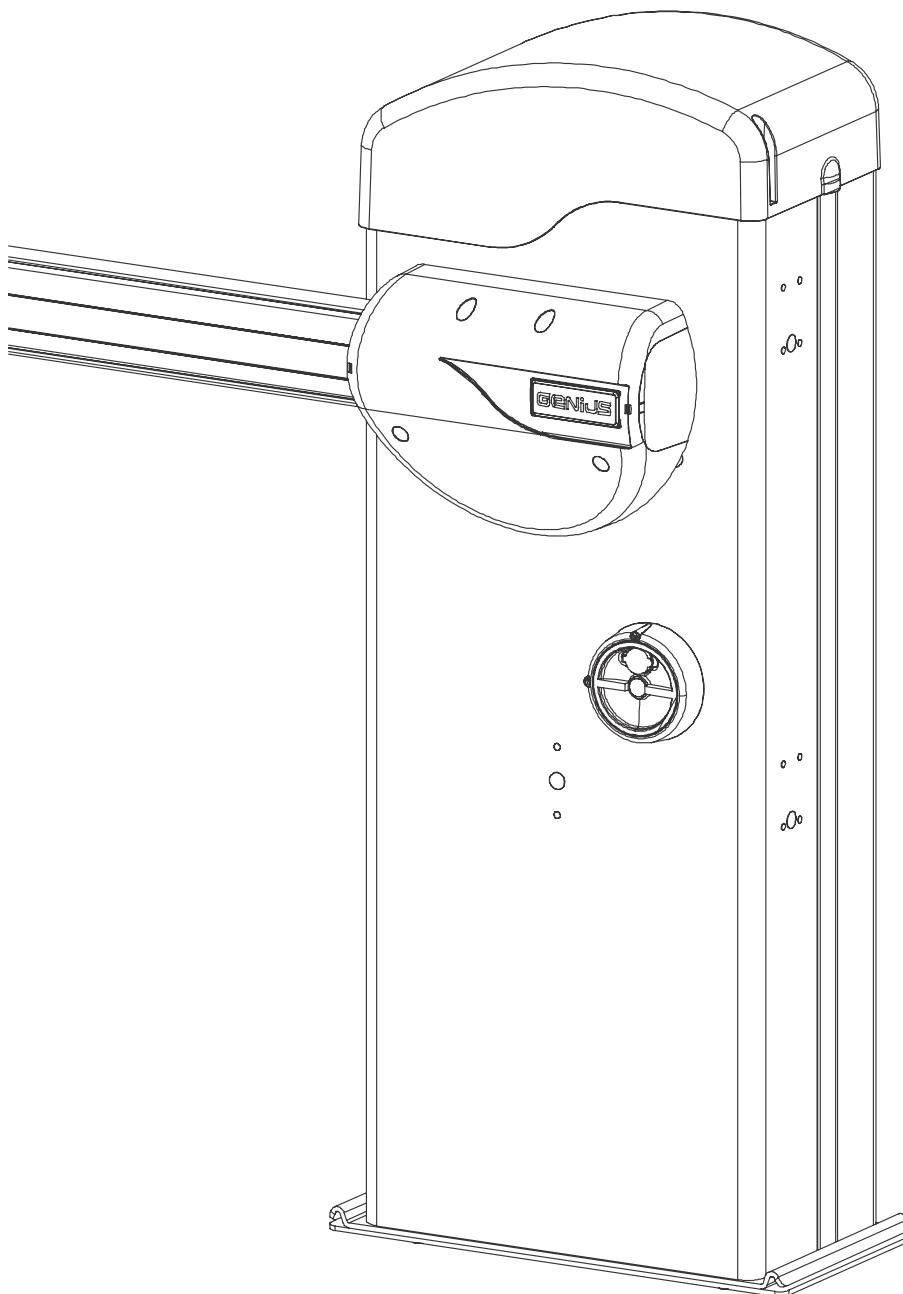




**genius®**

AUTOMATISMI PER CANCELLI

COMPANY  
WITH QUALITY SYSTEM  
CERTIFIED BY DNV  
= UNI EN ISO 9001/2000=



**RAINBOW 324 C**  
**RAINBOW 524 C**  
**RAINBOW 724 C**

**GUIDA PER L'INSTALLATORE - GUIDE FOR THE INSTALLER**  
**GUIDE POUR L'INSTALLATEUR - GUÍA PARA EL INSTALADOR**  
**LEITFADEN FÜR DEN INSTALLATEUR - GIDS VOOR DE INSTALLATEUR**



# ITALIANO

## AVVERTENZE PER L'INSTALLATORE

### OBBLIGHI GENERALI PER LA SICUREZZA



**ATTENZIONE!** È importante per la sicurezza delle persone seguire attentamente tutta l'istruzione. Una errata installazione o un errato uso del prodotto può portare a gravi danni alle persone.

- Leggere attentamente le istruzioni prima di iniziare l'installazione del prodotto.
- I materiali dell'imballaggio (plastica, polistirolo, ecc.) non devono essere lasciati alla portata dei bambini in quanto potenziali fonti di pericolo.
- Conservare le istruzioni per riferimenti futuri.
- Questo prodotto è stato progettato e costruito esclusivamente per l'utilizzo indicato in questa documentazione. Qualsiasi altro utilizzo non esplicitamente indicato potrebbe pregiudicare l'integrità del prodotto e/o rappresentare fonte di pericolo.
- GENIUS declina qualsiasi responsabilità derivata dall'uso improprio o diverso da quello per cui l'automatismo è destinato.
- Non installare l'apparecchio in atmosfera esplosiva: la presenza di gas o fumi infiammabili costituisce un grave pericolo per la sicurezza.
- Gli elementi costruttivi meccanici devono essere in accordo con quanto stabilito dalle Norme EN 12604 e EN 12605.
- Per i Paesi extra-CEE, oltre ai riferimenti normativi nazionali, per ottenere un livello di sicurezza adeguato, devono essere seguite le Norme sopra riportate.
- GENIUS non è responsabile dell'inosservanza della Buona Tecnica nella costruzione delle chiusure da motorizzare, nonché delle deformazioni che dovessero intervenire nell'utilizzo.
- L'installazione deve essere effettuata nell'osservanza delle Norme EN 12453 e EN 12445. Il livello di sicurezza dell'automazione deve essere C+D.
- Prima di effettuare qualsiasi intervento sull'impianto, togliere l'alimentazione elettrica e scollegare le batterie.
- Prevedere sulla rete di alimentazione dell'automazione un interruttore onnipolare con distanza d'apertura dei contatti uguale o superiore a 3 mm. È consigliabile l'uso di un magnetotermico da 6A con interruzione onnipolare.
- Verificare che a monte dell'impianto vi sia un interruttore differenziale con soglia da 0,03 A.
- Verificare che l'impianto di terra sia realizzato a regola d'arte e collegarvi le parti metalliche della chiusura.
- L'automazione dispone di una sicurezza intrinseca antischiaffiamento costituita da un controllo di coppia. E' comunque necessario verificarne la soglia di intervento secondo quanto previsto dalle Norme indicate al punto 10.
- I dispositivi di sicurezza (norma EN 12978) permettono di proteggere eventuali aree di pericolo da Rischii meccanici di movimento, come ad Es. schiacciamento, convogliamento, cesoialto.
- Per ogni impianto è consigliato l'utilizzo di almeno una segnalazione luminosa nonché di un cartello di segnalazione fissato adeguatamente sulla struttura dell'infisso, oltre ai dispositivi citati al punto "16".
- GENIUS declina ogni responsabilità ai fini della sicurezza e del buon funzionamento dell'automazione, in caso vengano utilizzati componenti dell'impianto non di produzione GENIUS.
- Per la manutenzione utilizzare esclusivamente parti originali GENIUS.
- Non eseguire alcuna modifica sui componenti facenti parte del sistema d'automazione.
- L'installatore deve fornire tutte le informazioni relative al funzionamento manuale del sistema in caso di emergenza e consegnare all'Utente utilizzatore dell'impianto il libretto d'avvertenze allegato al prodotto.
- Non permettere ai bambini o persone di sostare nelle vicinanze del prodotto durante il funzionamento.
- L'applicazione non può essere utilizzata da bambini, da persone con ridotte capacità fisiche, mentali, sensoriali o da persone prive di esperienza o del necessario addestramento.
- Tenere fuori dalla portata dei bambini radiocomandi o qualsiasi altro datore di impulso, per evitare che l'automazione possa essere azionata involontariamente.
- Il transito tra le ante deve avvenire solo a cancello completamente aperto.
- L'utente utilizzatore deve astenersi da qualsiasi tentativo di riparazione o d'intervento e deve rivolgersi solo ed esclusivamente a personale qualificato GENIUS o centri d'assistenza GENIUS.
- Tutto quello che non è previsto esplicitamente in queste istruzioni non è permesso.

# ENGLISH

## IMPORTANT NOTICE FOR THE INSTALLER

### GENERAL SAFETY REGULATIONS



**ATTENTION!** To ensure the safety of people, it is important that you read all the following instructions. Incorrect installation or incorrect use of the product could cause serious harm to people.

- Carefully read the instructions before beginning to install the product.
- Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
- Store these instructions for future reference.
- This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.
- GENIUS declines all liability caused by improper use or use other than that for which the automated system was intended.
- Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety.
- The mechanical parts must conform to the provisions of Standards EN 12604 and EN 12605.
- For non-EU countries, to obtain an adequate level of safety, the Standards mentioned above must be observed, in addition to national legal regulations.
- GENIUS is not responsible for failure to observe Good Technique in the construction of the closing elements to be motorised, or for any deformation that may occur during use.
- The installation must conform to Standards EN 12453 and EN 12445. The safety level of the automated system must be C+D.
- Before attempting any job on the system, cut out electrical power and disconnect the batteries.
- The mains power supply of the automated system must be fitted with an all-pole switch with contact opening distance of 3mm or greater. Use of a 6A thermal breaker with all-pole circuit break is recommended.
- Make sure that a differential switch with threshold of 0.03 A is fitted upstream of the system.
- Make sure that the earthing system is perfectly constructed, and connect metal parts of the means of the closure to it.
- The automated system is supplied with an intrinsic anti-crushing safety device consisting of a torque control. Nevertheless, its tripping threshold must be checked as specified in the Standards indicated at point 10.
- The safety devices (EN 12978 standard) protect any danger areas against mechanical movement Risks, such as crushing, dragging, and shearing.
- Use of at least one indicator-light is recommended for every system, as well as a warning sign adequately secured to the frame structure, in addition to the devices mentioned at point "16".
- GENIUS declines all liability as concerns safety and efficient operation of the automated system,

if system components not produced by GENIUS are used.

- For maintenance, strictly use original parts by GENIUS.
- Do not in any way modify the components of the automated system.
- The installer shall supply all information concerning manual operation of the system in case of an emergency, and shall hand over to the user the warnings handbook supplied with the product.
- Do not allow children or adults to stay near the product while it is operating.
- The application cannot be used by children, by people with reduced physical, mental, sensorial capacity, or by people without experience or the necessary training.
- Keep remote controls or other pulse generators away from children, to prevent the automated system from being activated involuntarily.
- Transit through the leaves is allowed only when the gate is fully open.
- The User must not in any way attempt to repair or to take direct action and must solely contact qualified GENIUS personnel or GENIUS service centres.
- Anything not expressly specified in these instructions is not permitted.

