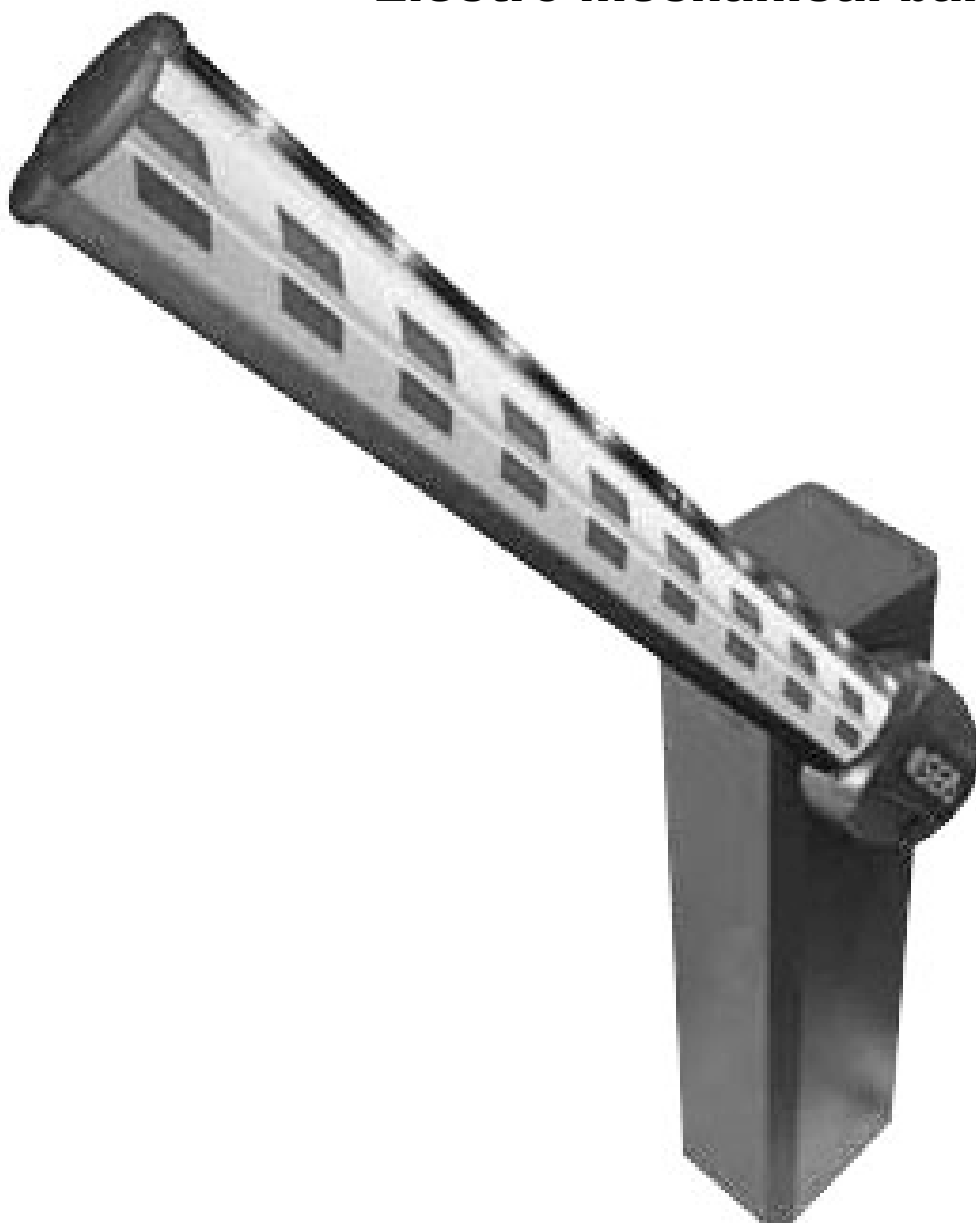




**SEA<sup>®</sup> USA**  
ELECTRONIC  
OPENING  
SYSTEMS  
International registered trademark n. 2.777.971

# **VERG 24V**

## **Electro-mechanical barrier**



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## Details

### General

An appliance shall be provided with an instruction manual. The instruction manual shall give instructions for the installation, operation, and user maintenance of the appliance.

The installation instructions shall specify the need for a grounding-type receptacle for connection to the supply and shall stress the importance of proper grounding.

The installation instructions shall inform the installer that permanent wiring is to be employed as required by local codes, and instructions for conversion to permanent wiring shall be supplied.

Information shall be supplied with a gate operator for:

- a) The required installation and adjustment of all devices and systems to effect the primary and secondary protection against entrapment (where included with the operator).
- b) The intended connections for all devices and systems to effect the primary and secondary protection against entrapment. The information shall be supplied in the instruction manual, wiring diagrams, separate instructions, or the equivalent.

### Vehicular gate operators (or systems)

A vehicular gate operator shall be provided with the information in the instruction manual that defines the different vehicular gate operator Class categories and give examples of each usage. The manual shall also indicate the use for which the particular unit is intended as defined in Glossary, Section 3. The installation instructions for vehicular gate operators shall include information on the Types of gate for which the gate operator is intended.

A gate operator shall be provided with the specific instructions describing all user adjustments required for proper operation of the gate. Detailed instructions shall be provided regarding user adjustment of any clutch or pressure relief adjustments provided. The instructions shall also indicate the need for periodic checking and adjustment by a qualified technician of the control mechanism for force, speed, and sensitivity.

Instructions for the installation, adjustment, and wiring of external controls and devices serving as required protection against entrapment shall be provided with the operator when such controls are shipped with the operator.

Instructions regarding intended installation of the gate operator shall be supplied as part of the installation instructions or as a separate document. The following instructions or the equivalent shall be supplied where applicable:

- a) Install the gate operator only when:
  - 1) The operator is appropriate for the construction of the gate and the usage Class of the gate,
  - 2) All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 4 feet (1.22 m) above the ground to prevent a 2-1/4 inch (57.2 mm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position,
  - 3) All exposed pinch points are eliminated or guarded, and
  - 4) Guarding is supplied for exposed rollers.
- b) The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening. The pedestrian access opening shall be designed to promote pedestrian usage. Locate the gate such that persons will not come in contact with the vehicular gate during the entire path of travel of the vehicular gate.
- c) The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.
- d) The gate must be properly installed and work freely in both directions prior to the installation of the gate operator. Do not over-tighten the operator clutch or pressure relief valve to compensate for a damaged gate.
- e) (not applicable)
- f) Controls intended for user activation must be located at least six feet (6') away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls. Outdoor or easily accessible controls shall have a security feature to prevent unauthorized use.



g) The Stop and/or Reset button must be located in the line-of-sight of the gate. Activation of the reset control shall not cause the operator to start.

h) A minimum of two (2) WARNING SIGNS shall be installed, one on each side of the gate where easily visible.

i) For gate operators utilizing a non-contact sensor:

- 1) See instructions on the placement of non-contact sensors for each Type of application,
- 2) Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle, trips the sensor while the gate is still moving, and
- 3) One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.

j) For a gate operator utilizing a contact sensor:

- 1) One or more contact sensors shall be located where the risk of entrapment or obstruction exists, such as at the leading edge, trailing edge, and postmounted both inside and outside of a vehicular horizontal slide gate.
- 2) One or more contact sensors shall be located at the bottom edge of a vehicular vertical lift gate.
- 3) One or more contact sensors shall be located at the pinch point of a vehicular vertical pivot gate.
- 4) A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.
- 5) A wireless contact sensor such as one that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless contact sensor shall function under the intended use conditions.
- 6) One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 6 inches (152 mm) above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.
- 7) One or more contact sensors shall be located at the bottom edge of a vertical barrier (arm).

