

BV PENTA PREDIAL

Technical Manual



WARNING:

Do not operate the equipment without first reading the instruction manual.



COMFORT AND SECURITY

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IMPORTANT SECURITY INSTRUCTIONS



Recommendation:

For the installation of the equipment, it is important that a PPA specialist installer follow all instructions given in this technical manual and in the user manual.

With the **user's manual**, the installer must present all the information, uses and safety items of the equipment to the user.



Before using the automation, read and follow all instructions contained in this manual carefully.



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

- Do not connect the electrical grid until installation / maintenance is complete. Always make electrical connections to the control unit with the electrical grid switched off;

-After installation, make sure that the parts of the gate do not extend through the roads and public walk;

-It is mandatory to use full shutdown devices in the automation system

TECHNICAL CHARACTERISTICS

PENTAL PREDIAL

OPERATOR TYPE	OVERHEAD	OVERHEAD
MODEL	Single Phase	Single Phase
RATED VOLTAGE	220 V	127 V
NOMINAL FREQUENCY	60 Hz	60 Hz
NOMINAL POWER	435 W	350 W
RPM	1740 RPM	1740 RPM
NOMINAL CURRENT	2,1 A	3,1 A
REDUCTION	1:26	1:26
LINEAR SPEED	4 m/min	4 m/min
MANEUVER	60 cycles/h	60 cycles/h
PROTECTION LEVEL	IPX4	IPX4
RAIL	Aluminum	Aluminum
TEMPERATURE RANGE	-5° C / +50° C	-5° C / +50° C
ISOLATION TYPE	Class B, 130° C	Class B, 130° C
LIMIT SWITCH	Analogic / Digital	Analogic / Digital
MAX. WEIGHT OF GATE LEAF	400 Kg	400 Kg
MAX. DIMENSION OF THE GATE	*HEIGHT = (Value in meters - 0,15) x 2 LENGTH = 4,0 m	*HEIGHT = (Value in meters - 0,15) x 2 LENGTH = 4,0 m

PENTA PREDIAL SP / PENTA PREDIAL JET FLEX / PENTA PREDIAL BRUSHLESS

OPERATOR TYPE	OVERHEAD	OVERHEAD	OVERHEAD	OVERHEAD
MODEL	Single Phase	Single Phase	Jet Flex	BRUSHLESS
RATED VOLTAGE	220 V	127 V	220 V / 127 V	220 V / 127 V
NOMINAL FREQUENCY	60 Hz	60 Hz	60 Hz	60 Hz
NOMINAL POWER	435 W	350 W	210 W	100 W / 300 W
RPM	1740 RPM	1740 RPM	4365 RPM	4500 RPM
NOMINAL CURRENT	2,1 A	3,1 A	1,6 A / 2,3 A	0,7 A / 1,3A
REDUCTION	2:30	2:30	2:30	02:30
LINEAR SPEED	7 m/min	7 m/min	17,4 m/min	17,4 m/min
MANEUVER	50 cycles/h	50 cycles/h	60 cycles/h	100 cycles/h
PROTECTION LEVEL	IPX4	IPX4	IPX4	IPX4
RAIL	Aluminum	Aluminum	Aluminum	Aluminum
TEMPERATURE RANGE	-5° C / +50° C	-5° C / +50° C	-5° C / +50° C	-5° C / +50° C
ISOLATION TYPE	Class B, 130° C	Class B, 130° C	Class B, 130° C	Class B, 130° C
LIMIT SWITCH	Hybrid	Hybrid	Hybrid	Hybrid
MAX. WEIGHT OF GATE LEAF	320 Kg	320 Kg	400 Kg	400 Kg
MAX. DIMENSION OF THE GATE	*HEIGHT = (Value in meters - 0,15) x 2 LENGTH = 4,0 m	*HEIGHT = (Value in meters - 0,15) x 2 LENGTH = 4,0 m	*HEIGHT = (Value in meters - 0,15) x 2 LENGTH = 4,0 m	*HEIGHT = (Value in meters - 0,15) x 2 LENGTH = 4,0 m

* Maximum height is calculated by the value obtained in the product description (value in meters) applied in the equation.

TOOLS REQUIRED FOR INSTALLATION

Here are some tools required to install the automation:



ELECTRICAL GRID

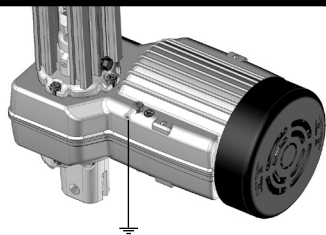
For electrical installation, the network shall contain the following characteristics:

- Electric network 127 V or 220 V;
- Have 5 A circuit breakers in the electrical distribution box;
- 3/4 "diameter conduit between the electrical distribution box and the total disconnect device;
- 3/4 "diameter conduit between the total shut-off device and the automator's connection point;
- 1/2 "diameter conduits for external and optional push button;
- Theres of 1/2 "diameter for safety photocells (optional).

