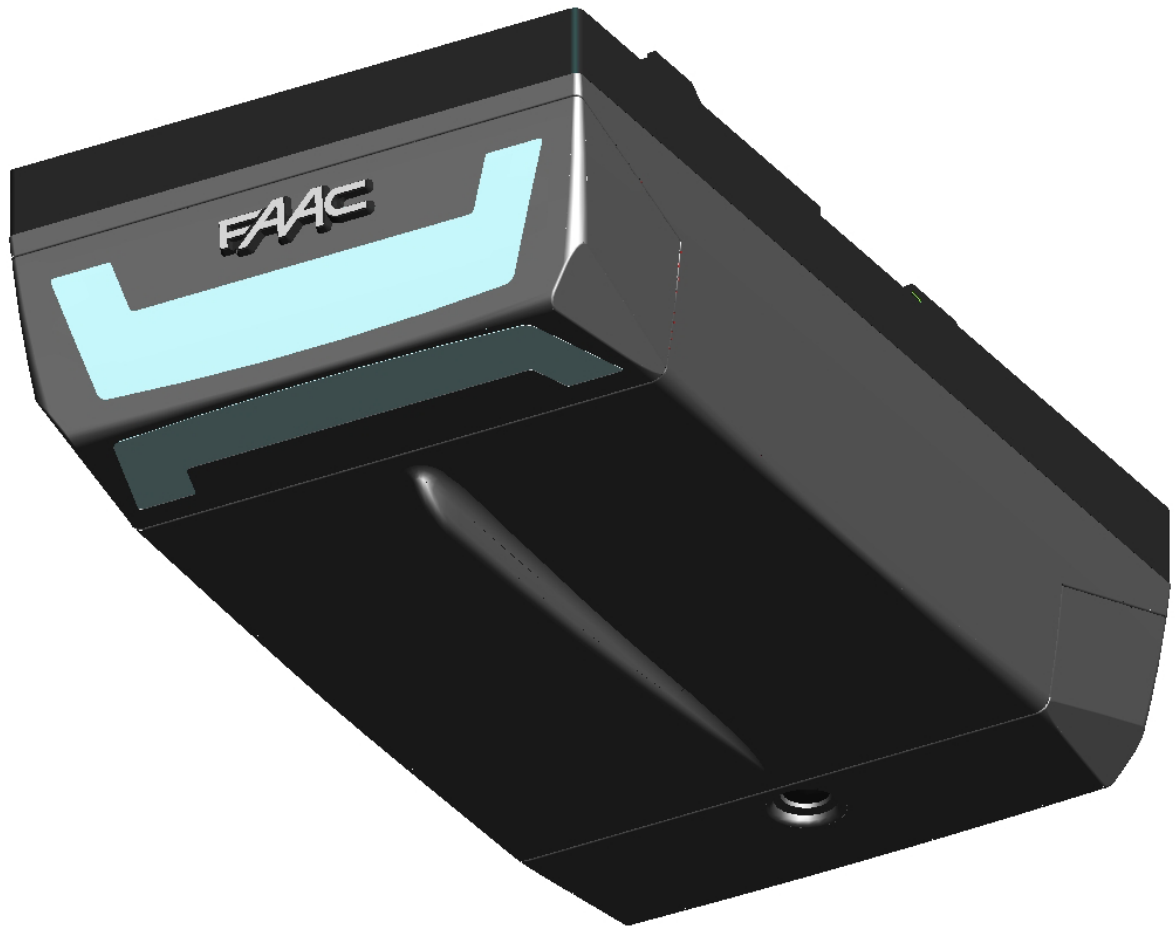
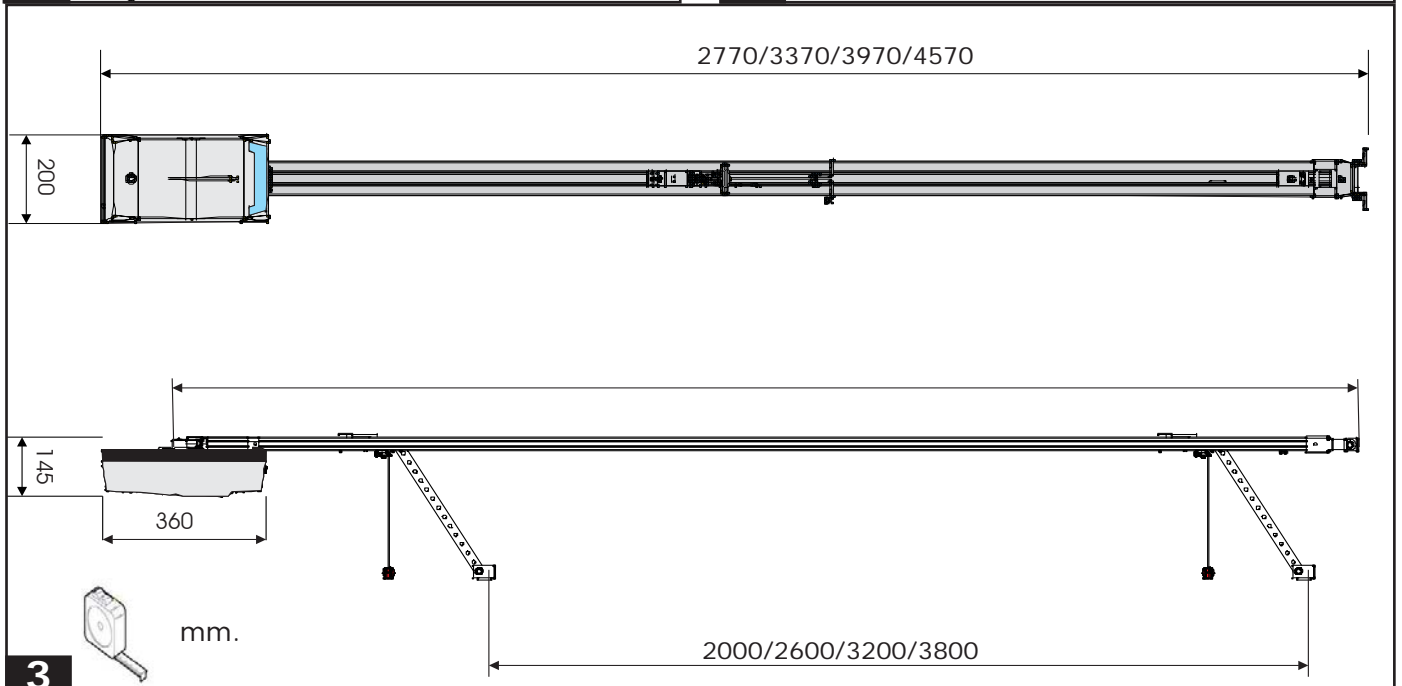
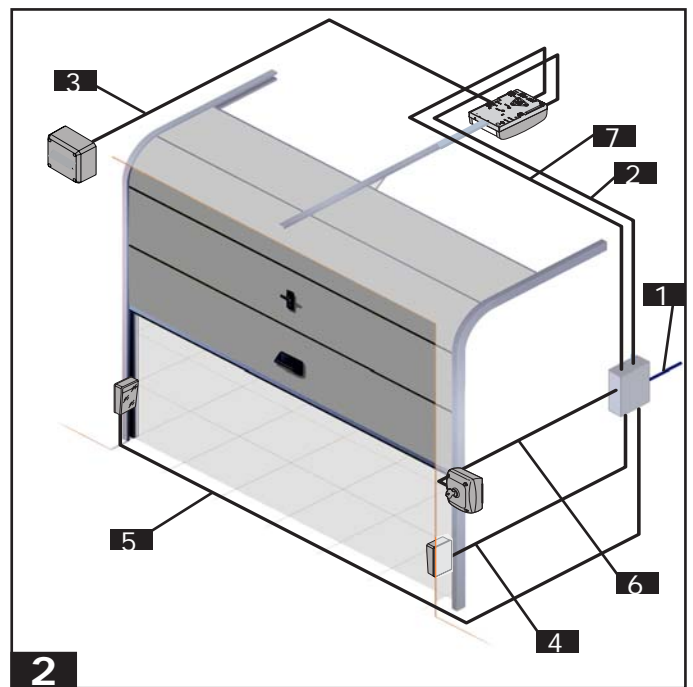
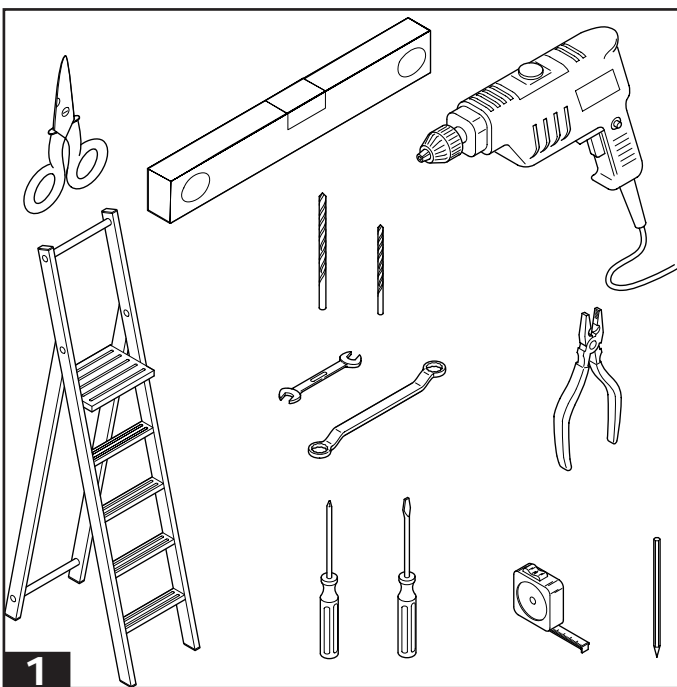


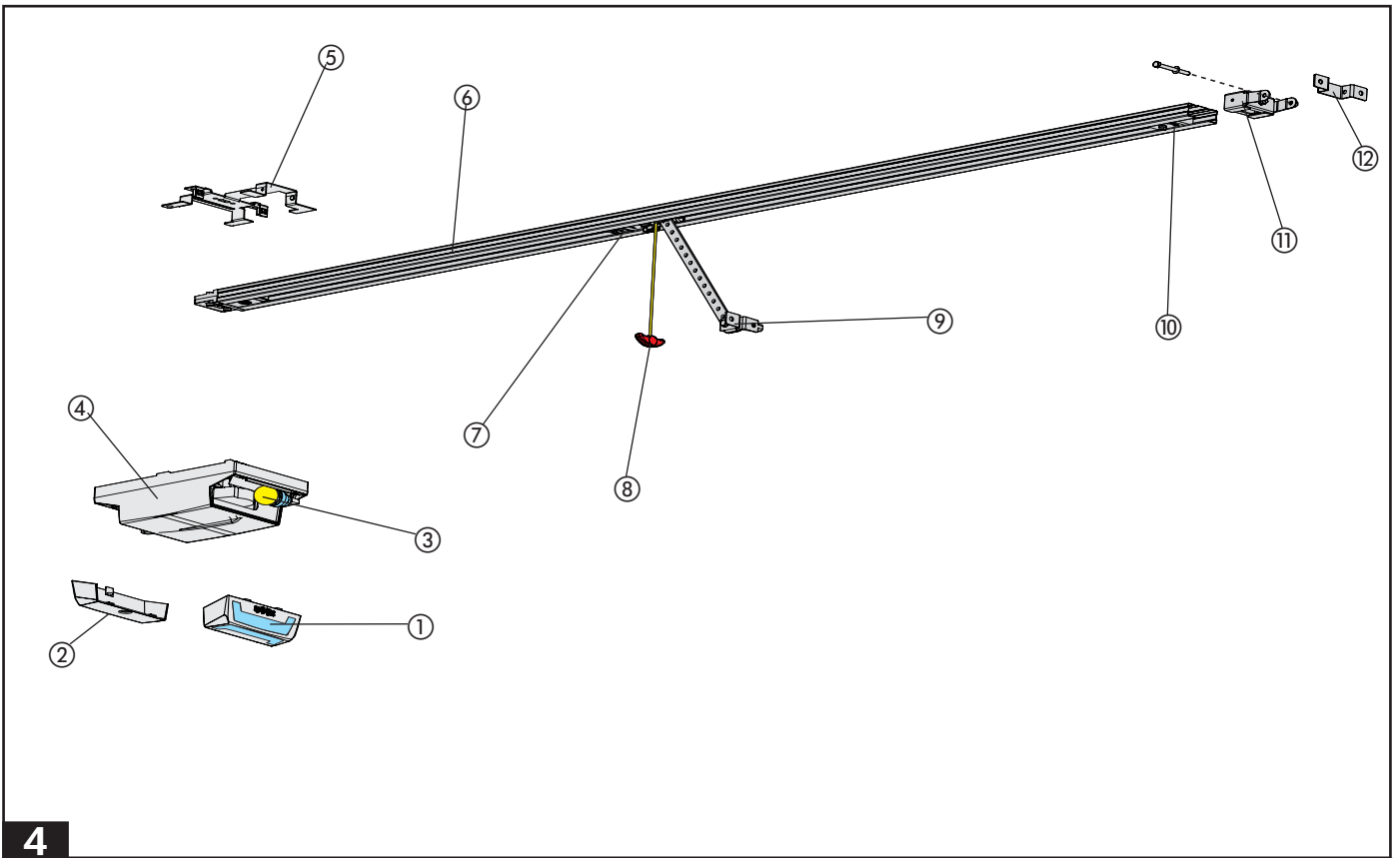
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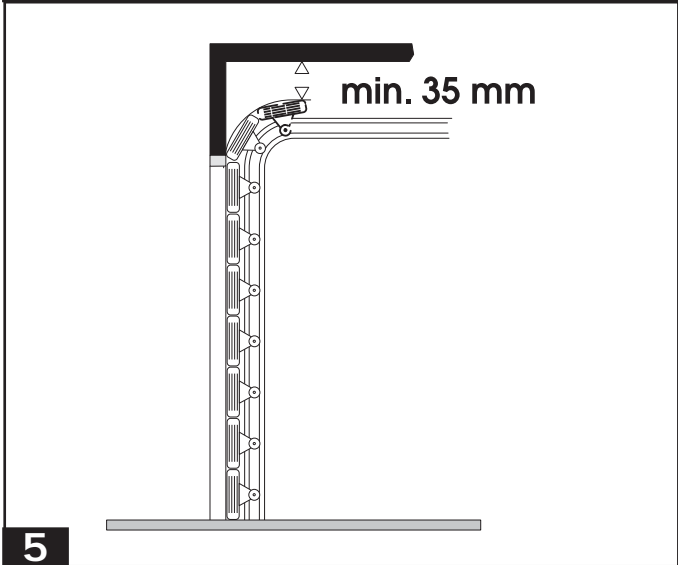
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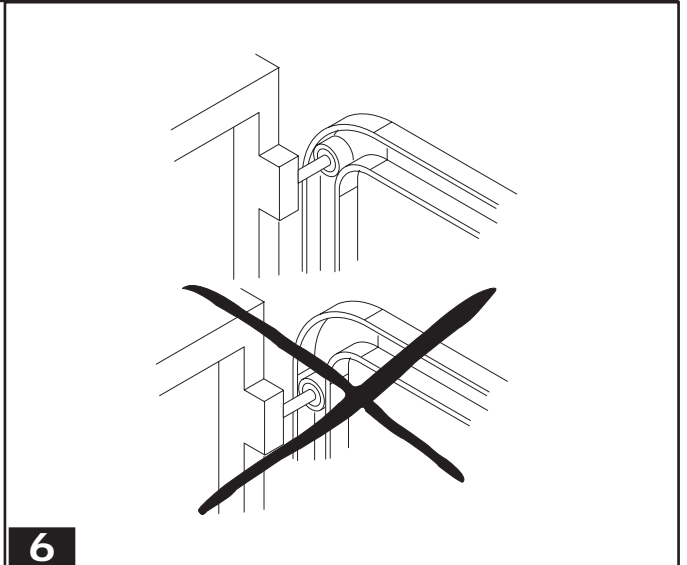




