



## **Ditec PWR25H/35H**

### Automation for hinged gates

(translation of the original instructions)

IP2250EN  
**Technical Manual**

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## Key



This symbol indicates instructions or notes regarding safety, to which special attention must be paid.



This symbol indicates useful information for the correct functioning of the product.

# 1. General safety precautions



**Failure to respect the information given in this manual  
may cause personal injury or damage to the device.  
Keep these instructions for future reference**

This installation manual is intended for qualified personnel only. Installation, electrical connections and adjustments must be performed in accordance with Good Working Methods and in compliance with the present standards. Read the instructions carefully before installing the product. Incorrect installation could be dangerous.

Before installing the product, make sure it is in perfect condition. Before installing the motorisation device, make all the necessary structural modifications to create safety clearance and to guard or isolate all the crushing, shearing, trapping and general hazardous areas.

Make sure the existing structure is up to standard in terms of strength and stability. The motorisation device manufacturer is not responsible for failure to observe Good Working Methods when building the frames to be motorised, or for any deformations during use.

The safety devices (photocells, safety edges, emergency stops, etc.) must be installed taking into account the applicable laws and directives, Good Working Methods, installation premises, system operating logic and the forces developed by the motorized gate. The safety devices must protect the crushing, shearing, trapping and general hazardous areas of the motorised door.

Display the signs required by law to identify hazardous areas.



Each installation must bear a visible indication of the data identifying the motorized gate.

When requested, connect the motorized gate to an effective earthing system that complies with current safety standards.

During installation, maintenance and repair operations, cut off the power supply before opening the cover to access the electrical parts.

The automation protection casing must be removed by qualified personnel only.



The manufacturer of the motorisation device declines all responsibility if component parts not compatible with safe and correct operation are fitted.

Only use original spare parts when repairing or replacing products.

The installer must supply all information on the automatic, manual and emergency operation of the motorised gate, and must provide the user with the operating instructions.

## 2. Declaration of incorporation of partly completed machinery

(Directive 2006/42/EC, Annex II-B)

The manufacturer Entrematic Group AB, with headquarters in Lodjursgatan 10, SE-261 44 Landskrona, Sweden, declares that the Ditec PWR25H / PWR35H automation for swing gates:

- is designed to be installed on a manual gate to form a machine pursuant to Directive 2006/42/EC. The manufacturer of the motorised gate must declare conformity with Directive 2006/42/EC (annex II-A) prior to initial machine start-up;
- complies with the applicable essential safety requirements indicated in Annex I, Chapter 1 of the Directive 2006/42/EC;
- complies with the Electromagnetic Compatibility Directive 2014/30/EU;
- complies with the RED Directive 2014/53/EU;
- the technical documentation complies with Annex VII-B of the Directive 2006/42/EC;
- the technical documentation is managed by the Technical Office of Entrematic Italy (with headquarters in Largo U. Boccioni 1 – 21040 Origgio (VA) – ITALY) and is available upon request, sending an e-mail to ditec@entrematic.com ;
- a copy of the technical documentation will be given to competent national authorities, following a suitably justified request.

Landskrona, 01-07-2016

  
Matteo Fino  
(Chairman)


### 2.1 Machinery Directive

Pursuant to the Machinery Directive (2006/42/EC), the installer who motorises a door or gate has the same obligations as the manufacturer of machinery and as such must:

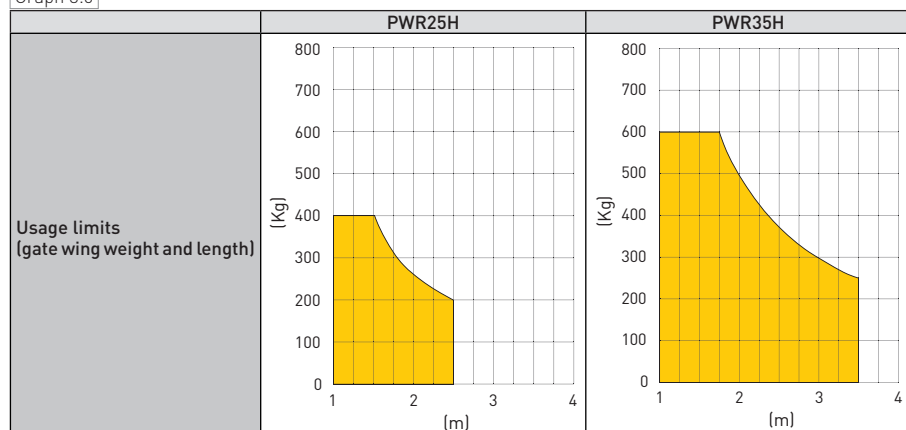
- prepare the technical data sheet which must contain the documents indicated in Annex V of the Machinery Directive;  
(the technical data sheet must be kept and placed at the disposal of competent national authorities for at least ten years from the date of manufacture of the motorised door or gate);
- draw up the EC Declaration of Conformity in accordance with Annex II-A of the Machinery Directive and deliver it to the customer;
- affix the EC marking on the motorised door or gate, in accordance with point 1.7.3 of Annex I of the Machinery Directive.

### 3. Technical specifications

Tab. 3.0

	PWR25H	PWR35H
Power	24V 	
Maximum power	5A	5.5A
Absorbed power	55W nom. / 120W max	65W nom. / 132W max
Maximum thrust	2000 N	3000 N
Maximum stroke	350mm	450mm
Opening time	10÷60 s/90°	14÷80 s/90°
Intermittence	80 cycles/day [max] 30 consecutive cycles at 20°C	max 150 cycles/day [max] 50 consecutive cycles at 20°C
Duration	From 90,000 to 150,000 cycles based on the conditions indicated in table 3.1 (see the durability graphs of the product)	From 120,000 to 300,000 cycles based on the conditions indicated in table 3.1 (see the durability graphs of the product)
Operating temperature	-20°C / +55°C (-35°C + 55°C with NIO active)	
Degree of protection	IP44	IP44
Dimensions (mm)	820 x 100 x 107 h	970 x 100 x 107 h
Weight (Kg)	7.8	9

Graph 3.0



WARNING: To prevent burglary, the use of an electric lock is recommended with wings longer than 2.3m.

