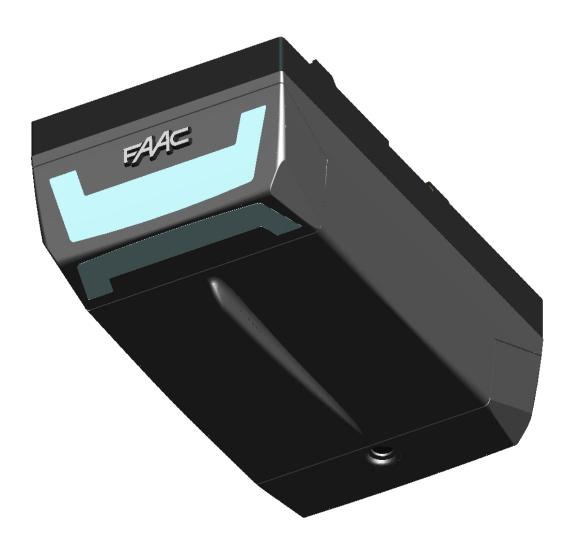
D064



FAAC

AUTOMATED SYSTEM D064

These instructions apply to model FAAC D064.

The D064 automated systems make it possible to automate balanced sectional doors of single garages for residential use.

They consist of an electro-mechanical operator, electronic control unit and courtesy light built into a single unit. This unit is fitted to the ceiling and opens the door by means of a transmission chain or belt.

The system is non-reversing and, therefore, the door locks mechanically when the motor is not operating and, consequently, no lock is necessary; two manual releases, one on the inside and one on the outside (optional) make it possible to move the door in case of a power cut or fault.

The operator is supplied with an electronic device that detects the presence of an obstacle that would hinder door movement - the device prevents crushing or lifting.

This instruction refers to the operator with chain drive, but the same procedures, regulations and application limits apply also to the belt driven operator.

The D064 automated systems were designed and built for indoor use and to control vehicle access. Do not use them for any other purpose.

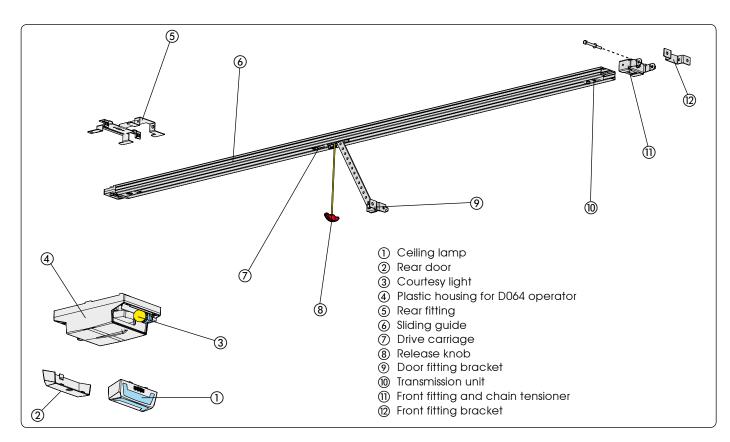
1 PRELIMINARY CHECKS

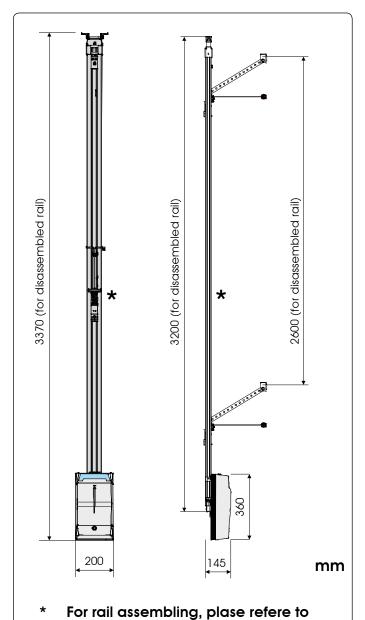
- The structure of the door must be suitable for fitting automation. In particular, check that the door dimensions conform to those indicated in the technical specifications, and that it is sufficiently sturdy.
- Check if the door conforms to standards EN12604 and EN12605.
- As it moves, the door must not encroach public areas dedicated to pedestrian or vehicular transport.
- Check the efficiency of the door bearings and joints.
- Make sure that the door is friction-free. If necessary clean and lubricate the guides with silicone based products, but do not use grease, and, in any event, follow the manufacturer's instructions.

