



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

**1132 (Verg)**

## **VERG 24V**



SEA USA Inc.  
10850 N.W. 21st unit 160 DORAL MIAMI  
Florida (FL) 33172  
Phone: ++1-305.594.1151 Fax: ++1-305.594.7325  
Toll Free: 800.689.4716

web site: [www.sea-usa.com](http://www.sea-usa.com)

e-mail: [sales@sea-usa.com](mailto:sales@sea-usa.com)



### **GENERAL SAFETY REGULATIONS FOR THE INSTALLER**

- The installer has to read and understand the functioning of this operator system, its safety features and knowing the manual function in case of emergency.
- Do not modify in any way the automated system's components. SEA USA Inc. declines all liability concerning the automated system's security and efficiency if the used components are not produced by SEA USA Inc. For maintenance, strictly use original SEA USA Inc. spare parts.
- The installer shall supply the user with all information concerning the proper operation of the product, the system's manual functioning in case of emergency and shall hand over to the user the warnings handbook supplied with the product.
- SEA USA Inc. recommends the system to have reversing sensor (encoder) on the drive shaft of the motor. In case of swing/linear/in-ground hydraulic operators/barriers, SEA USA Inc. recommends to install the SAFETY GATE as an additional reversing sensor. Reversing devices are required to prevent the system from closing on vehicular traffic and/or help to prevent injuries to pedestrians.
- It is recommended to use indicator-lights as well as warning signs for every system. Both should be visible on each side of the gate and well fixed on the frame structure.
- Do not leave packing materials (plastic, polystyrene, etc.) within children's reach, as they are potential sources of danger.
- For products having an emergency release, it is recommended to use it only when the gate/barrier is closed.
- Remove all locks connected to the gates before installing the operator.
- Where possible, install the opener control 7 feet or more above the floor. For products having an emergency release, mount the emergency release 6 feet above the floor.
- Locate the control button: (a) within sight of door, (b) at minimum height of 5 feet so that small children are not able to reach it, and (c) away from all moving parts of the door.
- Install entrapment Warning Label next to the control button in a prominent location. Attach marking next to the emergency release.
- Do not employ for any reason automatic closing devices (such as timer, loop sensors, or similar), and do not connect any other activation devices.

### **GENERAL SAFETY REGULATION FOR THE USER**

- Sea strongly recommends to follow these instructions literally to prevent very serious damages to persons. 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. SEA USA Inc. declines all liability caused by improper use or different use in respect to the intended one.
- Only qualified personnel can install, repair and periodically check this equipment.
- 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 centres. User can apply only the emergency manual function.
- The system has been designed for the control of vehicular traffic only. Pedestrians or bicycles must have a separate access opening.
- 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.
- Transit through the leaves or barrier is allowed only when the gate/barrier is fully open. Operate system only if it is fully visible, and free of obstructions.
- For products having an emergency release use it only when the door/barrier is closed.

### **ELECTRICAL CONNECTIONS - SAFETY INSTRUCTIONS**

- Disconnect the battery back up, if included, before disconnecting main power supply.
- Always disconnect power supply during installation or servicing of the product.
- All electrical connections from the control panel's to the operator's must be made in a waterproof junction box.
- The system requires a separate power supply circuit. Check that the main power supply circuit breakers are separated, intended solely for this equipment and rated for 15 AMPS. Visually check that the circuit breakers are in OFF position and mark the circuit breakers USED prior to installation.
- Permanent wiring must be used and installed to the operator as required by local electrical codes and it is recommended to do by a licensed electrician.
- It is also recommended to check the local building code requirements before making any type of wiring to be sure that all wirings comply with them. Local building codes will take precedence. It is recommended to use different colours for all wirings' codes.
- Distance for low voltage control wires, i.e., open input, single leaf, open input and stop input, can run up to 3000 feet with 18 AWG wire. Low voltage controls and communication wirings must all be separated by a minimum of 1 foot from high voltage power wiring and in a separate conduit.

### **GROUNDING**

- Good grounding and proper surge suppression are an integral part of proper installation for all operator systems. One or all of the followings may require surge suppressors: high voltage power lines, low voltage power lines, telephone lines, data lines, low voltage control lines and loops. Quantity of surge suppression requires depends on susceptibility of the area to lightning and power surges. Good grounding is essential to realize maximum protection.
- If the circuit breaker box is located close to the gate/barrier operator system, for example, in a guardhouse, then the ground from that circuit can be used to ground the gate operator system. Eliminate all 90° bends in ground wires and keep a minimum distance of three feet between the surge suppressor and the equipment to protect.
- If the power source or circuit breaker box is not located close to the operator system, an Isolated Ground Zone (IGZ) must be created. An IGZ is an imaginary circle drawn around the operator system. An IGZ can also be created, if the circuit breaker box is located close to the operator system. The operator system not only includes the operator and control panel, but all accessories and devices associated with it at that controlled entry point. This includes loop detectors, card readers, digital entries, telephone entries, any device that has or requires grounding and all the surge suppressors. The ground bus is a common ground point called Single Point Ground (SPG). It is used to bond all the equipments and devices grounded in the IGZ together. The SPG is very important because it helps to eliminate different ground potentials that can be present on the equipment and that could cause damages even with surge suppressors.
- Do not use or connect the ground wire coming from the circuit breaker box. By using an Isolated Ground Zone, you have to separate the operator system from the house or building ground. This eliminates ground potentials. It is recommended the ground bus to be located in a separate NEMA type enclosure. All grounds will be tied to this ground bus.
- Equipment ground wire should be of minimum 12 AWG. The main ground wire from the bus bar to the ground rod should be an 8 or 6 AWG copper wire. Ground rod should be minimum 10 feet in length, (length depends on local soil conditions).
- For more information, regarding good grounding practices check: National Electric Code art. 250; IEEE Emerald Book, standard 100; International Association of Electric Inspectors.



