



**SEA**<sup>®</sup>

Automatic Gate Openers  
International registered trademark n. 804888

**CE** | **UK**  
**CA**

ENGLISH

# **BIG 3000**

**MOTOR REDUCER IN OIL-BATH FOR SLIDING GATES**



**SEA S.p.A.**

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# 1 TECHNICAL FEATURES

**BIG 3000** is a gearmotor in oil bath, designed to automate large sliding gates with a **maximum length of 19 metres and a maximum weight of 3000 Kg**

**BIG 3000** has an **INTEGRATED LIMIT SWITCH** as standard.

The **BIG 3000** is **IRREVERSIBLE**, therefore it allows a perfect and safe closing of the gate so the electric lock installation is unnecessary.

Furthermore, it is equipped with a **MANUAL RELEASE SYSTEM** - placed inside the casing - which allows the gate to be opened and closed manually in the event of a power outage.

**BIG 3000** does not have an obstacle reversing device, **therefore the installation of external protection devices is mandatory to comply with the Laws in force concerning the safety of automatic gates**

## COMPONENTS BIG 3000

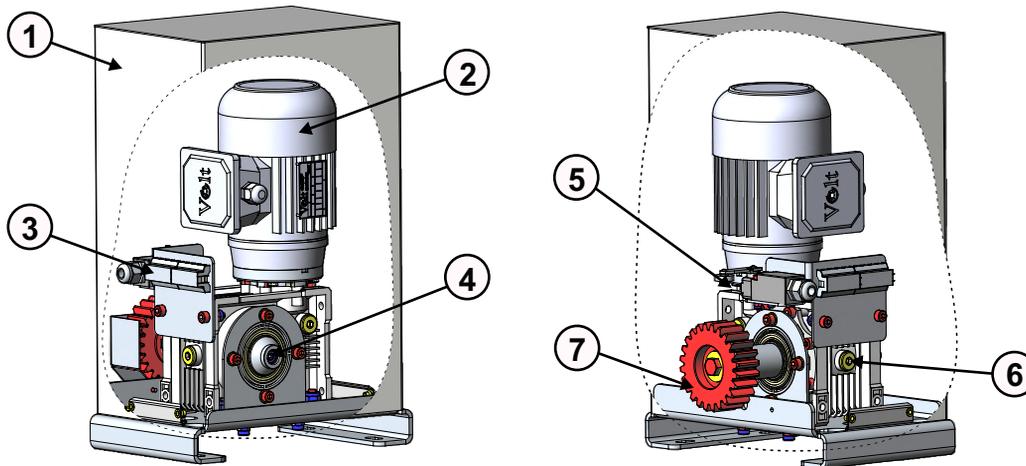


Fig. 1

- 1 - EXTERNAL BOX
- 2 - ELECTRIC MOTOR
- 3 - TERMINAL FOR ELECTRIC WIRINGS
- 4 - MANUAL RELEASE WITH CUSTOMIZED KEY
- 5 - LIMIT SWITCH WITH LEVER
- 6 - OIL LEVEL CHECK CAP
- 7 - PINION (Z24 M4 OR Z16 M6)

## DIMENSIONS (mm)

Fig. 2

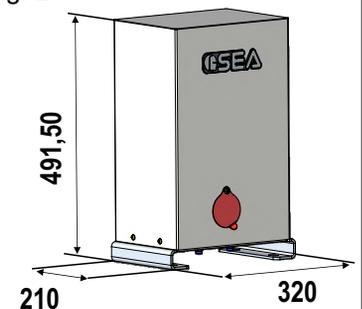
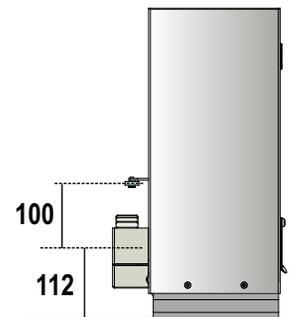


Fig. 3

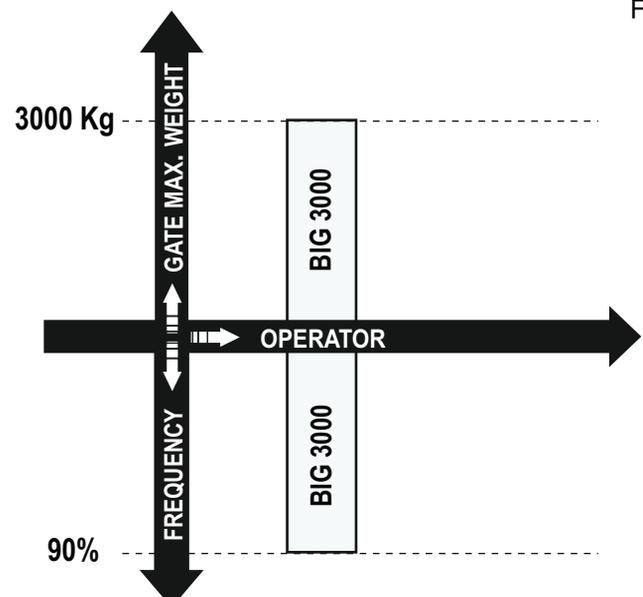


TECHNICAL DATA	BIG 3000
POWER SUPPLY	230VAC / 400VAC 50/60 Hz
POWER	750W
USAGE RATE *	90%
MOTOR ROTATION SPEED	1430 rpm
REDUCTION RATIO	1:40
MAX. TORQUE	135 Nm
SPEED (PINION Z16 M6)	UP TO 0,175 m/s
SPEED (PINION Z24 M4)	UP TO 0,175 m/s
OPERATING TEMPERATURE	-20°C +55°C
OPERATOR WEIGHT	28 Kg
PROTECTION CLASS	IP55
MAX. LEAF WEIGHT	3000 Kg
LIMIT SWITCH	MECHANICAL LIMIT SWITCH
ELECTRIC BRAKE	NO

