



# SEA<sup>®</sup>

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

CE

English

**HYDRAULIC OPERATOR FOR SWING GATE**

## **SUPER FULL TANK**



**INSTALLATION MANUAL  
and Security Information**

## FEATURES AND SPECIFICATIONS

The **SUPER FULL TANK** is a high quality hydraulic operator for condominium and industrial use for gates with leaf lengths up to max. 9 m. Available in the following versions:

**AC** (with lock in opening and closing position)

**SB** (without lock)

The lock is guaranteed for leaf lengths up to 4 m. For leaf lengths exceeding it is necessary, in all versions, to install an electric lock. The Super Full Tank is supplied with by-pass valves for the power regulation in both opening and closing. The slowdown is hydraulic only in closing.

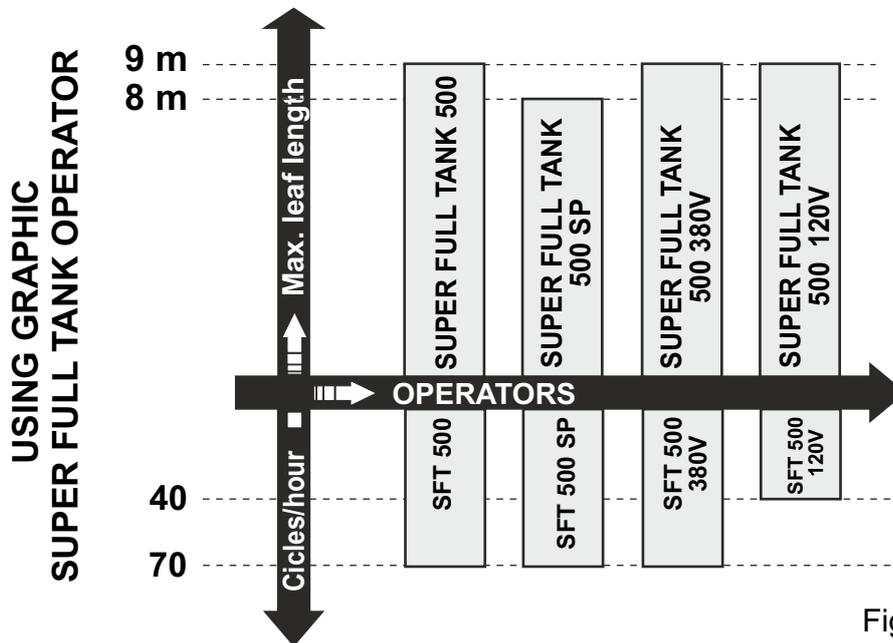
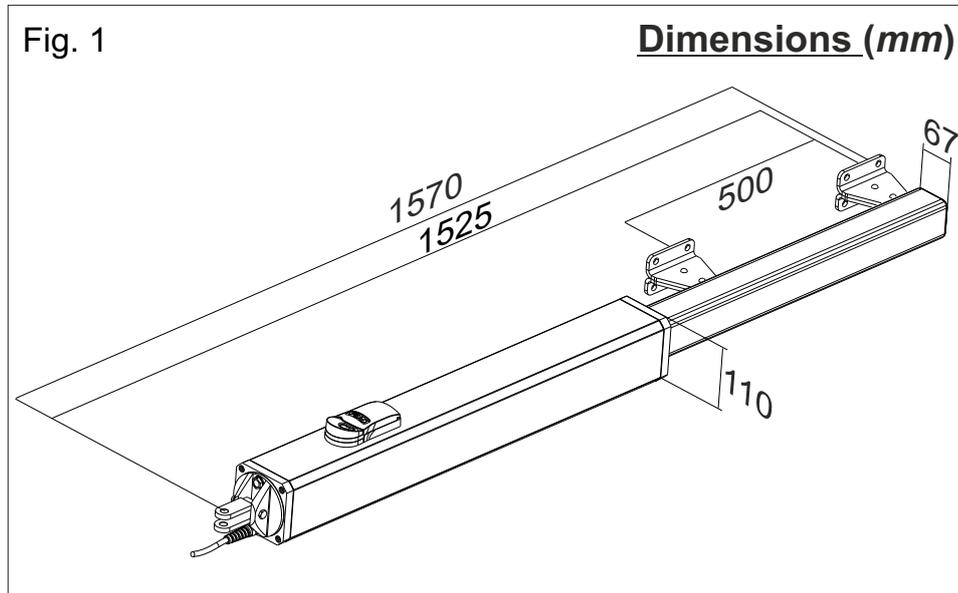
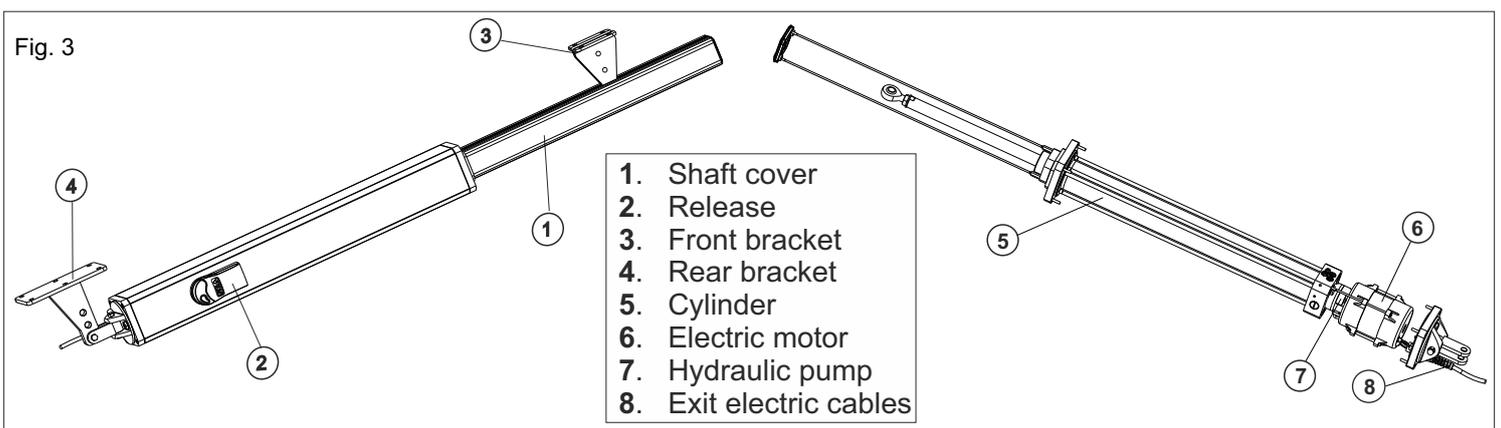


Fig. 2



<b>TECHNICAL FEATURES</b>	<b><i>SUPER FULL TANK 500</i></b>	<b><i>SUPER FULL TANK 500 SP *</i></b>
Power supply	230V (±5%) 50/60 Hz	
Power	310 W	-
Absorbed current	1,6 A	-
Stroke	500 mm	
Shaft speed	1,5 cm/s	
Cycles hour (at a temp. of 20°C)	70	
Max working pressure	100 bar	40 bar
Operating temperatures	-20°C ↕ +55°C ↕	
Thermal protection	130°C	
Max Thrust	2500 da N	1100 da N
Capacitor	16µF	-
Weight	18 kg	13 kg
Protection class	IP55	
Max leaf lenght	9 m	8 m
Opening degree of the leaf	90° / 125°	

\* In combination with the hydraulic unit Cod. 12001032

<b>TECHNICAL FEATURES</b>	<b><i>SUPER FULL TANK 500 380V</i></b>	<b><i>SUPER FULL TANK 500 120V</i></b>
Power supply	400V (±5%) 50/60 Hz	120V (±5%) 50/60 Hz
Power	500 W	450W
Absorbed current	1,5 A	4,4 A
Stroke	500 mm	
Shaft speed	1,5 cm/s	1,7 cm/s
Cycles hour (at a temp. of 20°C)	70	40
Max working pressure	100 bar	
Operating temperatures	-20°C ↕ +55°C ↕	
Thermal protection	130°C	
Max Thrust	2500 da N	
Capacitor	-	60 µF
Weight	18 kg	18 kg
Protection class	Ip55	
Max leaf lenght	9 m	
Opening degree of the leaf	90° / 125°	

