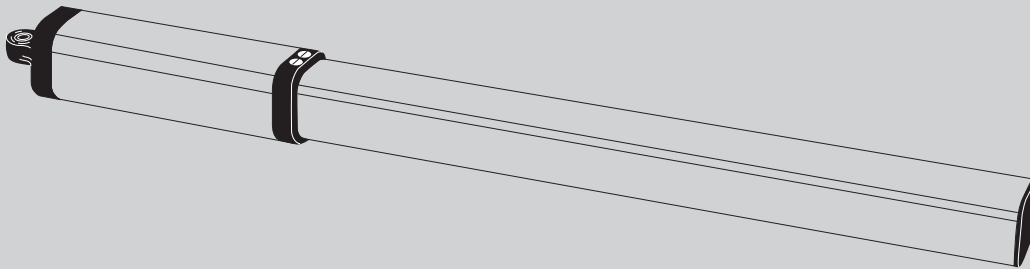




D811035\_10 21-07-16

AUTOMAZIONI A PISTONE PER CANCELLI A BATTENTE  
PISTON AUTOMATIONS FOR SWING GATES  
AUTOMATIONS A PISTON POUR PORTAILS BATTANTS  
HYDRAULISCHER DREHTORANTRIEB  
AUTOMATIZACIONES A PISTON PARA PORTONES CON BATIENDE  
AUTOMATIZAÇÕES A PISTÃO PARA PORTÕES COM BATEENTE



# LUX

ISTRUZIONI D'USO E DI INSTALLAZIONE  
INSTALLATION AND USER'S MANUAL  
INSTRUCTIONS D'UTILISATION ET D'INSTALLATION  
INSTALLATIONS-UND GEBRAUCHSANLEITUNG  
INSTRUCCIONES DE USO Y DE INSTALACION  
INSTRUÇÕES DE USO E DE INSTALAÇÃO



AZIENDA CON SISTEMA DI GESTIONE  
INTEGRATO CERTIFICATO DA DNV  
= UNI EN ISO 9001:2008 =  
UNI EN ISO 14001:2004

**Attenzione!** Leggere attentamente le "Avvertenze" all'interno! **Caution!** Read "Warnings" inside carefully! **Attention!** Veuillez lire attentivement les Avertissements qui se trouvent à l'intérieur!  
**Achtung!** Bitte lesen Sie aufmerksam die „Hinweise“ im Inneren! ¡**Atención!** Leer atentamente las "Advertencias" en el interior! **Atenção!** Ler atentamente as "Instruções" que se encontram no interior!

## INSTALLER WARNINGS

**WARNING! Important safety instructions. Carefully read and comply with all the warnings and instructions that come with the product as incorrect installation can cause injury to people and animals and damage to property. The warnings and instructions give important information regarding safety, installation, use and maintenance. Keep hold of instructions so that you can attach them to the technical file and keep them handy for future reference.**

### GENERAL SAFETY

This product has been designed and built solely for the purpose indicated herein. Uses other than those indicated herein might cause damage to the product and create a hazard.

- The units making up the machine and its installation must meet the requirements of the following European Directives, where applicable: 2014/30/EC, 2014/35/EC, 2006/42/EC, 2011/305/EC, 99/05/EC and later amendments. For all countries outside the EEC, it is advisable to comply with the standards mentioned, in addition to any national standards in force, to achieve a good level of safety.
- The Manufacturer of this product (hereinafter referred to as the "Firm") disclaims all responsibility resulting from improper use or any use other than that for which the product has been designed, as indicated herein, as well as for failure to apply Good Practice in the construction of entry systems (doors, gates, etc.) and for deformation that could occur during use.
- Installation must be carried out by qualified personnel (professional installer, according to EN 12635), in compliance with Good Practice and current code.
- Before installing the product, make all structural changes required to produce safety gaps and to provide protection from or isolate all crushing, shearing and dragging hazard areas and danger zones in general in accordance with the provisions of standards EN 12604 and 12453 or any local installation standards. Check that the existing structure meets the necessary strength and stability requirements.
- Before commencing installation, check the product for damage.
- The Firm is not responsible for failure to apply Good Practice in the construction and maintenance of the doors, gates, etc. to be motorized, or for deformation that might occur during use.
- Make sure the stated temperature range is compatible with the site in which the automated system is due to be installed.
- Do not install this product in an explosive atmosphere: the presence of flammable fumes or gas constitutes a serious safety hazard.
- Disconnect the electricity supply before performing any work on the system. Also disconnect buffer batteries, if any are connected.
- Before connecting the power supply, make sure the product's ratings match the mains ratings and that a suitable residual current circuit breaker and overcurrent protection device have been installed upline from the electrical system. Have the automated system's mains power supply fitted with a switch or omnipolar thermal-magnetic circuit breaker with a contact separation that provide full disconnection under overvoltage category III conditions.
- Make sure that upline from the mains power supply there is a residual current circuit breaker that trips at no more than 0.03A as well as any other equipment required by code.
- Make sure the earth system has been installed correctly: earth all the metal parts belonging to the entry system (doors, gates, etc.) and all parts of the system featuring an earth terminal.
- Installation must be carried out using safety devices and controls that meet standards EN 12978 and EN 12453.
- Impact forces can be reduced by using deformable edges.
- In the event impact forces exceed the values laid down by the relevant standards, apply electro-sensitive or pressure-sensitive devices.
- Apply all safety devices (photocells, safety edges, etc.) required to keep the area free of impact, crushing, dragging and shearing hazards. Bear in mind the standards and directives in force, Good Practice criteria, intended use, the installation environment, the operating logic of the system and forces generated by the automated system.
- Apply all signs required by current code to identify hazardous areas (residual risks). All installations must be visibly identified in compliance with the provisions of standard EN 13241-1.
- Once installation is complete, apply a nameplate featuring the door/gate's data.
- This product cannot be installed on leaves incorporating doors (unless the motor can be activated only when the door is closed).
- If the automated system is installed at a height of less than 2.5 m or is accessible, the electrical and mechanical parts must be suitably protected.
- For roller shutter automation only
  - 1) The motor's moving parts must be installed at a height greater than 2.5 m above the floor or other surface from which they may be reached.
  - 2) The gearmotor must be installed in a segregated and suitably protected space so that it cannot be reached without the aid of tools.
- Install any fixed controls in a position where they will not cause a hazard, away from moving parts. More specifically, hold-to-run controls must be positioned within direct sight of the part being controlled and, unless they are key operated, must be installed at a height of at least 1.5 m and in a place where they cannot be reached by the public.
- Apply at least one warning light (flashing light) in a visible position, and also attach a Warning sign to the structure.
- Attach a label near the operating device, in a permanent fashion, with information on how to operate the automated system's manual release.
- Make sure that, during operation, mechanical risks are avoided or relevant protective measures taken and, more specifically, that nothing can be banged, crushed, caught or cut between the part being operated and surrounding parts.
- Once installation is complete, make sure the motor automation settings are correct and that the safety and release systems are working properly.
- Only use original spare parts for any maintenance or repair work. The Firm disclaims all responsibility for the correct operation and safety of the automated system if parts from other manufacturers are used.
- Do not make any modifications to the automated system's components unless explicitly authorized by the Firm.
- Instruct the system's user on what residual risks may be encountered, on the control systems that have been applied and on how to open the system manually in an emergency. Give the user guide to the end user.

- Dispose of packaging materials (plastic, cardboard, polystyrene, etc.) in accordance with the provisions of the laws in force. Keep nylon bags and polystyrene out of reach of children.

### WIRING

**WARNING!** For connection to the mains power supply, use a multicore cable with a cross-sectional area of at least 5x1.5mm<sup>2</sup> or 4x1.5mm<sup>2</sup> when dealing with three-phase power supplies or 3x1.5mm<sup>2</sup> for single-phase supplies (by way of example, type H05RN-F cable can be used with a cross-sectional area of 4x1.5mm<sup>2</sup>). To connect auxiliary equipment, use wires with a cross-sectional area of at least 0.5 mm<sup>2</sup>.

- Only use pushbuttons with a capacity of 10A-250V or more.
- Wires must be secured with additional fastening near the terminals (for example, using cable clamps) in order to keep live parts well separated from safety extra low voltage parts.
- During installation, the power cable must be stripped to allow the earth wire to be connected to the relevant terminal, while leaving the live wires as short as possible. The earth wire must be the last to be pulled taut in the event the cable's fastening device comes loose.

**WARNING!** safety extra low voltage wires must be kept physically separate from low voltage wires.

Only qualified personnel (professional installer) should be allowed to access live parts.