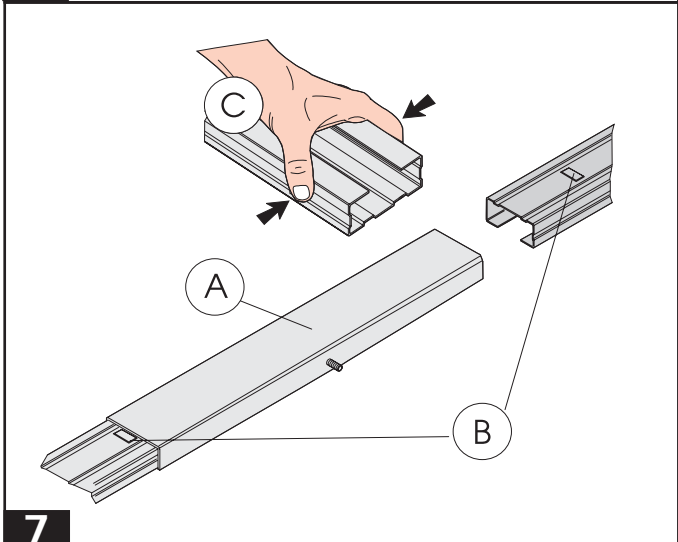
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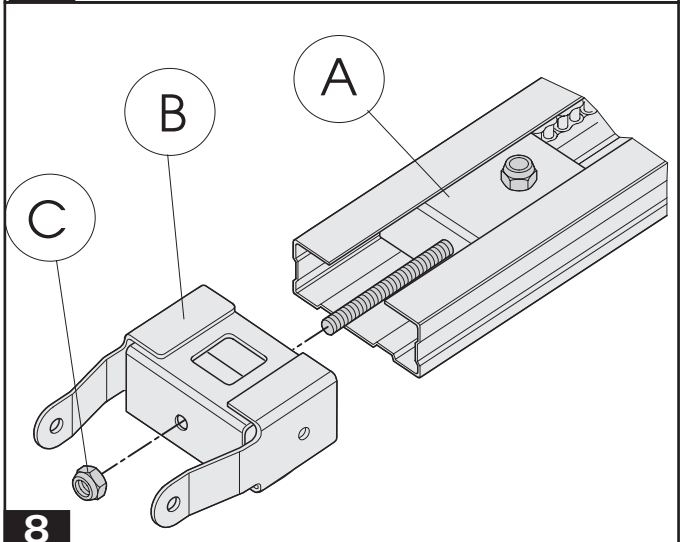
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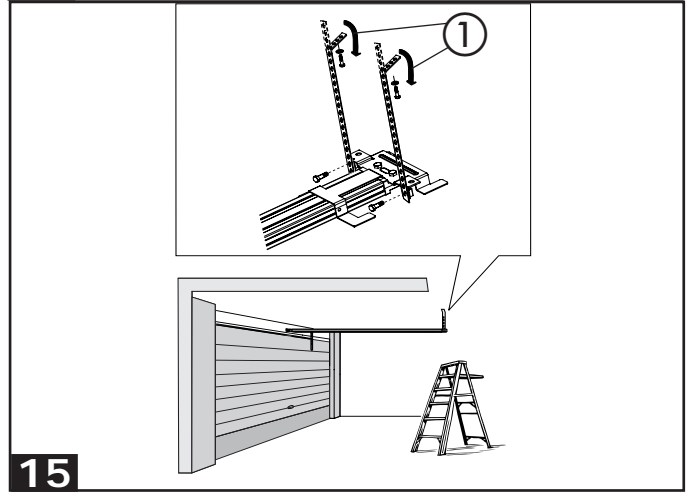
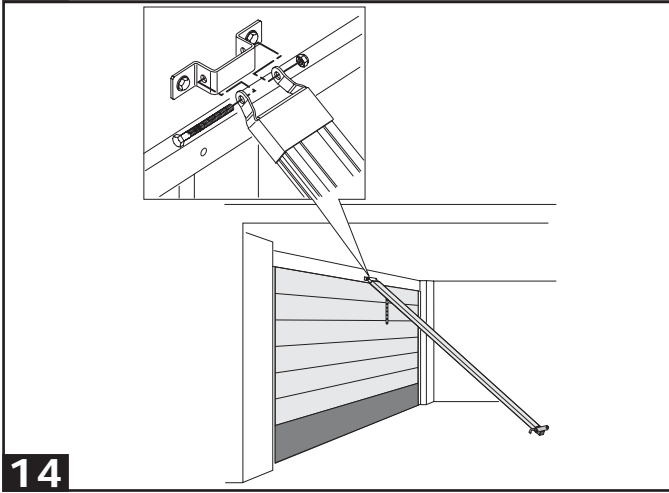
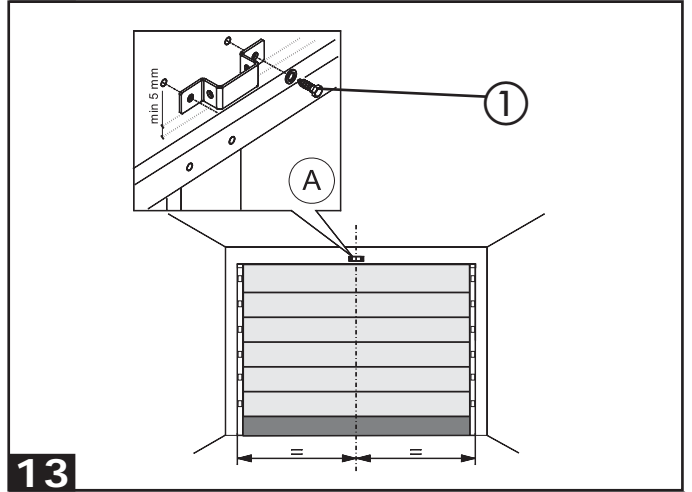
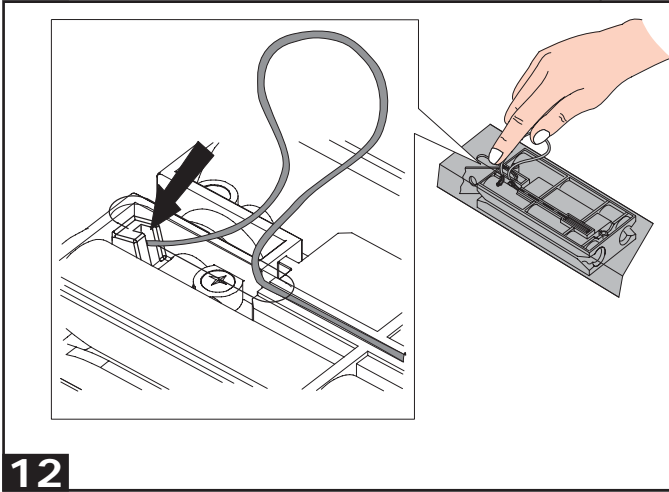
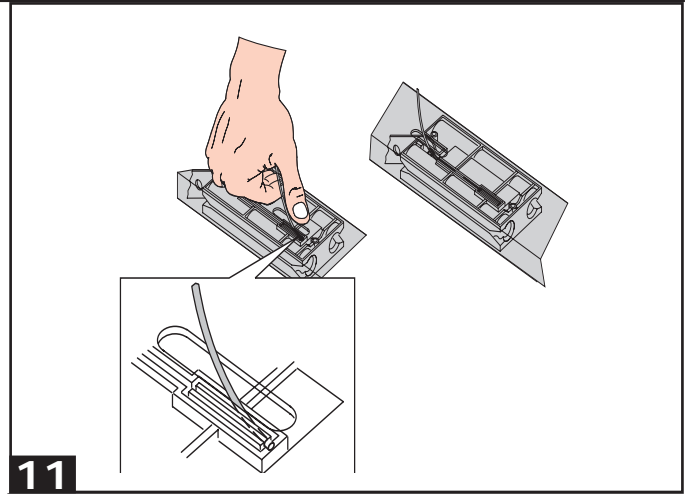
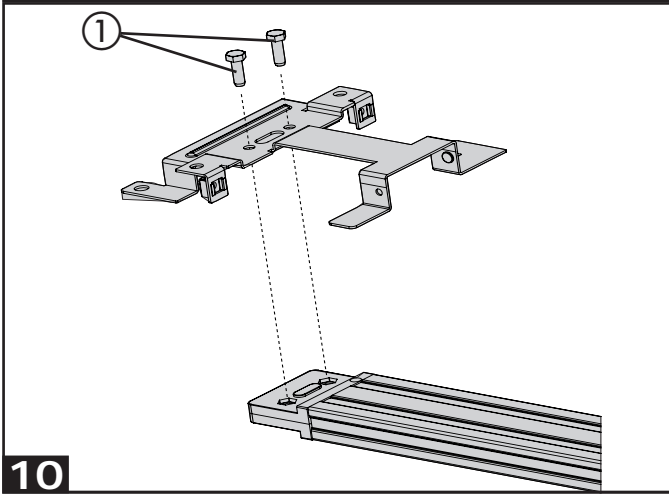
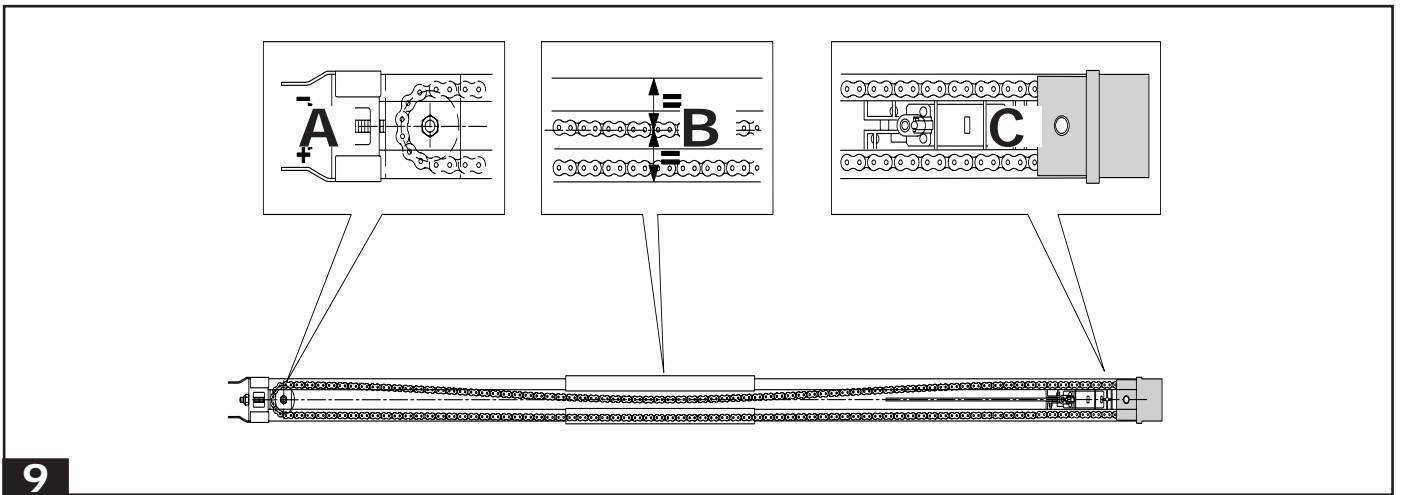
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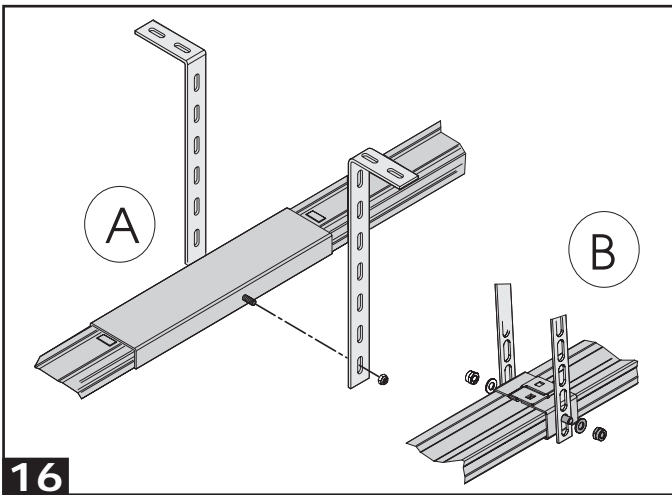


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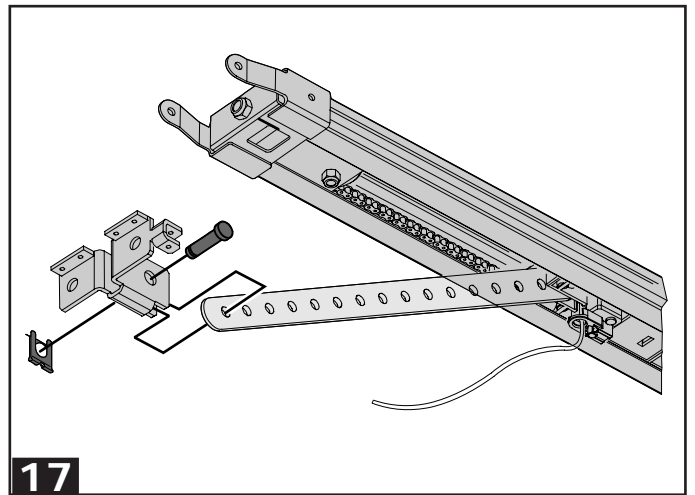


