



Installation • Assembly • Commissioning
Use • Maintenance • Repair

CAR DOOR & OPERATOR

REVECO-GO!

TWO-PANEL SIDE-OPENING (T2)
TWO-PANEL CENTRAL-OPENING (C2)

Technical Manual
V019 – 03/2016
MTMECOPRGO_019_EN

SUMMARY OF MODIFICATIONS IN REGARD WITH THE PREVIOUS VERSION:

 MT MTMECOPRGO_018_EN

INDEX SECTION	DESCRIPTION OF THE MODIFICATION	MODIFICATION CONCERNING			
		Physical Product	Functions Features	Figures	Writing
1.1	Controller requirements to get the operator compliant with EN 81-20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.7.1	The measurements for fixing the operator on the car frame and the profile dimensions are made clear	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.10	The fixing of the drive lever is included	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.11	The car door locking - dimensions and operating mode- is included	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.15	The static support of the curtain photocell is included	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2.2	The electrical circuit corresponding to the REVECO-GO! operator with MP ecoGO controller is included	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	The rescue operations and the emergency unlocking with MP ecoGO controller is included	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	The maintenance instructions of the operator installation are completed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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1. INSTALLATION

1.1. Electrical controller requirements

1.1.1. Operators with car door locking¹

The signal for car door operator closing shall be active while the car is travelling and not active when the car is at rest and with the doors closed.

Before the car moves, the controller shall send a closing signal for the doors to ensure that the locking device is under pressure and the lock is engaged.

After a power failure, a shutdown signal must be sent to the operator to ensure that the fixed cam is in the closed position when the car begins to travel.



Software: When the operator is assembled in existing installation, MP controllers, Vía Serie and MicroBASIC, may require a specific software version, in line with its age, for the control of the operator with car door interlocking. In this case, request the After-sales service.

In installations where an **automatic electrical emergency operation**, built-in or added as an accessory to prevent the power supply failures, before the car moves, a door closing signal must also be included. This signal should remain activated while the car is travelling to ensure that the drive lever is under pressure and the lock engaged.

Failure to meet these requirements means there is a malfunction that may lead to the lift stopping and possible deterioration in the installation.

Make sure that the height of the **curtain photocell beam** is not higher than 1750 mm to avoid any interference with the drive lever. This is the reason why the photocell to be installed must have a working beam \leq 1750 mm or it must allow to cancel the LEDs located above this height.

1.1.2. Operators without car door locking²

Unlike the previous case, the deactivation of the closing signal is not required when the car remains stopped doors closed.

1.2. Phases of the installation

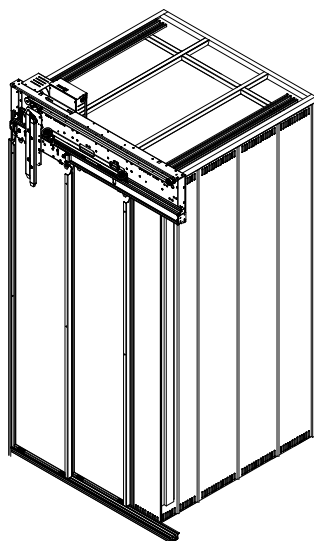
To keep the equipment clean and in correct working order it is important not to start the installation until the floor door has been closed and the masonry work and cleaning inside the hollow is finished.

NOTE: As long as it is not specifically indicated, assembly of the **centre opening (C2)** model will be carried out in a similar way to the 2-panel side opening model (T2).

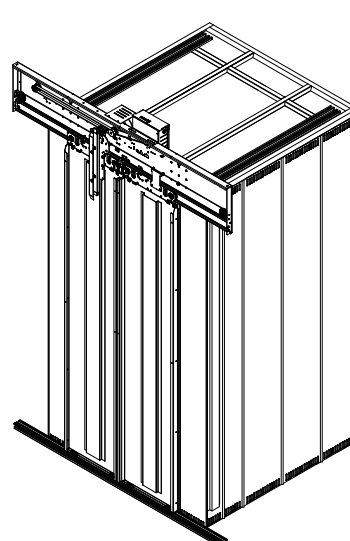
ORDER FOR CORRECT EQUIPMENT ASSEMBLY:

- SECURING THE OPERATOR SUPPORT PROFILES TO THE CAR FRAME
- SECURING THE STEP TO THE CAR
- OPERATOR ASSEMBLY
- PANEL POSITIONING AND ADJUSTMENT
- GUIDE SHOE POSITIONING
- SECURING THE DRIVE LEVER

Right REVECO-GO! T2 opening to the right side



REVECO-GO! C2 Operator



¹ Delivered as standard according to EN 81-20

² Option available, non-compliant with EN 81-20

1.3. Tools needed and individual protection equipment

Just like the individual protection equipment, the tools are not included in the packaging but are necessary and obligatory for assembly.