#### INSTALLATION WARNINGS

- For gate operators: install only when
  - A. The operator is appropriate for the gate's construction and usage Class.
  - B. All opening spaces on the wall of the horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 4 feet (1m) above the ground so that it could be possible to keep on the entire surface of the wall a minimum distance of 2-1/4 (57,15mm) inches from the gate and the wall on which the gate runs.
  - C. All exposed pinch points are eliminated or guarded
  - D. Guarding is supplied for exposed rollers.
  - E. Check if the gate works freely in both directions before installing the gate operator system. Any necessary repair to the gate must be done before installing the equipment. Swinging gate shall not open into public access areas.
- The operator systems must be installed in a proper place to prevent contacts with adjacent structures in opening and closing. Watch out to install the system so that users could have full view of the area.
- For operators using non-contact sensors:
  - A. See instructions on the placement of non-contact sensors for each Type of application.
  - B. Watch out to reduce the risk of nuisance tripping of the sensor.
  - C. 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.
- For operators utilizing contact sensors:
  - A. One or more contact sensors must be located where the risk of entrapment or obstruction exists, such as the operators' edges. They should be installed both inside and outside the operator's edge.
  - B. A hardwired contact sensor must be installed, watching out to arrange its wiring so that the communication between the sensor and the operator should not be subjected to mechanical damage.
  - C. A wireless contact sensor such as a radio frequency (RF) signal transmitter must be located where the signal's transmission cannot be obstructed by structures or natural landscaping.
- Controls should be far enough from the gate or barrier so that the user is prevented from coming in contact with them while operating the controls. Controls are intended to be used to reset an operator after 2 sequential activations of the entrapment protection device and must be located in the line-of-sight of the outdoor. Install a security feature if controls are easily accessible, to prevent unauthorized use.

#### AFTER INSTALLATION

- Check that: the open and close force are properly adjusted; the piston does not bottom out in either direction, the breather screws have been removed, the positive stops used are sufficient for stopping the gate properly, all the pinch points and potential entrapment areas are reduced.
- Check and test all reversing devices.
- The installer should instruct user on the operator system's proper operation. They should together review the basic functions of the reversing devices and how to periodically test them. Reversing devices include one or more of the followings: reversing loops, photocells, reversing edges, etc. The installer has to instruct user on how to remove the operator system from service, on shutting power off on the service panel and how to use the operator system manually.

#### GENERAL ENTRAPMENT PROVISIONS

**A vehicular operator must be installed with one independent primary and one independent secondary means at least to protect against entrapment (see Table A):**

<b>TABLE A</b>	<b>OPERATOR CATEGORY</b>			
	<b>Horizontal slide, vertical life and vertical pivot</b>		<b>Swing and vertical barrier</b>	
<b>USAGE CLASS</b>	<b>Primary Type</b>	<b>Secondary Type</b>	<b>Primary Type</b>	<b>Secondary Type</b>
<b>Vehicular I and II</b>	<b>A</b>	<b>B1 B2 D</b>	<b>A C</b>	<b>A B1 C D</b>
<b>Vehicular III</b>	<b>A B1 B2</b>	<b>A B1 B2 D E</b>	<b>A B1 C</b>	<b>A B1 C D E</b>
<b>Vehicular IV</b>	<b>A B1 B2 D</b>	<b>A B1 B2 D E</b>	<b>A B1 C D</b>	<b>A B1 C D E</b>

**Note:** The same type of device shall not be utilized for both the primary and secondary entrapment protection means. The use of a single device to cover both the opening and closing directions is in accordance with the requirements; however, a single device is not required to cover both directions. A combination of one Type B1 for one direction and one Type B2 for the other direction is the equivalent of one device, for the purpose of complying with the requirements of either the primary or secondary entrapment protection means.

#### Entrapment protection types

- Type A: Inherent entrapment sensing system.  
Type B1: Provision for connection of a non-contact sensor (photoelectric or equivalent).  
Type B2: Provision for connection of a contact sensor (edge device or equivalent).  
Type C: Inherent adjustable clutch or pressure relief device.  
Type D: Provision for connection of an actuating device requiring continuous pressure to maintain opening or closing motion of the gate.  
Type E: An inherent audio alarm.