**Note:** The frequency of use is valid only for the first hour at 20°C room temperature

**Note:** in non-automatic logic, use operators without lock

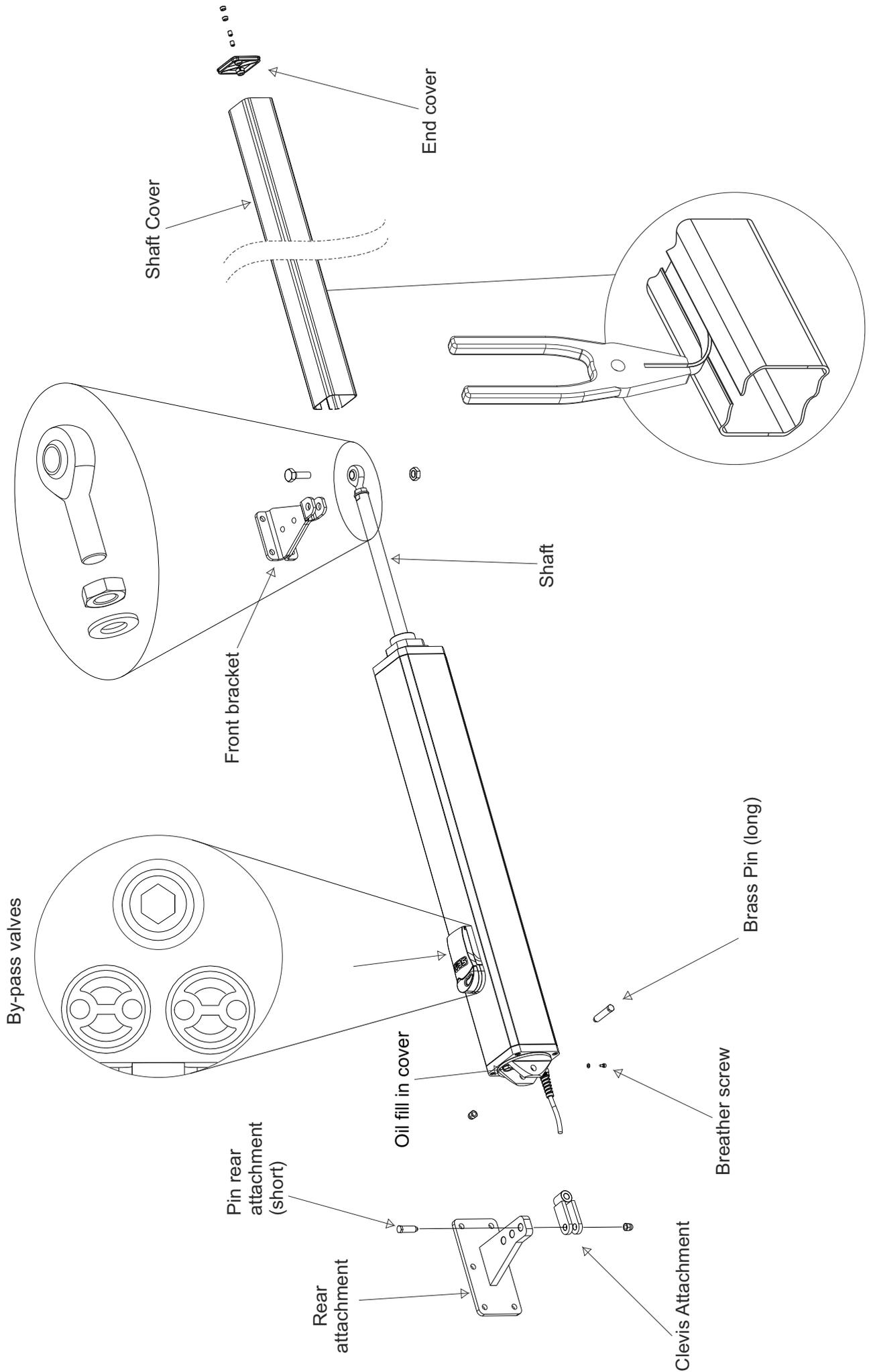
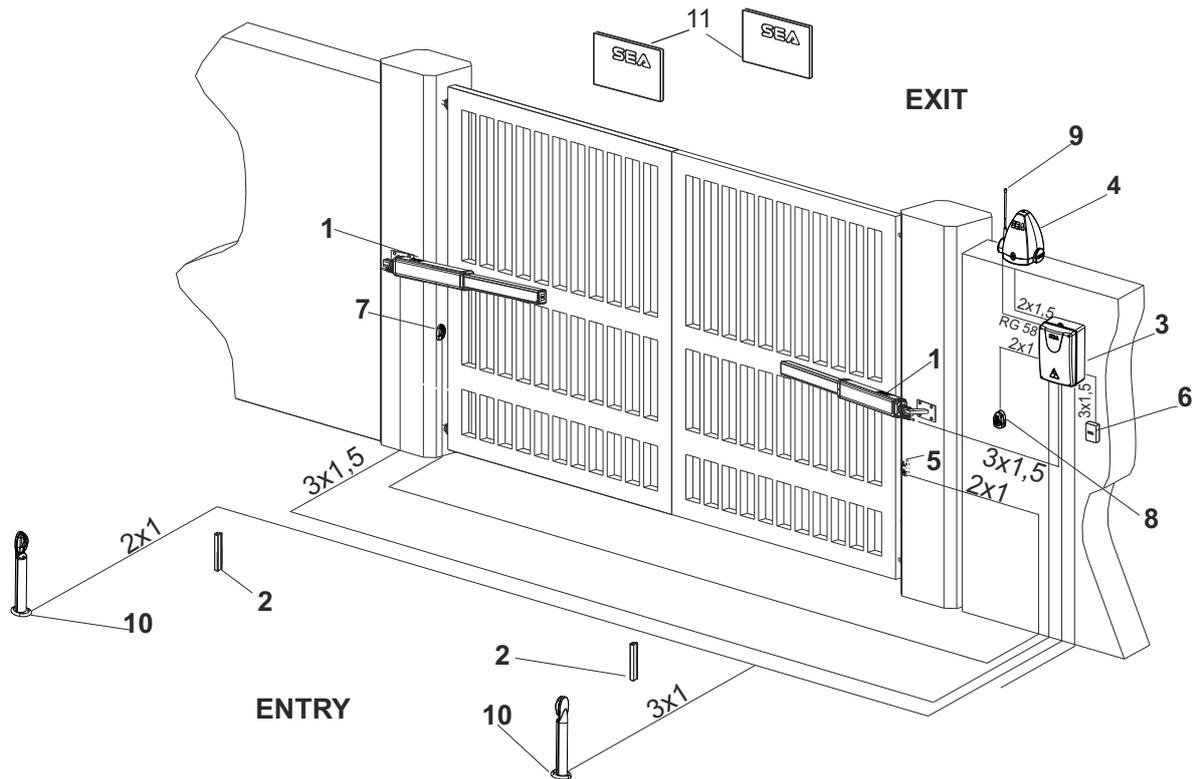
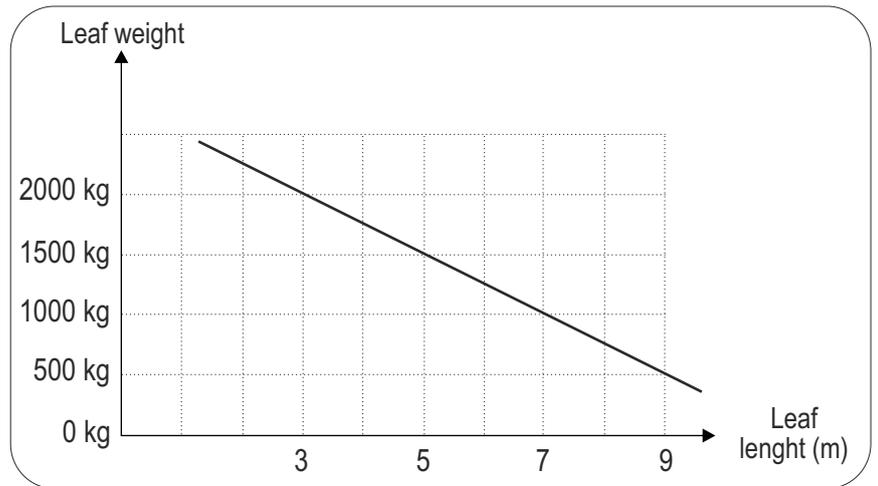


Fig. 4

## TYPICAL INSTALLATION

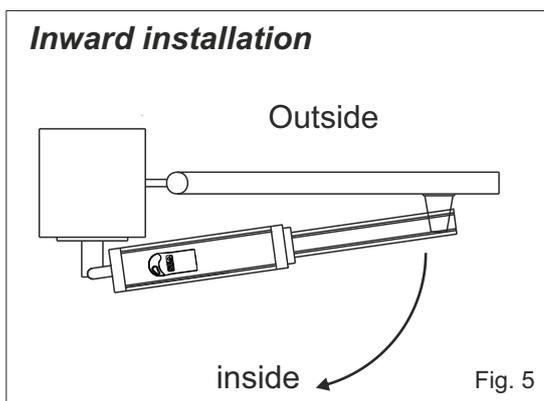


1. Super Full Tank operator
2. Mechanical stop
3. Control board
4. Warning lamp
5. Photocell tx
6. Differential switch 16A-0,03A
7. Photocell rx
8. Key switch start-stop
9. Antenna
10. Column for photocells
11. Warning notice



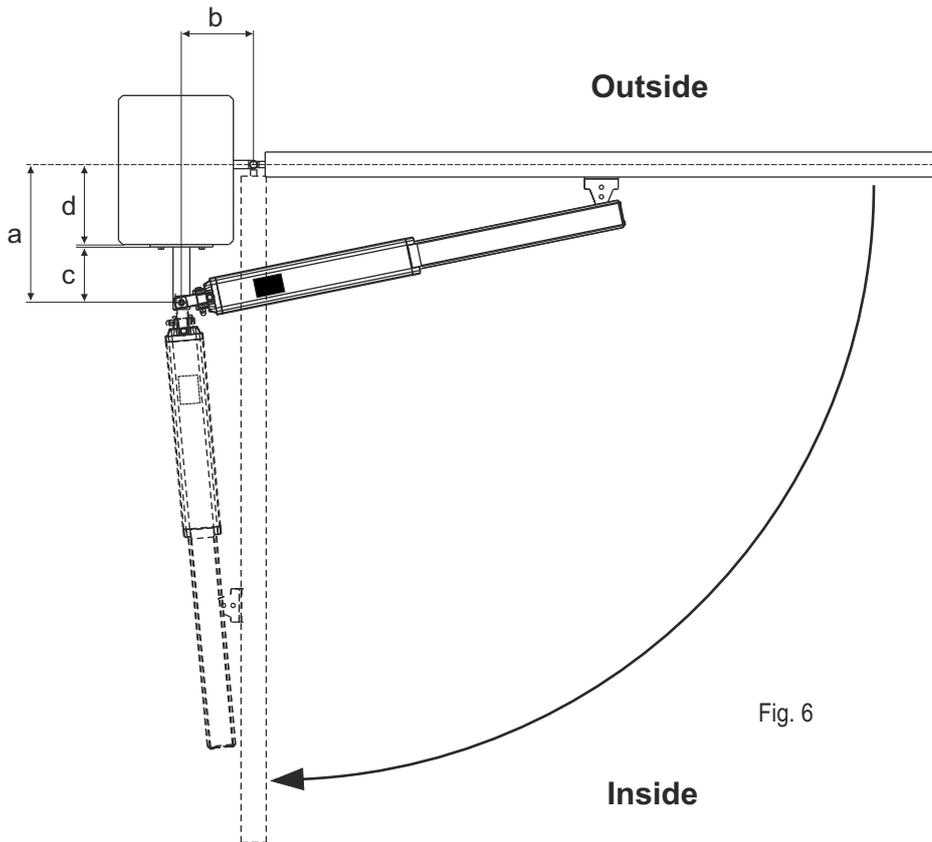
## TYPE OF INSTALLATION

It is possible to install the Super Full Tank with opening inside (Fig.5).