\* The indicated usage rate is valid only for the first operating hour and at average temperature of 20°C

## APPLICATION CHART

Fig. 4



**2**

**GATE ARRANGEMENT**

Before the installation check if all the gate parts (fixed and mobile) have a strong and non-deformable structure; also make the following checks:

- 2.1.** The gate must be rigid and compact;
- 2.2.** The lower gate slideway must be perfectly straight, horizontal and without any obstacles which could obstruct the gate sliding;
- 2.3.** The lower sliding wheels must be equipped with greasable or watertightened bearings;
- 2.4.** The upper slideway must be perfectly straight and placed so that the gate could be in vertical position;
- 2.5.** *The mechanical stops of the gate must always be installed in order to avoid any possible derailment*

**3**

**ANCHORING OF THE BASE**

**3.1.** Prepare a concrete pad using a R425 concrete type, according to the dimensions in Fig. 5 and 7; the anchor bolts will be concreted inside the pad

**3.2.** Foresee the passage for a flexible sheath for electric cables of at least **3 cm** in diameter; the sheath should come out from the special hole on the base (Fig. 6)

Fig. 5

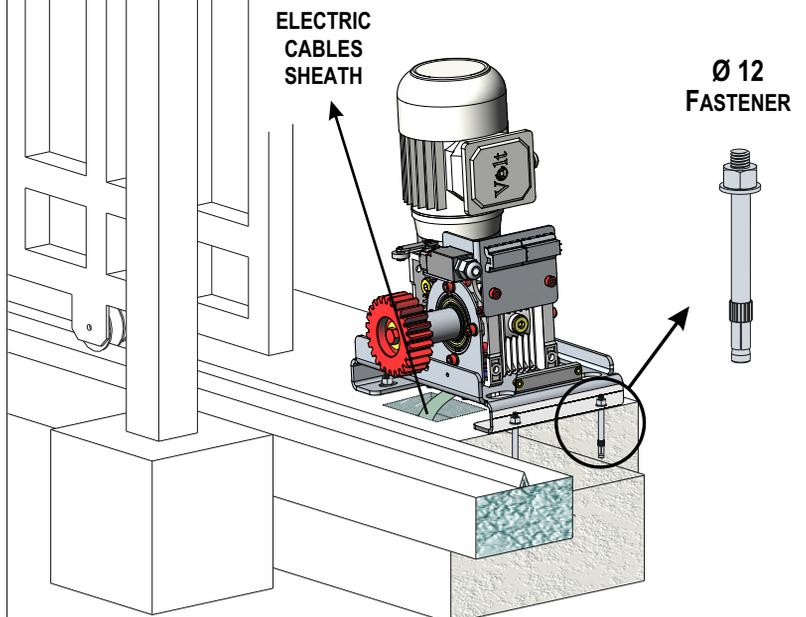
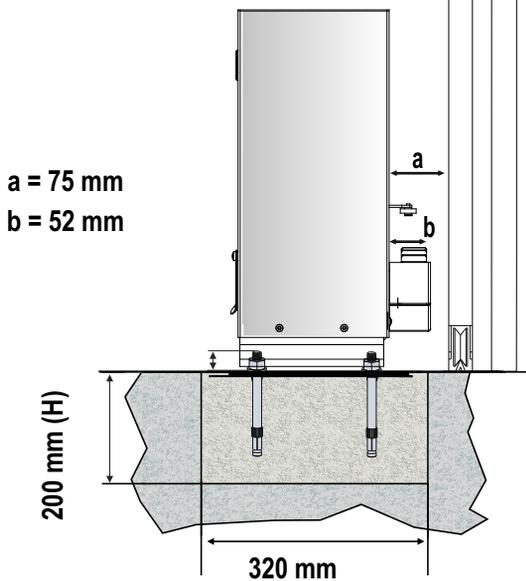


Fig. 6

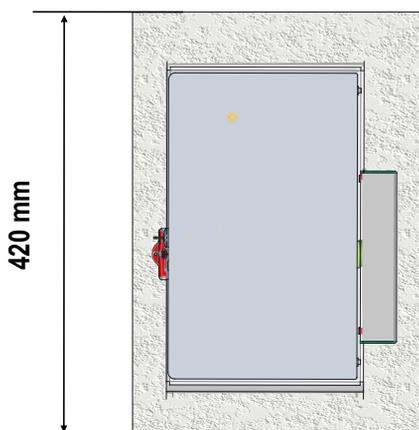
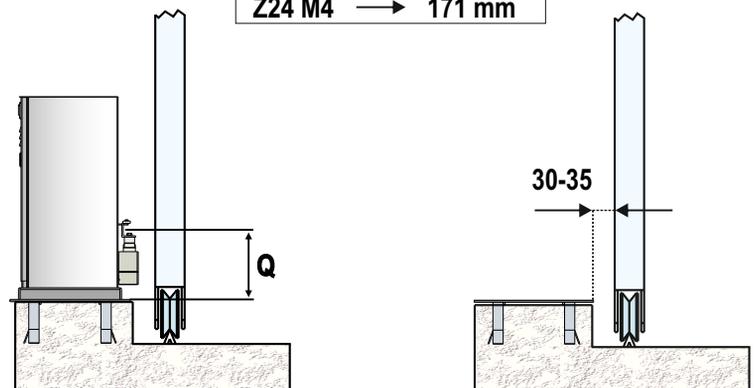