- Check correct balance and if the opening mechanical stops have been installed.
- Remove the door's existing closing mechanism to ensure the door is closed by the automated system.
- Make sure there is a clearance of at least 35 mm between the ceiling and the highest sliding point of the door .
- Check if the upper guide roller of the sectional door is in the horizontal part of the guide while the door is closed.

2 TECHNICAL SPECIFICATIONS

Model	D064
Power supply (V ~ / 50 Hz.)	230
Electric motor (Vdc)	24
Maximum absorbed power (W)	220
Thrust force (N)	550
Type of use	Residential
Maximum dimensions from ceiling (mm)	35
Courtesy light (V ~/W)	230 / 40 max.
Courtesy light timer (sec)	120
Standard speed with no-load carriage (m/min)	6,6
Slow speed with no-load carriage (m/min)	3,8
Carriage deceleration speed (m/min)	1,3
Travel length at deceleration	varies according to set-up
Intrinsic safety device	Category 2
Maximum sectional door width (mm)	5000
Maximum sectional door height (mm)	2600
Sliding guide useful travel (mm)	2600
Protection class	for indoor use only (IP20)
Operating ambient temperature (°C)	-20 / +55





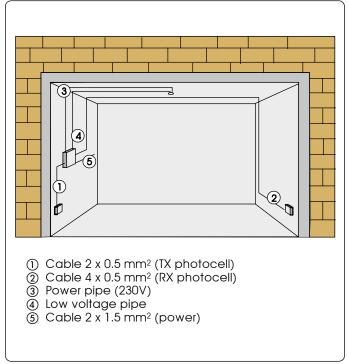
dedicate instruction

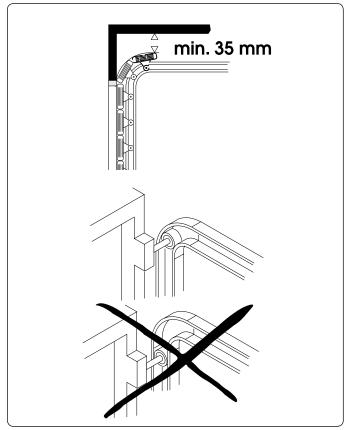
3 ANCILLARY ELECTRICAL EQUIPMENT

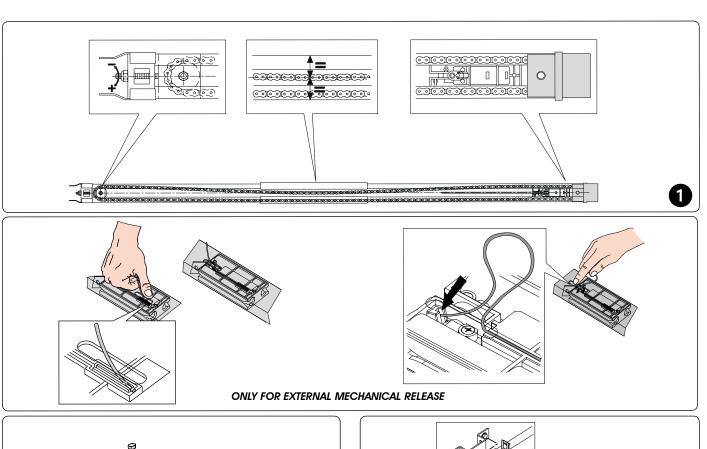
Prepare the electric system in keeping with the instructions in the chapter entitled "Warnings for the installer".
When you have finished installing, check if any external pipes

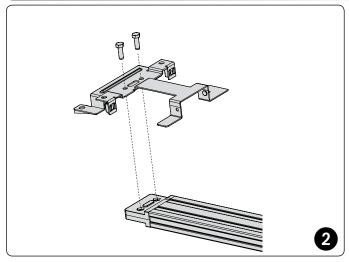
or cables can come into contact with moving parts.

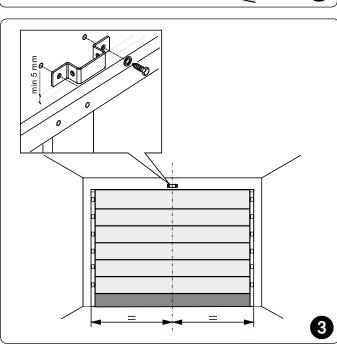
Install the fixed control points at a minimum height of 150 cm, clear of the door movement area, but in a position enabling visual control of that area.

