



SEA[®]

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

English

HYDRAULIC OPERATOR FOR SWING GATE

MINI TANK
MARK TANK



INSTALLATION MANUAL
and Security Information

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FEATURES AND SPECIFICATIONS

The **MINI TANK** and the **MARK TANK** are two high quality hydraulic operators for residential and condominium use with leaf length up to respectively 3 and 4m.

Available in the following versions:

SC (with lock only in closing)

SB (without lock)

AC (with lock in opening and closing)

The lock is guaranteed on leaves with lengths under 1,80m. For leaves which are longer than 1,80m use, for all versions, an electric lock.

The Mini Tank and the Mark Tank are supplied with by-pass valves for the power regulation in both opening and closing. Electronic adjustable slow down in opening and closing with control board **GATE 2**. For the European laws and directives actually in force it is strongly recommended to use the Safety Gate (device for the reading of the gate position), for reverse in case of obstacle.

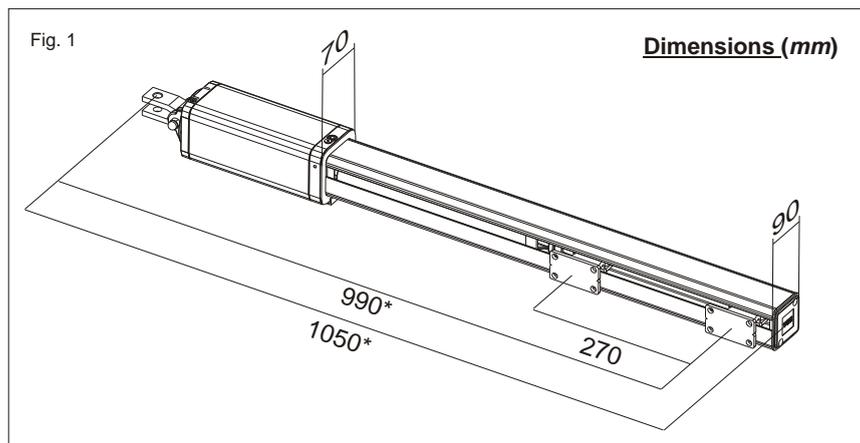
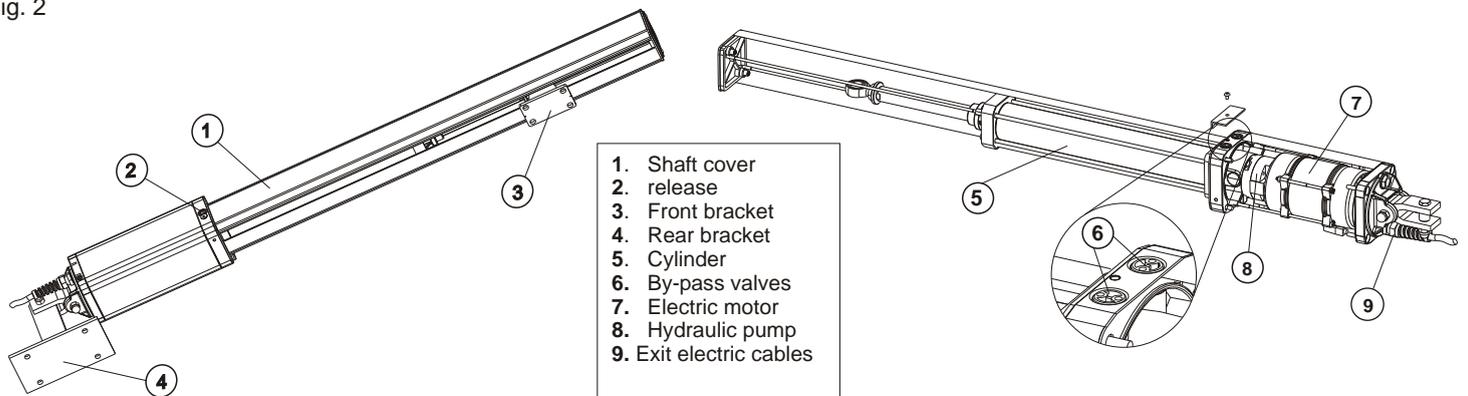
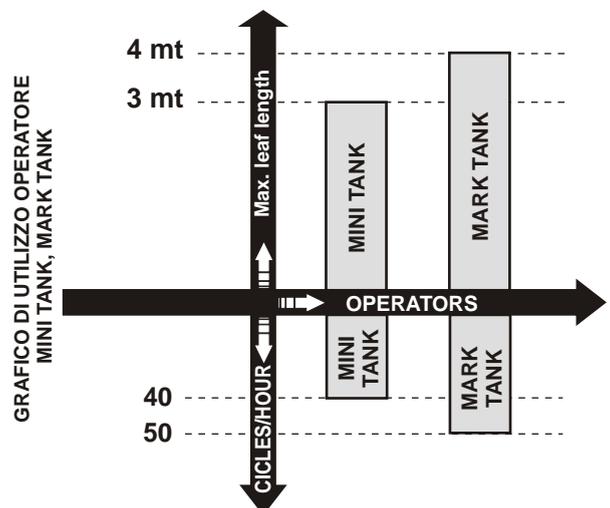


Fig. 2



TECHNICAL FEATURES	MINI TANK	MARK TANK
Power supply	230 V (±5%) 50/60 Hz	
Power	180 W	220 W
Absorbed current	1 A	
Stroke	270 mm	
Cycles hour (at a temp. of 20°C)	40	50
Max working pressure	30 bar	40 bar
Operating temperatures	-40°C +60°C	
Thermal protection	130°C	
Max Thrust	250 daN	640da N
Capacitor	12,5uF	12,5uF
Weight	10 Kg	11 Kg
Protection class	Ip55	
Max leaf length	3 mt	4 mt
Opening degree of the leaf	90° - 110°	



