

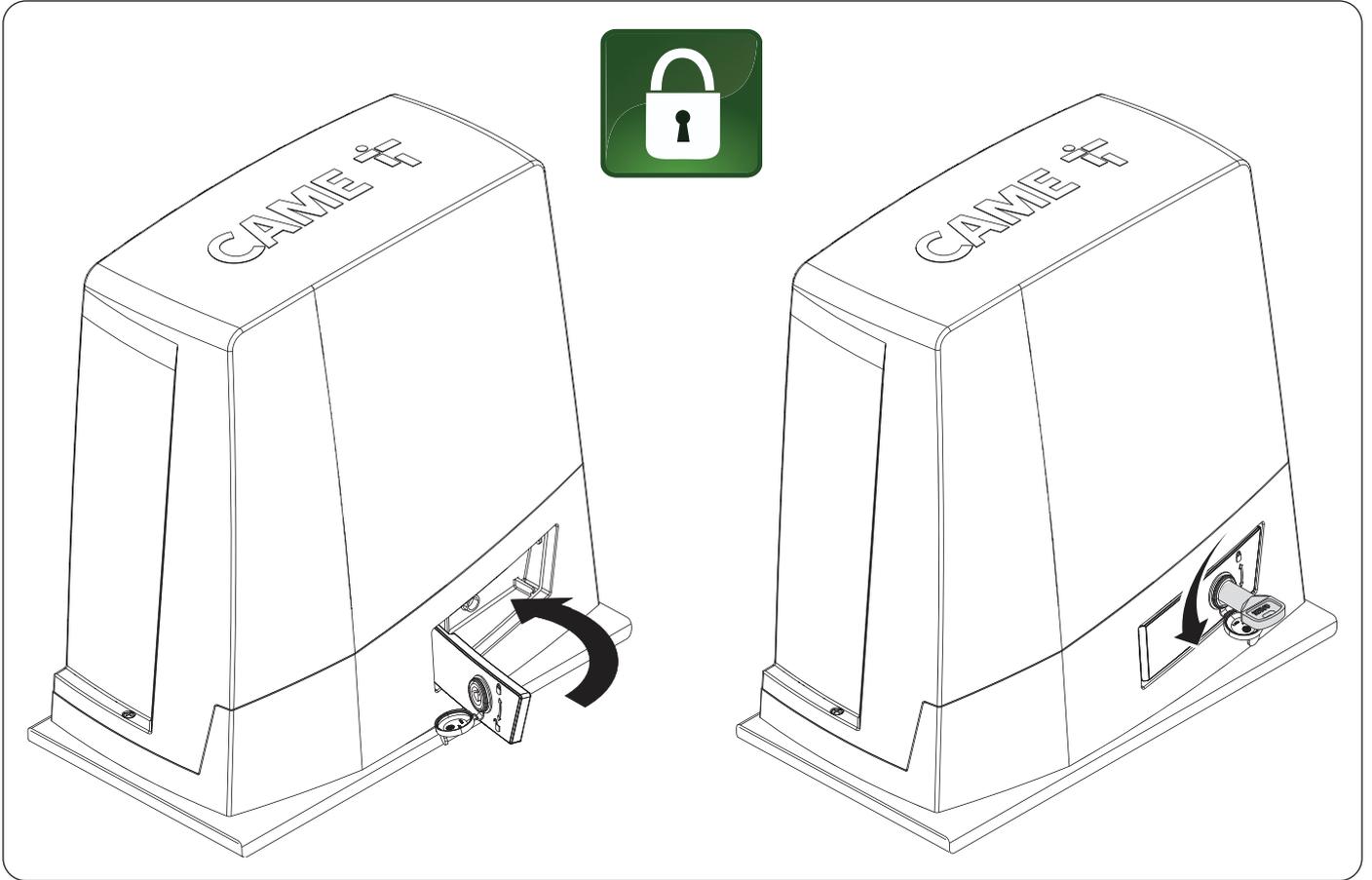
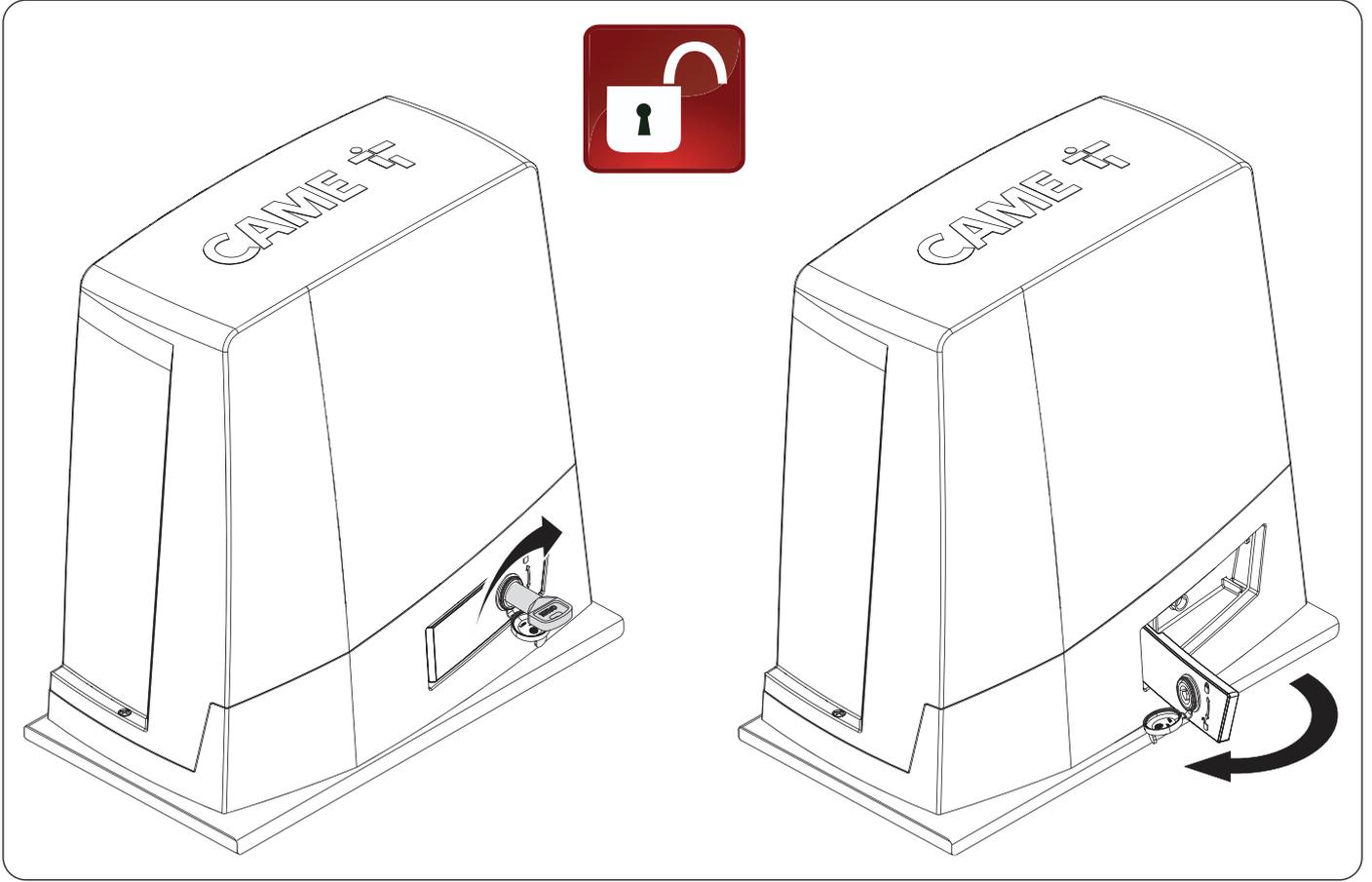
Sliding-gate operators