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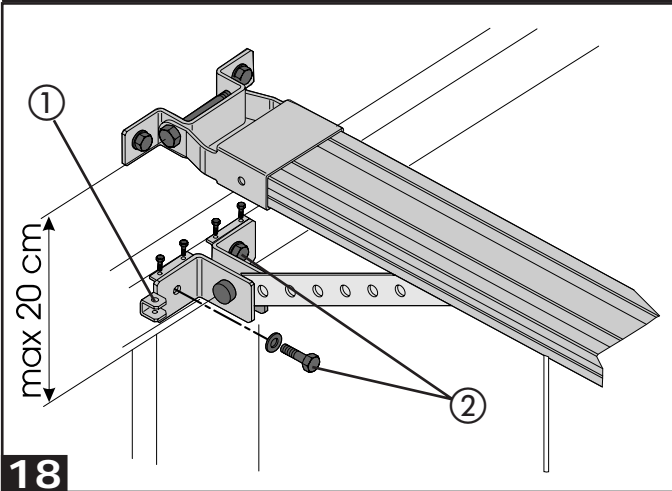




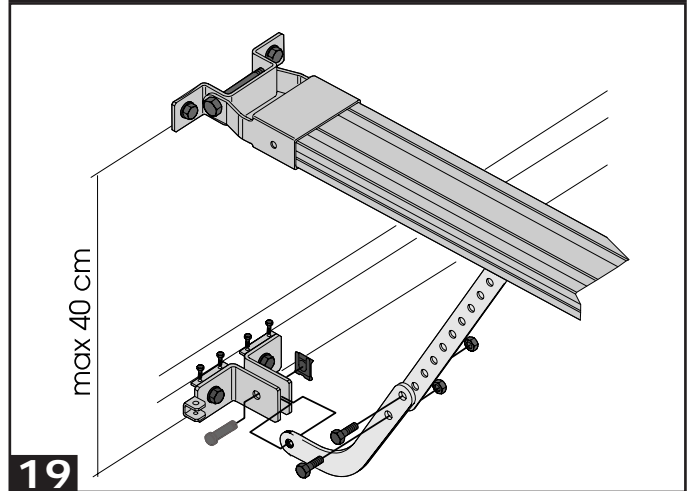
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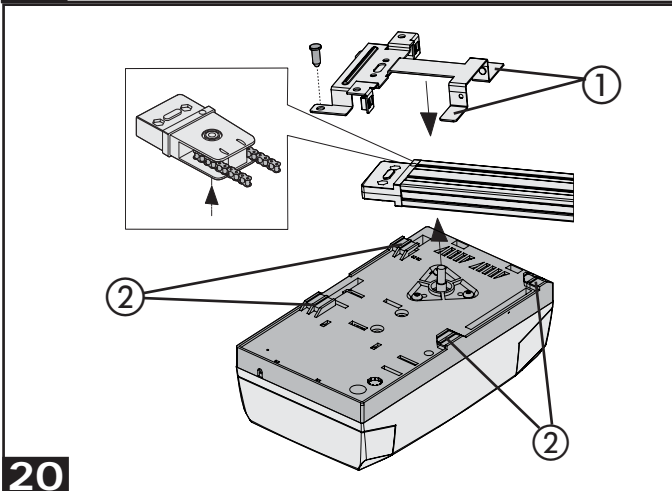
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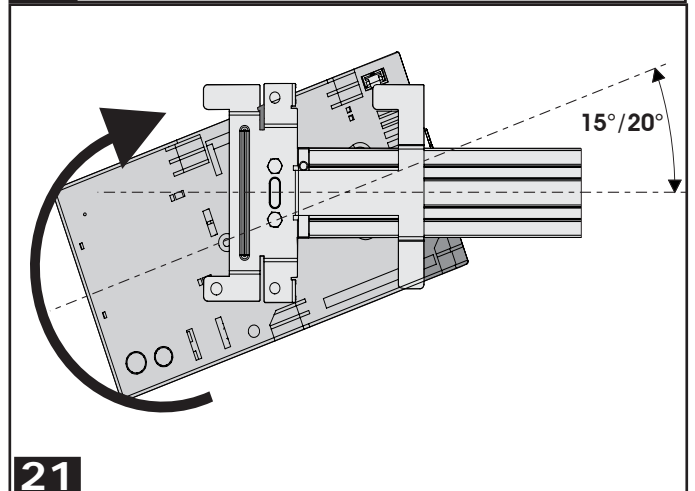
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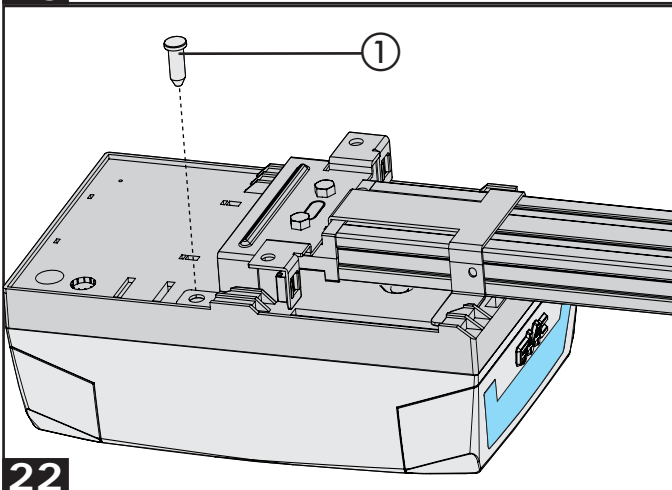
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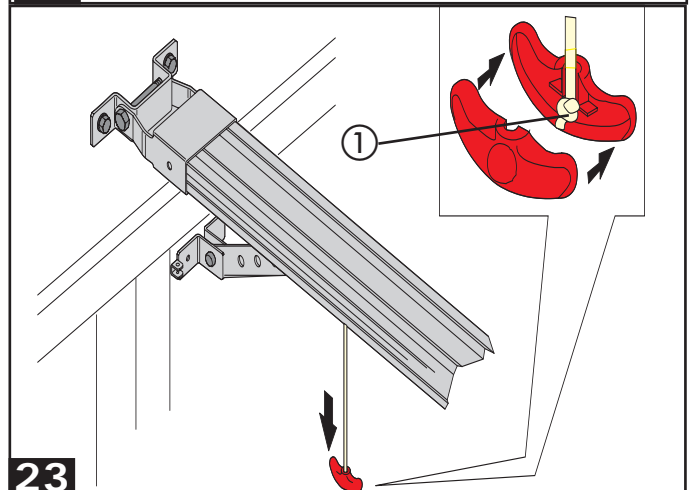
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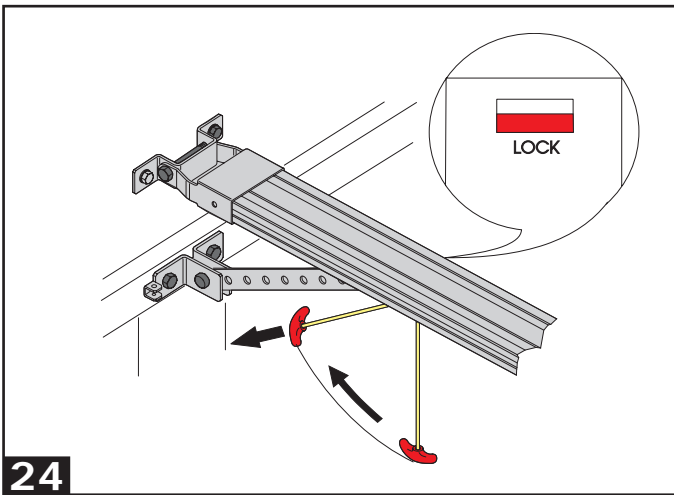
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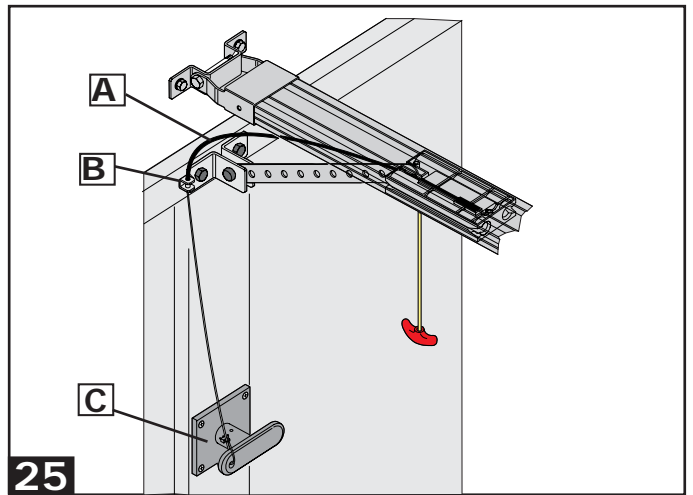
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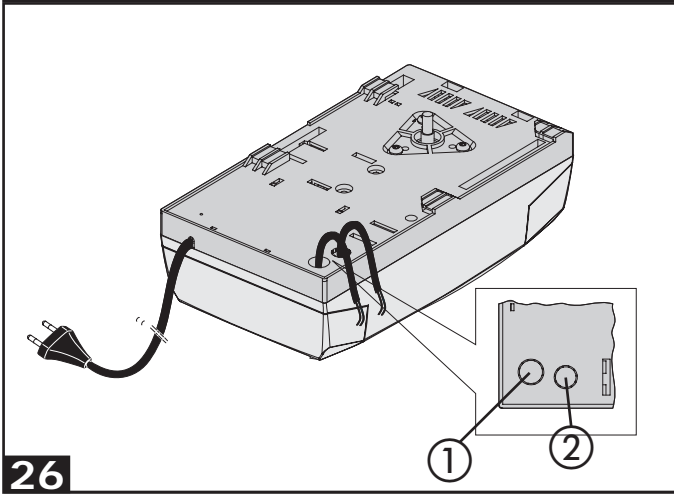
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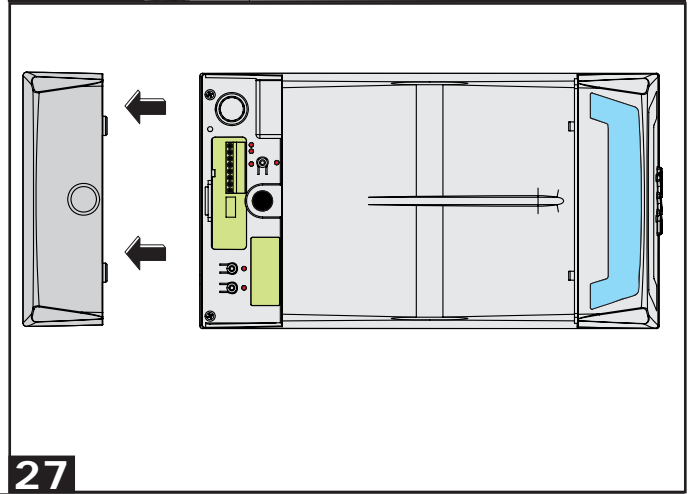
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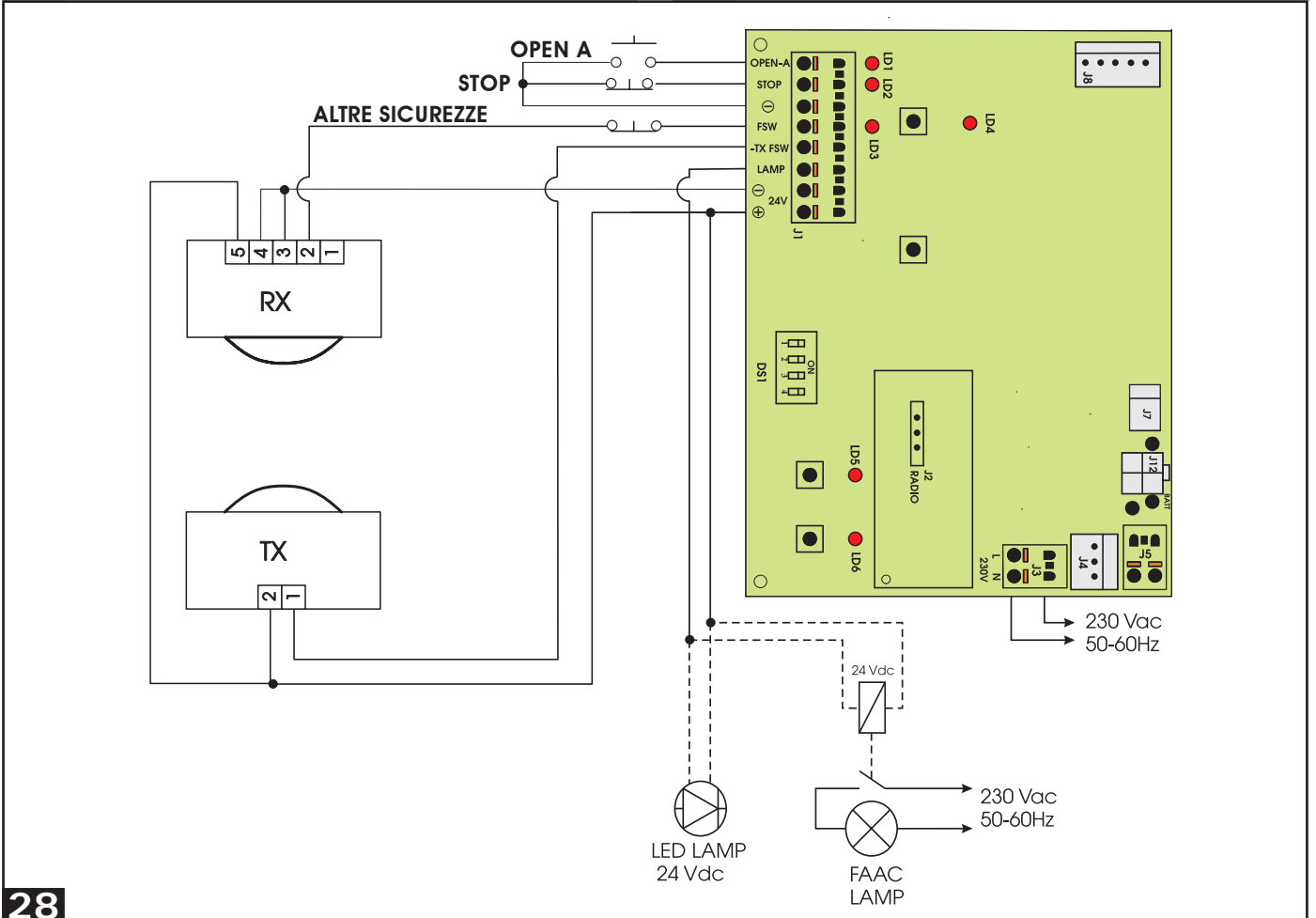
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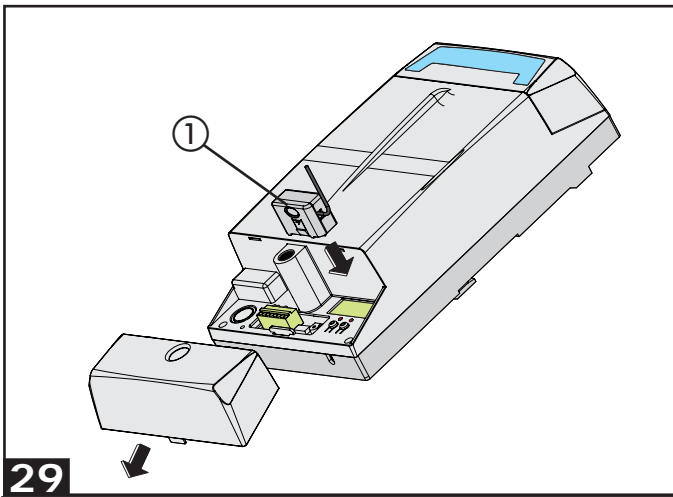
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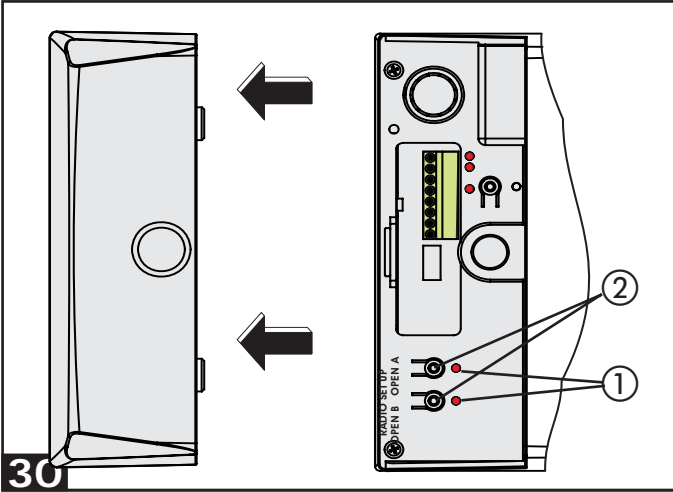
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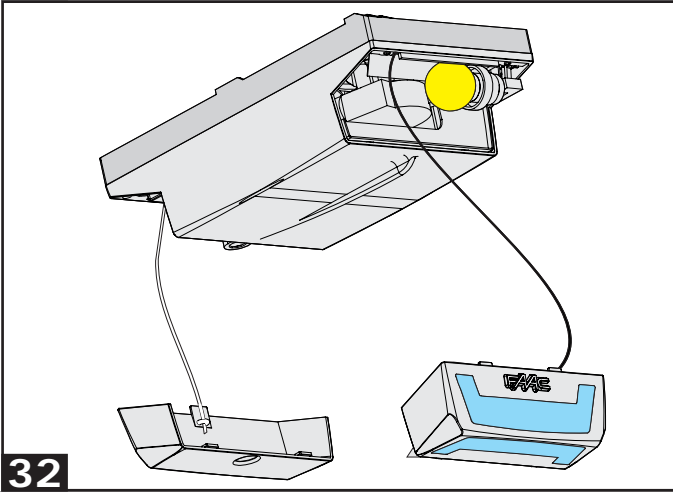
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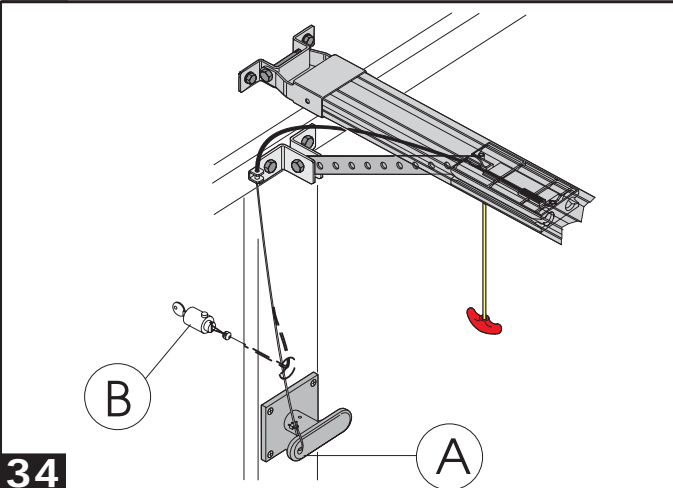
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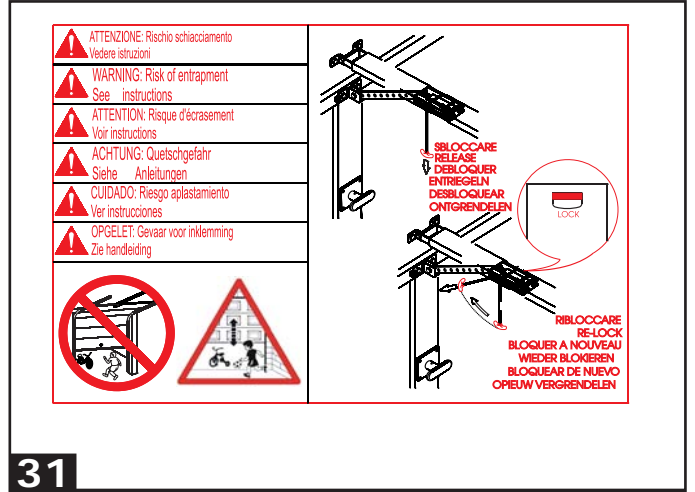
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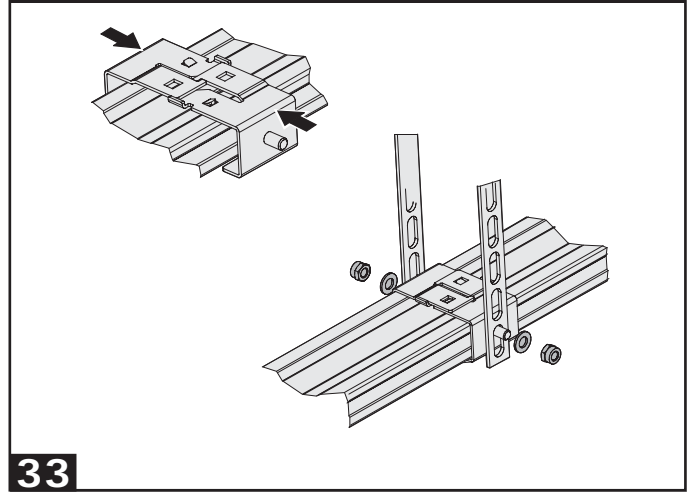
