CORAL® 1080

- ELECTRO-HYDRAULIC AUTOMATION CONSISTING OF A RISING POST **Ø100** **800mm** STROKE
- EASY AND SIMPLE TO INSTALL
- DESIGNED FOR TRAFFIC AND ACCESS CONTROL IN EITHER PUBLIC OR PRIVATE AREAS

FITTING INSTRUCTIONS

GB

FADINI®
the gate opener

INSTRUCTIONS TO FOLLOW FOR THE INSTALLATION OF THE AUTOMATION CORAL 1080

CORAL 1080

FOR A PERFECT APPLICATION AND CORRECT PERFORMANCE OF THE EQUIPMENT IT IS RECOMMENDED TO FOLLOW THESE INSTRUCTIONS AND DIAGRAMS

IMPORTANT: THE INSTALLATION IS TO BE CARRIED OUT BY A QUALIFIED TECHNICIAN IN COMPLIANCE WITH THE SAFETY NORMS EN 12453 - EN 12445, AND THE MACHINE DIRECTIVE 98/37/CE. A COMPLETE RISK ANALYSIS IS TO BE MADE IN COMPLIANCE WITH THE EXISTING SAFETY REGULATIONS

GENERAL FEATURES

This product can be classified as a type of automated bollard, fully retractable into the ground. It is easy and simple to install as no special adjusting or calibration is required. The main application is traffic control. CORAL 1080 is an electro-hydraulically operated post having a Ø100 mm diametre and a max. stroke of 800 mm.

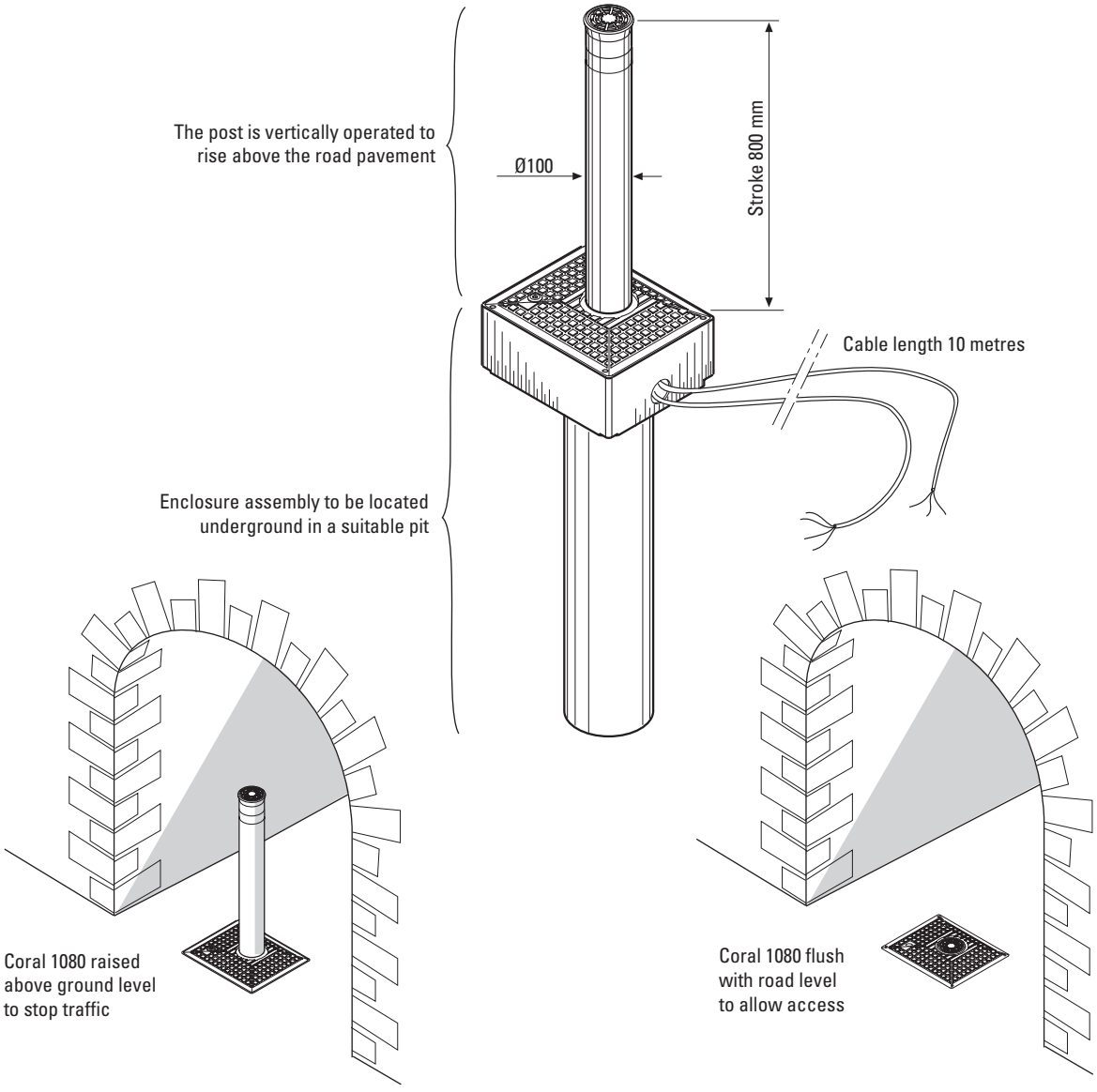
The main advantage of this product is semplicity of installation: soon after fixing the location enclosure, fit the mechanism into it, carry out the electrical connections and the system is ready to work.

Once a pulse is given (either by keyswitch or remote control), the post starts rising. A reflecting sticker makes it well visible, and an optional flashing lamp or traffic lights ensure clear indication of the post movements or status. An electronic control panel fitted with a microprocessor allows full automatic operations as required (optional sensing loops, photocells etc. ...) can be connected.