FA01443-EN



BKV15AGE BKV20AGE BKV25AGE
BKV15AGS BKV20AGS BKV25AGS
BKV15ALS BKV20ALS BKV25ALS
BKV15RGS BKV20RGS

INSTALLATION MANUAL

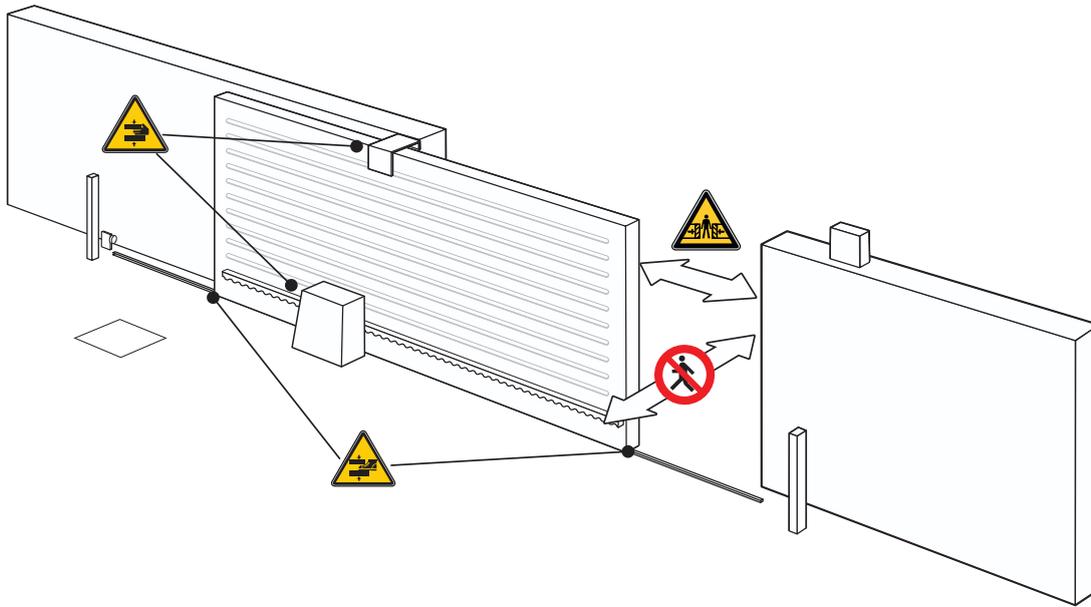


⚠ Important safety instructions.**⚠ Please follow all of these instructions. Improper installation may cause serious bodily harm.****⚠ Before continuing, please also read the general precautions for users.**

Only use this product for its intended purpose. Any other use is hazardous.

