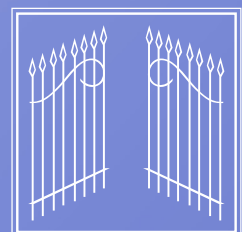


APROLI 280_{BATT}

- OIL-HYDRAULIC OPERATOR
FITTED WITH ARTICULATED ARM
- TWO-WAY LOCKING
- DESIGNED FOR SWING GATES
WITH VERY LARGE PILLARS



INSTALLATION MANUAL

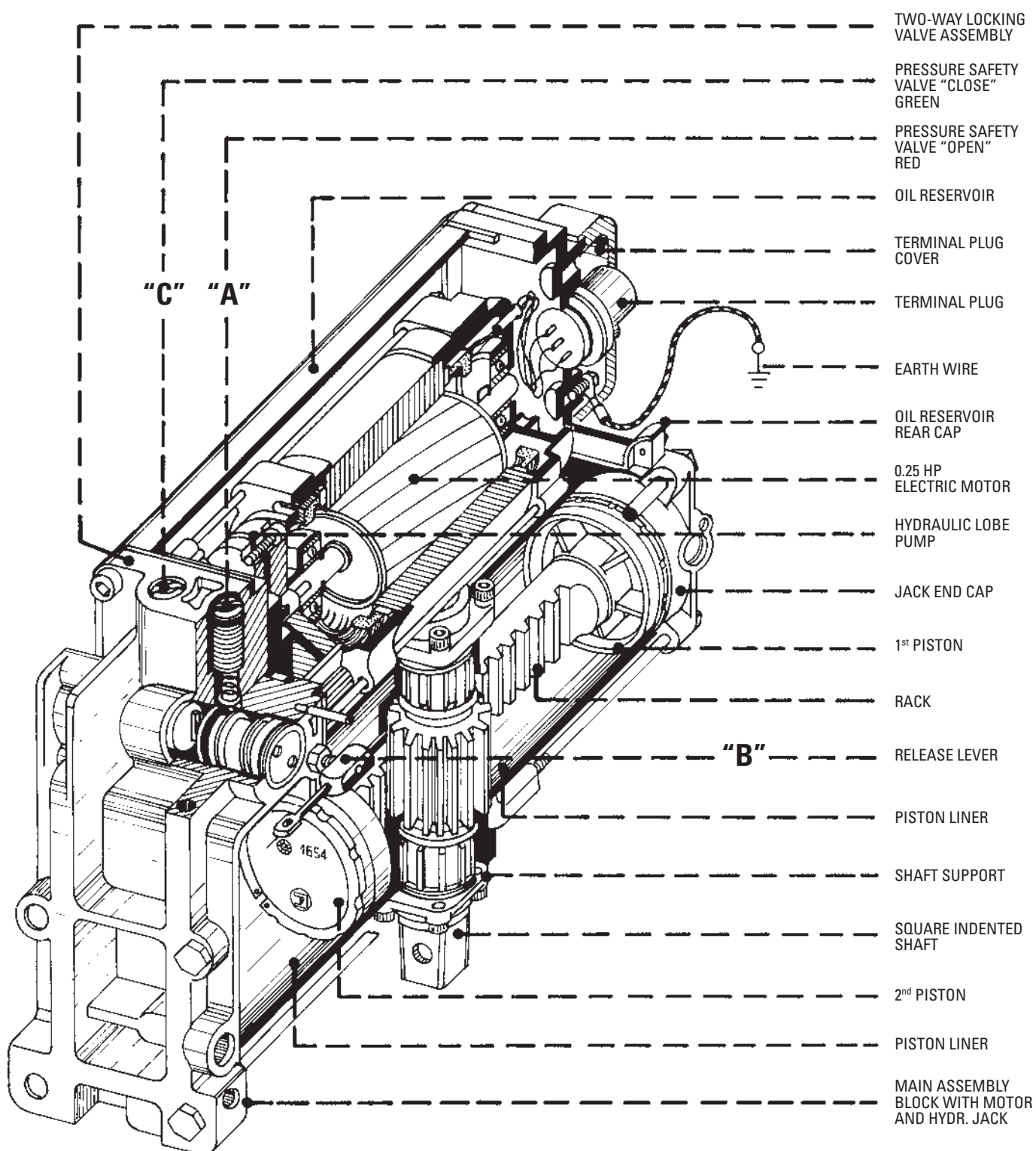


FADINI[®]
the gate opener

APROLI 280 BATT

CUTAWAY VIEW OF THE ELECTRIC MOTOR ASSEMBLY AND HYDRAULIC JACK

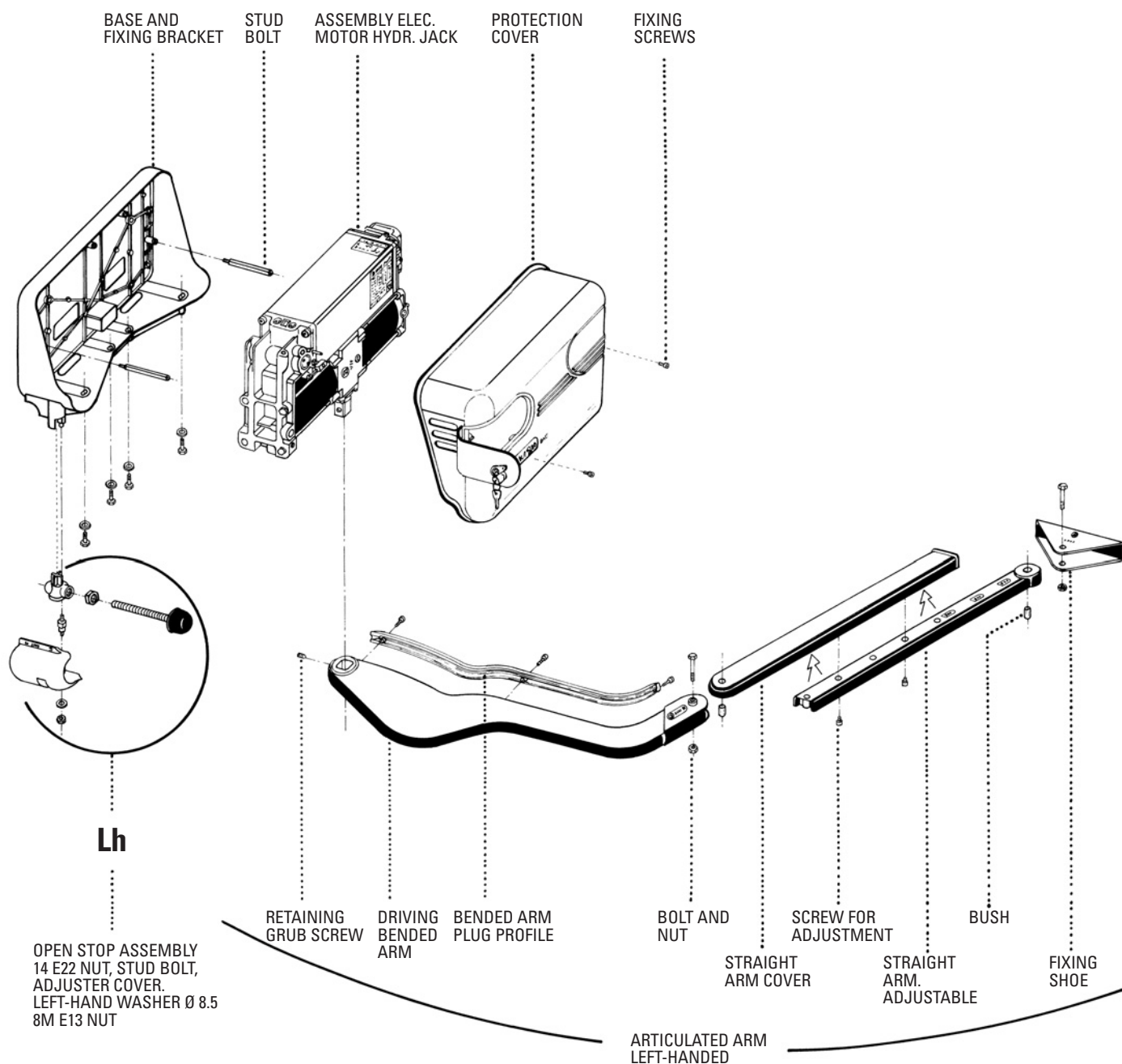
AVAILABLE TYPES: NON LOCKING - LOCKING - WITH FLOW REGULATOR



PIC. 1

INSTRUCTIONS FOR THE INSTALLATION OF APROLI 280 BATT TO SWINGING DOUBLE GATES WITH VERY LARGE PILLARS

it is recommended to follow these instructions to achieve a perfect application of the operator.



