

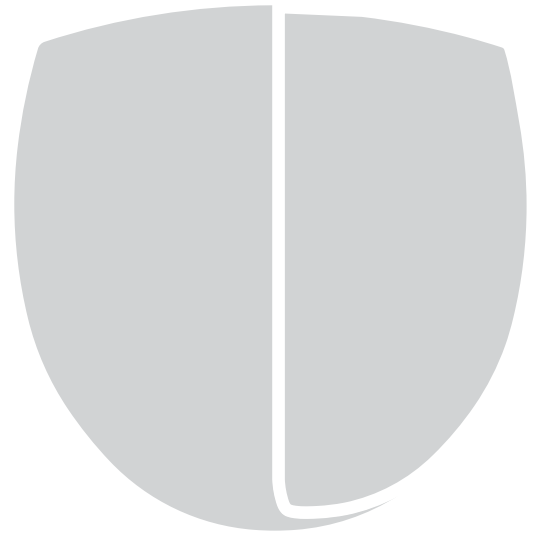
Nice

CE
EAC

SN6021

SN6031

SN6041



Garage door opener

EN - Instructions and warnings for the fitter

Nice

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GENERAL WARNINGS: SAFETY - INSTALLATION - USE

WARNING! Important safety instructions. Follow all instructions as improper installation may cause serious damage.

WARNING! Important safety instructions. It is important for you to comply with these instructions for your own and other people's safety. Keep these instructions.

- Before commencing the installation, check the "Technical characteristics" (in this manual), in particular whether this product is suitable for automating your guided part. If it is not suitable, DO NOT continue with the installation.
- The product cannot be used before it has been commissioned as specified in the chapter on "Testing and commissioning".

WARNING! According to the most recent European legislation, the implementation of an automation system must comply with the harmonised standards provided by the Machinery Directive in force, which enables declaration of the presumed conformity of the automation. Taking this into account, all operations regarding connection to the electricity grid, as well as product testing, commissioning and maintenance, must be performed exclusively by a qualified and skilled technician!

- Before proceeding with the installation of the product, check that all the materials are in good working order and suited to the intended applications.
- This product is not intended to be used by persons (including children) whose physical, sensory or mental capacities are reduced, or who lack the necessary experience or skill.
- Children must not play with the appliance.
- Do not allow children to play with the fixed control devices of the product. Keep the remote controls away from children.

WARNING! 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.

- Provide a disconnection device (not supplied) in the plant's power supply grid, with a contact opening distance permitting complete disconnection under the conditions dictated 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 assumes no liability for damage to property, items or persons resulting from non-compliance with the assembly instructions. In such cases the warranty for material defects is excluded.
- The weighted sound pressure level of the emission A is lower than 70 dB(A).
- Cleaning and maintenance to be carried out by 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 any backup batteries.
- Check the system periodically, in particular all cables, springs and supports to detect possible imbalances, signs of wear or damage. Do not use, if repairs or adjustments are necessary, since installation failure or an incorrectly balanced automation may cause injury.
- The packing materials of the product must be disposed of in compliance with local regulations.
- The product must not be installed outdoors.
- Keep an eye on moving doors and do not let anyone go near them until they have opened or closed fully.
- Be careful when activating the manual release (manual manoeuvre) device, as an open door may fall suddenly due to weak or broken springs, or if it is unbalanced.
- Every month, check that the drive motor reverses when the door encounters a 50 mm-high object placed on the ground. If necessary, readjust the door and check it again, as incorrect adjustment is potentially dangerous (for drive motors incorporating a trapping safety system that intervenes when the door's lower edge encounters an obstacle).
- If the power cable is damaged, it must be replaced by the manufacturer or by an appointed servicing company or similarly qualified person in order to prevent any form of risk.

INSTALLATION WARNINGS

- Prior to installing the drive motor, check that the door is in good working order, correctly balanced and that it opens and closes properly.
 - Prior to installing the motor, remove all unnecessary cables or chains and deactivate any equipment – such as locking devices – not required for motorised operation.
 - Check that there are no points where trapping or crushing against fixed parts can occur when the moving section is in the fully open or closed position; adequately protect any such parts.
 - Install the manoeuvring assembly for manual release (manual manoeuvre) at a height below 1.8 m.
NOTE: if removable, the manoeuvring assembly must be kept close to the door.
 - Make sure that the control devices are kept far from moving parts but nonetheless in a visible position.
The manoeuvring assembly of a switch kept manually closed must be located in a position that is visible from the guided part but far from moving parts. It must be installed at a minimum height of 1.5 m.
 - Permanently attach the trapping hazard warning labels in a highly visible location or near the fixed control devices (if present).
 - Permanently attach the manual release (manual manoeuvre) label close to the manoeuvring assembly.
 - After installation, make sure that the motor prevents or stops door opening when the latter is loaded with a 20 kg weight secured to the centre of its bottom edge (for drive motors that can be used with doors having opening widths exceeding 50 mm).
 - After installation, make sure that the mechanism is properly adjusted and that the motor reverses when the door collides with a 50 mm-tall object placed on the ground (for drive motors incorporating a trapping safety system that intervenes when the bottom edge of the door encounters an obstacle).
- Following installation, check and ensure that no door parts obstruct public roadways or pavements.

1 PRODUCT DESCRIPTION AND INTENDED USE

SPIN is a family of electromechanical gearmotors with integrated control unit, designed for automating sectional and spring-loaded or counter-weighted overhead doors, whether protruding or not (fig.1); the SPA5 accessory is required for overhead garage doors.

The control unit is equipped for installation of a 433.92 MHz radio receiver with FLOR coding.

The SPIN line includes the products listed in Table 1.

⚠ WARNING! – All uses other than the intended use described and use in environmental conditions other than those described in this manual should be considered improper and forbidden!

Table 1 - Description of the SPIN components

Model:	Gearmotor	Guide	Radio receiver	Radio Transmitter
SPIN20KCER10	SN6021	3x1m	OXI	FLO2RE
SPIN22KCER10	SN6021	4m	OXI	FLO2RE
SPIN23KCER10	SN6021	3m	OXI	FLO2RE
SPIN30R10	SN6031	3x1m	---	---
SN6031R10	SN6031	---	---	---
SPIN40R10	SN6041	3x1m	---	---
SN6041R10	SN6041	---	---	---

SN6031R10 must be completed with the guides SNA30/SNA30C (3m) or SNA30/SNA30C + SNA31/SNA31C (3m + 1m).

SN6031R10 must be completed with the guide SNA30/SNA30C (3m) or SNA30/SNA30C + SNA31/SNA31C (3m + 1m).

SPIN30R10; SPIN40R10; SN6031R10 e SN6041R10 can be completed with radio receivers OXI and relative radio transmitters.

2 OPERATING LIMITS

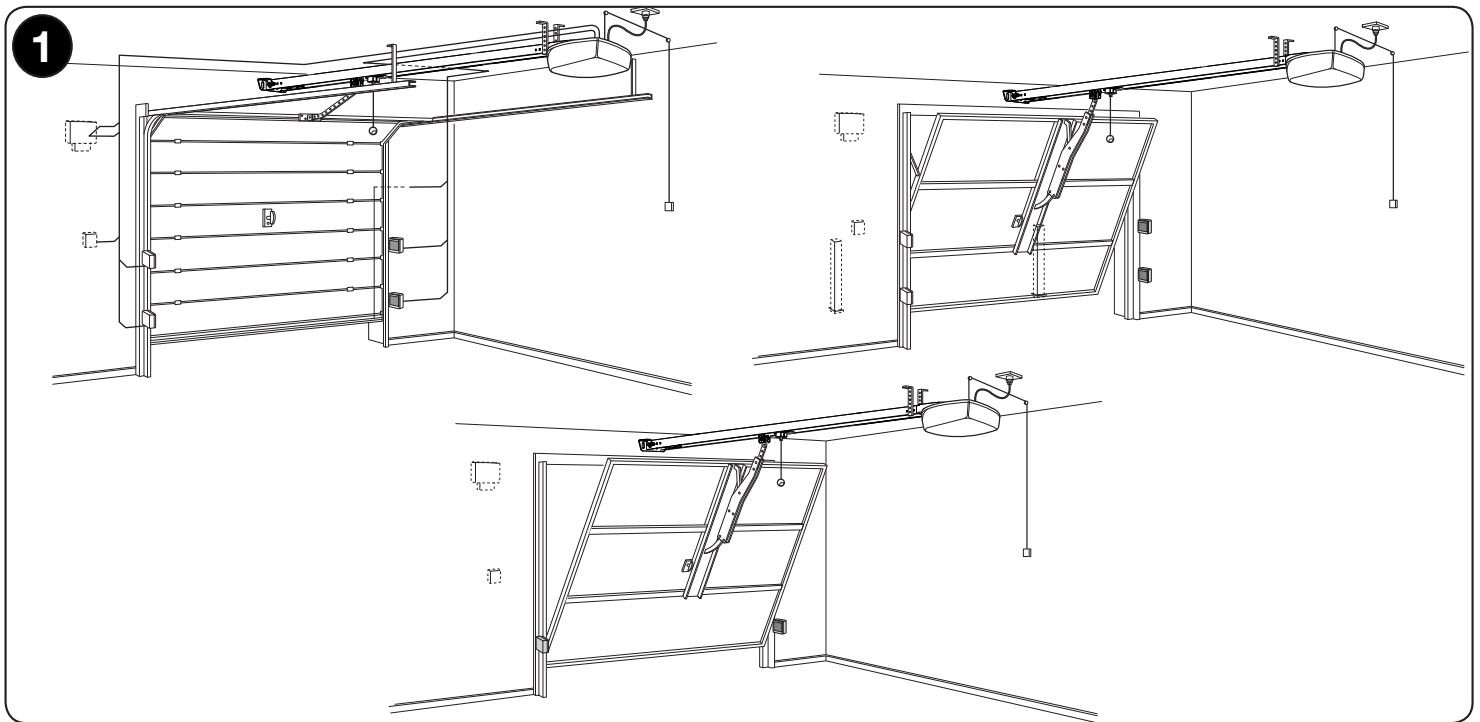
Chapter 13 “Technical Characteristics” provides the data needed to determine whether the products of the SPIN line are suitable for the intended application.

The structural characteristics of the SPIN products make it suitable for use on sectional and overhead doors within the limits shown in Tables 2, 3 and 4.

Table 2 - gearmotor operating limits

Model:	Sectional doors		Non-protruding overhead doors (with accessory SPA5)		Protruding overhead doors (with accessory SPA5) or with springs (without SPA5)	
	Width (m) x Height (m)	Surface (sqm)	Width (m) x Height (m)	Surface (sqm)	Width (m) x Height (m)	Surface (sqm)
SPIN20KCER10	4,4x2,4	10,5mq	4,2x2,2	9,2mq	4,2x2,8	11,8mq
SPIN22KCER10	3x3,4	10,2mq	2,9x3,2	9,2mq	3,4x3,5	11,8mq
SPIN23KCER10	4,4x2,4	10,5mq	4,2x2,2	9,2mq	4,2x2,8	11,8mq
SPIN30R10	5x2,4	12mq	4,2x2,2	9,2mq	4,2x2,8	11,8mq
SN6031R10	3,5x3,4	12mq	2,9x3,2	9,2mq	3,4x3,5	11,8mq
SPIN40R10	5,2x2,4	12,5mq	4,2x2,2	9,2mq	4,2x2,8	11,8mq
SN6041R10	5,2x3,4	17,5mq	4,2x3,2	13,4mq	4,2x3,5	14,7mq

⚠ WARNING! – All uses other than the intended use described and use in environmental conditions other than those described in this manual should be considered improper and forbidden!



The measurements in table N° 2 are guideline only and can be used as a general estimate only. The effective suitability of SPIN for automating a specific door depends on the degree of door leaf balancing, guide friction and other aspects, including occasional phenomena such as wind pressure or the presence of ice, which could obstruct leaf movement.

To establish effective conditions, the force required to move the leaf throughout its stroke must be measured, to ensure that this value does not exceed the "rated torque" specified in chapter "13 Technical specifications"; also, to calculate the number of cycles/hour and consecutive cycles, the data in tables 3 and 4 must be taken into account.

Table 3 - limits related to leaf height

Leaf height meters	Max. no. of cycles/hour	Max. no. of consecutive cycles
Max. 2m	20	10
2÷2,5m	15	7
2,5÷3m	12	5
3÷3,5m	10	4

Table 4 - limits in relation to force required to move door leaf

Force required to move leaf N	Cycle reduction percentage		
	SN6021	SN6031	SN6041
Max. 250N	100%	100%	100%
250 – 400N	70%	80%	90%
400 – 500N	25%	50%	70%
500 – 650N	---	25%	40%
650 – 850N	---	---	25%

The height of the door enables a calculation of the maximum number of cycles per hour and consecutive cycles, while the force required to move the door enables a calculation of the percentage of cycle reduction; for example, if the leaf height is 2.2 m this would enable 15 cycles per hour and 7 consecutive cycles, but if a force of 300N is required, using a SN6021 gearmotor, these would have to be reduced to 70%, resulting therefore in 10 cycles per hour and around 5 consecutive cycles. To avoid overheating, the control unit has a limiter that is based on the motor operation and duration of cycles, and trips when the maximum limit is exceeded.

N.B.: 1Kg = 9.81N, meaning that 500N, for example, is equivalent to 51Kg.

Table 5 – comparison of main features

Gearmotor type	SN6021	SN6031	SN6041
Maximum torque (corresponding to the maximum force)	11.7Nm (650N)	14.4Nm (800N)	18Nm (1000N)
Reduced consumptoin in Stand-By	4.2W	0.8W	1.2W

3 INSTALLATION

3.1 - Gearmotor installation

⚠ Important! Before installing the gearmotor check Chapter 2, the contents of the package to verify the materials and the overall dimensions of the gearmotor (fig. 2-3).

