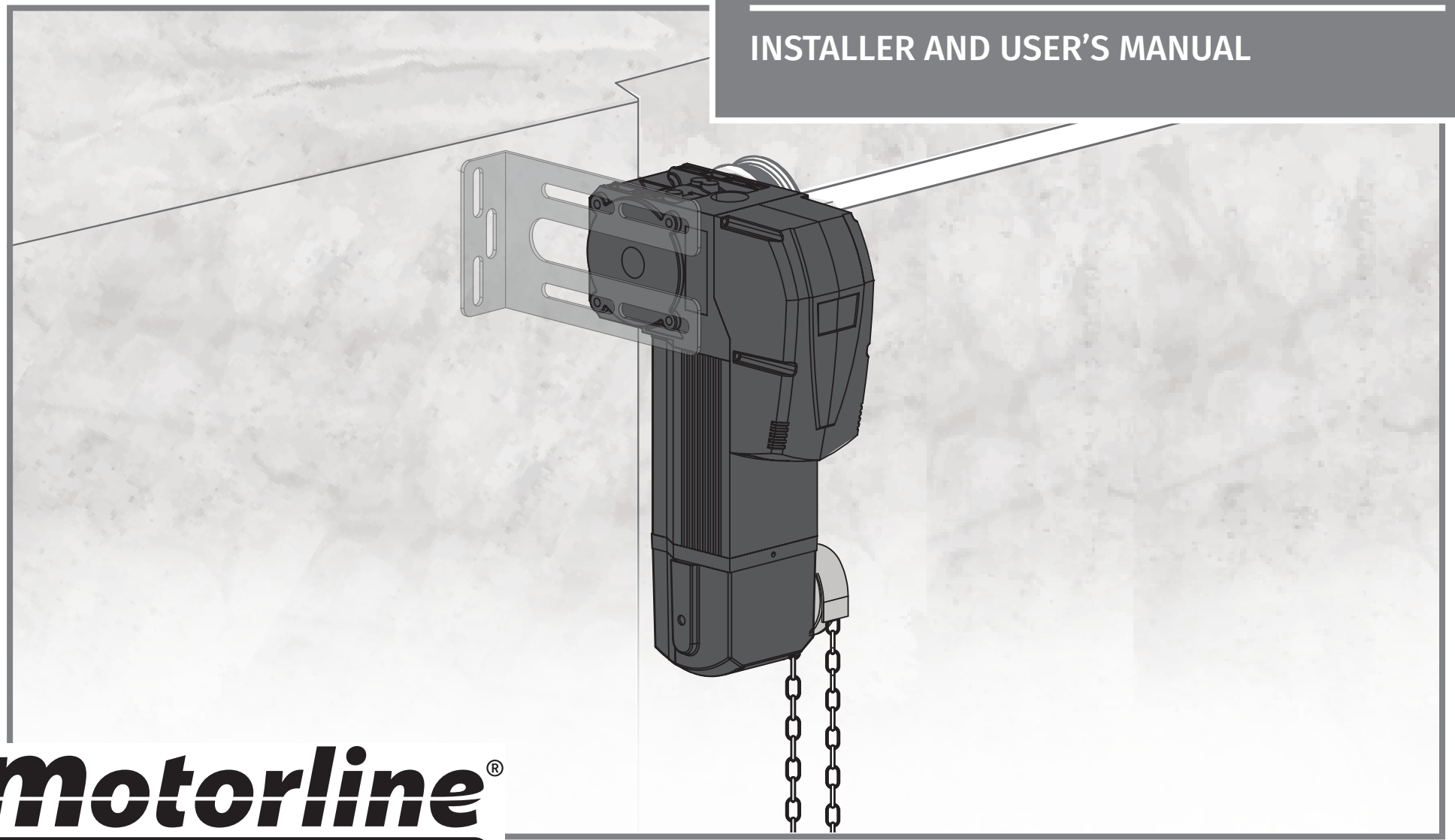
PORTUGAL

EN

KVM105 / KVM110 / KVM115

INSTALLER AND USER'S MANUAL



Motorline® PROFESSIONAL

v5.6
REV. 12/2024

00. CONTENT

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01. SAFETY INSTRUCTIONS

CE	This product is certified in accordance with European Community (EC) safety standards.
RoHS	This product complies with Directive 2011/65/EU of the European Parliament and of the Council, of 8 June 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment and with Delegated Directive (EU) 2015/863 from Commission.
	(Applicable in countries with recycling systems). This marking on the product or literature indicates that the product and electronic accessories (eg. Charger, USB cable, electronic material, controls, etc.) should not be disposed of as other household waste at the end of its useful life. To avoid possible harm to the environment or human health resulting from the uncontrolled disposal of waste, separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Home users should contact the dealer where they purchased this product or the National Environment Agency for details on where and how they can take these items for environmentally safe recycling. Business users should contact their vendor and check the terms and conditions of the purchase agreement. This product and its electronic accessories should not be mixed with other commercial waste.
	This marking indicates that batteries should not be discarded like other household waste at the end of their useful life. Batteries must be delivered to selective collection points for recycling.
	The different types of packaging (cardboard, plastic, etc.) must be subject to selective collection for recycling. Separate packaging and recycle it responsibly.
	This marking indicates that the product and electronic accessories (eg. charger, USB cable, electronic material, controls, etc.) are susceptible to electric shock by direct or indirect contact with electricity. Be cautious when handling the product and observe all safety procedures in this manual.

01. SAFETY INSTRUCTIONS

GENERAL WARNINGS

- This manual contains very important safety and usage information. Read all instructions carefully before beginning the installation/ usage procedures and keep this manual in a safe place that it can be consulted whenever necessary.
- This product is intended for use only as described in this manual. Any other enforcement or operation that is not mentioned is expressly prohibited, as it may damage the product and put people at risk causing serious injuries.
- This manual is intended firstly for specialized technicians, and does not invalidate the user's responsibility to read the "User Norms" section in order to ensure the correct functioning of the product.
