SEA® USA
ELECTRONIC OPENING SYSTEMS
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FIELD

C US
LISTED TO
CSA Std C22.2 no. 247-92(R2004)
UL Std no. 325 – 5th Edition

INSTALLATION MANUALS AND SAFETY INFORMATION

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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.

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.

MECHANICAL INSTALLATION

FIELD is an high quality electromechanical in-ground operator for residential use for swing gates with a leaf lenght of 137,8 inches and weight leaf of 1322,8 Lbs.

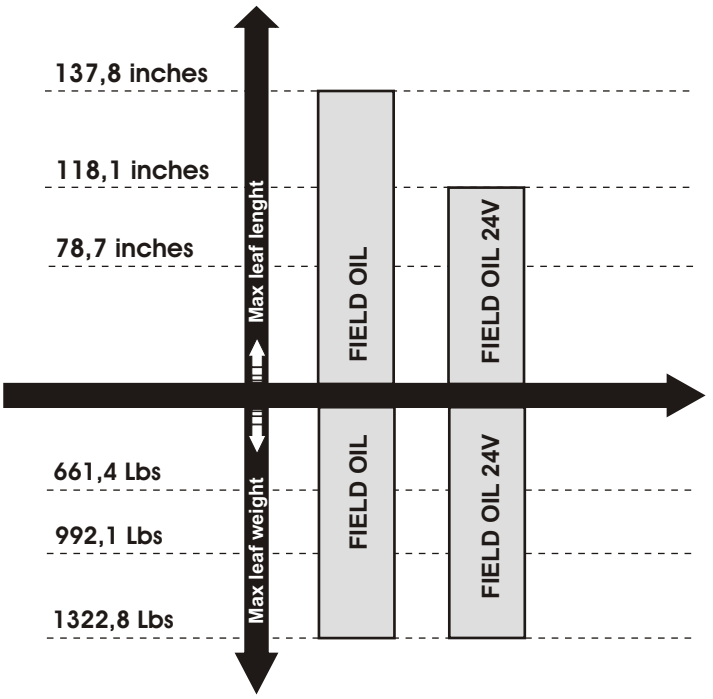
Lubrication with grease (oil bath optional)

Available in 3 versions: slow, fast and also with low voltage (24V) for maximum safety and intensive use.

Electronic limit switch and mecanichal stop in the carrying box.

Adjustable slow down in opening and closing with GATE control Board.

GRAPHIC FOR THE USE OF FIELD AND FIELD 24V



MAIN PARTS NOMENCLATURE

1 Handle bar device
2 Electric motor
3 Cover fixation screw
4 Leaf device
5 Counter-connecting rod
6 Foundation carrying box
7 Hole for water discharge
8 Hole electric cable exit
9 Adjustable limit switch in closing
10 Adjustable limit switch in opening

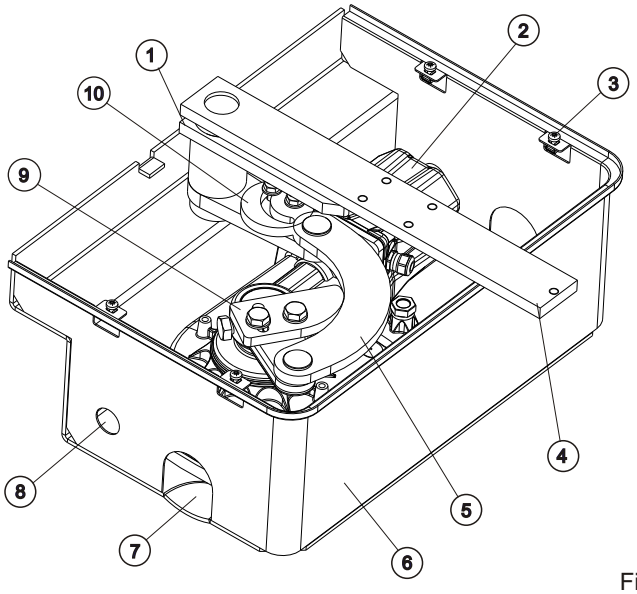


Fig. 1

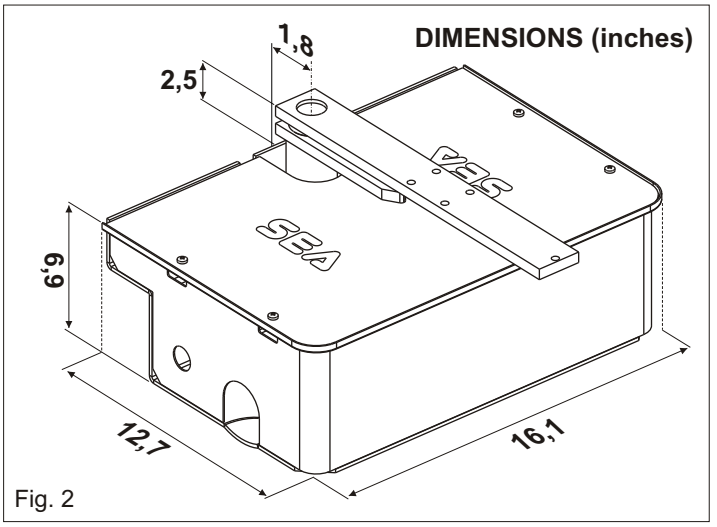


Fig. 2

TECHNICAL DATA	*FIELD OIL*	*FIELD OIL 24V*
Power supply	120V (60 Hz)	
Absorbed Power	280W	130W
Frequency of use	20 cycles/h	50 cycles/h
Operating temperature	From -4°F to 131°F	
Weight	27,5 Lbs	28,7 Lbs
Max leaf width	137,8 inc.	118,1 inc.
Opening degree	110° - 180° (optional)	
Time of 90° movement	18 s.	14/30 s.
Protection class	3R Type	
Starting capacitor	35 uF	-
Max torque	300 Nm	
Max leaf weight	1322,8 Lbs	

