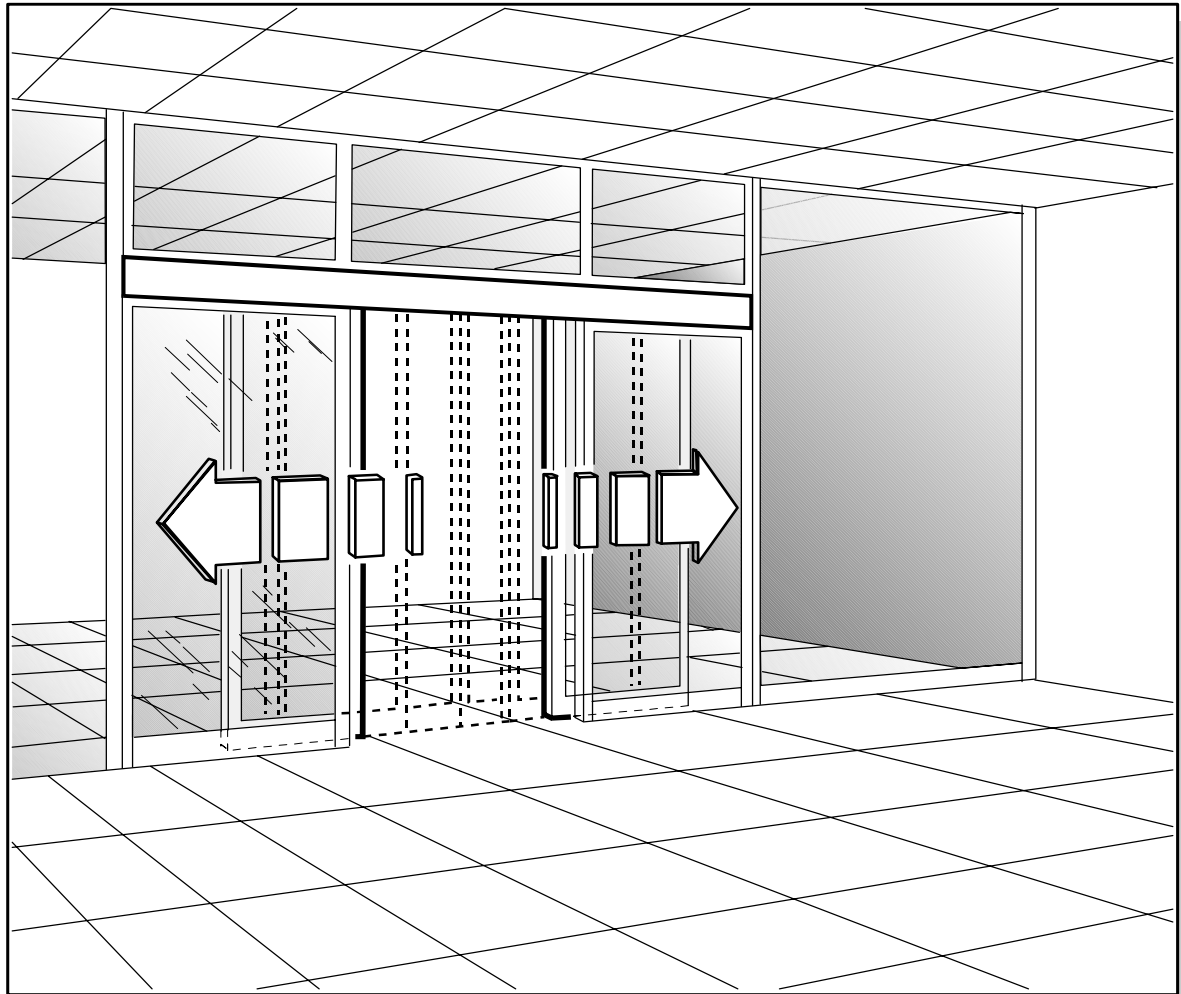


# 930 N SF-SFA



# FAAC

## CE DECLARATION OF CONFORMITY FOR MACHINES (DIRECTIVE 98/37/CE)

**Manufacturer:** FAAC S.p.A.

**Address:** Via Benini, 1 - 40069 Zola Predosa BOLOGNA - ITALIA

**Declares that:** Operator mod. 930NSF-SFA

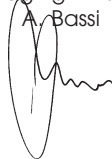
- is built to be incorporated in a machine or to be assembled with other machinery to create a machine under the provisions of Directive 98/37/CE;
- conforms to the essential safety requirements of the other following EEC directives:

73/23/EEC and subsequent amendment 93/68/EEC.  
89/336/EEC and subsequent amendment 92/31/EEC.

and also declares that the machinery must not be put into service 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 provisions of Directive 98/37/EC.

Bologna, 01 January 2005

The Managing Director  
A. Bassi



# AUTOMATIC DOOR 930 N SF-SFA

## 1. DESCRIPTION

These instructions apply to the following automatic door models:  
 930 N SF1 single leaf automatic door  
 930 N SF2 double leaf automatic door  
 930 N SFA1 single leaf self-supporting automatic door  
 930 N SFA2 double leaf self-supporting automatic door  
 The 930 N SF series was built to control and move pedestrian sliding doors.  
 The 930 headers consist of an activation module (of four different sizes depending on transit space) which, when combined with the carriages, enable leaf movement.  
 This manual was written for installing assembled doors (see section A) and kit doors (see section B).

Carefully read the instructions before beginning to install the product.  
 All dimensions indicated in this manual are in millimetres.

### 1.1 Electrical equipment

Route the electrical cables for connecting the accessories and electrical power supply as shown in fig. 1.

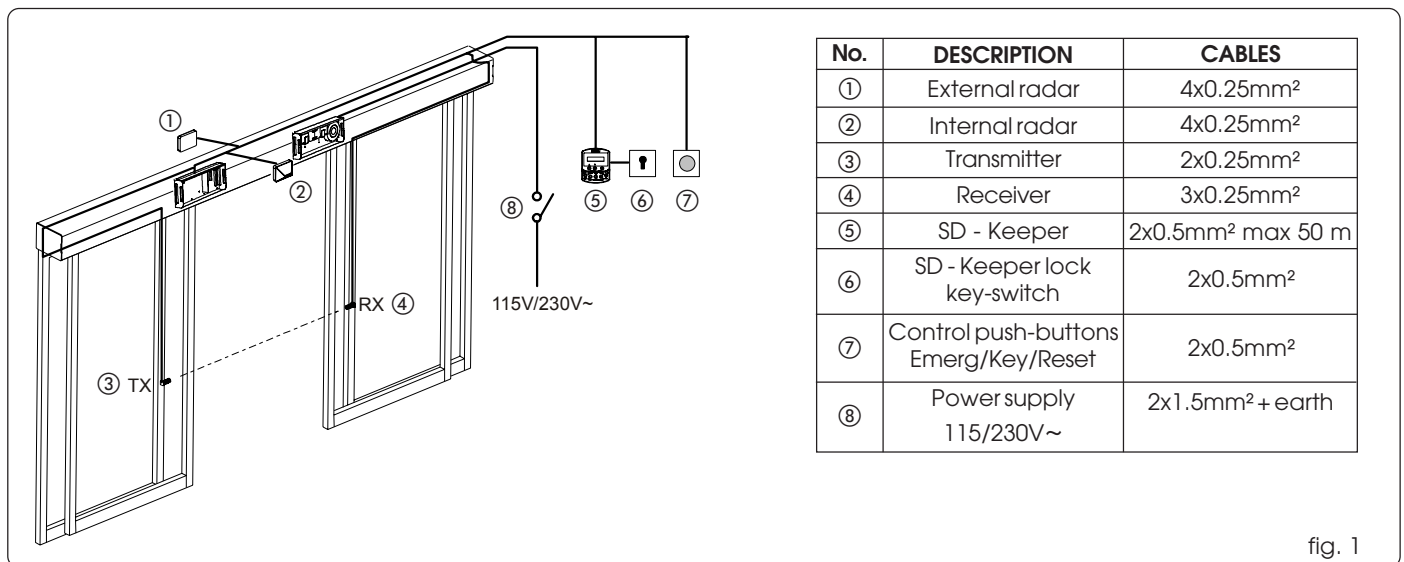
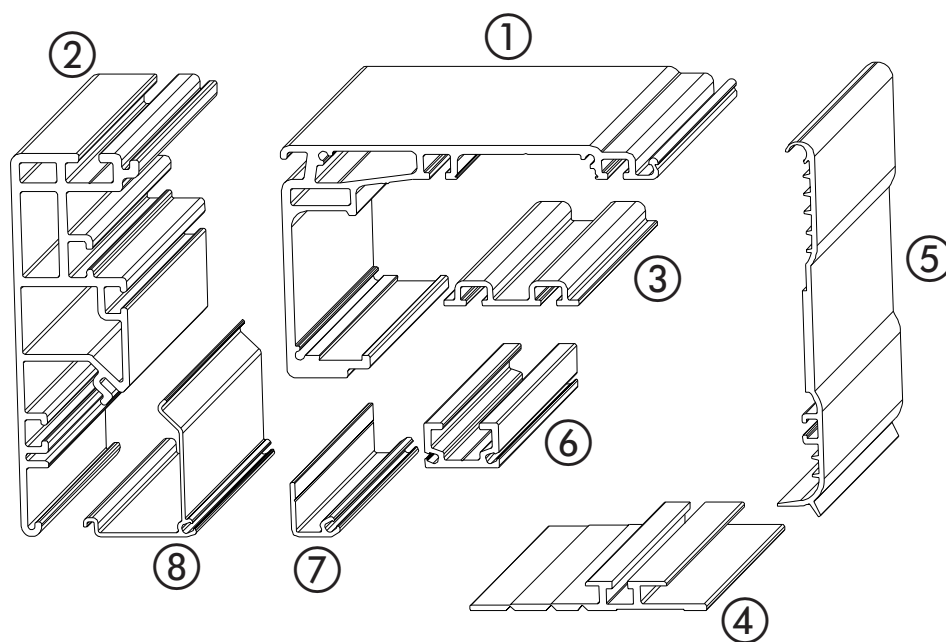
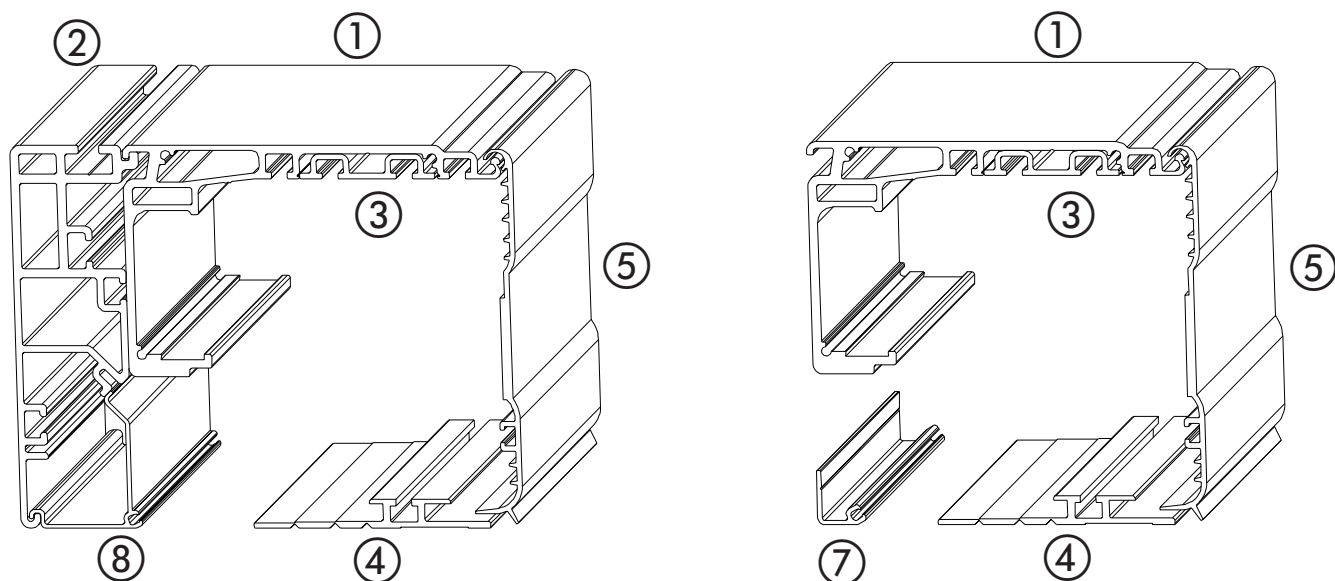


fig. 1

### 1.2 Technical specifications

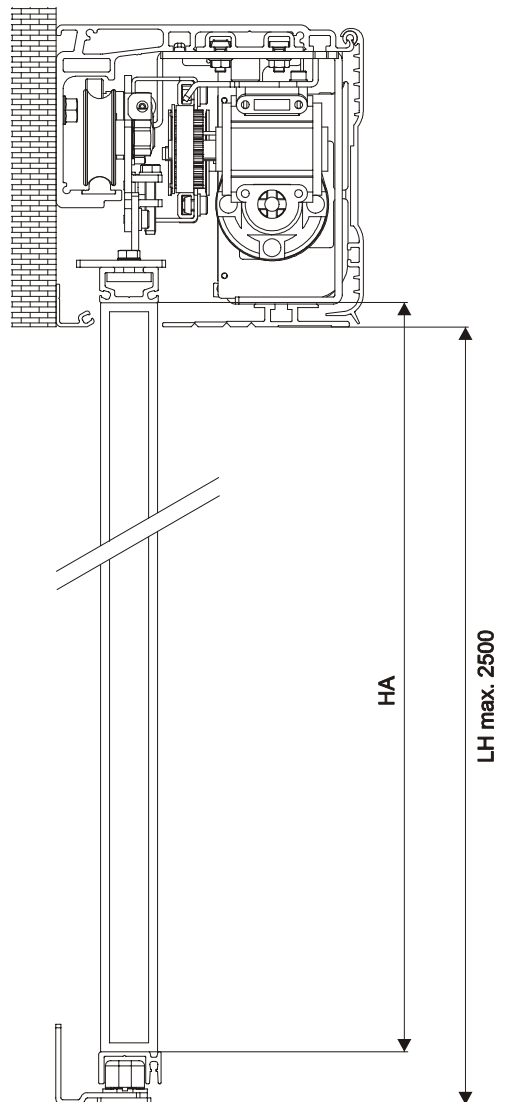
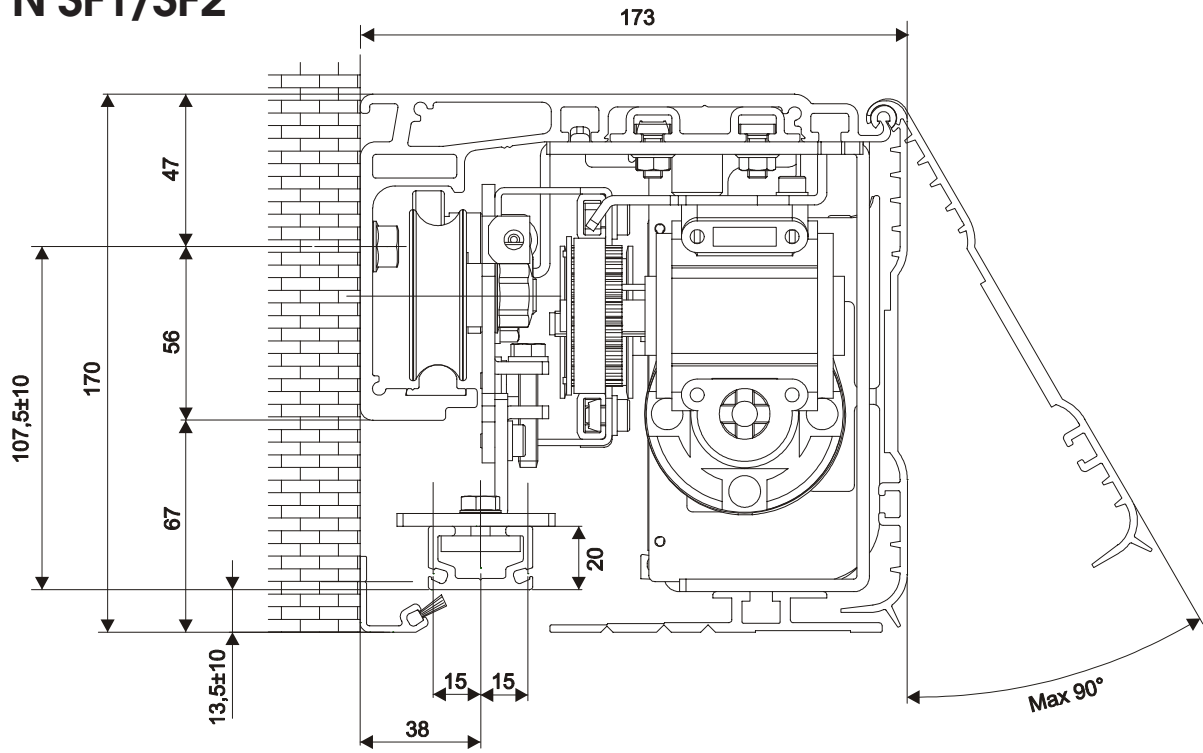
MODEL	930 N SF1 - 930 N SFA1	930 N SF2 - 930 N SFA2
Nr. of leaves	1	2
Max leaf weight	120 Kg	80 + 80 Kg
Transit space (Vp)	700 - 3000 mm	800 - 3000 mm
Max thickness of framed leaf	60 mm	
Use frequency	100 %	
Protection class	IP 23 (indoor use)	
Operating ambient temperature	-20°C - +55°C	
Power supply	115V/230 V~ 50/60 Hz	
Max absorbed power	100 W	
Beam length	Vp x 2 +100 mm	
Drive unit	24 Vdc with encoder	
Opening speed adjustment (load free)	5 - 70 cm/sec.	10 - 140 cm/sec.
Closing speed adjustment (load free)	5 - 70 cm/sec.	10 - 140 cm/sec.
Partial opening adjustment	10% - 90% of total opening	
Pause time adjustment	0 - 90 sec.	
Night pause time adjustment	0 - 240 sec.	
Static force adjustment	automatic	
Anti-crushing device active	when opening/closing	
Photocells fail-safe	yes (can be enabled by programming)	

## KEY TO PROFILES



- ① SUPPORT PROFILE
- ② SELF-SUPPORTING PROFILE
- ③ ACTIVATION PROFILE
- ④ LOWER HOUSING PROFILE
- ⑤ HOUSING PROFILE
- ⑥ LEAF ATTACHMENT PROFILE
- ⑦ CLOSURE PROFILE OF STANDARD AUTOMATED SYSTEM
- ⑧ CLOSURE PROFILE OF SELF-SUPPORTING AUTOMATED SYSTEM

# 930 N SF1/SF2



**HA=LH-16,5±10mm**

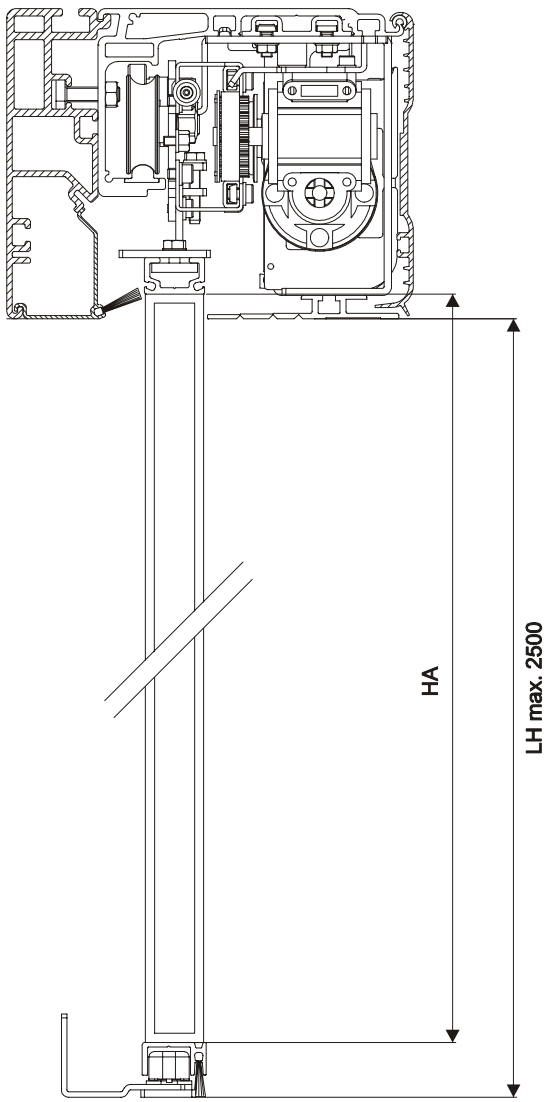
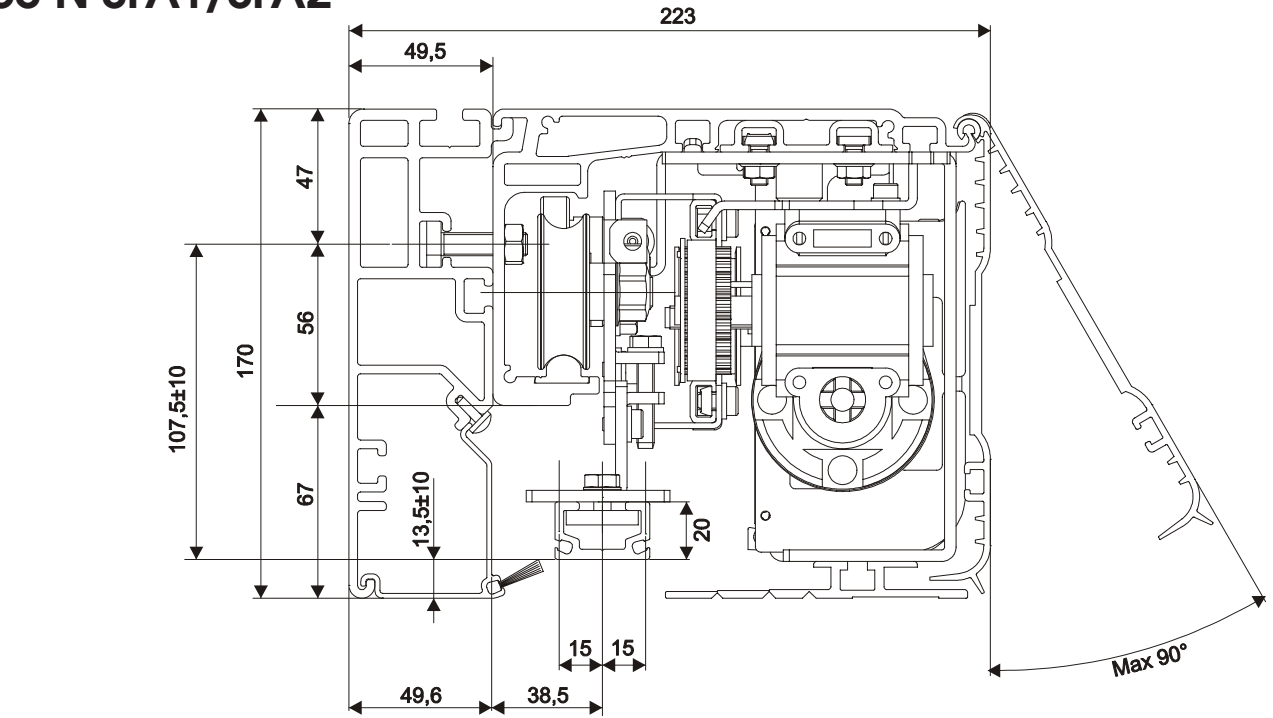
HA = Leaf height

LH = height off the floor, level with lower housing side

**N.B.:** the calculation of leaf height refers to the articulated slide. If using the fixed slide, refer to the specific instructions.

fig. 2

# 930 N SFA1/SFA2



$HA=LH-16,5\pm 10mm$

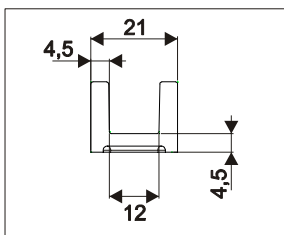
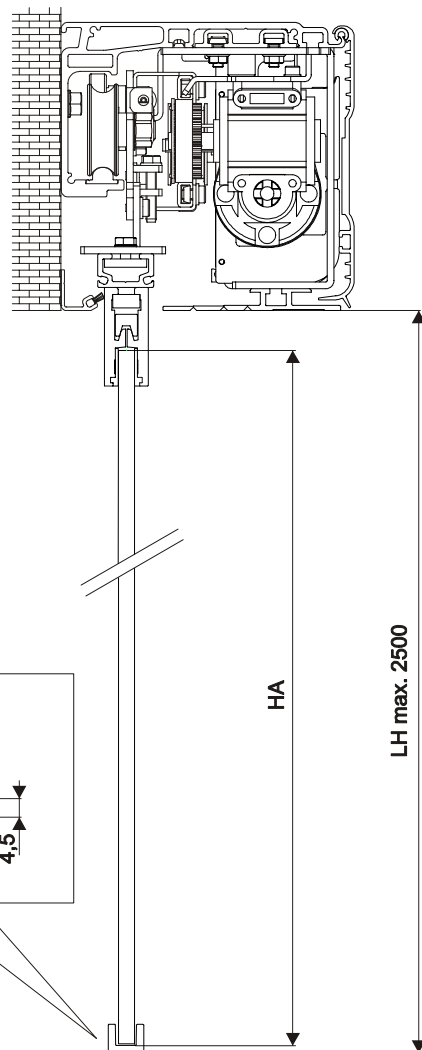
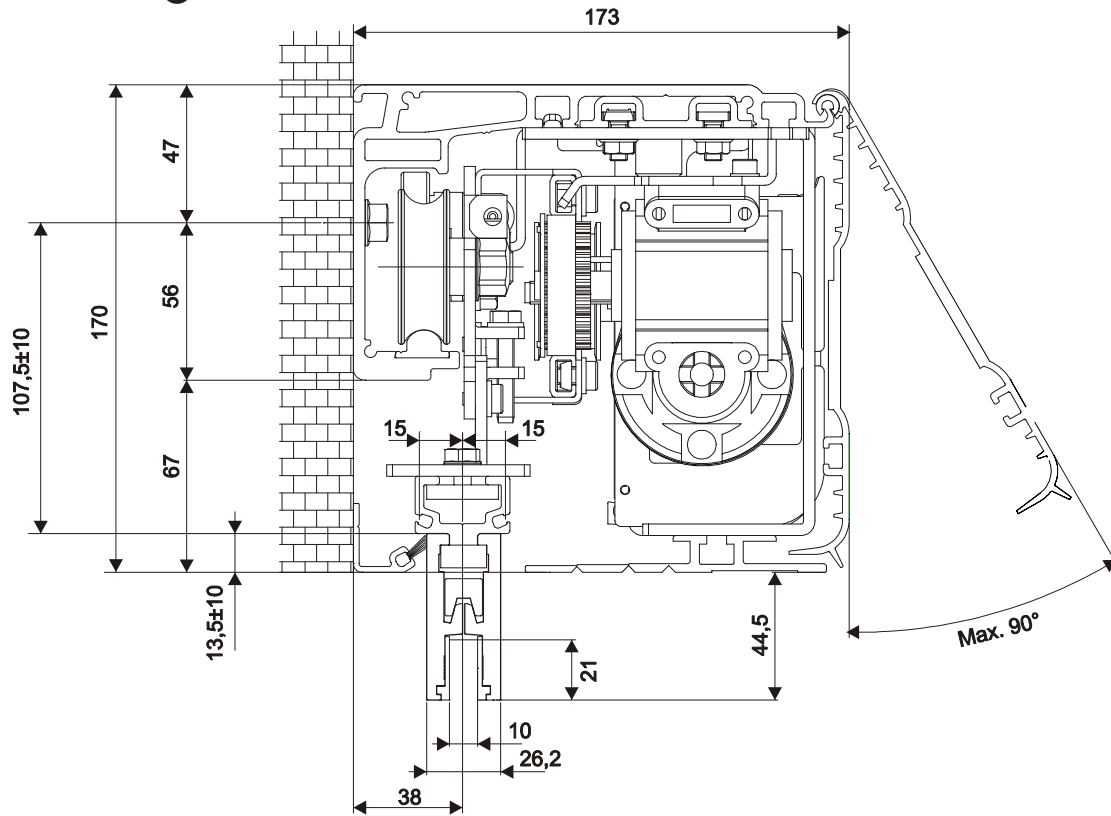
HA = Leaf height

LH = height off the floor, level with lower housing side

**N.B.:** the calculation of leaf height refers to the articulated slide. If using the fixed slide, refer to the specific instructions.

fig. 3

# 930 N SF glass leaf



$$HA = LH - (4,5 + 44,5) + 21 \pm 10 \text{ mm}$$

HA = Leaf height

LH = height off the floor, level with lower housing side

fig. 4

# A. INSTALLATION OF ASSEMBLED AUTOMATED SYSTEM

## 2. PREPARING THE HEADER

The header has two types of aluminium profiles:

• **SUPPORT**

This profile is used when the header can be completely secured to a metal or masonry load bearing structure, free of any significant deformation.

• **SELF-SUPPORTING**

When this aluminium profile is assembled to the support profile, it gives the header its self-supporting characteristic.

It is used when the headers cannot be completely secured to a load bearing structure, or when the support surface is not flat.

Make sure that the positioning surface of the header has no significant deformation.

Place the header on the floor.

Remove the parachute cables (when present), from the header side, unscrewing the locknuts as shown in fig. 5 ref. ①.

Remove the closure housing (when present), by lifting it up.

Remove the lower housing profile, unscrewing the securing screws on the three support brackets as shown in fig. 6 ref. ①.

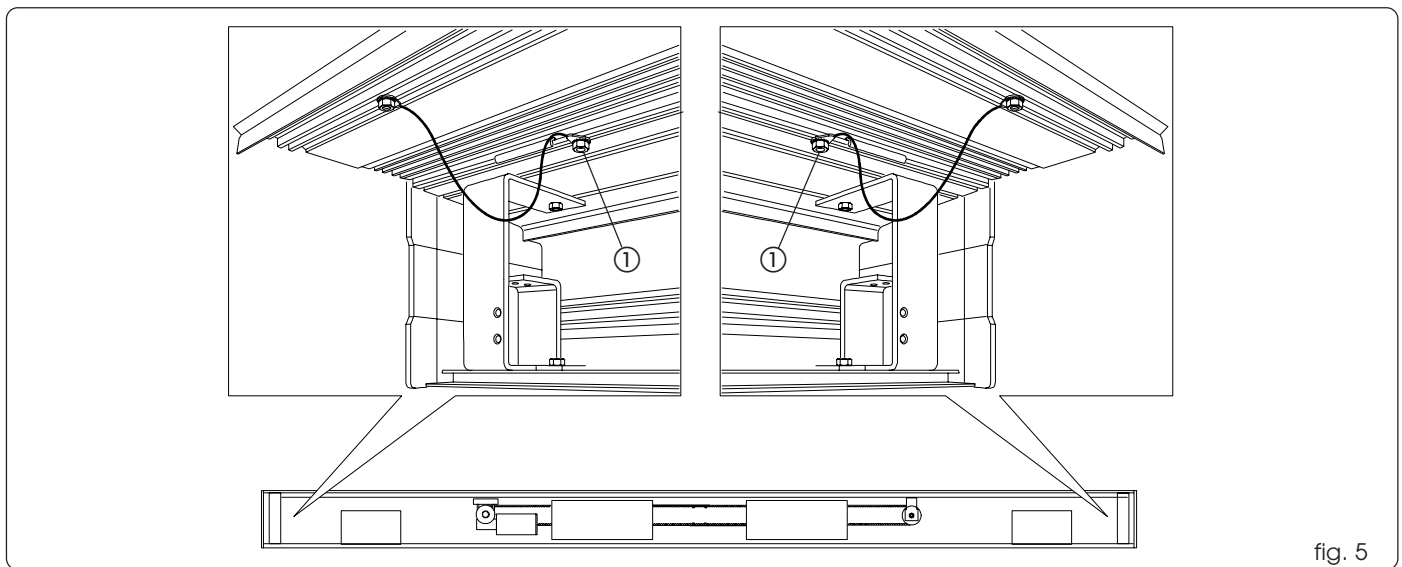


fig. 5

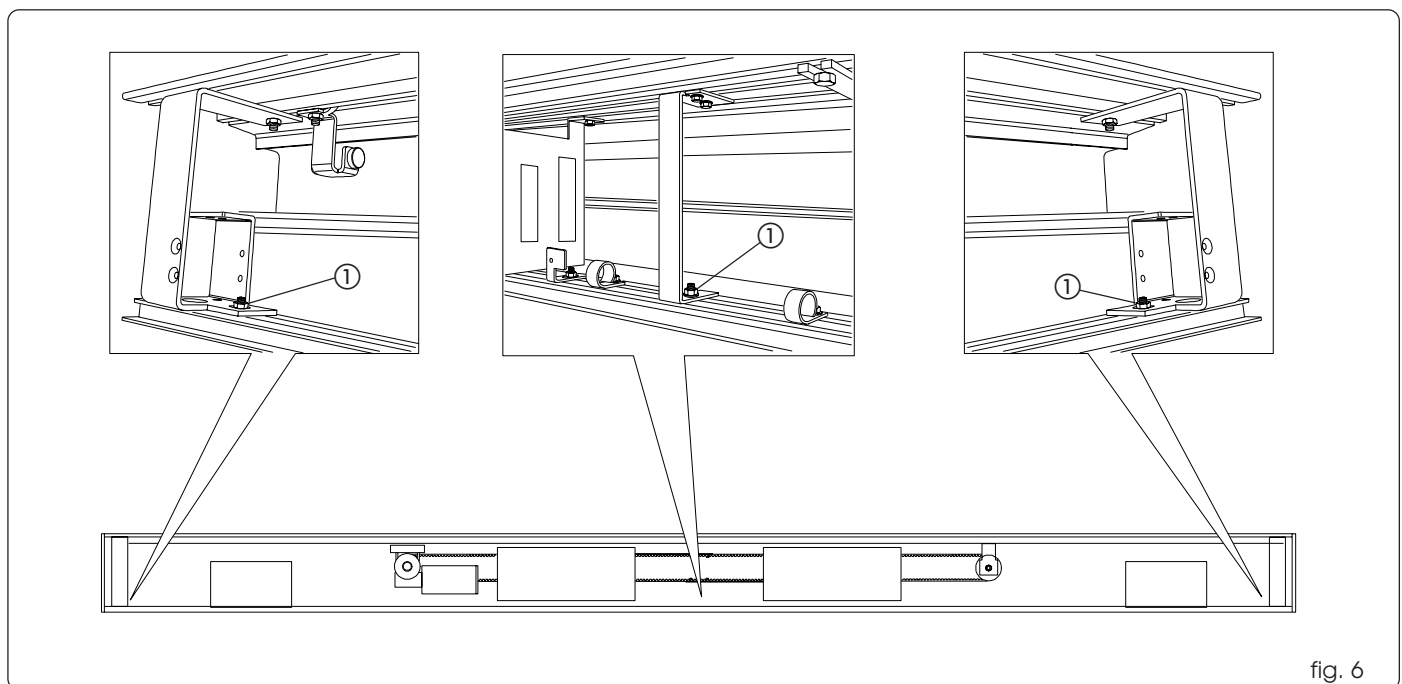


fig. 6



Remove the activation module, loosening the nuts from the securing plates and removing just one nut per plate (fig. 7 ref. ①). Leave the module supporting stay screws in the header profile. Remove the carriages from the support profile.

Find the exact position of the header on the wall, referring to the dimensions in fig. 2 for model SF, fig. 3 for model SFA and fig. 4 for doors with glass leaves.

