

# SPRINT

**BARRIERA OLEODINAMICA**  
**HYDRAULIC BARRIER**  
**BARRIERE HYDRAULIQUE**



**SEA S.p.A.**

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## TECHNICAL FEATURES

**SPRINT** is an high speed hydraulic barrier for intensive application, designed for arms up to 6 m

All models are **IRREVERSIBLE**, to allow a perfect and safe closing of the arm

The barrier is equipped with a **MANUAL RELEASE SYSTEM** - placed inside the barrier housing - which allows manual opening and closing in the event of a power outage.

**SPRINT** is also equipped with an **electronic inversion device via ABSOLUTE ENCODER**, which makes it safe and reliable and allows to comply with the Laws in force in the Countries where the barrier is installed.

The **ELECTRONIC DECELERATION SYSTEM**, combined with the absolute encoder, guarantees total control of the inertia forces.

The barrier is also equipped with **BY-PASS VALVES** which allows to adjust the thrust force and thus ensure anti-crushing safety.

The housing is made of cataphoresis treated steel and painted in polyester for outdoor use, for excellent resistance to atmospheric agents (*the casing is also available in STAINLESS STEEL, upon request*)

## COMPONENTS

- 1 - ADJUSTABLE MECHANICAL STOPS
- 2 - ABSOLUTE ENCODER
- 3 - GALVANIZED STEEL ROCKER ARM
- 4 - SWITCHING (ONLY ON SPRINT «BR») \*
- 5 - BALANCING SPRING
- 6 - HYDRAULIC UNIT
- 7 - BY-PASS VALVES
- 8 - MOTOR RELEASE SCREW
- 9 - BOX WITH ELECTRONIC CONTROL UNIT
- 10 - GALVANIZED STEEL FOUNDATION PLATE
- 11 - PISTON
- 12 - BREATHER CAP (SEE CHAPTER 10)
- 13 - CASING DOOR
- 14 - LOCK WITH DIN KEY

