



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

# VELA INDUSTRIAL

## Hydraulic 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 end-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**

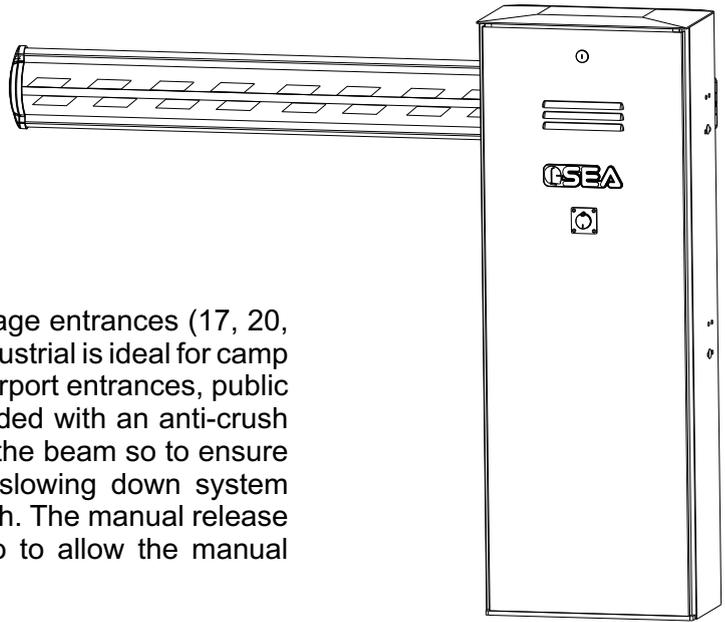
**WARNING** – To reduce the risk of injury or death:

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.**

**SEA** is glad to congratulate and thank you for choosing our product. Your choice will allow you to understand how our factory, according to studies, research and above all the needs of our customers, wants to gather technology, reliability and safety together keeping in mind use and installation easiness.

### General characteristics

Vela Industrial is a hydraulic automation for big carriage entrances (17, 20, 23, 25 feet). The places for fitting are multiple; Vela Industrial is ideal for camp entrances, hospitals, yards, private roads, port and airport entrances, public parking with half-intensive working cycles. It is provided with an anti-crush device that ensures a strength of max. 33 pound on the beam so to ensure people and things against accidents. An accurate slowing down system guarantees the total control of the momentum strength. The manual release makes the beam independent from the operator so to allow the manual closing and opening.

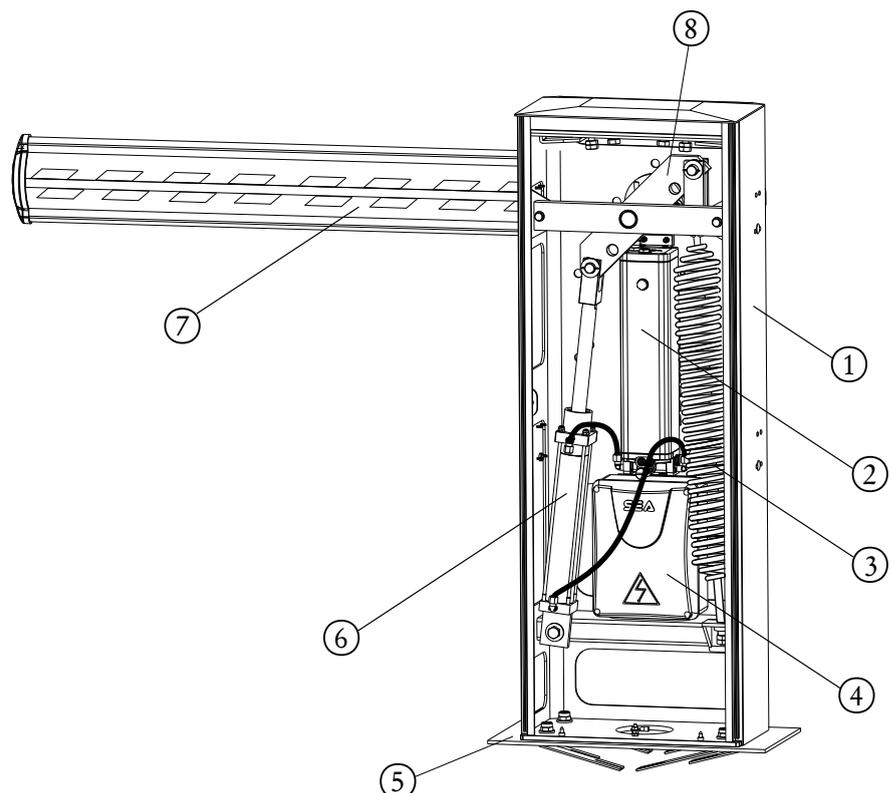


### The automation consists of :

- 1 The steel sheet casing, which is cataphoresis treated and epoxy dust polyester painted, protects all mechanical and electric devices from atmospheric agents. On request it is also possible to receive the casing in stainless steel.
- 2 The balancing spring is delivered according to the beam length, inside the beam kit (See spring tab.)
- 3 Electronic control unit, advanced device which allows the programming and control of all working and safety systems.
- 4 Operator with manual release for the manual opening of the beam in case of damages.
- 5 Beam in extruded aluminium, available sizes: from 17 to 25 feet.
- 6 Mounting plate out of steel sheet coated with zinc.
- 7 Balancing wheel in galvanized steel.

### List of the main parts:

1. Vela Industrial Series casing
2. Hydraulic pump unit
3. Balancing spring
4. Electronic Control Unit
5. Vela Ind. mounting plate
6. Piston
7. Aluminium beam
8. Balancing lever



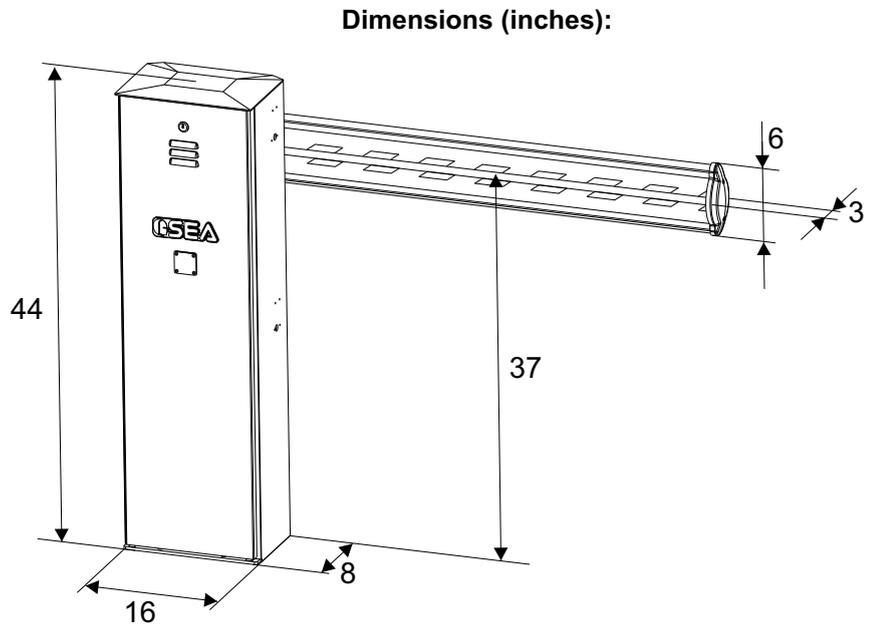
Technical data	VELA INDUSTRIAL
Voltage supply	120 V~ 50/60 Hz
Power absorption	220W
Opening time	9-13 s
Max. Beam length	25 feet with fork / 23 feet side fixation
Protection degree	IP55
Motor revolutions	1600 RPM/min.
Operating temperature	-4°F +131°F
Weight	183 pound
Manual release	Yes
Use frequency	75%

**Note1:** The frequency of use is valid only for the first hour at 68°F room temperature.  
**Nota2:** For a frequency of more than 60%, it is recommended to use the mechanical and electronic limit switch kit for a best duration in time.