- The installation and repair of this product may be done by qualified and specialized technicians, to assure every procedure are carried out in accordance with applicable rules and norms. Nonprofessional and inexperienced users are expressly prohibited of taking any action, unless explicitly requested by specialized technicians to do so.
- Installations must be frequently inspected for unbalance and the wear signals of the cables, springs, hinges, wheels, supports and other mechanical assembly parts.
- Do not use the product if it is necessary repair or adjustment is required.
- When performing maintenance, cleaning and replacement of parts, the product must be disconnected from power supply. Also including any operation that requires opening the product cover.
- The use, cleaning and maintenance of this product may be carried out by any persons aged eight years old and over and persons whose physical, sensorial or mental capacities are lower, or by persons without any knowledge of the product, provided that these are supervision and instructions given by persons with experienced in terms of usage of the product in a safe manner and who understands the risks and dangers involved.
- Children shouldn't play with the product or opening devices to avoid the motorized door or gate from being triggered involuntarily.
- If the power cable is damaged, it must be replaced by the manufacturer, after-sales service or similarly qualified personnel to avoid danger.
- The device must be disconnected from the electrical network when removing the battery.
- Ensure that blocking is avoided between the actuated part and its fixed parts due to the opening movement of the actuated part.

WARNINGS FOR TECHNICIANS

- Before beginning the installation procedures, make sure that you have all the devices and materials necessary to complete the installation of the product.
- You should note your Protection Index (IP) and operating temperature to ensure that is suitable for the installation site.
- Provide the manual of the product to the user and let them know how to handle it in an emergency.
- If the automatism is installed on a gate with a pedestrian door, a door locking mechanism must be installed while the gate is in motion.
- Do not install the product "upside down" or supported by elements do not support its weight. If necessary, add brackets at strategic points to ensure the safety of the automatism.
- Do not install the product in explosive site.
- Safety devices must protect the possible crushing, cutting, transport and danger areas of the motorized door or gate.
- Verify that the elements to be automated (gates, door, windows, blinds, etc.) are in perfect function, aligned and level. Also verify if the necessary mechanical stops are in the appropriate places.
- The control board must be installed on a safe place of any fluid (rain, moisture, etc.), dust and pests.
- You must route the various electrical cables through protective tubes, to protect them against mechanical exertions, essentially on

