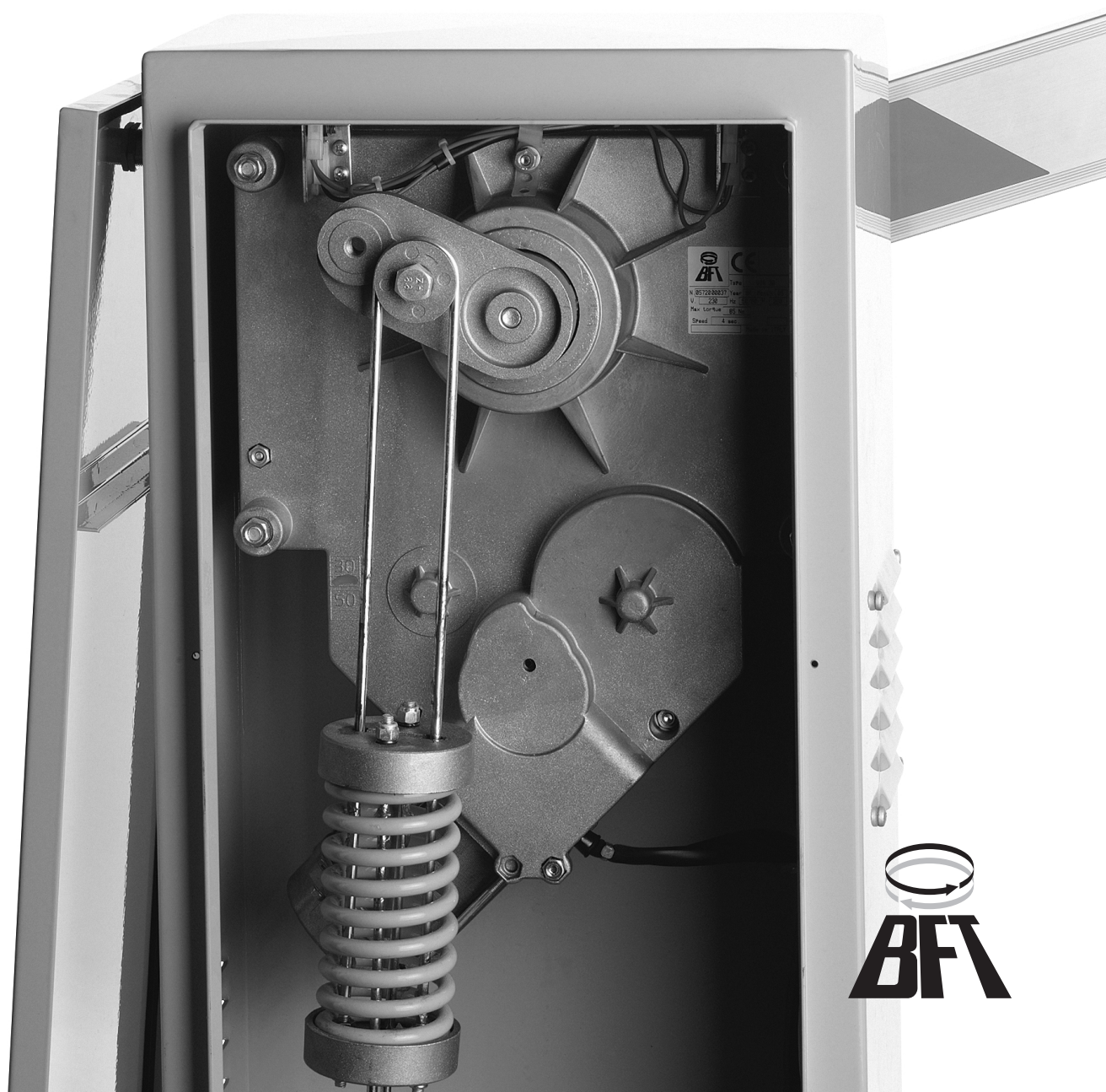


AUTOMATION FOR ROAD BARRIERS



Thank you for buying this product. Our company is sure that you will be more than satisfied with the performance of the product.

