

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 4 m.

Available in the following versions:

SC (with lock only in closing)

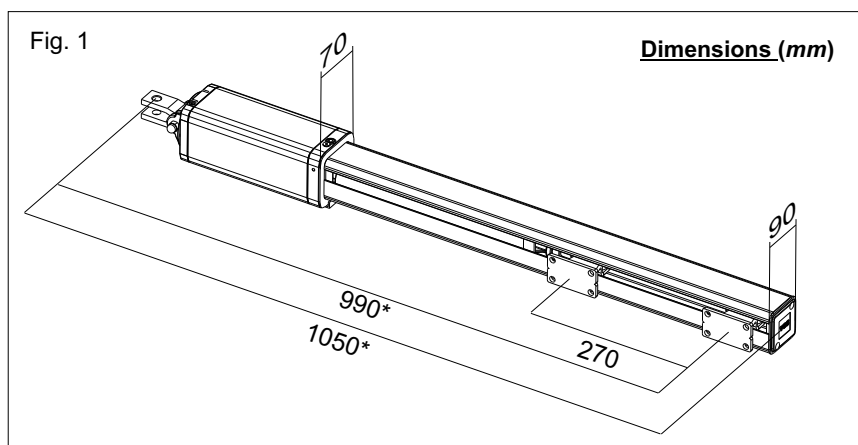
SB (without lock)

SA (with lock only in opening)

AC (with lock in opening and closing. Only Mark Tank.)

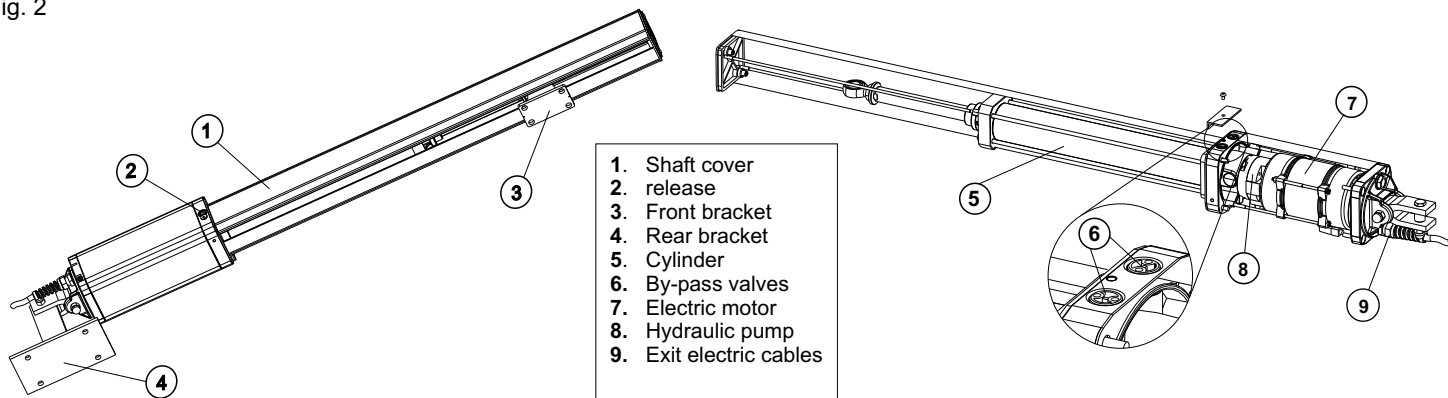
The lock is guaranteed on leaves with lengths under 1,80 m. For leaves which are longer than 1,80 m use, for all versions, an electric lock.

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.



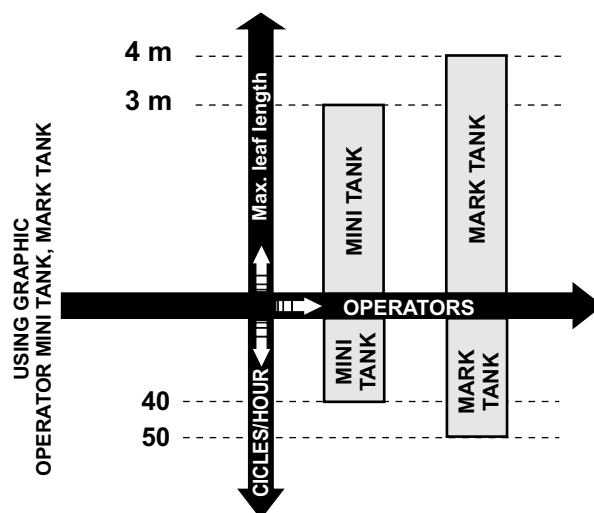
***NOTE:** Version with slow down in closing. + 24mm (only Mark Tank)

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	12,5µF	12,5µF
Weight	10 kg	11 kg
Protection class	Ip55	
Max leaf length	3 m	4 m
Opening degree of the leaf	90° - 110°	

