

STRABUC 930

HEAVY ARMoured

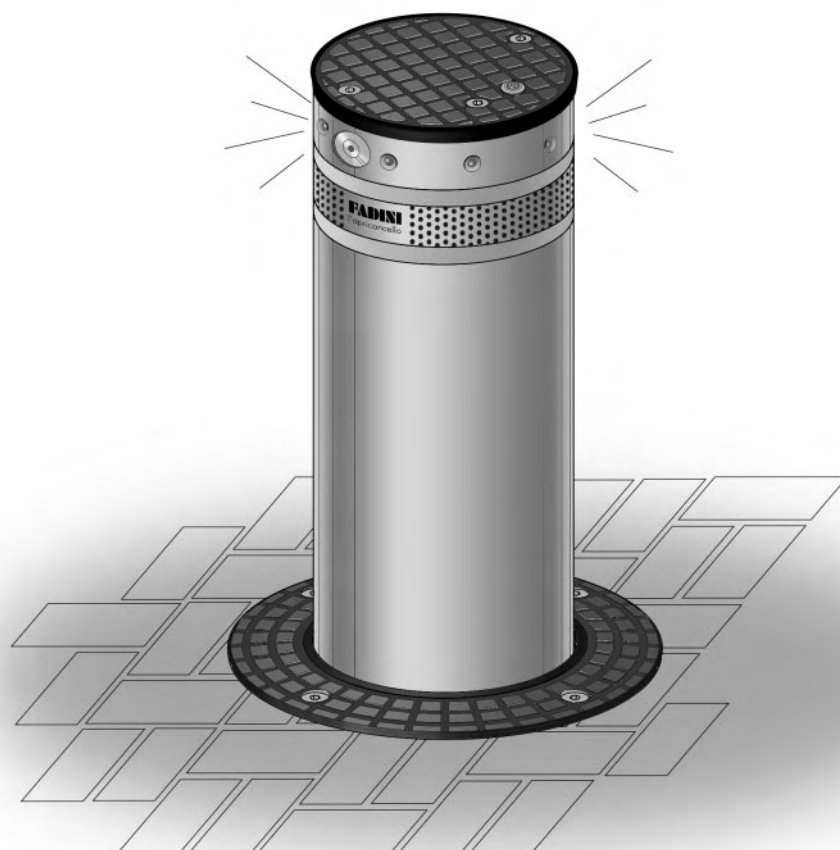
Fully retracting cylindrical traffic control post

Regulation-compliant oil-hydraulic operator

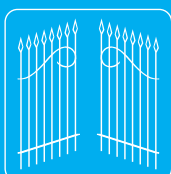
CE

With cylindrical container to be cemented

Manual release with armoured lock barrel version (optional)



CE



FADINI
the gate opener
Made in Italy

Instruction manual

GB

INSTRUCTIONS TO BE FOLLOWED BEFORE INSTALLING THE OPERATOR

FOR OPTIMAL APPLICATION AND USE OF THE STRABUC 930 HEAVY ARMoured PLEASE READ THE INSTRUCTIONS AND CONSULT EXPLANATORY DIAGRAMS.

IMPORTANT: ALL INSTALLATION OPERATIONS MUST BE PERFORMED BY A QUALIFIED TECHNICIAN, IN OBSERVANCE OF THE EN 12453 - EN 12445 SAFETY REGULATIONS AND MACHINERY DIRECTIVE 98/37/EC.
CAREFUL RISK ANALYSIS IS REQUIRED UNDER APPLICABLE REGULATIONS

GENERAL COMMENTS:

The **STRABUC 930 HEAVY ARMoured** is a fully retractable, oil-hydraulic thick steel traffic control post intended to prevent unauthorised vehicular access.

It is an oil-hydraulic operator with a built-in hydraulic main unit.

The Elpro S40 electronic programmer is installed externally, in a protected place.

The traffic control post comes with a series of accessories that guarantee the necessary safety and the required operations, in order to make the operator suitable for installation in all public and private settings.

The optionals available include the armoured lock barrel that can only be removed using the personalised key, which lends the traffic post greater protection against forced entry.



PRELIMINARY WARNINGS ON SAFETY AND GOOD OPERATION

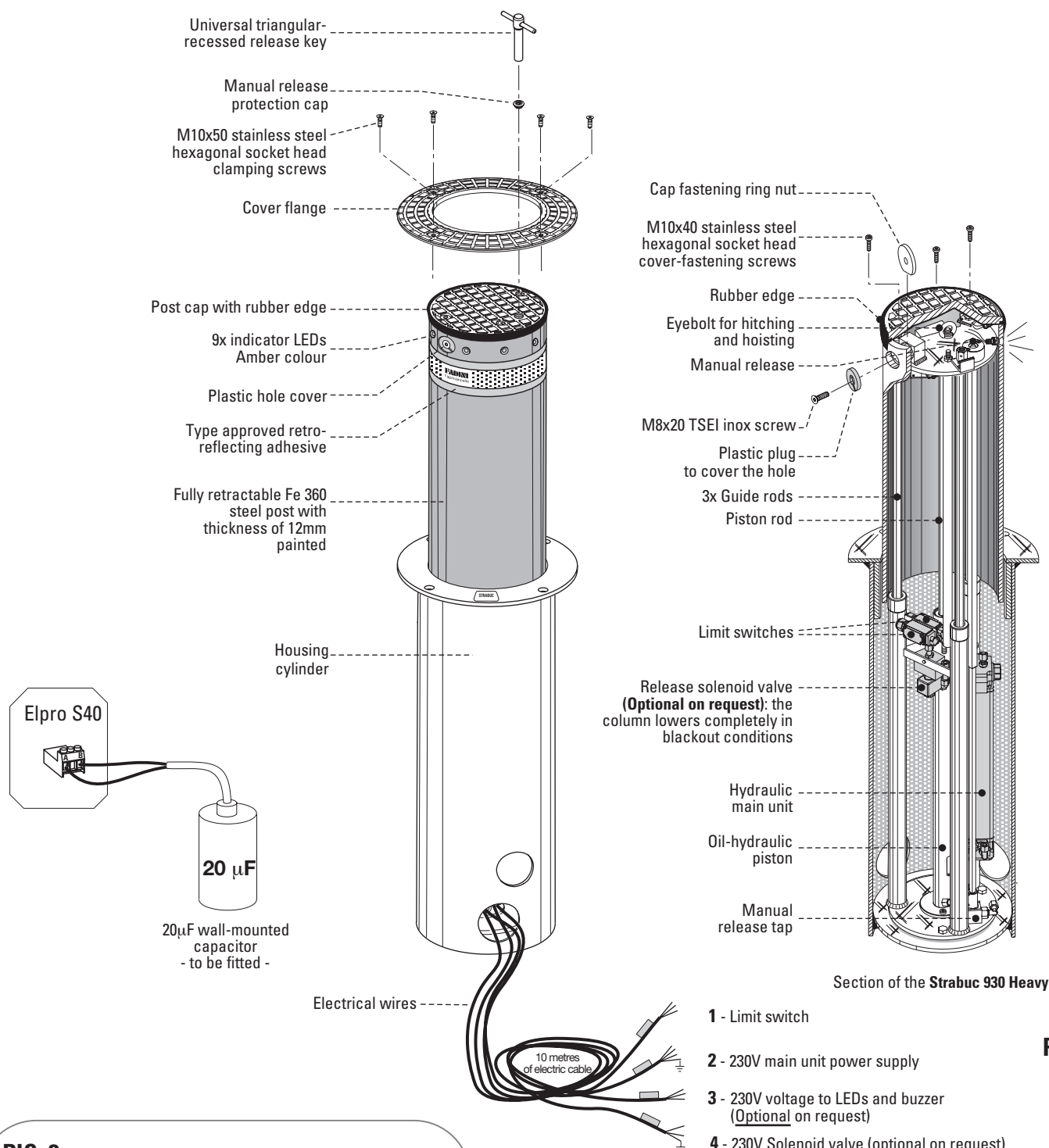
Before commencing operator installation, it is essential to remember:

- That installation, checking, testing, risk analysis and subsequent maintenance work must be performed by authorised, qualified technicians.
- This operator has been designed for the use described in this manual only, and using at least the safety, control and indication accessories as here recommended.
- Any other application not explicitly indicated in this manual could cause malfunction, damage or personal injury.
- To check that the ground is stable, to avoid subsequent settling or deformation in the traffic control post installation area.
- To check that there are no nearby buried utility pipes.
- To check that there are no sources of electromagnetic disturbance in the immediate vicinity of and below the installation accessories such as to conceal or influence the magnetic/electromagnetic detection of the metal detectors and/or other electronic system control and management appliances.
- To check that the mains supply and voltage to the electric motor is $230V \pm 10\%$ at 50Hz.
- The power supply to the **Strabuc 930 Heavy Armoured**'s built-in motor must be made using electricity cables with a 1.5 mm^2 section for a maximum distance of 50 metres. For distances of over 50 metres, use electric cables with sections suited to the installation.
- Always use the original components indicated by the manufacturer to replace elements or accessories.
- Meccanica Fadini declines all responsibility for improper use not specifically indicated in this manual and any malfunction deriving from the use of materials or accessories other than those indicated by the manufacturer.
- The manufacturer reserves the right to make changes to this manual without giving notice



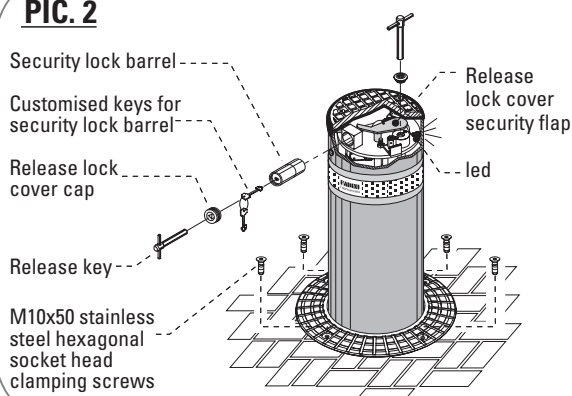
COMPONENTS OF THE RETRACTING OIL-HYDRAULIC POST OPERATOR

oil-hydraulic
traffic control post **STRABUC 930** *HEAVY*



PIC. 1

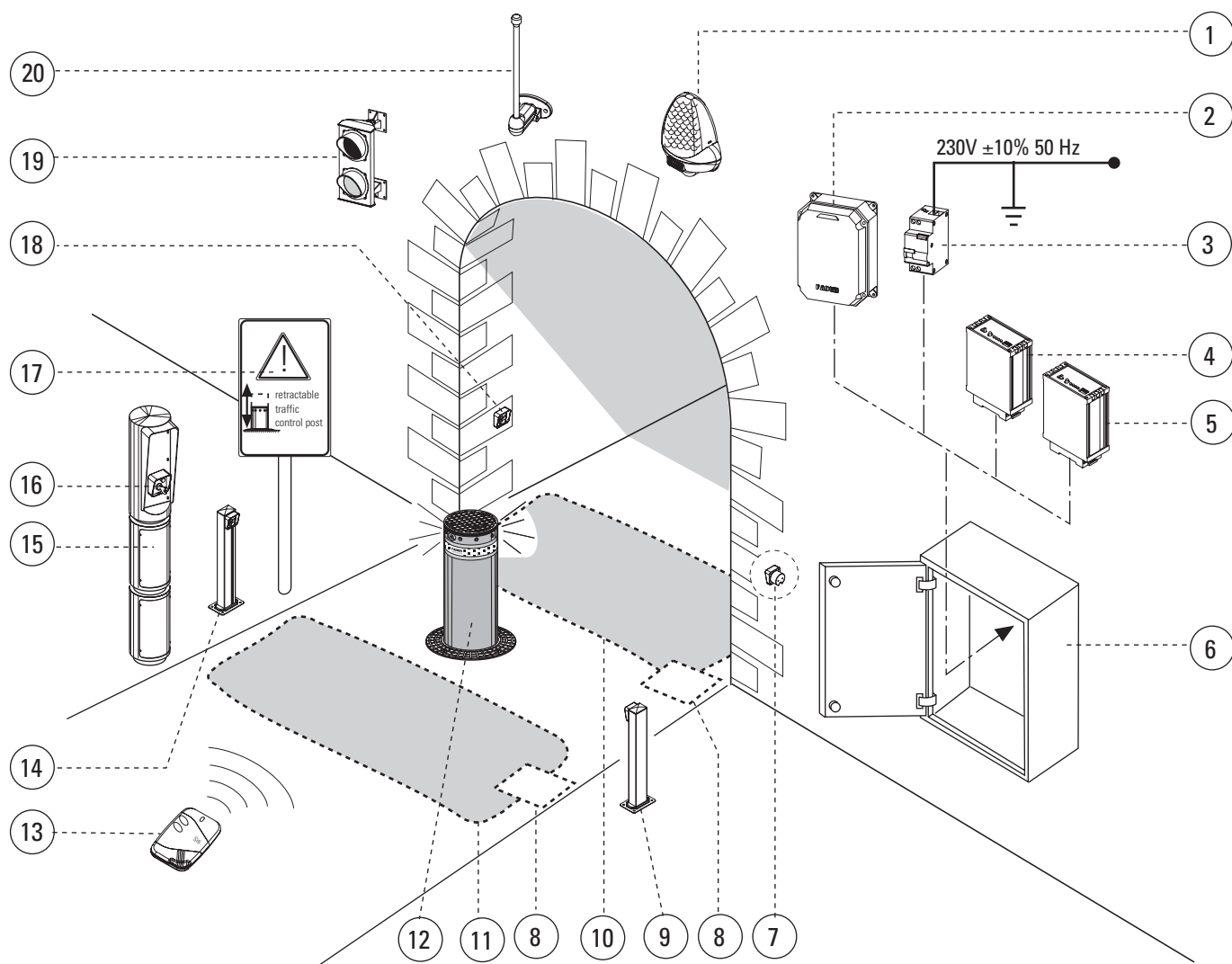
PIC. 2



STRABUC 930 *Heavy Armoured* version

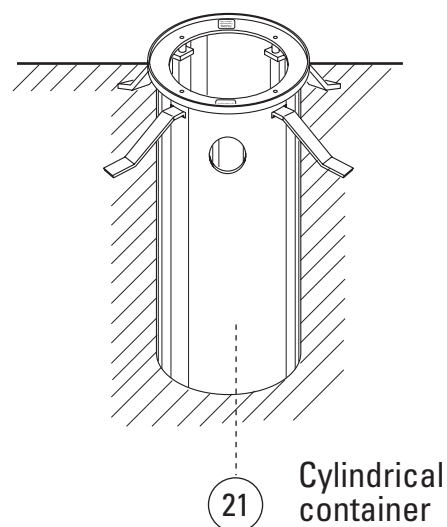
Version with *armoured lock barrel* (optional) that can only be removed using the personalised key, which lends the traffic post greater protection against forced entry (Pic. 2).

