

Swing gate opener

EN - Instructions and warnings for installation and use

IT - Istruzioni ed avvertenze per l'installazione e l'uso

FR - Instructions et avertissements pour l'installation et l'utilisation

DE - Installierungs-und Gebrauchsanleitungen und Hinweise

ES - Instrucciones y advertencias para la instalación y el uso

PL - Instrukcje i ostrzeżenia do instalacji i użytkowania

NL - Aanwijzingen en aanbevelingen voor installatie en gebruik

Spin

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1) Warnings

This manual contains important information regarding safety; before you start installing the components, it is important that you read all the information contained herein. Store this manual safely for future use.

In this manual when all data, warnings and other information related to all products are stated, the range name "SPIN" will be used. The description of individual products can be found in chapter "2 Product description".

Considering the hazards that may exist during the installation and operation of SPIN, installation must be carried out in strict compliance with current legislation, standards and regulations. This chapter provides details of general warnings. Other, more specific warnings are detailed in Chapters "3.1 Preliminary Checks" and "5 Testing and commissioning".

▲ According to the most recent European legislation, the production of automatic doors or gates is governed by the provisions listed in Directive 98/37/CE (Machine Directive) and, more specifically, to provisions: EN 12445; EN 12453 and EN 12635, which enable manufacturers to declare the presumed conformity of the product.

Please access "www.niceforyou.com" for further information, and guidelines for risk analysis and how to draw up the Technical Documentation.

- This manual has been especially written for use by qualified fitters. Except for the enclosed specification "Instructions and Warnings for Users of the SPIN gearmotor" which is to be removed by the installer, none of the information provided in this manual can be considered as being of interest to end users!
- Any use or operation of SPIN which is not explicitly provided for in these instructions is not permitted. Improper use may cause damage and personal injury.

- Risk analysis must be carried out before starting installation, to include the list of essential safety requisites provided for in Enclosure I of the Machine Directive, indicating the relative solutions employed. N.B. Risk analysis is one of the documents included in the "Technical Documentation" for this automation.
- Check whether additional devices are needed to complete the automation with SPIN based on the specific application requirements and dangers present. The following risks must be considered: impact, crushing, shearing, dragging, etc. as well as other general dangers.
- Do not make modifications to any components unless such action is specified in this manual. Operations of this type are likely to lead to malfunctions. NICE disclaims any liability for damage resulting from modified products.
- During installation and use, ensure that solid objects or liquids do not penetrate inside the control unit or other open devices. If necessary, please contact the NICE customer service department; the use of SPIN in these conditions can be dangerous.
- The automation system must not be used until it has been commissioned as described in chapter 5: "Testing and commissioning".
- The packing materials of SPIN must be disposed of in compliance with local regulations.
- If a fault occurs that cannot be solved using the information provided in this manual, refer to the NICE customer service department.
- In the event that any automatic switches are tripped or fuses blown, you must identify the fault and eliminate it before resetting the switches or replacing fuses.
- Disconnect all the power supply circuits before accessing the terminals inside the SPIN cover. If the disconnection device is not identifiable, post the following sign on it: "WARNING: MAINTENANCE WORK IN PROGRESS".

2) Product description

SPIN is a range of gearmotors designed for the automation of sectional doors and, in combination with accessory SPA5 (supplied separately), protruding or non-protruding spring or counterweight overhead doors.

The electrical connections to external devices have been simplified through the use of "BlueBUS", a technique by which several devices can be connected up using just 2 wires.

SPIN operates with electric power. In the event of a power failure, the gearmotor can be released in order to move the door manually. Alternatively, for some versions, there is the PS124 buffer battery accessory which makes it possible to use the door also during the event of a power failure.

The products described in tables 1 and 2 belong to the SPIN range.

Table No. 1: Description of the SPIN components

Model:	Gearmotor	Guide	Radio receiver	Radio Transmitter
SPIN20KCE	SN6021	3x1m	SMXI	FLO2R-S
SPIN21KCE	SN6021	3m	SMXI	FLO2R-S
SPIN30	SN6031	3x1m	---	---
SPIN40	SN6041	3x1m	---	---
SN6031	SN6031	---	---	---
SN6041	SN6041	---	---	---

SN6031 must be completed with the guides SNA5 (3m) or SNA6 (3m + 1m).

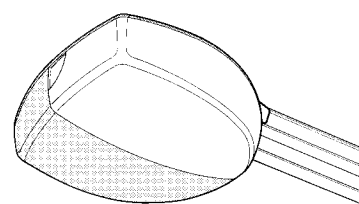
SN6041 must be completed with the guide SNA6 (3m + 1m).

SPIN30; SPIN40; SN6031 and SN6041 can be completed with radio receivers SMXI or SMXIS and relative radio transmitters

Table No. 2: comparison of main features of SPIN gearmotors

Gearmotor type	SN6021	SN6031	SN6041
Maximum torque (corresponding to the maximum force)	11.7 Nm (650N)	11.7 Nm (650N)	18 Nm (1000N)
Reduced consumptoin in Stand-By	No	Yes	Yes
Max. no. BlueBus units	2	6	6
Emergency power supply	No	with PS124	with PS124
Courtesy light (lamp fitting)	12V - 21W (BA15)	230V* - 60W (E27)	230V* - 60W (E27)

* 120V for the SPIN/V1 versions



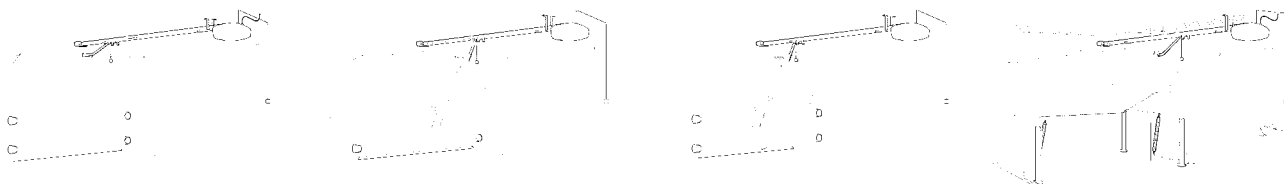
2.1) Operating limits

Chapter 8 "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 3, 4 and 5.

Table No. 3: SPIN gearmotor operating limits

Model:	SECTIONAL door		OVERHEAD door, non-protruding (with accessory SPA5)		OVERHEAD door, protruding (with accessory SPA5) or with springs (without SPA5)	
	Height	Width	Height	Width	Height	Width
SPIN20KCE	2.4m	4.4m	2.2m	4.2m	2.8m	4.2m
SPIN21KCE	2.4m	4.4m	2.2m	4.2m	2.8m	4.2m
SPIN30	2.4m	4.4m	2.2m	4.2m	2.8m	4.2m
SPIN40	2.4m	5.2m	2.2m	4.2m	2.8m	4.2m
SN6031 (SNA5)	2.4m	4.4m	2.2m	4.2m	2.8m	4.2m
SN6031 (SNA6)	3.4m	3.1m	3.2m	2.9m	3.5m	3.4m
SN6041 (SNA6)	3.4m	5.2m	3.2m	4.2m	3.5m	4.2m



The measurements in table N° 3 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 "8 Technical specifications"; also, to calculate the number of cycles/hour and consecutive cycles, the data in tables 4 and 5 must be taken into account.

Table 4: limits related to leaf height

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

Table N°5: limits in relation to force required to move door leaf

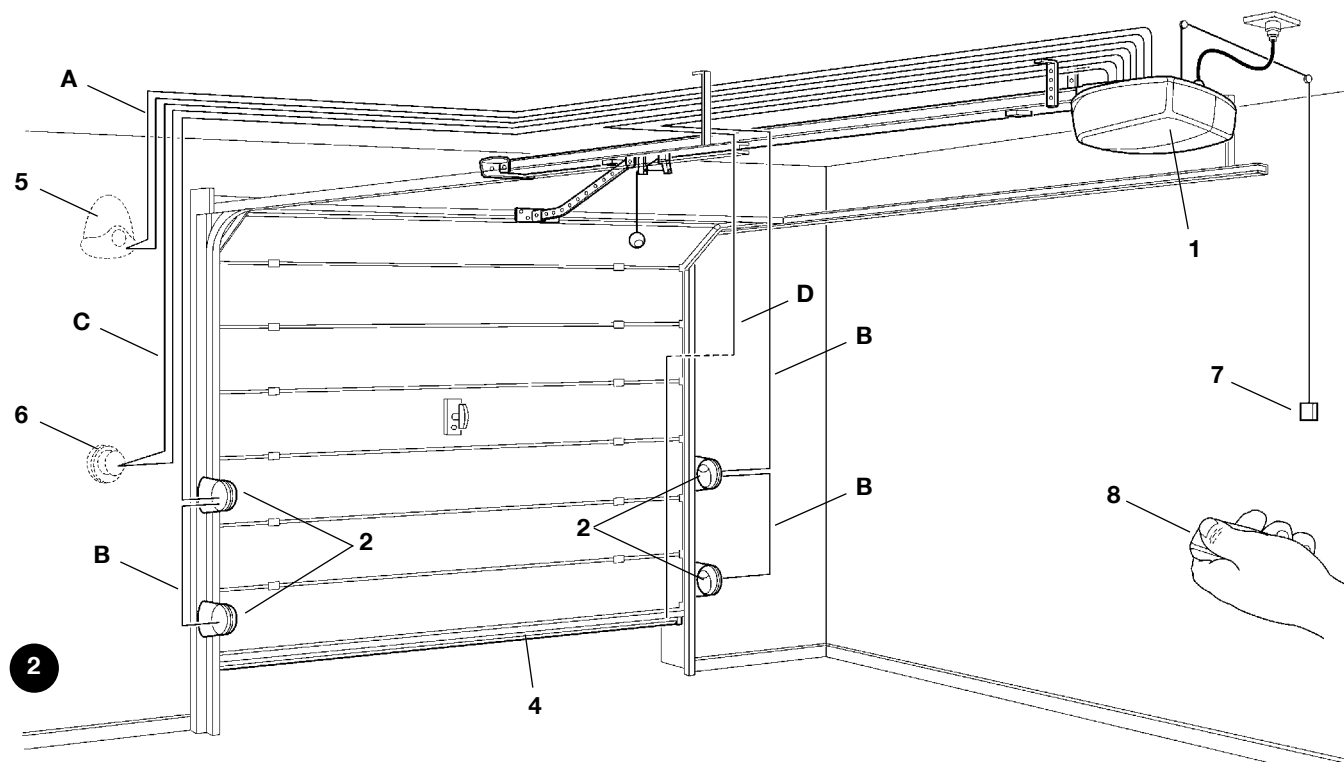
Force required to move leaf N	Cycle reduction percentage	
	SN6021 - SN6031	SN6041
Max. 250	100%	100%
250÷400	70%	90%
400÷500	25%	70%
500÷650	---	40%
650÷850	---	25%

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.

