LINEAR 500230-50024-400230-40024

IT **Istruzioni ed avvertenze per l'installazione e l'uso**

EN **Installation and use instructions and warnings**

Made in Italy

KINGGATES

CE Declaration of Conformity and declaration of incorporation of partly completed machinery

Declaration in accordance with the following Directives: 12004/108/EC (EMC); 2006/42/EC (MD) annex II, part B

Note – The content of this declaration corresponds to that specified in the official document deposited at the King gates srl headquarters and, in particular, to the latest revised edition available prior to the publishing of this manual. The text herein has been re-edited for editorial purposes. A copy of the original declaration can be requested from King gates (PN) Italy.

Declaration number: K109/LINEAR **Revision:** 0 **Language:** EN
Manufacturer's Name: KING GATES S.R.L.
Address: Via A. Malignani 42, 33077 Sacile (PN) Italy
Type of product: Telectromechanical gearmotor for swing gates
Model / Type: LINEAR500230, LINEAR50024, LINEAR400230, LINEAR400244

Accessories: -

The undersigned Giorgio Zanutto, as Managing Director, hereby declares under his own responsibility that the products identified above comply with the provisions of the following directives:

- DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC, in accordance with following harmonised standards: EN 61000-6-2:2005, EN 61000-6-4:2007

In addition, the product conforms to the following directive in accordance with the provisions applicable to partly completed machinery:

- Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast), in accordance with the following harmonised standards:
- I hereby declare that the pertinent technical documentation has been drafted in accordance with Annex VII B of Directive 2006/42/EC and that the following essential requirements have been satisfied: 1.1.1- 1.1.2- 1.1.3- 1.2.1-1.2.6- 1.5.1-1.5.2- 1.5.5- 1.5.6- 1.5.7- 1.5.8- 1.5.10- 1.5.11
- The manufacturer agrees to submit pertinent information on the partly completed machinery to the national authorities, in response to a motivated request, without affecting its intellectual property rights.
- If the partly completed machinery is operated in a European country with an official language other than the language used in this declaration, the importer must include a translation with this declaration.
- The partly completed machinery must not be operated until the final machine in which it is to be incorporated is declared to conform to the provisions of Directive 2006/42/EC, if applicable.

The product also complies with the following standards: EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006 + A2:2006 + A13:2008+ A14:2010 + A15:2011; EN 60335-2-103:2003 +A1:2009

The parts of the product which are subject to the following standards comply with them:
EN 13241-1:2003, EN 12445:2002, EN 12453:2002, EN 12978:2003

Sacile, 09 05 2014

Giorgio Zanutto
(Managing Director)

Dichiarazione CE di conformità e dichiarazione di incorporazione di "quasi macchina"

Dichiarazione in accordo alle Direttive: 12004/108/CE (EMC); 2006/42/CE (MD) allegato II, parte B

Nota - Il contenuto di questa dichiarazione corrisponde a quanto dichiarato nel documento ufficiale depositato presso la sede di King gates srl., e in particolare, alla sua ultima revisione disponibile prima della stampa di questo manuale. Il testo qui presente è stato riadattato per motivi editoriali. Copia della dichiarazione originale può essere richiesta a King gates (PN) I.

Numero dichiarazione: K109/LINEAR **Revisione:** 0 **Lingua:** IT
Nome produttore: KING GATES S.R.L.
Indirizzo: Via A. Malignani 42, 33077 Sacile (PN) Italy
Tipo di prodotto: Motoriduttore elettromeccanico per cancelli a battente
Modello / Tipo: LINEAR500230, LINEAR50024, LINEAR400230, LINEAR40024

Il sottoscritto Giorgio Zanutto in qualità di Amministratore Delegato, dichiara sotto la propria responsabilità che il prodotto sopra indicato risulta conforme alle disposizioni imposte dalle seguenti direttive:

- DIRETTIVA 2004/108/CE DEL PARLAMENTO EUROPEO E DEL CONSIGLIO del 15 dicembre 2004 concernente il ravvicinamento delle legislazioni degli Stati membri relative alla compatibilità elettromagnetica e che abroga la direttiva 89/336/CEE, secondo le seguenti norme armonizzate: EN 61000-6-2:2005, EN 61000-6-3:2007

Inoltre il prodotto risulta essere conforme alla seguente direttiva secondo i requisiti previsti per le "quasi macchine":

- Direttiva 2006/42/CE DEL PARLAMENTO EUROPEO E DEL CONSIGLIO del 17 maggio 2006 relativa alle macchine e che modifica la direttiva 95/16/CE (rifusione), secondo le seguenti norme armonizzate:
- Si dichiara che la documentazione tecnica pertinente è stata compilata in conformità all'allegato VII B della direttiva 2006/42/CE e che sono stati rispettati i seguenti requisiti essenziali: 1.1.1- 1.1.2- 1.1.3- 1.2.1-1.2.6- 1.5.1-1.5.2- 1.5.5- 1.5.6- 1.5.7- 1.5.8- 1.5.10- 1.5.11
- Il produttore si impegna a trasmettere alle autorità nazionali, in risposta ad una motivata richiesta, le informazioni pertinenti sulla "quasi macchina", mantenendo impregiudicati i propri diritti di proprietà intellettuale.
- Qualora la "quasi macchina" sia messa in servizio in un paese europeo con lingua ufficiale diversa da quella usata nella presente dichiarazione, l'importatore ha l'obbligo di associare alla presente dichiarazione la relativa traduzione.
- Si avverte che la "quasi macchina" non dovrà essere messa in servizio finché la macchina finale in cui sarà incorporata non sarà a sua volta dichiarata conforme, se del caso, alle disposizioni della direttiva 2006/42/CE.

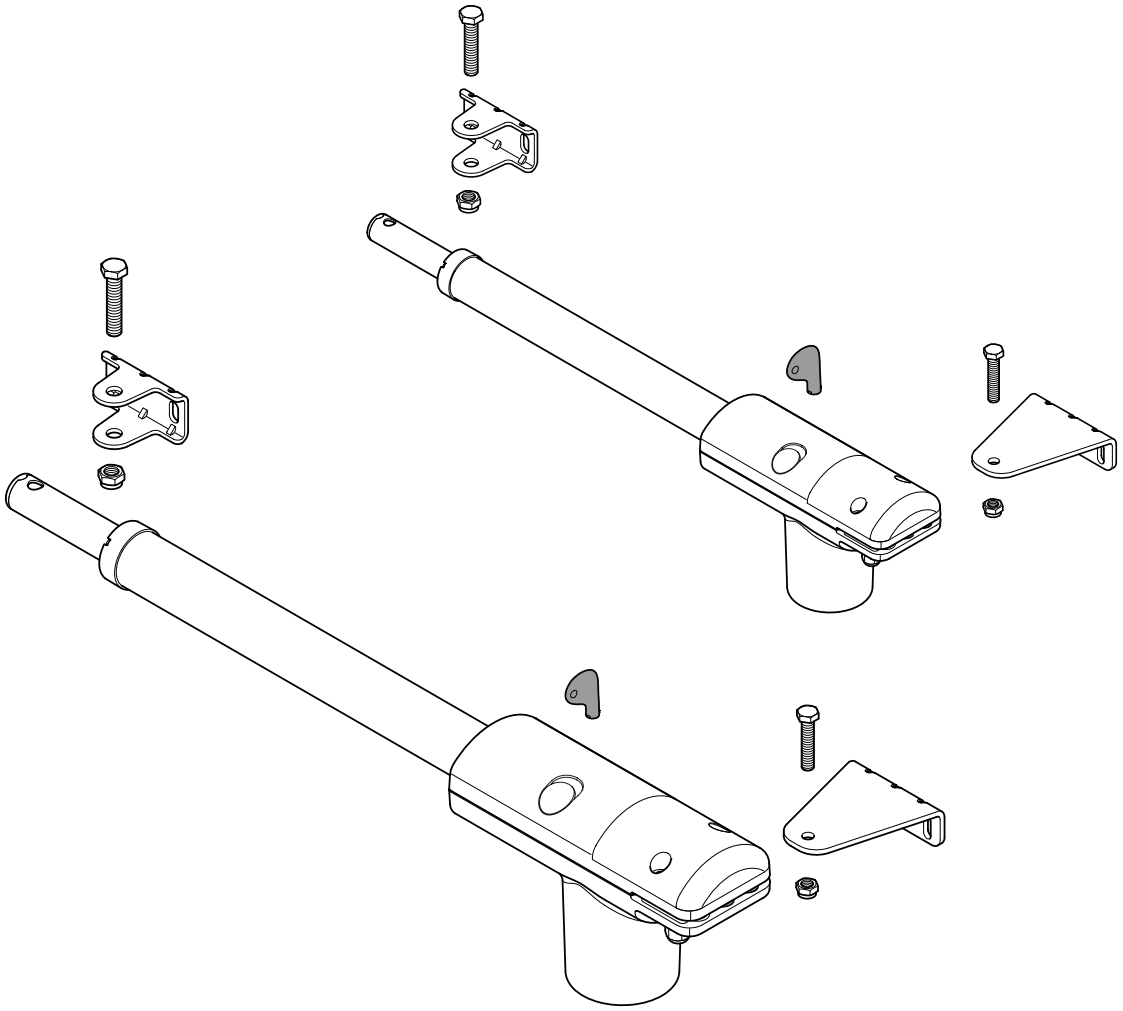
Inoltre il prodotto risulta conforme alle seguenti norme: EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006 + A2:2006 + A13:2008+ A14:2010 + A15:2011; EN 60335-2-103:2003 +A1:2009