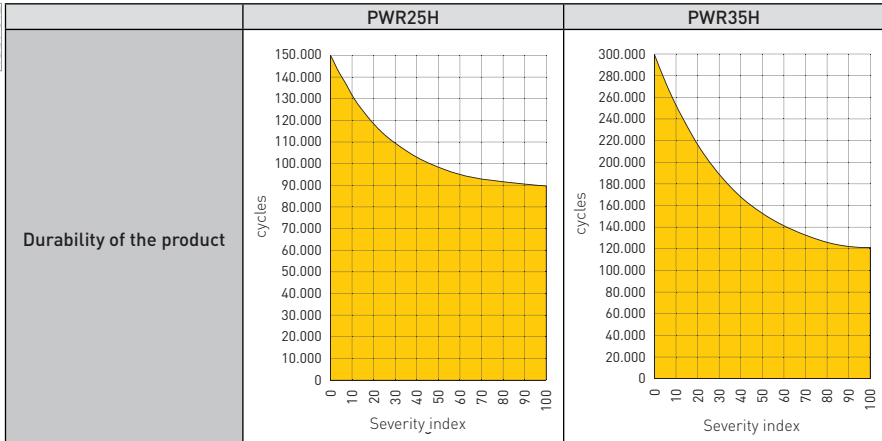
Tab. 3.1

Severity index			
		PWR25H	PWR35H
Wing weight	>150Kg	10	-
	>200Kg	20	-
	>300Kg	30	10
	>400Kg	-	20
	>500Kg	-	30
Wing width	>2m	20	10
	>3m	-	20
Solid wing		15	
Windy area		15	
Speed setting VA/VC/PO/PC over the default values		10	
Force setting R1/R2 over the default values		10	

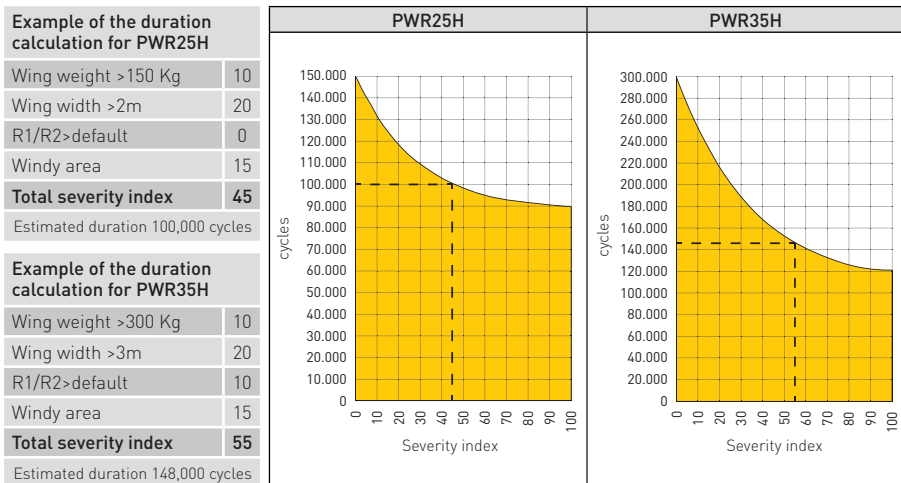
The durability of the product is influenced by the severity index:

with reference to Tab. 3.1, according to the type of piston, the weight and the width of the wing and the use conditions, different corrective factors were estimated, the sum of which influence the operator durability (see Tab. 3.2).

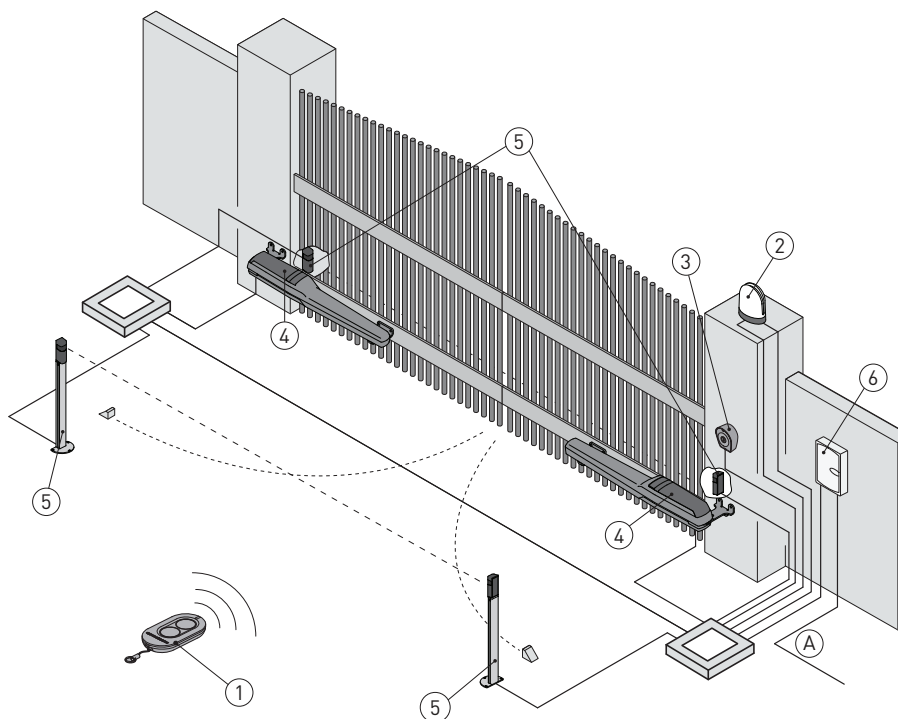
Tab. 3.2



Two examples of the operator durability calculation are shown below:

