SATURN 600 - 1000 - 2000

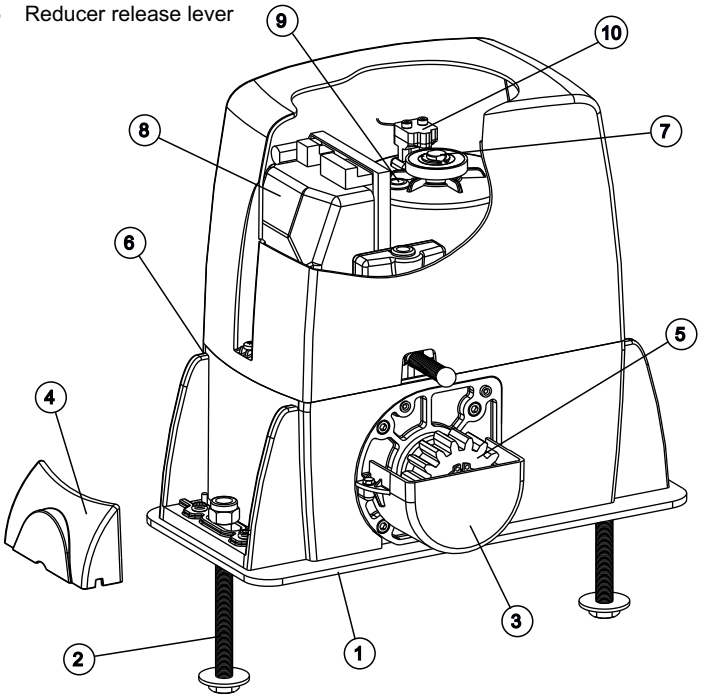
MOUNTING AND CONNECTING INSTRUCTIONS

ENGLISH

SATURN is a motor reducer designed for the automation of sliding gates with grease lubrication of the gear in the **600** version; in **oil bath** in the **1000** and **2000** versions.
The irreversibility of the motor reducer allows a perfect and safe gate closing, and makes the installation of an elecric lock unneccessary. In case of electric power cut, the lock device placed on the front part of the motor reducer allows the manual opening and closing. The operator is equipped with an electronic clutch device in the **600** version and with an **adjustable mechanical clutch** in the **1000** and **2000** versions, which guaranties a thrust adjustment on the gate, furthermore the **electronic inversion system** (optional) through **encoder** makes out of the Saturn motor reducer a safe and reliable operator allowing in a simple way to respect the laws in force in the country where the product will be installed.

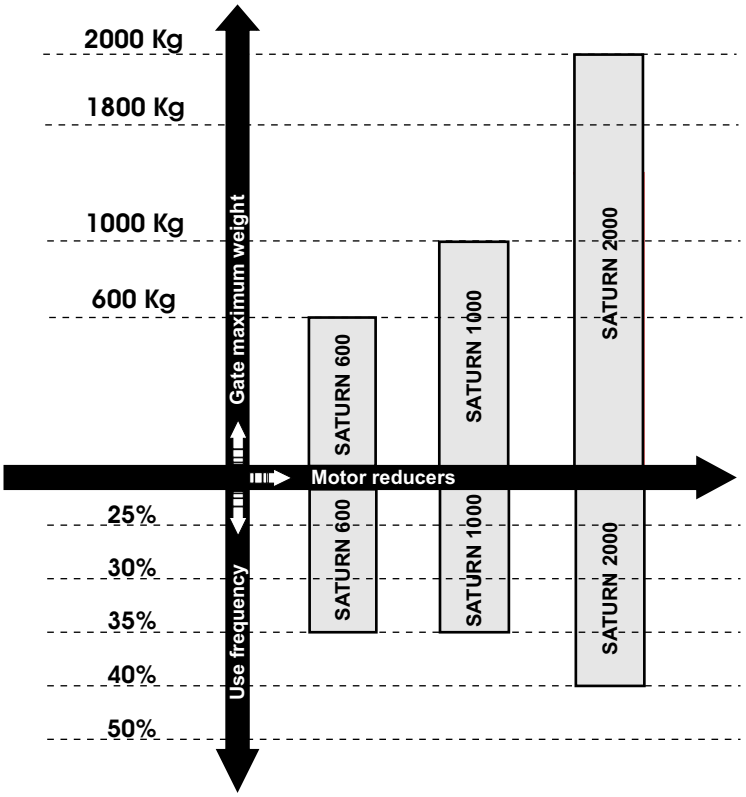
MAIN PARTS DENOMINATION

1 Adjustable foundation plate
2 Anchor bolts
3 Pinion protection
4 Adjusting screws cover
5 Pinion
6 Reducer release lever
7 Screw for mechanical clutch adjustment (only in 1000 and 2000 models)
8 Electronic unit
9 Oil filling up cap
10 Magnetic encoder