PRELIMINARY LOCATION CONSIDERATIONS

Before commencing installation ensure that:

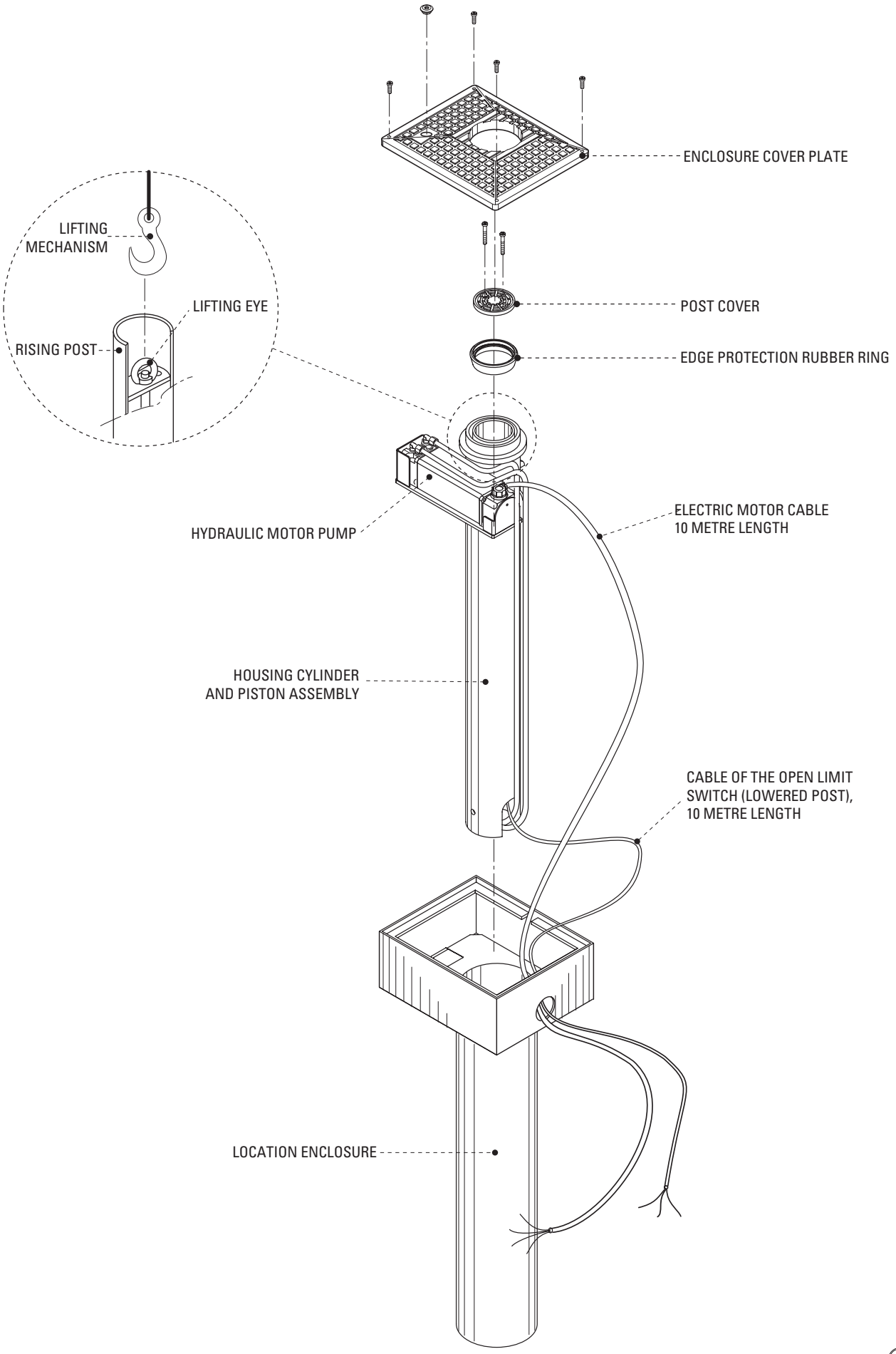
- The area where the enclosure is to be located is free from underground services, which may interfere with installation.
- The properties of the soil are adequate to the required application
- No obstruction interferes with the post movements



PIC. 1

PRELIMINARY OPERATION: SEPARATION OF THE POST ASSEMBLY

First operation. Once the enclosure cover plate is removed, you can have access to the mechanism, and the components ie. the inner motor pump and actuator assembly can be easily lifted out using mechanical aid. Pic.2
IMPORTANT: make sure the electric cables are not damaged or accidentally removed from termination.

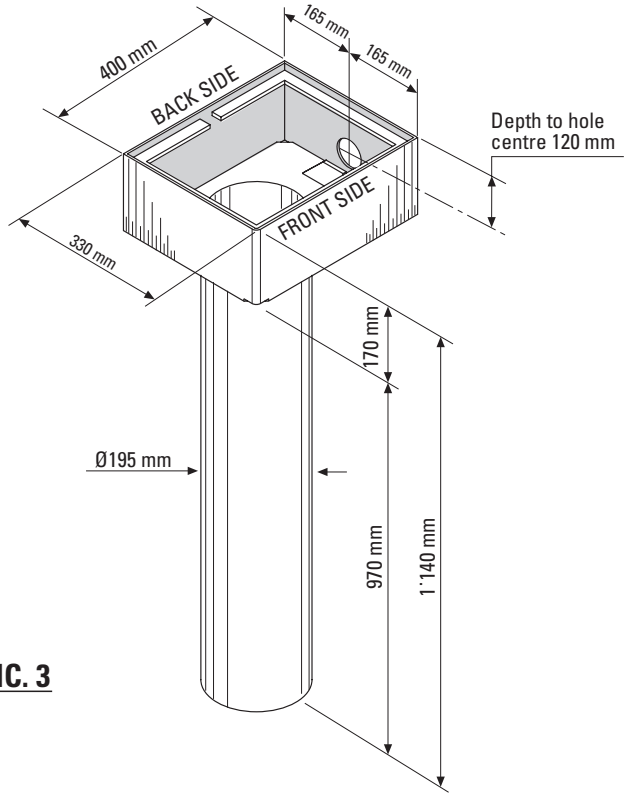


PIC. 2

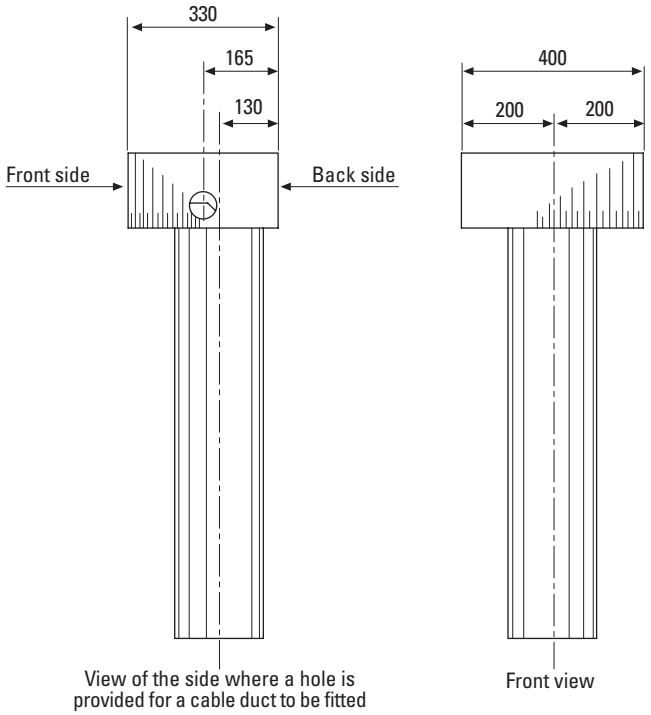
INSTALLATION OF THE LOCATING ENCLOSURE

The foundation enclosure is the component that is designed to house the automation and it should be set into the ground so that the top of it is at ground level.

