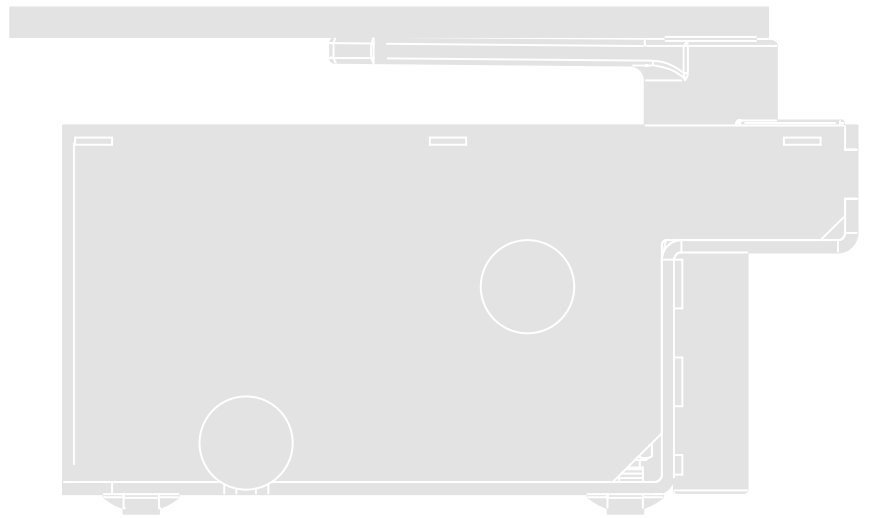


Nice

CE

LFAB4024
LFAB4000
BFAB5024
LFAB4024HS



Swing gate opener

EN - Instructions and warnings for installation and use

Nice

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GENERAL WARNINGS: SAFETY - INSTALLATION - USE (original instructions in Italian)

ATTENTION Important safety instructions. Follow all instructions as improper installation may cause serious damage
ATTENTION Important safety instructions. It is important for you to comply with these instructions for your own and other people's safety. Keep these instructions

- Before commencing the installation, check the "Technical characteristics" (in this manual), in particular whether this product is suitable for automating your guided part. If it is not suitable, DO NOT continue with the installation
- The product cannot be used before it has been commissioned as specified in the chapter on "Testing and commissioning"

ATTENTION According to the most recent European legislation, the implementation of an automation system must comply with the harmonised standards provided by the Machinery Directive in force, which enables declaration of the presumed conformity of the automation. Taking this into account, all operations regarding connection to the electricity grid, as well as product testing, commissioning and maintenance, must be performed exclusively by a qualified and skilled technician!

- Before proceeding with the installation of the product, check that all the materials are in good working order and suited to the intended applications
- 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
- Children must not play with the appliance
- Do not allow children to play with the fixed control devices of the product. Keep the remote controls away from children

ATTENTION In order to avoid any danger from inadvertent resetting of the thermal cut-off device, this appliance must not be powered through an external switching device, such as a timer, or connected to a supply that is regularly powered or switched off by the circuit

- Provide a disconnection device (not supplied) in the plant's power supply grid, with a contact opening distance permitting complete disconnection under the conditions dictated by overvoltage category III
- Handle the product with care during installation, taking care to avoid crushing, denting or dropping it, or allowing 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 happen, stop installation immediately and contact Customer Service
- The manufacturer assumes no liability for damage to property, items or persons resulting from non-compliance with the assembly instructions. In such cases the warranty for material defects is excluded
- The weighted sound pressure level of the emission A is lower than 70 dB(A)
- Cleaning and maintenance to be carried out by the user must not be carried out by unsupervised children
- Before working on the system (maintenance, cleaning), always disconnect the product from the mains power supply
- Check the system periodically, in particular all cables, springs and supports to detect possible imbalances, signs of wear or damage. Do not use, if repairs or adjustments are necessary, since installation failure or an incorrectly balanced automation may cause injury
- The packing materials of the product must be disposed of in compliance with local regulations
- When operating a biased-off switch, make sure that other persons are kept away
- 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 product if anyone is working nearby; disconnect its power supply before permitting such work to be done
- If the power cable is damaged, it must be replaced by the manufacturer or by an appointed servicing company or similarly qualified person in order to prevent any form of risk

INSTALLATION WARNINGS

- Prior to installing the drive motor, check that all mechanical components are in good working order and properly balanced, and that the automation moves correctly
- 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
- Make sure that the control devices are kept far from moving parts but nonetheless in a visible position. Unless a selector is used, the control devices must be installed at a height of at least 1.5 m and must not be accessible
- That windows, having a gap exceeding 200 mm when open, are to be closed using a biased-off switch if the opening movement is controlled by a fire-sensing system
- Ensure that entrapment between the driven part and the surrounding fixed parts due to the opening movement of the driven part is avoided
- Permanently fix the label concerning the manual release adjacent to its actuating member
- After installing the drive motor, make sure that the mechanism, protective system and all manual manoeuvres operate properly

1 PRODUCT DESCRIPTION AND INTENDED USE

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. 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 3.

The product is available in the version:

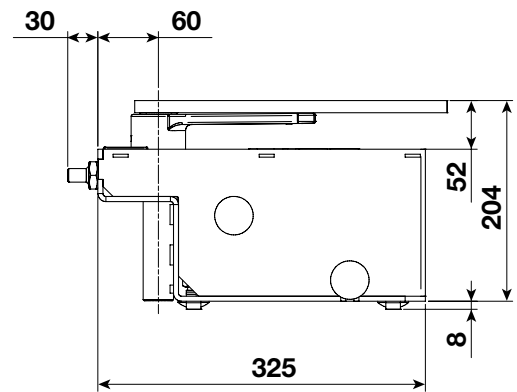
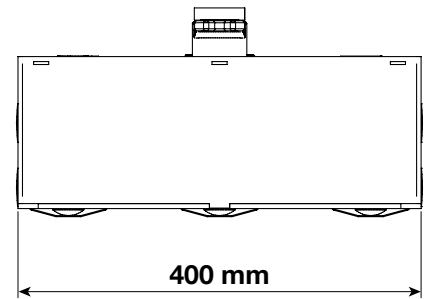
- BFAB5024 with encoder, suitable for MC824H control units
- LFAB4024 with encoder, suitable for MC824H control units
- LFAB4000 with encoder, suitable for A6F / A60 control units
- LFAB4024HS with encoder, suitable for MC824H control units

⚠ ATTENTION! – Do not use gear motors with incompatible control units.

