

**LEM 7
LEM 8F**

D811025 13-10-95 Vers. 01

**AUTOMATION
FOR RACK
SLIDING GATES**



This product complies with the recognised technical standards and safety regulations.

We declare that this product is in conformity with the following European Directives: 89/336/EEC and 73/23/EEC and subsequent amendments.

MOD. LEM-LEM7-LEM8F

Electromechanic reduction unit made up of:

- M - 4 pole motor with thermal circuit breaker.
- F - Clutch group between motor shaft and worm screw.
- R - Worm screw reduction unit - helical gear 1/30.
- P - Pinion with release mechanism.
- S - Reduction unit with limit switch.
- C - Removable housing.

TECHNICAL FEATURES

- Power supply: 230V + 10%, 50 Hz single phase.
- Motor power: 300 W.
- No-load absorption: 1.2 Amp.
- Number of RPM motor/pinion: 1400/47
- Sliding speed 8.5 m/min. Upon request, version with oversized pinion, speed 10.7 m/min.
- Pinion pitch: 4 mm.
- Capacity: LEM (500 kg.) - LEM7 (700 kg.)
- Weight: 15 kg.
- Number of manoeuvres in 24 h.: 100
- Protection: IP24

FOR A CORRECT INSTALLATION CAREFULLY OBSERVE THE FOLLOWING POINTS:

1) ANCHORING OF PLATE

Dig a hole for the anchoring plate (fig. 1) which must be:

- Positioned as per the dimensions of the drawing (fig. 2).
- Perfectly flat using level L.
- Positioned in such a way that the flexible sheathing G of the power supply cables go through the hole F of the plate B and lines up with the hole at the base of the reduction unit.
- Anchored to ground with concrete so that plate B foundation becomes an only body with that of lower guide I.

2) INSTALLATION OF GATE OPENER

Wait until concrete is set, place shims S (fig. 4) for the vertical adjustment of the pinion between the anchoring plate and the reduction unit then fasten the reduction unit to the base B using the 4 stud bolts P (fig. 3).

3) INSTALLATION OF THE RACK

- Release the pinion by turning clockwise the knob M (fig. 5), then mount the rack as follows.
- Weld the rack to angle bar A (fig. 6) which has the function of a shim and avoids inconveniences caused by bendings of gate.
- Rest the initial part of the rack on the toothed pinion P and weld a short stretch of the rack to the gate (fig. 7) at the point in the angle bar over the pinion: manually slide across completely and repeat the same procedure for the final part of the rack: the rack should be restintf at all times over the pinion. Weld further seams to fix the rack completely to the gate.

N.B. the gate rail must be anchored onto a very solid foundation so that the rack never rests onto the pinion.

4) POSITIONING OF PINION

After having completed the above operations remove the shims located under the base, so as to allow a 2 mm play between pinion and rack. We advise not to remove all the shims so that in case of gradual gate lowering it is possible to lower the reduction until as well.

Furthermore, horizontally adjust the pinion by moving the reduction unit along the special slots A located on the base in such a way that the pinion is in contact with the rack C along the whole length of the tooth (fig. 8).

5) MOUNTING OF LIMIT-SWITCH

Mod. C-D: Fasten the two brackets S for the closing-opening stop onto the rack using the special locking dowels G (fig. 9), positioning each of them with gate opened and gate closed in front of the lever L for the command of the microswitches (fig. 10).

Important: Make sure that the gate stop F (fig. 11) is positioned in such a way that the bracket S does not collide with the pinion.

Adjust the limit switch by moving the bracket S until you hear the microswitch click a few centimeters from the wanted stop position of the gate.

Leave a distance of abt. 50 mm between the gate and fixed stop as per current safety standards (fig. 11/a).

6) ELECTRICAL SYSTEM WIRING GENERAL DIAGRAM

- I) Main line switch with 5 Amp. fuse.
- L) Blinker.
- M) Reduction unit.

