

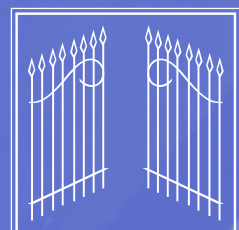
FIBO 400

- ELECTRO-MECHANICAL OPERATOR FOR HEAVY SLIDING GATES AND DOORS
2.2 KW (3.0 HP)



INSTALLATION MANUAL

GB



FADINI[®]
the gate opener

FIBO 400 INSTRUCTIONS FOR THE INSTALLATION OF THE SLIDING GATE OPERATOR

FOR CORRECT FIBO 400 INSTALLATION AND GOOD PERFORMANCE, PLEASE READ THE INSTRUCTIONS OUTLINED IN THIS MANUAL CAREFULLY AND KEEP TO THE DIAGRAMS.

IMPORTANT: THE ENTIRE INSTALLATION MUST BE CARRIED OUT BY QUALIFIED TECHNICAL PERSONNEL IN COMPLIANCE WITH EN 12453 – EN 12445 SAFETY STANDARDS AND IN ACCORDANCE WITH MACHINERY DIRECTIVE 98/37/EC.

GENERAL INFORMATION

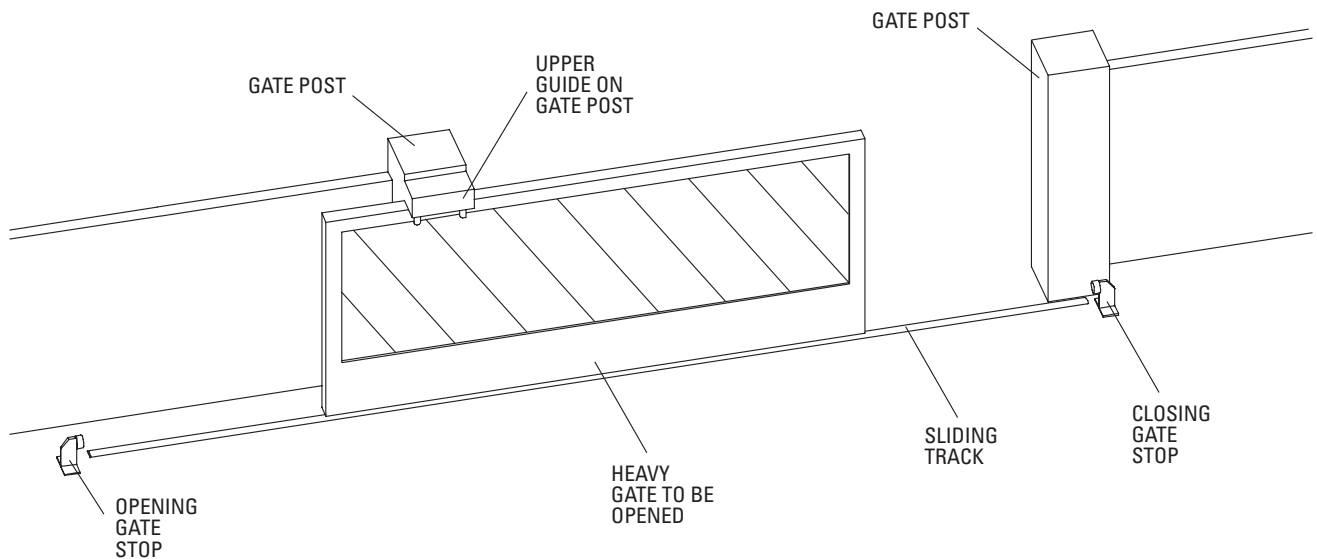
The three-phase 2.2 KW (3.0 HP) FIBO 400 is an automation for heavy sliding gates and industrial doors (the field of use varies from a gate weight of 2'500 to approx. 4'000 Kg); the gear motor unit is installed inside a sheet steel protection cover, which is fixed to a thick metal base plate. The protection cover houses the power panel and the electronic command programmer, while the limit switches are already attached to the body of the gear motor without electrical connections.

The protection cover can only be accessed by opening the door with a customized key. Personal safety is guaranteed by a voltage cut-off device.

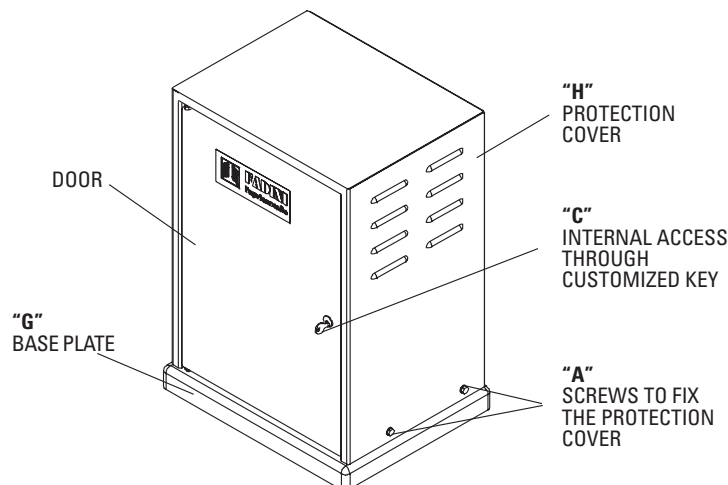
This is a strong and reliable automation for intense opening/closing cycles. The drive shaft is in direct contact with a mechanical torque control device; worm and gear are made of bronze and steel and are supported by bearings, in an oil bath. The irreversible worm-gear coupling makes it possible to block the gate in any stop position. A manual overriding system allows manual gate operation in emergency events such as power failure.

POINTS TO CHECK WITH THE GATE

- **IMPORTANT:** Make sure that the gate track is well fixed to a solid foundation in order to prevent deformation which would result in unbalanced gate motion (Pic. 1).
- **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 exit the upper guide (Pic. 1).
- **IMPORTANT:** Make sure that, once the gate has reached the end of the permitted travel area, it does not hit the **gate posts** or special gate stops so as to avoid damaging the gate structure (Pic. 1).