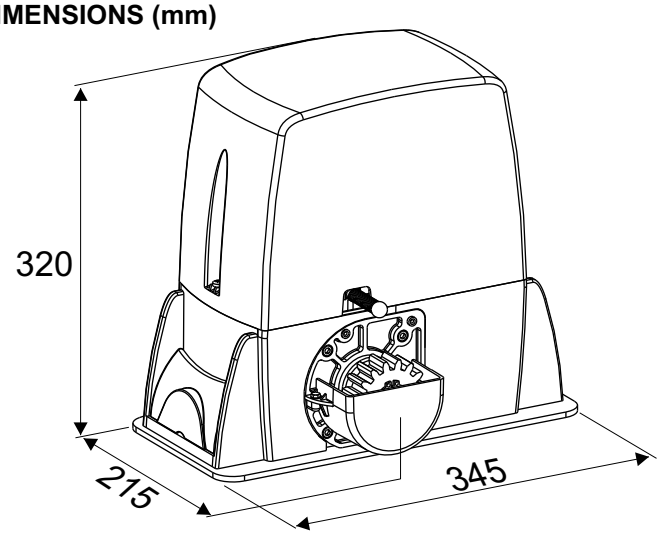


TECHNICAL DATA	600	1000	2000
Power supply	230 V (±5%) 50/60 Hz		
Power	330W	550W	750W
Absorbed current	1,6 A	2,6 A	3,0 A
Motor capacitor	16 uf	12,5 uf	25 uf
Working frequency	35%	35%	30%
Working Temperature	-20°C +55°C		
Thermoprotection	150°C		
Weight	12 Kg	13 Kg	14,5 Kg
Anticrushing clutch	Electronic	Electronic/Mechanical	
Protection degree	IP55		
Pinion Z16 (Z20) speed	9,5 (11) m/min		
Maximum torque	30 Nm	55 Nm	70 Nm
Gate maximum weight	600 Kg	1000 Kg	2000 Kg
Mechanical clutch	no	with or without	yes
Inductive or mechanical limit switch			

SATURN MOTOR REDUCER USING GRAPHIC



DIMENSIONS (mm)



1. GATE ARRANGEMENT

Before starting with the installation check if all the gate parts (fixed and mobile) have a strong and as less as possible deformable structure, also make sure that :
a) The leaf is rigid and compact;
b) The inferior slideway is perfectly straight, horizontal and without any obstacles which could obstruct the gate sliding;
c) The inferior sliding wheels are equipped with greasable or water tightened bearings;
d) The superior slideway has been produced and placed so that the gate is in a perfect vertical position;
e) Mechanical stops of the leaf are always installed in order to avoid possible derailment of it.

2. FOUNDATION PLATE ANCHORAGE

To install the foundation plate it is necessary to:

2.1. Prepare a concret basement with the dimensions shown in Fig. 1 where the foundation plate and the anchor bolts will be concreted.

NOTE: It is recommended, gate structure permitting, to lift the foundation plate about 50mm from the ground, in order to avoid eventual water stagnation (Fig.1)

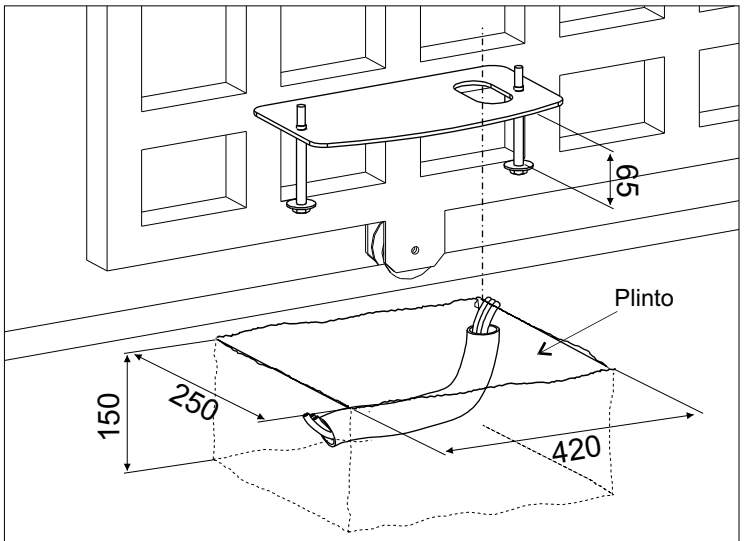


Fig. 1

2.2. Before concreting in the plate insert a flexible plastic duct Ø 35 mm minimum) into the special hole of the plate.

2.3. Before concreting in the plate, make sure that it is perfelcty leveled and that the distance of 50-55mm as shown in Fig. 2 is respected.

