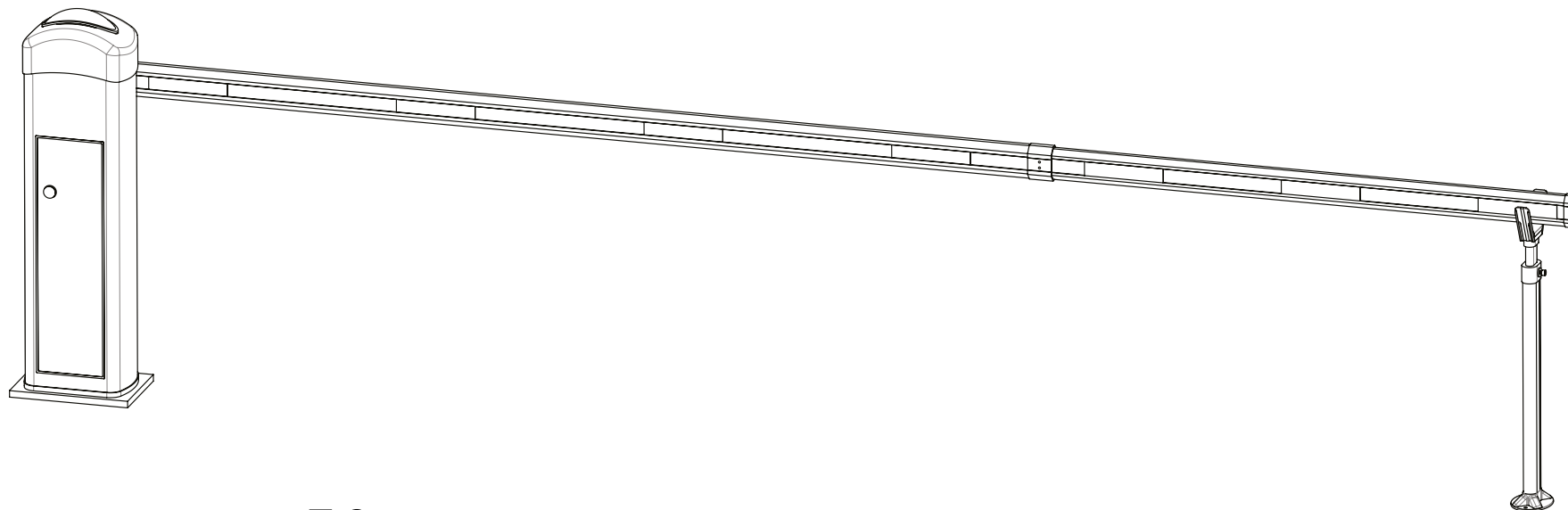




# MBM6 - BARRIER

## INSTALLER AND USER'S MANUAL



# 00. CONTENT

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# 01. SAFETY INSTRUCTIONS

## STANDARDS TO FOLLOW

### ATTENTION:

	This product is certified in accordance with European Community (EC) safety standards.
	This product complies with Directive 2011/65/EU of the European Parliament and of the Council, of 8 June 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
	(Applicable in countries with recycling systems). This marking on the product or literature indicates that the product and electronic accessories (eg. Charger, USB cable, electronic material, controls, etc.) should not be disposed of as other household waste at the end of its useful life. To avoid possible harm to the environment or human health resulting from the uncontrolled disposal of waste, separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Home users should contact the dealer where they purchased this product or the National Environment Agency for details on where and how they can take these items for environmentally safe recycling. Business users should contact their vendor and check the terms and conditions of the purchase agreement. This product and its electronic accessories should not be mixed with other commercial waste.
	This marking indicates that the product and electronic accessories (eg. charger, USB cable, electronic material, controls, etc.) are susceptible to electric shock by direct or indirect contact with electricity. Be cautious when handling the product and observe all safety procedures in this manual.