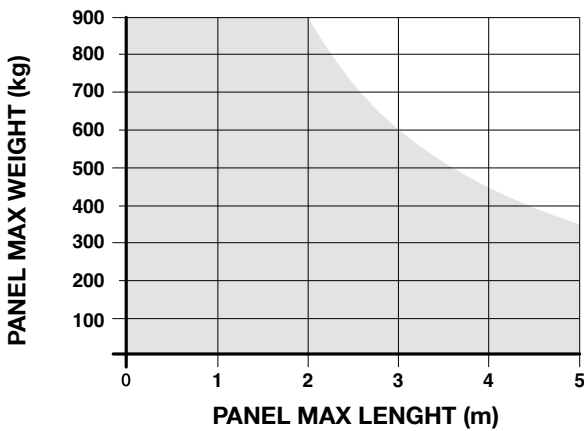
2 APPLICATION LIMITS

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

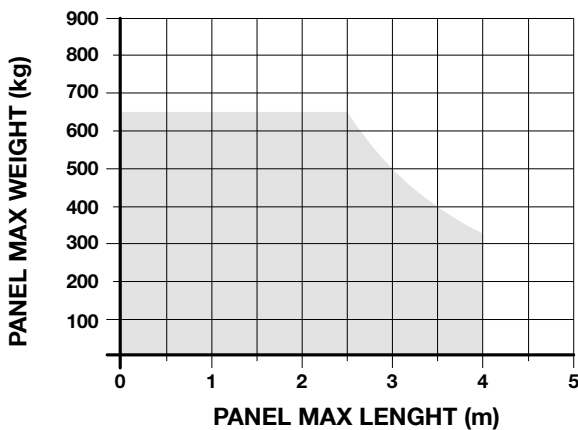
Before installing the product, check that the gate panel has dimensions and weight that lie within the limits given in **graph 1**; also evaluate the climatic conditions (e.g. strong wind) present in the place of installation. They can greatly reduce the values given in the graph.



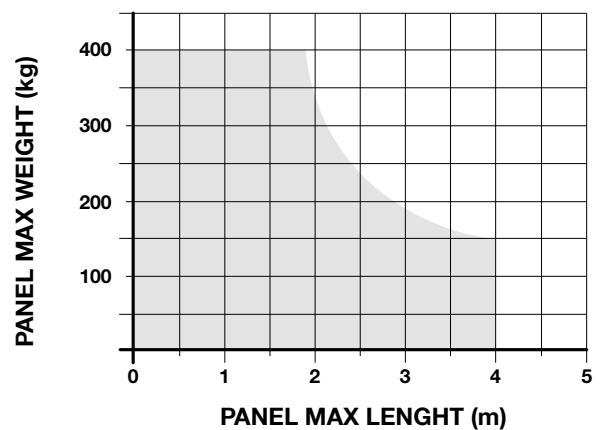
GRAPH 1 (mod. BFAB5024)



GRAPH 1 (mod. LFAB4024 / LFAB4000)



GRAPH 1 (mod. LFAB4024HS)



3 INSTALLATION

⚠ Important! Before installing the product, refer to chapters 2 and 10.

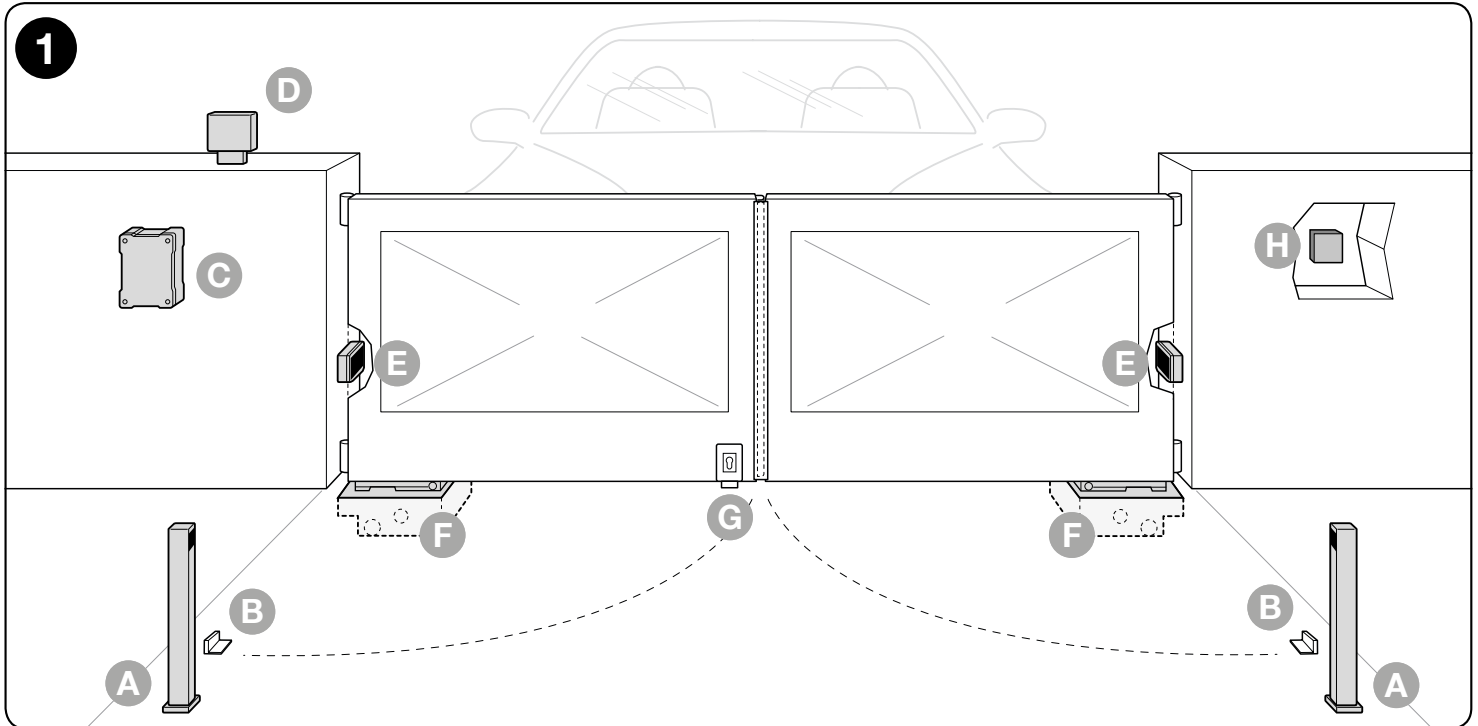
Before performing installation, check the integrity of the product components, the adequacy of the model chosen and the suitability of the environment destined for installation.