#### **CLASS OF OPERATORS**

**RESIDENTIAL VEHICULAR GATE OPERATOR - CLASS I** - A vehicular operator (or system) intended for use in a home of one-to four, single-family dwelling, or a garage or parking area associated therewith.

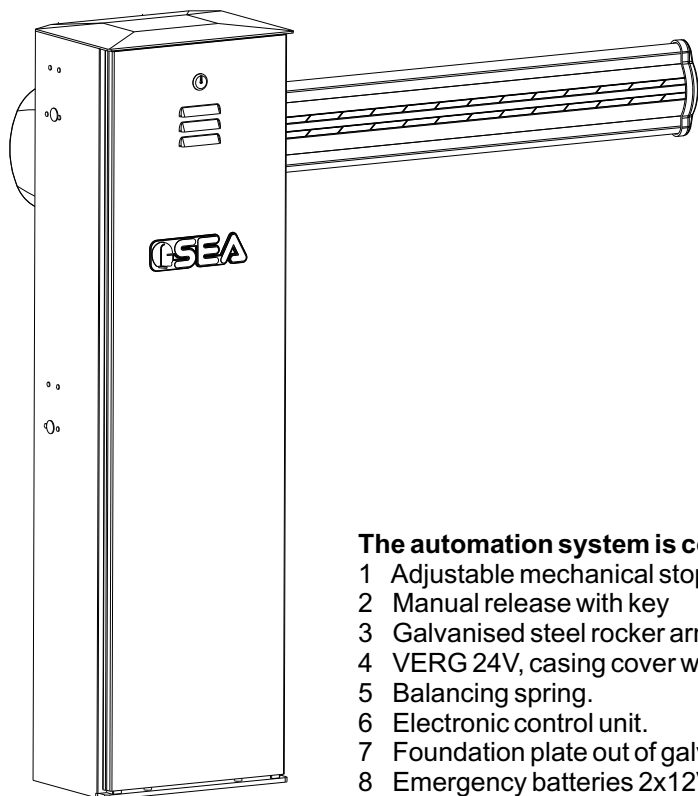
**COMMERCIAL/GENERAL ACCESS VEHICULAR OPERATOR - CLASS II** - A vehicular operator (or system) intended for use in a commercial location or building such as multi-family housing unit (five or more single family units), hotel, garage, retail store, or other building servicing the public.

**INDUSTRIAL/LIMITED ACCESS VEHICULAR OPERATOR - CLASS III** - A vehicular operator (or system) intended for use in an industrial location or building such as a factory or loading dock area or other locations not intended to service the public, in which unauthorized access is prevented via supervision by security personnel.



## VERG 24V BARRIER

### INSTALLATION MANUAL



Thank you for choosing a SEA s.r.l. product. This choice will give you the opportunity to understand that our company aims at combining high-tech and remarkable reliability and safety, thanks to studies, research and the accurate analysis of our customers' needs, without undermining the simple use and installation of our products.

#### 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.

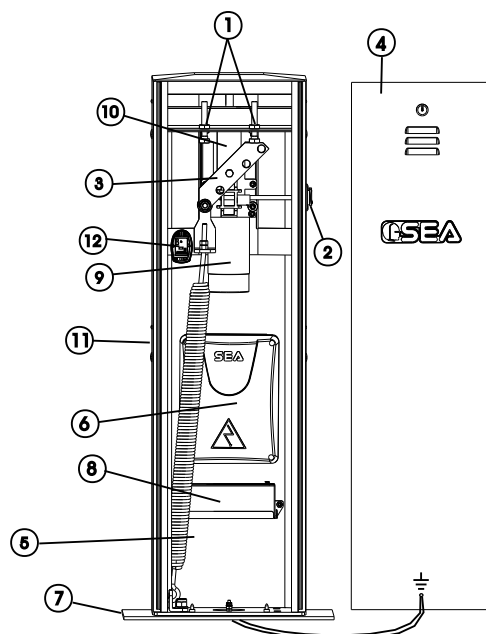
The emergency batteries guaranty at least 15 opening cycles (depending on the installed accessories) in case of power failure and a release system allows the manual opening in case of emergency.