Revised 56.8.4 effective February 21, 2008

Instruction regarding intended operation of the gate operator shall be provided as part of the user instructions or as a separate document. The following instructions or the equivalent shall be provided:

**IMPORTANT SAFETY INSTRUCTIONS**

**WARNING** – To reduce the risk of injury or death:

**ATTENTION:** *pour réduire le risque de dommages ou mort:*

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. Never let children operate or play with gate controls. Keep the remote control away from children.
3. Always keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.
4. Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of injury or death.
5. Use the emergency release only when the gate is not moving.
6. KEEP GATES PROPERLY MAINTAINED. Read the owner's manual. Have a qualified service person make repairs to gate hardware.
7. The entrance is for vehicles only. Pedestrians must use separate entrance.
8. SAVE THESE INSTRUCTIONS.



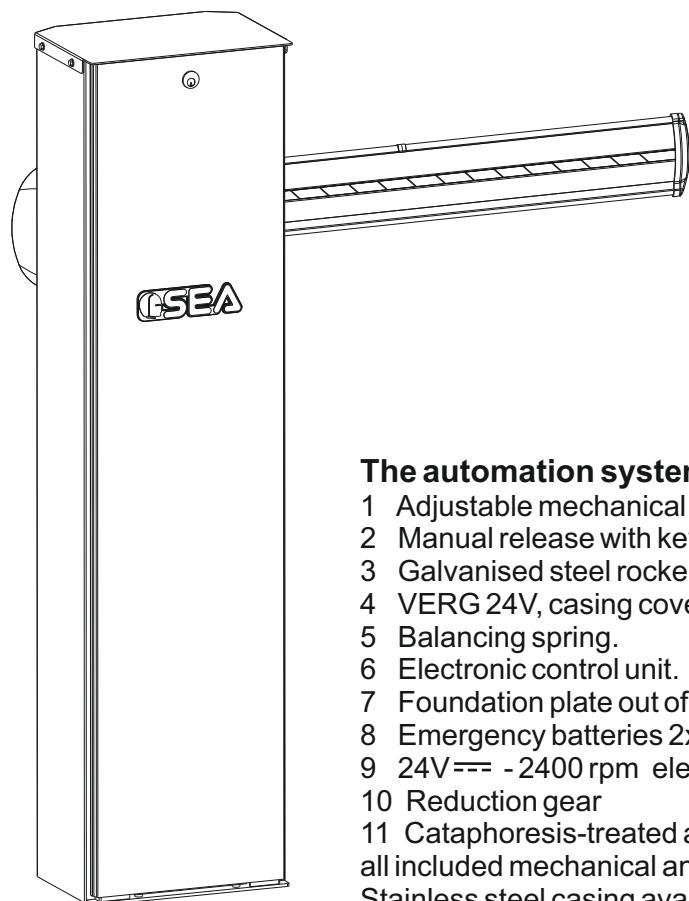
# Changes Coming to UL 325 for Gate Operators

Starting on Jan. 12, 2016, new UL 325 changes take effect, bringing a series of new mandates for the gate operator industry. Here's a quick guide to the key modifications.

- 1. Entrapment-Protection Devices.** Gate operators are required to have a minimum of two independent means of entrapment protection where the risk of entrapment or obstruction exists. A manufacturer can use two inherent-type systems, two external-type systems, or an inherent and an external system to meet the requirement. However, the same type of device cannot be used for both means of protection.
- 2. Monitoring Required.** An external non-contact sensor or contact sensor may be used as a means of entrapment protection. However, the sensor must be monitored once every cycle for (1) the correct connection to the operator and (2) the correct operation of the sensor.  
If the device is not present, not functioning, or is shorted, then the gate operator can only be operated by constant pressure on the control device. Portable wireless controls will not function in this case.
- 3. Entrapment Risk Identification.** As in the past, it's up to the installer to examine the installation and determine where a risk of entrapment or obstruction exists. Manufacturers are required to provide instructions for the placement of external devices, but they give only examples of suggested entrapment protection in their installation manuals. If the installer identifies a risk of entrapment or obstruction, at least two independent means of entrapment protection are required.
- 4. Terminology Change.** The terms "primary" and "secondary" have been removed in the description of entrapment protection devices. This was done to emphasize that all entrapment protection devices are equally important.
- 5. The End of Type E.** Type E (audible alarm) devices can no longer be used for entrapment protection. This change was made because the Type E device is really a warning device, not an entrapment-protection device. Also, all gate operator classes are now required to have an audio alarm that sounds when two successive obstructions are encountered via a contact-type system.
- 6. Access Control Location for Emergency Use.** An exception has been added in the manufacturer's instructional requirements for the location of controls that operate the gate.  
The instructional requirements state that these controls must be at least 6' away from any moving part of the gate. In the new exception, "Emergency access controls only accessible by authorized personnel (e.g., fire, police, EMS) may be placed at any location in the line-of-sight of the gate."
- 7. Barrier-Arm Operator Exception.** An exception has changed for barrier-arm gate operators requiring entrapment protection. The previous exception stated that a barrier-arm operator did not require entrapment protection if the arm did not move toward a rigid object closer than 2'. The distance has been reduced to 16" so it more closely aligns with the industry-defined entrapment protection provisions in ASTM F2200.
- 8. Gate Operator Class II and Class III Definitions.** The definitions for installation classes for gate operators were modified. Class II now includes commercial locations *accessible* to the general public. Class III was refined to specify industrial locations *not accessible* to the general public. These changes, while seemingly minor, may affect which gate operator is suitable for a particular installation location.



## VERG 24V BARRIER



### General features

VERG 24V is an electro-mechanical barrier (6.56, 9.84, 13.12, 16.40 feet) recommended for the automation of access points which require a high opening/closing speed (parking lots, motorways, airports, etc.) and frequent use features. The automation includes an anti-crush security system with adjustable sensitivity, which guarantees a barrier force value not exceeding 33 pound, thus protecting people and objects from any accidents. A highly reliable slowdown device guarantees the total control of the forces of inertia.

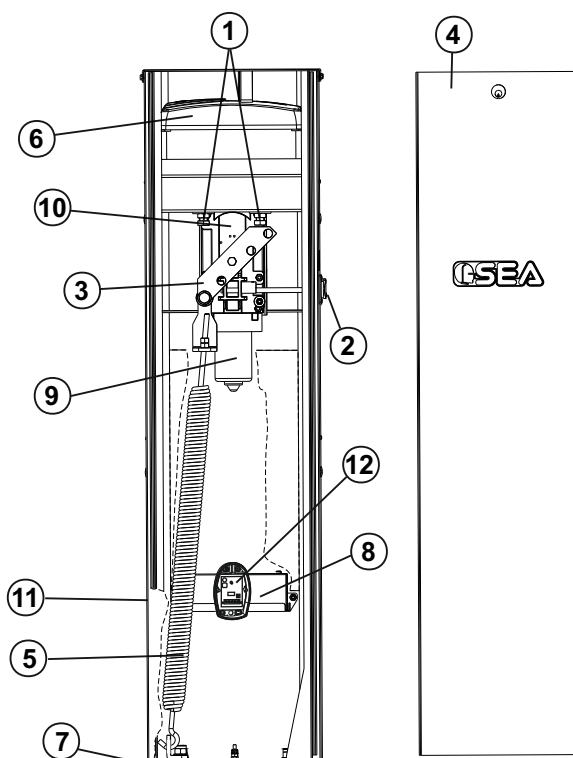
The emergency batteries guaranty at least 15 opening cycles (depending on the installed accessories) in case of power failure and a release system allows the manual opening in case of emergency.