# FRANÇAIS

## CONSIGNES POUR L'INSTALLATEUR

### RÈGLES DE SÉCURITÉ

**ATTENTION!** Il est important, pour la sécurité des personnes, de suivre à la lettre toutes les instructions. Une installation erronée ou un usage erroné du produit peut entraîner de graves conséquences pour les personnes.

- Lire attentivement les instructions avant d'installer le produit.
- Les matériaux d'emballage (matière plastique, polystyrène, etc.) ne doivent pas être laissés à la portée des enfants car ils constituent des sources potentielles de danger.
- Conserver les instructions pour les références futures.
- Ce produit a été conçu et construit exclusivement pour l'usage indiqué dans cette documentation. Toute autre utilisation non explicitement indiquée pourrait compromettre l'intégrité du produit et/ou représenter une source de danger.
- GENIUS décline toute responsabilité qui dériverait d'usage impropre ou différent de celui auquel l'automatisme est destiné.
- Ne pas installer l'appareil dans une atmosphère explosive: la présence de gaz ou de fumées inflammables constitue un grave danger pour la sécurité.
- Les composants mécaniques doivent répondre aux prescriptions des Normes EN 12604 et EN 12605.
- Pour les Pays extra-CEE, l'obtention d'un niveau de sécurité approprié exige non seulement le respect des normes nationales, mais également le respect des Normes susmentionnées.
- GENIUS n'est pas responsable du non-respect de la Bonne Technique dans la construction des fermetures à motoriser, ni des déformations qui pourraient intervenir lors de l'utilisation.
- L'installation doit être effectuée conformément aux Normes EN 12453 et EN 12445. Le niveau de sécurité de l'automatisme doit être C+D.
- Couper l'alimentation électrique et déconnecter la batterie avant toute intervention sur l'installation.
- Prévoir, sur le secteur d'alimentation de l'automatisme, un interrupteur onnipolaire avec une distance d'ouverture des contacts égale ou supérieure à 3 mm. On recommande d'utiliser un magnétothermique de 6A avec interruption onnipolaire.
- Vérifier qu'il y ait, en amont de l'installation, un interrupteur différentiel avec un seuil de 0,03 A.
- Vérifier que la mise à terre est réalisée selon les règles de l'art et y connecter les pièces métalliques de la fermeture.
- L'automatisme dispose d'une sécurité intrinsèque anti-éraslement, formée d'un contrôle du couple. Il est toutefois nécessaire d'en vérifier le seuil d'intervention suivant les prescriptions des Normes indiquées au point 10.
- Les dispositifs de sécurité (norme EN 12978) permettent de protéger des zones éventuellement dangereuses contre les Risques mécaniques du mouvement, comme l'éraslement, l'acheminement, le cisaillement.
- On recommande que toute installation soit doté au moins d'une signalisation lumineuse, d'un panneau de signalisation fixé, de manière appropriée, sur la structure de la fermeture, ainsi que des dispositifs cités au point "16".
- GENIUS décline toute responsabilité quant à la sécurité et au bon fonctionnement de l'automatisme si les composants utilisés dans l'installation n'appartiennent pas à la production GENIUS.
- Utiliser exclusivement, pour l'entretien, des pièces GENIUS originales.
- Ne jamais modifier les composants faisant partie du système d'automatisme.
- L'installateur doit fournir toutes les informations relatives au fonctionnement manuel du système en cas d'urgence et remettre à l'Usager qui utilise l'installation les "Instructions pour l'Usager" fournies avec le produit.
- Interdire aux enfants ou aux tiers de stationner près du produit durant le fonctionnement.
- Ne pas permettre aux enfants, aux personnes ayant des capacités physiques, mentales et sensorielles limitées ou dépourvues de l'expérience ou de la formation nécessaires d'utiliser l'application en question.
- Eloigner de la portée des enfants les radiocommandes ou tout autre générateur d'impulsions, pour éviter tout actionnement involontaire de l'automatisme.
- Le transit entre les vantaux ne doit avoir lieu que lorsque le portail est complètement ouvert.
- L'utilisateur doit s'abstenir de toute tentative de réparation ou d'intervention et doit s'adresser uniquement et exclusivement au personnel qualifié GENIUS ou aux centres d'assistance GENIUS.
- Tout ce qui n'est pas prévu explicitement dans ces instructions est interdit.

# ESPAÑOL

## ADVERTENCIAS PARA EL INSTALADOR

### REGLAS GENERALES PARA LA SEGURIDAD

**ATENCIÓN!** Es sumamente importante para la seguridad de las personas seguir atentamente las presentes instrucciones. Una instalación incorrecta o un uso incorrecto del producto puede causar graves daños a las personas.

- Lean detenidamente las instrucciones antes de instalar el producto.
- Los materiales del embalaje (plástico, poliestireno, etc.) no deben dejarse al alcance de los niños, ya que constituyen fuentes potenciales de peligro.
- Guarden las instrucciones para futuras consultas.
- Este producto ha sido proyectado y fabricado exclusivamente para la utilización indicada en el presente manual. Cualquier uso diverso del previsto podría perjudicar el funcionamiento del producto y/o representar fuente de peligro.
- GENIUS declina cualquier responsabilidad derivada de un uso impropio o diverso del previsto.
- No instalen el aparato en atmósfera explosiva: la presencia de gas o humos inflamables constituye un grave peligro para la seguridad.
- Los elementos constructivos mecánicos deben estar de acuerdo con lo establecido en las Normas EN 12604 y EN 12605.
- Para los países no pertenecientes a la CEE, además de las referencias normativas nacionales, para obtener un nivel de seguridad adecuado, deben seguirse las Normas arriba indicadas.
- GENIUS no es responsable del incumplimiento de las buenas técnicas de fabricación de los cierres que se han de motorizar, así como de las deformaciones que pudieran intervenir en la utilización.



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## CE DECLARATION OF CONFORMITY

**Manufacturer:** GENIUS S.p.A. con Socio Unico

**Address:** Via Padre Elzi, 32 - 24050 - Grassobbio- Bergamo - ITALY

**Declares that:** Operator mod. **RAINBOW 324 C - RAINBOW 524 C - RAINBOW 724 C**

- is built to be integrated into a machine or to be assembled with other machinery to create a machine under the provisions of Directive 2006/42/EC;
- conforms to the essential safety requirements of the following EEC directives:
  - 2006/95/EC Low Voltage directive.
  - 2004/108/EC Electromagnetic Compatibility directive.
- and also declares that it is prohibited to put into service the machinery until the machine in which it will be integrated or of which it will become a component has been identified and declared as conforming to the conditions of Directive 2006/42/EEC and subsequent modifications.

Grassobbio, June 14, 2011

  
 Massimo Colombo  
 Technical Manager

### Notes on reading the instruction

Read this installation manual to the full before you begin installing the product.

The symbol  indicates notes that are important for the safety of persons and for the good condition of the automated system.

The symbol  draws your attention to the notes on the characteristics and operation of the product.

Thank you for choosing our product. GENIUS is sure you will get the performances you expect to satisfy your requirements. All our products are the result of a many years' experience in the field of the automated systems, strengthened by being part of a world leading group in this sector.

 In the middle of the manual you will find a detachable booklet containing all the images for the installation.

The automated systems of the **RAINBOW** family are electro-mechanical barriers which have been designed and built to control vehicle accesses.

The control unit is located on the upper part of the automated system and can be rotated to facilitate wiring and setting operations. Suitable facilities for the photocells (Orion) and the key selector (Quick) are present on the housing. Both on the housing and on the rods you can install luminous strips, replacing thus the traditional flashing lamp.

Thanks to the various types of rods available, these can be used in very different types of accesses, from a minimum of 2 meters up to a maximum of 7 meters.

A handy release device, protected by customised key, enables you to move the rod by hand in the event of a power cut.

Thanks to the use of 24V motors and of the encoder (standard supplied), all automated systems of the **RAINBOW** family are able to guarantee very high safety levels.

### **IMPORTANT WARNINGS FOR THE INSTALLER**

- Carefully read the whole manual before beginning to install the operator.
- Store the manual for future reference.
- The correct operation and the declared technical specifications are only valid if the instructions given in this manual are strictly observed and only GENIUS accessories as well as safety device are used.
- To guarantee an adequate level of safety of the automated system, the use of a control unit with an adjustable electronic clutch is necessary due to the lack of a mechanical clutch .
- The automated system was designed and built to control vehicle access. Avoid any other use.
- The operator cannot be used to move safety exits or gates installed on emergency routes (escape routes).
- Do not transit when the rod is moving.
- Anything not expressly specified in this manual is not permitted.

## 1. DESCRIPTION

With reference to figure 1:

Pos.	Description
①	Upright
②	Panel
③	Foundation plate (sold as a separate part)
④	Cover
⑤	Control unit enclosure
⑥	Rod fitting cover
⑦	Rod (sold as a separate part according to installation requirements)
⑧	Balance spring (sold as a separate part, number and type according to rod type and to fitted accessories)
⑨	Gearmotor
⑩	Encoder
⑪	Closing / opening travel limits
⑫	Safety switch for opening panel
⑬	Red edge (cover for optional luminous strip)
⑭	Release device
⑮	Compartment for buffer batteries (not supplied)

## 1.1 TECHNICAL SPECIFICATIONS

RAINBOW Model	324 C	524 C	724 C
Power supply voltage	230V~ 50Hz / 115V~ 60Hz		
Motor supply voltage (V=)		24	
Max. power at thrust (W)	280	480	
Motor rated power (W)	160	220	
Max. torque at 24V= (Nm)	155	140	370
Operating rated torque (Nm)	30	75	140

RAINBOW Model	324 C	524 C	724 C
Opening / closing nominal time (sec) ①	2 to 3	4 to 8	7 to 11
Rod max. length (m) ②	3	5	7
Type and use frequency at 20°C		Semi-intensive	
Daily max. cycles (cycles)	1500	1000	500
Operating ambient temperature (°C)		t-20 t+55	
Noise (dBA)		<70	
Protection class		IP 54	
Operator weight (Kg)		66	72
Dimensions	See fig. 2		See fig. 3

① Time according to the type of deceleration being set.

② Length referred to the passage width, rod length +300mm approx for Rainbow 324C and Rainbow 524C; rod length +400mm approx for Rainbow 724C

### 1.1.1. PRODUCT LIFE

The tables below indicate the product life, expressed in number of cycles, according to the type of selected rod and to the accessories fitted to it:

RAINBOW 324 C - RAINBOW 524 C	
Rod and accessory	Life (No. of cycles)
2 to 3 meters	1.500.000
4 meters	1.300.000
5 meters	1.100.000
3 meters with foot	1.300.000
4 meters with foot	1.100.000
5 meters with foot	800.000
3 meters with 2 m skirt	1.300.000
4 meters with 3 m skirt	1.100.000
5 meters with 4 m skirt	800.000

RAINBOW 724 C	
Rod and accessory	Life (No. of cycles)
4 meters	1.300.000
5 meters	1.100.000
6 meters	850.000
7 meters	500.000
4 meters with foot	1.100.000
5 meters with foot	850.000
6.5 meters with foot	500.000
4 meters with 2 m skirt	1.100.000
5 meters with 3.5 m skirt	850.000
6.5 meters with 5 m skirt	500.000

 The product life has been calculated at a temperature of 20°C on correctly installed operators, according to the specifications indicated in the instructions.

