



# SEA<sup>®</sup>

Sistemi Elettronici  
di Apertura Porte e Cancelli  
International registered trademark n. 804888

CE

English

# BARRIERA TWIN

Automatic barrier



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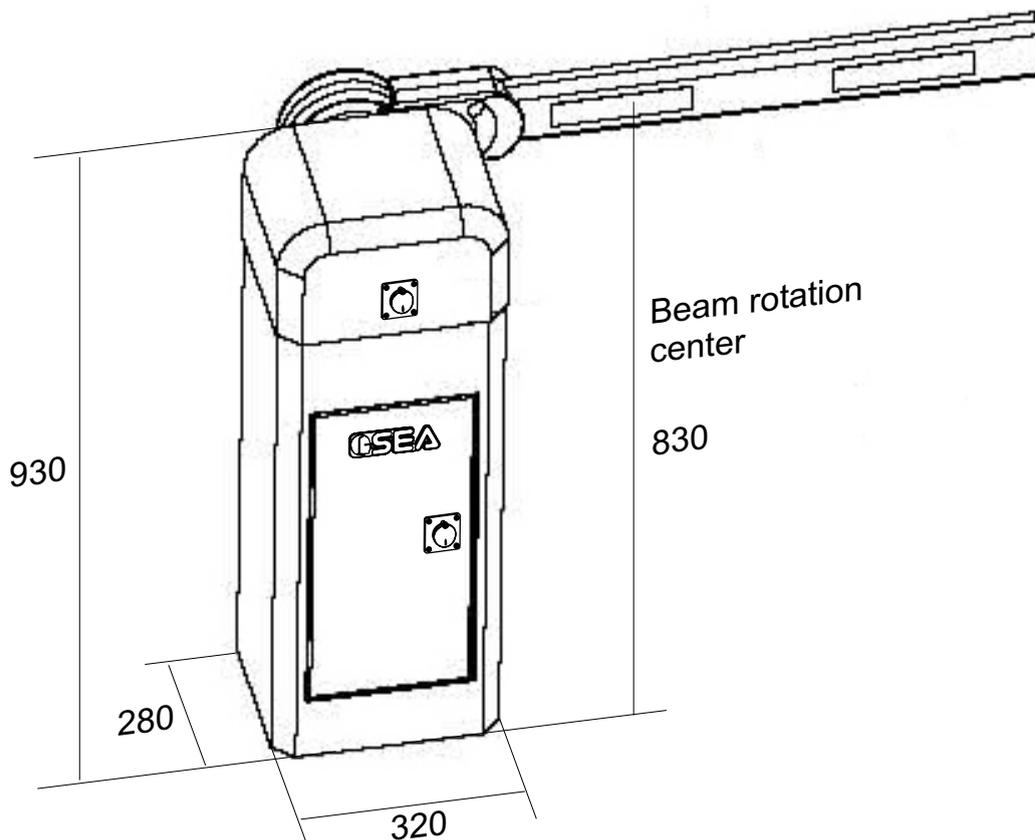


## FUNCTIONS AND FEATURES

- The humanized clutch device: In case of power off, unlock the clutch device and raise the boom manually. By the time the power is supplied, lock the clutch device to make it working normally again.
- Special spring device: Both the compression spring and tension spring can be used in the machine. Using the compression spring can avoid accidents caused by the tension spring.
- Three control buttons: for boom raising, falling and pausing.
- Boom backtrack function: the boom will rise if it hits something when falling.
- Infrared photocell design: for avoiding the crash when the boom falling.
- Both external and internal loop detectors are supported.
- 'Open', 'Close' and 'Stop' controlling interfaces.
- RS-485 communication serial interface (optional/NOT AVAILABLE).
- Traffic light signal connection device: red light for stop; green light for pass.

