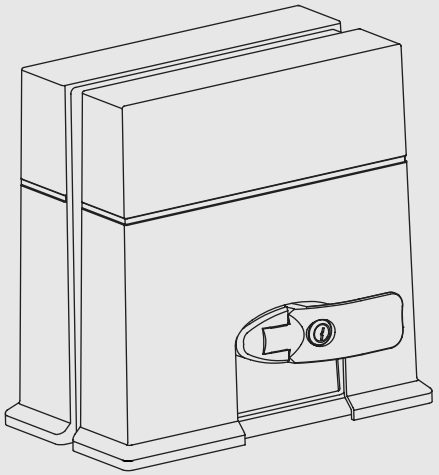
DZ IND 2.2 ROBUST

Technical Manual



ATTENTION:
Do not use this equipment without first reading the User's Manual.

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P33049 - 12/2023
Rev. 0

TABLE OF CONTENTS

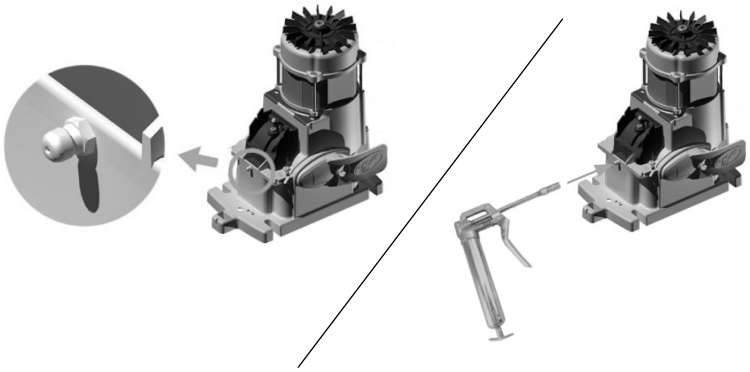
IMPORTANT SAFETY INSTRUCTIONS

Recommendation:
The specialized PPA installer must follow all the instructions mentioned in this technical manual and the user's manual to install the operator.
With the USER'S MANUAL in hand, the installer must show the user the operator's information, applications, and safety items.

Before installing the operator, closely read and follow all the instructions in this manual.

Before installing the operator, ensure the local electric power network is compatible with the one required on its identification label.
- Do not turn on the electric power network until completing installation or maintenance. Always make the control board electrical connections with the power supply turned off.
- Once installation is complete, ensure the garage door parts do not extend into the path and public sidewalk.
- Using total shutdown devices when installing an operator is mandatory.

NOTE: This product is manufactured with a straight M6 grease fitting, which makes greasing the inner ring easier, as the gearmotor does not need to be disassembled for maintenance, providing speed and convenience for installers.



TECHNICAL FEATURES

TYPE OF OPERATOR	Sliding
MODEL	BLDC
RATED VOLTAGE	220 V / 127 V
NOMINAL FREQUENCY	60 hz
NOMINAL POWER	150 W
MOTOR ROTATION	4440 rpm
MOTOR CURRENT	0.7A
REDUCTION RATIO	1:40
LINEAR SPEED	35.6 m/min
MANEUVERS	60 cycles/h
DEGREE OF PROTECTION	IPX4
TEMPERATURE RANGE	-5 ºC / +50ºC
INSULATION TYPE	Class B, 130o C
LIMIT SWITCH	Hybrid
GATE LEAF MAXIMUM MASS	2200 Kg
MAXIMUM GATE DIMENSIONS	Height: 2.5m Length: 10m

TOOLS REQUIRED FOR INSTALLATION

Below are some of the tools required to install the operator:

ELECTRICAL INSTALLATION

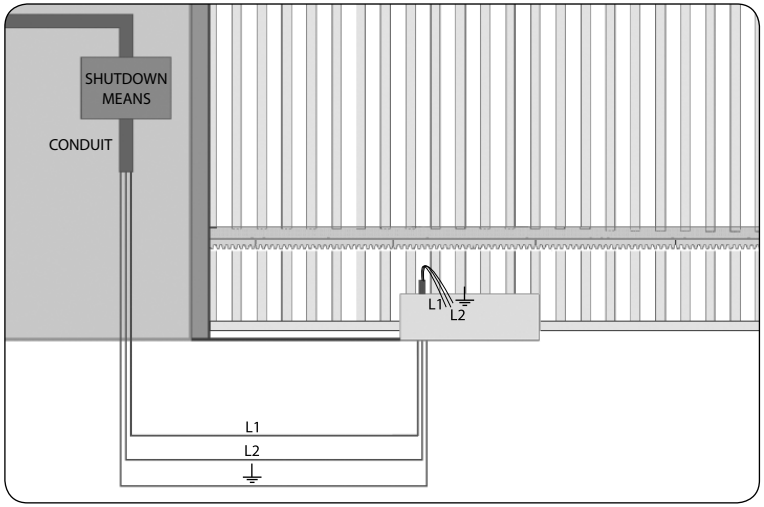
The network must have the following features for the electrical installation:

- Electrical network of 127 V or 220 V.
- 5-A circuit breakers in the electrical power distribution box.
- 3/4" diameter conduits between the electrical power distribution box and the total shutdown device.
- 3/4" diameter conduits between the total shutdown device and the operator connection point.
- 1/2" diameter conduits for external push-buttons and optional items.
- 1/2" diameter conduits for safety photocells (mandatory).

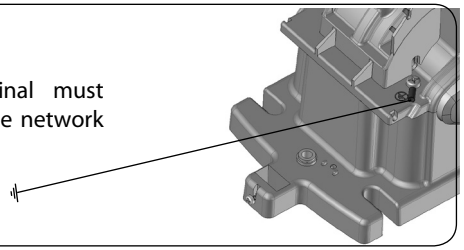
- The cable for fixed wiring must comply with NBR NM 247-3.
- The power supply conductor of a product for internal use must be a 3 x 0.75mm² flexible cable, be 500 V, and comply with the NBR NM 247-5 standard.
- The power supply conductor of a product for external use must be a 3 x 0.75 mm2 flexible cable, be 500 V, and comply with the IEC 60245-57 standard.

PRECAUTIONS WITH THE ELECTRICAL INSTALLATION

All conductors must be correctly attached to the operator to avoid damage to the wiring. The wires must be run through conduits, passing internally through the floor base, ensuring that none of the wiring conductors are trapped and damaged.



⚠ The ground terminal must be connected to the network ground cable.

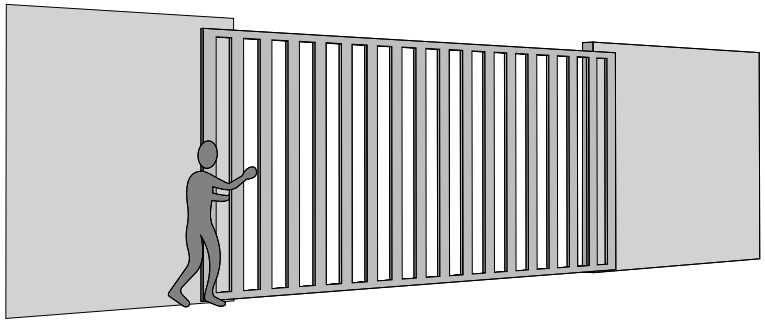


⚠ **IMPORTANT**
The device must be supplied via a residual current (RD) device with a rated residual operating current exceeding 30 mA.

PRECAUTIONS WITH THE GATE BEFORE ITS AUTOMATION

Before installing the operator, remove all unnecessary cables and turn off any equipment or system connected to the electrical network. To install the equipment, follow the steps mentioned below.

1st step: Before installing the operator, check if the gate is in good mechanical condition and if it is opening and closing properly. Open the gate manually and note the effort required. This effort must be minimal throughout the path length.



2nd step: Close the gate manually and check if the exerted effort was equal to the previous operation. The gate must have a strong structure and, as far as possible, one that does not deform. The pulleys must have a diameter that matches the gate dimensions, be in perfect running conditions, and be mounted so the gate leaf is stable throughout its movement. We recommend pulleys with a minimum diameter of 120 mm.
The figures below represent the two types of rails and pulleys used. The system that uses a straight section (Figure A – angle bracket) has greater friction and, consequently, more significant wear. The circular section (Figure B) allows for better gate movement and less friction for the operator.