01. SAFETY INSTRUCTIONS

the power supply cable. Please note that all the cables must enter the control board from the bottom.
- If the automatism is to be installed at a height of more than 2,5m from the ground or other level of access, the minimum safety and health requirements for the use of work equipment workers at the work of Directive 2009/104/CE of European Parliament and of the Council of 16 September 2009.
- Attach the permanent label for the manual release as close as possible to the release mechanism.
- Disconnect means, such as a switch or circuit breaker on the electrical panel, must be provided on the product's fixed power supply leads in accordance with the installation rules.
- If the product to be installed requires power supply of 230Vac or 110Vac, ensure that connection is to an electrical panel with ground connection.
- The product is only powered by low voltage satefy with control board (only at 24V motors).
- Parts/products weighing more than 20 kg must be handled with special care due to the risk of injury. It is recommended to use suitable auxiliary systems for moving or lifting heavy objects.
- Pay special attention to the danger of falling objects or uncontrolled movement of doors/gates during the installation or operation of this product.

WARNINGS FOR USERS

- Keep this manual in a safe place to be consulted whenever necessary.
- If the product has contact with fluids without being prepared, it must immediately disconnect from the power supply to avoid short circuits, and consult a specialized technician.
- Ensure that technician has provided you the product manual and informed you how to handle the product in an emergency.
- If the system requires any repair or modification, unlock the automatism, turn off the power and do not use it until all safety conditions have been met.
- In the event of tripping of circuits breakers of fuse failure, locate the malfunction and solve it before resetting the circuit breaker or replacing the fuse. If the malfunction is not repairable by consult this manual, contact a technician.
- Keep the operation area of the motorized gate free while the gate in in motion, and do not create strength to the gate movement.
- Do not perform any operation on mechanical elements or hinges if the product is in motion.

RESPONSABILITY

- Supplier disclaims any liability if:
  - Product failure or deformation result from improper installation use or maintenance!
  - Safety norms are not followed in the installation, use and maintenance of the product.
  - Instructions in this manual are not followed.
  - Damaged is caused by unauthorized modifications
  - In these cases, the warranty is voided.

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Barcelos, Portugal

SYMBOLS LEGEND:


- Important safety notices


- Potentiometer information


- Useful information


- Connectors information


- Programming information


- Buttons information

KVM105, KVM110 AND KVM115

KVM105, KVM110 and KVM115 are spindle drive automatims for sectional industrial door automation, with the possibility of horizontal or vertical application. The ease of installation, configuration and maintenance make it ideal for all sectional doors.

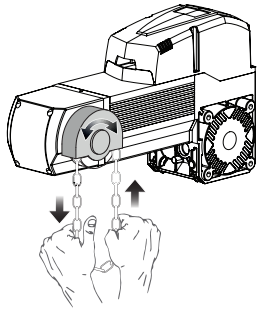
TECHNICAL CHARACTERISTICS

	KVM105	KVM110	KVM115
• **Lubricant Type**	Oil		
• **Noise**	<55dB		
• **Chain Type**	Standard chain		
• **Maximum limit of limit switches**	20 motor's rotations		
• **Shaft Bore Diameter**	ø25,4mm		
• **Working temperature**	-25~+55°C		
• **IP**	IP54		
• **Power Supply**	230V 50 Hz		400V 50 Hz
• **Capacitor**	35µF+12.5	39µF+12.5	-
• **Power**	650W	700W	800W
• **Force**	70Nm	120Nm	150Nm
• **Working frequency**	25%	20%	15%
• **Thermal**	120°C		
• **Motor RPM**	1400 RPM		
• **Reducer RPM**	24 RPM		
• **Weight**	20Kg	20,2Kg	20,7Kg
• For sectional doors up to	20m²	40m²	50m²

MANUAL OPENING / CLOSING

The automatism release system allows the user to open manually, in case of emergency and/or power cuts.