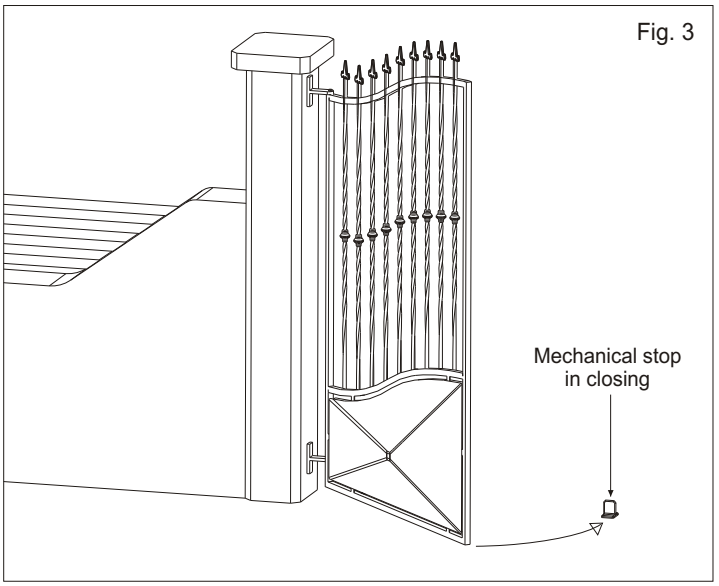
1. GATE ARRANGEMENT

You must do some checks on the gate to see if fitting a FIELD system is possible:

A. (Make sure that) the fixed and moving parts of the gate are strong and non-deformable;
B. the weight of each gate leaf must not exceed 1322,8 Lbs (Field Oil/Field Oil 24V) ;
C. the hinges and general structure must be in good condition and the gate must move smoothly throughout its travel;
D. the upper hinge alone is sufficient to install the unit; those which are unnecessary can be eliminated (the lower and that in the middle if exists);
E. in case of leaf length superior of 70,9 inches and 330,7Lbs of weight, it is recommended to fix to the ground a mechanical stop in closing (Fig. 3).

MECHANICAL INSTALLATION

Fig. 3



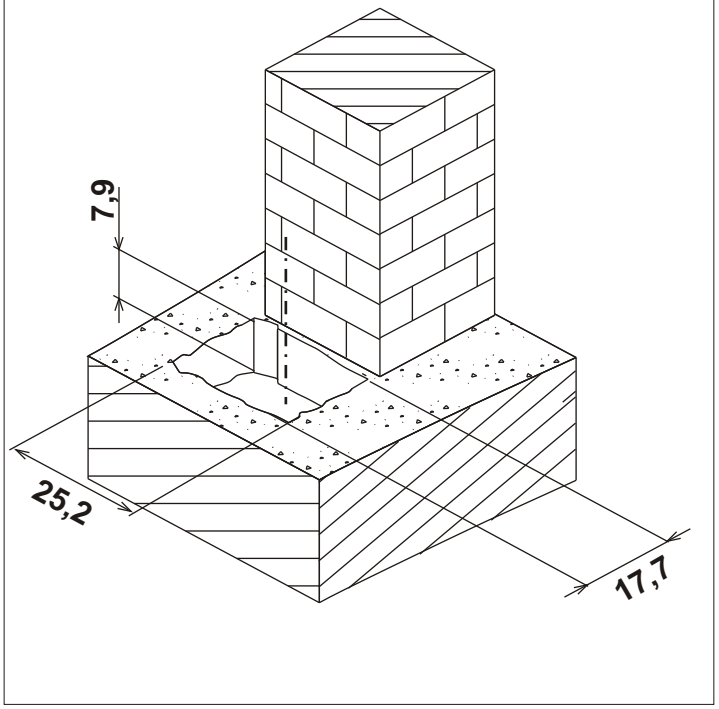
2. CARRYING BOX INSTALLATION

2.1. The hole which contains the carrying box must have the approximate dimensions mentioned in Fig. 4.

For a correct placing, it is obbligatory to follow closely the quote of 1,8 inches which corresponds to the minimum distance of the rotation axis from the pillar.

dimensions (inches)

Fig. 4



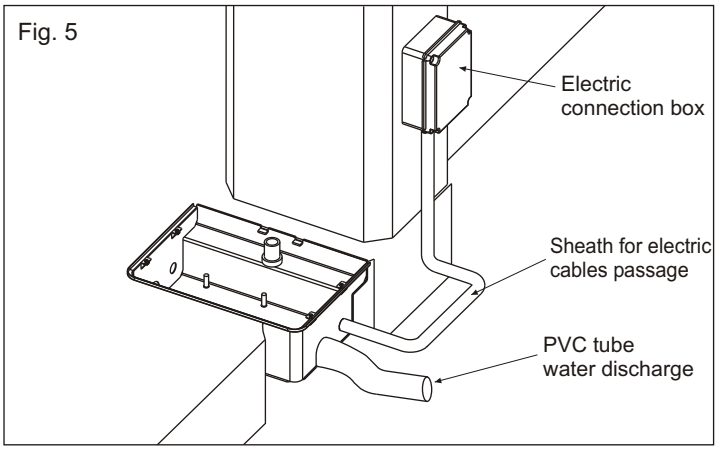
2.2. Inside the excavated pit you have to plan:

rain water drainage;

a water waste pipe in PVC of about 1,6 inches of diameter to put inside the provided hole of the box before it is concreted (Fig. 5). **It must be brought until the drain of the sewer line**;

a sheath for the passage of electrical cables of about 0,8 inches of diameter which must be brought to the proximity of the electric connection box (Fig. 5).

Fig. 5



2.3. Before concreting the carrying box, use a level to make it perfectly horizontal to the ground (Fig. 6) and perpendicular to the axis of the gate (Fig. 7).

The axis of the upper hinge of the gate must correspond exactly to the axis of the carrying box shaft.

Follow the distance of 2,5 inches closely between the carrying box cover and the base of the gate.

