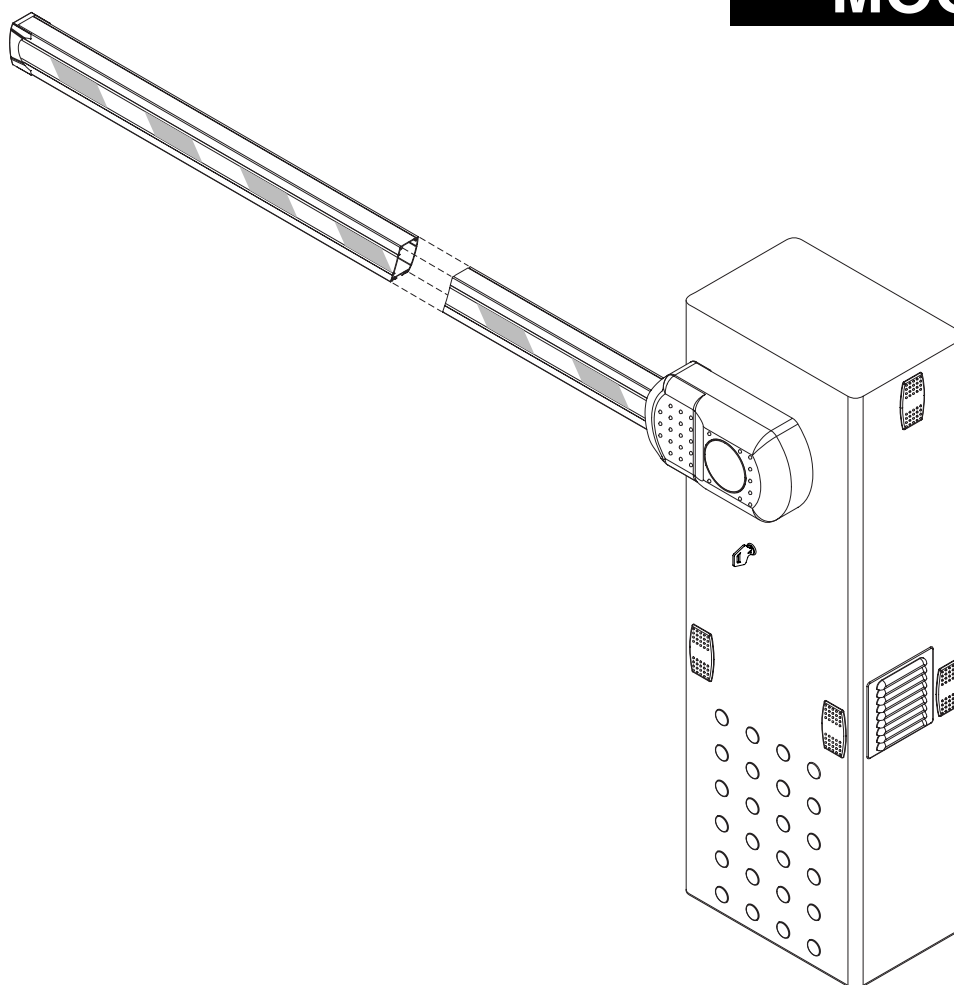


- I** AUTOMATISMO ELETTROMECCANICO PER BARRIERA VEICOLARE
GB ELECTROMECHANICAL CONTROL DEVICE FOR VEHICULAR BARRIERS
F AUTOMATISME ELECTROMECHANIQUE POUR BARRIERE POUR VÉHICULES
D ELEKTROMECHANISHER ANTRIEB FÜR FAHRZEUGSCHRANKEN
E AUTOMATISMOS ELECTROMECHANICOS PARA BARRERAS VEHICULAR
P AUTOMATIZAÇÃO ELECTROMECÂNICA PARA BARREIRA VEICULAR



MOOVI 30-50



ISTRUZIONI D'USO E DI INSTALLAZIONE
 INSTALLATION AND USER'S MANUAL
 INSTRUCTIONS D'UTILISATION ET D'INSTALLATION
 MONTAGE- und BEDIENTUNGSANLEITUNG
 INSTRUCCIONES DE USO Y DE INSTALACION
 INSTRUÇÕES DE USO E DE INSTALAÇÃO



AZIENDA CON SISTEMA
 DI GESTIONE INTEGRATO
 CERTIFICATO DA DNV
 = UNI EN ISO 9001:2000 =
 UNI EN ISO 14001:1996

SL-PRO
montage team

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**DICHIARAZIONE DI CONFORMITÀ / DECLARATION OF CONFORMITY / DÉCLARATION DE CONFORMITÉ
KONFORMITÄTSERKLÄRUNG / DECLARACION DE CONFORMIDAD / DECLARAÇÃO DE CONFORMIDADE**

(Dir. 98/37/EEC allegato / annex / en - annexe / anlage / adjunto / ficheiro IIB)

Fabbriante / Manufacturer / Fabricant / Hersteller / Fabricante / Fabricante:

BFT S.p.A.

Inirizzo / Address / Adresse / Adresse / Dirección / Endereço:

Via Lago di Vico 44
36015 - Schio
VICENZA - ITALY

- Dichiaro sotto la propria responsabilità che il prodotto: / I declare under its own responsibility that the following product:
/ Déclare sous sa propre responsabilité que le produit: / Erklärt auf eigene Verantwortung, daß das Produkt: / Declara, bajo su
propia responsabilidad, que el producto: / Declara, sob a sua responsabilidade, que o produto:

Automatismo elettromeccanico per barriera stradale mod. / Electromechanical control device for barriers mod. / Automatism
electromécanique pour barrière levante mod. / Elektromechanischer schrankenbetrieb mod. / Automatismos electromecánicos
para barreras mod. / Automação electromecânica para barreira estradal mod.

MOOVI 30, MOOVI 50

- È costruito per essere incorporato in un macchinario che verrà identificato come macchina ai sensi della DIRETTIVA
MACCHINE. / Has been produced to be incorporated into a machinery, which will be identified as a machine according to the
MACHINERY DIRECTIVE. / A été construit pour l'incorporation successive dans un équipement qui sera identifié comme
machine conformément à la DIRECTIVE MACHINES. / Dafür konstruiert wurde, in ein Gerät eingebaut zu werden, das als
Maschine im Sinne der MASCHINEN-DIREKTIVE identifiziert wird. / Ha sido construido para ser incorporado en una
maquinaria, que se identificará como máquina de conformidad con la DIRECTIVA MAQUINAS. / Foi construído para ser
incorporado numa maquinaria, que será identificada como máquina em conformidade com a DIRECTIVA MÁQUINAS
- È conforme ai requisiti essenziali di sicurezza delle Direttive: / It also complies with the main safety requirements of the
following Directives. / Est conforme aux exigences essentielles de sécurité des Directives: / Es entspricht den grundlegenden
Sicherheitsbedingungen der Direktiven: / Es conforme a los requisitos esenciales de seguridad de las Directivas: / Está
conforme aos requisitos essenciais de segurança das Directivas

BASSA TENSIONE / LOW VOLTAGE / BASSE TENSION / NIEDERSpannung / BAJA TENSION / BAIXA TENSÃO 73/23/CEE,
93/68/CEE (EN60335-1 (94)) (e modifiche successive / and subsequent amendments / et modifications successives / und ihren
nachfolgende Änderungen / e modificações sucessivas / y modificaciones sucesivas).

COMPATIBILITÀ ELETTROMAGNETICA / ELECTROMAGNETIC COMPATIBILITY / COMPATIBILITÉ ELECTROMAGNETIQUE /
ELEKTROMAGNETISCHE KOMPATIBILITÄT / COMPATIBILIDAD ELECTROMAGNETICA / COMPATIBILIDADE
ELECTROMAGNÉTICA 89/336/CEE, 91/263/CEE, 92/31/CEE, 93/68/CEE (EN61000-6-1, EN61000-6-2, EN61000-6-3,
EN61000-6-4, EN55014-1, EN55014-2) (e modifiche successive / and subsequent amendments / et modifications successives /
und ihren nachfolgende Änderungen / e modificações sucessivas / y modificaciones sucesivas).

- Si dichiara inoltre che è vietata la messa in servizio del prodotto, prima che la macchina in cui sarà incorporato, sia stata
dichiarata conforme alle disposizioni della DIRETTIVA MACCHINE. / We also declare that it is forbidden to start the product
before the machinery into which it will be incorporated is declared in compliance with the prescriptions of the MACHINERY
DIRECTIVE. / Nous déclarons en outre que la mise en service du produit est interdite, avant que la machine où il sera
incorporé n'ait été déclarée conforme aux dispositions de la DIRECTIVE MACHINES. / Es wird außerdem erklärt, daß die
Inbetriebnahme des Produkts verboten ist, solange die Maschine, in die es eingebaut wird, nicht als mit den Vorschriften der
MASCHINEN-DIREKTIVE konform erklärt wurde. / Se declara, además, que está prohibido instalar el producto antes de que
la máquina en la que se incorporará haya sido declarada conforme a las disposiciones de la DIRECTIVA MAQUINAS /
Declaramos, além disso, que é proibido instalar o produto, antes que a máquina em que será incorporada, tenha sido
declarada conforme às disposições da DIRECTIVA MÁQUINAS

SCHIO, 15/03/2004

Il Rappresentante Legale / The legal Representative
Le Représentant Légal / Der gesetzliche Vertreter
El Representante Legal / O Representante legal


(GIANCARLO BONOLLO)

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/CEE, 73/23/EEC, 98/37/EEC and subsequent amendments.

1) GENERAL OUTLINE

Compact electromechanical barrier suitable for limiting private areas, parkings, access areas for vehicles only. Available for passageways from 3 to 5 metres. Adjustable electromechanical limit devices ensuring a correct stop position for the boom. In case of intensive use, a thermal sensor activates the cooling fan.

The emergency release device for manual manoeuvre is controlled by a personalised key lock.

The actuator is always supplied for left-hand side fitting. However, when necessary, the opening direction can be reversed by means of simple operations.

The CBO mod. foundation base (on request) makes barrier installation easier.

Appropriate fittings make it easy to install accessories without needing to drill any holes.

WARNING! The barrier must be exclusively used for vehicles to drive through. Pedestrians must not walk within the operator manoeuvring area. An appropriate pedestrian passageway must be provided for.

2) EMERGENCY RELEASE (Fig. 1)

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).

3) 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.

