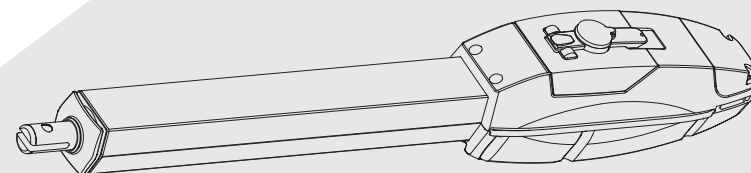




Technical manual

**SK**



All images in this manual are for illustrative purposes only.



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P30345 - 07/2022  
Rev. 1



**ATTENTION:**

Do not use the equipment without first reading the manual of instructions.

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# IMPORTANT SAFETY INSTRUCTIONS



### **Recommendation:**

For the installation of the equipment, it is important that the PPA specialized installer follow all the instructions mentioned in this **technical manual** and in the **user manual**.

Equipped with the **user manual**, the installer must present all the information, uses and safety items of the equipment to the user.



Before using the operator, read and strictly follow all instructions contained in this manual.



-Before installing the operator, make sure that the local electrical network is compatible with that required on the equipment identification label;

-Do not turn on the mains until the installation / maintenance is completed. Do the electrical connections of the command board always with the electrical network disconnected;

-After installation, make sure that the gate parts do not extend over the streets and the public footpath;

-The use of total shutdown devices is mandatory when installing the operator.

## TECHNICAL CHARACTERISTICS

MODEL:	SK	SK JETFLEX
POWER	127 V / 220 V	127 V / 220 V
MOTOR	Single phase	Three-phase
LEAF WEIGHT	125Kg (275lb)	175 Kg (385lb)
REDUCTION	1:31	1:31
OPENING TIME / CLOSING AT 90° *	Standard = 9,5 s Super = 15,5 s	Standard = 3 s Super = 5 s
NUMBER OF CYCLES / HOUR	20	30
OUTPUT FREQUENCY	60 Hz	200 Hz (maximum)
ENGINE ROTATION (RPM)	1740	5800 (maximum)
CAPACITOR	127 V = 20 µF 220 V = 8 µF	-
LIMIT SWITCH	Analog	Hybrid (analog and digital)
ACTIVATION COURSE	Standard = 265mm Super = 465mm	Standard = 265mm Super = 465mm
LEAF SIZE	Standard = 2 m Super = 3 m	Standard = 2 m Super = 3 m
SPINDLE STEP	30 mm	30 mm
RAIL	Aluminum	Aluminum
NUMBER OF SPINDLE ENTRIES	5 entries	5 entries
SPINDLE DIAMETER	1/2"	1/2"
CROWN	Nylon	Nylon
DEGREE OF PROTECTION	IPX4	IPX4

\*Speed may vary depending on gate size, weight and condition, as well as deceleration settings.