Fig. 6

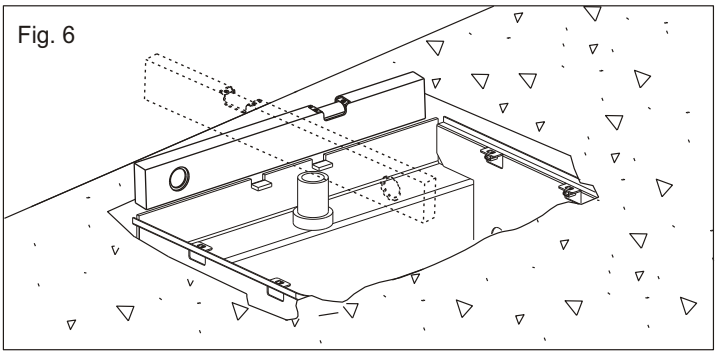
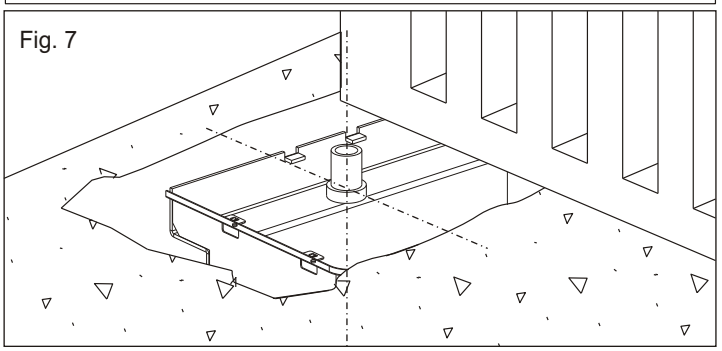


Fig. 7



2.4. Insert the ball into the perforated shaft (Fig. 8)

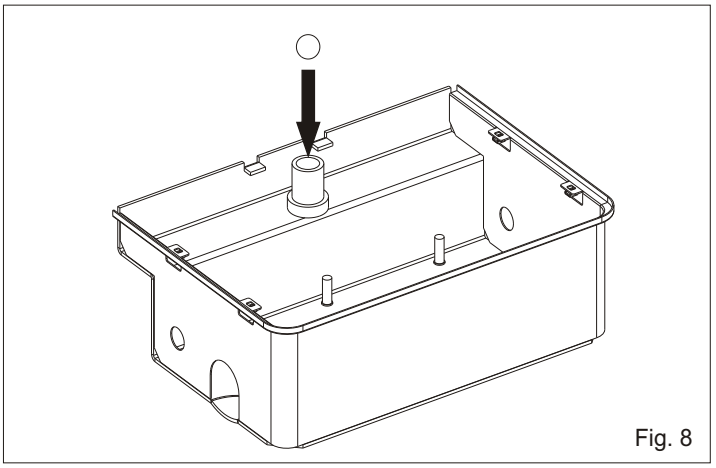


Fig. 8

MECHANICAL INSTALLATION

2.5. Insert the handle bar device into the perforated shaft (Fig. 9)

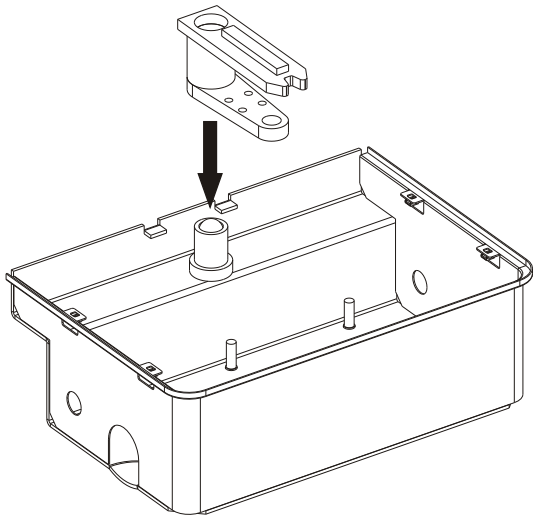


Fig. 9

2.6. Grease plentifully the hole A and insert the leaf device (Fig. 10). **Grease the whole with the special greaser until the grease comes out of both sides.** ⚠

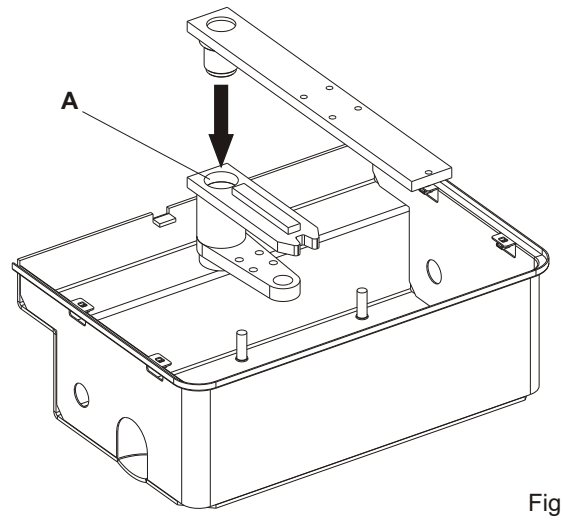


Fig. 10

2.7. Insert the cam of the limit switch into the handle bar and fix it with the special screws (left-hand side mounting Fig. 11, right-hand side mounting Fig. 12)

N.B.: During the insertion of the units lubricate them with the supplied grease (Fig.8, Fig.9, Fig.10).