⚠ Attention! The garage door must be able to move with ease. Limit to be complied with (according to EN12604):

- private use = 150 N maximum
- industrial/business use = 260 N maximum

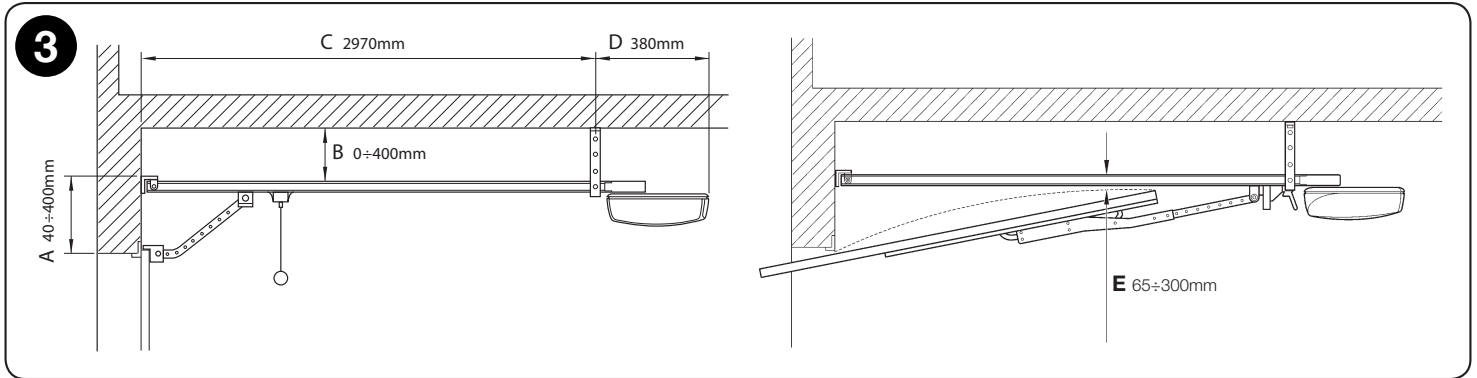
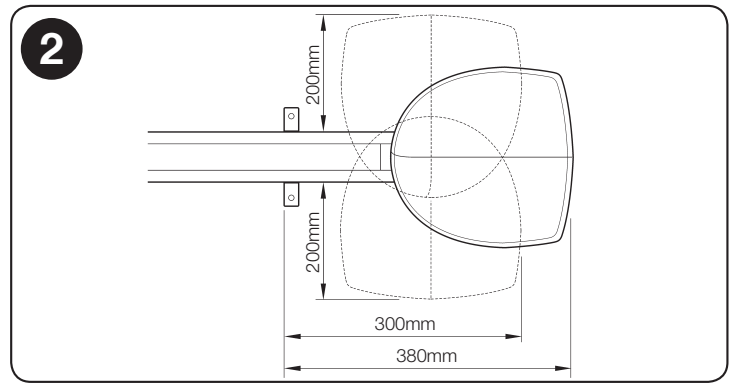
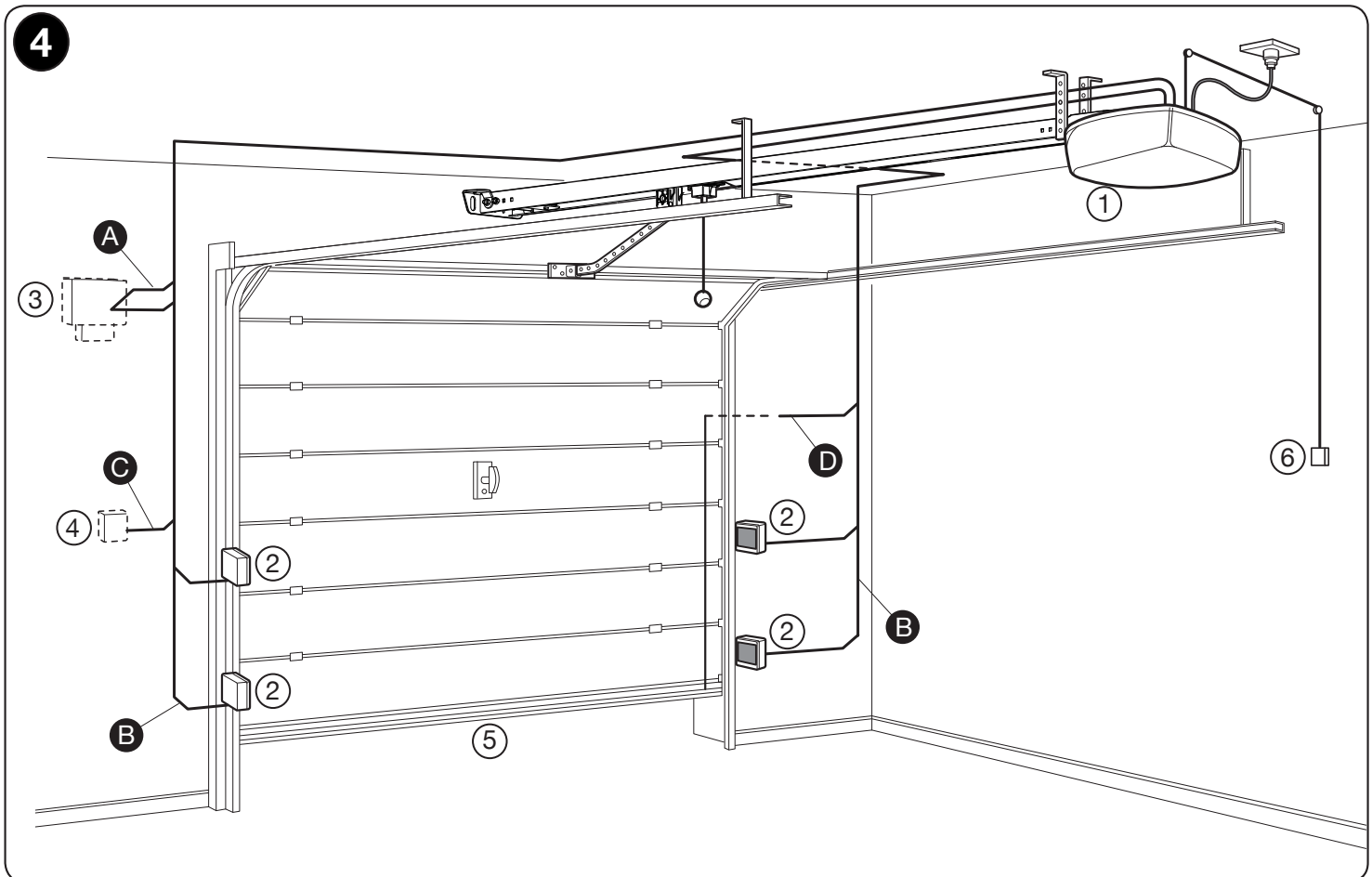


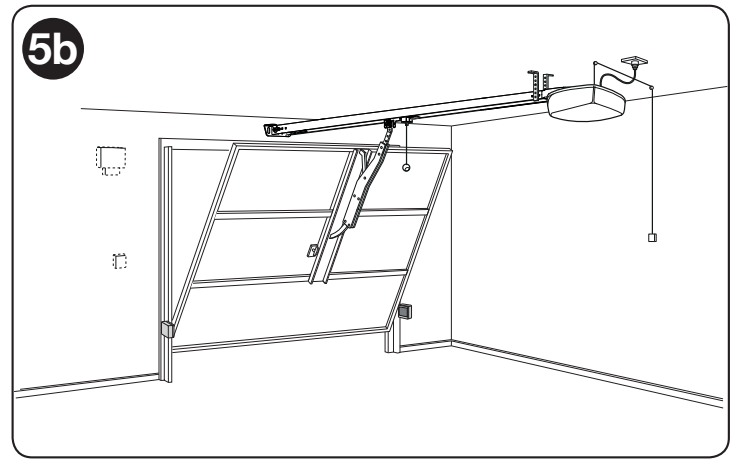
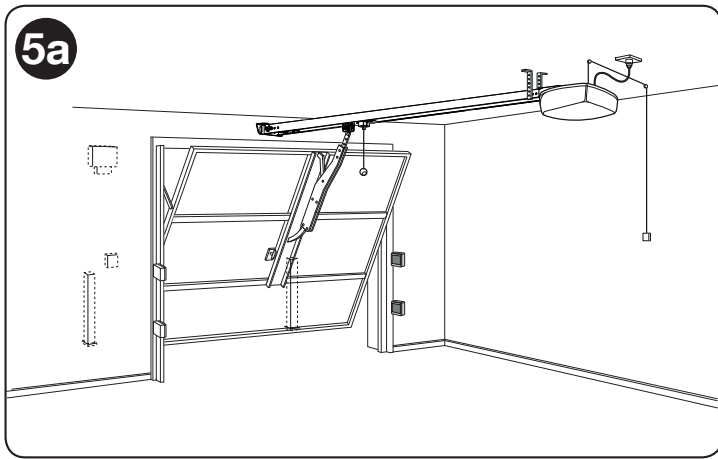
Fig. 4 shows the location of the components of a typical installation:

- | | |
|--|-------------------------|
| 1 - gearmotor with integrated control unit | 2 - photocells |
| 3 - flashing light | 4 - key-operated switch |
| 5 - primary sensitive edge | 6 - PP function cord |

Figures 5a and 5b show typical installations of a protruding and non-protruding overhead door.

⚠ For installations on overhead doors, the accessory SPA5 is required.





Before installing the equipment check the gearmotor clearance (**fig. 2**). If the door to be automated is an overhead version, check value E shown in **figure 3**, i.e. the minimum distance between the upper side of the guide and the maximum point reached by the upper edge of the door. If the value does not correspond, SPIN cannot be fitted.

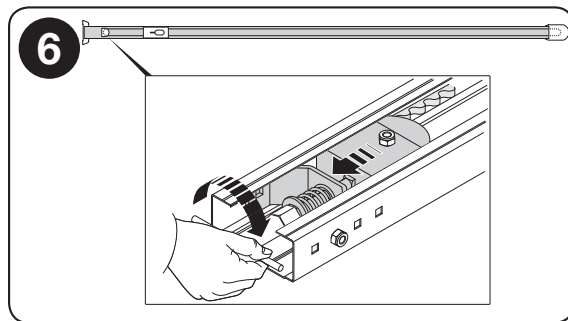
3.2 - Assembly of guide supplied with SPIN20KCE - SPIN30 - SPIN40

For the SN6031 and SN6041, you will need a SNA30 guide, SNA6 belt guide or SNA30C chain guide. The SNA30 and SNA30C guides can be lengthened with extensions SNA31 and SNA31C.

01.	Lay the three guide parts to enable them to be joined.	
02.	Assemble the end of the guide A . This requires a certain force; if necessary use a rubber mallet.	
03.	Using joining brackets B , fit the three parts C together.	
04.	Tension the belt by means of the nut D , until it is sufficiently taut.	

3.3 - SNA30 guide assembly

The SNA30 guide is already assembled. The only operation required is tensioning of the belt by means of the nut **D**, until it is sufficiently taut.

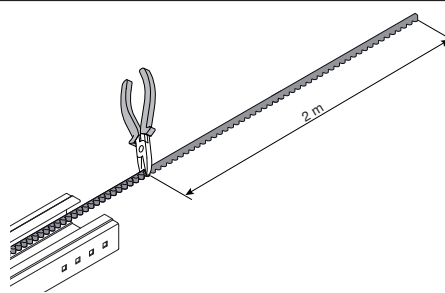
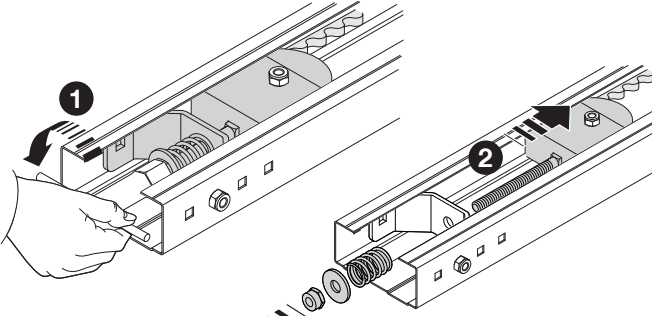
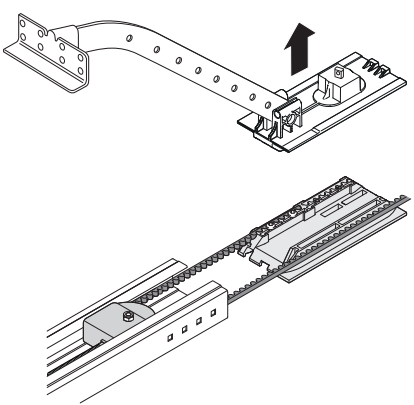
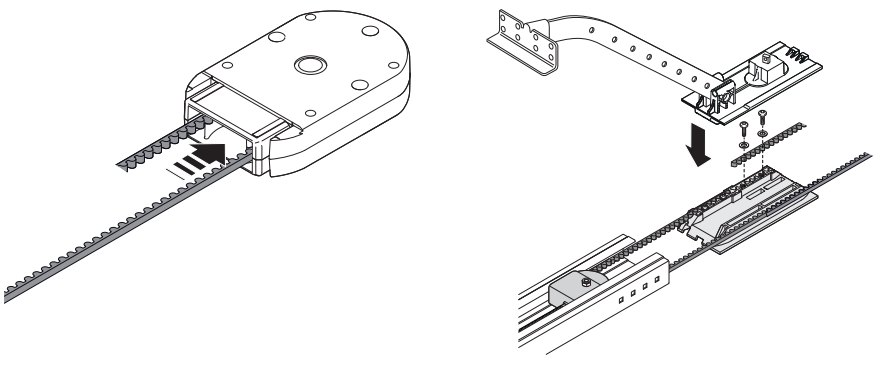


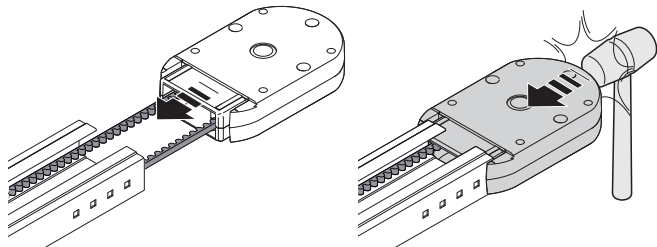
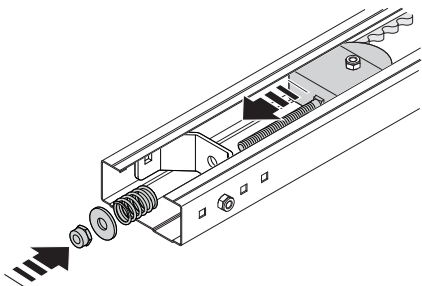
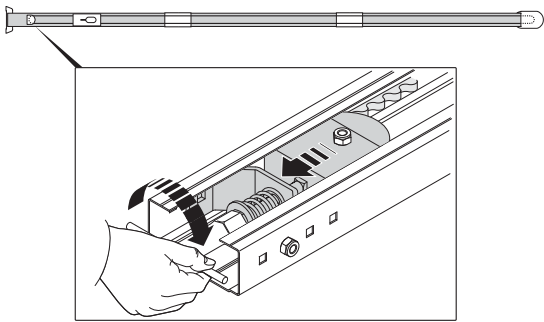
3.4 - SNA6 guide assembly

The SNA6 guide comprises 2 profiles: one 3 metres long and the other 1 metre long to enable 2 versions of guide:

3m version

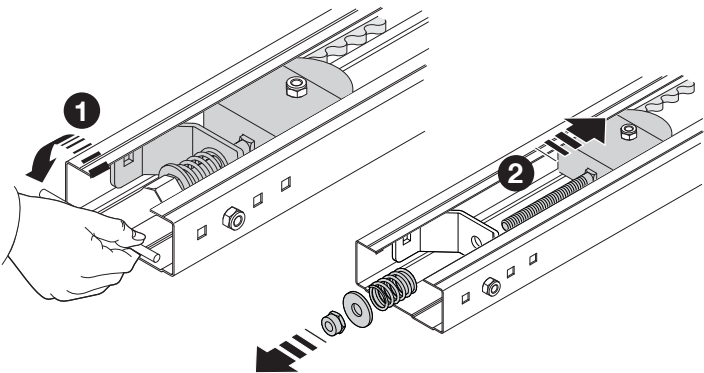
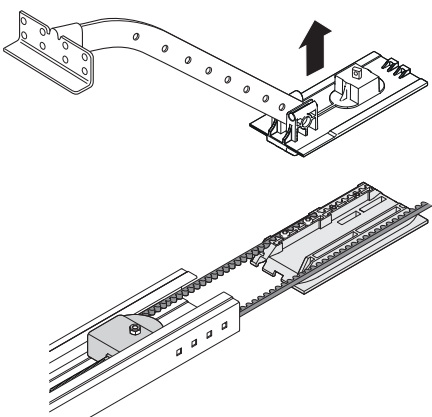
If the height of the door to be automated is equal to or less than 2.5 m assemble the guide as follows:

