



READ AND FOLLOW ALL INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

GENERAL



This swing gate operator system is designed to control vehicular traffic only. This operator system must never be used as a mean to control pedestrian or bicycle traffic. Serious injury or death to pedestrians may result if the operator is used in this manner.

If pedestrian traffic is expected to be near or needs to walk through, a separate pedestrian lane or pedestrian gate is required. Never allow pedestrians or pets to pass through this gate system.



Reversing devices are required to prevent the gate from closing on vehicular traffic. It is appropriate to the gate design and gate application.

This vehicular gate operator is intended to be a part of a total gate operating system. It is the responsibility of the purchaser and installer to ensure the total system is sold for its intended use.

BEFORE INSTALLATION

Check this is the proper gate operator system for the intended use.

Be sure the gate has been properly installed, gate posts are plumb and gate leafs operate freely. Make any necessary repairs to the gate before installing this equipment.

A separate pedestrian gate is required if pedestrian traffic is expected to be near or if pedestrians need to walk through. Furthertnore, photocells and/or reversing edges need to be added to help to prevent injuries.

Only qualified personnel should install this equipment. Failure to meet this requirement could cause severe injury and/or death, for which the manufacturer/distributor can not be held responsible.

Review this installation manual and the gate operator system prior to installation, maintenance and service.

DURING INSTALLATION



Check that the main power supply circuit breakers are separate, intended solely for this equipment and rated for 15 AMPS. Visually check that the circuit breakers are in the "OFF" position and mark the circuit breakers "USED" prior to installation.

Place all access devices a minimum of 10 feet away from the gate. Install access devices in a way the user can see, but not touch the operator and/or gate while operating the controls. Install controls so that unauthorized use is prevented.

Reversing devices such as loops, photo-eyes, and/or reversing edges are required to prevent the gate from closing on vehicular traffic and/or help prevent injuries to pedestrians. It is appropriate to the gate design and application.

Always disconnect power supply when servicing this equipment.



If this gate operator system includes a battery backup, the battery backup system needs to be disconnected first, prior to disconnecting main power supply during installation, maintenance and servicing procedures.

AFTER INSTALLATION

Check the gate operator system is working properly, that the open and close force are properly adjusted, that the piston does not bottom out in either direction, that breather screws have been removed, that the positive stops used are sufficient for stopping the gate properly, and that all pinch points and potential entrapment areas are reduced.

Check and test all reversing devices for proper operation.

The installer of this system needs to read and understand the operation of this gate operator system, its safety features and know how to place the gate in manual operation.

Show end user the proper operation of this gate system. Explain how the reversing system works. Show user how to place gate operator system in manual operation.

This manual is to be left with the end user.

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GROUNDING

Good grounding and proper surge suppression are an integral part of proper installation for a gate operator system. One or all of the following may require surge suppressors: high voltage power lines, low voltage power lines, telephone lines, data lines, low voltage control lines and loops. How much surge suppression is required depends upon how susceptible the area is to lightning and power surges. Regardless, good grounding is essential. To realize maximum protection, proper grounding and proper surge suppression is absolutely necessary.



If the circuit breaker box is located close to the gate operator system, for example, in a guard house, then the ground from that circuit can be used to ground the gate operator system. Eliminate all 90° bends in ground wires and keep a minimum of three feet between the surge suppressor and the equipment being protected.



If the power source or circuit breaker box is not located close to the gate operator system an Isolated Ground Zone (IGZ) needs to be created. An IGZ can also be created if the circuit breaker box is located close by the gate operator system. An IGZ is an imaginary circle drawn around the gate operator system. The gate operator system not only includes the gate operators and control panel, but all of the accessories and devices associated with it at that controlled entry point. This includes loop detectors, card readers, digital entries, telephone entries, any device that has a ground or requires a ground and all of the surge suppressors. The ground bus is a common ground point called a Single Point Ground (SPG). It is used to bond all the equipment and device grounds in the IGZ together. The SPG is very important because it helps eliminate different ground potentials that can be present on the equipment. In such cases, equipment damage occurs even with surge suppressors.



Do not use or connect the ground wire coming from the circuit breaker box. By using an Isolated Ground Zone, you are separating the gate operator system from the house or building ground. This eliminates ground potentials. It is recommended that the ground bus be located in a separate NEMA type enclosure. All grounds will be tied to this ground bus. Some points to remember:

Keep all ground wires as straight as possible. Do not have any sharp 90° bends. Have a minimum of 3 feet of wire between the surge suppressor and the equipment being protected.

Equipment ground wire should be a minimum of 12 AWG. The main ground wire from the bus bar to the ground rod should be an 8 or 6 AWG copper wire. Ground rod should be a minimum of 10 feet in length, longer depending on local soil conditions.