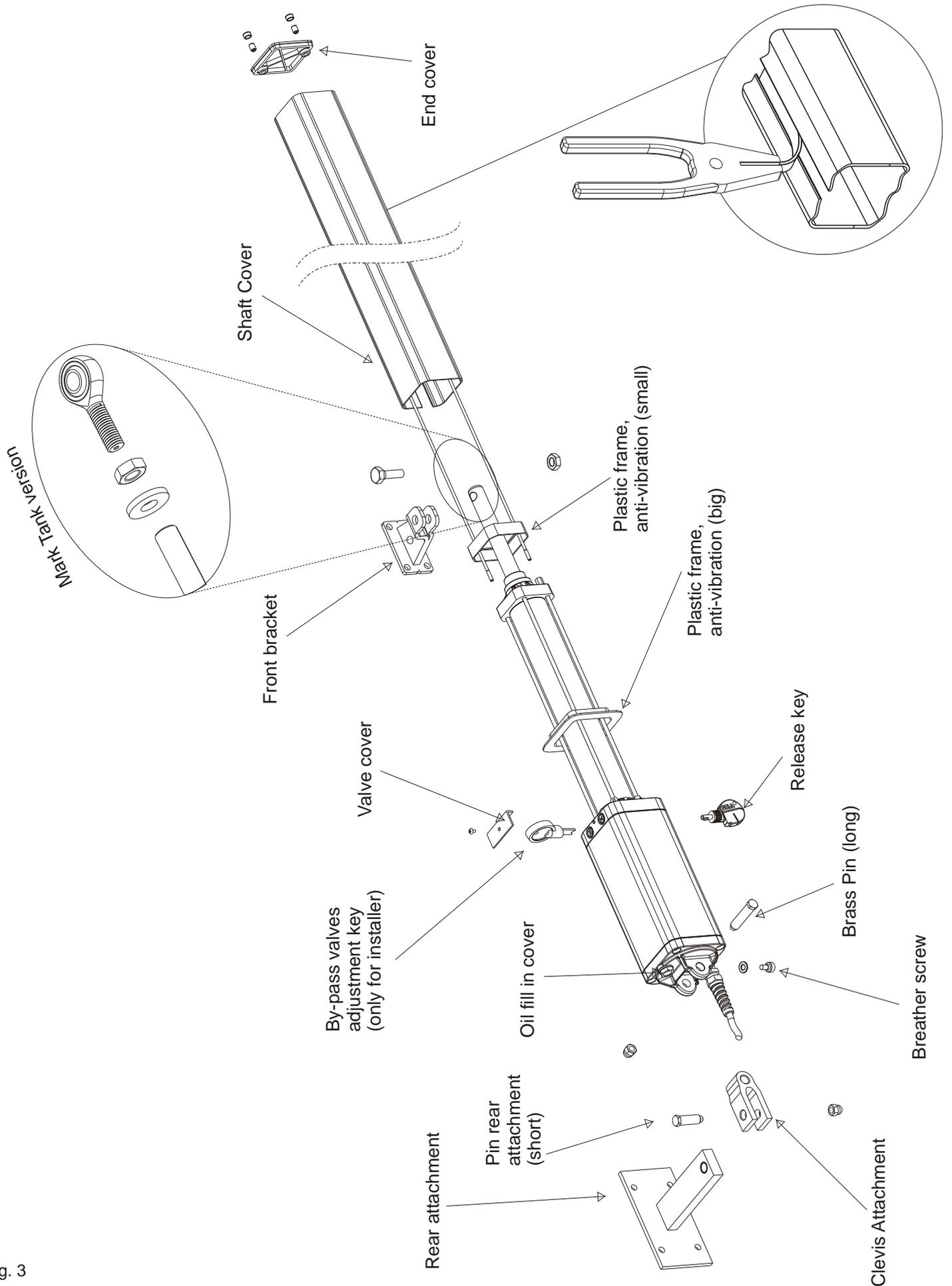
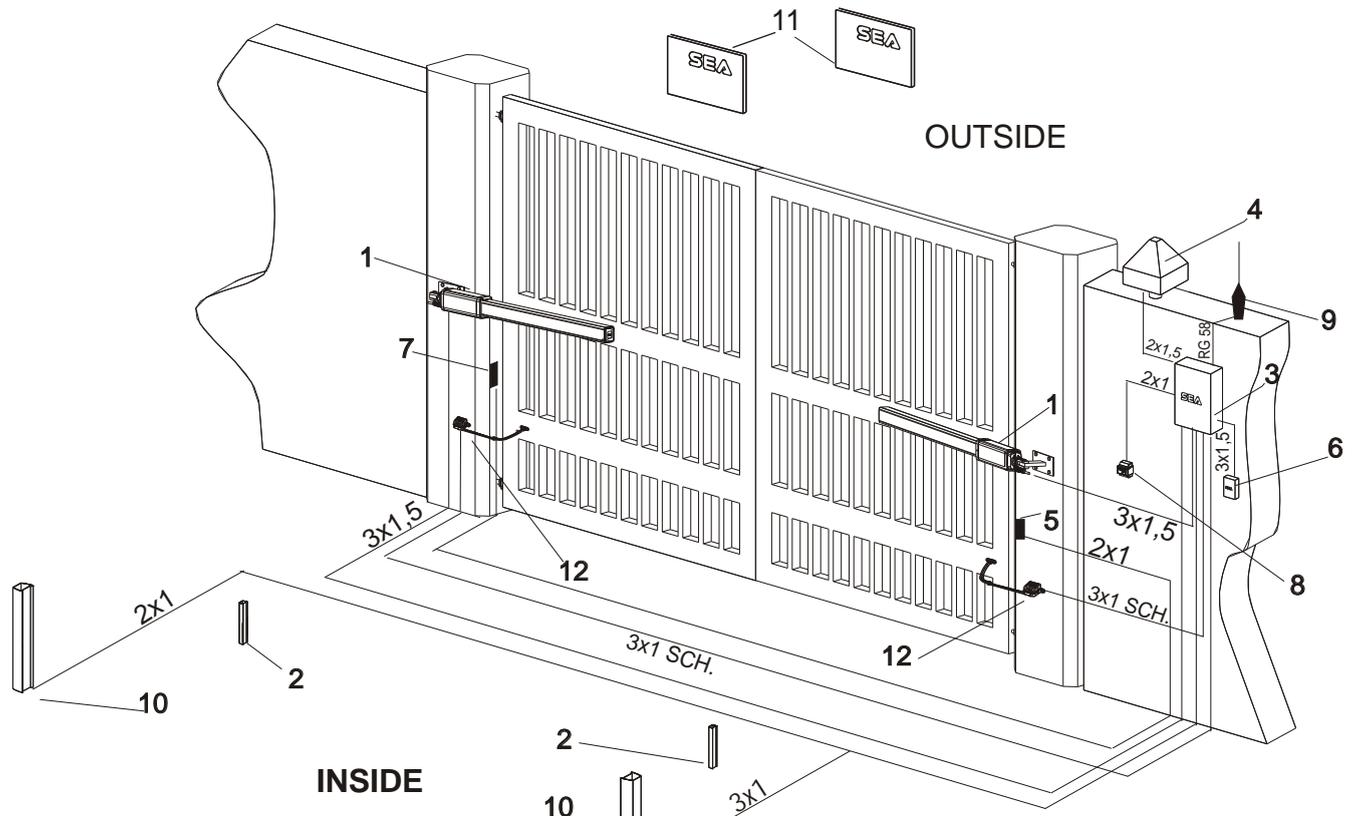