- The manufacturer cannot be held liable for any damage caused by improper, unreasonable or erroneous use.
- This product is defined by the Machinery Directive (2006/42/EC) as partly completed machinery.
- Partly completed machinery means an assembly which is almost machinery but which cannot in itself perform a specific application.
- Partly completed machinery is only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment thereby forming machinery to which the Machinery Directive (2006/42/EC) applies.
- The final installation must comply with the Machinery Directive (2006/42/EC) and the European reference standards in force.
- The manufacturer declines any liability for using non-original products, which would also void the warranty.
- All operations indicated in this manual must be carried out exclusively by skilled and qualified personnel and in full compliance with the regulations in force.
- The device must be installed, wired, connected and tested according to good professional practice, in compliance with the standards and laws in force.
- Make sure the mains power supply is disconnected during all installation procedures.
- Check that the temperature ranges given are suitable for the installation site.
- Do not install on slopes i.e. any surfaces that are not perfectly level.
- Do not install the operator on surfaces that could yield and bend. If necessary, add suitable reinforcements to the anchoring points.
- Make sure that no direct jets of water can wet the product at the installation site (sprinklers, water cleaners, etc.).
- 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.
- Demarcate the entire site properly to prevent unauthorised personnel from entering, especially minors.
- In case of manual handling, have one person for every 20 kg that needs hoisting; for non-manual handling, use proper hoisting equipment in safe conditions.
- Use suitable protection to prevent any mechanical hazards due to persons loitering within the operating range of the operator.
- The electrical cables must pass through special pipes, ducts and cable glands in order to guarantee adequate protection against mechanical damage.
- The electrical cables must not touch any parts that may overheat during use (such as the motor and transformer).
- Before installation, check that the guided part is in good mechanical condition, and that it opens and closes correctly.
- The product cannot be used to automate any guided part that includes a pedestrian gate, unless it can only be enabled when the pedestrian gate is secured.
- Make sure that nobody can become trapped between the guided and fixed parts, when the guided part is set in motion.
- Use additional protection to prevent your fingers from being crushed between the pinion and rack.
- All fixed controls must be clearly visible after installation, in a position that allows the guided part to be directly visible, but far away from moving parts. In the case of a hold-to-run control, this must be installed at a minimum height of 1.5 m from the ground and must not be accessible to the public.
- If not already present, apply a permanent tag that describes how to use the manual release mechanism close to it.
- Make sure that the operator has been properly adjusted and that the safety and protection devices and the manual release are working properly.
- Before handing over to the final user, check that the system complies with the harmonised standards and the essential requirements of the Machinery Directive (2006/42/EC).
- Any residual risks must be indicated clearly with proper signage affixed in visible areas, and explained to end users.
- Put the machine's ID plate in a visible place when the installation is complete.
- If the power-supply cable is damaged, it must be immediately replaced by the manufacturer or by an authorised technical assistance centre, or in any case, by qualified staff, to prevent any risk.
- Keep this manual inside the technical folder along with the manuals of all the other devices used for your automation system.
- Make sure to hand over to the end user all the operating manuals of the products that make up the final machinery.

Main points of danger for people



No transiting while the barrier is moving.



Risk of entrapment.



Risk of trapping hands.



Risk of trapping feet.

DISMANTLING AND DISPOSAL

CAME S.p.A. employs an Environmental Management System at its premises. This system is certified and compliant with the UNI EN ISO 14001 standard to ensure that the environment is respected and 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, etc.) can be disposed of easily as solid urban waste, separated for recycling.

Before dismantling and disposing of the product, please always check the local laws in force.

DISPOSE OF THE PRODUCT RESPONSIBLY

DISPOSING OF THE PRODUCT

Our products are made of various materials. Most of these materials (aluminium, plastic, iron and electrical cables) are classified as solid urban waste. They can be separated for recycling and disposed of at authorised waste treatment plants.

Other components (electronic boards, transmitter batteries, etc.) may contain pollutants.

These must be removed and disposed of by an authorised waste disposal and recycling firm.

It is always advisable to check the specific laws that apply in your area.

DISPOSE OF THE PRODUCT RESPONSIBLY

Key

-  This symbol shows which parts to read carefully.
-  This symbol shows which parts describe safety issues.
-  This symbol shows what to tell users.
-  The measurements, unless otherwise stated, are in millimetres.