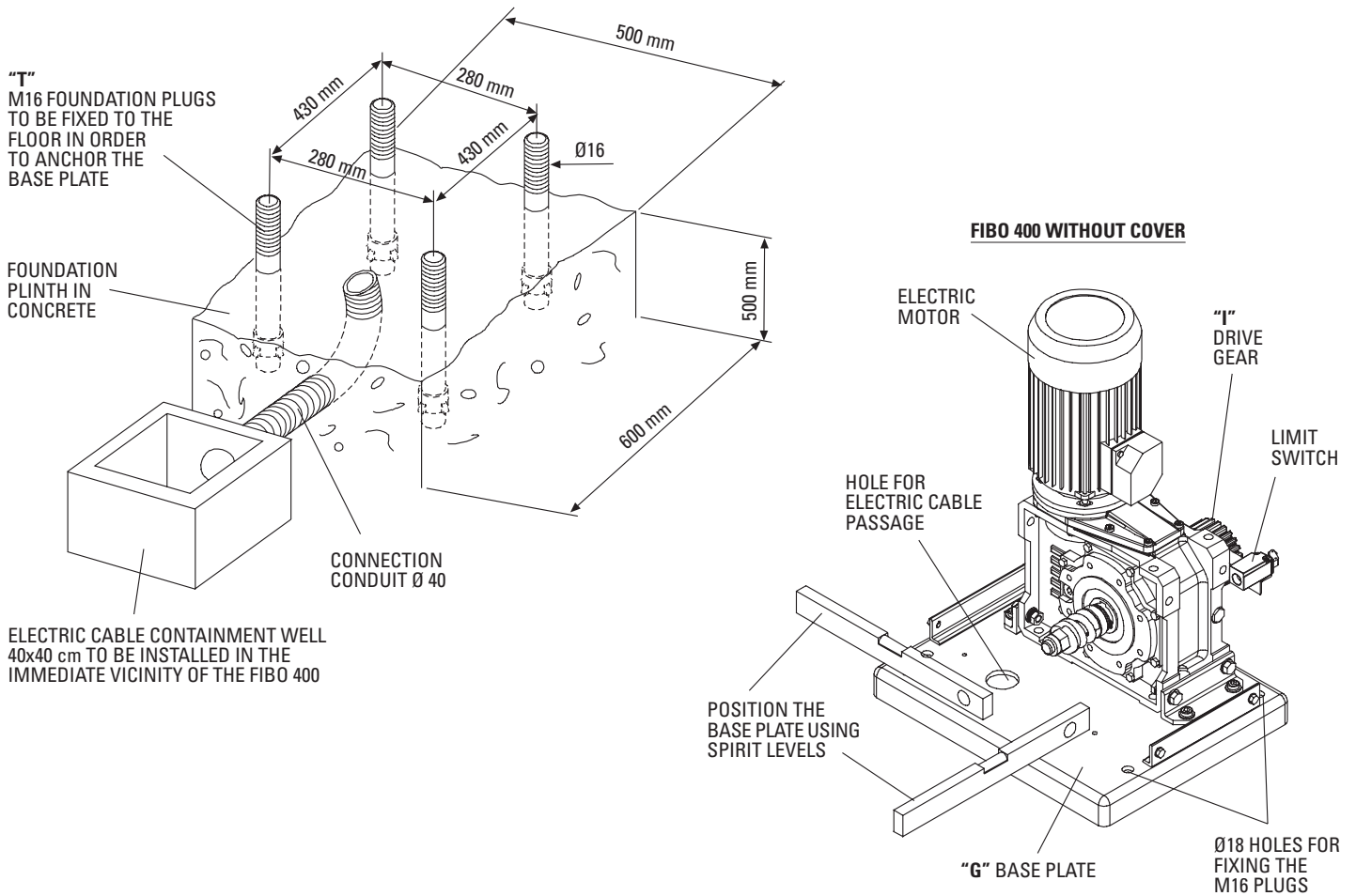
➤ **PIC. 1**



➤ **PIC. 2**

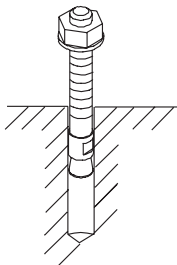
FITTING THE BASE PLATE

- The first operation involves preparing a **cable containment well** near the installation, connected to the FIBO 400 base plate by an appropriate conduit for electrical connections (Pic. 3).
- In order to fit the **base plate "G"** it is necessary to firstly remove the **protection cover "H"** by unscrewing the four fixing **screws "A"** from the bottom of the automation sides (Pic. 2).
- The **base plate "G"** should be fixed into place with **M16 plugs "T"**, which must be firmly anchored in the flooring, respecting the base plate hole centre distances and making sure that the automation **base plate "G"** is perfectly levelled by using spirit levels (Pic. 3).



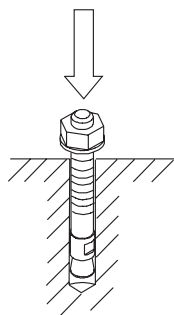
PROCEDURE FOR INSERTING AND FIXING THE FOUNDATION PLUGS "T"

1



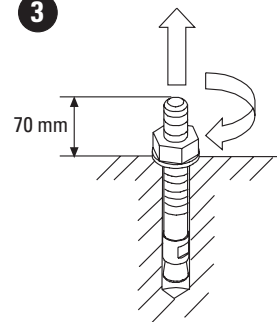
BORE 4 HOLES IN KEEPING WITH THE DIAMETER OF THE PLUGS AND THE PASSAGE

2



INSERT THE PLUGS IN THE HOLES LEAVING A PART PROTRUDING FROM THE FLOOR EQUIVALENT TO THE THICKNESS OF THE BASE PLATE AND FIXTURE NUT, CONSIDERING THE PROTRUSION OF THE PLUG DURING TIGHTENING

3

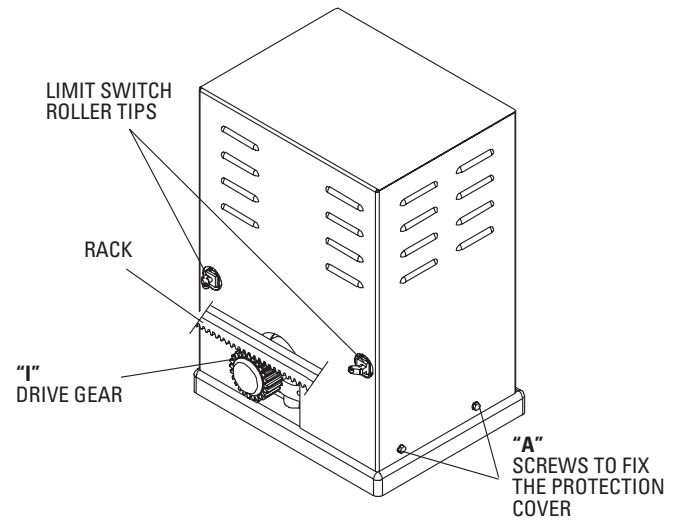
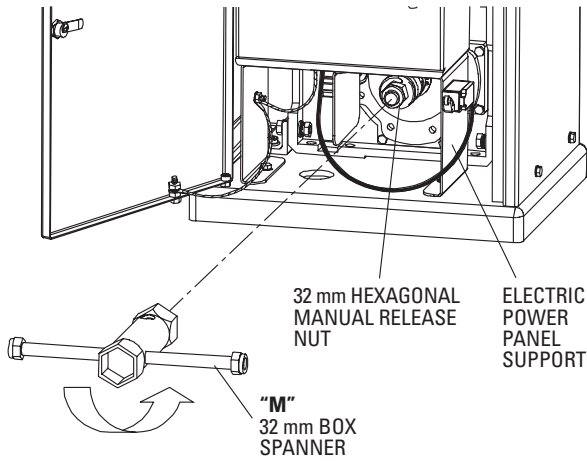


TIGHTENING THE PLUGS: ONCE THE PLUG PROTRUSION HAS BEEN ESTABLISHED, TIGHTEN THE NUT TO THE FLOOR IN ORDER TO FIRMLY FIX THE PLUG IN THE HOLE, THEN UNSCREW AND REMOVE THE NUT

MANUAL GATE AUTOMATION RELEASE

The release operation frees the gate's movement from the installed operator in events such as power cuts and during Fibro 400 installation operations.