Fig. 3

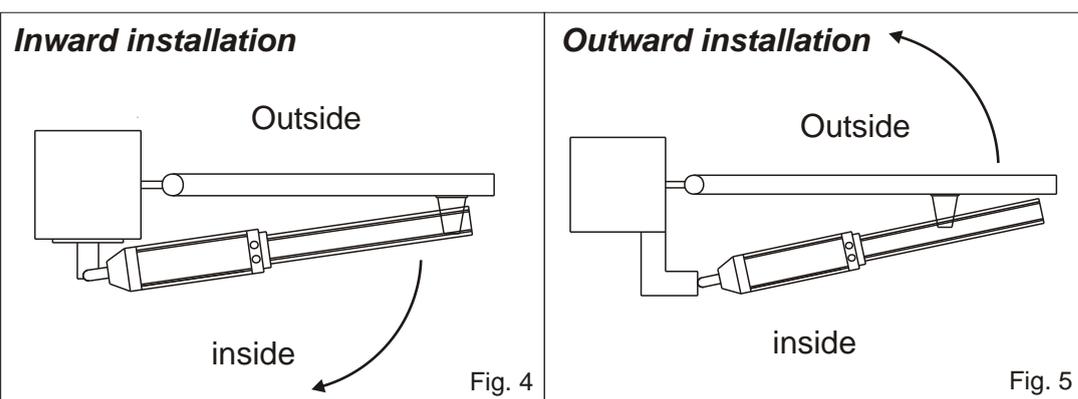
TYPICAL INSTALLATION



1. Libra operator
2. Mechanical stop
3. Gate 2 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
12. Safety Gate

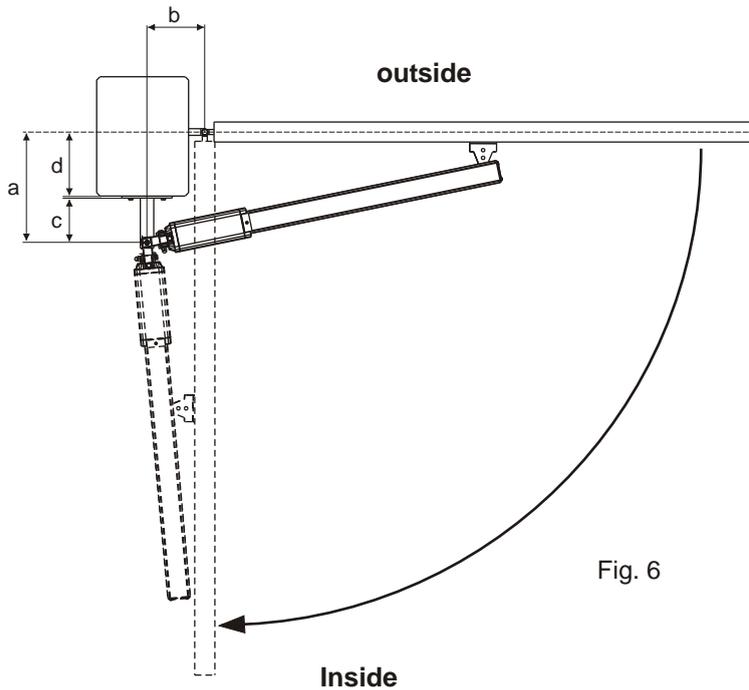
TYPE OF INSTALLATION

It is possible to install the Libra Mini Tank with opening inside (Fig.4) or opening outside (Fig.5).



Install the operator always
inside the property

INWARD INSTALLATION

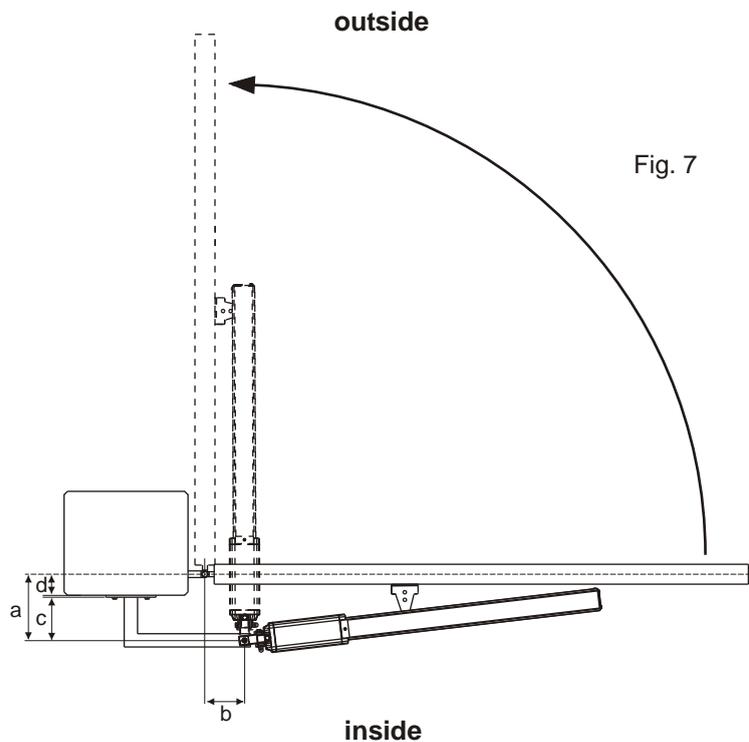


Total stroke 270 mm - max suggested stroke 250 mm

a (mm)	b (mm)	d _{max} (mm)	Max Opening Angle	Max stroke (mm)	Stroke for 90°(mm)
100	115	50	110°	250	215
100	150	50	90°	250	
105	110	55	110°	246	215
105	145	55	90°	250	
120	105	70	105°	249	225
120	130	70	90°	250	
125	125	75	90°	250	
140	95	90	100°	250	235
140	110	90	90°	250	
145	95	95	100°	255	240
145	105	95	90°	250	
150	100	100	90°	250	
155	85	105	95°	249	240
160	90	110	90°	250	
170	75	120	90°	248	
180	65	130	90°	247	

To obtain 110° with d > 55 mm make a recess in the gate.

OUTWARD INSTALLATION



Total stroke 270 mm - max suggested stroke 250 mm

a (mm)	b (mm)	Max Opening Angle	Max stroke (mm)	Stroke for 90°(mm)
150	90	95°	250	240
160	90	90°	250	
165	80	95°	249	243
175	80	90°	250	
180	70	90°	250	
180	65	90°	241	

INSTALLATION OF THE OSCILLATING REAR BRACKET

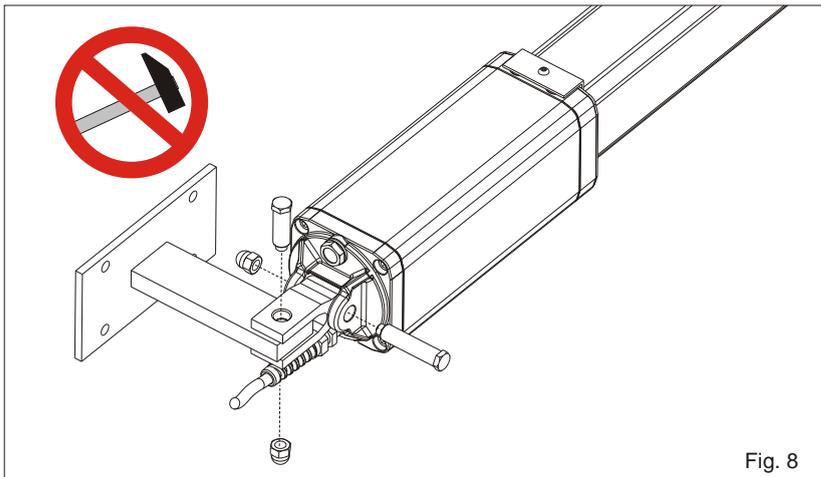


Fig. 8

- Open carefully the package, making sure not to loose parts which are listed in fig. 3
- Attach the rear oscillating bracket as shown in fig. 9

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.