### CHECKING THE AUTOMATED SYSTEM AND MAINTENANCE

Before the automated system is finally put into operation, and during maintenance work, perform the following checks meticulously:

- Make sure all components are fastened securely.
- Check starting and stopping operations in the case of manual control.
- Check the logic for normal or personalized operation.
- For sliding gates only: check that the rack and pinion mesh correctly with 2 mm of play along the full length of the rack; keep the track the gate slides on clean and free of debris at all times.
- For sliding gates and doors only: make sure the gate's running track is straight and horizontal and that the wheels are strong enough to take the weight of the gate.
- For cantilever sliding gates only: make sure there is no dipping or swinging during operation.
- For swing gates only: make sure the leaves' axis of rotation is perfectly vertical.
- For barriers only: before opening the door, the spring must be decompressed (vertical boom).
- Check that all safety devices (photocells, safety edges, etc.) are working properly and that the anti-crush safety device is set correctly, making sure that the force of impact measured at the points provided for by standard EN 12445 is lower than the value laid down by standard EN 12453.
- Impact forces can be reduced by using deformable edges.
- Make sure that the emergency operation works, where this feature is provided.
- Check opening and closing operations with the control devices applied.
- Check that electrical connections and cabling are intact, making extra sure that insulating sheaths and cable glands are undamaged.
- While performing maintenance, clean the photocells' optics.
- When the automated system is out of service for any length of time, activate the emergency release (see "EMERGENCY OPERATION" section) so that the operated part is made idle, thus allowing the gate to be opened and closed manually.
- If the power cord is damaged, it must be replaced by the manufacturer or their technical assistance department or other such qualified person to avoid any risk.
- If "D" type devices are installed (as defined by EN12453), connect in unverified mode, foresee mandatory maintenance at least every six months
- The maintenance described above must be repeated at least once yearly or at shorter intervals where site or installation conditions make this necessary.

### WARNING!

Remember that the drive is designed to make the gate/door easier to use and will not solve problems as a result of defective or poorly performed installation or lack of maintenance



### SCRAPPING

Materials must be disposed of in accordance with the regulations in force. Do not throw away your discarded equipment or used batteries with household waste. You are responsible for taking all your waste electrical and electronic equipment to a suitable recycling centre.

### DISMANTLING

If the automated system is being dismantled in order to be reassembled at another site, you are required to:

- Cut off the power and disconnect the whole electrical system.
- Remove the actuator from the base it is mounted on.
- Remove all the installation's components.
- See to the replacement of any components that cannot be removed or happen to be damaged.

**Anything that is not explicitly provided for in the installation manual is not allowed. The operator's proper operation can only be guaranteed if the information given is complied with. The Firm shall not be answerable for damage caused by failure to comply with the instructions featured herein.**

**While we will not alter the product's essential features, the Firm reserves the right, at any time, to make those changes deemed opportune to improve the product from a technical, design or commercial point of view, and will not be required to update this publication accordingly.**

## AVVERTENZE PER L'UTILIZZATORE (1)

**ATTENZIONE! Importanti istruzioni di sicurezza. Leggere e seguire attentamente le Avvertenze e le Istruzioni che accompagnano il prodotto poiché un uso improprio può causare danni a persone, animali o cose. Conservare le istruzioni per consultazioni future e trasmetterle ad eventuali subentranti nell'uso dell'impianto.**

**Questo prodotto dovrà essere destinato solo all'uso per il quale è stato espressamente installato. Ogni altro uso è da considerarsi improprio e quindi pericoloso. Il costruttore non può essere considerato responsabile per eventuali danni causati da usi impropri, erronei e irragionevoli.**

### SICUREZZA GENERALE

Nel ringraziarVi per la preferenza accordata a questo prodotto, la Ditta è certa che da esso otterrete le prestazioni necessarie al Vostro uso.

Questo prodotto risponde alle norme riconosciute della tecnica e della disposizioni relative alla sicurezza se correttamente installato da personale qualificato ed esperto (installatore professionale).

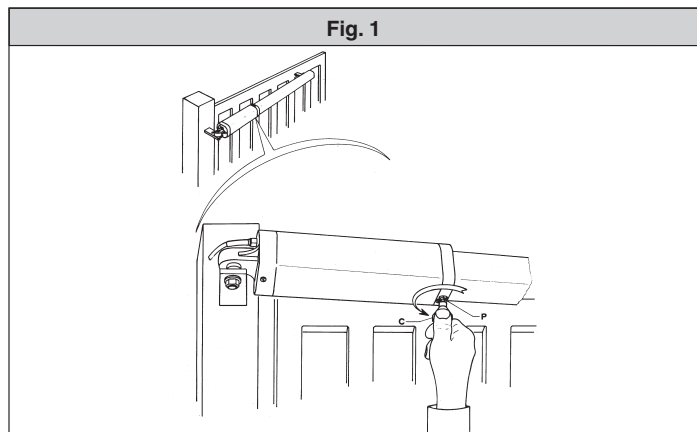
L'automazione, se installata ed utilizzata correttamente, soddisfa gli standard di sicurezza nell'uso. Tuttavia è opportuno osservare alcune regole di comportamento per evitare inconvenienti accidentali:

- Tenere bambini, persone e cose fuori dal raggio d'azione dell'automazione, in particolare durante il movimento.
- Non permettere a bambini di giocare o sostare nel raggio di azione dell'automazione.
- L'apparecchio può essere utilizzato da bambini di età non inferiore a 8 anni e da persone con ridotte capacità fisiche, sensoriali o mentali, o prive di esperienza o della necessaria conoscenza, purché sotto sorveglianza oppure dopo che le stesse abbiano ricevuto istruzioni relative all'uso sicuro dell'apparecchio e alla comprensione dei pericoli ad esso inerenti. I bambini non devono giocare con l'apparecchio. La pulizia e la manutenzione destinata ad essere effettuata dall'utilizzatore non deve essere effettuata da bambini senza sorveglianza.
- I bambini devono essere sorvegliati per sincerarsi che non giochino con l'apparecchio. Non permettere ai bambini di giocare con i controlli fissi. Tenere i telecomandi lontani dai bambini.
- Evitare di operare in prossimità delle cerniere o organi meccanici in movimento.
- Non contrastare il movimento dell'anta e non tentare di aprire manualmente la porta se non è stato sbloccato l'attuatore con l'apposita manopola di sblocco.
- Non entrare nel raggio di azione della porta o cancello motorizzati durante il loro movimento.
- Non lasciare radiocomandi o altri dispositivi di comando alla portata dei bambini onde evitare azionamenti involontari.
- L'attivazione dello sblocco manuale potrebbe causare movimenti incontrollati della porta se in presenza di guasti meccanici o di condizioni di squilibrio.
- In caso di apritapparelle: sorvegliare la tapparella in movimento e tenere lontano le persone finché non è completamente chiusa. Porre cura quando si aziona lo sblocco se presente, poiché una tapparella aperta potrebbe cadere rapidamente in presenza di usura o rotture.
- La rottura o l'usura di organi meccanici della porta (parte guidata), quali ad esempio cavi, molle, sup-

porti, cardini, guide.. potrebbe generare pericoli. Far controllare periodicamente l'impianto da personale qualificato ed esperto (installatore professionale) secondo quanto indicato dall'installatore o dal costruttore della porta.

- Per ogni operazione di pulizia esterna, togliere l'alimentazione di rete.
- Tenere pulite le ottiche delle fotocellule ed i dispositivi di segnalazione luminosa. Controllare che rami ed arbusti non disturbino i dispositivi di sicurezza.
- Non utilizzare l'automatismo se necessita di interventi di riparazione. In caso di guasto o di malfunzionamento dell'automazione, togliere l'alimentazione di rete sull'automazione, astenersi da qualsiasi tentativo di riparazione o intervento diretto e rivolgersi solo a personale qualificato ed esperto (installatore professionale) per la necessaria riparazione o manutenzione. Per consentire l'accesso, attivare lo sblocco di emergenza (se presente).
- Per qualsiasi intervento diretto sull'automazione o sull'impianto non previsto dal presente manuale, avvalersi di personale qualificato ed esperto (installatore professionale).
- Con frequenza almeno annuale far verificare l'integrità e il corretto funzionamento dell'automazione da personale qualificato ed esperto (installatore professionale), in particolare di tutti i dispositivi di sicurezza.
- Gli interventi d'installazione, manutenzione e riparazione devono essere documentati e la relativa documentazione tenuta a disposizione dell'utilizzatore.
- Il mancato rispetto di quanto sopra può creare situazioni di pericolo.
- Non tentare di aprire manualmente il cancello se: Nel modello **LUX-LUXL-LUXG-LUXGV** non è stata sbloccata l'elettroserratura con l'apposita chiave. Nel modello **LUXB-LUX2B** non è stato azionato lo sblocco con l'apposita chiave (Fig.1).
- Non modificare i componenti dell'automazione.
- In caso di malfunzionamento, togliere l'alimentazione, attivare lo sblocco di emergenza per consentire l'accesso e richiedere l'intervento di un tecnico qualificato (installatore).
- Per ogni operazione di pulizia esterna, togliere l'alimentazione di rete.
- Tenere pulite le ottiche delle fotocellule ed i dispositivi di segnalazione luminosa. Controllare che rami ed arbusti non disturbino i dispositivi di sicurezza (fotocellule).
- Per qualsiasi intervento diretto all'automazione, avvalersi di personale qualificato (installatore).
- Annualmente far controllare l'automazione da personale qualificato.