**Install the  
operator always  
inside the  
property**

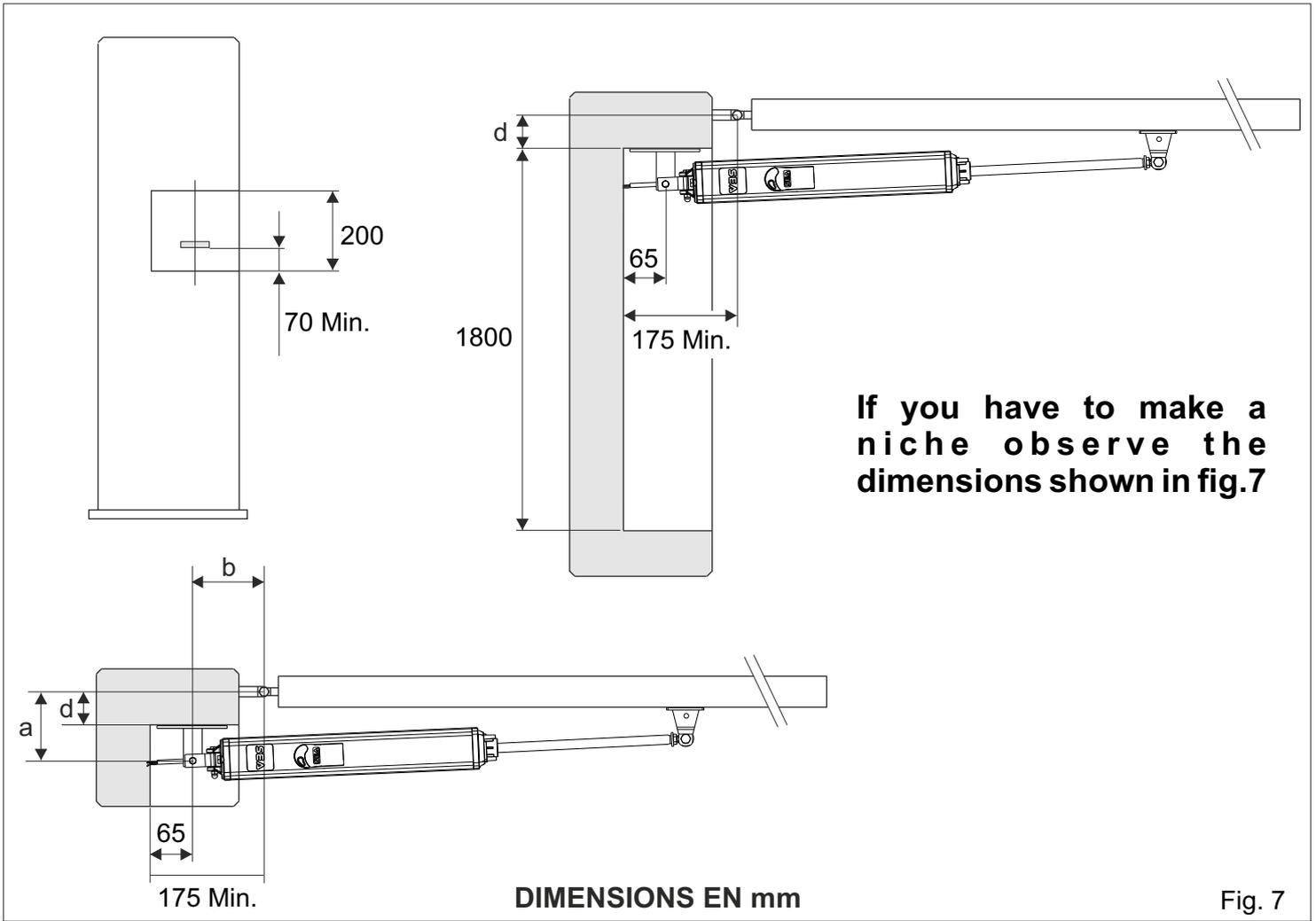
## INSIDE OPENING INSTALLATION



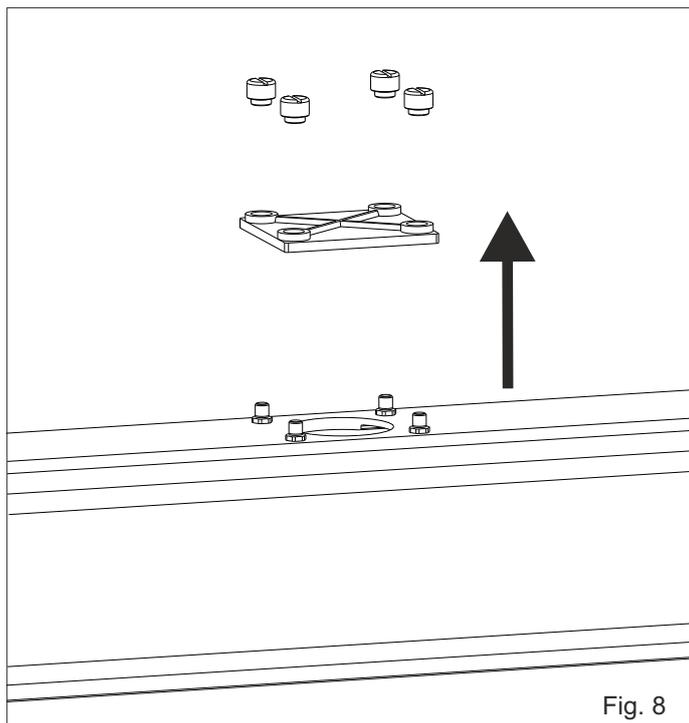
**Total stroke 500 mm - max. recommended stroke 480 mm**

a (mm)	b (mm)	d <sub>max</sub> (mm)	Max. Opening Angle	Max. Stroke (mm)	Stroke for 90°(mm)
220	205	80	<b>110°</b>	<b>480</b>	<b>430</b>
260	215	120	<b>90°</b>	<b>480</b>	
225	200	85	<b>110°</b>	<b>480</b>	<b>430</b>
265	210	125	<b>90°</b>	<b>480</b>	
240	195	100	<b>105°</b>	<b>480</b>	<b>440</b>
280	195	140	<b>90°</b>	<b>480</b>	
285	190	145	<b>90°</b>	<b>480</b>	
260	185	120	<b>102°</b>	<b>480</b>	<b>450</b>
300	170	160	<b>90°</b>	<b>480</b>	
265	180	125	<b>102°</b>	<b>480</b>	<b>450</b>
305	165	165	<b>90°</b>	<b>480</b>	
310	160	170	<b>90°</b>	<b>480</b>	
280	170	140	<b>100°</b>	<b>480</b>	<b>470</b>
320	150	180	<b>90°</b>	<b>480</b>	
330	140	190	<b>90°</b>	<b>480</b>	
340	130	200	<b>90°</b>	<b>480</b>	

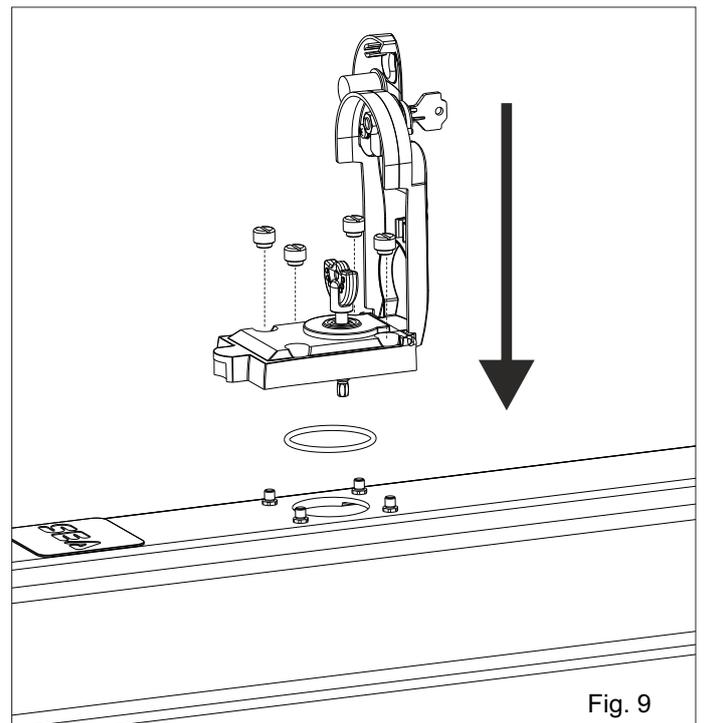
## INSTALLATION ON MASONRY PILLARS, MAKING A NICHE