#### 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~ - 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.  
Predisposed for the application of photocells, key switch, proximity reader. 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~ electric motor
- 10) Gearbox
- 11) VERG casing
- 12) Battery charger circuit (optional with battery kit)

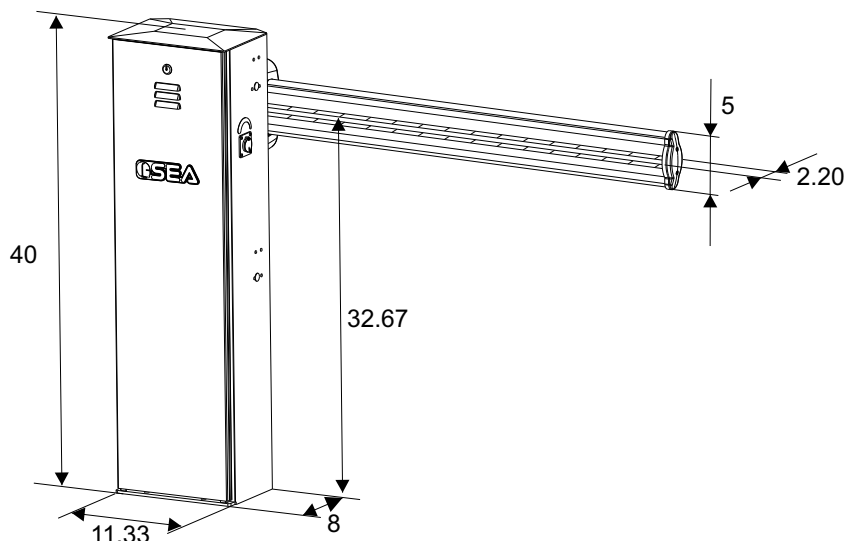




### Technical features

Supply voltage	: 115 V~ ± 5% - 50/60 Hz
Motor tension	: 24V==
Absorbed power	: 6 A
Motor power	: 90 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

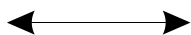
### Overall dimensions (inches):



## INSTALLATION INSTRUCTIONS

### 1) Spring position

Left-hand mounting



Right-hand mounting

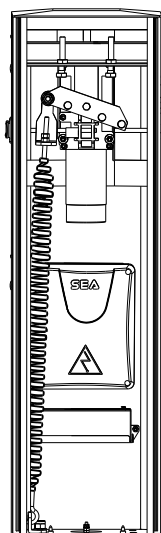


Fig.1

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).

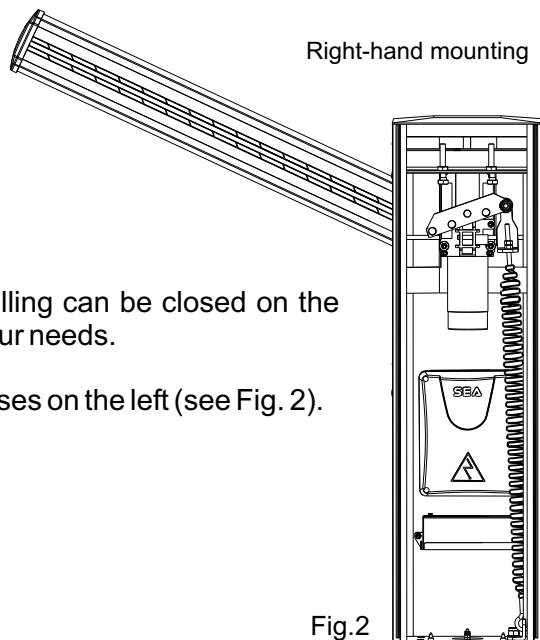


Fig.2



## 2) Foundation plate anchoring

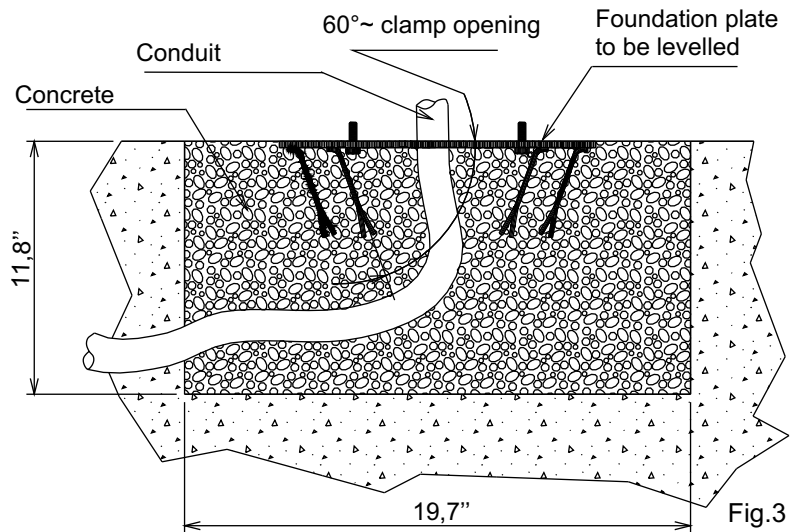
Make a 19,7" x 19,7" x 11,8" (depth) hole in the ground.

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.



