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

English

HYDRAULIC OPERATOR FOR SWING GATE

FULL TANK

INSTALLATION MANUAL
and Security Information

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FEATURES AND SPECIFICATIONS

The **FULL TANK** is a high quality hydraulic operator for condominium use for gates with leaf lengths up to max. 7 m.
Available in the following versions:
AC *(with lock in opening and closing)*
SA *(with lock only in opening)*
SC *(with lock only in closing)*
SB *(without lock)*

The lock is guaranteed for leaf lengths up to 180 m with the 100 version and up to 2,20 m with the 200 version. For leaf lengths exceeding 2,20 m it is necessery, in all versions, to install an electric lock.
The Full Tank is 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. 1

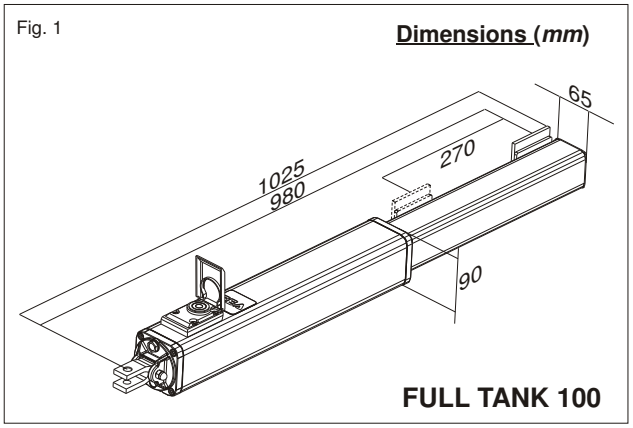


Fig. 2

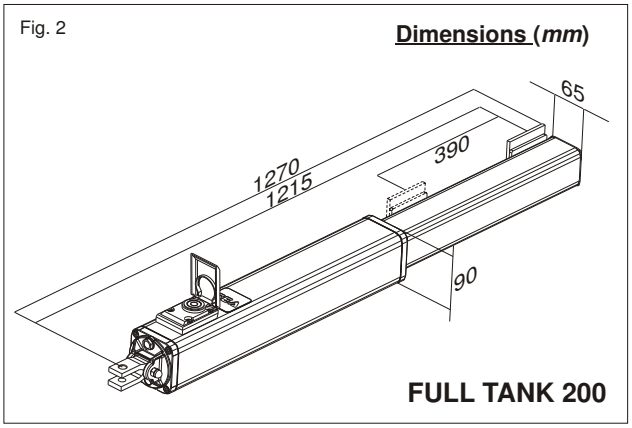
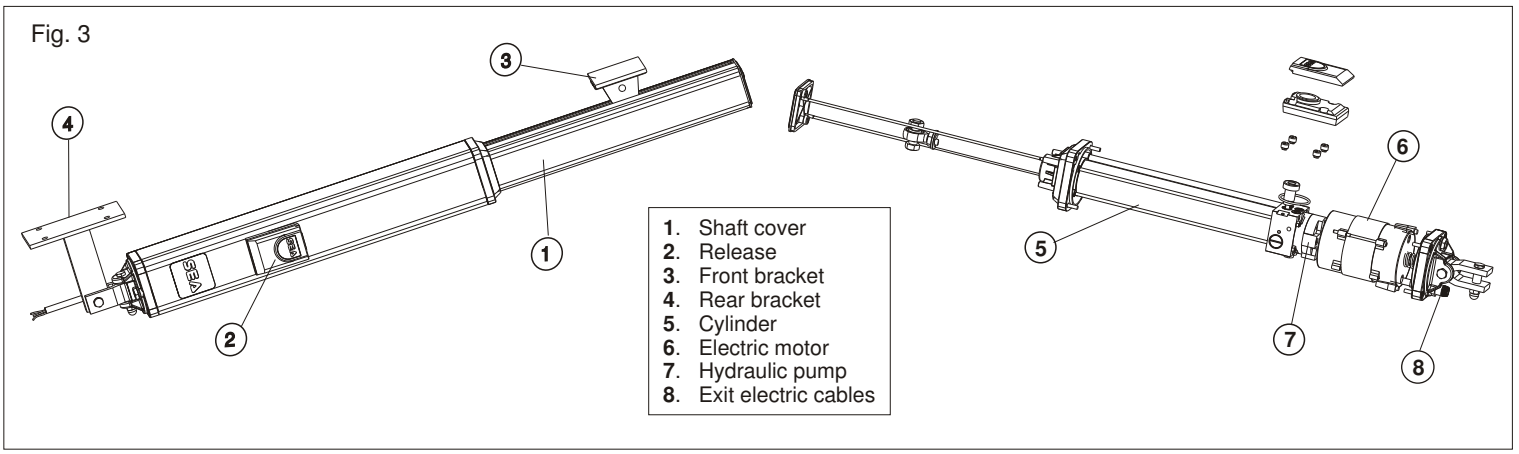
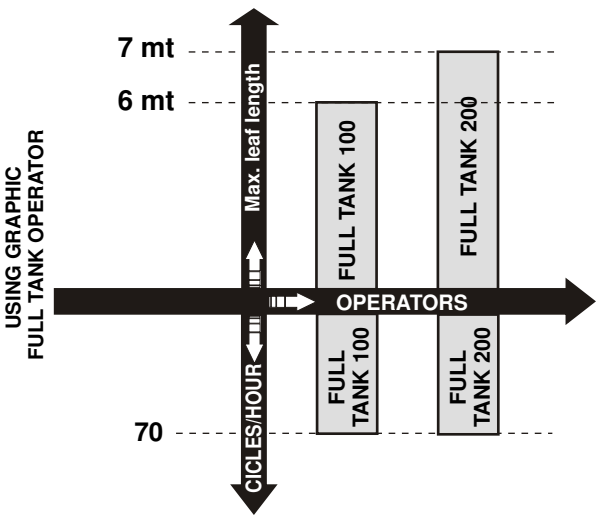


Fig. 3



TECHNICAL FEATURES	*FULL TANK 100*	*FULL TANK 200*
Power supply	230 V (±5%) 50/60 Hz	
Power	220 W	
Absorbed current	1 A	
Stroke	270 mm	390 mm
Cycles hour (at a temp. of 20°C)	70	
Max working pressure	40 bar	30 bar
Operating temperatures	-20°C	+55°C
Thermal protection	130°C	
Max Thrust	640da N	
Capacitor	12,5uF	
Weight	12,8 Kg	15,2 Kg
Protection class	Ip55	
Max leaf lenght	6 mt	7 mt
Opening degree of the leaf	90° / 125°	