- D) Junction box.
- A) Antenna with coaxial cable.
- S) Key selector to be mounted on exterior of post.
- P) Interior push button panel, extra panels can be connected in parallel.
- FTi-FTe) Internal/external transmitting photocells to be installed at a height between 40 and 60 cm.
- Fri-FRe) Internal/external receiving photocells to be installed at a height between 40 and 60 cm.
- Pa) Pressure switch for pneumatic skirt - opening phase.
- Pc) Pressure switch for pneumatic skirt - closing phase.
- Q) Electric terminal board with built-in radio receiver to be installed in a protected area.

N.B.: Wire gauge and number of wires are indicated on the drw (fig. 12), increase section for lengths more than 100 mt.

- All the metal masses of the equipment housings and the automatisms must be grounded.
- The photocells and the pressure switches must be connected in series with contacts normally closed.

CONNECTION TO TERMINAL BOARD (fig. 13)

- 1) Motor common wire (blue).
- 2) Motor and capacitor start.
- 3) Motor and capacitor start.
- 4) Common wire limit switch.
- 5) Opening-closing limit switch N.C.
- 6) Opening-closing limit switch N.C.
- 7) Motor grounding (slot connected to motor stay-bolt).

"SIGMA" Models

The SIGMA type LEM7 - LEM8 model (fig. 14) are supplied with motor, capacitor, limit switch and radioreceiver already connected to the built-in control unit C and 2 transmitters on equipment. Just connect to power supply and it is ready to work. The electric system is completed connecting the safety devices and the manual control elements.

"ENCO" Model

The ENCO model (fig. 14/a) has an electronic anti-squashing clutch controlled by and encoder device (E). It is exclusively supplied with the ORION/PEGASO control unit incorporated. Two transmitters and a receiver are included.

7) ADJUSTMENT OF THE SAFETY CLUTCH

Loading of clutch:

keep the motor shaft A still with the special spanner on supplied and tighten the nut D located on top of the loading spring (fig. 15).

Release of the clutch:

carry out the same operation as above but turn the nut D counterclockwise.

Make sure the operating force is not too low, so as to avoid useless stops of the gate due to deposits on the rail. However it is important to observe the anti-squash safety limits regulations.

8) EMERGENCY MANOEUVRES

To carry out the manual manoeuvre of the gate in case of emergency, insert the key knob M in the lock cylinder C and rotate it clockwise (fig. 16), in this manner the pinion runs idle and the gate movement is freed.

9) FAULTY OPERATION OF THE SYSTEM

Check if the reduction unit is energized after giving the open-close command. If it is energized, connect the motor to the mains following the diagram (fig. 17).

- M = Motor.
- C = Capacitor.
- D = Deviator.
- Cm = Common wire motor.

- Make sure that switching the circuit breaker D from position 1 to position 2 inverts the running direction of the motor. If it doesn't, this means the connection of the common wire is incorrect or the motor winding is faulty.

- If the limit switches don't work, make sure the contacts are normally open or closed depending on the control unit applied (fig. 18). If this isn't the cause, invert all the connection wires to the control unit except the common limit switch one. Should the photocells invert the gate movement during the opening phase instead of the closing phase, invert the two motor wires.

ELECTRICAL ACCESSORIES MALFUNCTIONS

The electrical accessories that can cause incorrect functioning are the following:

- PHOTOELECTRIC CELLS. When these devices are broken or they are not properly aligned the system will malfunction.
- PNEUMATIC SKIRT. The system will not function when this device is broken or for the effect of a sudden leap in temperature the internal pressure of the skirt varies such as to control the pneumatic relay.
- RADIORECEIVER. When this device is broken or the transmitters' batteries are dead and the code is not exactly the same as that of the transmitter, the system will operate only with the manual control.

- PUSHBUTTON. The system will not function when this device is broken, because of water seepage in the key operated switch for example, or if the normally open and normally closed contact are inverted.

