

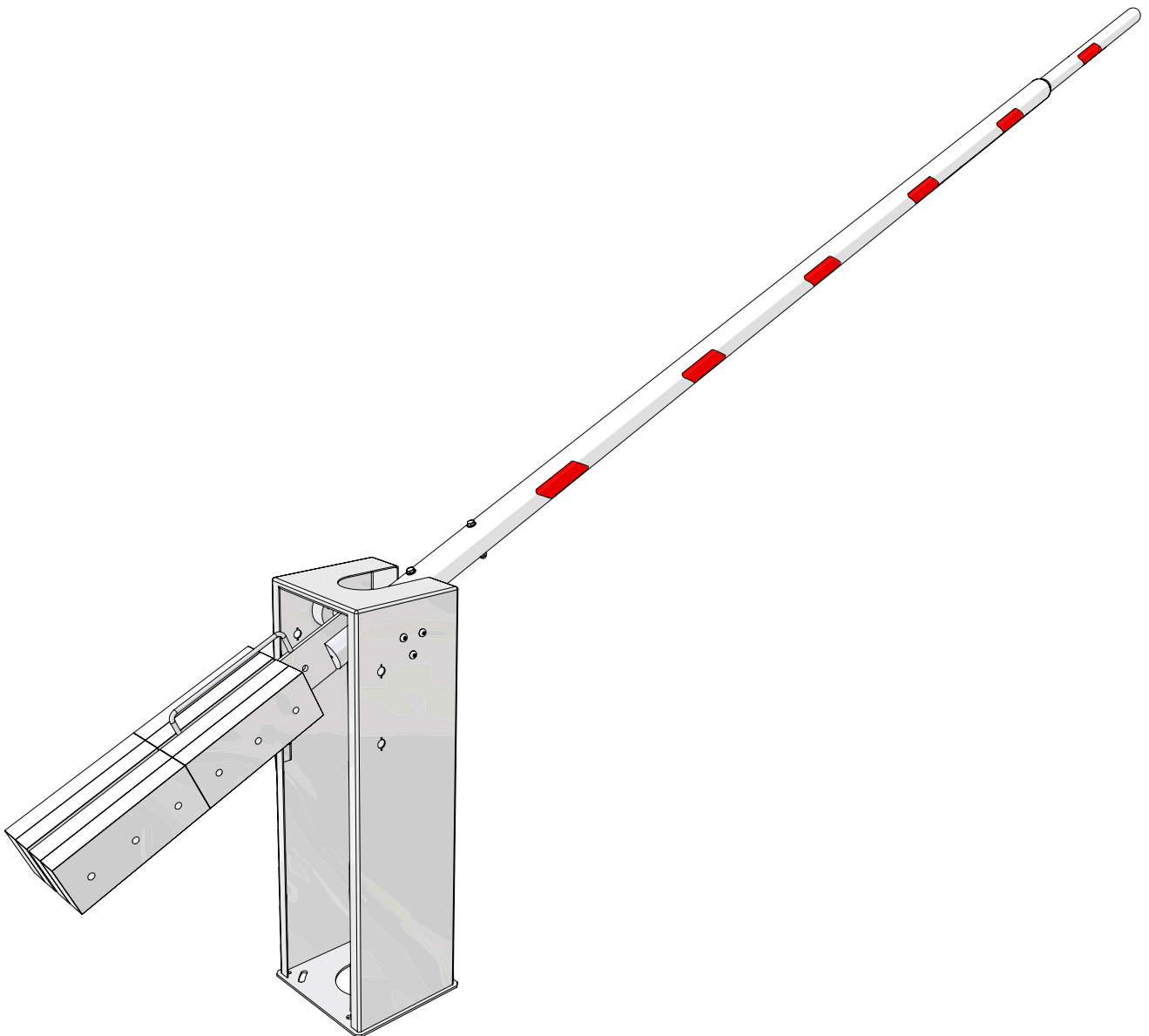
# BL 10

Manual rising barrier

## TECHNICAL MANUAL

*(Translated from the original French version)*

Rev. 01 • Update 10/2022





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## 1. INTRODUCTION

You have chosen a manual rising barrier from the BL 10 range designed and manufactured by **Automatic Systems**, for which we thank you.

We are convinced that your acquisition will give you complete satisfaction for many years and, to this end, invite you to read the following information carefully before installing your equipment.

While this manual has been prepared with great care, some information may seem erroneous or unclear to you. In that case, please do not hesitate to contact us with your remarks or questions.

## 2. SAFETY WARNINGS

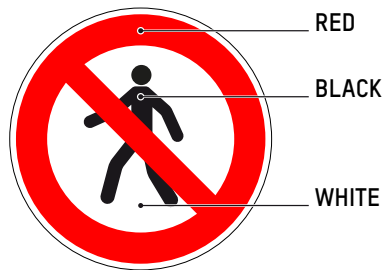


Read this document carefully and completely before using the barrier and keep it for future use. Failure to follow the instructions in this document may result in damage to the barrier and serious personal injury.

This equipment has been designed to control and manage vehicle access and cannot be applied to any other use without risk to users or to the integrity of the equipment. Automatic Systems cannot be held liable for damage resulting from improper use of the equipment.