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.

Fig. 1 shows an example of automated plant realised with Nice components. These components are positioned according to the typical and usual layout.

With reference to **fig. 1**, establish the approximate position where each component envisioned in the plant will be installed and the most appropriate connection layout.

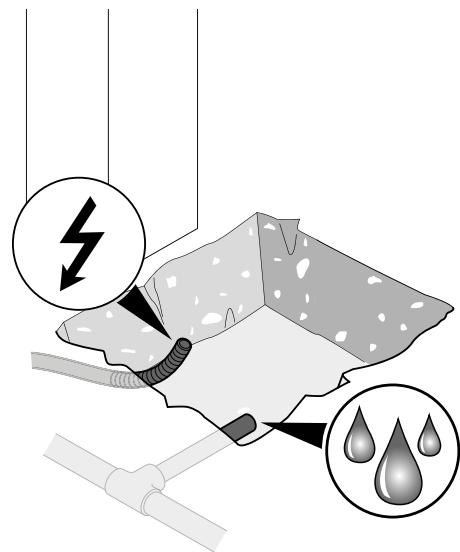
- A** - Photocell post
- B** - Pair of opening stops
- C** - Control panel (electrical panel)
- D** - Flashing light
- E** - Photocell
- F** - foundation case with actuator LFAB / BFAB(...)
- G** - Vertical electric lock
- H** - Key-operated selector switch or digital keypad



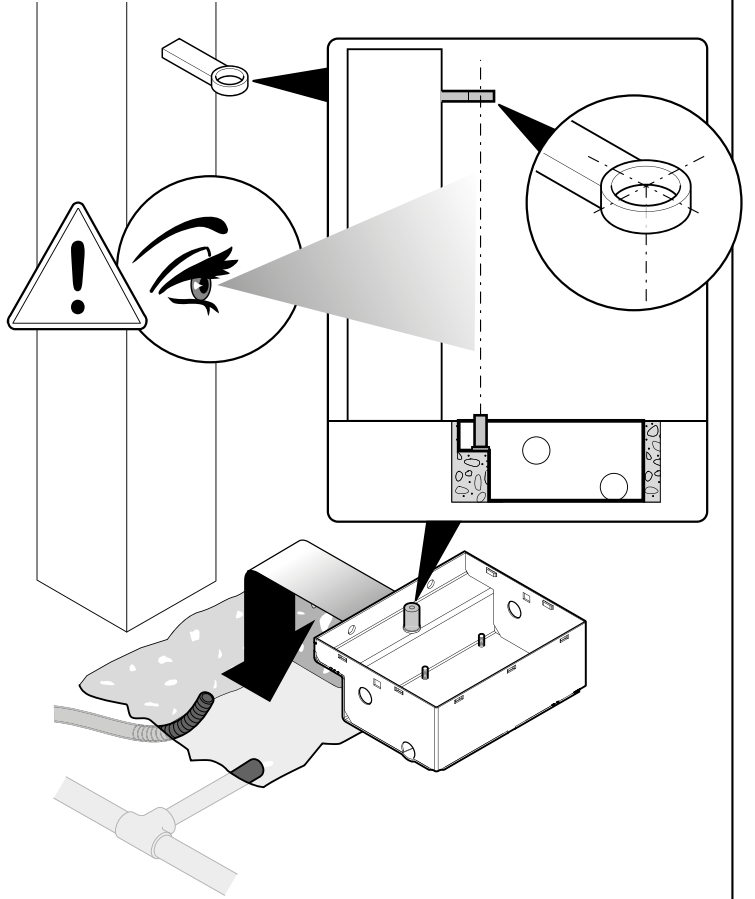
WARNINGS

- **Incorrect installation may cause serious physical injury to those working on or using the system.**

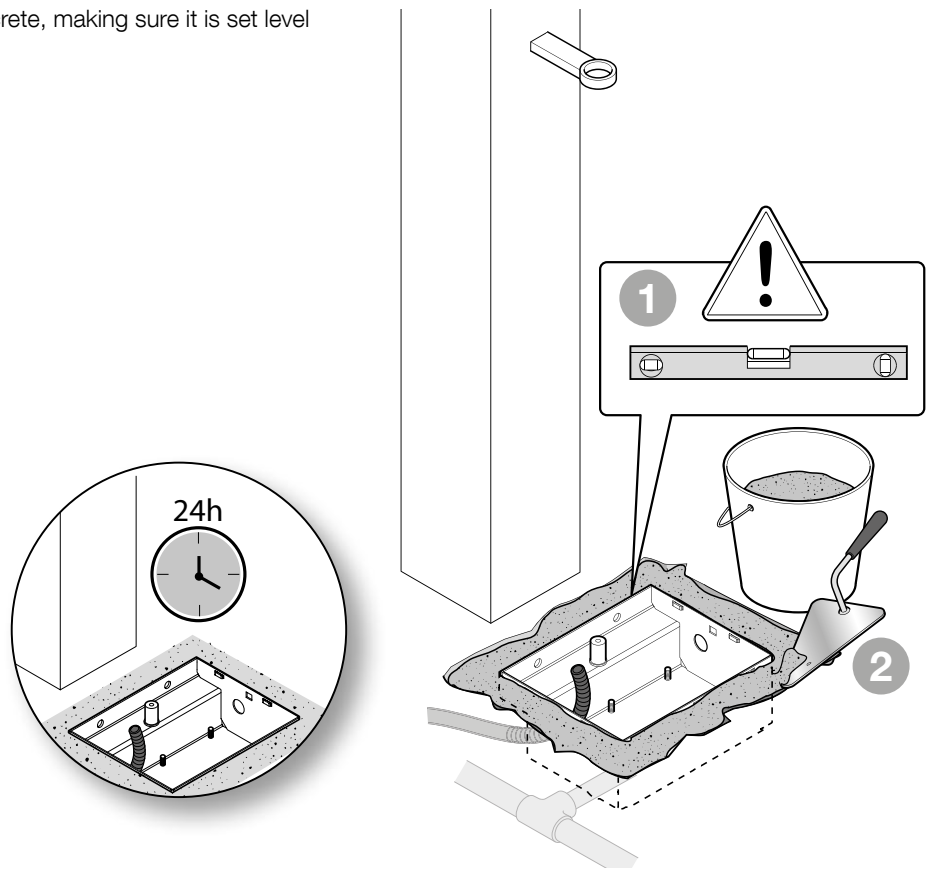
- 01.** Dig a generously sized foundation pit to house the foundation box
Prepare a drain pipeline for draining off water and avoid the build-up of water