2.2) Typical system

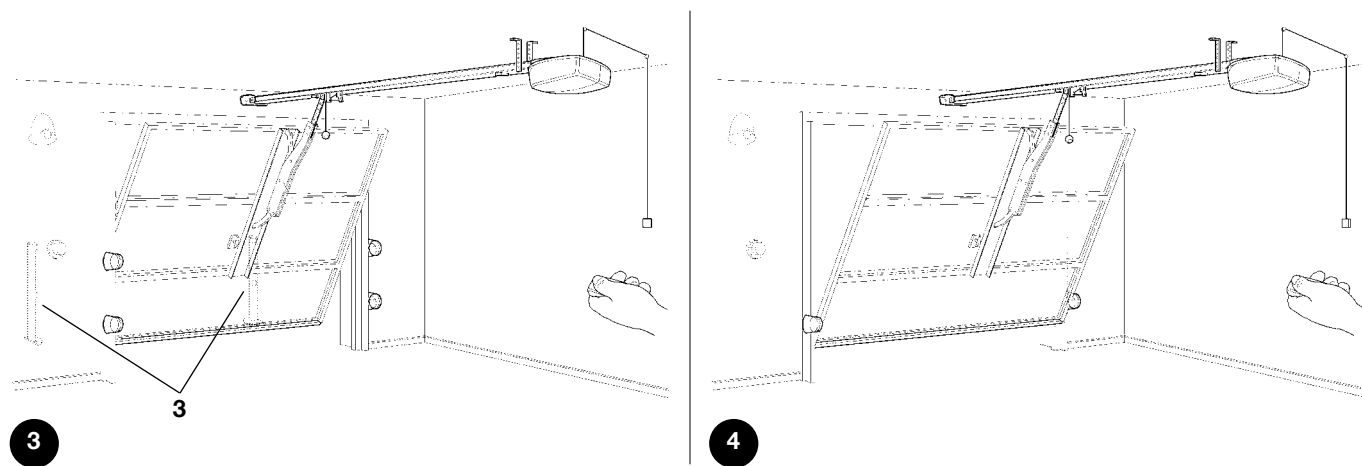
Figure 2 shows a typical system for automating a sectional door.



- 1 SPIN
- 2 Photocells
- 3 Photocells on post (fig. 3)
- 4 Main edge
- 5 Flashing light with incorporated aerial
- 6 Key-operated selector switch
- 7 PP function cord
- 8 Radio-transmitter

Figures 3 and 4 show typical installations of a protruding and non-protruding overhead door

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



2.3) List of cables

Figure 2 shows the cables needed for the connection of the devices in a typical installation; Table 6 shows the cable characteristics.

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

Table N°6: list of cables

Connection	Cable type	Maximum length allowed
A: Flashing light with aerial	1 2x0,5mm ² cable 1 RG58 type shielded cable	20m 20m (recommended less than 5m)
B: Photocells	1 cable 2x0,5mm ²	30m
C: Key-operated selector switch	2 2x0,5mm ² cables (noea 1)	50m
D: Primary sensitive edge	1 2x0,5mm ² cable (note 2-3)	30m

Note 1: A single 4x0.5mm² cable can be used instead of two 2x0.5mm² cables.

Note 2: Please refer to Chapter "7.3.2 STOP Input" in situations where there is more than one edge, for information about the type of connection

Note 3: Special devices which enable connection even when the leaf is moving must be used to connect edges to the door.

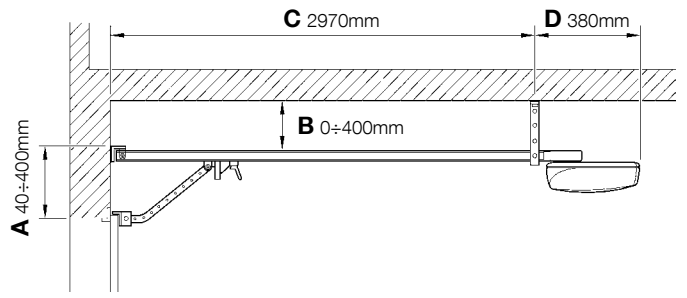
3) Installation

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

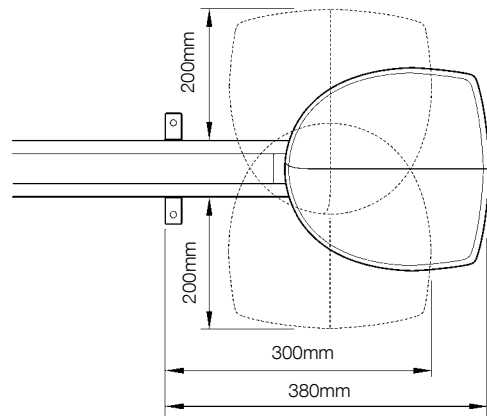
3.1) Preliminary checks

Before proceeding with the installation of SPIN you must:

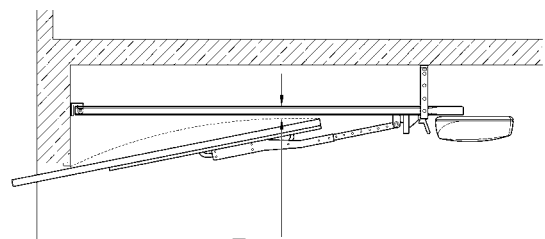
- Check that all the materials are in excellent condition, suitable for use and that they conform to the standards currently in force.
- Make sure that the structure of the door is suitable for automation.
- Make sure that the force and dimensions of the door fall within the specified operating limits provided in chapter "2.1 Operating limits".
- Check that the static friction (that is, the force required to start the movement of the leaf) is less than half the "maximum torque", and that the dynamic friction (that is, the force required to keep the leaf in movement) is less than half the "nominal torque". Compare the resulting values with those specified in Chapter "8 Technical Characteristics". The manufacturers recommend a 50% margin on the force, as unfavourable climatic conditions may cause an increase in the friction.
- Make sure that there are no points of greater friction in the opening or closing travel of the door leaves.
- Make sure that the mechanical stops are sturdy enough, and there is no danger of the door derailing.
- Check that the door is well balanced, i.e. does not move if left in any position.
- Make sure that the mounting positions of the various devices (photocells, buttons, etc.) are protected from impacts and that the mounting surfaces are sufficiently sturdy.
- Check and ensure minimum and maximum clearances as shown in figures 5 and 6
- Never immerse components in water or other liquids
- Keep SPIN components away from sources of heat and open flames; situations such as these could damage SPIN and cause either malfunctions, fires or dangerous situations.
- If the door includes an access door, make sure that it does not obstruct normal travel. Mount a suitable interlock system if necessary.
- If the door to be automated is an overhead version, check value E shown in figure 7, 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.
- Connect the SPIN power plug to a suitably earthed mains socket.
- The electrical socket must be protected by means of an adequate thermal magnetic cut-out device.



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3.2) Fitting SPIN

Fixture of the SPIN gearmotor comprises 3 stages:

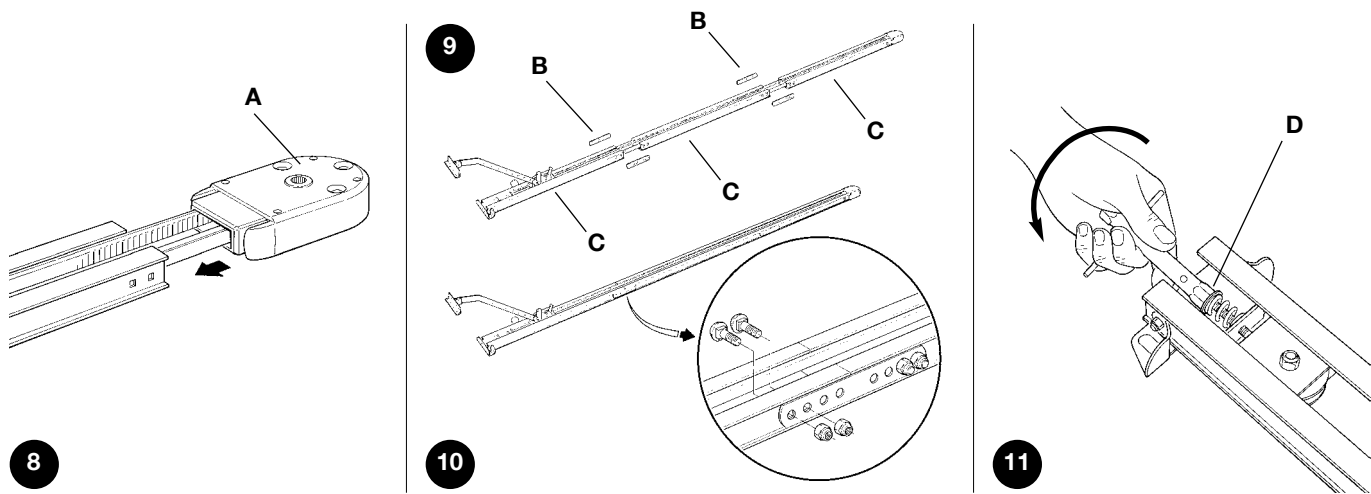
- Guide assembly (see paragraph 3.2.1 for guides supplied with SPIN20KCE, SPIN30 and SPIN40, paragraph 3.2.2 for guide SNA5 and paragraph 3.2.3 for guide SNA6)
- Fixture of gearmotor to guide (see paragraph 3.2.4)
- Fixture of gearmotor to ceiling (see paragraph 3.2.5)

⚠ SN6031 requires a SNA5 or a SNA6 guide, while SN6041 requires a SNA6 guide.

3.2.1) Assembly of guide supplied with SPIN20KCE, SPIN30 and SPIN40

The guide supplied with SPIN20KCE, SPIN30 and SPIN40 must be assembled as follows:

1. Lay the three guide parts to enable them to be joined. Pay attention to the position of the belt; this must have the teeth facing inwards, and be straight without any twists.
2. Assemble the end of the guide (A), as shown in figure 8. This requires a certain force; if necessary use a rubber mallet.
3. Using joining brackets (B), fit the three parts (C) together as shown in figures 9 and 10.
4. Tension the belt by means of the M8 nut (D), as shown in figure 11, until it is sufficiently taut.



3.2.2) SNA5 guide assembly

The SNA5 guide is already assembled. The only operation required is tensioning of the belt by means of the M8 nut (D), as shown in figure 11, until it is sufficiently taut.