Putting up a vehicle barrier or an access control obstacle exposes you to liabilities in terms of people's safety:

- Pedestrian, cyclist and motorcyclist must be banned from accessing the passage where the barrier is. However, if pedestrians must use this passage, it is mandatory to effectively signal their movement (sound and/or light signal, markings on the ground, and so on).
- In the countries of the European Union, the EC Machines Directive requires the displaying of the pictogram forbidding pedestrian access to the danger zone somewhere on the equipment (less than 1 metre upstream and downstream from the barrier's arm in horizontal position):



- Any intervention on the equipment must be made by qualified personnel. Any work on this product that is unauthorised or carried out by an unqualified technician will automatically entail the annulment of the constructor's warranty.
- Personal protective equipment (PPE) must be worn when working on the barrier:



**ASSEMBLE THE ARM AND ITS ACCESSORIES BEFORE PERFORMING ANY TESTS!**



**ATTENTION!  
DO NOT WORK ON THE BARRIER OR STAND NEAR IT DURING A THUNDERSTORM, ESPECIALLY WHEN THE BARRIER IS IN THE OPEN POSITION (ARM UP), RISK OF ELECTRIC SHOCK!**

- The end of the arm must always be at a distance of more than 0.5 m from any object.
- The barrier must be completely visible by the user before being activated.
- Safety devices (EN 12978) allow the protection of potentially dangerous areas where mechanical movements such as crushing, dragging or shearing are likely to occur.
- Do not add unapproved accessories (contact between different metals causes a battery effect that decreases the equipment's corrosion resistance).

### 3. GENERAL SYMBOLS

The following symbols are used in this manual or as labels on the equipment:



This symbol is used to highlight **a tip** that may help you better understand the product.



**Reminder** or **quick tip** useful for understanding how the product works.



This symbol is used to highlight **an important instruction** for the correct use and/or maintenance of the product.



**Important!** : This symbol is used to highlight a **risk of injury or material damage**.



This symbol is used to highlight a **risk of electric shock or electrocution**.



This symbol is used to highlight a **risk of cutting yourself**.



This symbol is used to identify the **principal ground connection point**.  
(Either in the form of an affixed label or directly engraved on a mechanical part).



This symbol is used to indicate the **tools** required for the relevant operation.



This symbol indicates that the equipment **conforms to European standards and directives**.



This symbol indicates that the equipment must **be disposed of in accordance with the applicable European Directives** (DEEE 2012/19/EU).

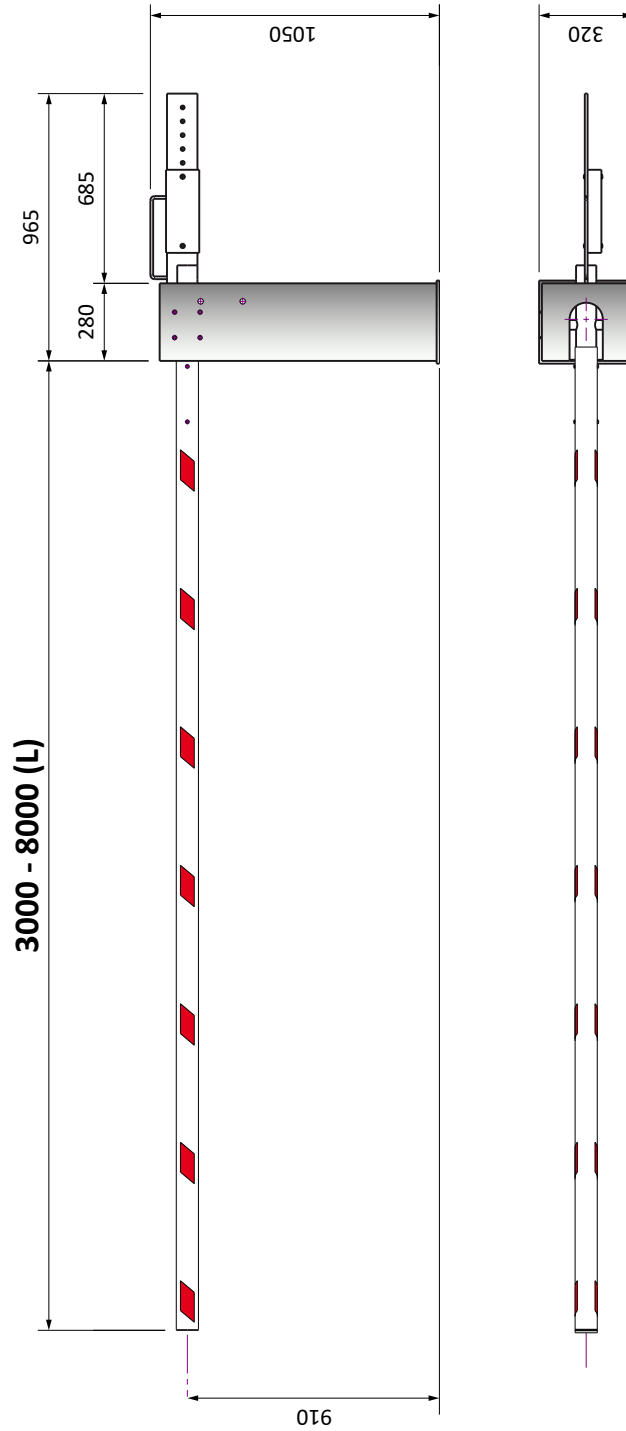
## 4. TERMINOLOGY

AS	<b>Automatic Systems</b>
Lisse	Obstacle to passage, materialized by an arm pivoting from top (open barrier) to bottom (closed barrier).
FDC	Limit switch.



5. DESCRIPTION

5.1. OVERALL DIMENSIONS



## 5.2. TECHNICAL SPECIFICATIONS

Barrier type:	manual
Arm type:	round
Working length (L) of the arm:	From 3 to 8 meters
Net weight:	From 54 to 118 kg, depending on the configuration
In accordance with European standards <b>CE</b>	