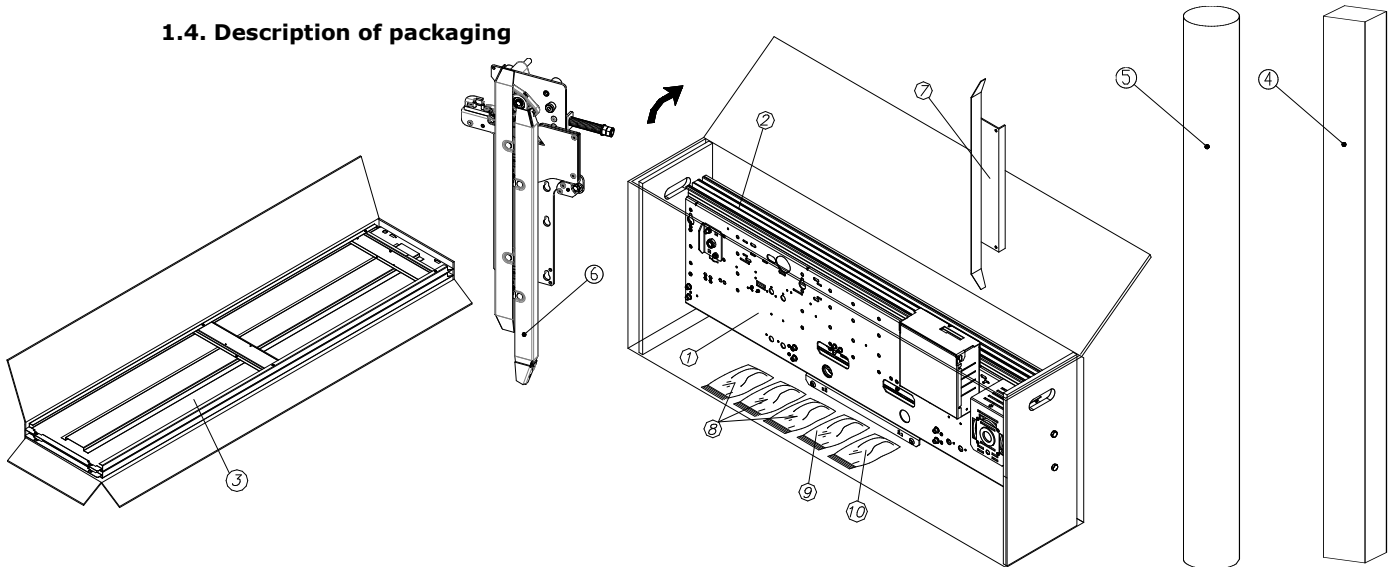
Individual protection equipment

Helmet.
Cut-proof gloves.
Reinforced boots.
Safety harness.
Goggles or screen.
Lumbar support belt.



TOOLS	STAGES OF ASSEMBLY	MAINTENANCE
1 No. 3 Allen Wrench	Operator electrical connection	Electronic card and motor cover replacement
1 No. 5 Allen Wrench	Securing drive lever	Panel adjustment
1 No. 6 Allen Wrench	Securing profiles to car frame Securing operator Securing panels	Panel adjustment and wheel replacement / motor replacement
1 No. 13 flat spanner	Securing step	Belt tensioning
1 No. 17 flat spanner	Securing profiles to car frame	
1 No. 25 flat spanner	Panel assembly	Panel adjustment
1 Fine pointed screwdriver		Potentiometer adjustment
1 No. 7 socket wrench		Electronic card change
1 Set square	Panel assembly	Panel adjustment
1 Permanent market		

1.4. Description of packaging



No.	NAME
1	REVECO-GO! OPERATOR
2	STEP
3	PANELS
4	CURTAIN PHOTOCELL
5	SUPPORT FOR FIXING THE CURTAIN PHOTOCELL
6	DRIVE LEVER (Optional)
7	FIXED CAM (Optional)
8	NUTS AND BOLTS BAGS (No.1, No.2 and No.3)
9	DOCUMENTATION POCKET (Product technical manual, check-sheet, certificate of electromagnetic compatibility
10	NUTS AND BOLTS BAG (accessories for the static support of the Curtain photocell)

CONTENTS OF NUTS AND BOLTS BAG No.1 (Securing operator to car)	T2 / C2
DIN 912 M8x25 5.6 Zn screw	4
DIN 125 M8 Zn flat washer	4
DIN 6798-J M8 star washer	4
INBUS RIPP M8x20 screw	4
DIN 603 M10x25 5.6 Zn screw	2
M10 flange plate	2
DIN 934 M10 8.8 Zn nut	2
DIN 125 M10 Zn flat washer	2
DIN 6798-J M10 star washer	2

CONTENTS OF NUTS AND BOLTS BAG No.2 (Securing car step)	T2 / C2
DIN 933 M8x50 8.8 Zn screw	3
DIN 934 M8 8.8 Zn nut	3
DIN 125 M8 Zn flat washer	3
DIN 6798-J M8 star washer	3

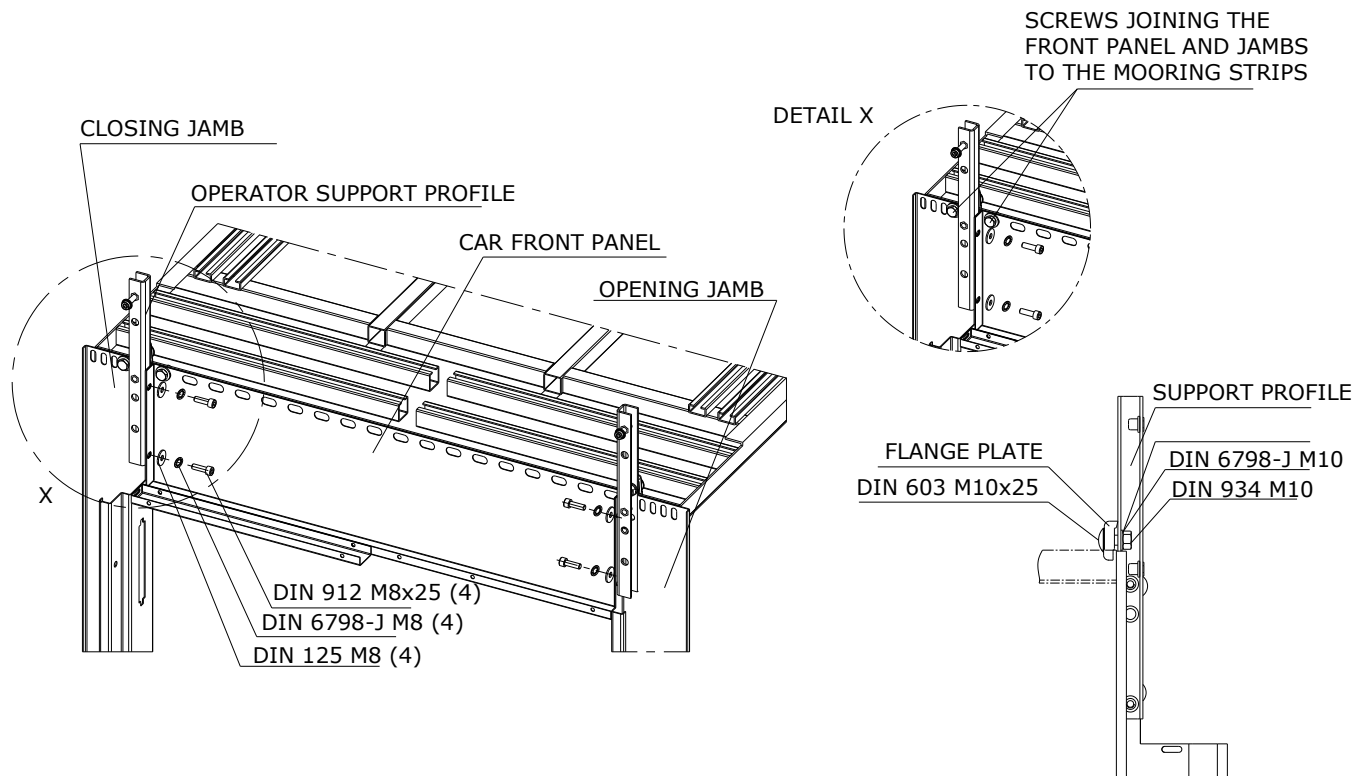
CONTENTS OF NUTS AND BOLTS BAG No.3 (Car panel assembly)	T2 / C2
Panel hook	4
DIN 912 M8x16 5.6 Zn screw	4
Guide shoes	4
DIN 6798-J M8 star washer	4