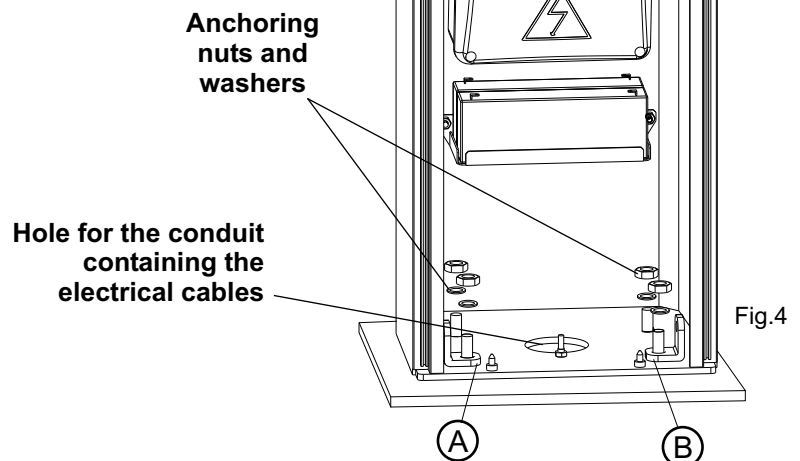
## 3) Post anchoring on the foundation plate

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.4

Fix the casing on the foundation plate, screwing the supplied nuts and washers carefully.







#### 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 hinge 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. 5

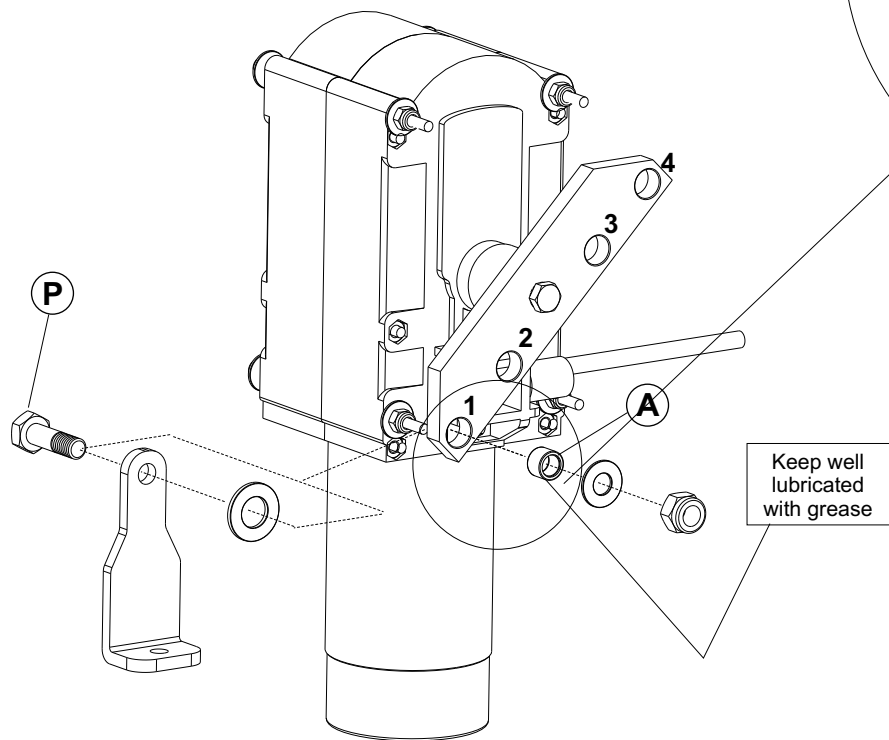


Fig.5

#### 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.

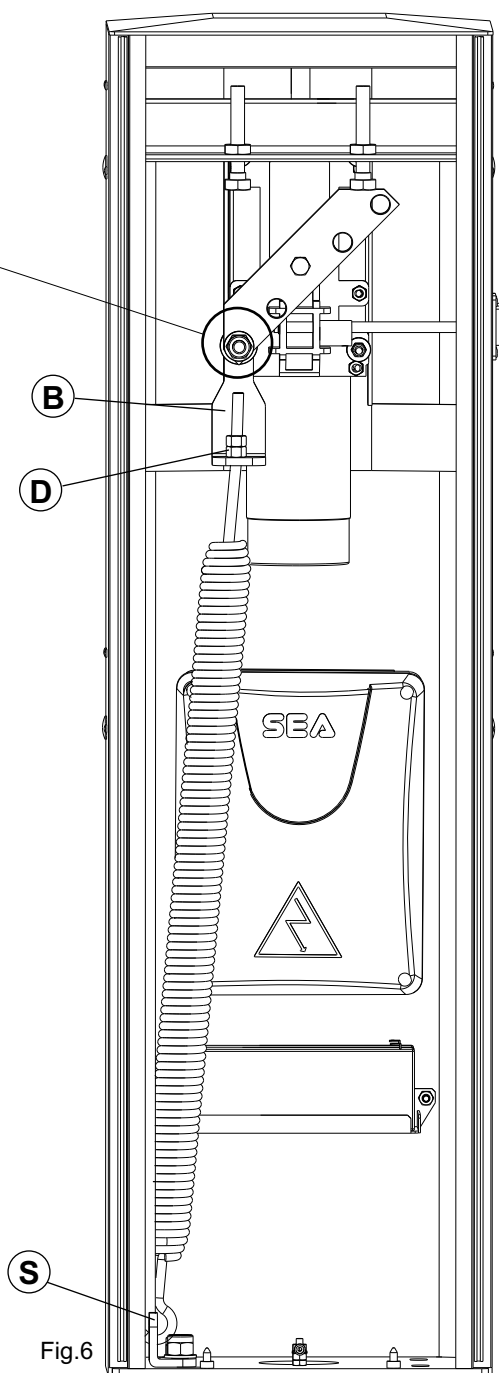
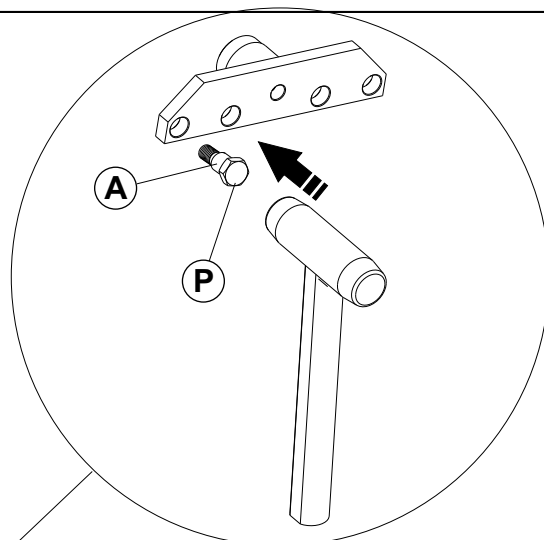