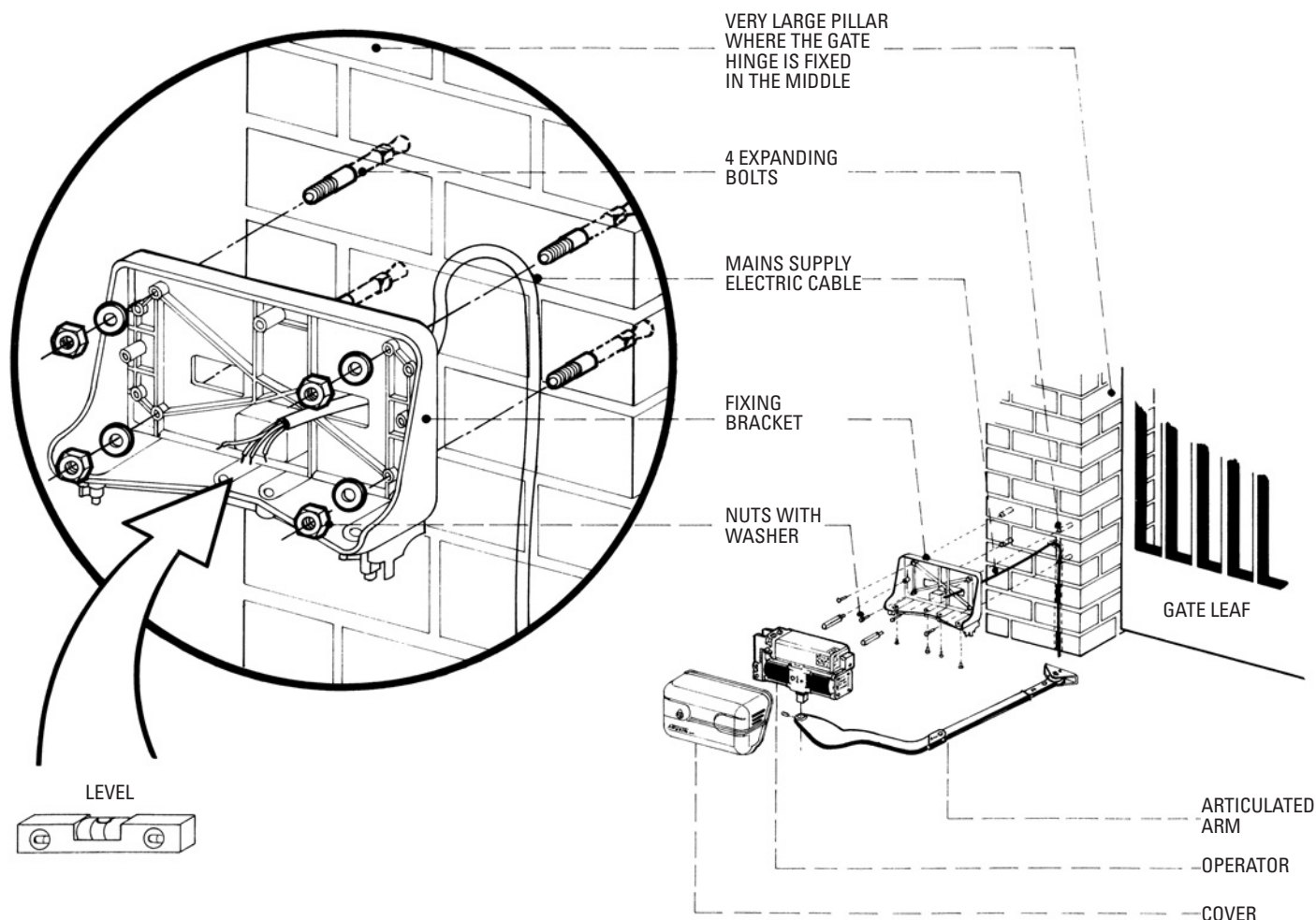
PIC. 2

First loosen the fastening screws to remove the cover. To do this, open the hinged door with the supplied key; one of the two fastening screws is there. After the removal of the cover, the electro-hydraulic assembly is fully exposed, ie. "electric motor/hydraulic jack" fitted with the pressure safety valves that control the thrust/pushing power of the operator and the emergency release in events like power failure. It also includes a bracket, designed to provide fixing facility to a wall or pillar and a suitable outlet for the cables; an articulated arm, adjustable to meet the most various distance requirements on site applications; and a shoe bracket to be fixed to the gate. The operator is supplied already pre-filled with special oil to suit both high and low environment temperatures. It allows the correct performance of APROLI 280 BATT within a temperature range from -20°C to $+80^{\circ}\text{C}$. APROLI 280 BATT is produced and tested in the workshops of MECCANICA FADINI which guarantees the long lasting reliability of this product in time.

HOW TO FIX APROLI 280 BATT TO A PILLAR BY EXPANDING BOLTS OR SCREWS

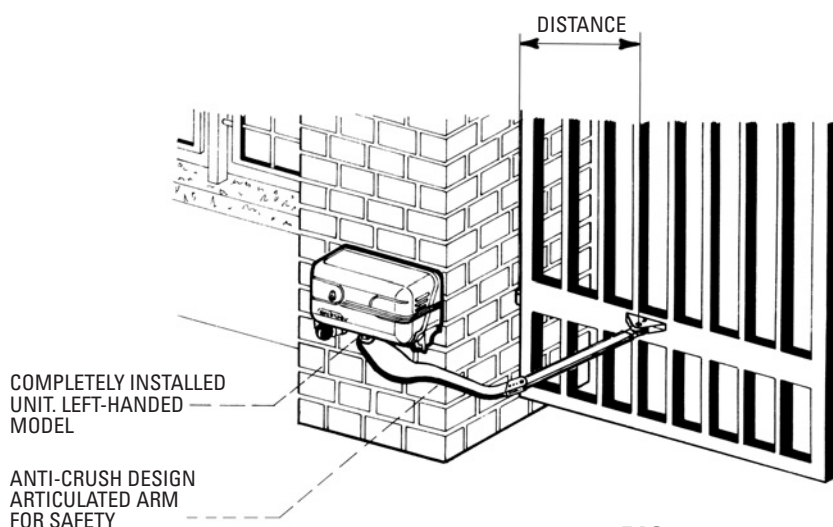
Before fitting the operator APROLI 280 BATT to the gate, make sure that the gate structure is adequate to be electrically operated and that is strong enough to bear the mechanical stress of automatic operations and is well built and smooth running.

It is recommended to reinforce the gate and fix the metallic parts which may not work properly, do the necessary to prevent or correct friction of the gate against the pavement or pillar (this must particularly apply to the gate hinges).