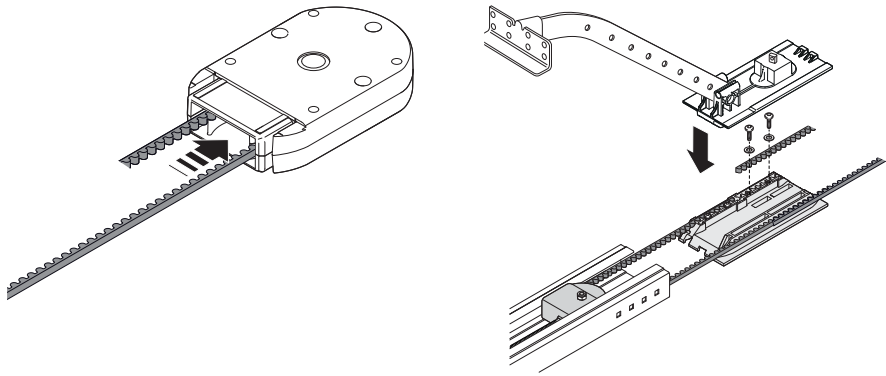
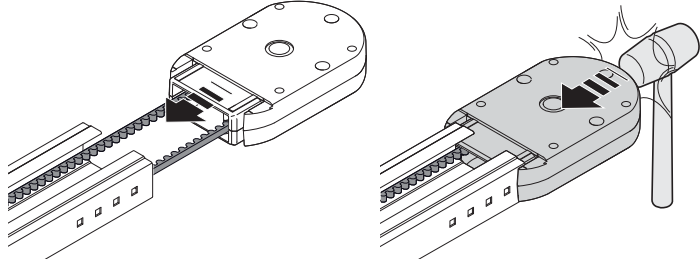
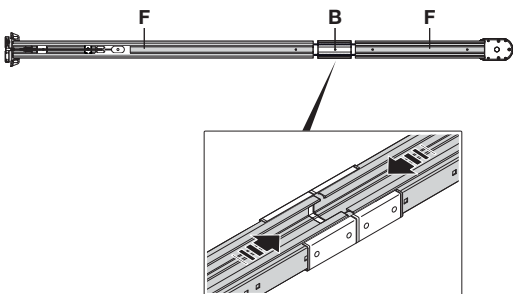
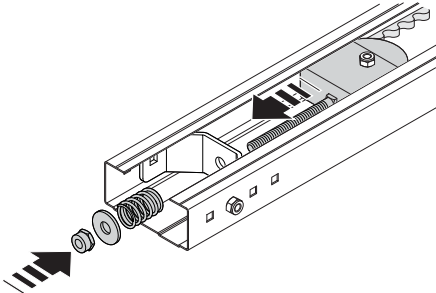
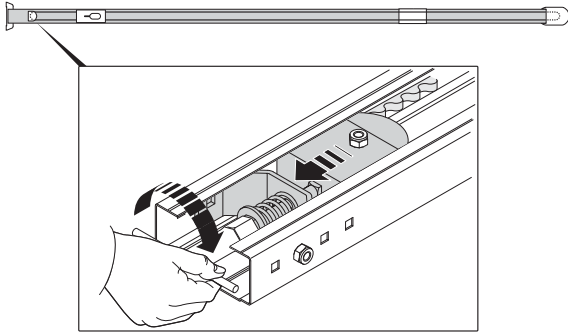
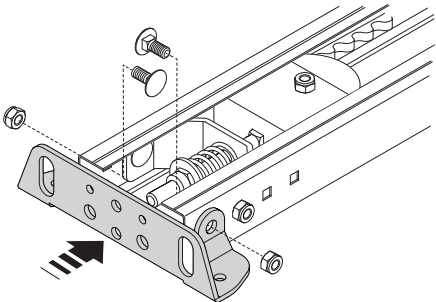
01.	Cut the free end of the belt to obtain a length of exactly 2 metres, 
02.	Loosen the nut D completely. 
03.	Slide the belt tensioner device to mid-stroke E and remove the carriage completely. 
04.	Pass the free end of the belt through the head section and secure to the carriage by means of the screws and washers present. Take care when positioning the belt; the teeth must be facing inwards, and it must be straight without twists. 

<p>05.</p>	<p>Return the belt tensioner device and carriage to the initial position. Assemble the guide head section A. This requires a certain force; if necessary use a rubber mallet.</p>	
<p>06.</p>	<p>Insert the spring, washer and nut D, in the screw of the belt tensioner device.</p>	
<p>07.</p>	<p>Tension the belt by means of the nut D until it is sufficiently taut.</p>	

4m Version

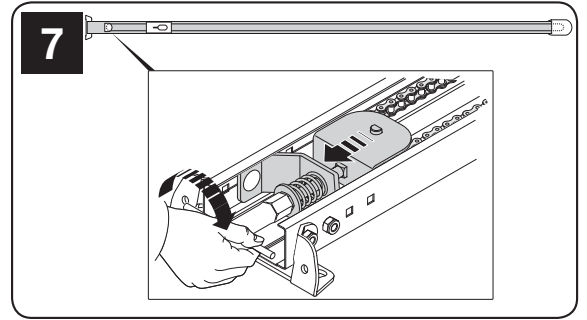
If the height of the door to be automated is greater than 2.5 m assemble the guide as follows:

<p>01.</p>	<p>Loosen the nut D completely,</p>	
<p>02.</p>	<p>Slide the belt tensioner device to mid-stroke E, and remove the carriage completely.</p>	

<p>03.</p>	<p>Pass the free end of the belt through the head section and secure to the carriage by means of the screws and washers present.. Take care when positioning the belt; the teeth must be facing inwards, and must be straight without twists.</p>	
<p>04.</p>	<p>Assemble the guide head section A. This requires a certain force; if necessary use a rubber mallet.</p>	
<p>05.</p>	<p>Using the joining brackets B, fix the two parts F.</p>	
<p>06.</p>	<p>Return the belt tensioner device and carriage to the initial position.</p>	
<p>07.</p>	<p>Insert the spring, washer and nut D, in the screw of the belt tensioner device,</p>	
<p>08.</p>	<p>Tension the belt by means of the nut D until it is sufficiently taut.</p>	
<p>09.</p>	<p>Assemble the bracket to the guide with M6x14 bolts and nuts.</p>	

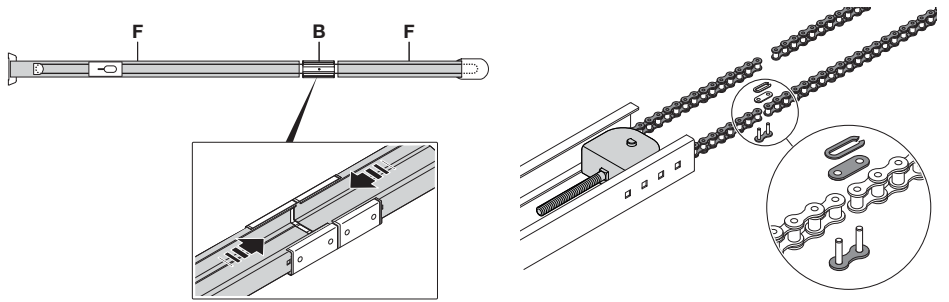
3.5 - Tensioning the SNA30C guide

The SNA30C guide is already assembled. The only operation required is tensioning the chain with the nut **D**, until it is sufficiently taut.



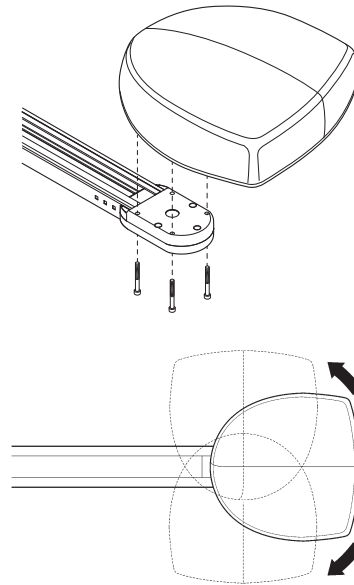
3.5.1 - Assembling the SNA31C accessory

- 01.** Extend the chain with the false link and unite the two profiles **F** with the joining bracket. Restore the carriage, head and chain return unit to their original configuration. Tension the chain.



3.6 - Fixing the gearmotor to the guide

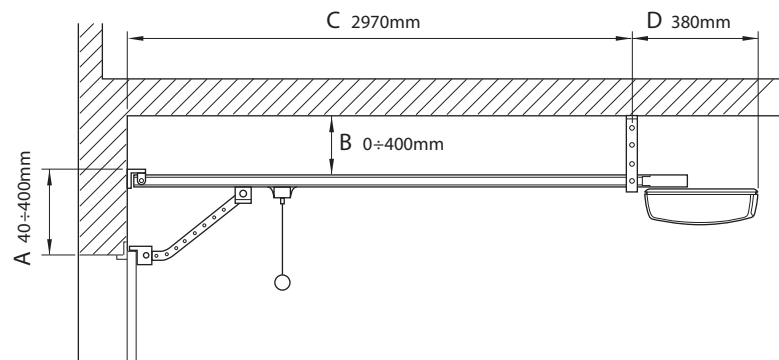
- 01.** Join the gearmotor with the guide head **A**; then secure by means of the four V6.3x38 screws.



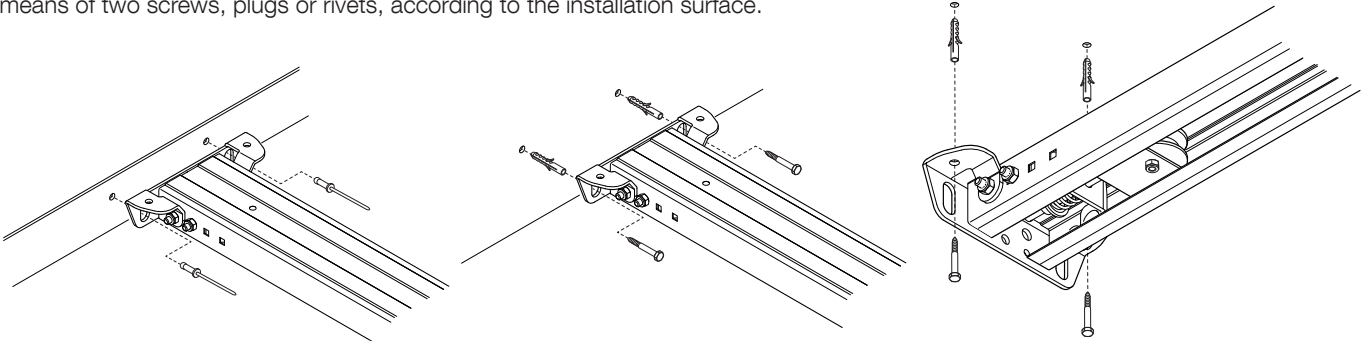
⚠ The motor can be rotated in three different positions.

3.7 - Fixing the gearmotor to the ceiling

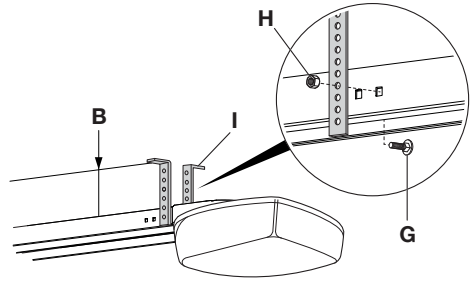
- 01.** On the basis of distances **A** and **B**, trace the two fixing points of the front guide bracket at the centre of the door. On the basis of the type of support surface, the front bracket can be fixed with rivets, plugs or screws. If distances **A** and **B** are sufficient, the bracket can be fixed directly onto the ceiling.



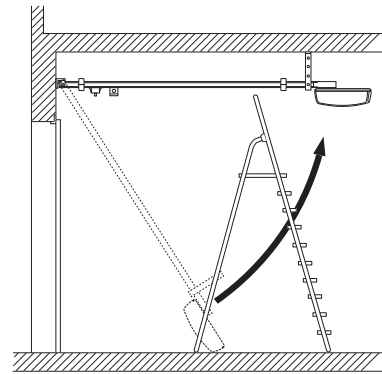
02. After drilling the holes in the relative points, leaving the gearmotor on the ground, lift the guide from the front section and secure by means of two screws, plugs or rivets, according to the installation surface.



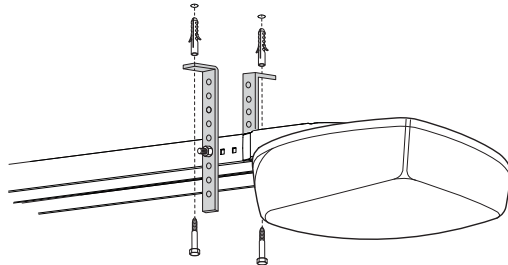
03. Secure the brackets **i** by means of the M6x15 screws **G** and nuts **H** selecting the hole most suited to ensure distance **B**.



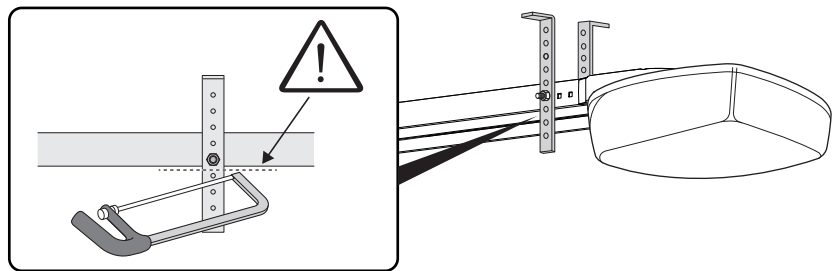
04. Using a ladder, lift the gearmotor until the brackets are touching the ceiling. Trace the drilling points and then return the gearmotor to the ground.



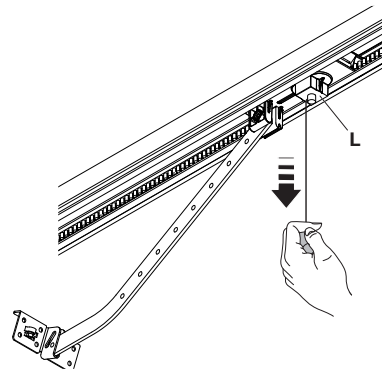
05. Drill at the outlined points and then, using a ladder, lift the gearmotor until the brackets are placed against the drilled holes and secure by means of screws and plugs suited to the support surface.