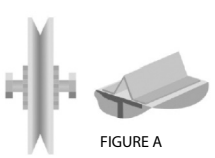


FIGURE A

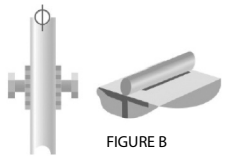
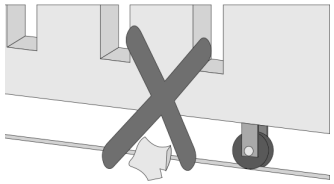


FIGURE B

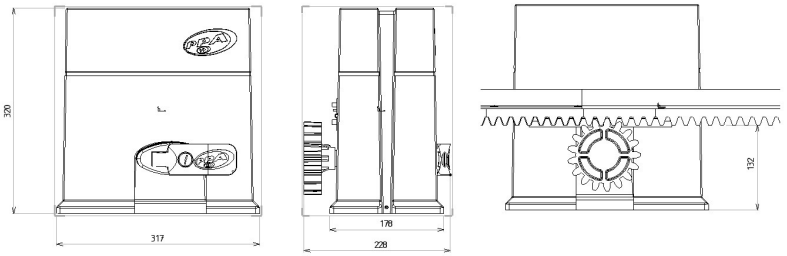
3rd step: Ensure the gate leaf does not get stuck in opening and closing movements. The gate sliding rail must be perfectly straight, level, and periodically clear of any element or dirt that makes it difficult for the pulleys to slide along its entire length, as shown in the figure below.



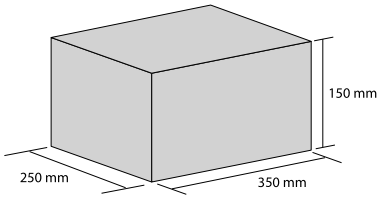
OPERATOR INSTALLATION AND FASTENING

Before installing the operator, remove all unnecessary cables and disconnect any equipment or systems connected to the electrical network.

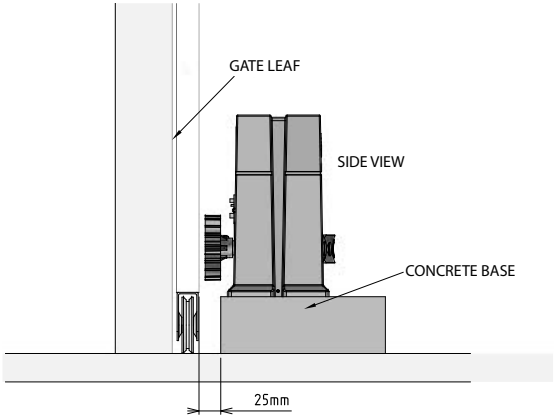
EQUIPMENT DIMENSIONS



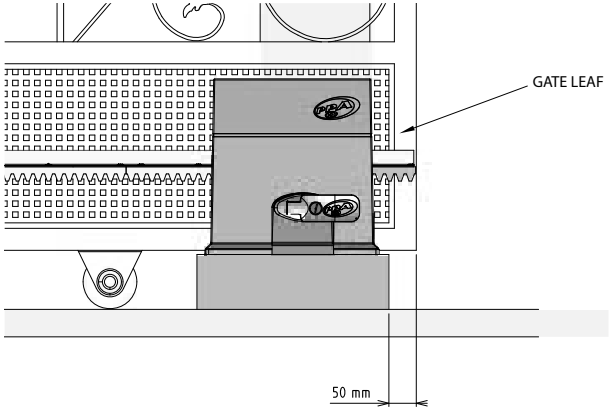
The perfect operation of this equipment depends on the instructions of this manual. To secure the equipment, proceed as follows:



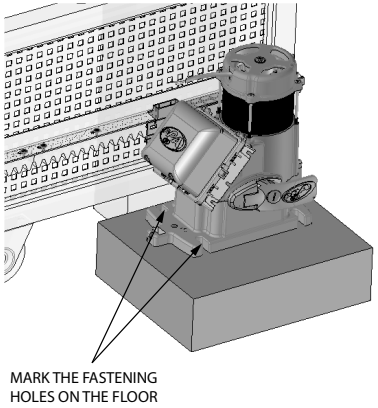
1st step: Ensure the floor is firm enough for the equipment to be screwed down and leveled. If it does satisfy this requirement, provide a concrete base, following the guidelines below:
2nd step: The base dimensions must be appropriate for the operator dimensions. The concrete base should be approximately 25 mm from the gate leaf face.