## RELEASE MOUNTING



Remove the transporting plate as shown in Fig. 8



Mount the release as shown in Fig. 9

## INSTALLATION OF THE OSCILLATING REAR BRACKET

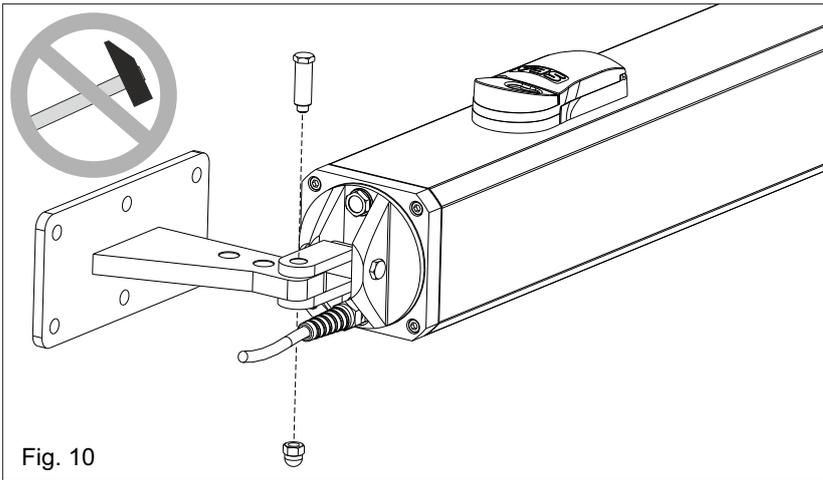


Fig. 10

### **PRELIMINARY:**

- Open carefully the package, making sure not to loose parts which are listed in fig. 4.
- Attach the rear oscillating bracket as shown in fig. 10

**Attention:** Do not use a hammer for the insertion of the short brass pin; its fitting into the bracket and clevis attachment must be done by the simple pressure of the hands.

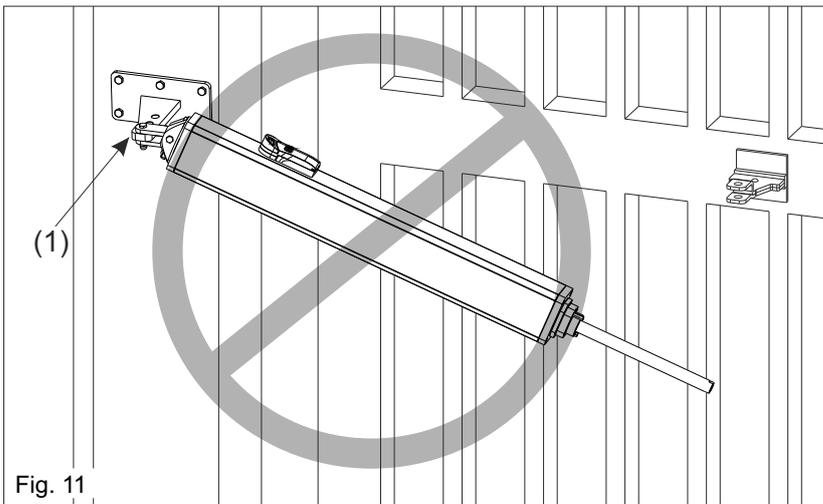


Fig. 11

**Attention:** Do not incline the hydraulic operator further than the allowed angle of the oscillating bracket (1), risks the possible braking of it.

## INSTALLATION OF REAR BRACKET

The rear bracket must first be cut respecting the quote "a" on pag. 19 and then welded as in fig. 12.

The support must be positioned so that the operator is perfectly levelled (Fig. 12, Fig. 13).

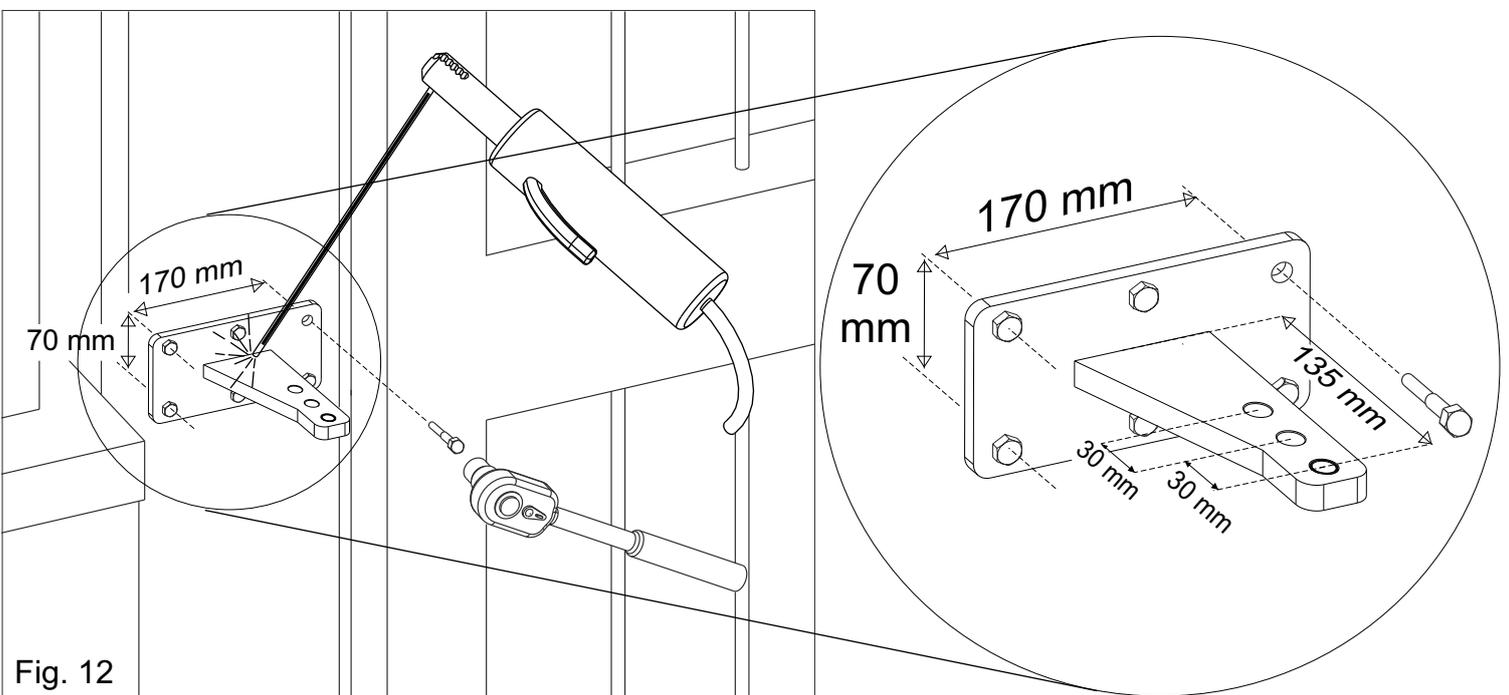


Fig. 12

## POSITIONING OF THE FRONT BRACKET

Once the operator is attached to the post and the leaf set in the closed position execute the following operations:

1. Release the operator.
2. Pull-out completely the chromate shaft and push it back in 1cm.
3. Attach the shaft to the front bracket (Fig. 14).
4. Set the operator perfectly levelled and mark the position of the front bracket (Fig. 13).

**Attention:** avoid the welding of the front bracket to the shaft of the hydraulic operator already attached; the welding scraps (daps) could ruin the chromium plating of the shaft.

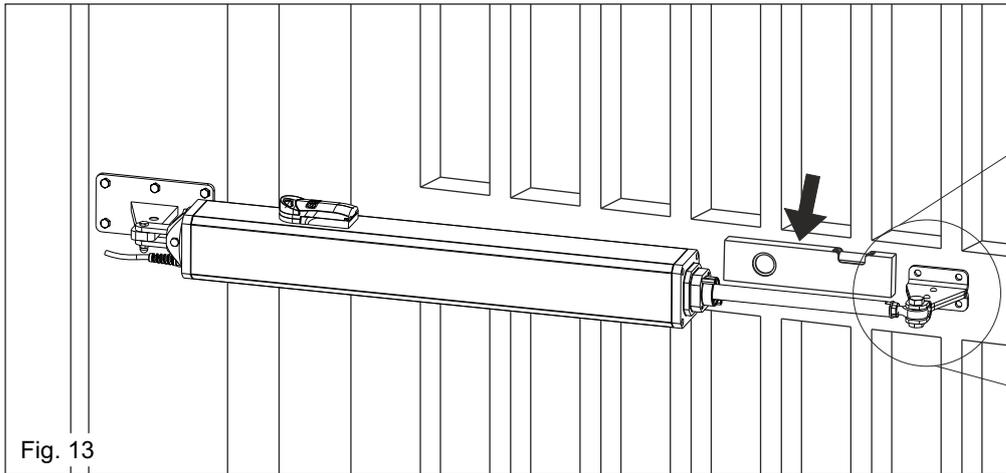


Fig. 13

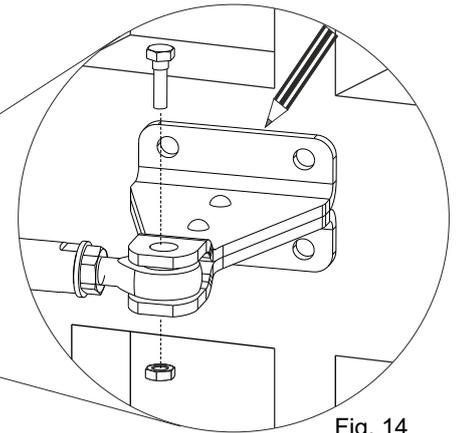


Fig. 14

## WELDING OF THE FRONT BRACKET TO THE GATE

*The front bracket must be positioned so that the operator is perfectly levelled*