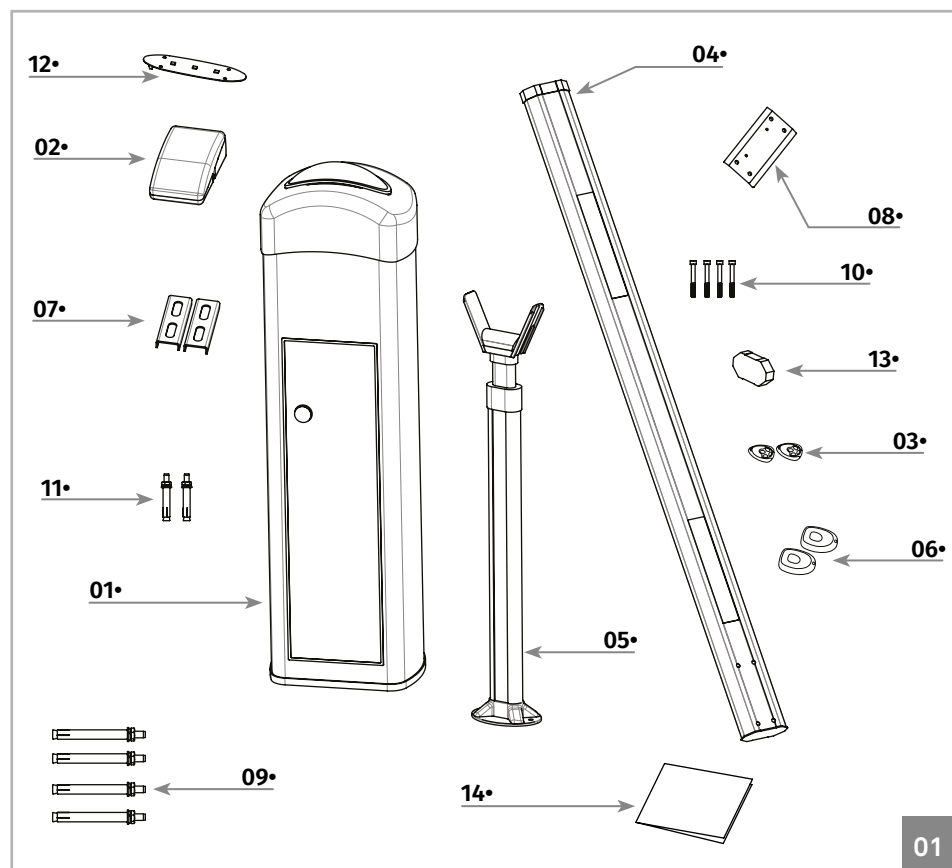
- It is important for your safety that these instructions are followed.
- Keep these instructions in a safe place for future reference.
- The **ELECTROCELOS S.A.** is not responsible for the improper use of the product, or other use than that for which it was designed.
- The **ELECTROCELOS S.A.** is not responsible if safety standards were not taken into account when installing the equipment, or for any deformation that may occur.
- The **ELECTROCELOS S.A.** is not responsible for insecurity and malfunction of the product when used with components that were not sold by the them.
- This product was designed and manufactured strictly for the use indicated in this manual.
- Any other use not expressly indicated may damage the product and/or can cause physical and property damages, and will void the warranty.
- Do not make any changes to the automation components and/or their accessories.
- Keep remote controls away from children, to prevent the automated system from being activated involuntarily.
- The customer shall not, under any circumstances, attempt to repair or tune the automatism. Must call qualified technician only.
- The installer must have certified professional knowledge at the level of mechanical assemblies in doors and gates and control board programming. He should also be able to perform electrical connections in compliance with all applicable regulations.
- The installer should inform the customer how to handle the product in an emergency and provide him the manual.

## 02. PACKAGE

### INSIDE PACKAGE

Inside the package you will find the following components:

- 01• 01 electromechanical
- 02• 01 control board
- 03• 02 4 channel MX4SP transmitter
- 04• 01 aluminium boom
- 05• 01 boom support
- 06• 01 MF1 exteriir photocells set
- 07• 02 fastening metal plates
- 08• 01 boom fastening metal plate
- 09• 04 M16 bolts with bushings
- 10• 04 boom fastening screws
- 11• 02 boom support fastening screws
- 12• 01 RGB LED board
- 13• 01 cover for boom
- 14• 01 installer and user's manual



