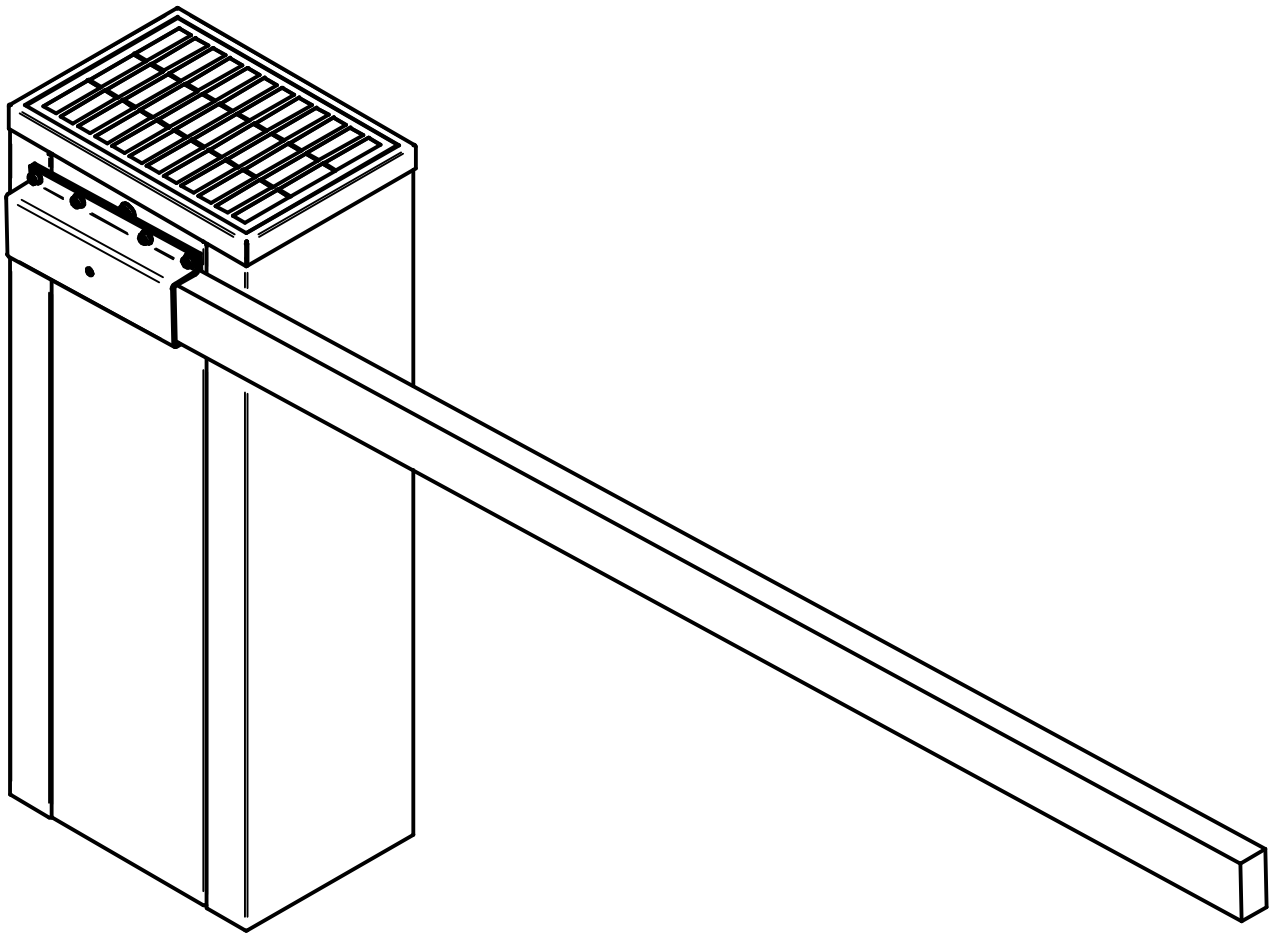
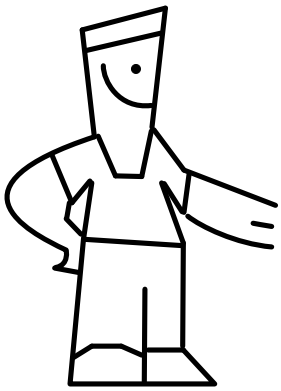
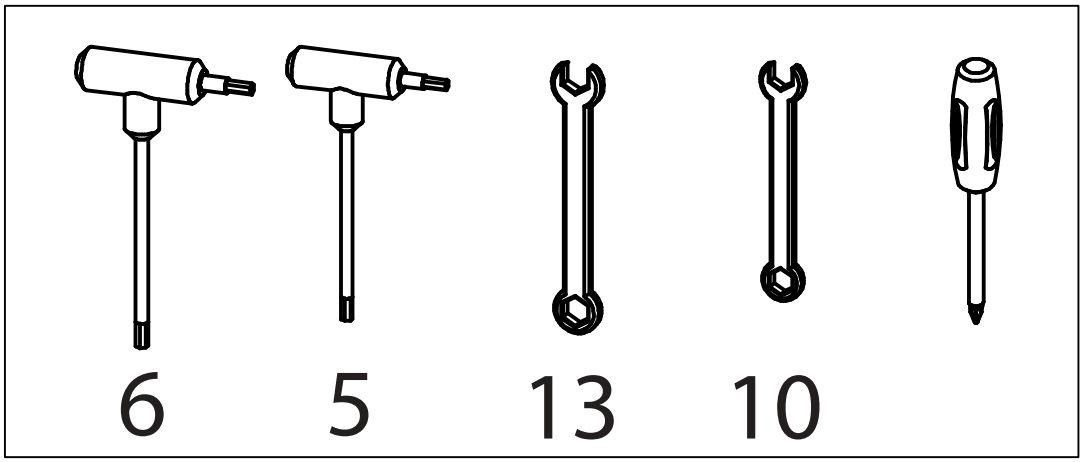
SB/900/SOLAR



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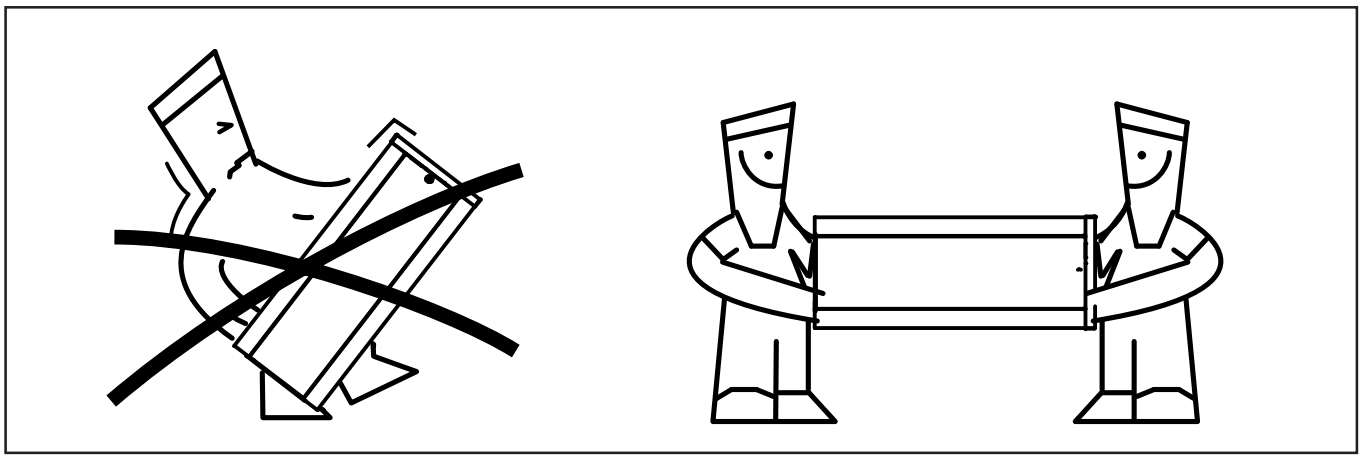
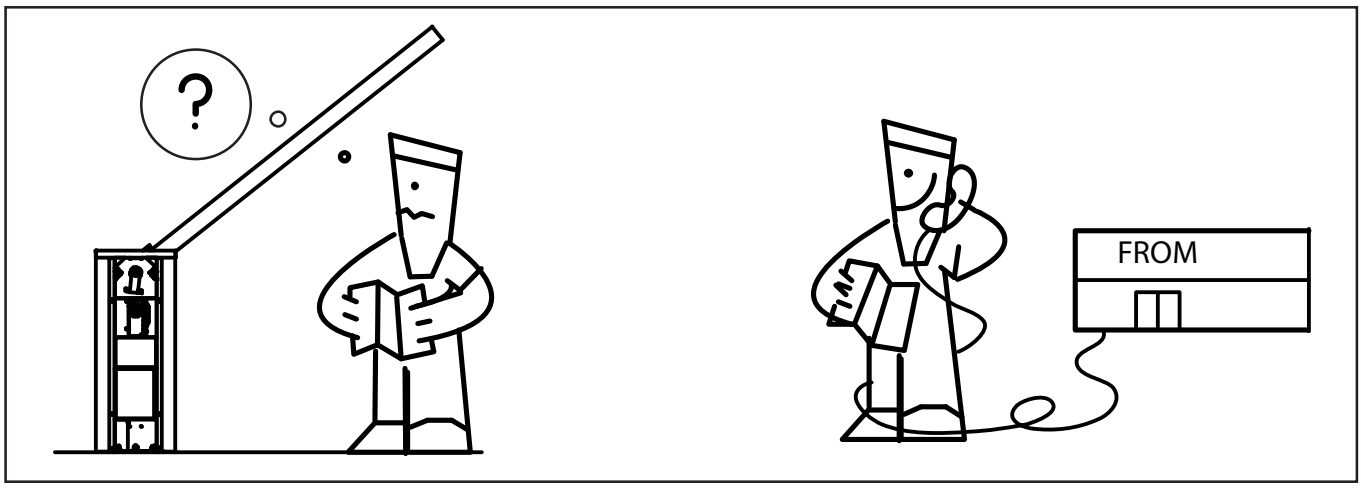
5
13
10




