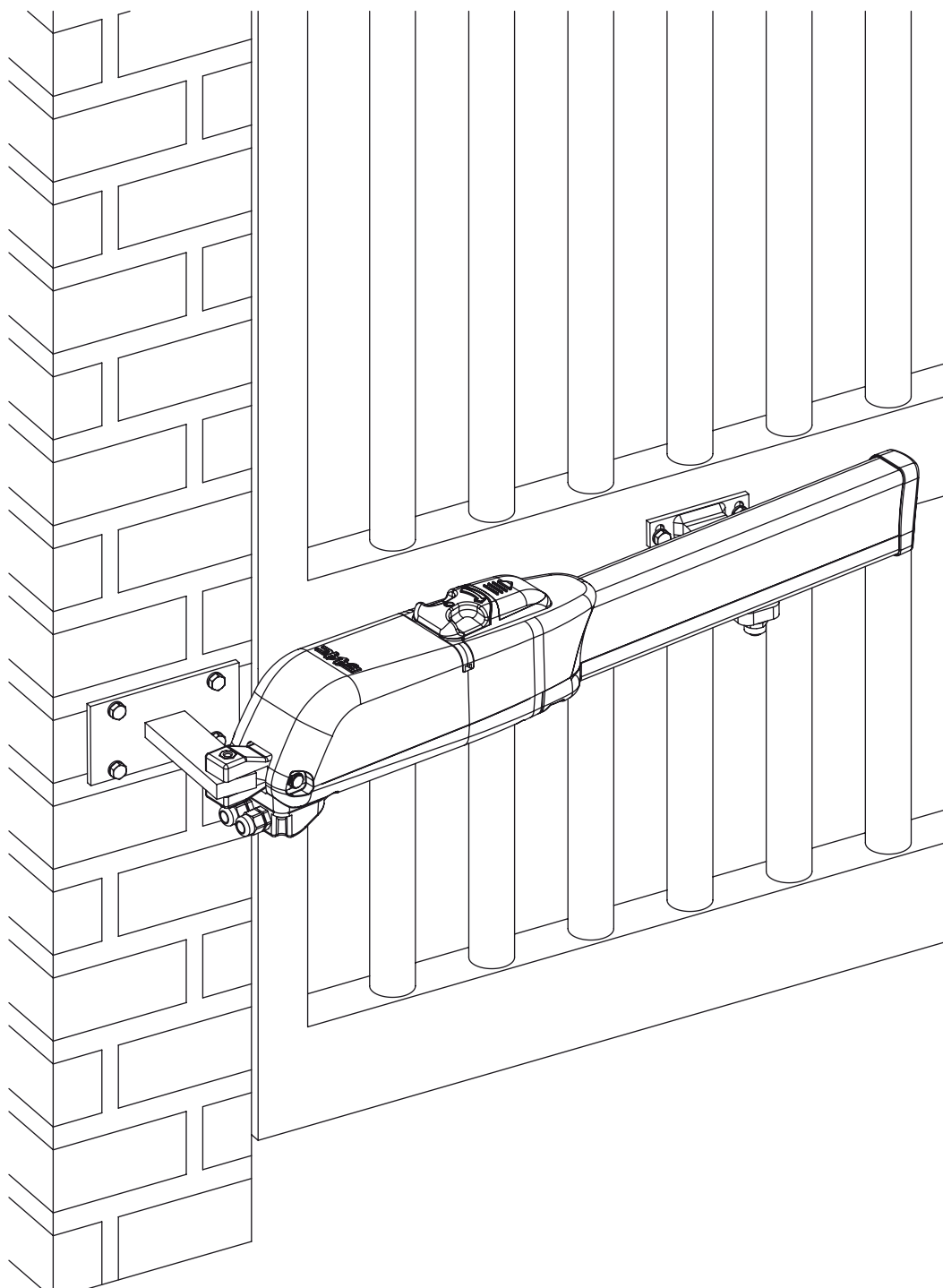


413



FAAC

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.

1. Leggere attentamente le istruzioni prima di iniziare l'installazione del prodotto.
2. I materiali dell'imballaggio (plastica, polistirolo, ecc.) non devono essere lasciati alla portata dei bambini in quanto potenziali fonti di pericolo.
3. Conservare le istruzioni per riferimenti futuri.
4. Questo prodotto è stato progettato e costruito esclusivamente per l'utilizzo indicato in questa documentazione. Qualsiasi altro utilizzo non espressamente indicato potrebbe pregiudicare l'integrità del prodotto e/o rappresentare fonte di pericolo.
5. FAAC declina qualsiasi responsabilità derivata dall'uso improprio o diverso da quello per cui l'automatismo è destinato.
6. Non installare l'apparecchio in atmosfera esplosiva: la presenza di gas o fumi infiammabili costituisce un grave pericolo per la sicurezza.
7. Gli elementi costruttivi meccanici devono essere in accordo con quanto stabilito dalle Norme EN 12604 e EN 12605.
8. Per i Paesi extra-CEE, oltre ai riferimenti normativi nazionali, per ottenere un livello di sicurezza adeguato, devono essere seguite le Norme sopra riportate.
9. FAAC non è responsabile dell'inosservanza della Buona Tecnica nella costruzione delle chiusure da motorizzare, nonché delle deformazioni che dovessero intervenire nell'utilizzo.
10. L'installazione deve essere effettuata nell'osservanza delle Norme EN 12453 e EN 12445. Il livello di sicurezza dell'automazione deve essere C+D.
11. Prima di effettuare qualsiasi intervento sull'impianto, togliere l'alimentazione elettrica e scollegare le batterie.
12. 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.
13. Verificare che a monte dell'impianto vi sia un interruttore differenziale con soglia da 0,03 A.
14. Verificare che l'impianto di terra sia realizzato a regola d'arte e collegarvi le parti metalliche della chiusura.
15. L'automazione dispone di una sicurezza intrinseca antischiacciamento costituita da un controllo di coppia. E' comunque necessario verificarne la soglia di intervento secondo quanto previsto dalle Norme indicate al punto 10.
16. I dispositivi di sicurezza (norma EN 12978) permettono di proteggere eventuali aree di pericolo da Rischi meccanici di movimento, come ad Es. schiacciamento, convogliamento, cesoiamento.
17. 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".
18. FAAC declina ogni responsabilità ai fini della sicurezza e del buon funzionamento dell'automazione, in caso vengano utilizzati componenti dell'impianto non di produzione FAAC.
19. Per la manutenzione utilizzare esclusivamente parti originali FAAC.
20. Non eseguire alcuna modifica sui componenti facenti parte del sistema d'automazione.
21. 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.
22. Non permettere ai bambini o persone di sostare nelle vicinanze del prodotto durante il funzionamento.
23. 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.
24. Tenere fuori dalla portata dei bambini radiocomandi o qualsiasi altro datore di impulso, per evitare che l'automazione possa essere azionata involontariamente.
25. Il transito tra le ante deve avvenire solo a cancello completamente aperto.
26. L'utente utilizzatore deve astenersi da qualsiasi tentativo di riparazione o d'intervento e deve rivolgersi solo ed esclusivamente a personale qualificato FAAC o centri d'assistenza FAAC.
27. Tutto quello che non è previsto espressamente 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.

1. Carefully read the instructions before beginning to install the product.
2. Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
3. Store these instructions for future reference.
4. 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.
5. FAAC declines all liability caused by improper use or use other than that for which the automated system was intended.
6. Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety.
7. The mechanical parts must conform to the provisions of Standards EN 12604 and EN 12605.
8. For non-EU countries, to obtain an adequate level of safety, the Standards mentioned above must be observed, in addition to national legal regulations.
9. FAAC 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.
10. The installation must conform to Standards EN 12453 and EN 12445. The safety level of the automated system must be C+D.
11. Before attempting any job on the system, cut out electrical power and disconnect the batteries.
12. 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.
13. Make sure that a differential switch with threshold of 0.03 A is fitted upstream of the system.
14. Make sure that the earthing system is perfectly constructed, and connect metal parts of the means of the closure to it.
15. 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.

16. The safety devices (EN 12978 standard) protect any danger areas against mechanical movement Risks, such as crushing, dragging, and shearing.
17. 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".
18. FAAC declines all liability as concerns safety and efficient operation of the automated system, if system components not produced by FAAC are used.
19. For maintenance, strictly use original parts by FAAC.
20. Do not in any way modify the components of the automated system.
21. 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.
22. Do not allow children or adults to stay near the product while it is operating.
23. The application cannot be used by children, by people with reduced physical, mental, sensorial capacity, or by people without experience or the necessary training.
24. Keep remote controls or other pulse generators away from children, to prevent the automated system from being activated involuntarily.
25. Transit through the leaves is allowed only when the gate is fully open.
26. The User must not in any way attempt to repair or to take direct action and must solely contact qualified FAAC personnel or FAAC service centres.
27. 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.

