

TURBO 250

Gear-motor for sliding gates



Management
System
ISO 9001:2008

www.tuv.com
ID 9105043769

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1 - SAFETY WARNINGS

ATTENTION !

ORIGINAL INSTRUCTIONS - important safety instructions. Follow the instructions since incorrect installation can lead to severe injury! Save these instructions.

Read the instructions carefully before proceeding with installation.

The design and manufacture of the devices making up the product and the information in this manual are compliant with current safety standards. However, incorrect installation or programming may cause serious injury to those working on or using the system. Compliance with the instructions provided here when installing the product is therefore extremely important.

If in any doubt regarding installation, do not proceed and contact the Key Automation Technical Service for clarifications.

Under European legislation, an automatic door or gate system must comply with the standards envisaged in the Directive 2006/42/EC (Machinery Directive) and in particular standards EN 12445; EN 12453; EN 12635 and EN 13241-1, which enable declaration of presumed conformity of the automation system.

Therefore, final connection of the automation system to the electrical mains, system testing, commissioning and routine maintenance must be performed by skilled, qualified personnel, in observance of the instructions in the "Testing and commissioning the automation system" section.

The aforesaid personnel are also responsible for the tests required to verify the solutions adopted according to the risks present, and for ensuring observance of all legal provisions, standards and regulations, with particular reference to all requirements of the EN 12445 standard which establishes the test methods for testing door and gate automation systems.

ATTENTION !

Before starting installation, perform the following checks and assessments:

ensure that every device used to set up the automation system is suited to the intended system overall. For this purpose, pay special attention to the data provided in the "Technical specifications" section. Do not proceed with installation if any one of these devices is not suitable for its intended purpose;

check that the devices purchased are sufficient to guarantee system safety and functionality;

perform a risk assessment, including a list of the essential safety requirements as envisaged in Annex I of the Machinery Directive, specifying the solutions adopted. The risk assessment is one of the documents included in the automation system's technical file. This must be compiled by a professional installer.

Considering the risk situations that may arise during installation phases and use of the product, the automation system must be installed in compliance with the following safety precautions:

never make modifications to any part of the automation system other than those specified in this manual. Operations of this type can only lead to malfunctions. The manufacturer declines all liability for damage caused by unauthorised modifications to products;

if the power cable is damaged, it must be replaced by the manufacturer or its after-sales service, or in all cases by a person with similar qualifications, to prevent all risks;

do not allow parts of the automation system to be immersed in water or other liquids. During installation ensure that no liquids are able to enter the various devices;

should this occur, disconnect the power supply immediately and contact a Key Automation Service Centre. Use of the automation system in these conditions may cause hazards;

never place automation system components near to sources of heat or expose them to naked lights. This may damage system components and cause malfunctions, fire or hazards;

ATTENTION !

The drive shall be disconnected from its power source during cleaning, maintenance and when replacing parts. If the disconnect device is not in a visible location, affix a notice stating: "MAINTENANCE IN PROGRESS":

connect all devices to an electric power line equipped with an earthing system;

the product cannot be considered to provide effective protection against intrusion. If effective protection is required, the automation system must be combined with other devices;

the product may not be used until the automation system "commissioning" procedure has been performed as specified in the "Automation system testing and commissioning" section;

the system power supply line must include a circuit breaker device with a contact gap allowing complete disconnection in the conditions specified by class III overvoltage;

use unions with IP55 or higher protection when connecting hoses, pipes or cable glands;

the electrical system upstream of the automation system must comply with the relevant regulations and be constructed to good workmanship standards;

this appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved;

before starting the automation system, ensure that there is no-one in the immediate vicinity;

before proceeding with any cleaning or maintenance work on the automation system, disconnect it from the electrical mains;

special care must be taken to avoid crushing between the part operated by the automation system and any fixed parts around it; children must be supervised to ensure that they do not play with the equipment.

that the drive cannot be used with a driven part incorporating a wicket door unless the drive can only be operated with the wicket door in the safe position;

ATTENTION !

Frequently examine the installation for imbalance where applicable and signs of wear or damage to cables, springs and mounting.

Do not use if repair or adjustment is necessary.

ATTENTION !

The automation system component packaging material must be disposed of in full observance of current local waste disposal legislation.

KEY AUTOMATION reserves the right to amend these instructions if necessary; they and/or any more recent versions are available at www.keyautomation.it

2 - INTRODUCING THE PRODUCT

2.1 - Product description

Irreversible electromechanical gearmotor for sliding gates weighing up to 2500 kg at 230 Vac.