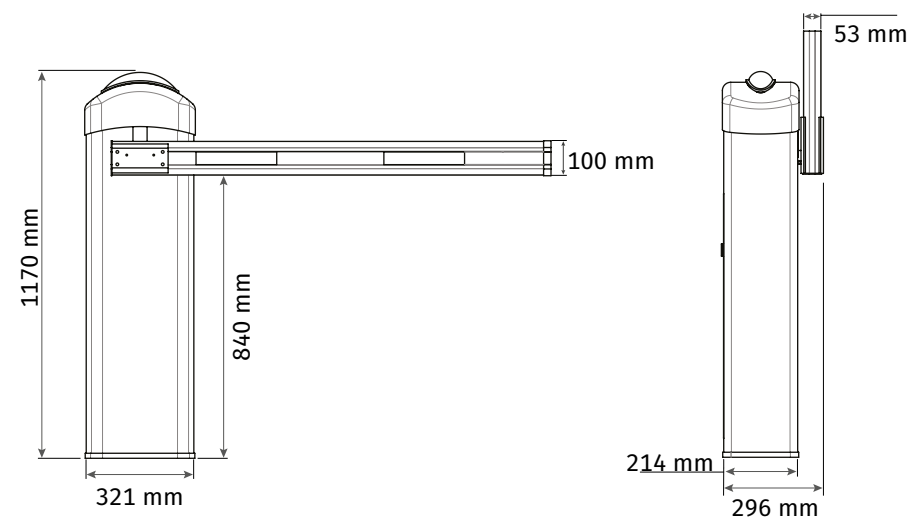
01

## 03. OPERATOR

### TECHNICAL SPECIFICATIONS

	MBM6 230V	MBM6 110V	MBM6 24V
• Barrier's Power Supply	230V 50/60Hz	230V 50/60Hz	230V 50/60Hz
• Motor's Voltage	AC 230V	AC 110V	24v DC
• Power	90W	90W	80W
• Current	0,75 A	0,75 A	0,75 A
• RPM	2800RPM	2800 RPM	1400 RPM
• Noise level	<65dB	<65dB	<65dB
• Working temperature	-45°C a 65°C	-45°C a 65°C	-45°C a 65°C
• Thermal protection	120°C	120°C	-
• Protection level	IP55	IP55	IP55
• Working frequency	80%	80%	Intense
• Opening/Closing time	3 - 6 s	3 - 6 s	3 - 6 s

The main dimensions of the MBM6 barrier are:

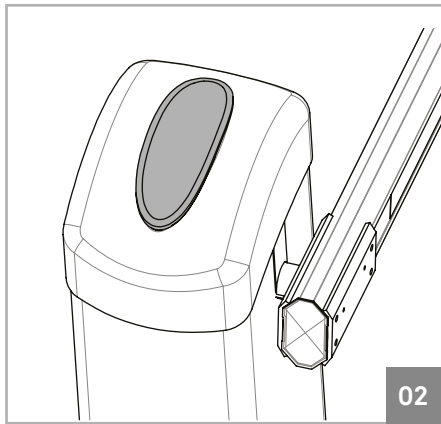


## 03. OPERATOR

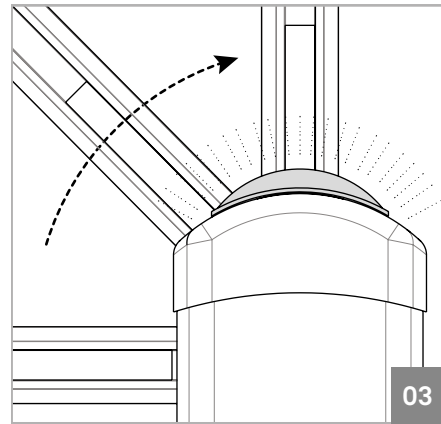
### WARNING LIGHT

The MBM6 barrier is a product developed with the purpose of controlling the access of vehicles to private, industrial and commercial areas.

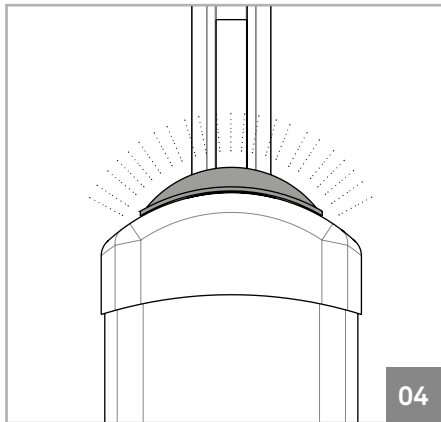
One of the main functionalities is the warning light capable of emitting different colors. This was developed to identify the different stages of the boom (opening, opened and closing) in a more clear and visible way.