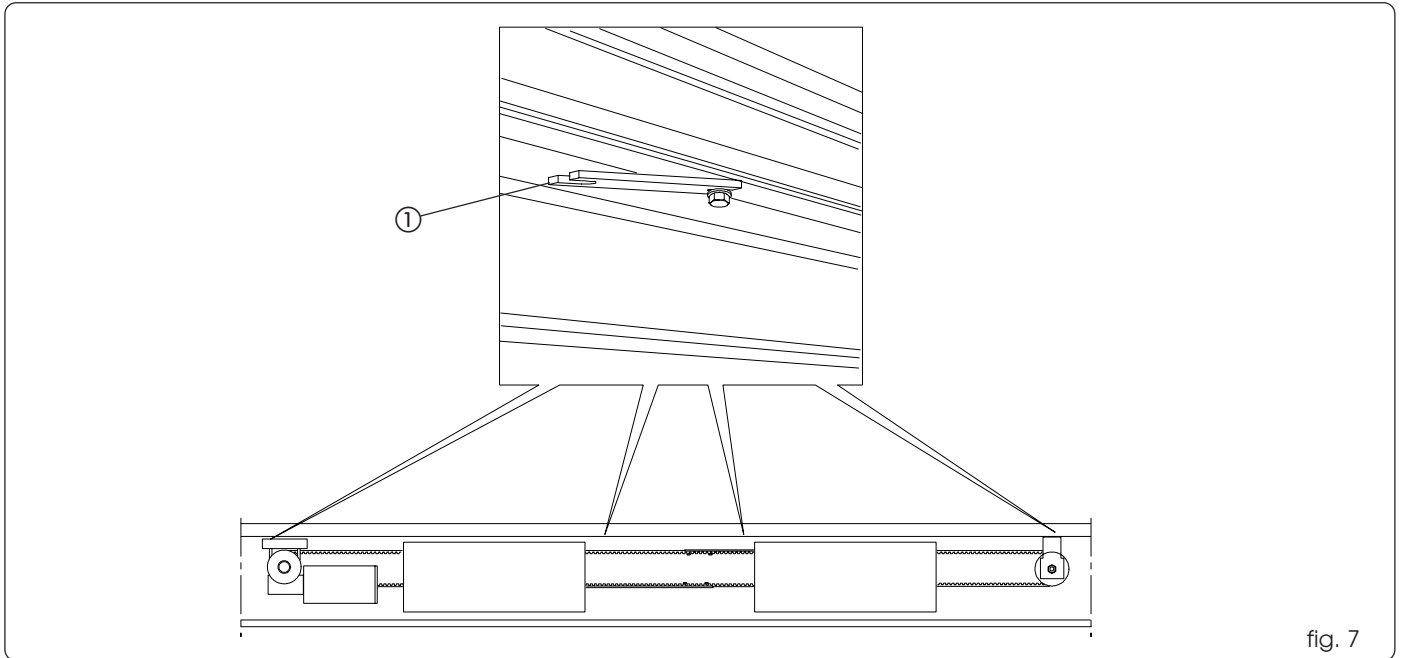


fig. 7

### 2.1 Support profile - securing to the wall

Initially fix the header on a vertical slot at one end, and on a horizontal slot at the other end (using M8 screws and appropriate expansion plugs which are not supplied) and level parallel to the floor. Fasten centrally, lifting the header with force to align the three securing points. Proceed with the remaining securing operations, alternating vertical and horizontal slots (fig.8). When you have finished securing, check if the header is parallel to the floor.

### 2.2 Self-supporting profile

The self-supporting profile is supplied pre-assembled to the support profile and with the side brackets already fitted on the header (fig. 9).

Secure the header to the wall, using the holes on the side plates (fig. 9 ref. ①), using adequate expansion plugs (not supplied) and, if necessary, providing side shims for the spaces E (fig. 10).

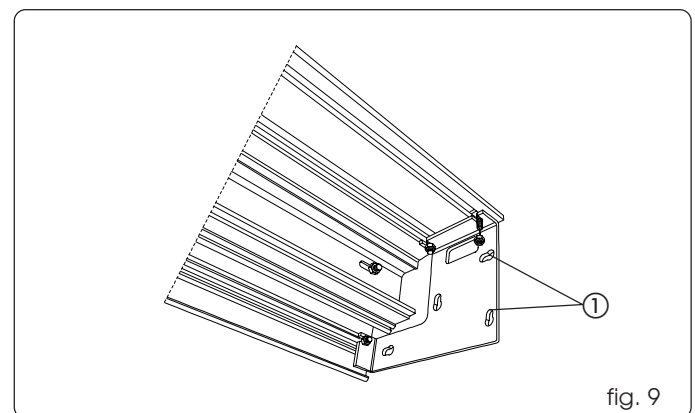


fig. 9

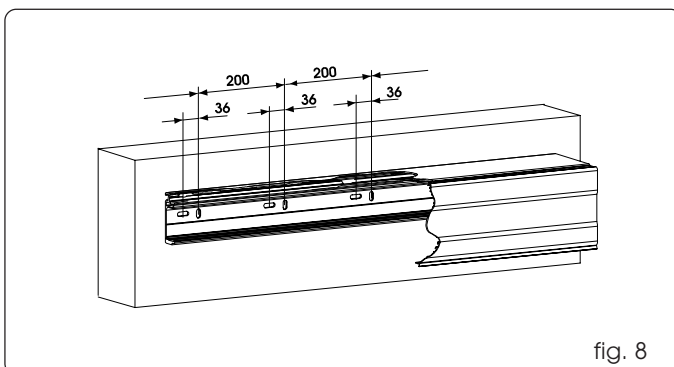


fig. 8

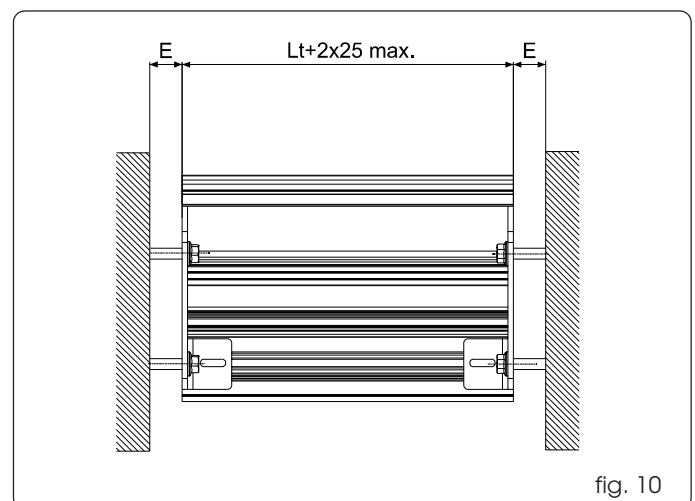


fig. 10

Intermediate securing points may be necessary, depending on the length of the header, using the guide indicated in fig. 11 ref. ①, central securing is required for 3 to 4 m lengths. two intermediate securing points are required for 4 to 6.1 m lengths. However, we advise you to create a central securing point also for lengths of less than 3m.

If necessary, on-wall securing points are possible, though the self-supporting profile is not designed for these.

Hole drilling procedure:

- 1) Remove the side brackets
- 2) Disassemble the load bearing profile from the self-supporting profile.
- 3) Drill the necessary holes on the self-supporting profile, in the position shown in fig. 12 ref. ①.

### 3. PREPARING THE LEAVES

For the double leaf, cut the leaf attachment profile 20 mm. shorter than leaf length, and secure it with adequate screws on the upper part (fig. 13).

For the single leaf, cut the leaf attachment profile to the same length as the leaf, and secure it with adequate screws on the upper part (fig. 14).

Position two carriages on each leaf, using the supplied plates and screws as shown in fig. 15.

Cut the lower sliding profile to the same length as the leaf and secure it to the lower part - fig. 16.

If specified, insert the brush in the seat of the sliding profile as shown in fig. 16 ref. ①.

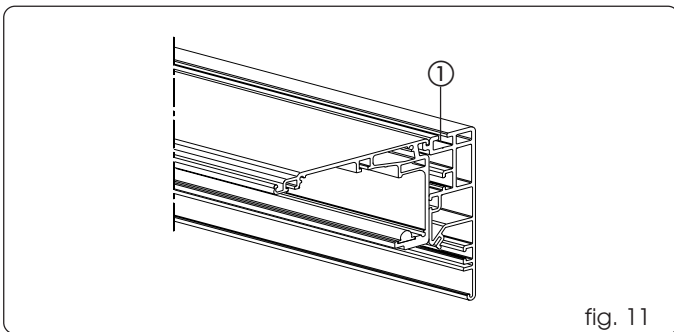


fig. 11

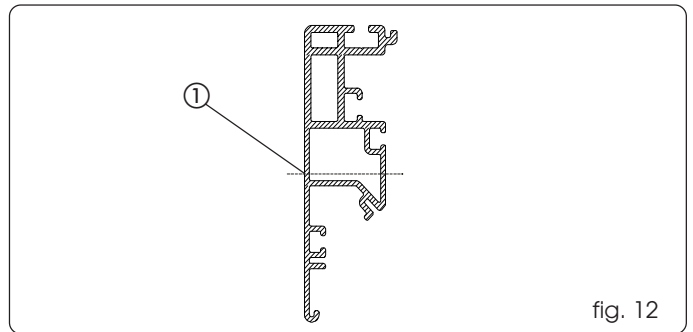


fig. 12

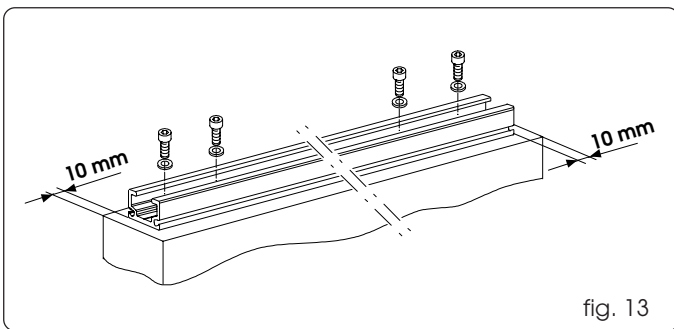


fig. 13

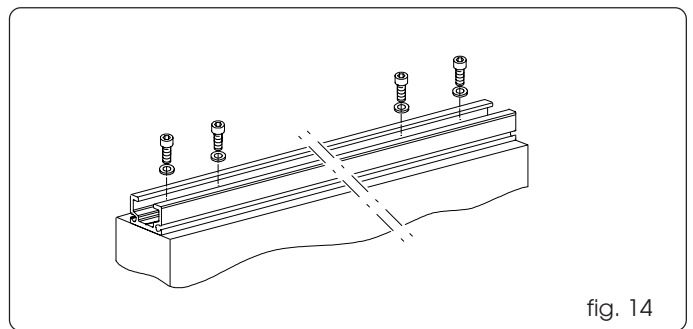


fig. 14

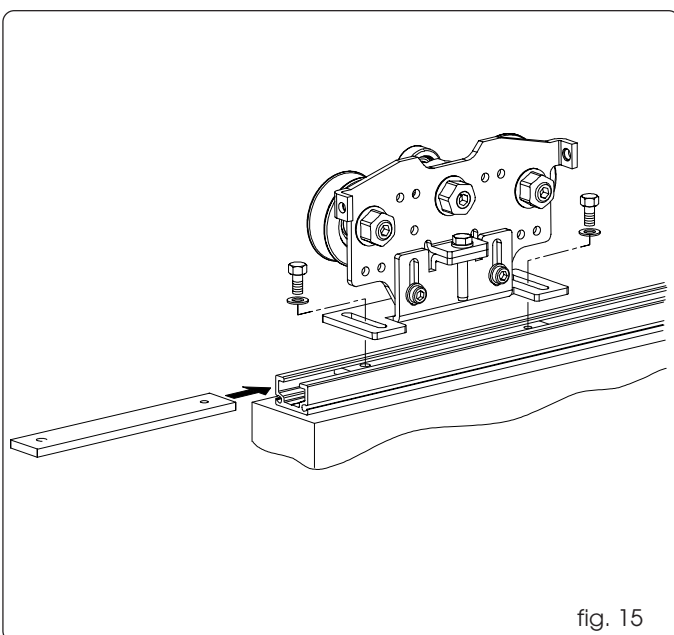


fig. 15

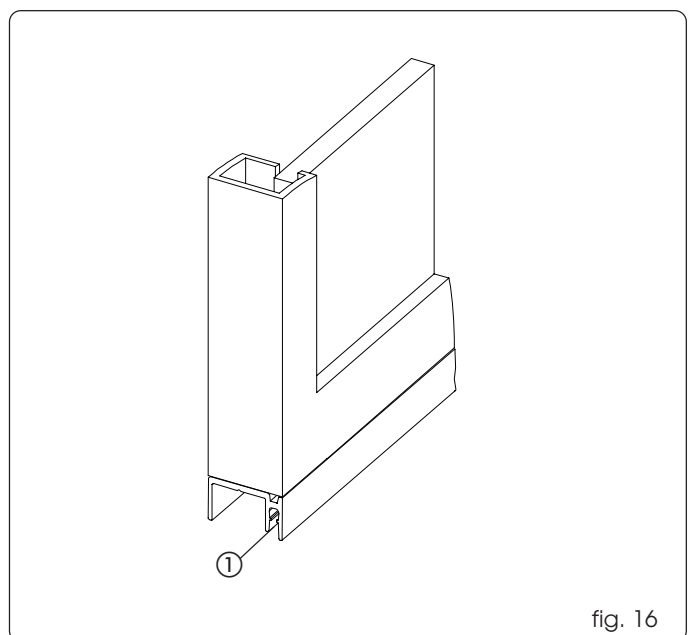


fig. 16

### 3.1 Securing the carriages on the leaves

Secure the carriages on the leaf, using the dimensions in figure 17 for the double leaf, and fig. 18 for the single leaf. Tighten the carriage securing screws.

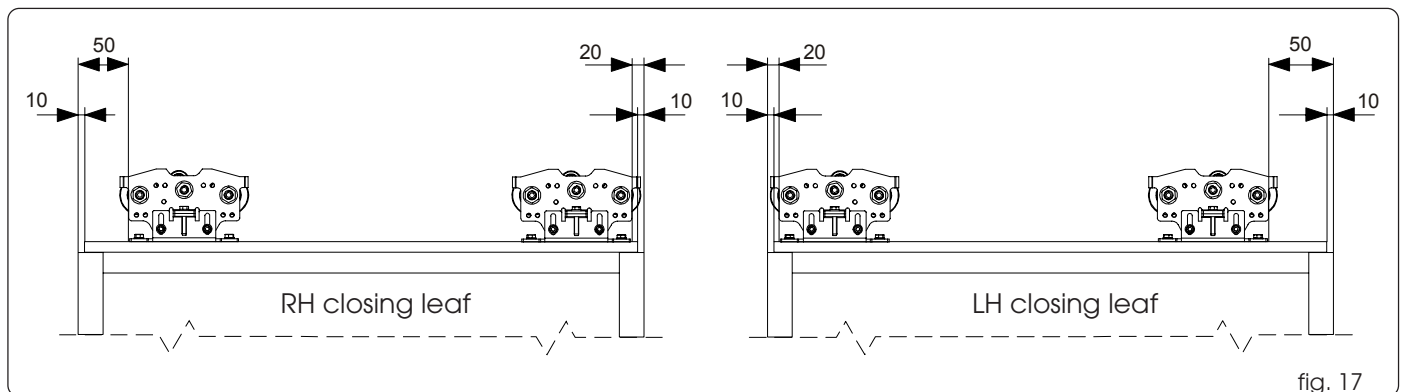


fig. 17

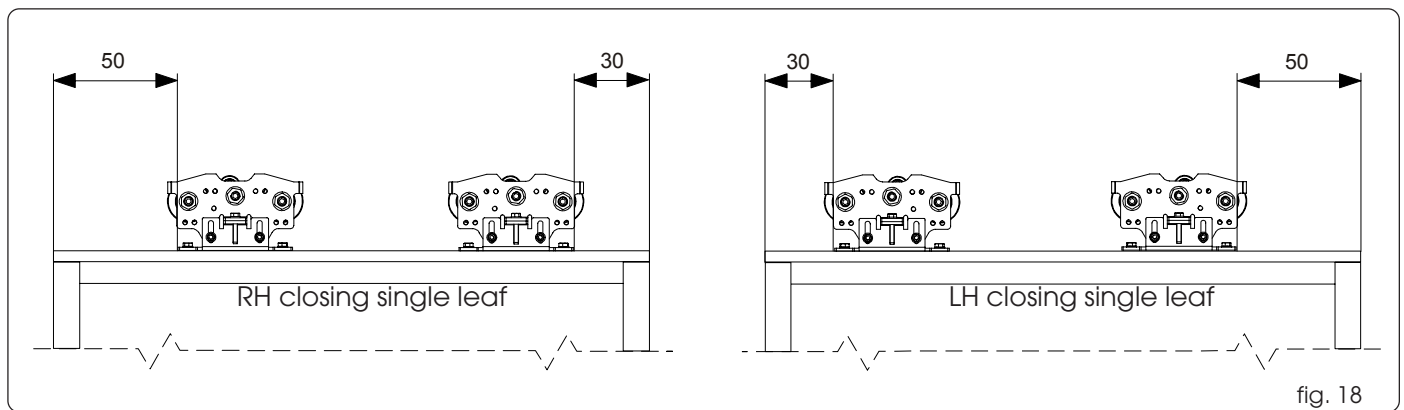


fig. 18

### 4. INSTALLING THE LOWER SLIDES

The lower slides are designed for securing to a wall (or fixed leaf) or to the floor.

#### Securing to the wall (or fixed leaf):

- Assemble the slides, referring to the dimensions in figures 19 and 20.

For the self-supporting version, we advise you to use the slide in fig. 19.

- Secure the slides as shown in fig. 21 ref. ①, using adequate screws.

#### Securing to the floor

- Directly secure the slide to the floor, as shown in fig. 21 ref. ②, using adequate expansion plugs and screws.

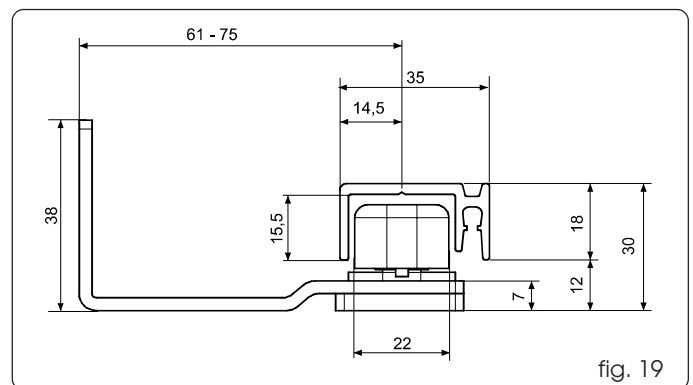


fig. 19

If using the fixed slide, refer to the specific instructions.

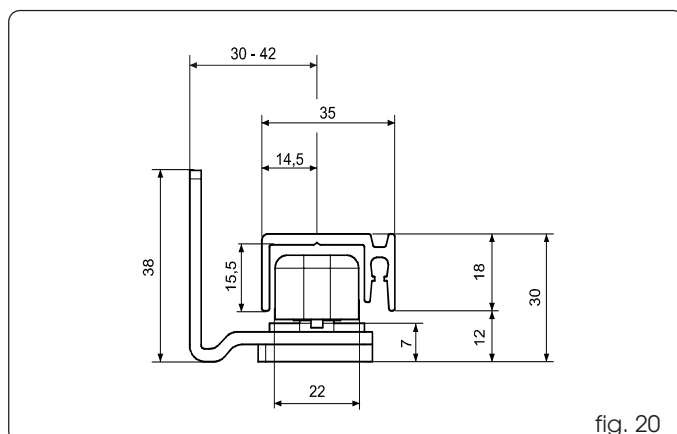


fig. 20

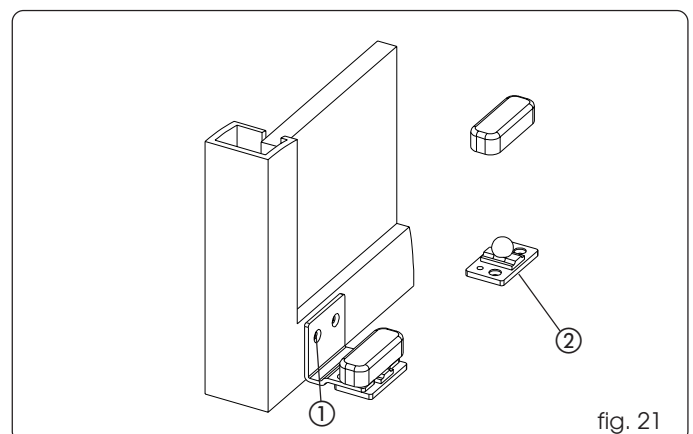


fig. 21

## 5. ADJUSTING THE LEAVES

Install the leaves on the header.  
The carriages have two sliding wheels and a counter wheel.  
Two slots are provided on the base of the carriages. These slots enable leaf depth adjustment.

### 5.1 Leaf height adjustment

The carriages enable leaf height adjustment by  $\pm 10$  mm.  
Adjustment procedure:

- Slightly loosen the two cylinder head screws - fig. 22.
- Turn the screw (fig. 23) clockwise to raise the leaves or anti-clockwise to lower them.
- Tighten the cylinder head screws.

### 5.2 Leaf depth adjustment

To adjust the depth of the leaves, loosen the screws as shown in fig. 24.

Move the leaf on the carriage slot as required and tighten the screws.

Check if the leaves are parallel with respect to the header.

### 5.3 Adjusting the counter wheel

The carriages have a counter wheel which prevents them from coming out of their seat.

The wheel must be adjusted so that it does not press on the header's aluminium profile, to thus prevent increased friction.

Counter wheel adjustment procedure:

- Keep the adjustment screw firm with an Allen wrench and loosen the locknut (fig. 25).
- Adjust wheel height (the wheel can be seen from the slot on the carriage), by turning the Allen wrench.
- When you have adjusted the height of the wheel, keep the Allen wrench steady and tighten the locknut with the appropriate wrench.

Move the leaves by hand and check if the counter wheel is free to move without grazing.

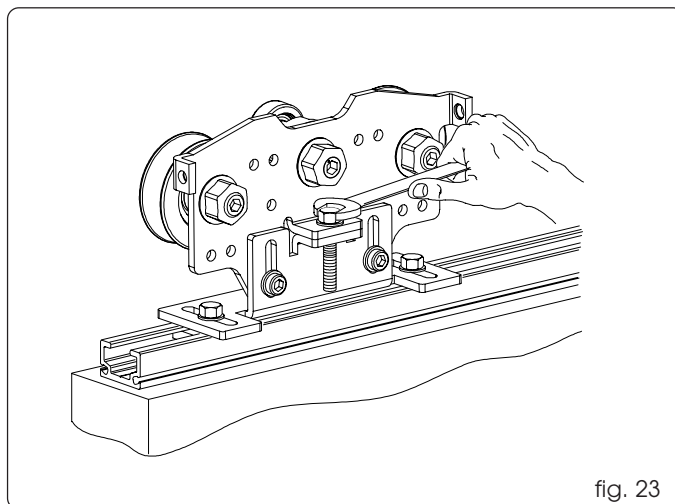


fig. 23

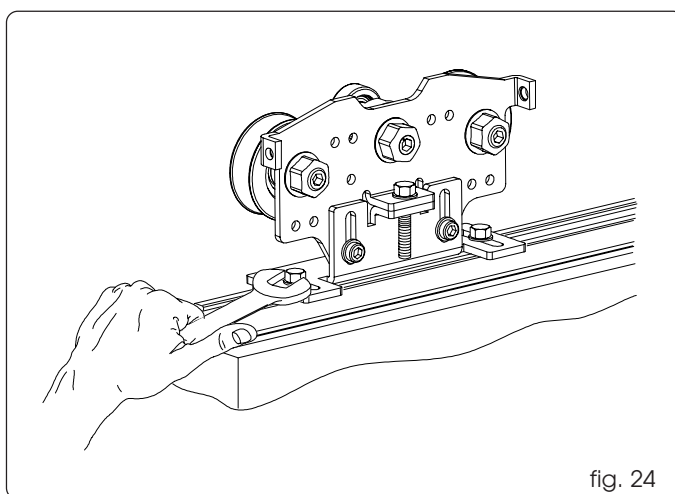


fig. 24

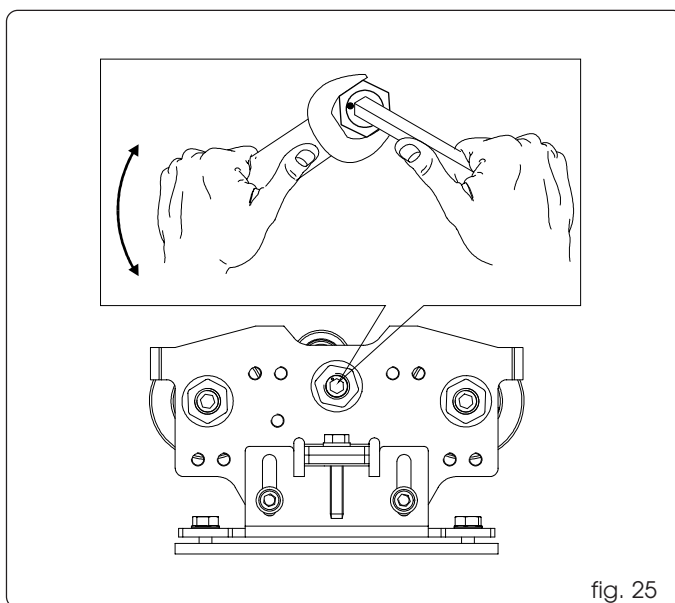


fig. 25

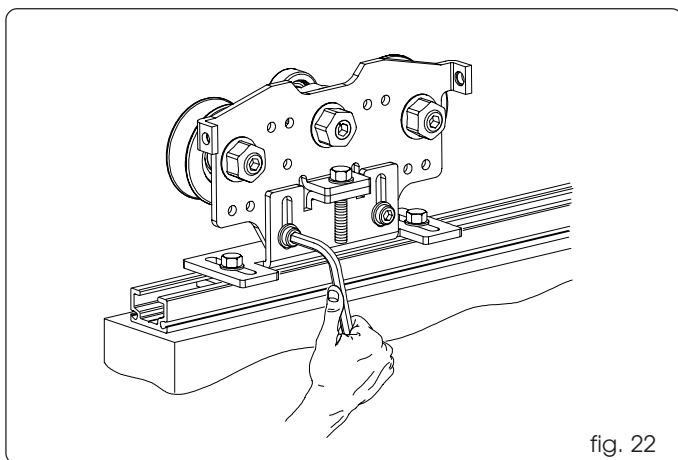


fig. 22

**6. ADJUSTING THE MECHANICAL STOPS**

For single leaf doors:  
loosen the locknuts of the mechanical stops (fig. 26 ref. ①) and take the stops to the ends of the header.  
Take the leaf into opening position (fig. 27), take the mechanical stop near to the carriage until the two parts touch and tighten the locknut.  
Take the leaf into door closing position, then take the mechanical stop near to the carriage until the two parts touch and tighten the locknut.

For double leaf doors:  
loosen the locknuts of the mechanical stops (fig. 26 ref. ①) and take the stops to the ends of the header.  
Take the leaves into opening position equidistant from the header mid-point (fig. 28), which is also the closing edge. Take the mechanical stops near to the carriage until the two parts touch and tighten the nuts.

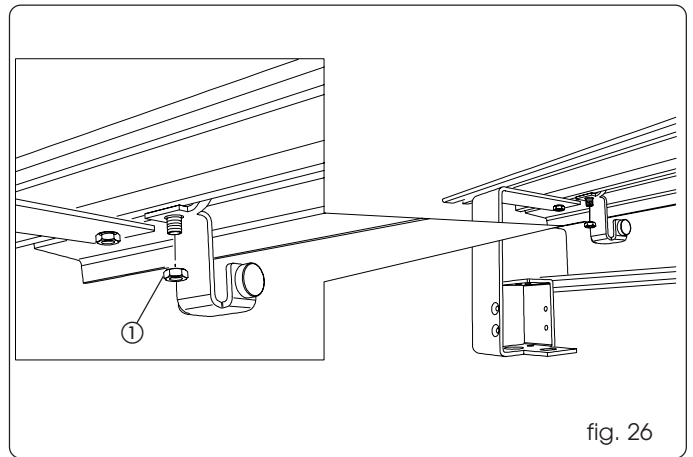


fig. 26

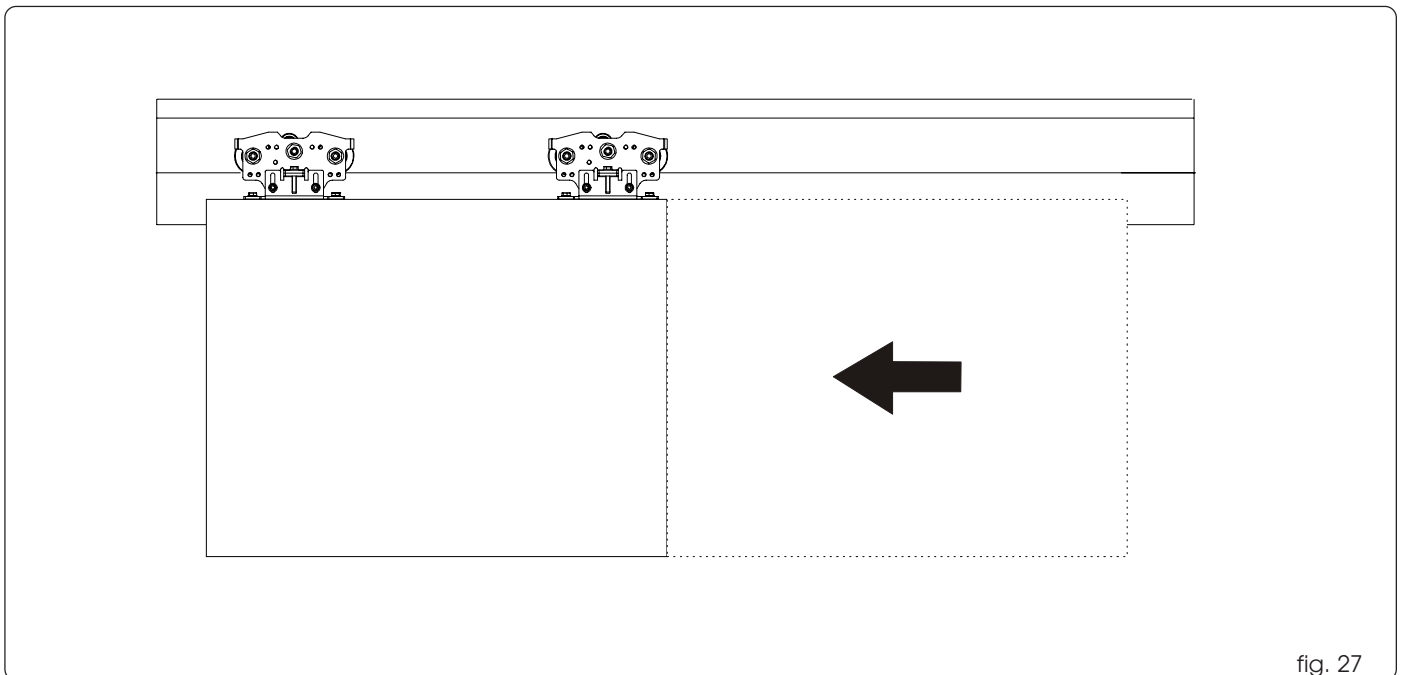


fig. 27

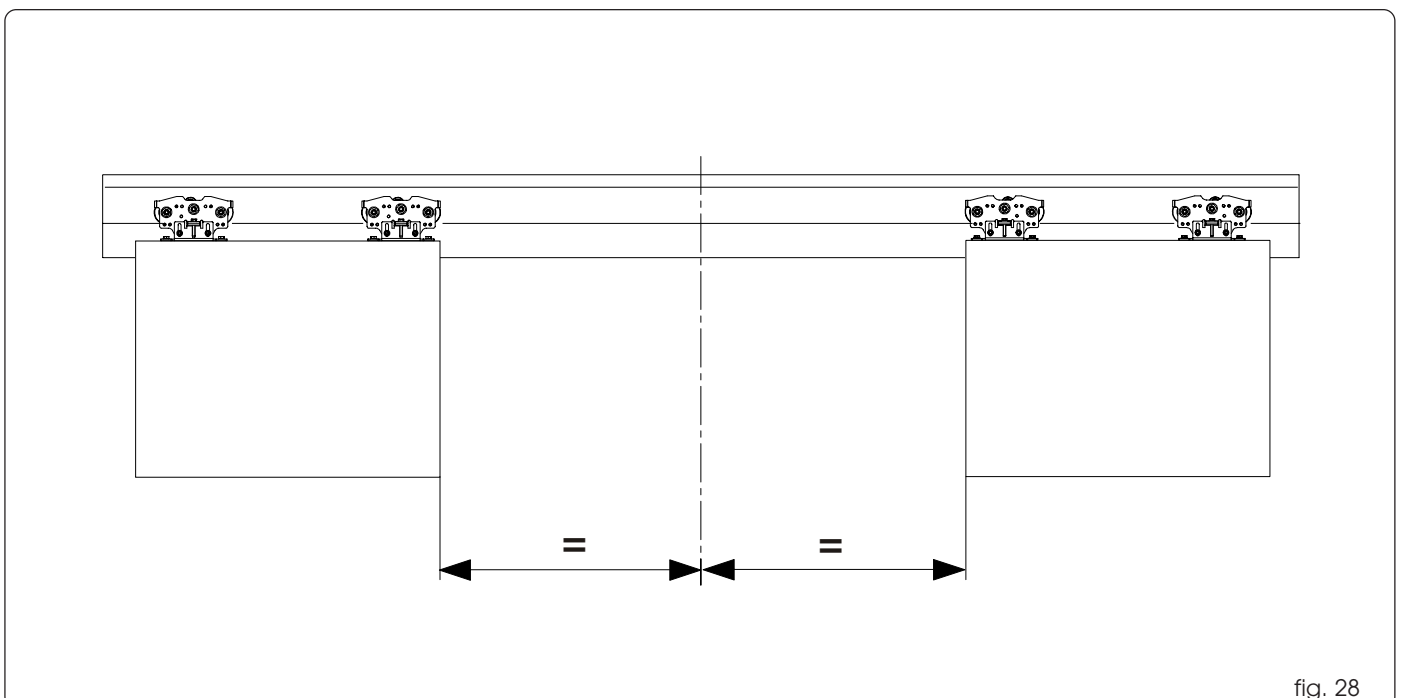
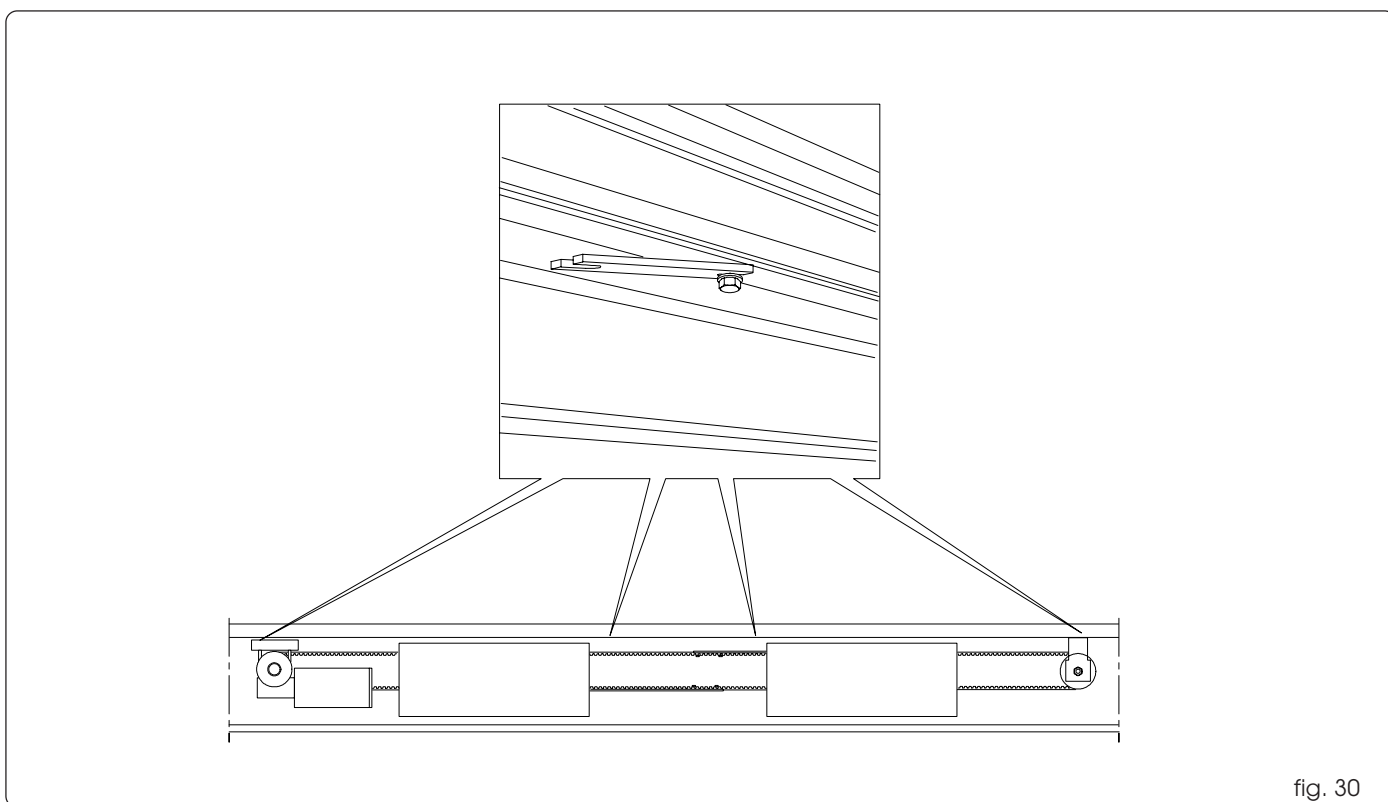
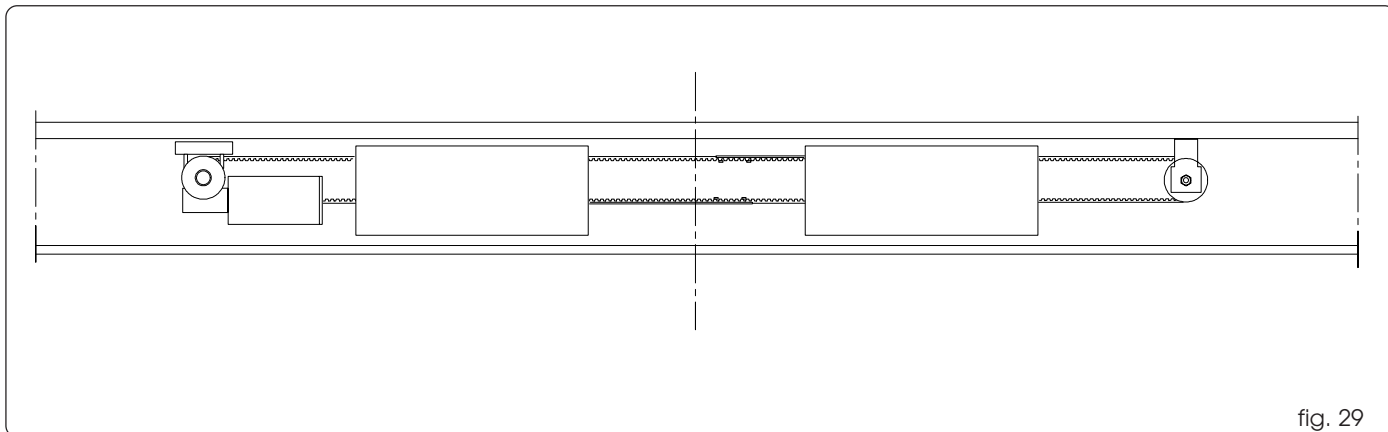


fig. 28

## 7. INSTALLING THE ACTIVATION MODULE

Re-install the activation module you had removed, centring it with respect to the header mid-point (fig. 29).  
Secure the module on the header, using the four plates and the stay screws (fig. 30).



