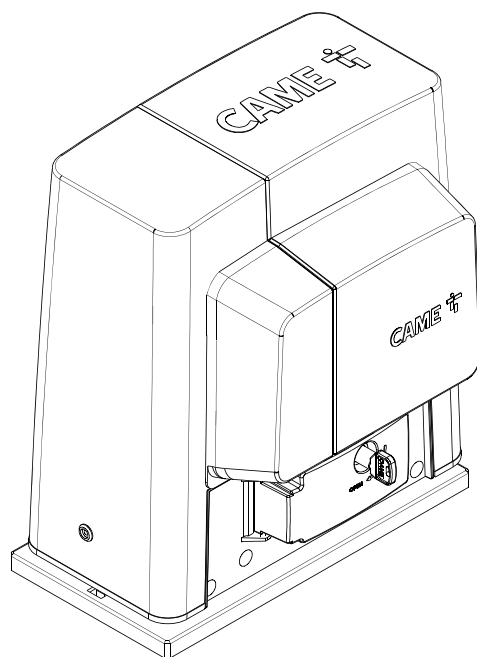


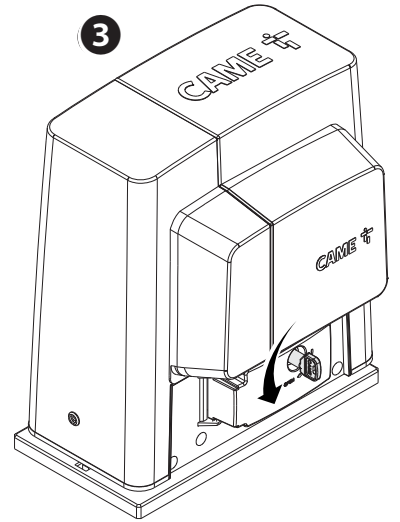
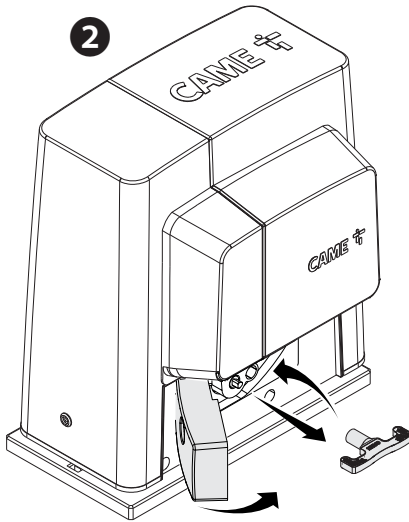
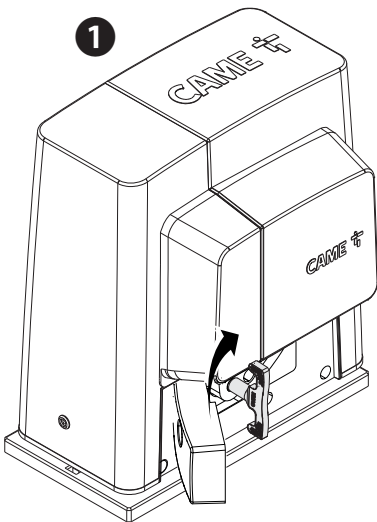
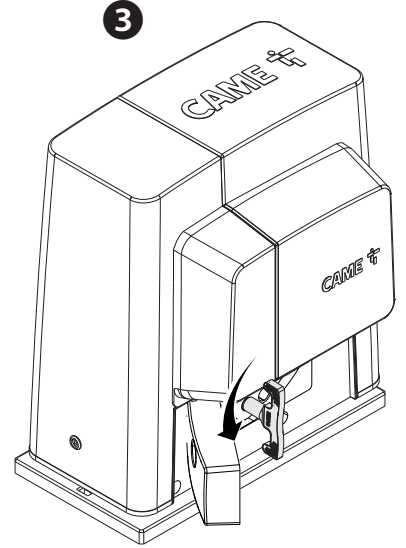
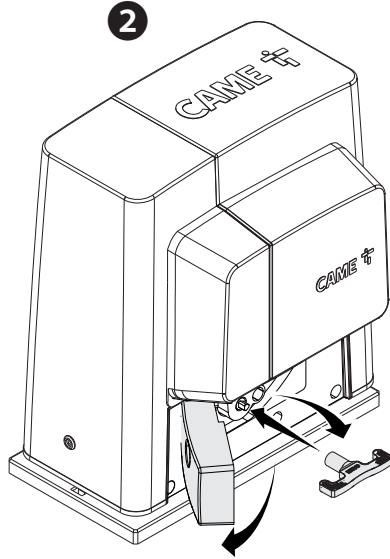
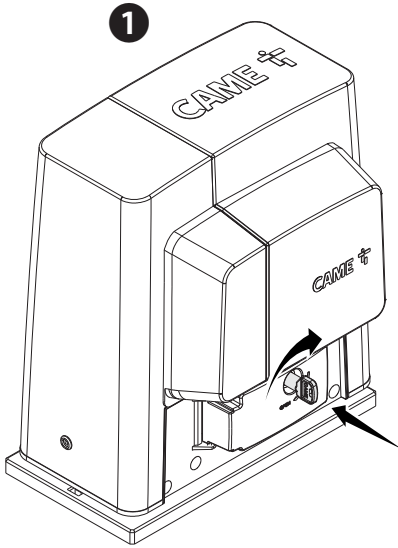
## Sliding gate operator

FA01157-EN



# BKS22TGS

## INSTALLATION MANUAL



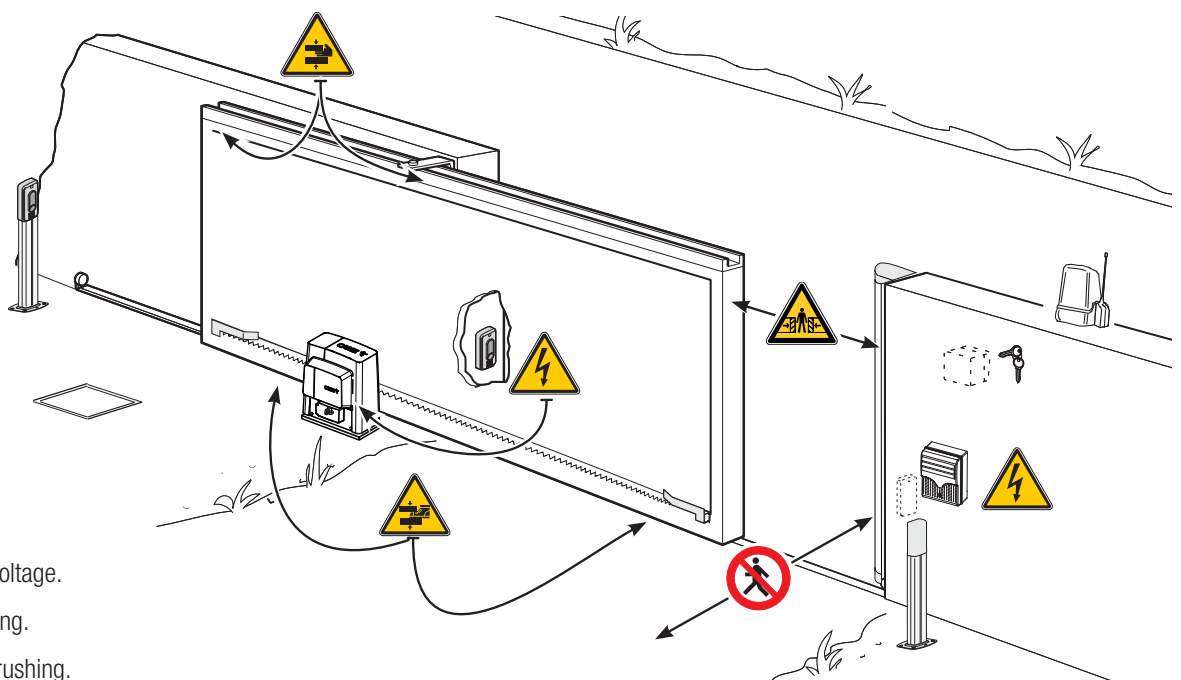
## GENERAL PRECAUTIONS FOR INSTALLERS






**⚠ CAUTION! Important safety instructions.**  
**Follow all of these instructions. Improper installation can cause serious bodily harm.**  
**Before continuing, also read the general precautions for users.**

Employ this product only for the use for which it was expressly made. Any other use is dangerous. Came S.p.A is not liable for any damage caused by improper, wrongful and unreasonable use • The product covered by this manual is defined in accordance with the Machinery Directive 2006/42/EC as a "partly completed machinery". The "partly completed machinery" is a whole that constitutes almost a machine, but that, by itself, is not able to guarantee a well-defined application. Partly completed machinery is only intended to be incorporated or assembled to other machines or other partly completed machinery or apparatus to constitute a machine governed by Directive 2006/42/EC. The final installation must comply with the 2006/42/EC (European directive) and with the current European reference standards. All procedures mentioned in this manual must be only performed by skilled, qualified technicians and in full compliance with current regulations. • The manufacturer declines any liability for using non-original products; which would result in warranty loss • Keep this manual inside the technical folder along with the manuals of all the other devices used for your automation system • Check that the temperature ranges given and those of the location match • Laying of cables, installation and testing must follow state-of-the-art procedures as dictated by applicable standards and laws • If the power-supply cable is damaged, it must be immediately replaced by the manufacturer or by an authorized technical assistance center, or in any case, by qualified staff, to prevent any risk