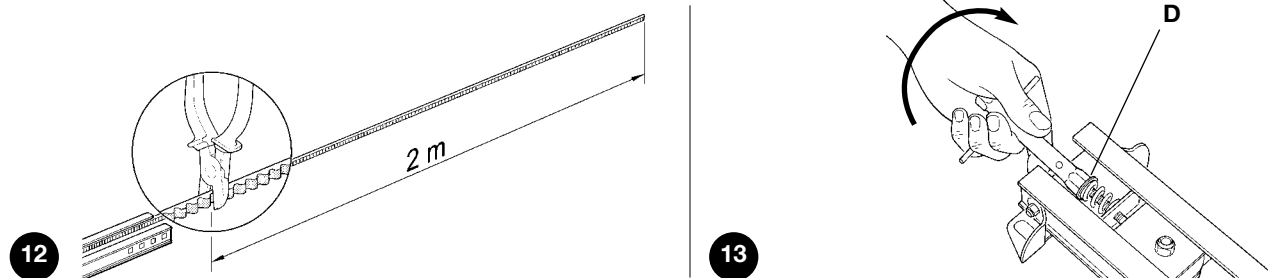
3.2.3) SNA6 guide assembly

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

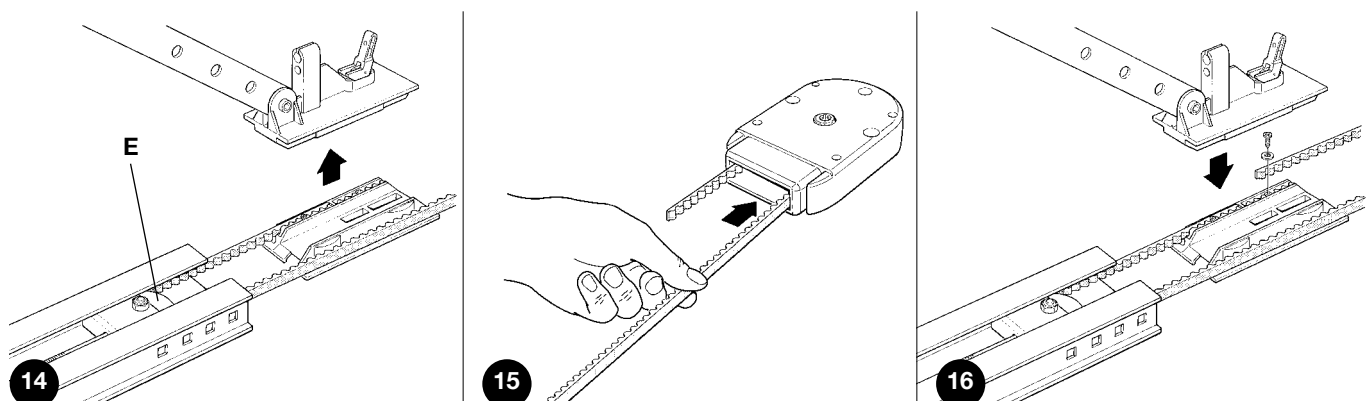
3m version

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

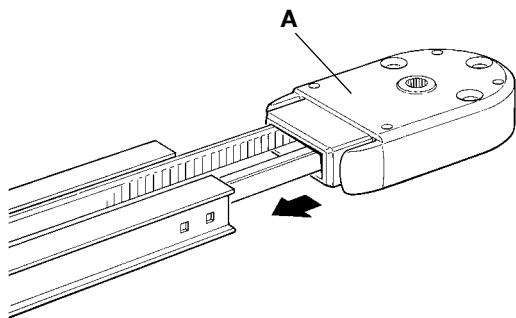
1. Cut the free end of the belt to obtain a length of exactly 2 metres, as shown in figure 12.
2. Loosen the M8 nut (D) completely, as shown in figure 13.



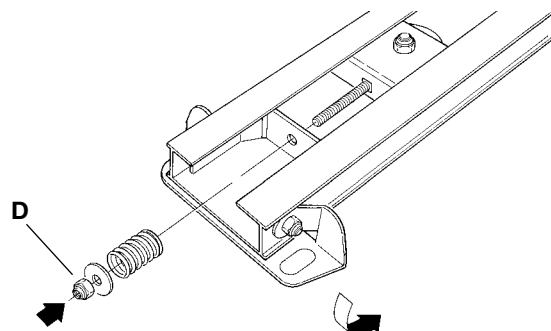
3. Slide the belt tensioner device to mid-stroke (E), as shown in figure 14, and remove the carriage completely.
4. Pass the free end of the belt through the head section, as shown in figure 15, and secure to the carriage by means of the screws and washers present, as shown in figure 16. Take care when positioning the belt; the teeth must be facing inwards, and it must be straight without twists.



- Return the belt tensioner device and carriage to the initial position. Assemble the guide head section (A), as shown in figure 17. This requires a certain force; if necessary use a rubber mallet.
- Insert the spring, washer and M8 nut (D), in the screw of the belt tensioner device, as shown in figure 18.
- Tension the belt by means of the M8 nut (D) (figure 11) until it is sufficiently taut.



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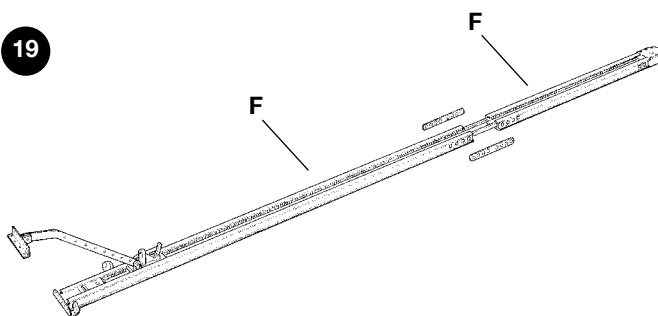
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4m Version

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

- Loosen the M8 nut (D) completely, as shown in figure 13.
- Slide the belt tensioner device to mid-stroke (E), as shown in figure 14, and remove the carriage completely.
- Pass the free end of the belt through the head section, as shown in figure 15, and secure to the carriage by means of the screws and washers present, as shown in figure 16. Take care when positioning the belt; the teeth must be facing inwards, and must be straight without twists.
- Assemble the guide head section (A), as shown in figure 17. This requires a certain force; if necessary use a rubber mallet.
- Using the joining brackets (B), fix the two parts (F), as shown in figure 19.
- Return the belt tensioner device and carriage to the initial position.

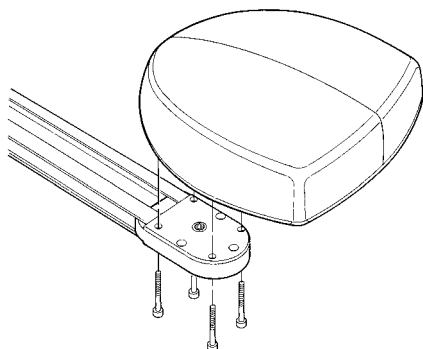
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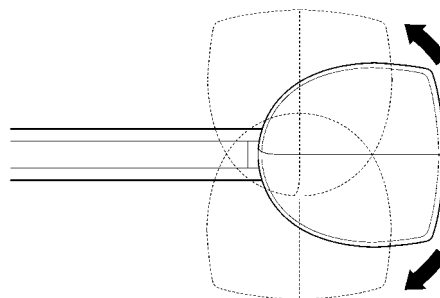
- Insert the spring, washer and M8 nut (D), in the screw of the belt tensioner device, as shown in figure 18.
- Tension the belt by means of the M8 nut (D) (figure 11) until it is sufficiently taut.

3.2.4) Fixing the gearmotor to the guide

- Join the SPIN gearmotor with the guide head (A); then secure by means of the four V6.3x38 screws, as shown in figure 20.
- The motor can be rotated in three different positions, as shown in figure 21.



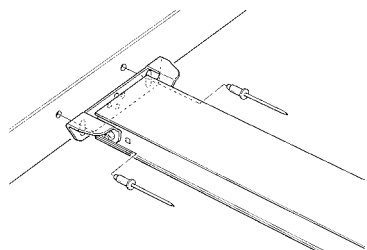
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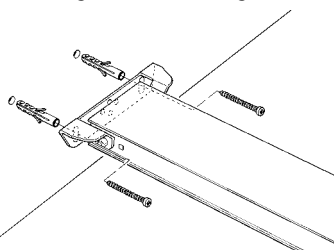
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3.2.5) Fixing the gearmotor to the ceiling

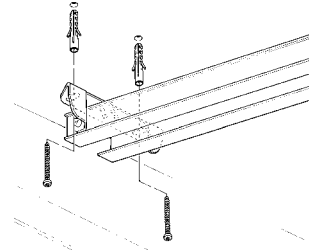
- On the basis of distances A and B in figure 5, trace the two fixing points of the front guide bracket at the centre of the door. On the basis of the type of support surface, the front bracket can be fixed with rivets, plugs or screws (figures 22, 23). If distances A, and B (figure 5) are sufficient, the bracket can be fixed directly onto the ceiling, as shown in figure 24.



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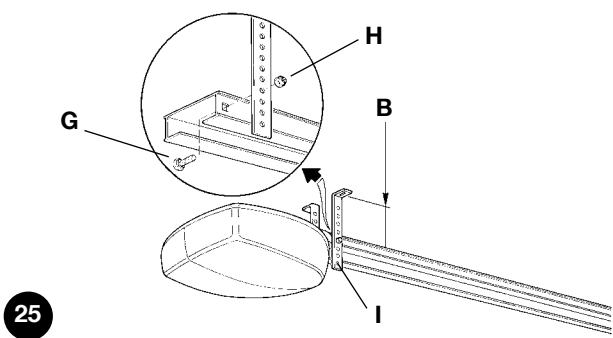


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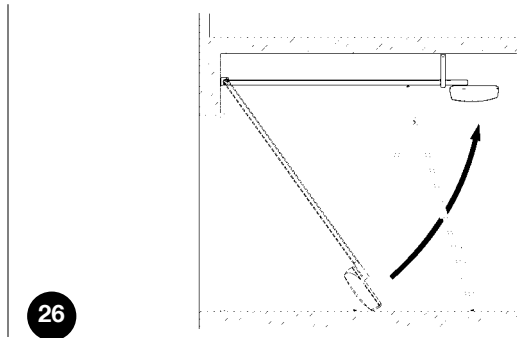


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2. After drilling the holes in the relative points, leaving the gearmotor on the ground, lift the guide from the front section and secure by means of two screws, plugs or rivets, according to the installation surface.
3. Secure the brackets (I) by means of the M6x15 screws (G) and nuts M6 (H) selecting the hole most suited to ensure distance B, as shown in figure 25.
4. 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, as shown in figure 26.

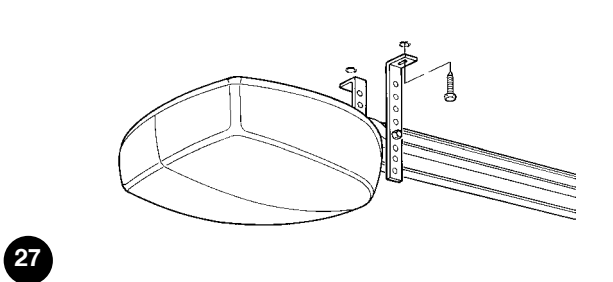


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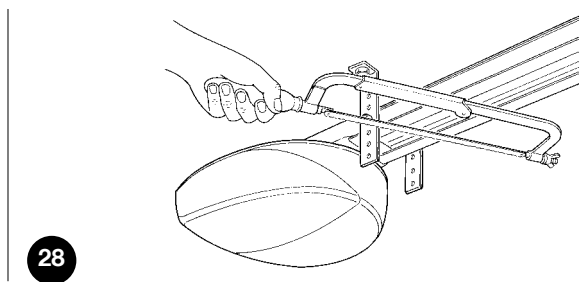


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5. Drill at the outlined points and then, using a ladder, lift the gearmotor until the brackets are placed against the drilled holes and secure by means of screws and plugs suited to the support surface, as shown in figure 27.
6. Ensure that the guides are perfectly horizontal, then cut off the excess section of the brackets with a saw, as shown in figure 28.

