

TELEC

D811257 24-01-01 Vers. 04

AUTOMATION FOR SPRING OVERHEAD DOORS



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 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 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 **QTElec** system is compatible with the EELink protocol for fast installation and maintenance.

It is suitable for motorising sectional doors (fig.14), protruding fully retracting spring-operated overhead doors (fig.2) and counterweight overhead doors provided with an appropriate towing arm (fig.3). The overhead door must not be higher than 2.5 metres (3.5m with extension). It is easy to install and fast to fit and does not need the door to be modified. The irreversible gearmotor keeps the door locked in the closing position.

3) TECHNICAL SPECIFICATIONS**3.1) Actuator**

Power supply: 230V $\pm$ 10%, 50-60Hz Single-phase(*)
 Motor voltage: 24Vdc
 Max power absorbed from mains: 135W
 Absorption: 0.7A
 Lubrication: Permanent grease
 Towing and pushing force: 600N

Working stroke: 2.55m (extended to 3.5m in Mod.PT1)
 Average speed: 7.7m/min
 Impact reaction in closing: Ampere-stop (stop and reverse)
 Manoeuvres in 24 hours: 100
 Limit switches: Electrical and adjustable
 Courtesy light: 230V 25W max, ED14
 Working temperature: -15°C / +60°C
 Degree of protection: IP30
 Total weight: 12 kg
 Noise: <70dB(A)
 Dimensions: See fig.1
 (*) Available in all mains voltages.

3.2) QTELEC control unit (Fig.15)

Supply to accessories: 24Vac (1A max)
 Ampere-stop setting: On closing and opening
 Automatic closing time: From 2 to 120s
 Working time: From 1 to 60s
 Reverse pause: Approx. 1s
 Blinker connection: 230Vac max 40W
 Service light switching time: 90s
 Pre-alarm time: 3s
 Parameter and option setting: By means of LEDs and small keys
 Incorporated Rolling-Code radio receiver: Frequency 433.92MHz
 Coded by means of: Rolling-Code algorithm
 No. combinations: 4 milliard
 Impedance antenna: 50Ohm (RG58)
 Max no. of radio controls to be memorised: 64

3.3) Transmitter

Key colour: Red
 Power supply: 12V Alkaline battery
 Range: 50-100 metres
 Transmitter versions:
TRC1 - Single-channel, **TRC2** - Double-channel, **TRC4** - Four-channel.

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 being unpacked, the door opener looks as illustrated in fig.4. Remember to dispose of all the packing elements by separating the different types of material (cardboard, polystyrene, PVC etc.) according to the provisions set out by the current standards.

- Remove the existing locking bolt from the cremone bolt of the door.
- Position joint "G" as shown in fig.5.
- Position the half track as in fig.6, and lower it to the supporting surface while tensioning the chain and therefore obtaining a whole track.
- Fit the joint to overlap each of the two half tracks by half its length, as in fig.7.
- Secure the joint by tightening the appropriate screws supplied, as in fig.8. 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.9. 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.10.
- Fix the two supporting brackets to the ceiling, as in fig.11. Recheck everything and fix the two supporting brackets to the gearmotor base plate.
- Release the towing carriage (fig.12) 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.13, using the screws supplied.

5) ELECTRICAL INSTALLATION SET-UP (Fig.14)

- 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 (fig.15). When this operation is completed, the appliance is ready to work by means of a remote control.

5.1) Terminal board connections

The automation device is to be operated after all the safety devices have been connected and checked. See terminal board diagram in fig.15.

JP1

- 1-2 Motor connection (1 Green - 2 Brown)
- 3 Transformer connection 0Vac
- 4 Transformer connection 25Vac
- 5 Transformer connection 15Vac

JP3A Stop microswitch connector

JP3

- 11-12 Antenna connection (11 signal, 12 braid)
- 13-14 Supply to accessories 24Vac
- 15-16 Free contact (N.O.) to be used as Open Gate Warning light (24Vac max 3W) or 2nd radio channel. This option can be set from menu B, see paragraph on programming.

JP5

- 22-23 START button (N.O.)
- 22-24 STOP button (N.C.). If not used, leave bridged.
- 22-25 Electric edge photocell PHOT input (N.C.). If not used, leave bridged.

JP6

- 26-27 Courtesy light connection 230Vac max 25W
- 28-29 Transformer supply 230Vac
- 30-31 Single-phase supply 230Vac, 50/60Hz (30N-31L)
- 32-33 Blinker connection 230Vac max 40W

JP7 Slow-down microswitch connector.

6) MANUAL PROGRAMMING OF CONTROL UNIT

6.1) Tests

In order to facilitate the automation setup tests, to control the opening and closing manoeuvres, you can use the remote control or temporarily connect a button between the two terminals 22 and 23 (START).

6.2) Trimmer adjustment (Fig.15)

WARNING! Before any adjustment, close jumper J1.

Set the trimmers to the requested value considering that the set value is increased by turning the relevant trimmer clockwise.

WARNING! The values set using the trimmers must be stored in the memory.

This operation can be carried out in 2 different ways:

- a) Disconnect and then reconnect the power supply (reset) after any correction to the trimmer. After completing the adjustment, wait at least 5 seconds from system reset and open the J1 jumper.
- b) Enter "menu A" after adjusting the trimmers (press SW1-SW2 one time simultaneously). Check that the LED flash correspond to that of the "Menu A" (the Green LED flashes in a constant way). After each trimmer correction, enter "Menu A" to store the new value.

TCA) Dwell time after which the door is automatically closed. Can be set from 20 to 120 s.

AMPC) Sets the amperometric limit switch trigger current during the closing manoeuvre (antisquash sensitivity). When the limit switch is triggered, it stops the door and reverses the movement.