1. Lire attentivement les instructions avant d'installer le produit.
2. 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.
3. Conserver les instructions pour les références futures.
4. Ce produit a été conçu et construit exclusivement pour l'usage indiqué dans cette documentation. Toute autre utilisation non expressément indiquée pourrait compromettre l'intégrité du produit et/ou représenter une source de danger.
5. FAAC décline toute responsabilité qui dériverait d'usage improprie ou différent de celui auquel l'automatisme est destiné.
6. Ne pas installer l'appareil dans une atmosphère explosive: la présence de gaz ou de fumées inflammables constitue un grave danger pour la sécurité.
7. Les composants mécaniques doivent répondre aux prescriptions des Normes EN 12604 et EN 12605.
8. 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.
9. FAAC 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.
10. L'installation doit être effectuée conformément aux Normes EN 12453 et EN 12445. Le niveau de sécurité de l'automatisme doit être C+D.
11. Couper l'alimentation électrique et déconnecter la batterie avant toute intervention sur l'installation.
12. 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.
13. Vérifier qu'il y ait, en amont de l'installation, un interrupteur différentiel avec un seuil de 0,03 A.
14. Vérifier que la mise à terre est réalisée selon les règles de l'art et y connecter les pièces métalliques de la fermeture.
15. L'automatisme dispose d'une sécurité intrinsèque anti-écrasement, 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.
16. Les dispositifs de sécurité (norme EN 12978) permettent de protéger des zones éventuellement dangereuses contre les Risques mécaniques du mouvement, comme l'écrasement, l'acheminement, le cisaillement.
17. On recommande que toute installation soit dotée 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".
18. FAAC 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 FAAC.
19. Utiliser exclusivement, pour l'entretien, des pièces FAAC originales.
20. Ne jamais modifier les composants faisant partie du système d'automatisme.
21. 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.
22. Interdire aux enfants ou aux tiers de stationner près du produit durant le fonctionnement.
23. 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.
24. Eloigner de la portée des enfants les radiocommandes ou tout autre générateur d'impulsions, pour éviter tout actionnement involontaire de l'automatisme.
25. Le transit entre les vantaux ne doit avoir lieu que lorsque le portail est complètement ouvert.
26. L'utilisateur doit s'abstenir de toute tentative de réparation ou d'intervention et doit s'adresser uniquement et exclusivement au personnel qualifié FAAC ou aux centres d'assistance FAAC.
27. Tout ce qui n'est pas prévu expressément 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 impropio del producto puede causar graves daños a las personas.

1. Leer detenidamente las instrucciones antes de instalar el producto.
2. Los materiales del embalaje (plástico, poliestireno, etc.) no deben dejarse al alcance de los niños, ya que constituyen fuentes potenciales de peligro.
3. Guardar las instrucciones para futuras consultas.



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CE DECLARATION OF CONFORMITY

Manufacturer: FAAC S.p.A.

Address: Via Calari, 10 - 40069 - Zola Predosa - Bologna - ITALY

Declares that: Operator mod. 413

- 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/EEC;
- 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.

Bologna, September 20, 2010

Managing Director
A. Marcellan



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. FAAC is sure that it will give you all the performances you are looking for. All our products are the result of a long experience in the field of the automated systems.

 In the middle of the handbook you will find a detachable brochure with the images for the installation.

The **413** automated system for swing gates is an electro-mechanical non-reversing operator that transmits motion to the leaf via a worm screw system.

The operator is available in several versions. The "LS" versions are equipped with opening and closing limit switches. Every version is supplied with opening and closing mechanical travel stops.

The non-reversing system ensures the leaf is mechanically locked when the motor is not operating. A convenient and safe release system with customised key makes it possible to manually move the leaf in the event of a malfunction or of a power failure.

IMPORTANT NOTES FOR INSTALLER

- Before starting the installation of the operator read this manual completely.
- Keep this manual for future reference.
- Smooth operation and specifications are obtained only declared following the directions given in this handbook and with accessories and safety devices FAAC.
- The lack of a mechanical clutch device requires to ensure an adequate level of security automation, the use of a central control device with an electronically controlled clutch.
- The automation was designed and built to control vehicular access. Avoid any other use.
- The operator can not be used to handle emergency exit routes or gates installed on emergency (escape routes).
- If there is built-in anti motorize from a door to the walkway is required to add a safety switch on the door, connected on the entry of STOP, to inhibit the operation of automation with door open.
- Everything that is not expressly stated in this manual is not allowed.

1. DESCRIPTION (Fig. 1)

Pos.	Description
①	Operator
②	Release device
③	Limit switch cover
④	Closing limit switch ^①
⑤	Opening limit switch ^①
⑥	Front bracket
⑦	Rear fitting
⑧	Rear fitting pin
⑨	Rear bracket
⑩	Terminal board cover

^① Only where "LS"

2. TECHNICAL SPECIFICATIONS

Technical specifications	Model					
	413	413 LS	413 24V	413 LS 24V	413 115V	413 LS 115V
Power supply	230 V~		24 V=		115 V~	
Power (W)	250		70		260	
Current (A)	1.1		3		2.2	
Thermal protection (°C)	140		/		140	
Capacitor (μF)	6.3		/		20	
Thrust (daN)	200		250		200	
Rated thrust (daN)	140		170		140	
Travel (mm)	300 ①					
Speed (cm/sec)	1.6				1.85	
Noisiness (dBA)	<70					
Leaf max. (m)	2.5 ②					
Type and use frequency at 20° C	S3 30%	S3 35%	100%		S3 30%	S3 35%

Technical specifications	Model					
	413	413 LS	413 24V	413 LS 24V	413 115V	413 LS 115V
Approximate min. cycle/hour at 20° C	~ 30		~ 100		~ 30	
Operating ambient temperature (°C)	-20 ÷ +55					
Operator weight (Kg)	6.5					
Operator dimensions (mm)	See Fig. 2					
Protection class	IP54					
① If no closing and opening mechanical travel stops are used, the operator travel is 350 mm.						
② With leaves exceeding 1.8 m the fitting of an electric lock is required to ensure the leaf locking.						

2.1. Versions

Model	Version
413	230V~ operator with opening/closing mechanical travel stops
413 LS	230V~ operator with opening/closing mechanical travel stops and opening/closing limit switches
413 24V	24V= operator with opening/closing mechanical travel stops
413 LS 24V	24V= operator with opening/closing mechanical travel stops and opening/closing limit switches
413 115V	115V~ operator with opening/closing mechanical travel stops
413 LS 115V	115V~ operator with opening/closing mechanical travel stops and opening/closing limit switches

 For CSA-UL approved operators, control unit **455 MPS UL 115** must be used in order to maintain the approval.

3. INSTALLATION

3.1. Electrical set-up (standard system Fig. 3)

Pos.	Description	Cables section
①	Operators ^①	4x1.5mm ² (2x1.5mm ²)
②	Control unit	3x1.5mm ² (power supply)
③	TX photocells	2x0.5mm ²
④	RX photocells	4x0.5mm ²
⑤	Key-operated selector switch ^②	2x0.5mm ² (3x0.5mm ²)
⑥	Flashing lamp	2x1.5mm ²
⑦	Receiver	3x0.5mm ²
⑧	Mechanical stops on the ground	

^① The value in parentheses refers to the motors at 24 V=

^② The value in parentheses refers to the switch with two contacts

 Use suitable tubes and/or hoses to lay electric cables

 To avoid any kind of interference always separate low-voltage accessories and control cables from 230/115 V~ power supply cables using separate sheaths.

3.2. Preliminary checks

To ensure a correct operation of the automated system, make sure the following requirements are observed as for the gate structure (existing or to be realised):

- the mechanical parts must conform to the provisions of Standards EN 12604 and EN 12605.
- leaf length in compliance with the operator specifications.
- sturdy and stiff structure of the leaves, suitable for automation
- regular and uniform movement of the leaves, without any friction and dragging during their entire opening.
- stiff hinges in good conditions.
- presence of both opening and closing mechanical limit stops (they are not necessary if opening and closing mechanical travel stops are used).
- presence of an efficient earthing for electrical connection of



the operator

Perform any necessary metalwork job before installing the automated system.

The condition of the gate structure directly affects the reliability and safety of the automated system.

3.3. Installation dimensions

Determine the fitting position of the operator with reference to Fig. 4. During this phase it is important to define if the mechanical travel stops are to be used: by eliminating the mechanical travel stops the operator travel increases thus changing the installation dimensions A and B.

Check with care if the distance between the open leaf and any obstacles (walls, fences etc.) is higher than the operator dimensions

Model	α	A	B	C ^①	D ^②	Z ^③	L	E ^③
with opening and closing stop	90°	140	140	280	80	60	675	80
	110°	120	135	295	65	55	675	
with opening stop	90°	150	150	300	90	60	690	90
	110°	135	135	310	80	55	690	
without opening and closing stop	90°	160	160	320	100	60	690	95
	110°	145	145	330	85	60	690	

① operator useful travel

② max. dimension

③ min. dimension

3.3.1. GENERAL RULES TO DETERMINE THE INSTALLATION DIMENSIONS

- to obtain 90° leaf openings : **A+B=C**
- to obtain leaf openings **exceeding 90°** : **A+B<C**
- **Smaller A and B dimensions determine higher peripheral speed of the leaf.**
- **Limit the difference between A and B dimension within 4 cm:** higher differences cause great speed variations during the gate opening and closing movement.
- Keep a Z dimension in such a way that the operator does not strike the pillar.
- **in the LS versions the limit switches are triggered for the first and the last 30 mm. Therefore use such A and B dimensions in order to use the whole operator travel. Shorter travels could limit or cancel the limit switch adjustment range.**
- **The mechanical travel stops operate for the first and the last 30 mm of the travel; shorter travels could limit or cancel the adjustment range.**

If the pillar dimensions or the hinge position do not allow the installation of the operator, a niche on the pillar, as shown in Fig. 5, should be created in order to maintain the A dimension as determined. The niche should be dimensioned in such a way to enable easy installation, operator rotation and operation of the release device.