## 2. ELECTRICAL PREPARATIONS (standard system)

With reference to fig. 4:

Pos.	Description	Cable section
①	Operator (power supply)	3x1.5 mm <sup>2</sup>
②	TX photocell	2x0.5 mm <sup>2</sup>
③	RX photocell	4x0.5 mm <sup>2</sup>
④	Key-selector	2x0.5 mm <sup>2</sup>

 To lay cables, use adequate rigid and/or flexible tubes

 Always separate connection cables of low-voltage accessories from power cables. To prevent any interference whatsoever, use separate sheaths.

## 3. INSTALLING THE AUTOMATED SYSTEM

### 3.1. PRELIMINARY CHECKS

To ensure safety and an efficiently operating automated system, make sure the following conditions are observed:

- When moving, the beam must not, on any account, meet any obstacles or overhead cables.
- The soil must permit sufficient stability for the foundation plinth.
- There must be no pipes or electrical cables in the plinth excavation

## Guide for the installer

area.

- If the barrier body is exposed to passing vehicles, install, if possible, adequate means of protection against accidental impacts.
- Check that an efficient earth socket is available for connecting the upright.

**3.2. MASONRY FOR FOUNDATION PLATE**

- Assemble the foundation plate as shown in fig. 5.
- Make a foundation plinth as shown in fig. 6.

**Plinth dimensions must be adequate for the type of installation and soil.**

- Wall the foundation plate as shown in fig. 6, supplying one or more sheaths for routing electrical cables.

**The rounded part of the foundation plate must face the internal part of the passage to be automated.**

- Using a spirit level, check if the plate is perfectly level.
- Wait for the cement to set.

**3.3. MECHANICAL INSTALLATION**

- Remove the 4 upper nuts from the foundation plate.
- Remove both screws securing the upper cover, see Fig.7, ref. ①.
- Fit the release key into the lock of the cover, Fig. 8, and turn it clockwise until it stops.
- Keeping the key in this position, remove the upper cover, Fig. 8.
- Remove the panel as shown in fig. 9.
- Place the upright on the four threaded tie-rods as shown in fig. 10 and tighten the four fixing nuts.
- Prepare the automated system for manual operation, see paragraph 7
- Place the spring rod, Fig. 11 ref. ①, horizontally.
- Secure the spring plate, as shown in fig. 12, according to the closing direction:
  - If the rod closes to the left of the upright, **right hand installation**, the plate must be secured on pin ②, fig.11.
  - If the rod closes to the right of the upright, **left hand installation**, the plate must be secured on pin ③, fig. 11.
- Turn the spring plate to the position shown in fig. 13, according to the installation type (right hand or left hand).
- Place the rod plate in the front part of the automated system keeping it horizontally, Fig. 14.

 For the RAINBOW 724 C model, pay attention to the orientation of the holes indicated in Fig. 14 ref. ①: the holes must be on the plate top part.

- Secure the rod plate using relevant screw, lock washer and washer, Fig.15.

**3.4. ASSEMBLING THE ROD**

To assemble the rod, you should remember that:

- The rubber edge, with the rod in closing position, must face the ground.
- The hole on the rod must be coupled with the pin coming out of the driving plate.

Operate as shown in fig. 16.

- Place the cheek plastic Fig. 16 ref. ①, as shown.
- Place the rod on the central pin with the rubber edge faced downward.
- Place the fixing pocket, fig. 16 ref. ②, and secure it using the supplied screws.

 Pay attention to the orientation of the holes, fig. 16 ref. ③, in correspondence with the holes on the rod plate.

- Assemble the cover as shown in fig. 17, according to the type of automated system and installation (left hand or right hand).
- Secure the cover as shown in fig. 18.

**3.5. INSTALLING AND ADJUSTING THE BALANCING SPRING**

To operate correctly, the automated system must be equipped with one or two balancing springs that must be ordered separately according to the automated system model, to the rod type and to any selected accessories.

To install and adjust the spring, follow the instructions below:

- Move the beam into vertical position and prepare the automated system for normal operation, see paragraph 8. Make sure that the rod cannot be moved by hand.
- Place the spring or the springs in the spring plate as shown in fig. 19.
- Place the other spring plate and its relevant tie-rod, fig. 20 ref. ① and

- on the other end of the spring; secure the whole part in the hole on the upright. Fit the fixing nut, fig. 20 ref. ③.

- Tighten the nut, fig. 20 ref. ③, to eliminate any spring clearance.
- Prepare the automated system for manual operation adjusting the release device as shown in paragraph 7.
- By means of the bottom nut, Fig. 20 ref. ④, start to tension the spring.

 **The spring is correctly tensioned when, after having positioned the rod to 45°, it stands still.**

- After you have adjusted the spring, block the tie-rod position tightening the counter-nut, fig. 20 ref. ④.

**3.6. ADJUSTING THE MECHANICAL STOPS**

Two mechanical stops are provided on the upper part of the upright, Fig. 21 ref. ① and ②.

To adjust the position of the stops, operate as follows:

- Manually move the rod into closing position.
- Loosen the fixing nuts, fig. 21 ref ③.
- Using the screw, move the rod into horizontal position.
- Tighten the fixing nut.
- Move the rod into vertical position and do the same for the other mechanical stop.

 We recommend you to grease both mechanical stops periodically.

**3.7. ADJUSTING THE TRAVEL LIMIT DEVICES**

Two travel limit devices are located on the automated system to identify the rod position, open or closed, Fig. 22.

 **The automated system is supplied with travel limit devices already prepared for a left hand installation of the beam.**

To adjust the cam position, operate as follows:

- Manually move the rod into closing position.
- Turn the cam, fig. 22 ref. ①, until the travel limit device engages.
- Slightly advance the cam.

 The travel limit device must operate before the mechanical stop.

- Block the cam position tightening the relevant screw.
- Move the rod into opening position.
- Turn the cam, fig. 22 ref. ②, until the travel limit device engages.
- Slightly advance the cam.

 The travel limit device must operate before the mechanical stop.

- Block the cam position tightening the relevant screw.

 In the event of right hand installations, reverse the wires of the travel limit devices connected to the unit, see control board instructions.

- Block the automated system again as indicated in paragraph 8.

**4. INSTALLING THE ACCESSORIES (Optional)**

Holes have been prepared on the upright of the automated system to facilitate fastening operations for accessories (if any), such as photocells (Orion) and key-selector (Quick).

Fig. 23 shows the accessories that can be fitted on the housing of the automated system.

On the upright sides as well as over the entire beam length you can install signalling lights.

To fix the single accessories, please refer to the relevant instructions.

**5. ELECTRIC CONNECTIONS**

 Install an omnipolar switch on the power supply mains of the automated system with contact opening distance of 3 mm or more. The use of a thermal magnetic switch 6A with omnipolar switching is recommended.

 Make sure that a differential switch with 0.03 A threshold is fitted upstream of the system.

At the end of the assembling and adjusting operations of the mechanical part of the automated system you can connect the power mains and all accessories fitted.

To connect the power cable you need to open the prepared hole on the central box, fig. 24 ref. ①, and mount the supplied cable gland M16x1.5.

 A channel for the cable routing has been prepared inside the upright.

 The power cable must enter the control unit passing through its dedicated cable gland.

 To connect the power line and the accessory line to the control

unit, please refer to the instructions for the control unit.

The control unit has been located on a swinging support, fig. 25. This makes the wiring and programming operations for the control unit easier.

## 6. START-UP

- Place the panel as shown in fig. 26 and power up the system.
- Check the status of the signalling LEDs and of the control unit.
- Perform the programming procedure for the control unit according to your needs.
- Perform a functional check of all the accessories connected, paying special attention to the safety devices.
- Close the unit enclosure and position it horizontally.
- Place the upper cover as shown in fig. 27.
- Inform the end user about the correct operation of the automated system
- Show the release and lock operations of the automated system.
- Hand over the booklet "User's guide": this is a detachable booklet in the middle of the manual. Fill out the enclosed maintenance register.

## 7. MANUAL OPERATION

If a manual operation of the rod is necessary due to a fault of the automated system or to a power cut, operate as follows:

**Cut power to the system using the differential switch upstream of the system.**

- Insert the key into the release device and turn it clockwise until it stops, as shown in fig. 28 ref. ①.
- Turn the release device clockwise until it stops, fig. 28 ref. ②.
- Move the rod by hand, fig. 28 ref. ③.

## 8. RESTORING NORMAL OPERATION

**To prevent an involuntary pulse from activating the automated system, make sure the system is not powered up using the differential switch, before restoring normal operation mode.**

- Turn the release device counter-clockwise until it stops, Fig. 29 ref. ①.
- Turn the key counter-clockwise until it stops and then remove it, fig. 29 ref ②.
- Move the rod by hand until it stops, fig. 29 ref. ③.
- Power up the system again.

## 9. MAINTENANCE

To ensure a correct operation and a constant safety level over time perform, every six months, a general check of the system paying special attention to the safety devices. The booklet "User's guide" contains a form for the registration of the maintenance operations.

**Every maintenance job or inspection performed by the operator must only occur after having cut power to the system and with the rod in vertical position.**

For the correct operation of the barrier, we recommend you to periodically replace the spring and the balancing springs. The table below shows the spring life according to the type of automated system and spring used:

Spring type	RAINBOW 324 C	RAINBOW 524 C	RAINBOW 724 C
Strong spring	500.000 cycles	500.000 cycles	200.000 cycles <sup>①</sup>
Soft spring		500.000 cycles	350.000 cycles

① In applications with a double spring also replace the tie rod adjustment Fig. 20 ref ②.

To remove the spring or the balancing spring in complete safety, operate as follows:

- Cut power to the system.
- Prepare the operator for manual operation; move the rod into vertical position and lock the operator again making sure that it cannot be moved manually.
- Remove the upper cover and the panel.
- Now you can remove the balancing springs.

If you need to remove the rod for maintenance operations, you need to perform the following:

- Remove the balancing springs as described before.
- Prepare the operator for manual operation and move the rod into horizontal position.
- Now you can remove the rod.

**The rod can only be removed after having removed the balancing springs.**

## 10. REPAIRS

The user must not attempt any repair or job and must only and exclusively contact qualified GENIUS personnel or GENIUS service centres.

## 11. ACCESSORIES

### 11.1. ARTICULATION KIT

The articulation kit, fig. 30, was created to articulate the rigid rod enabling installation in covered places.

**If the articulation kit is used, the balancing spring must be adapted.**

### 11.2. SKIRT KIT

The skirt kit, fig. 31, increases visibility of the beam. The kit is available in lengths of 2 meters.

**If the skirt kit is installed, the balancing spring must be adapted.**

### 11.3. END FOOT

The end foot, fig. 32, allows the rod to rest when closed thus preventing the profile bending downward.