Fig. 7

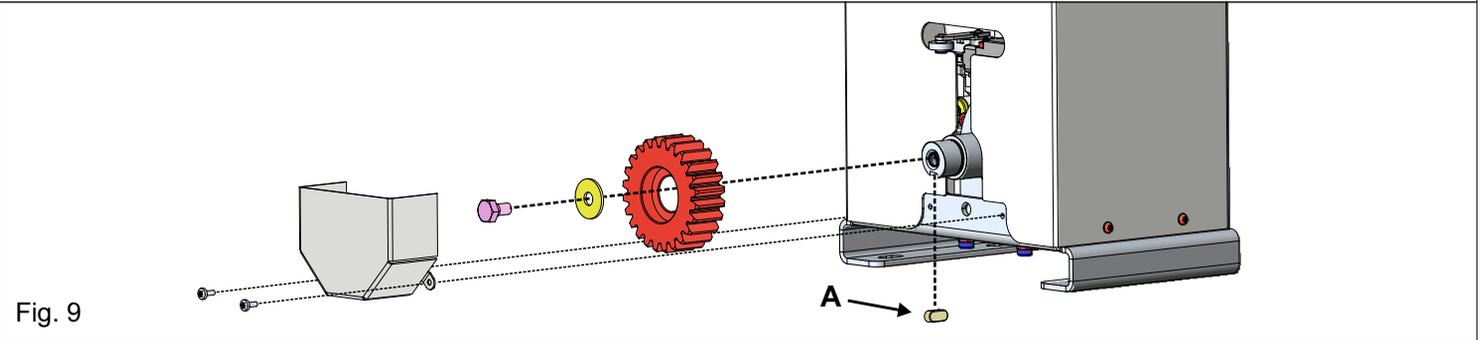
Fig. 8

MINIMUM Q DIMENSION	
BIG 3000	
Z16 M6	→ 214 mm
Z24 M4	→ 171 mm



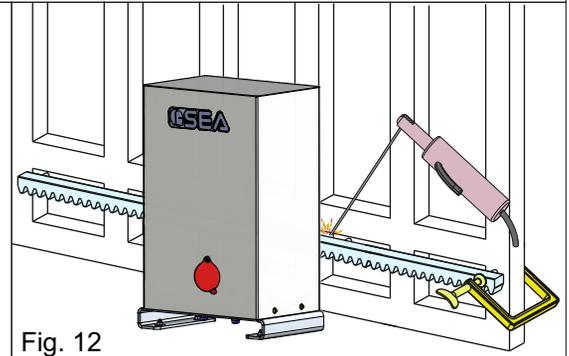
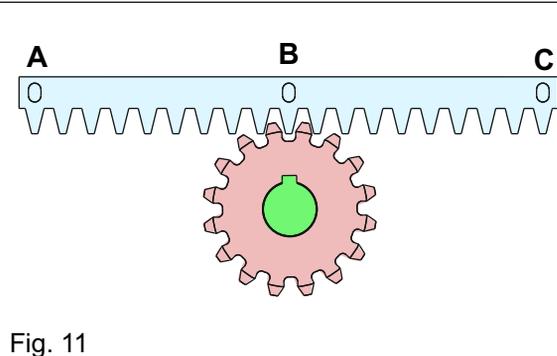
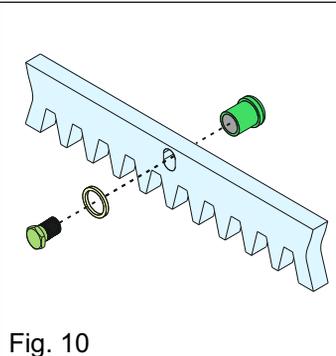
**4 PINION MOUNTING**

- 4.1. First, insert the «A» pin into the gearmotor shaft as shown in Fig. 9
- 4.2. Mount the pinion on the shaft of the gearmotor as shown in Fig. 9



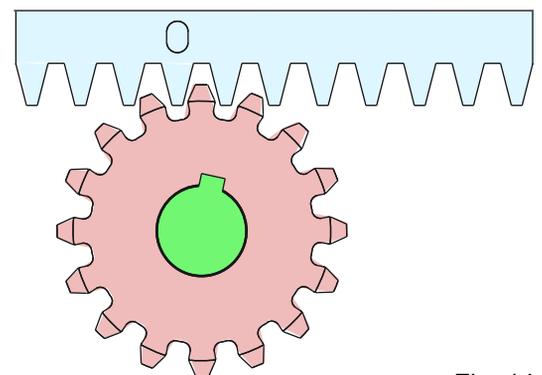
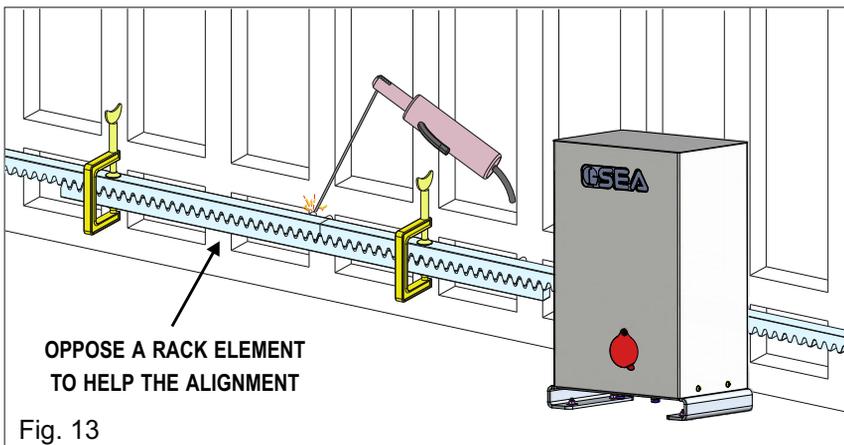
**5 GEAR RACK MOUNTING - MODULE 4**

