

EOS

EOS C

D811325 25-11-02 Vers. 02



**AUTOMATION
FOR OVERHEAD
AND SECTIONAL
GARAGE DOORS**



Thank you for buying this product, our company is sure that you will be more than satisfied with the product's performance. The product is supplied with a "Warnings" leaflet and an "Instruction booklet". These should both be read carefully as they provide important information about safety, installation, operation and maintenance. This product complies with the recognised technical standards and safety regulations. We declare that this product is in conformity with the following European Directives: 89/336/EEC and 73/23/EEC, 98/37/EEC (and subsequent amendments).

1) GENERAL SAFETY

WARNING! An incorrect installation or improper use of the product can cause damage to persons, animals or things.

- The "Warnings" leaflet and "Instruction booklet" supplied with this product should be read carefully as they provide important information about safety, installation, use and maintenance.
- Scrap packing materials (plastic, cardboard, polystyrene etc) according to the provisions set out by current standards. Keep nylon or polystyrene bags out of children's reach.
- Keep the instructions together with the technical brochure for future reference.
- This product was exclusively designed and manufactured for the use specified in the present documentation. Any other use not specified in this documentation could damage the product and be dangerous.
- The Company declines all responsibility for any consequences resulting from improper use of the product, or use which is different from that expected and specified in the present documentation.
- Do not install the product in explosive atmosphere.
- The construction components of this product must comply with the following European Directives: 89/336/CEE, 73/23/EEC, 98/37/EEC and subsequent amendments. As for all non EEC countries, the abovementioned standards as well as the current national standards should be respected in order to achieve a good safety level.
- The Company declines all responsibility for any consequences resulting from failure to observe Good Technical Practice when constructing closing structures (door, gates etc.), as well as from any deformation which might occur during use.
- The installation must comply with the provisions set out by the following European Directives: 89/336/CEE, 73/23/EEC, 98/37/EEC and subsequent amendments.
- Disconnect the electrical power supply before carrying out any work on the installation. Also disconnect any buffer batteries, if fitted.
- Fit an omnipolar or magnetothermal switch on the mains power supply, having a contact opening distance equal to or greater than 3mm.
- Check that a differential switch with a 0.03A threshold is fitted just before the power supply mains.
- Check that earthing is carried out correctly: connect all metal parts for closure (doors, gates etc.) and all system components provided with an earth terminal.
- Fit all the safety devices (photocells, electric edges etc.) which are needed to protect the area from any danger caused by squashing, conveying and shearing.
- Position at least one luminous signal indication device (blinker) where it can be easily seen, and fix a Warning sign to the structure.
- The Company declines all responsibility with respect to the automation safety and correct operation when other manufacturers' components are used.
- Only use original parts for any maintenance or repair operation.
- Do not modify the automation components, unless explicitly authorised by the company.
- Instruct the product user about the control systems provided and the manual opening operation in case of emergency.
- Do not allow persons or children to remain in the automation operation area.
- Keep radio control or other control devices out of children's reach, in order to avoid unintentional automation activation.
- The user must avoid any attempt to carry out work or repair on the automation system, and always request the assistance of qualified personnel.
- Anything which is not expressly provided for in the present instructions, is not allowed.

2) GENERAL OUTLINE

The EOS system is compatible with the EELink protocol for fast installation and maintenance. It is suitable for motorising sectional doors (fig. 3), protruding fully retracting spring-operated overhead doors (fig. 2) and counterweight overhead doors provided with an appropriate towing arm (fig. 4). The overhead door must not be higher than 2.5 metres. Its easy installation allows fast fitting without needing the door to be modified. The irreversible gearmotor keeps the door locked in the closing position. The SCE control panel is supplied by the manufacturer with standard

setting. Any modification must be set by means of the incorporated display programmer or by means of UNIPRO. The Control unit fully supports the EELINK protocol.

These are its main characteristics:

- Control of a low-voltage motor up to 24 V=
- Electronic torque limiter with obstacle detection and torque self-learning
- Electronic limit switch with encoder
- Incorporated rolling-code radio receiver with transmitter cloning
- Presetting for operation by means of local and centralised commands via wire (SCE-MA S).

The following optional accessories are available:

- CB EOS mod. buffer battery kit.

This allows the automation system to operate even when the mains power supply is off for a short time.

NOTE: The buffer battery kit is to be installed on the actuator fixing base on the ceiling side. A minimum distance of 50 mm must be kept between the fixing base and the ceiling in the case where batteries are expected to be installed at a later time.

3) TECHNICAL SPECIFICATIONS

3.1) Actuator

Power supply: 230V ~ ±10%, 50/60Hz single-phase (*)
 Motor voltage: 24V=
 Max. power absorbed from mains: 125W
 Lubrication: permanent grease
 Towing and pushing force: 600N
 Working stroke: 2.60m (extension to 3.60m for PRE1 Mod.)
 Average speed: 7.7 m/min
 Impact reaction: integrated torque limiter on control panel
 Manoeuvres in 24 hours: 100
 Limit switch: electronic with self-learning
 Courtesy light: 24V ~ 25W max, E14 bulb
 Working temperature: -15°C / +60°C
 Degree of protection: IPX0
 Total weight: 12kg
 Noise level: <70dB(A)
 Dimensions: see fig.1
 (*) Available in all mains voltages.

3.2) SCE/SCE-MA/SCE-MA S Control panel (Fig.16)

Supply to accessories: 24V ~ (180mA max)
 24V ~ Vsafe SCE-MA (180mA max)
 Torque limiter setting: on closing and opening
 Automatic closing time: from 2 to 120s
 Blinker connection: 24V max 25W
 Service light switching-on time: 90s
 Incorporated rolling-code radio receiver: frequency 433.92 MHz
 Coding: rolling-code algorithm to be cloned
 No. combinations: 4 milliard
 Antenna impedance: 50Ohm (RG58)
 Max no. radio controls to be memorised: 63
 Slow-down distance: closing: ~23 cm opening: ~15 cm

4) ACTUATOR INSTALLATION

4.1) Preliminary checks

- Check that the door is balanced.
- Check that the door slides smoothly along its entire travel.
- If the door has not been newly installed, check the wear condition of all its components.
- Repair or replace faulty or worn parts.
- The automation reliability and safety are directly influenced by the state of the door structure.

4.2) Fitting

After unpacking, dispose of the parts which make up the package properly, by separating the different type of materials (cardboard, polystyrene, PVC, etc.) according to the national rules in force.

- Remove the existing locking bolt from the cremone bolt of the door.
- Position joint "G" as shown in fig.6.
- Position the half track as in fig. 7, and lower it onto the supporting surface while tightening the chain to obtain the whole track.
- Fit the joint to overlap each of the two half tracks by half its length, as in fig.8.
- Secure the joint by tightening the appropriate screws supplied, as in fig. 9. The door opener is thus ready to be installed.
- Mark the mid-point of the door and fix the track articulated joint to the door frame, as in fig.10. If the ceiling is high enough, the articulated joint can be fitted higher up and fixed to the masonry lintel by means of dowels.

- With the help of an adequate support, lift the motorised head until the track is levelled, as in fig.11.
- Fix the two supporting brackets to the ceiling, as in fig.12. Recheck everything and fix the two supporting brackets to the gearmotor base plate.
- Release the towing carriage (fig.13) by pulling the wire, and bring the towing arm as far as the door panel. Fix the towing arm to the door panel, as in fig.14, using the screws supplied.

5) ELECTRICAL INSTALLATION SET-UP (Fig.15)

- I) Type-approved omnipolar circuit breaker with at least 3-mm contact opening, provided with protection against overloads and short circuits, suitable for cutting out automation from the mains. Place, if not already installed, a type-approved differential switch with a 0.03 A threshold just before the automation system.
- Qr) Control panel and incorporated receiver
- M) Actuator
- Ft) Transmitter photocell
- Fr) Receiver photocells
- T) 1-2-4 channel transmitter.

Connect the accessories, safety and control devices to the motor unit, making sure that the mains voltage connections are kept totally separate from the low voltage accessory connections. Proceed as illustrated in the electrical diagram.

5.1) Terminal board connections (Fig.16)

WARNINGS - For wiring and installation operations, refer to the current standards and good technical principles.

Wires powered at different voltages must be physically separated, or suitably insulated with at least 1 mm extra insulation. The wires must be clamped by an extra fastener near the terminals, for example by bands.

WARNING! For connection to the mains, use a multipolar cable with a minimum of 3x1.5mm² cross section and complying with the previously mentioned regulations. For example, if the cable is outside (in the open), it has to be at least equal to H07RN-F, but if it is on the inside (or outside but placed in a plastic cable channel) it has to be or at least equal to H05VV-F with section 3x1.5mm².

JP1

- 1 Transformer input 0 V ~
- 2 Transformer input 15 V ~
- 3 Transformer input 24 V ~

JP14 (only available in the SCE-MA S boards)

- 4 TX1 serial output
- 5 TX2 serial output
- 6 RX1 serial input
- 7 RX2 serial input

JP5

- 8-9 not used
- 10-11 START button input (N.O.).
- 10-12 STOP button input (N.C.). If not used, leave the jumper connected.
- 10-13 Photocell input (N.C.).
- 10-14 Fault input (N.O.). Input for photocells provided with N.O. checking contact (Fig.16). Only available in the SCE-MA and SCE-MA S boards.

JP6

- 15-16 Motor connection:
15 motor + (grey)
16 motor - (brown)
- 17-18 24V ~ output for blinking light (25W max)
- 19-20 24V ~ 180mA max output – supply to photocells or other devices
- 21-22 24V ~ Vsafe 180mA max output – supply to photocell transmitters with check. Only available in the SCE-MA and SCE-MA S boards.
- 23-24 Output (N.O. contact (24V~/0.5A max)) for gate-open warning light or alternatively 2nd radio channel (see “configuration” paragraph)
- 25-26 Antenna output for integrated radio-receiver board (25 signal - 26 braid).

N.B. The control board is provided with a series of pre-wired jumpers to make work easier for the installer.

The jumpers involve the following terminals: 10-12, 10-13. If the above-mentioned terminals are used, remove their respective jumpers.

6) MOTOR MOVEMENT CONTROL PARAMETERS

The functional parameters can be changed by means of the incorporated display programmer or the UNIPRO programmer.

Here is the explanation of the meaning of each option, followed by the relevant setting procedure.

Meaning of the settings:

- Automatic Closing Time: regulates the dwell time with the door open, following which the door is automatically closed if the TCA function is active.
- Motor torque (pushing force): regulates the pushing force which is electronically applied to the motor during the opening and closing manoeuvres.