- Make sure the mains power supply is disconnected during all installation procedures • The product cannot automate any guided part that includes a pedestrian gate, unless the latter can be enabled only when the pedestrian gate is secured. • Make sure that people cannot be entrapped between the guided and fixed parts, when the guided part is set in motion. • Before installing the operator, check that the guide part is in proper mechanical condition, that it is properly balanced and that it properly opens and closes: if any of these conditions are not met, do not continue before having met all safety requirements • Make sure that the gate is stable, that it opens and closes correctly and that the castors function properly and are well lubricated. • The ground rail must be well-fastened, entirely on the surface and are smooth and level so as not to obstruct the gate's movement • The rails of the upper tracks must not create friction • Make sure that opening and closing limiters are fitted • Make sure that the operator is installed onto a sturdy surface that is protected from any collisions • Make sure that mechanical stops are already installed • If the dangerous moving parts of the operator are installed lower than 2.5 from the ground or from any other access level, fit protections and/or signs to prevent hazardous situations. • Do not install the operator or onto elements that could yield and bend. If necessary, add suitable reinforcements to the anchoring points • Do not install door or gate leaves on tilted surfaces • Check that no lawn watering devices spray the operator with water from the bottom up • Any residual risks must be indicated clearly with proper signage affixed in visible areas. All of which must be explained to end users • Demarcate the entire site to prevent unauthorized personnel to enter; especially children and minors • Fit cautionary signs (such as the plate) wherever needed and in plain sight • Use suitable protections to prevent any mechanical hazards due to persons loitering within the operating range of the machinery (e.g. avoid crushing fingers between the rack and pinion) • The electrical cables must run through corresponding tubes, conduits and cable glands to ensure suitable protection against mechanical damage and they must not come into contact with parts that could heat up during use (such as motor and transformer). • Make sure you have set up a suitable dual pole cut off device along the power supply that is compliant with the installation rules. It should completely cut off the power supply according to category III surcharge conditions • Install all fixed controls at 1.5 m from the ground, clearly visible, in view of the guided part but far away from moving parts. If there is a maintained action command, it must not be accessible to the public. • If necessary, to pass the collision force test use a suitable sensitive safety-edge (as indicated below in this manual). Install it properly and adjust as needed. • Before handing over to users, check that the system is compliant with the 2006/42/CE uniformed Machinery Directive and with its essential requirements. Make sure that the operator has been properly adjusted and that the safety and protection devices, and the manual release, are working properly • Make sure to hand over to the end user, all operating manuals for the products that make up the final machinery.

- The next figure shows the main hazard points for people.



-  Danger of high voltage.
-  Danger of crushing.
-  Danger of foot crushing.
-  Danger of hand entrapment.
-  Do not transit through during maneuvering.

## KEY

-  This symbol shows which parts to read carefully.
-  This symbol shows which parts describe safety issues.
-  This symbol shows which parts to tell users about.

The measurements, unless otherwise stated, are in millimeters.

## DESCRIPTION

Gearmotor for sliding gates weighing up to 2,200 kg that are up to 23-m long.

### INTENDED USE

The gearmotor is designed to power sliding gates used in apartment blocks and industrial plants.

### INTENDED USE

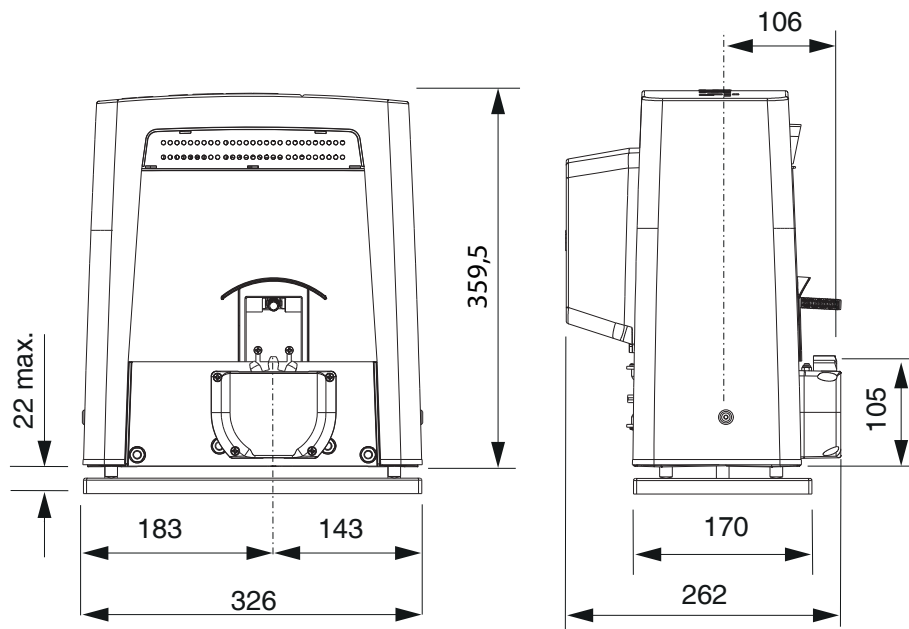
Model	BKS22TGS
Standard reference* length of the sliding part (m)	10 series
Maximum weight of the sliding part (kg)	2,200 series
Pinion module	6 series

\* For other-than-standard measurements, see the following graphs.

## TECHNICAL DATA

Model	BKS22TGS
Protection rating (IP)	44 series
Power supply (V - 50/60 Hz)	230/400 AC THREE-PHASE
Motor power supply (V - 50/60 Hz)	230/400 AC THREE-PHASE
Power (W)	520 series
Thrust (N)	1650 series
Opening speed (m/min)	10.5 series
Operating temperature (°C)	-20 to +55
Apparatus class	I
Motor thermal monitoring (°C)	150 series
Weight (kg)	21 series

## DIMENSIONS



## DUTY CYCLES

### Datum

Cycles/hour (no.)

14 series

Consecutive cycles (no.)

17 series

The cycles calculation is for **standard-length gates** (see the intended use), that are professionally installed, free of any mechanical issues and/or accidental friction points, and measured at 20° C, as stated in EN Standard 60335-2-103.

## DESCRIPTION OF PARTS

- |                            |                       |
|----------------------------|-----------------------|
| 1. Cover                   | 5. Anchoring plate    |
| 2. Front cover             | 6. Fastening hardware |
| 3. Gearmotor               | 7. Limit-switch tabs  |
| 4. Mechanical limit switch |                       |

## CONTROL PANELS

### 002ZT6

Control panel with safety devices self-diagnosis.

### 002ZT6C

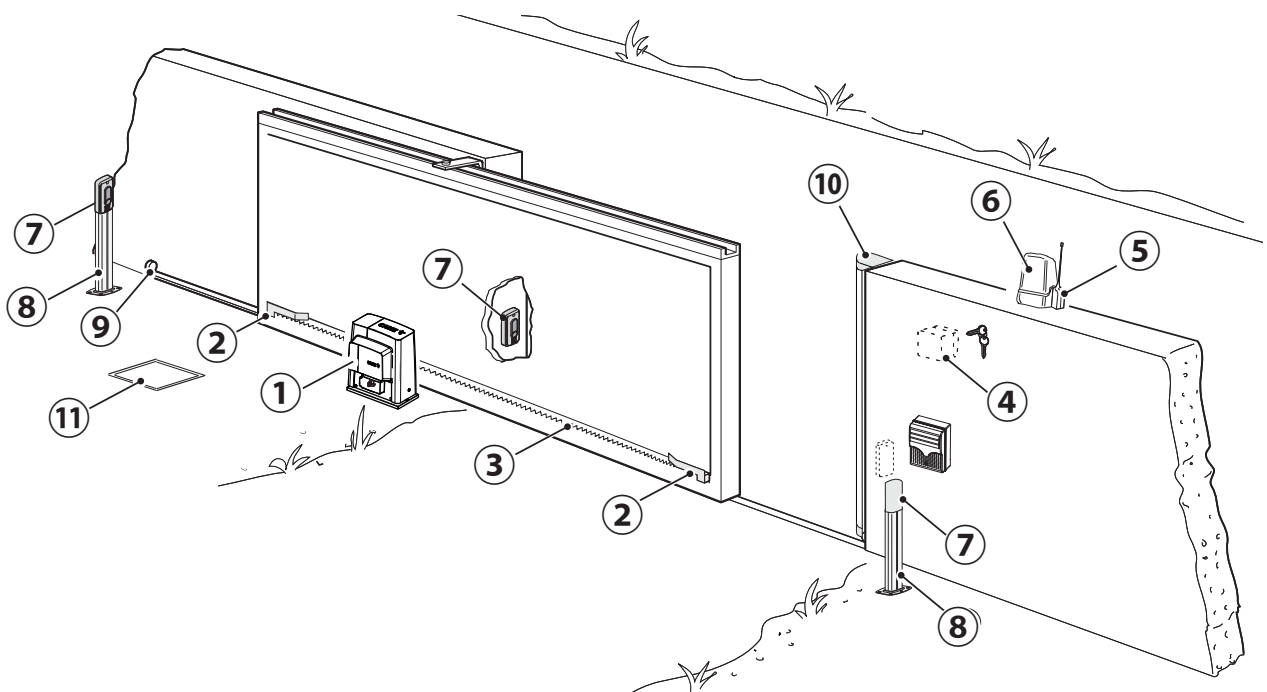
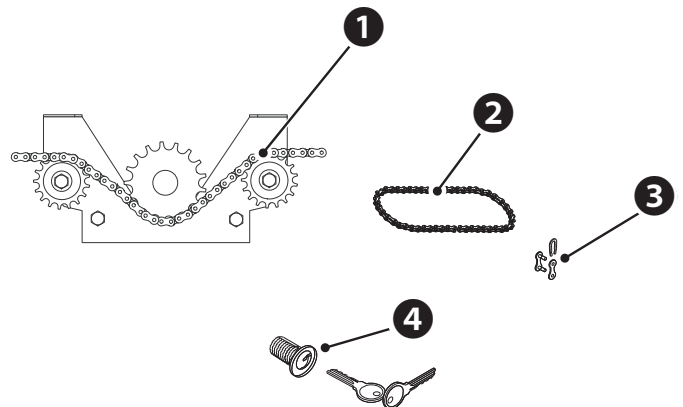
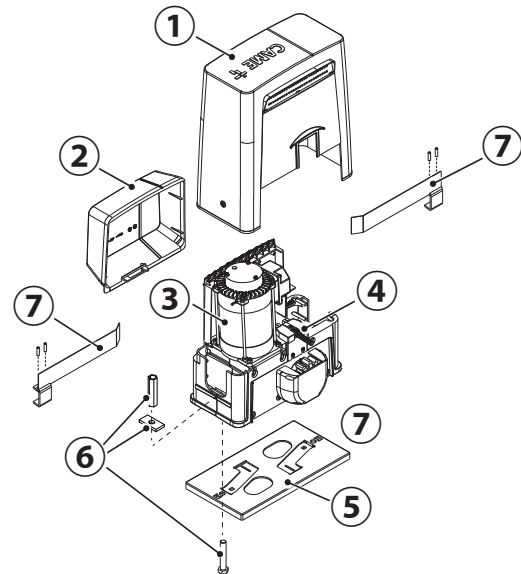
Control panel, complete with safety lock and buttons, with safety devices self-diagnosis.