Rectangular beam		
Barrier Length	D. Spring	Fexlible support
17 feet	0,41 in.	yes
20 feet	0,43 in.	yes
23 feet	0,45 in.	yes
25 feet	0,49 in.	yes

Linear Beam		
Barrier Length	D. Spring	Fexlible support
17 feet	0,41 in.	yes
20 feet	0,43 in.	yes
23 feet	0,45 in.	yes

Side beam with skirt		
Barrier Length	D. Spring	Type of skirt
17 feet	0,43 in.	15 feet
20 feet	0,45 in.	18 feet
23 feet	0,49 in.	21 feet



### FITTING INSTRUCTIONS

#### 1) Position of spring

##### Opening on the left

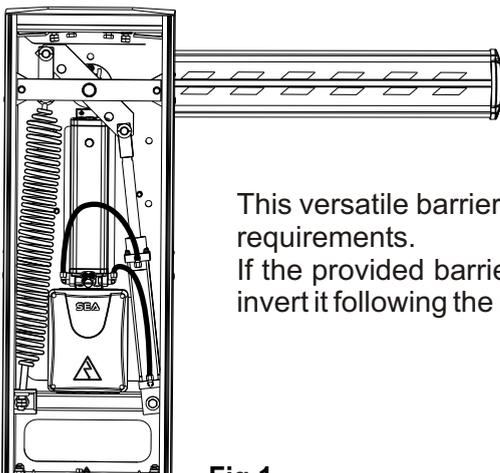


Fig.1



##### Opening on the right

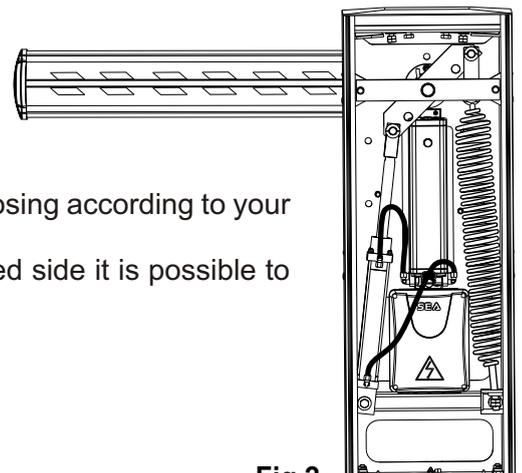


Fig.2

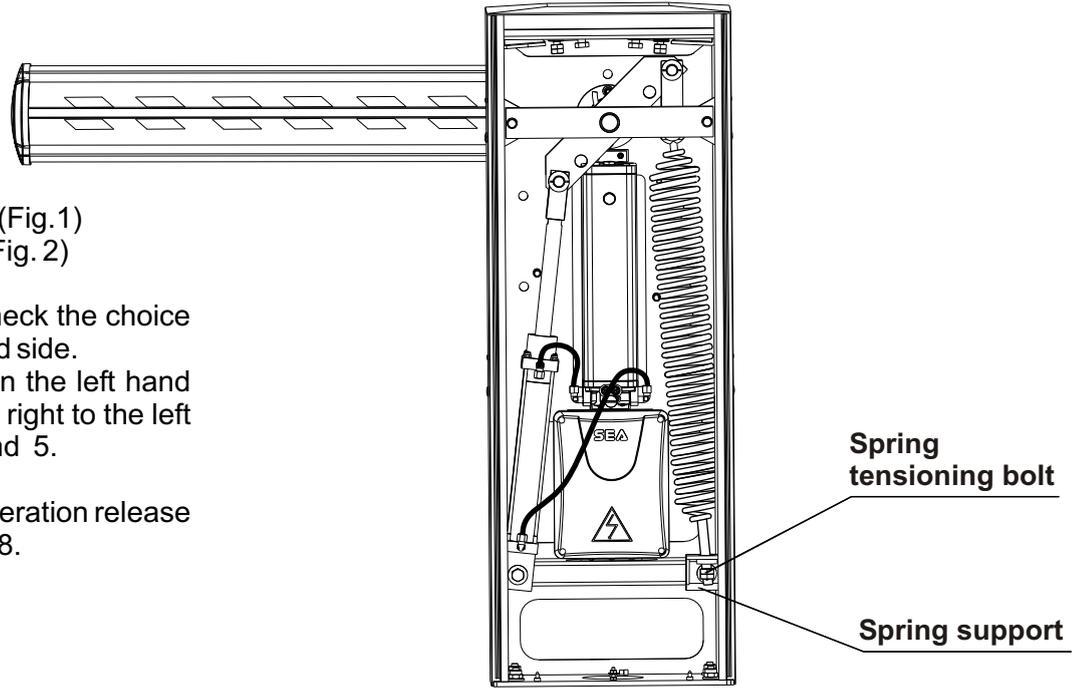
This versatile barrier allows the left or right hand closing according to your requirements.  
 If the provided barrier does not close on the desired side it is possible to invert it following the instructions.

**N.B.:** The operator comes as shown in Fig.1 (Closing on the right hand side).

Example:  
Barrier with right hand closing (Fig.1)  
Barrier with left hand closing (Fig. 2)

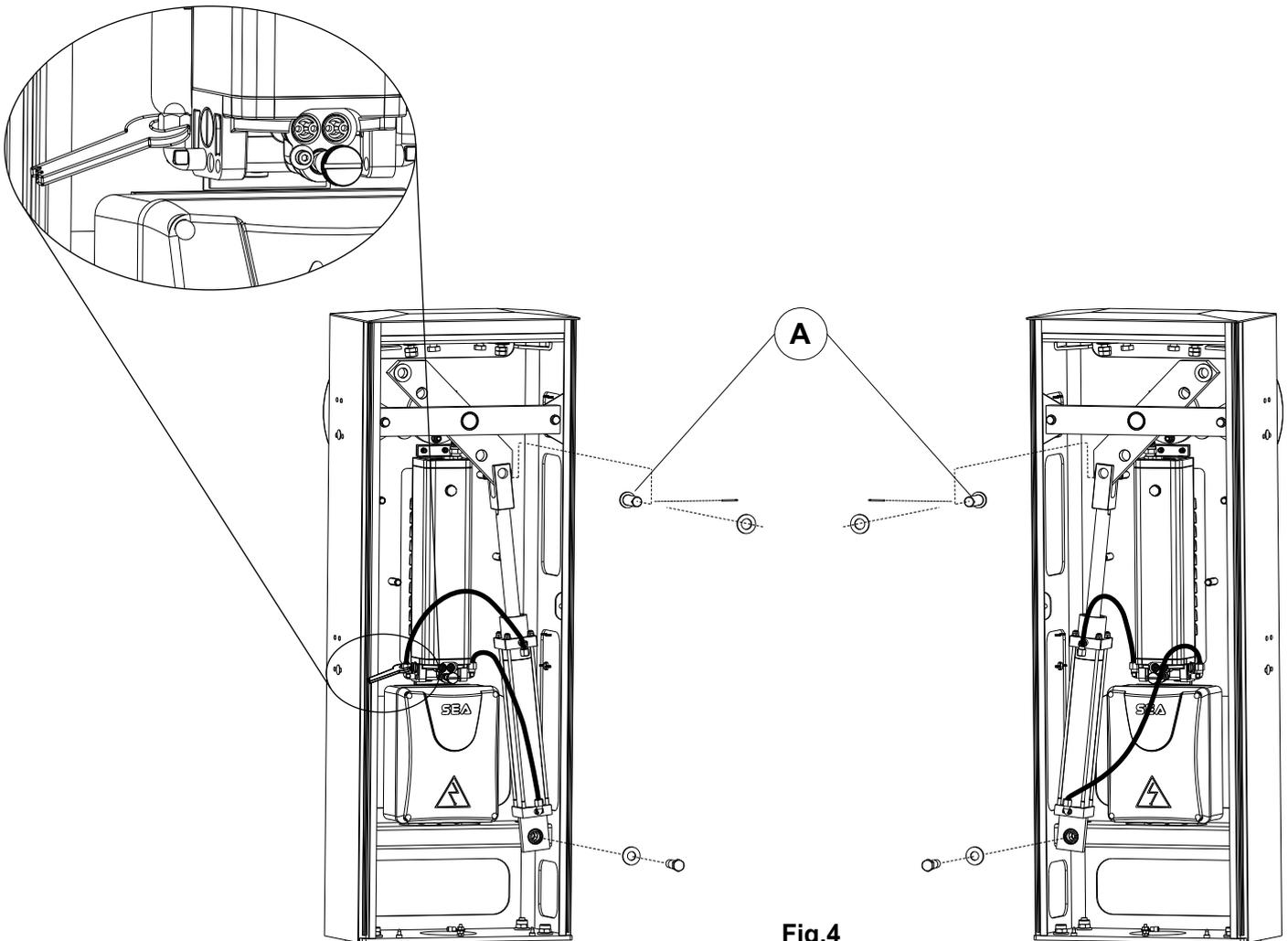
Before installing the spring check the choice of the barrier, if right or left hand side.  
If the barrier is with closing on the left hand side move the piston from the right to the left hand side as shown in Fig.4 and 5.

