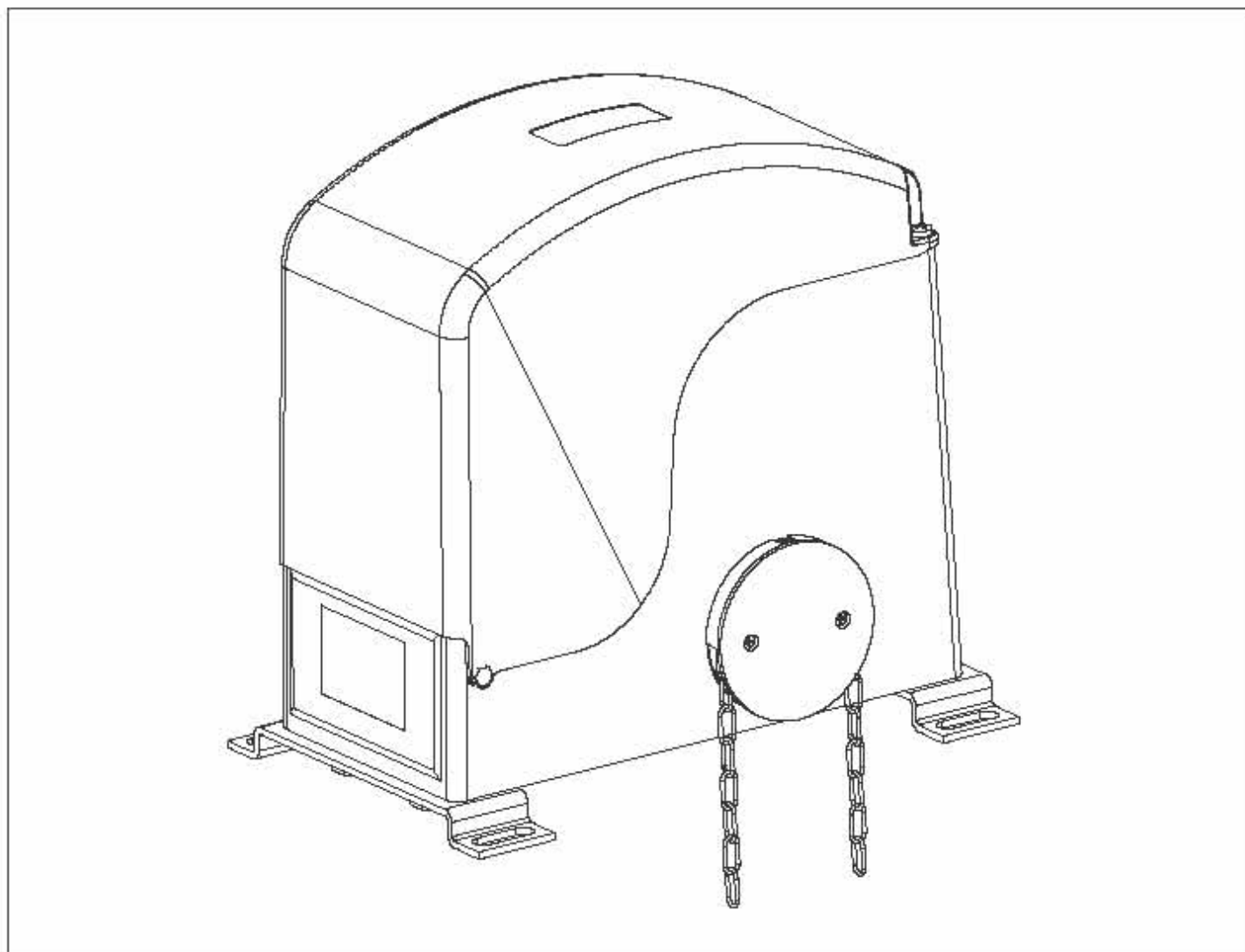


Falcon K



GENIUS[®]

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

CE

AVVERTENZE PER L'INSTALLATORE

OBBLIGHI GENERALI PER LA SICUREZZA

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

IMPORTANT NOTICE FOR THE INSTALLER

GENERAL SAFETY REGULATIONS

- ATTENTION! To ensure the safety of people, it is important that you read all the following instructions. Incorrect installation or incorrect use of the product could cause serious harm to people.**
- Carefully read the instructions before beginning to install the product.
- Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
- Store these instructions for future reference.
- This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.
- GENIUS declines all liability caused by improper use or use other than that for which the automated system was intended.
- Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety.