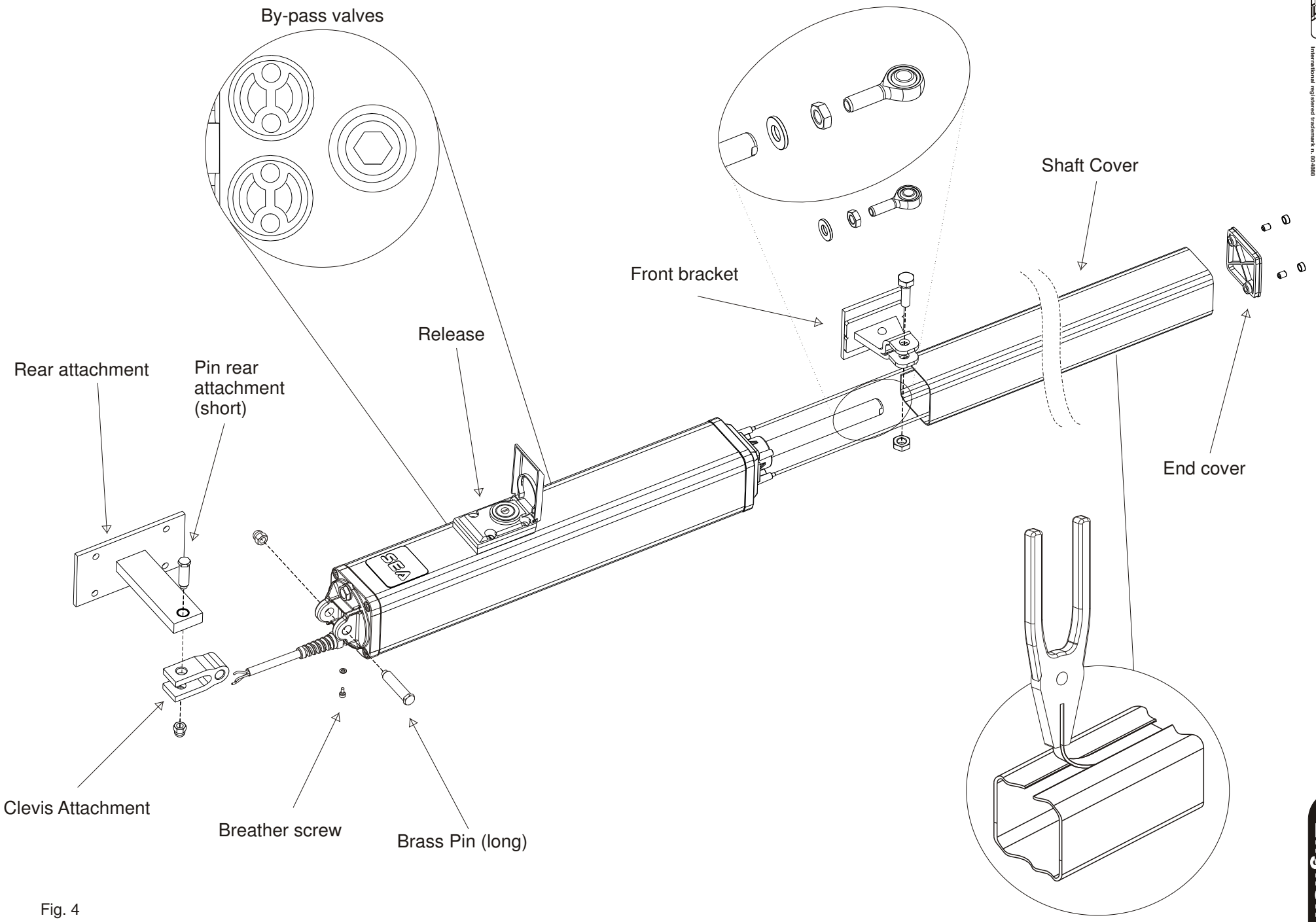
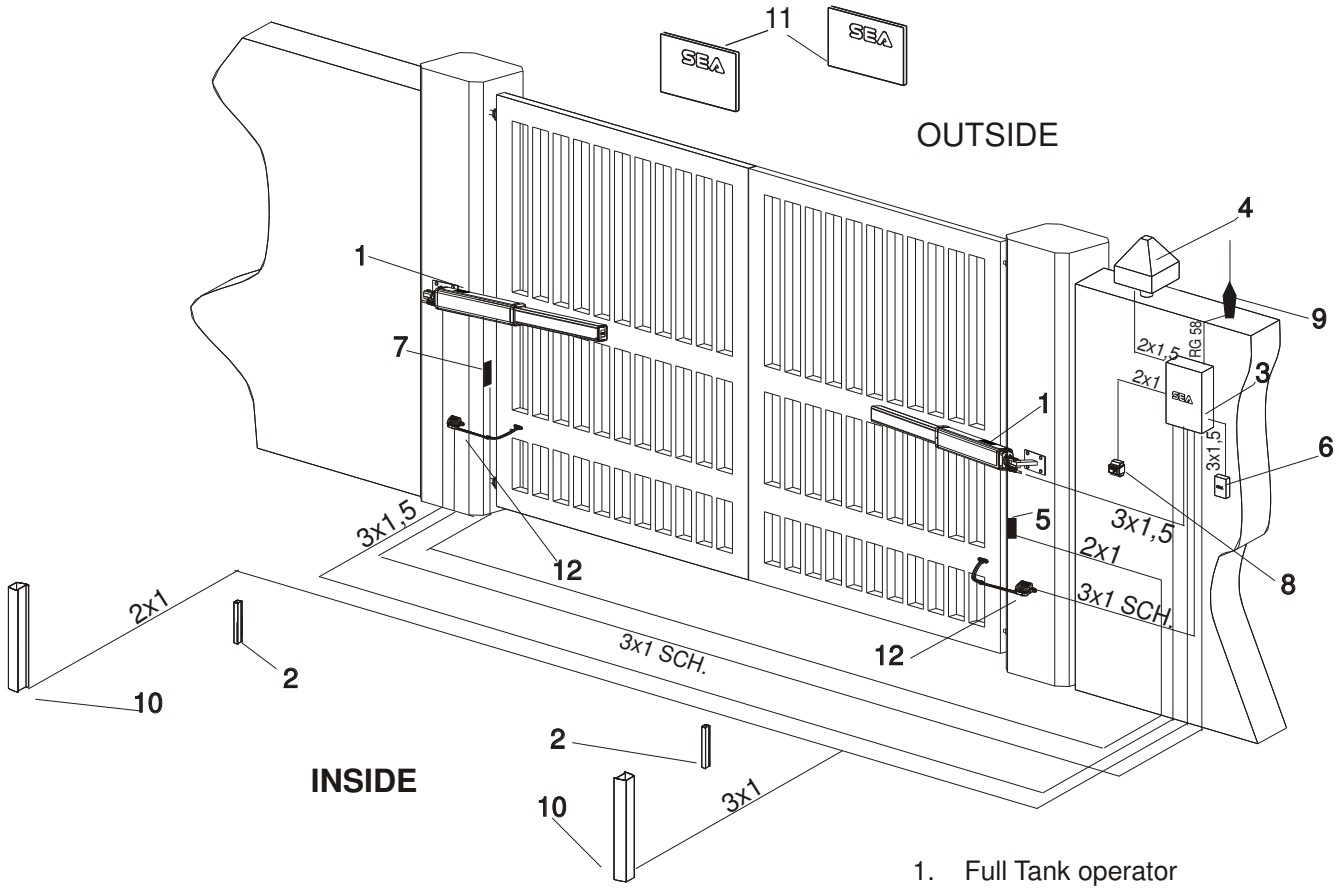


Fig. 4

TYPICAL INSTALLATION



1. Full Tank 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 Full Tank with opening inside (Fig.5) or opening outside (Fig.6).