OPTIONAL ACCESSORIES FOR COMPLETE INSTALLATION



List of all operative accessories available:

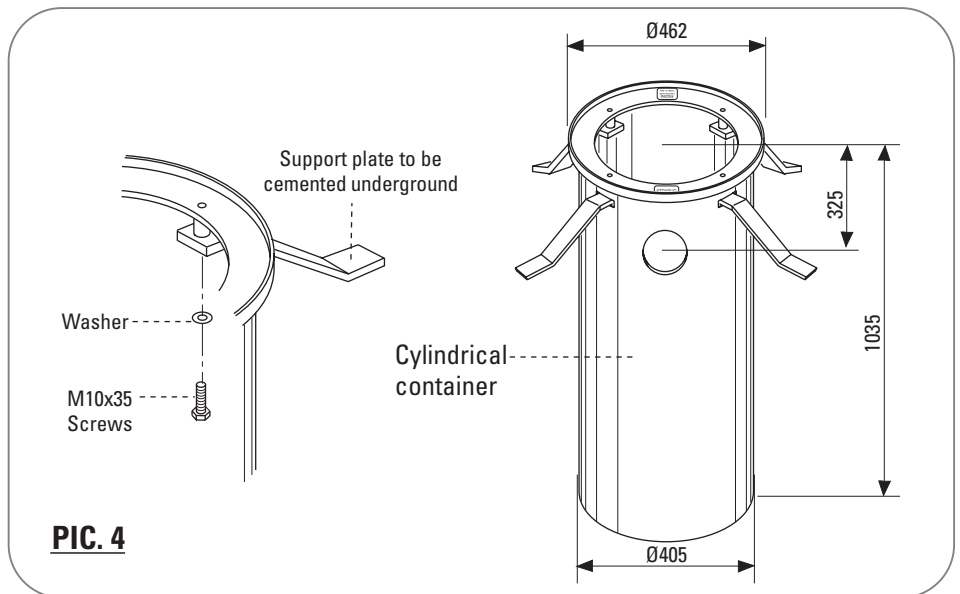
- 1 - Miri 4 flashing light
- 2 - Elpro S40 electronic programmer with Siti 63 radio receiver
- 3 - Thermomagnet differential switch with sensitivity 0.03A (not provided)
- 4 - Entry metal detector
- 5 - Exit metal detector
- 6 - Anti-intrusion cabinet
- 7 - Polo 44 recess-mounted photoelectric cell receiver
- 8 - Sealed electric connection box with inductive coil (not provided)
- 9 - Post for Polo 44 photoelectric cell projector
- 10 - Below-ground exit inductive coil (not provided)
- 11 - below-ground entry inductive coil (not provided)
- 12 - Strabuc 930 oil-hydraulic traffic control post
- 13 - Siti 63 Transmitter
- 14 - Post for Polo 44 photoelectric cell receiver
- 15 - Visual 344 control accessory housing post
- 16 - Prit 19 key switch
- 17 - Post moving hazard-warning indicator
- 18 - Recess-mounted Polo 44 photoelectric cell projector
- 19 - Two-light traffic lights
- 20 - Birio A8 wall-mounted aerial
- 21 - Strabuc 930 housing to be cemented into the ground (standard issue)



PIC. 3

INSTALLATION OF THE CYLINDRICAL HOUSING TO BE CEMENTED INTO THE GROUND

- Assemble the **support plates** to be cemented into the ground by fitting them inside the slots in the **cylindrical container** and fasten them by the provided screws (Pic.4)

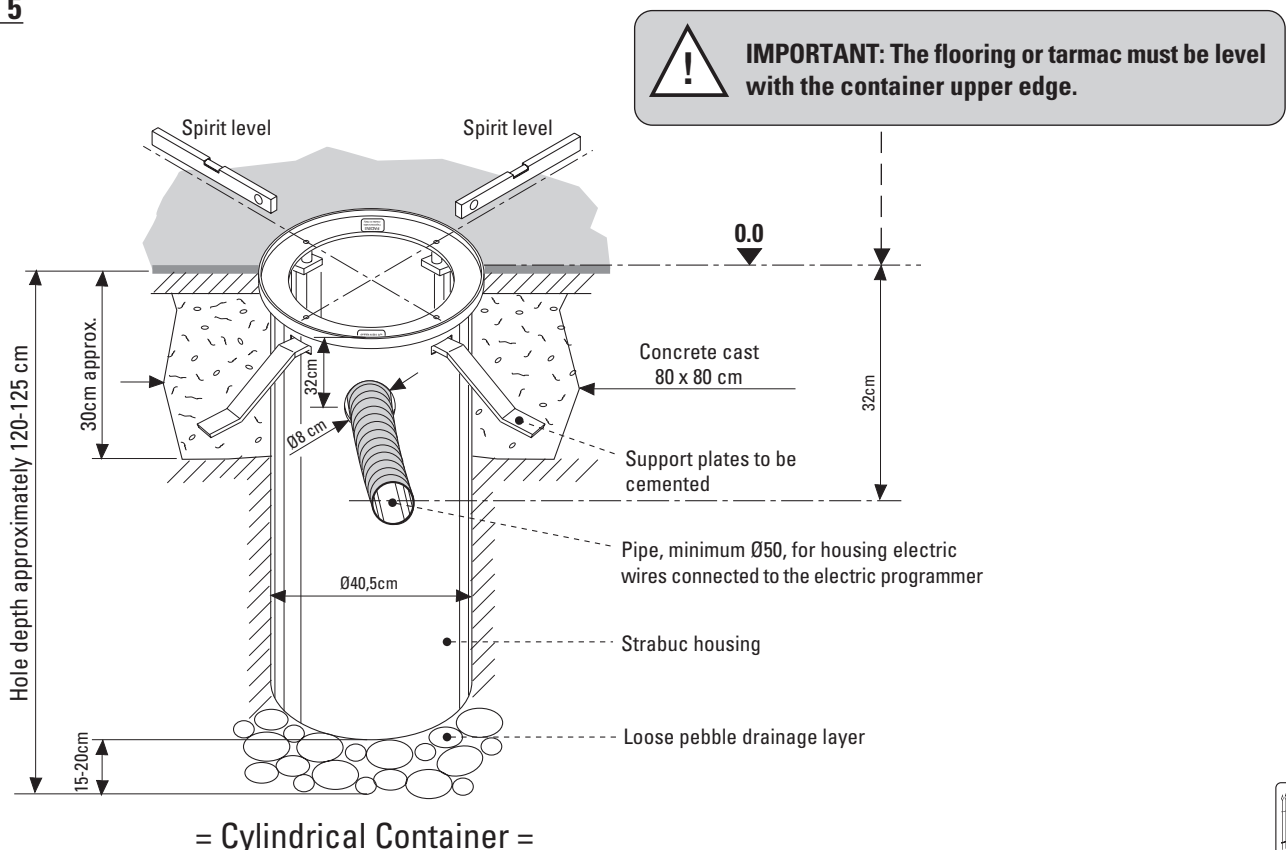


- Dig a hole measuring 80x80cm and approximately 1.20 m deep, where the Strabuc 930 is to be installed: these measurements are adequate for inserting and cementing the **cylindrical container** at ground level (Pic.5).
Simultaneously, it is important to dig a hole in the ground to take a **corrugated flexible pipe** (max Ø50mm) to the **cylindrical container**, passing through the hole as provided in the container, in order to house the electric wires to be connected to the **Elpro S40** electronic programmer (to be installed in a protected place).
- Before positioning the **cylindrical container**, arrange a 20 cm-deep layer of pebbles for rainwater drainage.
It is important that once the cylindrical container has been placed on the pebbles, the upper portion is flush with the ground level.

IMPORTANT: Take care to avoid power or water pipes when digging. Arrange a water drainage layer beneath the dig.

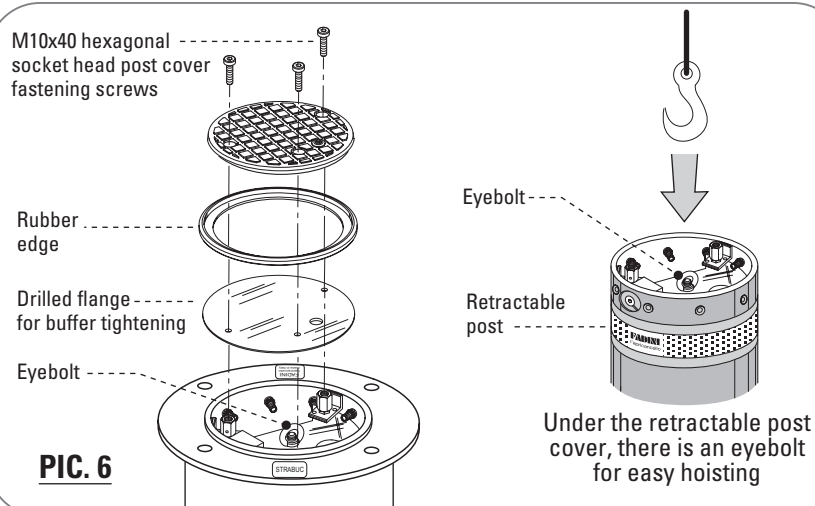
IMPORTANT: Once the housing has been positioned, before cementing, use a spirit level to ensure that it is absolutely level, to allow perfect vertical movement of the traffic control post.

PIC. 5



INSTALLATION OF THE STRABUC 930 *HEAVY* TRAFFIC CONTROL POST

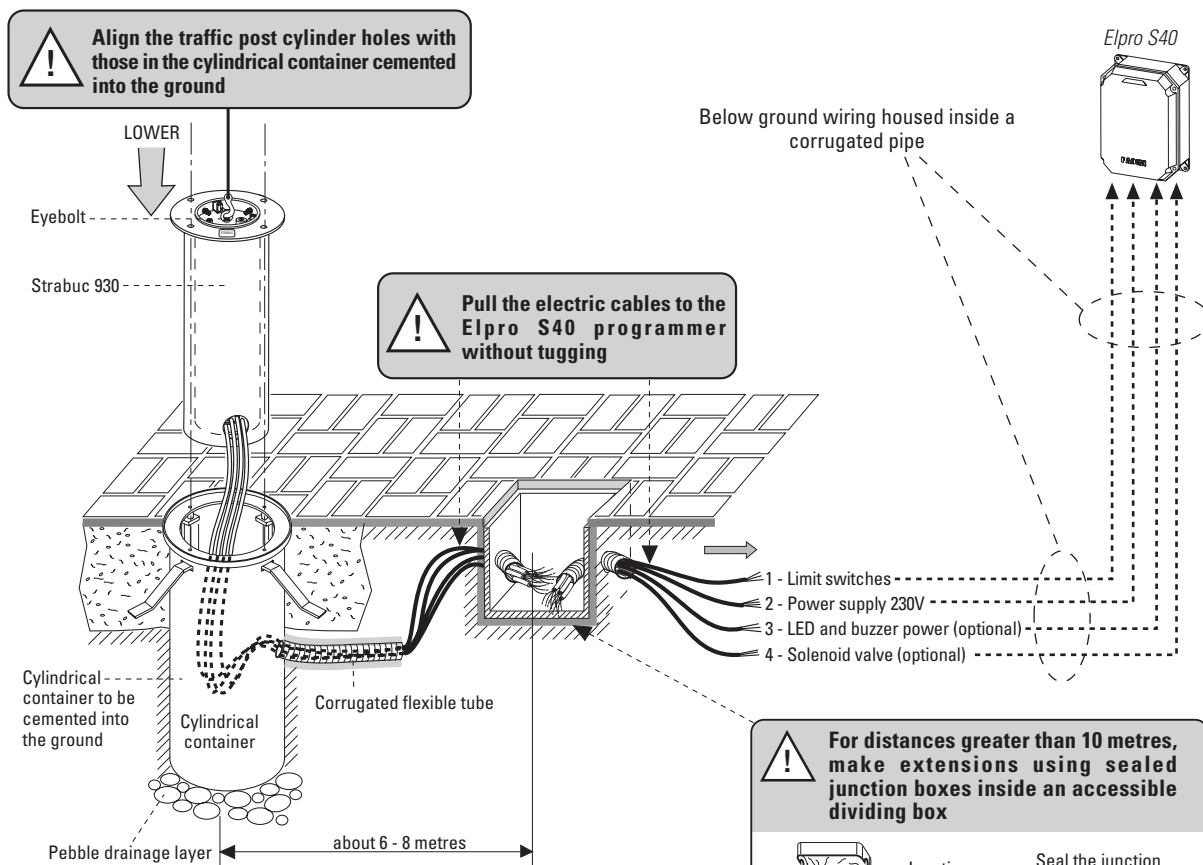
Once the cement has set, proceed with installation of the Strabuc 930 Heavy inside the **cylindrical container**. For this operation, it is necessary to use equipment suitable for hoisting and then placing it in the post seat, by hitching to the **eyebolt** on the top of the **retracting post cover**, having unscrewed and removed the three screws and the **cover**. Before placing the Strabuc 930 inside the cylindrical container, pass all the electric wires through the corrugated tube connected to the Elpro S40 programmer: for this initial phase, use a pull-out to be passed through the pipe first (Pic.6 and Pic.7).