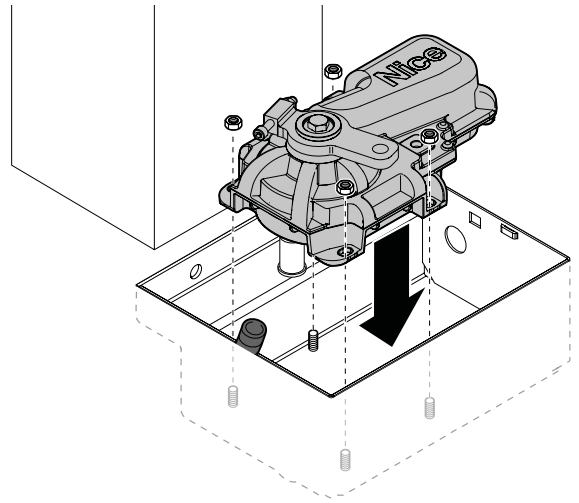
02. Place the box inside the foundation hole; the stud must be aligned with the axis of the hinge



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

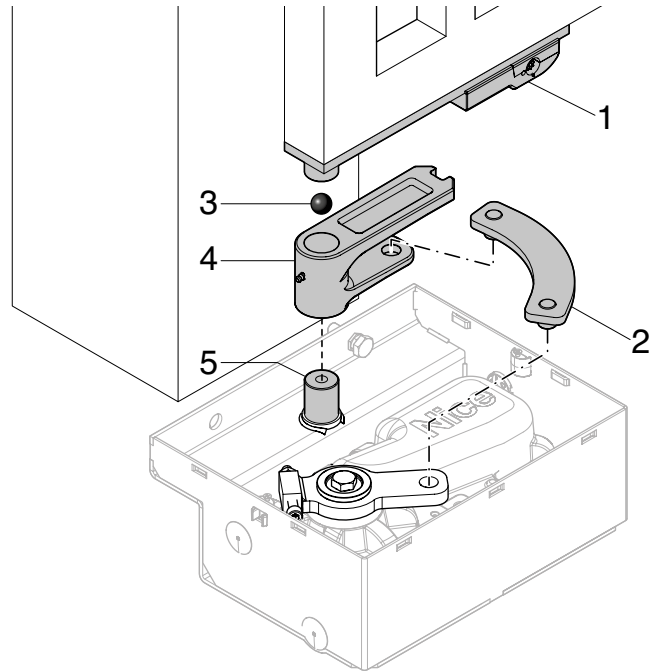


- 04.** Remove the nuts and washers
Place the gearmotor inside the foundation box making sure it faces the correct direction
Secure the gearmotor with the previously removed washers and nuts

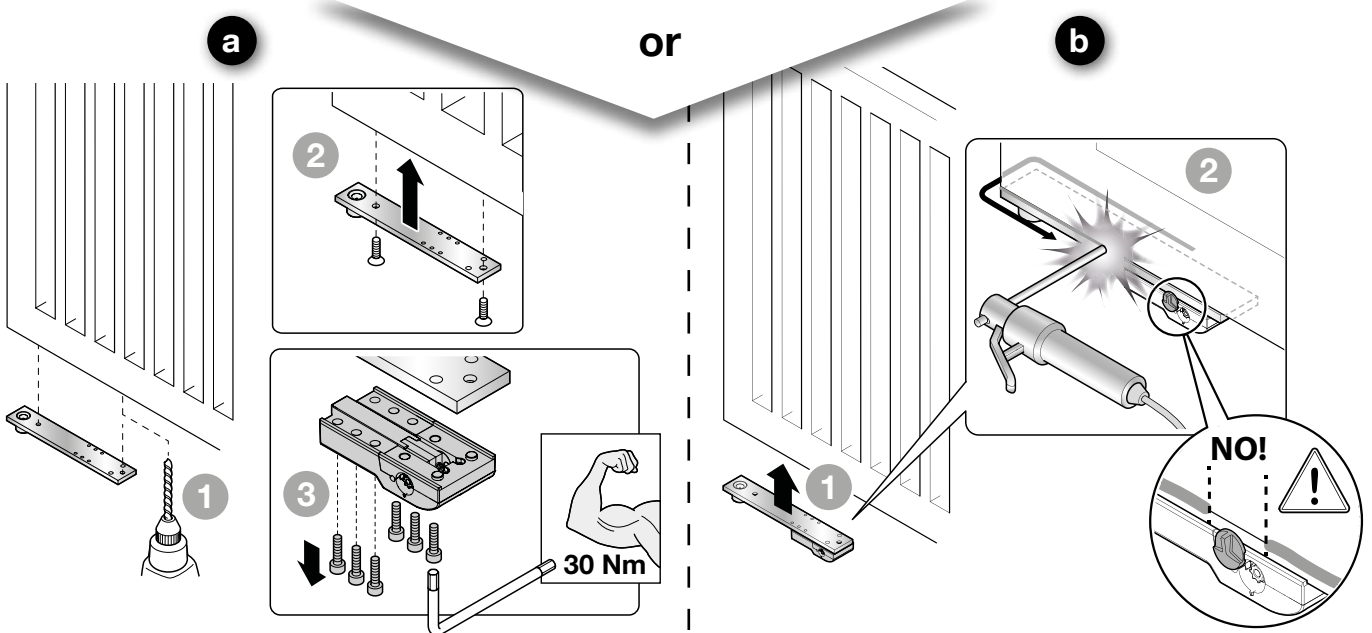


- 05.** Mount the control bracket on the box's stud along with the ball
Connect the gearmotor to the gate by means of the connecting lever