For more information regarding good grounding practices check: National Electric Code art. 250; IEEE Emerald Book, standard 100; International Association of Electric Inspectors.



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WIRING AND MOUNTING

This system requires a separate power supply circuit, intended solely for this equipment and rated for 15 AMPS. Visually check that the circuit breakers are in the "OFF" position and mark the circuit breakers "USED" prior to installation.

Permanent wiring must be used and installed to the operator as required by local electrical codes. It is recommended that this be performed by a licensed electrician. Prior to doing any type of wiring, it is highly recommended that you check with your local building department to be sure that all wiring to the operator and various accessories complies with local building code requirements. It is recommended that you color code all wiring. Local building codes will take precedence.

Distance for low voltage control wires, i.e., open input, single leaf open input and stop input, can run up to 3000 feet with 18 AWG wire.

All low voltage control and communication wiring must be separated by a minimum of 1 foot from high voltage power wiring and in a separate conduit.



GENERAL ENTRAPMENT PROVISIONS

A vehicular gate operator must be installed with at least one independent primary and one independent secondary means to protect against entrapment (see Table A):

TABLE A Usage Class	GATE OPERATOR CATEGORY			
	Horizontal slide, vertical life and vertical pivot		Swing and vertical barrier (arm)	
	Primary type	Secondary type	Primary type	Secondary type
Vehicular I and II	A	B1,B2 or D	A or C	A,B1,C or D
Vehicular III	A,B1 or B2	A,B1,B2,D or E	A,B1 or C	A,B1,C,D or E
Vehicular IV	A,B1,B2 or D	A,B1,B2,D or E	A,B1,C or D	A,B1,C,D or E

Note: The same type of device shall not be utilized for both the primary and secondary entrapment protection means. Use of a single device to cover both the opening and closing directions is in accordance with the requirement; however, a single device is not required to cover both directions. A combination of one Type B1 for one direction and one Type B2 for the other direction is the equivalent of one device for the purpose of complying with the requirements of either the primary or secondary entrapment protection means.

Entrapment protection types

Type A: Inherent entrapment sensing system

Type B1: Provision for connection of a non contact sensor (photoelectric or equivalent)

Type B2: Provision for connection of a contact sensor (edge device or equivalent)

Type C: Inherent adjustable clutch or pressure relief device

Type D: Provision for connection of an actuating device requiring continuous pressure to maintain opening or closing motion of the gate

Type E: An inherent audio alarm.

CLASS OF GATE OPERATORS

RESIDENTIAL VEHICULAR GATE OPERATOR - CLASS I - A vehicular gate operator (or system) intended for use in a home of one-to four single family dwelling, or a garage or parking area associated therewith.

COMMERCIAL/GENERAL ACCESS VEHICULAR GATE OPERATOR - CLASS II - A vehicular gate operator (or system) intended for use in a commercial location or building such as multi-family housing unit (five or more single family units), hotel, garage, retail store, or other building servicing the general public.

INDUSTRIAL/LIMITED ACCESS VEHICULAR GATE OPERATOR - CLASS III - A vehicular gate operator (or system) intended for use in a industrial location or building such as a factory or loading dock area or other locations not intended to service the general public.

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RESTRICTED ACCESS VEHICULAR GATE OPERATOR - CLASS IV - A vehicular gate operator (or system) intended for use in a guarded industrial location or building such as an airport security area or other restricted access locations not intended to service the general public.

THIS INSTRUCTION IS REFERRED TO AN OPERATOR IN CLASS

104, 105 (HT SERIES) CLASS I, II, III

106, 107 (FT SERIES) CLASS I, II, III, IV

WARNING - To reduce the risk of injury or death

A) Install the gate operator only when:

- A.1) The operator is appropriate for the construction of the gate and the usage Class of the gate
- A.2) All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 4 feet (1.2 m) above the ground to prevent a 2-1/4 inch (57.15 mm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position,
- A.3) All exposed pinch points are eliminated or guarded, and
- A.4) Guarding is supplied for exposed rollers.

B) The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening.

C) The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.

D) The gate must be properly installed and work freely in both directions prior to the installation of the gate operator. Do not over-tighten the operator clutch or pressure relief valve to compensate for a damaged gate.

E) For gate operators utilizing Type D protection:

- E.1) The gate operator controls must be placed so that the user has full view of the gate area when the gate is moving,
- E.2) The placard as required and shall be placed adjacent to the controls
- E.3) An automatic closing device (such as a timer, loop sensor, or similar device) shall not be employed, and
- E.4) No other activation device shall be connected.

F) Controls must be far enough from the gate so that the user is prevented from coming in contact with the gate while operating the controls. Controls intended to be used to reset an operator after 2 sequential activations of the entrapment protection device or devices must be located in the line-of-sight of the gate Outdoor or easily accessible controls shall have a security feature to prevent unauthorized use.