WARNING: Check that the impact force value measured at the points established by the EN 12445 standard is lower than that specified in the EN 12453 standard.



Incorrect sensitivity setting can cause injuries to persons or animals, or damage to things.

- 3-step or 4-step function logic: the Start command modifies the gate status depending on whether the 3-step or 4-step logic is active, as specified in the table below. The status of the gate-open warning light is also specified.

GATE STATUS	4 STEPS	3 STEPS	GATE-OPEN WARNING LIGHT
gate closed	opens	opens	off
on opening	stops and enters tca (if it is activated)	stops and enters tca (if it is activated)	on
gate open	closes	closes	on
on closing	stops and does not enter tca	stops and opens	blinks
after stop command	opens	opens	on

- Impulse lock: activates inhibition of the Start command from pushbutton and Start command from radio-control device during gate opening.
- Photocells on opening: if activated, it inhibits the photocells during opening. In this case, photocell triggering during opening is ignored. Photocell triggering during closing causes the gate to stop and then reopen. If not activated, photocell triggering on opening causes the gate to stop and reopen once the obstacle has been removed.
- Gate-open or 2nd radio channel warning light: if activated, allows you to connect a 24V ~ warning light, as in figure 16. In this case the light indicates the position of the gate as specified in the table above. If not activated, the output to terminals 23 and 24 shows a current-free and normally open contact, which is only activated for 1 second each time key 2 is pressed on the associated radio-control device. Key 1 is reserved for the Start command.
- Photocells not checked: if this setting is activated, it inhibits the photocell checking function, allowing connection of devices not provided with additional checking contact.

7) PROGRAMMING

7.1) Programming by means of the display

The display programmer available in the board allows you to set all the SCE control panel functions.

Make reference to fig. A and B.

The predefined parameter is shown between square brackets [0].

The writing appearing on the display is indicated between round brackets. Press the small OK key to display an introduction menu, press OK twice to bypass this introduction. Now you enter a menu including the following submenus: Parameters, logics, radio, language, default and self-diagnosis. In the first 4 menus you can move up/down within each menu and enter the submenus, then confirm the values set using the OK key. If you press OK in the DEFAULT menu, you can reprogram the control unit with the factory-set values. The SELF-DIAGNOSIS menu allows you to check the external connections.

To go back and exit the programming function, simultaneously press the up/down keys several times.

If, at the end of the diagnosis, the reply is OK, it means that the control unit and connected devices work correctly.

7.2) Programming by means of UNIPRO

Connect the UNIPRO programmer to the control unit by means of the UNIDA accessory (see fig. 26). The SCE control unit does not supply the UNIPRO programmer, which therefore needs an appropriate supply unit. Enter the “CONTROL UNITS” menu and the “PARAMETERS” submenu,

then scroll the display screenfuls using the up/down arrows, and set the numerical values of the parameters listed below.

- **Automatic Closing Time (t_{cR}) [10s]**
Set the numerical value of the automatic closing time from 2 to 120 seconds.
- **Opening motor torque (o_P t_{oR}qUE) [50%]**
Set the numerical value of the motor torque between 1% and 99%.
- **Closing motor torque (c_L t_{oR}qUE) [50%]**
Set the numerical value of the motor torque between 1% and 99%.
- **Zone (Z_{oR}E) [0]** (Only available for SCE-MA S.)
Set the zone number between a minimum value of 0 and a maximum value of 127. See paragraph on "Serial connection".

Enter the "CONTROL UNITS" menu and the "LOGIC" submenu, then scroll the display screenfuls using the up/down arrows, and set the numerical values of the parameters listed below.

- **TCA (t_{cR}) [OFF]**
ON Activates automatic closing
OFF Excludes automatic closing
- **3 Steps/4Step (3 5tEP) [OFF]**
ON Enables 3-step logic. stops and reopens
OFF Enables 4-step logic.
- **Impulse lock (i_{bL} o_{PE}n) [OFF]**
ON Enables impulse lock during the opening phase.
OFF Excludes impulse lock during the opening phase.
- **Photocells on opening (Pho_tc. o_{PE}n) [OFF]**
ON Enables on closing phase only.
OFF: Enables on opening and closing phase.
- **Photocell test (t_{ES}t Pho_t) [OFF]**
(Only available for SCE-MA and SCE-MA S)
ON Activates photocell check
OFF Deactivates photocell check
- **Gate-open or 2nd radio channel warning light (5c_R Z_{ch}) [ON]**
ON The output between terminals 23 and 24s configured as Gate-open warning light.
OFF The output between terminals 23 and 24 is configured as 2nd radio channel.
- **Fixed Code (F i_HE_d c_odE) [OFF]**
ON The receiver is configured to operate in fixed code mode, see paragraph on "Radio-transmitter cloning".
OFF The receiver is configured to operate in rolling-code mode, see paragraph on "Radio-transmitter cloning".
- **Loop (L_ooP) [OFF]** (Only available for SCE-MA S)
ON In the case of a closed loop centralised connection (Fig.29), set the control unit to ON.
OFF In the case of an open centralised connection (Fig.29), set the control unit to OFF.
- **Master/Slave (M_AS_tE_r) [OFF]** (Only available for SCE-MA S)
ON The control panel is set as Master in a centralised connection (see Paragraph "CENTRALISED SERIAL CONNECTION").
OFF The control panel is set as Slave in a centralised connection (see Paragraph "CENTRALISED SERIAL CONNECTION").

8) INTEGRATED RECEIVER TECHNICAL SPECIFICATION

Receiver output channels:

- output channel 1, if activated, controls a START command.
- output channel 2, if activated, controls the excitation of the 2nd radio channel relay for 1s.

Transmitter versions which can be used:

- **MITTO Transmitter**
MITTO2 – double-channel, MITTO4 – four-channel.
Keys : Yellow
Power supply : 2 3V Lithium batteries (CR2016 type)
Range : 50 / 100 metres
- **TRC Transmitter**
TRC1-single-channel, TRC2- double-channel, TRC4- four-channel.
Keys : Red
Power supply : 12V Alkaline battery
Range : 50 / 100 metres

ANTENNA INSTALLATION

Use an antenna tuned to 433MHz.

For Antenna-Receiver connection, use RG8 coaxial cable.

The presence of metallic masses next to the antenna can interfere with radio reception. In case of insufficient transmitter range, move the antenna to a more suitable position.

9) RECEIVER CONFIGURATION

The on-board receiver combines characteristics of utmost safety in copying variable code (rolling code) coding with the convenience of carrying out transmitter "cloning" operations thanks to an exclusive system.

Cloning a transmitter means creating a transmitter which can be automatically included within the list of the transmitters memorised in the receiver, either as an addition or as a replacement of a particular transmitter.

Cloning by replacement is used to create a new transmitter which takes the place of the one previously memorised in the receiver; in this way a specific transmitter can be removed from the memory and will no longer be usable.

Therefore it will be possible to remotely program a large number of additional transmitters or, for example, replacement transmitters for those which have been lost, without making changes directly to the receiver.

When coding safety is not a decisive factor, the on-board receiver allows you to carry out fixed-code additional cloning which, although abandoning the variable code, provides a high number of coding combinations, therefore keeping it possible to "copy" any transmitter which has already been programmed.

PROGRAMMING

Transmitter storage can be carried out in manual mode or by means of the UNIRADIO programmer which allows the complete installation database to be managed through the Eedbase software.

In this second case, receiver programming takes place through the connection of UNIRADIO to the SCE control panel, using the UNIFLAT and UNIDA accessories as indicated in Fig. 26.

10) MANUAL PROGRAMMING

In the case of standard installations where advanced functions are not required, you can proceed to manual storage of the transmitters, making reference to fig. B for basic programming.

- If you wish the transmitter to activate output 1 (START) by means of key1, key2, key3 or key4, enter the transmitter in menu "Start key", as in fig. B.
- If you wish the transmitter to activate output 2 (2nd radio channel relay) by means of key1, key2, key3 or key4, enter the transmitter in menu "2nd ch. key", as in fig. B.

Note: Hidden key P1 appears differently depending on the transmitter model.

For **TRC 1-2 / MITTO 2-4**, press hidden key P1 (fig. B1A). For **TRC 4**, the key P1 function corresponds to simultaneously pressing the 4 transmitter keys or, after opening the battery compartment, bridging the two P1 points by means of a screwdriver (fig. B2A).

IMPORTANT NOTE: ATTACH THE ADHESIVE KEY LABEL TO THE FIRST MEMORISED TRANSMITTER (MASTER).

In the case of manual programming, the first transmitter assigns the key code to the receiver; this code is necessary in order to carry out subsequent cloning of the radio transmitters.

11) RADIO TRANSMITTER CLONING

Clones can be added by means of UNIRADIO, and the only limitation to this is the maximum number of transmitters the receiver can memorise.

Note: in rolling-code cloning, the level of safety of the code anti-copying system is very high, and is the same as that of the transmitters memorised manually in the receivers.

Knowledge of the cloning **key code** or the reading from the key transmitter allow the operator to create additional clones by remote control, without needing further information.

To create replacement clones, you need to have the complete receiver memory data; therefore, if you plan to carry out replacement cloning operations by remote control, you need to memorise the contents of the receiver memory by reading it using **UNIRADIO** and entering it in the **Eedbase** database.

When assigning a specific key on an additional clone transmitter to a specific output channel on a receiver, a predefined procedure is followed. This procedure can be modified as required if radio transmitter storage is carried out by means of **UNIRADIO**, or otherwise it is identical to the procedure for the first transmitter, the one with the **KEY TRANSMITTER LABEL**.

The keys on the replacement clone transmitter maintain the same association with the output channels of the receiver as the replaced transmitter.

Code reading:

In the case where a receiver code is not known, it can be displayed using the "COD RX" submenu in the Radio menu.

Each time the OK key is pressed, the receiver code is displayed cyclically, divided in two groups of four characters each and one group of two

characters (ex. COD RX - OK - 1A9C - OK - 22FD - OK - 01). The + and - keys must be pressed simultaneously to exit the code display.

Having carried out key code reading, you are advised to write it down on the appropriate card supplied and given to the user (Fig.28).

Note the type of receiver configuration (rolling code or fixed code) on the card, in order to avoid errors in any subsequent transmitter cloning operations.

