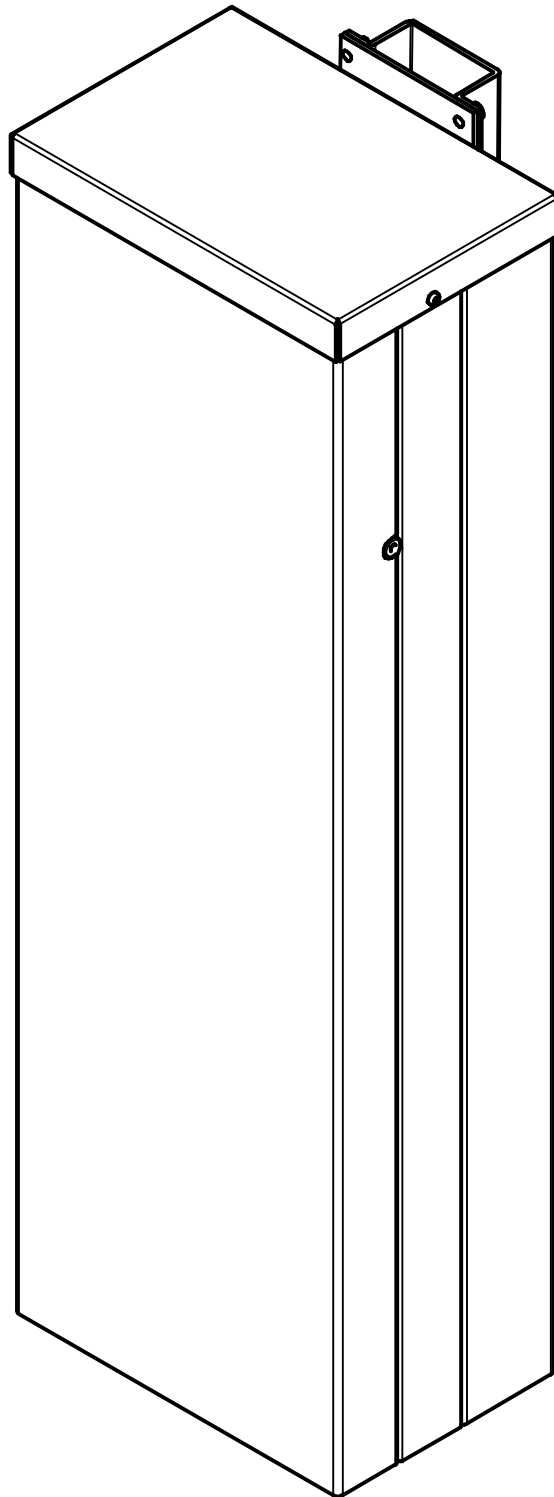
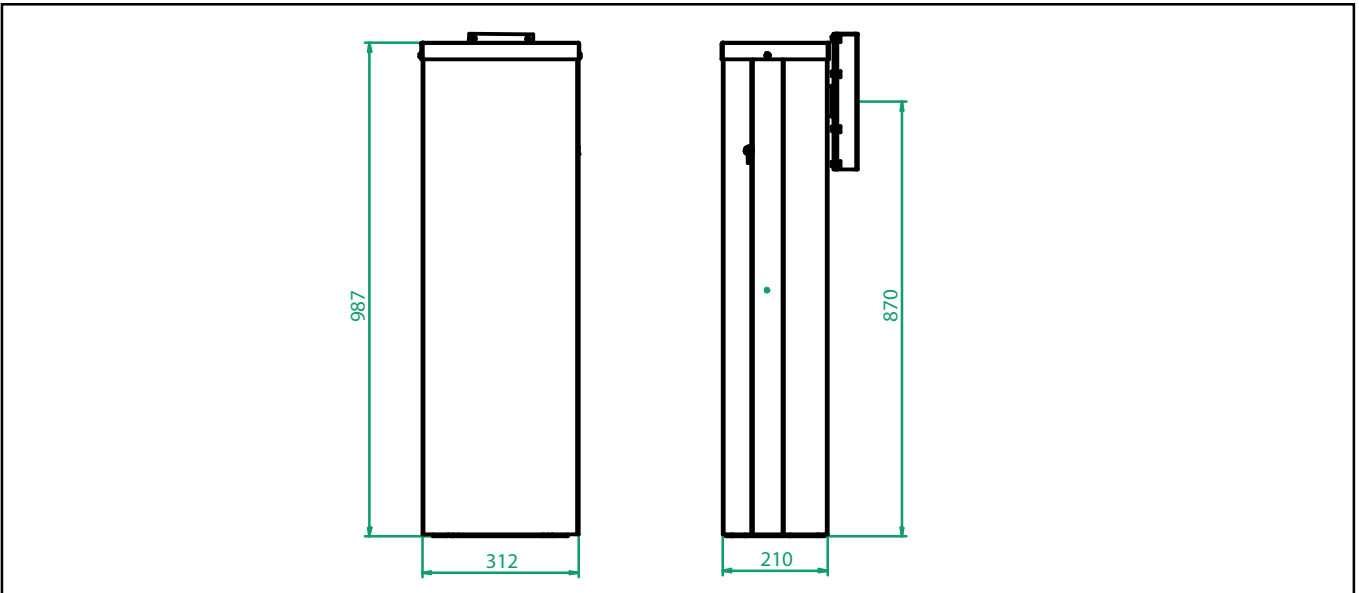
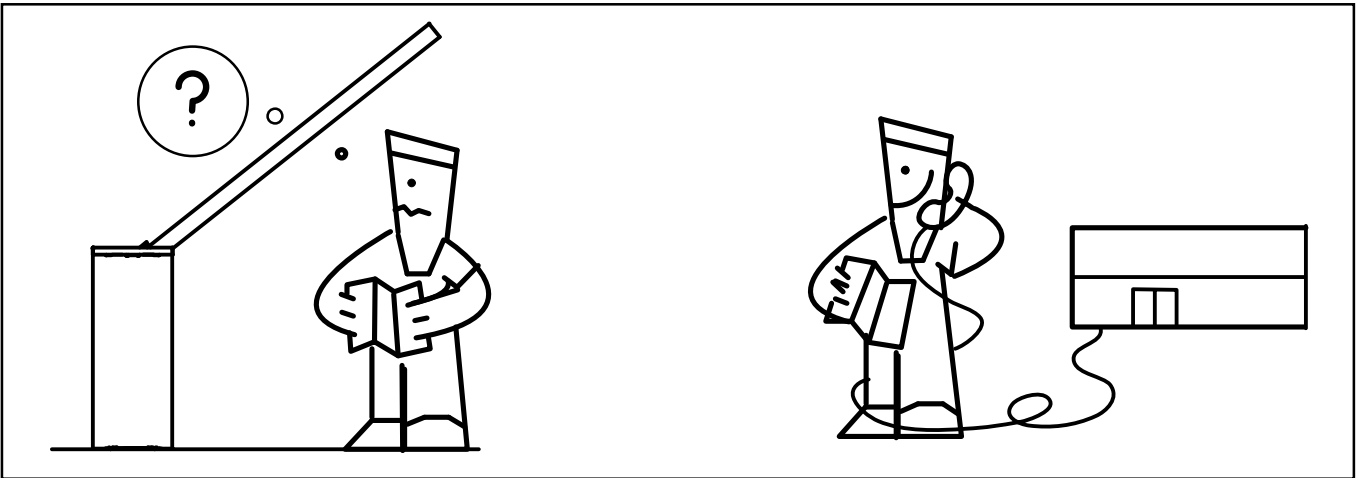
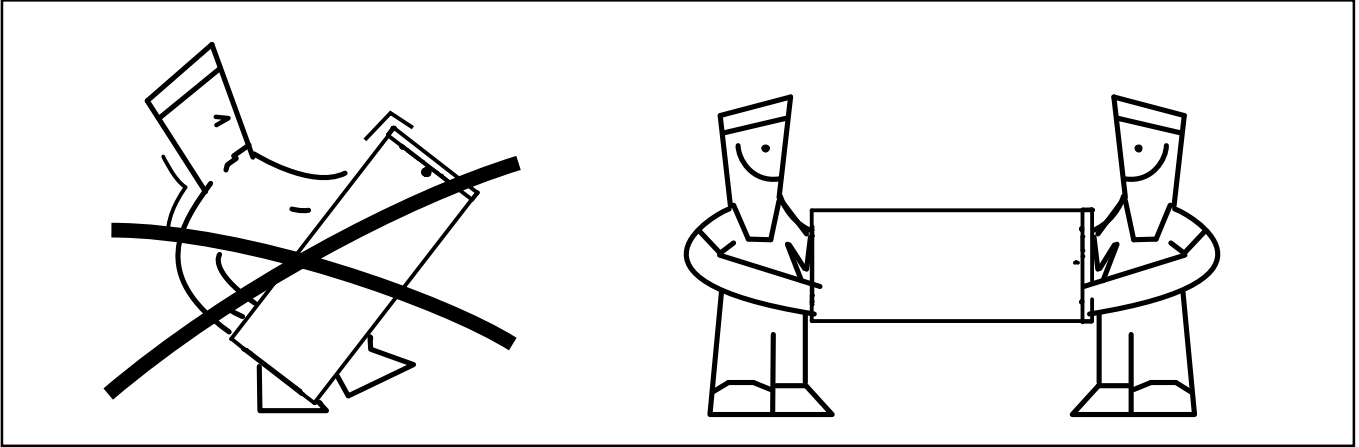
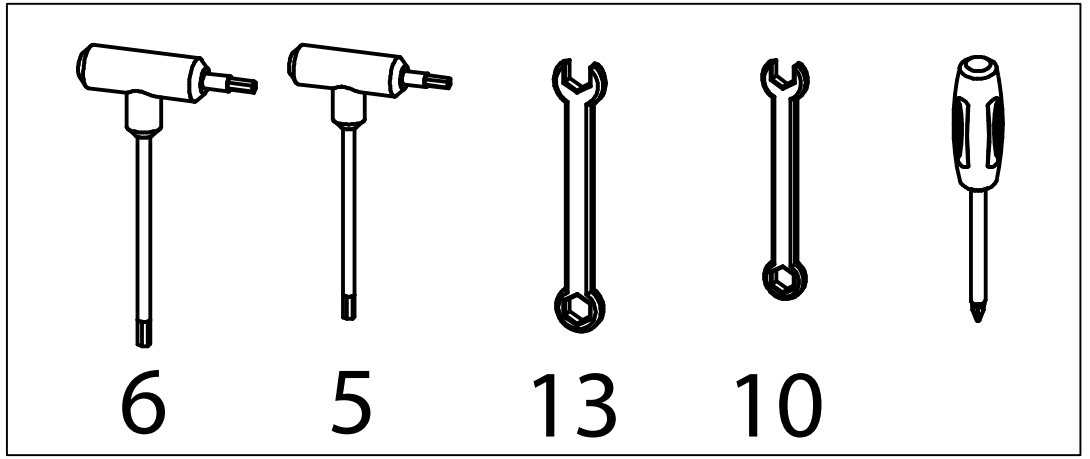
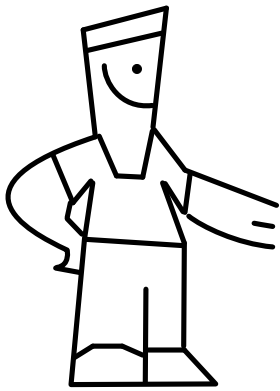
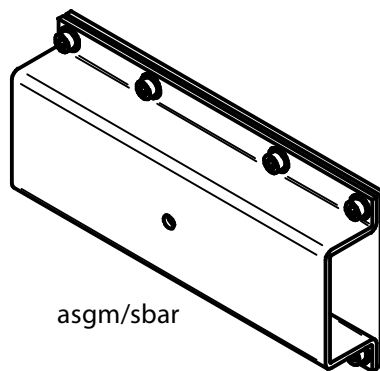
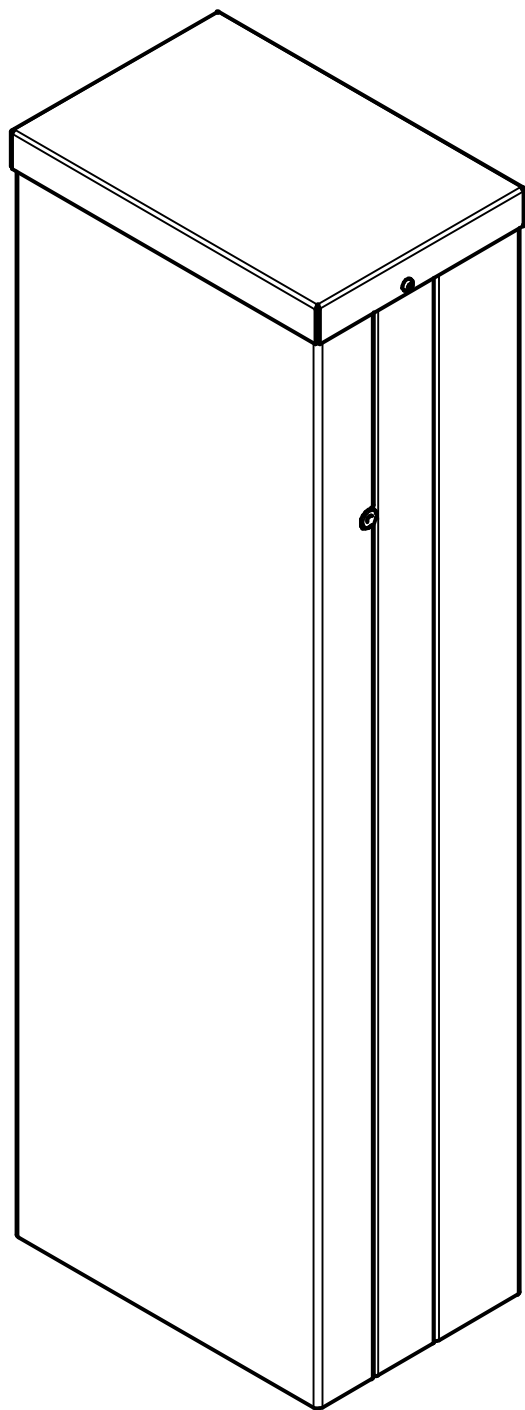