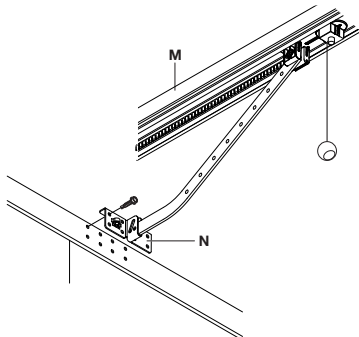
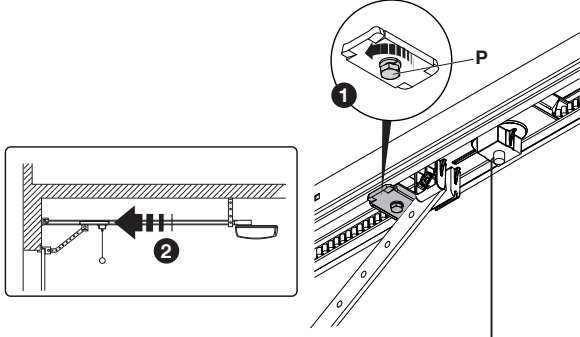
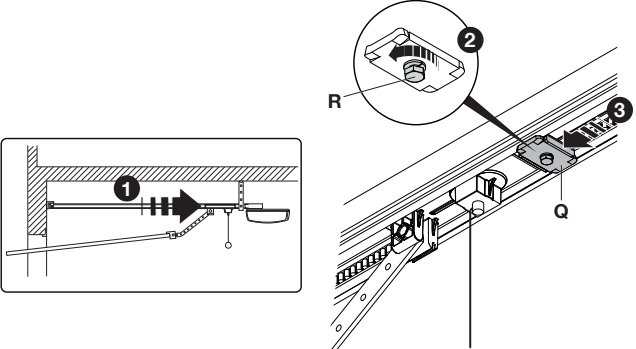
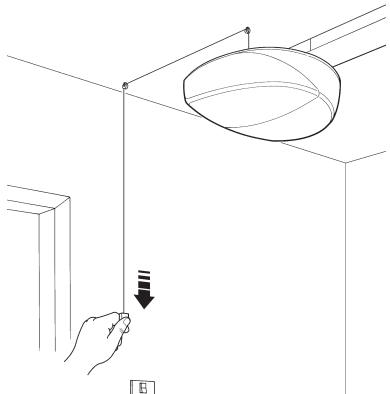


06. Ensure that the guides are perfectly horizontal, then cut off the excess section of the brackets with a saw.

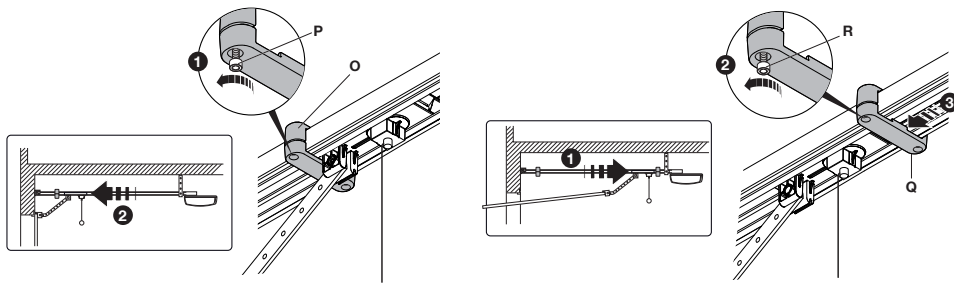


07. With the door closed, pull the cord to release carriage **L**.



<p>08.</p>	<p>Slide the carriage until the leaf connecting bracket N on the upper edge of the door is perfectly perpendicular to the guide M. Then secure the leaf connecting bracket N with rivets or screws. Use screws or rivets suited to the leaf material, and ensure that they are able to withstand the maximum force required for leaf opening and closing.</p>	
<p>09.</p>	<p>Loosen the screws of the two mechanical stops, then move the front mechanical stop O in front of the carriage. Push the carriage in the closing direction and, on reaching the position, tighten the screw P fully down.</p>	
<p>10.</p>	<p>Manually open the door to the required opening position, move the rear mechanical stop Q, next to the carriage and tighten the screw R fully down.</p>	
<p>11.</p>	<p>Try to move the door manually. Ensure that the carriage slides easily without friction on the guide and that manual movement does not require excessive force.</p>	
<p>12.</p>	<p>Position the control cord at the required point of the room; if necessary route across the ceiling by means of plugs with eyebolts.</p>	

3.7.1 - Stops for the SNA30C guide

<p>01.</p>	<p>Loosen the screws of the two mechanical stops, then move the front mechanical stop O in front of the motor carriage. Push the carriage in the closing direction and, on reaching the position, tighten the two screws P fully down. Manually open the door to the required opening position, move the rear mechanical stop Q next to the carriage, and tighten the two screws R fully down.</p>	
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To install the specified accessories, refer to the respective instruction manuals.

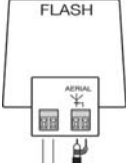
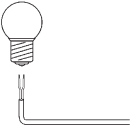

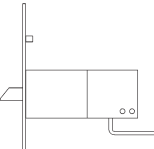
4 ELECTRICAL CONNECTIONS

⚠ Only carry out electrical connections once the electricity supply to the system has been switched off. Disconnect any buffer batteries present.

⚠ WARNING! – The cables used must be suitable for the type of installation. For example, an H03VV-F type cable is recommended for indoor applications

Here follows a brief description of the electrical connections. Please refer to the “8.1. Adding or Removing Devices” paragraph for further information.


FLASH: this output is programmable (see paragraph 6.6.3) for connection of one of the following devices:

Table 6 - Types of electrical connections		
	Function	Description
	FLASHING LIGHT	If programmed as “flashing light” on the “FLASH” output a NICE “ELDC” flashing light can be connected with a car type 12V 21W lamp. During the manoeuvre the unit flashes at intervals of 0.5s.
	“DOOR OPEN INDICATOR” OUTPUT	If programmed as “door open indicator” on the “FLASH” output a 24V max 5W indicator can be connected to signal when the door is open. It remains lit when the door is open and turns off when closed. During the manoeuvre the indicator flashes slowly on opening and fast on closing.
	SUCTION CUP	If programmed as “suction cup” on the “FLASH” output a 24V max 10W suction cup can be connected (versions with electromagnet only, without electronic devices). When the door is closed, the suction cup is activated, locking the door. It is disabled during door opening and closing manoeuvres.
	ELECTRIC LOCK	If programmed as “electric lock” on the “FLASH” output an electric lock with latch 24V max 10W can be connected (versions with electromagnet only, without electronic devices). During opening, the electric lock is activated for a brief interval to release the door and perform the manoeuvre. During closing, ensure that the electric lock engages mechanically.

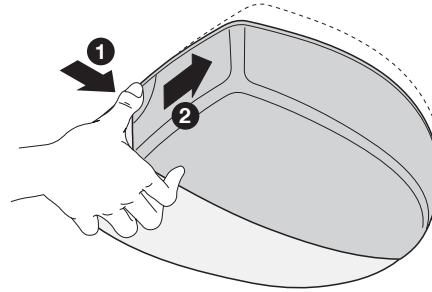
⚠ NEVER USE DEVICES OTHER THAN THOSE SPECIFIED

4.1 - Electrical cable connections

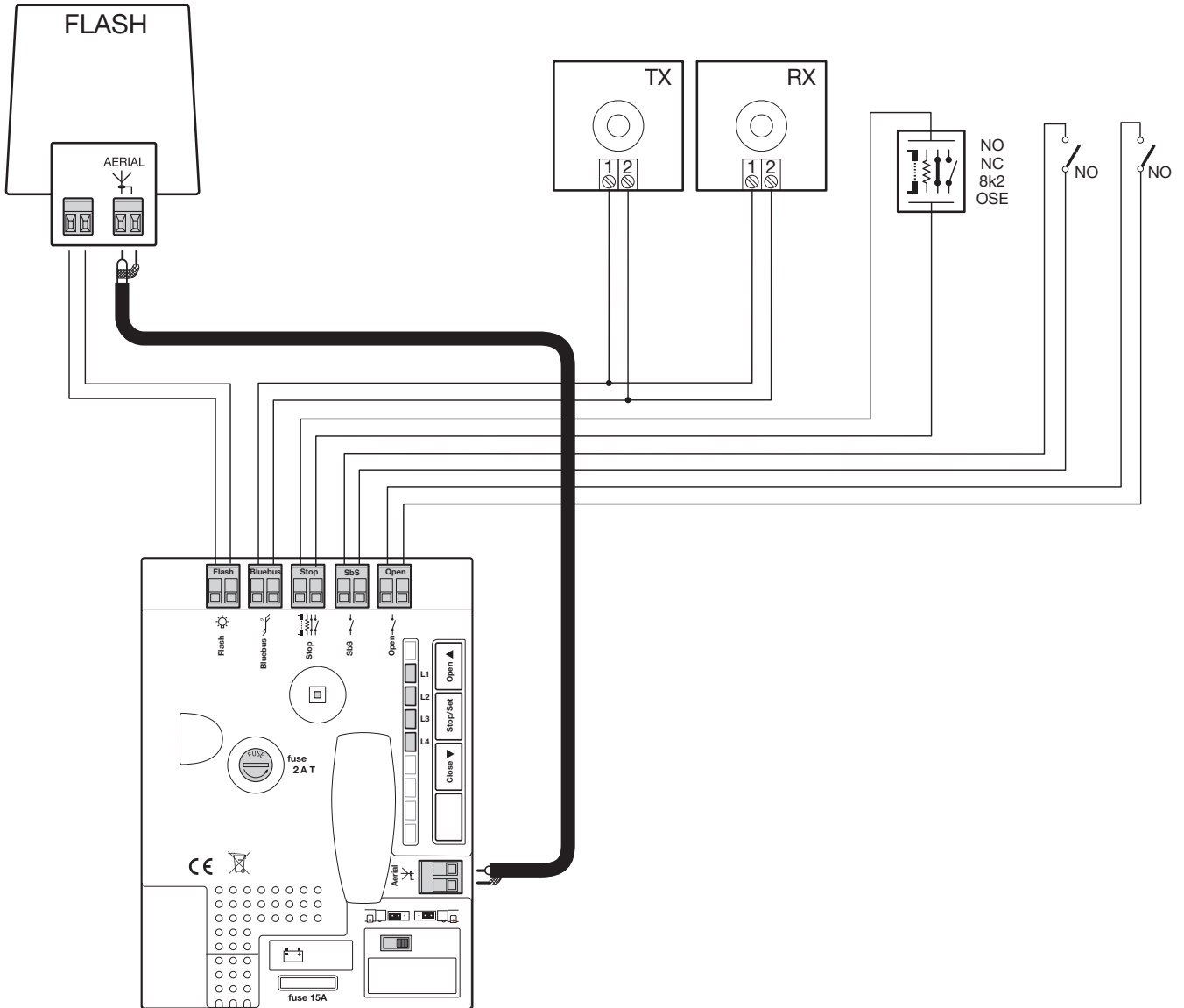
Fig. 4 shows the electrical connections in a typical installation; **the figure referring to step 02 of the installation** shows the electrical connections to be made on the control unit.

Table 7 - Description of electrical connections			
Function	Type of cable	Max. admissible length	Description
Aerial (A) 	1 shielded cable (type RG58)	20m (recommended length: below 5 m)	Connection input for the radio receiver aerial. The antenna is incorporated in the ELDC; alternatively an external antenna can be used, or a section of wire already present on the terminal, which functions as an antenna, can be left.
OPEN (C)	1 cable 2x0.5mm ²	20m	Input for devices which control movement. It is possible to connect “Normally Open” devices to this input. Exciting the input sends the Open command.
SbS (C)	1 cable 2x0.5mm ²	20m	Input for devices which control movement. It is possible to connect “Normally Open” devices to this input. Exciting the input or pulling the cord sends an SbS command (step-by-step).
STOP (D)	1 cable 2x0.5mm ²	20m	Input for devices that block or shut down the manoeuvre in progress; by setting the input accordingly, it is possible to connect “Normally Closed”, “Normally Open”, constant resistance and OSE (Optical Safety Edge) contacts. For further information about STOP, refer to par. “8.1”.
BLUEBUS (B)	1 cable 2x0.75mm ²	20m	This terminal enables the connection of compatible devices; all are connected in parallel with just two wires conveying the electric power and communication signals. For further information about BlueBUS, refer to par. “8.1”.
FLASH (A)	1 cable 2x0.5mm ²	20m	This output can be connected to a Nice ELDC flashing light (see technical specifications). During the manoeuvre the unit flashes at intervals of 0.5 s.

01. Open the protection cover.

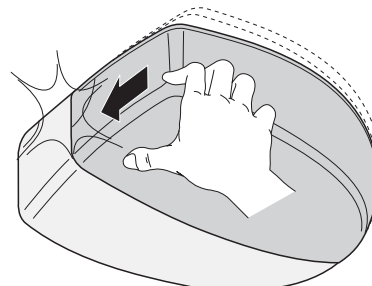


02. 1 - connect the power cables of the motor and accessories (depending on the control unit model)
2 - connect the power cable



- Install a disconnection switch (not included) on the power supply with a disconnection gap which ensures complete disconnection in the conditions dictated by overvoltage category III
- Before intervening on the system (maintenance, cleaning), always disconnect the product from the mains power supply and any backup batteries

03. After the programming, close the lid.



5 STARTING THE AUTOMATION AND CHECKING THE CONNECTIONS

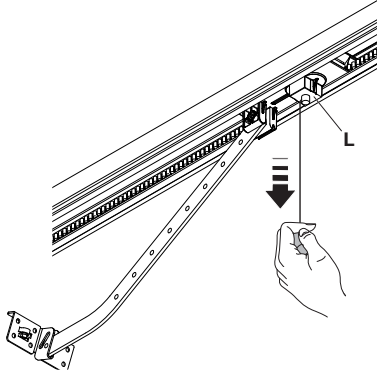
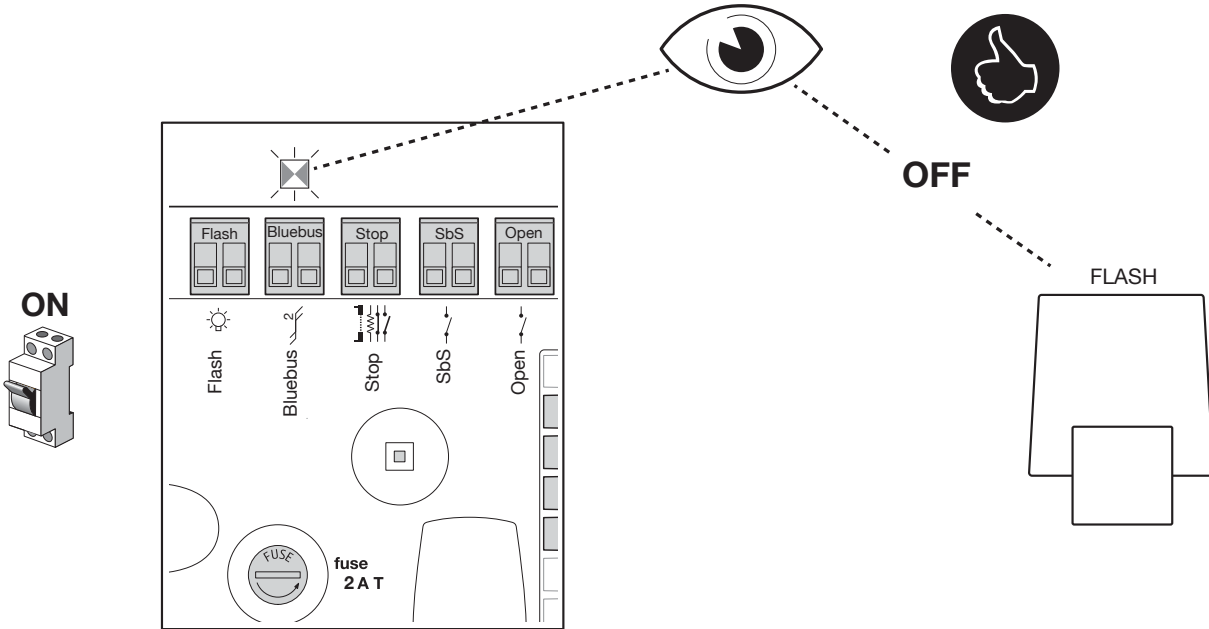
5.1 - Connecting the automation to the mains electricity

⚠ WARNING! – The automation must be connected to the mains electricity by an expert and qualified electrician, in accordance with established laws, standards and local regulations. Proceed as described below:

To power SPIN simply insert the plug in a mains socket. If necessary, use a commercial adaptor if the plug on the SPIN unit does not correspond to the socket available.

⚠ Never cut or remove the cable supplied with SPIN. If not already available, the power socket for SPIN connection must be fitted by skilled and qualified personnel in strict observance of current legislation, standards and regulations.