- 5.1. Release the operator and open the gate completely;
  - 5.2. Fix the support pawls on each gear rack element, by the use of the special lock screws; make sure to put them in the upper part of the hole - Fig. 10;
  - 5.3. Lean the rack element on the pinion - Fig. 11 - in parallel to the gate slideway on the ground, then weld the central pawl **B** to the gate structure - Fig. 12.
- Manually move the gate until the pawl **C** is placed in front of the pinion and weld it to the gate structure. Manually move the gate until the pawl **A** is placed in front of the pinion and weld it to the gate structure.



- 5.4. Repeat the above-described operation for all the gear rack elements to be installed;
- 5.5. Make sure that all the rack elements are perfectly aligned and correctly placed (**THE TEETH MUST BE IN PHASE**). It is suggested to oppose an element to two consecutive elements to ensure the perfect alignment as shown in Fig. 13;
- 5.6. Make sure that the gear rack works at the midpoint of the pinion along all the rack elements; if necessary, adjust the length of the spacers

**! KEEP A GAP OF ABOUT 0,5 mm BETWEEN THE PINION TOOTH AND THE GEAR RACK TOOTH TO AVOID THAT THE GATE WEIGHTS DOWN THE PINION - FIG. 14**



**6 GEAR RACK MOUNTING - MODULE 6**

- 6.1. Release the operator and open the gate completely;
- 6.2. Fix the two metal supports «A» on each gear rack element by the use of the special screws - Fig. 15
- 6.3. Lean the rack element on the pinion - Fig. 16 - in parallel to the gate slideway on the ground
- 6.4. Make the holes on the gate structure in correspondence with the «B» holes on the metal supports, then fix the gear rack to the gate - Fig. 17 - using screws (**NOT SUPPLIED**)
- 6.5. Repeat the above-described operation for all the gear rack elements to be installed;
- 6.6. Make sure that all the rack elements are perfectly aligned and correctly placed (**THE TEETH MUST BE IN PHASE**). It is suggested to oppose an element to two consecutive elements to ensure the perfect alignment as shown in Fig. 18
- 6.7. Make sure that the gear rack works at the midpoint of the pinion along all the rack elements; if necessary, adjust the length of the spacers

**! KEEP A GAP OF ABOUT 1 mm BETWEEN THE PINION TOOTH AND THE GEAR RACK TOOTH TO AVOID THAT THE GATE WEIGHTS DOWN THE PINION - FIG. 19**

