



Installation and user guide for the garage drive
for sectional and tilt-up doors.

ECO 600 N





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1. Safety



Read the instructions carefully and follow all installation and safety instructions.

Keep the instruction. Failure to follow these instructions can present risk to life and health or damage to property.

1. The drive is designed and manufactured in accordance with applicable standards and regulations.

To properly mount the drive, the installer must comply with the standards and regulations in force in the country where the appliance will be installed.

2. Unskilled personnel or people who do not know the health and safety standards applicable to the installation of automatic gates and doors may not under any circumstances perform system installation or commissioning.

3. Persons who install or service the device without complying with all applicable safety standards shall be liable for any damage, injury, costs, expenses or claims of the injured person as a result of improper installation of the system.

4. In order to increase safety, we recommended to install the photocells. Although the drive is equipped with an overload system, added of photocells will significantly improve the safety of automatic garage doors.

5. Before leaving or entering the garage, make sure that the garage door is completely open and stationary.

6. After CLOSE command, make sure that the garage door is completely closed and stationary.

7. Do not hold your hands near the drive and garage door when operating the drive.

8. The obstacle detection system is designed to work only on stationary objects. When the garage door contacting with a moving object, it can cause serious personal injury and / or property damage.

9. This device is not intended for use by children or persons with limited physical, sensory or mental abilities, unless they have been supervised or trained in the use of the device by a person responsible for their safety. Children should not play with the device.

10. If the supply cord is damaged it must be replaced by manufacturer, its service agent or qualified persons in order to avoid a hazard.



Used electrical products should not be disposed of with municipal waste. Throw them into specially marked containers.

11. Do not allow children to play garage door control units. Keep away remotes control from children.

12. Watch the movable gate until it is fully opened or closed. Make sure there are no people or animals nearby.

13. Be careful when opening the gate - an open gate that has damaged or weak springs

may fall down sharply.

14. Check the installation regularly, especially wires, springs and mountings for signs of use and damage. In a situation where it is necessary to repair or adjust the gate - do not use it. Using an incorrectly balanced or damaged door can cause personal injury.

15. Once a month check obstacle detection function to work properly. Place an obstacle with a height of min. 5 cm and close the gate - the drive should detect it and the gate should stop or go back. If necessary, adjust the overload force and check again, as improper adjustment can pose a hazard when using the door.

16. Familiarize yourself with the instructions before releasing and using the gate manually.

17. Please check the informations of regulating the gate and drive.

18. Turn power supply off while cleaning or other maintenance.

19. The manual should contain details regarding the installation of the drive and related components.

2. Drive description and functions

1. Obstacle detection

Drive stops or retreats if sensing resistance in its path. Thanks to this function, we can protect children, pets and other things from being crushed by the gate.

2. Soft start / soft stop function

The reduced speed of moving the gate up and down at the beginning and end of each cycle reduces the stress of the gate and drive to extend the service life and makes for quieter working.

3. Auto closing

This function provides home security, automatically closing the gate after entering or leaving the garage.

4. Automatic adjustable opening and closing forces

The drive force for various stages of gate movement is automatically set during the drive configuration and is constantly updated. The drive force is automatically adjusted in the appropriate range.

5. Electronic limit positions

Setting the electronic limit positions is quick and easy, you only need to control the configuration from the drive panel.

6. Additional connectors

Optionally, we can connect: photocells, additional receivers, wired and wireless wall switches, signal lamps and pass door protection.

7. LED lighting

The lighting switch on for each cycle for 3 minutes.

8. Connecting emergency power supply

In the event of a power failure, the drive can be powered from the battery.

9. Break gear

The brake gear is a protection against uncontrolled lowering of the gate.

10. Disconnecting the drive manually

The manual release system is used to operate the gate in the event of a power failure.

11. Radio control

Rolling code technology (7.38×10^{19} combinations), frequency 433.92 MHz, Transmitter, eg 4-channel, allows you to control 4 gates using one transmitter.

