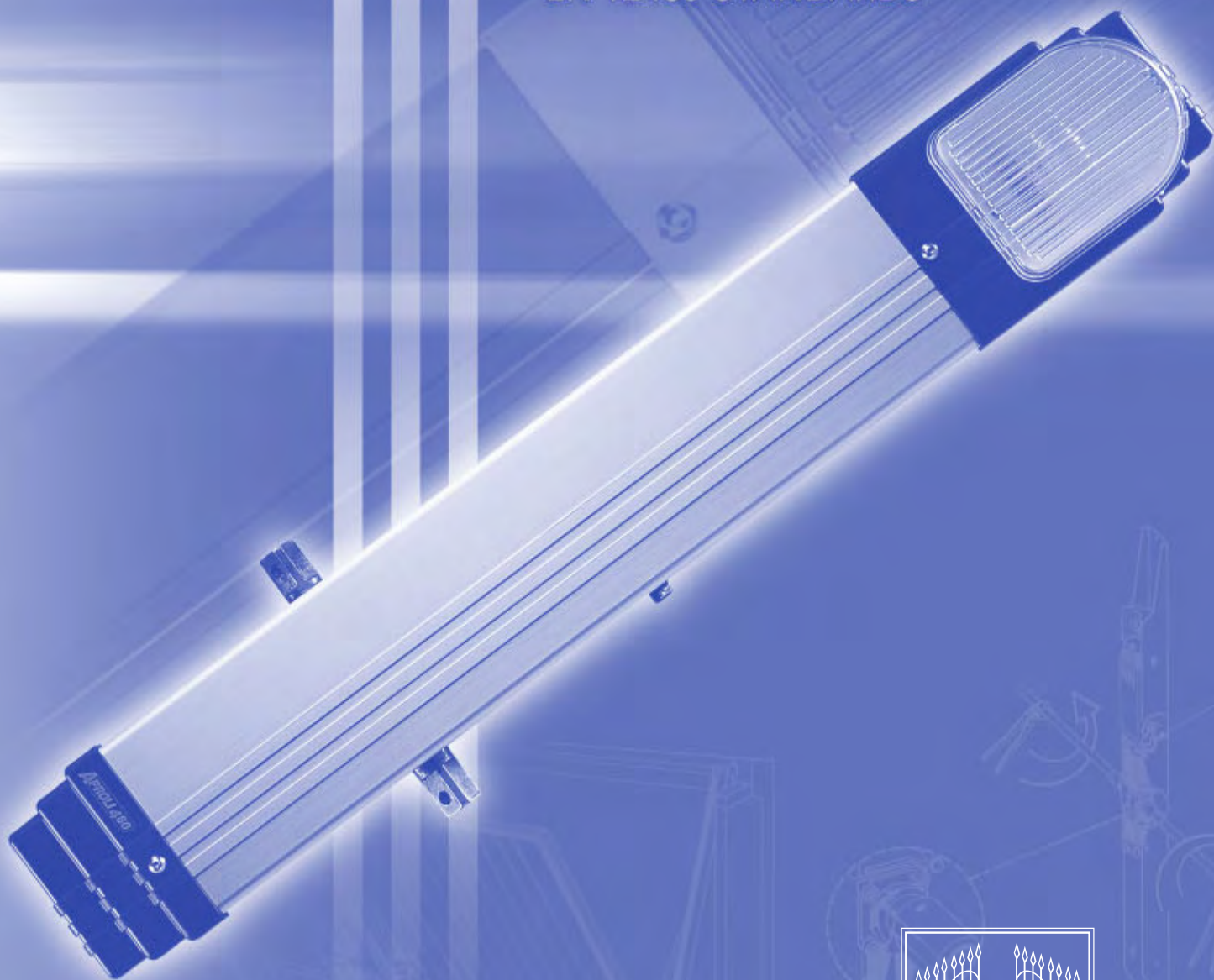
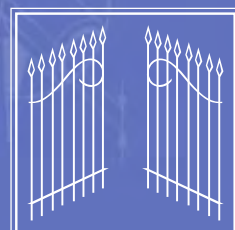


APPROLI 480

- OIL-HYDRAULIC OPERATOR FOR GARAGE DOORS WITH COUNTERWEIGHTS
- IN CONFORMITY WITH EN 12445, EN 12453 STANDARDS



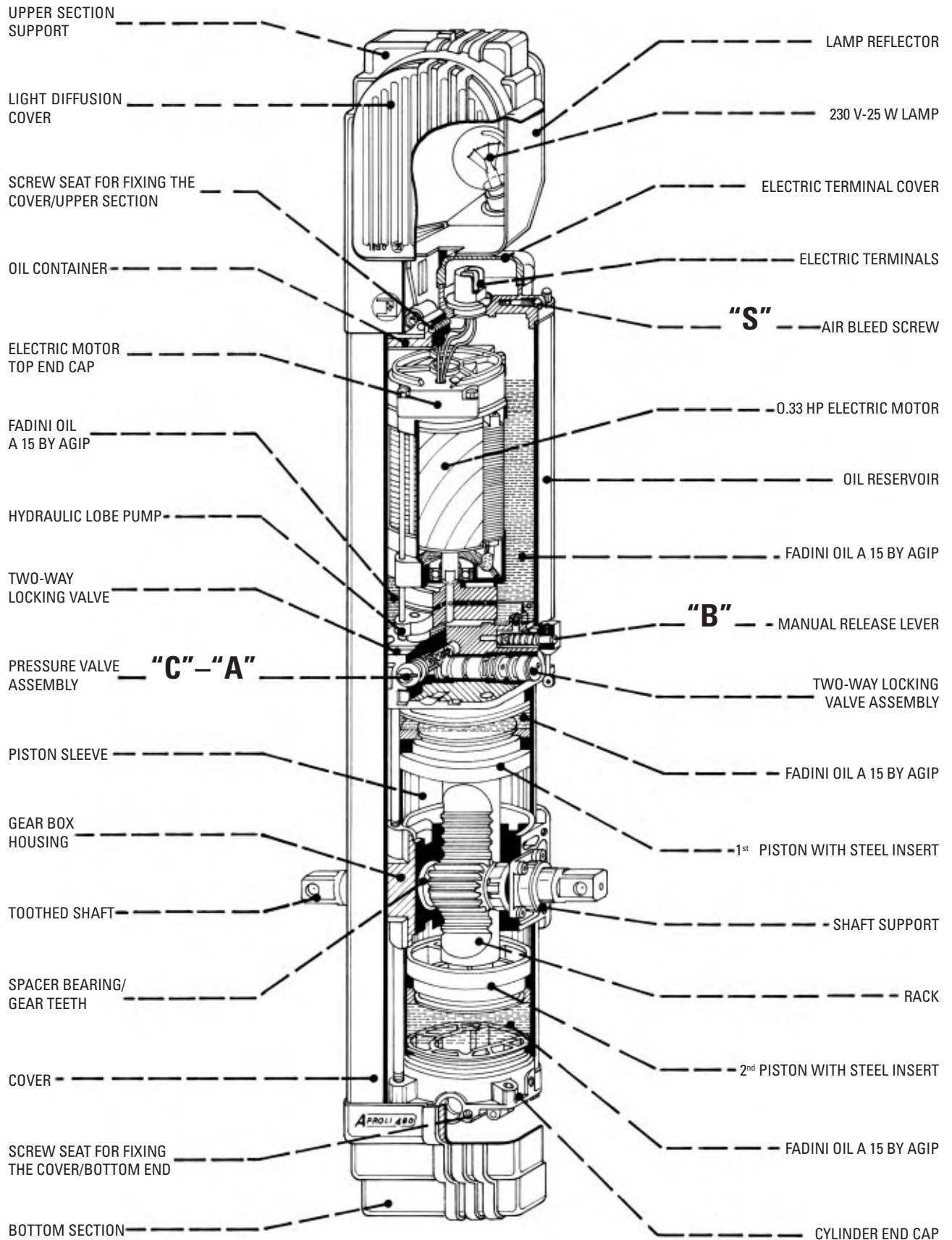
INSTALLATION MANUAL



FADINI[®]
the gate opener

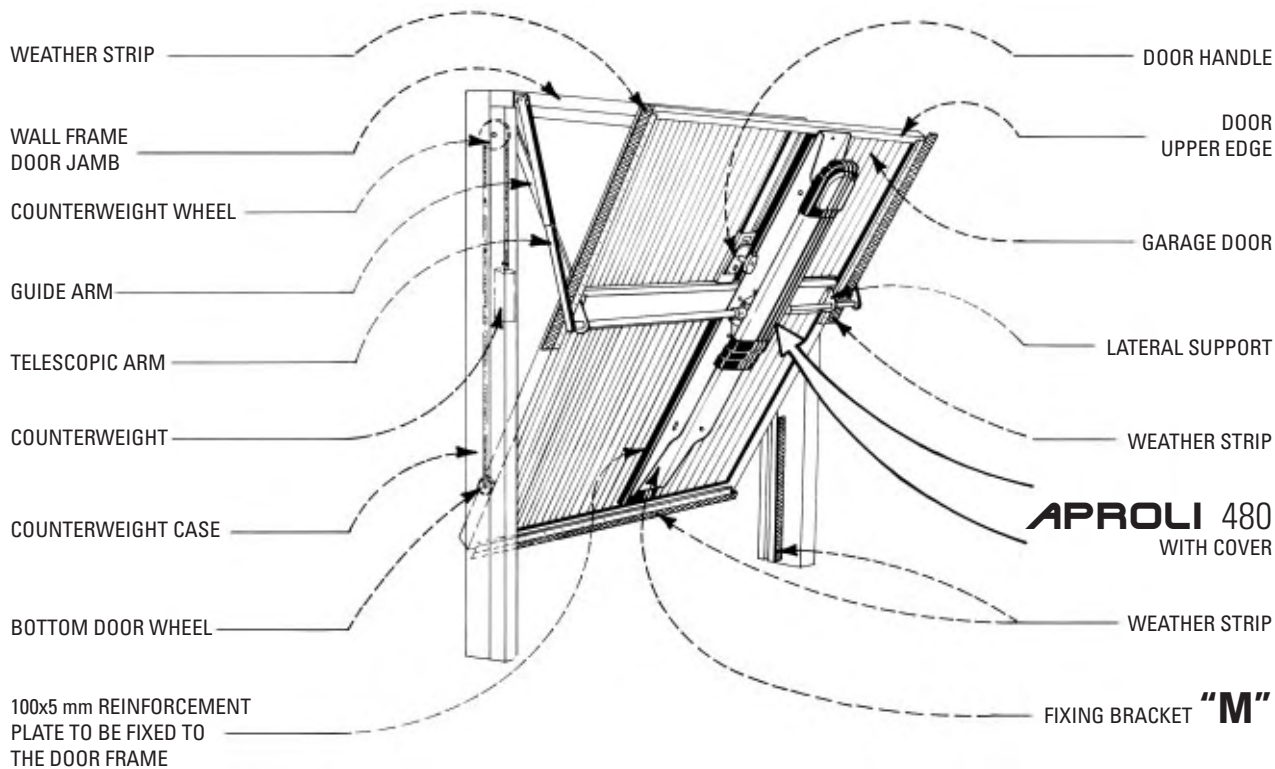
APROLI 480 OIL-HYDRAULIC OPERATOR FOR GARAGE DOORS