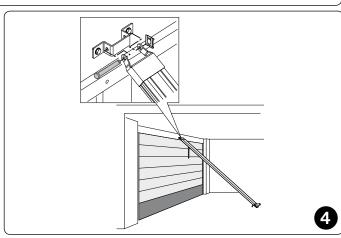


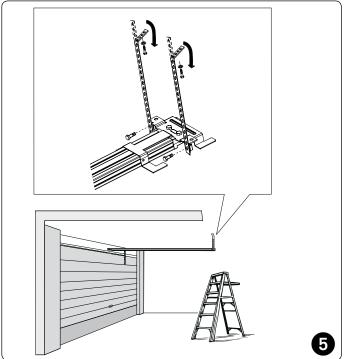


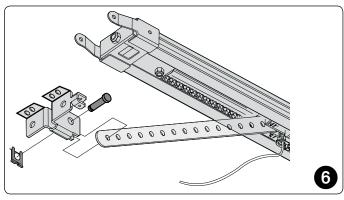


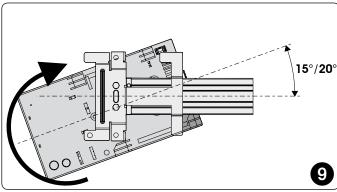


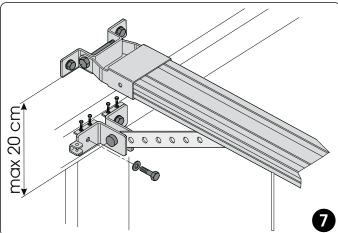


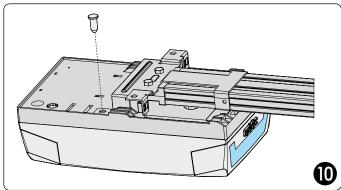


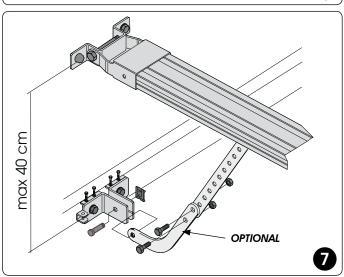


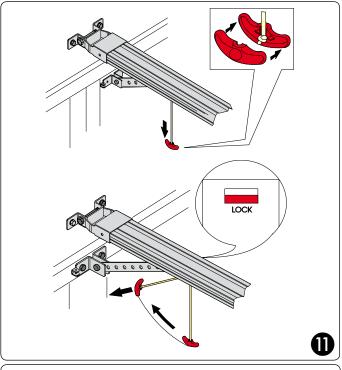


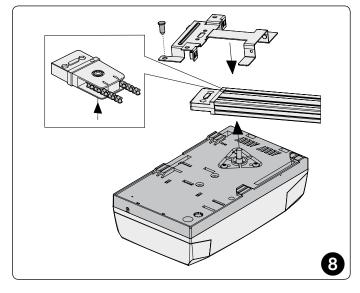


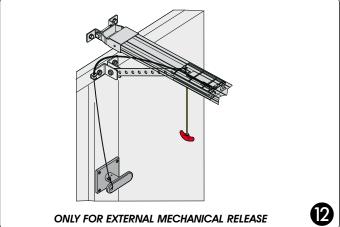












4 E064 CONTROL BOARD

4.1 Technical specifications

Supply voltage (V ~ / Hz.)	230 / 50
Power supply to accessories (Vdc)	24
Accessories max. load (mA.)	200
Operating ambient temperature (°C)	-20 / +55
Quick-fit connector	for receiver boards XF433 / XF868 and battery module
Operating logics	Automatic / Semiautomatic
Terminal-board connections	Open/Stop/Safety devices/Fail- safe/Flashing lamp 24 Vdc
Courtesy light timer (min.)	2