11.1) Cloning with rolling-code

a) Cloning by addition with code

For practical clone creation, refer to instructions on the UNIRADIO device or, for clone addition, observe the following simplified procedure:

- 1) Switch **UNIRADIO** on and wait for the welcome message.
- 2) Use the **<arrow up>** and **<arrow down>** keys to select item **<go the menu number>**.
- 3) Press **<enter>**.
- 5) When in the subsequent menu, type number **2121** and press **<enter>**.
- 6) Follow the instructions appearing on the **UNIRADIO** display.

b) Cloning by addition with master

For practical clone creation by means of the master transmitter (marked with the key label) refer to the instructions on the UNIRADIO device, or observe the following simplified procedure:

- 1) Switch **UNIRADIO** on and wait for the welcome message.
- 2) Use the **<arrow up>** and **<arrow down>** keys to select item **<go the menu number>**.
- 3) Press **<enter>**.
- 5) When in the subsequent menu, type number **2122** and press **<enter>**.
- 6) Follow the instructions appearing on the **UNIRADIO** display.

11.2) Cloning with fixed code

NOTE: ALTHOUGH A HIGH NUMBER OF COMBINATIONS FOR TRANSMITTER CODING IS INCLUDED IN THE FIXED CODE CONFIGURATION, THE SAFETY LEVEL OF THE CODE ANTI-COPYING SYSTEM IS INFERIOR.

In the cases where you do not wish to manage the list or the cloning key or the key transmitter, additional clones can be generated by means of UNIRADIO, starting from any transmitter which is already memorised within the system.

This operation can only be carried out if the receiver is configured to operate with a fixed code (no longer a rolling code).

To do this, you must activate the **FIXED CODE** option in the logic menu, see fig. A.

Otherwise, for activation through UNIPRO:

Enter the **"CONTROL UNITS"** menu, the **"LOGICS"** submenu and the **"SPECIAL LOGICS"** submenu; then scroll the display screenfuls using the up/down arrows to set the numerical values of:

- Address (13) [0]

ON fixed code

OFF rolling code

When assigning a specific key on an additional clone transmitter to a specific output channel on a receiver, a predefined procedure is followed which can be decided at will if the radio transmitter storage is carried out by means of **UNIRADIO**, otherwise it is identical to the diagram of the first memorised transmitter, the one with the **KEY TRANSMITTER LABEL**.

For fixed code clone creation, refer to the **UNIRADIO** instructions or observe the following simplified procedure:

- 1) Switch **UNIRADIO** on and wait for the welcome message.
- 2) Use the **<arrow up>** and **<arrow down>** keys to select item **<go the menu number>**.
- 3) Press **<enter>**.
- 4) When in the subsequent menu, type number **213** and press **<enter>**.
- 5) Select menu **<fixed code cloning>** and press **<enter>**.
- 6) Follow the instructions appearing on the **UNIRADIO** display.

11.3) ADVANCED PROGRAMMING: COLLECTIVE RECEIVERS

Collective installations can be carried out by means of the **UNIRADIO** programmer. For instance, just one transmitter can be used to control a "collective" receiver (ref. "C", Fig.27), and an "individual" receiver (ref. PX, Fig. 27).

In this type of installation, the appropriate codes need to be assigned to the various receivers by means of UNIRADIO.

Each code is made up of 10 figures in hexadecimal format (thus figures from 0 to 9 as well as characters A-B-C-D-E-F are allowed), e.g.:

1A9C-22FD-00

is a valid code.

The first eight characters represent the actual code, the last two figures represent the type of receiver, either collective or individual. If the last two

figures are equal to 00, it means that the receiver is preset for collective operation, whereas if the last two figures are different from 00, it means that the receiver is preset for individual operation. Therefore, if you wish to carry out an installation similar to the one illustrated in Fig.27, you will need to assign a collective code to receiver "C" (e.g. **1A9C-22FD-00**) and then assign the same code to the individual receivers, except for the two last figures which must be in progressively increasing sequence (**1A9C-22FD-01, 1A9C-22FD-02, 1A9C-22FD-03** etc.).

All the transmitters programmed with a particular code will therefore be automatically enabled to activate both the collective receiver (being provided with the same initial code number) and their own individual receiver (being provided with the full code number).

If necessary, a transmitter can be set exclusively to activate the collective receiver by being assigned the entire collective receiver code (in our example **1A9C-22FD-00**).

WARNING!: The installation code will have to be chosen with care, avoiding codes which are too simple and codes which have already been assigned during previous installations.

In "Communal buildings" installations, no additional cloning operations can be carried out by means of the "Master" transmitter, since the code is directly assigned by the installer.

The codes ending with letters FB, FC, FD, FE and FF are not valid.

At this point it will be possible to program all the radio transmitters required, using the **UNIRADIO** programmer, managed by the **EEdbase** software if necessary.

NOTE: The EEdbase software provides a more efficient installation database management and a simpler storage procedure in the case of complex installations.

Programming of receivers is carried out through UNIRADIO according to the following procedure:

- a) Configuration of complete parameters for each receiver by means of **UNIRADIO**
- b) Transfer of programming data to the receiver.

a) Parameter configuration

- 1) Switch **UNIRADIO** on and wait for the welcome message.
- 2) Use the **<arrow up>** and **<arrow down>** keys to select item **<go the menu number>**.
- 3) Press **<enter>**.
- 4) When in the subsequent menu, type number **243** and press **<enter>**.
- 5) Configure the receiver following the instructions displayed on the screen:

list definition: enter 64

output configuration: not active for this panel

description: indicate the name of the list, maximum 15 characters

receiver code: enter the assigned key code paying attention to the distinction between "collective" receiver and "individual" receiver.

clone default: assign the required output to the required transmitter key, taking care to avoid assigning a key to an individual receiver, which has already been assigned to a collective receiver, or vice versa.

Example: T1 output 1 (Start) = collective receiver and

T2 output 1 (Start) = individual receiver

b) Transfer of programming data

- 6) Exit the list parameter menu by pressing **<ESCAPE>** and return to the initial menu.
- 7) Use the **<arrow up>** and **<arrow down>** keys to select item **<go the menu number>**.
- 8) Press **<enter>**.
- 9) When in the subsequent menu, type number **223** and press **<enter>**.
- 10) Connect the receiver to be programmed as indicated in Fig.26.
- 11) Wait for the data to be transferred.

Repeat this procedure for each receiver to be memorised, each time increasing the last two figures of the key code.

Refer to the **UNIRADIO** instructions for further details.

Then use the individual receiver codes to set up all the required radio transmitters, following the instructions given in paragraph 11.1 **"Rolling-code cloning with code"**.

You can carry out creation and cloning of other radio transmitters at any time by using the code number assigned, which is chosen at the installer's or user's discretion.

You are therefore advised to write it down on the appropriate card supplied and to give it to user of the "individual" receiver (Fig.28).

Make a note of the type of receiver configuration ("rolling code" or "fixed code") on the card, in order to avoid errors during future transmitter cloning operations.

To create replacement clones, you need to have the complete receiver

memory data; therefore, if you plan to carry out replacement cloning operations by remote control, you need to memorise the contents of the receiver memory by reading it using **UNIRADIO** and entering it in the **EEdbase** database.

NOTE: For installations in the “collective receivers” mode, it is advisable to create a complete installation database, by means of **EEdbase**, containing the data for each receiver and transmitter, and to number progressively each memorised transmitter, in order to be able to carry out additional or replacement cloning operations, even years later, without needing to make changes directly to the receivers. Refer to the **UNIRADIO** instructions and to the on-line **EEdbase** software guide.

WARNING!: The cloning procedures specified in paragraph 11 give a simplified explanation of how to carry out cloning, without having the clones created contained in a database.

Refer to the **UNIRADIO** instructions for further information concerning the creation and management of a database.

12) CENTRALISED SERIAL CONNECTION (only available for SCE-MA S)

As well as having local commands, the control unit is preset to operate in a centralised system, divided into several “zones” which group protocol-compatible devices. A master device must be selected for each zone, keeping in mind that the commands given from this device are executed by all the other devices belonging to the same zone.

A “centralised” command can therefore be sent via wire by means of the master panel to a given zone: the devices contained in that zone will carry out the said command. Besides deciding on the zone master panel, you must configure the zone address for each device included in the centralised installation. The SCE panel can be included in the centralised installation both as zone master and as slave (only carrying out commands).

Moreover, a centralised installation via wire can be obtained both by closing the connection loop (fig.29) and by leaving the connection loop open. With the loop closed, each zone master unit is able to check command completion by each slave unit, and to update certain statistics relating to loop composition; the failed commands will therefore be repeated after a few minutes. With the loop open, these operations cannot be carried out, all the other functions however remaining unchanged.

This is why it is necessary to carry out zone number setting, master / slave setting and closed-loop / open-loop setting for each device. Here follows the procedure used to set these parameters.

12.1) Programming of centralised installation through display

The display programmer available in the board is used to set all the SCE control panel functions. Make reference to Fig. A and B. Set the zone number from the PARAM. Menu, and set the closed-loop / open-loop and master / slave values from the Logic menu.

12.2) Programming of centralised installation through Unipro

Connect the **UNIPRO** programmer to the control unit by means of the **UNIDA** accessory (see fig. 26). The SCE control unit does not supply power to the UNIPRO programmer which therefore requires an appropriate supply unit or charged batteries. Enter the “CONTROL UNITS” menu, the “PARAMETERS” submenu, and the “SPECIAL PARAMETERS” submenu; then scroll the display screenfuls using the up/down arrows, and set the numerical values of the parameters listed below.

- Configuration (1) [1]

Enter the zone number

Enter the “CONTROL UNITS” menu, the “LOGICS” submenu, and the “SPECIAL LOGICS” submenu; then scroll the display screenfuls using the up/down arrows, and set the numerical values of the parameters listed below.

- Address (11) [0]

ON activates closed loop

OFF open loop

- Address (12) [0]

ON master

OFF slave.

13) DIAGNOSTICS AND MONITORING

The display on the **SCE** panel shows some useful information, both during normal operation and in the case of malfunctions.

Diagnostics:

In the case of malfunctions, the display shows a message indicating which device needs to be checked:

STRT= START input activation

STOP= STOP input activation

PHOT= PHOT input activation

FLT = FAULT input activation for checked photocells (only SCE-MA and SCE-MA S)

In the case where an obstacle is found, the SCE panel stops the door and activates a reverse manoeuvre; at the same time the display shows the “AMP” message.

Monitoring:

During the opening and closing phases, the display shows four digits separated by a dot, for example 3560. The first two digits are constantly updated during the manoeuvre, and represent the maximum torque reached. The last two digits represent the torque value set in the parameter menu. These values allow the torque setting to be corrected.

If the maximum torque value reached during the manoeuvre gets sensibly close to the value set, malfunctions may occur in the future following wear or slight door deformation.

It is therefore advisable to check the maximum torque reached (the first two digits) during some of the manoeuvres carried out in the course of installation, and if necessary set a value about 15-20 percent points higher in the parameter menu.