**N.B.:** Before executing this operation release the operator as shown in Fig. 18.



**Fig. 3**

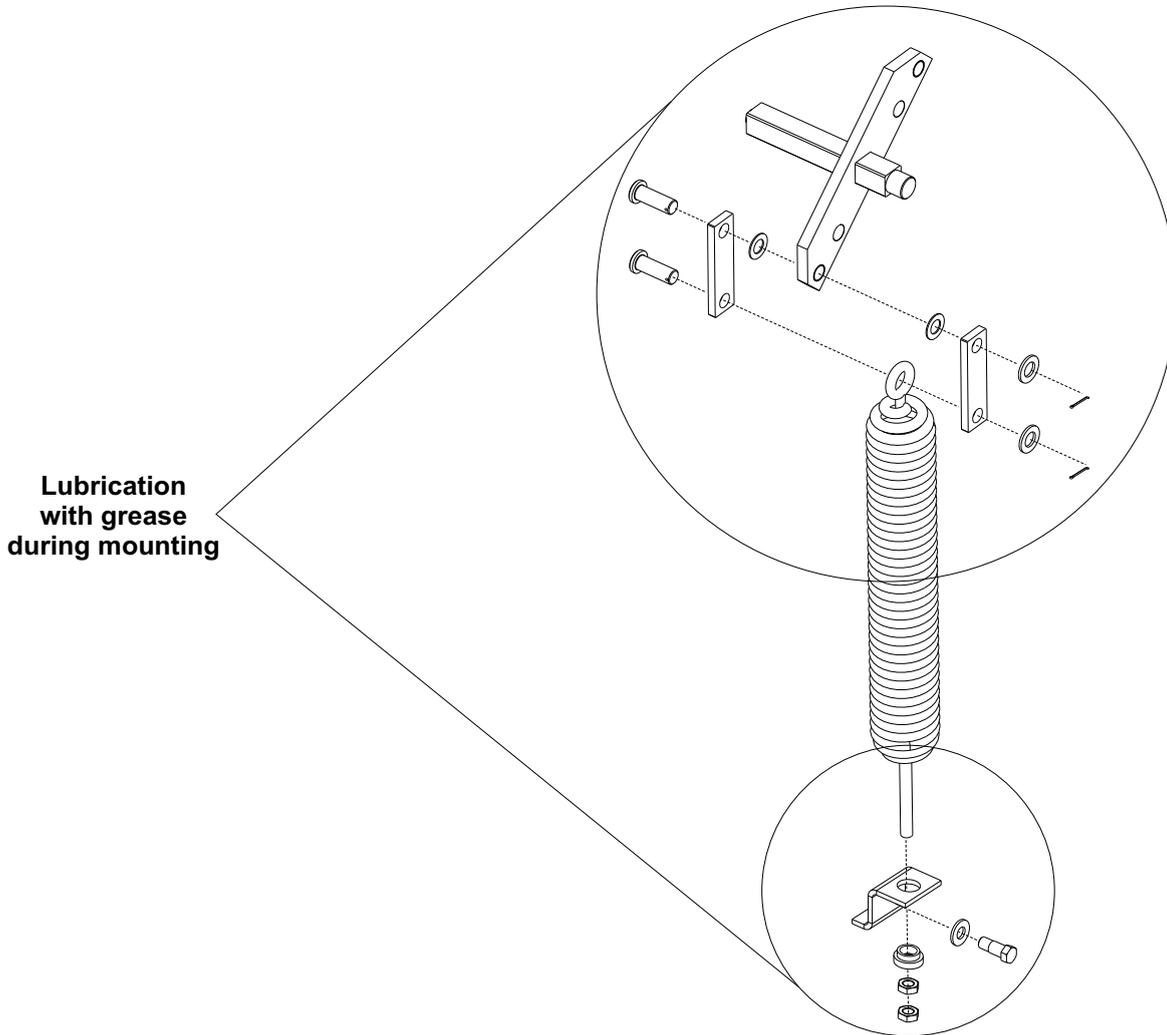
Once exchanged the piston tighten its fixation screw and lubricate with grease (Use DIN 51502 KP 2 N-20 - K 2 K-20 grease).



**Fig.4**

## 2) Mounting of the spring

Insert the spring in to the carter as shown in Fig.5.

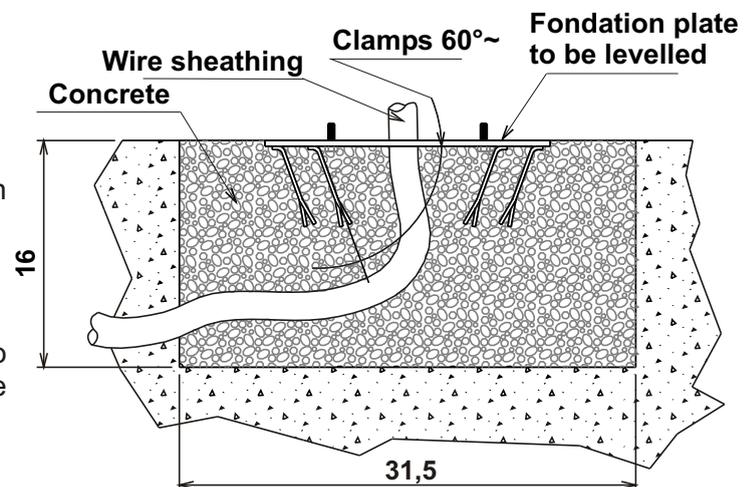


**Fig. 5**

## 3) Mounting plate fixing

- Dig a hole 31,5x24x16 inches
- Widen the foundation plate clamps at 60° (Fig. 6)
- Fill the hole with R425 concrete and place the foundation plate as in Fig. 6.
- Level the plate with care.

\* The plate has got a central hole for electric wiring so before filling the hole with concrete put an electric wire sheathing on the hole.



**Fig. 6**

#### 4) Fixing the column on the foundation plate

- Place the column so that the holes at the base correspond to the screws that emerge from the foundation plate.
- Make sure that the wire sheathing is fixed on the big central hole at the base of the column.
- Tighten the column to the foundation plate screwing the provided nuts and bolts with care.