Fig. 1





## APERTURA MANUALE

### Versioni con blocco idraulico (LUXB-LUX2B)

Nei casi di emergenza, per esempio in mancanza di energia elettrica, per sbloccare il cancello, infilare la stessa chiave "C" usata per la regolazione delle valvole by-pass nel perno "P" triangolare situato sotto l'attuatore (fig. 1) e ruotarla in senso antiorario. Il cancello è così apribile manualmente imprimendo una velocità di spinta uguale a quella di apertura automatica.

Per ripristinare il funzionamento elettrico dell'attuatore, girare la chiave in senso orario fino al completo bloccaggio del perno "P".

### Versione senza blocco idraulico (LUX-LUXL-LUXG-LUXGV)

È sufficiente aprire l'elettroserratura con la relativa chiave e spingere manualmente l'anta.



## DEMOLIZIONE

L'eliminazione dei materiali va fatta rispettando le norme vigenti. Non gettate il vostro apparecchio scartato, le pile o le batterie usate nei rifiuti domestici. Avete la responsabilità di restituire tutti i vostri rifiuti da apparecchiature elettriche o elettroniche lasciandoli in un punto di raccolta dedicato al loro riciclo.

Tutto quello che non è espressamente previsto nel manuale d'uso, non è permesso. Il buon funzionamento dell'operatore è garantito solo se vengono rispettate le prescrizioni riportate in questo manuale. La Ditta non risponde dei danni causati dall'inosservanza delle indicazioni riportate in questo manuale.

Lasciando inalterate le caratteristiche essenziali del prodotto, la Ditta si riserva di apportare in qualunque momento le modifiche che essa ritiene convenienti per migliorare tecnicamente, costruttivamente e commercialmente il prodotto, senza impegnarsi ad aggiornare la presente pubblicazione.

## USER WARNINGS (GB)

**WARNING! Important safety instructions. Carefully read and comply with the Warnings and Instructions that come with the product as improper use can cause injury to people and animals and damage to property. Keep the instructions for future reference and hand them on to any new users. This product is meant to be used only for the purpose for which it was explicitly installed. Any other use constitutes improper use and, consequently, is hazardous. The manufacturer cannot be held liable for any damage as a result of improper, incorrect or unreasonable use.**

### GENERAL SAFETY

Thank you for choosing this product. The Firm is confident that its performance will meet your operating needs.

This product meets recognized technical standards and complies with safety provisions when installed correctly by qualified, expert personnel (professional installer).

If installed and used correctly, the automated system will meet operating safety standards. Nonetheless, it is advisable to observe certain rules of behaviour so that accidental problems can be avoided:

- Keep adults, children and property out of range of the automated system, especially while it is moving.
- Do not allow children to play or stand within range of the automated system.
- The unit can be used by children over 8 years old and by people with reduced physical, sensory or

mental capabilities or with no experience or necessary knowledge on condition they are supervised or trained about the safe use of the equipment and understand the risks involved. Children must not play with the unit. Cleaning and maintenance must not be performed by unsupervised children.

- Children must be supervised to ensure they do not play with the device. Do not allow children to play with the fixed controls. Keep remote controls out of reach of children.
- Do not work near hinges or moving mechanical parts.
- Do not hinder the leaf's movement and do not attempt to open the door manually unless the actuator has been released with the relevant release knob.
- Keep out of range of the motorized door or gate while they are moving.
- Keep remote controls or other control devices out of reach of children in order to avoid the automated system being operated inadvertently.
- The manual release's activation could result in uncontrolled door movements if there are mechanical faults or loss of balance.
- When using roller shutter openers: keep an eye on the roller shutter while it is moving and keep people away until it has closed completely. Exercise care when activating the release, if such a device is fitted, as an open shutter could drop quickly in the event of wear or breakage.
- The breakage or wear of any mechanical parts of the door (operated part), such as cables, springs, supports, hinges, guides... , may generate a hazard. Have the system checked by qualified, expert personnel (professional installer) at regular intervals according to the instructions issued by the installer or manufacturer of the door.
- When cleaning the outside, always cut off mains power.
- Keep the photocells' optics and illuminating indicator devices clean. Check that no branches or shrubs interfere with the safety devices.
- Do not use the automated system if it is in need of repair. In the event the automated system breaks down or malfunctions, cut off mains power to the system; do not attempt to repair or perform any other work to rectify the fault yourself and instead call in qualified, expert personnel (professional installer) to perform the necessary repairs or maintenance. To allow access, activate the emergency release (where fitted).
- If any part of the automated system requires direct work of any kind that is not contemplated herein, employ the services of qualified, expert personnel (professional installer).
- At least once a year, have the automated system, and especially all safety devices, checked by qualified, expert personnel (professional installer) to make sure that it is undamaged and working properly.
- A record must be made of any installation, maintenance and repair work and the relevant documentation kept and made available to the user on request.
- Failure to comply with the above may result in hazardous situations.
- Do not attempt to open the gate manually if:
- In mod. **LUX-LUXL-LUXG-LUXGV** the electric lock has not been released by means of the appropriate key.
- In mod. **LUXB-LUX2B** the release has not been activated by means of the appropriate key (fig.1).
- Do not modify the automation components.
- In case of malfunction, disconnect the power sup-

ply, activate the emergency release to have access to the automation and request the assistance of a qualified technician (installer).

- Before proceeding to any outside cleaning operation, disconnect the power supply.
- Keep the photocell optical components and light signal devices clean.
- Check that the safety devices (photocells) are not obscured by branches or shrubs.
- For any direct assistance to the automation system, request the help of a qualified technician (installer).
- Have qualified personnel check the automation system once a year.

### MANUAL OPENING

#### Versions with hydraulic lock (LUXB-LUX2B)

In case of emergency, for example during a power cut, the gate can be released by inserting the same key "C" used to adjust the bypass valve into the triangular pivot "P" found under the actuator (fig. 1) and turning it anti-clockwise. The gate can then be opened manually following the same speed as an automatic opening. To restore the actuator to electrical operation, turn the key clockwise until pivot "P" is locked.

#### Versions without hydraulic lock (LUX-LUXL-LUXG-LUXGV)

It is sufficient to open the electric lock with its key and move the leaf manually.



### SCRAPPING

Materials must be disposed of in accordance with the regulations in force. Do not throw away your discarded equipment or used batteries with household waste. You are responsible for taking all your waste electrical and electronic equipment to a suitable recycling centre.