12. The metal bottom plate provides a strong and safer assembly.

13. UP/DOWN control buttons.

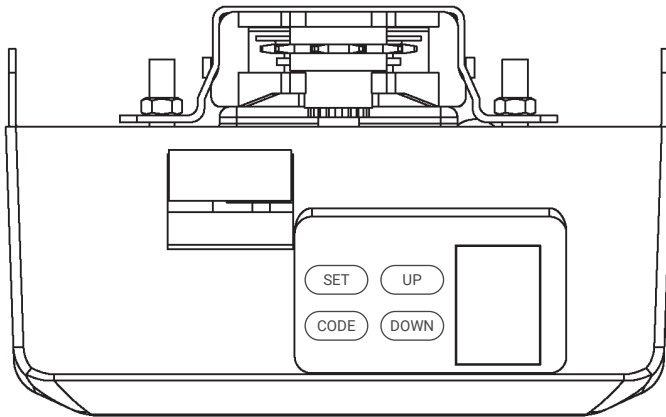


Fig. 1

3. Pre-installation recommendations

1. A correctly installed garage door should be manually lifted and closed without much effort. Good balance of the gate and properly mounted springs are essential for proper installation.
2. In a situation when the garage door is incorrectly mounted (opening of which requires use of large force), the drive should not be installed.
3. Make sure that mounted locking devices have been removed from the gate before installing the device. In the opposite situation, you can lose your warranty.
4. The power supply socket must be mounted near the place where the drive will be installed.
5. There should be a gap with a minimum height of 30 mm at its nearest point between the bottom of the metal rail and the upper part of the garage door (Fig.2).



As an additional protection for the garage door, we recommend installing photocells on all installations.

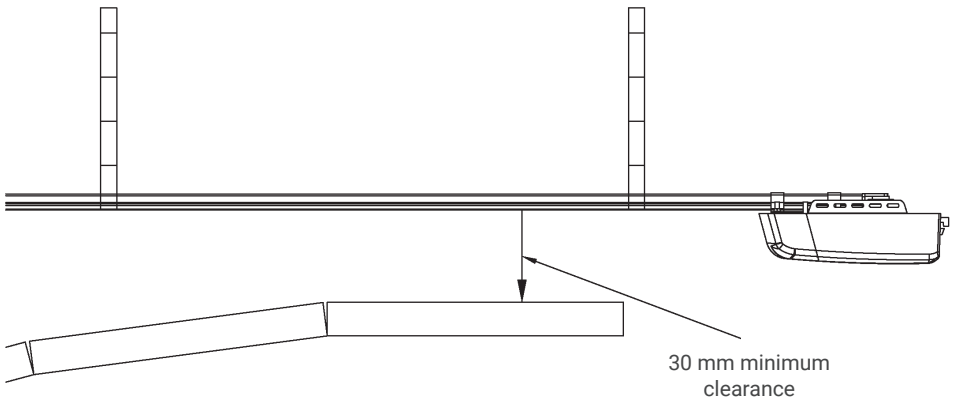


Fig. 2

4. Montage

4.1 Installation of wall bracket and handle gate

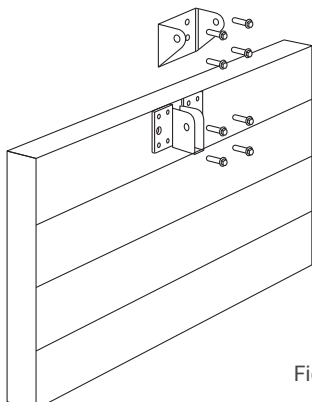


Fig. 3

1. Wall bracket

Close the garage door, measure its width at the top and mark the center. Attach and mount the wall bracket on the inner wall 2cm-15cm above the gate (depending on the space available).

2. Handle gate

Attach the handle door to the internal side of the door as close as possible to the top edge.

4.2 Folding the rail

2- elements rail

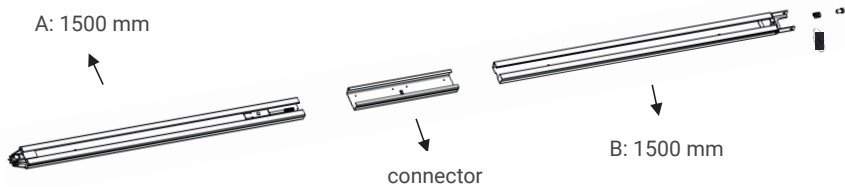


Fig. 4

3- elements rail

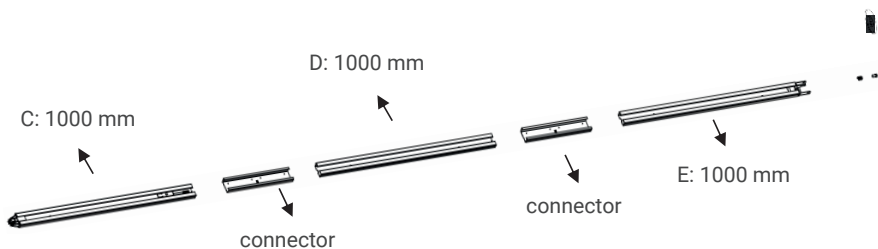


Fig. 5

1. 2- elements rail:

Slide rail A and B in the connector (Fig. 4).