AMPO) Sets the amperometric limit switch trigger current during the opening manoeuvre. When the limit switch is triggered, it stops the door movement.

WARNING: Excessive value setting can jeopardise antisquash safety. Setting must be calibrated to the minimum value needed to carry out complete opening and closing strokes. In any case, the pushing force at the edge of the door must be within the limits provided for by the current standards.

TW) Sets the motor operation time, after which the motor stops. The value set must be slightly greater than the time needed to close the door. Can be set from 0 to 60s.

6.3) Setting of programmable parameters and functions

To program the required functions, follow the sequence described in the "PROGRAMMING" pages. These include a "LEGEND" which explains the types of signal indication provided by the green and red LEDs. For "Menu B", the on/off condition is specified in each individual function.

N.B. To enable function setting or modification, you must close jumper J1 (fig.15).

Programming is divided into three menus:

- A)** Radio control storage
- B)** Function logic setting
- C)** Memory cancellation

To gain access to each individual programming menu, simultaneously press keys SW1 and SW2 for a short time, as follows: once for menu A, twice for menu B and three times for menu C.

If you do not carry out any selection within a working time of 60 seconds after entering the programming mode, you will automatically exit programming. When setting is completed, set J1 to Off (open the jumper). To initialise the control unit with the required setting, disconnect the mains power supply for a few seconds, and then reconnect it.

6.4) Transmitter storage

See the "Menu A" diagram shown on the "PROGRAMMING" page.

6.5) Function logic setting

See the "Menu B" diagram shown on the "PROGRAMMING" page.

The red LED (DL1) condition (on/off) shows the function selected.

The value given within square brackets [] is the value predefined by the manufacturer. Here follows a detailed explanation of "Menu B" programmable functions:

Opening photocell [Red LED On]

Red DL1 on: when obscured, it excludes photocell operation on opening. Immediately reverses during the closing phase.

Red DL1 off: when obscured, the photocells remain active during both opening and closing. If the photocell is obscured during closing, it only reverses the movement after the photocell has been released.

Opening impulse blocking [Red LED Off]

Red DL1 on: the start impulse has no effect during the opening phase.

Red DL1 off: accepts start commands during opening.

Automatic closing [Red LED Off]

Red DL1 on: activates automatic closing after a dwell time set by trimmer TCA.

Red DL1 off: excludes automatic closing.

4 or 2 step logic [Red LED Off]

Red DL1 on: 2 step logic. A start impulse given while the gate is closing, causes the direction to reverse; during opening, it causes it to stop.

Red DL1 off: 4 step logic. A start impulse given while the gate is moving, causes it to stop; the subsequent impulse causes the direction to reverse.

N.B.: The start impulse during the opening phase has no effect when the opening impulse blocking is enabled (DL1 On).

Gate-open or 2nd radio channel warning light [Red LED On]

Red DL1 on: operation as gate-open warning light (see connection fig.15). This warning light is off when the gate is closed, blinks when it closing and stays on when the gate is open or being opened.

Red DL1 off: operation as 2nd radio channel (see connection fig.15).

Allows other devices to be controlled through the second radio channel of the receiver.

Pre-alarm [Red LED Off]

Red LED on: the blinker comes on 3 seconds before the motor starts.

Red LED off: the blinker comes on at the same time as the motor starts.

6.6) Cancellation storage

See the "Menu C" diagram shown on the "PROGRAMMING" page.

7) UNIPRO UNIVERSAL PROGRAMMER (See fig.25)

The **QTelec** control unit can be programmed by means of the **UNIPRO** programmer in the following modes:

- TRC series radio control programming
- Function logic programming (No Trimmer)
- Memory cancellation
- Parameter reading

Leave the **J1** jumper open. The **UNIPRO** connection only allows reading of those values set using the trimmers. Connect the **UNIPRO** programmer to the **TRC** transmitter by means of the **UNITRC** and **UNIFLAT** accessories supplied. Connect the **UNIPRO** programmer to the **QTelec** control unit by means of the **UNIDA** and **UNIFLAT** accessories supplied.

N.B.: The **QTelec** control unit cannot supply the **UNIPRO** programmer. For the programming procedure, refer to the appropriate **UNIPRO** instruction manual.

8) CHAIN TIGHTENER ADJUSTMENT

The automation device supplied is already calibrated and inspected.

Should the chain tension need to be adjusted, proceed as shown in fig.16.

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

compressed during operation.

9) LIMIT SWITCH ADJUSTMENT

The controller is provided with a limit switch adjustment unit which is supplied already adjusted for the maximum stroke available.

The limit switch unit has 2 microswitches for each direction: the first to be intercepted activated slow-down operation, the second to be intercepted stops the controller. **WARNING: Before carrying out any adjustment operation, disconnect the power supply from the system.**

Each time the system is disconnected from the power supply, the electronics is reset. When the system is supplied with power, the first starting command always activates the opening manoeuvre.

To set the opening and closing microswitches, proceed as follows:

- If the towing carriage is in the manual release position, bring it over to the chain coupling by manually moving the door until it is hooked, and supply the system with power.
- Press START: the first command always activated the opening manoeuvre. Press START to stop the door when it is fully open. To set the stroke limit, lift the retaining spring away from the cam teeth by means of a screwdriver (fig.17), turn the opening cam in the direction of the "OPEN" microswitches until you hear the first and second limit switches click. Lower the spring until one of the cam teeth is engaged.
- Supply the system with power and press START to activate the closing manoeuvre. Press START when the door is fully closed. Lift the retaining spring away from the cam teeth by means of a screwdriver (fig.18), turn the closing cam in the direction of the "CLOSE" microswitches until you hear both the limit switches click. Lower the spring until one of the cam teeth is engaged.
- Supply the system with power and check that the door slows down and stops in both directions. Check that the opening and closing stop actions do not require excessive towing or compression force.
- Repeat the complete opening and closing manoeuvres a few times to check that the limit microswitches operate correctly. If necessary, readjust the cam position.
- The retaining spring must always be engaged in the cam toothing to keep the cams into position.
- Refit the cover on the controller.