1.5. Securing the operator support profiles to the car frame

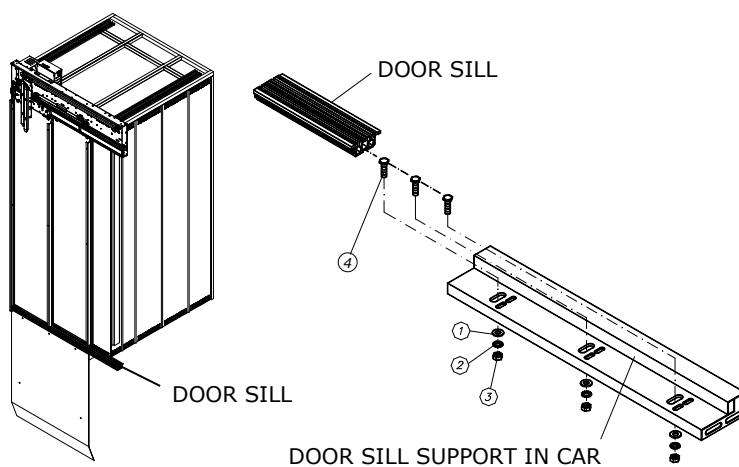


Make sure there are screws in the eyelets nearest to the joints between the front panel and jambs, which secure the front panel and jambs to the mooring strip on the roof. If this is not the case, put them in the eyelets to prevent the joint giving way under the weight of the operator. (See detail X)

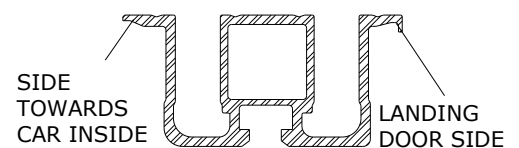
1. Position the support profiles inside the car jambs and join the jambs, front panel and profiles by putting 2 DIN 912 M8x25 screws through the eyelets and screwing in the profile's rivet bushes. **Before tightening the screws, position the profiles in such a way that they are as close as possible to the car roof and are vertical. See figure.**
2. Ensure the operator support profile is fastened by clamping the flange to the mooring strip surrounding the car roof. Both profiles must remain perfectly tightened and vertical. See figure.



1.6. Fixing of the door sill to the car



No.	NUTS AND BOLTS STEP: 75
1	DIN 125 Ø 8
2	DIN 6798-J Ø8
3	DIN 934 M8
4	DIN 933 M8x50



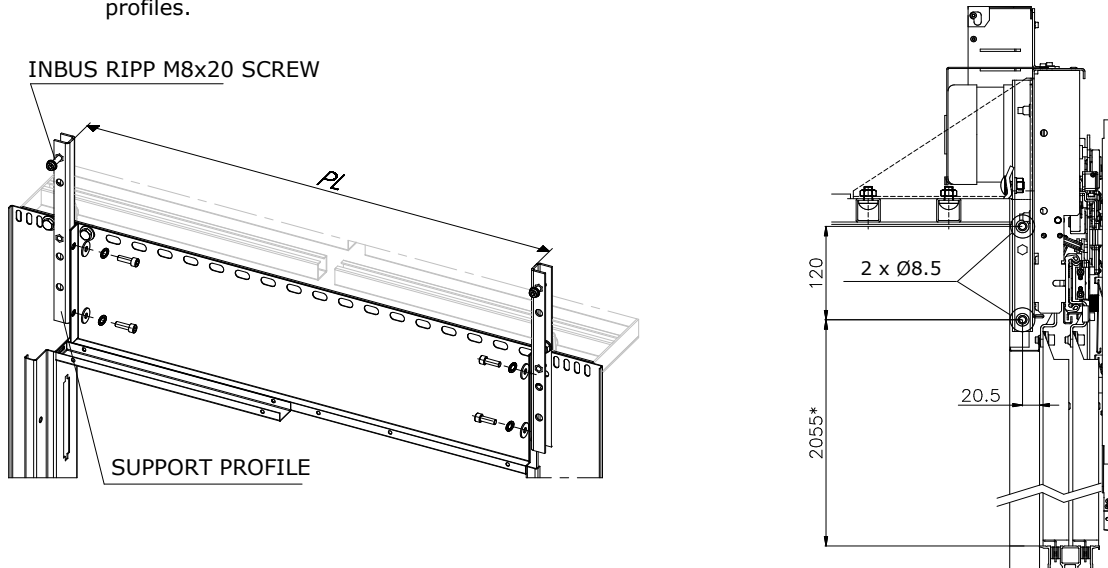
1.7. Operator assembly



To be assembled on modernization or "NON MP cars" using the fixing profiles supplied with the operator, the cars must include the fixing holes and meet the specified dimensions.