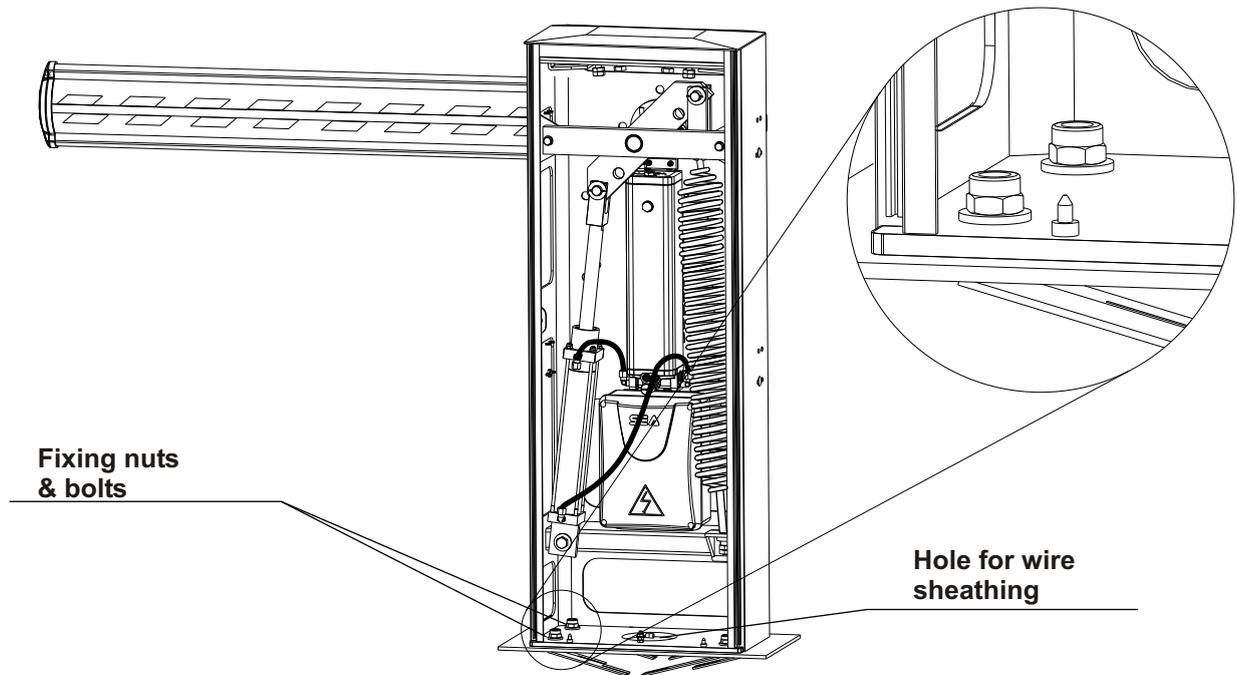


Fig. 7

#### 5) Mounting of the central beam with fork (Fig. 8)

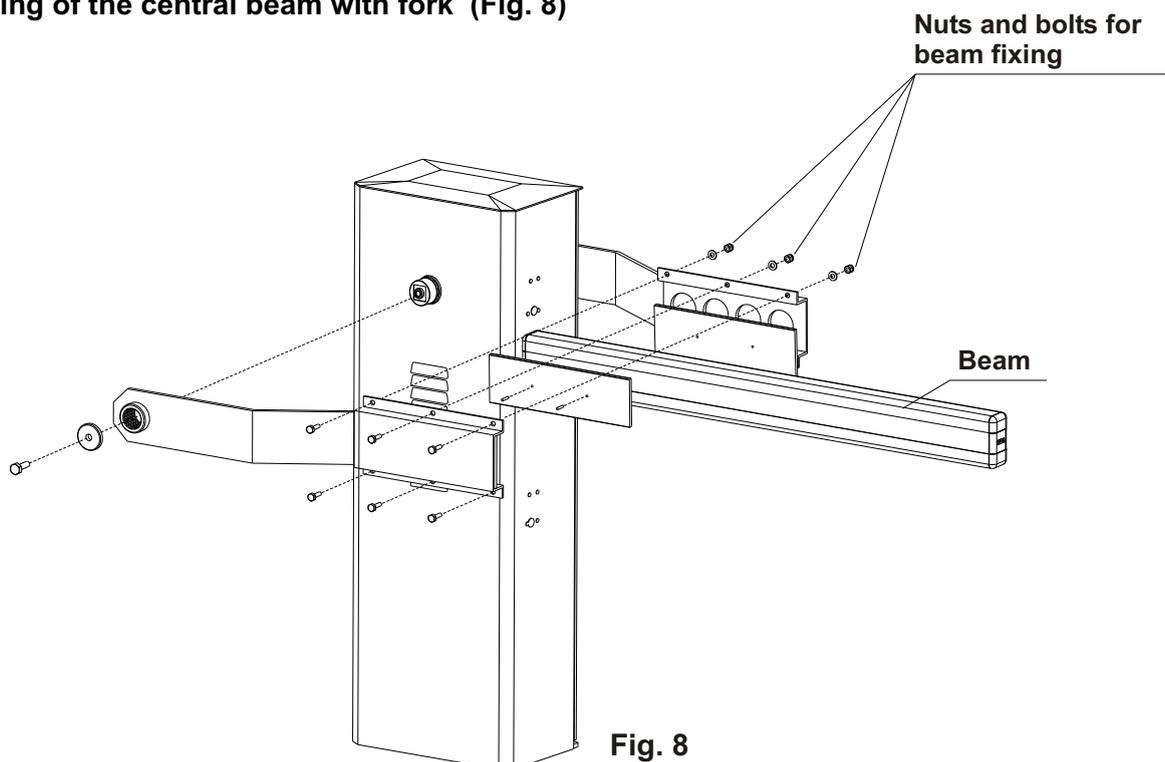


Fig. 8

6) Mounting of the Linear beam (Fig. 9)