14) STATISTICS

The statistics are only managed through UNIPRO. Therefore connect the UNIPRO programmer to the control unit, enter the CONTROL UNITS/ STATISTICS menu and scroll the screenful displaying statistical parameters:

- Board microprocessor software version
- Number of cycles carried out. If the motors are replaced, take down the number of manoeuvres carried out up to that time.
- Number of cycles carried out since the latest maintenance operation. It is automatically set to zero after each self-diagnosing or parameter writing operation.
- Date of latest maintenance. To be manually updated from the appropriate “Update maintenance date” menu.
- Installation description. Allows you to enter 16 characters identifying the installation.
- Number of zone operating units (advanced statistics) Address 16: indicates the number of actuators belonging to the same zone as that of the master (only updated in the master boards).
- Number of total operating units (advanced statistics) Address 17: indicates the number of actuators connected (only updated in the master boards).

15) CHAIN TIGHTENER ADJUSTMENT

The operator supplied is already calibrated and inspected. Should the chain tension need to be adjusted, proceed as shown in fig. 17.

WARNING: The anti-tear spring must never be completely compressed. Scrupulously check that the spring does not become totally compressed during operation.

16) LIMIT-SWITCH ADJUSTMENT MENU

The SCE control panel is provided with an adjustment menu for opening and closing limit switches, which simplify the installation procedure.

Making reference to Fig. 18 and 19, and Fig. B showing control panel programming, proceed as follows:

- Initiate a limit-switch adjustment operation by moving to the appropriate SCE panel menu (Fig.B).
- When the “CLOSE” message is displayed, bring the door to the required closing position using the “+” and “-” control unit buttons, keeping in mind that the “-” button closes the door whereas the “+” button opens the door. As soon as the door is in the required closing position, press the “OK” button in order to memorise the closing limit-switch position.
- When the “OPEN” message is displayed, bring the door to the required opening position using the “+” and “-” control unit buttons. As soon as the door is in the required opening position, press the “OK” button in order to memorise the opening limit-switch position.

NOTE: These manoeuvres are carried out in “hold-to-run” mode at reduced speed and without any safety device intervention.

- Now the control panel initiates a partial closing manoeuvre, in order to allow the reference cam to be positioned, then displays the message “REF” and moves to the wait mode.

The cam is to be positioned (Fig.19) at a distance of approximately 230 mm from the fixing base. This measurement can vary by approximately ± 13 mm depending on the chain pitch.

Warning!! The cam is to be positioned as shown in details 9A and 9B of fig. 19. **Any incorrect cam positioning can cause damage to the operator.**

- After positioning the cam, press the “OK” button, the control unit initiates reopening the door to memorise the encoder reference cam positioning.
- At this point the limit-switch adjustment can be considered complete, now proceed to the autoset operation to complete the operator setting up.

17) AUTOSSET MENU (Rilevato)

- Bring the door to its closing position.
- Initiate an autoset operation by moving to the appropriate SCE panel menu (Fig.B).
- As soon as the OK button is pressed, the following message will be displayed ".....", and the control unit initiates an opening manoeuvre followed by a closing manoeuvre, during which the minimum torque value needed for door movement will be automatically set. During this phase, it is important to avoid obscuring the photocells, as well as using the START and STOP commands and the display.
- By the end of this operation, the control unit will have automatically set the optimum torque values. Check and, if necessary, modify them as described in the programming section.



WARNING: Check that the impact force value measured at the points established by the EN 12445 standard is lower than that specified in the EN 12453 standard.



WARNING! During the autoset phase, the obstacle detection function is not optimised; the installer must check the operator movement and prevent persons and things from coming near or stopping within the operating range.

18) SLOW-DOWN SPEED AND TORQUE

N.B.: In the case where, during the final opening and closing phases, the pushing force does not allow the required manoeuvre to be completed, the gearmotor force can be increased by moving the transformer connection from terminal 15V to terminal 20V, as in fig.20.

19) EMERGENCY MANOEUVRE

In case of electric power failure or system malfunction, the manoeuvre must be carried out manually by pulling the wire connected to the carriage, as in fig.21. For garages which are not provided with a second exit, it is compulsory to fit an external key release device like Mod. **SM1** (fig.22) or Mod. **SET/S** (fig.23).

20) AUTOMATION CHECK

Before the automation device finally becomes operational, scrupulously check the following conditions:

- Check that all the safety devices (limit microswitches, photocells, electric edges etc) operate correctly.
- Check that the door (antisquash) thrust is comprised within the limits set out by the current standards, and anyway not too strong for the installation and operating conditions.
- Check that the chain-tightener spring is not completely compressed during manoeuvre.
- Check the manual opening control operation.
- Check the opening and closing operations using the control devices fitted.
- Check the normal and customised operation electronic logics.

21) AUTOMATION DEVICE USE

Since the automation device can be remotely controlled by means of a radio control device or a Start button, and therefore when not in sight, all the safety devices must be frequently checked in order to ensure their perfect efficiency. In the event of any malfunction, request immediate assistance from qualified personnel. Children must be kept at a safe distance from the automation operation area.

22) AUTOMATION CONTROL

The use of this control device allows the gate to be opened and closed automatically. There are different types of controls (manual, radio control, magnetic card access etc.) depending on the installation requirements and characteristics. For the various control systems, see the relevant instructions. **The automation device users must be instructed on control and operation.**

23) MAINTENANCE

Before carrying out any maintenance operation, disconnect the system power supply.

- Periodically check the tension of the belt (twice a year).
- Occasionally clean the photocell optical elements, if installed.
- Have a qualified technician (installer) check the correct setting of the electronic clutch.
- When any operational malfunction is found, and not resolved, disconnect the system power supply and request the assistance of a qualified technician (installer). When the product is out of service, activate the manual release device to allow the door to be opened and closed manually.

24) ACCESSORIES

- SM1** External release device to be applied to the cremone bolt already fitted to the overhead door (fig.22).
- SET/S** External release device with retracting handle for sectional doors measuring max 50mm (fig.23).
- APT** Extension and bracket accessories used to fit the product away from the door or close to the ceiling (fig.24).
- ST** Automatic bolt release device for spring-operated overhead doors. Fitted to the control arm, it automatically releases the side door bolts (fig.25).

25) SCRAPPING

Warning! This operation should only be carried out by qualified personnel. Materials must be disposed of in conformity with the current regulations. In case of scrapping, the automation devices do not entail any particular risks or danger. In case of materials to be recycled, these should be sorted out by type (electrical components, copper, aluminium, plastic etc.).

26) DISMANTLING

Warning! This operation should only be carried out by qualified personnel. When the automation system is disassembled to be reassembled on another site, proceed as follows:

- Disconnect the power supply and the entire external electrical installation.
- In the case where some of the components cannot be removed or are damaged, they must be replaced.

The descriptions and illustrations contained in the present manual are not binding. The Company reserves the right to make any alterations deemed appropriate for the technical, manufacturing and commercial improvement of the product, while leaving the essential product features unchanged, at any time and without undertaking to update the present publication.