3.4. Installing the operators

1. Fix the rear bracket in the position determined before. In the event of iron pillar carefully weld the bracket directly on the pillar (Fig. 6). In the event of masonry pillar, use the suitable plate (optional) for the fixing to screw (Fig. 7) by making use of suitable fastening systems. Then carefully weld the bracket to the plate. During the fastening operations, check if the bracket is perfectly horizontal by means of a level.
2. Assemble the rear fitting to the operator as shown in Fig. 8.
3. Check if the front fitting is in the correct position as shown in Fig. 9 (with closing mechanical travel stop) or in Fig. 10 (without closing mechanical travel stop). If this is not the case, temporarily supply power to the operator to position the fitting.

The operator can be moved by hand only if it is installed on the gate and in released position (see paragraph 5).

4. Assemble the front bracket as shown in Fig. 11. A hexagonal seat is located in the lower part of the fitting CH=5 (Fig. 11 ref. ①) to make the assembling operations easier.
5. Fix the operator to the rear bracket by means of the supplied pins as shown in Fig. 12.

Before securing the operator to the bracket you have just welded, wait for it to cool.

6. Close the leaf and, keeping the operator in a perfect horizontal position, determine the fastening point of the front bracket (Fig. 13).

7. Temporarily fix the front bracket with two welding spots (Fig. 13).

If the gate structure does not allow a fix bracket fastening it is necessary to create a sturdy supporting base in the gate structure.

8. Release the operator (see paragraph 5) and manually check if the gate can completely open without hindrances and stop at the mechanical travel stops as well as if the leaf moves regularly without any friction.
9. Carry out the necessary corrective measures and repeat from point 8.
10. Temporarily release the operator from the front bracket and weld the bracket definitively.

Before securing the operator to the bracket you have just welded, wait for it to cool.

We recommend to grease all the fastening pins of the fittings.

3.5. Wiring the operator

A terminal board is fitted in the lower part of the operator for the connection of the motor, of any limit switch and for the earthing of the operator.

To connect the motor, the supplied cable must be used for the mobile section, or a cable for mobile laying from the outside.

Motor wiring operations:

1. Open one of the two pre-drilled holes in the supplied cover, Fig. 14; in case of operators with limit switches, open both holes.
2. Fit the supplied cable gland.
3. Connect the motor and the earthing with reference to Fig. 15 and the following tables.

413 230 V~ (115 V~)		
Pos.	Colour	Description
①	Blue (White)	Common cable
②	Brown (Red)	Phase 1
③	Black (Black)	Phase 2
T	Yellow-Green (Green)	Earthing

413 24 V~		
Pos.	Colour	Description
①	Blue	Phase 1
②	Not used	/
③	Brown	Phase 2
T	Not used	/

To maintain approval for CSA-UL approved operators, position the capacitor (secured in a stable manner) inside a CSA-UL approved enclosure.

4. Close the cover with the four supplied screws, Fig. 16.

4.6. Mechanical travel stops

The 413 operators are equipped with opening and closing mechanical travel stops. They can be used instead of the leaf mechanical limit stops. To adjust the mechanical travel stops operate as follows:

4.6.1. ADJUSTING THE OPENING MECHANICAL TRAVEL STOP

1. Set the operator for manual operation, see paragraph 5
 2. Manually move the leaf in opening position.
 3. Loosen the fastening screw, Fig. 17 ref. ①. Do not remove the screw.
 4. Move the stop near the fitting as shown in Fig. 18.
- The mechanical stop works coupled to a toothed sector, Fig. 17 ref. ②. If there are any troubles during the movement, make sure that the coupling is free. DO NOT FORCE.**
5. Re-tighten the securing screw, checking correct coupling to the toothed sector.



4.6.2. ADJUSTING THE CLOSING MECHANICAL TRAVEL STOP

1. Set the operator for manual operation, see paragraph 5
2. Manually move the leaf in closing position.
3. Loosen the fastening screw, Fig. 19 ref. ①. Do not remove the screw.
4. Move the stop near the fitting as shown in Fig. 20.

 **The mechanical stop works coupled to a toothed sector, Fig. 19 ref. ②. If there are any troubles during the movement, make sure that the coupling is free. DO NOT FORCE.**

5. Re-tighten the securing screw, checking correct coupling to the toothed sector.

3.7. Limit switches

The "LS" models are equipped with opening and closing limit switches. Therefore they require the use of a control board able to control these inputs.

 *The limit switches are triggered for the first and the last 30 mm of the travel. Therefore the operator should use the whole available travel during the opening phase. Shorter travels can limit or completely cancel the limit switch adjustment range.*

3.7.1. WIRING THE LIMIT SWITCHES

The limit switches are wired in the same terminal board where the motor wiring has been carried out. Wire the limit switches as follows:

1. Open the second pre-drilled hole in the cover, Fig. 21.
2. Fit the supplied cable gland, Fig. 21
3. Insert the cable and connect to the terminals of the colors specified in the table below with reference to Figure 22.

Pos.	Colour	Description
①	Blue	Common cable
②	Brown	Closing limit switch (FCC)
③	Black	Opening limit switch (FCA)

4. Close the cover with the four supplied screws.

 *For the limit switch connection use the cable for the external movable laying with wires having a cross section of 0.5 mm².*

3.7.2. ADJUSTING THE LIMIT SWITCHES

The limit switch adjustment is carried out as follows:

1. Remove the two plugs which cover the lower securing screws, Fig. 23 ref. ①. To facilitate this operation, a slot is provided for inserting a screwdriver.
2. Unscrew both lower screws of the front cap and remove the cover, Fig. 23.
3. Loosen the fastening screws of the limit switch to adjust, Fig. 24 ref. ①.
4. Move the limit switch to the desired position and lock the screws.
5. Perform a pair of test cycles to check the correct position of the limit switch. If the adjustment of the limit switch needs to be carried out again, repeat the operation starting from point 3.
6. Position again the cover by sliding it on the lower casting and make sure that it reaches the stop, Fig. 25.
7. Screw both lower screws, Fig. 25.
8. Re-position the two front plugs.

3.8. Start-up

 **Cut power before any job on the system or on the operator.**

Carefully observe points 10, 11, 12, 13 and 14 of the SAFETY GENERAL RULES.

With reference to the indications in Fig.3, set the ducts and carry out the electrical connections of the control board and of the chosen accessories.

Always separate power cables from control and safety cables (push button, receiver, photocells, etc.). To avoid any electrical noise whatever in the unit, use separate sheaths.

1. Power up the system and check the LED condition as shown in the table of the control board instructions.
2. Program the control board according to the needs by following the given instructions.

4. TESTING THE AUTOMATED SYSTEM

- Carefully check operating efficiency of the automated system and of all accessories connected to it, paying special attention to the safety devices.
- Hand the "User's Guide" to the final user together with the Maintenance sheet.
- Explain correct operation and use of the automated system to the user.
- Indicate the potentially dangerous areas of the automated system to the user.

5. MANUAL OPERATION

If the automated system needs to be moved manually due to a power lack or to an operator malfunction, proceed as follows:

1. Cut power by means of the safety circuit breaker (even in the event of a power lack).
2. Slide the protective cap, Fig. 26/1.
3. Insert the key and turn it 90°, Fig. 26/2.
4. To release the operator turn 180° the control lever to the direction indicated by the arrow on the release system, Fig. 26/3.
5. Open and close the leaf manually.

 *To hold the operator in manual operation the release device should be left in its current positions and the system should be without power.*

5.1. Restoring normal operation

To restore normal operating conditions, proceed as follows:

 **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.**

1. Turn the release system 180° in the opposite direction of the arrow.
2. Turn 90° the release key and remove it.
3. Close the protection cover.
4. Power up the system and perform some movements in order to check the correct restoring of every function of the automated system.

6. 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 or inspection performed by the operator must only occur after having cut power to the system.**

7. REPAIRS

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

8. AVAILABLE ACCESSORIES

Refer to catalogue for available accessories.

9. SPECIAL APPLICATIONS

There is no special application other than the described use.