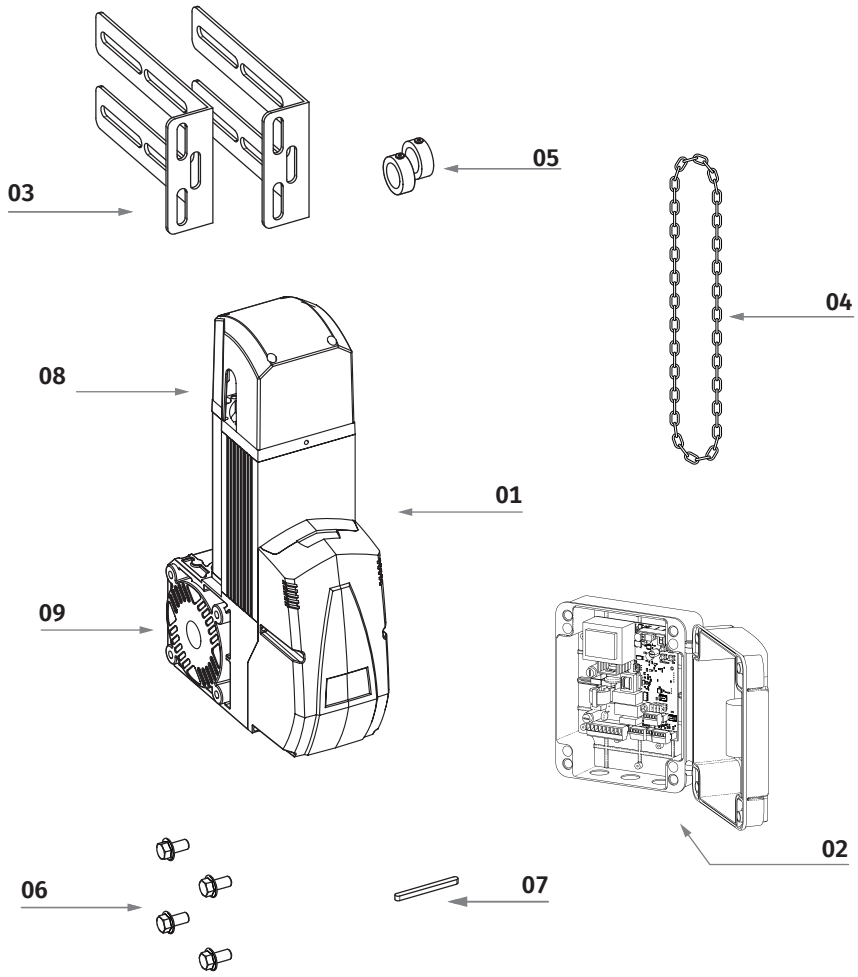
For that just have to pull the circular chain in one direction or another to proceed to the manual opening or closing as shown in the picture.



PACKAGE

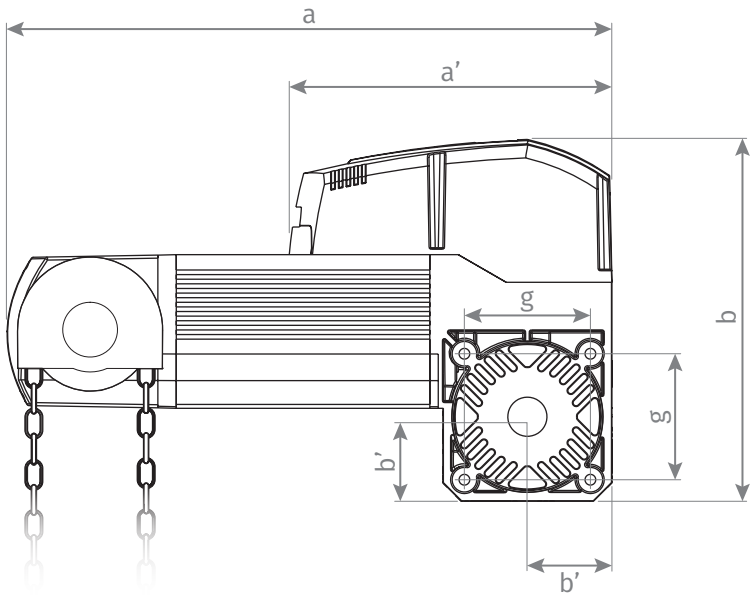
In the kit you will find the following components:

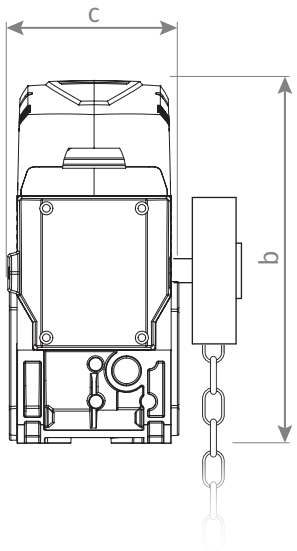
01• 01 KVM Motor
02• 01 Control panel (with control board)
03• 01 Motor fixing plate
04• 01 Chain
05• 02 Protection ring
06• 04 Motor fixing screws
07• 01 Dowel
08• 01 Release System
09• 01 Shaft Reducer