4.2 E064 board components

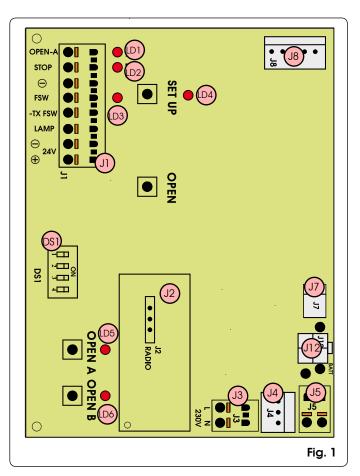
J1	Low voltage inputs/accessories terminal board	
J2	Quick-fit connector for receivers XF433 or XF868	
J3	230V power supply input terminal board	
J4	Connector for transformer primary winding	
J5	Courtesy light terminal-board	
J7	Connector for transformer secondary winding	
J8	Motor output connector	
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	
D\$1	Programming dip-switch	
LD1	Signalling LED: OPEN input	
LD2	Signalling LED: STOP input	
LD3	Signalling LED: FSW input	
LD4	Signalling LED: SET UP cycle	
LD5	LED signalling memory-storage: radio channel OPEN A	
LD6	LED signalling memory-storage: radio channel OPEN B	

4.3 Terminal-boards and connectors

Description	Connected device	
OPEN A	Command device with N.O. contact (see chap. OPERATING LOGICS)	
STOP Device with N.C. contact which stops the automated system		
①	Negative for OPEN A and STOP devices	
FSW	Closing safety device with N.C. contact (see chap. OPERATING LOGICS)	
LAMP	OPEN COLLECTOR 24 Vdc 100 mA. output for flashing lamp	
-TX FSW	Negative for powering safety accessories (FAIL SAFE function)	
(1)	Negative for powering accessories	
(+24 Vdc for powering accessories	

4.4 DS1 Programming dip-switches

No. Function	OFF	ON
1 Fail Safe	Enabled	Not enabled
2 Anti-crushing sensitivity	Low	High
3 Not used	/	/
4 Carriage speed	High	Low



Fail Safe

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

Operating logics

For doors with an irregular movement, it reduces the sensitivity of the anti-crushing device to prevent unwanted action by it.

4.5 Operating logics

Logic A (automatic)

Status	Open (pulse)	Stop	Fsw
CLOSED	Opens and closes after pause time	No effect (2)	No effect
OPENING	No effect	Locks (2)	No effect (1)
OPEN IN PAUSE	Resumes counting of pause time (1)	Locks (1)	Resumes counting of pause time (1)
CLOSING	Reverses motion	Locks (2)	Reverses motion
LOCKED	Closes	No effect (2)	No effect (1)

Logic E (semi-automatic)

Status	Open (pulse)	Stop	Fsw
CLOSED	Opens	No effect (2)	No effect
OPENING	Locks	Locks (2)	No effect (1)
OPEN	Closes	No effect (2)	No effect (1)
CLOSING	Reverses motion	Locks (2)	Reverses motion
LOCKED	Closes	No effect (2)	No effect (1)



(1) Prevents closing if pulse is maintained.



(2) Prevents closing and/or opening if pulse is maintained.

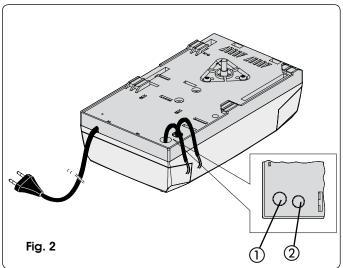


During the opening manoeuvre, the anti-crushing device causes an immediate stop. During the closing manoeuvre, it opens the door.

If, during closure, an obstacle is detected more than three consecutive times, the automated system considers this distance as the new closing contact point and goes into closed status. To restore the correct positions, remove the obstacle and command a new cycle: at the next closure, the automated system will advance at low speed until it detects the contact point.

5 COURTESY LIGHT

- The courtesy light stays lighted for 2 minutes after the end of the manoeuvre (cannot be modified).



6 CONNECTIONS

IMPORTANT: Before attempting any work on the board (connections, maintenance), always cut off power.

- To prevent any electric noise whatever, use separate sheaths for powering the network, signals and accessories.
- The D064 operator has a cable with a two-pole plug for 230 Vac power supply.
- To connect the external controls, safety devices and signals, break open the pre-holed element (Fig. 2 ref. ①).
- To connect the safety edge, break open the pre-holed element (Fig. 2 ref. (2)).
- Make the electrical connections, referring to Fig. 3.



If the **STOP** input is not used, jumper connect the input to the terminal Θ .

