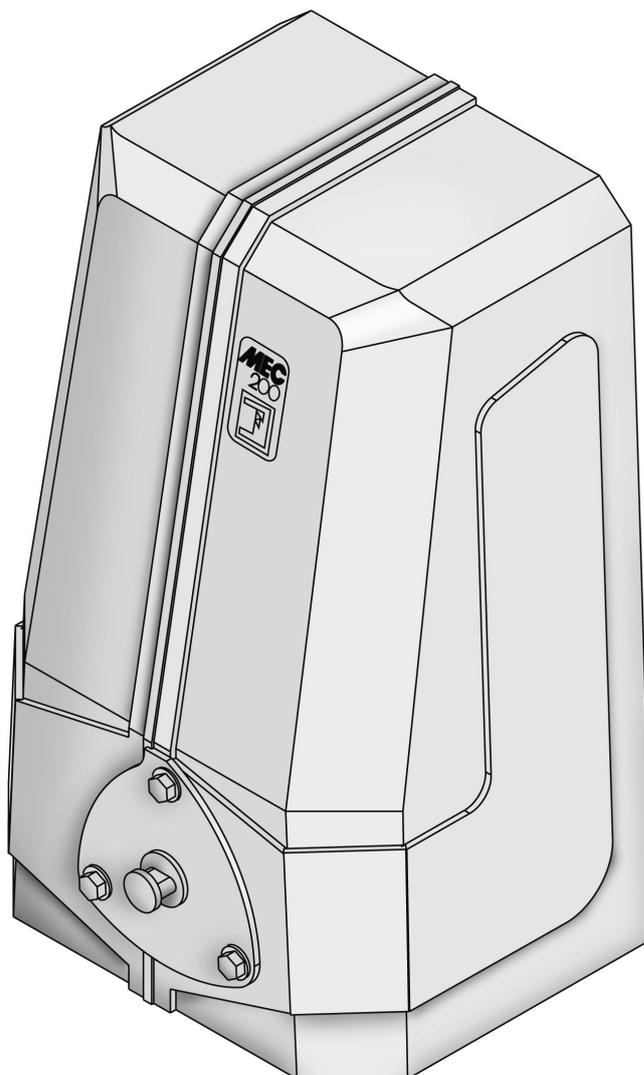


MEC 200

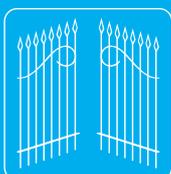
Electro-mechanical sliding gate operator

Vertical and horizontal installation

Gear movements and worm-gear coupling
in oil bath fully mounted on ball bearings



CE



FADINI
the gate opener
Made in Italy

Installation manual

GB

INSTRUCTIONS TO FIT THE VERTICAL AND HORIZONTAL MEC 200 OPERATORS TO A SLIDING GATE

FOR A PROPER AND PERFECT PERFORMANCE OF MEC 200 READ THE INSTRUCTIONS THAT ARE OUTLINED IN THIS MANUAL AND KEEP TO THE DIAGRAMS.

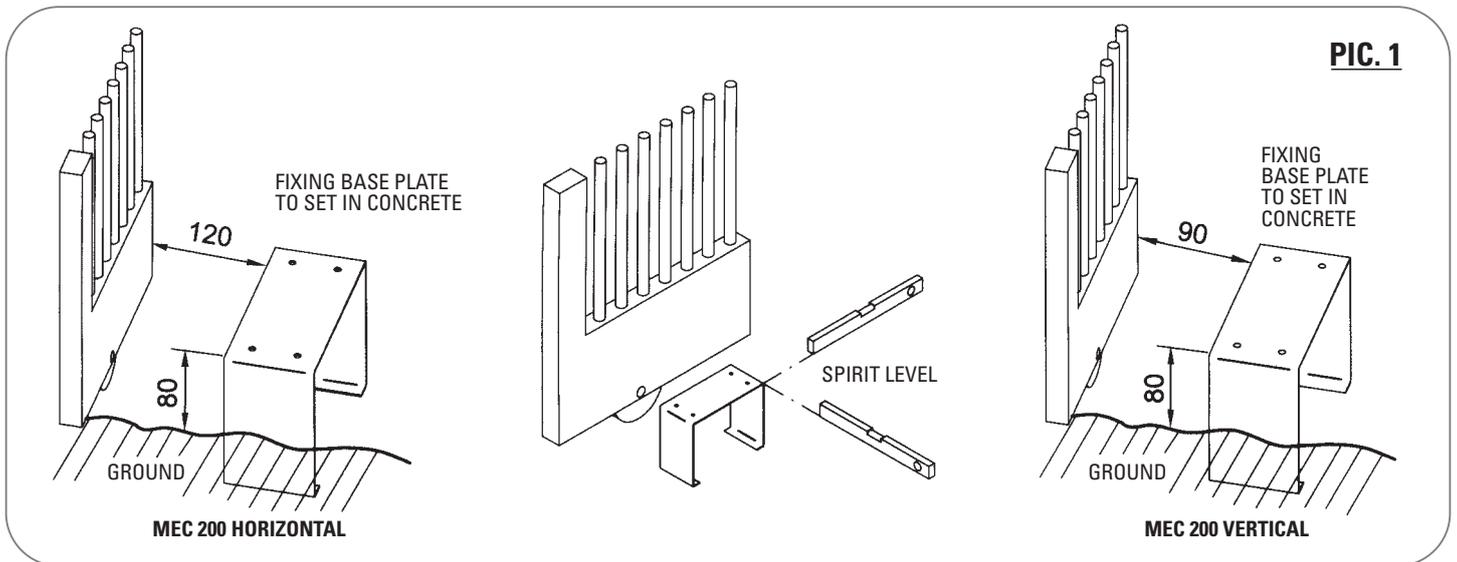
Mec 200 is an extremely versatile system and can suit any sliding gate as it can be mounted either vertically or horizontally, and the motor is available in different power specifications such as 0.37 KW (0.5 HP single- and three-phase); 0.73 KW (1.0 HP single- and three-phase); 1.1 KW (1.5 HP three-phase only). It is a strong and reliable automation. It has a torque control device that can be manually adjusted; worm and gear are made of bronze and steel and are supported by bearings, in an oil bath. A manual overriding system allows manual operations of the gate in emergency events like power failure.

POINTS TO CHECK WITH THE GATE

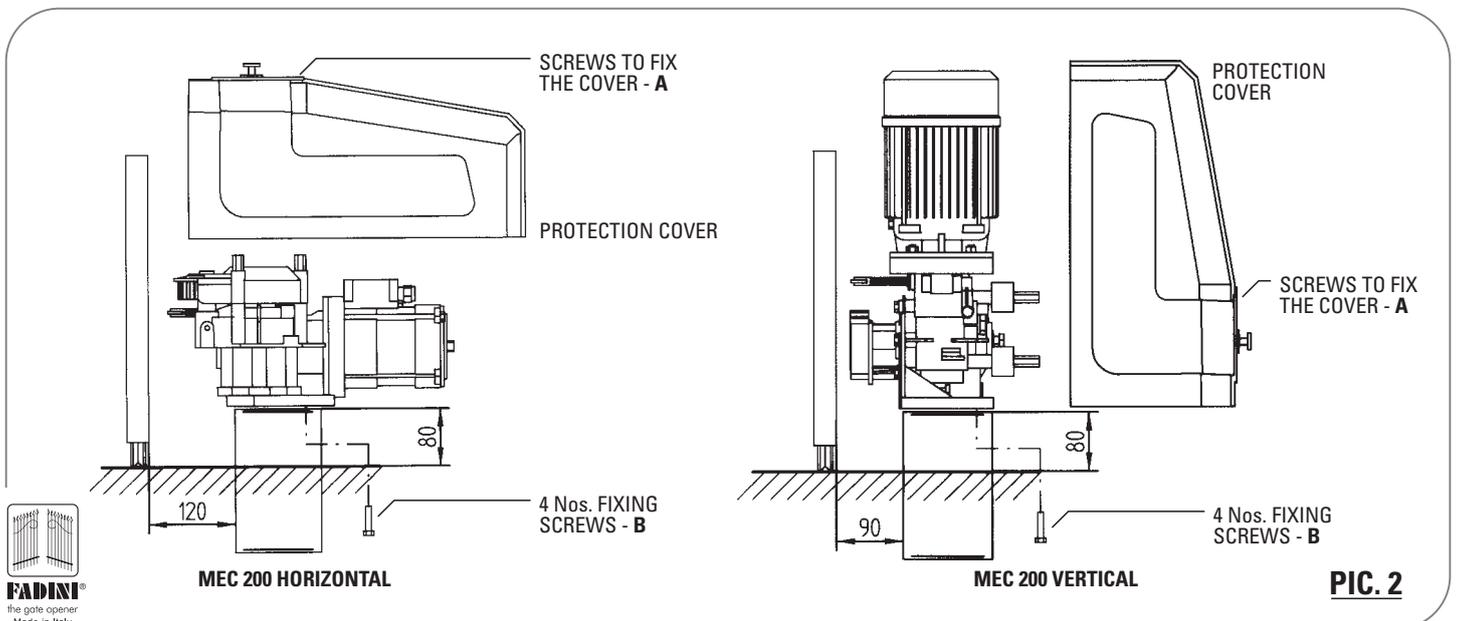
- Check that the gate track is well fixed to a solid foundation to prevent deformation which would result into an unbalanced travelling of the gate.
- **IMPORTANT:** Make sure that **gate stops** are fixed in the **open** and **closed** gate positions so that the gate does not over travel the permitted limit and go out of the upper guide.
- **IMPORTANT:** Make sure that, once at the end of the permitted travel, the gate does not hit the gate posts or special gate stops to avoid damages to its structure.