Fig. A

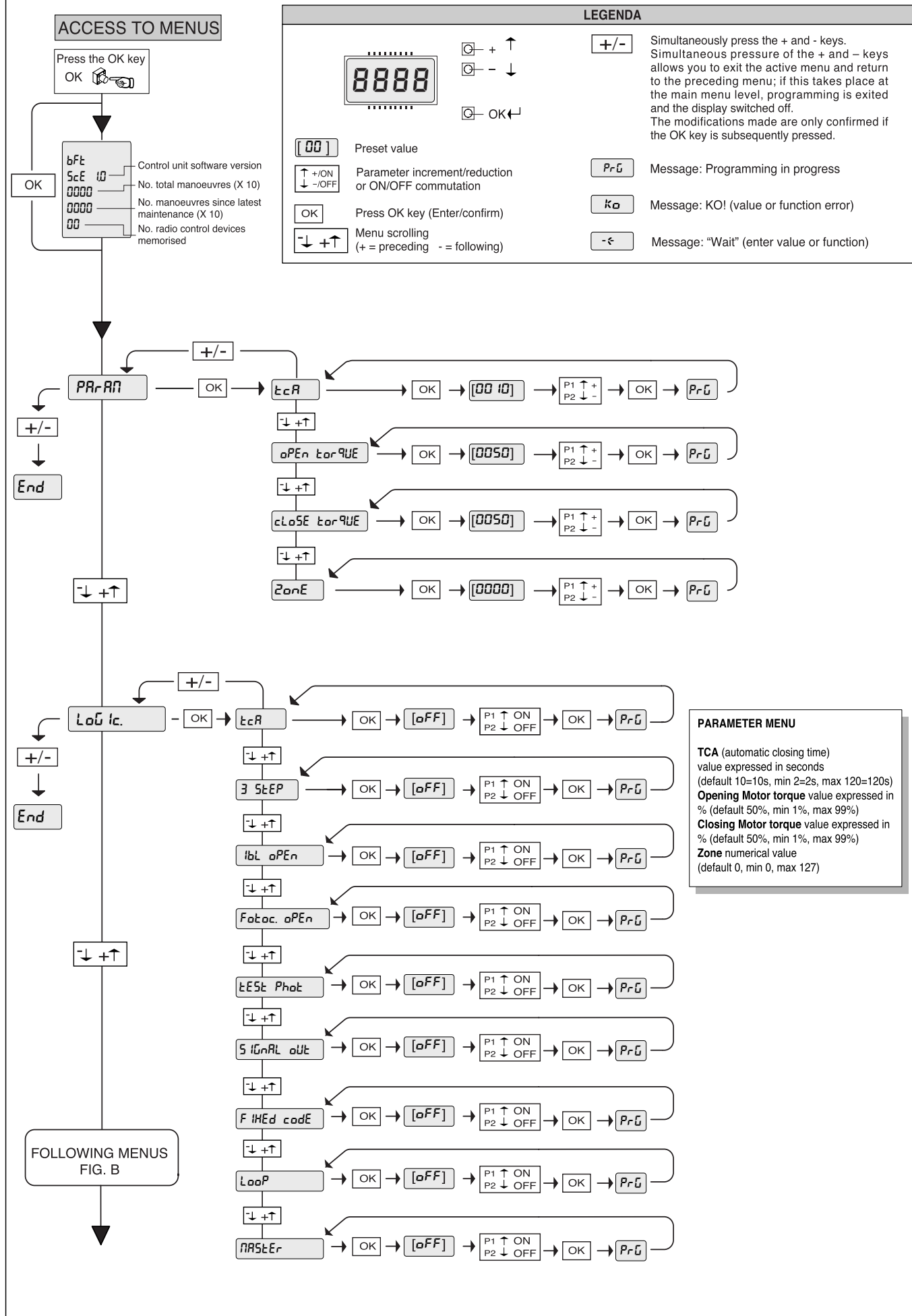


Fig. B

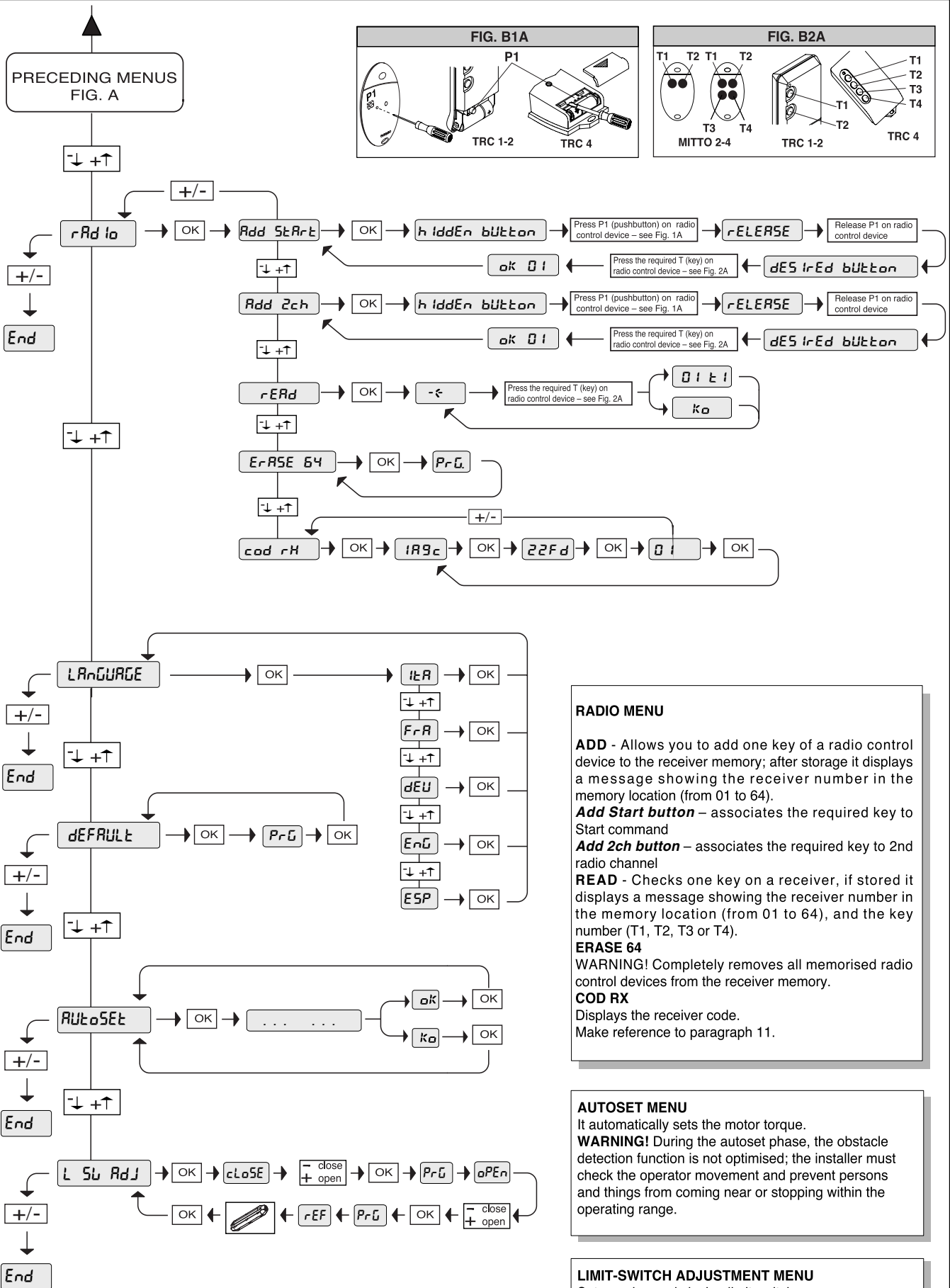


Fig. 1

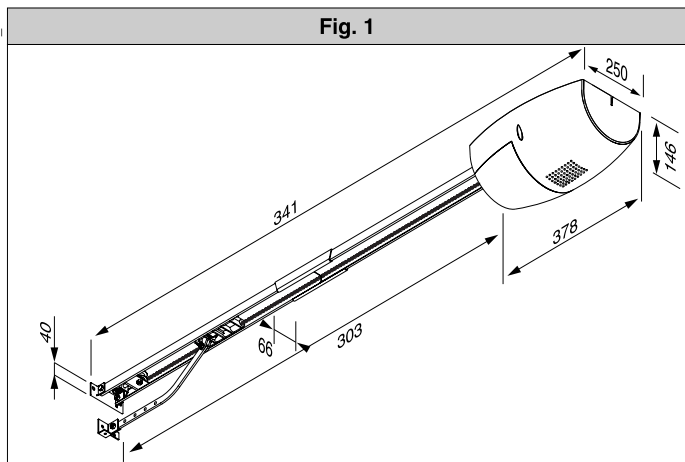


Fig. 2

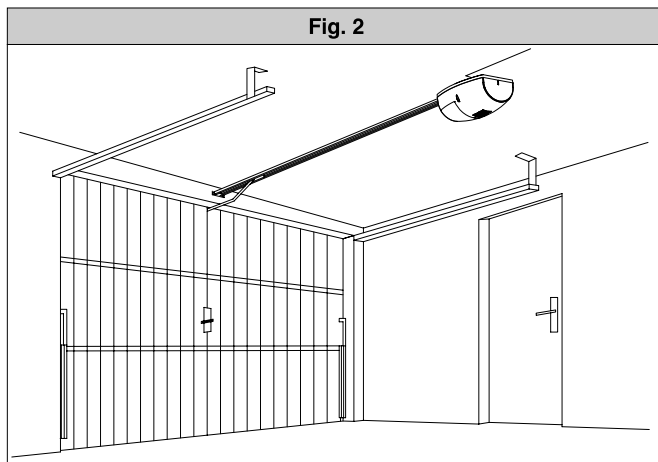


Fig. 3

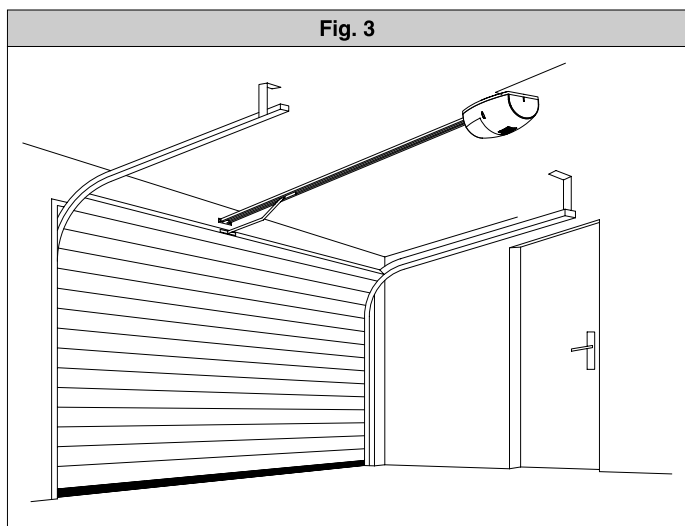


Fig. 4

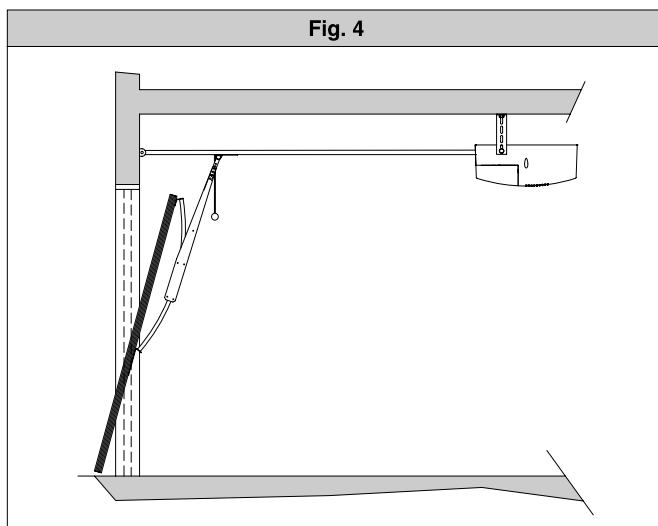


Fig. 5

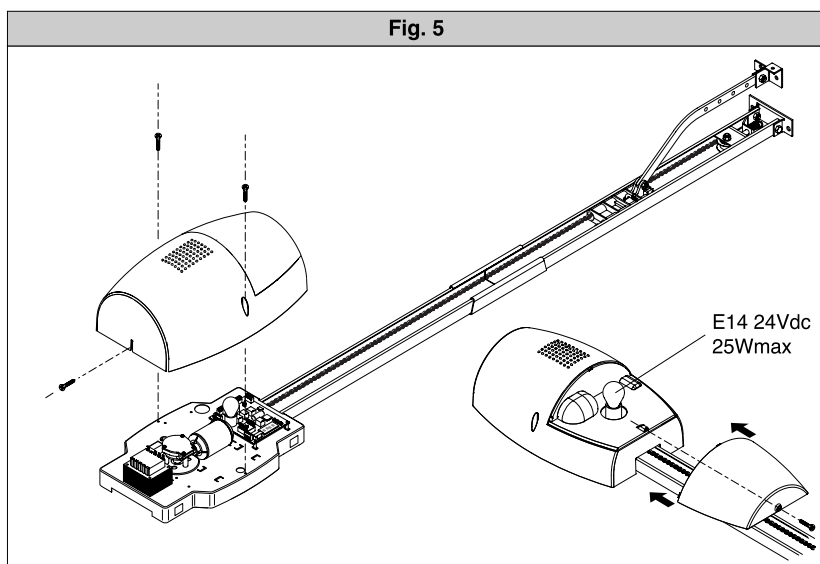


Fig. 7

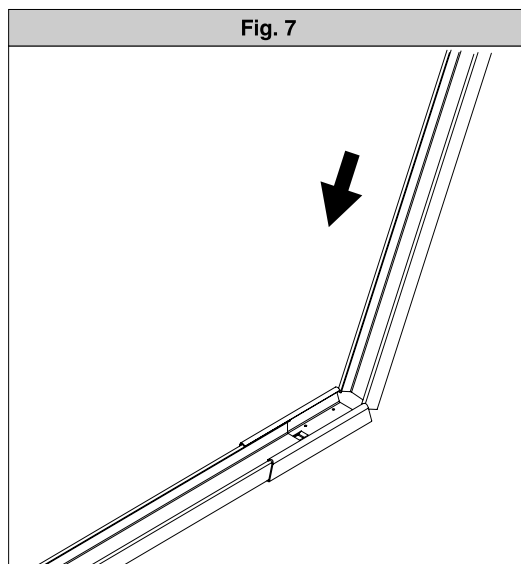


Fig. 6

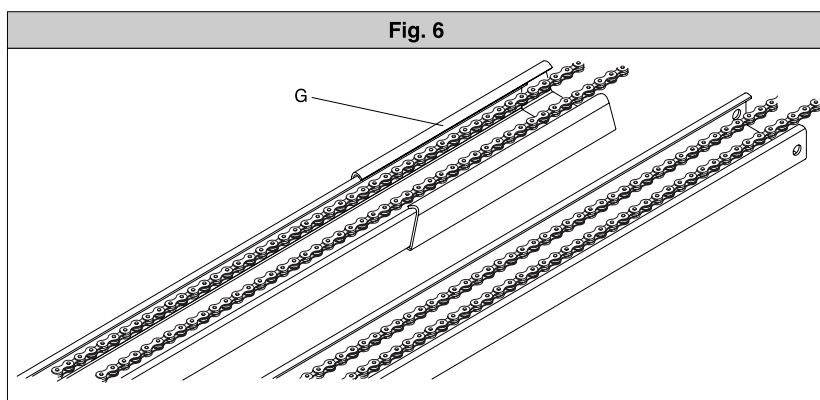


