

OVO

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

EN Instructions and warnings for installation and use

FR Consignes et avertissements pour l'installation et l'utilisation

ES Instrucciones y advertencias para la instalación y el uso



Made in Italy

KINGGates

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1. General warnings

1.1 - Safety warnings



- This manual contains important safety instructions and warnings. Incorrect installation could lead to serious injury. Before starting, please read all sections of the manual carefully. If you are unsure about something, stop installation immediately and contact KING-gates Customer Service for assistance.

- Important: please retain this manual for future maintenance work and product disposal.

1.2 - Installation warnings

- Before beginning the installation procedure, check that this product is suitable for the intended use (see sections 3.1 and 3.2). If unsuitable, do NOT proceed with installation.

The contents of this manual refer to an installation like the one shown in **fig. 1**.

- Taking into account the hazards which could occur during installation and product operation, the automation system should be installed according to the following procedure:

- Ensure there is a system device which is a means of disconnection from the supply mains. This device must have a contact separation in all poles which ensures full disconnection under overvoltage category III conditions.

- All installation and maintenance operations must be carried out with the automation system switched off and the power supply disconnected. If the disconnection device is not visible from where the automation system has been installed, a sign must be attached to it before attempting any work. The sign should read: "CAUTION! MAINTENANCE WORK IN PROGRESS".

- The product must be connected to a power supply line equipped with safety grounding system.

- Take care not to crush, bang, drop or spill any kind of liquid on the automation system during installation. Do not keep the product close to sources of heat or open flames. Doing so may damage it, corrupt it or lead to hazardous situations. If this were to happen, stop installation immediately and contact KING-gates Customer Service.

- Do not make alterations to the product in any way. Improper use can only lead to malfunctions. The manufacturer declines all liability for damage caused by arbitrary modifications to the product.

- This product is not intended for use by people (including children) with reduced physical, sensory or mental capabilities or who lack experience and knowledge, unless they have been given supervision or instruction concerning the use of the product by a person responsible for their safety.

- The product is not intended as an intruder protection system. Additional devices must be installed alongside the automation system to guarantee effective protection.

- Do not allow children to play with the fixed control devices. Keep remote control devices out of their reach as well.

- The automation system must not be used until it has been commissioned as described in chapter 5 ("Testing and commissioning").

- The packing materials of the product must be disposed of in compliance with local regulations.

2. Product description

OVO is a gearmotor designed for the automation of sectional doors.

OVO operates using electric power. In the event of a power failure, the gearmotor can be released in order to move the door manually.

2.1 - Operating limits

Chapter 9 ("Technical specifications") provides the data needed to determine whether the product is suitable for the intended application. Its structural characteristics make it suitable for use on sectional doors within the limits shown in **tables 1, 2 and 3**.

Table 1 - OVO gearmotor operating limits		
Model:	SECTIONAL door	
OVO550	Height: 2.4 m	Width: 3.7 m

The measurements in **table 2** are to be taken as a guideline and are for general estimate purposes only. The effective suitability of OVO 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 "nominal torque" specified in section 9 ("Technical specifications"); also, to calculate the number of cycles/hour and consecutive cycles, the data in **tables 3 and 4** must be taken into account.

Table 2 - Limits related to leaf height		
Leaf height (metres)	Max. no. of cycles/hour	Max. no. of consecutive cycles
up to 2	16	8
2÷2.4	12	6

Table 3 - Limits in relation to force required to move door leaf	
Force required to move leaf N	Cycle reduction percentage
Up to 200	100%
200÷300	70%
300÷400	25%

The height of the door enables the maximum number of cycles per hour and consecutive cycles to be calculated, while the force required to move the door enables the percentage of cycle reduction to be determined; for example, if the leaf height is 2.2 m, this would enable 12 cycles per hour and 6 consecutive cycles, but if a force of 250 N is required, these would have to be reduced to 70%, resulting therefore in 8 cycles per hour and around 4 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.: 1 kg = 9.81 N, for example, 500 N = 51 kg

2.2 - Typical system

Fig. 1 shows a typical system for automating a sectional door.

a OVO

b Photocells

c Main edge

d Flashing light with incorporated aerial

e Key-operated selector switch

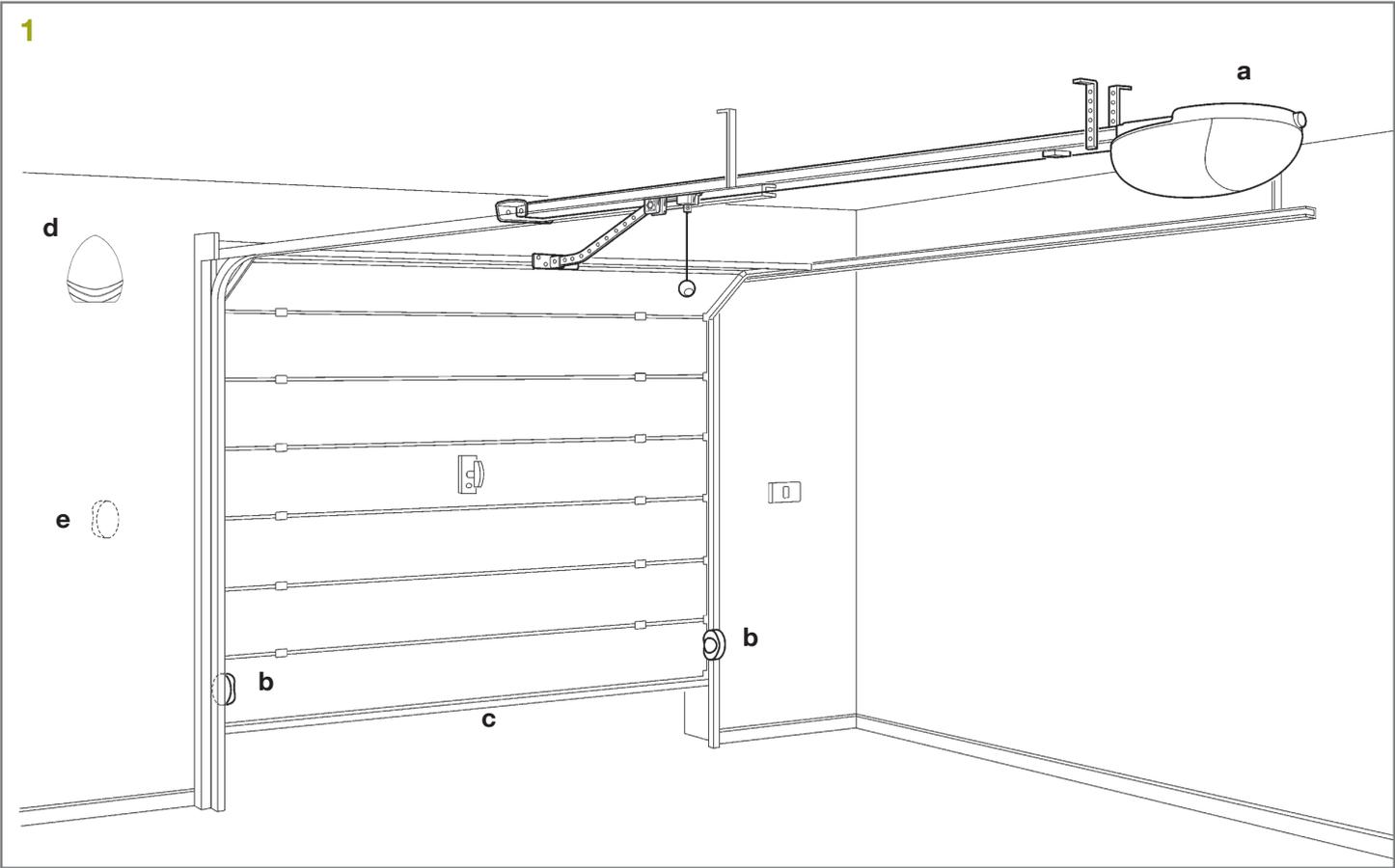
2.3 - List of cables

Table 5 shows the specifications of the cables needed to connect up the various devices.

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

Table 4 - List of cables		
Connection	Cable type	Maximum length allowed
Flashing light with aerial	1 2x0.5 mm ² cable	20 m
	1 RG58 type shielded cable	20 m (recommended less than 5 m)
Photocells	1 2x0.25 mm ² cable for TX	30 m
	1 4x0.25 mm ² cable for TX	30 m
Key-operated selector switch	2 2x0.5 mm ² cables (note 1)	50 m

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



3. Installation

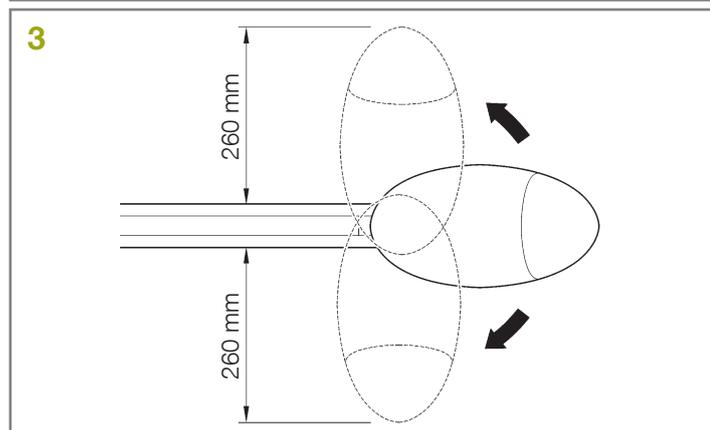
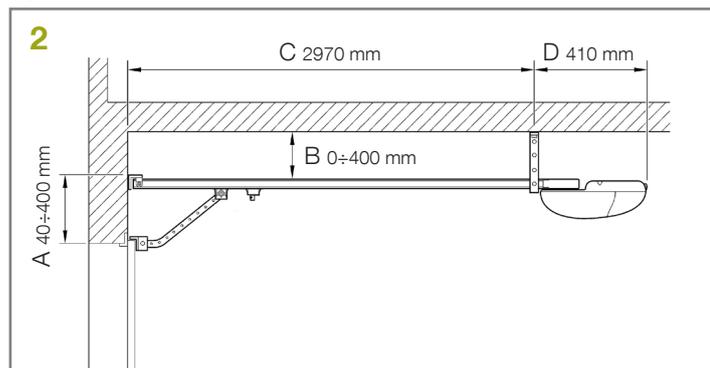
EN

The installation of OVO 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 OVO you must:

- Verify and ensure after installation that no door parts obstruct public roadways or pavements.
- 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 gate 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 section 9 ("Technical specifications"). The manufacturer recommends 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.
- Make sure that the mechanical stops are sturdy enough, and that there is no danger of the door derailing.
- Make sure that the door is well balanced: it must not move by itself when left stationary in any position.
- Make sure that the mounting positions of the various devices (photocells, keys, etc.) are protected from impact and that the mounting surfaces are sufficiently sturdy.
- Make sure that the minimum and maximum clearances specified in **fig. 2** and **3** are observed.