IMPORTANT: the upper square section of the foundation enclosure (where the motor pump unit is to be fitted) is not centered to the lower tube where the guide tube and piston assembly are to be located: there is a distance of 13 cm from the "back side" of the enclosure to the tube centre line (Pic. 13 and 14).

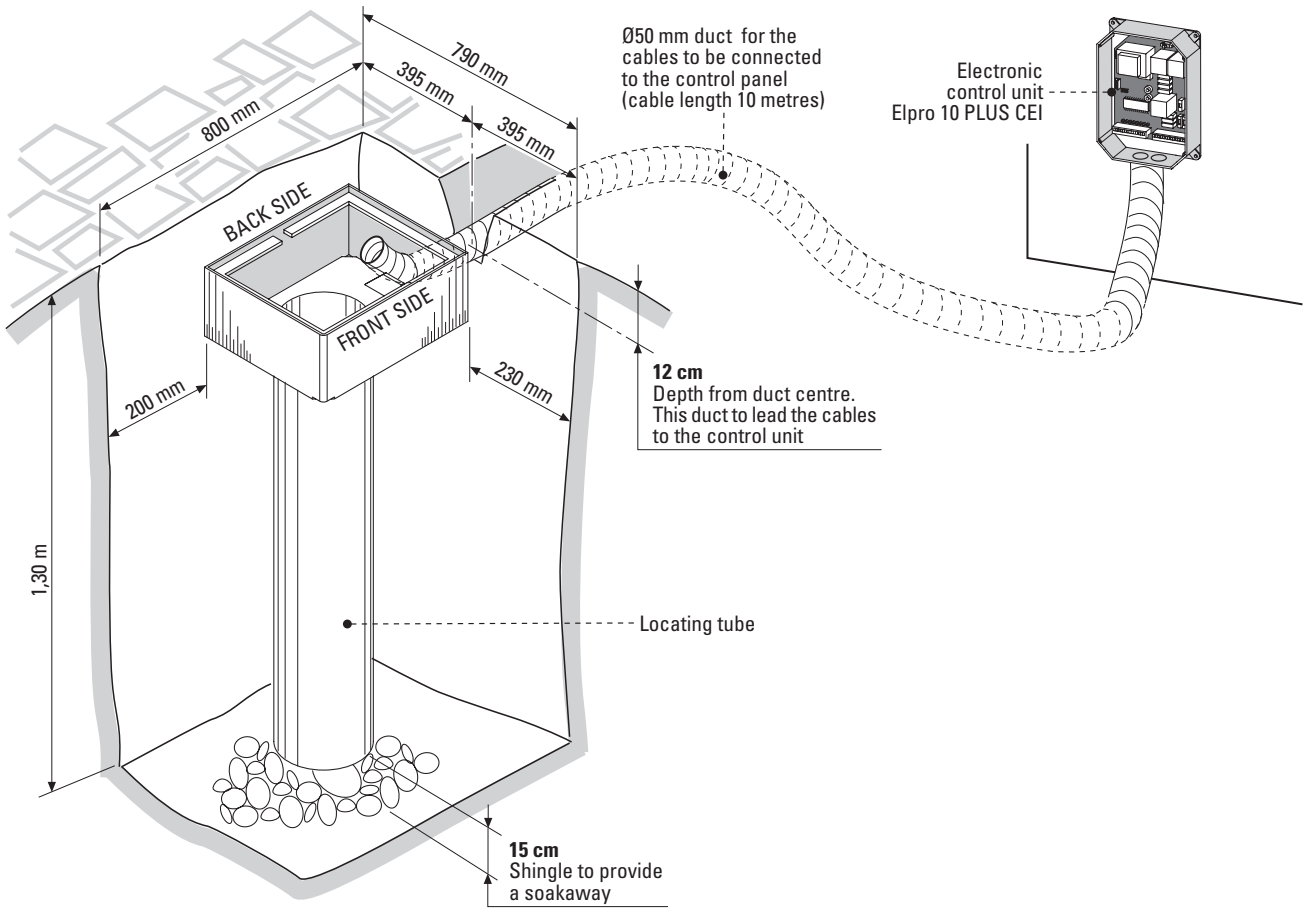


PIC. 3



PIC. 4

- A hole will be required in the road surface where Coral 1080 is to be located, as indicated in Pic. 5. Provision is made within the unit for the entry of a Ø 50 mm duct to the electronic control unit (the cables are 10 m long). Provide a soakaway by pouring shingle into the hole up to 15 cm from bottom level.



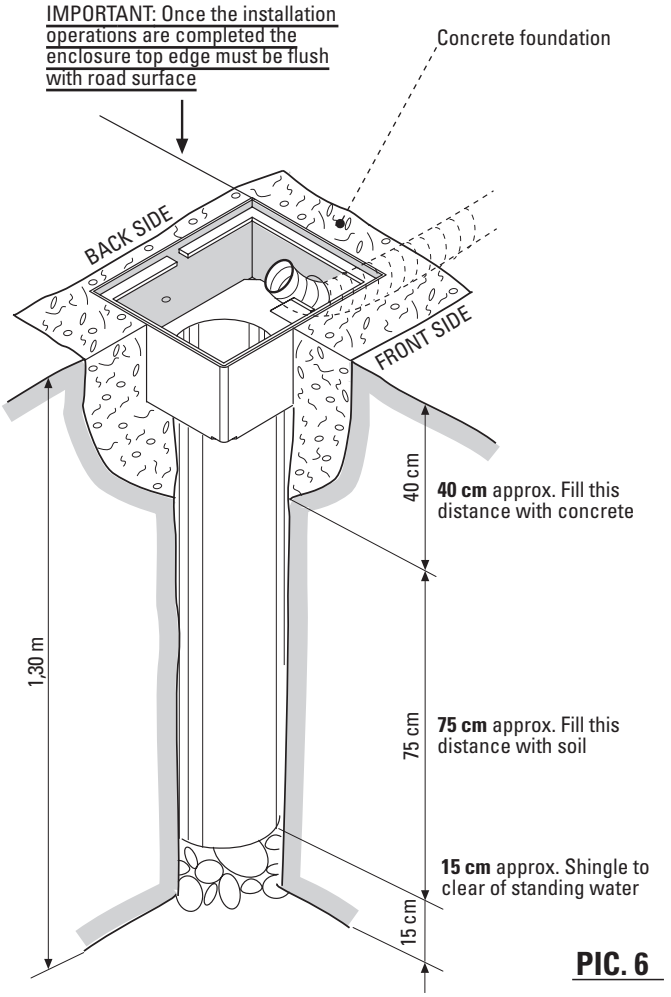
PIC. 5

- Once located the enclosure into the pit, it is important that the top edge is flush with the ground level.
- Fill with soil up to 75 cm and the remaining 40 cm with concrete Pic. 6.