## COMPLETION ACCESSORIES

- 1 001B4353**  
Chain transmission device.
- 2 009CCT**  
Simple 1/2" chain.
- 3 009CGIU**  
1/2" chain coupling.
- 4 001R001**  
Customized cylinder lock.

## STANDARD INSTALLATION

- |                        |                           |
|------------------------|---------------------------|
| 1. Gearmotor           | 7. Photocells             |
| 2. Limit-switch fins   | 8. Small post             |
| 3. Rack                | 9. Mechanical gate stop   |
| 4. Key-switch selector | 10. Sensitive safety-edge |
| 5. Antenna(s)          | 11. Junction pit          |
| 6. Flashing light      |                           |



## GENERAL INSTALLATION INDICATIONS

△ Only skilled, qualified staff must install this product in full compliance with the law in force.

### PRELIMINARY CHECKS

△ Before installing the gearmotor it is necessary to:

- check that the upper slide-guides are friction-free;
- check that the gate is stable and that the casters are in good working order and lubricated;
- check that the ground rails are well-fastened, entirely on the surface and are smooth and level so as not to obstruct the gate's movement;
- make sure you have fitted opening and closing mechanical gate stops;
- make sure that the point where the gearmotor is fastened is protected from any impacts and that the anchoring surface is solid enough;
- set up suitable tubes and conduits for the electric cables to pass through, making sure they are protected from any mechanical damage.

### CABLE TYPES AND MINIMUM THICKNESSES

Connection	cable length	
	< 20 m	20 < 30 m
Control panel power supply 230/400 V	4G x 2.5 mm <sup>2</sup>	4G x 4 mm <sup>2</sup>
Motor power supply 230/400 V	4G x 1.5 mm <sup>2</sup>	4G x 2.5 mm <sup>2</sup>
Flashing light		2 x 1.5 mm <sup>2</sup>
Command and control devices		2 x 0.5 mm <sup>2</sup>
TX Photocells		2 x 0.5 mm <sup>2</sup>
RX photocells		4 x 0.5 mm <sup>2</sup>
Limit switch		3 x 1 mm <sup>2</sup>

📖 To connect the antenna, use the RG58 (we suggest up to 5 m).

📖 If cable lengths differ from those specified in the table, establish the cable sections depending on the actual power draw of the connected devices and according to the provisions of regulation CEI EN 60204-1.

📖 For multiple, sequential loads along the same line, the dimensions on the table need to be recalculated according to the actual power draw and distances. For connecting products that are not contemplated in this manual, see the literature accompanying said products

## INSTALLING

△ The following illustrations are just examples, in that the space available for fitting the operator and accessories varies depending on the overall dimensions. It is up to the fitter, therefore, to choose the most suitable solution.

📖 The drawings refer to the left-side gearmotor.

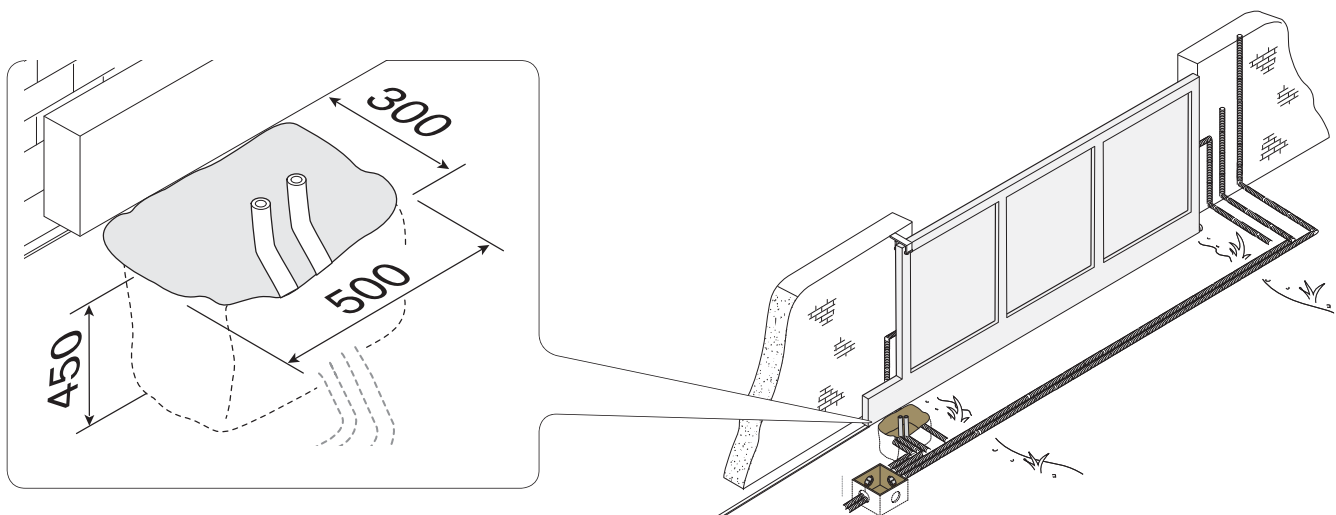
### LAYING THE CORRUGATED TUBES

Dig a hole for the foundation frame.

Set up the corrugated tubes needed for the wiring coming out of the junction pit.

Use two Ø 40 mm corrugated tubes to connect the gearmotor.

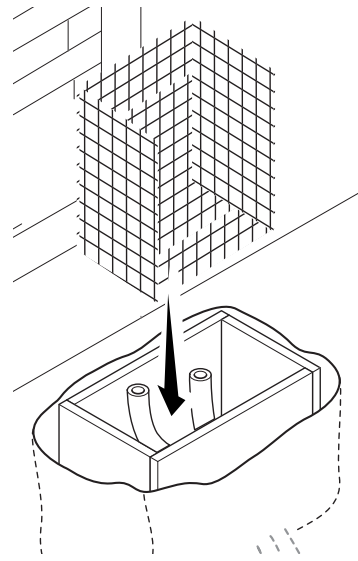
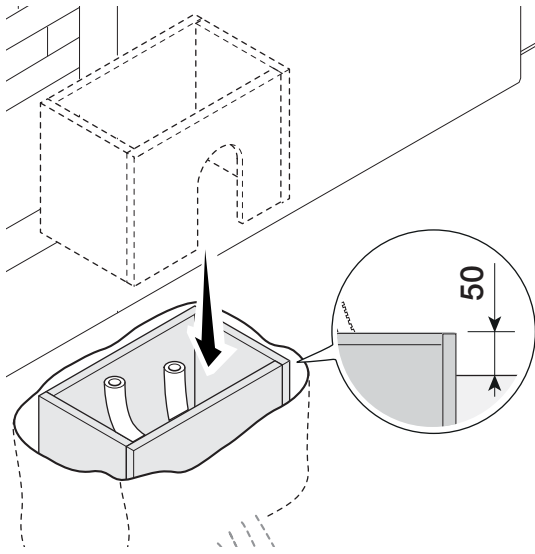
📖 The number of tubes depends on the type of system and the accessories you are going to be fit.



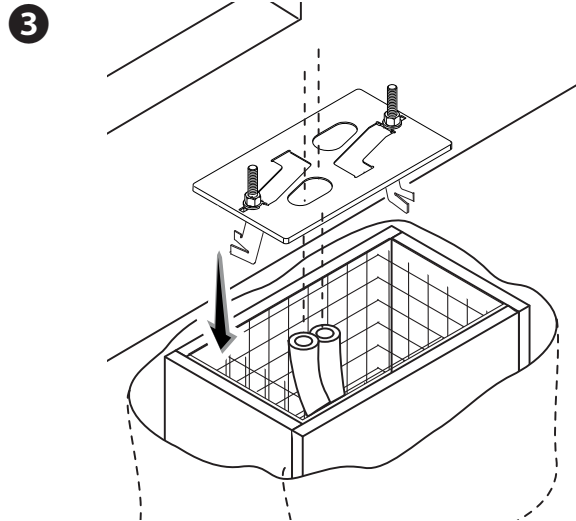
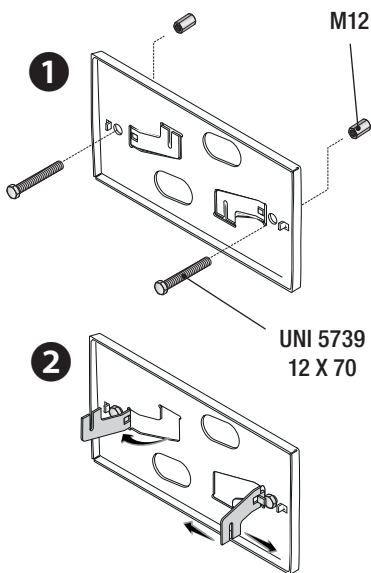
## FITTING THE ANCHORING PLATE

Set up a foundation frame that is larger than the anchoring plate and sink it into the dug hole. The foundation frame must jut out by 50 mm above ground level.

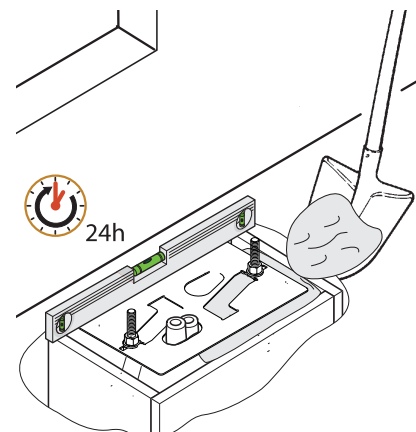
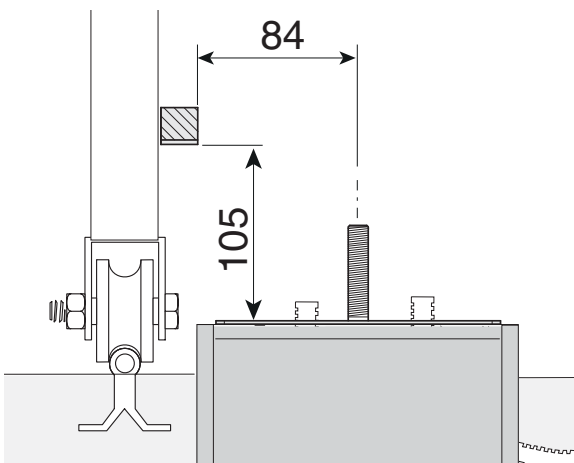
Fit an iron cage into the foundation frame to reinforce the concrete.