- The mechanical parts must conform to the provisions of Standards EN 12604 and EN 12605.
For non-EU countries, to obtain an adequate level of safety, the Standards mentioned above must be observed. In addition to national legal regulations.
- GENIUS is not responsible for failure to observe Good Technique in the construction of the closing elements to be motorised, or for any deformation that may occur during use.
- The installation must conform to Standards EN 12453 and EN 12445. The safety level of the automated system must be C+E.
- Before attempting any job on the system, cut out electrical power.
- The mains power supply of the automated system must be fitted with an all-pole switch with contact opening distance of 3mm or greater. Use of a 6A thermal breaker with all-pole circuit break is recommended.
- Make sure that a differential switch with threshold of 0.03 A is fitted upstream of the system.
- Make sure that the earthing system is perfectly constructed, and connect metal parts of the means of the closure to it.
- The automated system is supplied with an intrinsic anti-crushing safety device consisting of a torque control. Nevertheless, its tripping threshold must be checked as specified in the Standards indicated at point 10.
- The safety devices (EN 12978 standard) protect any danger areas against **mechanical movement risks**, such as crushing, dragging, and shearing.
- Use of at least one indicator-light is recommended for every system, as well as a warning sign adequately secured to the frame structure. In addition to the devices mentioned at point "16".
- GENIUS declines all liability as concerns safety and efficient operation of the automated system, if system components not produced by GENIUS are used.
- For maintenance, strictly use original parts by GENIUS.
- Do not in any way modify the components of the automated system.
- The installer shall supply all information concerning manual operation of the system in case of an emergency, and shall hand over to the user the warnings handbook supplied with the product.
- Do not allow children or adults to stay near the product while it is operating.
- Keep remote controls or other pulse generators away from children, to prevent the automated system from being activated involuntarily.
- Transit through the leaves is allowed only when the gate is fully open.
- The user must not attempt any kind of repair or direct action whatever and contact qualified personnel only.
- Anything not expressly specified in these instructions is not permitted.**

CONSIGNES POUR L'INSTALLATEUR

RÈGLES DE SÉCURITÉ

- ATTENTION! Il est important, pour la sécurité des personnes, de suivre à la lettre toutes les instructions. Une installation erronée ou un usage erroné du produit peut entraîner de graves conséquences pour les personnes.**
- Lire attentivement les instructions avant d'installer le produit.
- Les matériaux d'emballage (matière plastique, polystyrène, etc.) ne doivent pas être laissés à la portée des enfants car ils constituent des sources potentielles de danger.
- Conserver les instructions pour les références futures.
- Ce produit a été conçu et construit exclusivement pour l'usage indiqué dans cette documentation. Toute autre utilisation non expressément indiquée pourrait compromettre l'intégrité du produit et/ou représenter une source de danger.
- GENIUS décline toute responsabilité qui dériverait d'usage impropre ou différent de celui auquel l'automatisme est destiné.
- Ne pas installer l'appareil dans une atmosphère explosive: la présence de gaz ou de fumées inflammables constitue un grave danger pour la sécurité.
- Les composants mécaniques doivent répondre aux prescriptions des Normes EN 12604 et EN 12605.
Pour les Pays extra-CEE, l'obtention d'un niveau de sécurité approprié exige non seulement le respect des normes nationales, mais également le respect des Normes susmentionnées.
- GENIUS n'est pas responsable du non-respect de la Bonne Technique dans la construction des fermetures à motoriser, ni des déformations qui pourraient intervenir lors de l'utilisation.
- L'installation doit être effectuée conformément aux Normes EN 12453 et EN 12445. Le niveau de sécurité de l'automatisme doit être C+E.
- Couper l'alimentation électrique avant toute intervention sur l'installation.
- Prévoir, sur le secteur d'alimentation de l'automatisme, un interrupteur onnipolaire avec une distance d'ouverture des contacts égale ou supérieure à 3 mm. On recommande d'utiliser un magnétothermique de 6A avec interruption onnipolaire.
- Vérifier qu'il y ait, en amont de l'installation, un interrupteur différentiel avec un seuil de 0,03 A.
- Vérifier que la mise à terre est réalisée selon les règles de l'art et y connecter les pièces métalliques de la fermeture.
- L'automatisme dispose d'une sécurité intrinsèque anti-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.
- Les dispositifs de sécurité (norme EN 12978) permettent de protéger des zones éventuellement dangereuses contre les **Risques mécaniques de mouvement**, comme l'écrasement, l'acheminement, le cisaillement.