1.7.1. Fixing on the car frame using profiles

1. Place an INBUS RIPP M8x20 screw, but do not fully tighten it, in the upper rivet bush of both support profiles.

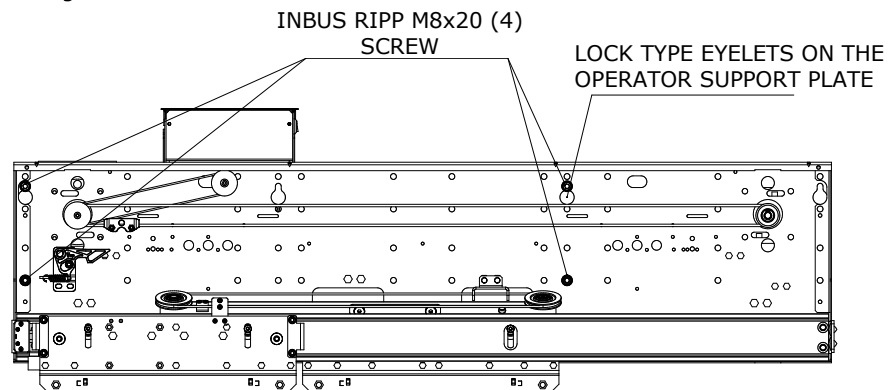


(*) 2155 mm for panel height +100

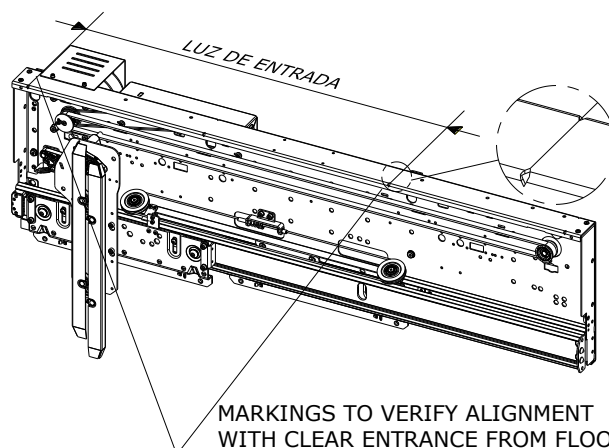


NOTE: Only the upper screw of each fixing profile will be placed until the operator

2. Position the operator on the support profiles, putting the upper screw of the support through the lock type eyelets on the operator plate.
3. Secure the operator by placing the second INBUS RIPP M8x20 screw in the lower rivet bush of the support profiles. Tighten all the screws.



NOTE: The operator has some markings on the roof of the plate (drilled holes in a rhombus shape) which allow alignment of the operator with the clear entrance from the floor door to be checked.

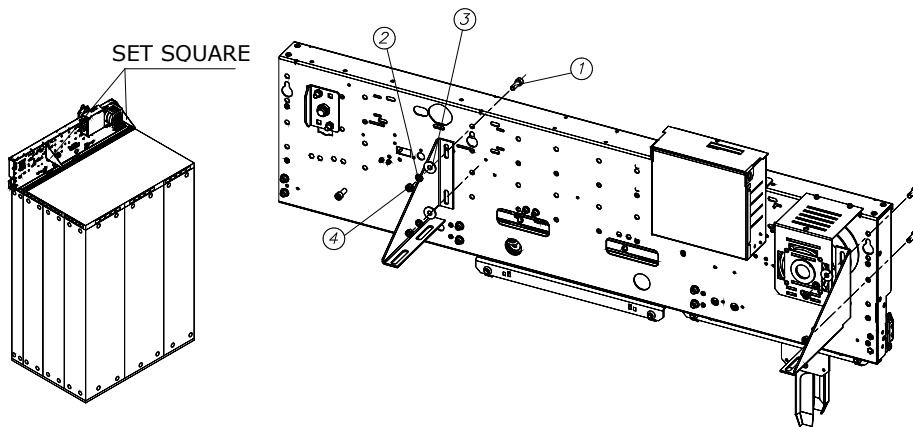


1.7.2. Fixing on the car roof using brackets



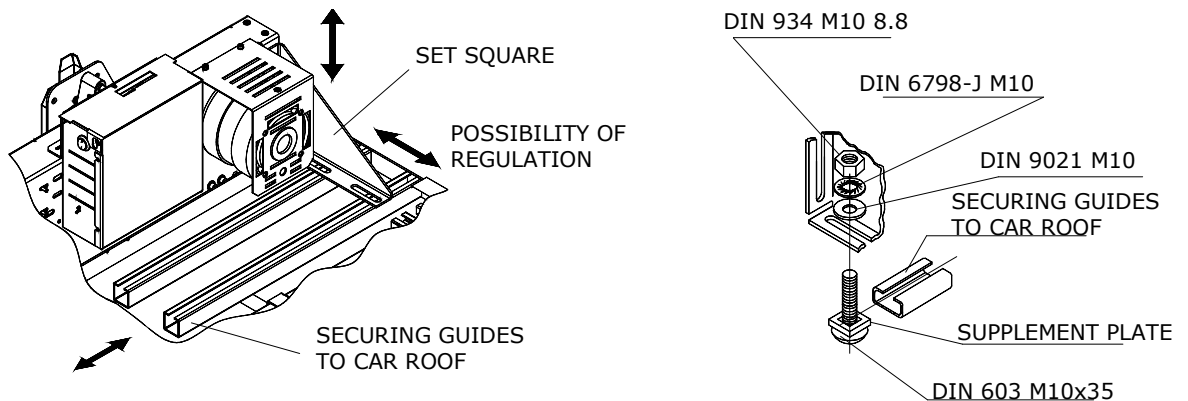
These set squares are valid for assembly on cars with jamb width of 37 mm. For other jamb widths, the position of the roof fixing profiles should be modified in the same ratio with regard to 37.

1. Position and fix the brackets to the operator plate using the series of slots for this purpose.



No.	NUTS AND BOLTS FIXING BRACKETS
1	DIN 912 M8x25
2	DIN 6798-J M8
3	DIN 9021 M8
4	DIN 934 M8

2. With the brackets already mounted on the car roof, fix the operator by screwing the brackets to the mooring guides as is shown in the following diagram:



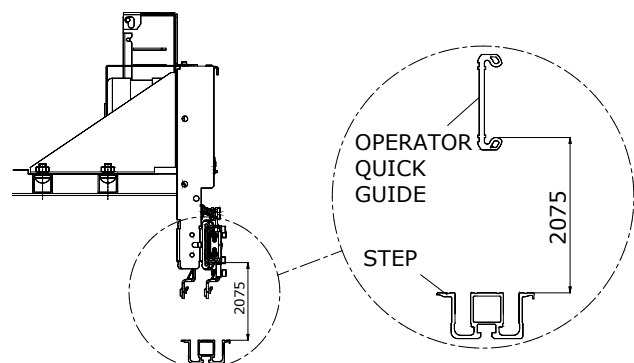
Regulation of the operator

1. Horizontal adjustment:

- In the direction defined by the movement of panels:
The correct installation of the operator in this direction is obtained when it is positioned in such a way that the green alignment point of the operator is aligned with the car slam post and the door suspension green point (landing door). Also, the position of the operator green alignment point must be aligned:
 - With the fire-proof slam post of the telescopic one side opening doors (Look at figures in next page).
 - With the centre of the clearance of central opening doors.
 - Verify the coincidence of the alignment markings on the operator supporting plate with the clear opening of the landing door (look at figure at previous page).
- In the direction perpendicular to the panels:
The operator should be installed so that the panels' verticality is achieved and keeping a 5 mm distance between panels, and between the panel and the car jamb with the door open. In MP cars with width of jamb 37 mm, this alignment can be obtained by installing the operator to 29 mm, measured between the outside of the car roof and the supporting plate of the operator.
In other cars, these distances will change in relation to the width of the opening jamb (To see measured drawings in following page).