**If the end foot is used, the balancing spring must be adapted.**

### 11.4. FORK SUPPORT

The fork support, fig. 33, has two functions:

- It prevents the rod, when closed, from bending and splitting due to external stresses.
- It allows the rod to rest when closed thus preventing any bending.

**The use of the fork support does not imply any adaptation of the balancing spring.**

**For the positioning of support refer to the dimensions shown in Figure 34.**

### 11.5. PHOTOCELL SUPPORT

The photocell support, fig. 35, enables the positioning of a pair of photocells aligned with the rod.

**The second photocell must be positioned using a column.**

### 11.6. LUMINOUS STRIP FOR UPRIGHT

The luminous strip for the upright increases visibility of the automated system and compensates the use of a flashing lamp. Its operation is controlled by the control unit.

### 11.7. LUMINOUS STRIP FOR ROD

The luminous strip for rod is positioned on top of the rod to increase its visibility. The operation of the strip is controlled by the control unit.

**If the luminous strip is used on the rod, the balancing spring must be adapted.**

### 11.8. BATTERY KIT

A tray to house buffer batteries (not supplied) is located in the upright. For models RAINBOW 524 C and RAINBOW 524 C you can use 24V 7Ah batteries, whereas for the RAINBOW 724 C model you can use 24V 12Ah batteries.



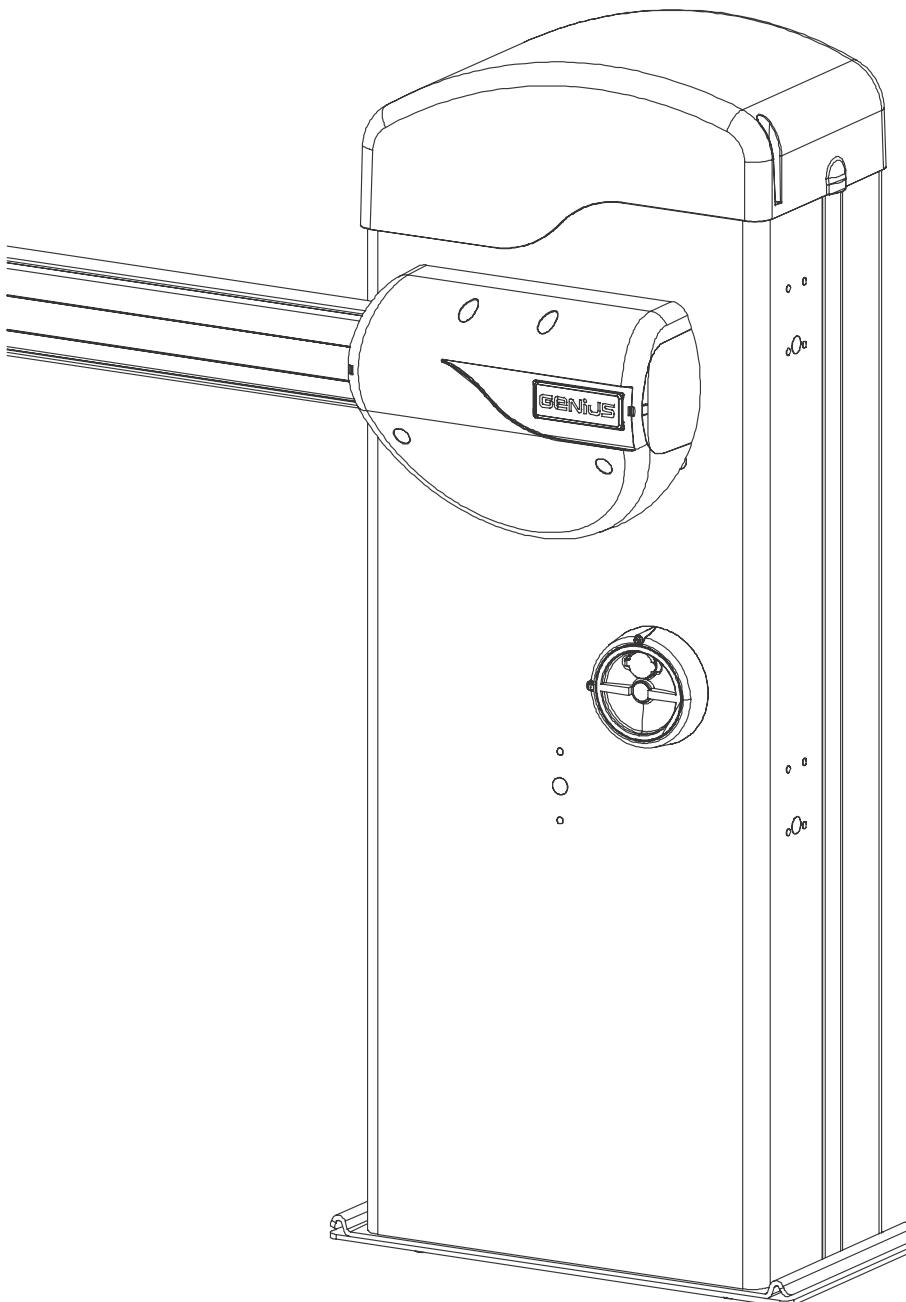


Note • Notes • Note • Notas • Anmerkung • Opmerkingen



**GENIUS®**  
AUTOMATISMI PER CANCELLI

COMPANY  
WITH QUALITY SYSTEM  
CERTIFIED BY DNV  
= UNI EN ISO 9001/2000 =



**RAINBOW 324C**   **RAINBOW 624C**   **RAINBOW 724C**

**GUIDA PER L'UTENTE - USER'S GUIDE**  
**INSTRUCTIONS POUR L'UTILISATEUR - GUÍA PARA EL USUARIO**  
**FÜHRER FÜR DEN BENUTZER - HANDLEIDING VOOR DE GEBRUIKER**



**⚠ Carefully read the instructions before using the product.**

**⚠ Store these instructions for future reference.**

Thank you for choosing our product. GENIUS is sure you will get the performances you expect to satisfy your requirements.

All our products are the result of a many years' experience in the field of the automated systems, strengthened by being part of a world leading group in this sector.

The automated systems of the **RAINBOW** family are electro-mechanical barriers which have been designed and realised to control vehicle accesses.

During design particular attention has been paid to the many installation requirements. The result has been a product attentive to installer ergonomics, the control unit is located on the upper part of the automated system and can be rotated. Attention has also been paid to the ease of installation: suitable facilities for the photocells and the key-selector are present on the housing. Both on the housing and on the rods you can install luminous strips, replacing thus the traditional flashing lamp.

Thanks to the various types of rods available, these can be used in very different types of accesses, from a minimum of 3 meters to a maximum of 7 meters in case of single applications.

These automated systems consist of a steel structure with powder paint enclosing the non-reversing electro-mechanical gearmotor.

A handy release device, protected by customised key, enables you to move the rod by hand in the event of a power cut.

Thanks to the use of 24V motors and of the encoder (standard supplied), all automated systems of the **RAINBOW** family are able to guarantee very high safety levels. If correctly installed, they realise installations in compliance with current safety standards.

### GENERAL SAFETY REGULATIONS

If correctly installed and used, the **RAINBOW** automated system guarantees a high level of safety. Certain simple rules of behaviour can also avoid accidental hitches:

- Do not transit when the rod is moving. Transit is only allowed when the beam is completely open.
- Do not in any way stand under the rod.
- Keep radio controls or any other pulse generators out of reach of children, to prevent the automated system from being activated involuntarily.
- Do not allow children to play with the automated system.
- Do not willingly impede the movement of the rod.
- Prevent any branches or shrubs from interfering with the movement of the rod.
- Keep the signalling systems clearly visible and operating efficiently.
- Do not attempt to manually move the rod unless you have released it.
- In the event of malfunctions, cut power, release the rod to permit access and wait for qualified personnel to do the necessary work.
- Once the system has been set in manual mode, before restoring normal operation check that the system is not powered.
- Do not make any modifications to the components of the automated system.
- Have the efficiency of the automated system checked every six months.
- Do not attempt any kind of repair or direct action whatsoever; these operations must only be carried out by GENIUS qualified personnel or by GENIUS service centres.
- Make sure that the installing technician fills out the enclosed maintenance register

### MANUAL OPERATION

If a manual operation of the rod is necessary due to a fault of the automated system or to a power cut, operate as follows:

**⚠ Cut power to the system using the differential switch upstream of the system.**

- Insert the key into the release device and turn it clockwise until it stops, as shown in fig. 1 ref. ①.
- Turn the release device clockwise until it stops, fig. 1 ref. ②.
- Move the rod by hand, fig. 1 ref. ③.

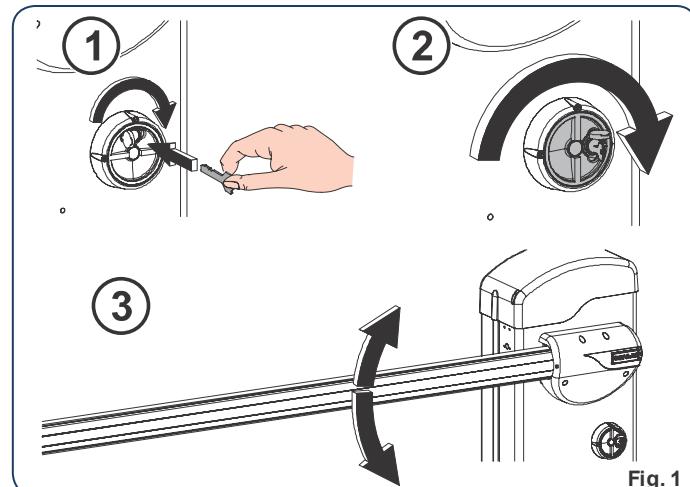


Fig. 1

### RESTORING NORMAL OPERATION

**⚠ To prevent an involuntary pulse from activating the automated system, make sure the system is not powered up using the differential switch, before restoring normal operation mode.**

- Turn the release device counter-clockwise until it stops, Fig. 2 ref. ①.
- Turn the key counter-clockwise until it stops and then remove it, fig. 2 ref ②.
- Move the rod by hand until it stops, fig. 2 ref. ③.
- Power up the system.

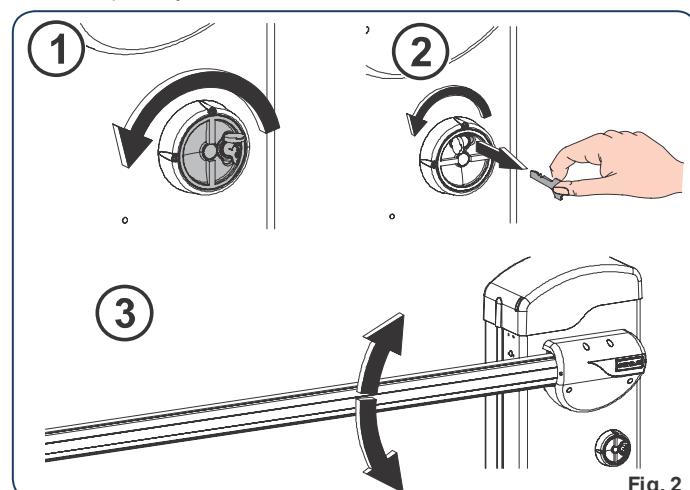


Fig. 2

### MAINTENANCE

To ensure a correct operation and a constant safety level over time perform, every six months, a general check of the system paying special attention to the safety devices. The booklet "Instructions for use" contains a form for the registration of the maintenance operations.