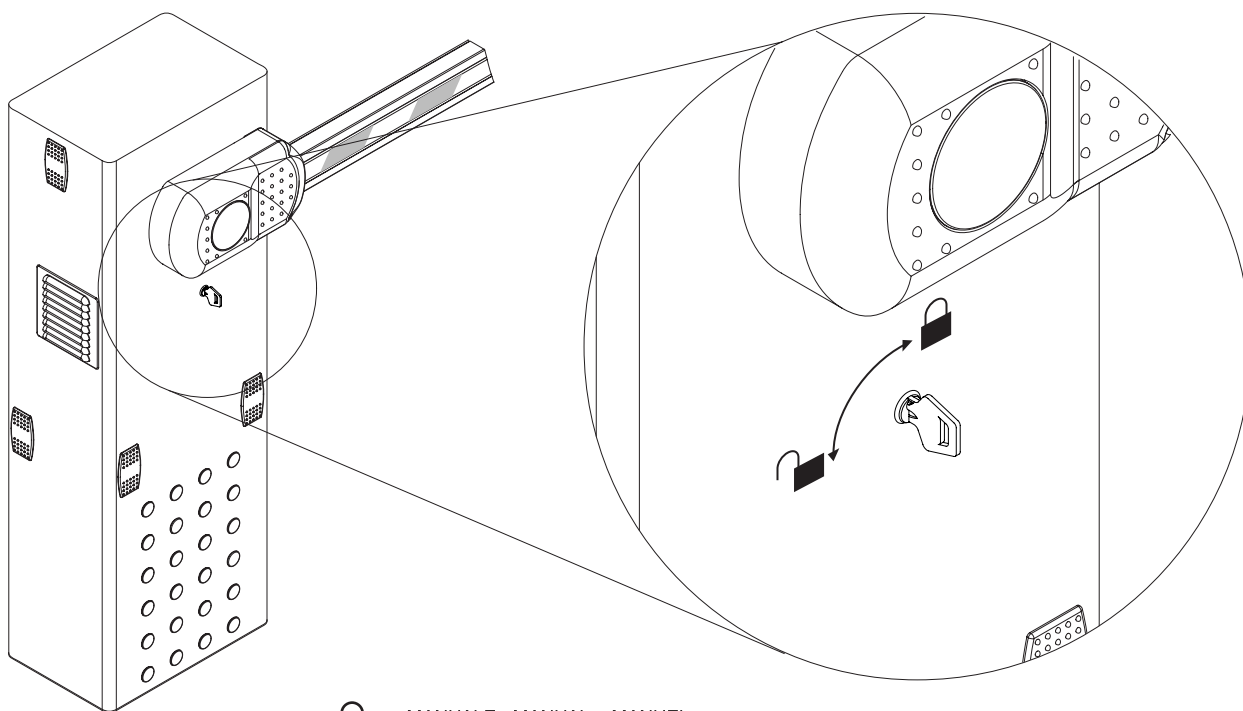
WARNING! In case of any malfunction in the safety devices, take immediate action and require the assistance of a specialised technician.

It is recommended to keep children at a safe distance from the automation field of action.

4) 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.).

Fig. 1



MANUALE - MANUAL - MANUEL
BEDIENUNGSANLEITUNG - MANUAL - MANUAL



AUTOMATICO - AUTOMATIC - AUTOMATIQUE
AUTOMATIK - AUTOMÁTICO - AUTOMÁTICO



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Appropriate fittings make it easy to install accessories without needing to drill any holes.

2) 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 above-mentioned 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 3,5 mm.
- 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, according to and in compliance with the applicable directives and technical standards.
- 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.
- Installation must be carried out using the safety devices and controls prescribed by the EN 12978 Standard.

3) TECHNICAL SPECIFICATIONS

MOOVI 30-50

Power supply: 230V a.c. $\pm 10\%$ 50Hz (*)
 Absorbed power: 300W
 Motor: 1400 min⁻¹, 4 poles
 Capacitor: 8 μ F 450V (230V) : 32 μ F 250V (110V)
 Absorption: 0.8 A : 1.6 A
 Insulation class: F
 Ventilation intervention temperature: 110°C (winding)
 Circuit-breaker intervention temperature: 130°C (self-resetting)
 Reduction gear lubrication: Permanent grease
 Max torque: MOOVI-30 85Nm: MOOVI-50 250Nm
 Opening time: MOOVI-30 4s : MOOVI-50 8s
 (Aluminium) bar length: MOOVI-30 3m max : MOOVI-50 5m max.
 Impact reaction (electric edge): Stop or stop and reverse
 Limiting devices: Electric, incorporated and adjustable
 Manual manoeuvre: Quick key release
 No. manoeuvres in 24 hour: 1200 (MOOVI-30) : 600 (MOOVI-50)
 Working temperature: -10°C $\div$ +55°C
 Degree of protection: IP24
 Actuator weight (without bar): 356N (~35.6 kg)
 Dimensions: See fig.1

MIZAR BOM CONTROL PANEL

Power supply: 230V a.c. $\pm 10\%$ 50Hz (*)
 Loadless absorption: 100 mA
 Accessory output power: 24V a.c. 200 mA max
 Max. motor power absorbed: 500W
 Limits switch: electric switch
 Working time: adjustable from 1 to 30s
 Working temperature: -10 $\div$ +55 °C
 (*) Special power voltages available on request.

4) OPTIONAL ACCESSORIES (Fig.17)

- **CBO.** Foundation base
- **MOOVI PRM.** Antishearing Kit
- **MOOVI 130.** Kit for Cellula 130 fixing post
- **FAF.** Fixed fork for boom rest
- **MOOVI GA.** Movable rod for boom rest (Only for MOOVI 50)
- **MOOVI GAMA.** Movable cushioned rod for boom rest
- **SB.** Skirt already assembled to the boom
- **Safety edge BIR**
- **MOOVI LIGHT.** Light kit for booms from 3m to 4.5m
- **MOOVI LIGHT 1.** Light kit for booms from 5m to 6m
- **MOOVI PCA.** Lower or upper boom covering contour

For further information about installation and use of the accessories, make reference to their respective instruction manuals.

5) 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.

6) FITTING OF THE ACTUATOR

 **WARNING! The barrier must be exclusively used for vehicles to drive through. Pedestrians must not walk within the operator manoeuvring area. An appropriate pedestrian passageway must be provided for.**

The passageway must be suitably indicated by means of the warning signs illustrated in Fig.10.

WARNING: before opening the door, make sure that the spring has been unloaded (rod at 43°). 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.

The barrier is available with the operator fitted either to the left (looking from the door side) or to the right.

The actuator is always supplied for left-hand side fitting.

6.1) Left-hand fitting

- Fix the operator to the foundation base and secure it by means of nuts M12 (fig.4 ref.1). The door of the box must face towards the inside of the property
- The upper surface of the operator is slightly tilted so as to prevent any rain water from being trapped there. Therefore use a side surface to check correct positioning by means of a level (fig.2).
- The installation of the MOOVI PRM antishearing Kit (optional) is easier when carried out before fitting the boom to the operator. Make reference to Fig.18 and paragraph 6.3 for correct fitting of the MOOVI PRM Kit, then proceed to fit the boom.
- Fit the boom in its opening position (vertical) as indicated in fig.3, ref.7. The operator balancing is pre-calibrated for the nominal boom in the opening position (balancing spring stretched).
- Position the cover closing element (fig.3 ref.10) on the boom, as indicated in fig. 3. After positioning, drill part 10 and boom using a 2 mm bit. Insert the screw supplied.
- Fix the boom using the bracket (fig.3 ref.4) and the screws and washers supplied as standard, then fix the protection cover (fig.3 ref.8) and finally the screw cover (fig.3 ref.9). Close the protection cover by making the closing element slide over the boom (fig.3 ref.10). **WARNING!** The boom must be positioned so as to have the double contour facing down (fig.3 ref.11).
- Balance the boom as described in relevant paragraph 7.

6.2) Right-hand fitting

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

- A) Fix the box to the foundation base and lock it in position using M12 nuts.
- B) Ensure that the balancing spring is in the opening position (stretched spring - fig.5).
- C) 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.
- D) 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).
- E) Rotate the lever (fig.4/ref.6) by 180° and fasten it into the correct position.
- F) 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 N/m.
- G) 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.
- H) Lock the spring stretcher (fig.4/ref.2) into position (fig.4/ref.Dx) with the screw and self-locking nut.
- I) Adjust the spring stretcher (fig.4/ref.2) until the spring comes under tension.
- L) Refit and partially fix the U bolt (fig.4/ref.4) holding the bar to the actuator in the opening position.
- M) The installation of the MOOVI PRM antishearing Kit (optional) is easier when carried out before fitting the boom to the operator. Make reference to Fig.18 and paragraph 6.3 for correct fitting of the MOOVI PRM Kit, then proceed to fit the boom. Fit the boom in its opening position (vertical) as indicated in fig.3, ref.7. The operator balancing is pre-calibrated for the nominal boom in the opening position (balancing spring stretched). Position the cover closing element (fig.3 ref.10) on the boom, as indicated in fig. 3. After positioning, drill part 10 and boom using a 2 mm bit. Insert the screw supplied. Fix the boom using the bracket (fig.3 ref.4) and the screws and washers supplied as standard, then fix the protection cover (fig.3 ref.8) and finally the screw cover (fig.3 ref.9). Close the protection cover by making the closing element slide over the boom (fig.3 ref.10). **WARNING!** The boom must be positioned so as to have the double contour facing down (fig.3 ref.11).
- N) Carry out bar balancing as described in paragraph 7.
- O) 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.

6.3) Fitting of MOOVI PRM antishearing Kit (Fig.18)

- 1) Remove the rubber plugs.
- 2) Join two pivots "P" to antishearing plate "L" so as to obtain a single body.
- 3) Fix the plate to the box by putting screw M6x20 through the central threaded hole in the box.
- 4) Fix rotation lock screw M6x10 through the side threaded hole in the box.

- 5) The antishearing plate is to be positioned on the boom opening, the lock screw through the remaining hole.
- 6) During subsequent fitting of the cover, the plate must be inserted between two guide pivots "D" fixed by means of screws C. Having completed the fitting procedure, check that the antishearing plate operates correctly. When the barrier is lifted, it must be in the position indicated in Fig.18, ref.7; when the barrier is being closed, the plate must follow the boom movement until it reaches the position indicated in Fig.18, ref.8.

6.4) LAMPO/LAMPO-PA blinker fitting (Fig. 19)

Blinker installation is carried using one of the two upper fittings on the MOOVI barrier. It is indispensable to use the **SLM2** fixing bracket. It is also recommended to install the blinker on the side of the barrier opposite to the boom opening direction.

Making reference to Fig. 19, proceed as follows:

- 1) Remove protection cover "C" positioned on the barrier.
- 2) Remove cover "D" from the SLM bracket.
- 3) Having laid the connection cables to the blinker, fix the SLM2 bracket to the barrier by means of the appropriate screws (supplied).
- 4) Spacer "E" is only necessary for the "PA" series blinkers (suitable for the receiver antenna). For blinkers without antennas, the base is to be directly fixed to the SLM2 bracket.
- 5) Reposition cover "D".
- 6) Complete fitting and wiring as specified in the instructions for LAMPO/LAMPO-PA.

6.5) Photocell fitting (Fig. 20)

The photocell can be installed on the MOOVI barrier as follows:

- 1- By directly fixing the **CELLULA 130** photocell to the side of the barrier (Fig. 20 "A")
- 2- By fastening the **MOOVI 130** photocell post to one of the front fittings (Fig. 20 "B")

A) Cellula 130 fitting

- 1) Remove the protection cover positioned on the barrier.
- 2) Lay the wiring needed for photocell connection.
- 3) Fit the photocell as shown in Fig.20 A by means of the appropriate screws. Refer to the instruction sheet for Cellula 130 for further information.