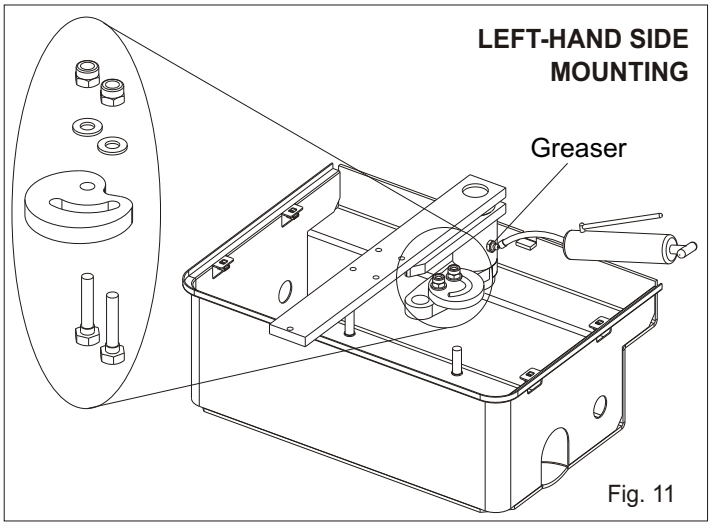


Fig. 11

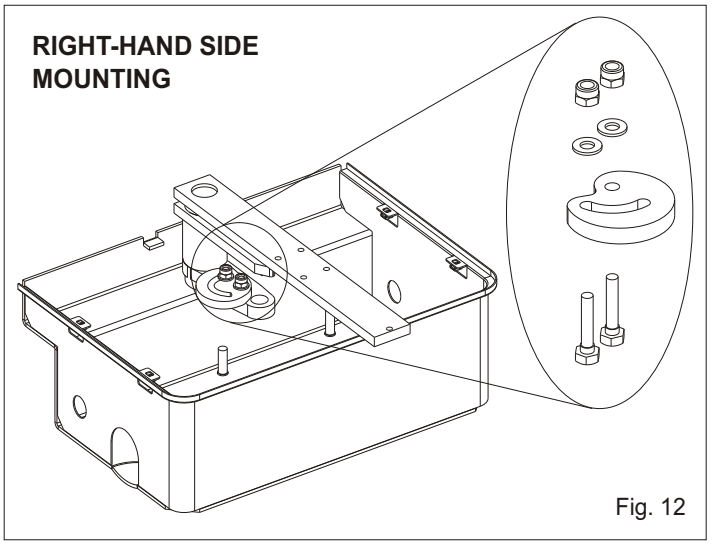


Fig. 12

3. LEAF ASSEMBLING

Before installing the gate make sure that the concrete has hardened into the foundation hole.

3.1. Position the leaf of the gate on the leaf device making reference to the rotation axe of the leaf hinge (Fig. 13);

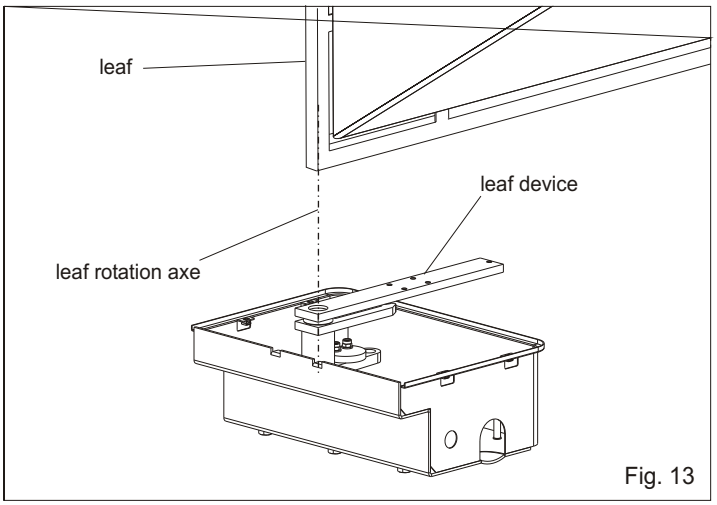


Fig. 13

3.2. Weld with care the leaf device to the leaf of the gate realizing a tract fixation of ca. 1,2 - 1,6 inches along the surface of the contact, avoiding the welding next to the threaded holes, furthermore it is necessary to respect the perpendicularity to the axe of rotation (Fig. 14)

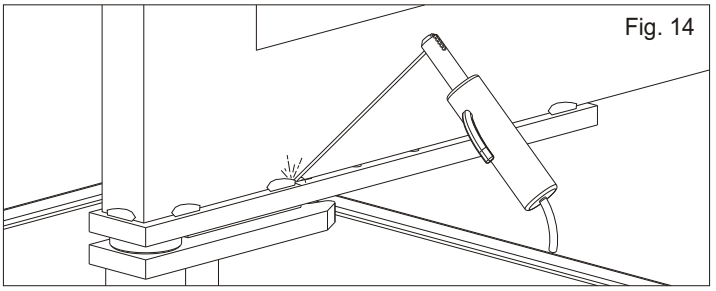


Fig. 14

MECHANICAL INSTALLATION

3.3. Be careful not to place the leaf outside the axis (Fig. 15 and 16), but make sure the shaft corresponds to the hinge rotation axis remembering that the minimum distance from the pillar is 1,8 inches (Fig. 17).