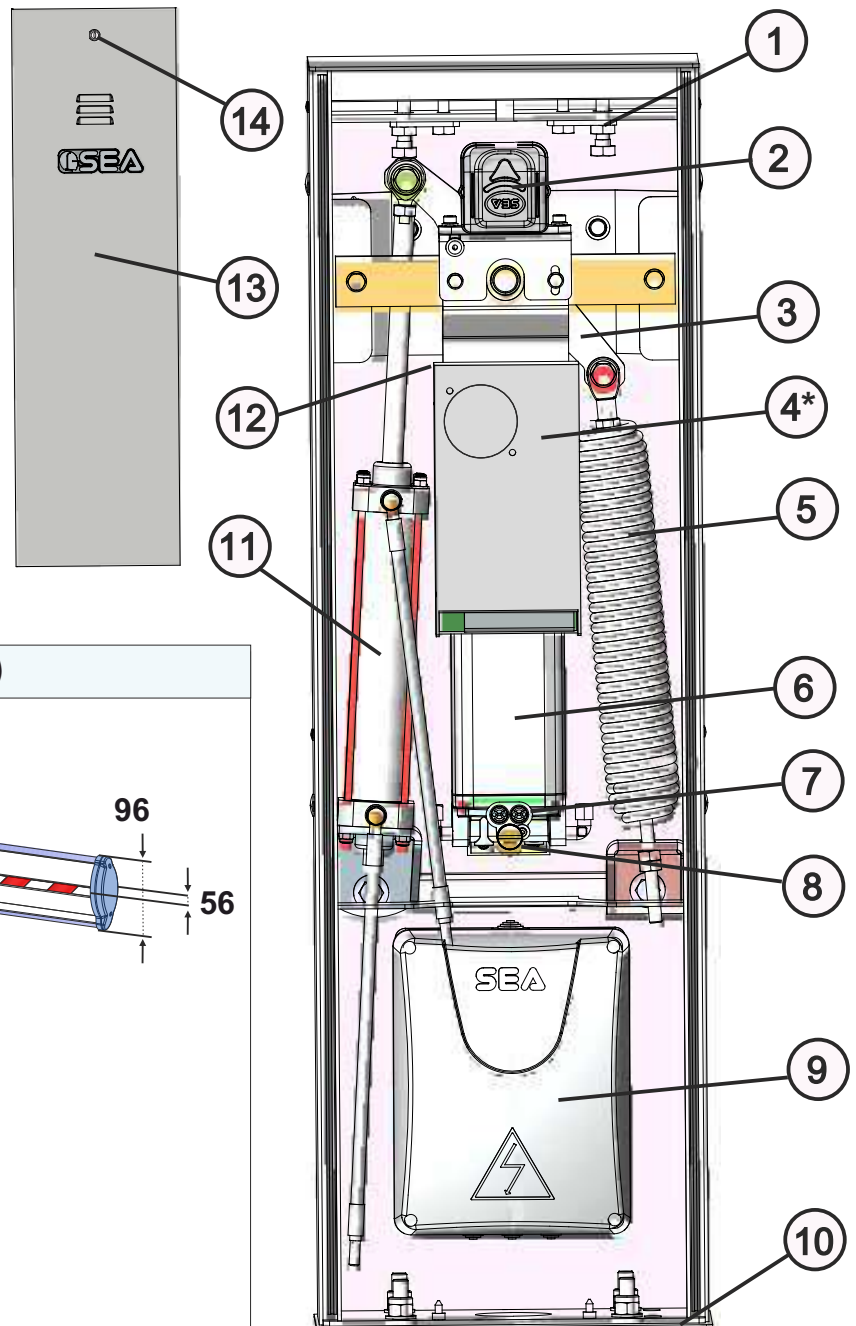


Fig. 1

## DIMENSIONS (mm)

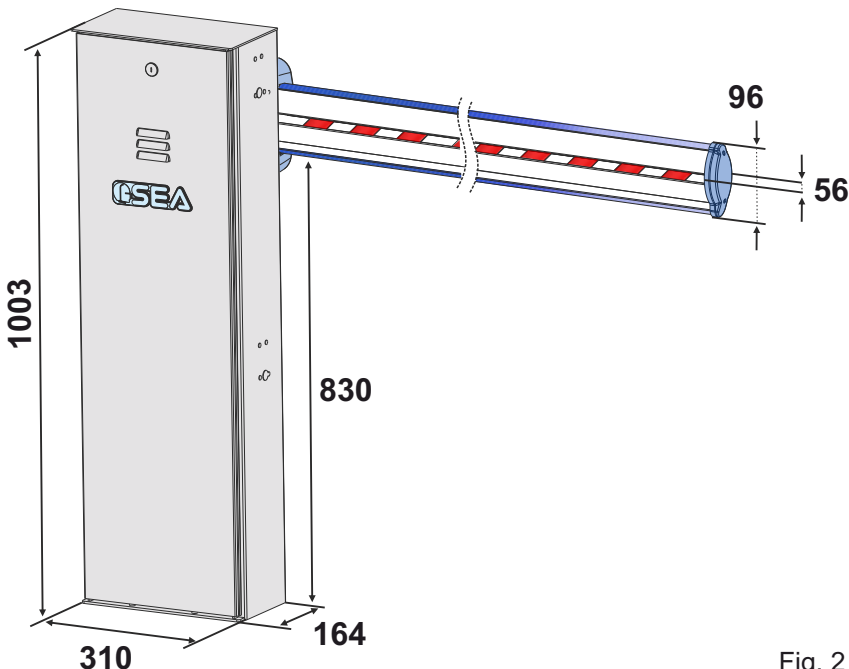


Fig. 2

TECHNICAL DATA	SPRINT (1 L)	SPRINT (2 L)	SPRINT FAST	SPRINT IV	SPRINT BR 36V
POWER SUPPLY	230V (±5%) 50/60 Hz				
HYDRAULIC UNIT	230V				36Vac
POWER	220 W	270 W	250 W	220 W	260 W
ABSORPTION	1 A		1,2 A	1,1 A	-
START CAPACITOR	12,5 µF	6,3µF	12,5 µF	-	-
MOTOR ROTATION SPEED	1430 rpm				2300 rpm
USAGE RATE	75%			90%	
OPERATING TEMPERATURE	-20°C +55°C				
THERMAL PROTECTION	130°C				-
OPERATOR WEIGHT	51 Kg				52 Kg
OIL TANK CAPACITY	1 L	2 L	3 L	1,5 L	
PROTECTION CLASS	IP 55				
OPENING/CLOSING TIME	10 s	8 s	3 s	ADJUSTABLE (4 - 10 seconds)	
MAX. ARM LENGTH	6 m				
ELECTRONIC CONTROL UNIT	GATE 1 DG			UNIGATE FV INVERTER	UNIGATE BR 36V

➔ The indicated usage rate is valid only for the first operating hour and at a 20°C temperature

➔ The usage rate is valid only if all the arm length parameters and the respective speeds are respected; refer to this table and to those below

➔ Speed setting must respect the minimum value indicated in the «Minimum Opening Time» column which varies according to the arm length; DO NOT set values lower than the minimum times indicated

### ARMS SPEED CHART (SPRINT IV AND SPRINT BR ONLY)

ARM LENGTH (m)	SPRING WIRE DIAMETER (mm)	SPRING CODE	ARM TYPE	MINIMUM OPENING TIME (s)	DEFAULT OPENING TIME (s)	SPRING END-ROD JOINT COLOR
3	6,5	16400010R1	LIGHT -TH	4	5	GREEN
4	7	16400015R1	LIGHT -TH	5	6,5	BLUE
5	8	16400026R1	LIGHT -TH	7	8	PINK
6	9	16400027R1	LIGHT -TH	8	10	VIOLET

### SPRINGS FOR «LIGHT-TH» ARMS

ARM LENGTH (m)	SPRING WIRE DIAMETER (mm)	SPRING CODE	SPRING END-ROD JOINT COLOR
2	5,5	16400005	RED
2,5	6,5	16400010R1	GREEN
3	6,5	16400010R1	GREEN
3,5	7	16400015R1	BLUE
4	7	16400015R1	BLUE
4,5	8	16400026R1	PINK
5	8	16400026R1	PINK
6	9	16400027R1	VIOLET

➔ In case of FOLDING ARM, set the control unit on 6 meters (menu 11) even if the maximum length of the folding arm is 4 meters!

## 1 - LEFT OR RIGHT HAND ARM ARRANGEMENT

The **SPRINT** barrier can be installed either for left or right-hand opening

The opening direction depends on the position of the balancing spring - see **chapter 4**:

If the spring is left-hand installed, the arm opens to the left;

If the spring is right-hand installed, the arm opens to the right;

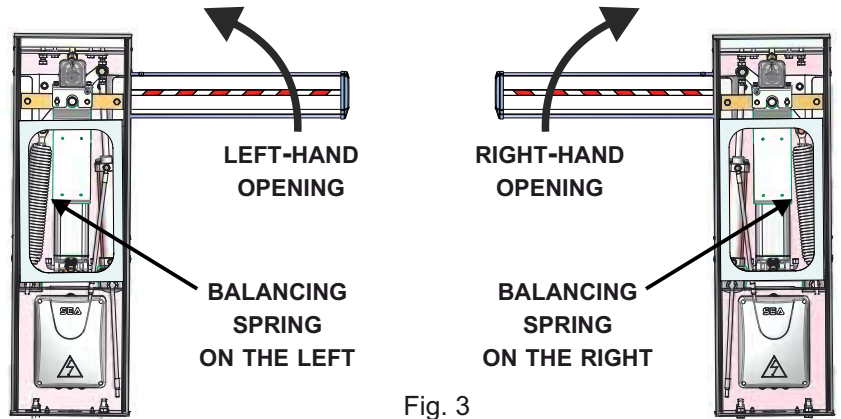


Fig. 3

## 2 - INSTALLATION OF THE FOUNDATION PLATE

To install the foundation plate it is necessary to:

**2.1.** Prepare a concrete slab according to the dimensions shown in Fig. 4;  
 The anchor bolts must be concreted inside the slab. The foundation plate must be fixed on the anchor bolts and concreted on the slab

***IF ALLOWED BY THE STRUCTURE, IT IS RECOMMENDED TO LIFT THE FOUNDATION PLATE OF ABOUT 50mm FROM THE GROUND, TO AVOID WATER PUDDLING.***

**2.2.** Insert the flexible plastic pipe ( $\varnothing 30\text{ mm}$  at least) for the electric cables into the special hole of the plate

**2.3.** Make sure that the plate is perfectly leveled and that the anchor bolts come out of the plate for **30 mm**, as shown in Fig. 5

**2.4.** Fill up the excavation using «R425» concrete; carefully level the plate on the concrete.

DIMENSIONS IN mm

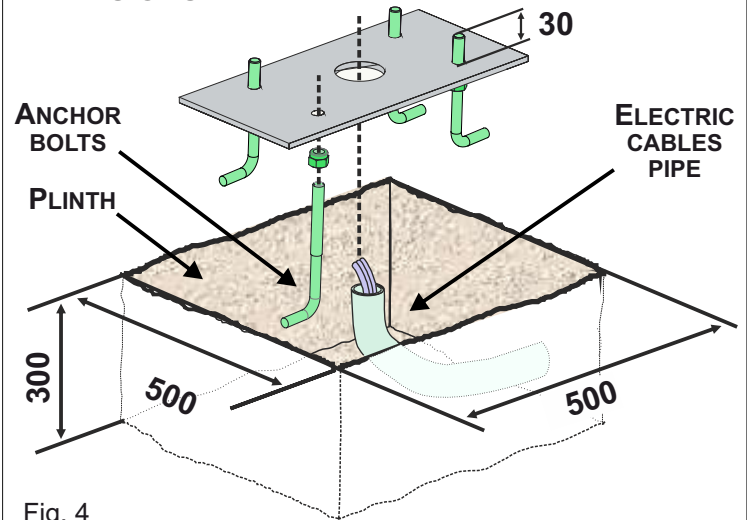


Fig. 4

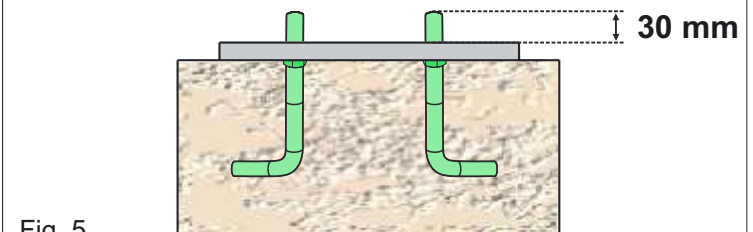


Fig. 5

## 3 - INSTALLATION OF THE BARRIER ON THE FOUNDATION PLATE

**3.1.** Place the barrier housing on the foundation plate by matching the base holes with the anchor bolts coming out of the plate