To single out which of the above listed accessories is faulty, disconnect each single accessory until finding the accessory that, while disconnected, allows the correct functioning of the unit. If all the electrical accessories are found to function correctly search for the failure in the control unit, in which case ensure that the «open» and «close» relays release after the command impulse, if the contrary occurs change the internal timer card.

WARNING

The good operation of the operator is guaranteed only if the following rules are observed:

- Observe the maximum load of the gate indicated in the table, bearing in mind that the weights indicated are valid for gates that slide on a perfectly horizontal surface without friction and that can also be moved manually.
- The number of daily openings must not be more that 100.

The company is not liable for damages caused by the disregard of the above mentioned rules.

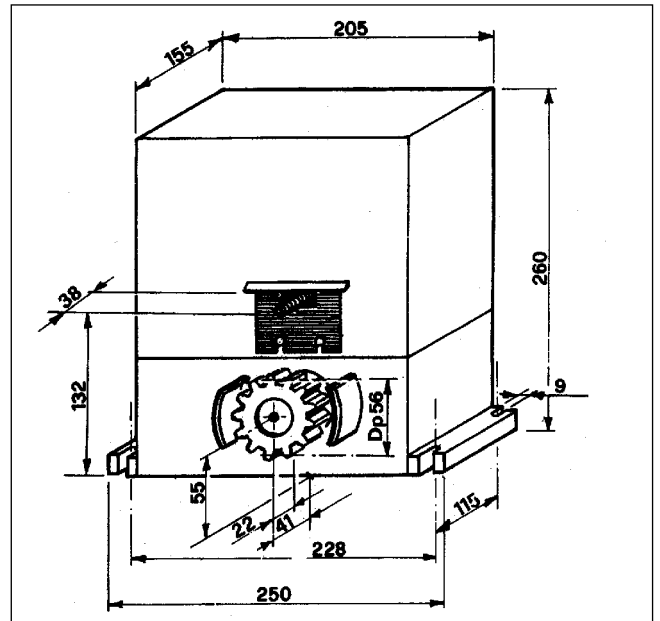
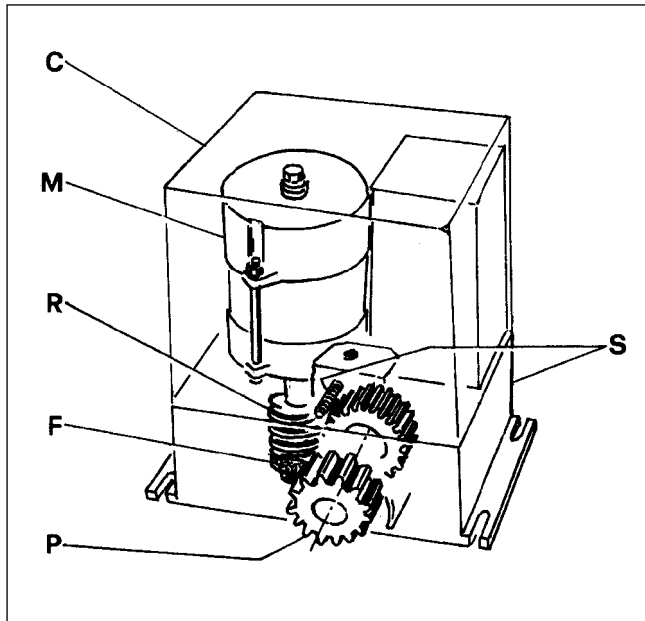