10) 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 3 to terminal 4, as in fig.19.

11) 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.12. For garages which are not provided with a second exit, it is compulsory to fit an external key release device like Mod. **SM1** (fig.20) or Mod. **SET/S** (fig.21).

12) 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 pushing force (antisquash) of the door is within the limits provided for by the current standards.
- 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.

13) 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.

14) 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.

15) MAINTENANCE

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

- Periodically check chain tensioning (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.

16) ACCESSORIES

SM1 External release device to be applied to the cremone bolt already fitted to the overhead door (fig.20).

SET/S External release device with retracting handle for sectional doors measuring max 50mm (fig.21).

PT1 1-metre extension for doors measuring up to 3.50m (fig.22).

APT Extension and bracket accessories used to fit the product away from the door or close to the ceiling (fig.23).

ST Automatic bolt release device for spring-operated overhead doors. Fitted to the control arm, it automatically releases the side door bolts (fig.24).

17) SCRAPPING

Warning! This operation should only be carried out by qualified personnel.

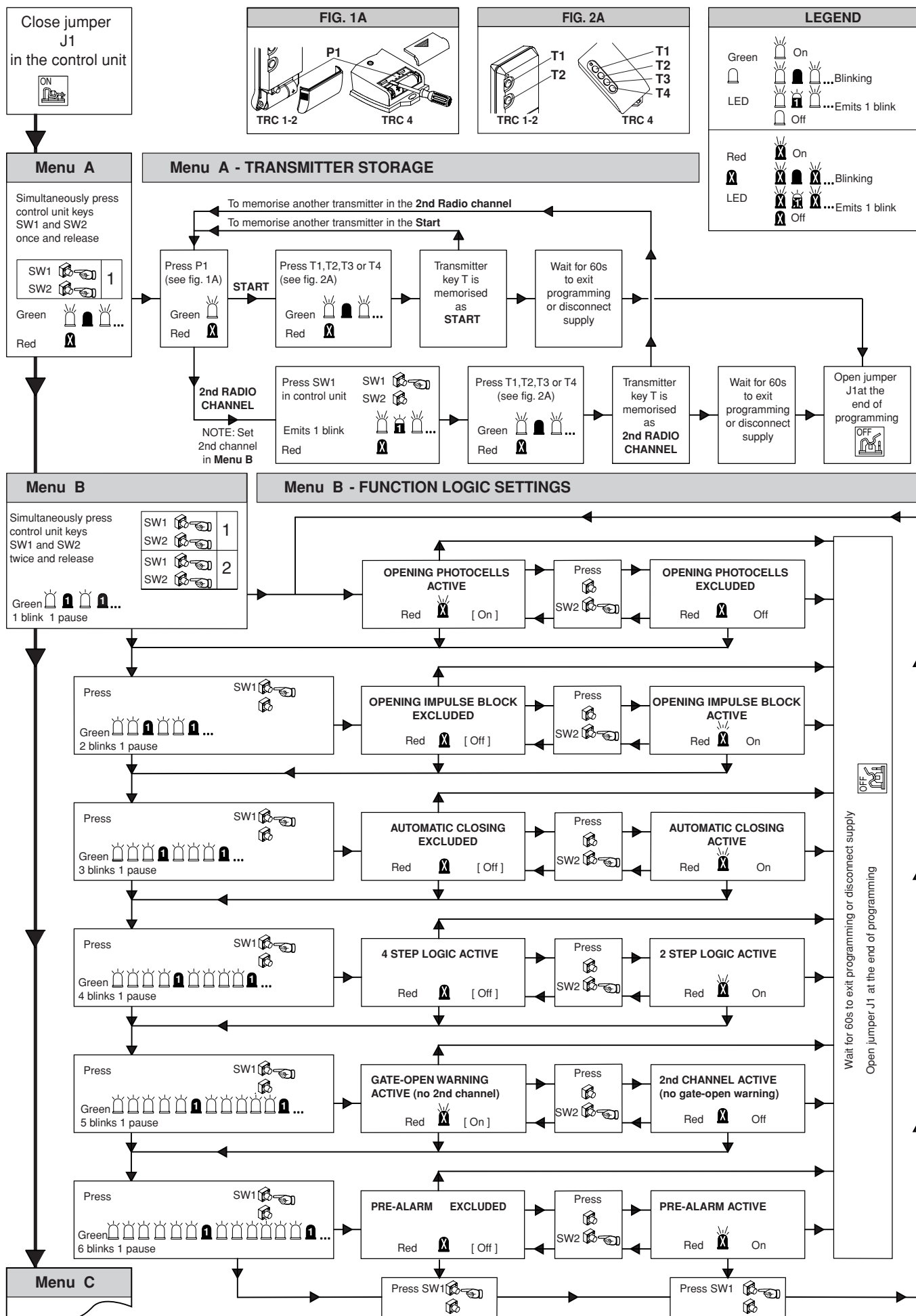
Materials must be disposed of in conformity with the current regulations. In case of scrapping, the automation devices do not entail any particular risks or danger. In case of materials to be recycled, these should be sorted out by type (electrical components, copper, aluminium, plastic etc.).

18) 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.