SECTION VIEW OF THE OIL-HYDRAULIC OPERATOR WITH LAMP AND COVER



➤ **PIC. 1**

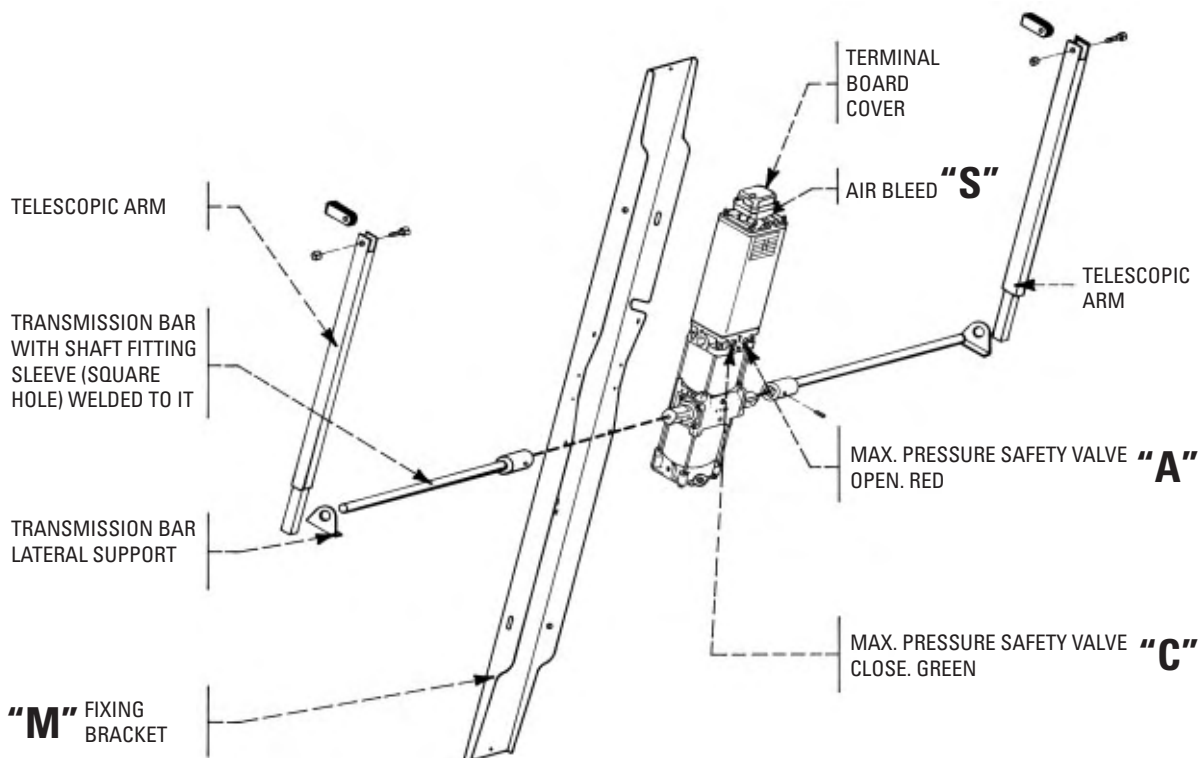
INSTRUCTIONS FOR THE INSTALLATION OF APROLI 480 TO A GARAGE DOOR WITH COUNTERWEIGHTS



PIC. 2

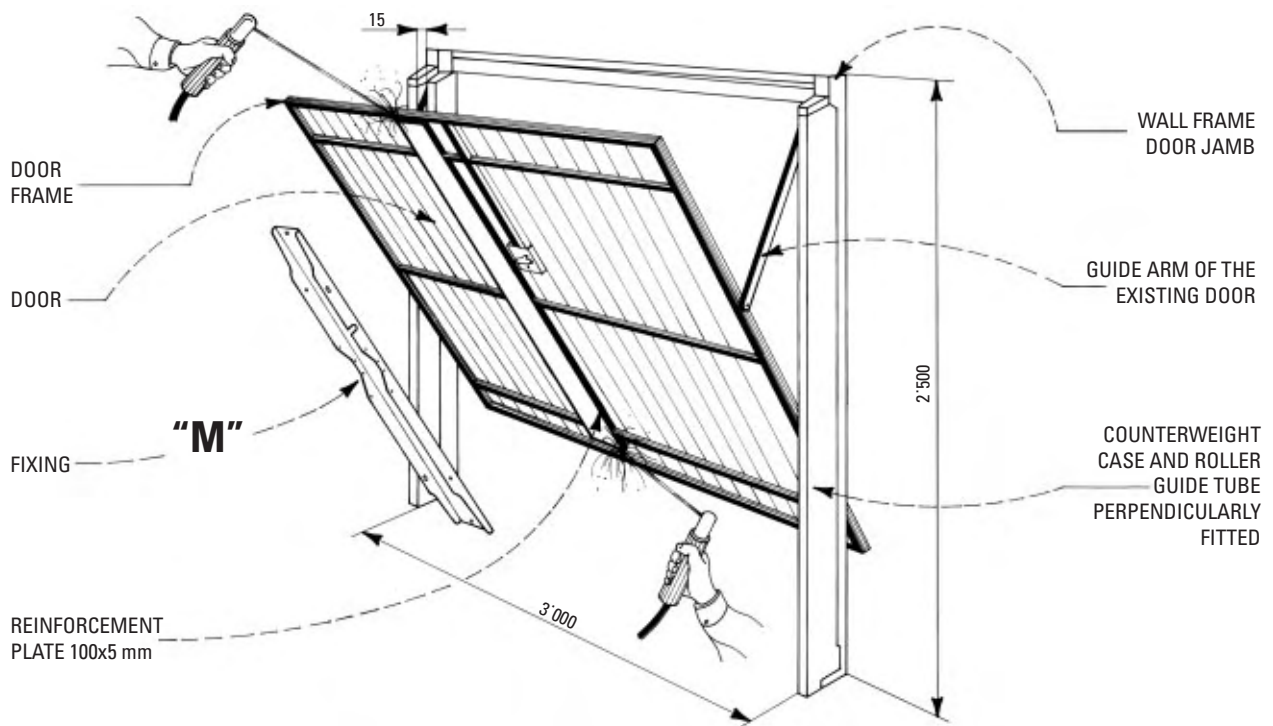
No change to the existing door is required for the installation of this operator. Automatic or semi-automatic operations. Hand operation can be made possible by releasing the system through the lever "B" both from inside or outside the building. (Pic.1)

ESSENTIAL COMPONENTS FOR THE APPLICATION OF THE OPERATOR ON TO A GARAGE DOOR HAVING COUNTERWEIGHT (PIC.3)



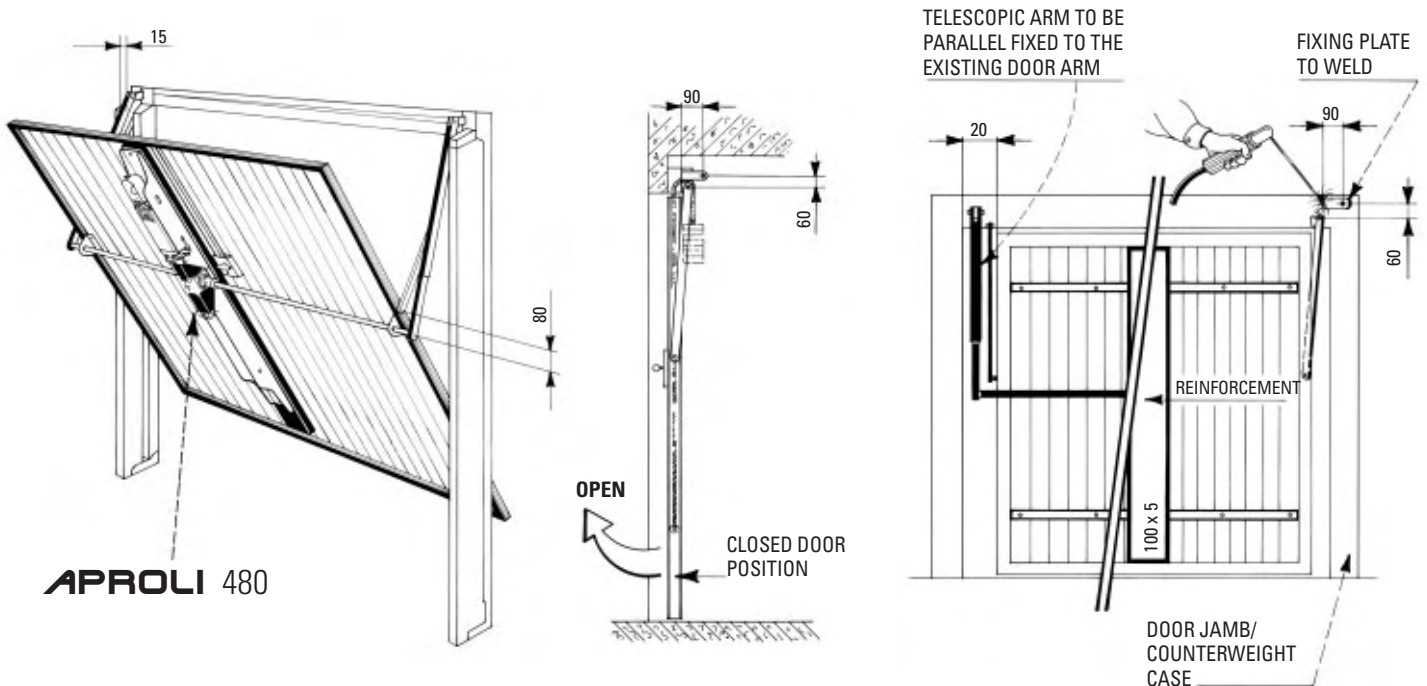
PIC. 3

It is recommended to follow the drawings in this manual to install APROLI 480 on to garage doors in order to automate them. The operator is designed for the installation in the centre of the existing door by means of a bracket "M" that is fixed to the door with screws. Pic.4