- Check and ensure that the manual release is fitted at a maximum height of 1.8 m.

- Components must never be immersed in water or other liquids.
- Keep all OVO components away from heat sources and open flames; these could damage the components and cause malfunctions, fire or dangerous situations.
- If the door includes an access door, make sure that it does not obstruct normal travel. Fit a suitable interlock system if necessary.
- Only insert the OVO plug into sockets equipped with a safety grounding system.
- The socket must be protected by suitable magneto-thermal and differential switches.

3.2 - Fitting OVO

Installation of the OVO gearmotor comprises 3 stages:

- Assembly of GRO33 and GRO13 guides (see sections 3.2.1 and 3.2.2).
- Mounting the gearmotor to the guide (see section 3.2.3)

3.2.1 - Assembly of guide supplied GRO33

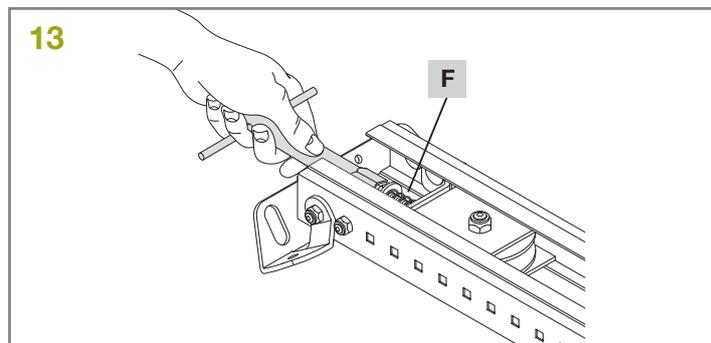
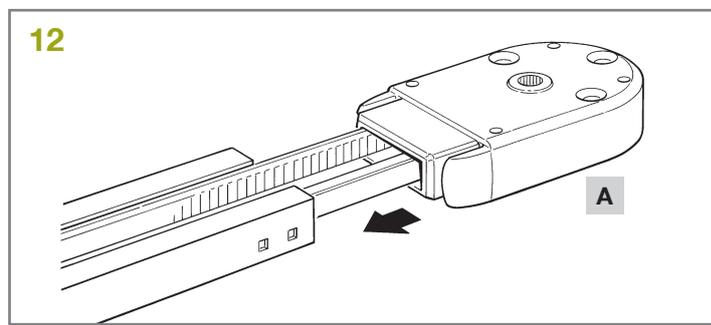
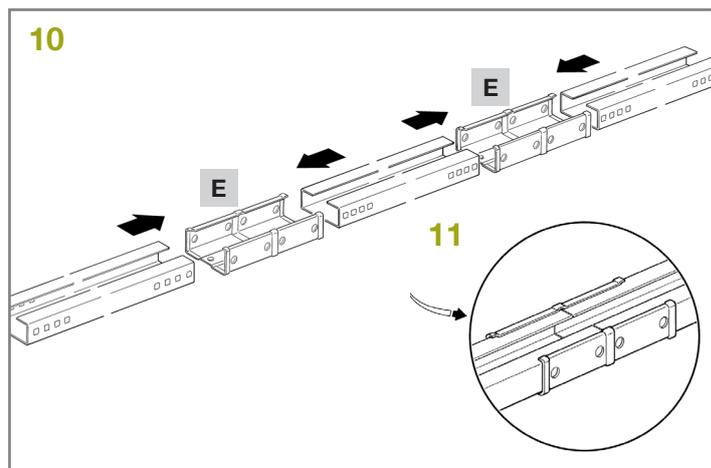
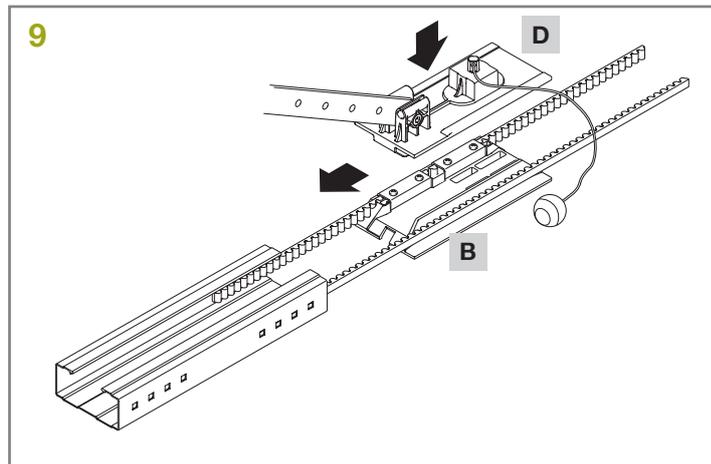
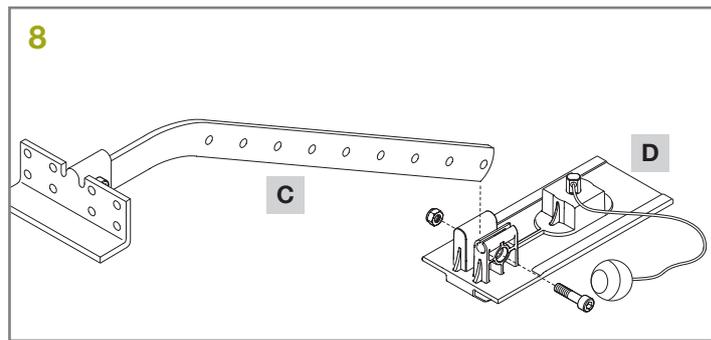
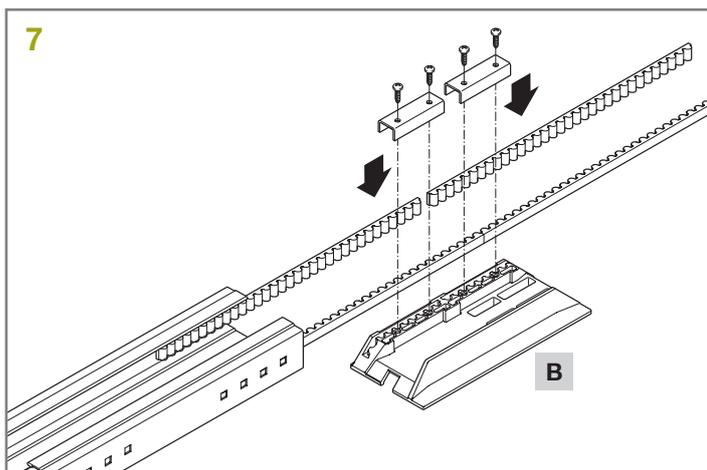
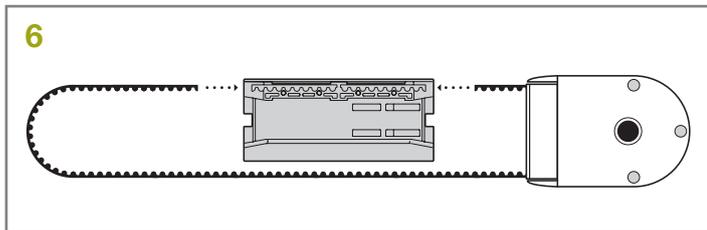
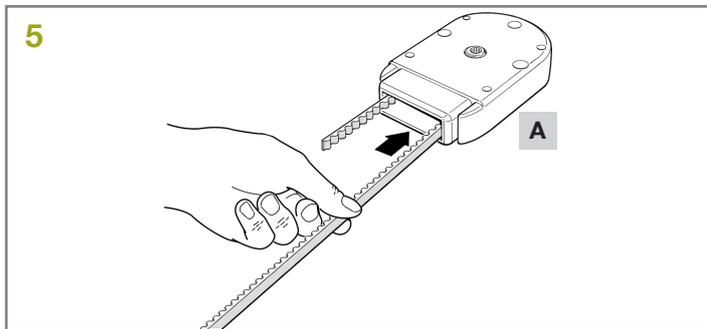
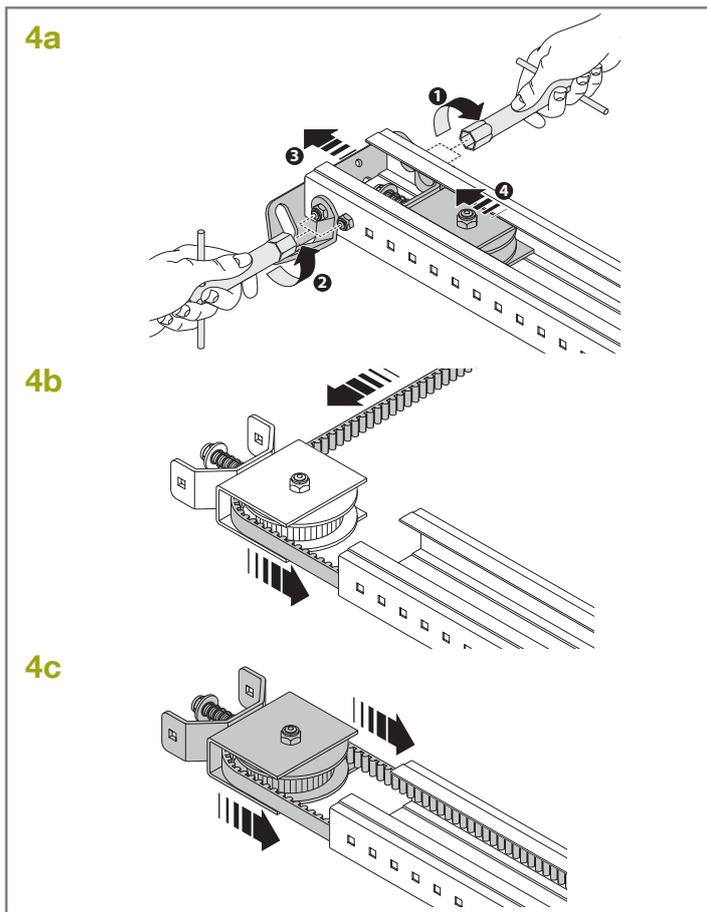
The guide that is supplied with GRO33 must be assembled as follows:

01. Referring to **fig. 4**, remove the belt tensioner device (**4a**); insert one end of the belt into the pulley (**4b**); reintroduce the belt tensioner device into the guide (**4c**).
02. Pass the same end of the belt through the head [A], as in **fig. 5**. NB - Make sure that the belt is correctly positioned: it must be with the teeth facing inwards, straight and without twists.
03. Turn the lower section of the carriage so that the grooves correspond with the two ends of the belt, as in **fig. 6**.
04. Place both ends of the belt into all the shaped slots of the lower carriage [B]. Secure the ends of the belt with the 2 screws (V4.2x9.5) and 2 washers (R05), as in **fig. 7**.
05. Fix the belt guide [C] to the upper carriage [D] with the V6x18 screw and related M6 nut, as in **fig. 8**.
06. Insert the upper carriage [D] into the lower carriage [B] and place the entire carriage assembly inside the guide, as in **fig. 9**.
07. Hammer the three pieces of the guide into place inside the connection brackets [E], as in **fig. 10** and **11**. **Important** – the guides must slide into the brackets until they click into position.
08. Carefully position the belt into the guide, making sure that it is not twisted.
09. Push the head [A] into the free end of the guide using significant force, as in **fig. 12**.
10. Finally, tension the belt with the adjustment screw [F] of the belt tensioner device, as in **fig. 13**.