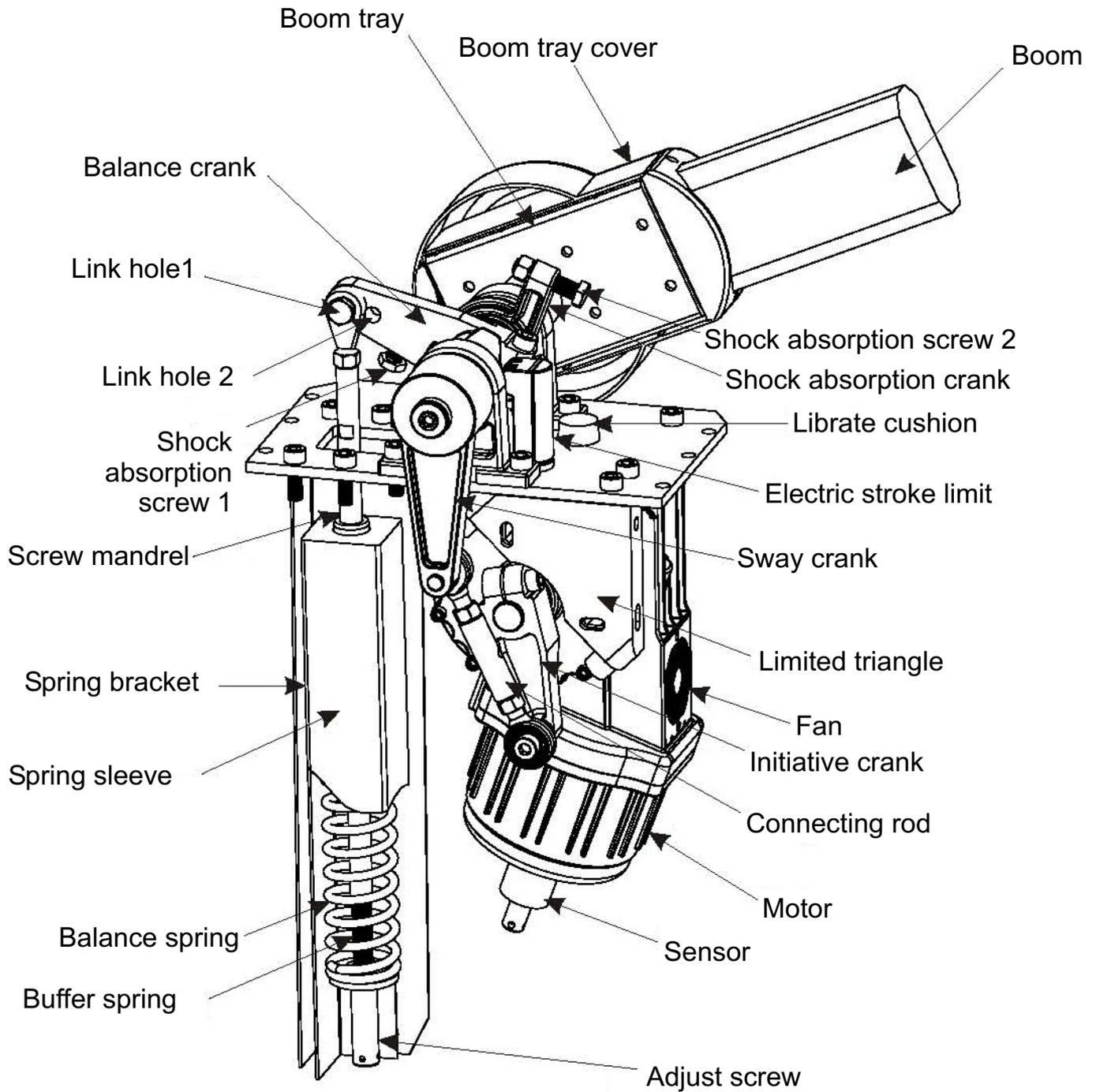
| TECHNICAL DATA                       |                    |
|--------------------------------------|--------------------|
| Machine core working temperature     | -25°C ~ +85°C      |
| Electric cabinet working temperature | -20°C ~ +75°C      |
| Rating voltage                       | 220 ± 10%, 50/60Hz |
| Rating power                         | 100W               |
| Relative humidity                    | ≤90%               |
| Remote control distance              | ≥30m               |
| Net weight                           | 65Kg               |

## DIMENSIONS (mm)



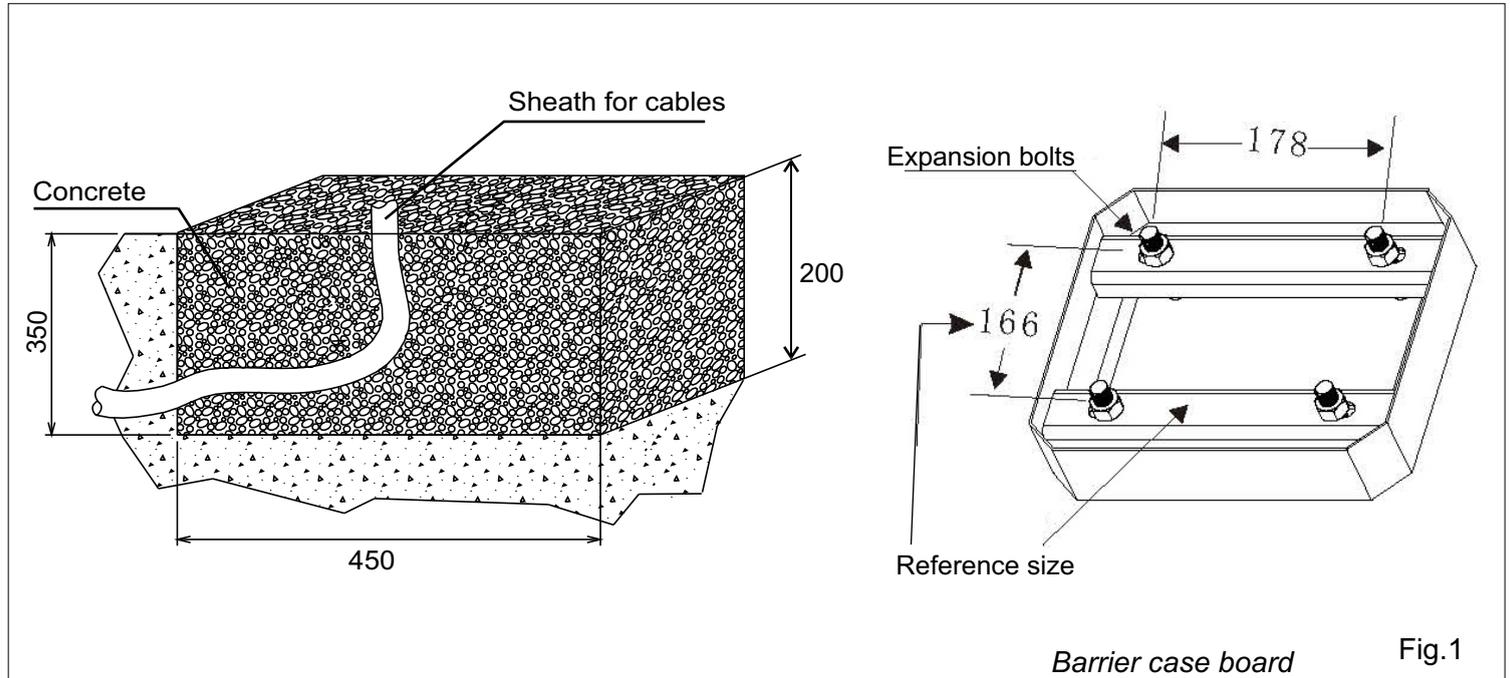


## LIST OF THE MAIN PARTS



## INSTALLATION

Fix the barrier gate case board with 4 expansion bolts (supplied) (refer to the fig. 1)