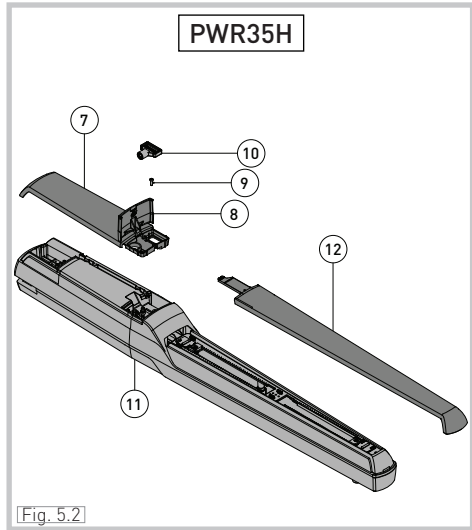
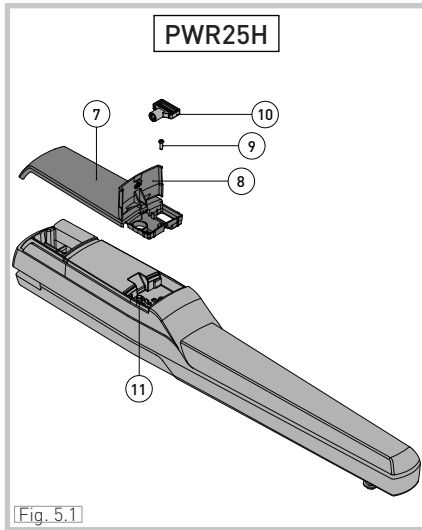


## 4. Standard installation

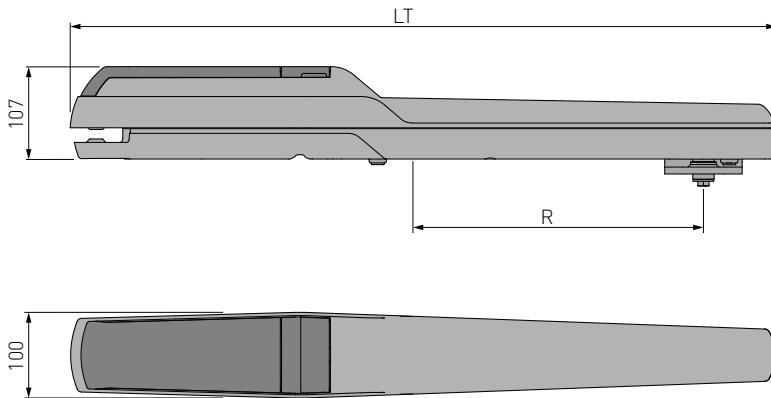


Ref.	Description	Cable
1	Transmitter	/
2	Flashing light	2 x 1 mm <sup>2</sup>
	Antenna (integrated into the flashing light)	coaxial 58 Ω
3	Key selector switch	4 x 0.5 mm <sup>2</sup>
	Digital combination wireless keypad	/
	Actuator PWR25H	
4	Actuator PWR35H	2 x 1.5 mm <sup>2</sup>
	Actuator PWR35H with magnetic limit switches	3 x 1.5 mm <sup>2</sup>
5	Photocells	4 x 0.5 mm <sup>2</sup>
6	Control panel	3G x 1.5 mm <sup>2</sup>
A	Connect the power supply to a type-approved omnipolar switch, with a contact opening distance of at least 3mm (not supplied). The connection to the mains must follow an independent path, separate from the connections to the control and safety devices.	

## 5. Gearmotor dimensions and references



Ref.	Description
7	Rear cover
8	Release lock hatch
9	Cover fastening screw
10	Release key
11	Release pin
12	Front cover



Model	L	R
PWR25H	820	350
PWR35H	970	450



## 6. Installation

The declared operating and performance features can only be guaranteed with the use of EN-TREMATIC accessories and safety devices.

Unless otherwise specified, all measurements are expressed in mm.

### 6.1 Preliminary checks

Check that the structure of the gate is sturdy and that the hinges are lubricated and function smoothly. If possible, provide an opening and closing stop, otherwise use the integrated mechanical stops and/or the electric limit switch (optional) if available. The mechanical parts must be in accordance with the provisions of the EN12604 standard.

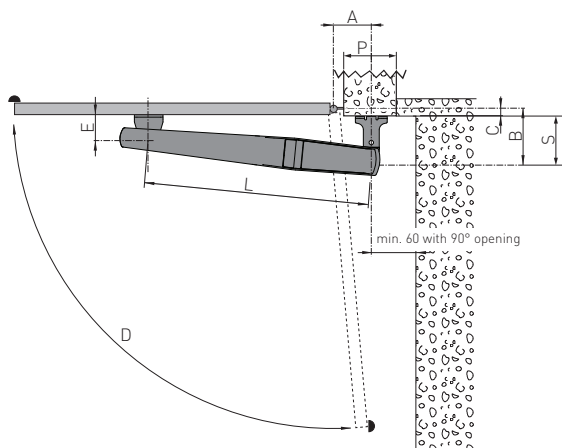


The fixing point of the automation varies depending on the space available and the gate to be automated, therefore it is up to the installer to choose each time the best solution to ensure the correct operation of the system.

The installation measurements indicated in the table allow to choose the values of [A] and [B] on the basis of the desired opening angle and in relation to the on site spaces and overall dimensions. Increasing measurement [A], you reduce the opening approach speed.

Reducing measurement [B], you increase the degrees of gate opening.

Measurements [A] and [B] must, however, be compatible with the effective stroke of the piston.