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



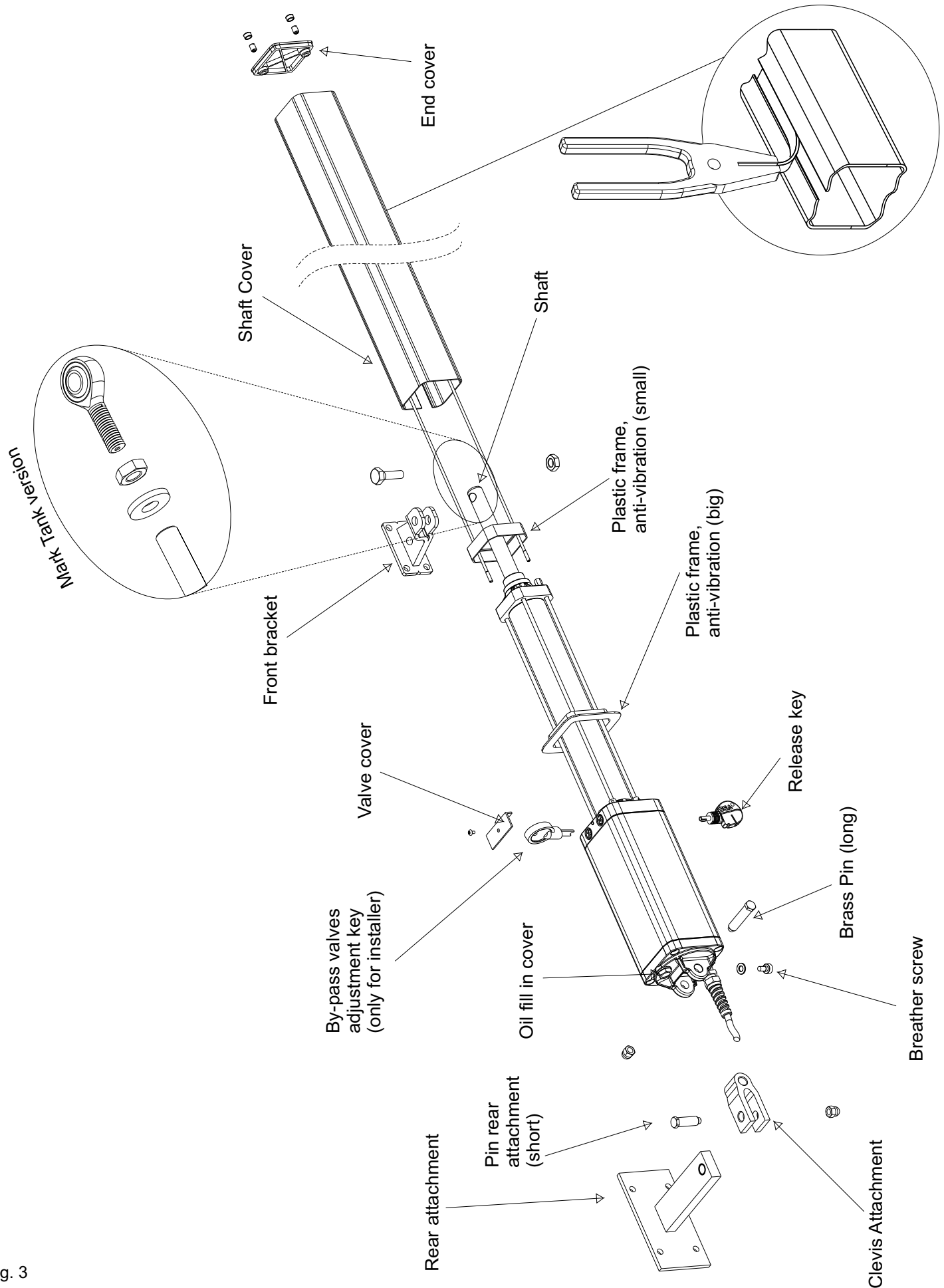
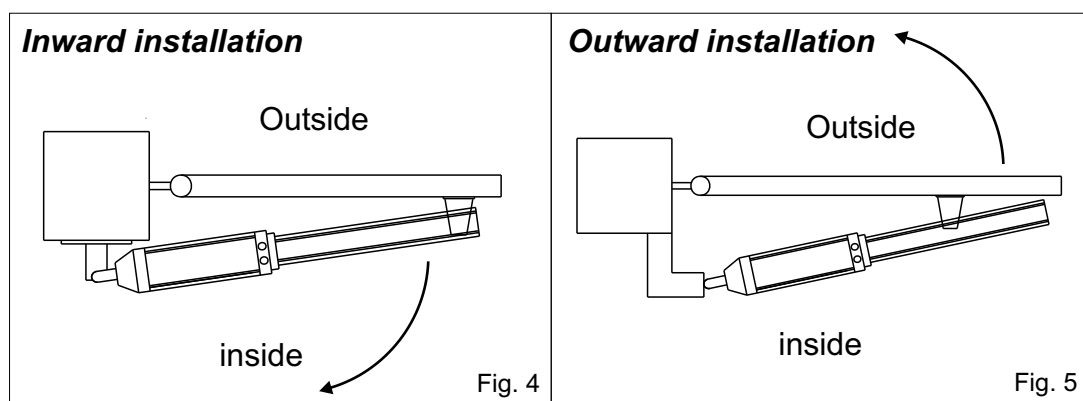