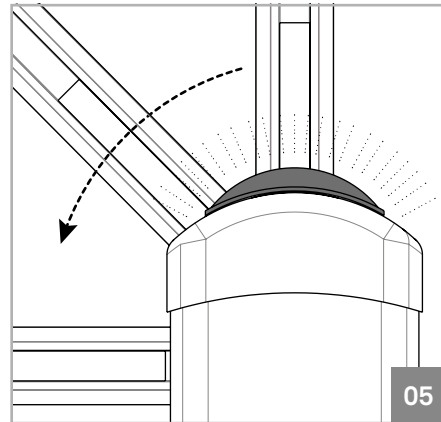
DETAIL: Barrier's warning light



During opening course - warning light emits GREEN light



During pausing time while opened - warning light emits BLUE light

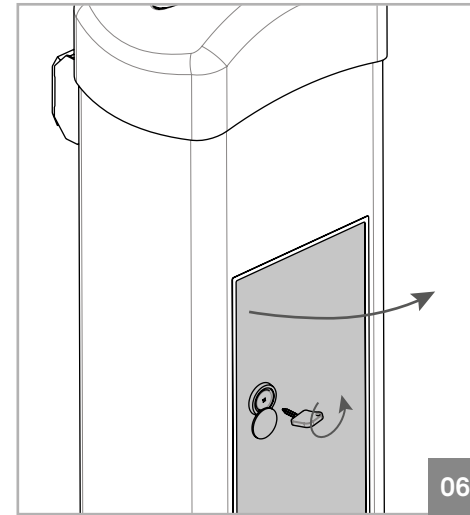


During closing course - warning light emits RED light

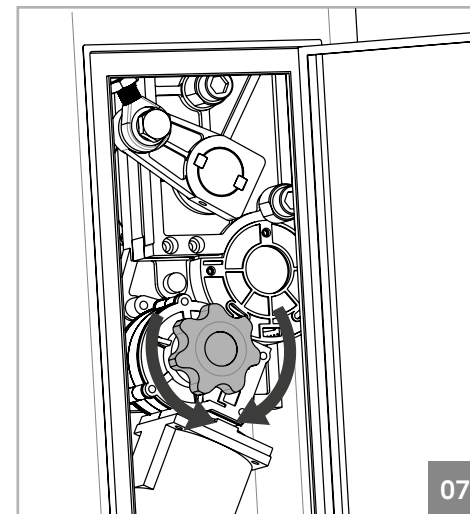
## 03. OPERATOR

### LOCKING/UNLOCKING

In case of power failure, the barrier is equipped with a manual unlocking and locking system. Follow the bellow instructions to unlock or lock the barrier.



**01•** Open the door using the key supplied with the barrier. Rotate the key to unlock the door and pull it towards outside. On the interior, you will have access to the unlocking system.



**02•** The unlocking is made by pressing and rotating the motor wheel shaded on the image on the side. The rotation direction to unlock will depend on the current stage of the boom (opened or closed) which will make the rotation possible to only one side.

**You must rotate the red wheel to the easiest side.**

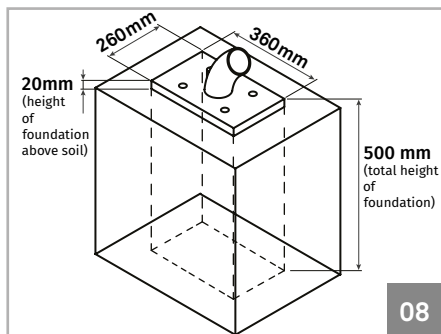
To lock the barrier, you must do the same steps because once it is unlocked, the red wheel will only be able to rotate to one of the sides.

## 04. INSTALLATION

### INSTALLATION SITE PREPARATION

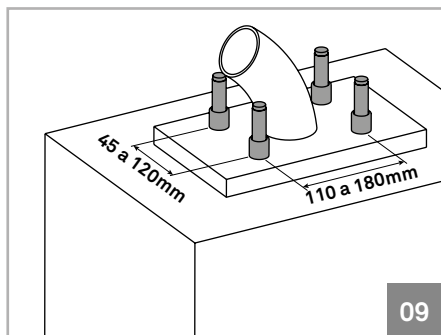


It's important that this order of installation is respected!  
Otherwise we can't assure the correct installation of the barrier and it may not work properly.



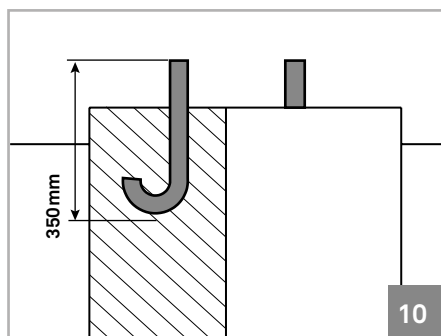
08

**01•** Create a foundation in cement on the soil. **The dimensions on the side image are the minimum to maintain**, so they can be superior but never inferior. You must leave one or more tubes for the cables of the different components to pass through the foundation to the barrier (photocells, wall starts, key selectors, etc).



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**02•** Solder the bolts with bushings on the foundation while the cement is still fresh. It is also necessary to respect the dimensions on the side image when soldering the bolts, so that the barrier can be installed.

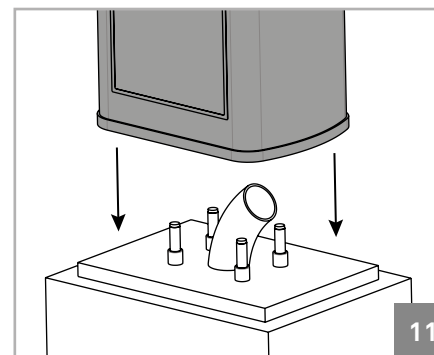


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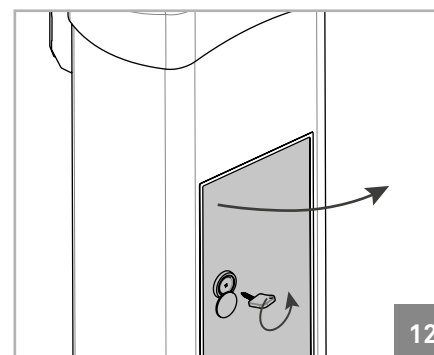
**ALTERNATIVE•** During installation, you can replace the bolts supplied by metal hooks, soldering them on the cement foundation while it is still fresh. You must pay attention to the above image's dimensions when placing the hooks.