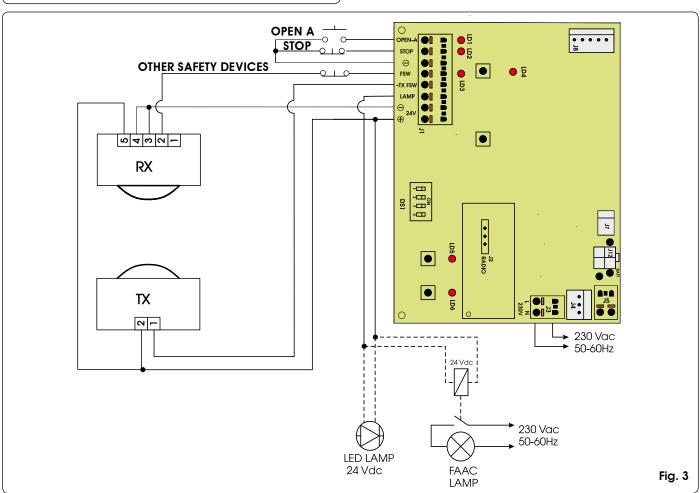
If the photocells are not used, connect the FSW input to terminal -TX FSW.

Input status LEDS

LD	Meaning	OFF	ON
1	Input status OPEN	Not enabled	Enabled
2	Input status STOP	Enabled	Not Enabled
3	Input status FSW	Safety devices engaged	Safety devices disengaged



The automated system stopped and at rest is indicated in bold for each input.



7 PROGRAMMING

7.1 Setting the board

Set the unit with Dip-Switch DS1 to obtain the operation you require.

7.2 Learning

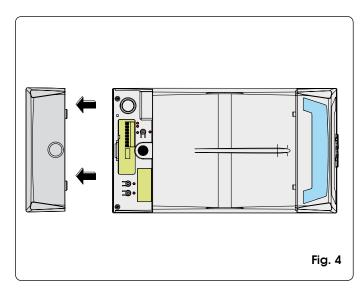


During the learning procedure, the obstacle detection device does not operate. However, the STOP command and the closing safety devices (FSW) are enabled; if they are triggered, learning is interrupted and a fault is signalled.



The SETUP cycle is carried out with the plastic housing installed. Just remove the rear door (Fig. 4).

Grip the rear door with both hands and pull gently downward. When you have finished the procedure described in this chapter, put the door back in place.



The learning cycle makes it possible to define the following:

- the force required to move the door.
- the slow-down points.
- the opening and closing stop points.
- the pause time (in automatic logic).

Learning must be started with the operator locked, irrespective of the door's position.

The procedure also determines the operating logic.

The logic tables indicate the behaviour of the automated system in different conditions, and following commands or action by the safety devices.

Learning can be automatic or manual. In the latter case, the opening and closing deceleration points can be determined. However, in automatic mode, the unit independently determines the movement parameters.

If the procedure is not correctly concluded (e.g. due to excessive friction during door movement), the unit signals a fault status (the SET UP LED flashes slowly). In this case, the procedure must be repeated after the cause is eliminated.

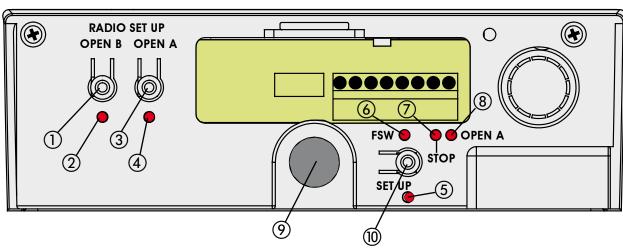
LEARNING WITH LOGIC "E" (SEMI-AUTOMATIC LOGIC)

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

Press the SET UP push-button for one second. The SET UP LED starts to flash when you release the push-button.

- 1) After 8 seconds the operator automatically closes the door until the stop point is detected.
- The operator begins the opening movement. Wait until the stop point is reached, or give an OPEN command in the position where you wish to stop motion.
- 3) The operator closes the door.
- Wait for the door to reach the stop point and for the operator to stop.

If the learning procedure terminated positively, the SET UP LED stops flashing and stays lighted for 5 seconds.