**Anything that is not explicitly provided for in the user guide is not allowed. The operator's proper operation can only be guaranteed if the instructions given herein are complied with. The Firm shall not be answerable for damage caused by failure to comply with the instructions featured herein.**

**While we will not alter the product's essential features, the Firm reserves the right, at any time, to make those changes deemed opportune to improve the product from a technical, design or commercial point of view, and will not be required to update this publication accordingly.**

**AVERTISSEMENTS POUR L'UTILISATEUR (F)**



Fig. 1

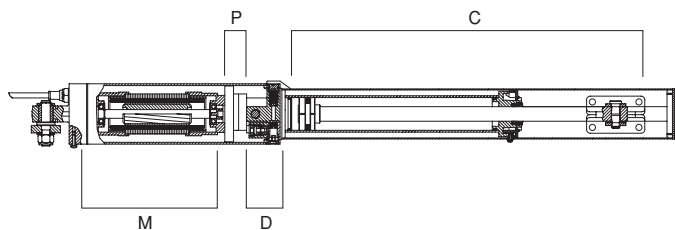
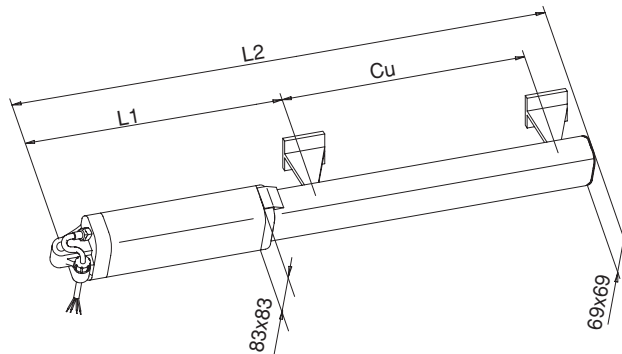


Fig. 2



	L1	Cu	L2
LUX	715	270	1025
LUXG	850	390	1300

(mm)

Fig. 3

LUX		mm								
b \ a	80	90	100	110	120	135	145	155	165	175
90						116	108	102	98	94
100						110	103	98	94	91
110					123	104	99	94	91	
120					111	99	94	91		
135				111	100	90°				
145				102	94					
155			104	95	90					
165			95	90						
175		95	88							
185	96	88								α°

Fig. 4

LUX G - LUX GV											mm
b \ a	95	115	135	155	175	195	215	235	255	275	295
95						128	115	107	102	97	94
115						119	108	102	97	93	90
135					130	111	102	97	93	89	
155					114	103	97	92	88		
175					104	96	91	87			
195					107	96	90°				
215					96	89					
235					96	88					
255	105	96	87								
275	96	85									
295	94										α°

- I - Installazione possibile solo con staffa da 110 mm.
- GB - Installation only to be carried out using a 110 mm bracket.
- F - Installation possible seulement avec patte de 110 mm.
- D - Installation nur mit 110 mm - Torflansch möglich.
- E - Instalación posible solamente con estribo de 110 mm.
- P - É possível efectuar a instalação somente com uma braçadeira de 110 mm.