CAUTION! the gearmotor could break if the belt is TOO taut, and it could cause unpleasant noise if it is TOO slack.

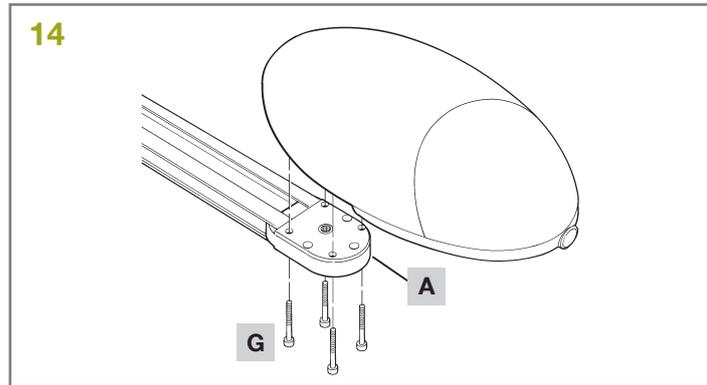
3.2.2 - Assembly of guide supplied GRO13

The GRO13 guide is already assembled. All you have to do is tensioning the belt using the M8 nut [F] (**fig. 13**) until it is sufficiently taut.



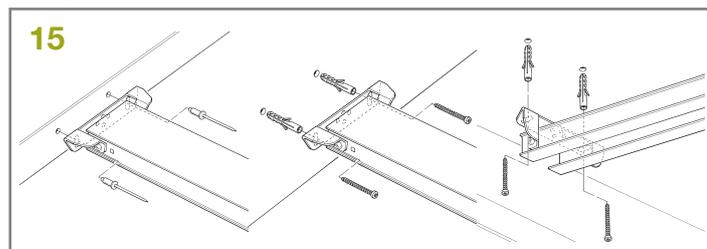
3.2.3 - Fitting the gearmotor to the guide

01. Fit the OVO gearmotor output shaft to the guide head [A] and secure using 4 M6.3x38 screws [G] (**fig. 14**). The gear motor rotates and can be positioned in three different ways (**fig. 3**).



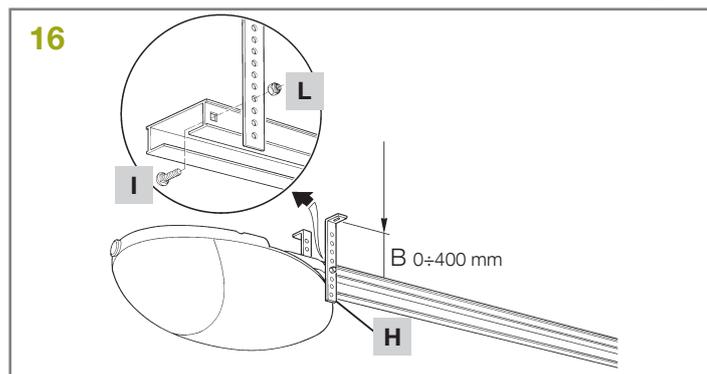
3.2.4 - Mounting the gearmotor to the ceiling

01. On the basis of distances A, B and C in **fig. 2** and **3**, 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 (**fig. 15**). If distances A, B and C (**fig. 2** and **3**) are sufficient, the bracket can be fixed directly onto the ceiling.



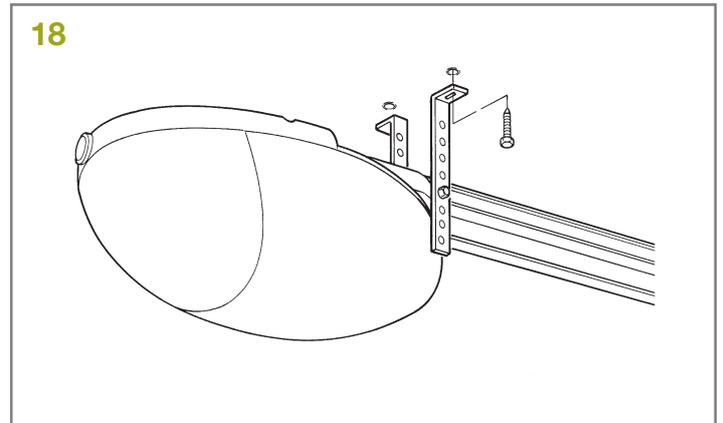
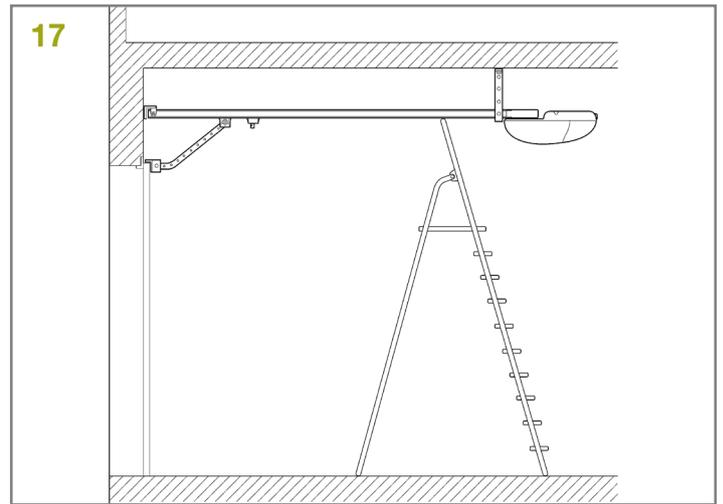
02. After drilling the holes in the relative points, leaving the gearmotor on the ground, lift the guide from the front section and secure using two screws, plugs or rivets, according to the installation surface.

03. Secure the brackets [H] using the screws [I] and nuts [L], selecting the hole most suited to ensure distance B, as shown in (**fig. 16**)

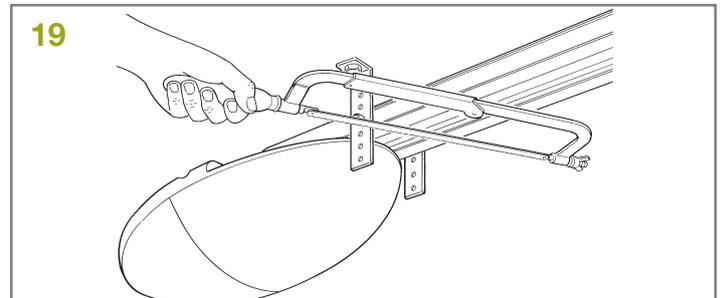


04. Using a ladder, lift the gearmotor until the brackets are touching the ceiling. Trace the drilling points and then return the gearmotor to the ground.

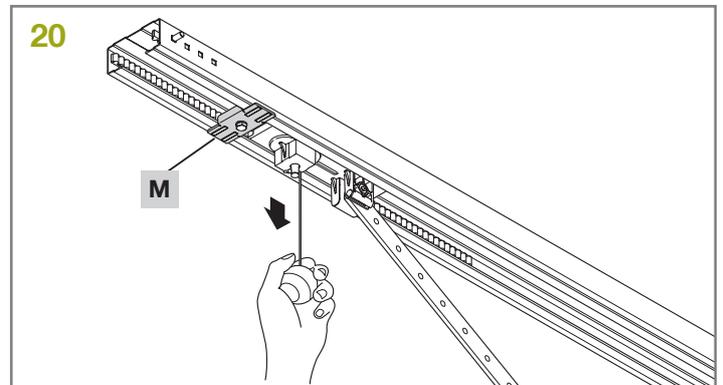
05. Drill at the outlined points and then, using a ladder, lift the gearmotor until the brackets are placed against the drilled holes (**fig. 17**) and secure using screws and plugs suited to the support surface (**fig. 18**).



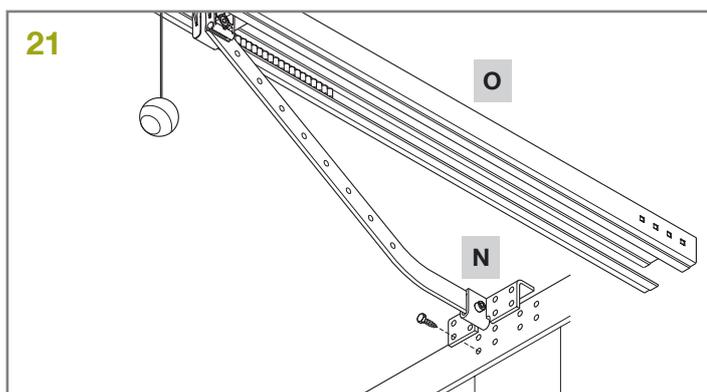
06. Ensure that the guide is perfectly horizontal, then cut off the excess section of the brackets with a saw (**fig. 19**).



07. With the door closed, pull the cord to release carriage [M] from the guide (**fig. 20**).

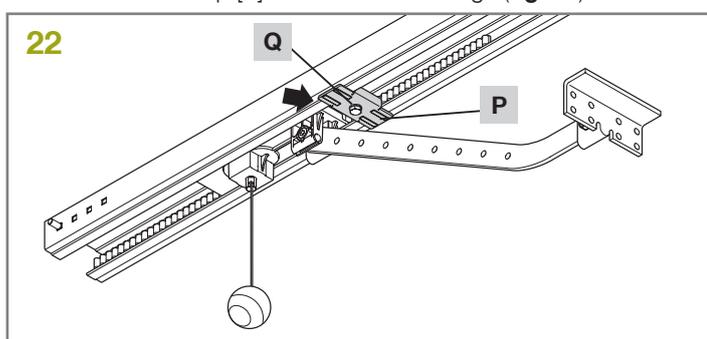


08. Slide the carriage until the leaf connecting bracket [N] (**fig. 21**) on the upper edge of the door is perfectly perpendicular to the guide [O].



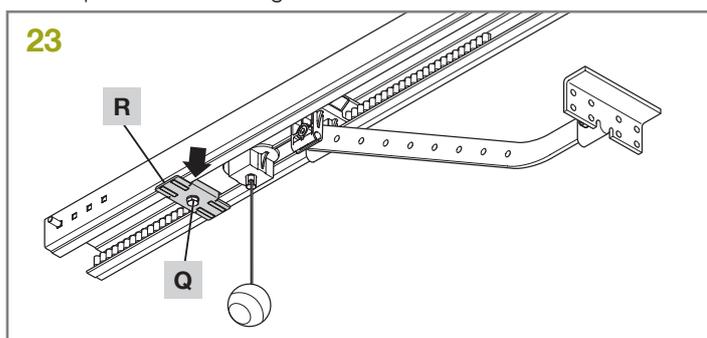
09. Then secure the leaf connecting bracket [N] with rivets or screws (fig. 21). Use screws or rivets suited to the leaf material, and ensure that they are able to withstand the maximum force required for leaf opening and closing.