PROGRAMMING

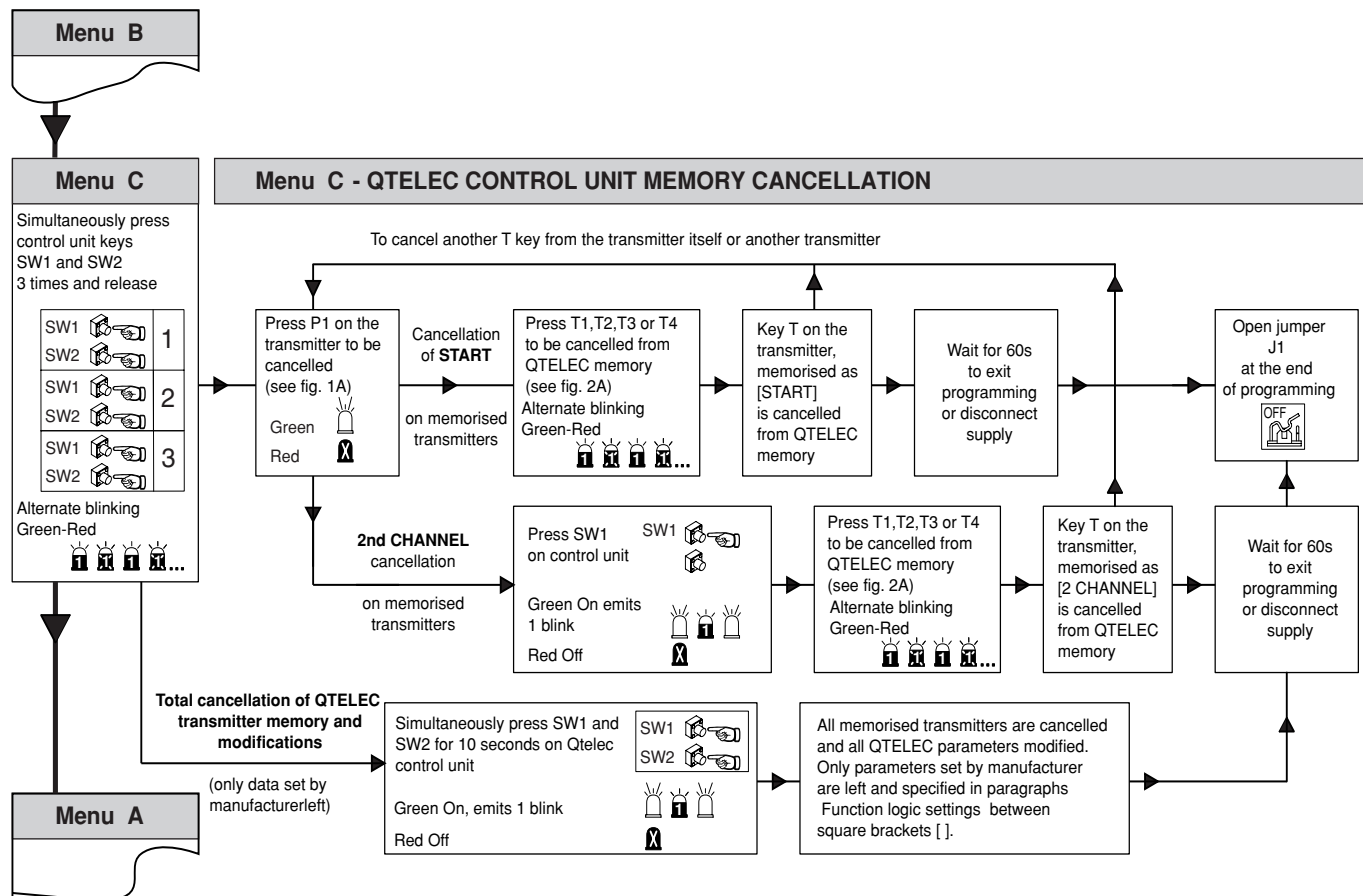


Fig. 1

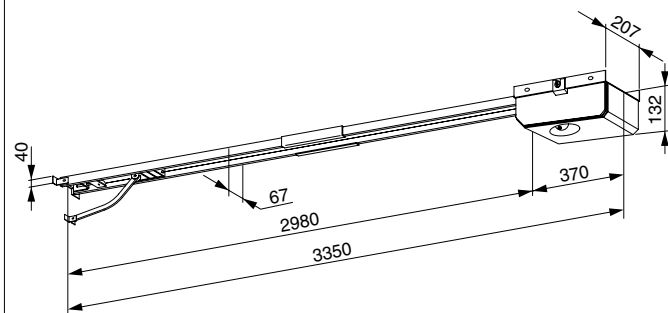


Fig. 2

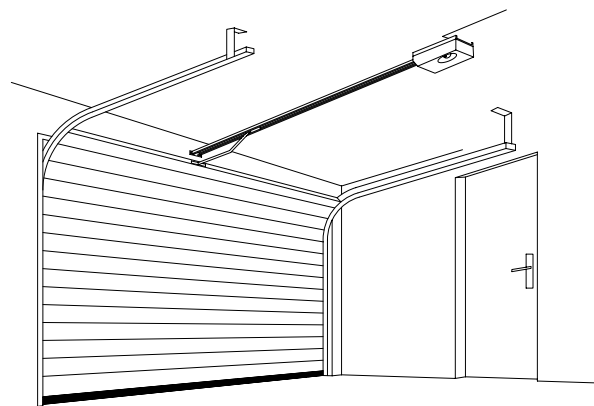


Fig. 3

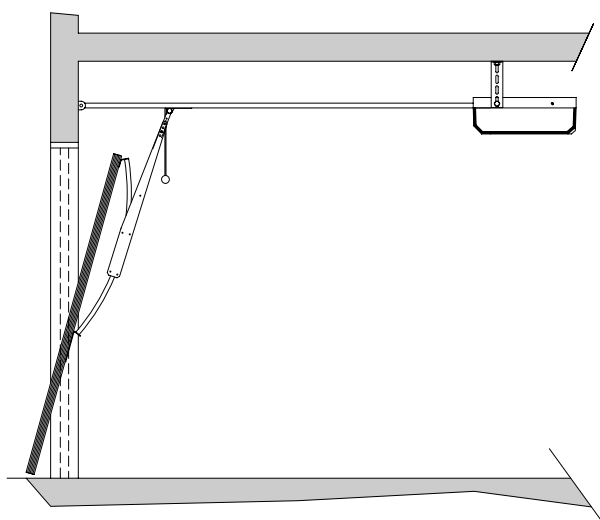


Fig. 6



Fig. 4