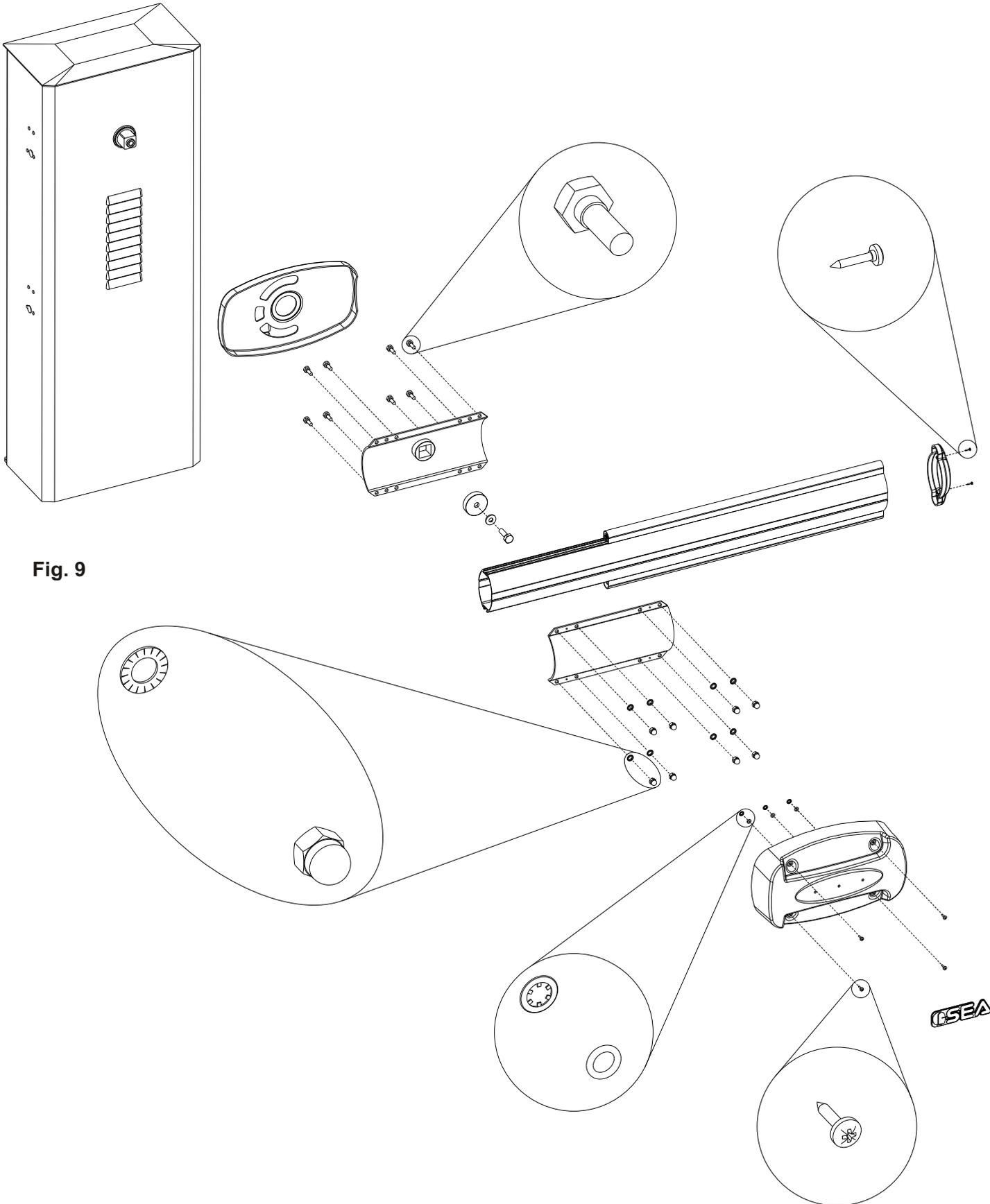
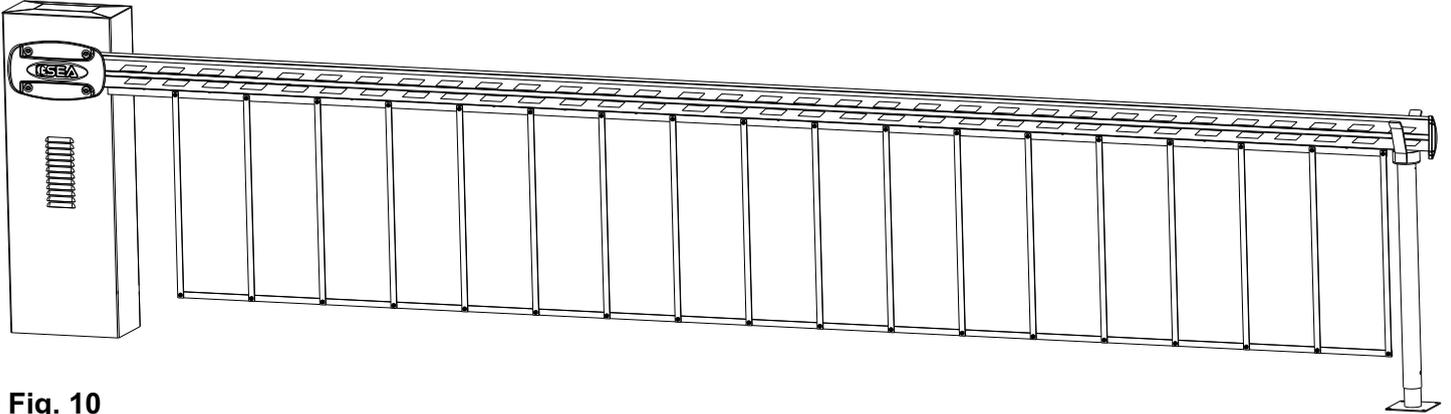


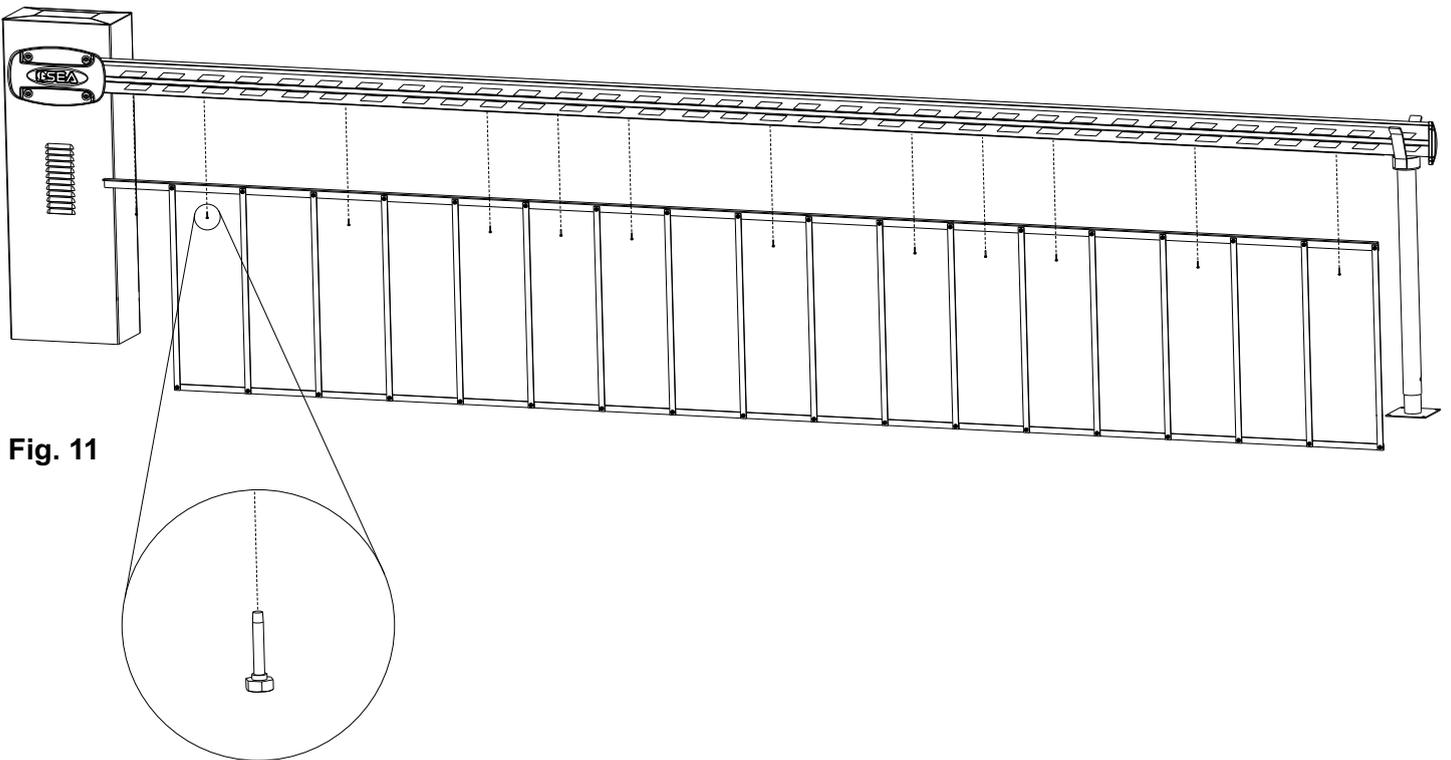
Fig. 9

### 7) Mounting of the skirt on the beam

**N.B.:** The skirt can be installed only on lateral mounted beams.



**Fig. 10**



**Fig. 11**

### 8) Balancing the spring

- Turn the manual release valve anti-clockwise to release the operator so that the beam can be opened and closed manually.

- Place the beam at approx. 45° and execute the balancing with the nuts of Fig. 12.  
To obtain a correct balancing the beam must be on 45° and the operator must be unlocked.