FITTING MEC 200 ON TO THE FIXING BASE PLATE

- The first operation is to fix the **fixing base plate** to the ground and make sure that it is perfectly **levelled**. Fixing distances are as indicated in pic.1 here below. Fixing is by setting the plate into a **concrete** foundation.
- Remove the MEC 200 **cover** by loosening the three **screws-A** and pulling it upwards; Temporary fix the MEC 200 operator to the **fixing base plate** by means of the **four screws-B**. (pic.2).



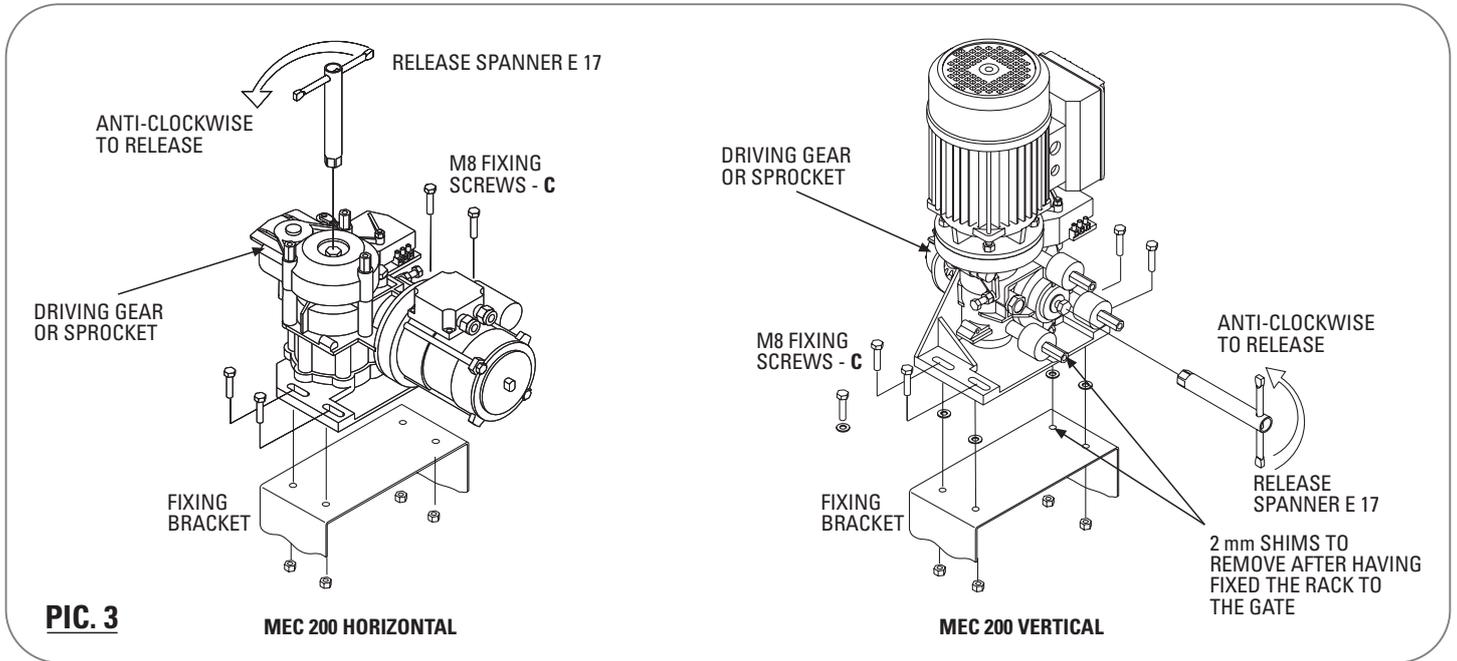
- Remove the MEC 200 **cover** by loosening the three **screws-A** and pulling it upwards; temporary fix the MEC 200 operator to the **fixing base plate** by means of the **four screws-B** (pic.2).



RACK FITTING OPERATIONS

IMPORTANT: If installing **MEC 200 Vertical** it is recommended to insert 2 mm shims between the **fixing bracket** and the **operator base plate** before welding the rack to the gate, so that rack and gear mesh each other with an adequate clearance after that the shims have been removed.

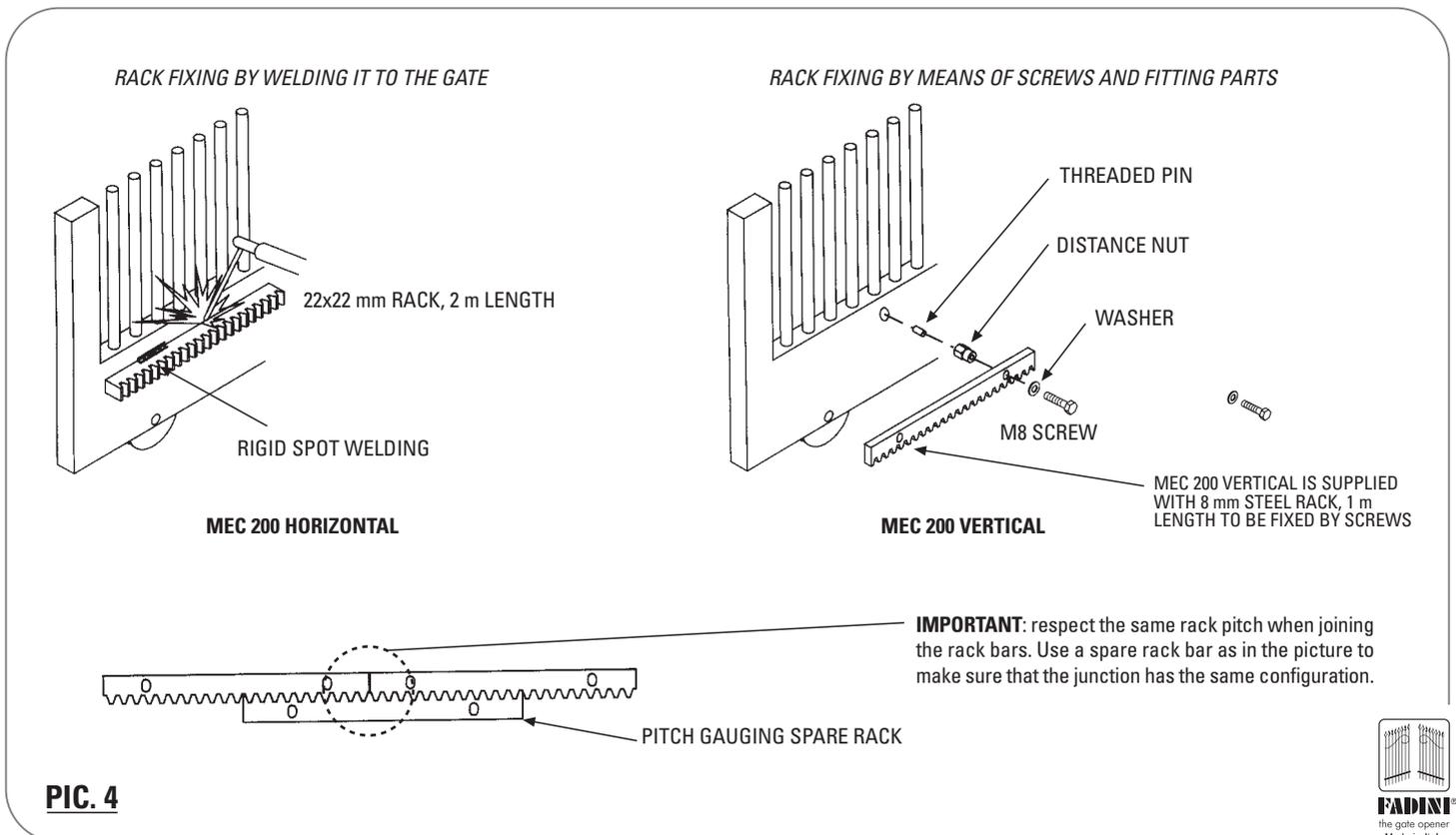
- Temporary fix MEC 200 on to the fixing bracket, perfectly levelled, by means of the 4 fixing screws C.
- MEC 200 outer gear must run idle: loosen (by 1 or 2 turns maximum) the hexagonal head screw by means of the **release spanner E 17** supplied with the equipment (pic.3).