Fit the bolts into the anchoring plate **1** and tighten them using the nuts. Remove the pre-shaped clamps **2** using a screw driver or pliers. Fit the plate into the iron cage **3**. Caution! The tubes must run through the existing holes.

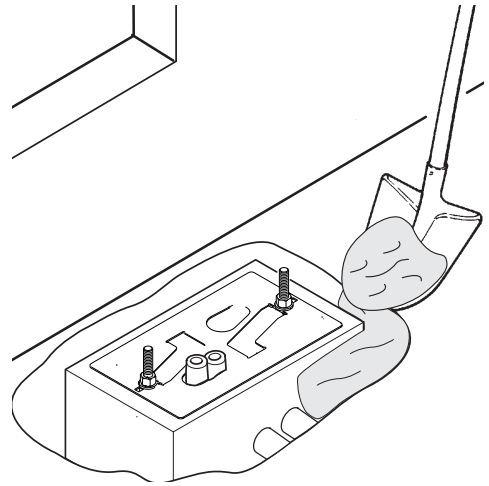
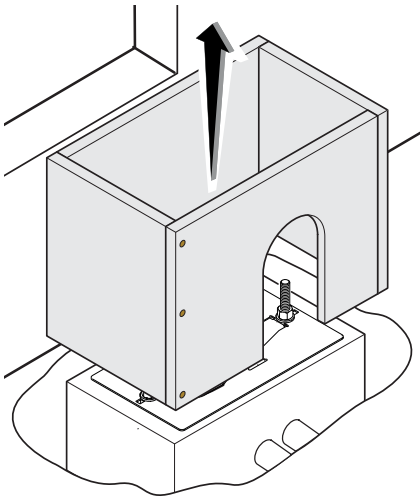


If the rack is already there, place the anchoring plate, being careful to respect the measurements shown in the drawing. Fill the foundation frame with concrete. The plate must be perfectly level with the bolts which are entirely above surface. Wait at least 24 hrs for the concrete to solidify.

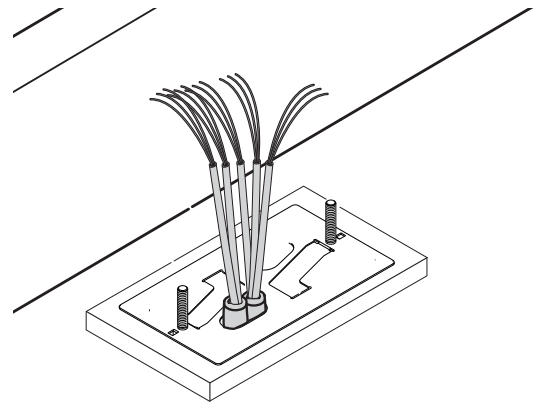
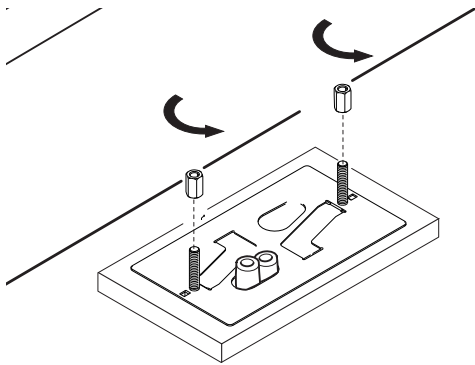




Remove the foundation frame and fill the hole with earth around the concrete block.

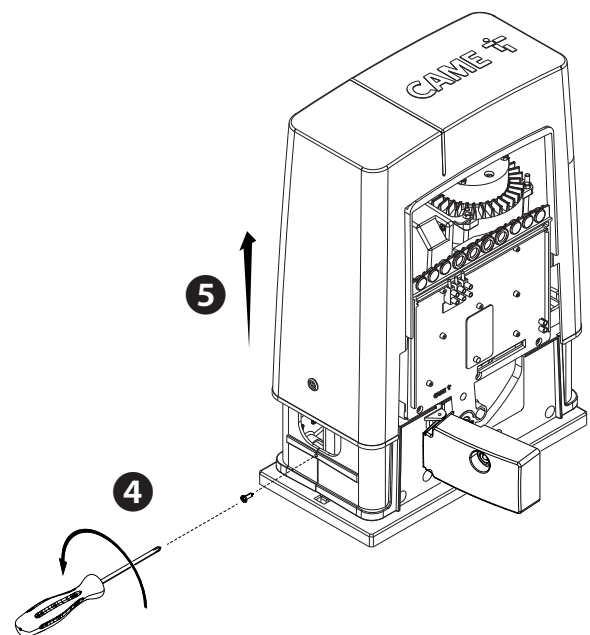
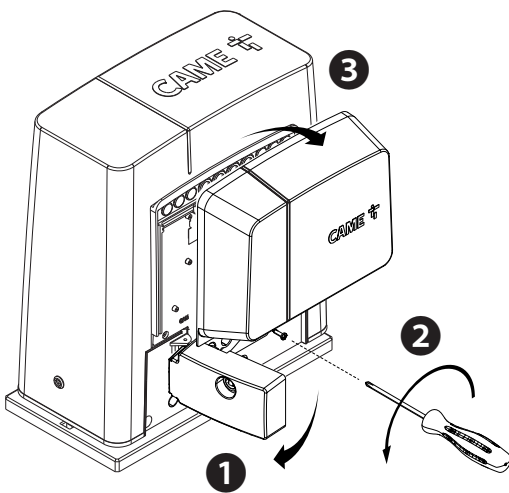


Remove the nuts from the bolts.  
Fit the electric cables into the tubes so that they come out about 600 mm.



## PREPARING THE GEARMOTOR

Remove the front cover and the gearmotor cover.

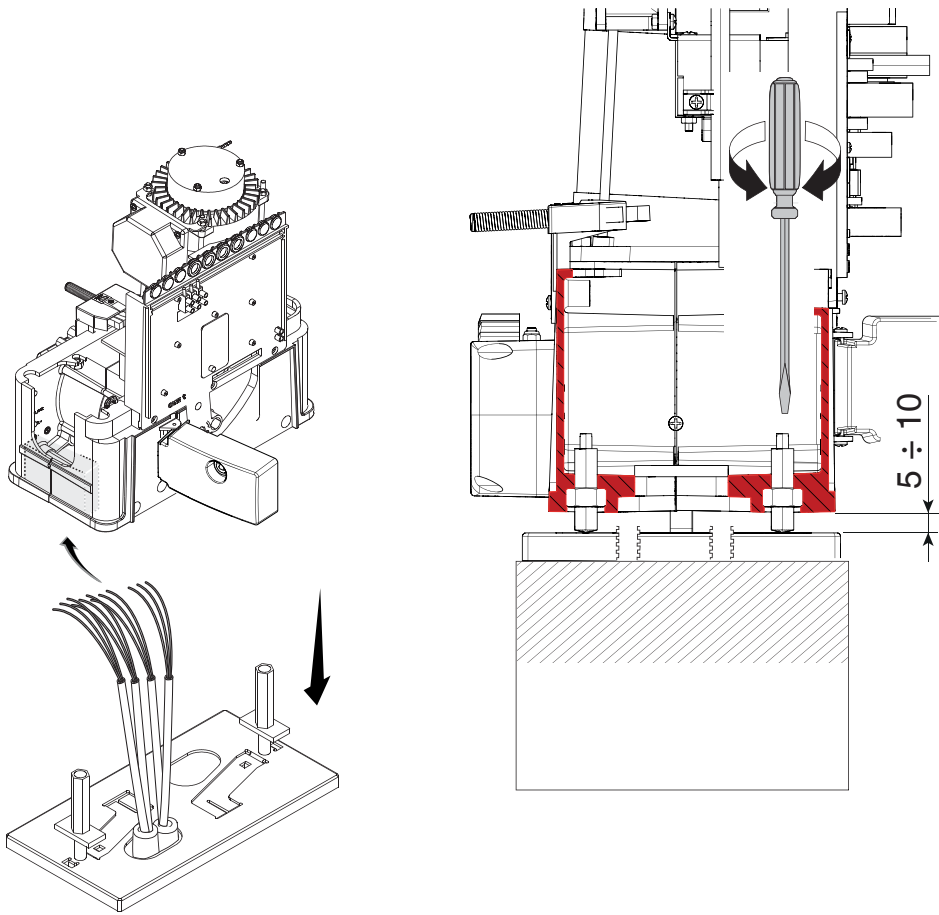




Place the gearmotor above the anchoring plate.

Caution! The electrical cables must run under the gearmotor casing and must not touch any parts, such as the motor, transformer, and so on - that heat up during operation.

Raise the gearmotor by 5 to 10 mm from the plate by turning the threaded feet, to make room for further pinion and rack adjustments.