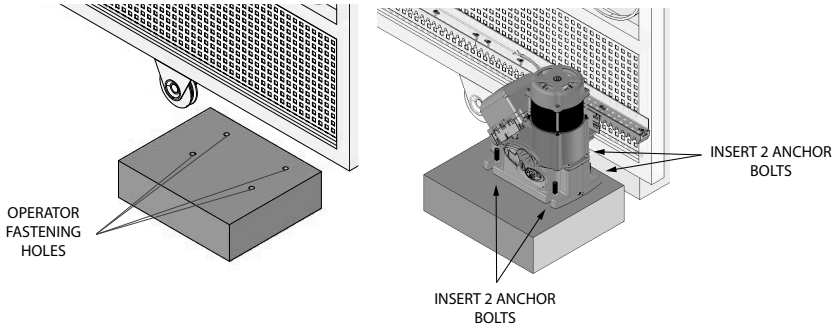
3rd step: Once the conditions are met, fully open the gate and position the operator close to the gate leaf face, observing the 50 mm measurement between the end of the leaf and the operator.



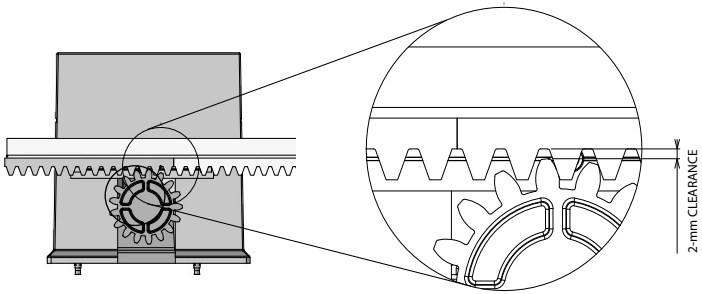
4th step: Pre-align the operator to the gate by positioning the rack over the gear and touching the gate assembly. Next, mark the fastening holes on the concrete floor or base.



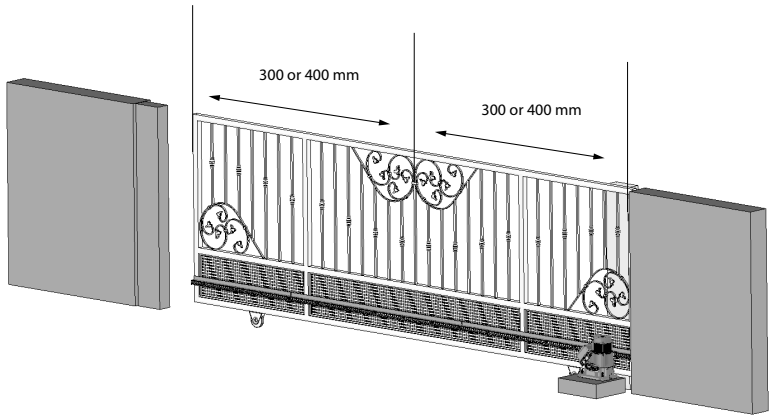
5th step: Drill the holes, positioning the operator in line with the gate. Before tightening the anchor bolts, move the gate, and make sure it does not touch the operator during its path. If this occurs, move the operator away.



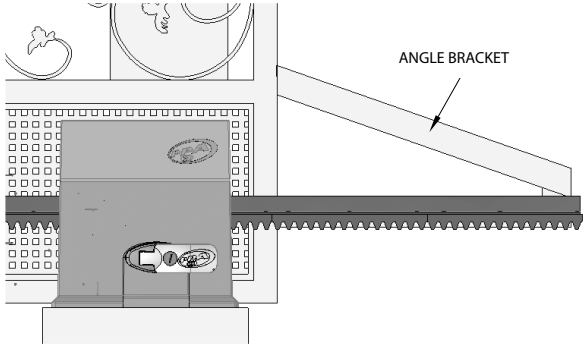
6th step: With the operator unlocked, position the rack bar over the gear and aligned with the gate. Leave approximately a clearance of 2 mm between the top of the gear tooth and the bottom of the rack tooth.



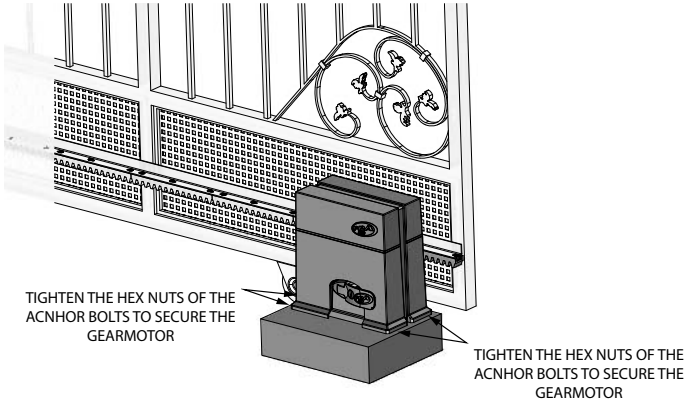
7th step: Weld or screw the rack along the entire length of the gate leaf every 300 or 400 mm.