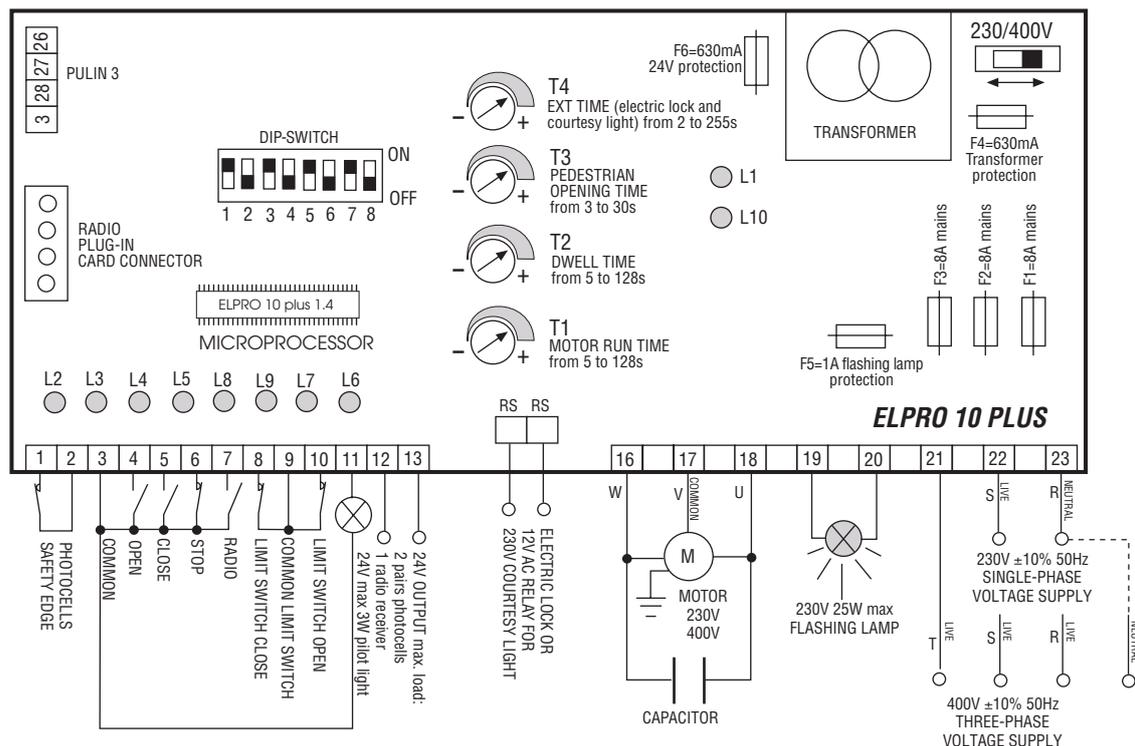


- While fixing the **rack** it is required that the MEC 200 **driving gear** is not connected with the gate and it can be made run idle by means of the **release spanner E17** supplied with the equipment; the gate can be freely moved by hand.
- Temporary clamp the **rack** to the gate so that it can adequately mesh the **driving gear**: the **rack** must mesh the driving gear, idle, of MEC 200 in a very smooth way, without friction (pic. 4).

IMPORTANT: Before definitely fixing any component, make sure that the rack can mesh the **driving gear** of MEC 200 so that the whole system, gate included, can be smoothly run by hand the full travel open and close without any friction.

- Remove the **2 mm shims** only after having fixed the rack. An adequate clearance between rack and gear has thus been achieved (pic. 4).





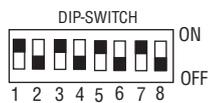
PIC. 7

General description: the electronic control panel Elpro 10 Plus, new generation, is designed to operate sliding gates. Power supply is 230/400V single-phase and three-phase. Built in full compliance with BT 93/68/CE Low Voltage and EMC 93/68/CE Electro-Magnetic Compatibility Regulations. Fitting operations are recommended by a qualified technician in conformity to the existing safety standards. The manufacturing company declines any responsibility for incorrect handling and application; also, it reserves the right to change or update the control panel any time. **Failure to follow installation regulations may result in serious damage to property and persons.**

- PLEASE NOTE:**
- The control panel must be installed in a sheltered, dry place, inside the box provided with it.
 - Make sure that the power supply to the electronic programmer is $230V \pm 10\%$ or $400V \pm 10\%$
 - Make sure that the power supply to the Electric Motor is $230V \pm 10\%$ or $400V \pm 10\%$
 - For distances of over 50 metres we recommend using electric cables with bigger sections.
 - Fit the mains to the control panel with a 0.03A high performance circuit breaker.
 - Use 1.5 mm^2 section wires for voltage supply, electric motor and flashing lamp. Maximum recommended distance 50 m. Use 1 mm^2 section wires for limit switches, photocells, push-buttons/key-switch and accessories.
 - Bridge terminals 1 and 2 if no photocells are required.
 - Bridge terminals 3 and 6 if no key- or push-button switches are required.
- N.W.:** To fit extra accessories such as lights, CCTV etc. use only solid state relays to prevent damages to the microprocessor.

Dip-Switch:

- 1= ON. Photocells. Stop while opening
2= ON. Radio. No reversing while opening
3= ON. Automatic closing
4= ON. Preflashing activated
5= ON. Radio. Step by step. Stop in between
6= ON. Dead Man Control (Dip 4=OFF and Dip 3=OFF)
7= ON. No lamp on during dwell time
8= OFF. No function

**In case of failure of the panel:**

- Make sure that the power supply to the electronic programmer is $230V \pm 10\%$ or $400V \pm 10\%$
- Make sure that the power supply to the Electric Motor is $230V \pm 10\%$ or $400V \pm 10\%$
- Check fuses
- Check photocells if contacts are normally closed
- Check all NC contacts
- Check that no voltage drop has occurred from the control panel to the electric motor

Led Status Indication:

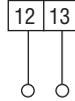
- L1= 230V 50Hz power supply. Alight
- L2= Photocells, if obstructed light goes off
- L3= Open. Alight whenever an Open pulse is given
- L4= Close. Alight whenever a Close pulse is given
- L5= Stop. It goes off on pulsing Stop
- L6= Radio. It goes on by pressing a transmitter button
- L7= Gate Status; it flashes on gate opening
- L8= Limit switch Close; off when gate is closed
- L9= Limit switch Open; off when gate is open
- L10= It stays on for a time equal to the time set on T4

LOW VOLTAGE ELECTRICAL CONNECTIONS

Photocells and Safety Edge:



PHOTOCELLS AND SAFETY EDGE



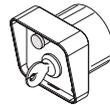
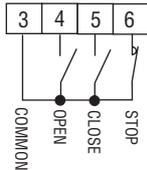
24V (500 mA) OUTPUT (MAX. LOAD:
2 PAIRS PHOTOCELLS
1 RADIO RECEIVER)

DIP-SWITCH 1:

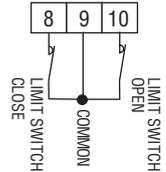
- ON: Photocells stop gate while opening, reverse it on closing once obstacle is removed
- 1 OFF: Photocells do not stop gate while opening, reverse it on closing in case of an obstacle



Button switch:

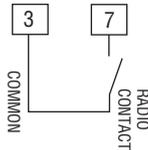


Limit switch:



Radio Contact:

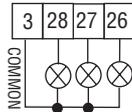
- Open/Close (Standard)
- Travel reversing on pulsing
- Step by step