?
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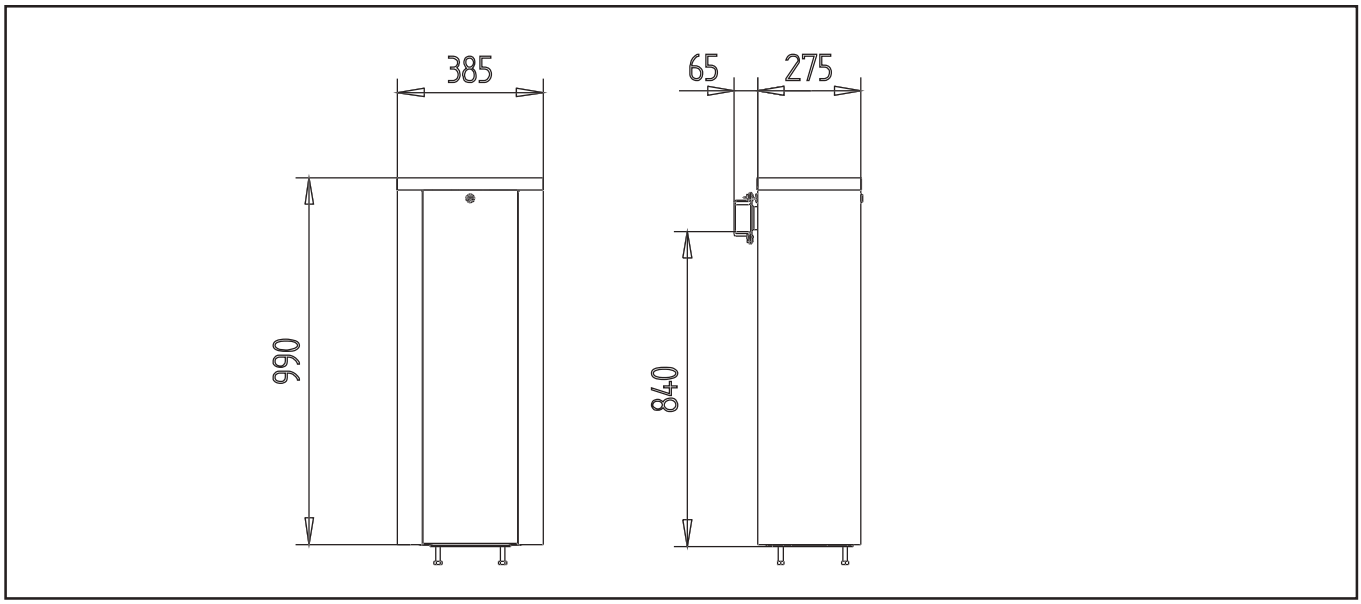
385
990
65
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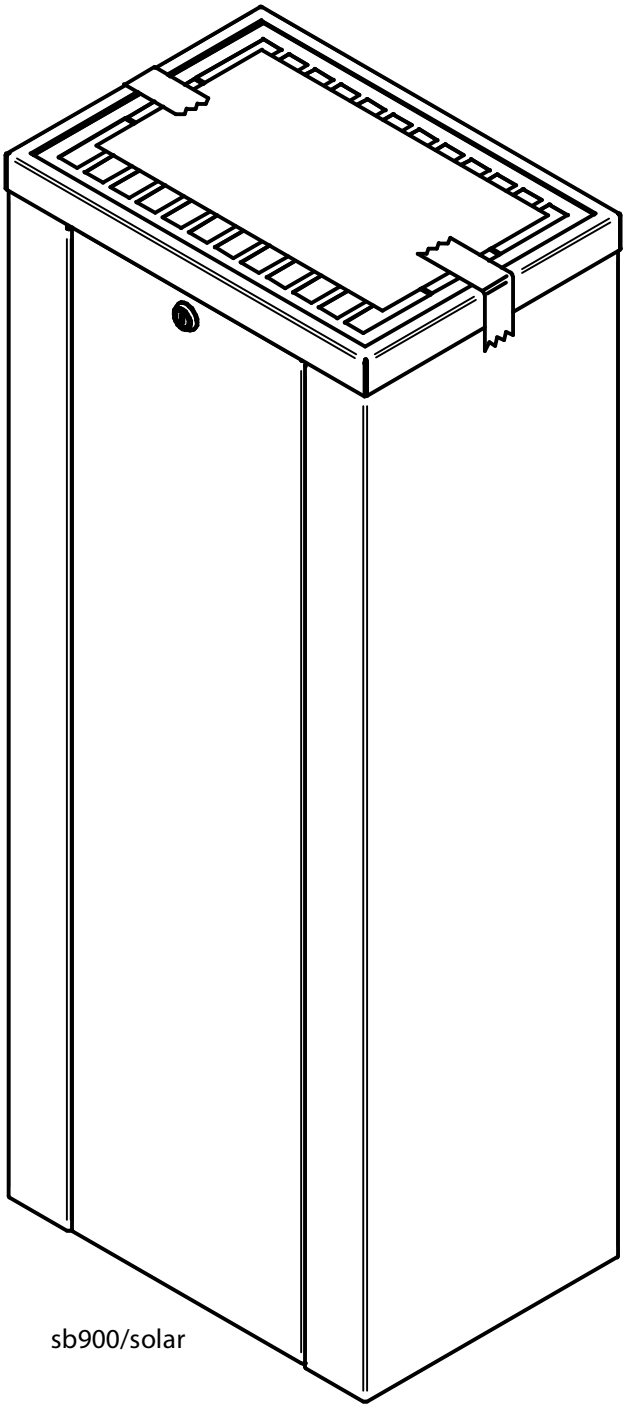
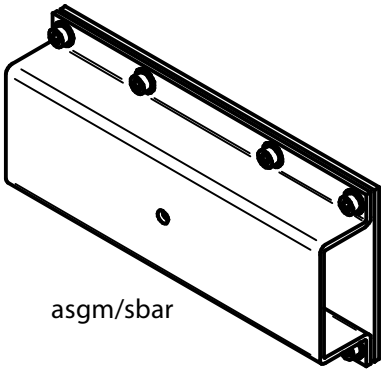
840

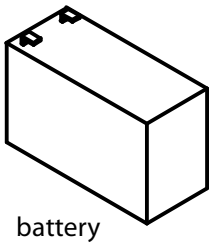
WHAT'S INSIDE KIT SB/900/SOLAR



sb900/solar

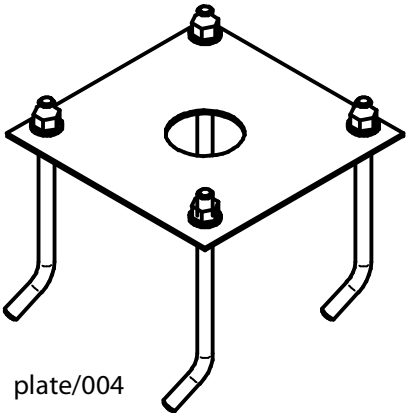


asgm/sbar

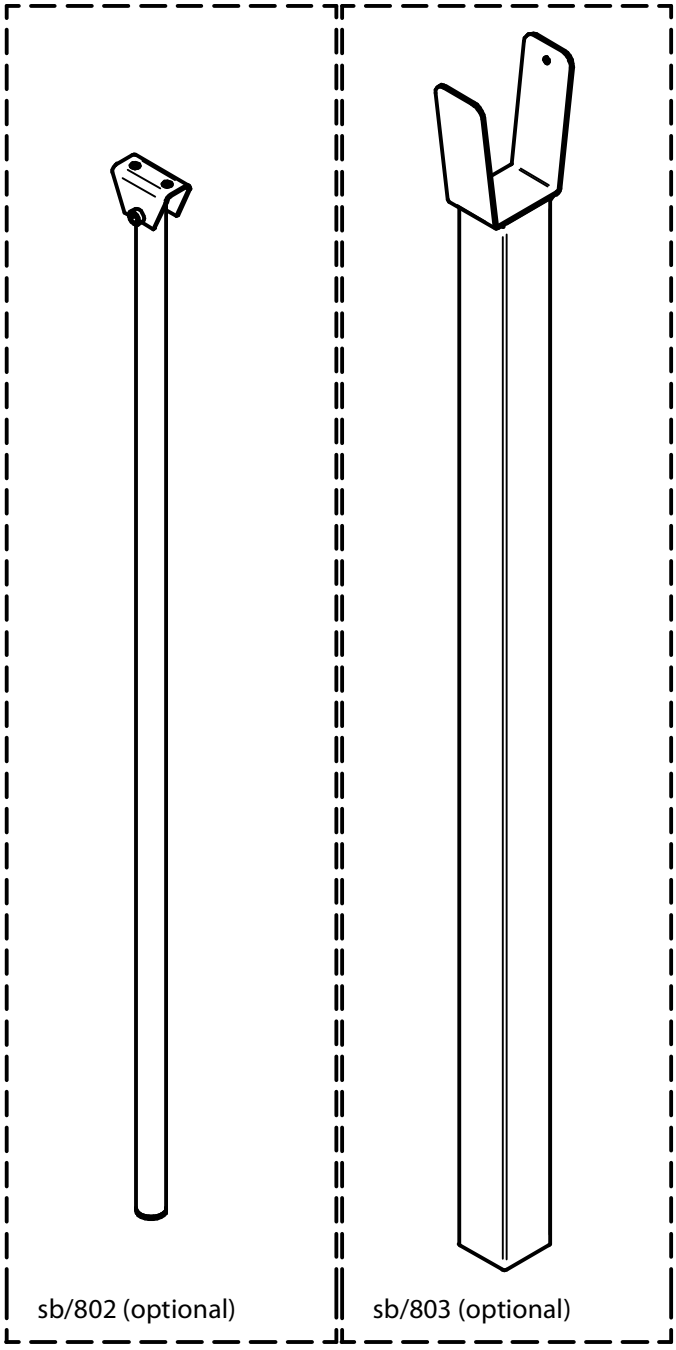


battery

key/3419



plate/004



sb/802 (optional)

sb/803 (optional)

INSTALLATION MANUAL

All measures are expressed in mm, unless otherwise indication.

TECHNICAL DATA
(all characteristics refer to an ambient temperature of +20 ° C)

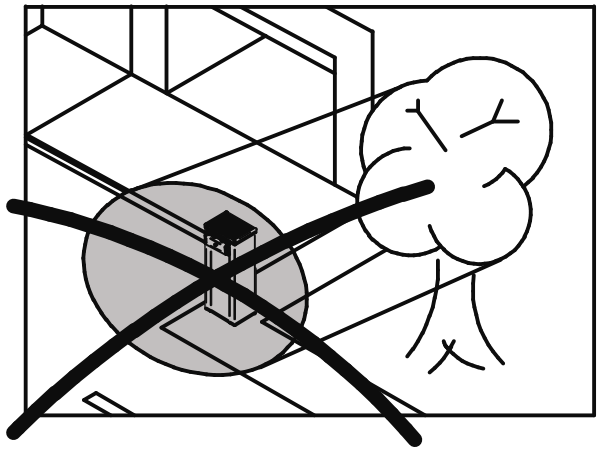
SB900/SOLAR

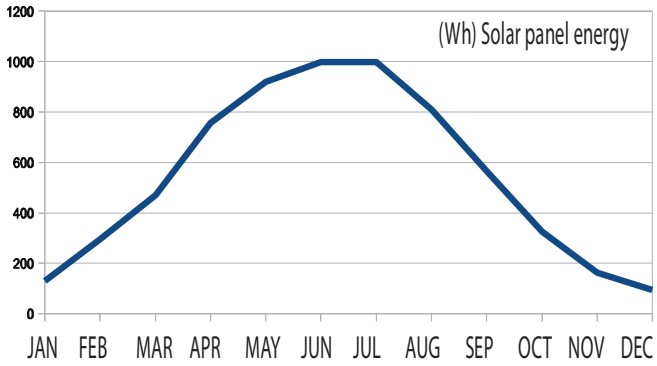
Rated motor voltage	12V DC
Maximum motor current	7A
Peak power solar panel	10Wp
Nominal battery capacity	12Ah
(with optional second battery)	24Ah
Operating temperature	-20°C + 50°C
Temperature charging batteries	0°C + 40°C
Degree of protection	IP55
Dimensions (see fig. P. 2).	
Radio Receiver frequency	433,92 Mhz
Max remotes stored in radio memory	63
Weight	55 Kg

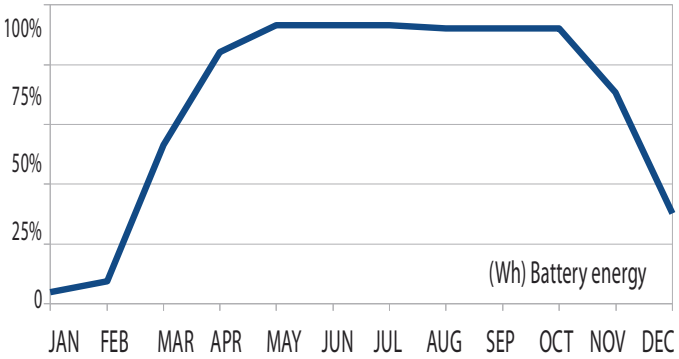
PRELIMINARY CHECKING OPERATIONS

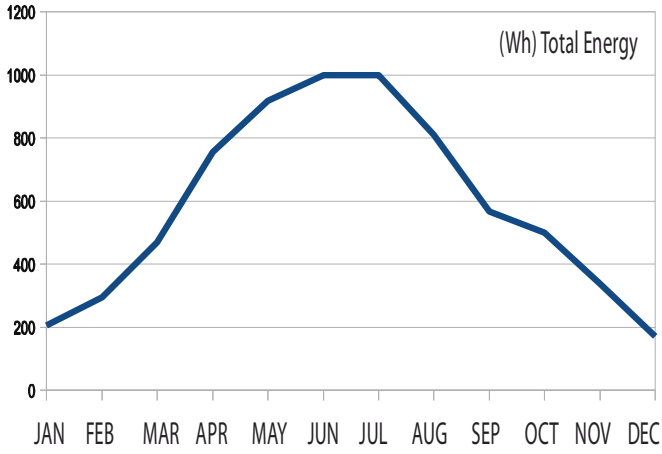
Check the stability and strength of anchorage area of the barrier and eventual support fork sets.
Check for shearing and crushing points, install edges safety where needed .
Connect the eventual grid connections to a power pole switch with a contact opening distance of at least 3 mm.
The cables to the grid connection and connections to safety and control devices must pass over independent channels and separate ducts.
Pay special attention of the solar panel to irradiation:
- Verify that the site chosen for the installation of the panel ensures a 100% direct illumination (full sun), in any day of the year.
- If you can not favored the radiation in the winter months
- Check that your proposed installation of the panel is far from vegetation, walls or other situations that could cast a shadow, even partially, on its sensitive surface.

