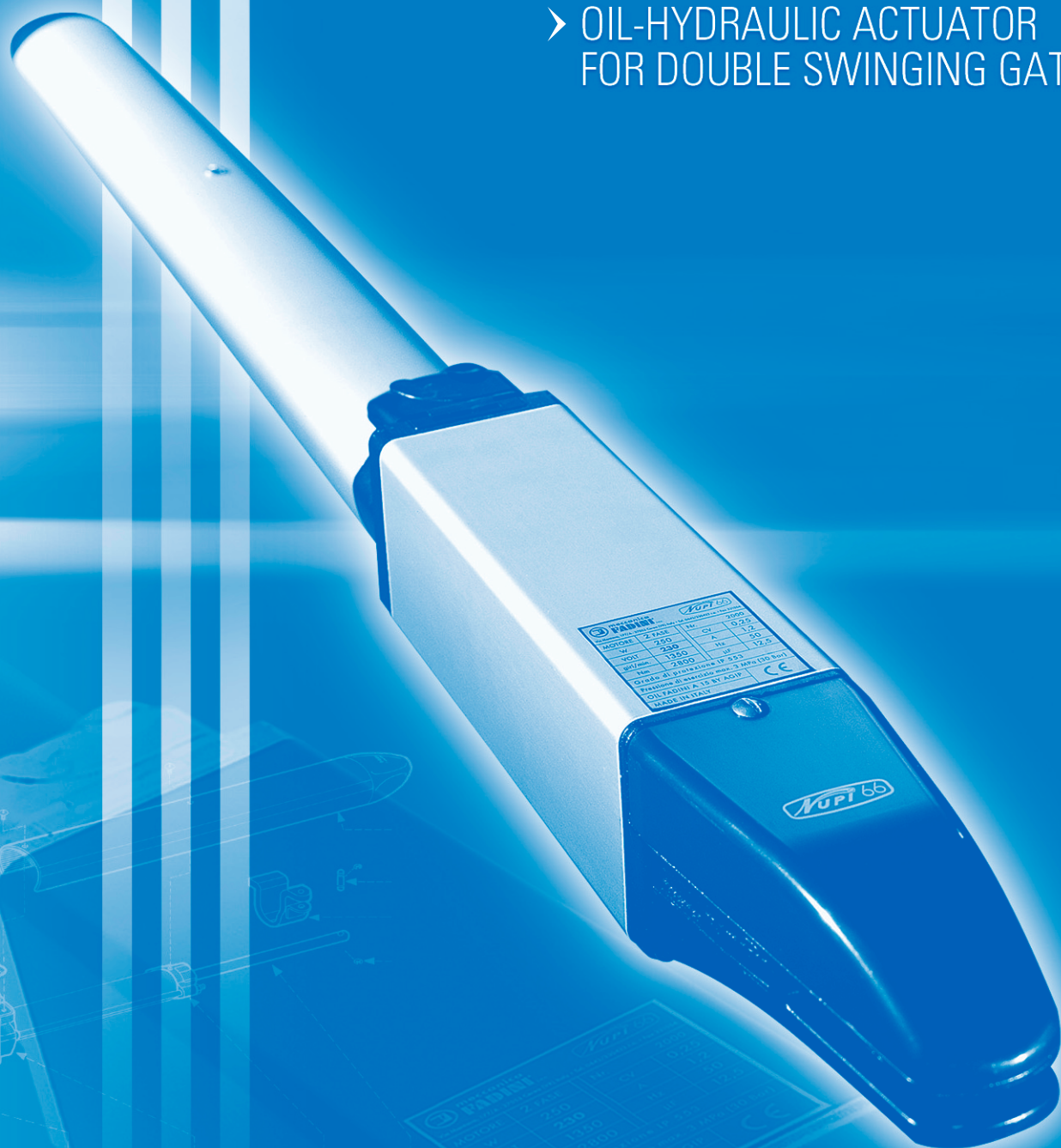


# NUPI

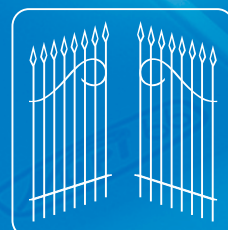
# 66

➤ OIL-HYDRAULIC ACTUATOR  
FOR DOUBLE SWINGING GATES



**INSTALLATION MANUAL**

GB



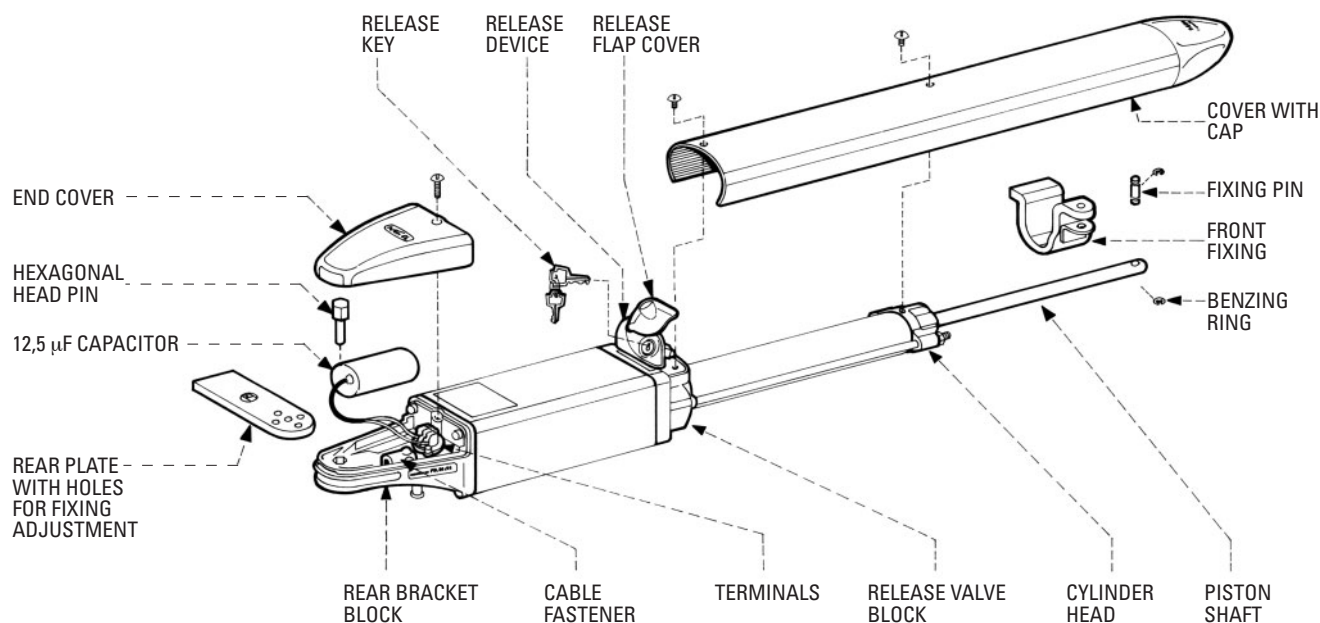
**FADINI**<sup>®</sup>  
the gate opener  
Made in Italy

# NUPI 66 FITTING INSTRUCTIONS

## Important:

Keep to the instructions outlined in the pages and diagrams that follow to achieve a perfect installation.

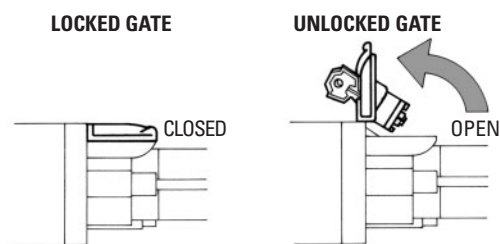
NUPI 66 is an oil-hydraulic actuator locking in the closed gate position to operate gates that are not wider than 2.0 m. Fixing to the gate and gate posts is by specially designed brackets. Peculiar with this operator is the absence of the high/low pressure valves, power is set and controlled by the electronic control box ELPRO 7 RP (See the description on page 4, Elpro 7 RP wiring diagram).



➤ **PIC. 1**

## FITTING NUPI 66

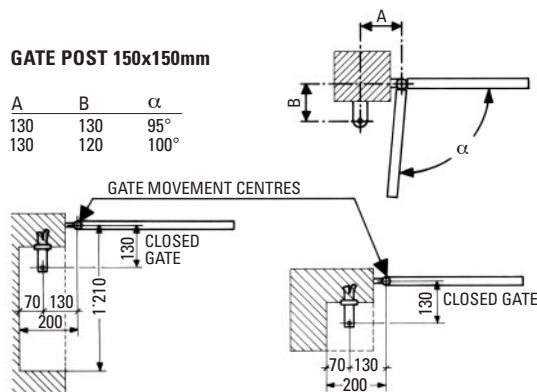
This explains how to remove the operator cover and fix the actuator. The first operation is to unlock the operator: push the **lock flap** to one side, insert the **key** and turn it 90° clockwise. The **locking barrel** can be tilted open and the operator is now released (pic. 2). Unscrew the two screws that fix the operator cover and remove it. Unscrew the screw that fixes the **rear end cover** and remove it. The actuator is so ready for fixing operations.



**PIC. 2 - Releasing system. Details.** ◀

### • Special fitting

There can be cases where special fitting requirements are needed to meet (gate hinges on the post edge line, brickwork to be indented, special opening,...). NUPI 66 is supplied complete with an adjustable **rear fixing plate**: a pattern of fixing holes makes the rear fixing extremely versatile to suit any gate. Refer to the diagram on the right for fixing geometry (pic. 3).