Fig. 5

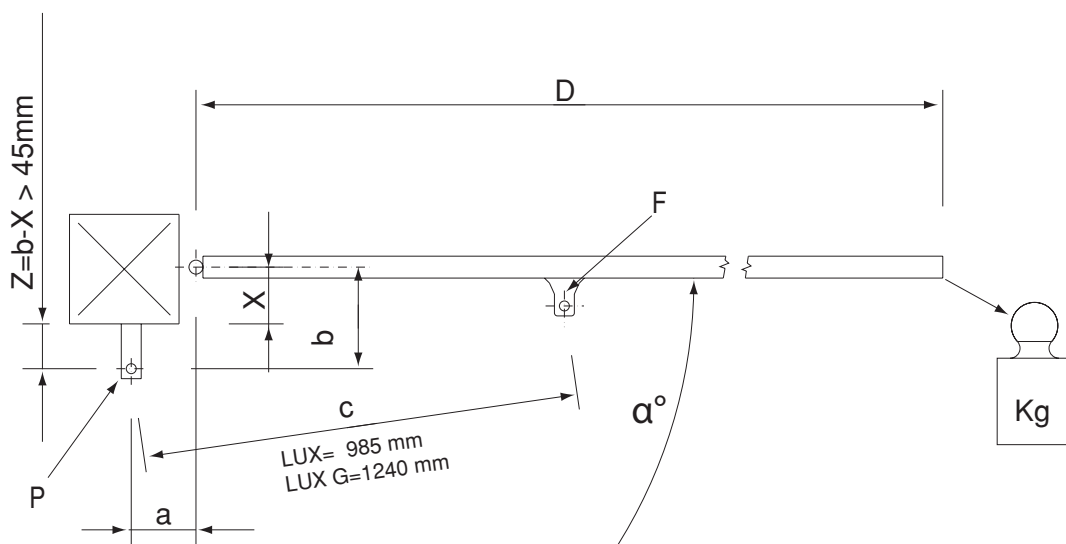


Fig. 6

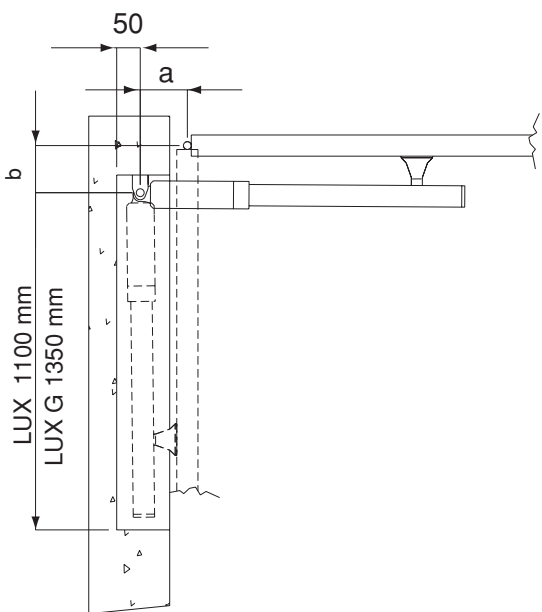


Fig. 7

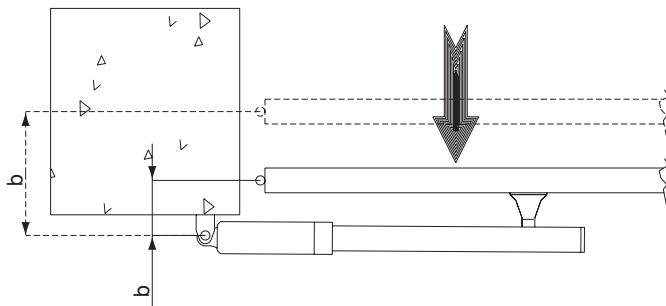


Fig. 8

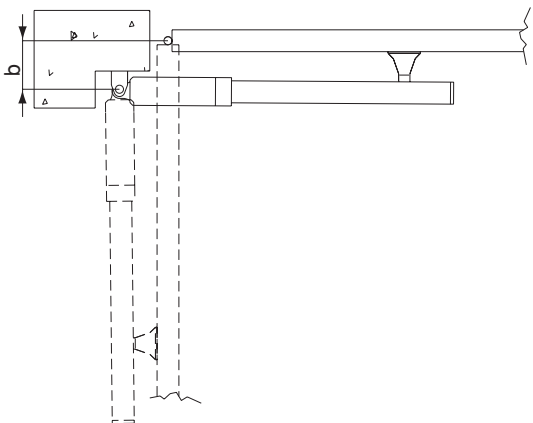


Fig. 9

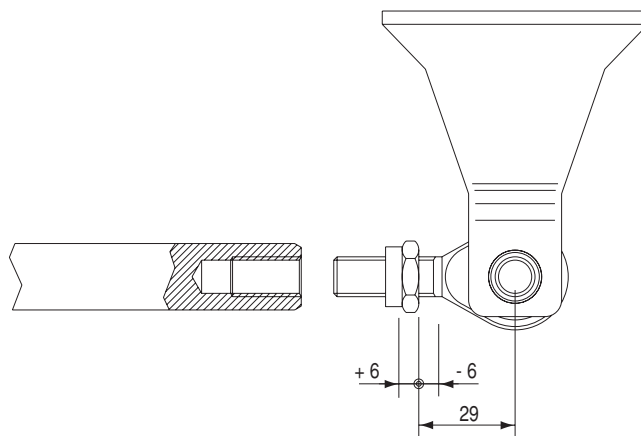
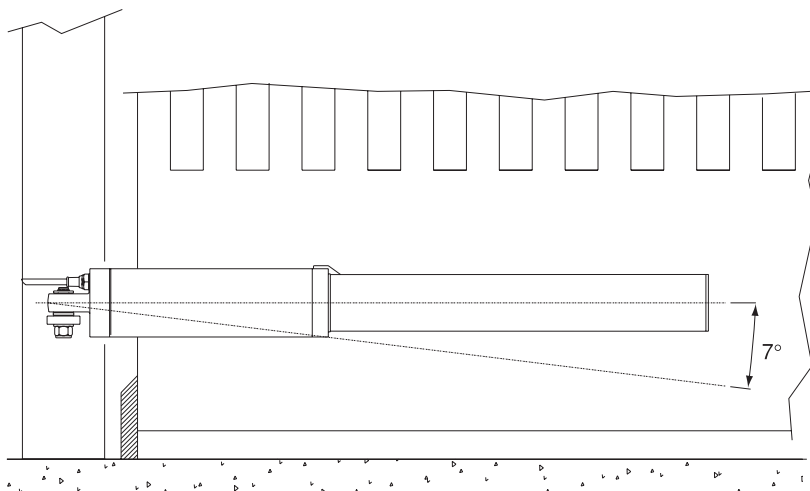
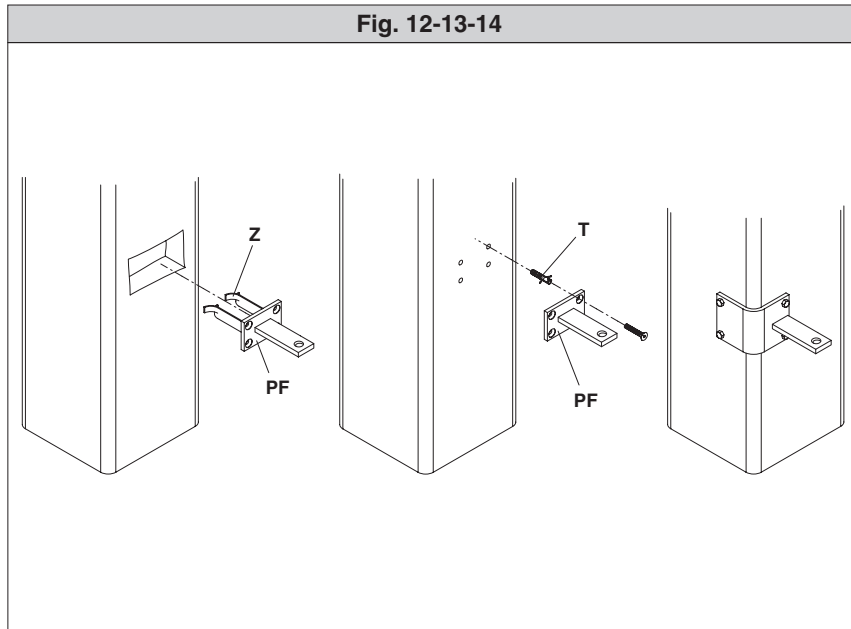
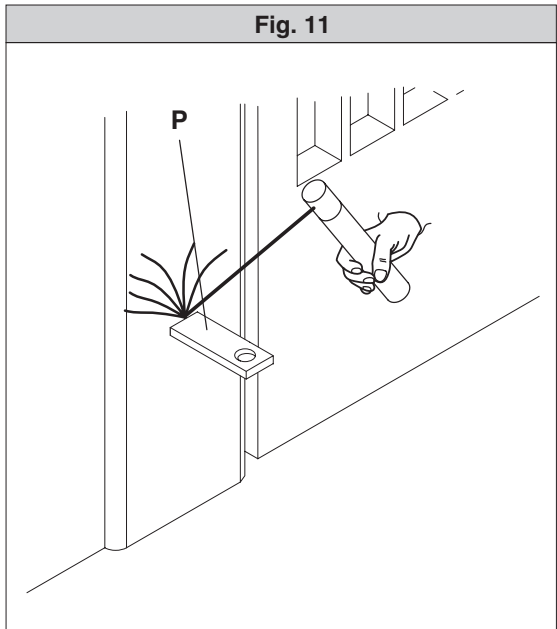
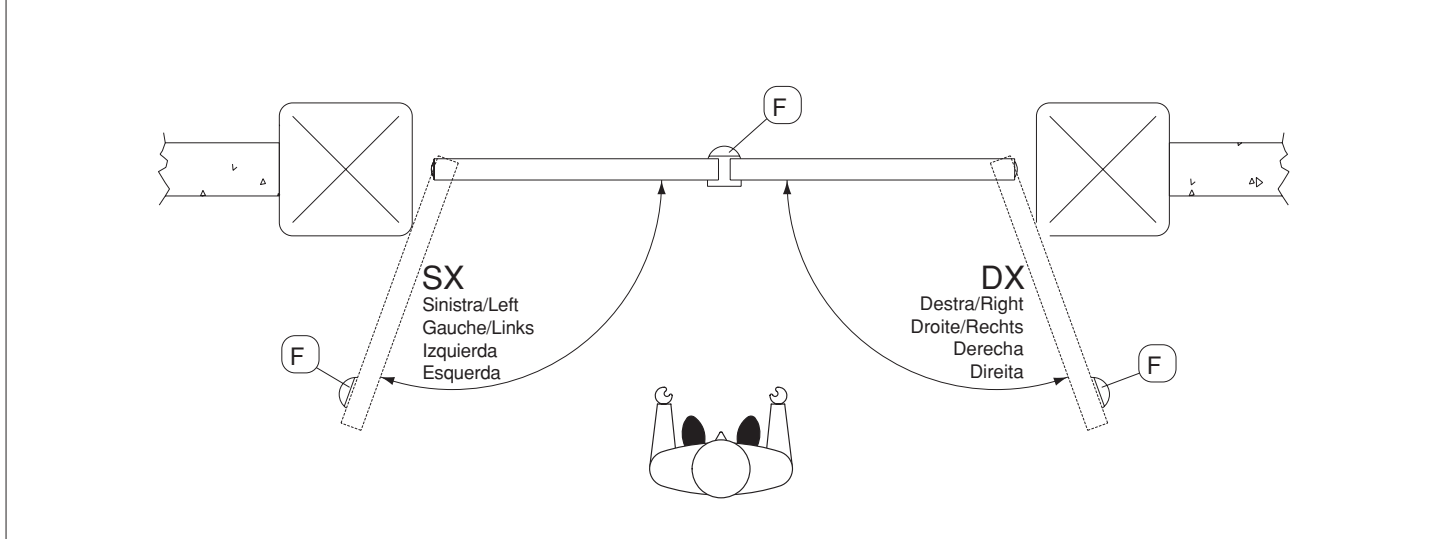