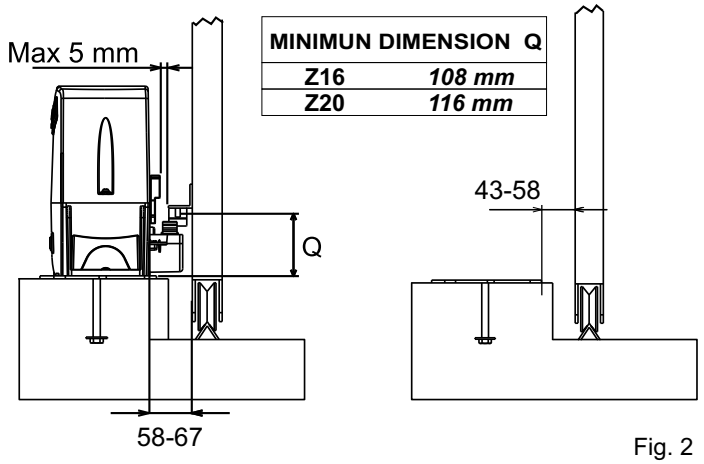


Fig. 2

3. CABLES PASSAGE ARRANGEMENT

Saturn is provided with two different holes for electric cables passage.
It's very important to make the high - tension (230Vac) cables pass through one hole and the low - tension cables (24Vdc) through the other one (Fig. 3)

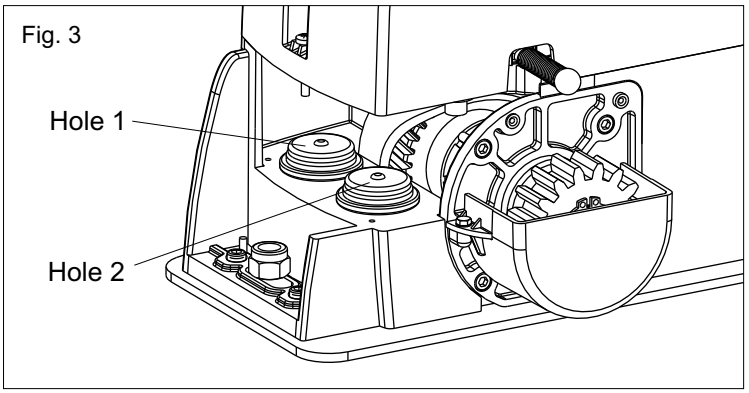


Fig. 3

4. FITTING OF THE MOTOR REDUCER

4.1. Insert the 4 grains into the special holes, so that it is possible to adjust the motor reducer height on the plate (Fig. 4).

4.2. Fix the motor reducer to the foundation plate with the 2 included nuts, adjusting the side position (Fig. 5) so to respect the shown quota in (Fig. 2).

4.3. Remove the closing loading oil cap (red) and substitute it with that supplied apart provided with the airhole (black).