## RELEASE SYSTEM

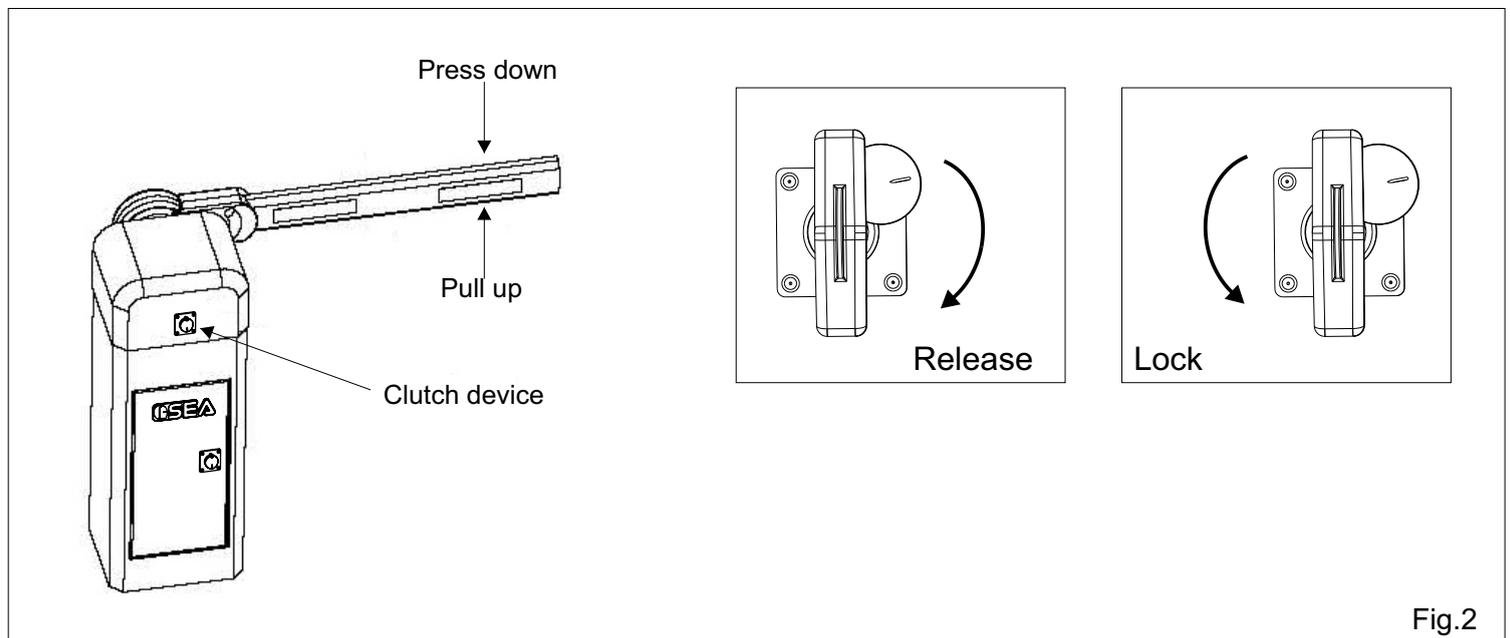
### To release operate as follows:

Insert the release key and turn it into clockwise direction.

### To re-lock operate as follows:

Turn the release key into anti-clockwise direction.