B) MOOVI 130 post fitting

- 1) Remove the protection cover positioned on the barrier.
- 2) Lay the wiring needed for photocell connection.
- 3) Fit post "F" and protection frame "G" as shown in Fig. 20B. The post is fastened from inside the barrier by means of 3 screws (supplied).
- 4) Fit the photocell to the post, as shown in the instruction sheet for Cellula 130.

Refer to the instruction sheet for Cellula 130 for further information.

6.6) Moovi accessories: boom length limits and balancing (Fig.21)

All barriers belonging to the MOOVI series are equipped with a hooking bracket with 3 securing points located on the device for boom balancing (Fig. 21 - ref. A points A-B-C).

The ideal securing point for correct balancing of the boom must be chosen according to the barrier type and to the length of the boom and accessories installed.

Tab.1 of Fig.21 shows the weight expressed in kgs by linear meter (kg/m) for each accessory.

When the supporting leg Moovi GA/GAMA is used, it is necessary to calculate the arbitrary weight in Kg/m, using the following formula:

$$\text{Kg/m} = 1,2/L$$

where L stands for the length of the boom.

Then proceed as follows:

- 1) Sum up the total linear weight of the accessories installed (including boom weight).
- 2) Find the crossing point between the length of the boom and the total weight of the accessories on the diagram, making reference to the MOOVI model.
- 3) The point found in this way will indicate the correct hooking point (A-B-C).

Example

MOOVI 50 with:

(boom measuring 4,0m + BIR + GAMA +1PCA).

$$(1,028+0,510+(1,2/4,0)+0,160) = 1,97$$

The crossing point between value 1,97 and boom length equal to 4,0 is within the "A" area of MOOVI 50 graph. "A" hooking point will therefore be suitable for correct boom balancing.

Calibrate the spring as described in paragraph 7.

WARNING!:

The securing points marked with A and B can be used with MOOVI 50 only. The securing point marked with C can be used with MOOVI 30MM only.

If the point found is within the crossed area that means that installation is not possible and it is necessary to shorten the boom or reduce the number of accessories.

If no accessory is used, only use the weight of the "PA" boom to find the securing point.

7) 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.

8) ELECTRICAL INSTALLATION SET-UP

WARNING: before opening the door, make sure that the spring has been unloaded (rod at 43°). 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 minimum 3x1.5mm² cross section and complying with the previously mentioned regulations (for example, if the cable is not protected, it must be at least equal to H07 RN-F, whereas if it is protected it must be at least equal to H07 VV-F with a 3x1.5 sq mm² cross 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):

- I) 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. Place, if not already installed, a type-approved differential switch with a 0.03A threshold 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.

9) TERMINAL BOARD CONNECTIONS

WARNING: before opening the door, make sure that the spring has been unloaded (rod at 43°). 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. 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.

Keep the low voltage connections definitely separated from the power supply connections.

JP2

- 1-2 Power supply 230Va.c. +/- 10% 50 Hz (Neutral wire to terminal 1).
- 3-4-5 M motor connection (terminal 4 common wire, terminals 3-5 motor and capacitor operation).
- 1-4 Blinker connection 230V

JP1

- 7-8 Open-close push button and key selector (N.O.).
- 7-9 Stop button (N.O.). If not used, leave jumped.
- 7-10 Photocell or pneumatic edge input (N.C.). If not used, leave bridged.
- 7-11 Opening limit switch (N.C.).
- 7-12 Closing limit switch (N.C.).
- 13-14 24 Vac power supply output for photocell and additional devices.
- 15-16 Second radio channel output of the double-channel receiver board (N.O.).
- 17-18 Antenna input for radio-receiver board (18 braid - 17 signal).
- CON1 Radio-receiver board connector, 1-2 channels.

9.1) LED (Fig.16)

The **MIZAR-BOM** control unit is provided with a series of self-diagnosis leds which control all the functions.

The functions of the LEDs are the following:

- (LD1 on - LD2 off) - Barrier opening.
- (LD1 off - LD2 off) - Barrier stop.
- (LD1 on - LD2 on) - Barrier closing.
- LD3 Start - goes on when a start command is given.
- LD4 Closing limit switch - goes off when the closing limit switch is operated.
- LD5 Opening limit switch - goes off when the opening limit switch is operated.
- LD6 Photocell - goes off when the photocells are not aligned or in the presence of obstacles.
- LD7 Stop - goes off when a stop command is given.

9.2) FUNCTIONING LOGIC

4-step logic: (Dip-Fix IBL ON)

The following actions take place after a start command:

- closed barrier: opens
 - opening: stops and operates the TCA (Dip-Fix TCA ON)
 - open barrier: closes
 - closing: stops (stops and does not operate the TCA)
 - after the stop: opens
- With Dip-Fix IBL ON, any start command given during opening has no effect.

9.3) DIP-FIX SELECTION (Fig.16)

TCA Automatic closing time TCA.

- ON: Automatic closing on.
- OFF: Automatic closing off.

IBL Blocks impulses.

- ON: START commands are not accepted during the opening phase.
- OFF: START commands are accepted during the opening phase.

FCH Photocells.

- ON: Photocells are only active in the closing phase. If an object is detected by the photocells during the closing phase, the gate reverses the current movement.
- OFF: Photocells are active both in the closing and opening phase. If an object is detected by the photocells on closing or opening, the gate stops; once the object has been removed, the gate opens.

9.4) TRIMMER ADJUSTMENT (Fig.16)

TCA (Dip-Fix TCA ON)

It is used to set the automatic closing time, after which the gate closes automatically (adjustable from 0 to 90 sec.).

TW

It is used to set the motor working time, after which the motor stop (adjustable from 0 to 30 sec.). When using electrical limit switches, increase the motor stopping time by a few seconds with respect to the leaf closing time.

9.5) ACCESSORIES

SS (fig.16).

Optional board signalling gate open. Operates only with electrical limit switches.

10) LIMIT SWITCH SETTING

WARNING: before opening the door, make sure that the spring has been unloaded (rod at 43°). 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.

11) 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).

12) 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.

13) 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.

14) MAINTENANCE

WARNING: before opening the door, make sure that the spring has been unloaded (rod at 43°). **WARNING:** Before carrying out any maintenance to the installation, disconnect the mains power supply. The following points need 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 "11") so as to release the manual bar opening and closing operations.

15) 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.).

16) DISMANTLING

WARNING: before opening the door, make sure that the spring has been unloaded (rod at 43°). 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.

17) MALFUNCTION: CAUSES and REMEDIES

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

WARNING: before opening the door, make sure that the spring has been unloaded (rod at 43°).

- 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.
- 7) Check the movement of the cam-holder bars (fig. 13), if it is not smooth, the bars must be lubricated.

17.2) 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.

WARNINGS

Correct controller operation is only ensured when the data contained in the present manual are observed. The company is not to be held responsible for any damage resulting from failure to observe the installation standards and the instructions contained in the present manual.