ATTENTION: as Strabuc 930 comes complete with a series of electric cables, each one 10 metres long, during all these Strabuc 930 installation operations, **never tug at or charge electric wires for any reason**. During Strabuc 930 maintenance or removal operations **DO NOT CUT THE ELECTRIC WIRES**, remove them from the pipes.

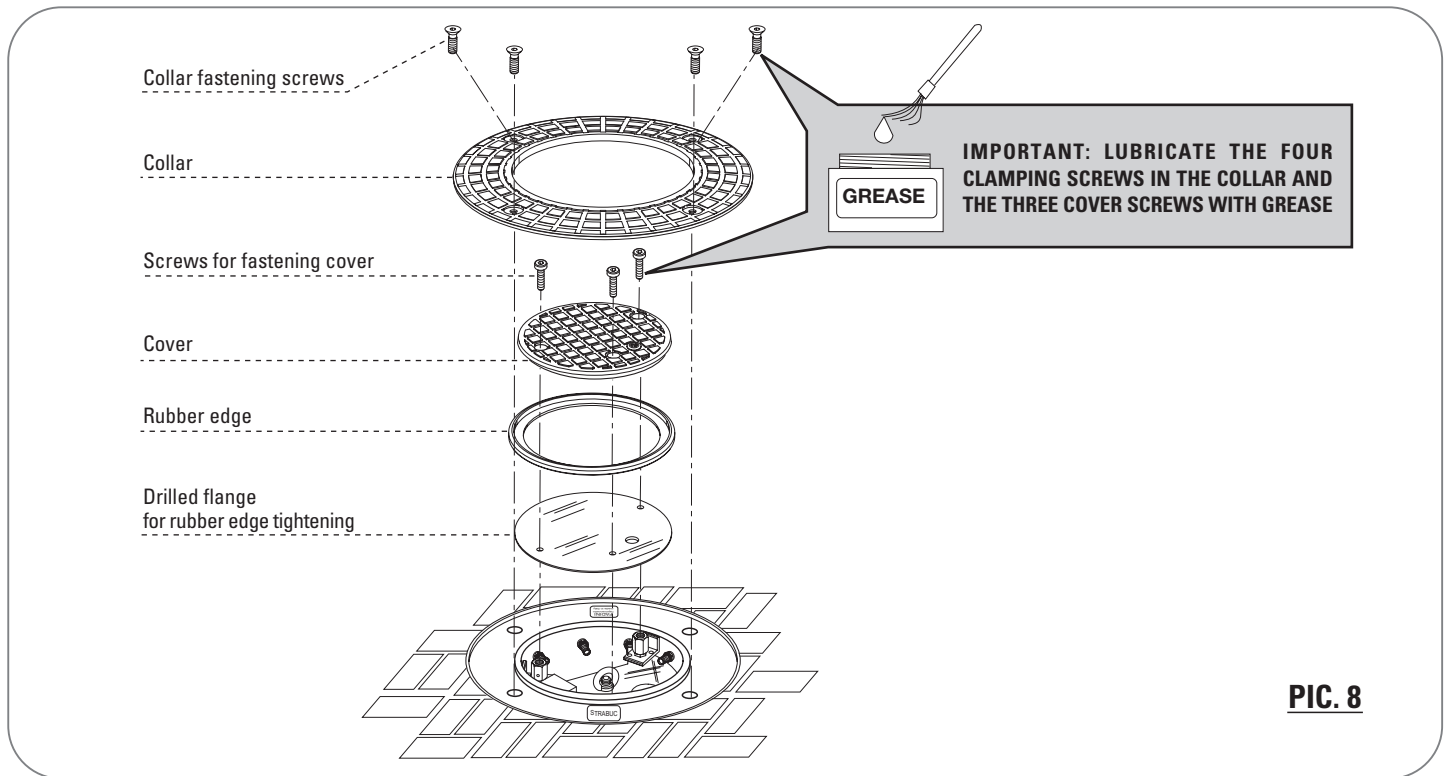


ATTENTION: measure the distance between the Strabuc 930 installed and the Elpro S40 programmer: once the Strabuc 930 has been positioned and fastened, all the electric cables must rest freely on the bottom of the cylindrical housing. If the distance is greater, the wires should be extended using sealed joints (junction boxes) inside an accessible dividing box, according to good installation practice: this will prevent malfunctions and will guarantee efficient operation over time.



PIC. 7

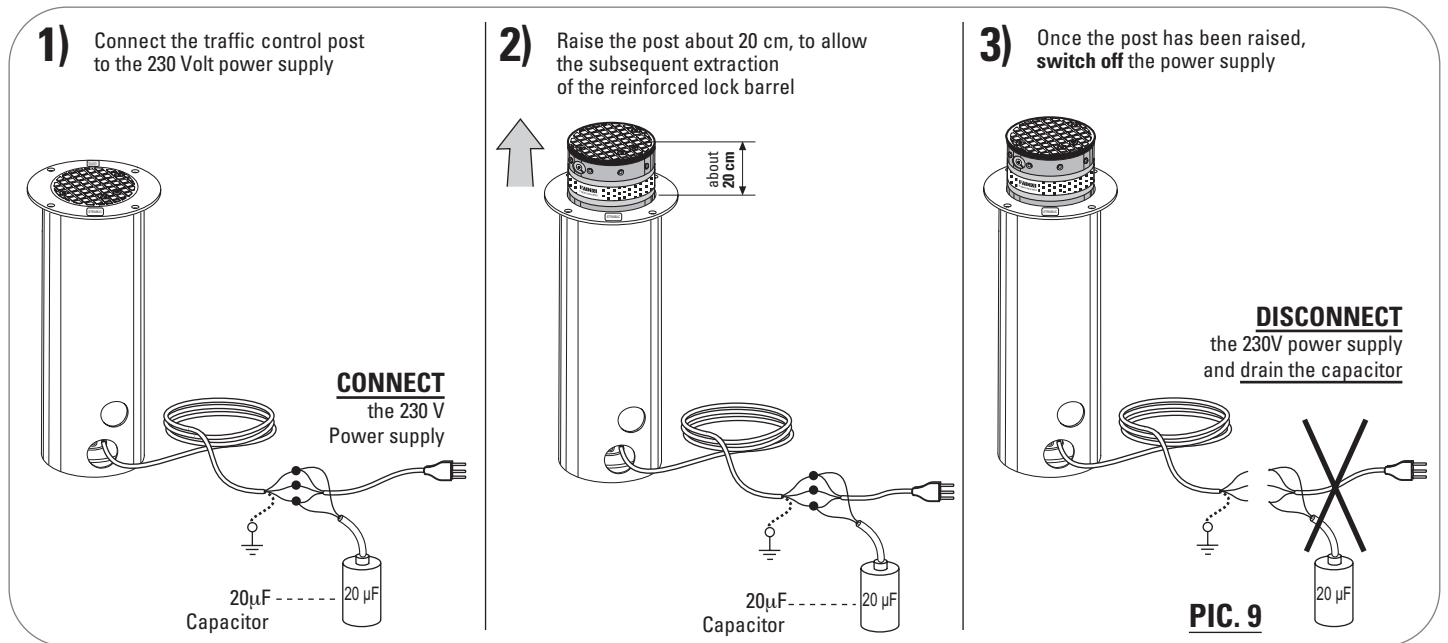
Once all the electric wires have been put in place, terminate by fastening the **Aluminium collar** and the **Cover**: lubricate the fixing screws of the collar and retractable post cover using grease (Pic. 8).



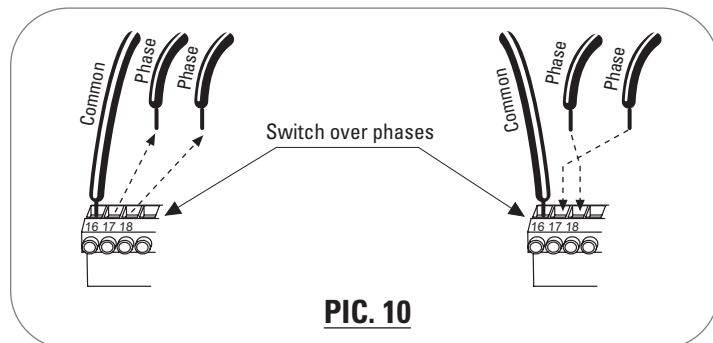
PRELIMINARY OPERATION FOR INSTALLATION OF STRABUC 930 *Heavy Armoured version*

Before installing the *Strabuc 930 Heavy Armoured version* (with **Armoured Lock Barrel**) the traffic post must be connected to the 230 Volt power supply (1). Raise the post about 20 cm (2) and switch off the power supply (3) (Pic.9).

N.B. We recommend connecting a 20 μ F capacitor to give the traffic control post more power on starting.



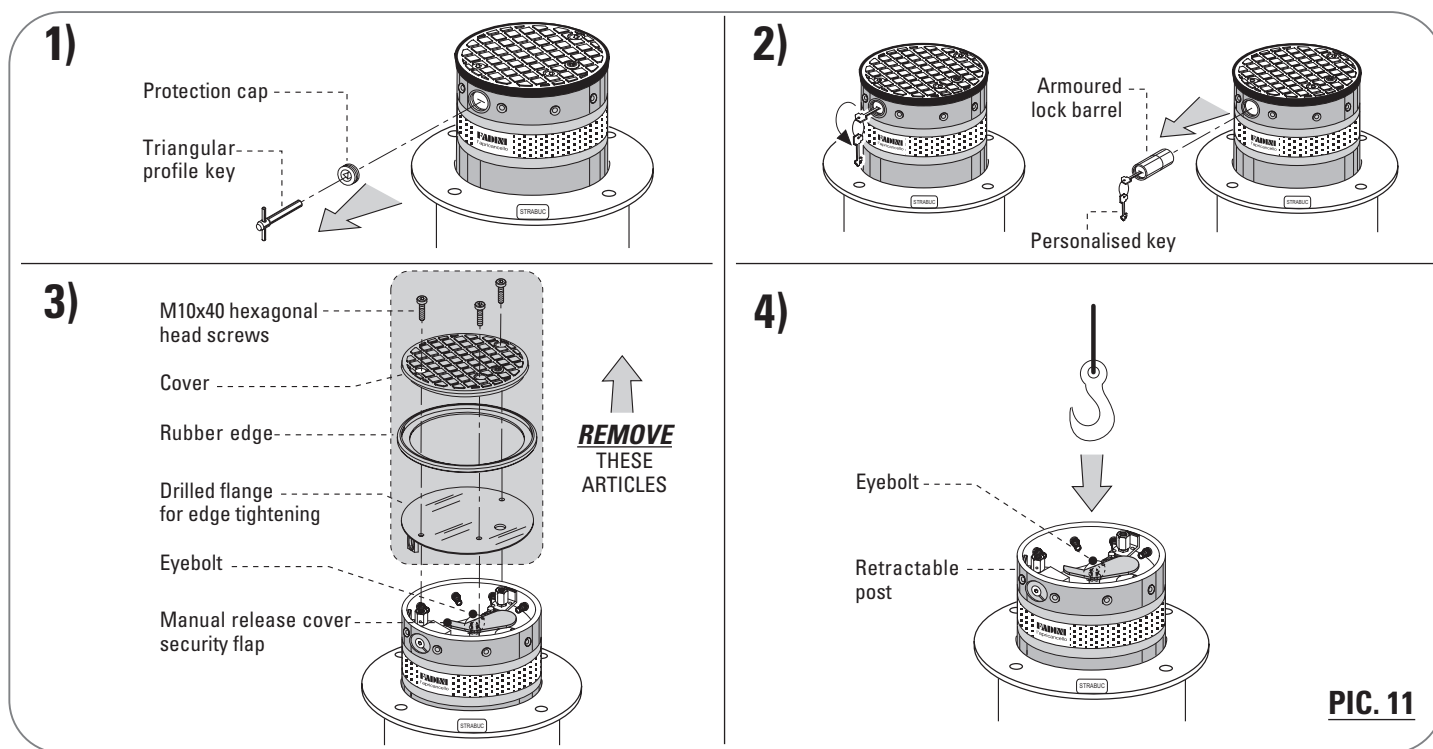
N.B. If the post lowers instead of rising, switch over the electric wires of the two "phases", leaving the "common" in place (Pic. 10).



INSTALLATION OF THE STRABUC 930 *Heavy Armoured Version* TRAFFIC CONTROL POST

When installing the *Strabuc 930 Heavy Armoured version* first unscrew the **Cap** protecting the **Armoured lock barrel** with the triangular profile key (1) and then pull out the whole **Armoured lock barrel** by inserting the customised key and turning anticlockwise (2); lastly, remove the three **clamping screws**, the post **Cover**, the **Rubber edge** and the **Drilled flange** (3). Then insert the Strabuc 930 Heavy Armoured version into the **Cylindrical Housing**: this operation should be performed using suitable lifting equipment and subsequent insertion of the post into the housing, hitching it to the **Eyebolt** positioned beneath the **Cover** on the **Retractable post** (4) (Pic.11).

The remainder of the installation procedure is identical to that of the Strabuc 930, follow the instructions provided on pages 6-7, pictures 7-8.