## 5.3. COMPONENTS LOCATION

### 5.3.1. MAIN COMPONENTS

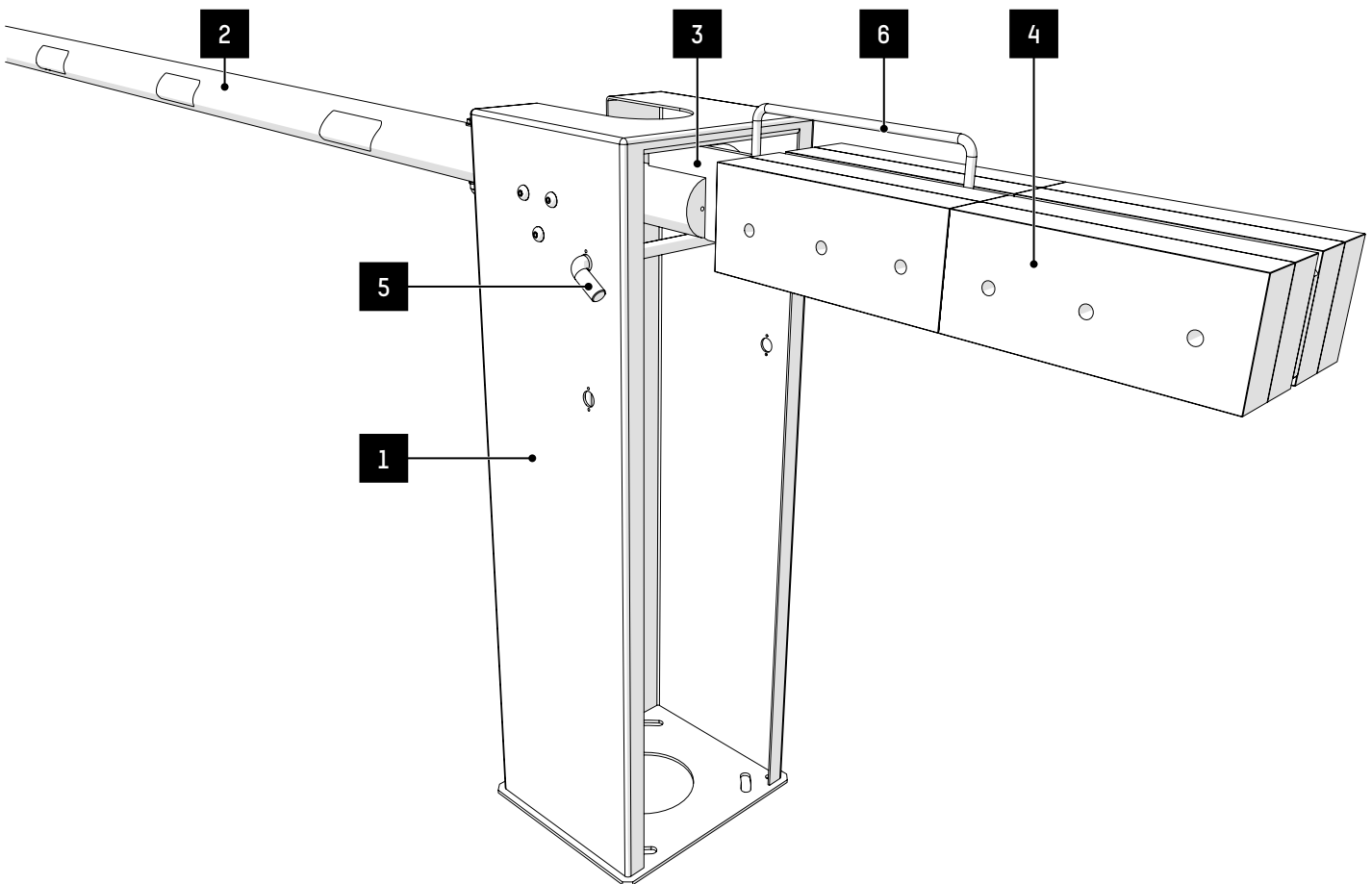


Fig. 1 - Main components location

REP.	DESIGNATION
1	Frame
2	Round aluminium arm
3	Shaft
4	14 kg counterweight
5	Arm locking pin