3- elements rail:

Slide the rail C, D and E into the connector (Fig. 5).

2. Pull the screw F with the tensioning element to the end of the rail (Fig. 6).

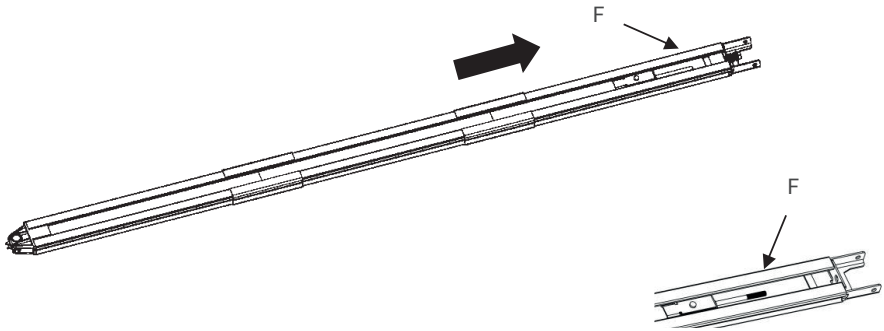


Fig. 6

3. Loosen the nut and spring as in Fig. 7.

4. Tighten the nut as shown in Fig. 8, then go to the rail assembly.

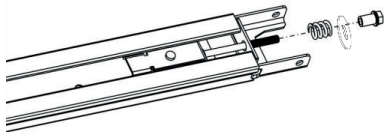


Fig. 7

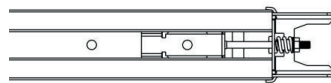


Fig. 8

4.3 Installation of a metal rail with a drive

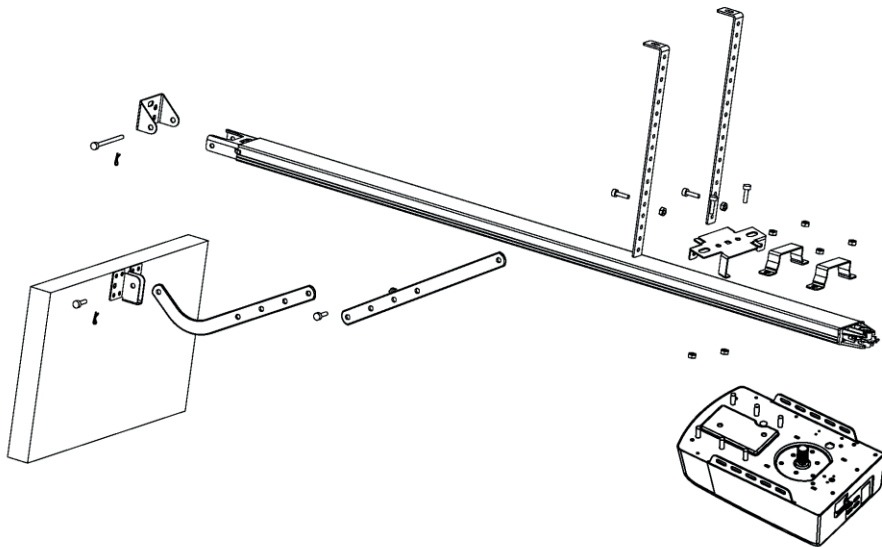


Fig. 9

STEP 1

Fasten the drive to the rail with two U-shaped handles. Fasten the handles with the 6 mm nuts included in the set (Fig. 9).

STEP 2

Place the rail with a drive on the garage floor, in the middle of the gate. The side without the drive should be at the gate. Lift and place the front of the rail in the wall bracket. Insert the spindle and secure it with the cotter (Fig. 9).

STEP 3

Lift the rail with the drive so that its position will be horizontal and in the center of the gate. Mount the drive rail to the ceiling with mounting brackets (Fig. 9, Fig. 10).



Do not let children stay near a gate, drive or ladder. It can cause serious injuries and / or damage.

STEP 4

Connect with screws the straight arm with the bented arm.

Place and screw the arms to the gate handle located on the upper edge of the gate, using the screws included in the set (Fig. 9, Fig. 11).