**According to the nature of the gate the front bracket (wood, steal, Aluminium) can be:**

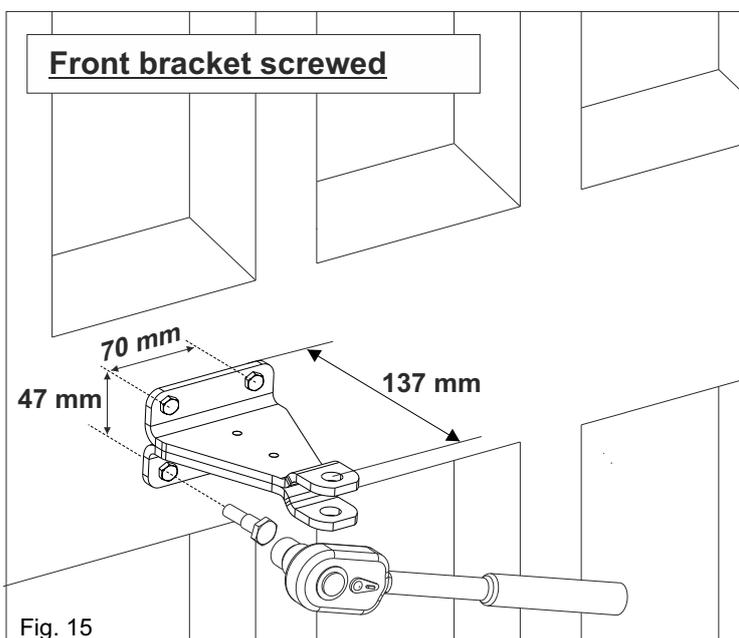


Fig. 15

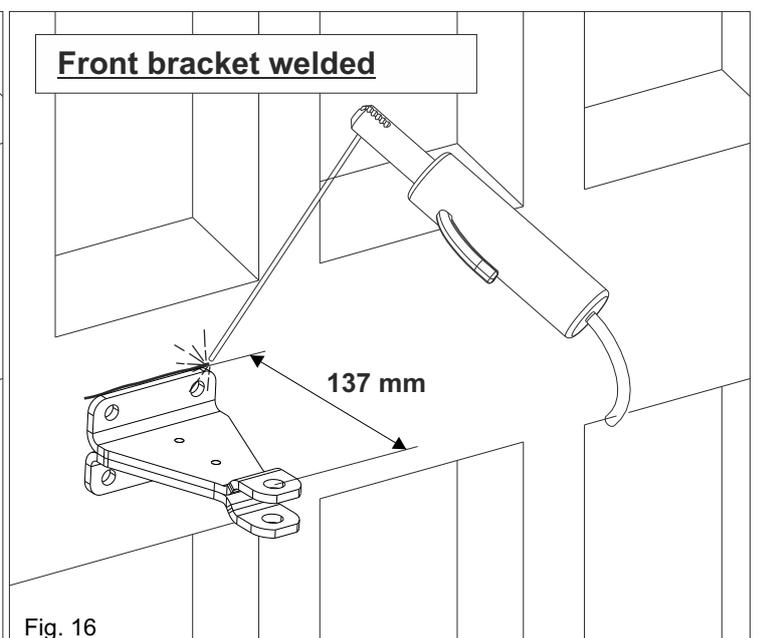
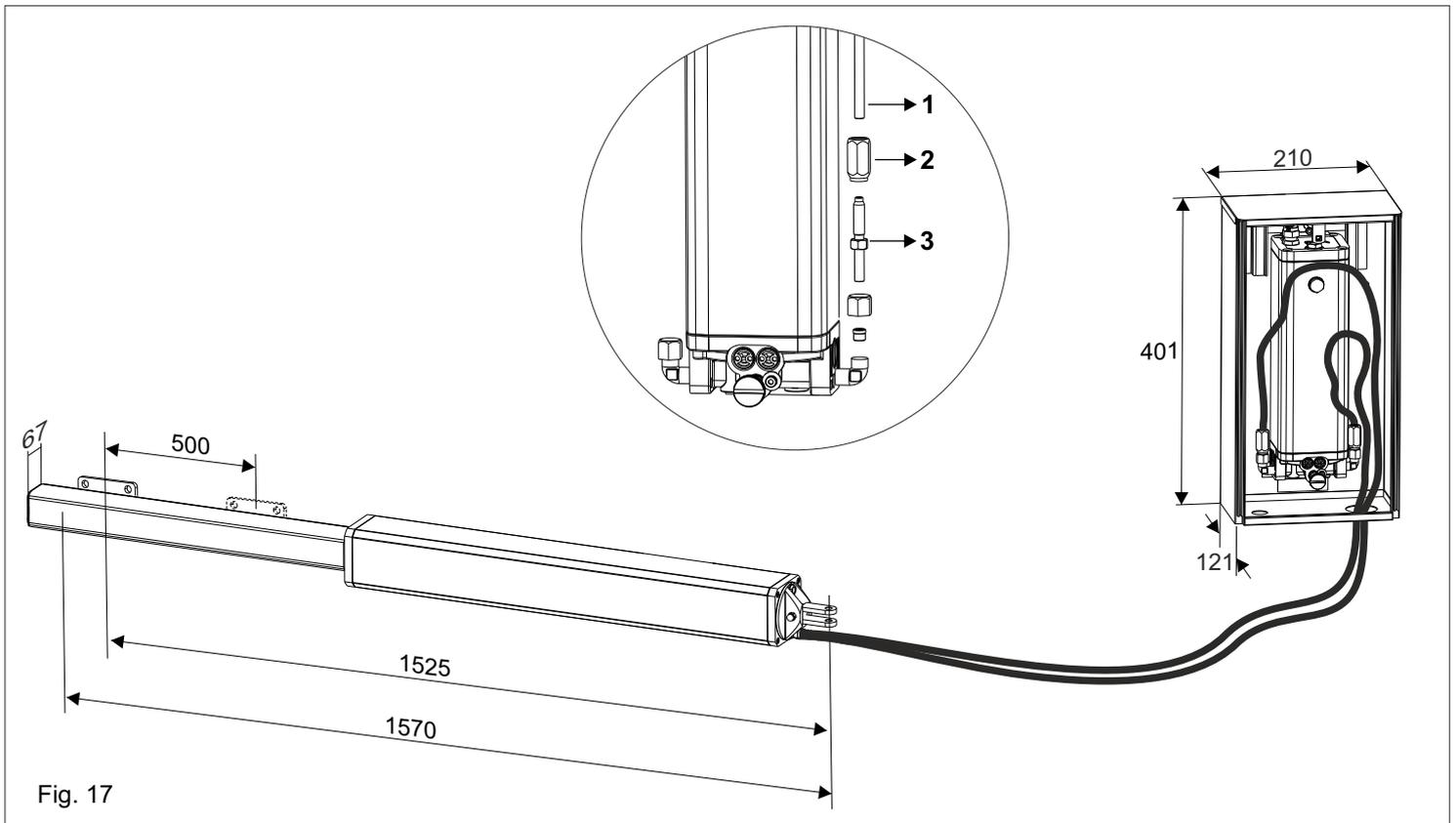


Fig. 16

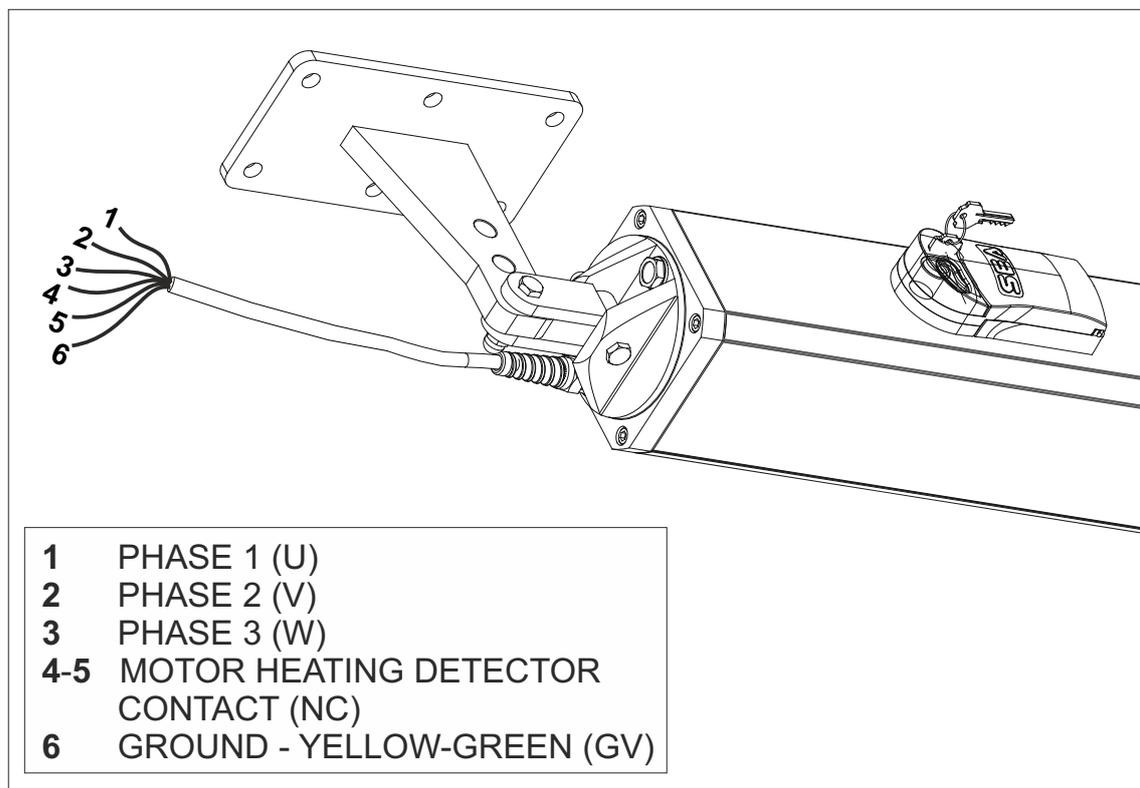
## SUPER FULL TANK WITH SEPARATE HYDRAULIC UNIT (SP VERSION)