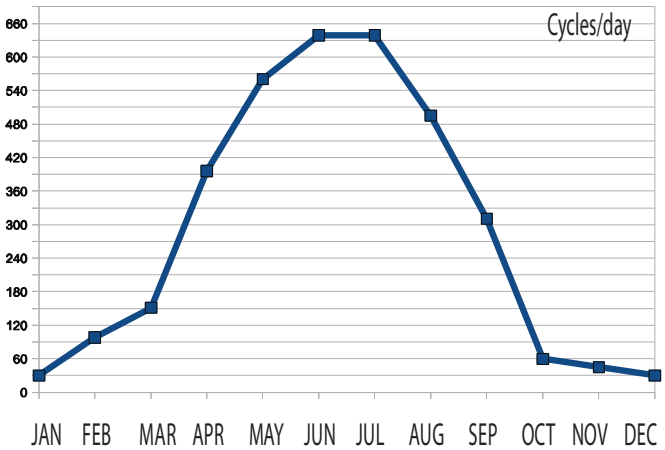
Warning! - This surface must be illuminated by sunlight directly and at any point; partial shade, although small (due, for example, a leaf or other), significantly reduces the energy capacity of the panel.
The calculation of the number of cycles / day is based on a installation of the barrier with unobstructed illumination of the panel and is taken as a reference a city in northern Germany, according to figures provided by the Photovoltaic Geographical Information Systems (Photovoltaic Geographical Information System) (http://re.jrc.ec.europa.eu/pvgis/).
To obtain from the battery best efficiency and a long duration is necessary to install the battery as described in this manual, inside the barrier so that the battery is protected from high summer temperatures and low winter temperatures.
In fact, the efficiency of the battery charge depends on the temperature of the environment in which it is installed: the efficiency optimum is achieved at medium temperatures, while decreases significantly at low temperatures.
Instead, the longevity of the accumulator is influenced mainly by high summer temperatures that speed up the aging of the parties.
Normally, the average battery life is about 4-5 years;
This also depends on the intensity with which you use the automation.





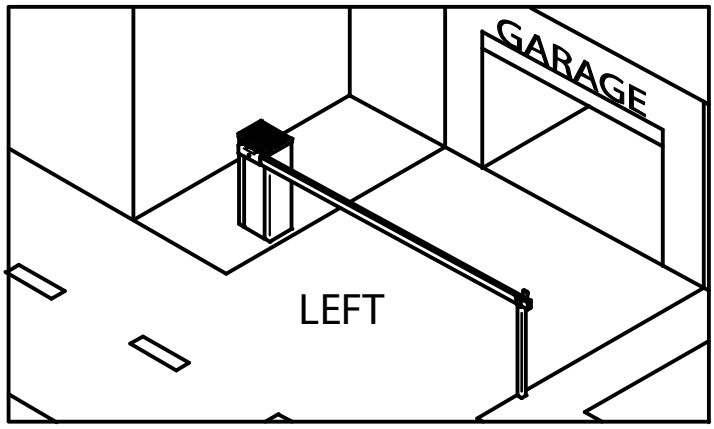




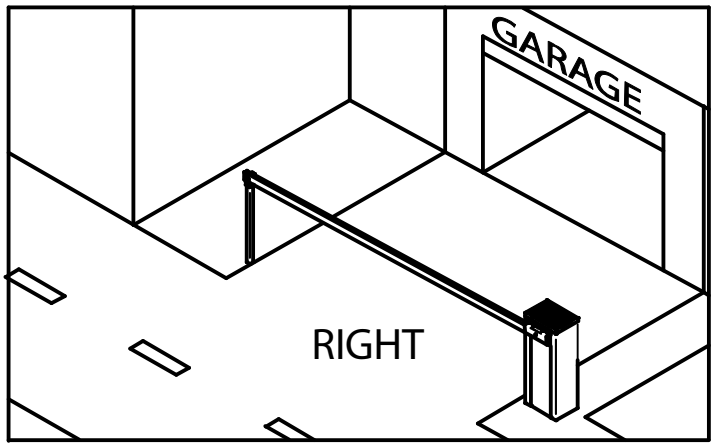


INSTALLATION ARRANGEMENT

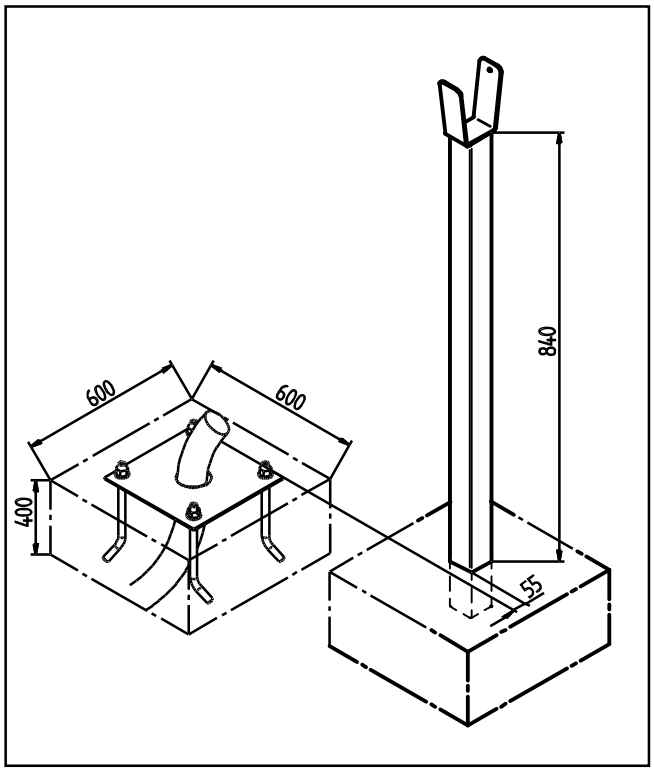
It is possible to order the barrier already in the right or left configuration and already set with the required length of the boom.
We call "LEFT" a barrier that, looking the automation from the outside of driveway is installed to the left of the driveway:

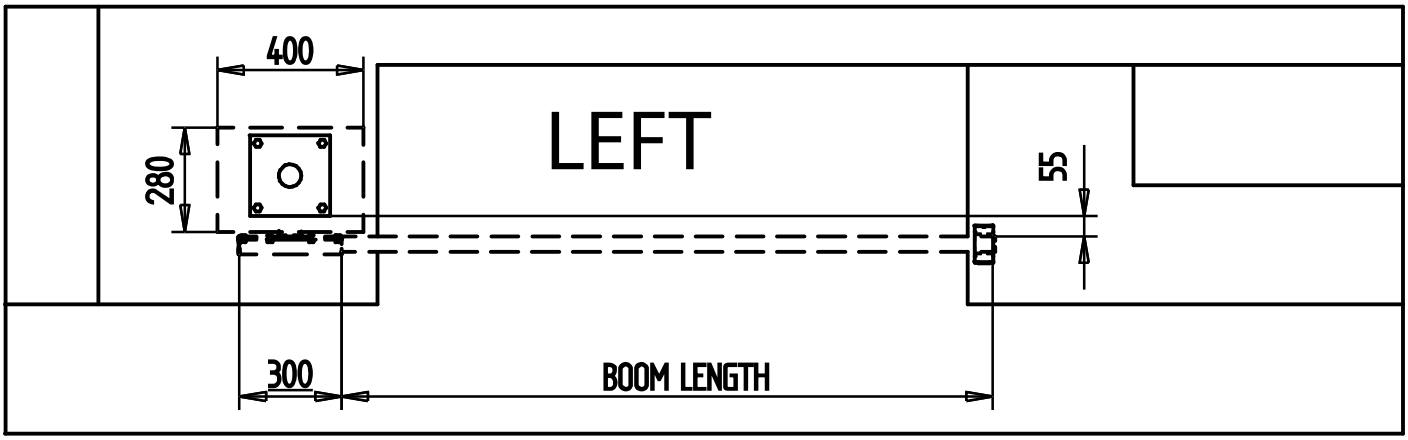


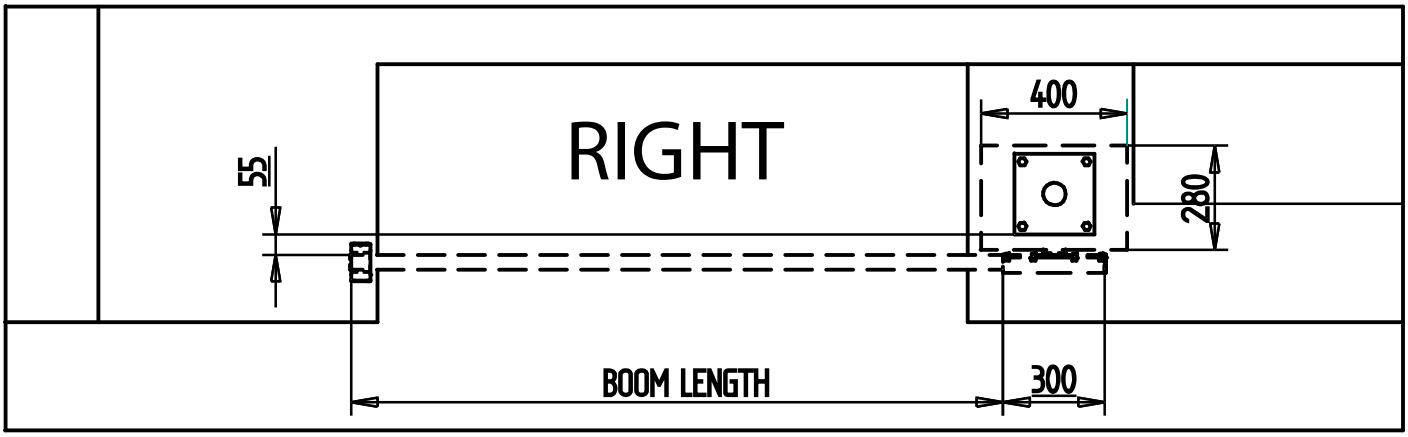
We call "RIGHT" a barrier that, looking the automation from the outside of driveway is installed to the right of the driveway:



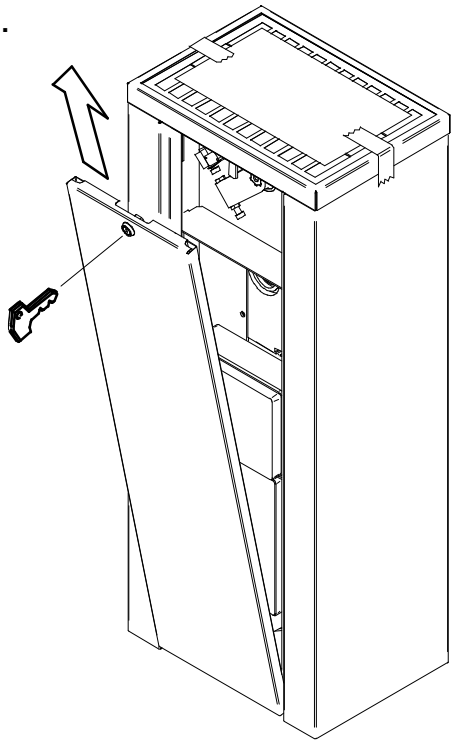
When you have choosen the configuration of the boom barrier you can arrange installation laying down ducts for cables and the foundation plate and the optional fork support for the boom.
Refer to the figures below for th installation arrangement.





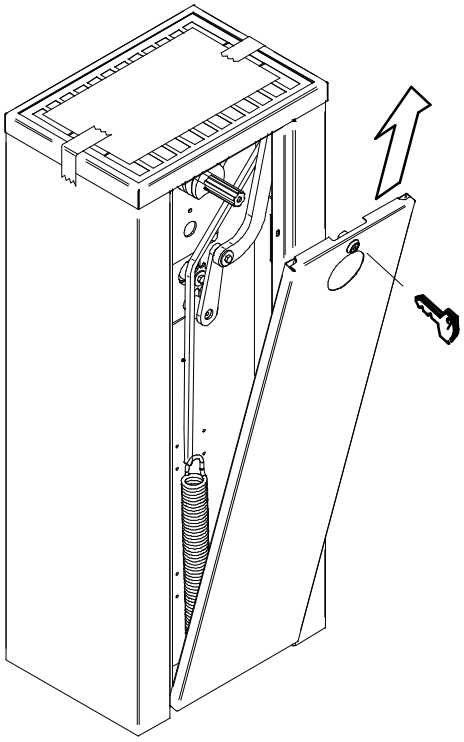


1.