- ⚠ - The cable for the fixed wiring must comply with NBR NM 247-3;
- The power conductor of a product for internal use must be a flexible cable $3 \times 0.75 \text{ mm}^2$; 500 V, according to the norm NBR NM 247-5;
- The power conductor of a product for external use must be a flexible cable $3 \times 0.75 \text{ mm}^2$; 500 V, according to IEC 60245-57.



- ⚠ It is mandatory that the ground terminal is connected to the ground.



- ⚠ **IMPORTANT**
The device must be powered by a residual current (DR) device, with a rated residual current exceeding 30 mA.

PRECAUTIONS WITH THE GATE BEFORE AUTOMATION

Before applying the automation to the gate, some procedures should be taken:

-Check the mechanical conditions, whether the balancing is correct and whether the opening and closing are suitable. Remove any equipment not necessary for the operation of the machine, such as locks, ropes, chains, tools, among others;

-The unlocking (manual release) must be installed at a height of less than 1.8 m;

-In the case of push button installations (optional fixed control), install at a height of at least 1.5 m from the floor and in view of the door, further away from moving parts;

-Fix crush risk warning, available in the automation kit, in places visible or near the button (fixed control);

-Check the manual release system, fastened next to the actuation element of the unlocking;

-Move the door leaf manually (opening and closing) and observe the required effort. The leaf should rise and fall, throughout the course, with the minimum of effort;

-Check the balance of the gate leaf. Lift the sheet up to the middle of the path and observe whether it remains stationary. If the sheet remains stationary, the gate will be satisfactorily balanced. This equilibrium condition must occur for approximately 80% of the course, with imbalance close to the extremes of the course being permissible.

-The gate shall have a sturdy and, as far as possible, non-deformable structure.

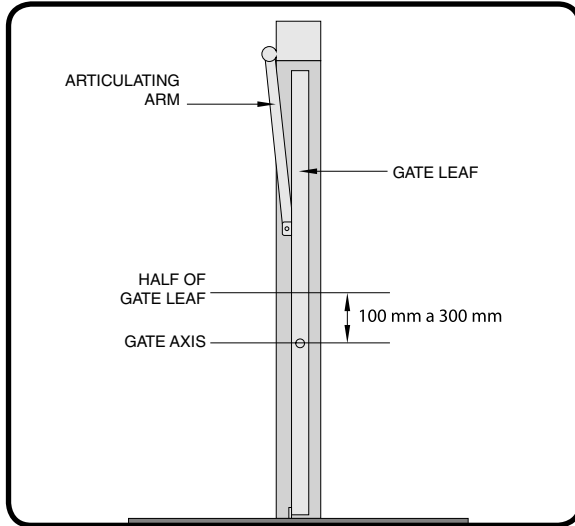
FIXATION AND INSTALLATION OF THE OPERATOR



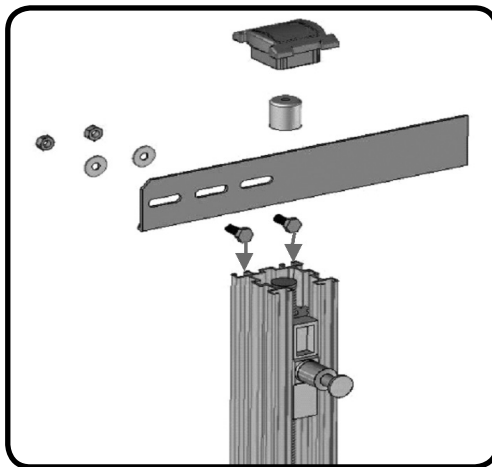
Before installing the automation system, remove any unnecessary cables and disable any equipment or system connected to the electrical grid.

To install the equipment, follow the steps below:

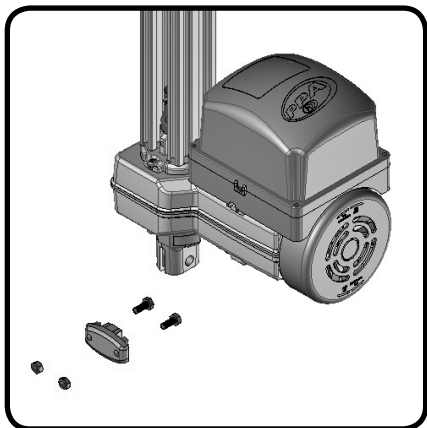
Step 1: The gate axis shall be between 100 mm and 300 mm below the central point of the gate leaf.