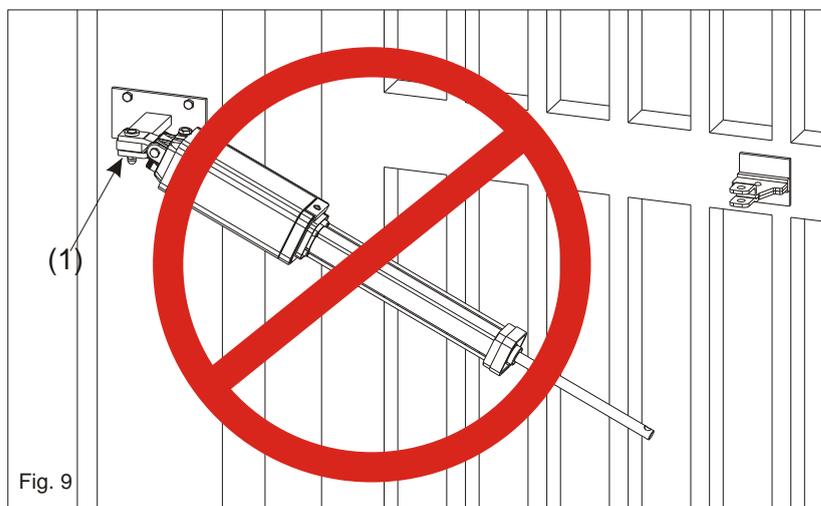


Fig. 9

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

According to the type of opening that you have chosen (inside or outside) and to the chosen leaf rotation (see pag. 18), the rear bracket must first be cut respecting the quote "a" on pag. 18 and then welded as in fig. 10.

The support must be positioned so that the operator is perfectly levelled (Fig. 10, Fig. 12)

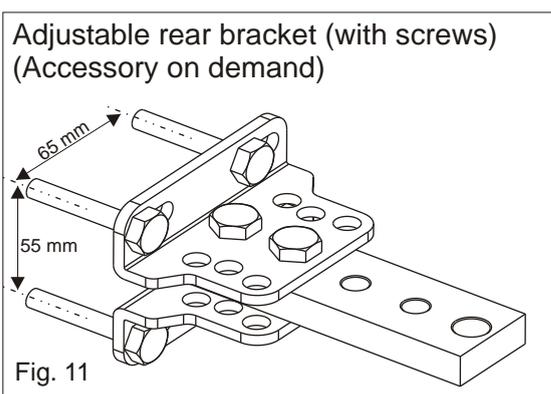


Fig. 11

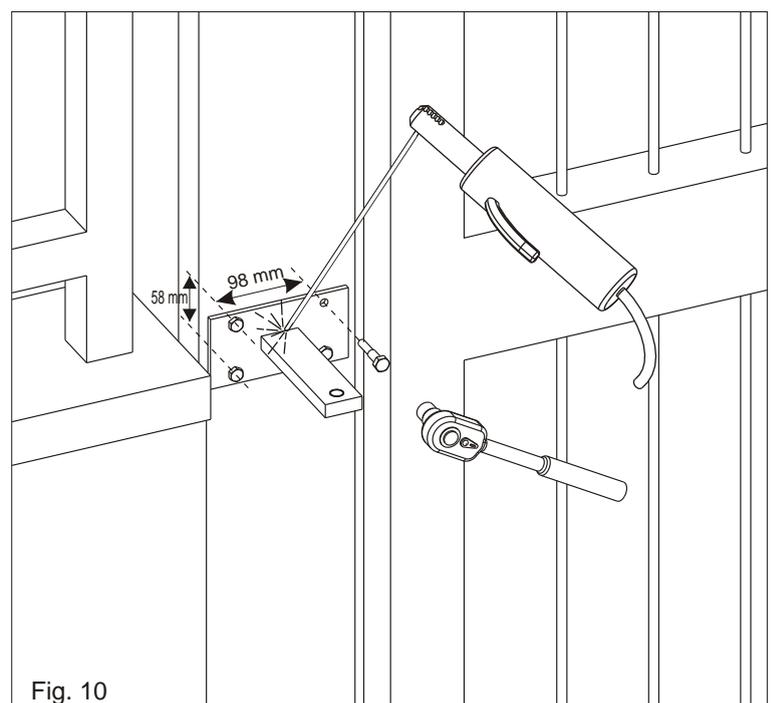


Fig. 10

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 (as in fig. 23 pag.23)
2. Pull-out completely the chromate shaft and push it back in 1cm
3. Attach the shaft to the front bracket (Fig. 13)
4. Set the operator perfectly levelled and mark the position of the front bracket (Fig.12)

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.

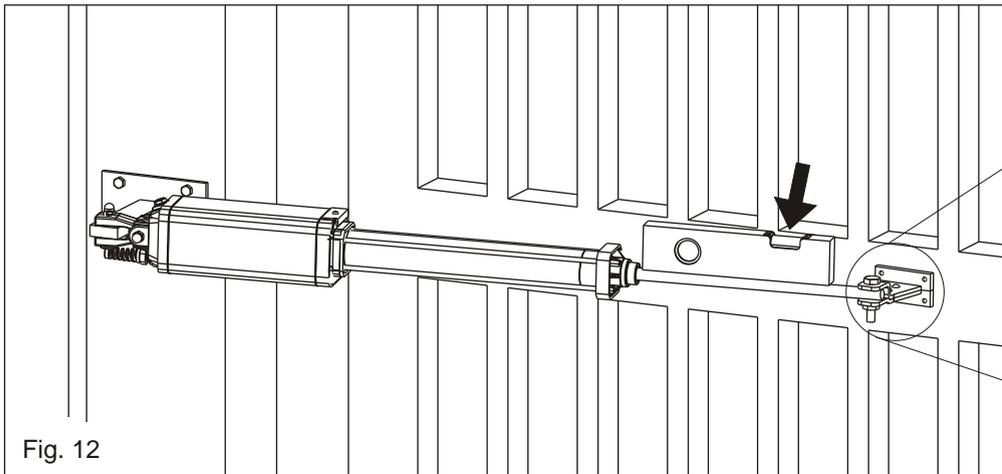


Fig. 12

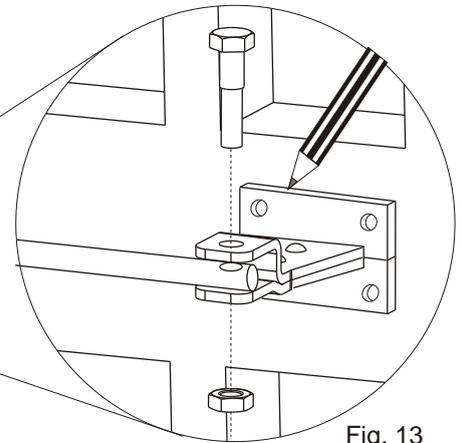


Fig. 13

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:

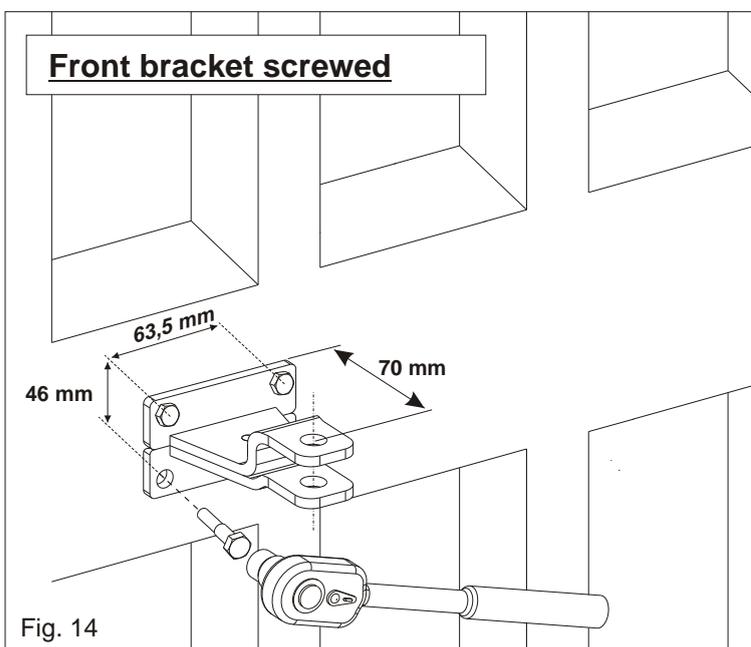


Fig. 14

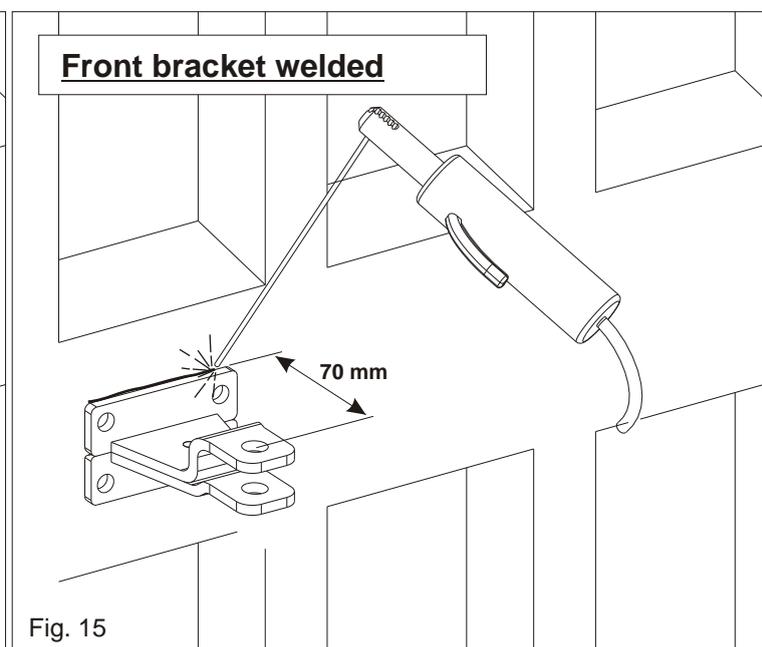
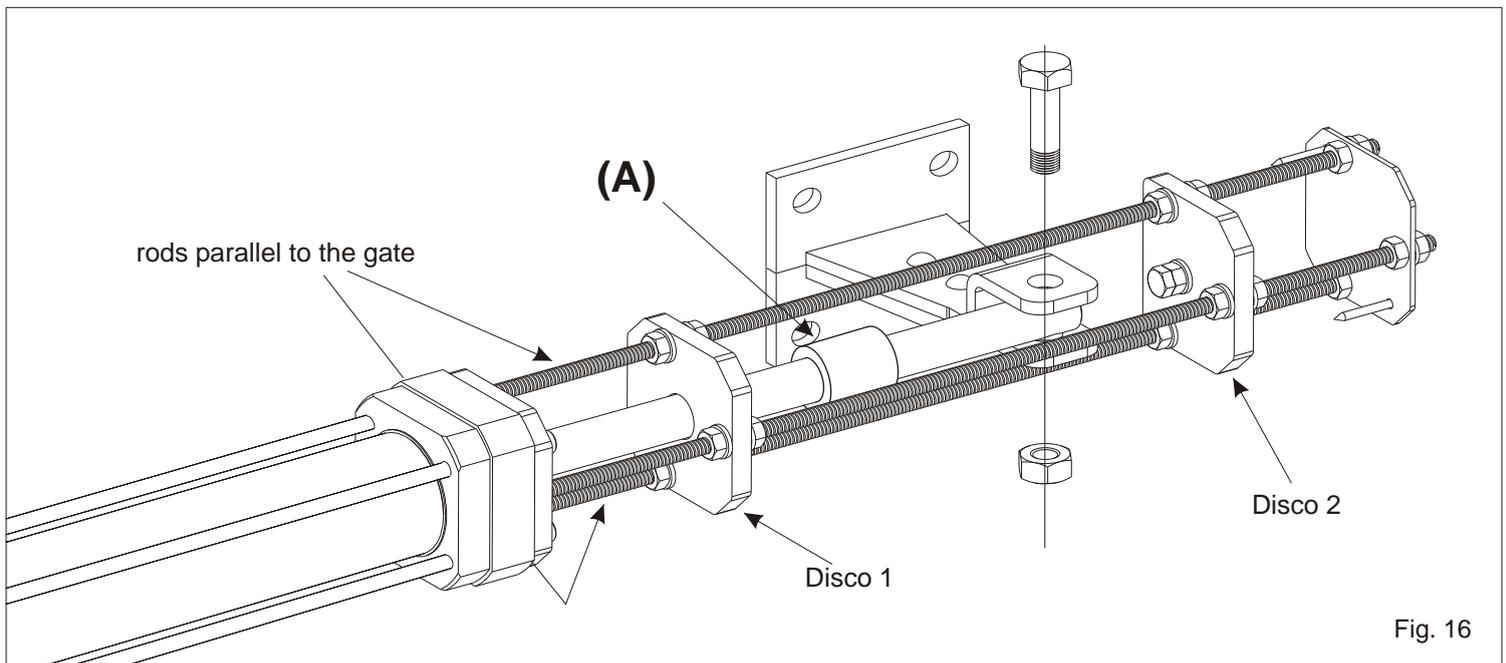


Fig. 15

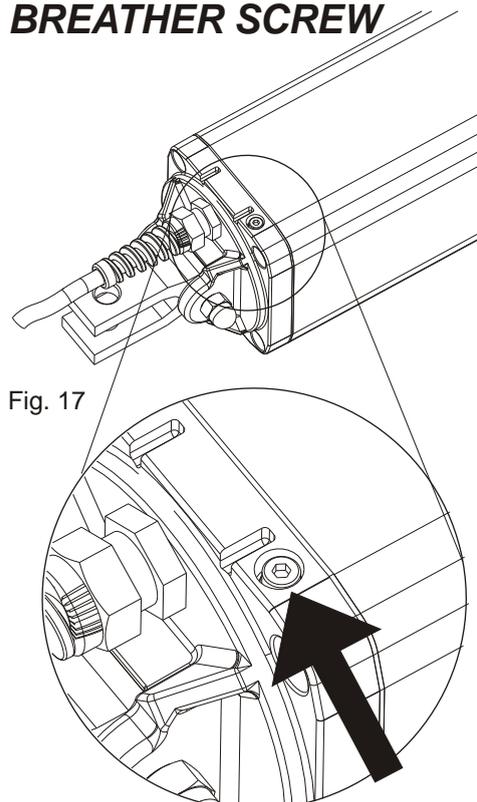
INSTALLATION OF POSITIVE STOPS

- release the unit (as in fig. 23 of page 23)
- Make the shaft come out for $\frac{3}{4}$ of its stroke
- Put the positive stops into the front flange of the unit with the two tie rods (of the three present on the stops) which are parallel to the gate (Fig.16)
- Fix the positive stops with the provided screws
- Only Mini Tank : Put the provided bush (A) into the shaft
- at this point couple the shaft to the front bracket
- To adjust the positive stops in opening act on disk 1 and in closing act on disk 2.