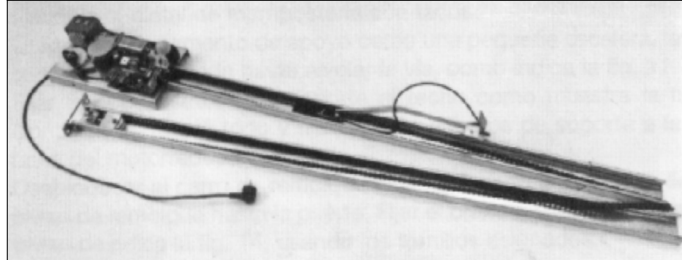


Fig. 5



Fig. 7

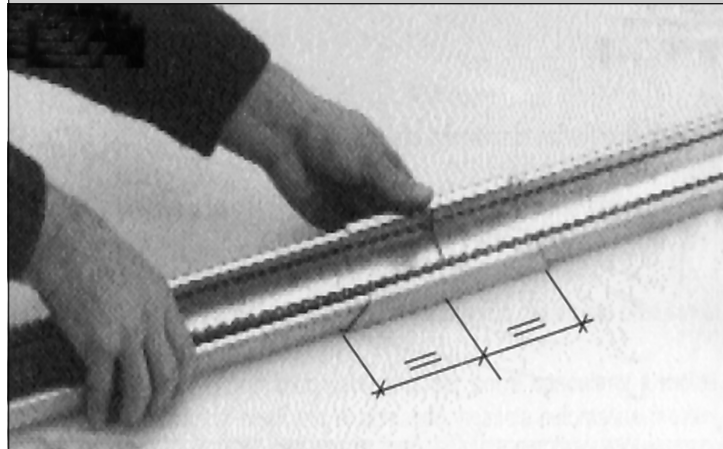


Fig. 8

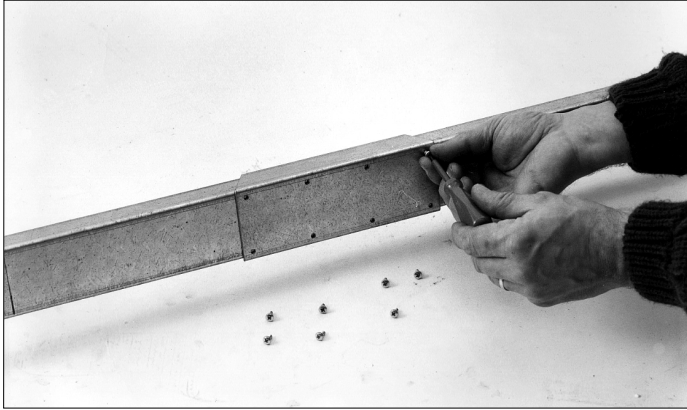


Fig. 9



Fig. 10

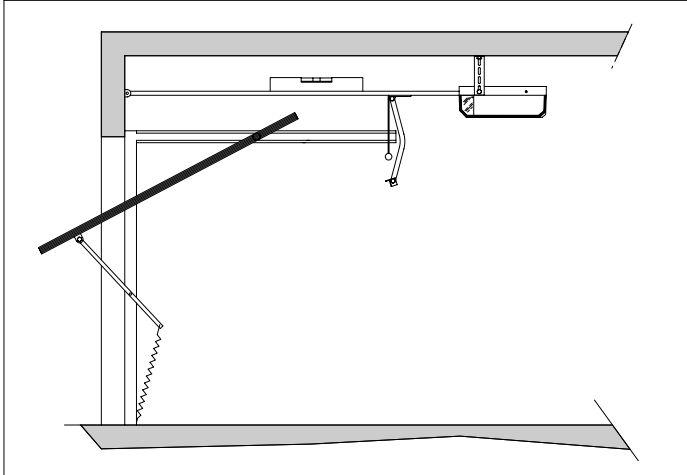


Fig. 11