Fig. 1

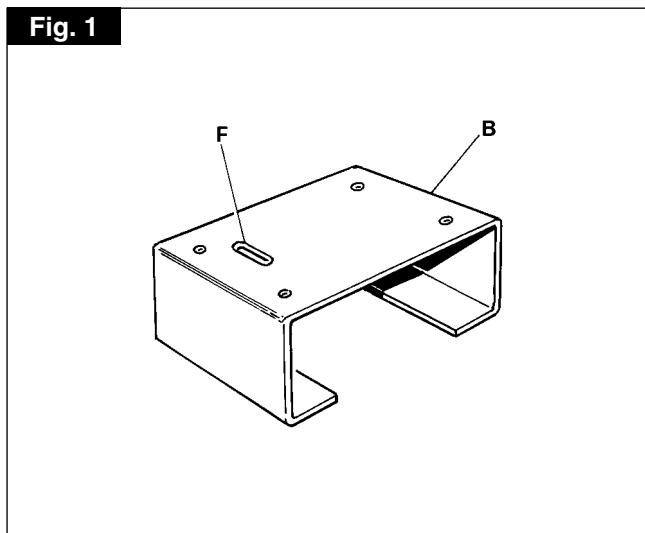
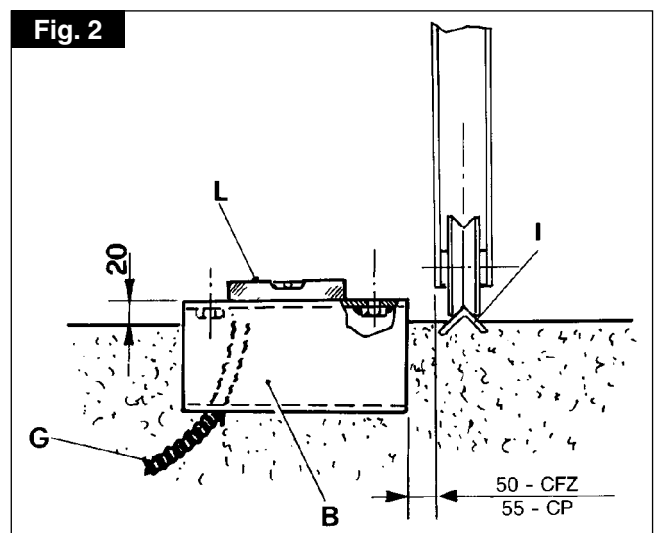