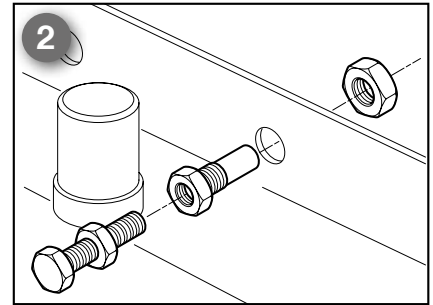
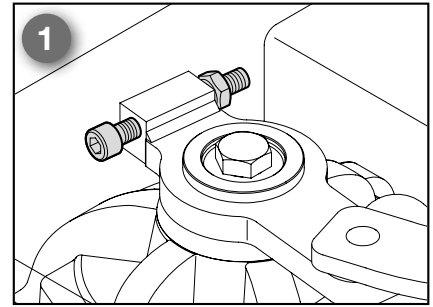
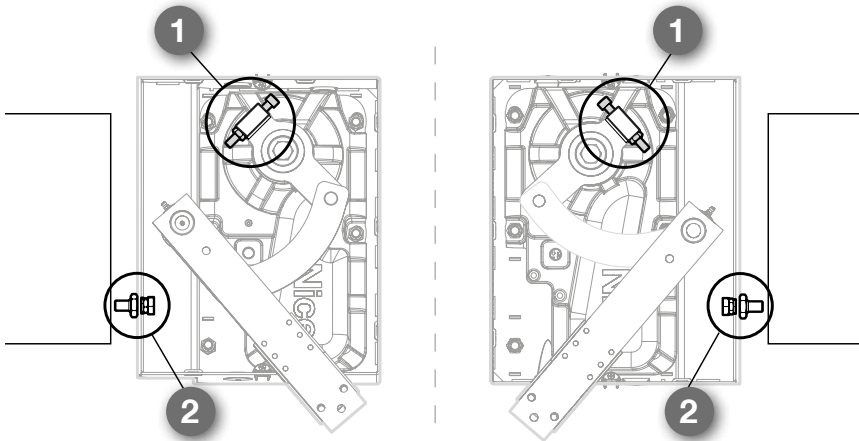
- 1 = Release lever
- 2 = Connecting lever
- 3 = Ball
- 4 = Control bracket
- 5 = Pin



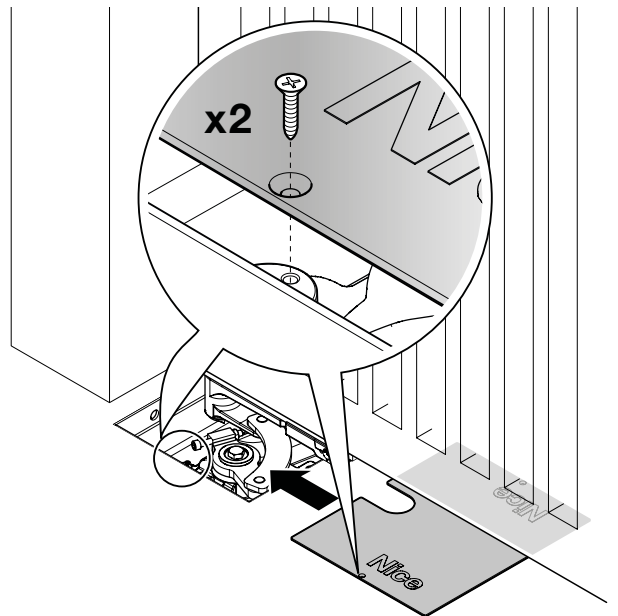
- 06.** Place the gate leaf on the release lever and secure it with bolts (a) or a strong weld (b)



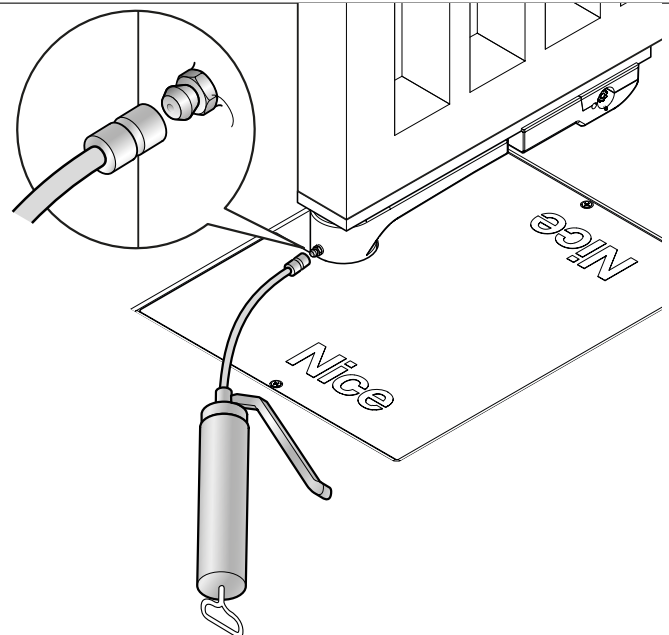
- 07.** If the gate is equipped with its own mechanical stops (**fig. 1**) skip directly to point 02
 Otherwise secure the opening limiter accessory to the box
1) Closing limit switch (supplied with the motor)
2) Opening limit switch (supplied with the box)