G) All warning signs and placards must be installed where visible in the area of the gate.

H) For gate operators utilizing a non-contact sensor

- H.1) See instructions on the placement of non-contact sensors for each Type of application,
- H.2) Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle, trips the sensor while the gate is still moving, and
- H.3) One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.

I) For a gate operator utilizing a contact sensor

- I.1) One or more contact sensors shall be located at the leading edge, trailing edge, and postmounted both inside and outside of a vehicular horizontal slide gate.
- I.2) One or more contact sensors shall be located at the bottom edge of a vehicular vertical lift gate.
- I.3) One or more contact sensors shall be located at the pinch point of a vehicular vertical pivot gate.
- I.4) A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.
- I.5) A wireless contact sensor such as one that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless contact sensor shall function under the intended end-use conditions.

THE PROTECTIONS MEANS INSTRUCTIONS ARE AVAILABLE IN THEIR WRAPPING, WHEN PURCHASED.

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WARNING - To reduce the risk of severe injury or death to persons

When you make the connection, for a residential or commercial pedestrian door operator, to the source of supply by a flexible cord:

All electrical connections from the control panel to the door operator must be made in a watherproof junction box.

You can't route the cord through doorways, window openings, walls, ceilings, floors, or the like.

You can't attache, or otherwise secure, the cord to the building structure.

You can't conceale the cord behind walls and the like.



FIELD INSTALLED PLACARDS

You must install a placard on each side of the gate. Each placard is to be visible by persons located on the side of the gate on which the placard is installed.

MAINTENANCE

It is necessary to execute a periodic checking and ajustement (every six months) for all parts (control mechanism of force, speed, sensitivity etc.) of vehicular gate operator by a qualified technician.



All electrical connections from the control panel to the operator must be made in a waterproof junction box.

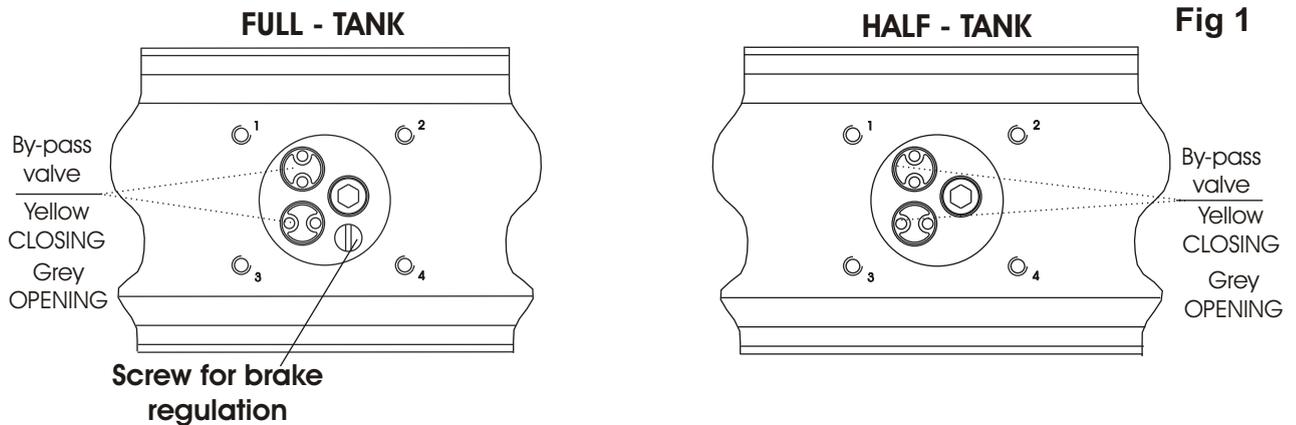
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PRESSURE REGULATION (ANTI-CRUSH SAFETY)

The opening and closing forces transmitted to the gate by the motor-pump assembly are regulated by adjusting two by-pass valves; the plain (silver)-coloured valve adjusts the opening pressure whilst the yellow (brass)coloured valve adjusts the closing pressure. To increase the operating pressure turn the appropriate valve clockwise; to decrease turn anti-clockwise. **THE MAXIMUM THRUST FORCE DURING THE MOVEMENT, MEASURED AT THE LEADING EDGE OF LEAF, IS SUBJECTED TO THE LAWS IN FORCE IN THE COUNTRY WHERE THE GATE IS INSTALLED.** It is advisable that both opening and closing pressures are similar, with the opening pressure set slightly higher than the closing one. By-pass valves are placed under the key release system.