Description

801MS-0300

BKV15AGS - Operator with 36 V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, movement and obstruction-detecting device for gates weighing up to 1500 kg that are up to 20 m long.

801MS-0310

BKV20AGS - Operator with 36 V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, movement and obstruction-detecting device for gates weighing up to 2000 kg that are up to 20 m long.

801MS-0320

BKV25AGS - Operator with 36 V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, movement/obstruction-detection device and module 6 pinion for gates weighing up to 2500 kg that are up to 20 m long.

801MS-0330

BKV15RGS - High performance operator with 36V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, movement and obstruction-detecting device for gates weighing up to 1500 kg that are up to 20 m long.

801MS-0340

BKV20RGS - High performance operator with 36V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, movement and obstruction-detecting device for gates weighing up to 2000 kg that are up to 20 m long.

801MS-0350

BKV15AGE - Plus operator with 36 V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, magnetic limit switches and clock accessory included for gates weighing up to 1500 kg that are up to 20 m long.

801MS-0360

BKV20AGE - Plus operator with 36 V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, magnetic limit switches and clock accessory included for gates weighing up to 2000 kg that are up to 20 m long.

801MS-0370

BKV25AGE - Plus operator with 36 V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, module 6 pinion, magnetic limit switches and clock accessory included for gates weighing up to 2500 kg that are up to 20 m long.

801MS-0301

BKV15ALS - High-performance operator with 36V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, movement and obstruction-detecting device for gates weighing up to 1500 kg that are up to 20 m long. RAL 7040 grey cover.

801MS-0311

BKV20ALS - High-performance operator with 36V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, movement and obstruction-detecting device for gates weighing up to 2000 kg that are up to 20 m long. RAL 7040 grey cover.

801MS-0321

BKV25ALS - High-performance operator with 36 V motor, featuring a control board with graphic display, Adaptive Speed & Torque Technology, 4 safety inputs, movement and obstruction-detecting device, and module 6 pinion for gates weighing up to 2500 kg that are up to 20 m long. RAL 7040 grey cover.

Intended use

Solution for large sliding gates.

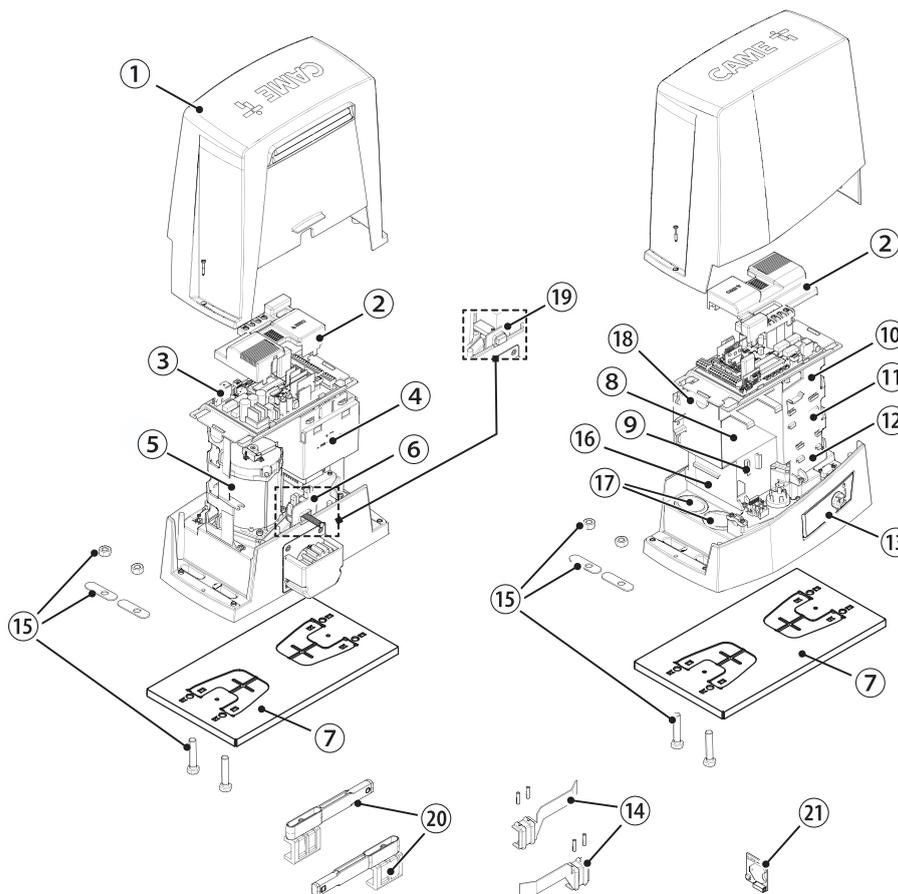
-  Any installation and/or use other than that specified in this manual is forbidden.