Fig. 8

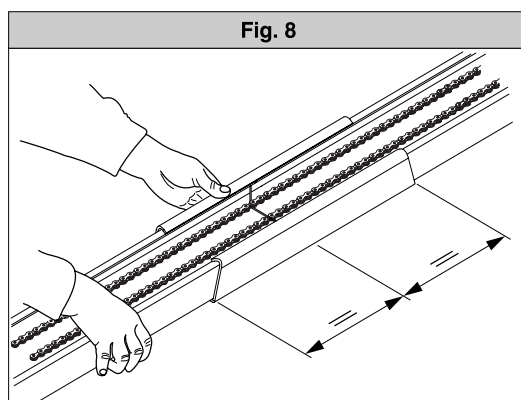


Fig. 9

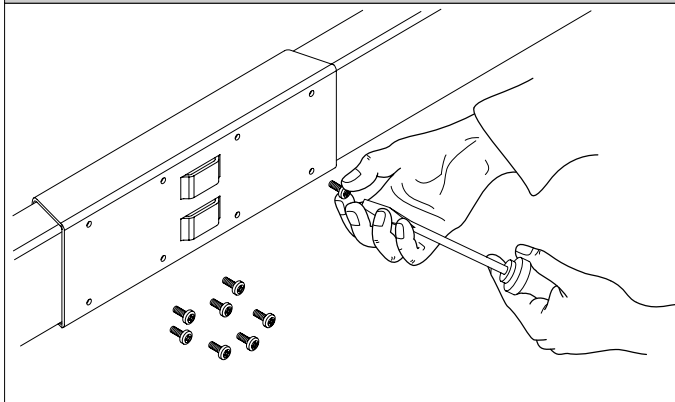


Fig. 10

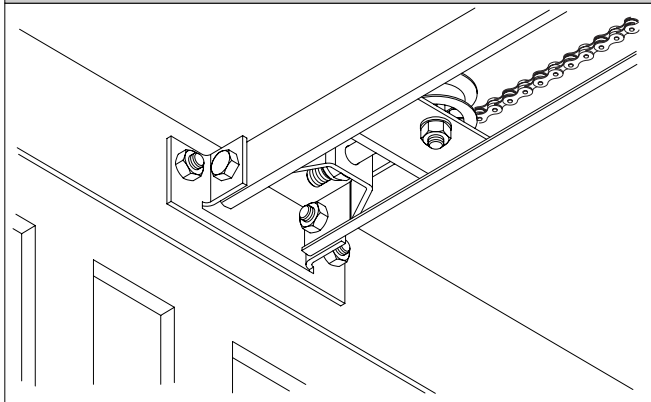


Fig. 11

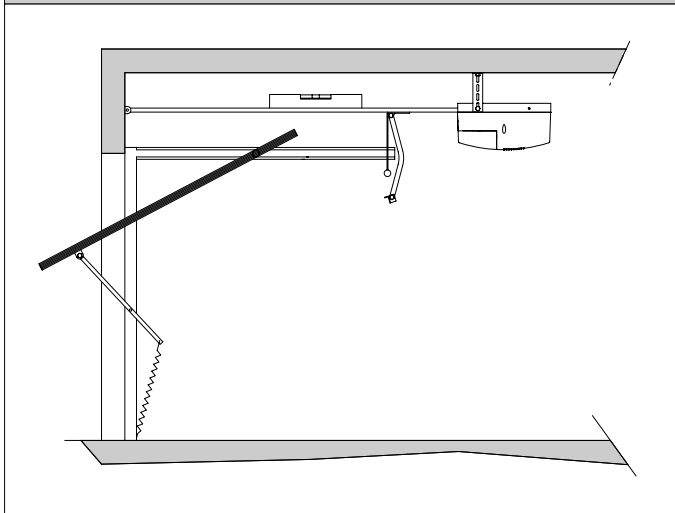


Fig. 12

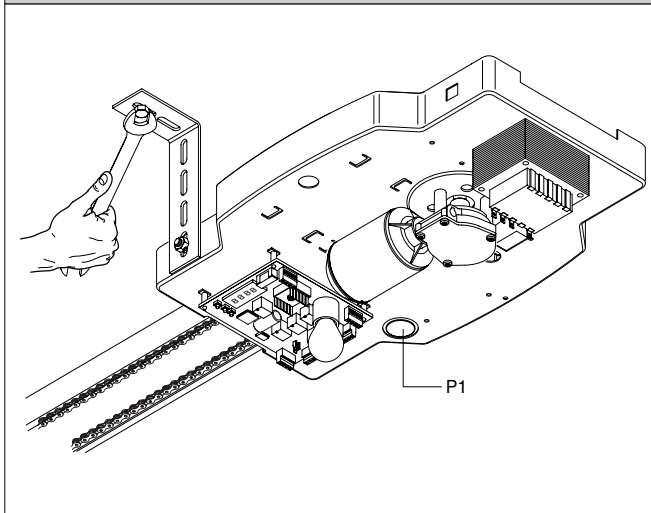


Fig. 13

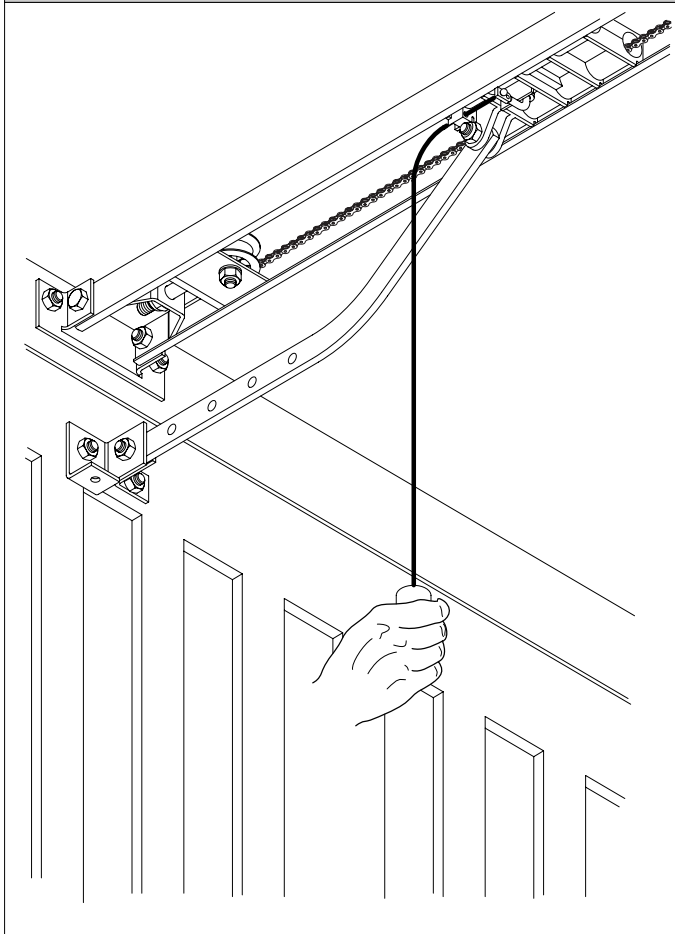


Fig. 14

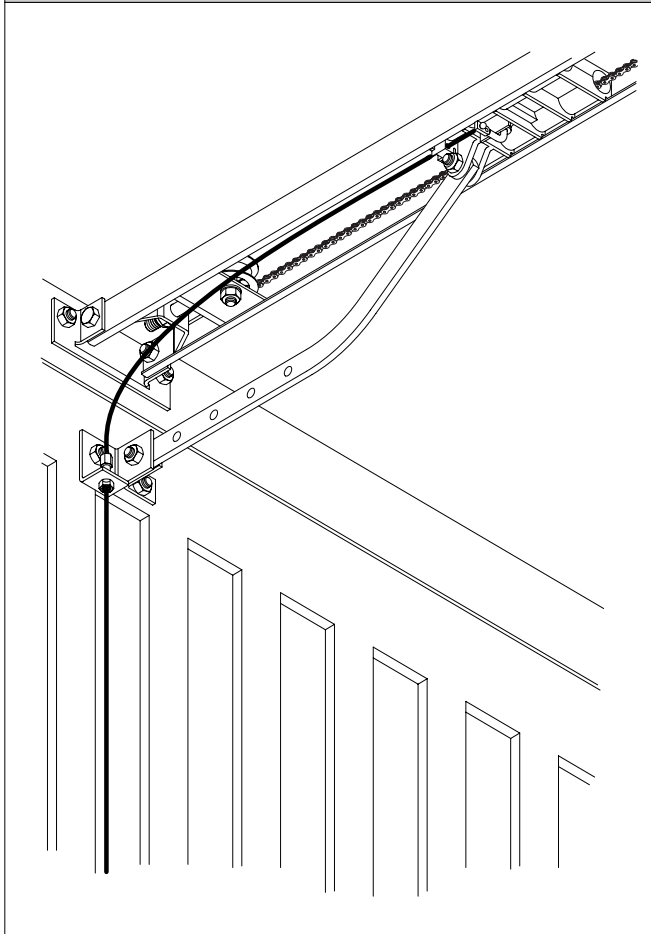


Fig. 15

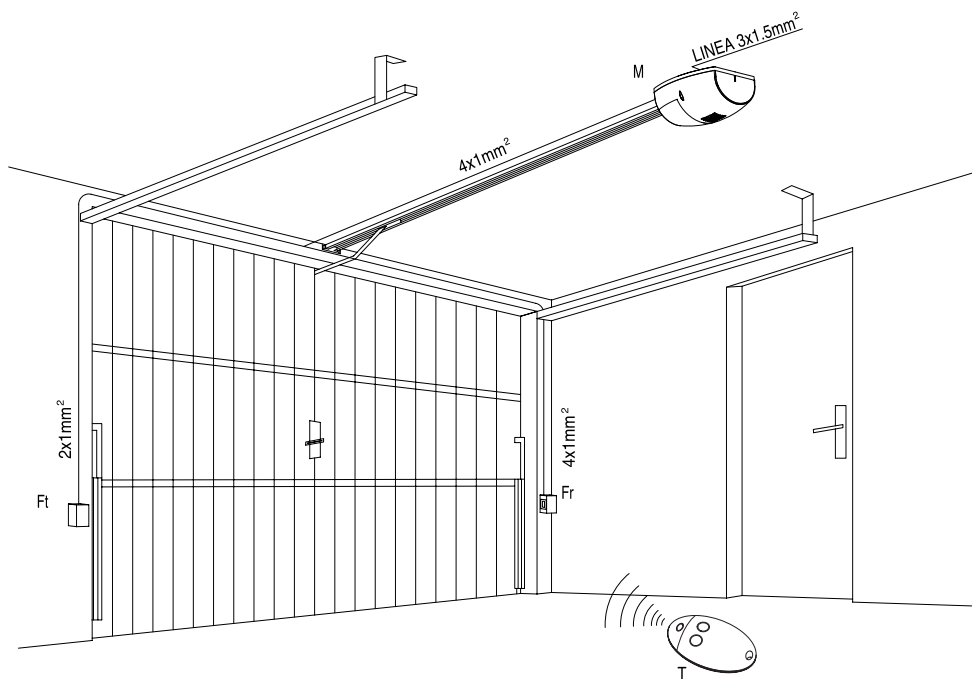


Fig. 16

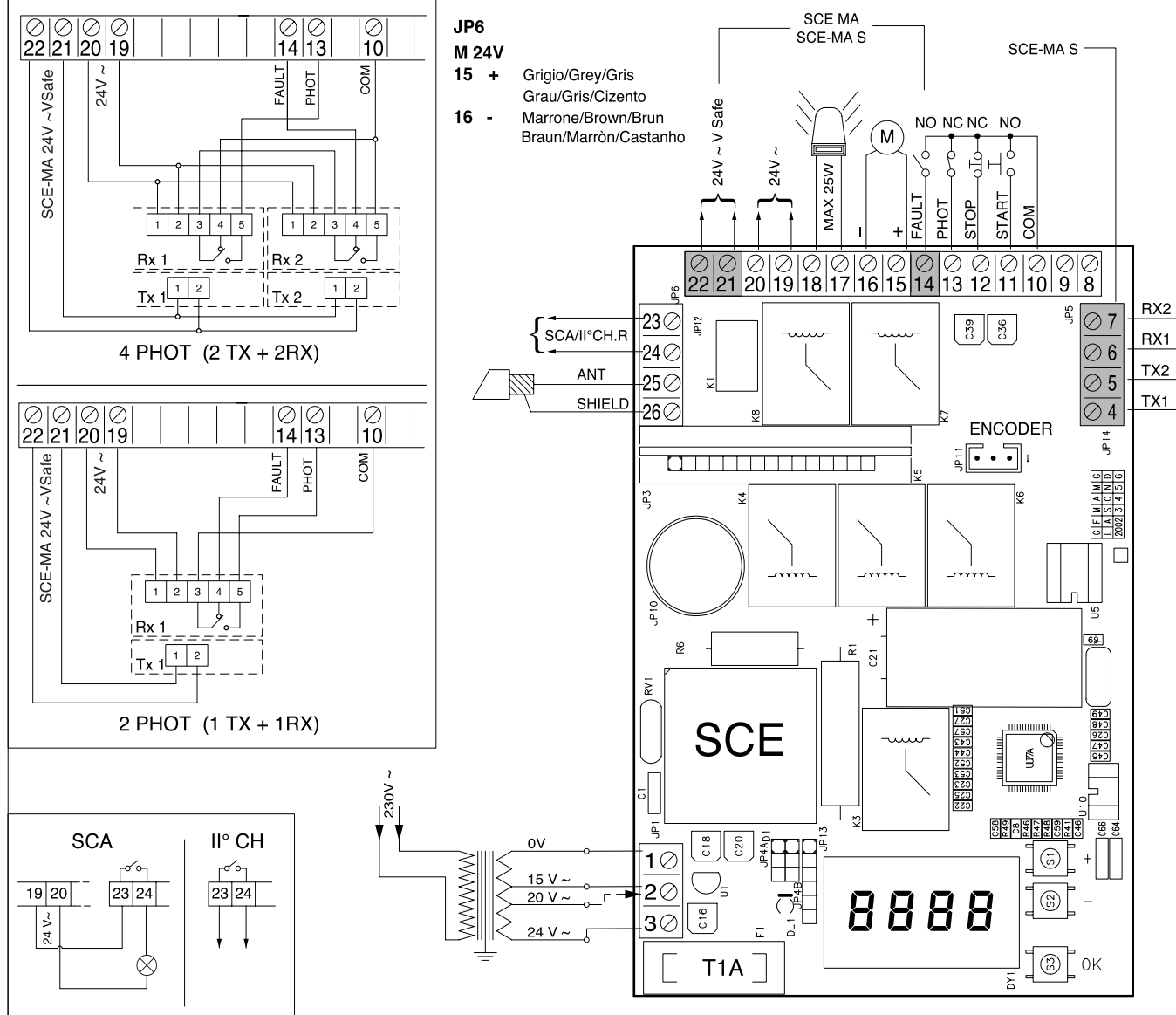