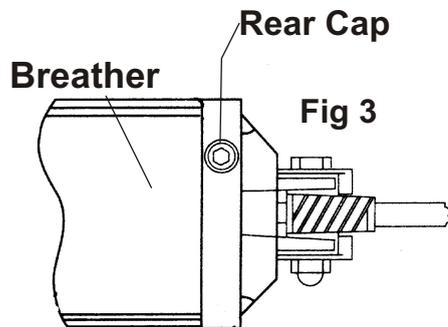


BRAKE SYSTEM

HT with brake = Steady brake in the last 0.78 Inc. of the piston stroke.

FT with adjustable brake =Adjustable brake in the last 0.78 Inc. of the piston stroke

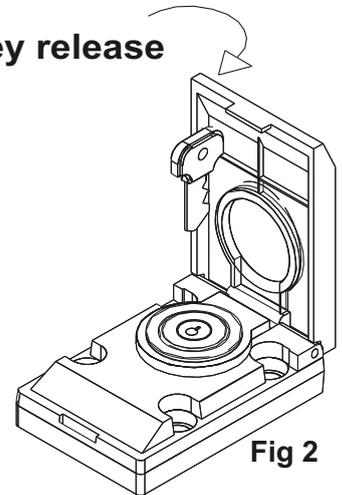
Warning: The regulation of the brake is made through the opening and the closing of the screw for the brake regulation.



VERY IMPORTANT

Take the breather screw (in the lower part of the operator) off after installation as in fig. 3

Key release



VERY IMPORTANT

Insert the key as in Fig.2. Position the releasing kit on the operator and move the key in order to get inserted the pin located under the releasing kit to the hexagonal screw located on the distributor. Release the operator turning the key and lock it again. Make sure that the operator is not released when you pull out the key.

ATTENTION: In the 107 models with hydraulic lock in opening and closing and in the 106 - 107 models without locke, the stroke reduces of 1,06 inches

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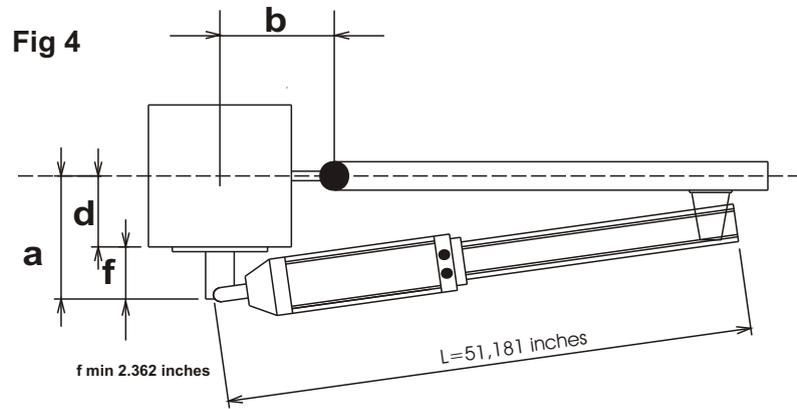
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Libra Half-Tank/ Full-Tank Stroke 15.354 inches

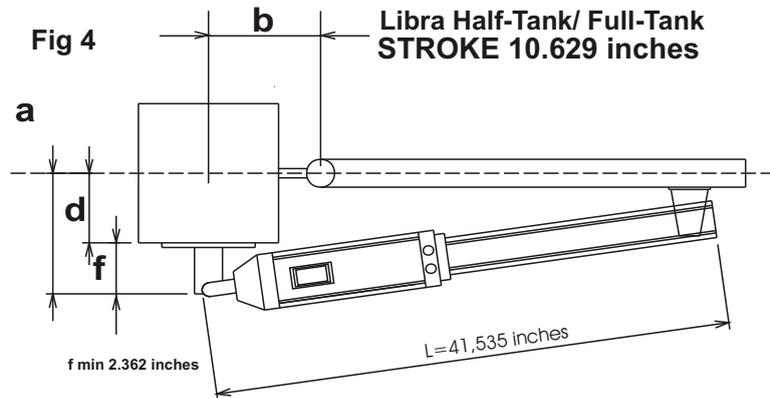
Fitting to the pier

Length of the leaf inches	a inches	b inches	d max inches	Stroke op. Per 90 ϕ inches	Max Angle opening ϕ
47.244 - 70.866	7.874	7.480	5.511	15.354	90°
47.244 - 70.866	8.661	6.299	6.299	15.354	90°
47.244 - 70.866	10.236	4.724	7.874	15.354	90°
70.866 - 98.425	7.874	7.480	5.511	15.354	90°
70.866 - 98.425	8.661	6.299	6.299	15.354	90°



