Hindi 880®

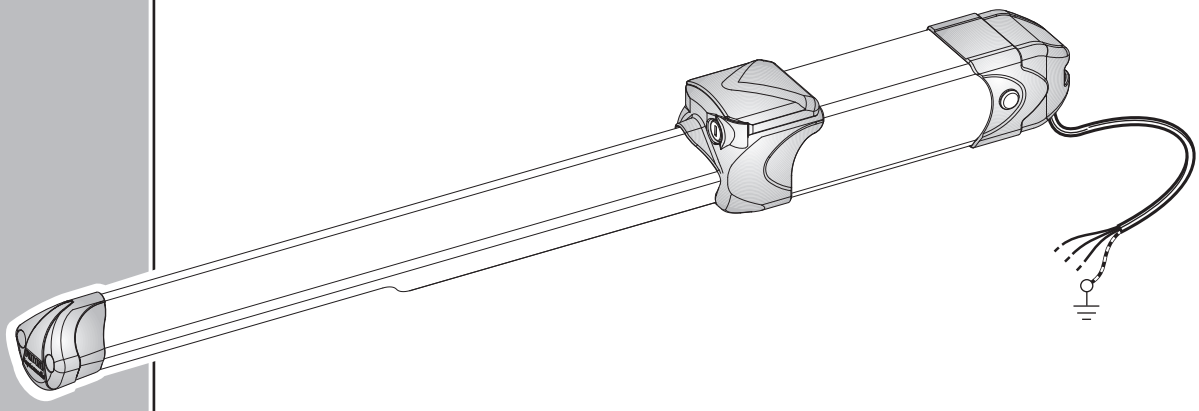
Oil-hydraulic actuator to operate swinging gates up to 4 meters

Versions:

- **150mm** stroke ..... in 12s
- **280mm** stroke ..... in 24s
- **400mm** stroke ..... in 32s

