INTRO

Installation and use instructions and warnings

Made in Italy

KINGGATES

EN

Contents

1. General safety precautions

1.1 - Recommendations regarding safety

• **ATTENTION! – This manual contains important instructions and recommendations regarding the safety of persons. Incorrect installation can cause serious injury. Read the manual completely before starting work. If in doubt, suspend the installation and request clarifications from the King After-sales Assistance.**

• **ATTENTION! – Important instructions: keep this manual for any future maintenance interventions and product disposal.**

• **ATTENTION! – In compliance with the most recent European Legislation, the realisation of an automatic door or gate must respect the Standards envisioned by the 2006/42/CE Directive (ex 98/37/CE) (Machinery Directive) and in particular, the EN 12445; EN 12453; EN 12635 and EN 13241-1 Standards, which allow to declare conformity of the automation. Considering this, all product installation, connection, inspection and maintenance operations must only be performed by a qualified and skilled technician!**

1.2 - Recommendations for installation

• Before starting installation, check whether this product is suitable to automate your gate or door (see chapter 3 and the "Product technical features"). If it is not suitable, DO NOT proceed with installation.

• **All installation and maintenance operations must take place with the automation disconnected from the electric power input.** If the power input disconnection device is not visible from the place where the automation is positioned, before starting work, affix a sign onto the disconnection device that states "ATTENTION! MAINTENANCE IN PROGRESS".

• Handle the automation with care during installation, preventing crushing, blows, falls or contact with liquids of any nature. Do not place the product near to heat sources or expose it to naked flames. All of these actions can damage it and be cause of malfunctioning or dangerous situations. If this occurs, suspend installation immediately and contact the King After-sales Assistance.

• Do not modify any product parts. Unauthorised operations can only cause malfunctioning. The manufacturer declines liability for damage deriving from arbitrary modifications to the product**.**

• If the gate or door to be automated has a pedestrian door the plant must be set up with a control system that prevents functioning of the motor when the pedestrian door is open**.**

• The product packaging material must be disposed of in compliance with local legislation.

2. Description of the product

This product is destined to be used to automate gates or doors with hinged panels.

ATTENTION! – Any use different to that described and in environmental conditions different to those stated in this manual must be considered improper and prohibited!

The product is an electro-mechanical gear motor, with a 24 Vdc motor. The gear motor is powered by the external control unit, to which it must be connected.

If the electric energy is interrupted (black-out), the gate panels can be moved by releasing the gear motor using the relevant wrench; to perform the manual manoeuvre, see chapter 8.

Do not use gear motors with incompatible control units.

3. Installation

3.1 - Preliminary checks on installation

Before performing installation, check the integrity of the product components, the adequacy of the model chosen and the suitability of the environment destined for installation.

IMPORTANT – The gear motor cannot automate a manual gate that does not have an efficient and safe mechanical structure. Moreover, it cannot solve defects caused by incorrect installation or bad maintenance of the gate itself.

3.2 - Suitability of the gate to automate and the surrounding environment

• Check that the gate mechanical structure is suitable to be automated and complies with the Standards in force on the territory (if necessary, refer to the data given on the gate label).

• Moving the gate panel manually in Opening and in Closure, check that the movement takes place with the same and constant friction in all points of the run (there must not be moments of greater effort).

• Check that the gate panel stays in equilibrium, i.e. that is does not move if taken manually into any position and left.

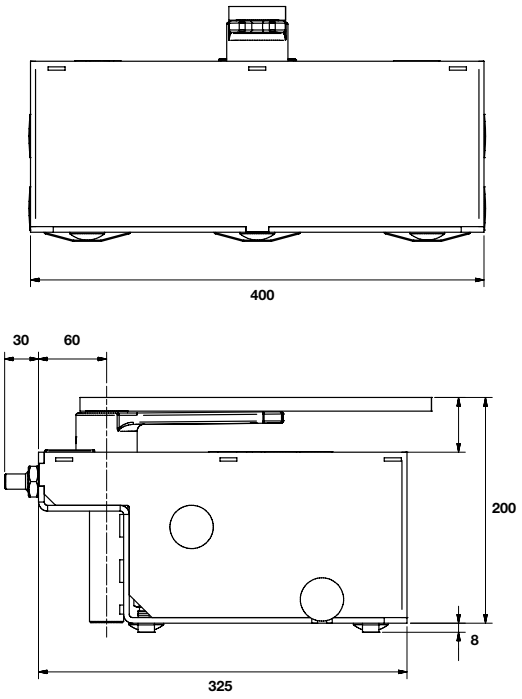
• Check that the space around the gear motor allows to manually release the gate panels easily and safely.