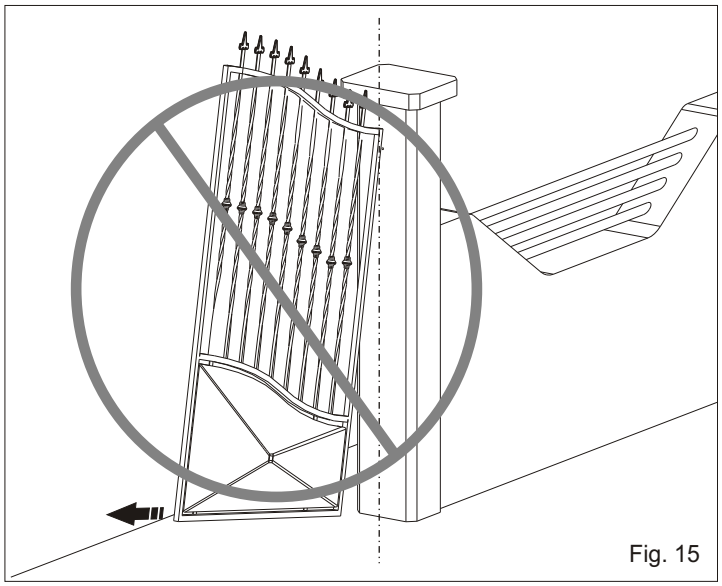


Fig. 15

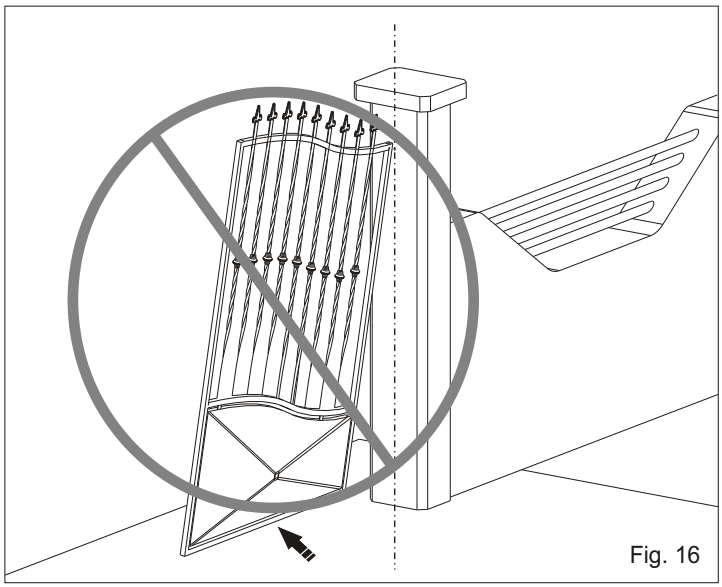


Fig. 16

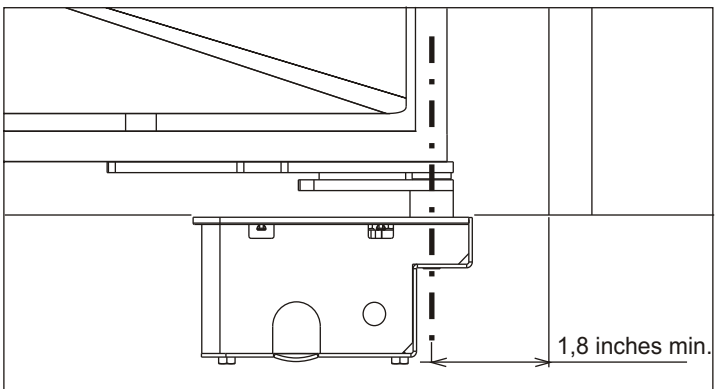


Fig. 17

4. INSTALLATION OF THE OPERATOR

4.1. It is important to distinguish the right hand and the left hand side operator, anyway the motor must always be turned against the opening side.
Make reference to Fig. 18.

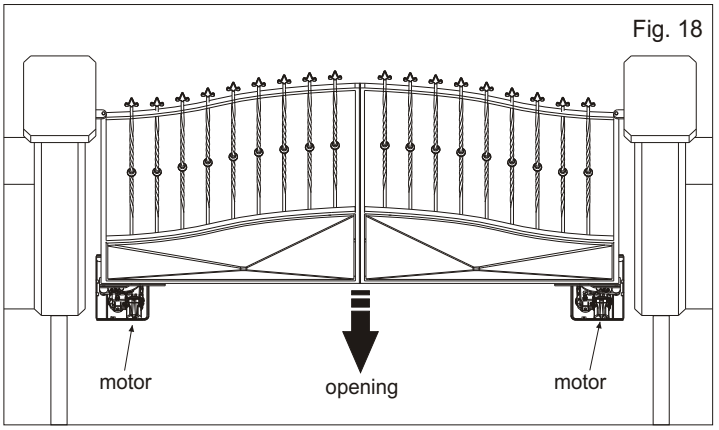


Fig. 18

4.2. Introduce manually the operator into the inside of the carrying box (Fig. 19-20) and fix the operator with the 4 screws of the box using the furnished washers and nuts.

LEFT-HAND SIDE MOUNTING

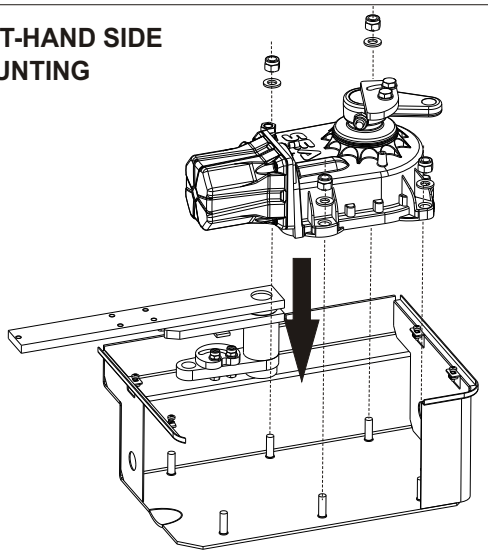


Fig. 19

RIGHT-HAND SIDE MOUNTING

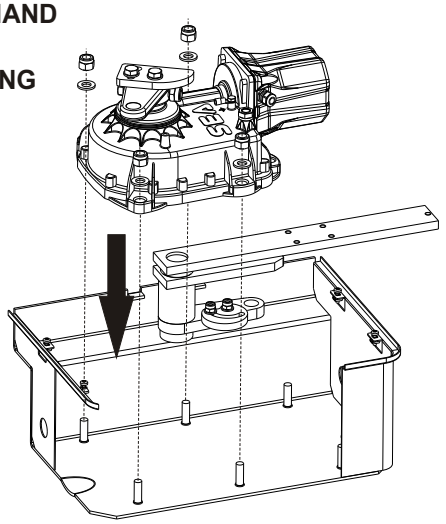


Fig. 20

MECHANICAL INSTALLATION

4.3. Connect the handle bar device to the motor using the counter-connecting rod through the special holes.
Note: Grease very well the holes and respect the direction of insertion of the counter-connecting rod (Fig. 21).