**8. SECURING THE RODS TO THE CARRIAGES**

The activation module is supplied with the drive rods already assembled on the drive belt.

The carriages are supplied with the fittings for the drive rods. Procedure for coupling the drive rods to the carriages.

Double leaf automated system:

- Take the leaves to their opening position (fig. 31).
- Take the two belt/drive-rod couplings to the internal carriages.
- Fit two plates with threaded hole inside each of the two drive rods (fig. 31).
- Secure the drive rods on the carriages, using the supplied screws.
- Check if the closing meeting point between the two leaves corresponds to the header mid-point and if the leaves can be fully opened and closed.
- Cut the excess part of the drive rod.

Single leaf automated system:

- Take the leaf to its opening position (fig. 32).
- Take the belt/drive rod coupling to the internal carriage.
- Fit two plates with threaded hole inside the drive rod (fig. 32).
- Secure the drive rod to the carriages, using the supplied screws, and check if the leaf can be fully opened and closed.
- Cut the excess part of the drive rod.

Move the leaves by hand and check correct sliding motion.

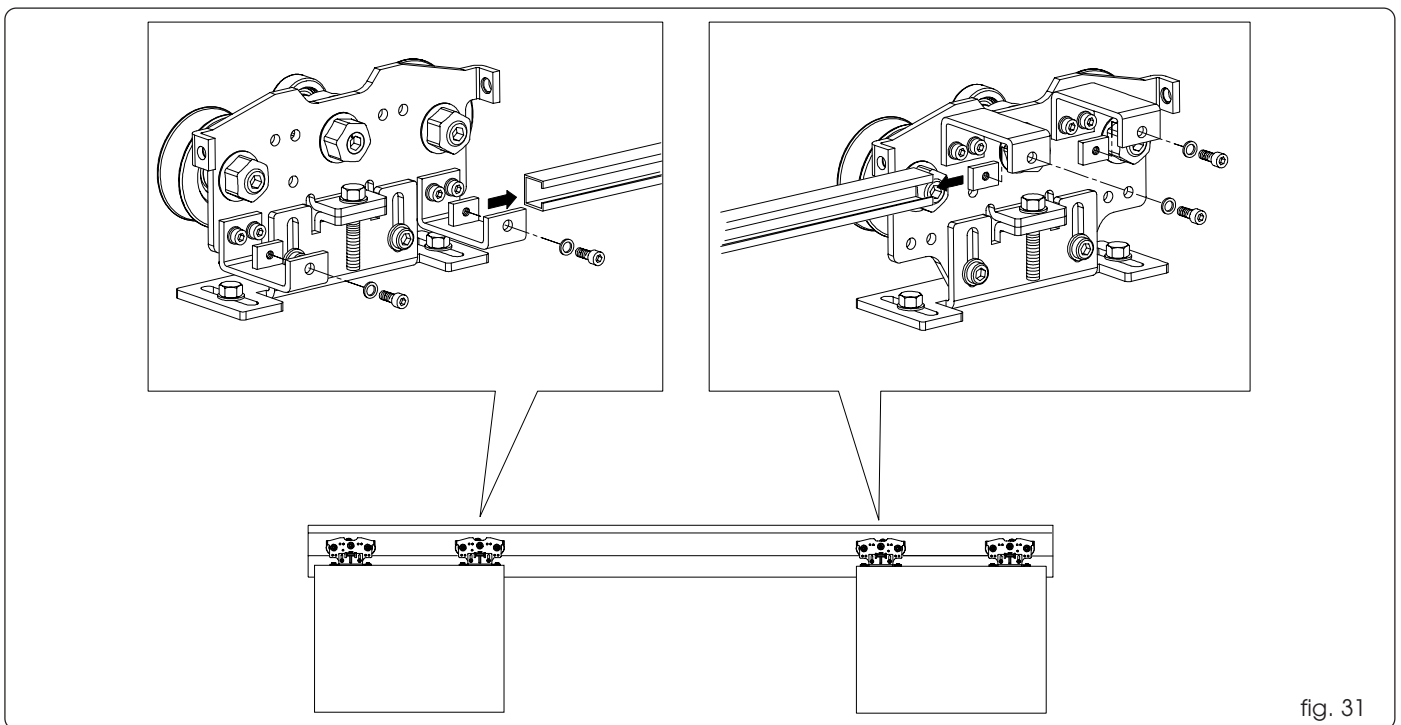


fig. 31

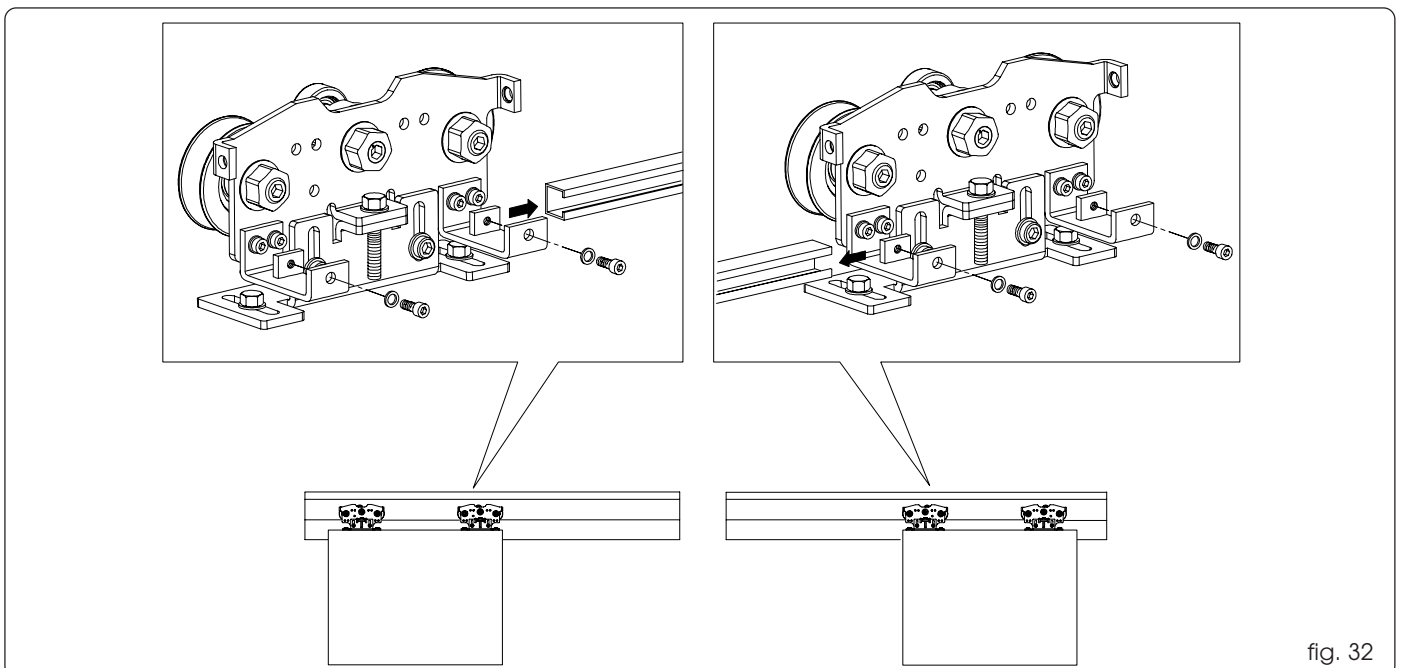


fig. 32

## 9. ADJUSTING THE BELT

Make sure that the belt is not too loose or too taut.

Belt tensioning procedure:

- Loosen the nut (fig. 33 ref. ①).

- Screw the bolt (fig. 33 ref. ②) to apply tension to the belt, or unscrew it to loosen the belt.

- After controlling tension, tighten the nut.

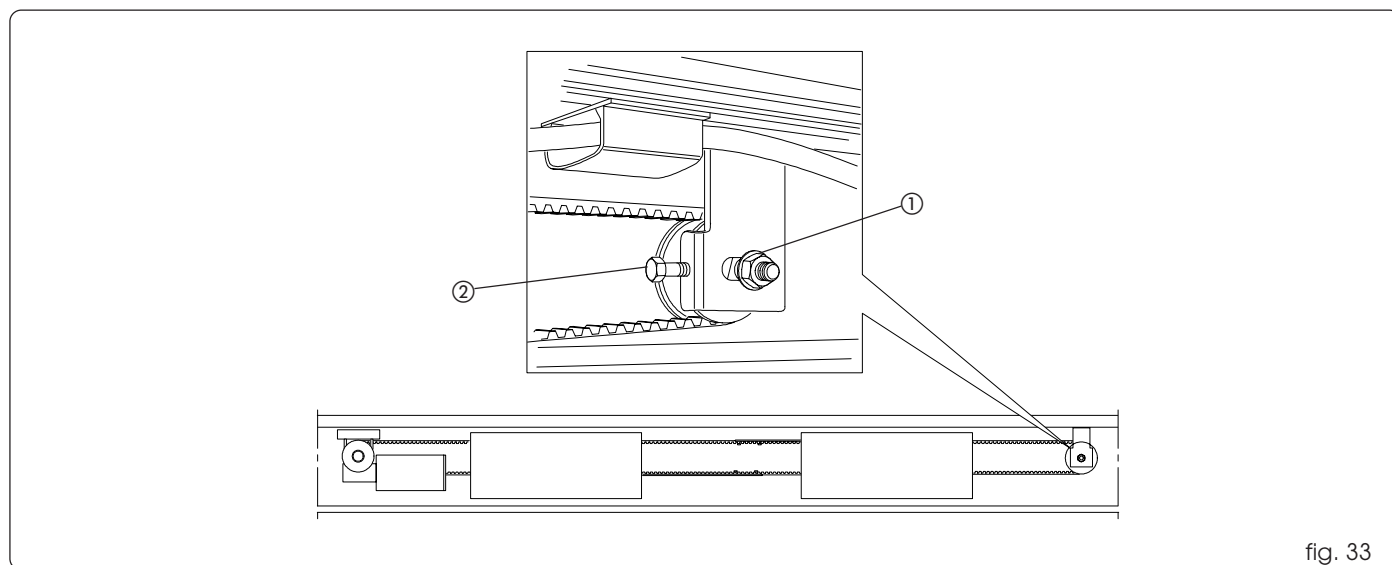


fig. 33

## 10. INSTALLING THE LOWER HOUSING PROFILE

Re-install the lower housing profile you had removed, securing it on the 3 housing support brackets as shown in fig. 35.

The lower housing profile is pre-marked to adapt it to different leaf thickness values. Eliminate excess material by cutting at the points indicated in fig. 34 ref. ①.

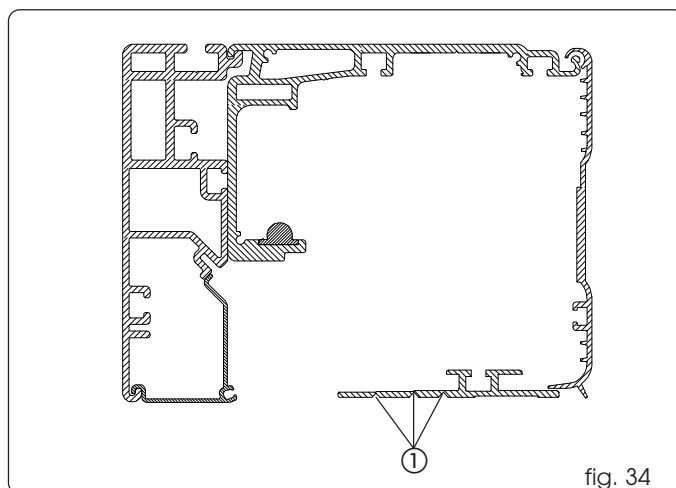


fig. 34

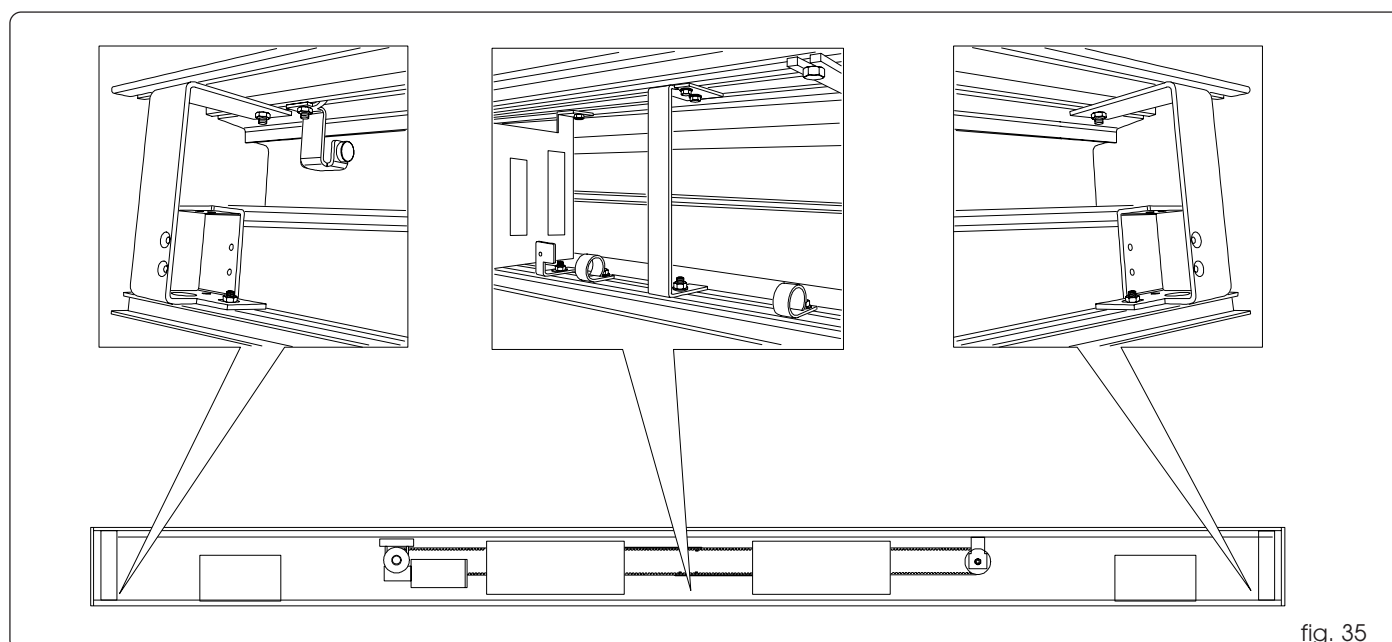


fig. 35



**11. INSTALLING PARACHUTE CABLES AND CLOSURE HOUSING**

Re-install the parachute cables and the closure housing (if supplied) you had removed, as shown in fig. 36.  
Position the closure housing on the anti-vibration spacers; pull it as shown in fig. 37 ref. ①, and turn it upward (fig. 37 ref. ②) to obtain correct coupling. Check correct fitting along the whole length of the housing.

**12. INSTALLING THE CLOSURE PROFILE**

Standard automated system:  
install the closure profile for standard automated systems as shown in fig. 38.  
Insert the brush (if supplied) in the closure profile, before installing - fig. 38 ref. ①.  
Self-supporting automated system:  
Install the closure profile for self-supporting automated systems as shown in fig. 39.  
Insert the brush (if supplied) in the closure profile, before installing - fig. 39 ref. ①.

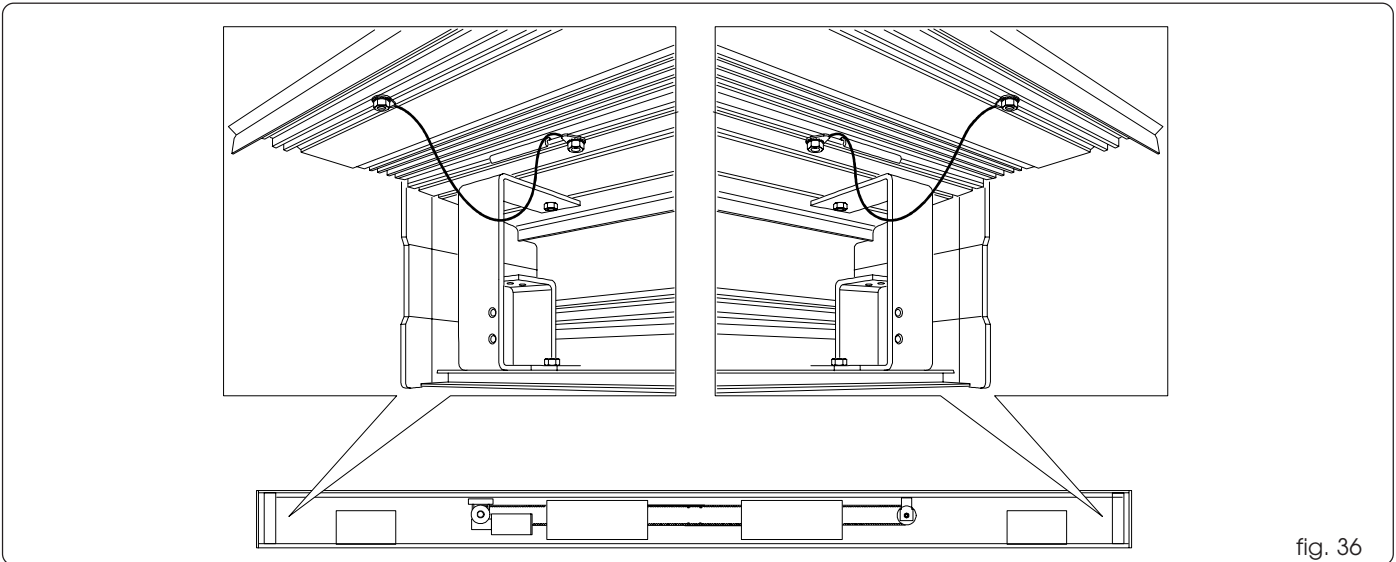


fig. 36

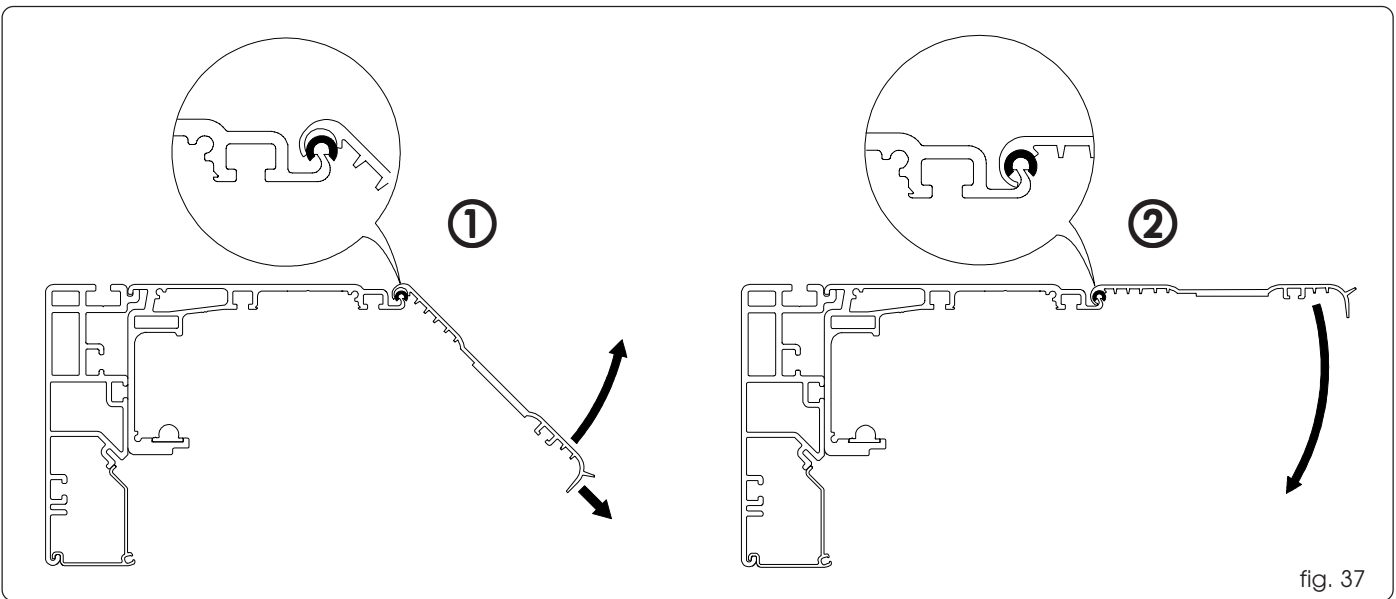


fig. 37

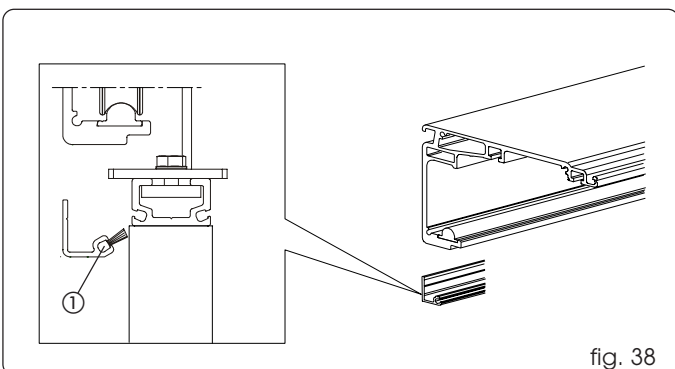


fig. 38

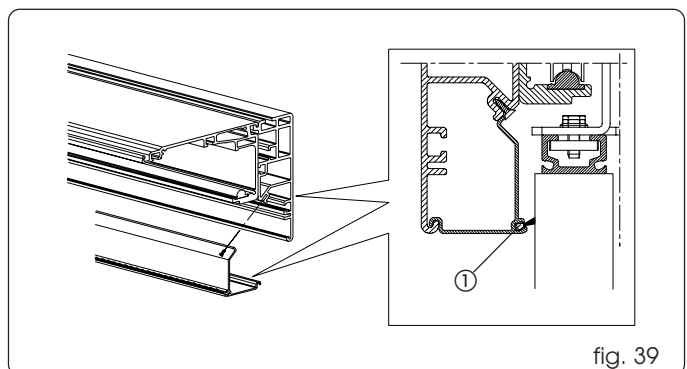


fig. 39

### 13. INSTALLING THE SIDE PANELS

Fit the side panels as shown in fig. 40.  
The panels are pre-marked to adapt them to headers with or without a self-supporting profile.

### 14. MOTOR LOCK DEVICE

The motor lock device guarantees that the leaves will stop in any position. If requested when ordering, the motor lock device is supplied installed on the automation header, including the knob operated internal release system.

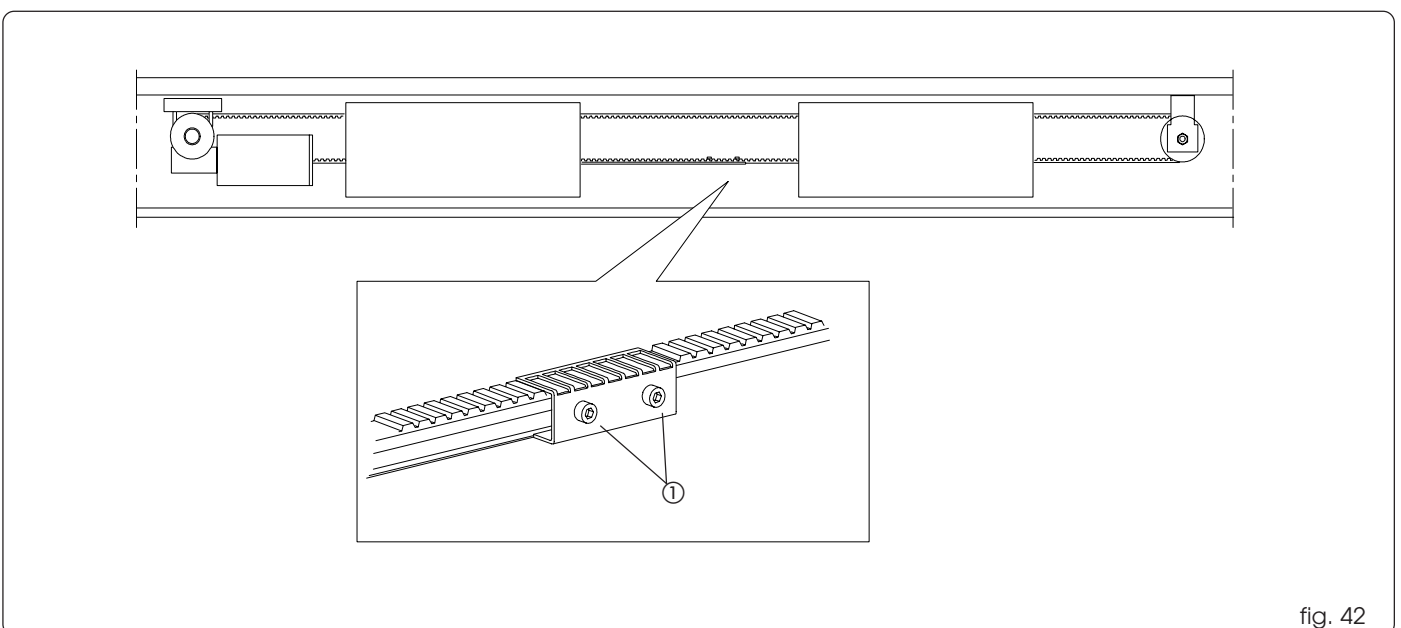
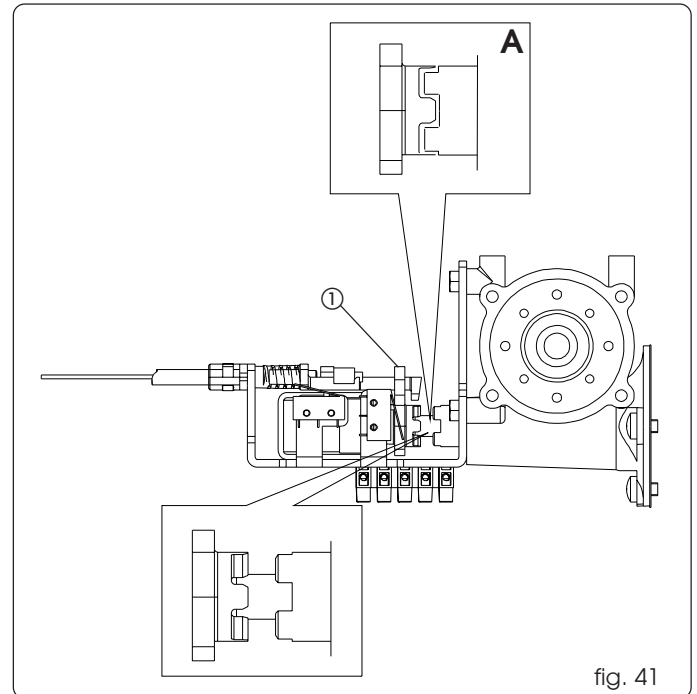
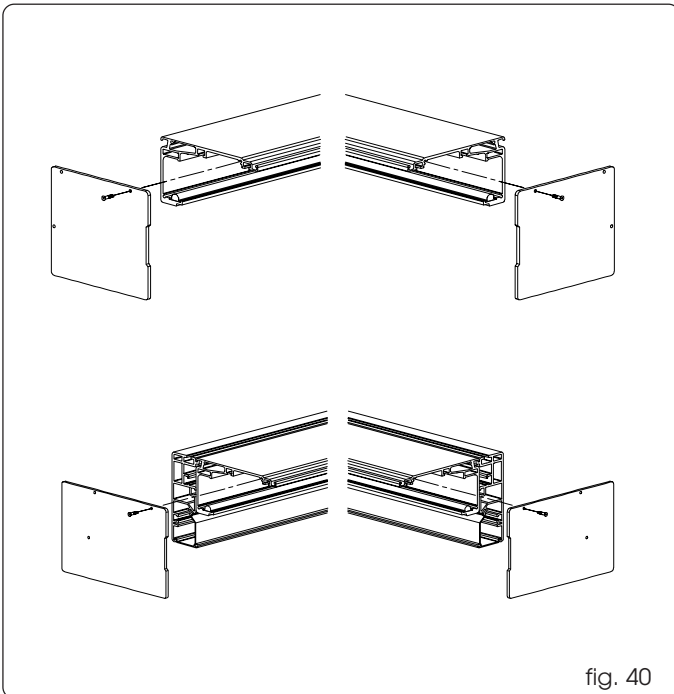
Adjustment procedure for the motor lock device:

- Close the leaves.
- Manually push the lever (fig. 41 ref. ①) toward the motor shaft, checking correct coupling as shown in fig. 41, ref. A);
- Move the lever (fig. 41 ref. ①) vertically and check for any play between the motor shaft and motor lock coupling.

If there is no play, proceed as follows:

- Loosen the two screws (fig. 42 ref. ①) which connect the belt coupling to the drive rod (on both carriages in the case of double leaves).
- Gently move the belt coupling in horizontal direction, until the lever moves freely; tighten the screws on the belt coupling.

If installing later on, refer to chapter 19. For programming, consult the part of these instructions referring to the control board.



## 15. START-UP OF THE AUTOMATED SYSTEM

- Remove the protective covers of the SDM control units and transformer, delicately obtaining leverage with a screwdriver as shown in fig. 43.

To fit them back, hook them onto the upper part and press as shown in fig. 44.

- Manually check correct sliding of the leaves and of all the moving elements.

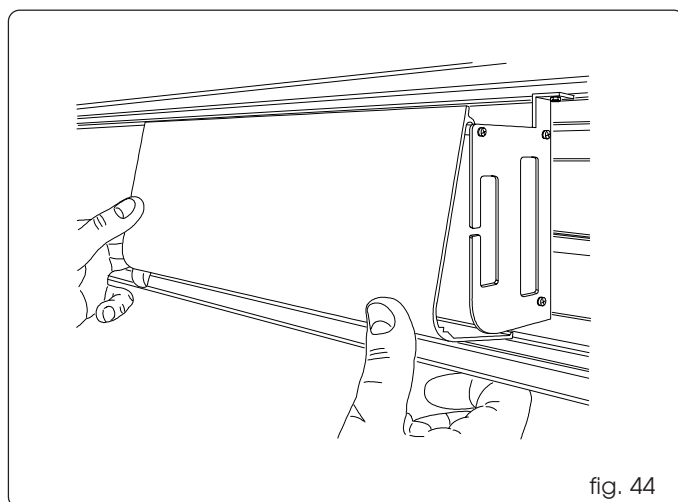
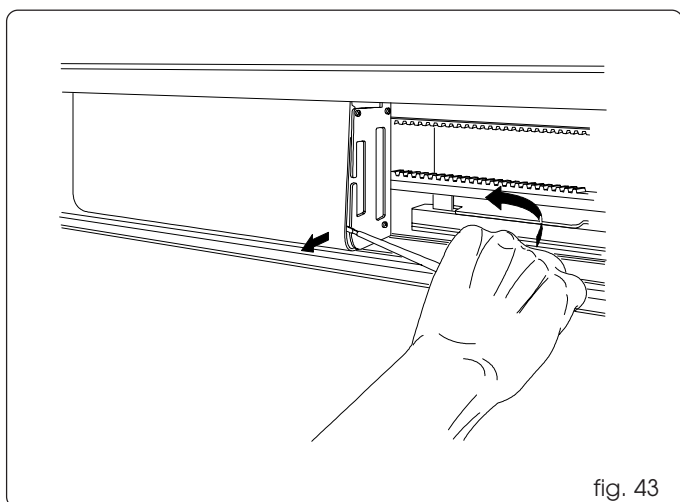
- Make/check the electrical connections on the SDM board: of the power supply cables from the toroidal transformer, from the motor and from all accessories, routing the cables inside the raceways and inside the eyelets.

- Set motor rotation direction according to type of door (refer to the SDM board instructions).

- Check if a jumper is present on the J7 terminal board of the SDM board (refer to the SDM board instructions).

- Connect the 230V~ power supply cables to the terminals inside the power supply unit, relating to the primary winding of the toroidal transformer (Note: a T1A/250V delayed fuse to protect the transformer is also provided).

- Check the efficiency of all installed accessories, especially photocells and sensors.



## B. ASSEMBLY OF KIT AUTOMATED SYSTEM

This section describes the assembly of the in-kit automated systems. After you have prepared the necessary profiles, we advise you to assemble and install at the same time. Refer to section A for the installation procedure.

### 16. PREPARING THE SUPPORT PROFILE

Support profiles are available in two sizes: 4300 mm. or 6100 mm.

#### 16.1 Cutting the support profile

Cut the support profile using the following formula:

$$LT = Vp \times 2 + 100$$

where Lt is the header length, Vp is the transit space and 100 is the overlap between the fixed and mobile leaf.

#### 16.2 Cutting and securing the sliding guide

Cut the sliding guide 20 mm. shorter than the support profile. Spread a thin film of silicone on the seat of the load bearing profile (fig. 45 ref. ①) and position the sliding guide so that 10 mm. of space remain on both sides of the profile (fig. 45 ref. ②). Keep pressing the sliding guide against its seat and make sure that no dips develop. Carefully clean off any silicone residues.

N.B.: the guide is not symmetrical; the side with the groove must face the wall (fig.45 ref. ③).

Secure the sliding guide using the supplied elastic pliers (fig. 45 ref. ④).

Position 2 at the ends of the header and one in the middle.