Inward installation

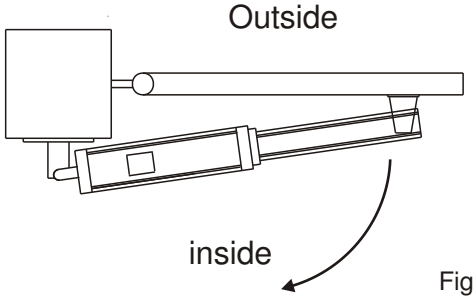


Fig. 5

Outward installation

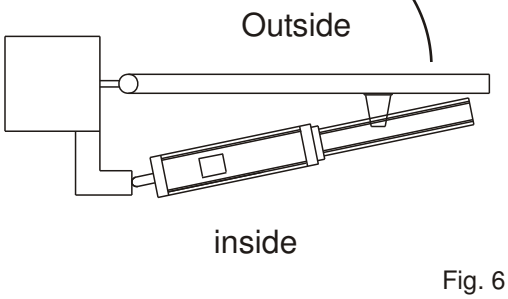


Fig. 6

Install the operator always inside the property

INSIDE OPENING INSTALLATION

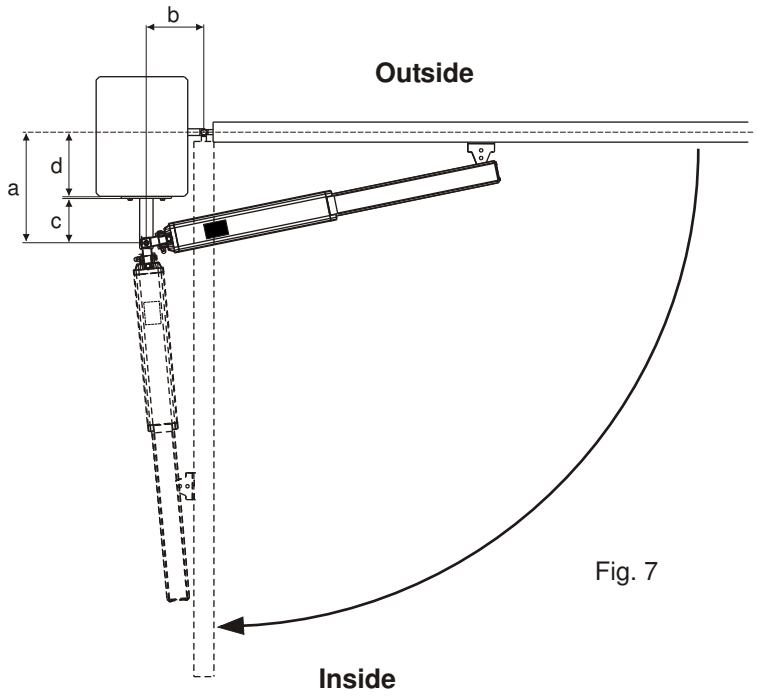


Fig. 7

Total stroke 270 mm - max. recommended 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°**	**245**	**215**
105	145	55	**90°**	**250**	
120	105	70	**106°**	**250**	**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**	**242**
145	105	95	**90°**	**250**	
150	100	100	**90°**	**250**	
155	85	105	**96°**	**250**	**242**
160	90	110	**90°**	**253**	
170	75	120	**92°**	**250**	
180	65	130	**92°**	**250**	

To obtain 110° with d > 55 mm it is necessary to make a niche in the gate.

INSIDE OPENING INSTALLATION

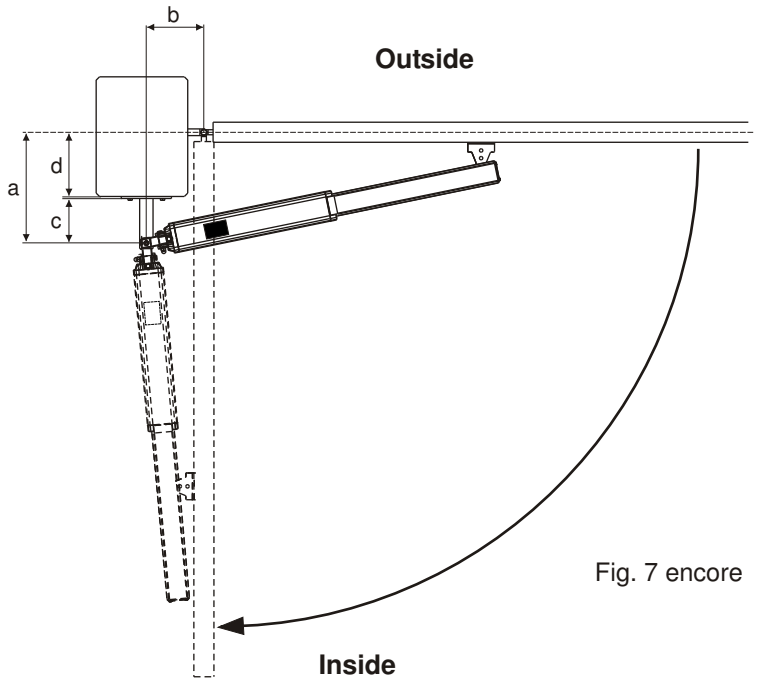


Fig. 7 encore

Total stroke 390 mm - max. recommended stroke 370 mm

a (mm)	b (mm)	d max (mm)	Max. Opening Angle	Stroke max **(mm)**	Stroke for 90°**(mm)**
125	170	75	**125°**	**368**	**295**
130	170	80	**125°**	**372**	**300**
140	235	90	**90°**	**370**	
145	165	95	**120°**	**372**	**310**
145	230	95	**90°**	**370**	
160	210	110	**90°**	**370**	
175	195	120	**90°**	**370**	
185	145	130	**110°**	**370**	**330**
185	190	130	**90°**	**370**	
195	140	140	**110°**	**371**	**355**
195	175	140	**90°**	**370**	
240	110	185	**100°**	**370**	**355**
240	125	185	**90°**	**370**	
250	105	195	**95°**	**370**	**360**
250	115	195	**90°**	**370**	
260	95	205	**95°**	**369**	**365**
260	100	205	**90°**	**370**	
270	90	215	**90°**	**370**	
280	80	230	**90°**	**370**	
295	65	245	**90°**	**369**	

To obtain 125° with d > 55 mm it is necessary to make a niche in the gate.

OUTSIDE OPENING INSTALLATION

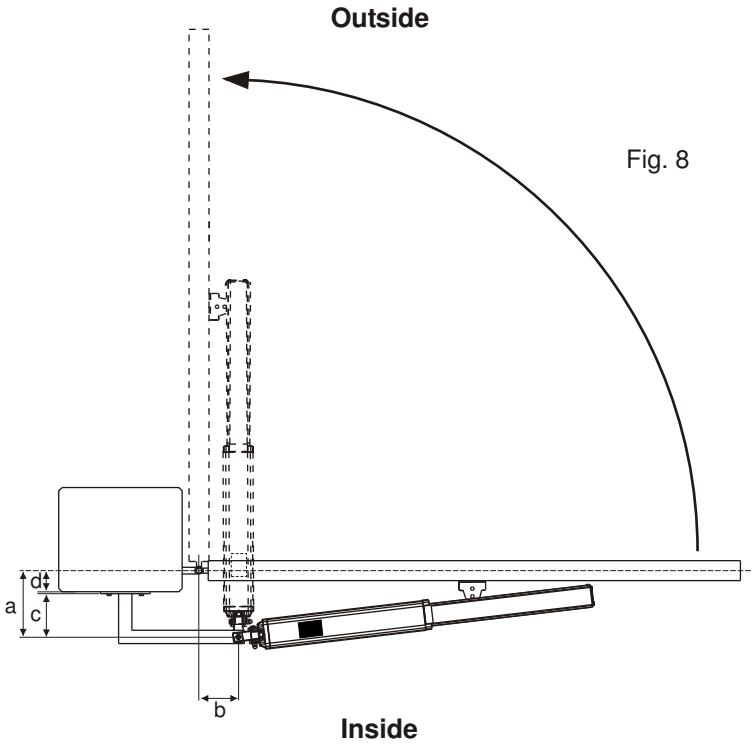


Fig. 8

Total stroke 270 mm - max. recommended stroke 250 mm

a (mm)	b (mm)	Max. Opening Angle	Stroke max **(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**	