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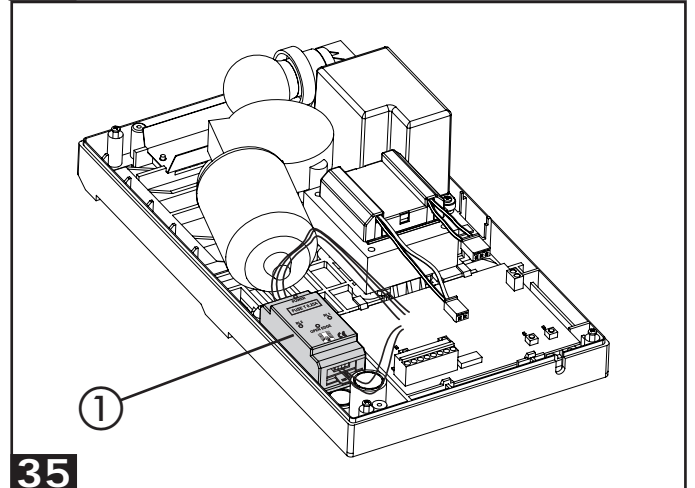
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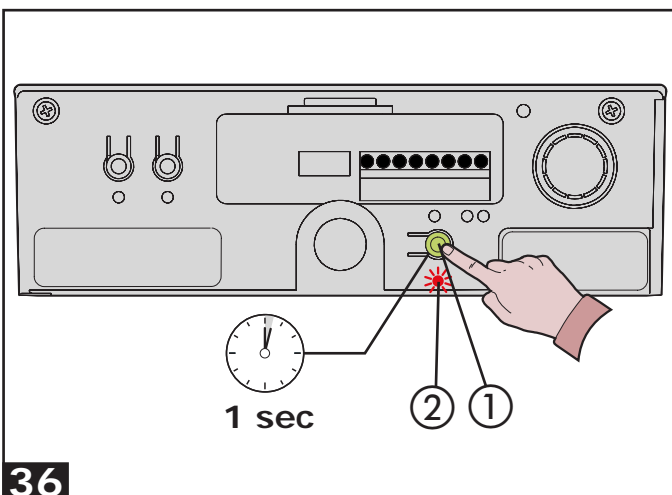
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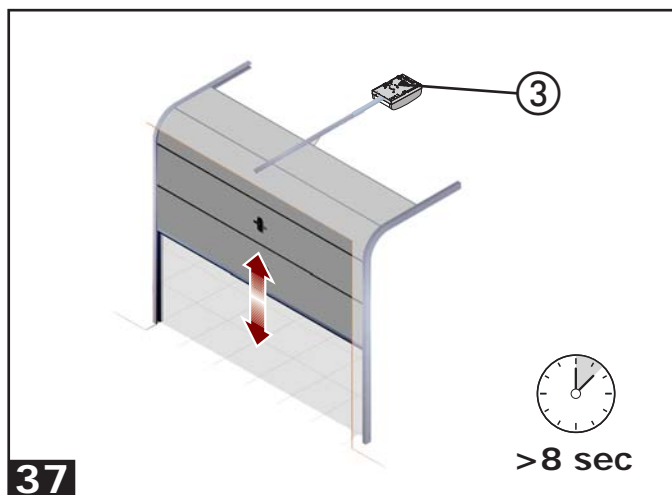
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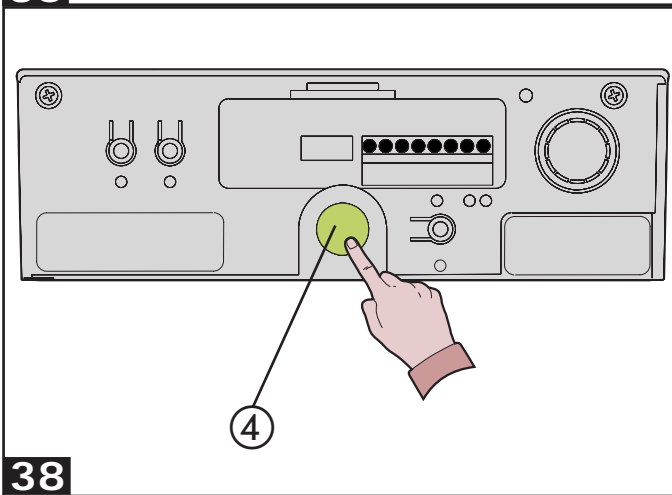
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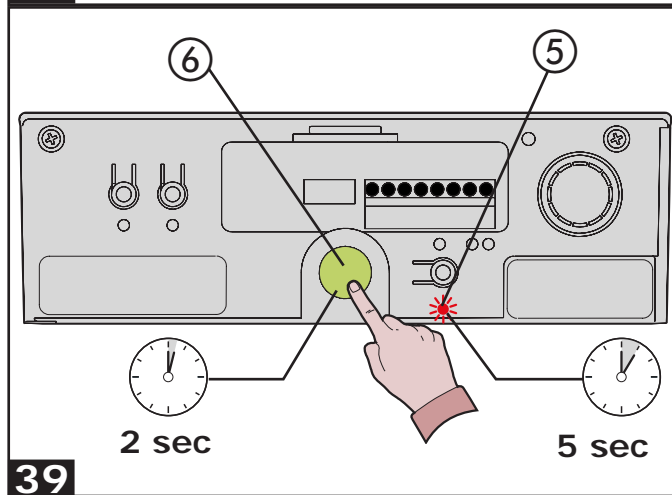
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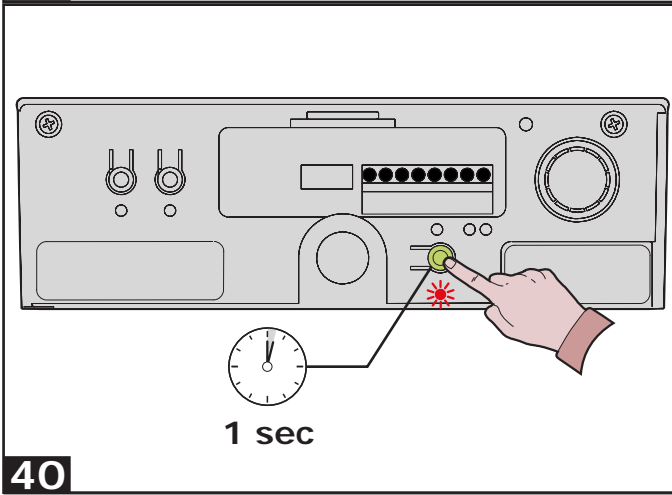
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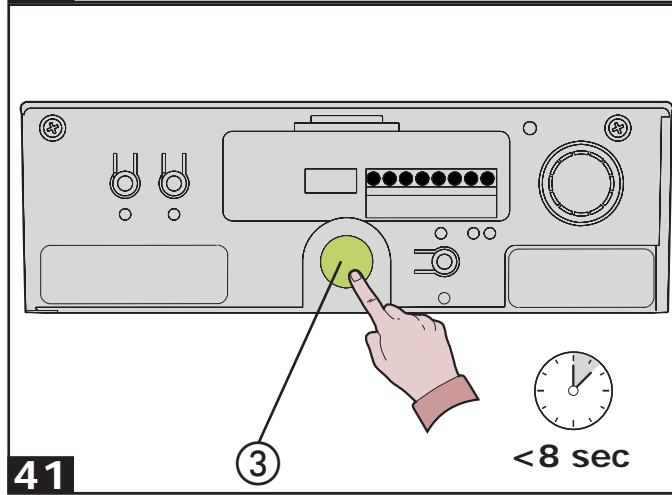
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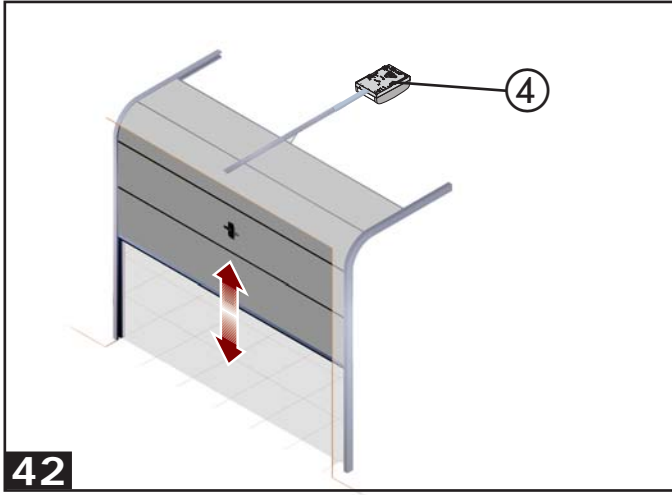
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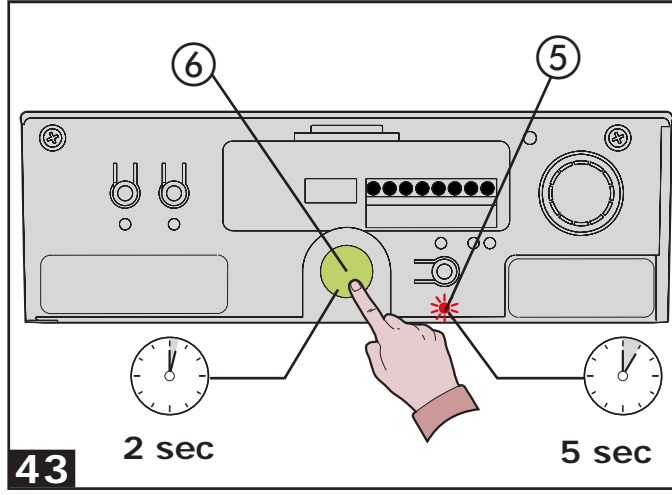
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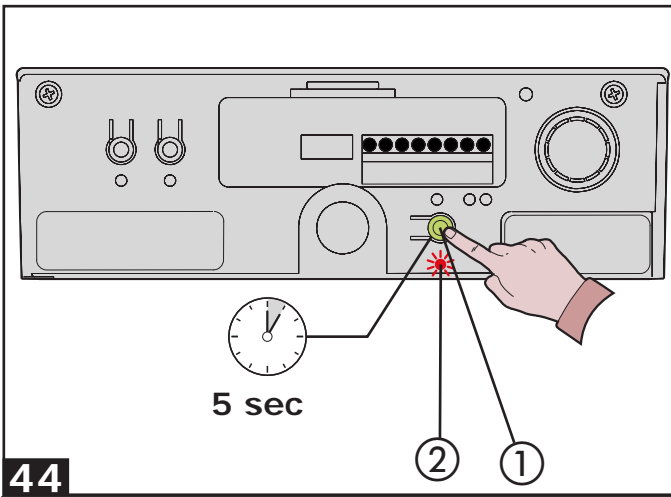
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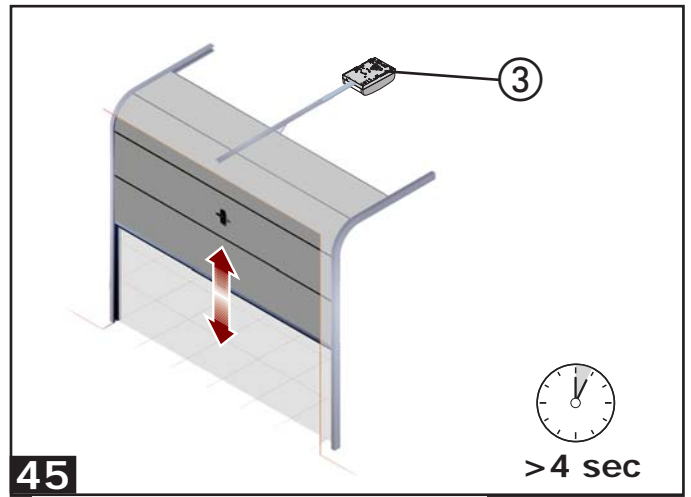
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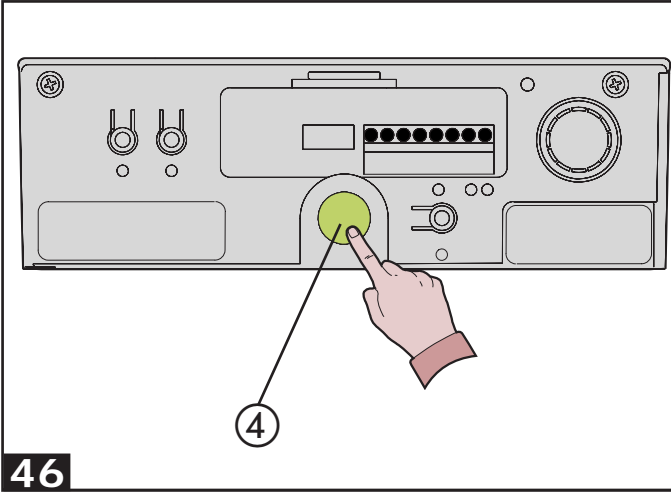
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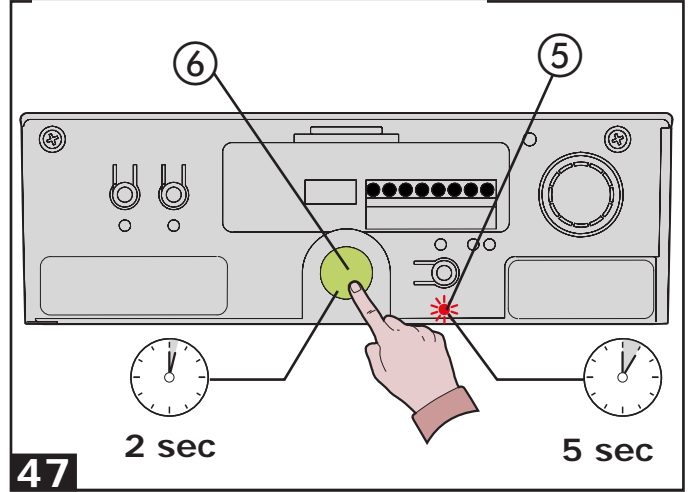
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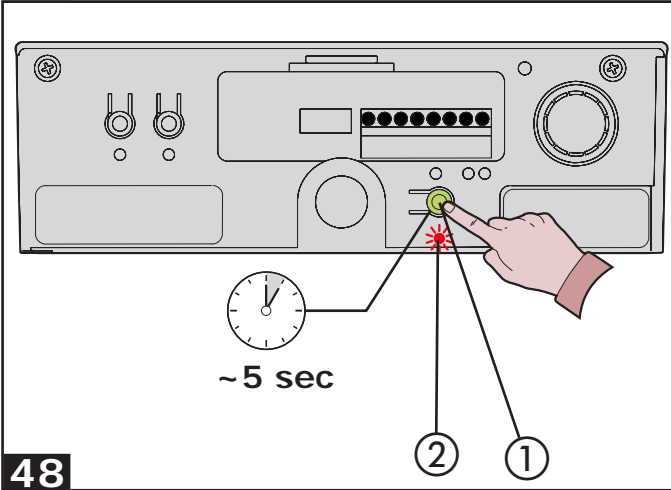
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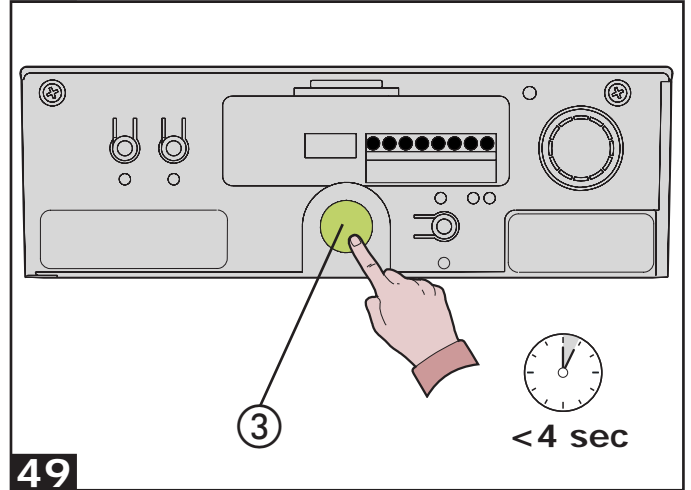
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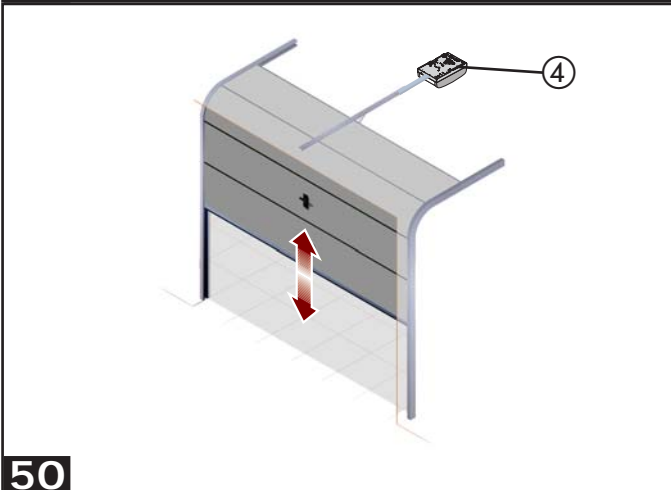
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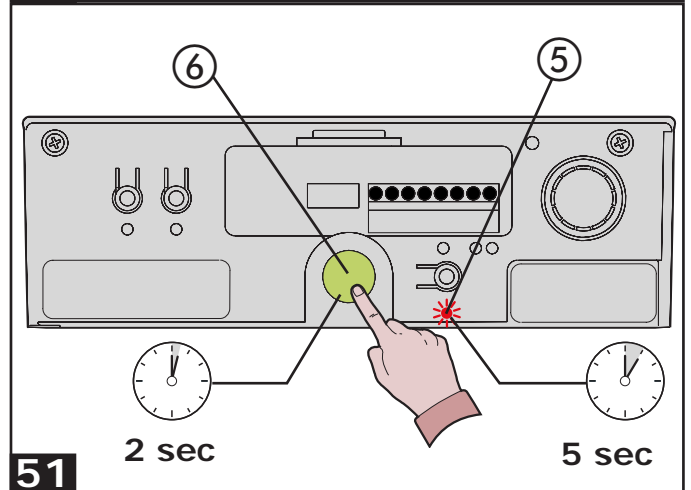
48