2.2 - Set panel and and technical characteristics

| TECHNICAL DATA | | SC202MHD | SC252M |
|---------------------|------|-------------|-------------|
| Speed* | cm/s | 17 | 17 |
| Torque | Nm | 93 | 110 |
| Working cycle | % | 50/70* | 30 |
| Control unit | | CT102I | CT102I |
| Power | Vac | 230 | 230 |
| Motor consumption | A | 4 | 4 |
| Absorbed power | W | 920 | 920 |
| Capacitor | µF | 25 | 35 |
| Thermoprotection | °C | 150 | 150 |
| Protection degree | IP | 44 | 44 |
| Dimensions (L-P-H) | mm | 360-270-390 | 360-270-390 |
| Weight | kg | 25 | 24 |
| Working temperature | °C | -20+55 | -20+55 |
| Max gate weight | kg | 2000 | 2500 |

* Variable data according to gate weight

LIMIT USE: The limit use refer to the recommended weight (about 2/3 of maximum allowed weight). Use with maximum allowed weight could reduce the above performance specifications in technical data. The working cycle, operating times and number of consecutive cycles are merely approximate. These have been statistically determined in average conditions of use and are not certain for each single case. They refer to the period when the product ope-

rates without the need for special maintenance.- Each automatic entrance features variable factors such as: friction, balancing and environmental conditions that can substantially change both the duration and operating quality of the automatic entrance or part of its components (including automatic system). It is up to the installer to adopt adequate safety coefficients for each single installation.

3 - PRELIMINARY CHECKS

Before installing this product, verify and check the following steps:

- Check that the gate or door are suitable for automation
- The weight and size of the gate or door must be within the maximum permissible operating limits specified in Fig. 2
- Check the presence and strength of the security mechanical stops of the gate or door
- Check that the mounting area of the product is not subject to flooding
- Conditions of high acidity or salinity or proximity to heat sources could cause malfunction of the product
- Extreme weather conditions (for example the presence of snow, ice, high temperature range, high temperatures) may increase the friction and therefore the force required for the handling and initial

starting point may be higher than under normal conditions.

- Check that the manual operation of gate or door is smooth and friction-free and there is no risk of derailment of the same
- Check that the gate or door are in equilibrium and stationary if left in any position
- Check that the power line to supply the product is equipped with proper grounding safety and protected by a magnetothermal and differential security device
- Provide the power system with a disconnecting device with a gap of contacts enabling full disconnection under the conditions dictated by the overvoltage category III.
- Ensure that all materials used for the installation comply with current regulations

4 - INSTALLING THE PRODUCT

4.1 - Installing

⚠ ATTENTION !

The installer must verify that the working temperature range stated on the automation device is suitable for the location where it is installed.

⚠ ATTENTION !

The automation system must be equipped with a pressure-sensitive edge protecting all possible crushing points (hands, feet, etc.) in accordance with the requirements of the EN 13241-1 standard.

⚠ ATTENTION !

The gate has to be equipped with stop locks at the opening and closing, which prevent the gate derailment.

Before starting installation, you should carry out the following checks, as well as making sure the structure is compliant with current standards.

Also check that the gearmotor's installation zone is compatible with its overall dimensions (Fig.1). Create a solid concrete footing and fix the base plate to the ground immersing it into the concrete using the bracket clamps and fixing screws (Fig.4). If the base already exists use robust expanding wedges;

⚠ ATTENTION !

The exact dimensions of the rack must be known to allow precise calculation of the counterplate position (Fig. 6).

Provide one or more pipelines for the laying of electrical cables.

Fig.2 shows a typical installation:

- Post for photocells (1)
- Automation electromechanical (2)
- Photocell detectors (3)
- Flashing light (4)
- Key switch (5)
- Radio transmitter (6)
- Pressure-sensitive edge (7)

4.2 - Manual running

Insert the key in position 1 lock and rotate 90° counter-clockwise (fig.3).

Insert the unlock key in position 2 and rotate clockwise until complete unlock of the pinion (fig.3).

4.3 - Fixing

Open the packaging and check the condition of all the parts of the automation.

Remove the lid unscrewing the screws see (fig.5.1).

Place the gearmotor on the foundation plate matching the slots with the protruding screws (B1).

Insert the 4 washers + locknuts to fix the gear (fig.5.2).

If the allowed adjustment of the ratchet is not sufficient it is possible to compensate the height of the reduction gear working on the 4

more external screws B2 (fig.5.2).