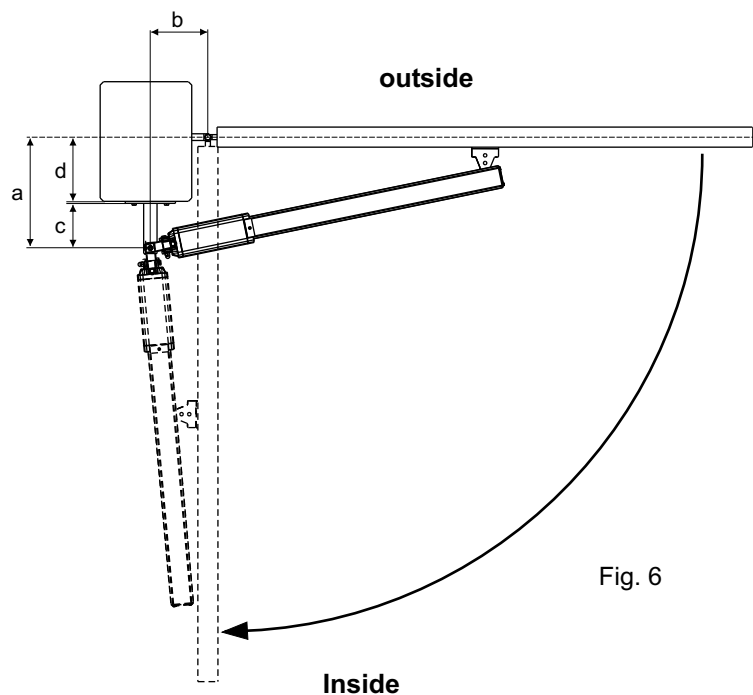
Fig. 3

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



Install the operator always
inside the property

INWARD INSTALLATION

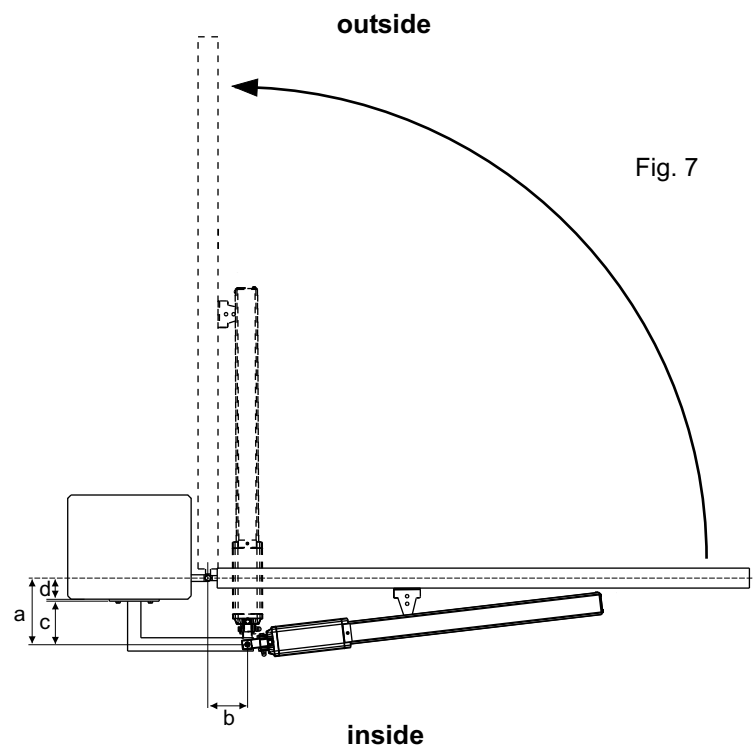


Total stroke 270 mm - max suggested stroke 250 mm

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

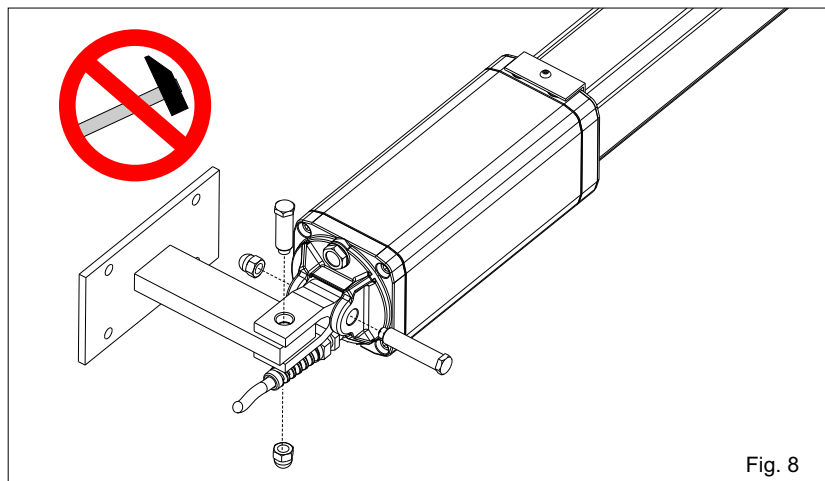


Fig. 8

PRELIMINARY

- 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.

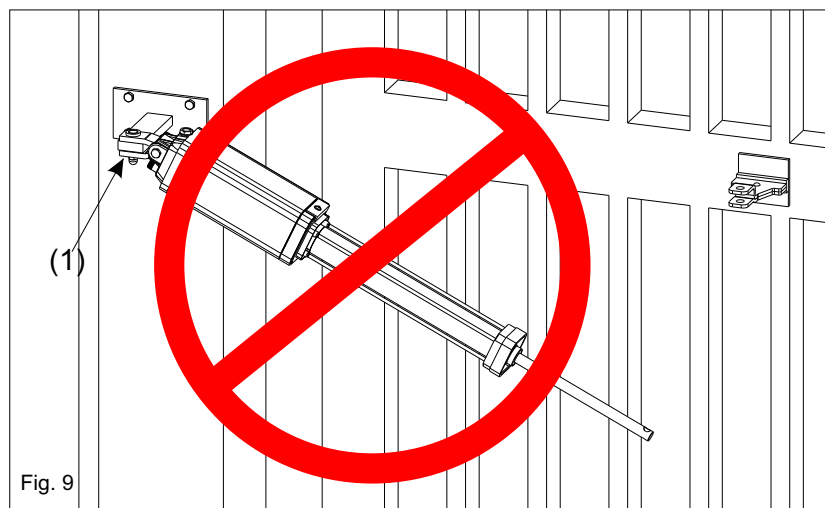


Fig. 9

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. 16), the rear bracket must first be cut respecting the quote "a" on pag. 16 and then welded as in fig. 10.

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

Adjustable rear bracket (with screws)
(Accessory on demand)

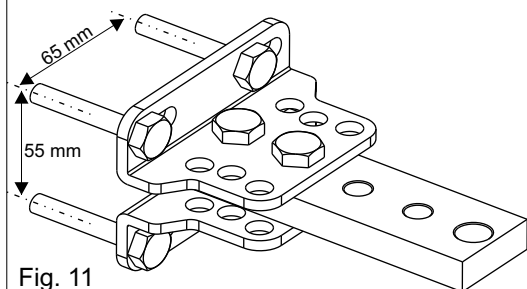


Fig. 11

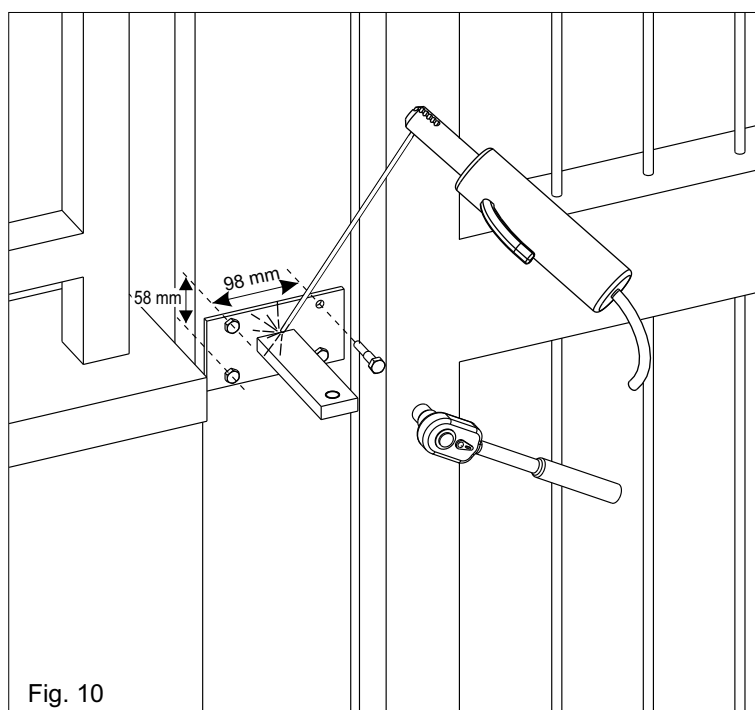


Fig. 10

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. 24)
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.