Instructions manual

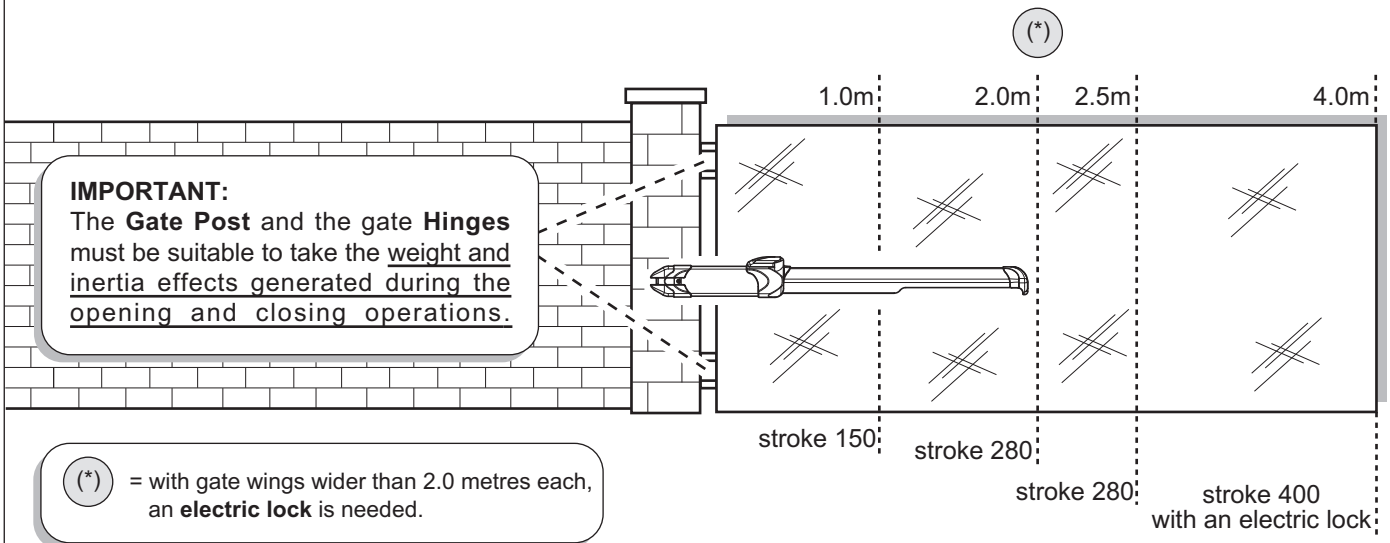
pages 13-24

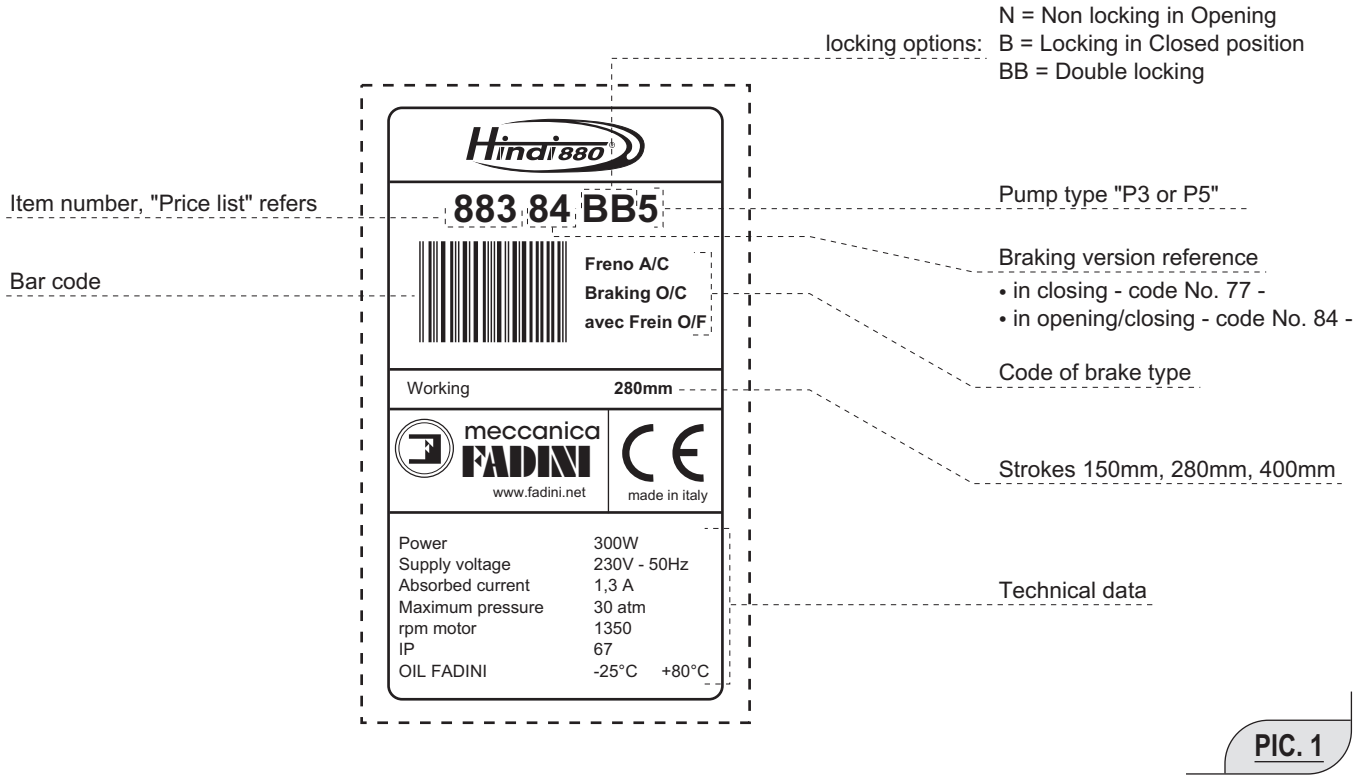


GB

FADINI®
the gate opener
Made in Italy

APPLICATION OPTIONS DEPENDING ON GATE WIDTHS





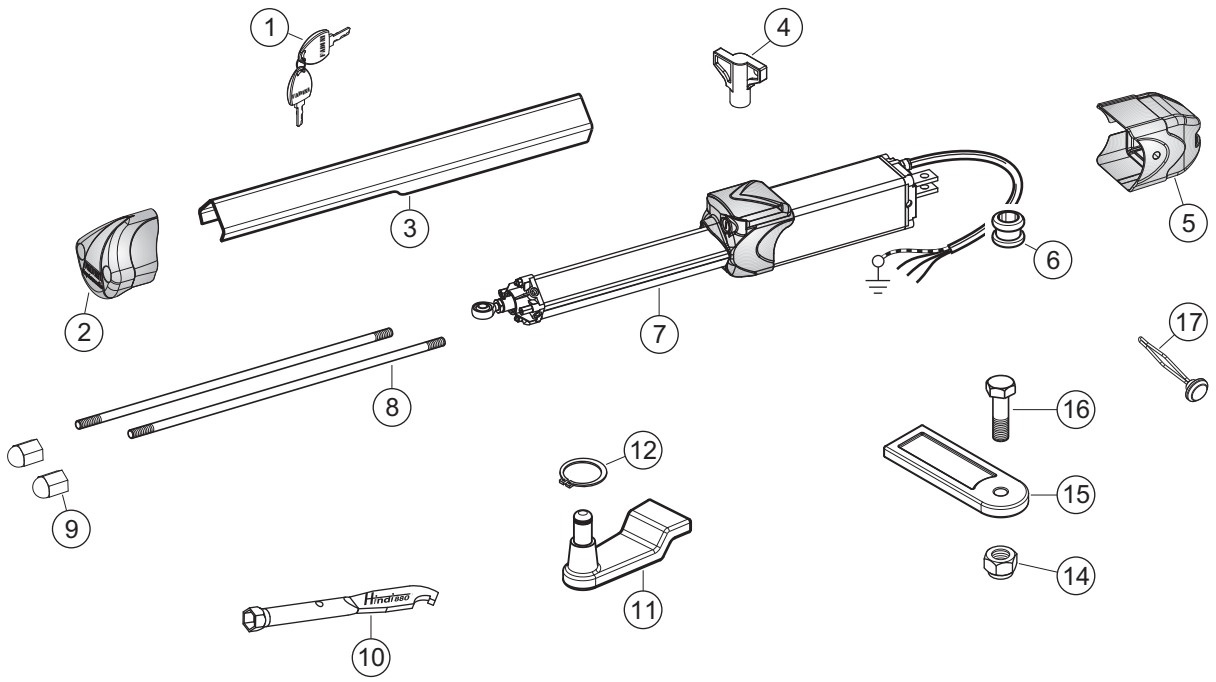
PIC. 1

PRELIMINARY WARNINGS FOR SAFETY AND PROPER SYSTEM OPERATION

- Site inspection, installation, testing, risk analysis and after sale service/maintenance must be carried out by qualified and authorized technicians
- This automation is designed for a specific scope of applications as indicated in this manual, including safety, control and signalling accessories as minimum required with "Fadini" equipment.
- Any applications not explicitly included in this manual may cause operation problems or damages to properties and people.
- Make sure the gate is correctly mounted and opening/closing movements are smooth, without any friction or jerking.
- Verify that the gate is perfectly levelled in the vertical position and both upper and lower hinges are well lubricated and smooth running.
- Make sure that rigid gate stops are mounted in both open and closed gate stop positions.
- Ensure that the mains and voltage supplied to the motor is 230V ±10% 50Hz.
- **Hindi 880** must be powered with cables having wires with 1.5 mm^2 section, maximum distance of 50 meters. For distances longer than 50 meters, it is recommended that wires with suitable sections in compliance with good installation requirements be used.
- In case parts or accessories are needed as replacements, use only Fadini originals as recommended by the manufacturer.
- Meccanica Fadini is not liable for damages caused by the incorrect use of the equipment, or for applications not included in this manual or for malfunctioning resulting from the use of materials or accessories not recommended by the manufacturer.
- The manufacturer reserves the right to make changes to this manual without prior notice.

English

COMPONENTS AND ACCESSORIES INCLUDED



Patching plates (OPTIONAL)

To suit 400mm

1 - 2 x Coded keys opening the sliding lid
2 - Cover plug
3 - Anodized aluminium cover
4 - Internal manual release key
(only with the versions Hindi 880 Locking Close & Double Locking)
5 - Rear protection cap
6 - Cable gland
7 - Oil-hydraulic actuator - Stroke 150mm
- " 280mm
- " 400mm
8 - 2 x Tie rods to fix the cover
9 - 2 x Hex. grommet nuts to fix the front cover plug
10 - Ball bearing joint spanner
11 - Front fixing plate, Hindi 880 - 150mm and 280mm
12 - Front fastening circlip
13 - Front fixing plate, Hindi 880 - 400mm
14 - M12 self-locking nut
15 - Rear plate, gate post fixing
16 - M12x40 rear fixing screw
17 - Cap fixing stud
18 - Patch plate, rear fixing 150x150mm - (optional) code 8311
19 - Patch plate, front fixing120x120mm - " code 8310
20 - Patch plate, front fixing 84x84mm - " code 8312

PIC. 2

PRELIMINARY INSTRUCTIONS BEFORE INSTALLATION

FOR A CORRECT INSTALLATION IN ORDER TO ACHIEVE A GOOD PERFORMANCE OF HINDI 880 IT IS RECOMMENDED TO KEEP TO THE FOLLOWING INSTRUCTIONS AND DIAGRAMS.

IMPORTANT: INSTALLATIONS SHOULD BE CARRIED OUT BY QUALIFIED TECHNICAL AGENTS ONLY, IN COMPLIANCE WITH THE SAFETY NORMS EN 12445 - EN 12453 AND THE 2006/42/CE MACHINERY DIRECTIVE. ALSO CARRY OUT AN ACCURATE RISK ANALYSIS IN RESPECT OF THE EXISTING SAFETY REGULATIONS.

Meccanica Fadini, as manufacturer, is not liable for installations failing to meet the rules of good fitting technique and for applications not included in this manual.

GENERAL INFORMATION

HINDI 880 is an oil-hydraulic automation for external use, designed to open and close swinging gates of any shapes and sizes. It is an oil-hydraulic product and therefore offers all the advantages of hydraulic operations such as reliability, smoothness and adjustable minimum and maximum pressure valves, versatility of application, being suitable for any type of swinging gates.

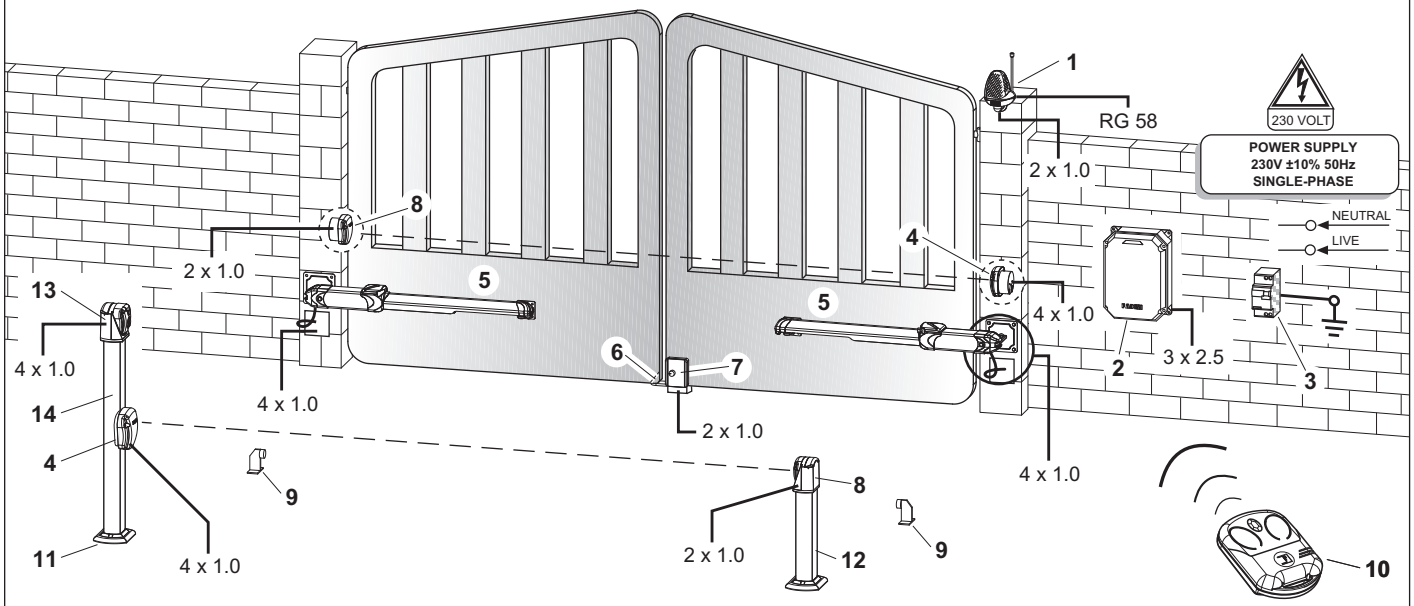
It is operated by an electronic control box, installed outside in a protected place; operations can be fully automatic or semi-automatic, depending on the application requirements.