## 04. INSTALLATION

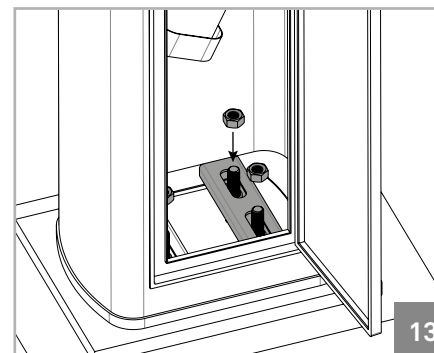
### BARRIER'S FIXATION



**01•** With the bolts already fixed on the cement foundation, respecting the dimensions of point 2, place the barrier on top of the foundation in a way that the screws stay inside and centered with the barrier.



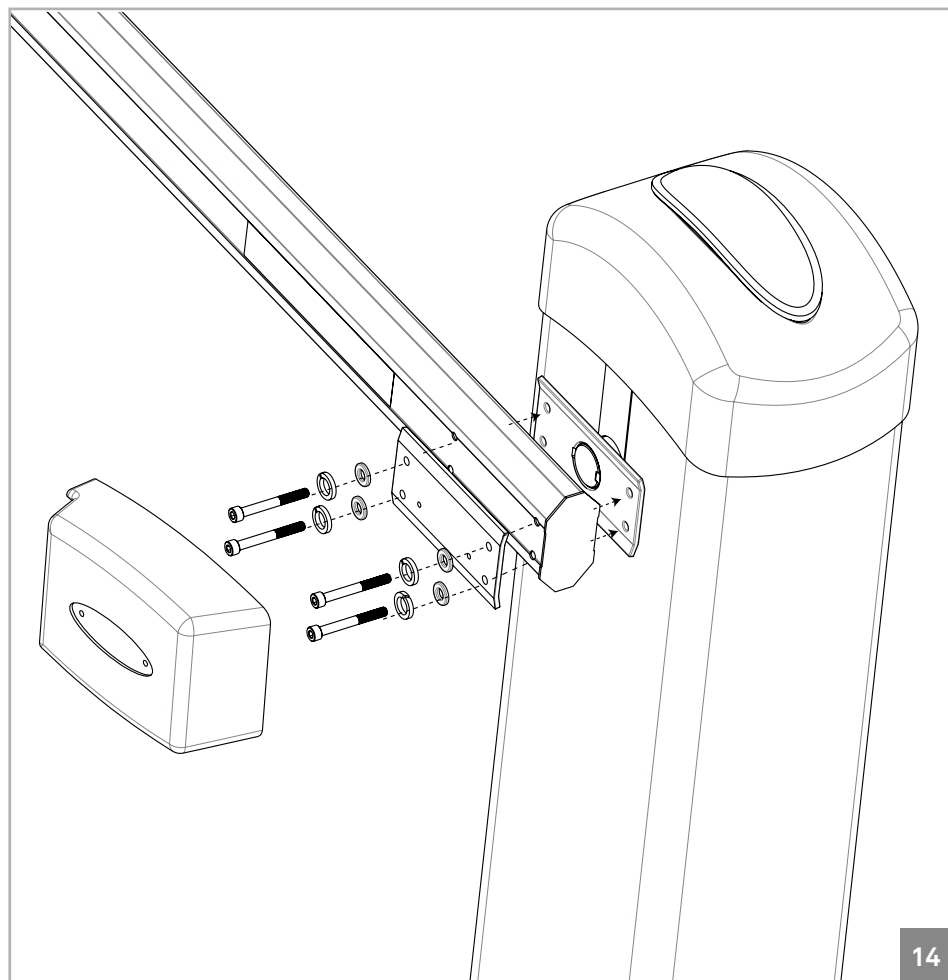
**02•** Open the door using the key to unlock it, and pull it to the outside.