Fig. 2



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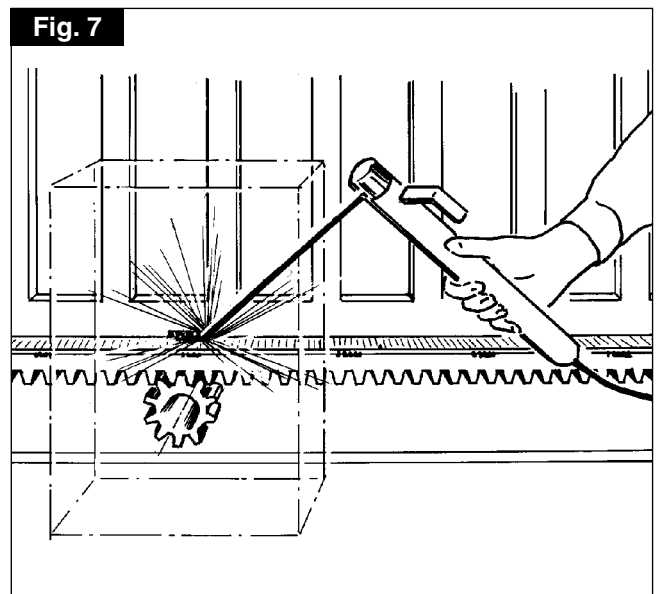
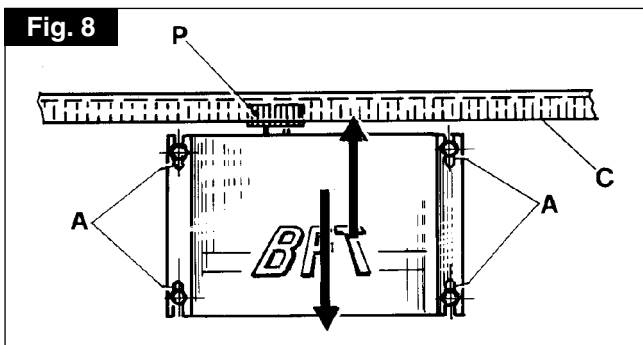
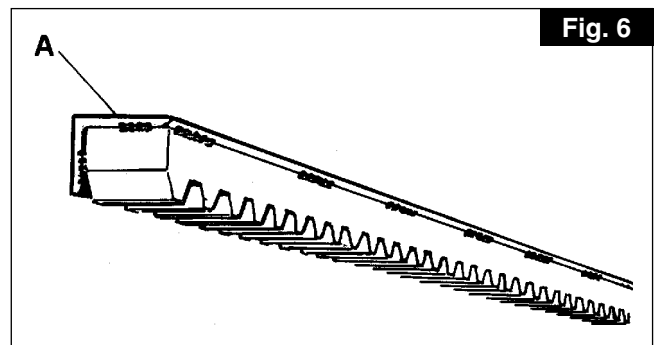
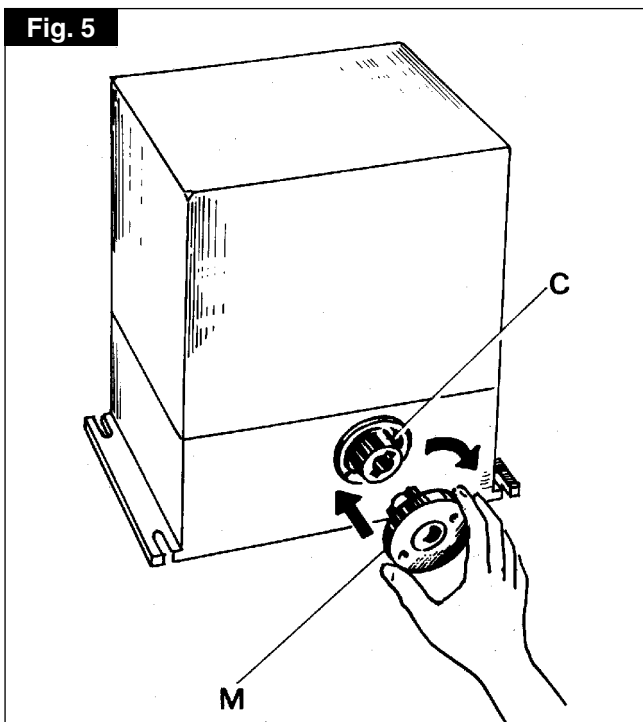
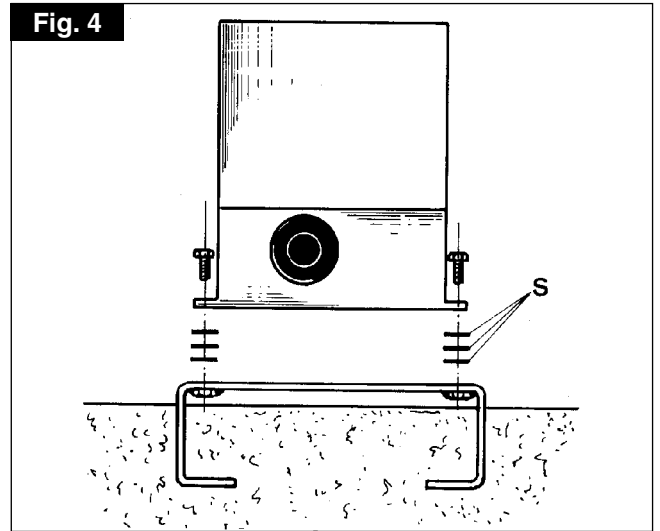
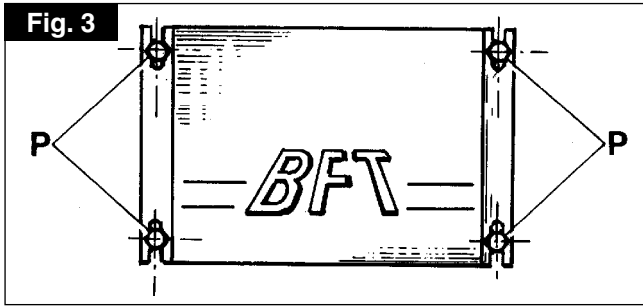