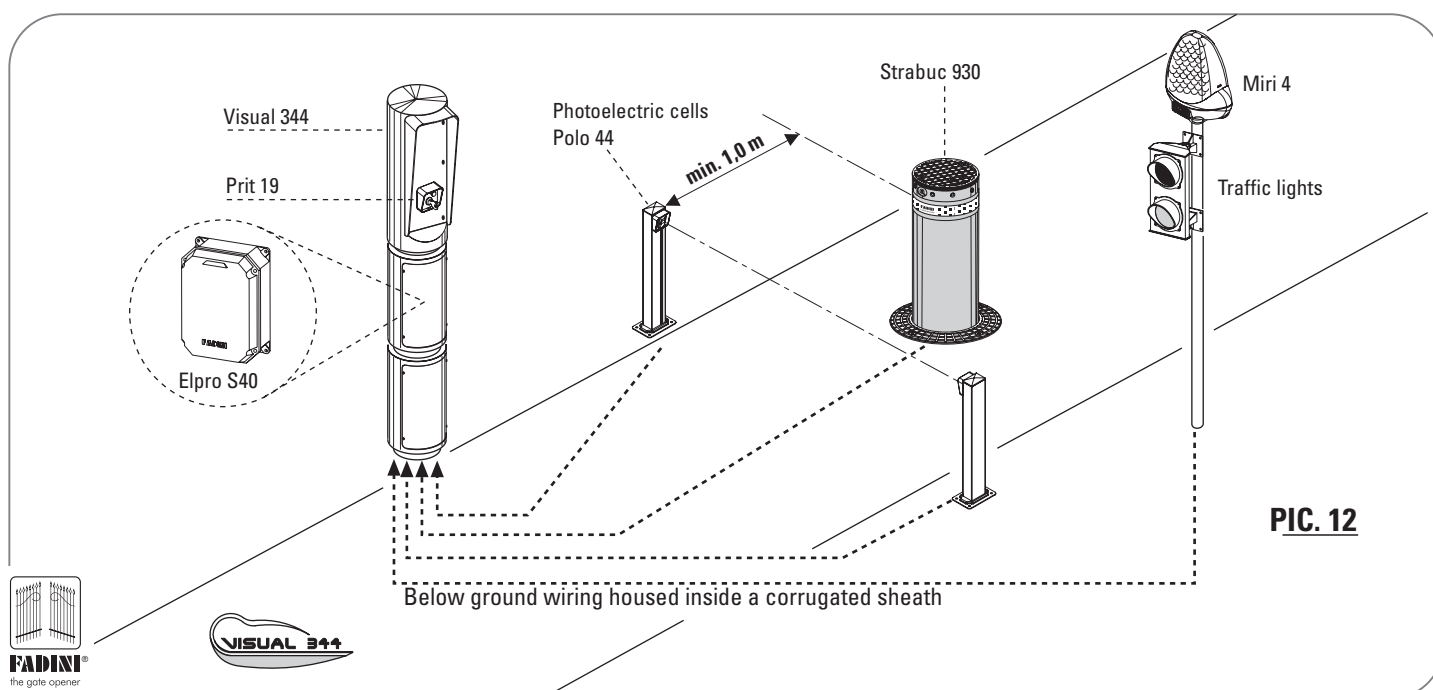


ARRANGING THE SAFETY AND CONTROL ACCESSORIES

All safety and control accessories must be installed according to minimum recommended distances from the Strabuc 930 and these distances must be strictly observed in order to obtain effective installation.

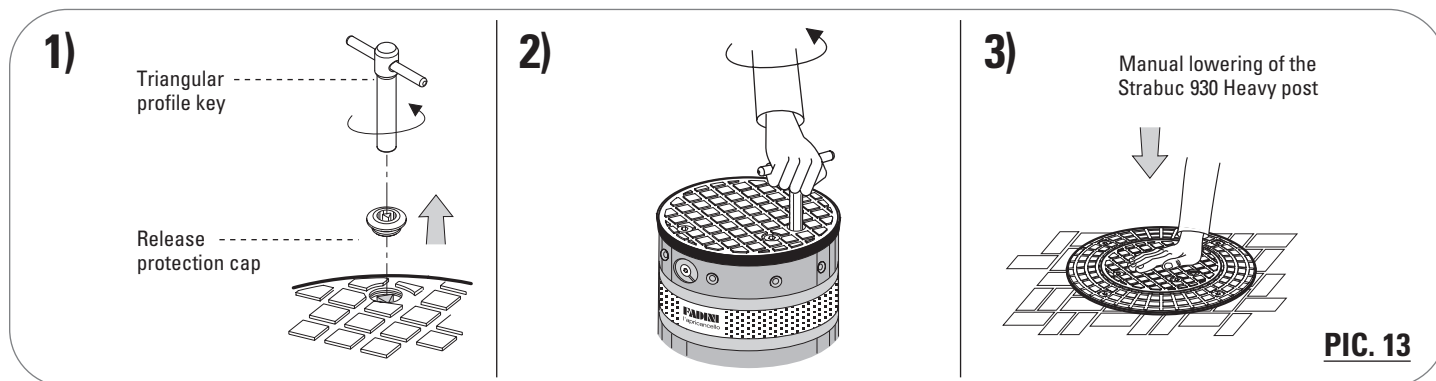
Arrangement of the photoelectric cells: the photoelectric cells must be installed at a minimum working distance as indicated in Pic. 12.

Arrangement of visual 344: the 2 or 3-module Visual 344 is a metal accessory used to house the Elpro S40 in exposed positions, in those installation situations in which the programmer cannot be wall- or recess-mounted. It has also been designed for the installation of possible control accessories such as intercom systems or key switches, in the immediate vicinity of the Strabuc 930 (pic. 12).



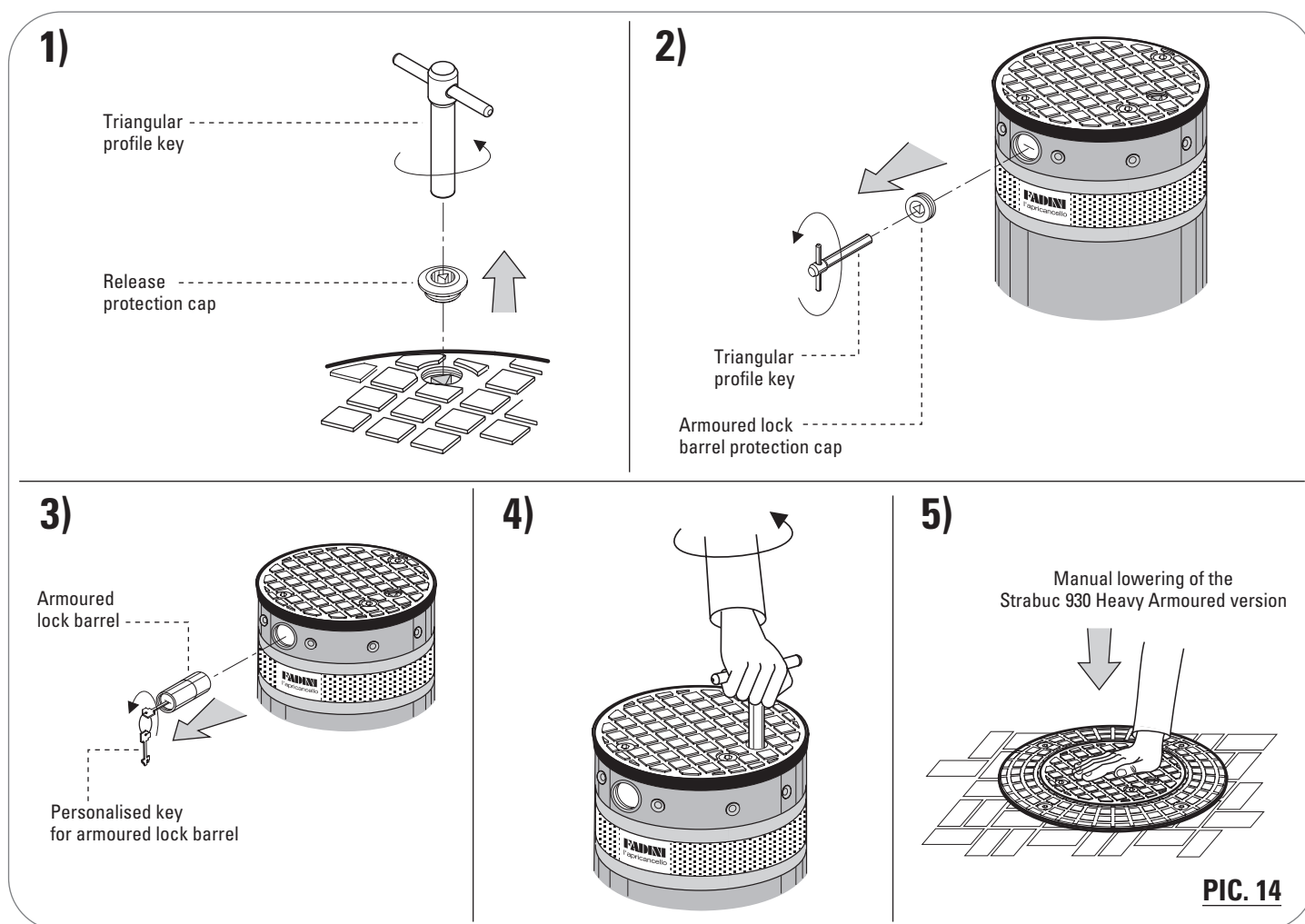
Release operations for manual lowering of the STRABUC 930 *Heavy*

The Strabuc 930 Heavy is fitted with a release system for manual post lowering in the event of a blackout, as shown in picture 13. Using the universal key with triangular recess provided, unscrew the **Release Protection cap (1)**; then insert the **Release key** into the dedicated hole and turn anticlockwise to release the post (2). Press lightly to lower the post to floor level (3).



RELEASE OPERATIONS FOR MANUAL LOWERING OF THE STRABUC 930 *Heavy Armoured version*

Strabuc 930 Heavy Armoured posts can be lowered manually by following the operations shown in picture 14. Use the universal triangular profile key provided to unscrew the **Release protection cap (1)** and the **Armoured lock barrel protection cover (2)**. Remove the **Armoured lock barrel** from its recess by inserting the **personalised key** into the lock and turning anti-clockwise (3). Then insert the **Release key** into the dedicated hole and turn anti-clockwise to release the post (4). Press lightly to lower the post to floor level (5).



N.B. In both cases, once the post has been lowered manually, it only rises again following command impulse, with the power supply on.

Once the electric wires have been laid and positioned and the oil-hydraulic unit with the retractable post has been fixed, position the electronic programmer and make the electrical connections (as indicated in pic.15), by connecting just one Strabuc 930.

It is important to connect a 20 μ F capacitor (provided) to the terminals "A and B", located above terminals 16 - 17 - 18 (position "1" on the card). Pic.16.

Limit switch connections are made using wire n°1 Limit switches to terminals 11-12-13 (pic. 16) with the "blue" common to terminal 13.

The **Electric Motor** connections are powered by wire n°2 at 230V. If the Electric Motor does not raise the post, switch over the black and brown wires to terminals 17 and 18, leaving the blue wire connected to terminal n°16. Pic.16.

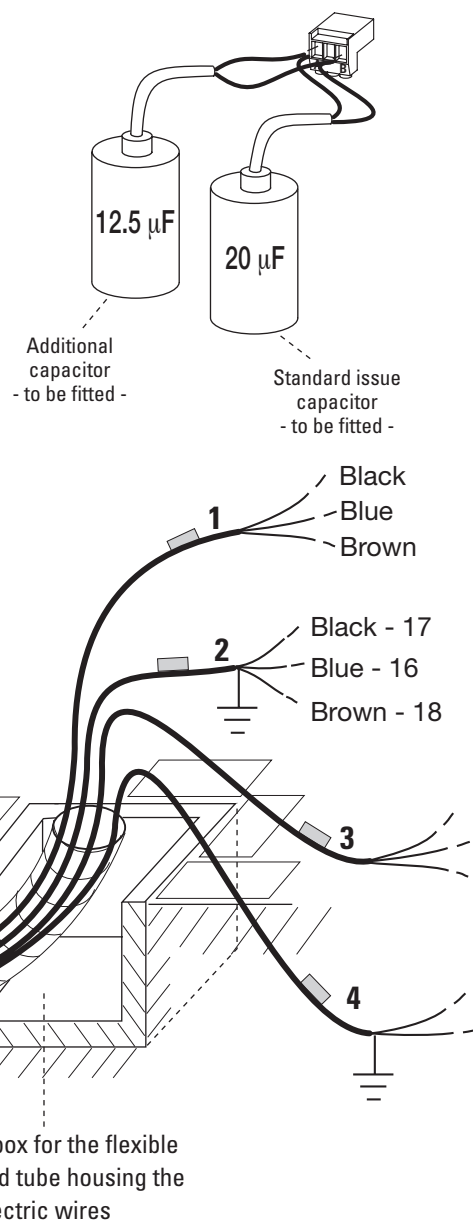
The **LED** connections are made using cable n°3, with dark blue and brown wires to terminals 52 and 53, respectively (pic. 17 page 12)

A **Buzzer** (optional) is available, powered by wire n°3, which sounds as the post rises and lowers. Wiring to be performed as indicated in pic.17 on page 12.