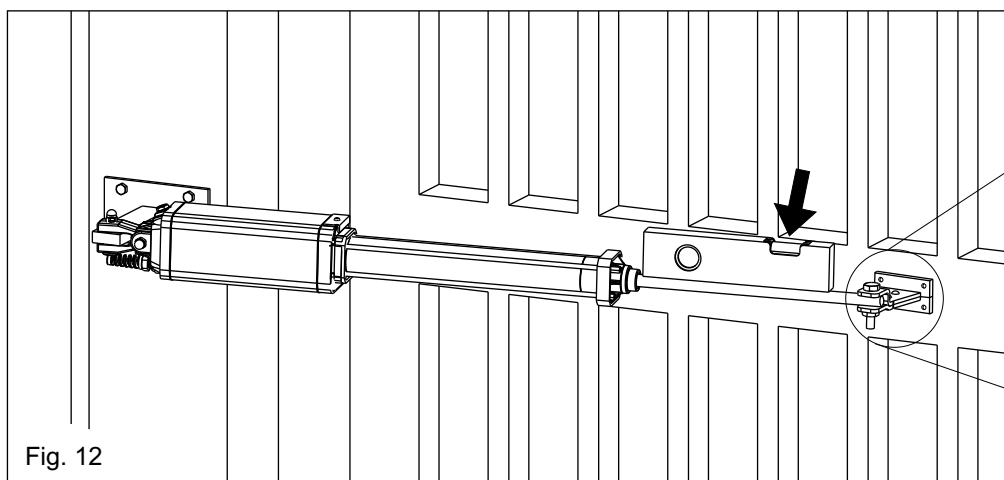


Fig. 12

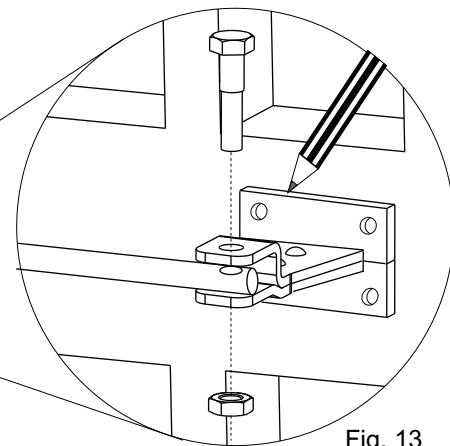


Fig. 13

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:

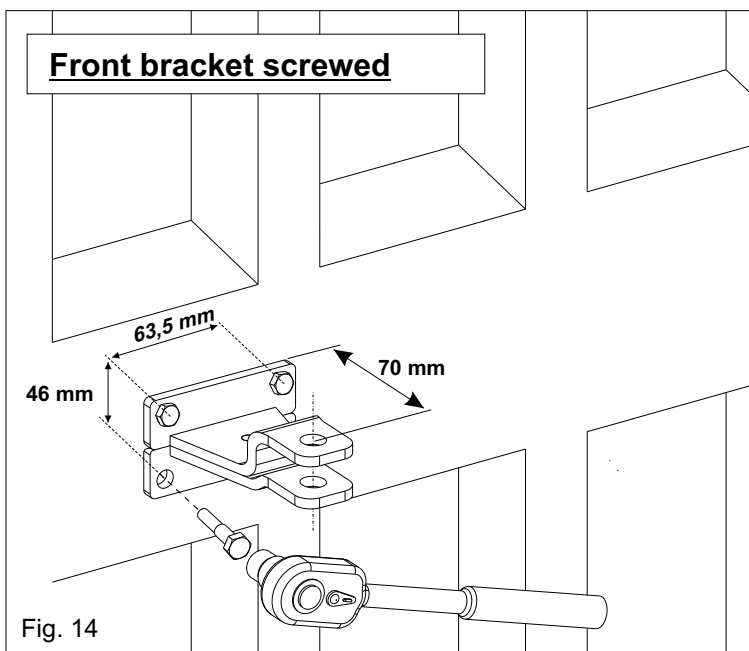


Fig. 14

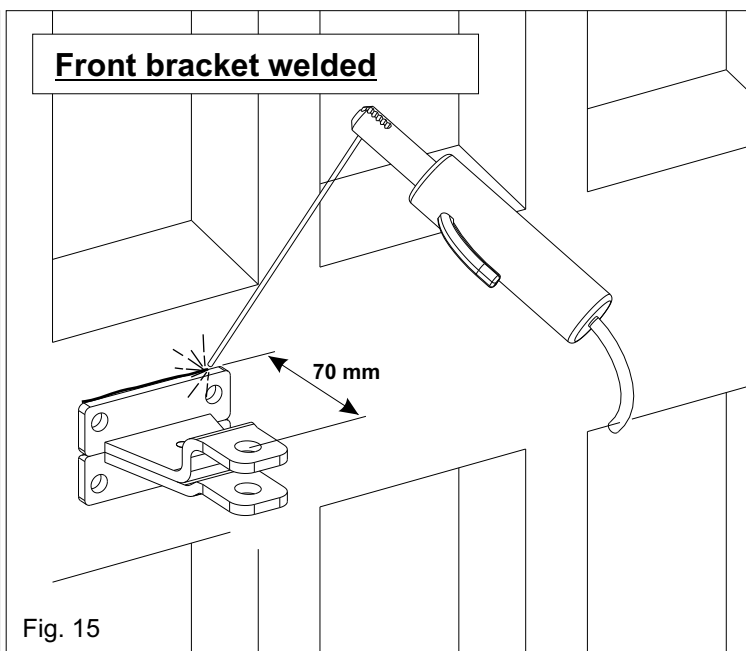


Fig. 15

INSTALLATION OF POSITIVE STOPS (Accessory on demand)

- release the unit (as in fig. 24)
- 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.

