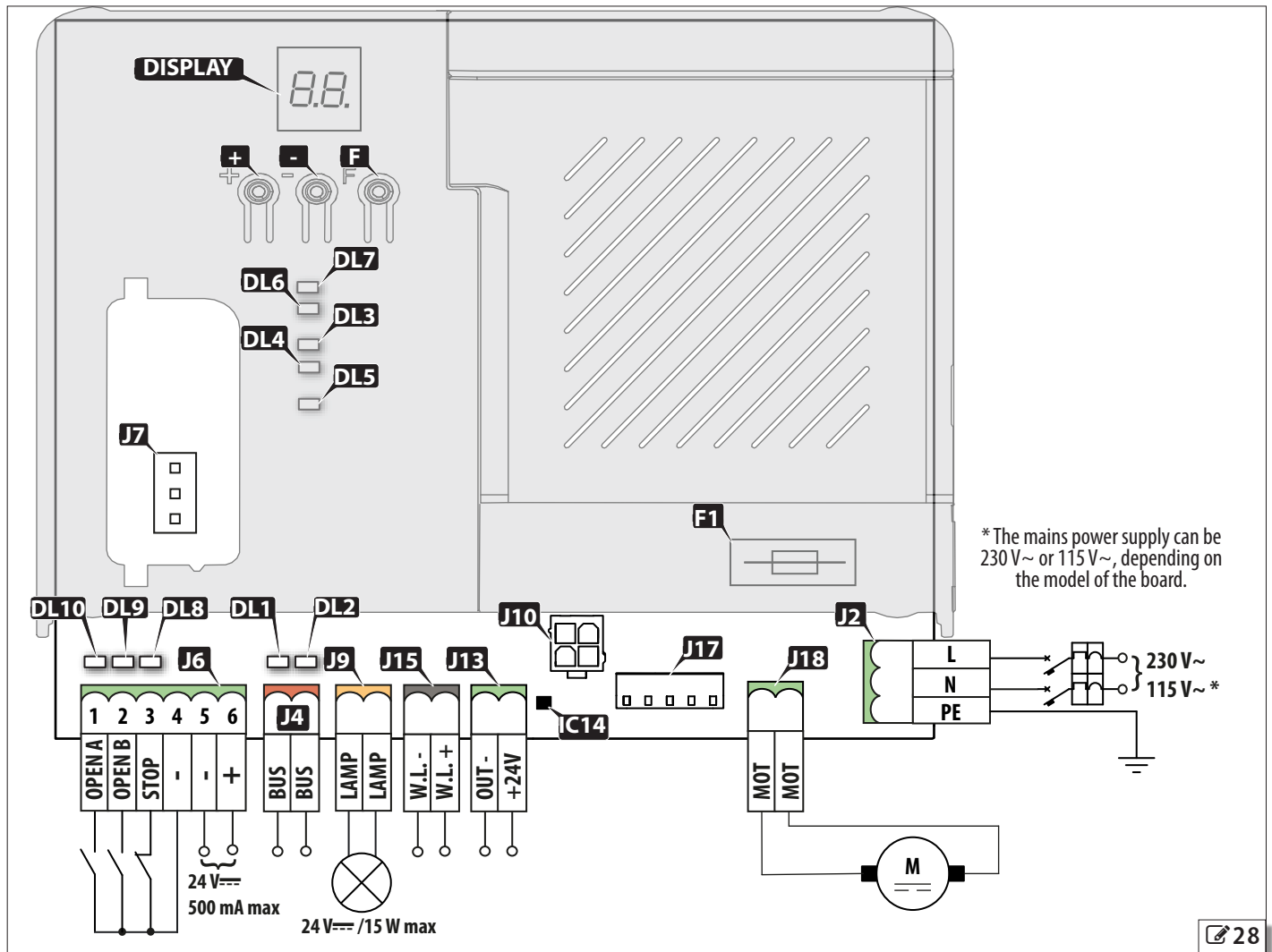


 The operations described in this section are fundamentally important to the integrity and operation of the gearmotor.

1. When you have installed the rack, lower the gearmotor by 1.5mm (🔗 26-1), by adjusting the four support nuts (🔗 27-1).
2. Check that the gearmotor is level using a spirit level (🔗 27).
3. Tighten the four upper lock nuts to a minimum torque of 40Nm (🔗 27-2), using a hex spanner and a torque wrench.
4. Move the gate by hand and check that:
  - There is 1.5 mm between the teeth of the rack and pinion along the travel
  - The rack remains engaged with the pinion along its travel (🔗 26-2)
  - The leaf and gearmotor do not touch at any point
  - There is no friction.



## 6. SPRINT M24 BOARD



KEY:	
J2	Power supply terminal board
J4	Terminal board for Bus G-Way
J6	Terminal board for accessories
J7	Connector for GENIUS RQFZ radio module
J9	Terminal board for flashing light
J10	Connector for GENIUS battery kit
J13	Terminal board for output OUT
J15	Terminal board for output W.L.
J17	Connector for encoder
J18	Terminal board for motor
IC14	Limit switch sensor
F1	Mains power supply fuse

KEY:	
DL1	Signalling LED Bus G-Way device active - "BUS"
DL2	Diagnostic LED Bus G-Way - "BUS MON."
DL3	Signalling LED RADIO1
DL4	Signalling LED RADIO2
DL5	Signalling LED - radio memory full
DL6	Status LED FCC (Closing limit switch)
DL7	Status LED FCA (Opening limit switch)
DL8	Status LED STOP
DL9	Status LED OPEN B
DL10	Status LED OPEN A
+	+ button
-	- button
F	F button

### 9 Technical data

	SPRINT M24	SPRINT M24 115V
Power supply voltage	210-250 V~ 50/60 Hz	105-125 V~ 50/60 Hz
Fuse F1	2.5 AT	5 AT
Max power	150 W	150 W
Max accessories load 24 V==	500 mA	500 mA
Ambient operating temperature	-20 °C - +55 °C	-20 °C - +55 °C
Flashing light	24 V== - 15 W	24 V== - 15 W

## 6.1 CONNECTIONS

- i** If using a MASTER-SLAVE configuration, first read § 10.  
Do not exceed the maximum load of the outputs.

### TERMINAL BOARD FOR ACCESSORIES (30)

- i** Multiple N.O. contacts on the same input must be connected in parallel. Multiple N.C. contacts on the same input must be connected in series (29).

#### INPUTS:

- 1 OPEN A** N.O. contact: if active, commands the total opening of the gate.
- 2 OPEN B** N.O. contact: if active, commands the partial opening of the gate. Can be configured in Advanced Programming (b) as:  
SAFE - N.C. contact for opening edges.  
CLOSE - N.O. contact: if active, commands the closing of the gate.

- i** If logic b or c are used, the input OPEN B must be configured as CLOSE in Advanced programming (b = c).

- 3 STOP** N.C. stop contact.  
Can be configured in Advanced Programming (SP) as:  
SAFE - N.C. contact for closing edges.

#### OUTPUTS:

- 4-5 -** Accessories negative (500 mA max).
- 6 +** Accessories positive 24 V== (500 mA max).

### TERMINAL BOARD FOR FLASHING LIGHT (31)

- i** The flashing light, if connected to the board, indicates that the automation is moving.

Terminal board for connecting the flashing light 24 V==.  
Max load: 15 W.

### TERMINAL BOARD FOR OUTPUT W.L. (32)

Output can be configured as a LED or as a timed output in Advanced Programming (L).

When active, it supplies 24 V==.

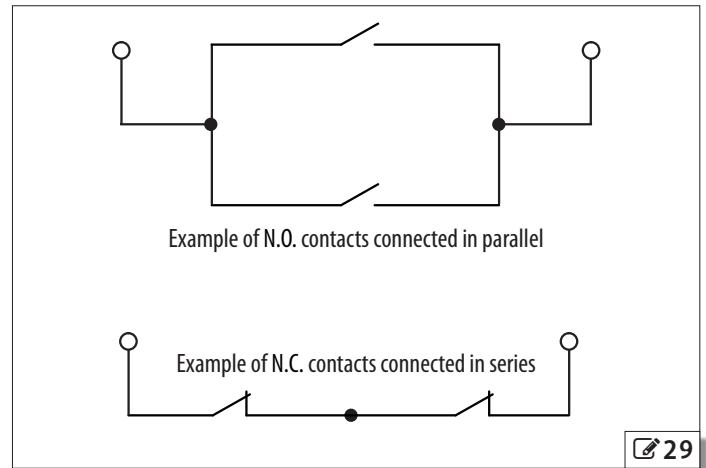
Max load: 100 mA.