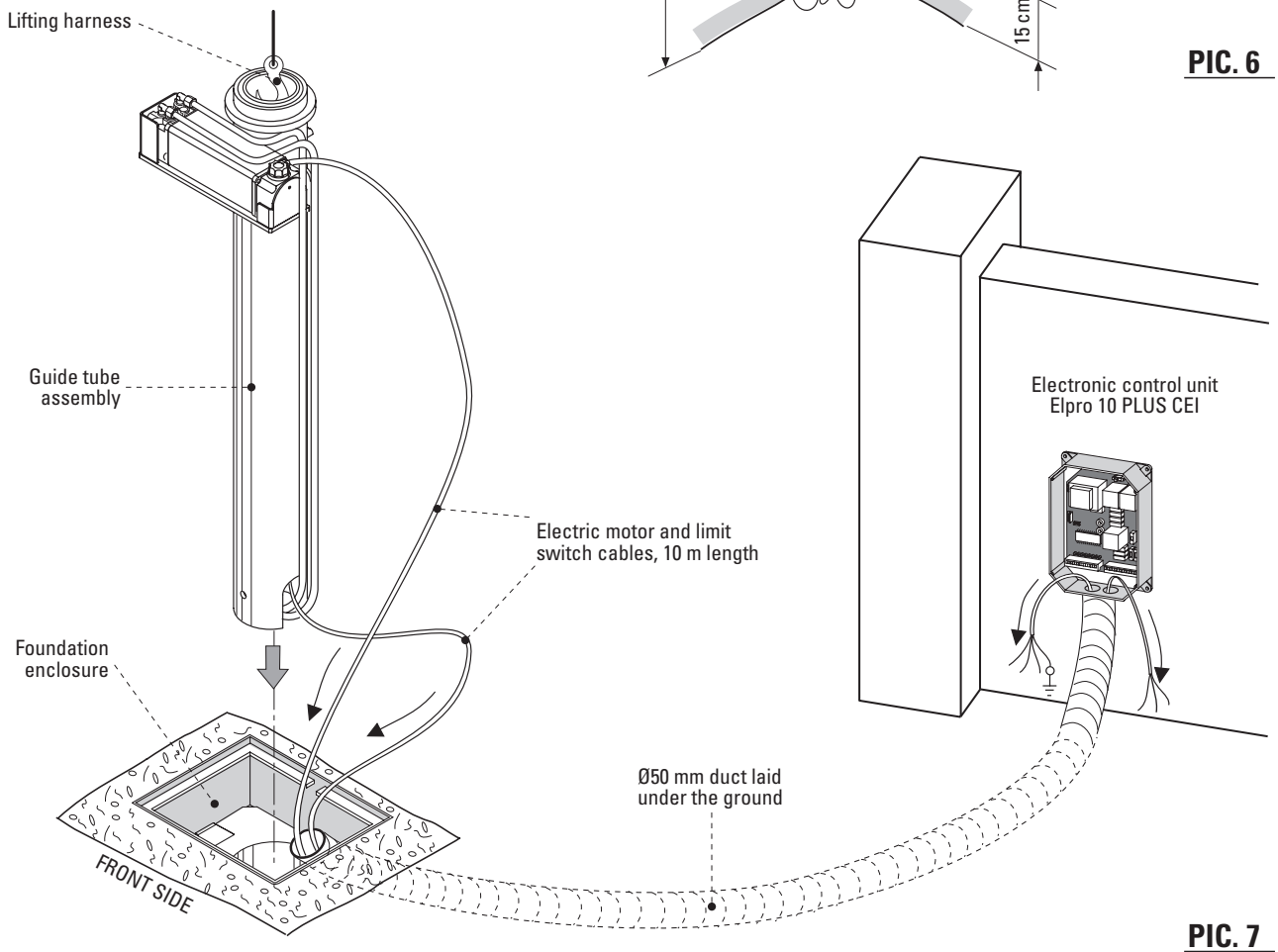
INNER ASSEMBLY INSTALLATION

For this operation it is fundamental that the location enclosure is very firmly set in its foundation, therefore it has to be carried out only after you are satisfied that the concrete is well set and the electrical duct coupled to the enclosure and laid under the ground.
- A suitable lifting harness should be passed through the eye in the bollard top and attached to a lifting mechanism. The assembly should be raised from the ground and positioned directly above the location enclosure.
- Next step. The motor and the limit switch cables should be pulled through the duct (a rope pull-through previously inserted), and the inner assembly gently lowered onto the location enclosure.

IMPORTANT: Pull the electric motor and limit switch cables through the duct to the control unit. Be careful not to damage or remove the cables from their termination Pic.7.