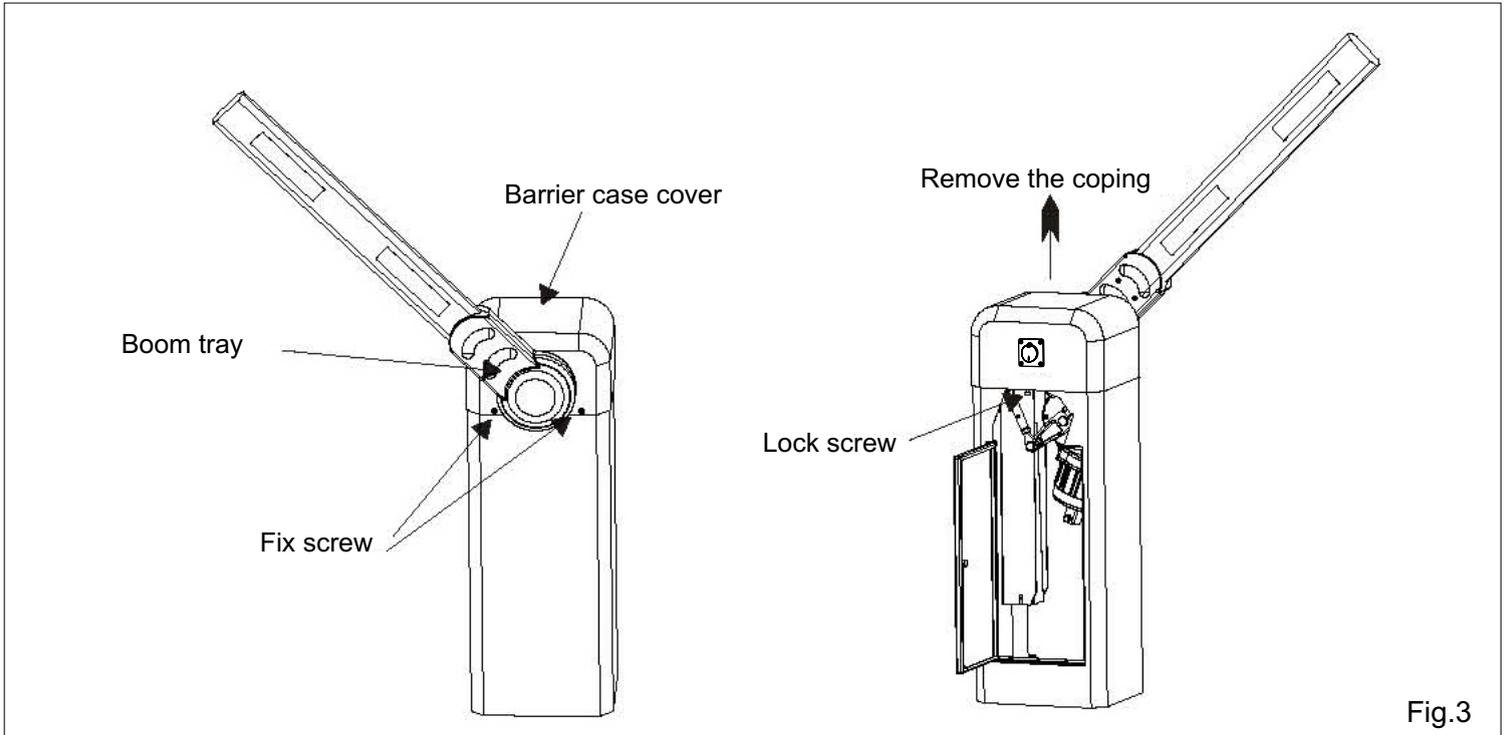
If you are unable to lock / unlock the release, push the beam slightly up or down by hand (see Figure 2). Then turn on the power.





## DEBUGGING AND USE OF THE MECHANISM (CAUTION: TURN OFF THE POWER BEFORE SETTING)

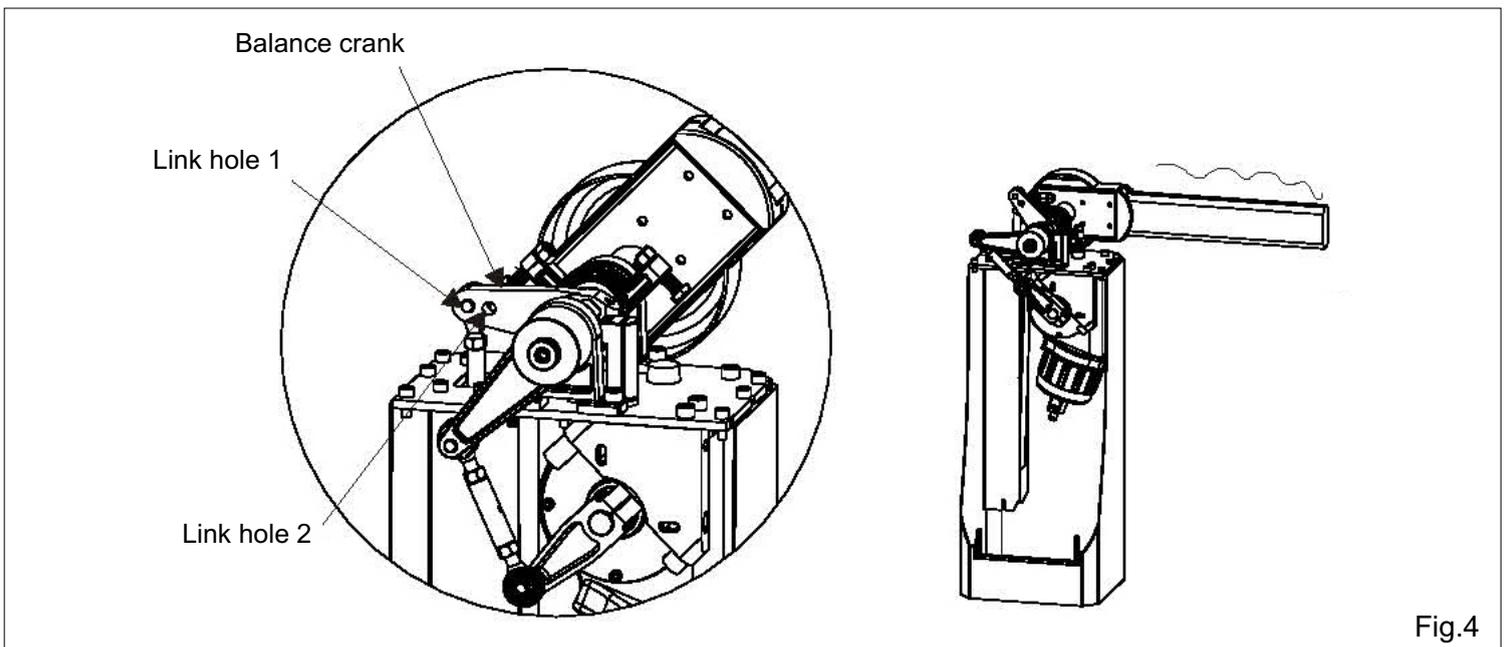
Fig. 3 (Caution: turn off the power before setting)



(A) The barrier gate has been well set in our factory, but it can be further debugged if there is any problem in usage.