Il prodotto risulta conforme, limitatamente alle parti applicabili, alle seguenti norme:
EN 13241-1:2003, EN 12445:2002, EN 12453:2002, EN 12978:2003

Sacile, 09 05 2014

Giorgio Zanutto
(Amministratore Delegato)

1



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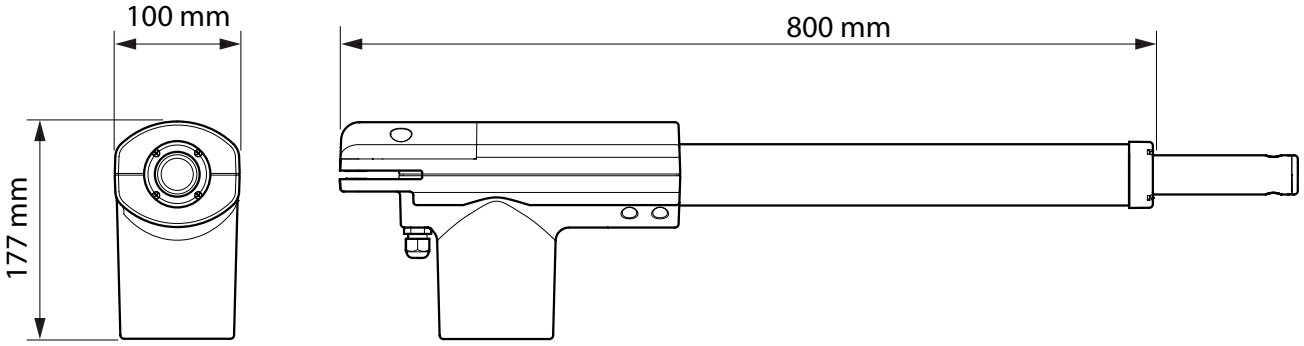
LINEAR500230 / LINEAR50024



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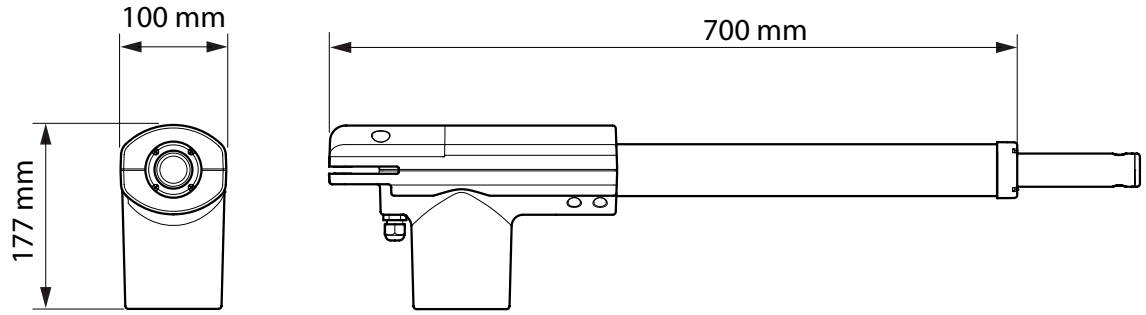