• Envision end run retainers on the ground both for opening and closure of the gate.

• Check that the gear motor fixing area is compatible with the clearance of the latter (fig. 1).

EN

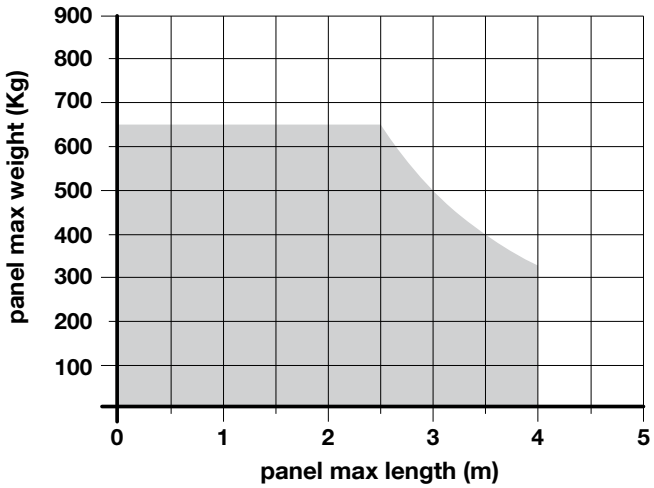
1



3.3 - Limits of use for the product

Before installing the product, check that the gate panel has dimensions and weight that lie within the limits given in graph 1; also evaluate the climatic conditions (e.g. strong wind) present in the place of installation: they can greatly reduce the values given in the graph.

Graph 1

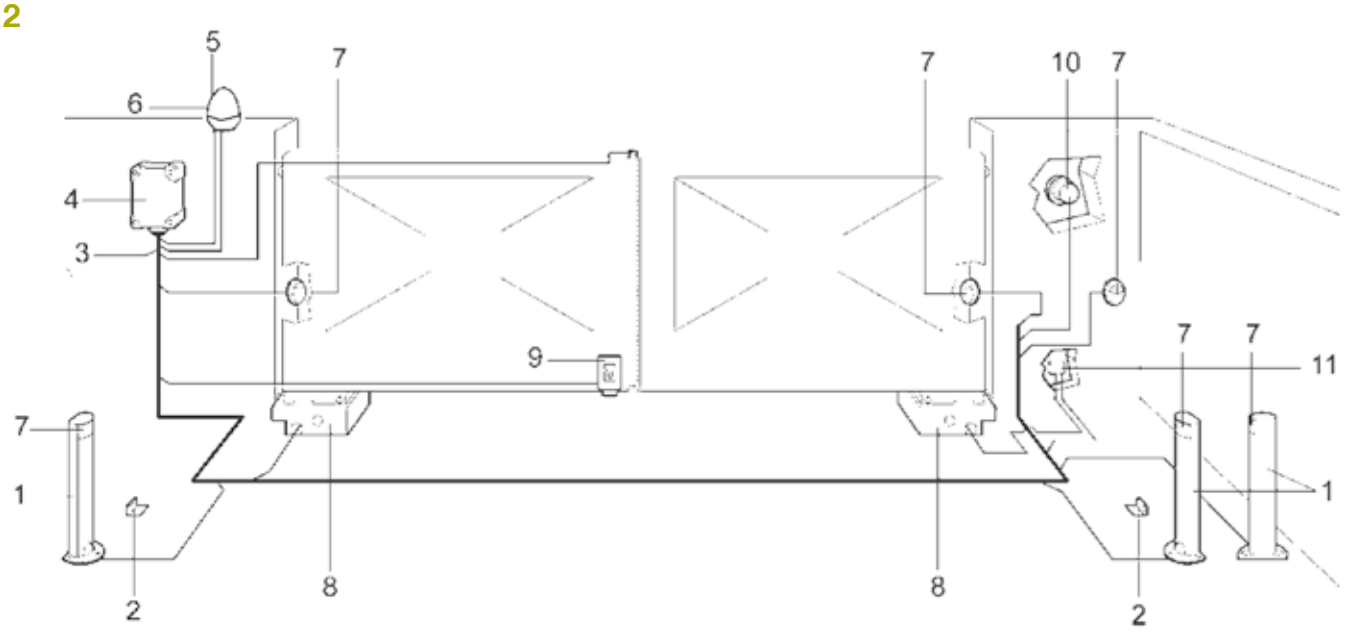


3.4 - Set-up for installation

Fig. 2 shows an example of automated plant realised with King gates components. These components are positioned according to the typical and usual layout.