A variety of accessories complete the system to ensure safety and full control of it at your finger tips, making Hindi 880 suitable for any installation requirements in either commercial, industrial or residential applications.

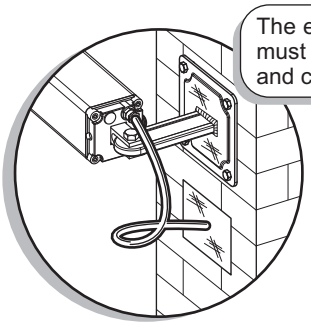
For a correct installation of the operator, it is important that the fitting dimensions be respected as indicated on page 14, Pic.1 and page 17, Pic. 6-7-8.

English

ELECTRICAL LAYOUT AND ACCESSORIES



1 - Flasher Miri 4 with aerial ..... code **4602**
2 - Controller Elpro 13 exp (*) ..... code **7079**
(most important: it must be kept sheltered and dry)
(*) with plug-on receiver Astro 43/2 R M.Q.B. ..... code **4329**
3 - 230V - 50Hz 0.03A magneto-thermal differential circuit breaker (beyond 100m use 2.5 mm² section wires) ..... ***(NOT included)***
4 - Photocell receiver FIT 55 recess mount ..... code **551**
5 - HINDI 880 oil-hydraulic actuator
6 - Gate stop in closed gate position ..... ***(NOT included)***
7 - Electric lock for Hindi 880 Non-locking (**)
(**) and for gates wider than 2.0m each ..... code **7083**
8 - Photocell projector FIT 55 recess mount ..... code **551**
9 - Gate stop in open gate position ..... ***(NOT included)***
10 - Transmitter Astro 43/2 TR Small ..... code **4321**
11 - Post fixing base plate (***)
(***) complete with base plate cover ..... code **554**
12 - Anodized aluminium 0.5m post ..... code **555**
13 - Key-switch CHIS 37 recess mount ..... code **371**
14 - Anodized aluminium 1.20m post ..... code **557**



The electric cable for power supply must dangle loosely during opening and closing movements.

PIC. 3

Before installing Hindi 880 set up all the safety and commanding accessories, at least as minimum required. Pic.3.

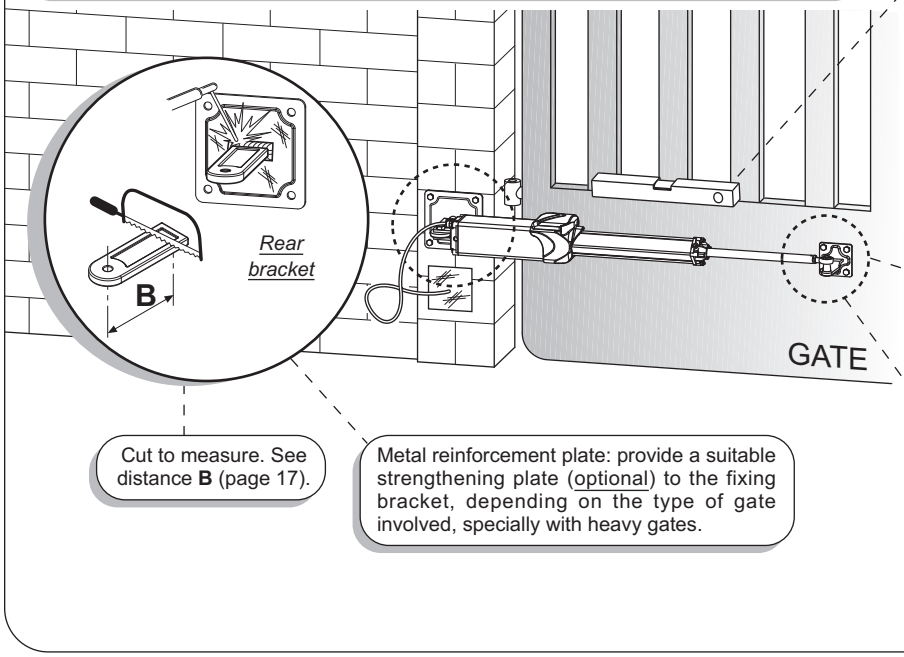
FIXING GEOMETRY DEPENDING ON THE TYPE OF "ACTUATOR"

After checking the fixing dimensions as indicated on page 17 (Pic.6, Pic.7 and Pic.8), weld the rear and front brackets to the respective patch plates (Pic.4).

Make sure the actuator is levelled in any directions before welding.

***IMPORTANT*: with heavy gates, the installer must properly strengthen the fixing both to the gate post and gate with rigid metal plates (not supplied by manufacturer), depending on the application requirements (Pic.4).**

***PLEASE NOTE:* When the front fixing is welded, make sure to suitably protect the shaft during this operation.**



Cut to measure. See distance **B** (page 17).

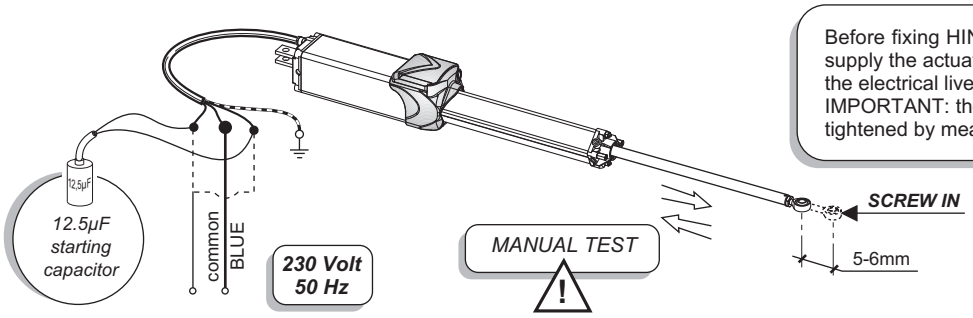
Metal reinforcement plate: provide a suitable strengthening plate (optional) to the fixing bracket, depending on the type of gate involved, specially with heavy gates.

PIC. 4

English

MANUAL TEST OF THE ACTUATOR

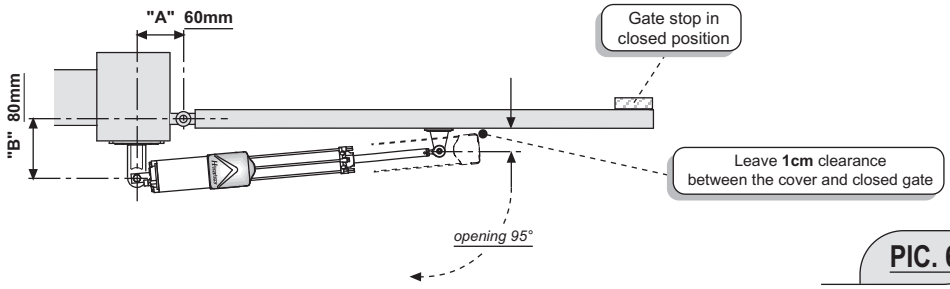
Before fixing HINDI 880 to the gate post and gate, power supply the actuator and drive the shaft fully out; then swap the electrical live connections and drive it 5-6 mm in.
IMPORTANT: the ball bearing joint must ALWAYS be fully tightened by means of the lock nut (Pic.9).