- Open the cover door using the customized key "C" (Pic. 2)
- Use a 32 mm box spanner "M" on the **M22 self-locking nut** on the drive shaft located immediately beneath the **electric panel support**: turn the nut a few times in an anti-clockwise direction so that the **drive gear "I"** located behind the automation becomes idle (Pic. 4).



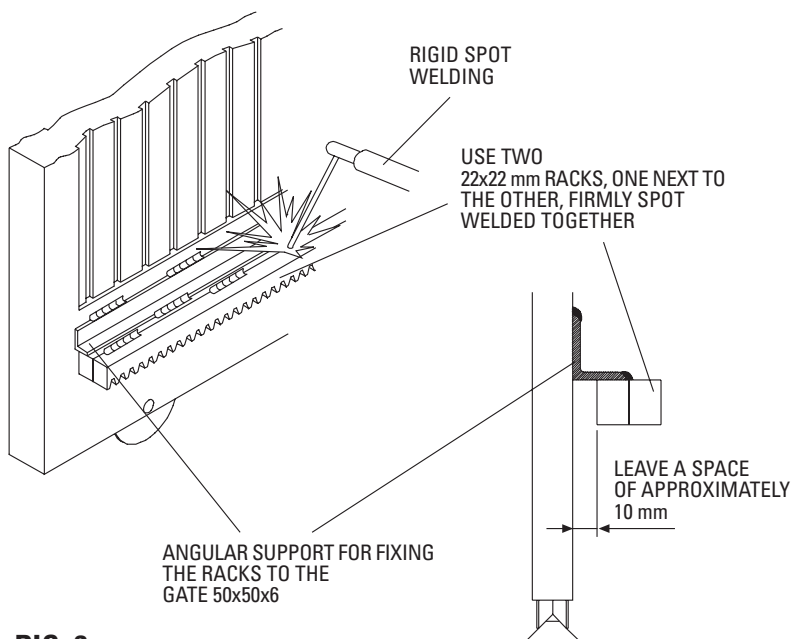
PIC. 4

PIC. 5

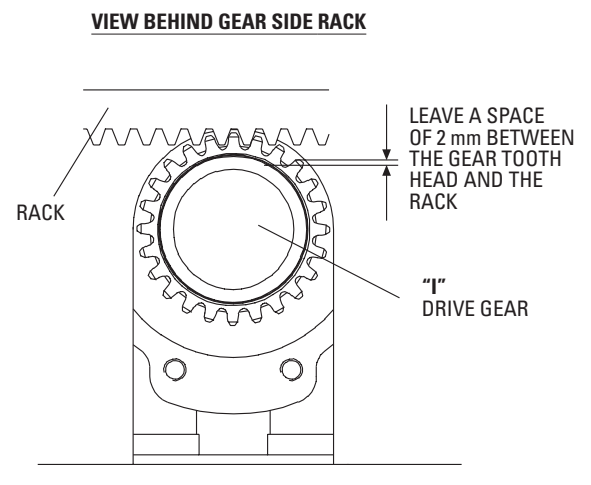
RACK FITTING OPERATIONS

IMPORTANT: in order to achieve effective installation, there should be a gap of approximately 2 mm between the teeth of the rack and drive gear coupling (Pic. 7).

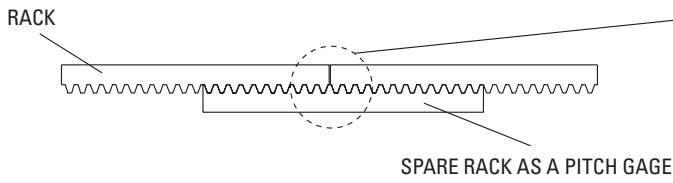
- Use a double rack of 22 x 22 mm thickness (we recommend using an angular support in order to connect the racks to the gate) (Pic. 6).
- Temporarily clamp the **rack** to the gate, levelling it using a spirit level for the entire length of the gate: the **rack** must mesh the idle Fibro 400 **driving gear "I"** smoothly and without friction. This should be manually tested by running the system backwards and forwards along the whole length of the gate for its effective course.
- Firmly weld the two racks together and then to the gate with an angular support 50x50x6, respecting the pitch between the teeth in the rack junctions, using a spare rack as a gage for that purpose (Pic. 8).



PIC. 6



PIC. 7



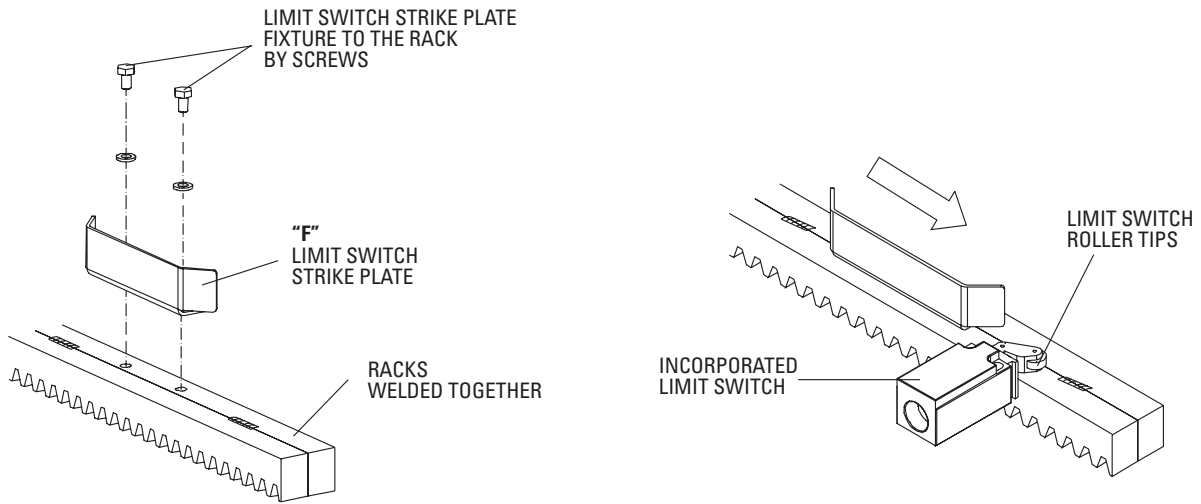
IMPORTANT: IN THE JOINT BETWEEN THE RACK RODS MAKE SURE YOU RESPECT THE PITCH BETWEEN THE TEETH, USING A SPARE RACK DURING THE ASSEMBLY PHASE IN ORDER TO OBTAIN THE CORRECT SHAPE

➤ **PIC. 8**

INSTALLATION OF LIMIT SWITCH STRIKE PLATES "F"

In order to stop the gate's movement, the Fibo 400 has two hermetic roller tip limit switches positioned behind the automation, one of which operates during closing and one during opening (Pic. 5).

