



INSTALLATION MANUAL


Our compliments for your excellent choice. The PS141-PS151 electro-mechanical gear motor has been produced for reliability and high quality.


This Manual will offer information you may need to install your gear motor assuring long-lasting performance and to safeguard your safety. **HOWEVER CAUTION IS UNQUESTIONABLY INDISPENSABLE AND NOTHING IS BETTER THAN PREVENTING ACCIDENTS.**


GR products have been made to conform with rules and laws in force at time of manufacture.


 This manual is designed exclusively for the specialized installation expert in the criteria of construction and equipment to assist in the protection against accidents in the installation and use of the gate; door and automation of such gates (adhere to the rules and laws in force).


 On completion the installer should issue to the end consumer an instruction manual according to EN 12635.


 Before proceeding with the installation the installer must provide an analysis of the identification and management of risks as per the standards EN 12453 and EN 12445.


 All wiring of the various external electrical components connected to the automation (e.g. Photocells, flashing lights, keypads etc) must be carried out according to EN 60204-1 and the amendments made of the point 5.2.2 of EN 12453.


 It is prohibited to do any repair or adjustment of the equipment if you have not taken all necessary precautions to avoid possible accidents (example: power supply disconnected, engine block). All mechanisms in motion must be equipped with appropriate protections.


 The mains power line must be protected for maximum current in locked rotor condition as per government electrical laws.


 Install the gear motor on gates that conform to EN 12604.


 Perform the measure of strength developed by the gear motor and adopt the measures as per EN 12445.


 Positioning photocells: These safety devices must be installed at a height not exceeding 70cm from the ground and at a distance from the floor movement of the door of no more than 20cm. Their proper functioning of the photocells must be verified at the end of installation according to Section 7.2.1 of EN12445.


 Keep the activation controls of automation out of reach of children. The controls should be installed at a minimum 1.5m height above the ground and outside the range of actions of moving parts such as the gate.


 All activation actions must be executed only at points from where the automation is fully visible.

 Operate the remote only in view of automation.

 Store carefully this manual in a suitable place known to all interested people.


 Any unauthorized and arbitrary modification made to this product, releases the company KEY AUTOMATION S.R.L., from any liability resulting from damage or injury to things, people or animals.

 The non-observance of regulations and of safety standards here listed releases the company KEY AUTOMATION S.R.L., from any liability resulting from damage or injury to things, people or animals.


 The automation must be coupled to a control board equipped with torque regulation that provides an anti crushing safety as described in EN 12453 - EN 12445

SAFETY RULES


During the installation and the use of the automation, pay attention to the following safety rules:


 Distance security!


 Mechanisms moving!

 Do not install automation in an environment saturated with explosive mixtures!


 Electric Shock!


 Use gloves!


 Use welding glasses!


 Maintain ear protection!

MAINTENANCE


 All repairs must be carried out by qualified people.


 Before each intervention remove power through the switch and lock in that position

 The equipment must be maintained so as to preserve the conditions that ensure safe and efficient operation

 Always use original spare parts

 Do not make interventions that modify the machine.

 The modified equipment requires new CE mark

 The settings of the operator must be performed by qualified personnel, in accordance with the rules of reference. During these operations provide the presence of two operators for safety.

DEMOLITION

You have to operate the elimination of the materials in conformity with the regulations in force. All materials must be divided by type (copper, aluminium, plastic, electrical parts, etc)

DISMANTLING

In order to move away the automation, follow these instructions:

- 1 - cut off the power supply and disconnect the electrical installation;
- 2 - dismantle the control console and all the other components of the installation.

If you have noticed that some components have been damaged, you have to replace them.

CONFORMITY DECLARATION:

It's in accordance with Machine Directive 2006/42/EC and following modify.

It's in accordance with the following directive CE:

Electromagnetic compatibility Directive 2014/30/EU and following modify.

Low tension Directive 2014/35/EU and following modify.