OUTSIDE OPENING INSTALLATION

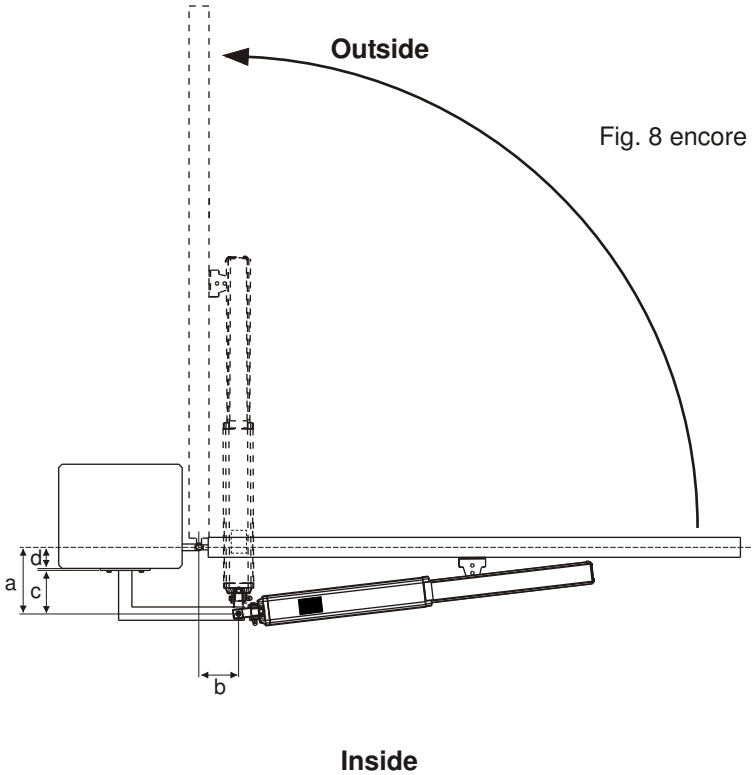


Fig. 8 encore

Stroke 390 mm - max. recommended stroke 370 mm

a (mm)	b (mm)	Max. Opening angle	Max. Stroke **(mm)**	Stroke for 90°**(mm)**
250	100	**100°**	**356**	**342**
255	95	**95°**	**345**	**336**
265	95	**95°**	**342**	**335**
270	90	**90°**	**330**	
275	90	**90°**	**325**	
275	90	**90°**	**319**	

RELEASE MOUNTING

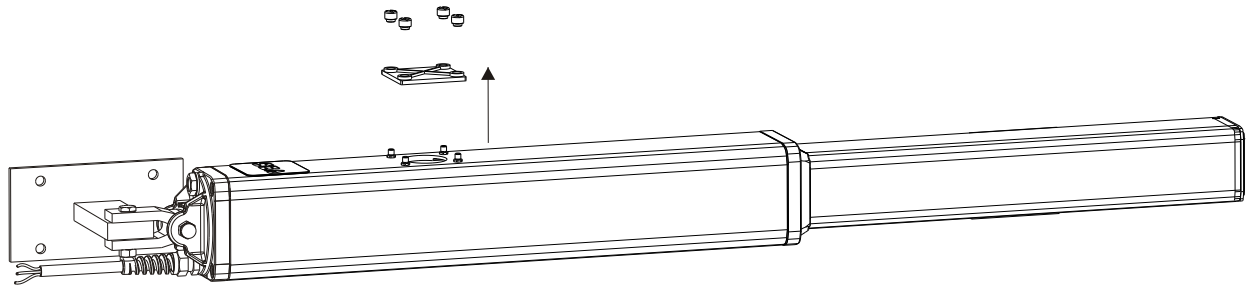


Fig. 9

Remove the transporting plate as shown in Fig. 9.

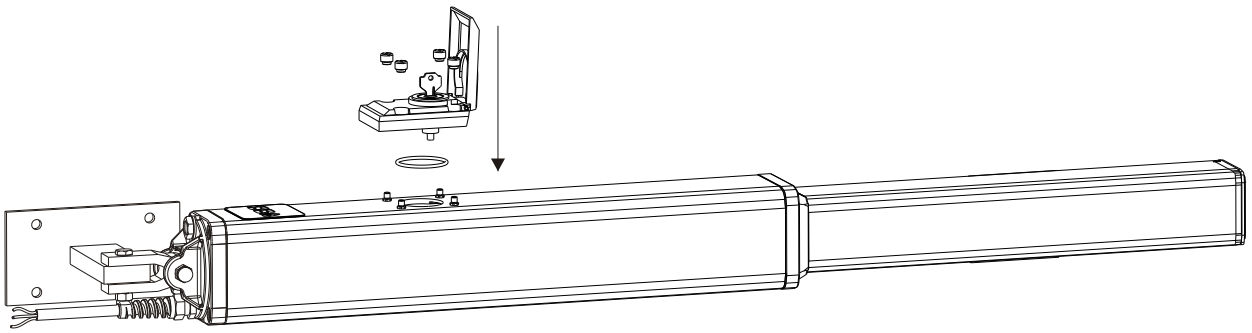


Fig. 10

Mount the release as shown in Fig. 10.

INSTALLATION OF THE OSCILLATING REAR BRACKET

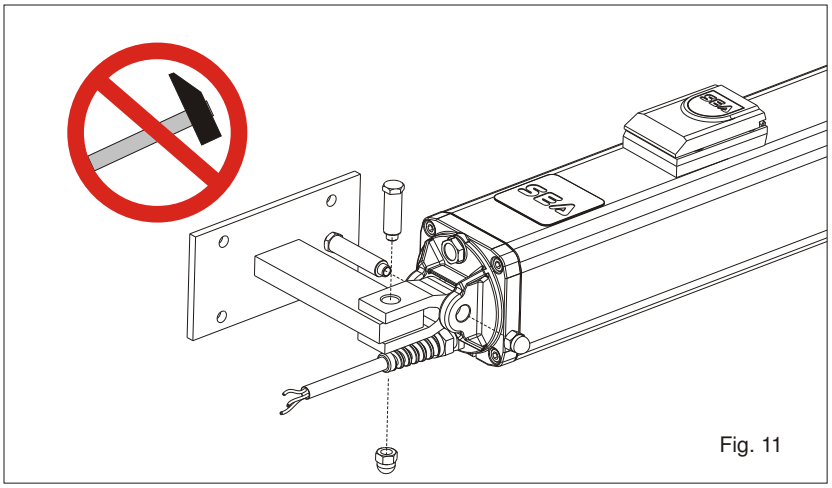


Fig. 11

- 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. 12

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.