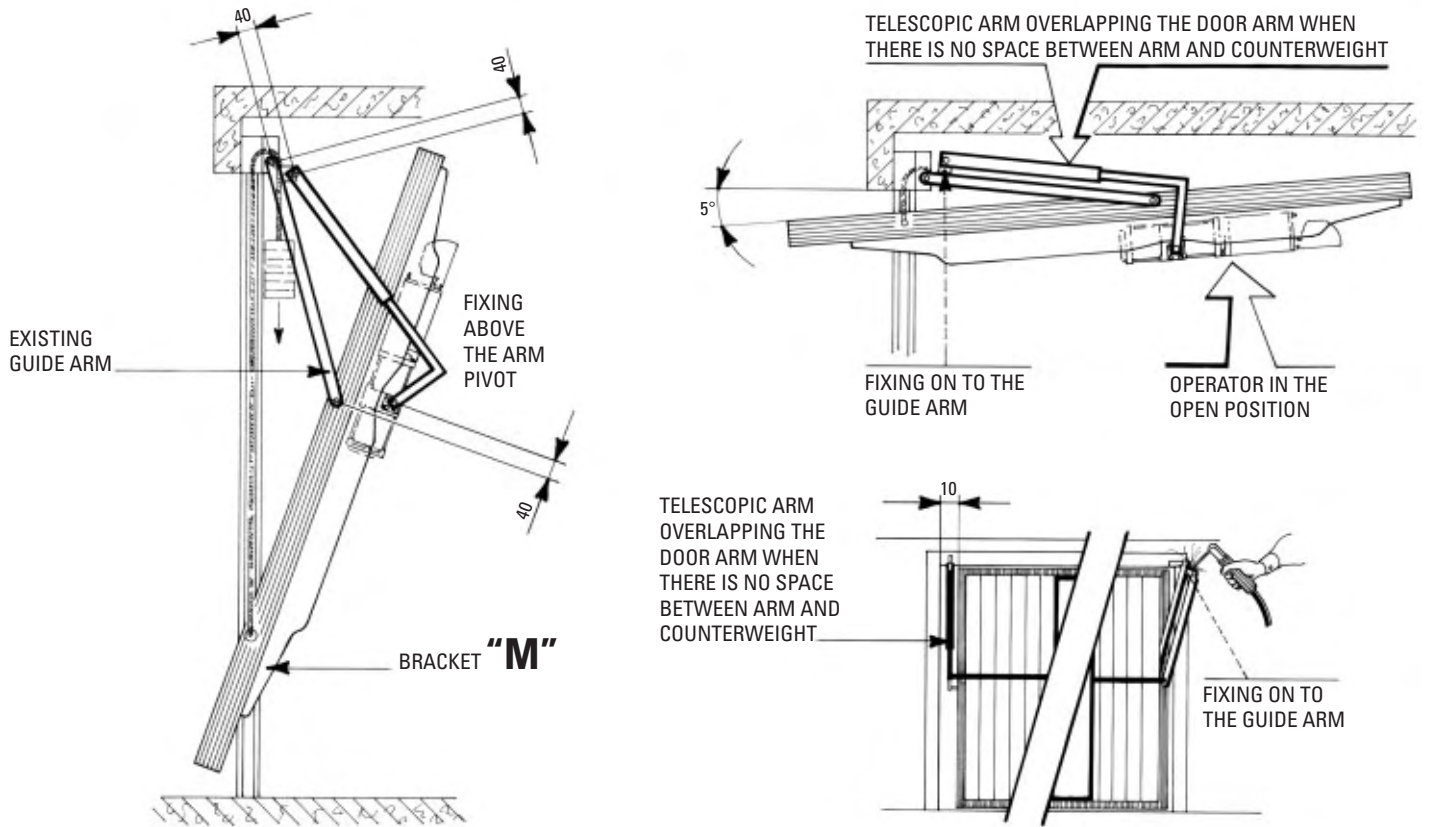
PIC. 4

Should the upper and lower fixing ends of the bracket "M" not coincide with the upper and lower edges of the door, it is recommended to rivet, screw or spot weld an iron reinforcement plate (100 mm - 5 mm thickness) vertically across the door so to connect the top and bottom edges of the door as shown in pic. 4



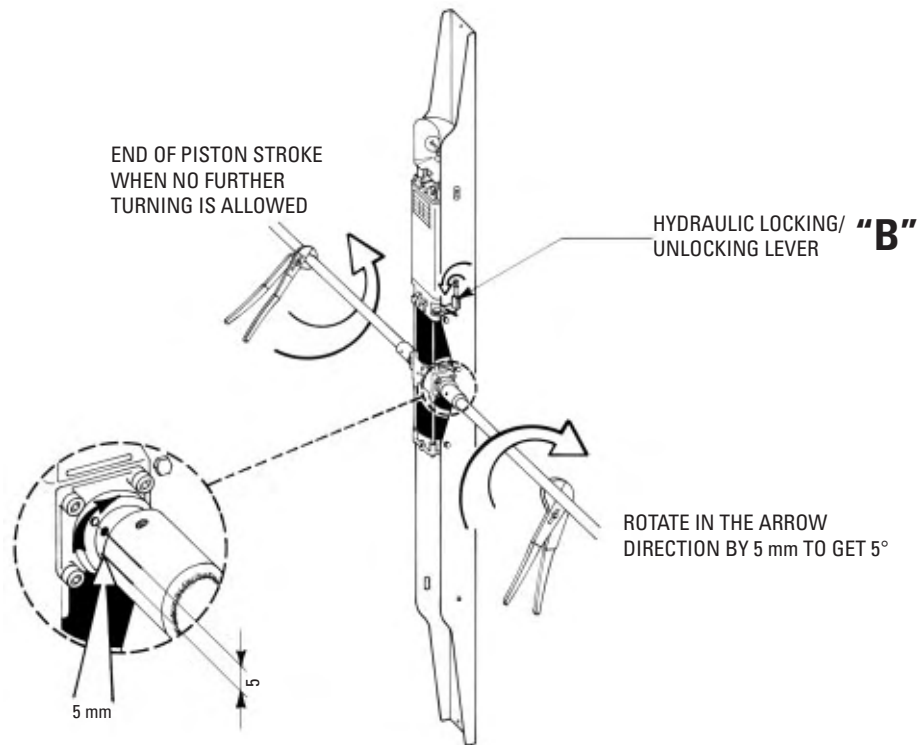
PIC. 5

Once the bracket "M" has been fixed, it is to be determined whether the telescopic arms are to overlap the existing door arms or be fixed parallel to them. See pic. 5 and 6. Then proceed to weld the fixing plates as indicated by the distances in pic.5



PIC. 6

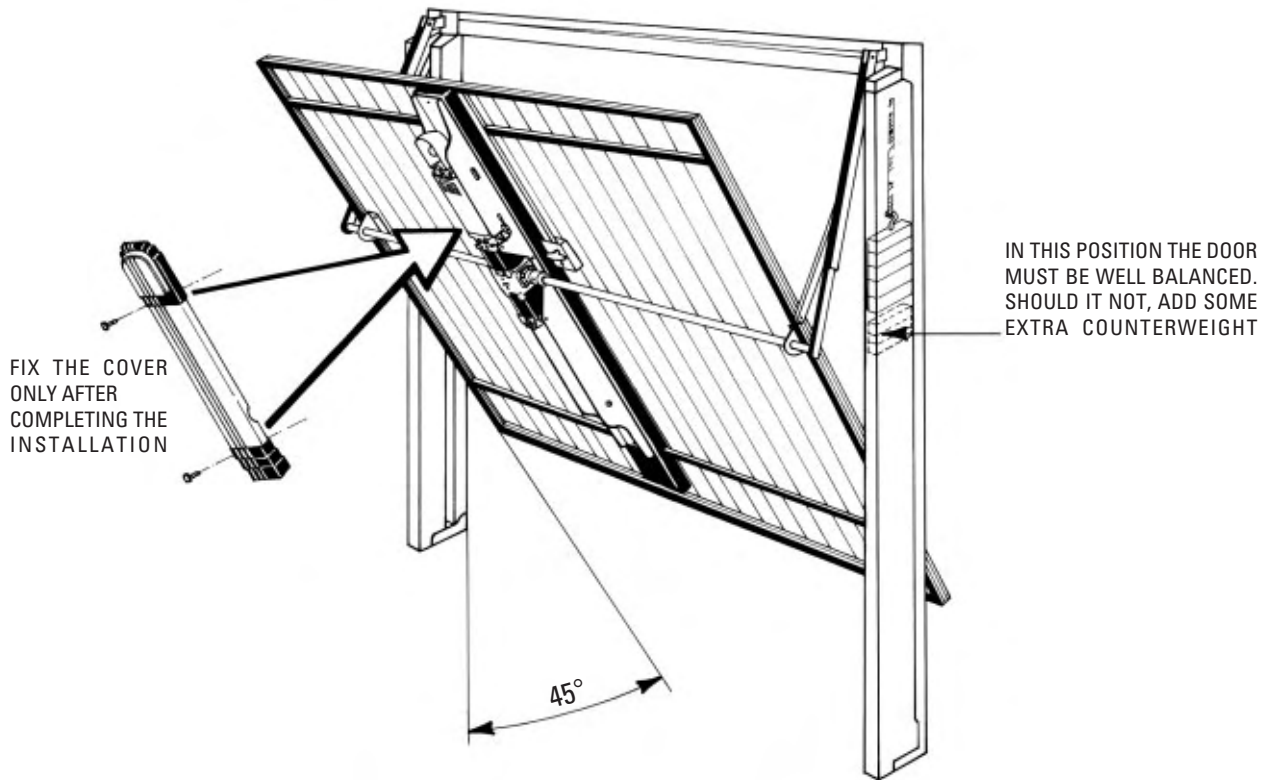
Once the bracket and the operator have been fixed to the door, proceed to temporarily fix the two telescopic arms to the torsion shaft, considering that the shaft must be allowed to rotate 5 degrees less than the end of the permitted stroke, as further explained in pic.7