Have been applied the following harmonized norms:

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013

EN 61000-3-2:2014, EN 61000-3-3:2013

EN 61000-6-2:2005, EN 61000-6-3:2007

EN 60335-1:2012 + A1 + A11; EN 60335-2-103:2015

EN 55014-1:2006 + A1 + A2; EN 55014-2:2015

EN 62233:2008.

USE OF THE AUTOMATION

The gearmotor PS141-PS151 was designed and built for the opening of gates with max of 5 m leaf or weight max. 200kg. The KEY AUTOMATION S.R.L., assumes no responsibility for a purpose other than that provided by gearmotor PS141-PS151. Since automation can be put into motion in view by built on or remotely by remote control, it is essential to check frequently the perfect efficiency of all safety devices. It is advisable to check periodically (every six months) the regulation of electronic friction of which must be equipped the electronic control board.

PRELIMINARY CHECKS

- 1 - Read carefully the instructions enclosed in this manual.

- 2 - Make sure that the gate has a rather solid structure and that there is no friction points in its movement.

- 3 - Make sure that the leaf is suitably balanced, even after the installation of the gear motor.

- 4 - Check that the electrical installation is in accordance with the characteristic required by the gear motor.

TECHNICAL DATA

	PS141	PS151
Maximum length of the gate	4,0 m	5,0 m
Maximum weight of the gate	200Kg	200Kg
Stroke	40cm	60cm
Power	180 W	180 W
Power supply	220 V	220V
Absorption	0,9 A	0,9 A
Max. Thrust	1600 N	1600 N
Operating temperature	-25°C +60°C	-25°C +60°C
Opening time	22sec.	33sec.
Thermal protection	150°C	150°C
Use frequency	35%	35%
Lubrication	GREASE	

SCHEDULED MAINTENANCE

DESCRIPTION	FREQUENCY	ENTRUSTED	OPERATION
Photocells cleaning	Monthly	Operator	Clean with damp cloth
Control of gate hinges and supports, balancing of the gate	Annual	Operator	Check the status of welds and corrosion. Unhook the engine and check the balancing and the eventual points of friction.
Controlling the sensitivity of electronic friction (torque adjustment) of the control board.	Semiannual	Technician	Check the adjustment of the couple as described in EN 12453 - EN 12445
Monitoring current dispersion	Annual	Technician	Verify that the dispersion of current is less than 7.5 A
Control of signals	Semiannual	Operator	Verify that the safety warning signage is complete and intact

EMERGENCY MANOEUVRE

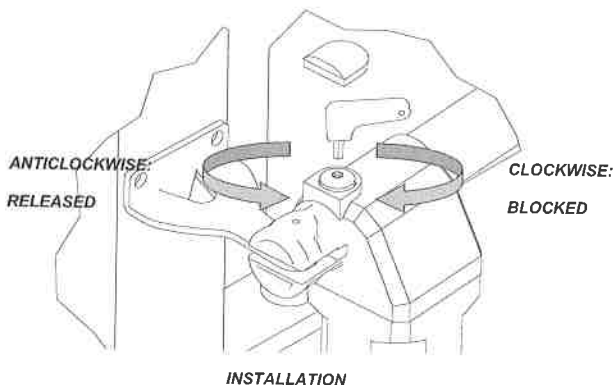
For the manual door locking and unlocking act with the supplied key on the screw C (See FIG 1-2).

- 1 - Remove the protection cap

- 2 - insert the key into the seat allocation as in Figure 1

- 3 - Turn the key in the sense of the arrow to the top of the gearmotor to unlock and in the opposite block.