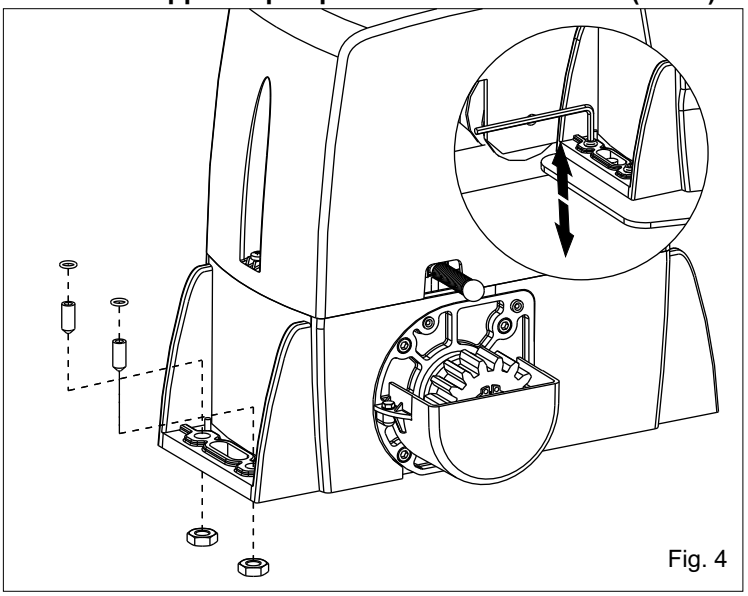


Fig. 4

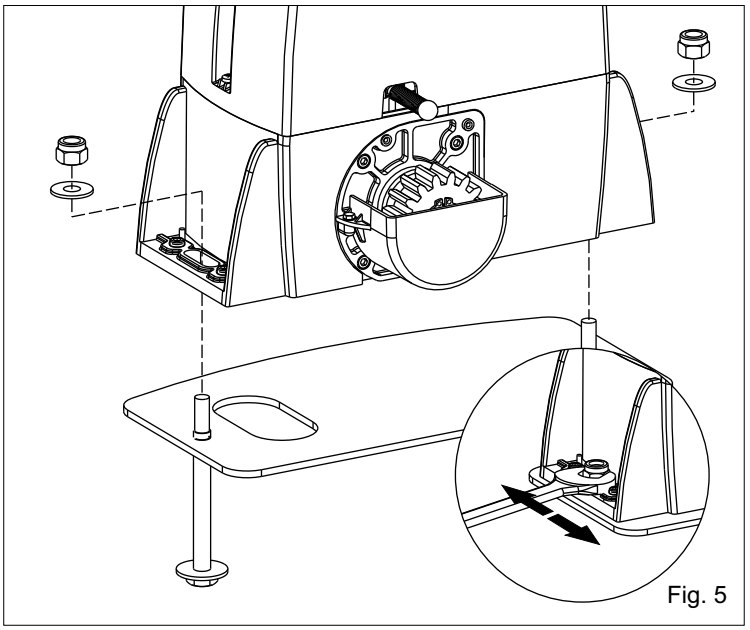


Fig. 5

5. RELEASE SYSTEM

5.1. In order to release do as follows:

-Open the lock cover, insert the key and rotate it 90° clockwise (Fig. 6).

- Pull the release lever until it stops, about 90° approximately (Fig. 7).

Note: when you pull the release lever, the electronic control unit receives a stop impulse thanks to a micro-switch placed inside.

5.2. In order to relock do as follows:

- Push the release lever to complete closing.
- Rotate the key counter-clockwise and extract it.
- Close the protective lock cover.

Once the lock has been restored the electronic control unit reactivates

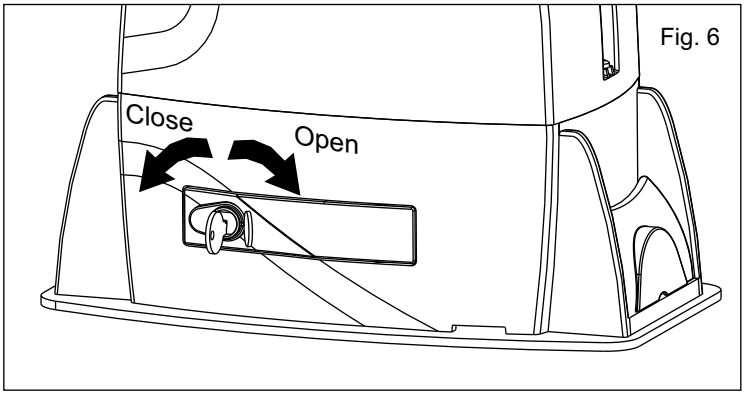


Fig. 6

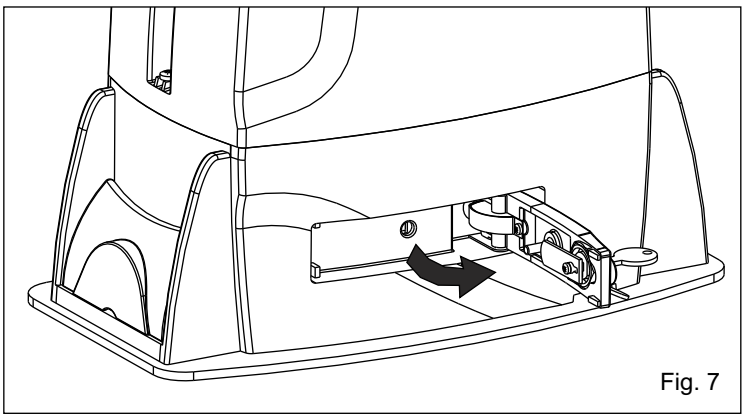


Fig. 7

6. GEAR RACK MOUNTING

6.1. Release the motor reducer and take the leaf to complete opening;

6.2. Fix to each gear rack element the support pawls using the appropriate lock screws, taking care to place them in the upper part of the hole (Fig. 8) ;

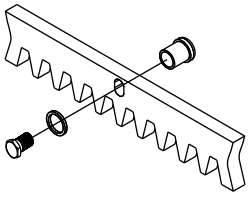


Fig. 8

6.3. Lean the gear rack element on the toothed pinion of the motor so that it results parallel to the ground slideway of the gate, place it as shown in Fig. 9 and electrically weld the central pawl B to the gate structure (Fig. 10).