# SB/400

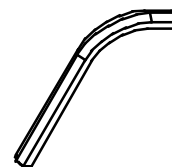




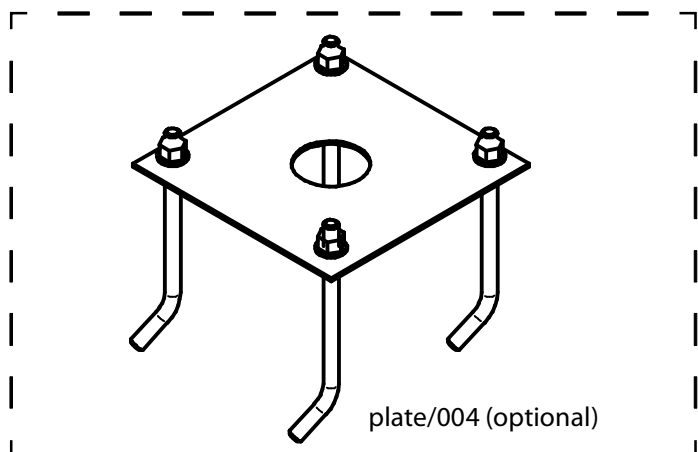
# CONTENTS OF THE KIT SB/400



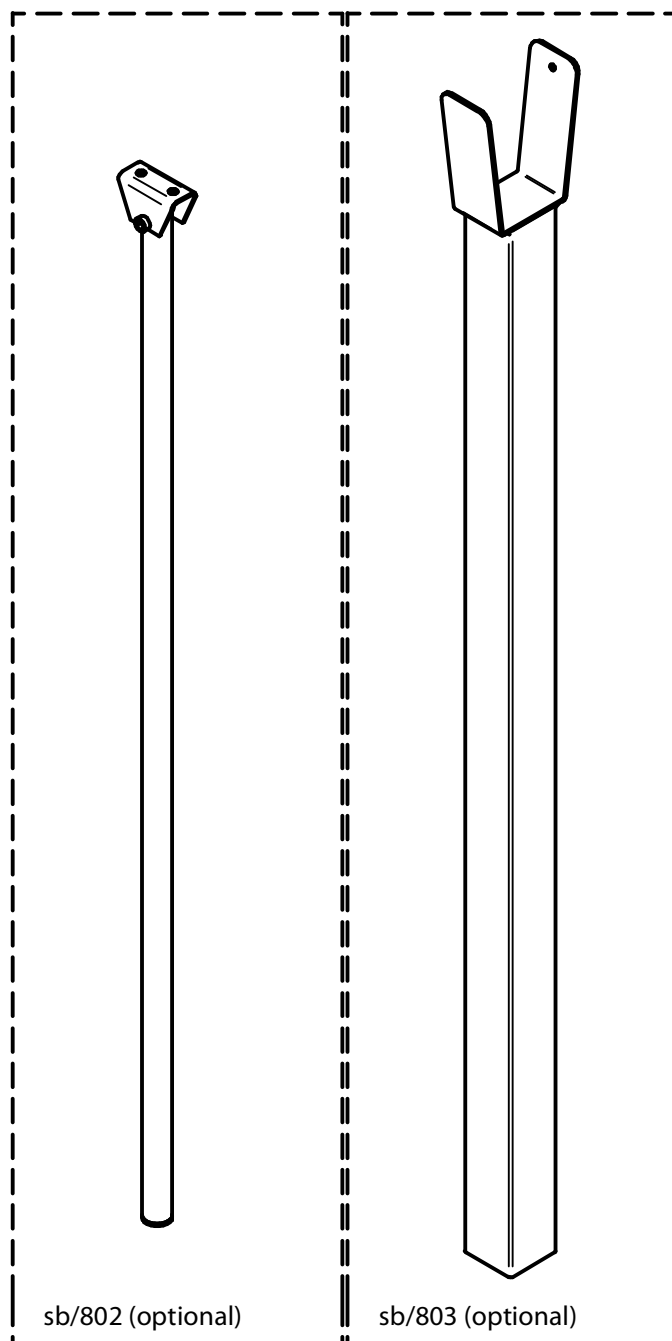
asgm/sbar



Chiave E5



plate/004 (optional)



sb/802 (optional)

sb/803 (optional)

## MANUAL FOR INSTALLATION

All dimensions are expressed in mm, unless otherwise indication.