Fig. 17

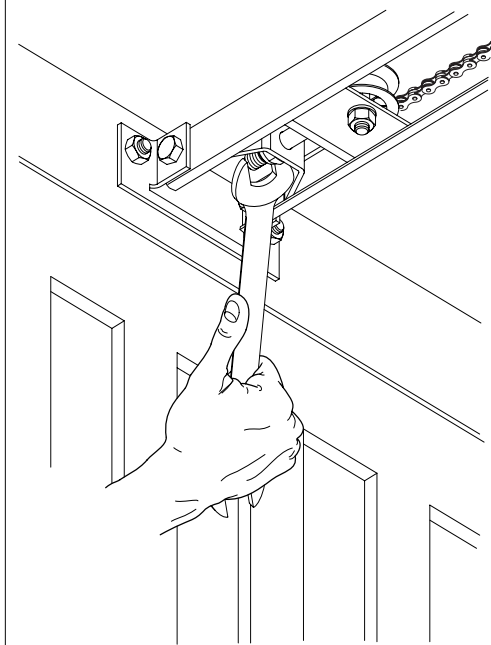
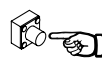


Fig. 18

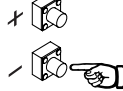
SCE **rEG. Fc**

①



SCE **cLoSE**

②



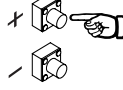
SCE **cLoSE**

④



SCE **aPEn**

⑤



SCE **aPEn**

⑦

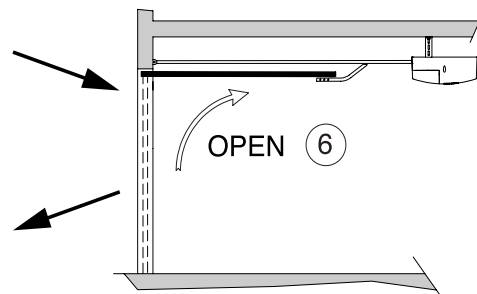
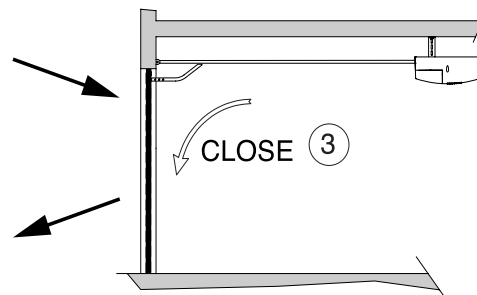
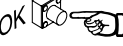
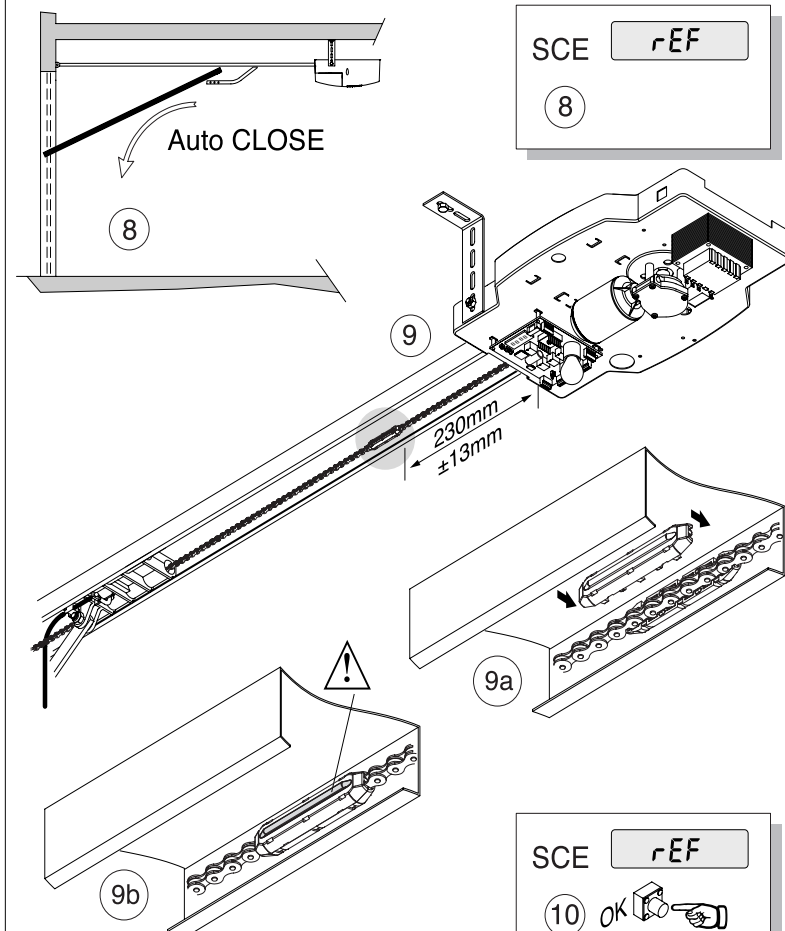