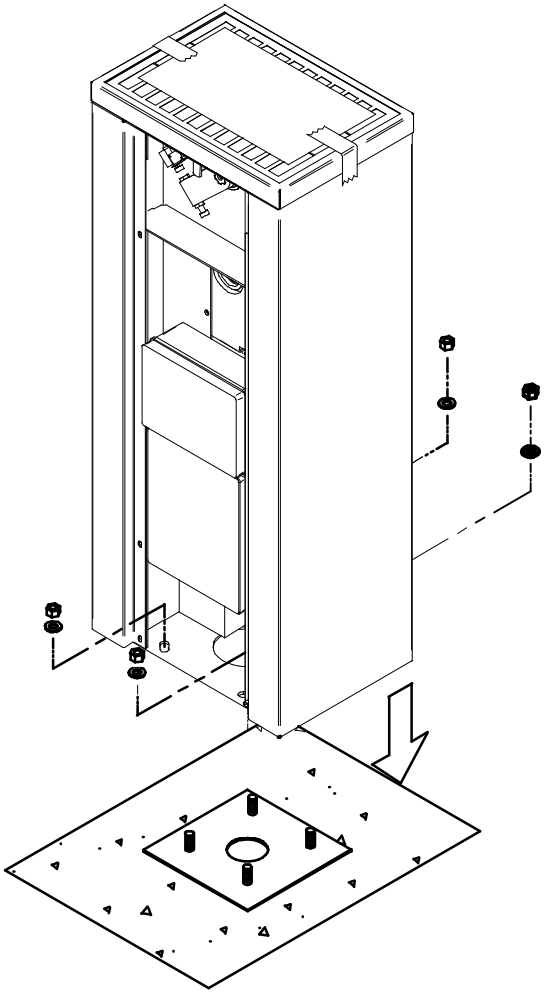
Insert the key into the front cover and remove the front cover from the barrier.

2.



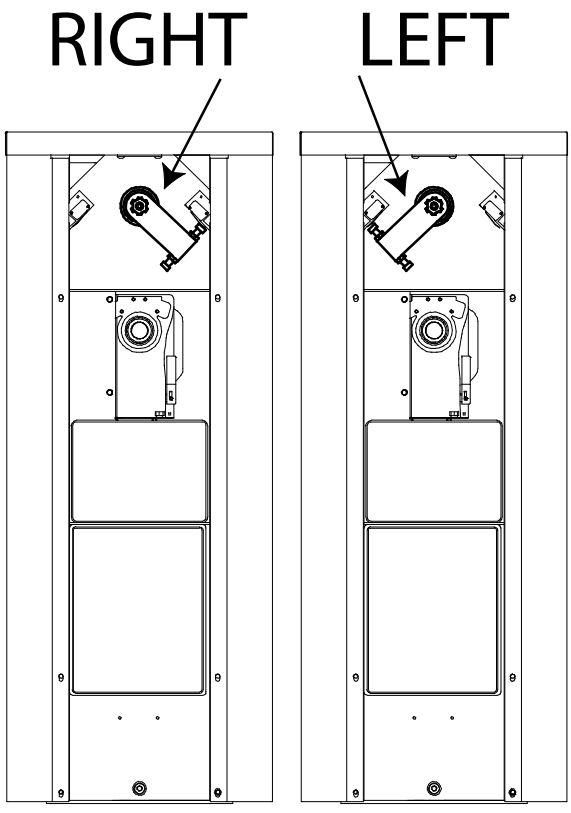
Insert the key into the rear cover and remove the rear cover from the barrier.

3.



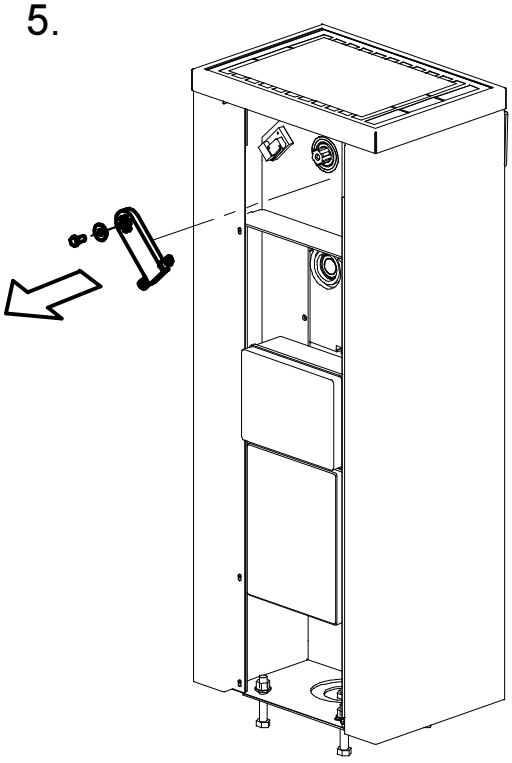
Insert the barrier on the foundation plate and join the barrier to the foundation plate with the 4 nuts and 4 washers supplied in the box.

4.



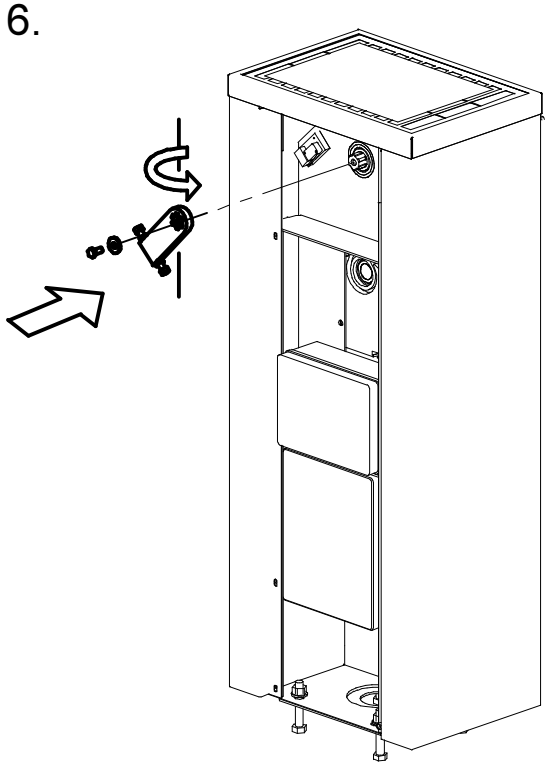
Verify the configuration (left or right) of the barrier as requested.
If the barrier is already set the right way go to step 13. otherwise follow the instructions from step 5. to step 12. to change the configuration of the barrier.

5.



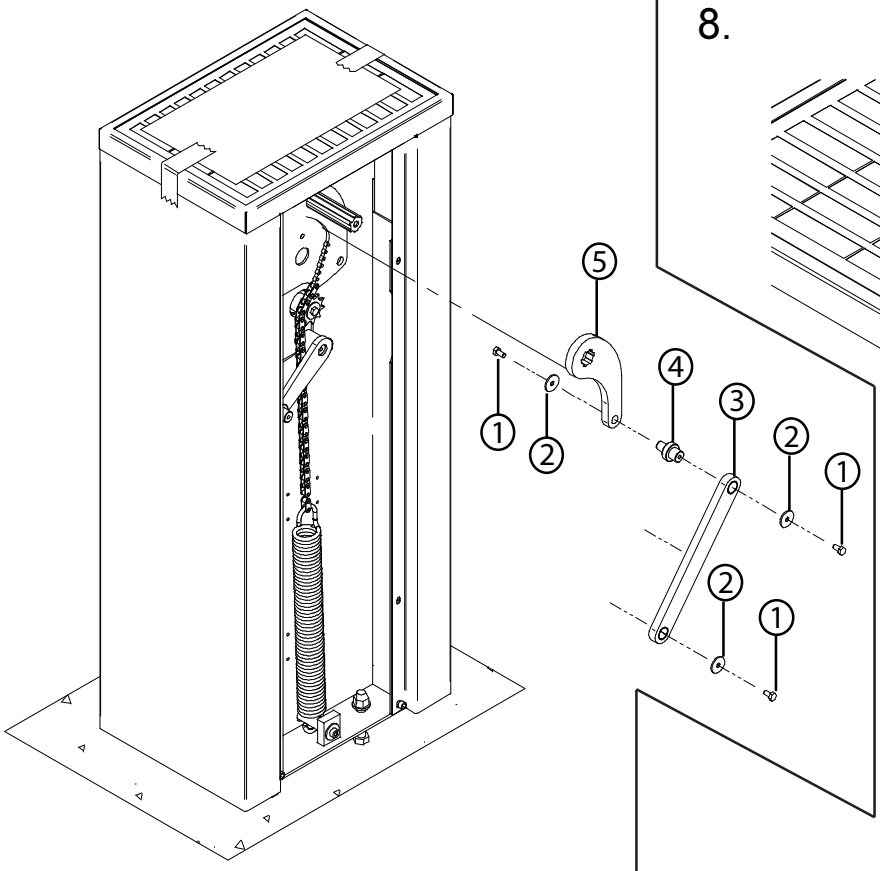
Unscrew the M8x16 screw and remove from the toothed shaft the screw , the washer and the rocker that acts on the limit switches

6.



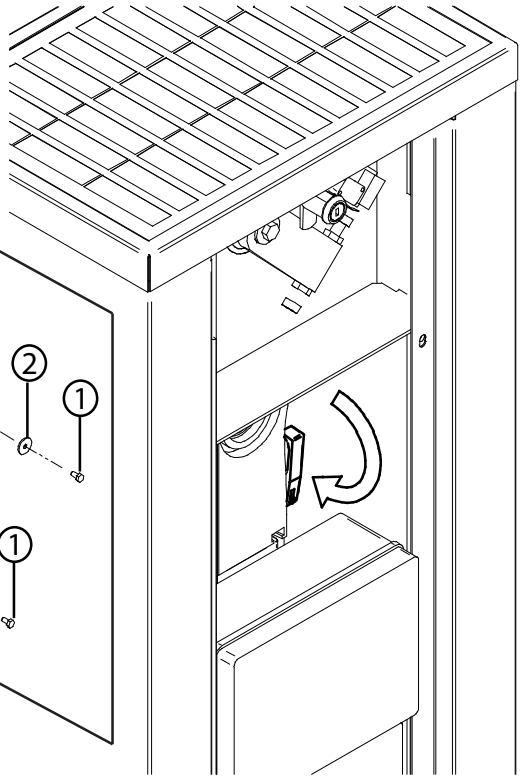
Flip the rocker (the face of the rocker that was visible before now has to be against the toothed shaft).
Insert the rocker on the toothed shaft as shown in figure and and insert the washer and tight the screw.

7.



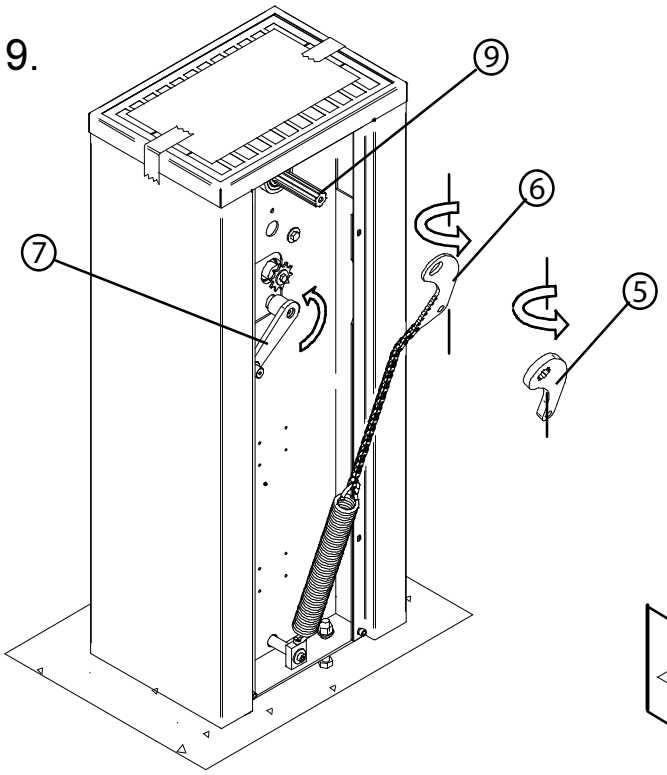
Remove the rear linkage:
- Loosen the screws M6x16 (1) and washers (2) shown in figure
- Remove the connecting rod (3) from the pin (4)
- Remove the pin (4) from the bended arm (5)
- Pull the bended arm (5) from the toothed shaft

8.