This product is supplied with a “**WARNINGS**” leaflet and an “**INSTRUCTION MANUAL**”. These should both be read carefully as they provide important information about safety, installation, operation and maintenance.

This product complies with 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 (amended by RL 91/263/EEC, 92/31/EEC and 93/68/EEC).

1) GENERAL OUTLINE

Compact electromechanical barrier suitable for enclosing private areas, parking spaces and accesses. Available for 3 to 5-metre passageways. The adjustable electromechanical limiting devices guarantee the correct stop position of the bar. In case of intensive use, a thermal sensor activates the cooling fan. The manual manoeuvre emergency release is controlled by a personalised key lock. The bar can be provided with accessories such as fence, signal lights, electric edge and suspended rest. The barrier, which is supplied as pre-assembled for a left-hand actuator (looking from the door side), can be easily made suitable for a right-hand actuator by means of simple operations described later. The CBO mod. foundation base (available on request) facilitates the installation of the barrier.

2) TECHNICAL SPECIFICATIONS

Power supply	:230V±10% 50Hz (*)	
Absorbed power	:300W	
Motor	:1400 min ⁻¹ , 4 poles	
Capacitor	:8µF 450V (230V)	:32µF 250V (110V)
Absorption	:1,4 A (230V)	:2,8 A (110V)
Insulation class	:F	
Ventilation intv.temp.	:110°C (winding)	
Circuit-breaker intv.temp.	:130°C (self-resetting)	
Reduction gear lubrication	:Permanent grease	
Max torque	:VIR30 85Nm	:VIR50 250Nm
Opening time	:VIR30 4s	:VIR50 8s
(Aluminium) bar length	:VIR30 3m max	:VIR50 5m max.
Impact reaction (electric edge)	:Stop or stop and reverse	
Limiting devices	:Electric, incorporated and adjustable	
Standard control unit	:MIZAR-BOM Mod.	
Control unit on request	:RIGEL4 Mod.(separate opn-clc control)	
Manual manoeuvre	:Quick key release	
No. manoeuvres in 24 hour	:1200 (VIR30)	:600 (VIR50)
Working temperature	: -10 ÷ +55°C	
Degree of protection	:IP24	
Actuator weight (without bar)	:356N (~ 35.6 kg)	
Cover treatment	:Cataphoresis	
Cover painting	:Polyester	
Dimensions	:See fig. 1	
(*) Special power voltages available on request.		

3) ACCESSORIES

- Foundation base
- Fixed fork for bar rest
- Moveable rod for bar rest (VIR50 only)
- Fence pre-assembled to the bar (VIR50 only, obtained by shortening the nominal bar length by 1 metre)
- Electric edge (obtained by shortening the nominal bar length by 1 metre)
- Signal blinkers pre-assembled to the bar.

4) FOUNDATION PLATE (fig. 2)

- Prepare a foundation hole suitable for the particular kind of ground.
- Layout several raceways for the electric cables to pass through.
- Position the screws supplied with the CBO mod. base into the 4 fixing holes with the thread facing upwards. Weld the 4 screw heads to the base and protect the welds with rust preventer. Position the base so that it protrudes about 20mm from the floor (fig. 2).
- Fill the hole with concrete, checking the position of the base in both directions by means of a level, and let the cement harden.

5) FITTING OF THE ACTUATOR

The door of the box must face the inside of the property. When standing in the middle of the passageway, if the box is on the left the barrier opens to the left, and if the box is on the right the barrier opens to the right.

WARNING! The lever (fig. 3/ref. 6) is provided with two fixing points for the bar balancing device, as shown in fig. 3, which are intended for VIR30 and VIR50 models respectively.

5.1) Left-hand side fitting

- The actuator is always supplied for left-hand side fitting.
- Fix the actuator to the foundation base and lock it in position using M12

nuts (fig. 3/ref. 1). The door of the box must be facing the inside of the property.