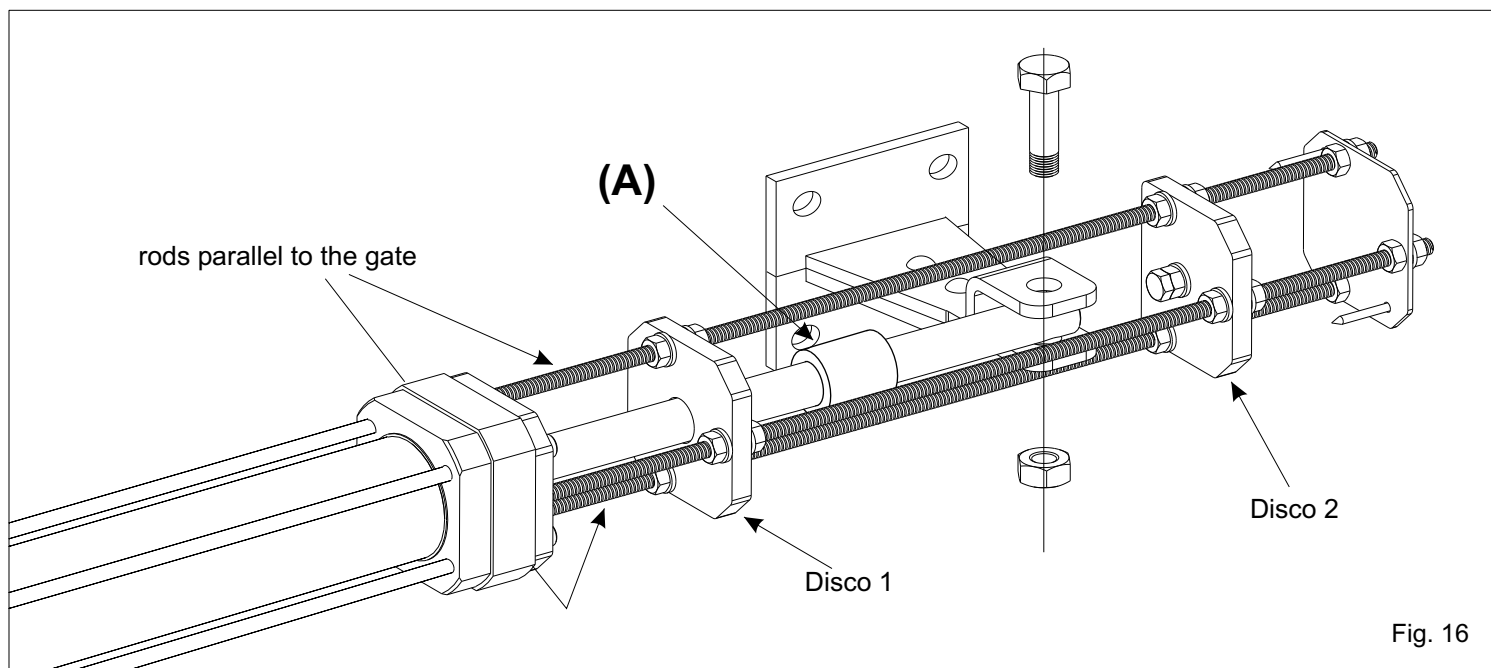


Fig. 16

BREATHER SCREW

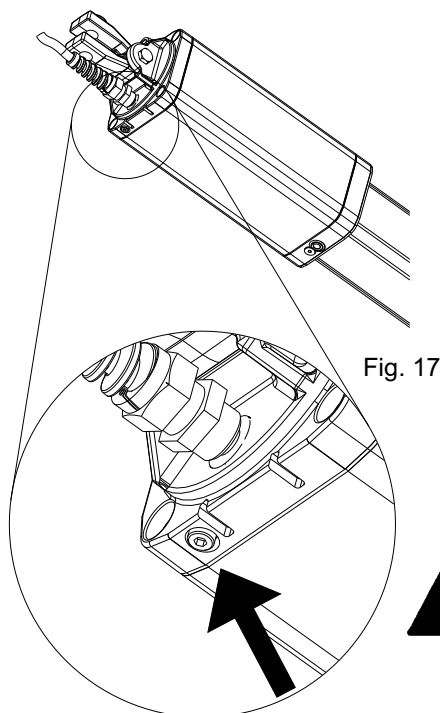


Fig. 17



ATTENTION

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

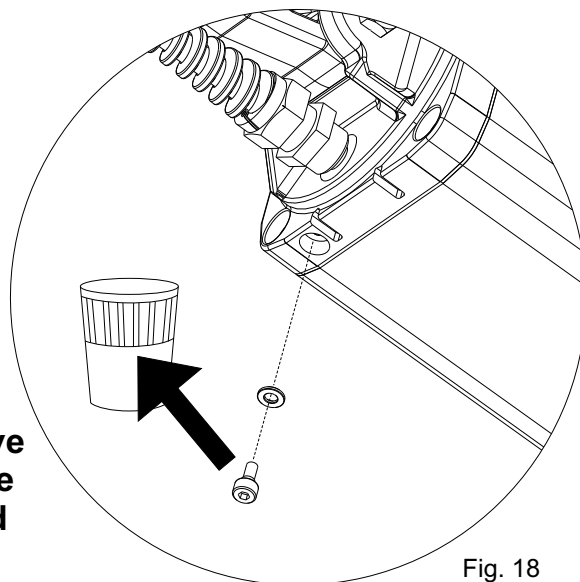
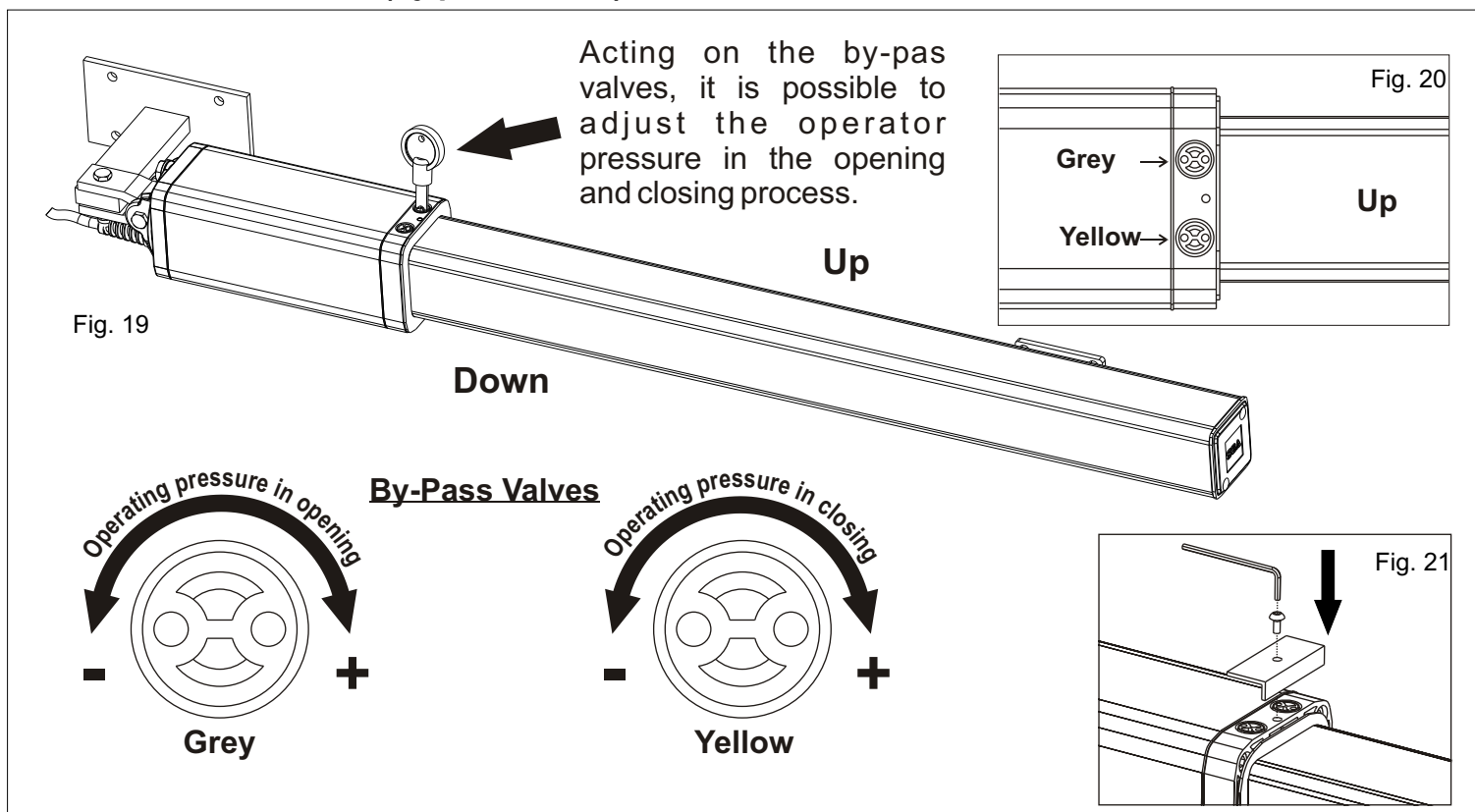