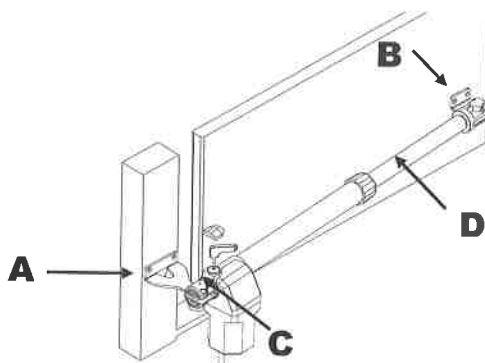
FIG 1



INSTALLATION

FIG 2

- A - Pillar bracket
- B - Gate bracket
- D - Piston rod
- C - Release

**INSTALLATION**

To operate a good installation of the gear motors PS141-PS151, follow these instructions:

- 1 - Open the box and take out gear motor. Make sure that it has not been damaged during the transport.
- 2 - Make sure that the leaf of the gate is perfectly horizontal.
- 3 - Place the gear motor inclined approximately 1° below the horizontal line (picture 3)

5 - Install the gear motor on to the support plate A and fix it with the bolt.

6 - With gate's leaf closed, turn and slide the screw of gear motor's D shaft, until the end of the stroke-

7 - Screw D shaft back on 1 complete turn of 360° . (picture 5)

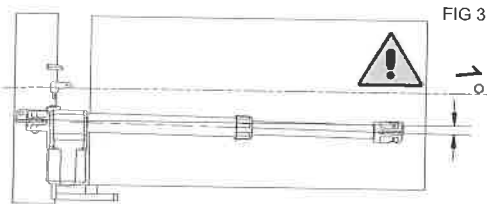


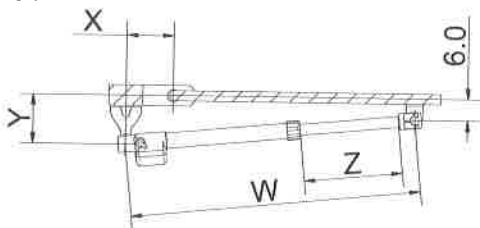
FIG 3



FIG 5

- 4 - Fix the support plate A on the pillar beside the leaf, taking in account the measures shown in Table 1. Do not forget inclination.

FIG 4



- 8 - Place B support plate in the hole of D shaft and position it against the gate leaf. Fix it to the gate leaf taking in account the inclination (point nr.3).

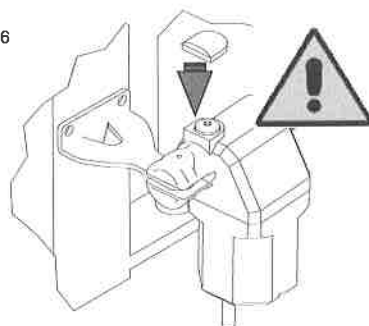
- 9 - Proceed in the same way with the other gate leaf.

- 10 - Connect the electrical wires according to the following table; place the mechanical limit stops and install any required safety devices.

YELLOW/GREEN	EARTH
GREY	COMMON
BROWN	OPEN
BLACK	CLOSE

11 – Place the cover on the unblocking screw (C) (picture 6)