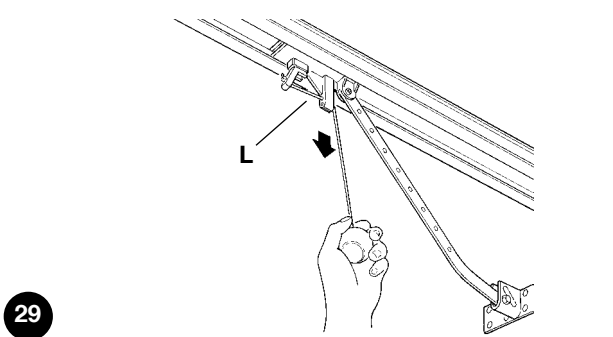


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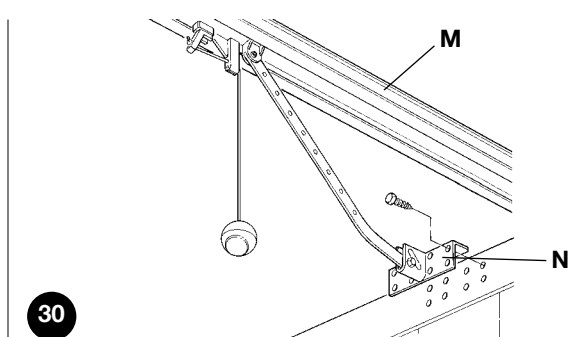


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7. With the door closed, pull the cord to release carriage (L), as shown in figure 29.
8. Slide the carriage until the leaf connecting bracket (N) on the upper edge of the door is perfectly perpendicular to the guide (M). Then secure the leaf connecting bracket (N) with rivets or screws, as shown in figure 30. 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.

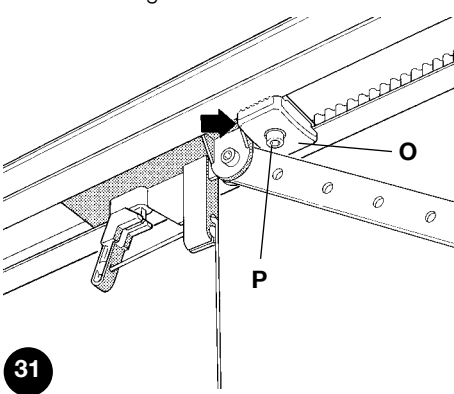


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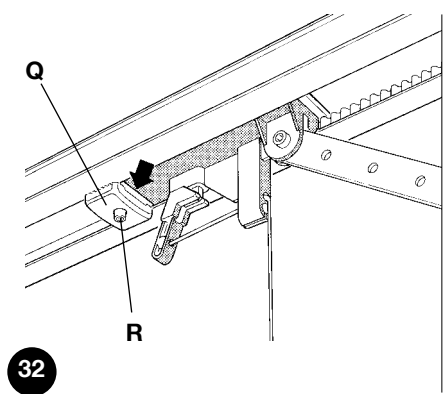


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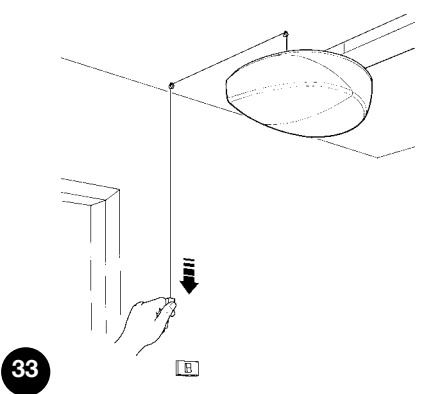
9. Loosen the screws of the two mechanical stops, then move the front mechanical stop (O) in front of the carriage, as shown in figure 31. Push the carriage in the closing direction and, on reaching the position, tighten the screw (P) fully down.
10. Manually open the door to the required opening position, move the rear mechanical stop (Q), next to the carriage, as shown in figure 32 and tighten the screw (R) fully down.
11. 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.
12. Position the control cord at the required point of the room; if necessary route across the ceiling by means of plugs with eyebolts, as shown in figure 33.



31



32



33

3.3) Installation of the Various Devices

If other devices are needed, install them following the directions provided in the corresponding instructions. Check this in paragraph "3.5 Description of electrical connections" and the devices which can be connected to the SPIN in Figure 2..

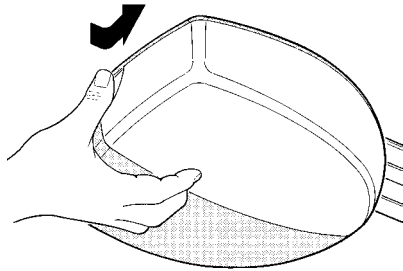
3.4) Electrical connections

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

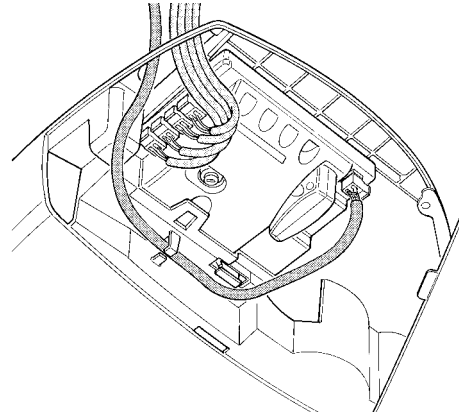
1. Open the protection cover in order to access the electronic control unit of the SPIN. To do this, press the side and rotate as shown in figure 34.

2. Insert all the connection cables towards the various devices through the hole, leaving a length of 20÷30 cm longer than necessary. Pass the aerial cable through the cable retainer ring. See Table 6 for information regarding the type of cables and Figure 2 for the connections.

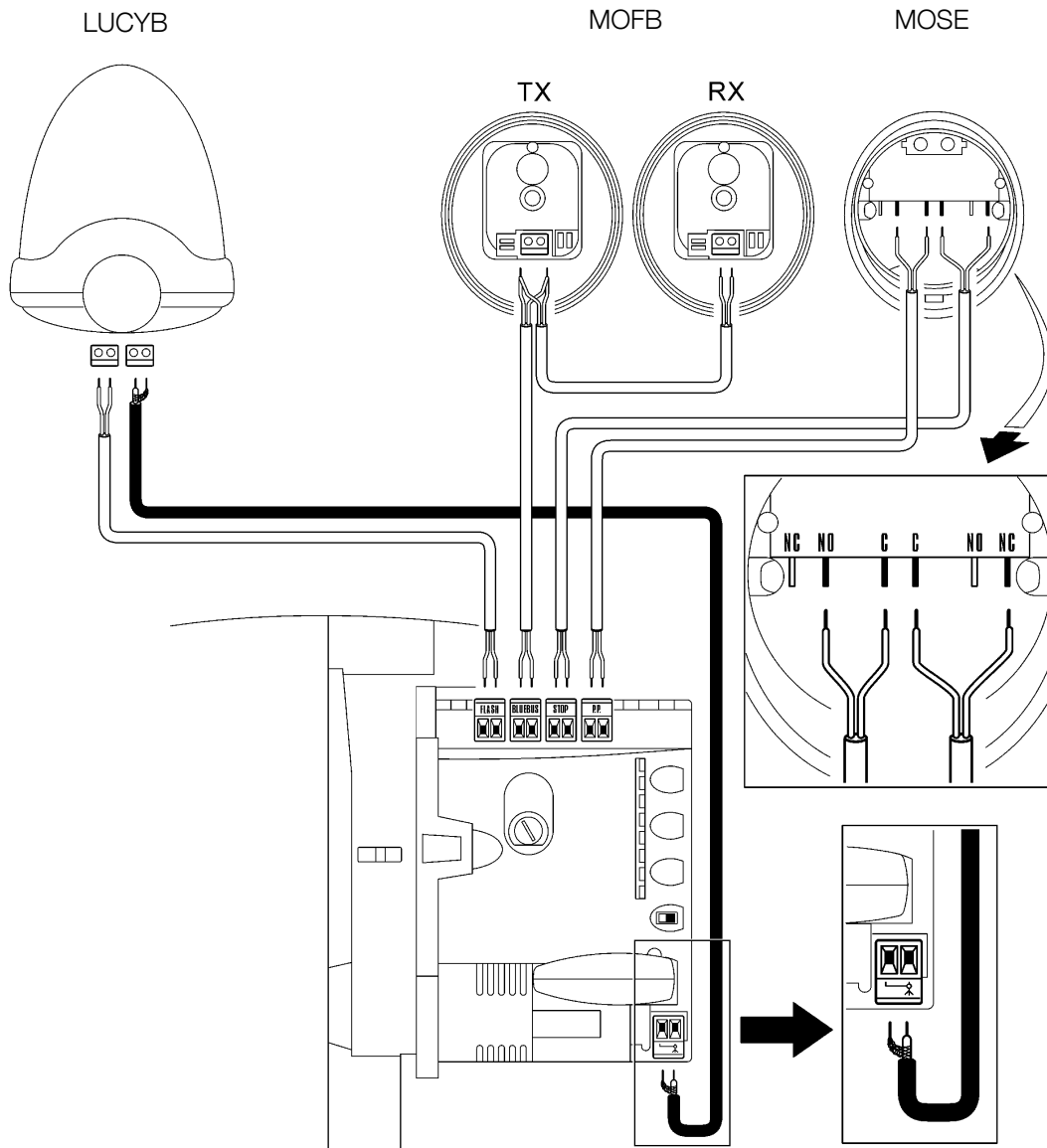
3. Connect up the cables according to the diagram in Figure 36. The terminals can be removed in order to make this work easier.



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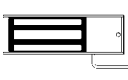
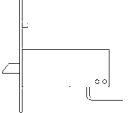


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3.5) Description of the electrical connections

Here follows a brief description of the electrical connections. Please refer to the “7.3. Adding or Removing Devices” paragraph for further information.

FLASH: this output is programmable (see paragraph 7.2.4) for connection of one of the following devices:

	<p>Flashing light If programmed as “flashing light” on the “FLASH” output a NICE “LUCY B” flashing light can be connected with a car type 12V 21W lamp. During the manoeuvre the unit flashes at intervals of 0.5s.</p>
	<p>“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.</p>
	<p>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.</p>
	<p>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.</p>

⚠ NEVER USE DEVICES OTHER THAN THOSE SPECIFIED

BLUEBUS: compatible devices can be connected up to this terminal. They are connected in parallel using two conductors only, through which both the electricity supply and the communication signals travel. Please refer to paragraph “7.3.1BlueBUS” for further information about BlueBUS.

STOP: input for the devices which block or eventually stop the manoeuvre in progress. Contacts like “Normally Closed”, “Normally Open” or constant resistance devices can be connected up using special procedures on the input. Please refer to Paragraph “7.3.2 STOP Input” for further information about STOP”.