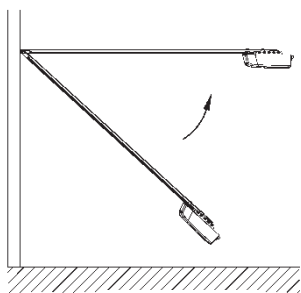


Fig. 10

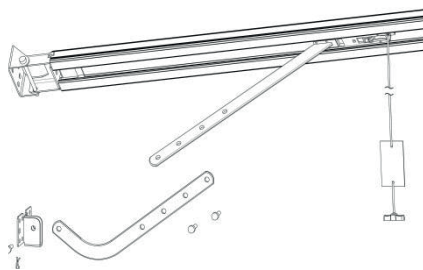


Fig. 11

STEP 5

Open the gate until the latch locks on the belt or chain, and proceed to the drive setting.

4.4. Battery installation (optional)

Option 1 - Mount at the top of the drive

Mount the battery using the handle and nuts (Fig. 12 i Fig. 13).

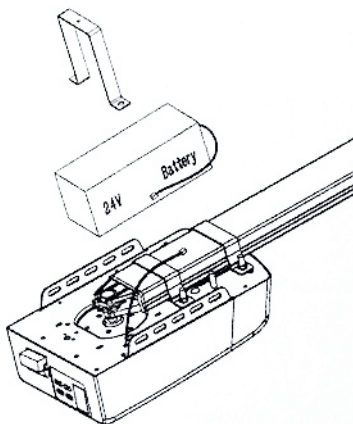


Fig. 12

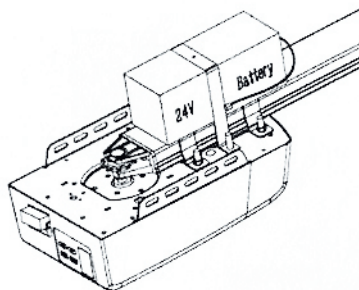


Fig. 13

Option 2 - Mounting on the side of the drive

Mount the battery using the handle and nuts (see Fig.14 and 15).

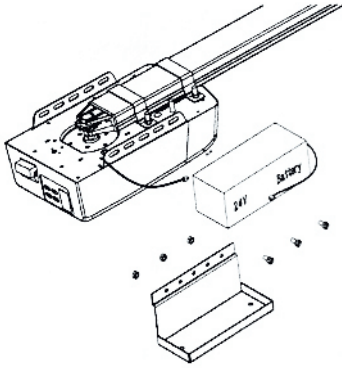


Fig. 14

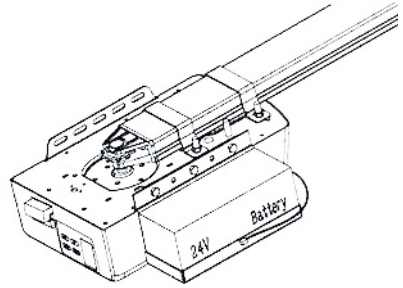


Fig. 15

5. Programming

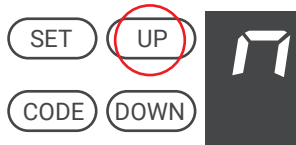
5.1 Programming of limit positions



1. Press shortly UP or DOWN buttons to set precisely limit positions.
2. After setting the limit positions, the gate will automatically open and close. During this time, the drive force is set. After the movement is completed, the drive is ready for work.



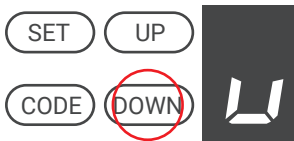
Press and hold SET button
untill digit 1 appear.
The drive is in programming mode.



Press and hold UP button
untill the gate will be in
its upper limit position.



Press SET button to confirm
the upper limit position.
Digit 2 appears.



Press and hold DOWN button untill the
gate will be in its lower limit position.



Press SET button to confirm
the lower limit position.

5.2 Programming transmitters

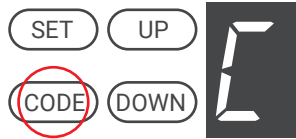


Press CODE button.
A dot will appear in the bottom corner.

Press button which will be control the gate on the remote control. Wait 2 seconds, press and hold the same button.
Dot will flash several times confirming transmitter programmed.

Repeat the procedure for all added transmitters.