- 08.** Fasten the cover with the screws provided



- 09.** Grease using a suitable grease nozzle

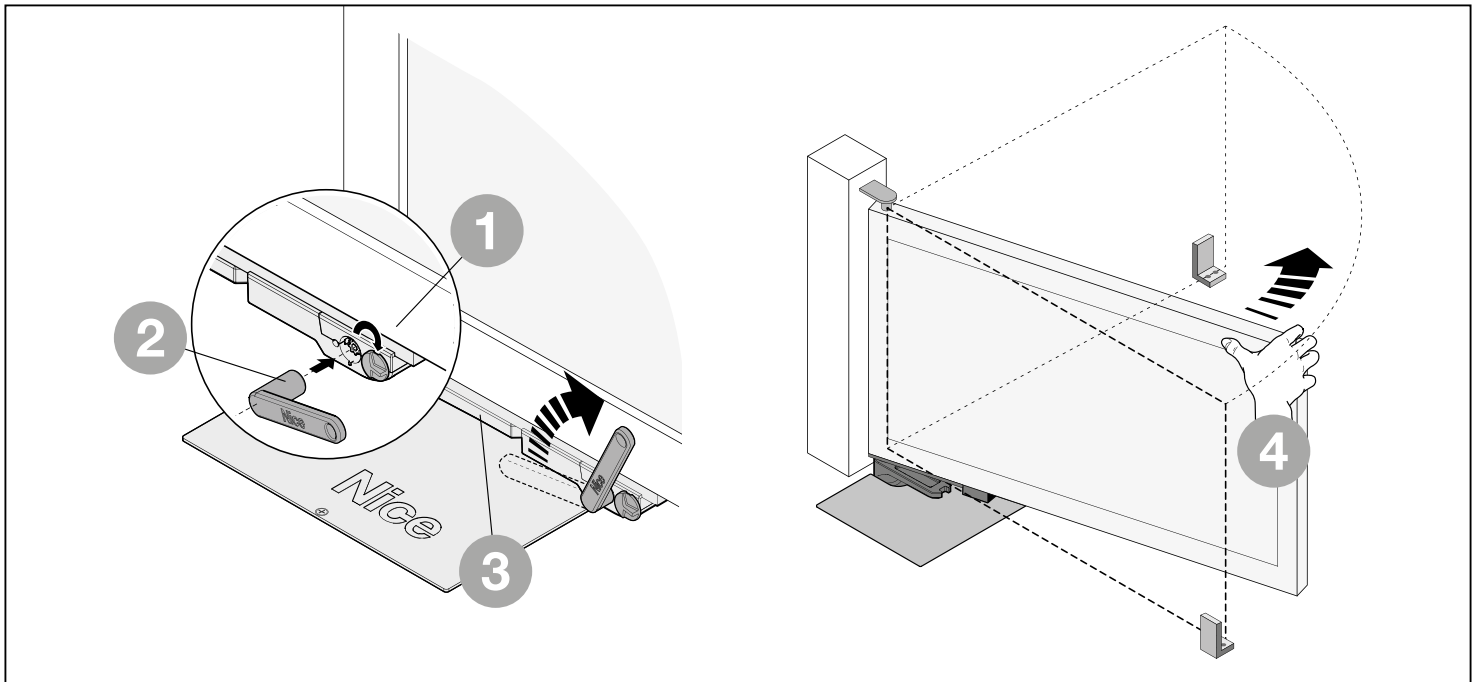


Follow this procedure for both gearmotors.

3.1 - Manually releasing the gearmotor (manual manoeuvre)

01.	Turn the lock cover
02.	Fit the provided wrench and rotate it CW by 90°

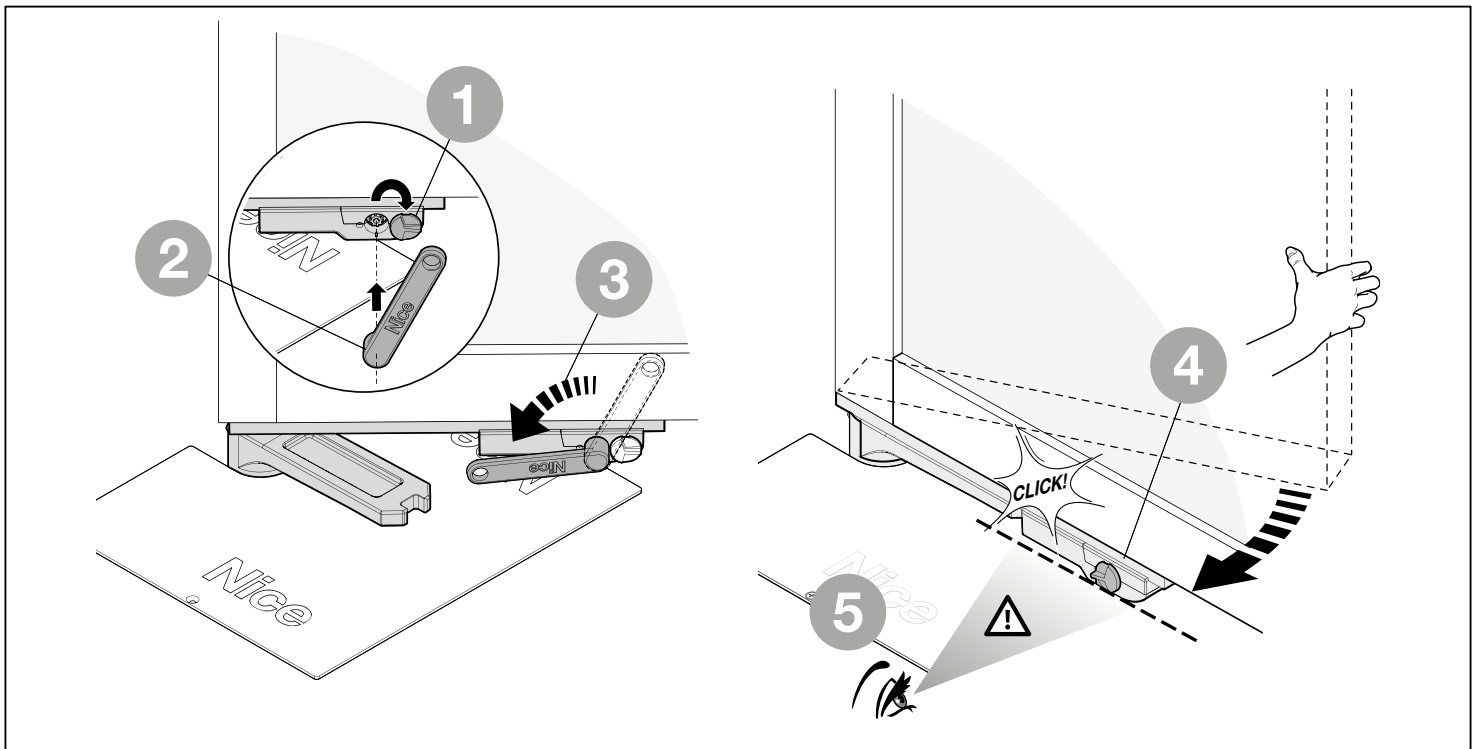
Follow this procedure for both gearmotors.



3.2 - Manually locking the gearmotor (manual manoeuvre)

01.	Move the gate to the halfway open position by hand
02.	Turn the lock cover
03.	Fit the provided wrench and rotate it CCW by 90°

Follow 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.

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.**

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

- For **LFAB4000** connect the cables as follows:

WIRE	CONNECTION
Black wire	“Open” phase
Brown wire	“Close” phase
Grey wire	Common
Yellow/Green wire	Earth

- For **BFAB5024 - LFAB4024 - LFAB4024HS** connect the cables as follows:

WIRE	CONNECTION
Blu wire	24 V motor power supply
Brown wire	24 V motor power supply
Black wire	Encoder
Grey wire	Encoder
Yellow/Green wire	Earth

5 AUTOMATION TESTING

These are the most important stages in the automation’s construction in order to ensure maximum safety. Testing can also be adopted as a method for periodically checking that all the various devices in the system are functioning correctly.