If one wants the column to lower automatically in the event of a power failure, order the traffic control post complete with **Solenoid valve** (optional), powered by electrical wire n°4 at 230V. (pic. 24 page 16)



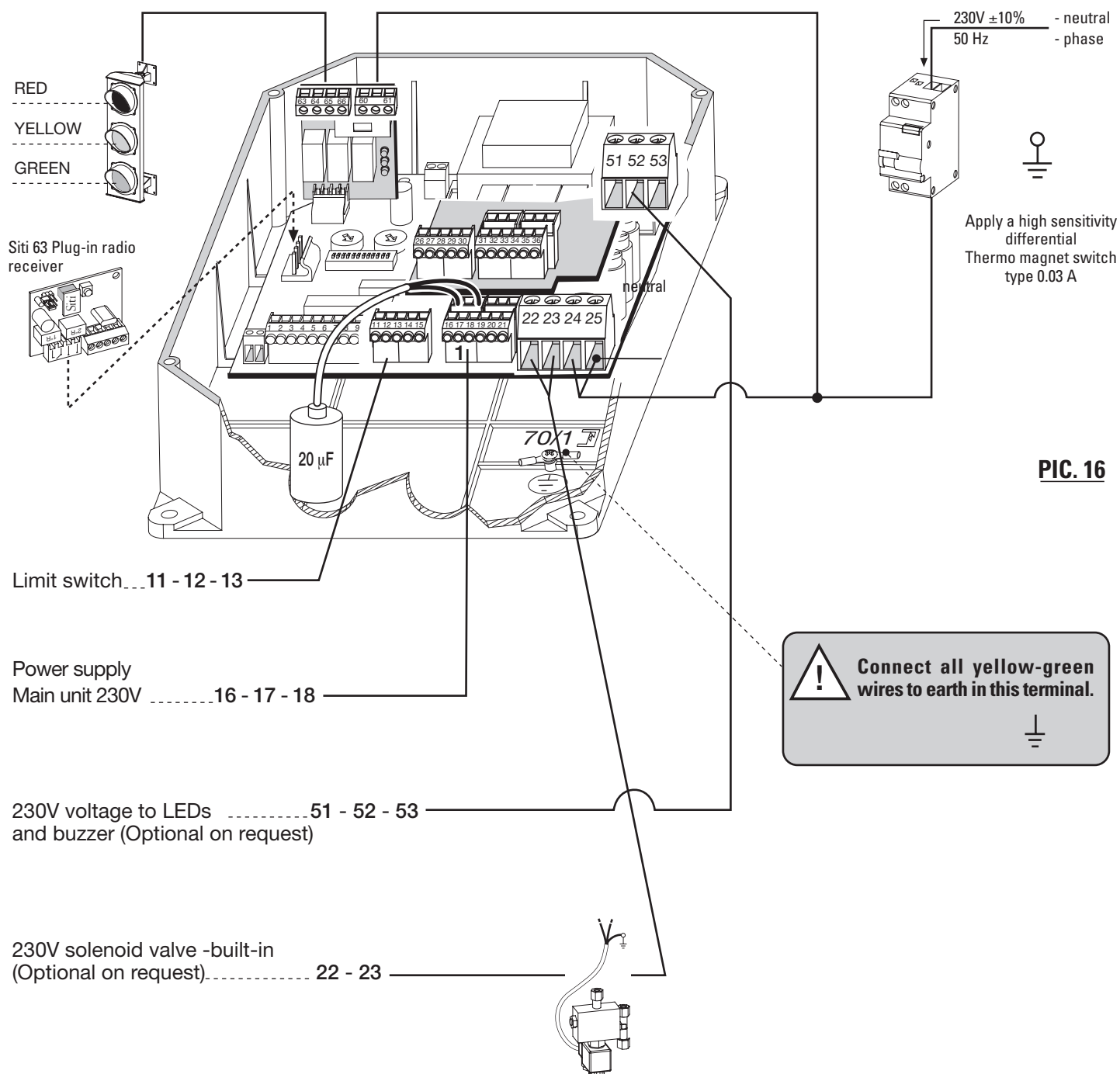
Important: in the event of shortage of power supply to the motor, connect another 12.5 μ F capacitor in parallel with the previous 20 μ F one.



Strabuc 930
-installed-

PIC. 15

- The **Elpro S40** programmer should be installed in a dry, protected place, inside its own container or, in the case of additional components for operating the control and safety accessories, it should be housed inside a cabinet certified for external use (not provided by the Manufacturer).
- The **Elpro S40** programmer is powered using electric wires with a 1.5mm² section, with a cut-off differential switch for a maximum length of 50 metres. For distances of over 50 metres we recommend using electric cables with appropriate sections according to good installation practice. For all accessories external to the electric panel, electric cables with 1mm² wires may be used.
 - The three-light traffic lights must be connected by a four x 1.5mm² wire electric cable and the card powered 230 Volts to terminals **60 - 61** on the plug-in card. Pic.16.



PIC. 16

ELPRO S40 electronic programmer

General description: The electronic panel **Elpro S40** is fitted with a microprocessor to manage up to four retractable traffic control posts in the Strabuc series. With its single-phase 230V power supply, it satisfies the Low Voltage LV 93/68/EC and Electromagnetic Compatibility EMC 93/68/EC safety standards and should therefore be installed by a qualified technician in compliance with applicable regulations.

Elpro S40 stands out for its ability to monitor system faults and malfunctions (ISC).

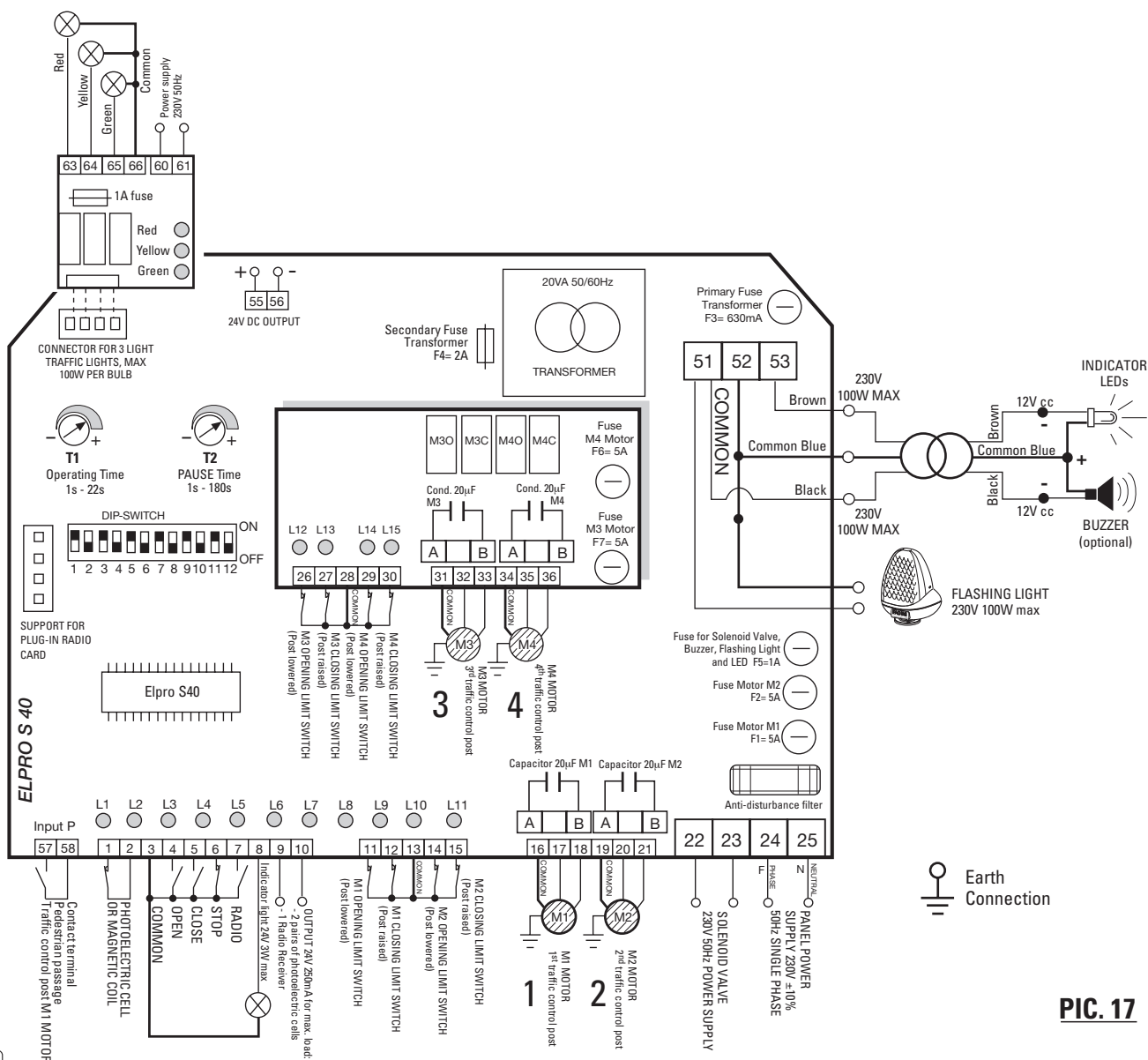
ISC= Integrated Supervision Circuit is a special Elpro S40 feature that monitors the whole electronic board aimed at detecting any component faults, or system accessory malfunction, if the operator is fitted with a release solenoid valve this allows the retractable post to lower.

The **Elpro S40** programmer should be installed in a dry, protected place, inside its own container or, in the case of additional components for operating the control and safety accessories, it should be housed inside a Visual 344 or a cabinet certified for external use.

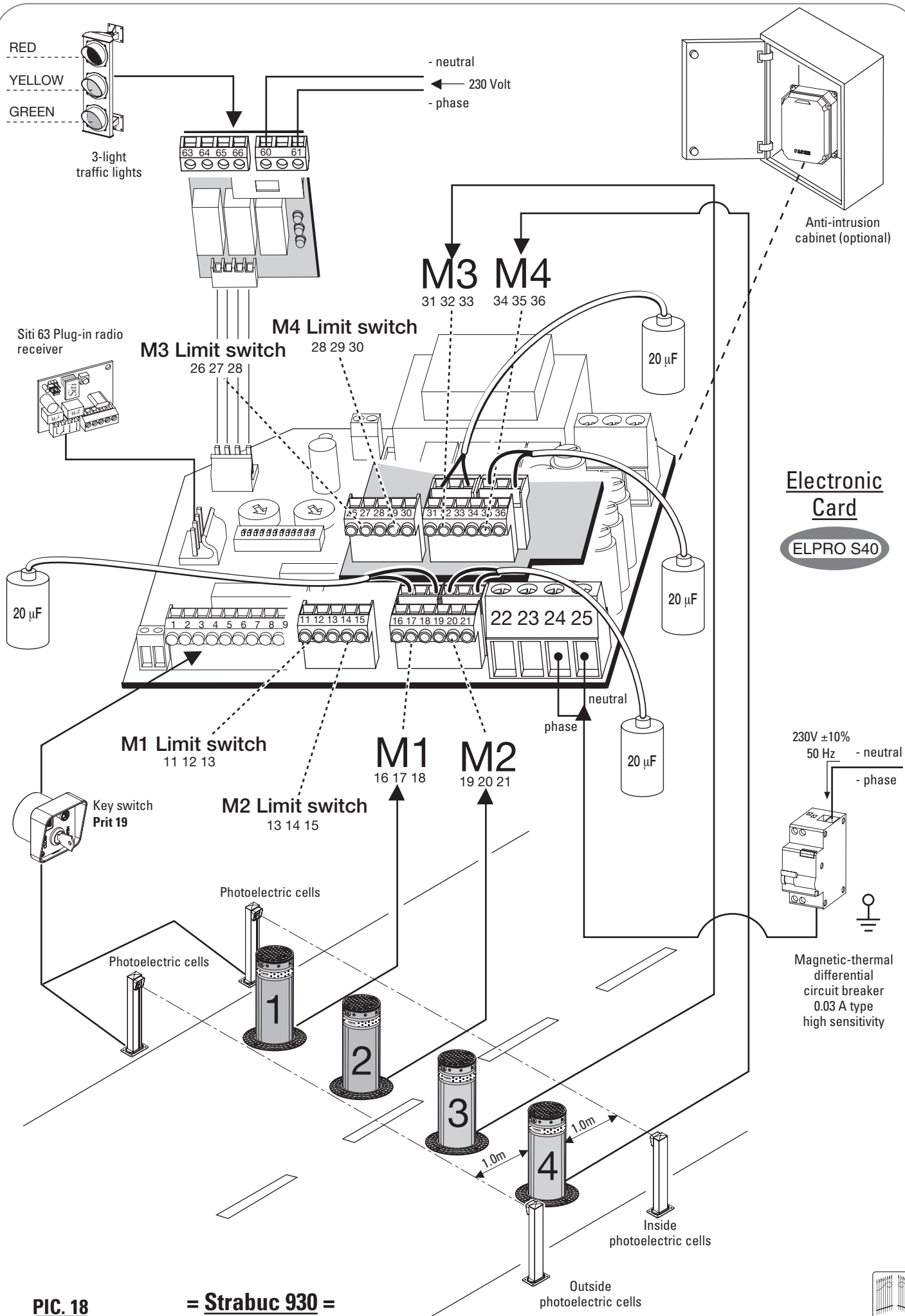
- The **Elpro S40** programmer is powered using electric wires with a 1.5mm² section, with a cut-off differential switch over a maximum distance of 50 metres. For distances of over 50 metres we recommend using electric cables with appropriate sections according to good installation practice. For all accessories external to the electric panel, electric cables with 1mm² wires may be used.
- The three-light traffic lights must be connected by a 4 x 1.5mm² wire electric cable and the card powered 230 Volts to terminals 60-61 on the plug-in card.

N. B. For all explanations on functions and electric wiring we recommend consulting the Instruction Manual, Drawing 4555.

IMPORTANT: earth the system by means of the dedicated terminal in the bottom on the right-hand side of the Elpro S40 card container (Pic.17 and Pic.18).