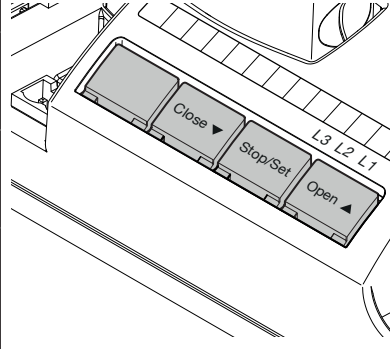
The power supply line must be protected from short circuits and ground leakage; a device must be provided to enable the disconnection of the power supply during the installation and maintenance of SPIN (the plug with outlet are suitable for this purpose).

01.	Manually disengage the gearmotor so that you can move the door in the opening/closing direction.	
02.	Manually lock the gearmotor.	
03.	<p>Proceed as described below:</p> <ul style="list-style-type: none"> • Make sure that the “BLUEBUS” LED flashes regularly, with about one flash per second. • Make sure that the LED's on the photocells (if any) flash (both on TX and RX); the type of flashing is not important as it depends on other factors. • Make sure that the device connected to the FLASH output is off. • Make sure that the courtesy light is off. 	
<p>⚠ If the above conditions are not satisfied, you should immediately switch off the power supply to the control unit and check the electrical connections more carefully. For more useful information about finding and analysing failures see also chapter “9 Diagnostics”.</p>		

6.1 - Programming keys

A number of programmable functions are available on the SPIN control unit; they can be adjusted using 4 buttons on the control unit and are displayed with 8 LEDs: L1...L4 .

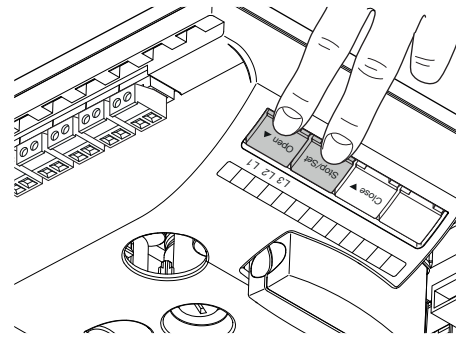
SPIN's default settings should satisfy most requirements, but can be modified at any time using the appropriate programming procedure; see par. 6.6.2

Tasti	Funzione	
Open ▲	The “ OPEN ” key enables the user to control the opening of the door or move the programming point upwards.	
Stop / Set	The “ STOP ” key enables the user to stop the manoeuvre. If pressed down for more than 5 seconds it enables the user to enter programming.	
Close ▼	The “ CLOSE ” key enables the user to control the closing of the door or move the programming point downwards	

6.2 - Recognition of the devices

After you have hooked up electrical power, you must acquire the devices connected to the BlueBUS and STOP inputs (indicated by the flashing of LEDs L1 and L2).

⚠ WARNING! - The device acquisition phase must be performed even if there is no device connected.

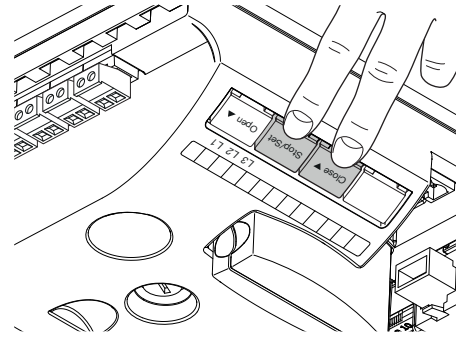
01.	Hold down the ▲ and Set keys together.	
02.	Release the keys then LEDs L1 and L2 start flashing rapidly (after approx 3sec)	
03.	Wait for a few seconds for the control unit to finish recognising the devices	
04.	The STOP LED must remain on when the recognitions stage has been completed, while LEDs L1 and L2 will switch off (LEDs L3 and L4 will eventually start flashing)	

The connected devices recognition stage can be repeated at any time, even after installation, e.g. if another device is added. Please refer to Paragraph 8.1 for information about how to carry out another recognition process.

6.3 - Acquisition of the door opening and closing positions

After recognizing the devices the control unit must be made to recognize the opening and closing positions of the door. In this phase, the door stroke from the mechanical closing stop to the mechanical opening stop is detected.

Ensure that the drive belt is correctly tensioned and that the two mechanical stops are fully secured.

01.	Engage the carriage.	
02.	Hold down the Close ▼ and Set keys together.	
03.	Release the keys when the manoeuvre (after approx. 3s)	
04.	Wait for the control unit to complete the recognition phase: closing, opening and closing again of the door. The courtesy light will now start flashing while waiting for the force seek procedure to start.	

05.	Pull the control cord to start the automatic acquisition procedure. This procedure takes 4 complete movement cycles: Wait for it to complete without interrupting it and without modifying the positions of the limit switches while it is in progress.
-----	---

During acquisition, pressing the open key increases the motor speed in 10% steps up to a maximum of 100%; pressing the close key decreases it by 10% steps to a minimum of 40%.

After acquisition, the courtesy light starts flashing once a second to indicates that the force acquisition procedure must be run.

Force acquisition runs 4 full cycles automatically. Once the movements have stopped, the courtesy light remains steady on for the set time.

these manoeuvres, the control unit memorises the force required for opening and closing.

If the **L3** and **L4** LEDs flash at the conclusion of the acquisition process, it means that an error has occurred; see par. "9 Diagnostics".

It is important that these manoeuvres are not interrupted, e.g. by a STOP command.

If this occurs, the self-learning process described in point 01 must be repeated.

The position acquisition phase can be repeated at any time also after installation (for example if one of the mechanical stops is moved); simply repeat the procedure from point 01.

⚠ During the position acquisition procedure, if the belt is not taut, the belt may slip on the pinion. If this occurs, stop acquisition with the Stop key; tension the belt by screwing nut D in as shown in point 4 of par. 3.2; then repeat the acquisition procedure from point 01.

⚠ Caution: When you change the speed or enable the Light Door function, the courtesy light starts flashing again to indicate that the force acquisition procedure must be run again. If it does, send an open/close command to initiate the automatic procedure.

6.4 - Checking door movements

Once the opening and closing positions have been acquired, it is advisable to carry out a number of manoeuvres in order to check the door travels properly.

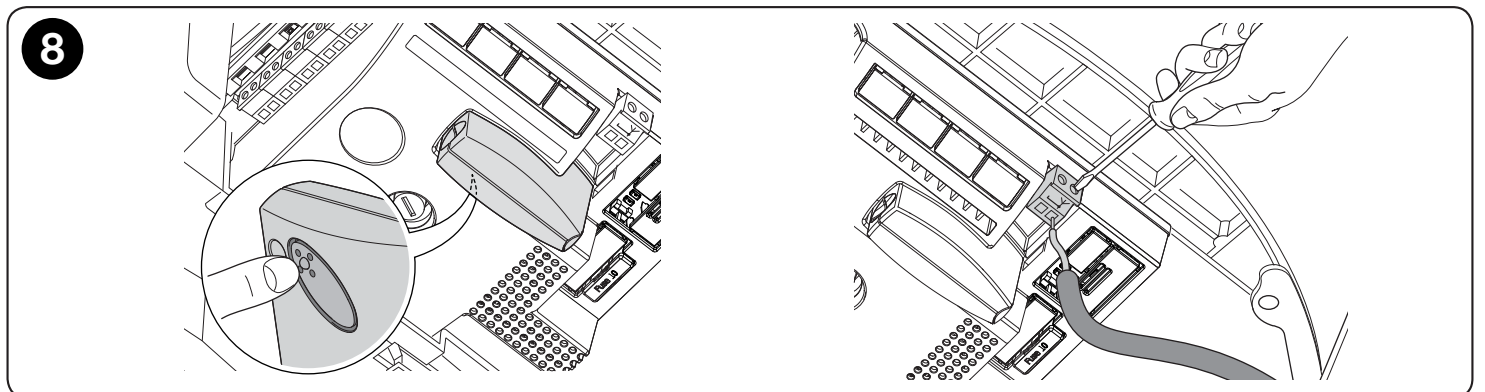
01.	Press and release the Open key to open the door: check that this happens smoothly and without any changes in speed. Important - The door must slow down when it is 30 and 20 cm from the mechanical opening stop, and stop against the mechanical stop itself. Then run a brief closing manoeuvre to release the tension of the belt or chain.
02.	Press and release the Close key to close the door: check that this happens smoothly and without any changes in speed. Important - The door must slow down when it is 30 and 20 cm from the mechanical closing stop, and stop against the closing stop itself. A brief opening manoeuvre is then performed to release the tension of the belt or chain.
03.	During the manoeuvre, check that the flashing light (if any) flashes at a speed of 0.5 seconds on and 0.5 seconds off.
04.	Open and close the door several times to make sure that there are no defects in the assembly, adjustments or other faults (such as points of excessive friction).
05.	Check that the fastening of the gearmotor, the guide and the mechanical stops are solid, stable and resistant, even if the door accelerates or decelerates sharply.

6.5 - Integrated radio receiver

The SM radio receiver connector for OXI or OXIS type radio receivers has been provided in order to enable the user to control SPIN from a distance. In SPIN20KCE, SPIN22KCE and SPIN23KCE, the receiver is included in the kit.

01.	Press lightly to connect the radio receiver
02.	If the incorporated antenna with ELDC or other type of external antenna is not used, screw the rigid cable supplied with the receiver onto the antenna terminal.

To connect the radio receiver on SPIN30, SPIN40, SN6031 and SN6041 models see fig. 8.



6.6 - Functions programming

A number of programmable functions are available on the SPIN control unit. The functions are adjusted using 4 keys set on the control unit and are used by means of 4 LEDs: L1...L4.

SPIN's default settings should satisfy most requirements, but can be modified at any time using the appropriate programming procedure; see par. 6.6.2.











6.6.1 - Level one functions (ON-OFF)

Table 8 - Programmable functions: Level one		
Led	Function	Description
L1	Automatic Closing	This function causes the door to close automatically after the programmed time has lapsed. The factory set Pause Time is 20 seconds, but can be changed to 10, 20, 40 and 80 seconds (see Table 10). If the function is inactive, functioning will be "semi-automatic".
L2	Close After Photo	Close After Photo After the photocells are disengaged (photo and photo II), this function activates "Automatic Closing" with a "Pause Time" of 5s, even if the pause time is set for a longer interval.
L3	Motor force	This function enables selection of the motor force control sensitivity to adapt it to the type of door installed. If this function is enabled, sensitivity is more suited to smaller and more lightweight doors. If the function is disabled, sensitivity is more suited to larger, heavier doors. When the function is activated, the courtesy light starts flashing to indicate that the force acquisition procedure must be run. Send the command to start the execution of 3 complete manoeuvres.
L4	Stand-By	This function enables the user to lower consumption to a very minimum. It is particularly useful in cases when the buffer battery is being used. If this function is active, the control unit will switch the BLUEBUS output (and consequently the devices) and all the LEDs off one minute after the end of the manoeuvre. The only LED which will remain on is the BLUEBUS LED which will simply flash more slowly. When a command arrives, the control unit will reset to complete functioning. If this function is inactive, there will be no reduction in the consumption.

During the normal functioning of the SPIN, LEDs L1...L4 will either be on or off depending on the state of the function they represent. For example, L1 will be on if the "Automatic Closing" function is active.

6.6.2 - Level one programming functions (ON-OFF)

Level 1 functions are all factory set to "OFF". However, they can be changed at any time as shown in Table 9. Follow the procedure carefully, as there is a maximum time of 10 seconds between pressing one key and another. If a longer period of time lapses, the procedure will finish automatically and memorize the modifications made up to that stage.

Table 9 - Procedure to change ON-OFF functions	
01. Press and hold the Set key for roughly 3 s	 3S
02. Release the Set key when L1 LED starts flashing	 L1 
03. Press and release the ▲ or ▼ keys to shift the flashing LED to the LED representing the function to be modified	  
04. Press and release Set to change the status of the function (short flash = OFF; long flash = ON)	  
05. Wait 10 seconds before leaving the programme to allow the maximum time to lapse	 10S

Note: Points 3 and 4 can be repeated during the same programming phases in order to set other functions to ON or OFF.

6.6.3 - Level two functions (adjustable parameters)













Table 10 - Programmable function list: level two				
Led	Parameter	Level	Value	Description
L1	Pause Time	L1	10 seconds	Adjust the pause time, namely the time which lapses before automatic closure. This will only have an effect if automatic closing is active
		L2	20 seconds	
		L3	40 seconds	
		L4	80 seconds	
L2	SbS Function	L1	Open – stop – close - stop	Manage the sequence of controls associated to the SbS input or to the 1st radio command
		L2	Open - stop - close- open	
		L3	Condominium operation	
		L4	Man present	
L3	Motor speed	L1	Very slow	Adjust the speed of the motor during normal travel. When you change the speed, the courtesy light starts flashing to indicate that the force acquisition procedure must be run again. If it does, send an open/close command to initiate the automatic procedure.
		L2	Slow	
		L3	Medium	
		L4	Fast	
L4	FLASH output	L1	Output Open door indicator	Select the device connected to the FLASH output
		L2	Flashing light	
		L3	Electric lock	
		L4	Suction cup	

Note: "■" factory setting.

⚠ Before you connect the device to the “FLASH” output, make sure you have programmed the correct function. If not, you may damage the device or its control unit.

6.6.4 - Level two programming (adjustable parameters)

The adjustable parameters are factory set as shown in the table 10 with “■” However, they can be changed at any time, as shown in Table 11. Follow the procedure carefully as there is a maximum time of 10 seconds between pressing one key and another. If more time lapses, the procedure will finish automatically and memorize the modifications made up to that stage.

Table 11 - Procedure to change the adjustable parameters	
01. Press and hold Set for roughly 3 s	 3S
02. Release the Set key when L1 LED starts flashing	 L1 
03. Press keys ▲ or ▼ to move the flashing LED to the “input LED” which represents the parameter which is to be modified.e	 
04. Press and hold the Set key; the Set key must be kept pressed during steps 5 and 6	
05. Wait approx. 3 seconds, after which the LED representing the current level of the parameter which is to be modified will light up.	 3S
06. Press keys ▲ or ▼ to move the LED which represents the parameter value.	  
07. Release the key Set	
08. Wait 10s to exit programming on elapse of the maximum time interval.	 10S
Note: Points 3 to 7 can be repeated during the same programming phases in order to adjust other parameters	

6.7 - Memorization of transmitters

Each radio transmitter is recognised by the radio receiver by means of a “code” which is different from that of any other transmitter It is thus necessary to carry out the “memorisation” procedure by means of which the user prepares the receiver to recognise each single transmitter. Transmitters can be memorised in 2 modes: Mode 1 and Mode 2 (paragraphs 6.7.1 and 6.7.3).






6.7.1 - Memorizzazione trasmettitore in Modo 1

In this mode the function of the transmitter keys is fixed and each key corresponds to the command in the control unit shown in Table 12; A single stage is carried out for each transmitter, during which all the transmitter keys are memorised. It does not matter which key is pressed during this stage and only one place in the memory is used. A transmitter can normally only control a single automation in Mode 1

Note: single-channel transmitters only have a T1 key, two channel transmitters only have T1 and T2 keys.