- 1) Radio signal programming push-button OPEN B.
- ② RADIO SET UP LED signalling that the OPEN B radio signal is stored in the memory.
- (3) Radio signal programming push-button OPEN A.
- (4) RADIO SET UP LED signalling that the OPEN A radio signal is stored in the memory.
- (5) LED signalling the SET UP stage.
- 6 LED signalling photocells status.
- 7 LED signalling STOP.
- (8) LED signalling OPEN A.
- (9) OPEN push-button to totally open sectional door.
- (ii) SET UP push-button for programming operating logics and learning work times.

Fig. 5

During these 5 seconds, in order to lighten the load on the release system, you can send OPEN pulses within a time interval of 2 seconds from each other, in order to reverse the carriage. One pulse corresponds to a 5 millimetre travel.

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

The control unit establishes the deceleration points.

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

Press the SET UP push-button for one second. The SET UP LED starts to flash when you release the push-button. Start the following procedure within 8 seconds (otherwise the operator will perform automatic learning):

- Give the 1st OPEN command: the operator performs a slowed-down closing manoeuvre until it detects the stop point and stops.
- 2) Give the 2nd OPEN command: the operator continues with an opening movement.
- 3) Give the 3rd OPEN command in order to define the point where you wish deceleration to begin.
- 4) Give the 4th OPEN command to define the opening stop point, or wait for the automated system to detect arrival at the stop point and then stop.
- 5) Give the 5th OPEN command: the automated system begins the closing movement.
- 6) Give the 6th OPEN command in order to define the point where you wish deceleration to begin.
- Wait for the door to reach the stop point and for the operator to stop.

If the learning procedure terminated positively, the SET UP LED stops flashing and stays lighted for 5 seconds.

During these 5 seconds, in order to lighten the load on the release system, you can send OPEN pulses within a time interval of 2 seconds from each other, in order to reverse the carriage. One pulse corresponds to a 5 millimetre travel.

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

LEARNING WITH LOGIC "A" (AUTOMATIC LOGIC)

AUTOMATIC LEARNING WITH LOGIC "A" (AUTOMATIC LOGIC)

Hold down the SET UP push-button until the SET UP LED goes on (about 5 seconds). The SET UP LED starts to flash when you release the push-button.

- 1) After 4 seconds the operator automatically closes the door by deceleration until the stop point is detected.
- The operator moves the door to open. Wait until the stop point is reached, or give an OPEN command in the position where you wish to stop motion.
- 3) The operator closes the door.
- Wait for the door to reach the stop point and for the operator to stop.

If the learning procedure terminated positively, the SET UP LED stops flashing and stays lighted for 5 seconds.

During these 5 seconds, in order to lighten the load on the release system, you can send OPEN pulses within a time interval of 2 seconds from each other, in order to reverse the carriage. One pulse corresponds to a 5 millimetre travel.

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

The control unit establishes the deceleration points. Pause time is fixed at 3 minutes.

MANUAL LEARNING WITH LOGIC "A" (AUTOMATIC LOGIC)

Hold down the SETUP push-button until the SET UP LED goes on (about 5 seconds). The SET UP LED starts to flash when you release the push-button. Start the following procedure within 4 seconds (otherwise the operator will perform automatic SET UP).

- Give the 1st OPEN command: the operator performs a deceleration closing manoeuvre until it detects the stop point.
- 2) Give the 2nd OPEN command: the operator continues with an opening movement.
- 3) Give the 3rd OPEN command in order to define the point where you wish deceleration to begin.
- 4) Give the 4th OPEN command to define the opening stop point, or wait for the automated system to detect arrival at the stop point. After the stop, the time when the automated system is left open starts to be counted. This will be the pause time which will be observed during manual operation (3 minutes maximum).
- 5) Give the 5th OPEN command: the pause time count is stopped and the closing movement starts.
- 6) Give the 6th OPEN command in order to define the point where you wish deceleration to begin.
- Wait for the door to reach the stop point and for the operator to stop.

If the learning procedure terminated positively, the SET UP LED stops flashing and stays lighted for 5 seconds.

During these 5 seconds, in order to lighten the load on the release system, you can send OPEN pulses within a time interval of 2 seconds from each other, in order to reverse the carriage. One pulse corresponds to a 5 millimetre travel.

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

ON GROUND MANUAL SETTING OF STOP CONTACT POINT (at the learning stage)

During the learning stage, the operator searches for the on-ground stop point, using the maximum force that can be supplied (550N). To prevent excessive stress, the stop point can be determined also manually: when the automated system performs the closing movements, give an OPEN command when the stop point is reached. If the stop commands at first and second closing were inconsistent, the automated system signals the fault status and the learning cycle must be repeated.