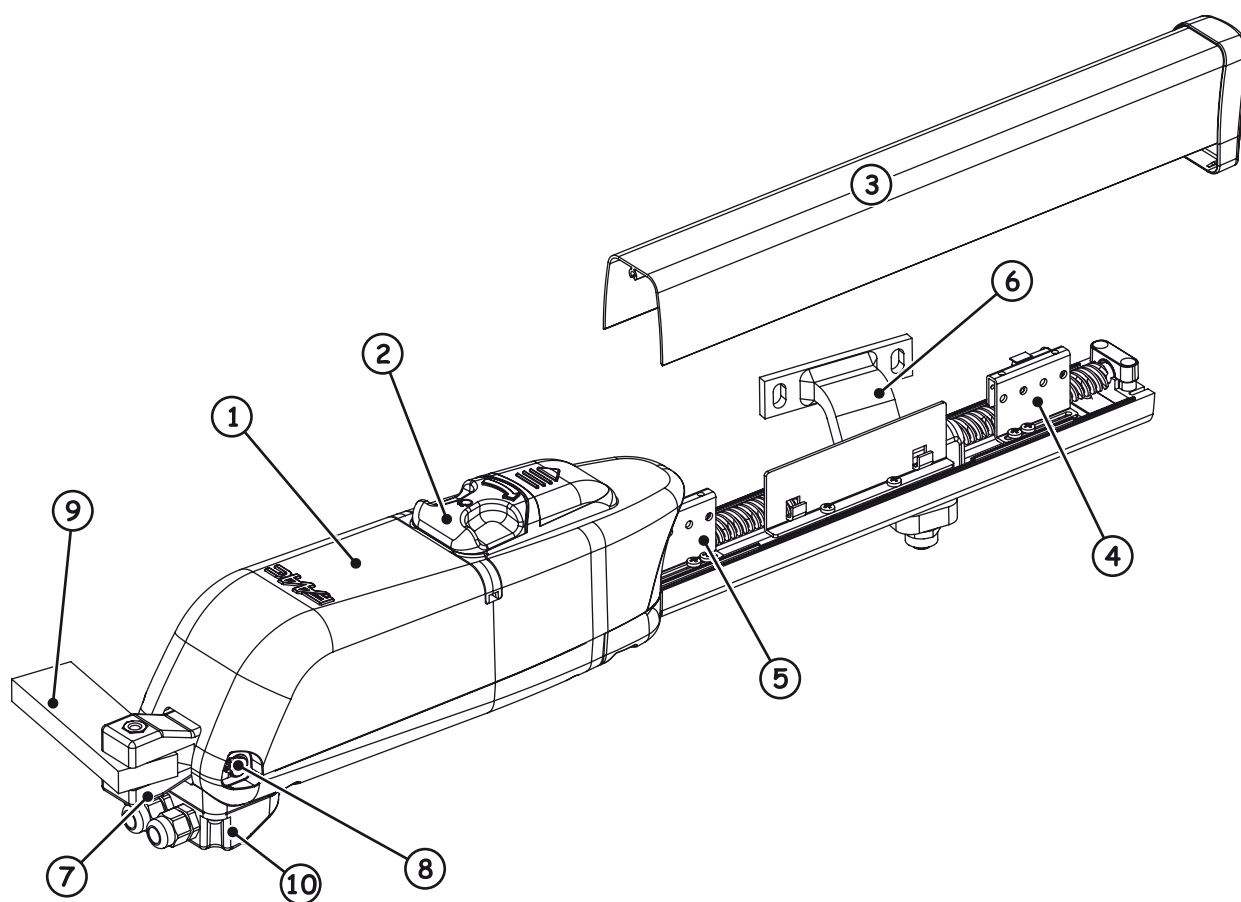


Fig. 1

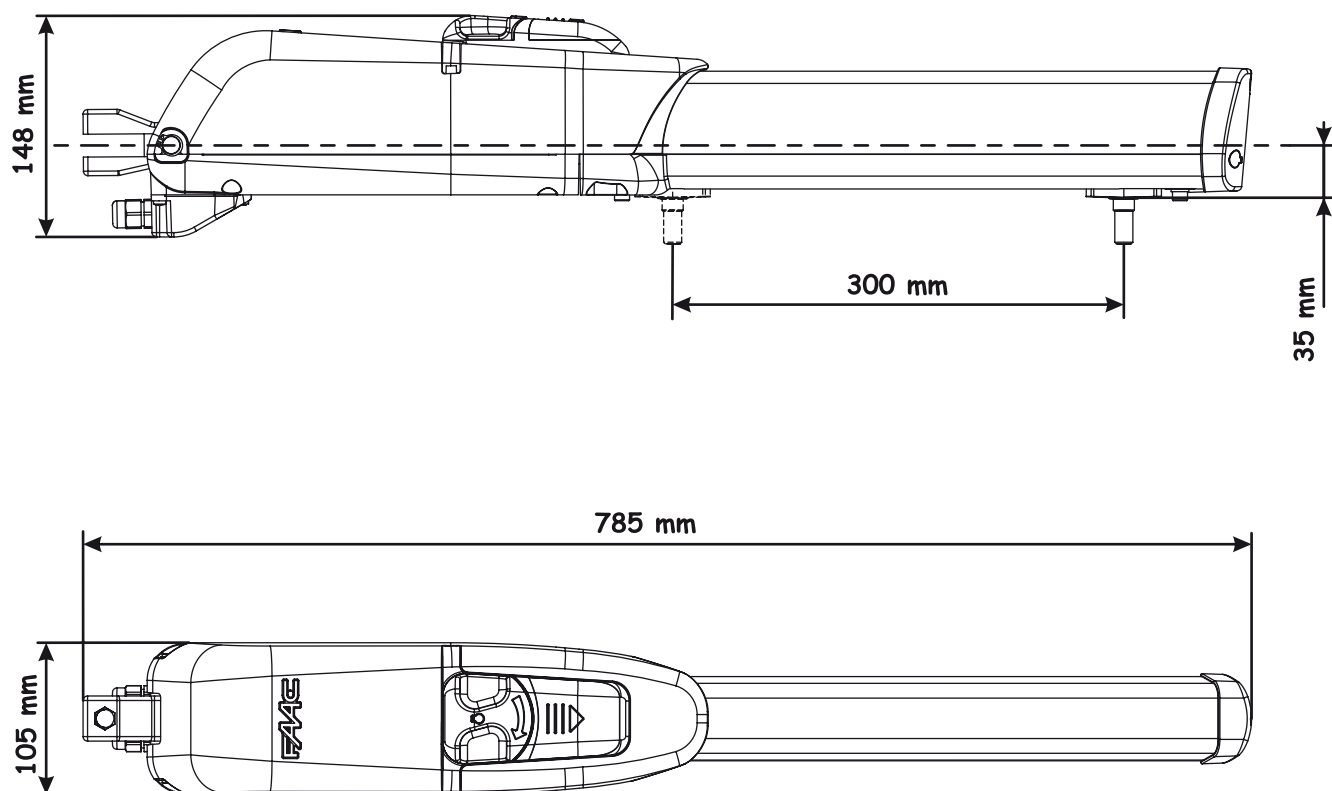


Fig. 2

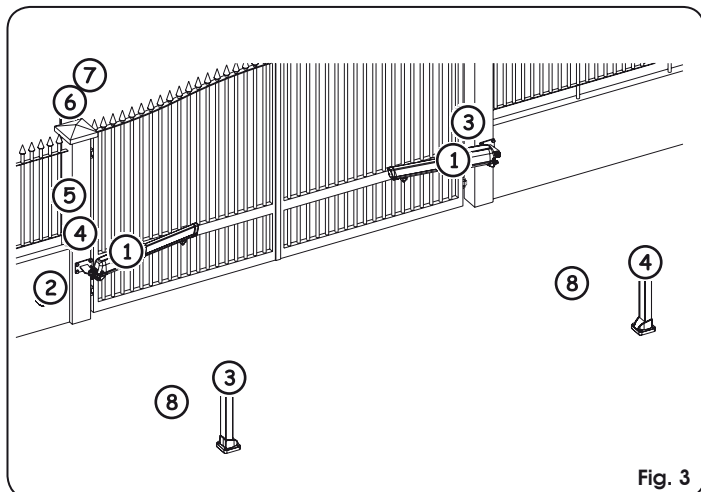


Fig. 3

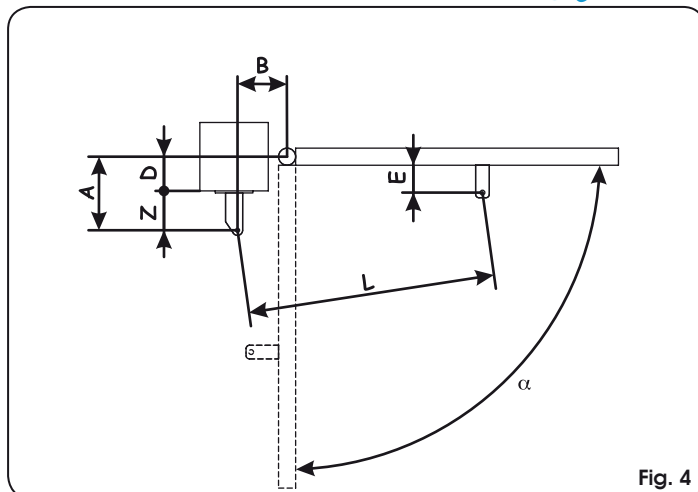


Fig. 4

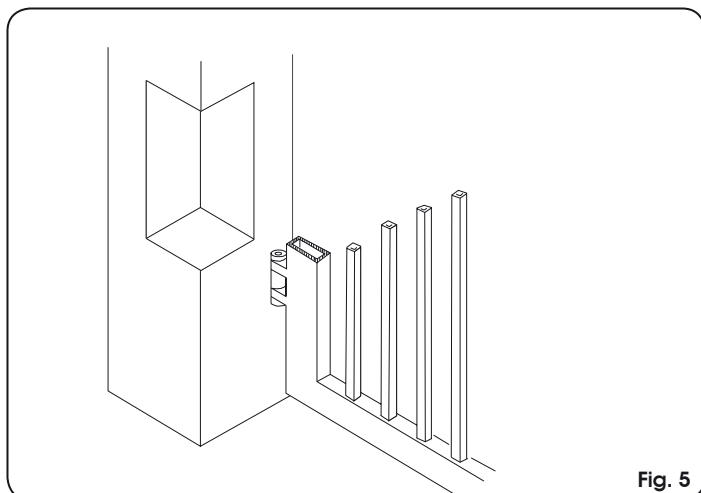


Fig. 5

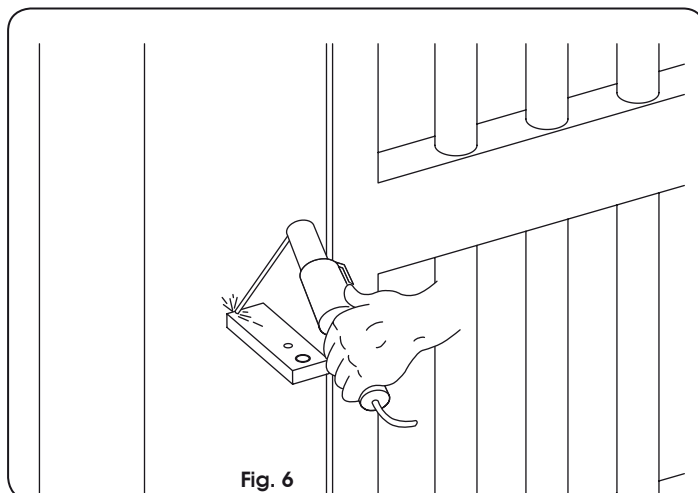


Fig. 6

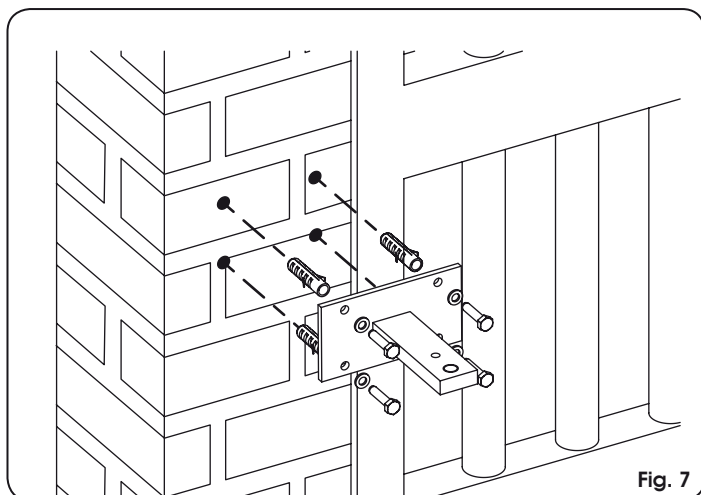


Fig. 7

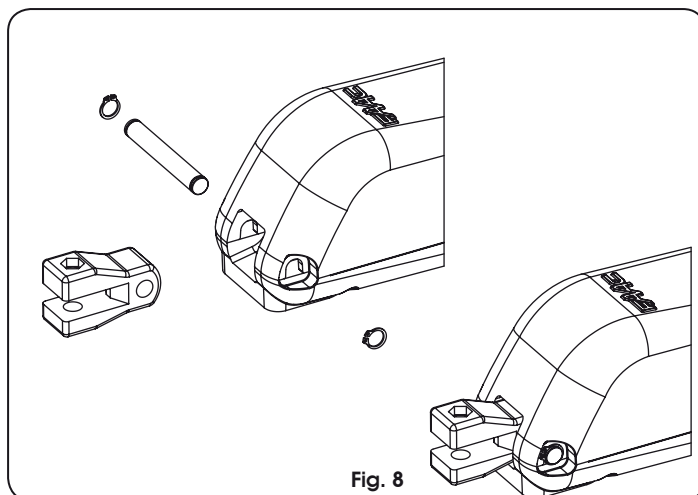


Fig. 8

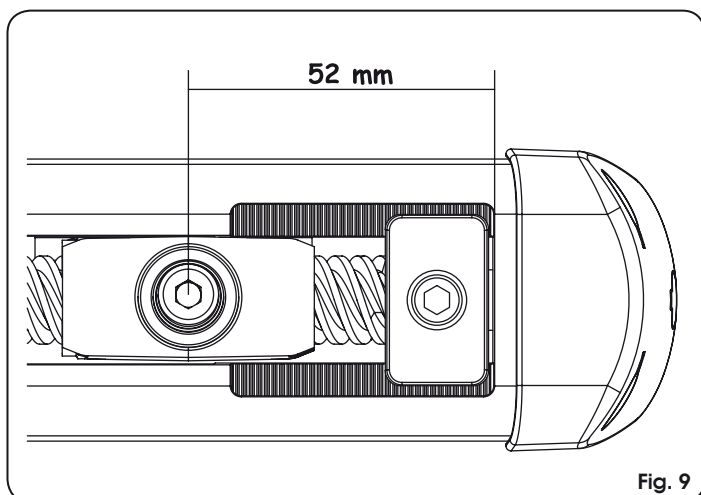


Fig. 9