Once the adjustment is finished firmly fix the 4 locknuts, making sure that during the entire run of the gate, the reduction gear is firmly to the ground.

The screws should be tightened again after the motor has been operated a few times.

4.4 - Rack assembling

Depending on the type of pinion used, the rack must be mounted at a height, relative to the foundation plate, indicated by the dimension B (Fig. 6).

For the correct installation of the ratchet unlock the reduction gear as shown in (fig.3) and bring the gate to complete aperture.

Lay one element of the ratchet on the pinion and fix the latter with screws and tingles to the gate.

Manually move the gate bringing the pinion in correspondance with the last tingle.

Definitively fix the element of the ratchet.

For the correct positioning of the other elements and to ensure they are straight it is necessary to use a ratchet element using it as reference and support (Fig. 6.2).

Moreover it is necessary to ensure some air between the ratchet and the pinion of about 2 mm (indicative measure), so that the weight of the gate does not bear upon the pinion of the reduction gear (Fig. 6.1).

4.5 - Limit switch fixing

The gate must feature check stops for aperture and closure that prevent the gate from derailing.

The position of the limit device must ensure that the limit devices do not collide with the pinion.

Manually open the gate leaving, based on the weight of the gate, a

space between 30 a 50 mm. between the gate and the mechanical stop.

Fix the limit device using the pins (fig.7.2) leaving a space between the magnetic limit device and the reduction gear of max 15 mm min (fig.7.1) repeat the operation with the gate closed.

4.6 - Limit switch setting

⚠ ATTENTION !

The opening and closing limit switches must intervene at least X cm before the mechanical end stop (fig. 8)

Depending on the model, set on the control panel CT 102i, the pro-

gramming values $L5i$ and $EL.F.$ as indicated in the table

| MODEL | $L5i$ | $EL.F.$ | X |
|----------|-------|---------|-------|
| SC202MHD | 0 | 0 | 5 cm |
| SC252M * | 0 | 15 | 10 cm |

* without electro-brake

5 - TESTING AND COMMISSIONING THE AUTOMATION SYSTEM

The system must be tested by a qualified technician, who must perform the tests required by the relevant standards in relation to the risks present, to check that the installation complies with

the relevant regulatory requirements, especially the EN12445 standard which specifies the test methods for gate and door automation systems.

5.1 - Testing

All system components must be tested following the procedures described in their respective operator's manuals;

ensure that the recommendations in Chapter 1 - Safety Warnings - have been complied with;

check that the gate or door is able to move freely once the automation system has been released and is well balanced, meaning that it will remain stationary when released in any position;

check that all connected devices (photocells, sensitive edges, emergency buttons, etc.) are operating correctly by performing gate or door opening, closing and stop tests using the connected control devices (transmitters, buttons or switches);

perform the impact measurements as required by the EN12445 standard, adjusting the control unit's speed, motor force and deceleration functions if the measurements do not give the required results, until the correct setting is obtained.

5.2 - Commissioning

Once all (and not just some) of the system devices have passed the testing procedure, the system can be commissioned;

the system's technical dossier must be produced and kept for 10 years. It must contain the electrical wiring diagram, a drawing or photograph of the system, the analysis of the risks and the solutions adopted to deal with them, the manufacturer's declaration of conformity for all connected devices, the operator's manual for every device and the system maintenance plan;

fix a dataplate with the details of the automation, the name of the person who commissioned it, the serial number and year of construction and the CE marking on the gate or door;

also fit a sign specifying the procedure for releasing the system by hand;

draw up the declaration of conformity, the instructions and precautions for use for the end user and the system maintenance plan and consign them to the end user;

ensure that the user has fully understood how to operate the system in automatic, manual and emergency modes;

the end user must also be informed in writing about any risks and hazards still present;

WARNING - after detecting an obstacle, the gate or door stops during its opening travel and automatic closure is disabled; to restart operation, the user must press the control button or use the transmitter.