PIC. 17



PIC. 18

= **Strabuc 930** =

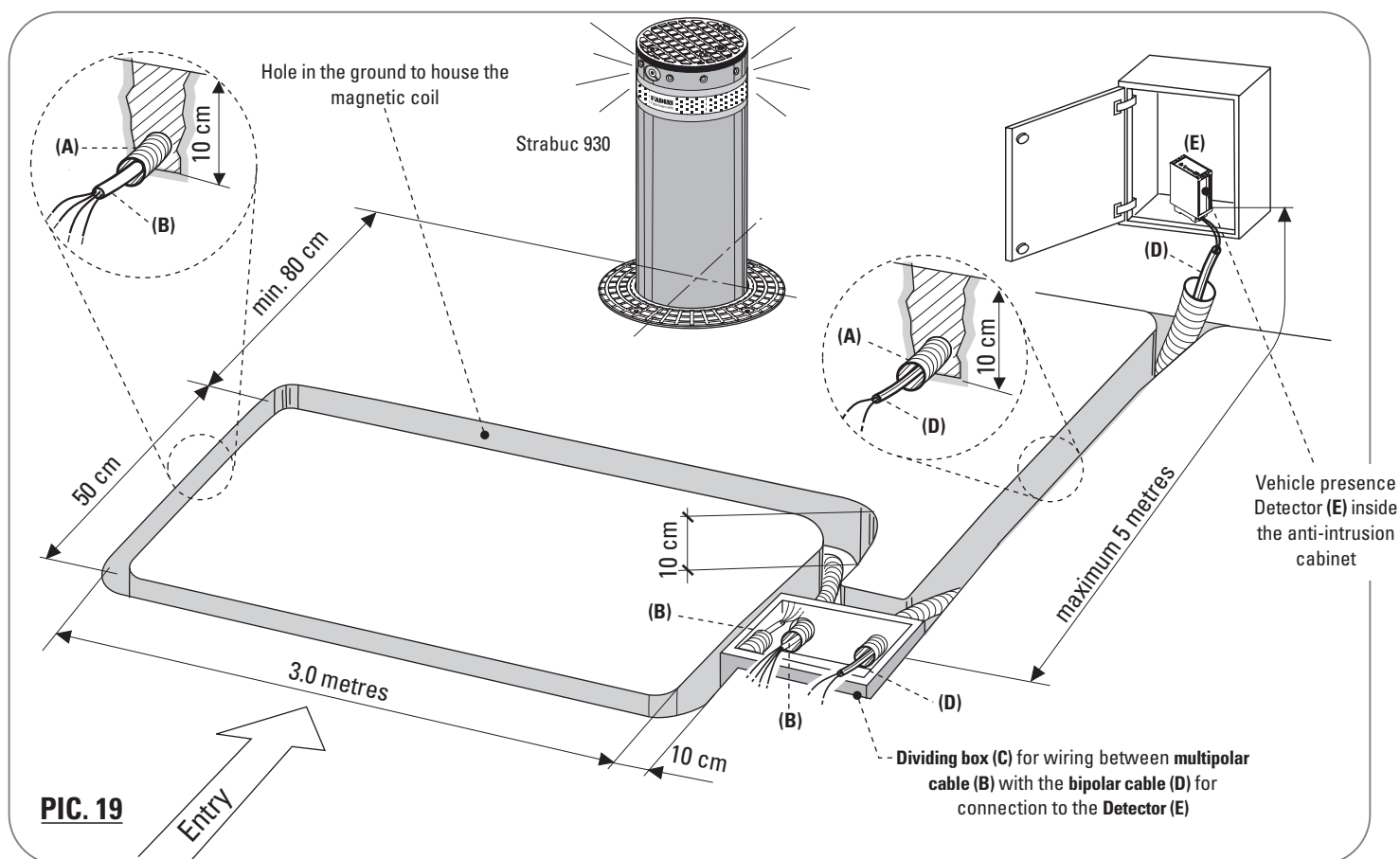
ARRANGING THE MAGNETIC COILS

IMPORTANT: check that there are no sources of disturbance such as to conceal or influence the magnetic/electromagnetic detections of any metal detector coils in the immediate vicinity of the installation accessories.

The magnetic coil safety accessory is always activated to detect transiting road vehicles. It prevents the Strabuc 930 from rising when vehicles pass over the coils.

A hole with a maximum depth of 10 cm must be prepared as shown in Pic. 19 (the hole must be rectangular with the long side perpendicular to the direction of movement). Alternative arrangements may be used to suit installation requirements, however the coil characteristics must always be respected (see relative instruction sheet).

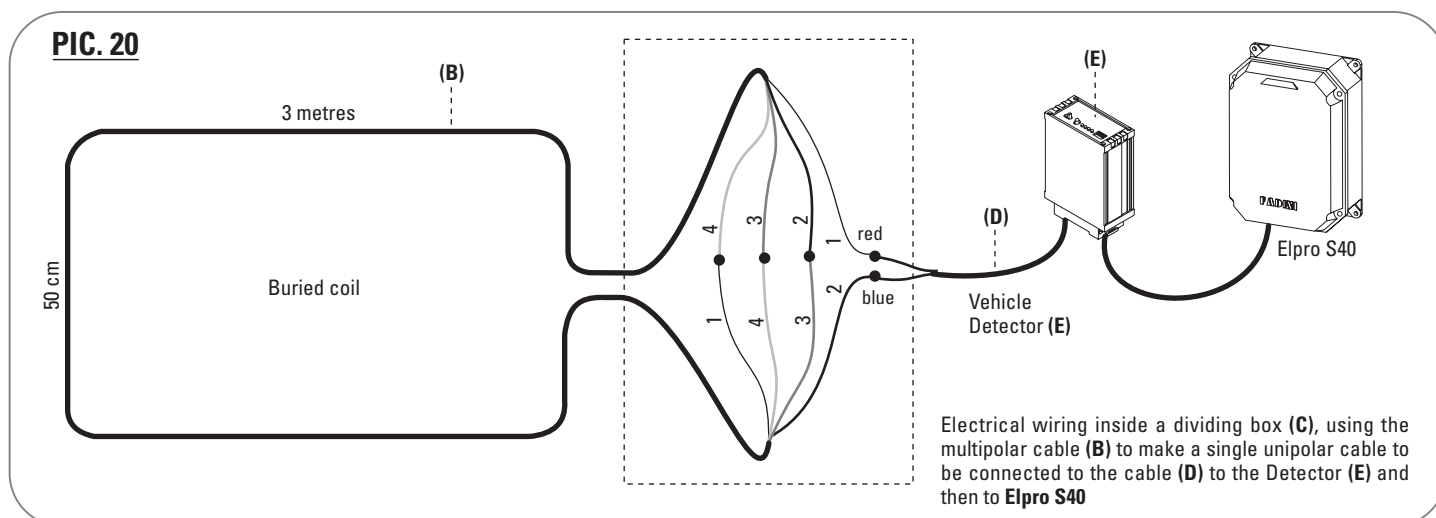
Specifications should always be observed for correct magnetic coil operation.



The coil is made using a multipolar electric cable, with four x 1.5 mm² wires, connected to form a single wire.

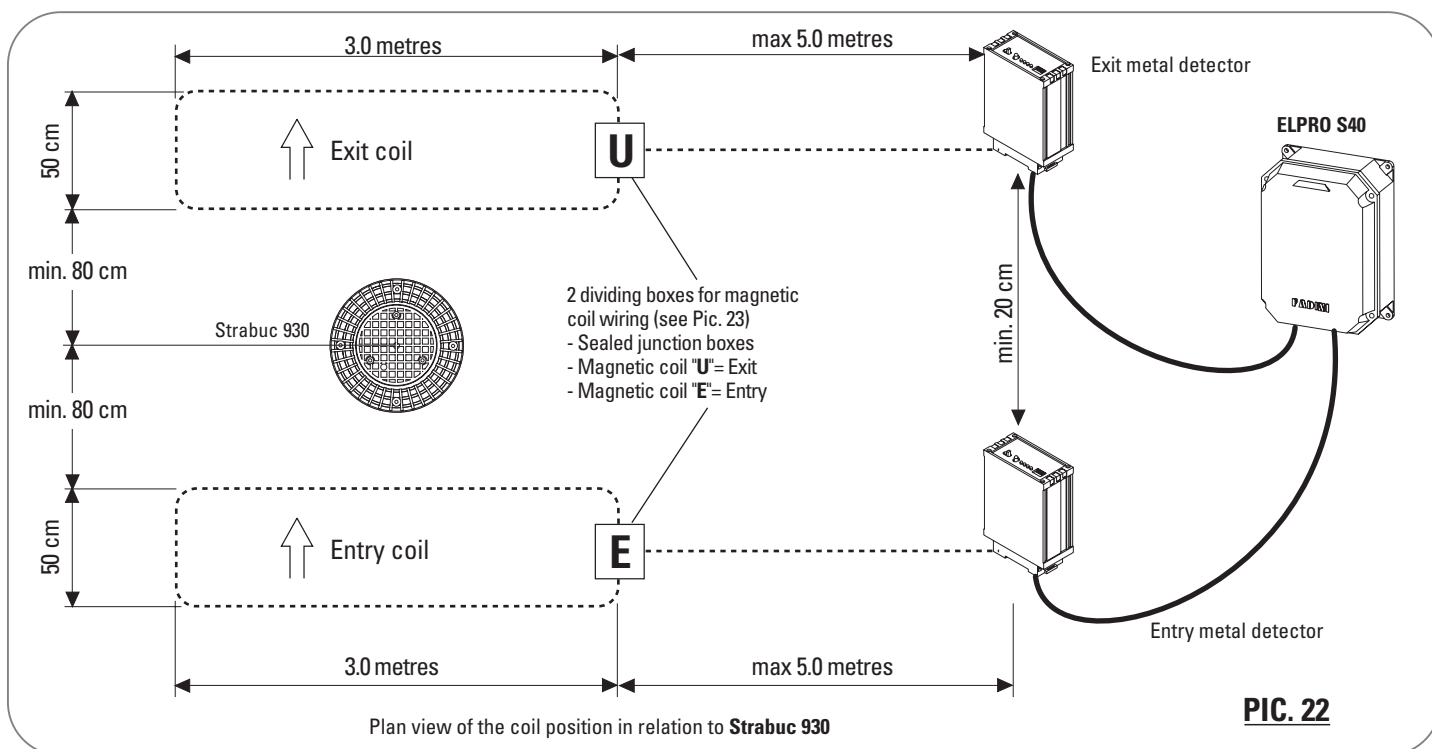
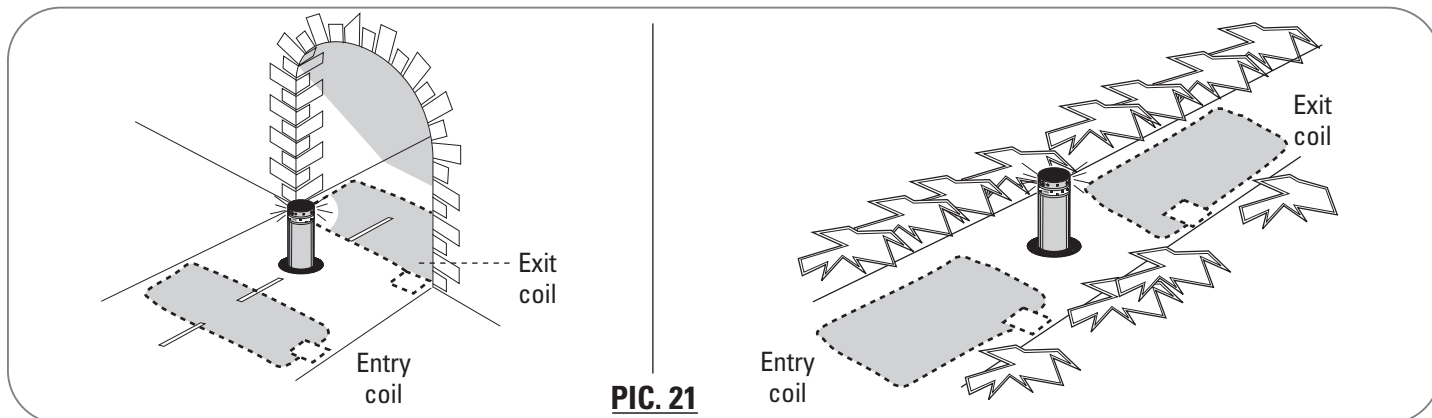
Bury and cement in place the **corrugated sheath (A)** large enough to house a **4-wire multipolar electrical cable (B)**. The two ends must then be connected and sealed inside a **dividing box (C)** to the **bipolar cable (D)** made to pass through another corrugated sheath (A) connected to the **Detector (E)** close to the "Elpro S40" programmer.

Once this phase has been completed, the electrical wiring must be performed inside the dividing box as shown in Pic. 20: the individual wires in the multipolar cable (B) must be connected in series, creating a single unipolar cable with two end wires to be connected to the Detector (E) through the bipolar cable (D).

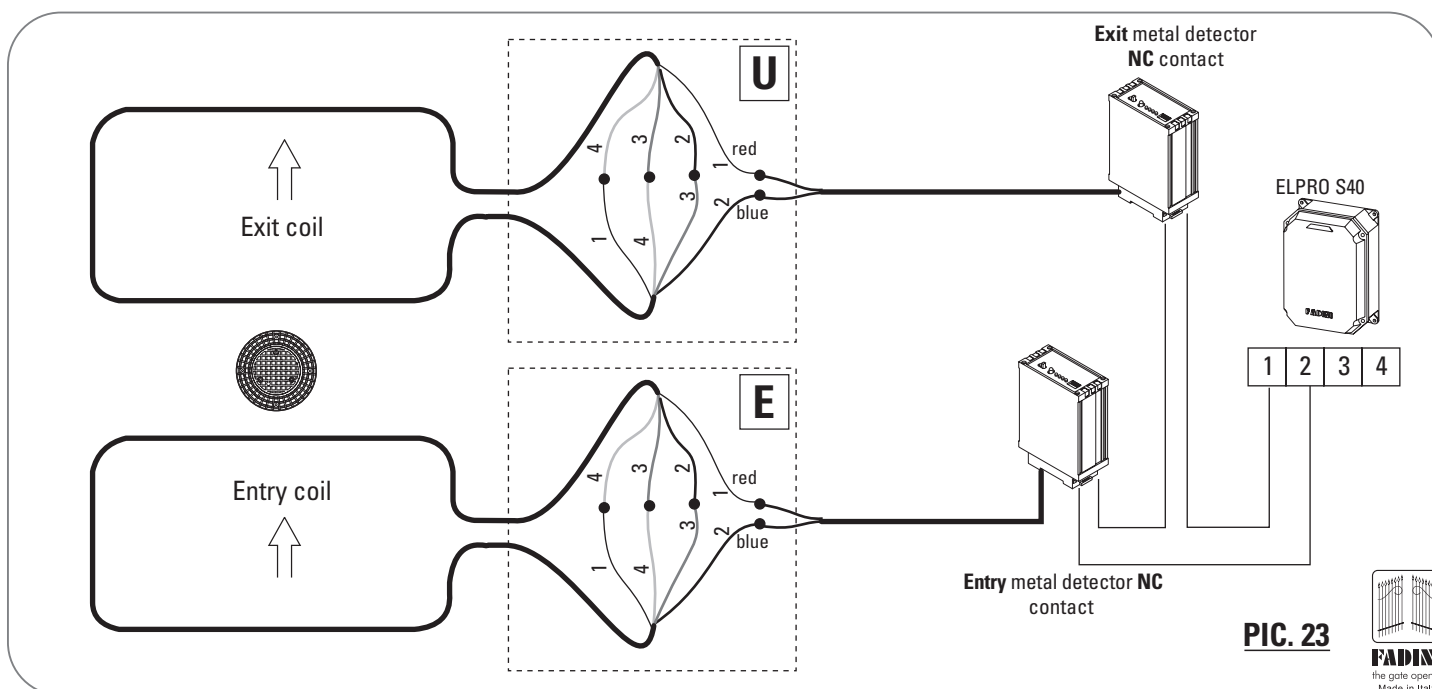


ARRANGEMENT OF A PAIR OF MAGNETIC COILS AT THE ENTRY AND AT THE EXIT

For installations requiring a pair of magnetic coils, one at the entry and one at the exit as shown in Pic.21, for each one a hole must be prepared as shown in Pic.22, to arrange two dividing boxes "E" (Entry) and "U" (Exit) for the coil wiring (Pic.23), following the minimum distances indicated.