### TECHNICAL DATA

(all characteristics refer to a temperature environment of +20 ° C)

#### SB400/12V

Nominal motor voltage	12V DC
Maximum motor current	7A
Nominal capacity battery	12Ah
Operating Temperature	-20°C + 50°C
Battery charging temperature	0°C + 40°C
Degree of protection	
Dimensions (see fig. P. 2)	IP55
frequency radio receiver	433,92 Mhz
weight	42 Kg
Opening time	6 s
Length of beam	4,25 m

#### SB400/24V

Nominal motor voltage	24V DC
Maximum motor current	4,5A
Nominal capacity battery	12Ah
Operating Temperature	-20°C + 50°C
Battery charging temperature	0°C + 40°C
Degree of protection	IP55
Dimensions (see fig. P. 2)	
frequency radio receiver	433,92 Mhz
weight	42 Kg
Opening time	5 s
Length of beam	4,25 m

#### SB600/24V

Nominal motor voltage	24V DC
Maximum motor current	4,5A
Nominal capacity battery	12Ah
Operating Temperature	-20°C + 50°C
Battery charging temperature	0°C + 40°C
Degree of protection	IP55
Dimensions (see fig. P. 2)	
frequency radio receiver	433,92 Mhz
weight	42 Kg
Opening time	10 s
Length of beam	6,0 m

#### SB400/230V

Nominal motor voltage	230V AC
Maximum motor current	1,8 A
Nominal capacity battery	--
Operating Temperature	-20°C + 50°C
Battery charging temperature	0°C + 40°C
Degree of protection	IP55
Dimensions (see fig. P. 2)	
frequency radio receiver	433,92 Mhz
weight	42 Kg
Opening time	5 s
Length of beam	4,5 m

#### SB600/230V

Nominal motor voltage	230V AC
Maximum motor current	1,8 A
Nominal capacity battery	--
Operating Temperature	-20°C + 50°C
Battery charging temperature	0°C + 40°C
Degree of protection	IP55
Dimensions (see fig. P. 2)	
frequency radio receiver	433,92 Mhz
weight	42 Kg
Opening time	9 s
Length of beam	6 m

### PRELIMINARY CHECKING OPERATIONS

Check the stability and strength of anchorage area of the barrier and eventual support fork sets.

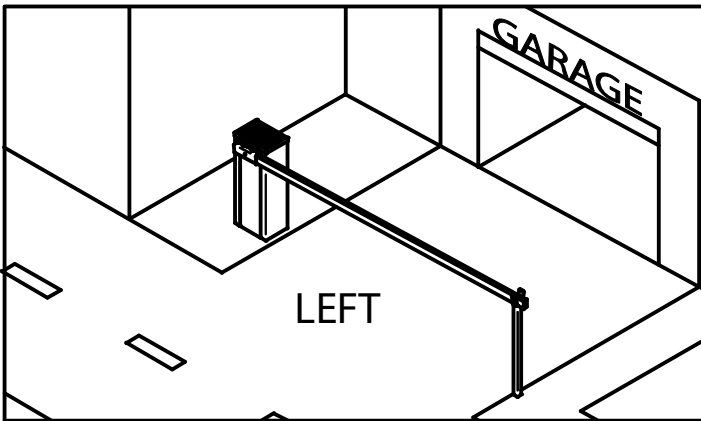
Check for shearing and crushing points, install edges safety where needed .

Connect the eventual grid connections to a power pole switch with a contact opening distance of at least 3 mm.

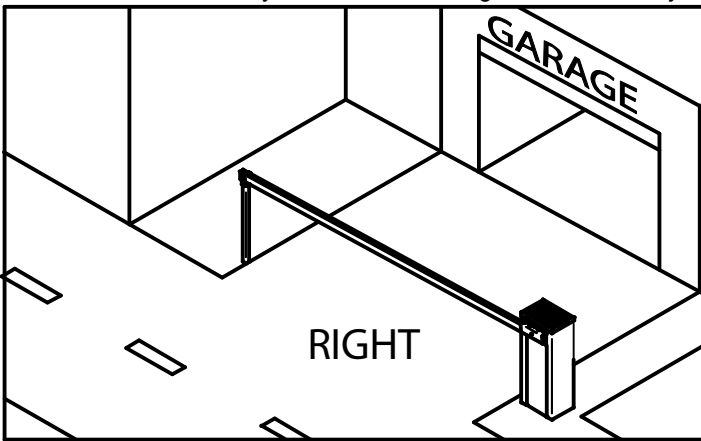
The cables to the grid connection and connections to safety and control devices must pass over independent channels and separate ducts.

## 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:



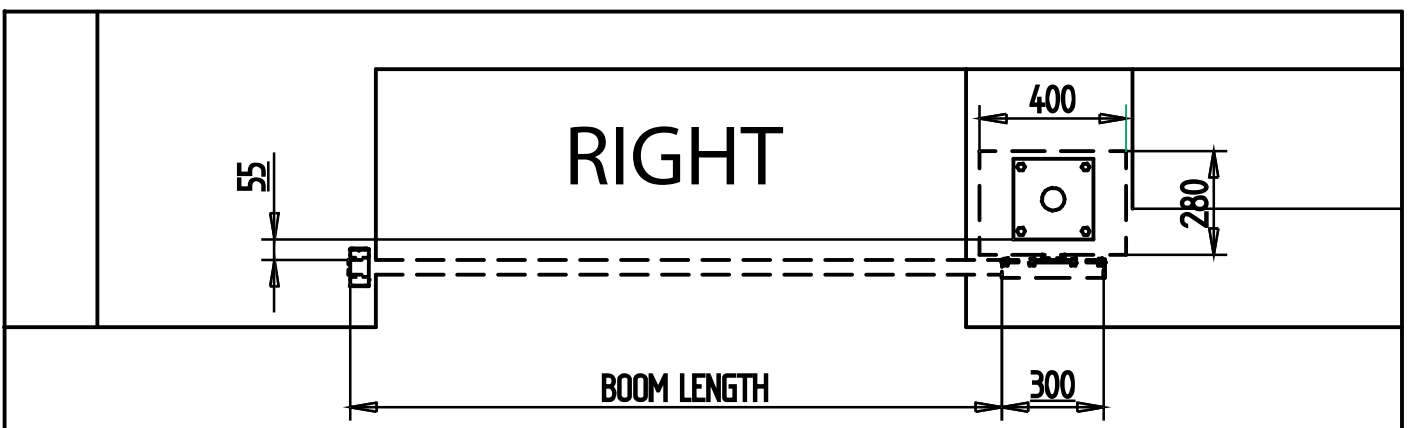
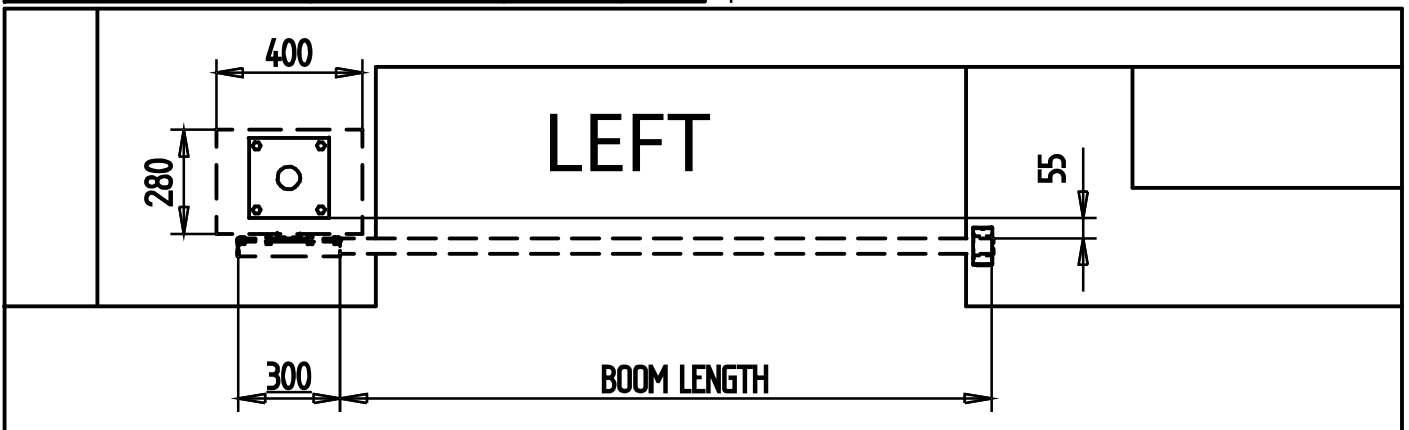
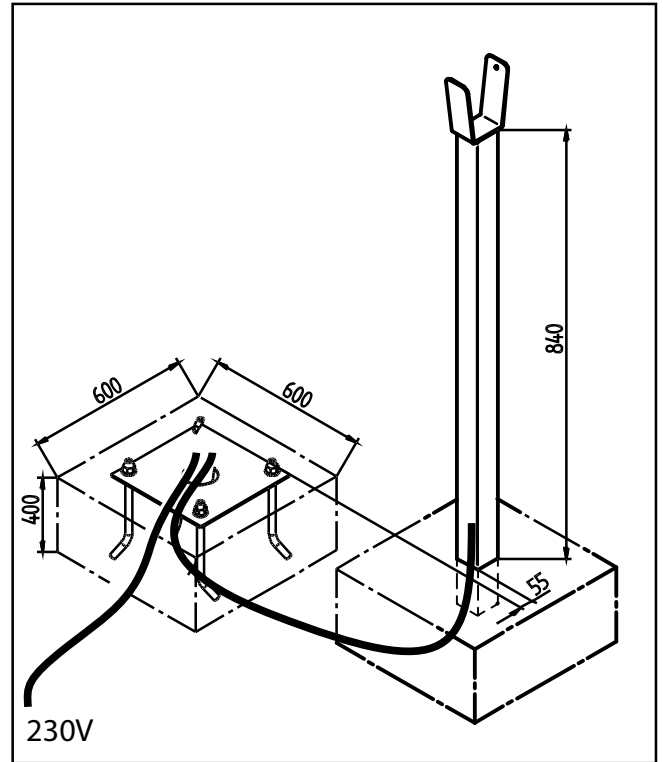
We call "RIGHT" a barrier that, looking the automation from the outside of driveway is installed to the right of the driveway:



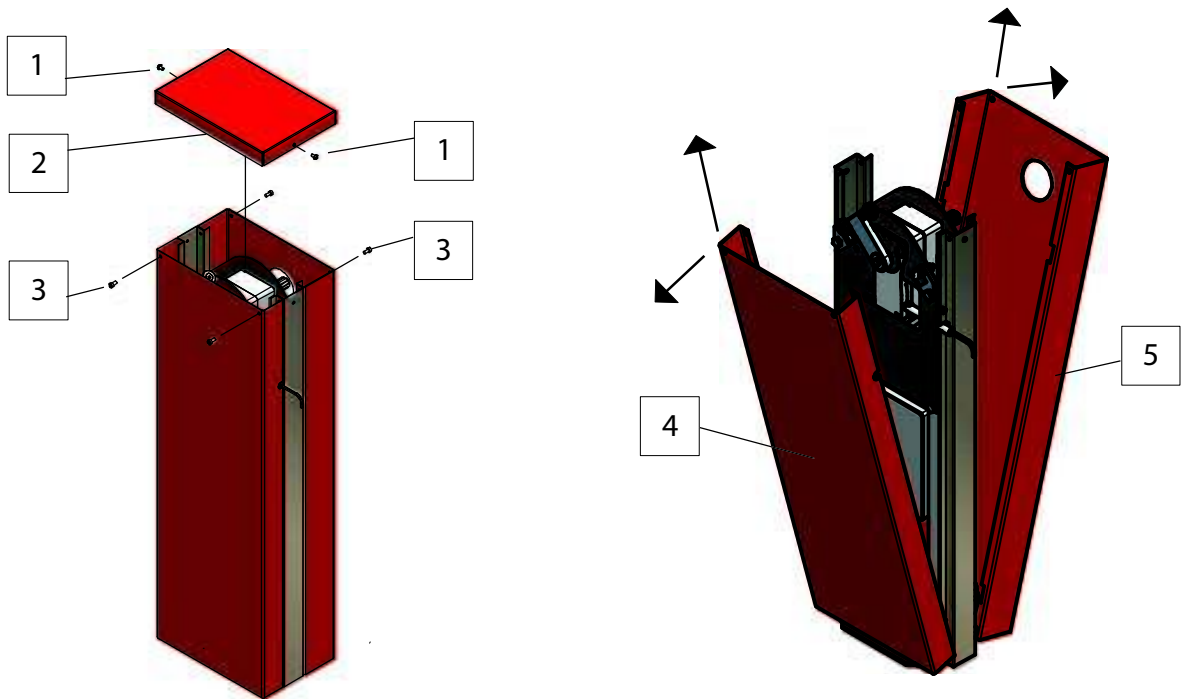
When you have chosen the configuration of the boom barrier you can arrange installation laying down ducts for cables and the foundation plate and the optional fork support for the boom. Refer to the figures below for the installation arrangement.

Before proceeding with mounting base plate to insert into the central hole present on the base plate also corrugated pipes for electrical cables:

- D32 pipe for cable 3x1, 5 to 230V
- D25 pipe to the fork for accessories (photocells, etc ...)



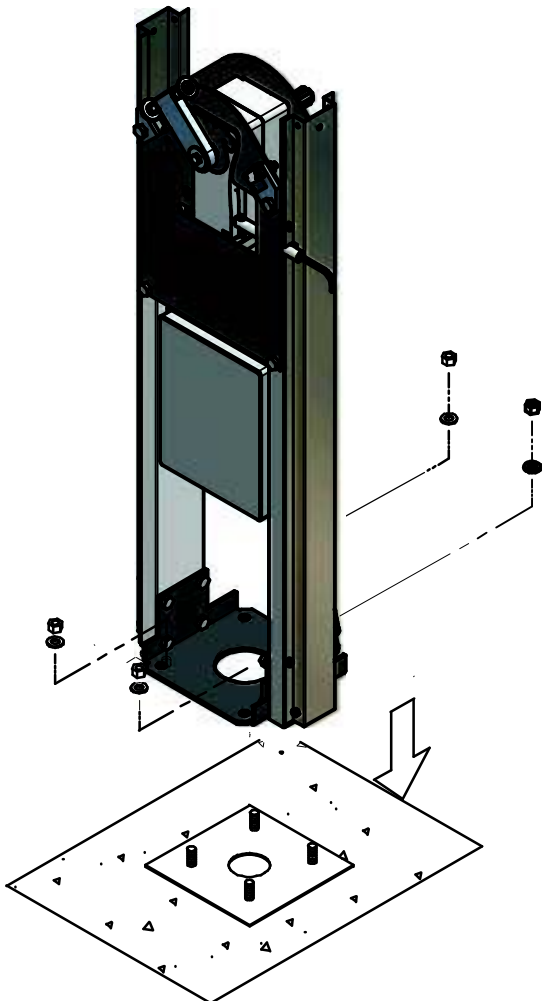
## 1. REMOVAL OF EXTERNAL LIDS



Remove the 2 stainless steel screws M5x12 [1].  
Remove the top lid [2].  
Unscrew the 4 screws M6x12 [3].

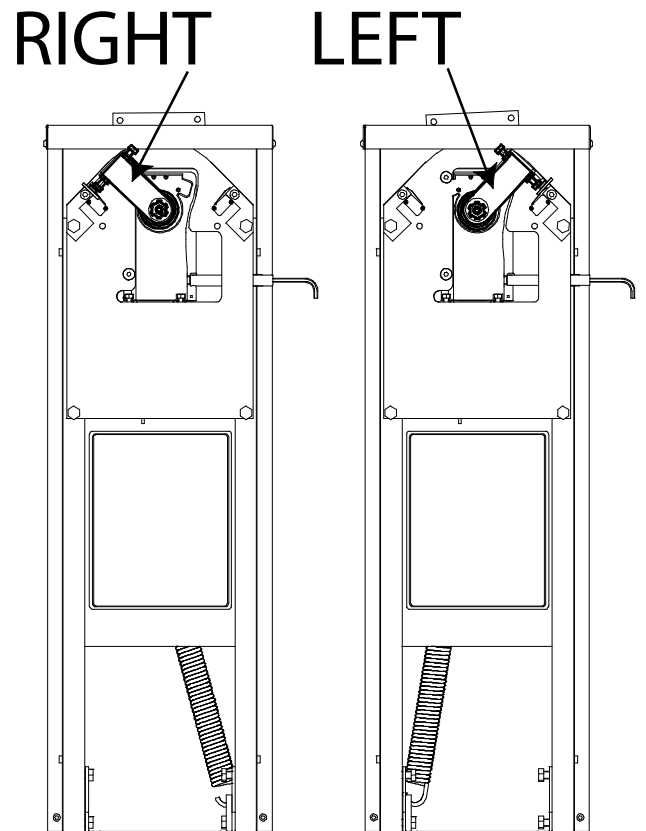
Slightly rotate the front lid [4] and the back lid [5] and pull them upward to remove them from the column.

## 2. FASTENING TO THE GROUND



Insert the barrier on the base plate and fasten to the ground with 4 nuts M10 and inserting 4 M10x20 washers.

## 3. CHECK OF WORKING DIRECTION



Check that the barrier is actually in the right or left version as required.

If the barrier is already set the correct way go to step 6. Otherwise, follow the instructions in step 5. to change the direction of operation of the barrier.

#### 4. CONVERSION OF THE BARRIER FROM "RIGHT" TO "LEFT"

Unscrew and remove the screw M8x16 [6] and washer [7] from the splined shaft.

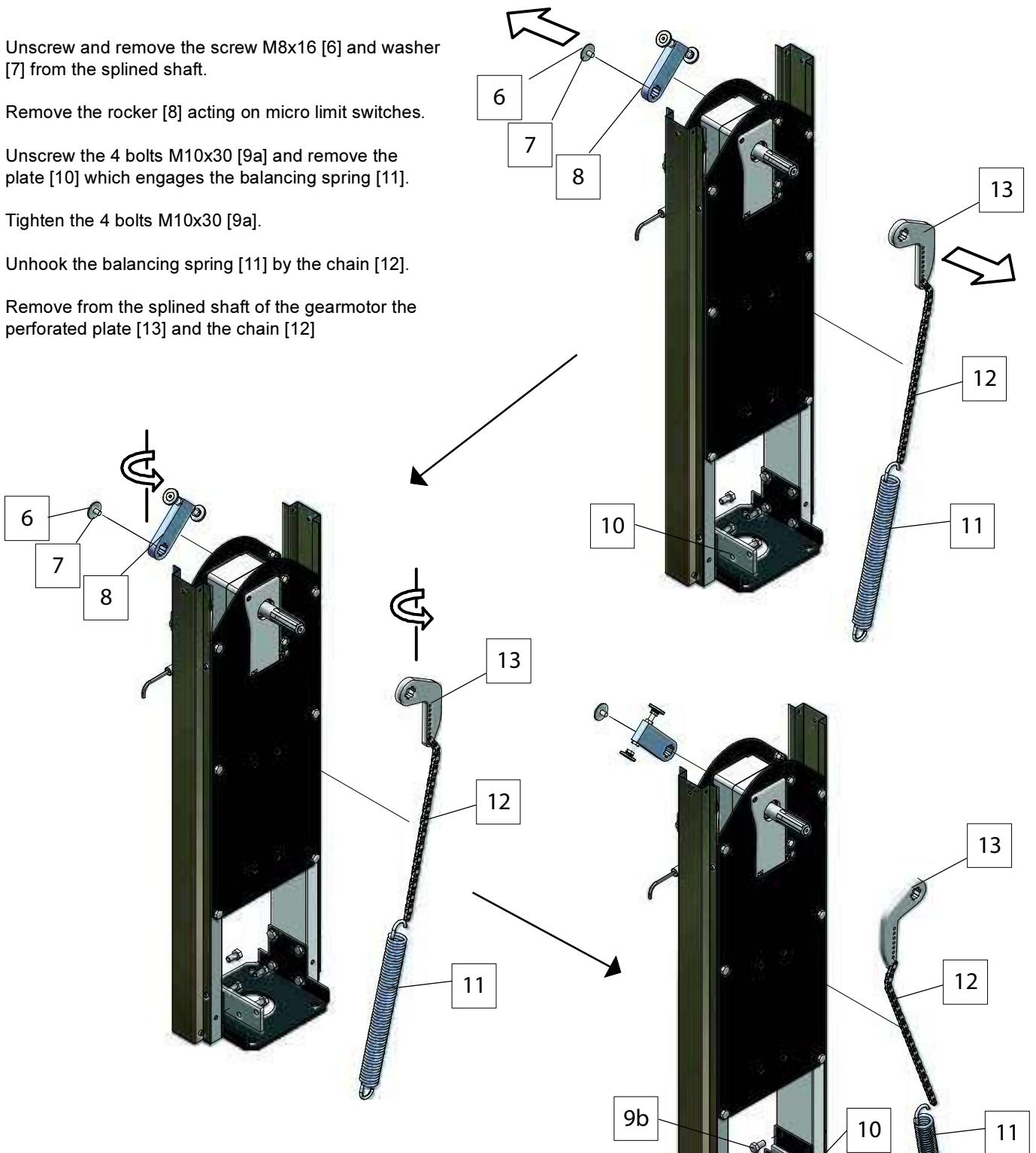
Remove the rocker [8] acting on micro limit switches.