STEP-BY-STEP: input for devices which control movement. It is possible to connect “Normally Open” devices up to this input. Activation of the control cord sends a signal to the PP input.

AERIAL: connection input for the radio receiver aerial (the aerial is incorporated in LUCY B; alternatively an external antenna can be used or leave a section of wire already present on the terminal, to serve as an antenna.

4) Final checks and start up

The manufacturers recommend you unhook the carriage and position the leaf at approximately half travel before starting the checking and start up phase of the automation. This will ensure the leaf is free to move both during opening and closure.

4.1) Power supply connection

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).

As soon as SPIN is energized, you should check the following:

1. Make sure that the “BLUEBUS” LED flashes regularly, with about one flash per second.
2. 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.
3. Make sure that the device connected to the FLASH output is off.
4. Make sure that the courtesy light is off.

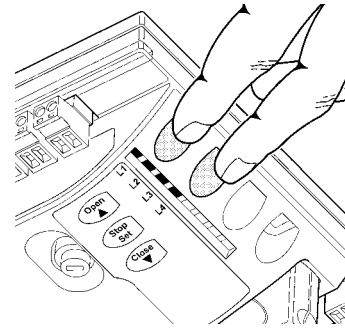
If the above conditions are not satisfied, you should immediately switch off the power supply to the control unit and check the electrical connections more carefully.

Please refer to Chapter “7.6 Troubleshooting” for further information about finding and analysing failures.

4.2) Recognition of the devices

After connecting up the power supply, the control unit must be made to recognise the devices connected up to the BLUEBUS and STOP inputs. Before this phase, LEDs L1 and L2 will flash to indicate that recognition of the devices must be carried out.

⚠ The device self-learning phase must be performed even if no device is connected.



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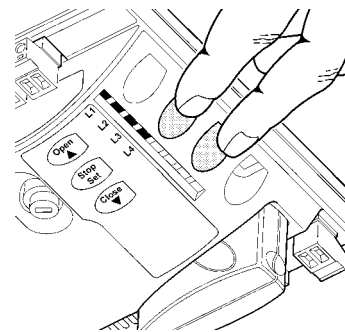
1. Press keys **[▲]** and **[Set]** 2 and keep them pressed down.
2. Release the keys then LEDs L1 and L2 start flashing rapidly (after approx 3sec)
3. Wait for a few seconds for the control unit to finish recognising the devices
4. The STOP LED must remain on when the recognitions stage has been completed, 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 "7.3.4 Recognition of other devices" for information about how to carry out another recognition process

4.3) Recognizing 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.



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1. Engage the carriage.
2. Press keys **[▼]** and **[Set]** and keep them pressed down
3. Release the keys when the manoeuvre (after approx. 3s)
4. Wait for the control unit to complete the recognition phase: closing, opening and closing again of the door.
5. Pull the control cord to perform a complete opening manoeuvre.
6. Pull the cord again to perform closing.

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

At the end of the self-learning process, if LEDs L3 and L4 flash, this means there is an error; see paragraph "7.6 Troubleshooting".

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 1 must be repeated.

The position recognition stage can be repeated at any time, even after installation (for example if one of the mechanical stops is moved); simply repeat the procedure from point 1.

⚠ During the position search process, if the belt is not sufficiently tensioned, it may slip on the pinion. If this occurs, press the [Stop] key to interrupt self-learning; tension the belt by tightening the M8 nut (D) as shown in figure 11, then repeat self-learning from point 1.

4.4) Checking door movements

On completion of the recognition of the opening and closing positions, it is advisable to carry out a number of manoeuvres in order to check the door travels properly.

1. Press the **[Open]** key to open the door. Check that door opening occurs regularly, without any variations in speed; The door must only slowdown and stop when it is between 30 and 20 cm from the opening mechanical stop. Then, at 2÷3cm from the mechanical opening stop the limit switch will trigger.
2. Press the **[Close]** key to close the door. Check that the door closes regularly without any variations in speed. The door must only slowdown when it is between 30 and 20cm from the closing mechanical stop and stop against the mechanical closing stop. A brief opening manoeuvre is then performed to release belt tension.
3. During the manoeuvre, check that the flashing light (if any) flashes at a speed of 0.5 seconds on and 0.5 seconds off.
4. Open and close the door several times to make sure that there are neither points of excessive friction nor defects in the assembly or adjustments.
5. Check that the fastening of the gearmotor, the guide and the mechanical stops are solid, stable and suitably resistant, even if the door accelerates or decelerates sharply.

4.5) Preset functions

The SPIN control unit has a number of programmable functions. These functions are set to a configuration which should satisfy most automations. However, the functions can be altered at any time by means of a

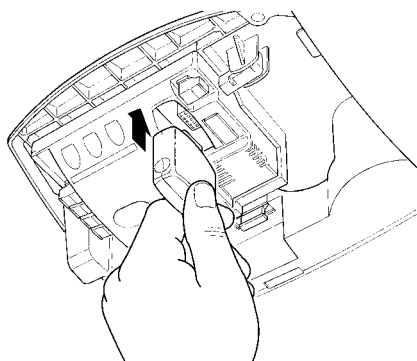
special programming procedure. Please refer to paragraph "7.2 Programming" for further information about this.

4.6) Radio receiver

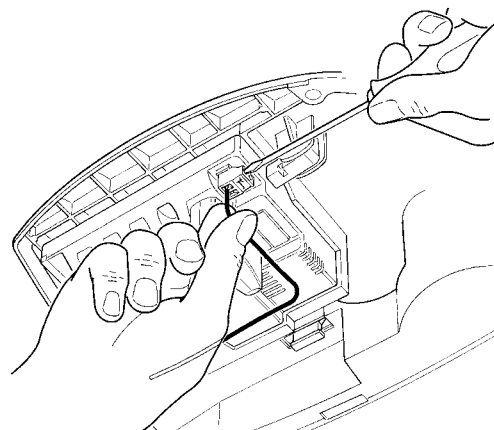
The "SM" radio receiver connector for SMXI or SMXIS type radio receivers has been provided in order to enable the user to control SPIN from a distance. The radio receiver on SPIN20KCE and SPIN21KCE is already connected.

To connect the radio receiver on SPIN30, SPIN40, SN6031 and SN6041 follow the procedure as shown in figures 39 and 40.

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



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4.6.1) 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 I: 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 7; 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 I

Mode II: in this mode, each transmitter key can be associated with one of the 4 possible control unit commands shown in Table 8; 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.

In Mode II, different keys on the same transmitter can be used in order to give the same automation more than one command or to control more than one automation. For example, in Table 9, only automation "A" is controlled, and the T3 and T4 keys are associated with the same command. Alternatively, three automations are controlled in the example shown in Table 10, namely (keys T1 and T2), "B" (key T3) and "C" (key T4).

⚠ Since the memorization procedures are timed (10s), you must read the instructions in the following paragraphs before you proceed with their execution

Table 7: Mode I memorisation

T1 key	"Step-by-step" command
T2 key	"Partial opening" command
T3 key	"Open" command
T4 key	"Close" command

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

Table 8: commands available in Mode II

1	"STEP-BY-STEP" COMMAND
2	"PARTIAL OPENING" COMMAND
3	"OPEN" COMMAND
4	"CLOSE" COMMAND

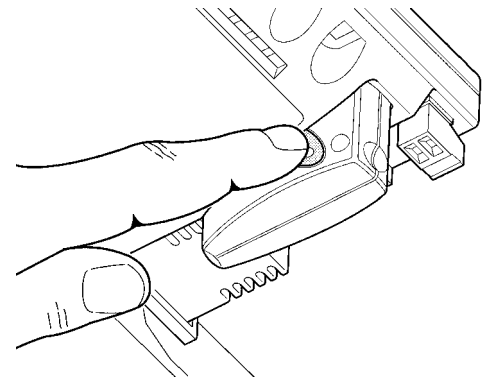
Table 9: 1st example of memorization in Mode II

T1 key	"Open" command	Automation A
T2 key	"Close" command	Automation A
T3 key	"Partial opening"	Automation A
T4 key	"Partial opening"	Automation A


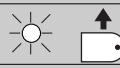


Table 10: 2nd example of memorization in Mode II

T1 key	"Open" command	Automation A
T2 key	"Close" command	Automation A
T3 key	"Step-by-step" command	Automation B
T4 key	"Step-by-step" command	Automation C

4.6.2) Memorization mode I







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Table 11: to memorize a transmitter in mode I		Example
1.	Press the key on the receiver and hold it down (approx. 3s)	 3s
2.	Release the key when the LED on the receiver lights up	
3.	Within 10s, press any key on the radio transmitter to be memorized and hold it down for at least 2s	 2s
4.	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.

4.6.3) Memorization mode II

Table 12: to memorize the key of a transmitter in mode II		Example
1.	Press the key on the receiver as many times as the number corresponding to the desired command, according to table 8	 1...4
2.	Make sure that the LED on the receiver makes as many flashes as the number corresponding to the selected command	 1...4
3.	Within 10 s, press any key on the radio transmitter to be memorized and hold it down for at least 2 s	 2s
4.	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.

4.6.4 "Remote" memorization

A new radio transmitter can be memorized without directly operating 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 II, the new one will also be memorized in Mode II: 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 13: for the "Remote" memorization of a transmitter		Example
1.	Press the key on the new radio transmitter and hold it down for at least 5 s, then release it.	 5s 
2.	Press key on the previously memorized transmitter slowly 3 times.	 1s  1s  1s
3.	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.

4.6.5) Deleting the Radio Transmitters

	Example
1. Press the key on the receiver and hold it down	
2. Wait until the LED lights up, then wait until it goes off, then wait until it has flashed 3 times	
3. Release the key precisely upon the third flash.	
4. If the procedure is successful, after a few moments the LED will flash 5 times	

4.6.6) Declaration of conformity of the radio receivers and transmitters

CE declaration of conformity Declaration in accordance with Directive 1999/5/EC

Note: The content of this declaration corresponds to that specified in the official document deposited at the Nice S.p.A. headquarters and, in particular, to the latest revised edition available prior to the publishing of this manual. The text herein has been readapted for editorial reasons. A copy of the original declaration can be requested from Nice S.p.A. (TV).

Declaration number: 151/SMXI **Rev.:** 9 **Language:** EN

The undersigned, Mauro Sordini, CEO, declares under his sole responsibility that the following product:

Manufacturer's Name: NICE S.p.A.
Address: Via Pezza Alta n°13, 31046 Rustignè di Oderzo (TV) Italy
Type of product: Receiver 433.92MHz for remote control of doors, gates, shutters, awnings, roller shutters and similar applications
Model / Type: SMXI, SMXIS, SMXIF
Accessories:

Complies with the essential requirements pursuant to Article 3 of the following European directive, relevant to the use for which the products are intended:

- DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity, in accordance with the following harmonised standards:
 - Health and safety (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 V1.9.2:2011, EN 301 489-3 V1.6.1:2013
 - Radio spectrum (Art. 3(3)): EN 300 220-2 V2.4.1:2012

Oderzo, 03 July 2014

Mr. Mauro Sordini (Chief Executive Officer)



5) Testing and commissioning

This is the most important stage in the automation system installation procedure in order to ensure the maximum safety levels.