**⚠ Every maintenance job must be performed by GENIUS qualified personnel or by GENIUS service centres.**

### REPAIRS

The user must not attempt any repair or job and must only and exclusively contact qualified GENIUS personnel or GENIUS service centres.



## REGISTRO DI MANUTENZIONE / MAINTENANCE REGISTER / REGISTRE D'ENTRETIEN / REGISTRO DE MANTENIMIENTO / WARTUNGSPROGRAMM / ONDERHOUDREGISTER

Dati impianto / System data / données de l'installation / Datos equipo / Daten der Anlage / Gegevens installatie

Installatore / Installer / Installateur / Installador / Monteur / installateur	
Cliente / Customer / Client / Cliente / Kunde / Klant	
Tipo impianto / Type of system / Type d'installation / Tipo de equipo / Art der Anlage / Type installatie	
Matricola / Serial No. / N° de série / N° de serie / Seriennummer / Seriennummer	
Data installazione / Installation date / Date d'installation / Fecha de instalación / Installationsdatum / datum installatie	
Attivazione / Start-up / Activation / Activación / Inbetriebnahme / Activering	

Configurazione impianto / System configuration / Configuration de l'installation / Configuración del equipo / Konfiguration der Anlage / Configuratie installatie

COMPONENTE / PART / COMPOSANT / COMPONENTE / BAUTEIL / ONDERDEEL	MODELLO / MODEL / MODÈLE / MODELO / MEDELL / MODEL	MATRICOLO / SERIAL NUMBER / N° DE SERIE / N° DE SERIE / SERIENNUMMER / SERIENNUMMER
Operatore / Operator / Opératuer / Operador / Antrieb / Aandrijving		
Dispositivo di sicurezza 1 / Safety device 1 / dispositif de sécurité 1 / Dispositivo de seguridad 1 / Sicherheitsvorrichtung 1 / Veiligheidsvoorziening 1		
Dispositivo di sicurezza 2 / Safety device 2 / dispositif de sécurité 2 / Dispositivo de seguridad 2 / Sicherheitsvorrichtung 2 / Veiligheidsvoorziening 2		
Coppia di fotocellule 1 / Pair of photocells 1 / Paire de photoccules 1 / Par de fotocélulas 1 / Fotozellenpaar 1 / Paar fotocellen 1		
Coppia di fotocellule 2 / Pair of photocells 2 / Paire de photoccules 2 / Par de fotocélulas 2 / Fotozellenpaar 2 / Paar fotocellen 2		
Dispositivo di comando 1 / Control device 1 / Dispositif de commande 1 / Dispositivo de mando 1 / Schaltvorrichtung 1 / Bedienungsvoorziening 1		
Dispositivo di comando 2 / Control device 2 / Dispositif de commande 2 / Dispositivo de mando 2 / Schaltvorrichtung 2 / Bedienungsvoorziening 2		
Radiocontrol / Radio control / Radiocommande / Radiomando / Funksteuerung / Afstandsbediening		
Lampeggiante / Flashing lamp / Lampe clignotante / Destellador / Blinkbeleucht / Signallamp		

Indicazione dei rischi residui e dell'uso improprio prevedibile / Indication of residual risks and of foreseeable improper use / Indication des risques résiduels et de l'usage impropre prévisible / Indicación de los riesgos residuos y del uso impropio previsible / Angabe der Restrisiken und der voraussichtbaren unsachgemäßen Anwendung / Aanduiding van de restrisico's en van voorziensbaar oneigenlijk gebruik



Registro di manutenzione - Maintenance register - Registre d'entretien  
Registro de mantenimiento - Wartungsprogramm - Onderhoudsregister

Nr	Data / Date / / Date / Fecha / Datum / Datum	Descrizione intervento / Job description / Description de l'intervention / Descripción de la intervención / Beschreibung der Arbeiten / Beschrijving ingreep	Firma / Signatures / Signatures / Firma / Unterschrift / Handtekeningen
1			Tecnico / Technicia Technician / Técnico Techniker / Technicus  Cliente / Customer Client / Cliente Kunde / Klient
2			Tecnico / Technicia Technician / Técnico Techniker / Technicus  Cliente / Customer Client / Cliente Kunde / Klient
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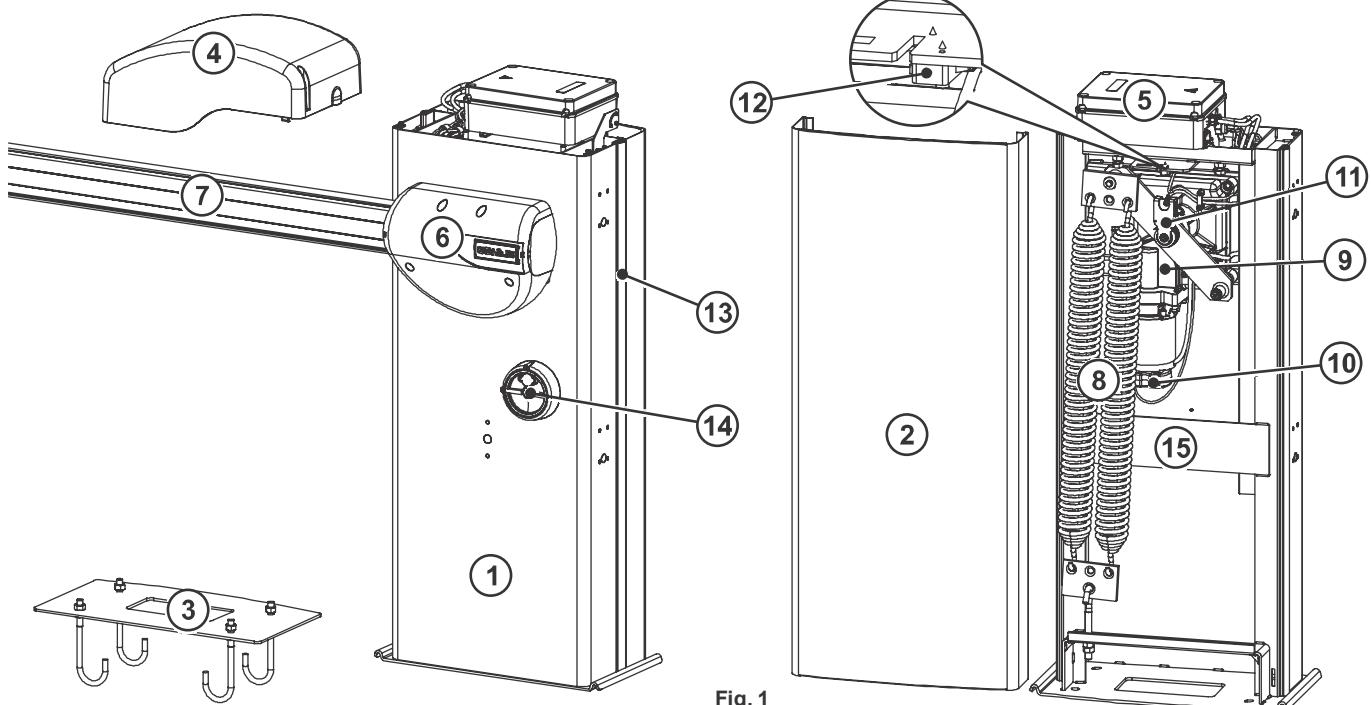


Fig. 1

Fig. 2

Fig. 3

Fig. 4

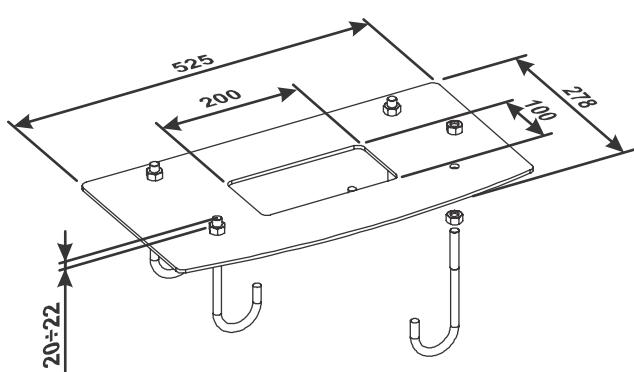


Fig. 5

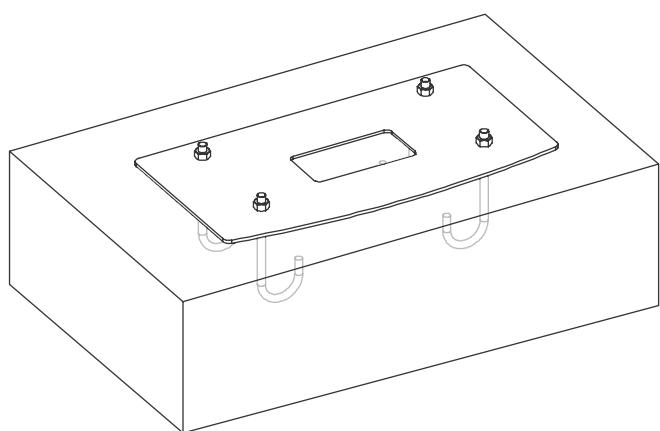


Fig. 6

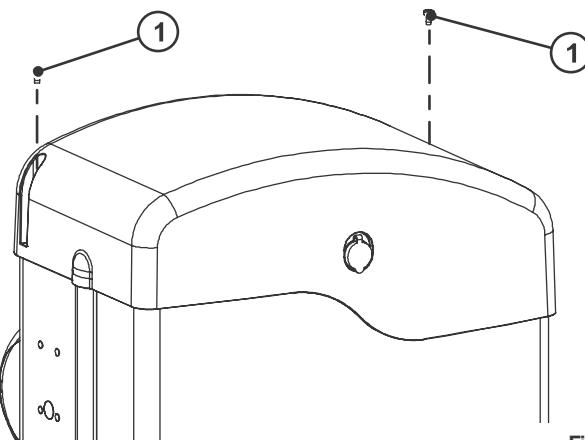


Fig. 7

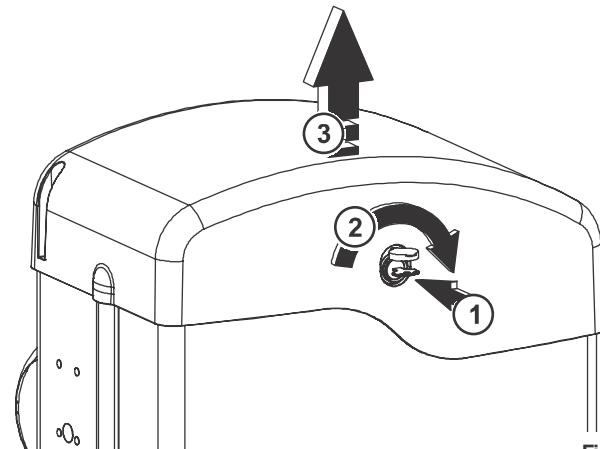


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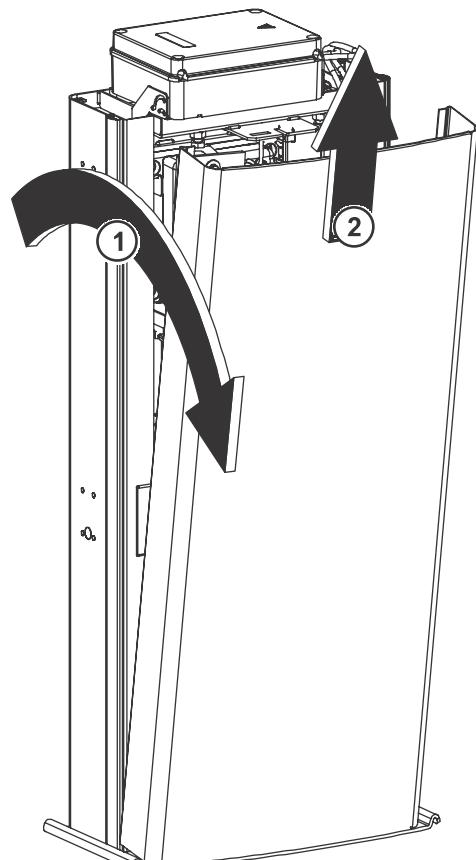