Caution! – In order to limit impact forces, a sensitive edge must be used.

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 EN 13241-1 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.

Run the test as follows:

01.	Ensure that the instructions outlined in this manual and in particular in chapter 1 have been observed in full
02.	Close the gate
03.	ATTENTION! – Remove any electric power input source to the control unit
04.	Release the gear motor using the relative wrench
05.	Open the panel manually until the maximum opening position is reached and check that there is no friction during the movement
06.	Check that the panel, left in any position of its run, does not move
07.	Check that the safety systems and the mechanical stops are in good working order
08.	Check that the screw connections are well-fastened
09.	If necessary, clean the inside of the foundation case and check that the water drain functions correctly
10.	Block the gear motor using the relative wrench
11.	Apply the electric power input to the control unit
12.	Measure the force of impact according to that envisioned by the EN 12445 Standard. If the control of the “driving force” is used by the control unit as an auxiliary to the system for the reduction of the force of impact, try and adjust the functions that offer better parameters. LFAB(...) / BFAB(...) is not equipped with any torque adjustment device, therefore this operation is performed by the control unit
13.	Permanently fix a label, which describes how to manually release the gear motor, in a zone adjacent to the automation

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 OPTIONAL ACCESSORIES

The following optional accessories are available:

ACCESSORI
PLA10 electric lock 12 V= vertical
PLA11 electric lock 12 V= horizontal
BMA1 360° opening device
BMA3 Lever-operated release mechanism

Refer to the user manuals of the various individual products.

7 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 4

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

8 DISPOSAL OF THE PRODUCT

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

Similarly to the installation operations, also at the end of this product's working life the dismantling and scrapping operations must be performed by qualified personnel.

This product is made up of different types of material, some of which can be recycled while others must be disposed of. Seek information on the recycling and disposal systems envisaged by the local regulations in your area for this product category.

⚠ 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 an equivalent product.

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

9 PRODUCT DURATION

The duration and average economic life of the product. The value of duration is strongly affected by the fatigue index of the manoeuvres performed by the automation: i.e. the sum of all factors that contribute to wear of the product (see Table 1).

The estimation of duration is made on the basis of the design calculations and the test results performed on prototypes. In fact, as it is an estimate, it does not represent any guarantee regarding the effective duration of the product.

To establish the probable duration of your automation, proceed as follows:

01. Calculate the fatigue index by adding the percentage values of the items present in **Table 1**.
02. In **Graph A** of the value just found, trace a vertical line that crosses the curve; from this point trace a horizontal line until the "manoeuvre cycles" line is crossed. The value determined is the estimated duration of your product.

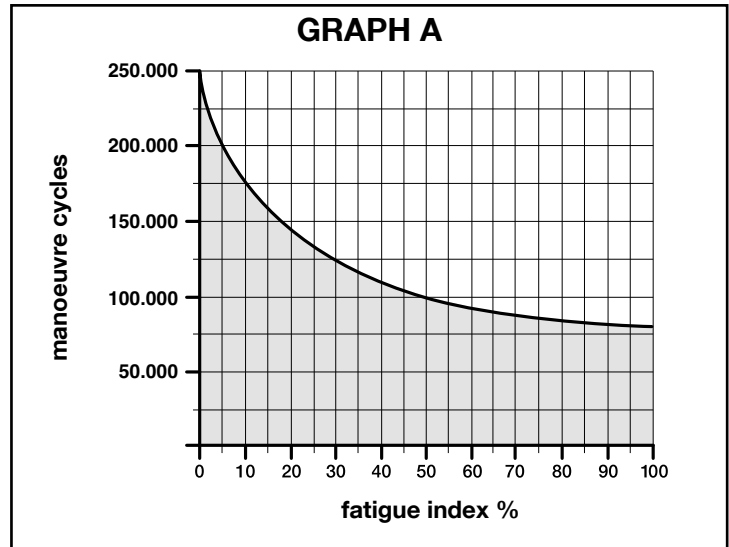
Example of the duration calculation of an LFAB(...) / BFAB(...) gear motor. Refer to Table 1 and Graph A:

- 1) - Panel length: 3 m
- 2) - Panel weight: 500 kg = fatigue index: 30%
- 3) - Installation in windy areas = fatigue index: 15%
- 4) - Does not have other elements of fatigue

Total fatigue index = 45%

Estimated duration = 110.000 manoeuvre cycles

Length of the panel (m)	≥ 2.00	2.01 ÷ 3.00	3.01 ÷ 4.00	4.01 ÷ 5.00
Weight of the panel (kg)	Fatigue index			
≤ 150	0 %	10 %	20 %	30 %
151 ÷ 350	10 %	20 %	30 %	40 %
351 ÷ 550	20 %	30 %	40 %	50 %
551 ÷ 750	30 %	40 %	50 %	–
751 ÷ 900	40 %	50 %	–	–
Environmental temperature exceeding 40°C or below 0°C or humidity exceeding 80%				15 %
Blind panel				20 %
Installation in windy area				15 %



10 TECHNICAL SPECIFICATIONS

⚠ All technical specifications stated in this section refer to an ambient temperature of 20°C (± 5°C). • Nice S.p.A. reserves the right to apply modifications to products at any time when deemed necessary, while maintaining the same intended use and functionality.

	BFAB5024	LFAB4024	LFAB4024HS	LFAB4000
Type	Electro-mechanical gear motors for gates and doors with hinged panels			
Power input	24 V ---	24 V ---	24 V ---	230 V ~
Peak absorption	7 A	5 A	7 A	1,5 A
Maximum absorption	2 A	1,5 A	4 A	1 A
Peak power	170 W	120 W	170 W	340 W
Maximum power	50 W	36 W	96 W	180 W
Capacitor incorporated	–			7µF
Protection rating	IP 67			
Run	from 0° to 110° or 360°			
Idle speed	0,8 rpm	1 rpm (1,25 rpm*)	3 rpm	0,85 rpm
Speed at nominal torque	0,65 rpm	0,85 rpm	2,4 rpm	0,65 rpm
Maximum torque	400 Nm	300 Nm	200 Nm	500 Nm
Nominal torque	100 Nm	75 Nm	90 Nm	125 Nm
Functioning temperature	-20 °C ... +55 °C			
Cycles/hour at the nominal torque	45	60	50	20
Duration	Estimated between about 100.000 and 250,000 manoeuvre cycles, according to the conditions given in Table 1			
Dimensions	230 mm x 206 mm x h 88 mm	375 mm x 225 mm x h 110 mm		
Weight	15 kg (gear motor with foundation space)	12,5 kg	12,5 kg	14,3 kg

(*) - Value refers to a power supply voltage of 30 V.