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. 1

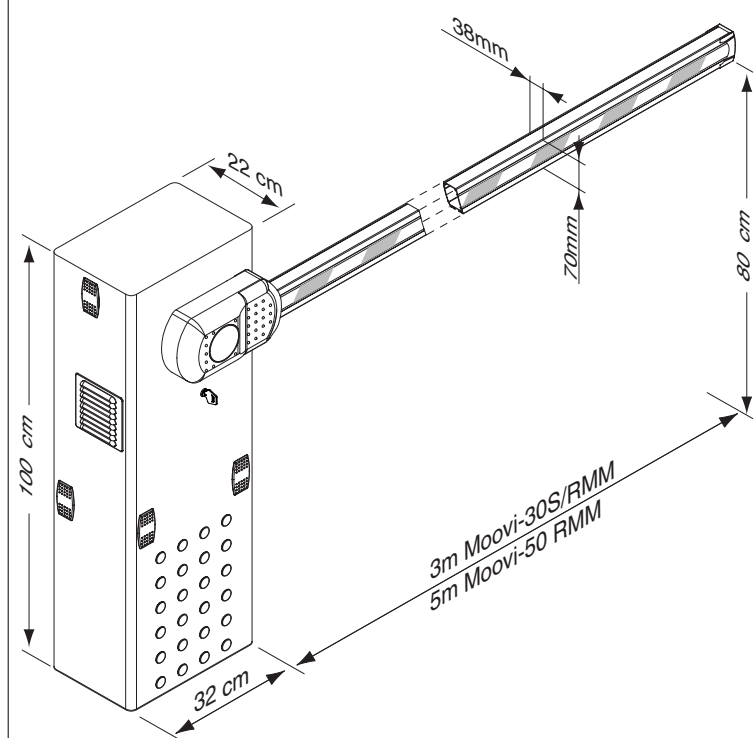


Fig. 2

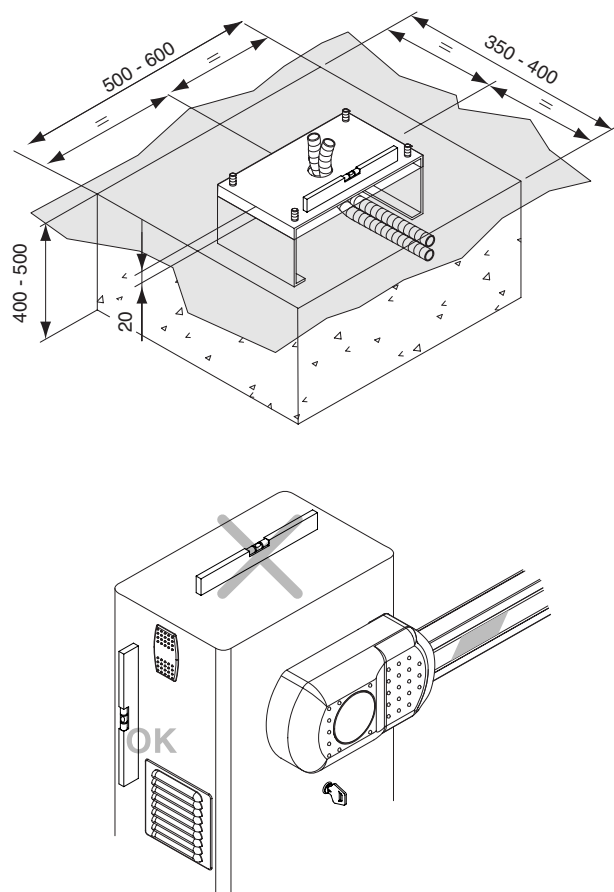
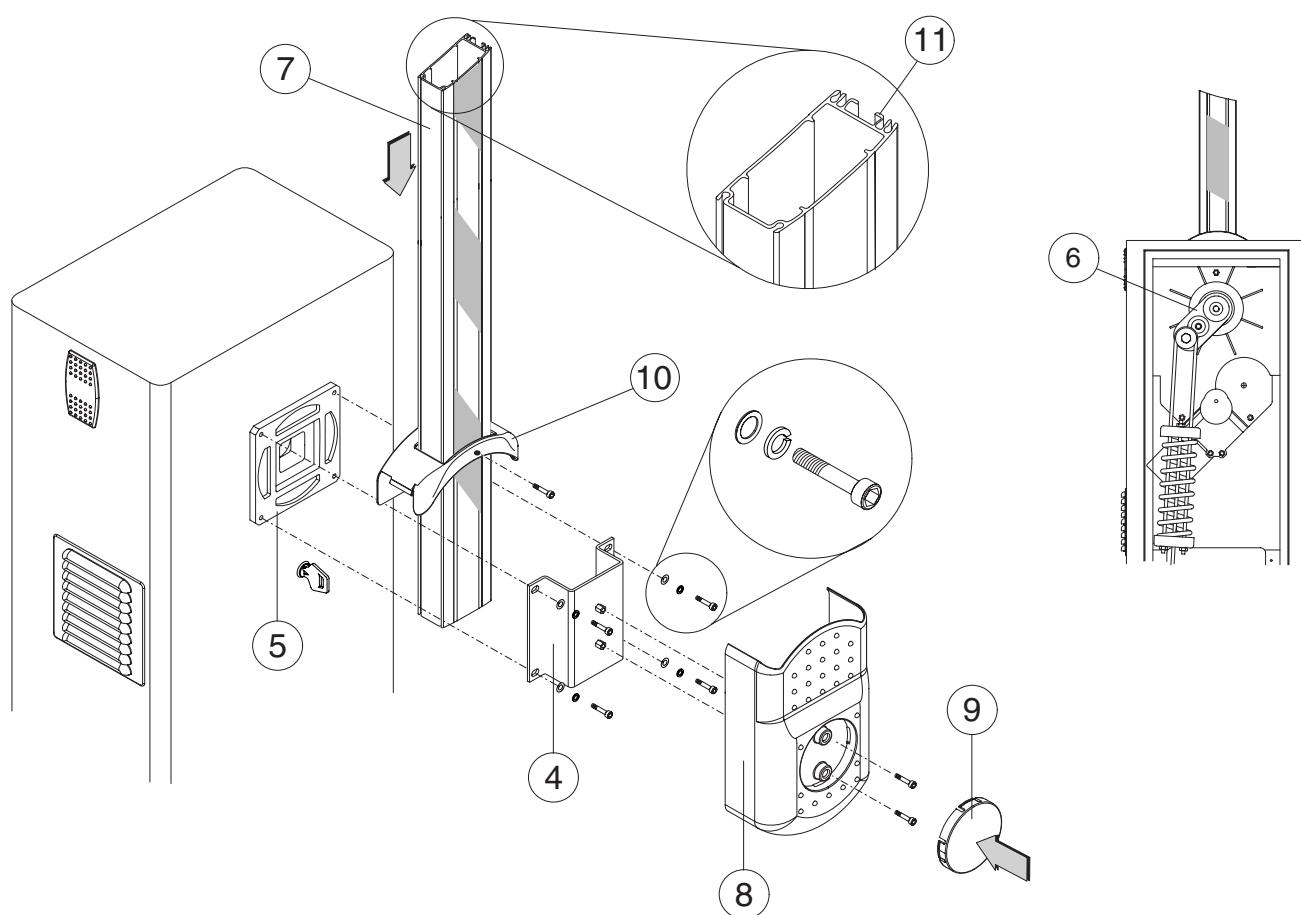


Fig. 3



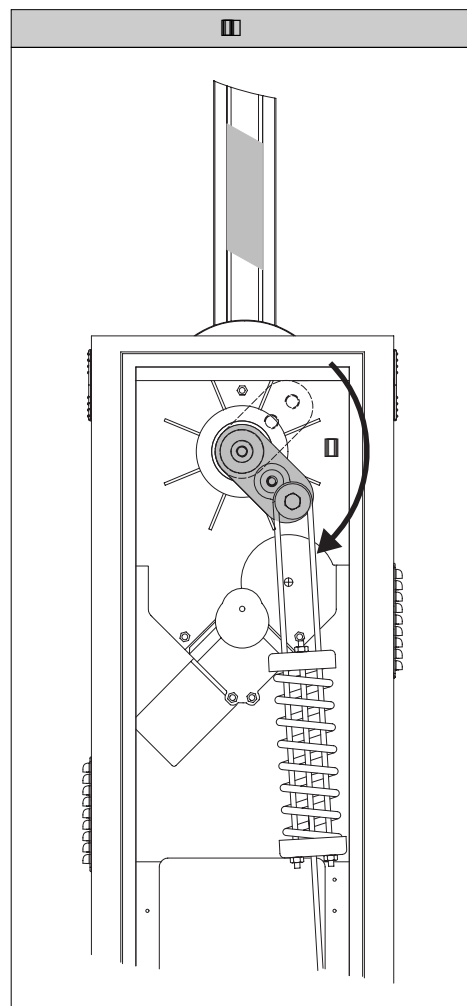
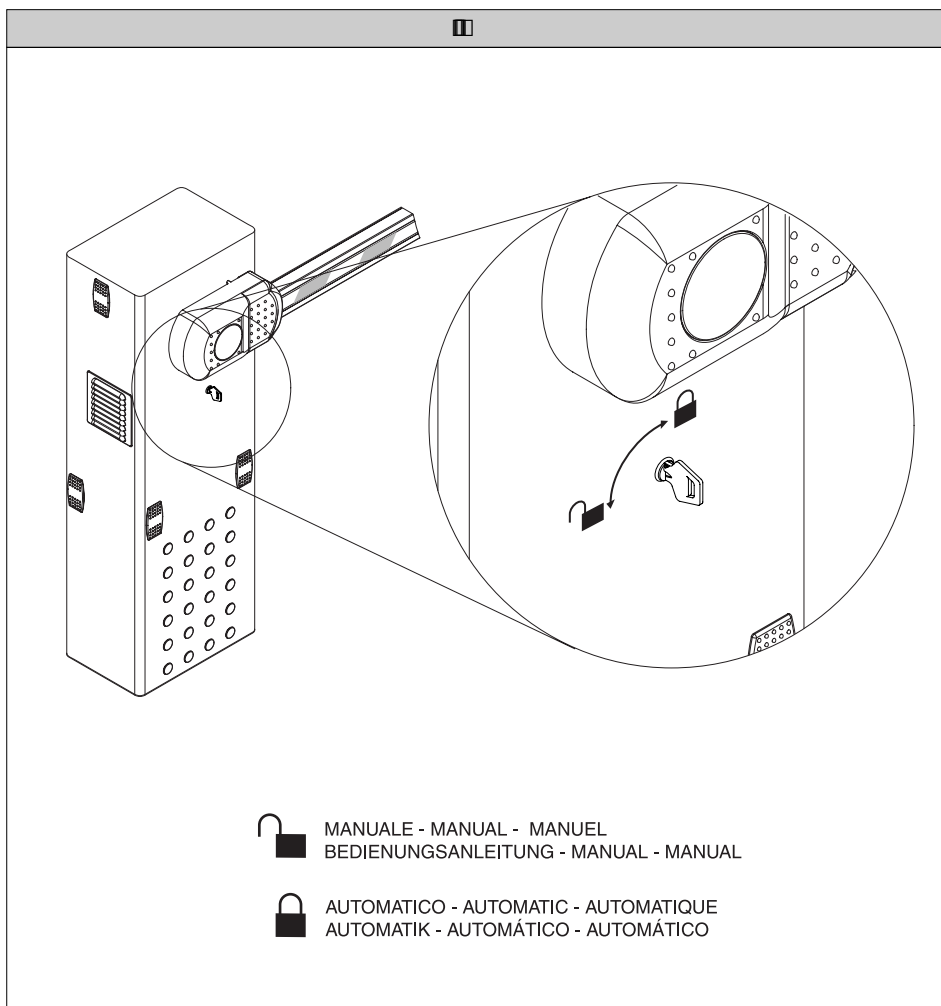
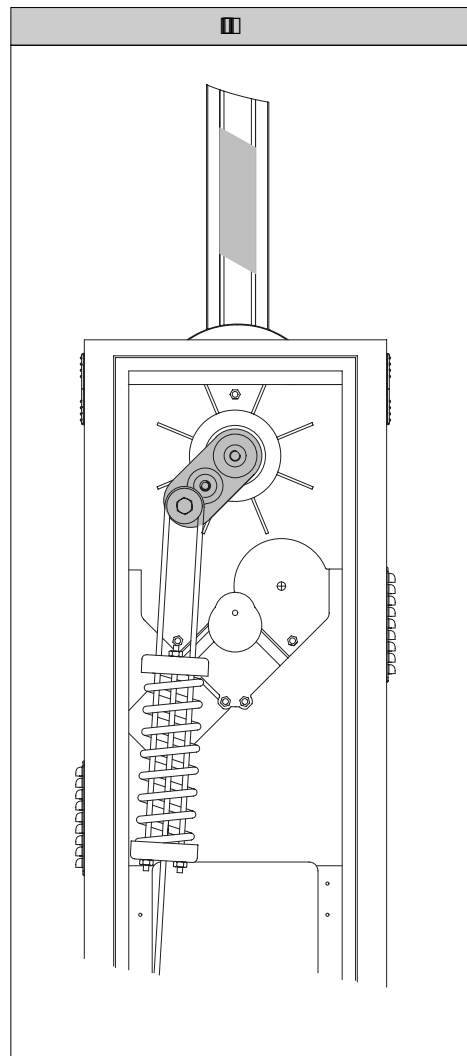
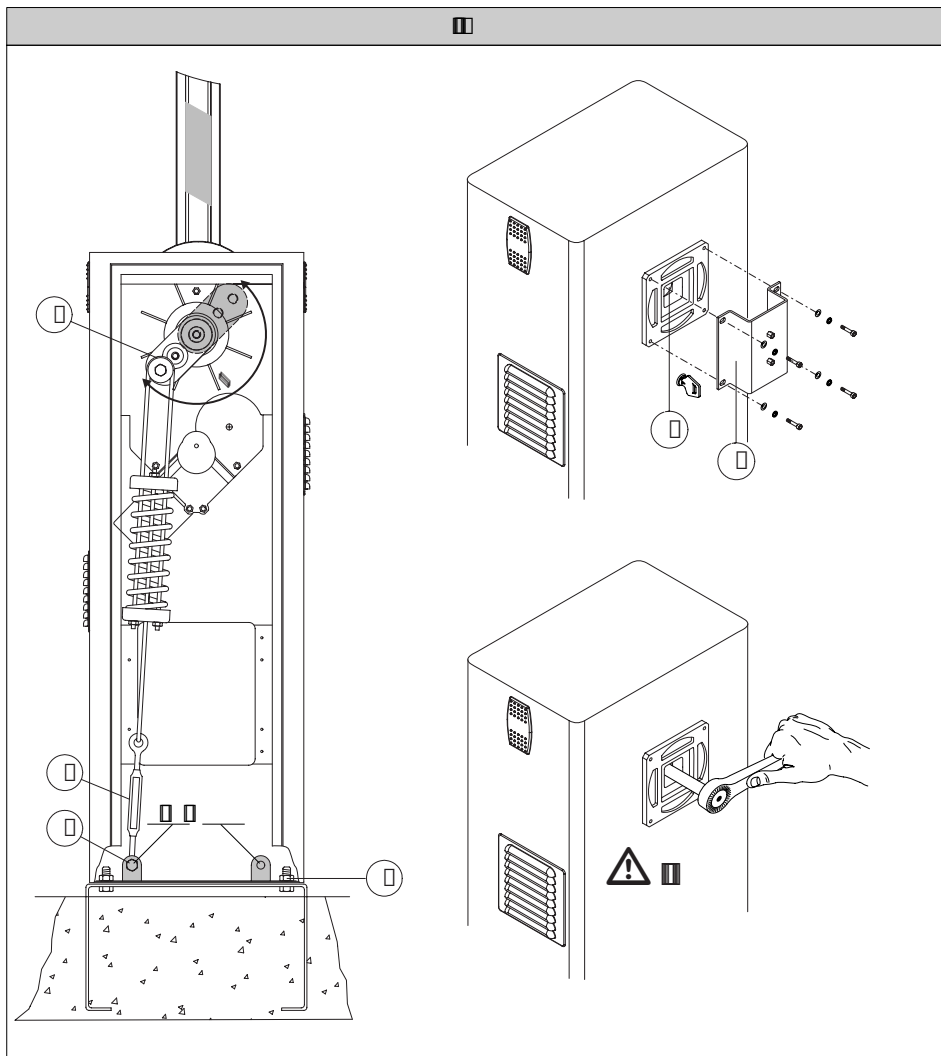