PIC. 3

Fix the bracket to the pillar and bring the electric cable to the most suitable position so that the fixing of the articulated arm is allowed to coincide with a solid crossing bar of the gate leaf. The shoe bracket is to be bolted or welded to the gate at a suitable distance which is set after the first manual tests. (Release lever B page 10)



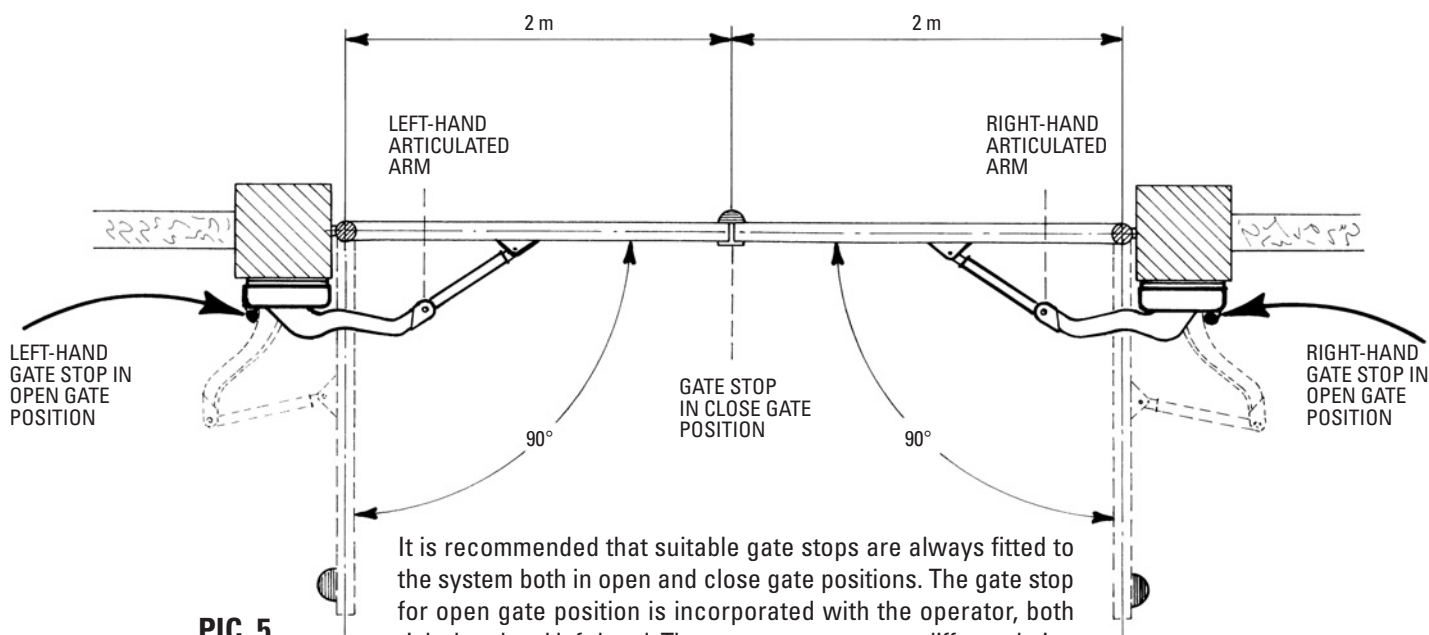
PIC. 4

The distance from gate pivot center to arm bolt center is to be calculated through manual operations of the gate before fixing the shoe bracket. The distances on page 6-7 are merely an application example.

APROLI 280 BATT is easy to install. It can be supplied either fitted with hydraulic locking device for gates up to 2 m width, or without hydraulic locking with an electric lock for gate leaf up to 5 m.

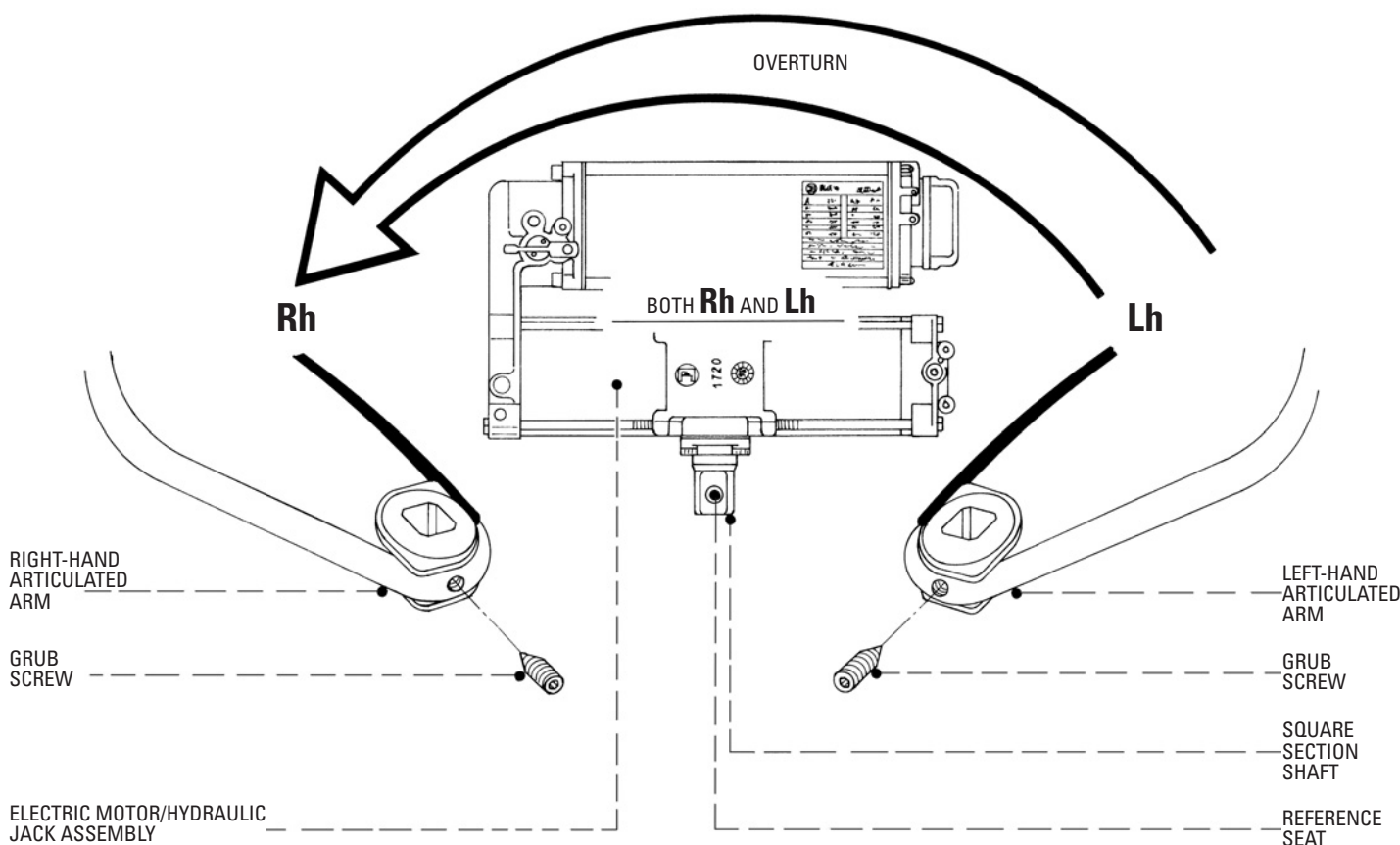
APPLICATION OF TWO APROLI 280 BATT ON TO A DOUBLE SWINGING GATE. 90° OPENING.

The recommended maximum gate width with APROLI 280 is 5 m. The locking type operator is recommended up to 2 m gate width. Beyond 2 m a lock is required to be fitted to the gate and the non locking type operator is advisable.