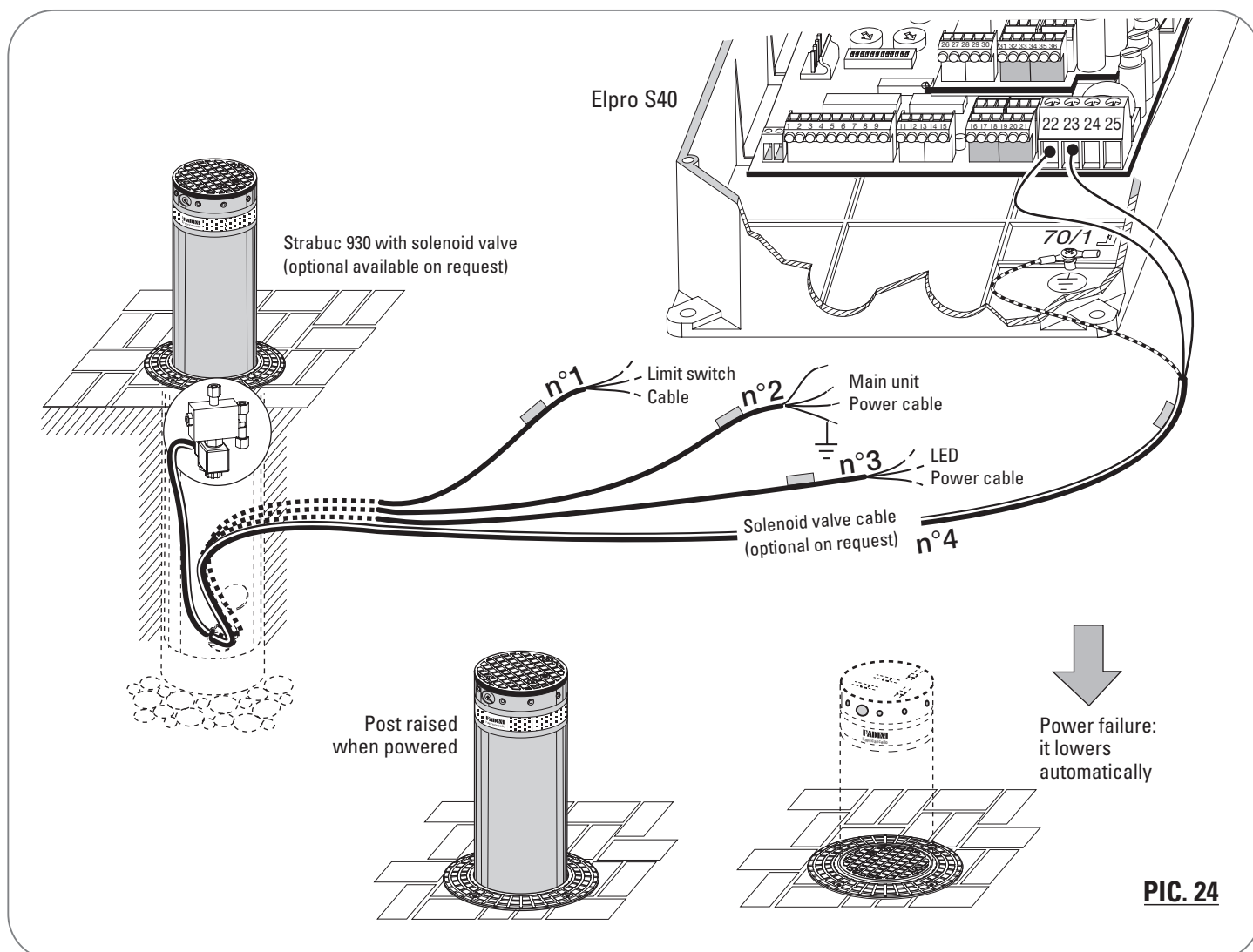


The electric wiring between the Detectors and the Elpro S40 Programmer are shown in Pic.23.



STRABUC 930 WITH SOLENOID VALVE

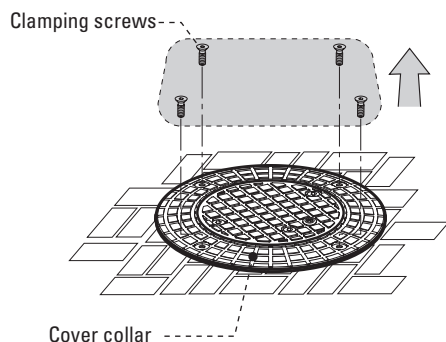
In the version fitted with solenoid valve, it is not necessary to manually release the post as it automatically lowers to ground level in the event of a power failure. To allow the solenoid valve to work, connect the wires of the electric cable labelled "SOLENOID VALVE" (N° 4), which comes from the Strabuc, directly to terminals 22 and 23 of the Elpro S40 programmer (Pic. 24).



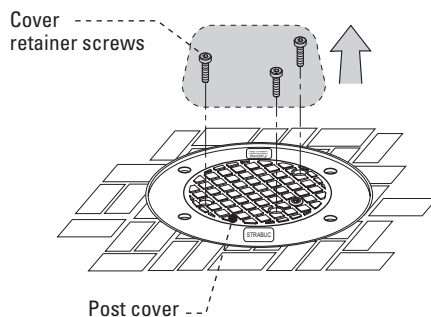
REMOVING THE STRABUC 930 FROM THE HOUSING

The *Strabuc 930* can be removed from its housing following the procedure in pictures 25 and 26.

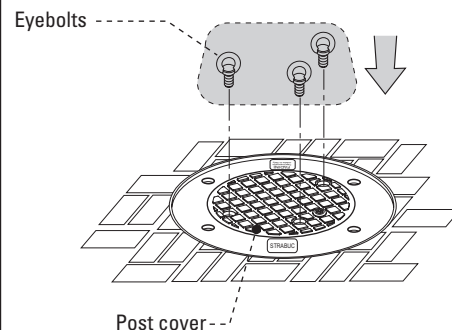
- 1)** Unscrew the four ground **Clamping screws** and remove the **cover collar**



- 2)** Unscrew the three **Retainer screws** of the **Retractable post cover**

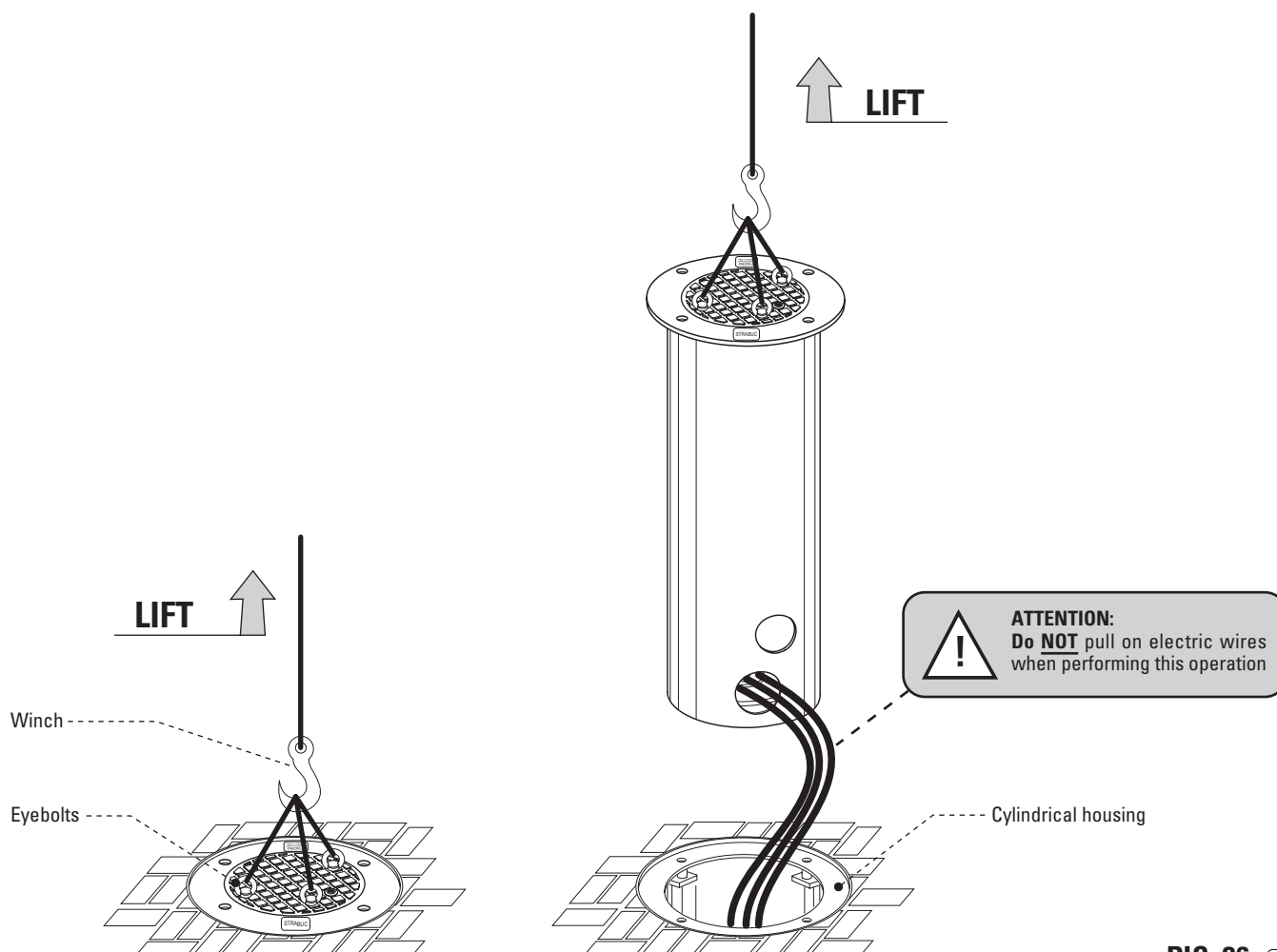


- 3)** Screw three **Eyebolts** into the holes in the cover



PIC. 25

- 4)** Lift the Strabuc 930 out of the housing using a **Winch**, by means of the three **Eyebolts** previously screwed into the post cover.

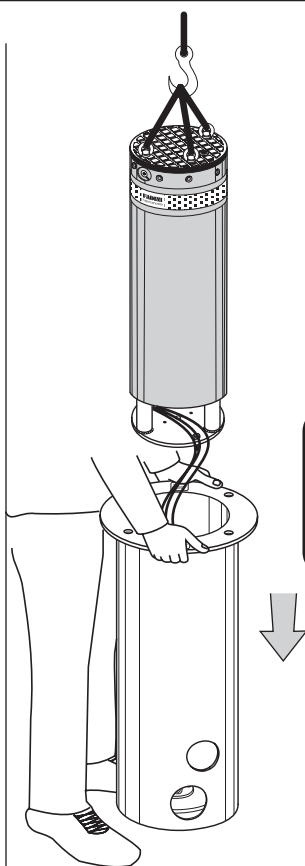
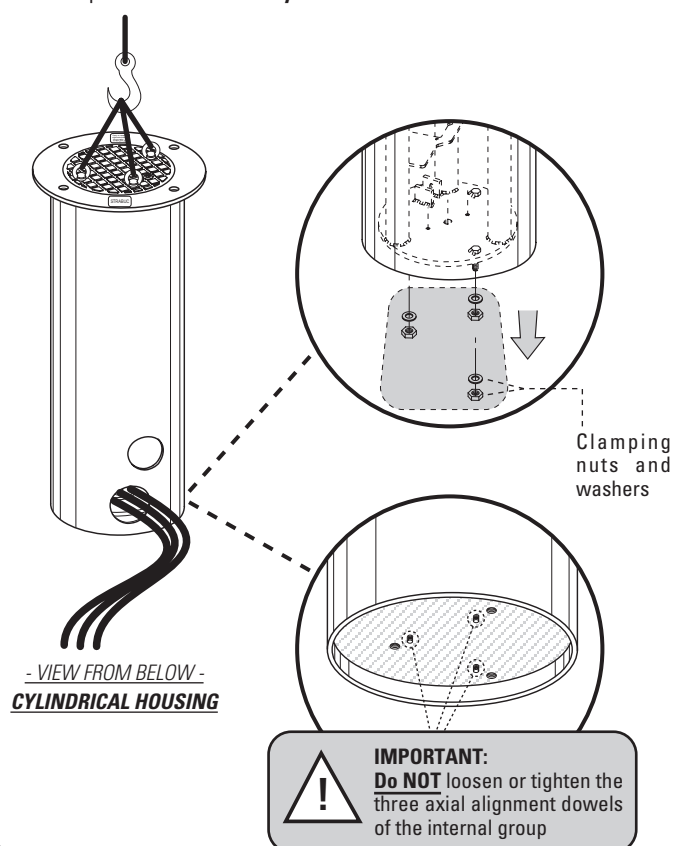


PIC. 26

DISMANTLING THE STRABUC 930 *Heavy Armoured* TRAFFIC POST

The *Strabuc 930 Heavy Armoured version* can be dismantled following the procedure in pictures 27 and 28.