Unscrew the 4 bolts M10x30 [9a] and remove the plate [10] which engages the balancing spring [11].

Tighten the 4 bolts M10x30 [9a].

Unhook the balancing spring [11] by the chain [12].

Remove from the splined shaft of the gearmotor the perforated plate [13] and the chain [12]



Fold the Rocker [8] (the side that was previously visible now must face the splined shaft)

Enter your equalizer [8] on the gear as shown in the figure to the right and tighten the screw [6] placing the washer [7].

Fold the perforated plate [13] with attached chain (the side that was previously visible now must face the splined shaft).

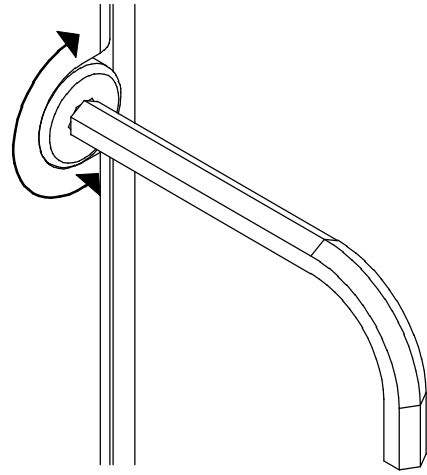
Insert the perforated plate [13] on the gear as shown in the figure to the right.

Remove the 4 screws M10x30 [9b], the insertion of the plate [10] and tighten the 4 screws M10x30 [9b].

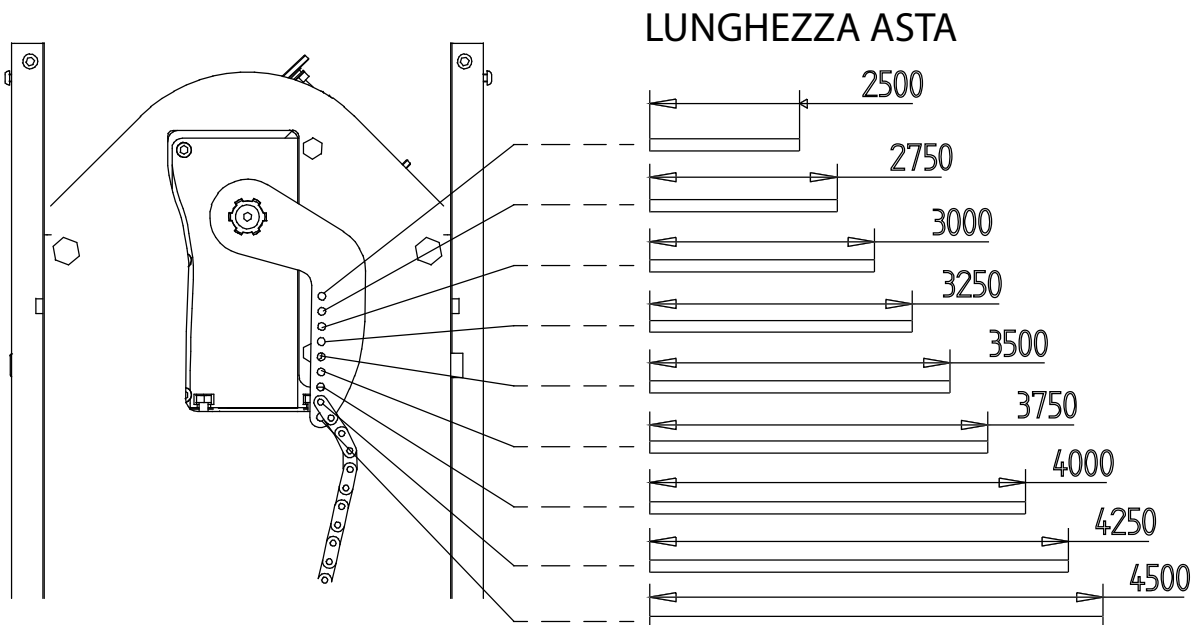
Hook the balancing spring [11] to the plate [10] and the chain [12].

## 5. UNLOCK GEARBOX

Release the gearmotor by inserting the supplied Allen key into the cylinder on the right side of the barrier and turning counterclockwise.

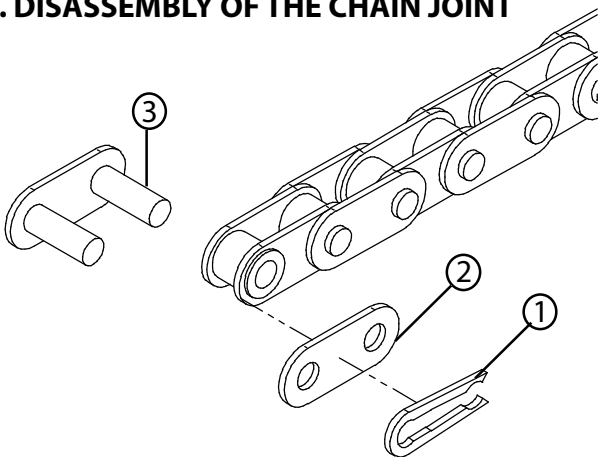


## 6. ADJUSTMENT OF THE HOOKING POINT OF THE CHAIN



Verify that the chain is connected to the rocker in the correct position according to the length of the bar that must be installed on the barrier.

## 7. DISASSEMBLY OF THE CHAIN JOINT



In case it is necessary to vary the position in which the chain is connected disassemble the coupling chain by removing the clip (1) and the plate (2) and then remove the mesh (3).

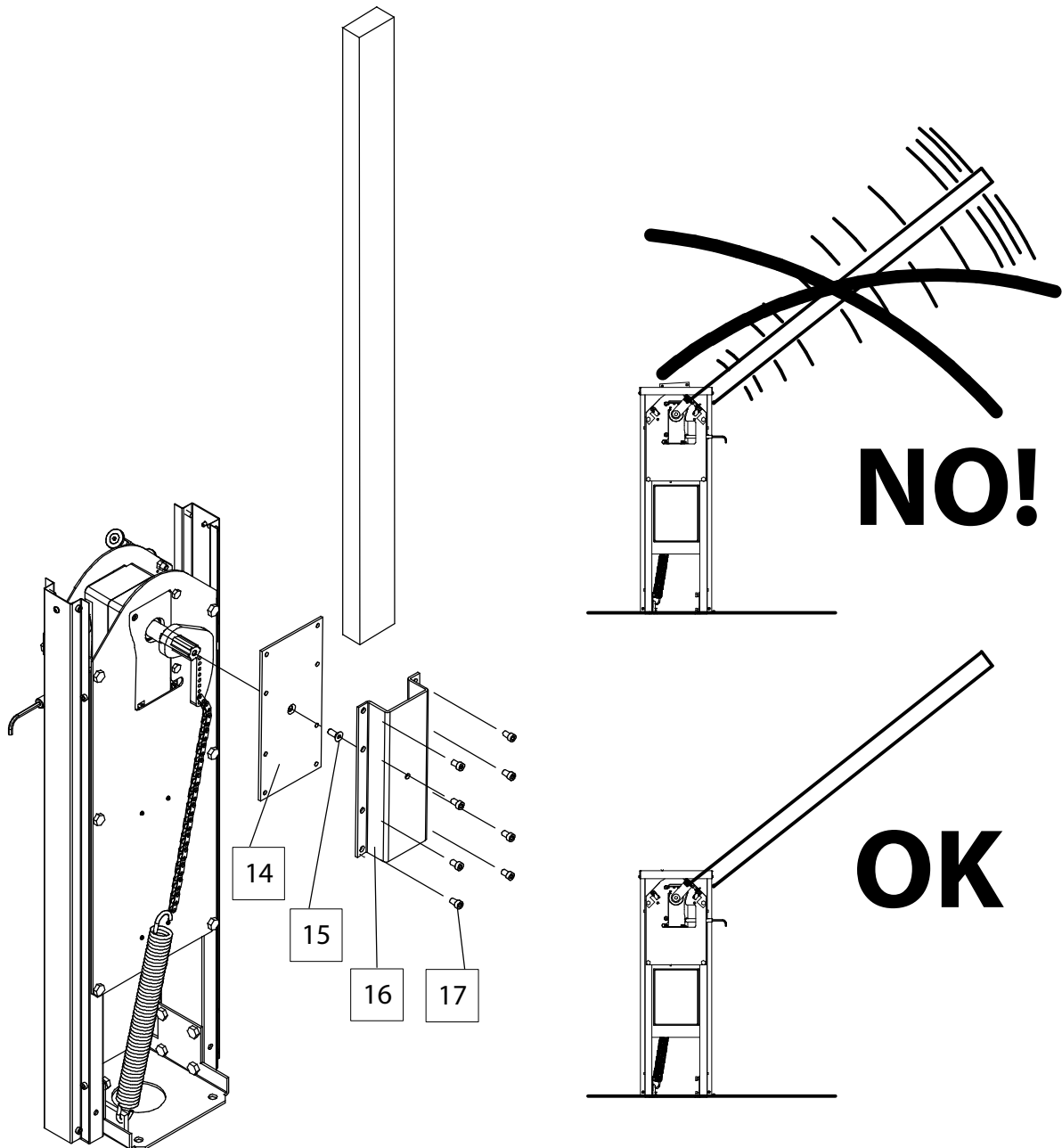
## 8. CHAIN LENGTH ADJUSTMENT



Adjust the length of the chain and insert it in the eyelet of the spring as shown in the figure. In the fully open position the spring should be slightly pulled.