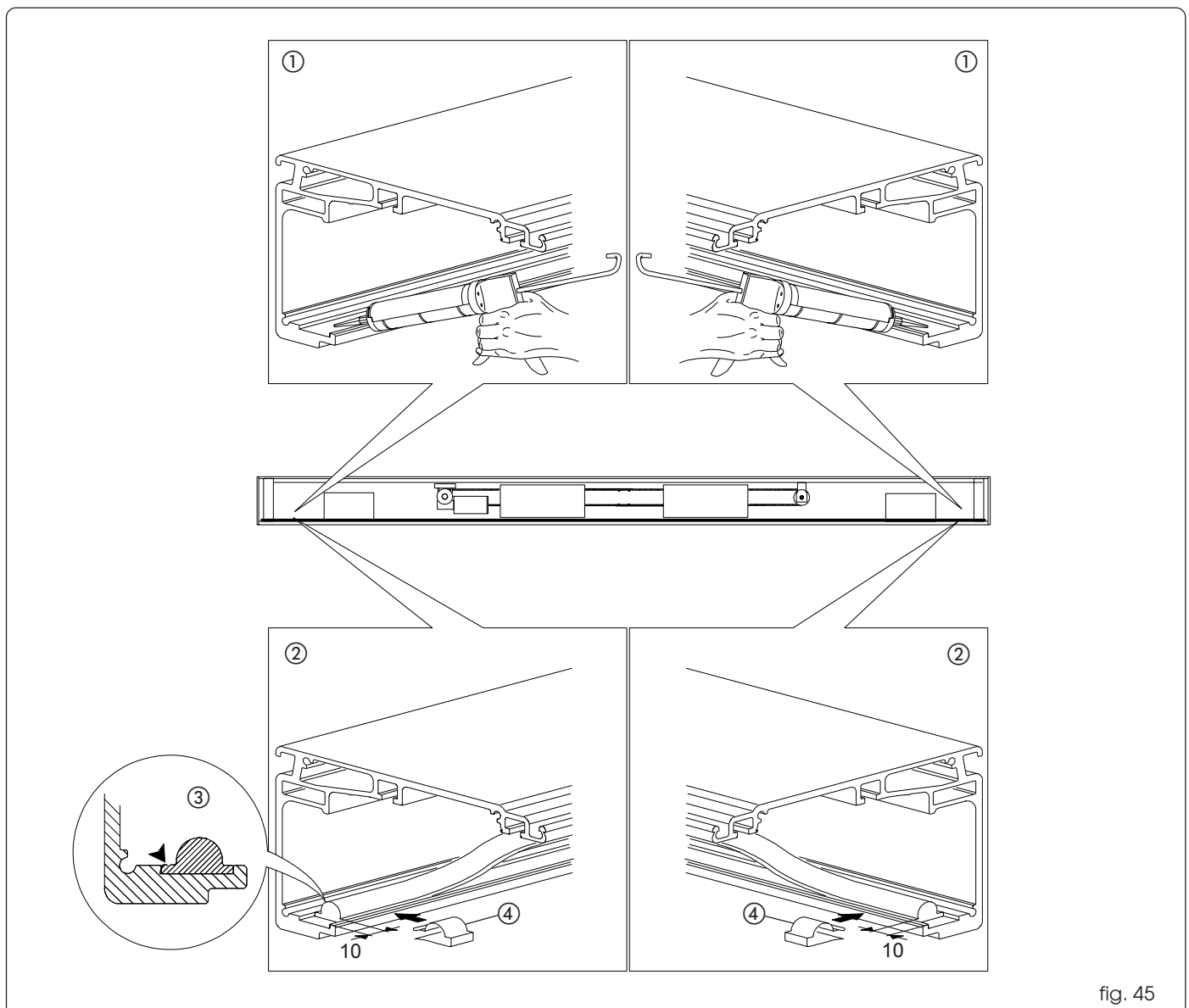


fig. 45

**16.3 Securing components to the profile**

The accessories are secured to the profile, using the supplied plates. They can be fitted into their seats both laterally and on any point of the profile (fig. 46).

**17. SELF-SUPPORTING PROFILE**

Cut the self-supporting profile to the same length as the support profile.

Fit the M8 stay screws (the number of stay screws varies according to header length) in the slot on the self-supporting profile (fig. 47 ref. ①).

Couple the support profile to the self-supporting profile (fig. 47) and assemble them, using the stay screws and nuts, on the horizontal slots on the support profile (fig. 48 ref. ①).

**17.1 Installing the side fixing brackets**

Insert 6 threaded plates on the profiles of the header as shown in fig. 49.

Assemble the side fixing brackets, using the stay screws (fig. 50 ref. ①).

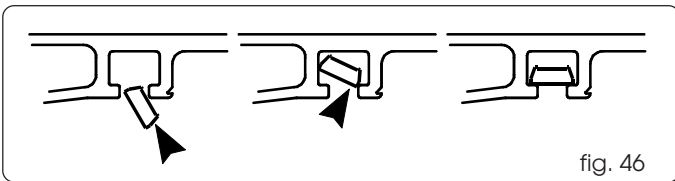


fig. 46

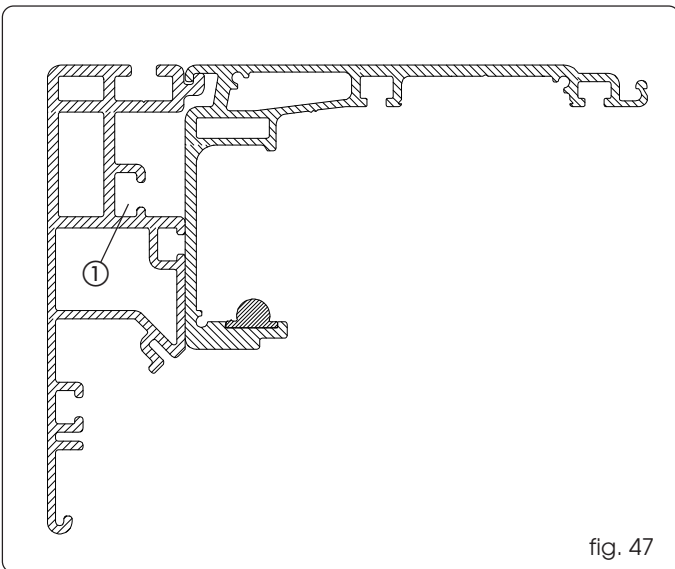


fig. 47

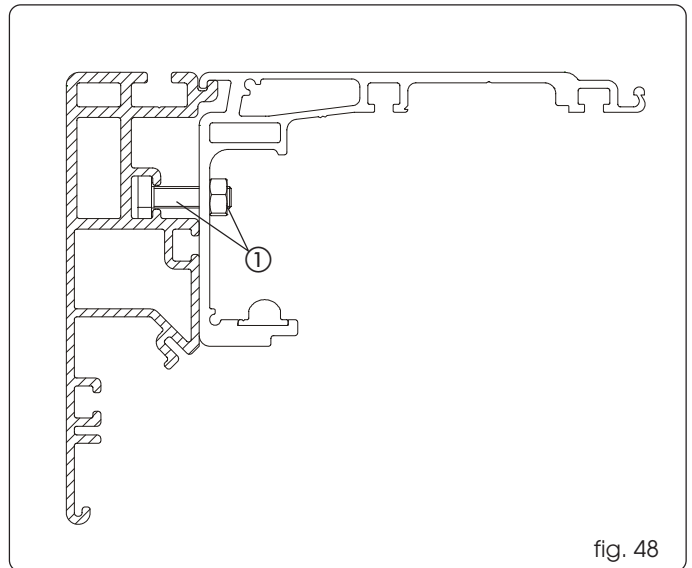


fig. 48

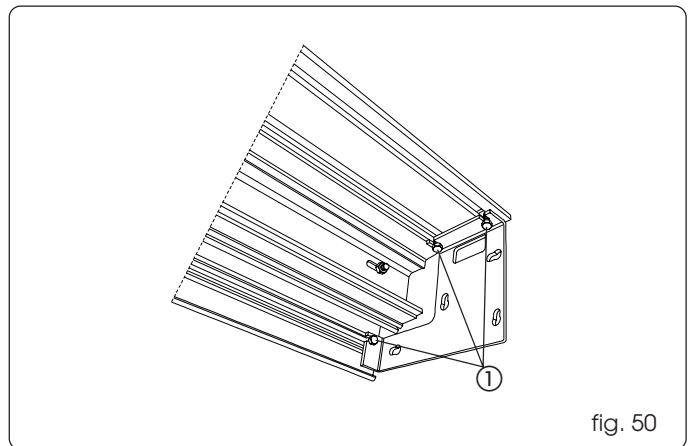


fig. 50

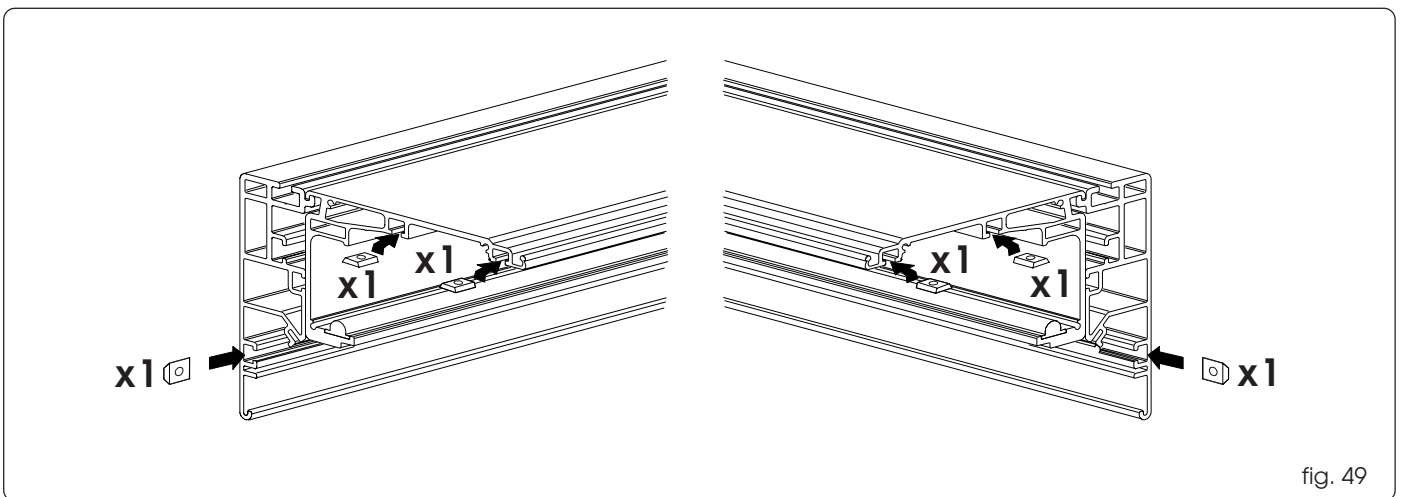


fig. 49

**18. POSITIONING THE TRAVEL LIMIT STOPS**

Fit two plates at the ends of the header's profile (fig. 51).  
Install the two mechanical stops as shown in fig. 52, using the supplied stay screws.

**19. MOTION CARRIAGES**

Provide the necessary number of carriages, 2 or 4 according to number of leaves.

Double leaf automated system:  
Install two stop plates on the innermost carriages as shown in fig. 53.  
Fit the rubber stops (fig. 53 ref. ①).

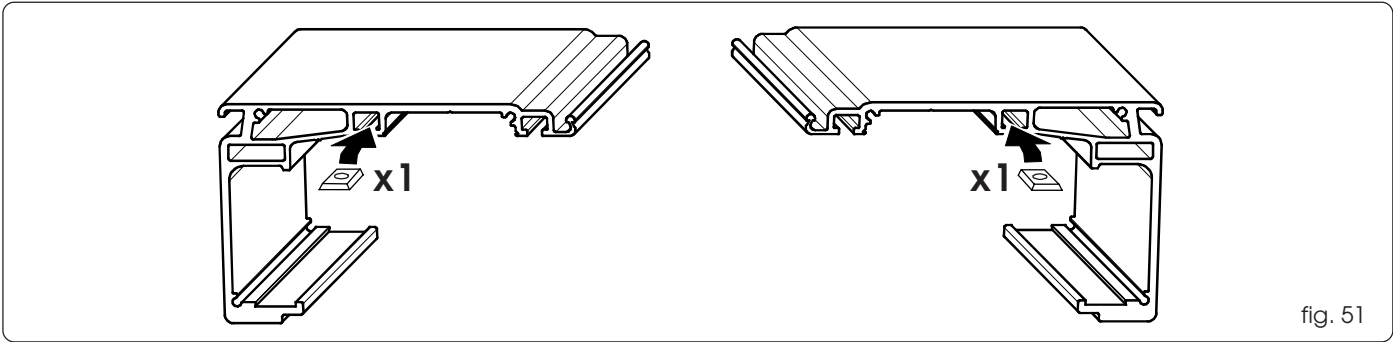


fig. 51

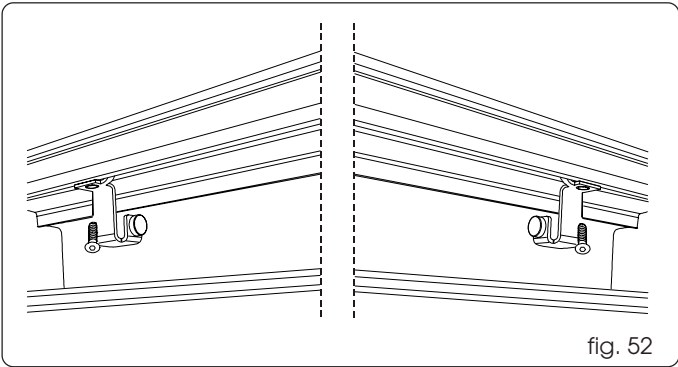


fig. 52

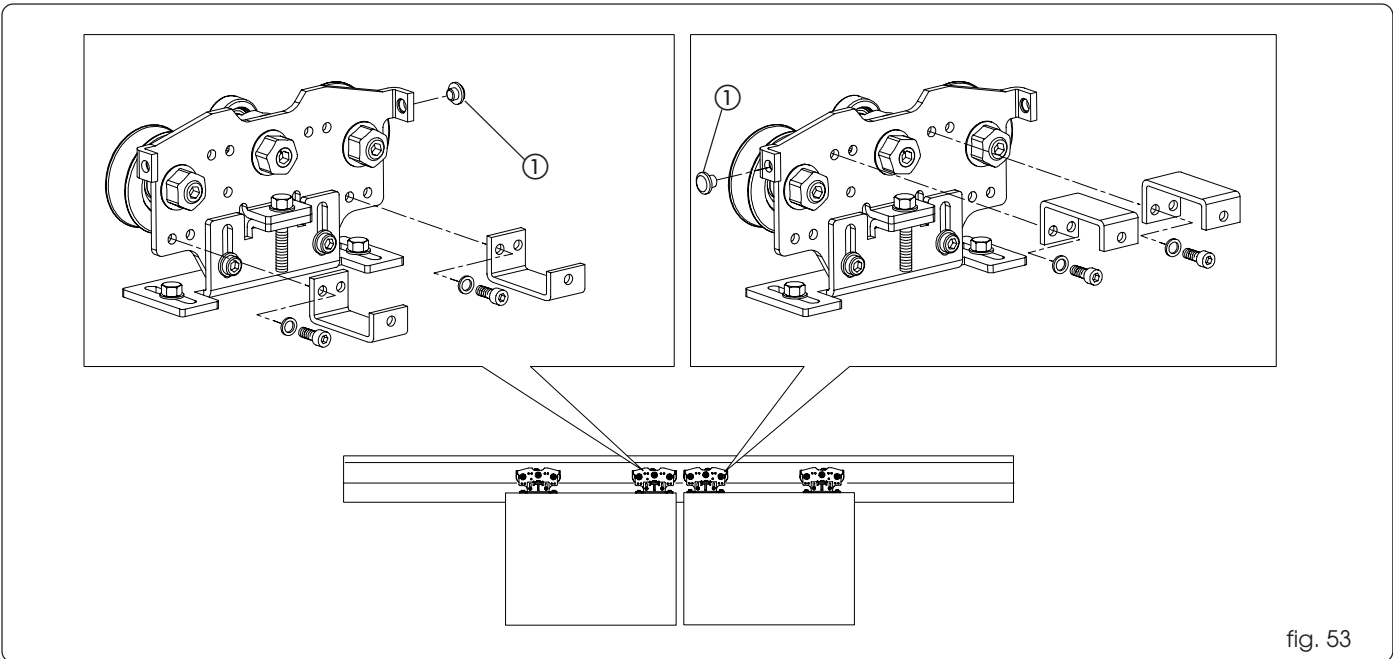


fig. 53

Single leaf automated system:  
Install two stop plates on the carriages as shown in fig. 54,  
according to the closing direction.

Reference A: left opening  
Reference B: right opening

Fit the carriages on the sliding guide from the ends of the headers.  
For positioning the carriages on the leaves, refer to paragraph 3.1.

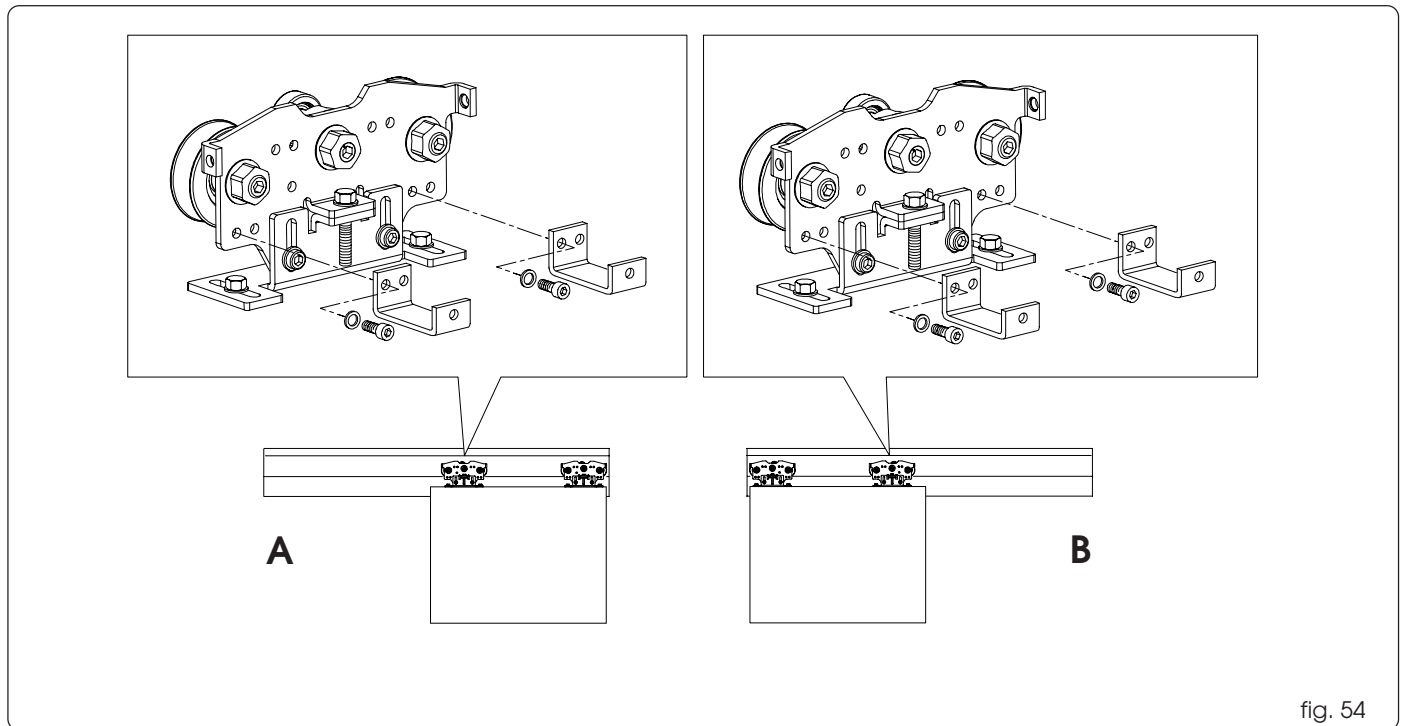


fig. 54

## 20. ACTIVATION MODULE

The activation module is always supplied assembled and is available in 4 sizes.

The activation module to use varies according to the transit space as shown in table 1.

Table 1

Vp 1 leaf	Vp 2 leaves	Drive profile length	effective travel	Center distance	Belt length
700-900	-	1100	900	950	2050
901-1300	800-2600	1500	1300	1350	2850
1301-2100	2601-3000	2300	2100	2150	4450
2101-3000	-	3200	3000	3050	6250

### 20.1 Installing the activation module

The activation module is supplied with only one drive rod secured to the belt, always connected to the lower section and facing left (fig. 55).

For single leaf left-opening doors, the two securing screws must be loosened (fig. 55 ref. ①) and the drive rod must be manually taken to the right.

For double leaf doors only, install the second drive rod as shown in figure 56, using the supplied plates and screws. To secure the drive rods to the carriages, see chapter 8.

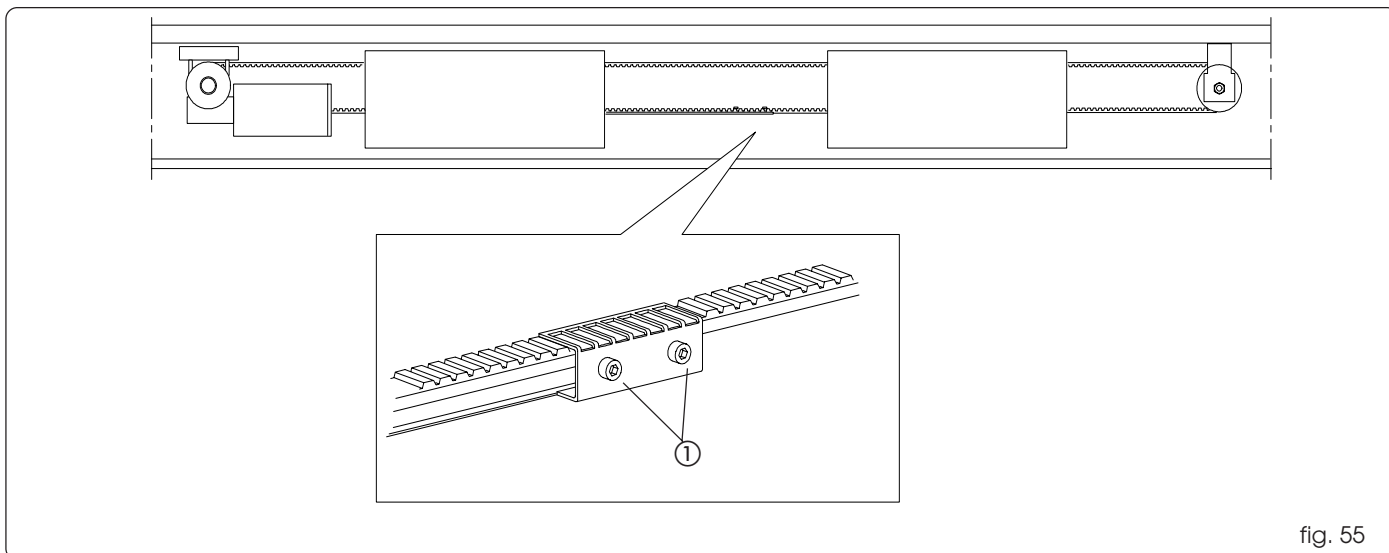


fig. 55

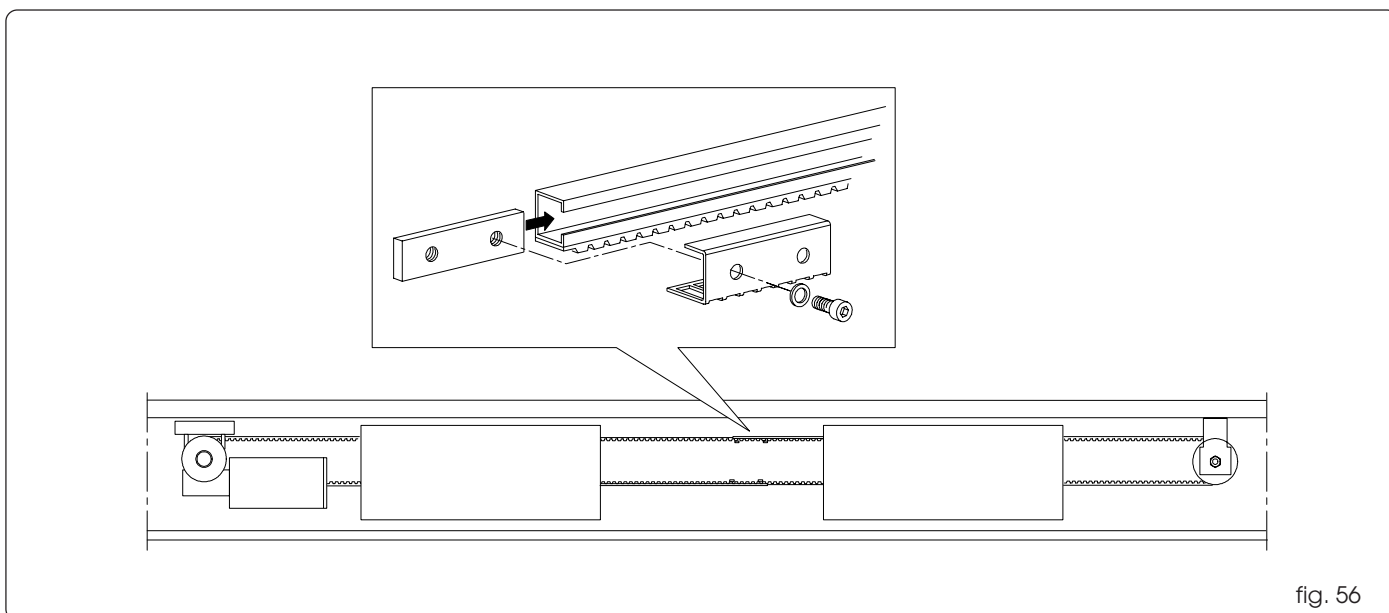


fig. 56



Fit the plates in the seats of the support profile as shown in figure 57.

For modules L=1100 and L=1500, fit 8 plates (4 in seat A and 4 in seat B).

For modules L=2300 and L=3200, fit 10 plates (5 in seat A and 5 in seat B).

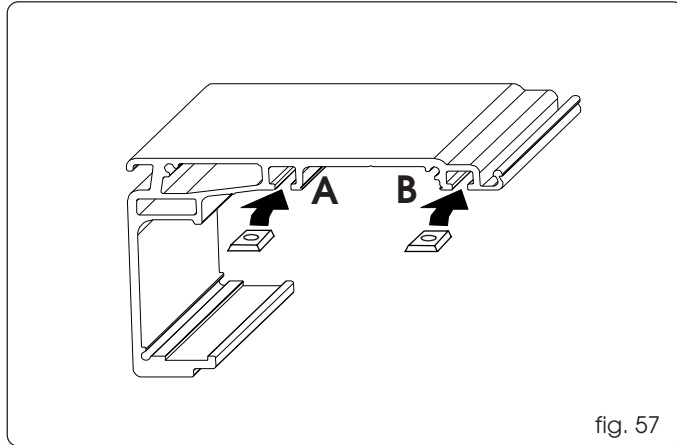


fig. 57

Partially screw the 4 fixing brackets of the activation module (fig. 58), or 5 (fig. 59) for modules L=2300 and L= 3200, on the perforated end, using the stay screws.

Position the module on the seat of the support profile, centring it with respect to the mid-point of the header.

Secure the activation module, using the remaining stay screws (fig. 60).

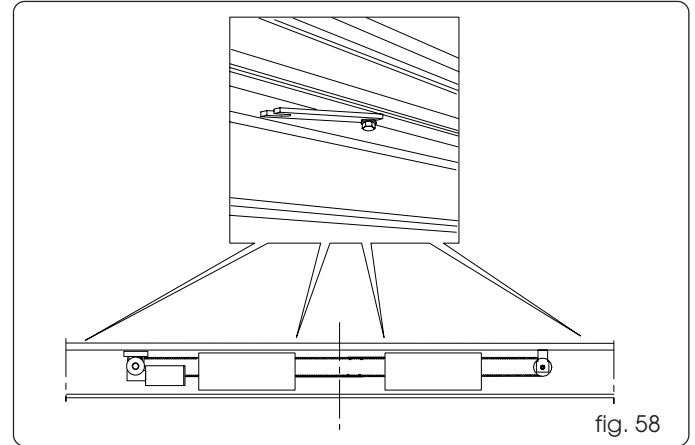


fig. 58

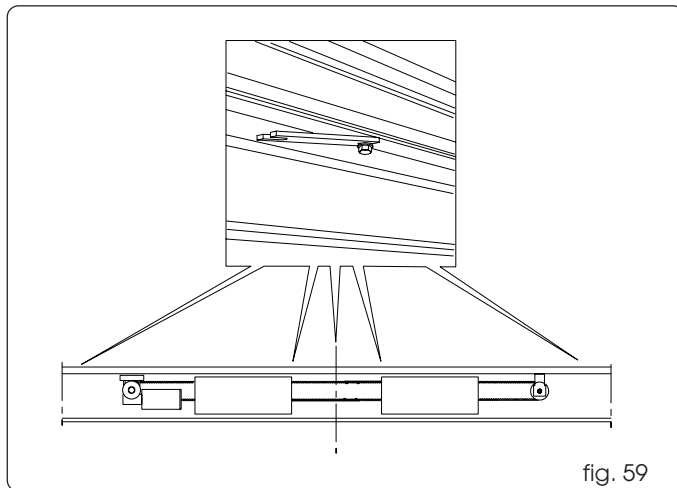


fig. 59

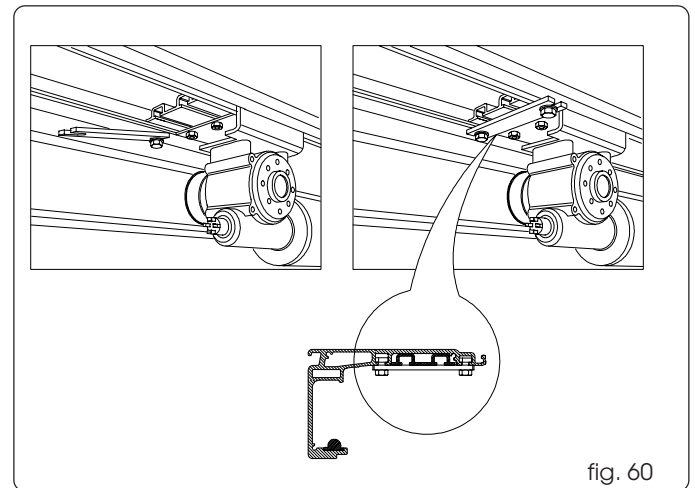


fig. 60

## 21. INSTALLATION OF CABLE RACEWAYS

Using pressure, insert the cable raceways in the seat of the support profile not occupied by the activation module, as shown in fig. 61 ref. ①.

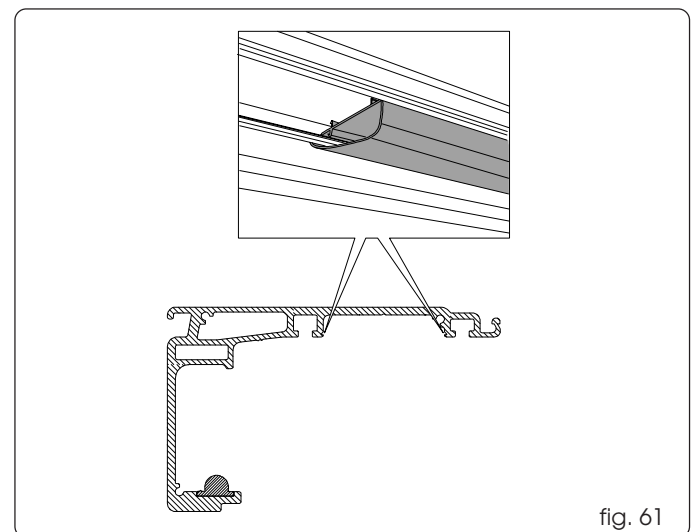


fig. 61

**22. INSTALLING THE HOUSING SUPPORT BRACKETS**

Place four plates on the profile of the header for installing the lower-housing support side-brackets (fig. 62). Fit 2 from the header side and 2 from the other side.

Fit another 2 plates at the centre of the header for securing the central bracket as shown in fig. 63 ref. ①.

Secure the three brackets, using the appropriate screws as shown in fig. 63 ref. ②.