49



50



51

Index

| | |
|---|--------------|
| SAFETY GENERAL INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE | p. 2 |
| DECLARATION OF CONFORMITY | p. 3 |
| WARNINGS FOR THE INSTALLER | p. 3 |
| 1. DIMENSIONS | p. 4 |
| 2. TECHNICAL SPECIFICATIONS | p. 4 |
| 3. TOOLS, MATERIALS AND ELECTRIC PREPARATIONS | p. 4 |
| 4. DESCRIPTION | p. 4 |
| 5. PRELIMINARY CHECKS | p. 5 |
| 6. ASSEMBLY | p. 5 |
| 6.1. Sliding guide | p. 5 |
| 6.2. Rear fitting | p. 5 |
| 6.3. External release (optional) | p. 5 |
| 7. INSTALLATION | p. 5 |
| 7.1. Sliding guide | p. 5 |
| 7.2. Fitting on the door | p. 6 |
| 7.3. Operator | p. 6 |
| 7.4. Release device of the automated system | p. 6 |
| 7.5. External release | p. 6 |
| 8. E700HS CONTROL BOARD | p. 6 |
| 8.1. Technical specifications and components of board E700HS | p. 6 |
| 8.2. Terminal boards and connectors | p. 7 |
| 8.3. DS1 Programming dip-switches | p. 7 |
| 8.4. Operating logics | p. 7 |
| 9. COURTESY LAMP | p. 8 |
| 10. CONNECTIONS | p. 8 |
| 11. PROGRAMMING | p. 8 |
| 11.1. Board settings | p. 8 |
| 11.2. Learning (SET UP) | p. 8 |
| 11.3. Pre-flashing | p. 9 |
| 12. MEMORY STORING THE RADIOCONTROL CODE | p. 10 |
| 12.1. Memory storing the DS radio controls | p. 10 |
| 12.2. Memory storing the SLH radio controls | p. 10 |
| 12.3. Memory storing the RC radio controls (for certain markets only) | p. 10 |
| 12.3.1. Remote memory storing the RC radio controls | p. 10 |
| 12.4. Deleting the radio controls | p. 11 |
| 13. START UP | p. 11 |
| 14. FALL-PREVENTION CABLES | p. 11 |
| 15. MAINTENANCE | p. 11 |
| 16. REPAIRS | p. 11 |
| 17. ACCESSORIES | p. 11 |
| 17.1. Central support | p. 11 |
| 17.2. Key-operated release | p. 11 |
| 17.3. Safety edge CN60E | p. 11 |
| 18. TROUBLESHOOTING | p. 12 |

SAFETY GENERAL INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

A correct installation procedure and the observation of the instructions for use are the necessary assumptions for a safe and efficient automated door. Incorrect installation and use can cause serious damage to people and things.

Please carefully read the whole installation manual before starting with the installation. Do not carry out any modifications if they are not mentioned in this manual. Do not install the operator for uses other than for the intended one. For securing operations, use the supplied accessories or, in any case, securing means (screws, dowels, etc.) that are suitable for the type of support and for the mechanical stresses exerted by the automated system.

Check if the sectional door complies with the EN12604 and EN12605 standards (information can be found in the door documentation). For non-UE countries, in addition to the national standard references, observe the Standards mentioned above to get a suitable safety level.

Check if the door is correctly balanced, correctly operating and equipped with mechanical opening stops.

During installation, observe the following:

- take and keep within reach the materials and tools indicated in the paragraph "Tools and materials".
- use a stable support to perform operations with no rest on the ground.
- suitably protect face and hands before performing drilling operations.
- do not allow children play nearby during installation, use as well as during the release operation of the automated system.
- remove debris and objects that can prevent movement before activating the system electrically.
- remove the mechanical closures of the door so that it is the automated system that blocks the door when closed.
- apply the warning stickers according to the instructions.
- install manual release devices at a height not exceeding 180cm.
- install the external command devices at a height of 150cm or higher, distant from the area involved in the door movement, but in such a position to be checked visually.

After installation, we recommend you to:

- check if the anti-crushing device is able to detect a 50 mm high object on the ground and if a weight of Kg 20 applied to the door causes the opening movement to stop.
- make sure that no part of the automated system interferes with public spaces, such as sidewalks and/or streets.
- Use the automated system observing the regulations indicated in the "User's Guide".
- Compile, keep and update the maintenance register.
- The D700HS automated system does not require a periodical replacement of parts.
- Every month check the operation of the safety devices and of the anti-crushing system: a non-deforming 50 mm high object on the ground must be correctly detected.



ATTENTION! CRUSHING RISK.

The automated system must not be used by children or people with reduced physical, mental, sensorial capacity or by people without experience or the necessary training.

Children must not handle the automated system and must always be under surveillance.