Fig. 8

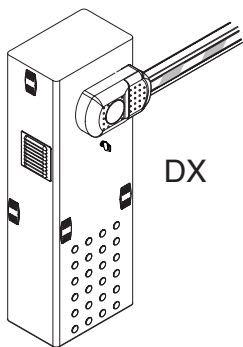
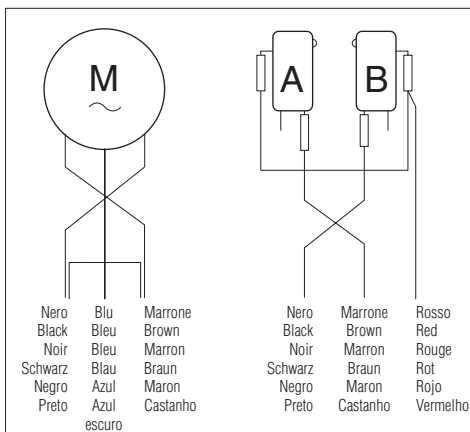
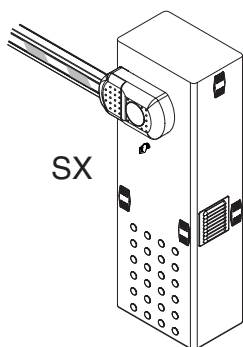
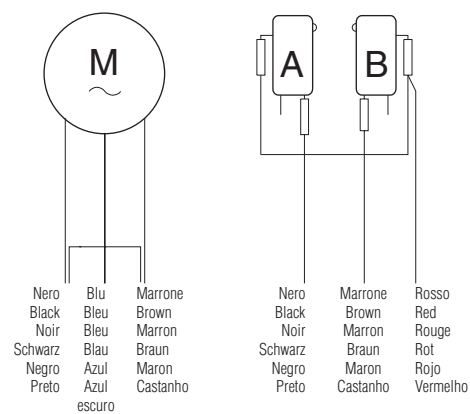


Fig. 9

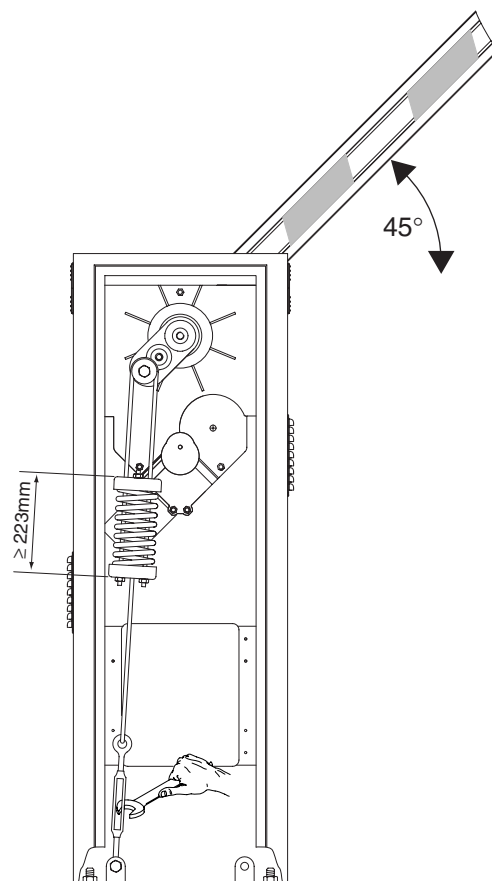
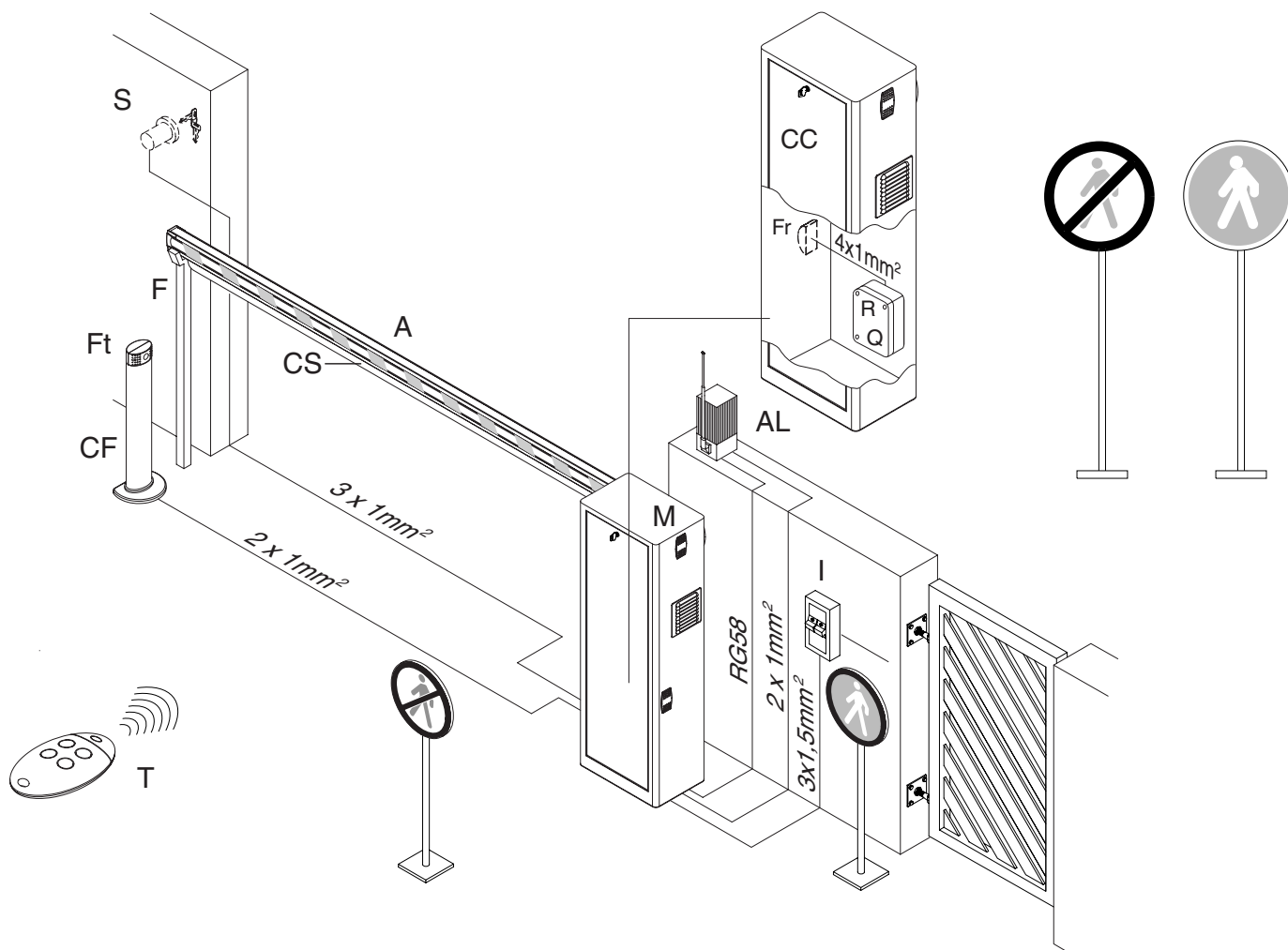