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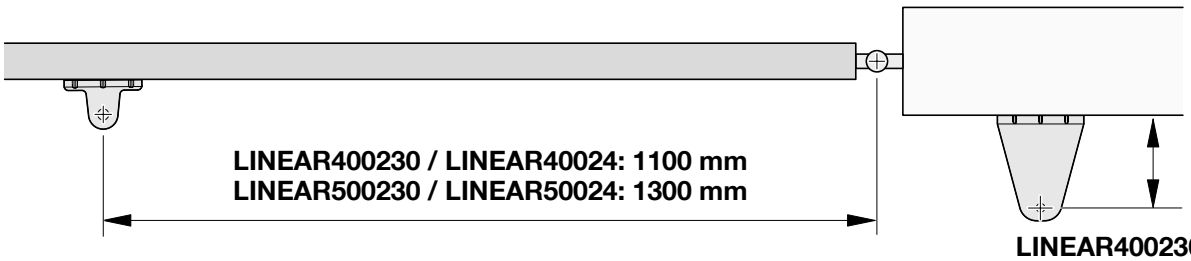
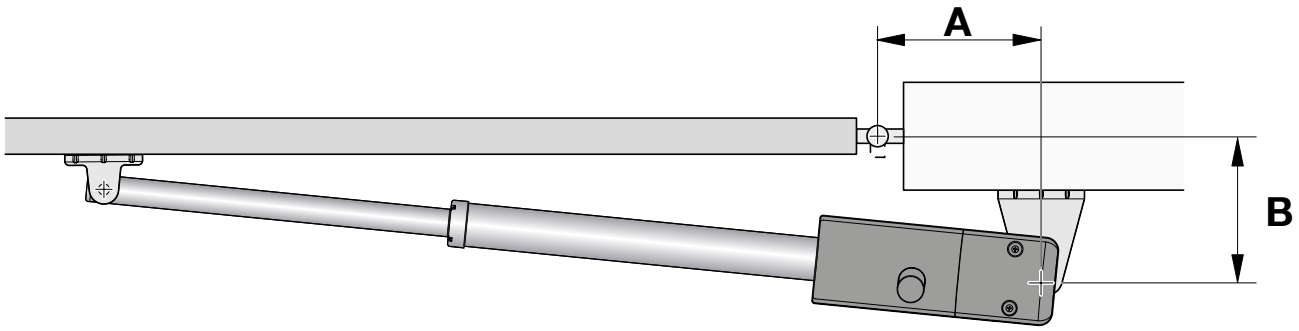
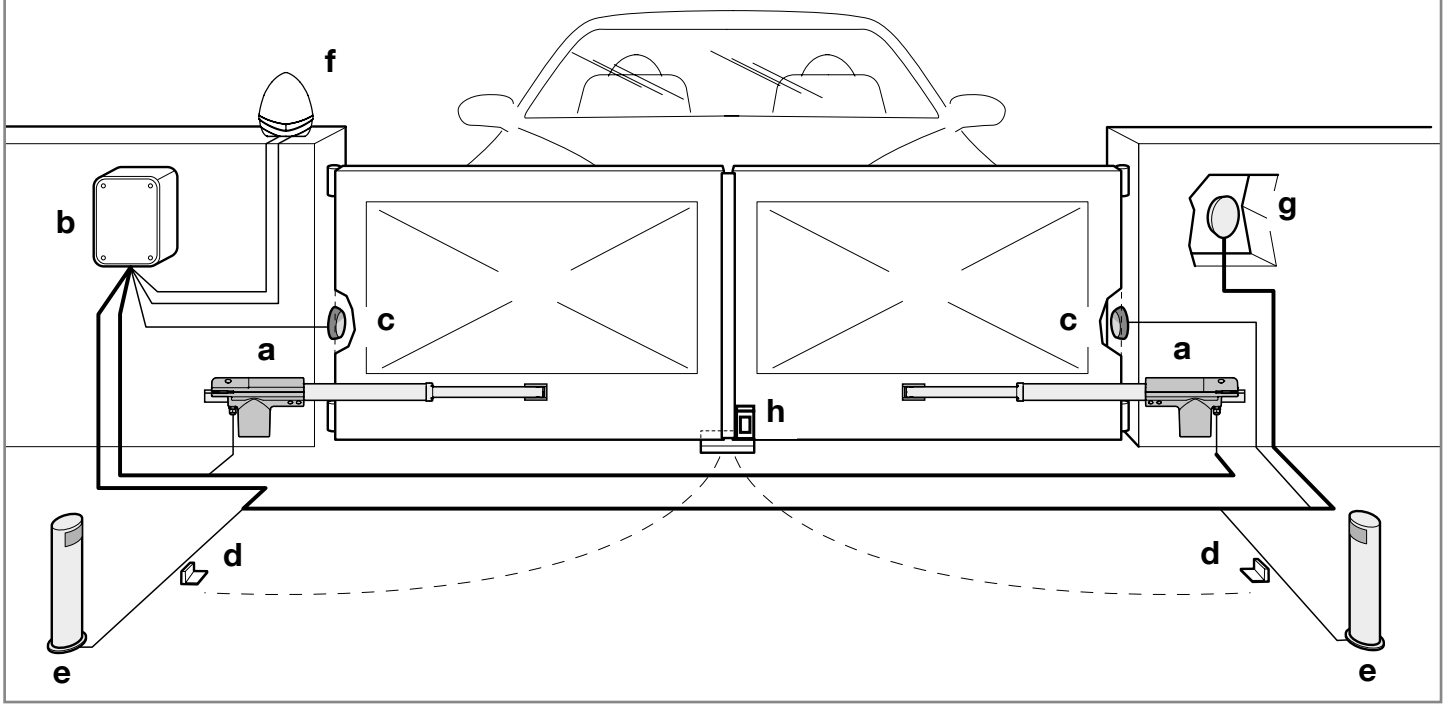


LINEAR400230
LINEAR40024: 107 mm
LINEAR500230
LINEAR50024: 142 mm



LINEAR	α	A	B
LINEAR400230 LINEAR40024	90°	95	270
	90°	195	200
	110°	150	150
LINEAR500230 LINEAR50024	90°	200	250
	110°	170	170

4



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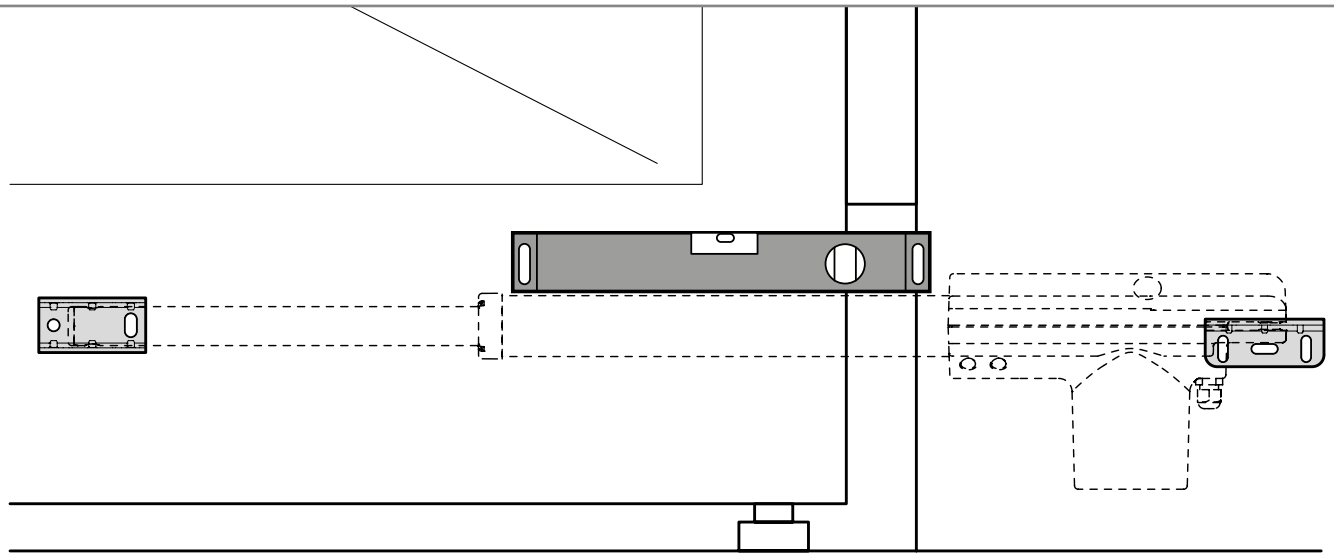

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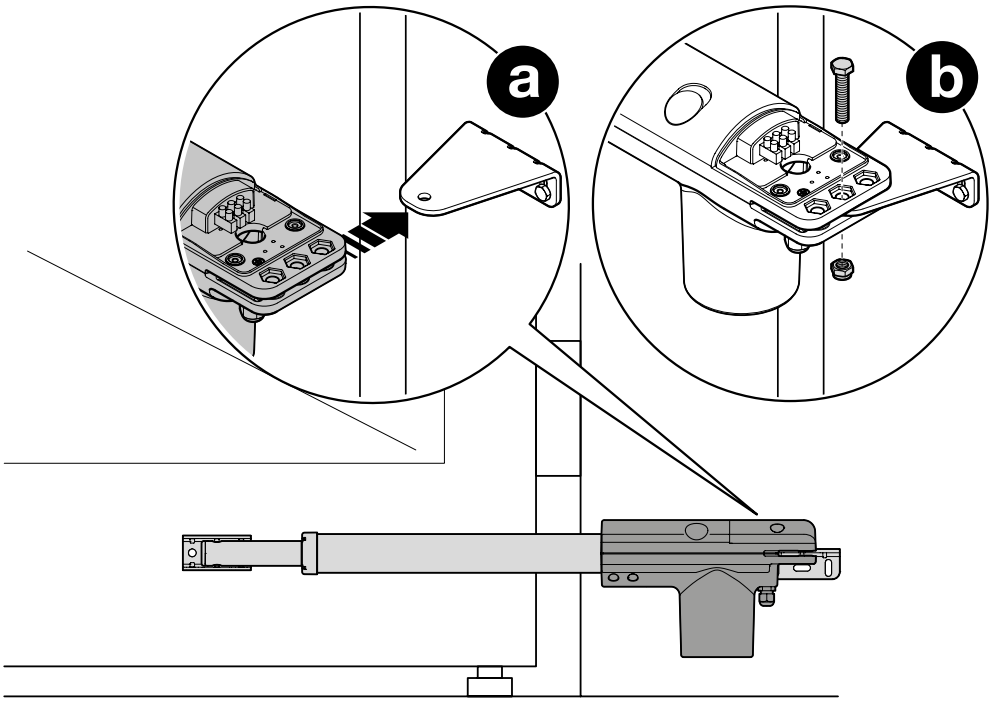