**PIC. 3** ◀

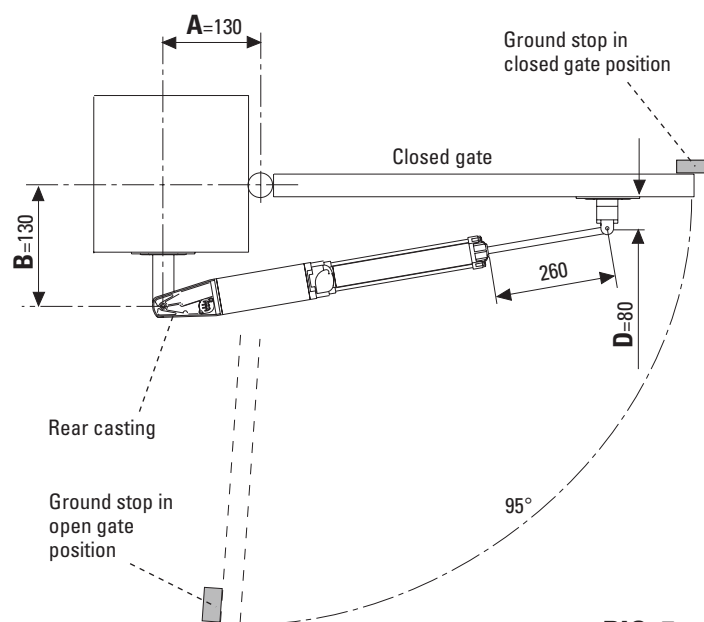
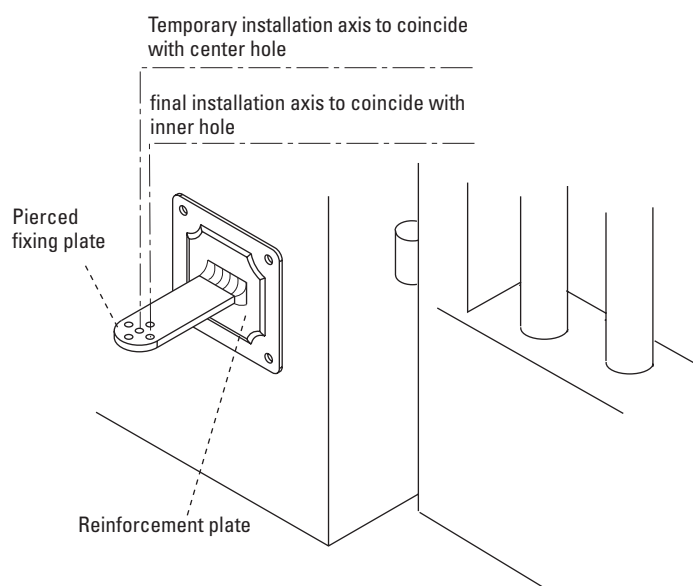
### ELECTRIC LOCK

An electric lock is recommended in installations where each gate leaf exceeds 1.8 meters and is subjected to high winds or are close boarded gates.

**IMPORTANT:** It is important to temporarily fix the operator **rear casting** using the center hole in the **fixing plate** and, once the installation is completed, move the **rear fixing** to the inner hole.

**IMPORTANT:** it is necessary to firmly fix the gate stops to the ground in the open and closed gate positions (See pic. 5 on page 3 and pic. 7 on page 4, parts 5 and 15) before installing the operator.

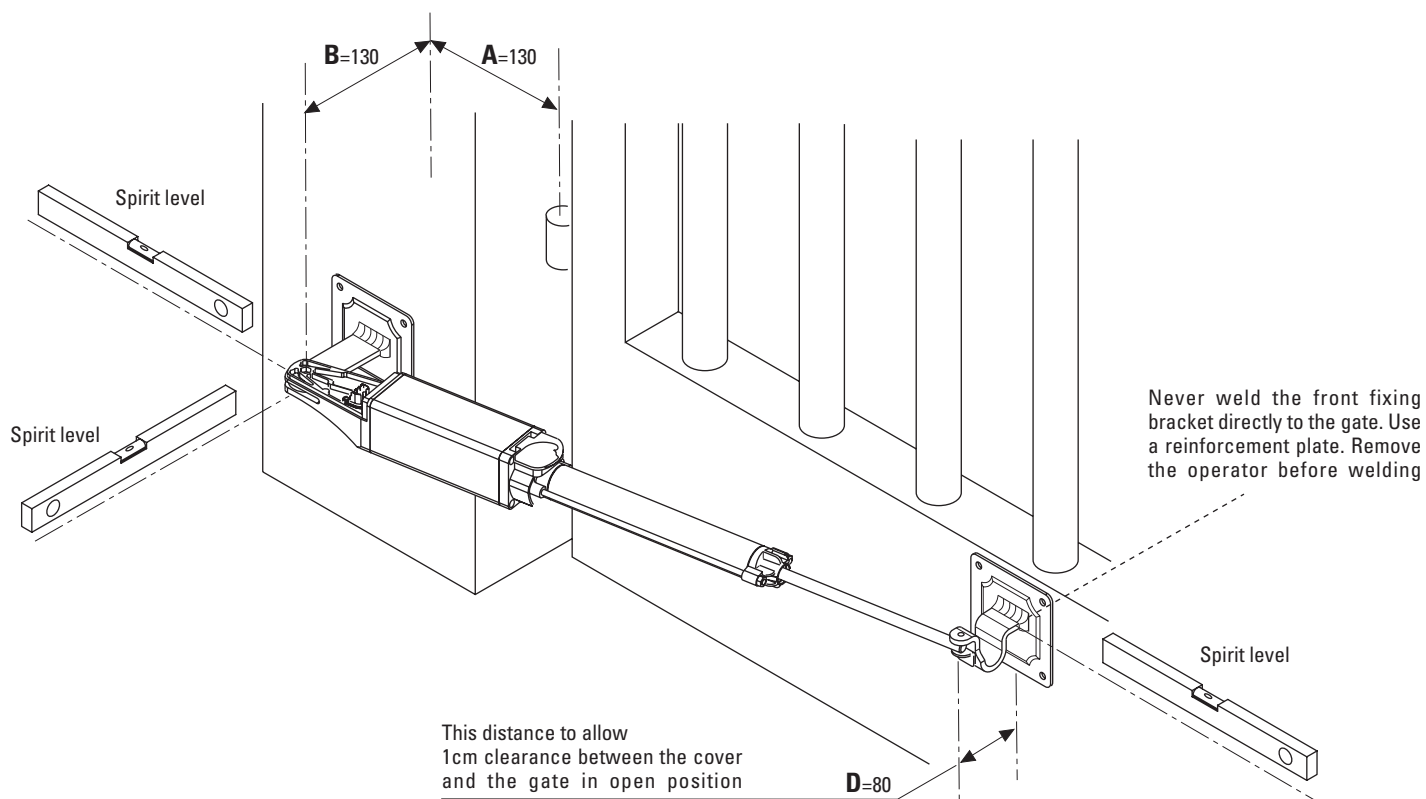
- A **reinforcement plate** is recommended for the **rear fixing**, either to be embedded in the gate post, anchoring plates to be welded to improve holding, or bolted to it so that the operator rear fixing can be welded to it in full respect of the geometry indicated below. See distances A and B in pic.5 (distances are strictly referred to the center lines of the gate hinge and operator rear fixing)