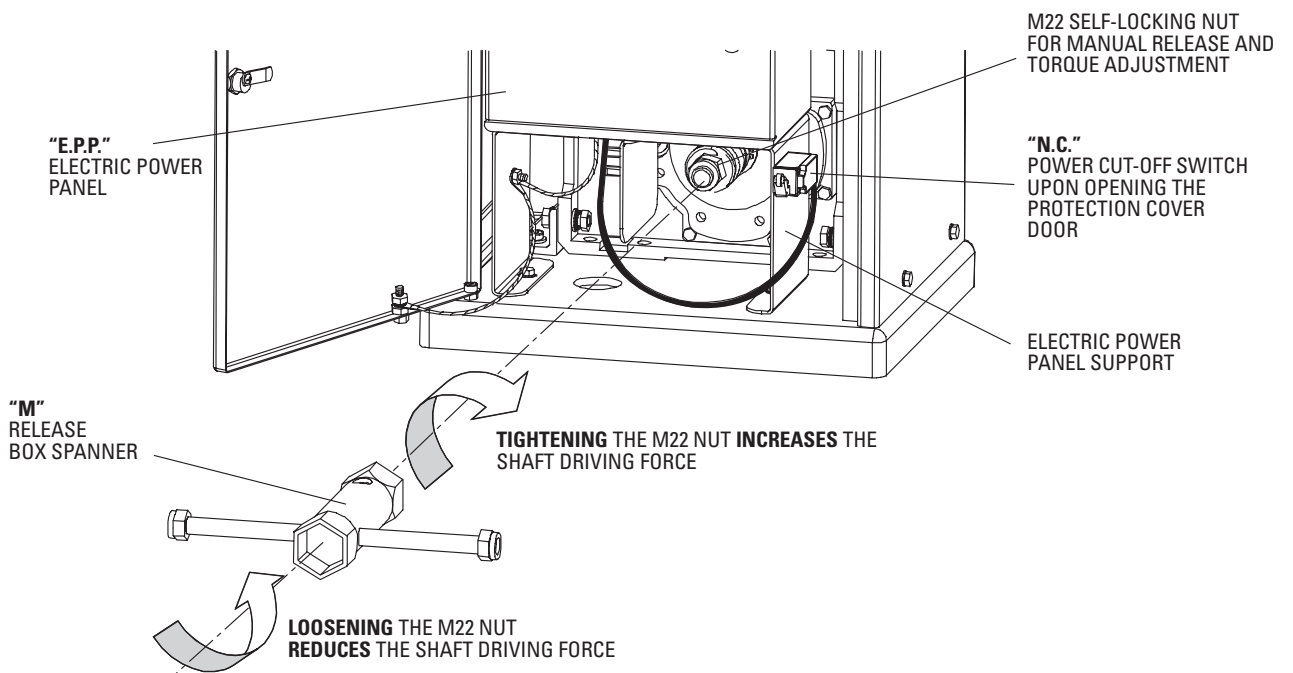
The two **strike plates "F"** for stopping gate movement during opening and closing must be fixed to the gate by screws (Pic. 9), in such a position that the **limit switch roller tips** come into action as soon as they meet the strike plates "F".



➤ **PIC. 9**

TORQUE CONTROL AND ADJUSTMENT

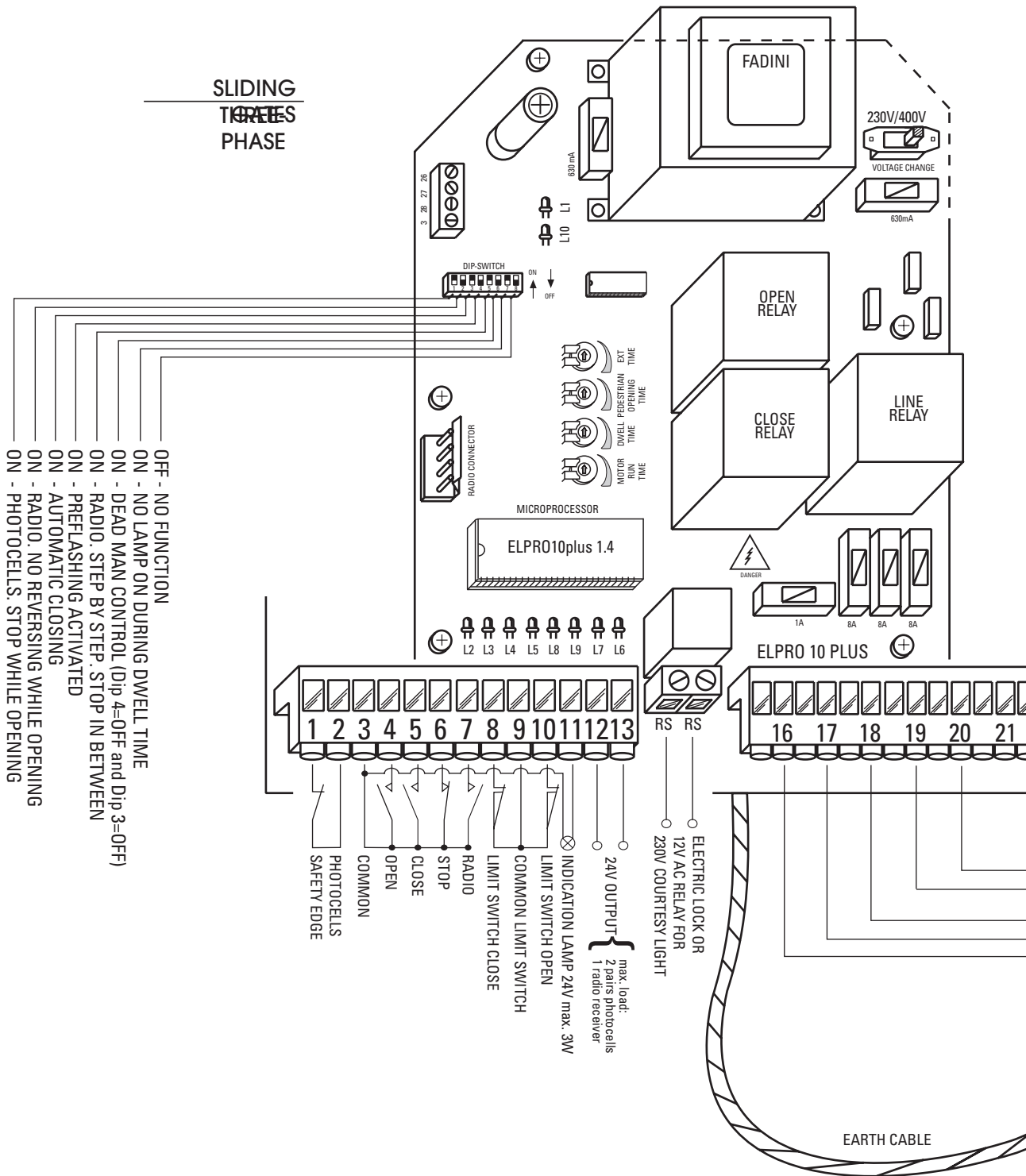
In order to adjust the operator torque, open the door with the customized key, then use a 32 mm box spanner "M" on the **M22 self-locking nut** located on the front beneath the electric power panel "E.P.P.": tighten in order to increase the torque and loosen in order to reduce the torque (Pic. 10).