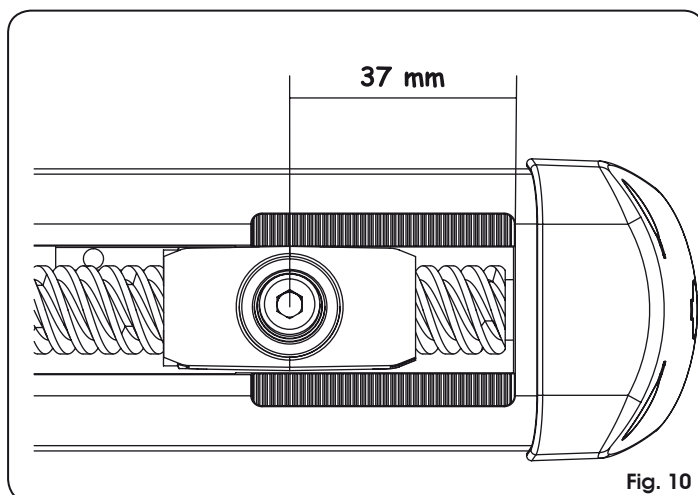
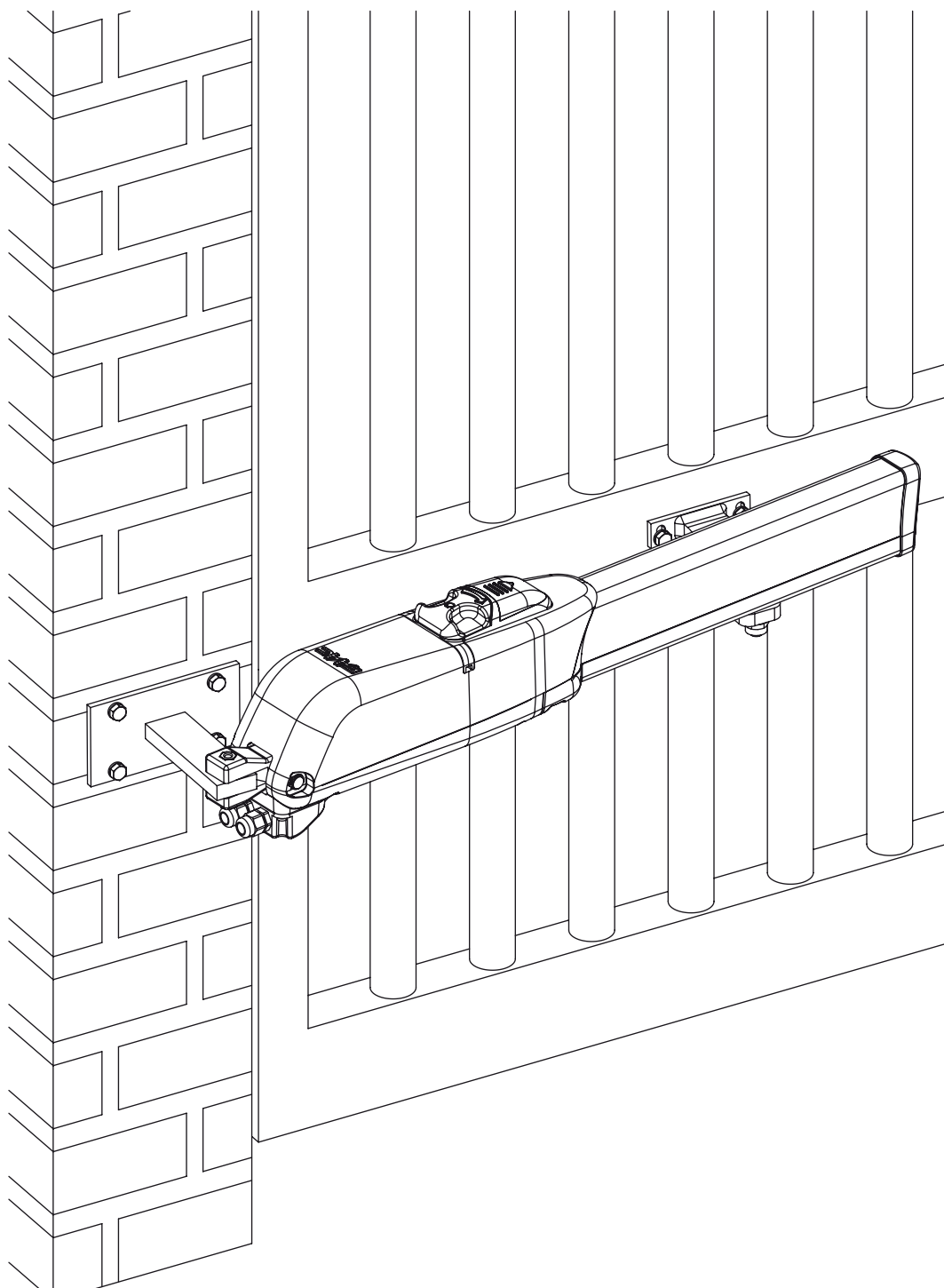


Fig. 10

413

Guida per l'utente - User's guide
Instructions pour l'utilisateur - Guía para el usuario
Anweisungen für den Benutzer - Gebruikersgids



FAAC



Read the instructions carefully before using the product, and keep them for future consultation

GENERAL SAFETY REGULATIONS

If installed and used correctly, the 413 automated system will ensure a high degree of safety.