Fig. 10





**Fig. 15**



**Fig. 16**

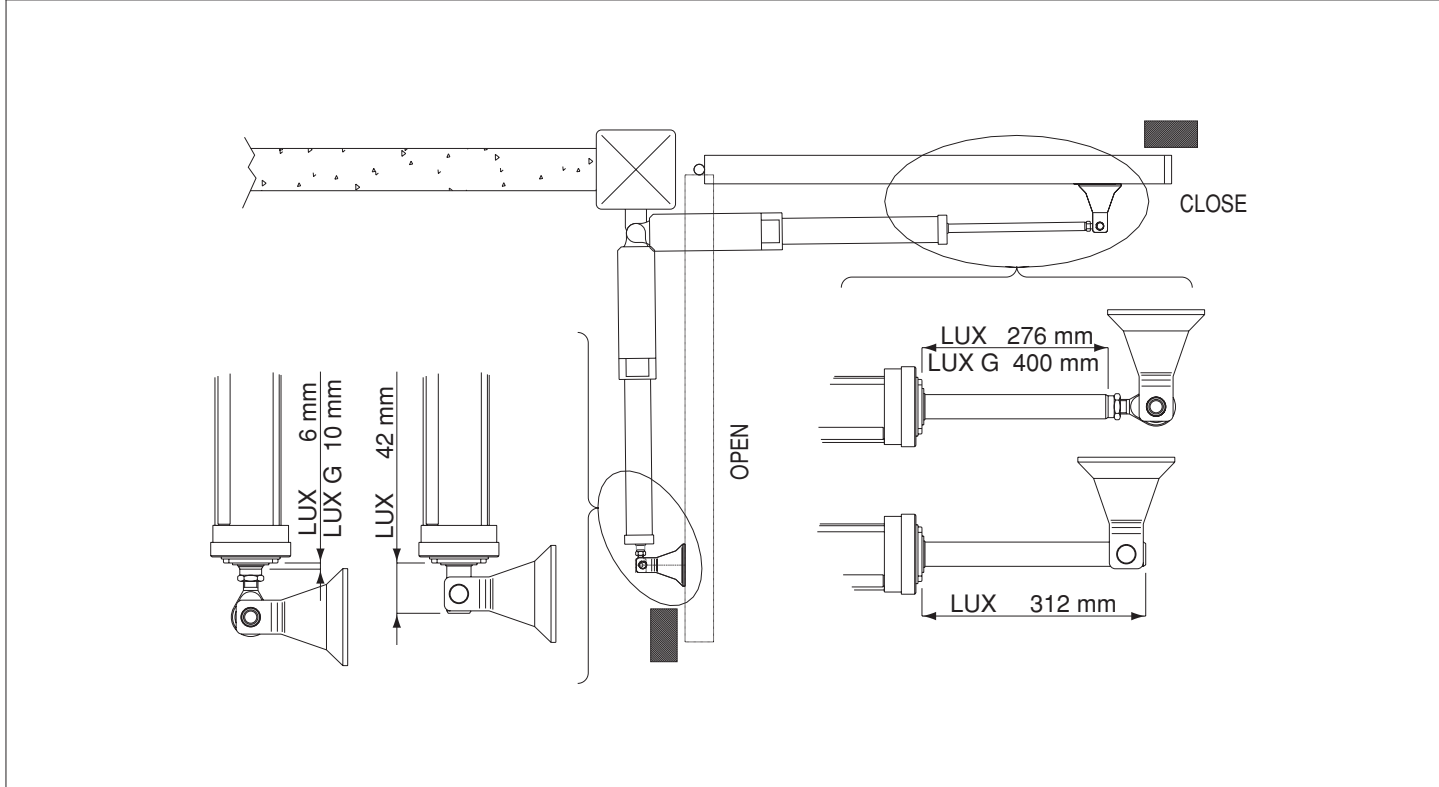




Fig. 17

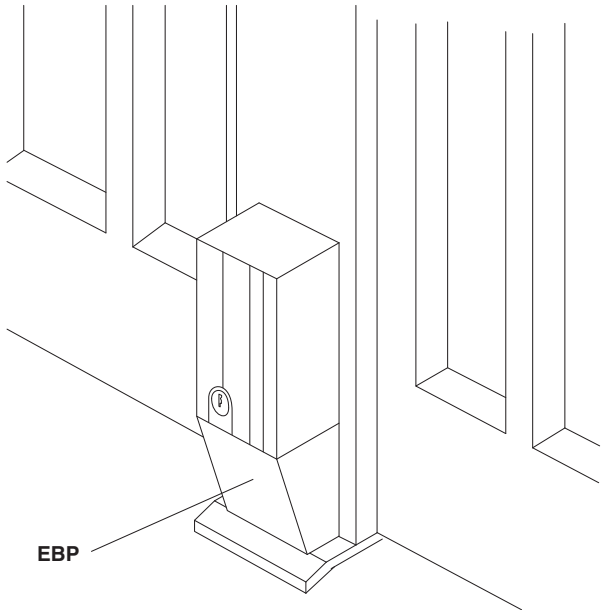


Fig. 18

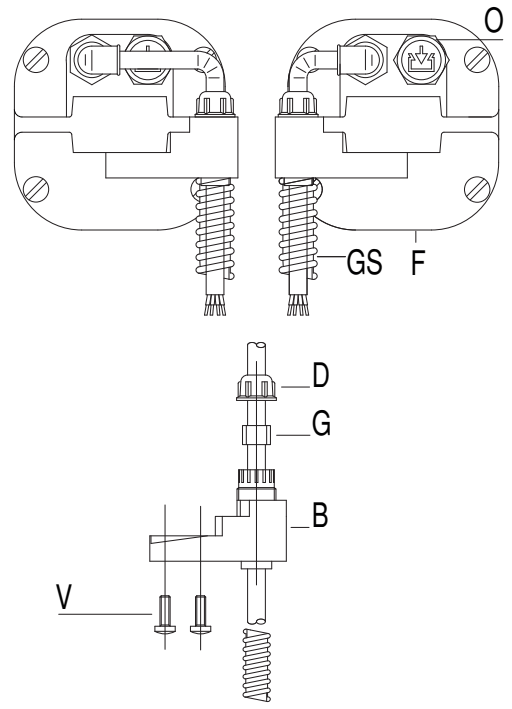


Fig. 19

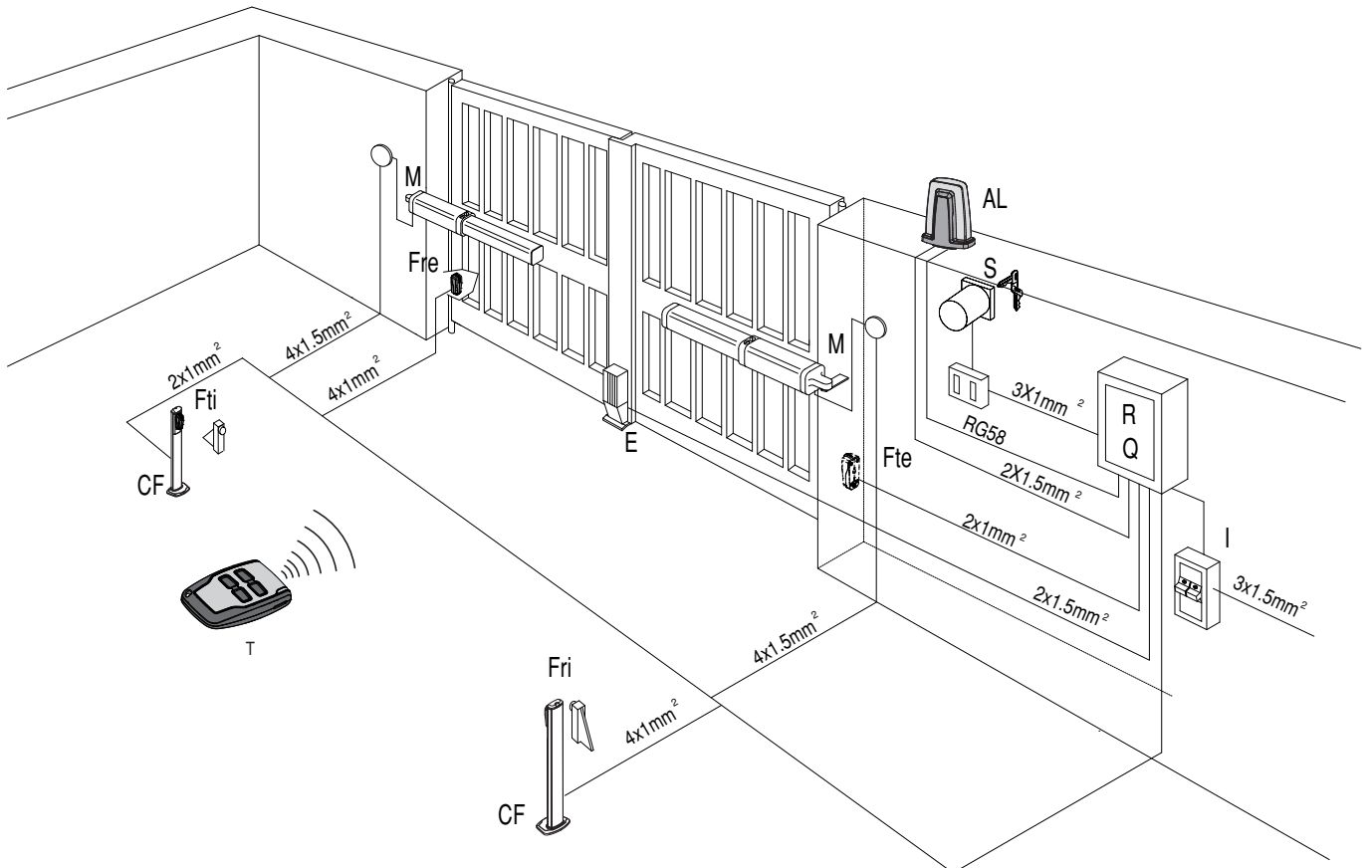


Fig. 20

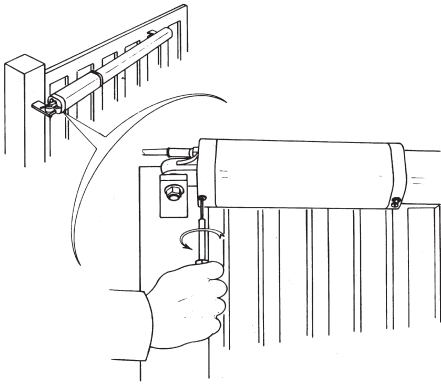


Fig. 21

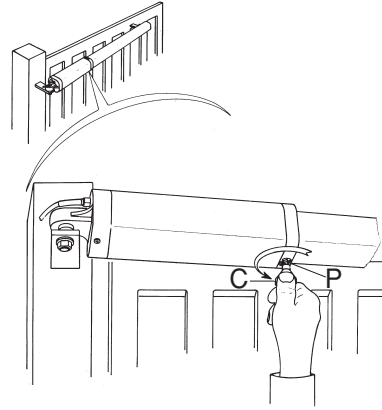


Fig. 22

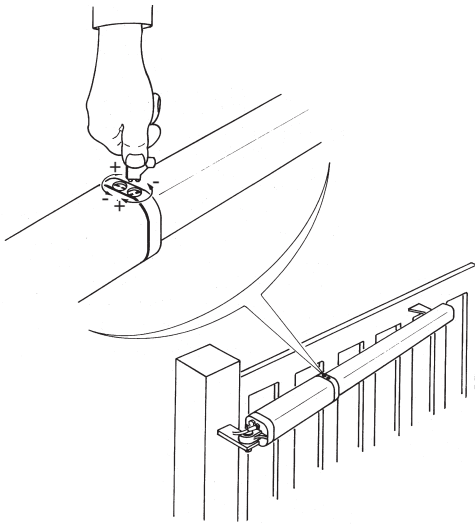


Fig. 24

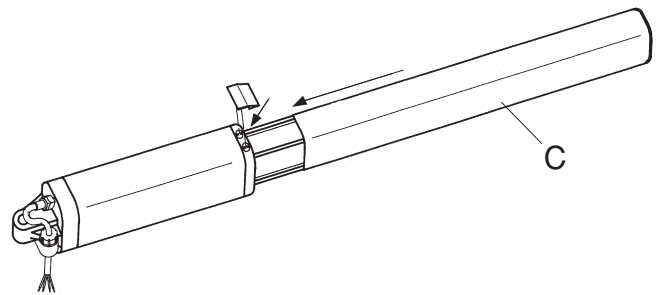
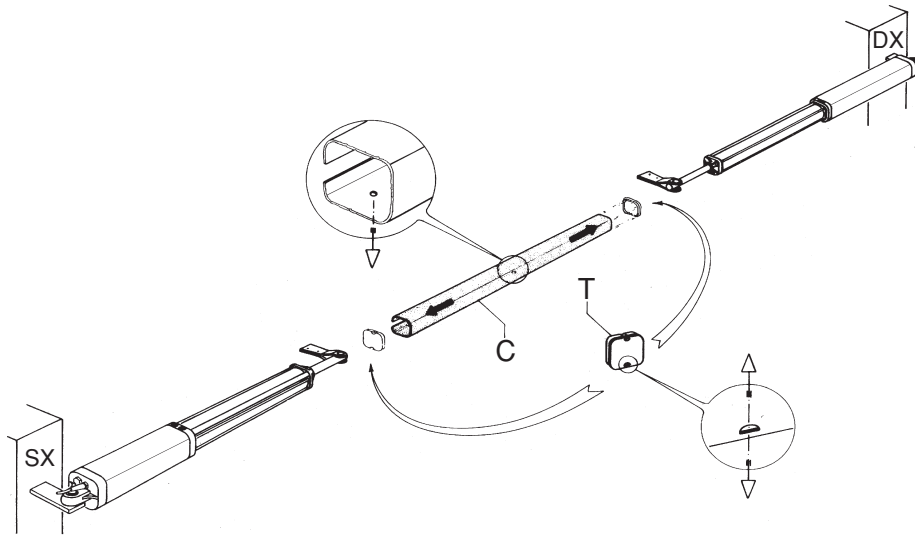


Fig. 23



## 2) GENERAL OUTLINE

A compact, sturdy oleodynamic piston, available in a wide range of models to fit any need and field of operation. It is available in versions both with or without (reversible) hydraulic lock, that need to be equipped with an electric lock to hold the gate both closed and open.

The emergency release is obtained with the special key provided.

The adjustment of the pushing force is extremely precise and is performed by means of two by-pass valves that act as an antisquash safety. The operation at the end of the stroke is controlled electronically by a timer in the control panel.

The LUX series includes special versions with slowdown in the closing phase (Mod. "R") while the LUX FC series is especially suited to areas prone to heavy snowfalls or where the central gate stop cannot be provided (see specific instruction manual).

**Warning:** during the first manoeuvring cycles, some oil may leak out after being deposited in the breather channel during transport.

**Warning:** an excessively fast manual manoeuvre can cause oil to leak out.

## 3) THE MAIN PARTS IN THE AUTOMATION (fig. 1)

**M)** Single phase 2 pole motor protected by thermal circuit breaker

**P)** Hydraulic lobe pump

**D)** Fluid distributor with adjustment valves

**C)** Cylinder with piston

Standard components:

- gate post and gate brackets - release key and bypass adjustment
- drive capacitor - instruction booklet.

## 4) TECHNICAL SPECIFICATIONS

Power supply: ..... 220-230V 50/60(Hz\*)

Motor: ..... 2800 min<sup>-1</sup>

Power absorption: ..... 250W

Capacitor: ..... 6.3 µF

Current absorption: ..... 1.4A

Max. pressure: ..... 30 bar

Pump delivery: ..... See Table 1

Pushing force: ..... 3000N

Pulling force: ..... 2600 N

Working stroke: ..... See Table 1

Impact reaction: ..... hydraulic clutch

Manual manoeuvres: ..... by release key

Max. no. manoeuvres in 24: ..... See table 1

Thermal protection: ..... 160° C

Ambient temperature: ..... -10° C ÷ 60° C

Protection: ..... IP 57

Controller weight: ..... 8.7 kg

Dimensions: ..... see fig. 2

Circuit oil: ..... idrolux

Sound pressure ..... LpA<70dbA

(\*) Special voltages on request

## 5) INSTALLATION OF THE ACTUATOR

### 5.1) Preliminary checks

Check:

- that the structure of the gate is rigid and strong enough. In any case, the actuator must push against a reinforced point in the leaf
- that the leaves move manually without excessive effort for the whole of their stroke
- that the door stops are mounted on the leaves
- If the gate being installed is not new, check whether its components are worn.