Testing can also be adopted as a method of periodically checking that all the various devices in the system are functioning correctly.

⚠ Testing of the entire system must be performed by qualified and experienced personnel who must establish which tests to conduct on the basis of the risks involved, and verify the compliance of the system with applicable regulations, legislation and standards, in particular with all the provisions of EN standard 12445 which establishes the test methods for automation systems for doors and gates.

5.1) Testing

Each component of the system, e.g. safety edges, photocells, emergency stop, etc. requires a specific testing phase. We therefore recommend observing the procedures shown in the relative instruction manuals.

To test SPIN proceed as follows:

1. Ensure that the instructions outlined in chapter 1 "Warnings" have been observed in full.
2. Release the door by pulling the release cord down. Make sure you can move the door manually both during opening and closing with a force of max. 225N.
3. Engage the carriage again.
4. 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.
5. 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.
6. Check the proper operation of all the safety devices, one by one (photocells, sensitive edges, etc.). In particular, each time a device

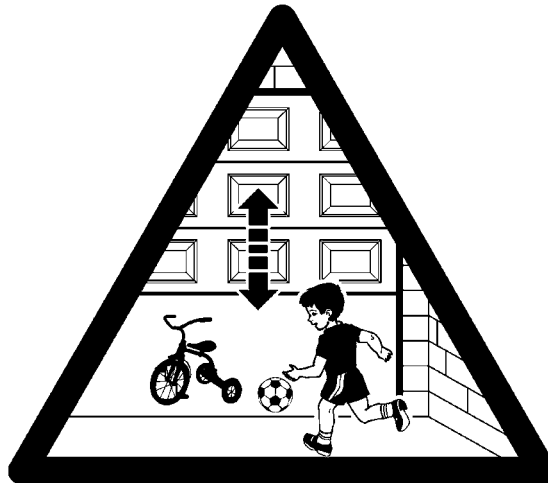
is activated the "BLUBUS" LED on the control unit flashes 2 times quickly, confirming that the control unit recognizes the event.

7. 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.
8. 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. 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.

5.2) Commissioning

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

1. Prepare and store for at least 10 years the technical documentation for the automation, which must include at least: 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.
2. 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").
3. Post a permanent label or sign near the door containing this picture (min. height 60mm).
4. 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.
5. Prepare the declaration of conformity of the automation system and deliver it to the owner.
6. Prepare the "Installation instructions and warnings" of the automation system and deliver it to the owner.
7. Prepare the maintenance schedule of the automation system and deliver it to the owner; it provides all directions regarding the maintenance of all automation devices.
8. Before commissioning the automation system inform the owner in writing regarding dangers and hazards that are still existing (e.g. in the "Installation instructions and warnings").



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6) Maintenance and Disposal

This charter provides information about how to draw up a maintenance schedule, and the disposal of SPIN.

6.1) Maintenance

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.

1. SPIN requires scheduled maintenance work every 6 months or 3,000 manoeuvres (max.) after previous maintenance:
2. Disconnect the power supply and buffer batteries, if featured.
3. 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.
4. Check the wear and tear on the moving parts: belt, carriage, pinions and the door components; if necessary replace them.
5. Connect the electric power sources up again, and carry out the testing and checks provided for in Paragraph "5.1 Testing".

6.2) Disposal

SPIN is constructed of various types of materials, some of which can be recycled: steel, aluminium, plastic, electric cables; while others must be disposed of (batteries and electronic boards).

⚠ Some electronic components and the batteries may contain polluting substances; do not pollute the environment. Enquire about the recycling or disposal systems available in compliance regulations locally in force.

1. Disconnect the power supply of the automation system (and the buffer battery, if featured).
2. Disassemble all the devices and accessories, following in reverse order the procedures described in chapter 3 "Installation".
3. Wherever possible, separate any parts which can or must be recycled or disposed of in different ways, e.g. metal parts must be disposed of separately from plastic ones, as must the electronic cards, batteries etc
4. Sort the various materials and consign them to local licensed firms for recovery and disposal.

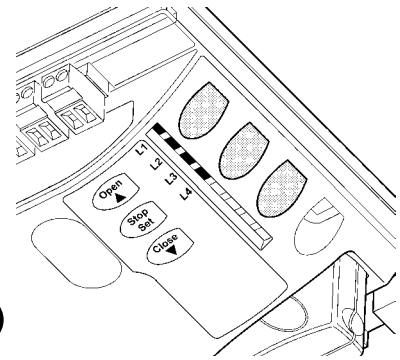
7) Additional Information

Programming, personalisation and how to look for and deal with faults on the SPIN will be dealt with in this chapter.

7.1) Programming keys

The SPIN control unit feature three keys that can be used to command the control unit both during tests and programming:

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.



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7.2) Programming

A number of programmable functions are available on the SPIN control unit. The functions are adjusted using 3 keys set on the control unit: [▲] [Set] [▼] and are used by means of 4 LEDs: L1....L4.

The programmable functions available on SPIN are set out on 2 levels:

Level 1: the functions can be adjusted in modes ON-OFF (active or inactive). In this case, each of the LEDs L1....L4 indicates a function. If the LED is on, the function is active, if off the function is inactive. See Table 15.

Level 2: the parameters can be adjusted on a scale of values (from 1 to 4). In this case, each of the LEDs L1....L4 indicates the value set (there are 4 possible settings). Please refer to Table 17.

7.2.1) Level one functions (ON-OFF functions).


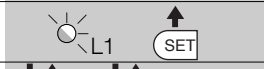



Table 15: list of programmable functions: Level one

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. 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; this varies according to whether "Automatic Closing" is enabled or disabled. When "Automatic Closing" is active: the opening manoeuvre stops immediately after the photocells have disengaged. After 5 seconds, the door will begin to close. If the function "Close after Photo" is inactive, the pause time will be the one which has been programmed. When "Automatic Closing" is inactive: the opening manoeuvre will not be interrupted but, when the photocell disengages, this will cause an automatic closing manoeuvre with a pause time of 5 seconds. If the function "Close After Photo" is inactive, the automatic closing manoeuvre will not take place.
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.
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.

7.2.2 Level one programming (ON-OFF functions)

Level 1 functions are all factory set to "OFF". However, they can be changed at any time as shown in Table 16. 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 N°16: changing ON-OFF functions		Example
1.	Press the key [Set] and hold it down (approx. 3 s)	
2.	Release the [Set] key when L1 LED starts flashing	
3.	Press keys [▲] or [▼] to move the flashing LED onto the LED representing the function which is to be changed	
4.	Press the [Set] key to change function status (short flash = OFF; long flash = ON)	
5.	Wait 10 seconds before leaving the programme to allow the maximum time to lapse	

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

7.2.3 Level two functions (adjustable parameters)

Table 17: programmable function list: level two				
Input LED	Parameter	LED (level)	value	Description
L1	Pause Time	L1	10 seconds	Adjusts 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	Step-by-step Function.	L1	Open – stop – close - stop	Manages the sequence of controls associated to the Step-by-Step input or to the 1st radio command (see tables 7 and 8).
		L2	Open - stop - close- open	
		L3	Condominium operation	
		L4	Man present	
L3	Motor speed	L1	Very slow	Adjusts the speed of the motor during normal travel.
		L2	Slow	
		L3	Medium	
		L4	Fast	
L4	FLASH:	L1	Output Open door indicator	Selects the device connected to the FLASH output
		L2	Flashing light	
		L3	Electric lock	
		L4	Suction cup	


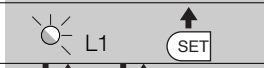


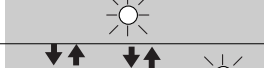



Note: "■" represents the factory setting

All the parameters can be adjusted as required without any contraindication; only the selection of the device connected to the "FLASH" output could require special care:

⚠ Before connecting the device to the "FLASH" output, ensure that the correct function has been programmed. Otherwise there is a risk of damage to the device.

7.2.4 Level two programming (adjustable parameters)










The adjustable parameters are factory set as shown in the table 17 with "■". However, they can be changed at any time, as shown in Table 18. 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 18: changing the adjustable parameters		Example
1.	Press the key [Set] and hold it down (approx. 3 s)	
2.	Release the [Set] key when L1 LED starts flashing	
3.	Press keys [▲] or [▼] to move the flashing LED to the "input LED" which represents the parameter which is to be modified.	
4.	Press the key [Set] , and hold it down during step 5 and 6	
5.	Wait approx. 3 seconds, after which the LED representing the current level of the parameter which is to be modified will light up.	
6.	Press keys [▲] or [▼] to move the LED which represents the parameter value.	
7.	Release the key [Set]	
8.	Wait 10s to exit programming on elapse of the maximum time interval.	

Note: Points 3 to 7 can be repeated during the same programming phases in order to adjust other parameters

7.2.5) Level one programming example (ON-OFF functions)














The sequence to follow in order to change the factory settings of the functions for activating "Automatic Closing" (L1) and "Motor force" (L3) have been included as examples

	Example
1. Press the key [Set] and hold it down (approx. 3 s)	 3s
2. Release the [Set] key when L1 LED starts flashing	 L1 
3. Press the [Set] key once to change the state of the function associated with L1 (Automatic Closing). LED L1 will now flash with long flashes.	  L1
4. Press the [▼] key twice to move the flashing LED to LED L3.	  L3
5. Press the [Set] key once to change the state of the function associated with L3 (Motor Force). LED L3 will now flash with long flashes.	
6. Wait 10 seconds before leaving the programme to allow the maximum time to lapse.	 10s

Once these operations have been completed, LEDs L1 and L3 must remain on to indicate that the "Automatic Closing" and "Motor Force" functions are active.

7.2.6) Level two programming example (adjustable parameters)

The sequence to follow in order to change the factory settings of the parameters increasing the "Pause Time" to 80s (input on L1 and level on L4) and select the Open Door Indicator for the "FLASH" output (input on L4 and level on L1) have been included as examples.

	Example
1. Press the key [Set] and hold it down (approx. 3 s)	 3s
2. Release the [Set] key when L1 LED starts flashing	 L1 
3. Press the key [Set] and hold it down during step 4 and 5	
4. Wait approx. 3 seconds until LED L2, which represents the current level of the "Pause time", switches on.	 L2 3s
5. Press the [▼] key twice to move the LED which is lit on to L4, which represents the new "Pause Time" value.	 L4
6. Release the key [Set]	
7. Press the [▼] key 3 times to move the LED which is flashing to L4	 L4
8. Press the key [Set] ; and hold it down during step 9 and 10	
9. Wait approx. 3s until LED L2, which represents the current device associated with the "FLASH Output", i.e. the flashing light.	 L2 3s
10. Press the [▲] key one time to move the LED which is on to L1 which represents the new device associated with the "FLASH Output", i.e. the "Open Door Indicator".	 L1
11. Release the key [Set]	
12. AWait 10 seconds before leaving the programme to allow the maximum time to lapse.	 10s

7.3) Adding or Removing Devices

Devices can be added to or removed from the SPIN automation system at any time. In particular, various devices types can be connected to "BLUEBUS" and "STOP" input as explained in paragraphs

"7.3.1 BlueBUS" and "7.3.2 STOP Input".