PIC. 7

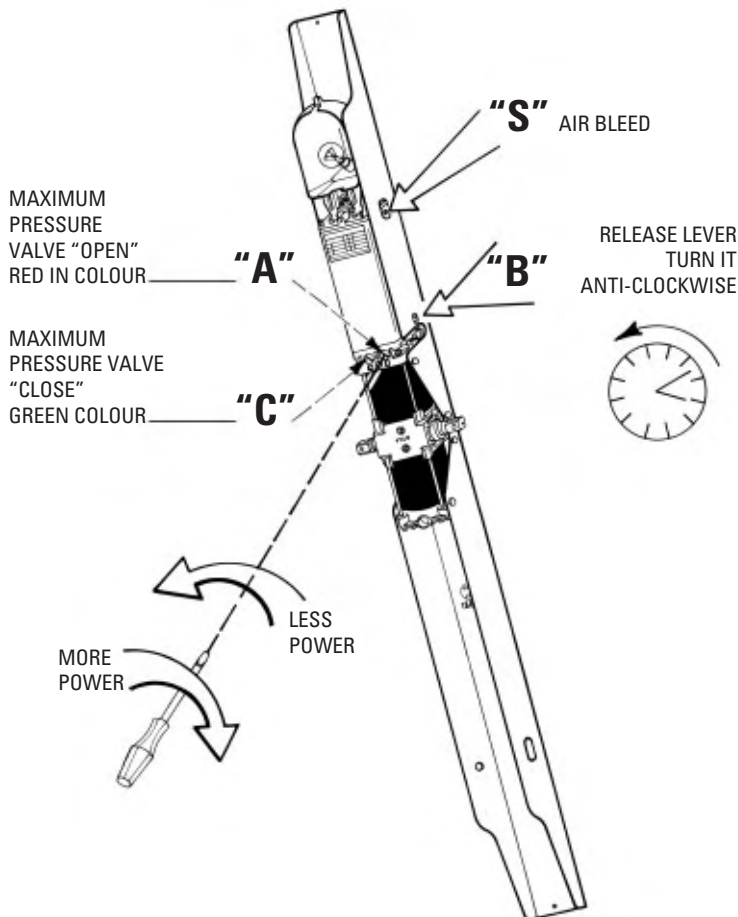
Rotate the shaft to the end of the permitted stroke by means of pliers. Then rotate the shaft back by 5 mm. This allows more power to the operator when it is required to close the door. Pic. 7. Please note the door must be in closed position when this operation is done.

Once satisfied that the installation is correct and smooth, remove the two torsion bars and the sliding bars in order to firmly fix them by welding all around. Pic.9



PIC. 10 <

A good test to verify how well balanced the door is in both directions, ie. lifting and lowering, is to position it 45 degrees from ground level, as shown in picture 10. Add counterweight to improve running smoothness and balance if required.

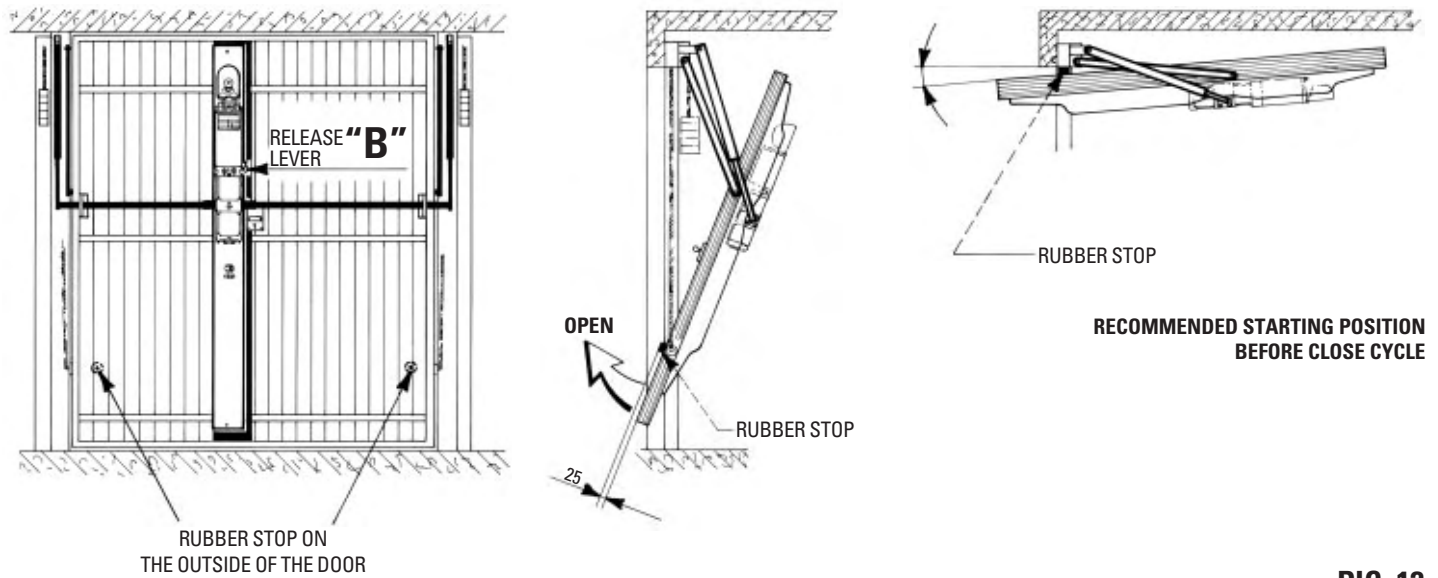


The two safety pressure valves are identified by colours: «A» Open is red; «C» close is green. They are located in the front of the motor/pump unit, easy to reach for setting operations in order to meet the power requirements. Pic.11

Once the valves are set, you can fit the cover and the other accessories. Pic.10

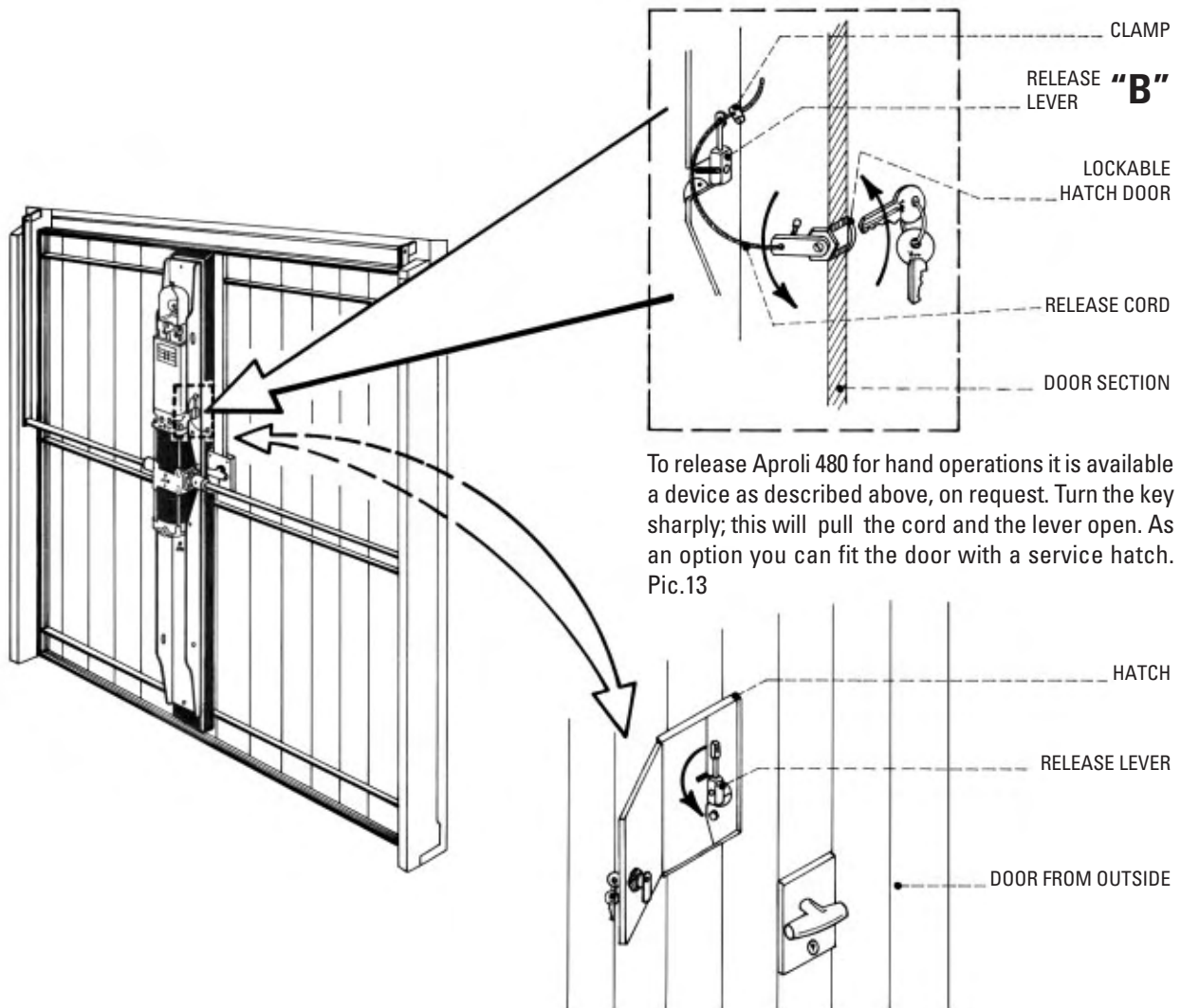
The setting of the safety pressure valves is to be done so to achieve the exact amount of power required to safely operate the door. The more you turn the screw clockwise, the more you increase the power of the operator.

> **PIC. 11**



PIC. 12 <

The highest power is required to start the close cycle. Therefore it is recommended to fit rubber stops to the door. This will cushion the door at the end of the up stroke and will keep the door inclined by 5 degrees for a better start. See Pic.12.