PIC. 5

INSTALLATION OF THE "ACTUATORS"

stroke 150mm • Gate post fitting geometry •

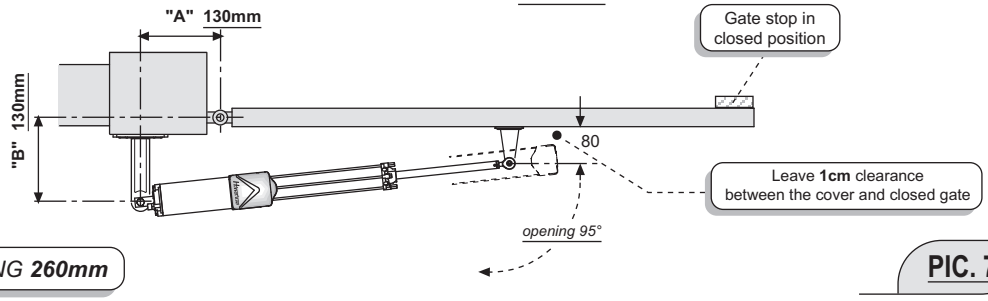


Shaft travel **150mm**

PIC. 6

stroke 280mm • Gate post fitting geometry •

- With the *BRAKING version* distance "A" must be 120mm -

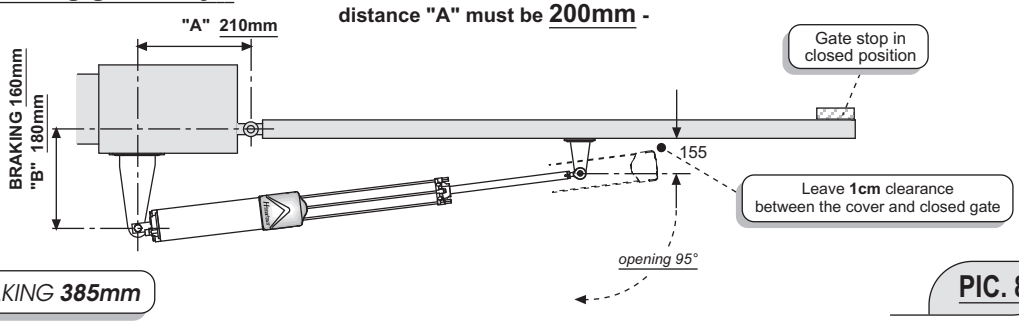


Shaft travel **280mm** - BRAKING **260mm**

PIC. 7

stroke 400mm • Gate post fitting geometry •

- With the *BRAKING version* distance "A" must be 200mm -

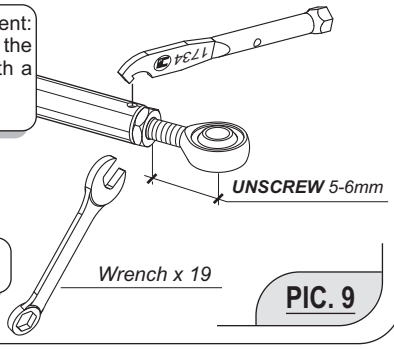


Shaft travel **400mm** - BRAKING **385mm**

PIC. 8

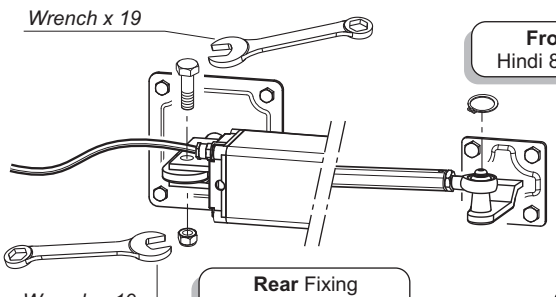
Once the installation of the brackets is completed, unscrew the ball bearing joint by 5-6 mm: in this way the actuator keeps pushing the gates to closing and a better hold is achieved in closed gate position. It is most important to tighten the lock nut very well (a special spanner is supplied and a wrench x 19 to be provided for this job - Pic.9). Fix Hindi 880 on to the rear bracket by the screw and to the front bracket by the circlip, both incuded in the equipment (Pic.9 - 10).

Spanner supplied with equipment: it allows to hold the shaft while the lock nut is being tightened with a wrench x 19
- (NOT included) -



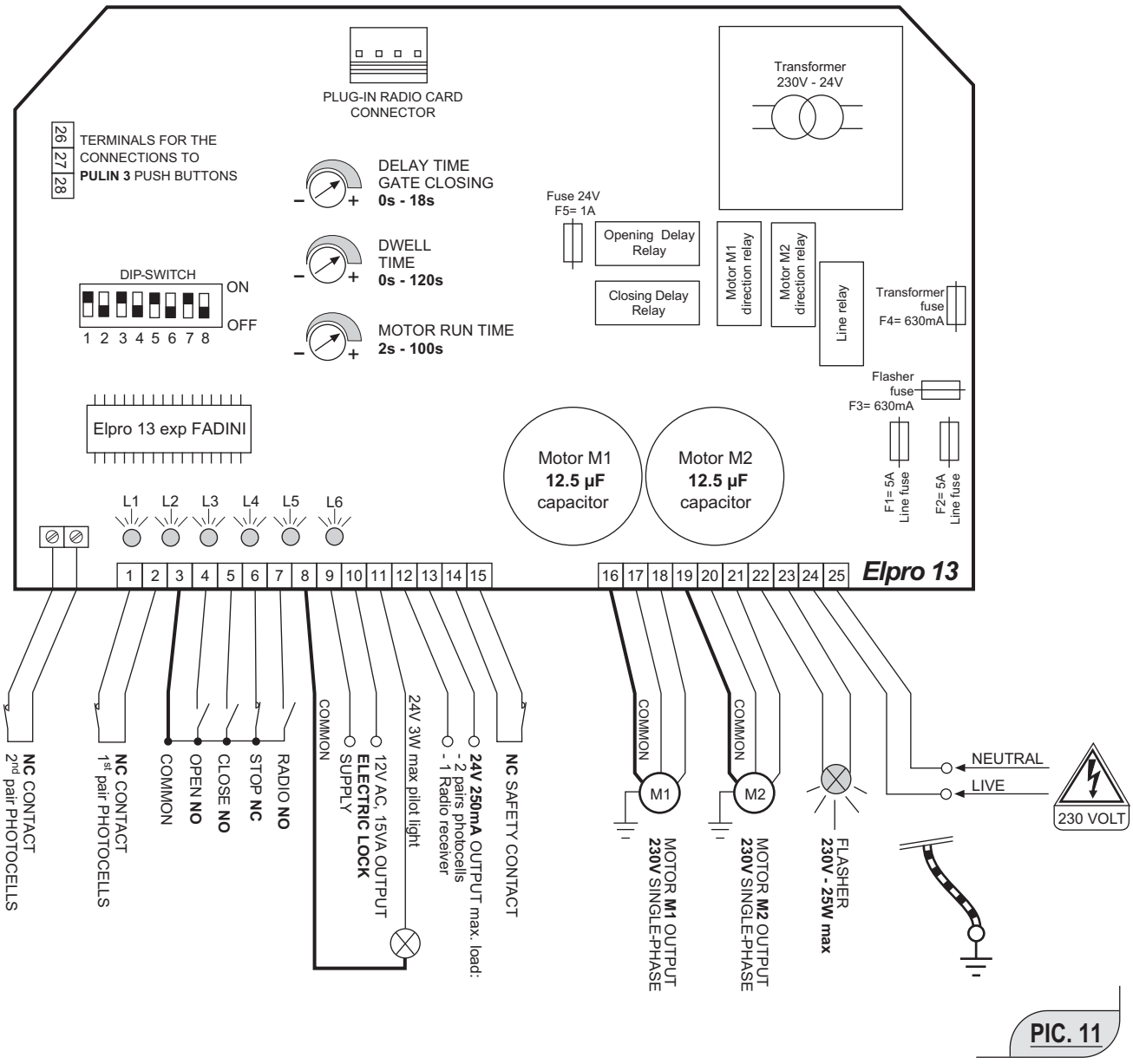
NOTE WELL: tighten the lock nut hard

PIC. 9



PIC. 10

English

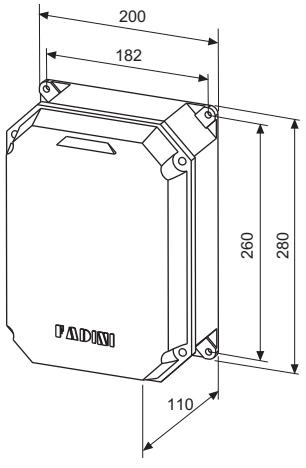


PIC. 11

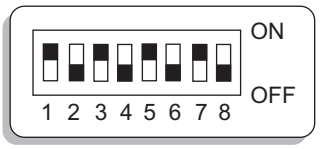
It is important to follow the instructions enclosed in the "Elpro 13 exp" box. Electronic board with microprocessor designed to control double swinging gates.