PIC. 6

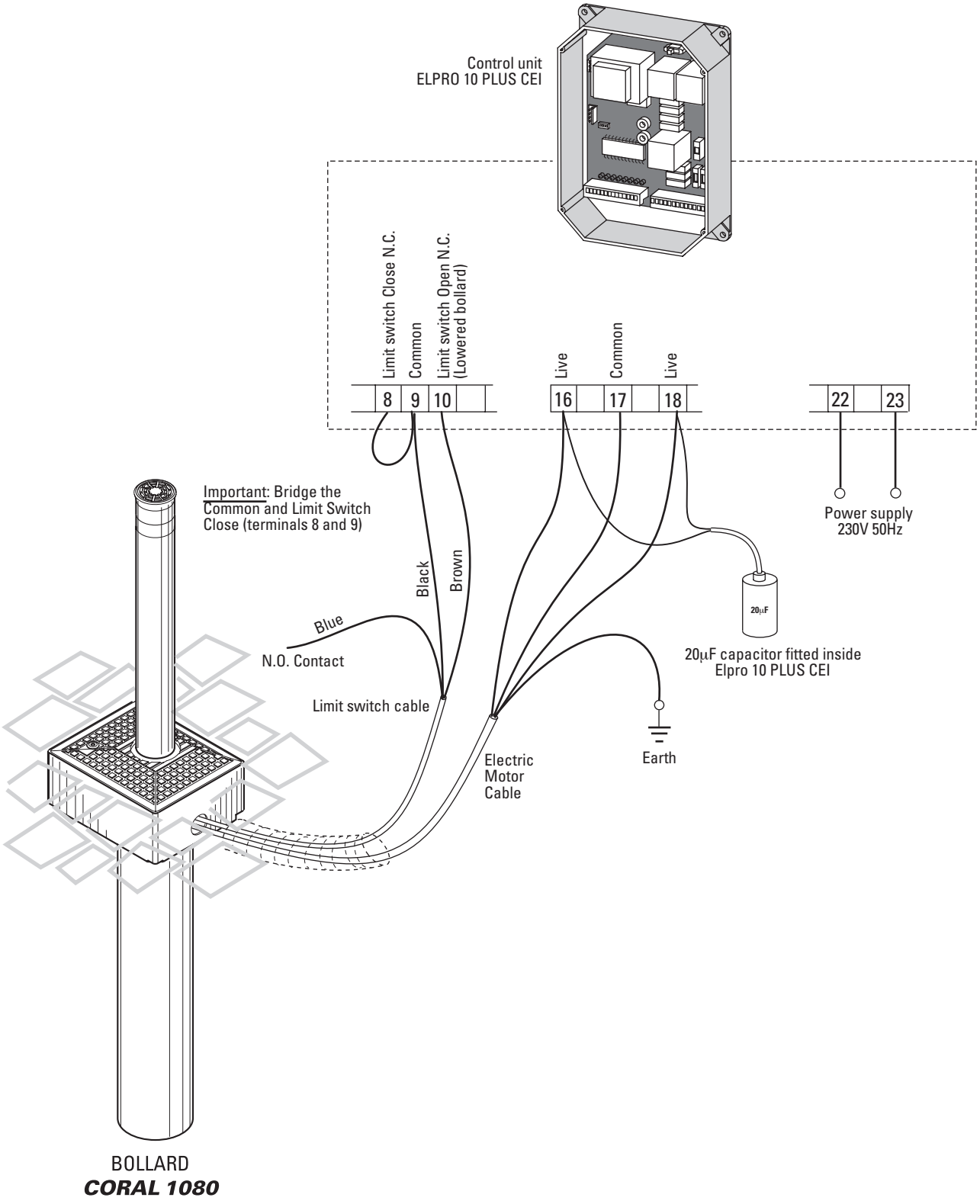


PIC. 7

Once satisfied that the guide tube assembly is properly fitted inside the location enclosure, fit back the bollard lid and the enclosure cover plate (Pic. 8 on page 6).

ELECTRICAL CONNECTIONS TO THE CONTROL UNIT ELPRO 10 PLUS CEI

Coral 1080 is supplied fitted with two cables: one for the 230V 50Hz electric motor, the other cable should be connected to terminals 9 and 10, limit switch Open (Pic.8).
The electric motor should be connected as indicated in the diagram, a 20μF capacitor in parallel with the two live terminals.



PIC. 8

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Read the description of the electronic control unit Elpro 10 PLUS CEI on page 8 Pic. 10.

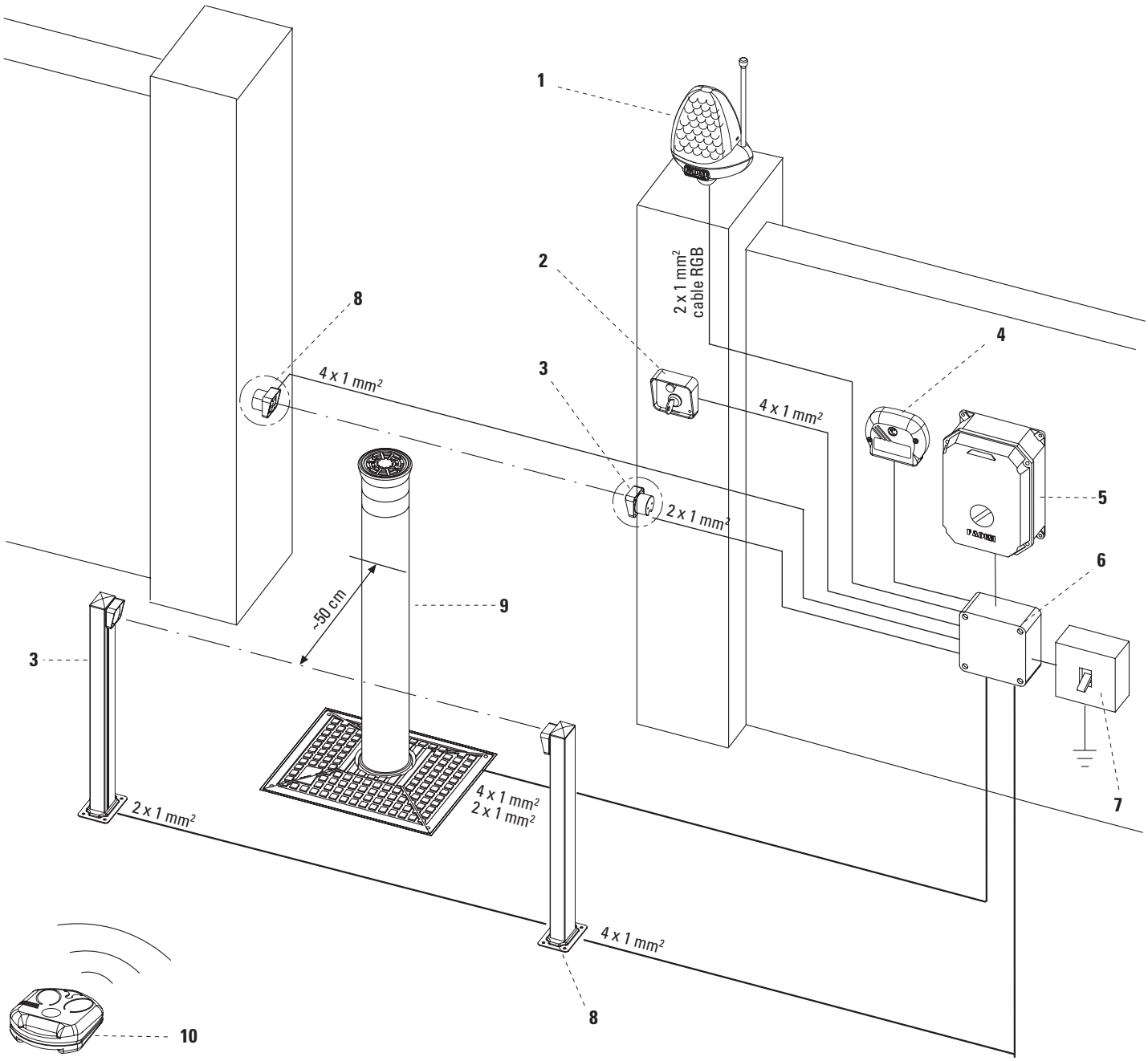
ELECTRICAL WIRING DIAGRAM

Read the diagrams that follow carefully and familiarise yourself with their contents before starting the electrical connections (Pic. 9 and Pic. 10).