FIG 6

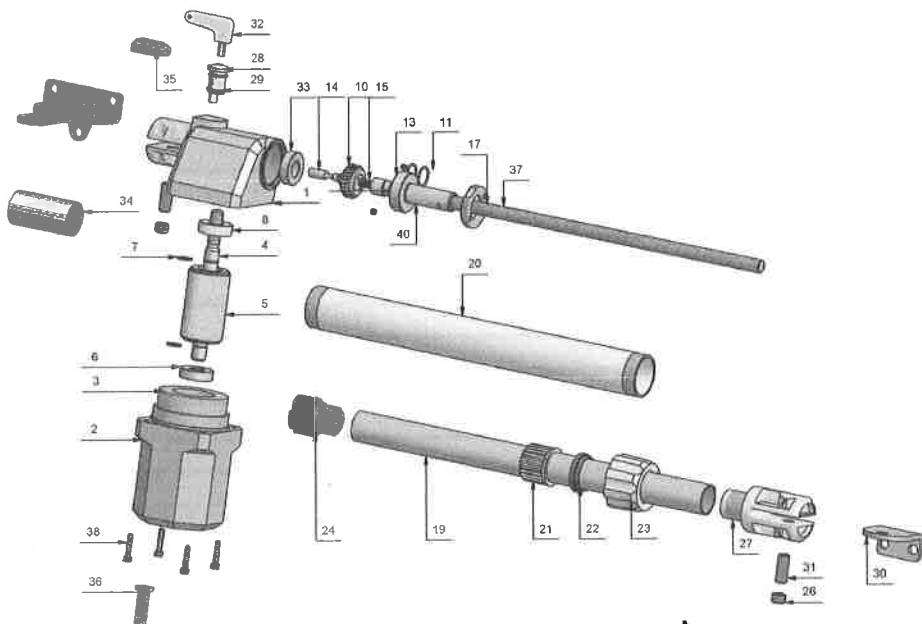


TAB 1

MOTOR	ROTATION 95 °				ROTATION 120 °			
	W	X	Y	Z	W	X	Y	Z
PS141	1122	145	145	478	1122	170	110	478
PS151	1532	280	280	678	1532	310	120	678

SPARE PARTS

PART	QTY	CODE	DESCRIPTION	PART	Q.TY	CODE	DESCRIPTION
1	1	100645	REDUCTION GEAR COVER LF. BLACK	20	1	100739	BLACK ALUMINIUM TUBE 600mm STROKE
1	1	100644	REDUCTION GEAR COVER RG. BLACK	20	1	100764	GREY ALUMINIUM TUBE 600mm STROKE
1	1	100759	REDUCTION GEAR COVER LF. GREY	21	1	100829	PISTON ROD GUIDE
1	1	100758	REDUCTION GEAR COVER RG. GREY	22	1	100625	SCRAPER RING
2	1	100647	MOTOR CASING RG. BLACK	23	1	100827	PISTON ROD LOCK NUT
2	1	100761	MOTOR CASING RG. GREY	24	1	100828	FEMALE SCREW
3	1	100840	STATOR 220V 4 POLES 45mm 1400rpm	25	1	100823	WALL BRACKET
4	1	100651	IRREVERSIBLE MOTOR SHAFT	26	2	100705	GRUB SCREW M14X10
5	1	100841	ROTOR 45mm	27	1	100646	ALUMINIUM PISTON ROD TERMINAL BLACK
6	1	100278	BEARING 6202 ZZ	27	1	100906	ALUMINIUM PISTON ROD TERMINAL GREY
7	2	100706	HELASTIC RING E15	28	1	100624	ALUMINIUM UNCLAMPING
8	1	100291	BEARING 6202 2RS	29	2	100657	O-RING
10	1	100650	IRREVERSIBLE TOOTH WHEEL	30	1	100825	GATE BRACKET
11	2	100789	HELASTIC RING E20	31	2	100654	PIN
12	1	100709	BEARING 6004 ZZ	32	1	100218	UNCLAMPING KEY
13	2	100658	TOWING BALL	33	1	100707	BEARING 6003 ZZ
14	1	100655	UNCLAMPING PIN	34	1	100184	CAPACITOR 8µF
15	1	100641	UNCLAMPING SPRING	35	1	100755	UNCLAMPING CAP
17	1	100661	ALUMINIUM LOCK NUT	36	1	100748	CABLE PRESS
17	1	100909	FIBRE LOCK NUT	37	1	100717 + 100998	ENDLESS SCREW 50 + release shaft
19	1	100713	STAINLESS STEEL TUBE 400mm STROKE	37	1	100740 + 100998	ENDLESS SCREW 70 + release shaft
19	1	100738	STAINLESS STEEL TUBE 600mm STROKE	38	4	100313	CAP SCREW M5X16
20	1	100715	BLACK ALUMINIUM TUBE 400mm STROKE	38	4	100313	CAP SCREW M5X16
20	1	100763	GREY ALUMINIUM TUBE 400mm STROKE				



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