5.3 Deleting programmed transmitters

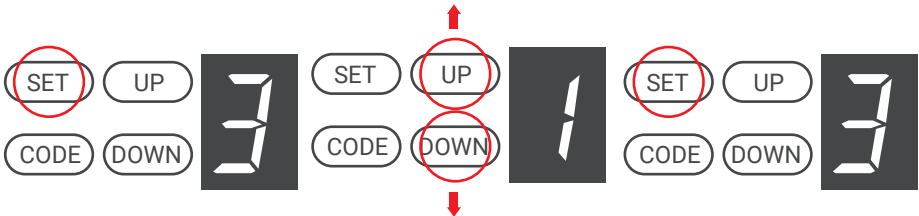


Press and hold CODE button until C symbol appear. All programmed transmitters has been deleted.

5.4 Regulation of obstacle detection system



The obstacle detection is set automatically during programming limit positions. Typically, obstacle detection regulation is not necessary.



Press and hold SET button until digit 3 appear. The drive is in regulation overload force mode. The minimum value of the overload force is 1.

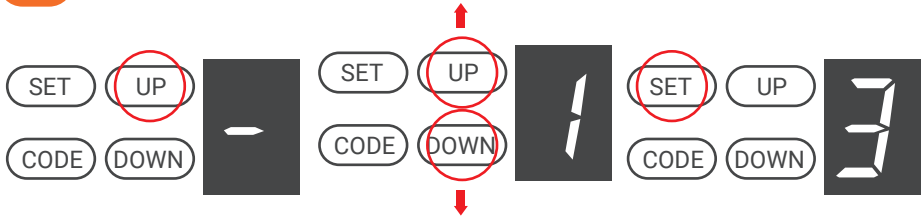
Press UP button to increase or DOWN button to decreases overload force.

Press SET button to confirm settings.
The default value of the overload force is 3.

5.5 Auto closing



For the automatic closing function to work properly, photocells must be installed.



Press and hold UP button until the digit or horizontal bar appears. Press UP button again to set the automatic closing time.

Press UP button to increase the time or DOWN to decrease the time. The display shows numbers from 0 to 9, where:
0 - auto closing function is turned off,
1 - minimum closing time it's 15 seconds,
9 - maximum closing time it's 135 seconds.

Press the SET button to confirm the settings.

5.6 Photocells



Make sure that the photocells are properly connected. Use a NC photocell (Fig. 15 and Fig. 16). The photocell function should be turned off when they are not connected. Otherwise, it will not be possible to close the gate.



Press and hold DOWN button until digit 11 or symbol „H“ appear.

Press UP button to activate photocells. The „H“ symbol appears in the display.



Press DOWN button to turn on the photocells. The digit 11 appear.

Press the SET button to confirm the settings.

5.7 Open/ stop/ close input



The O / S / C input can be used to control the drive using an external switch. The switch must have normally open voltage-free contacts (Fig. 19).

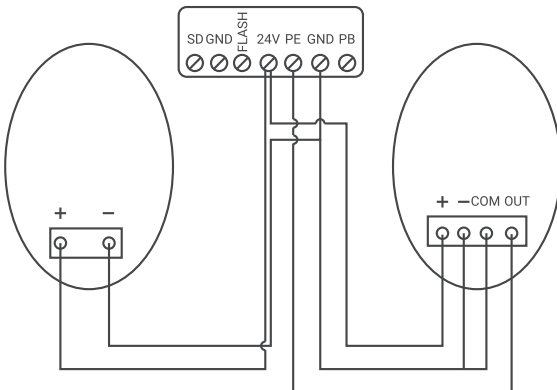
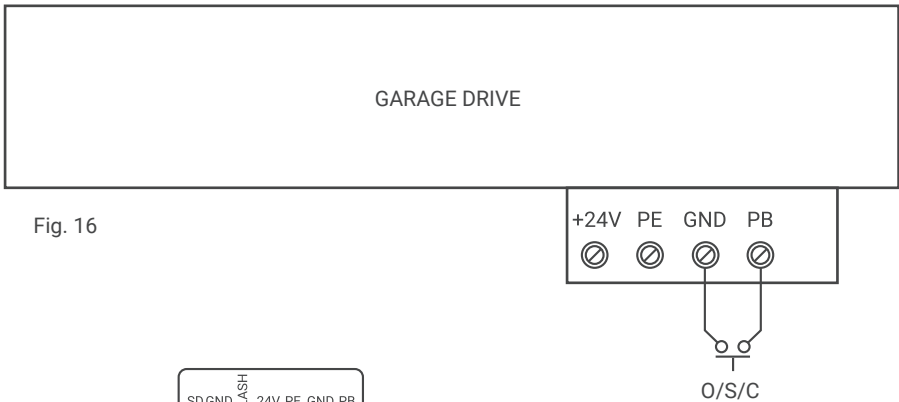
6. Optional connectors and connections

Connection of photocells - Fig. 17

Connection of the switch - Fig. 16



The power of the caution light should not exceed 25 W. The external switch should be a „NO“.