Fig.6



## 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.

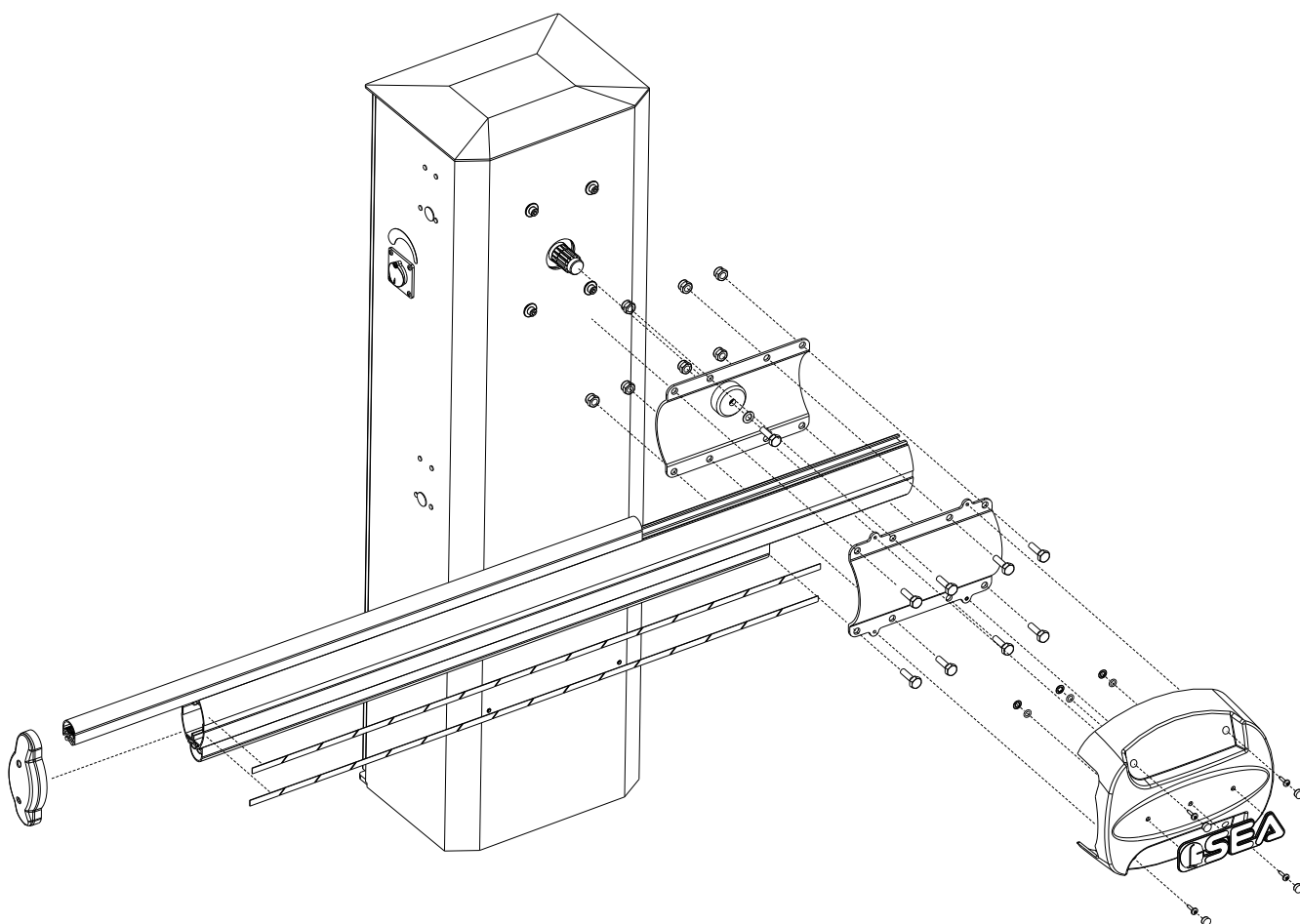


Fig.7





## 7) Beam balancing

Release the beam with manual release, so that it is free to be opened and closed manually (Fig.8).