### The automation system is composed of the following elements:

- 1 Adjustable mechanical stop
- 2 Manual release with key
- 3 Galvanised steel rocker arm.
- 4 VERG 24V, casing cover with lock and DIN key
- 5 Balancing spring.
- 6 Electronic control unit.
- 7 Foundation plate out of galvanized steel
- 8 Emergency batteries 2x12V 2Ah.
- 9 24V  $\text{---}$  - 2400 rpm electric motor
- 10 Reduction gear
- 11 Cataphoresis-treated and polyester painted VERG 24V casing, for outside, protects all included mechanical and electronic devices from fire, flood, lightning, etc. Stainless steel casing available on request.
- 12 Battery charger circuit

### Main components:

- 1) Adjustable mechanical stop
- 2) Manual release system
- 3) Rocker arm
- 4) VERG 24V casing cover
- 5) Balancing spring
- 6) Electronic control unit
- 7) VERG anchoring plate (optional)
- 8) Emergency batteries 2x12V 2Ah (optional)
- 9) 24V  $\text{---}$  electric motor
- 10) Gearbox
- 11) VERG casing
- 12) Battery charger circuit (optional with battery kit)

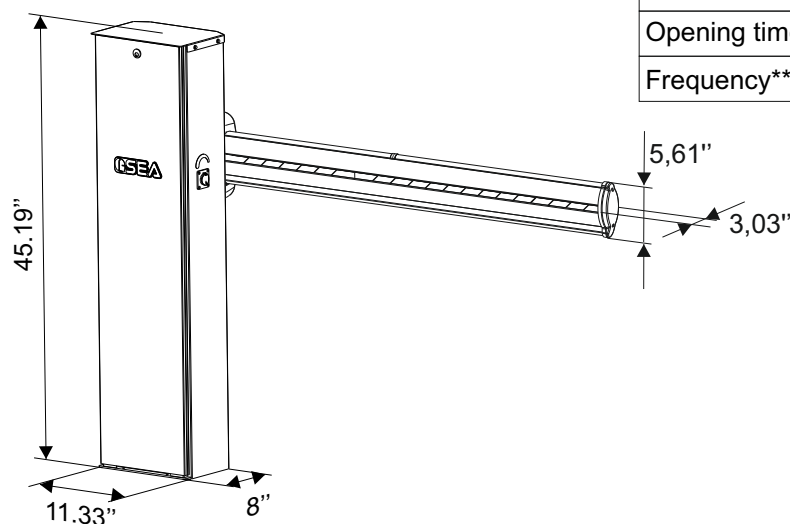




TECHNICAL FEATURES	VERG 115V
Supply voltage	115 V~ ± 5% - 50/60 Hz
Motor power supply	24Vdc
Motor power	60 W
Motor speed	2400 RPM
Working temperature	-4°F + 131°F
Opening/closing time	Adjustable
Protection class	IP55
Manual release system	Yes
Usage frequency	60%
Anti-crushing device	Ammeter
Holding block	Yes
Slowdown	Electronic
Barrier body treatment	Cataphoresis treated and polyester painted
Weight	86 pound
Electronic equipment	USER 1 24V

**Note:** The frequency of use is valid only for the first hour at 68°F room temperature.

## OVERALL DIMENSIONS:



## BEAMS RECOMMENDED SPEED

VERG	6.56 feet	9.84 feet	13.12 feet	16.40 feet	Articulated beam 9,84 feet
Opening time*	2-3 sec	3-4 sec	4-5 sec	5-6 sec	5-6 sec
Frequency**	60%	50%	45%	35%	35%

\*To guarantee longer life of the barrier, SEA recommend to adjust the speed giving an extra time of at least 1 sec from the Max Speed as for this chart.

\*\* SEA grant those performances only for the 1st hour of operation. After 1 st hours cycles can drop up to 50%. Cycles are granted only with slowdown active. Periodically check the balance of the beam.

## INSTALLATION INSTRUCTIONS

### 1) Spring position

Opening on the left



Opening on the right

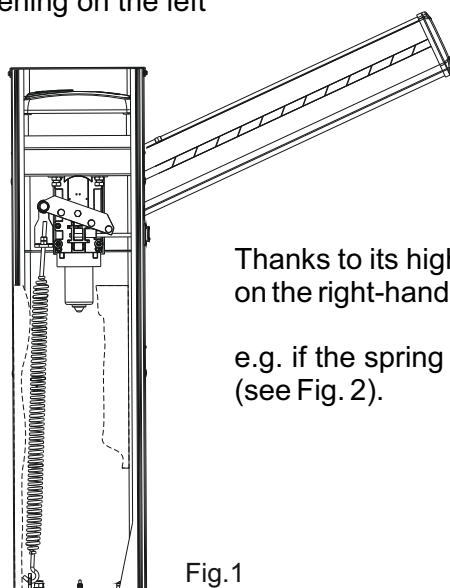


Fig.1

Thanks to its high flexibility, the barrier you are installing can be closed on the right-hand or left-hand side of the post, according to your needs.

e.g. if the spring is on the right-hand side, the guard closes on the left (see Fig. 2).

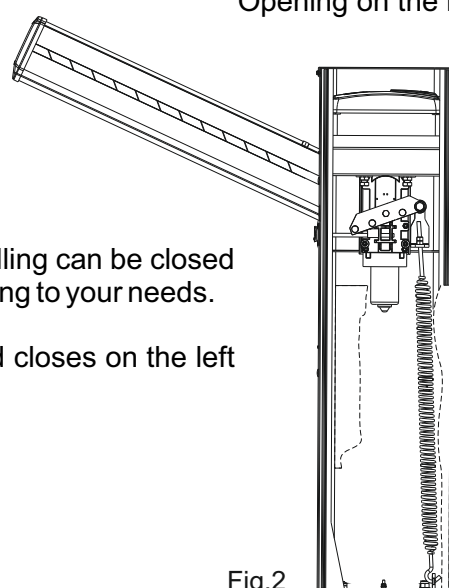


Fig.2





## 2) Foundation plate anchoring

- Make a 19,7" x 19,7" x 11,8" (depth) hole in the ground.
  - Widen the foundation plate clamps till they reach approx. 60° (Fig. 3).
  - Fill the hole with R425 concrete and place the foundation plate as shown in Fig. 3.
  - Accurately level the plate.
- \* The middle hole of the plate must be used for cable routing. Therefore, make sure that the conduit connected to the hole complies with current regulations, before filling the hole with concrete.