2. Vertical adjustment:

- When the operator is fixed to the bracket and vertically adjusted there should be **2075 mm** (for a clearance height of 2000) between the sill and lower track on the operator's quick guide, which will be checked. The following diagram explains how to check. In this way the panels are 5mm away from the sill when they are resting on the carriage's reference points.

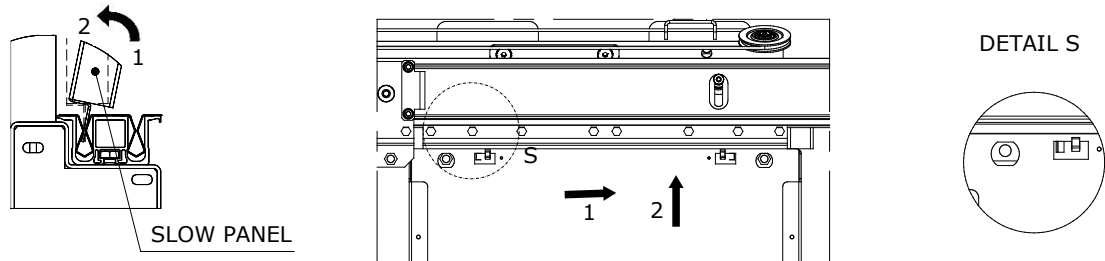


1.8. Panel positioning and adjustment

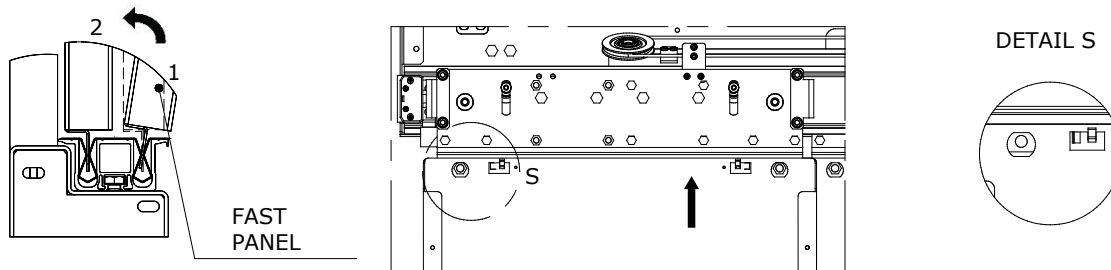


Do not remove the step protection until the construction work has finished and the installation has been cleaned. During assembly and until start-up is finalised, the operator can provisionally operate with the step protection and without the guide shoes. Finally, remove the protection and position the guide shoes, as is indicated at a later stage.

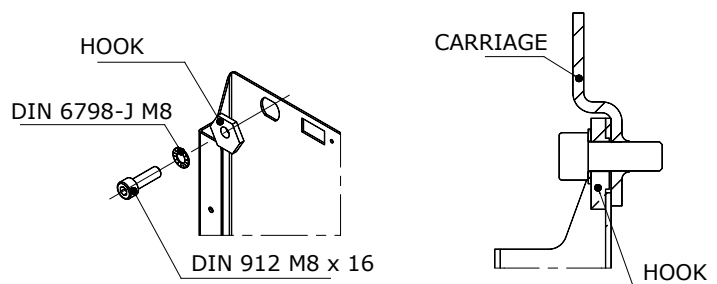
1. With the slow panel inclined, insert the lower part of the panel into the slot in the step protection in the channel of the step nearest to the car's interior. Now with the panel vertical, move it to its position in the slow carriage and hang it on the hooks (shown on the right-hand side).



2. Gently move the fast carriage in the opening direction in order to facilitate panel positioning. With the fast panel inclined, insert the lower part into the slot in the step protection in the channel of the step nearest to the landing. Now with the panel vertical, hang it on the carriage hooks.

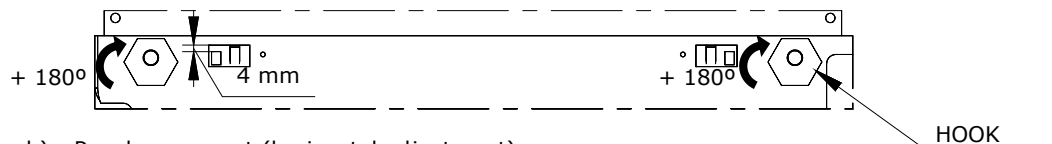


3. Place the screws through the eccentric hooks with the less eccentric side facing upwards, and ensure that the cylindrical flange remains inside the panel enclosure.

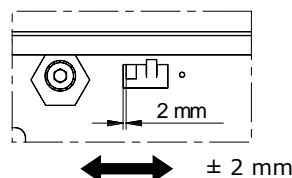


4. Panel adjustment:

- a) Panel turn (vertical adjustment):
If on opening the car door the panels do not end up vertically aligned with the opening jamb, it is possible to adjust their incline using the corresponding hexagonal hook.



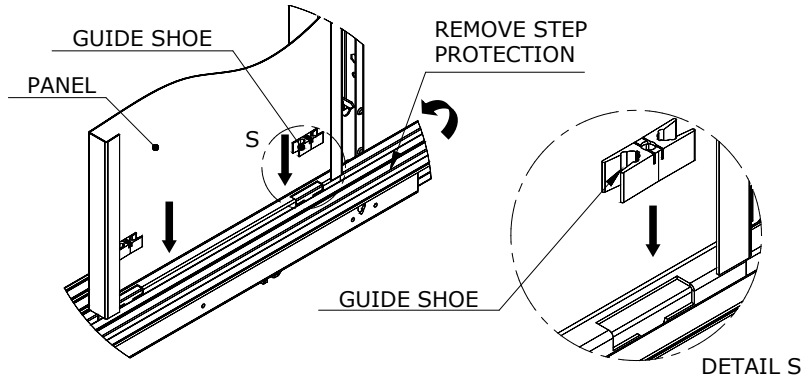
- b) Panel movement (horizontal adjustment):
If when the car door is open the panels do not end up flush with the opening jamb, or when the door is closed the fast panel reaches the closing jamb stops before the operator carriage reaches its closing travel stop, adjust the forward movement of the panels by gently moving them on their hooks.