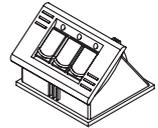
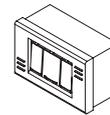
DIP-SWITCH 2 and 5 (NEVER set BOTH of them to ON at the same time):

- ON: Gate is not reversed while opening
- 2 OFF: Any pulse reverses the gate
- ON: Step by step. Stop in between
- 5 OFF: Standard operating mode

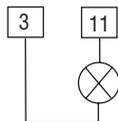
Push Button Switch Pulin3:



Led to indicate status of Open - Stop - Close switches



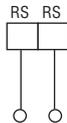
24V 3W Indication Light:



- Light **ON** = Open gate
- Light **OFF** = Closed gate
- Flashing (**fast**) **0.5s** = Closing gate
- Flashing (**normally**) **1s** = Opening gate
- Flashing (**slowly**) **2s** = gate is stopped

Courtesy light:

Connect a 12VAC Relay (T4 Trimmer Time from 2s to 255s) to operate a 230V lamp

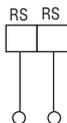


T4
- TIME EXT (Electric lock and courtesy light) from 2 to 255s

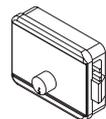


Electric lock:

Set the T4 Trimmer Time to the lowest value
The electric lock is excited for 2 seconds

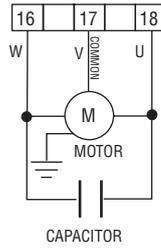


T4

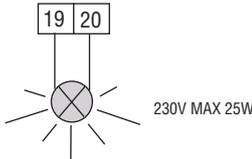


ELECTRICAL POWER CONNECTIONS

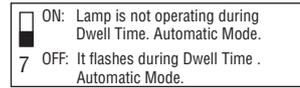
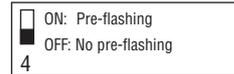
Single- (230V) and Three-phase (400V) Motors:



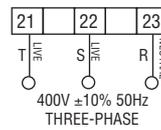
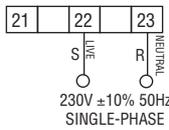
Flashing lamp:



DIP-SWITCH 4 and 7:



Power supply:



OPERATING MODES

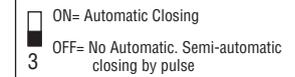
Automatic / Semiautomatic:

Automatic Operation: any pulse opens the gate, the gate stays open as long as the Dwell time expires as set by T2 trimmer, then it closes automatically, no pulsing is required.

Semi-automatic Operation: any pulse opens the gate that stays open. A second pulse to Close is required for the gate to close.

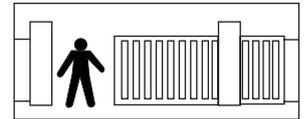


DIP-SWITCH 3



Pedestrian Opening:

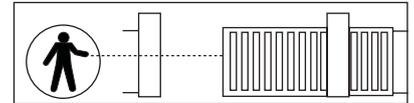
Trimmer T3 at minimum disactivates Pedestrian Opening from 3 to 30s. It can be activated by any pulse (eg. by remote control) superior to 2s



Hold on switched (Deadman) control:

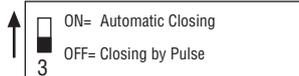
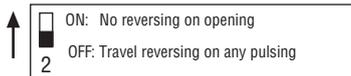
Open and Close operations are achieved "by holding a switch on" (no relay self-holding is involved) therefore a physical attendance is required to keep the gate opening or closing until either the button or key is released.

DIP-SWITCH 6



Remote Controlled Operations Excluded during Dwell Time on Automatic Mode:

With this setting it is not possible to operate the gate by remote control during the dwell time on automatic mode. DIP-SWITCH 2=ON, 3=ON and 5=ON

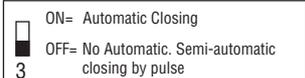


Time clock installation:

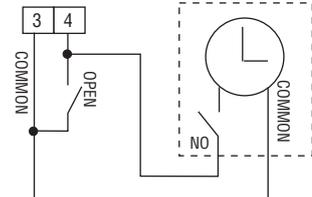
How it works: Set the clock to the required time. On the pre-set time the gate is automatically opened and held open. Any further pulsing (even by remote control) is not accepted by the system until the time pre-set by the clock has expired. On expiring and after the pre-set dwell time the gate is closed automatically. T3 trimmer on to zero, Dip-Switch 3=ON.

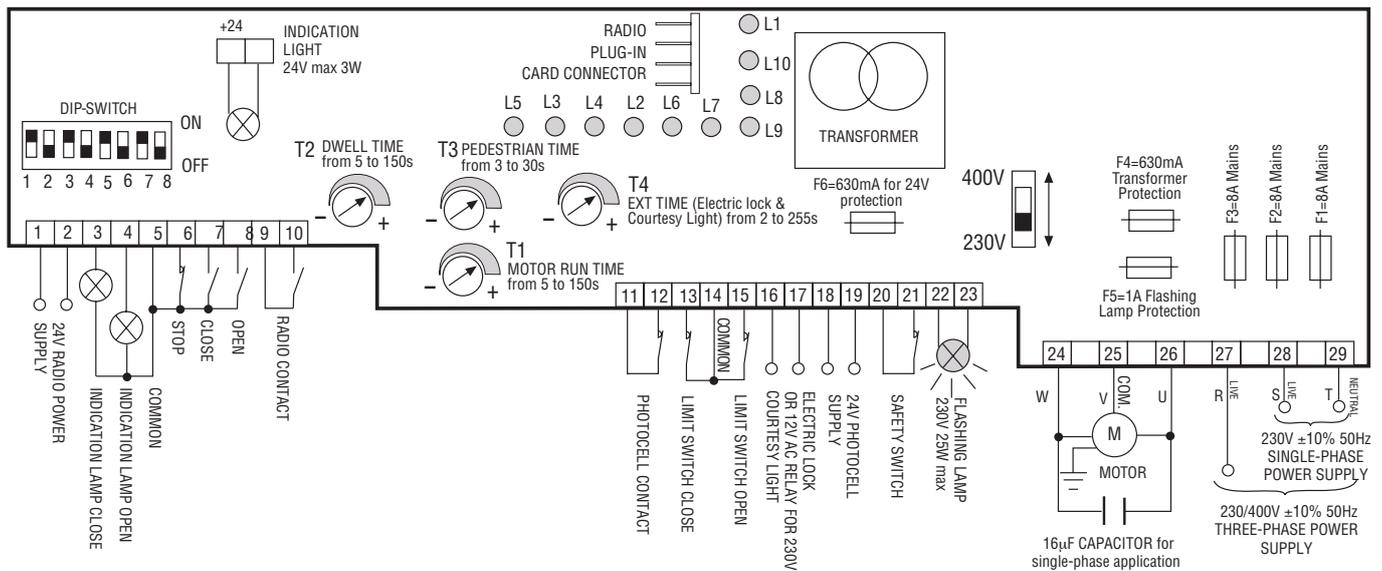


DIP-SWITCH No.3=ON Automatic Closing



External Time Clock





PIC. 8

General description: The electronic control panel Elpro 70/3 Plus, new generation, is designed to operate the sliding gate operators MEC 200. Power supply is 230-380V single- and three-phase. It is built in full compliance with the Low Voltage and Electro-Magnetic Compatibility Regulations. Fitting operations are recommended to be carried out by a qualified technician in conformity to the existing safety standards. The manufacturing company declines any responsibility for incorrect handling and applications; also, it reserves the right to change or update the control panel any time. **Failure to follow installation regulations may result in serious damage to property and persons.**

**PLEASE NOTE:**

- The control panel is fitted inside Mec 200.

- Make sure that the power supply to the electronic programmer is $230V \pm 10\%$

- Make sure that the power supply to the Electric Motor is $230V \pm 10\%$

- For distances of over 50 metres we recommend using electric cables with bigger sections.

- Fit the mains to the control panel with a 0.03A high performance circuit breaker.

- Use 1.5 mm² section wires for voltage supply, electric motor and flashing lamp. Maximum recommended distance 50 m. Use 1 mm² section wires for limit switches, photocells, push-buttons/key-switch and accessories.

- Bridge terminals 11 and 12 if no photocells are required.

- Bridge terminals 5 and 6 if no key- or push-button switches are required.

N.W: To fit extra accessories such as lights, CCTV etc. use only solid state relays to prevent damages to the microprocessor.