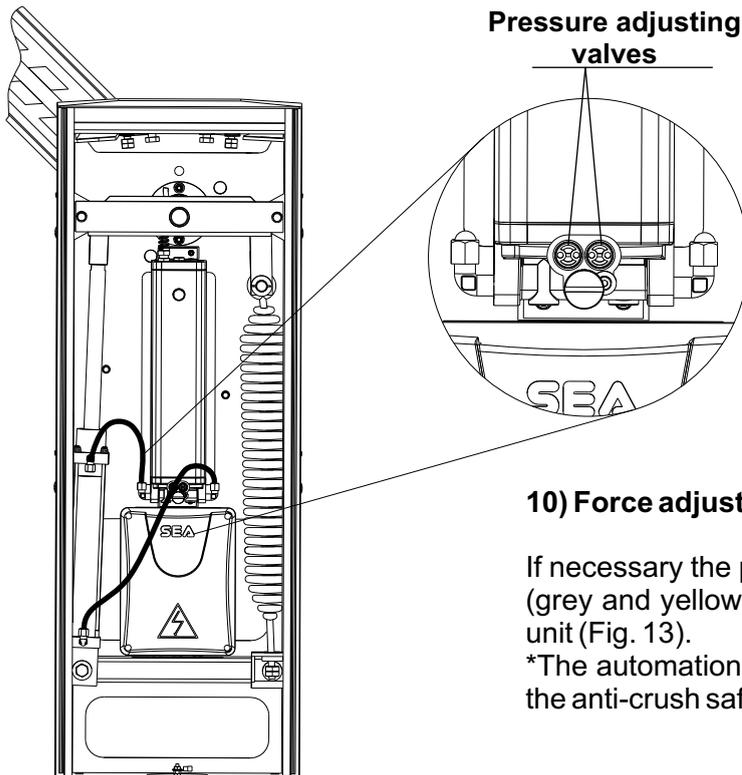
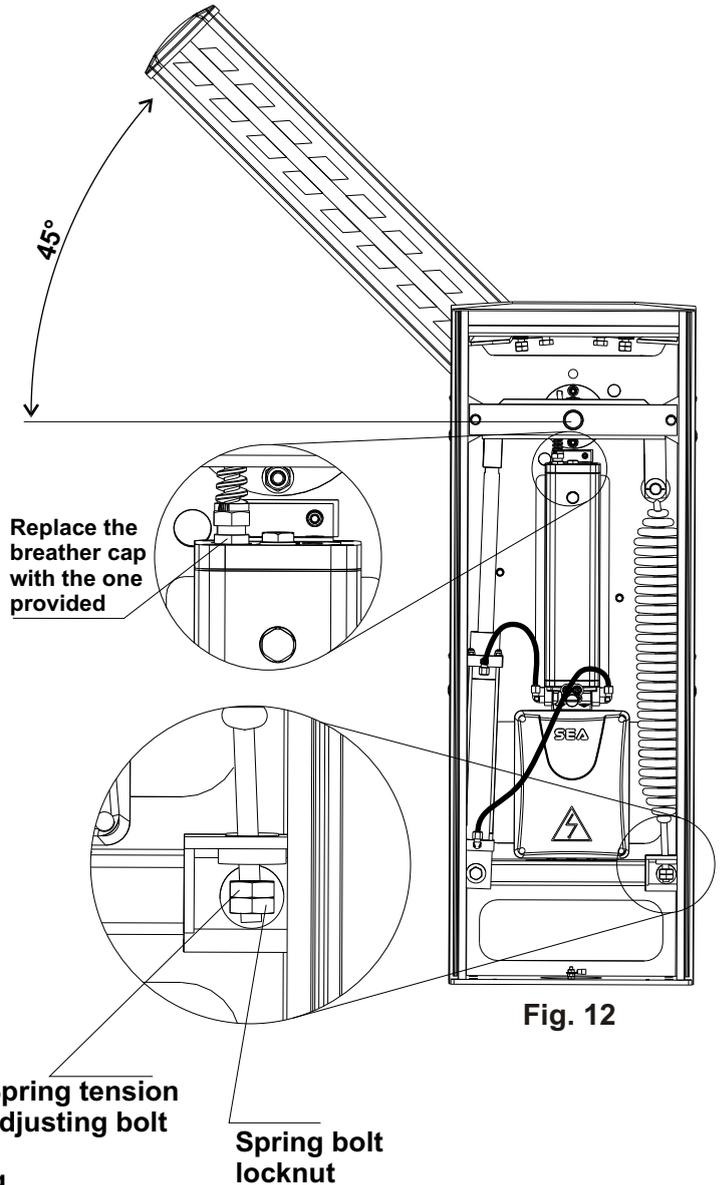
- Tight or untight the spring adjusting bolt locknut so that the spring reaches a balance point with the beam at 45° (Fig. 12).

- After balancing fix the spring adjusting bolt locknut with the bolt and block the operator.

**NOTE: For the correct balancing of the beam it is recommended to unhook the piston from the balance wheel extracting the pivot as in fig. 4**

### 9) Barrier power supply

Now it is possible to power supply the barrier with 120V~ 50/60 Hz.



### 10) Force adjustment

If necessary the piston force can be adjusted by the two adjusting screws (grey and yellow) placed on the front lower place of the Hydraulic pump unit (Fig. 13).

\*The automation is adjusted at 33 pound force ex works so to guarantee the anti-crush safety. We recommend to adjust it only in case of necessity.

Fig. 13

## 11) Levelling the beam

**Important:** This manoeuvre must be executed only if at the end stroke the beam is not in perfectly horizontal position in closing or in perfectly vertical position in opening.

- Unlock the actuator through the release screw so that the beam opens and closes manually.
- Release the end stroke screws unscrewing the lock nuts on the limit switch (Fig. 14).
- Screw or unscrew the end stroke screws so that the beam stays in perfectly vertical position in opening and in perfectly horizontal position in closing (Fig. 14).
- After levelling, fix the end stroke by tightening the lock nuts on the limit switch and block the actuator.

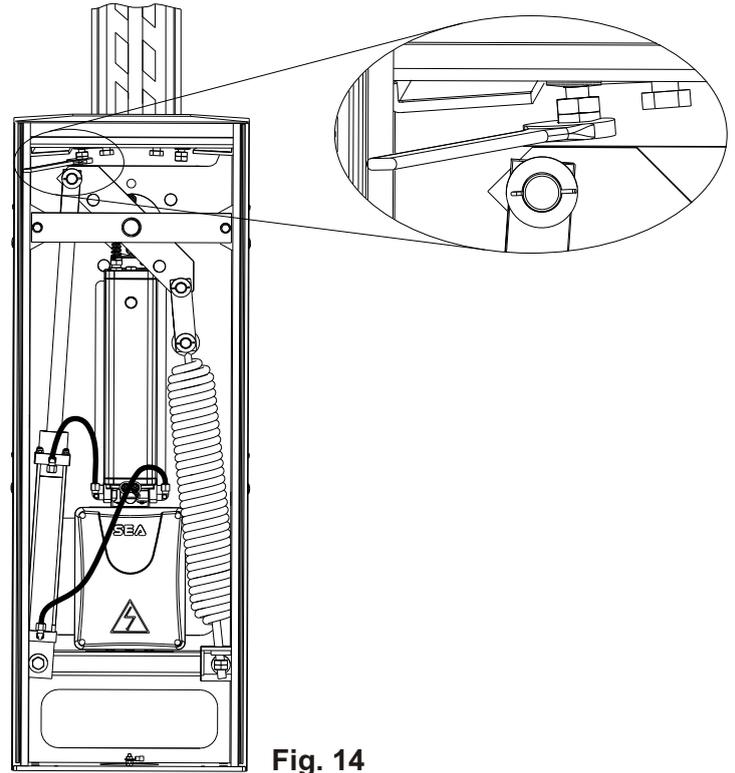


Fig. 14

## 12) Levelling of the central beam with fork

First extract the screws B, than the screws C (Fig. 15). Continue as described in the preceding paragraph.