Note: Once the adjustment of the panels is checked, firmly tighten all the fixings.

1.9. Positioning the guide shoes

- These will not be positioned until the lift installation is complete, the construction and flooring works are finished and the installation is completely clean and free of construction work remains.
- Before starting up the lift, remove the step protection and position the guide shoes by pushing very firmly until hearing the catch "click". Position the guide shoes with the slots facing upwards. See detail A.



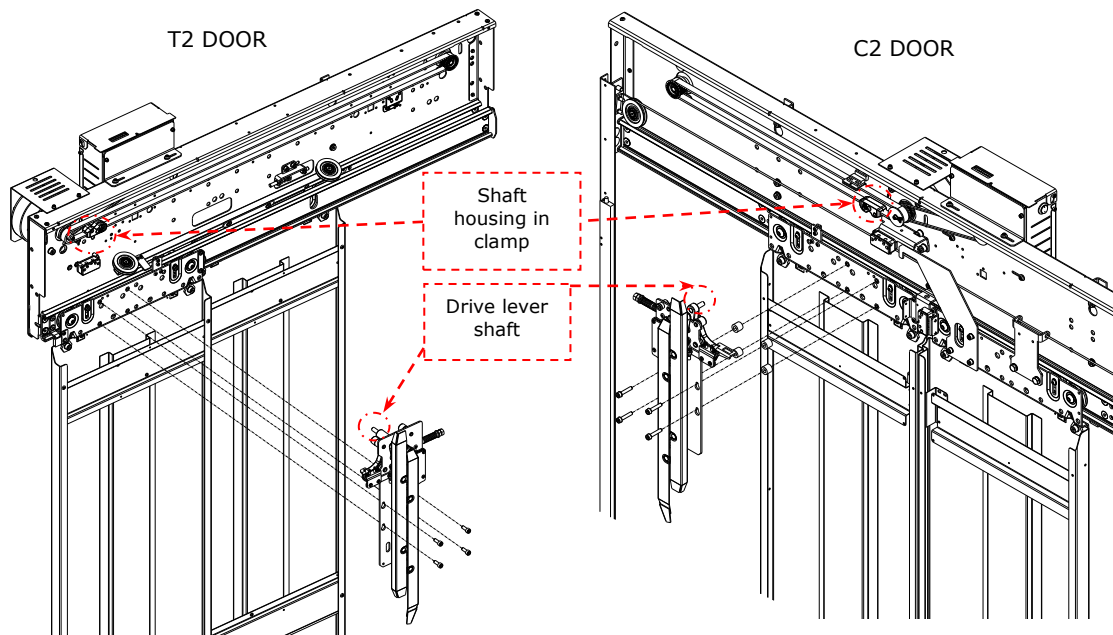
1.10. Drive lever fixing



The panels shall already be assembled for assembling the drive lever.

1.10.1. Assembly of drive lever

1. Loosen the 4 screws on the operator carriage and insert the lever shaft into the clamp drill of the belt.
2. Move the oscillating lever until its shaft coincides with the clamp housing. Secure the drive lever to the operator carriage using the screws in it. In case of C2 doors, insert separators between the drive lever and the carriage.



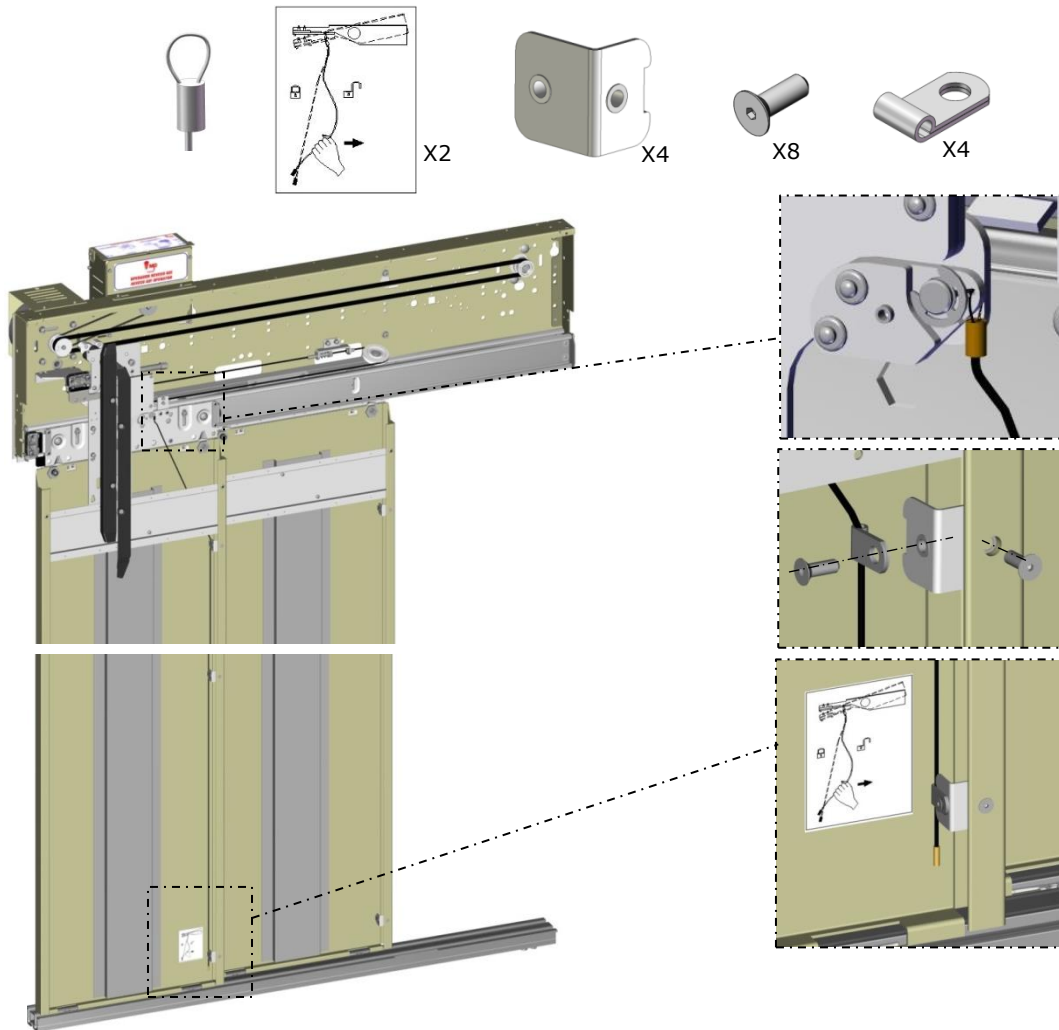
Do not start-up the lift whether the operator is not powered or its switch is off.