Fitting to the pier

Length of the leaf inches	a inches	b inches	d max inches	Op. Stroke for 90 ϕ inches	Max opening angle ϕ	Pump C. gall/min
39.370 - 70.866	3.937	3.543	1.968	7.480	110°	0.2641
70.866 - 98.425	4.330	3.937	2.362	8.267	115°	0.2641
98.425 - 118.110	4.724	4.330	2.755	9.055	115°	0.2641
118.110 - 137.795	5.118	4.724	3.149	9.842	100°	0.2641
137.795 - 157.480	5.511	5.118	3.543	10.629	90°	0.2641
157.480 - 177.165	5.118	4.724	2.755	9.842	105°	0.1981
177.165 - 196.850	5.511	4.724	3.149	10.236	95°	0.1981
196.850 - 236.220	5.511	5.118	3.543	10.629	90°	0.1981



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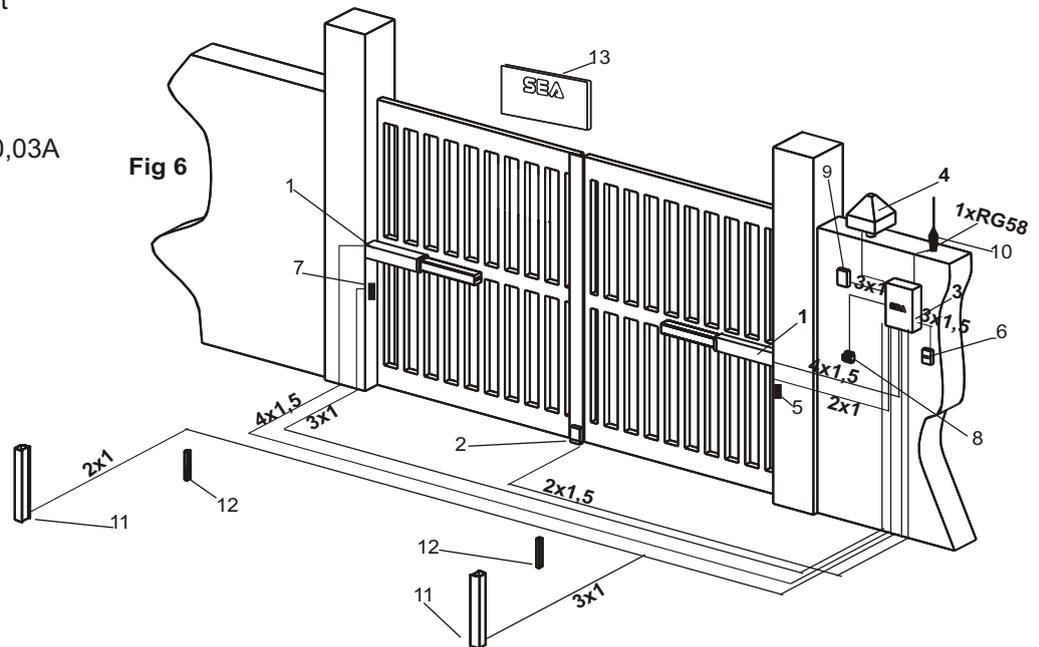
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Cable Layout

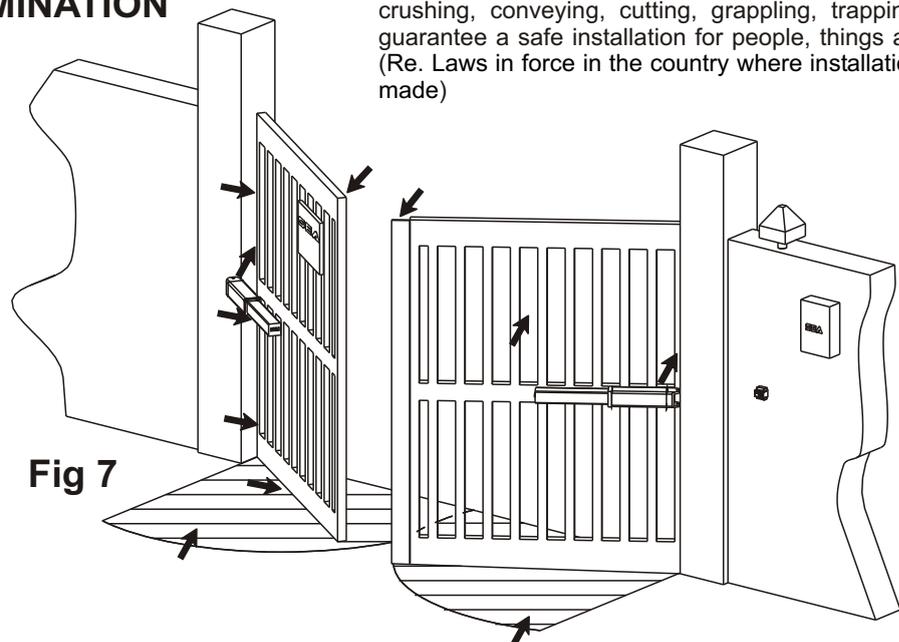
- 1) The Full Tank, Half Tank unit
- 2) Electro lock
- 3) Electronic control unit
- 4) Flashing warning light
- 5) Photocell Rx
- 6) RCD Circuit breaker 16A 0,03A
- 7) Photocell Tx
- 8) Key switch
- 9) Radio receiver
- 10) Antenna
- 11) Support for photocells
- 12) Open and close stop
- 13) N. 2 Warning notice