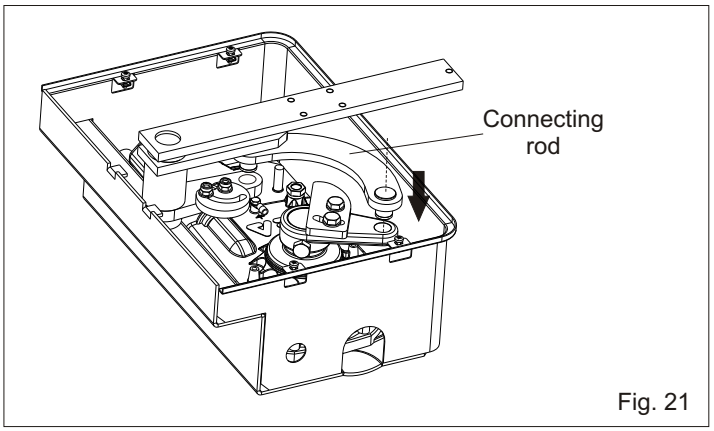


Fig. 21

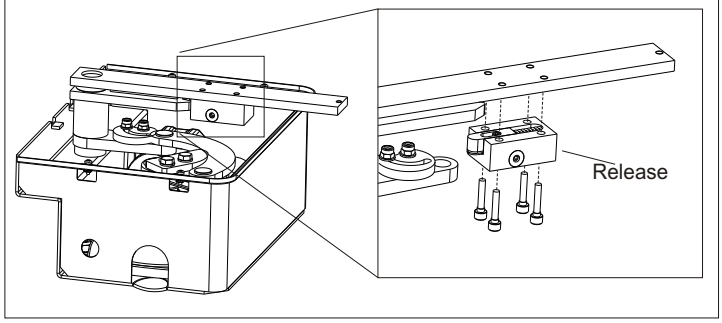
5. MOUNTING OF THE RELEASE

For the Field there are foreseen two types of release: RELEASE (with personalised key) and RELEASE PLUS (with DIN key).

RELEASE

5.1. Grease the hinge (A) and mount the release system under the leaf device using the 4 furnished screws (Fig. 22)

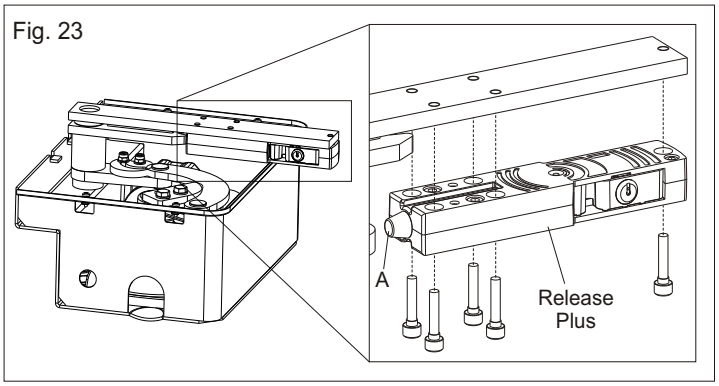
Fig. 22



RELEASE PLUS

5.2. Grease the hinge (A) and mount the release system under the leaf device using the 5 furnished screws (Fig. 23)

Fig. 23



Carry out the electrical connections to the control unit as described in the instructions supplied with SEA control unit.

6. LIMIT SWITCH ADJUSTMENT

For the limit switch adjustment in closing and in opening execute the following operations:

Limit switch in closing

Even if in closing there are limit switch stops mounted on the ground it is necessary to adjust the limit switch of the Field, operate as follows:

6.1. Close the leaves completely

6.2. Mount the cam of the limit switch as shown in Fig. 24, bring it to the stop with the connecting rod and fix it with the special screws.

The mounting of the cam and its adjustment is shown in Fig. 25 and 26.

6.3. Adjustable limit switches in closing (from 85° to 95° degrees)

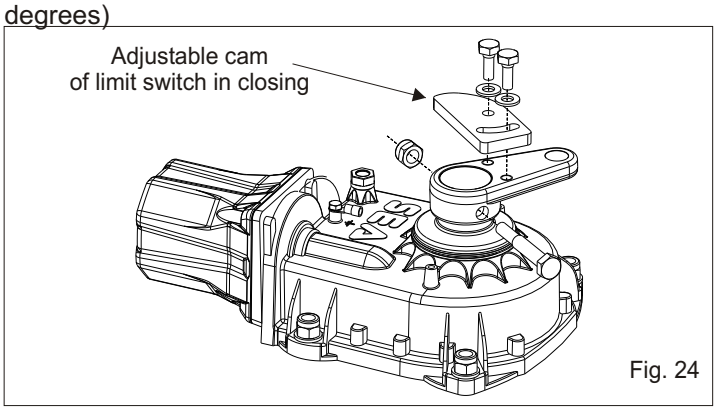
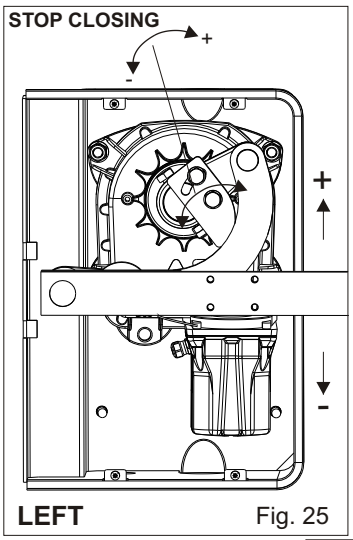
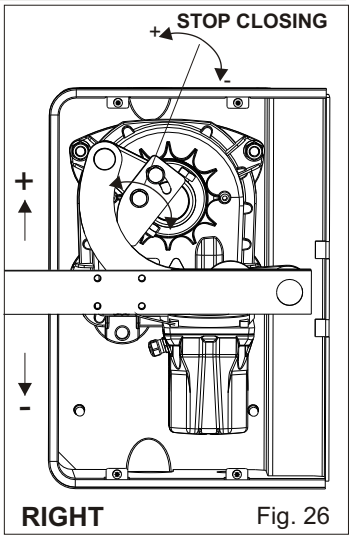


Fig. 24



LEFT Fig. 25



RIGHT Fig. 26

Limit switch in opening

It is recommended to have limit switch stops on the ground in opening, if already installed, it is not necessary to adjust the limit switches present on the Field.