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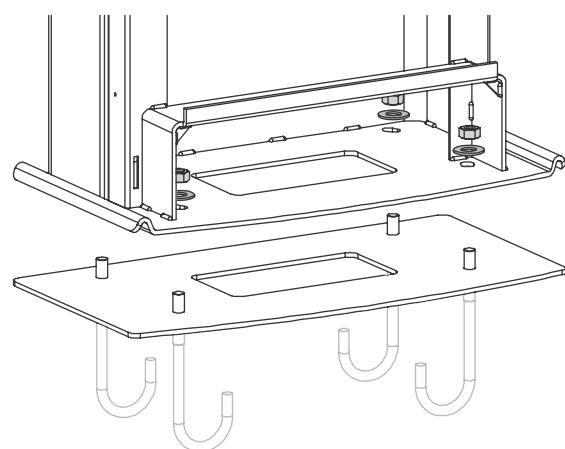


Fig. 10

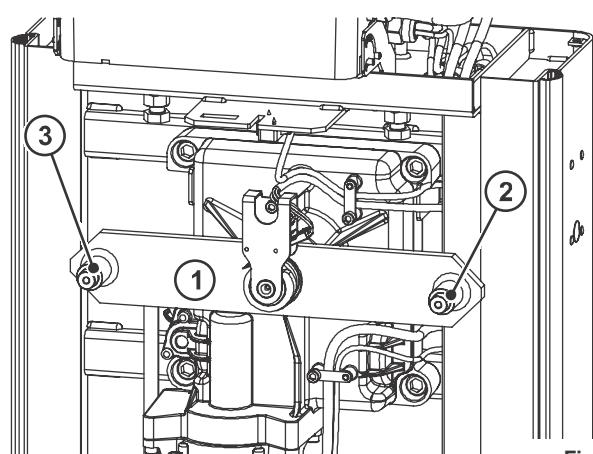


Fig. 11

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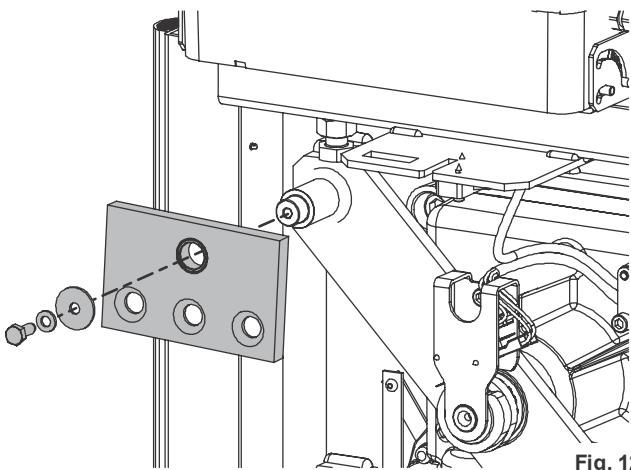


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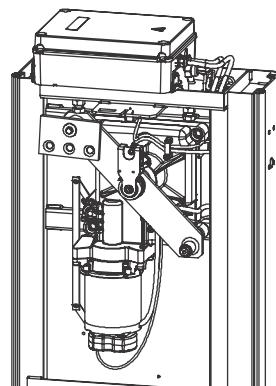
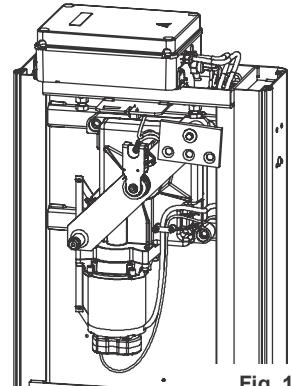
**SX****DX**

Fig. 13

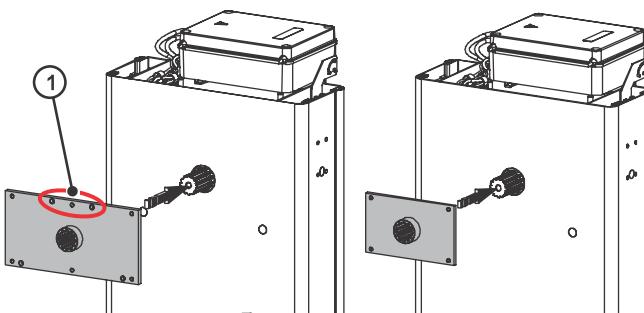
**RAINBOW 724****RAINBOW 524  
RAINBOW 324**

Fig. 14

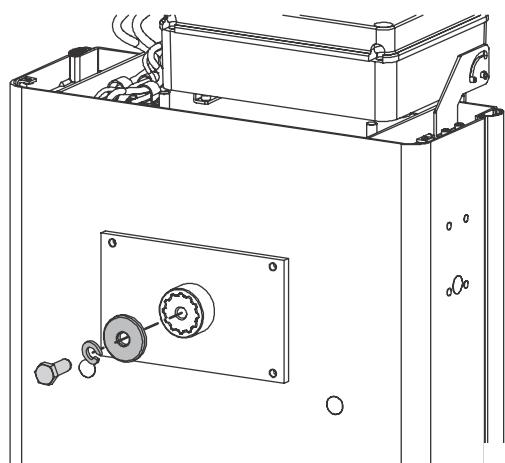


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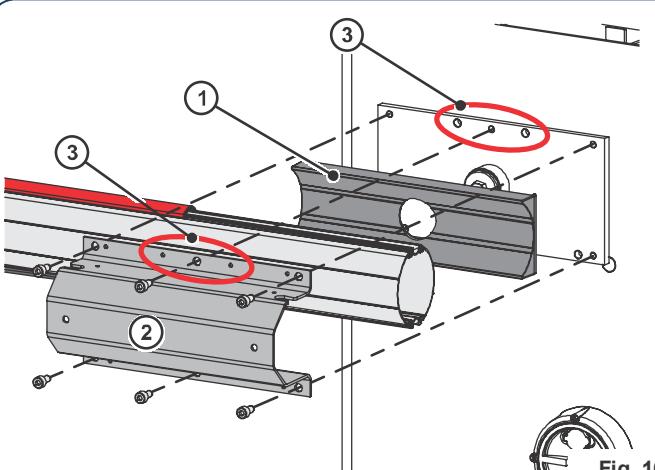


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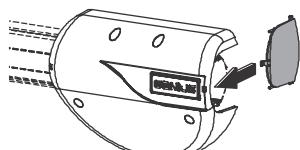
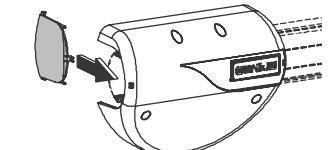
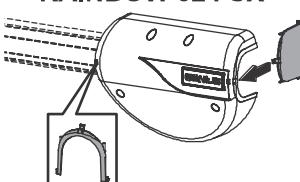
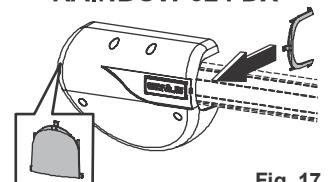
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RAINBOW 324 SX****RAINBOW 524 DX  
RAINBOW 324 DX**

Fig. 17

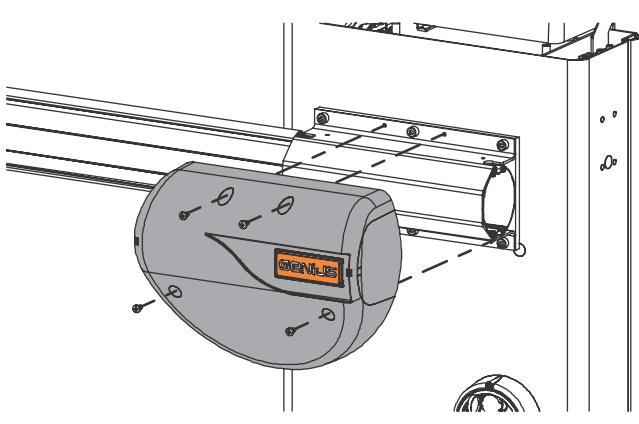


Fig. 18

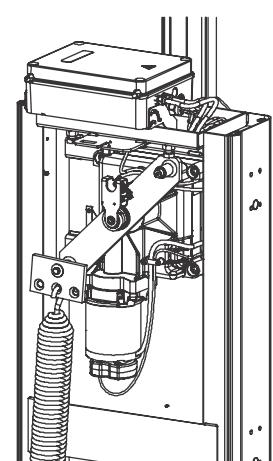


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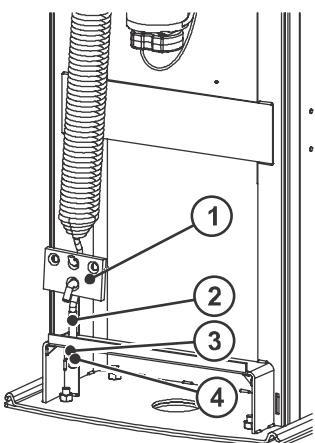