Some simple rules regarding behaviour will avoid any accidental trouble:

- Do not pass between the leaves when they are moving. Before passing between the leaves, wait for their complete opening.
- Do not stand between the leaves.
- Do not stand near the automated system and do not allow children and other people or things to stand there.
- Keep radiocontrols or any other pulse generator well away from children to prevent the automated system from being activated involuntarily.
- Do not allow children to play with the automated system.
- Do not willingly obstruct leaf movement.
- Prevent any branches or shrubs from interfering with leaf movement.
- Keep illuminated signalling systems efficient and clearly visible.
- Do not attempt to activate the leaves by hand unless you have released them.
- In the event of malfunctions, release the leaves to allow access and wait for qualified technical personnel to do the necessary work.
- Do not make any alterations to the components of the automated system.
- Do not attempt any kind of repair or direct action whatsoever and contact qualified personnel only.
- Call in qualified personnel at least every 6 months to check the efficiency of the automated system, safety devices and earth connection.

DESCRIPTION

The **413** automated system for swing gates is an electro-mechanical non-reversing operator that transmits motion to the leaf via a worm screw system.

The operator is available in many versions covering therefore every installation requirement. The "LS" versions are equipped with opening and closing limit switches. Every version is supplied with opening and closing mechanical travel stops.

The non-reversing system ensures the leaf is mechanically locked when the motor is not operating. A convenient and safe release system with customised key makes it possible to manually move the leaf in the event of a malfunction or of a power failure. Consult the Installation Technician for the desired operating logic.

The leaves are normally in closed position.

When the electronic control unit receives an opening command by radiocontrol or by any other pulse generator, it activates the electro-mechanical operator to rotate the leaves until they reach the opening position to provide access.

For detailed operation of the automated system under different operating logics, consult the Installation Technician.

The automated system includes safety devices (photocells) which prevent the leaves from moving when there is an obstacle in the area they protect.

The light indicates that leaves are moving.



The correct operation and the declared specifications only apply if FAAC accessories and safety devices are used.



As no mechanical clutch device is fitted, a control unit with adjustable electronic clutch is required to ensure the necessary anti-crushing safety.



The 413 automated system was designed and built for controlling vehicle access. Avoid any other use whatever.

MANUAL OPERATION

If the automated system needs to be moved manually due to a power lack or to an operator malfunction, proceed as follows:

1. Cut power by means of the safety circuit breaker (even in the event of a power lack).
2. Slide the protective cap, Fig. 1/1.
3. Insert the key and turn it 90°, Fig. 1/2.
4. To release the operator turn 180° the control lever to the direc-

tion indicated by the arrow on the release system, Fig. 1/3.

5. Open and close the leaf manually.

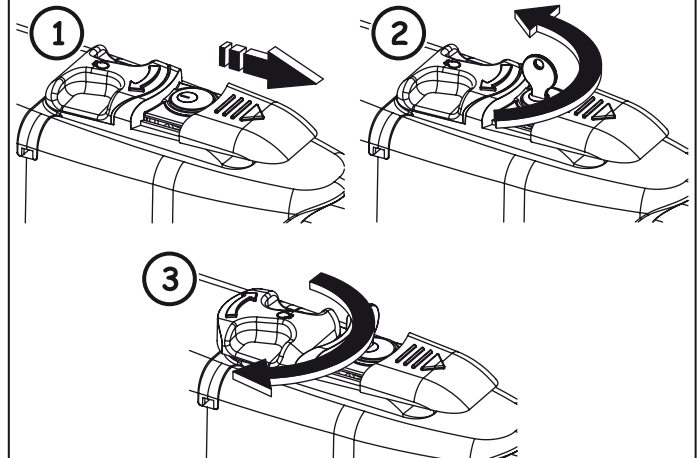


Fig. 1



To hold the operator in manual operation the release device should be left in its current positions and the system should be without power.

RESTORING NORMAL OPERATION

To restore normal operating conditions, proceed as follows:



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.

1. Turn the release system 180° in the opposite direction of the arrow.
2. Turn 90° the release key and remove it.
3. Close the protection cover.
4. Power up the system and perform some movements in order to check the correct restoring of every function of the automated system.

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 or inspection performed by the operator must only occur after having cut power to the system.

REPAIRS

The user must not attempt any repair or job and must only and exclusively contact qualified FAAC personnel or FAAC 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 / ONDEREEL	MODELLO / MODEL / MODÈLE / MODELO / MEDELL / MODEL	MATRICOLA / SERIAL NUMBER / N° DE SERIE / N° DE SERIE / SERIENNUMMER / SERIENNUMMER
Operatore / Operator / Opérateur / Operador / Antrieb / Aandrijving		
Dispositivo di sicurezza 1 / Safety device 1 / dispositif de sécurité 1 / Dispositivo de seguridad 1 / Scherheitsvorrichtung 1 / Veiligheidsvoorziening 1		
Dispositivo di sicurezza 2 / Safety device 2 / dispositif de sécurité 2 / Dispositivo de seguridad 2 / Scherheitsvorrichtung 1 / Veiligheidsvoorziening 2		
Coppia di fotocellule 1 / Pair of photocells 1 / Paire de photocellules 1 / Par de fotocélulas 1 / Fotozellenpaar 1 / Paar fotocellen 1		
Coppia di fotocellule 2 / Pair of photocells 2 / Paire de photocellules 2 / Par de fotocélulas 2 / Fotozellenpaar 2 / Paar fotocellen 2		
Dispositivo di comando 1 / Control device 1 / Dispositif de commande 1 / Dispositivi de mando 1 / Schaltvorrichtung 1 / Bedieningsvoorziening 1		
Dispositivo di comando 2 / Control device 2 / Dispositif de commande 2 / Dispositivi de mando 2 / Schaltvorrichtung 2 / Bedieningsvoorziening 2		
Radiocomando / Radio control / Radiocommande / Radiomando / Funksteuerung / Afstandsbediening		
Lampeggiante / Flashing lamp / Lampe clignotante / Destellador / Blinkleuchte / Signaallamp		

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 voraussehbaren unsachgemäßen Anwendung / Aanduiding van de restrisico's en van voorzienbaar oneigenlijk gebruik



**Registro di manutenzione - Maintenance register - Registre d'entretien
Registro de mantenimeinto - Wartungsprogramm - Onderhoudregister**

Nr	Data / Date / Date / Fecha / Datum / Datum	Descrizione intervento / Job description / Description de l'intervention / Descripción de la intervención / Beschrei- bung der Arbeiten / Beschrijving ingreep	Firme / Signatures / Signatures / Firma / Unterschrift / Handtekeningen
1			Tecnico / Technica Technicien / Técnico Techniker / Technicus
			Cliente / Customer Client / Cliente Kunde / Klant
2			Tecnico / Technica Technicien / Técnico Techniker / Technicus
			Cliente / Customer Client / Cliente Kunde / Klant
3			Tecnico / Technica Technicien / Técnico Techniker / Technicus
			Cliente / Customer Client / Cliente Kunde / Klant
4			Tecnico / Technica Technicien / Técnico Techniker / Technicus
			Cliente / Customer Client / Cliente Kunde / Klant
5			Tecnico / Technica Technicien / Técnico Techniker / Technicus
			Cliente / Customer Client / Cliente Kunde / Klant
6			Tecnico / Technica Technicien / Técnico Techniker / Technicus
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8			Tecnico / Technica Technicien / Técnico Techniker / Technicus
			Cliente / Customer Client / Cliente Kunde / Klant
9			Tecnico / Technica Technicien / Técnico Techniker / Technicus
			Cliente / Customer Client / Cliente Kunde / Klant
10			Tecnico / Technica Technicien / Técnico Techniker / Technicus
			Cliente / Customer Client / Cliente Kunde / Klant