Tab. 6.1

	A	B	C	S	D	E	L	P min
PWR25H	90	160	50	110	95°	90	700	110
	110	160	50	110	100°			120
	150	130	50	80	110°			160
	130	150	70	80	90°			140
	110	180	100	80	90°			120
	100	190	110	80	90°			110
PWR35H	90	190	50	140	95°	110	850	100
	130	190	50	140	100°			140
	150	190	50	140	110°			160
	130	180	70	110	90°			140
	130	210	100	110	90°			140
	110	260	150	110	90°			120
	100	280	200	80	90°			110

## 6.2 Bracket fastening

After choosing the most suitable fastening point for the front bracket [14] to the gate wing, to determine the height position, proceed with the sizing, positioning and fixing of the rear bracket [13]. If necessary, shorten the rear bracket [13] following measurement (S) in Tab. 6.1.

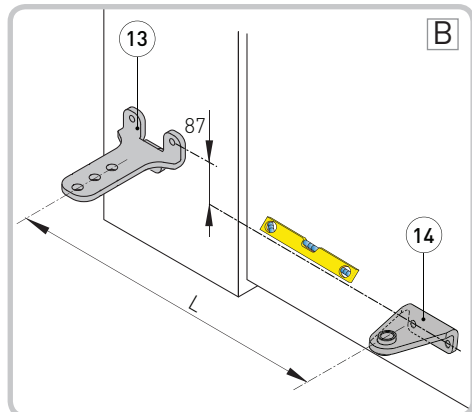
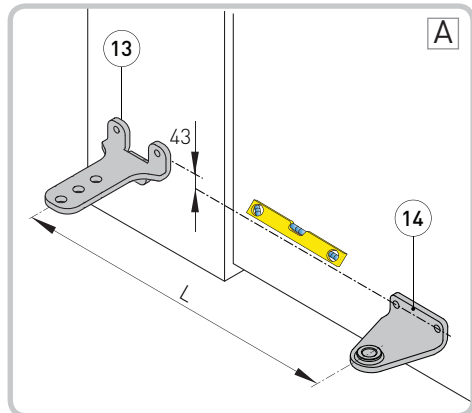
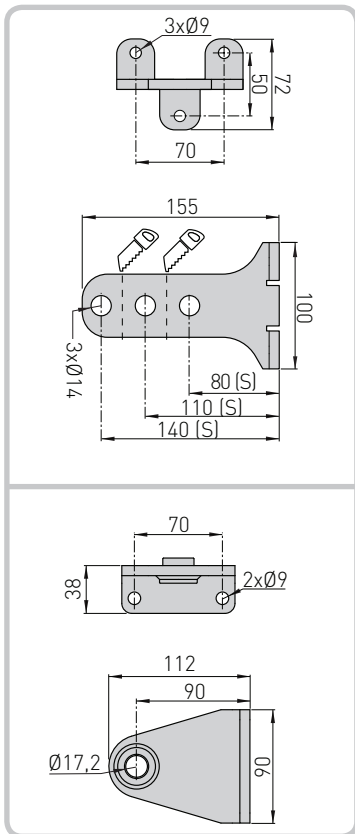
- Once you have fastened the rear bracket [13] following the measurements indicated on page 10, fasten the front bracket [14] to the gate.
- With the gate completely closed, position the front bracket [14], in accordance with measurement (L). Check that the front bracket [13] and rear bracket [14] are properly levelled as shown in the following figures and fasten the front bracket [13] to the gate.

NB: If necessary, the front bracket [14] can be rotated and fixed as shown in figures [B], in this way the operator position will be higher by about 40 mm.

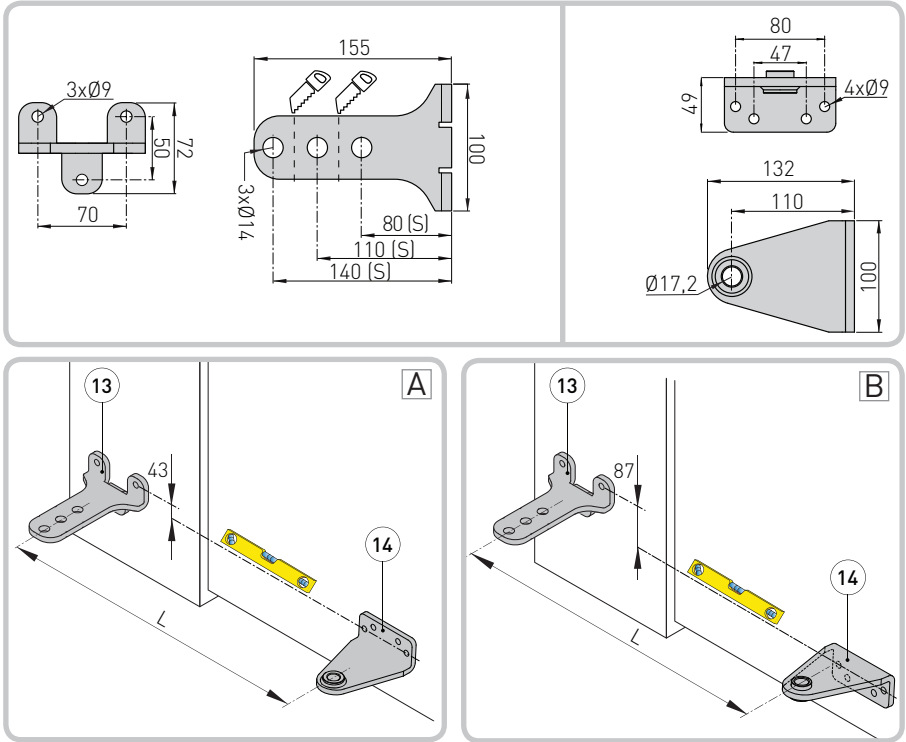


Configuration [A] is the one recommended for a greater mechanical resistance.