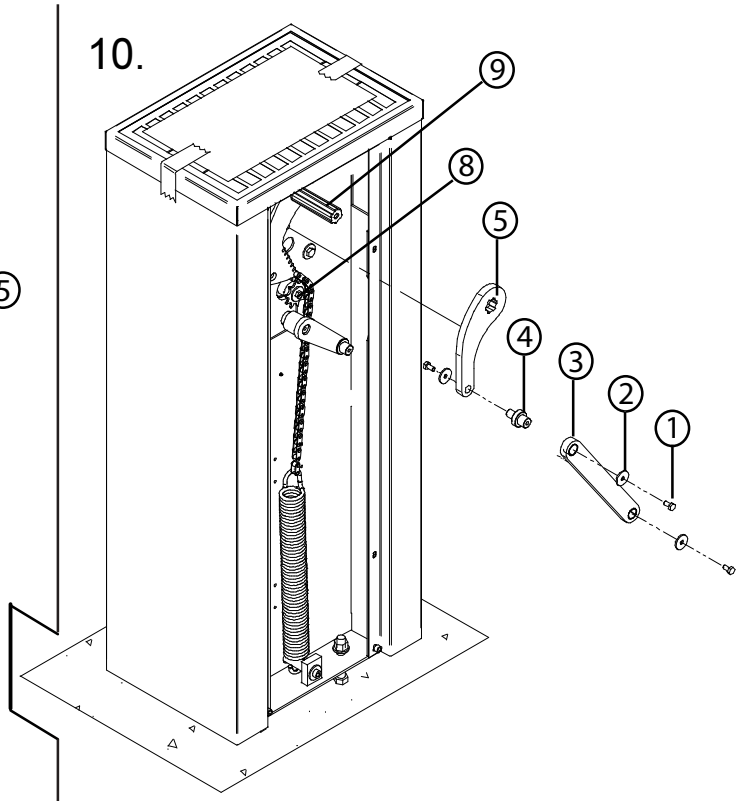
Unlock the motor by turning down the black trigger located above the sealed box that contains the control unit.

9.



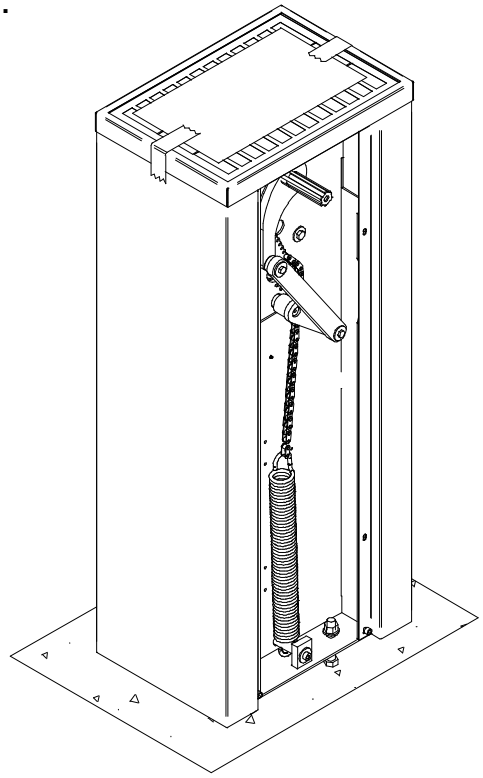
Pull the arm to which is hooked to the chain (6) from the toothed shaft (9).
Flip both the lever (6) and lever (5).
Rotate 90 degrees counter-clockwise the arm drive (7).

10.



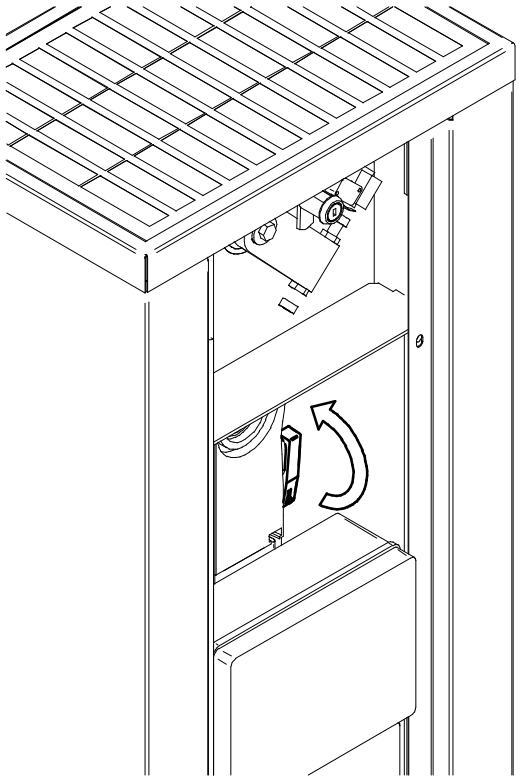
Put the arm to which is hooked to the chain (6) on the toothed shaft (9) making sure that the chain lies in correctly on the pinion (8).

11.



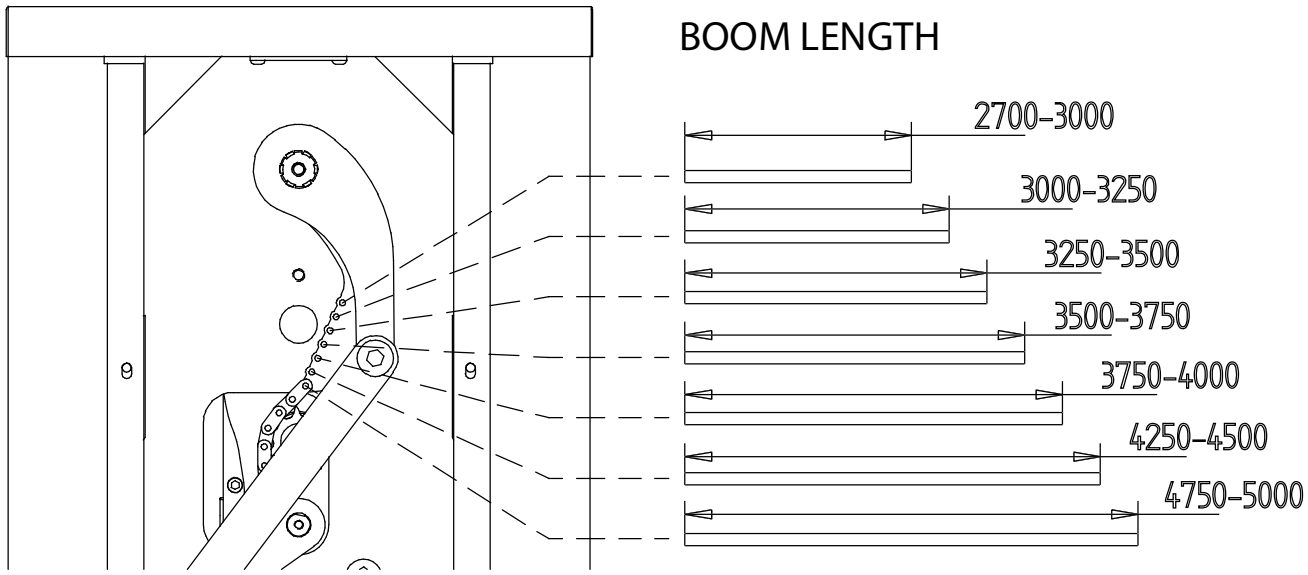
Reassemble the rear linkage:
- Insert the bended arm (5) on the toothed shaft
- Insert the pin (4) on the bended arm (5)
- Insert the connecting rod (3) on the pin (4)
- Screw and tighten the screws M6x16 (1) and washers (2)

12.



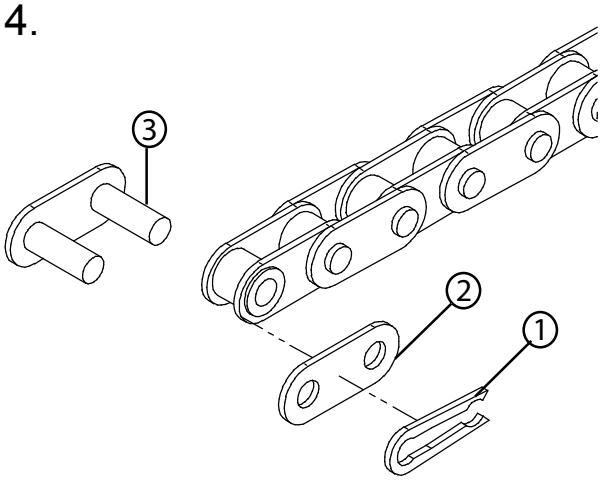
Lock again the motor by turning up the black trigger located above the sealed box that contains the control unit.
Turn slightly forward or backward the toothed shaft to facilitate the synchroniazation of the mechanism.

13.



Verify that the chain is connected to the arm in the rigth position for the boom length you need to install on the barrier.

14.



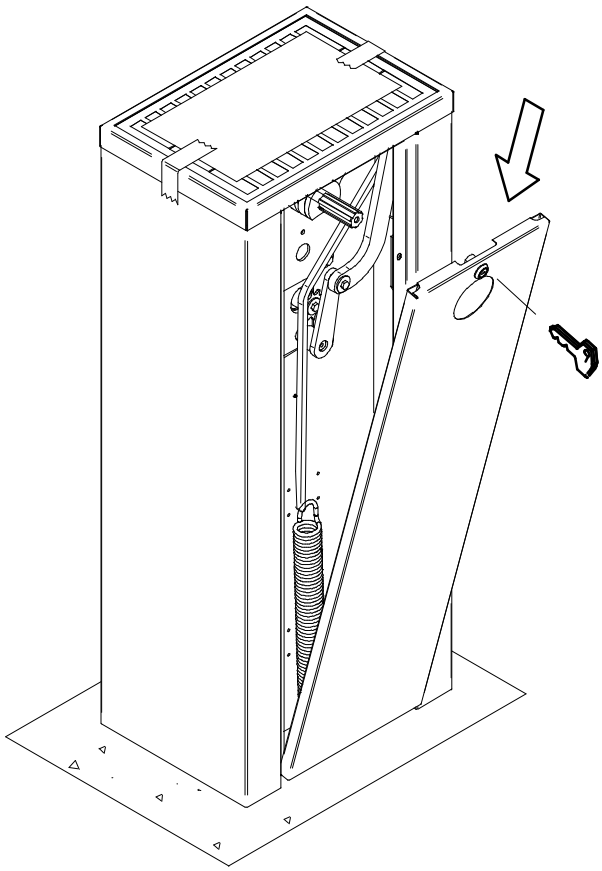
If it is necessary to change position of the chain you can remove the hook chain by removing the clip (1) and platelet (2) and then pull the hook (3).

15.

IMMAGINE MANCANTE

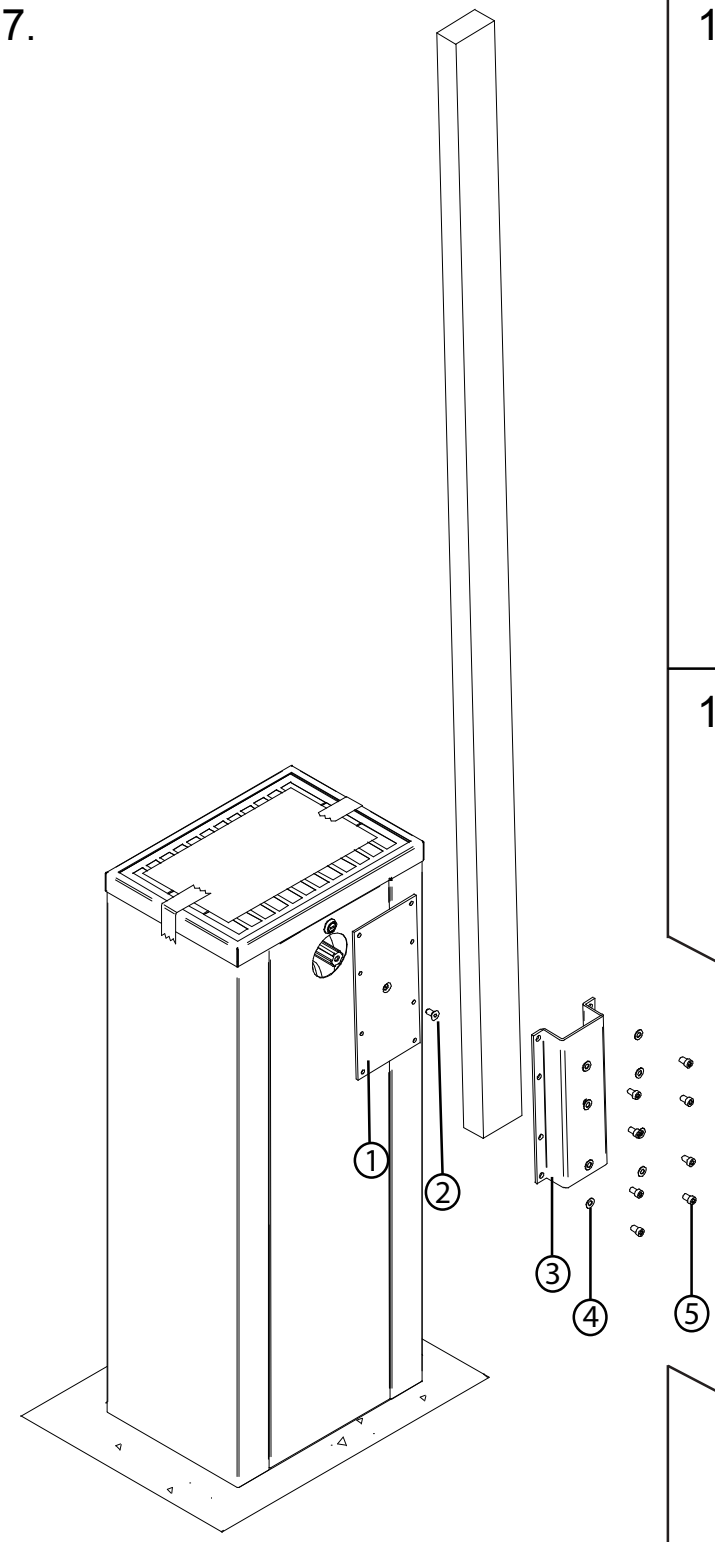
Adjust the length of the chain through the register.