**PIC. 4**

**PIC. 5**

- By means of a spirit level, make sure that the fixing plates are perfectly levelled, respect distance D for the front fixing, the gate in closed position, ie. operator shaft driven 260 mm out.

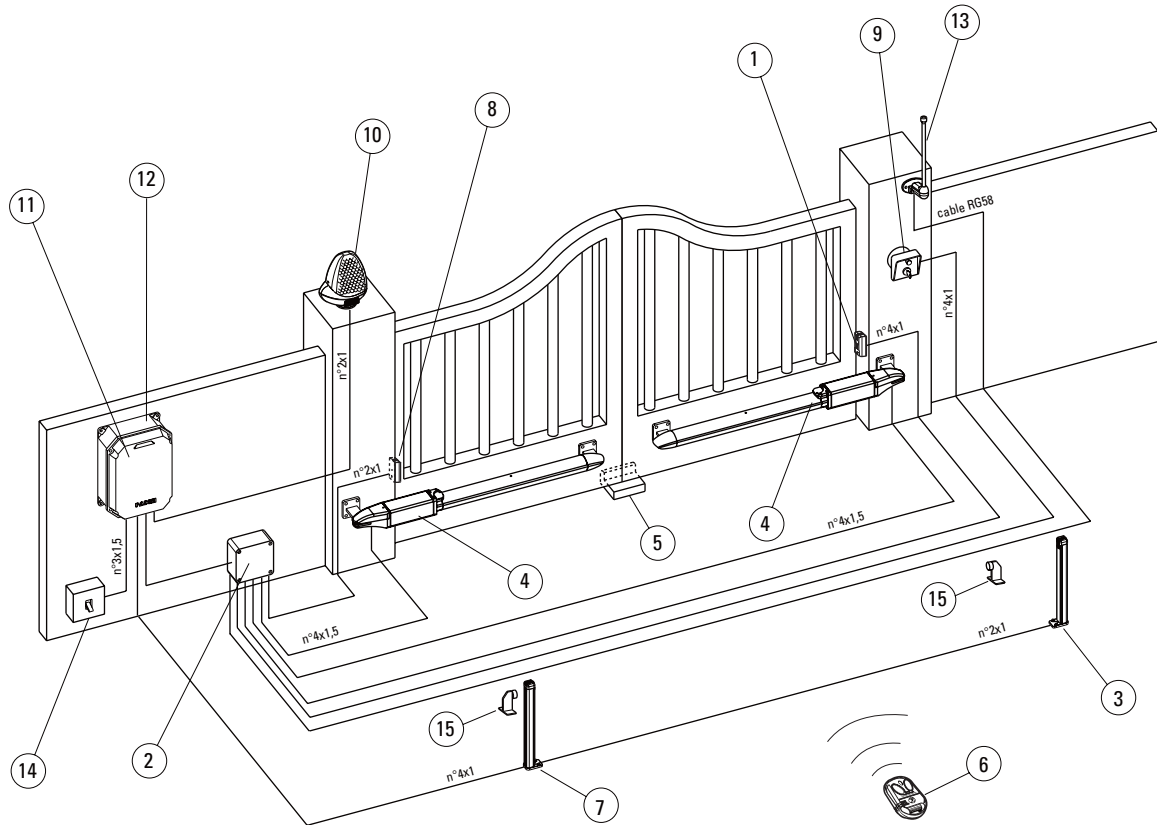


**PIC. 6**

- At this stage NUPI 66 is fixed to the gate leaf. Note that it is locking when the **release lid is closed**; with the lid in the open position the locking device is overridden and the gate can be pushed open by hand (pic.2 on page 2). The electrical connections of the power supply cable to the **terminal board** are the next step. Remove the **cable fastener**. Connect the neutral to the central terminal and the two live wires to the lateral terminals (pic. 9 on page 4) in parallel with the **capacitor**. Put back the **cable fastener**. On connecting the electronic control panel **Elpro 7 RP**, it is advised to set the torque control switch to position 3 (pic. 10 on page 5 and pic. 11 on page 6).