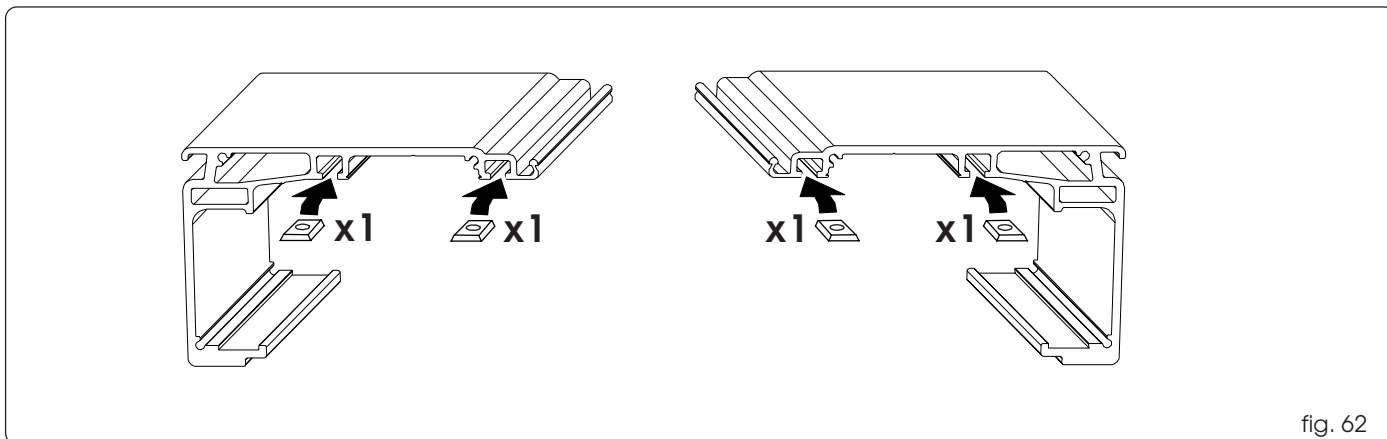


fig. 62

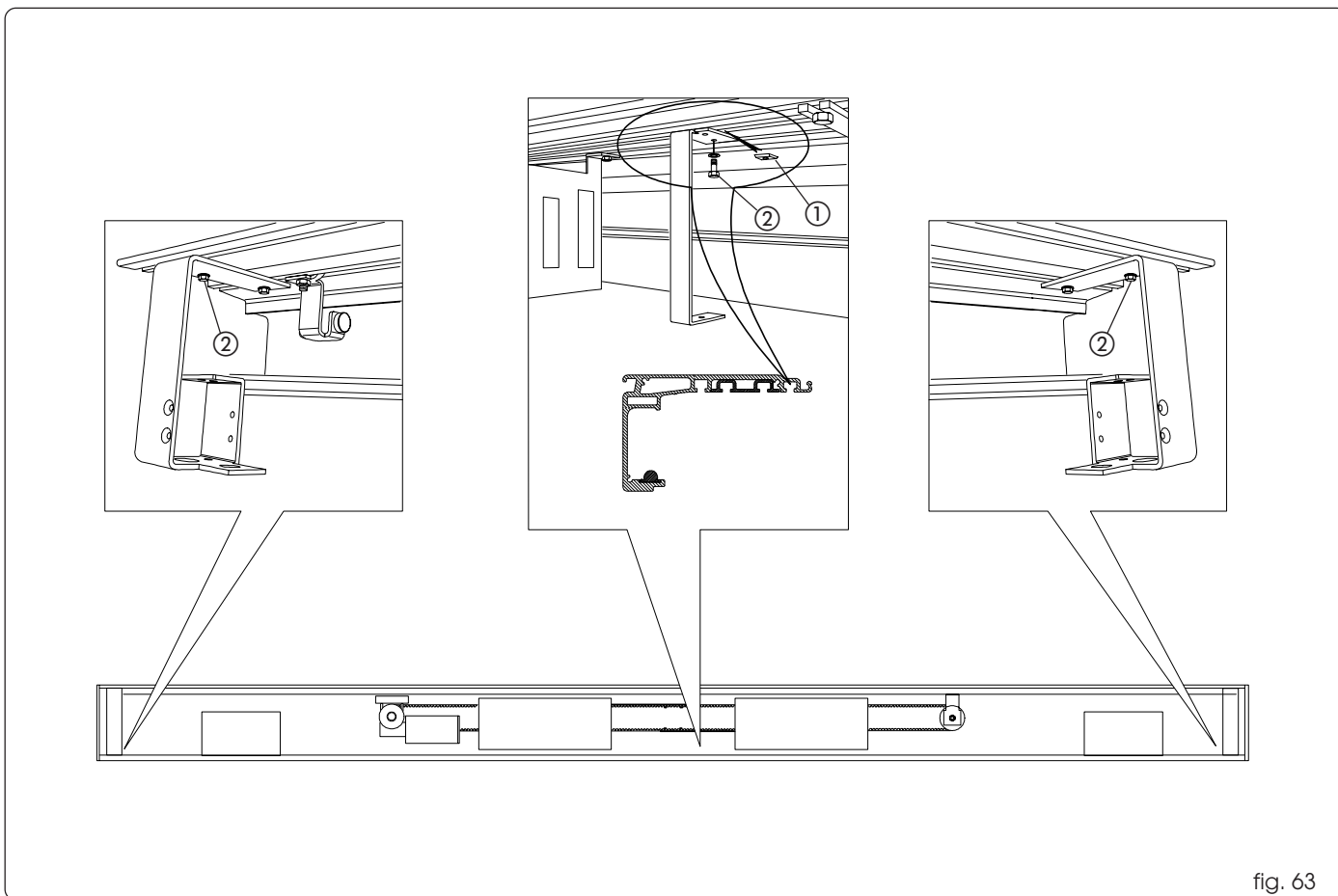


fig. 63

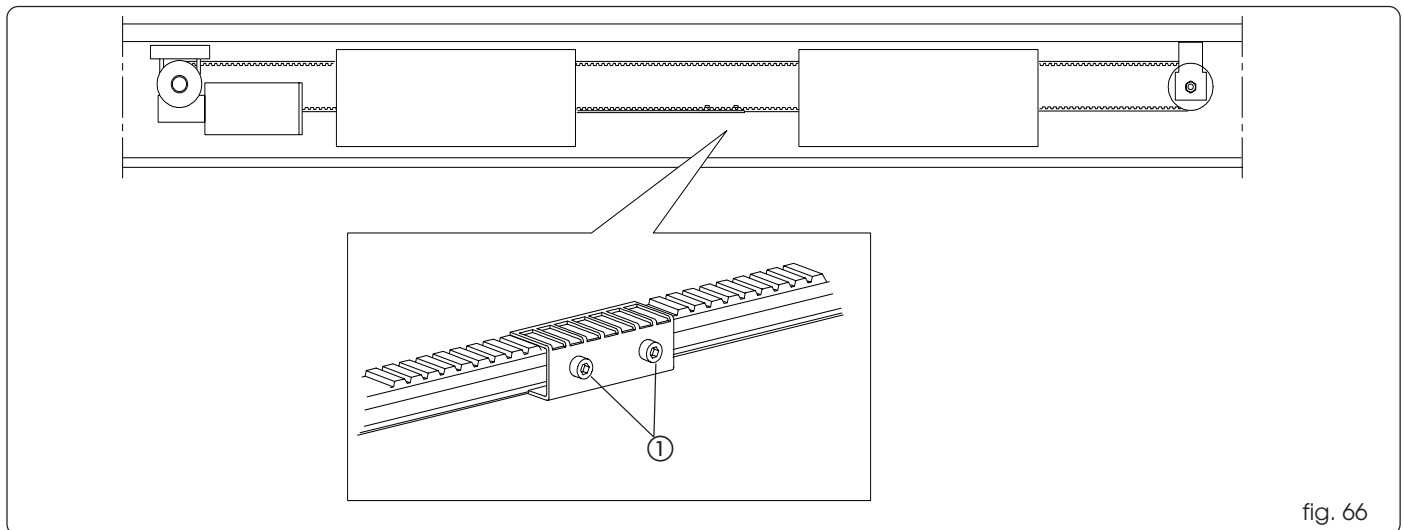
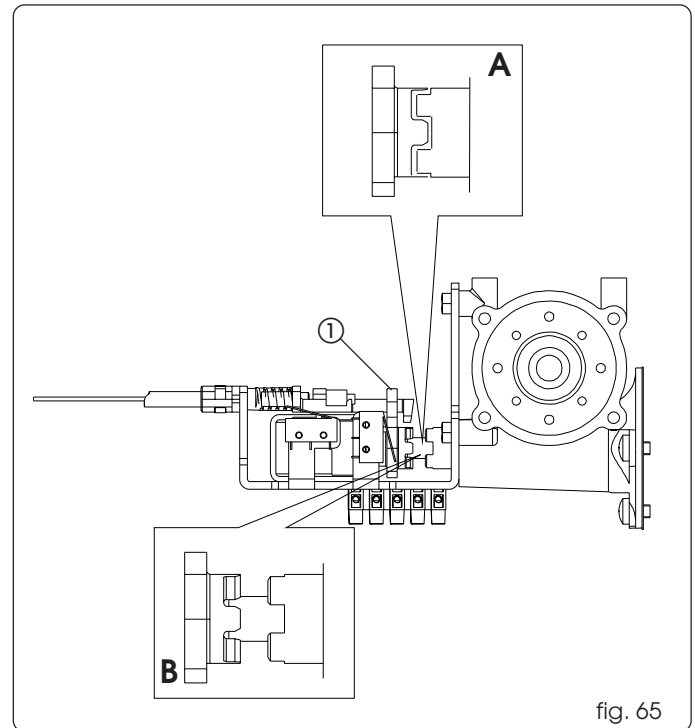
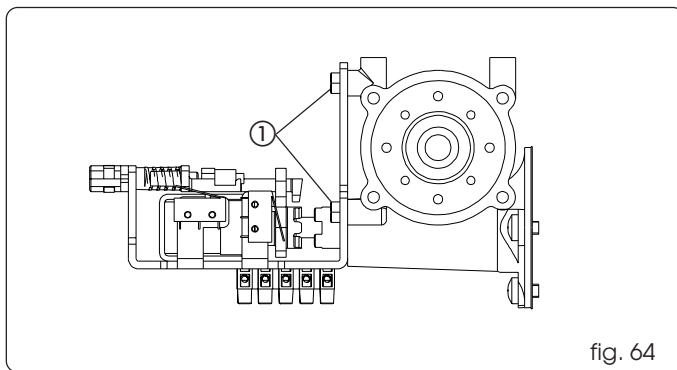
## 23. INSTALLING THE MOTOR LOCK DEVICE

Install the motor lock device, using the supplied bolts as shown in fig. 64 ref. ①.

### 23.1 Adjustment of motor lock device

Adjustment procedure for the motor lock device:

- Close the leaves.
- Manually push the lever (fig. 65 ref. ①) toward the motor shaft, checking correct coupling as shown in fig. 65 ref. A).
- Move the lever (fig. 65 ref. ①) vertically and check for any play between the motor shaft and motor lock coupling.



### 23.2 Installing the internal release knob

- Assemble the release knob on the side bracket as shown in fig. 67 and 68. Press the contact washer until it fits in with the release knob.
- Tighten the adjuster, with the relevant locknuts, on the internal part of the bracket (fig. 69 ref. ①).
- Take about 20 cm. of steel cable from the sheath.
- Insert the steel cable inside the adjuster; then route it inside the washer and the release knob.
- Secure the steel cable with the clamp and tighten the screw (fig. 69 ref. ②).
- Pull the cable to the contact point of the cable stop inside the knob.

If there is no play, proceed as follows:

- Loosen the two screws (fig. 66 ref. ①) which fasten the belt coupling to the drive rod (on both carriers in the case of double leaves).
- Gently move the belt coupling in horizontal direction, until the lever moves freely; tighten the screws on the belt coupling.

- Take the black sheath of the cable in contact with the adjuster (fig. 69 ref. ③).
- Fully screw the adjuster on the bracket.
- Pull the knob and turn it through 90° making sure it does not return to its original position.
- Route the cable with sheath inside the cable raceways, until you reach the motor lock device, avoiding excessively tight sheath curves.
- Take the cable with sheath to detail ② in figure 70, and cut excess sheath.

- Route the cable (fig.70 ref. ①) inside detail ②, taking the sheath to its contact point (fig. 70 ref. ⑦).
- Insert the cable in the clamp (fig. 70 ref. ③)
- Pull detail ⑧ to its contact point (compressing the springs) and fasten the screw of the clamp ③, thus securing the steel cable. Cut the excess portion of the steel cable.
- Make sure that the motor lock device coupling is free of the motor shaft coupling (fig. 65 ref. B).
- If any adjustments are necessary, use the adjuster of the knob bracket.
- Release the knob, turning it through 90°, and check if the release functions. Also check if the door opening microswitch (fig. 70 ref. ④) is activated by pulling the knob.

For electrical connection of the motor lock device, consult the section on the control board in these instructions.

If it is necessary to install the external lock device, use key-operated push-buttons T21IF or T21EF. Fit the release cable on the motor lock device, using the appropriate seat (fig. 70 ref. ⑤).

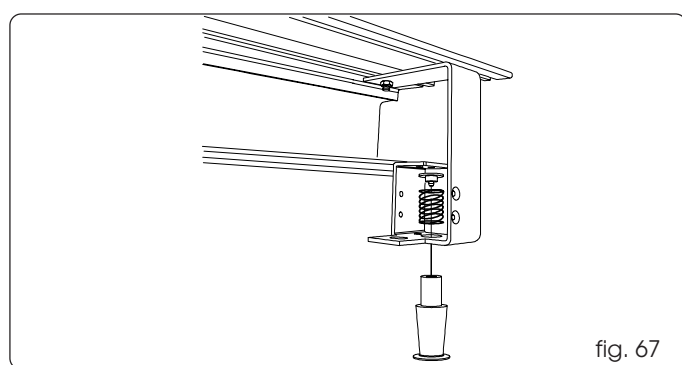


fig. 67

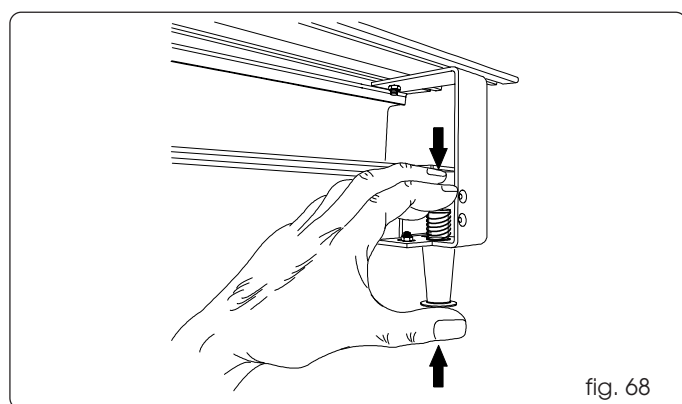


fig. 68

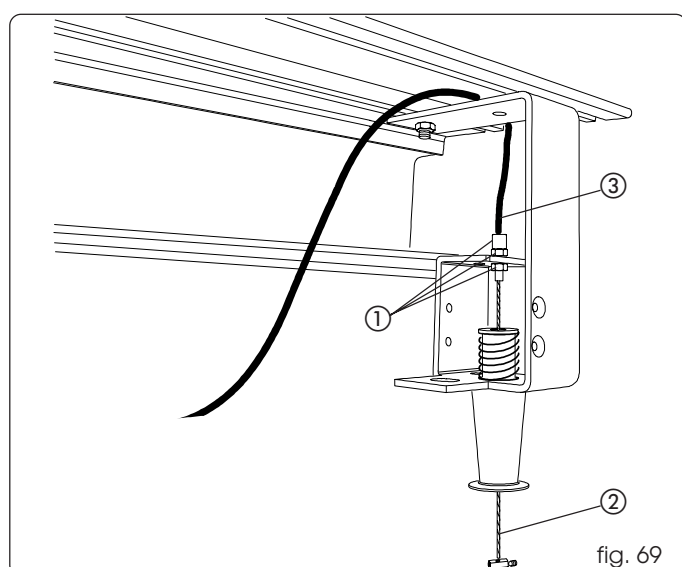


fig. 69

### 23.3 Microswitch for surveillance of motor lock device

The surveillance microswitch is an accessory that verifies if the motor lock device is operating correctly. In case of an error, it signals it via the SD-Keeper.

Install the surveillance microswitch as shown in fig. 70 ref. ⑥. For electrical connection and programming, refer to the section on the control board in these instructions.

### 23.4 Surveillance sensor

The surveillance sensor is an accessory to which a relay can be connected, in order to have a door closed /door not closed state (e.g. for connection to an alarm system). Sensor installation procedure:

Single leaf automated system

- Screw the magnet on the carriage nearest to the closing contact point, using the threaded hole on the carriage (fig.71 ref. ①).
- Assemble the sensor to the bracket (fig. 71 ref. ②), using the plastic nuts. Inset two threaded plates on the seats of the support profile, and install the bracket, using the screws (fig. 71 ref. ③). Make sure that the sensor is in line with the magnet when the leaf is closed.

Double leaf automated system

- Screw the magnet on the innermost carriage of the right leaf, using the threaded hole on the carriage (fig.71 ref. ①).
- Install in the same way as for the single leaf. Make sure that the sensor is in line with the magnet when the leaves are closed.

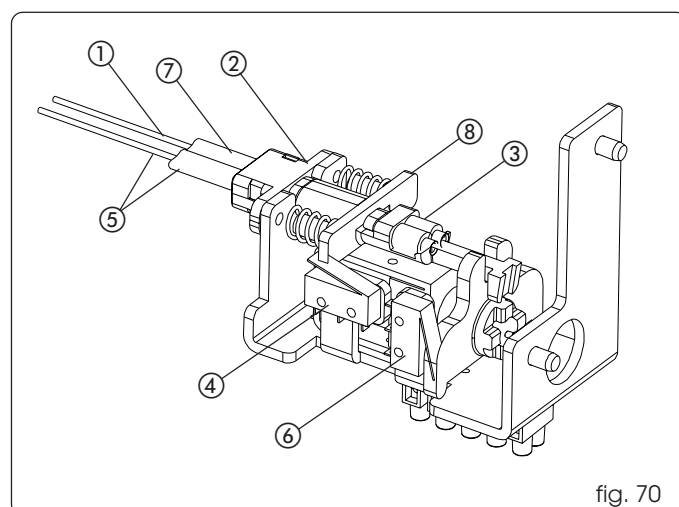


fig. 70

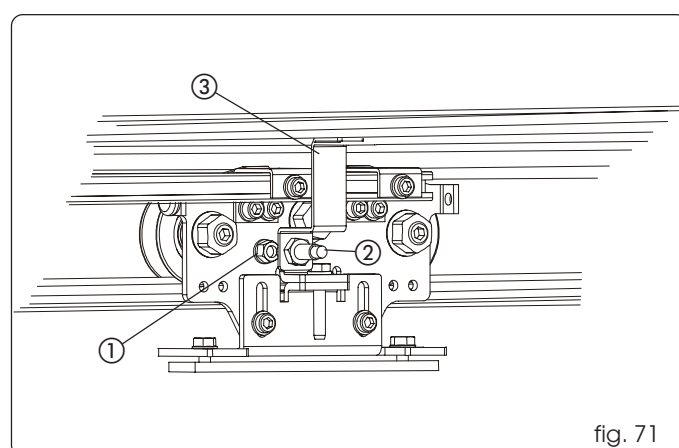


fig. 71

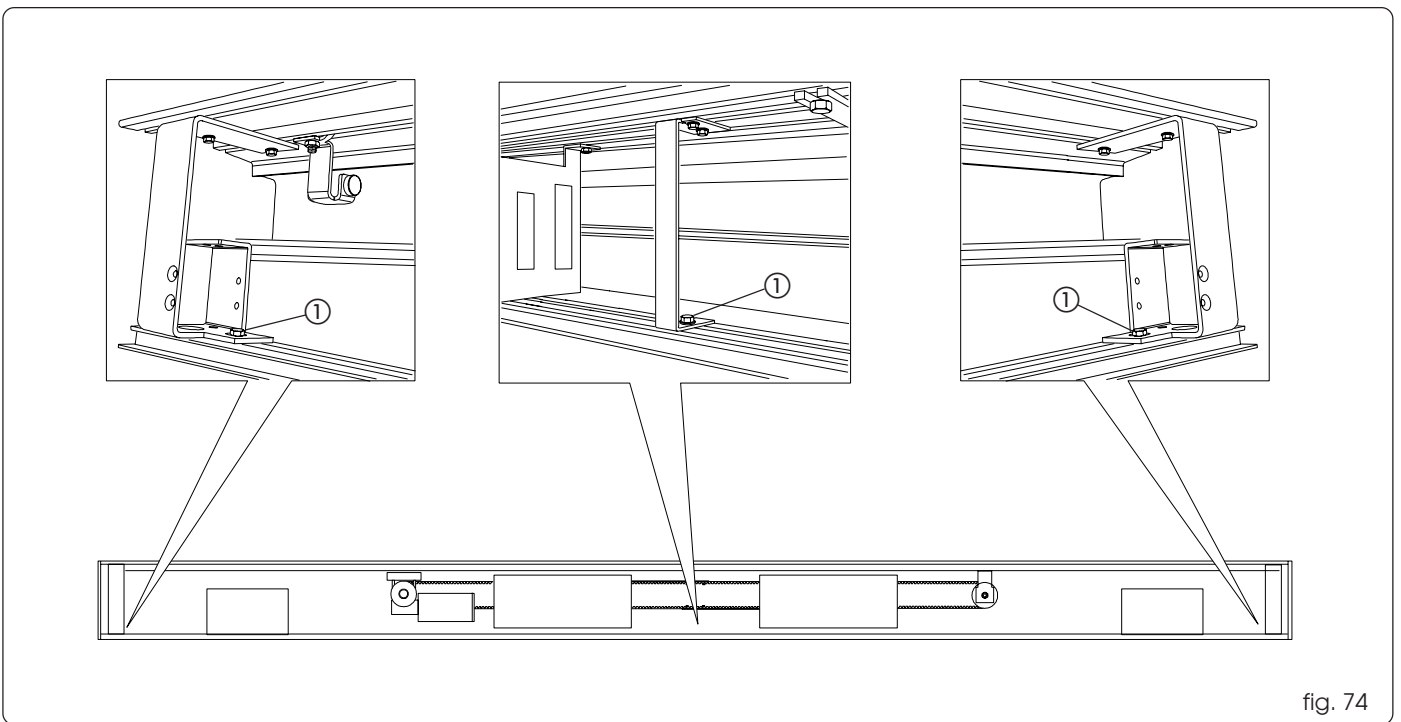
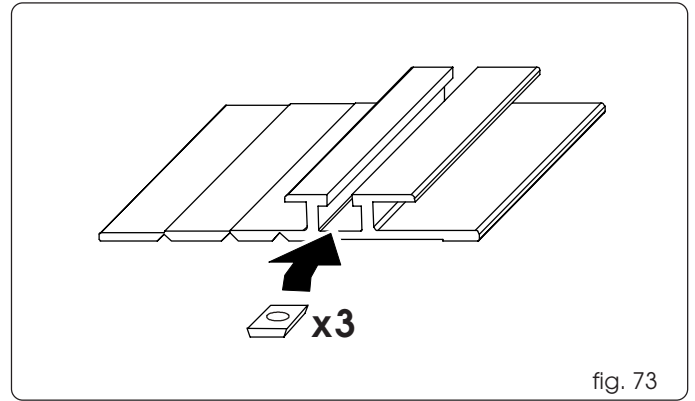
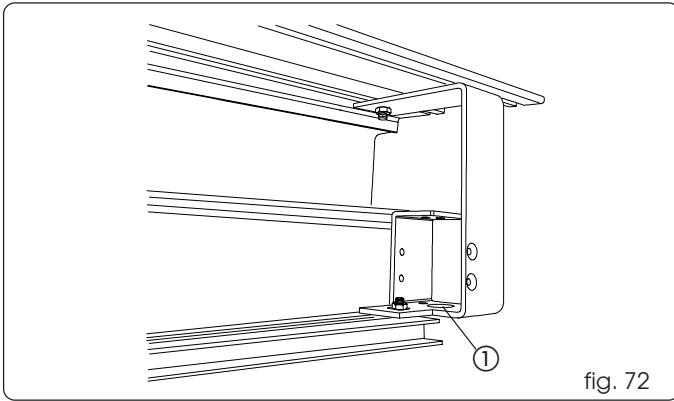
**24. INSTALLING THE LOWER HOUSING**

Cut the lower housing profile to the same length as the support profile.

If the motor lock device is present, cut the lower housing profile shorter than the support profile, to enable installing the release knob (fig. 72 ref. ①).

Fit three plates in the seat of the housing profile (fig.73).

Secure the housing profile on the three brackets using the screws as shown in fig.74, ref. ①.



**25. CLOSURE HOUSING AND HOUSING SECURING ACCESSORIES**

Cut the closure housing to the same length as the support profile.  
Fit the anti-vibration spacers (fig. 75 ref. ①).  
Position the closure housing on the spacers; pull it as shown in fig. 75 and turn it upward to obtain correct attachment.

In the seat of the housing, fit the square plates and M5 stay screws, in the quantity and order shown in figure 76.

The square plates and the M5 stay screws are specified for the following accessories:

Fig.76 ref. A: 1 for parachute cable and 1 for housing support articulated lever.

Fig.76 ref. B: 1 for housing securing plate.

Fig.76 ref. C: 2 for housing securing plate.

Fig.76 ref. D: 1 for parachute cable and 1 for housing support articulated lever.

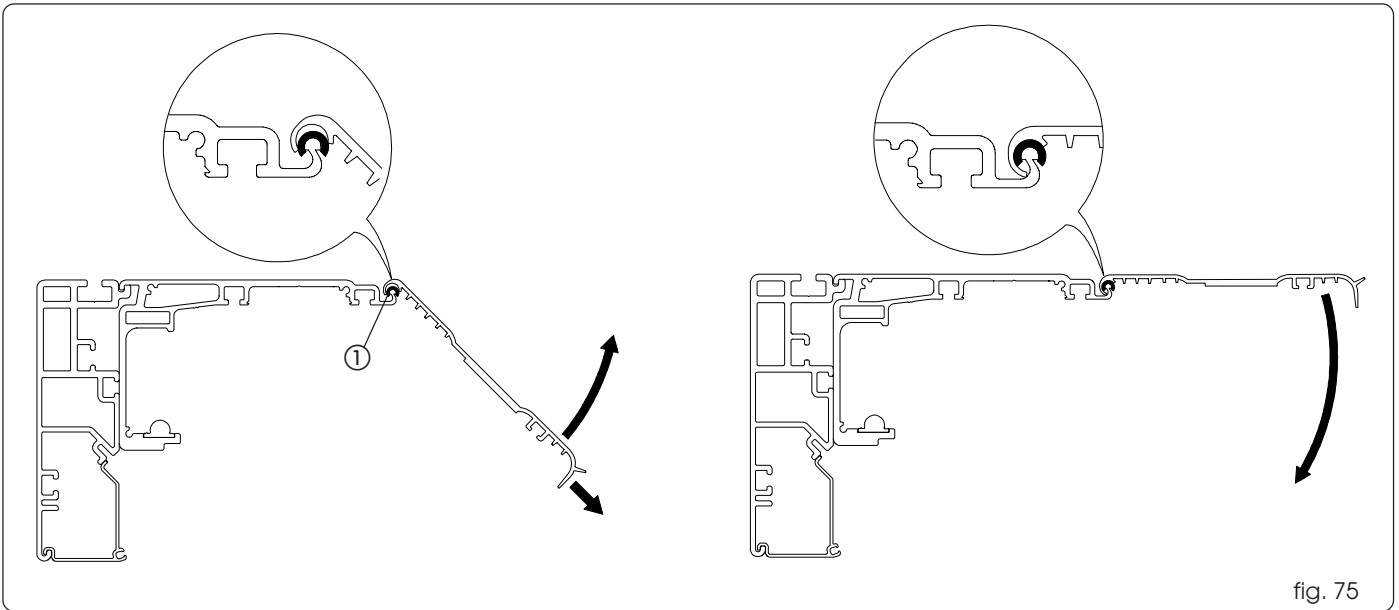


fig. 75

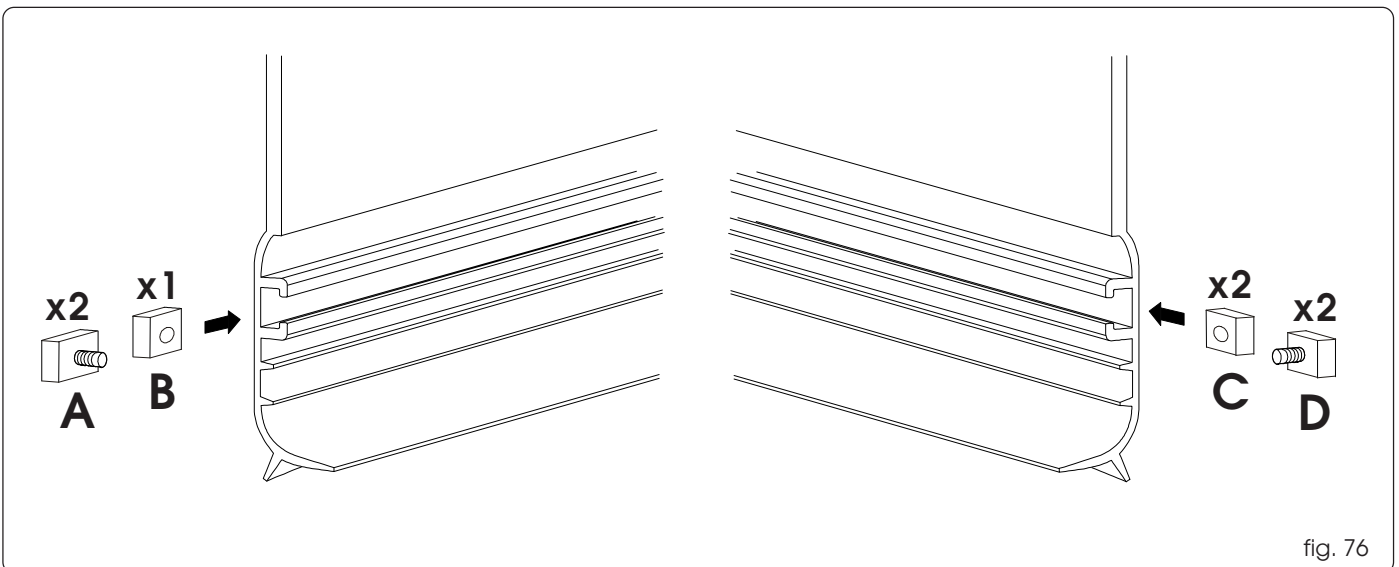


fig. 76

**25.1 Installing the housing fixing brackets**

Fit the three plates in the seat of the lower housing profile as shown in fig. 77.

Install the three housing fixing brackets, using the supplied screws (fig. 78 ref. ①).

If using the standard housing securing accessories, apply Velcro on the fixing brackets (fig. 78 ref. ②).

If using the lx housing securing accessories, apply the magnets on the fixing brackets (fig. 78 ref. ③).

Position the metal securing plates (fig. 79 ref. ①) on the housing in line with the brackets, using the three plates fitted previously (fig. 76 refs. B and C) and the supplied screws. Only if using the standard housing securing accessories, apply Velcro on the metal plates (fig. 79 ref. ②).

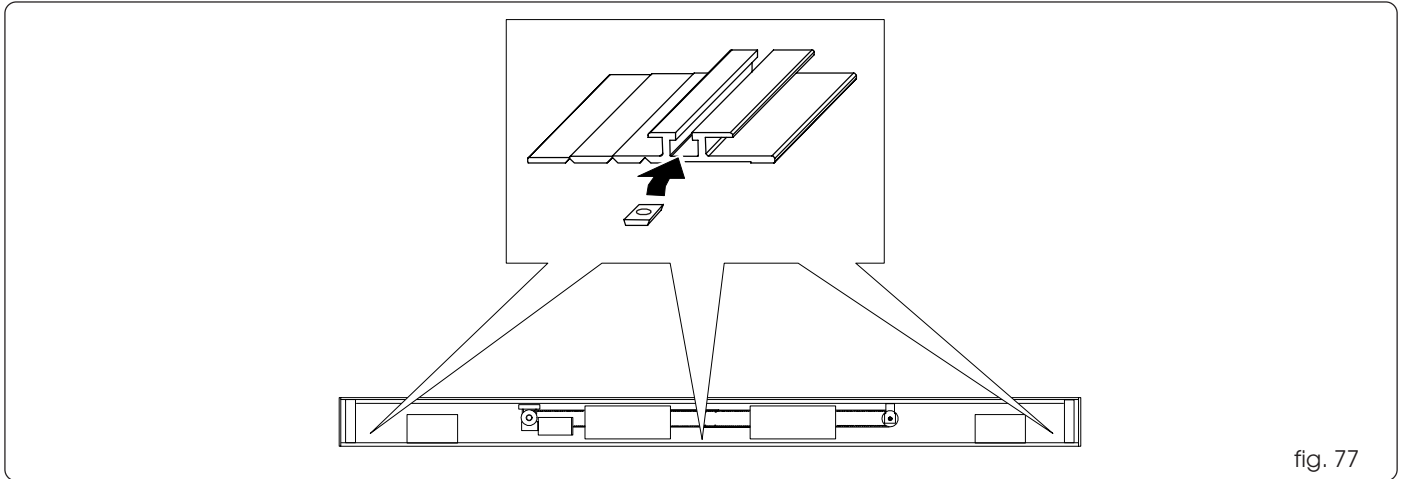


fig. 77

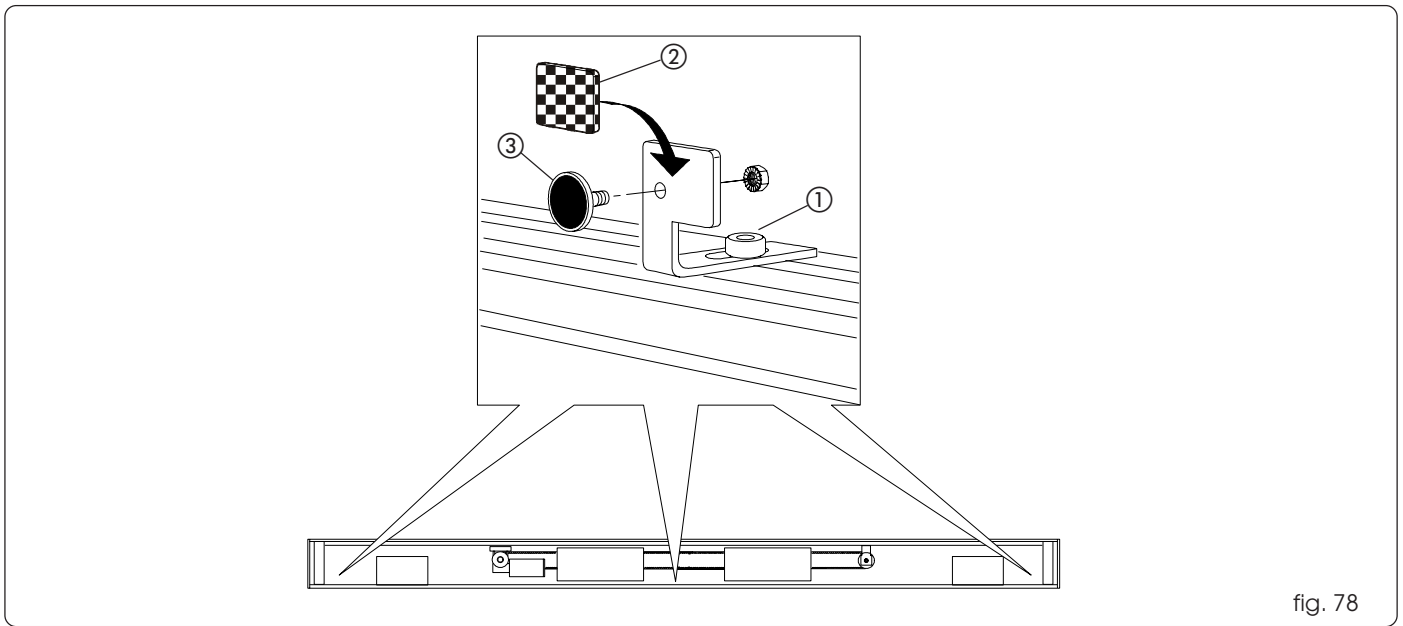


fig. 78

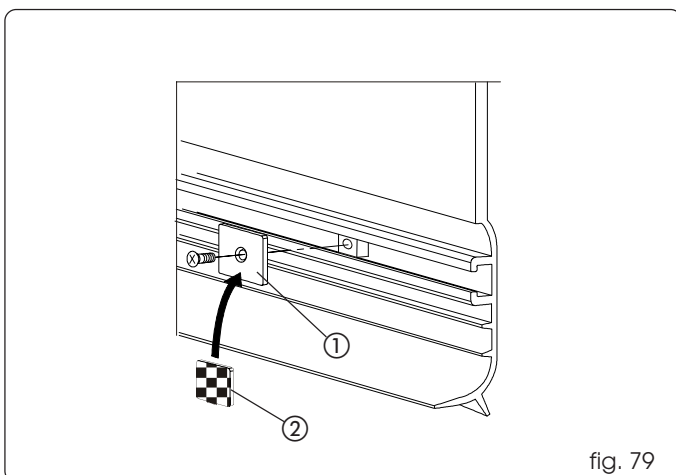


fig. 79

### 25.2 Installing the parachute cables

Using an eyelet, secure the parachute cables to the M5 stay screws previously fitted (fig. 76 refs. A and D) on the closure housing. Secure the eyelets with the supplied nut (fig. 80 ref. ①). Insert two plates in the seat of the support profile (fig. 80 ref. ②) and secure the second eyelet with the supplied screw (fig. 80 ref. ③).

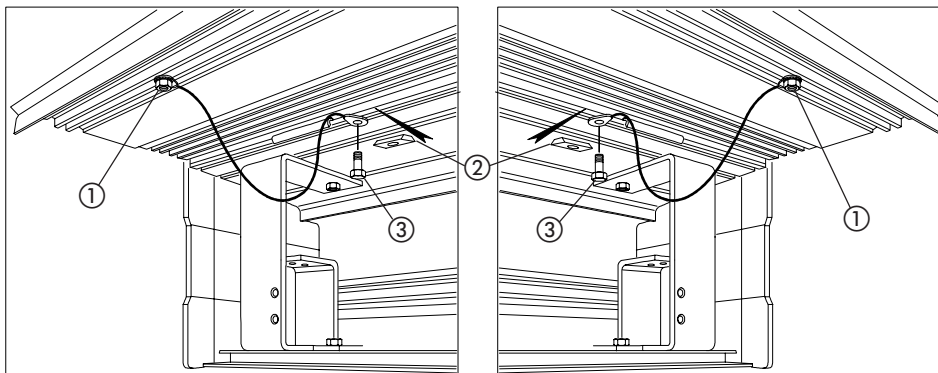


fig. 80

### 25.3 Installing the housing support levers

Secure the two housing support levers to the outermost housing support brackets, using the 4 supplied screws (fig. 81 ref. ①). Position the two support levers on the two outermost M5 stay screws fitted previously (fig. 76 refs. A and D) and secure them with the supplied nuts (fig. 81 ref. ②).

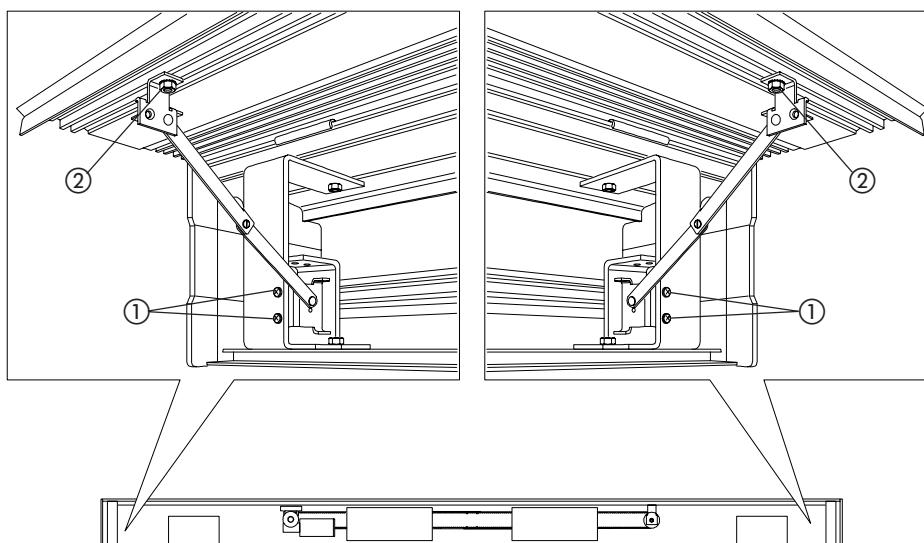


fig. 81



**26. INSTALLING THE EMERGENCY BATTERY KIT**

Install the two batteries inside the transformer enclosure, using the support plate (fig. 82 ref. ①) and the supplied screws (fig. 82 ref. ②). Wire the two batteries in series, using the supplied connection cables (fig. 82 ref. ③) and fit the cable connector to the battery board (fig. 82 ref. ④).