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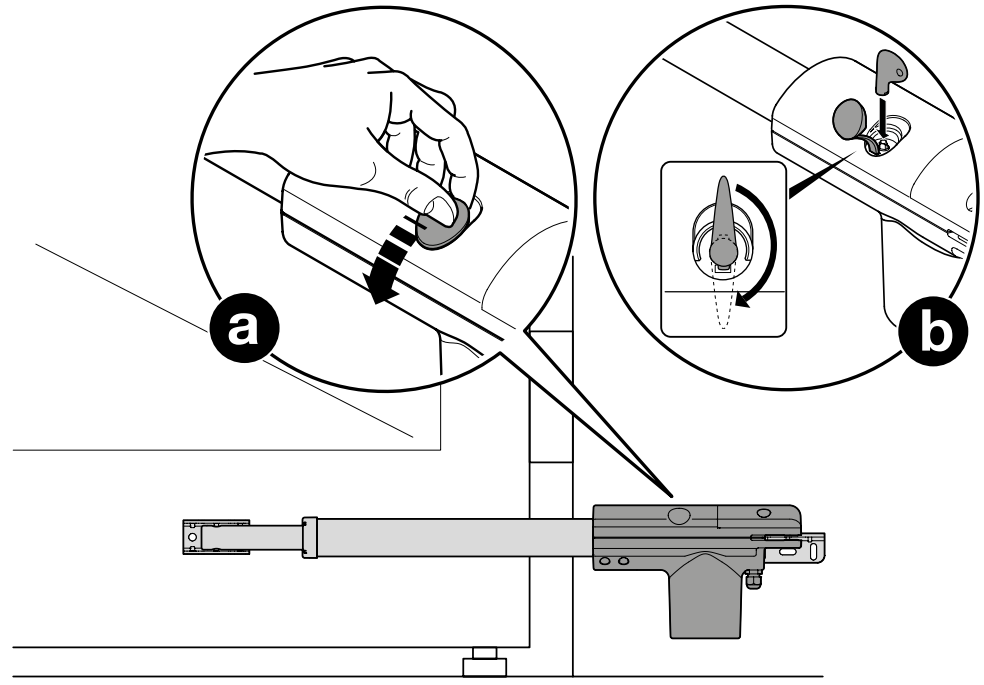

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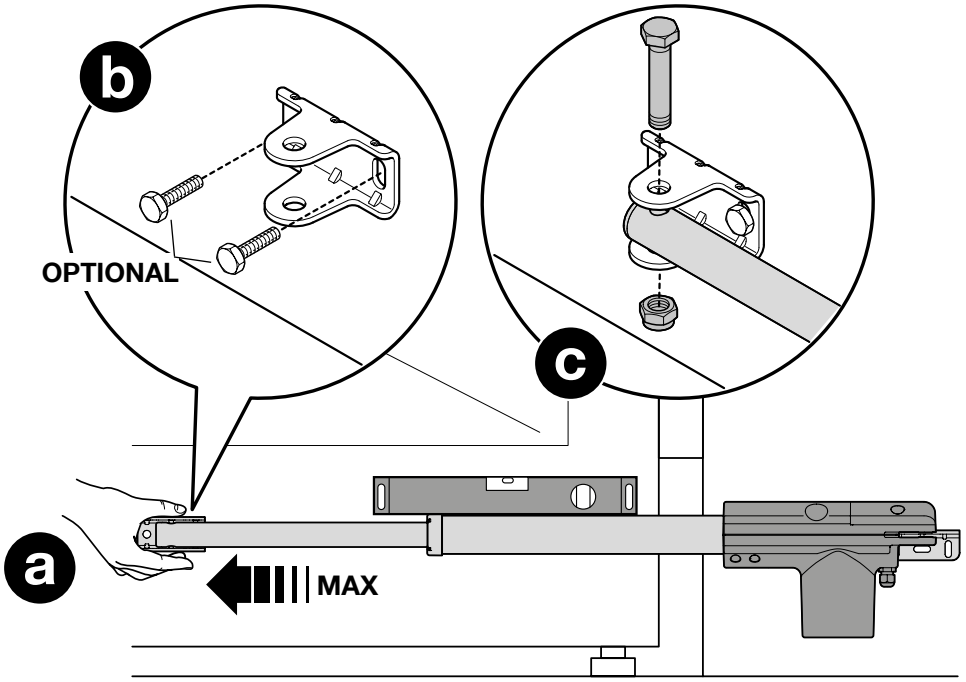

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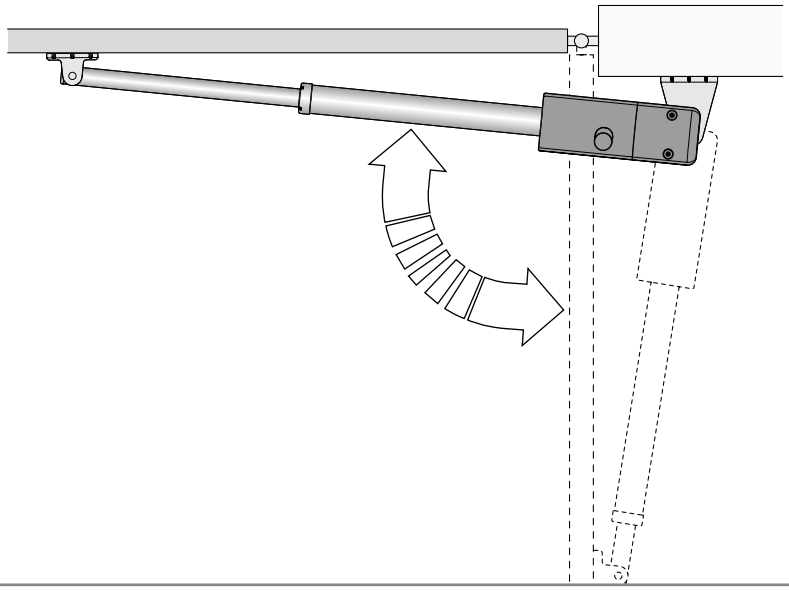