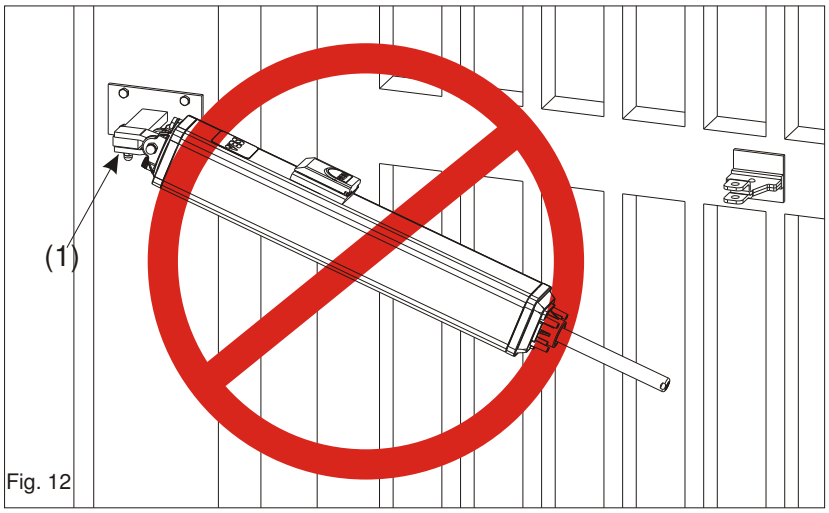


Fig. 12

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. 20-21), the rear bracket must first be cut respecting the quote “a” on pag. 20-21 and then welded as in fig. 13.

The support must be positioned so that the operator is perfectly levelled (Fig. 13, Fig. 15)

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

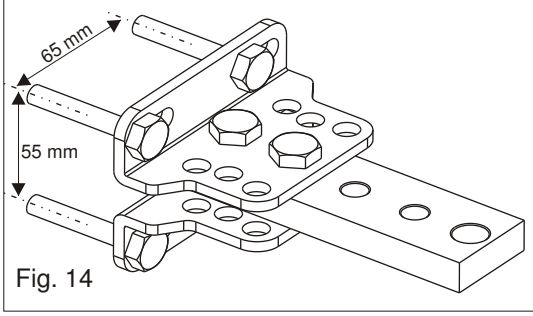


Fig. 14

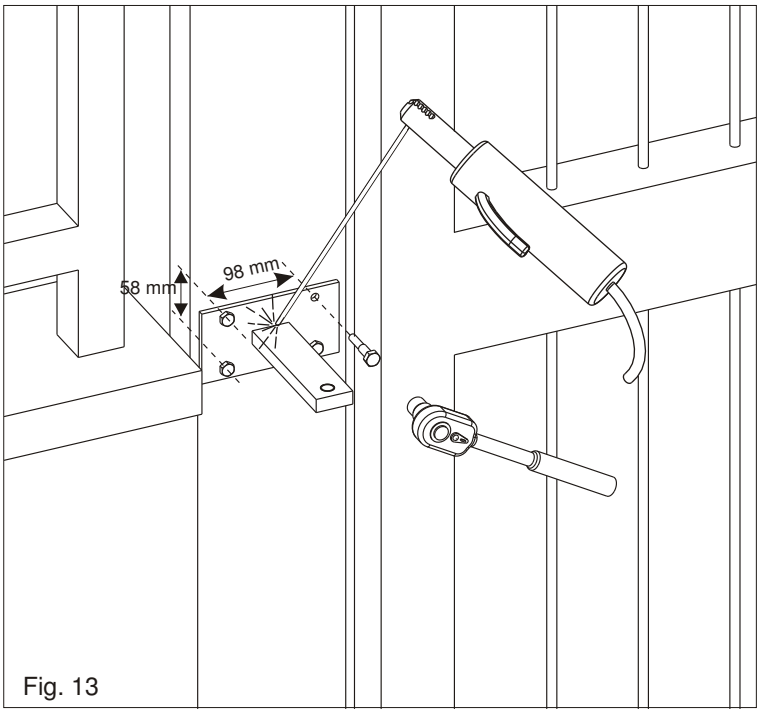


Fig. 13

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 pag.12)
2. Pull-out completely the chromate shaft and push it back in 1cm
3. Attach the shaft to the front bracket (Fig. 16)
4. Set the operator perfectly levelled and mark the position of the front bracket (Fig.15)

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.

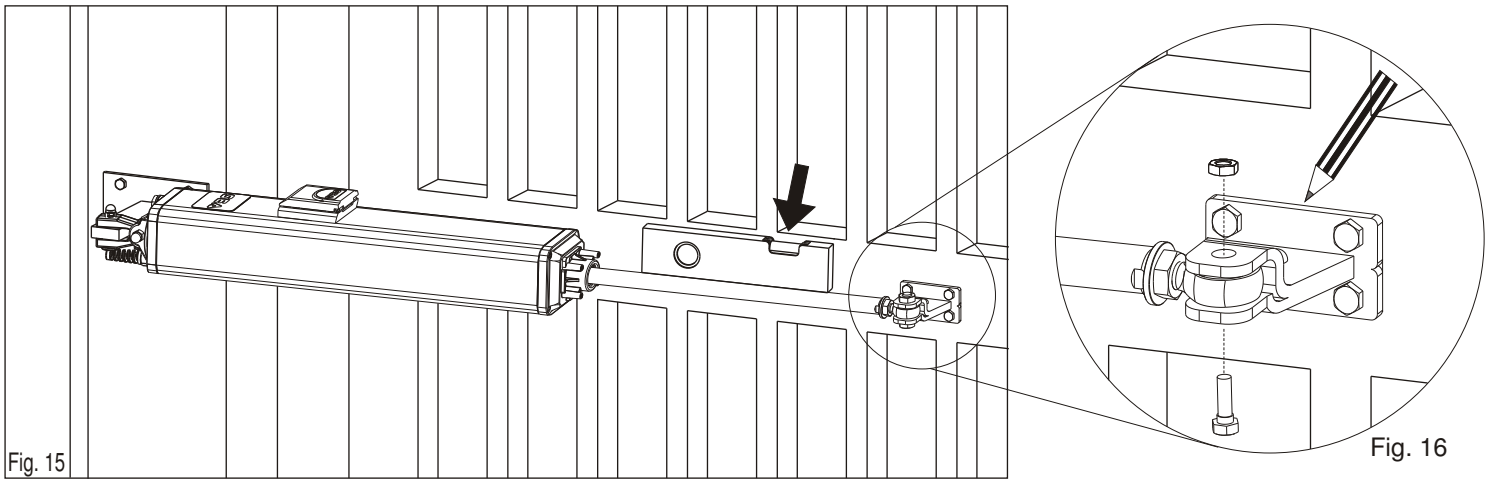


Fig. 15

Fig. 16

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:

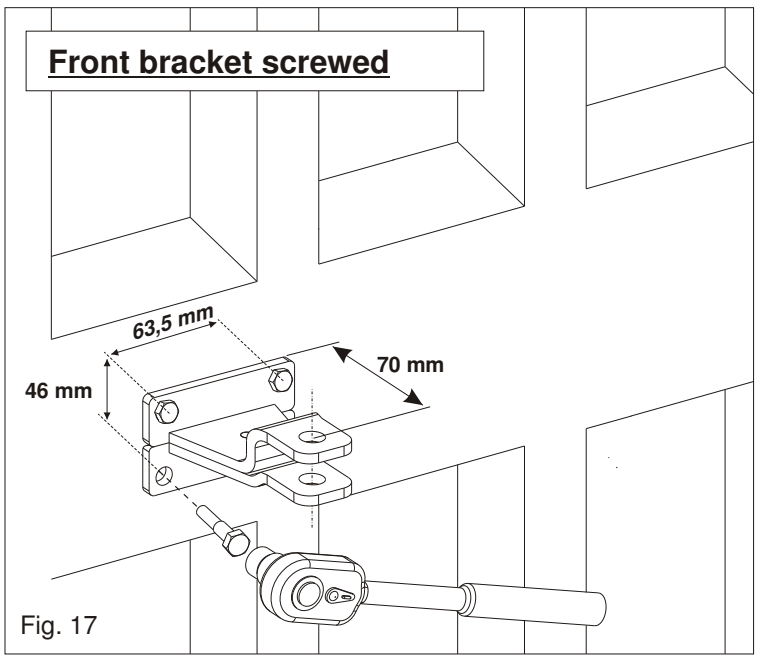


Fig. 17

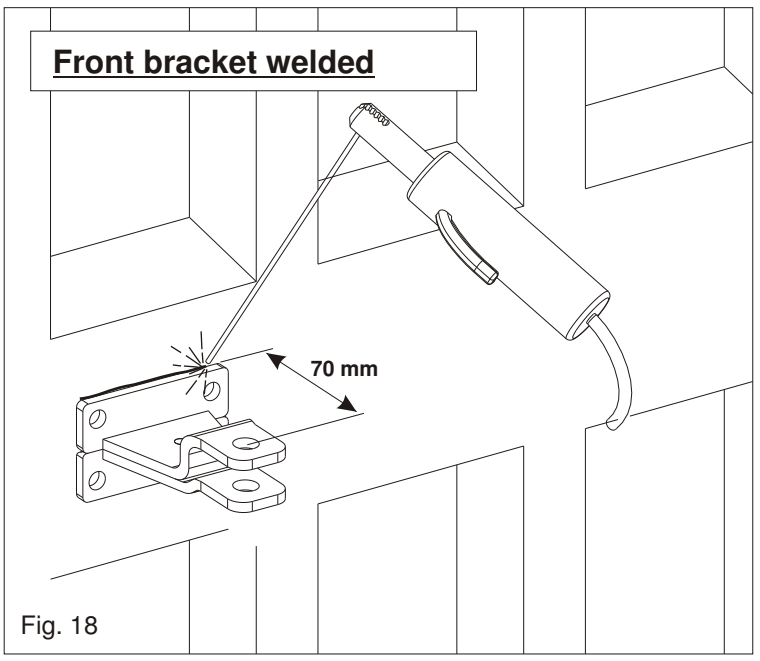


Fig. 18

INSTALLATION OF POSITIVE STOPS

- Release the unit (as in fig. 24 of page 27)
- Make the shaft come out for ¾ 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.19)
- Fix the positive stops with the provided screws
- Insert the ball joint after having installed the stops.
- 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.

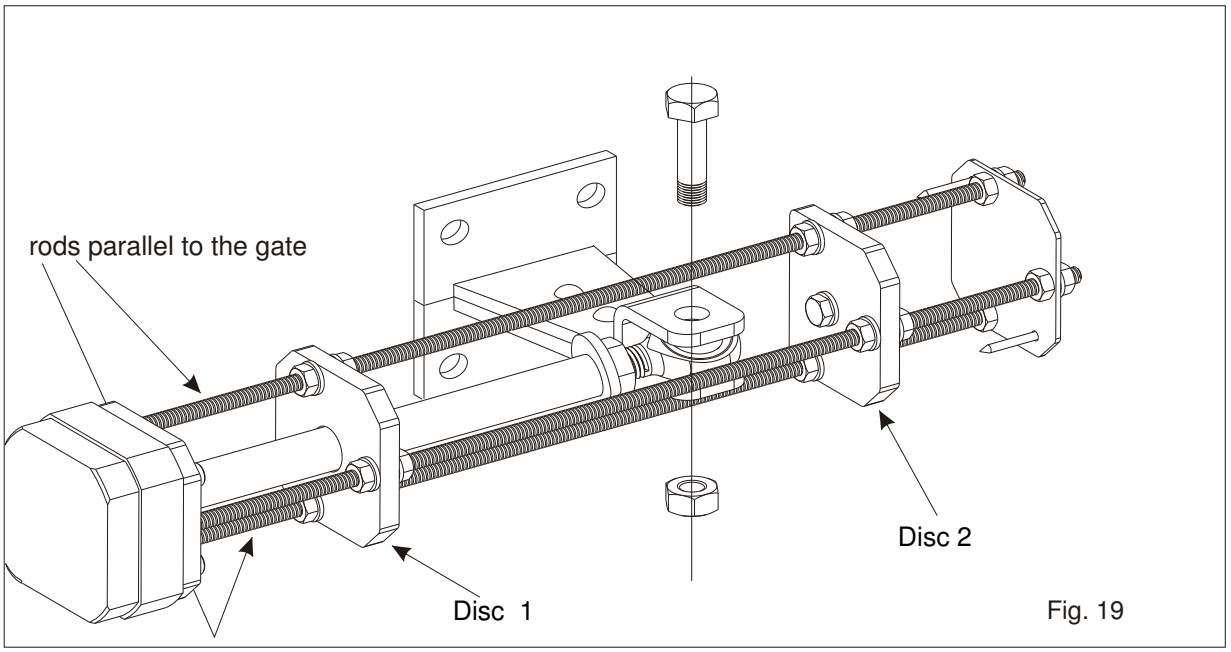


Fig. 19

BREATHER SCREW

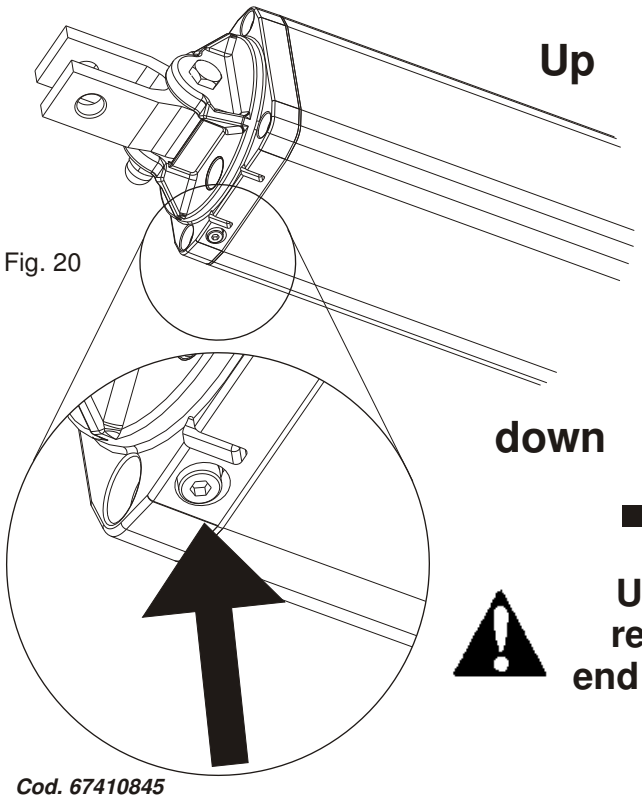


Fig. 20

ATTENTION

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

Unscrew and remove at the end of installation

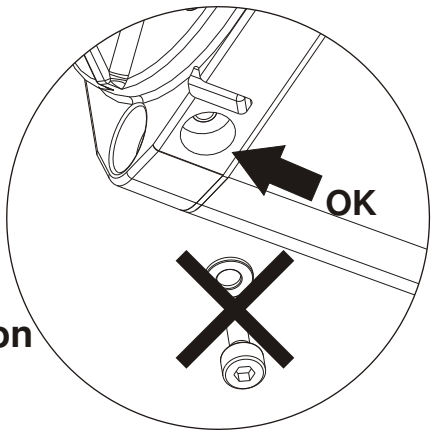


Fig. 21

TORQUE ADJUSTMENT (by pass valves)