With reference to fig. 2, establish the approximate position where each component envisioned in the plant will be installed and the most appropriate connection layout.

2



1	Photocell post	**5**	Aerial	**9**	Vertical electric lock
2	Pair of opening stops	**6**	Flashing light	**10**	Key-operated selector switch or digital keypad
3	230V line	**7**	Photocell		
4	Control panel (electrical panel)	**8**	Box with INTRO actuator	**11**	Connector block (not supplied)

EN

3.5 - Mounting: Overall Dimensions and Positioning of Foundation Box

01. Dig a generously sized foundation pit to house the foundation box (fig. 3): prepare a drain pipeline for draining off water and avoid the build-up of water.

02. If the gate is equipped with its own mechanical stops (fig. 2) skip directly to point 3. Otherwise secure the opening limiter accessory to the box (see paragraph 4).

03. Place the box inside the foundation hole; the stud must be aligned with the axis of the hinge (fig. 3).

04. Provide a duct for the electrical cables and a drainage pipe.

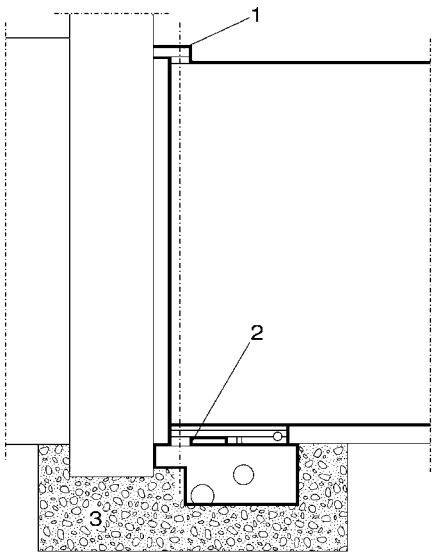
05. Bury the foundation box in concrete, making sure it is set level.

06. Mount the control bracket on the box's stud along with the ball (fig. 4).

07. Set the gate leaf on the release lever and weld them securely.

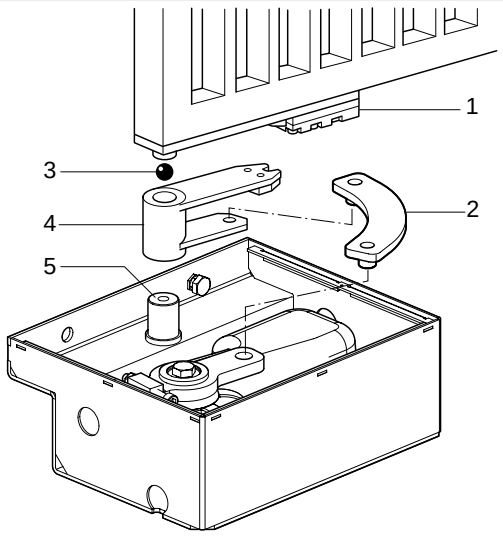
08. Grease using a suitable grease nozzle.

3



1- Hinge **2- Pin** **3- Concrete**

4



1	**Release lever**	**4**	**Control bracket**
2	**Connecting lever**	**5**	**Pin**
3	**Ball**		

3.6 - Installation of INTRO Gearmotor

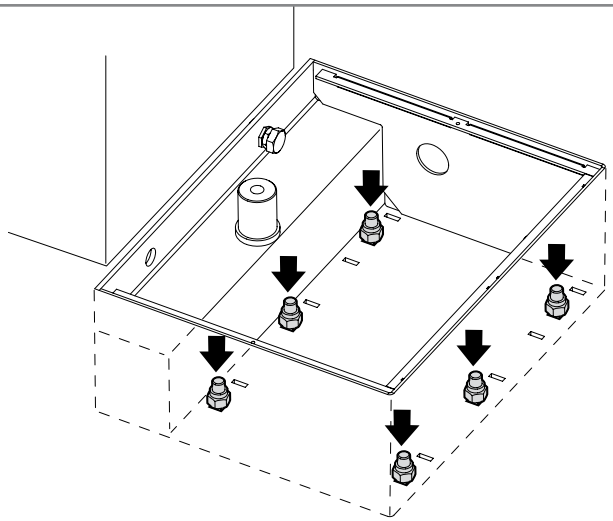
01. Remove the nuts and washers shown in the figure on the right (fig. 5).