Fig. 9

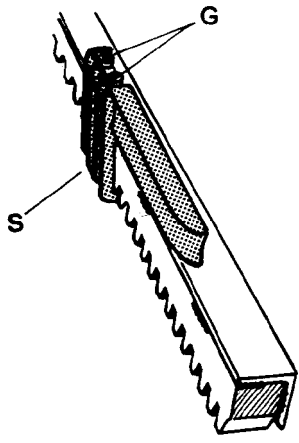


Fig. 10

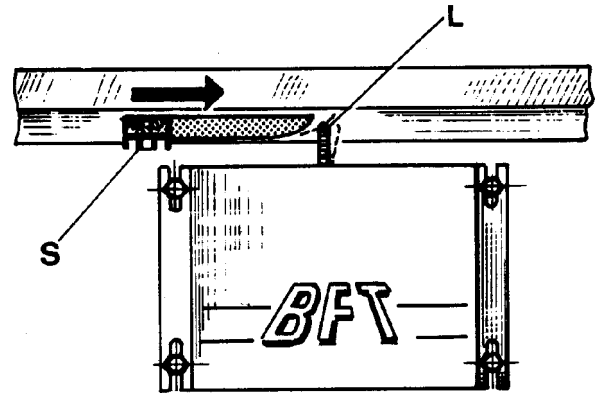


Fig. 11

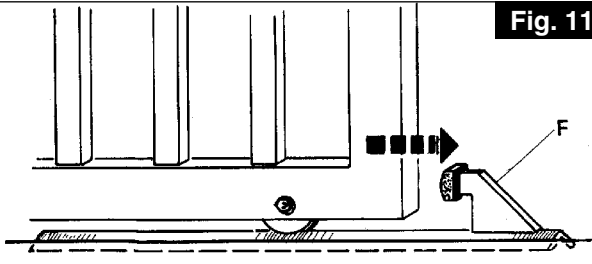


Fig. 11a

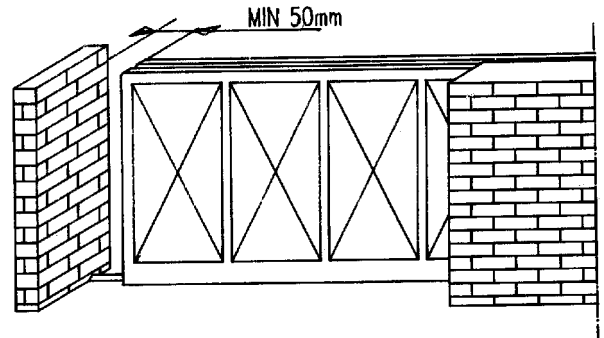


Fig. 12

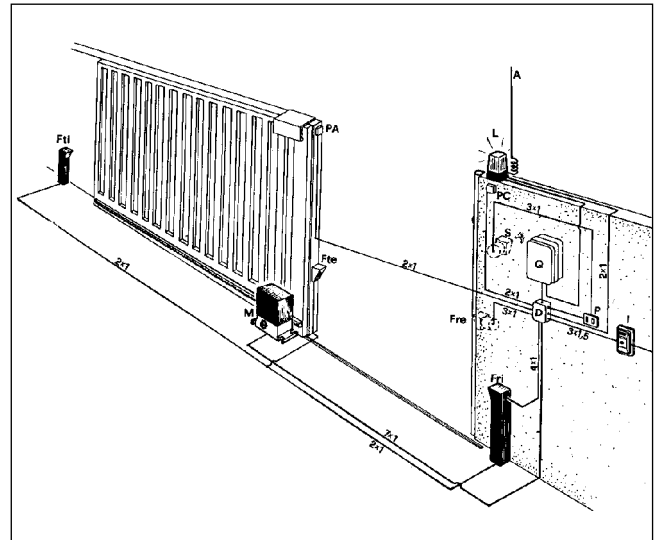
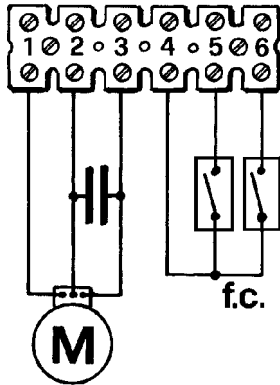