Attention: The mounting of the mechanical positive stops does not cause the reduction of the shaft stroke.



BREATHER SCREW



Up

ATTENTION



It is obligatory to remove the breather screw at the end of the installation.

down



**Unscrew and
remove at the
end of installation**

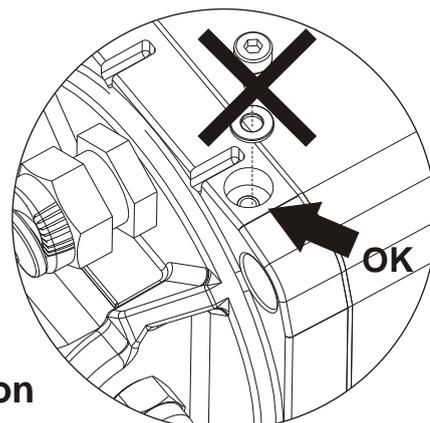
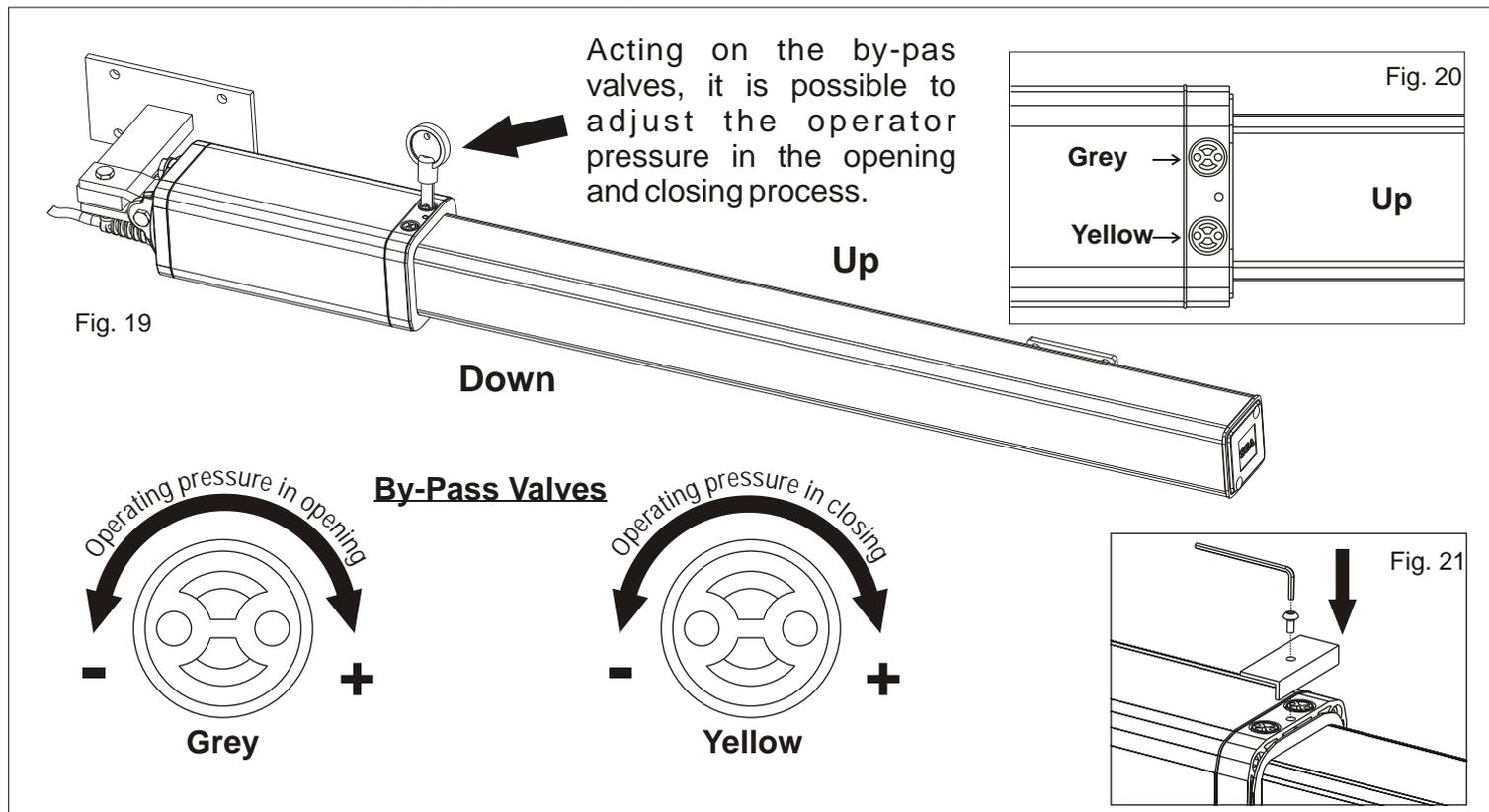