02. Place the gearmotor inside the foundation box making sure it faces the correct direction.

03. Secure the gearmotor with the previously removed washers and nuts.

04. Connect the gearmotor to the gate by means of the connecting lever (2) (fig. 4).

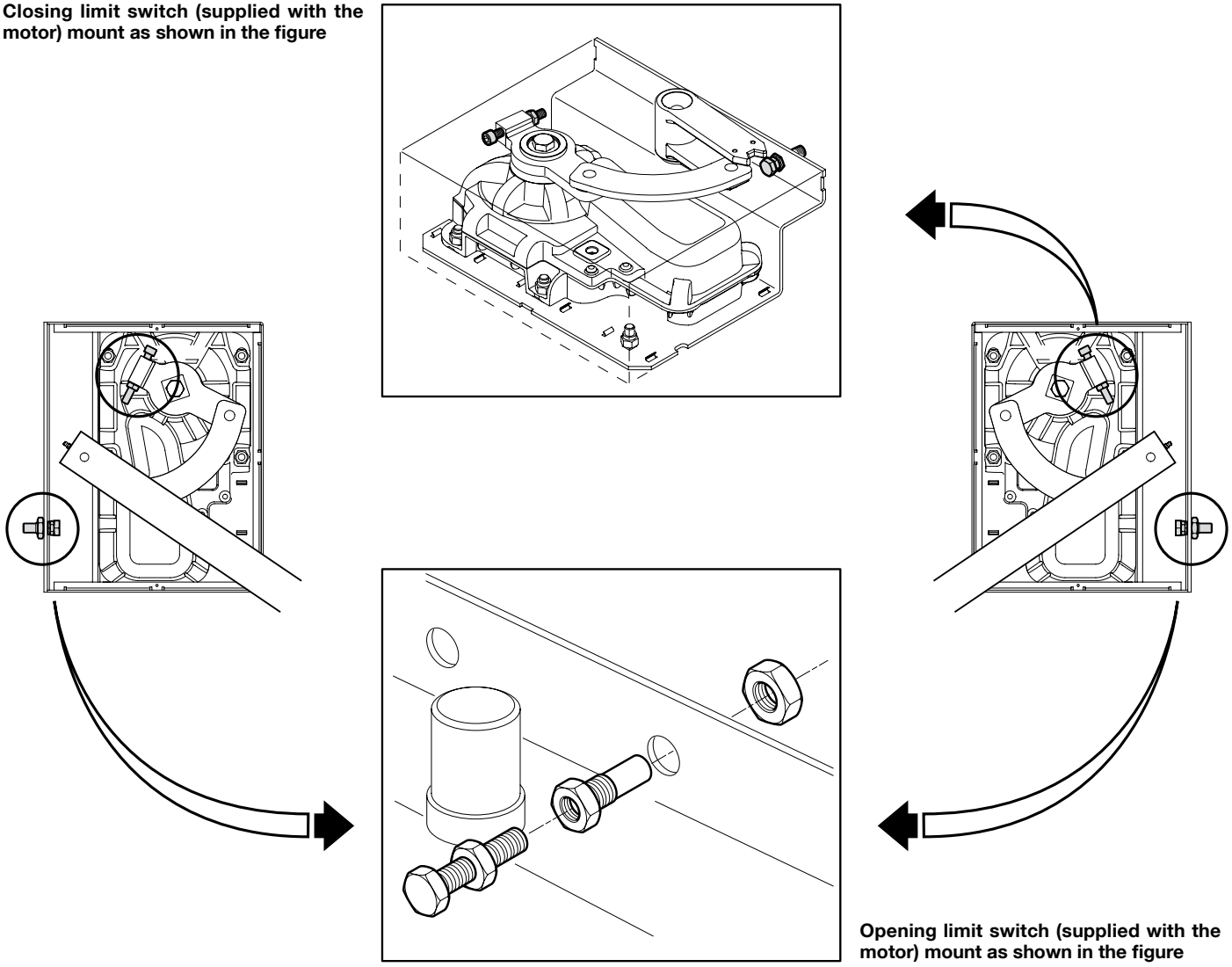
5



EN

4. Limit switch positioning

Closing limit switch (supplied with the motor) mount as shown in the figure



Opening limit switch (supplied with the motor) mount as shown in the figure

5. Electric connections

Recommendations:

- The gear motor is supplied with an electric power input cable measuring 2 m. Therefore, if a greater distance must be covered to perform the electric connections, a diversion box must be used (not supplied). **IMPORTANT! – It is prohibited to join the electric cable inside the foundation case.**
- **Make the electric connections with the mains power input disconnected.**

To connect the power input cable to the control unit, see the manual regarding the latter and the following indications:

• For model **INTRO24-400** connect the cables as follows:

Blu = 24 V motor power input

Brown = 24 V motor power input

Yellow/Green = ⏚

• For model **INTRO230-400** connect the cables as follows:

Black = “open” phase

Brown = “close” phase

Grey = Common

Yellow/Green = ⏚

6. Testing and commissioning

Testing of the entire system must be conducted by experienced and qualified personnel, who must establish what tests are necessary depending on the risks involved.

To test INTRO proceed as follows:

• close the gate;

- disconnect the power supply to the control unit;
- release the gearmotor from the gate leaf as shown in paragraph "Manual release device (Key and Lever-Operated Release)" in Chapter "Instructions and Warnings for Users of the INTRO Gearmotor";
- open the gate manually all the way;
- make sure the gate opens and closes smoothly without any points of friction;
- make sure that the gate, when stopped in any position and released, does not display a tendency to start moving again;
- make sure that the safety systems and mechanical stops are in good working order;
- make sure that the screw connections are properly tightened;
- clean the inside of the box and make sure that the drain operates properly;
- when all the checks have been completed, re-connect the gearmotor and power the control unit;
- INTRO is not equipped with any torque adjustment device, therefore this operation is performed by the control unit;
- measure the impact force as provided by the EN12453 and EN12445 standards.

7. Product maintenance

INTRO does not require any special maintenance; however, routine checks conducted every six months at least will ensure the long life of the gearmotor as well as the correct and safe operation of the system.

Maintenance consists simply in repeating the testing procedure.

8. Disposal of the product

This product is an integral part of the automation system, and should therefore be disposed of together with it.

As for the installation operations, even at the end of this product's life span, the dismantling operations must be carried out by qualified experts.

This product is made up of various types of materials: some can be recycled while others need to be disposed of. Find out about the recycling or disposal systems envisaged by your local regulations for this product category.

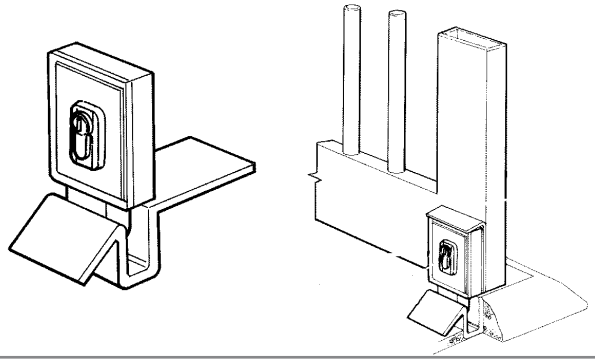
Attention! – Parts of the product could contain pollutants or hazardous substances which, if released into the environment, could cause harmful effects to the environment itself as well as to human health.

As indicated by the symbol opposite, throwing away this product as domestic waste is strictly forbidden. So dispose of it as differentiated waste, in accordance with your local regulations, or return the product to the retailer when you purchase a new equivalent product.

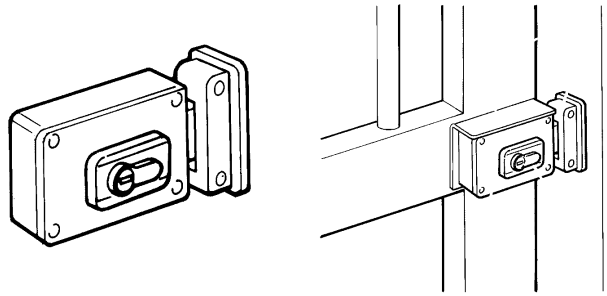
Important! – the local applicable regulations may envisage heavy sanctions in the event of illegal disposal of this product.