As for misunderstandings that may arise refer to your area distributor or call our help desk. These instructions are part of the device and must be kept in a well known place. The installer shall follow the provided instructions thoroughly. SEA S.r.l. products must only be used to automatise doors, gates and wings. Any initiative taken without SEA S.r.l. explicit authorization will preserve the manufacturer from whatsoever responsibility. The installer shall provide warning notices on not assessable further risks. SEA S.r.l. in its relentless aim to improve the products, is allowed to make whatsoever adjustment without giving notice. This doesn't oblige SEA S.r.l. to up-grade the past production. SEA S.r.l. 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 S.r.l. 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.

RISK EXAMINATION

The points pointed by arrows 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)



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READ AND FOLLOW ALL INSTRUCTIONS

END USER INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

WARNING - To reduce risk of severe injury or death:

READ AND FOLLOW ALL INSTRUCTIONS

Never let children operate or play with door controls. Keep the remote control away from children.

Always keep the moving system in sight and away from people and objects until it is completely closed or stopped. **NO ONE SHOULD CROSS THE PATH OF THE MOVING SYSTEM.**

Test the system opener monthly. The system **MUST** reverse on contact with a 1 - ½ inch high object (or a 2 by 4 board laid flat) on the floor. After adjusting either the force or the limit of the travel, retest the door opener. Failure to adjust properly the opener increases the risk of severe injury or death. For products having an emergency release use it only when the door is closed. Beware when using this release with the door open. Weak or broken springs can increase the rate of door closure and the risk of severe injury or death.

KEEP THE SYSTEM PROPERLY BALANCED AND MAINTAINED. An improper balancing or maintenance increases the risk of severe injury or death. Have a qualified service personal to make repairs to cables, spring assemblies and other hardware.

Vehicular gate operator systems offer convenience to their users and limit vehicular traffic onto your property. Gate operator systems can and do produce high levels of force. It is important that you are aware of the possible hazards associated with your gate operator system. Hazards may include, but are not limited to pinch points, entrapment, absence of reversing devices, absence of pedestrian access, traffic backup, etc.

Your installer should instruct you on the proper operation of your gate operator system. You and your installer should review the basic functions of the reversing devices on your gate operator system and test them periodically. Reversing devices include one or more of the following: reversing loops, photo-eyes, reversing edges, etc. Your installer needs to instruct you on how to remove the gate operator system from service, shut power off at service panel and how to use the gate operator system manually.

Do not allow children or pets to play in the area of the gate and gate operator system. Do not allow children to play with any access control device.

Operate gate only when fully visible, properly adjusted and free of obstructions. The owner/operator and/or installer should determine, prior to use, whether the equipment and optional devices, or combination thereof are suitable and safe for the use intended. Since individual installations may be subject to variations and are usually abundant in devices not always obtained from or through SEA S.r.l. and since SEA S.r.l. has no control over the end use of the products it distributes, SEA S.r.l. makes no representations or warranties as to the suitability of safety of this equipment for a specific application.

Warranty will be considered void if unit was installed and/or wired improperly, used wrong power source, used wrong hydraulic fluid, or if damage was caused by fire, flood, lightning or any other acts of God.

This manual is your property. Please keep for future reference.

WARNING - To reduce risk of severe injury or death:



Install only on a properly balanced garage door. An improperly balanced door has the potential to inflict severe injury. Have a qualified service personal to make repairs to cables, spring assemblies and other hardware before installing the opener.

Remove all ropes and remove or make inoperative all locks connected to the garage door before installing opener.

Where possible, install the door opener 7 feet or more above the floor. For products having an emergency release, mount the emergency release 6 feet above the floor.

Do not connect the opener to source of power until instructed to do so.

Locate the control button: (a) within sight of door, (b) at minimum height of 5 feet so small children are not able to reach it, and (c) away from all moving parts of the door.

Install entrapment Warning Label next to the control button in a prominent location. Install the Emergency Release Marking. Attach the marking on or next to the emergency release.

After installing the opener, the door must reverse when it contacts a 1 - ½ inch high object (or a 2 by 4 board laid flat) on the floor.