## 5.3.2. ALL COMPONENTS

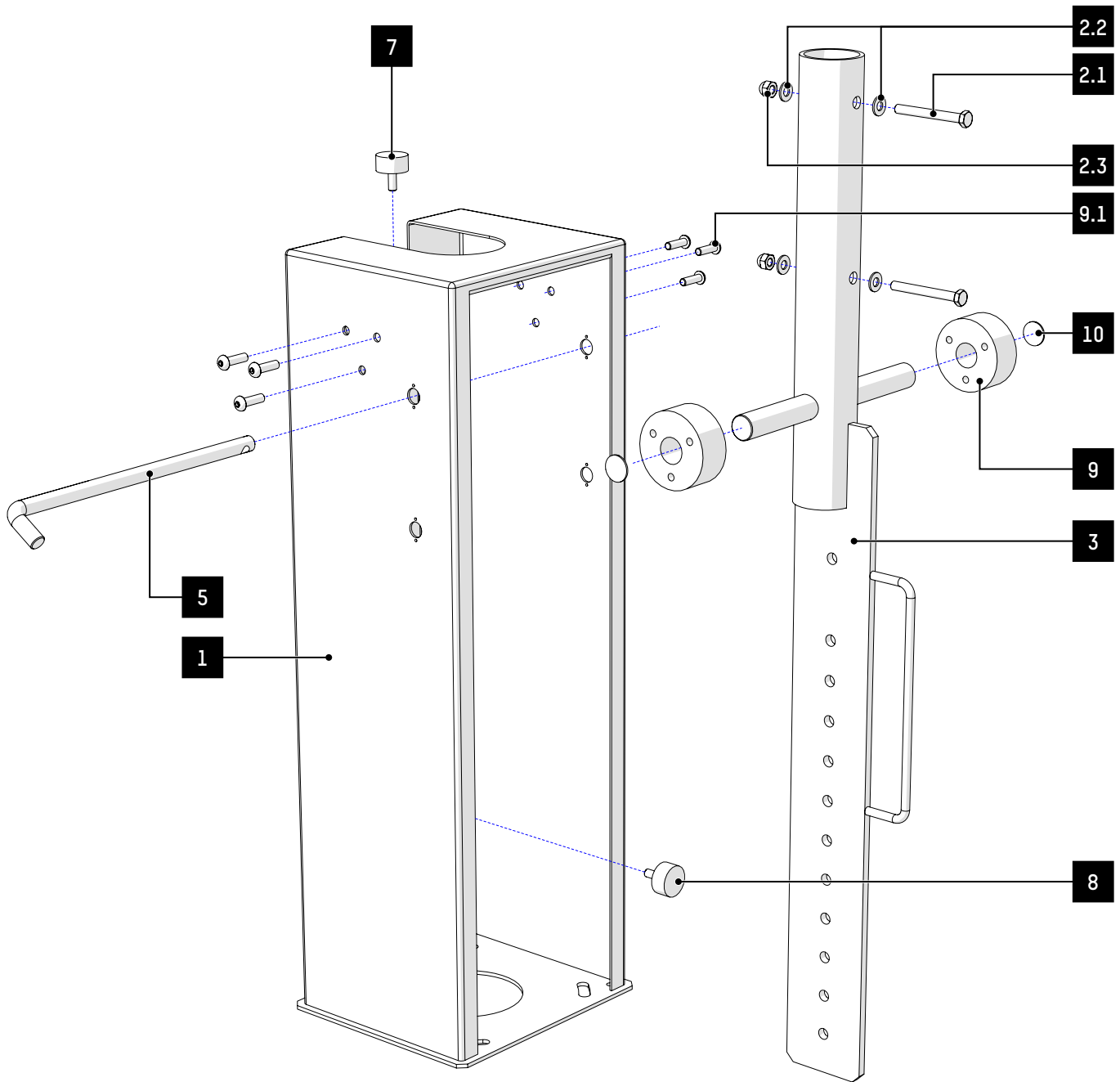


Fig. 2 - All components location

REP.	DESIGNATION	REP.	DESIGNATION
1	Frame	5	Arm locking pin
2	Round aluminium arm <sup>(1)</sup>	6	Arm handle
2.1	Stainless steel hexagonal screw M10x90	7	Opening stopper
2.2	Stainless steel flat washer M10	8	Closing stopper <sup>(2)</sup>
2.3	Stainless steel hexagonal nut M10	9	Bearing
3	Shaft	9.1	Stainless steel truss head screw M10x35
4	14 kg counterweight <sup>(1)</sup>	10	Shim

(1) ⇒ Chap. 5, page 9

(2) Not existent if a tip support (optional) is provided with the barrier.

## 5.4. OPERATION PRINCIPLE



Number indicators mentioned below refer to chapter 5.3. Components location.

Closing and opening of the arm is done manually by using the arm handle (6).

A blocking pin (5), which can be equipped with a lock, is used to lock the barrier in its two extreme positions (open and close). See pictures below.

The arm (2), from 3 to 8 meters long, is used to block the way. It is mounted on an axis (3) that is mounted on the frame (1) of the barrier with two bearings.

One or more counterweights (4), mounted on the axis on the opposite side of the arm, balance the system in order to facilitate the manual opening and closing movements of the barrier.

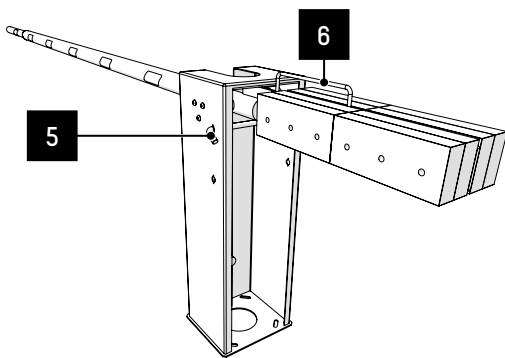


Fig. 3 - Closed barrier

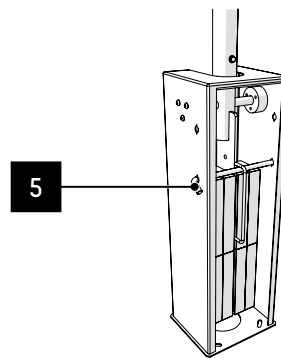


Fig. 4 - Open barrier

The blocking pin can be stored inside the housing when not in use, as shown on the picture below. A lock may be installed through the hole of the blocking pin to avoid unwanted operation of the barrier by unauthorized personnel.

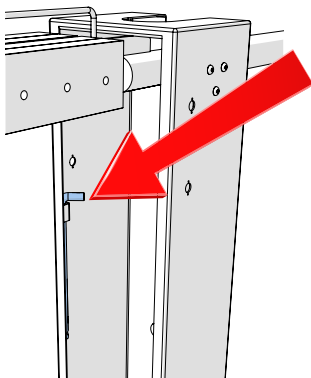


Fig. 5 - Blocking pin stored inside the housing

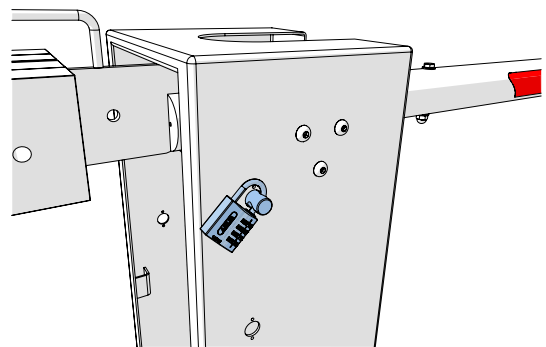


Fig. 6 - Blocking pin locked by a padlock

## 6. INSTALLATION

On receipt, check the state of the material and notify forthwith your insurance company or your distributor in the event of damage occurring during transport. If necessary, proceed with the repairs.



**ATTENTION! SAFETY INSTRUCTIONS!**

1. The installation personnel must follow all laws and standards applicable to the gate installation site.
2. When installing the gate, all operations must be done by qualified personnel. All the safety instructions indicated in this section and in Chap. 1, page 3 must be followed.
3. To reduce the risk of entrapment, the gate must be installed in a location with sufficient clearance between the gate and adjacent structures when opening and closing. (600 mm minimum)

### 6.1. EQUIPMENT STORAGE BEFORE INSTALLATION

Before installation, avoid any impact on the product and leave it in its original packaging in a dry area, free from dust, heat and extreme weather.