Description of parts

Operator

- ❶ Cover
- ❷ Board protection cover
- ❸ Control board
- ❹ Board-holder support
- ❺ Gearmotor
- ❻ Mechanical limit switch
- ❼ Anchoring plate
- ❽ Housing for two emergency batteries
- ❾ Housing for thermostat with cartridge
- ❿ Housing for the RGSM001 module
- ⓫ Housing for the LBB card
- ⓬ Housing for the RGP1 module
- ⓭ Release lever
- ⓮ Mechanical limit-switch tabs
- ⓯ Fixtures and fittings
- ⓰ Housing for UR042 module
- ⓱ Holes for the electrical cables
- ⓲ Housing for SMA module
- ⓳ Magnetic limit switch*
- ⓴ Magnetic limit-switch tabs*
- ⓵ Clock card (806SA-0120)*

* Only for BKV15AGE, BKV20AGE and BKV25AGE



Control board

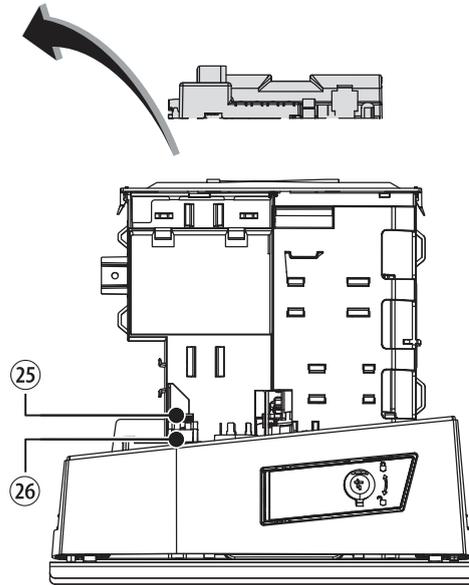
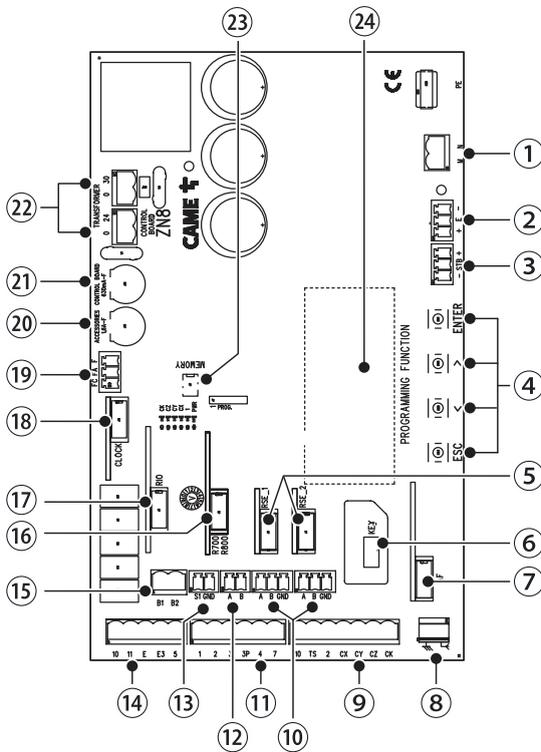
The functions on the input and output contacts, the time settings and user management are set and viewed on the display.

All connections are protected by quick fuses.

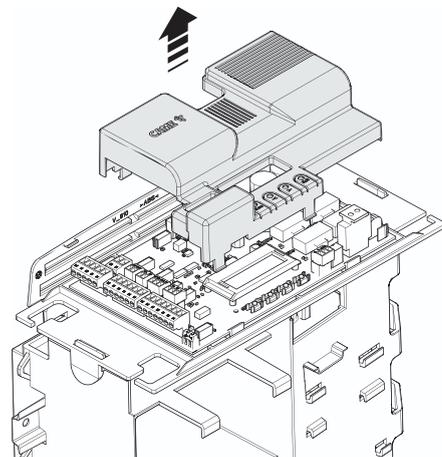
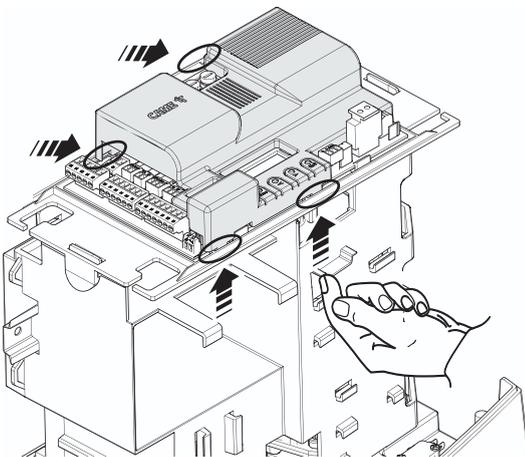
For the system to work properly, before fitting any plug-in card, DISCONNECT THE MAIN POWER SUPPLY and remove any batteries.