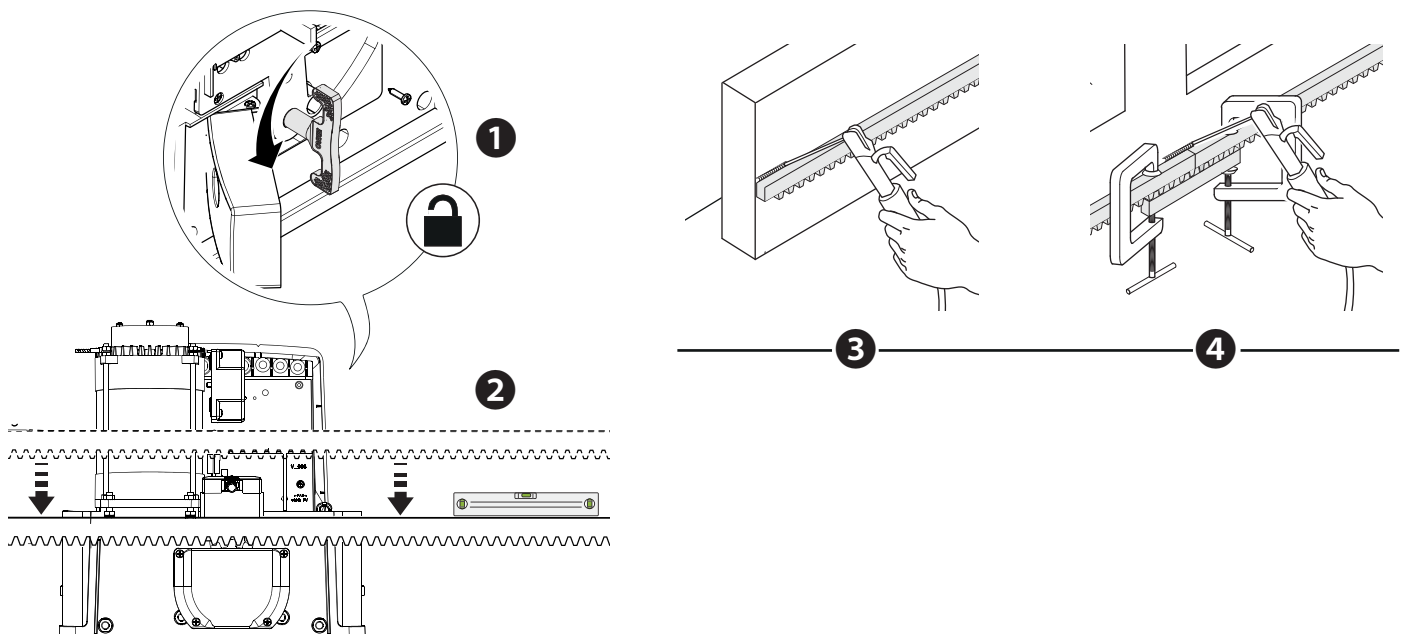


## FASTENING THE RACK

If the rack is already set up, the next step should be to adjust the rack-and-pinion coupling distance, otherwise, fasten it:

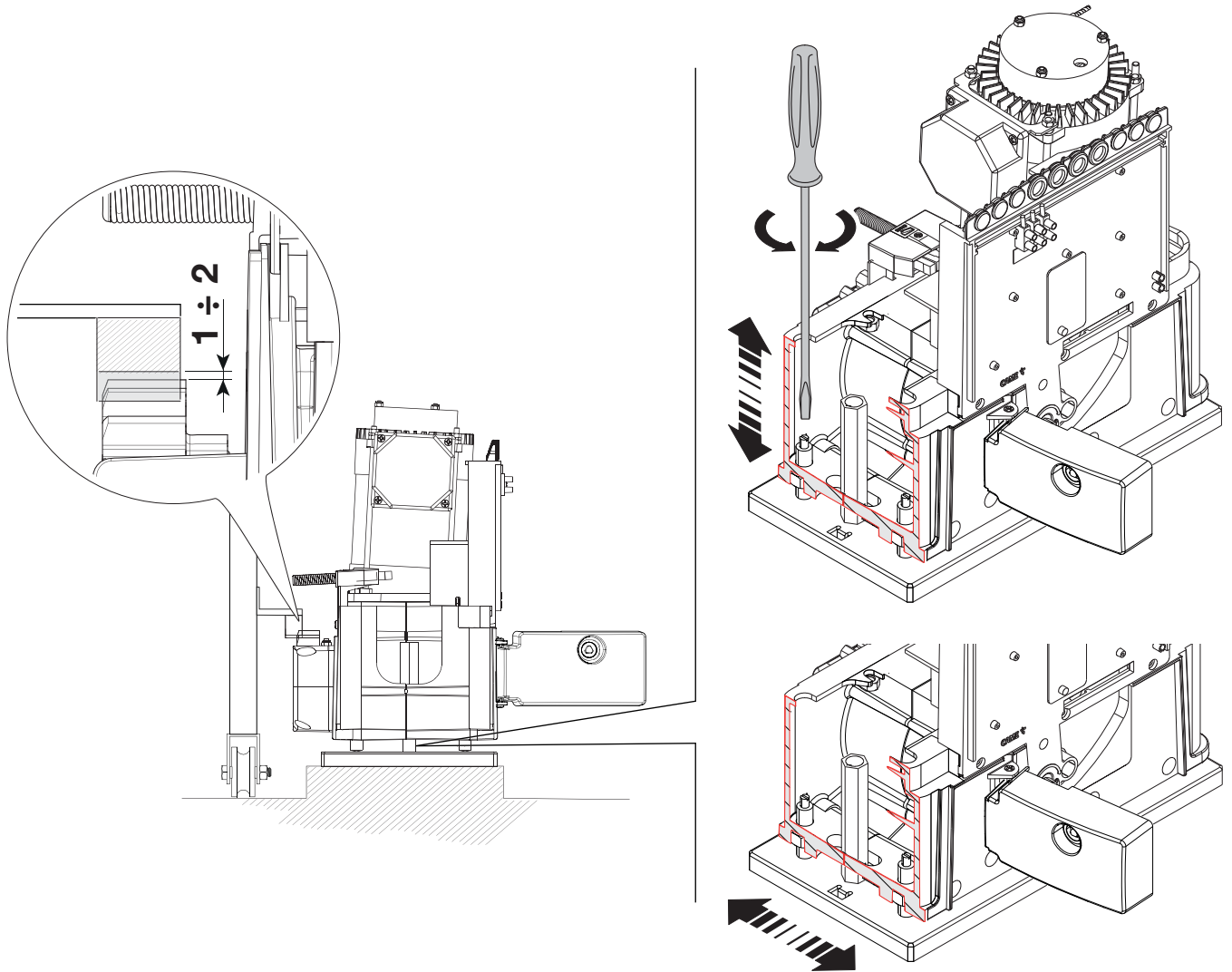
- release the gearmotor **1**;
- rest the rack above the gearmotor pinion **2**;
- weld or fasten the rack to the gate along its entire length **3 4**.

To assemble the rack modules, use an extra piece and rest it under the joint, then fasten it using two clamps.



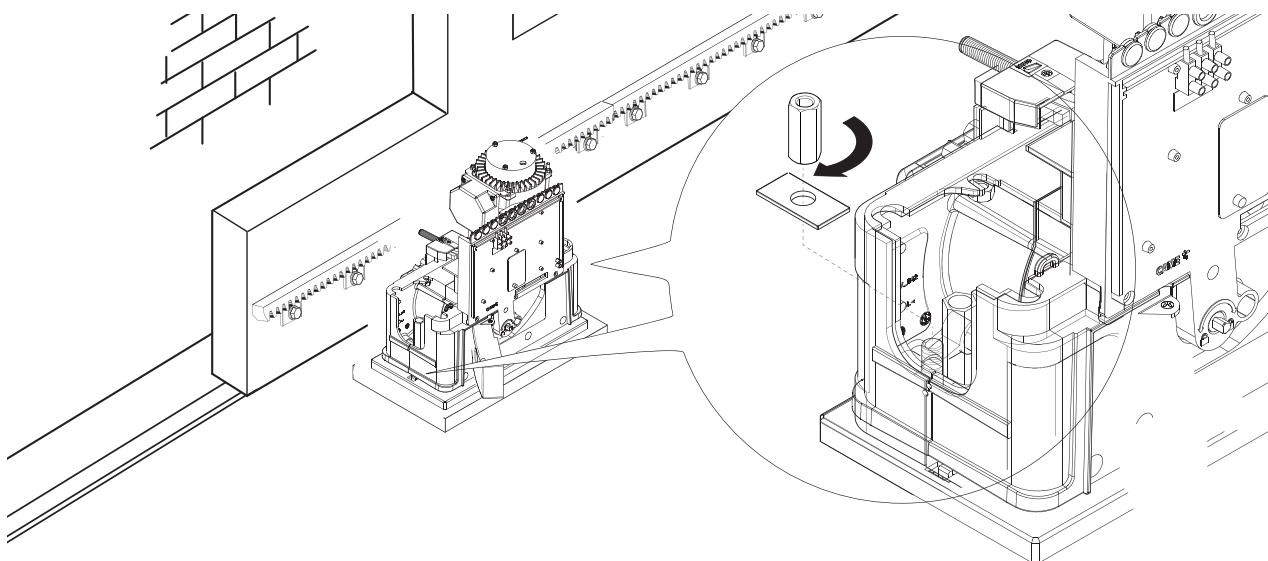
## ADJUSTING THE PINION-RACK PAIRING

Manually open and close the gate and adjust the pinion-rack coupling distance using the threaded feet (vertical adjustment) and the holes (horizontal adjustment). This prevents the gate's weight from bearing down on the gearmotor.



## FASTENING THE GEARMOTOR

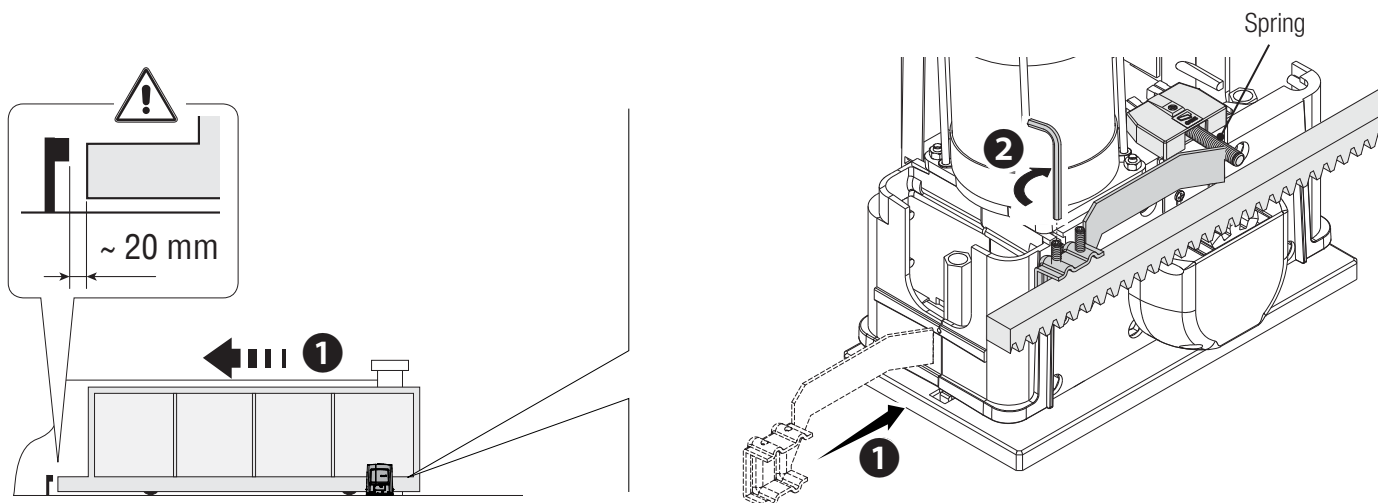
Once adjusting is complete, fasten the gearmotor to the plate using the plates and nuts.