**PWR25H**



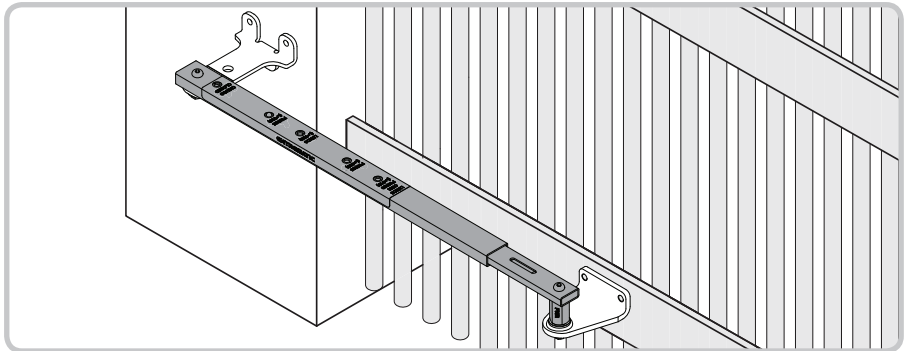
## PWR35H



### 6.3 Positioning template usage

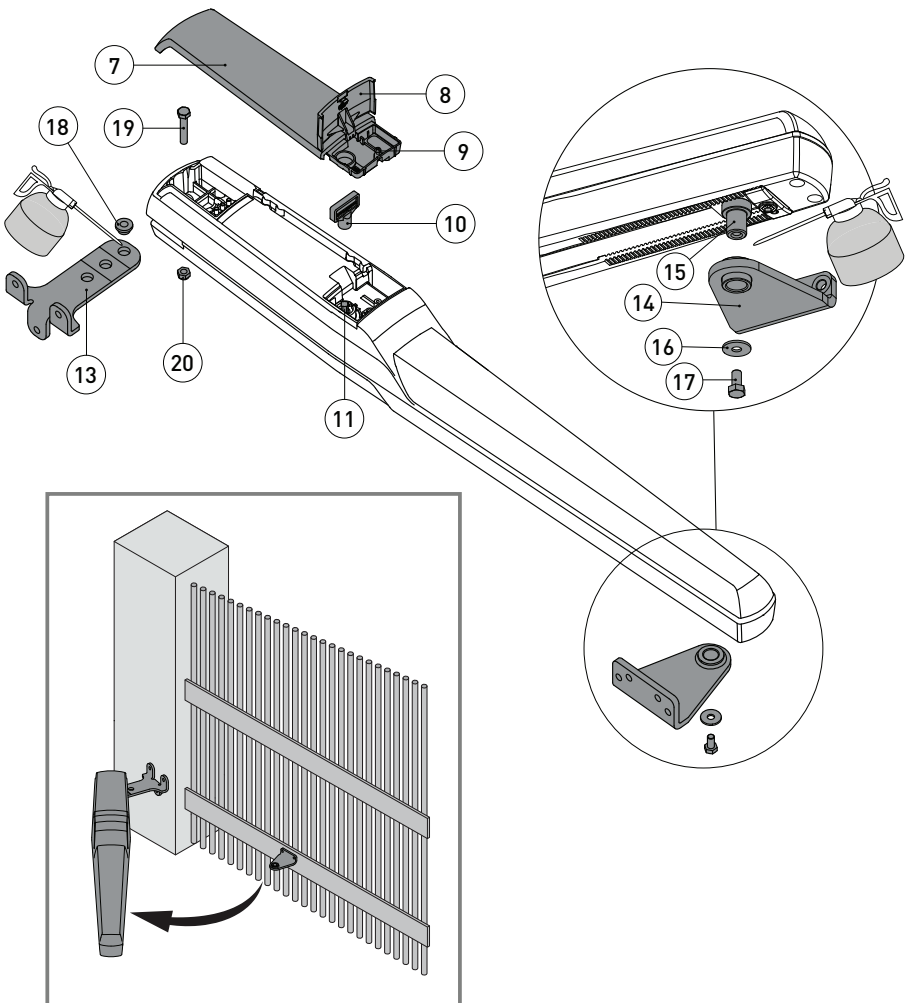
The positioning of the brackets can be greatly simplified by using the positioning template (optional accessory), which allows to establish with certainty the fixing positions and distances of a bracket with respect to the other during installation. In this way positioning errors and incorrect alignment of the fixing holes are avoided thanks to the level integrated in the template.

The installation template is compatible with all pistons of the PWR, Obbi and Luxo series.



## 6.4 Gearmotor installation

- Open the release lock hatch [8], loosen the screw [9] and remove the rear cover [7].
- Release the piston by inserting the key [10] in the appropriate pin [11] and turn it counter-clockwise as indicated by the arrow.
- Insert the rear bushing [18] into the hole of the rear bracket [13] and lubricate the pivot points.
- Fix the piston to the rear bracket, fully tightening the M8x45 screw [19] to nut [20].
- Open the wing manually and insert the front mounting pin [15] into the hole of the front fastening bracket [14]; block the pin in the bracket using the washer [16] and the M8x16 screw [17] supplied.
- Moving the gate manually, check that the entire stroke takes place without interference.