**3.2.** Make sure that the electric cables pipe has perfectly passed through the large hole at the base of the barrier housing

**3.3.** Fix the barrier housing to the foundation plate using the nuts and washers provided - Fig. 6 and Fig. 7

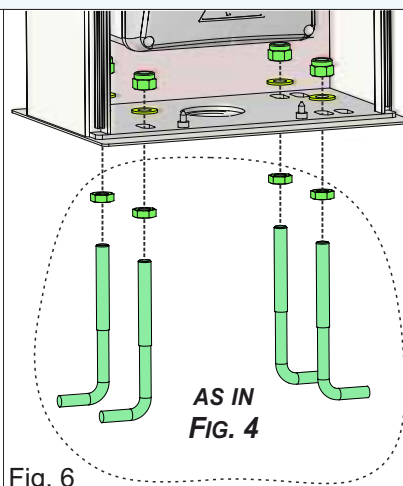


Fig. 6

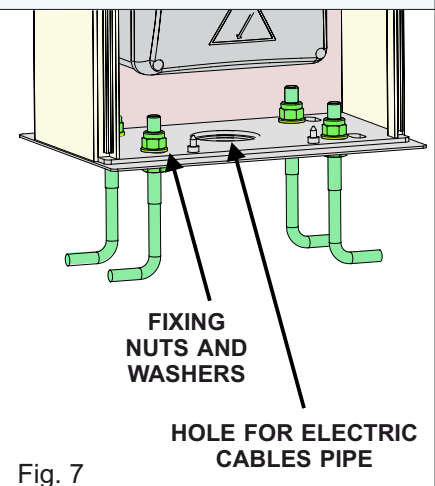


Fig. 7



## 4 - LEFT OR RIGHT HAND INSTALLATION OF THE PISTON AND SPRING

**SPRINT barrier is supplied with left-hand opening arm as standard**; it is possible to change the opening direction by moving both the piston and the balancing spring.

**4.1.** Before carrying out the moving operation, release the operator - **see chapter 13** - and, on the hydraulic unit, **LOOSEN THE TWO FITTINGS OF THE HYDRAULIC PIPES BY HALF A TURN** (pipes connecting hydraulic unit to the piston) to simplify the piston rotation.

**Be careful not to choke the hydraulic pipes!** (not visible in the figures!)

**4.2. CHANGE OF THE OPENING DIRECTION - (RIGHT-HAND OPENING)**

- unscrew and pull out the balancing spring - Fig. 11

- unscrew the hydraulic piston - Fig. 8, move it gently from its position by rotating on itself 360° - Fig. 9 - to release it from the hydraulic pipes and prevent them from intertwining, then place the piston on the opposite side of the barrier and tighten with the fixing screws - Fig. 10

- lubricate the piston rod-end spherical bearing with *DIN 51502 KP 2 N-20 - K 2 K-20* grease

- place the balancing spring on the opposite side of the barrier, greasing the parts indicated in Fig. 12

**4.3.** In case of ordinary replacement of the spring, according to the barrier opening direction, disassemble the old spring and reassemble the new one following the tightening instructions in Fig. 11 or in Fig. 12

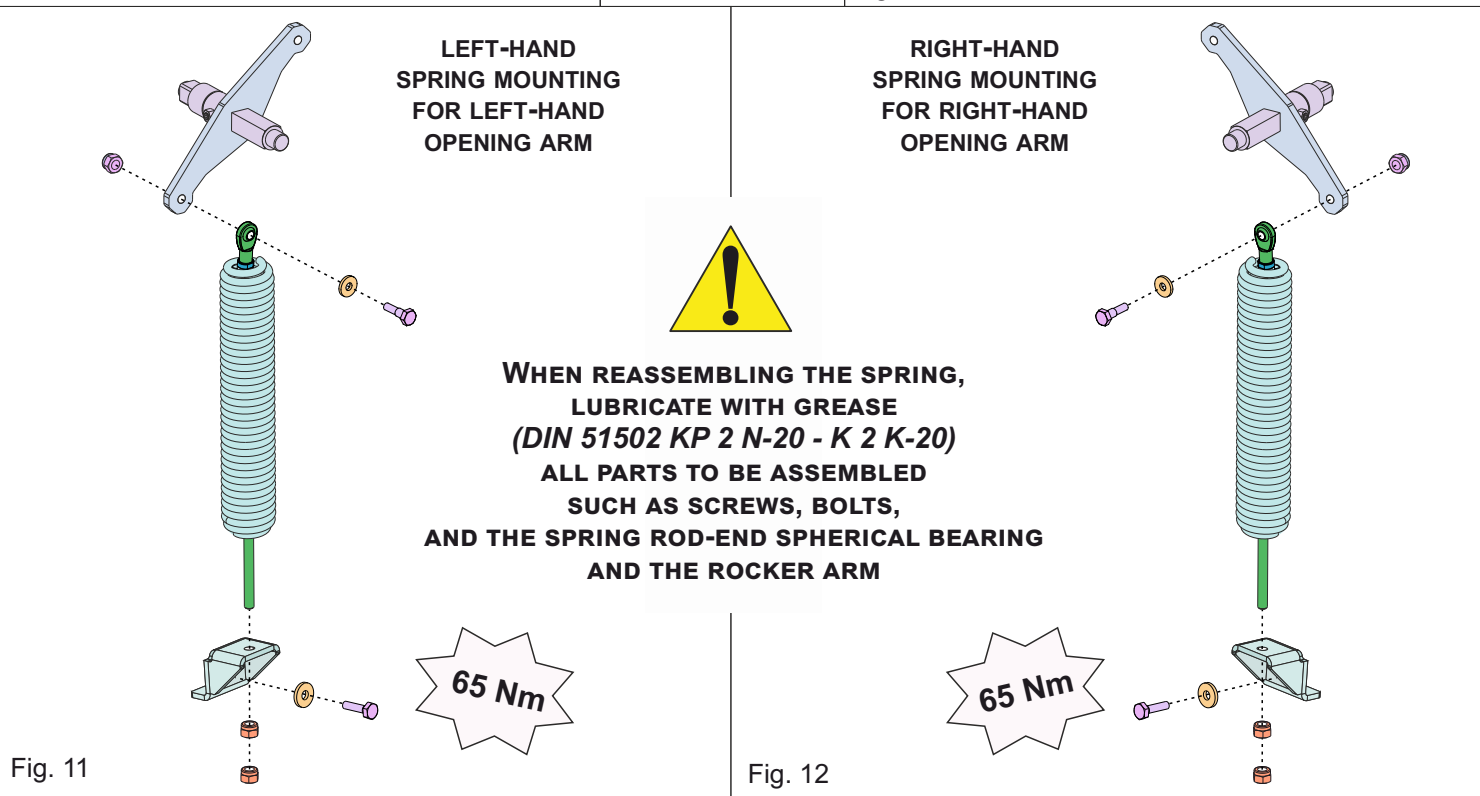
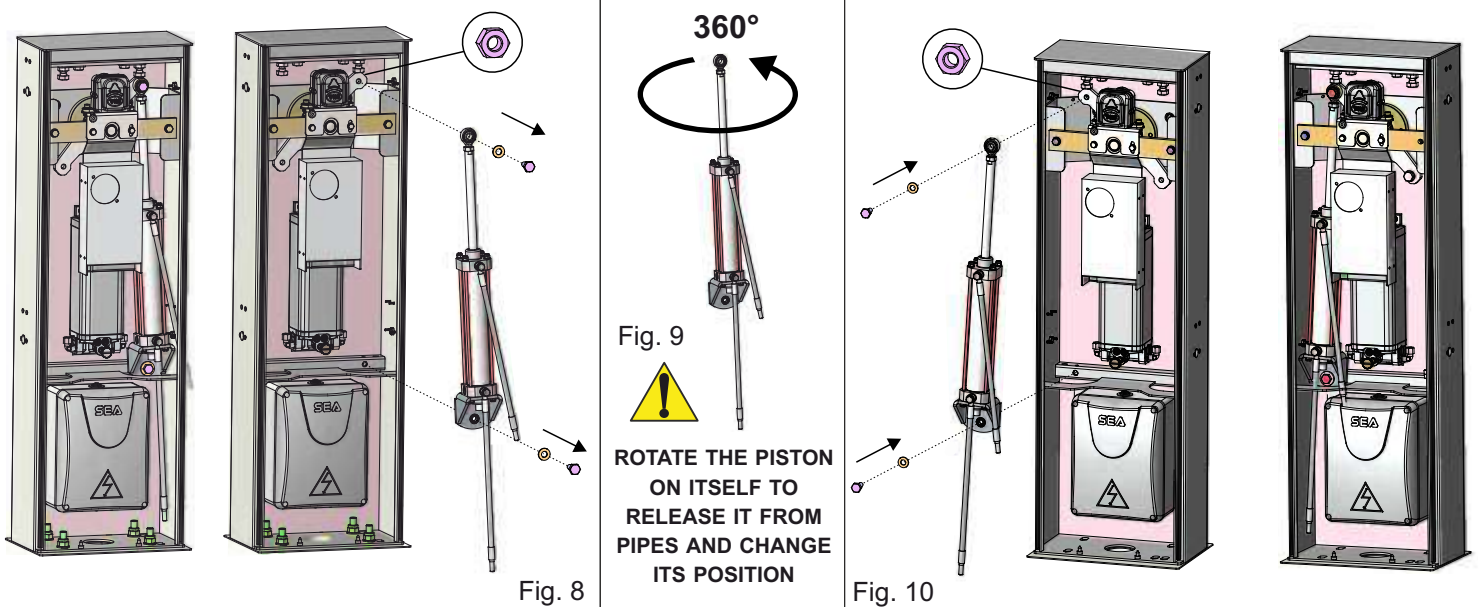