For electrical connection of the battery board and for programming, refer to the section on the control board in these instructions.

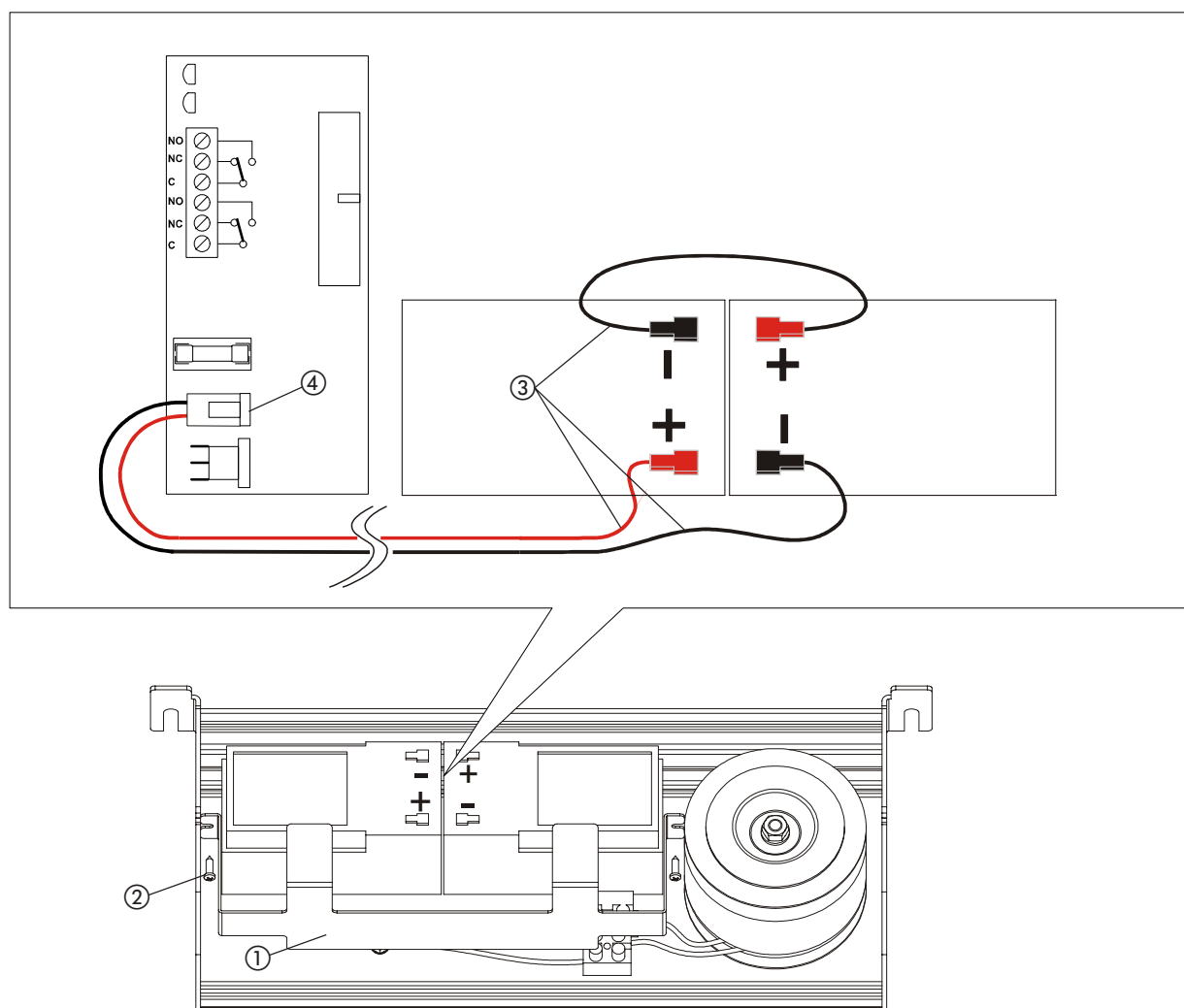
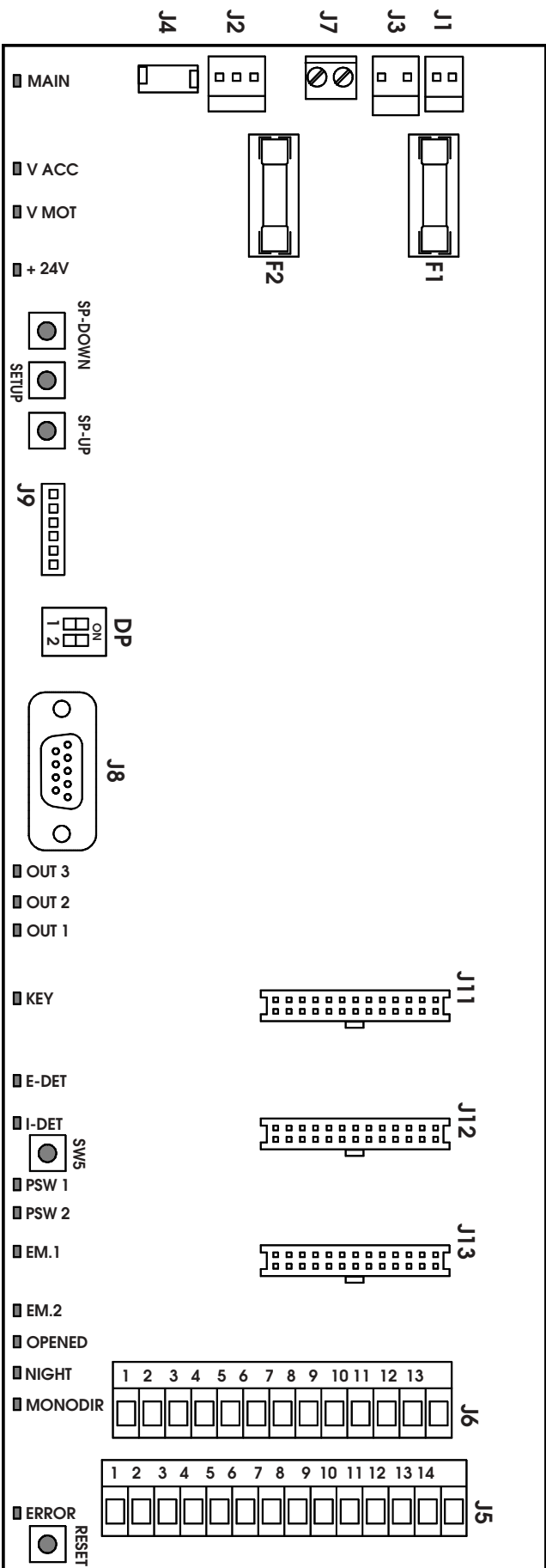


fig. 82

# SDM CONTROL BOARD



LED	ON	OFF
<b>MAIN</b>	220V ~ mains ON	220V ~ mains OFF
<b>V ACC</b>	Vacc ON	Vacc OFF
<b>V MOT</b>	motor powered up	motor powered down
<b>+ 24V</b>	+ 24V ON	+ 24V OFF
<b>OUT 3</b>	OUT 3 contact closed	OUT 3 contact open
<b>OUT 2</b>	OUT 2 contact closed	OUT 2 contact open
<b>OU 1</b>	OUT 1 contact closed	OUT 1 contact open
<b>KEY</b>	KEY input closed	KEY input open
<b>E-DET</b>	E-DET input closed	E-DET input open
<b>I-DET</b>	I-DET input closed	I-DET input open
<b>PSW 1</b>	PSW 1 input closed	PSW 1 input open
<b>PSW 2</b>	PSW 2 input closed	PSW 2 input open
<b>EM.1</b>	EMERG.1 input closed	EMERG.1 input open
<b>EM.2</b>	EMERG.2 input closed	EMERG.2 input open
<b>OPENED</b>	OPENED input closed	OPENED input open
<b>NIGHT</b>	NIGHT input closed	NIGHT input open
<b>MONODIR</b>	ONE WAY input closed	ONE WAY input open
<b>ERROR</b>		see table

LED ERROR STATUS	MEANING
<b>OFF</b>	normal operating status
<b>ON</b>	Alarms n° 18,20,22,24: execute SETUP
<b>SLOW FLASHING</b>	current alarm signalling
<b>FAST FLASHING</b>	setup/reset in progress or during setup with the "kit elastic" activated

PUSH-BUTTON	MEANING
<b>RESET</b>	executes reset
<b>SWS</b>	pulse on "Internal sensor" input (I-DET)
<b>SETUP</b>	executes automatic setup
<b>SP-DOWN</b>	reduces closing speed
<b>SP-UP</b>	increases closing speed

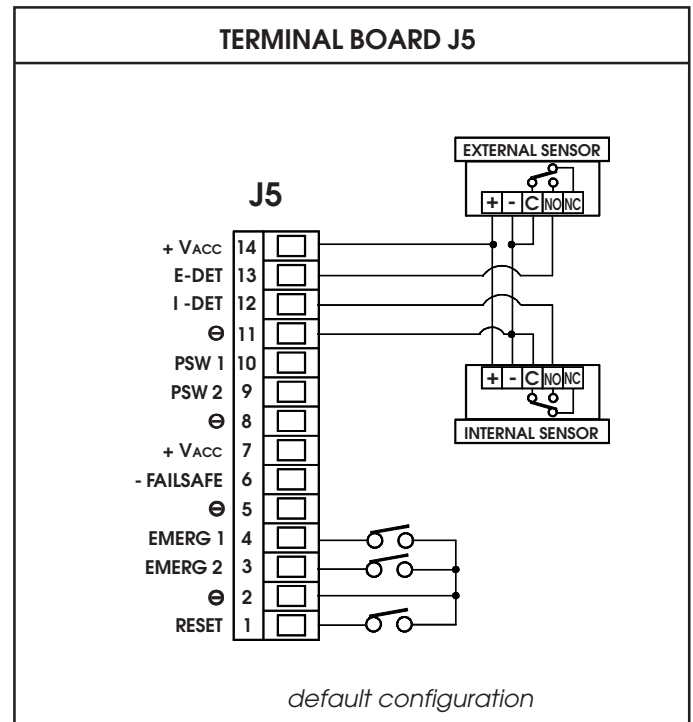
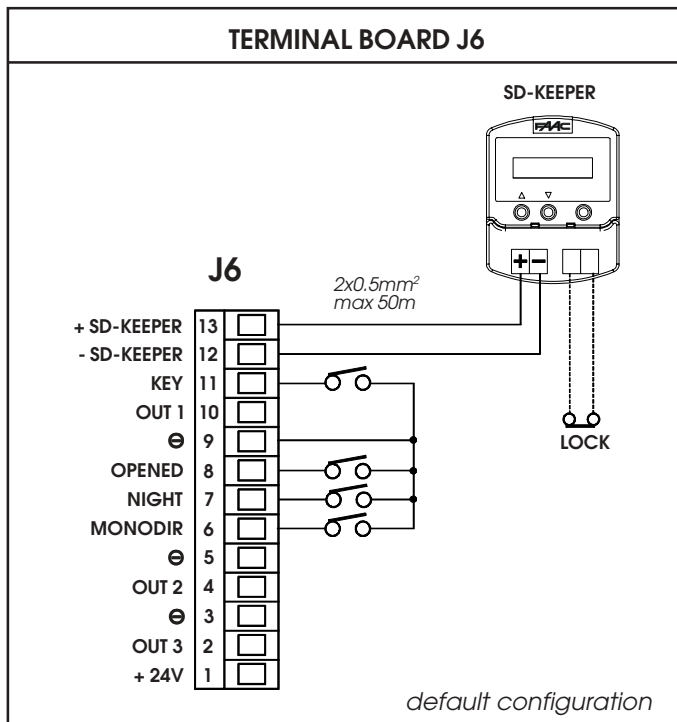
CONNECTOR	MEANING
<b>J1</b>	transformer 40V secondary winding
<b>J2</b>	transformer 24V secondary winding
<b>J3</b>	motor quick-fit connector
<b>J4</b>	flat cable connector for encoder
<b>J5</b>	terminal board
<b>J6</b>	terminal board
<b>J7</b>	NOT AUS emergency stop (NC contact)
<b>J8</b>	RS232 serial port for PC connection
<b>J11-J12-J13</b>	connectors for additional control boards

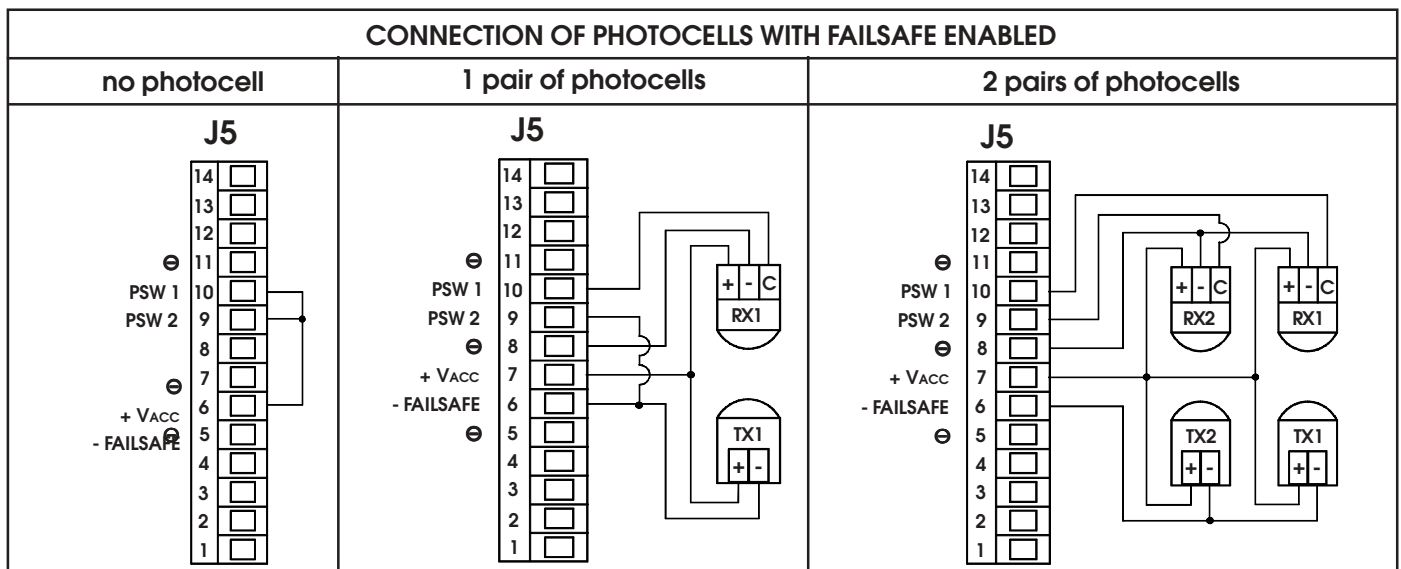
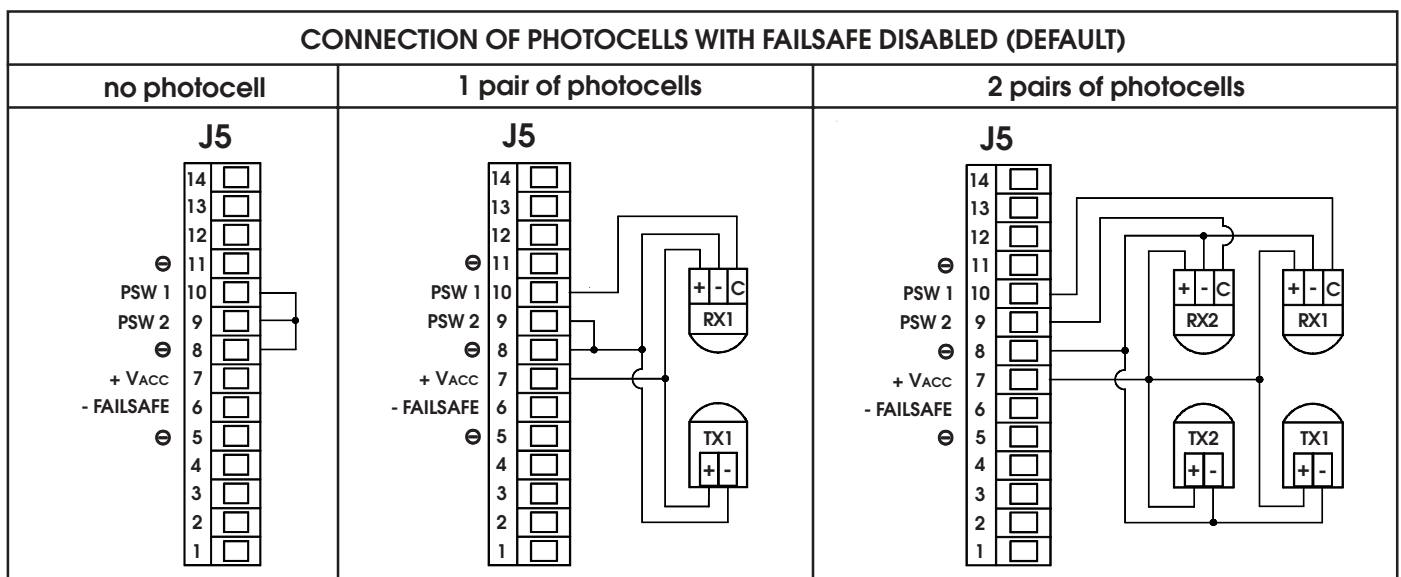
FUSE	MEANING
<b>F1</b>	fuse 5x20 T 6.3A/250V (motor protection)
<b>F2</b>	fuse 5x20 T 1A/250V (24V protection)

DP	ON	OFF
<b>Dip n°1</b>	motor rotation direction (see table)	
<b>Dip n°2</b>	RS232 port set for S/W update	RS232 port set for PC connection



**NOTE:** Photocell inputs in connection diagrams are considered NC contacts (default configuration).



**DESCRIPTION OF TERMINALS**

**Terminal board J5**

- 1 RESET (NO contact)**  
Contact closure executes the Reset procedure.  
Reset is the function for restoring normal operating conditions after some types of alarm.
- 2-5-8-11 - (COM)**  
Negative for powering accessories (+24V and +Vacc) and common for contacts
- 3 EMERG2 (NO default contact)**  
Emergency command:  
in the standard setting, activation causes the door to open (the door stays open for as long as the command is activated).  
By using SD-Keeper+Display, you can program the operation of this input differently (see programming instructions).
- 4 EMERG1 (NO default contact)**  
Emergency command:  
in the standard setting, activation causes the door to stop (the door stays in stop status for as long as the command is activated).  
By using SD-Keeper+Display, you can program the operation of this input differently (see programming instructions).
- 6 -FAILSAFE**  
Negative for powering photocell projectors when the FAILSAFE function is activated (programmable from SD-Keeper+Display).
- 7-14 +Vacc**  
+24V power supply for accessories.  
The total maximum load of the accessories connected to the "+Vacc" and "+24V" inputs, must not exceed 700mA.  
➔ While operating on the battery in the absence of mains power, when the battery charge drops to a critical level, Vacc is interrupted for energy saving purposes.
- 9 PSW2 (NC default contact)**  
Input of 2nd safety photocell  
By using SD-Keeper+Display, you can :  
- program the NO contact,  
- cut out this input if there are no photocells or if there is only one photocell (which must therefore be connected to the PSW1 input).  
For the effects the tripped photocell has on this input, see PSW1.
- 10 PSW1 (NC default contact)**  
Input of 1st safety photocell  
By using SD-Keeper+Display, you can :  
- program the NO contact,  
- cut out this input if there are no photocells.  
Following intervention by the photocell connected to this input, the door behaves as follows:  
OPENING: no effect  
PAUSE: pause time re-counted  
CLOSING: reverses immediately
- 12 I-DET (NO default contact)**  
Internal sensor input.  
By using SD-Keeper+Display, you can program the NC contact.
- 13 E-DET (NO default contact)**  
External sensor input.  
By using SD-Keeper+Display, you can program the NC contact.

**Terminal board J6**

- 1 +24V**  
+24V power supply for accessories.  
The total maximum load of the accessories connected to the "+Vacc" and "+24V" inputs, must not exceed 700mA.
- 2 OUT 3 (default "door not close")**  
Open-collector (negative) output (100mA).  
In the standard setting, this output is active for as long as the door is not closed.  
By using SD-Keeper+Display, you can program the operation of this output differently (see programming instructions).
- 3-5-9 - (COM)**  
Negative for powering accessories (+24V and +Vacc) and common for contacts.
- 4 OUT 2 (default : "night courtesy light")**  
Open-collector (negative) output (100mA).  
In the standard setting, this output is activated for 60 sec. when the door is commanded to open in NIGHT mode.  
By using SD-Keeper+Display, you can program the operation of this output differently (see programming instructions).
- 6 MONODIR (NO contact)**  
If the SD-Keeper is not installed, closing this contact activates the "ONE WAY" function.
- 7 NIGHT (NO contact)**  
If the SD-Keeper is not installed, closing this contact activates the "NIGHT" function.
- 8 OPENED (NO contact)**  
If the SD-Keeper is not installed, closing this contact activates the "DOOR OPEN" function.
- 10 OUT 1 ("gong" default)**  
Open-collector (negative) output (100mA).  
In the standard setting, this input is active, while the photocells are covered, for 1 sec. at 0.5 sec. intervals until disengaged.  
By using SD-Keeper+Display, you can program the operation of this output differently (see programming instructions).
- 11 KEY (NO default contact)**  
Key command:  
activation causes the door to open and then re-close after night pause time elapses.  
By using SD-Keeper+Display, you can program the NC contact.
- 12-13 SD-KEEPER**  
SD-Keeper connection terminals (cable: 2x0.5mm<sup>2</sup> max 50m).  
➔ Observe indicated polarity.

**Terminal board J7**

- NOT AUS (NC contact)**  
Contact for the emergency push-button (NC) which cuts power to the motor.  
➔ If not used, jumper the terminals with a 0.5mm<sup>2</sup> cable.

**MOTOR ROTATION DIRECTION**

Set dip-switch n°1 as follows:

DOOR MODEL	DIP-SWITCH N°1
2 LEAVES	ON
1 LEAF WITH LH OPENING	ON
1 LEAF WITH RH OPENING	OFF

- ➔ To find out the closing direction, look at the automation cross-piece from the front and:  
- for a double leaf, the LH leaf is connected to the lower section of the belt.  
- for a single leaf, the leaf is always connected to the lower section of the belt.

## START-UP

The first time the door is powered, the SDM control board automatically executes a setup procedure and loads all the standard configuration settings.

## STANDARD CONFIGURATION

The standard configuration is as follows:

- "AUTOMATIC"- "TOTAL"- "TWO-WAY"; operating function;
- maximum OPENING SPEED (level 10);
- CLOSING SPEED level 3;
- EMERG1 emergency input configured as a "no memory" NO contact, i.e. when activated, it causes the movement to stop and the door remains open in stop status for as long as the contact is maintained;
- EMERG2 emergency input configured as a "no memory" NO contact, i.e. when activated, it causes opening at normal speed and the door remains open for as long as the contact is maintained;
- two photocells with NC contact are supplied, to be connected to the PSW1 and PSW2 contacts (if one or both are not installed, jumper connections must be made according to the diagram);
- FAILSAFE disabled;
- ANTI-INTRUDER function active;
- PAUSE time 2 sec.;
- NIGHT PAUSE time 8 sec.;
- KIT LOCK enabled in standard mode (locks in NIGHT mode only);
- SURVEILLANCE KIT on disabled lock;
- BATTERY KIT not enabled;
- OUT1 output with GONG function;
- OUT2 output with LIGHT function;
- OUT3 output with DOOR NOT CLOSE function;
- PARTIAL OPENING set at 50%;
- no anticipated DECELERATION during opening and closing;
- Low DECELERATION SPEED;
- Standard OBSTACLE DETECTION: if an obstacle is recognised at opening or closing, the door reverses and continuously attempts to move until the obstacle is removed, without generating an alarm signal;
- two SENSORS with NO contact are provided (one internal, the other external);
- NO type KEY contact;
- INTERLOCK function not activated;
- ANTI-PANIC KIT WITH ELASTIC not enabled;
- TIMER not activated.

### IMPORTANT:

The standard configuration, particularly for the set speed levels, does not guarantee compliance with standards prEN12650-1 and prEN12650-2, specified for doors distributed and installed in the European Union.

## PHOTOCELLS

The following configurations are possible:

### -NO PHOTOCCELL

- In the standard configuration, PSW1 and PSW2 inputs must be jumper connected to the FAILSAFE terminal;
- for the SD-Keeper+Display, as an alternative, the PSW1 and PSW2 inputs can be disabled, thus avoiding the jumpers.

### -1 PHOTOCCELL

- In the standard configuration, the photocell must be connected to the PSW1 input, while PSW2 must be jumper connected to the FAILSAFE terminal;
- for the SD-Keeper+Display, as an alternative, one photocell only can be set (connecting it to the PSW1 input as usual), thus disabling the PSW2 input and avoiding

the jumper (see the SD-Keeper programming instructions).

### -2 PHOTOCCELLS

- connect the photocells to the PSW1 and PSW2 inputs.

Programming with the SD-Keeper+Display makes it possible to (see programming instructions):

- select the number of connected photocells (2,1,0);
- select the type of contact (NO/NC) of the PSW1 and PSW2 inputs;
- enable/disable the failsafe.

## SETUP

The following parameters are checked and adjusted during the Setup cycle:

- measurement of masses and friction, setting of speeds, plus optimal acceleration and deceleration;
- acquisition of open and closed door positions;
- self-setting of the anti-crushing system at opening/closing according to selected speeds.

During Setup, the ERROR LED flashes rapidly and goes off at the end of the process if correctly executed.

Any faults are signalled by the ERROR LED and by the diagnostics via SD-Keeper.

Detection of serious faults (e.g. insufficient or excessive leaf travel, too much friction, motor malfunctions) causes the ERROR LED to light up steadily.

Subsequent variations of closing speed (by the push-buttons on the control board or SD-Keeper+Display) are signalled by a slowly flashing ERROR LED and by ALARM 1; in this case, a new Setup is necessary to ensure that the electronic anti-crushing device operates correctly.

To activate a new Setup procedure, press the SETUP push-button on the control board; Setup can also be started by a combination of push-buttons on SD-Keeper (see relevant instructions).

The following are the situations in which, if required, the Setup cycle is not executed, and the door stays in shut-down state, generating an alarm signal (slowly flashing ERROR LED and ALARM 15 on SD-Keeper):

- door powered by battery;
- NIGHT operating function selected;
- MANUAL operating function selected;
- DOOR OPEN operating function selected;
- an emergency input is active;
- photocells engaged;
- no power supplied to motor.

When the cause has been eliminated, the Setup starts automatically.

## RESET

Whenever the automated system is powered, the door executes a Reset cycle during which:

- the door's travel limit positions are sought;
- any alarm signals are reset.

To activate a new Reset procedure, press the RESET push-button on the control board; Reset can also be started by a combination of push-buttons on SD-Keeper (see relevant instructions).

If a Reset is commanded while the door is in "Manual" mode, it is executed when this operating function is exited.

In the "Night" operating function, Reset consists of a slow closing movement, whereas it is normally a slow opening movement. During Reset, the ERROR LED flashes rapidly.

The reset procedure is necessary following the occurrence of certain conditions causing the door to stop operating:

- after an obstacle is detected on 3 successive occasions during closing/opening when the function STANDARD OBSTACLE DETECTION (ALARM 8 or ALARM 9) has been activated;
- after a "with memory"-configured emergency command has been activated (see programming instructions), (ALARM 6 or ALARM 7);
- if, when using a kit lock, an opening malfunction is detected on the kit.

### SPEED CHANGES

There are 10 speed adjustment levels for opening and closing. Level 10 refers to the maximum speed permitted by door weight, whereas level 1 refers to the corresponding minimum speed. CLOSING speed can be adjusted by two push-buttons on the SDM control board (SP-UP and SP-DOWN) if the SD-Keeper is NOT present.

By using SD-Keeper+Display, you can change both closing and opening speed.

Whenever closing speed is changed, the ERROR LED flashes slowly and the SD-Keeper shows ALARM 1 to report the need to execute a new Setup, in order to ensure the electronic anti-crushing device operates correctly.

### BEHAVIOUR UNDER DIFFERENT OPERATING FUNCTIONS

OPERATING FUNCTION	DOOR STATUS	INTERNAL SENSOR (I-DET)	EXTERNAL SENSOR (E-DET)	KEY	EMERGENCY OPENING (EMERG 2) (2)	EMERGENCY CLOSING (2)
MANUAL	IN ANY POSITION	no effect	no effect	no effect	no effect	no effect
TOTALLY OPEN	OPEN	no effect	no effect	no effect	no effect	immediate closing
TOTAL AUTOMATIC TWO-WAY	OPEN	restarts pause time count	restarts pause time count	starts night pause time count	starts pause time count	immediate closing
	CLOSED	total opening and re-closing after pause time	total opening and re-closing after pause time	total opening and re-closing after night pause time	total opening	no effect
PARTIAL AUTOMATIC TWO-WAY	PARTIALLY OPEN	restarts pause time count	restarts pause time count	starts night pause time count	total opening	immediate closing
	CLOSED	partial opening and re-closing after pause time	partial opening and re-closing after pause time	partial opening and re-closing after night pause time	total opening	no effect
TOTAL AUTOMATIC ONE WAY	OPEN	restarts pause time count	<b>no effect</b>	<i>starts night pause time count</i>	starts pause time count	immediate closing
	CLOSED	total opening and re-closing after pause time	no effect	total opening and re-closing after night pause time	total opening	no effect
PARTIAL AUTOMATIC ONE WAY	PARTIALLY OPEN	restarts pause time count	no effect	starts night pause time count	total opening	immediate closing
	CLOSED	partial opening and re-closing after pause time	no effect	partial opening and re-closing after night pause time	total opening	no effect
TOTAL NIGHT	CLOSED	no effect	no effect	(1) total opening and re-closing after night pause time	total opening	no effect
PARTIAL NIGHT	CLOSED	no effect	no effect	(1) partial opening and re-closing after night pause time	total opening	no effect

(1) During standard operation with battery in the "Night" operating mode, opening is performed by activating the command key for 3 seconds.

(2) Emerg1 and Emerg 2 inputs can be programmed with SD-Keeper+Display to obtain:

- emergency opening;
- emergency closing;
- stop.

Furthermore, command activation can be programmed:

- with no memory (when the command is de-activated, the door resumes normal operation);
- with memory (when the command is de-activated, a Reset is necessary to restore normal operation).

This is the default configuration:

Emerg1 ----> Stop/no memory

A pulse (function not shown in the table) causes immediate stop followed by slow re-closing after pause time (night pause time if the Night operating function was set).

Emerg2 ----> Emergency opening/no memory;

A pulse causes opening followed by re-closing after pause time.

Emergency commands have priority over all others.



# SD-KEEPER PROGRAMMING UNIT

The SD-Keeper is used for selecting operational functions, and for controlling and programming sliding automatic doors. It is divided into two parts: a fixed part used for selecting the operating functions by means of push-buttons and relevant signalling LEDs (fig. 1 ref. A), and a pull-out part with LCD display to access complete programming (fig. 1 ref. B). The SD-Keeper display can be used as a temporary programming unit: after all programming and adjustments have been carried out, it can be fully removed because the settings remain stored on the SDM control board. When the display is removed, a cover is provided (fig. 1 ref. C).

SD-Keeper can be disabled by a combination of keys (see the special LOCK function) or by internally fitting a jumper by means of a switch (fig. 2 ref. LOCK).

## FITTING

Refer to fig. 2 for an exploded view of fitting. Let cable route through point A or B according to the cable position needs.

## CONNECTIONS

Connect SD-Keeper to the SDM control board with the following cable: 2x0.5mm<sup>2</sup> max 50m (fig. 2).

If a jumper is closed between two terminals as shown in fig. 2 (LOCK), all keys on the programmer are disabled.

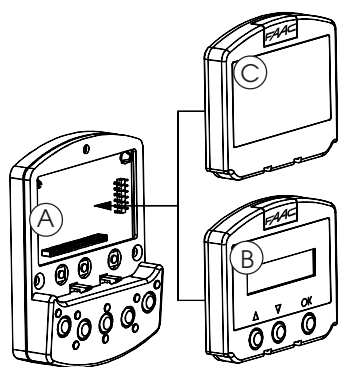


fig. 1

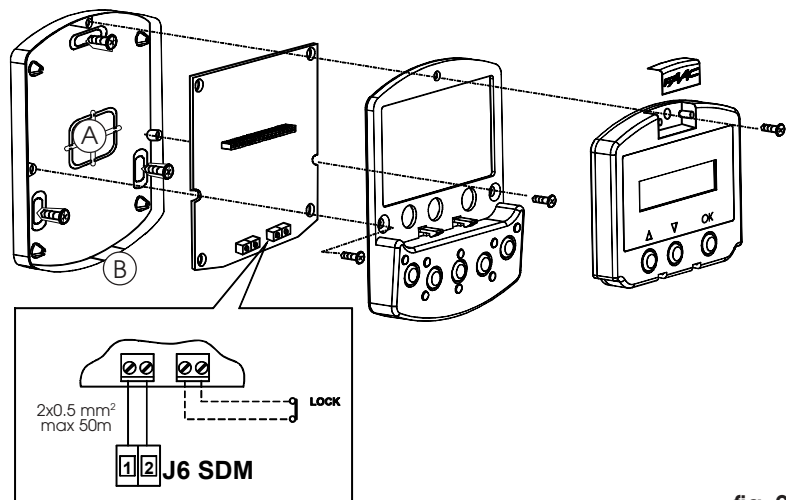


fig. 2

## DIAGNOSTICS

SD-Keeper (also without display) has a diagnostic function which, in case of an alarm, interrupts normal display of the function every 2 seconds in order to show the fault status for 1 second by a combination of flashing LEDs. Consult fig. 3 and table 1 to identify the type of alarm by interpreting the flashing LEDs.

➔ If there are several simultaneous faults, the first to be detected is shown.

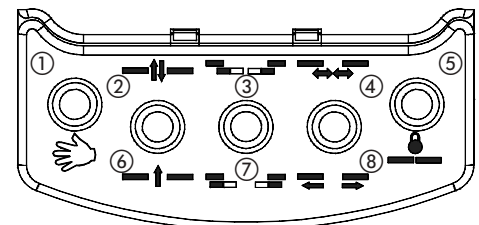


fig. 3

Tab.1 DIAGNOSTICS		Led							
DESCRIPTION	MEANING	①	②	③	④	⑤	⑥	⑦	⑧
ENERGY SAV.	Operating on low battery consumption	○	●	○	○	○	○	○	○
1 SPEED CHANGES	Speed changed, new setup required	○	○	○	○	○	○	○	●
2 BAT. OPERATION	Door operating on battery	○	○	●	○	○	○	○	○
3 FORCED OPEN	Door forced opening in progress.	○	○	●	○	○	○	○	○
4 FLAT BATTERY	Battery discharged: emergency movement not guaranteed	○	○	○	●	○	○	○	○
6 EMERG 2 ON	Emergency 2 input active	○	○	●	●	○	○	○	○
7 EMERG 1 ON	Emergency 1 input active	○	○	●	●	○	○	○	○
8 OBST. IN OPEN.	Opening obstacle detected 3 successive times; Reset necessary to restore operation.	○	○	○	○	○	○	○	●
9 OBST. IN CLOS.	Closing obstacle detected 3 successive times; Reset necessary to restore operation	○	○	○	○	○	○	○	●
10	Lock locked in closed position	○	○	●	○	○	○	○	○
11	Lock locked in open position (with surveillance kit only)	○	○	●	○	○	○	○	○
12	Incorrect power supply to motor (VMOT absent)	○	○	○	●	○	○	○	○
13	Photocell 2 faulty (PSW2 input)	○	○	○	○	○	○	○	○
14	Photocell 1 faulty (PSW1 input)	○	○	○	○	○	○	○	○
15	Setup not possible	○	○	○	○	○	○	○	○
18	Initialisation process not possible on motor: leaf stroke too long	○	○	○	○	○	○	○	○
20	Initialisation process not possible on motor: insufficient leaf stroke	○	○	○	○	○	○	○	○
22	Initialisation process not possible on motor: too much friction or leaf too heavy	○	○	○	○	○	○	○	○
24	Motor failure	○	○	○	○	○	○	○	○
25	SDM control board faulty	○	○	○	○	○	○	○	○

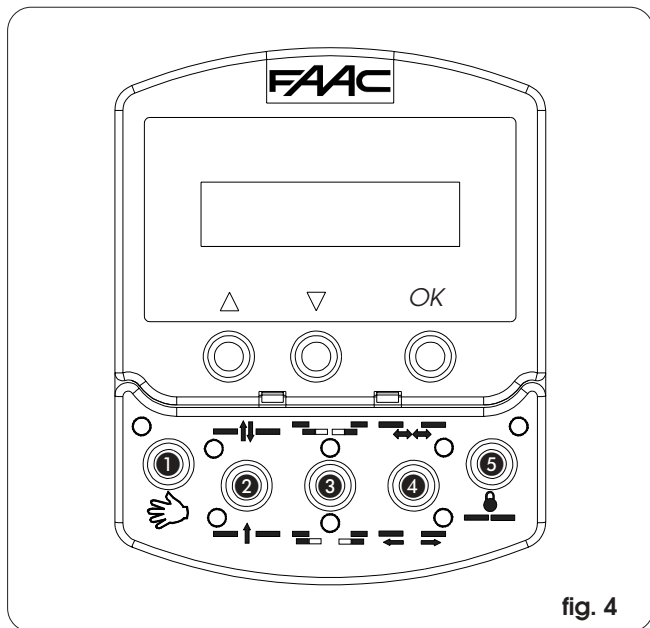


fig. 4

**OPERATING FUNCTIONS**

Selection is performed by pressing the keys on the fixed part of the programmer - the function is indicated by the relevant LED lighting up.