## 6.5 Adjusting the mechanical end stops

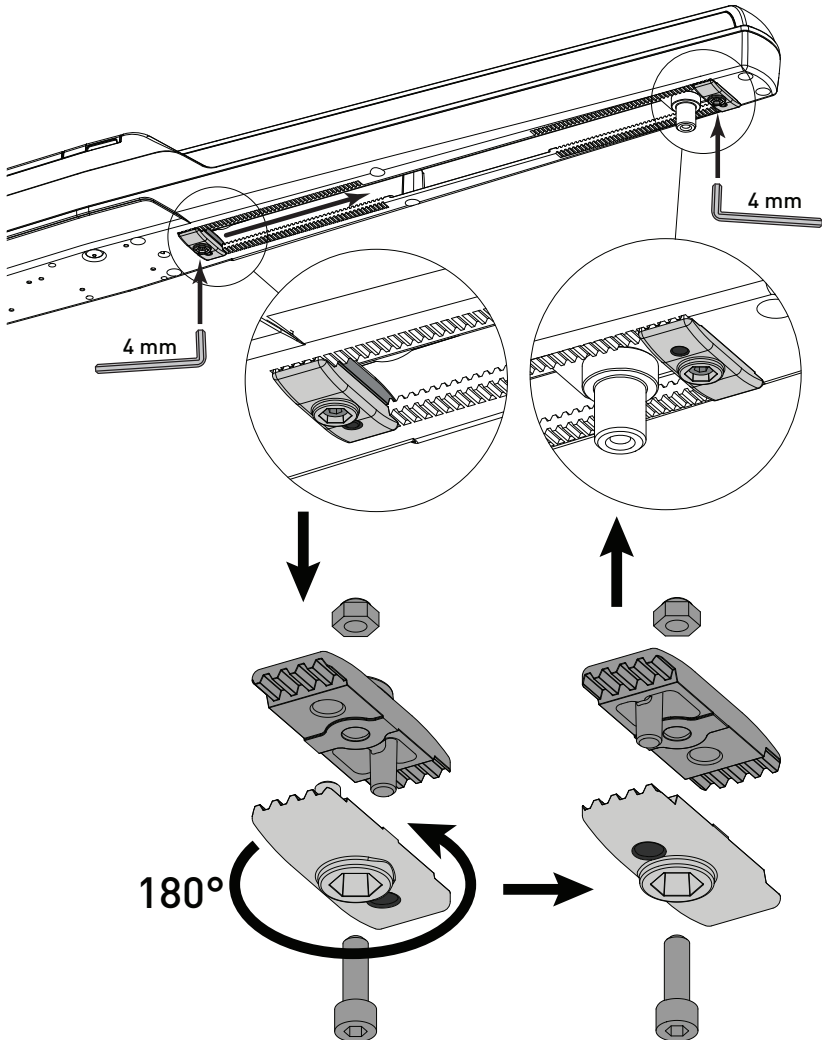
The mechanical end stops are adjusted in steps of 4mm.

Example: GATE WING STOP at stroke [R] = 340 – 344 – 348mm, etc.

If the stopping point of the gate wing does not coincide with the required position, remove the mechanical end stop and rotate it 180° before replacing it in the toothed guide (as shown in the figure below).

In this way, the mechanical end stops are still adjusted in 4mm steps, but at points differentiated by 2mm.

Example: GATE WING STOP at stroke [R] = 338 – 342 – 346mm, etc.



## 6.6. Electrical connections

The PWR25H and PWR35H gear-motors can be connected to control panels LCU30 and LCU40. To connect the automation to the control panel, proceed as follows:

- Remove the rear cover [9] as shown in paragraph 6.4;
- Fit the cable gland on the automation, securing it with the nut inserted in the hole in the casting (Fig. 6.1 and 6.2), then insert the connecting cables (Fig. 6.3);
- Connect the various wires as shown in the wiring diagram in Fig. 6.4;
- Secure the rear cover [9] to the gearmotor.

The electrical wiring and start-up of the gear-motors PWR25H and PWR35H are shown in the installation manuals of control panels LCU30 and LCU40.

A flexible corrugated  $\varnothing 16$  pipe and related  $\varnothing 20$  fitting (not supplied) can be used to increase protection of the motor cable.

Fig. 6.1

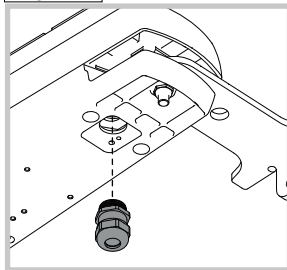


Fig. 6.2

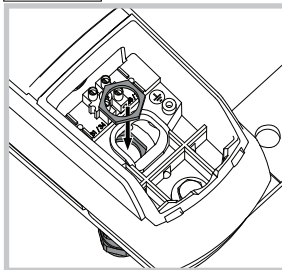
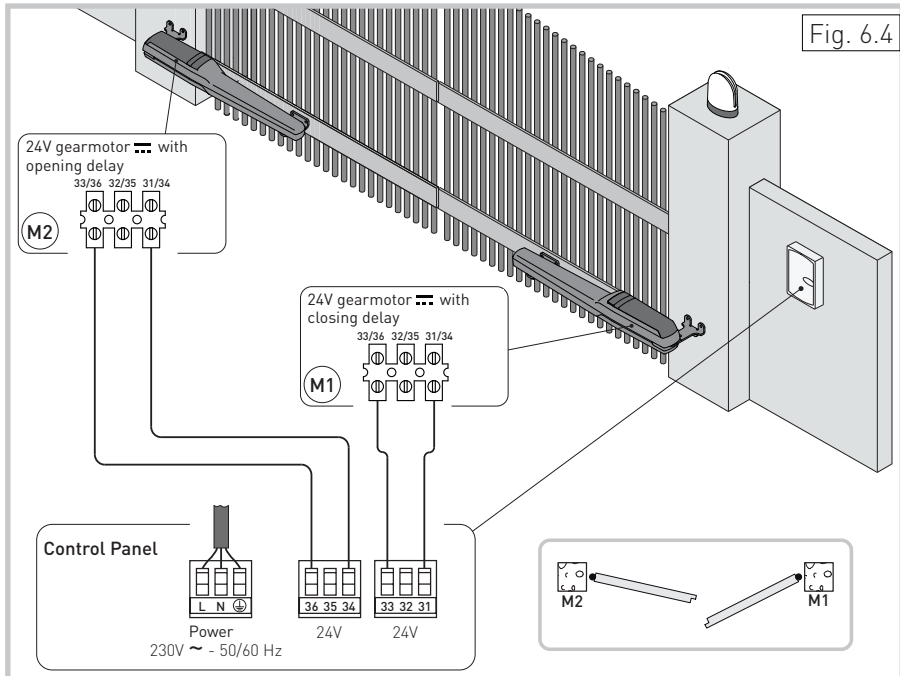
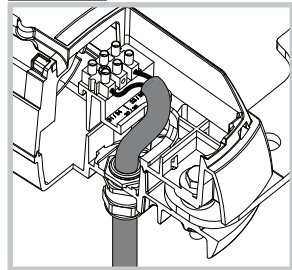