If there are no limit switch stops in opening on the ground, operate as follows:

6.3. Open the leaves completely (1) and bring them back of about 10° (2) (Fig. 27).

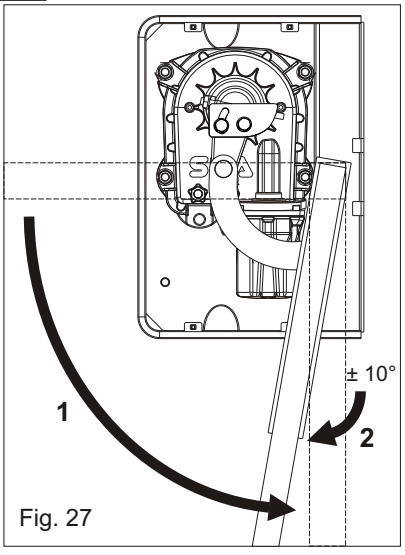


Fig. 27

MECHANICAL INSTALLATION

6.4. Unscrew the nuts A and B, turn the cam with the counter-connecting rod until it reaches the stop and relock the nuts (Fig. 28)

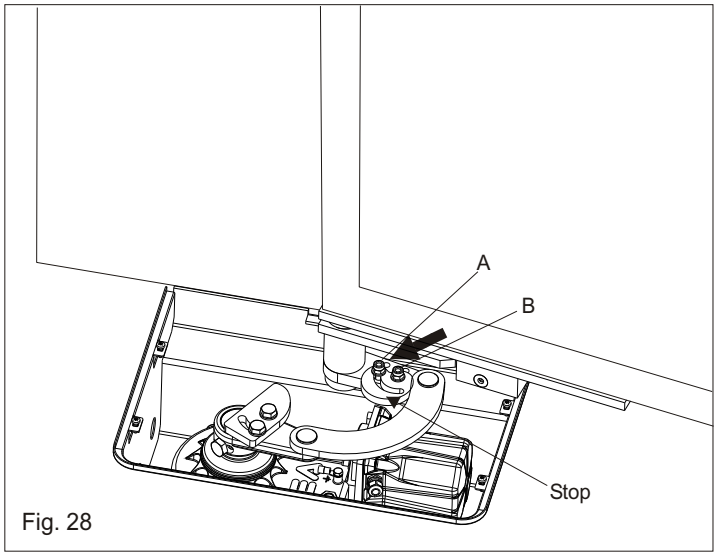


Fig. 28

In case of a not perfect positioning of the leaves in opening, it is possible to adjust the position through the cam.

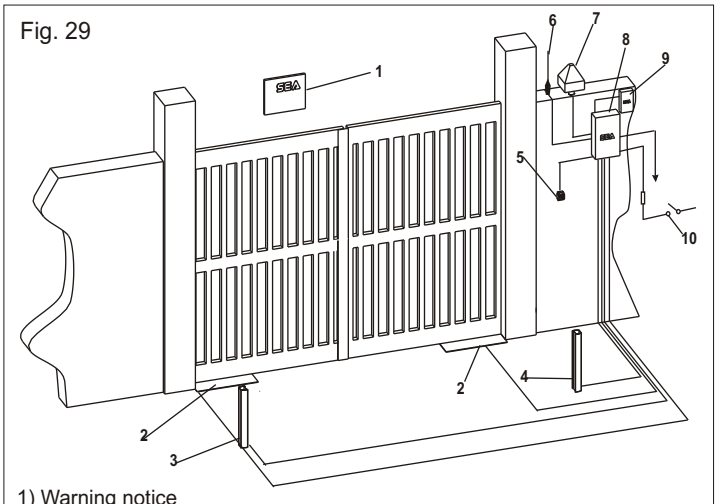
Close the operator with the cover using the 4 enclosed screw.

After ending all the operations in the installation of the above mentioned carrying box, of the gate and the operator, try to do some moves slowly by hand verifying that there are not irregular frictions and that the movement is uniform for the whole range.
Notice: to do this last operation, release the operator as described in the next paragraph.

When putting in function the installation it is peremptory to lubricate the box as in Fig. 11 until the grease comes out. (Use grease type DIN 51502 KP 2 N-20 - K 2 K-20).

7. CABLE LAYOUT (Fig. 29)

Fig. 29



1) Warning notice
2) Field operator
3) Left photocell
4) Right photocell
5) Key switch
6) Antenna
7) Flashing lamp
8) Control board
9) Receiver
10) Differential switch

To the attention of users and technicians

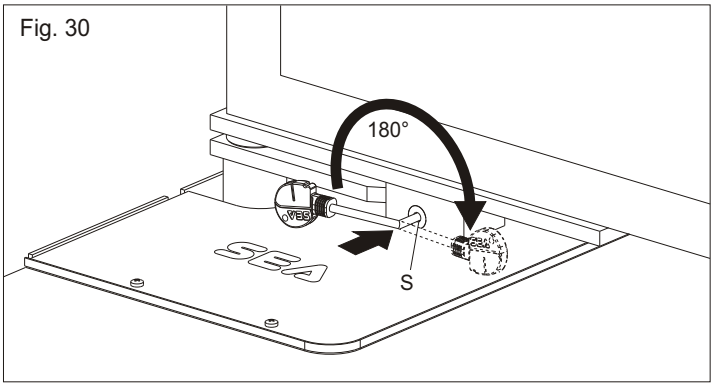
8. RELEASE SYSTEM

RELEASE

8.1. To release act as follows:
- Insert the enclosed key into the keyhole (S) and turn the handle about 180° against the centre of the gate (Fig. 30) .
- Keep the key locked and move the leaf, now turn back the key to the normal position and extract it.