10. Loosen the screws of the two mechanical stops, then move the front mechanical stop [P] in front of the carriage (fig. 22).



11. Push the carriage in the closing direction and, on reaching the position, tighten the screw [Q] fully down.

12. Manually open the door to the required opening position, move the rear mechanical stop [R] next to the carriage (fig. 23) and tighten the screw [Q] fully down. **Important!** - Make sure the release cord can be pulled below a height of 1.8 m.

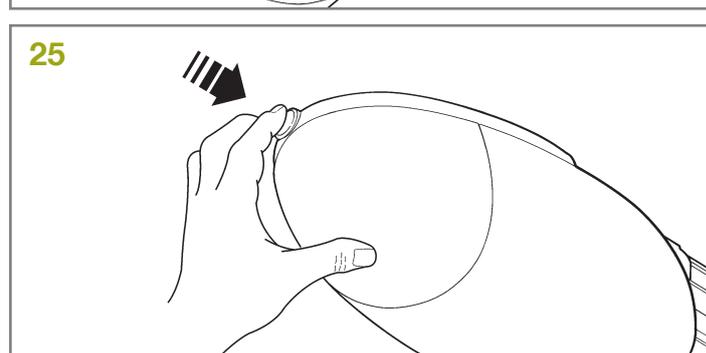
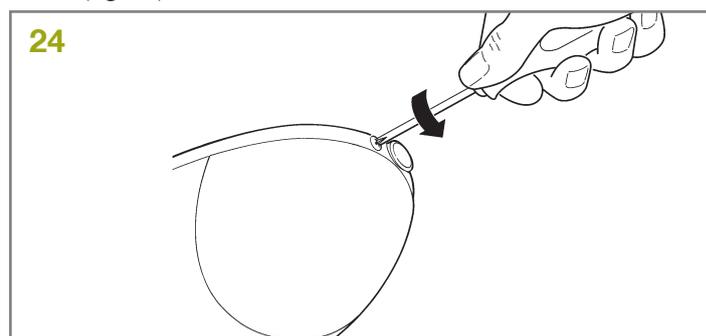


3.3 - Installation of other devices

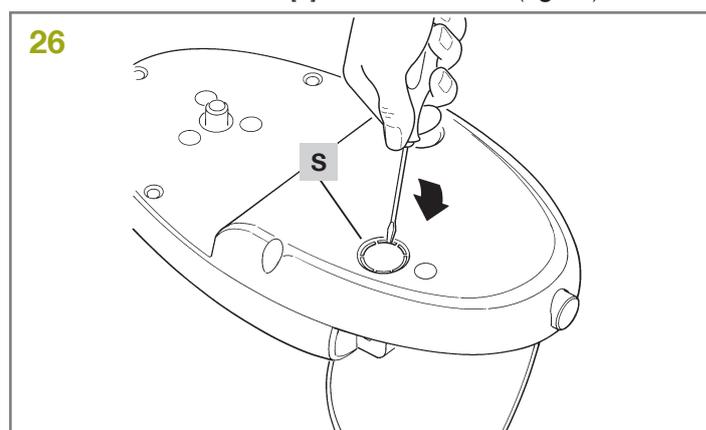
If other devices are needed, install them following the directions provided in the corresponding instructions. Check the devices which can be connected to OVO in fig. 1 and in section 3.5 ("Description of electrical connections").

3.4 - Electrical connections

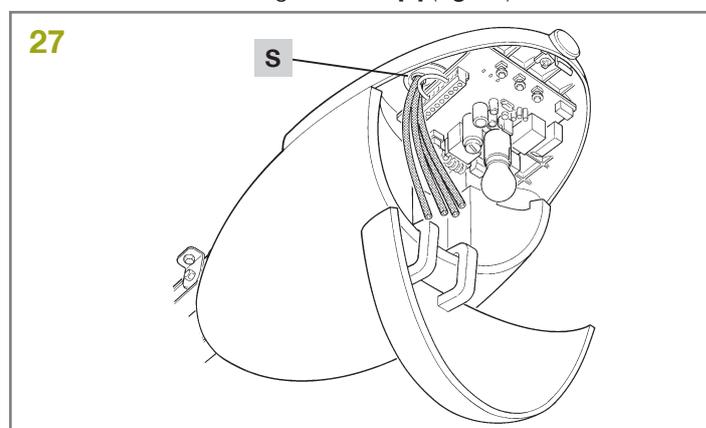
01. Open the cover by loosening the screw (fig. 24) and pushing the button (fig. 25).



02. Remove the small disc [S] with a screwdriver (fig. 26).



03. Feed the cables through the hole [S] (fig. 27).



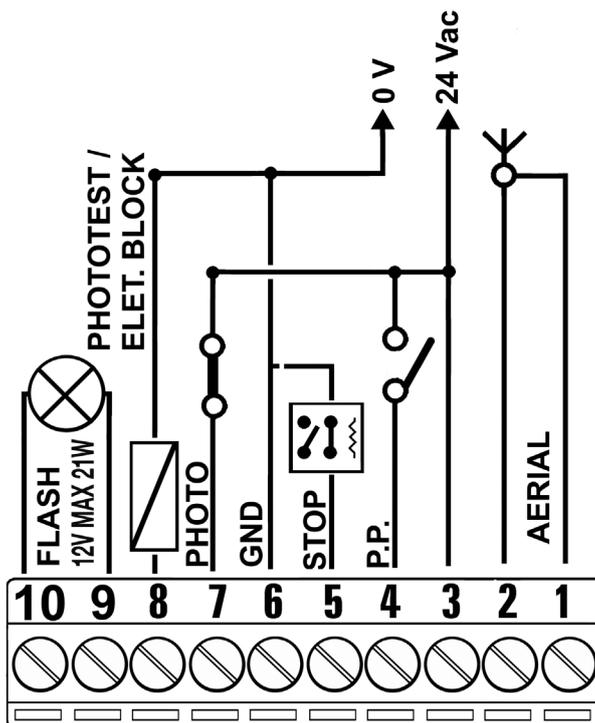
04. Refer to fig. 28 and the connection descriptions in table 5 when making the connections:

- if using photocells, remove the wire clip between terminals 3 and 7 and follow the connection diagram in fig. 28.
- if using the flashing light aerial, remove the wire clip (connected to terminal 2 as standard) and connect the RG58 shielded cable.

05. Once you have connected up all the cables, secure them using cable clips.

06. To close the cover, push it back into place, making sure you hear a "click". Reinsert and tighten the screw to finish.

28



3.5 - Description of the electrical connections

The following is a brief description of the electrical connections (table 5); for further information, please read section 7.3 ("Adding or removing devices").

Table 5

Terminals	Function	Description
1 – 2	Aerial	connection input for the radio receiver aerial.
3 – 4	Step-by-step	input for devices which control movement. It is possible to connect "Normally Open" devices to this input.
5 – 6	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 section 7.3.1 ("STOP Input") for further information about STOP.
3 - 7	Photo	input for safety devices such as photocells. They cut-in during closure, reversing the manoeuvre. "Normally closed" contacts can be connected. Further PHOTO information can be found in section 7.3.2 ("Photocells").
6 – 8	Phototest	Whenever a manoeuvre starts, the relative safety devices are checked and only if everything is in order will the manoeuvre start. All this is only possible if a special configuration of the connections is used; in practice, the "TX" photocell transmitters are powered separately from the "RX" receivers. Further connection information can be found in section 7.3.2 ("Photocells").
9 – 10	Flashing light	a flashing light can be connected on this output with a car type 12 V 21 W lamp. During the manoeuvre the unit flashes at intervals of 0.5 s.

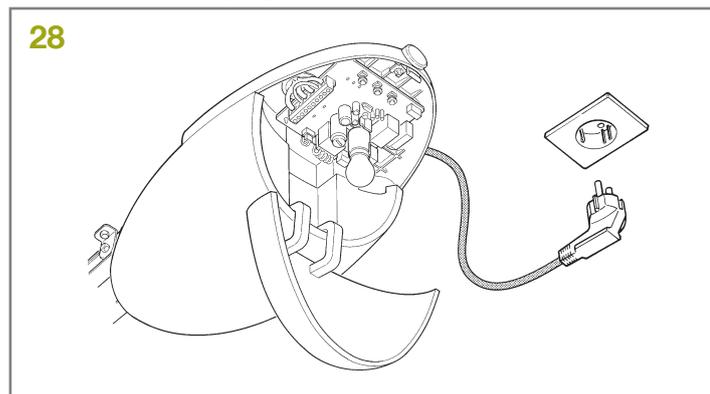
3.6 - Connecting OVO to the mains



- Never cut or remove the cable supplied with OVO.
- If not already available, a power socket for connecting OVO to the mains must be made by qualified and experienced personnel in strict observance of current legislation, standards and regulations.

OVO must be connected to the supply mains by a qualified electrician.

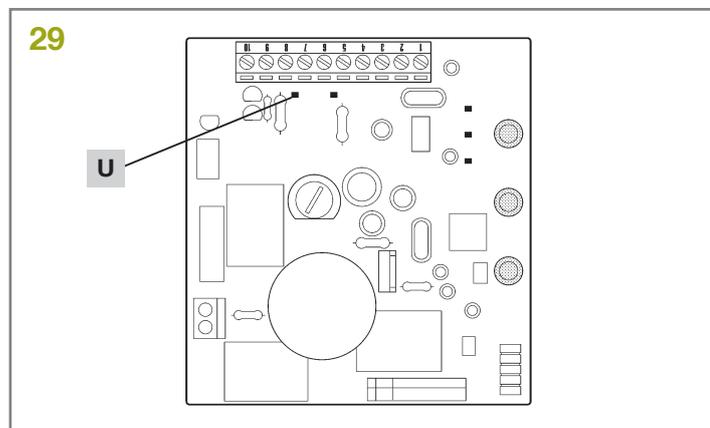
To test OVO, just insert the plug into a power outlet, using an extension cord if necessary (fig. 28).



3.7 - Preliminary checks

As soon as OVO is energised, you should check the following:

01. Check that the LED [U] is flashing normally with around 1 flash per second (fig. 29).



3.7.1 - Recognition of the door opening and closing positions

The control unit must be made to recognise the opening and closing positions of the door. In this phase, the door stroke from the closing mechanical stop to the opening mechanical stop is detected. In addition to position, the STOP input configuration is detected and memorised in this phase as well as the existence or non-existence of the PHOTO input "Phototest".