16.



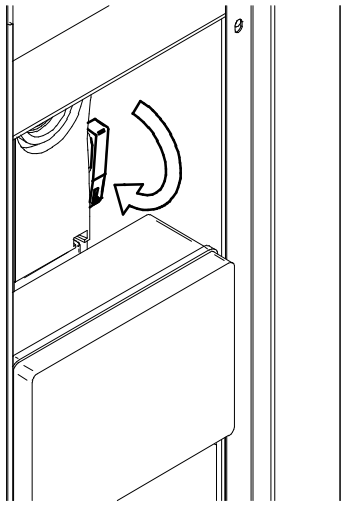
Reassemble the back cover and secure it using the provided key.

17.



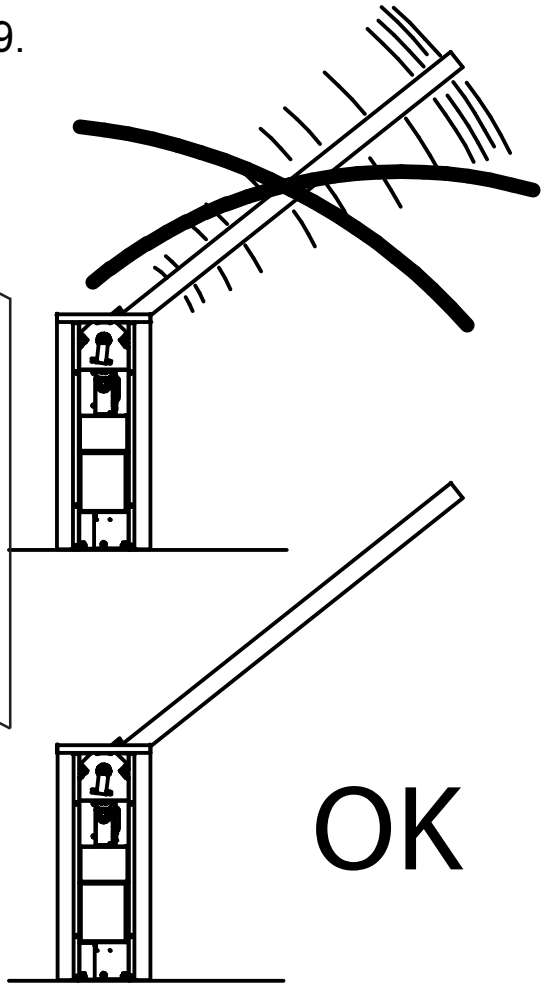
Install the boom on the barrier :
- Put the plate (1) on the toothed shaft in vertical position
- Tighten the countersunk head screw (2)
- Fix the plate (3) to the plate (1) using the 8 screws M8x10 (5) and inserting the washers (4)
- Do not fully tighten the screws
- Put the boom inside the 2 plates (1) and (3)
- Tighten the 8 screws (5)

18.



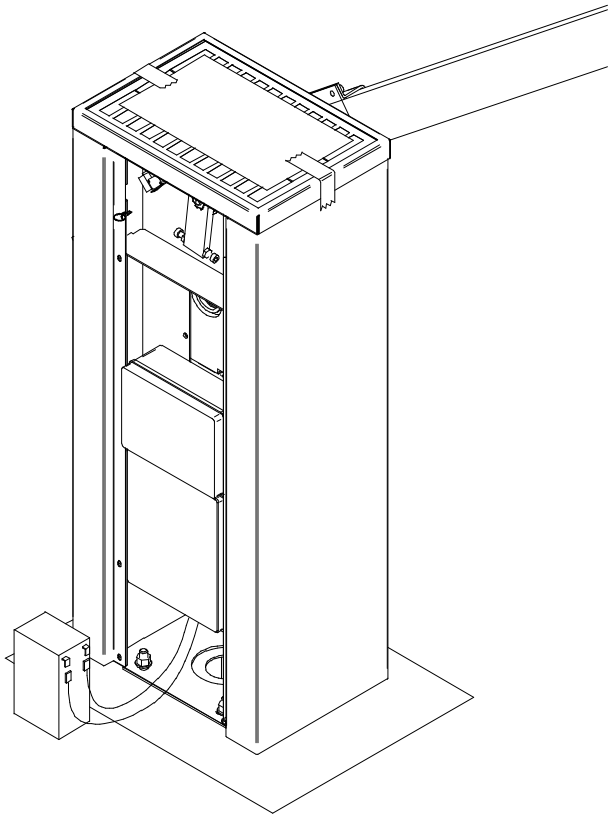
Unlock the motor by turning down the black trigger located above the sealed box that contains the control unit.

19.



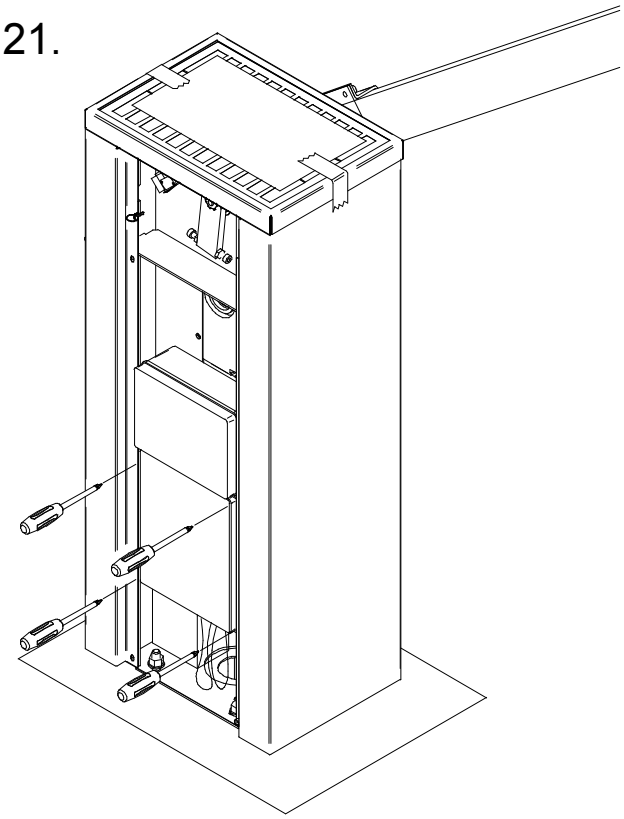
Bring the boom in various intermediate positions and verify that it is perfectly balanced.
The greater the precision of the balance and the lower is the consumption of the barrier and then it's greater the number of cycles per day possible with the available solar energy.
If necessary, move the point to which is linked the chain as explained in paragraph 13.

20.



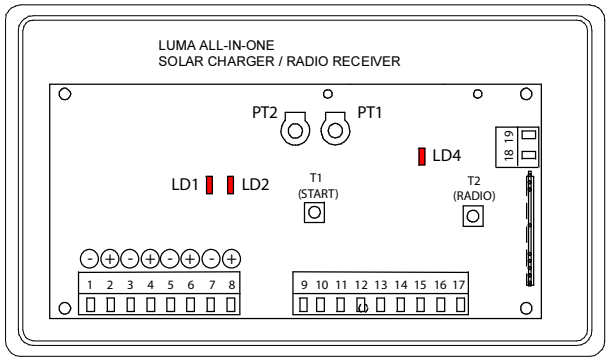
Connect the battery to the cables coming out of the waterproof box that contains the control unit.
(Connect red wire to terminal [+] and the black wire to terminal [-])

21.



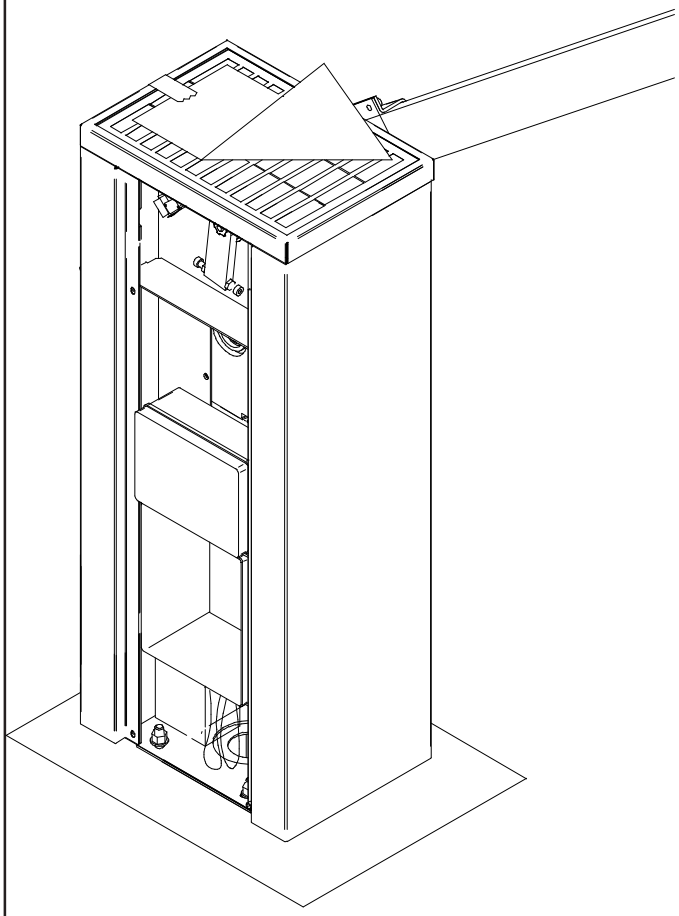
Put the battery into the barrier.
Open the waterproof box that contains the control unit.

22.



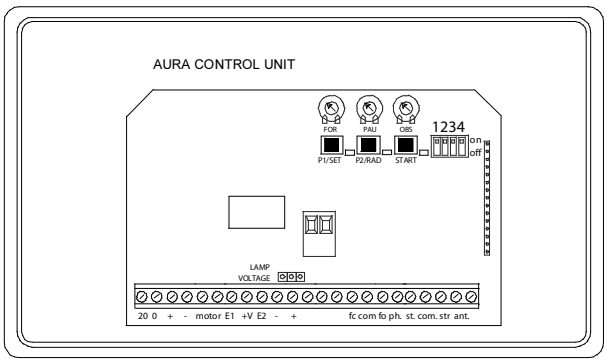
Check :
- the led LD4 it's blinking. If LD4 it's blinking the battery it's properly connected and the CPU it's working

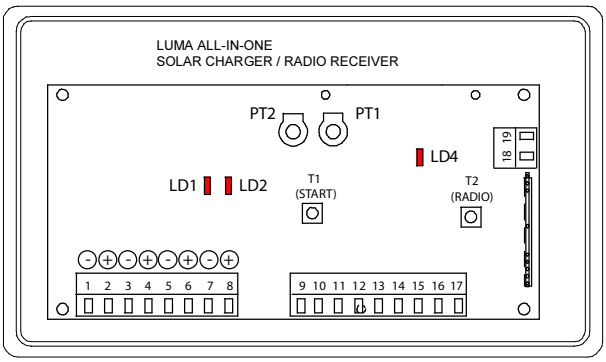
23.



Remove the paper sheet from the solar panel.