➤ **PIC. 10**

FIBO 400 ELECTRIC POWER PANEL

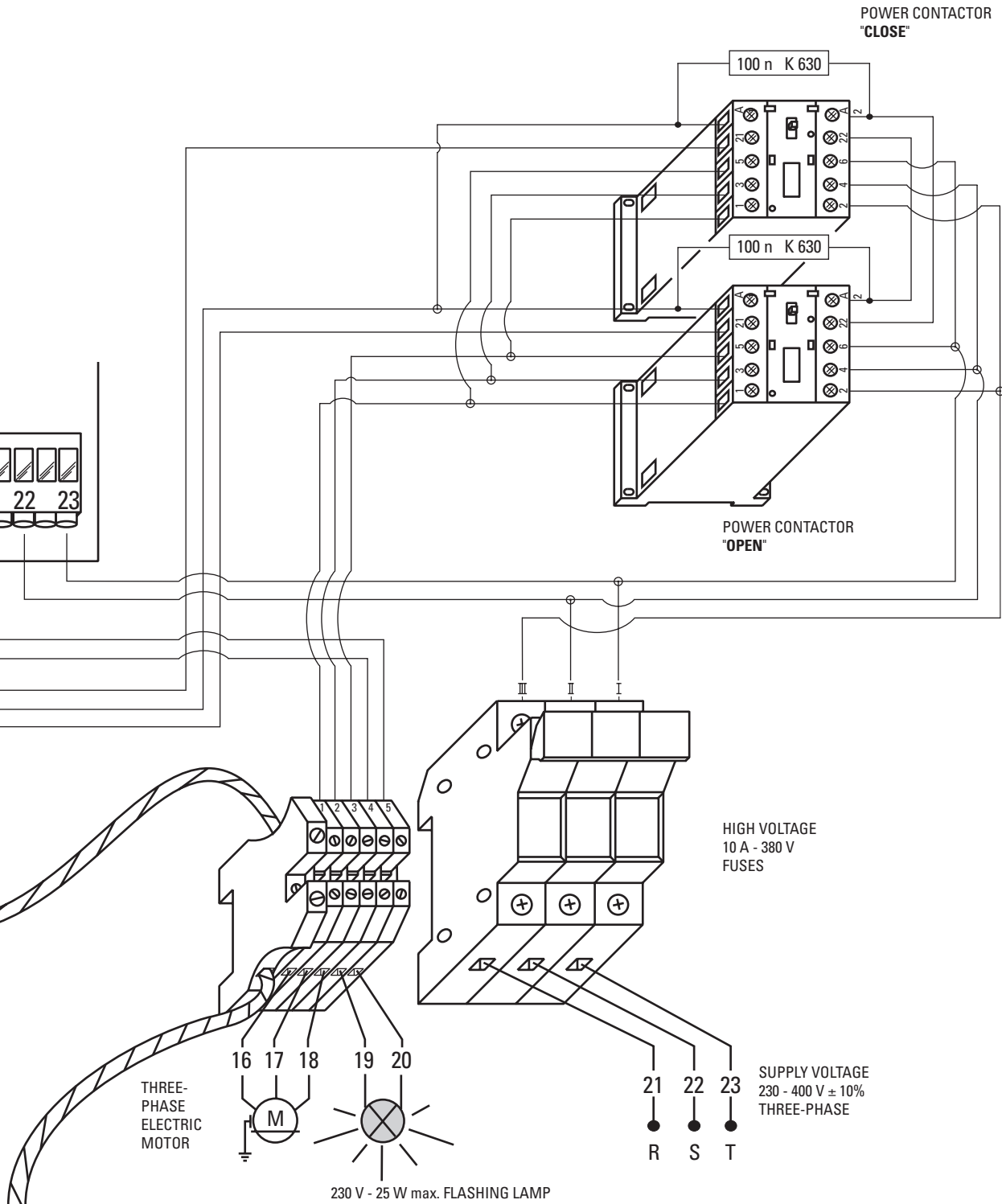
Drwg. No. **3499**



PIC. 11

Elpro·10 PLUS

SLIDING GATES - THREE-PHASE



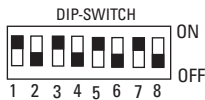
The electronic control panel Elpro 10 Plus, new generation, is designed to operate the sliding gates. Power supply is 230/400V three-phase. Built in full compliance with BT 93/68/CE Low/High Voltage and EMC 93/68/CE Electro-Magnetic Compatibility Regulations. Fitting operations are recommended by a qualified 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.

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 400V ±10%
 - Make sure that the power supply to the Electric Motor is 400V ±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 1.5mm² section wires for voltage supply, electric motor and flashing lamp.
 - Maximum recommended distance 50m.
 - Use 1mm² 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:

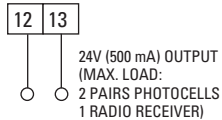
- Make sure that the power supply to the electronic programmer is 400V ±10%
- Make sure that the power supply to the Electric Motor is 400V ±10%
- Check fuses
- Check photocells if contacts are normally closed
- Check all NC contacts
- Check that no voltage drop has occurred from the control panel to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

Led Status Indication:

- L1= 230V 50Hz power supply. 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

LOW VOLTAGE ELECTRICAL CONNECTIONS

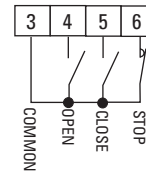
Photocells and Safety Edge:



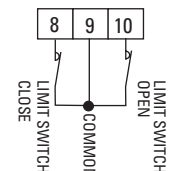
DIP-SWITCH 1:

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

Button switch:

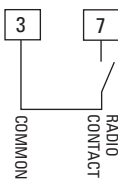


Limit switch:



Radio Contact:

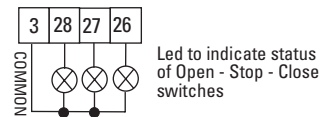
- Open/Close (Standard)
- Travel reversing on pulsing
- Step by step



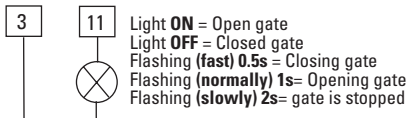
DIP-SWITCH 2 and 5 (NEVER set BOTH of them to ON at the same time):

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

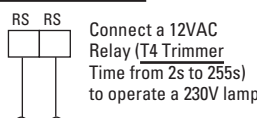
Push Button Switch Pulin3:



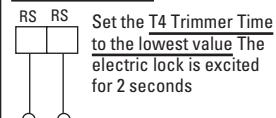
24V 3W Indication Light:



Courtesy light:

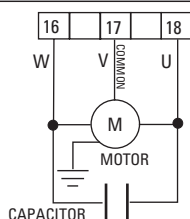
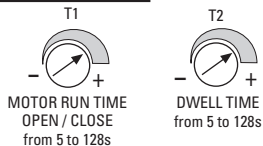


Electric lock:

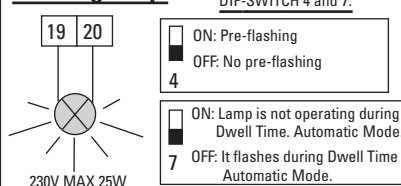


ELECTRIC POWER CONNECTIONS

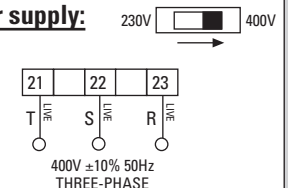
Three-phase Motors (400V):



Flashing lamp:



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.