Ideal storage temperature: -30 to +80°C.

6.2. INSTALLATION DRAWING

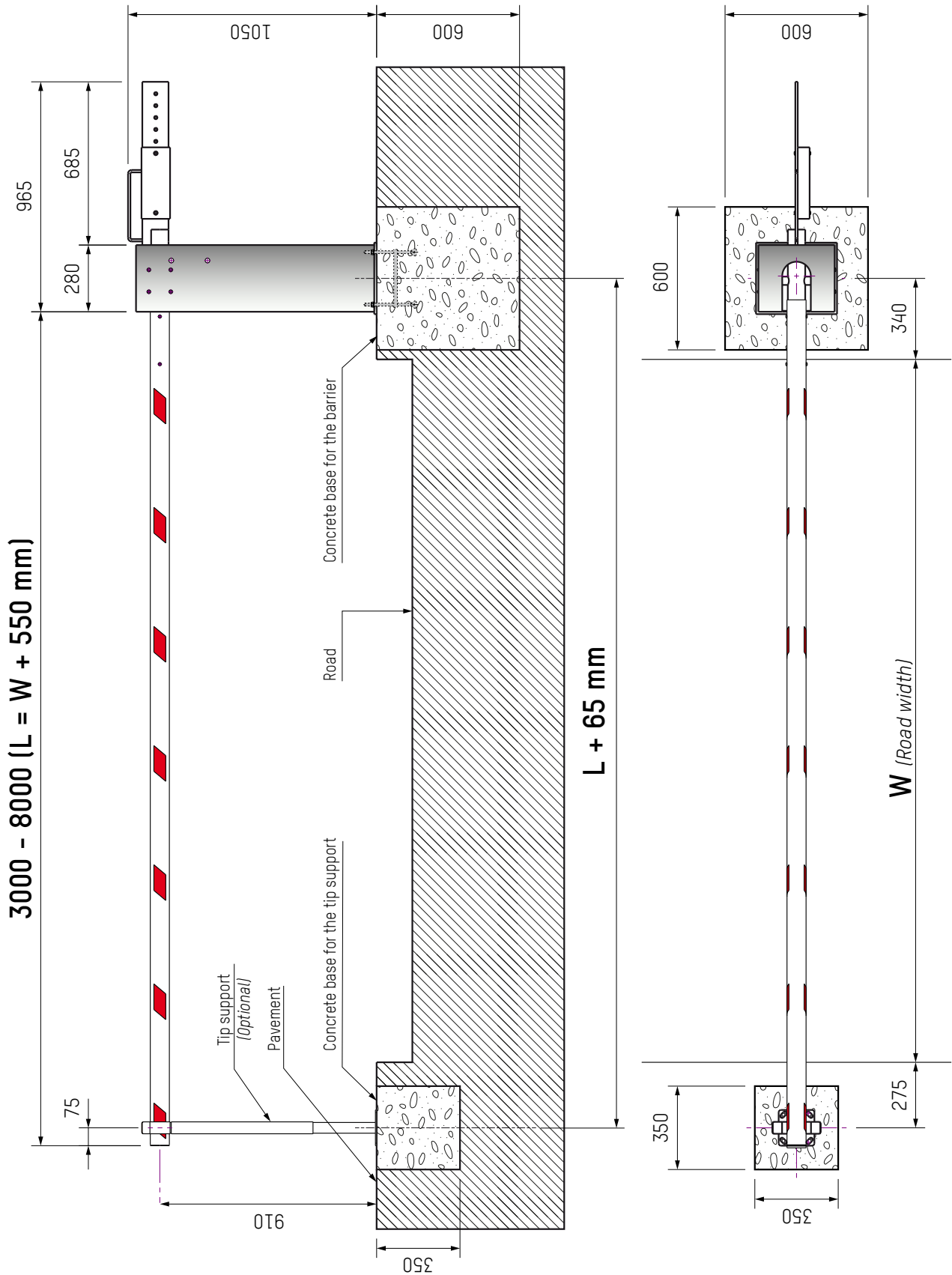


Fig. 7 - Installation drawing

## 6.3. INSTALLATION PROCEDURE

1. Verify that the ground location of the barrier is free from water pipes or any other type of interference.
2. Dig a hole approximately 60 cm long, 60 cm wide and 60 cm deep.
3. If your barrier has the option **Limit Switches for arm position information**, before concrete placement, place a flexible tube of 20 mm external diameter, located at the center of the hole and connecting the barrier to the command center (See notes 1 & 2 hereafter).



*If your barrier does not have this option, skip to step 4.*

4. If you are using the optional sealing plate (**CHA0209**), it needs to be submerged it in the concrete. The 4 anchors needs to be exceeding from the concrete by 40 mm minimum.

### 6.3.1. SEALING PLATE CHA0209 (OPTIONAL)

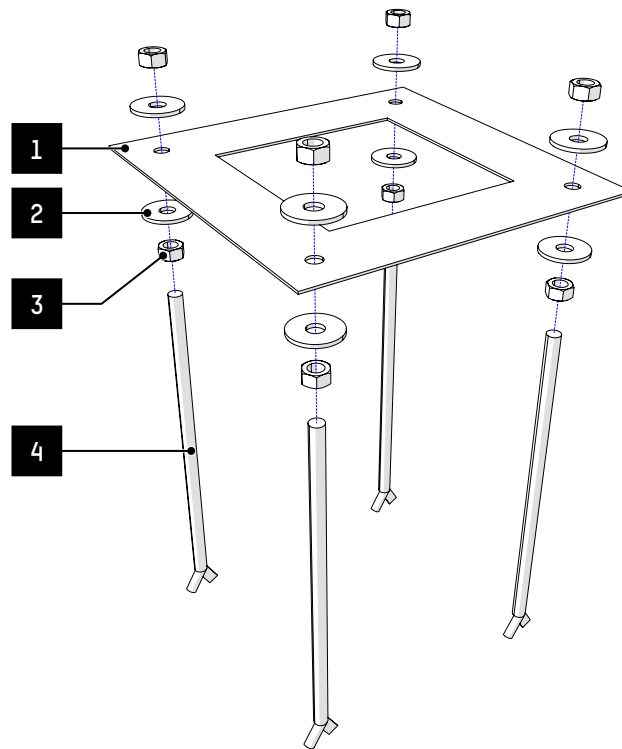


Fig. 8 - Optional sealing plate (CHA0209)