7.3.1) 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 7.3.4 "Recognition of Other Devices".

7.3.2) 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 8.2KΩ constant resistance output, like sensitive edges, can be connected to this input.

During the recognition stage the control unit, like BlueBUS, recognizes the type of device connected to the STOP input (see paragraph 7.3.4 “Recognition of Other Devices”); 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.

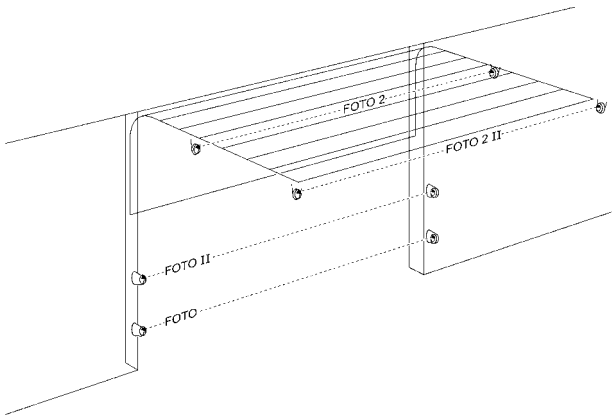
- Two devices with 8.2KΩ constant resistance output can be connected in parallel; if needed, multiple devices must be connected “in cascade” with a single 8.2KΩ termination resistance
- It is possible to combine Normally Open and Normally Closed by making 2 contacts in parallel with the warning to place an 8.2KΩ resistance in series with the Normally Closed contact (this also makes it possible to combine 3 devices: Normally Open, Normally Closed and 8.2KΩ).

⚠ If the STOP input is used to connect devices with safety functions, only the devices with 8.2KΩ constant resistance output guarantee the fail-safe category 3 according to EN standard 954-1.

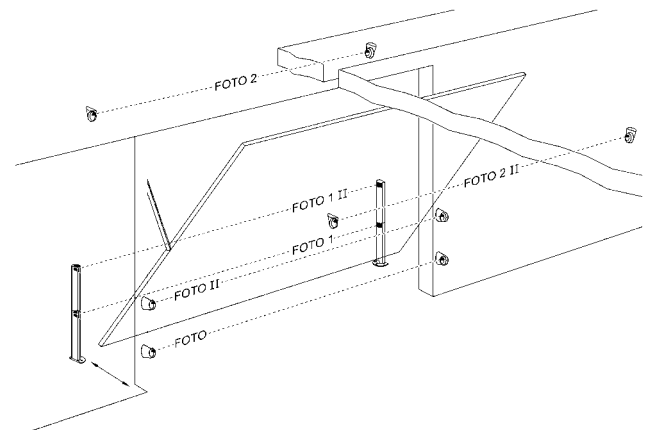
7.3.3) Photocells

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 for sectional doors or non-protruding overhead doors it is possible to install the photocells as shown in Figure 44. In an automation with protruding overhead doors, refer to figure 45. 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 “7.3.4 Recognition of other devices” must be carried out.



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Table 21: Photocell addressing

Photocell	Jumpers	Photocell	Jumpers
PHOTO Photocell h=50cm activated when door closes		FOTO 2 Photocell activated when door opens	
PHOTO II Photocell h=100cm activated when door closes		FOTO 2 II Photocell activated when door opens	
PHOTO 1 Photocell h = 50 activated when door closes and opens		FOTO 3 INADMISSIBLE CONFIGURATION	
PHOTO 1 II Photocell h = 100 activated when door closes and opens			

⚠ In the SN6021 versions the BlueBUS output has a maximum load of 2 units. On SN6031 and SN6041 the maximum load is 6 units; one pair of photocells absorbs power equal to 1 BlueBUS unit.

7.3.4) 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 22: Recognition of Other Devices		Example
1.	Press keys [▲] and [Set] and hold them down [Set] x 3s	
2.	Release the keys when L1 and L2 LED's start flashing very quickly (after approx. 3 s)	
3.	Wait a few seconds for the control unit to finish recognizing the devices	
4.	When the recognition stage is completed L1 and L2 LED's will go off, the STOP LED must remain on, while L2...L4 LED's will light up according to the status of the relative ON-OFF functions.	

⚠ After you have added or removed any devices, the automation system must be tested again according to the directions contained in paragraph 5.1 "Testing".

7.4) Special Functions

7.4.1) "Always Open" Function

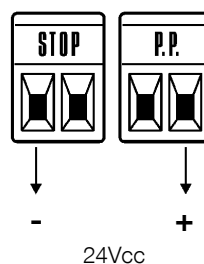
The "Always open" function is a control unit feature which enables the user to control an opening manoeuvre when the "Step-by-Step" command lasts longer than 3 seconds. This is useful for connecting a timer contact to the "Step-by-Step" terminal in order to keep the door open for a certain length of time, for example. This feature is valid with any kind of "Step-by-Step" input programming. Please refer to the "Step-by-Step Function" parameter in Table 17.

7.4.2) "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 "Instructions and Warnings for users of the SPIN gearmotor" for further information.

7.5 Connection to other devices

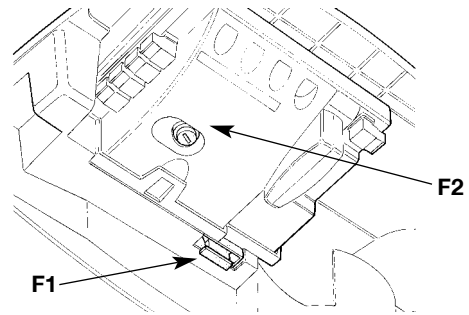
If the user needs to feed external devices such as a proximity reader for transponder cards or the illumination light of the key-operated selector switch, it is possible to tap power as shown in Figure 46. The power supply voltage is 24Vdc -30% - +50% with a maximum available current of 100mA



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7.6) 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.



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Table 23: Troubleshooting

SYMPTOMS	PROBABLE CAUSE AND POSSIBLE 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 any fuses 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 STEP-BY-STEP input, the corresponding "STEP-BY-STEP" 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 24.
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	Verificare che il dispositivo collegato all'uscita "FLASH" sia effettivamente quello programmato. 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.

7.7) Diagnostics and signals

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

7.7.1) Flashing light and courtesy light signalling

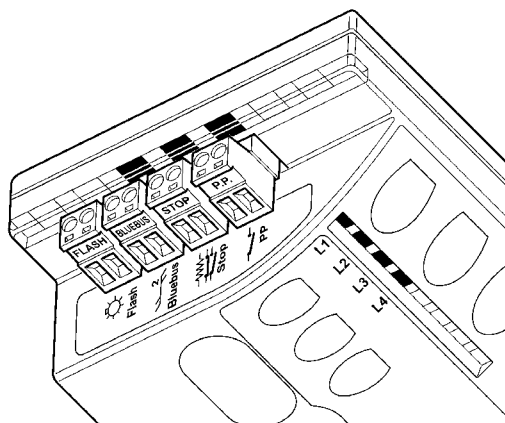
If the FLASH output is programmed and a flashing light is connected, it should flash every second during the manoeuvre; When something is wrong the flashes are more frequent; the light flashes twice with a second's pause between flashes. The courtesy light gives the same diagnostics signals.

Table 24: 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 (7.3.4 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
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.

7.7.2) 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.



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Table 25: LED's on the control unit's terminals

BLUEBUS Led	Cause	ACTION
Off	Malfunctionaa	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: STEP-BY-STEP, STOP, triggering of photocells or the radio transmitter is used
Series of flashes separated by a second's pause	Miscellaneous	It corresponds to the flashing light's or the courtesy light signal. See table 24
STOP LED	Cause	ACTION
Off	Activation of the STOP input	Check the devices connected to the STOP input
On	Everything OK	STOP Input active
STEP-BY-STEP LED	Cause	ACTION
Off	Everything OK	STEP-BY-STEP input not active
On	Activation of the STEP-BY-STEP input	This is normal if the device connected to the STEP-BY-STEP input is actually active

Table 26: LED's on the control unit's keys

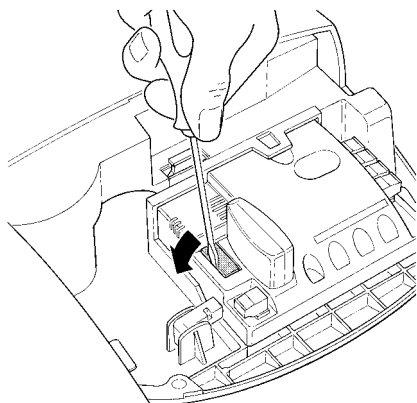
L1 LED	Description
Off	During normal operation the device indicates "Automatic Closure" is inactive.
On	During normal operation the device indicates "Automatic Closure" is active.
Flashing	<ul style="list-style-type: none"> Function programming in progress If it flashes together with L2, it means that it the user must carry out the device recognition phase (refer to Paragraph "4.3 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 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 "4.2 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"
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 "4.3 Recognition of the door opening and closing positions").
L4 LED	Description
Off	During normal operation the device indicates "Stand-by" is inactive.
On	During normal operation the device indicates "Stand-by" is active.
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 "4.3 Recognition of the door opening and closing positions").

7.8) Accessories

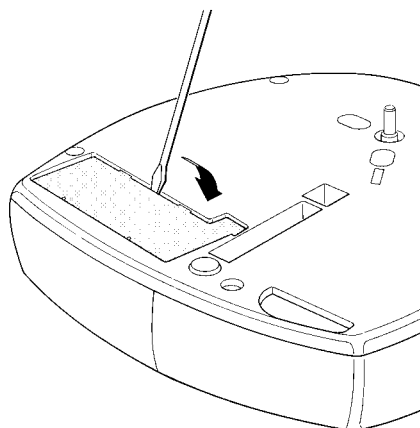
The following optional accessories are available for SPIN. For information on the complete range of accessories, refer to the Nice s.p.a. product catalogue.

For SN6031 and SN6041

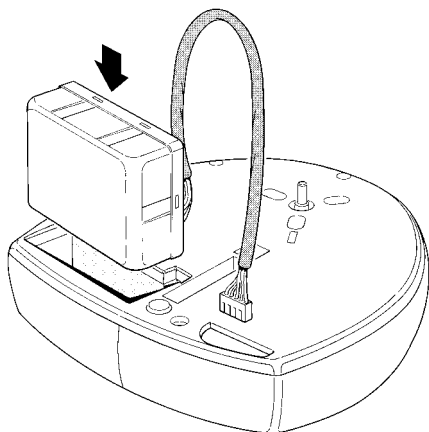
- PS124 24 V Buffer battery – 1.2Ah with integrated charger battery



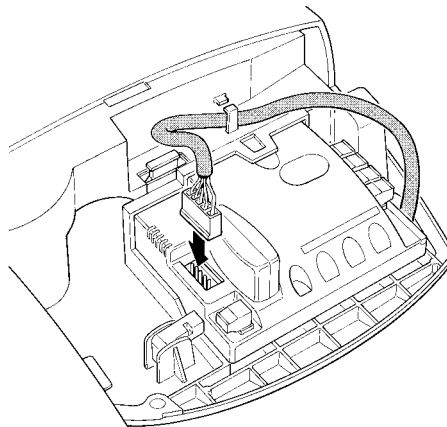
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For SN6031 and SN6041

- SMXI o SMXIS Radio receiver at 433,92MHz with Rolling code digital coding.