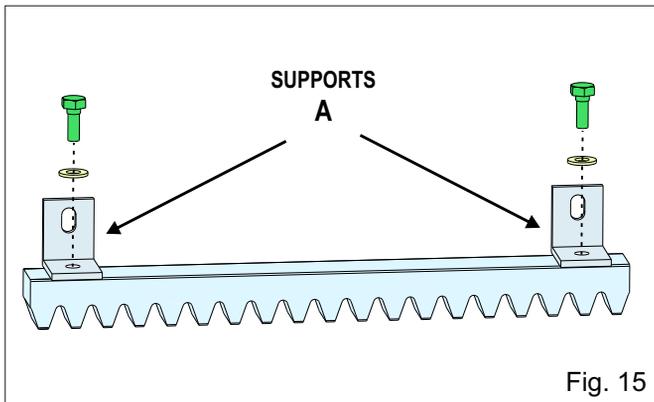


Fig. 15

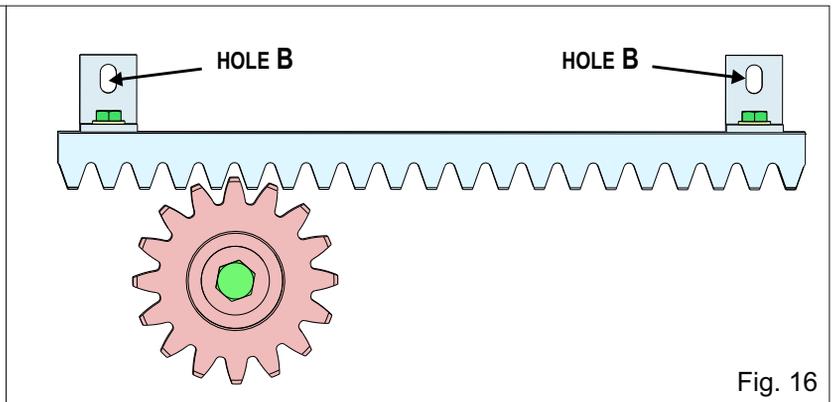


Fig. 16

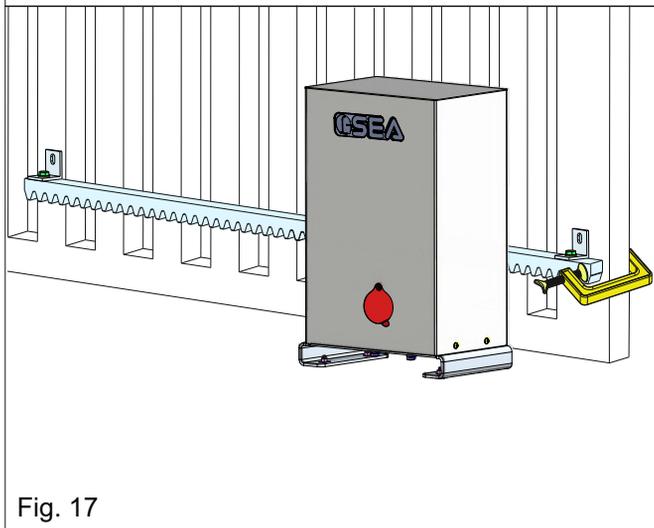


Fig. 17

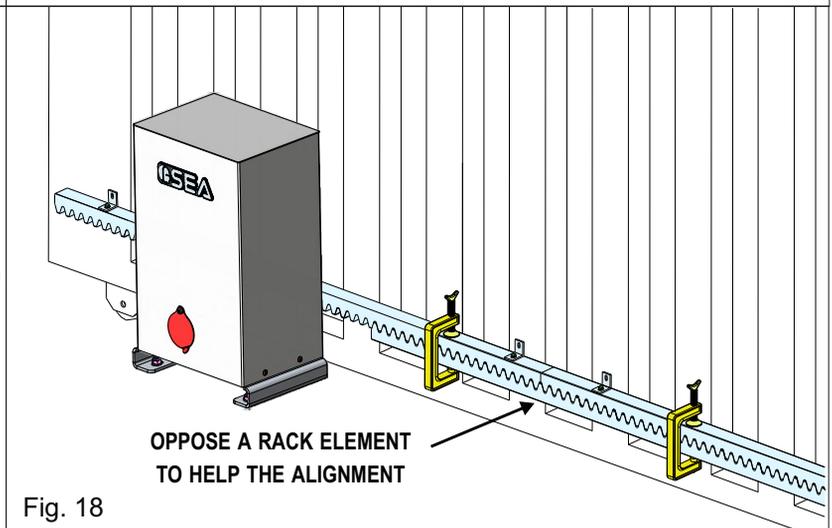


Fig. 18

## 7 LIMIT SWITCH ADJUSTMENTS

### 7.1. IN OPENING

- Fully open the gate
- Place the plate - Fig. 19 - on the rack according to the desired gate stop position - Fig. 20; fix the plate on the rack using the supplied screws.

### 7.2. IN CLOSING

- Fully close the gate
- Place the plate - Fig. 19 - on the rack according to the desired gate stop position - Fig. 20; fix the plate on the rack using the supplied screws.

**➔ AFTER STARTING THE OPERATOR, IT MAY BE NECESSARY TO MANUALLY ADJUST THE PLATES, BOTH IN OPENING AND CLOSING. ANY FURTHER ADJUSTMENTS ALSO CAN BE MADE ON THE ELECTRONIC CONTROL UNIT!**