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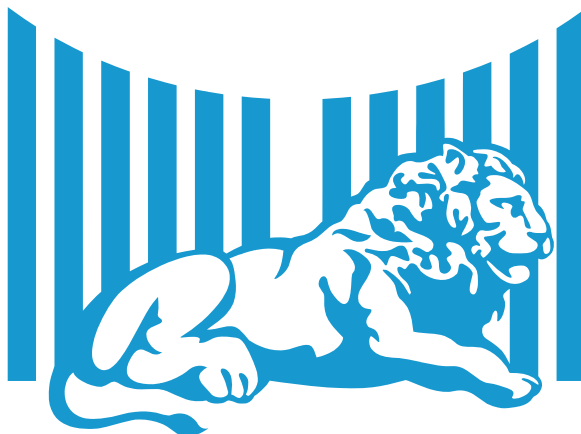
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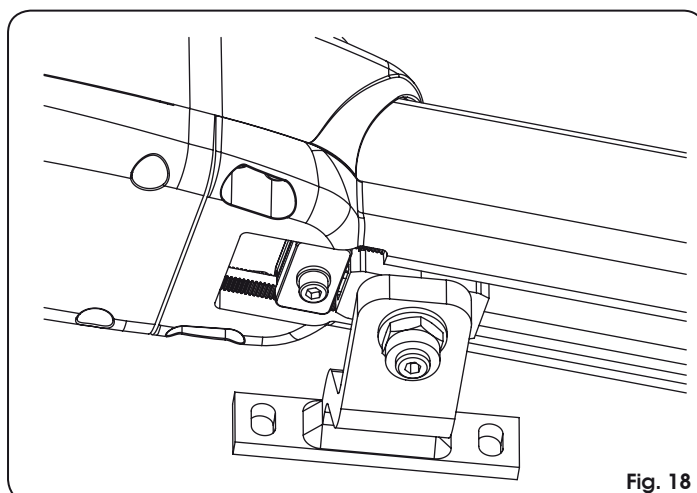
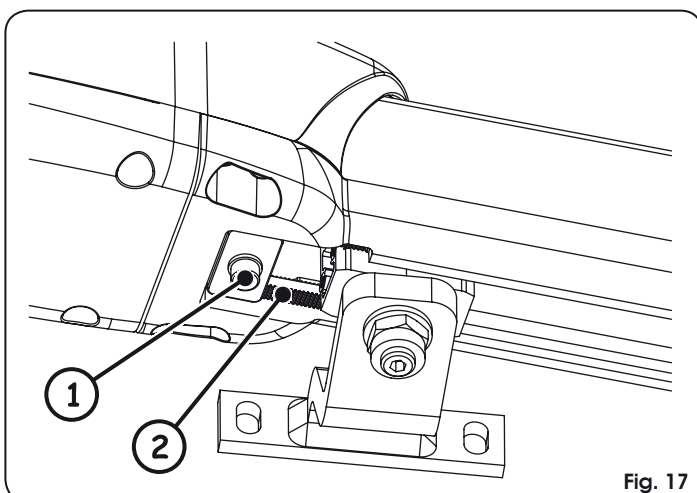
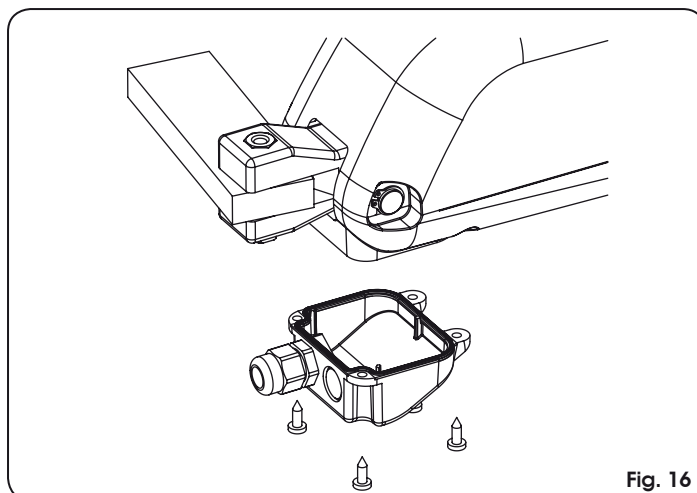
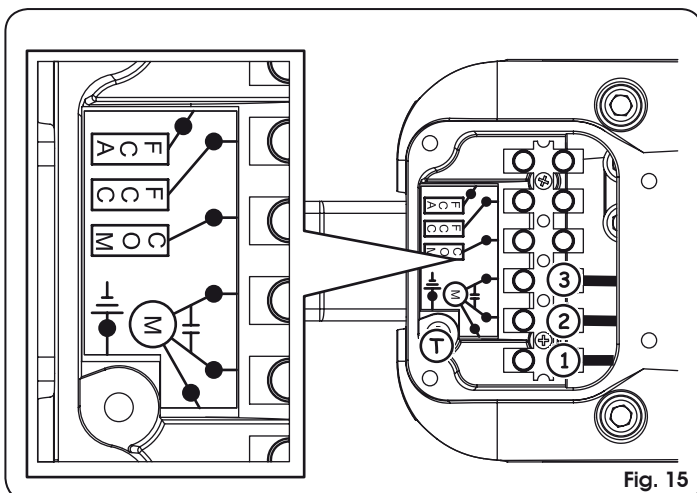
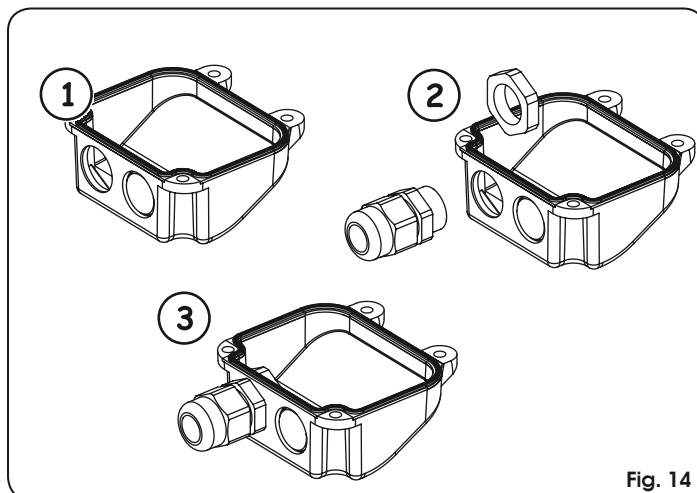
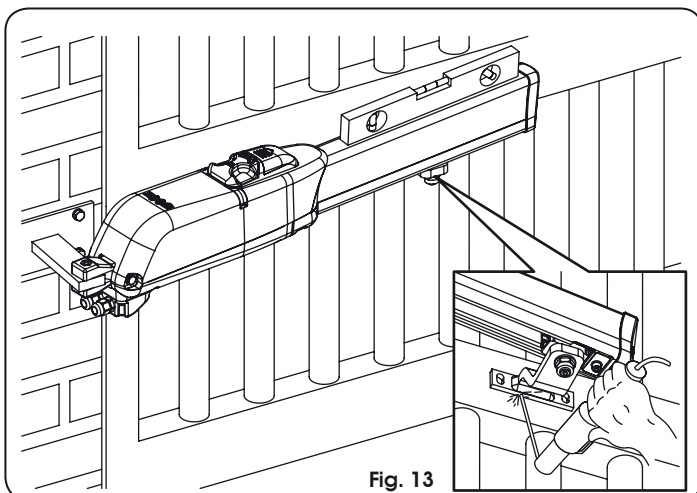
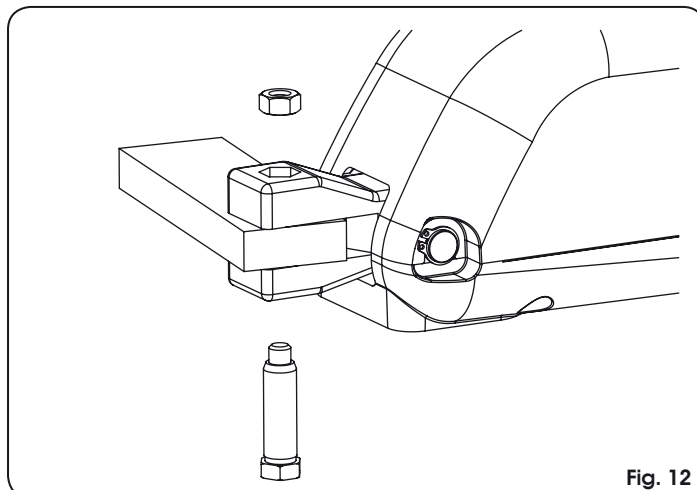
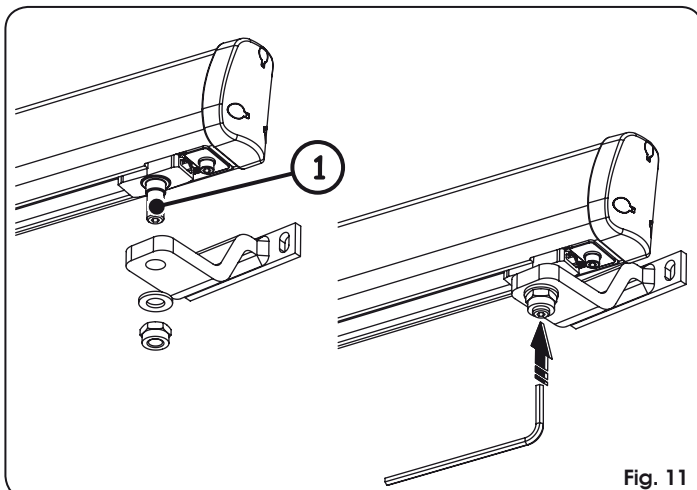
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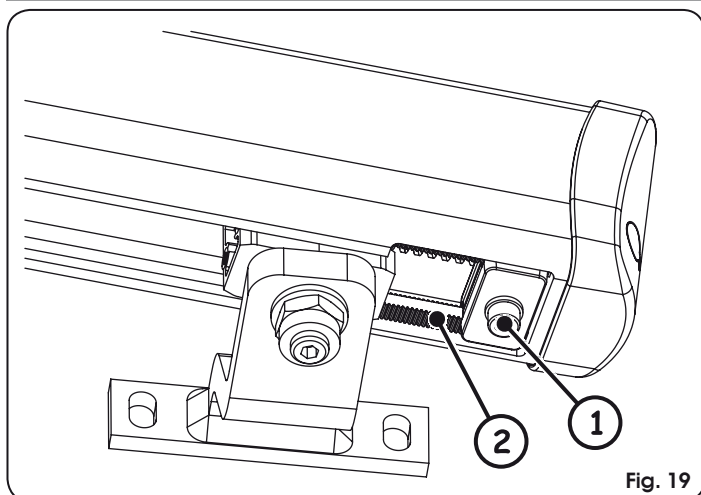