02. AUTOMATISM

MOTOR AND CONTROL PANEL DIMENSIONS





	KVM105	KVM110	KVM115
• Motor Dimensions (a x b x c)	400x236x110	450x300x200	450x240x110
• Reducer Width (c')	110	110	110
• Total Motor Height (a)	400	450	450
• Control Panel Dimensions (d x e x f)	170x200x100	-	-
• Motor Depth (b)	236	240	240
• Total Height of Electronic Panel (a')	282	170	170
• Distance to the center of reducer (b')	54	55	55
• Distance between center of screws (g)	83	83	83

03. INSTALLATION

AUTOMATISM INSTALLATION

- **The gearmotor must be installed in a protected area of shocks.**
- **The fixation surface should be solid.**
- **Should be used accessories with capacity to fixing the engine to surface.**
- **Install suitable tubes for the passage of electrical cables, to ensure the complete protection against mechanical damage.**
- **The door structure must be resistant enough, with efficient hinges.**
- **There should be no friction between fixed parts and moving parts.**

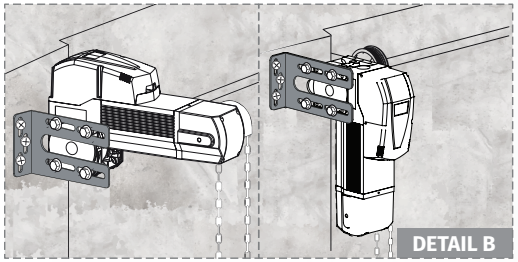
1 **ASSEMBLY THE SHAFT**
Leave an excess of 350mm on the spring shaft beyond the bracket. Insert a dowel protection bushing.

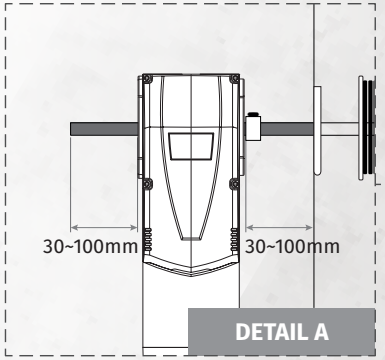
2 **FIT MOTOR**
Place the motor on the shaft leaving about 3 to 10 cm on both sides of the motor (detail A).

3 **MARK THE HOLES**
Place the plates on the motor without fully tightening (one on each side).
Place the plates against the wall and mark the holes.

4 **DRILL THE HOLES**
Remove the motor plates and drill holes to secure the motor.

5 **ATTACH MOTOR**
Screw the plates to the wall and then to the motor.
Insert dowel and then place the dowel protection bushing, lean against the motor and tighten it.