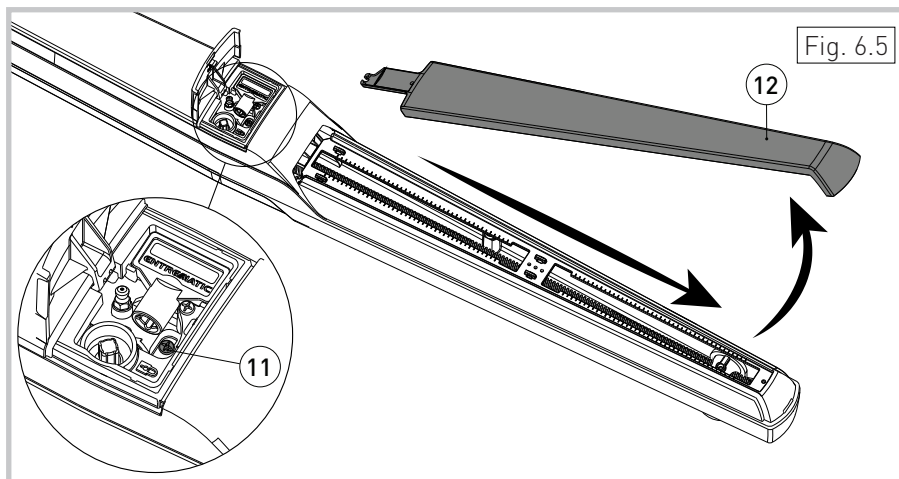
Fig. 6.3



## 6.7 Magnetic limit switches adjustment (PWR35H only)

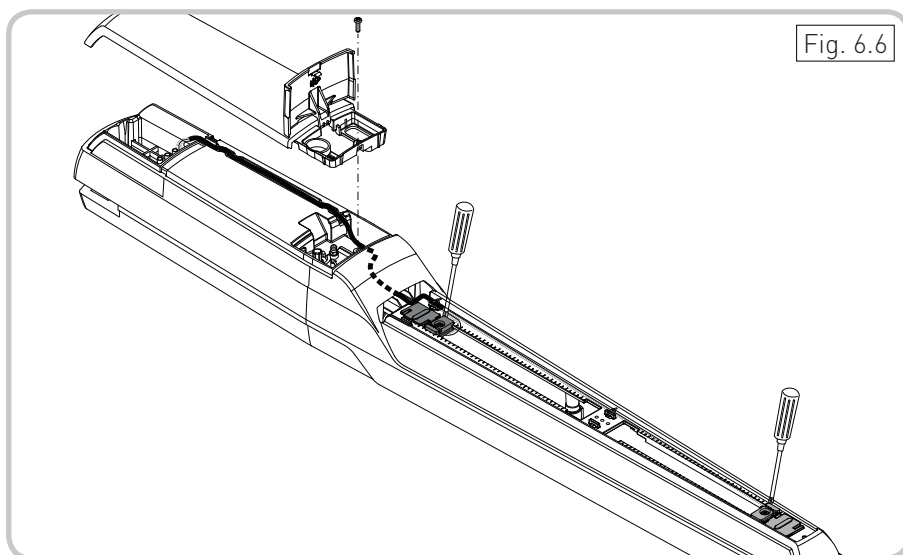
The front cover must be removed for the maintenance, adjustment and/or installation of the magnetic limit switches:

- Loosen screw [11], slide the cover [12] forward and lift the front of it.



- Loosen the sensor support screws, adjust the opening and closing position of the sensors using the notches as a guide, and tighten the screws.
- Secure the cables to the appropriate supports using cable straps.

See the instructions attached to the limit switch kit for additional information.



# 7 . Routine maintenance plan

## 7.1 Maintenance every 6 months or 10,000 cycles

Perform the following operations and checks every 6 months or based on the intensity of use of the automation.

Disconnect the 230 V~ power supply and batteries (if present):

- Clean and lubricate the gate's rotation pins, hinges and drive screws with neutral grease.
- Check the resistance of the fixing points.
- Check the electrical wiring is in good condition.

Reconnect the 230V~ power supply and batteries (if present):

- Check the power adjustment.
- Check that all commands and safety functions (photocells) are operating correctly.
- Check that the release system is working correctly.
- Test the batteries (in continuity) if present, disconnecting power and performing a few manoeuvres in succession. Once performed, turn on the 230 V~ power supply again.

## 7.2 Maintenance every 12 months or 20,000 cycles (PWR35H only)

- Lubrication of the reducer gears and motor worm screw:

insert lubricant using a manual greaser, connecting it to the specific filler valve (model NIP DIN 71412A-M6) inside the manual release compartment [Fig. 7.1].

Amount of grease to be inserted (5ml) = (8-10g).