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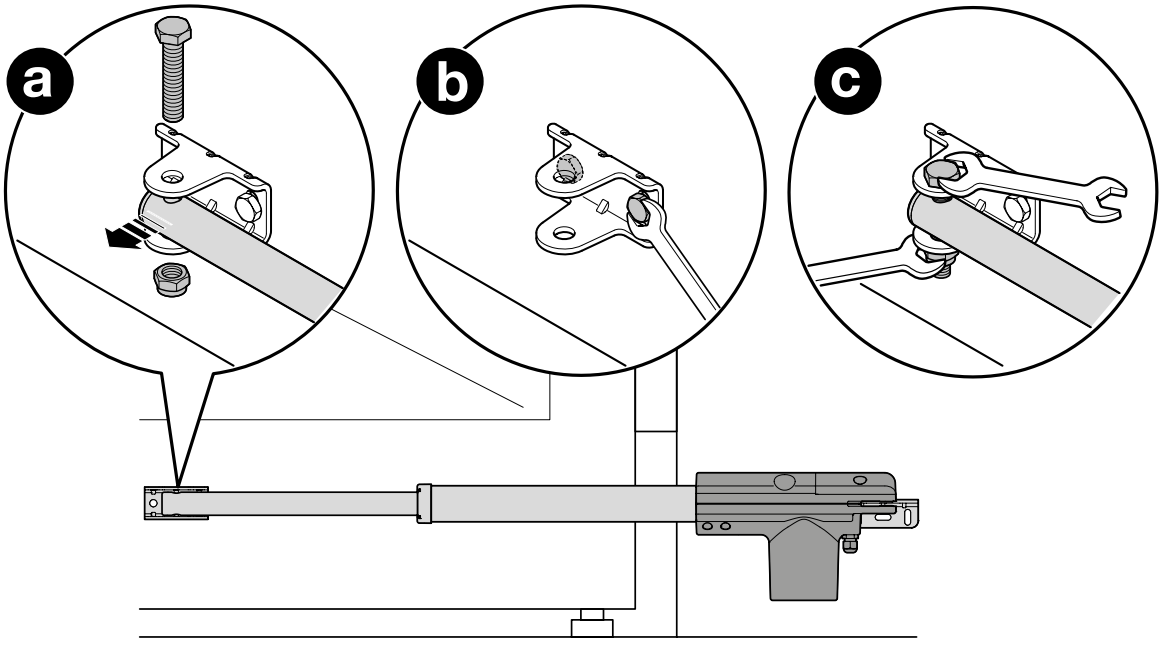

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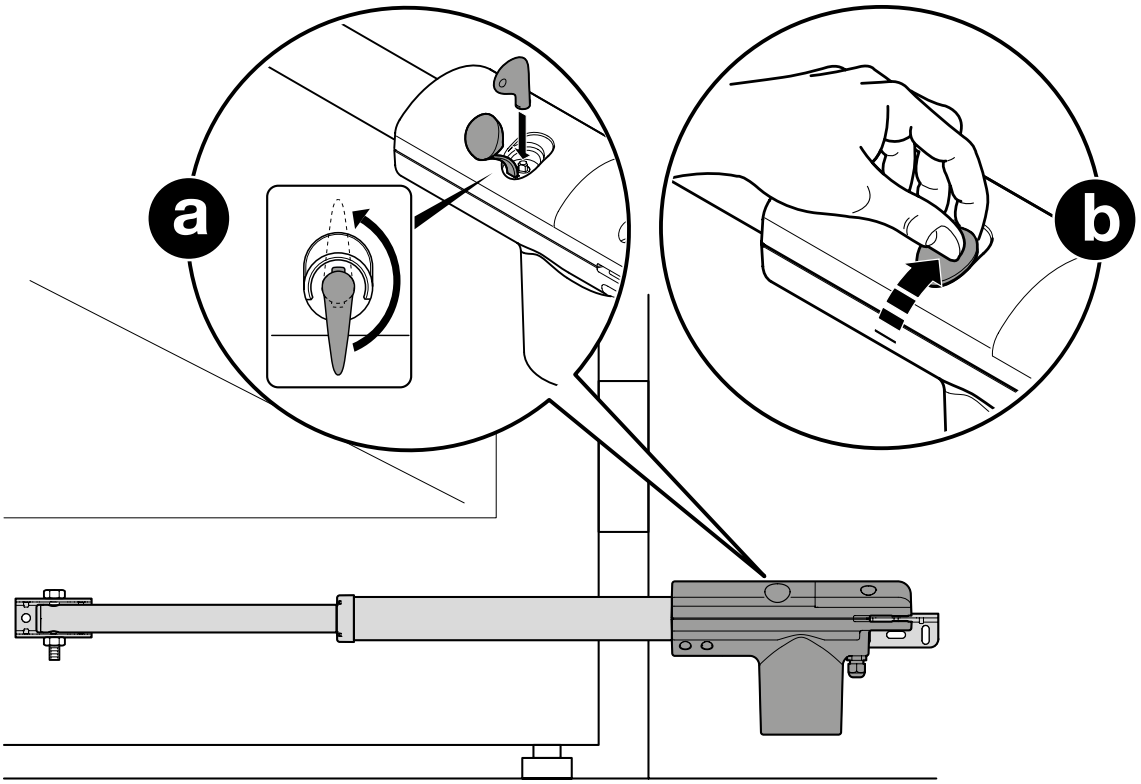

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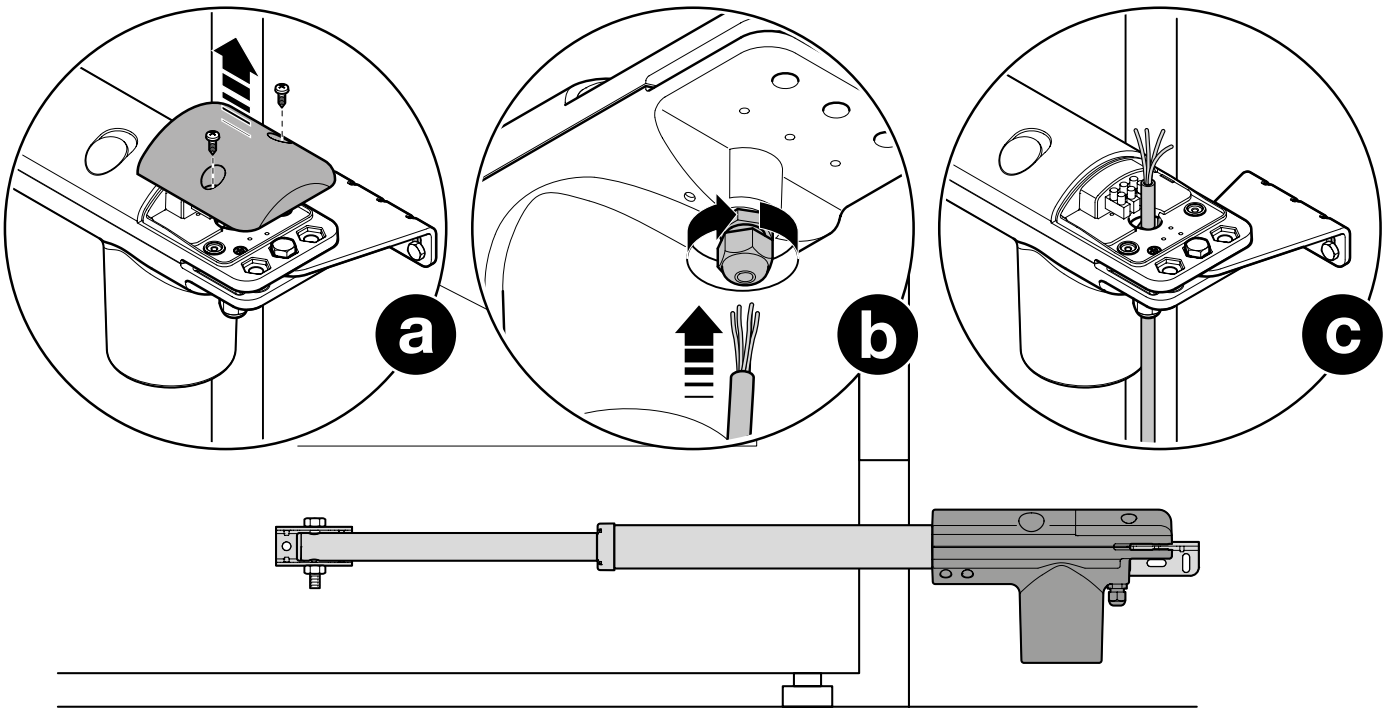