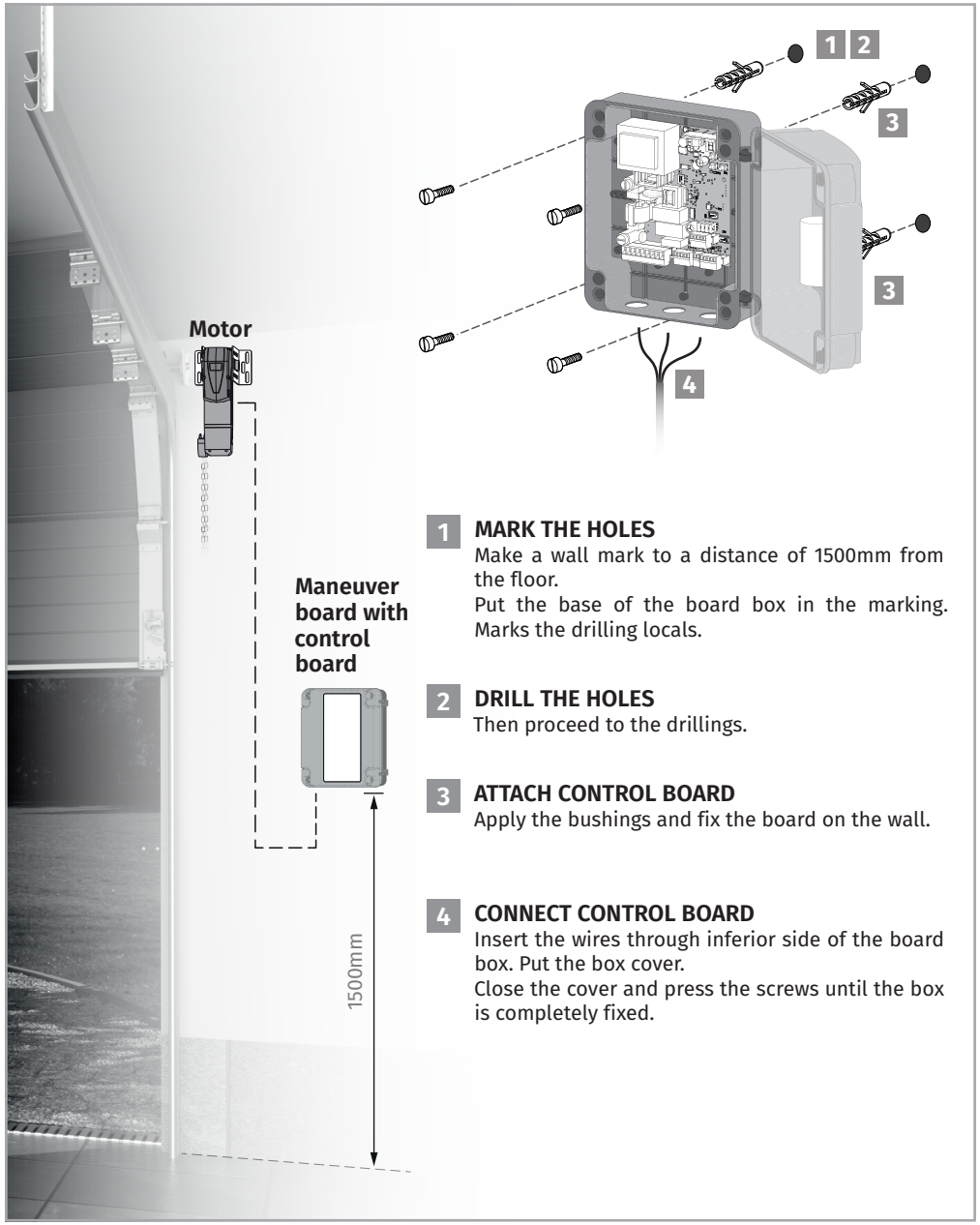


You can install the motor horizontally or vertically; The procedure is the same as shown on page. 6A. See detail B.

These automations require the use of additional safety devices (example: MF2020, MR14 w/MX14, etc.), in accordance with the EN12453 standard, to detect obstacles and prevent injuries and material damage.

03. INSTALLATION

FIX CONTROL PANEL ON THE WALL



1 MARK THE HOLES
Make a wall mark to a distance of 1500mm from the floor.
Put the base of the board box in the marking. Marks the drilling locals.

2 DRILL THE HOLES
Then proceed to the drillings.

3 ATTACH CONTROL BOARD
Apply the bushings and fix the board on the wall.

4 CONNECT CONTROL BOARD
Insert the wires through inferior side of the board box. Put the box cover.
Close the cover and press the screws until the box is completely fixed.

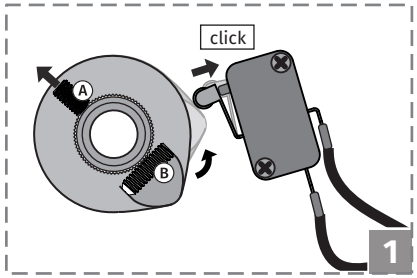
03. INSTALLATION

ADJUSTMENT OF LIMIT SWITCHES

Screw A correspondes to general tuning and B is the fine tuning screw.
Do not only use fine tuning if you want make a full adjustment, this may damage the tuning rings.

General tuning is for full tuning, looping tuning rings.