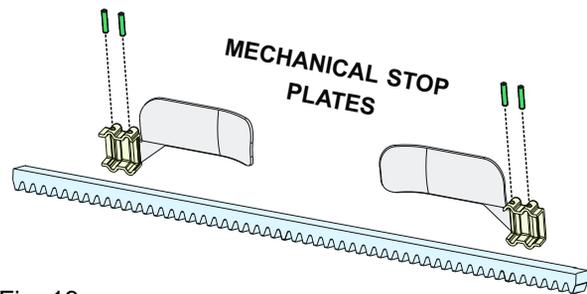


Fig. 19

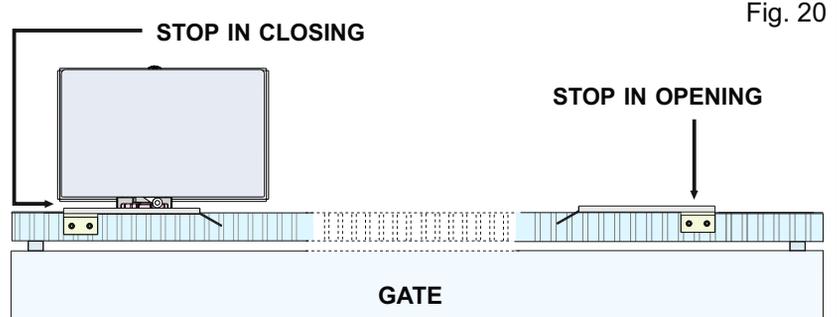


Fig. 20

## 8 MOTOR WIRING AND GROUNDING

MOTOR VOLTAGE	
$\Delta$	→ 230V
W2 U2 V2	↓ ↓ ↓
U1 V1 W1	
Y	→ 380V
W2 U2 V2	↔ ↔ ↔
U1 V1 W1	

Fig. 21

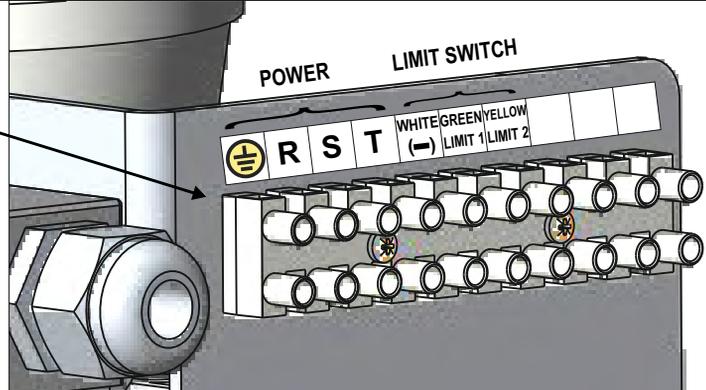
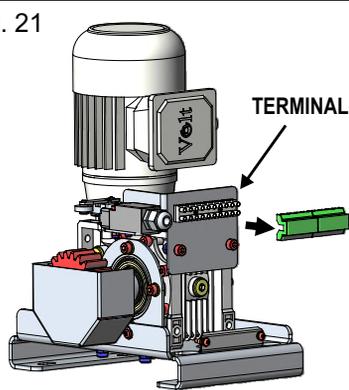


Fig. 22

## 9 GENERAL ELECTRIC WIRINGS

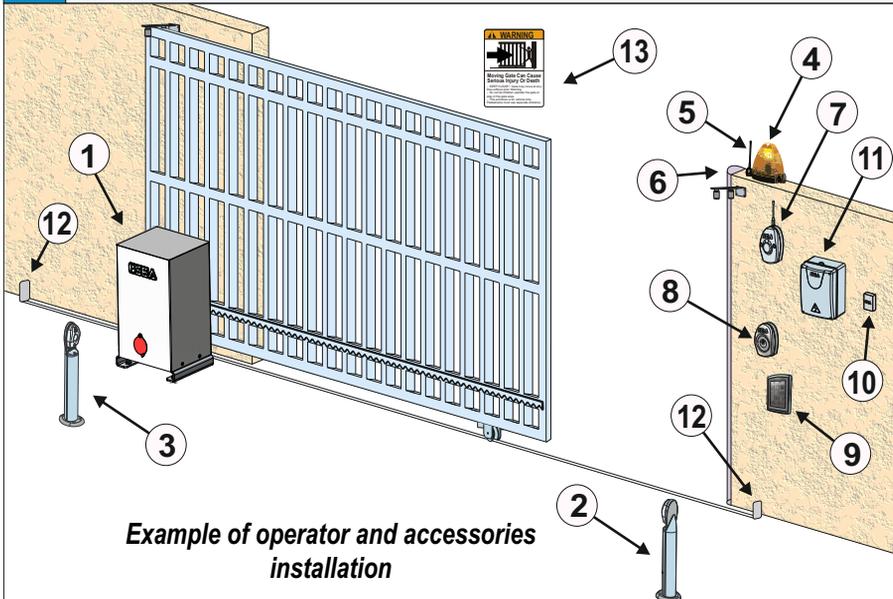


Fig. 23

*Example of operator and accessories installation*

### RECOMMENDED CABLES NUMBER AND SECTION FOR WIRINGS ON CONTROL UNIT

1) OPERATOR	→	4 x 1,5
2) PHOTOCCELL TX	→	2 x 0,5
3) PHOTOCCELL RX	→	4 x 0,5
4) FLASHING LAMP	→	2 x 0,5
5) ANTENNA	→	1 x RG58
6) SAFETY EDGE	→	2 x 0,5 *
7) EXTERNAL RECEIVER	→	4 x 0,5
8) KEY-BUTTON	→	4 x 0,5
9) KEYPAD	→	4 x 0,5
10) DIFFERENTIAL 16A/30MA	→	3 x 1,5 **
11) CONTROL UNIT BOX		
12) END-OF-STROKE MECHANICAL STOPS		
13) WARNING SIGNS		

\* In case of powered safety edge: 4 x 0,5

\*\* Increase the cable section in case of high distance from the control unit

**PART FOR BOTH INSTALLER AND END-USER**



**ALL THE UNLOCKING AND LOCKING OPERATIONS AND ALL THE MAINTENANCE OPERATIONS MUST BE CARRIED OUT ONLY WHEN THE POWER SUPPLY IS OFF!**

**10**

**RELEASE SYSTEM**

**10.1. TO UNLOCK**

- Open the red lock cover - Fig. 24
- Insert the red release key (*provided*) and turn it clockwise until it stops, without forcing it - Fig. 25

**10.2. TO LOCK**

- Turn the red release key anticlockwise until it stops, without forcing it - Fig. 25
- Remove the red release key
- Close the red lock cover - Fig. 24