IMPORTANT:

1 - The control board must be installed in a protected, dry place inside the box provided with it.
2 - Fit a high sensitivity, 0.03A, magneto-thermal, differential circuit breaker (Pic.3, page 16) to the control board power supply.
3 - Make sure that power supply is 230V ±10% 50Hz.
4 - For the power supply to the board and flasher use 1.5mm^2 section wires (up to 50m distance); for the accessories use 1mm^2 section wires and connect the yellow/green cable - i.e. Ground - to the electric motor/s (Pic.11).
5 - Link out terminals 1 - 2 if no Photocells are used, and bridge the respective terminals if the 2nd pair is not used either.
6 - If no Button- or Key-switches with stop button are used, link out / bridge the NC contacts of terminals 3 and 6.

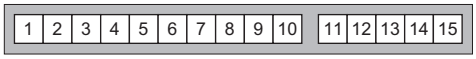


Switch setting *DIP-SWITCH*:



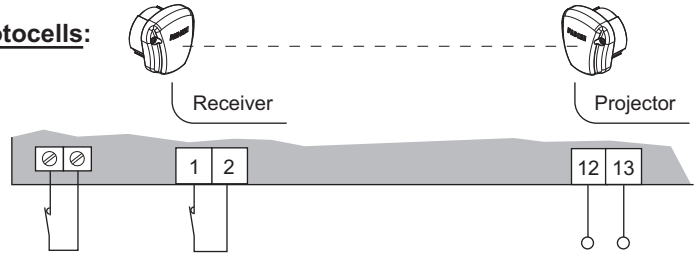
1= **ON** 1st pair Photocells. Stop in Opening cycle
2= **ON** Radio. No reverse in Opening cycle
3= **ON** Automatic Closing
4= **ON** Pre-flasing
5= **ON** Radio. Step by step, stop in between
6= **ON** Pedestrian opening of one gate, gate in closed position
7= **ON** Stroke Reversing Mode on pulsing to Open, gate closed
8= **ON** No Gate Delay on Opening. Both motors start together

TERMINAL BOARD - *Electronic board low voltage*



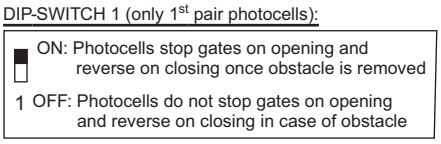
Terminal board - Elpro 13 exp -

Photocells:

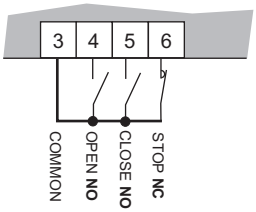


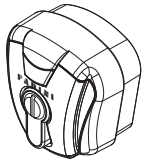
1st pair Photocells (the ones fitted on to the gate posts), controlled by Dip-Switch 1.
2nd pair Photocells (the ones fitted inside the gateway), always stop the gates on opening and reverse travel direction on closing once obstacle is removed

DIP-SWITCH 1 (only 1st pair photocells):

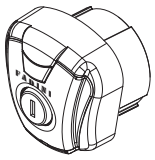


Switch with custom--coded key:



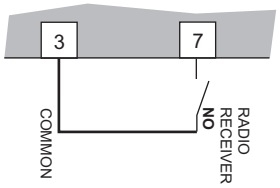


Lock barrel ***EUROPEAN PROFILE***



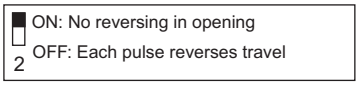
Lock barrel ***UNIVERSAL PROFILE***

Radio contact:

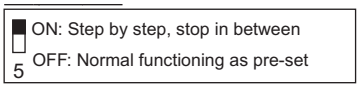


- Open/Close (normal) each pulse reverses gate travel direction
- Step by step stop in between

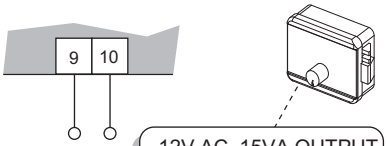
DIP-SWITCH 2:



DIP-SWITCH 5:



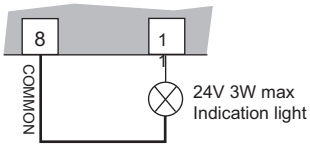
Electric lock:



12V AC, 15VA OUTPUT **ELECTRIC LOCK** POWER SUPPLY

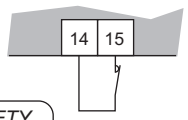
Device to mechanically hold the gates in closed position recommended with gates wider than 2 meters and in case non locking actuators are fitted.
Time of activation: on powering for **2 seconds**, 100ms in advance against gate motion.

Gate movement signalling:

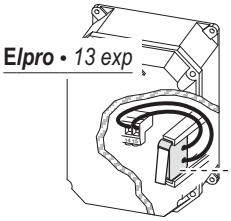


Light **On** = Gate open
Light **Off** = Gate closed
Flashing **0.5s (fast)** = Gate closing
Flashing **1s** = Gate opening

Safety contact:



***NC** SAFETY CONTACT*



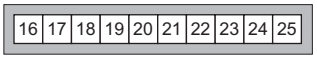
Microswitch fitted to the box lid. If not used, link out the terminals 14 and 15.

IMPORTANT
Connect all the - yellow/green - cables to GROUND

English

POWER CONNECTIONS

TERMINAL BOARD - *electronic board voltage connections*



Terminal boards - Elpro 13 exp -

DIP-SWITCH 8:

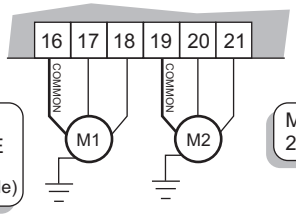
ON: Gate delay on Opening out of service. Both motors start together
8 OFF: Gate delay on Opening in service

DIP-SWITCH 3:

ON= Automatic closing
OFF= No automatic closing. Semi-automatic mode,closing by pulse.
3

Electric motors:

Once connections to the electric motors have been completed, the three timers as follows are to be set:
Gate Delay on Closing, ***Dwell Time*** and ***Motor Run Time***.



MOTOR OUTPUT **M1**
230V SINGLE-PHASE
(It operates the 1st gate wing and Pedestrian mode)

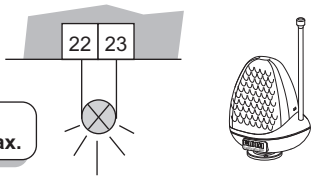
MOTOR OUTPUT **M2**
230V SINGLE-PHASE

GATE DELAY TIME ON CLOSING
0s - 18s

DWELL TIME (with Dip-Switch 3=ON)
0s - 120s

MOTOR RUN TIME
2s - 100s

Flasher:



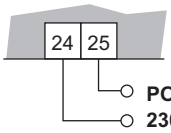
FLASHER
230V - 25W max.

Pre-flashing. Dip-Switch 4=ON:
Once a commanding pulse is given, the light starts flashing and after 3 seconds the actuators start operating.

DIP-SWITCH 4:

ON: Pre-flashing
4 OFF: No pre-flashing

Power supply to the controller:



POWER SUPPLY INPUT
230V ±10% 50Hz SINGLE-PHASE

230 VOLT

Fit a 0.03A High sensitivity, Magneto-thermal, Differential circuit breaker to the mains to the controller.
Supply the board with 230V ±10% 50Hz single-phase voltage, once all the power and low voltage connections have been completed.

"Elpro • 13 exp" CONNECTIONS

Automatic / Semi-automatic:

DWELL TIME
0 seconds - 120 seconds

DIP-SWITCH 3:

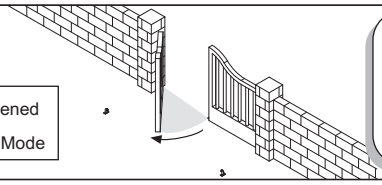
ON= Automatic closing
OFF= No automatic closing. Closing by pulse.
3

Automatic Cycle: on pulsing to Open, the gates move to open; are held open for a time as set by the dwell timer, on expiring they are driven to close automatically.
Semi-automatic Cycle: on pulsing to Open, the gates are opened; another pulse is needed to close them.