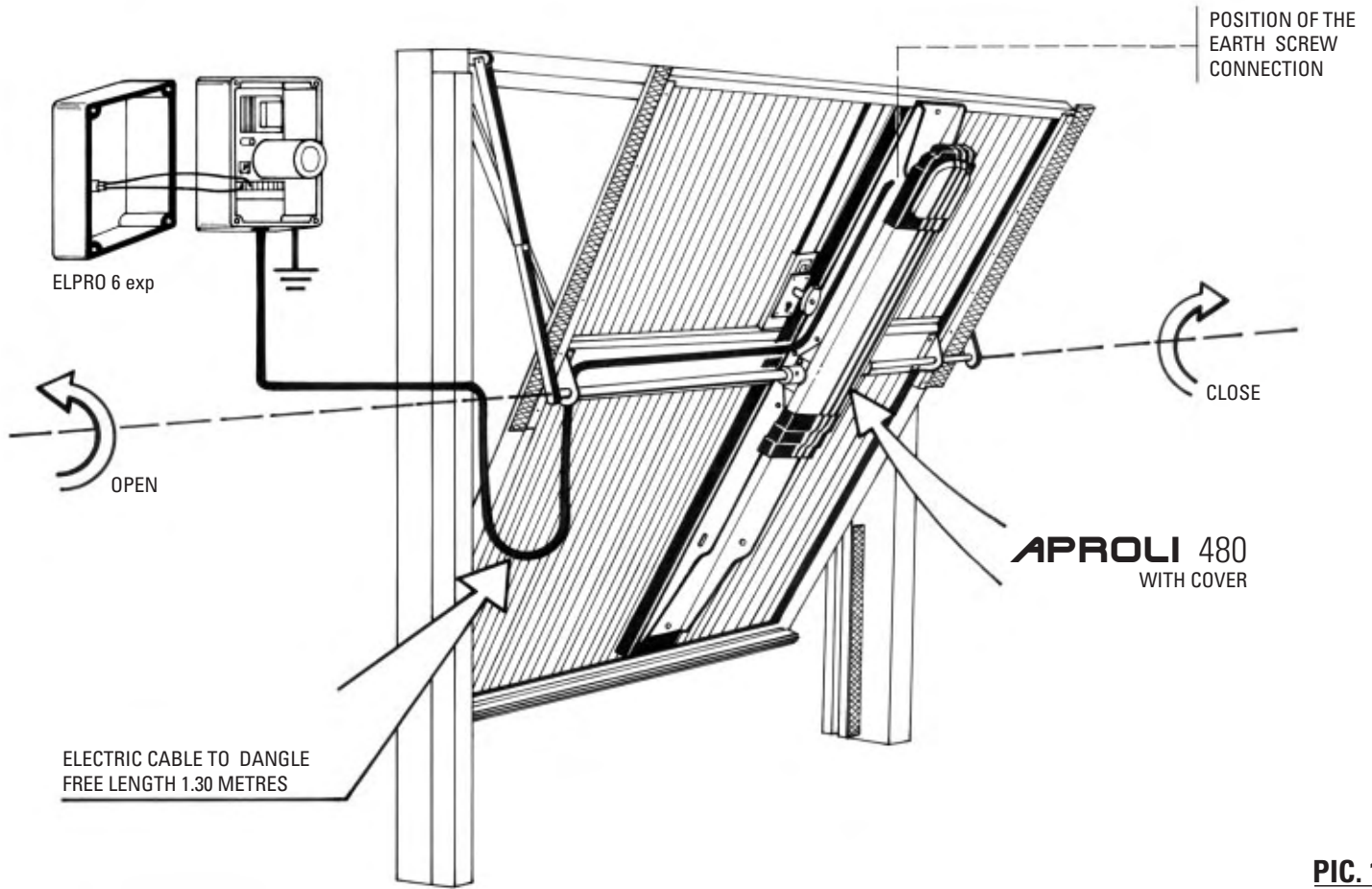


To release Aproli 480 for hand operations it is available a device as described above, on request. Turn the key sharply; this will pull the cord and the lever open. As an option you can fit the door with a service hatch. Pic.13

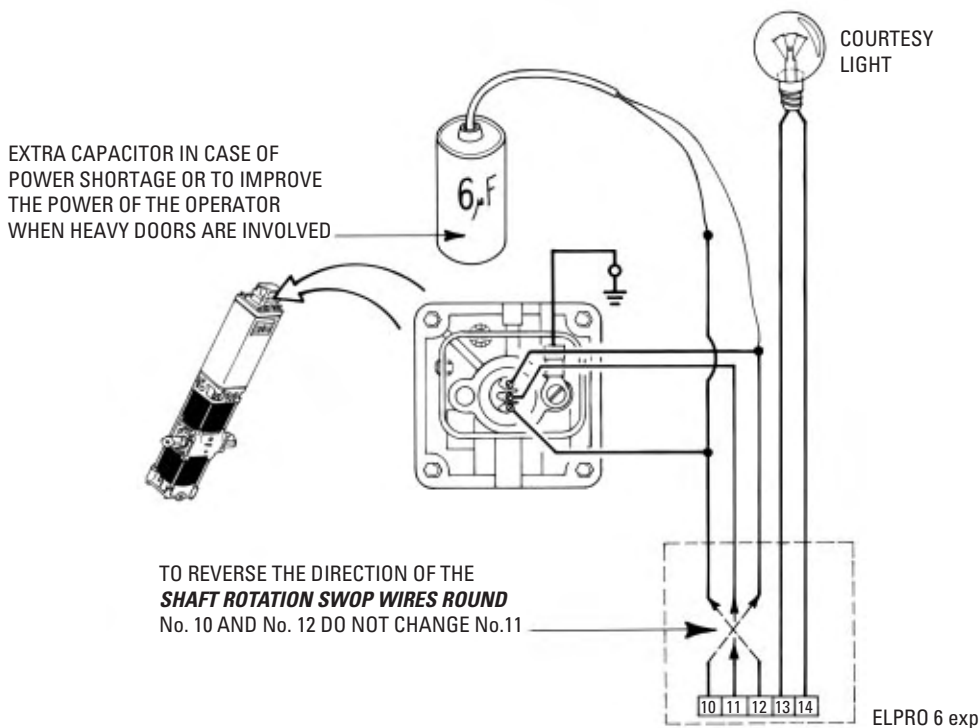
> **PIC. 13**

There are two solutions to get access to the operator release lever for hand operations of the door. Either a lock is fitted at a suitable distance from the release lever, to which it is connected by a steel flexible cord as in Pic.13; or a 12 cm x 12 cm lockable hatch is provided and fitted to allow a hand to pass from outside to inside and release the lever «B».

The electric cable which supplies power to the motor/pump is connected by means of terminals, which are located above the oil container, next to the earth screw connection. The cable must be led along the door to the point where the telescopic arm is welded to the bar. It is recommended that the cable is allowed to dangle free by 130 cm so that the door can go fully up to the end of the permitted stroke.



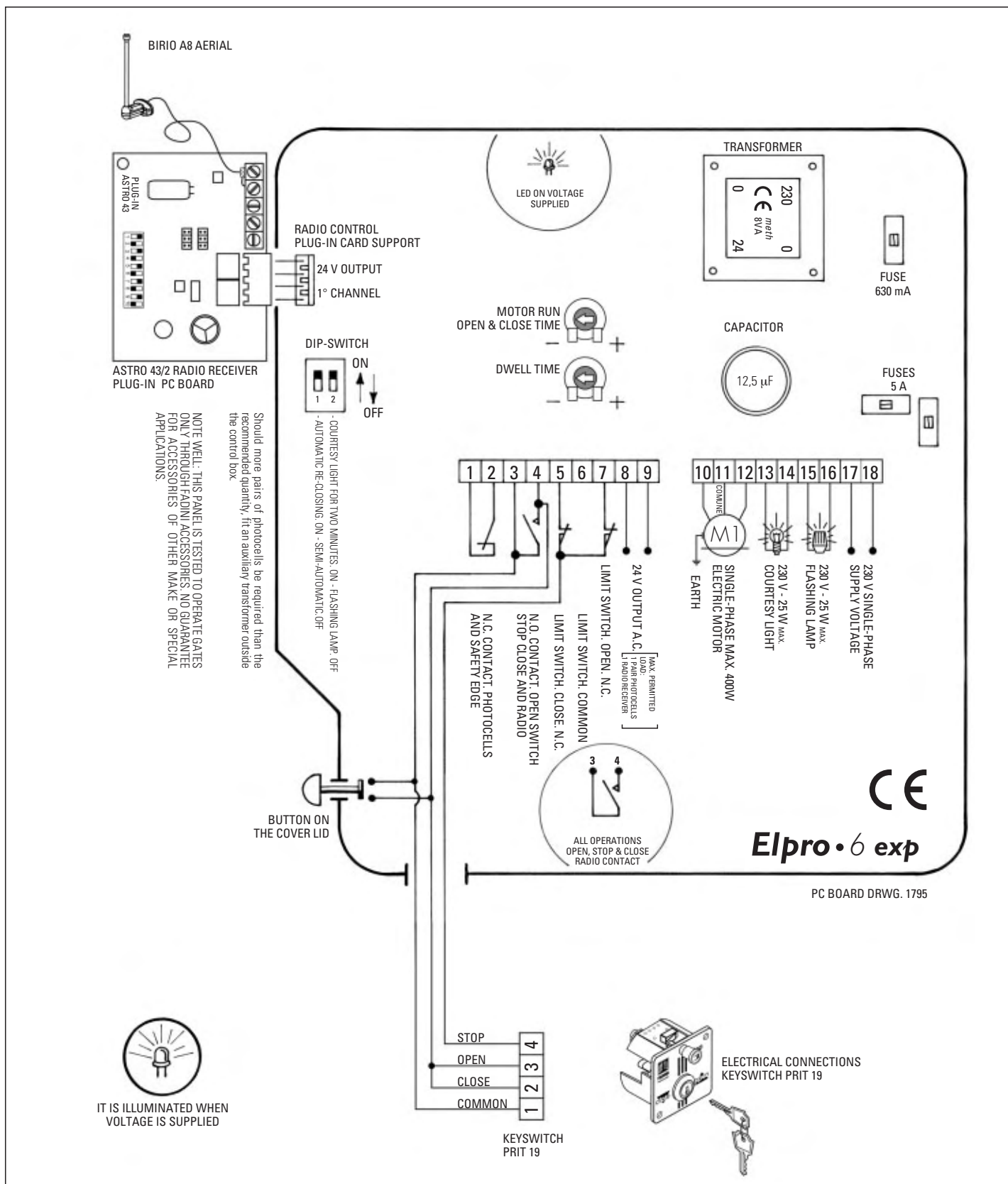
PIC. 14



PIC. 15

It is essential to make sure that the shaft rotates in the required direction during the first running test. Should it rotate in the opposite direction, change wire No. 10 with No. 12. Pic. 15