MODELO:	SK PREDIAL	SK PREDIAL JETFLEX	SK PREDIAL JETFLEX BRUSHLESS	SK PREDIAL BRUSHLESS 24V
POWER	127 V / 220 V	127 V / 220 V	127 V / 220 V	127 – 220 V
MOTOR	Single phase	Three-phase	Brushless DC	Brushless 24V
LEAF WEIGHT	200 Kg (440lb)	250 Kg (551lb)	300 Kg (661lb )	125 Kg (275lb)
REDUCTION	1:31	1:31	1:31	1:31
OPENING TIME / CLOSING AT 90° *	Standard = 19 s Super = 37,5 s Mega = 43 s	Standard = 6 s Super = 11,5 s Mega = 13 s	Standard = 7,5 s Super = 14,5 s Mega = 16,5 s	Standard = 9,5 s Super = 18 s
NUMBER OF CYCLES / HOUR	50	60	70 (INTENSE)	70 (INTENSE)
OUTPUT FREQUENCY	60 Hz	200 Hz (maximum)	-	-
ENGINE ROTATION (RPM)	1740	5800 (maximum)	4500 (maximum)	3600 (maximum)
CAPACITOR	127 V = 20 µF 220 V = 8 µF	-	-	-
LIMIT SWITCH	Analog	Hybrid (analog and digital)	Hybrid (analog and digital)	Hybrid (analog and digital)
ACTIVATION COURSE	Standard = 375 mm Super = 750 mm Mega = 980 mm	Standard = 375 mm Super = 750 mm Mega = 980 mm	Standard = 375 mm Super = 750 mm Mega = 980 mm	Standard = 375 mm Super = 750 mm
LEAF SIZE	Standard = 2 m Super = 3,5 m Mega = 4,5 m	Standard = 2 m Super = 3,5 m Mega = 4,5 m	Standard = 2 m Super = 3,5 m Mega = 4,5 m	Standard = 2 m Super = 3,5 m
SPINDLE STEP	20 mm	20 mm	20 mm	20 mm
RAIL	Aluminum	Aluminum	Aluminum	Aluminum
NUMBER OF SPINDLE ENTRIES	4 entries	4 entries	4 entries	4 entries
SPINDLE DIAMETER	5/8"	5/8"	5/8"	5/8"
CROWN	Nylon/Bronze	Nylon/Bronze	Nylon/Bronze	Nylon/Bronze
DEGREE OF PROTECTION	IPX4	IPX4	IPX4	IPX4

\*Speed may vary depending on gate size, weight and condition, as well as deceleration settings.

## TOOLS REQUIRED FOR INSTALLATION

Below are some tools needed to install the operator:

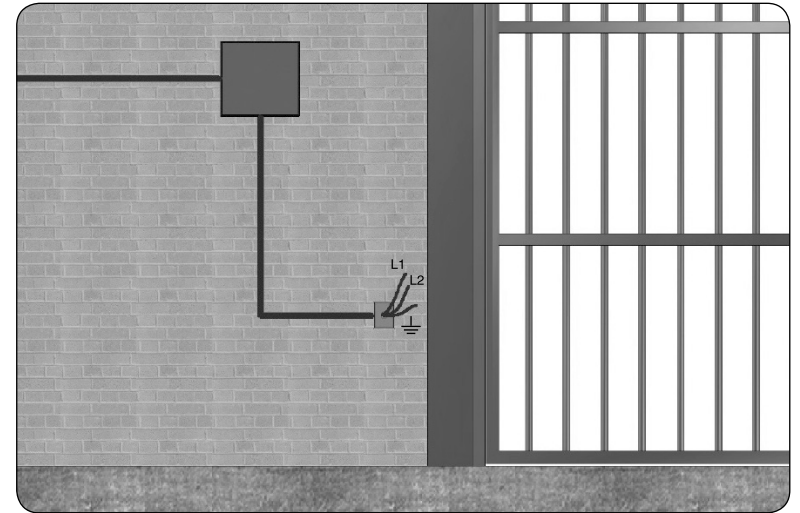


## ELECTRICAL INSTALLATION

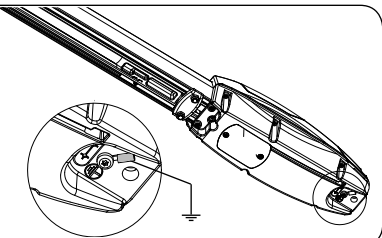
For electrical installation, the network must contain the following characteristics:

- Mains 127 V or 220 V;
- Have 5 A circuit breakers in the electrical energy 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 and optional push buttons;
- 1/2" diameter conduits for safety photocells (optional).

- ⚠** - Cable for fixed wiring must comply with NBR NM 247-3;
- The power conductor, of a product for internal use, must be a flexible cable 3 x 0.75 mm<sup>2</sup>; 500 V, according to the NBR standard NM 247-5;
- The power conductor, of a product for external use, must be a flexible cable 3 x 0.75 mm<sup>2</sup>; 500 V, as per IEC standard 60245-57.



- ⚠** It is mandatory that the terminal grounding is connected to the network ground cable.



- ⚠ IMPORTANT** The instrument shall be powered via a residual differential current (DR) device with a rated residual operating current exceeding 30 mA.