### TERMINAL BOARD FOR OUTPUT OUT (33)

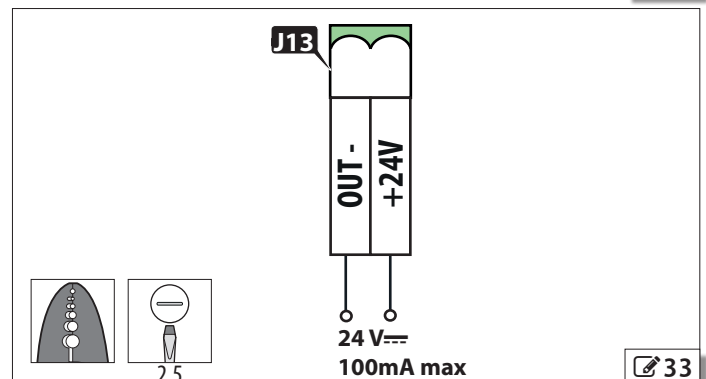
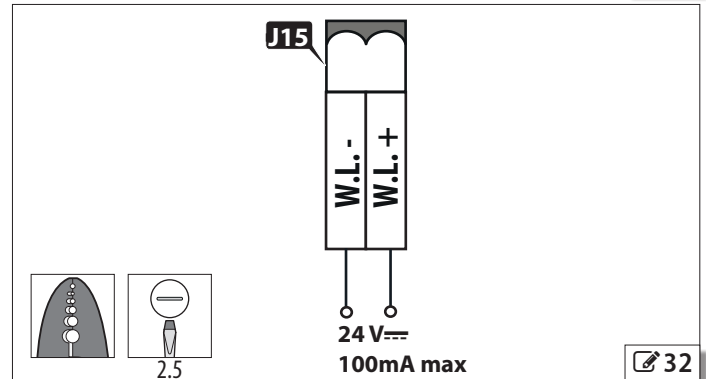
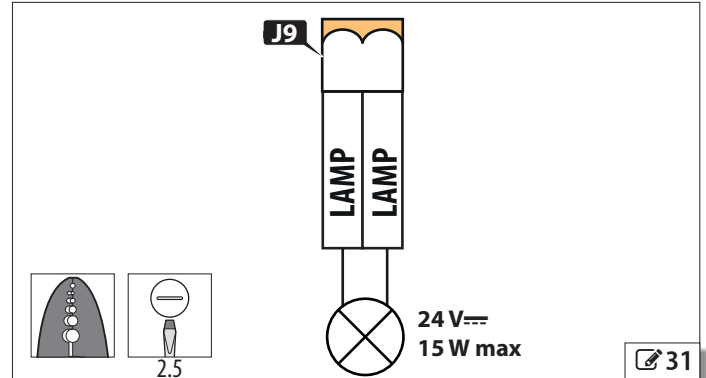
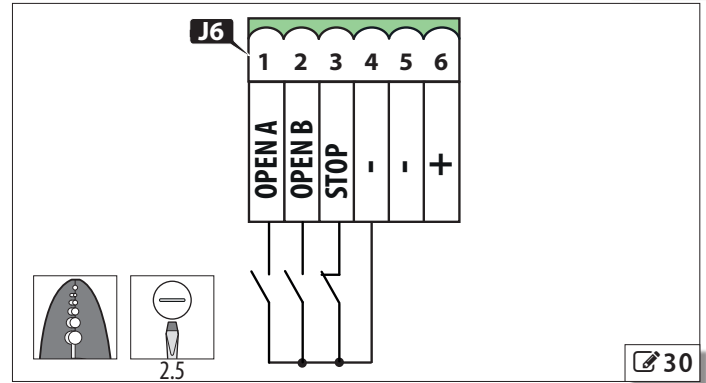
Output can be configured in Advanced Programming. The condition under which it is activated is set in function I.

When active, it supplies 24 V==.

Max load: 100 mA.

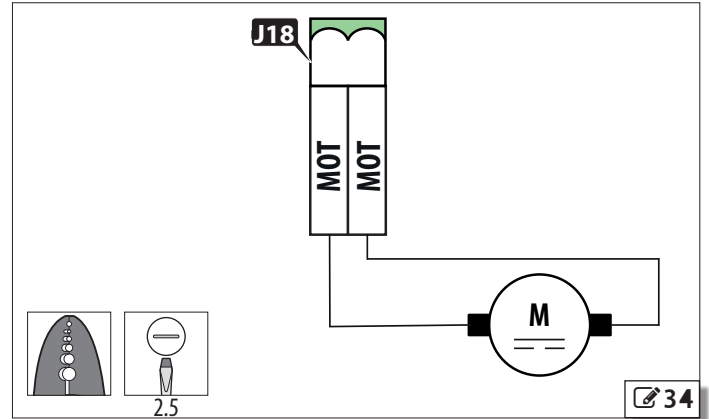


29



**MOTOR TERMINAL BOARD (🔗 34)**

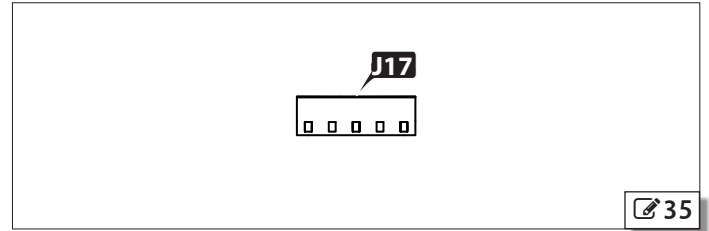
Terminal board for connecting the electric motor.  
The cable of the electric motor is connected at the factory.



**ENCODER CONNECTOR (🔗 35)**

Connector for connecting the encoder.  
The encoder cable is connected at the factory.

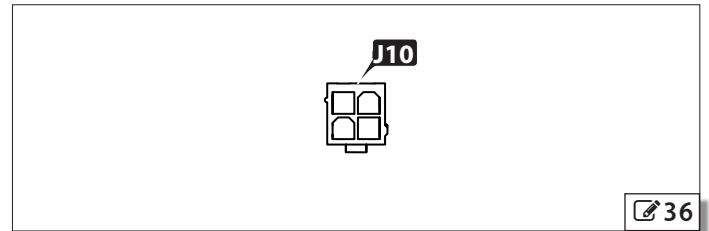
**i** The encoder must always be connected in order for the automation to operate.



**BATTERY KIT CONNECTOR (🔗 36)**

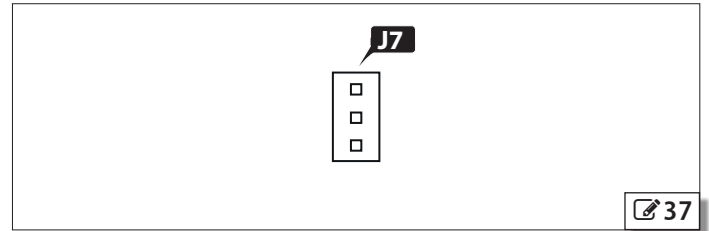
Connector for connecting the GENIUS battery kit (optional accessory).

**i** Battery kits with revision 1 are not compatible: the revision number must be A1 or higher. Check the revision number on the label of the battery kit board.



**RQFZ RADIO MODULE CONNECTOR (🔗 37)**

Rapid connector for plugging in the GENIUS RQFZ radio module (optional accessory). Plug in the module only when the board is not powered.



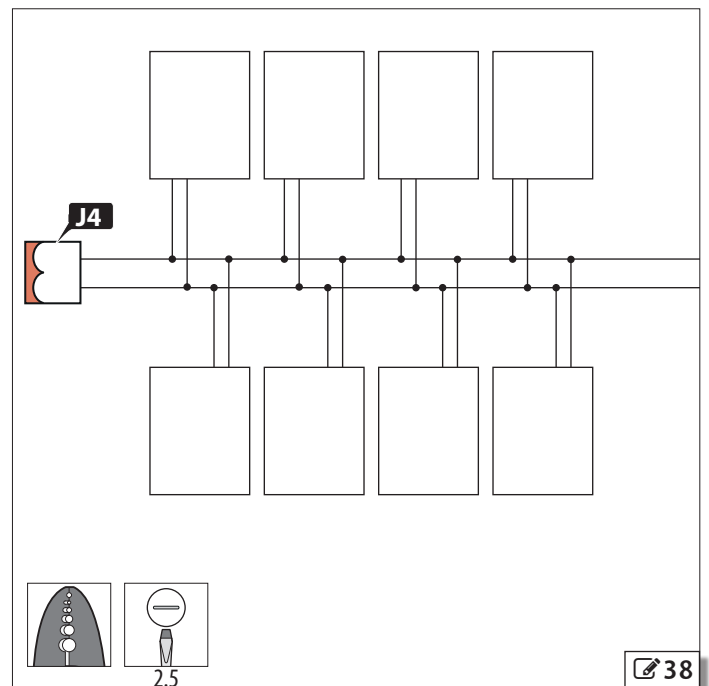
**BUS PHOTOCELLS AND SAFETY EDGES**

The SPRINT M24 board enables Bus photocells and safety edges to be installed.

Connect the Bus devices in parallel to terminal J4 of the SPRINT M24 board (🔗 38). The Bus photocells and safety edges connection has no polarity.