CE declaration of conformity and declaration of incorporation of “partly-completed machinery”

Declaration in accordance with Directives: 2014/30/UE (EMC); 2006/42/CE (MD) annex II, part B

Note: The contents of this declaration correspond to declarations in the official document filed in the offices of Nice S.p.A. and, in particular, the latest version thereof available prior to the printing of this manual. The text herein has been re-edited for editorial purposes. A copy of the original declaration can be requested from Nice S.p.A. (TV) Italy.

Declaration number: **389/LFAB-B**

Revision: **6**

Language: **EN**

Manufacturer's Name: NICE S.p.A.

Address: Via Pezza Alta 13, 31046 Rustignè di Oderzo (TV) Italy

Person authorised to compile the technical documentation: NICE S.p.A.

Address: Via Pezza Alta 13, 31046 Rustignè di Oderzo (TV) Italy

Type of product: Electro-mechanical dear motors

Model / Type: LFAB4024, LFAB4000, BFAB5024, LFAB4024HS

Accessories:

The undersigned, Roberto Griffa, as Chief Executive Officer, hereby declares under his own responsibility that the product identified above comply with the provisions of the following directives:

- DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast), in accordance with the following harmonised standards: EN 61000-6-2:2005, EN 61000-6-3:2007+A1:2011

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 COUNCIL of 17 May 2006 regarding machines and amending directive 95/16/EC (consolidated text)

- It is hereby declared that the relevant technical documentation has been compiled in accordance with Annex VII Part B of Directive 2006/42/CE and that the following essential requirements have been applied and fulfilled: 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 undertakes to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery. This shall be without prejudice to the intellectual property rights of the manufacturer of the partly completed machinery.

- Should the partly completed machinery be put into service in a European country with an official language different to the one used in this declaration, a translation into that language must be provided by the person bringing the machinery into the language area in question.

- The partly completed machinery may not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/EC, where appropriate.

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

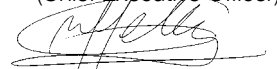
EN 60335-2-103:2003 +A11:2009

The parts of the product which are subject to the following standards comply with them:

EN 13241-1:2003+A1:2011, EN 12445:2000, EN 12453:2000, EN 12978:2003+A1:2009

Oderzo, 07 March 2017

Ing. **Roberto Griffa**
(Chief Executive Officer)



⚠ This user guide should be stored and handed to all users of the automation.

WARNINGS

- Keep at a safe distance from the moving gate until it is completely open or closed; do not transit through the gate until it is completely open and has come to a standstill.
- Do not let children play near the gate or with its commands.
- Keep the transmitters away from children.
- Suspend the use of the automation immediately as soon as you notice something abnormal in the operation (noises or jolting movements); failure to follow this warning may cause serious danger and accidents.
- Do not touch moving parts.
- Regular maintenance checks must be carried out by qualified personnel according to the maintenance plan.
- Maintenance or repairs must only be carried out by qualified technical personnel.
- Send a command with the safety devices disabled:

If the safety devices do not work properly or are out of order, the gate can still be operated.

01. Command the gate with the transmitter. If the safety devices give the enable signal, the gate opens normally; otherwise, reattempt within 3 seconds and keep the control activated.

02. After approximately 2 seconds the gate will start moving in the “man present” mode, that is, so long as the control is kept activated the gate will keep moving; as soon as the control is released the gate will stop.

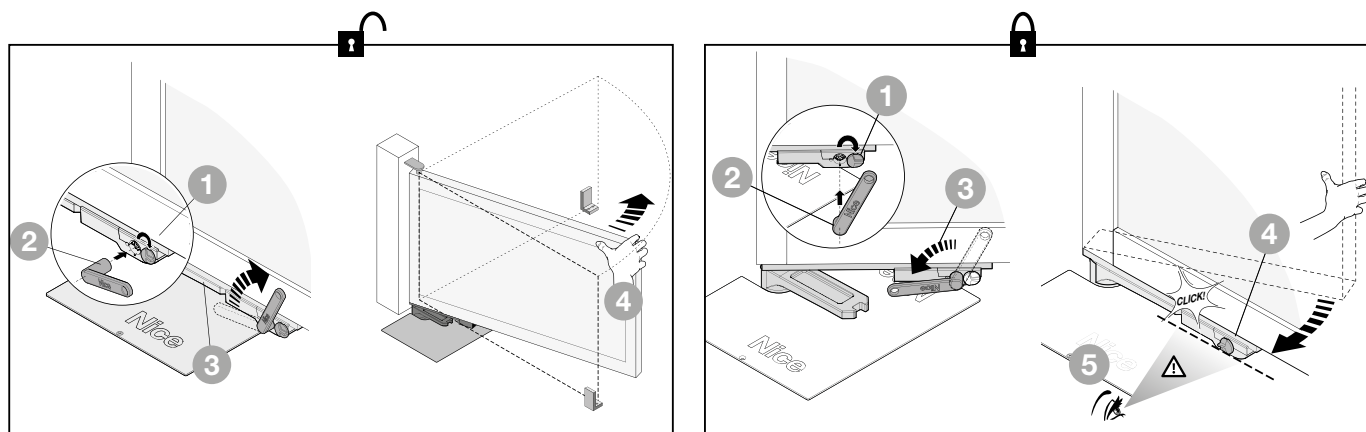
If the safety devices are out of order, arrange to repair the automation as soon as possible.

Releasing  and locking  the gearmotor (manual manoeuvre)

The gearmotor is equipped with a mechanical system that allows for opening and closing the gate manually.

Manual operation must be performed in the case of a power outage or in the event of anomalies affecting the system.

In the event of a gearmotor fault, it is still possible to try release the motor to check whether the fault lies in the release mechanism.



User-admissible maintenance operations

The operations that the user must carry out periodically are listed below:

- **Cleaning of the surfaces of the devices:** use a slightly damp (not wet) cloth. Do not use substances containing alcohol, benzene, thinners or other flammable substances; the use of these substances may damage the devices and cause fires or electric shocks.
- **Removal of leaves and stones:** disconnect the power supply before proceeding, so as to prevent anyone from moving the gate. If a back-up battery is fitted, disconnect it.



Nice