IMPORTANT: All the electrical components should be properly earthed (Pic.9).

- For **the power supply, electric motor and flashing lamp** use wires having a square section of 1,5 mm² for a distance not superior to 50 m. For longer distances use 2 mm² wires.
- To connect the **photo cells, key or button operated switches and other accessories**, 1 mm² wires can be used.

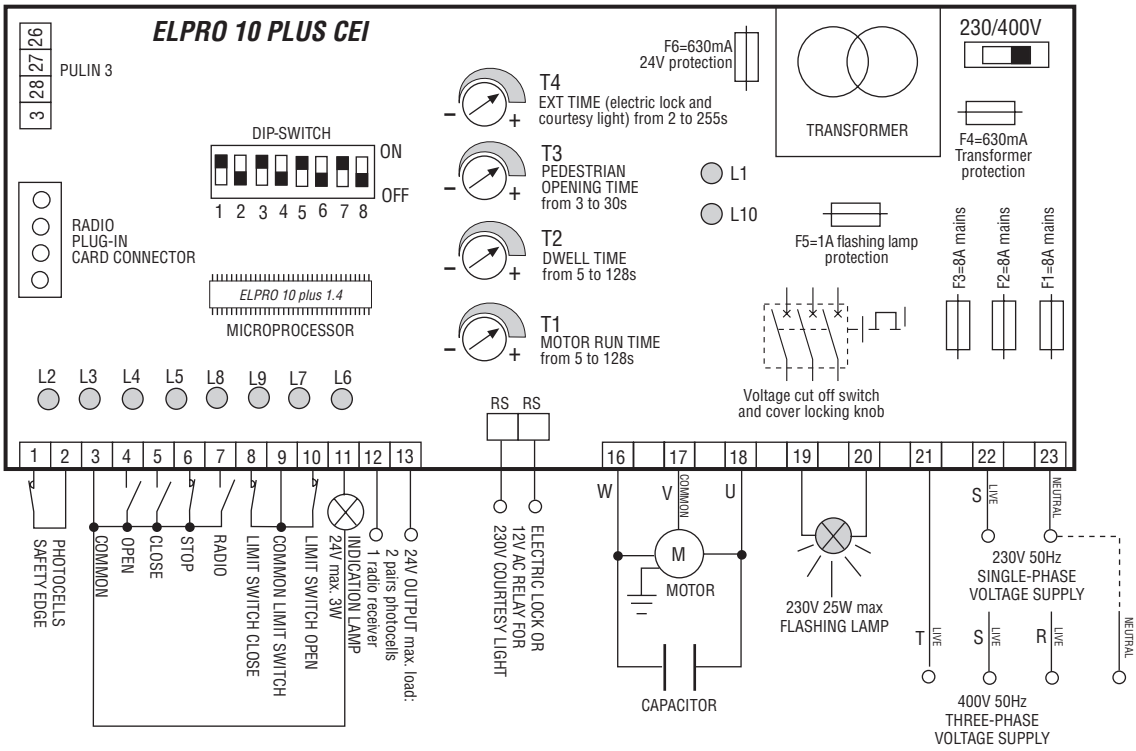
ELECTRICAL WIRING DIAGRAM



ESSENTIAL COMPONENTS OF THE INSTALLATION:

1 - Miri 4 flashing lamp with incorporated aerial
2 - Prit 19 keyswitch
3 - Polo 44 photo cell projector
4 - Jubi 433 receiver in weather-proof casing
5 - Elpro 10 PLUS CEI electronic control unit
6 - Electrical junction box
7 - Differential magnetic thermal mains switch (rating 30 mA, protection 6-10A)
8 - Polo 44 photo cell receiver
9 - Bollard Coral 1080
10 - Jubi 433 transmitter

PIC. 9



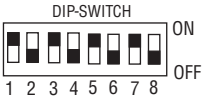
PIC. 10

The electronic control panel Elpro 10 Plus CEI, 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/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 responsability 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.
- 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:



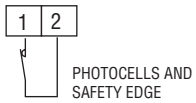
1= ON. Photocells. Stop while opening
2= ON. Radio. No reversing while opening
3= ON. Automatic closing
4= ON. Preflashing activated
5= ON. Radio. Step by step. Stop in between
6= ON. Dead Man Control (Dip 4=OFF and Dip 3=OFF)
7= ON. No lamp on during dwell time
8= OFF. No function

In case of failure of the panel:
- Check voltage supply. It must be 230V or 400V 50Hz
- 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:

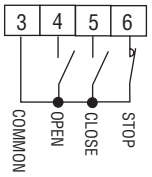


DIP-SWITCH 1:

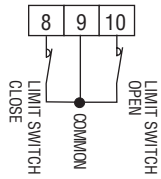
1 ON: Photocells stop gate while opening, reverse it on closing once obstacle is removed

OFF: Photocells do not stop gate while opening, reverse it on closing in case of an obstacle

Button switch:

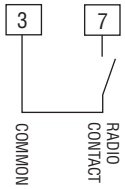


Limit switch:



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):

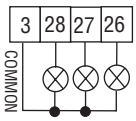
2 ON: Gate is not reversed while opening

OFF: Any pulse reverses the gate

5 ON: Step by step. Stop in between

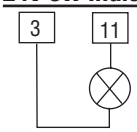
OFF: Standard operating mode

Push Button Switch Pulin 3:



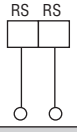
Led to indicate status of Open - Stop - Close switches

24V 3W Indication Light:



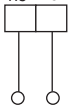
Light **ON** = Open gate
Light **OFF** = Closed gate
Flashing **(fast) 0.5s** = Closing gate
Flashing **(normally) 1s** = Opening gate
Flashing **(slowly) 2s** = gate is stopped

Courtesy light:



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

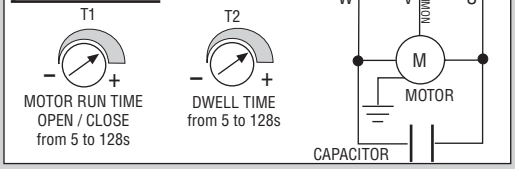
Electric lock:



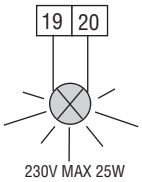
Set the T4 Trimmer Time to the lowest value The electric lock is excited for 2 seconds

ELECTRIC POWER CONNECTIONS

Single- and Three-phase Motors:



Flashing lamp:



DIP-SWITCH 4 and 7:

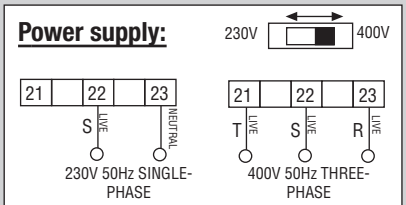
4 ON: Pre-flashing

OFF: No pre-flashing

7 ON: Lamp is not operating during Dwell Time. Automatic Mode.

OFF: It flashes during Dwell Time. Automatic Mode.