- Fit the bar in the opening position (vertical) as shown in fig. 3/ref. 7. The actuator balancing is pre-calibrated for the nominal bar in the opening position (stretched balancing spring).
- Balance the bar as described in the relevant paragraph 6.

5.2) Right-hand side fitting

Some internal members need to be moved, with reference to fig. 4 and the following procedure:

- Fix the box to the foundation base and lock it in position using M12 nuts.
- Ensure that the balancing spring is in the opening position (stretched spring - fig. 5).
- Completely slacken the spring stretcher (fig. 4/ref. 2) until the screw (fig. 4/ref. 3) anchoring it to the bottom of the box can be removed.
- Remove the bar locking bracket (fig. 4/ref. 4) and slacken the screw (fig. 4/ref. 5) by means of a CH19 socket spanner until the lever can be rotated (fig. 4/ref. 6).
- Rotate the lever (fig. 4/ref. 6) by 180° and fasten it into the correct position.
- Tighten the tie rod (fig. 4/ref. 5) blocking the lever (fig. 4/ref. 6) by means of a torque wrench set at about 80 Nm.
- Bring the release key (fig. 6) to the manual operation position and manually rotate the lever (fig. 4/ref. 6) downwards by 90° (fig. 7) so as to bring the barrier to the right-hand opening position.
- Lock the spring stretcher (fig. 4/ref. 2) into position (fig. 4/ref. Dx) with the screw and self-locking nut.
- Adjust the spring stretcher (fig. 4/ref. 2) until the spring comes under tension.
- Refit and partially fix the U bolt (fig. 4/ref. 4) holding the bar to the actuator in the opening position.
- Fit the bar (fig. 4/ref. 7) in the opening position (vertical). The bar must be fixed onto the reinforced side, which can be recognised by the label.
- Carry out bar balancing as described in paragraph 6.
- Invert the limit switch connections and the motor drive connections inside the control unit (fig.15-16), with reference to the instructions regarding the existing control unit. Fig. 8 shows a diagram highlighting the connections to be inverted.

5.3) Fitting of the metal mass detector device

A DIN bar, which allows the DIN module to be connected, is fitted to the versions suitable for the use of a mass detector. The control unit must include the separate Open-Close control. For connection, refer to the relevant instruction manual. In the case where the bar balancing device hinders the adjustment of this device (left-hand barrier), remove it from its socket, carry out the adjustment and then re-position it.

6) BAR BALANCING (fig. 9)

- Activate the emergency release (fig. 14).
- Position the bar at about 45° (fig. 9). The bar must remain still.
- If the bar tends to open, unload the spring by operating on the “T” tie rod.
- If the bar tends to close, load the spring by operating on the “T” tie rod.
- In both cases, load or unload the spring until the bar remains still at about 45°.
- Reset the motorised operation by rotating the release key to the opposite direction (fig. 14).

WARNING! During the closing operation, the balancing spring must never be reduced to a pack (be totally compressed). Fig. 9 indicates the position where the minimum value of the compressed spring is measured with the rod in the opening (vertical bar) position.

7) ELECTRICAL INSTALLATION SET-UP

Set up the electrical installation (fig. 10) with reference to the current regulations for electrical installations CEI64-8, IEC364, in conformity with HD384 and other national standards. Keep the mains power supply connections definitely separate from the service connections (photocells, electric edges, control devices etc.).

WARNING! For connection to the mains, use a multipolar cable having a 3x1mm² minimum section and complying with the previously mentioned regulations (e.g.: a H05VV-F cable with 3x1mm² section).

Connect the control and safety devices in conformity with the previously mentioned installation standards.

Fig. 10 shows the number of connections and section for a 100m length of power supply cables; for greater lengths, calculate the section for the true automation load. When the auxiliary connections exceed 50-metre lengths or go through critical disturbance areas, it is recommended to decouple the control and safety devices by means of suitable relays.