Fig. 24

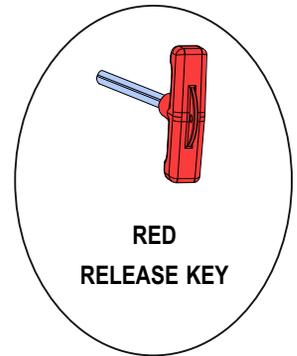


Fig. 25

**11**

**PERIODIC MAINTENANCE - FOR INSTALLERS ONLY!**

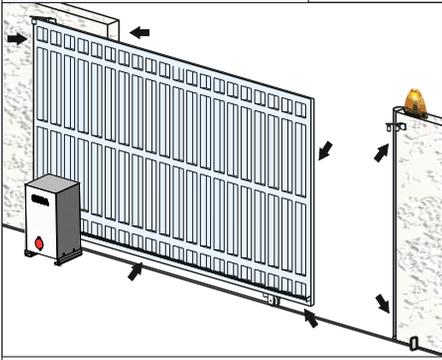
CHECK THE OIL LEVEL	ANNUAL
CHANGE THE OIL	4 YEARS
CHECK THE CORRECT OPERATION OF THE RELEASE SYSTEM	ANNUAL
CHECK THE CORRECT DISTANCE BETWEEN PINION AND GEAR RACK	ANNUAL
CHECK THE CONDITION OF THE PINION AND THE GEAR RACK ( <i>IF OVERUSED OR DAMAGED</i> )	ANNUAL
CHECK ALL THE FASTENING SCREWS	ANNUAL
CHECK THE CONDITION OF THE ELECTRIC CABLES	ANNUAL
CHECK THE CORRECT OPERATION OF THE LIMIT SWITCHES IN OPENING AND CLOSING; ALSO CHECK THE CONDITION OF THE STOP PLATES	ANNUAL



**ALL OPERATIONS MUST BE CARRIED OUT EXCLUSIVELY BY AN AUTHORIZED INSTALLER  
ALL OPERATIONS MUST BE CARRIED OUT IN ABSENCE OF POWER SUPPLY**

## PART FOR BOTH INSTALLER AND END-USER

### GENERAL NOTICE



**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). 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 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 upgrade the past production. SEA cannot 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 product and after having evaluated all the risks which could arise in any installation, **it is necessary to test the automation to guarantee the maximum safety and to guarantee that the Laws in force are fully respected.** The first Start must be executed according to the rule **EN 12445** which establishes the methods of tests for checking the gate automation respecting the limits established by the rule **EN 12453**

**SAFETY PRECAUTIONS:** All electrical works should comply with the current regulations. A 16A/0,030 differential switch must be used. Separate the source cables (operators, power supply) and command cables (photocells, push-buttons, etc). Be sure the entire system is properly grounded. Always run cables in separate ducts to prevent interferences

**INTENDED USE:** The operator has been designed to be used for the automation of sliding gates only

**SPARE PARTS:** Send request for spare parts to: **SEA S.p.A. - Teramo - ITALY - [www.seateam.com](http://www.seateam.com)**

**SAFETY AND ENVIRONMENTAL COMPATIBILITY:** Don't waste product packing materials and/or circuits

**STORAGE:** T = -30°C/+60°C ; Humidity = min. 5% / max. 90% (without condensation); Materials must be properly packaged, handled with care and with appropriate vehicles

**WARRANTY LIMITS** - see the sales conditions

**MAINTENANCE AND DECOMMISSION:** must only be carried out by specialized and authorized personnel

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

*SEA S.p.A. reserves the right to make any required modification or change to the products and/or to this manual without any advanced notice obligation.*

1. Read carefully these instructions before beginning to install the product. Store these instructions for future reference
2. Don't waste product packaging materials and /or circuits
3. This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger. SEAS.p.a. declines all liability caused by improper use or different use in respect to the intended one.
4. The mechanical parts must comply with Directives: Machine Regulation 2006/42/CE and following adjustments, Low Tension (2006/95/CE), Electromagnetic Consistency (2004/108/CE); Installation must respect Directives: EN12453 and EN12445.
5. Do not install the equipment in an explosive atmosphere.
6. SEA is not responsible for failure to observe Good Techniques in the construction of the locking elements to motorize or for any deformation that may occur during use
7. Before attempting any job on the system, cut out electrical power and disconnect the batteries. Be sure that the grounding system is perfectly constructed, and connect to it the metal parts of the gate
8. Use of the indicator-light is recommended for every system, as well as a warning sign well-fixed to the frame structure.
9. SEA declines all liability concerning the automated system safety and efficiency, if components used are not produced by SEA
10. For maintenance, strictly use original parts by SEA.
11. Do not modify in any way the components of the automated system.
12. The installer shall supply all information concerning the system manual functioning in case of emergency and shall hand over to the user the warnings handbook supplied with the product.
13. Do not allow children or adults to stay near the product while it is operating. The application cannot be used by children, by people with reduced physical, mental or sensorial capacity or by people without experience or necessary training. Keep remote controls or other pulse generators away from children, to prevent involuntary activation of the system.
14. Transit through the leaves is allowed only when the gate is fully open.
15. The User must not attempt to repair or to take direct action on the system and must solely contact qualified SEA personnel or SEA service centers. The User can apply only the manual function of emergency.
16. The power cables maximum length between the central engine and motors should not be greater than 10 m. Use cables with 2,5 mm<sup>2</sup> section. Use double insulation cable (cable sheath) to the immediate vicinity of the terminals, in particular for the 230V cable. Keep an adequate distance (at least 2.5 mm in air), between the conductors in low voltage (230V) and the conductors in safety low voltage (SELV) or use an appropriate sheath that provides extra insulation having a thickness of 1 mm

## 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 S.p.A. All sales made by SEA to all customers are made under the prescription of this terms of sales which are integral part of sale contract and cancel and substitute all apposed clauses or specific negotiations present in order document received from the buyer.

**GENERAL NOTICE** The systems must be assembled exclusively with SEA components, unless specific agreements apply. Non-compliance with the applicable safety standards (European Standards EN12453 – EN 12445) and with good installation practice releases SEA from any responsibilities. SEA shall not be held responsible for any failure to execute a correct and safe installation under the above mentioned standards.