Manually move the gate until pawl C is placed in correspondence to the pinion, now fix it with electric welding. Repeat the same procedure for pawl A after having placed it in correspondence to the pinion;

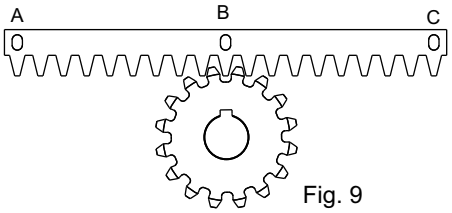


Fig. 9

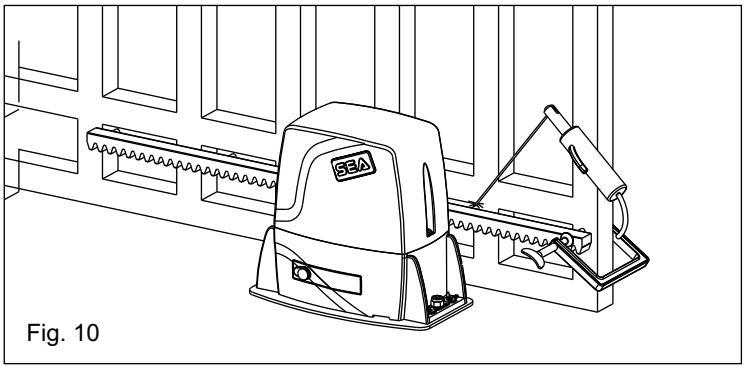


Fig. 10

6.4. Make sure that all the gear rack elements are perfectly aligned and placed correctly (teeth in phase). It's suggested to place two aligned elements infront of a third one as shown in Fig.11;

6.5. Repeat the above described operation for all the remaining gear rack elements which have to be installed;

6.6. To avoid that the door weights down on the pinion (Fig.12) lift up the whole rack about 1,5 mm.
Warning: Keep a gap of about 0,5 mm between pinion tooth and gear rack tooth;

6.7. Make sure that the gear rack works at the center of the pinion along all rack elements, if necessary, adjust the distance pieces length.

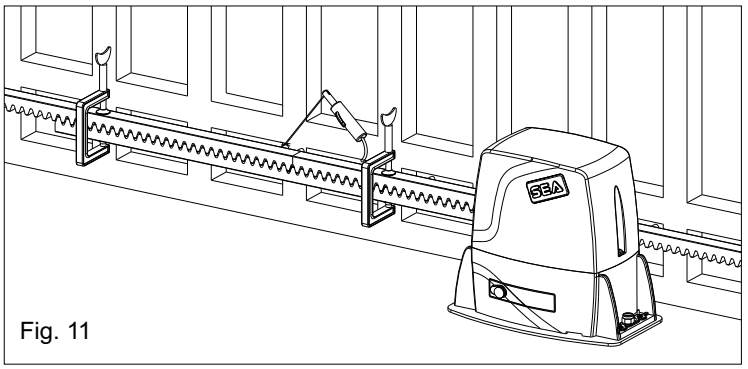


Fig. 11

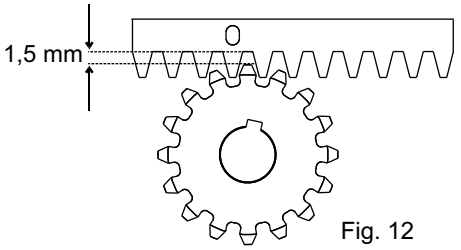


Fig. 12

7. LIMIT SWITCH ADJUSTMENT

7.1. In order to install and adjust the limit switch in opening, follow the below mentioned instructions (Fig. 13):
- Take the gate to complete opening,
- Place the small plate on the gear rack so that the limit switch is (small lever in case of mechanical limit switch (Fig. 14); small pointers placed on the upper part in case of inductive limit switch (Fig. 15)) in corrispondence of pointX which is placed 50 mm from the folded side of the small plate (fig. 16) and fix it with the delivered screws (Fig. 17).