6 - INSTRUCTIONS AND WARNINGS FOR THE END USER

Key Automation S.r.l. produces systems for the automation of gates, garage doors, automatic doors, roller blinds and car-park and road barriers. However, Key Automation is not the manufacturer of your complete automation system, which is the outcome of the analysis, assessment, choice of materials and installation work of your chosen installer. Every automation system is unique, and only your installer has the experience and skill required to produce a safe, reliable, durable system tailored to your needs, and above all that complies with the relevant regulatory standards. Although your automation system complies with the regulation safety level, this does not rule out the presence of "residual risk", meaning the possibility that hazards may occur, usually due to reckless or even incorrect use. We would therefore like to give you some advice for the correct use of the system:

- before using the automation system for the first time, have the installer explain the potential causes of residual risks to you;
- keep the manual for future reference, and pass it on to any new owner of the automation system;
- reckless use and misuse of the automation system may make it dangerous: do not operate the automation system with people, animal or objects within its range of action;
- a properly designed automation system has a high level of safety, since its sensor systems prevent it from moving with people or obstacles present so that its operation is always predictable and safe. However, as a precaution children should not be allowed to play close to the automation system, and to prevent involuntary activation, remote controls must not be left within their reach;
- as soon as any system malfunction is noticed, disconnect the electricity supply and perform the manual release procedure. Never attempt repairs on your own; call in your installation engineer. In the meantime the door or gate can be operated without automation once the geared motor has been released using the release key supplied with the system. In the event of safety devices out of service arrange for repairs to the automation immediately;
- in the event of malfunctions or power failures: while waiting for the engineer to come (or for the power to be restored if your system is not equipped with buffer batteries), the door or gate can be used just like any non-automated installation. To do this, the manual release procedure must be carried out;
- manual release and operation: first bear in mind that the release procedure can only be carried out with the door or gate stationary.

- Maintenance: Like any machine, your automation system needs regular periodic maintenance to ensure its long life and total safety. Arrange a periodic maintenance schedule with your installation engineer. Key Automation recommends that maintenance checks should be carried out every six months for normal domestic use, but this interval may vary depending on the level of use. Any inspection, maintenance or repair work must only be carried out by qualified staff.

- Never modify the automation system or its programming and setup parameters: this is the responsibility of your installation engineer.

- Testing, routine maintenance and any repairs must be recorded by the person who performs them and the documents must be conserved by the system's owner.

The only procedures you are capable of, and which you are recommended to perform, are cleaning of the photocell glass and removal of any leaves or stones that may obstruct the automation system. To prevent anyone from activating the gate or door, release the automation system before starting. Clean only with a cloth dipped in a little water.

At the end of its useful life, the automation system must be dismantled by qualified personnel, and the materials must be recycled or disposed of in compliance with the legislation locally in force.

If after some time your remote control seems to have become less effective, or stops operating completely, the battery may be flat (depending on the level of use, this may take from several months up to more than a year). You will realise this because the transmission confirmation light does not come on, or only lights up for a very short time.

Batteries contain pollutants: do not dispose of them with normal waste but follow the methods specified by the local regulations.

Thank you for choosing Key Automation S.r.l.; please visit our Internet site www.keyautomation.it for further information.