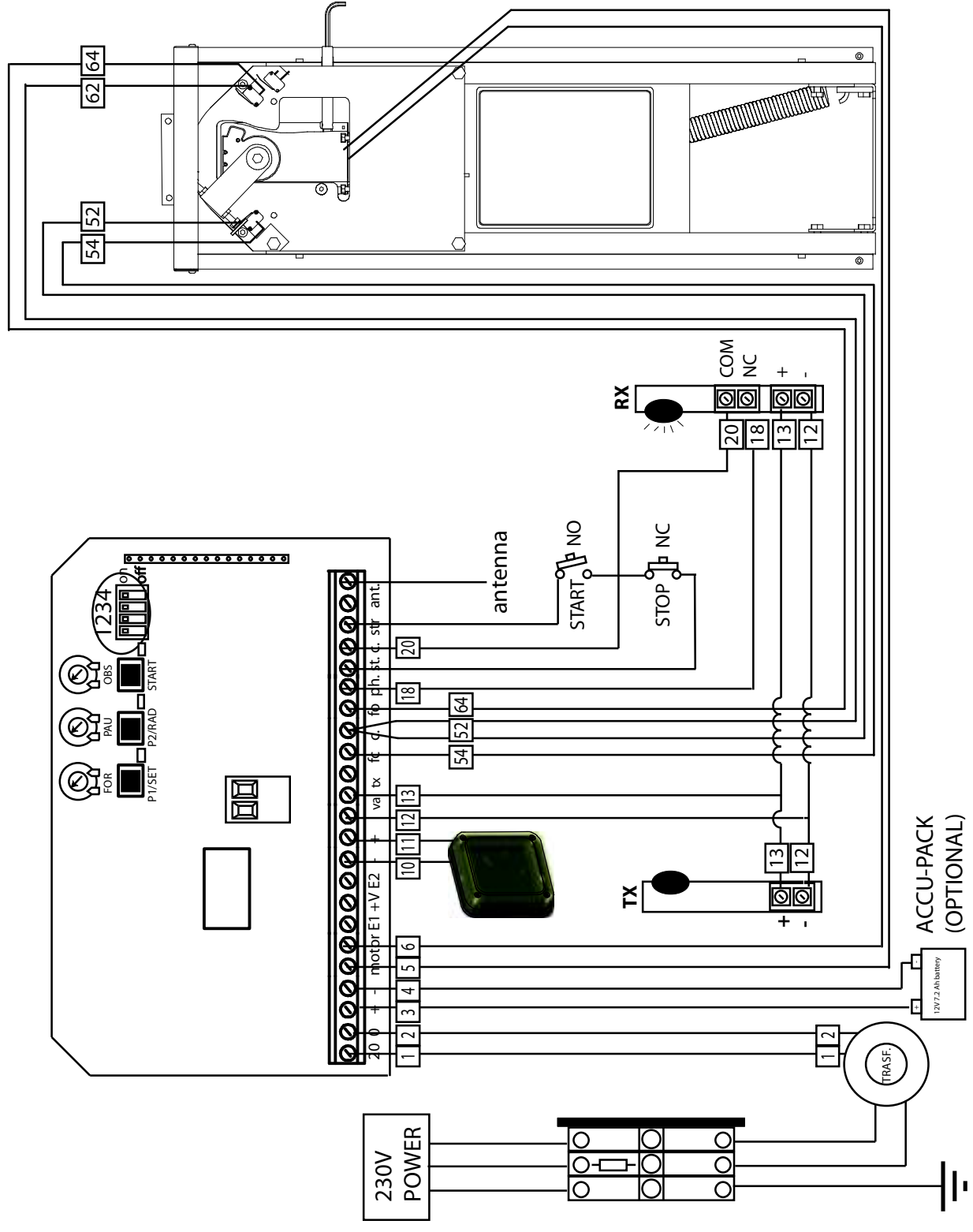
## 9. CHECK THE BALANCE OF THE BOOM



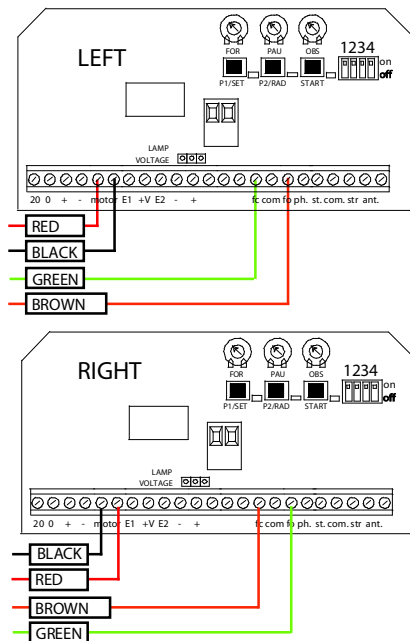
Install the boom on the barrier as follows:

- Insert the plate [14] on the splined shaft in a vertical position as shown in Figure
- Ensure the plate [14] all splined shaft by tightening the flathead screw flared [15]
- Secure the [16] on the plate [14] using the 8 screws M8x10 [17]
- Do not fully tighten the screws
- Insert the boom, complete with accessories such as rubber profiles, LED lighting, fence, foot mobile support etc ... within the two plates [14] and [16] and tighten the 8 screws [17]
- Release the operator as explained in paragraph 5.
- Bring down the boom manually and check that the spring is able to balance the weight of the rod
- the boom should remain at about 45 ° to the ground.
- If the spring balance is not correctly set move the the coupling point of the spring as explained in paragraphs 6. , 7. and 8.

# 10. WIRING SCHEMATIC 24V ( AND 12V )



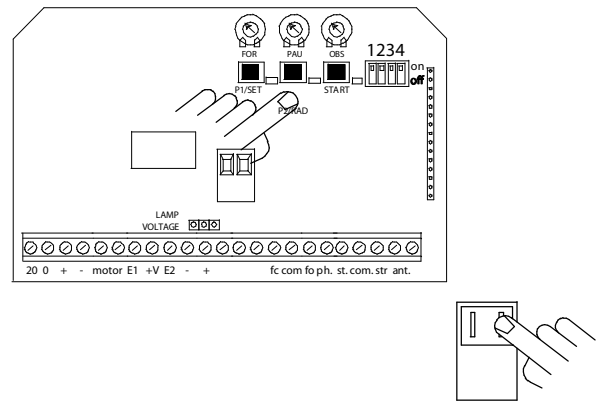
## 11. DIRECTION OF THE BARRIER



If the barrier is installed at the left side of the road follow the upper wiring schematic for the gearmotor supply and for the electric limit switches ( optional )

If the barrier is installed at the right side of the road follow the below wiring schematic for the gearmotor supply and for the electric limit switches ( optional )

## 12. RADIOTRANSMITTERS



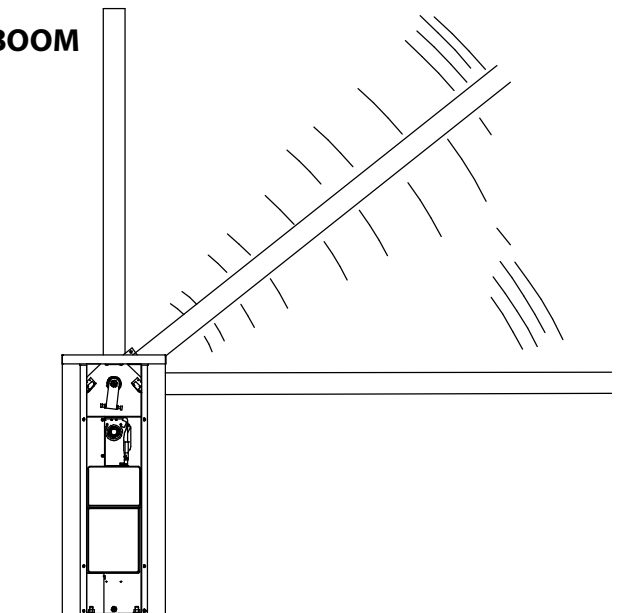
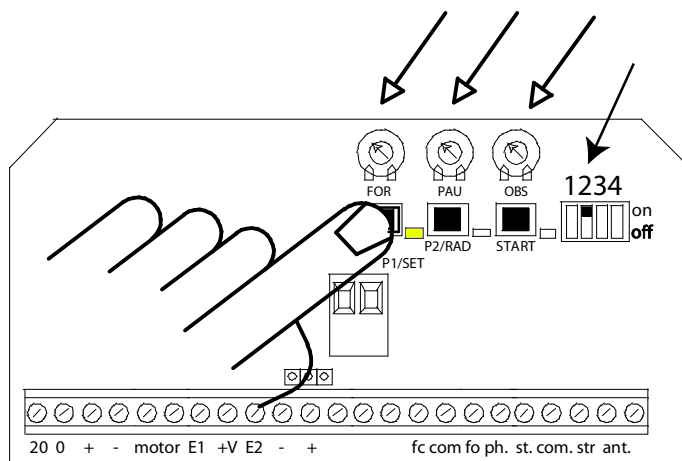
**RADIO TRANSMITTERS PROGRAMMING**  
( the radio receiver can store only 1 radio code ! )

- Push P2 button ( RADIO BUTTON ) for 2-3 seconds until the green LED turns on
- push the button on the radiotransmitter until the LED blinks
- push the P2 button or wait 10 seconds to exit from the programming procedure

**RADIO TRANSMITTERS ERASING**

- Push P2 button ( RADIO BUTTON ) for 2-3 seconds until the green LED begin to blinks
- push again on the P2 button for 1 second until the LED blinks very fast.