7.2. In order to install and adjust the limit switch in closing, follow the below mentioned instructions (Fig. 13):
- Take the gate to complete closing
- Place the small plate on the gear rack so that the limit switch is in corrispondence of pointX which is placed 50 mm from the folded side of the small plate (fig. 16) and fix it with the delivered screws (Fig. 17).

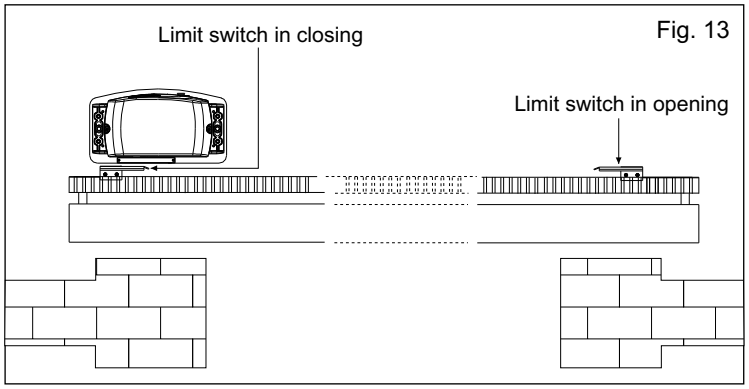


Fig. 13

Mechanical limit switch

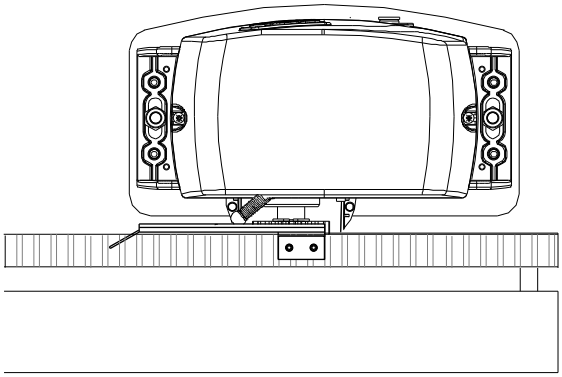


Fig. 14

Inductive limit switch

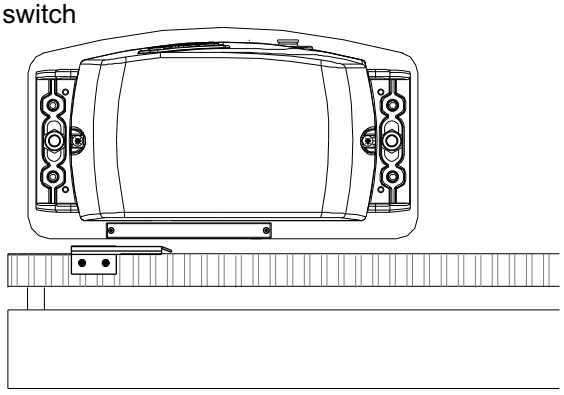


Fig. 15

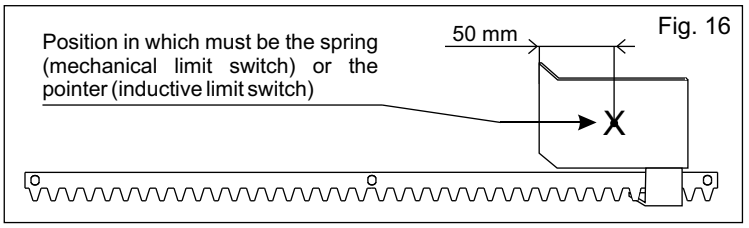


Fig. 16

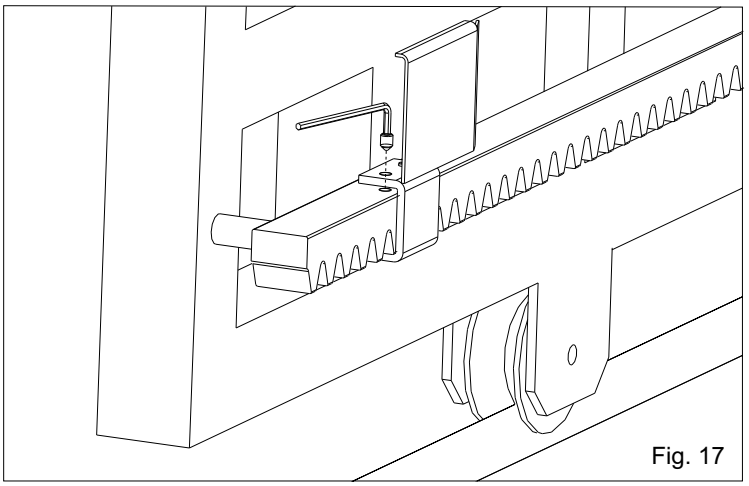


Fig. 17

Adjusting the trimmer for braking, placed on the electronic control unit, it is possible to make the gate stop on the desired position.