Additional connectors:

- 1. **The O / S / C input** allows you to connect a switch to control the drive (Fig. 19).
- 2. **The signal lamp** (Fig. 18 and Fig. 19).

The drive has a separate output signal lamp. Supplying the signaling lamp it should be in the 24 V - 28 V DC range and the current consumption must not exceed 100 mA. When using AC 230 V signal lamps, additional relays should be used.

- 3. **Pass door protection** (Fig. 19).

This function does not allow the gate to be opened when the small wicket door is open. Thanks to this, the door panel will not be damaged.

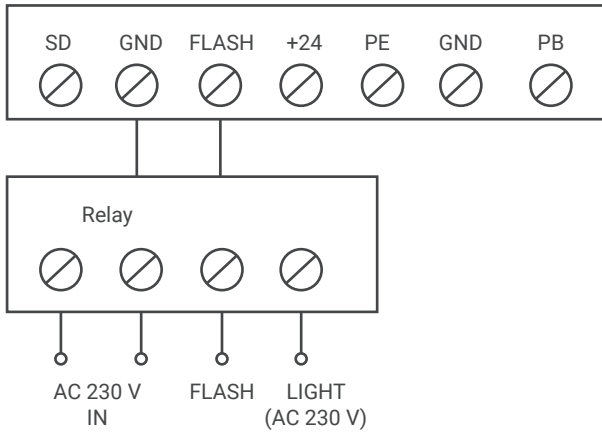


Fig. 18

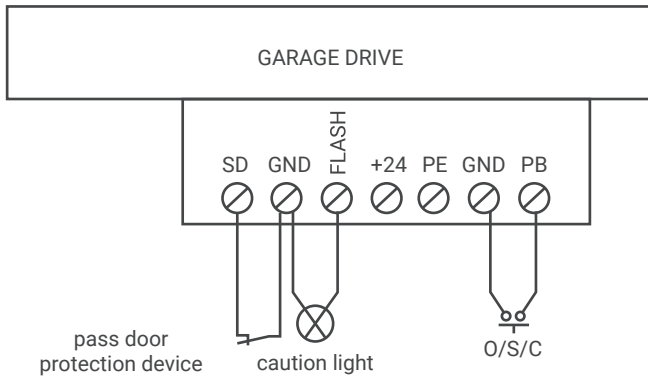


Fig. 19

7. Manual drive disconnection

The drive is equipped with a mechanism for disconnecting the drive, which allows you to manually open or close the gate in the event of power failure or drive failure (Fig. 19). To disconnect the drive, pull the handle. To re-engage the drive, simply close the latch of the drive disconnect mechanism and then move the gate manually or start the drive until the latch locks on the belt or chain.

In some cases, it is recommended to bring the drive disconnect handle to the outside so that the mechanism is accessible from the outside (Fig. 21).

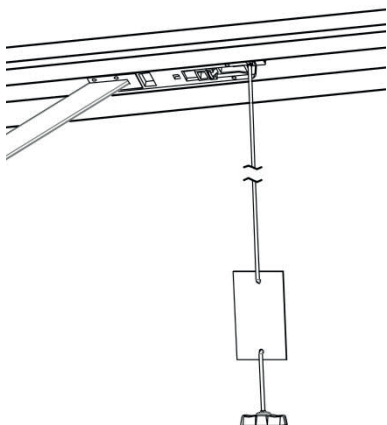


Fig. 20

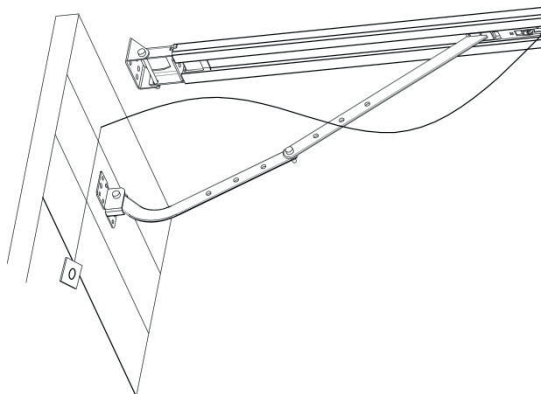


Fig. 21

8. Maintenance

1. No special maintenance of the drive's electronic system is required. Check at least twice a year that the gate is properly balanced and that all working parts are in good condition. Also check, at least twice a year, overload force and adjust it if necessary. Make sure that the photocells, works correctly.