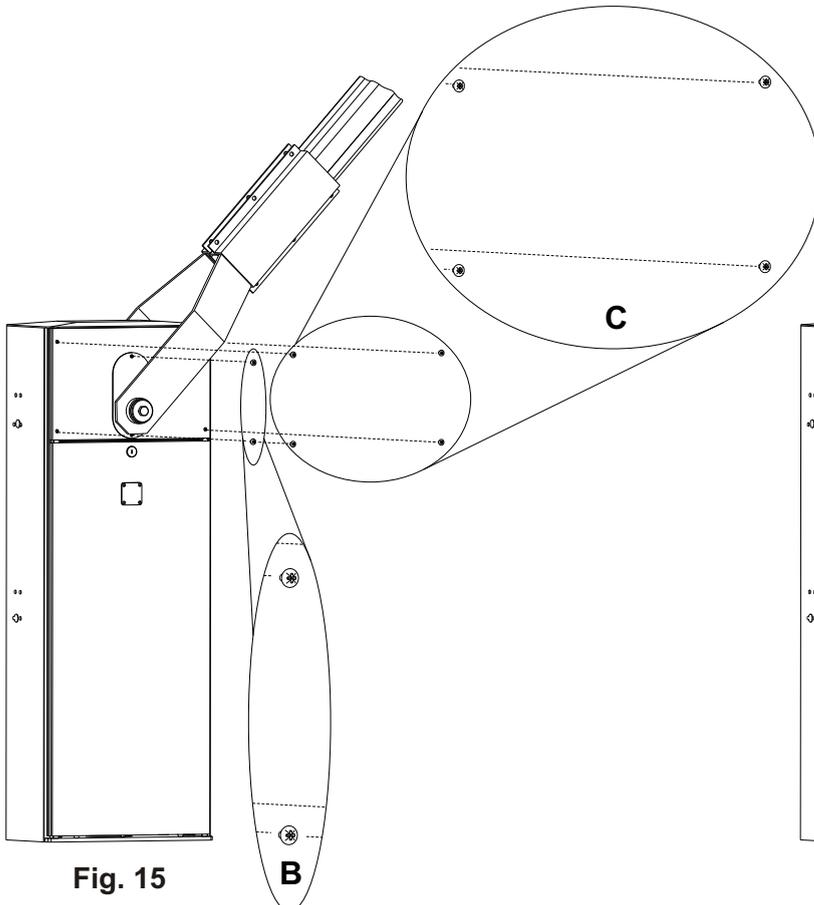


Fig. 15

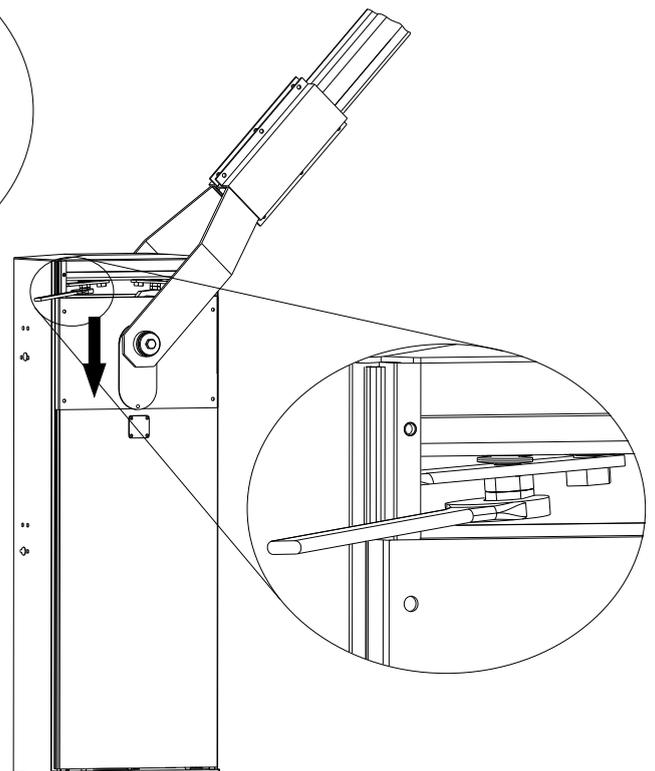


Fig. 16

### 13) Standard installation

In Fig.17 you find the necessary wiring for the barrier installation.  
The two numbers placed next to the electric cables show their quantity and section.

**Legend:**

- 1) Electronic control unit
- 2) Photocell (receiver)
- 3) Photocell (transmitter)
- 4) Key switch
- 5) Radio receiver
- 6) Warning light
- 7) Push button board
- 8) Main switch