PIC. 5

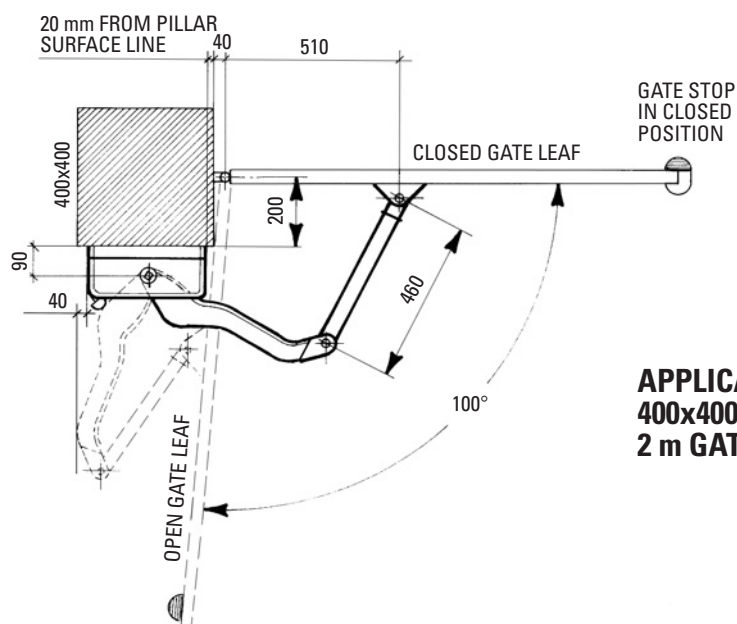
It is recommended that suitable gate stops are always fitted to the system both in open and close gate positions. The gate stop for open gate position is incorporated with the operator, both right-hand and left-hand. The gate stop covers are different being designed as handed units (part No. 2062=right-hand, 2055=left hand). Another feature of the incorporated open gate stop is the possibility of being adjusted to the required distance to achieve the required opening angle, either 90° or more/less.



PIC. 6

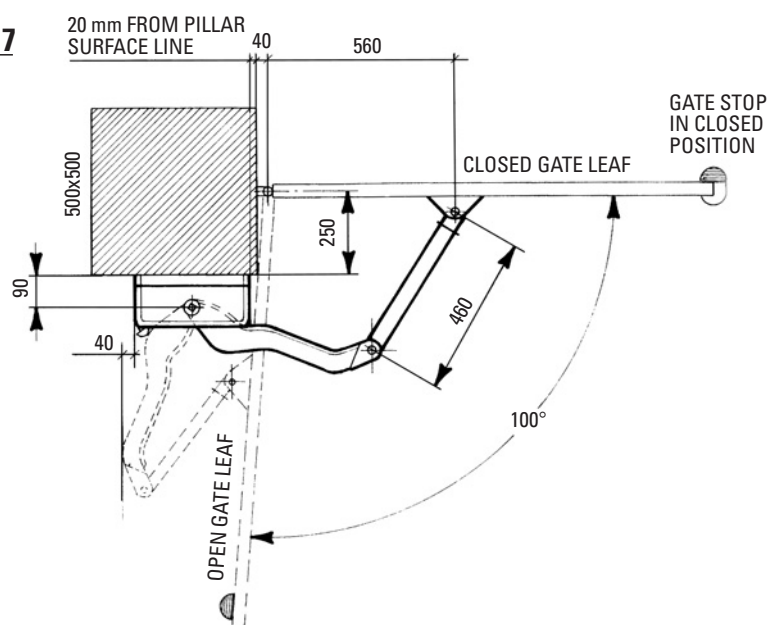
Both right-hand and left-hand applications are possible just by turning over the articulated arm and fitting it to the square section shaft of the operator. Tighten the retaining pin in its seat to fix the arm to the shaft. The assembly ie. motor/jack, fixing bracket and cover are designed to suit both right and left-hand applications with the same method of installation. Important: the articulated arm must be fixed so that it pushes against the gates and keeps them well pressed on to the close position gate stop.

EXAMPLE OF APPLICATIONS TO PILLARS OF VARIOUS DIMENSIONS. DISTANCES ARE NOT BINDING AND ARE QUOTED FOR REFERENCE ONLY



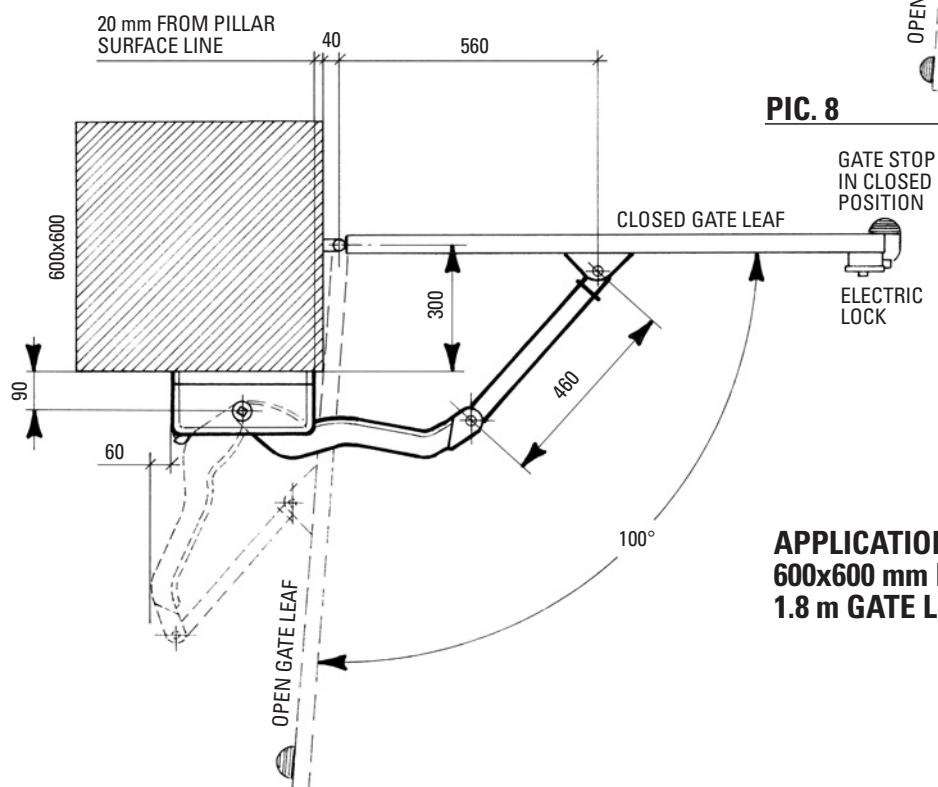
APPLICATION EXAMPLE
400x400 mm PILLAR
2 m GATE LEAF - 110 Kg

PIC. 7



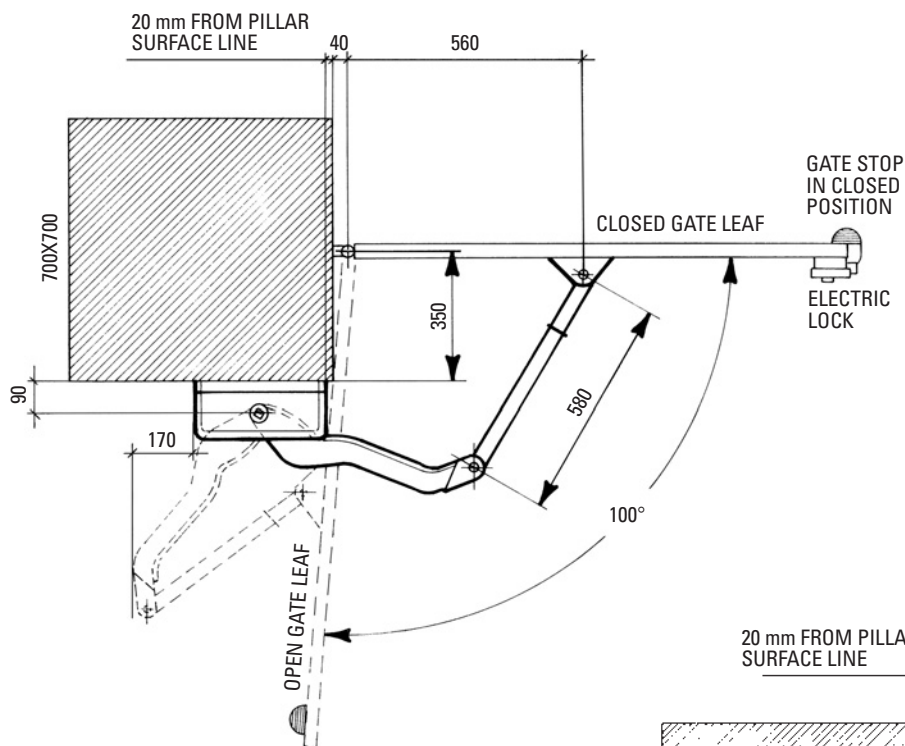
APPLICATION EXAMPLE
500x500 mm PILLAR
3 m GATE LEAF - 100 Kg