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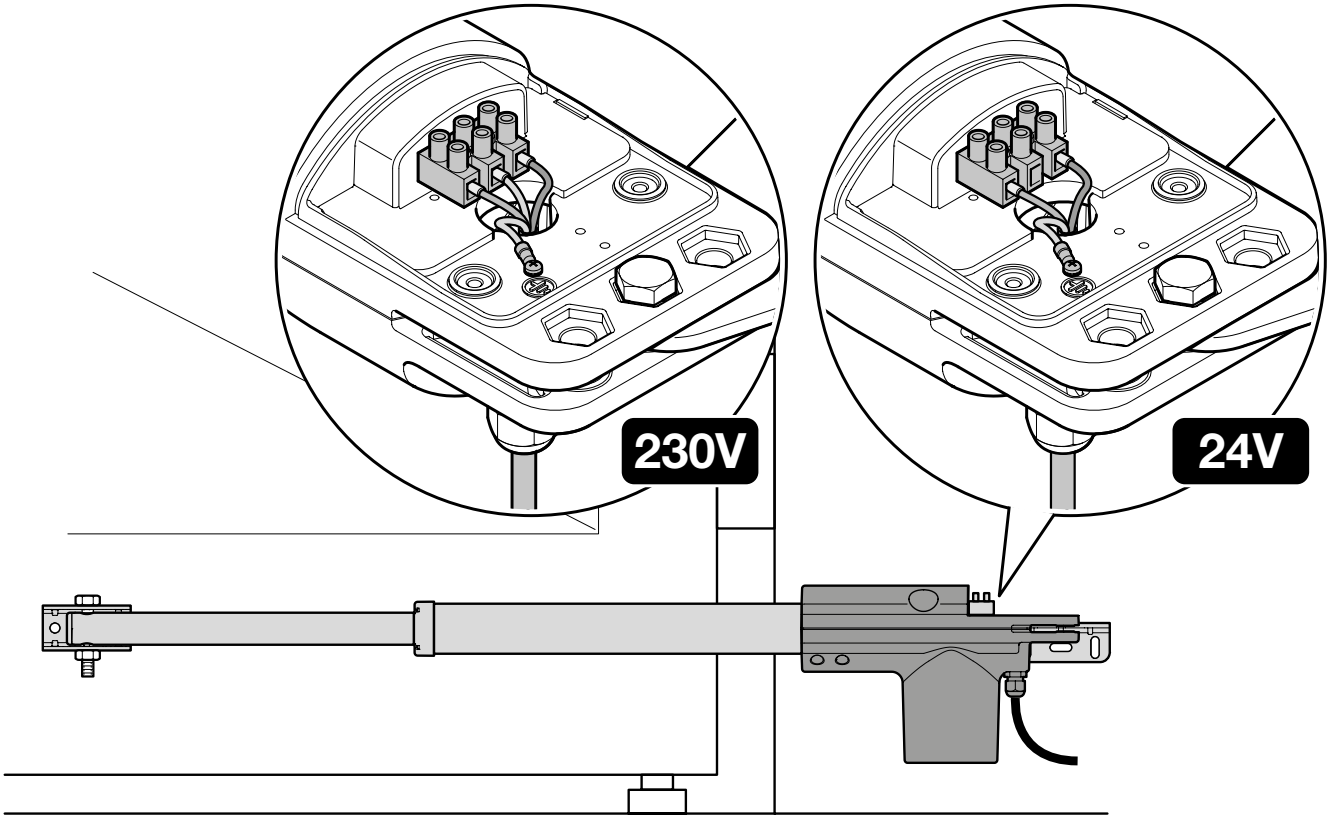

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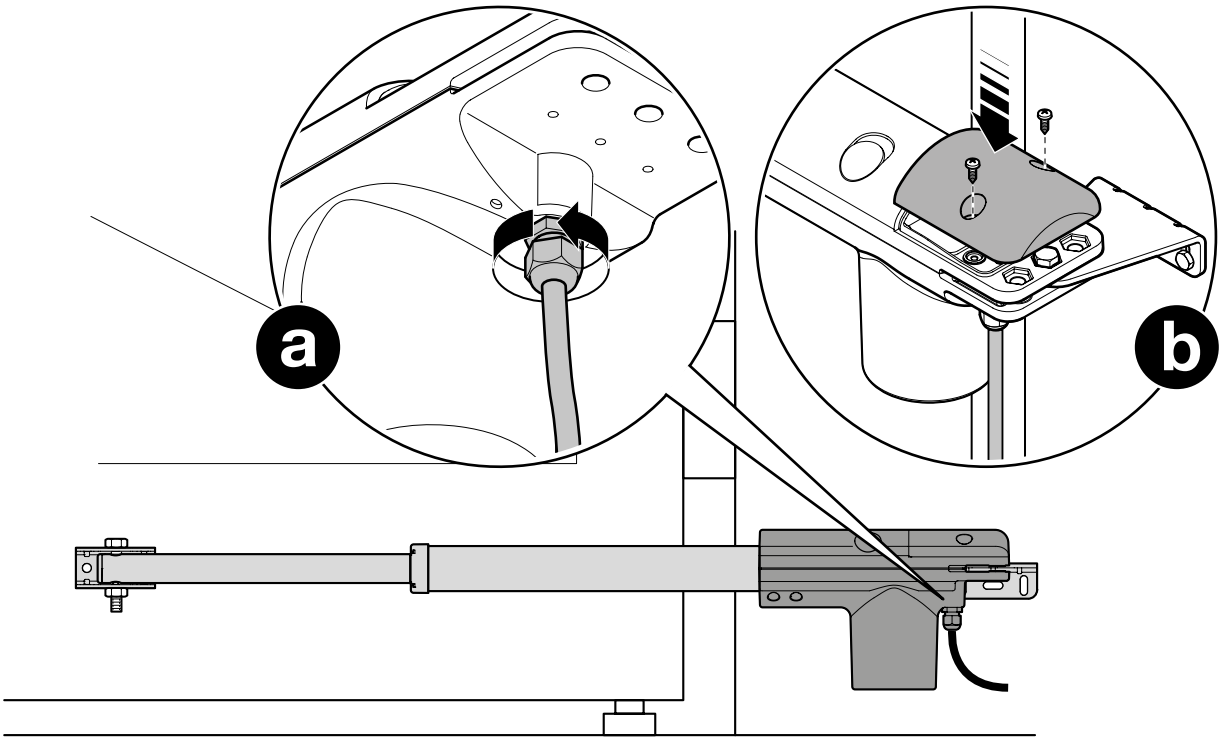


1. Warnings and general precautions

1.1 - Safety warnings

- **WARNING! - Important safety instructions. The following instructions are critical for personal safety. Incorrect installation can result in serious injury.**
  Read these instructions with care before starting; in case of doubt, contact King gates Support Service.
- **WARNING! - Keep these instructions in a safe place to enable future product maintenance and disposal operations.**
- **WARNING! – According to current European legislation, the installation of an automatic door or gate must be in full observance of the standards envisaged by European 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. Given the above, all product installation, connection, programming and maintenance work must be done exclusively by a skilled and qualified technician, in observance of local laws, standards, regulations and the instructions in this manual.**

1.2 - Installation warnings

- Before commencing the installation, check that this product is suitable for controlling your gate (see Chapters 3 and 9). If it is not suitable, DO NOT proceed with the installation.
- All product installation and maintenance must be done with the automated mechanism disconnected from the power mains. Before starting work, put a sign on the disconnection device that says “CAUTION! MAINTENANCE IN PROGRESS” to the disconnection equipment.
- Handle the product with care during installation, taking care to avoid crushing, denting or dropping it, or contact with liquids of any kind. Keep the product away from sources of heat and naked flames. Failure to observe the above can damage the product, and increase the risk of danger or malfunction. Should this occur, suspend installation work immediately and contact the King gates Support Service.
- Do not modify any part of the product. Operations other than as specified can only cause malfunctions. The manufacturer declines all liability for damage caused by makeshift modifications to the product.
- If the gate or door being automated has a pedestrian gate, then the system must include a control device that will inhibit the operation of the motor when the pedestrian gate is open.
- Check that there are no points where people could become trapped or crushed against fixed parts when the gate is fully open; if there are, provide protection for these parts.
- The packing materials of the product must be disposed of in compliance with local regulations.