8th step: If the gate leaf is warped, provide shims to ensure the rack alignment. There are cases in which the rack must exceed the leaf length. In that case, provide an angle brace so it does not skip the teeth when starting the machine.

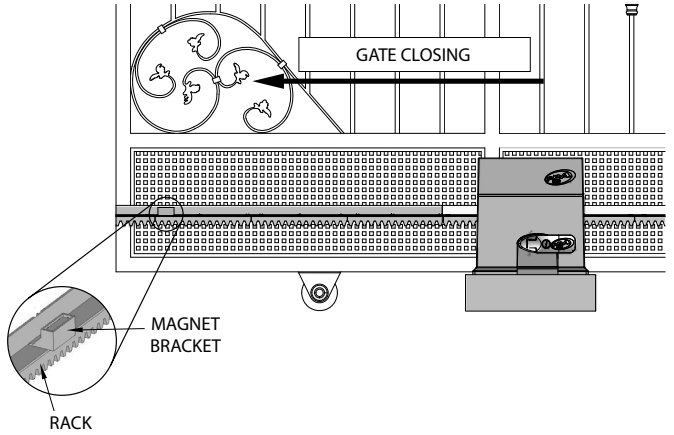


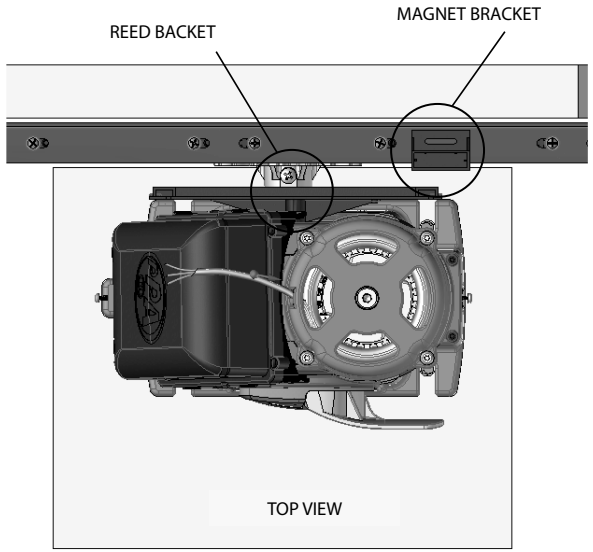
9th step: After fixing the rack, fix the operator on the floor or concrete base, and tighten the screws.



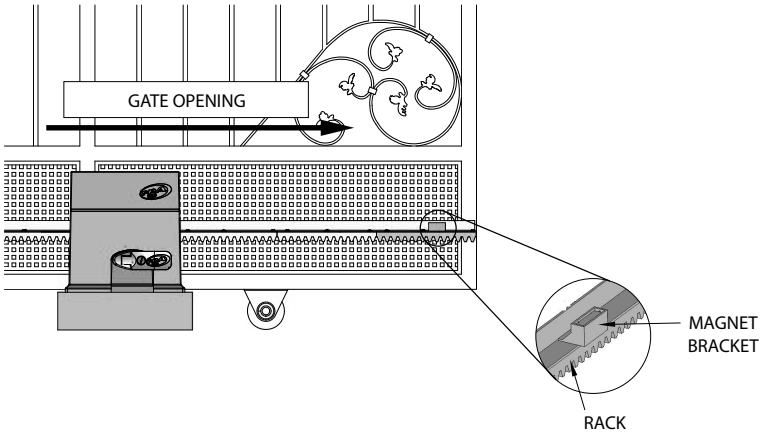
ANALOG LIMIT SWITCH INSTALLATION

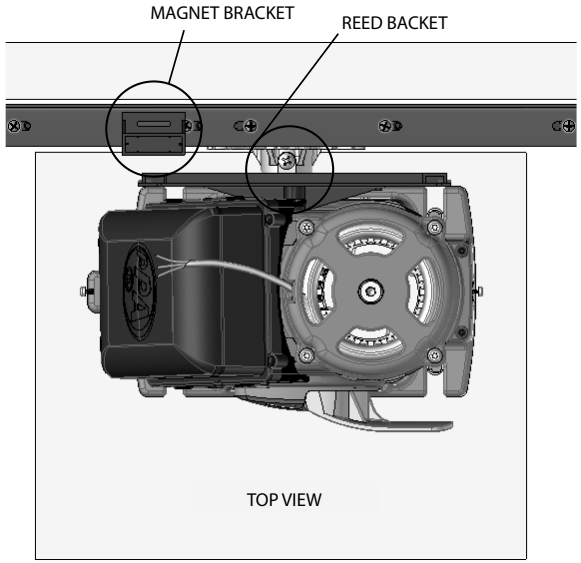
1st step: With the gate closed, place the magnet bracket on the rack, facing the operator's REED. This magnet will act as a closing limit switch.