Fig. 20

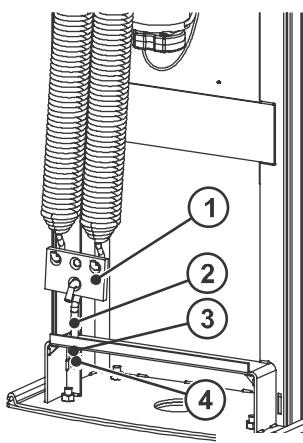


Fig. 21

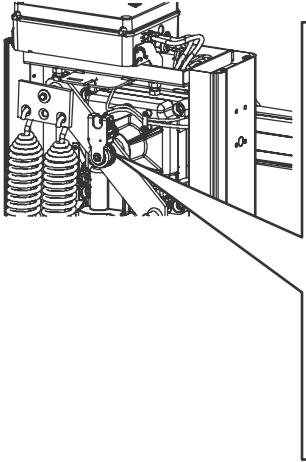


Fig. 22

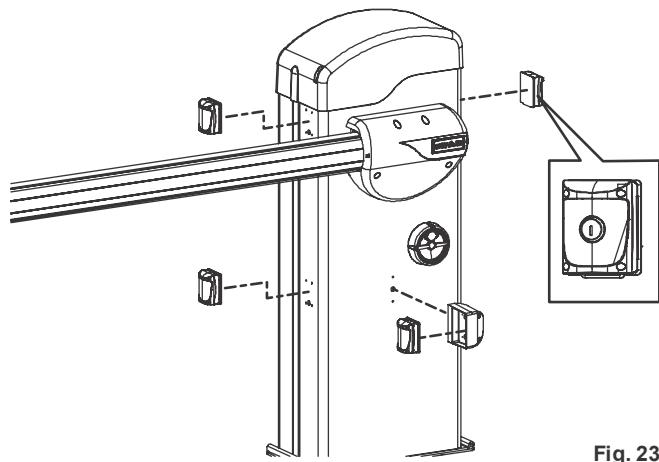


Fig. 23

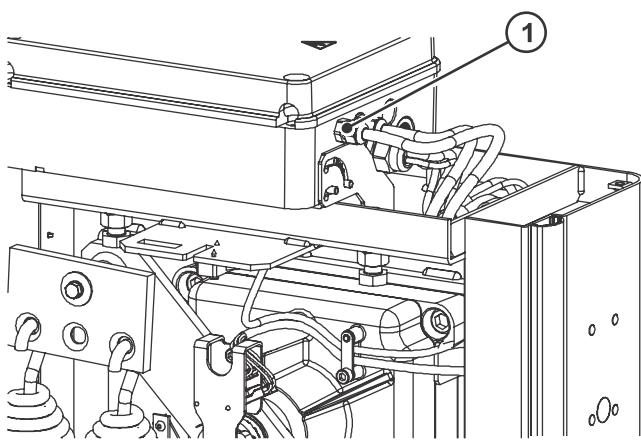


Fig. 24

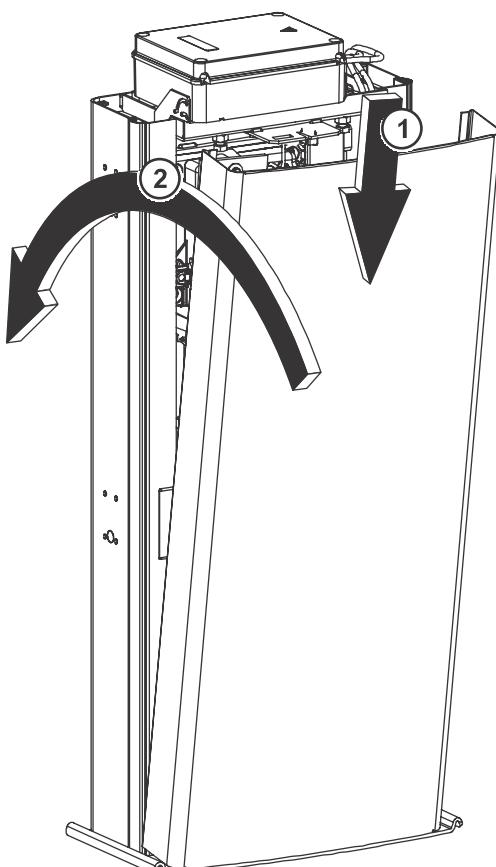


Fig. 25

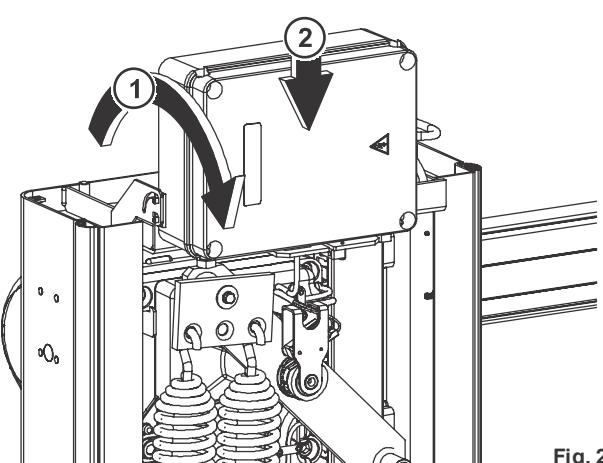
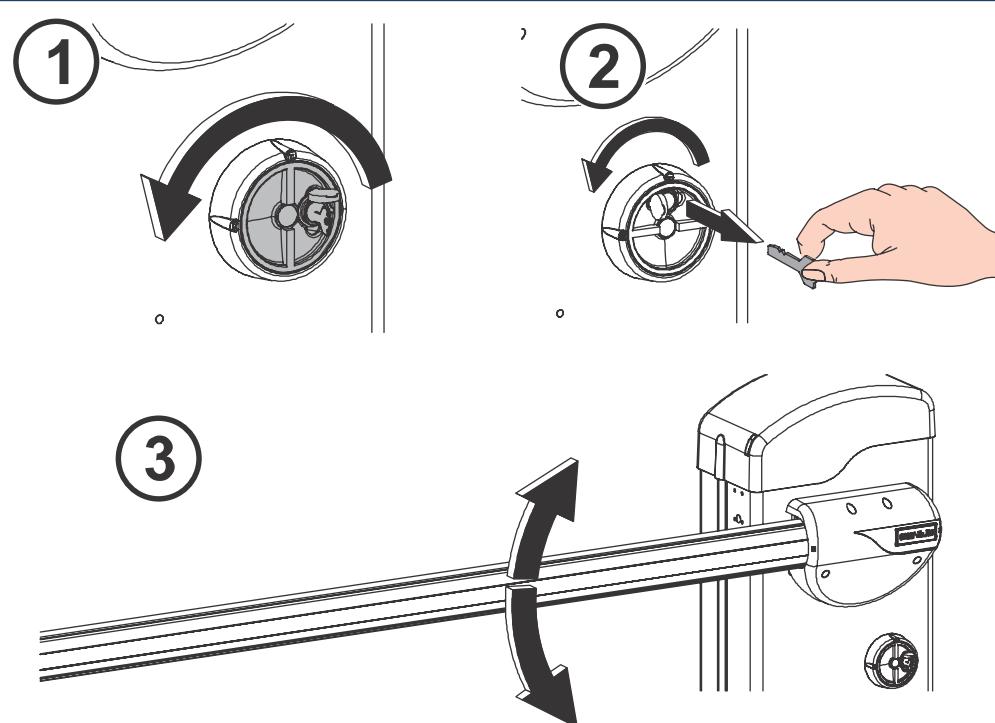
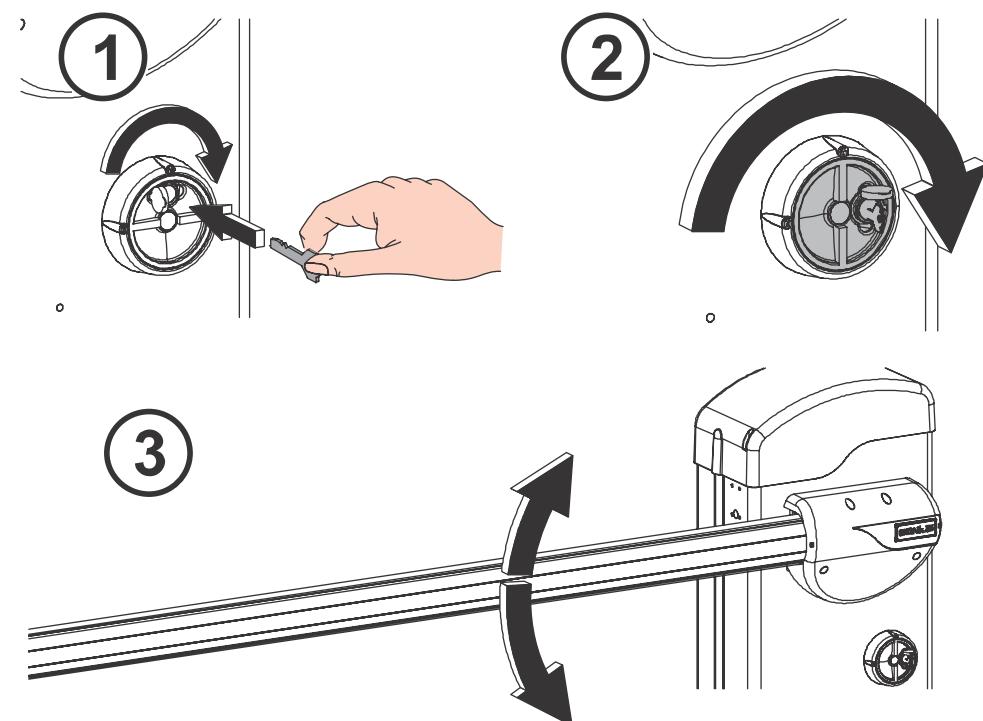
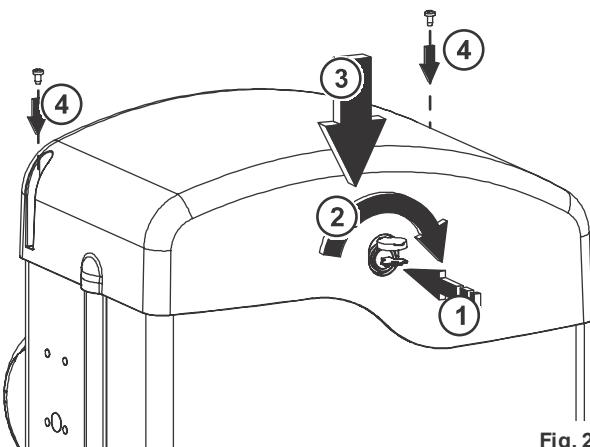