Fig. 18

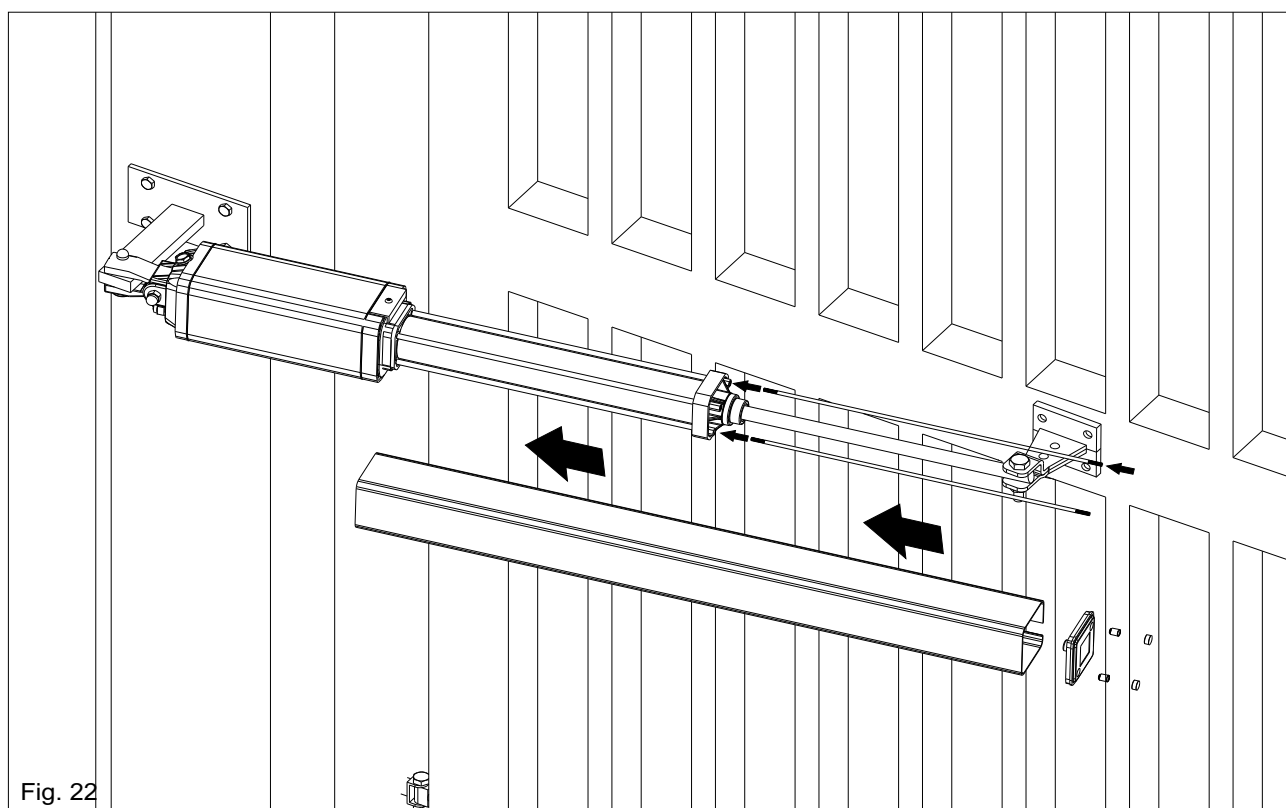
**Unscrew and remove
the screw under the
operator at the end
of installation**

TORQUE ADJUSTMENT (by pass valves)