Dip-Switch:

1= ON Photocells. Stop on opening

2= ON Radio. No reverse on opening

3= ON Automatic closing

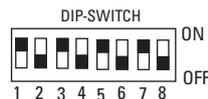
4= ON Preflashing activated

5= ON Radio. Step by step. stop in between

6= ON Dead Man Control (Dip 4=OFF n Dip 3=OFF)

7= ON No light during dwell time

8= OFF. No function

**In case of failure of the panel:**

- Make sure that the power supply to the electronic programmer is $230V \pm 10\%$ or $400V \pm 10\%$

- Make sure that the power supply to the Electric Motor is $230V \pm 10\%$ or $400V \pm 10\%$

- Check fuses

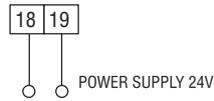
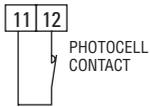
- Check photocells if contacts are normally closed

- Check all NC contacts

- Check that no voltage drop has occurred from the control panel to the electric motor

LOW VOLTAGE ELECTRICAL CONNECTIONS

Photocell:

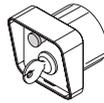
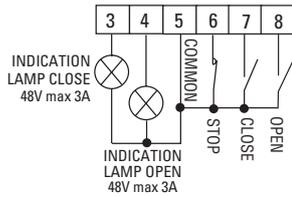


DIP-SWITCH 1:

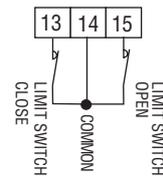
- ON: Photocells stop gate while opening, reverse it on closing once obstacle is removed
- 1 OFF: Photocells do not stop gate while opening, reverse it on closing in case of an obstacle



Push Button Switch:

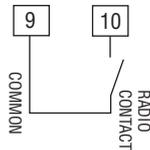


Limit switch:



Radio Contact:

- Open/Close (Standard)
- Travel reversing on pulsing
- Step by step

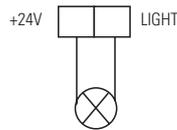


DIP-SWITCH 2 and 5 (NEVER set BOTH of them to ON at the same time):

- ON: Gate is not reversed while opening
- 2 OFF: Any pulse reverses the gate

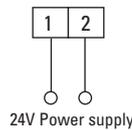
- ON: Step by step. Stop in between
- 5 OFF: Standard operating mode

24V 3W Indication Light:

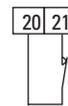


- Light **ON** = Open gate
- Light **OFF** = Closed gate
- Flashing (**fast**) **0.5s** = Closing gate
- Flashing (**normally**) **1s** = Opening gate
- Flashing (**slowly**) **2s** = gate is stopped

Radio Power Supply

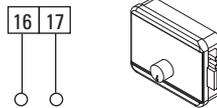


Safety Switch



Electric lock:

Set the T4 Trimmer Time to the lowest value
The electric lock is excited for 2 seconds



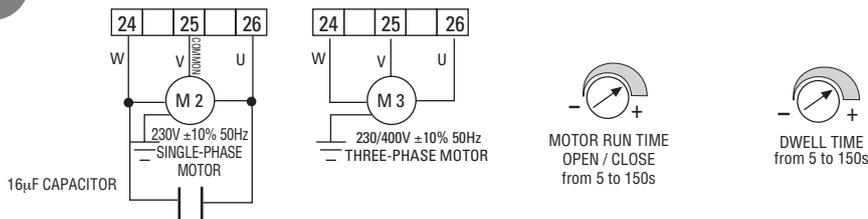
Courtesy light:

Connect a 12VAC Relay (T4 Trimmer Time from 2s to 255s)
to operate a 230V lamp

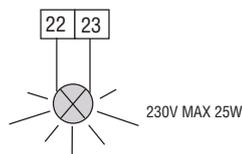


ELECTRICAL POWER CONNECTIONS

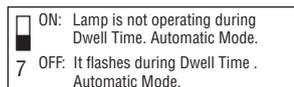
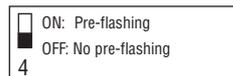
Single- (230V) and Three-phase (400V) Motors:



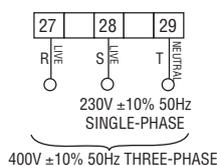
Flashing lamp:



DIP-SWITCH 4 and 7:



Power supply:

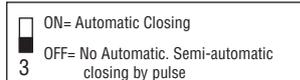


OPERATING MODES

Automatic / Semiautomatic:

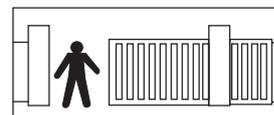
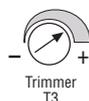


DIP-SWITCH 3



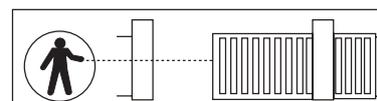
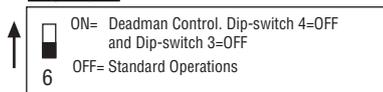
Pedestrian Opening:

Trimmer T3 from 3 to 30s. It can be activated by any pulse (eg. by remote control) superior to 2s



Hold on switched (Deadman) control:

DIP-SWITCH 6

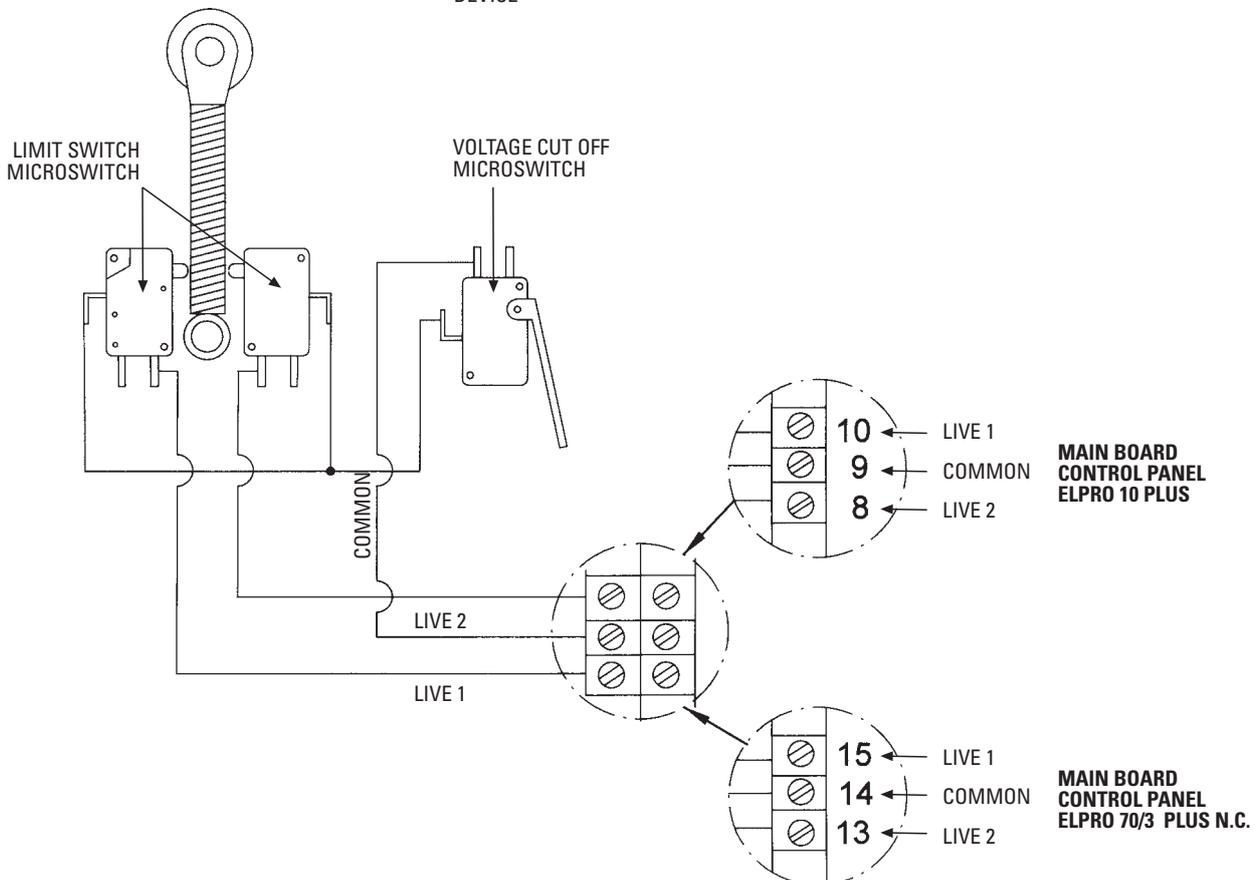
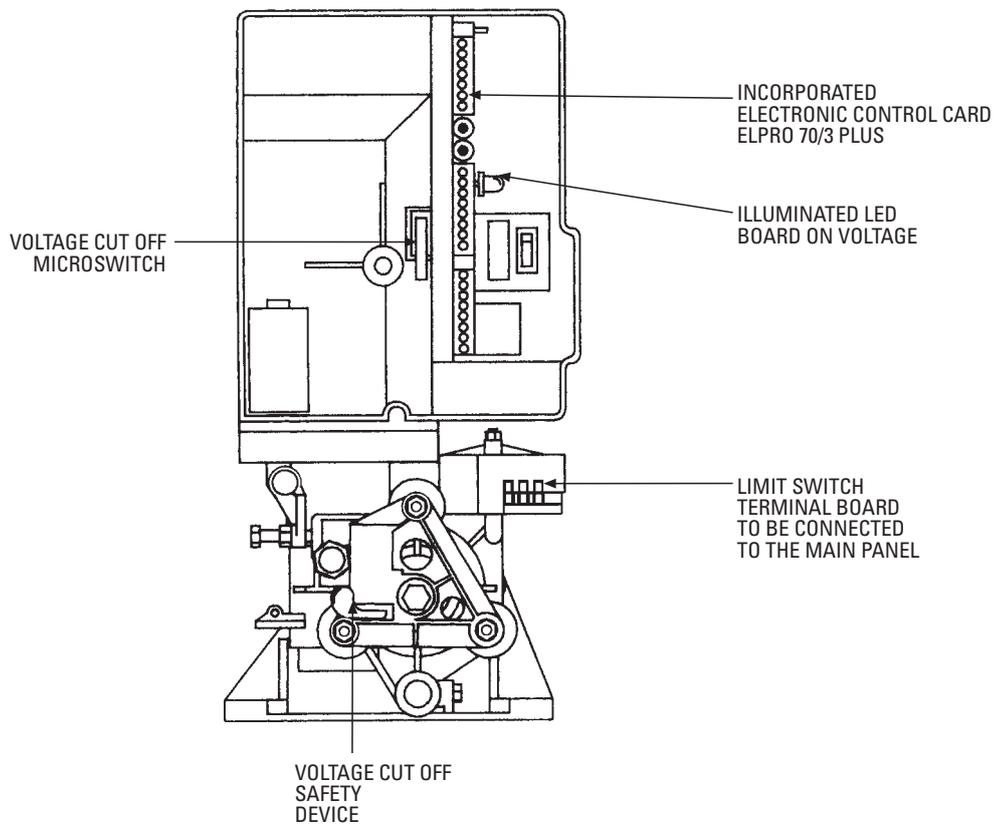