- If the power cable of the D700HS operator is damaged, it must be replaced by skilled personnel with a new cable of the same type. Do not use different power cables.

Read this instruction manual thoroughly before starting with the installation of the product.



The symbol indicates notes that are important for the safety of persons and for the good condition of the automated system.



The symbol draws your attention to the notes on the characteristics or the operation of the product.

CE DECLARATION OF CONFORMITY FOR MACHINES (2006/42/EC DIRECTIVE)

Manufacturer: FAAC S.p.A.

Address: Via Calari, 10 - 40069 Zola Predosa BOLOGNA - ITALY

Declares that: The operator mod. D700HS with E700HS board,

- is built to be incorporated in a machinery or to be assembled with other machines to form a machine according to 2006/42/EC Directive;
- complies with the essential safety requirements of the following EC directives:
 - 2004/108/EC.
 - 2006/95/EC.

furthermore the manufacturer declares that the machinery cannot be put into service until the machine into which it will be integrated or of which it will become a component has been identified and it complies with the conditions of 2006/42/EC Directive and subsequent modifications assimilated in the Italian National legislation under Presidential Decree No. 17 of 27 January 2010.

Bologna, 01 February 2010

The Managing Director
A. Marcellan



ENGLISH

WARNINGS FOR THE INSTALLER GENERAL SAFETY OBLIGATIONS

- 1) **ATTENTION! To ensure the safety of people, it is important that you read all the following instructions. Incorrect installation or incorrect use of the product could cause serious harm to people.**
- 2) Carefully read the instructions before beginning to install the product.
- 3) Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
- 4) Store these instructions for future reference.
- 5) This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.
- 6) FAAC declines all liability caused by improper use or use other than that for which the automated system was intended.
- 7) Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety.
- 8) The mechanical parts must conform to the provisions of Standards EN 12604 and EN 12605. For non-EU countries, to obtain an adequate level of safety, the Standards mentioned above must be observed, in addition to national legal regulations.
- 9) FAAC is not responsible for failure to observe Good Technique in the construction of the closing elements to be motorised, or for any deformation that may occur during use.
- 10) The installation must conform to Standards EN 12453 and EN 12445.
For non-EU countries, to obtain an adequate level of safety, the Standards mentioned above must be observed, in addition to national legal regulations.
- 11) Before attempting any job on the system, cut out electrical power.
- 12) The mains power supply of the automated system must be fitted with an all-pole switch with contact opening distance of 3 mm or greater. Use of a 6A thermal breaker with all-pole circuit break is recommended.
- 13) Make sure that a differential switch with threshold of 0.03 A is fitted upstream of the system.
- 14) Make sure that the earthing system is perfectly constructed and connect metal parts of the closure to it.
- 15) The safety devices (EN 12978 standard) protect any danger areas against **mechanical movement Risks**, such as crushing, dragging, and shearing.
- 16) Use of at least one indicator-light (e.g. FAACLIGHT) is recommended for every system, as well as a warning sign adequately secured to the frame structure, in addition to the devices mentioned at point "15".
- 17) FAAC declines all liability as concerns safety and efficient operation of the automated system, if system components not produced by FAAC are used.
- 18) For maintenance, strictly use original parts by FAAC.
- 19) Do not in any way modify the components of the automated system.
- 20) The installer shall supply all information concerning manual operation of the system in case of an emergency and shall hand over to the user the warnings handbook supplied with the product.
- 21) Do not allow children or adults to stay near the product while it is operating.
- 22) Keep remote controls or other pulse generators away from children, to prevent the automated system from being activated involuntarily.
- 23) Transit is permitted only when the automated system is idle.
- 24) The user must not attempt any kind of repair or direct action whatever and contact qualified personnel only.
- 25) Check at least every 6 months the efficiency of the system, particularly the efficiency of the safety devices (including, where foreseen, the operator thrust force) and of the release devices.
- 26) **Anything not expressly specified in these instructions is not permitted.**

AUTOMATED SYSTEM D700HS

These instructions apply to **FAAC D700HS** model.

The D700HS automated systems automate balanced sectional doors of single garages for residential use. They consist in an electro-mechanical operator, an electronic control unit and a courtesy lamp integrated in a single enbloc that, ceiling-mounted, enables the door opening thanks to a chain or belt transmission.

The non-reversing system guarantees the mechanical block of the door when the motor is not operating and therefore there is no need to install a lock; an internal and an external (optional) manual release make it possible to move the door in the event of a power cut or malfunction. The operator is equipped with an electronic device that detects the presence of obstacles, if any, preventing the door movement and avoiding any crushing or lifting. These instructions refer to the operator with chain drive, however, the same procedures, adjustments and application limits also apply for the operator with belt drive.

 **The D700HS automated systems were designed and built for internal use and to check the vehicle access. Avoid any other use.**

1. DIMENSIONS

For the dimensions of the **FAAC D700HS** operator, consult Fig. 3 and Chapter 2: Technical Specifications.

2. TECHNICAL SPECIFICATIONS

| Model | D700HS |
|---|------------------------------|
| Power supply (V~ / 50 Hz) | 230 |
| Electric motor (Vdc) | 24 |
| Max. absorbed power (W) | 440 |
| Thrust force (N) | 700 |
| Rated Operating Time (R.O.T.) | 18 min. 55 °C |
| Max. overall dimensions from ceiling (mm) | 35 (Fig. 5) |
| Courtesy lamp (V~ / W) | 230 / 40 max. |
| Courtesy lamp timing (s) | 120 |
| Carriage standard no-load speed (m/min) | 12 |
| Carriage reduced no-load speed (m/min) | 3.8 |
| Carriage decelerated speed (m/min) | 1.3 |
| Standard speed noise (dBA) | 52 |
| Deceleration travel length | Can be varied from setup |
| Intrinsic safety device | Class 2 |
| Sectional door max. width (mm) | 5000 |
| Sectional door max. height (mm) | See useful travel |
| Sliding guide useful travel (mm) | 2000 - 2600 - 3200 - 3800 |
| Protection class | Only for internal use (IP20) |
| Operating ambient temperature (°C) | -20 / +55 |


 **The noise emission level of the D700HS operator, referred to the work station, is 52 dB(A).**

3. TOOLS, MATERIALS AND ELECTRIC PREPARATIONS

The necessary tools for installing the D700HS operator are indicated in Fig. 1.

The necessary material for installing the D700HS operator is:

| | TYPE | Ø (mm ²) | QTY. |
|---|-----------------------|----------------------|------|
| 1 | Network Power Supply | Ø 1,5 | 2 |
| 2 | Operator Power Supply | Ø 1,5 | 2 |
| 3 | Flashing lamp | Ø 1 | 2 |
| 4 | RX photocells | Ø 0,5 | 3 |
| 5 | TX photocells | Ø 0,5 | 2 |
| 6 | Key-operated selector | Ø 0,5 | 2 |
| 7 | Low-Voltage tubes | - | - |

 Numbers refer to Fig. 2.

- Use cables with a suitable insulation class.
- The electrical system must comply with the instructions given in chapter "Warnings for the installer".
- The power cable with 230V~ must be laid and connected by a qualified installer. Close to the operator have a socket, type 2P - 10A - 250 V~, installed.
- Lay cables in suitable tubes and prevent free cables from entering into contact with moving parts of the automated system and of the door.
- Separate low-voltage cable and 230V~ power cables in different tubes.
- Prepare the electrical system in compliance with the instructions given in chapter "Warnings for the installer".
- After installation, make sure that no tubes or external cables can come in contact with moving parts.
- Install the fixed command points at a minimum height of 150 cm, distant from the area involved in the door movement, but in such a position to be checked visually.

4. DESCRIPTION

The description of the **FAAC D700HS** operator refers to Fig. 4.

- ① Ceiling fitting
- ② Rear door
- ③ Courtesy lamp
- ④ D700HS operator plastic cover
- ⑤ Rear fitting
- ⑥ Sliding guide
- ⑦ Driving carriage
- ⑧ Driving carriage
- ⑨ Door fitting bracket
- ⑩ Transmission unit
- ⑪ Front fitting and chain-tensioner
- ⑫ Front fitting bracket

5. PRELIMINARY CHECKS

- The door structure must be suitable for being automated. In particular make sure that the door dimensions correspond to those indicated in the technical specifications and that the door is sturdy enough.
- Check if the door complies with EN12604 and EN12605 standards.
- During movement, the door must not invade public areas destined to pedestrian or vehicle transit.
- Check the efficiency of bearings and couplings of the door.
- Make sure that the door has no friction; if any, clean and lubricate the guides with silicone-based products, avoiding the use of grease and, in any case, in compliance with the instructions of the manufacturer.
- Check the correct balance and if the mechanical opening stops are present.
- Remove the mechanical closures of the door so that it is the automated system that blocks it when closed.
- Check if a space of at least 35 mm is available between the ceiling and the highest sliding point of the door (Fig. 5).
- Check if the upper guide roller of the sectional door is in the horizontal part of the guide when the door is closed (fig. 6).

6. ASSEMBLY

6.1. Sliding guide

If a two-piece sliding guide is used, you need to assemble it observing the instructions below. If you have an already assembled guide, go to paragraph 6.2.

- 1) Assemble both pieces of the sliding guide inserting them into the central joint (Fig. 7 ref. A) until the metal references reach the stop point (Fig. 7 ref. B). To facilitate the coupling of the sliding guide, we recommend you to insert it in the central joint pressing it as shown in Fig. 7 ref. C. Do not use tools which could deform the guide or the joint.
- 2) Slide the transmission unit (Fig. 8 ref. A) along the whole sliding guide until it is close to the front terminal, i.e. the one opposed to the drive coupling unit.
- 3) Assemble the front fitting (Fig. 8 ref. B) to the transmission unit (Fig. 8 ref. A).
- 4) Slightly tension the chain by tightening the nut (Fig. 8 ref. C).
- 5) Lay the sliding unit on its side (Fig. 9). Push the carriage to the drive coupling unit (Fig. 9 ref. C).
- 6) Adjust the tensioner (fig. 9 ref. A) so that the central area of the loop, formed by the upper section of the chain, almost matches the center line of the sliding guide (Fig. 9 ref. B)

Attention: excessive tensioning can damage the transmission and drive coupling units.

6.2. Rear fitting

Before fixing the sliding guide to the ceiling, assemble the rear fitting in the relevant seat on the drive coupling unit and tighten the screws as shown in Fig. 10 ref. ①.

6.3. External release (optional)

If the installation of an external release system is foreseen, you must lay the small cable before starting with the installation:

- 1) Release the carriage (see par. 7.4. point 3) and take it to the slot on the upper part of the sliding guide.
- 2) Fit the terminal of the small cable into its relevant red seat (Fig. 11).
- 3) Move back the carriage toward the drive coupling unit until the through hole on the carriage matches the slot and route the cable without sheath (Fig. 12).
- 4) Draw out completely the cable from the lower part of the carriage.
- 5) Wind the cable to prevent it from being of hindrance during the installation of the sliding guide.

7. INSTALLATION

- **In order to work in safety conditions, we recommend you to install the operator keeping the door completely closed.**
- **Use all anchoring points provided.**
- **The securing systems must be suitable for the type of support and must be sturdy enough.**
- **Suitably protect face and hands during drilling.**
- **Read this chapter thoroughly before starting with the installation.**

7.1. Sliding guide

After having completed the preliminary assembly operations, you can proceed with the installation of the sliding guide operating as follows:

- 1) On the lintel mark a line corresponding to the vertical center line of the door (Fig. 13).
- 2) On the lintel mark a horizontal line corresponding to the max. height reached by the door during movement (see Fig. 5).
- 3) Place the fixing bracket of the front fitting leaving the bottom edge at least 5 mm over the intersection point of the lines and centered with respect to the vertical line (Fig. 13). Please refer also to paragraph 7.2. for the correct position of the bracket with respect to the fitting point of the door.
- 4) Mark both fixing points.
- 5) Drill and mount using the screws (ref. ① Fig. 13) that are **NOT** standard supplied.
- 6) Place the sliding guide on the ground, perpendicular to the door.
- 7) Lift the guide from the front fitting and assemble this fitting with the fixing bracket using the through screw and the clamp (Fig. 14).
- 8) Lift the sliding guide until the rear fitting is at the same level of the front fitting or until reaching the same inclination of the door horizontal rail. In the event of a direct fixing to the ceiling, go to point 12.
- 9) Measure the distance between ceiling and the distance between centers of the nuts securing the rear fitting.
- 10) Fold the supplied brackets to the detected measure (measure starting from the middle of the first bracket slot).
- 11) Mount the brackets on the rear fitting and position the sliding guide again (Fig. 15).
- 12) Mark the fixing points on ceiling of the rear fitting and drill (taking care to protect the sliding guide). Complete the installation of the guide.
- 13) If a two-piece guide with central union (Fig. 16 ref. A) or the central support for a single rail (Fig. 16 ref. B - optional) are used, secure to the ceiling using the suitable brackets and observing the steps 9,10 and 12 (Fig. 16).

7.2. Fitting on the door

- 1) Assemble the fitting with the carriage rod (Fig. 17). Place the fitting on the door in order that the through hole of the release cable is directed toward the left side of the door (ref. ① Fig. 18).
- 2) Close the door and take the carriage to it.
- 3) Place the fitting on the door centered to the center line of it.
- 4) Check if the distance between centres of the securing holes of the front fitting and of the fitting on the door does not exceed 20 cm (Fig. 18). For a correct operation of the automated system, we recommend you to avoid arm inclination over 30° with respect to the sliding guide. If a curved arm for sectional door (optional) is used, perform the assembly with the straight arm of the carriage as shown in Fig. 19. To improve the efficiency of the anti-crushing system, we recommend you to secure the fitting on the sectional door as down as possible without exceeding however the distance of 40 cm from the front fitting of the operator. (Fig. 19)
- 5) Mark, drill and secure the fitting to the door using the screws (ref. ② Fig. 18) that are **NOT** standard supplied.

7.3. Operator

After having assembled the rear fitting with the sliding guide and after having completed the installation of the sliding guide, you can mount the operator:

- 1) Keep the operator inclined by 15°/20° (Fig. 21), insert the gearmotor shaft into the coupling in the rear fitting of the sliding guide and move the fins (Fig. 20 rif. ①) close to the seats on the bottom of the operator (Fig. 20 rif. ②).
- 2) Turn the operator in the direction given in Fig. 21 until reaching the position shown in Fig. 22, then fit the pin into the hole of the rear fitting (Fig. 22 rif. ①).

7.4. Release device of the automated system

- 1) Define the height of the release knob, taking into consideration that it must not exceed a height of 180 cm off the ground, then cut the rope in excess.
- 2) Make a knot at the end of the rope and assemble the release handle (Fig. 23).
- 3) Pull downwards the release handle and check if the door can be moved manually (Fig. 23).
- 4) To lock again the operator, pull the release handle horizontally to the door (Fig. 24). Check if, when the handle is released, the LOCK window, which is located under the carriage, is red. Move the door manually until reaching again the coupling point of the carriage.