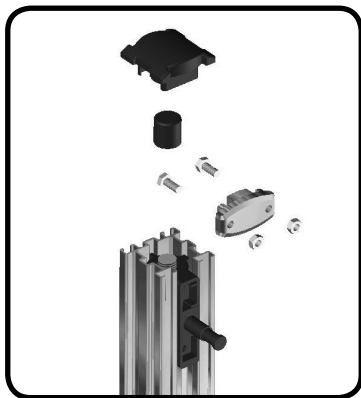
Step 2: Remove the top rail cover and install the securing brackets on the opposite side to the drive nut pin.



Step 3: Insert the closing stop with the rubber facing the drive nut.



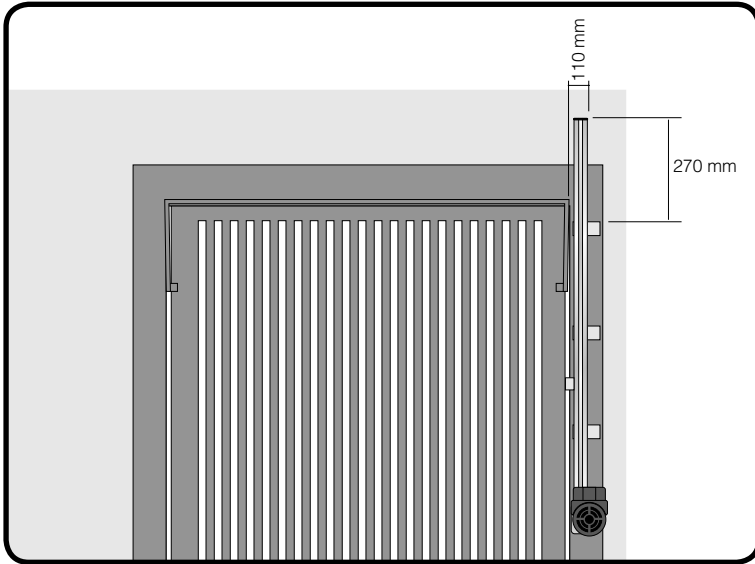
Step 4: Insert the opening stop with the rubber facing the drive nut.



Step 5: Place back the top cover on the rail.

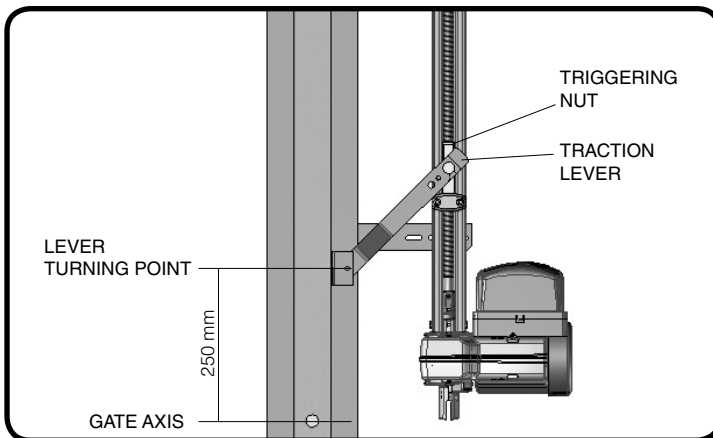


Step 6: Position the automation vertically on the door column and weld the mounting brackets on the column, respecting the measurements in the figure below.

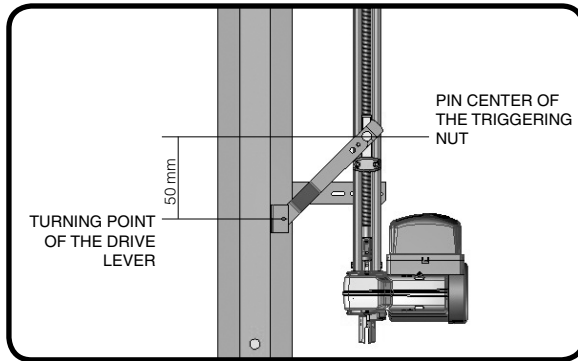


Step 7: Attach the drive lever to the pin of the drive nut of the operator.

Step 8: Weld the drive lever on the gate leaf, keeping the distance of 250 mm between the center of the gate shaft and the center of the lever's turning point.



Step 9: With the gate closed, maintain a 50 mm tilt on the drive lever, respecting a distance from the center of the turning point of the drive lever and the center of the drive nut pin.