**3•** Place the fastening metal plates and fix the barrier to the ground tightening the nuts supplied with the product.

## 04. INSTALLATION

### BOOM ASSEMBLY

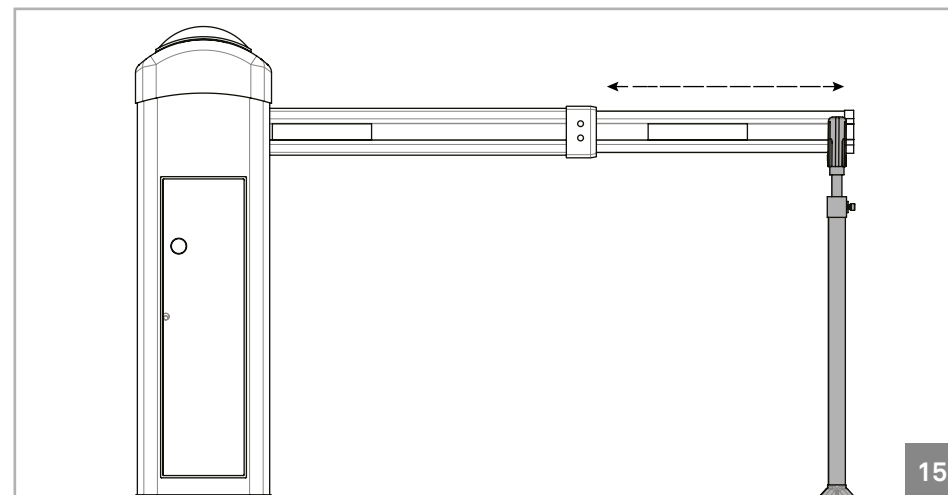


14

To assemble the boom, you must place the boom on the barrier fixing plate and align the four holes on each piece. Then you just need to place the boom fastening metal plate and use the screws to fasten the three parts together. When the boom is fixed, use the cover to hide these fastening parts.

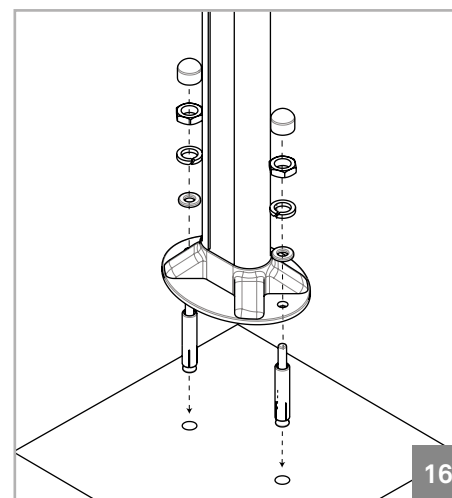
## 04. INSTALLATION

### BOOM SUPPORT INSTALLATION



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After assembling the boom, you must define the length of it so that you can fix the boom support, as visible on the image above. When the boom's length is decided, fix it with the two small screws situated at the end of the fix part of the boom.

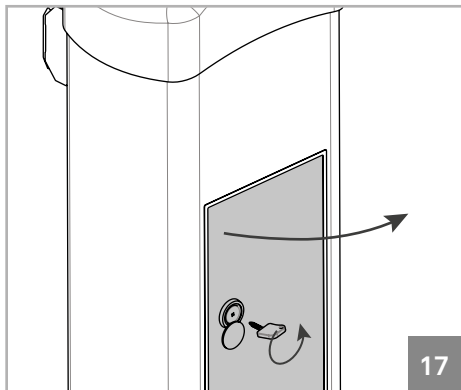


16

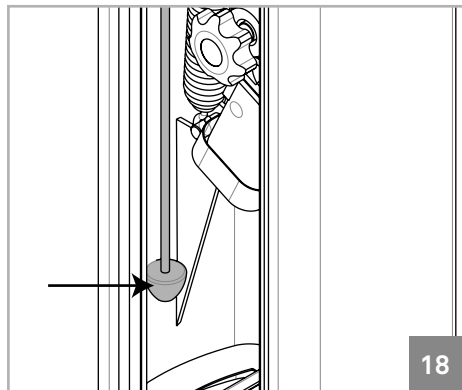
When the position of the boom's support is defined, you can fix it to the ground. Make two holes on the fixing ground, and place the screws supplied. Align the support holes with those same screws and fasten the support using the nuts.