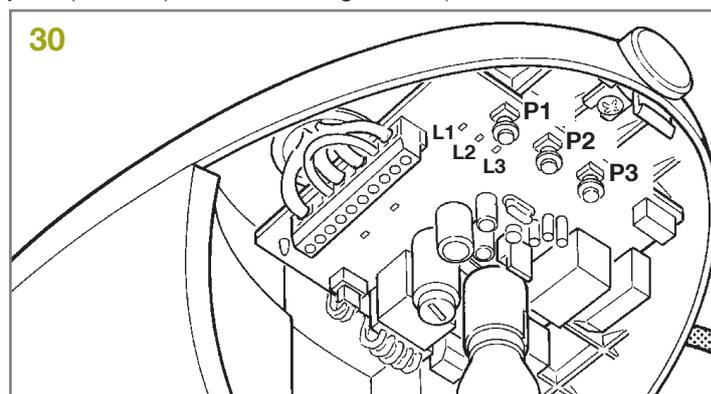
01. Ensure that the drive belt is correctly tensioned and that the two mechanical stops are fully secured.
02. Engage the carriage.
03. Press the P2 and P3 keys and hold them down (fig. 30).
04. Release the keys when the manoeuvre starts (after approx. 3 s).
05. Wait for the control unit to complete the recognition stage: closing, opening and closing again of the door.
06. Push the P3 key to perform a complete opening manoeuvre.
07. Push the P3 key to close.

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

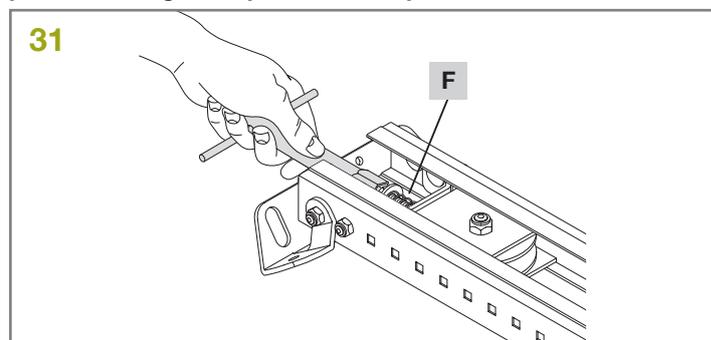
If the L2 and L3 LEDs flash at the conclusion of the recognition process, it means that an error has occurred; see section 8 ("Troubleshooting").

Important! - It is important that these manoeuvres are not interrupted, e.g. by a STOP command. If this occurs, the recognition process described in point 01 must be repeated.

The recognition stage of the positions, and of the STOP and PHOTO input configuration, can be repeated again at any time, even after the installation (for example, if one of the mechanical stops is removed); just repeat the procedure starting from step 01.



CAUTION! During the position search process, if the belt is not sufficiently tensioned, it may slip on the pinion. If this occurs, press the P2 key to interrupt recognition; tension the belt by tightening the M8 nut (F) as shown in fig. 31, then repeat the recognition process from point 01.



Recognition of the door opening and closing positions is only possible after the radio transmitter memorisation and deletion time interval has elapsed (see section 3.7.5 "Radio receiver").

3.7.2 - Checking door movements

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

01. Press the P3 key to open the door. Check that the door opens normally, without any variations in speed; the door must only slow down and stop when it is close to the opening mechanical stop.
02. Press the P3 key to close the door. Check that the door closes normally, without any variations in speed; the door must begin the slow down when it is between 30 and 20 cm. from the closing mechanical stop, and then stop. A brief opening manoeuvre is then performed to release belt tension.
03. During the manoeuvre, check that the flashing light (if any) flashes at a speed of 0.5 seconds on and 0.5 seconds off.
04. Open and close the gate several times to make sure that there are no points of excessive friction and that there are no defects in the assembly or adjustments.
05. 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.

3.7.3 - Preset functions

The OVO 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 (see section 7.2 "Programming").

3.7.4 - Radio receiver

A radio receiver is incorporated in the control unit of OVO for remote control, operating at a frequency of 433.92 MHz and compatible with the following types of transmitter:

Clipper, Stylo 4, Stilo 4K, Myo C4, Novo TX and Novo Digy
Up to 160 transmitters can be memorised.

3.7.5 - Memorisation of radio transmitters

Each radio transmitter is recognised by the radio receiver by means of a "code" which is different from that of any other transmitter. A "memorisation" phase must therefore be performed in order to allow the receiver to recognise each single transmitter. Transmitters can be memorised in 2 ways:

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 memorisation phase is carried out for each transmitter, during which all the transmitter keys are memorised. 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 memory section is occupied for each key.

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 the 1st example of Mode II memorisation, only automation "A", is controlled, and the T3 and T4 keys are associated with the same command. Alternatively, three automations are controlled in the 2nd example of Mode II memorisation, namely "A"(keys T1 and T2), "B" (key T3) and "C" (key T4).

Memorisation and deletion of transmitters must be performed within the first 10 seconds after powering up the unit. In this time interval, the control unit key [P1] is used for radio memorisation and deletion functions. 10 seconds after the last flash of the L1 LED or after the last key is pressed, the key is disabled and the L1 LED is dedicated to programming. The courtesy light flashes once to indicate the end of the interval in which radio memorisation functions are enabled.

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

NB: two channel transmitters only have T1 and T2 keys.

1.	"Step-by-step" command
2.	"Partial opening" command
3.	"Open" command
4.	"Close" command

Examples of Mode II memorisation:

1st example of Mode II memorisation		
T1 Key	"Open" command	Automation A
T2 Key	"Close" command	Automation A
T3 Key	"Partial opening" command	Automation A
T4 Key	"Partial opening" command	Automation A
2nd example of Mode II memorisation		
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

3.7.6 - Mode I memorisation

01. Press the **P1** key on the control unit and hold it down (approx. 4 s).
02. Release the key when the **L1** LED on the control unit lights up.
03. Within 10s, press any key on the radio transmitter to be memorised and hold it down for at least 3s.
04. If the memorisation procedure is successful, the radio LED on the control unit will flash 3 times.
05. If there are other transmitters to memorise, repeat step 3 within another 10 seconds.

The memorisation phase finishes if no new codes are received for 10 seconds.

3.7.7 - Mode II memorisation

01. Press the radio key on the control unit as many times as the number corresponding to the desired command, according to table 8.
 02. Make sure that the radio LED on the control unit makes as many flashes as the number corresponding to the desired command.
 03. Within 10s, press any key on the radio transmitter to be memorised and hold it down for at least 3s.
 04. If the memorisation procedure is successful, the LED on the receiver will flash 3 times.
- If there are other transmitters to memorise for the same type of command, repeat step 3 within another 10 seconds.

The memorisation phase finishes if no new codes are received for 10 seconds.

3.7.8 - "Remote" memorisation

A new radio transmitter can be memorised without directly operating the keys on the receiver. You need to have a pre-memorised and operational radio transmitter. The new radio transmitter will "inherit" the characteristics of the old one, i.e. if the old radio transmitter was memorised in Mode I, the new one will also be memorised in Mode I. In this case, during the memorisation stage you can press any key on the transmitters. If, on the other hand, the old transmitter was memorised in Mode II, the new one will also be memorised in Mode II. Subsequently, 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.

CAUTION! - Programming via radio may be done on all the receivers within the range of the transmitter. Therefore, only the one involved in the operation should be kept switched on.

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

01. Press the key on the new radio transmitter and hold it down for at least 5s, then release it.
02. Press the key on the previously memorised transmitter slowly 3 times.

03. Press the key on the new radio transmitter once slowly.

At this point the new radio transmitter will be recognised by the receiver and will assume the characteristics of the previously memorised one.

If there are other transmitters to be memorised, repeat all the steps above for each new transmitter.

3.7.9 - Deleting the radio transmitters

01. Press the **P1** key on the control unit and hold it down.

02. Wait until the **L1** LED lights up, then wait until it goes off, then wait until it has flashed 3 times.

03. Release the radio key precisely upon the third flash.

If the procedure is successful, after a few moments the LED will flash 5 times.

4. Testing and commissioning

This is the most important stage in the automation system installation procedure in order to ensure 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 gates and doors.

4.1 - 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 OVO, proceed as follows:

01. Make sure that the provisions contained in chapter 1 ("WARNINGS") have been carefully observed.

02. Release the door by pulling the release cord downwards. Check that the door can be manually manoeuvred with a force no greater than 225N.

03. Engage the carriage again.

04. Using the selector switch or the radio transmitter, test the opening and closing of the door and make sure that the door moves in the intended direction.

05. The test should be carried out a number of times to make sure that the gate moves smoothly, that there are no points of excessive friction and that there are no defects in the assembly or adjustments.

06. Check the proper operation of all the safety devices, one by one (photocells, safety edges, etc.). In particular, each time a device is activated, the "OK" LED on the control unit quickly flashes twice, confirming that the control unit has recognised this.

07. To check the photocells and make sure that there is no interference with other devices, pass a 5 cm diameter, 30 cm long cylinder on the optical axis, first near TX, then near RX and finally at the mid-point between them and make sure that in all these cases the device is triggered, switching from the active to the alarm status and vice-versa; finally, make sure that it causes the intended action in the control unit; for example that it causes the reversal of the movement during the closing manoeuvre.

08. If the dangerous situations caused by the movement of the door have been safeguarded by limiting the force impact, the user must measure the impact force according to the EN 12445 standard. 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.

4.2 - Commissioning

01. Commissioning can take place only after all testing phases have been completed successfully. Partial commissioning or use of the system in "makeshift" conditions is not permitted.

02. Prepare and store the technical documentation for the automation for at least 10 years. This must include at least: an assembly drawing of the automation, a wiring diagram, an analysis of hazards and solutions adopted, a manufacturer's declaration of conformity of all the devices installed (for OVO use the annexed CE declaration of conformity); a copy of the automation system instruction manual and maintenance schedule.

03. Post a permanent label or sign near the door detailing the release and manual manoeuvre operations (refer to the figures in "Instructions and warnings for users of the OVO gearmotor").

04. Post a permanent label or sign near the door containing this picture (min. height 60 mm).



05. Post a label on the door providing at least the following data: type of automation, name and address of manufacturer (person responsible for the "commissioning"), serial number, year of manufacture and "CE" marking.

06. Prepare the declaration of conformity of the automation system and deliver it to the owner.

07. Prepare the "Installation instructions and warnings" of the automation system and deliver it to the owner.

08. Prepare the maintenance schedule of the automation system and deliver it to the owner; it must provide all directions regarding the maintenance of all the automation devices.

09. Before commissioning the automation system, inform the owner in writing regarding dangers and hazards that still exist (e.g. in the "Installation instructions and warnings").

5. Maintenance

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

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

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

01. OVO requires scheduled maintenance work every 6 months or 3,000 manoeuvres after previous maintenance.

02. Disconnect any source of electric power.

03. Check for any deterioration in automation system components, paying special attention to erosion or oxidation of the structural parts. Replace any parts which are below the required standard.

04. Check the wear and tear on the moving parts: belt, carriage, pinions and the door components; replace them if necessary.

05. Connect the electric power sources up again, and carry out all the tests and checks described in section 4.1 ("Testing").

6. Disposal of the product

This product constitutes an integral part of the automation system, therefore it must be disposed of along with the latter.