## 13.1 EASY PROGRAMMING OF THE STROKE OF THE BOOM



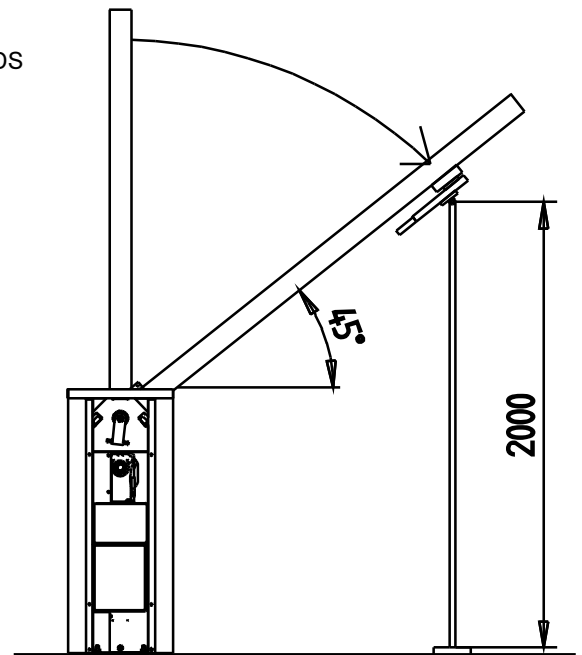
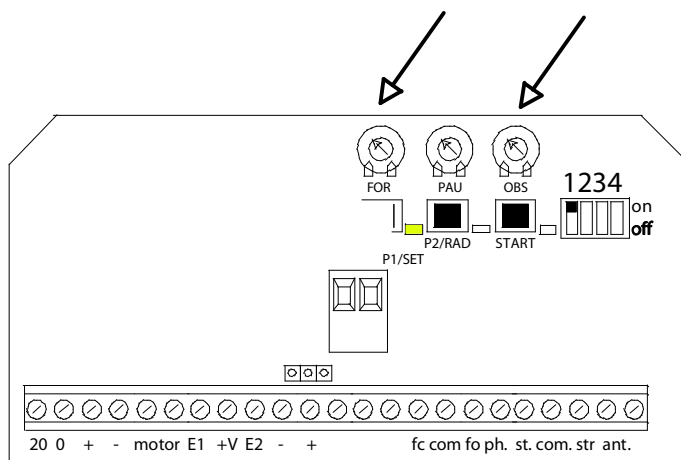
- Release the gearmotor and bring it in an intermediate position between the position of complete opening and complete closing
- Lock the motor and slightly move the rod back and forth to ensure correct reassembly.
- Check that the selector dip switch 2 is ON.
- Adjust the FORCE trimmer, PAU trimmer and the OBS in the middle.
- Press the P1/SET for 3 seconds, then release it, the yellow LED will be lit on the control unit control
- Then press again the P1/SET button for 1 second .
- The barrier starts opening for a few seconds
- The barrier closes then closes and stops against the mechanical stop or the closing limit switch (if present)

- The barrier opens
- The barrier stops against the mechanical stop or the opening limit switch (if present)
- The barrier closes.
- The barrier stops against the mechanical stop or the closing limit switch (if present)
- The programming is complete.

## 13.2 PROFESSIONAL PROGRAMMING OF THE STROKE OF THE BOOM

- Release the gearmotor and bring it in an intermediate position between the position of complete opening and complete closing
- Lock the motor and slightly move the rod back and forth to ensure correct reassembly.
- Check that the selector dip switch 2 is ON.
- Adjust the FORCE trimmer, trimmer and the OBS in the middle.
- Adjust the PAU trimmer to adjust the low speed :
  - To the left for very slow low speed
  - In the middle position for normal low speed
  - All right for faster low speed
- Press the P1/SET for 3 seconds, then release it, the yellow LED will be lit on the control unit control
- Then press the button P2/SET for 1 second .
- The barrier starts opening for a few seconds
- The barrier closes then and stops against the mechanical stop or the closing limit switch (if present)
- Press P1/SET button, the barrier opens
- Press P1/SET button when you want the barrier begins to slow down.
- The barrier stops against the mechanical stop or the opening limit switch (if present)
- Press P1/SET button, the barrier closes.
- Press P1/SET button when you want the barrier begins to slow down.
- The barrier stops against the mechanical stop or the closing limit switch (if present)
- The programming is complete.

## 14. 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.

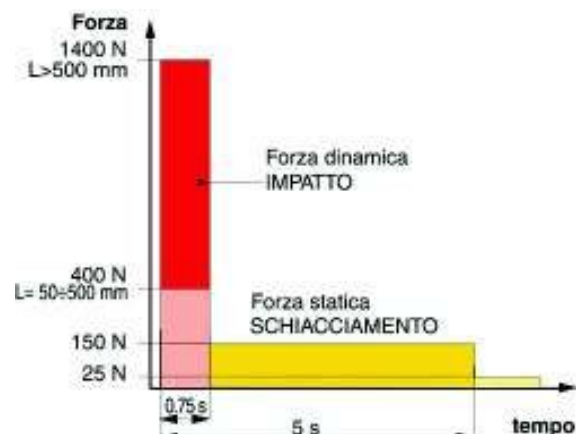
Verify that the values measured by the instrument are lower than those indicated in the graph. Please note that the measurement should be repeated three times and must be considered the average value.

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.

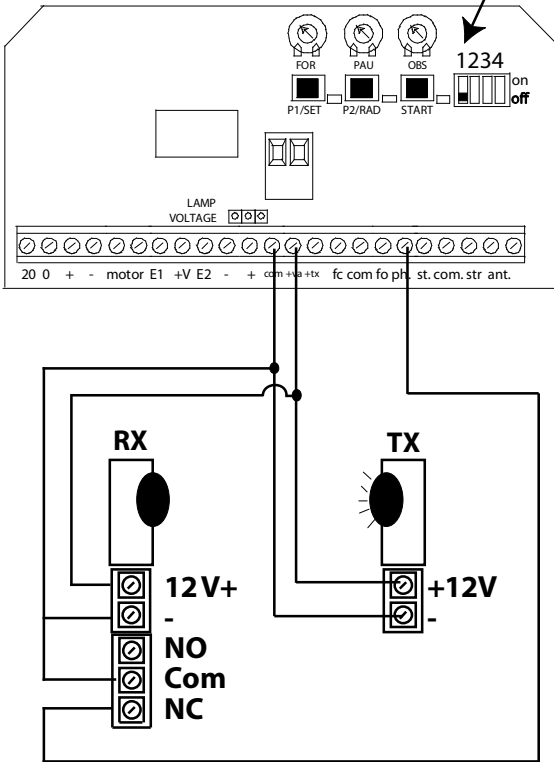
The graph shows the maximum values of the operational dynamics, static and residual forces.

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!

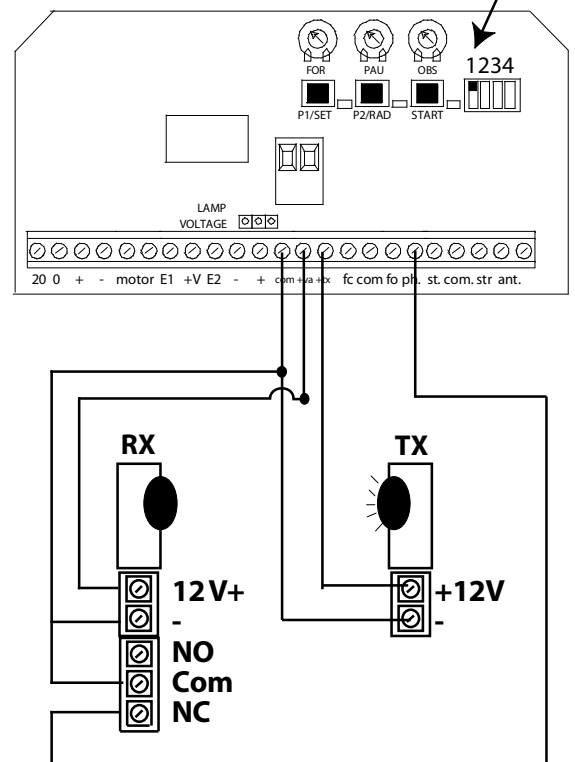


### 15. PHOTOCELL WITHOUT SELF TEST WIRING SCHEMATIC



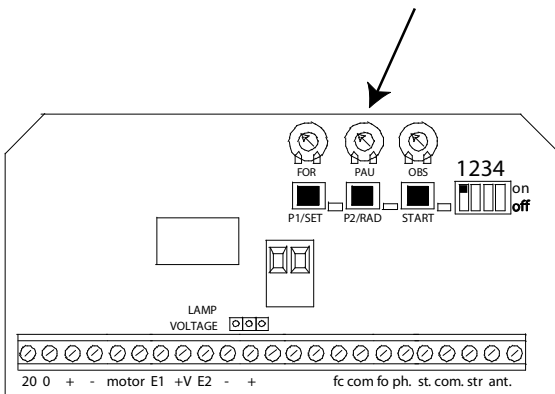
Connect the photocells as shown and turn the selector dip switch 1 to OFF

### 16. PHOTOCELL WITH SELF TEST WIRING SCHEMATIC



Connect the photocells as shown and turn the selector dip switch 1 to ON

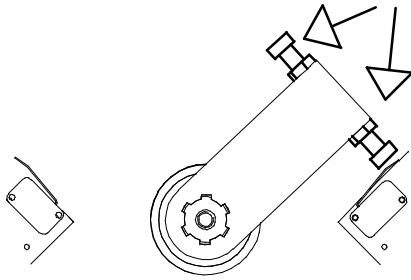
### 17. PAUSE TIME ADJUSTMENT



#### 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 the barrier waits before to close. Rotate clockwise the PAU trimmer to have more pause time. Rotate counterclockwise the PAU trimmer to have less pause time.