Led Status Indication:

- L1 = 230V 50Hz power supply. A light
- L2 = Photocells, if obstructed light goes off
- L3 = Open. A light whenever an Open pulse is given
- L4 = Close. A light whenever a Close pulse is given
- L5 = Stop. It goes off on pulsing Stop
- L6 = Radio. It goes on by pressing a transmitter button
- L7 = Gate Status; it flashes on gate opening
- L8 = Limit switch Close; off when gate is closed
- L9 = Limit switch Open; off when gate is open
- L10 = It stays on for a time equal to the time set on T4

- It is recommended to fit **three-phase** operators with a **safety device** consisting of a switch to cut off power to the low voltage circuit. Connections are **in series with the limit switch common terminal** (pic. 9). The switch is activated whenever the override spanner is inserted for manual operations or the operator cover is removed.

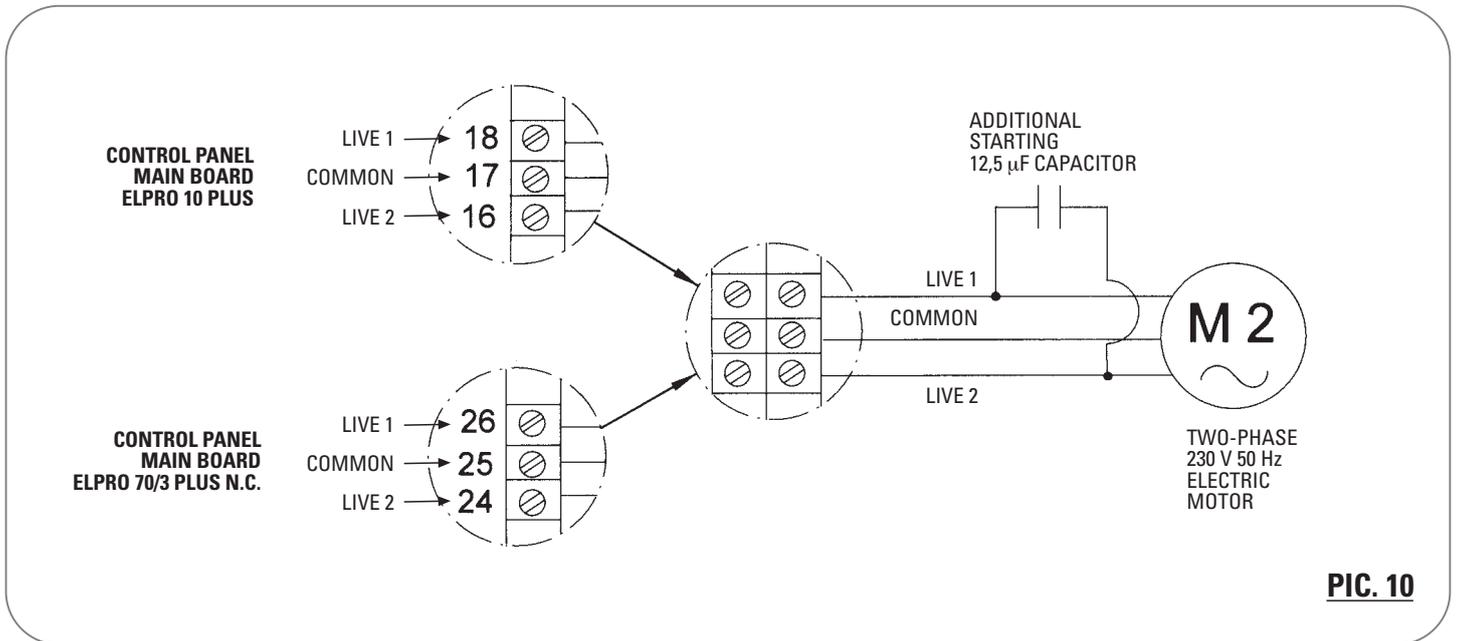
Should the limit switches be wrongly connected so that their action opposes the normal travelling of the gate, reverse their connections in the main board. Change over the live connections, keep the **common fixed** in the same terminal.