# ELECTRICAL WIRING DIAGRAM

The diagram here below shows the electrical connections of all the accessories that are available for the system:



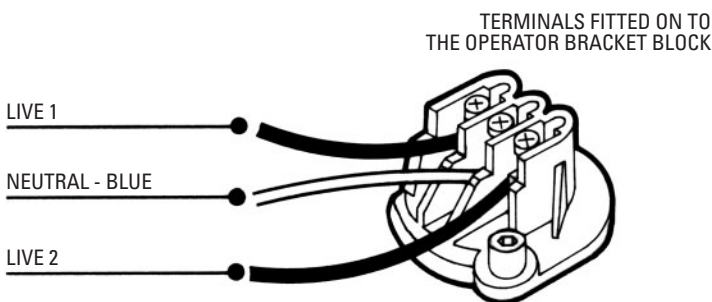
**IMPORTANT:** All the system must be properly earthed

- 1 - PHOTOCELL RECEIVER TRIFO 11
- 2 - JUNCTION BOX
- 3 - POST WITH PHOTOCELL PROJECTOR TRIFO 11
- 4 - OIL-HYDRAULIC ACTUATORS NUPI 66
- 5 - CLOSED GATE STOP REQUIRED
- 6 - RADIO TRANSMITTER ASTRO 43/2 TR SMALL
- 7 - POST WITH PHOTOCELL RECEIVER TRIFO 11
- 8 - PHOTOCELL PROJECTOR TRIFO 11
- 9 - KEYSWITCH PRIT 19

- 10 - FLASHING LAMP MIRI 4
- 11 - PLUG-IN RADIO RECEIVER CARD ASTRO 43/2 R
- 12 - ELECTRONIC CONTROL PANEL ELPRO 7 RP
- 13 - AERIAL BIRIO A8
- 14 - 0.03A MAGNETIC-THERMAL CIRCUIT BREAKER (BEYOND 100m 2.5mm Ø CABLE TO BE USED )
- 15 - OPEN GATE STOP REQUIRED

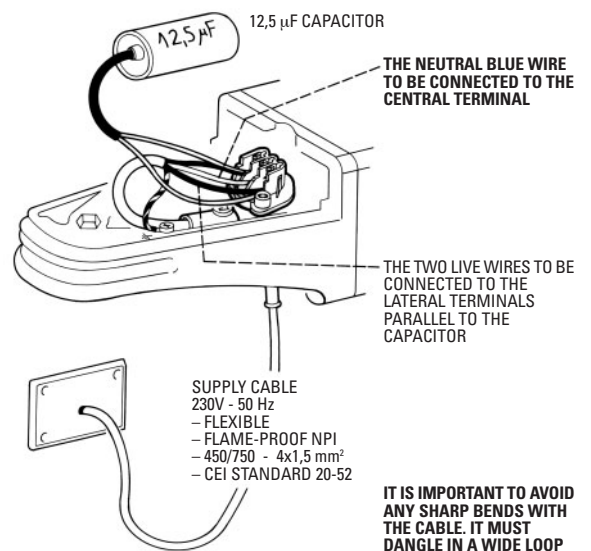
## PIC. 7

**N.W: CARRY OUT A RISK ANALYSIS IN COMPLIANCE WITH EN 12445 AND EN 12453 NORMS AND FIT ANY SAFETY DEVICE WHERE REQUIRED.**



**NOTE:** BY EXCHANGING THE POSITION OF L1 WITH L2 THE ELECTRIC MOTOR IS REVERSED.

## PIC. 8



## PIC. 9



# WIRING DIAGRAM CONTROL PANEL ELPRO 7 RP

**IMPORTANT:** Elpro 7 RP is specifically designed to suit NUPI 66 only. The manufacturers decline any responsibility for damages caused by incorrect use, or applications with accessories that are not FADINI.