**i** The maximum permitted length for Bus G-Way cables is 100 m.  
The standard mode of operation of the photocells and reverse on obstacle function can be modified in Advanced Programming (Ph, OP, IP).

TYPE	STANDARD MODE OF OPERATION	
<b>Closing photo-cells</b>	Active during closing	If engaged, reverse the movement during opening
<b>Opening photocells</b>	Active during opening	If engaged, stop the gate and when disengaged, reverse the movement during closing
<b>Opening and closing photocells</b>	Active during both opening and closing	If engaged, stop and when disengaged, reverse the movement
<b>Photocells used as pulse generators</b>	Always active	If engaged, send an OPEN command
<b>Bus closing edges</b>	Active during closing	When an obstacle is detected, they reverse the movement until the open position is reached. At the second consecutive obstacle the gate stops (St = 02).
<b>Bus opening edges</b>	Active during opening	When an obstacle is detected, they reverse the movement until the closed position is reached.





**Addressing the Bus devices**

Position the DIP switches (address) to identify the transmitter-receiver pair and assign the type of operation (39-1).

**i** The transmitter and receiver of a pair of photocells must have the same address, but there must never be two or more pairs of photocells with the same address.

Choose the combinations from the following table:

DIP1	DIP2	DIP3	DIP4	OPERATING MODE
OFF	OFF	OFF	OFF	OPENING (max 5 pairs)
OFF	OFF	OFF	ON	
OFF	OFF	ON	OFF	
OFF	OFF	ON	ON	
OFF	ON	ON	ON	CLOSING (max 6 pairs)
ON	OFF	OFF	OFF	
ON	OFF	OFF	ON	
ON	OFF	ON	OFF	
ON	OFF	ON	ON	
ON	ON	OFF	OFF	
OFF	ON	OFF	OFF	OPENING and CLOSING (max 2 pairs)
OFF	ON	OFF	ON	
ON	ON	ON	ON	OPEN COMMAND (1 pair)

**N.C. CONTACT SAFETY EDGES**

The SPRINT M24 board enables N.C. contact safety edges to be connected. To do this, one of the inputs, OPEN B and/or STOP, must be configured as SAFE in Advanced Programming (Ob, SP).

**i** It is possible to modify the way the reverse on obstacle function works in Advanced Programming (iP).

A Fail-Safe test can be carried out on N.C. contact safety edges via the OUT output. If the test fails, the electronic board does not command the movement.

If there are multiple safety edges, connect the N.C. contacts in series.

TYPE	STANDARD MODE OF OPERATION
<b>Closing contact safety edges</b> Active during closing	When an obstacle is detected, they reverse the movement until the open position is reached. At the second consecutive obstacle the gate stops (St = 02).
<b>Opening contact safety edges</b> Active during opening	When an obstacle is detected, they reverse the movement until the closed position is reached.

**INPUT OPEN B CONFIGURED AS OPENING SAFETY EDGE**

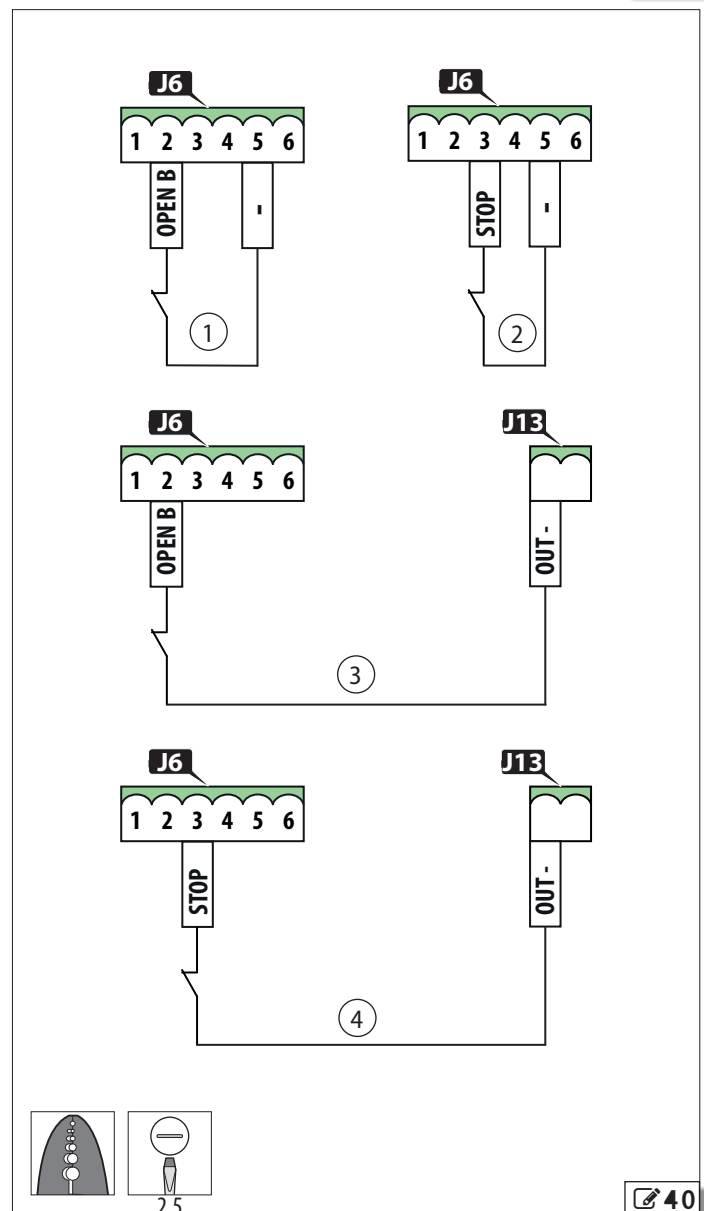
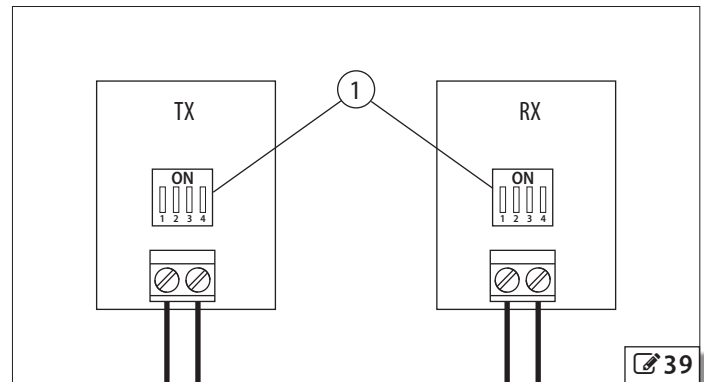
**i** If logic B or C are used, it is not permitted to connect the safety edges to input OPEN B.

If logic A is used, connect the safety edges after having configured input OPEN B in Advanced Programming

	CONNECTIONS	ADVANCED PROGRAMMING
<b>WITHOUT FAIL-SAFE TEST</b>	40-1	Ob = 01 OI ≠ 01
<b>WITH FAIL-SAFE TEST</b>	40-3	Ob = 01 OI = 01

**INPUT STOP CONFIGURED AS CLOSING SAFETY EDGE**

	CONNECTIONS	ADVANCED PROGRAMMING
<b>WITHOUT FAIL-SAFE TEST</b>	40-2	SP = 01 OI ≠ 01
<b>WITH FAIL-SAFE TEST</b>	40-4	SP = 01 OI = 01



## 7. START-UP



During operation there is a risk of fingers and hands being trapped between the rack, pinion and cover.

### 7.1 POWER SUPPLY AND EARTHING

#### RISKS



Disconnect power to the system before making the connections and before removing the plastic cover of the electronic board. Before switching power on, make sure that you have replaced the plastic cover. Do not remove the earth wire that is connected to the electronic board (☞ 41-1).

1. Crimp the earth wire of the power cable to the cable lug provided. (☞ 41-2).
2. Install the cable lug, M5 washer and nut on the gearmotor earth connection (☞ 41-3). Tighten the nut.
3. Connect the phase wires and neutral to terminals L and N respectively of J2 (☞ 41-4).

#### ☞ 10 Mains power supply

<b>PE</b>	Earth: do not remove the wire.
<b>N</b>	Neutral
<b>L</b>	Phase

4. Secure the mains power cable using the appropriate clamp (☞ 42-1).
5. Secure the other cables in the appropriate clamp (☞ 42-2).
6. Switch on power to the system.



When first switched on, the board display shows the firmware version and then the S□ code flashes: this means that the Setup procedure must be carried out.