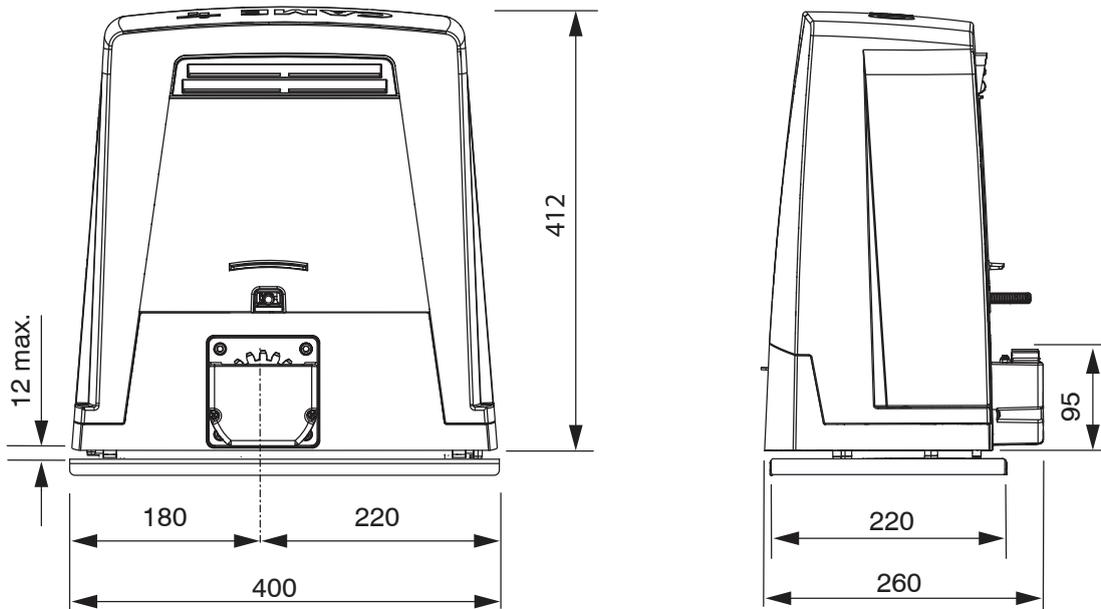
Before working on the control panel, disconnect the mains power supply and remove the batteries, if any.

- | | |
|---|---|
| <ul style="list-style-type: none"> ❶ Terminal board for connecting the gearmotor ❷ Terminal board for connecting the encoder ❸ Terminal board for connecting the RGP1 module or LBB card ❹ Programming buttons ❺ RSE card connector ❻ Connector for CAME KEY ❼ Connector for plug-in radio frequency card (AF) ❽ Terminal board for connecting the antenna ❾ Terminal board for connecting the safety devices ❿ Terminal board for connecting the paired function or the CRP ⓫ Terminal board for connecting control devices ⓬ Terminal board for connecting the keypad selector ⓭ Terminal board for connecting the transponder selector switch | <ul style="list-style-type: none"> ⓮ Terminal board for connecting the signalling devices ⓯ Terminal board for B1-B2 output ⓰ Connector for the R700 or R800 decoding card ⓱ Connector for the RIOCN8WS module ⓲ Connector for the clock card (806SA-0120) ⓳ Terminal board for limit-switch micro-switches ⓴ Accessories fuse ⓵ Control board fuse ⓶ Terminal board for connecting the transformer ⓷ Memory Roll card connector ⓸ Display ⓹ Line fuse ⓺ Power supply terminal board |
|---|---|



Remove the card cover before inserting the cards into the connectors.





Usage limitations

MODELS	BKV15AGS	BKV20AGS	BKV25AGS	BKV15RGS	BKV20RGS
Pinion module	4	4	6	4	4
Maximum gate-leaf length (m)	20	20	20	20	20
Maximum gate-leaf weight (kg)	1500	2000	2500	1500	2000

MODELS	BKV15AGE	BKV20AGE	BKV25AGE	BKV15ALS	BKV20ALS	BKV25ALS
Pinion module	4	4	6	4	4	6
Maximum gate-leaf length (m)	20	20	20	20	20	20
Maximum gate-leaf weight (kg)	1500	2000	2500	1500	2000	2500

Technical data

MODELS	BKV15AGS	BKV20AGS	BKV25AGS	BKV15RGS	BKV20RGS
Power supply (V - 50/60 Hz)	230 AC	230 AC	230 AC	120 AC	120 AC
Motor power supply (V)	36 DC				
Board power supply (V)	26 DC				
Standby consumption (W)	14	14	14	14	14
Standby consumption with the RGP1 (W) module	0,8	0,8	0,8	0,8	0,8
Power (W)	200	250	300	200	250
Transformer thermal protection (°C)	120	120	120	120	120
Current draw (mA)	8	9	10	8	9
Maximum current draw (mA)	20	20	20	20	20
Colour	RAL 7024				
Operating temperature (°C)	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55
Thrust (N)	800	900	1000	800	900
Maximum thrust (N)	1200	1350	1500	1200	1350
Maximum operating speed (m/min)	12	12	12	12	12
Operating time (s)	180	180	180	180	180
Cycles/hour	CONTINUOUS OPERATION				
Protection rating (IP)	54	54	54	54	54
Insulation class	I	I	I	I	I
Reduction ratio (i)	40	40	40	40	40
Weight (kg)	20	21	21	20	21