Likewise for installation operations, when the product reaches its end-of-life, decommissioning operations must be performed by qualified personnel.

This product is made up of different types of material, some of which can be recycled while others must be disposed of. Seek information on the recycling and disposal systems available in your area for this product category.

CAUTION! - Some parts of the product may contain pollutants or hazardous substances that could cause serious damage to the environment or human health if released into the environment.

As indicated by the adjacent symbol, it is strictly forbidden to dispose of this product together with domestic waste. Therefore, implement separate waste collection criteria for disposal according to the regulations in force in your area, or return the product to the dealer when purchasing a new equivalent version.



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

6.1 - Disposal of the buffer battery (if present)

CAUTION! The empty battery will contain toxic substances and must not be thrown out with ordinary rubbish.

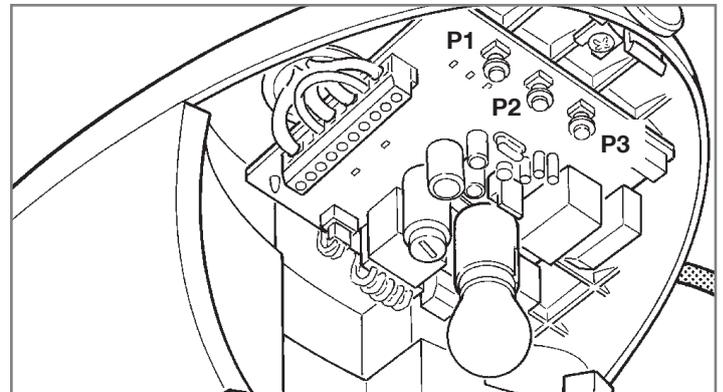
It should be disposed of according to the "separate" refuse collection procedures in effect in your local area.

7. Additional information

7.1 - Programming keys

The OVO control unit is fitted with 3 keys which can be used both for the control of the unit during testing and the programming procedure:

P1	Within the first 10 seconds after power-up, perform the "RADIO" function to memorise or delete the radio transmitters used with OVO. After this time interval, the key is no longer used.
P2	The P2 key stops the manoeuvre; if pressed for more than 5 seconds, it enables programming mode as described below.
P3	The P3 key enables you to control door opening and closing or scroll through the programming steps.



7.2 - Programming

The OVO control unit is equipped with a number of programmable functions; function settings are entered using 2 keys on the control unit: **P3** and **P2**. They are displayed by means of 3 LEDs: **L1**, **L2** and **L3**.

There are two types of programming:

Programming on power-up: this type of programming can only be performed immediately after switching on OVO. Press and hold **P2** during power-up of the control unit to activate this programming mode.

Standard programming: this programming mode can be used at any time and is activated by pressing and holding **P2**.

For both modes, the programming and programmable functions available are divided into 2 levels:

Level 1: functions settable in ON-OFF mode (enabled or disabled). In this case, the **L1**, **L2** and **L3** LEDs indicate a function: if lit, the function is enabled; if off, the function is disabled. See Tables 9 and 10.

Level 2: parameters settable on a scale of values (from 1 to 3). In this case, each LED (**L1**, **L2** and **L3**) indicates 1 of the 3 possible set values. See Tables 11 and 12.

7.2.1 - Level 1 programming (ON-OFF functions)

Table 9 - List of programmable functions in "Programming on power-up" mode		
N°	Description	Example
L1	Variable sensitivity	This function enables the user to enable or disable the sensitivity with which obstacles are detected. The factory setting of sensitivity is variable (L1 LED off): greater sensitivity in the case of low motor force, and less sensitivity where the motor force increases. All with the aim of ensuring optimal detection precision. Variable sensitivity can be disabled, and 3 "fixed" levels of motor force remain (L1 LED lit).
L2	Phototest/Electric lock	This function enables the user to enable output 8 of the terminal board for operation with phototest or with an electric lock. The factory setting of output 8 is with the "phototest" function enabled (L2 LED off). Alternatively, the output can be programmed on the OVO control unit to control an electric lock (L2 LED lit).
L3	Partial opening	This function enables either a long or short partial opening interval to be selected. The factory setting for partial opening is long (approx. 1 m, L3 LED lit). Alternatively, partial opening can be set to short (approx. 15 cm, L3 LED off).

At the end of the "Programming on power-up" procedure, the L1, L2 and L3 LEDs indicate the status of the functions in "Standard programming" mode.

Table 10 - List of programmable functions in "Standard programming" mode		
N°	Description	Example
L1	Closing speed	This function enables the selection of the motor speed during the closing manoeuvre, from 2 levels: "high" and "low". The factory setting is "high" (L1 LED lit). Alternatively the function can be disabled to set the "low" speed (L1 LED off).
L2	Opening speed	This function enables the selection of the motor speed during the opening manoeuvre, from 2 levels: "high" and "low". The factory setting is "high" (L2 LED lit). Alternatively the function can be disabled to set the "low" speed (L2 LED off).
L3	Automatic closure	This function enables automatic closure of the door after a programmed pause; the default Pause Time is set at 30 seconds but may be changed to 15 or 60 seconds. The factory setting is "semiautomatic" as Automatic closure is disabled (L3 LED off).

During normal operation of OVO, the L1, L2 and L3 LEDs are lit or off depending on the status of the associated function in "Standard programming" mode. For example, L3 is lit if the "Automatic closure" function is enabled. L1 also displays the status of the "radio" function in the first 10 seconds after power-up.

7.2.2 - Level 1 programming (ON-OFF functions)

By default level 1 functions are set as shown in tables 9 and 10, but can be modified at any time as shown in the procedures below. Take care during modification procedures, as there is a maximum time interval of 10 seconds between pressing one key and another; otherwise the system exits the procedure automatically memorising the changes made up to that time.

• To modify the ON-OFF functions in "programming on power-up" mode:

01. Switch off OVO (for example, by removing the F1 fuse).
02. Press and hold **P2**.
03. Switch on OVO (for example, by inserting the F1 fuse).
04. Wait for the flashing signal indicating control unit start-up and keep **P2** pressed until **L1** starts to flash (approx. 6s).
05. Release the **P2** key when the **L1** LED starts to flash.
06. Press **P3** to move the flashing LED to the LED associated with the function to be modified.
07. Press **P2** to change the status of the function (short flash = OFF; long flash = ON)
08. Wait 10s to exit the programming mode automatically after the maximum time interval.

NB: points 6 and 7 can be repeated during the same programming phase to set other functions to ON or OFF

• To modify the ON-OFF functions in "standard programming" mode:

01. Press and hold **P2** for approx. 3s.
02. Release the **P2** key when the **L1** LED starts to flash.
03. Press **P3** to move the flashing LED to the LED associated with the function to be modified.
04. Press **P2** to change the status of the function (short flash = OFF; long flash = ON)
05. Wait 10s to exit the programming mode automatically after the maximum time interval.

NB: points 3 and 4 can be repeated during the same programming phase to set other functions to ON or OFF

7.2.3 - Level 2 programming (adjustable parameters)

Table 11 - List of programmable functions in "Programming on power-up" mode				
Input LEDs	Parameter	LED (level)	Value	Description
L1	Variable Sensitivity	L1	High	When variable sensitivity is enabled, it can be set to three different activation thresholds. "High" variable sensitivity is most suited to small, correctly balanced doors.
		L2	Medium	
		L3	Low	
L2	Belt recovery	L1	No recovery	Adjust belt recovery limit Once the door has closed completely, a brief opening manoeuvre is then performed which can be adjusted using this parameter.
		L2	Minimum recovery	
		L3	Maximum recovery	
L3	Closure slowdown	L1	Short	Controls how long closure slowdown takes.
		L2	Average	
		L3	Long	

Table 12 - List of programmable functions in "Standard programming" mode				
Input LEDs	Parameter	LED (level)	Value	Description
L1	Motor force	L1	Low	Sets the maximum force generated by the motor to move the door.
		L2	Medium	
		L3	High	
L2	"Step-by-step" function	L1	Open - stop - close - open	Adjusts the sequence of commands associated with the "Step-by-step" input or the 1st radio command (see tables 7 and 8).
		L2	Open - stop - close - stop	
		L3	Apartment block	
L3	Pause time	L1	15 seconds	Adjusts the pause time, i.e. time before automatic re-closure. Is effective only if automatic closure is enabled.
		L2	30 seconds	
		L3	60 seconds	

All parameters can be adjusted as required without any contraindications, only the "Motor force" setting may require special attention:

- Use of high force values are not recommended to compensate for the fact that the leaf has anomalous points of friction; excessive force may impair the safety system and damage the leaf.
- If the "Motor force control" is used in support of the system for impact force reduction, the force measurement procedure must be performed after each adjustment, as envisaged by standard EN 12445.
- Wear and atmospheric conditions influence movement of the gate; force settings should be checked periodically.

7.2.4 - Level 2 programming (adjustable parameters)

By default level 1 functions are set as shown in tables 11 and 12, but can be modified at any time as shown in the procedures below. Take care during modification procedures, as there is a maximum time interval of 10 seconds between pressing one key and another; otherwise the system exits the procedure automatically, memorising the changes made up to that time.

• To modify the adjustable parameters in "Programming on power-up" mode:

01. Switch off OVO (for example, by removing the F1 fuse).
02. Press and hold **P2**.
03. Switch on OVO (for example, by inserting the F1 fuse).
04. Wait for the flashing signal indicating control unit start-up and keep **P2** pressed until **L1** starts to flash (approx. 6s).
05. Release the **P2** key when the L1 LED starts to flash.
06. Press the **P3** key to move the flashing LED to the "input LED" associated with the parameter to be modified.
07. Press and hold **P2** during steps 8 and 9.
08. Wait approx. 3s after which the LED associated with the current level of the parameter to be modified will light up.
09. Press the **P3** key to move the LED associated with the parameter value.
10. Release **P2**
11. Wait 10s to exit the programming mode automatically after the maximum time interval.

Points 6 to 10 can be repeated during the same programming phase to modify other parameters.

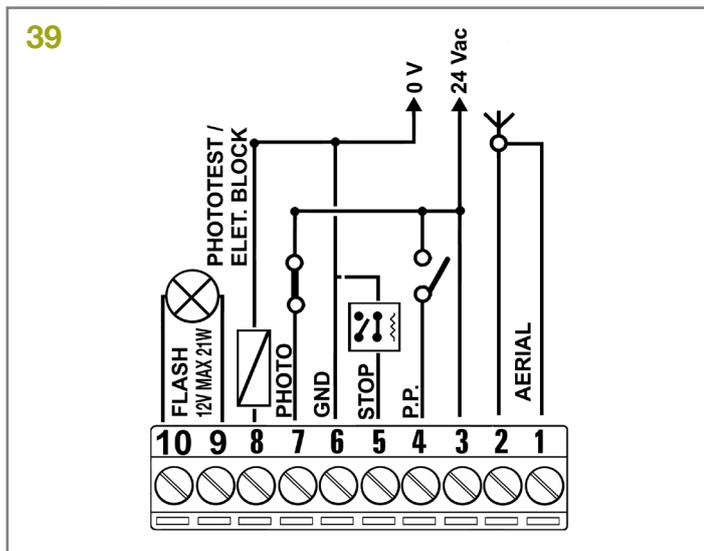
• To modify the adjustable parameters in "Standard programming" mode:

01. Press and hold **P2** for approx. 3s.
02. Release the **P2** key when the L1 LED starts to flash.

- 03. Press the **P3** key to move the flashing LED to the "input LED" associated with the parameter to be modified.
 - 04. Press and hold **P2** during steps 5 and 6.
 - 05. Wait approx. 3s, after which the LED associated with the current level of the parameter to be modified will light up.
 - 06. Press the **P3** key to move the LED associated with the parameter value.
 - 07. Release **P2**.
 - 08. Wait 10s to exit the programming mode automatically after the maximum time interval.
- Points 3 to 7 can be repeated during the same programming phase to modify other parameters.