FALCON K AUTOMATED SYSTEM

These instructions apply to the following models:

FALCON 14 K - FALCON 20 K - FALCON 15 K

The FALCON K gearmotor for sliding and folding doors is an electro-mechanical operator transmitting motion to the leaves by a suitably coupled chain-pinion.

The non-reversing system ensures mechanical locking of the door when the motor is not operating and, therefore, it is not necessary to install any lock.

The gearmotor does not have a mechanical clutch and, therefore, requires a control equipment with adjustable electronic clutch ensuring the necessary anti-crushing safety.

A handy manual release disengages the operator enabling manual operation in the event of a power cut or fault.

The FALCON K gearmotor is supplied without the electronic control equipment - this can be purchased separately.

ATTENTION: Correct operation and declared characteristics can be obtained only by using GENIUS accessories and safety devices. The FALCON K gearmotor was designed and built for controlling vehicle access. Any other use will compromise the product's efficiency and/or is a source of danger.

1. DESCRIPTION AND TECHNICAL SPECIFICATIONS

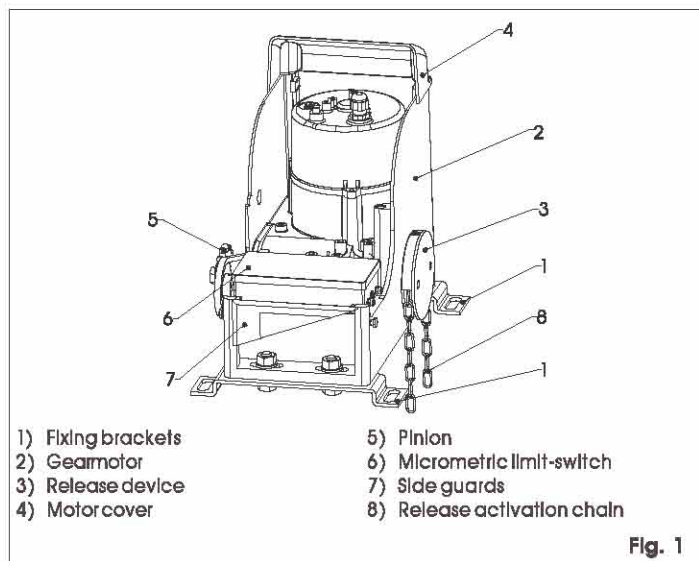


Fig. 1

MODEL FALCON K	14	20	15
Power supply	230V~ (+ 6% - 10%) 50Hz		115 V~
Absorbed power (W)	650	800	710
Absorbed current (A)	2.8	3.5	6.7
Electric motor (rpm)	1400		1700
Thrust capacitor (µF)	16	20	60
Thrust on pinion (daN)	110	150	130
Torque (Nm)	35	45	38
Winding thermal protection (°C)	140		
Leaf max weight (Kg)	1400	2000	1500
Type of pinion	Z16 1/2" x 5/16"		
Leaf speed (m/min)	10		11
Max. travel (m)	20		
Type of limit switch	mechanical		
Clutch	electronic (see equipment)		
Use frequency	S3 - 40 % (see graph)		
Operating ambient temperature (°C)	-20 ÷ +55		
Gearmotor weight (Kg)	14	15	
Protection class	IP 23		
Gearmotor overall dimensions LxDxH (mm)	see fig. 2		