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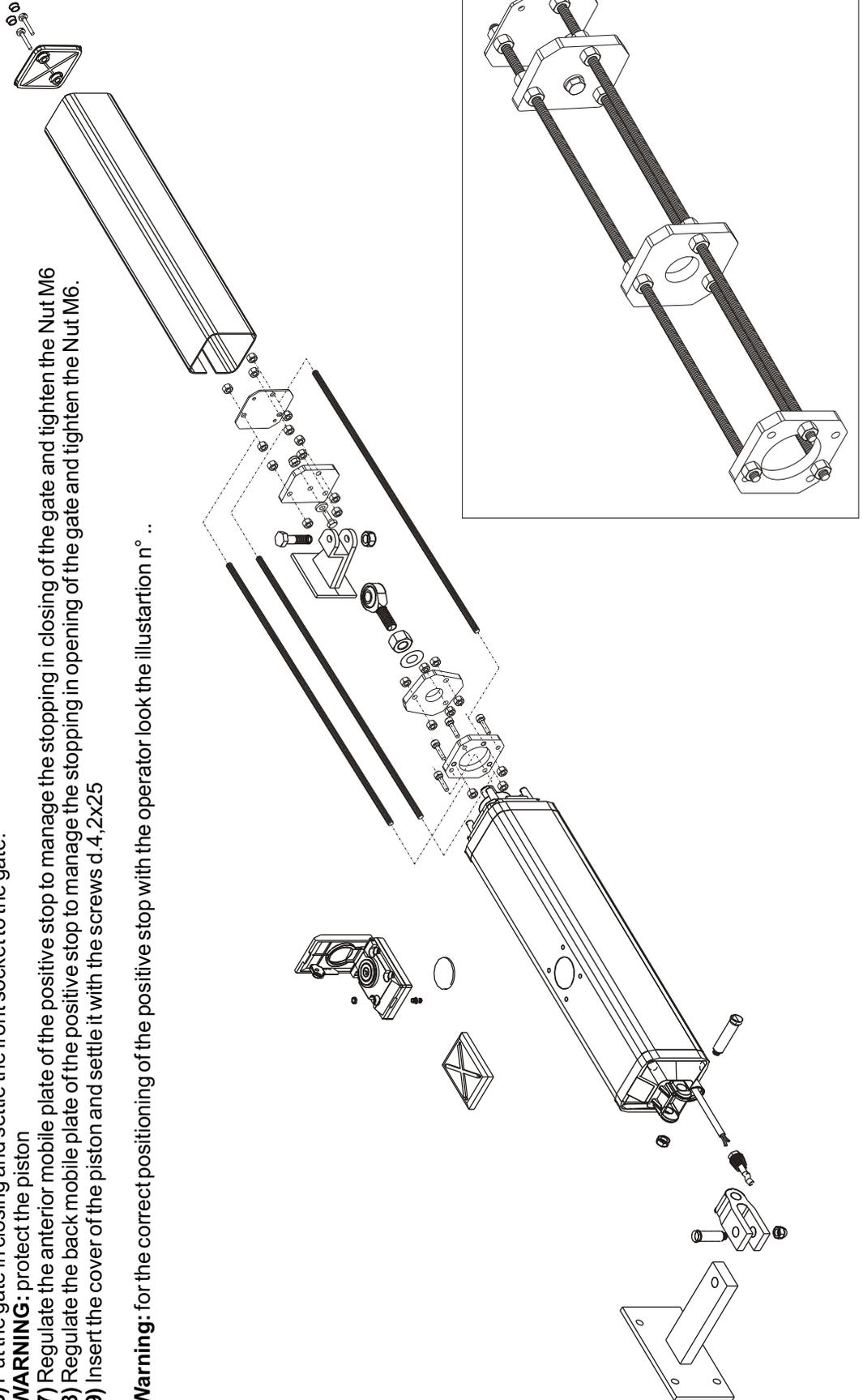
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ASSEMBLING INSTRUCTIONS - LOCKING SYSTEM

- 1) Settle the back socket of the operator according to the operator parameter (see instruction manuals)
- 2) Release the operator through the releasing key and make come out the piston for about 3.93 Inc..
- 3) Insert the positive stop on the piston. Settle the positive stop through the 4 screw M5x18 to the anterior flange of the operator.
- 4) Screw the pin joint, the washer d.27 and the nut M12 to the piston for half screw-thread of the pin joint. Screwing or unscrewing the pin joint for about 0,59 Inc. it is possible to regulate the stroke of the brake. Settle the anterior socket of the arm to the pin joint. Make come out completely the piston and make sure of the occurred brake.
- 5) Make the piston return back for 0,19/0,39 Inc.
- WARNING:** the anterior mobile plate of the positive stop must be positioned over the max stroke of the operator.
- WARNING:** protect the piston
- 7) Regulate the anterior mobile plate of the positive stop to manage the stopping in closing of the gate and tighten the Nut M6
- 8) Regulate the back mobile plate of the positive stop to manage the stopping in opening of the gate and tighten the Nut M6.
- 9) Insert the cover of the piston and settle it with the screws d.4,2x25

Warning: for the correct positioning of the positive stop with the operator look the illustration n° ..