8. GROUNDING (Fig. 18)

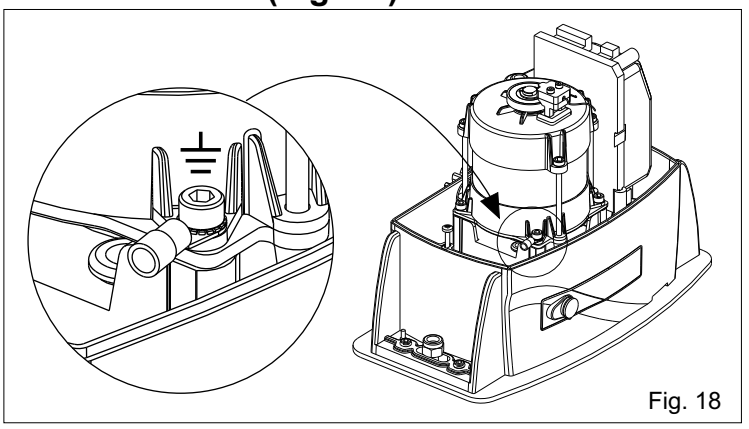


Fig. 18

9. CLUTCH ADJUSTMENT *(Saturn 1000 and 2000)*

9.1. Switch off electric power.

9.2. In order to adjust the clutch it is necessary to:

- Act on the scrub screw "A" (Fig. 19) as follows:
- Turning clockwise = less clutch sensibility / more thrust force
-Counter clockwise = more clutch sensibility / less thrust force
.

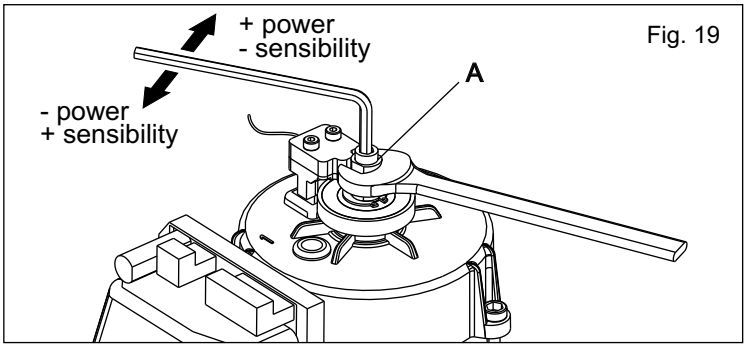
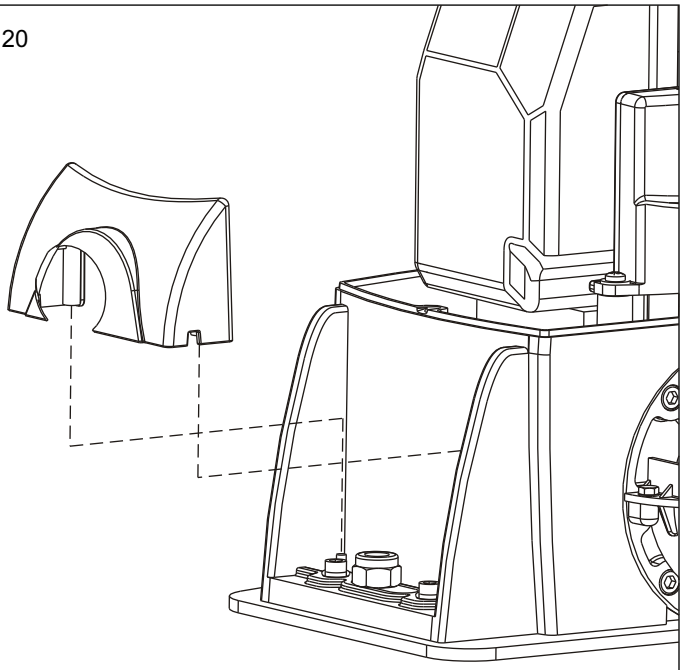