## ESTABLISHING THE LIMIT-SWITCH POINTS

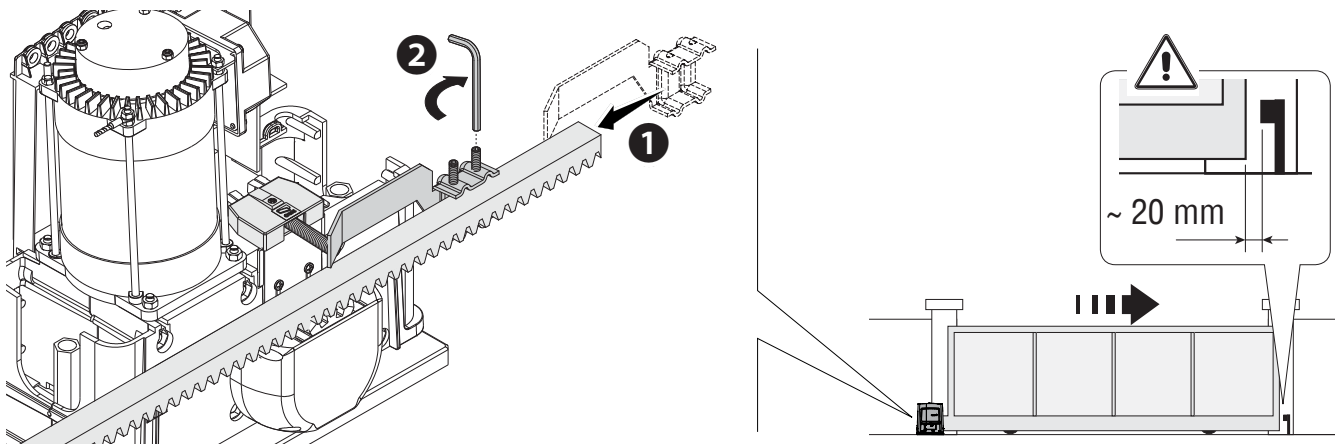
### For opening:

- open the gate **1**;
- fit the opening limit-switch tab onto the rack until the micro switch activates (spring) and fasten it using the grub screws **2 3**.



### For closing:

- close the gate **4**;
- fit the closing limit-switch tab into the rack until the micro-switch is activated (spring) and fasten it using the grub screws **5 6**.

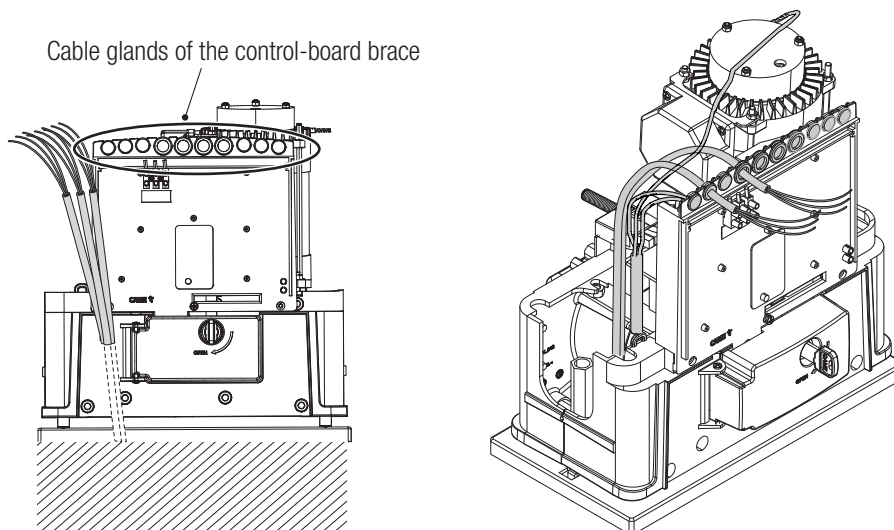


## ELECTRICAL CONNECTIONS

⚠ Connect all wires and cables in compliance with the law.

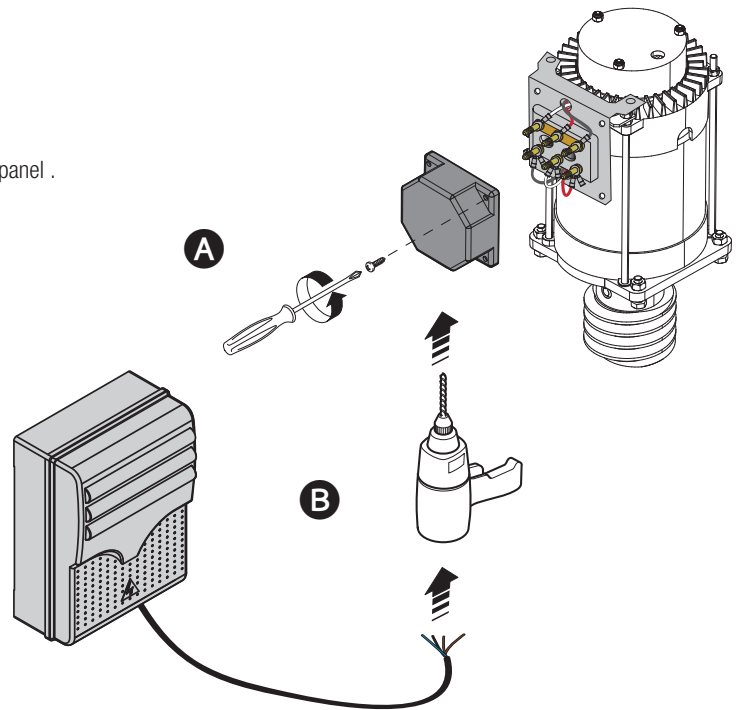
Before connecting all the wires, set up the cables by using cable glands on the control board brace, as shown in the figure.

The electrical cables must not touch any heated parts such as the motor, transformer, and so on.

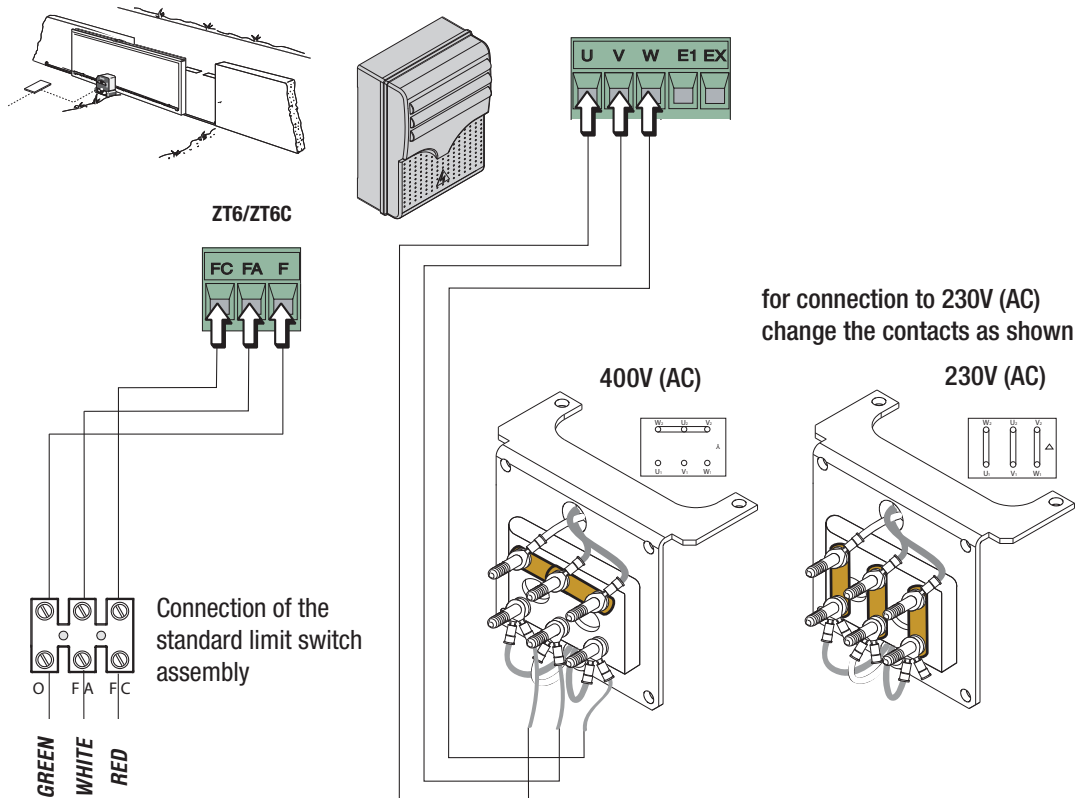


## CONNECTING THE GEARMOTOR AND THE LIMIT SWITCH

- Open the protection box ;
- Drill the protective box and run through it the cables from the external panel .