### 7.2 LEDS CHECK

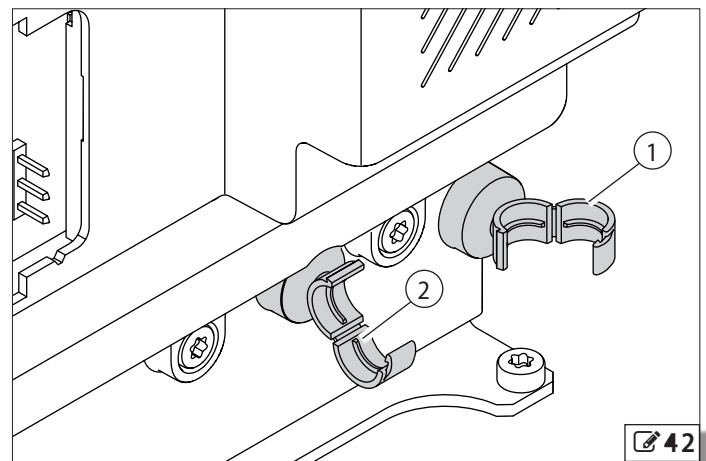
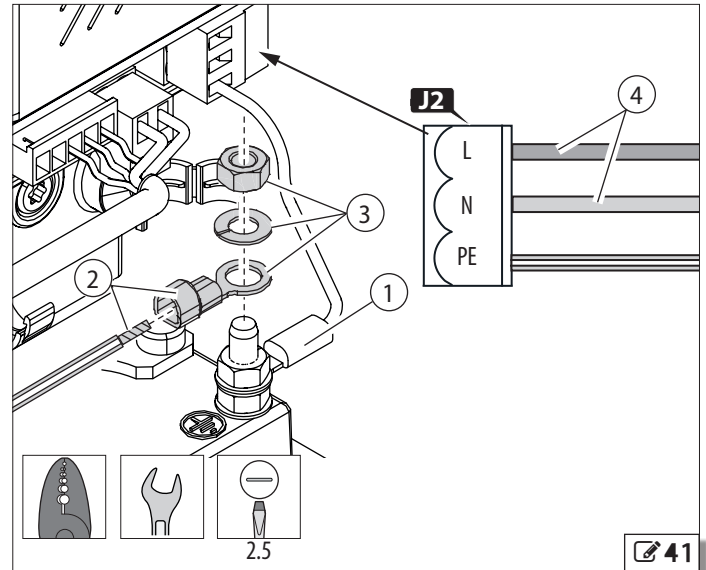
1. Move the gate to its half-travel position.
2. Check that the status of the LEDS is the same as that shown in ☞ 11. If it is not, check the connections.

#### ☞ 11 LEDs check

	STATUS	MEANING
<b>DL1</b>	<b>BUS</b> § 7.6	"Bus device active" signalling LED
<b>DL2</b>	<b>BUS MON.</b> § 7.6	Bus diagnostics LED
<b>DL3</b>	<b>RADIO1</b> ○	First radio channel not active
<b>DL4</b>	<b>RADIO2</b> ○	Second radio channel not active
<b>DL5</b>	<b>ERROR</b> ○	Radio memory available
<b>DL6</b>	<b>FCC</b> ●	Closing limit switch disengaged
<b>DL7</b>	<b>FCA</b> ●	Opening limit switch disengaged
<b>DL8</b>	<b>STOP</b> ●	STOP or CLOSE not active
<b>DL9</b>	<b>OPEN B</b> 1)○ 2)●	1)OPEN B or CLOSE not active 2)SAFE not active
<b>DL10</b>	<b>OPEN A</b> ○	Total opening command not active

Key:

- = LED off
- = LED on



### 7.3 INSTALLATION OF THE LIMIT SWITCHES

**RISKS**



**PERSONAL PROTECTIVE EQUIPMENT**



1. Move the gate to the closed position by hand.
2. Position the closing magnetic limit switch on the rack (☞ 43-1) and look for the point at which the FCC (closing limit switch) LED turns off.
3. Mark the centre of the limit switch slots on the rack; manually open the gate by 1m.
4. Drill a 3.6mm diameter hole in correspondence with the centre of the slots. Fasten the limit switch using two 3.9x16 self-tapping screws and two washers (supplied) (☞ 43-2).
5. Manually move the gate back into its stop position when closed and check that the FCC (closing limit switch) LED turns off. Otherwise, adjust the position of the limit switch using the slots.
6. Move the gate to the open position by hand.
7. Position the opening magnetic limit switch on the rack (☞ 44-1) and look for the point at which the FCA (opening limit switch) LED turns off.
8. Mark the centre of the limit switch slots on the rack; manually close the gate by 1m.
9. Drill a 3.6mm diameter hole in correspondence with the centre of the slots. Fasten the limit switch using two 3.9x16 self-tapping screws and two washers (supplied) (☞ 44-2).
10. Manually move the gate to its open position and check that the FCA (opening limit switch) LED turns off. Otherwise, adjust the position of the limit switch using the slots.

### 7.4 PROGRAMMING

The electronic board contains two Programming menus: Basic and Advanced.

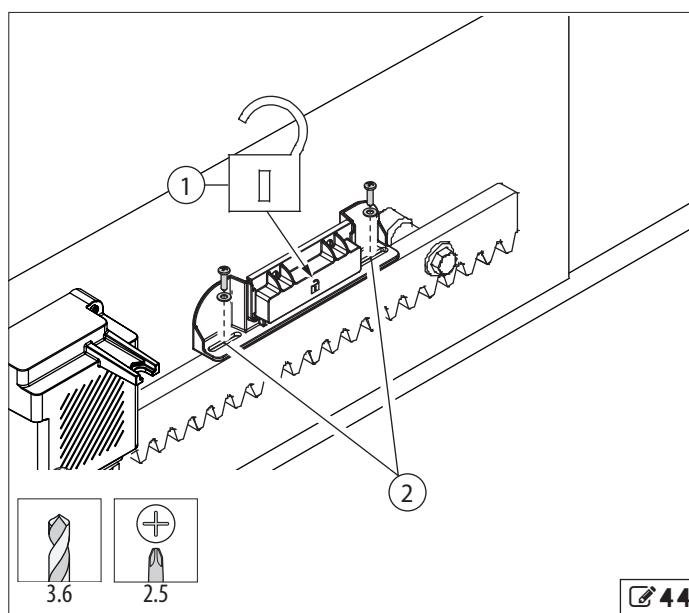
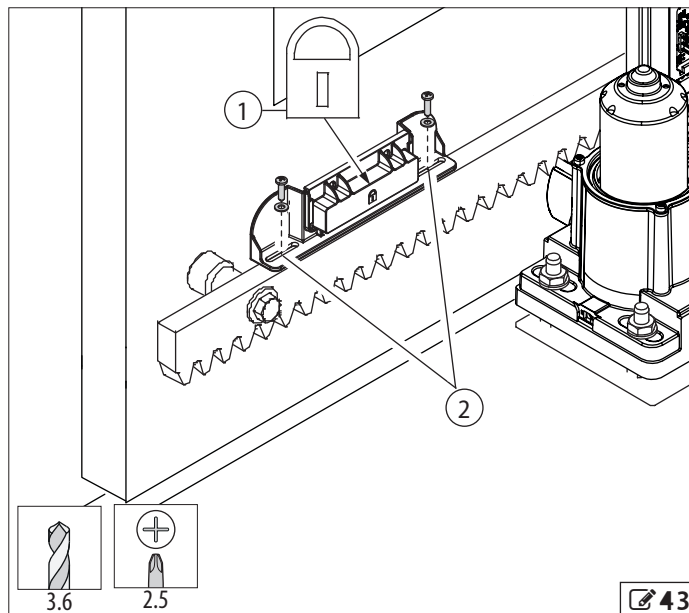
- i** To save the modifications made to the programming, scroll through the menu until you reach the **St** function leaving value **3** unchanged. If the mains power supply fails before the modifications are saved, all the modifications will be lost.
- To reset the default values, set function **dF** = **3** and save the modifications (**St** = **3**).

#### BASIC PROGRAMMING

1. To access the menu, press and hold down button **F**: the display shows the first function (**dF**).
- i** The display continues to show the name of the function as long as button **F** remains pressed.
2. Release button **F**: the display shows the value of the function.
  3. Press the **+** or **-** buttons to modify the value of the function.
  4. Press and hold down button **F** to go to the next function.

#### ADVANCED PROGRAMMING

1. To access the menu, press and hold down button **F** and then press the **+** button: the display shows the first function (**Pf**).
  2. Release the **+** button whilst keeping button **F** pressed.
- i** The display continues to show the name of the function as long as button **F** remains pressed.
3. Release button **F**: the display shows the value of the function.
  4. Press the **+** or **-** buttons to modify the value of the function.
  5. Press and hold down button **F** to go to the next function.