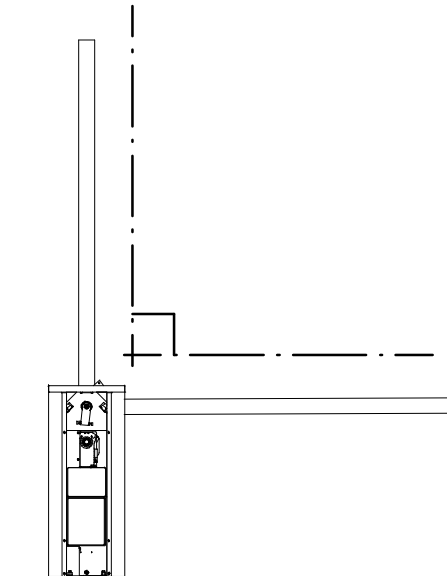
## 18. MECHANICAL STROKE ADJUSTMENT



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.



## 19. WORKING MODE SELECTION

1234



### CONDOMINIUM 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



### STEP BY STEP MODE WITH PAUSE AND AUTOMATIC CLOSE

Set dip 3 in ON 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.

## 20. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
1)The control unit is OFF ( red LED is OFF) the gearmotor doesn't start	Lack of power supply	Check the power connection heck that the fuse is not interrupted
2)The control unit is switched on (ON LED lit), the engine remains off and the barrier does not open and does not close	2a) The stroke of the barrier is not programmed 2b) The safety devices connected to STOP input are active 2c) DIP 2 and 3 are both in OFF	2a) program the strok ( see paragraph 13.) 2b) check safety devices 2c) put DIP2 in ON position
3)The barrier opens but doesn't close	3) There is a problem with photocells input	3a) check photocell wirings 3b) check photocells are working
4)The barrier opens and closes but doesn't reach the limit switches and reverses the motion	4) The control unit detect an obstacle	4a) Check if spring balancement is ok. 4b) turn clockwise OBS trimmer 4c) turn counterclockwise FOR trimmer
5)The barrier opens and closes but doesn't slowdown before the limits	5) The power supply tension to the gearmotor is too high	5) turn counterclockwise FOR trimmer

## 21. REASSEMBLY OF EXTERNAL LIDS

### - REMOVE THE BOOM:

Remove the 8 screws [17], remove the plate [16], remove the rod, remove the screw [15] and plate [14].

### - SEALED BOX CLOSING:

Close the watertight box that contains the control unit.

Seal any hole made during installation to prevent the ingress of moisture and insects in a waterproof box.

### - REASSEMBLY COVER:

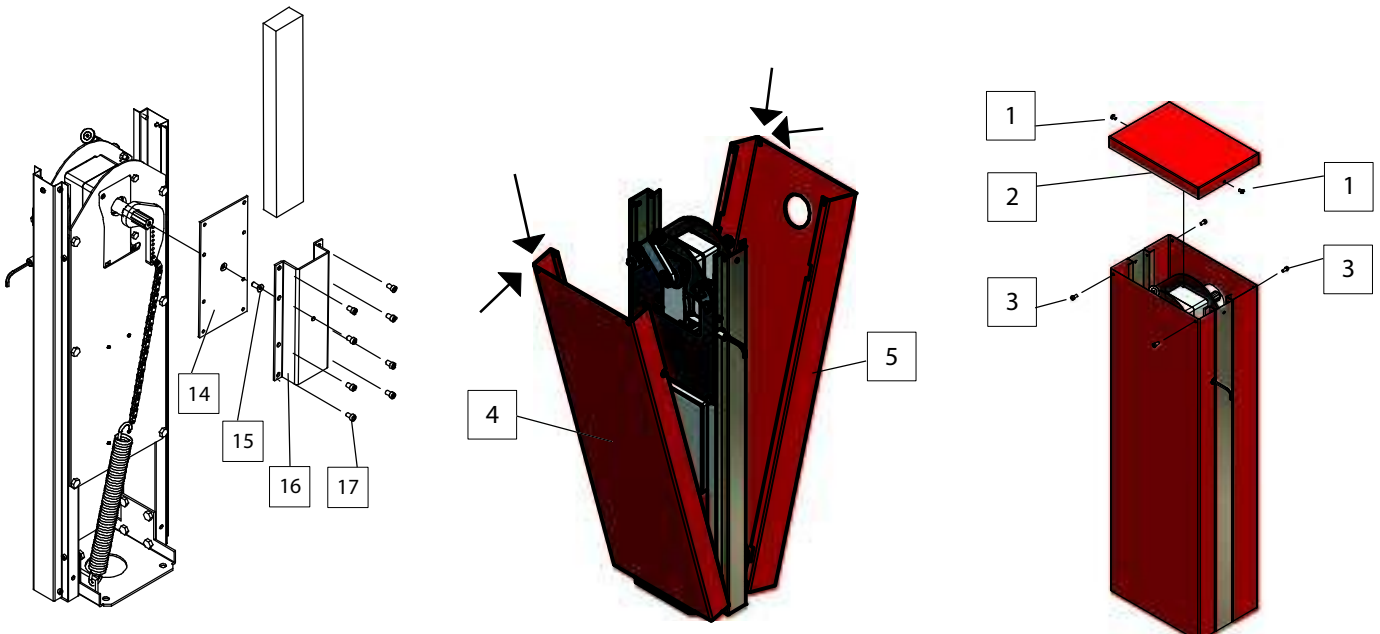
Insert column covers front [4] and [5], and tighten the 4 screws [3].

Insert the top cover [2] and tighten the 2 screws [1].

### - INSTALL THE BOOM:

Fix plate [14] and tighten the screw [15].

Insert the boom between the plates [14] and [16] and tighten the 8 screws [17] on the plate [16].



## GENERAL SAFETY

This installation manual is intended for qualified personnel. The installation, electrical connections and adjustments must be made in compliance with the following European Directives: 2004/108/EC, 2006/95/EC and subsequent amendments. Read the instructions carefully before starting the installation. Incorrect installation can be a source of danger. The packaging materials (plastic, polystyrene, etc..) should not be disposed of properly and should not be left within reach of children as they are potential sources of danger. Before starting the installation, check the integrity of the product. Do not install the product in explosive areas and atmospheres: presence of flammable gases or fumes are a serious safety hazard. Before installing the motors, make all structural changes relating to construction safety clearances and protection or segregation of all areas of crushing, shearing, trapping and general danger. Verify that the existing structure has the necessary strength and stability. The motor manufacturer is not responsible for the workmanship in the construction of frames to be motorized or for any deformation occurring during use. The safety devices (photocells, safety edges, emergency stops, etc..) must be installed taking into account: applicable laws and directives in force, Good Working Methods, installation environment, the logic of the system and the forces developed by the motorized door or gate. The safety devices must protect any areas of crushing, shearing, trapping and general danger of the door or gate. The signs required by law to identify danger areas. Each installation must clearly show the identification details of the motorized door or gate. Before connecting the power supply, make sure the data plate correspond to those of the electricity distribution network. Install on the power supply, if necessary, a switch / isolating switch with a contact opening distance equal to or greater than 3 mm. Check that upstream of the electrical system there is a differential switch and a suitable circuit breaker. When prompted, connect the motorized door or gate to an effective system of earth terminal in accordance with applicable safety standards. While performing installation, maintenance and repair, interrupt the power supply before opening the cover to access the electrical parts. The electronic parts must be done by arranging grounded antistatic conductive bracelets. The motor manufacturer is not liable for any components which are incompatible with the safety and efficient operation. For repairs or replacements of products only original spare parts must be used. The installer must supply all the information relating to the automation, manual and emergency operation of the motorized door or gate, and operating instructions and deliver it to the user of the automation. Everything that is not EXPRESSLY specified in these instructions is not permitted. The access to the electrical compartment must be performed by qualified personnel only.

## MAINTENANCE (EVERY 6 MONTHS)

Remove the power supply 230V or batteries to obscure the solar panel if present.  
Clean and grease the levers and chains in the mechanism.  
Check that the screws that connect the gearmotor to the barrier and the screws that connect the spring to the barrier are tight.  
Check the tightness of the linkage and that the system works without unusual play.  
Check the manual release.  
Check the balance of the spring.  
Replace any worn parts.  
Check the state of charge of the battery and recharge or replace if necessary.  
Reconnect the power supply 230V or batteries and the solar panel if present.  
Check the function of electromechanical limit switches.  
Check the function of obstacle detection.  
Check the proper functioning of all functions of control and safety.

## DISMANTLING

When the automation system is disassembled to be reassembled on another site you need to:

- Turn off the power and disconnect the batteries and the solar panel if present
- Unlock the automation and bring the rod in the fully open position so that the balancing spring is unloaded and relock the automation.
- Remove the barrier from its anchorage to the ground
- Preparing a new anchor to the ground at the new site (order foundation plate base PLATE/004)
- Replace any damaged or worn parts.

## DEMOLITION

Disposal of materials must be carried out in accordance with local regulations. In the case of scrapping, be sure to unlock the automation and bring the rod in the fully open position so that the balancing spring is unloaded before disassembling the automatism. Materials must be separated for recycling (electrical components - copper - aluminum - plastic - etc ...). The batteries must be removed safely (12V - 12Ah). Remove and dispose of them separately as required by law.

The smooth operation is only ensured if the data are respected in this manual.

The Company is not liable for damages caused by the installation standards and the instructions contained in this manual.

The descriptions and illustrations in this manual are not binding.

Preserving the essential characteristics of the product, the Company reserves the right to make changes at any time deemed appropriate to improve the technical, manufacturing and commercial product, without being required to update this publication.