Fig. 19

10. SCREW COVER MOUNTING

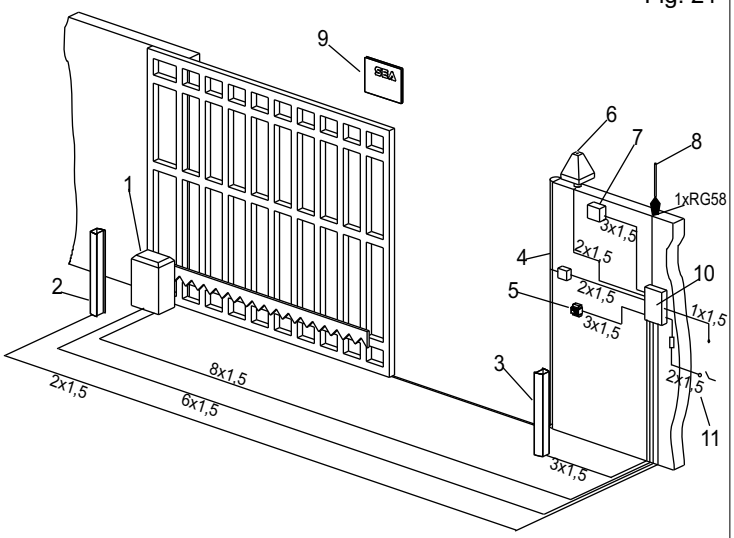
At the end of the mechanical installation and after having executed all the required adjustments, mount the two screw covers on the operator as shown in Fig. 20.

Fig. 20



11. ELECTRIC CONNECTIONS OF THE INSTALLATION (Fig. 21)

Fig. 21

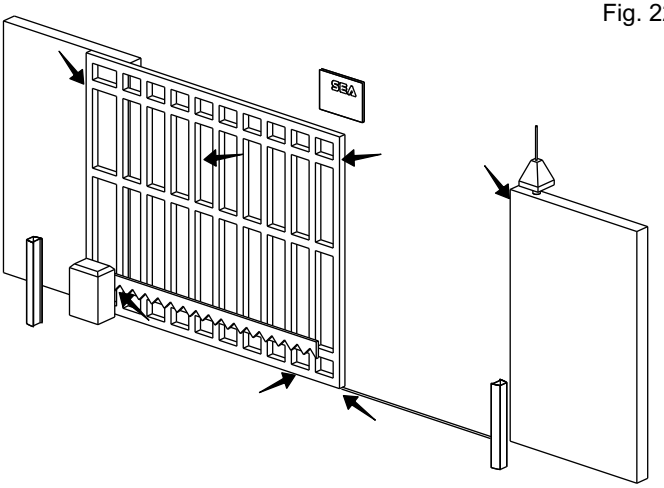


1) Saturn
2) photocell Sx
3) photocell Dx
4) Mechanical safety edge
5) Key push botton
6) Flasher
7) Receiver
8) Antenna
9) Warning notice
10) Junction box
11) Differential 16A - 30mA

12. RISK EXAMINATION

The points pointed by arrows in Fig. 22 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 the installation has been made.)

Fig. 22



NOTICE

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 (according to Machine Law) will be nullified if SEA Srl 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 (D.L.46/90). This is a quotation from the GENERAL DIRECTIONS that the installer must read carefully before installing. Packaging materials such as plastic bags, foam polystyrene, nails etc must be kept out of children's reach as dangers may arise.

PERIODIC MAINTENANCE

Check the oil level (only Saturn 1000 and 2000) (Use the oil level rod)	Annual
Change oil	4 years
Check the release functionality	Annual
Check the clutch functionality (1000 and 2000)	Annual
Check the distance between pinion and gear rack (1.5 mm)	Annual
Check the usury status of pinion and gear rack	Annual
Check the fixing screws	Annual
Check the connection cables integrity	Annual
Check limit switch functionality and status in opening and closing and the related small plates	Annual

All the above described operations must be done exclusively by an authorized installer.

SEA
Sistemi elettronici
di Aperture Porte e Cancelli

CE

ENGLISH

CONFORMITY DECLARATION

SEA declares under its responsibility that the following products:

Saturn 600, Saturn 1000, Saturn 2000

meet the essential requisites provided by the following European Directive and following modifications (where applicable)::
89/392/CEE (Machine Directive)
89/336/CEE (Electromagnetic Compatibility Directive)
73/23/CEE (Low Tension Directive)

SAFETY PRECAUTIONS:
All electrical work and the choice of the operating logic 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 SATURN operator has been designed to be solely used for the automation of sliding 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.

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 CANNOT 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.