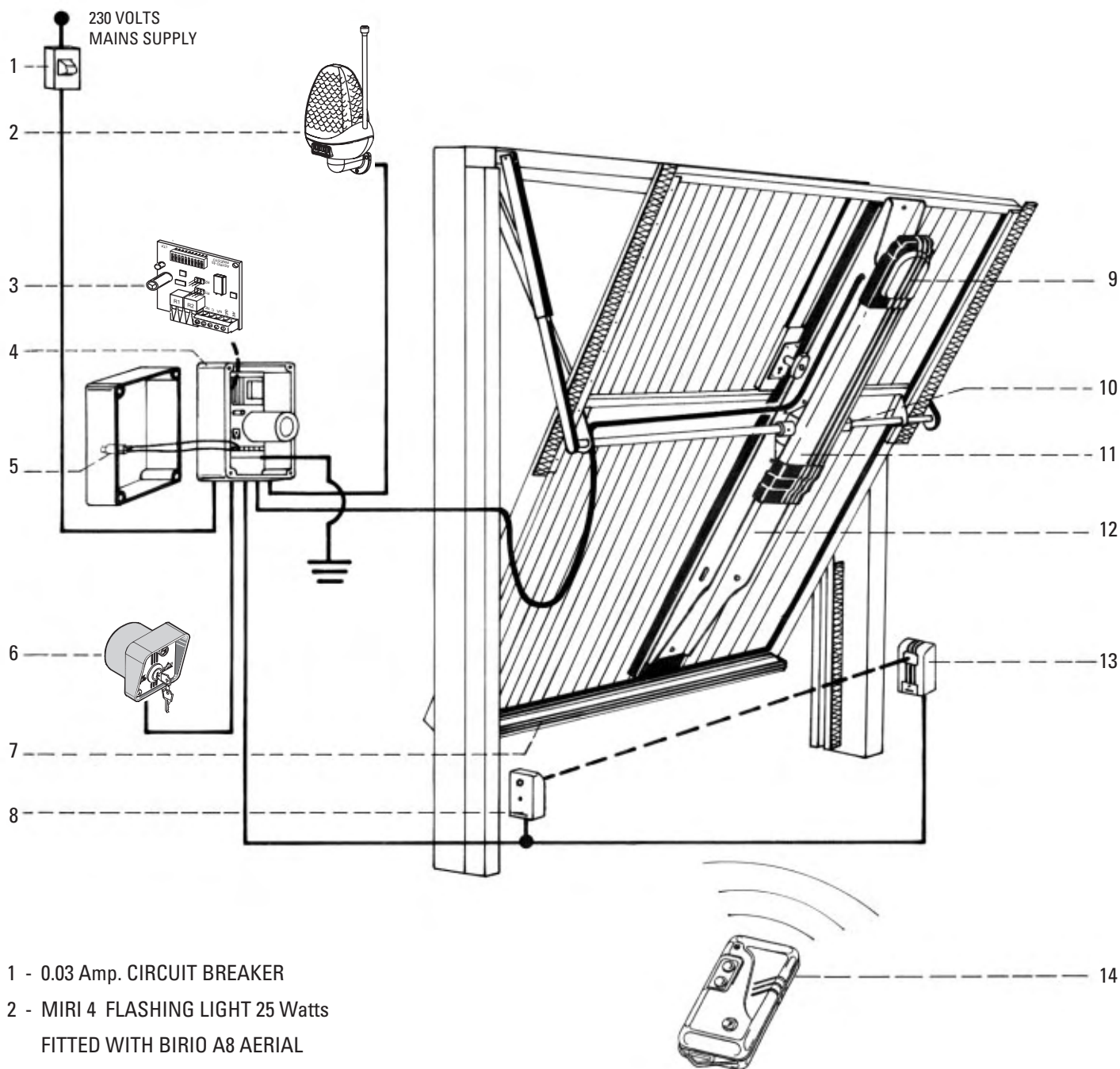
ELECTRICAL WIRING DIAGRAM OF THE OIL-HYDRAULIC GARAGE DOOR OPERATOR APROLI 480 TO THE ELECTRONIC CONTROL PANEL



PIC. 16

All the electrical connections to the control panel are to be made as per – Drawing 1795 – Elpro 6 exp having the following features: terminals for the keyswitch open-stop-close, photocells, safety edge, courtesy light, remote control to terminals 3 & 4 where the first pulse opens the door, the second stops it and the third re-cycles to open or close.

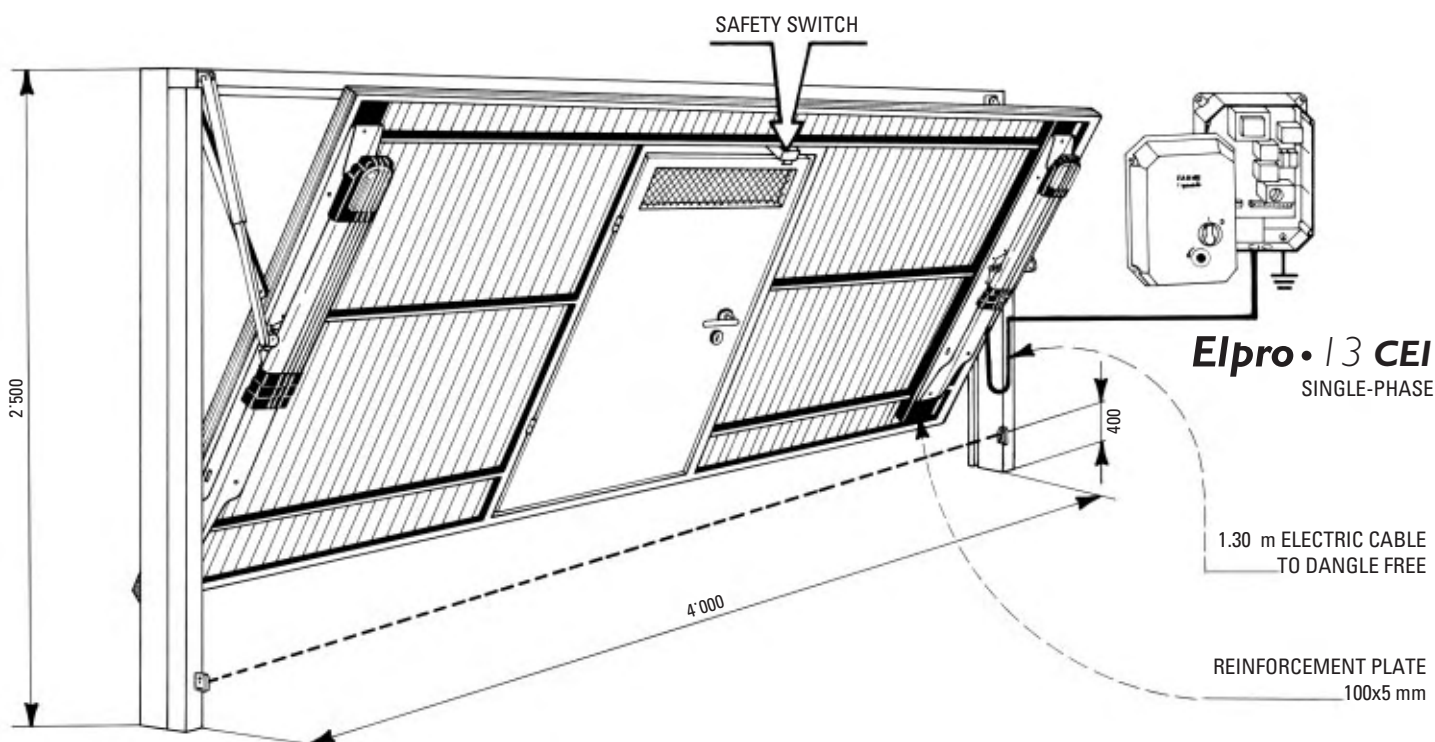
GARAGE DOOR OPERATOR COMPLETE WITH ALL THE RECOMMENDED ACCESSORIES FOR A GOOD PERFORMANCE



- 1 - 0.03 Amp. CIRCUIT BREAKER
- 2 - MIRI 4 FLASHING LIGHT 25 Watts
FITTED WITH BIRIO A8 AERIAL
- 3 - PLUG-IN RADIO RECEIVER CARD ASTRO 43 SAW
- 4 - ELECTRONIC CONTROL BOX Elpro 6 exp
- 5 - START PUSH BUTTON
- 6 - KEYSWITCH PRIT 19
- 7 - SAFETY EDGE. LOW PROFILE
- 8 - PHOTOCELL TRIFO 11. RECEIVER
- 9 - 25 Watt LAMP
- 10 - OPERATOR APROLI 480
- 11 - COVER TO PROTECT THE VALVES
- 12 - FIXING BRACKET
- 13 - PHOTOCELL TRIFO 11. PROJECTOR
- 14 - RADIO TRANSMITTER ASTRO 43 TWO BUTTONS

PIC. 17 <

SPECIAL GARAGE DOORS

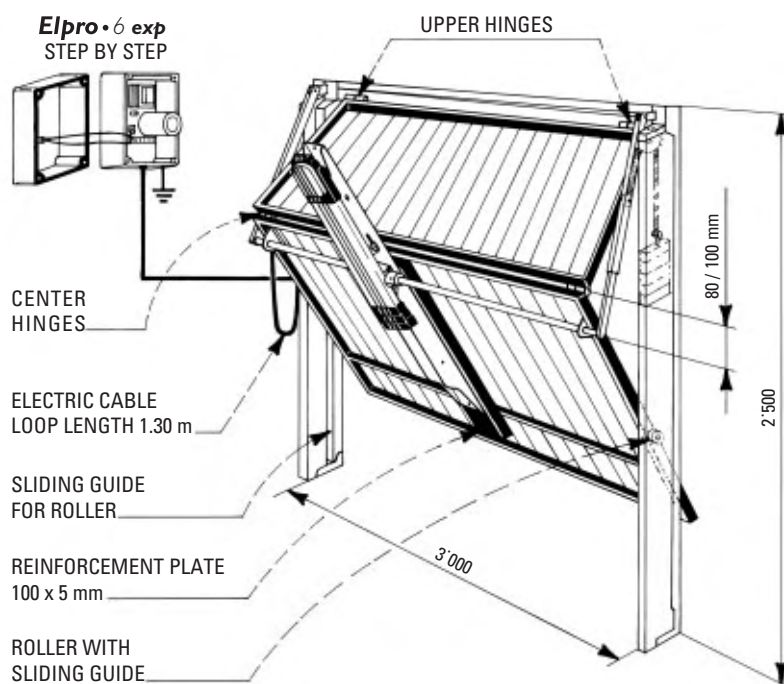


PIC. 18

When very large doors are involved with a service door in the middle, it is recommended to install two operators Aproli 480 on to the door sides without connecting the shaft inner ends. Fixing dimensions and measurements are as explained before in the previous application drawings. It is also recommended to fit the service door with a safety microswitch as shown in pic.18

When two operators are required for one door, it is recommended to install the control panel "Elpro 13 CEI" and one pair of photocells Trifo 11. These are to be fixed on to the "counterweight case" 40 cm from ground level.