BASIC PROGRAMMING		Default
<b>dF</b>	<b>DEFAULT:</b> 4 indicates that all the set values correspond to the defaults. n0 indicates that one or more set values are different from the defaults.  Select 4 if you wish to restore the default configuration.	4
<b>Ct</b>	<b>MASTER-SLAVE CONFIGURATION (§ 10):</b> nA = board in MASTER mode: SL = board in SLAVE mode:  ⓘ If the board is in SLAVE mode, some functions will not be displayed: L0, PA, Pb, bu, PF, Ph, OP, t, IP, tI, Ob, SP.	nA
<b>L0</b>	<b>OPERATING LOGICS (§ 7.5):</b> E = Semi-automatic EP = Semi-automatic Step-by-Step A = Automatic AP = Automatic Step-by-Step S = Automatic Safety b = Semi-automatic B C = Dead-man	E
<b>PA</b>	<b>PAUSE TIME A</b> <b>(displayed only with automatic logics)</b> It is the total opening pause time. Adjustable from 00 to 59 sec, in 1 second steps. If 59 is exceeded, the display changes to indicate minutes and tens of seconds (separated by a dot) with adjustment in steps of 10 seconds, up to a maximum of 9 min and 50 s.  ⓘ E.g.: if the display indicates 2.5, the time is 2 min and 50 sec.	20
<b>Pb</b>	<b>PAUSE TIME B</b> <b>(displayed only with automatic logics)</b> It is the partial opening pause time. Adjustable from 00 to 59 sec, in 1 second steps. If 59 is exceeded, the display changes to indicate minutes and tens of seconds (separated by a dot) with adjustment in steps of 10 seconds, up to a maximum of 9 min and 50 s.  ⓘ E.g.: if the display indicates 2.5, the time is 2 min and 50 sec.	20
<b>F0</b>	<b>MOTOR POWER:</b> 01 = minimum force 50 = minimum force	50
<b>S0</b>	<b>OPENING SPEED:</b> 01 = minimum speed 10 = maximum speed	08
<b>Sc</b>	<b>CLOSING SPEED:</b> Regulates the closing speed of the motor. 01 = minimum speed 10 = maximum speed	08
<b>r0</b>	<b>DECELERATION DURING OPENING:</b> Sets the opening pre-limit switch deceleration space in cm 00 = minimum deceleration space 99 = maximum deceleration space.	50

BASIC PROGRAMMING		Default
<b>rC</b>	<b>DECELERATION DURING CLOSING:</b> Sets the closing pre-limit switch deceleration space in cm 00 = minimum deceleration space 99 = maximum deceleration space	50
<b>bu</b>	<b>BUS DEVICE REGISTRATION:</b> ⓘ See § 7.6.	--
<b>nI</b>	<b>ELECTRIC MOTOR ACTUATION IN DEAD-MAN MODE</b> ⓘ See § 7.7.	nE
<b>tL</b>	<b>SET-UP</b> ⓘ See § 7.8.	
<b>St</b>	<b>AUTOMATION SYSTEM STATUS:</b> 4 To save and exit from programming mode. n0 To exit from programming mode without saving Press button <b>F</b> to confirm; when finished, the display reverts to the automation status display: 00 = Closed 01 = Open 02 = Stationary then opens 03 = Stationary then closes 04 = Paused 05 = Opening 06 = Closing 09 = Pre-flashing then opens 10 = Pre-flashing then closes 14 = Obstacle during opening 15 = Obstacle during closing	4

13 Advanced Programming

ADVANCED PROGRAMMING	Default
<b>PF PRE-FLASHING:</b> 00 = Sets a pre-flashing of 3 s on the LAMP output, before each movement. n0 = Pre-flashing on LAMP output disabled.	n0
<b>Ph CLOSING PHOTOCELLS:</b> Sets the way in which the closing photocells operate 4 = Stop and reverse during opening when released. n0 = Immediate reverse during opening.	n0
<b>OP OPENING PHOTOCELLS:</b> Sets the way in which the opening photocells operate 4 = Immediate reverse during closing n0 = Stop and reverse when released.	n0
<b>PO PARTIAL OPENING:</b> This sets the partial opening width (OPEN B). It can be adjusted from 00 to 99% of total opening.	50
<b>t CYCLE TIME-OUT:</b> Sets the maximum operating time of the gearmotor. Adjustable from 20 s to 59 s, in steps of 1 s. And from 1.0 to 9.5 min (9 min and 50 s), in steps of 10 s. Set a longer time for a complete opening and closing cycle. EG: 2.5=2 min. and 50 sec.	9.5
<b>Sr DECELERATION SPEED</b> L0 = standard deceleration speed. H1 = high deceleration speed.	L0
<b>IP REVERSE ON OBSTACLE MODE:</b> 4 = Sets partial reverse after an obstacle has been detected by the encoder or the safety edge. n0 = Sets total reverse after an obstacle has been detected by the encoder or safety edge.	n0
<b>OL OUTPUT W.L.:</b> 00 = LED, active during opening, when open and open in pause; flashing during closing; off when gate closed. 01 = Courtesy light, active for the opening movement and for a further 90 s.	00
<b>01 OUTPUT OUT</b> 00 = Always active 01 = Fail-Safe test on SAFE input 05 = Gate open or open in pause 06 = Gate closed 07 = Gate moving 09 = Gate opening 10 = Gate closing 12 = Safety device active 13 = Traffic light control: output active when the gate is open and open in pause; output disabled during pre-flashing, when moving and when the gate is closed 14 = Timed output that can be activated by the second radio channel (see the next function t1) 15 = Step by step controlled by the second radio channel 19 = Battery operation	00
<b>t1 TIMING OF OUTPUT OUT:</b> Sets the activation time of the output OUT in timed mode that can be activated by the second radio channel (14). Adjustable from 01 min. to 99 min. in 1 second steps.	02

ADVANCED PROGRAMMING	Default
<b>0b INPUT OPEN B OPERATION</b> 00 = OPEN B - partial opening command. 01 = SAFE - contact for opening edges. 02 = CLOSE - close command.	00
<b>5P INPUT STOP OPERATION</b> 00 = STOP - automation stop command. 01 = SAFE - contact for closing edges.	00
<b>5t AUTOMATION SYSTEM STATUS:</b> 4 to save and exit from programming mode n0 to exit from programming mode without saving Press button <b>F</b> to confirm; when finished, the display reverts to the automation status display: 00 = Closed 01 = Open 02 = Stationary then opens 03 = Stationary then closes 04 = Paused 05 = Opening 06 = Closing 09 = Pre-flashing then opens 10 = Pre-flashing then closes 14 = Obstacle during opening 15 = Obstacle during closing	4

**7.5 OPERATING LOGICS**

**i** To control the gate through a timed device, logic **A** must be set. In the event of a mains power failure and after power has been restored, this logic enables the actual state of the timer to be recognised.  
In all the logics, the STOP command has priority over other commands and locks the automation.

**E - SEMI-AUTOMATIC**

Logic **E** requires only one command:

- OPEN when the gate is closed, causes it to open.
- OPEN during opening stops the gate. The next OPEN command causes it to close.
- OPEN when the gate is open, causes it to close.
- OPEN during closing reopens the gate.

**i** An input configured as CLOSE always causes it to close.

**EP - SEMI-AUTOMATIC STEP-BY-STEP**

Logic **EP** requires only one command:

- OPEN when the gate is closed, causes it to open.
- OPEN during opening stops the gate. The next OPEN command causes it to close.
- OPEN when the gate is open, causes it to close.
- OPEN during closing stops the gate. The next OPEN command causes it to open.

**i** An input configured as CLOSE always causes it to close.

**A - AUTOMATIC**

Logic **A** requires only one command:

- OPEN when the gate is closed, causes it to open. After the pause time, the gate closes automatically.
- OPEN when the gate is open in pause resets the pause time. A maintained OPEN command during the pause time prevents automatic closing: when the OPEN command is released the pause time counter restarts.
- When the gate is open in pause, the CLOSING PHOTOCELLS reset the pause time.
- OPEN during opening is ignored.
- OPEN during closing causes it to reopen.

**i** An input configured as CLOSE always causes it to close.

**AP - AUTOMATIC STEP-BY-STEP**

Logic **AP** requires only one command:

- OPEN when the gate is closed, causes it to open. After the pause time, the gate closes automatically.
- OPEN when the gate is open in pause, stops the gate in the open state: automatic closing is disabled.
- When the gate is open in pause, the CLOSING PHOTOCELLS reset the pause time.
- OPEN during opening stops the gate. The next OPEN command causes it to close.
- OPEN during closing causes it to reopen.

**i** An input configured as CLOSE always causes it to close.

**S - AUTOMATIC SAFETY**

Logic **S** requires only one command:

- OPEN when the gate is closed, causes it to open. After the pause time, the gate closes automatically.
- OPEN when the gate is open in pause causes it to close.
- When the gate is open in pause the CLOSING PHOTOCELLS cause it to close when they are released.
- OPEN during opening causes it to close.
- OPEN during opening causes it to reopen.

**i** An input configured as CLOSE always causes it to close.

**b - SEMI-AUTOMATIC B**

Logic **b** requires the OPEN and CLOSE commands to be used:

**i** If logic **b** is used, the input OPEN B must be configured as CLOSE in Advanced Programming ( $\square b = \square 2$ ). It is not permitted to control the gate using the integrated radio receiver.

- OPEN when the gate is closed, causes it to open.
- CLOSE when the gate is open causes it to close.
- CLOSE during opening cause it to close.
- OPEN during closing causes it to reopen.