7 - IMAGES

Fig. 1
EN - Dimensions

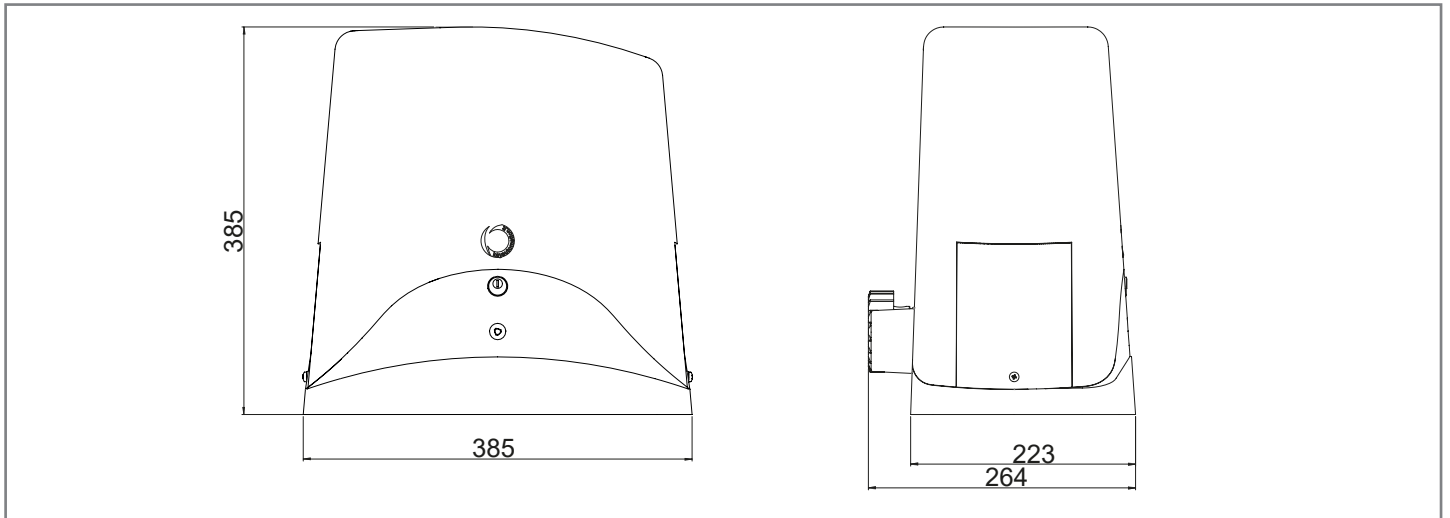


Fig. 2
EN - Typical Installation

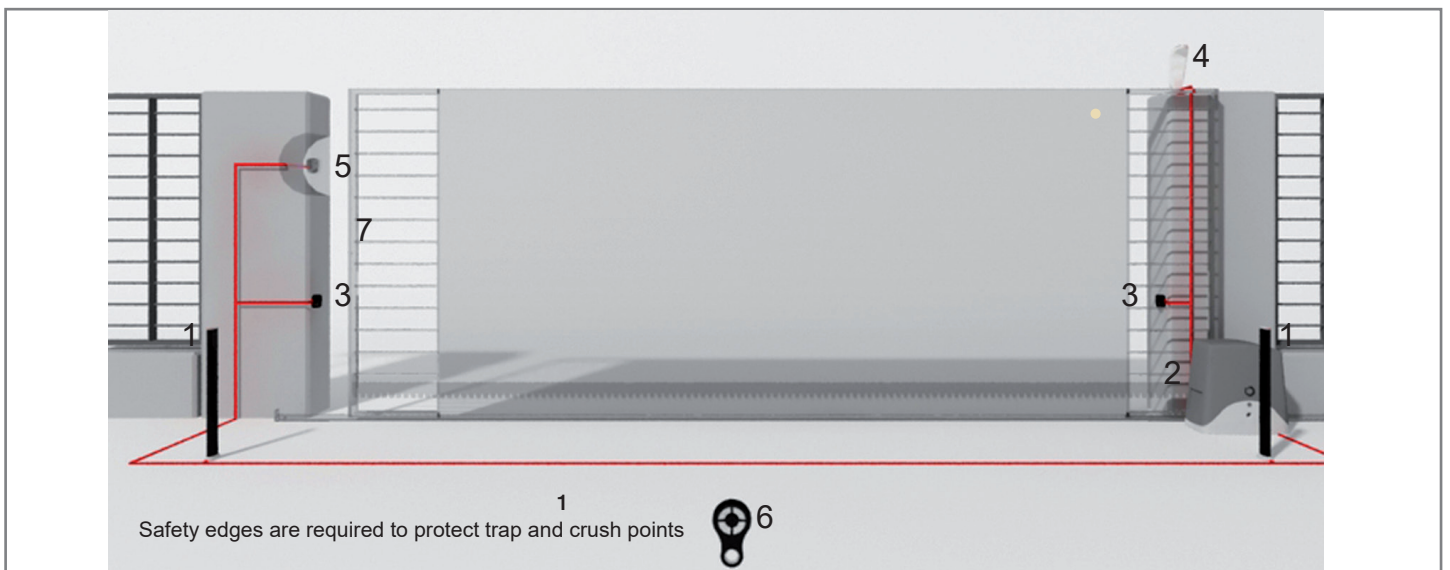


Fig. 3
EN - Gearmotor release

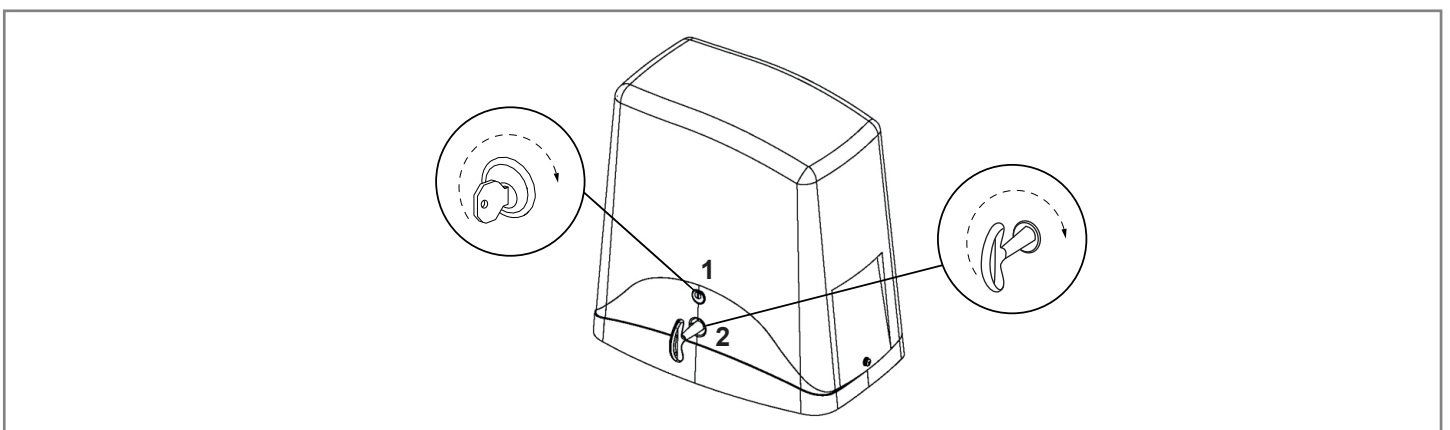


Fig. 4
EN - Installing