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



When the learning cycle has finished, make the automated system perform a complete cycle, in order to acquire the correct closing stop point. If, after the end of this cycle, the automated system opens the door again, command closure.

7.3 Pre-flashing

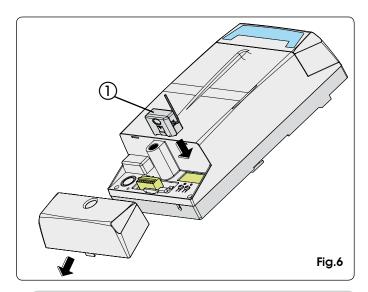
The pre-flashing function can be enabled and disabled (following an OPEN command, the unit activates the flashing lamp for 5 seconds before it starts the movement).

Procedure:

- 1) Press and hold down the SET UP push-button.
- 2) Press the OPEN push-button too after about 3 seconds. If the SET UP LED goes ON, pre-flashing was activated, if instead, it stays OFF, pre-flashing was disabled.
- 3) Release both push-buttons.

8 MEMORY STORAGE OF RADIO CONTROLS CODING

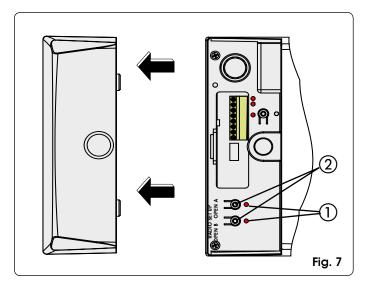
The control unit has an integrated 2-channel decoding system named OMNIDEC. This system makes it possible to memory-store both total opening (OPEN A) and partial opening (OPEN B) of the automated system - this is made possible by an additional receiver module (Fig. 6 ref. ①) and radio controls on the same frequency.



8.3 Memory storage of radio controls RC / LC

A Maximum of 250 codes can be memory stored, split between OPEN A and OPEN B.

- 1) Use LC/RC remote controls only with receiver module at 433 MHz.
- 2) To respectively memory store total or partial opening, press the OPEN A or OPEN B push-button for one second (Fig. 7 ref. (2)).
- 3) The relevant LED starts to flash slowly for 5 sec.
- 4) Within these 5 secs., press the appropriate push-button on the LC/RC remote control.
- 5) The LED lights up on steady beam for 1 second, indicating memory storage executed, and then resumes flashing for another 5 sec., during which another radio control (point 4) can be memory stored.
- 6) When the 5 secs. have elapsed, the LED goes OFF indicating the end of the procedure.
- 7) To add other radio controls, repeat the operation from point 1



8.3.1 Remote memory storage of RC/LC radio controls

Other radio controls can be remotely stored only with the $\ensuremath{\mathsf{RC/LC}}$

radio controls, i.e. without using the RADIO SETUP push-buttons, but using a previously stored radio control.

- 1) Obtain a radio control already stored on one of the 2 channels (OPEN A or OPEN B).
- 2) Press and simultaneously hold down push-buttons P1 and P2 until the lights of both the LEDs on the board light up.
- 3) Both LEDs flash slowly for 5 sec.
- 4) Within 5 sec. press the push-button of the radio control that had been memory stored to enable learning on the selected channel (OPEN A or OPEN B).
- 5) The LED on the board relating to the channel being learned flashes for 5 sec., within which time the code of another radio control must be transmitted.
- 6) The LED lights up on steady beam for 2 seconds, indicating memory storage executed, and then resumes flashing for 5 sec., during which other radio controls can be memory stored, as in point 5, and then goes OFF.

8.4 Radio controls deletion procedure

- 1) To delete <u>ALL</u> the radio control codes, hold down push-button OPEN A or OPEN B for 10 sec.
- 2) The LED relating to the pressed push-button flashes for the first 5 sec, and then flashes more quickly for the next 5 sec.
- 3) Both LEDs light up on steady beam for 2 sec and then go OFF.
- 4) Release the pressed push-button when both LEDs light up on a steady beam.



This operation is **NOT** reversible.



All codes of radio controls stored as OPEN A and OPEN B will be deleted.