**C - DEAD-MAN**

Logic **C** requires the use of maintained action OPEN and CLOSE commands.

**!** The command must be activated intentionally and the gate must be visible.  
The speed of the gate must be less than 0.5 m/s

**i** If logic **C** is used, input OPEN B must be configured as CLOSE in Advanced Programming ( $\square b = \square 2$ ). It is not permitted to control the gate using the integrated radio receiver.

- Maintained OPEN causes it to open.
- Maintained CLOSE causes it to close.
- The CLOSING PHOTOCELLS stop the gate during closing.
- The OPENING PHOTOCELLS stop the gate during opening.



## 7.6 BUS DEVICES

**i** Bus devices can be registered and their status checked only on SPRINT M24 boards that have been programmed as MASTER (§ 10) boards.

### REGISTRATION OF BUS DEVICES

#### Registration is required:

- When the automation is first started or after the board has been replaced.
- Following any change (addition, replacement or removal) in the Busdevices.

#### Registration procedure:

1. Check that the Bus devices are connected and addressed correctly. § 6.1
2. Go to function BU in Basic Programming.
3. Press and hold down the + and - buttons until H appears on the display. The registration is complete.
4. Release the + and - buttons. The display shows the status of the Bus devices.

### CHECKING THE REGISTERED BUS DEVICES

1. Go to function BU in Basic Programming.
2. The display shows the status of the Bus devices. Check each Bus device according to the following table.

CONDITION	DISPLAY
No device registered	
No device engaged	
Opening photocells engaged	
Closing photocells engaged	
Opening and closing photocells engaged	
Photocell used as OPEN engaged	
Bus line short-circuited	
Bus line error	

3. Check the status of the Bus LEDs according to the following table.

		STATUS	MEANING
DL1	BUS	●	At least one Bus device is engaged/active
DL1	BUS	○	No Bus device is engaged/active
DL2	BUS MON.	●	Bus OK
DL2	BUS MON.	*	Bus short-circuited: check connections
DL2	BUS MON.	*	Bus conflict error: multiple Bus devices or pairs of photocells have the same address. A different address has to be set for each pair of photocells.

Key:

○ = LED off

● = LED on

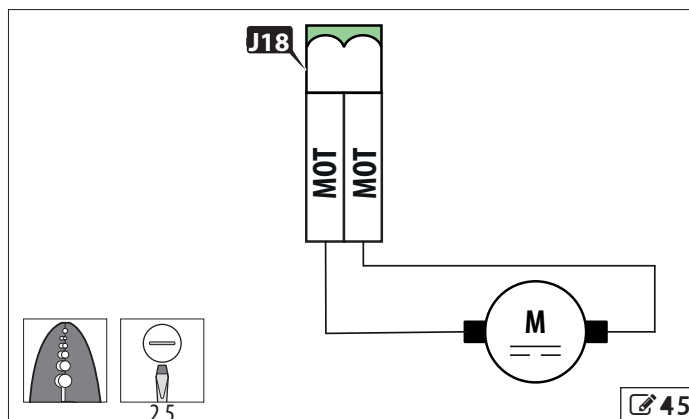
\* = Slow flashing (1 flash every 2.5 s)

\* = Fast flashing (1 flash every 0.5 s)

## 7.7 DIRECTION OF MOVEMENT CHECK

**i** The operations described in this section are essential for the proper operation of the automation. If a MASTER-SLAVE configuration is used, the direction of movement should be checked for both BLIZZARD 400-800 C ENC.

1. Bring the gate to its halfway position following the instructions in § 5.5. Restore automatic operation.
2. Go to function FI in Basic Programming. The display shows --.
3. Press and hold down the + button. The display indicates OP and the gate opens. The flashing point between the two letters indicates that the encoder is operating correctly.
4. Press and hold down the - button. The display indicates cL and the gate closes. The flashing point between the two letters indicates that the encoder is operating correctly.
5. If the conditions in points 3 and 4 are not met, invert the wires of the electric motor (45).



## 7.8 SET-UP



During Setup, the photocells and the safety edges are disabled; prevent transit in the area of movement of the gate.



The flashing S0 code on the display indicates that the Setup procedure must be carried out.

Any Bus devices that are connected are registered during the Setup procedure.

The Setup procedure can be interrupted by using the STOP command.

If a MASTER-SLAVE configuration is used, carry out the Setup procedure after having read § 10.

1. Bring the gate to its halfway position following the instructions in § 5.5. Restore automatic operation.
2. Go to function E.L. in Basic Programming.
3. Press and hold down the + and - buttons until the gate starts to close.
4. Release the + and - buttons. The Setup procedure will continue independently. Check the following conditions:

DISPLAY	PHASE
S1	Gate closing movement
S2	Closing limit switch engaged.
S3	Gate opening movement.
S4	Opening limit switch engaged.
01	Setup procedure completed. Gate open.

## 8. FINAL OPERATIONS

### RISKS



### PERSONAL PROTECTIVE EQUIPMENT

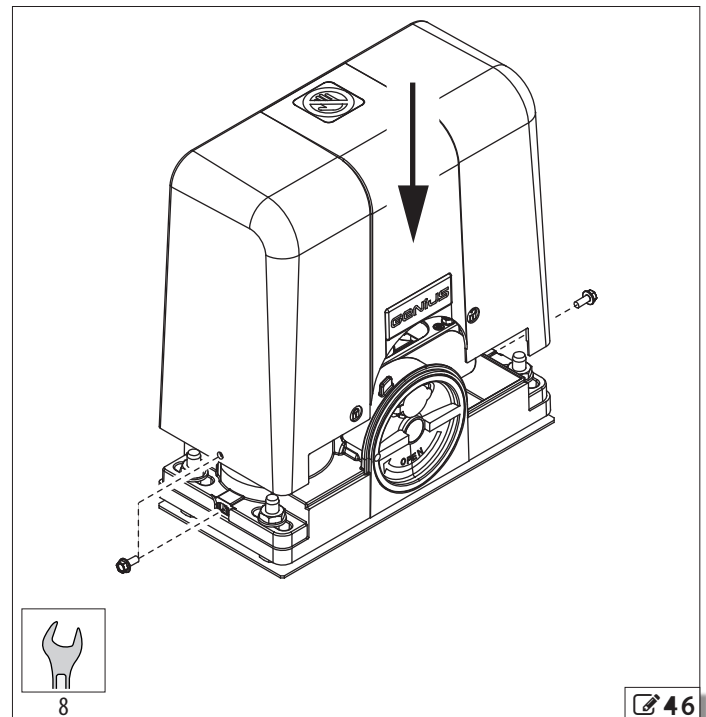


1. Make sure that the forces generated by the leaf are within the limits permitted by the current regulations. Use an impact force tester in accordance with standards EN 12453 and EN 12445. For non-EU countries, if there are no specific local regulations, the force must be less than 150 N.
2. Check that the maximum force required to move the leaf by hand is less than 150 N.
3. Highlight all areas with adequate warning signs in which there are still residual risks, even if all possible safety measures having been adopted.
4. Place a "DANGER, AUTOMATICALLY CONTROLLED" sign in a prominent position on the gate.
5. Attach the CE marking to the gate.
6. Fill out the EC declaration of conformity and the system register.
7. Give the EC Declaration, the system register with the maintenance plan and the instructions for use of the automation system to the system owner/operator.

### INSTALLING THE CASING



Install the cover  46: using the M5X12 hexagonal head or Allen screws provided.



## 9. ACCESSORIES

### 9.1 RQFZ RADIO MODULE

**i** The SPRINT M24 electronic board is fitted with an integrated two-channel decoding system. The RQFZ module makes it possible to memorise GENIUS RC and JLC radio controls: the two types of radio codes can coexist simultaneously. A maximum of 256 codes can be memorised. Make sure that the radio controls and the RQFZ module have the same transmission frequency.

The first channel (RADIO1) commands a total opening, whilst the second channel (RADIO2) commands a partial opening.

The gate cannot be closed using the radio control.

When memorising the codes, keep the radio control approximately one metre from the RQFZ module.

1. Switch off power to the system.
2. Plug in the RQFZ radio module into connector J7, taking care to insert it in the right way round (🔗 47).
3. Memorise the radio controls.