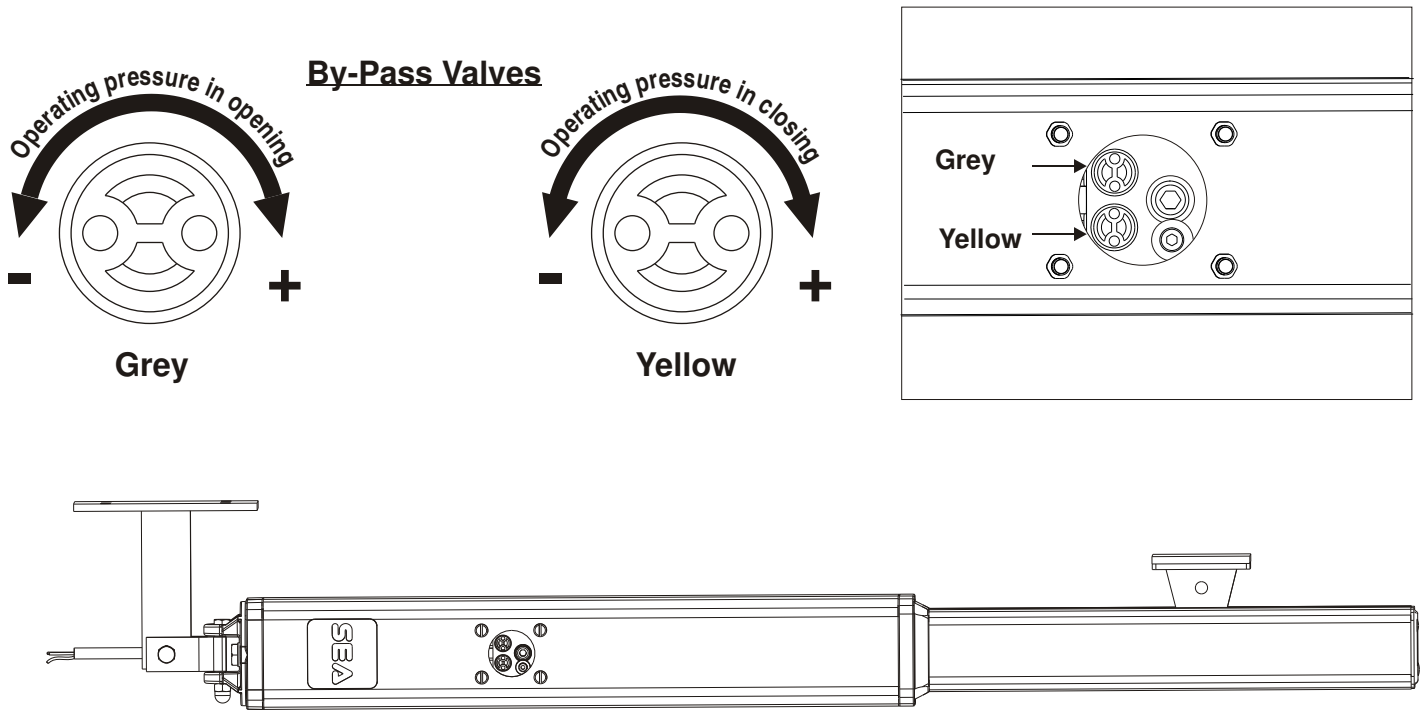


Fig. 22

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

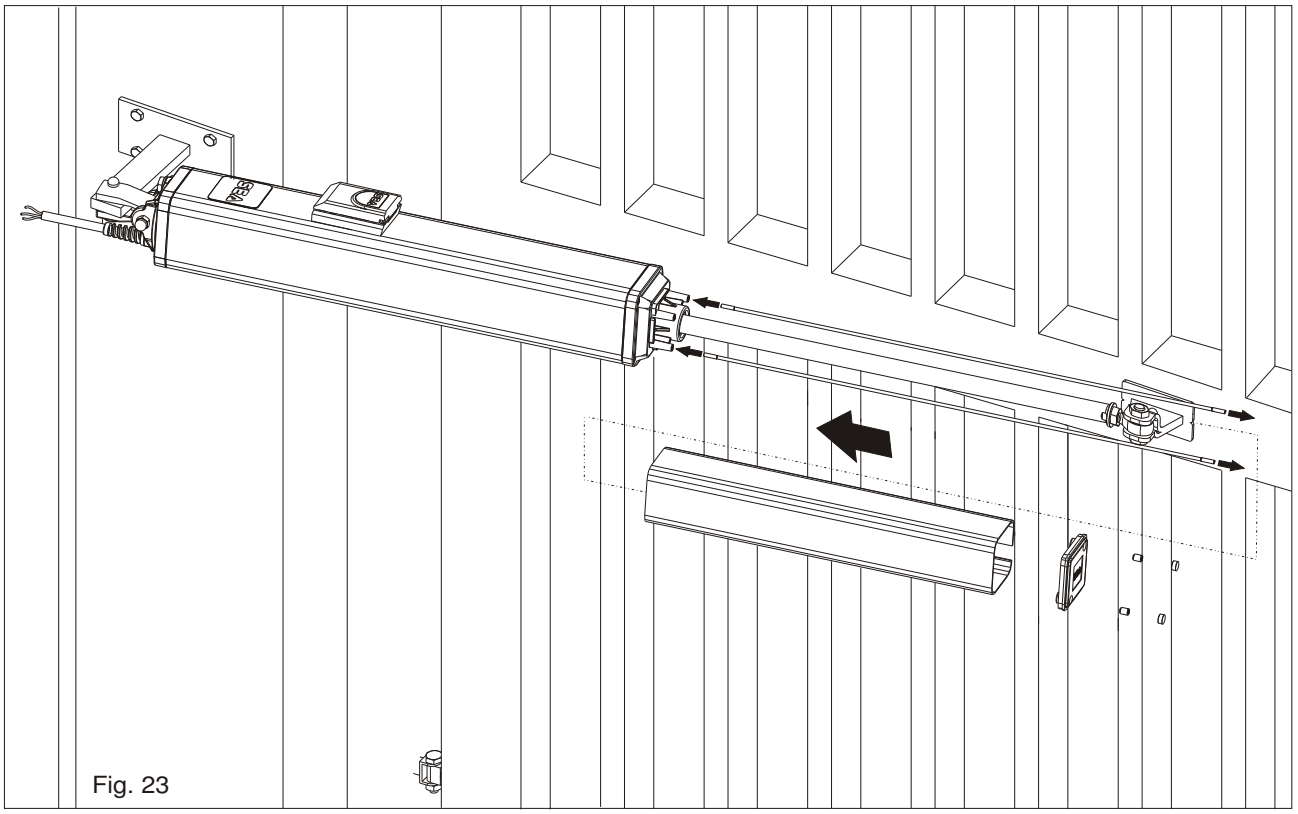


Fig. 23

MANUAL RELEASE SYSTEM

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

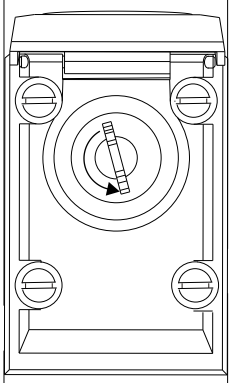


Fig. 24

To release, open the lid, insert the key, rotate starting from the stop of departure from ½ turn to a maximum of 1 turn (360°) in anti-clockwise direction (see fig.24).
To re-lock, turn the key into clockwise direction to the maximum, afterwards bring back the key into the position 0, turn it again in anti-clockwise direction (see fig. 25), remove the key and close the little door again.
Attention: Turning the key over 1 turn (360°) could damage the release .