Fig. 19



SCE **rEF**

⑧

SCE **rEF**

⑩



Fig. 20

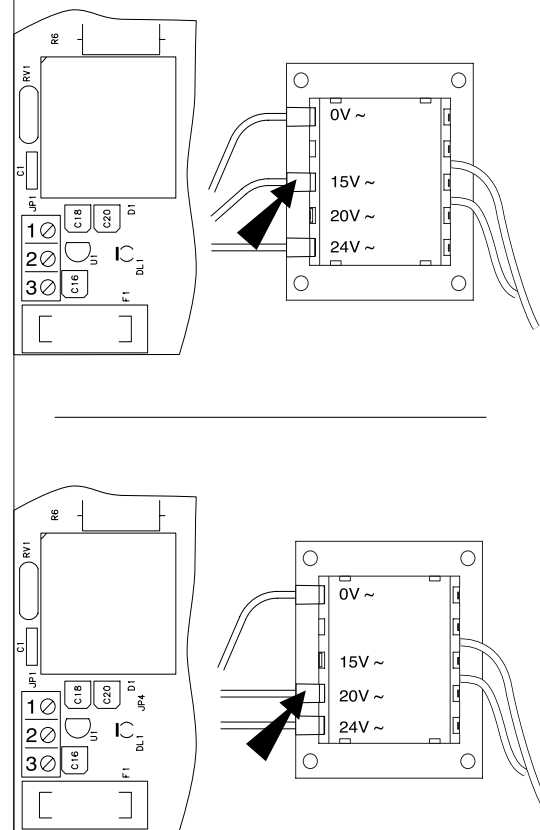


Fig. 21

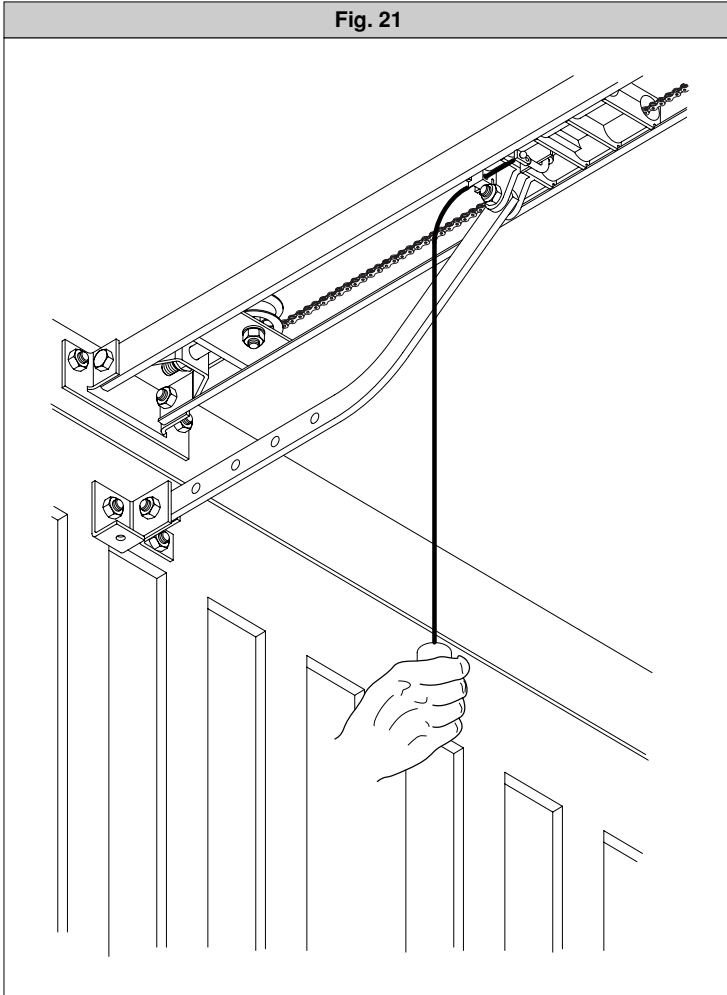


Fig. 22

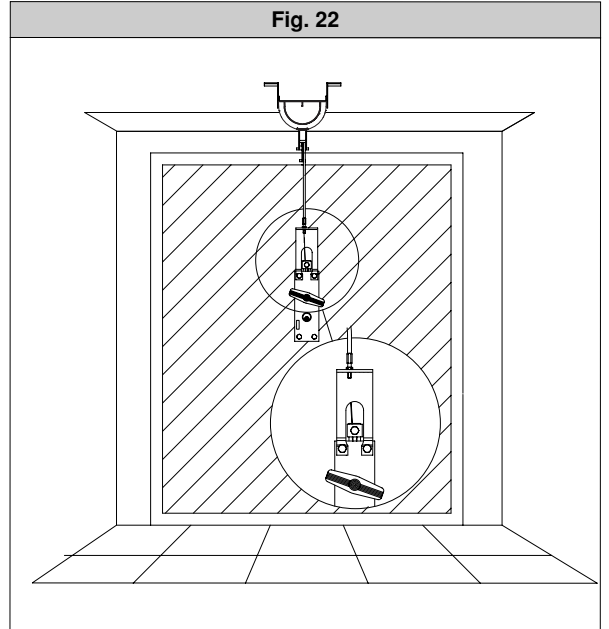


Fig. 24

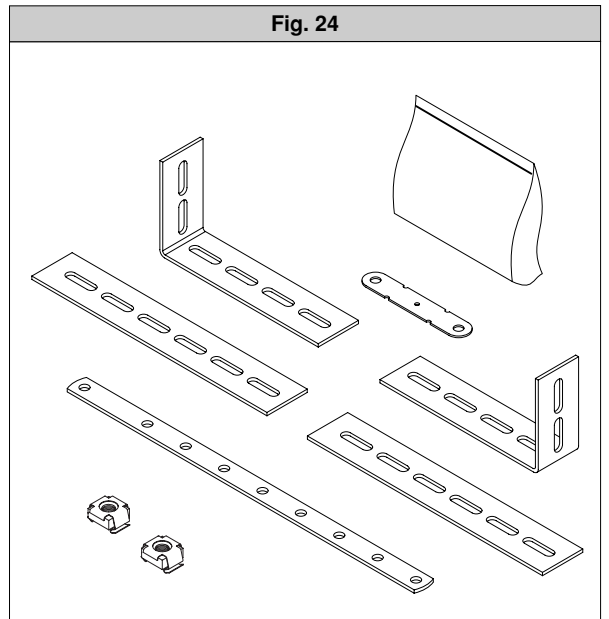


Fig. 23

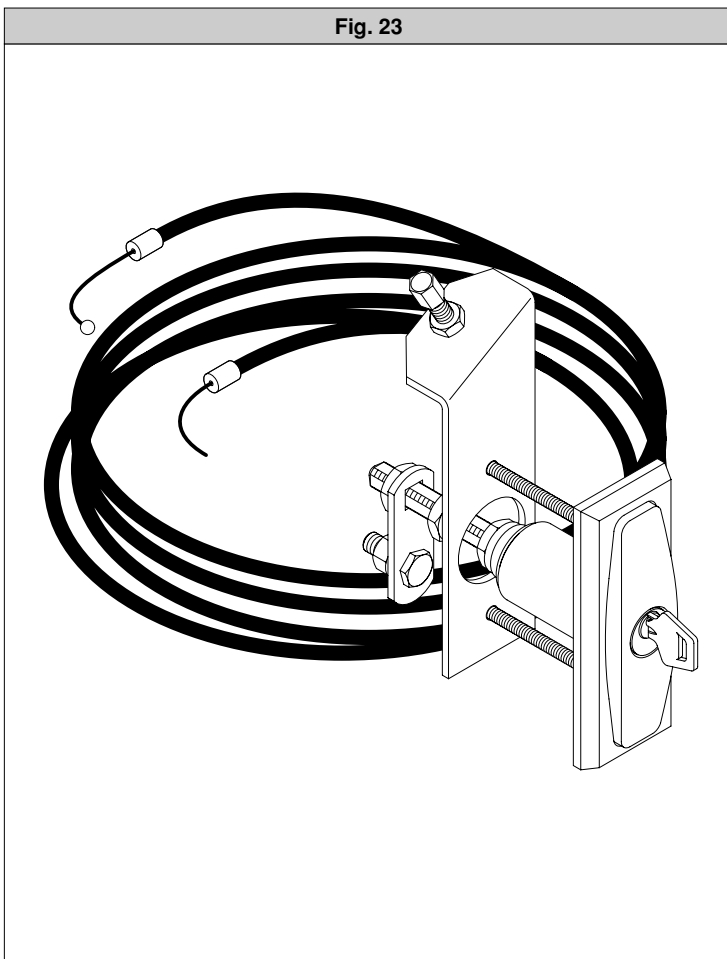


Fig. 25

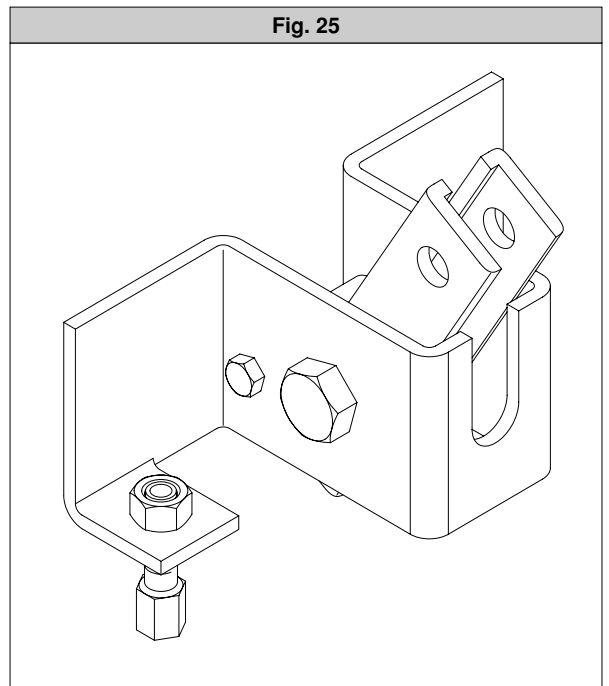


Fig. 26