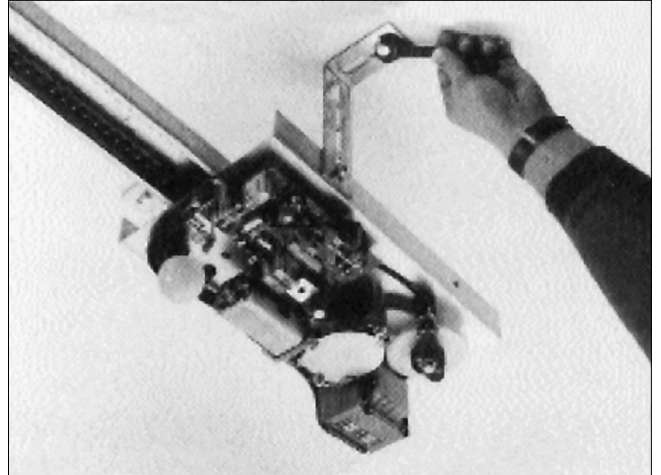


Fig. 12

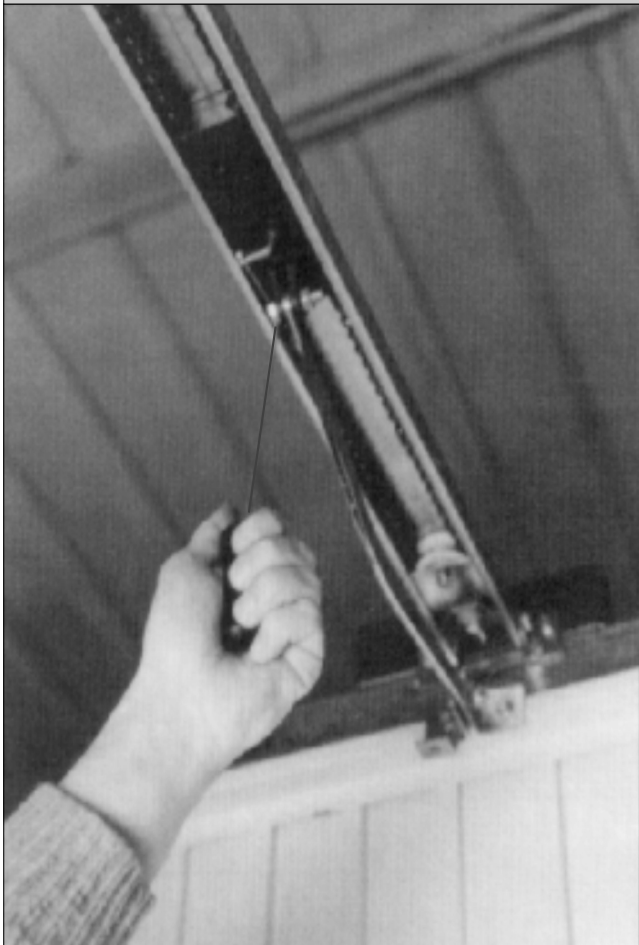


Fig. 13



Fig. 14

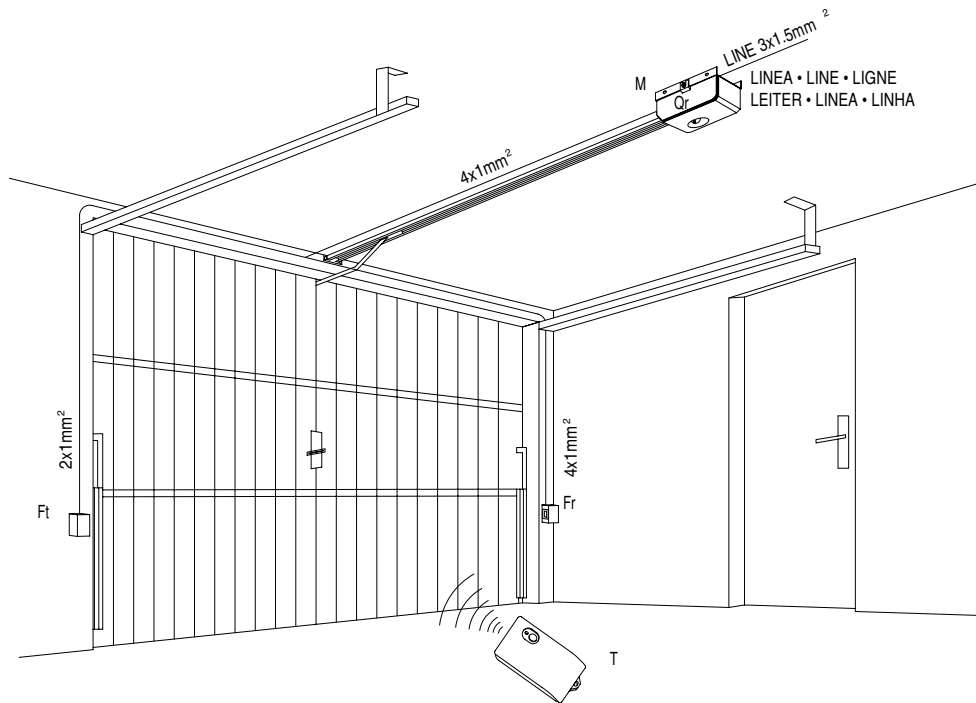


Fig. 15

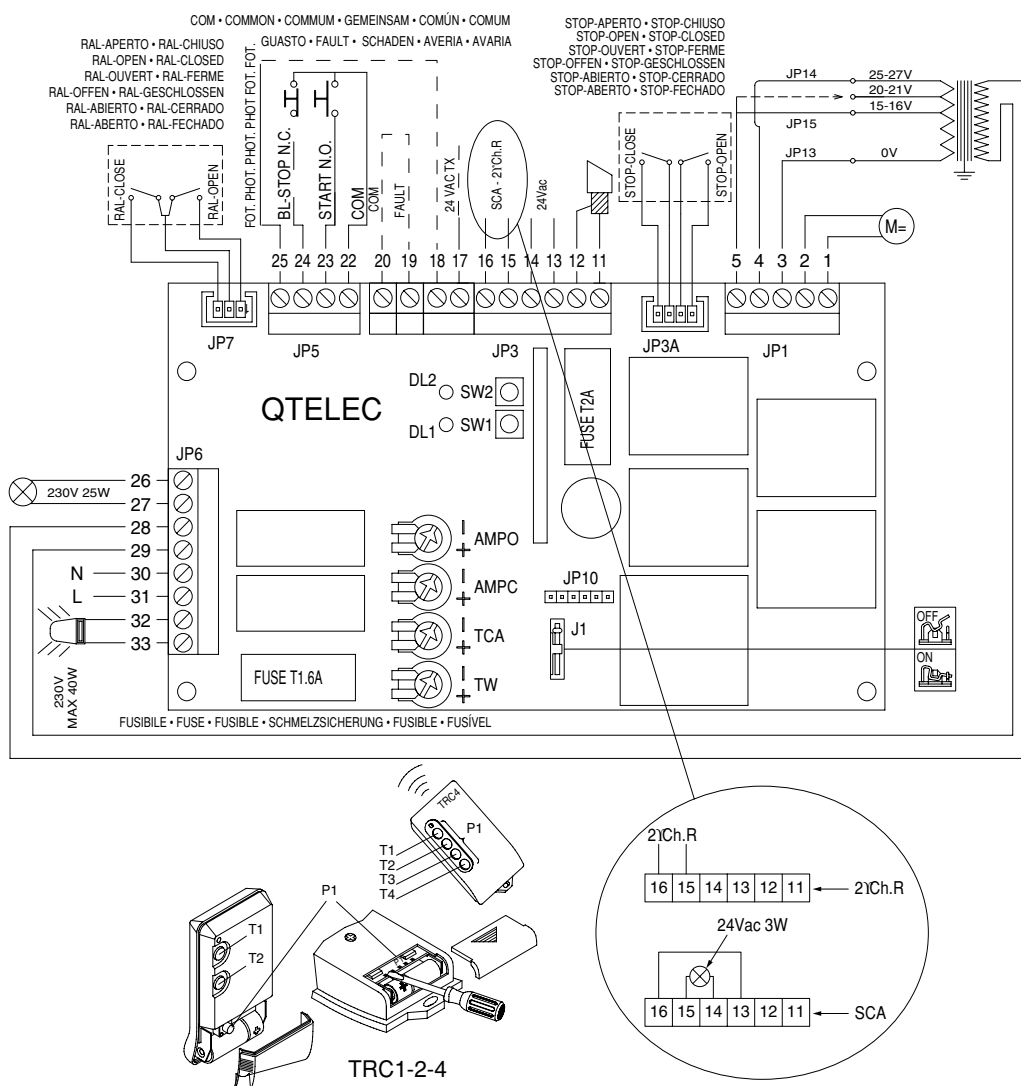
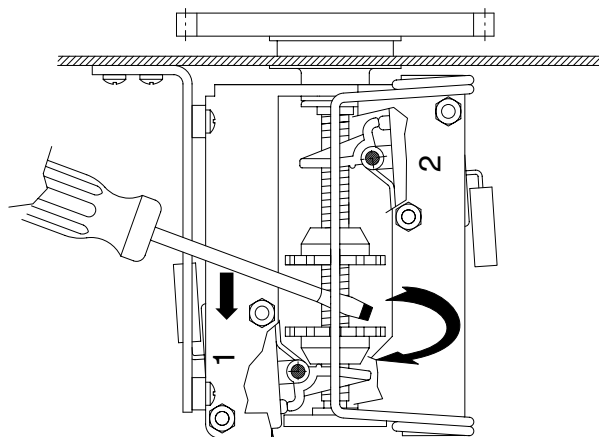