Table 12 - Commands available in Mode 1	
Key	Command
Key T1	SbS
Key T2	Partial opening
Key T3	Open
Key T4	Close

6.7.2 - Procedure for Mode 1 memorisation





Table 13 - Procedure to memorize the key of a transmitter in mode 1	
01. Press the key on the receiver and hold it down (approx. 3s)	 3S
02. Release the key when the LED on the receiver lights up	 
03. Within 10s, press any key on the radio transmitter to be memorized and hold it down for at least 3s	 3S
04. If the memorization procedure is successful, the LED on the receiver will flash 3 times.	 X3
If there are other transmitters to be memorized, repeat step 3 within the next 10 s, otherwise the memorization stage will terminate automatically.	

6.7.3 - Memorization of transmitter in Mode 2

In this mode, each transmitter key can be associated with one of the 15 possible control unit commands shown in Table 14; Only one key is memorised for each stage, namely the one which was pressed during memorisation. One place in the memory is occupied for each key memorised.

Table 14 - Commands available in Mode 2	
Command 1	“Step by Step”
Command 2	“Partial opening”
Command 3	“Open”
Command 4	“Close”
Command 5	“Stop”
Command 6	“Condominium Step by Step”
Command 7	“Step by Step High priority”
Command 8	“Open and unlock”
Command 9	“Close and unlock”
Command 10	“Open and Lock automation”
Command 11	“Close and Lock automation”
Command 12	“Lock automation”
Command 13	“Release automation”
Command 14	“Timer On Courtesy light”
Command 15	“Courtesy light On-Off”

6.7.4 - Procedure for Mode 2 memorisation







Table 15 - Procedure to memorize the key of a transmitter in mode 2	
01. Press the key on the receiver as many times as the number corresponding to the desired command, according to table 14	 1...4
02. Make sure that the LED on the receiver makes as many flashes as the number corresponding to the selected command	 1...4
03. Within 10 s, press any key on the radio transmitter to be memorized and hold it down for at least 2 s	 3S
04. The LED on the receiver will flash 3 times if the memorization procedure has been successful.	 X3
If there are other transmitters to be memorized for the same type of command, repeat step 3 within the next 10 s, otherwise the memorization stage will terminate automatically.	

6.8 - “Remote” memorization

the keys on the receiver. You need to have a pre-memorized operational radio transmitter The “new” radio transmitter will inherit the characteristics of the old one, i.e. if the old radio transmitter was memorized in Mode 1, the new one will also be memorized in Mode 1. In this case, during the memorization stage you can press any key on the two transmitters. If, on the other hand, the old transmitter was memorized in Mode 2, the new one will also be memorized in Mode 2: you must press the key on the old transmitter which corresponds to the desired command, and the key on the new transmitter to which you wish to associate that command.





⚠ Remote memorisation can occur in all those receivers which are within range of the capacity of the transmitter. Therefore, only the one which is actually involved in the operation must be powered.

Holding the two transmitters, position yourself within the operating range of the automation and perform the following operations:

Table 16 - for the “Remote” memorization of a transmitter	
01. Press the key on the new radio transmitter and hold it down for at least 5 s, then release it.	 8S 
02. Press key on the previously memorized transmitter slowly 3 times.	 3S  3S  3S
03. Press the key on the new radio transmitter once slowly.	 1S
At this point the new radio transmitter will be recognized by the receiver and will assume the characteristics of the previously memorized one. If there are other transmitters to be memorized, repeat all the steps above for each new transmitter.	

6.9 - Deleting the Radio Transmitters

Table 17 - to delete all the radio transmitters

01. Press the key on the receiver and hold it down	
02. Wait until the LED lights up, then wait until it goes off, then wait until it has flashed 3 times	 X3
03. Release the key precisely upon the third flash.	
04. If the procedure is successful, after a few moments the LED will flash 5 times	 X5

7 TESTING AND COMMISSIONING

These are the most important phases in the automation's arrangement to ensure maximum system safety.

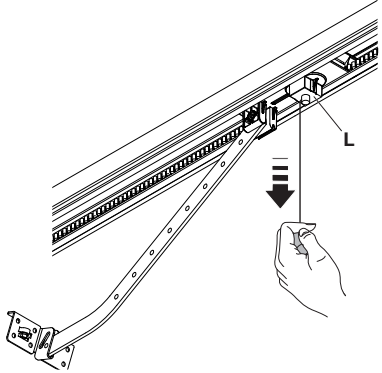
They must be done by a qualified, expert technician who will also run the tests required to check that the solution is appropriate for any risks and to check the observance of the law, standards and regulations: in particular, all requirements of EN 13241-1, EN 12445 and EN 12453.

Any supplementary equipment must be tested separately for operation and interaction with the SPIN: refer to the respective user manuals.

7.1 Testing


The testing procedure can also be performed as a periodic check of the automation devices. Each component of the system (sensitive edges, photocells, emergency stop, etc.) requires a specific testing phase; for these devices, observe the procedures given in the respective instruction manuals.

To test SPIN proceed as follows:

01.	Ensure that the instructions outlined in chapter 1 "Warnings" have been observed in full.
02.	<p>Release the garage door by pulling the release cord downwards and see if you can manually move the garage door in opening and closing with a force of no more than 225N</p> 
03.	Engage the carriage again.
04.	Using the switch, the radio transmitter or the control cord test the opening and closing of the door and make sure that it moves in the intended direction.
05.	The test should be carried out a number of times to make sure that the door moves smoothly, that there are no points of excessive friction and that there are no defects in the assembly or adjustments.
06.	Check the proper operation of all the safety devices, one by one (photocells, sensitive edges, etc.). In particular, each time a device is activated the "BLUBUS" LED on the control unit flashes 2 times quickly, confirming that the control unit recognizes the event.
07.	To check the photocells and make sure that there is no interference with other devices, pass a 5 cm diameter, 30 cm long cylinder on the optical axis, first near TX, then near RX and finally at the mid-point between them and make sure that in all these cases the device is triggered, switching from the active to the alarm status and vice-versa; finally, that it causes the intended action in the control unit, for example that it causes the reversal of the movement during the closing manoeuvre
08.	<p>If the dangerous situations caused by the movement of the door have been safeguarded by limiting the force of impact, the user must measure the impact force according to EN Standard 12445.</p> <p>If the adjustment of the "speed" and control of the "motor force" are used to assist the system for the reduction of the impact force, try to find the adjustment that gives the best results.</p>

7.2 - Commissioning

Commissioning can take place only after all testing phases have been terminated successfully (paragraph 7.1). It is not permissible to execute partial commissioning or to enable use of the system in makeshift conditions.

01.	Prepare and store (at least 10 years) the technical documentation for the automation, which must include: assembly drawing of the automation, wiring diagram, analysis of hazards and solutions adopted, manufacturer's declaration of conformity of all the devices installed (for SPIN use the annexed CE declaration of conformity); copy of the instruction manual and maintenance schedule of the automation.
02.	Post a permanent label or sign near the door detailing the operations for the release and manual manoeuvre (refer to the figures in "Instructions and warnings for users of the SPIN gearmotor").
03.	Post a permanent label or sign near the door containing this picture (min. height 60mm).
	
04.	Use the key switch or radio transmitter or the control unit keys, test the opening and closing of the garage door and make sure that it moves in the intended direction.
05.	Post a label on the door providing at least the following data: type of automation, name and address of manufacturer (person responsible for the "commissioning"), serial number, year of manufacture and "CE" marking.
06.	Prepare the declaration of conformity of the automation system and deliver it to the owner.
07.	Give the owner the user manual (tear-out insert).
08.	Prepare the maintenance schedule of the automation system and deliver it to the owner;
09.	The force adjustment is an important safety factor and must be done with the utmost care by qualified technicians. Important! - Adjustments set to force loads higher than those allowed may cause injury to persons and animals or damage to property. Adjust the force to the minimum available value to allow rapid and reliable detection of any obstacles.
10.	Before commissioning the automation system inform the owner in writing regarding dangers and hazards that are still existing.

8 ADDITIONAL INFORMATION

8.1 - Adding or Removing Devices

Devices can be added or removed at any time on an automation using SPIN. In particular, various device types can be connected to "BlueBus" and "STOP" input as explained below:

STOP Input

STOP is the input that causes the immediate interruption of the manoeuvre (with a short reverse run). Devices with output featuring normally open "NO" contacts and devices with normally closed "NC" contacts, as well as devices with 8.2K Ω constant resistance output, like sensitive edges, can be connected to this input.

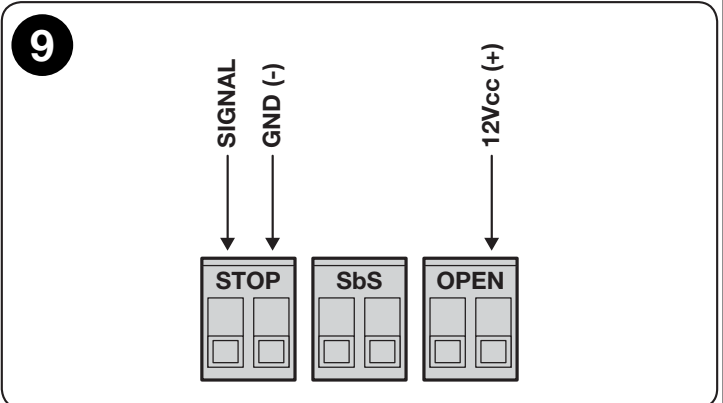
During the device acquisition phase, the control unit recognises the type of device connected to the Stop input and later, during normal use of the automation, the control unit commands a Stop when it senses a change with respect to the acquired situation.

During the recognition stage the control unit, like BlueBUS, recognizes the type of device connected to the STOP input (see paragraph 6.2); subsequently it commands a STOP whenever a change occurs in the recognized status.

Multiple devices, even of different type, 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.
- If there are more than 2 devices, all must be connected "in cascade" with a single 8.2 k Ω termination resistance.
- It is possible to combine Normally Open and Normally Closed by making 2 contacts in parallel with the warning to place an 8.2K Ω resistance in series with the Normally Closed contact (this also makes it possible to combine 3 devices: Normally Open, Normally Closed and 8.2K Ω). To connect an optical device, refer to fig. 9. The maximum current supplied on the 12 V \equiv line is 40 mA.

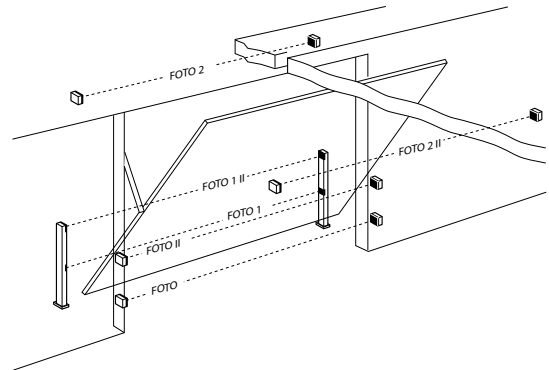
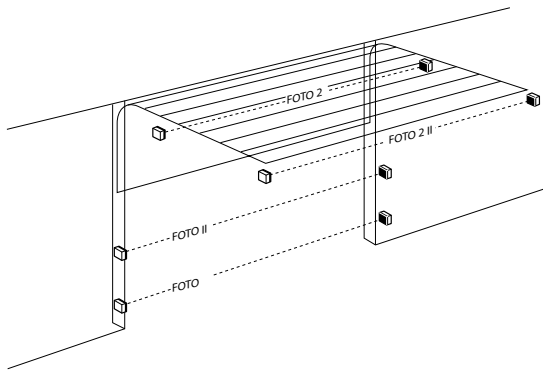
⚠ WARNING! - If you want to ensure category 3 safety with faults according to EN 13849-1, you must only use "Opto Sensor" devices with 8.2 K Ω constant resistance output.



Photocells

By means of addressing using special jumpers, the “BlueBUS” system enables the user to make the control unit recognise the photocells and assign them with a correct detection function. The addressing operation must be done both on TX and RX (setting the jumpers in the same way) making sure there are no other couples of photocells with the same address. In an automation mechanism for sectional or non-protruding overhead doors, it is possible to install photocells as shown in Table 18. In an automation for protruding overhead doors, refer to the following figure.

Photo 2 and Photo 2II are used in special installations requiring complete protection of the automation, also during opening. After the installation or removal of photocells, the recognition phase in the control unit as described in Paragraph 7.1 must be carried out.



BlueBUS

BlueBUS technology allows you to connect compatible devices using only two wires which carry both the power supply and the communication signals. All the devices are connected in parallel on the 2 wires of the BlueBUS itself. It is not necessary to observe any polarity; each device is individually recognized because a univocal address is assigned to it during the installation. Photocells, safety devices, control keys, signalling lights etc. can be connected to BlueBUS. The SPIN control unit recognizes all the connected devices individually through a suitable recognition process, and can detect all the possible abnormalities with absolute precision. For this reason, each time a device connected to BlueBUS is added or removed the control unit must go through the recognition process; see paragraph 8.2.

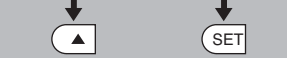



Table 18 - Photocell addressing

Photocell	Jumpers	Photocell	Jumpers
PHOTO External photocell h = 50 activated when door closes invert in opening		PHOTO 2 External photocell activated when door opens invert in closing	
PHOTO II External photocell h = 100 activated when door closes invert in opening		PHOTO 2 II Internal photocell activated when door opens invert in closing	
PHOTO 1 Internal photocell h = 50 activated when door closes and opens temporary stop and invert in “open”		PHOTO 3 Single photocell with activation during opening and closing (tem- porary stop and reverses in “open”)	
PHOTO 1 II Internal photocell h = 100 activated when door closes and opens temporary stop and invert in “open”		FA1 Photocell for opening command (cut jumper A on the back of the TX and RX cards)	
FA2 Photocell for opening command (cut jumper A on the back of the TX and RX cards)			

8.2 - Recognition of other devices

Normally the recognition of the devices connected to the BlueBUS and the STOP input takes place during the installation stage. However, if new devices are added or old ones removed, the recognition process can be gone through again by proceeding as follows:

Table 19 - Recognition of Other Devices

01. Press keys ▲ and Set and hold them down [Set] x 3s	
02. Release the keys when L1 and L2 LED's start flashing very quickly (after approx. 3 s)	
03. Wait a few seconds for the control unit to finish recognizing the devices	
04. When the recognition stage is completed L1 and L2 LED's will go off, the STOP LED must remain on, while L1...L4 LED's will light up according to the status of the relative ON-OFF functions.	
<p>⚠ After you have added or removed any devices, the automation system must be tested again according to the directions contained in paragraph 7.1.</p>	

8.3 - Connection to other devices

Power for external devices

To power an external device (transponder badge reader, or backlighting for a keyswitch) connect the device to the control unit as shown in figure 2. The power voltage is 30 V \pm 20%, -50%, with maximum available current 100 mA (figure 10) .

Connecting a programmer

You can connect the Oview programming unit to the control unit, via the IBT4N interface with a 4 wire bus cable. This unit enables quick and full programming of the functions, parameter adjustment, updating of the control unit firmware, diagnostics to detect any malfunctions and periodic maintenance.