(B) Dismantle the machine coping:

- 1) Remove the fixed screws which were fixed under the boom tray.
- 2) Open the machine door and loose the lock screws.
- 3) Take away the coping.(Refer to fig.3)

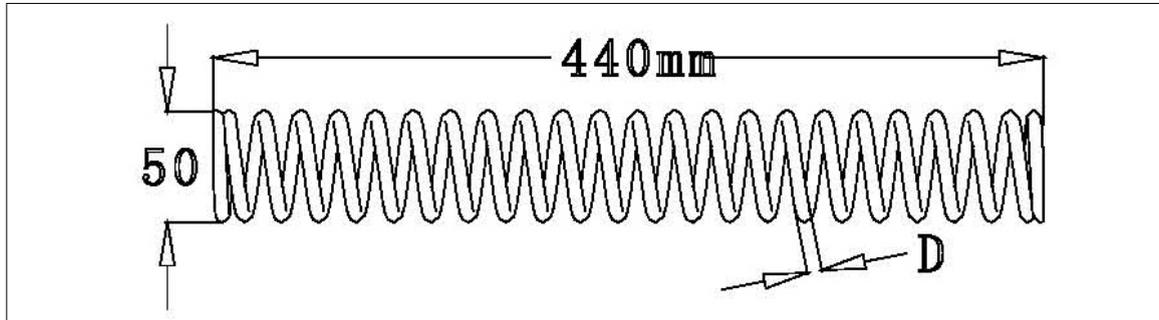




## SPRING SELECTION, INSTALLATION AND ADJUSTMENT

### A) Spring selection:

#### Balance spring



The parameter for selecting the balance spring

| Num. | The length of the arm<br>(L = m) | Line diameter/diameter of<br>the spring (D = mm) | Link hole<br>selection |
|------|----------------------------------|--|------------------------|
| 1    | $2.5 < L < 3.5$                  | D=4.5  | Foro 1                 |

#### Inbuilt spring:

Line diameter = 3.0 mm

Length = 145 mm

External diameter = 26 mm

In order to make a safe and steady performance and to decrease the metal fatigue of the balance spring, 3 inbuilt springs covered with PVC pipe are inserted into the 6.5 mm compressed balance spring and separated with rubber cushion.

### (B) Spring installation

(B-a) Select a suitable spring together with the screw mandrel and insert them into the spring sleeve.

(B-b) Put the whole assembled sleeve into the spring bracket.

(B-c) Make the screw mandrel connected to the balance crank by link hole 1 or link hole 2.

(B-d) Install the gasket and the screw at the bottom of the screw thread pole.

(B-e) Spin the screw clockwise to adjust the press of the balance spring, so that it can balance the weight of the arm.

### (C) Spring replacement

(C-a) Rise up the boom to the vertical position. If the power is off, unlock the clutch device, put the boom to the vertical position manually, and make sure the boom would not fall down.

(C-b) Spin the bottom adjusting nut anticlockwise to disassemble it and the baffle ring.

(C-c) Fall down the boom to the horizontal position manually, loosen the fixed screw and take out the screw mandrel from the spring sleeve.

(C-d) Loosen 4 set screws to take off the spring sleeve for changing the new spring. (Refer to Fig.5)

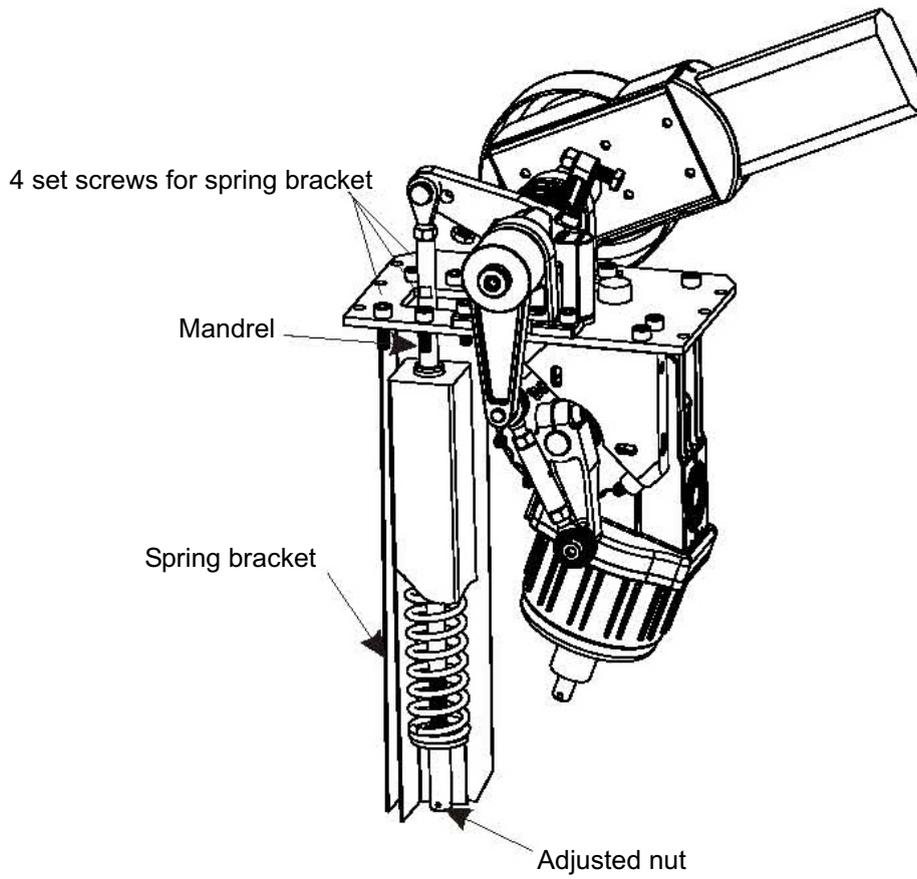


Fig.5

(C-e) Insert the screw mandrel again and fix it to the selected link hole.