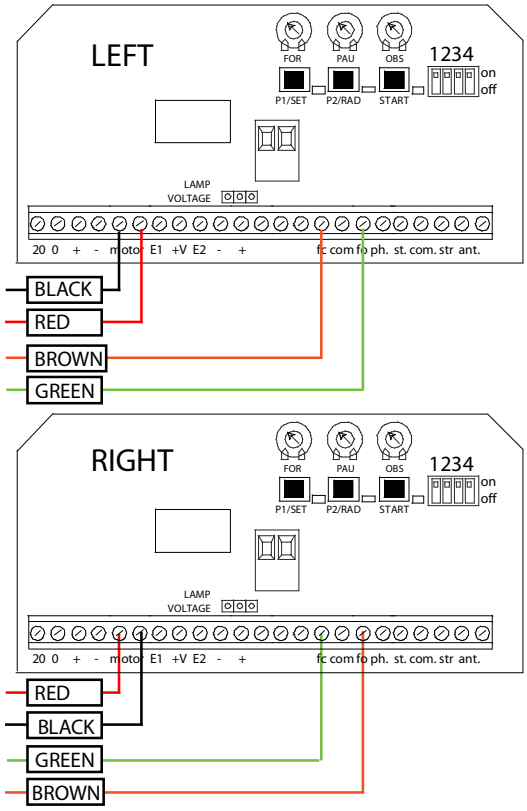
24.





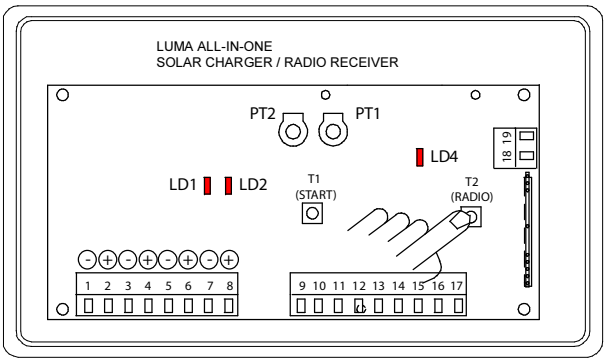
Check the led LD1 or LD2 are ON.
If LD1 it's on the solar panel is charging the battery.
If LD2 it's on the battery it's full charged.

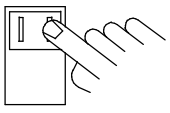
25.



Check if all wirings to the motor (red and black cables) and to the limit switches (brown and green cables) are correct and consistent with right or left direction of the barrier.

26.

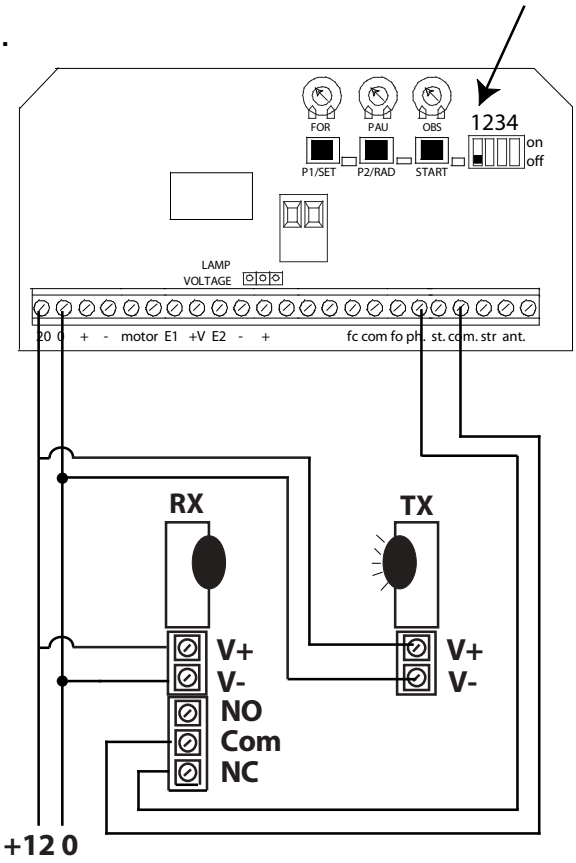




RADIORECEIVER PROGRAMMING :

- push the T2 (RADIO BUTTON) on the LUMA solar charger/radio receiver for 2-3 seconds until the red led LD4 turns on
- push the button on the radiotransmitter until the led LD4 of the radio receiver blinks for 3 times.
- If the memory on the radio receiver is full or the code is not correct the LD4 doesn't blinks and turns off.
- If the code was yet inserted in the memory the LD4 blinks for 5 times and the code is erased from the memory
- To erase all codes push the T2 button until the LD4 blinks for 7 times.

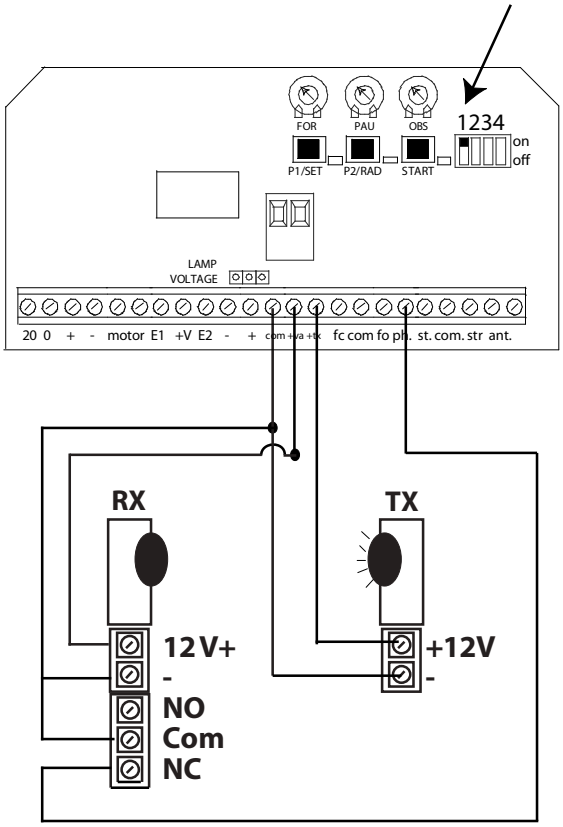
27.



PHOTOCELLS

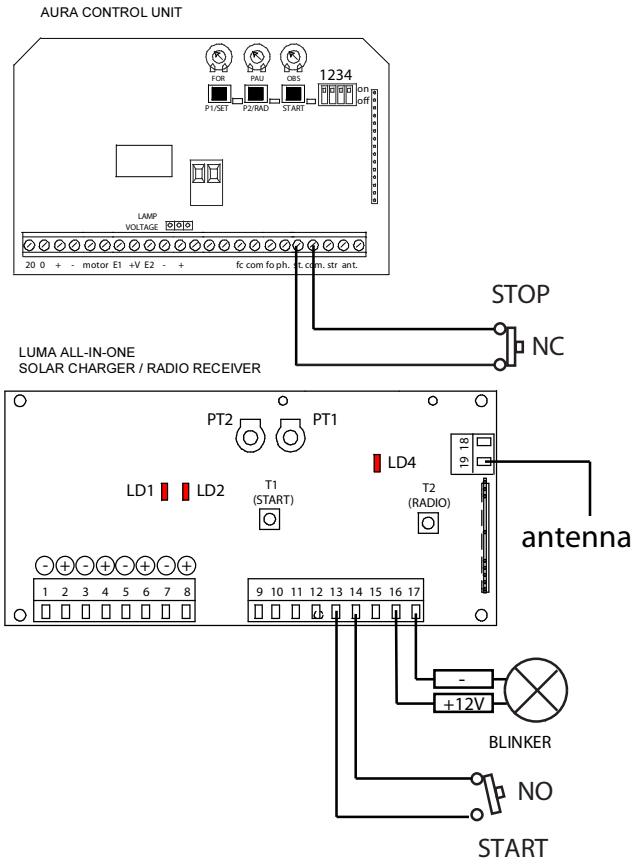
Wire the photocells as shown in figure and put in OFF position the dip switch 1.

28.



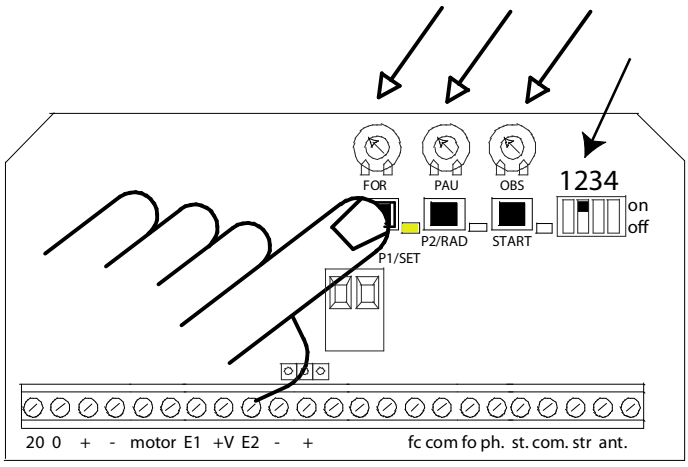
PHOTOCELLS WITH AUTOTEST
Wire the photocells as show in figure and set the dip switch 1 on ON position to enable autotest of the photocells.
Attention !
You need photocells that works with 9 volts power supply .

29.

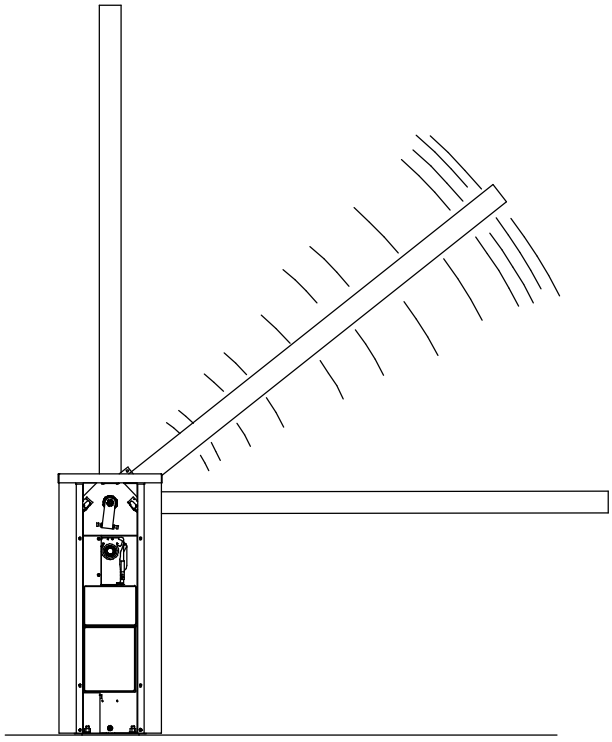


Wire the connections of START and STOP command , antenna and blinker.

30.



CONTROL UNIT PROGRAMING
- Check thath the barrier is unlocked, (check point 18.)
- Bring the boom on at half way open (about 30° from horizontal position) and lock the gearmotor (check point 12.)
- Check thath dip switch DIP2 is in ON position.
- Push the button on the radiotransmitter that you have inserted in radio receiver memory (check point 26.) to power on the AURA control unit.
- the red led on AURA control unit will blink fast
- put all the trimmer FOR, PAU and trimmer OBS in half position
- push the button P1/SET for 3 seconds , then release it, at this point the yellow led will turn on
- push the P1/SET button for 1 second.

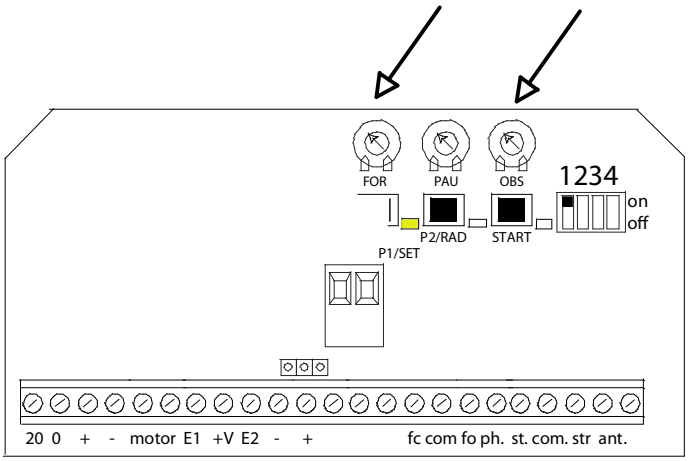


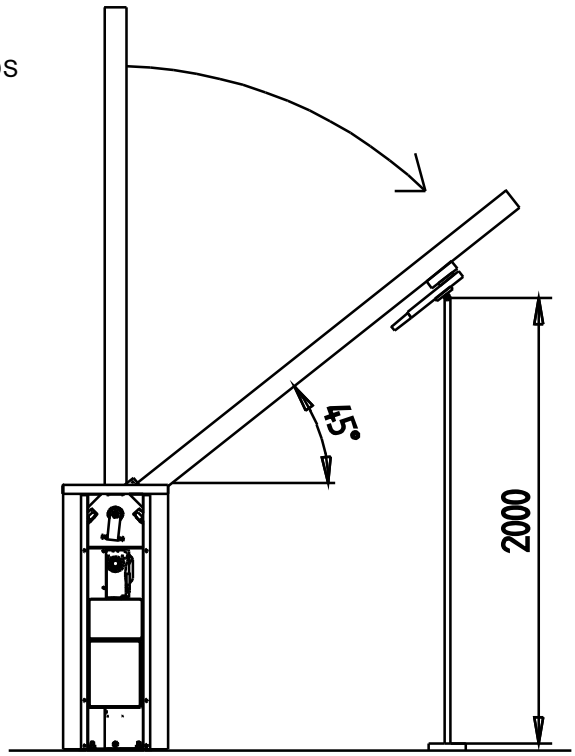
- The barrier will do :
  - slowly opening for some seconds
  - slowly closing until the boom reaches limit switch
  - complete opening untile the boom reaches limit switch
  - 1 second pause
  - complete closing until the boom reaches limit switch

The programming procedure is complete.