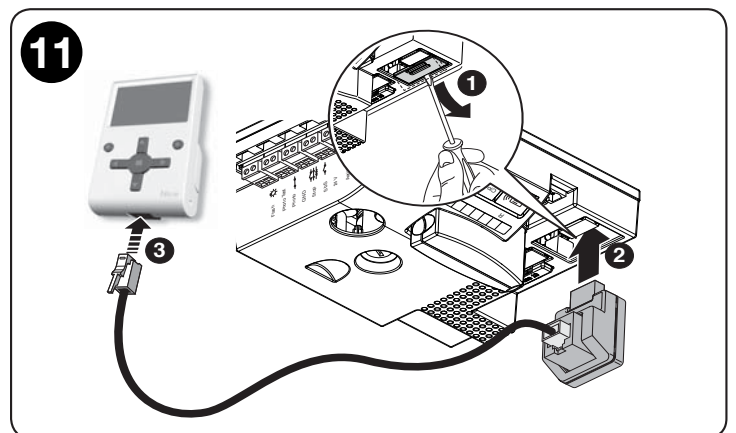
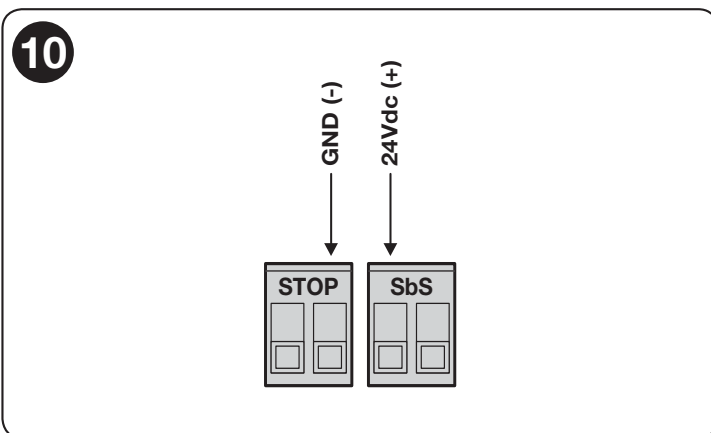
The Oview can be used at up to 100 m away from the control unit.

If several control units are networked with each other in a BusT4 network, by connecting the Oview to one of them, you can view on the display all the networked control units (up to a maximum of 16 units).

The Oview unit can also be left connected to the control unit during normal operation of the automation, so that the user can send commands using a specific menu.

Furthermore, if the control unit has an OXI type radio receiver, the Oview allows you to access the parameters memorised on this receiver.

⚠ WARNING! - Before connecting the IBT4N interface, it is necessary to disconnect the control unit from the power supply.



8.4 - Special Functions

“Always Open” Function

The “Always open” function is a control unit feature which enables the user to control an opening manoeuvre when the “Step-by-Step” command lasts longer than 3 seconds. This is useful for connecting a timer contact to the SbS terminal in order to keep the door open for a certain length of time, for example. This feature is valid with any kind of SbS input programming. Please refer to the “Step-by-Step Function” parameter in Table 10.


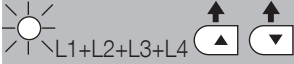

“Move anyway” function

In the event that one of the safety devices is not functioning properly or is out of use, it is still possible to command and move the door in “Man present” mode. Please refer to the Paragraph “Control with safety devices out of order” in the enclosure “User Manual” for further information.

8.5 - Full deletion of the memory

When full deletion of the memory is required, to restore the default settings, perform the following procedure with the motor stationary:

Table 20 - Full deletion of the memory

01. Hold down the ▲ and keys together ▼	
02. When all the LEDs light up simultaneously, release the keys (roughly 5 seconds).	
03. LEDs L1 and L2 flash at the end of the procedure.	
⚠ After full deletion, the device and position acquisition procedure can be run again.	

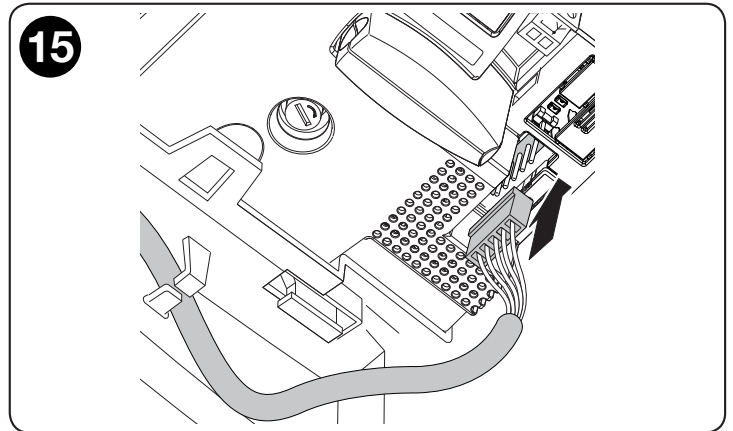
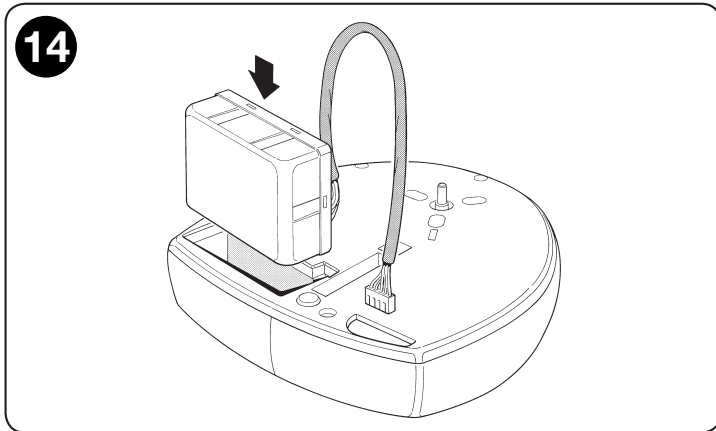
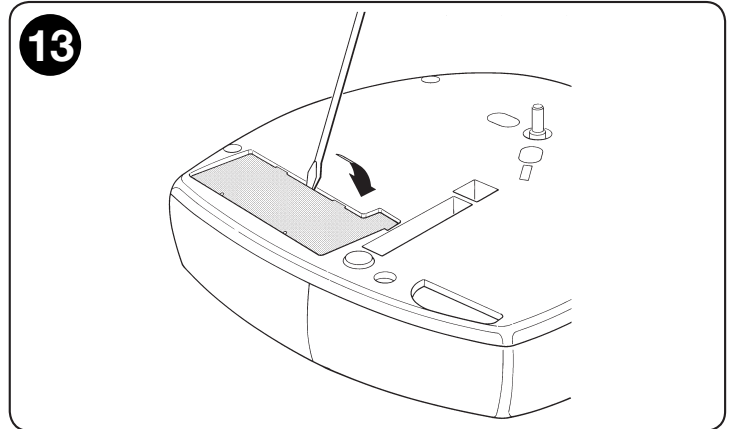
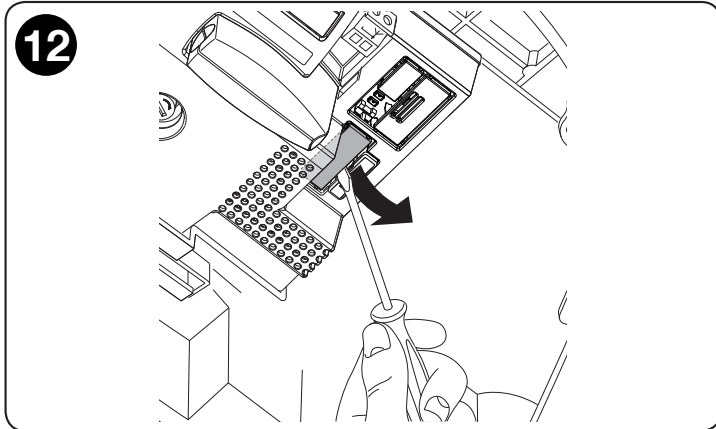
8.6 - Accessories

The following optional accessories are available for SPIN.

For information on the complete range of accessories, refer to the Nice s.p.a. product catalogue.

Buffer battery PS124

- PS124 24 V Buffer battery – 1.2Ah with integrated charger battery



A few devices issue special signals that allow you to recognize the operating status or possible malfunctions.

9.1 - Flashing light and courtesy light signalling

If the FLASH output is programmed and a flashing light is connected, it should flash every second during the manoeuvre; When something is wrong the flashes are more frequent; the light flashes twice with a second's pause between flashes. The same diagnostics signals are output by the courtesy light and the RED BlueBUS LED.

Table 21 - FLASH flashing light signalling

Quick flashes	Cause	ACTION
1 flash 1 second's pause 1 flash	BlueBUS error	At the starting of the manoeuvre, the devices connected to BLUEBUS do not correspond to those recognized during the recognition phase. One or more devices may be faulty; check and, if necessary, replace them; in case of modifications repeat the recognition process (8.2 Recognition of other devices).
2 flashes 1 second's pause 2 flashes	Triggering of a photocell	At the starting of the manoeuvre, one or more photocells do not enable it; check to see if there are any obstacles. This is normal when there is an obstacle impeding the movement.
3 flashes 1 second's pause 3 flashes	Activation of the "motor force" limiting device	During the movement, the door experienced excessive friction; identify the cause. If necessary, increase the value of the 'Motor Force' or reduce the 'Obstacle detection sensitivity' value.
4 flashes 1 second's pause 4 flashes	Activation of the STOP input	During the movement the STOP input was activated; identify the cause.
5 flashes 1 second's pause 5 flashes	Error in the internal parameters of the electronic control unit.	Wait at least 30 seconds, then try giving a command. If nothing happens there may be a serious fault and the electronic card will have to be replaced.
6 flashes 1 second's pause 6 flashes	The maximum manoeuvre limit/hour has been exceeded.	Wait for a few minutes until the manoeuvre limiting device drops to under the maximum limit.
7 flashes 1 second's pause 7 flashes	There is an error in the internal electric circuits.	Disconnect all the power circuits for a few seconds and then try to give the command again. If nothing happens there may be a serious fault on the electronic card or the motor cabling. Check and replace as necessary.
8 flashes 1 second's pause 8 flashes	A command that does not allow other commands to be 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 "step by step" input.
9 flashes 1 second's pause 9 flashes	Lock automation	Send the "Release Automation" command or command the manoeuvre with "Step-by-Step High Priority".
10 flashes 1 second's pause 10 flashes	During the position learning phase, there is no absorption by the motor.	Check that the control unit is installed properly in its compartment.

9.2 - Signals on the control unit

On the SPIN control unit there is a set of LED's each of which can give special indications both during normal operation and in case of malfunctions.

Table 22 - LED's on the control unit's terminals

Green/red BLUEBUS Led	Cause	ACTION
Off	Malfunction	Make sure there is power supply; check to see if the fuses are blown; if necessary, identify the reason for the failure and then replace the fuses with others having the same characteristics.
On	Serious malfunction	There is a serious malfunction; try switching off the control unit for a few seconds; if the condition persists it means there is a malfunction and the electronic board has to be replaced.
One flash every second	Everything OK	Normal operation of control unit.
2 Quick flashes	The status of the inputs has changed	This is normal when there is a change in one of the inputs: SbS, STOP, triggering of photocells or the radio transmitter is used
Red Led = Series of flashes separated by a second's pause	Miscellaneous	It corresponds to the flashing light's or the courtesy light signal. See table 21
Red LED = long fast flashing	Short circuit on the BlueBUS terminal clamp	Disconnect the clamp and check the reason for the short circuit on the BlueBUS connection. If the short circuit is resolved the LED will start flashing normally after ten seconds or so.

STOP Led (red)	Cause	ACTION
Off	Activation of the STOP input	Check the devices connected to the STOP input
On	Everything OK	STOP Input active
SbS Led	Cause	ACTION
Off	Activation of the SbS input	SbS input not active
On	Everything OK	This is normal if the device connected to the SbS input is actually active
OPEN Led	Cause	ACTION
Off	Everything OK	OPEN input not active
On	Activation of the OPEN input	This is normal if the device connected to the OPEN input is actually active

Table 23 -LED's on the control unit's keys

L1 Led	Description
Off	During normal operation the device indicates "Automatic Closure" is inactive.
On	During normal operation the device indicates "Automatic Closure" is active.
Flashing	<ul style="list-style-type: none"> • Function programming in progress • If it flashes together with L2, it means that it the user must carry out the device recognition phase (refer to Paragraph "6.2 Recognition of the devices").
L2 Led	Description
Off	During normal operation the device indicates "Close after photo" is inactive.
On	During normal operation the device indicates "Close after photo" is ictive.
Flashing	<ul style="list-style-type: none"> • Function programming in progress • If it flashes together with L2, it means that it the user must carry out the device recognition phase (refer to Paragraph "6.2 Recognition of the devices").
L3 Led	Description
Off	During normal operation the device indicates "Motor Force" for "heavy" doors.
On	During normal operation the device indicates "Motor force" for light "doors"
Lampeggia Flashing	<ul style="list-style-type: none"> • Function programming in progress • If it flashes together with L4 it means that the user must carry out the door opening and closing positions recognition phase (refer to Paragraph "6.3 Acquisition of the door opening and closing positions")
L4 Led	Description
Off	Durante il funzionamento normale indica "Stand-By" non attivo.
On	Durante il funzionamento normale indica "Stand-By" attivo.
Flashing	<ul style="list-style-type: none"> • Function programming in progress • If it flashes together with L3 it means that it the user must carry out the leaf length recognition phase (refer to Paragraph "6.3 Acquisition of the door opening and closing positions")

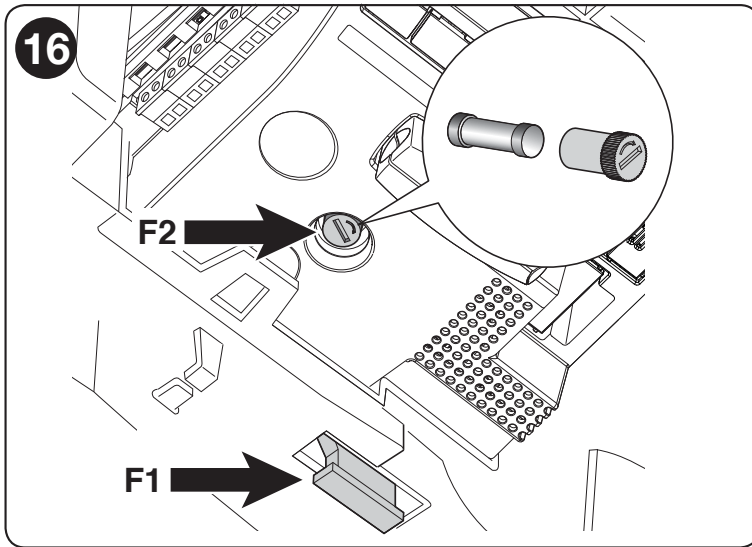
10 TROUBLESHOOTING

The following table contains instructions to help you solve malfunctions or errors that may occur during the installation stage or in case of failure.

Table 24 - Troubleshooting	
Problem	Solution
The radio transmitter does not control the door and the LED on the transmitter does not light up	Check to see if the transmitter batteries are exhausted, if necessary replace them.
The radio transmitter does not control the door but the LED on the transmitter lights up.	Check the transmitter has been memorised correctly in the radio receiver.
The user is unable to command manoeuvres and the "BLUEBUS" LED fails to flash.	Check that SPIN is being fed 230V voltage from the power supply. Check to see if F1 and F2fuses have blown. If necessary, identify the reason for the failure and then replace the fuses with others having the same current rating and characteristics
No manoeuvre starts and the flashing light is off	Make sure that the command is actually received. If the command reaches the SbS input, the corresponding Sbs LED must light up; if you are using the radio transmitter, the "BlueBus" LED must make two quick flashes.
No manoeuvre starts and the flashing light flashes a few times	Count the flashes and check the corresponding value in Table 25.
The manoeuvre starts but it is immediately followed by a short reverse run	The selected force could be too low to move the door. Check to see whether there are any obstacles; if necessary increase the force

The manoeuvre is carried out but the device connected to the FLASH output does not work

Ensure that the device connected to the "FLASH" output is as programmed. When the device is powered, ensure that there is voltage present on the device terminal; if there is voltage, the problem is due to the device; in this case replace the device with one having the same characteristics; if there is no voltage, there is an overload on the output. Check that the cable has not short-circuited.