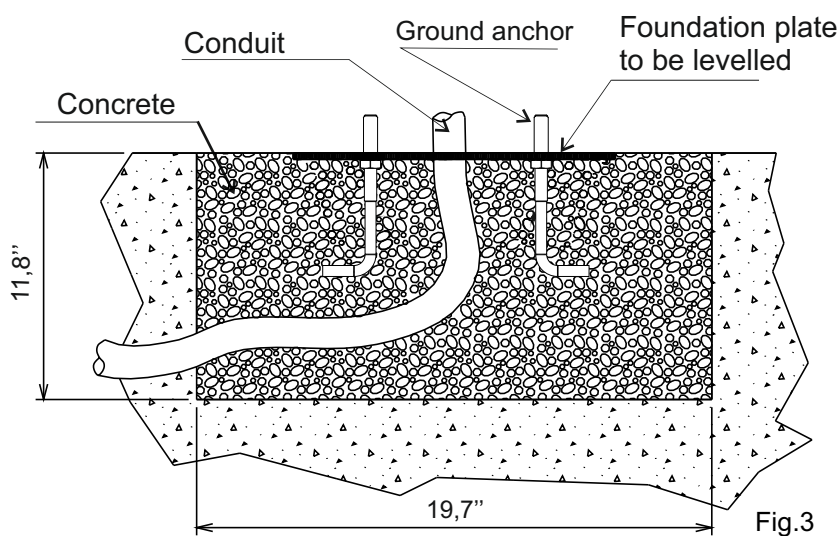


Fig.3

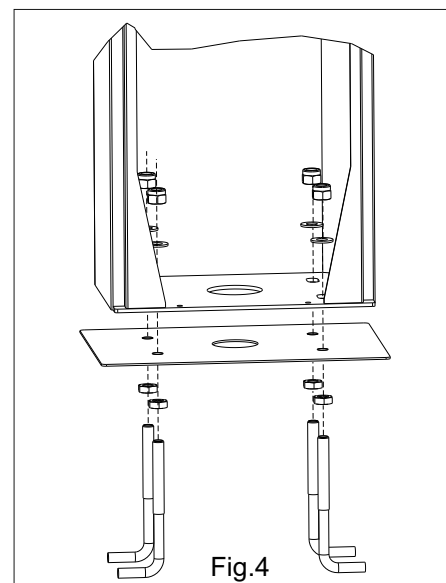


Fig.4

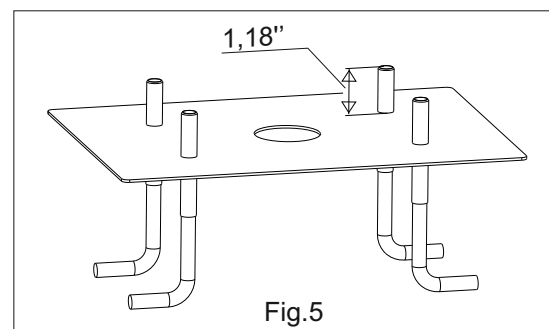


Fig.5

## 3) Post anchoring on the foundation plate

- Place the casing so that the holes on the base match the screws located on the foundation plate.
- Make sure that the conduit for the cables goes through the large hole of the casing base.
- Insert the bracket for anchoring the spring: A in case of left-hand mounting, B in case of right-hand mounting; the bracket must always be positioned towards the inside as in Fig.6.
- Fix the casing on the foundation plate, screwing the supplied nuts and washers carefully.

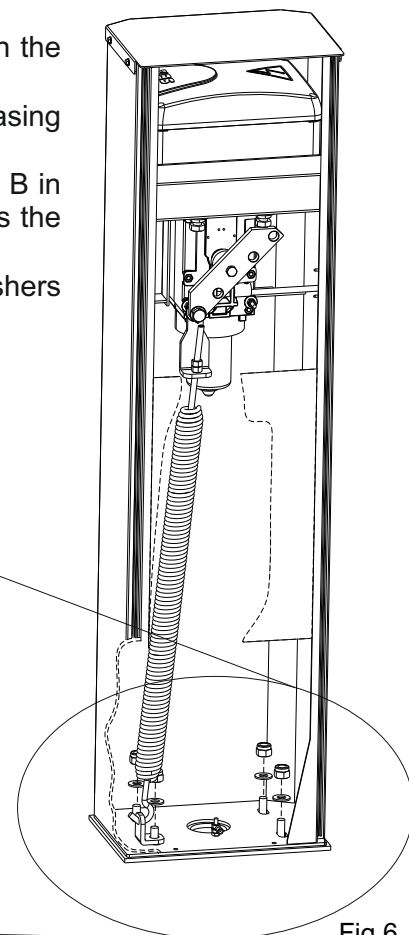
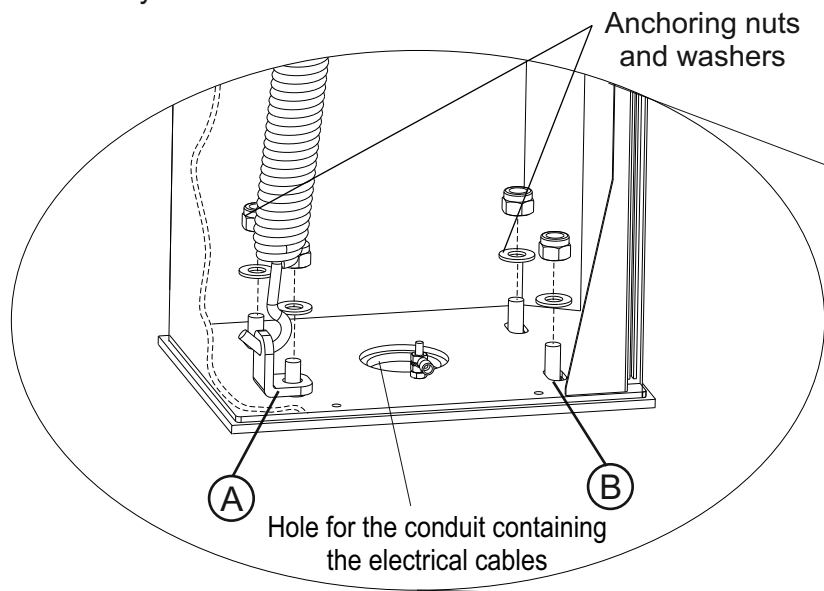


Fig.6



#### 4) Fixation of the balance

- Carefully insert the roll bearing (A) into the hole 1 or 2 of the balance in case of left-hand mounting; into hole 3 or 4 in case of right-hand mounting using screw (P) and a nylon hammer.

Attention: The choice of the hole varies according to the beam length. (SEE BOARD)

- **Lubricate with grease the bearing and the washers during assembling.**
- Mount the resting devices as shown in Fig. 7

**Note:** Tighten screw (P) until the end without clamping it and clamp lock nut (C).

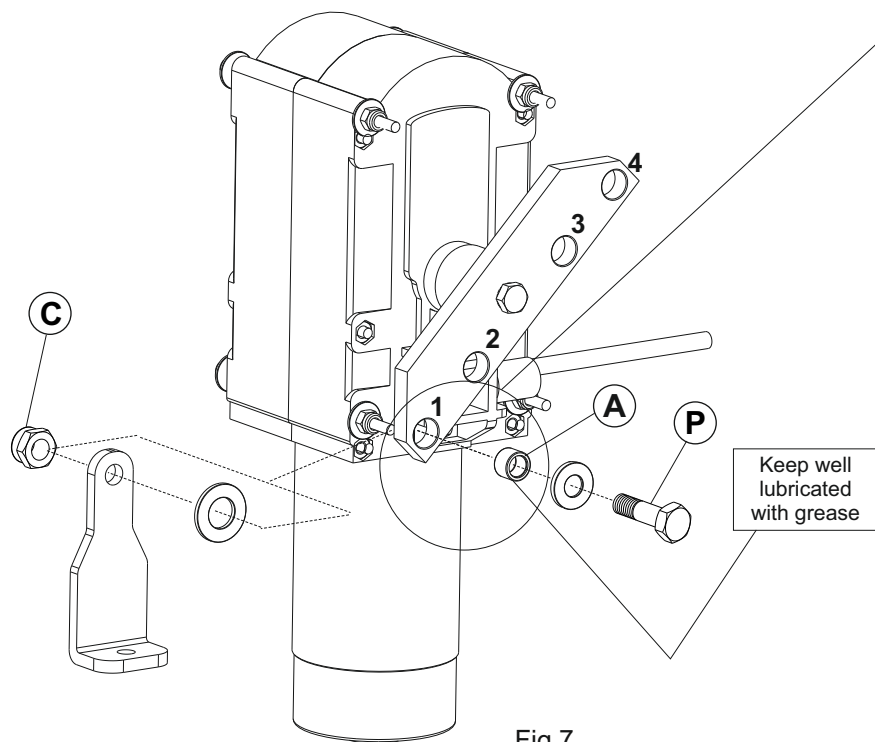
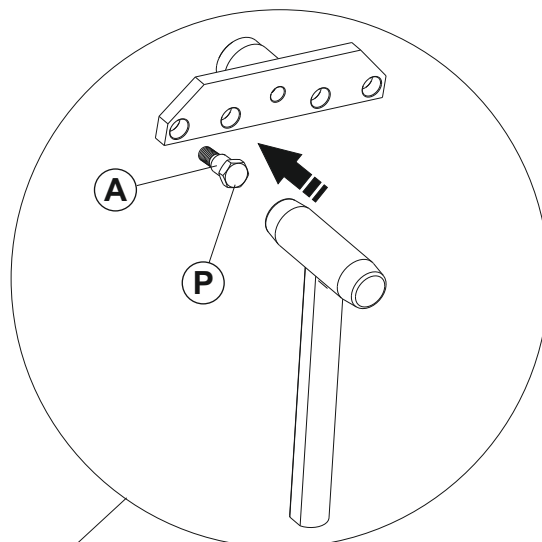


Fig.7

#### OVAL BEAM

Length (feet)	Balance position	Spring (Ø inc.)	Opening time
9,8	1 / 4	0,23	3" ÷ 4"
13,1	1 / 4	0,29	4" ÷ 5"
16,4	1 / 4	0,33	5" ÷ 6"

**Note: Strictly follow the opening time to avoid bad working**

Note: The springs and the bracket of anchorage are supplied with the beam.