Note: when the "Night" or "Manual" modes have been set, the relevant selection keys must be pressed to exit the modes.

**Manual**

The sliding leaves are free and can be activated manually.

**Two-way**

Pedestrian transit is possible in both directions; the inside and outside radars are enabled.

**One way**

Pedestrian transit is possible in one direction only; the external radar is disabled.

**Partial opening**

The door opens only partially (standard: 50%)  
Partial opening can be adjusted in range from 10% to 90% of total.

**Total opening**

The door opens completely.

**Automatic**

The door opens (partially or totally) and then re-closes after the set pause time (standard: 2 sec.).  
Adjusting range of pause time: 0 to 90 sec.

**Door open**

The door opens and stays open.

**Night**

The door closes and the lock (if present) is activated. The internal and external radars are disabled.  
The Key command causes the door to open and re-close after night pause time elapses (standard: 8 sec).  
Adjusting range of night pause time : 0 to 240 sec.  
To obtain partial opening in this mode, before selecting the "Night" function, activate the "Partial Opening" function .

①		MANUAL
②		TWO-WAY
		ONE WAY
③		PARTIAL OPENING
		TOTAL OPENING
④		AUTOMATIC
		DOOR OPEN
⑤		NIGHT

**SPECIAL FUNCTIONS**

**Setup**

Setup is the door initialisation function during which parameters are self-learned.

To activate, simultaneously press keys ① and ⑤ for 5 sec.

**Reset**

Reset is the function for restoring normal operating conditions after some types of alarm have been signalled.

To activate, simultaneously press keys ② and ③.

**Lock**

When active, the Lock function disables SD-Keeper.

To activate (and de-activate), simultaneously press keys ③ and ④ for 5 sec.

**BATTERY INSERTION/CHANGE**

To keep the clock inside SD-Keeper active even in the event of a power cut, a 3V model CR1216 lithium battery is provided.  
To insert or change the battery, find the compartment on the printed circuit (fig. 5) and observe the indicated polarity.

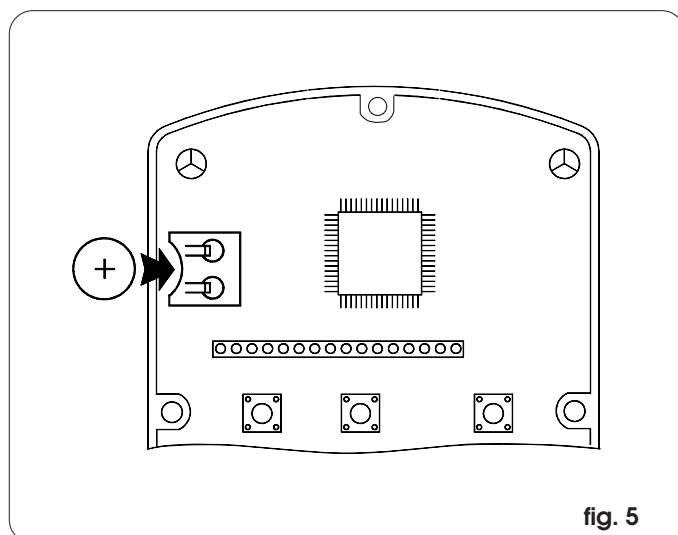
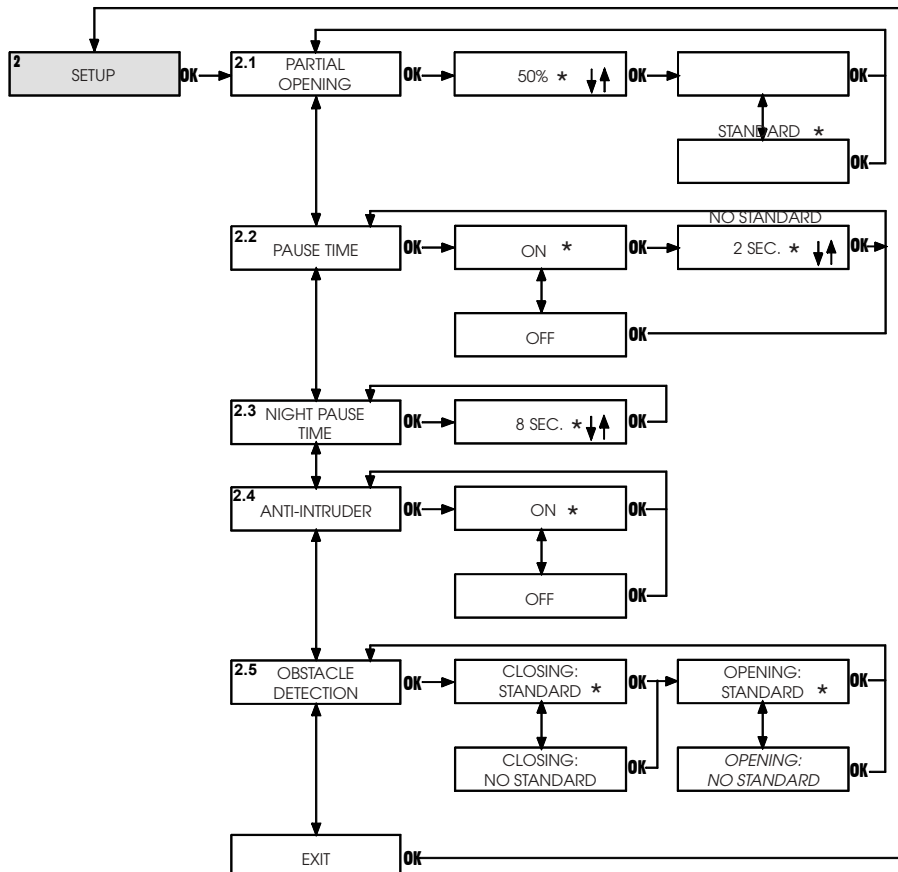
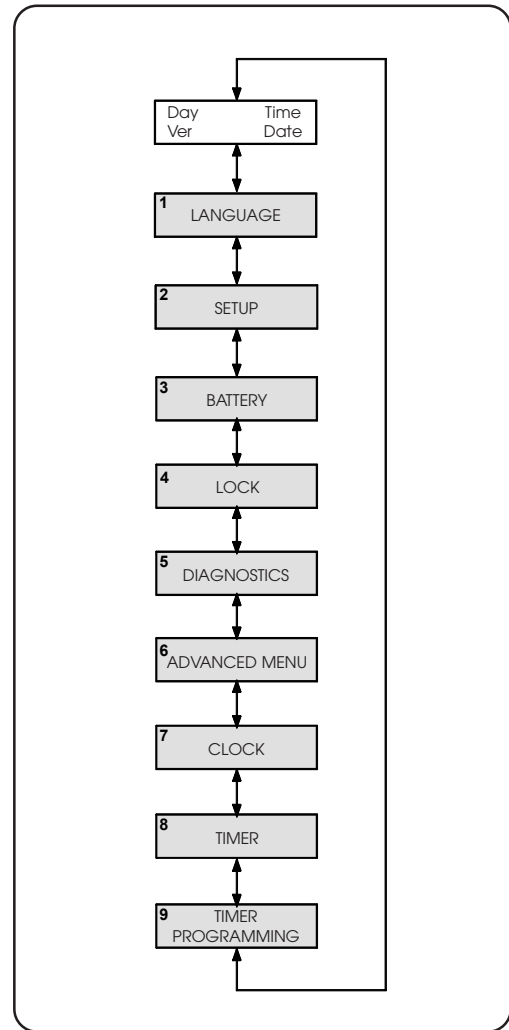
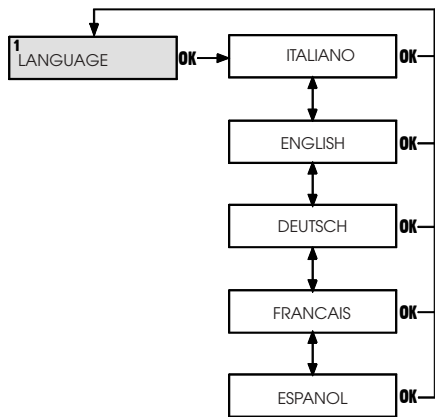
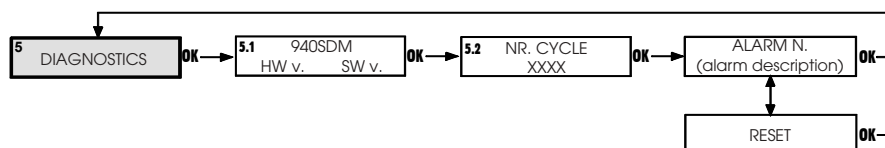
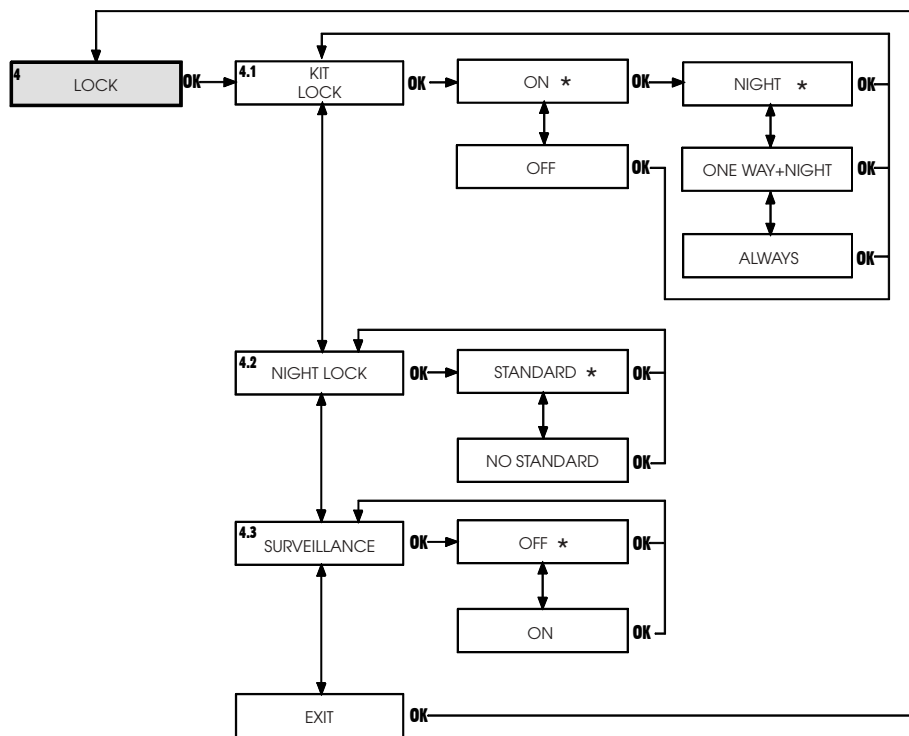
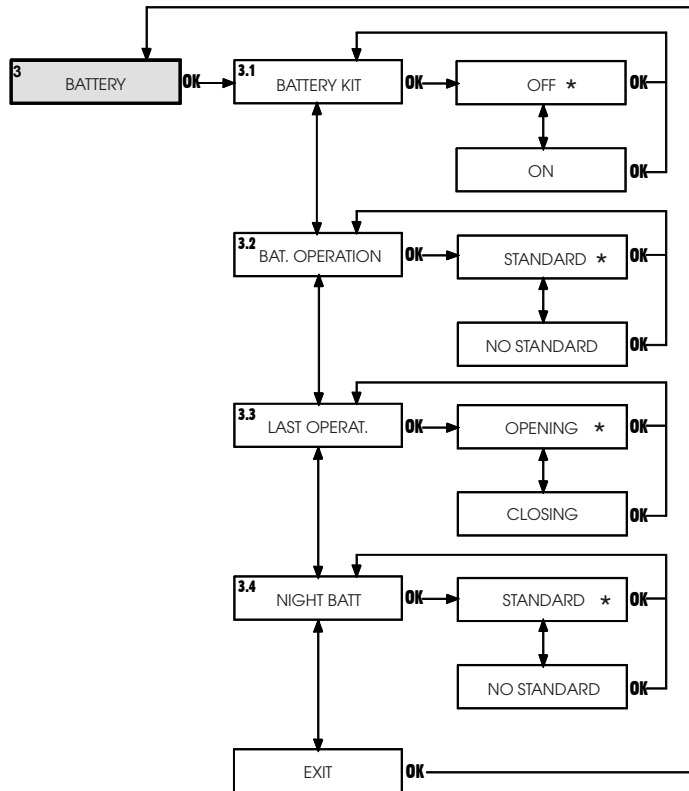


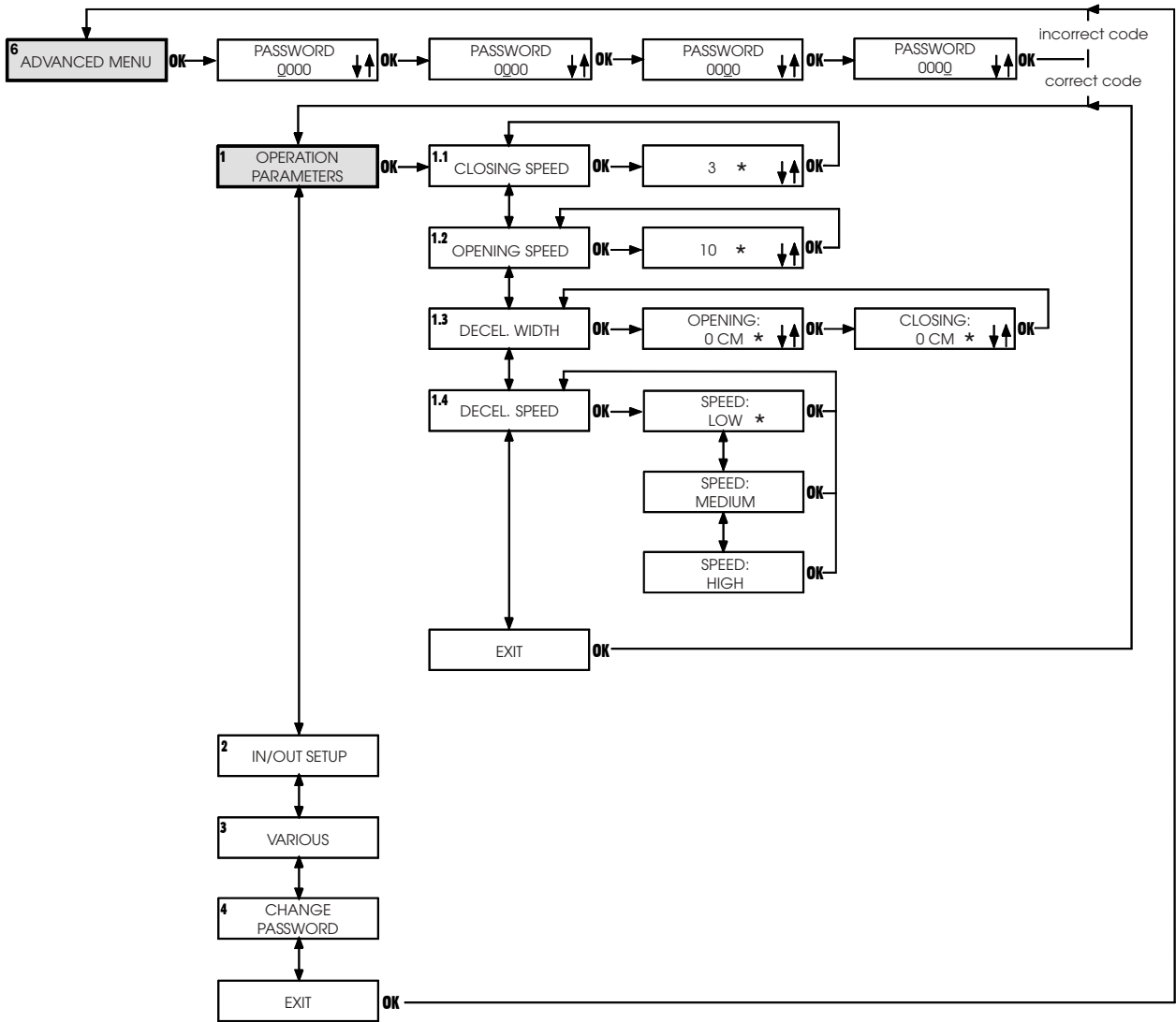
fig. 5

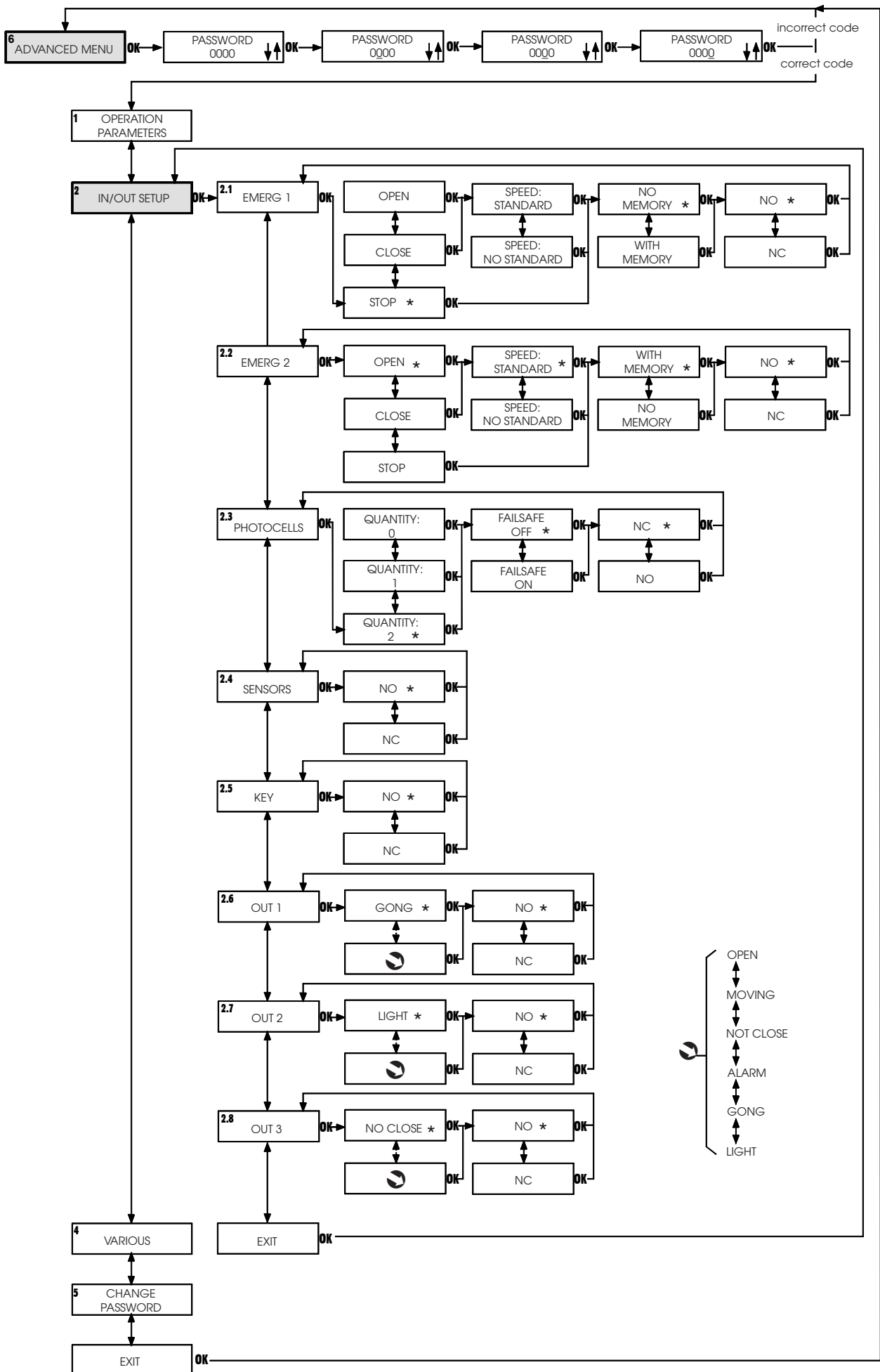


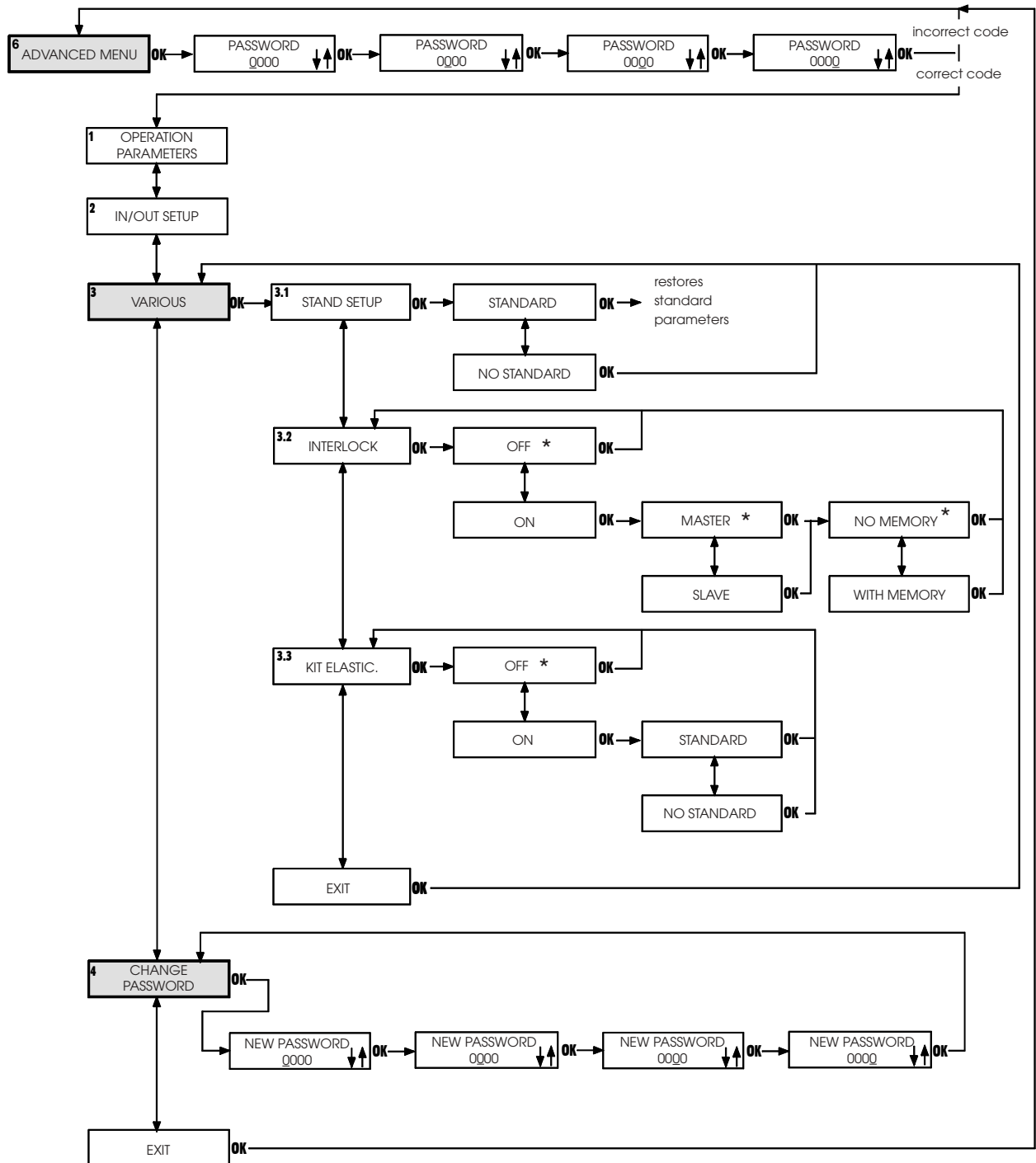
To access programming while the standard view is shown on the display, press any of keys  $\Delta$  or  $\nabla$  .  
 Programming is subdivided into main menus (see box) split into subjects.  
 After selecting the menu with keys  $\Delta$  or  $\nabla$ , to access it press OK.  
 Each menu is, in turn, subdivided into sub-menus at different parameter setting levels.  
 Use keys  $\Delta$  or  $\nabla$  to select (sub-menu or parameter) and confirm with the OK key.  
 An asterisk on the display indicates the currently active setting.  
 To exit programming, select the "exit" function at each level.  
 Otherwise, after about 2 minutes, the display automatically returns to standard view.

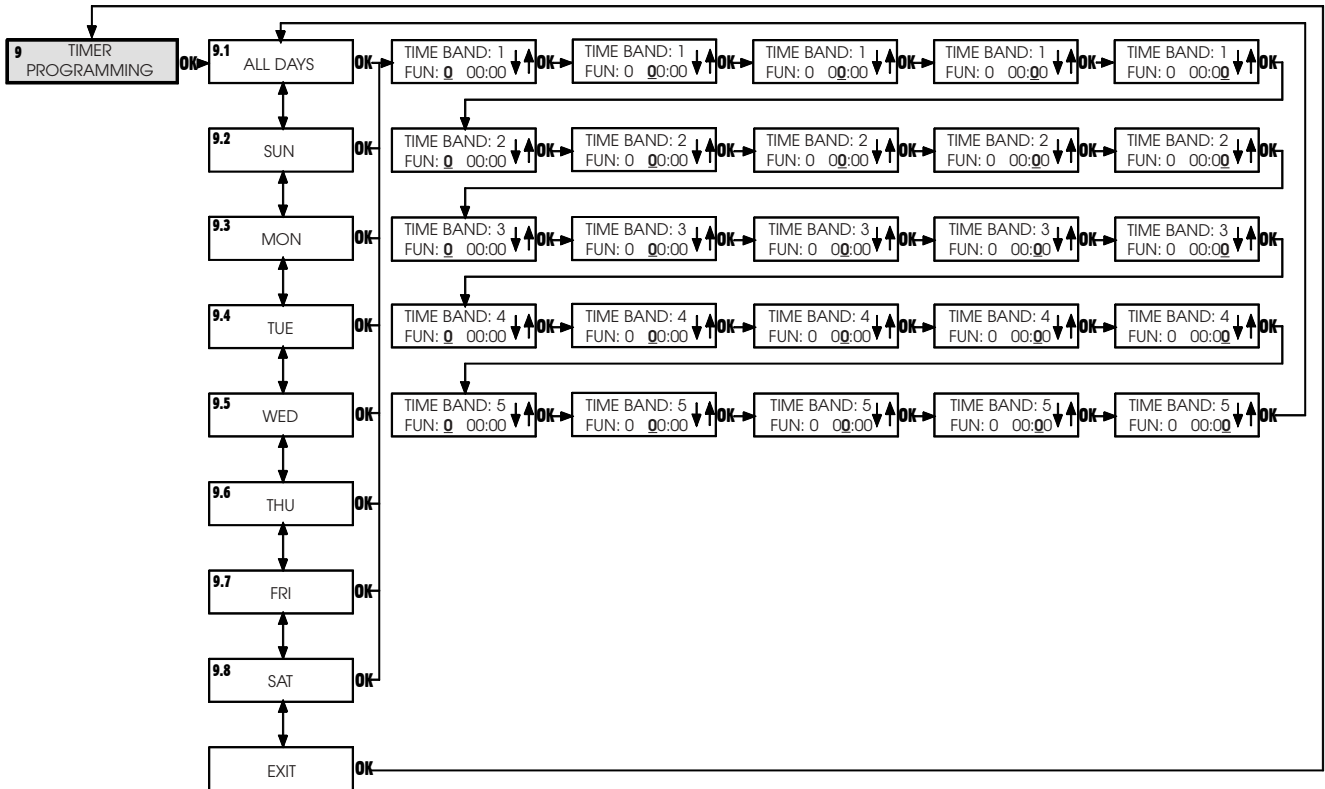
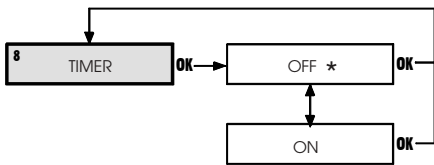
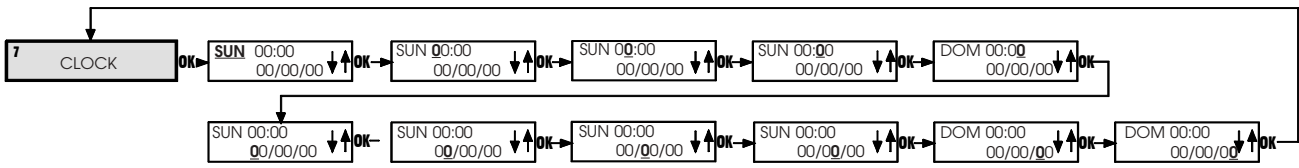












## 1 LANGUAGE

Selects the language for showing the messages on the display.

## 2 SETUP

### 2.1 Partial opening

#### Partial opening percentage

Selects the opening percentage (referred to total opening) performed in the "partial opening" operational function.

Standard value: 50%

Adjusting range: from 10% to 90%

#### Standard

When the "partial opening" operational function is selected, sensor activation always causes a partial opening command.

#### No Standard

When the "partial opening" operational function is selected, simultaneous activation of the internal and external sensors commands total opening.

### 2.2 Pause time

#### On

Pause time enabled in the "automatic" operational function.

#### Pause time value

If pause time is enabled, it can be set.

Standard value: 2 sec.

Adjusting range: from 0 to 90 sec.

#### Off

The leaves begin the closing stage as soon as the command elements (e.g. sensors) are inactive.

### 2.3 Night pause time

#### Night pause time value

Sets pause time in the "night" operational function.

Standard value: 3 sec.

Adjusting range: from 2 to 240 sec in steps of 2.

### 2.4 Anti intruder

#### On

In "Automatic" operating mode, the door opposes manual opening attempts by means of contrary force.

During the attempt to open, an alarm is signalled on the control board ("Error" LED flashing slowly) and on the SD-Keeper (alarm #3 - forced door).

#### Off

In "automatic" operating mode, when manual opening is attempted, the door opens automatically and re-closes after any pause time.

Note: In the "night" operational function, the anti-intruder is always active.

### 2.5 Obstacle detection

#### Closing: Standard

If an obstacle is detected during closing, the door re-opens.

During the next closing operation, closing is decelerated at the point where the obstacle had been detected, and continues at the slower speed until completed.

#### Closing: No Standard

If an obstacle is detected for 3 consecutive times at closing, the door stops in open position, and causes an alarm signal on the control board ("error" LED) and on SD-Keeper (alarm No.9 - obstacle during closing).

To restore operation, resetting is necessary either from the control board or from SD-Keeper.

#### Opening: Standard

If an obstacle is detected during opening, the door stops for one second and then re-closes.

During the next opening operation, opening is decelerated at the point where the obstacle had been detected, and continues at the slower speed until completed.

#### Opening: No Standard

If an obstacle is detected for 3 consecutive times at opening, the door stops in closed position, and causes an alarm signal on the control board ("error" LED) and on SD-Keeper (alarm No.8 - obstacle during opening).

To restore operation, resetting is necessary either from the control board or from SD-Keeper.

## 3 BATTERY

### 3.1 Battery kit

#### Off

Battery kit not installed.

#### On

Battery kit installed.

### 3.2 Bat. operation

#### Standard

If there is a power cut and the operating function is other than "Night", the door continues operating normally until the battery has sufficient charge reserve to perform at least one emergency movement.

The last movement operation to be executed is the one selected with function 3.3.

#### No Standard

In the event of a power cut, the door executes only the moving operation selected with function 3.3.

### 3.3 Last operat.

#### Opening

During battery operated functioning, the last moving operation is opening (see also function 3.2).

#### Closing

During battery operated functioning, the last moving operation is closing (see also function 3.2).

### 3.4 Night batt.

#### Standard

In the event of a power cut, and with the "Night" operating function selected, the control board operates immediately in low consumption mode; opening is possible only by activating emergency opening, or the key command for 3 seconds (Key input).

#### No Standard

In the event of a power cut and with the "Night" operating function selected, the door operates normally until the battery has sufficient charge reserve to perform at least one emergency movement.

## 4 LOCK

### 4.1 Kit lock

#### On

Lock installed.

#### Night

The lock locks the leaves only in the "night" operational function.

#### One way + night

The lock locks the leaves in the "night" and "one way" operational functions.

#### Always

The lock locks the leaves whenever they close, irrespective of the set operational function.

Note: During battery operated functioning, the lock locks the leaves only in "night" operational function, irrespective of the set selection.

#### Off

Lock not installed.

## 4.2 Night lock

### Standard

In the "night" operational function, with discharged batteries, the lock keeps the leaves locked.

### No Standard

In the "night" operational function, the lock is released before the batteries are fully discharged.

## 4.3 Surveillance

### Off

Surveillance device on lock not installed.

### On

Surveillance device on lock installed.

## 5 DIAGNOSTICS

### 5.1 SDM












The door's hardware model and the software of the SDM control board to which SD-Keeper is connected are shown.

### 5.2 Nr cycle

The count (non resettable) of the cycles effected by the door is shown.

### 5.3 Alarm n.

The number and description of the current alarm are shown.

No.	DESCRIPTION	MEANING
	ENERGY SAV.	Operating on low battery consumption
1	SPEED CHANGES	Speed changed, new setup required
2	BAT.OPERATION.	Door operating on battery
3	FORCED OPEN	Door forced opening in progress
4	FLAT BATTERY	Battery discharged: emergency movement not guaranteed
6	EMERG 2 ON	Emergency 2 input active
7	EMERG 1 ON	Emergency 1 input active
8	OBST. IN OPEN.	Opening obstacle detected 3 successive times; Reset necessary to restore operation
9	OBST. IN CLOS.	Closing obstacle detected 3 consecutive times; Reset necessary to restore operation
10		Lock locked in closed position
11		Lock locked in open position (with surveillance kit only)
12		Incorrect power supply to motor (VMOT absent)
13		Photocell 2 faulty (PSW2 input)
14		Photocell 1 faulty (PSW1 input)
15		Setup not possible
18		Initialisation process not possible on motor: leaf stroke too long
20		Initialisation process not possible on motor: insufficient leaf stroke
22		Initialisation process not possible on motor: too much friction
24		Motor malfunctions
25		SDM control board faulty

### Reset

Executes reset procedure.

## 6 ADVANCED MENU

### PASSWORD

To access the advanced menu, insert the 4-digit password (default 0000).

## 1 OPERATION PARAMETERS

### 1.1 Closing speed

Sets door speed for closing.

When speed is changed with respect to the set value, an alarm is signalled on the control board ("Error" LED flashing slowly) and on the SD-Keeper (ALARM 1: speed change) - a new Setup is recommended.

Standard value: level 3.

Adjusting range: from 0 to 10

### 1.2 Opening speed

Sets door speed for opening.