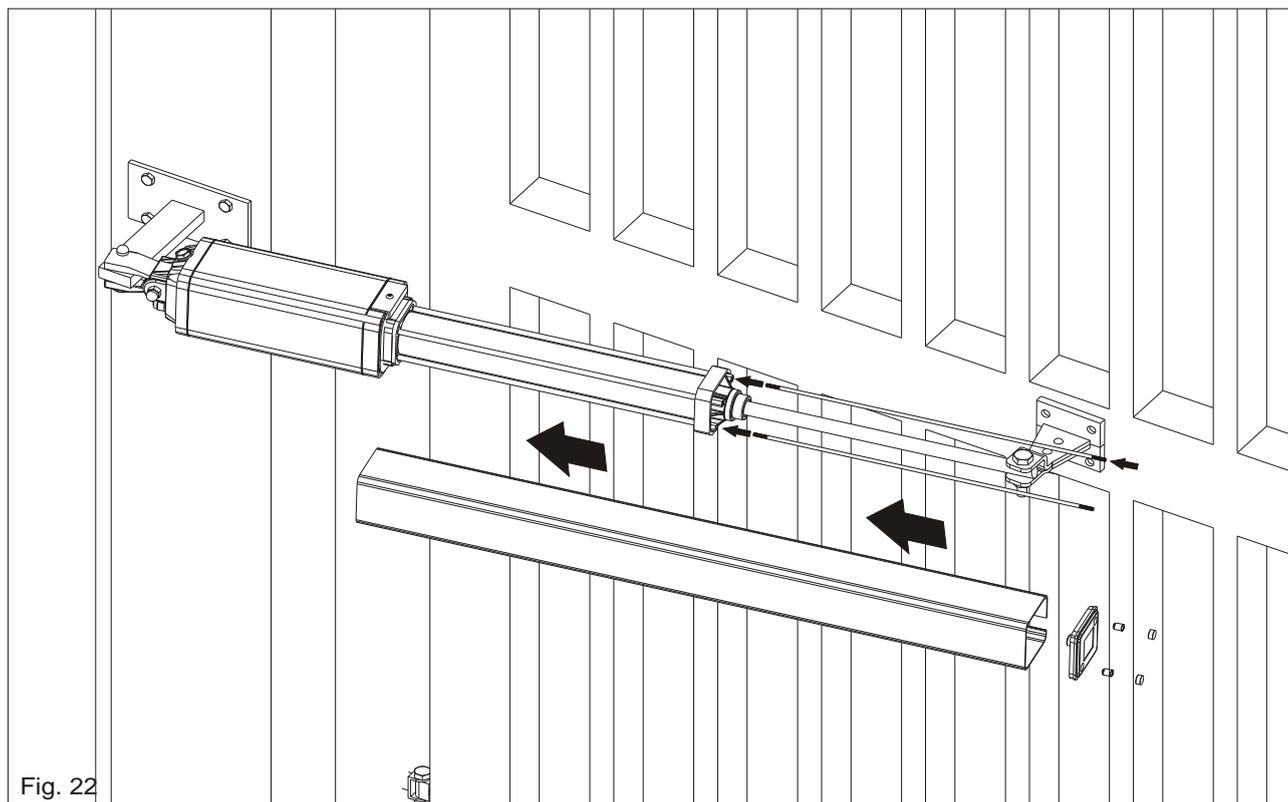
Fig. 18

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



MANUAL RELEASE SYSTEM

WARNING: Always switch off the main power (110V or 230V) before servicing the operator.

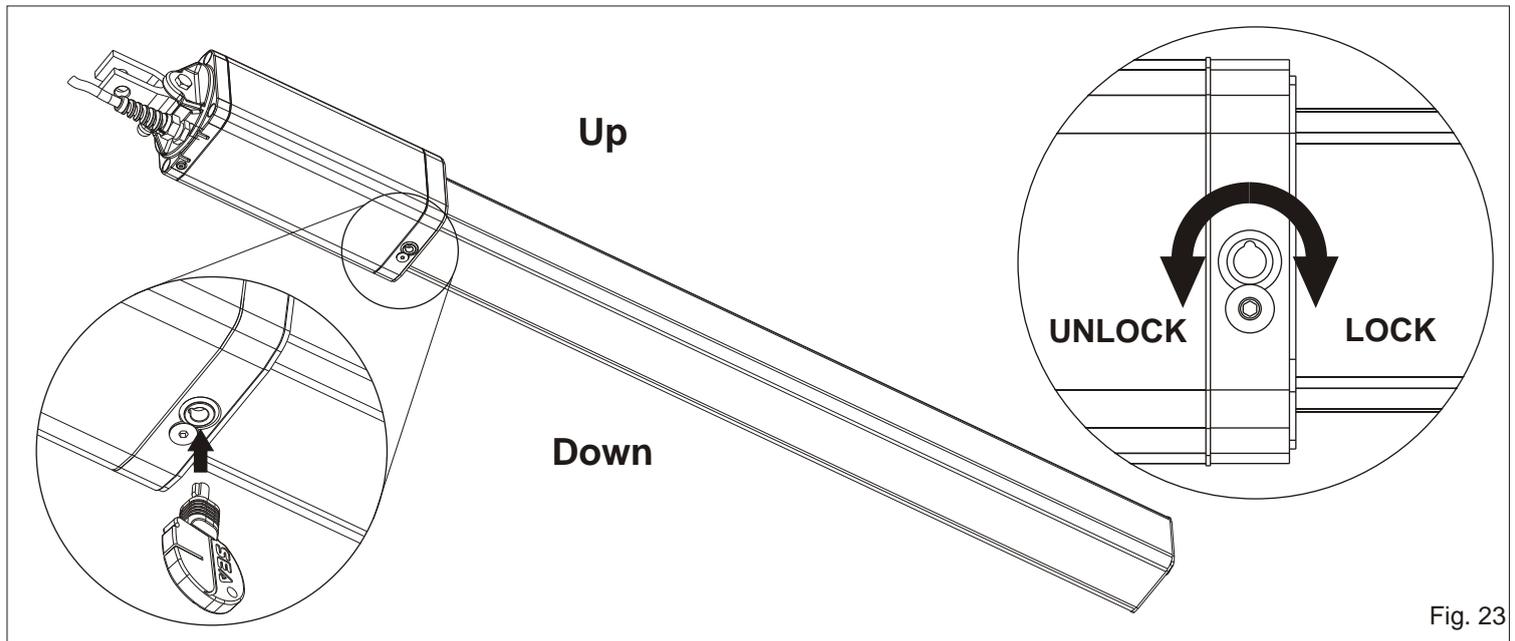


Fig. 23

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.

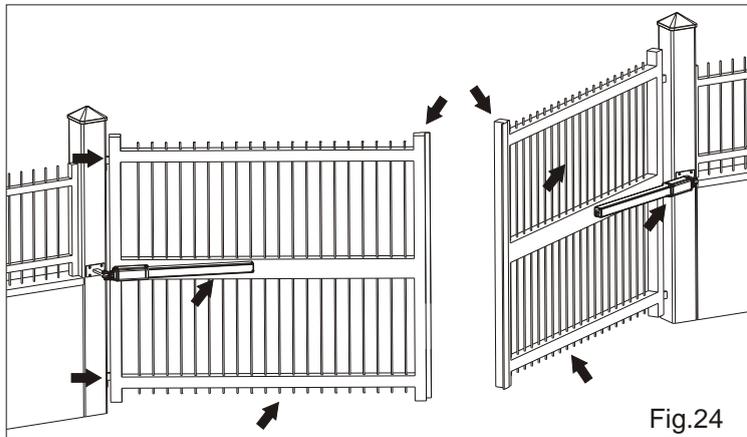
PERIODICAL MAINTENANCE

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 Mini 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 function and the positive stops condition in opening and closing (where there is present a mechanical positive stop accessory)	Annual
9) Check the good status of all parts which are forced (rear bracket, oscillating bracket and front bracket).	Annual
10) Check the operating of all accessories, especially the function of all safety devices and of the Safety Gate.	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.

RISK EXAMINATION

The points pointed by arrows in fig. 24 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.



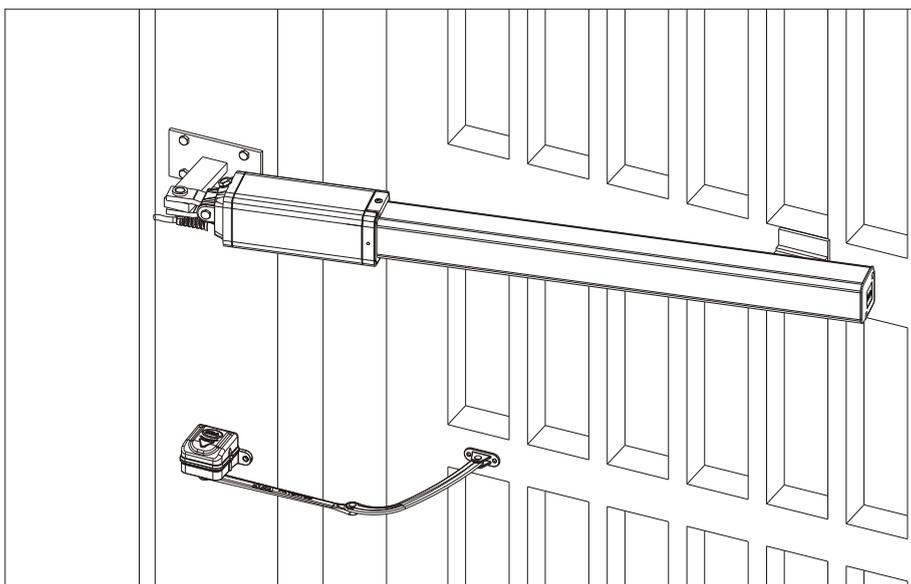
(Re. Laws in force in the country where installation has been made.)