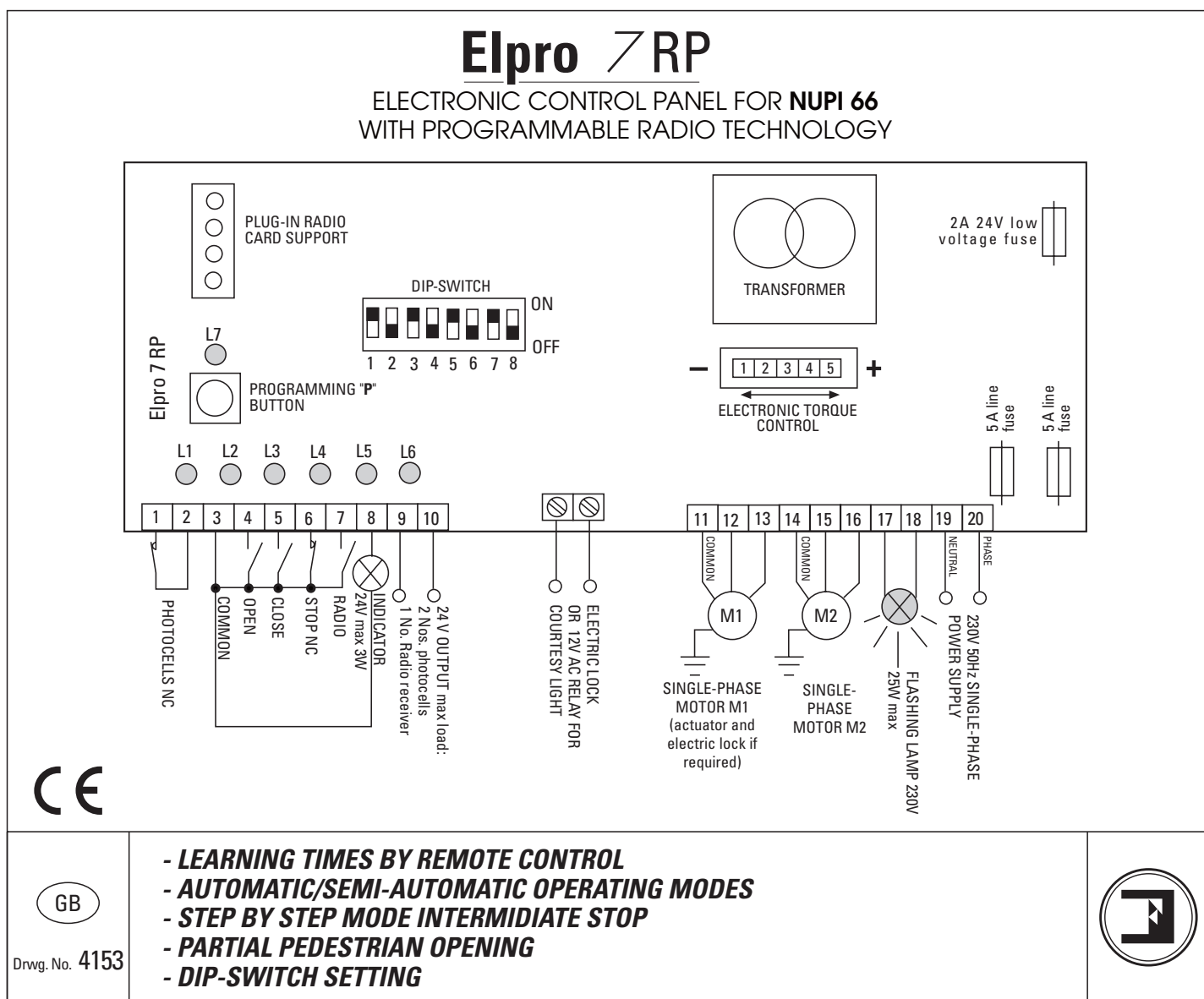
For the electrical connections to the **motor** of NUPI 66, **mains** and **flashing lamp** use **1,5 mm²** cables.

For the **photo cells**, **keyswitches** and other accessories you can use **1 mm²** wires.

Make sure that all the electrical connections are done in compliance with this diagram.

Once the terminals 19 - 20 are supplied with 230V - 50Hz power, the neutral and live properly connected, the red led No. 1 (L1) illuminates to confirm that the board has voltage.

Read the instructions contained in the ELPRO 7 RP box.



**PIC. 10**

Elpro 7 RP is an electronic control panel developed for Nupi 66. The main feature of this unit is the capability to learn the required working times during operation (gate delay in open and close cycles, dwell time). It is recommended to carry out the installation in strict compliance with the rules of good technique and fit the system with ground stops in the Open and Closed positions.

Elpro 7RP is to be powered with 230 V single-phase voltage. It is manufactured in conformity to 93/68/EC Low Voltage Safety Norms and EMC 93/68/EC Norms for the Electro Magnetic Compatibility. Installation is to be carried out by qualified technicians in compliance with the existing safety regulations. The manufacturer is not liable for incorrect use of the equipment and reserves the right to do changes to the unit and this manual any time.

## DESCRIPTION OF FUNCTIONS OF THE CONTROL PANEL FOR SWINGING GATES

### ELECTRICAL CONNECTIONS:

- 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 1.5mm<sup>2</sup> section wires for voltage supply, electric motor and flashing lamp. Maximum recommended distance 50m.
- Use 1mm<sup>2</sup> 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

**WORKING LOGIC:** Elpro 7 RP is supplied with pre-set working times so that to allow the first installation:

- Working time is about 20 s
- Gate Delay Times:
  - Opening=2 s
  - Closing=6 s
  - Dwell on automatic Mode=15 s

Once satisfied that the system is working all right, new working times can be programmed to meet the user's needs or the installation requirements. Elpro 7RP functions can be set by Dip-switches, both before and after the times have been stored by the unit.

**LEARNING THE TIMES:** ELPRO 7 RP learning operation is quite easy and can be achieved either by the P button on the PCB or by the remote control after entering setting mode, see point 1).

Starting the unit to learn the required times: with the gate in closed position pulse the equipment to one complete cycle, ie. open-stop/dwell-close Important:

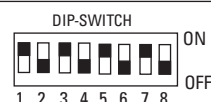
- 1) In order to avoid setting times which are not suitable with the correct gate functioning, some time limits were pre-set. Beyond these values the automation will start with the maximum pre-set time:  
M1 and M2 Motor Run time: max.55s Dwell time on Automatic Mode: maximum 90s
- 2) During the learning operation, no other functions can be activated, the Photocells and the Stop button are out of service
- 3) If the new setting operation is interrupted (for example: mains cut off), the times in the previous setting are memorized.
- 4) Normally, not on programming mode, the P button has the same function as a remote control button and it is possible to test the system by pulsing it; the Led 7 becomes a simple indicator, the same as the indicator to terminal 8.