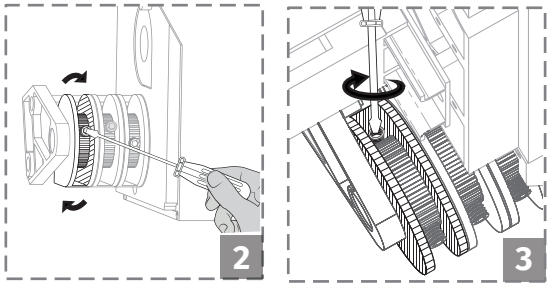
Fine tuning is in turn a detailed tuning on the tuning ring to achieve the most accurate tuning.



1 Make sure the door is open and make sure about which is the opening limit-switch.

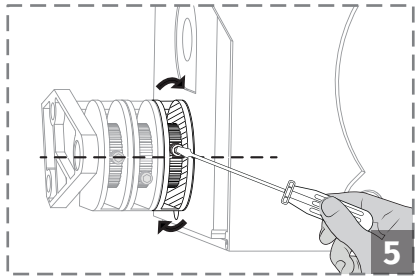
2 Loose the screw **A** opening micro (right ring) and adjust the ring until you hear the micro click. Turn to tighten the screw.

3 Use now screw **B** to a more precisely tuner of the limit-switch, tuning the plastic that active the micro.



4 Make sure the door is closes and repeat the 2 and 3 processes (middle ring).

5 On the last micro make an identical tuning on the opening micro so that it can be activated just before the opening finish.



If the motor operates in the opposite direction, you must change the connections that turn on the motor, inside the industrial box.