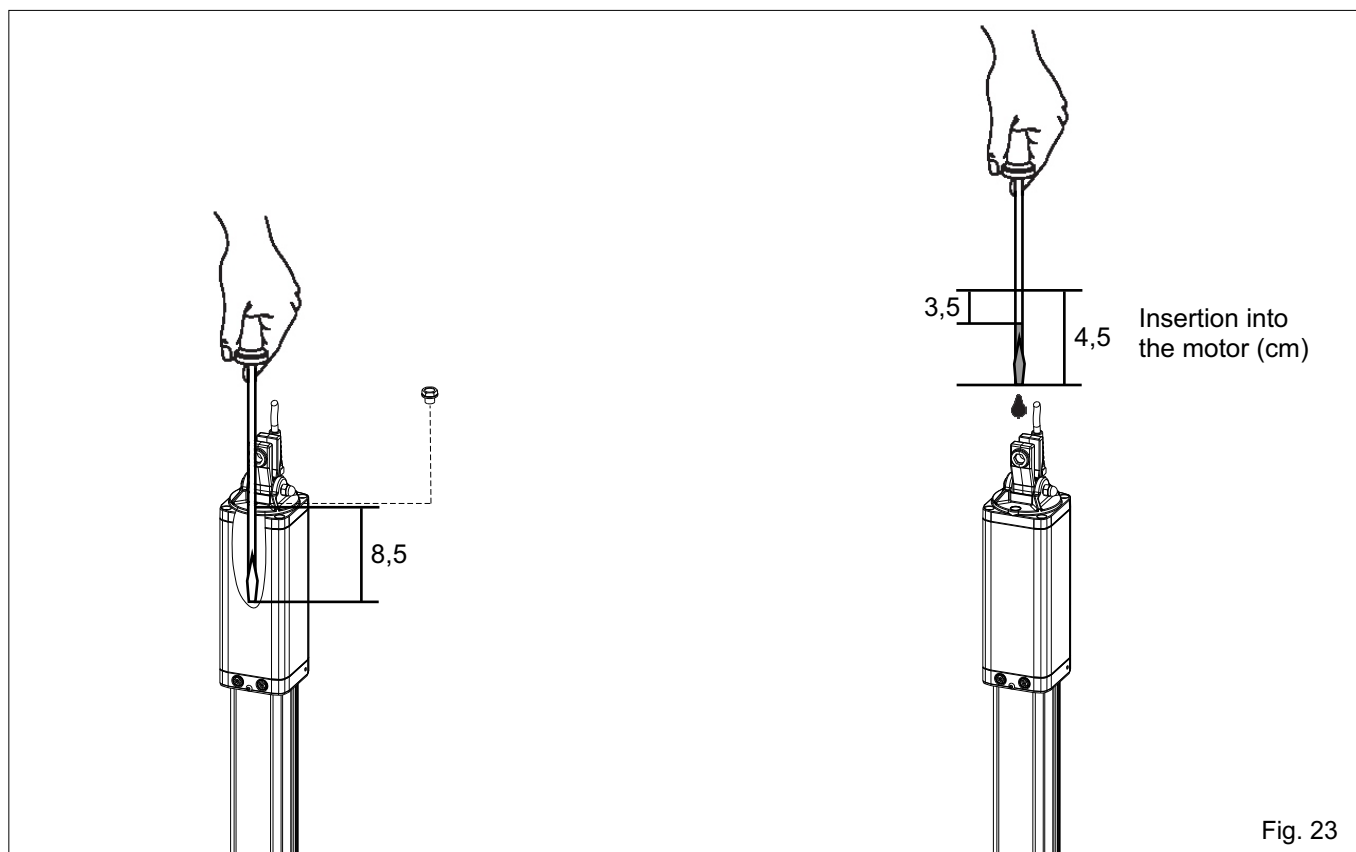


Adjust the opening and closing forces of the gate so that the diagram of the force is respected (present in the regulation EN 12453); Anyway the max. thrust force should never be superior of 15 KgF.

INSTALLATION OF THE CHROME PLATED SHAFT COVER



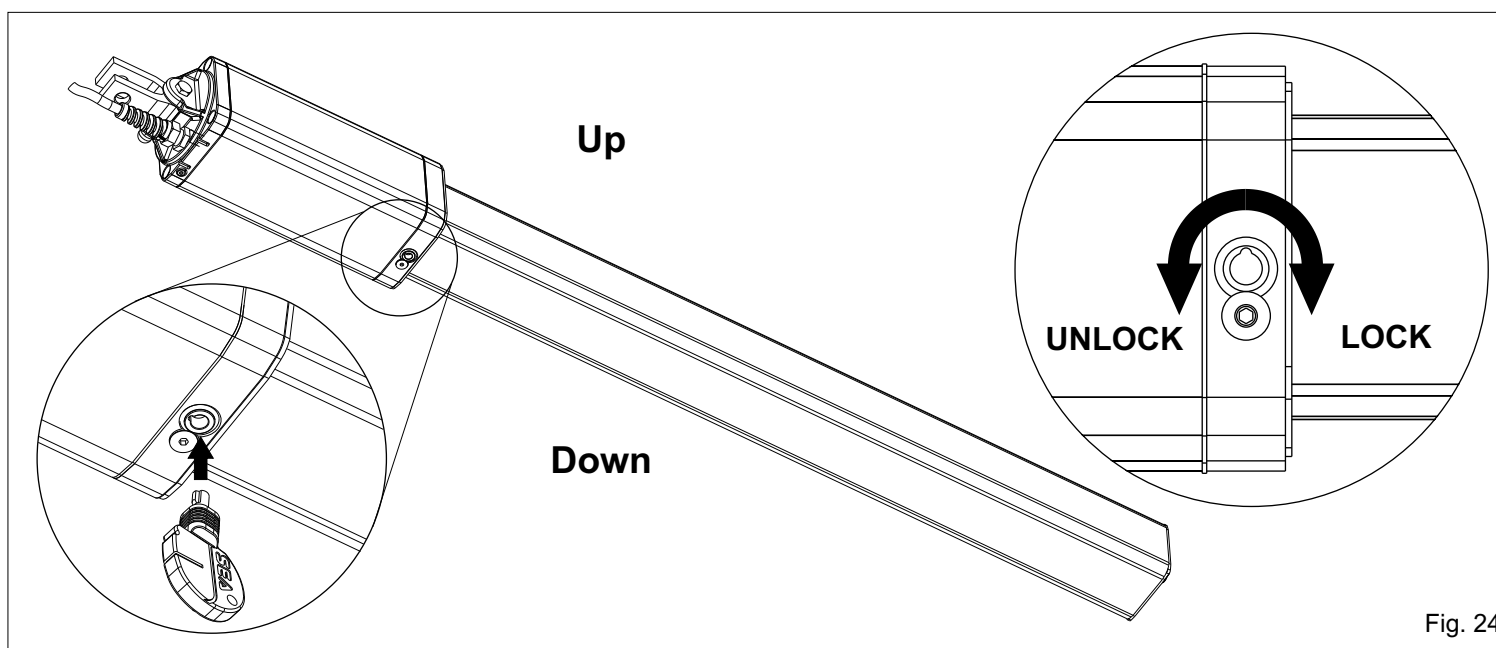
OIL LEVEL MEASUREMENT



To the attention of users and technicians

MANUAL RELEASE SYSTEM

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



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.