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 wings. 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 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

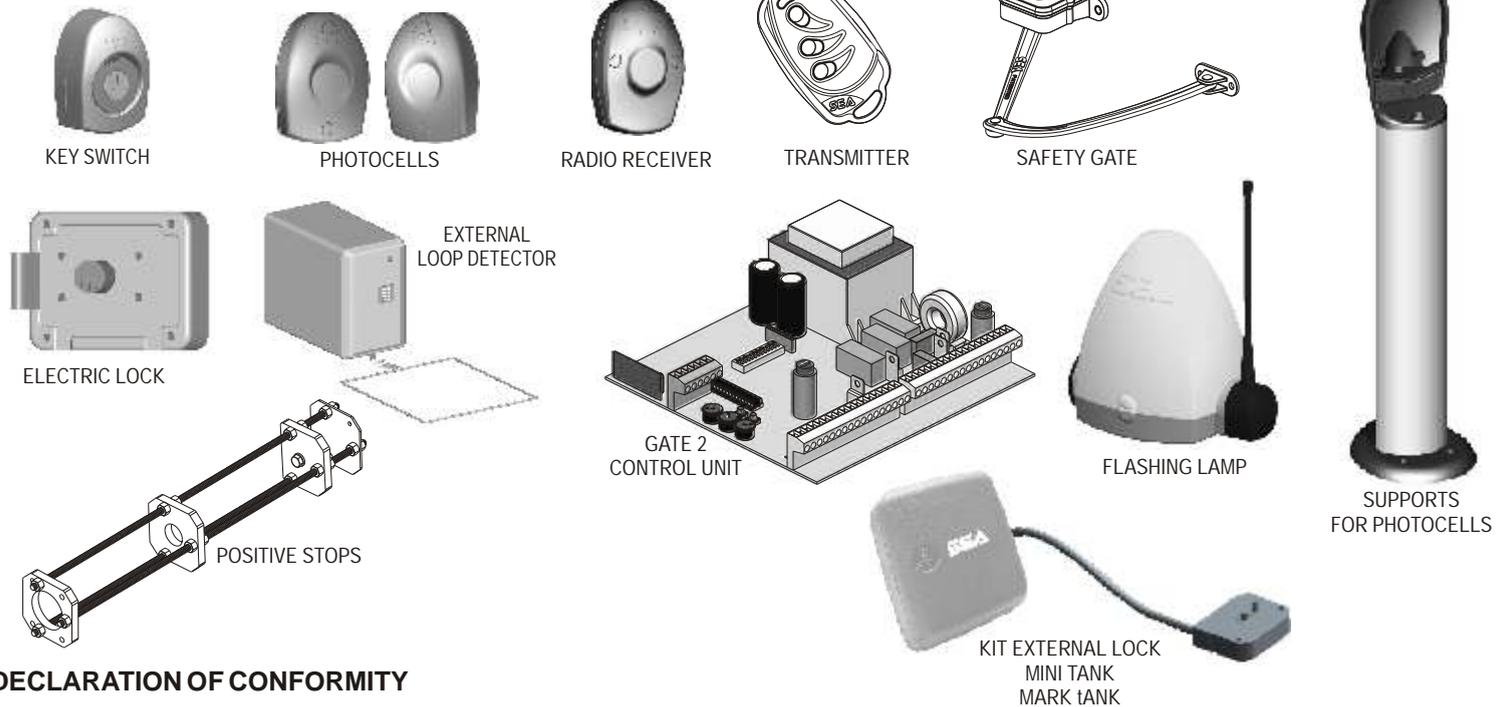
After having completed the necessary operations for a correct installation of the Mini Tank or Mark Tank product, as described in this manual, and after having valuated all resting risks which could arise in any installation, **it is necessary to test the automation to guaranty the maximum security and,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

For a correct and safe installation it is strongly recommended to install a Safety Gate, **which allows the fulfilment of the force diagram included in the norm EN 12453** and consequently the test and start of the whole installation.

MINI TANK E MARK TANK ACCESSORIES



DECLARATION OF CONFORMITY

SEA declares under its responsibility that the products

MINI TANK, MARK TANK

meet the essential requisites provided for by the following European Directive and following changes:

89/392/CEE (Machine Directive)

89/336/CEE (Electromagnetic Compatibility Directive)

73/23/CEE (Low Tension Directive)

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 Mini Tank and Mark Tank operators are been designed to be solely used for the automation of swing gates.

SPARE PARTS:

To obtain spare parts contact:

SEA s.r.l. -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

The Mini Tank and Mark Tank operators are guaranteed for a period of 36 months. The guarantee period starts from the date stamp printed on the unit. The Mini Tank and Mark Tank guarantee will be void if the unit has been incorrectly installed, not used for the purpose intended, tampered with or modified in any way.

The validity of this guarantee only extends to the original purchaser of the unit.

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.

TERMS OF SALE

EFFICACY OF THE FOLLOWING TERMS OF SALE: The following general terms of sale shall be applied to all orders sent to SEA srl. All sales made by SEA to all customers are made under the prescription of this terms of sales which are integral part of the sale contract and cancel and substitute all opposed clauses or specific negotiations present in the order or in other documents received from the buyer.

GENERAL NOTICE The gate automation systems must be assembled exclusively with SEA components, unless specific agreements apply. Non-compliance with the applicable safety standards (European Standards EN 12453 EN12445 and others) 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 and always under those Terms of sale. 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.

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 noncompliance of safety standards and good practice during installation and use of the purchased products.

8) WARRANTY.

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.r.l. within 30 days from the purchase date. 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 installation, or if the product label of the manufacturer with the registered SEA trademark n° 804888 has been removed . 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 repairs of products in warranty and out of warranty is accepted only if the procedure of SEA are fully respected by the customer.

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 acquires the property of the goods only after full payment of the invoice.

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. The official language for the interpretation of the catalogue, the manuals, the terms of sale and any other is the italian language. SEA reserves the faculty to make technical changes to improve its own products, which are and are not included 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: with the purchase, the buyer accepts in full the present Terms of Sale and recognizes that SEA has the exclusive legal ownership of the registered SEA International trademark n° 804888 which is attached on each products label, and/or on manuals, packaging and/or in any other documentation, and he will commit himself to use it in its marketing and/or installation activity in a way which does not reduce the value of these rights; he won't also remove, replace or modify the trademark or any other particularity from the products. Any kind of replication or use of SEA brand is forbidden as well as of any change of sings-brands on the products, unless preventive and expressed authorization by SEA.