⚠ Prevent people, animals or objects from standing within the movement area of the door during the release operation.

7.5. External release

If the automated system has an external release, you need to complete the installation you have already begun (see par. 6.3.):

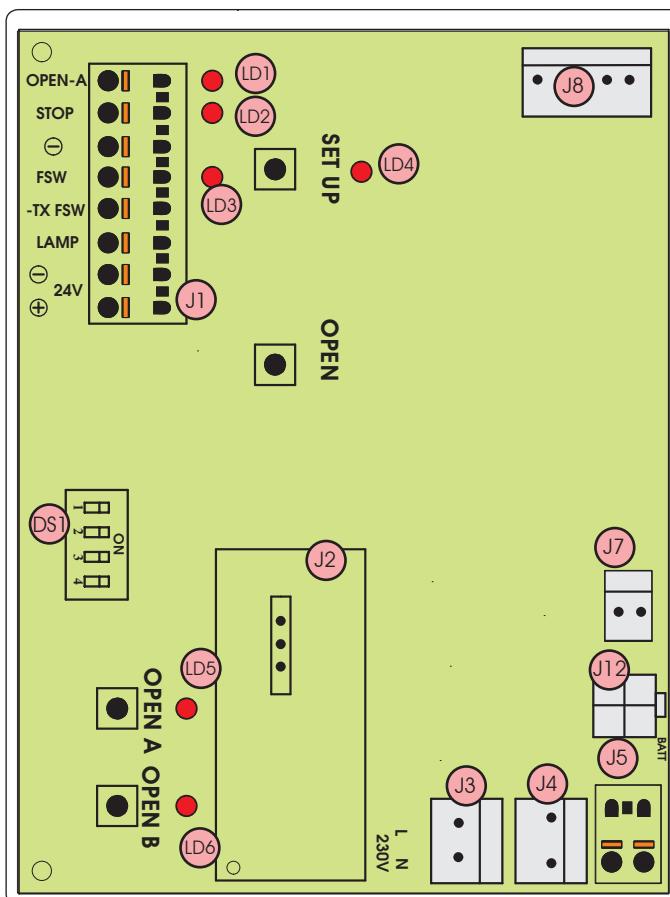
- 1) Cut the cable sheath to measure (Fig. 25 ref. A).
- 2) Route the cable into the sheath and through its relevant eyelet of the fitting on the door (Fig. 25 ref. B).
- 3) Cut the cable to measure and assemble it with the internal lever of the release handle (Fig. 25 ref. C).

8. E700HS CONTROL BOARD

8.1. Technical specifications and components

| | |
|------------------------------------|--|
| Voltage power supply (V ~ / Hz.) | 230 / 50 |
| Power supply to accessories (Vdc.) | 24 |
| Accessories max. load (mA.) | 200 |
| Operating ambient temperature (°C) | -20 / +55 |
| Rapid connector | For XF433 / XF868 receiving cards and battery module |
| Operating logics | Automatic/Semiautomatic |
| Terminal board connections | Open/Stop/Safety devices/ Fail Safe/ Flashing lamp 24 Vdc. |
| Courtesy lamp timing (min.) | 2 |

| | |
|--------|--|
| J1 | Low-voltage terminal board for inputs/accessories |
| J2 | Rapid connector for XF433 or XF868 receivers |
| J3 | 230V power supply input terminal board |
| J4 | Transformer primary connector |
| J5 | Courtesy lamp terminal board |
| J7 | Transformer secondary connector |
| J8 | Motor output connector |
| J12 | Battery module connector |
| OPEN A | Radio signal programming push-button |
| OPEN B | Radio signal programming push-button |
| OPEN | OPEN push-button |
| SETUP | SET UP push-button |
| DS1 | Programming dip-switch |
| LD1 | OPEN input signalling LED |
| LD2 | STOP input signalling LED |
| LD3 | FSW input signalling LED |
| LD4 | SET UP cycle signalling LED |
| LD5 | OPEN A radio channel memory-storing signalling LED |
| LD6 | OPEN B radio channel memory-storing signalling LED |



8.2. Terminal boards and connectors

| Description | Connected device |
|----------------|---|
| OPEN A | Control device with NO contact (see chapter OPERATING LOGICS) |
| STOP | Device with NC contact, that causes the block of the automated system |
| ⊖ | Negative for OPEN A and STOP devices |
| FSW | Closing safety device with NC contact (see chapter OPERATING LOGICS) |
| LAMP | OPEN COLLECTOR output, 24 Vdc 100 mA., for flashing lamp |
| -TX FSW | Safety accessory power supply negative (FAIL SAFE function) |
| ⊖ | Accessory power supply negative |
| ⊕ | +24 Vdc accessory power supply |

8.3. DS1 Programming dip-switches

| No. function | OFF | ON |
|-----------------------------|--------|--------------------------|
| 1 Fail Safe | Active | Not active |
| 2 Anti-crushing sensitivity | Low | High |
| 3 Opening/Closing speed | Same | Closing at reduced speed |
| 4 Carriage speed | High | Low |

Fail Safe

If activated, it enables the test on the photocell operation before every movement.

Anti-crushing sensitivity

In the event of irregular movement of the doors, it enables to reduce the sensitivity of the anti-crushing device to avoid unwanted operations.

8.4. Operating logics

Logic A (automatic)

| Status | Open (pulse) | Stop | Fsw |
|---------------|---|---------------|-------------------------------|
| CLOSED | Opens and closes again after pause time | No effect (2) | No effect |
| OPENING | No effect | Blocks (2) | No effect (1) |
| OPEN IN PAUSE | Restarts pause time count (1) | Blocks (1) | Restarts pause time count (1) |
| CLOSING | Reverses movement | Blocks (2) | Reverses movement |
| BLOCKED | Closes | No effect (2) | No effect (1) |

Logic E (semi-automatic)

| Status | Open (pulse) | Stop | Fsw |
|---------|-------------------|---------------|-------------------|
| CLOSED | Opens | No effect (2) | No effect |
| OPENING | Blocks | Blocks (2) | No effect (1) |
| OPEN | Closes | No effect (2) | No effect (1) |
| CLOSING | Reverses movement | Blocks (2) | Reverses movement |
| BLOCKED | Closes | No effect (2) | No effect (1) |

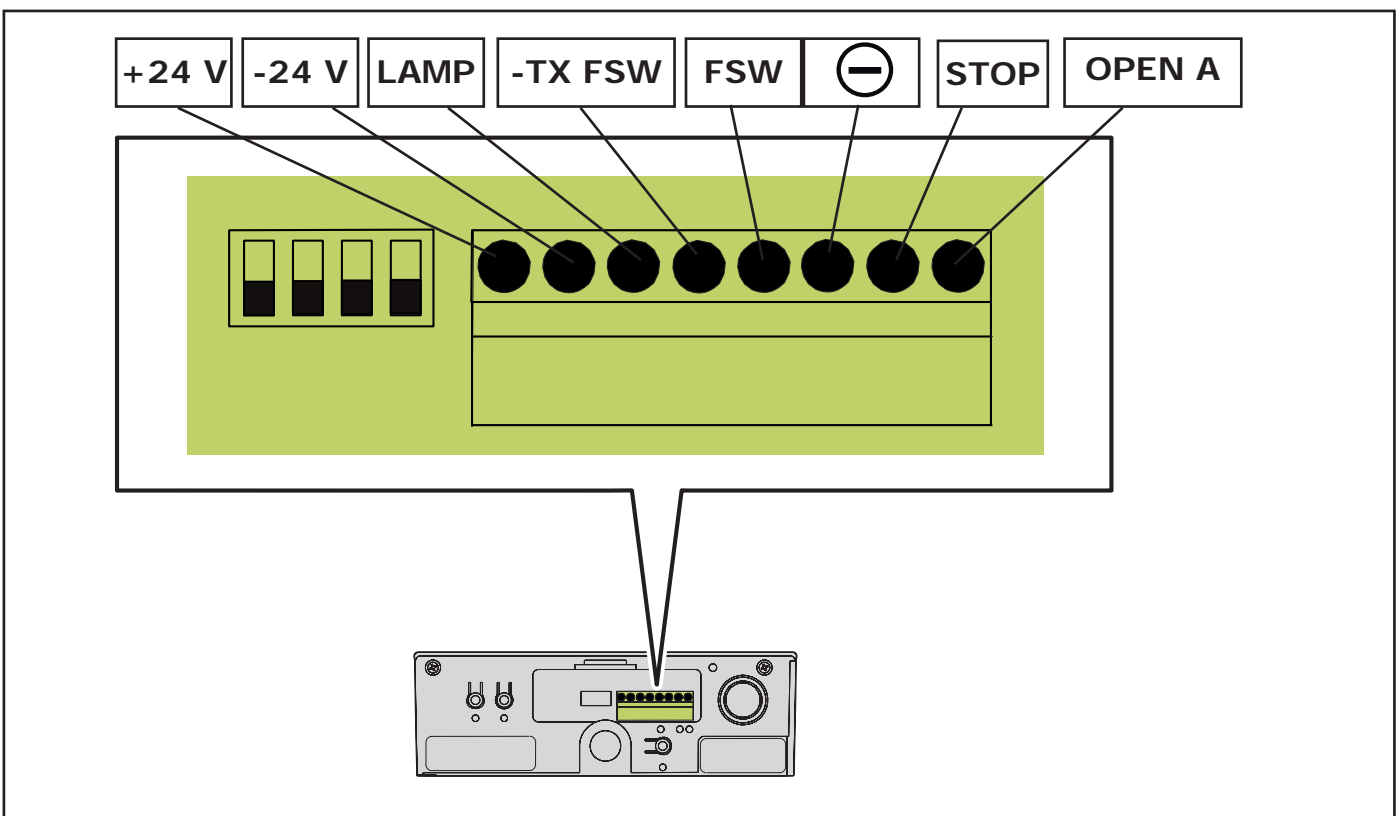
(1) With maintained pulse, it inhibits closure.

(2) With maintained pulse, it inhibits closure and/or opening.



During the opening movement, the intervention of the anti-crushing device causes immediate stop. During the closing movement, it re-opens the door.

If an obstacle is detected at closure in the same position for three consecutive times, the automated system considers this position as the new closing stop point and changes over to closed status. To restore the correct positions, remove the obstacle and command a new cycle: on next closure, the automated system moves at decelerated speed until it locates the stop point.




9. COURTESY LAMP

- The courtesy lamp stays ON for 2 minutes after the end of the movement (cannot be modified).

10. CONNECTIONS

ATTENTION: Before performing any operation on the board (connections, maintenance), always cut electric power.

- To avoid any electrical disturbance, use separate sheaths for mains power supply, signals and accessories.
- The D700HS operator has a cable with two-pole plug for the 230 Vac power supply.
- To connect external commands, safety devices and signals, open the relevant pre-cut part (Fig. 26 ref. ①).
- To connect the safety edge (see par. 18.3.), open the relevant pre-cut part (Fig. 26 ref. ②)
- Perform the electrical connections referring to Fig. 28.

 If the **STOP** input is not used, jumper connect the input to the terminal \ominus .
If no photocells are used, connect the **FSW** input to the terminal **-TX FSW**.

Input status LEDs:


| LD | Meaning | OFF | ON |
|----|-------------------|------------------------|----------------------------|
| 1 | OPEN input status | Not active | Active |
| 2 | STOP input status | Active | Not active |
| 3 | FSW input status | Safety devices engaged | Safety devices not engaged |

 **The condition with automated system stopped and at rest is shown in bold for every input.**


11. PROGRAMMING


11.1. Board settings

Set the control board using the DS1 dip-switches, referring to chapter 8.3 to obtain the requested operation.

 To select the Opening/Closing speed, set the dip-switch 3 of DS1, as indicated in chapter 8.3. We recommend you to set the dip-switch 3 to ON.

11.2. Learning (SET UP)

 **During the learning procedure, the obstacle detection device is not operating. The STOP command and the closing safety devices (FSW) are instead active; their operation stops the learning phase and signals a fault.**

 **The SET UP cycle must be performed with mounted cover. Just remove the rear door (Fig. 27). Seize with both hands the rear door and gently draw downwards. At the end of the procedure indicated in this chapter, mount the door again.**

The learning cycle enables you to define the following:

- necessary thrust to move the door.
- deceleration points.
- stop points at opening and closing.
- pause time (in automatic logic).

The learning phase must begin when the operator is blocked, independently of the door position.


The procedure also determines the operating logic.

The logic tables indicate the behaviour of the automated system in the different conditions and following to commands or operation of the safety devices.

The learning phase can be performed in both automatic or manual mode; in this latter case, you can determine the deceleration points at opening and closing; in the automatic mode, instead, the control board autonomously determines the movement parameters.

If the procedure is not completed correctly (i.e. due to excessive friction during door movement), the board signals the fault status (the SET UP LED flashes slowly). In this case, after having removed the cause, you need to repeat the procedure.

AUTOMATIC LEARNING WITH LOGIC "E" (SEMI-AUTOMATIC)

 **NOTE:** it is recommended to perform this learning phase with **SLOW** speed. (dip-switch 4 = ON)

Press the SET UP push-button for one second. (Fig. 36 ref. ①)
The SET UP LED starts flashing as soon as the push-button is released. (Fig.36 ref. ②)

- 1) After 8 seconds, the operator automatically performs a closing movement until reaching the stop point. (Fig. 37 ref. ③)
- 2) The operator starts the opening movement. Wait for it to reach the stop point or send an OPEN command (Fig. 38 ref. ④) in the position where you want to stop the movement.
- 3) The operator closes the door again.
- 4) Wait for the door to reach the stop point and for the operator to stop.

If the learning procedure has ended successfully, the SET UP LED (Fig. 39 ref. ⑤) stops flashing and stays ON for 5 seconds. During these 5 seconds you can send OPEN pulses (Fig. 39 ref. ⑥), in order to decrease the load on the release system, within 2 seconds from each other to move the carriage back. A pulse corresponds to a 5 millimetres stroke.
N.B.: The back movement of the carriage can only be seen during the normal operation of the automated system. The deceleration points are defined by the control unit.