1.3 - Warnings about use

- This product is not intended to be used by persons (including children) whose physical, sensory or mental capacities are reduced, or who lack the necessary experience or skill, unless suitable instructions on how to use the product have been imparted by a person responsible for their safety.
- Do not allow children to play with the automation.
- Do not allow children to play with fixed control devices. Keep remote control devices out of their reach as well.
- When operating the gate, keep an eye on the automated mechanism and keep all bystanders at a safe distance until the movement has been completed.
- Do not operate the automation if anyone is working nearby (cleaning, etc.); disconnect its power supply before permitting such work to be done.
- Check the automation frequently for imbalance, wear and damage. Do not operate the system if it needs repair or adjustment; have it serviced exclusively by qualified and specialised technicians.

2. Product description

This product is intended to be used to automate swing gates. **CAUTION! – Any use other than the intended use, and any use in conditions other than those described in this manual, is improper and forbidden!**

The product is an electromechanical gearmotor, available in the versions:

LINEAR500230 / LINEAR50024 / LINEAR400230 / LINEAR40024.

It is equipped with a 24V DC motor or 220V AC motor (depending on the version) and a worm screw reduction unit.

The gearmotor is powered off the external control unit to which it is connected.

In case of power outage, the gate can be operated manually by disengaging the gearmotor (par. 3.4).

3. Installation

3.1 - Pre-installation checks

Caution! - The motor must be installed by qualified personnel in compliance with current legislation, standards and regulations, and the directions provided in this manual.

Before proceeding with the installation:

01. Check that the area to which the gearmotor is to be mounted is large enough (**fig. 2**).

02. Check the gate’s opening movement and the force exerted by the motor: these depend on the position of the rear bracket. To set the maximum opening position of the gate wing, refer to **fig. 3**.

03. Establish the rough installation position for each component of the system and the most appropriate connection layout.

Fig. 4 provides an example of an automation system using King gates components:

a - Electromechanical gearmotors
b - Control unit
c - Photocell pair
d - Mechanical limit switch pair (opening)
e - Photocell pillars
f - Flasher
g - Keyswitch/digital keypad
h - Vertical electric lock

3.2 - Installation of gearmotor

WARNINGS

- **Incorrect installation may cause serious physical injury to those working on or using the system.**
- **Before proceeding with the installation, refer to par. 3.1.**

01. Identify the front and rear bracket mounting positions (**fig. 3**)

02. Secure the rear bracket with reference to its specified installation positions (**fig. 3**)

03. Mount the gearmotor to the rear bracket (**figg. 5 / 6**)

04. Manually release the gearmotor (**fig. 7**)

05. Pull the rod completely out (**fig. 8 - a**)

06. Provisionally locate the front bracket onto the gate (**fig. 8 - b**)

07. Check that the gearmotor is level, then fit and secure the rod to the front bracket (**fig. 8 - c**)

08. (**fig. 9**) Check manually that:

- when the gate is fully open, it halts against its mechanical stops
- the gate swings freely and without resistance

Correct any defect

09. Unhook the rod from the front bracket (**fig. 10 - a**) and mount the latter to the gate definitively (**fig. 10 - b**)

10. Definitively mount the rod to the front bracket (**fig. 10 - c**)

11. Lock the gearmotor (**fig. 11**)

Run this procedure for both gearmotors.

3.3 - Manually releasing the gearmotor (fg. 7)

01. Raise the rubber cap (**fig. 7 - a**)

02. Fit the provided wrench and rotate it CW by 90° (**fig. 7 - b**)

Run this procedure for both gearmotors.

3.4 - Manually locking the gearmotor (fg. 11)

01. Move the gate to the halfway open position by hand

02. Raise the rubber cap (**fig. 11 - a**)

03. Fit the provided wrench and rotate it CCW by 90°(**fig. 11 - b**)

Run this procedure for both gearmotors.

4. Electrical connections

CAUTION!

– **Incorrect connections can cause faults or hazards; therefore ensure that the specified connections are strictly observed.**

– **Hook up the unit with the electrical power shut off.**

01. Remove the gearmotor's cover (**fig. 12 - a**)

02. Loosen the cable clamp (**fig. 12 - b**) and run the cable through it (**fig. 12 - c**)

03. Hook up the cables and connect the earth cable to its eyebolt (**fig. 13**)

04. Tighten down the cable clamp and restore the cover (**fig. 14**)

5. Automation testing

This is the most important stage in the automation system installation procedure in order to ensure the maximum safety levels. Testing can also be adopted as a method of periodically checking that all the various devices in the system are functioning correctly.

Testing of the entire system must be performed by qualified and experienced personnel who must establish which tests to conduct on the basis of the risks involved, and verify the compliance of the system with applicable regulations, legislation and standards, in particular with all the provisions of EN12445 which establishes the test methods for automation systems for gates.

5.1 - Testing

Each component of the system, (safety edges, photocells, emergency stop, etc.) requires a specific testing phase. To do so, follow the procedures given in the instruction manuals.

01. Ensure that the instructions outlined in this manual and in particular in chapter 1 have been observed in full.

02. Manually release the gearmotor (**fig. 7**)

03. Make sure you can move the door manually both during opening and closing with a force of max. 390 N (40 kg approx.).

04. Manually lock the gearmotor (**fig. 11**)

05. Hook up the electrical power supply

06. Use the control or stop devices to test the opening, closing and stopping of the gate and that it behaves as intended.

07. Check the operation of all safety devices, and check that the gate performs as it should.

08. Activate a closing manoeuvre and check impact force of the door against the mechanical stop. If necessary, reduce the pressure for better adjustment

09. If the dangerous situations caused by the movement of the gate have been safeguarded by limiting the impact force, the user must measure the impact force according to EN12445.

Note – The gearmotor's torque cannot be adjusted directly: this adjustment is done by the control unit.

5.2 - Commissioning

Commissioning may only be done when all the gearmotor tests specified in par. 5.1, and those of the other equipment, have been passed: to commission the unit, refer to the control unit manual.

IMPORTANT - It is not permissible to execute partial commissioning or to enable use of the system in makeshift conditions.

6. Maintenance

To ensure that the level of safety of the installation is maintained and that the system remains reliable and operational, it must be serviced regularly in observance of the safety regulations given in this manual and established legislation.

The gearmotor must be serviced no later than 6 months after commissioning.

01. Disconnect all power supplies

02. Check for any deterioration in automation system components, paying special attention to erosion or oxidation of its structural parts. Replace any parts which are below the required standard.

03. Check that all screw fasteners are fully tightened down

04. Check the wear of all moving parts and replace any worn components

05. Connect the power supplies up again, and run all the tests and checks described in Chapter 5.

For the other equipment in the system, refer to its user manuals.

7. Dispotal of the product

This product is an integral part of the automation and must be scrapped with it.

At the end of the product's service life, the product must be scrapped by qualified staff.

This product is made up of a variety of materials, some of which can be recycled while others must be disposed of. Check that regulatory recycling and scrapping facilities are available locally.

Caution! – some parts of the product may contain polluting or hazardous substances which, if disposed of into the environment, constitute serious environmental and health risks.

As indicated by the symbol, the product may not be disposed of as domestic waste.

Sort the materials for disposal, according to the methods envisaged by current legislation in your area, or return the product to the retailer when purchasing a new version.

Caution! – Local legislation may envisage serious fines in the event of abusive disposal of this product.