PIC. 8



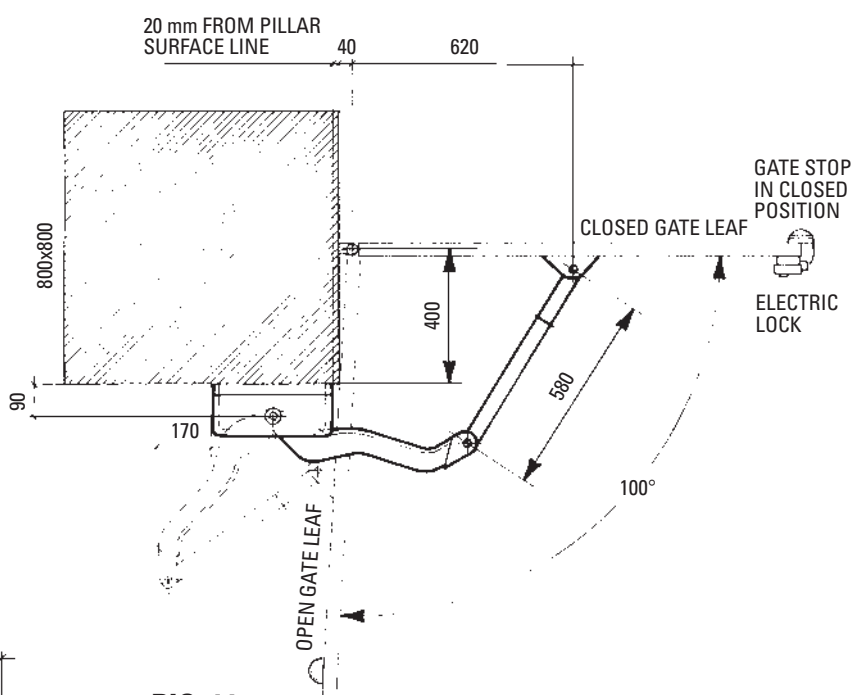
APPLICATION EXAMPLE
600x600 mm PILLAR
1.8 m GATE LEAF - 140 Kg

PIC. 9



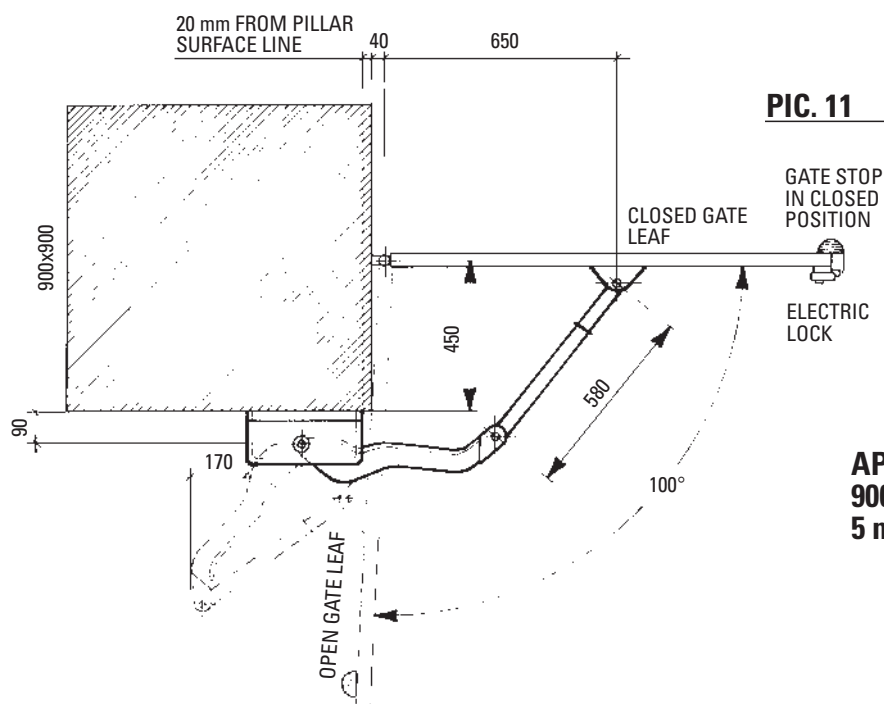
APPLICATION EXAMPLE
700x700 mm PILLAR
3 m GATE LEAF - 130 Kg

PIC. 10



APPLICATION EXAMPLE
800x800 mm PILLAR
4 m GATE LEAF - 140 Kg

PIC. 11

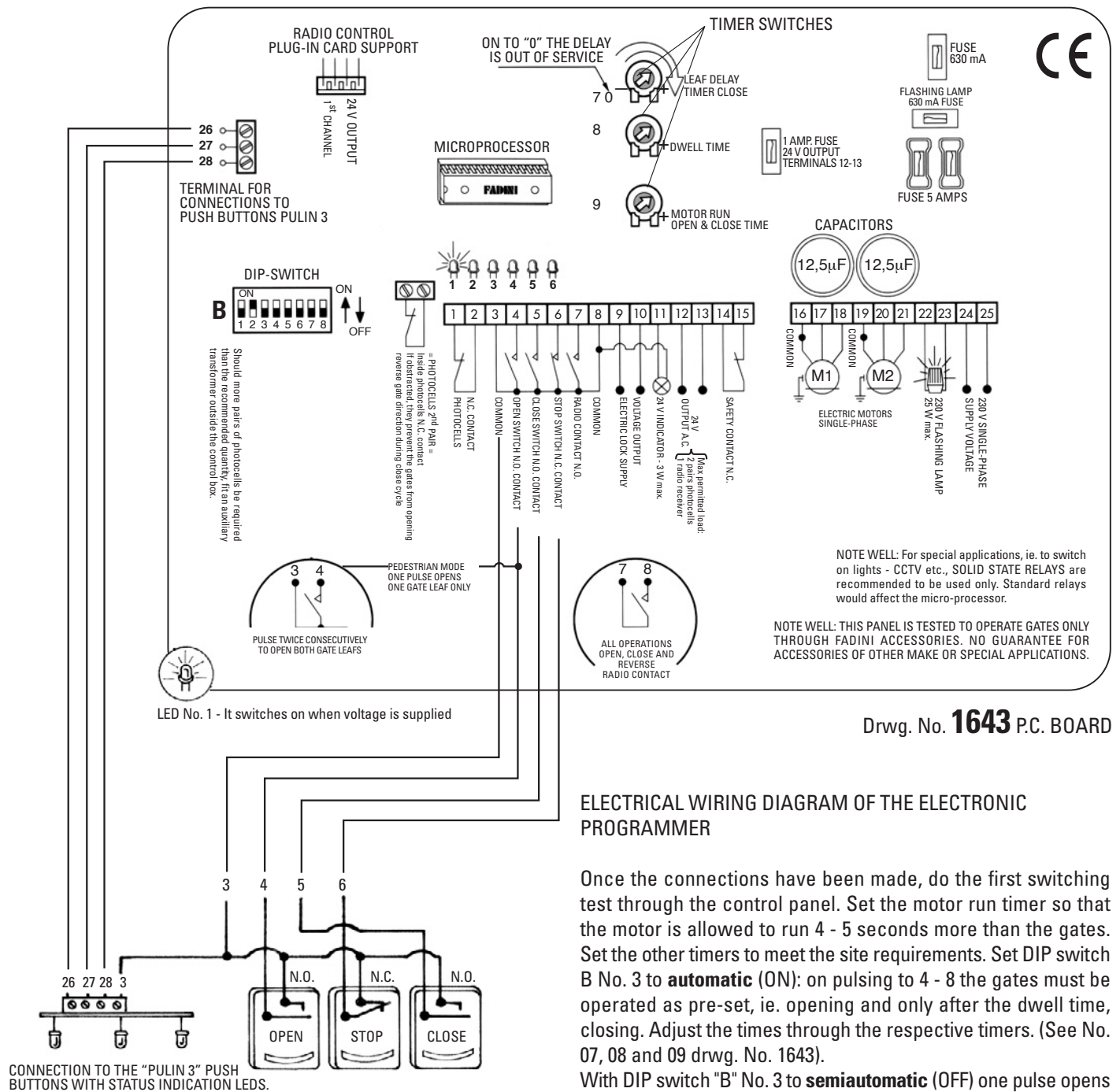


APPLICATION EXAMPLE
900x900 mm PILLAR
5 m GATE LEAF - 150 Kg

PIC. 12

It is recommended that all gates are provided with adequate gate stops both in open and closed gate positions. When a 5 m gate is involved the weight must not be greater than 200 Kg and it is required to fit the gate with an electric lock, the operator must be non locking type. With gates up to 2 m width, it is possible to install the locking type without electric lock. See the examples and drawings on pages 6 - 7.