To the attention of users and technicians

PERIODICAL MAINTENANCE

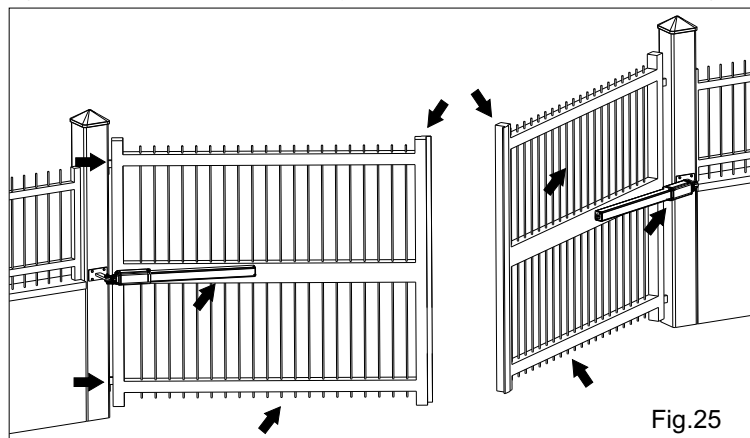
1) Check the solidity and the stability of the gate, especially the points of support and/or rotation of the gate (pivots).	Annual
2) Check the oil level of the hydraulic/in oil bath operators (cap on rear cover of the Mini Tank)	Annual
3) Change the hydraulic oil with the one recommended from the head 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
12) Lubricate the shaft (see page 14) with SEA grease (GREASE GL 00 Cod.65000009)	Annual

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

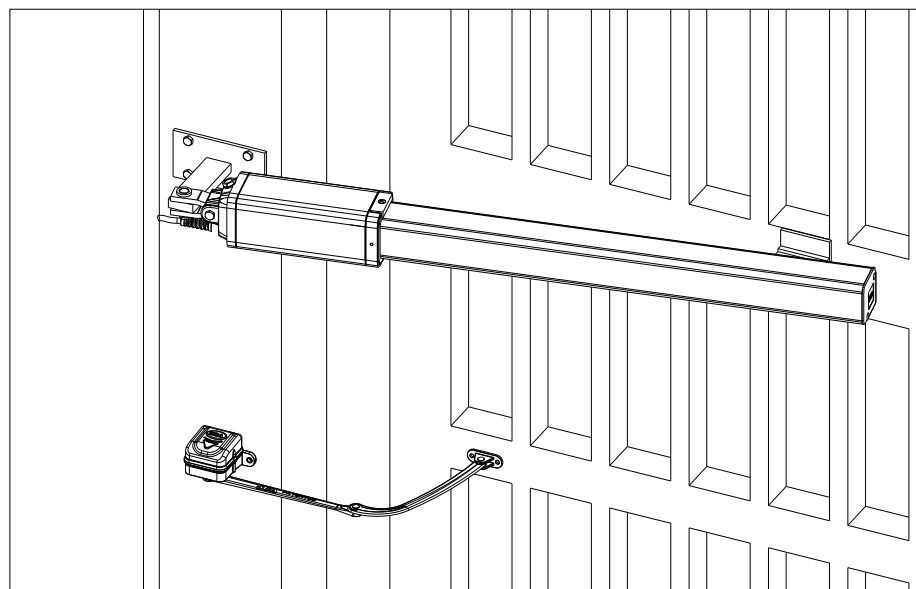
RISK EXAMINATION

The points pointed by arrows in fig. 25 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 automate doors, gates and twings. 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.



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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**.

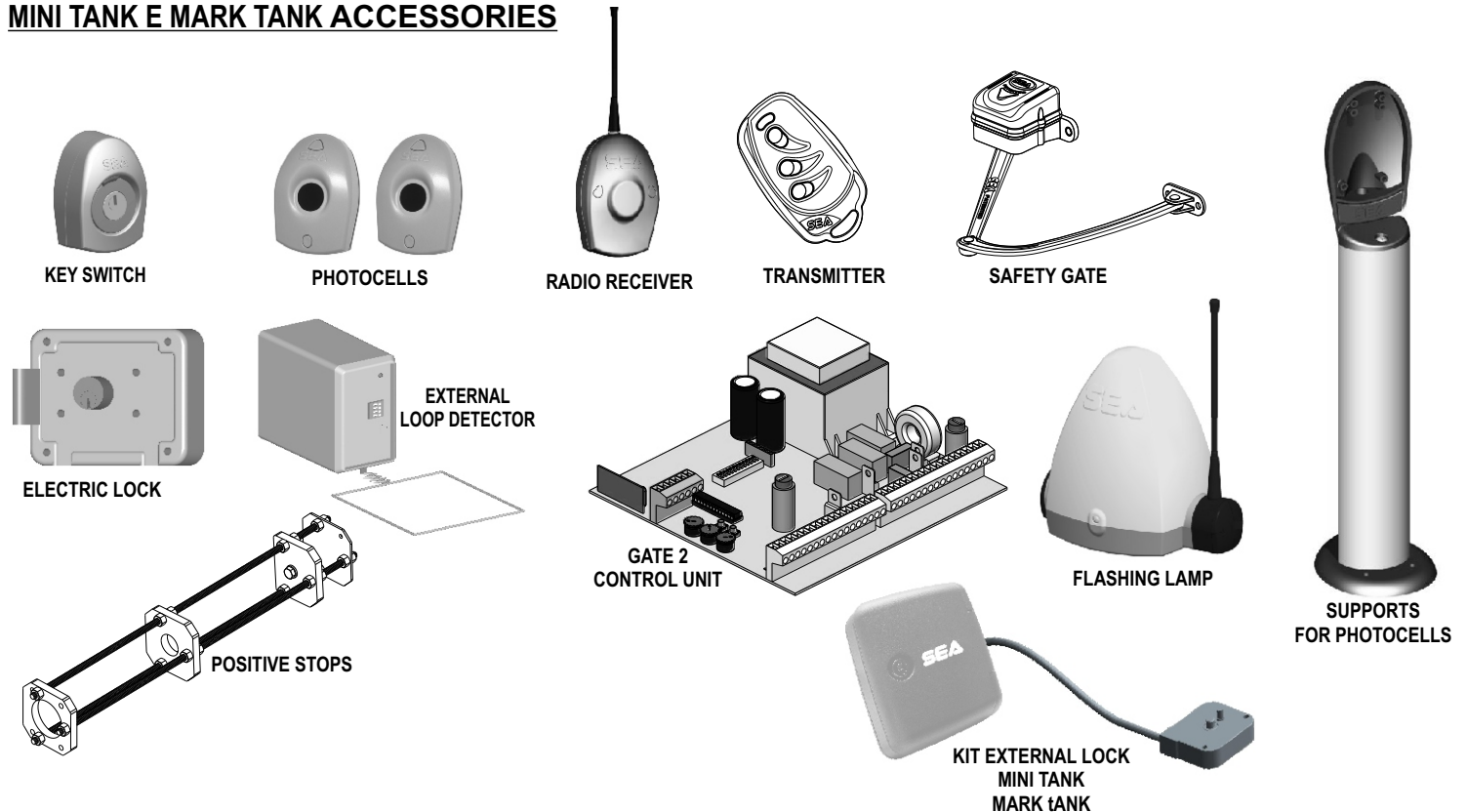
SAFETY GATE

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.



To the attention of users and technicians

MINI TANK E MARK TANK ACCESSORIES



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 have 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

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.