Pedestrian Opening:

DIP-SWITCH 6:

ON= Only one gate is opened
6 OFF= Normal Operating Mode



The pedestrian opening is allowed for one gate wing, in closed position.
Dip-Switch n°6=ON - Pulse the terminals 3-4 to open**:**
- the first Open pulse operates **Motor 1**;
- a second pulse, to terminals 3 and 4, operates the second gate wing.
The remote control always operates both gate wings, through the Radio contact, terminals 7-8.

Stroke Reversing Pulse:

This function **(Dip-Switch n°7=ON)** facilitates the release of the electric lock with the gates in fully closed position, even on *pedestrian opening* mode: the gates in closed position, before being opened, are pushed to close for **2 seconds.**

DIP-SWITCH 7:

ON: Stroke Reversing Pulse in service with gate in closed position
7 OFF: Stroke Reversing Pulse out of service

Step by Step:

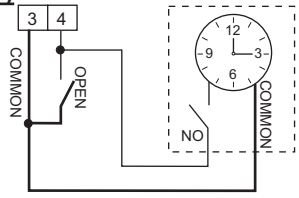
Dip-Switch n°5=ON:
By pulsing the Radio contact, the automation goes through open-stop-close-stop operations step by step.

DIP-SWITCH 5:

ON: Step-by-step mode in service
5 OFF: Step-by-step out of service

External Time Clock (Optional):

DWELL TIME
0 seconds - 120 seconds



DIP-SWITCH N°3=ON Automatic Closing:

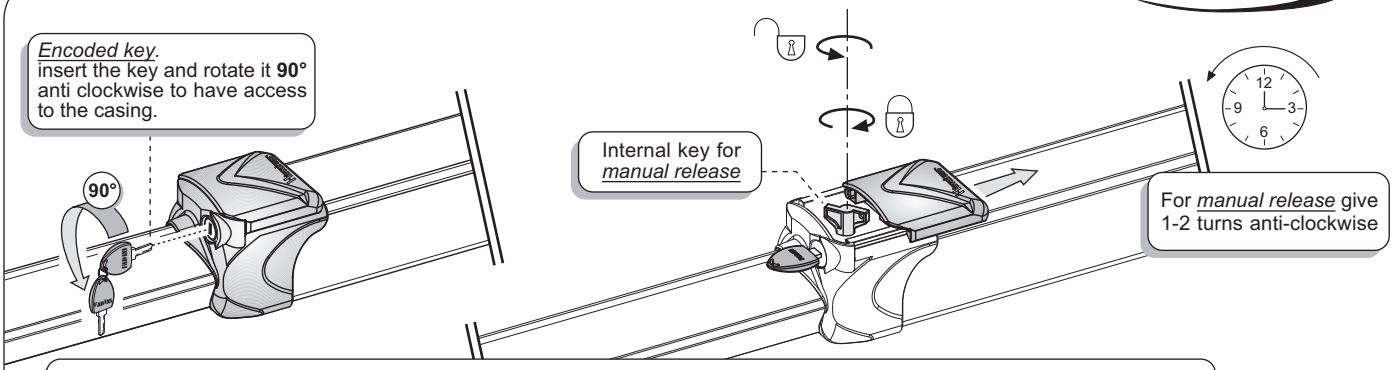
ON= Automatic Closing
OFF= No Automatic Closing. Semi-automatic by pulsing
3

TIME CLOCK: the Elpro 13 exp controller allows the connection of a time clock to open and close the gates.
Wiring: parallel connect the NO contact of the clock to terminals No.4 OPEN and No.3 COMMON, set Dip-Switch No.3=ON Automatic Closing and adjust the Dwell Time as required.
Functioning: set the opening time on the clock. At the set time the gates are opened and held open (the flasher switches off and the indication light gives out two quick flashes followed by a longer pause). No further command is accepted (not even by remote control). On elapsing of the clock time and after the dwell time the gates are automatically reclosed.

English

HINDI 880 MANUAL RELEASE - DOUBLE LOCKING AND LOCKING CLOSE VERSIONS -

Encoded key.
insert the key and rotate it **90°** anti clockwise to have access to the casing.

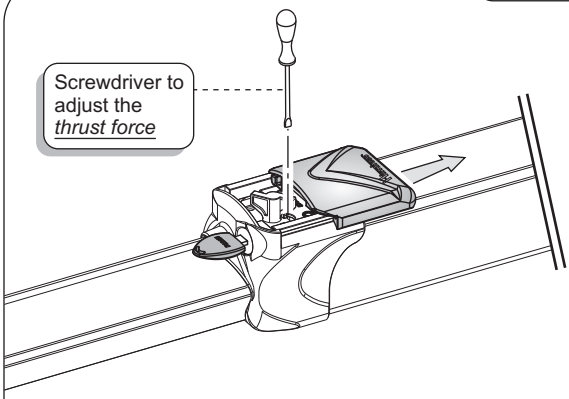


The manual release of Hindi 880 system allows to manually operate gates fitted with actuators, locking type. The coded key is supplied with the equipment and must be inserted in the casing lock and turned by 90° anti clockwise in order to be able to slide the hatch cover to open.
The manual release key is already inserted and must be turned anti clockwise once or twice. When the manual operations are completed, the hydraulic circuit must be relocked by turning the release key clockwise to tighten the valve screw firmly (Pic.12).

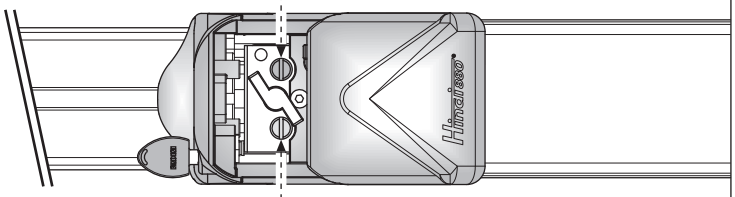
PIC. 12

ADJUSTING THE THRUST FORCE

Screwdriver to adjust the *thrust force*



Red screw = to adjust the **thrust force in closing cycle**
- clockwise: **+ Force**
- counter clockwise: **− Force**



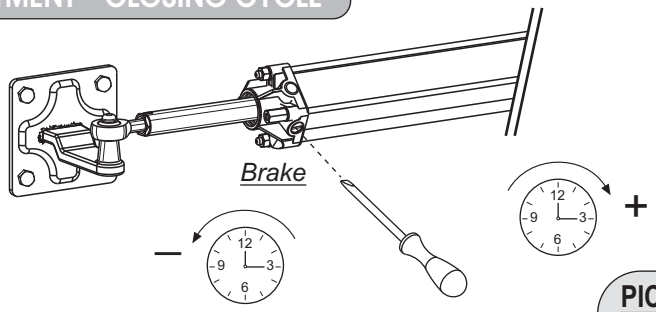
Green screw = to adjust the **thrust force in opening cycle**
- clockwise: **+ Force**
- counter clockwise: **− Force**

The thrust force must be adjusted in open and close cycles by loosening or tightening the adjusting screws (Red and Green); these are located inside the valve casing, which can be accessed by using the coded key (Pic.13).

PIC. 13

BRAKING · ADJUSTMENT · CLOSING CYCLE

ATTENTION.
It is possible to adjust the "BRAKE" in *closing cycle* by the actuator head: ***be careful, it is very sensitive***.
In *opening, cycle* braking is factory set.



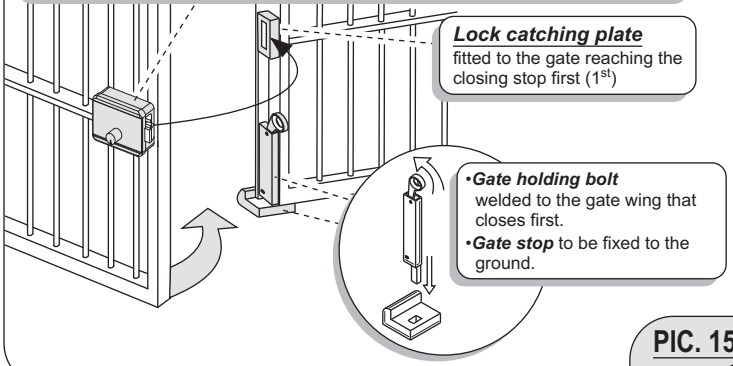
PIC. 14

INSTALLING THE ELECTRIC LOCK

HORIZONTAL

code 7081 "Horizontal" electric lock
to be fitted to the gate that closes second (2nd) and catches the latching bolt, firmly holding the gates in closed position.