Do not move the car if the operator is disconnected or without power: the expanded drive lever will interfere with the roller of the landing doors and it will open the safety chain and stop the car.

To be compliant with the EN 81-20, the installations shall be provided with the operator and the drive lever with car door locking device EPC-15³. But, in addition, these installations shall also follow the requirements about checking, adjustment of the locking device and the electrical contact, as well as the emergency unlocking device described in the hereafter chapters.

³ Supplied as a standard, but the option of drive lever without car door locking device is also available

1.10.2. Assembly of device for emergency unlocking

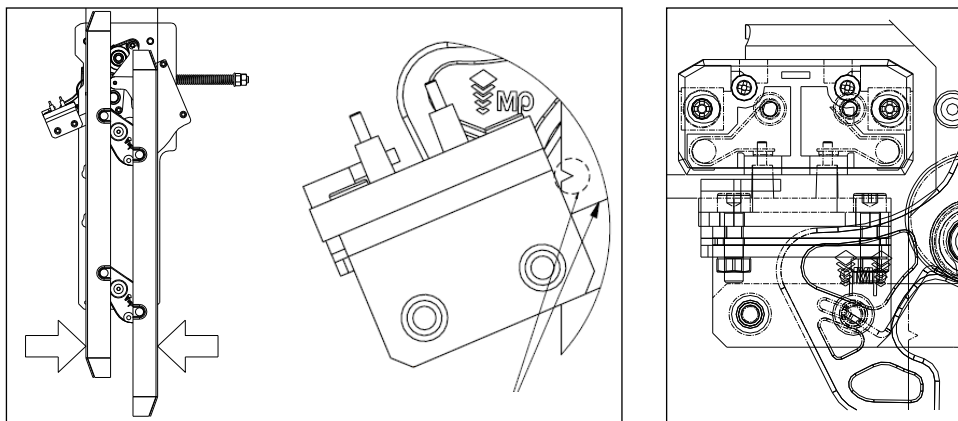


Check that, when pulling on the rope, the lock is unlocked and, when releasing the rope, it comes back to its idle position.

1.10.3. Checking

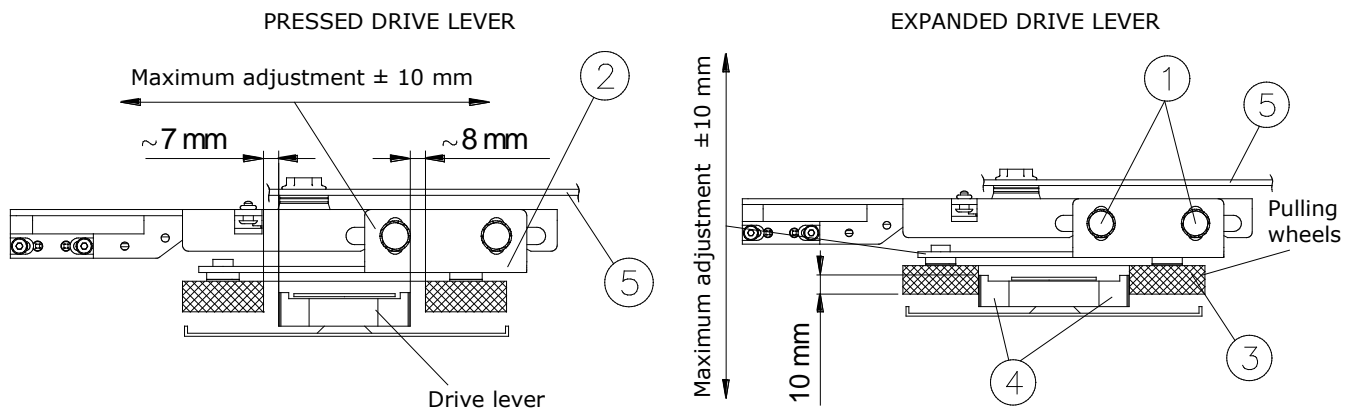
Check the following from the landing, with the car between floors and the operator disconnected:

- 1. Check emergency compression:** The closing hook must rotate freely downwards when the drive lever slats are pressed. Check that the lock arm oscillates until it is below the notch on the drive lever support plate.



- 2. Manually check that the lock interlocks out of the unlocking area:** Manually move the door until closing position and check that the slats are pressed and that the drive lever lock closes by pulling the upper end of the belt in the opening direction. (Top right drawing). Release the belt and check that the drive lever moves by itself (due to the spring force) to the fully expanded position. The closing hook must be in the horizontal position of blocked lock during this operation.
- 3. Check that the jumper is correctly centred on the contact base:** Push the carriage against the closing end to check centring in this position. The contact jumper must be aligned with the centre of the contact holes without touching the entrance edges. If necessary, the contact base will be adjusted in order to meet the correct alignment. The base can be adjusted either in the opening or closing direction. It can be accessed by using the eye set screws located behind its bracket.
- 4. Check electrical overlap:** Clearance between base and contact jumper must be between 5 and 3 mm. (With a 5-mm separation, a 3-mm electrical overlap is guaranteed). Electrical terminations must be tightened and secure.