For SN6031

- SNA5 Single profile 3-metre guide in galvanised steel. Belt drive with 4 steel inserts.

For SN6031 and SN6041

- SNA6 Double profile 4-metre guide (3m + 1m) in galvanised steel. Belt drive with 6 steel inserts.

For all versions

- SPA2 Mechanical release with metal cord. For use in systems which envisage only the automated door as point of access.

For all versions

- SPA5 Oscillating arm. Required when the door to be automated is a spring or counterweight overhead model.

8) 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 SNA5, SNA6 and guides supplied with SPIN20KCE, SPIN30 and SPIN40		
Peak thrust [corresponds to the force necessary to start a leaf]	11.7Nm [650N]	11.7Nm [650N]	18Nm [1000N]
Nominal torque [corresponds to the force necessary to keep a leaf moving]	5.85Nm [345N]	5.85Nm [345N]	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	3 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	230Vac (±10%) 50/60Hz. 120Vac (±10%) 50/60Hz.		
Max. absorbed power	250W	250W	370W
Reduced consumption in Stand-By	---	less than 2.2W	less than 2.5W
Insulation class	1 (a safety grounding system is required)		
Emergency Power Supply	---	With PS124 accessory	With PS124 accessory
Courtesy light SPIN Courtesy light SPIN/V1	12V-21W socket BA15 12V-21W socket BA15	230V-60W socket E27 120V-60W socket E27	230V-60W socket E27 120V-60W socket E27
FLASH Output	If programmed as "SPA "Open door indicator"": output for a maximum 24V-5W lamp; if programmed as "Flashing light": output for 1 LUCYB 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	2	6	6
STOP Input	For normally open contacts, for 8.2Kohm constant resistance, or normally closed contacts; with self-recognition (any variation from the memorized status causes the "STOP" command)		
Step-by-step Input	For normally open contacts (the closing of the contact causes the "STEP-BY-STEP" command)		
Radio AERIAL Input	52 ohm for RG58 or similar type of cable		
Radio receiver	"SM" connector for SMXI and SMXIS receivers		
Programmable functions	4 ON-OFF functions and 4 adjustable functions (see tables 15 and 17)		
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 ÷ 50°C		
Use in acid, saline or potentially explosive atmosphere	No		
Protection class	IP40 (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 SPIN20KCE and SPIN30	Guide in SPIN40	SNA5	SNA6
Type	3-piece profile in galvanised steel		single profile in galvanised steel	2-piece profile in galvanised steel
Guide length	3.15m	3.15m	3.15m	4.15m
Guide height	35mm	35mm	35mm	35mm
Useful stroke	2.5m	2.5m	2.5m	3.5m
Belt width	6m	6m	6m	8m
Belt Height	6mm	10mm	6mm	10mm
Resistance to traction	730N	1220N	730N	1220N

Technical characteristics	radio receiver: SMXI	radio receiver: SMXIS
Type	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	FLOR, VERY VR; only single group: ERGO, PLANO, PLANOTIME	SMILO
Transmitters memorized	Up to 256 if memorized in mode I	
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	-10°C ÷ 55°C	

Technical characteristics	transmitter: FLO2R-S	transmitter: SM2
Type	2 channel transmitter for radio command	
Frequency	433.92MHz	
Coding	Digital Rolling code with 53 Bit code, FLOR type	Digital Rolling code with 64 Bit code, SMILO type
Buttons	2	
Power supply	12Vdc with 23A battery	
Absorption	25mA	
Battery life	1 year, estimated on the basis of 20 commands/day, each lasting 1s at 20°C (at low temperatures the efficiency of the batteries decreases)	
Irradiated power	100μW	
Dimensions and weight	72 x 40 h 18mm / 30g	Diameter 48 h14mm / 19g
Protection class	IP40 (suitable for use indoors or in protected environments)	
Operating temperature	-40°C ÷ 85°C	

Instructions and Warnings for users of SPIN gearmotor

These instructions can be incorporated with the "Instructions and Warnings for the use of the automation" which the installer must give the owner of the automation, and must be incorporated by them.

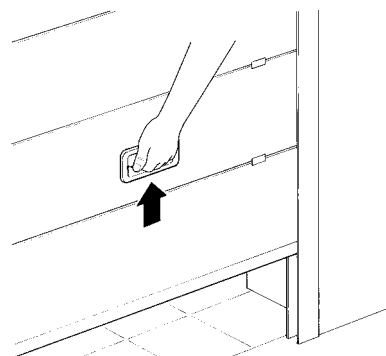
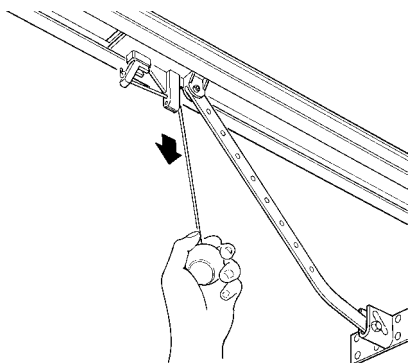
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- **Before using your automation system for the first time**, ask the installer to explain the origin of any residual risks; take a few minutes and read the users **instructions manual given you by the installer**. Retain the manual for future use and deliver it to any subsequent owner of the automation system.
 - **Your automation system is a machine that will faithfully execute your commands**; unreasonable or improper use may generate dangers: 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, children should not be allowed to play in the vicinity of automated systems; to prevent any accidental activations, keep all remote controls away from children: **they are not toys!**
 - **Malfunctions**: If you notice that your automation is not functioning properly, disconnect the power supply to the system and operate the manual release device. Do not attempt to make any repairs; call the installation technician and, in the meantime, operate the system like a non-automatic door after releasing the gearmotor as described below.
 - **Maintenance**: Like any machine, your automation needs regular periodic maintenance to ensure its long life and total safety. Arrange a periodic maintenance schedule with your installation technician. Nice recommends that maintenance checks be carried out every six months for normal domestic use, but this interval may vary depending on the intensity of use. Only qualified personnel are authorized to carry out checks, maintenance operations and repairs.
 - Do not modify the system or its programming and adjustment parameters in any way, even if you feel capable of doing it: your installation technician is responsible for the system.
 - The final test, the periodic maintenance operations and any repairs must be documented by the person who has performed them; these documents must remain under the custody of the owner of the system.
The only recommended maintenance operations that the user can perform periodically concern the cleaning of the photocell glasses and the removal of leaves and debris that may impede the automation.
- To prevent anyone from activating the door **release the automation system** (as described below). Use a slightly damp cloth to
- **Disposal**: At the end of its useful life, the automation must be dismantled by qualified personnel, and the materials must be recycled or disposed of in compliance with the legislation locally in force.
 - **In the event of malfunctions or power failures**. While you are waiting for the technician to come (or for the power to be restored if your system is not equipped with buffer batteries), you can operate the system like any non-automatic door. In order to do this you need to manually release the gearmotor (this operation is the only one that the user of the automation is authorized to perform): This operation has been carefully designed by Nice to make it extremely easy, without any need for tools or physical exertion.



Manual movement and release: before carrying out this operation please note that release can only occur when the door is stopped.

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.



Control with safety devices out of order: If the safety devices are malfunctioning, it is still possible to control the door.

- Operate the door control device (remote control or key-operated selector switch etc.). If the safety devices enable the operation, the door will open and close normally, otherwise the flashing light flashes a few times but the manoeuvre does not start (the number of flashes depends on the reason why the manoeuvre is not enabled).
- In this case, **actuate** the control again within 3 seconds and **keep it actuated**.
- After approximately 2s the door will start moving in the "man present" mode, i.e. so long as the control is maintained the door will keep moving; as soon as the control is released the door will stop.

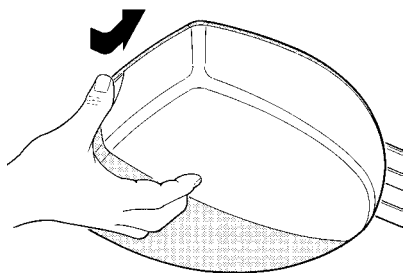
If the safety devices are out of order the automation must be repaired as soon as possible.

Replacing the Remote Control Battery: if your radio control, after a period of time, seems not to work as well, or not to work at all, it may simply be that the battery is exhausted (depending on the type of use, it may last from several months up to one year and more). In this case you will see that the light confirming the transmission is weak, or does not come on, or comes on only briefly. Before calling the installation technician try exchanging the battery with one from another operating transmitter: if the problem is caused by a low battery, just replace it with another of the same type.

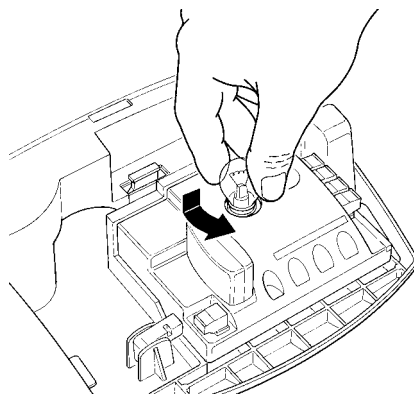
WARNING: The batteries contain polluting substances: do not dispose of them together with other waste but use the methods established by local regulations.

Lamp replacement: before proceeding, disconnect SPIN from the power supply.

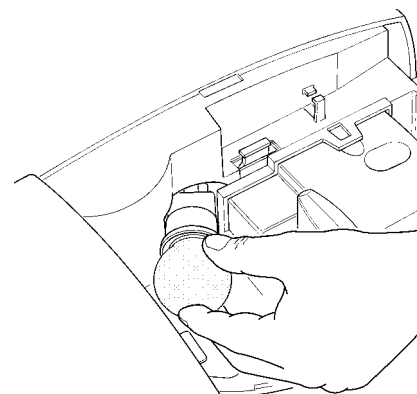
1. Press the white cover and turn to remove.



2. For SN6021: push the lamp up and rotate to remove. Insert a new 12V / 21W lamp with BA15 fitting.



3. For SN6031 and SN6041: unscrew the faulty lamp. Insert a new 230V / 60W lamp with E27 fitting.



Are you satisfied? If you wish to install another automation system in your home, call your old installation technician and use Nice products. You will get the services of a specialist and the most advanced products available on the market, superior performances and maximum system compatibility.

Thank you for reading these instructions. We feel confident that you will be well satisfied with your new system: for any present or future requirements, please contact your reliable installation technician.