#### MEMORISING JLC RADIO CONTROL CODES

##### First radio control:

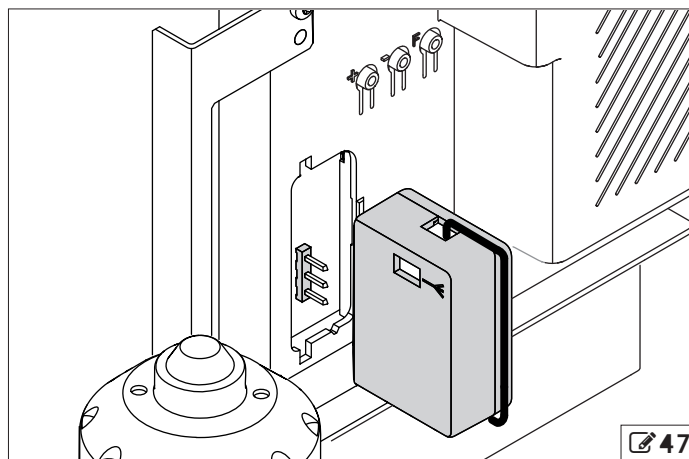
1. Press and hold down the **+** button on the electronic board to program RADIO1 or the **-** button to program RADIO2. After approximately 5 s, the LED corresponding to (RADIO1 or RADIO2) starts to flash slowly for approximately 20 s. Release the button.
2. Press and hold down buttons P1 and P2 simultaneously on the JLC radio control. The LED of the radio control starts to flash. Release both buttons.
3. While the LED of RADIO1 or RADIO2 and the LED of the radio control are flashing, press and hold down the required button on the radio control. The LED of the radio control turns on with a steady light.
4. The RADIO1 or RADIO2 LED turns on with a steady light for 1 s and then turns off, indicating that it has been memorised. Release the button of the radio control.
5. Press the button twice in succession on the radio control that was memorised to complete the memorisation procedure. The automation will open the gate.

##### Other radio controls:

1. Press and hold down buttons P1 and P2 simultaneously on the radio control that has already been memorised. The LED of the radio control will start to flash. Release both buttons.
2. While the LED of the radio control is flashing, press and hold down the button that has already been memorised. The LED of the radio control turns on with a steady light.
3. Bring the radio control to be memorised up to the one that has already been memorised. Press and hold down the button of the radio control to be memorised. The LED of the radio control to be memorised flashes twice, indicating that it has been memorised.
4. Press the button twice in succession on the radio control that was memorised to complete the memorisation procedure. The automation will open the gate.

#### MEMORISING RC RADIO CONTROL CODES

1. Press and hold down the **+** button on the electronic board to program RADIO1 or the **-** button to program RADIO2. After approximately 5 s, the LED corresponding to (RADIO1 or RADIO2) starts to flash slowly for approximately 20 s. Release the button.
2. While the RADIO1 or RADIO2 LED is flashing, press the required button on the RC radio control.
3. The RADIO1 or RADIO2 LED turns on with a steady light for 1 s and then turns off, indicating that it has been memorised. It subsequently starts to flash again for a further 20 s, during which it is possible to memorise another radio control.



#### MEMORISING RC RADIO CONTROL CODES REMOTELY

Additional RC radio controls can be memorised remotely, without having to use the board directly, by using a radio control that has already been memorised.

1. Bring a radio control that has already been memorised close to the board.
2. Press and hold down buttons P1 and P2 simultaneously on the radio control. The LED on the radio control starts to flash. Release both buttons.
3. Press the previously memorised button of the radio control within 5 s to activate the learning phase on the relative channel (RADIO1 or RADIO2).
4. The RADIO1 or RADIO2 LED flashes for 20 s within which you have to press the required button on the other radio control
5. The RADIO1 or RADIO2 LED turns on with a steady light for 1 s and then turns off, indicating that it has been memorised. It subsequently starts to flash again for a further 20 s, during which it is possible to memorise another radio control.

#### DELETING RADIO CONTROL CODES



This procedure cannot be reversed and deletes all the radio control codes memorised on both channels. The deletion procedure is only enabled in the gate status display mode.

1. Press and hold down the **-** button.
  - After pressing the button for approximately 5 s, the RADIO2 LED starts to flash slowly. After another 5 seconds of slow flashing and keeping the button pressed, the RADIO1 and RADIO2 LEDs start to flash more quickly.
  - When the fast flashing stops, the RADIO1 and RADIO2 LEDs turn on steadily to confirm that all the radio codes have been deleted.
2. Release the **-** button.

## 9.2 BATTERY KIT

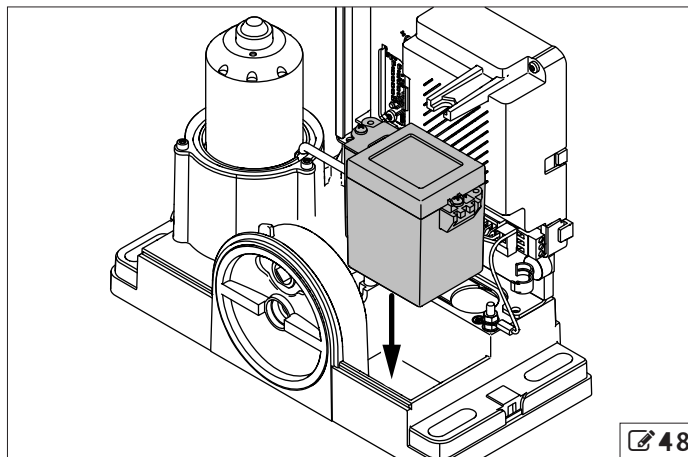
**!** Disconnect the battery kit if the automation is taken out of service.

**i** Battery kits with revision 1 are not compatible: the revision number must be A1 or higher. Check the revision number on the label of the battery kit board.

Recharge the battery kit by connecting it to the SPRINT M24, before starting up the system. The full charging cycle of the battery kit is 72 hours.

The battery kit ensures that the automation is powered if there is a mains power failure. The number of cycles that can be carried out by the battery depends on the condition of the automation system (the state of charge of the battery, the time elapsed since the mains power failure, the ambient temperature, structure of the gate etc.).

1. Switch off power to the system.
2. Place the battery kit in its housing (🔗 48).
3. Connect the battery kit to connector J10 on the electronic board.
4. Switch on power to the system.



## 10. MASTER-SLAVE

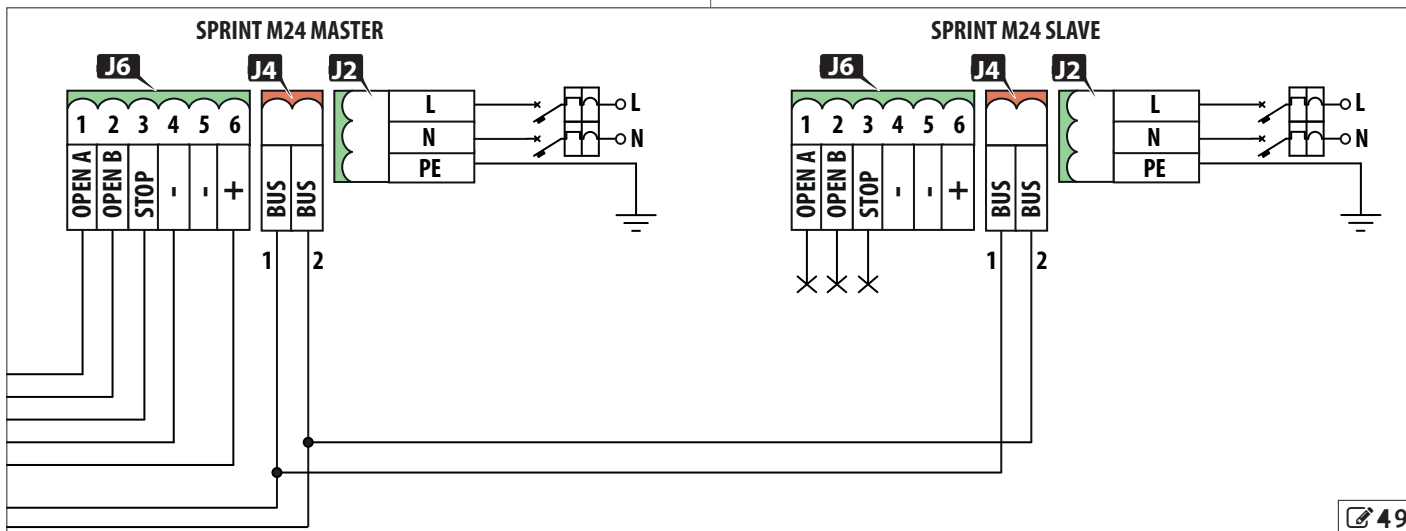
If installing systems that have two opposite opening leaves, two BLIZZARD 400-800 C ENC must be installed. The first (referred to as the MASTER) controls the second (referred to as the SLAVE). It is up to the installer to decide which is the MASTER and which is the SLAVE.

**!** Cut the power to the system before making the connections.

1. Install one gearmotor for each leaf (§ 5).
2. Connect all the accessories to the MASTER (§ 6). The only accessory that can be connected to the SLAVE is the flashing light.
3. Install a pair of wires to connect the MASTER and SLAVE together via the Bus. For the moment, do not connect the MASTER and SLAVE via the Bus.
4. Carry out the Start-up and Set-up procedure for the MASTER and SLAVE independently (§ 7).
5. Set the  $\square \square = \square \square$  function on the MASTER.
6. Set the  $\square \square = \square \square$  function on the SLAVE.
7. Connect the MASTER and SLAVE together via the Bus. Follow the polarity indicated in 🔗 49.
8. Carry out the final operations (§ 8).