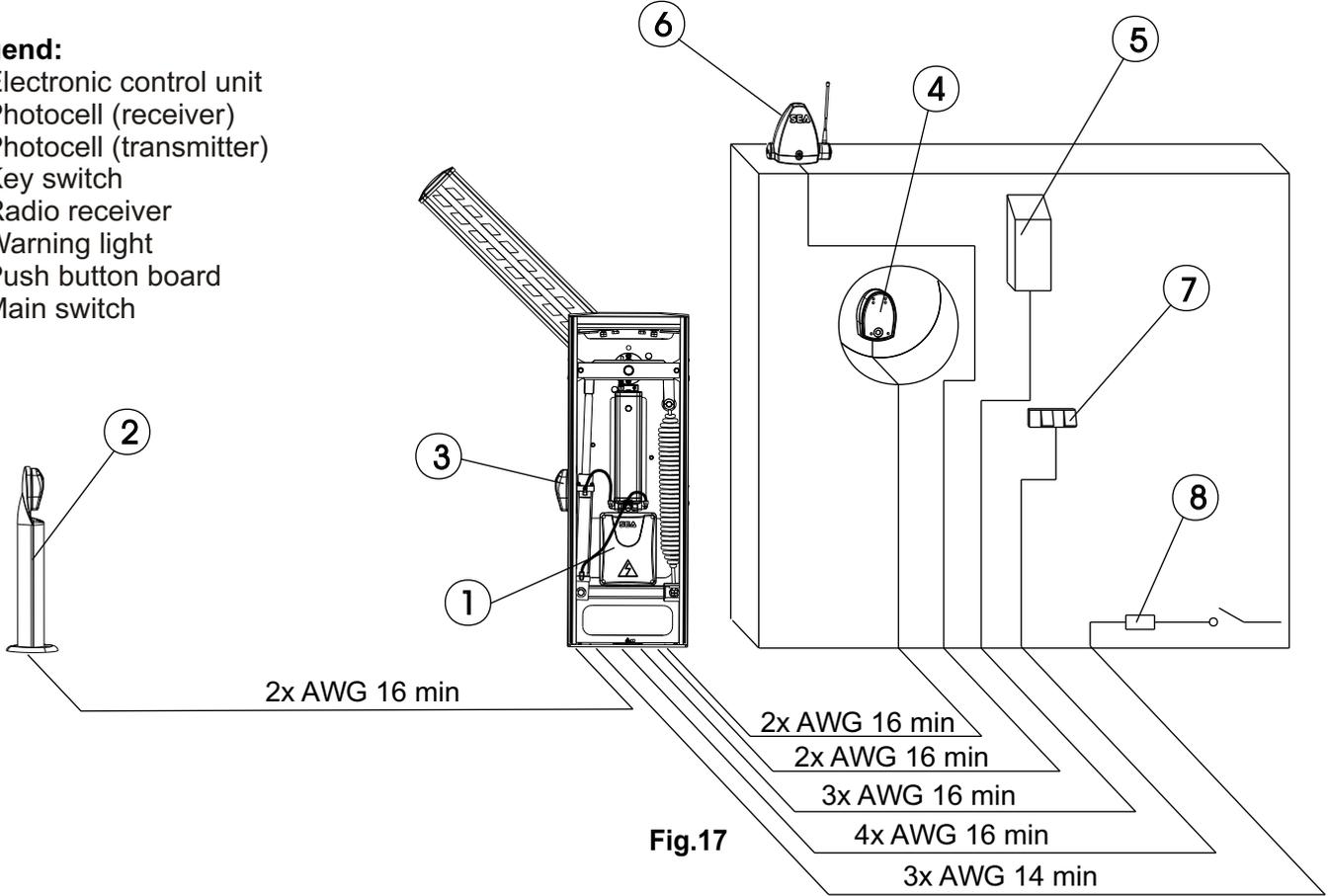
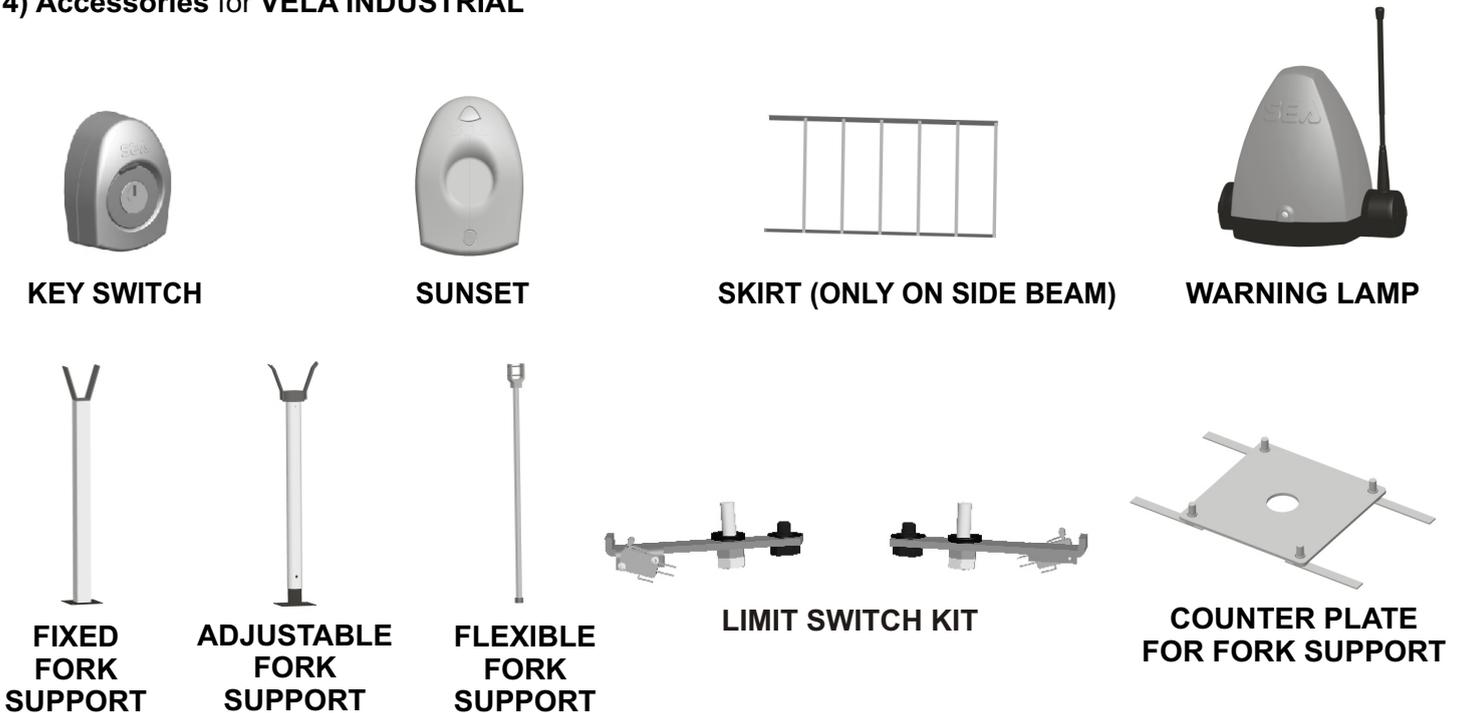


Fig.17

### 14) Accessories for VELA INDUSTRIAL



## To the attention of users and technicians

### 15) Release system

#### To release operate as follows:

- Open the door with the delivered special key
- Turn about 90° into anti-clockwise direction the release screw placed on the hydraulic unit.
- Move the beam with the hand

#### To re-lock operate as follows:

- Turn about 90° into clockwise direction the release screw placed on the hydraulic unit.
- Close the door

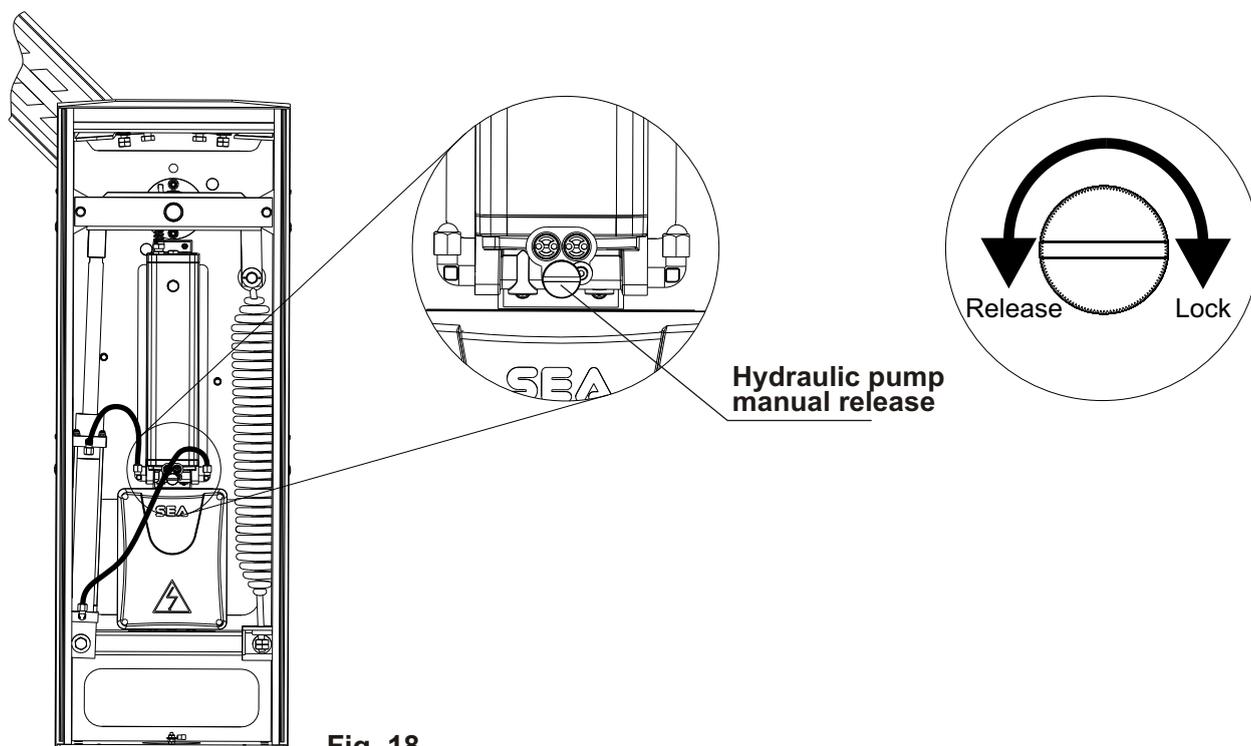


Fig. 18

### PERIODICAL MAINTENANCE

Check the functionality of the release	Annually
Lubricate all moving parts	Annually
Check the efficiency of the spring (balancing)	Annually
Check the beam fixing screws, the balance and the casing	Annually
Check the integrity of the connexion cables	Annually
Verify the efficiency of the limit switches (micro-switch)	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:

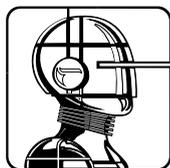
Hydraulic and oil-bath motors: 36 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.

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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