MODELS	BKV15AGE	BKV20AGE	BKV25AGE	BKV15ALS	BKV20ALS	BKV25ALS
Power supply (V - 50/60 Hz)	230 AC					
Motor power supply (V)	36 DC					
Board power supply (V)	26 DC					
Standby consumption (W)	14	14	14	14	14	14
Standby consumption with the RGP1 (W) module	0,8	0,8	0,8	0,8	0,8	0,8
Power (W)	200	250	300	200	250	300
Transformer thermal protection (°C)	120	120	120	120	120	120
Current draw (mA)	8	9	10	8	9	10
Maximum current draw (mA)	20	20	20	20	20	20
Colour	RAL 7024	RAL 7024	RAL 7024	RAL 7040	RAL 7040	RAL 7040
Operating temperature (°C)	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55	-20 ÷ +55
Thrust (N)	800	900	1000	800	900	1000
Maximum thrust (N)	1200	1350	1500	1200	1350	1500
Maximum operating speed (m/min)	12	12	12	12	12	12
Operating time (s)	180	180	180	180	180	180
Cycles/hour	CONTINUOUS OPERATION					
Protection rating (IP)	54	54	54	54	54	54
Insulation class	I	I	I	I	I	I
Reduction ratio (i)	40	40	40	40	40	40
Weight (kg)	20	21	21	20	21	21

Fuse table

MODELS	BKV15AGS	BKV20AGS	BKV25AGS	BKV15RGS	BKV20RGS
Line fuse	2 A F	2 A F	2 A F	4 A F	4 A F
Control-board fuse	630 mA F				
Accessories fuse	1.6 A F				

MODELS	BKV15AGE	BKV20AGE	BKV25AGE	BKV15ALS	BKV20ALS	BKV25ALS
Line fuse	2 A F	2 A F	2 A F	2 A F	2 A F	2 A F
Control-board fuse	630 mA F					
Accessories fuse	1.6 A F					

Cable types and minimum thicknesses

Cable length (m)	up to 20	from 20 to 30
Power supply 230 V AC	3G x 1.5 mm ²	3G x 2.5 mm ²
24 V AC/DC flashing beacon	2 x 1 mm ²	2 x 1 mm ²
TX Photocells	2 x 0.5 mm ²	2 x 0.5 mm ²
RX photocells	4 x 0.5 mm ²	4 x 0.5 mm ²
Command and control devices	* no. x 0.5 mm ²	* no. x 0.5 mm ²

* no. = see product assembly instructions - Warning: the cable cross-section is indicative and varies according to the motor power and cable length.

 When operating at 230 V and outdoors, use H05RN-F cables compliant with 60245 IEC 57 (IEC); when operating indoors, use H05VV-F cables compliant with 60227 IEC 53 (IEC). For power supplies up to 48 V, you can use FROR 20-22 II cables compliant with EN 50267-2-1 (CEI).

 To connect the antenna, use RG58 cable (up to 5 m).

 For paired connection and CRP, use UTP CAT5 cable (up to 1,000 m).

 If the cable lengths differ from those specified in the table, define the cable cross-sections according to the actual power draw of the connected devices and in line with regulation CEI EN 60204-1.

 For multiple, sequential loads along the same line, recalculate the values in the table according to the actual power draw and distances. For information on connecting products not covered in this manual, please see the documentation accompanying the products themselves.

INSTALLATION

 The following illustrations are examples only. The space available for fitting the operator and accessories varies depending on the area where it is installed. It is up to the installer to find the most suitable solution.

 The drawings show an operator fitted on the left.

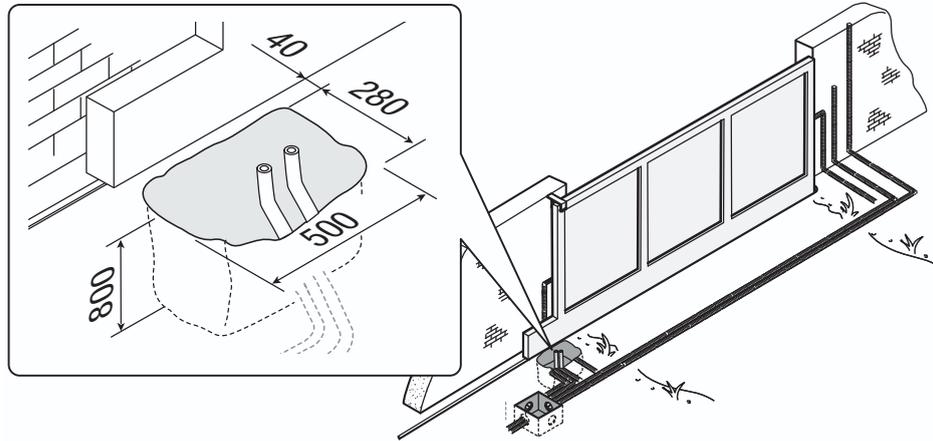
Preliminary operations

Dig a hole for the foundation frame.