The main automation components are (fig. 10):

- Type-approved adequately rated omnipolar circuit-breaker with at least 3mm contact opening, provided with protection against overloads and short circuits, suitable for cutting out automation from the mains. If not already installed, put a type-approved differential switch with a 0,03A

	threshold in the circuit just before the automation system.
QR)	Control panel and incorporated receiver
S)	Key selector
AL)	Blinker with tuned antenna
M)	Actuators
A)	Bar
F)	Rest fork
CS)	Electric edge
CC)	Edge control
Ft,Fr)	Pair of photocells
CF)	Photocell post
T)	1-2-4 channel transmitter
RMM)	Inductive metal mass detector
LOOP)	Mass detector loops

8) TERMINAL BOARD CONNECTIONS

First pass the appropriate electric cables through the raceways and fix the various automation components to the chosen points, then connect them following the directions and diagrams contained in the control unit instruction manual.

Carry out phase, neutral and (compulsory) earth connections. The protection wire (earth) with yellow/green insulating sheath must be connected to the appropriate terminals marked by their symbol $\oplus$.

It is absolutely necessary to avoid operating the automation system without adequate protection. This can jeopardise personal and product safety. In no circumstances must the automation system be activated before carrying out all connections and checking the efficiency of all safety devices.

9) LIMIT SWITCH SETTING

The barrier is provided with electrical limit switches and end-of-stroke mechanical stop devices. There must be a rotation margin (about 1°) on closing and opening between the electrical limit switches and mechanical stop devices (fig. 11).

The adjustment is carried out as follows:

- Activate the manual release, bring the bar to its completely open position (perfectly vertical).
- Manually advance the bar by about 2° with respect to the vertical position.
- Set the opening microswitch (fig. 12 ref. SWO) by loosening the dowel (fig. 13 ref. G) and moving the cam (fig. 13 ref. C) until the microswitch trip is heard (or checking that the respective control unit LED switches off).
- Manually bring the bar to its completely closed position resting onto the fork (fig. 11 ref. F). Check that the bar is perfectly horizontal using a level (fig. 11 ref. L).
- Set the closing microswitch (fig. 12 ref. SWC) by loosening the dowel (fig. 13 ref. G) and moving the cam (fig. 13 ref. C) until the microswitch trip is heard (or check that the respective control unit LED switches off).
- Set the closing microswitch (fig. 12 ref. SWC) so that the bar stops a few millimeters before hitting the fork (fig. 11 ref. F).
- Activate the motorised operation and run a few cycles.
- Check that the electrical limit switch stops the bar before it reaches its vertical open position.
- Check that the electrical limit switch stops the bar before it reaches its horizontal closed position on the "F" fork.
- If necessary, adjust the position of the "C" cams (fig. 13) which control the end-of-stroke devices.

10) EMERGENCY RELEASE (fig. 14)

The emergency release allows the bar to be manoeuvred manually.

It is activated from the outside of the box by inserting the personalised key into the lock placed under the bar and rotating it anticlockwise by 180°.

WARNING! When an actuator without bar needs to be released, ensure that the balancing spring is not compressed (bar in the opening position).

11) USE OF AUTOMATION

As automation can be remotely controlled and therefore not within sight, it is essential to frequently check that all safety devices are perfectly efficient.

WARNING! In case of any malfunction in the safety devices, take immediate action and require the assistance of a specialised technician. It is recommended to keep children at a safe distance from the automation field of action.

12) CONTROL

The automation system is used to obtain motorised access control. There are different types of control (manual, remote, magnetic badge, mass detector etc.) depending on the installation requirements and characteristics. For the various control systems, see the relevant instructions.

13) MAINTENANCE

WARNING! Before carrying out any maintenance to the installation,

disconnect the mains power supply.

If the following

The following points, if presents, needs checking and maintenance:

- Photocell optics. Clean occasionally.
- Electric edge. Carry out a periodical manual check to ensure that the edge stops the bar in case of obstacles.
- Dismantle the gearmotor and replace the lubricating grease every two years.
- When any operational malfunction is found, and not resolved, disconnect the mains power supply and require the assistance of a specialised technician (installer). When automation is out of order, activate the emergency release (see paragraph "10") so as to release the manual bar opening and closing operations.