Fig. 26

Immagini - Images - Images - Imágenes - Bilder - Afbeeldingen



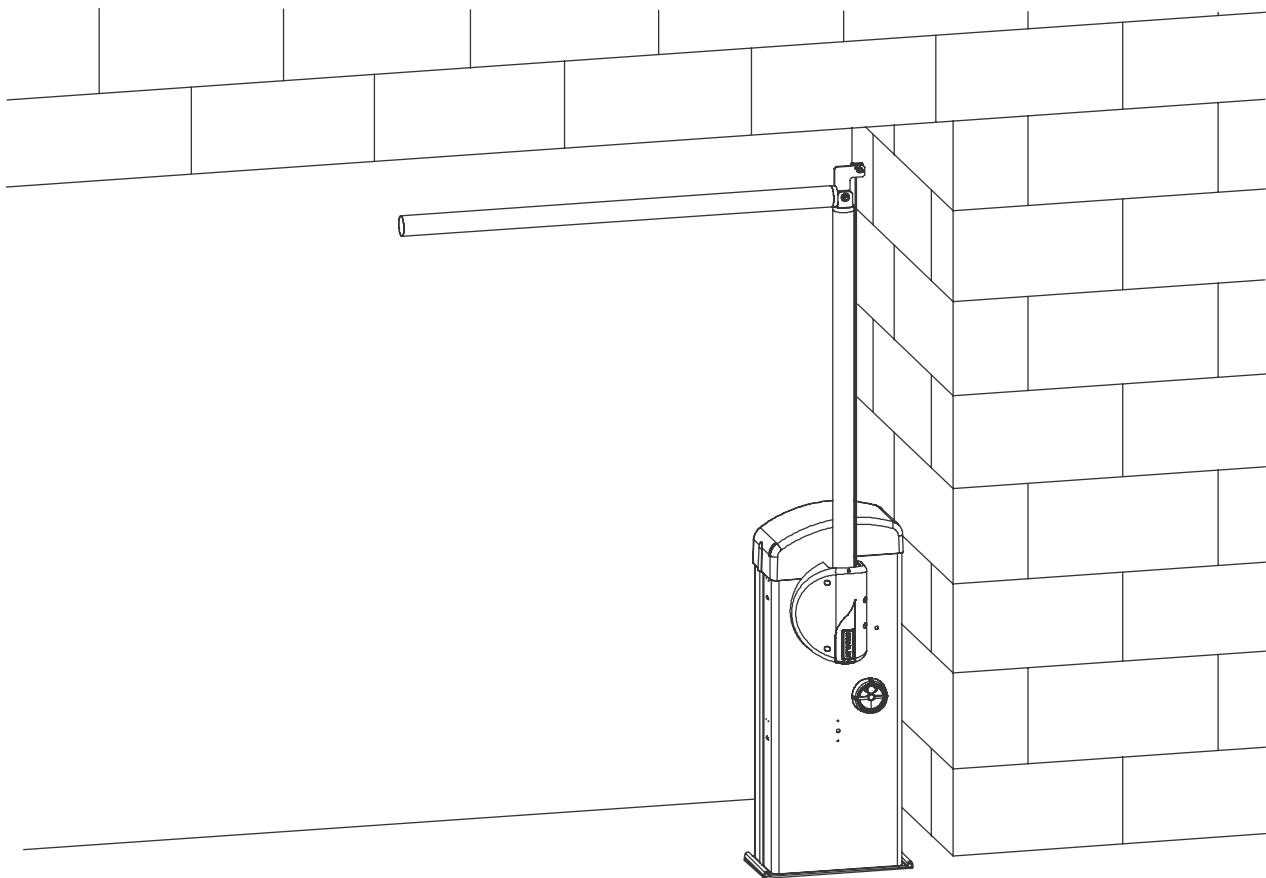


Fig. 30

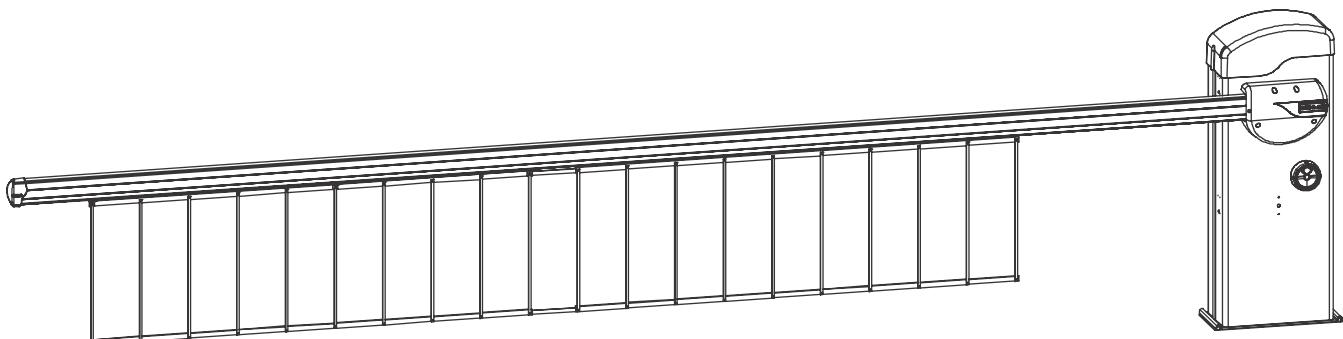


Fig. 31

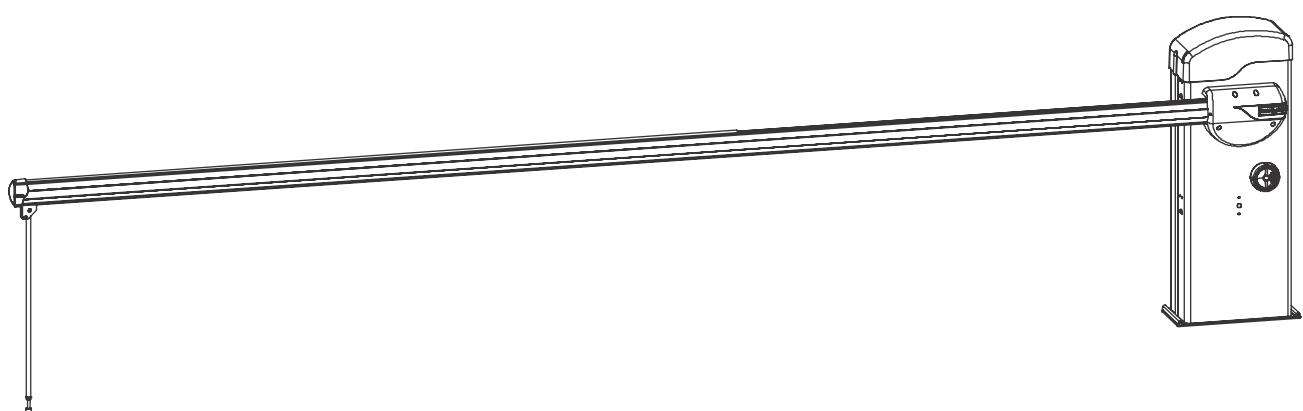


Fig. 32

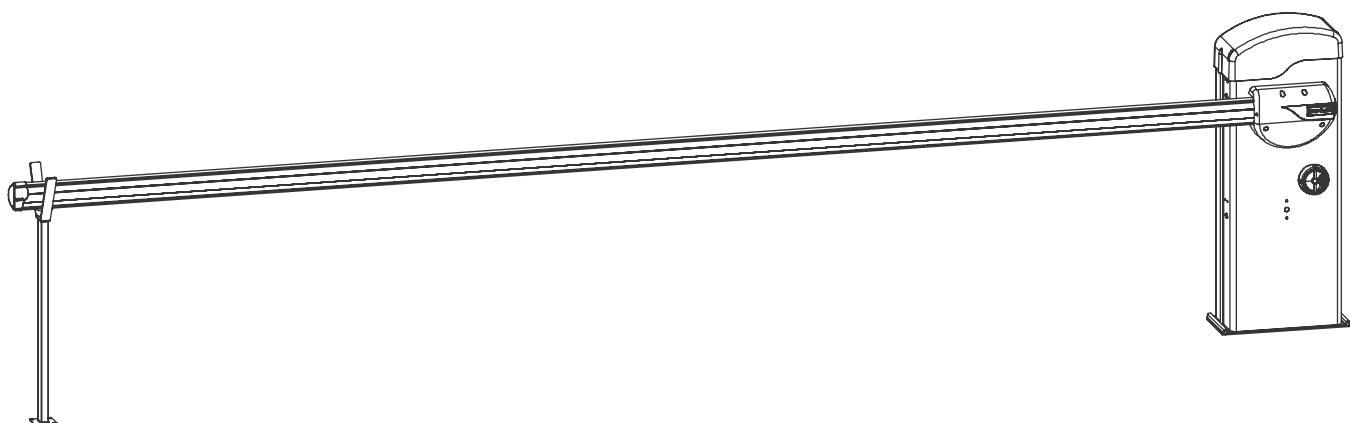


Fig. 33

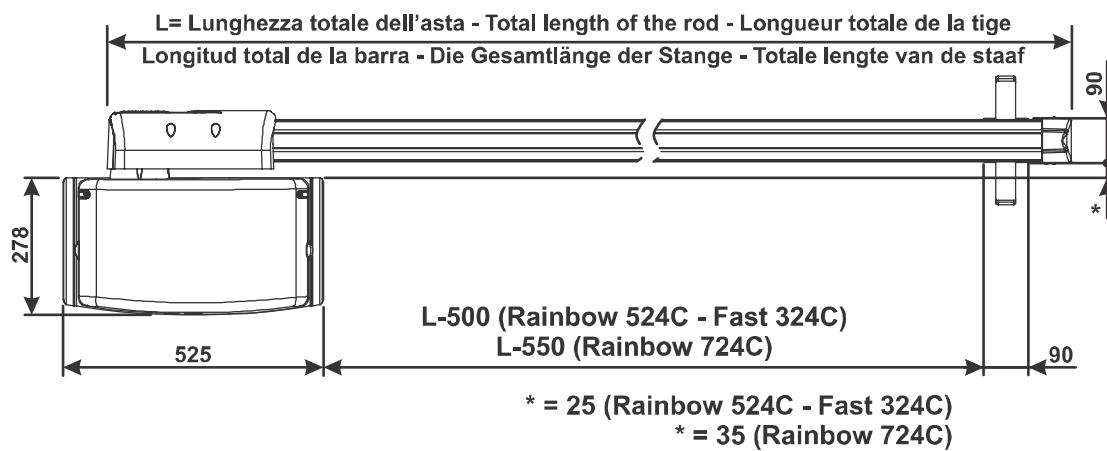


Fig. 34

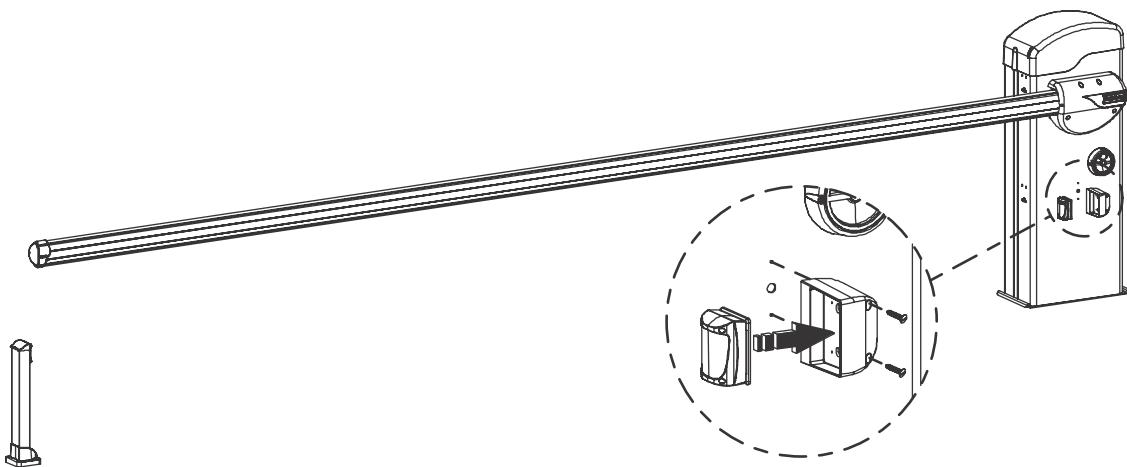


Fig. 35