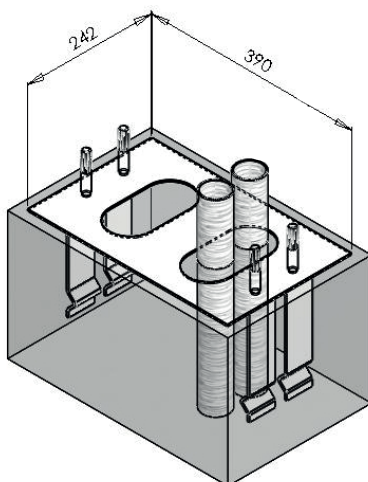
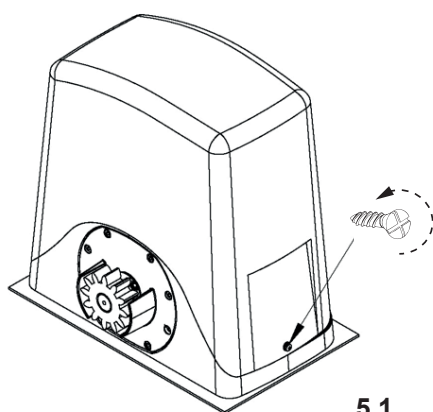
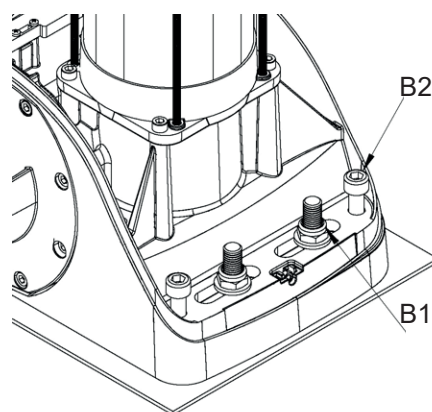


Fig. 5
EN - Fixing

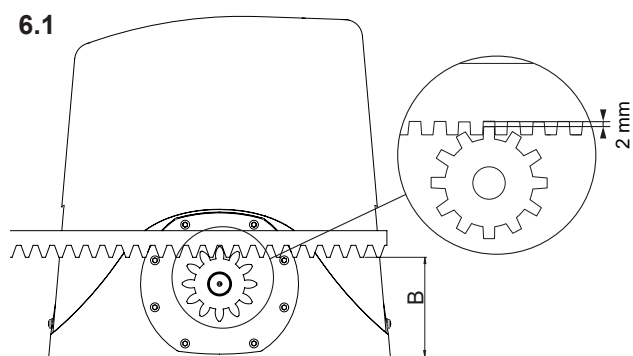


5.1

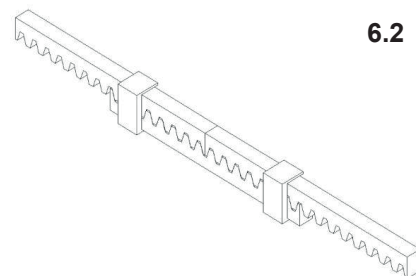
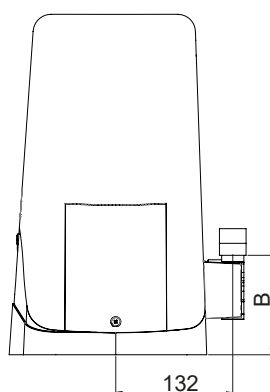