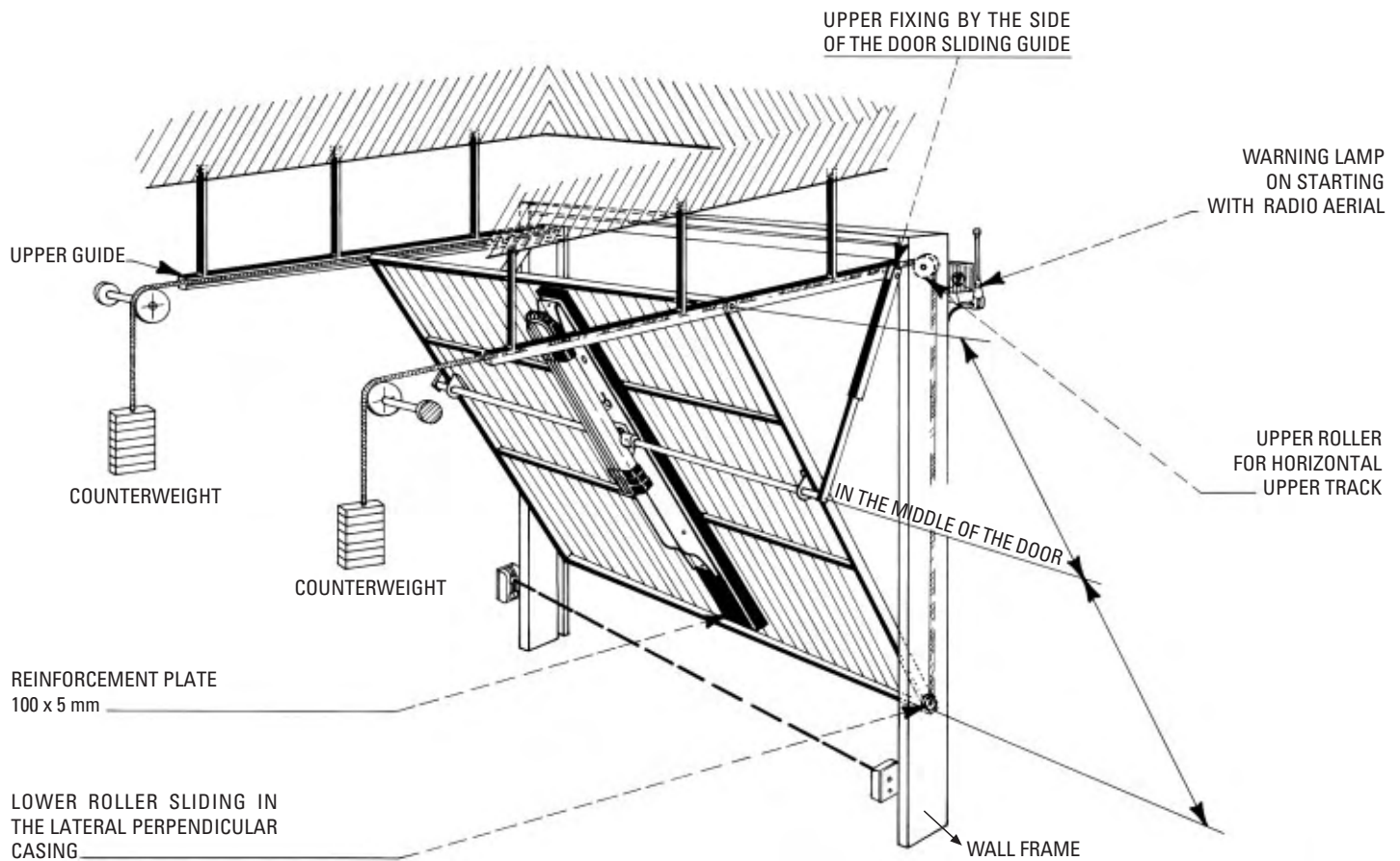
APPLICATION OF APROLI 480 ON A JACK-KNIFE DOOR



PIC. 19

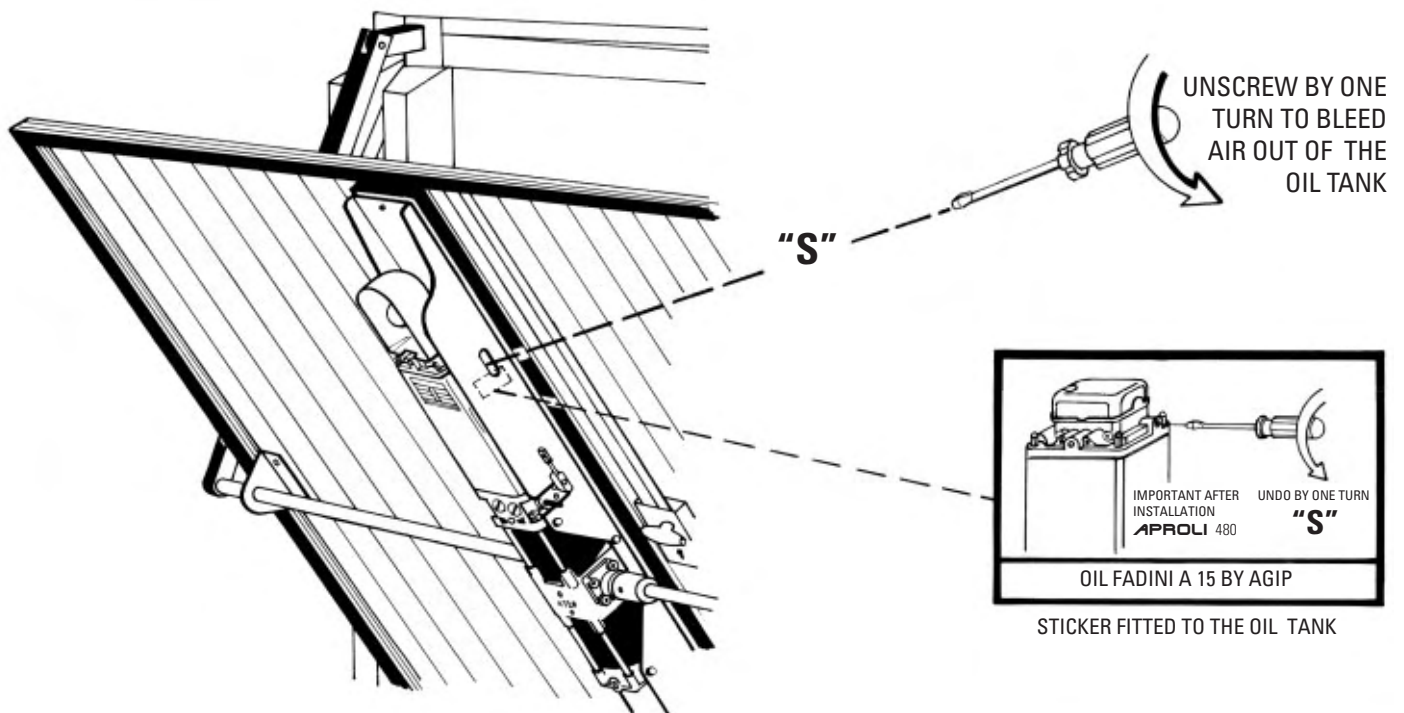
For jack-knife doors, the same instructions apply as for single-panel doors as explained in the previous pages. Only please note that with articulated doors as the above type, it is recommended to fix the operator so that the shaft and the torsion bars are 80-100 mm below the door hinge centre line. Pic.19

APPLICATION OF APROLI 480 ON TO A DOOR WITH UPPER TRACK, FULLY INDOOR



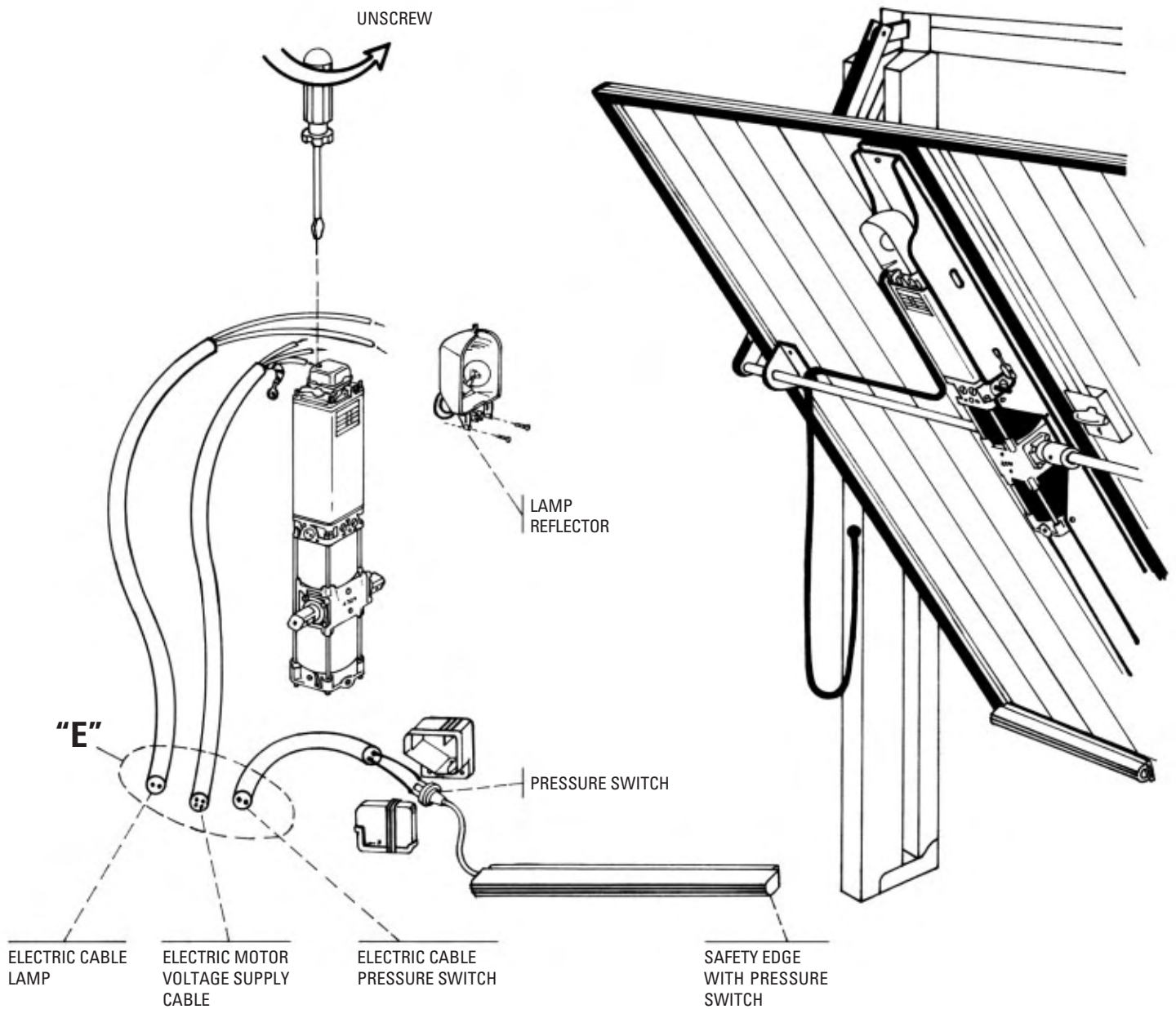
PIC. 20

For the installation of Aproli 480 on to garage doors with upper track follow the same instructions as explained before; the shaft ie. the torsion fulcrum must coincide with the centre line of the door, right in the middle between upper and lower guide rollers. See Pic. 20



PIC. 21

Please note, once Aproli 480 has been fixed, unscrew the air bleed screw by one turn. This screw is fitted on the cap of the oil container, where the voltage supplying cable is led to the motor. Pic.21 Should the operator «Aproli 480» be removed for maintenance or repairing tighten the screw «S» to prevent oil from coming out during handling.