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

 Use $\varnothing 40$ mm corrugated tubes to connect the gearmotor to the accessories.

 The number of tubes depends on the type of system and the accessories that are going to be fitted.



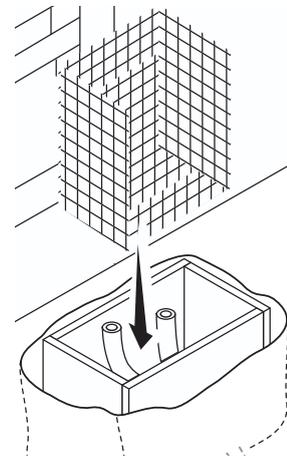
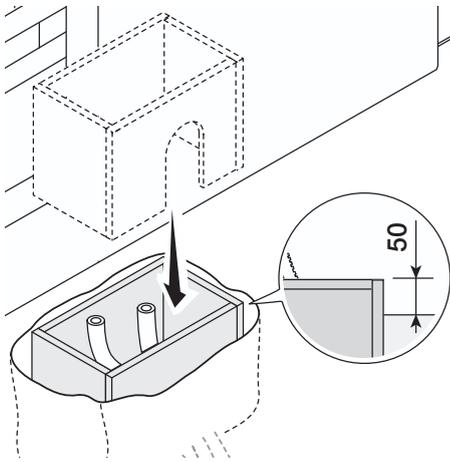
Laying the anchoring plate

Set up a foundation frame that is larger than the anchoring plate.

Insert the foundation frame into the dug hole.

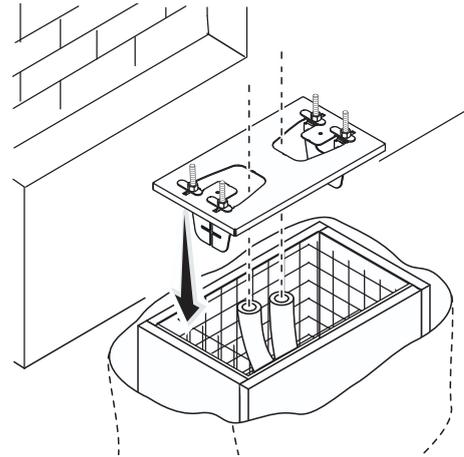
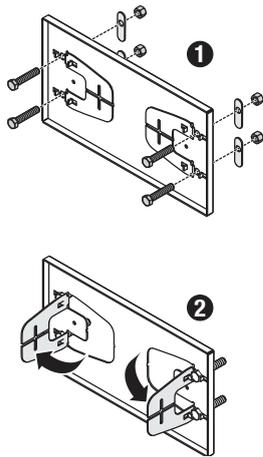
 The foundation frame must protrude by 50 mm, above ground level.

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



Insert the screws supplied in the anchoring plate.
 Lock the screws in place with the nuts supplied.
 Remove the pre-shaped clamps using a screwdriver.
 Fit the anchoring plate in the iron cage.

 The tubes must pass through the existing holes.



Position the anchoring plate, taking note of the measurements shown in the drawing.

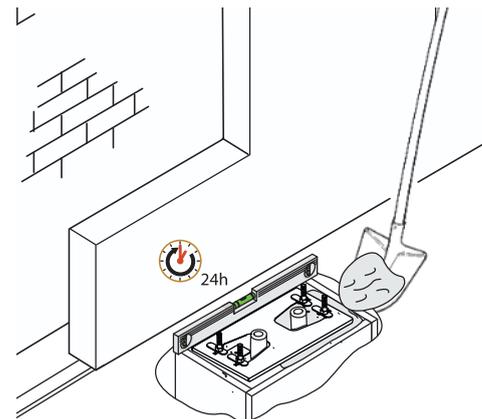
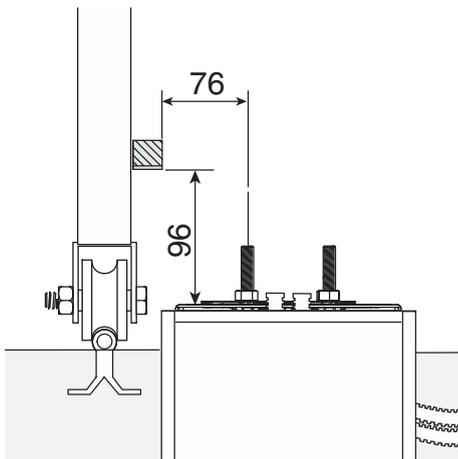
 If the gate does not have a rack, proceed with the installation.

 See the section "FASTENING THE RACK".

Cast cement into the foundation frame.

 The plate must be perfectly level and the screw threads completely above surface.

Wait at least 24 hours for the cement to dry.



Remove the foundation frame.

Fill the hole with soil around the concrete block.