#### 5) Mounting of the spring

- Anchor the spring on the bracket which has been mounted before (S)
- Insert the rod of the spring into the bracket (B) and insert the nuts (D) without tightening them.

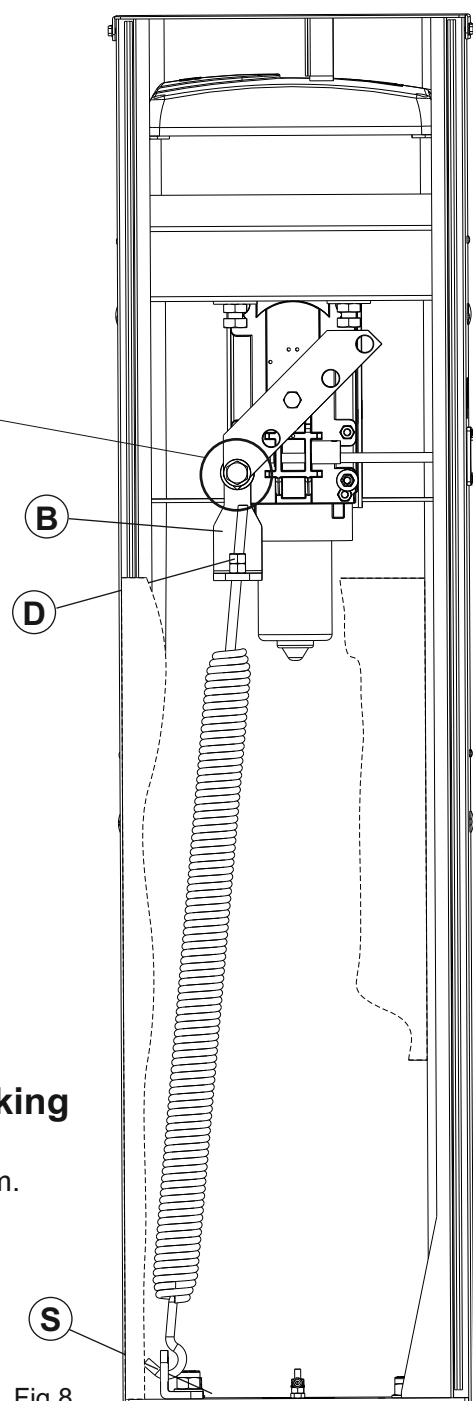


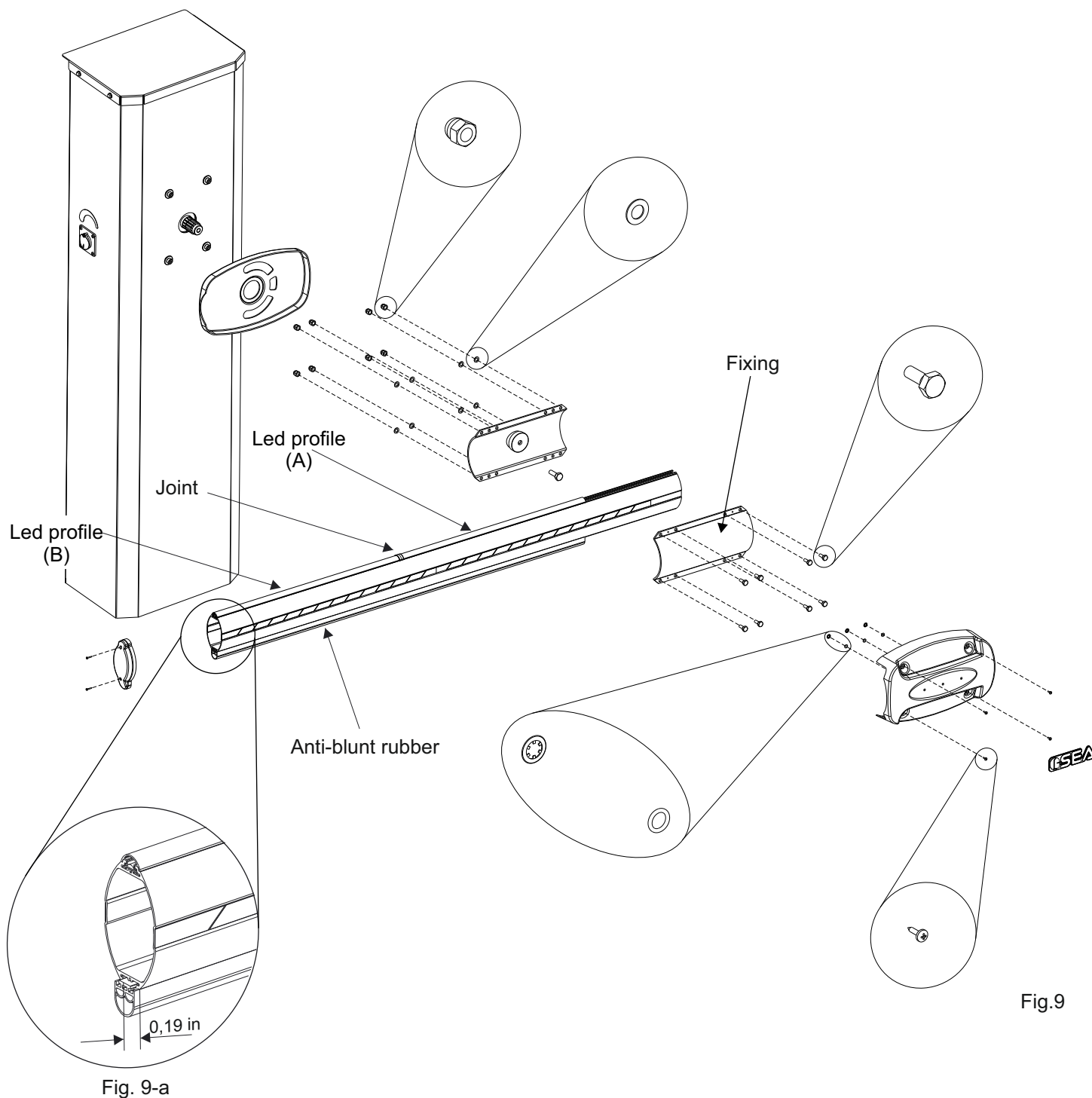
Fig.8





## 6) Mounting of the oval beam

**Note:** For 13,1 and 16,4 feet beams it is recommended to use the fork support or the flexible support.



Mount the first segment (A) of the LED profile, positioning it in doorstep on the fixing, mount the joint, fit the second segment (B) of the LED profile and repeat the operation for all segments of the LED profile up to covering the length of the whole beam. The last profile LED must be cut with a hacksaw at the end of the rod (Fig.9-a). Intersperse each segment of the LED profile with a joint.

Mount the anti-blunt rubber so that it comes out from the beam about 0,19 in (Fig.9-a).



## 7) Beam balancing

- Release the beam with manual release, so that it is free to be opened and closed manually (Fig.10).
- Place the beam at approx. 45°.
- Loosen or tighten the spring stretching nut until the spring counterbalances the weight of the 45° beam (Fig.10). The best balancing position is obtained when the beam reaches the position shown in Fig. 10.
- After having obtained the balancing, lock the nuts of the spring stretcher with the counter nut and re-block the motor.

Should the balancing of the beam not be perfect and the length of the spring stretcher (T) be too long, cut it about half of its length.