PIC. 9

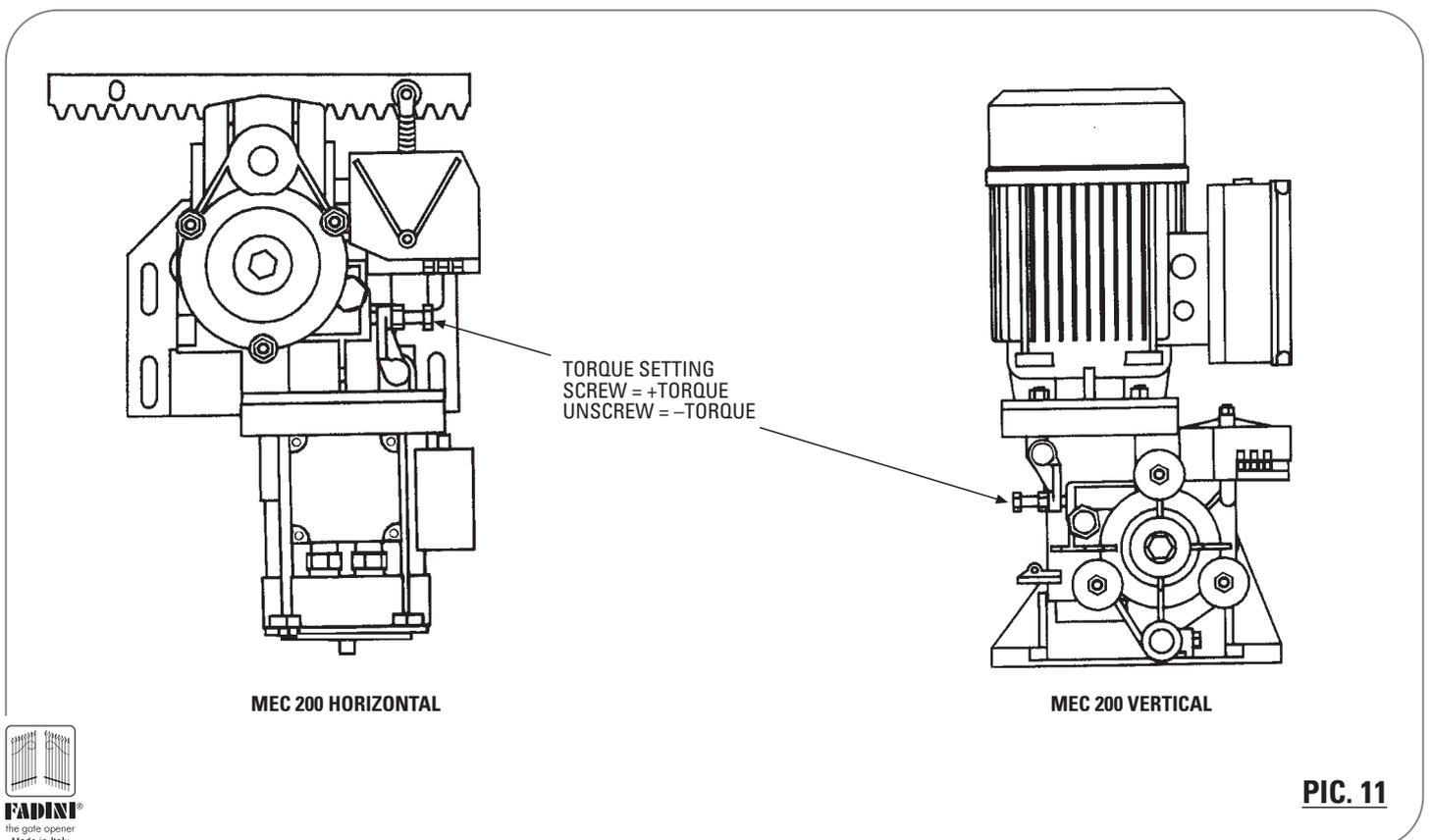
-The electrical connections to the motor are as described in the diagram included in each specific control box (pic.7 and pic.8) Should it be needed to reverse the rotation direction of the motor, change live 1 with live 2, but the neutral **is to remain fixed** in its terminal (pic.10).

NOTE: SHOULD THE MOTOR FAIL TO OPERATE THE GATE IN CASE OF POWER SHORTAGE, ADD AN EXTRA **12.5 μ F CAPACITOR** AND PARALLEL CONNECT IT TO THE ELECTRIC MOTOR LIVE 1 AND 2 (PIC 10).



TORQUE CONTROL AND ADJUSTMENT

MEC 200 incorporates an adjustable clutch system for torque control. The system is in an oil bath and can be adjusted to the gate weight. Adjusting is by a **screw** which is located on one side of the operator (pic.11). A special **spanner E17** is provided with the equipment for this purpose: unscrew the **locknut**; the more you tighten the screw **clockwise, the more you increase the operator torque**; by unscrewing it torque is decreased. Once set it to meet the site requirements, tighten the locknut hard.



TECHNICAL SPECIFICATIONS

ELECTRIC MOTOR

	SINGLE-PHASE	THREE-PHASE	SINGLE-PHASE	THREE-PHASE	THREE-PHASE
Power output	0.37 KW (0.5 HP)	0.37 KW (0.5 HP)	0.73 KW (1 HP)	0.73 KW (1 HP)	1.1 KW (1.5 HP)
Supply voltage	230 V	230/400 V	230 V	230/400 V	230/400 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Absorbed power	510 W	575 W	1'130W	1'030 W	1'500 W
Absorbed current	2.4 A	2.1-1.2 A	5.7 A	3.7-2.2 A	5.1-3 A
Motor rotation speed	1'380 rpm	1'380 rpm	1'380 rpm	1'380 rpm	1'380 rpm
Capacitor	20 µF		30 µF		
Intermittent service	S3	S3	S3	S3	S3

MEC 200 GEAR BOX

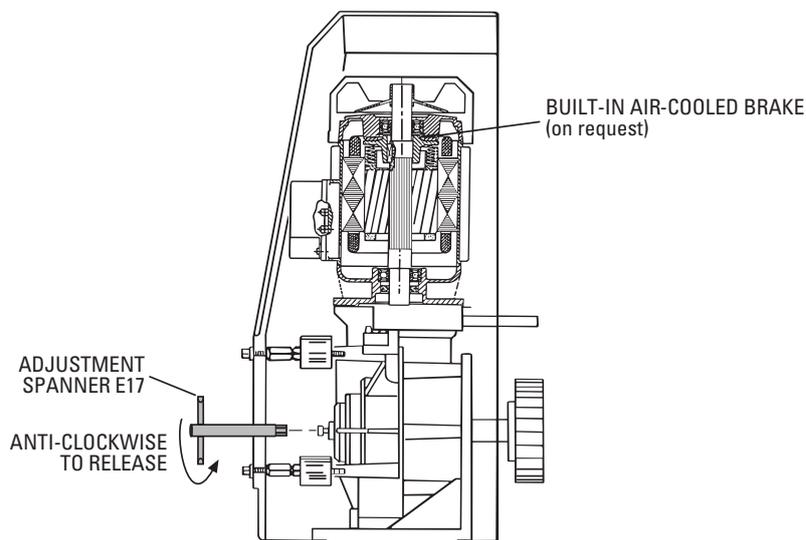
	SINGLE-PHASE	THREE-PHASE	SINGLE-PHASE	THREE-PHASE	THREE-PHASE
Rated torque	40 Nm	40 Nm	80 Nm	80 Nm	110 Nm
Gear ratio	1:32	1:32	1:32	1:32	1:32
Running speed	9.6 m/1'	9.6 m/1'	9.6 m/1'	9.6 m/1'	9.6 m/1'
Oil temperature	-20°C +80°C	-20°C +80°C	-20°C +80°C	-20°C +80°C	-20°C +80°C
Oil type (AGIP ROTRA THT)	W 80 - Kg 0.22	W 80 - Kg 0.22	W 80 - Kg 0.22	W 80 - Kg 0.22	W 80 - Kg 0.22
Protection standard	IP 557	IP 557	IP 557	IP 557	IP 557
Weight. Mec 200 Vertical	19 Kg	18 Kg	23 Kg	21 Kg	25 Kg
Weight. Mec 200 Horizontal	19.5 Kg	18.5 Kg	23.5 Kg	21.5 Kg	25.5 Kg
Max. gate weight	400 Kg	450 Kg	800 Kg	850 Kg	1'200 Kg
Duty cycle	25 s Open - 30 s Dwell - 25 s Close Time for one complete cycle 80 s No. of complete cycles Open-Dwell-Close: 45/Hour No. of complete cycles per year (8 hours' service per day): 131'000 cycles				

ELPRO 10 PLUS ELECTRONIC PANEL

Power supply	230 / 400 V	Power transformer	20 VA
Voltage output	230 V - 25 W	Magnetic core	1.5 W / 0.5 thick
Low voltage output	24 V - 10 W	Voltage	0-230 V
E.M. max. power output	1'100 W	Outputs	0-12-18-24 V
Line fuses	5 A	Frequency	50-60 Hz
Secondary fuses	1A - 630 mA	Insulation	4 Kv x 1'
Logic switching	Open-Stop-Close	Main switch	T215K Mark SAA
Box dimensions	290x205x140	Contact rating	15A 250 V AC
Protection standard	IP 437		
Elستا relay marking	VDE-CSA-DEMCO-SEV		
	10 A 230 V		
	4 A 400 V		