8. Technical specifications

WARNINGS: • All technical specifications stated in this section refer to an ambient temperature of 20°C (± 5°C). • King gate sreserves the right to apply modifications to products at any time when deemed necessary, while maintaining the same intended use and functionality.

MODEL	LINEAR500230	LINEAR50024	LINEAR400230	LINEAR40024
Motor voltage [V]	230	24	230	24
Frequency [Hz]	50	DC	50	DC
Max gate length [m]	4.5	4.5	3	3
Max gate weight (kg)	250	250	300	300
IP protection rating	54	54	54	54
Operating temperature [C°]	-20 to +50	-20 to +50	-20 to +50	-20 to +50
Weight of motor [kg]	6	5.5	6	5.5
Speed [m/s]	0.016	0.014	0.016	0.014
Travel [mm]	500	500	400	400
Capacitor [μF]	7	-	7	-
Nominal current draw [A]	1.1	1.1	1.1	1.1
Maximum current draw [A]	1.5	5	1.5	5
Nominal power draw [W]	250	30	250	30
Maximum power draw [W]	340	120	340	120
Nominal force [N]	300	300	300	300
Maximum force [N]	2000	1800	2000	1800
Cycles (cycles/hour)	24	continuous	24	continuous
Dimensions [mm]	800 x 100 x 177 h	800 x 100 x 177 h	800 x 100 x 177 h	800 x 100 x 177 h

9. Operation manual (to be delivered to the end user)

- **Before using the automation for the first time,** ask the installer to explain the origin of residual risks and devote a few minutes to reading this user instruction and warning **manual** given to you by the installer. Keep the manual for reference when in doubt and pass it on to new owners of the automation.

- **Your automation is a machine that performs your commands faithfully;** negligent or improper use may make it dangerous: never activate automation controls if persons, animals or objects are present in the operating range.

- **Children:** An automation system guarantees a high level of safety, using its detection systems to prevent movement in the presence of persons or objects, and ensuring constantly foreseeable and safe activation. Nonetheless, it is advisable to ensure that children do not play in the vicinity of the automation. **To prevent the risk of accidental activation, do not leave the remote controls within the reach of children. This is not a toy!**

- **Faults:** if you notice that the automation is not functioning correctly, remove the electrical power supply from the system. Never attempt any repairs; contact your local installer for assistance. The system can be operated manually: release the gearmotor, as described in “Manual release and lock”.

- **Maintenance:** As with any machinery your automation needs periodic maintenance so that it may work as long as possible and in complete safety. Arrange a maintenance schedule with your installer with a periodic frequency; King gates advises an intervention every 6 months for normal domestic use, but this period may vary depending on the intensity of use. Any check, maintenance or repair must only be carried out by qualified personnel.

- Even if you possess the skills, never modify the system or programming and setting parameters of the automation: this is the responsibility of the installer.

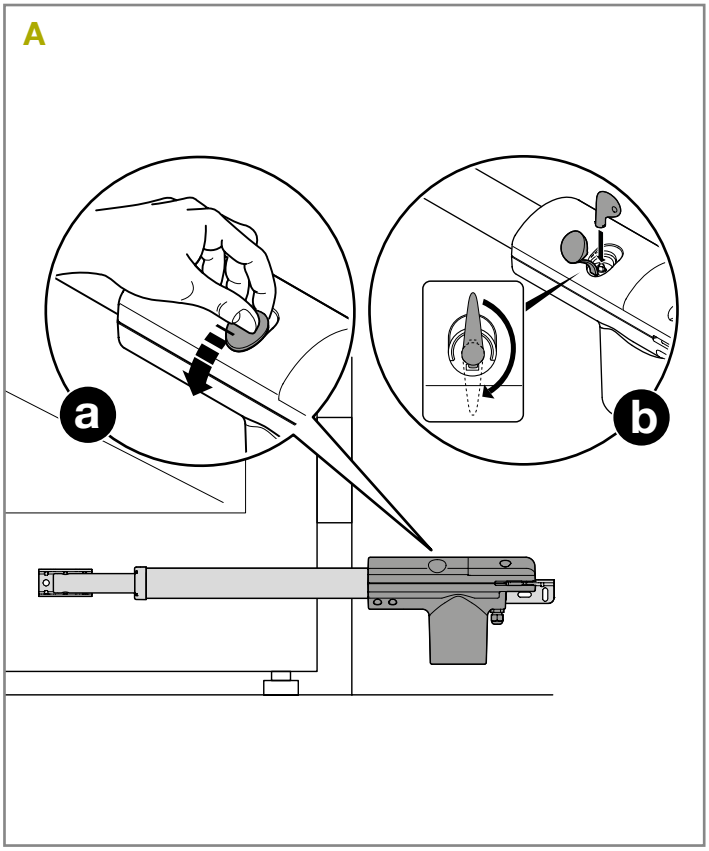
- Testing, periodic maintenance and any repairs must be documented by the person who makes them and the documents stored by the owner of the system.

  The only recommended maintenance operations that the user can perform periodically are the removal of leaves or debris that may impede the automation.
  To ensure that no one can activate the door, before you begin, remember to **lock the automation** (**fig. A**) and **disconnect all power sources** (including back up batteries, where applicable).

- **Disposal:** At the end of the automation’s lifetime, ensure that it is disposed by qualified personnel and that the materials are recycled or scrapped according to current local standards.

- **Manual release and lock**
  - Releasing the gearmotor: (fig. A)
  - Locking the gearmotor: (fig. B)

A



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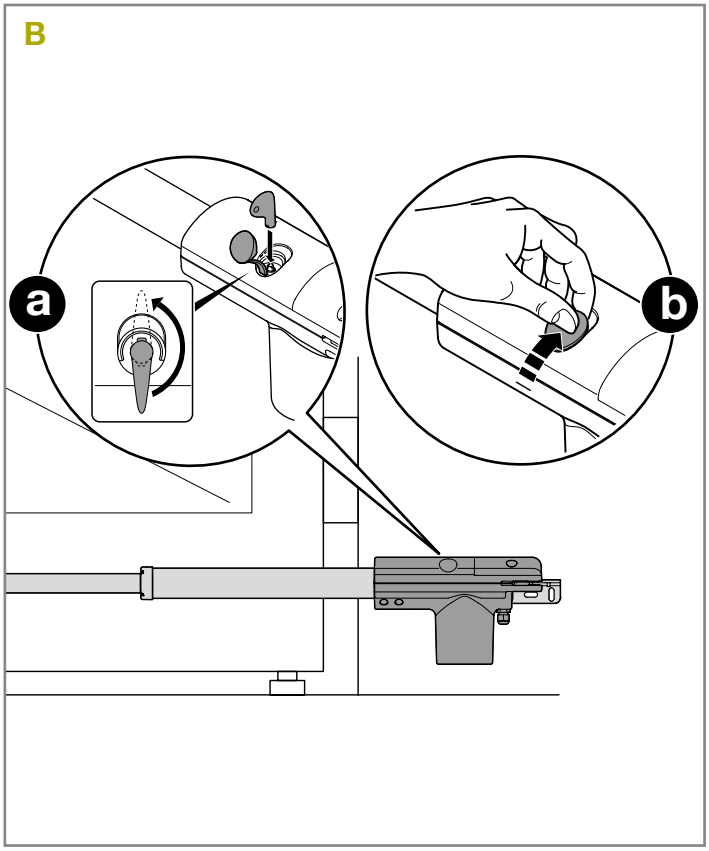

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Dati dell'installatore / *Installer details*

Azienda / *Company* _____

Località / *Address* _____

Provincia / *Province* _____

Recapito telefonico / *Tel.* _____

Referente / *Contact person* _____

Timbro / *Stamp*

Dati del costruttore / *Manufacturer's details*

KINGGATES

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