CONNECTION DIAGRAM FOR SWING GATES *Elpro.13^{exp}*



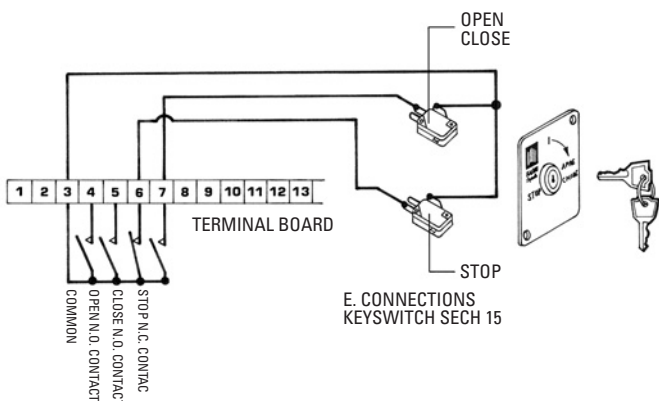
ELECTRICAL WIRING DIAGRAM OF THE ELECTRONIC PROGRAMMER

Once the connections have been made, do the first switching test through the control panel. Set the motor run timer so that the motor is allowed to run 4 - 5 seconds more than the gates. Set the other timers to meet the site requirements. Set DIP switch B No. 3 to **automatic** (ON): on pulsing to 4 - 8 the gates must be operated as pre-set, i.e. opening and only after the dwell time, closing. Adjust the times through the respective timers. (See No. 07, 08 and 09 drwg. No. 1643).

With DIP switch "B" No. 3 to **semiautomatic** (OFF) one pulse opens the gates, a second pulse to 5 - 8 is needed to close the gates. Any one pulse to 7 - 8 will open, close or reverse the gates independently from the operation being performed. It is recommended to carefully read the instructions in the control box to have all the functions performed correctly.

The 6 LEDs on the P.C. board indicate the following:

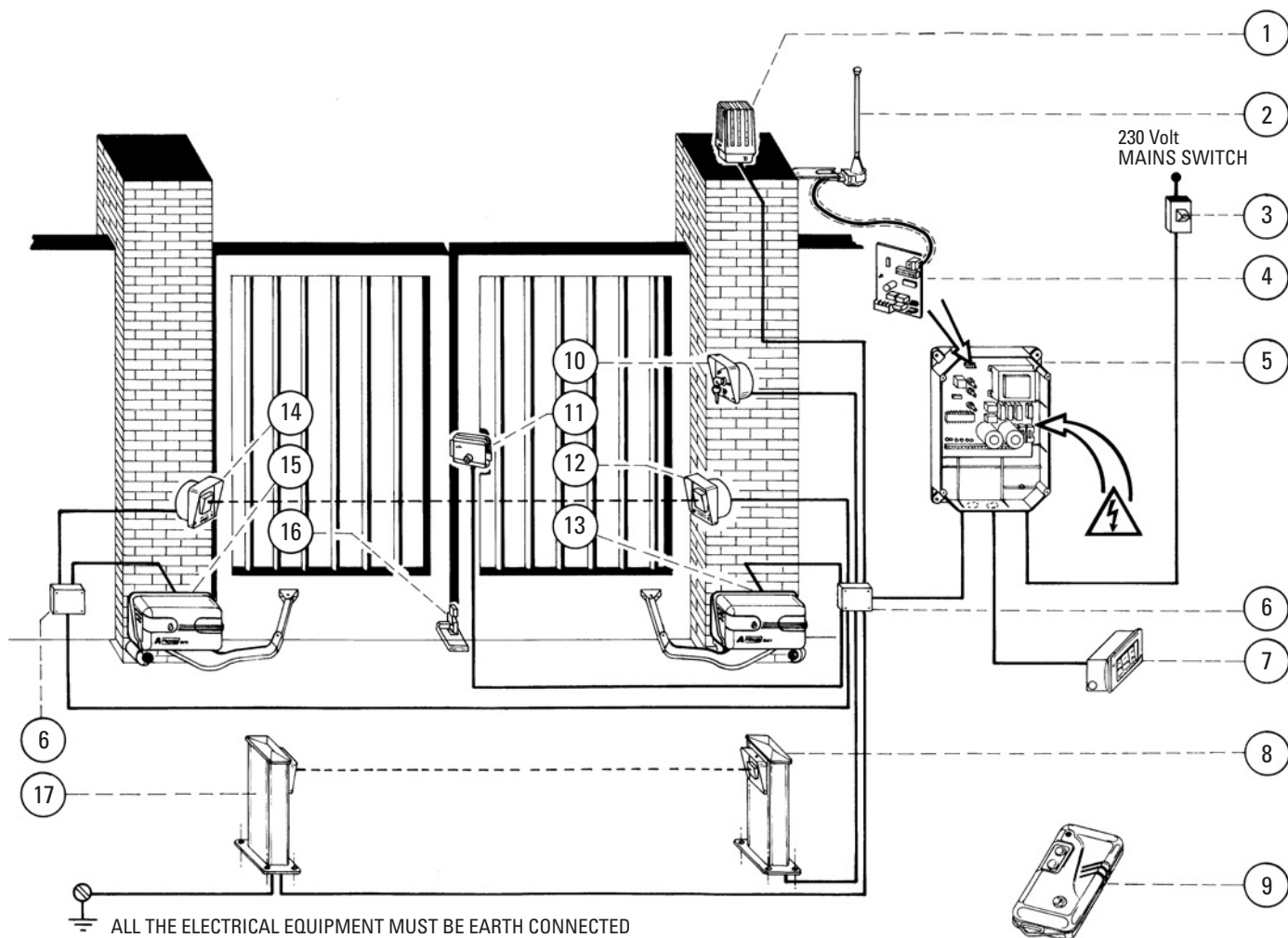
- Led No. 1 It switches on when voltage is supplied
- Led No. 2 Photocells - Normally on. It switches off when the photocells are obstructed
- Led No. 3 Open - It switches on when the respective switch is activated
- Led No. 4 Close - It switches on when the respective switch is activated
- Led No. 5 Stop - Normally on. it switches off when the respective switch is activated
- Led No. 6 Radio - It switches on whenever a pulse is given, either from remote control, keyswitch or push buttons.



PIC. 13

PIC. 14

The below diagram is general for an application of the operator and the complementary accessories which are supplied with the unit.