- 1)** With the Strabuc 930 Heavy Armoured version raised using the winch, unscrew the three clamping nuts and respective washers, positioned below the **Cylindrical container**.



ATTENTION:
During this operation the cylindrical housing will drop: it is therefore recommended to support it.

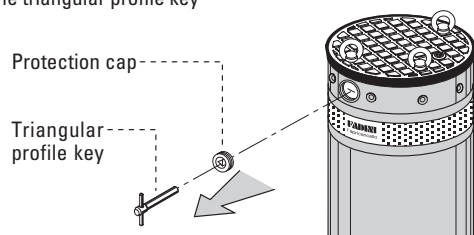
PIC. 27



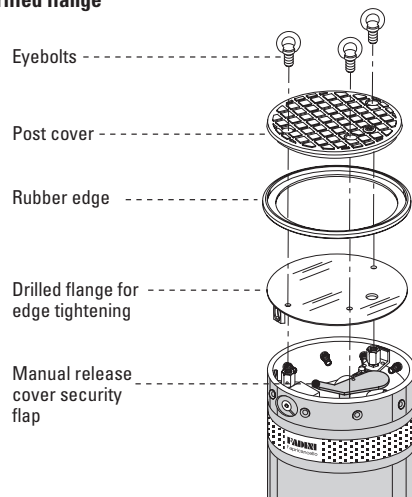
ATTENTION:

During the assembly phase it is important to reposition the internal unit in exactly the same position as before without screwing or loosening the three axial alignment dowels.

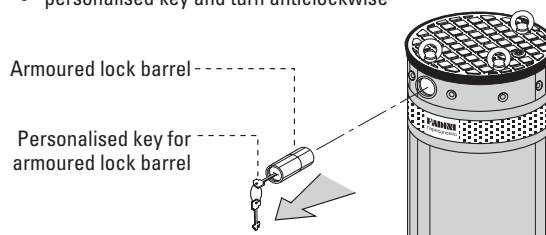
- 2)** Unscrew the **Cap** protecting the **Armoured lock barrel** using the triangular profile key



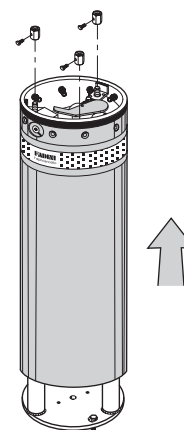
- 4)** Remove the three **Eyebolts**, the **post Cover**, the **Rubber edge** and the **Drilled flange**



- 3)** Remove the whole **Reinforced Lock Barrel** by inserting the personalised key and turn anticlockwise



- 5)** Unscrew the three **long hexagonal nuts** with their respective **Clamping screws** and remove the **Retractable post** to leave the **Piston - hydraulic main unit** set exposed.



PIC. 28

FIRST OPERATION MANOEUVRES OF THE STRABUC 930

ATTENTION: do not power the system until all the wiring needed for operation has been performed.

Having terminated installation of the traffic control post and all the safety and control accessories with the respective wiring to the Elpro S40 programmer, and having completed a thorough risk analysis, the first operation manoeuvres can be performed. If you have a radio transmitter, encode the radio receiver according to the relative instructions before giving the command to raise the retractable post, or give the manoeuvre command using a key switch (pic. 29).

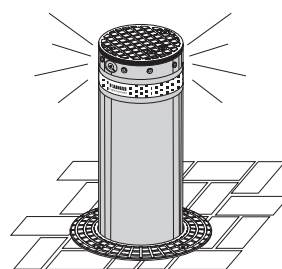


ATTENTION: it is important to establish whether the traffic control post is open or closed depending on whether it leaves the access free or blocks it (Pic.29).

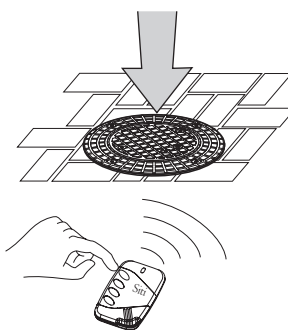
During first use, it is important to check whether the wiring of the rising and lowering limit switches and the electric motor power supply is correct and corresponds to the "open" and "closed" positions of the traffic control post (pic. 29).



ATTENTION: If the limit switch and electric motor wiring is not correct, exchange the wires in the corresponding traffic control post terminals, leaving the common in place (Pic.30).

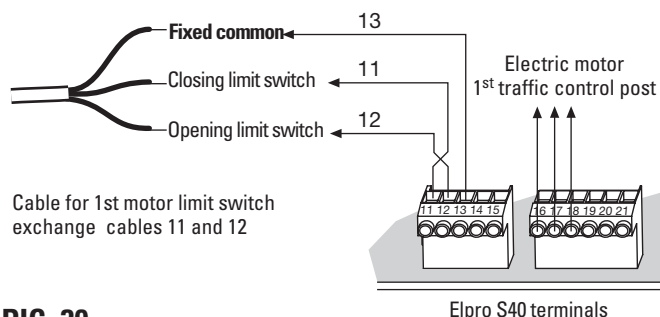


Strabuc 930 in raised position:
Access Closed



A pulse commands the Strabuc 930 post to lower: **Access Open**

PIC. 29



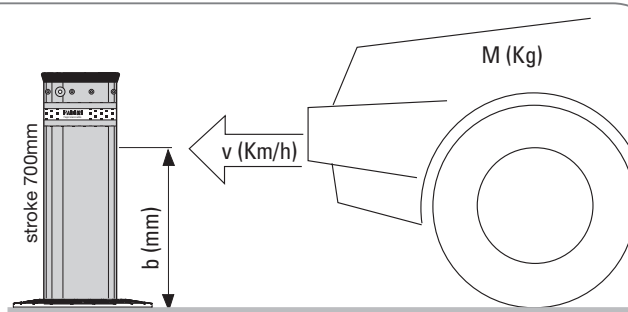
PIC. 30

STRABUC 930 TRAFFIC CONTROL POST RESISTANCE DATA

VIOLENT COLLISION RESISTANCE

Technical theoretical calculation table (Ref. Table Drawing 3803).

Maximum shock resistance:
upon collision, a car travelling at **90 Km/h** deforms the Strabuc 930 traffic control post to such an extent that the whole post needs to be replaced (Pic. 31).

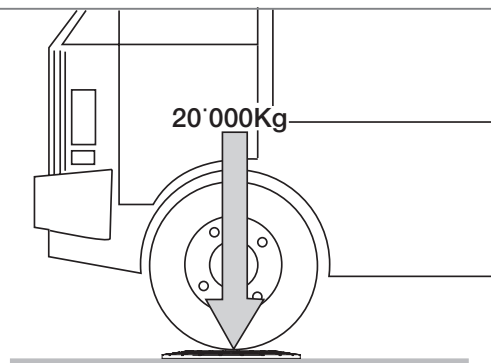


PIC. 31

STATIC LOAD RESISTANCE

The static load acting on the Strabuc 930 when completely lowered is considered as the weight a 20'000 Kg lorry exerts when parked on or passing over the traffic control post. Practical tests with fully laden lorries have confirmed this result
Maximum static load 20'000 Kg

Static load resistance:
with the post lowered, Strabuc 930 is able to resist a fully laden lorry weighing 20'000 Kg parked on top of it. Pic.32.



PIC. 32

STRABUC 930 TECHNICAL FEATURES

ELECTRIC MOTOR

Output	0.25KW (0.33HP)
Power consumption	330W
Power supply voltage	230V±10%
Frequency	50Hz
Absorbed current	1.8A
Intermittent service	S3

OIL-HYDRAULIC MAIN UNIT

Hydraulic pump	P10
Operating pressure	2 MPa (20bar)
Operating temperature	-20°C +80°C
Hydraulic oil type	OIL Fadini
Protection class	IP54

OIL-HYDRAULIC PISTON

Plunger diameter	40 mm
Rod diameter	16 mm
Net rod travel	740 mm
Rod exit time	10 sec.
Calibrated thrust	18 daN

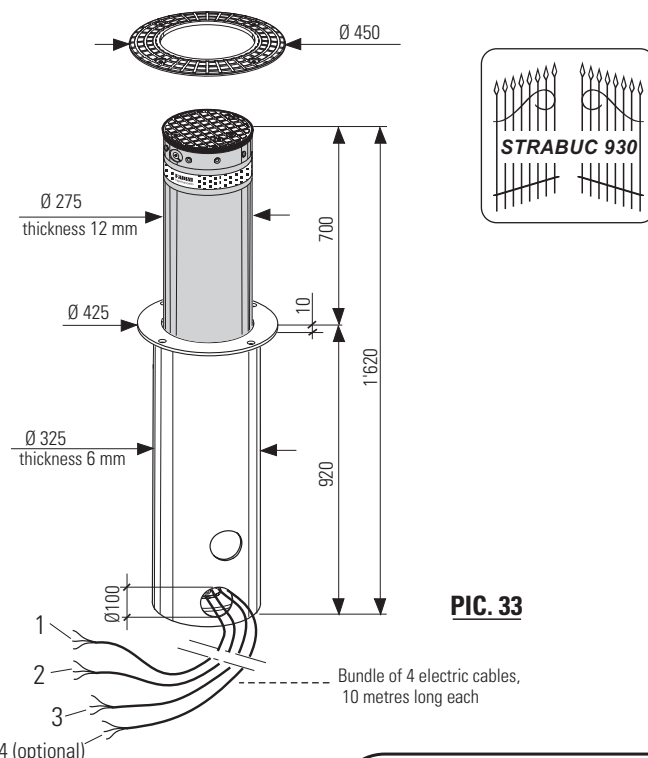
FEATURES

Service cycle 10s Rise - 30s Dwell - 10s Lower - 30s Dwell:
 Full cycle time.....80 seconds
 Full Rise - Dwell - Lower - DwellN°45/hour
 Annual cycles (considering 8-hour working day)N° 131'000

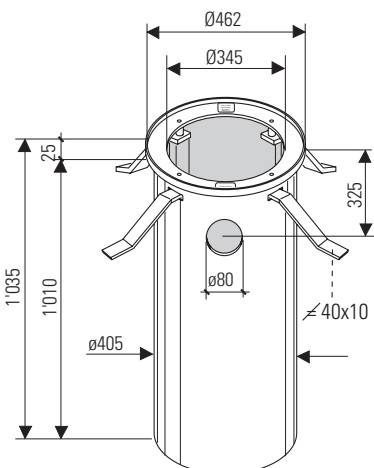
Complete weight of Strabuc 930	180Kg
Protection class - Strabuc 930	IP67
LED power supply	230V 50Hz
LED lights	24V

Painted post RAL 7016 - Anthracite Gray

Post materialFe360 steel



PIC. 33



CYLINDRICAL CONTAINER
- to be cemented -

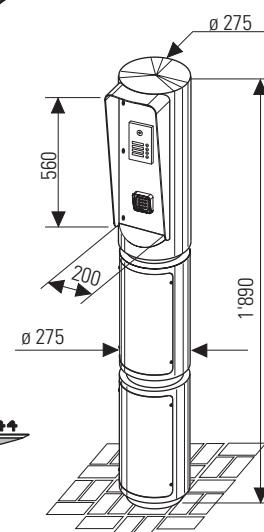
PIC. 34

CYLINDRICAL CONTAINER - to be cemented - pic.34

Material	"FE" sheet steel
Treatment	Cataphoresis
Calandered sheet metal thickness	1.5 mm
Fixing flange thickness	10mm
4x Support plate clamping bolts	M10x35
4x Washers	Ø10
4x support plates	flat 40x10
Total weight	25Kg

TECHNICAL SPECIFICATIONS VISUAL 344 - pic.35

Material	Fe 360 Steel
Panel material	Aluminium
Individual height of basic module	542 mm
Height with three modules	1'890 mm
Weight	70Kg
Protection class	IP53
Colour	RAL 7016 Anthracite Gray
Shock resistance	5'000 J (500Kg at 1 m)



PIC. 35

WARNINGS

- Before performing installation, conduct Risk Analysis and operate using devices compliant with EN 12445 and EN 12453 safety regulations
- Packaging materials such as cardboard, nylon, polystyrene, etc. should be disposed of using specialised waste collection firms
- If the operator is removed, **do not cut the electric wires**, rather remove them from the terminal board loosening the clamping screws inside the dividing box
- Disconnect the main switch before opening the lid of the electric cable dividing box.
- The whole operator must be earthed using the yellow/green electric cable.

CHECKS AND MAINTENANCE:

For optimal performance of the system over time and operation in compliance with safety regulations, correct maintenance and checks must be performed on the operator, the electronic equipment constituting the installation and wiring performed by qualified technicians:

- Oil-hydraulic operator: maintenance check every 6 months.
- Electronic equipment and safety systems: a monthly maintenance check

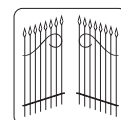
The growth of MECCANICA FADINI has always been based on the development of guaranteed products thanks to our TOTAL QUALITY CONTROL system, which ensures constant quality standards, updated knowledge of the European Standards and compliance with their requirements, in view of an ongoing commitment to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



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