2. DIMENSIONS

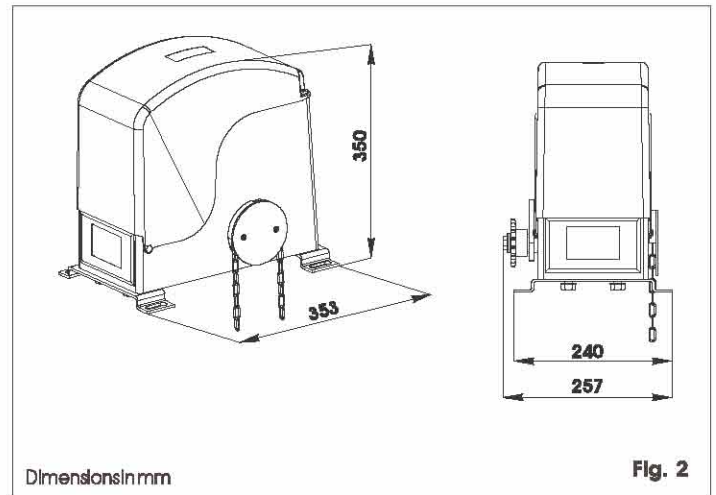


Fig. 2

3. MAXIMUM USE CURVE

The curve makes it possible to establish maximum work time (T) according to use frequency (F).

With reference to IEC 34-1 standard, the FALCON K gearmotor with an S3 duty, can operate at a use frequency of 40%.

To ensure efficient operation, operate in the work range below the curve.

Important: The curve is obtained at a temperature of 20°C. Exposure to the direct sun rays can reduce use frequency down to 20%.

Calculation of use frequency

The percentage of effective work time (opening + closing) compared to total time of cycle (opening + closing + pause times).

Calculation formula:

$$\% F = \frac{T_a + T_c}{T_a + T_c + T_p + T_i} \times 100$$

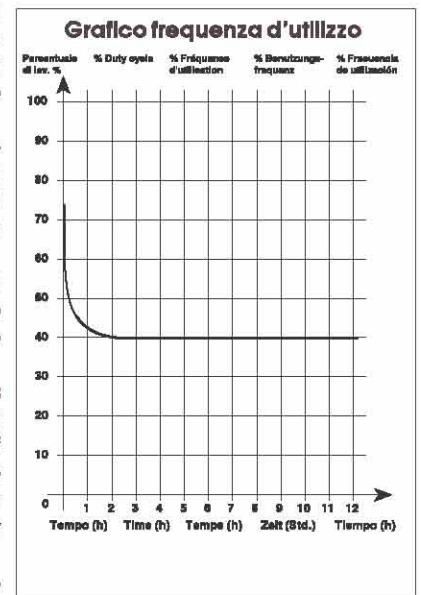
where:

T_a = opening time

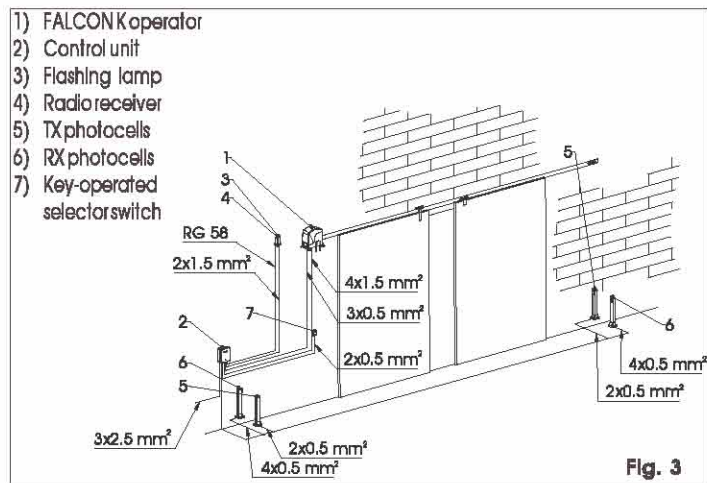
T_c = closing time

T_p = pause time

T_i = time of interval between two complete cycles



4. ELECTRIC EQUIPMENT (standard system)



5. INSTALLING THE AUTOMATED SYSTEM

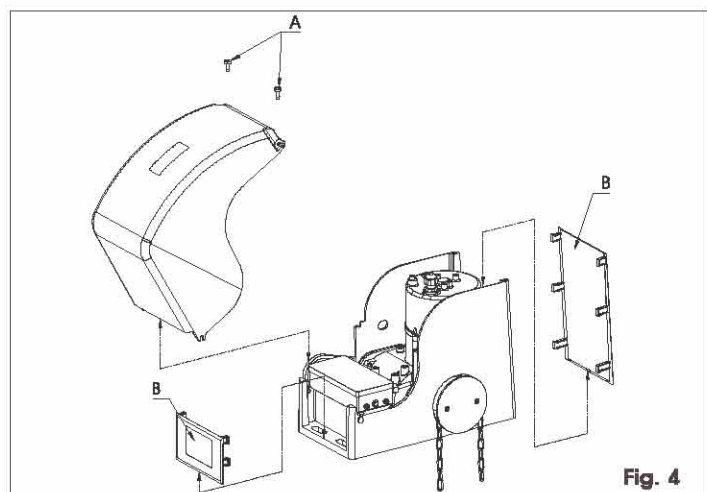
5.1. PRELIMINARY CHECKS

To ensure safety and efficiency of the automated system, make sure the following conditions are observed:

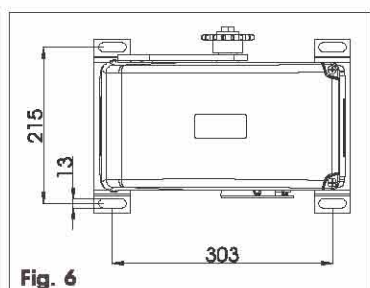
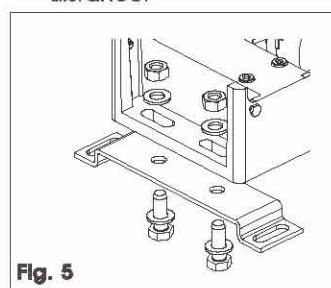
- Check if the existing structure has the necessary requirements to be automated. In particular, the following are necessary: an upper guide, and mechanical limit stops to prevent the leaves derailing.
- It must be possible to secure the operator in accordance with Good Installation Practice.
- Check if an efficient earth socket is available for connection to the gearmotor.

5.2. INSTALLATION (standard system)

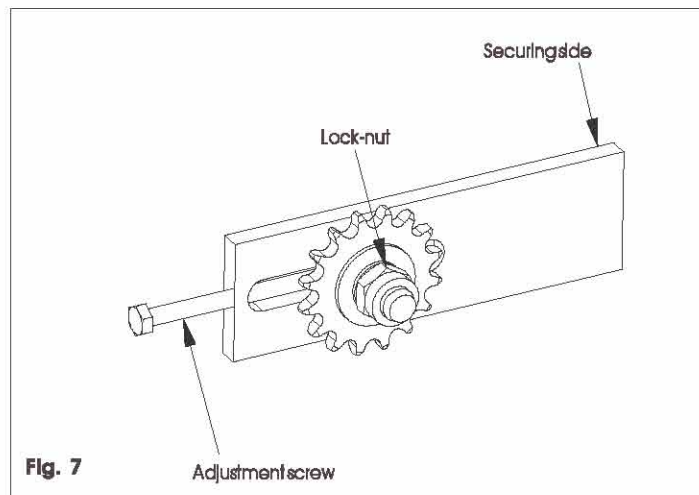
- 1) Remove the motor cover, fully unscrewing the 2 upper fixing screws (Fig.4 ref. A), turn the cover by about 30° and extract it vertically. Withdraw the 2 side guards (Fig.4 ref.B).