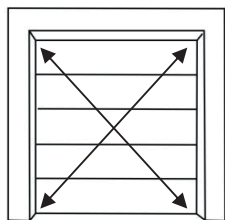
2. Bulb replacement:

Note: Before replacing the lighting, make sure that the power has been turned off and that the voltage of the new bulb is compatible with its supply voltage and the power does not exceed 25 W.

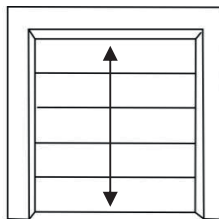
Loosen the screws on the lamp cover. Remove the lamp cover and then unscrew the old LED lamp. Screw the new lighting LED and lamp cover.

9. ECO 600 N technical data

POWER	230 V 50 Hz
MAX. PULLING FORCE	600 N
MAX. GATE AREA	10.0 m ²
MAX. GATE WEIGHT	80 kg
MAX. GATE HEIGHT	2400 - 3500 mm
RAIL	chain belt
OPENING SPEED	160 mm / sec.
LED LIGHT	24 V 15 pcs. LED
LIMIT SWITCHES	electronic
RADIO FREQUENCY	433.92 MHz
CODING FORMAT	rolling code (7.38 x 10 ¹⁹ combinations)
MEMORY	25 transmitters
LAMP CAUTION OUTPUT	yes
OPERATING TEMPERATURE	from -40°C to +50°C
SAFETY	soft start and stop, the possibility of connecting photocells and a caution lamp
PROTECTION DEGREE	IP20



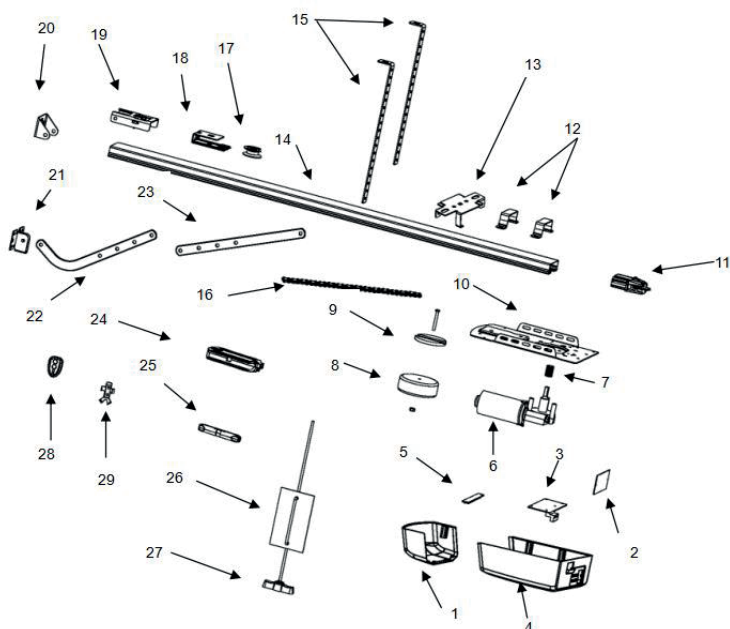
Max. gate area $\leq 10.0 \text{ m}^2$



Standard gate height: 2400 mm
Max. gate height: 3500 mm

10. Elements list

10.1 Table



NR	QUANTITY	Description
1	1	LED lighting housing
2	1	Electronic system 1
3	1	Electronic system 2
4	1	Housing
5	1	LED light
6	1	DC motor with gear
7	1	Motor shaft
8	1	Converter
9	1	Mounting the transformer
10	1	Steel bottom housing
11	1	Gearwheel

12	1	Type „U“ handle
13	1	Rail handle
14	1	Steel rail
15	2	Mounting brackets
16	1	Chain / Belt
17	1	The belt gear
18	1	Gear holder
19	1	End of the rails
20	1	Wall holder
21	1	Gate bracket
22	1	Bent arm
23	1	Sraight arm

24	1	Trolley
25	1	Belt Chain connector
26	1	Warning card
27	1	Disconnecting the drive handle
28	1	Transmitter
29	1	Transmitter handle

11. Troubleshooting

Fault	Possible causes	Solutions
1. The drive does not start, the LCD display does not light up.	a) No power supply. b) The power cord is damaged.	a) Check whether the motor socket is energized. b) Check that the fuse is not damaged. c) Check that the transformer low voltage cable is connected to the power board. d) Check that the wires are connected to the board. e) Check if the transformer's low voltage side is 26 V AC. If there is voltage - replace the PCB, while if there is no voltage - replace the transformer.
2. No limit positions.	Error system	Set the limit positions again.