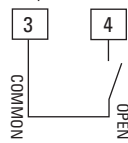


DIP-SWITCH 3

- ON= Automatic Closing
- OFF= No Automatic. Semi-automatic closing by pulse

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:

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

- ON= Deadman Control. Dip-switch 4=OFF and Dip-switch 3=OFF
- OFF= Standard Operations

Remote Controlled Operations Excluded during

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

Dwell Time on Automatic Mode:

- ON: No reversing on opening
- OFF: Travel reversing on any pulsing

- ON= Automatic Closing
- OFF= Closing by Pulse

- ON: Step by step. Stop in between
- OFF: Standard Operations

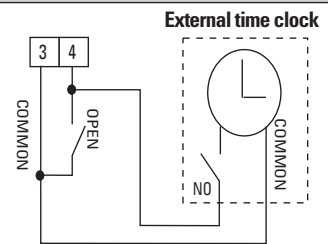
Time clock installation:

How it works: Set the clock to the required times. 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

- ON= Automatic Closing
- OFF= No Automatic. Semi-automatic closing by pulse



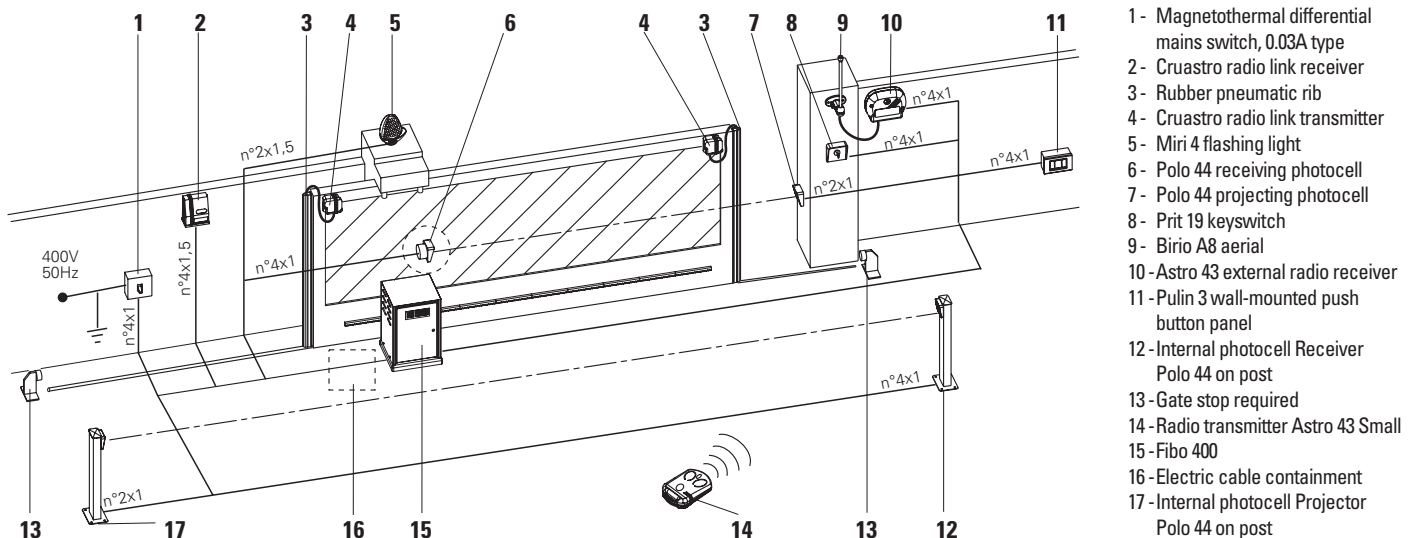
➤ **FIG. 12**

ELECTRICAL CONNECTIONS TO ELPRO 10 PLUS PROGRAMMER

Before making any connections, study the enclosed electrical diagrams carefully (Pic. 11, Pic. 12, Pic. 13).

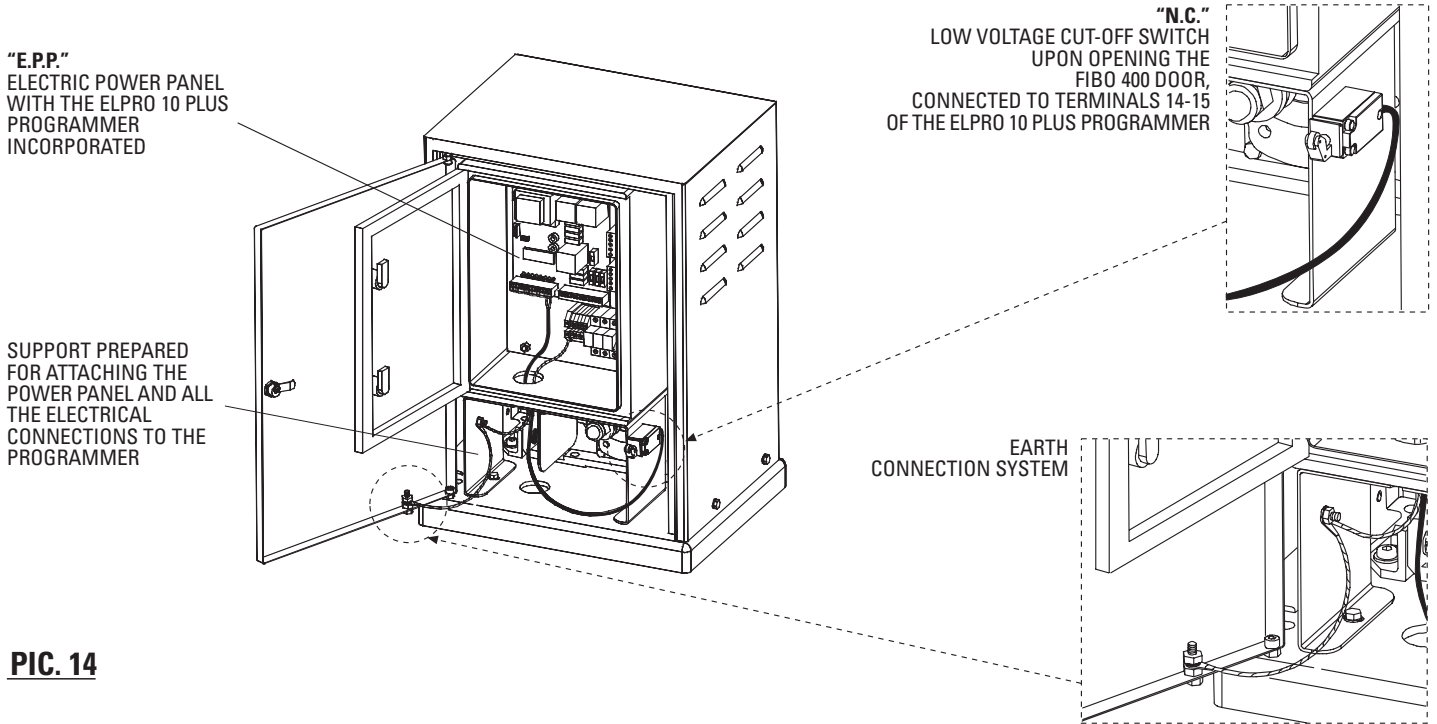
IMPORTANT: The whole electrical system must be earthed (Pic. 13).