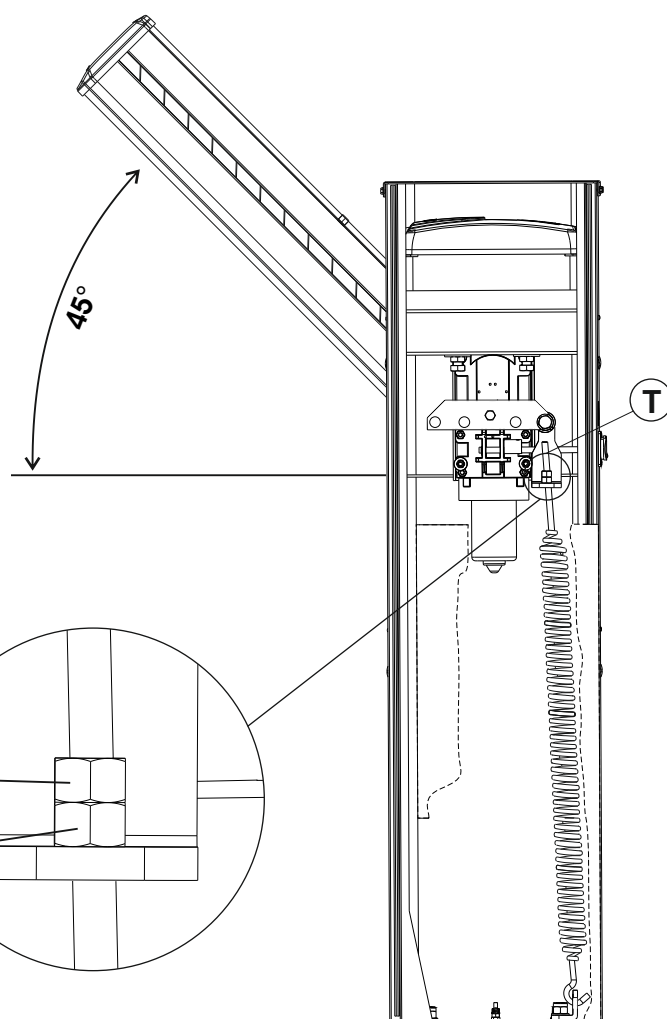


Fig. 10

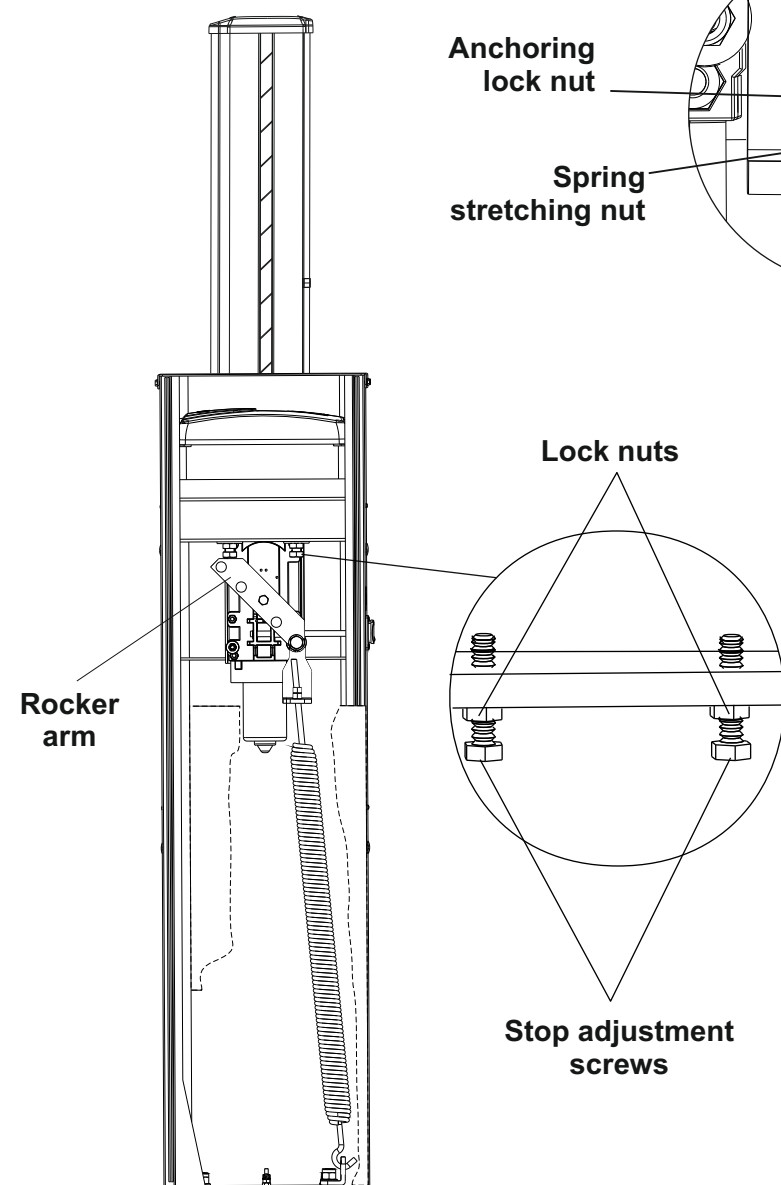


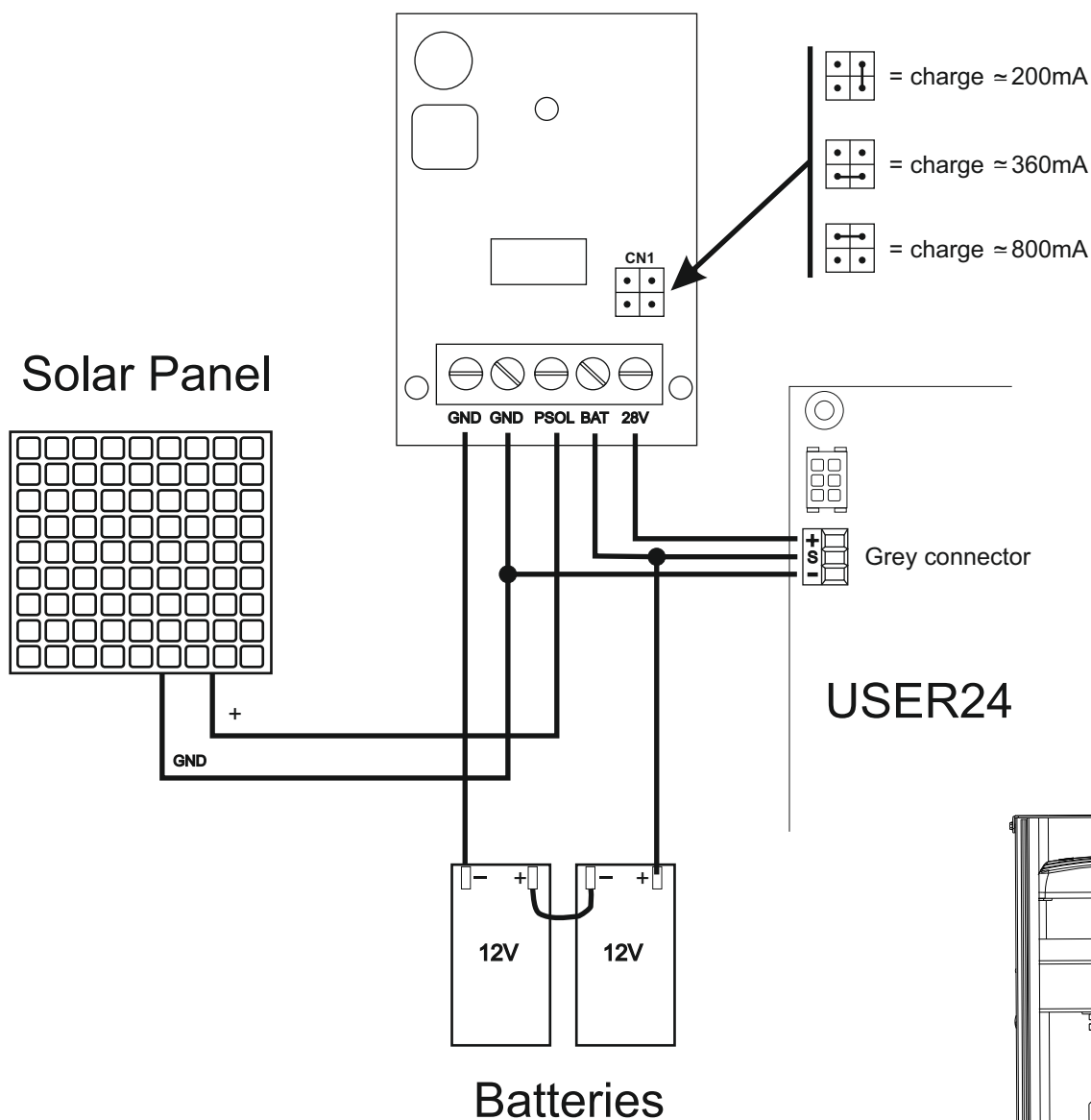
Fig.11

## 8) Beam levelling




Note: this operation must be carried out only if the beam is not perfectly horizontal (closing stage) or vertical (opening stage) at the end of its stroke.

- Release the beam with the special manual release so that it is free to open and close manually.
- Release the screws of the limit switch on unscrewing the nuts on the mechanical stops (Fig.11).
- Loosen or tighten the stop screws so that the beam is released in its vertical position (opening stage) (Fig. 11) and horizontal position (closing stage).