Power supply:

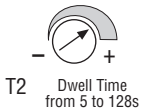


OPERATING MODES

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.

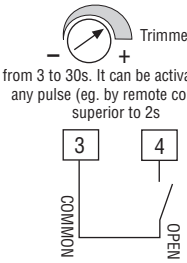


DIP-SWITCH 3

3 ON= Automatic Closing

OFF= No Automatic. Semi-automatic closing by pulse

Pedestrian Opening:



Hold on switched (Deadman) control:

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

DIP-SWITCH 6

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

OFF= Standard Operations

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

2 ON: No reversing on opening

OFF: Travel reversing on any pulsing

3 ON= Automatic Closing

OFF= Closing by Pulse

5 ON: Step by step. Stop in between

OFF: Standard Operations

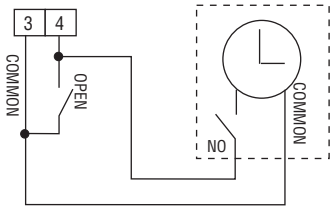
Time clock:

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

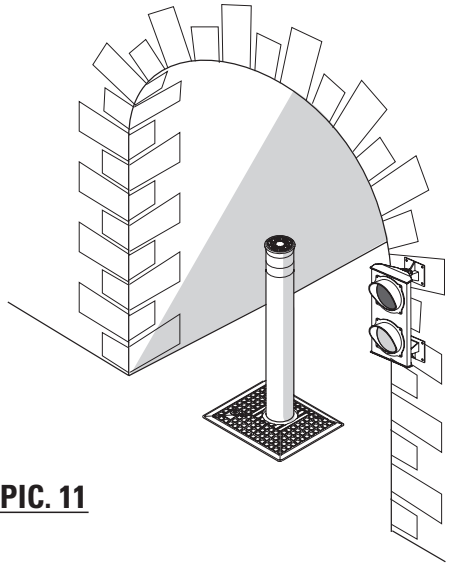
3 ON= Automatic Closing

OFF= No Automatic. Semi-automatic closing by pulse

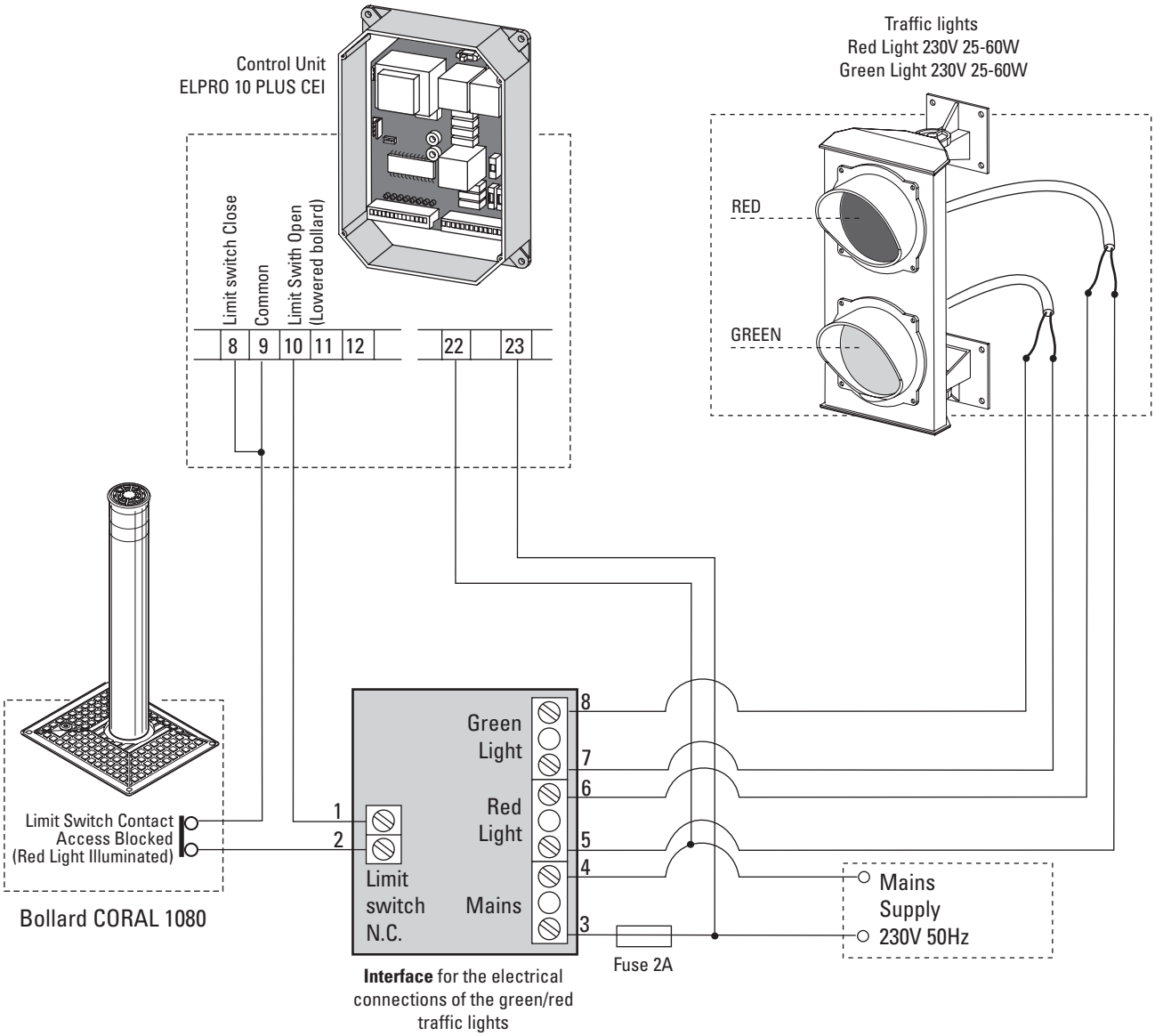


APPLICATION OF TRAFFIC LIGHTS

Optional green/red traffic lights can be used to indicate that the post is fully lowered or raised (Pic.11). An **interface** is required to be fitted to the control unit for the electrical connections (Pic.12).