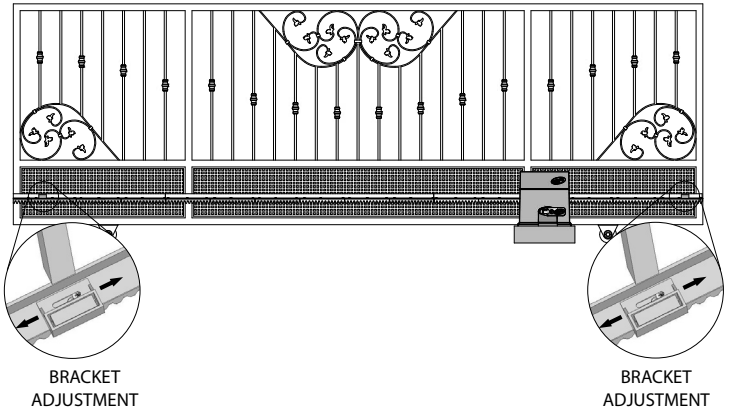


2nd step: Fully open the gate and place the other magnet bracket on the rack, facing the operator's REED. This magnet will act as the opening limit switch.

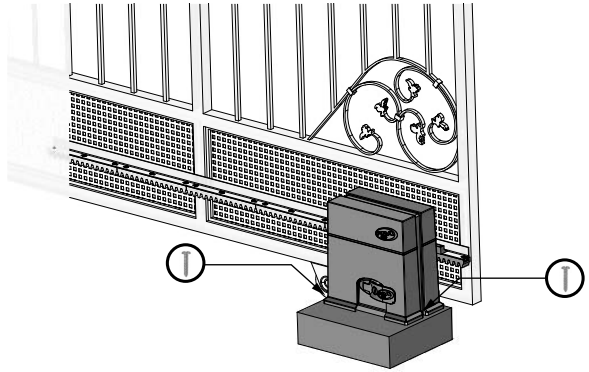




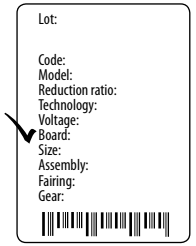
3rd step: Start the motor and observe if the REEDs are shutting down correctly. If necessary, invert the board connector. After fixing the magnet brackets, make the final adjustments, moving them to the right or to the left, according to the desired adjustment.



4th step: To finish installing the operator and before operating it, screw the cowling with 2 screws 3.5 x 16 mm (available in the kit).



CONTROL BOARD:
Check the operator control board on the product label (according to the model on the side). After that, refer to the control board manual available for download at **www.ppa.com.br** and make all the connections and configurations.



MAINTENANCE

The table below lists some PROBLEMS — DEFECTS, PROBABLE CAUSES, AND CORRECTIONS — that may occur in your operator. Before any maintenance, turn off the electrical power supply.

DEFECTS	PROBABLE CAUSES	CORRECTIONS
The motor does not turn on / does not move.	A) The power supply is off. B) The fuse is open / blown. C) The gate is locked. D) The limit switch is defective.	A) Make sure the electrical power supply is connected correctly. B) Replace the fuse with the same specification. C) Make sure no objects are blocking the garage door operation. D) Replace the limit switch system (analog and/or digital)
The motor is blocked.	A) The motor connection is inverted. B) The gate or the operator are locked.	A) Check the motor wires. B) Put in manual mode and check separately.
The electronic control board does not accept command	A) The fuse is blown. B) The electrical network is disconnected (power supply). C) There is a defect in the discharged remote control. D) Transmitter range (remote control)	A) Replace the fuse. B) Turn on the electrical network (power supply). C) Check and change the battery. D) Check the position of the receiver antenna and, if necessary, reposition it to ensure the range.
The motor only moves to one of the sides	A) The motor wires are inverted. B) The limit switch system is inverted. C) There is a defect in the control board.	A) Check the motor connection. B) Invert the limit switch connector (analog and/or digital). C) Replace the control board.