- After having executed the levelling lock the screws of the limit switch tightening the nuts on the mechanical stops and re-lock the beam.

### 9) Battery charger circuit (OPTIONAL)



**Note:** For a longer duration of the battery it is recommended to set the charging current according to the following table:

Battery current (mA)	Battery (Ah)
 800	12 or 16
 360	7
 200	2

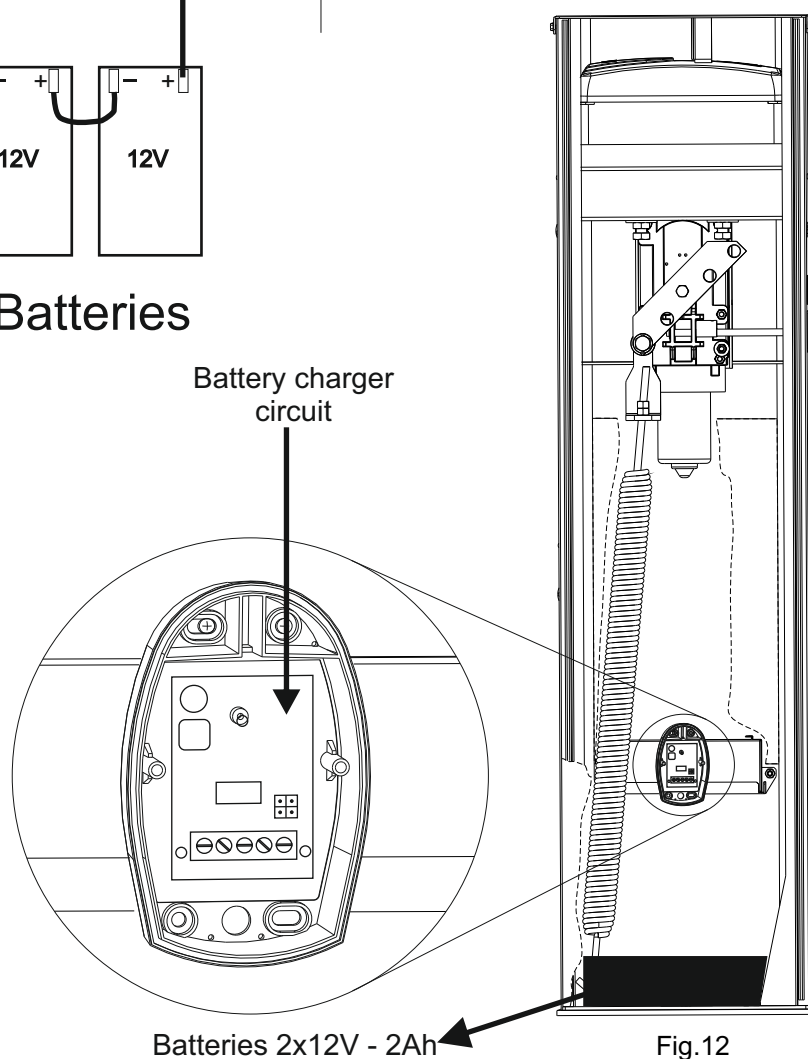
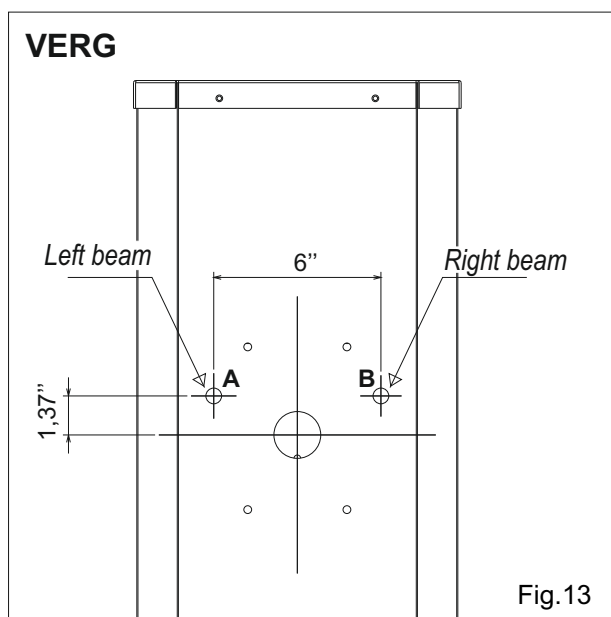


Fig.12



## 10) Drilling scheme for passage of light power cable



Use hole **A** for assembly of the right beam.  
Use hole **B** for assembly of the left beam.

Holes **B** and **A** to be made on carter

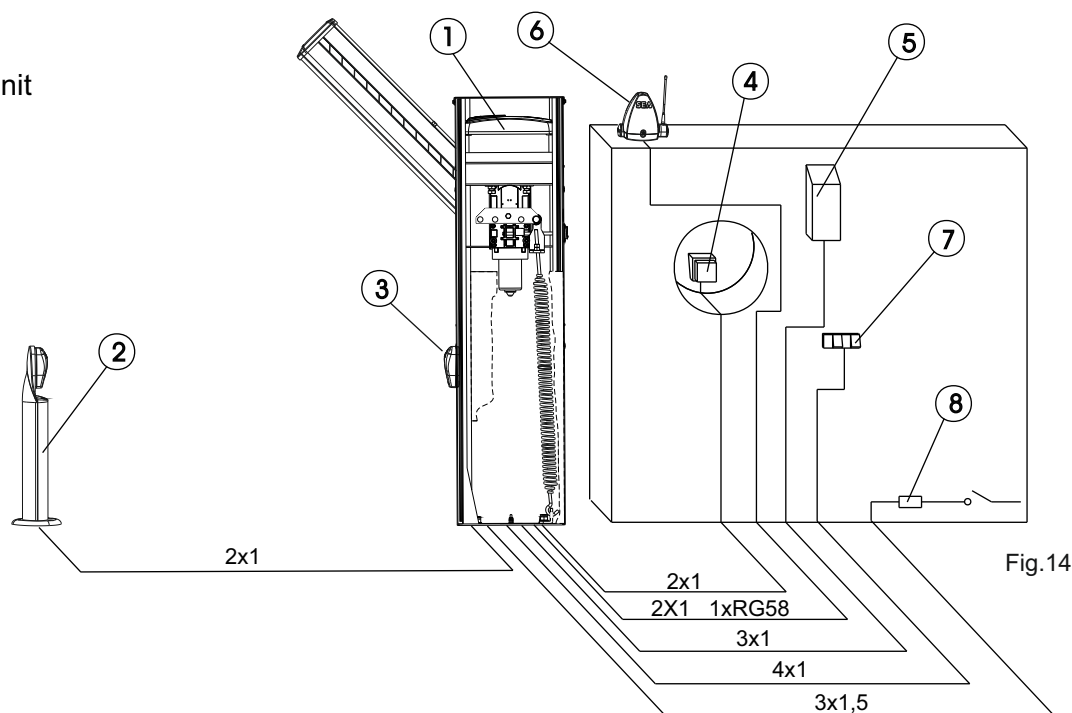
## 11) Electrical system

Fig. 14 sketches the electrical system that the barrier requires.