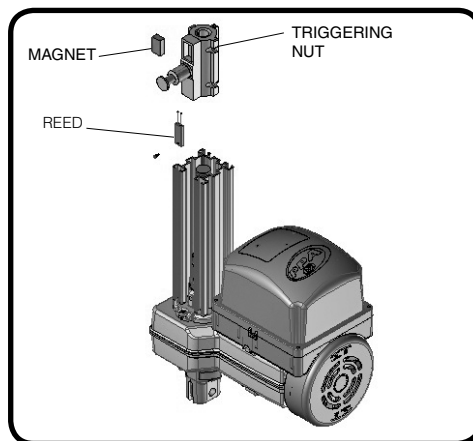


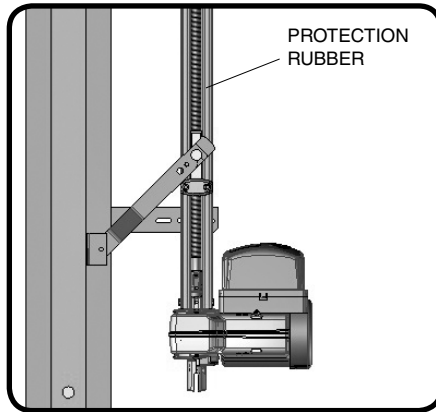
Step 10: Still with the gate closed, adjust the closing stop, so that the rubber of the gate cushion the drive nut in the closing of the gate. Then, with the gate open, perform the same procedure for the opening stop.

ANALOGIC LIMIT SWITCH INSTALLATION

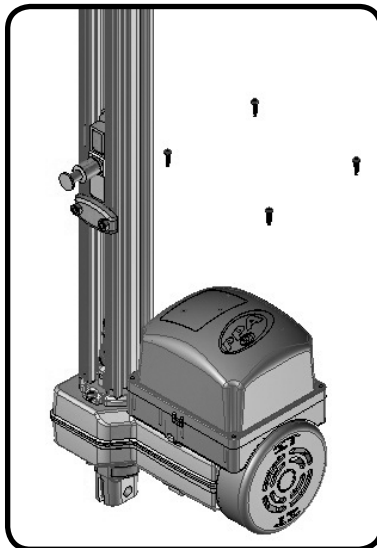
Step 1: Position the limit switch magnet into the drive nut housing. Position the opening and closing limit switches so that they activate when the gate leaf completes its movement. Connect the limit switch to the control unit.

Step 2: Place the protective rubber of the wires into the reed housing, traversing the entire rail profile.





Prior to the operation of the operator, it is mandatory to screw the panel cover with 4 x 3.5 x 12 mm screws (available in the kit).





COMMAND BOARD:

Check the label attached to the product (according to the model on the side) which is the command board part of the operator. Once this is done, consult the board manual that is available for download at www.ppa.com.br and make all connections and configurations.

Code:
Model:
Reduction:
Technology:
Voltage:
Board:
Size:
Assembly:
Fairing:
Gear:



illustrative images

MAINTENANCE

In the table below, we will mention some PROBLEMS - DEFECTS, PROBABLE CAUSES AND CORRECTIONS - which may occur in your operator. Before any maintenance, it is necessary to completely disconnect the electricity.

DEFECTS	PROBABLE CAUSES	CORRECTIONS
Engine does not start / does not move	<ul style="list-style-type: none"> A) Power off B) Open / burned fuse C) Locked gate D) Defective limit switch 	<ul style="list-style-type: none"> A) Make sure that the power supply is connected correctly B) Replace fuse with the same specification C) Make sure that there is no object blocking the operation of the gate D) Replace the limit switch system (analog and / or digital)
Motor blocked	<ul style="list-style-type: none"> A) Inverted motor connection B) Blocked gate or trigger 	<ul style="list-style-type: none"> A) Check the motor wires B) Set to manual mode and check separately
Command board does not accept command	<ul style="list-style-type: none"> A) Fuse blown B) Power line off (power) C) Defect on remote control unloaded D) Transmitter range (remote control) 	<ul style="list-style-type: none"> A) Replace the fuse B) Connect the power supply C) Check and replace battery D) Check the position of the receiver's antenna and, if necessary, reposition it to ensure the reach
Motor only turns to one side	<ul style="list-style-type: none"> A) Inverted motor wires B) Inverted end-of-course system C) Defect in the command center 	<ul style="list-style-type: none"> A) Check the motor connection B) Invert the limit switch connector (analog and / or digital) C) Replace the board



COMFORT AND SECURITY

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