PIC. 11



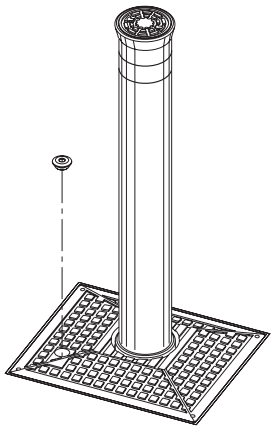
PIC. 12

IMPORTANT: For security reasons, failure of the red light prevents even the green light from illuminating

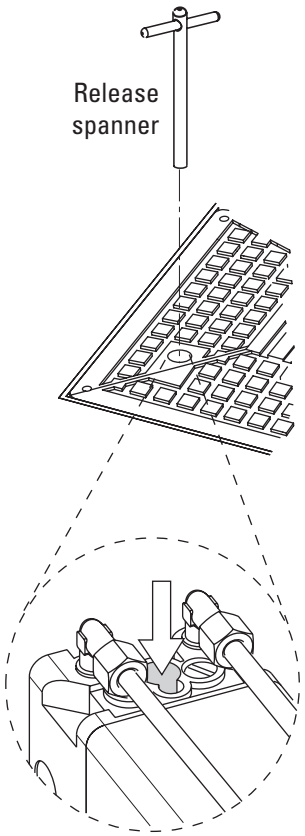
MANUAL RELEASE SYSTEM

In events like power failure, it is possible to manually operate the bollard by following the instructions in picture 13: first unscrew the **Release Plug** (1), locate the **Release Spanner** into the over-ride valve (2) and rotate anti-clockwise by one turn to over-ride the hydraulic circuit (3); push gently downward to lower the bollard (4) and eventually re-establish normal operation by rotating the spanner clockwise to the original position (5).

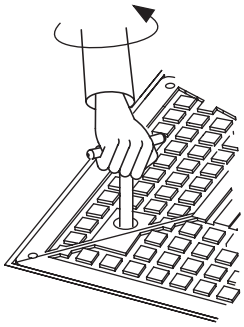
1 - Unscrew the protection plug



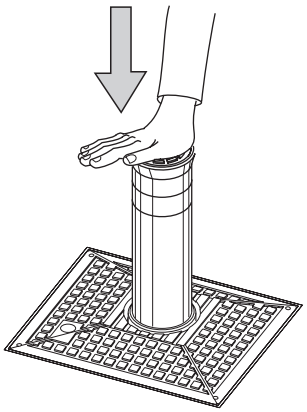
2 - Locate the spanner in the over-ride valve



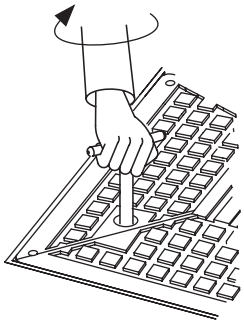
3 - One turn anti-clockwise to over-ride



4 - Push gently to lower the bollard



5 - Turn the spanner clockwise to lock the hydraulic circuit



PIC. 13

To re-establish normal operation, first turn the spanner clockwise to "lock" the hydraulic circuit, make sure that the system is supplied with voltage and pulse for the bollard to rise.

TECHNICAL SPECIFICATIONS CORAL 1080

PUMP ASSEMBLY

Pump type	P 10
Pump flow rate	4,45 ℓ/min
Average working pressure	2 MPa (20 bars)
Max. pump pressure	4 MPa (40 bars)
Working temperature	–20°C +80°C
Power oil type	OIL FADINI A 15 by AGIP
Pump assembly static weight	10 Kg
Pump ass. protection standards	IP 54

HYDRAULIC PISTON

Piston stroke travel time	6 sec.
Piston stroke	800 mm
Shaft diametre	16 mm
Piston diametre	30 mm
Max. pushing power Open	280 daN
Protection standard complete ref.	IP 557

ELECTRIC MOTOR

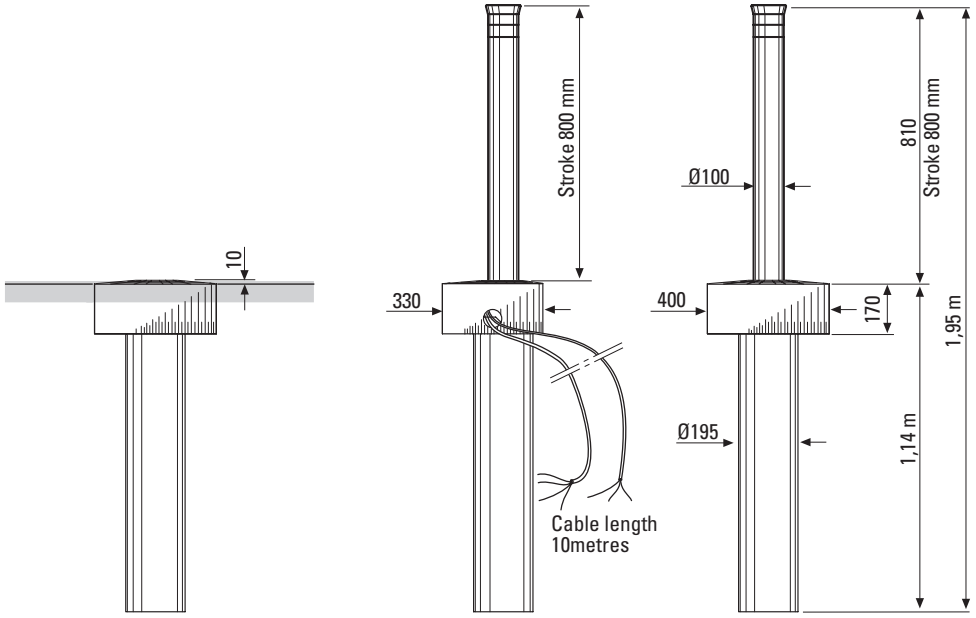
Power rating	0,25 KW (0,33 HP)
Supply voltage	230 V
Absorbed current	1,8 A
Frequency	50 Hz
Absorbed power	330 W
Capacitor	20 μF
Motor revolutions	2˙800 rev./1′
Service Standards	S 3

PERFORMANCE

Duty cycle:	6s Opening - 30s Dwell - 6s Closing
Time of one complete cycle	42 seconds
Complete cycles Opening-Dwell-Closing	No. 85/hour
Cycles per year (8 hours˙service per day)	No. 245˙000

Static weight Coral 1080 ..... 104 Kg

OVERALL DIMENSIONS CORAL 1080



PIC. 14

Bollard flush with ground level
Front view

Raised bollard
Lateral view

Raised bollard
Front view

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 maintenance are made by qualified technicians to the whole installation ie. both the mechanical and electronic parts as well as wiring:
- Oil-hydraulic automation: maintenance every 6 months
- Electronic and safety equipment: maintenance monthly

FADINI
the gate opener
Made in Italy

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

CE

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

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.

meccanica FADINI® s.n.c.
AUTOMATIC GATE MANUFACTURERS

Distributor's box

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

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