Repair or replace any worn or damaged parts.

Automation reliability and safety are directly influenced by the condition of the gate's structure.

### 5.2) Installation values

The values to be known for installation can be found in the table related to the model being installed (fig. 3-4), with reference also to the diagram in fig. 5.

The diagram in fig. 5 uses the following legend:

**P** Gate-post fastening rear bracket

**F** Leaf fastening front fork

**a-b** "P" bracket installation values

**C** Distance between fixing points (see fig. 2)

**D** Gate length

**X** Distance from gate axis to the edge of the post

**Z** always over 45 mm (b - X)

**kg** max. weight of leaf (Table 1)

**α°** leaf opening in degrees

### 5.3) How to read the installation dimensions (fig- 3-4)

From the tables (fig. 3-4), select "a" and "b" according to the angle in degrees  $\alpha^\circ$  that the gate has to open. Each table shows the ideal value for "a" and "b" for an opening of  $\alpha^\circ = 90^\circ$  at constant speed.

In this condition, the sum of "a" plus "b" gives the value of the working stroke "Cu" (fig. 2).

If there is too large a difference between "a" and "b", the leaf will not travel smoothly and the pushing or pulling force will fluctuate during its stroke.

When "a" and "b" are at their maximum, the piston develops the maximum force.

This condition is particularly useful for heavy gates or gates with very long leaves.

**WARNING!** The LUX models having a rod with adjustment ball joint enable the rod to be lengthened or shortened by about 6 mm., but only if it is set in the position shown in fig. 9 before being installed. When installed, this adjustment will allow for correcting the stroke of the rod. Fig. 10 shows the oscillation to which the LUX models with front and rear joint are subject with respect to the horizontal axis.

### 5.4) Off-standard installations

Fig. 6 - need for a recess to house the controller when the leaf is completely opened; Fig. 6 gives the size of the recess for the different LUX models.

Fig. 7 - if the "b" value is higher than the values listed in the installation tables, the leaf's hinge pivot should be shifted, or a recess be made in the gate-post (fig. 8).

### 5.5) Mounting the brackets to the gate-post and to the gate-leaf.

Fix the bracket "P" (fig. 11) to the gate-post with a good welding.

The fork "F" should be welded in the same way to the gate leaf along the distance "C" as shown in fig. 5, taking care that the operator is installed within the limits shown in Fig. 10.

### 5.5) Mounting the brackets to the gate-post and to the gate-leaf.

- If the gate-post is in brick, the plate "PF" must be welded to a metal base (mod. PLE) and set soundly into the post using adequately sized cramps "Z" welded to the back of the plate (fig. 12).

- If the gate-post is in stone, the plate "PF" welded to a metal base (mod. PLE) can be fixed with four metal expansion plugs "T" (fig. 13). If a larger gate is being installed it would be better to weld the plate "PF" to an angular base (fig. 14).