Place the beam at approx. 45°.

Loosen or tighten the spring stretching nut until the spring counterbalances the weight of the 45° beam (Fig. 8). The best balancing position is obtained when the beam reaches the position shown in Fig. 8.

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.**

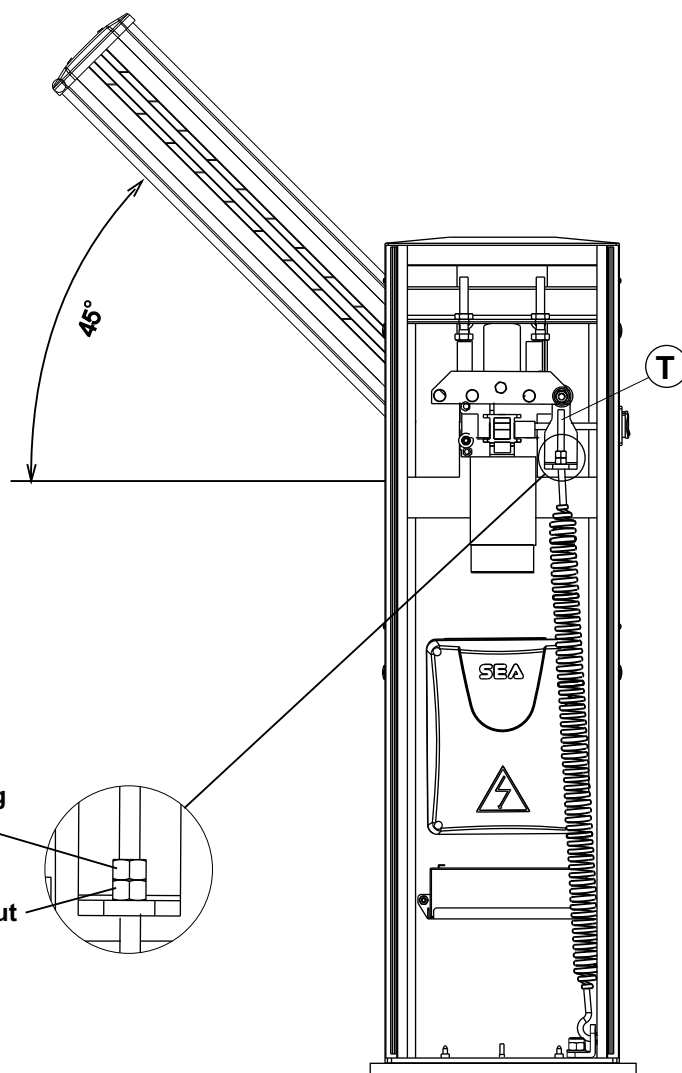


Fig. 8

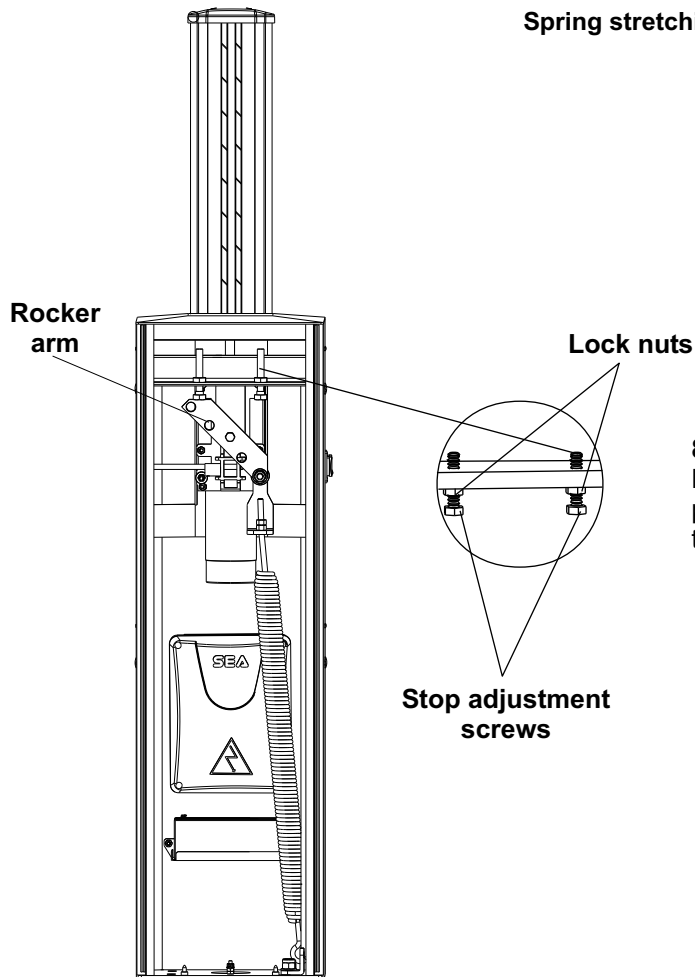


Fig.9

## 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.9).

Loosen or tighten the stop screws so that the beam is released in its vertical position (opening stage) and horizontal position (closing stage) (Fig. 9).