(C-f) Rise up the boom to the vertical position again and make sure the boom will not fall down.

(C-g) Install the adjusting nuts and the baffle ring in the lower part of the screw mandrel and adjust the press to the balance spring, so that it can balance the weight of the arm.

#### (D) Spring adjustment

The bottom screw can be screwed clockwise or anticlockwise to adjust the press to the balance spring. (Refer to Fig.6)

(D-a) In the uptrend area, the boom will move upright because of the balance spring.

(D-b) Correct balance of the beam: at 45° the beam must remain motionless.



# INSTALLATION AND CONNECTIONS OF THE ELECTRIC PART

## *Electrical connections*

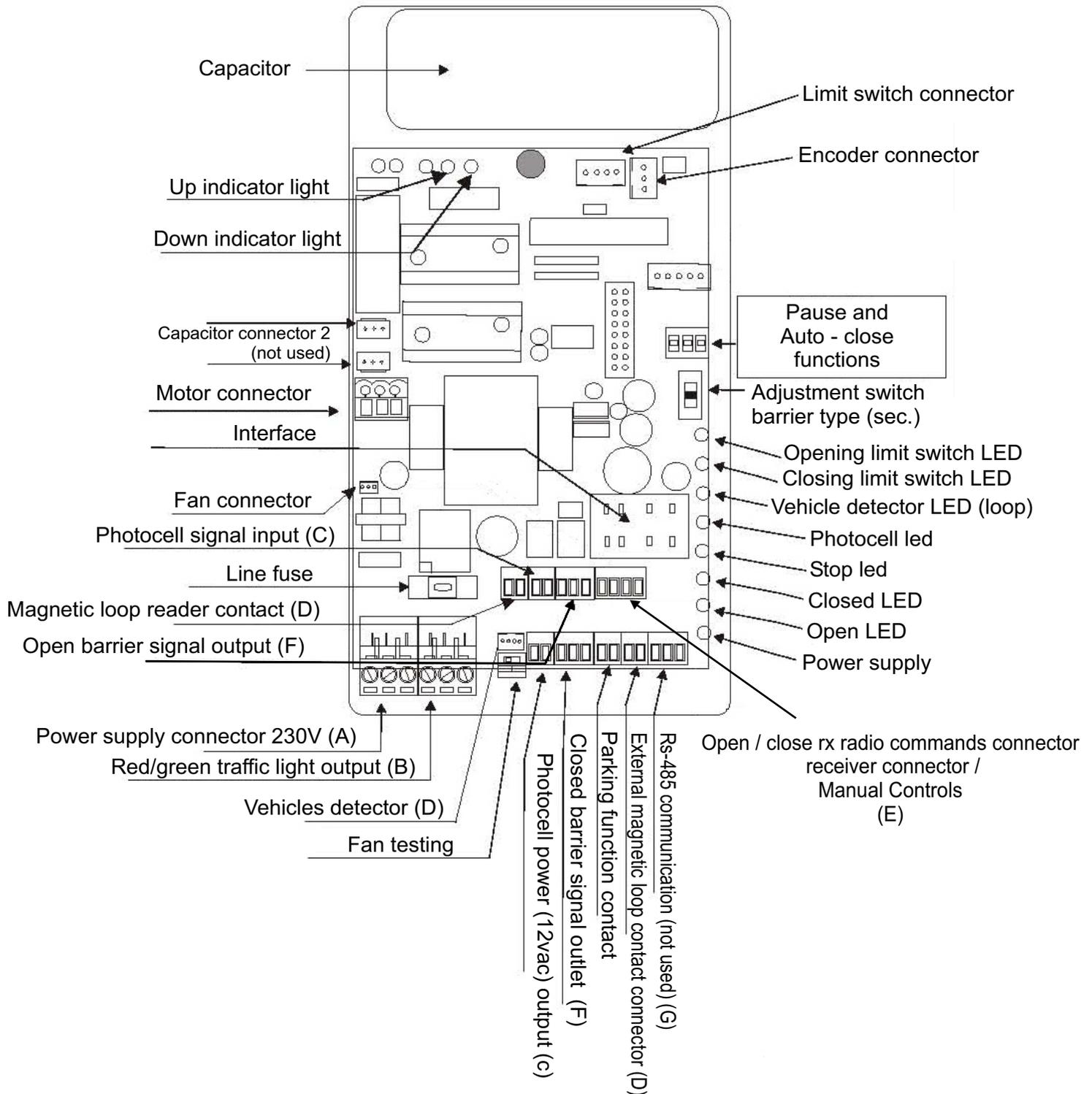


Fig.7



**A) Terminale alimentazione a 220V (110V):**

Take off the output terminal cover and plug in the power wire.

**B) The traffic light (R&G light) connection:**

The traffic light connector is for 220V power. Connect the Red Light Wire to R output terminal, the Green Light Wire to G output terminal. And the COM terminal is the loop input terminal for the traffic light circuit.

**C) Infrared emitter and receiver (photocell):**

To use this device, first connect the infrared device (TX and RX) to 12Vac power output terminal, and then connect the receiver to the infrared signal input terminal.