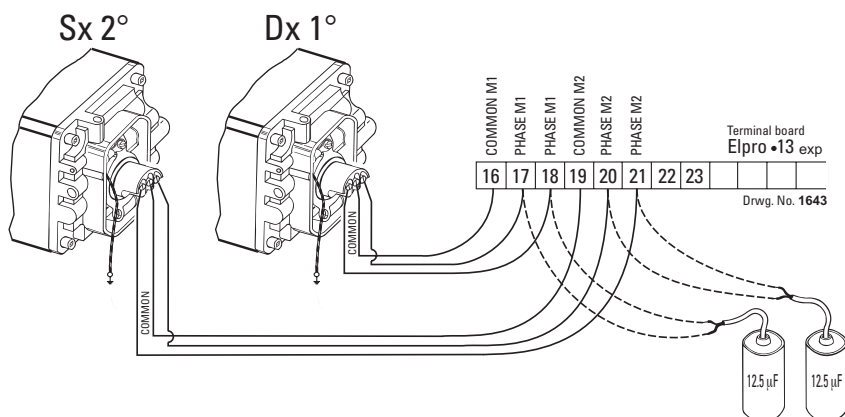
PIC. 15

- 1 - STEMMED AERIAL A 43
- 2 - LAPI 2 FLASHING LAMP
- 3 - 230 V - 50/60 Hz MAINS SWITCH WITH
MAGNETIC-THERMAL DIFFERENTIAL TYPE 0.03 A
(beyond 100 m distance 2.5 mm Ø cables are recommended)
- 4 - RADIO RECEIVER CARD A 43/2R
- 5 - ELECTRONIC PROGRAMMER TYPE ELPRO 13 exp
- 6 - JUNCTION BOX
- 7 - WALL PUSH BUTTONS PULIN 3 (INSIDE HOME)
- 8 - POST WITH PHOTOCELL RECEIVER TYPE DIFO 33

- 9 - RADIO TRANSMITTER TYPE A43/ 2TR
- 10 - KEYSWITCH TYPE SECH 15
- 11 - ELECTRIC LOCK
- 12 - PHOTOCELL TRANSMITTER DIFO 33. OUTSIDE
- 13 - RIGHT-HAND OPERATOR TYPE APROLI 280 BATT
- 14 - PHOTOCELL RECEIVER TYPE DIFO 33 OUTSIDE
- 15 - LEFT-HAND OPERATOR TYPE APROLI 280 BATT
- 16 - MECHANICAL LATCH
- 17 - POST WITH PHOTOCELL PROJECTOR TYPE DIFO 33

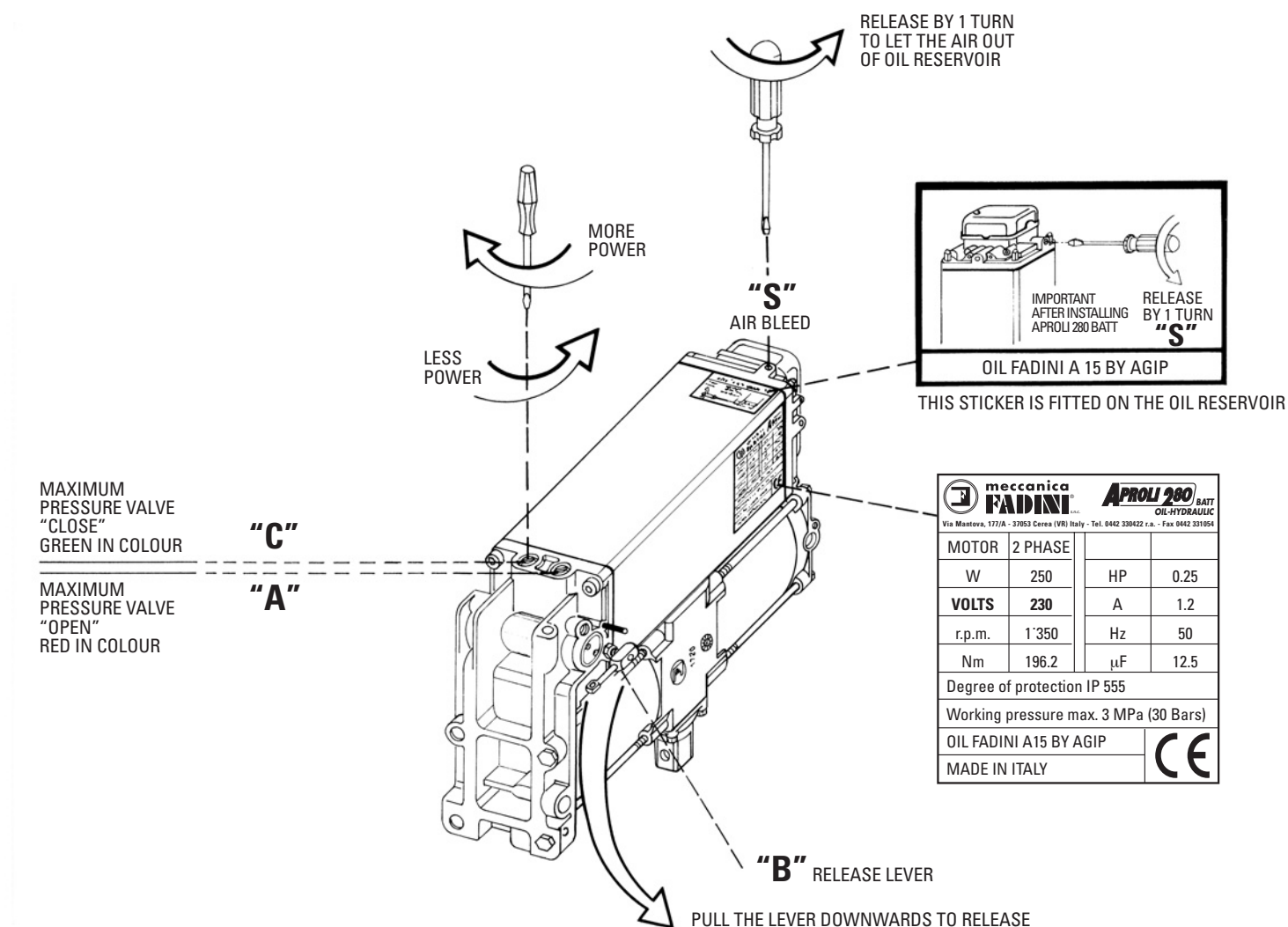
To perform the electrical work, connections are as per diagrams on pages 8-9. Once the connections have been made, adjust the switches in the control box so that the sequence of operations occurs as pre-set. Set DIP switch 3 on automatic and check if the working times meet your requirements. On semiautomatic mode, one pulse opens the gates, a second pulse is needed to close the gates.

PLEASE NOTE: Should the electric motors fail to start properly because of power shortage, connect some extra 12.5 μ F capacitors to the phase and common terminals as shown in pic. 16.



PIC. 16

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



PIC. 17

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

Please note, once APROLI 280 has been fixed, unscrew the air bleed screw by one turn. This screw is fitted on the cap of the oil reservoir, where the mains cable is led to the motor.

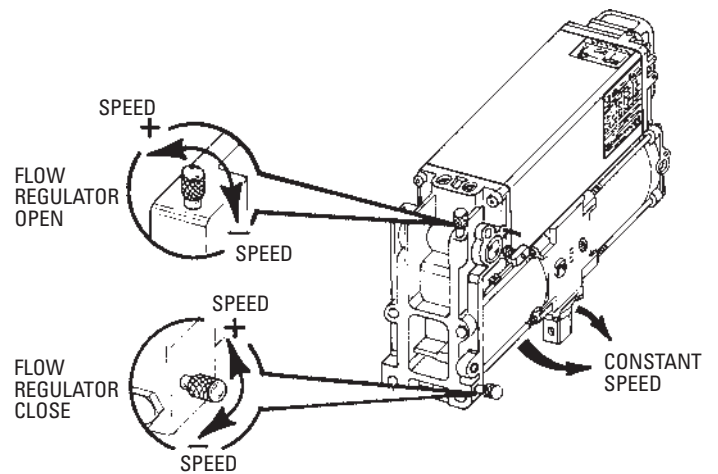
Should the operator "APROLI 280" be removed for maintenance or repairing, tighten the screw "S" to prevent oil from coming out during handling.

In case of power failure, to open the two leafs fitted with APROLI 280 BATT non-locking type, you have to release the electric lock with the key and push the gate leafs open by hand in a very smooth way. Should the operator be fitted with locking device, first pull the release lever "B" downwards and then push open (Pic. 17). Open the hinged door to have access to the lever.