During programming, the display is „0“.	The operating range of the drive is less than 30 cm or greater than 9 m.	Set the limit positions again.
4. The display shows „P“ and the drive does not work or has stopped working.	Too low supply voltage.	Check the power supply voltage.
5. Symbol „b“ appears on the display.	Unbalanced spring.	Balance the springs.
6. Symbol „L“ appears on the display.	The motor gear can not lock properly.	Replace the engine gears.
7. The drive does not work. Symbol „-“ appears on the display.	Error during setting the limit positions.	Set the limit positions again.
8. LED lighting is on constantly.	Control panel or power board is damaged.	Replace the control panel or power board.
9. The drive stops after a movement of approx. 10 cm. The symbol „H“ appears on the display.	Damaged Hall sensor cable.	Open the housing. Check and if necessary replace the wires connecting the Hall sensor.
10. The drive does not work. The relay activates. The symbol „H“ appears on the display.	Damaged motor connection to the control board.	Open the housing and check the motor connection to the control board.
11. The drive stops after a movement of approx. 10 cm. The symbol „h“ appears on the display.	The cable between the motor and the control board is connected in reverse.	Turn the power off, open the housing and connect the wire between the motor and the control board. Set the limit positions again.
12. The gate rises but does not move down. The symbol „ Γ “ appears on the display.	The photocell option has been set without connection.	a) If the photocells are not connected, turn off the photocell function. b) If the photocells are connected, check the connection of the photocells and their operation.
13. When the gate closes automatically after opening. LED lighting flash 4 time.	Auto closing function is on.	Set the appropriate automatic closing time or deactivate the function.

14. When the caution light is lit all the time, even though the gate has stopped.	Power board damaged.	Replace the power board.
15. LED lighting does not work.	<ul style="list-style-type: none"> a) The lighting cable is not connected. b) LED diodes damaged. c) Power board damaged. 	<ul style="list-style-type: none"> a) Check the LED connection. b) Replace the LEDs. c) Replace the power board.
16. The door opens automatically before it is completely closed.	<ul style="list-style-type: none"> a) The automatic reversing function after detecting an obstacle is activated. b) The gate is incorrectly installed. c) The gate is blocked during closing. 	<ul style="list-style-type: none"> a) Check the place of blocking the gate and set the limit positions again. b) Increase the power of the drive overload.
17. The gate stops while opening.	<ul style="list-style-type: none"> a) The overload function is activated. b) The gate is incorrectly installed. c) The gate is blocked during opening. 	<ul style="list-style-type: none"> a) Check the place of blocking the gate and set the limit positions again. b) Increase the power of the drive overload.
18. Remote control does not work or has a small operating range.	<ul style="list-style-type: none"> a) Low battery. b) The antenna is not connected or placed inside the drive. c) Radio signal interference. 	<ul style="list-style-type: none"> a) Replace the battery. b) Place the antenna outside the drive. c) Remove radio signal interference.
19. A new remote control can not be added.	The new remote control is not compatible with the drive.	Select remote control compatible with the drive.
20. The display shows the „F“ symbol.	The drive's memory is full. The drive reached max. number of programmed remotes control.	Remove programmed remote controls.
21. The symbol „. “ appears on the display.	The pass door is open.	Check the security connections in pass door.
22. The drive works, but the gate does not move.	Motor shaft damaged.	Replace the motor shaft.
23. The battery does not power the drive.	<ul style="list-style-type: none"> a) Discharged battery. b) The battery is incorrectly connected. c) Damaged wires connecting the battery with the drive. 	<ul style="list-style-type: none"> a) Charge the battery. b) Check the correctness of connection. c) Replace the wires connecting the battery with the drive.
24. Other unusual problems.	External devices are not compatible with the drive.	Disconnect all external devices. If you still have unusual problems, replace the control board.