Fig. 10



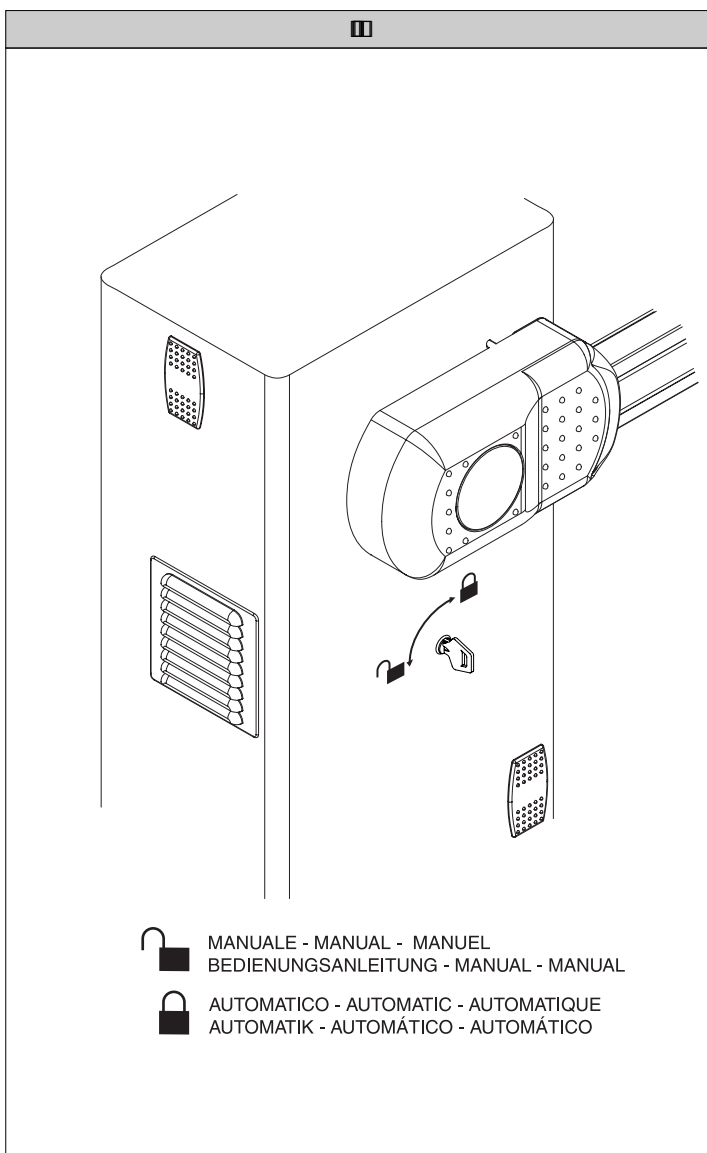
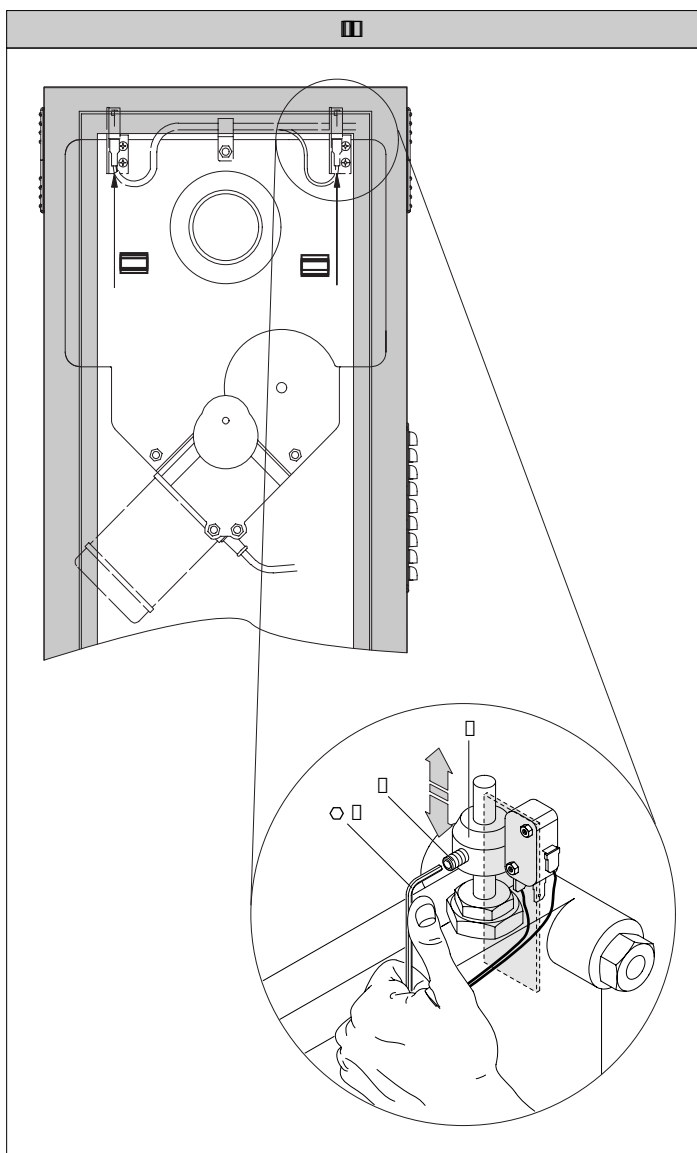
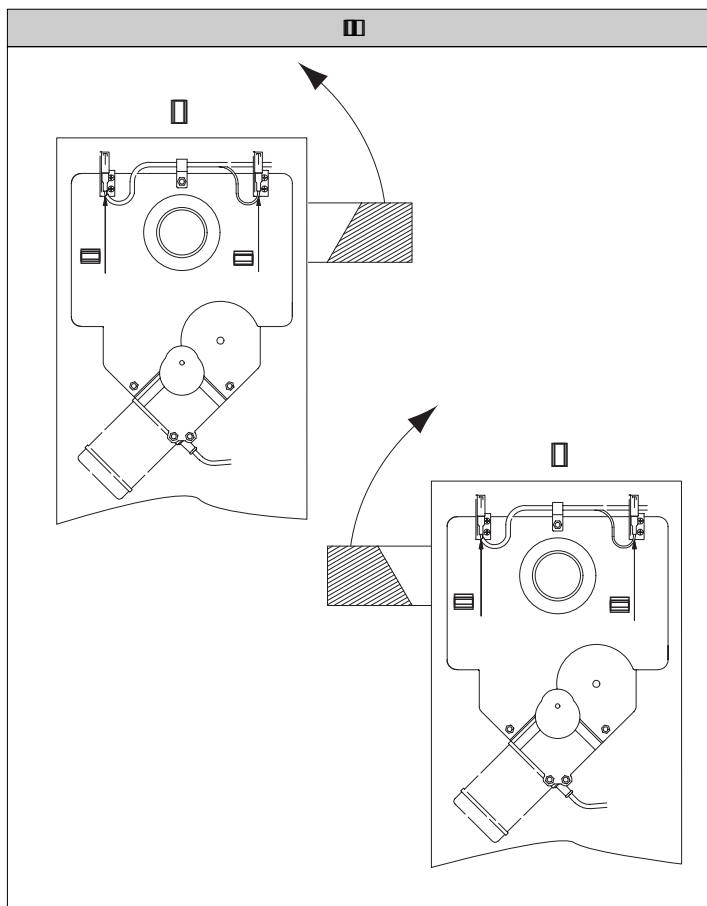
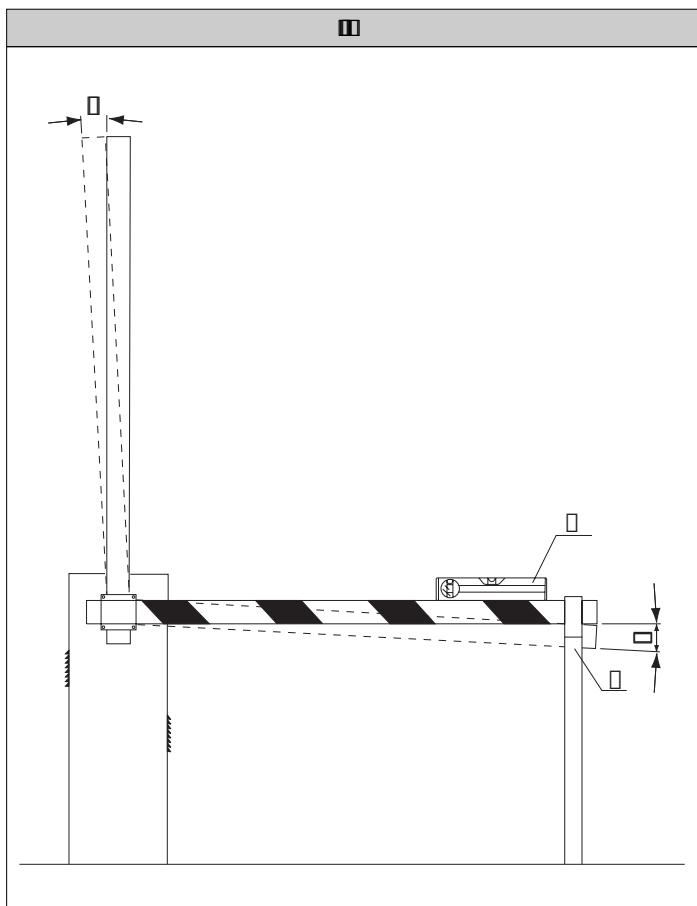


Fig. 15

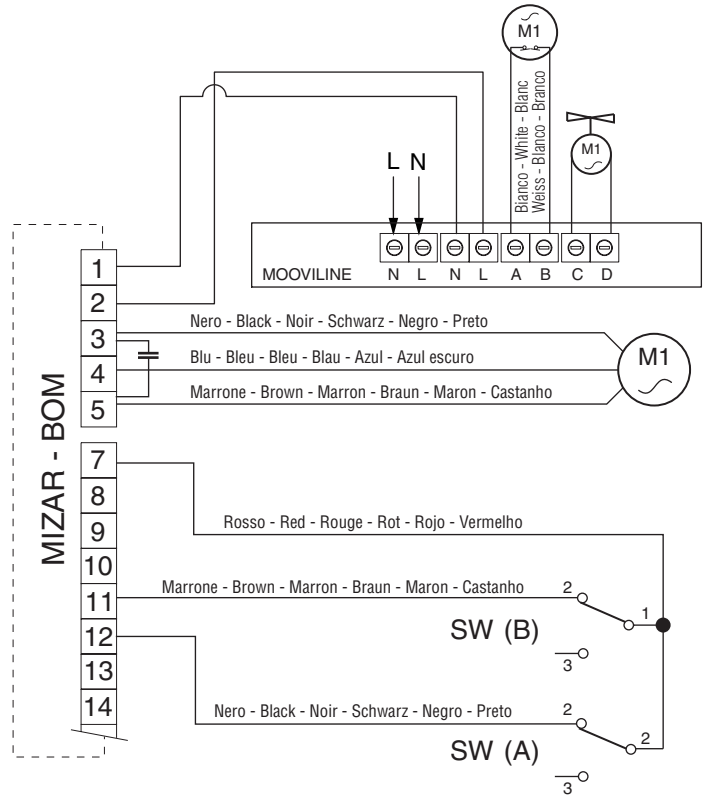
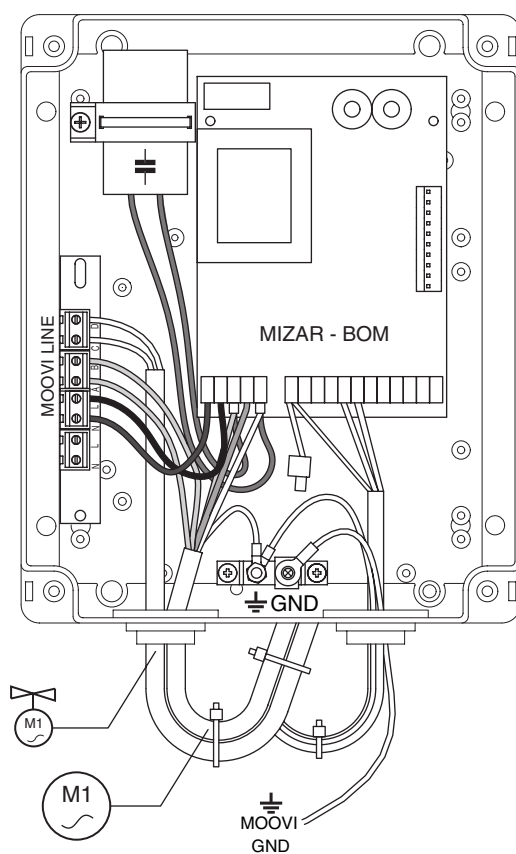