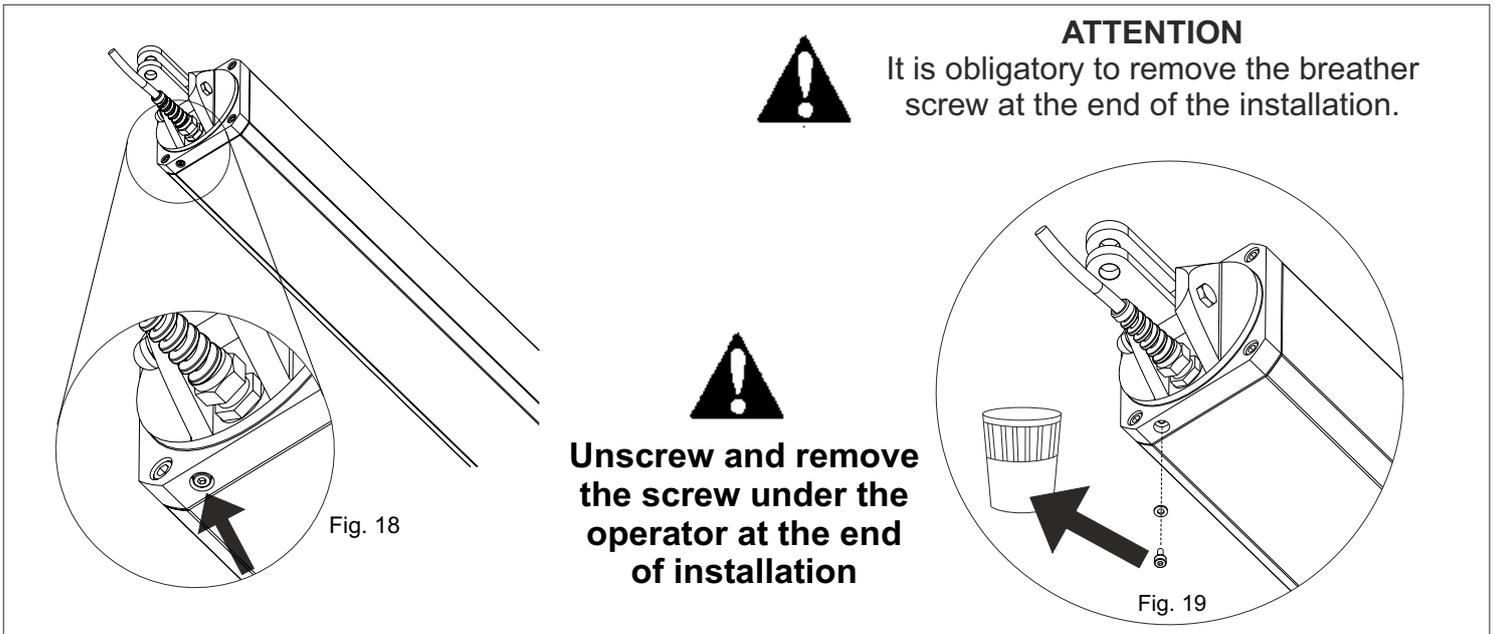
### ASSEMBLY OF THE CONNECTOR ON THE FLEXIBLE TUBE

Cut the flexible tube (1) to the desired size, screw the component (2) onto the flexible tube and insert the component (3) by screwing it on both (1) and (2).

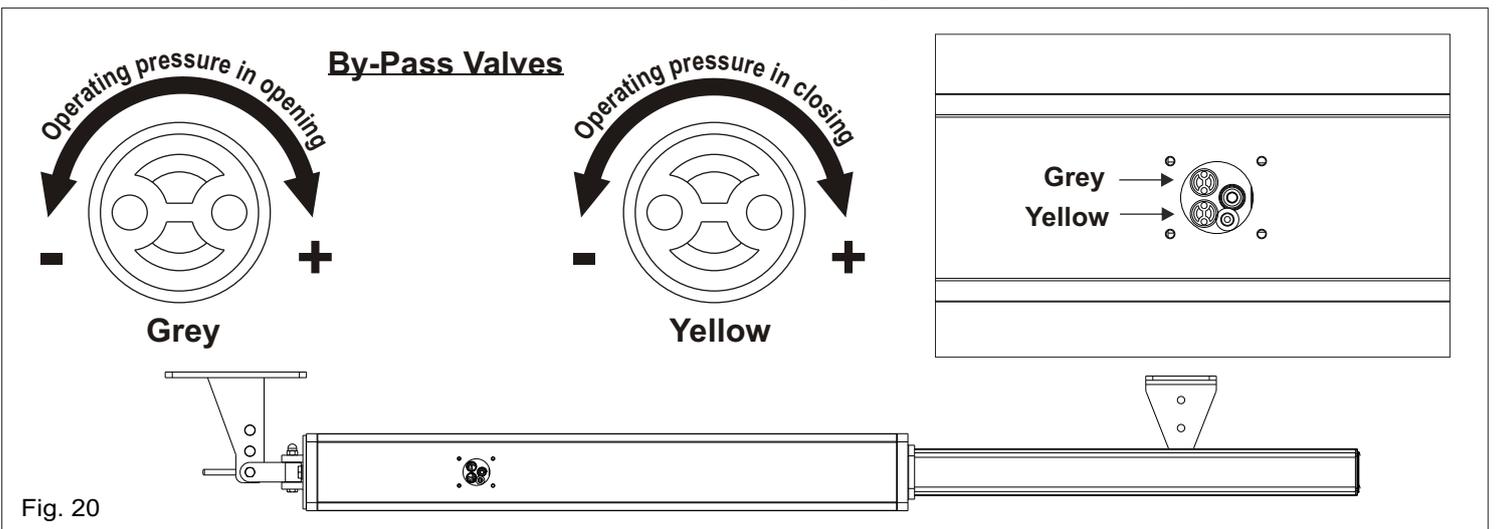
## SUPER FULL TANK THREEPHASE - THREEPHASE CABLE CONNECTIONS



## BREATHER SCREW

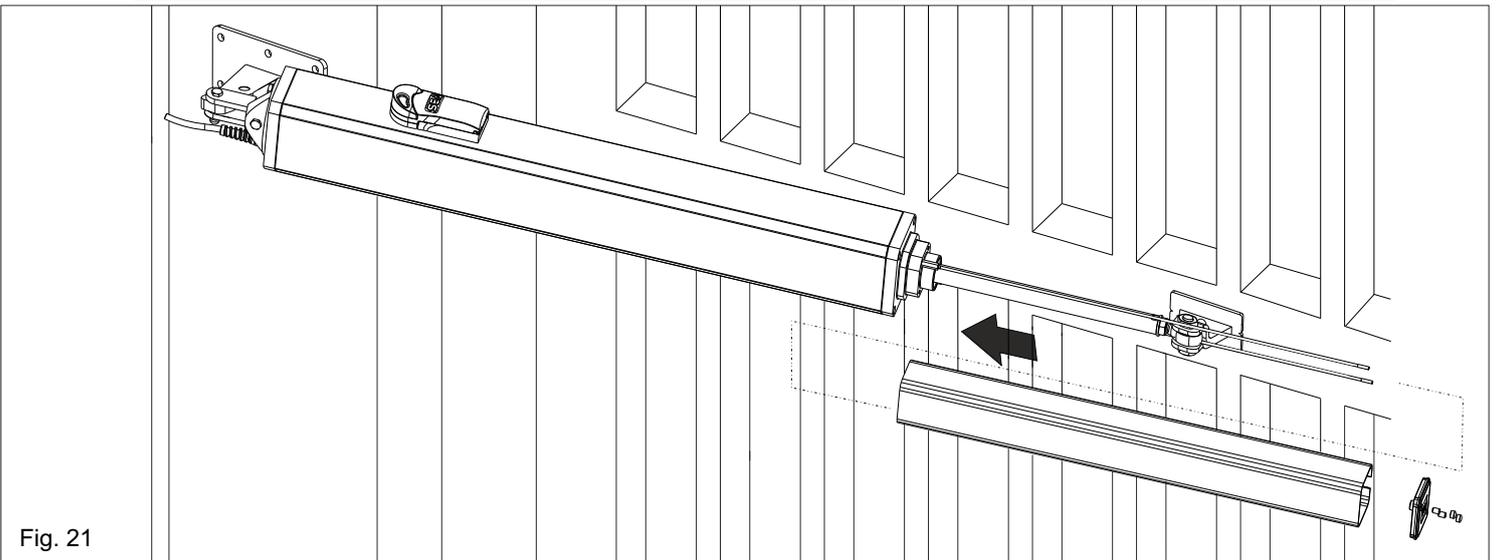


## TORQUE ADJUSTMENT (by pass valves)



Adjust the opening and closing forces of the gate so that the diagram of the force is respected (present in the regulation EN 12453); Anyway the max. thrust force should never be superior of 15 kgF.