04. TROUBLESHOOTING

INSTRUCTIONS FOR FINAL CONSUMERS / TECHNICIANS

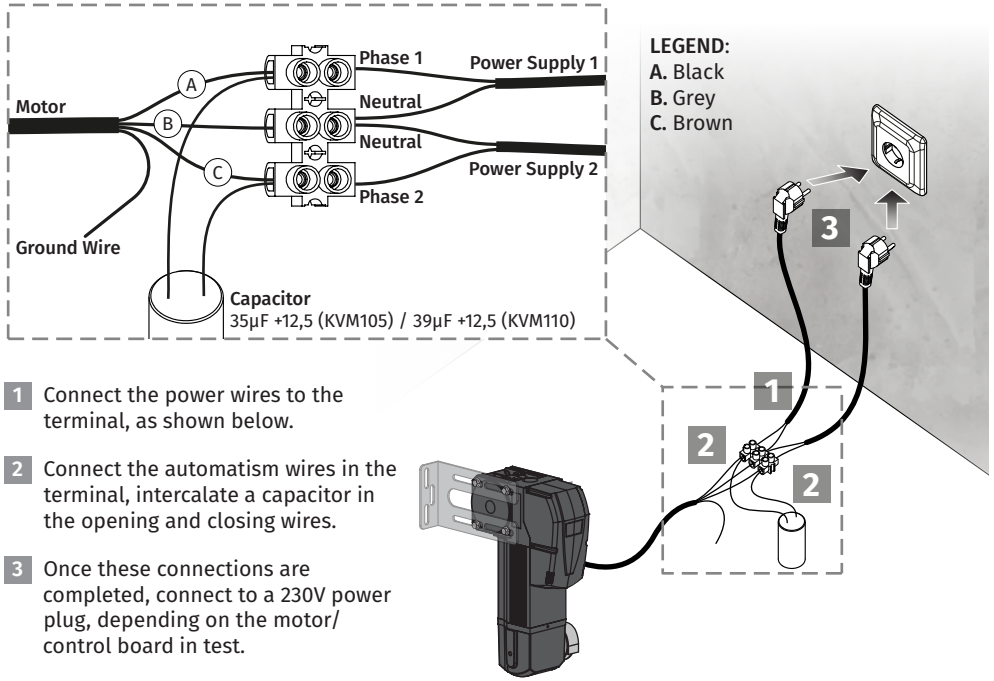
Anomaly	Procedure	Behavior	Procedure II	Find the source of the problem
• Motor does not work	• Check that the 230Vac power supply is connected to the automation and that it is working correctly.	• Still not working	• Consult a qualified **MOTORLINE** technician.	**1** • Open the control bord and check that it has a 230Vac power supply. **2** • Check the control board input fuses. **3** • Disconnect from the control board and test connecting directly to the current to find out if it is faulty. **4** • If the motor works, the problem is with the control board. Consult the control board manual to understand the problem. **5** • If the motor does not work, remove it and send it to **MOTORLINE** technical services for diagnosis.
• Motor does not move but makes noise	• Unlock the motor and move the door manually to check the door for mechanical problems. • Check the capacitor.	• Did you find problems?	• Consult a specialized gate technician.	Check all axes and movement systems associated with the door automations (dowel, hinges, etc.) to find out what the problem is.
		• Does the door move easily?	• Consult a qualified **MOTORLINE** technician.	**1** • Analyze the capacitor and test new capacitors. **2** • If the problem is not the capacitor, turn off the control board from motor and test directly connecting the current. **3** • If the motor does not run, remove it and send it to **MOTORLINE** technical services for diagnosis. **4** • If the motor works, the problem will be with the control board. **5** • Consult the control board manual to understand the problem or remove it and send it to MOTORLINE technical services for diagnosis.
• Motor opens but does not close	• Unlock the motor and move the door manually to the closed position. • Turn off the main board for 5 seconds, then turn it on again. • Give opening order with remote control.	• Door opened but did not close.	**1** • Check if there is any obstacle in front of the photocells; **2** • Check if any of the control devices (key selector, pushbutton, video intercom, etc.) of the door are stuck and sending a permanent signal to the control board; **3** • Consult a qualified **MOTORLINE** technician.	All MOTORLINE control boards have LEDs that allow you to easily conclude which devices are faulty. All safety device (DS) LEDs in normal situations remain ON. All LEDs of “START” circuits in normal situations remain OFF. If the device LEDs are not all on, there is a fault in the security systems (photocells, safety edges). If “START” LEDs are on, there is a remote control issuing device emitting a permanent signal. **A) SECURITY SYSTEMS:** **1** • Check all the devices that are installed for Closing safety, which can be NC or NO as programmed in the P2 menus, and turn them off one by one until you discover the fault. **2** • Replace this device with a functional one, and check that the automation works correctly with all other devices. If you find any other defects, follow the same steps until you find all the problems. **B) START SYSTEMS:** **1** • Disconnect all connected wires from START (UP/DOWN). **NOTE:** If the procedures described in points A) and B) do not work, remove the control board and send it to **MOTORLINE** technical services for diagnosis.
• Motor does not make complete course	• Unlock the motor and move the door manually to check the door for mechanical problems.	• Did you find problems?	• Consult a specialized gate technician.	Check all axes and movement systems associated with the door automations (dowel, hinges, etc.) to find out what the problem is.
		• Does the door move easily?	• Consult a qualified **MOTORLINE** technician.	**1** • Analyze the capacitor and test new capacitors. **2** • If the problem is not the capacitor, turn off the control board from motor and test directly connecting the current. **3** • If the motor does not run, remove it and send it to **MOTORLINE** technical services for diagnosis. **4** • If the motor works, the problem will be with the control board. **5** • Consult the control board manual to understand the problem or remove it and send it to MOTORLINE technical services for diagnosis.
				NOTE: The tuning of the force of the control board must be enough to open and close the door without stopping it, but with a little effort from a person to stop it. In case of failure of the security systems, the door can never cause physical damage to obstacles (vehicles, people, etc).

05. COMPONENTS TEST

230V MOTOR (KVM105 and KVM110)

To detect if the malfunction is on the control board or on the motor is, sometimes, necessary to perform tests with direct connection to a 230V power supply.
For this, it is necessary to intercalate a capacitor on the connection in order to the automatism to work (check the type of capacitor to be used in the product manual). The diagram below, shows how to make that connection and how to intercalate the different components wires.

NOTES:
- To perform the tests, there is no need to remove the automatism from the place it is installed, because in this way, it is possible to understand if the automatism can function properly connected directly to the power.
- You should use a new capacitor during this test to ensure that the problem is not with the capacitor.
- This test can only be carried out on the KVM105/110 as it is a motor powered by 230V 50 Hz.



1. Connect the power wires to the terminal, as shown below.
2. Connect the automatism wires in the terminal, intercalate a capacitor in the opening and closing wires.
3. Once these connections are completed, connect to a 230V power plug, depending on the motor/ control board in test.

All tests must be performed by specialized technicians due to serious danger associated with the bad use of electrical systems!