Fig. 16



Fig. 17



1APERTO • 2CHIUSO
1OPEN • 2CLOSED
1OUVERT • 2FERME
1OFFEN • 2GESCHLOSSEN
1ABIERTO • 2CERRADO
1ABERTO • 2FECHADO

Fig. 19

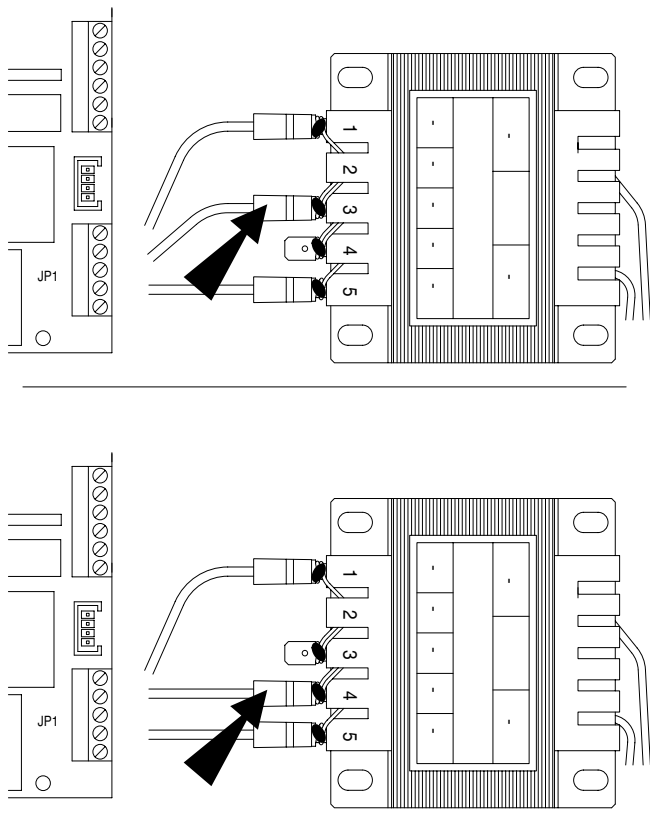
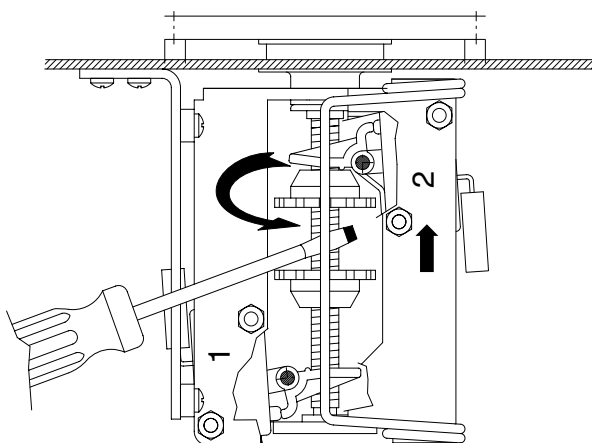