7.3 - Adding or removing devices

Devices can be added or removed at any time on an automation using OVO. In particular, various types of device can be connected to the inputs STOP and PHOTO as indicated in sections 4.8.1 ("STOP Input") and 4.8.2 ("Photocells"). **Fig. 39** shows the wiring diagram for connecting the various devices.



7.3.1 - STOP input

STOP is the input that stops movement immediately, followed by a brief reverse of the manoeuvre. Devices with contact types Normally Open (NO), Normally Closed (NC) or devices with a constant resistance of 8.2KΩ (such as safety edges) can be connected to this input.

The control unit recognises the type of device connected to the STOP input during the recognition phase (see section 3.7.1 "Recognition of the door opening and closing positions"); after this, a STOP command is activated whenever the device detects any difference from the recognised setting.

When set accordingly, more than one device (these can be different) can be connected to the STOP input:

- An unlimited number of NO devices can be connected in parallel.
- An unlimited number of NC devices can be connected in series.
- Several devices with a constant resistance of 8.2 KΩ can be "cascade" connected with a single terminating resistance of 8.2 KΩ
- It is possible to combine two NO and NC contacts, placing them in parallel, taking care to place a resistance of 8.2 KΩ in series with the NC contact (this also enables the combination of 3 devices: NO, NC and 8.2 KΩ).

If the STOP input is used for connecting devices with safety functions, only the devices with a constant resistance of 8.2 KΩ guarantee safety category 3 against faults in accordance with the standard EN 954-1.

7.3.2 - Photocells

Please note - The images in this section refer to the Viki 30 photocell model.

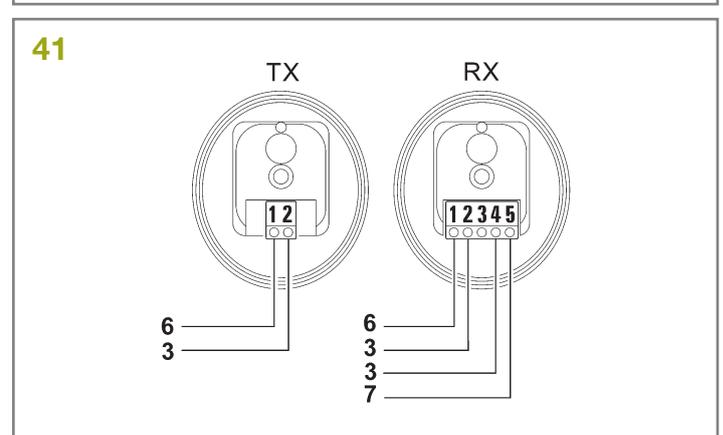
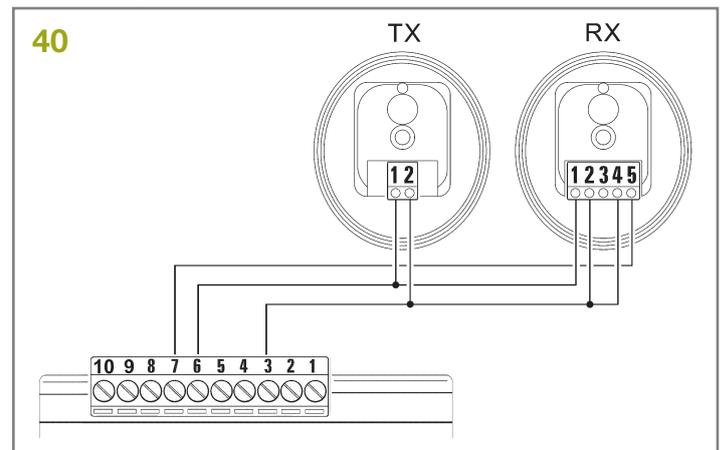
The OVO control unit is equipped with a "Phototest" function which increases the reliability of the safety devices, enabling it to be classified in category 2 in compliance with the standard EN 954-1 regarding the combination of the control unit and safety photocells.

Each time a manoeuvre is started up, all safety devices are checked and operation will only start if everything is in order. If, however, the test fails (photocell "blinded" by the sun, cables shorted etc.), the fault is identified and the manoeuvre disabled.

For the "phototest" function, a specific connection is required for the photocell transmitters (see **fig. 42 and 43**). The control unit recognises the connection in "phototest" mode during the self-learning phase (see section 3.7.1 "Recognition of the door opening and closing positions").

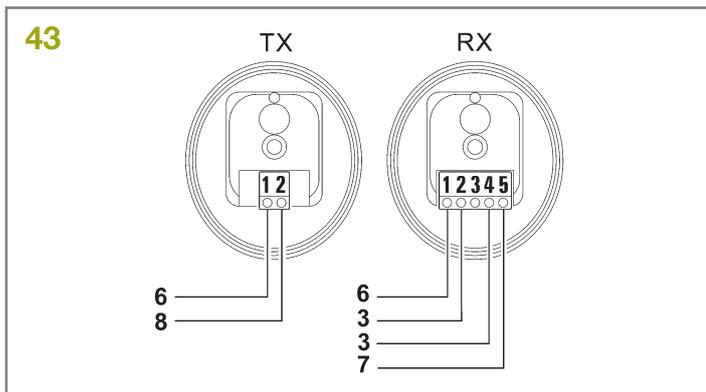
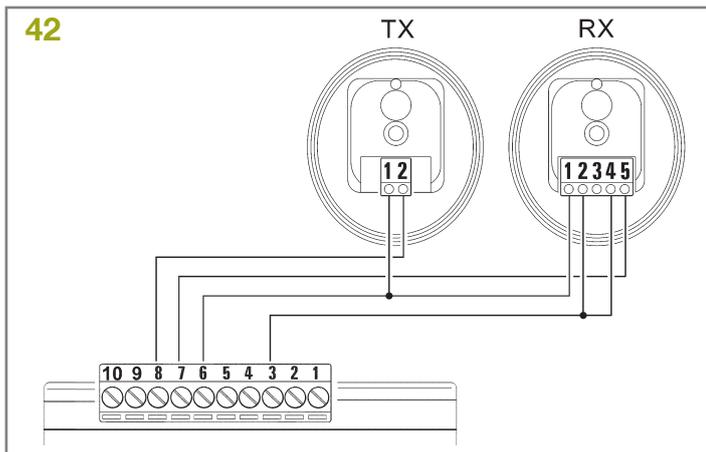
- Connection without "Phototest" function (**fig. 40 and 41**)

Power the transmitters and receivers directly from the control unit services output (terminals 3 - 6).



- Connection with "Phototest" function (**fig. 42 and 43**)

The receiver power comes directly from the services output (terminals 3 - 6), while that of the transmitters is from the "Phototest" output (terminals 8 - 6). The maximum admissible current on the "Phototest" output is 100 mA.



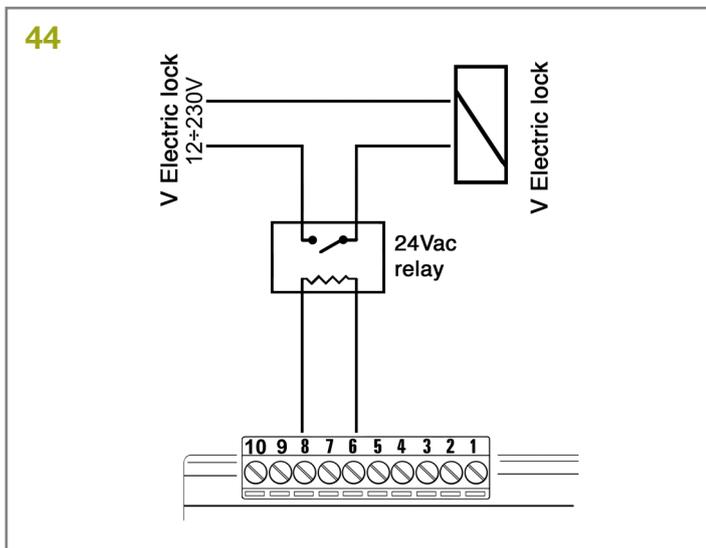
If two pairs of photocells are used which could interfere with each other, activate the synchronisation mechanism as described in the photocell instructions.

7.3.3 - Electric lock

The factory setting of the "phototest" output is with the "Phototest" function enabled.

Alternatively, the output can be programmed on the OVO control unit to control an electric lock. On start-up of each opening manoeuvre, the output is activated for 2 seconds; in this way an electric lock device can be connected. The output is not activated during the closing manoeuvre and therefore the electric lock must have a provision for mechanical reactivation.

The output cannot control the electric lock directly (only loads of 24Vac – 2W). The output must be interfaced with a relay, as shown in **fig. 44**.



7.4 - Special functions

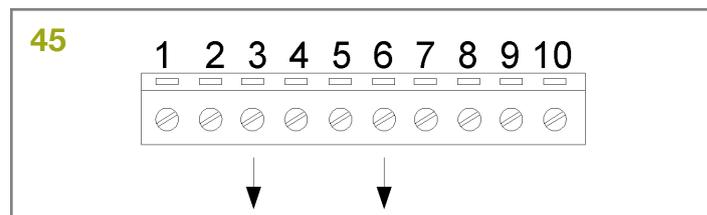
7.4.1 - "Always open" function

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" input in order to keep the door open for a certain length of time, for example.

This feature is valid whatever the "Step-by-step" input programming may be (see the "Step-by-step" properties in table 12).

7.5 - Connection of other devices

If the user needs to power external devices, it is possible to tap power as shown in **fig. 45**. The power supply voltage is 24Vac -30% ÷ +50% with a maximum available current of 100mA.



8. Troubleshooting

Table 13 contains instructions to help you solve malfunctions or errors that may occur during the installation stage or in case of failure.