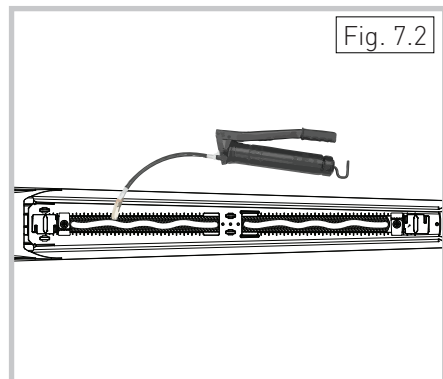
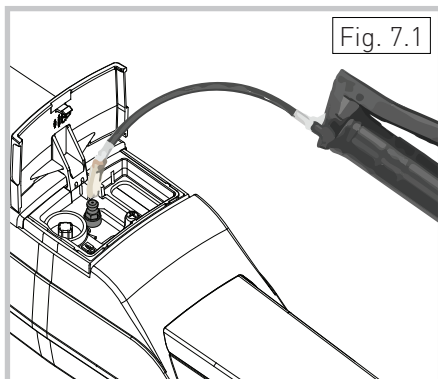
- Lubrication of the drive screw and split nut / nut screw:

remove the plastic front cover [see par. 6.7] and spread the lubricant on the upper visible part of the drive screw [Fig. 7.2].

Approx. amount of grease to be used (5ml) = (8-10g).



Recommended grease: type EP1.





## 8 . Troubleshooting

Problem	Possible cause	Operation
The gate doesn't open or close.	No power supply.	Check that the mains power supply is present.
	Gearmotor released.	See release instructions.
	Photocells interrupted.	Check that the photocells are clean and operating correctly.
	Permanent stop command.	Check the stop command or control panel.
	Faulty selector.	Check the selector or control panel.
	Faulty remote control	Check the condition of the batteries.
	Electric lock not working	Check the positioning and proper operation of the lock.
The gate opens but doesn't close.	Photocells interrupted.	Check that the photocells are clean and operating correctly.

## 9 . Disposal



The packaging components (cardboard, plastic, etc.) should be disposed through the separate collection for recycling. Before proceeding however, check the local regulations regarding disposal.

The packaging materials should not be discarded in the environment or left within reach of children, as they are a potential source of danger.



To dispose of electrical and electronic equipment, batteries and storage cells correctly, users must take the product to special "recycling centres" provided by the municipal authorities for disposal according to the methods envisaged by current legislation.

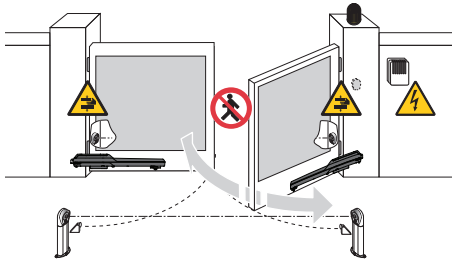


NB: for spare parts, see the spares price list.



## Operating instructions

### General safety precautions



 These precautions are an integral and essential part of the product and must be supplied to the user.

Read them carefully since they contain important information on safe installation, use and maintenance.

These instructions must be kept and forwarded to all possible future users of the system.

This product must only be used for the specific purpose for which it was designed.

Any other use is to be considered improper and therefore dangerous. The manufacturer cannot be held responsible for any damage caused by improper, incorrect or unreasonable use.

Avoid operating in the proximity of the hinges or moving mechanical parts. Do not enter within the operating range of the motorised door or gate while it is moving.

Do not obstruct the motion of the motorised door or gate, as this may cause a dangerous situation.

The motorised door or gate may be used by children over the age of 8 and by people with reduced physical, sensorial or mental abilities, or lack of experience or knowledge, as long as they are properly supervised or have been instructed in the safe use of the device and the relative hazards.

Children must be supervised to make sure they do not play with the device, nor play/remain in the sphere of action of the motorised door or gate.

Keep remote controls and/or any other command devices out of the reach of children, to avoid any accidental activation of the motorised door or gate. In the event of a product fault or malfunction, turn off the power supply switch. Do not attempt to repair or intervene directly, and contact only qualified personnel.

Failure to comply with the above may cause a dangerous situation.

Any repairs or technical interventions must be carried out by qualified

personnel.

Cleaning and maintenance work must not be carried out by children unless they are supervised.

To ensure that the system works efficiently and correctly, the manufacturer's indications must be complied with and only qualified personnel must perform routine maintenance on the motorised door or gate. In particular, regular checks are recommended in order to verify that the safety devices are operating correctly.

All installation, maintenance and repair work must be documented and made available to the user.

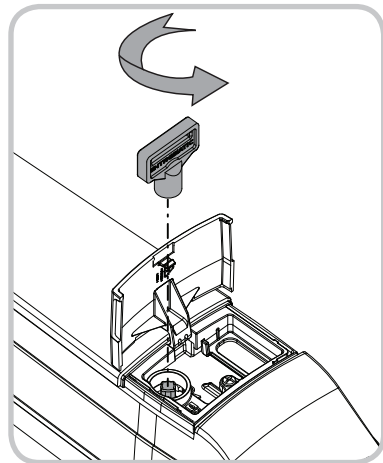
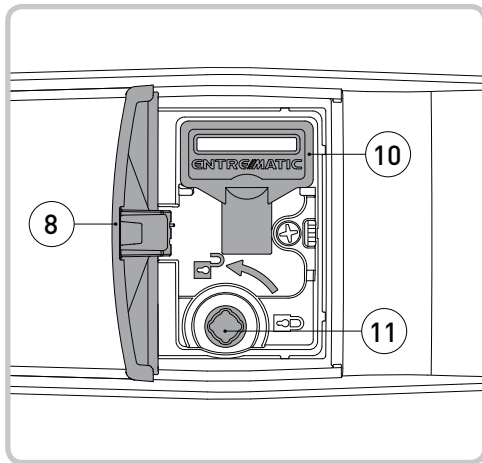
Only lock and release the door wings when the motor is switched off. Do not enter within the operating range of the wing.

## Manual release instructions

In the event of failure or lack of voltage, open the hatch (8), insert the key (10) in the pin (11) and rotate counter-clockwise, as indicated by the arrow.

If present, release any electric lock. Manually open the gate.

Turn the key clockwise to lock the wings.



**WARNING:** Only lock and release the door wings when the motor is switched off.



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