Fig. 11

Fig. 12

## 5 - ARM INSTALLATION ON THE BARRIER

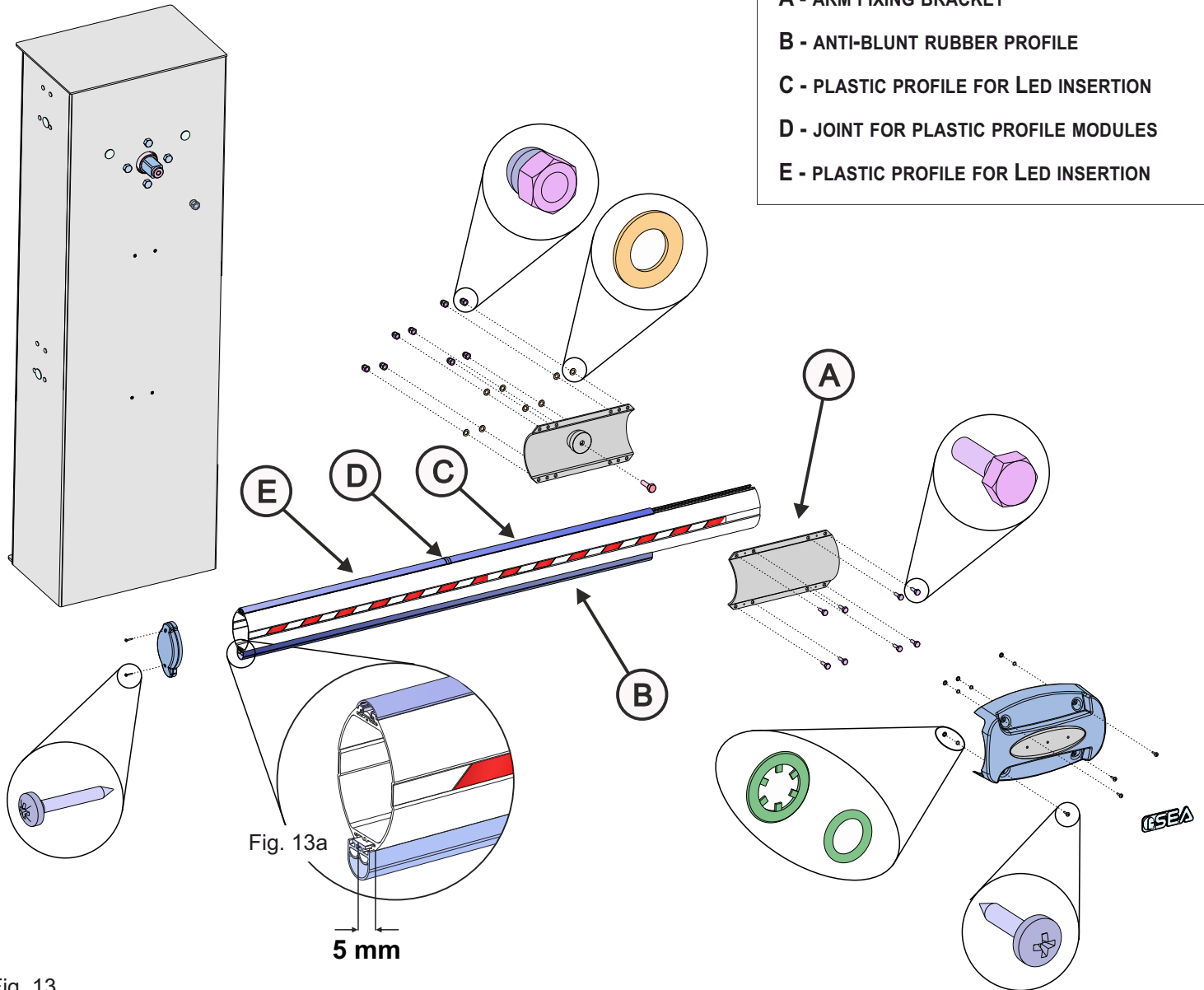


Fig. 13

The «LIGHT TH» arm for SPRINT barrier is supplied in a single module for lengths up to 3 meters, and in two modules «FIX» + «MB» with joint, for lengths over 3 meters.