## INSTALLATION OF THE CHROME PLATED SHAFT COVER



## OIL LEVEL MEASUREMENT

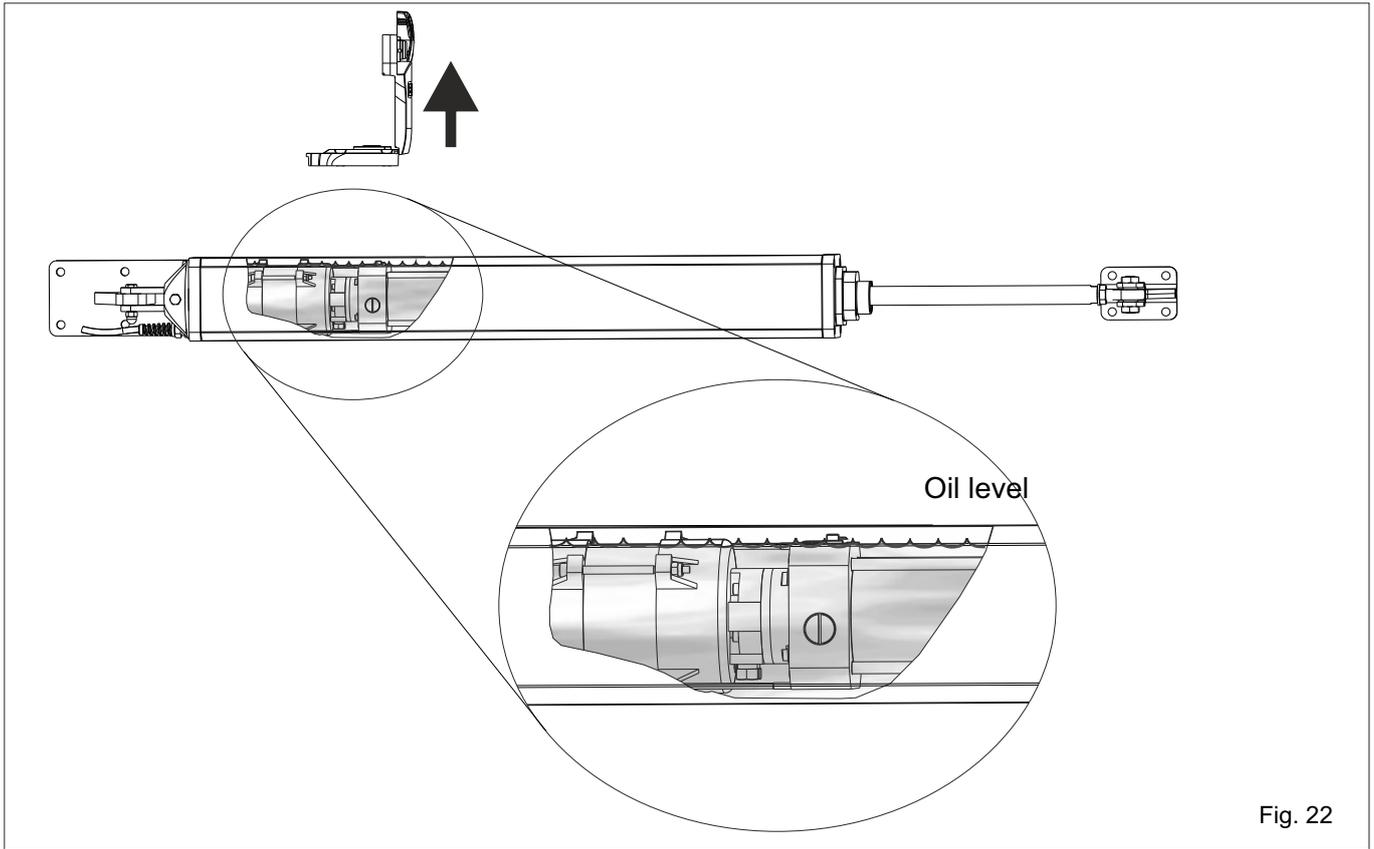
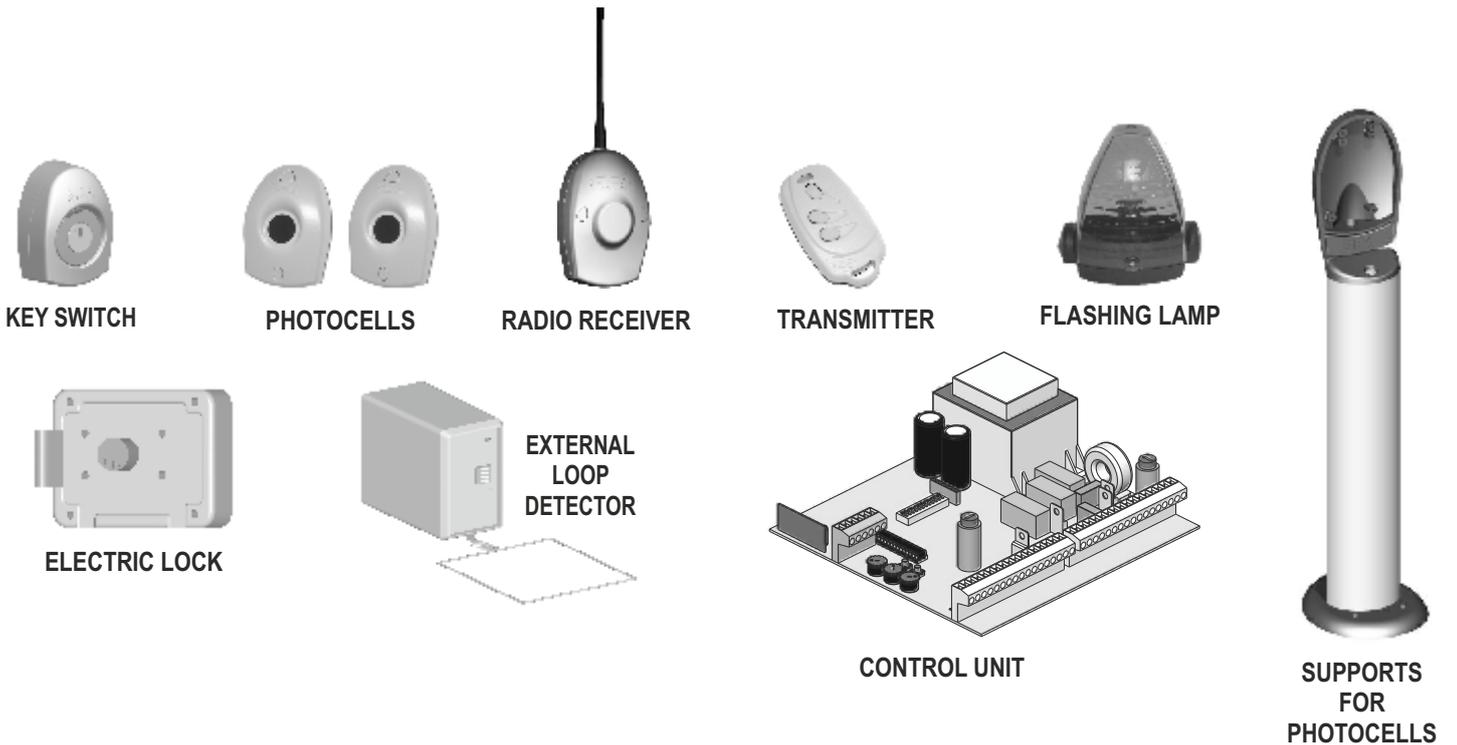


Fig. 22

The oil level should be measured with the rod inserted into the actuator and must stand in accordance with the distributor.

## SUPER FULL TANK ACCESSORIES



## RISK EXAMINATION

The points pointed by arrows in fig. 23 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.) 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 automatise doors, gates and livings. Any initiative taken without SEA explicit authorization will preserve the manufacturer from whatsoever responsibility. The installer shall provide warning notices on not assessable further risks. SEA 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 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 original spare parts are not being used. The electrical

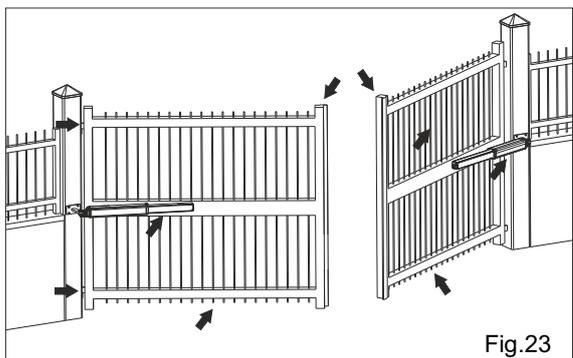


Fig.23

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.