5.2

Fig. 6
EN - Rack assembling



6.1



6.2

| MODELLO | B |
|--------------------|----------|
| CON CREMAGLIERA M4 | 114 mm |
| CON CREMAGLIERA M6 | 112 mm * |

*
IT con accessorio 480RM6Z12
EN with accessory 480RM6Z12

FR avec accessoire 480RM6Z12
ES con accesorio 480RM6Z12

DE mit Zubehör 480RM6Z12
PT com acessório 480RM6Z12

PL z akcesoriów 480RM6Z12

Fig. 7
EN - Limit switch fixing

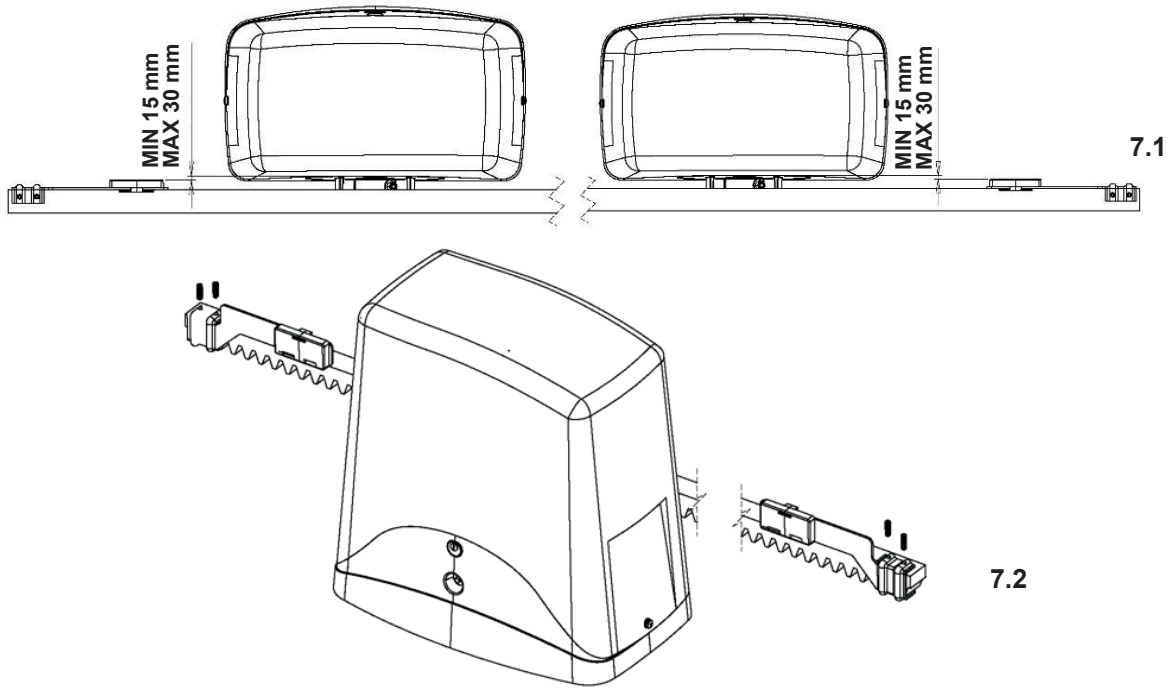
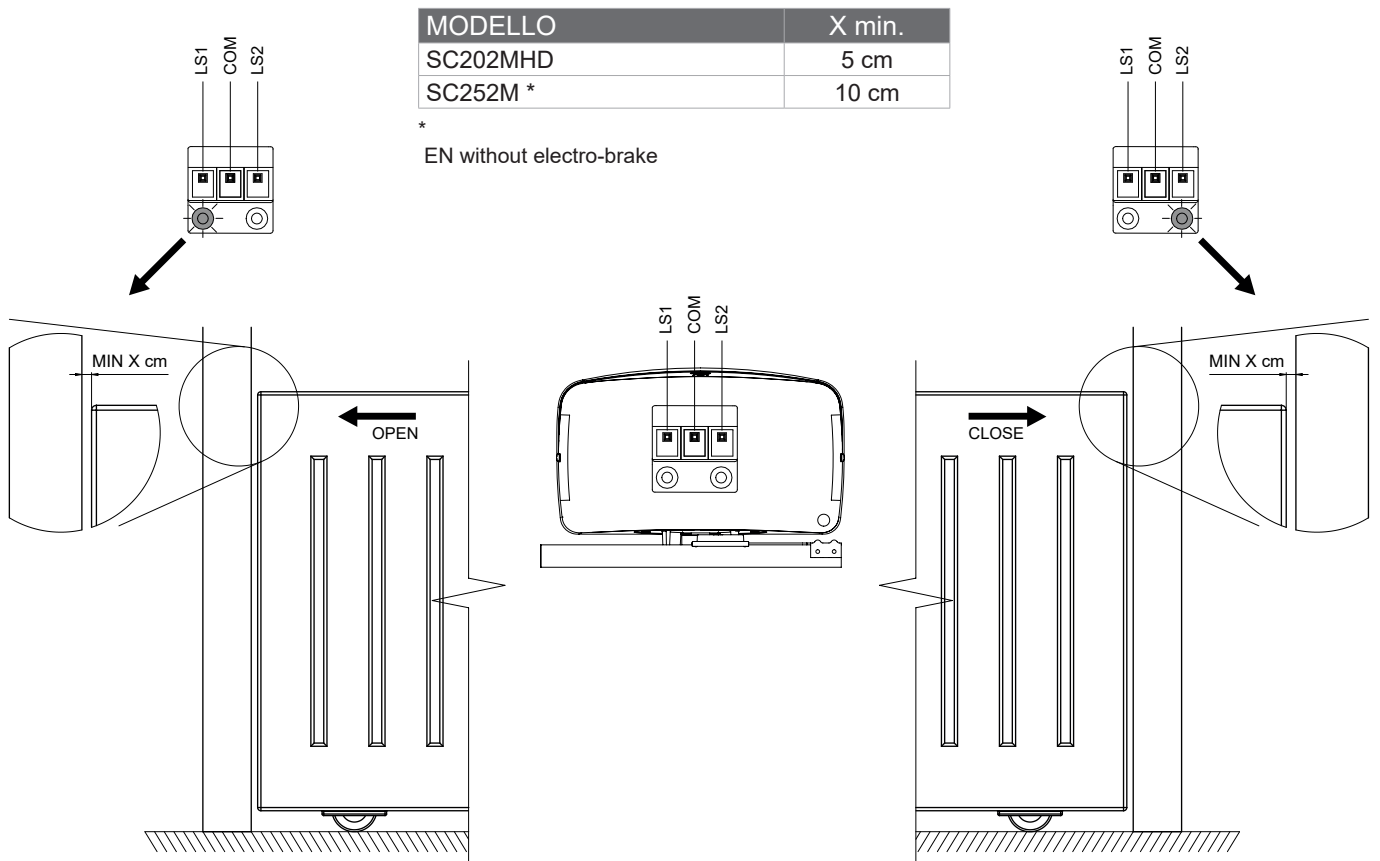