- **Power supply, electric motor and flashing light** connections are made with electric cables with a section of 1.5 mm² for a maximum distance of 50 m. For distances of over 50 metres, we recommend using electric cables with a section of 2 mm².
- For **limit switches, photocells, pushbuttons and accessories** use cables with a 1 mm² section (Pic. 11 - Drwg. 3499).
- The **pneumatic safety rib** attached to the gate is connected via cable, a cable winder is to be provided to take up the slack, or by **radio link**, in series with the **limit switches** or with the **receiving photocell**, connection diagram Drwg. 3499.
- The ELPRO 10 PLUS three-phase electronic programmer is installed in its own panel, inside the Fibo 400 protection cover; it is prepared for all programmed automatic and semiautomatic logic services, line relays and incorporated indication lights (Pic. 11 - Drwg. 3499).



➤ **FIG. 13**

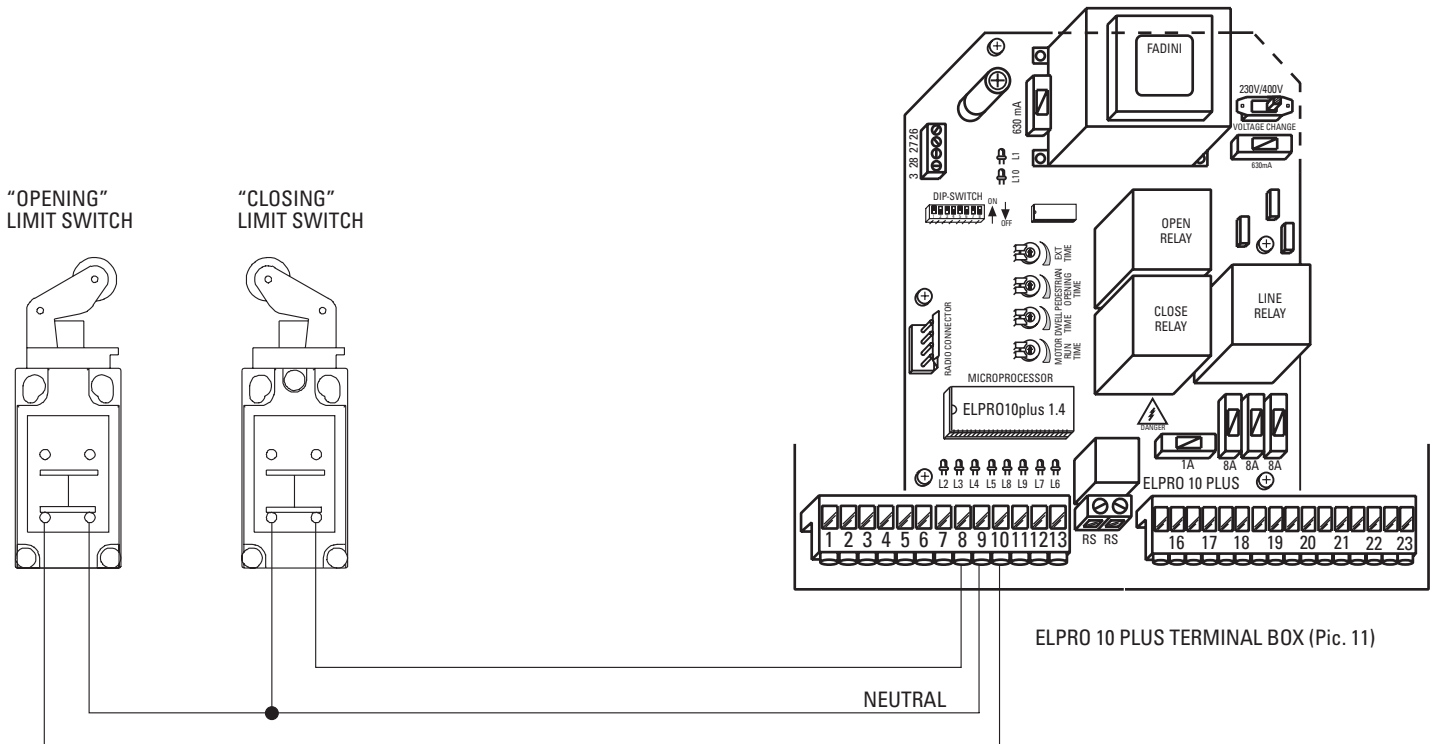
Fibo 400 is fitted with a **safety system** that is activated upon opening the front cover door, through an “NC” power cut-off switch which, for automations without an installed electric panel, must be connected to the Elpro 10 PLUS programmer, terminals 14-15 (Pic. 10 and Pic. 11); it is also necessary to earth the entire system (Pic. 14).



➤ **PIC. 14**

SEPARATE LIMIT SWITCH ELECTRICAL CONNECTIONS

Fibo 400 has two independent limit switches, protected and isolated from outside (Pic. 15) and not connected to the electric panel “E.P.P.”, therefore once the protection cover has been removed (Pic. 2, p. 2), it is necessary to implement the wiring in keeping with the diagrams provided (Pic. 11 and Pic. 15) following the Elpro 10 PLUS function logic description, Drwg. 3499 p. 6.



➤ **PIC. 15**

FIBO 400 TECHNICAL DATA

ELECTRIC MOTOR

Power output.....	2.2 KW (3.0 HP)
Three-phase supply voltage.....	230/400 V
Frequency.....	50 Hz
Absorbed current.....	9.4/5.4 A
Absorbed power.....	2'800 W
Motor rotation speed.....	1'400 rpm
Intermittent service.....	S3
Cooling.....	by fan