14) SCRAPPING

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 recovered materials, these should be sorted out by type (electrical components, copper, aluminium, plastic etc.).

15) DISMANTLING

When the automation system is disassembled to be reassembled on another site, proceed as follows:

- Disconnect the power supply and the entire electrical installation.
- Remove the actuator from its fixing base.
- Disassemble all the installation components.
- In the case where some of the components cannot be removed or are damaged, they must be replaced.

16) MALFUNCTION: CAUSES and REMEDIES

16.1) The bar does not open. The motor does not turn.

- 1) Check that the photocells are not dirty, or engaged, or not aligned. Proceed accordingly. Check the electric edge.
- 2) If the engine is overheated, the thermal protection might have been activated. Wait for it to be reset.
- 3) Check the correct connection of the drive motor and capacitor.
- 4) Check that the electronic appliance is correctly supplied. Check the integrity of the fuses.
- 5) Check that the functions are correct by means of the control unit diagnosing LEDs (see relevant instructions). Identify causes for faults, if any. If the LEDs show persisting start control, check that no radio controls, start buttons or other control devices keep the start contact activated (closed).
- 6) If the control unit does not work, it must be replaced.

16.2) The bar does not open. The motor turns but there is no movement.

- 1) The manual release was left engaged. Reset the motorised operation.
- 2) If the release is in the motorised operation position, check the gearmotor for integrity.

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.