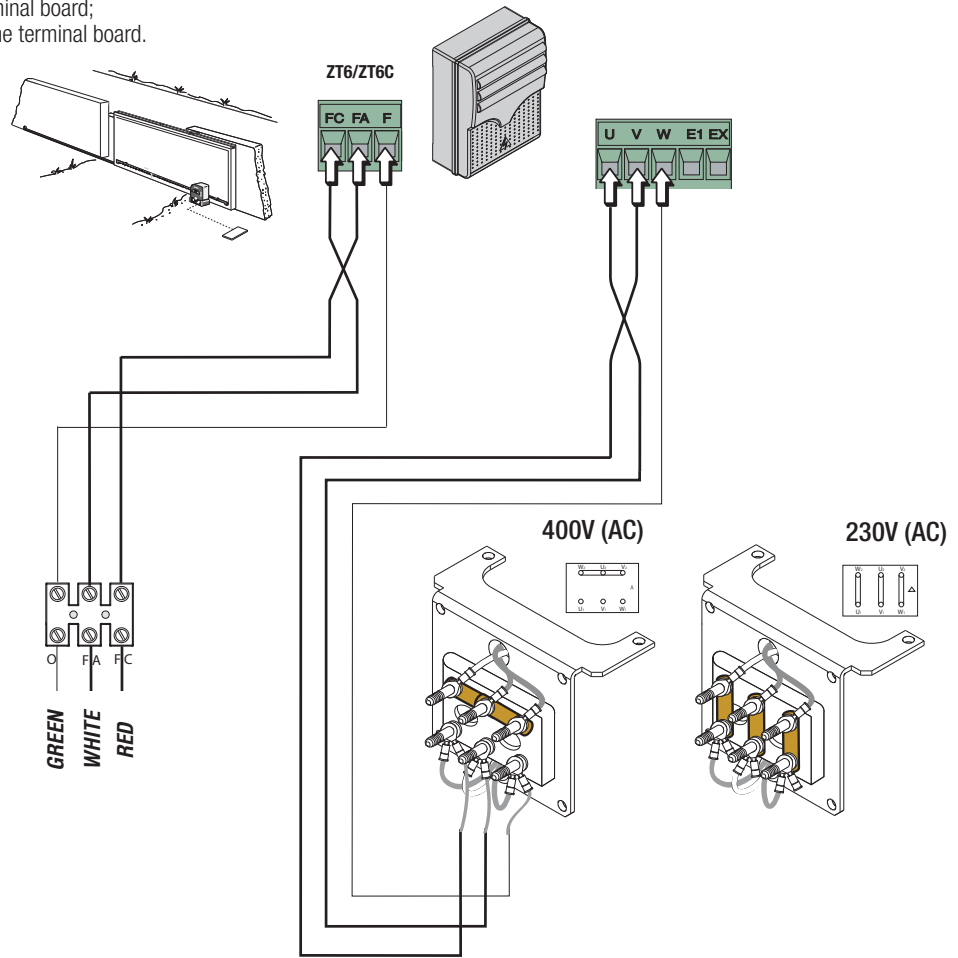
Gearmotor-limit switch assembly already connected for installation on the left inside view.



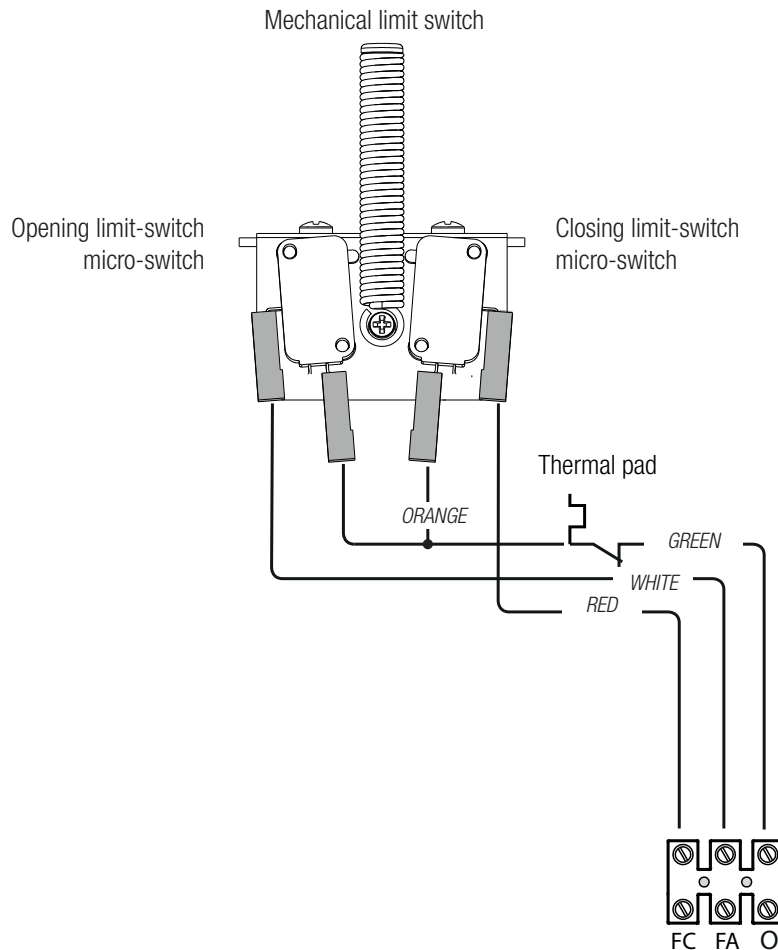
## CHANGES ON ELECTRICAL CONNECTIONS FOR GEARMOTOR INSTALLATION ON THE RIGHT

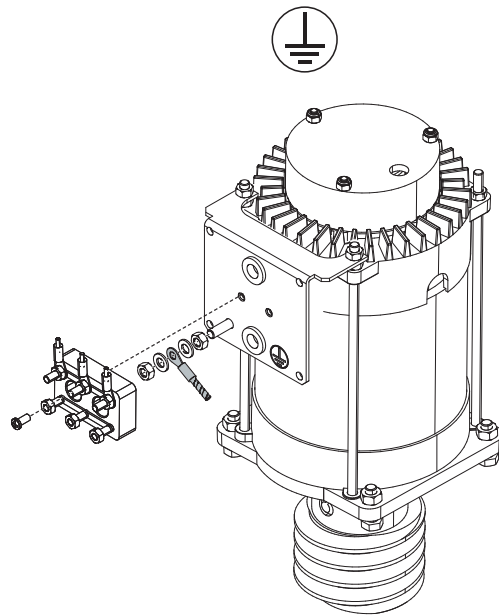
For installing on the right:

- reverse the limit switch FA-FC on the terminal board;
- reverse the U-V phases of the motor on the terminal board.



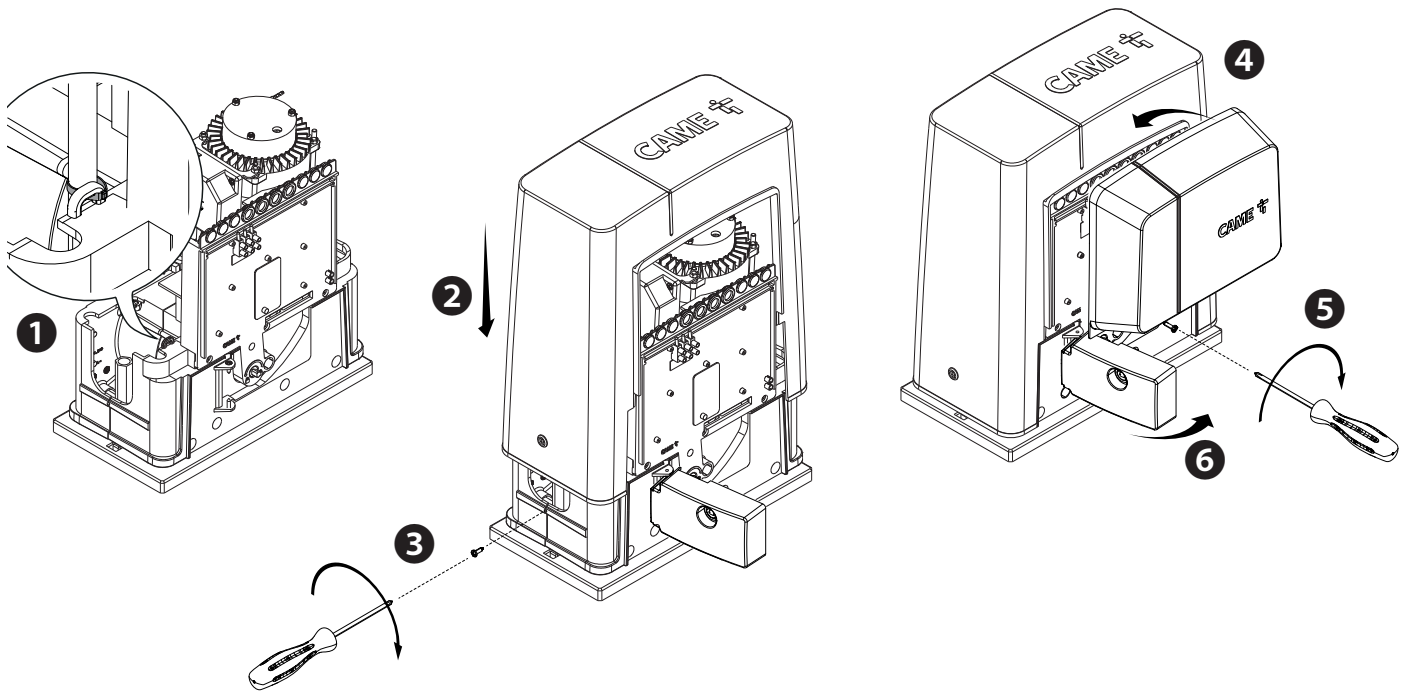
## FACTORY WIRING





### FINAL OPERATIONS

Once the operator is up and running and the users are registered, refit and fasten the covers without pinching any wires.



### DISMANTLING AND DISPOSAL

CAME CANCELLI AUTOMATICI S.p.A. employs a certified Environmental Management System at its premises, compliant with the UNI EN ISO 14001 standard to ensure the environment is safeguarded.

Please continue safeguarding the environment. At CAME we consider it one of the fundamentals of our operating and market strategies. Simply follow these brief disposal guidelines:

#### DISPOSING OF THE PACKAGING

The packaging materials (cardboard, plastic, and so on) should be disposed of as solid household waste, and simply separated from other waste for recycling.