Fig. 19

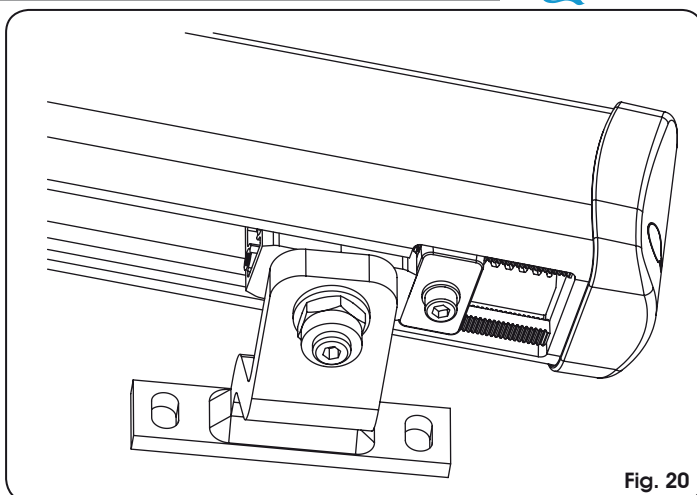


Fig. 20

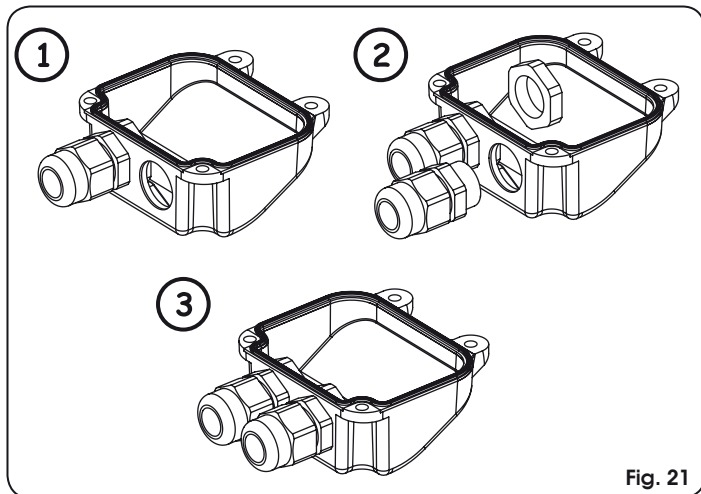


Fig. 21

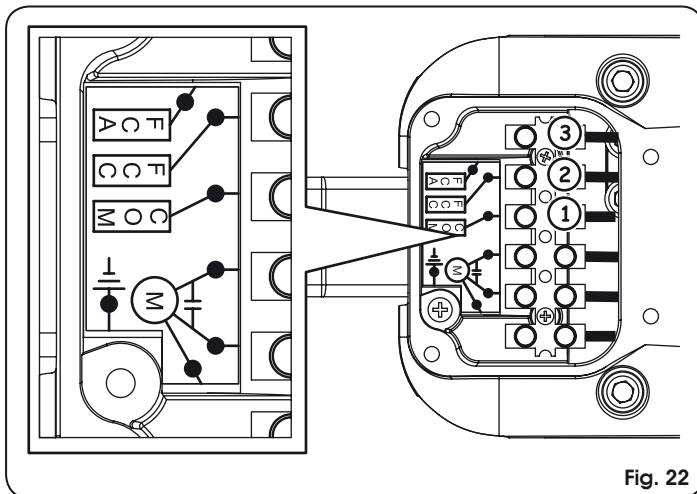


Fig. 22

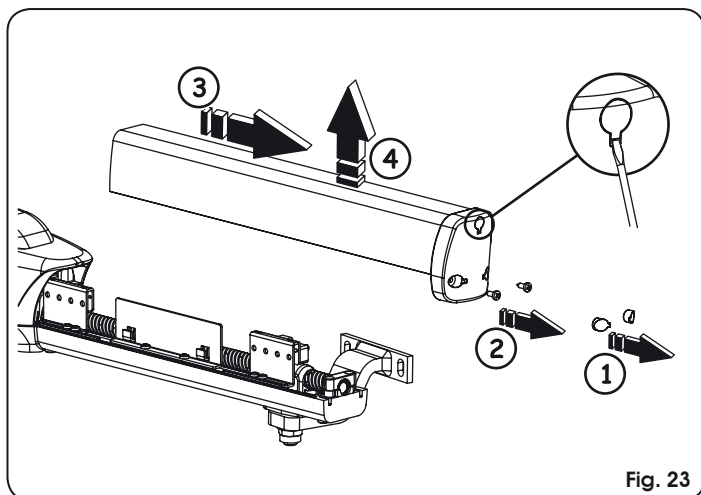


Fig. 23

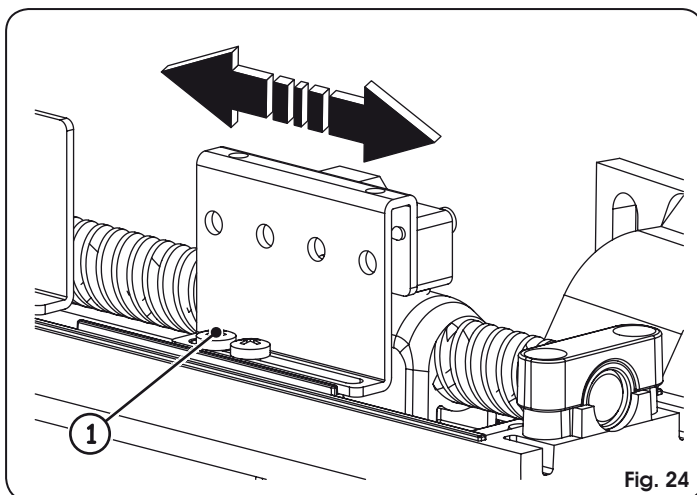


Fig. 24

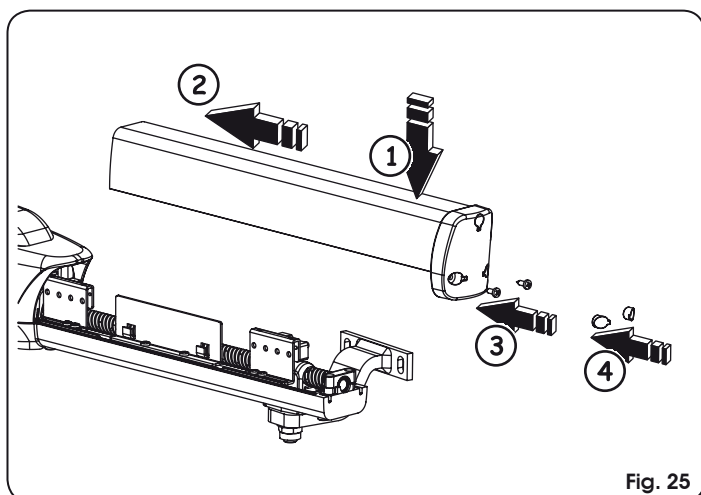


Fig. 25

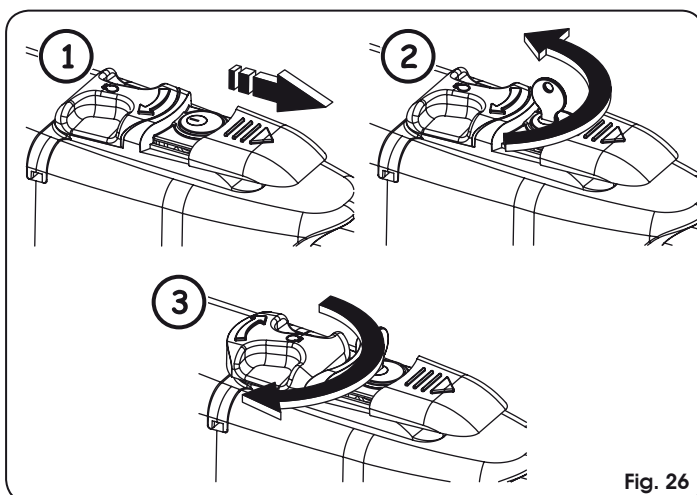


Fig. 26







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