### 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; and programming led

### Dip-Switch:

- 1= ON Photocells, Stop during opening
- 2= ON Radio no reversing during Opening
- 3= ON Automatic Closing
- 4= ON Pre-flashing in service
- 5= ON Radio step by step
- 6= ON No delay on opening
- 7= ON Additional pushing on the gate leaf after closing
- 8= ON Pedestrian opening by Open button

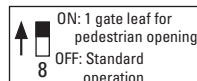


### 24V 3W Indicator:

3 8  
COMMON  
Led **On** = the Gate is Open  
Led **Off** = the Gate is Closed  
**Fast Flash** = closing movement  
**Slow Flash** = opening movement

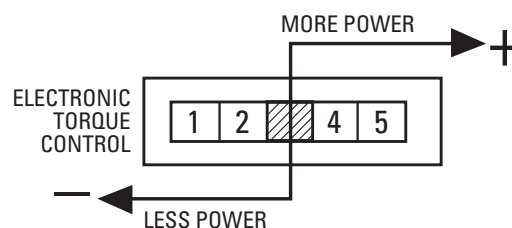
### Pedestrian Opening ( M1 Motor by Open pulse):

Partial opening for pedestrians is only allowed in closed gate position by pulsing to Open (the gate closes after the dwell time if set to Automatic Dip-Switch 3=ON)  
-the first pulse operates 1 gate leaf (M1)  
-the second pulse operates the second gate leaf



**IMPORTANT:** The Elpro 7 RP control panel is supplied with open/close time memory.

**TORQUE CONTROL SETTING:** Adjust torque from lower level (step 1) up to the required amount of power step by step to achieve a correct performance of the system so that the gates are operated as required and any injuring hazard is prevented.  
Please note, torque is to be adjusted by a technician



**PIC. 11**

**TORQUE ADJUSTING WHEN LIGHT GATES ARE INVOLVED:** (made of timbers, PVC or aluminium etc. ...) replace the existing capacitor with a 8 µF one and adjust torque accordingly starting from step one (lowest setting).

## DESCRIPTION OF FUNCTIONS OF THE CONTROL PANEL FOR SWINGING GATES

### Preliminary notes to Learning Mode:

- Make sure that the gate is closed
- Make sure that the gate stops in the respective open and closed gate positions are firmly fixed to the ground

1°

#### 1st Operation:

Cut off power supply to Elpro 7 RP by removing the **2A 24V Low Voltage white Fuse**, which is on the right upper side of the PCB



2°

#### 2nd Operation:

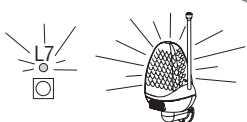
Hold the **button "P"** pressed and re-power the PCB by inserting the **24V Low Voltage Fuse** back into its holder.



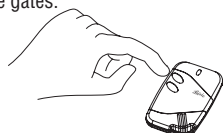
3°

#### 3rd Operation:

When the **Led L7** illuminates, release **button "P"**: **Led L7** will flash 5 times and the **flashing lamp** will illuminate: the program "learning working times" has been entered.



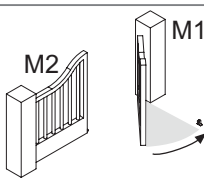
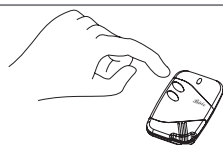
**IMPORTANT:** at this stage two options are allowed to go on with setting i.e. learning the required operating times: by the "P" button or by remote control. The last option allows the installation agent to have direct visual control of the operation being performed by the gates.



4°

#### 4th Operation:

A pulse to open starts M1 motor (the first gate starts opening)

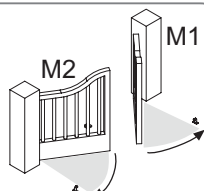
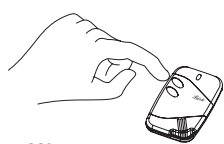


The time passing from 4th to 5th operations is stored by the system as the **Gate Delay Time in Open Cycle**, with the options in service (Dip No.6 =ON) or out of service (Dip No. 6=OFF, the time is stored but no delay will occur).

5°

#### 5th Operation:

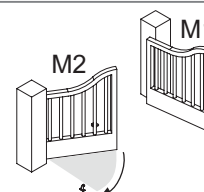
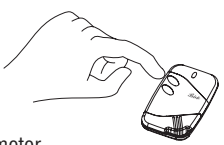
A pulse to open starts M2 motor (second gate starts opening)



6°

#### 6th Operation:

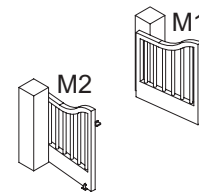
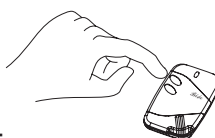
A pulse stops M1 motor (first gate wide open on open gate stop)



7°

#### 7th Operation:

A pulse stops M2 motor (second gate wide open on open gate stop)

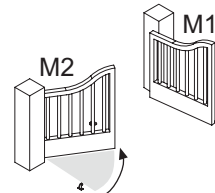
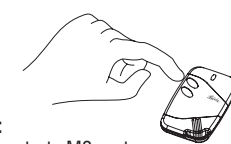


The time passing from 7th to 8th operation is stored by the system as **"Dwell Time"**, in service on AUTOMATIC MODE (Dip No.3=ON) or out of service (Dip No.3=OFF, dwell time still in the system memory but not applicable).