**For the assembly of the modules, please refer to the arm technical instructions.**

### 5.1. INSTALLATION OF THE PLASTIC PROFILE FOR LED LIGHTS INSERTION (LED LIGHTS ARE OPTIONAL)

The plastic profile must be mounted on the upper side of the arm;  
Insert the first module of the plastic profile «C» in the guide up to the edge of the arm fixing bracket «A»;  
Insert the joint «D» followed by the next plastic profile module «E» - repeat for the following modules, each spaced out by the joint, until the end of the arm; cut out the exceeding module, if necessary.

### 5.2. INSTALLATION OF THE ANTI-BLUNT RUBBER PROFILE

The anti-blunt rubber profile must be mounted on the lower side of the arm;  
Insert the rubber profile «B» in the guide, sliding up to the edge of the arm fixing bracket «A»;



**CUT OUT THE EXCEEDING RUBBER PROFILE MAKING SURE IT COMES OUT OF THE ARM FOR 5 mm - Fig. 13a**

➔ **For arms longer than 4 meters, it is recommended to install the fork support on the ground (to be installed at the end of the arm) or to install the folding support (to be installed on the arm)**

## 6 - SKIRT INSTALLATION (OPTIONAL)

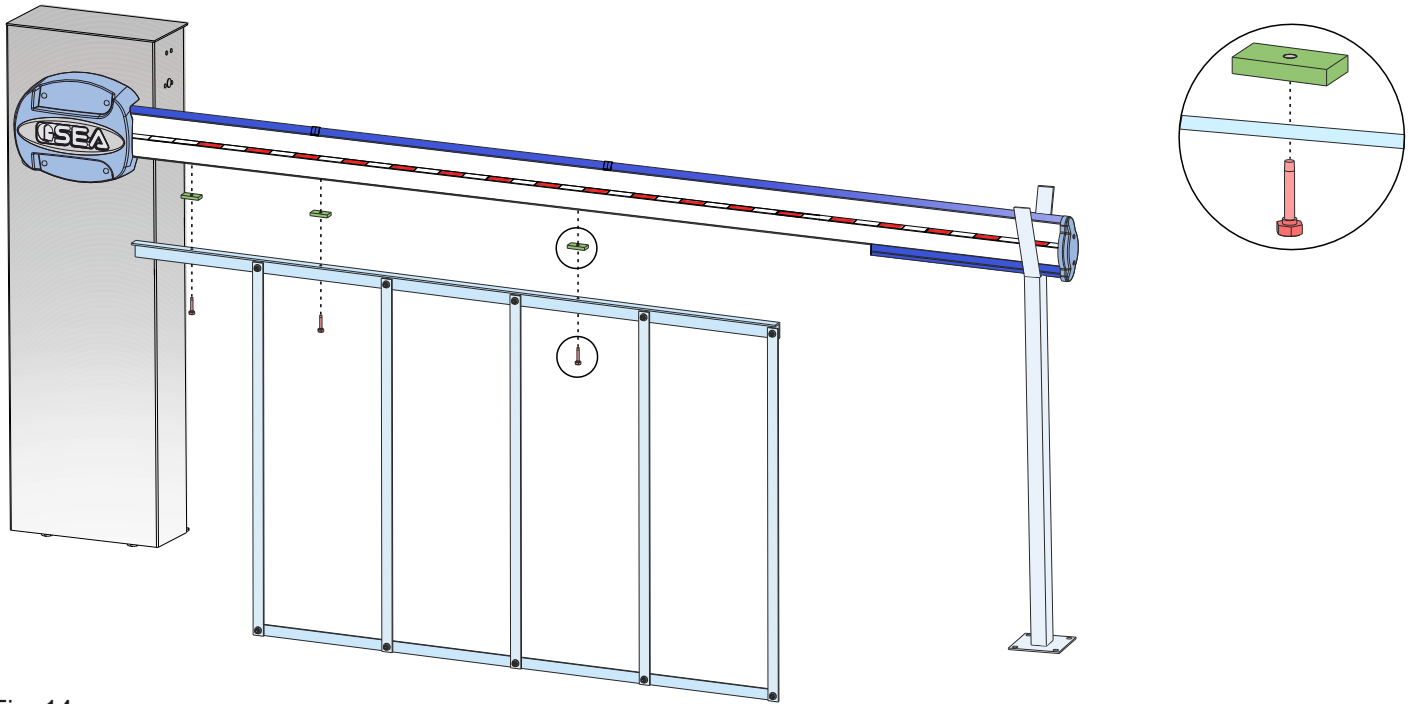


Fig. 14

## 7 - ARM BALANCING OPERATION

**⚠** For the correct balancing of the arm, it is recommended to unscrew the piston from the rocker arm, as shown in CHAPTER 4 - Fig. 8 or Fig. 10

7.1. Release the arm using the manual release - **chapter 13** - in order to move it manually

7.2. Place the arm halfway, approximately 45°

7.3. Tighten or loosen the spring-tensioner nut until the spring counter-balances the weight of the arm placed at 45°;  
The optimal balancing position is when the arm stays in the position shown in Fig. 15

7.4. Once the arm has been balanced, lock the spring-tensioner nut by tightening the counter-nut.

7.5. Re-lock the arm as shown in **chapter 13**

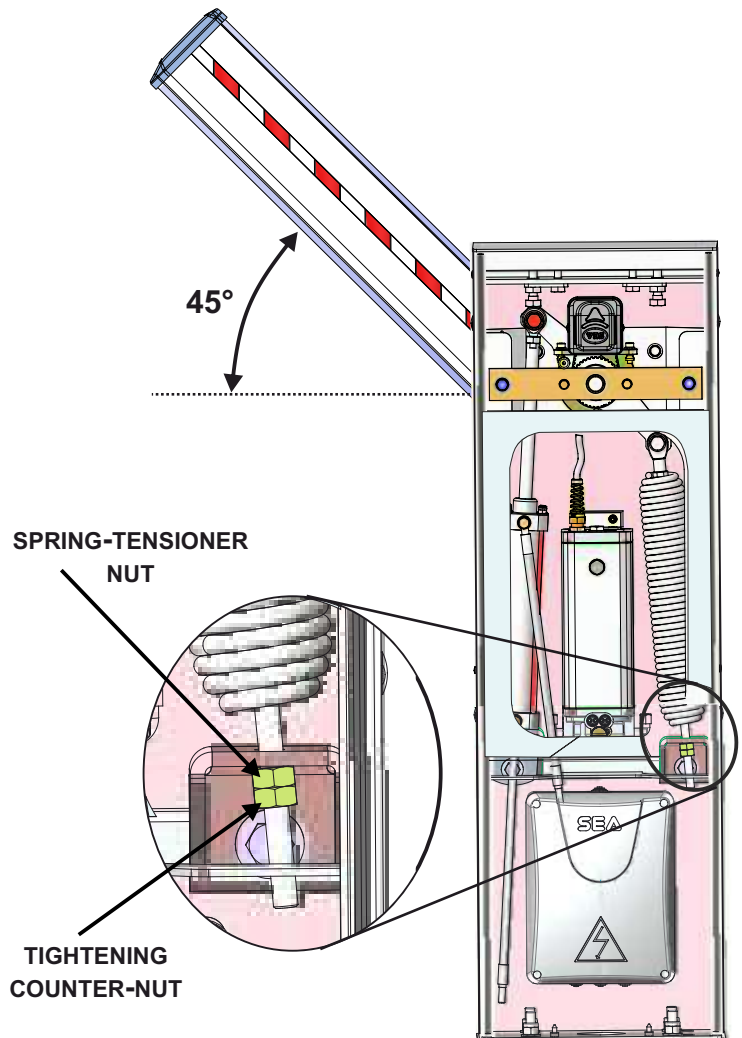


Fig. 15

## 8 - ARM LEVELING

**⚠** Carry on the following procedure only if the arm does not stay perfectly horizontal (in closing) or vertical (in opening) at the end of its stroke