## INITIAL TEST AND STARTING OF THE AUTOMATION

After having completed the necessary operations for a correct installation of the Super Full Tank product, as described in this manual, and after having valuated all resting risks which could arise in any installation, **it is necessary to test the automation to guaranty the maximum security and, in particular way, to guaranty that the laws and norms**

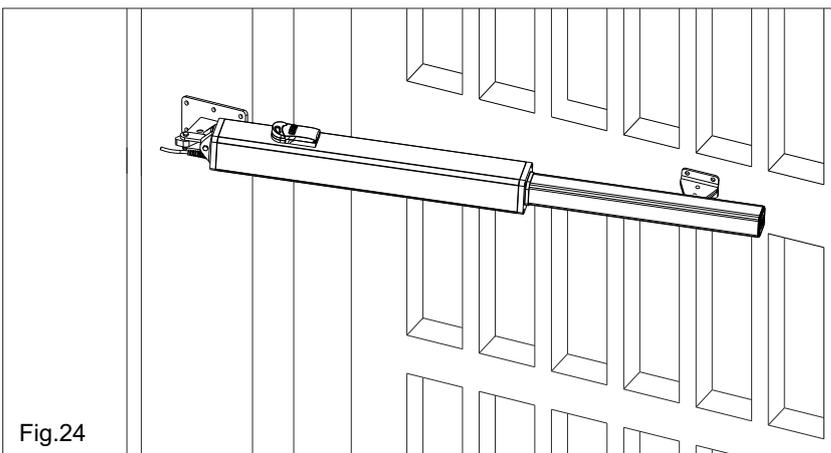


Fig.24

**of this sector are fully respected.** Especially the test must be executed following the norm **EN 12445** which establishes the methods of tests for checking the gate automations respecting the limits established by the rule **EN 12453**.

## SAFETY PRECAUTIONS:

All electrical work should conform to current regulations. A 16 A 0,030 A differential switch must be incorporated into the source of the operators main electrical supply and the entire system properly earth bonded. Always run mains carrying cables in separate ducts to low voltage control cables to prevent mains interference.

## INTENDED USE:

The operator Super Full Tank has been planned to be used for the automation of swing gate operator only.

## SPARE PARTS:

To obtain spare parts contact: **SEA S.p.A. -Zona Ind.le, 64020 S. ATTO Teramo Italia**

## SAFETY AND ENVIRONMENTAL COMPATIBILITY:

Don't waste product packing materials and/or circuits.

When being transported this product must be properly packaged and handled with care.

## LIMIT OF GUARANTEE

For the guarantee see the sales conditions on the official SEA price list.

## MAINTENANCE AND OUT OF SERVICE:

The decommission and maintenance of this unit must only be carried out by specialised and authorised personnel.

**NOTE: THE MANUFACTURER CAN NOT BE DEEMED RESPONSIBLE FOR ANY DAMAGE OR INJURY CAUSED BY IMPROPER USE OF THIS PRODUCT.**

*SEA reserves the right to do changes or variations that may be necessary to its products with no obligation to notice.*

## To the attention of users and technicians

### RELEASE SYSTEM

**To release operate as follows:**

open the lock cover, insert the key, turn it about 90° clockwise (see fig.25) and open the lid.  
Take the red key located under the lid, insert it and turn it about 90° anti-clockwise (see fig.26).

**To relock the operator do as follows:**

turn the red key clockwise until it stops (see fig.26), remove it, put it under the lid **and close the lid again.**

**Attention: Turning the key over 1 turn (360°) could damage the release.**

Turn the key anti-clockwise to tighten the lid, remove the key and close the lock cover.

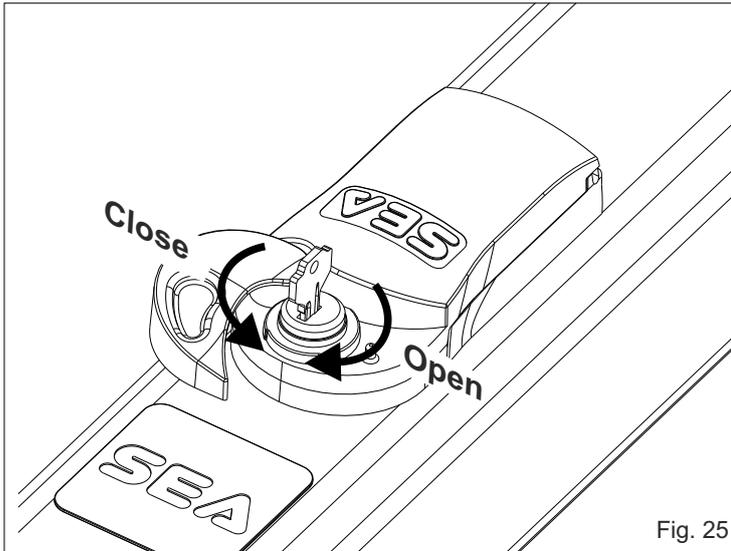


Fig. 25

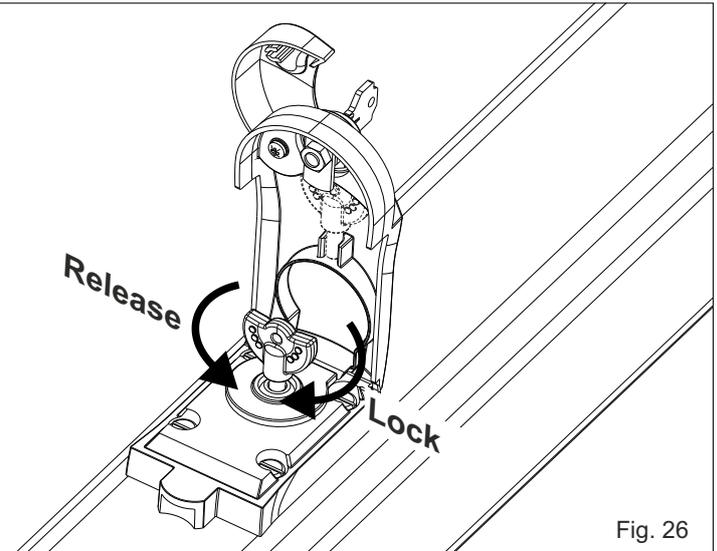


Fig. 26

**WARNING:** SEA recommends to the end user to release the operator only after having switched off the electric power. Always contact a professional installer in case of not correct working of the operator.

### PERIODICAL MAINTENANCE

1) Check the solidity and the stability of the gate, especially the points of support and/or rotation of the gate (pivots).	Annual
2) Check the oil level of the hydraulic/in oil bath operators (cap on rear cover of the Super Full Tank)	Annual
3) Change the hydraulic oil with the one recommended from the head company	4 years
4) Check the release function	Annual
5) Check the by-pass valves function	Annual
6) Check and lubricate the fixing pins	Annual
7) Check the integrity of the connection cables	Annual
8) Check the good status of all parts which are forced (rear bracket, oscillating bracket and front bracket).	Annual
9) Check the operating of all accessories, especially the function of all safety devices.	Annual
10) Lubricate the shaft (see Fig.4) with SEA grease (GREASE GL 00 Cod.65000009)	Annual
11) After having executed the periodical maintenance operations it is necessary to repeat the test and the putting in service of the automation	Annual

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

## **English** 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 be comply with Directives: Machine Regulation 2006/42/CE and following adjustments), Low Tension (2006/95/CE), electromgnetic 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 SEAS.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**

# CERTIFICATO DI ESTENSIONE GARANZIA CERTIFICATE OF WARRANTY EXTENTION

n.

## PRODOTTO/ PRODUCT

- Modello/Model \_\_\_\_\_
- Matricola n. /Serial Number \_\_\_\_\_
- Data di acquisto/Date of order \_\_\_\_\_
- Data di installazione/Date of installation \_\_\_\_\_

Centrale/Control unit	SEA <input type="checkbox"/>	Altri/Others	<input type="checkbox"/>
Fotocellule/Photocells	SEA <input type="checkbox"/>	Altri/Others	<input type="checkbox"/>
RX - TX	SEA <input type="checkbox"/>	Altri/Others	<input type="checkbox"/>
Altri accessori /Other accessories	SEA <input type="checkbox"/>	Altri/Others	<input type="checkbox"/>

## UTENTE/Customer

Nome e Cognome \_\_\_\_\_  
*First Name and Family Name* \_\_\_\_\_  
Indirizzo/Address \_\_\_\_\_

## INSTALLATORE/Installer

Ragione sociale/Company Name \_\_\_\_\_  
Nome e Cognome/First and Family Name \_\_\_\_\_  
Indirizzo/Address \_\_\_\_\_

## INSTALLATORE/INSTALLER

Firma per il trattamento dei dati personali 196/2003  
Agreement of law No. 196/2003 (Privacy Code)

Copia da restituire  
*Copy to be returned*

Firma e Timbro  
*Sign and Stamp* \_\_\_\_\_

N.B: L'estensione della garanzia legale di 12 mesi a 24 mesi e 36 mesi è valida solo se il presente modulo viene rispedito per posta o fax a SEA S.p.A. entro 15gg dalla data di acquisto. Allegare relativa fattura d'acquisto.

Note: The extension of the legal standard warranty of 12 months to 24 months and to 36 months, is valid only if the present form is returned by mail or fax to SEA S.p.A within 15days from the date of purchase. Attach customer invoice.



**SEA**<sup>®</sup>  
Sistemi Elettronici  
di Apertura Porte e Cancelli  
International registered trademark n. 804888

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Phone +39 0861 588341- Fax +39 0861588344  
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**SEA**<sup>®</sup>  
electronic opening system

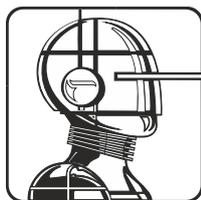
Questo articolo è stato prodotto seguendo rigide procedure di lavorazione ed è stato testato singolarmente al fine di garantire i più alti livelli qualitativi e la vostra soddisfazione. Vi ringraziamo per aver scelto SEA.

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Thanks for choosing SEA.

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Le agradecemos por haber escogito SEA.





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