Lock catching plate
fitted to the gate reaching the closing stop first (1st)



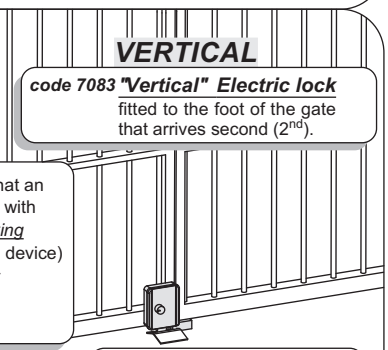
- ***Gate holding bolt*** welded to the gate wing that closes first.
- ***Gate stop*** to be fixed to the ground.

PIC. 15

VERTICAL

code 7083 "Vertical" Electric lock
fitted to the foot of the gate that arrives second (2nd).

It is recommended that an electric lock be fitted with Hindi 880's *Non locking* (no hydraulic locking device) and with gates wider than 2.0 meters (Pic.15 and Pic.16).

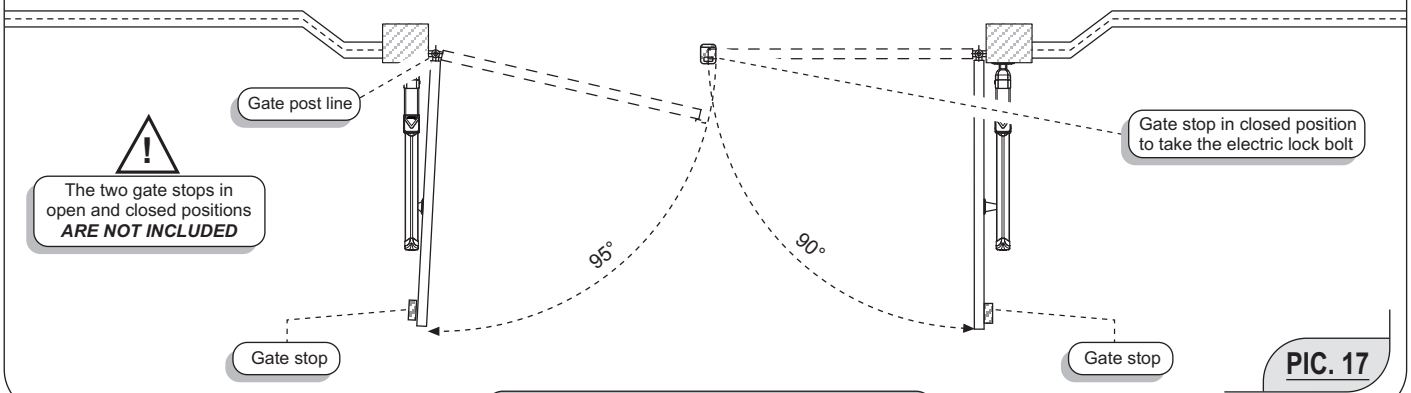


Electric lock** fitted **vertically
fixed to the ground with catching plate and gate stop.

PIC. 16

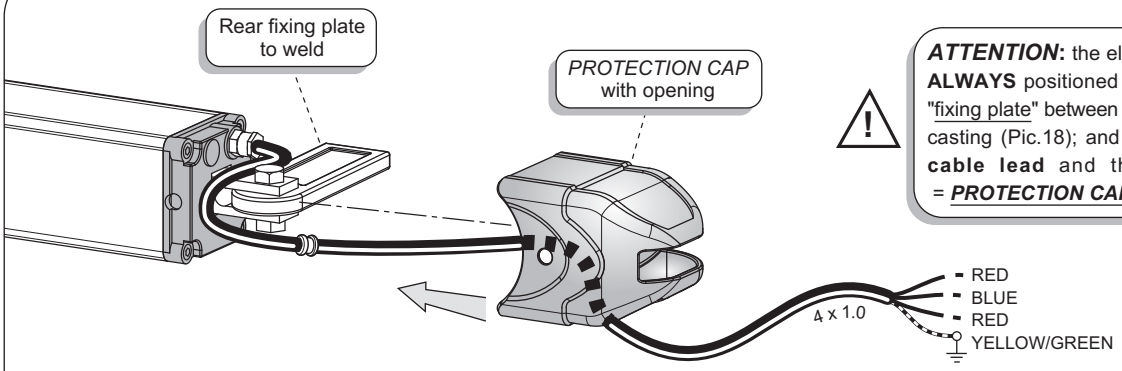
English

INSTALLING THE GATE STOP "PROVIDED BY THE INSTALLER"



PIC. 17

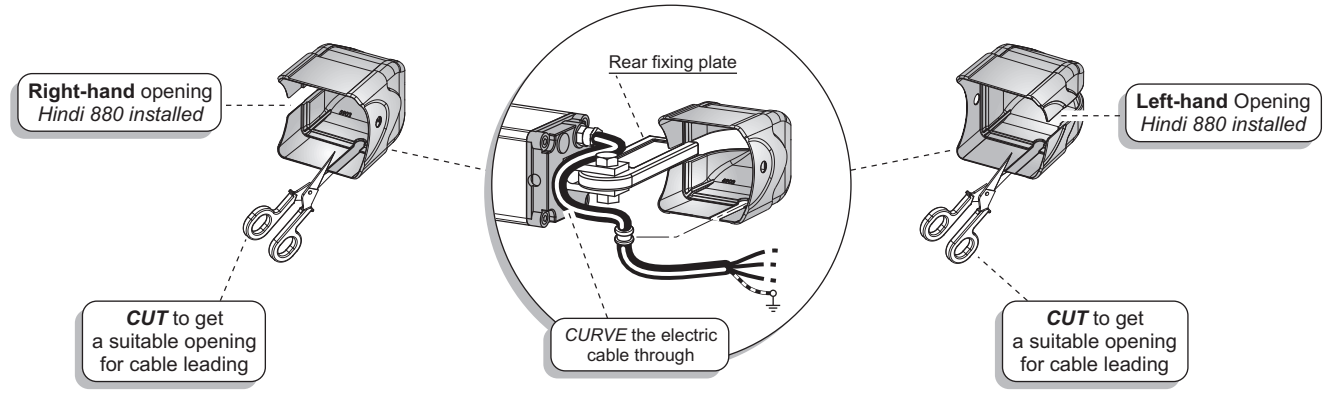
FITTING THE PROTECTION CAP



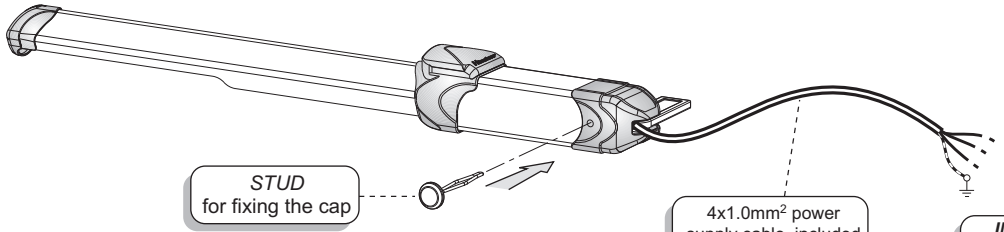
ATTENTION*:** the electric power cable **must be ALWAYS** positioned **along the side** of the rear "fixing plate" between the bolt and the actuator rear casting (Pic.18); and it **must** be pulled into the **cable lead** and through the hole in the = ***PROTECTION CAP = (Pic.19).