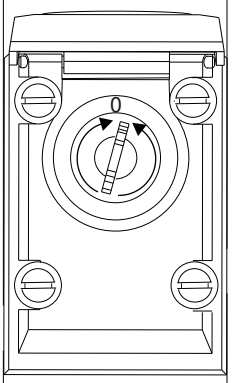


Fig. 25

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 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 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. 26 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.)

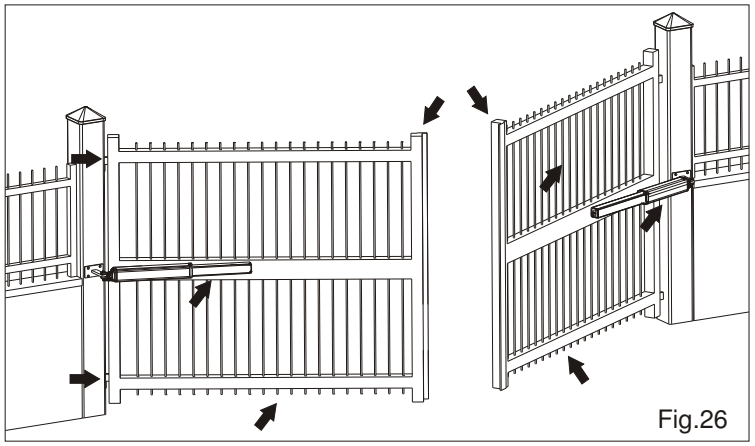
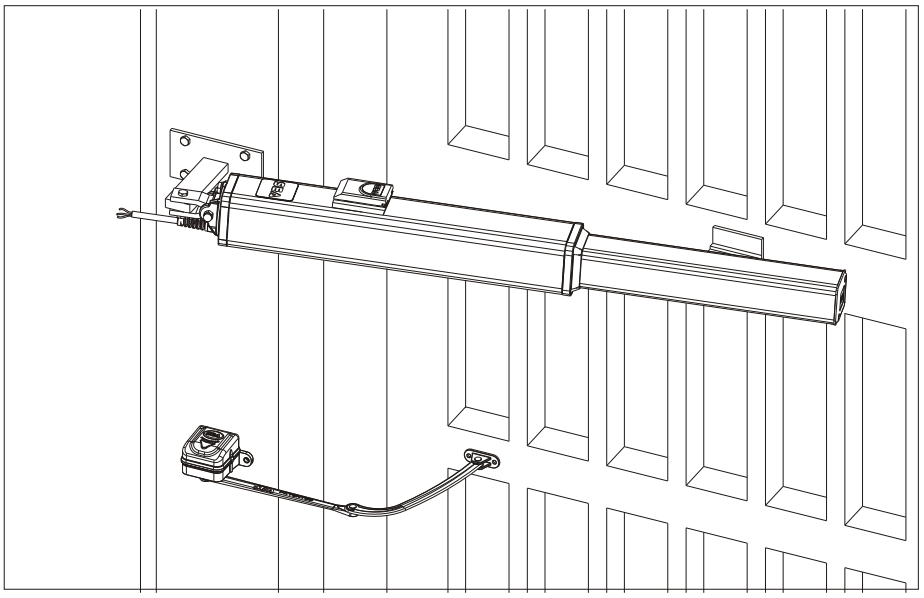


Fig.26

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 intructions thoroughly. SEA products must only be used to automise doors, gates and lwings. 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 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 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.

SELF INSTALL - NEED TECHNICAL ASSISTANCE?

OPTION 1: DIRECT WITH THE SERVICE DESK – QUICKEST AND MOST EFFECTIVE METHOD

Submit your enquiry direct with the service desk at – service@automaticsolutions.com.au
The service desk has the most experienced staff in Australia to help with your problem but they need your help.

- **Describe your problem in detail and as clearly as possible. Don't forget to include a telephone number.**
- **Be certain to detail which model or models of you are working with.**
- **Send photos of the installation – they love photos. The people at the service desk are good but they are even better when they can see the installation. Send photos of the overall scene so they can see the entire installation. Also send photos of the wiring to the control board and any other part of the installation you think is relevant.**
- **Send video if appropriate. Smartphone's these days take remarkably good video in small file sizes which can be emailed in a moment. If your problem needs a video to show the issue please feel free to send it.**

NOTE: THIS IS BY FAR THE FASTEST AND MOST SUCCESFUL WAY TO SOLVE YOUR PROBLEM
PHOTOS AND VIDEOS ARE THE NEXT BEST THING TO BEING THERE

OPTION 2: LODGE YOUR ENQUIRY LOCALLY - SLOWER BUT CAN STILL BE EFFECTIVE

Make contact with the store of purchase. Branch staffs are typically not technicians and dependent on their length of service will have varying degrees of technical knowledge. If they cannot help however they will certainly either source help locally from their technicians or make contact with the service technicians on your behalf.

OPTION 3: SERVICE CALL WITH AUTOMATIC SOLUTIONS TECHNICIAN – SLOWEST METHOD

If you fall within the local branch service area it may be possible to book a local technician to look at your installation. Wait times will vary dependent on local workloads. The cost is a service fee which includes the first half hour and the hourly rate thereafter. If any Automatic Solutions provided parts are found to be defective and within warranty these will be provided free of charge.
(NOTE: If you suspect that any parts are defective and within warranty you may wish to consider option 4)

A note on this option: If you decide on this option you will be asked to sign an "authorisation to proceed" which will provide legal authority and payment security. This form has three options available of which only the first two are available to you. The third option is for warranty repairs only for full install customers. Self install customers requiring warranty only service need to refer to option four below.

IMPORTANT: IN SHORT THIS OPTION WILL INCUR CHARGES

OPTION 4: RETURN THE PRODUCT IF BELIEVED TO BE FAULTY

As a self install customer who has purchased product if you believe the product to be faulty rather than an installation or site problem you have the option of returning the product for evaluation and to exercise your right to a replacement, repair or refund as applicable. All returned product is forwarded immediately to the service technicians for evaluation and response. There are two main methods available to return product –

- **Direct to the service centre – this is the quickest method as it cuts out the branch delay**
- **Via the branch of purchase – slower because of the delay at the branch**

When choosing this option you need to complete a product return form. This form gives you all the information on procedure involved and where to send to. These are available at the branch of purchase, can be emailed to you (contact your branch), or available here - http://automaticsolutions.com.au/page/warranty.php