VIR 30-50

FIG. 1

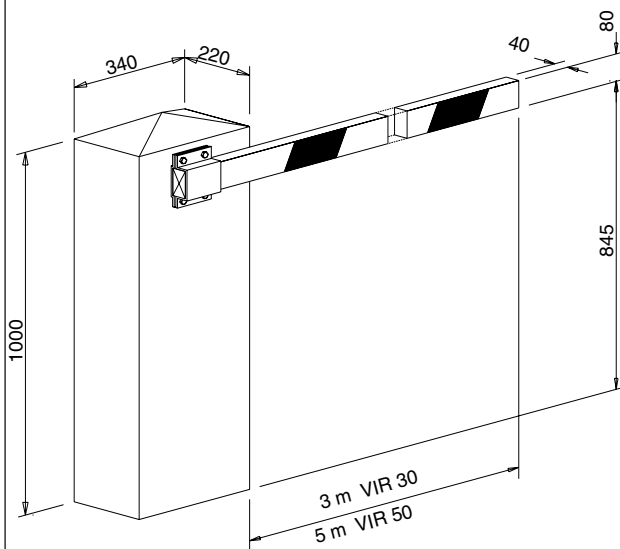


FIG. 2

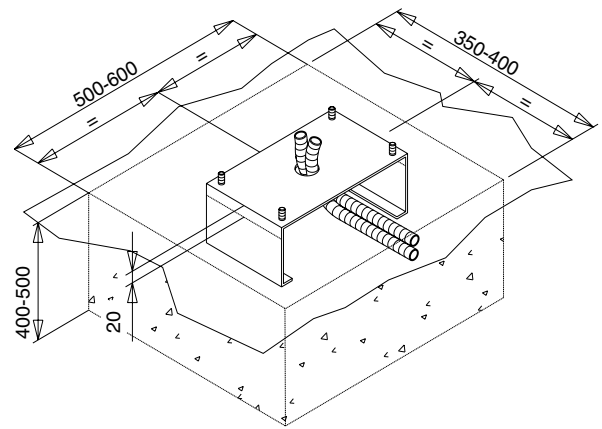


FIG.3

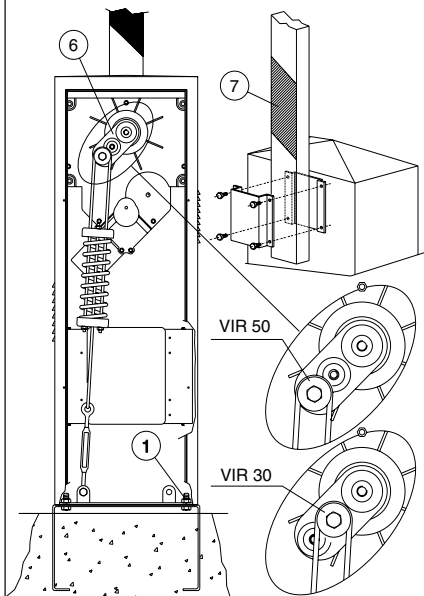


FIG.4

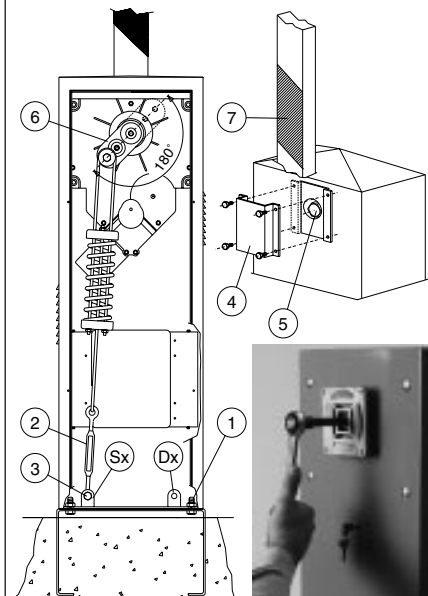


FIG.5