9 START-UP

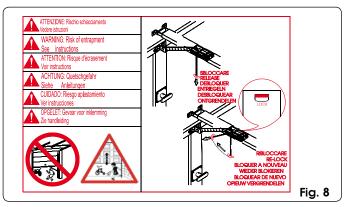
After installation, make sure that no part of the door interferes with public spaces such as pavements and/or roads.

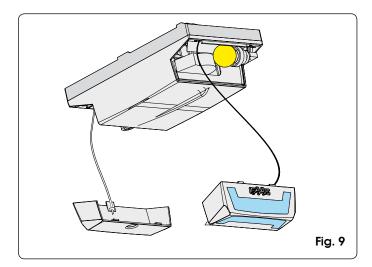
Check the status of the unit's inputs and make sure that all the safety devices are correctly connected (the relevant LEDs must be lighted).

Run a few complete cycles to check if the automated system and the accessories connected to it are operating correctly, addressing special care to the safety devices and the anti-crushing device of the operator. Check if the automated system is able to detect an obstacle with a height of 50mm laid on the ground.

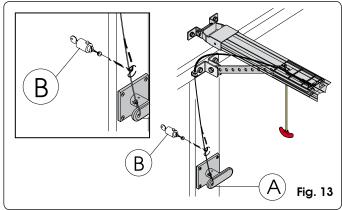
Apply the stickers indicating the release manoeuvre near the automated system. Apply the danger signal sticker (Fig. 8), so that it is clearly visible, near to the door or near to the control device.

Hand the customer the page entitled "User's guide", and describe how the system works, and the operator release and locking operations indicated in the guide.





14 ACCESSORIES



10 PARACHUTE CABLES

Connect the parachute cables to the rear door and to the ceiling lamp to prevent accidental falls (Fig. 9).

11 MAINTENANCE

Run a functional check of the system at least every 6 months, with special attention to the efficiency of the safety and release devices

Once a month: check the efficiency of the anti-crushing device and also check if it is able to detect a 50mm high obstacle laid on the ground.

12 REPAIRS

For repairs, contact FAAC's authorised Repair Centres.

Battery kit

13 TROUBLESHOOTING

Trouble	Possible causes	Solution
When the learning procedure is started, the SET UP LED flashes but the automated system does not perform any manoeuvre		Check the LEDs' status following the instructions of the "Inputs status LEDs". Check the connections shown in fig. 3
The automated system does not perform	STOP command enabled	
any movement	The Fail-Safe function is enabled, but the NC contact of the devices connected to the FSW input does not open during test by the unit before the manoeuvre is started	
The automated system opens the door but does not close it	FSW safety devices engaged	
Learning is not finished correctly and the SET UP LED flashes to signal a fault	The automated system detects that the door movement is too difficult	Check the balance of the door and make sure that it moves without too much friction. Move the door manually, using the
The automated system frequently reverses motion during the opening and/or closing manoeuvre		rod fitting on the door, and check if the movement is smooth and does not require too much traction or thrust.
It is difficult to release the automated system while the door is closed	Too much mechanical load on the release system with the door closed	Run a new learning cycle and, when over, lighten the closing thrust, commanding the carriage to withdraw as described in paragraph 7.2.
The SET UP LED flashes to signal a fault status	The learning cycle did not finish positively.	Run a new learning cycle

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

Manufacturer: FAAC S.p.A.

Address: Via Benini, 1 - 40069 Zola Predosa BOLOGNA - ITALY

Declares that: Operator model D064 with E064

is built to be integrated into a machine or to be assembled with other machinery to create a machine under the provisions of Directive

2006/42/EC

conforms to the essential safety requirements of the following EEC directives

2006/95/EC Low Voltage directive

2004/108/EC Electromagnetic Compatibility directive

and also declares that it is prohibited to put into service the machinery until the machine in which it will be integrated or of which it will become a component has been identified and declared as conforming to the conditions of Directive 2006/42/EC

Bologna, 01 April 2008

The Managing Director

A. Bassi



WARNINGS FOR THE INSTALLER GENERAL SAFETY OBLIGATIONS

- 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) <u>Carefully read the instructions</u> before beginning to install the product.
- 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.
- Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety.
- 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 3mm or greater. Use of a 6A thermal breaker with all-pole circuit break is recommended.

- 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 means 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.
- 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.
- 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.
- Transit under the door must occur only when the automated system has stopped.
- 24) The user must not attempt any kind of repair or direct action whatever and contact qualified personnel only.
- 25) Maintenance: 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.



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