## GATE CARE BEFORE OPERATION

Before applying the operator to the gate, some procedures must be taken:

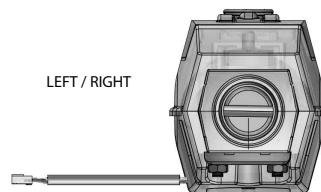
- Check the performance of the gate before starting the machine installation;
- Check the effort required to move the gate. It should be moved smoothly along the entire route. To check this effort, move the gate at a distance of 80 cm from the turning point (where the operator exerts force to move);
- The gate must have a resistant structure and, as much as possible, non-deformable.

## INSTALLATION AND FIXING THE OPERATOR

**⚠** Before installing the operator, remove all unnecessary cables and disable any equipment or system connected to the electrical network.

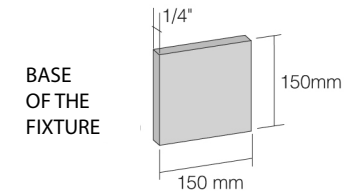
To install the equipment, follow the steps mentioned below:

The gearmotor is universal, so it can be installed on both sides, left-hand leaves and right-hand leaves.

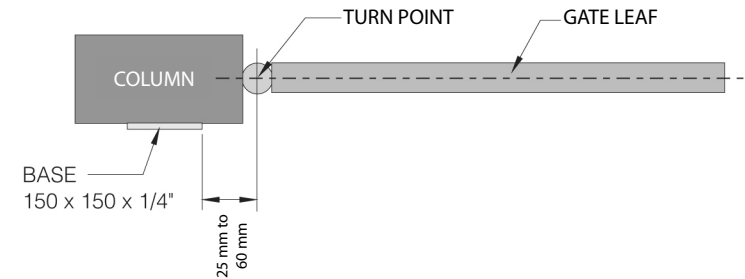


To fix the equipment, carefully follow the instructions below:

**1st Step:** The gate must open to the interior of the property. Provide a 150mm x 150mm x 1/4" flat iron base. This will be the base of the fixture.



**2nd Step:** Fix, on the wall or on the gate column, the base of the fixing bracket at a distance of 25 to 60 mm from the turning point of the gate and at the desired height for fixing the operator to the gate, as shown in the figure below.

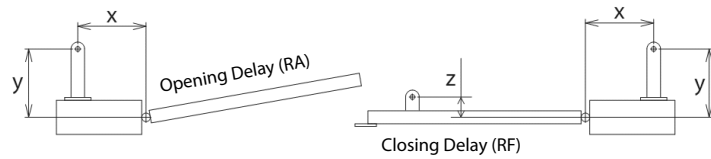


**3rd Step:** Weld the fixing bracket to the base, according to instructions / illustrations below.

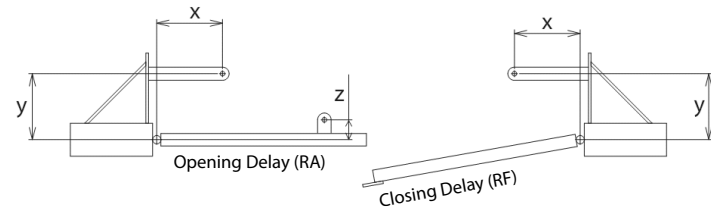
MEASURES FOR INSTALLATION OF FIXING BRACKETS				
OPERATOR	X	Y	Z	LENGTH MAXIMUM LEAF
SK (STANDARD)	130	130	50	2000
SK (SUPER)	215	215	50	3000
SK PREDIAL (STANDARD)	175	175	50	2000
SK PREDIAL (SUPER)	350	350	50	3500
SK PREDIAL (MEGA)	400	400	50	4500

Maximum allowable measurements for standard installation (in millimeters)