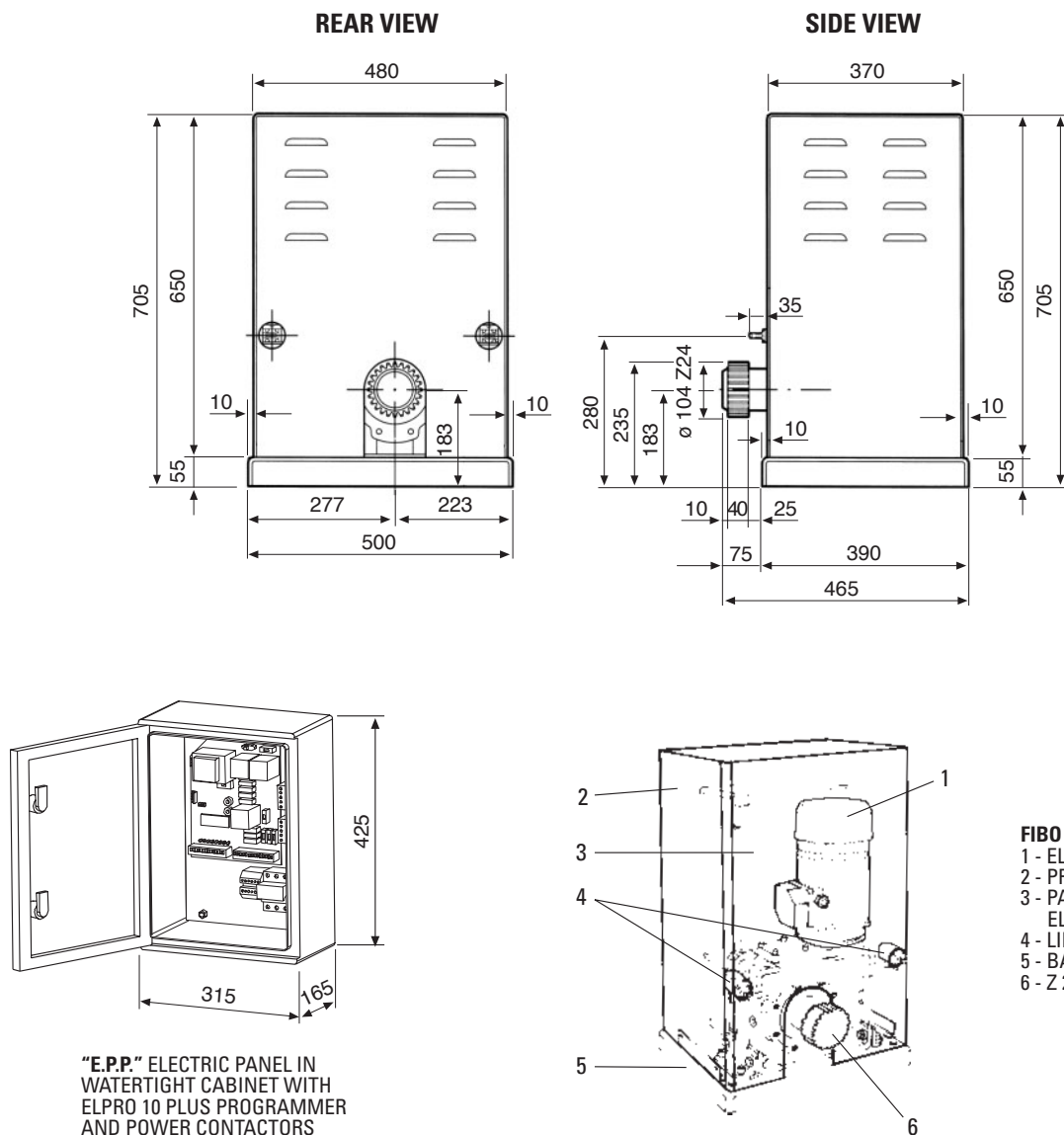
PERFORMANCE

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 cycles a year, 8 hours a day.....	131'000

FIBO 400 GEAR MOTOR

Output revolutions.....	33.8 rpm
Drive gear.....	Z 24
Module.....	4.0
Ratio.....	1 / 42
Maximum nominal torque.....	311.4 Nm
Transfer speed.....	10.2 m/min.
Hydraulic oil type.....	AGIP ROTRA THT
Working temperature.....	- 20 °C + 80 °C
Weight.....	105 Kg
Protection standard.....	IP 557

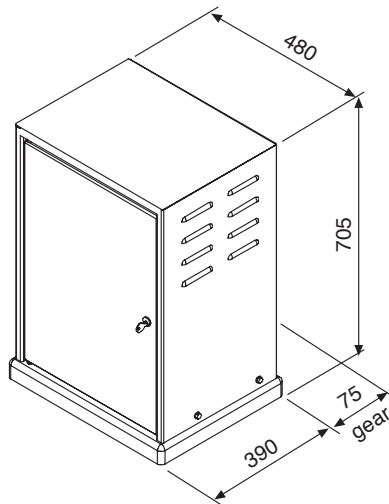
FIBO 400 OVERALL DIMENSIONS



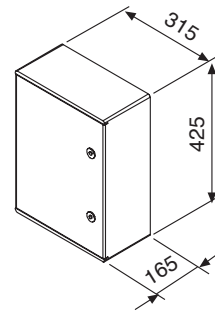
"E.P.P." ELECTRIC PANEL IN WATERTIGHT CABINET WITH ELPRO 10 PLUS PROGRAMMER AND POWER CONTACTORS

- FIBO 400:**
- 1 - ELECTRIC MOTOR
 - 2 - PROTECTION COVER
 - 3 - PANEL WITH INCORPORATED ELECTRONIC PROGRAMMER
 - 4 - LIMIT SWITCH
 - 5 - BASE PLATE
 - 6 - Z 24 DRIVE GEAR

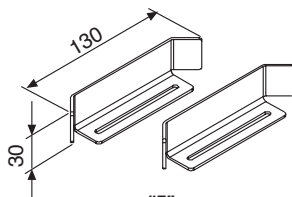
FIBO 400 COMPONENTS



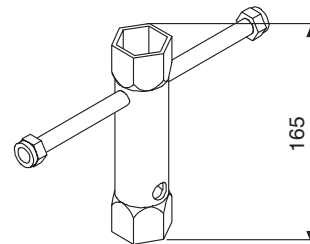
FIBO 400 INSIDE PROTECTION CABINET WITH CUSTOMIZED KEY



**"E.P.P."
UPON REQUEST: ELECTRIC POWER PANEL
WITH ELPRO 10 PLUS PROGRAMMER
AND ACCESS KEYS**



**"F"
LIMIT SWITCH STRIKE PLATES**



**"M"
32 mm RELEASE BOX SPANNER**

INSPECTIONS AND MAINTENANCE

In order to ensure optimal system performance over time and so as to comply with current safety standards, it is necessary to follow the correct maintenance and monitoring procedures for the entire automation, electronic devices and wiring:

- Oil-hydraulic automation: maintenance inspection around every 6 months
- Electronic devices and safety systems: maintenance inspection monthly.

WARNINGS

- Perform a **Risk Analysis** before every installation and resolve risks through the use of safety devices in compliance with EN 12445 and EN 12453 safety standards
- Follow the instructions provided
- Dispose of all cardboard, nylon, polystyrene and other packaging with specialized waste disposal firms
- If removing the actuator, **do not cut** the electric wires, but disconnect them from the terminal box by loosening the screws inside the junction box
- Disconnect the mains switch before opening the electrical wire junction box cover
- The whole automation should be earthed with the yellow/green wire

We recommend reading the "Safety Norms", suggestions and observations in this booklet very carefully.



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

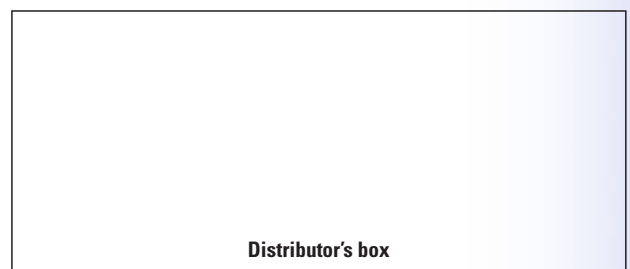
- DECLARATION OF CONFORMITY
- SAFETY NORMS
- EN 12453, EN 12445 STANDARDS
- CEI EN 60204-1 STANDARDS
- WARRANTY CERTIFICATE ON THE CUSTOMER'S REQUEST



FADINI
the gate opener
Made in Italy



AUTOMATIC GATE MANUFACTURERS



Distributor's box

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