Standard value: level 10 (maximum speed)

Adjusting range: from 0 to 10

### 1.3 Decel. width

#### Opening

Sets anticipated time value on the standard deceleration point at the opening stop position.

Standard value: 0 cm

Adjusting range: from 0 to 120 cm

#### Closing

Sets anticipated time value on the standard deceleration point at the closing stop position.

Standard value: 0 cm

Adjusting range: from 0 to 120 cm

### 1.4 Decel speed

#### Speed:

Sets speed level during deceleration.

Standard value: low

Adjusting range: high/medium/low

## 2 IN/OUT SETUP

### 2.1 Emerg 1

### 2.2 Emerg 2

Sets the effect of the emergency commands (Emerg1 and Emerg2 inputs on SDM control board).

Standard setting EMERG 1:

Stop/No memory/NO

Standard setting EMERG 2:

Open/Speed: Standard/No memory/ NO

#### Open

Activating this command opens the door.

#### Close

Activating this command closes the door.

#### Stop

Activating this command stops the door.

#### Speed: Standard

The door opens or closes (according to setting) at normal speed.

#### Speed: No Standard

The door opens or closes (according to setting) at slow speed.

#### No memory

In order to keep the emergency active, the command must be maintained active (on release, the door returns to normal operation).

#### With memory

A pulse keeps the emergency operational;

To restore operation, resetting is necessary either from the control board or from SD-Keeper.

#### No

Normally open input.

#### Nc

Normally closed input.

### 2.3 Photocells

#### Quantity

Number of connected photocells.

Standard no.: 2

Settable no.: 0, 1, 2

When no photocells are configured and the selected status is NC (see below), there is no need to jumper connect unused inputs.

When configuring 1 photocell, you can connect to the PSW1 input of the SDM control board.



**Failsafe Off**

Failsafe test on photocells not executed.

**Failsafe On**

Failsafe test on photocells executed before each movement.

**Nc**

Normally closed input.

**No**

Normally open input.

**2.4 Sensors**

Sets the status of "external radar" and "internal radar" commands (E-Det and I-Det inputs on SDM control board).

**No**

Normally open input.

**Nc**

Normally closed input.

**2.5 Key**

Sets the status of the "key" command (Key input on the SDM control board).

**No**

Normally open input.

**Nc**

Normally closed input.

**2.6 Out 1**

**2.7 Out 2**

**2.8 Out 3**

Sets function or status associated with individual outputs on the SDM control board.

Standard setting OUT 1:

Gong/NO

Standard setting OUT 2:

Light/NO

Standard setting OUT 3:

No close/NO

**Function/Status**

The output is activated according to selection:

SELECTION	OUTPUT ACTIVATION
OPEN	Until the door is open
MOVING	Until door is moving
NOT CLOSE	Until door is not closed
ALARM	Until the door is in alarm status
GONG	Intervention of photocells activates the output for 1 sec. at 0.5 sec. intervals until release.
LIGHT	In "night" operational function, when the door is commanded to open, the output is activated for 60 sec.
INTERLOCK (*)	The output is activated to create an interlock between the doors

(\*) The "interlock" function cannot be selected but is automatically set on the OUT1 output when the interlock is activated (see Various/Interlock).

**No**

Normally open output.

**Nc**

Normally closed output.

**3 VARIOUS**

**3.1 Stand Setup**

Used for checking if any non-standard programming operation was effected.

**Standard**

If no function was modified with respect to the standard programming, an asterisk is shown.

If the asterisk is not present, press the "OK" key and all standard programming functions are reset.

**No Standard**

If at least one function was modified with respect to the standard programming, an asterisk is shown.

**3.2 Interlock**

The interlock function makes it possible to control two sliding doors (master and slave) so that opening of one depends on closing of the other and vice versa.

**Off**

Interlock function not active.

**On**

Activates the interlock function.

**Master**

The master door (usually the internal one).

**Slave**

The slave door.

**No Memory**

With interlock operation, you must wait for one door to re-close before commanding the other to open: any opening pulses sent during the operating cycle of the first door, have no effect.

**With Memory**

With interlock operation, there is no need to wait for one door to re-close before commanding the other to open: any opening pulses sent during the operating cycle of the first door are memorised, and the second door opens automatically as soon as the first door closes.

**3.3 Kit elastic.**

The elastic kit is a mechanical accessory which, when installed, enables anti-panic opening of the leaves in case of a blackout.

**Off**

Elastic kit not installed.

**On**

Elastic kit installed.

**Standard**

When power is restored after a blackout, the door remains set in its "manual" operating function (which cannot be changed) until the device is reset by manually closing the leaf.

☞ For correct operation, the SD-Keeper must be permanently installed.

**No standard**

When power is restored after a blackout, the door automatically executes the movement required to reset the device.

**Important!:** when the system is being automatically reset, the anti-crushing device is disabled.

**4 CHANGE PASSWORD**

Sets the new password for accessing the advanced menu (4 digits).

**7 CLOCK**

Sets the current day, time and date.

**8 TIMER**

**Off**

Timer not activated.

**On**

Timer activated: the operating time bands set in "9 Timer Programming" are enabled.

When the timer is activated, a "T" appears at the side of the time shown on the display and the SD-Keeper will not allow any operational selection.

The battery inside the SD-Keeper maintains the clock in operation even if power is not supplied; if correct time is lost (e.g. black-out and discharged battery), a flashing asterisk appears in place of the "T" and the timer is disabled.

**9 TIMER PROGRAMMING**

With the timer, you can create up to 5 different time bands for each day of the week (by setting the band starting time) and assign an operational function to each time band.

When the SD-Keeper's internal clock reaches the starting time of a band, the associated operating function is automatically set, and the door remains in this condition until the subsequent band intervenes.

Permanent connection of the SD-Keeper+Display is necessary for correct management of time bands.

**Selecting the day**

Selects the day of the week to create time bands.

If you select "All days", any time bands defined subsequently are included in all days of the week.

**Function**

Sets the operating function to be associated with the time band by referring to the following table:

FUN	MEANING
0	NO FUNCTION
1	AUTOMATIC TWO-WAY TOTAL
2	AUTOMATIC ONE WAY TOTAL
3	AUTOMATIC TWO-WAY PARTIAL
4	AUTOMATIC ONE WAY PARTIAL
5	DOOR TOTALLY OPEN
6	DOOR PARTIALLY OPEN
7	MANUAL
8	NIGHT

**Time band starting time**

Sets the activation time for the time band.

There is no need for the time bands to be in chronological order.

**-TIMER PROGRAMMING EXAMPLE-**

We wish to program a door operating at the following times:

- from MONDAY to FRIDAY:
  - from 8 a.m. in AUTOMATIC TWO-WAY TOTAL
  - from 6 p.m. in AUTOMATIC ONE WAY TOTAL
  - from 7 p.m. in NIGHT
- SATURDAY and SUNDAY: NIGHT for the whole day

Proceed as follows:

select ALL DAYS and set the following:

- TIME BAND 1: FUN 1 8 a.m.
- TIME BAND 2: FUN 2 6 p.m.
- TIME BAND 3: FUN 8 7 p.m.
- TIME BAND 4: FUN 0
- TIME BAND 5 :FUN 0

Select SAT and set the following:

- TIME BAND 1: FUN 0
- TIME BAND 2: FUN 0
- TIME BAND 3: FUN 0
- TIME BAND 4: FUN 0
- TIME BAND 5: FUN 0

Select SUN and set the following:

- TIME BAND 1: FUN 0
- TIME BAND 2: FUN 0
- TIME BAND 3: FUN 0
- TIME BAND 4: FUN 0
- TIME BAND 5: FUN 0

**ACCESSORIES**

**LOCK**

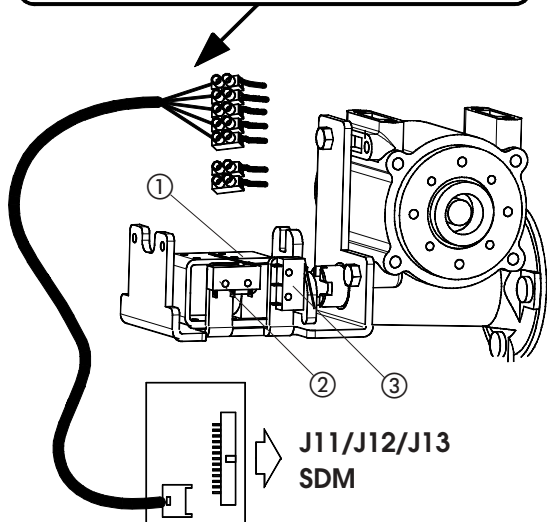
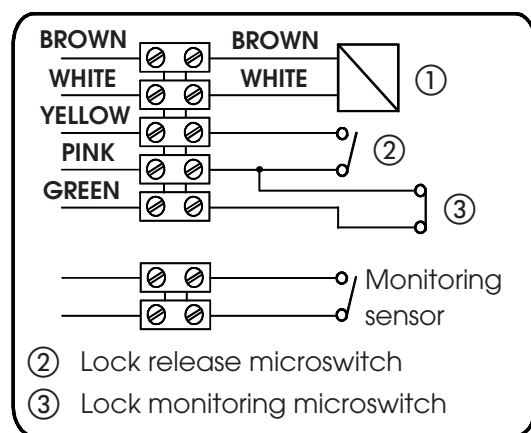
Lock card installation procedure:

- cut mains power;
- insert the lock card in any of connectors J11, J12, J13 of the SDM control board;
- make the electric connections;
- restore power.

**Note:** to avoid damaging the lock card, always insert it when power is OFF.

In the standard configuration:

- the lock locks the leaves only in the Night operating function.
  - if operating on batteries in the Night mode, if the batteries become discharged, the lock continues locking the leaves.
- By using SD-Keeper+Display, you can change lock operation.



**LOCK SURVEILLANCE**

This accessory enables a check of lock efficiency and, in the event of an error, this is signalled by the SD-Keeper. To activate lock surveillance, the function must be set with SD-Keeper+Display.

**ANTI-PANIC WITH ELASTIC**

The "Kit elastic" is a mechanical accessory enabling opening of the leaves in case of a black-out.

To ensure the system operates correctly, the SD-Keeper must be permanently installed.

Elastic kit installation procedure:

- supply mains power to the door;
- execute the Setup;
- activate the elastic kit with SD-Keeper+Display;
- install the accessory mechanically.

After installation, the leaves will open when mains power fails; when mains power is restored, the elastic must be "reset".

Resetting can be done in two different ways (selected with SD-Keeper+Display):

- manually (STANDARD),
- automatically (NO STANDARD).

Resetting entails re-closing the leaves in order to apply tension to the elastic and re-connect it to the electric magnet (re-connection occurs with the leaves totally closed and the SDM control board powered).

If manual resetting is selected, when mains power is restored, the door is in manual mode, and this mode cannot be exited until the leaves are totally re-closed manually.

If automatic resetting is selected, when mains power is restored, the control board activates a leaf closing procedure, using much greater power than is usually required for movement; furthermore, the ANTI-CRUSHING DEVICE IS NOT ACTIVE during this procedure.

During the automatic procedure for resetting the elastic:

- if the photocells intervene, the door reopens and the disengagement procedure begins;
- the sensors are disabled;
- any Setup requests are ignored.

**IMPORTANT:**

- NEVER carry out a Setup procedure if the elastic has not been reset,
- do not install the batteries with this accessory.

**ANTI-PANIC BY BREAK-OUT**

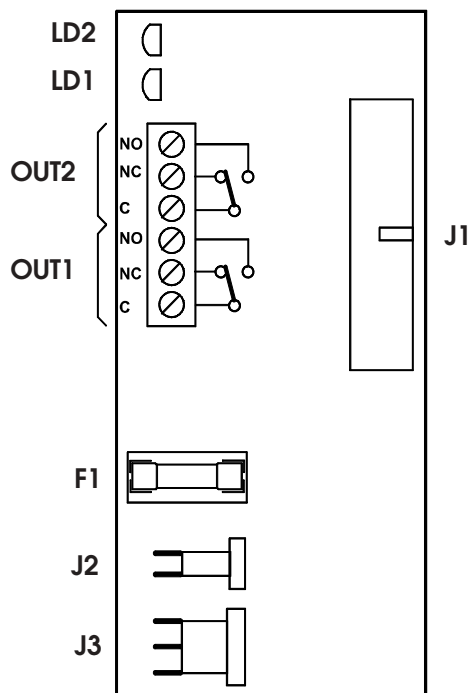
This accessory enables the leaves to be opened by pressure; to install it, refer to the specific instructions.

If installing the anti-panic by break-out facility, a sensor (according to Standards prEN12650-1 and prEN12650-2) must be installed. It must be connected to the EMERG1 input (via SD-Keeper+Display) configured for commanding immediate stop of the movement.

**BATTERY KIT**

Battery card installation procedure:

- cut mains power;
  - insert the battery card in connector J11, J12 or J13 of the SDM control board;
  - restore mains power;
  - using the SD-Keeper+Display, activate the "Battery Kit" and set the required operating parameters (the standard configuration is described further below);
  - connect the batteries to the battery card on connector J2.
- IMPORTANT: TO AVOID DAMAGING THE BATTERY CARD:**
- ALWAYS insert and remove the battery card while mains power is OFF.
  - connect the batteries (connector J2) only when the battery card has already been inserted.



<b>F1</b>	Fuse 20 T5A/250V (battery protection)
<b>J1</b>	Connection to SDM control board
<b>J2</b>	Battery connection
<b>J3</b>	Connection to J10 of SDM board
<b>OUT 1</b>	Relay output (Com/NC/NO)
<b>OUT 2</b>	Relay output (Com/NC/NO)
<b>LD1 (green)</b>	Door power supply mode
<b>LD2 (red)</b>	Battery charge status

By using the SD-Keeper+Display, you can select door behaviour in battery operation mode, so that, if mains power fails:

OPERATING FUNCT. other than NIGHT and STANDARD BAT. OPERATION programming:

- the control board continues to operate normally until the battery has only sufficient reserve charge to perform at least one emergency movement, after which
- the last programmed movement is performed (opening or closing), and finally
- the SDM control board goes into ENERGY SAVING status.

OPERATING FUNCT. other than NIGHT and NO STANDARD BAT. OPERATION programming:

- the last programmed movement is immediately performed (opening or closing), after which
- the SDM control board goes into ENERGY SAVING status.

NIGHT OPERATING FUNCT. and NIGHT STANDARD BAT. OPERATION programming:

- the SDM control board goes into NIGHT ENERGY SAVING status.

NIGHT OPERATING FUNCT. and NIGHT NO STANDARD BAT. OPERATION programming:

- the control board continues to operate normally until the battery has only sufficient reserve charge to perform at least one emergency movement, after which
- the SDM control board goes into NIGHT ENERGY SAVING status.

**ENERGY SAVING (other than Night operating function)**

- +VAC is switched OFF;
- SD-Keeper shows ENERGY SAV. on the Display, the alarm is signalled, back lighting goes OFF, menus cannot be scrolled, and only the keys for changing the operating function remain active.

**NIGHT ENERGY SAVING (Night operating function)**

- +VAC is switched OFF;
- SD-Keeper completely OFF.

These statuses can be exited in the following ways:

**WAKE-UP PROCEDURE (KEY INPUT FOR 3 SEC)**

If the last selected movement was opening, the SD-Keeper re-activates itself for night pause time and then returns to ENERGY SAVING status.

If the last selected movement was closing, opening is executed. When the door is open, the SD-Keeper re-activates itself for night pause time, after which the +Vacc is re-activated too (to allow the photocells to operate) and the door re-closes (SD-Keeper resumes its ENERGY SAVING status).

**BY ACTIVATING AN EMERGENCY INPUT (EMERG1 or EMERG2)**

Providing it was set, the emergency movement is executed. SD-Keeper stays ON during the period when the emergency status remains active. Vacc is re-activated if a closing movement is requested.

**BY USING THE LOCK KNOB**

See the WAKE-UP function.

NOTE: by using SD-Keeper+Display, you can configure lock operation in battery-powered Night mode.

	<b>GREEN LED ON</b>	<b>RED LED OFF</b>
<b>LED RED ON</b>	<ul style="list-style-type: none"> <li>- the door is mains powered</li> <li>- battery at very low charge level (1)</li> <li>- OUT1 not active</li> <li>- OUT2 active</li> </ul>	<ul style="list-style-type: none"> <li>- the door is battery-powered</li> <li>- battery fully discharged (3)</li> <li>- OUT1 not active</li> <li>- OUT2 not active</li> </ul>
<b>LED RED FLASHING</b>	<ul style="list-style-type: none"> <li>- the door is mains powered</li> <li>- battery now recharging; if mains power fails, no emergency movement is guaranteed (2)</li> <li>- OUT1 not active</li> <li>- OUT2 active</li> </ul>	<ul style="list-style-type: none"> <li>- the door is battery-powered</li> <li>- battery now discharging; at least one emergency movement is guaranteed (2)</li> <li>- OUT1 not active</li> <li>- OUT2 not active</li> </ul>
<b>LED RED OFF</b>	<ul style="list-style-type: none"> <li>- the door is mains powered</li> <li>- the battery is charged; if mains power fails, door movement is guaranteed</li> <li>- OUT1 active</li> <li>- OUT2 active</li> </ul>	<ul style="list-style-type: none"> <li>- the door is battery-powered</li> <li>- the battery is charged and can move the door</li> <li>- OUT1 active</li> <li>- OUT2 not active</li> </ul>

(1) If the red LED does not start to flash within about 30 mins, the causes may be as follows:

- incorrect battery connection or no battery connection;
- fuse F1 interrupted;
- batteries or battery card damaged.

(2) recharging time for fully discharged batteries: about 14 hours.

(3) No emergency movement is possible: the accessories connected to +Vacc and SD-Keeper are turned OFF and the Manual operating mode is set.

**INTERLOCK**

**Interlock with internal sensors**

This application is recommended when the distance between the two doors is sufficient to avoid interference in the detection ranges of the two internal sensors.

- Make the connections between the J6 terminal boards of the two SDM control boards and the sensors as shown in figure 6.
- Program the following functions:
  - "interlock" active on both doors,
  - select the "master" option for the internal door, and the "slave" option for the external one,
  - select, for both doors, option "interlock with no memory" or "interlock with memory" (refer to explanations in the programming flow-charts).

**Important:**

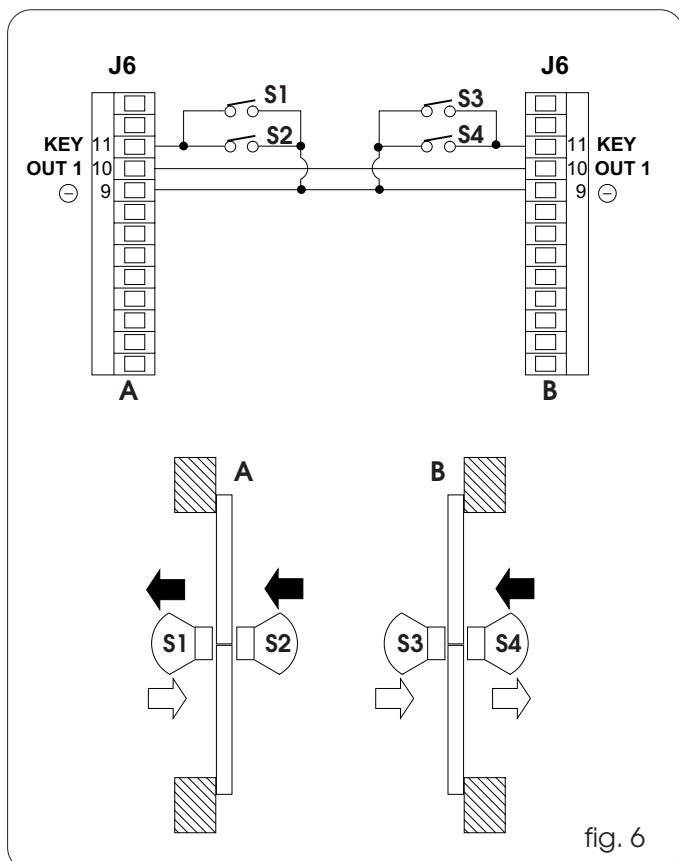
- The sensors must be connected ONLY to the KEY input of the equipment;
- The interlock will operate only if both doors are set to the NIGHT or ONE WAY operating function.

**Operation**

These are the interlock operational stages:

- 1) The person on the outside activates sensor S1 of door A;
- 2) Door A opens;
- 3) The person enters the internal space between the two doors;
- 4) Door A closes after the night pause time elapses;
- 5) The person activates sensor S3 of door B (If the "Interlock with memory" option was selected, there is no need to wait for the first door to close totally in order to activate the sensor of the second door);
- 6) Door B opens;
- 7) The person exits;
- 8) Door B closes after the night pause time elapses.

The operation is identical if the person comes from the opposite direction.



**Interlock without internal sensors**

This application is recommended if the doors are so near to one another that the two internal sensors cannot be used; two push-buttons are provided for activating the doors from the outside.

- Make the connections between the J6 terminal boards of the two SDM control boards, of the push-buttons and additional electronic components as shown in figure 7.
- Program the following functions:
  - "interlock" active on both doors,
  - select the "master" option for the internal door, and the "slave" option for the external one,
  - select the "interlock with memory" option for both doors (refer to explanations in the programming flow-charts).

**Important:**

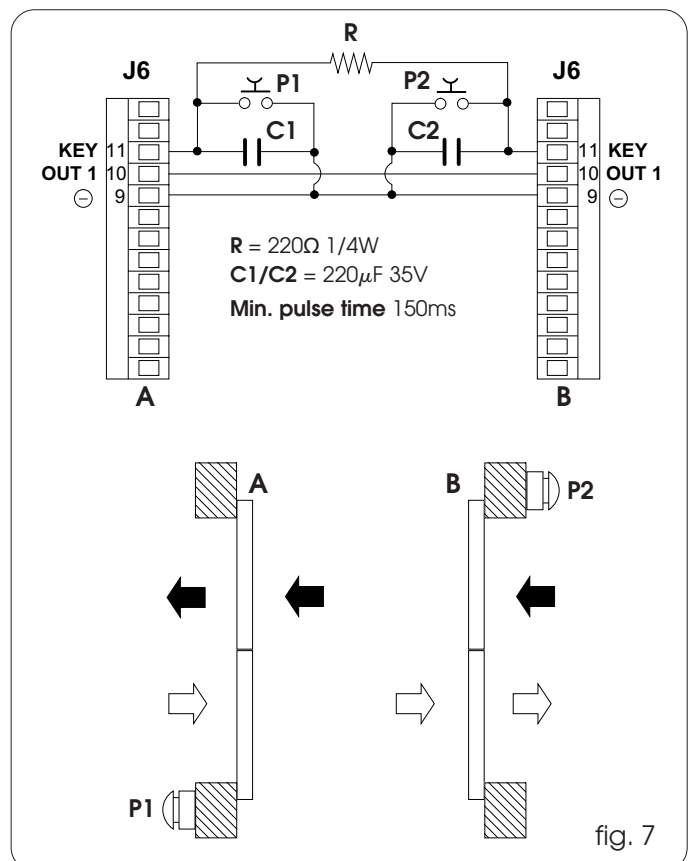
- The push-buttons must be connected ONLY to the KEY input of the equipment;
- The interlock will operate only if both doors are set to the NIGHT or ONE WAY operating function.

**Operation**

These are the interlock operational stages:

- 1) The person on the outside activates push-button P1 of door A;
- 2) Door A opens;
- 3) The person enters the internal space between the two doors;
- 4) Door A closes after the night pause time elapses;
- 5) Door B opens automatically;
- 7) The person exits;
- 8) Door B closes after the night pause time elapses.

The operation is identical if the person comes from the opposite direction.

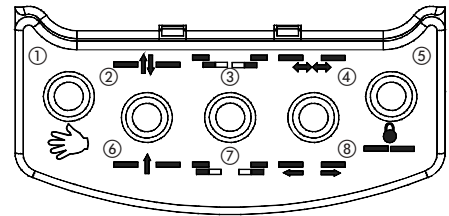


**DIAGNOSTICS GUIDE**

The following is a list of the specified alarms plus the relevant explanation/solution.

SD-Keeper+Display shows the alarm number and description on the Diagnostics menu.

Only the SD-Keeper shows the type of alarm by a combination of flashing LEDs (referring to the figure on the side).



DESCRIPTION	CAUSE	NOTES	ACTIONS	LED
<b>ENERGY SAV.</b>	The SDM control board is operating in battery powered low consumption mode	In this mode, SD-Keeper's back-lighting is OFF and menus cannot be scrolled on the display.	(see battery kit instructions) However, the push-buttons for changing the operating functions are active.	<b>2</b>
<b>1 SPEED CHANGES</b>	Closing speed was changed.		Execute a new SETUP	<b>7</b>
<b>2 BAT. OPERATION</b>	SDM control board operating on battery	GREEN LED on battery card is OFF	In the event of a power cut, this is the normal battery-powered operation signal However, if mains power is available, check: •is the 5x20 T1A fuse of the transformer in the power supply unit interrupted? •is the F2 5x20 T1A fuse on the SDM control board interrupted? •Is the 220V- mains power supply correctly connected? •Is connector J1 fitted correctly on the SDM control board? If the alarm persists, replace the SDM control board. If the alarm persists, replace the transformer.	<b>3</b>
<b>3 FORCED OPEN</b>	Someone is now trying to force the door.	This signal is generated only if STANDARD ANTI-INTRUDER is set.		<b>3</b> <b>7</b>
<b>4 FLAT-BATTERY</b>	The battery is discharged: emergency movement is not guaranteed at changeover from mains-powered to battery-powered mode.	RED LED on battery card is ON steady.	If the alarm goes on for more than one hour, check the following: •connections to battery •is the battery card inserted correctly? •is the 5x20 T5A fuse on the battery card interrupted? •are the batteries efficient? If the alarm persists, replace the battery card. If the alarm persists, replace the batteries.	<b>4</b>
<b>6 EMERG 2 ON</b>	Emergency input 2 active.	This signal is shown whenever the EMERG2 emergency contact is active. If the WITH MEMORY function was selected for this input, the signal continues even when the contact is no longer active.	If the WITH MEMORY function was selected for the EMERG2 input, when the contact is restored, RESET is necessary to cancel the signal.	<b>3</b> <b>4</b>
<b>7 EMERG 1 ON</b>	Emergency input 1 active.	This signal is shown whenever the EMERG1 emergency contact is active. If the WITH MEMORY function was selected for this input, the signal continues even when the contact is no longer active.	If the WITH MEMORY function was selected for the EMERG1 input, when the contact is restored, RESET is necessary to cancel the signal.	<b>3</b> <b>4</b> <b>7</b>
<b>8 OBST. IN OPEN.</b>	An obstacle was detected 3 consecutive times during the opening movement.	This signal is shown only if the following function was selected: OBSTACLE DETECTION --> OPENING: NO STANDARD	Remove the obstacle and execute RESET to restore operation.	<b>8</b>
<b>9 OBST. IN CLOS.</b>	An obstacle was detected 3 consecutive times during the closing movement.	This signal is shown only if the following function was selected: OBSTACLE DETECTION --> CLOSING: NO STANDARD	Remove the obstacle and execute RESET to restore operation.	<b>7</b> <b>8</b>
<b>10</b>	The lock is locked in closed position.	This signal is shown only if the lock was installed: •without surveillance: the door attempts to release the lock 3 times and then stops in a state from which it can exit only by a RESET or by turning the emergency release knob. •with surveillance: the door stops immediately in a state from which it can exit only by a RESET or by turning the emergency release knob	Check the following: •is the lock card inserted correctly? •are the lock connections good? •is the lock operating correctly? •is the lock surveillance kit (if any) correctly fitted and connected? If the alarm continues even after RESET, replace the lock card and/or the lock.	<b>3</b> <b>8</b>
<b>11</b>	Lock not closing	This signal is shown only if a SURVEILLANCE KIT was installed ON THE LOCK, and was programmed.	Check the following: •is the lock card inserted correctly? •are the lock connections good? •is the lock operating correctly? •is the lock surveillance kit correctly fitted and connected?	<b>3</b> <b>7</b> <b>8</b>
<b>12</b>	Incorrect power supplied to motor.	The +VMOT green LED is OFF.	Check the following: •is the F1 5x20 T6.3A fuse on the SDM control board interrupted? •is connector J1 correctly fitted?	<b>4</b> <b>8</b>
<b>13</b>	Photocell 2 faulty.	This signal is shown only if the FAILSAFE function is active and 2 photocells were configured.	Check the following: •is photocell 2 aligned correctly? •photocell 2 connections •is photocell 2 in good condition and efficient?	<b>4</b> <b>7</b> <b>8</b>



<b>14</b>	Photocell 1 faulty.	This signal is shown only if the FAILSAFE function is active and at least 1 photocell was configured.	Check the following: • is photocell 1 aligned correctly? • photocell 1 connections • is photocell 1 in good condition and efficient?	<b>3</b> <b>4</b> <b>8</b>
<b>15</b>	SETUP execution is impeded in some way.	When the trouble fault is removed, SETUP starts automatically	Check the following: • the set operating function is not MANUAL, NIGHT, or DOOR OPEN. • operation is not battery-powered • photocells are not engaged • no emergency input is active • motor power supply absent (+VMOT LED OFF)	<b>3</b> <b>4</b> <b>7</b> <b>8</b>
<b>18</b>	SETUP procedure cannot be completed because excessively large (over 3m) transit space was detected	When this signal is generated, the ERROR LED on the SDM control board is ON steady and the door is locked.	Reduce leaf travel and execute a new SETUP	<b>2</b> <b>3</b>
<b>20</b>	SETUP procedure cannot be completed because insufficient (less than 70cm) transit space was detected	When this signal is generated, the ERROR LED on the SDM control board is ON steady and the door is locked.	Increase leaf travel and execute a new SETUP	<b>2</b> <b>4</b>
<b>22</b>	The SETUP procedure cannot be completed because excessive friction or excessive leaf weight was detected.	When this signal is generated, the ERROR LED on the SDM control board is ON steady and the door is locked.	• cut power or set the MANUAL operating function, and then manually check if the leaves are moving correctly. • check weight of leaves	<b>2</b> <b>3</b> <b>4</b>
<b>24</b>	A motor fault was detected during operation.	When this signal is generated, the ERROR LED on the SDM control board is ON steady and the door is locked.	Check the following: • is connector J3 fitted correctly? • is the motor efficient? If the ERROR LED is flashing, when the error cause is eliminated, the door resumes operating normally; if, instead, the ERROR LED is ON steady, execute a SETUP when the cause has been removed. If the alarm persists, replace the SDM control board. If the alarm persists, replace the motor.	<b>2</b> <b>8</b>
<b>25</b>	SDM control board failure		Replace the SDM control board	<b>2</b> <b>7</b> <b>8</b>
<b>All the LEDs of the operating functions are flashing.</b>	No communication between SD-Keeper and SDM control board.		Check the following: • connection length must not exceed 50 m • each connection cable must have a minimum diameter of 0.5mm <sup>2</sup> If the alarm persists, replace the SD-Keeper. If the alarm persists, replace the SDM control board.	

**TROUBLESHOOTING**

The following will help you identify and solve some particular states.

	STATE	SUGGESTION
<b>A</b>	<b>SD-KEEPER off</b>	<ul style="list-style-type: none"> <li>no mains power supplied and the SDM control board is battery-powered in NIGHT operating function, and in energy saving statuses.</li> <li>connection to the SDM control board is interrupted: check the connection cables and wiring between SD-Keeper and the SDM control board</li> <li>SDM control board not operating correctly; replace the SDM control board</li> </ul>
<b>B</b>	<b>LEDs MAIN, V<sub>ACC</sub>, VMOT and +24V OFF</b>	<ul style="list-style-type: none"> <li>check if the F2 5x20 T1A fuse on the SDM control board is interrupted</li> <li>is the 5x20 T1A fuse inside the power supply unit interrupted?</li> <li>is connector J2 fitted correctly on the SDM control board?</li> <li>check connection to the power supply unit</li> <li>SDM control board not operating correctly; replace the SDM control board</li> </ul>
<b>C</b>	<b>MAIN LED OFF; V<sub>ACC</sub>, VMOT and +24V LEDs all ON</b>	<ul style="list-style-type: none"> <li>mains power not supplied and the SDM control board is battery-powered</li> <li>if mains power is being supplied, see point B</li> </ul>
<b>D</b>	<b>MAIN and V<sub>ACC</sub> LEDs OFF; VMOT and +24V LEDs ON</b>	<ul style="list-style-type: none"> <li>no mains power supplied, the SDM control board is battery-powered and in energy saving statuses.</li> <li>if mains power is being supplied, see point B</li> </ul>
<b>E</b>	<b>VMOT LED OFF; MAIN, V<sub>ACC</sub> and +24V LEDs ON</b>	<ul style="list-style-type: none"> <li>is the F1 5x20 T6.3A fuse on the SDM control board interrupted?</li> <li>is connector J3 fitted correctly on the SDM control board?</li> <li>check if the power supply unit and the control board are efficiently connected</li> <li>SDM control board not operating correctly; replace the SDM control board</li> </ul>
<b>F</b>	<b>VMOT and V<sub>ACC</sub> LEDs OFF; MAIN and +24V LEDs ON</b>	<ul style="list-style-type: none"> <li>this state occurs when the control board software is being updated</li> <li>there may be condensation on the board; cut power and dry the dampness.</li> <li>SDM control board not operating correctly; replace the SDM control board</li> </ul>
<b>G</b>	<b>ERROR LED flashing slowly</b>	<ul style="list-style-type: none"> <li>alarm in progress: connect the SD-Keeper to find the alarm and take the appropriate action (see the diagnostics guide)</li> </ul>
<b>H</b>	<b>door locked and ERROR LED ON</b>	<ul style="list-style-type: none"> <li>SETUP must be executed</li> <li>alarm in progress: connect the SD-Keeper to find the alarm and take the appropriate action (see the diagnostics guide)</li> <li>check motor connection</li> <li>check motor encoder connection</li> <li>check the condition of the encoder connection flat cable</li> </ul>
<b>I</b>	<b>door NOT executing SETUP and ERROR LED flashing slowly</b>	<ul style="list-style-type: none"> <li>SETUP execution impeded (see SDM control board instructions)</li> </ul>
<b>L</b>	<b>door NOT CLOSING and ERROR LED off</b>	<ul style="list-style-type: none"> <li>photocell/s engaged</li> <li>make sure that the selected operating function is not DOOR OPEN (if no SD-Keeper is installed, make sure that input 8 of the J6 terminal board is not jumper connected to the negative)</li> <li>make sure that the selected operating function is not MANUAL</li> <li>check motor connection</li> <li>check if power is being supplied to the motor (VMOT LED ON)</li> </ul>
<b>M</b>	<b>door NOT OPENING and ERROR LED off</b>	<ul style="list-style-type: none"> <li>make sure that the selected operating function is not MANUAL</li> <li>make sure that the selected operating function is not NIGHT (if no SD-Keeper is installed, make sure that input 7 of the J6 terminal board is not jumper connected to the negative)</li> <li>check motor connection</li> <li>make sure that the lock is not locked</li> <li>check if power is being supplied to the motor (VMOT LED ON)</li> </ul>
<b>N</b>	<b>door CLOSES instead of OPENING and vice versa</b>	<ul style="list-style-type: none"> <li>reverse the position of dip-switch 1 on the SDM control board and execute a SETUP</li> </ul>
<b>O</b>	<b>door moving for short distances only</b>	<ul style="list-style-type: none"> <li>check if encoder connector J4 is correctly inserted</li> <li>check condition of the encoder</li> <li>check the condition of the encoder connection flat cable</li> </ul>
<b>P</b>	<b>door movements very slow</b>	<ul style="list-style-type: none"> <li>using the SD-Keeper+Display, check if the selected speed levels are as required</li> <li>using the SD-Keeper+Display, check if the selected deceleration distances are as required</li> </ul>
<b>Q</b>	<b>ERROR LED flashing rapidly</b>	<ul style="list-style-type: none"> <li>door executing a SETUP; wait for the procedure to end</li> <li>door executing a RESET; wait for the procedure to end</li> <li>with the KIT ELASTIC installed, the door is resetting the elastic; wait for the procedure to end</li> </ul>



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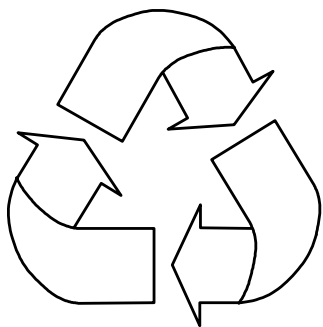
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