Fig. 8
EN - Limit switch Setting



DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

The undersigned Nicola Michelin, General Manager of the company

Key Automation srl, Via Alessandro Volta, 30 - 30020 Noventa di Piave (VE) – ITALIA

declares that the product type:

TURBO 200

Electromechanical irreversible gear motor for sliding gates up to 2500kg

Model:

SC252, SC256, SC202MHD, SC206MHD

Is in conformity with the following community (EC) regulations:

Direttiva macchine / *Machinery Directive 2006/42/EC*
Direttiva compatibilità elettromagnetica / *EMC Directive 2014/30/EU*
Direttiva bassa tensione / *Low voltage Directive 2014/35/EU*
Direttiva radiofrequenza / *RED Directive 2014/53/EU*
Direttiva RoHS / *RoHS Directive 2011/65/EU*

In accordance with the following harmonized standards regulations:

ETSI EN 301489-3:2013, ETSI EN 310489-1:2011
EN 55014-1:2006 + A1:2009 + A2:2011, EN 55014-2:2015
EN 62233:2008
EN 60335-1:2012 + A1 + A11, EN 60335-2-103:2015
EN 61000-3-2:2014, EN 61000-3-3:2013
EN 61000-6-2:2016, EN 61000-6-4:2006 + A1:2010
EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013

Declares that the technical documentation is compiled in accordance with the directive 2006/42/EC Annex VII part B and will be transmitted in response to a reasoned request by the national authorities.

He also declares that is not allowed to use the above mentioned product until the machine, in which this product is incorporated, has been identified and declared in conformity with the regulation 2006/42/EC.

Noventa di Piave (VE), 21/08/17

Amministratore Delegato
General Manager
Nicola Michelin



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Organizzazione con sistema di gestione certificato
ISO 9001:2008

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