Always make sure you comply with local laws before dismantling and disposing of the product.

DISPOSE OF RESPONSIBLY!

#### DISPOSING OF THE PRODUCT

Our products are made of various materials. Most of these (aluminum, plastic, iron, electrical cables) are classified as solid household waste. They can be recycled by separating them before dumping at authorized city plants.

Whereas other components (control boards, batteries, transmitters, and so on) may contain hazardous pollutants.

These must therefore be disposed of by authorized, certified professional services.

Before disposing, it is always advisable to check with the specific laws that apply in your area.

DISPOSE OF RESPONSIBLY!



Fabbricante / Manufacturer / Hersteller / Fabricant / Fabricante / Fabricante  
/ Wytwórca / Fabrikant

**Came S.p.a.**

indirizzo / address / adresse / adresse / direcció / endereço / adres / adres

Via Martiri della Libertà 15 - 31030 Dosson di Casier, Treviso - Italy



DICHIARA CHE LE AUTOMAZIONI PER CANCELLI SCORREVOLI / DECLARES THAT THE DRIVES FOR SLIDING GATES /  
ERKLÄRT DASS DIE AUTOMATISIERUNGEN FÜR SCHIEBETÖRE / DECLARE QUE LES AUTOMATISATIONS POUR  
PORTAILS COULISSANTS / DECLARA QUE LAS AUTOMATIZACIONES PARA PUERTAS CORREDERAS / DECLARA QUE AS  
AUTOMATIZAÇÕES PARA PORTÕES DE CORRER / OSWADCZA ZE AUTOMATYKA DO BRAM PRZESUWNYCH /  
VERKLAART DAT DE AUTOMATISERING VOOR SCHUIFHEKKEN

BKS22TGS  
BKS22TLS

SONO CONFORMI ALLE DISPOSIZIONI DELLE SEGUENTI DIRETTIVE / THEY COMPLY WITH THE PROVISIONS OF THE FOLLOW-  
ING DIRECTIVES / DEN VORGABEN DER FOLGENDEN RICHTLINIEN ENTSPRECHEN / SONT CONFORMES AUX DISPOSITIONS  
DES DIRECTIVES SUIVANTES / CUMPLEN CON LAS DISPOSICIONES DE LAS SIGUIENTES DIRECTIVAS / ESTÃO DE ACORDO  
COM AS DISPOSIÇÕES DAS SEGUINTE DIRECTIVAS / SA ZGODNE Z POSTANOWIENIAMI NASTĘPUJĄCYCH DYREKTYW  
EUROPEJSKICH / VOLDOEN AAN DE VOORSCHRIFTEN VAN DE VOLGENDE RICHTLIJNEN:

- COMPATIBILITA' ELETTRONMAGNETICA / ELECTROMAGNETIC COMPATIBILITY / ELEKTROMAGNETISCHE  
VERTRÄGLICHKEIT / COMPATIBILITÉ ELECTROMAGNETIQUE / COMPATIBILIDADE ELECTROMAGNETICA / COMPATIBILI-  
DADE ELETROMAGNETICA / KOMPATYBILNOŚCI ELEKTROMAGNETYCZNEJ / ELEKTROMAGNETISCHE COMPATIBI-  
LITEIT : 2014/30/UE.

Riferimento norme armonizzate ed altre norme tecniche / Refer to  
European regulations and other technical regulations / Harmonisierte  
Bezugsnormen und andere technische Vorgaben / Référence aux normes  
harmonisées et aux autres normes techniques / Referencia normas  
armonizadas y otras normas técnicas / Referência de normas harmoniza-  
das e outras normas técnicas / Odnosne normy ujednolicone i inne normy  
techniczne / Geharmoniseerde en andere technische normen waarnaar is  
verwezen

EN 61000-6-2:2005  
EN 61000-6-3:2007+A1:2011  
EN 62233:2008  
EN 60335-1:2012+A11:2014  
EN 60335-2-103:2015

RISPETTANO I REQUISITI ESSENZIALI APPLICATI: / MEET THE APPLICABLE ESSENTIAL REQUIREMENTS: / DEN WESENTLIJCHEN  
ANGEWANDTEN ANFORDERUNGEN ENTSPRECHEN: / RESPECTENT LES CONDITIONS REQUISES NECESSAIRES APPLIQUEES:  
/ CUMPLEN CON LOS REQUISITOS ESENCIALES APLICADOS: / RESPETAM O REQUISITOS ESSENCIAIS APLICADOS: /  
SPEŁNIAJA PODSTAWOWE WYMAGANIE WYRUNKI: / VOLDOEN AAN DE TOEPASBARE MINIMUM EISEN:

**1.1.3; 1.1.5; 1.2.1; 1.2.2; 1.3.2; 1.3.7; 1.3.8.1; 1.4.1; 1.4.2; 1.5.1; 1.5.6; 1.5.8; 1.5.9; 1.5.9; 1.5.13; 1.6.1; 1.6.3; 1.6.4;  
1.7.1; 1.7.2; 1.7.4**

PERSONA AUTORIZZATA A COSTITUIRE LA DOCUMENTAZIONE TECNICA PERTINENTE / PERSON AUTHORISED TO COMPILE THE RELEVANT TECHNICAL DOCUMENTATION /  
PERSON DIE BEVOLLMÄCHTIGT IST, DIE RELEVANTEN TECHNISCHEN UNTERLAGEN ZUSAMMENZUSTELLEN / DOCUMENTATION TECHNIQUE SPECIFIQUE D'AUTORISATION  
A CONSTRUIRE DE / PERSONA FACULTADA PARA ELABORAR LA DOCUMENTACIÓN TÉCNICA PERTINENTE / PESSOA AUTORIZADA A CONSTITUIR A DOCUMENTAÇÃO TÉCNICA  
PERTINENTE / OSOBA UPOWAŻNIONA DO ZREDAGOWANIA DOKUMENTACJI TECHNICZNEJ / DEGENE DIE GEMACHTIGD IS DE RELEVANTE TECHNISCHE DOCUMENTEN  
SAMEN TE STELLEN.

#### CAME S.p.a.

La documentazione tecnica pertinente è stata compilata in conformità all'allegato VIIB. / The pertinent technical documentation has been drawn up in compliance with attached  
document VIIB. / Die relevante technische Dokumentation wurde entsprechend der Anlage VIIB ausgestellt. / La documentation technique spécifique a été remplie conformément à  
l'annexe IIB / La documentación técnica pertinente ha sido rellenada en cumplimiento con el anexo VIIB. / A documentação técnica pertinente foi preenchida de acordo com o anexo  
VIIB. / Odnosna dokumentacja techniczna została zredagowana zgodnie z załącznikiem VIIB. / De technische documentatie terzake is opgesteld in overeenstemming met de bijlage VIIB.

CAME S.p.a. si impegna a trasmettere, in risposta a una richiesta adeguatamente motivata delle autorità nazionali, informazioni pertinenti sulle quasi macchine, e / Came S.p.A., following  
a duly motivated request from the national authorities, undertakes to provide information related to the quasi machines, and / Die Firma Came S.p.A. verpflichtet sich auf eine angemessen  
motivierende Anfrage der staatlichen Behörden Informationen über die unvollständigen Maschinen, zu übermitteln, und / Came S.p.A. s'engage à transmettre, en réponse à une demande  
bien fondée de la part des autorités nationales, les renseignements relatifs aux quasi machines / Came S.p.A. se compromete a transmitir, como respuesta a una solicitud adecuadamente  
fundada por parte de las autoridades nacionales, informaciones relacionadas con las cuasimáquinas / Came S.p.A. compromete-se em transmitir, em resposta a uma solicitação motivada  
apropriadamente pelas autoridades nacionais, informações pertinentes às partes que compoñham máquinas / Came S.p.A. zobowiązuje się do udzielenia informacji dotyczących maszyn  
nieukonczonych na odpowiednio umotywowana prosbe, złożona przez kompetentne organy państwowe / Came S.p.A. verbindt zich ertoe om op met redenen omkleed verzoek van de  
nationale autoriteiten de relevante informatie voor de niet voltooidde machine te verstrekken,

#### VIETA / FORBIDS / VERBIETET / INTERDIT / PROHIBE / PROIBE / ZABRANIA SIE / VERBIEDT

la messa in servizio finché la macchina finale in cui deve essere incorporata non è stata dichiarata conforme, se del caso alla 2006/42/CE. / commissioning of the above mentioned until such  
moment when the final machine into which they must be incorporated, has been declared compliant, if pertinent, to 2006/42/CE / die Inbetriebnahme bevor die „Endmaschine“ in die die  
unvollständige Maschine eingebaut wird, als konform erklärt wurde, gegebenenfalls gemäß der Richtlinie 2006/42/EU. / la mise en service tant que la machine finale dans laquelle elle doit  
être incorporée n'a pas été déclarée conforme, le cas échéant, à la norme 2006/42/CE. / la puesta en servicio hasta que la máquina final en la que será incorporada no haya sido declarada  
de conformidad de acuerdo a la 2006/42/CE / a colocação em funcionamento, até que a máquina final, onde devem ser incorporadas, não for declarada em conformidade, se de acordo  
com a 2006/42/CE. / Uruchomienia urządzenia do czasu, kiedy maszyna, do której ma być wbudowany, nie zostanie oceniona jako zgodna z wymogami dyrektywy 2006/42/WE, jeśli taka  
procedura była konieczna. / deze in werking te stellen zolang de eindmachine waarin de niet voltooidde machine moet worden ingebouwd in overeenstemming is verklaard, indien toepasselijk  
met de richtlijn 2006/42/EG.

Dosson di Casier (TV)  
30 Luglio / July / Juli / Juillet /  
Julio / Julho / Lipiec / Juli 2018

Amministratore Delegato / Managing Director /  
General Direktor / Directeur Général / Director General /  
Administrator Delegado / Dyrektor Zarządzający /  
Algemeen Directeur

Andrea Menzies

Fascicolo tecnico a supporto / Supporting technical dossier / Unterstützung technische Dossier / soutien dossier technique / apoyo expediente  
técnico / apoiar dossier técnico / wspieranie dokumentacji technicznej / ondersteunende technische dossier: 801MS-0130

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