SECTION VIEW WITH BRAKE (on request) AND RELEASE KEY

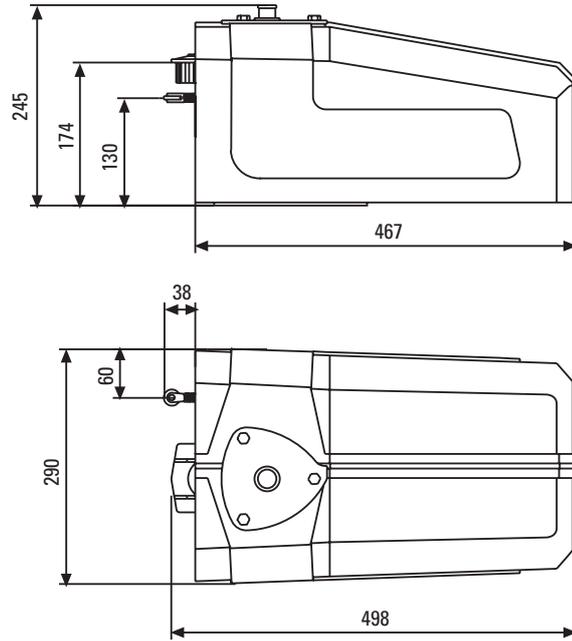
Drwg. No. 3404



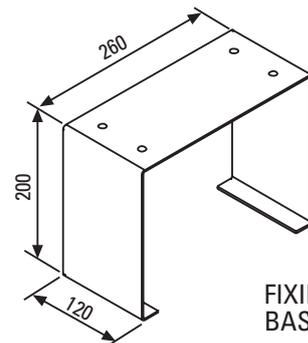
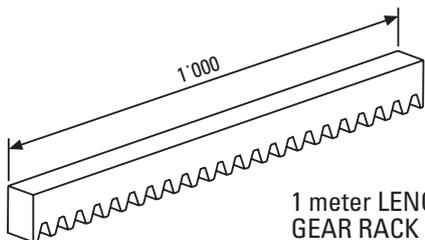
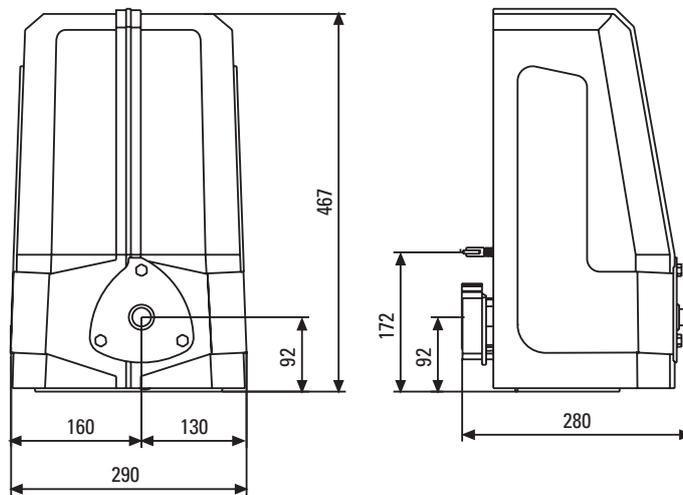
PIC. 12

MEC 200 OVERALL DIMENSIONS

MEC 200 HORIZONTAL

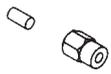
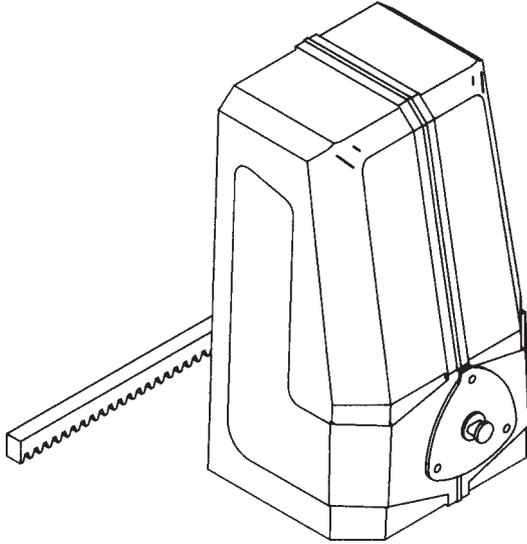


MEC 200 VERTICAL

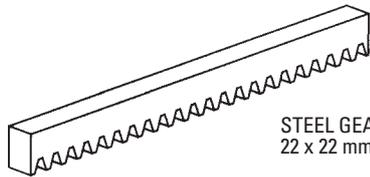


FITTING ACCESSORIES FOR INSTALLING MEC 200

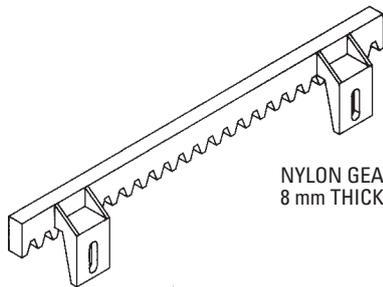
MEC 200 VERTICAL



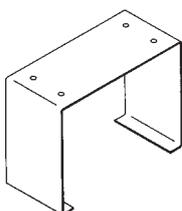
GEAR RACK FIXING SET



STEEL GEAR RACK
22 x 22 mm THICKNESS

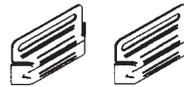
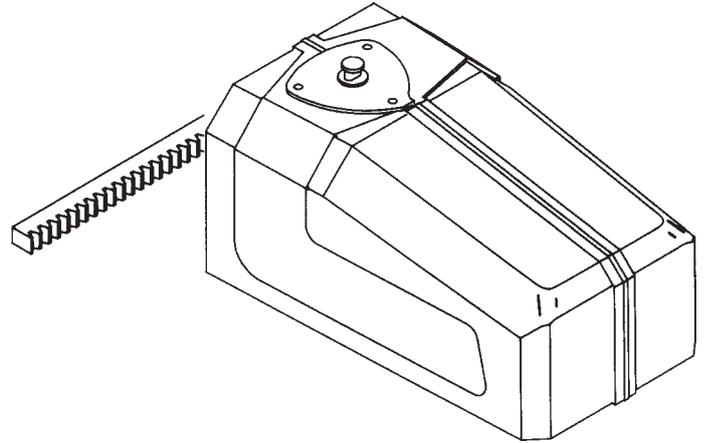


NYLON GEAR RACK
8 mm THICKNESS

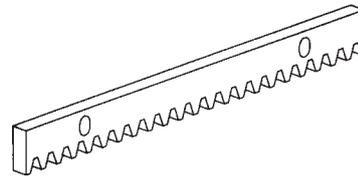


FIXING
BASE PLATE

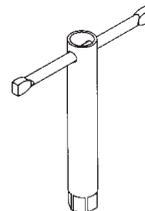
MEC 200 HORIZONTAL



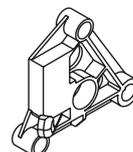
LIMIT SWITCH STRIKING
PLATES FOR SCREW FIXING
TO THE GATE



STEEL GEAR RACK
WITH FIXING SLOTS



E 17 RELEASE
SPANNER

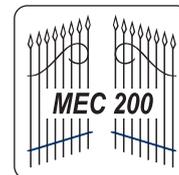


POWER CUT OFF
DEVICE

PIC. 14

MEC 200

ELECTRO-MECHANICAL SLIDING GATE OPERATOR



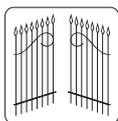
CHECKING AND MAINTENANCE:

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 approx.

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 in this booklet - make sure that the motor specifications as printed on the motor sticker conform to those of the mains.
- Dispose properly of the packaging materials such as cardboard, nylon and polystyrene through specialized companies.
- Should the operator be removed, **do not cut** the electrical cables, but properly remove them by loosening the pins in the terminal board.
- Switch off the mains switch before the cover of the cable junction box is removed.
- All the equipment must be properly earthed by the yellow/green cable marked with the specific symbol.
- It is recommended to carefully read the regulations, advice and remarks in the book "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 standard.

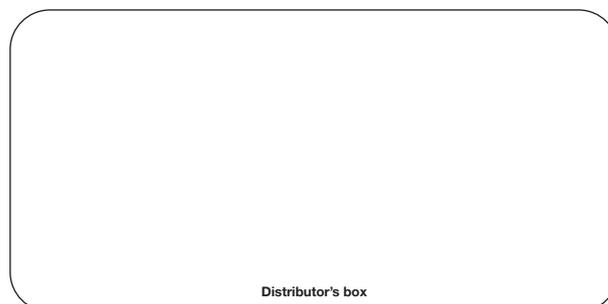
CE EUROPEAN MARK CERTIFYING CONFORMITY
TO THE ESSENTIAL REQUIREMENTS OF THE
STANDARDS 98/37/EC

- 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

Via Mantova, 177/A - 37053 Cerea (Verona) Italy
Tel. 0442 330422 r.a. - Fax 0442 331054
e-mail: info@fadini.net - www.fadini.net



Distributor's box

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