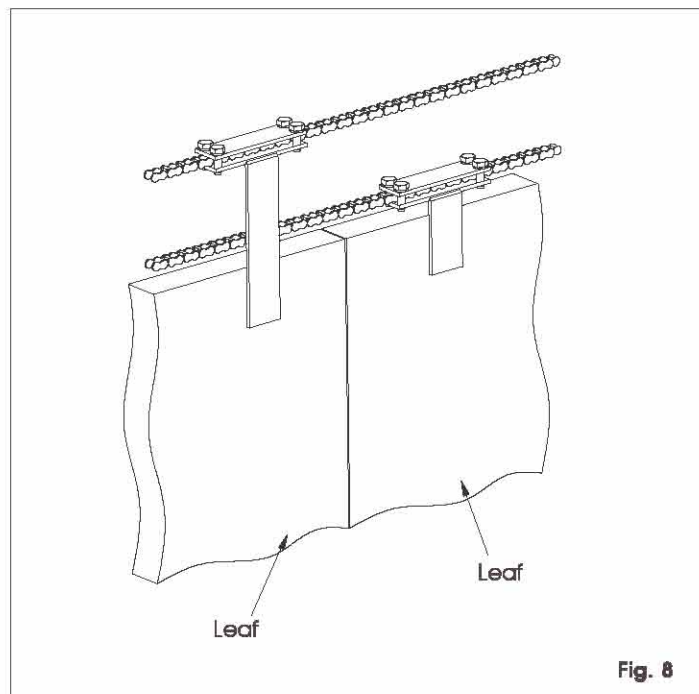
- 2) Assemble the fixing brackets as shown in fig. 5. Figure 6 shows the plate securing dimensions.
- 3) Position the operator so that the doors travel the full necessary distance.



- 4) Position the chain-tensioner transmission (optional item) on the other side of the motor, aligning the crown-gear with the motor pinion. The transmission must be secured on the opposite side of the adjustment screw (fig. 7).
- 5) Fit the chain (the chain must be twice the length of the distance between the pinion on the motor and the transmission).
- 6) Adjust chain tension with the transmission adjustment screw and lock the transmission with the securing nut (Fig.7).
N.B.: The chain must not be taut.



- 7) Fix the appropriate fittings, purchased separately (fig.8), first to the chain and then to the leaves.



6. START-UP

6.1. CONTROL BOARD CONNECTION

Before attempting any work on the board (connections, programming, maintenance), always turn off power. Observe points 10, 11, 12, 13 and 14 of the GENERAL SAFETY OBLIGATIONS.

Observing the Instructions in Fig. 3, route the cables through the raceways and make the necessary electric connections to the selected accessories.

Always separate power cables from control and safety cables (push-button, receiver, photocells, etc.). To prevent any electric noise whatever, use separate sheaths.

6.1.1. EARTHING

Connect the earth cables as shown in figure 9.

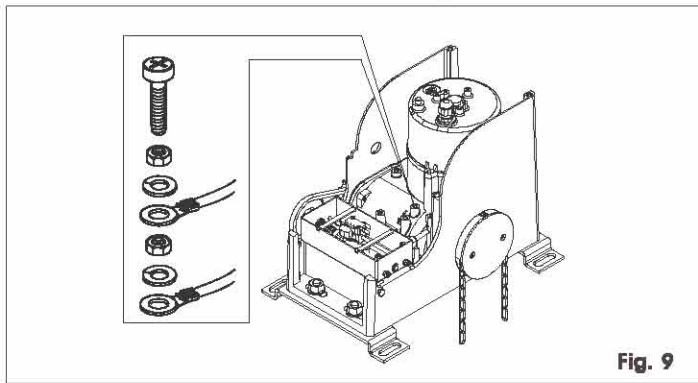


Fig. 9

6.1.2. CONTROL BOARD

For correct wiring and programming of the control unit, proceed as follows:

- 1) Wire the control board observing all details of the relevant instructions.
- 2) Power up the system.
- 3) Program the control board according to your needs and to the characteristics of the equipment itself, as per relevant instructions.

6.1.3. CONNECTING THE LIMIT-SWITCHES

The limit-switches must be wired making sure that the colours of the limit-switch wires match those of the Molex terminal, supplied with the equipment (Fig. 10).