REP.	DESIGNATION	QTY
1	Sealing plate	1
2	Large zinc coated flat washer M12	4
3	Sinc coated nut M12	4
4	Anchors M12 x 280	4

### 6.3.2. SEALING FRAME ASSEMBLY

Insert the four anchors (4) with nuts (3) and flat washers (2) in the hole of the sealing plate (1). Threads must be oriented up, as shown on the picture above in the previous page. Assemble the anchors on the sealing plate with flat washers (2) and nuts (3) on each thread in a way that they minimally protrude by 40 mm. Tighten the nuts. Use a tape to protect the threads that exceed from the sealing plate from concrete splatter.

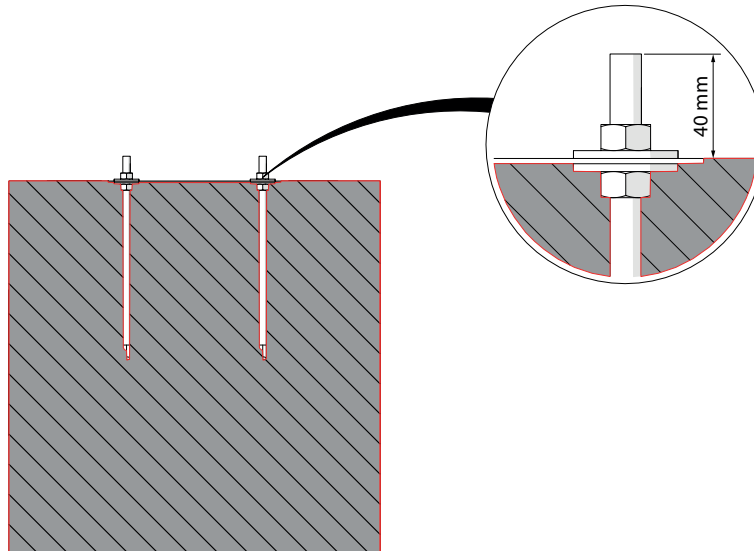


Fig. 9 - Sealing frame - Exceeding

5. Pour quality concrete, C25-30 xc4 xf4 (30 N/mm<sup>2</sup> or superior), in the hole and vibrate the concrete with the appropriate tools. Upper surface of the concrete block must be perfectly level and placed high enough to prevent water accumulation.
6. Once the concrete has cured, install the barrier on its pedestal with the adequate anchoring material:
  - Flat washers (2) and nuts (3), for installation on a sealing plate;
  - 4 chemical anchors M12 or 4 expansion bolts M12, for a fixation in the concrete pedestal.



*Flexible tube installation is necessary, only if **Limit switches for arm positioning information** option is installed on the barrier.*



*All tubes must be installed in compliance with all applicable rules and legislations.*



## 6.4. ARM INSTALLATION



**THE BARRIER MUST BE ANCHORED TO THE GROUND AND IN OPEN POSITION, BEFORE BEGINNING THE INSTALLATION OR REMOVAL.**



*Each screw and threaded rod must be greased before installation.  
Counterweights to balance the barrier are assembled at the factory*



*To facilitate the assembly of a long arm, begin with the assembly of the first arm section. Once the sleeve is mounted as shown below, it will be possible to lower the arm in the horizontal position and mount the second arm section.*