Fig. 13

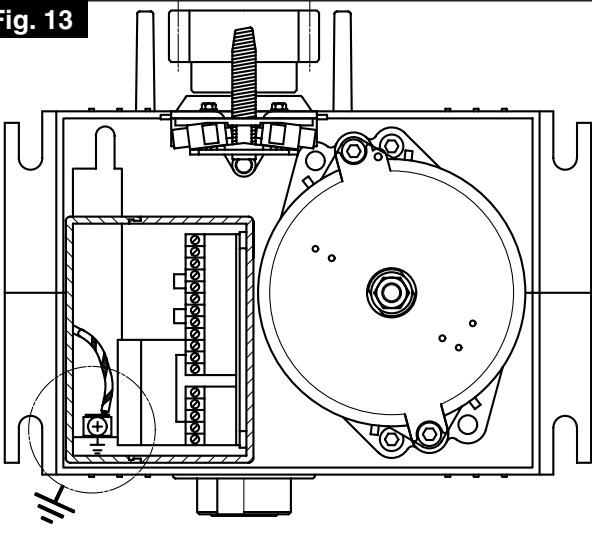


Fig. 14

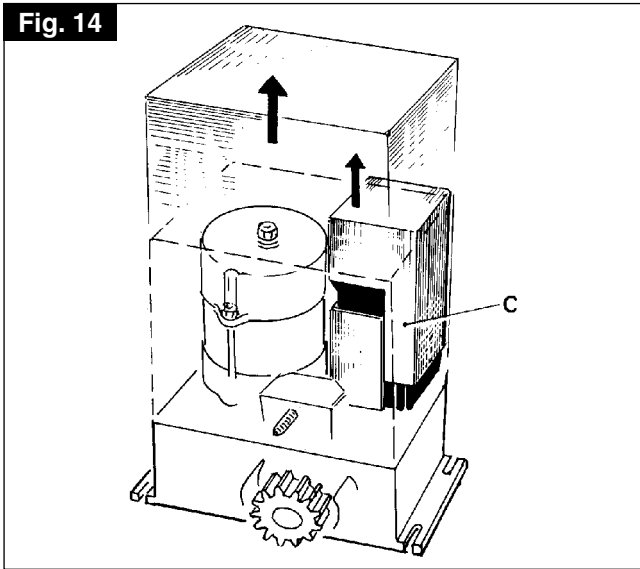


Fig. 14/a

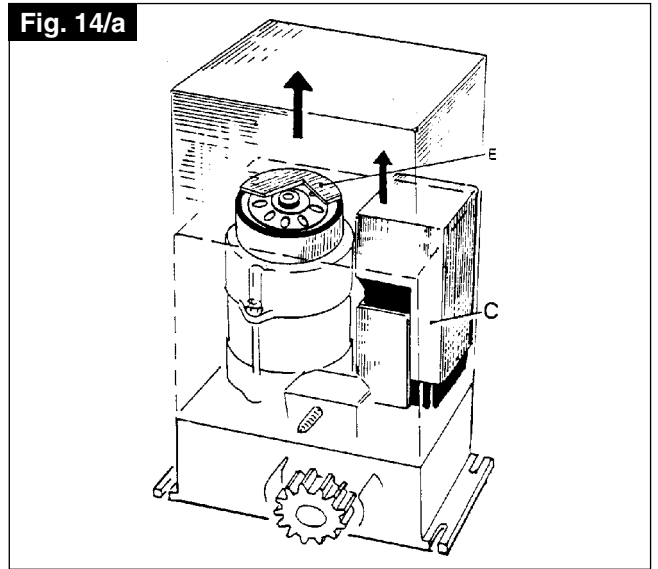