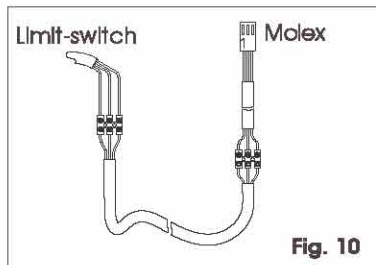


Fig. 10

6.2. ADJUSTING THE LIMIT-SWITCHES

The operator is equipped with a micrometric limit-switch connected to the pinion, which commands leaf movement to stop when a striker - inside the limit-switch unit - activates the relevant microswitch. Procedure for correct adjustment of the two limit microswitches:

- 1) Prepare the operator for manual operating mode as described in paragraph 8.
- 2) Adjusting the opening limit-switch: manually take the leaves to opening position, leaving 2 cm from the mechanical limit stop.
- 3) Turn the adjusting screw A (Fig. 11) until you can hear the relevant limit-switch come into operation. As soon as the limit-switch operates, turn the adjustment screw by a further 360°.
- 4) Adjusting the closing limit-switch: manually take the leaves to closing position, leaving 2 cm from the mechanical limit stop.
- 5) Turn the adjusting screw B (Fig. 11) until you can hear the relevant limit-switch come into operation. As soon as the limit-switch operates, turn the adjustment screw by a further 360°.
- 6) Re-lock the system (see paragraph 9).

Important: Before sending a pulse, make sure that the door cannot be moved manually.

- 7) Command a complete door cycle to check if the limit-switches are operating correctly.

Attention: To avoid damaging the operator and/or interrupting operation of the automated system, leave a distance of **at least 2 cm** from the mechanical limit stops.

- 8) Make the necessary modifications to the position of the limit-switches.

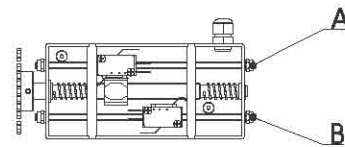


Fig. 11

7. TESTING THE AUTOMATED SYSTEM

Fit the side guards and re-position the motor cover, securing it with the appropriate screws (Fig. 4).

Carefully check operating efficiency of the automated system and all accessories connected to it.

Hand the "User's Guide" to the Client, explain correct operation and use of the gearmotor, and indicate the potentially dangerous areas of the automated system.

8. MANUAL OPERATION

Important: The operator has a chain for activating the release device. It is 50 cm long and must be lengthened to facilitate operation.

If the door has to be moved manually due to a power cut or fault of the automated system, proceed as follows:

Attention: Cut power to the system in order to prevent an involuntary pulse from activating the door during the manoeuvre.

- 1) Operate the release device, pulling the right-hand section of the chain (Fig. 12) until it stops.
- 2) Open and close the door manually.

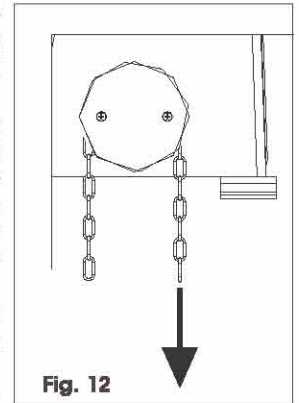


Fig. 12

9. RESTORING NORMAL OPERATION MODE

Attention: To prevent an involuntary pulse from activating the door during the manoeuvre, cut power to the system before re-locking the operator.

This is the procedure:

- 1) Operate the release device, pulling the left-hand section of the chain (Fig. 13) until it stops.
- 2) Move the leaves by hand until the release device meshes.
- 3) Restore power to the system.

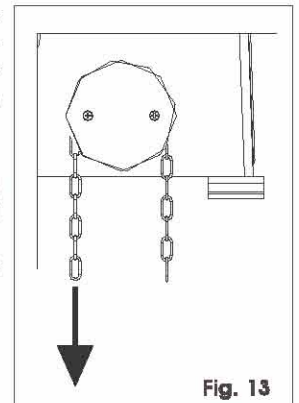


Fig. 13

10. SPECIAL APPLICATIONS

The FALCON K automated system was designed and built for controlling vehicle access. Any other use will damage the product and/or is a source of danger.

11. MAINTENANCE

Check the following points every six months.

- 1) Check if all the safety devices in use are connected and efficient.
- 2) Check if the anti-crushing clutch is correctly set.
- 3) Check the condition and efficiency of the earth connection.
- 4) Check if all screws are tight.
- 5) Check chain tension and lubrication.
- 6) Check wear and lubrication of guides.

12. REPAIRS

For any repairs, contact the authorised Repair Centres.