MANUAL LEARNING WITH LOGIC "E" (SEMI-AUTOMATIC)

Press the SET UP push-button for one second. (Fig. 40 ref. ①)
The SET UP LED starts flashing as soon as the push-button is released. (Fig.40 ref. ②)

Start the following procedure within 8 seconds (otherwise the operator performs the automatic learning):

- 1) Send the 1st OPEN command: the operator performs a decelerated closing movement until it detects the stop point, then it stops. (Fig. 41 ref. ③ and Fig. 42 ref. ④)
- 2) Send the 2nd OPEN command: the operator continues with an opening movement. (Fig. 41 ref. ③ and Fig. 42 ref. ④)
- 3) Send the 3rd OPEN command to define the point in which the deceleration should start. (Fig. 41 ref. ③ and Fig. 42 ref. ④)
- 4) Send the 4th OPEN command to define the opening stop point, or wait for the automated system to detect the stop point and to stop. (Fig. 41 ref. ③ and Fig. 42 ref. ④)
- 5) Send the 5th OPEN command: the automated system starts the closing movement. (Fig. 41 ref. ③ and Fig. 42 ref. ④)
- 6) Send the 6th OPEN command to define the point in which the deceleration should start. (Fig. 41 ref. ③ and Fig. 42 ref. ④)
- 7) Wait for the door to reach the stop point and for the operator to stop. (Fig. 42 ref. ④)

If the learning procedure has ended successfully, the SET UP LED (Fig. 43 ref. ⑤) stops flashing and stays ON for 5 seconds.

During these 5 seconds, in order to decrease the load on the release system, you can send OPEN pulses (Fig. 43 ref. ⑥) within 2 seconds from each other in order to move the carriage back. A pulse corresponds to a 5 millimetre stroke.

N.B.: The moving back of the carriage can only be seen during the normal operation of the automated system.

AUTOMATIC LEARNING WITH LOGIC "A" (AUTOMATIC)



NOTA: we recommend you to perform this learning at **LOW** speed.
(dip-switch 4 = ON)

Hold down the SET UP push-button until the SET UP LED lights on (approx. 5 seconds). (Fig. 44 ref. ①) On release of the push-button, the SET UP LED starts flashing. (Fig. 44 ref. ②)

- 1) After 4 seconds the operator automatically performs the decelerated closing movement until it detects the stop point. (Fig. 45 ref. ③)
- 2) The operator performs the door opening. Wait for the door to reach the stop point or send an OPEN command (Fig. 46 ref. ④) in the position where you want to stop the movement.
- 3) The operator closes the door again.
- 4) Wait for the door to reach the stop point and for the operator to stop.

If the learning procedure has ended successfully, the SET UP LED (Fig. 47 ref. ⑤) stops flashing and stays on for 5 seconds.

During these 5 seconds, in order to decrease the load on the release system, you can send OPEN pulses (Fig. 47 ref. ⑥) within 2 seconds from each other in order to move back the carriage. A pulse corresponds to a 5 millimetre stroke.

N.B.: The moving back of the carriage can only be seen during the normal operation of the automated system.

The deceleration points will be defined by the control unit.

The pause time is fix (3 minutes).

MANUAL LEARNING WITH LOGIC "A" (AUTOMATIC)

Hold down the SET UP push-button until the SET UP LED lights on (approx. 5 seconds). (Fig. 48 ref. ①) On release of the push-button, the SET UP LED starts flashing. (Fig. 48 ref. ②)

Start the following procedure within 4 seconds (otherwise the operator performs the automatic SET UP).

- 1) Send the 1st OPEN command: the operator performs a decelerated closing movement until it detects the stop point. (Fig. 49 ref. ③ and Fig. 50 ref. ④)
- 2) Send the 2nd OPEN command: the operator starts with an opening movement. (Fig. 49 ref. ③ and Fig. 50 ref. ④)
- 3) Send the 3rd OPEN command to define the point where you want to start the deceleration. (Fig. 49 ref. ③ and Fig. 50 ref. ④)
- 4) Send the 4th OPEN command to define the opening stop point, or wait for the automated system to detect the stop point. Following to the stop, the count of the time starts, during which the automated system stays open. This corresponds to the pause time that will be observed during normal operation (max. 3 minutes). (Fig. 49 ref. ③ and Fig. 50 ref. ④)
- 5) Send the 5th OPEN command: the pause time count stops and the closing movement begins. (Fig. 49 ref. ③ and Fig. 50 ref. ④)
- 6) Send the 6th OPEN command to define the point where you want to start the deceleration. (Fig. 49 ref. ③ and Fig. 50 ref. ④)
- 7) Wait for the door to reach the stop point and for the operator to stop. (Fig. 50 ref. ④)

If the learning procedure has ended successfully, the SET UP LED (Fig. 51 ref. ⑤) stops flashing and stays on for 5 seconds.

During these 5 seconds, in order to decrease the load on the release system, you can send OPEN pulses (Fig. 51 ref. ⑥) within 2 seconds from each other to move back the carriage. A pulse corresponds to a 5 millimetre stroke.

N.B.: The moving back of the carriage can only be seen during normal operation of the automated system.

MANUAL SETTING OF THE STOP POINT ON GROUND (in learning mode)

During the learning stage, the operator searches for the stop point on ground using the max. force that can be applied. To avoid excessive stress, you can determine the stop point manually: **when the automated system performs the closing movement, send an OPEN command as soon as the stop point has been reached.** If the stop commands at the first and at the second closing movement are incongruent, the automated system will signal the fault status and the learning cycle must be repeated.

During the normal operation, the automated system searches in any case for the stop point, but it only exercises the necessary force to move the door.



The sensitivity of the anti-crushing device depends on programming (anti-crushing sensitivity, manual force adjustment) and on the mechanical characteristics of the door. At the end of installation and programming, always perform the checks according to the standards mentioned in the chapter "WARNINGS FOR THE INSTALLER" of these instructions.



At the end of the learning cycle, perform a complete cycle of the automated system in order to acquire the correct closing stop point. If, at the end of this cycle, the automated system reopens the door, command a re-closure.

11.3 Pre-flashing


You can activate and disable the pre-flashing function (following to an OPEN command, the unit activates the flashing lamp for 5 seconds before starting the movement) acting as follows:

- 1) Press the SET UP push-button and hold it down.
- 2) After approx. 3 seconds press the OPEN push-button. If the SET UP LED lights on, it means that the pre-flashing is active; if, on the contrary, it remains off, it means that the pre-flashing is disabled.
- 3) Release both push-buttons.

12. MEMORY STORING THE RADIOCONTROL CODE

The control unit has an integrated two-channel decoding system (DS, SLH, LC), named OMNIDEC.

This system makes it possible to memory store – via an additional receiving module (Fig. 29 ref. ①) and radio controls with the same frequency – both the total opening (OPEN A) and the partial opening (OPEN B) of the automated system.

 **The 3 radio coding types (DS, SLH, LC) cannot coexist. Only one radio code can be used at a time. To change over from one code to the other, delete the existing one (see paragraph concerning deletion), and repeat the memory storing.**

12.1. Memory storing the DS radio controls


 **You can memory store up to a maximum of 2 codes. One on the OPEN A channel and the other on the OPEN B channel.**

- 1) On the DS radio control select the required ON-OFF combination of the 12 dip switches.
- 2) Press, for 1 second, the OPEN A or OPEN B (Fig. 30 ref. ②) push-button to respectively memory store total or partial opening.
- 3) The corresponding LED (Fig. 30 ref. ①) starts flashing slowly for 5 seconds.
- 4) Within these 5 seconds press the required push-button on the radio control.
- 5) The corresponding LED lights up with steady beam for 1 second and then turns off to indicate that the radio control has been memory stored.
- 6) To add further radio controls set the same ON-OFF combination used in point 1).

12.2. Memory storing the SLH radio controls

 **You can memory store up to a maximum of 250 codes, subdivided between OPEN A and OPEN B. B channel.**

- 1) On the SLH radio control press and hold down the push-buttons P1 and P2 simultaneously.
- 2) The LED of the radio control begins to flash.
- 3) Release both push-buttons.
- 4) Press, for 1 second, the OPEN A or OPEN B (Fig. 30 ref. ②) push-button to respectively memory store total or partial opening.
- 5) The corresponding LED begins to flash slowly for 5 seconds. (Fig. 30 ref. ①)
- 6) Within these 5 seconds, while the LED of the radio control is still flashing, press and hold down the required push-button on the radio control (the LED of the radio control lights up with steady beam).
- 7) The LED on the board lights up with steady beam for 1 second and then turns off to indicate that the radio control has been memory stored.
- 8) Release the push-button of the radio control.
- 9) Press twice the push-button of the memory stored radio control in brief succession.

 **The automated system performs an opening movement. Make sure that the automated system is free from any obstacle created by persons or things.**

- 10) To add other radio controls you need to transfer the code of the push-button of the memory-stored radio control to the corresponding push-button of the radio control to add, observing the following procedure:

- On the memory-stored radio control press and hold down the push-buttons P1 and P2 simultaneously.
- The LED of the radio control begins to flash.

- Release both push-buttons.
- Press the memory stored push-button and hold it down (the LED of the radio control lights up with steady beam).
- Put the radio controls close to each other and hold down the corresponding push-button of the radio control to add, releasing it only after a double flashing of the LED of the radio control indicating that the radio control has been stored in the memory.
- Press twice the push-button of the just memory-stored radio control in brief succession.



The automated system performs an opening movement. Make sure that the automated system is free from any obstacle created by persons or things.

12.3 Memory storing the RC radio controls



You can memory store up to a maximum of 250 codes, subdivided between OPEN A and OPEN B.

- 1) Use the RC remote controls only with a receiving module with 433MHz.
- 2) Press, for 1 second, the OPEN A or OPEN B push-button (Fig. 30 ref. ②) to memory store respectively total or partial opening.
- 3) The corresponding LED begins to flash slowly for 5 seconds. (Fig. 30 ref. ①)
- 4) Within these 5 seconds, press the required push-button on the RC remote control.
- 5) The LED lights up with steady beam for 1 second, indicating that the radio control has been memory stored, and then resumes flashing for 5 seconds during which you can memory store another radio control (point 4).
- 6) At the end of the 5 seconds, the LED turns off indicating that the procedure has been completed.
- 7) To add other radio controls repeat the operation from point 1).

12.3.1 Remote memory storing the RC radio controls

Only with RC radio controls you can memory store other radio controls in a remote more, that is without using the RADIO SETUP push-buttons, but using a previously memory stored radio control.

- 1) Take a radio control which has been already memory stored on one of the 2 channels (OPEN A or OPEN B).
- 2) Press and hold down the push-buttons P1 and P2 simultaneously until both LEDs on the board start flashing.
- 3) Both LEDs flash slowly for 5 seconds.
- 4) Within 5 seconds, press the previously memory stored push-button of the radio control to activate the learning phase on the selected channel (OPEN A or OPEN B).
- 5) The LED on the board corresponding to the channel in learning phase flashes for 5 seconds, within which you must send the code of another radio control.
- 6) The LED lights up with steady beam for 2 seconds indicating that the radio control has been memory stored, and then resumes flashing for 5 seconds, during which you can memory store other radio controls, as per point 5, and then it turns off.

12.4. Deleting the radio controls

- 1) To delete **ALL** the radio control codes stored in the memory, just press and hold down the push-button OPEN A or OPEN B for 10 seconds.
- 2) The LED corresponding to the pressed push-button flashes for 5 seconds and then flashes more rapidly for the next 5 seconds.
- 3) Both LEDs light up with steady beam for 2 seconds and then turn off.
- 4) Release the push-button when both LEDs light up with steady beam.



This operation **IS NOT** reversible.



All radio control codes memory stored as OPEN A and OPEN B will be deleted.

13. START UP



After installation, make sure that no part of the door interferes with public spaces, such as sidewalks and/or streets.

Check the status of the unit inputs and make sure that every safety device is correctly connected (the corresponding LEDs must be ON). Perform some complete cycles to check the correct operation of the automated system and of the accessories connected to it, taking special care with the safety devices and the anti-crushing device of the operator. Check if the automated system is able to detect a 50 mm high obstacle on the ground.

Apply the sticker indicating the release operation close to the automated system and the sticker indicating danger well visible near the door or close to the command device Fig. 31). Hand over to the customer the page named "User's Guide", and show the operation of the system and of the lock-release operations of the operator as shown in the mentioned guide.

14. FALL-PREVENTION CABLES

Connect the fall-prevention cables to the rear door and to the ceiling fitting (Fig. 32).

15. MAINTENANCE

At least every six months perform the functional check of the system, with special attention on the efficiency of the safety and release devices.

Check every month the efficiency of the anti-crushing device and make sure that it is able to detect a 50 mm high obstacle on the ground.

16. REPAIRS

For repairs, contact authorized FAAC Repair Centres.

17. ACCESSORIES

17.1. Central support

The central support (Fig. 33) provides a central securing point also for the single-piece sliding guide.

17.2. Key-operated release

The external release can be installed with a lever (Fig.34 ref. A) or with a key (Fig. 35 ref. B) system. Refer to the instructions in par. 6.3. and par. 7.5.

17.3. Safety edge CN60E

The use of the safety edge with conductive element is made easier by the possibility to house on the operator the relevant control unit (Fig. 35 ref. ① of the User's Guide).

Operate as follows:

- Seize the rear door with your hand.
- Slightly pull separating it from the plastic cover.
- Seize the ceiling fitting with your hand.
- Slightly pull separating it from the plastic cover.
- Loosen the 4 screws in the 4 corners of the plastic cover.
- Separate it from the base.
- House the control unit as shown in Fig. 35.
- First fix the two securing clips on the coupling on the base.
- Then slightly press until you hear the coupling click.
- For the connections, refer to the specific instructions of the safety edge CN60E and to Fig. 35.

18. TROUBLESHOOTING

| Fault | Possible causes | Solution |
|---|---|--|
| When the learning procedure starts, the SET UP LED flashes but the automated system does not perform any movement | The STOP and FSW safety devices are active also during the learning phase. Their missing or incorrect connection inhibits the operator | Check the LEDs status observing the indications of the table "Input status LEDs" on page 8. Check the connections shown in fig. 28. |
| The automated system does not perform any movement | The STOP command is active | |
| | The Fail-Safe function is active, but the NC contact of the devices connected to the FSW input does not open during the test performed by the unit before starting the movement | |
| The automated system opens the door but it does not perform the re-closure | The FSW safety devices are engaged. | Check the door balance and if the door moves without too much friction. Move the door manually using the rod fitting on the door and check if the movement is smooth and does not require excessive drive or thrust. Adjust the balance of the system so that the released door cannot move. Execute a new learning procedure. |
| The learning procedure has not ended successfully and the SET UP LED flashes thus signalling a fault | -The automated system detects an excessive difficult movement of the door -If you are using the manual force adjustment, the set thrust could be insufficient | |
| The automated system performs frequent reversals of movement during the opening and/or closing movement | | |
| The automated system is difficult to release when the door is closed | The mechanical load on the release system is too high when the door is closed | Execute a new learning cycle and then decrease the thrust at closure by commanding a back movement of the carriage as described in paragraph 11.2. |
| The SET UP LED flashes thus signalling the fault status | The learning cycle has not ended successfully | Execute a new learning cycle |
| | The learning cycle has never been performed. | |

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