8°

#### 8th Operation:

A Pulse to close starts M2 motor (M2 gate starts closing)

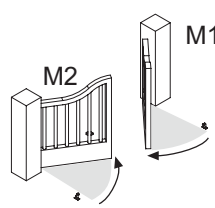
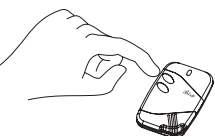


The time between the 8th and 9th operations is stored by the system as **"Gate Delay Time on Closing Cycle"**

9°

#### 9th Operation:

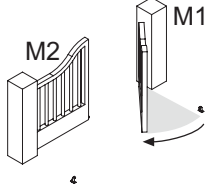
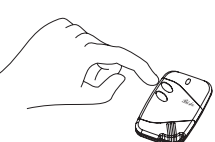
A pulse to close starts M1 motor (M1 gate starts closing)



10°

#### 10th Operation:

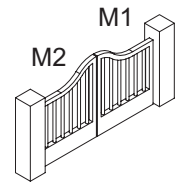
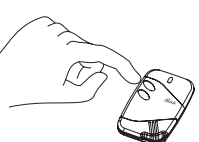
A pulse stops M2 motor (M2 gate on closed gate position)  
In order to ensure that the gate is securely held in stop position, it is advised to pulse the actuator i.e. gate to stop approx. 3-4 seconds after the gate has reached the end of the permitted stroke on the closed gate stop position.



11°

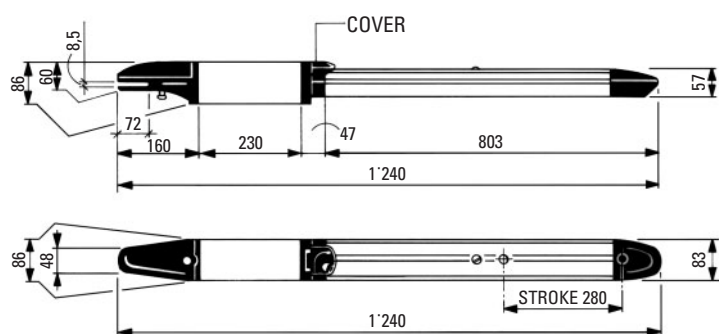
#### 11th Operation:

A pulse stops M1 motor (M1 gate on closed gate position)  
In order to ensure that the gate is securely held in stop position, it is advised to pulse the actuator i.e. gate to stop approx. 3-4 seconds after the gate has reached the end of the permitted stroke on the closed gate stop position.



The 11th operation concludes the procedure for the control panel to learn the required working times.  
After the learning procedure it is possible to set the operating modes either ON/OFF as required by means the Dip-switches on the PCB

# NUPI 66 TECHNICAL SPECIFICATIONS



**PIC. 12**

## OIL-HYDRAULIC ACTUATOR

Pump flow rate - P5 .....	1.4 l/min.
Working pressure .....	2 MPa (20 Bars)
Working temperature .....	-20°C +80°C
Shaft travelling time .....	21 sec.
Power oil .....	Fadini A15 by Agip
Piston stroke .....	280 mm
Piston diameter .....	45 mm
Shaft diameter .....	16 mm
Pushing power open .....	2'720 N
Pulling power close .....	3'120 N
Weight of NUPI 66 complete .....	8 Kg
Protection standards .....	IP 553
Overall dimensions (LxWxH) .....	1'240x86x86 mm

## ELECTRIC MOTOR

Power output .....	0.18 KW (0.25 HP)
Supply voltage .....	230 V
Frequency .....	50 Hz
Absorbed current .....	1.2 A
Absorbed power .....	250 W
Capacitor .....	12.5 µF
Motor rotation speed .....	1'350 rpm
Intermittent service .....	S 3
Flexible electric cable .....	CEI 20-52 FROR 450-750 V
Class .....	H
Gate height and width (mm) .....	H 1'200, W 1'600
Static weight per gate leaf .....	70/100 Kg

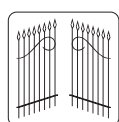
## SERVICE

Duty cycle .....	19 sec. Opening - 30 sec. Stop - 21 sec. Closing
Time of one complete cycle .....	70 s
No. of complete cycles Opening - Stop - Closing .....	51/h
No. of cycles a year, 8 hours' service a day .....	150'000



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

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



**FADINI**  
the gate opener  
Made in Italy



AUTOMATIC GATE MANUFACTURERS

**NUPI 66**  
OIL-HYDRAULIC ACTUATOR



## WARNINGS

- 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 here outlined - check the specifications on the motor sticker with your mains supply.
- Dispose properly of the packaging: cardboard, nylon, polystyrene, through specialized companies.
- Should the operator be removed, **do not cut** the electric cables. These must be properly removed from the terminal board in the junction box.
- Switch off the mains switch before removing the junction box cover where the electric cables are terminated.
- All the system must be earthed by using the yellow/green wire.
- It is recommended to read the regulations, suggestions and remarks quoted in the booklet "Safety norms".

## 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 inspection monthly.

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.

**Distributor's box**

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