11 SCRAPPING

This product is an integral part of the automation and must be scrapped with it.

As when installing the product, when the product reaches the end of its service life, it must be scrapped by a qualified technician.

This product comprises various types of materials: some may be recycled others must be disposed of. Seek information on the recycling and disposal systems available in your area for this product category.

⚠ WARNING! Some parts of the product may contain pollutants or hazardous substances which, if released into the environment, may cause serious damage to the environment or human health.



As indicated by the symbol, the product may not be disposed of as domestic waste. Sort the materials for disposal, according to the methods envisaged by current legislation in your area, or return the product to the retailer when purchasing a new version.

⚠ WARNING! - Local legislation may include the application of serious fines in the event of improper disposal of this product.

12 MAINTENANCE

This charter provides information about how to draw up a maintenance schedule of SPIN.

The automation must be subjected to maintenance work on a regular basis, in order to guarantee it lasts.

⚠ The maintenance operations must be performed in strict compliance with the safety directions provided in this manual and according to the applicable legislation and standards.

If other devices are present, follow the directions provided in the corresponding maintenance schedule.

01.	SPIN requires scheduled maintenance work every 6 months or 3,000 manoeuvres (max.) after previous maintenance.
02.	Disconnect the power supply and buffer batteries, if featured.
03.	Check for any deterioration of the components which form the automation, paying particular attention to erosion or oxidation of the structural parts. Replace any parts which are below the required standard.
04.	Check the wear and tear on the moving parts: belt, carriage, pinions and the door components; if necessary replace them.
05.	Connect the electric power sources up again, and carry out the testing and checks provided for in Paragraph "7.1".

13 TECHNICAL CHARACTERISTICS

Nice S.p.a., in order to improve its products, reserves the right to modify their technical characteristics at any time without prior notice. In any case, the manufacturer guarantees their functionality and fitness for the intended purposes.

All the technical characteristics refer to a room temperature of 20°C (±5°C)

Technical characteristics: SPIN			
Model	SN6021	SN6031	SN6041
Type	Electromechanical gearmotor for the automatic movement of garage doors for residential use, complete with electronic control unit		
Pinion	Diameter 9.5mm, 28 teeth; for guides SNA30, SNA30C, SNA6 and guides supplied with SPIN20KCE, SPIN30 and SPIN40		
Peak thrust [corresponds to the force necessary to start a leaf]	11.7Nm [650N]	14.4Nm [800N]	18Nm [1000N]
Nominal torque [corresponds to the force necessary to keep a leaf moving]	5.85Nm [345N]	7.2Nm [425N]	9Nm [560N]
Speed under no load [corresponding to if "High speed" is programmed]	106 rpm [0,20m/s] The control unit enables programming of 4 speeds equal to approx. 100% - 85% - 70% - 55%		
Nominal torque speed [corresponds to if "High speed" is programmed]	53 rpm [0,08m/s]		
Maximum frequency of operating cycles	50 cycles per day (the control unit allows up to the maximum described in tables 4 and 5)		
Maximum continuous operating time	4 minutes (the control unit limits the continuous operation up to the maximum described in tables 4 and 5)		
Operating limits	Normally SPIN can automate sectional or overhead doors which remain within the dimensions stated in table 3 and limits specified in tables 4 and 5.		
SPIN Power supply SPIN/V1 Power supply	230V ~ (±10%) 50/60Hz. 120V ~ (±10%) 50/60Hz.		
Max. absorbed power	270W	300W	370W
Reduced consumption in Stand-By	4.2W	less than 0.8W	less than 1.2W
Insulation class	1 (a safety grounding system is required)		
Emergency Power Supply	With PS124 accessory	With PS124 accessory	With PS124 accessory
Internal light	internal white LED	internal white LED	internal white LED
FLASH Output	If programmed as "SPA "Open door indicator"": output for a maximum 24V-5W lamp; if programmed as "Flashing light": output for ELDC or ELB Flashing light (12V, 21W) if programmed as "Electric lock": output for maximum 24V- 10W electro-mechanical lock; if programmed as "Suction cup" output for maximum 24V- 10W electro-mechanical suction cup		
Maximum BLUEBUS output load	6	6	6
STOP Input	For normally open contacts, for 8.2kΩ constant resistance, or normally closed contacts; with self-recognition (any variation from the memorized status causes the "STOP" command)		
SbS Input	For normally open contacts (the closing of the contact causes the SbS command)		
Radio AERIAL Input	52Ω for RG58 or similar type of cable		
Radio receiver	"SM" connector for SMXI, SMXIS, OXI or OXIT		
Programmable functions	4 ON-OFF functions and 4 adjustable functions (see tables 8 and 10)		
Recognition functions	Recognition of the devices connected up to the BlueBUS output. Recognition of the type of "STOP" device (Normally Open or Normally Closed contact or 8.2kΩ resistance). Recognition of the door opening and closing positions and calculation of the slowdown and partial opening points.		
Operating temperature	-20°C ÷ 55°C		
Use in acid, saline or potentially explosive atmosphere	No		
Protection class	IP 40 (use only in indoor or protected environments)		
Dimensions / weight	311x327 h 105 / 3,6kg		311x327 h 105 / 4,7kg

Guide technical characteristics							
Model	Guide in SPIN23KCER10	Guide in SPIN20KCER10, SPIN30R10, SPIN40R10	SNA30	SNA30 +SNA31	SNA6	SNA30C	SNA30C +SNA31C
Type	single profile in galvanised steel	3-piece profile in galvanised steel	single profile in galvanised steel	2-piece profile in galvanised steel	2-piece profile in galvanised steel	single profile in galvanised steel	2-piece profile in galvanised steel
Guide length	--	3.15m	3.15m	4.15m	4.15m	3.05m	4.05m
Guide height	--	35mm	35mm	35mm	35mm	35mm	35mm
Useful stroke	--	2.5m	2.5m	3.5m	3.5m	2.5m	3.5m
Length of chain	--	--	--	--	--	5778.5mm	7747mm
Belt width	--	6m	6m	8m	8m	--	--
Belt Height	--	10mm	10mm	10mm	10mm	--	--
Resistance to traction	--	1220N	1220N	1220N	1220N	--	--

Technical characteristics radio receiver		
Model	OXI	OXIS
Type	4 channel receiver for radio control devices	
Frequency	433.92MHz	
Coding	Digital Rolling with 52 Bit code, FLOR type	Digital Rolling code with 64 Bit code, SMILO type
Transmitter compatibility	HCS Nice, Flor, Opera	SMILO
Transmitters memorized	Up to 256 if memorized in mode 1	
Input impedance	52Ω	
Sensitivity	better than 0.5μV	
Range of the transmitters	From 100 to 150 m. The range can vary if there are obstacles or electromagnetic disturbances, and is affected by the position of the receiving aerial	
Outputs	4 (on SM connector)	
Operating temperature	-20°C ÷ 55°C	

EU Declaration of Conformity (N. 184/SPIN) and declaration of incorporation of “partly completed machinery”

Declaration pursuant to the following Directives: 2014/30/EC (EMC); 2006/42/EC (MD) Annex II, part B

Note: the contents of this declaration correspond to that stated in the official document filed in the offices of Nice S.p.A. and, in particular, to the latest version thereof available prior to the printing of this manual. The text herein has been re-edited for editorial purposes. A copy of the original declaration can be requested from Nice S.p.A. (TV) Italy.

Rev: 12

Language: **English**

Manufacturer's Name	NICE S.p.A.
Address:	Via Pezza Alta n°13, 31046 Rustignè di Oderzo (TV) Italy
Authorized Person to constitute the technical documentation:	NICE S.p.A.
Address:	Via Pezza Alta n°13, 31046 Rustignè di Oderzo (TV) Italy
Type of product:	Electromechanical gearmotor with central incorporated
Model / Type:	SN6021, SN6031, SN6041, SN6021/A, SN6031/A, SN6041/A, SN6041/B
Accessories:	Radio receiver SMXI, SMXIS, OXI, OXIT, emergency battery PS124, flash light ELB, photocellules EPMA

The undersigned, Roberto Griffa, in the role of Chief Executive Officer, declares under his sole responsibility, that the product specified above conforms to the provisions of the following directives:

- Directive 2014/53/EU (RED)
 - Health protection standards (art. 3(1)(a)): EN 62479:2010
 - Electrical safety (art. 3(1)(a)): EN 60950-1:2006+A11:2009+A12:2011+A1:2010+A2:2013
 - electromagnetic compatibility (art. 3(1)(b)): EN 301 489-1 V2.2.0:2017, EN 301 489-3 V2.1.1:2017
 - Radio spectrum (art. 3(2)): EN 300 220-2 V3.1.1:2017

The product also complies with the following directives according to the requirements envisaged for “partly completed machinery” (Annex II, part 1, section B):

Directive 2006/42/EC OF THE EUROPEAN PARLIAMENT AND COUNCIL of 17 May 2006 related to machinery, and which amends the directive 95/16/EC (recast).

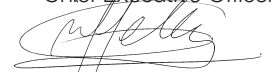
- It is hereby declared that the pertinent technical documentation has been compiled in compliance with appendix VII B of directive 2006/42/EC and that the following essential requirements have been observed:
1.1.1- 1.1.2- 1.1.3- 1.2.1-1.2.6- 1.5.1-1.5.2- 1.5.5- 1.5.6- 1.5.7- 1.5.8- 1.5.10- 1.5.11
- The manufacturer undertakes to transmit to the national authorities, in response to a motivated request, all information regarding the “partly completed machinery”, while maintaining full rights to the related intellectual property
- Should the “partly completed machinery” be put into service in a European country with an official language other than that used in this declaration, the importer is obliged to arrange for the relative translation to accompany this declaration
- The “partly completed machinery” must not be used until the final machine in which it is incorporated is in turn declared as compliant, if applicable, with the provisions of directive 2006/42/EC.

The product also complies with the following standards:

EN 60335-1:2012+A11:2014, EN 62233:2008, EN 60335-2-103:2015
EN 61000-6-2:2005, EN 61000-6-3:2007+A1:2011

Place and Date: Oderzo, 04/10/2017

Ing. **Roberto Griffa**
Chief Executive Officer



⚠ This user guide should be stored and handed to all users of the automation.

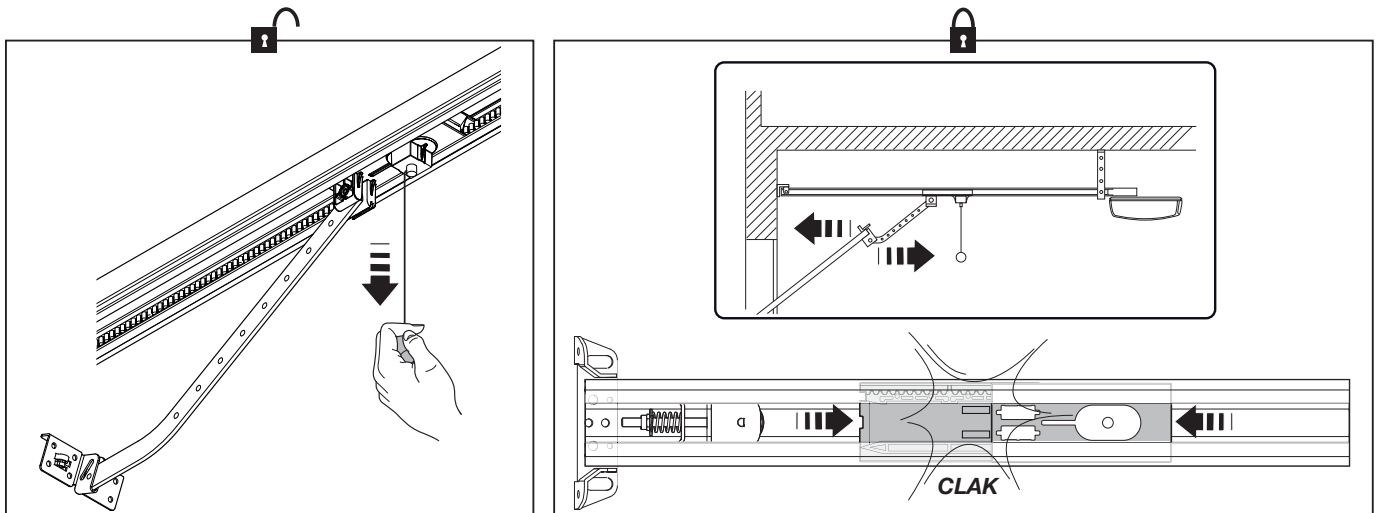
WARNINGS

- When you first use the automation, the installation technician must inform you about the origin of the residual risks and you must take time to read the user manual, with special attention to the general warnings (instruction manual).
- Make sure to keep the manual (delivered by the installation technician) for future reference and for handover to any further owner of the automation.
- Your automation system is a machine that will faithfully execute your commands; unreasonable or improper use may make it dangerous: do not operate the system if there are people, animals or objects within its range of operation.
- Children: automation systems are designed to guarantee high levels of safety and security. They are equipped with detection devices that prevent movement if people or objects are in the way, guaranteeing safe and reliable activation. However, it is advisable to avoid letting children play in the vicinity of the automation and remote controls should always be kept out of their reach – it is not a toy!
- Check the installation, with special attention to the cables, springs and supports, to detect possible imbalances, and signs of wear or damage.
 - Check on a monthly basis that the gearmotor performs a reverse manoeuvre when the garage door touches an object with a height of 50 mm.
 - Do not use the automation if repairs or adjustments are required; any fault or an incorrectly balanced garage door may lead to physical injury.
- Malfunctions: if the automation is malfunctioning, shut off its power supply. Never attempt any repairs; contact your local installer for assistance.
 - The system can be operated manually: release the gearmotor, as described in “Manual release and lock”.
 - Do not modify the system or its programming and adjustment parameters in any way; your installer is exclusively responsible for these operations.
 - The final test, periodic maintenance and any repairs must be documented by the person who performed them, and the relative documents must be stored by the owner of the system.
- Disposal: At the end of the automation’s life, ensure that it is disposed by qualified personnel and that the materials are recycled or scrapped according to current local regulations for this product category.
- Control with safety equipment deactivated: the system can be controlled even if the safety equipment is not operational.
 - If the flasher flashes several times when a command is given (the number of flashes depends on the cause of the malfunction) but the door does not respond, proceed as follows:
 - within 3 seconds, hold down a control; after 2 seconds the movement will start in ‘hold-to-run’ mode and will continue until you release the control.

⚠ Important: have the system repaired as soon as possible if the safety devices are malfunctioning.
‘Transit is allowed only if the door is open and stationary’.

Unlocking  and locking  the gearmotor (manual operation)



1. Pull the release cord down until you hear the release of the carriage.
2. The door can now be moved manually
3. To restore automation operation return the door to the initial position until you hear the carriage engage.



Maintenance

To ensure that no one can activate the garage door, before you begin, remember to lock the automation (as described in “Manual gearmotor release and lock”) and disconnect all power sources.

In order to ensure constant levels of safety and the maximum useful life of the automation, it must undergo programmed maintenance work every 6 months.

01.		+ any backup batteries present
02.	Check for any deterioration in automation system components, paying special ATTENTION to erosion or oxidation of the structural parts. Replace any parts which are below the required standard.	
03.	Check the wear and tear of the moving parts.	
04.	Clean the guide with a dry cloth to remove any dirt.	
05.		Run all the tests and checks indicated in par. 7.1.



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