➤ **PIC. 22**

NEVER CUT THE ELECTRIC CABLES

- It is most important that the electric cables are removed from their terminals by loosening the fastening screws. **Never cut** the electric cables. Also make sure that the 230 V mains switch is off before removing the cables. See page 11 pic. 17.

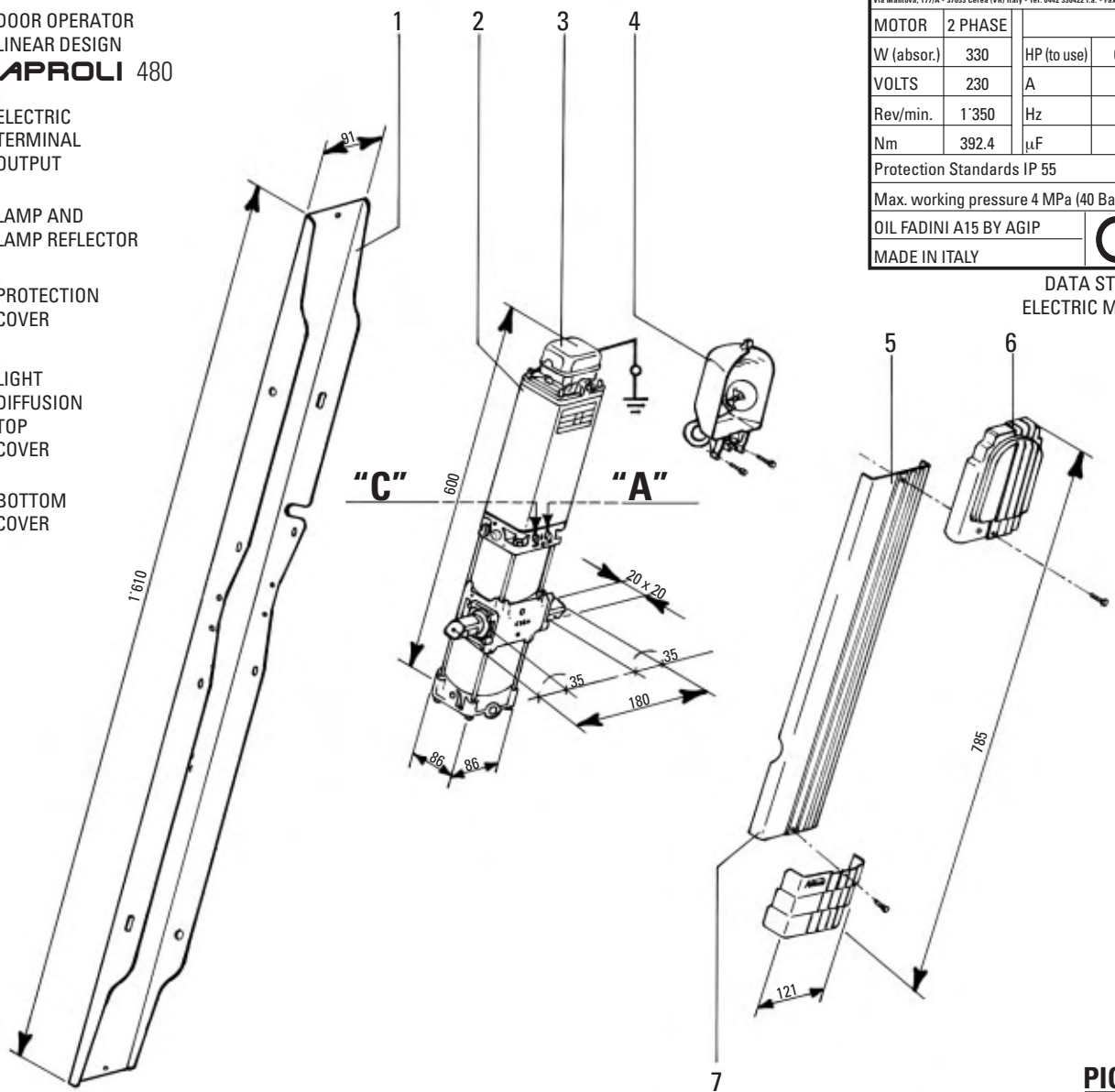
- Only by keeping to these fitting instructions a reliable installation and correct performance of the equipment can be achieved.

The installation is fully under the responsibility of the installation agent, even if only Fadini products have been used as indicated in this booklet. It is advisable that the system is installed in full compliance with these instructions and in observance of the existing laws for automatic gate equipment.

- The information, specifications and drawings contained herein are subject to any change that the manufacturer considers as needed.

TECHNICAL SPECIFICATIONS **APROLI 480**

- 1 — FIXING BRACKET "M"
- 2 — DOOR OPERATOR LINEAR DESIGN **APROLI 480**
- 3 — ELECTRIC TERMINAL OUTPUT
- 4 — LAMP AND LAMP REFLECTOR
- 5 — PROTECTION COVER
- 6 — LIGHT DIFFUSION TOP COVER
- 7 — BOTTOM COVER



meccanica FADINI		APROLI 480	
<small>Via Mantova, 177/A - 37053 Cerea (VR) Italy - Tel. 0442 330422 r.a. - Fax 0442 331054</small>			
MOTOR	2 PHASE		
W (absor.)	330	HP (to use)	0.33
VOLTS	230	A	1.8
Rev/min.	1'350	Hz	50
Nm	392.4	μF	12.5
Protection Standards IP 55			
Max. working pressure 4 MPa (40 Bar)			
OIL FADINI A15 BY AGIP			
MADE IN ITALY			

DATA STICKER
ELECTRIC MOTOR

PIC. 23

OIL-HYDRAULIC PUMP

Pump flow rate	1.10 l/min.
Working pressure	2 MPa (20 bar)
Maximum pressure.....	4 MPa (40 bar)
Working temperature.....	-20°C +80°C
Opening time.....	18 s
Recommended door size.....	7 m ²
Shaft rotation.....	max. 205°
Hydraulic oil.....	oil Fadini A15 by Agip
Static weight of operator	10.5 Kg
Weight of Aproli 480 with accessories.....	24 Kg
Max. torque.....	392.4 Nm
Max. gate weight.....	150 Kg

ELECTRIC MOTOR

Power output.....	0.24 KW (0.33 HP)
Supply voltage	230 V
Frequency.....	50 Hz
Absorbed power	330 W
Absorbed current.....	1.8 A
Capacitor.....	12.5 μF
Motor revolution.....	1'350 r.p.m.
IP Protection Standard	IP 55
Motor rated torque.....	1.3 Nm
Lamp	230 V - 25 W
Intermittent service	S 3

PERFORMANCE

Duty cycle.....	18 sec. Opening – 30 sec. Dwell – 18 sec. Closing
Time of one complete cycle	66 sec.
Complete cycles.....	No. 47/hour
Annual cycles - 8 hours' service per day.....	No.159'000



CHECKING AND MAINTENANCE:

To achieve an optimum performance and longer life of the equipment and in observance of the safety regulations, it is recommended that inspections and proper maintenance are made by qualified technicians to the whole installation ie, both the mechanical and electronic parts, as well as wiring:

- Mechanical parts: maintenance every 6 months approx.
- Electronic apparatus and safety equipment: maintenance every month.

IMPORTANT WARNING NOTES

- Before installing the equipment carry out a **Risk Analysis** and fit any required device in compliance with EN 12445 and EN 12453 Safety Norms.
- It is recommended to keep to the instructions here outlined. Check the specifications on the motor sticker with your mains supply.
- Dispose properly of the packaging: cardboard, nylon, polystyrene, through specializing companies.
- Should the operator be removed, **do not cut** the electric cable. This must be properly removed from the terminal board in the junction box.
- Switch off the mains switch before removing the junction box cover where the electric cable is terminated.
- All the system must be earthed by using the yellow/green wire, marked by its specific symbol.
- It is recommended to read the regulations, suggestions and remarks quoted in the booklet "Safety Norms".



FADINI

the gate opener

Made in Italy

The growth of MECCANICA FADINI has always been based on the development of guaranteed products thanks to our "TOTAL QUALITY CONTROL" system which ensures constant quality standards, updated knowledge of the European Standards and compliance with their requirements, in view of an ever increasing process of improvement.

The "CE" mark certifies that the operator conforms to the essential requirements of the European Directive art. 10 EEC 73/23, in relation to the manufacturer's declaration for the supplied items, in compliance with the body of the regulations ISO 9000= UNI EN 29000. Automation in conformity to EN 12453, EN 12445 safety standards.

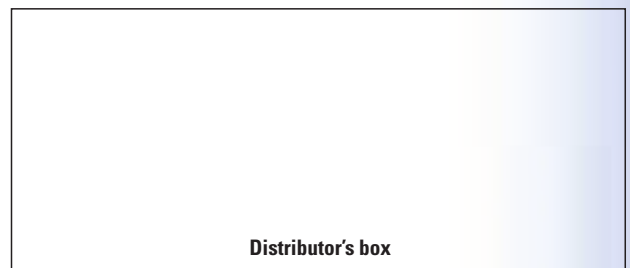


**EUROPEAN MARK CERTIFYING CONFORMITY
TO THE ESSENTIAL REQUIREMENTS OF THE
STANDARDS 98/37/EC**

- DECLARATION OF CONFORMITY
- SAFETY NORMS
- EN 12453, EN 12445 STANDARDS
- CEI EN 60204-1 STANDARDS
- WARRANTY CERTIFICATE ON THE CUSTOMER'S REQUEST



AUTOMATIC GATE MANUFACTURERS



Distributor's box

The manufacturers reserve the right to change the products without any previous notice and are not liable for possible damages to people and properties.