FIG.6



FIG.7

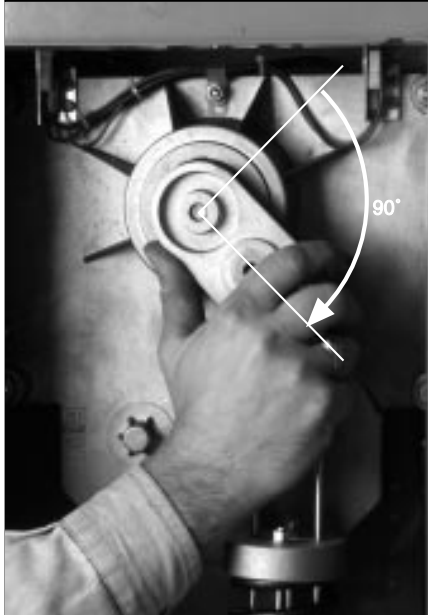


FIG. 8

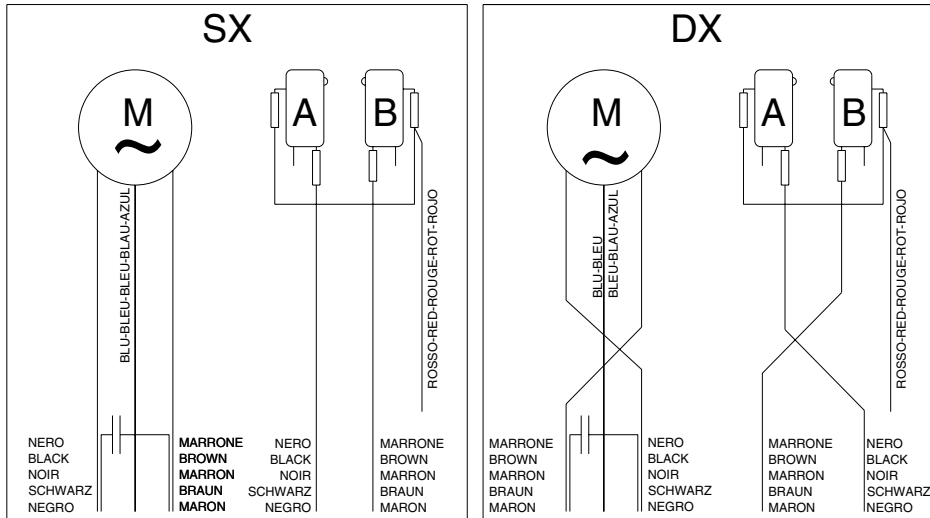


FIG. 9

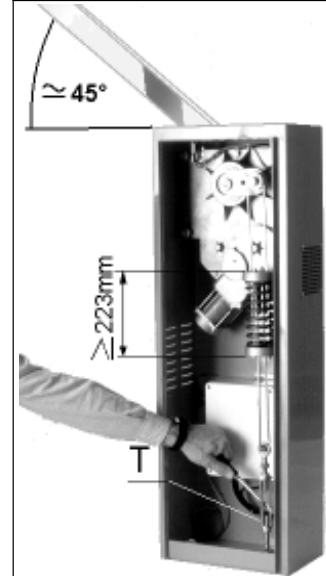


FIG.10

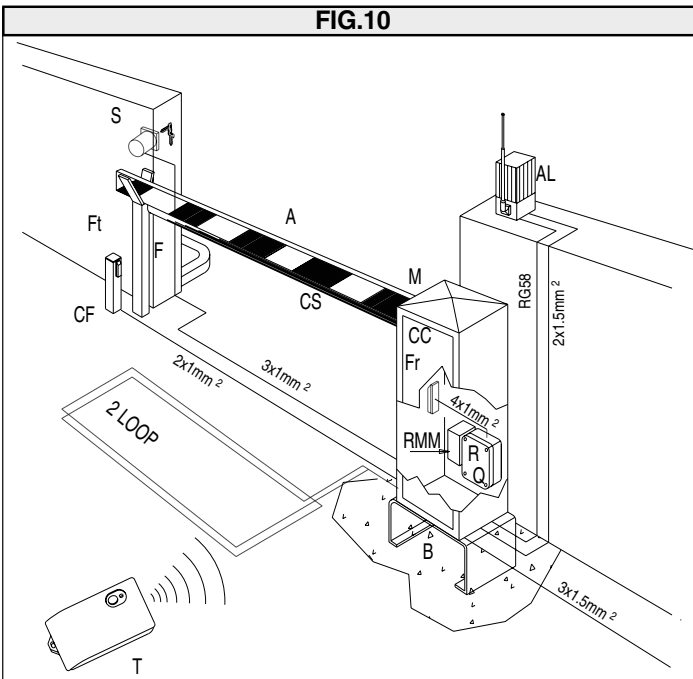


FIG.11