Fig. 18



1APERTO • 2CHIUSO
1OPEN • 2CLOSED
1OUVERT • 2FERME
1OFFEN • 2GESCHLOSSEN
1ABIERTO • 2CERRADO
1ABERTO • 2FECHADO

Fig. 20

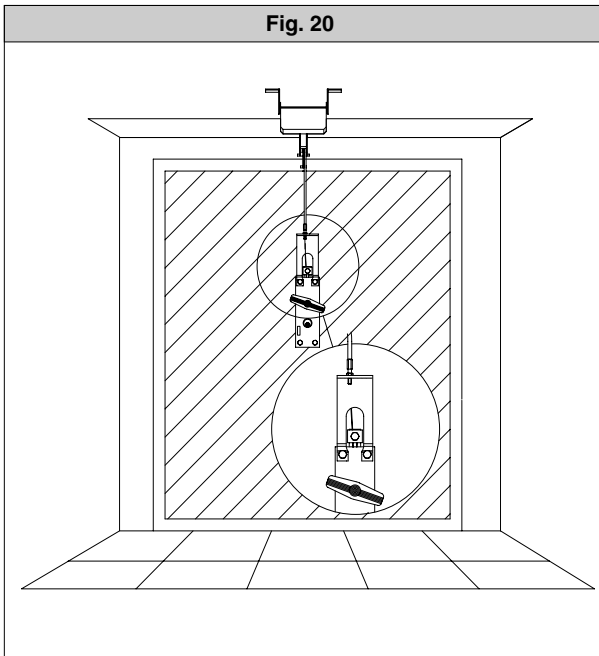


Fig. 21

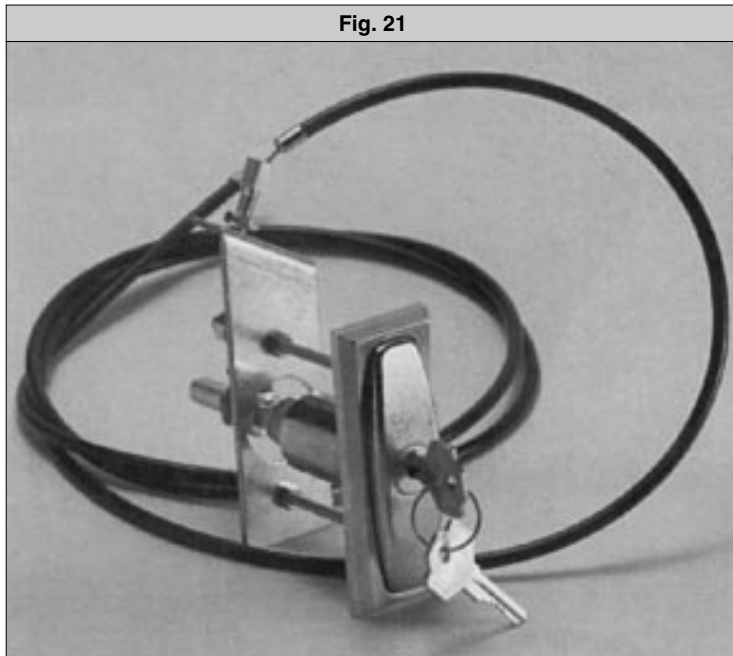


Fig. 22

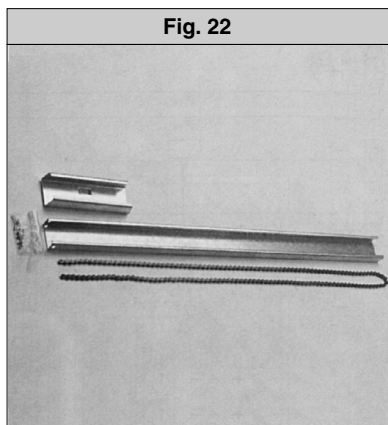


Fig. 23

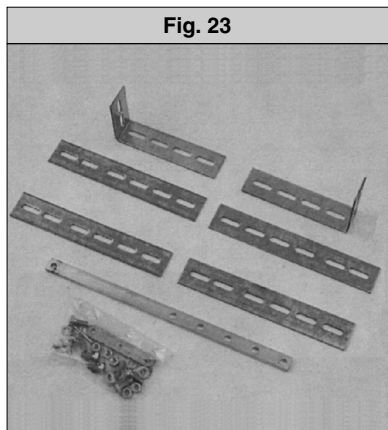


Fig. 24

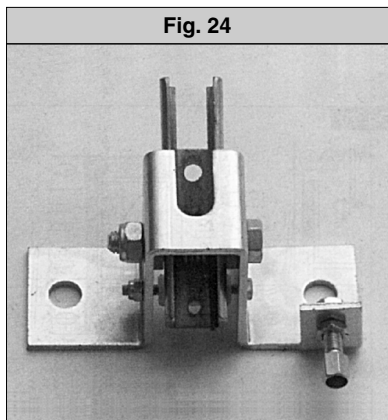


Fig. 25