PIC. 18

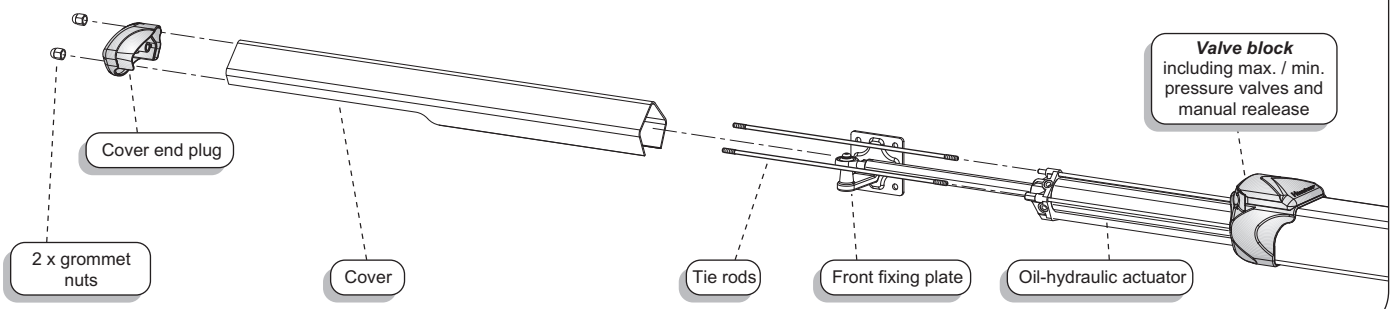
FITTING THE COVER AND THE REAR CAP



PIC. 19



Hindi 880
COMPLETE



English

DECLARATION OF CONFORMITY
of the Manufacturer

Manufacturing company:

meccanica FADINI snc.

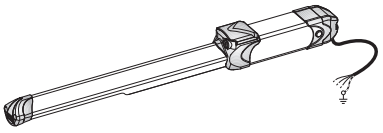
Address:

Via Mantova, 177/A - C.P. 126 - 37053 Cerea (VR) Italy
Tel.+39 0442 330422 r.a. - Fax +39 0442 331054
e-mail: info@fadini.net - www.fadini.net

DECLARES UNDER ITS OWN RESPONSIBILITY THAT:

Model:

Hindi 880®



On-the-gate oil-hydraulic operator for swinging gates

IS IN COMPLIANCE WITH THE NORMS **2006/42/CE**

AND THAT:

Hindi 880 is to be sold and installed as a comprehensive "Automatic System", including the accessories and the components as recommended by the Manufacturing Company.
In observance of the current directives, any automation is to be regarded as a "machinery". Therefore it is required that all the applicable safety norms are strictly complied with by the installation agents, who are also required to issue a Declaration of Conformity.
The manufacturing company is not liable for incorrect applications or misuse of its products that are declared to be produced in compliance with the following norms:

- Analysis of the risk and actions to cure them: ---------- **EN 12445** & **EN 12453**
- Low Voltage Directive ---------- **2006/95 CE**
- Electro-magnetic compatibility Directive ---------- **2004/108/CE** & **92/31 CEE**

In order to certify the product the Manufacturing Company declares under its own responsibility the compliance with the PRODUCT NORM .....EN 13241-1

CE

Meccanica Fadini s.n.c.
Direttore Responsabile

Date: 03-03-10

The Responsible Manager

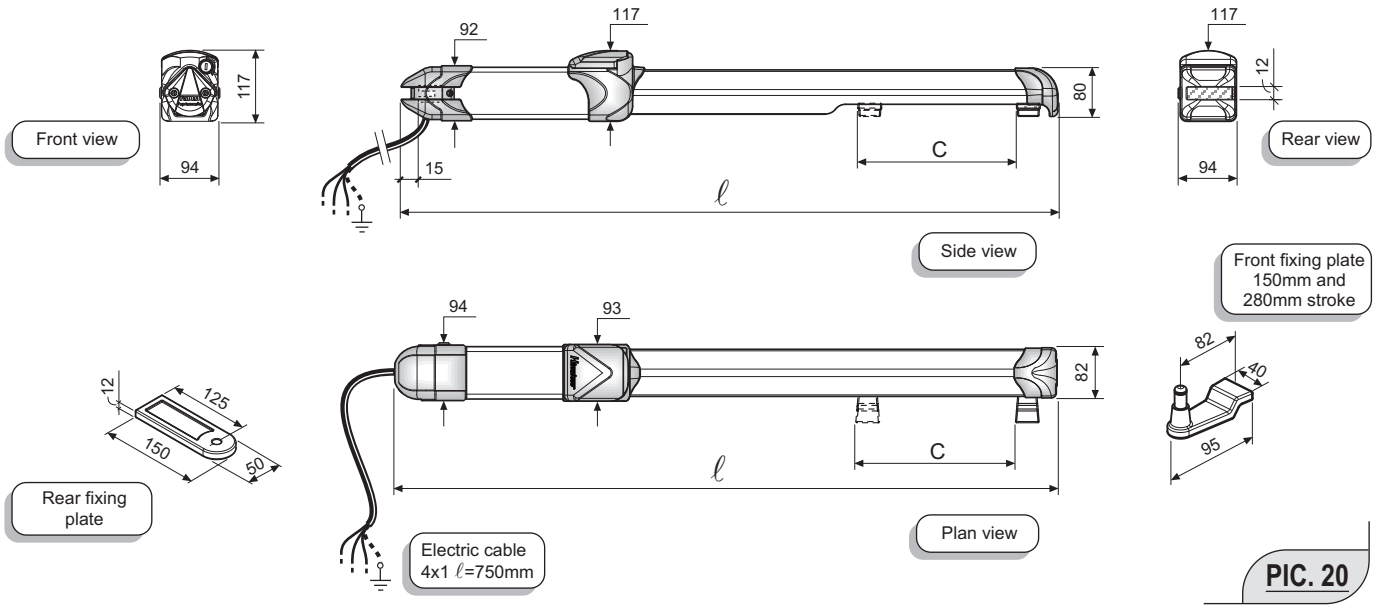
FADINI
the gate opener
made in Italy

GB

English

QUALITY IN MOTION

OVERALL DIMENSIONS



PIC. 20

ELECTRIC MOTOR TECHNICAL DATA

Power Yield	180W (0.25HP)
Supply voltage	230V
Frequency	50Hz
Absorbed current	1.3A
Absorbed power	300W
Motor revolutions	1'350 rev./1'
Capacitor	12.5µF
Intermittent service	S3 - 25%

OIL-HYDRAULIC PISTON TECHNICAL DATA

Pump flow rate - P5	1.4 ℓ/min.
Piston diametre	45mm
Shaft diametre	20mm
Thrust power (10 bar)	1'000N
Thrust power (30 bar)	3'000N
Mean working pressure	1 MPa (10 bar)
Maximum pump pressure	3 MPa (30 bar)
Hydraulic oil type	Oil Fadini
Working temperature	-25°C +80°C
Maximum gate weight	180Kg
Protection grade complete	IP 553

"HINDI 880" FEATURES

MODEL	OPENING TIME	DWELL TIME	CLOSING TIME	REST TIME	TIME OF ONE COMPLETE CYCLE	COMPLETE CYCLES Opening - Dwell - Closing - Dwell	CYCLES PER YEAR with 8 hours' service per day	WEIGHT
Stroke **150mm**	12 sec.	30 sec.	12 sec.	40 sec.	94 sec.	N°39/h	N°112'000	9.5 Kg
Stroke **280mm**	24 sec.	30 sec.	24 sec.	40 sec.	118 sec.	N°30/h	N°86'000	11 Kg
Stroke **400mm**	32 sec.	40 sec.	32 sec.	50 sec.	154 sec.	N°23/h	N°66'000	14 Kg
280mm	12 sec.	***Fast*** - pump **P10** (for specific applications)		50 sec.	106 sec.	N°34/h	N°97'000	11 Kg
400mm	16 sec.				120 sec.	N°30/h	N°86'000	14 Kg

For the system to operate to its best performance level over the time and in compliance with the safety norms, it is recommended that proper maintenance and inspection of the entire installation be carried out, including the gate operator/s, electronic equipment and cables. The entire installation must be executed by qualified technicians following the guidelines of the Safety Norms handbook available on request, and to be filled in, where required:
- Oil-hydraulic equipment: inspection and maintenance at least every 6 months.
- Electronic equipment and safety accessories: inspection and maintenance at least once a month .
- Ordinary and extraordinary maintenance and service to be agreed between the installation agent and customer /end user.
- Dispose properly of packaging materials such as cardboard, nylon, polystyrene, etc. through specialized companies.

ATTENTION ***Important***

DISPOSE PROPERLY OF ENVIRONMENT-NOXIOUS MATERIALS

The growth of MECCANICA FADINI has always been based on high quality products and on a TOTAL QUALITY CONTROL SYSTEM ensuring the consistency of the quality standards over the time as well as constant updating with the European Norms in the framework of a process of continuous improvement.

meccanica FADINI

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