**D) Loop detector terminal:**

This controller can support both the internal and the external loop detector connections. However, just one way can be chosen. If external loop detector is selected, just connect the loop detector to 220V power ( 230V readers), and connect the signal wire to the signal input terminal. If the internal loop detector is selected, connect the internal loop detector to the socket on the circuit board directly and the signal wire to vehicles detector signal input terminal.

**E) "COM", "UP", "DOWN", "STOP" terminale ingresso segnali:**

Se si sceglie la connessione a "UP" "DOWN", "STOP" con il contatto "COM" tramite filo, la scheda madre darà il segnale correlato all'asta.

**F) "UP" and "DOWN" position limit switch:**

This switch transmits the "UP" and "DOWN" command to boom by optical signal.: More details please refer to Fig.12)

**G) RS485 serial communication terminal (not used).**

## **ADJUSTMENT OF THE LIMIT SWITCH**

(1) The blue laser obstacle on the spindle near the clutch is the laser obstacle to stop the boom after it stands straight: When the boom is at the falling limit position, adjust this laser to make it point down wards and form an angle ( $=90^\circ$ ) with the arm.

When the laser obstacle moves into the slot and the green light is on, the rising limit will work and the boom will stand straight. Check the vertical angle between the boom and the horizontal position and adjust 19 the laser obstacle, so as to make the boom be perfectly vertical.

(2) The blue laser obstacle on the spindle near the boom is the laser obstacle to stop the boom after it lies horizontally:

When the boom is at the rising limit position, adjust this laser obstacle to make it point upwards and form an angle ( $90^\circ$ ) with the arm. When the laser obstacle moves into the slot and the red light is on, the falling limit will work and the boom will lie horizontally. Check the horizontal angle between the boom and the horizontal position and adjust the laser obstacle, to make the boom be perfectly horizontal.



## TROUBLE SHOOTING

| Problem Found   | Solutions  |
|---|--|
| Motor works but there is no reaction on the arm   | a. Please check whether the clutch device is locked or not.  |
| There is too much vibrant when the boom is rising or falling.                             | a. Please check whether the shock absorption rubber is broken or not, if yes, change a new one.<br>b. Please check whether the balance spring is overused and distorted. If yes, change a new one; or spin bottom adjust nut.                    |
| The boom could not rise up or fall down to the end.                                       | a. When change a long boom to a short one, please readjust it.   |
| The distance of the remote control decreases.   | a. Check whether the charge capacity of the remote controller is enough or not.  |
| There is no reaction when pressing the remote controller buttons.                         | a. Please check whether the power is supplied to the barrier gate or not.<br>b. Please check whether the fuse is burnt out or not.<br>c. Please check whether the code both in the remote controller and the control board are accordant or not. |
| There is no reaction on the motor when the user changes a control board.                  | a. Please check the capacitance is correctly fixed or not.<br>b. Please check the sensor is right inserted or not.   |
| If the user changes a new control board and the boom is abnormal when rising and falling. | a. Please adjust the "Gate Type Selection" (Refer to the control board).   |

## PACKING LIST

| Title                      | Specification                  | Qty | Note                                   |
|----------------------------|--------------------------------|-----|--|
| Barrier Gate Core          |                                | 1   | Main part                              |
| Barrier Gate Boom          |                                |     |  |
| Hexagonal Head Tap Bolt    | M8x55mm                        | 6   | For fixing the boom                    |
| Self-tapping screw         | ST4x16                         | 1   | For fixing the boom                    |
| Self-tapping screw         | ST3x10                         | 4   | For fixing the boom                    |
| Supporting pole            |                                | 1   | For supporting the boom                |
| Expansion Bolt             | M16x150                        | 4   | For fixing the case                    |
| Hexagonal Inner Screw      | M8x35                          | 4   | For fixing the case                    |
| Release key                |                                | 1   | For release system                     |
| Case key                   |                                | 2   | For barrier gate case and cove locking |
| Balance Spring             | According to length of the arm | 1   | For spare usage                        |
| Remote Emitter             | Roll Plus                      | 2   | For remote controlling                 |
| Instruction                |                                | 1   | For reference                          |
| Rs485 transition Interface | Not available                  | 1   | Optional part                          |
| Communication Module       | Not available                  | 1   | Optional part                          |
| Cover head                 |                                | 1   |  |



## GENERAL NOTICE FOR THE INSTALLER AND THE USER

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. SEA S.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 be done respecting Directives: EN12453 and En12445.
5. Do not install the equipment in an explosive atmosphere.
6. SEA S.p.A. 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 earthing system is perfectly constructed, and connect it metal parts of the lock.
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 S.p.A. declines all liability as concerns the automated system's security and efficiency, if components used, are not produced by SEA S.p.A..
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 system's 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. 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 low voltage safety (SELV) or use an appropriate sheath that provides extra insulation having a thickness of 1 mm.

## TERMS OF SALES

**EFFICACY OF THE FOLLOWING TERMS OF SALE:** the following general terms of sale shall be applied to all orders sent to SEA S.p.A. All sales made by SEA to all costumers are made under the prescription of this terms of sales which are integral part of sale contract and cancel and substitute all apposed clauses or specific negotiations present in order document received from the buyer.

**GENERAL NOTICE** The systems must be assembled exclusively with SEA components, unless specific agreements apply. Non-compliance with the applicable safety standards (European Standards EM12453 – EM 12445) and with good installation practice releases SEA from any responsibilities. SEA shall not be held responsible for any failure to execute a correct and safe installation under the above mentioned standards.

**1) PROPOSED ORDER** The proposed order shall be accepted only prior SEA approval of it. By signing the proposed order, the Buyer shall be bound to enter a purchase agreement, according to the specifications stated in the proposed order.