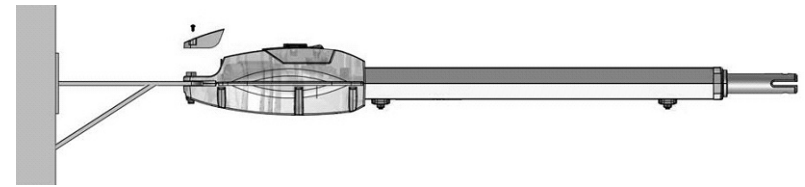
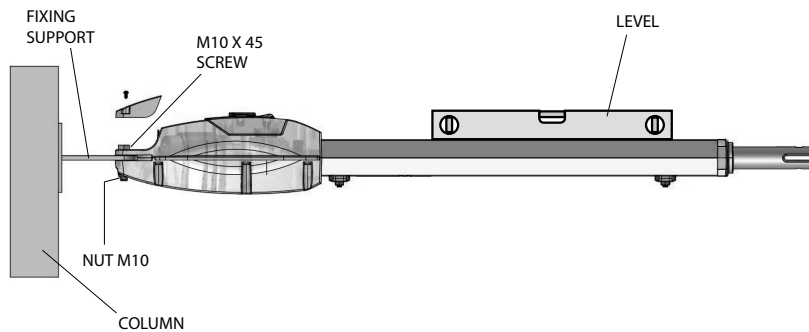
### INTERNAL OPENING (DOUBLE BOARD)



### EXTERNAL OPENING (DOUBLE BOARD)

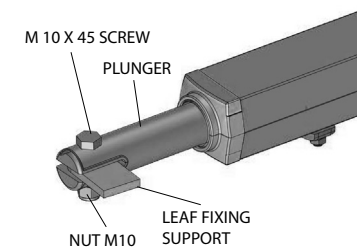


**4th Step:** Attach the operator to the fixing bracket, place the M10 x 45 mm screw and secure it with the M10 hex nut (available in the kit), as shown in the figure below.

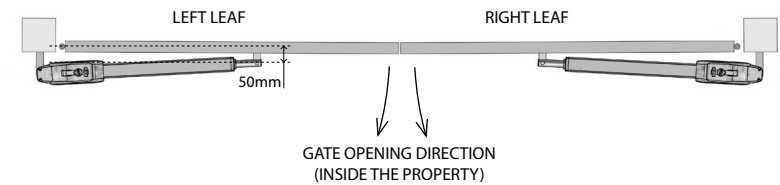


**! ATTENTION:** If the fixation support has a high dimension, it is recommended to include a French hand in order to provide greater support for the mechanical structure of the gearmotor assembly.

**5th Step:** Then, fit the leaf fixing bracket to the end of the plunger and secure it with an M10 x 45 mm screw and an M10 hex nut (available in the kit), as shown in the figure below.

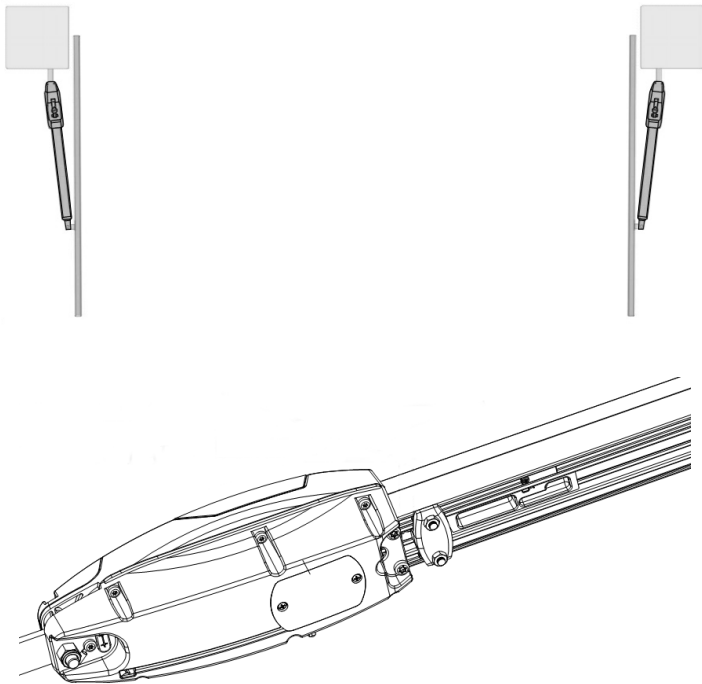


**6th Step:** With the gate closed, advance the plunger fully and weld the fixing bracket to the gate leaf.



There is the possibility of installation on gates with internal opening (where the leaves move towards the inside of the site) and external opening\* (where the leaves move towards the outside of the site), below are the instructions for installation in both situations:

INTERNAL: With the gate fully open, at 90°, fully withdraw (close) the plunger bringing the actuating nut to the mechanical stop.