## 04. INSTALLATION

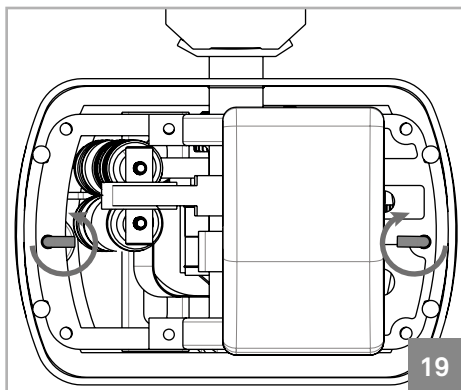
### TOP COVER REMOVAL



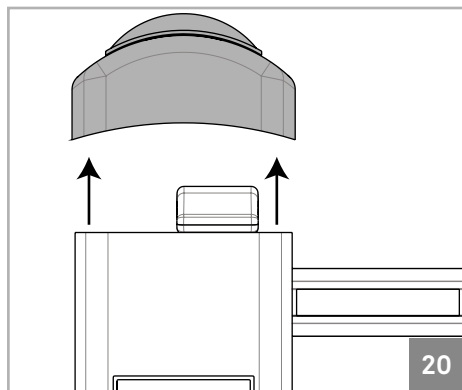
**01•** Open the door using the key supplied to unlock it and then pull it to the outside.



**02•** Rotate the rod (image above) to unlock the cover. There are two rods, one on each side of the barrier.



**03•** The hooks that secure the top cover are also rotated and release the cover.



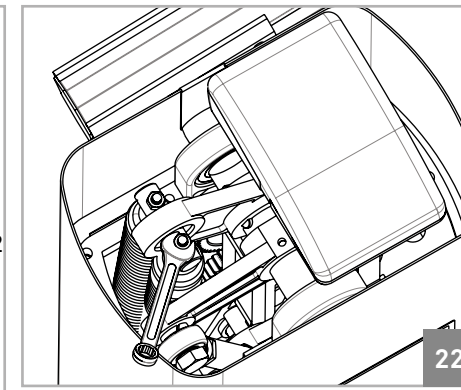
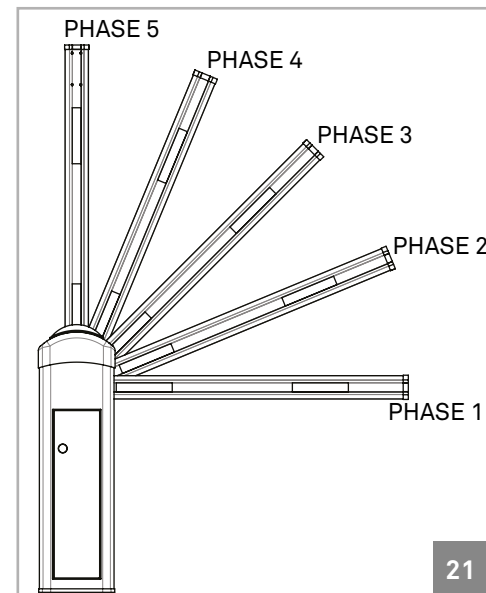
**04•** Pull the cover up to remove it.



When assembling the top cover on the barrier, you must do the exact same steps but in reverse order.

## 04. INSTALLATION

### SPRING ADJUSTMENT



**ADJUSTMENT•** To adjust the springs, you must use a wrench to fasten or release the springs nuts. If you rotate them clockwise you are giving tension to the springs causing the boom to rise up, and rotating counterclockwise you are removing tension from the springs causing the boom to descend.

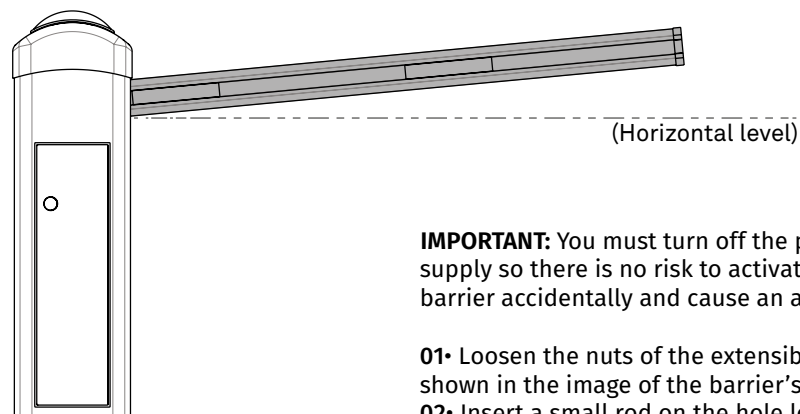
- 01•** Unlock the barrier (please follow steps on page 03.B)  
**02•** Put the boom like on phase 1 as shown on the above image. Let it go and it must maintain on that position, or rising very slowly. If the boom starts to descend or rise adjust the springs until you can make the boom become stabilized.  
**03•** Put the boom like on phase 2, phase 3, phase 4 and phase 5 and repeat the same process of point 2 for each phase. With the adjustment of the springs, you must achieve a stage where you can let go the boom in each position you desire and it must stay stabilized. The springs must be calibrated to sustain the total weight of the boom without the help of the motor.  
**04•** When the springs are tuned, lock the barrier following the steps on page 03.B.