**WARNING:** Avoid installing the operator too close to the ground, so as to prevent rain or snow from being sucked in by the operator breather.

## 6) GROUND GATE STOPS

For the controller to operate correctly the gate stops "F" must be used both in opening and closing, as shown in fig. 15.

The gate stops should prevent the rod of the actuator from reaching its end of stroke. Fig. 16 gives the values which ensure a perfect installation when the actuator is performing the pushing or pulling function. They must be placed so that about a 5-10 mm margin of travel is maintained in the rod. This margin prevents any malfunctions.

### TABLE 1

MOD	TYPE OF LOCK	PUMP l/min	WORKING TIME (s)	MAX.WING LENGHT/WEIGHT		STROKE WORKING/TOT		MANOEUVRES
				(m)	(Kg)	(mm)	(mm)	24h
LUX	electric lock	1.2	17	2	300	270	290	500
LUX B	hydraulic closing	1.2	17	2	300	270	290	500
LUX 2B	hydraulic clos./open	1.2	17	2	300	270	290	500
LUX L	electric lock	0.6	33	2-4	300/500	270	290	350
LUX G	electric lock	0.6	48	5-2	300/800	390	410	250
LUX GV	electric lock	1.2	28	3,5	300	390	410	500
LUX MB	hydraulic closing	0.9	23	2,3	300	270	290	500

## 7) FITTING THE ELECTRIC LOCK

This is only necessary on models without a hydraulic lock at closing end of stroke.

The electric lock **mod. EBP** (fig. 17) consists of a continuous electromagnet with ground catch. As long as the gearmotor is operating, this device features a non-stop excitation and maintains the bolt "D" lifted until it reaches the closing end of stroke without creating any friction. This characteristic enables the pushing force to be reduced in closing which will improve the antisquash safety level.

## 8) MOUNTING THE CABLE-CLAMP (fig. 18)

**WARNING!** Fix the board "B" to the base "F" with the screws "V" provided. Place the rubber "G" in its seat in the board "B". Slide the nut "D" onto the power cable and pass the cable over board "B" as shown in the picture. Tighten nut "D" until the power cable is clamped.

N.B. The board "B" can be fitted onto both the right and left of the base "F", as required (see picture).

The bottom of board "B" has a spiralled recess to eventually receive a spiralled sheath "GS" in PVC ( $\varnothing=12$  - PG9).

## 9) THE ELECTRICAL PLANT SET-UP

Set the electrical plant (fig. 19) according to the current standards for electrical plants. Keep the power supply connections definitely separated from the auxiliary connections (photocells, rubber skirts, control devices, etc.).

Perform the connections of the control and safety devices in compliance with the above mentioned standards.

Fig. 19 indicates the number of connections and the sections for 100m. long power supply cables. For distances of over 100 m., calculate the cable section depending on the automation actual load. If the length of the auxiliary connections exceeds 50 metres or if they pass through critical areas subject to disturbances, we advise to disconnect the control and safety devices with suitable relays.

**The connector blocks for the power supply must be placed at a height greater than that of the actuators so as to avoid oil leaks (Fig. 19).**

### 9.1) Automation main components (fig. 19)

- I) Type approved omnipolar switch with 3,5 mm min. contact opening, provided with overload and short-circuit protection, used to break the automation connection from the mains. If not present, provide the automation with a type approved differential switch with adequate capacity and a 0.03 A threshold.
- Qr) Control unit with built-in receiver
- SPL) Pre-heating board for operation at temperatures below 5° C (optional)
- S) Key selector
- AL) Blinker tuned in with antenna and RG58 cable
- M) Actuator
- Fte) Pair of outside photocells (transmitters)
- Fre) Pair of outside photocells (receivers)
- Fti) Pair of inside photocells with CF column (transmitters)
- Fri) Pair of inside photocells with CF column (receivers)
- T) 1-2-4 channel transmitter

**IMPORTANT:** Before operating the actuator electrically, unscrew the bleeder screw "S" (fig. 20) found under the joint block and keep it for future uses. Remove the bleeder screw "S" only after having installed the actuator.

## 10) ADJUSTING THE PUSHING FORCE

**WARNING:** Check that the impact force value measured at the points established by the EN 12445 standard is lower than that specified in the EN 12453 standard.

The adjustment is made by two valves marked "close" and "open" which control the pushing force during closing and opening respectively.

By turning the valves towards "+", the force is increased, while by turning them towards "-" it is reduced.

To ensure an adequate antisquash safety, the pushing force must be adjusted to just over the push needed to move the leaf, both in closing and opening. In any event, the pushing force at the end of the leaf, must not exceed the limits prescribed by the regulations indicated above. For no reason should the adjustment valves (bypass) be fully closed.

The actuator does not have electric limit switches. Therefore the motors stop when the working time set in the control unit has expired. The time set must be increased by 2-5 sec.'s with respect to the time in which the leaves reach the ground gate stops.

## 11) MANUAL OPENING

### 11.1) Versions with hydraulic lock

In case of emergency, for example during a power cut, the gate can be released by inserting the same key "C" used to adjust the bypass valve into the triangular pivot "P" found under the actuator (fig. 21) and turning it anti-clockwise. The gate can then be opened manually following the same speed as an automatic opening. To restore the actuator to electrical operation, turn the key clockwise until pivot "P" is locked.

### 11.2) Versions without hydraulic lock

It is sufficient to open the electric lock with its key and move the leaf manually.

## 12) COVER POSITIONS

The "C" cover of all LUX models can be changed from right to left by inverting the position of the cap "T" (fig. 23).

To fit the bypass guard (fig. 24), place it in position and insert it under the rod cover "C".

## 13) CHECKING THE AUTOMATION

Before considering the automation completely operational, the following checks must be made with great care:

- Check that all the components are firmly anchored.
- Control that all the safety means work properly (i.e. photocells, pneumatic skirt, etc.).
- Check the emergency manoeuvre control.
- Check the opening and closing manoeuvres using the controls.
- Check the control unit's electronic logic in normal (or customised) operation.
- Remove the bleeder screw.

## 14) USE OF THE AUTOMATION

Since the automation may be remote controlled either by radio or a Start button, it is essential that all safeties are checked frequently.

Any malfunction should be corrected immediately by a qualified specialist.

Keep children at a safe distance from the field of action of the automation.

## 15) THE CONTROLS

The controls can come in various forms (i.e. manual, remote controlled, limited access by magnetic badge, etc.) depending on needs and installation characteristics. For details on the various command systems, consult the specific instruction booklets.

Anyone using the automation must be instructed in its operation and controls.

## 16) MAINTENANCE

All maintenance on the controller must be performed with the system's power supply shut off.

- Check periodically for oil leaks. To **top-up the oil** proceed as follows:
  - a) Screw in the bleeder screw (fig. 20) and remove the controller from the gate.
  - b) Push the rod right back.
  - c) Set the controller upright and unscrew the cap O (fig. 18).
  - d) Use the same type of oil to top up the level until the motor bearing under the cap "O" is covered.
  - e) Close the cap "O" and mount the controller back onto the gate.
  - f) Remove the bleeder screw.
  - g) Run through 2 complete manoeuvres collecting the excess oil from the bleeder.
- Check the safety elements on the gate and drive unit.
- For any malfunction that remains unsolved, shut off the power to the system and call a qualified specialist (the installer). During a breakdown, use the manual release to allow the gate to be opened and closed by hand.

## 17) TROUBLE SHOOTING

### 17.1) Faulty operation of the gearmotor

- Use a suitable instrument to check if there is a voltage across the gear-motor terminals when an open or close command has been given
- If the motor vibrates but does not turn, this may be due to:
  - the common wire C is wrongly connected (it is always light blue)
  - the drive capacitor is not connected to the two drive terminals
- if the leaf moves in the wrong direction, invert the drive connections of the motor in the control unit **LEAF STOP:** when the operating time set in the control unit is too short, the leaves may not have time to complete their stroke. Slightly raise the operating time in the control unit.

### 17.2) Faulty operation of the electrical accessories

If any of the control and safety components are faulty, this can cause malfunctions or a breakdown of the whole automation.

If the control unit is equipped with a self-diagnostics system, identify the fault.

In case of a fault, it is wise to disconnect each of the components in the automation one at a time, until the one that is causing the fault is found.

After having repaired or replaced it, restore all the components that were disconnected. For details on each component, refer to its specific instruction manual.

**WARNING:** Any malfunction should be corrected immediately by a qualified specialist. When carrying out maintenance operations, the area around the gate should be well marked and barred in order to prevent accidents to people, animals and objects.