8.1. Release the arm using the manual release - **chapter 13** - in order to move it manually

8.2. Loosen the nut «B»

8.3. Tighten or loosen the screw «A» until the arm gets in vertical position in opening and in horizontal position in closing;

8.4. Once a perfect leveling has been achieved, lock the screw «A» by tightening the nut «B»

8.5. Re-lock the arm as shown in **chapter 13**

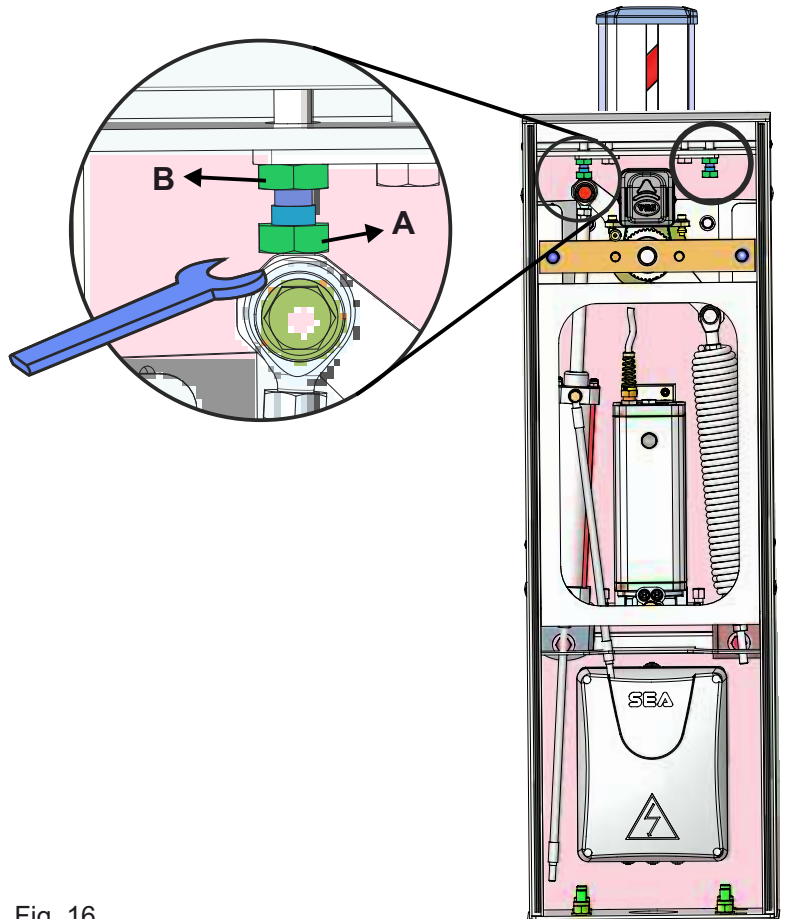


Fig. 16

## 9 - ADJUSTMENT OF THE THRUST FORCE (BY-PASS VALVES)

**⚠** The **SPRINT** barrier is factory set to a force of 15 KgF in order to ensure the anti-crushing safety, so it is recommended to modify this setting only in case of absolute need!

9.1. If necessary, adjust the thrust force of the barrier through the By-Pass valves placed on the front side of the hydraulic unit - Fig. 17

- Turn clockwise to increase the force;
- Turn counter-clockwise to decrease the force;

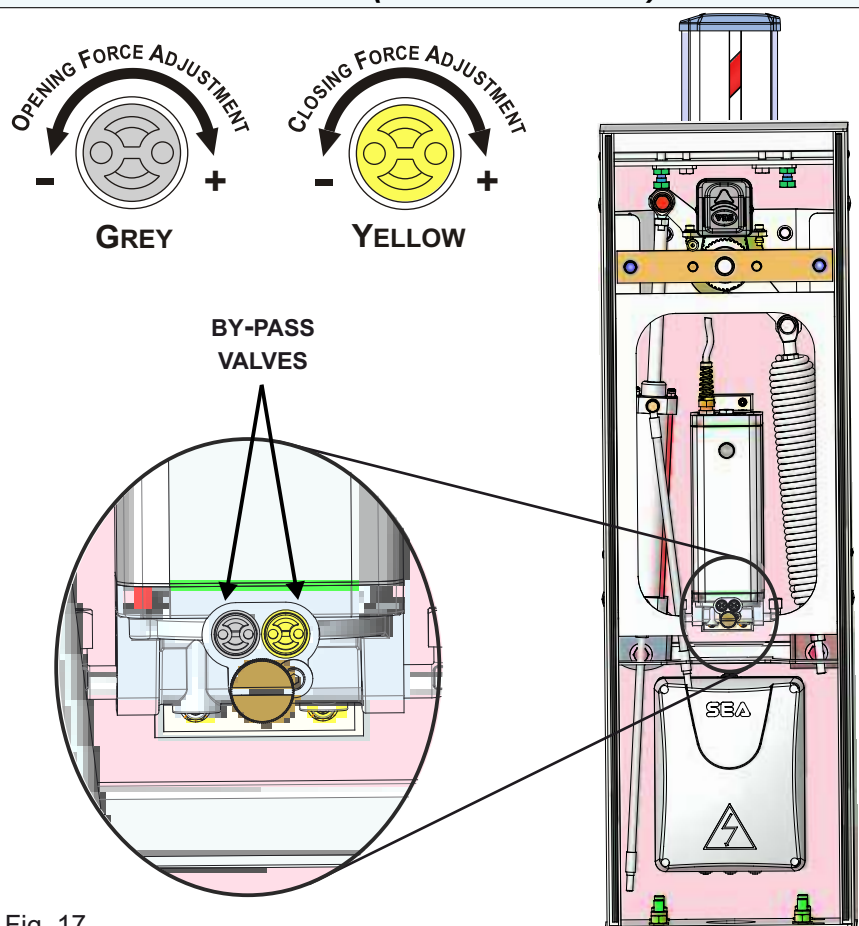


Fig. 17

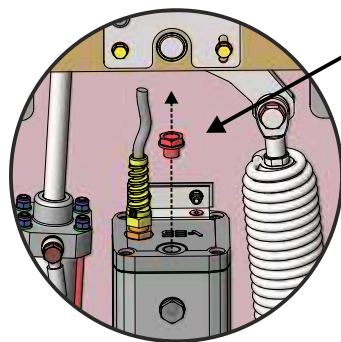


## 10 - BREATHER CAP REPLACEMENT

**10.1.** Before starting the barrier, remove the red transport cap and replace it with the black one supplied and equipped with the airhole;

The cap is on the top of the hydraulic unit - Fig. 18

On **SPRINT BR** model the cap is hidden behind the **switching**, so pass the hand behind the metal support to unscrew the cap.