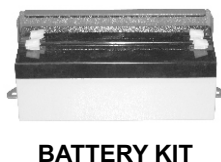
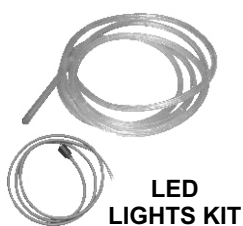
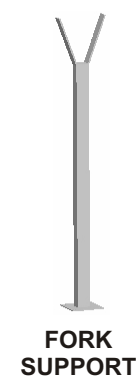
The two numbers located near the electrical cables indicate the cable number and section.

### Captions:

- 1- VERG electronic control unit
- 2- Transmitting photocell
- 3- Receiving photocell
- 4- Key switch
- 5- Radio receiver
- 6- Flashing light
- 7- Push-button station
- 8- Differential switch



### ACCESSORIES FOR VERG





## To the attention of users and technicians

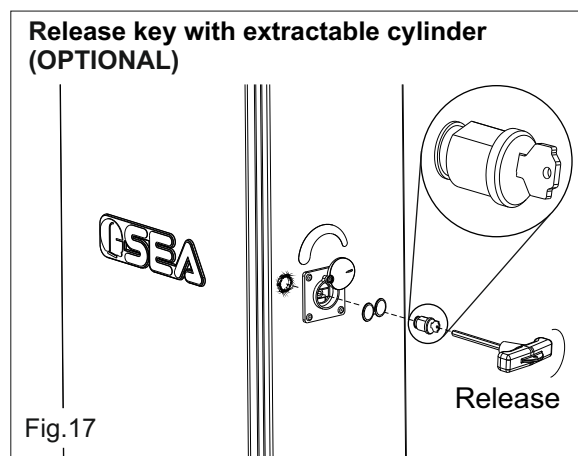
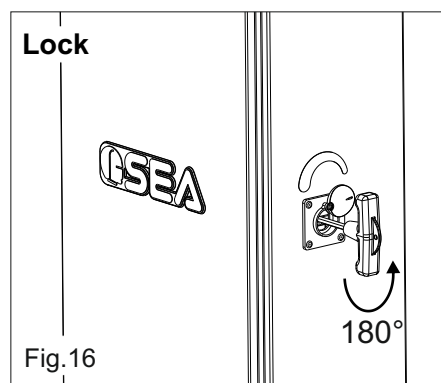
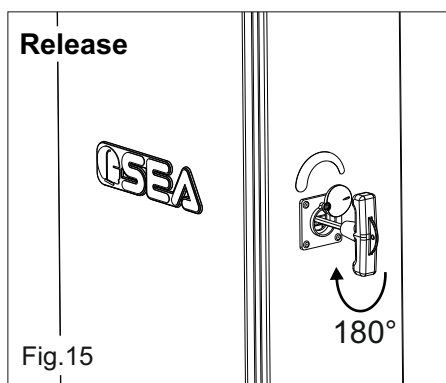
### 12) Release system

#### To release operate as follows

- Turn the protection cap of the release.
- Insert the T shaped key and turn it about 180° into clockwise direction until the beam is released (Fig. 15).
- Open manually the beam.

#### To re-lock operate as follows

- Turn the T shaped key into anti-clockwise direction (Fig. 16).
- Extract the key.
- Re-close the protection cap.



### PERIODICAL MAINTENANCE

Check the functionality of the release	Annually
<b>Lubricate the bearing of the balance</b>	Annually
Check the efficiency of the spring	Annually
Check the beam fixing screws and the balance and the casing	Annually
Check the integrity of the connexion cables	Annually
Check the efficiency of the batteries (where included)	Annually
Check and eventually adjust the value of intervention of the anti-crash sensor.	Annually

All above mentioned operations must be executed exclusively by authorized installers.



## **SALES CONDITIONS**

**GENERAL WARNING:** Installation must be realized using parts and accessories approved by SEA. SEA is not responsible for incorrect installations and/or non-compliance with safety standards according to the law in-force. SEA is in no way liable for any damages and/or malfunctioning due to using parts and accessories non-compliant with the UL325 safety standards.

**ORDERS:** Orders are processed upon approval by SEA. Buyers must confirm orders by sending a written Purchase Orders to SEA. Purchase Orders are intended as confirmation of orders and binding for the buyer, which accepts SEA sales condition.

**QUOTATION:** Quotation and special offers with a non-specified duration expires automatically after 30 days.

**PRICES:** Prices are based on the Price List in force. Discounts and quotation from Sales Rep. and other selling branches must be approved by SEA. Prices are F.O.B SEA Warehouse in Miami and do not include shipments costs. SEA reserves the right to modify the price list at any time and provide notice to its sales network.

**PAYMENT:** Method of payments and terms are notified by SEA and displayed on the commercial invoice.

**DELIVERY:** The delivery time on the invoice is not binding and represents an estimated delivery. Shipments costs will be charged to the buyer and SEA is not responsible for delays and/or damages occurred to the products during shipment.

**COMPLAINS:** Complains and/or claims must be notified to SEA within 7 business days after receiving the products. Claims and complains must be supported by original documents. Customer must contact the factory for instructions and authorization. Merchandise returned for credit must be current, uninstalled and unused and returned in its original packaging. Freight must be pre-paid on all authorized returns.

**REPAIRS:** Repairs and parts are subject to the availability in stock. Shipment of products for repairs must be pre-paid by the customer. Products shipped without authorization, sender's details and description of the problems will be refused. Customers must contact SEA for instructions.

**WARRANTY:** for the original buyer only:

Hydraulic and oil-bath motors: 36 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.

Electro-mechanic motors and electronic control systems: 24 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.

Lepus and Full Tank Standard model: 60 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.

No warranty will be recognized for damages due to incorrect installation and/or improper use for which the product was intended. SEA warranty obligations shall be limited to repair or replace the defective product/parts at SEA option, upon examination of the products by SEA technical Staff. All replaced parts must remain property of SEA. The warranty status of the product remains an unquestionable assessment of SEA. Buyer must ship pre-paid defective products. Products under warranty will be returned pre-paid by SEA. Recognized defects, whatever their nature, will not produce any responsibility and/or damage claims to SEA USA Inc and SEA s.r.l. Warranty shall not cover any required labor activities. Warranty will in no case be recognized if alterations and any other changes will be found on products. Warranty will not cover damages caused by carriers, expendable materials and faults due to improper use with the products specifications. No indemnities are recognized during repairing and/or replacing of the products under warranty. SEA USA Inc. and SEA s.r.l. decline any responsibility for damages to person and objects deriving from non-compliance with safety standards, installation instructions or use of the products sold. It is intended that warranty will be recognized only on products bought through the SEA authorized network. Products must be installed by professionals. No warranty will be recognized if products are installed directly by the final user. Warranty does not apply in case of unexpected events such as fire, flood, electrical power surge, lightning, vandalism and others.

**SEA USA Inc. is not responsible for errors in technical information printed in catalogs and installation manuals.**







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