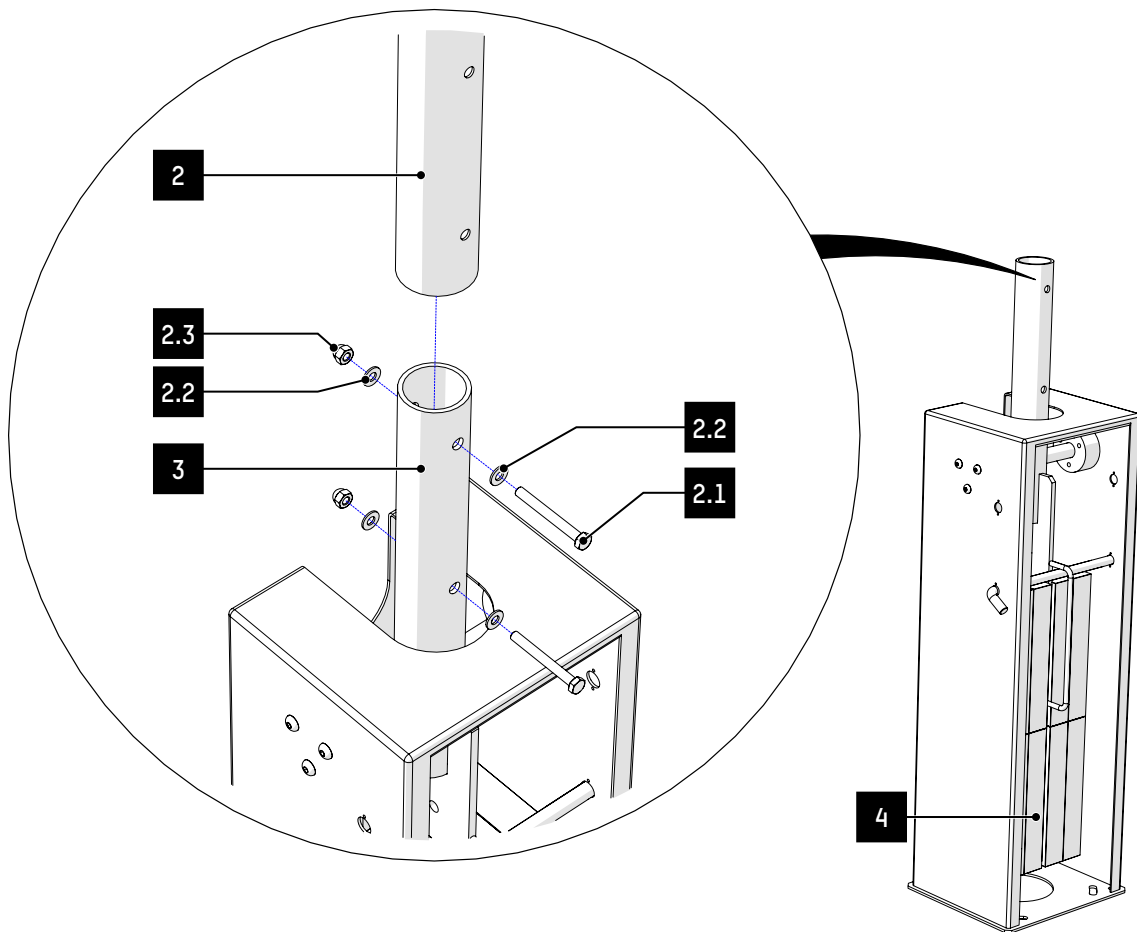


Fig. 10 - Arm installation

- Insert the arm (2) on the shaft sleeve (3) so the attachment holes are aligned.
- Mount the arm on the sleeve with the provided screws (2.1), washers (2.2) and nuts (2.3).



*Torque for hexagonal stainless steel screws: M10 = 44 Nm.*

## 7. BARRIER BALANCING

The barrier comes with all the necessary material to balance the barrier correctly with the length of the arm.

In the case of length modification of the arm or the addition of accessories not part of the original order, the following tables show the adequate positioning of the counterweight(s):

FREE ARM (NO ACCESSORIES)					
Working length (L)	Overturning torque	Ref. counterweights	Qty	Position	Negative residual torque
3,00 m	5,94 daN.m	4E4268 (14 kg)	1	7	0,58 daN.m
3,50 m	8,75 daN.m		1	6	2,71 daN.m
4,00 m	12 daN.m		1	1	2,37 daN.m
4,50 m	15,63 daN.m		2	5	2,18 daN.m
5,00 m	19,67 daN.m		2	1	0,7 daN.m
5,50 m	24,76 daN.m		3	4	2,5 daN.m
6,00 m	27,65 daN.m		3	2	1,23 daN.m
6,50 m	30,84 daN.m		3	1	2,35 daN.m
7,00 m	34,23 daN.m		4	3	1,75 daN.m
7,50 m	37,88 daN.m		4	2	2,64 daN.m
8,00 m	41,80 daN.m		4	1	3,78 daN.m



During the assembly of the tip support, take the balancing value of: **working length + 0,50 m**.

ARM WITH RIGID ALUMINUM SKIRT (OPTIONAL)				
Working length (L)	Ref. counterweights	Qty	Position	Negative residual torque
3,00 m	4E4268 (14 kg)	2	1	0,64 daN.m
3,50 m		2	1	0,65 daN.m
		1	7	
4,00 m		3	1	2,2 daN.m
4,50 m		3	3	3,3 daN.m
		1	1	
5,00 m		4	1	0,97 daN.m
		1	7	
5,50 m		4	1	4,1 daN.m
		2	7	
6,00 m		4	1	0,11 daN.m
		4	7	

ARM WITH PVC SKIRT (OPTIONAL)			
Working length (L)	Ref. counterweights	Qty	Position
3,00 m	4E4268 (14 kg)	1	6
3,50 m		1	1
4,00 m		2	5
4,50 m		2	1
5,00 m		3	2
5,50 m		4	3
6,00 m		4	2
6,50 m		4	1
7,00 m		4	1
		1	7



For counterweight positioning, see chapter 7.1. Positionnement des contrepoids ci-après.