REMOVE THE RED  
TRANSPORT CAP

REPLACE IT  
WITH THE BLACK  
BREATHER CAP



Fig. 18

## 11 - DRILLING HOLES DIAGRAM FOR LED LIGHTS CABLES PASSAGE

**11.1.** The Fig. 19 shows the drilling holes diagram for the passage of the power cables of the barrier lights;

**11.2.** If the arm is left-hand installed - Fig. 19a, then use hole «A» - Fig. 19

**11.3.** If the arm is right-hand installed - Fig. 19b, then use hole «B» - Fig. 19

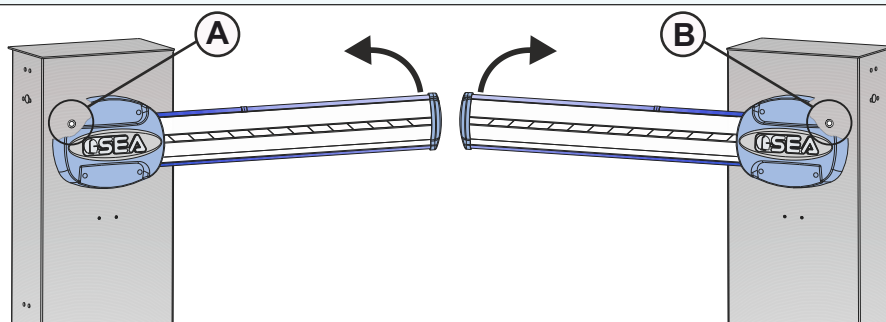


Fig. 19a

Fig. 19b

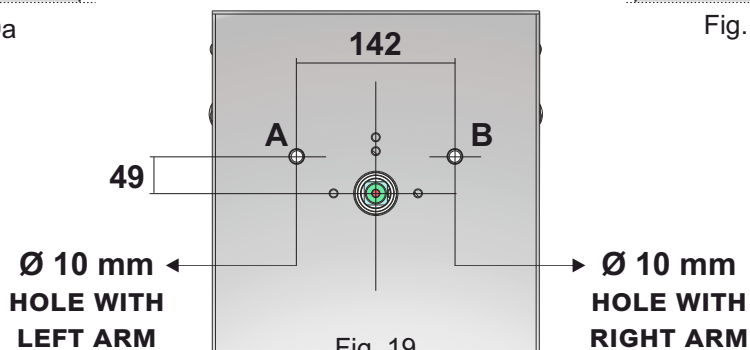


Fig. 19

## 12 - ELECTRIC WIRINGS

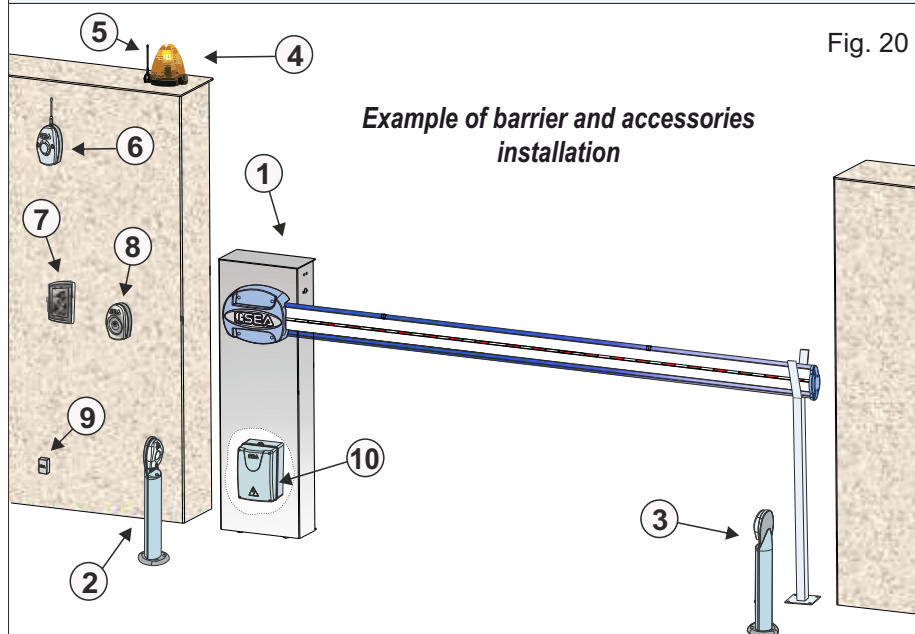


Fig. 20

### RECOMMENDED CABLES NUMBER AND SECTION FOR WIRINGS ON CONTROL UNIT

1) BARRIER (MOTOR)	→	4 x 1,5
2) PHOTOCCELL TX	→	2 x 0,5
3) PHOTOCCELL RX	→	4 x 0,5
4) FLASHING LAMP	→	2 x 0,5
5) ANTENNA	→	1 x RG58
6) EXTERNAL RECEIVER	→	4 x 0,5
7) KEYPAD	→	4 x 0,5
8) KEY-BUTTON	→	4 x 0,5
9) DIFFERENTIAL 16A/30mA	→	3 x 1,5 *
10) CONTROL UNIT BOX		

\* Increase the cable section in case of high distance from the control unit

**PART FOR BOTH INSTALLER AND END-USER**

**! ALL THE UNLOCKING AND LOCKING OPERATIONS AND ALL PERIODIC MAINTENANCE OPERATIONS MUST BE CARRIED OUT IN ABSENCE OF POWER SUPPLY!**

**13 - RELEASE SYSTEM**

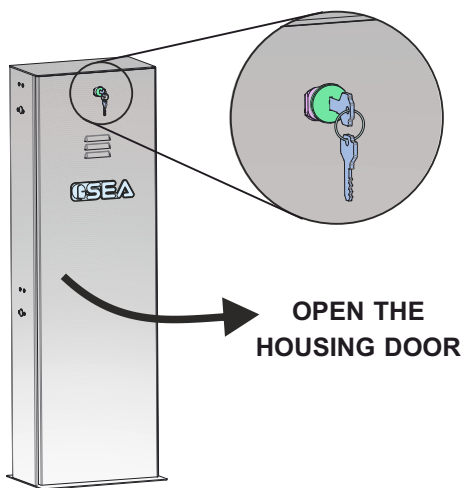
**13.1. TO RELEASE THE BARRIER**

- Open the barrier housing door, using the special key supplied - Fig. 21
- Turn the release screw 180° counter-clockwise with a screwdriver (*the screw is on the front side of the hydraulic unit*) - Fig. 22
- Manually move the arm

**13.2. TO LOCK THE BARRIER**

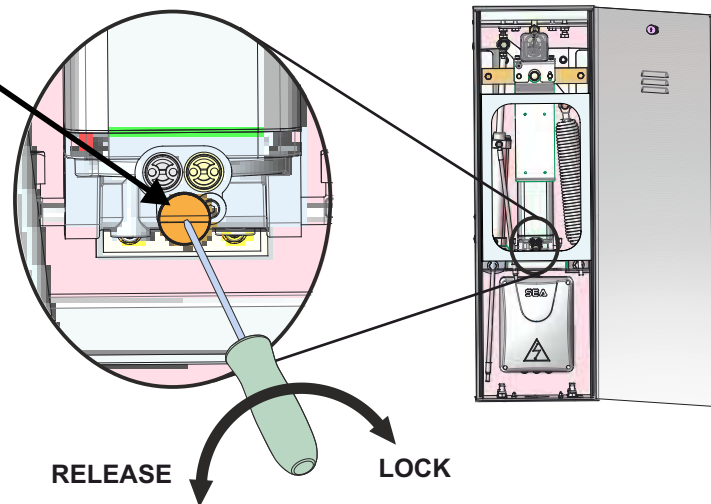
- Turn the release screw clockwise with the screwdriver, up to it stops
- Lock the barrier housing door