9. Accessories on request

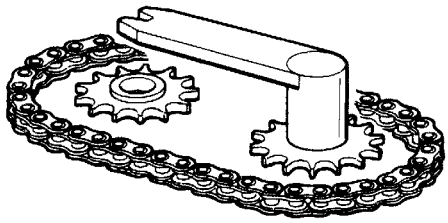
LOCK HO Vertical electric lock 12 Vac



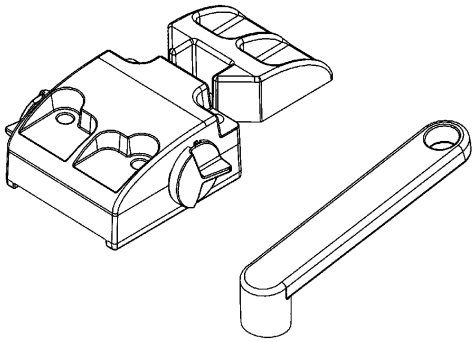
LOCK VE Horizontal electric lock 12 Vac



INT 360 360° opening device



INTROLOCK Key-operated release mechanism



EN

10. Gearmotor manual release

Type Lever-Operated Release INTROLOCK (fig. 6)

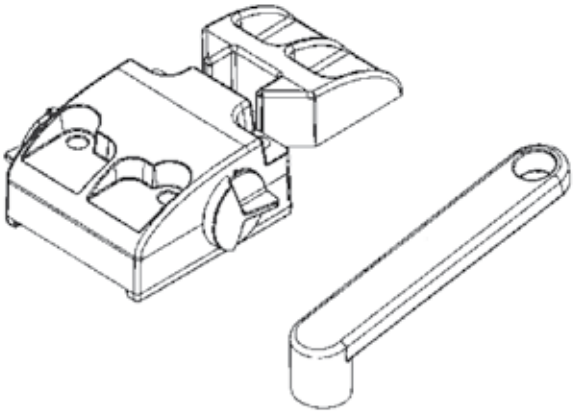
01. Pull down the lock cover.

02. Insert the key and rotate it 90° clockwise.

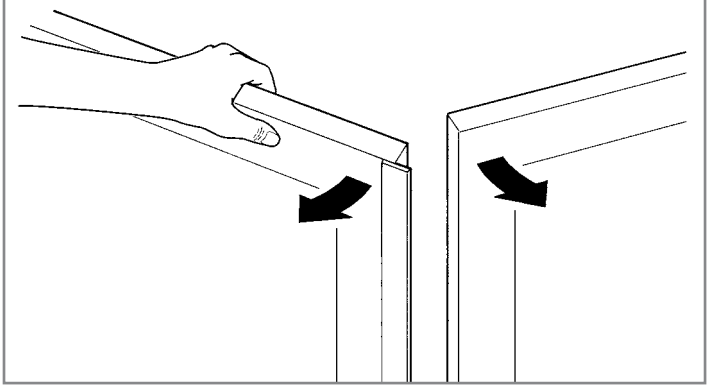
03. Move the gate manually (fig. 7).

⚠ **The system will revert to automatic operation upon the first electrical manoeuvre.**

6



7



11. Technical features

RECOMMENDATIONS: • All technical features stated make reference at a room temperature of 20°C (± 5°C). • King S.p.a. reserves the right to modify the product at any time it deems necessary, however maintaining the same functionality and destination of use.

	INTRO24-400	INTRO230-400
Type	Electro-mechanical dear motors for gates and doors with hinged panels	
Power input	24 V ⎓	230 V ~
Peak absorption	5 A	1,5 A
Maximum absorption	1,5 A	1 A
Peak Power	120 W	340 W
Maximum power	36 W	180 W
Capacitor incorporated	–	7µF
Protection rating	IP 67	
Run	from 0° to 110° or 360°	
Idle speed	1 rpm (1,25 rpm*)	0,85 rpm
Speed at nominal torque	0,85 rpm	0,65 rpm
Maximum torque	300 Nm	500 Nm
Nominal torque	75 Nm	125 Nm
Functioning temperature	from -20°C to +50°C	
Cycles/hour at the nominal torque	60	20
Dimensions	375 mm x 225 mm x h 110 mm	
Weight	12,5 kg	14,3 kg
***** Value refers to a power supply voltage of 30V.		