Fig. 16

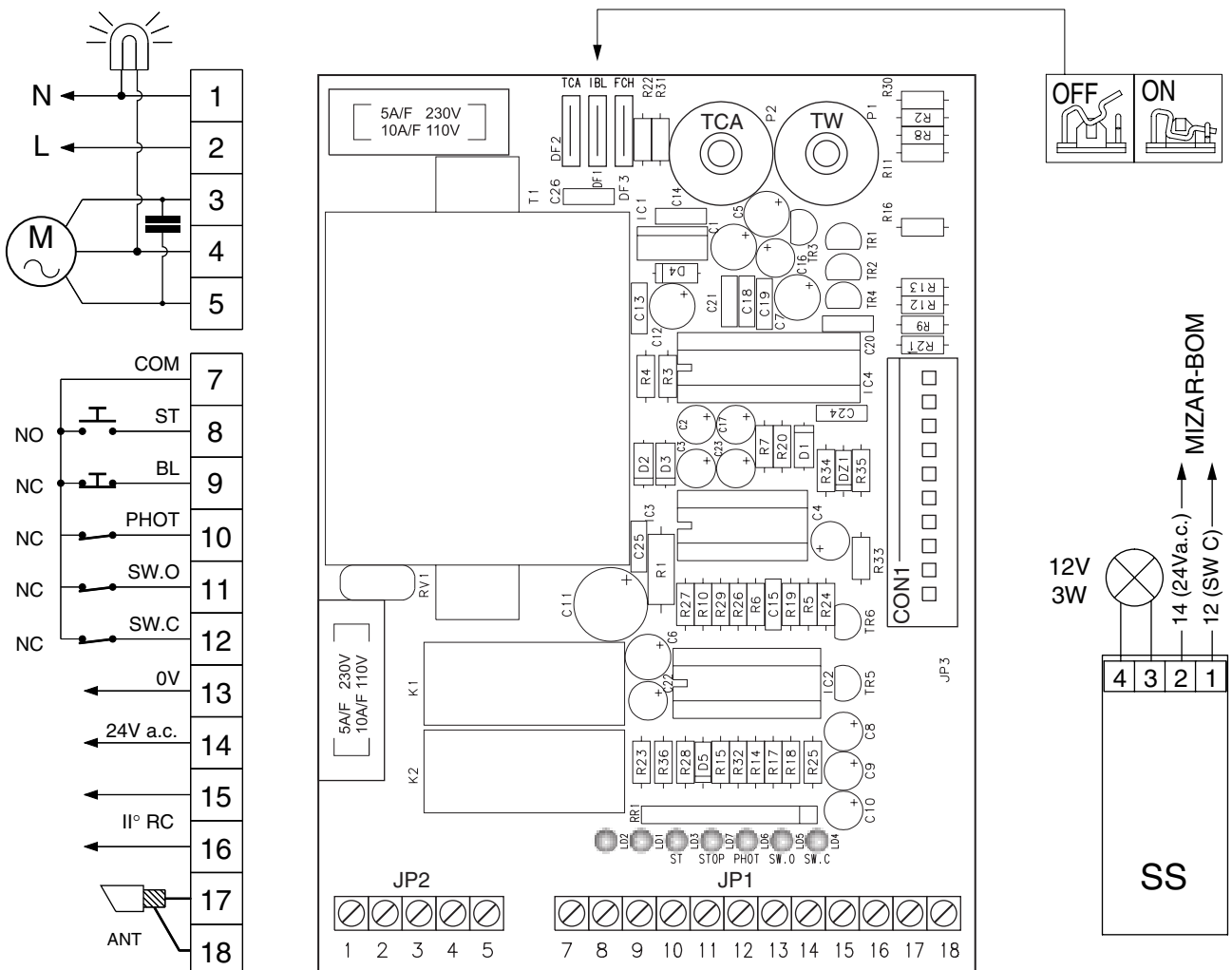
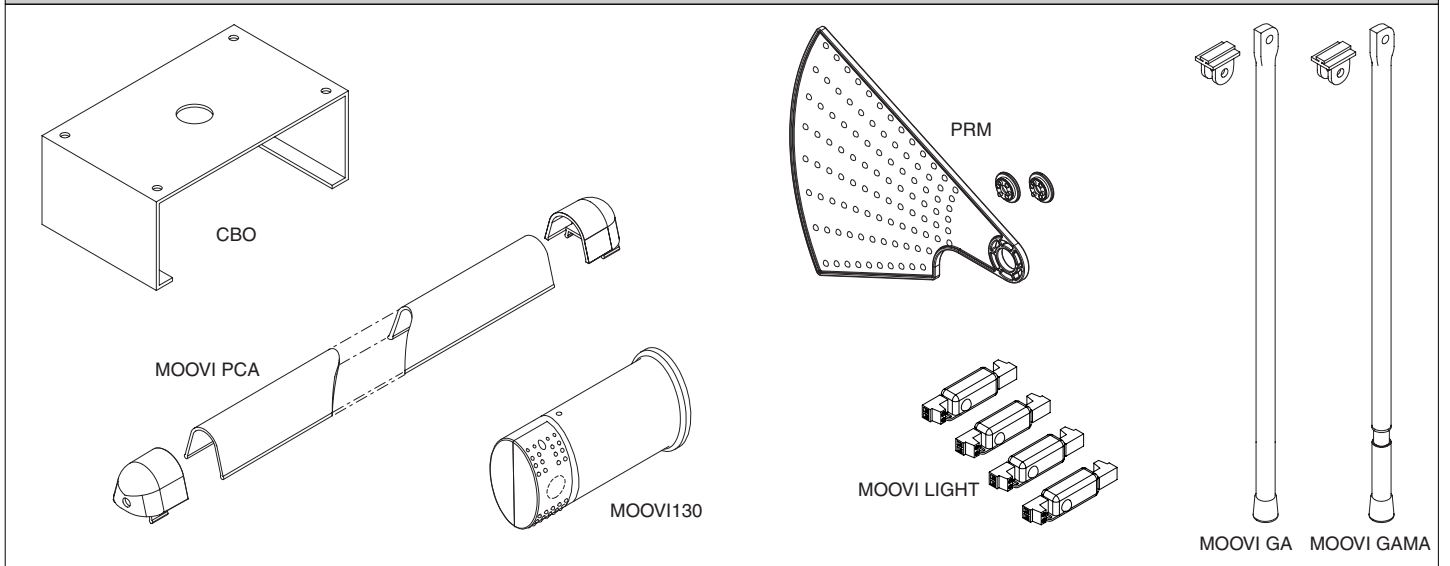