Fig. 21



RELEASE SCREW ON THE HYDRAULIC UNIT

Fig. 22



**14 - PERIODIC MAINTENANCE - FOR INSTALLERS ONLY!**

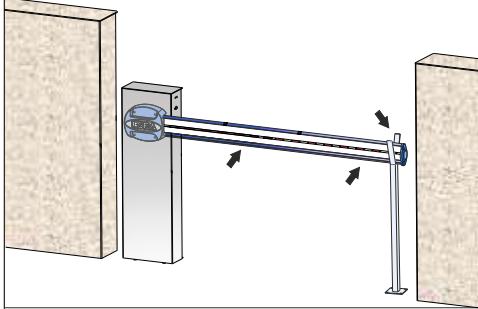
LUBRICATE THE SPRING AND PISTON ROD-END SPHERICAL BEARINGS ON THE ROCKER ARM	ANNUAL
CHECK THE CONDITION AND THE CORRECT OPERATION OF THE BALANCING SPRING	ANNUAL
CHECK THE CORRECT OPERATION OF THE RELEASE SYSTEM	ANNUAL
CHECK ALL THE FASTENING SCREWS ( <i>ARM, ROCKER ARM AND HOUSING FASTENING SCREWS</i> )	ANNUAL
CHECK THE CONDITION OF THE ELECTRIC CABLES	ANNUAL
CHECK THE CORRECT OPERATION OF THE BACK-UP BATTERIES ( <i>IF INSTALLED</i> )	ANNUAL

**! ALL OPERATIONS MUST BE CARRIED OUT EXCLUSIVELY BY AN AUTHORIZED INSTALLER**

**! ALL OPERATIONS MUST BE CARRIED OUT IN ABSENCE OF POWER SUPPLY**

## PART FOR BOTH INSTALLER AND END-USER

### GENERAL NOTICE



**RISK EXAMINATION:** The points pointed by arrows are potentially dangerous. The installer must take a thorough risk examination to prevent crushing, conveying, cutting, grappling, trapping so as to guarantee a safe installation for people, things and animals (Re. Laws in force in the Country where installation has been made). As for misunderstandings that may arise refer to your area distributor or call our help desk. These instructions are part of the device and must be kept in a well known place. The installer shall follow the provided instructions thoroughly. SEA products must only be used to automate doors, gates and wings. Any initiative taken without SEA explicit authorization will preserve the manufacturer from whatsoever respon-

sibility. The installer shall provide warning notices on not assessable further risks. SEA in its relentless aim to improve the products, is allowed to make whatsoever adjustment without giving notice. This doesn't oblige SEA to upgrade the past production. SEA can not be deemed responsible for any damage or accident caused by product breaking, being damages or accidents due to a failure to comply with the instructions herein. The guarantee will be void and the manufacturer responsibility will be nullified if SEA original spare parts are not being used. The electrical installation shall be carried out by a professional technician who will release documentation as requested by the laws in force. Packaging materials such as plastic bags, foam polystyrene, nails etc must be kept out of children's reach as dangers may arise.

**INITIAL TEST AND STARTING OF THE AUTOMATION:** After having completed the necessary operations for a correct installation of the product and after having evaluated all the risks which could arise in any installation, **it is necessary to test the automation to guarantee the maximum safety and to guarantee that the Laws in force are fully respected.** The first Start must be executed according to the rule **EN 12445** which establishes the methods of tests for checking the gate automation respecting the limits established by the rule **EN 12453**

**SAFETY PRECAUTIONS:** All electrical works should comply with the current regulations. A 16A/0,030 differential switch must be used. Separate the source cables (operators, power supply) and command cables (photocells, push-buttons, etc). Be sure the entire system is properly grounded. Always run cables in separate ducts to prevent interferences

**INTENDED USE:** The operator has been designed to be used as access automatic barrier only

**SPARE PARTS:** Send request for spare parts to: **SEA S.p.A. - Teramo - ITALY - [www.seateam.com](http://www.seateam.com)**

**SAFETY AND ENVIRONMENTAL COMPATIBILITY:** Don't waste product packing materials and/or circuits

**STORAGE:** T = -30°C/+60°C ; Humidity = min. 5% / max. 90% (without condensation); Materials must be properly packaged, handled with care and with appropriate vehicles

**WARRANTY LIMITS** - see the sales conditions

**MAINTENANCE AND DECOMMISSION:** must only be carried out by specialized and authorized personnel

**THE MANUFACTURER CAN NOT BE DEEMED RESPONSIBLE FOR ANY DAMAGE OR INJURY CAUSED BY IMPROPER USE OF THIS PRODUCT**

*SEA S.p.A. reserves the right to make any required modification or change to the products and/or to this manual without any advanced notice obligation.*

1. Read carefully these instructions before beginning to install the product. Store these instructions for future reference
2. Don't waste product packaging materials and/or circuits
3. This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger. SEAS.p.A. declines all liability caused by improper use or different use in respect to the intended one.
4. The mechanical parts must comply with Directives: Machine Regulation 2006/42/CE and following adjustments, Low Tension (2006/95/CE), Electromagnetic Consistency (2004/108/CE); Installation must respect Directives: EN12453 and EN12445.
5. Do not install the equipment in an explosive atmosphere.
6. SEA is not responsible for failure to observe Good Techniques in the construction of the locking elements to motorize or for any deformation that may occur during use
7. Before attempting any job on the system, cut out electrical power and disconnect the batteries. Be sure that the grounding system is perfectly constructed, and connect to it the metal parts of the gate
8. Use of the indicator-light is recommended for every system, as well as a warning sign well-fixed to the frame structure.
9. SEA declines all liability concerning the automated system safety and efficiency, if components used are not produced by SEA
10. For maintenance, strictly use original parts by SEA.
11. Do not modify in any way the components of the automated system.
12. The installer shall supply all information concerning the system manual functioning in case of emergency and shall hand over to the user the warnings handbook supplied with the product.
13. Do not allow children or adults to stay near the product while it is operating. The application cannot be used by children, by people with reduced physical, mental or sensorial capacity or by people without experience or necessary training. Keep remote controls or other pulse generators away from children, to prevent involuntary activation of the system.
14. Transit through the leaves is allowed only when the gate is fully open.
15. The User must not attempt to repair or to take direct action on the system and must solely contact qualified SEA personnel or SEA service centers. The User can apply only the manual function of emergency.
16. The power cables maximum length between the central engine and motors should not be greater than 10 m. Use cables with 2,5 mm<sup>2</sup> section. Use double insulation cable (cable sheath) to the immediate vicinity of the terminals, in particular for the 230V cable. Keep an adequate distance (at least 2.5 mm in air), between the conductors in low voltage (230V) and the conductors in safety low voltage (SELV) or use an appropriate sheath that provides extra insulation having a thickness of 1 mm



**SEA**®



**Automatic Gate Openers**

International registered trademark n. 804888

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