On the other hand, failure to notify the Buyer of said approval must not be construed as automatic acceptance on the part of SEA.

**2) PERIOD OF THE OFFER** The offer proposed by SEA or by its branch sales department shall be valid for 30 solar days, unless otherwise notified.

**3) PRICING** The prices in the proposed order are quoted from the Price List which is valid on the date the order was issued. The discounts granted by the branch sales department of SEA shall apply only prior to acceptance on the part of SEA. The prices are for merchandise delivered ex-works from the SEA establishment in Teramo, not including VAT and special packaging. SEA reserves the right to change at any time this price list, providing timely notice to the sales network. The special sales conditions with extra discount on quantity basis (Qx, Qx1, Qx2, Qx3 formula) is reserved to official distributors under SEA management written agreement.

**4) PAYMENTS** The accepted forms of payment are each time notified or approved by SEA. The interest rate on delay in payment shall be 1.5% every month but anyway shall not be higher than the max. interest rate legally permitted.

**5) DELIVERY** Delivery shall take place, approximately and not peremptorily, within 30 working days from the date of receipt of the order, unless otherwise notified. Transport of the goods sold shall be at Buyer's cost and risk. SEA shall not bear the costs of delivery giving the goods to the carrier, as chosen either by SEA or by the Buyer. Any loss and/or damage of the goods during transport, are at Buyer's cost.

**6) COMPLAINTS** Any complaints and/or claims shall be sent to SEA within 8 solar days from receipt of the goods, proved by adequate supporting documents as to their truthfulness.

**7) SUPPLY** The concerning order will be accepted by SEA without any engagement and subordinately to the possibility to get it's supplies of raw material which is necessary for the production; Eventual completely or partially unsuccessful executions cannot be reason for complains or reservations for damage. SEA supply is strictly limited to the goods of its manufacturing, not including assembly, installation and testing. SEA, therefore, disclaims any responsibility for damage deriving, also to third parties, from non-compliance of safety standards and good practice during installation and use of the purchased products.

**8) WARRANTY** The standard warranty period is 12 months. This warranty time can be extended by means of expedition of the warranty coupon as follows:

**SILVER:** The mechanical components of the operators belonging to this line are guaranteed for 24 months from the date of manufacturing written on the operator.

**GOLD:** The mechanical components of the operators belonging to this line are guaranteed for 36 months from the date of manufacturing written on the operator.

**PLATINUM:** The mechanical components of the operators belonging to this line are guaranteed for 36 months from the date of manufacturing written on the operator. The base warranty (36 months) will be extended for further 24 months (up to a total of 60 months) when it is acquired the certificate of warranty which will be filled in and sent to SEA S.p.A. The electronic devices and the systems of command are guaranteed for 24 months from the date of manufacturing. In case of defective product, SEA undertakes to replace free of charge or to repair the goods provided that they are returned to SEA repair centre. The definition of warranty status is by unquestionable assessment of SEA. The replaced parts shall remain propriety of SEA. Binding upon the parties, the material held in warranty by the Buyer, must be sent back to SEA repair centre with fees prepaid, and shall be dispatched by SEA with carriage forward. The warranty shall not cover any required labour activities.

The recognized defects, whatever their nature, shall not produce any responsibility and/or damage claim on the part of the Buyer against SEA. The guarantee is in no case recognized if changes are made to the goods, or in the case of improper use, or in the case of tampering or improper assembly, or if the label affixed by the manufacturer has been removed including the SEA registered trademark No. 804888. Furthermore, the warranty shall not apply if SEA products are partly or completely coupled with non-original mechanical and/or electronic components, and in particular, without a specific relevant authorization, and if the Buyer is not making regular payments. The warranty shall not cover damage caused by transport, expendable material, faults due to non-conformity with performance specifications of the products shown in the price list. No indemnification is granted during repairing and/or replacing of the goods in warranty. SEA disclaims any responsibility for damage to objects and persons deriving from non-compliance with safety standards, installation instructions or use of sold goods. The repair of products under warranty and out of warranty is subject to compliance with the procedures notified by SEA.

**9) RESERVED DOMAIN** A clause of reserved domain applies to the sold goods; SEA shall decide autonomously whether to make use of it or not, whereby the Buyer purchases propriety of the goods only after full payment of the latter.

**10) COMPETENT COURT OF LAW** In case of disputes arising from the application of the agreement, the competent court of law is the tribunal of Teramo. SEA reserves the faculty to make technical changes to improve its own products, which are not in this price list at any moment and without notice. SEA declines any responsibility due to possible mistakes contained inside the present price list caused by printing and/or copying. The present price list cancels and substitutes the previous ones. The Buyer, according to the law No. 196/2003 (privacy code) consents to put his personal data, deriving from the present contract, in SEA archives and electronic files, and he also gives his consent to their treatment for commercial and administrative purposes.

**Industrial ownership rights:** once the Buyer has recognized that SEA has the exclusive legal ownership of the registered SEA brand num.804888 affixed on product labels and / or on manuals and / or on any other documentation, he will commit himself to use it in a way which does not reduce the value of these rights, he won't also remove, replace or modify brands or any other particularity from the products. Any kind of replication or use of SEA brand is forbidden as well as of any particularity on the products, unless preventive and expressed authorization by SEA.

**In accomplishment with art. 1341 of the Italian Civil Law it will be approved expressly clauses under numbers:**

**4) PAYMENTS - 8) GUARANTEE - 10) COMPETENT COURT OF LAW**



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