Table 13 - 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 and the LED on the transmitter lights up.	Check to see if the transmitter has been memorised correctly in the radio receiver. Check that the emission of the transmitter radio signal is correct by means of this empirical test: push a key and rest the LED on the aerial of a normal radio (ideally an economical one) that is switched on and tuned in, as close as possible, to 108.5Mhz FM; a slight crackling sound should be heard.
No manoeuvre starts and the OK LED fails to flash.	Check that OVO is being powered at the mains voltage of 230 V. Check to see if fuses F1 and F2 (fig. 46) have blown; if necessary, identify the reason for the failure and then replace the fuses with others that have the same current rating and specs.
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 OK led flashes twice indicating that the command has been received.
No manoeuvre starts and the flashing light flashes a few times.	Count the flashes and check the corresponding value in table 14.
The manoeuvre starts but it is immediately followed by a reverse run.	The selected force could be too low for this type of door. Check to see whether there are any obstacles; if necessary increase the force.

8.1 - Diagnostics and signals

A few devices give out special signals that allow you to recognise the operating status or possible malfunctions.

8.1.1 - Flashing light and courtesy light signals

During the manoeuvre, the flashing light, flashes once every second if connected. When something is wrong, the flashes are more frequent: the light flashes twice with a 1 second pause between flashes. The courtesy light gives the same diagnostics signals.

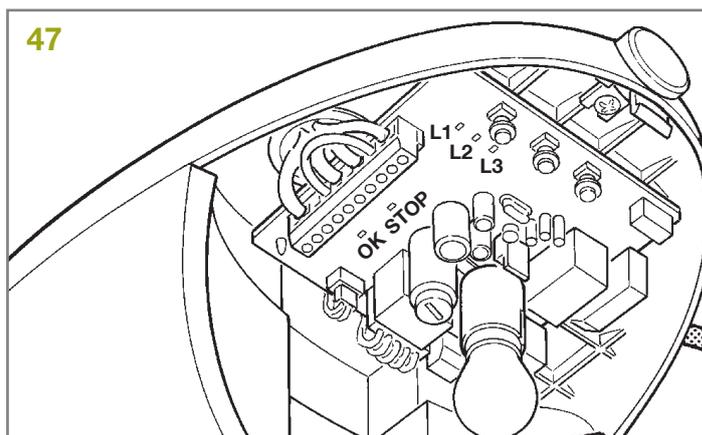
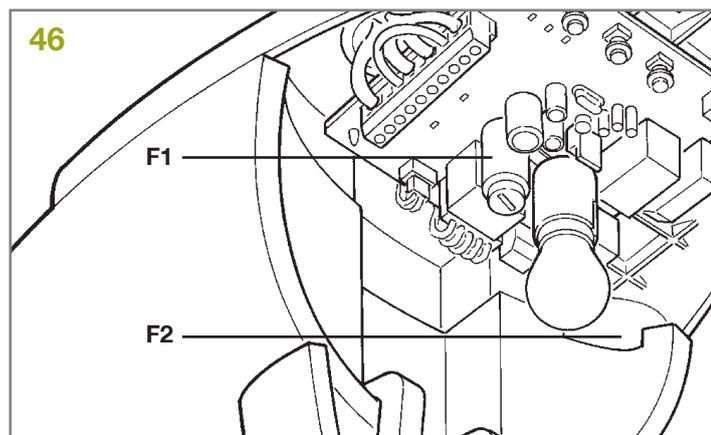
Table 14 - FLASH flashing light signals		
Quick flashes	Cause	Action
2 flashes 1 second pause 2 flashes	Triggering of a photocell	At the start of the manoeuvre, one or more photocells are preventing movement; check to see if there are any obstacles. This is normal when there is an obstacle impeding the closing movement.
3 flashes 1 second 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 pause 4 flashes	Activation of the STOP input	At the start of or during the manoeuvre, the STOP input was activated; identify the cause.
5 flashes 1 second pause 5 flashes	Error in the internal parameters of the electronic control unit	Wait at least 30 seconds, then try giving a command; if the condition persists, it means there is a serious malfunction and the circuit board has to be replaced.
6 flashes 1 second 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 pause 7 flashes	There is an error in the internal electric circuits	Disconnect all the power circuits for a few seconds and then try giving a command again; if the condition persists, it means there is a serious fault on the circuit board or the motor cabling. Check and replace as necessary.

8.1.2 - Control unit signals

On the OVO control unit, you can find the **L1**, **L2** and, **L3** LEDs (**fig. 46**). Each of these can give special indications, both during normal operation and in case of malfunctions.

Table 15 - LEDs on the control unit terminals		
OK LED	Cause	Action
Off	Malfunction	Make sure there is power supply; check to see if the fuses are blown; if necessary, identify the reason for the failure and then replace the fuses ones of the same type.
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 circuit 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 use of the radio transmitter.
Series of flashes separated by a 1 second pause	Miscellaneous	It corresponds to the flashing light or the courtesy signal. See table 14.
STOP LED	Cause	Action
Off	Activation of the STOP input	Check the devices connected to the STOP input.
On	Everything OK	STOP Input active.

Table 16 - LEDs on the control unit keys	
L1 LED	Description
Off	Correct during normal functioning.
On	Indicates that a radio code that is not in the memory has been received during normal functioning.
It flashes	<ul style="list-style-type: none"> Function programming in progress. Memorising or deleting the radio transmitters.
L2 LED	Description
Off	Indicates the slow "Motor speed" during normal functioning.
On	Indicates the fast "Motor speed" during normal functioning.
It flashes	<ul style="list-style-type: none"> Function programming in progress. If it flashes together with L3, it means that the user must carry out the recognition of the door opening and closing positions (refer to section 3.7.1 "Recognition of the door opening and closing positions").
L3 LED	Description
Off	During normal operation the device indicates "Automatic Closing" is inactive.
On	During normal operation the device indicates "Automatic Closing" is active.
It flashes	<ul style="list-style-type: none"> Function programming in progress. If it flashes together with L2, it means that the user must carry out the recognition of the door opening and closing positions (refer to section 3.7.1 "Recognition of the door opening and closing positions").



9. Technical specifications

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

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

OVO technical specifications	
Type	Electromechanical gearmotor for the automatic movement of garage doors for residential use, complete with electronic control unit
Pinion	9.5 mm diameter, 28 teeth
Peak starting torque [corresponds to the force necessary to keep set the leaf in motion]	9.9 Nm [550N]
Nominal torque [corresponds to the force necessary to keep a leaf moving]	4.95 Nm [275N]
Speed under no load [corresponds if "Fast" speed is programmed]	103 rpm [0.14m/s] The control unit enables 2 speeds equal to approx. 100% - 60% to be programmed
Nominal torque speed [corresponds if "Fast" speed is programmed]	52 rpm [0.07m/s]
Maximum frequency of operating cycles	30 cycles per day (the control unit allows up to the maximum described in tables 2 and 3)
Maximum continuous operating time	3 minutes (the control unit limits the continuous operation up to the maximum described in tables 2 and 3)
Operating limits	In general, OVO is suitable for the automation of sectional or overhead doors which remain within the dimensions stated in table 1 and limits specified in tables 2 and 3.
OVO power supply	230Vac (±10%) 50/60Hz.
Max. absorbed power	200 W
Insulation class	1 (a safety grounding system is required)
Emergency power supply	No
OVO courtesy light	12 V-21 W
Flashing Light Output	for 1 flashing light (12 V, 21 W)
STOP Input	For normally closed or normally open contacts or for constant resistance of 8.2 KΩ with self-recognition (any variation from the memorised 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	52Ω for RG58 or similar type of cable
Radio receiver	Incorporated
Programmable functions	6 ON-OFF functions and 6 adjustable functions (see tables 9, 10, 11 and 12)
Recognition functions	Recognition of the type of "STOP" device (NO or NC contact or 8.2 KΩ resistance). Recognition the door opening and closing positions and calculation of the slowdown and partial opening points.
Working temp.	-20°C ÷ 50°C
Use in acid, saline or potentially explosive atmosphere	No
Protection class	IP 40 use only in indoor or protected environments
Dimensions and weight	225 x 330 h 100 / 3.3 kg

Guide technical characteristics		
	GRO33	GRO13
Type	3-piece profile in galvanised steel	single profile in galvanised steel
Guide length	3.15 m	3.15 m
Guide height	35 mm	35 mm
Useful stroke	2.6 m	2.6 m
Belt length	6 m	6 m
Belt height	6 mm	6 mm
Resistance to traction	730 N	730 N

Incorporated radio receiver technical specifications	
Type	4 channel receiver for incorporated radio command
Frequency	433.92 MHz
Coding	King
Transmitter compatibility (*)	Clipper, Stylo 4, Stilo 4K, Myo C4, Novo TX and Novo Digy
No. of transmitters that can be memorised	Up to 160 if memorised in mode 1
Input impedance	52Ω
Sensitivity	better than 0.5μV
Range of the transmitters	From 100 to 150m. The range can vary if there are obstacles or electromagnetic disturbances, and is also affected by the position of the receiving aerial
Outputs	/
Working temp.	-20°C ÷ 55°C

10. CE Declaration of conformity

Declaration of conformity as per Directive 2004/108/CE (EMC)

Declaration code: K101/OVO

Address: Via Malignani, 42 - 33077 - Sacile (PN) Italy

Rev.: 0.

Type: Electromechanical gearmotor with incorporated control unit

Language: EN

Model: OVO

Manufacturer's name: KING GATES S.r.l.

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 protection: EN 50371:2002
- Electrical safety: EN 60950-1:2006+A11:2009
- Electromagnetic compatibility EN 301 489-1 V1.8.1:2008, EN 301 489-3 V1.4.1:2002
- Radio spectrum: EN 300 220-2 V2.3.1:2010

• DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC, in accordance with following harmonised standards.
EN 61000-6-2:2005, EN 61000-6-3:2007

In addition, the product conforms with the following Directive on partly completed machinery:

• Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast), in accordance with the following harmonised standards:

- It is hereby declared that the relevant technical documentation has been compiled in accordance with Annex VII Part B of Directive 2006/42/CE and that the following essential requirements have been applied and fulfilled: 1.1.1- 1.1.2- 1.1.3- 1.2.1-1.2.6- 1.5.1-1.5.2- 1.5.5- 1.5.6- 1.5.7- 1.5.8- 1.5.10- 1.5.11
- The manufacturer undertakes to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery. This shall be without prejudice to the intellectual property rights of the manufacturer of the partly completed machinery.
- Should the partly completed machinery be put into service in a European country with an official language different to the one used in this declaration, a translation into that language must be provided by the person bringing the machinery into the language area in question.
- The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/CE, where appropriate;

In addition, the product GD0N complies with the following standards: EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006 + A2:2006 + A13:2008+A14:2010; EN 60335-2-95:2004

The product complies with the following standards (limited to the applicable sections): EN 13241-1:2003, EN 12445:2002, EN 12453:2002, EN 12978:2003

Sacile, 19-06-2012

Alex Antonioli
(Managing Director)



Dati dell'installatore / *Installer details*

Azienda / *Company* _____

Timbro / *Stamp*

Località / *Address* _____

Provincia / *Province* _____

Recapito telefonico / *Tel.* _____

Referente / *Contact person* _____

Dati del costruttore / *Manufacturer's details*

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