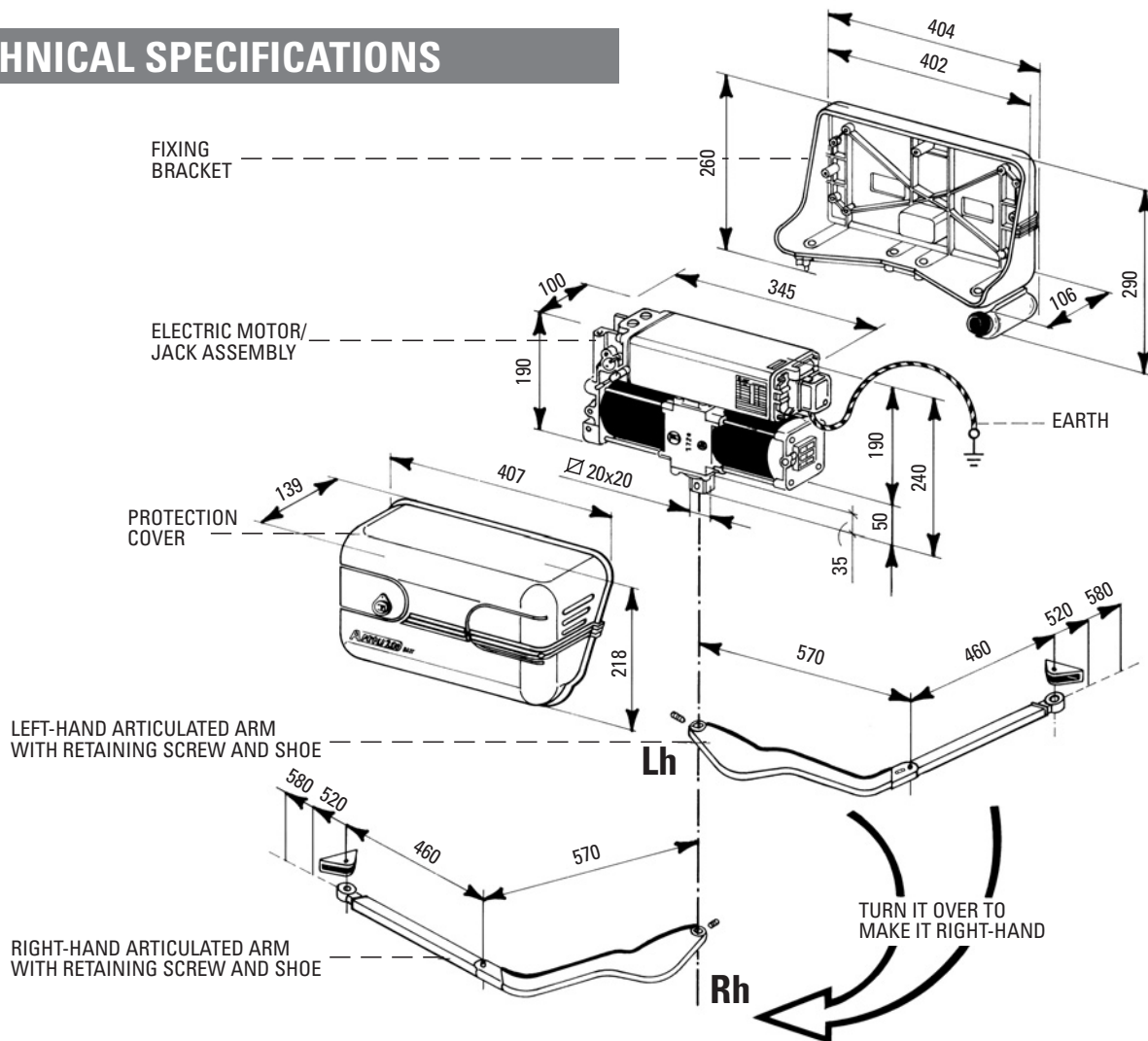
NEVER CUT THE ELECTRIC CABLES

- Please note that the electric cables must be removed from their terminals by loosening the fastening screws. Never cut the electric cables. Also make sure that the 230V mains switch No. 3 is off before removing the cables. See page 9, pic. 15.
- Only by keeping to these fitting instructions it can be achieved a reliable installation and the best performance of the operator. The installation is fully under the responsibility of the installation agent, even if it consists entirely of Fadini products as listed in this booklet. It is advisable that the system is installed in full compliance with these instructions and in observance of the existing laws which rule automatic doors.
- All the information, specifications and drawings contained herein are subject to any change that is considered appropriate by the manufacturer with any previous notice.

The flow regulator has the purpose of maintaining constant the rotation speed of the shaft that operates the articulated arm.


PIC. 18

TECHNICAL SPECIFICATIONS


PIC. 19

HYDRAULIC PUMP

Pump flow rate - P3	0.85 l/min.
Working pressure	1 MPa (10 bars)
Max. pressure	3 MPa (30 bars)
Working temperature	-20°C +80°C
Opening time	23 s
Oil type	A 15 FADINI by AGIP
Max. shaft rotation angle	205°
Rated torque	196.2 Nm
Static weight of operator	11 Kg
IP Standards	IP 555

ELECTRIC MOTOR

Power output	0.18 KW (0.25 HP)
Supply voltage / Frequency	230 V - 50 Hz
Absorbed current	1.2 A
Absorbed power	250 W
Capacitor	12.5 µF
Motor rotation speed	1'350 r.p.m.
Intermittent service	S 3

Duty cycle	23 sec. Open - 30 sec. Dwell - 23 sec. Close
Time of one complete cycle	76 s
No. of complete cycles Open - Dwell - Close	47/hour
No. cycles a year, 8 hours a day	137'000

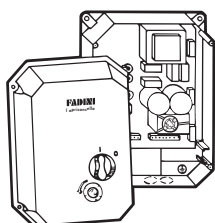
WARNINGS

- 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 of APROLI 280 BATT 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 "Warnings".
- Should APROLI 280 BATT be removed for maintenance, servicing or repair, tighten the air bleeding screw to prevent oil coming out of the reservoir during transport.

Meccanica Fadini recommends the control panel **ELPRO 13 CEI** to achieve an installation that is in conformity to the existing safety standards.

The electronic programmer ELPRO 13 incorporates and can provide all the functions which are required by the most demanding applications with swinging gates.

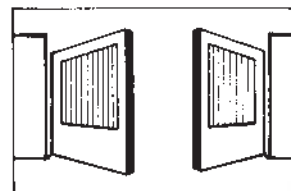
In addition to the standard features of a conventional control box type ELPRO 9 (see page 8 pic. 13) the following requirements can be provided: "stroke reversing pulse", pedestrian mode, stop in any gate position by holding down the remote control button. Among the added features and improvements of ELPRO 13 in conformity to the European safety standards, there is the mains rotary switch: it is fitted to the box cover and switches off the mains voltage whenever the cover is removed.



Elpro 13 CEI

SINGLE-PHASE

CUT OFF MAINS SWITCH



STATIC GATE WEIGHT
400 Kg each leaf

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 standard.



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

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



AUTOMATIC GATE MANUFACTURERS

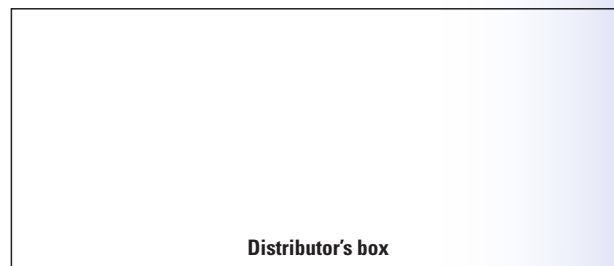
The growth of MECCANICA FADINI has always been based on the development of guaranteed products thanks to our "TOTAL QUALITY CONTROL" system which ensures constant quality standards, updated knowledge of the European Standards and compliance with their requirements, in view of an ever increasing process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



FADINI

the gate opener

Made in Italy



Distributor's box

The manufacturers reserve the right to change the products without any previous notice