Fig. 17



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Fig. 18

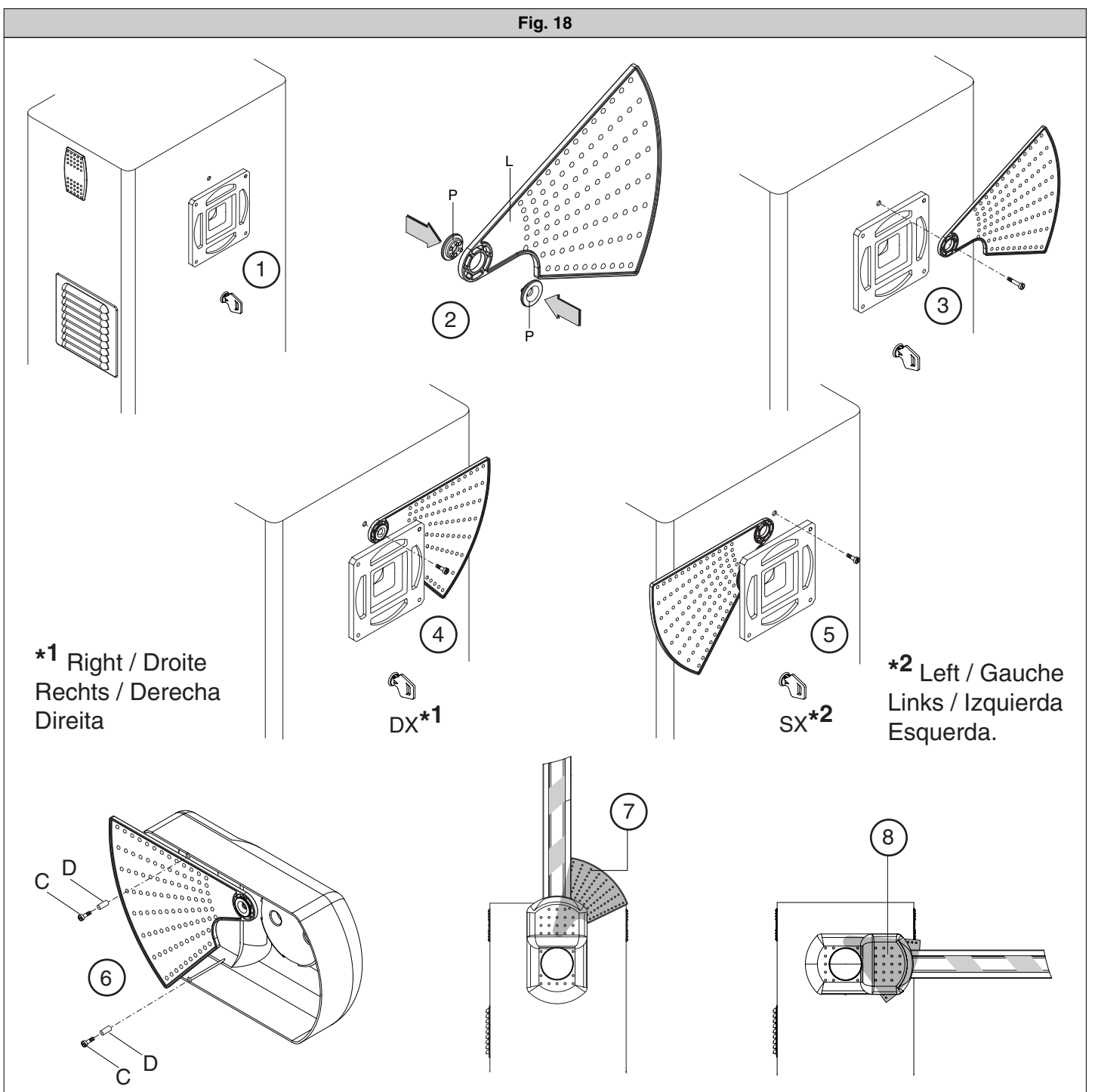


Fig. 19

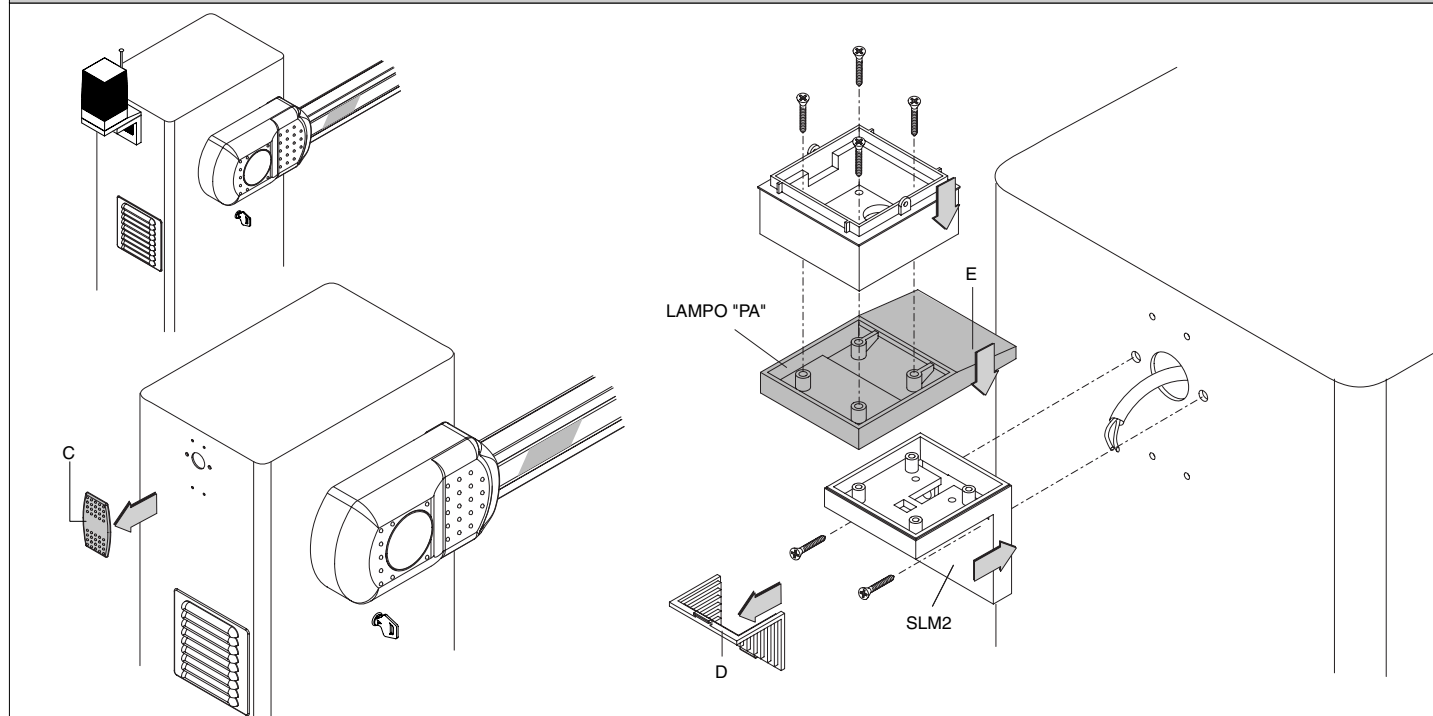


Fig. 20

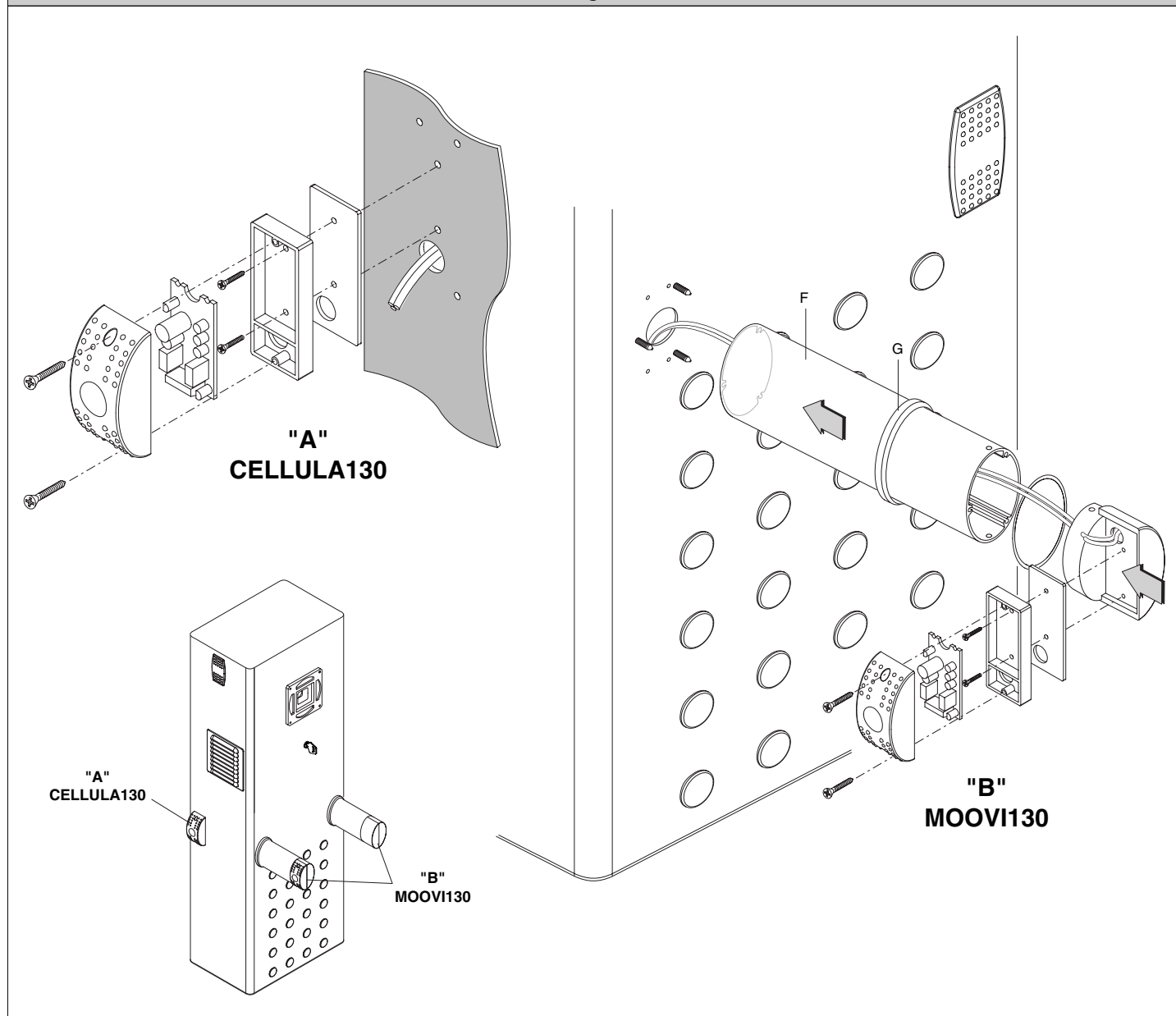


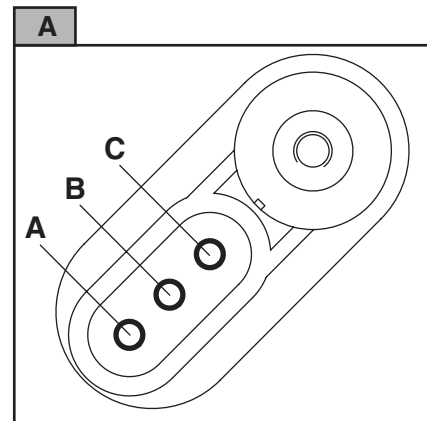
Fig.21

TAB.1

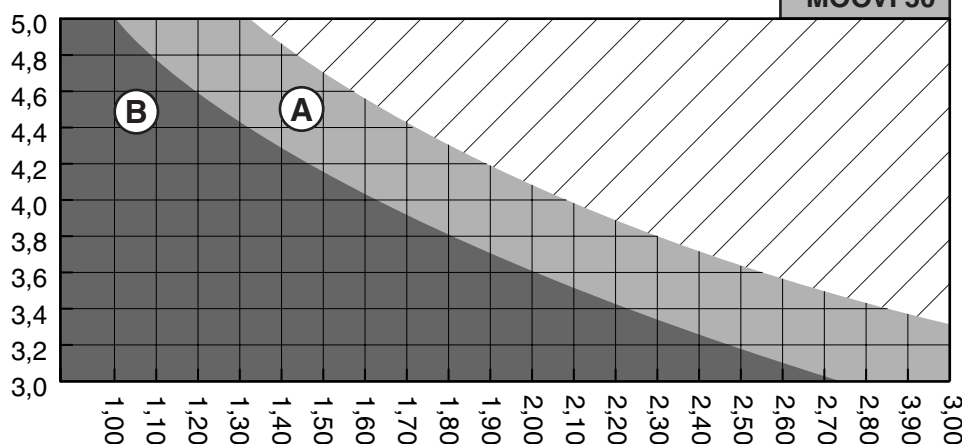
ACCESSORI - ACCESSORIES - ACCESSOIRES ZUBEHÖR - ACCESORIOS - ACESSÓRIOS	Peso - Weight - Poids Gewicht - Peso
PA*	Kg/m 1,028
SB	Kg/m 1,250
BIR**	Kg/m 0,510
1PCA	Kg/m 0,160
2PCA	Kg/m 0,320
MOOVI Light + 1PCA	Kg/m 0,230

PA* Peso asta senza accessori/Boom weight without accessories
Poids de la lisse sans accessoires/Schrackenbaumgewicht ohne Zubehör
Peso del asta sin accesorios/Peso haste sem acessórios

BIR** Costa Sensibile/Safety edge/Barre palpeuse
Sicherheitsleiste/Barra sensible

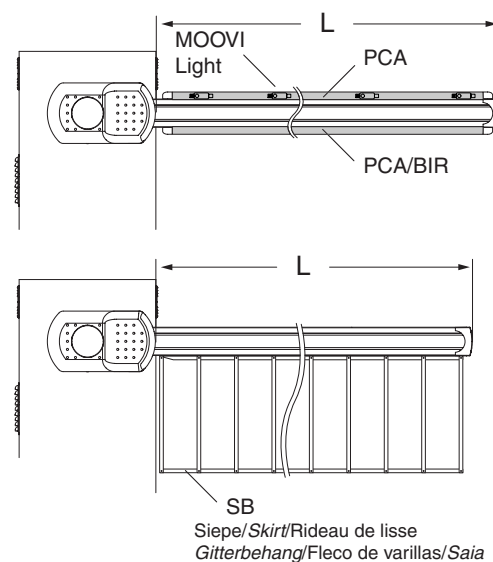
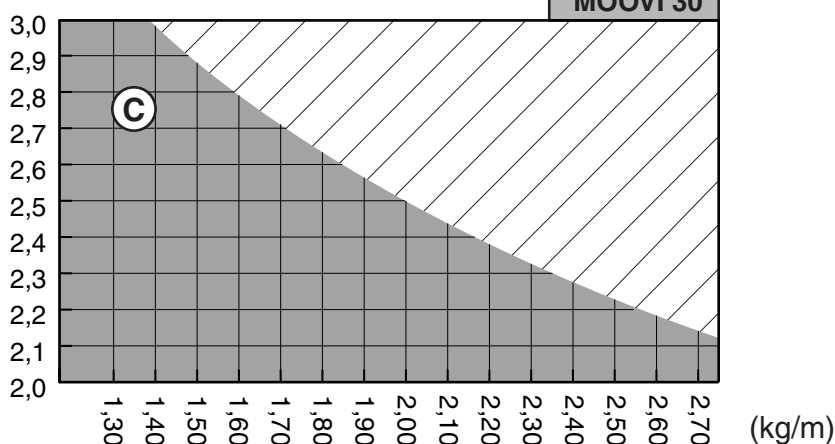


L (m)



Installazione non ammessa
Installation not allowed
Installation non admise
Installation unzulässig
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Instalação não consentida

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