**1) PROPOSED ORDER** The proposed order shall be accepted only prior SEA approval of it. By signing the proposed order, the Buyer shall be bound to enter a purchase agreement, according to the specifications stated in the proposed order. On the other hand, failure to notify the Buyer of said approval must not be construed as automatic acceptance on the part of SEA.

**2) PERIOD OF THE OFFER** The offer proposed by SEA or by its branch sales department shall be valid for 30 solar days, unless otherwise notified.

**3) PRICING** The prices in the proposed order are quoted from the Price List which is valid on the date the order was issued. The discounts granted by the branch sales department of SEA shall apply only prior to acceptance on the part of SEA. The prices are for merchandise delivered ex-works from the SEA establishment in Teramo, not including VAT and special packaging. SEA reserves the right to change at any time this price list, providing timely notice to the sales network. The special sales conditions with extra discount on quantity basis (Qx, Qx1, Qx2, Qx3 formula) is reserved to official distributors under SEA management written agreement.

**4) PAYMENTS** The accepted forms of payment are each time notified or approved by SEA. The interest rate on delay in payment shall be 1.5% every month but anyway shall not be higher than the max. interest rate legally permitted.

**5) DELIVERY** 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 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 or damage of the goods during transport, are at Buyer's cost

**6) COMPLAINTS** Any complaints 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 its supplies of raw material which is necessary for the production; Eventual completely or partially unsuccessful executions cannot be reason for complaints or reservations for damage. SEA supply is strictly limited to the goods of its manufacturing, not including assembly, installation and testing. SEA, therefore, disclaims any responsibility for damage deriving, also to third parties, from non-compliance of safety standards and good practice during installation and use of the purchased products.

**8) WARRANTY** The standard warranty period is 12 months. This warranty time can be extended by means of expedition of the warranty coupon as follows:

**SILVER:** The mechanical components of the operators belonging to this line are guaranteed for 24 months from the date of manufacturing written on the operator.

**GOLD:** The mechanical components of the operators belonging to this line are guaranteed for 36 months from the date of manufacturing written on the operator.

**PLATINUM:** The mechanical components of the operators belonging to this line are guaranteed for 36 months from the date of manufacturing written on the operator. The base warranty (36 months) will be extended for further 24 months (up to a total of 60 months) when it is acquired the certificate of warranty which will be filled in and sent to SEA S.p.A. The electronic devices and the systems of command are guaranteed for 24 months from the date of manufacturing. In case of defective product, SEA undertakes to replace free of charge or to repair the goods provided that they are returned to SEA repair centre. The definition of warranty status is by unquestionable assessment of SEA. The replaced parts shall remain propriety of SEA. Binding upon the parties, the material held in warranty by the Buyer, must be sent back to SEA repair centre with fees prepaid, and shall be dispatched by SEA with carriage forward. The warranty shall not cover any required labour activities. The recognized defects, whatever their nature, shall not produce any responsibility and/or damage claim on the part of the Buyer against SEA. The guarantee is in no case recognized if changes are made to the goods, or in the case of improper use, or in the case of tampering or improper assembly, or if the label affixed by the manufacturer has been removed including the SEA registered trademark No. 804888. Furthermore, the warranty shall not apply if SEA products are partly or completely coupled with non-original mechanical and/or electronic components, and in particular, without a specific relevant authorization, and if the Buyer is not making regular payments. The warranty shall not cover damage caused by transport, expendable material, faults due to non-conformity with performance specifications of the products shown in the price list. No indemnification is granted during repairing and/or replacing of the goods in warranty. SEA disclaims any responsibility for damage to objects and persons deriving from non-compliance with safety standards, installation instructions or use of sold goods. The repair of products under warranty and out of warranty is subject to compliance with the procedures notified by SEA.

**9) RESERVED DOMAIN** A clause of reserved domain applies to the sold goods; SEA shall decide autonomously whether to make use of it or not, whereby the Buyer purchases property of the goods only after full payment of the latter.

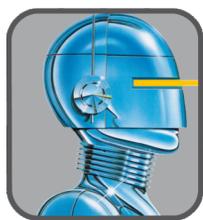
**10) COMPETENT COURT OF LAW** In case of disputes arising from the application of the agreement, the competent court of law is the tribunal of Teramo. SEA reserves the faculty to make technical changes to improve its own products, which are not in this price list at any moment and without notice. SEA declines any responsibility due to possible mistakes contained inside the present price list caused by printing and/or copying. The present price list cancels and substitutes the previous ones. The Buyer, according to the law No. 196/2003 (privacy code) consents to put his personal data, deriving from the present contract, in SEA archives and electronic files, and he also gives his consent to their treatment for commercial and administrative purposes.

**Industrial ownership rights:** once the Buyer has recognized that SEA has the exclusive legal ownership of the registered SEA brand num.804888 affixed on product labels and / or on manuals and / or on any other documentation, he will commit himself to use it in a way which does not reduce the value of these rights, he won't also remove, replace or modify brands or any other particularity from the products. Any kind of replication or use of SEA brand is forbidden as well as of any particularity on the products, unless preventive and expressed authorization by SEA. **In accomplishment with art.**

**1341 of the Italian Civil Law it will be approved expressly clauses under numbers: 4) PAYMENTS - 8) GUARANTEE - 10) COMPETENT COURT OF LAW**







**SEA**®



**Automatic Gate Openers**

International registered trademark n. 804888

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**[www.seateam.com](http://www.seateam.com)**