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Gate Operators &
Traffic Barriers

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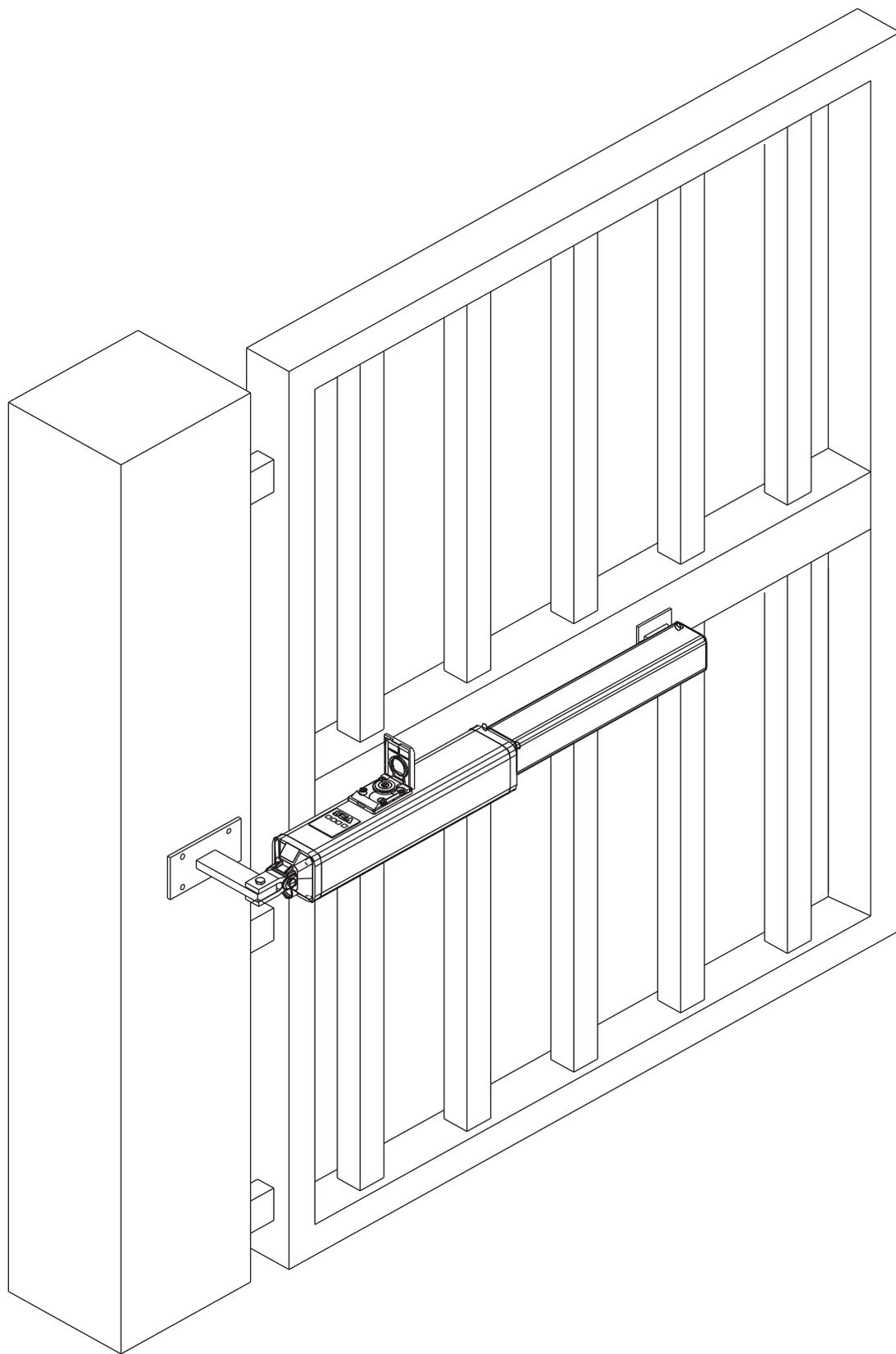
<http://www.sea-usa.com>
e-mail: sales@sea-usa.com

104, 105 (Half Tank Series)
106, 107 (Full Tank Series)



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The installer is responsible for grounding the operator system, for providing the main power breaker switch, and for making sure that the entire gate systems meets all applicable electrical codes.



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