31.

CHECKING COMPLIANCE WITH THE DIRECTIVE 2006/42/EC
ON MACHINERY AND THE APPLICABLE PARTS OF STANDARDS
EN 13241-1, EN 12453, EN 12445





The barriers used exclusively for transit vehicles are excluded from the application of European standards.
These barriers usually require high-speed opening and closing.
The barriers used exclusively for transit vehicles must have appropriate signs to clearly prohibit pedestrian walkway.

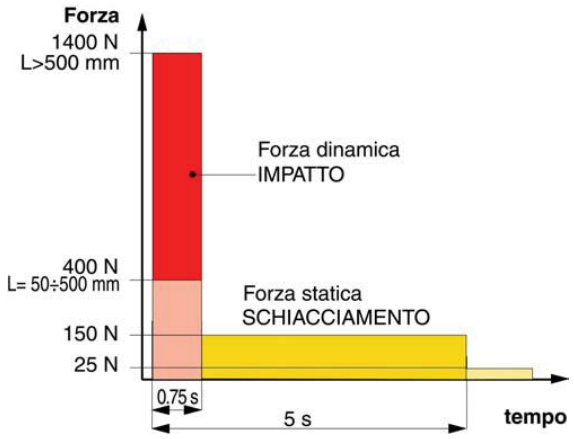
In the case when the barrier is also used for pedestrian traffic in public areas, it must be installed photocells to detect obstacles and must be measured the forces necessary to close (using the special tool needed by EN 12445) as shown.

Verify that the values measured by the instrument are lower than those indicated in the graph.
Please note that the measurement should be repeated three times and must be considered the average value.

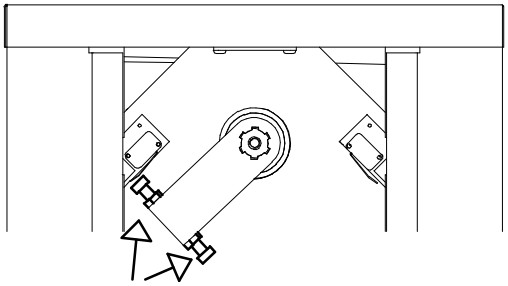
Use the trimmer FOR (force) and OBS (obstacle detection) to increase or decrease the force applied on the shaft of the engine during operation and increase or decrease the sensibility with which the obstacle is detected.

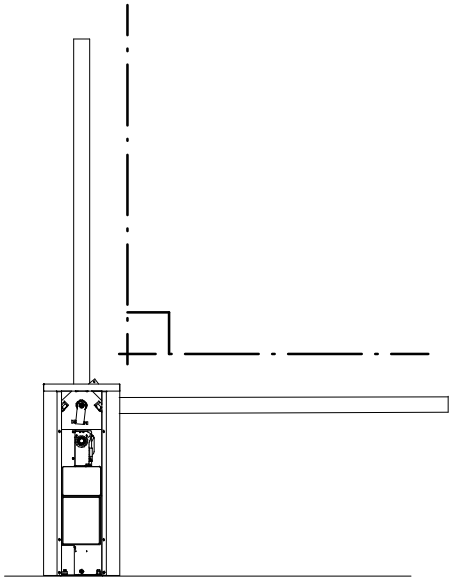
The graph shows the maximum values of the operational dynamics, static and residual forces.
If the values of the forces are higher, install a protective device in accordance with EN 12978 (for example, a safety edge) and repeat the measurement.
Please note that the reduction of the dynamic force can be obtained using a sensitive edge with a high elastic deformation

If it is known the length of the boom to install you can request the barrier already balanced, calibrated, tested and certified!



32.





MECHANICAL STROKE ADJUSTMENT
To ensure that the boom is in a perfectly horizontal position when fully closed and in a perfectly vertical position when fully opened you should adjust the mechanical stops.
Loosen the 2 nuts M8 on the rocker and loosen or tighten the 2 screws in the rocker to adjust the position of complete opening and complete closing of the boom.
Tighten the 2 nuts M8 when you have obtained proper adjustment.

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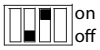
33. WORKING MODE SELECTION

1234


AUTOMATIC CLOSE WITH TIMER MODE
Set dip 3 in ON and dip 2 in OFF position.
In this way if the control unit receives a START command by the radiotransmitter or STR input the barrier :
- open with the force and speed selected by “FOR” trimmer
- opening procedure stop when the barrier reaches the limit switch or a obstacle is detected or time is over. Further START commands during opening are ignored.
- when the barrier is in PAUSE further START command reset the pause time that restart from zero.
- when the PAUSE time is over the barrier begin the closing procedure with the force and speed selected by the “FOR” trimmer. Further START command during closing stop the closing procedure and begin a opening procedure.
- closing procedure stop when the barrier reaches the limit switch or a obstacle is detected or time is over.

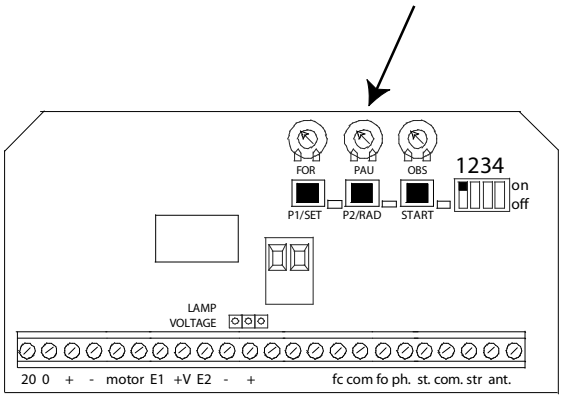
1234


CONDOMINIUM MODE
Set dip 3 in OFF and dip 2 in ON position.
In this way if the control unit receives a START command by the radiotransmitter or STR input the barrier :
- open with the force and speed selected by “FOR” trimmer
- opening procedure stop when the barrier reach the limit switch or a obstacle is detected or time is over.
- further START commands during the opening procedure work as STOP command
- when the barrier is in PAUSE further START command start a closing procedure.
- further START commands during the closing procedure work as STOP command
- closing procedure stop when the barrier reaches the limit switch or a obstacle is detected or time is over.

1234


STEP BY STEP MODE
Set dip 3 in OFF and dip 2 in ON position.
In this way if the control unit receives a START command by the radiotransmitter or STR input the barrier :
- open with the force and speed selected by “FOR” trimmer
- opening procedure stop when the barrier reaches the limit switch or a obstacle is detected or time is over.
- further START commands during the opening procedure work as STOP command
- when the barrier is in full open position a further START command starts a closing procedure.
- further START commands during the closing procedure work as STOP command
- closing procedure stop when the barrier reaches the limit switch or a obstacle is detected or time is over.

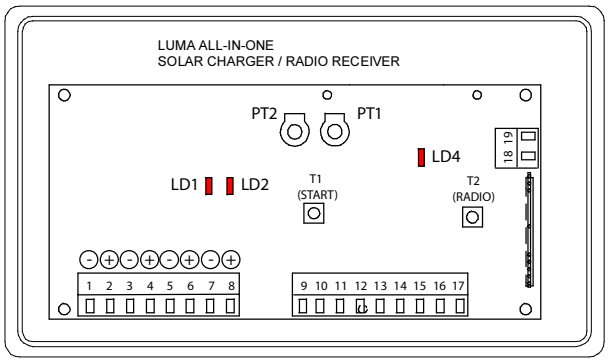
34.



PAUSE TIME ADJUSTMENT

If you have selected working modes with PAUSE TIME and automatic close or condominium mode it's possible to adjust the time
è possibile regolare il tempo di pausa dopo il quale la barriera si richiude automaticamente agendo sul trimmer PAU.
Ruotare in senso orario per aumentare il tempo di pausa.
Ruotare in senso antioirario per diminuire il tempo di pausa.

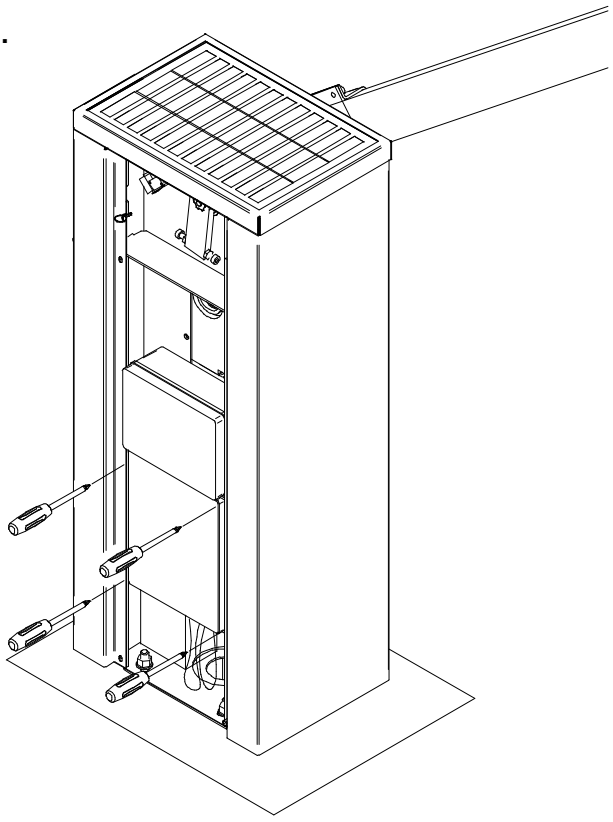
35.



OPTIMIZATION FOR BATTERY ENERGY SAVING

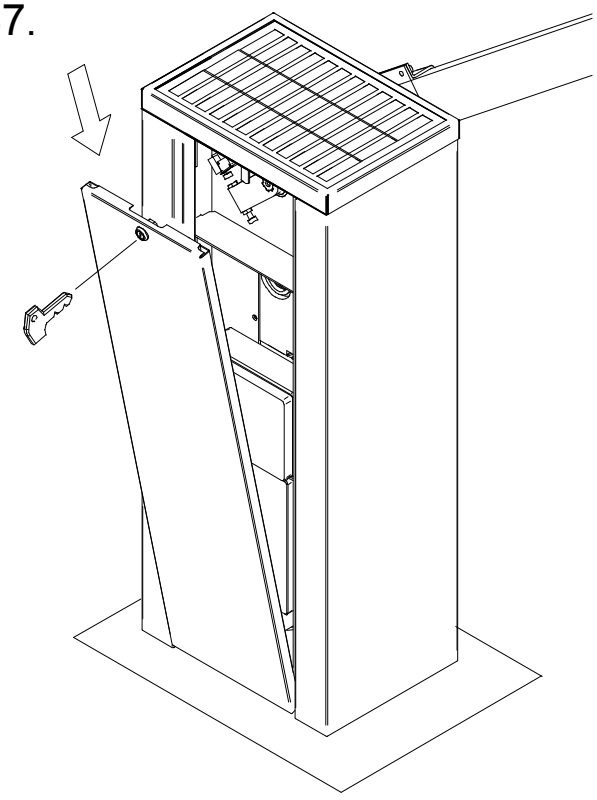
Check how many seconds it's a normal cycle time of the boom barrier (single opening or single closing or complete opening-pause-closing cycle, this depends on how you set working mode on AURA control unit).
Now you can adjust the time the LUMA radio receiver power on the AURA control unit with PT2 trimmer.
PT2 all left position = 5 seconds working time.
PT2 all rigth position = 5 minutes working time.
Adjust this working time as normal cycle time + 10 seconds.

36.



Close the junction box that contains the control center.
Seal any holes made during installation to prevent ingress of moisture and insects in the sealed box.

37.



Close the front cover.
Give the key to open the front cover, the manual page that explains how to unlock the barrier in case of emergency and the necessary documentation to the end user.