After having executed the levelling lock the screws of the limit switch tightening the nuts on the mechanical stops and re-lock the beam.



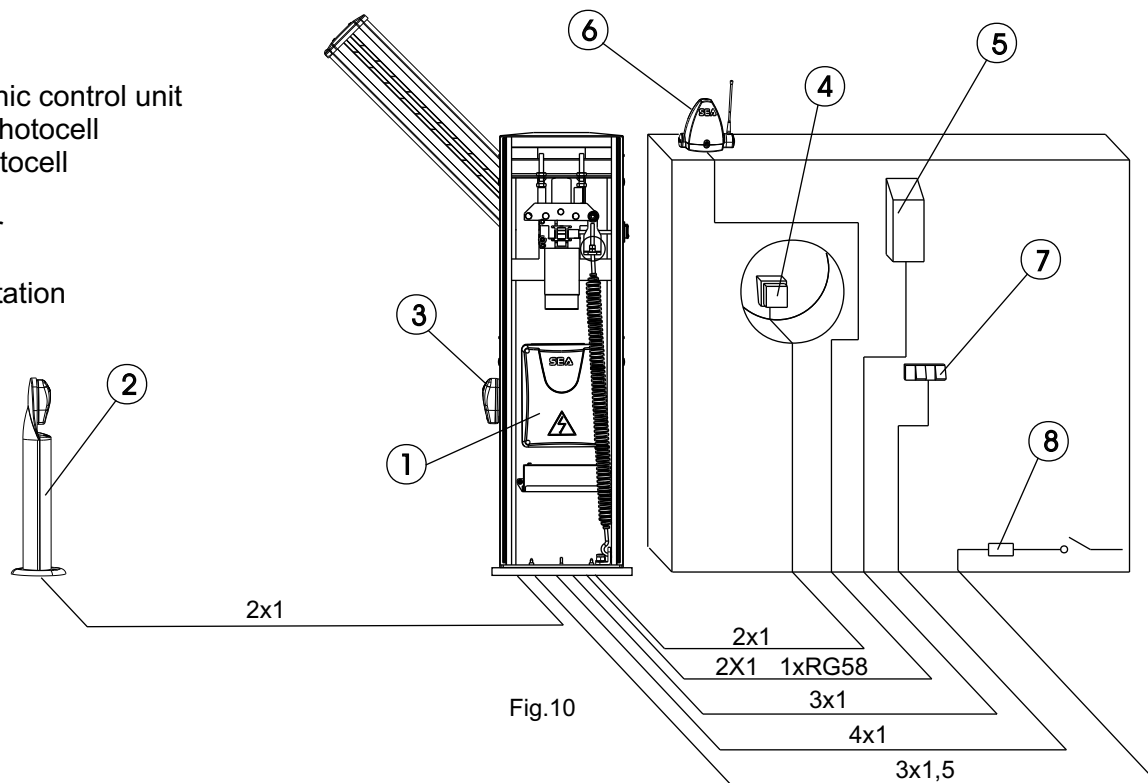
## 9) Electrical system

Fig. 10 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- Main switch



## To the attention of users and technicians

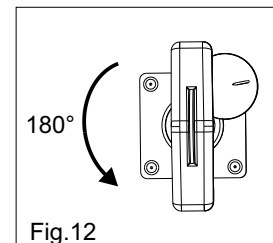
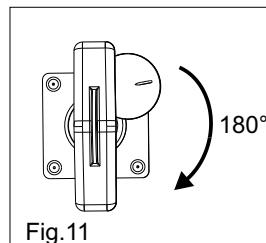
### 10) Release system

#### 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. 11).
- Open manually the beam.

#### To re-lock operate as follows

- Turn the T shaped key into anti-clockwise direction (Fig. 12).
- 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.



**To the attention of users and technicians**

## **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:

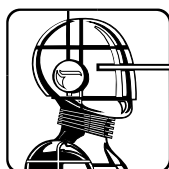
Hydraulic and oil-bath motors: 36 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.

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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**SEA USA Inc.**  
**10850 N.W. 21st unit 160 DORAL MIAMI**  
**Florida (FL) 33172**  
**Phone:++1-305.594.1151 Fax: ++1-305.594.7325**  
**Toll Free: 800.689.4716**

web site: [www.sea-usa.com](http://www.sea-usa.com)

e-mail: [sales@sea-usa.com](mailto:sales@sea-usa.com)