**i** If there is a fault, after having replaced the electronic board:

- Set the  $\square \square$  function with the Bus line disconnected
- Connect the MASTER and SLAVE together via the Bus. Follow the polarity indicated in 🔗 49
- Carry out the Setup procedure from the MASTER: in this way, the Setup procedure will also be carried out for the SLAVE.



# 11. MAINTENANCE

## RISKS



## PERSONAL PROTECTIVE EQUIPMENT



Before performing any maintenance, disconnect the mains power supply. If the disconnecting switch is not visible, apply a "ATTENTION - Maintenance in progress" sign. Restore the power supply once maintenance is complete and after tidying up the area.

Maintenance must be performed by the installer/maintenance technician.

Comply with all the safety instructions and recommendations provided in this manual.

Close off the work site and prevent access/transit. Do not leave the work site unattended.

The work area must be kept tidy and clear upon completing maintenance.

Before starting activities, wait for the components subject to heating to cool down.

Do not modify the original components in any way.

FAAC S.p.A. disclaims any liability for damage caused by components that are modified or tampered with.

The warranty shall be forfeited in the event of tampering with components.

For replacements, use only original spare parts GENIUS.

## 11.1 ROUTINE MAINTENANCE

The Scheduled Maintenance Table 14 lists the operations which must be performed on a regular basis in order to keep the automation system working reliably and safely; these are given purely as a guideline and should not be considered exhaustive. The installer/machine manufacturer is responsible for drawing up the maintenance plan for the automation system, supplementing this list or modifying the maintenance operations on the basis of the machine characteristics.

14 Scheduled maintenance

Operations	Frequency
<b>Structures</b>	
Check the slab, the structures and components of the building/fence adjacent to the automation system, ensuring there is no damage, cracking or subsidence.	12
Check the gate's area of movement, ensuring it is free from obstacles, objects or deposits which would reduce the effectiveness of the safety measures.	12
Check that there are no gaps in the perimeter fence and that any protective grilles in the area where it overlaps with the mobile leaf are intact.	12
Ensure that there are no sharp protrusions which could represent a perforation or hooking hazard.	12
<b>Gate</b>	
Check the gate, ensuring it is intact and free of deformations, rust etc.	12
Check that there are no slots/openings on the leaf and that any protective grilles are intact.	12
Check that screws and bolts are correctly tightened.	12
Check that the sliding guides are straight and not excessively worn.	12
Check that the bearings are in good condition and there is no friction.	12
For cantilever systems, check the solidity of the guide system for the suspended leaf and the counterweight, where present.	12
Check that the mechanical strikes are fastened solidly and in good condition. This check must be performed on both sides, simulating any knocks which could occur during use.	12

Check the wheels, ensuring that they are intact, correctly fastened and free of deformation, wear and rust.	12
Check the rack, ensuring it is straight, spaced correctly from the pinion along its entire length, and correctly fastened to the gate.	12
Cantilever gates: check the solidity of the guide system for the suspended leaf and the counterweight, if present.	12
Check the containing guide and the anti-tipping column, ensuring they are correctly fastened and intact.	12
Perform a general clean of the area of movement of the gate.	12

### Gearmotor

Check that the gearmotor is intact and correctly fastened.	12
Check that the pinion is correctly keyed to the shaft and tightened correctly.	12
Check that the hand guard around the pinion is present and intact.	12
Check that it is irreversible.	12
Check that there is no loss of grease.	12
Check the condition of the gearmotor cables, the cable glands and junction boxes.	12

### Electronic equipment

Check that the power supply and connecting cables and the cable glands are intact.	12
Check that the connectors and wiring are intact.	12
Check that there are no signs of overheating, burning etc. of electronic components.	12
Check that the earth connections are intact.	12

Check the operation of the circuit breaker and RCD.	12
Check that the limit switch is intact and that it operates correctly.	12

### Control devices

Check that the installed devices and radio controls are in good condition and that they operate correctly.	12
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### Sensitive edges

Check condition, fastening and correct operation.	6
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### Deformable edges

Check that they are intact and correctly fastened.	12
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### Photocells

Check condition, fastening and correct operation.	6
Check the posts, ensuring that they are intact, correctly fastened and free of deformation etc.	6

### Flashing light

Check condition, fastening and correct operation.	12
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### Electric locks

Check condition, fastening and correct operation.	12
Clean the seats.	12

### Access control

Check that the gate opens only when an authorised user is recognised.	12
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### Complete automation system

Check that the automation system operates correctly, following the set logic, when using the various control devices.	12
Check that the gate moves correctly - smooth, regular and without abnormal noise.	12
Check that both the opening and closing speed are correct and that the stop positions and slow-downs provided for are respected.	12
Check that the manual release operates correctly: when the release mechanism is activated, it must only be possible to move the gate manually.	6
Check that the caps on the locks are present.	12
Check that the maximum force required for manual movement of the gate is below 225 N in residential areas and 260 N in industrial or commercial settings.	6
Check that the safety edges operate correctly when faced with an obstacle.	6
Check that the encoder, if present, functions correctly when an obstacle is detected.	6
Check that each pair of photocells is working correctly.	6
Check that there is no optical/light interference between the pairs of photocells.	6
Check the force limitation curve (standard EN 12453).	6
Check that all necessary signage and warnings are present, intact and legible: residual risks, exclusive use etc.	12
Check that the gate's CE marking and the DANGER, AUTOMATIC MOVEMENT warning signage is present, intact and legible.	12




## 12. INSTRUCTIONS FOR USE



### 12.1 SAFETY RECOMMENDATIONS

Installations using GENIUS BLIZZARD 400-800 C ENC series gearmotors are designed for use with vehicular traffic.

The user must be in good physical and mental health and be aware of and responsible for the dangers which use of the product can lead to.

-  - Do not remain in or walk/drive through the area of operation of the automation system while it is moving.
- Do not use the automation system when the area of operation is not free of persons, animals or objects.
- Do not allow children to approach or play in the area of operation of the automation system.
- Do not try to prevent the movement of the automation system.
- Do not climb on, hold onto or let yourself be pulled by the leaf. Do not climb onto or sit on the gearmotor.
- Do not allow the devices to be used by anyone who is not specifically authorised and trained to do so.
- Do not allow the devices to be controlled by children or persons with mental and physical deficiencies unless they are supervised by an adult who is responsible for their safety.
- Do not use the automation system with the fixed and/or mobile guards removed or altered.
- Do not use the automation system in the presence of faults which could compromise safety.
- Do not expose the automation system to corrosive chemicals or atmospheric agents; do not expose the gearmotor to water jets of any type or size.
- Do not expose the automation system to flammable gases or fumes.
- Do not perform any work on the components of the automation system.

### 12.2 PRODUCT WARNINGS


-  Risk of fingers and hands being trapped between the rack, pinion and casing (§ 3.8- 2).

### 12.3 EMERGENCY USE




Environmental phenomena, even occasional, such as ice, snow and strong wind may hinder correct operation of the automation and affect component integrity and may become a potential source of danger.

In any case the beam is not behaving properly, in emergencies or if there is a fault, turn off the power supply to the automation and disconnect the buffer batteries if there are any. If the leaf can be moved safely by hand, use the MANUAL OPERATION mode; otherwise place the automation out of service until it has been reset/repaired. In the case of a breakdown, the automation must be reset/repaired exclusively by the installer/maintenance technician.

### 12.4 MANUAL OPERATION

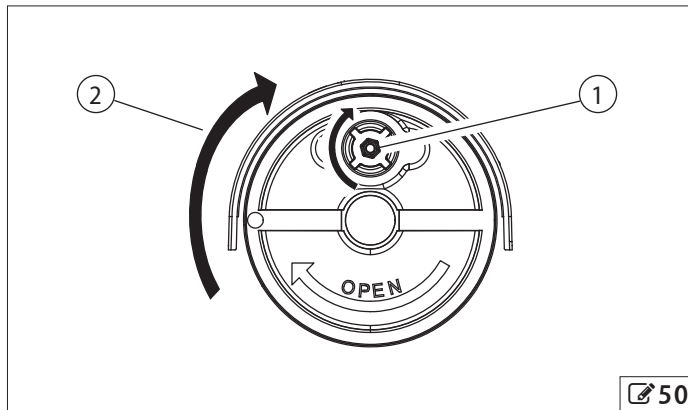
-  Before performing the release operation, shut off the power supply to the automation.
- During manual operation, gently guide the leaf the whole way. Do not push it and let it slide freely.
- Do not leave the gate with the release engaged: after moving it manually, restore automatic operation.

#### RELEASE MANOEUVRE

1. Open the plastic cap on the release device ( 50-1).
2. Turn the lock clockwise using a coin or your personalised key ( 50-1).
3. Turn the knob clockwise ( 50-2).

#### RESTORING AUTOMATIC OPERATION

1. Turn the knob anticlockwise.
2. Turn the lock anticlockwise.
3. Manually move the gate until the mechanical system engages.







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