Boom Length	Number of Springs	Spring's Length and Steel Diameter
<3600mm	1	440mm (1 spring de Ø5mm)
3600 - 5000mm	1	440mm (1 spring de Ø6mm)
5000 - 6000mm	2	440mm (1x Ø5mm + 1x Ø6mm)

## 04. INSTALLATION

### BOOM LEVELING

After installing the barrier, you must verify the position of the boom while closed. If it isn't aligned horizontally when closed, follow the instructions below to adjust it.



**IMPORTANT:** You must turn off the power supply so there is no risk to activate the barrier accidentally and cause an accident.

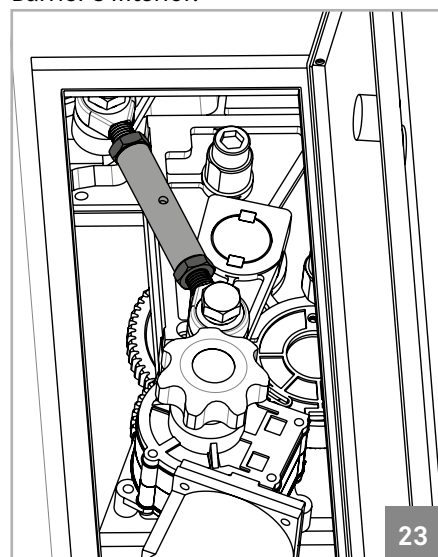
**01•** Loosen the nuts of the extensible arm shown in the image of the barrier's interior.  
**02•** Insert a small rod on the hole located on the extensible arm so you can rotate it more easily.

**03•** To level the boom when closed, you just need to rotate the extensible arm. If you rotate to the direction shown by the arrow of the image, you are reducing its size and causing the boom to rise. If you rotate on the other direction, you are increasing its size causing the boom to descend.

**04•** When the boom is leveled, you must fasten the nuts of the extensible arm to lock its length. This will prevent the arm to accidentally increase or decrease during the normal usage of the barrier.

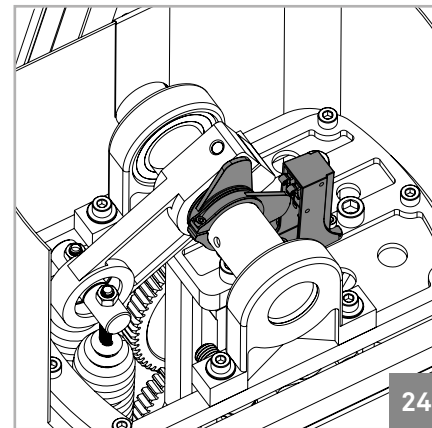
**NOTE•** The study of the mechanical parts was performed in order to obtain an opening of 90° regardless the leveling. If you level it horizontally with the barrier closed, it will also be vertically leveled when you open it.

Barrier's interior:



## 04. INSTALLATION

### LIMIT-SWITCHES AND STOPPERS ADJUSTMENT



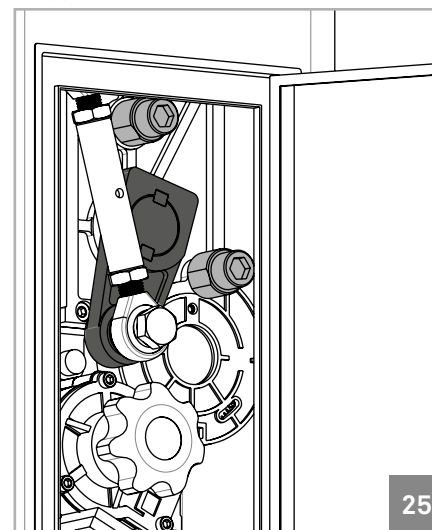
The mechanical limit-switches of the barrier are shown on the image on the left. They consist of two rings fixed to the boom's rotation shaft, that when opening or closing will activate the micro-switches also installed. This will cause the control board to stop the barrier when the micro-switches are activated, one for each type of maneuvers.

Adjust limit-switches:

**01•** Slightly loosen the screw of the ring you want to adjust, so it becomes easier to move.  
**02•** Rotate it to the desired position, so it can activate the micro-switch and stop the boom on the correct position.

**03•** Fasten the screw of the ring you've adjusted to fit it on that position.

**NOTE:** When adjusting the limit-switches you must also need to adjust the mechanical stoppers.



The mechanical stoppers shown in the image on the side, were developed to limit the movement of the arms inside the barrier's body.

After adjusting the limit-switches, you must need to adjust the stoppers so that the arm shaded on the image touches them as soon as the micro-switches are activated. This will cause the stoppers to hold the boom's weight when it gets to end of course. To make the adjustments, you just need to loosen the bolts that fix them, rotate them and fasten the bolts to fix them on that position.