Fig. 15

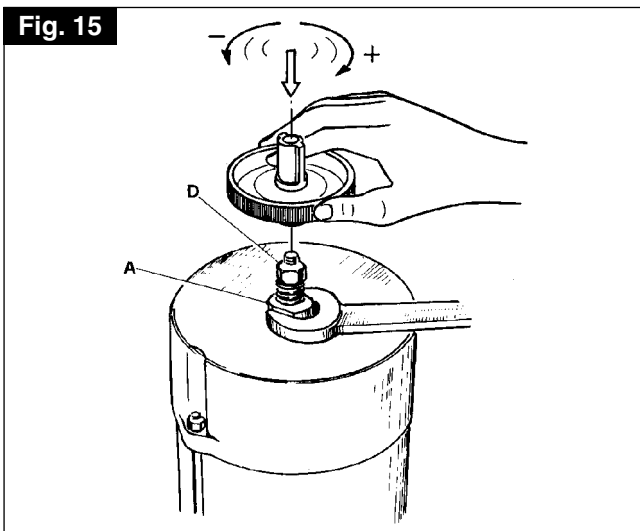


Fig. 16

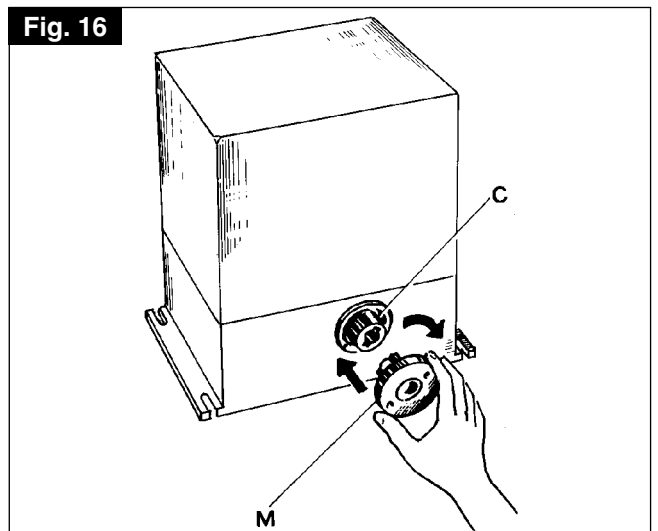


Fig. 17

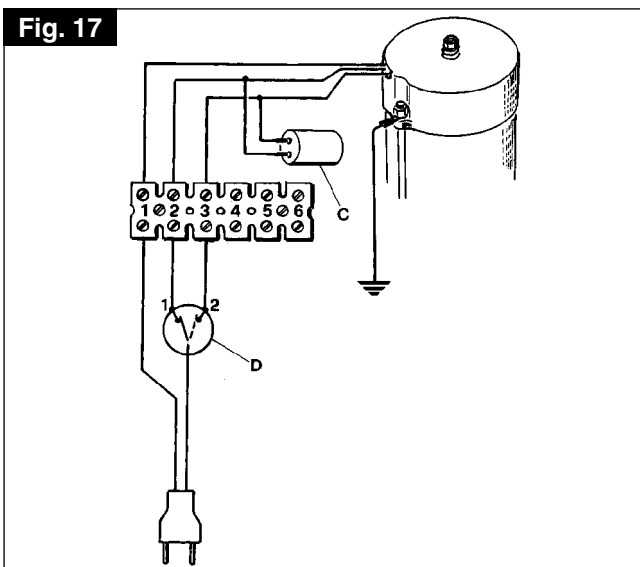


Fig. 18