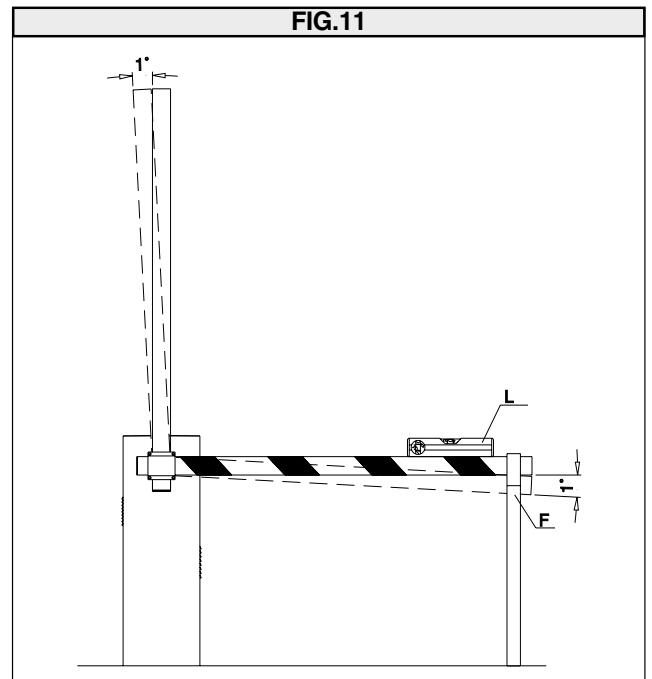


FIG.12

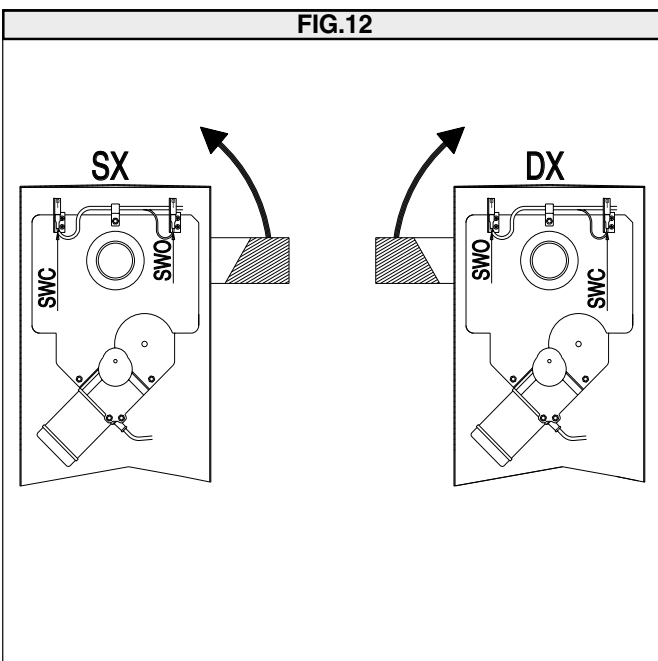


FIG. 13

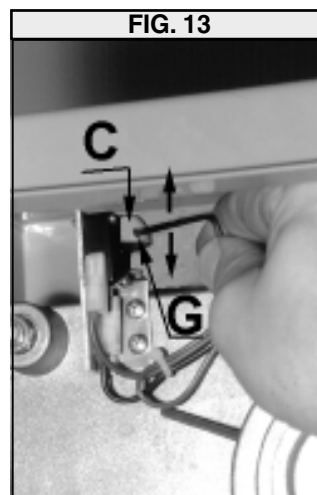


FIG. 14



FIG.15

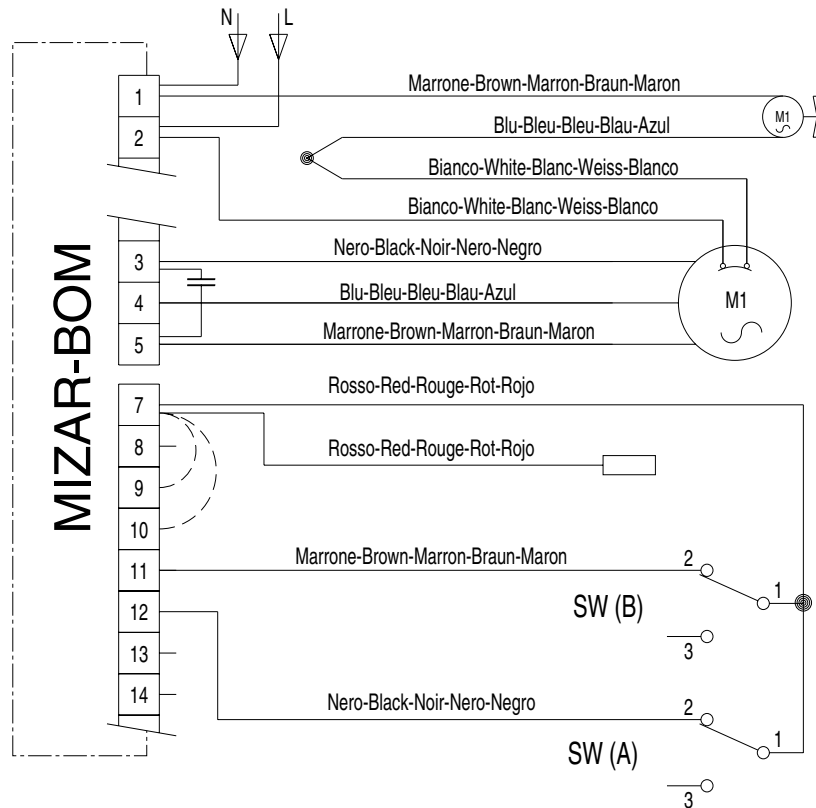


FIG.16