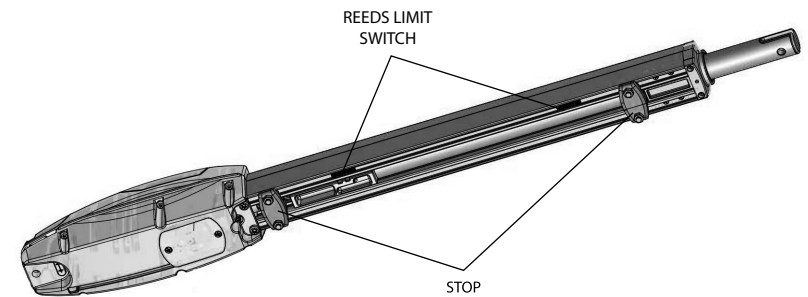


EXTERNAL: With the gate fully open, at 90°, fully advance (open) the plunger, bringing the actuating nut closer to the mechanical stop, as shown in the previous image.

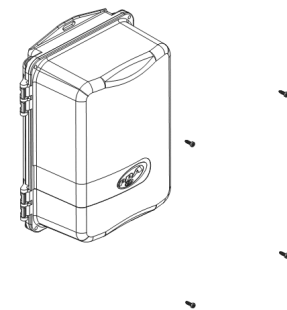


**NOTE:** The closer the piston tip is to the end of the gate leaf, the more locking the mechanical system will have, as well as requiring less force from the motor during movement. Please always check the drive model according to the size of the gate.

**7th Step:** Adjust the stops and position the opening and closing limit switches on the rail, so that they activate when the gate leaf completes its movement. Fix the limit switch reeds with the 3 x 10 screws (available in the kit) and connect it to the board.




**!** Before the operator works, it is mandatory to screw board cover with 4 screws 3.5 x 16mm (available in kit).



**COMMAND BOARD:**

Check the label attached to the product (according to the model on the side) which is the operator board. Once this is done, consult the board manual which is available for download at [www.ppa.com.br](http://www.ppa.com.br) and perform all connections and settings.

Lot:  
 Code:  
 Model:  
 Reduction:  
 Technology:  
 Voltage:  
 Board:  
 Size:  
 Mounting:  
 Fairing:  
 Gear:  


## MAINTENANCE

In the table below, some PROBLEMS will be mentioned — DEFECTS, PROBABLE CAUSES AND CORRECTIONS — that may occur in your Operator. Before any maintenance, it is necessary to completely disconnect the electrical network.

DEFECTS	PROBABLE CAUSES	CORRECTIONS
Engine does not start / does not move	A) Power off B) Open / blown fuse C) Locked gate D) Defective limit switch	A) Make sure the electrical network is connected correctly B) Replace fuse with same specification C) Make sure there is no object blocking the gate operation D) Replace the limit switch system (analog and/or digital)
Motor blocked	A) Inverted motor connection B) Locked gate or trigger	A) Check motor wires B) Put in manual mode and check separately
Electronics board does not accept command	A) Blown fuse B) Mains disconnected (power) C) Defect in remote control unloaded D) Transmitter range (remote control)	A) Replace the fuse B) Connect the network (power) C) Check and replace battery D) Check the position of the receiver antenna and, if necessary, reposition it to ensure reach
Motor only runs for one side	A) Inverted motor wires B) Limit switch system inverted C) Defect in command board	A) Check motor connection B) Invert the limit switch connector (analog and/or digital) C) Replace the command board