8.2. To stop again act as follows:
- Move the leaf until the lock has coupled again.

Fig. 30



RELEASE PLUS

8.3. To release act as follows:
- Insert the enclosed key into the keyhole and turn it about 90° in clockwise direction (Fig. 31).
- Pull the key against the external of the release making come out the handle of the lock until it reaches the stop (Fig.32).
- Move the leaf and make return the handle of the release in its original position and extract the key.

8.4. To stop again act as follows:
- Move the leaf until the lock has coupled again.

Fig. 31

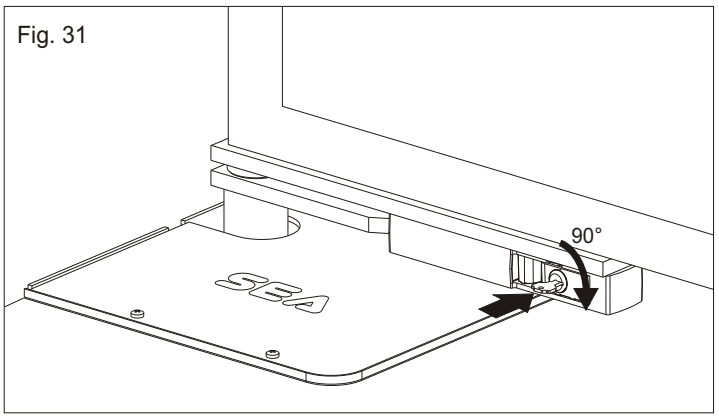
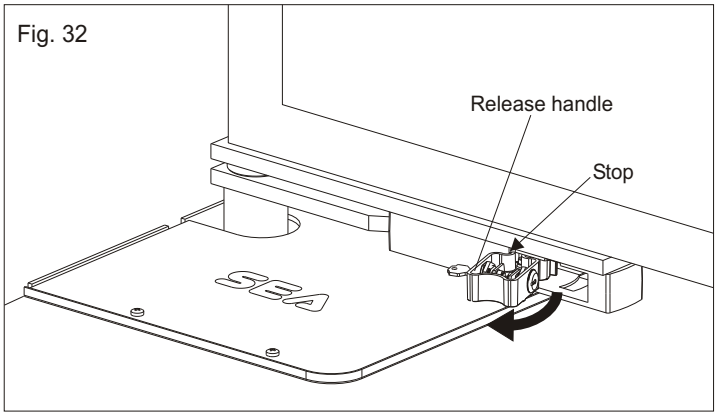


Fig. 32



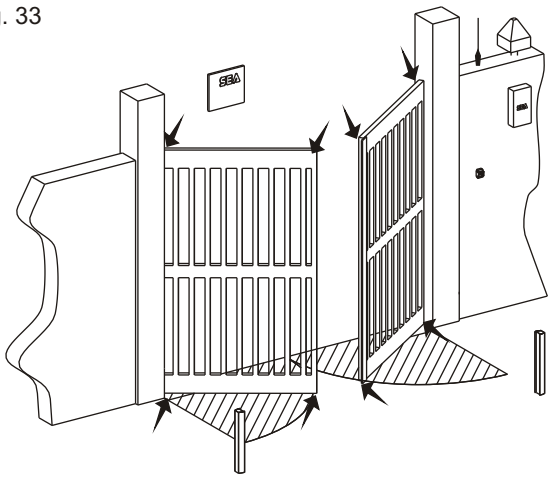
MECHANICAL INSTALLATION

To the attention of users and technicians

9. RISK EXAMINATION

The points pointed by arrows in Fig. 33 are potentially dangerous. The installer must take a thorough risk examination to prevent crushing, conveying, cutting, grappling, trapping so as to guarantee a safe installation for people, things and animals (Re. Laws in force in the country where installation has been made.).

Fig. 33



PERIODICAL MAINTENANCE

Grease the parts in movement (counter-connecting rod, release, etc.)	Annual
Check the release function	Annual
Check if the screws are locked tight	Annual
Check the conditions of wear and tear of the devices in movement	Annual
Check the correct drain of the rainwater	Annual
Check the integrity of the connection cables	Annual

All the above described operations **must be made exclusively by an authorized installer.**

NOTICE

As for misunderstandings that may arise refer to your area distributor or call our help desk. These instructions are part of the device and must be kept in a well known place. The installer shall follow the provided instructions thoroughly. SEA products must only be used to automate doors, gates and wings. Any initiative taken without SEA USA Inc. explicit authorization will preserve the manufacturer from whatsoever responsibility. The installer shall provide warning notices on not assessable further risks. SEA USA Inc. in its relentless aim to improve the products, is allowed to make whatsoever adjustment without giving notice. This doesn't oblige Sea to up-grade the past production. SEA USA Inc. can not be deemed responsible for any damage or accident caused by product breaking, being damages or accidents due to a failure to comply with the instructions herein. The guarantee will be void and the manufacturer responsibility will be nullified if SEA USA Inc. original spare parts are not being used.

The electrical installation shall be carried out by a professional technician who will release documentation as requested by the laws in force. Packaging materials such as plastic bags, foam polystyrene, nails etc must be kept out of children's reach as dangers may arise.

To respect the norms in force it is recommended to use the SAFETY GATE system together with the electronic control unit GATE.

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.

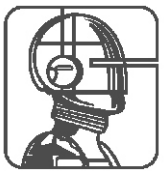
DELIVERY: The delivery time on the invoice is not binding and represents an estimated delivery. Shipments costs will be charged to the buyer and SEA is not responsible for delays and/or damages occurred to the products during shipment.

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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