### 7.1. COUNTERWEIGHT POSITIONING

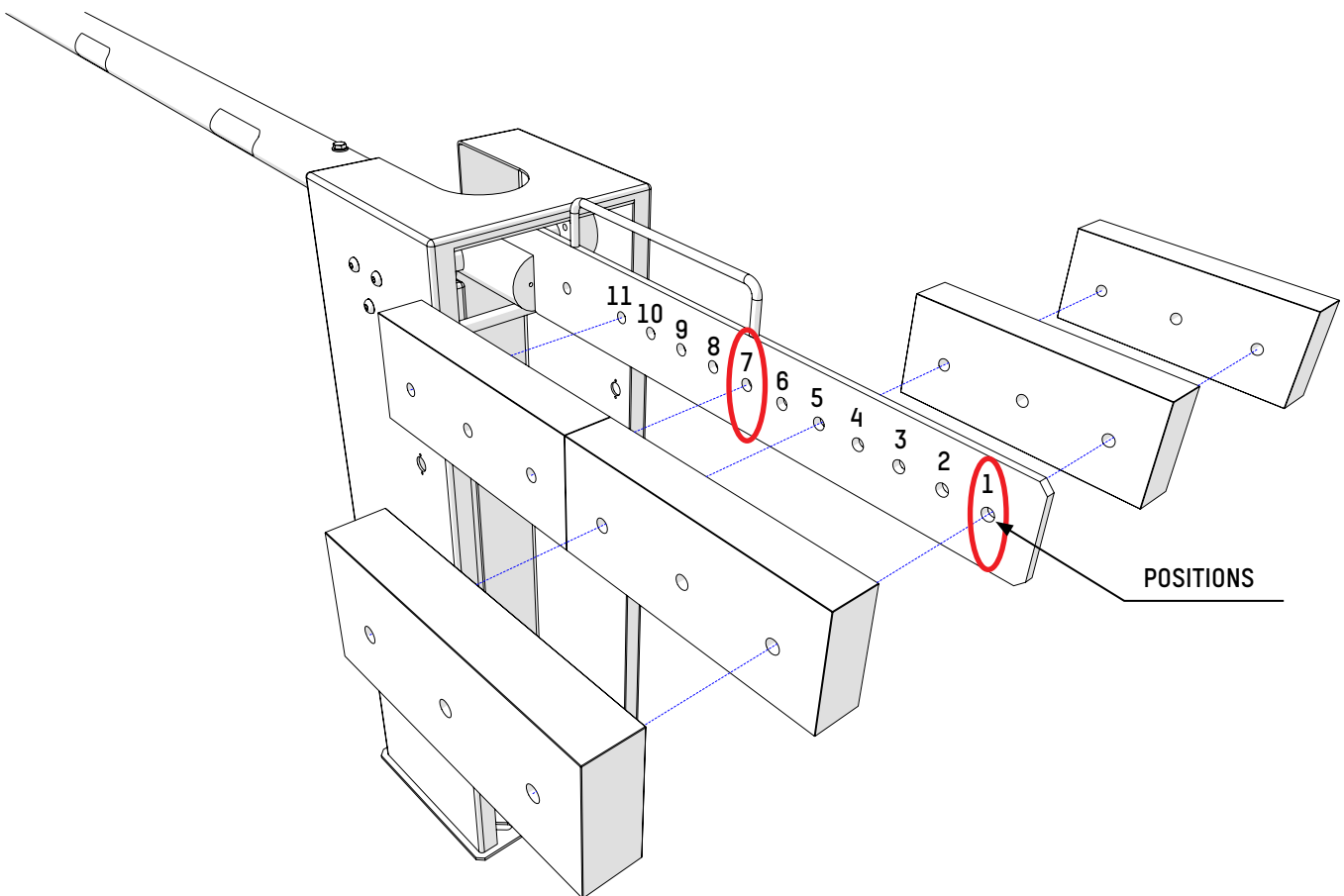


Fig. 11 - Counterweight positioning

*Example:* positioning of the counterweights for a 5.00 metre long arm (without options): 4 counterweights in position 1 and 1 counterweight in position 7.

**7.2. COUNTERWEIGHT MOUNTING**

	NUMBER OF COUNTERWEIGHTS			
	1	2	3	4
Stainless steel screw M10x90	2			
Stainless steel threated rod M10x140		2		
Stainless steel threated rod M10x190			2	
Stainless steel threated rod M10x240				2
Stainless steel flat washer M10	4	4	4	4
Stainless steel Grower washer M10	4	4	4	4
Stainless steel nut M10	4	4	4	4

## 8. ACCESSORIES AND OPTIONS

It is possible to add one or more options to the barrier.

Ask the sales representative to verify feasibility and availability of the chosen options.

### 8.1. LIMIT SWITCHES FOR ARM POSITION INFORMATION

One or two limit switches IP67 (**11** & **13**), mounted on a support (**10**), allows the arm position to be known.

One or two cams (**12** & **14**), mounted on the shaft, enables the mechanical limit switches when end positions are reached.

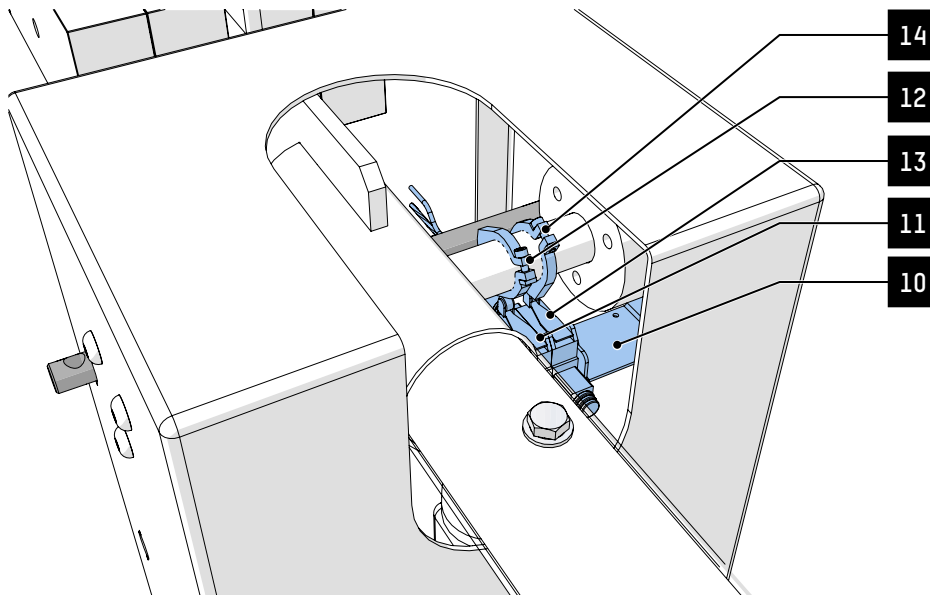


Fig. 12 - Limit switches for arm position information.

A  $\pm 2,5$  m cable is connected to the limit switches on one side and to a terminal block on the other side. The customer can connect to the terminal block to gather the information given by the limit switches.



## 9. MAINTENANCE



**THE BARRIER MUST BE ATTACHED TO THE GROUND AND BLOCKED IN THE OPEN POSITION PRIOR TO DOING ANY MAINTENANCE WORK ON THE GATE.**

### Every years(\*)

- Verify the condition of the barrier:
  - Frame, arm conditions...
  - Condition of every component (arm, locking pin, counterweight...)
- Verify that all screws and nuts are torqued properly: bearing, arm, counterweight, ground anchors...
- Clean the inside of the frame to remove leaves and other debris that could have built up.
- Clean the body and the arm with a soft tissue and nonaggressive detergent.
- For direct sun exposure areas, it is recommended to treat the exterior of the body with a polishing product.





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