1.10.4. Positioning of the pulling wheels of the landing door

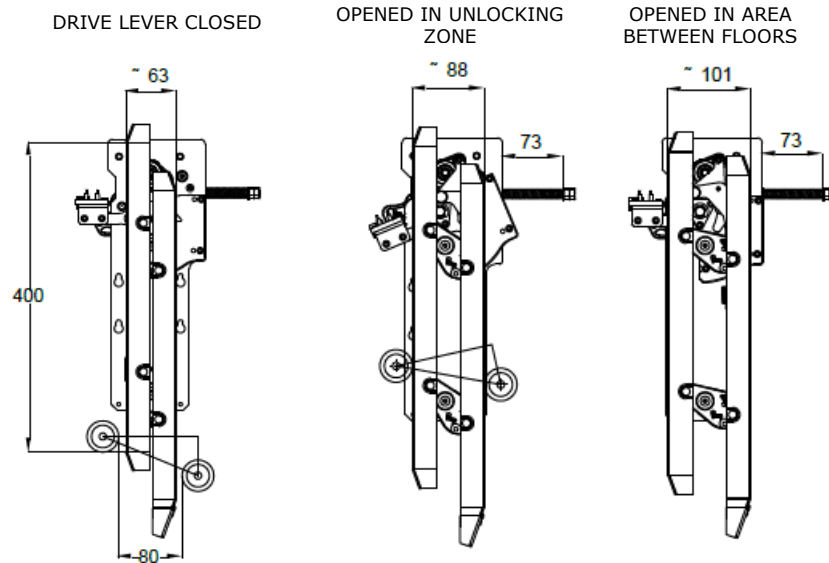
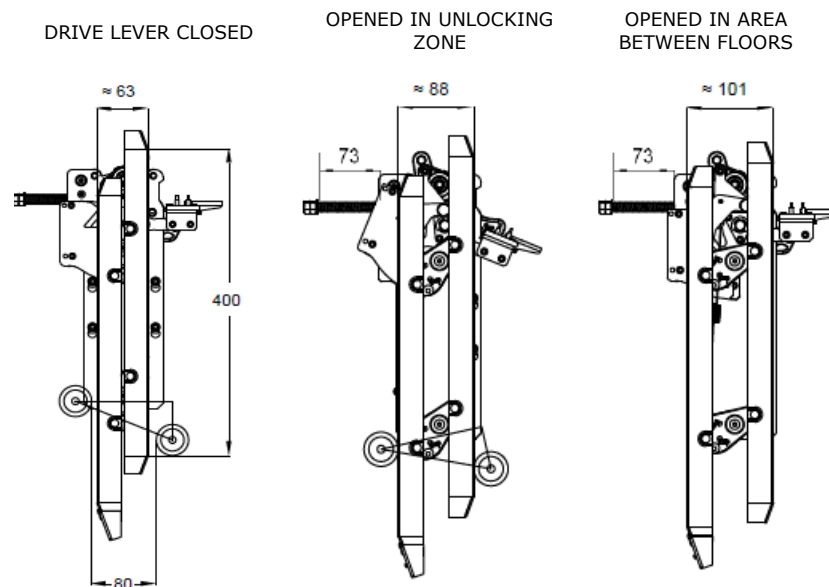
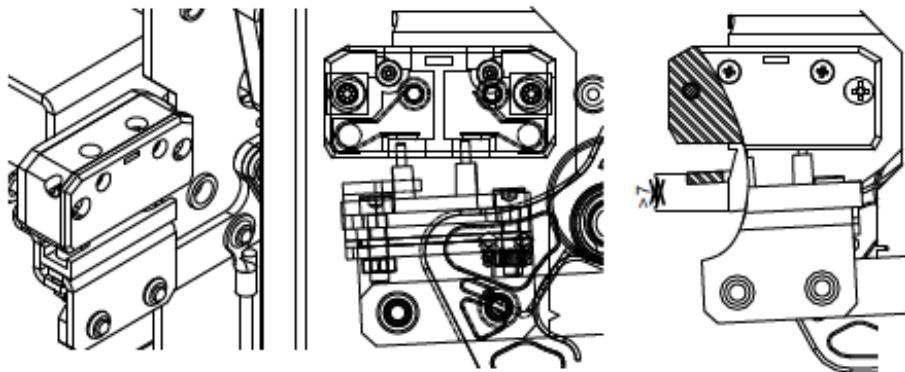


Adjustment of pulling wheels of landing doors: For a proper unlocking, it is compulsory to check the right adjustment of pulling wheels of landing doors. The space between the leaves of the drive lever, in closed position, and the wheels should be similar. If the space is not well distributed and the wheel nearer to the closing is not enough far away from the leave, there should be obstructions at the beginning of the opening.

1. Loosen screws (mark 1), until the pulling assembly can be moved manually.
2. Approach the car, so that the drive lever gets into the pulling wheels (mark 3).
3. Stop the car and position the pulling device (mark 2), in such a way that the drive lever is centred, respecting distances in the drawing as much as possible (7 and 8 mm). Besides centring it in relation to the drive lever, also check that the lap distance between the drive lever sheets (mark 4) and pulling wheels (mark 3), is approximately 12 mm (see drawing "positioning of pulling wheels"). For that purpose, place the device pull (mark 2) parallel to the carriage (mark 5) and leave some millimetres between them.
4. Once in place, mark the position (using an indelible pen).
5. Lower the car as to have an easy access, tighten screws (mark 1), ensuring that the device pull (mark 2) did not move from the position indicated. When tightening the device pull screws, pay special attention so that the device pull and the carriage remain parallel.



WARNING: Slowly approaching the car, check that the pressed drive lever does not touch the wheels and the car sill does not touch landing door pulling wheels.

1.11. Car door locking; dimensions and operating mode
Side opening

Centre opening

MECHANICAL OVERLAP AFTER THE ELECTRICAL CONTACT IS OVER


During the opening movement of the drive lever, this system detects if it is in an unlocking area (through contact with the landing door lock wheels).

Opening the lock in the unlocking area

When the car door opening movement sequence begins, if it detects it is in an unlocking area, it operates the device to open the door lock and, then, the door can be opened.

Closing the lock out of the unlocking area

If, however, during the movement, the controller detects that the car is not in the unlocking area, the lock will stay engaged and the door will not be able to be opened.

Electrical power failure

If it occurs in the unlocking area, the landing and car doors will be unlocked.
If it occurs out of the unlocking area, the car door will remain locked.

Emergency pressure on the slats

In case of the car moving either without power supply from the operator or disconnected, the slats will be forced to close on going past the next unlocking area. The doors will be unlocked and the safety chain will be cut off (car stop due to a safety chain interruption)

Emergency unlocking

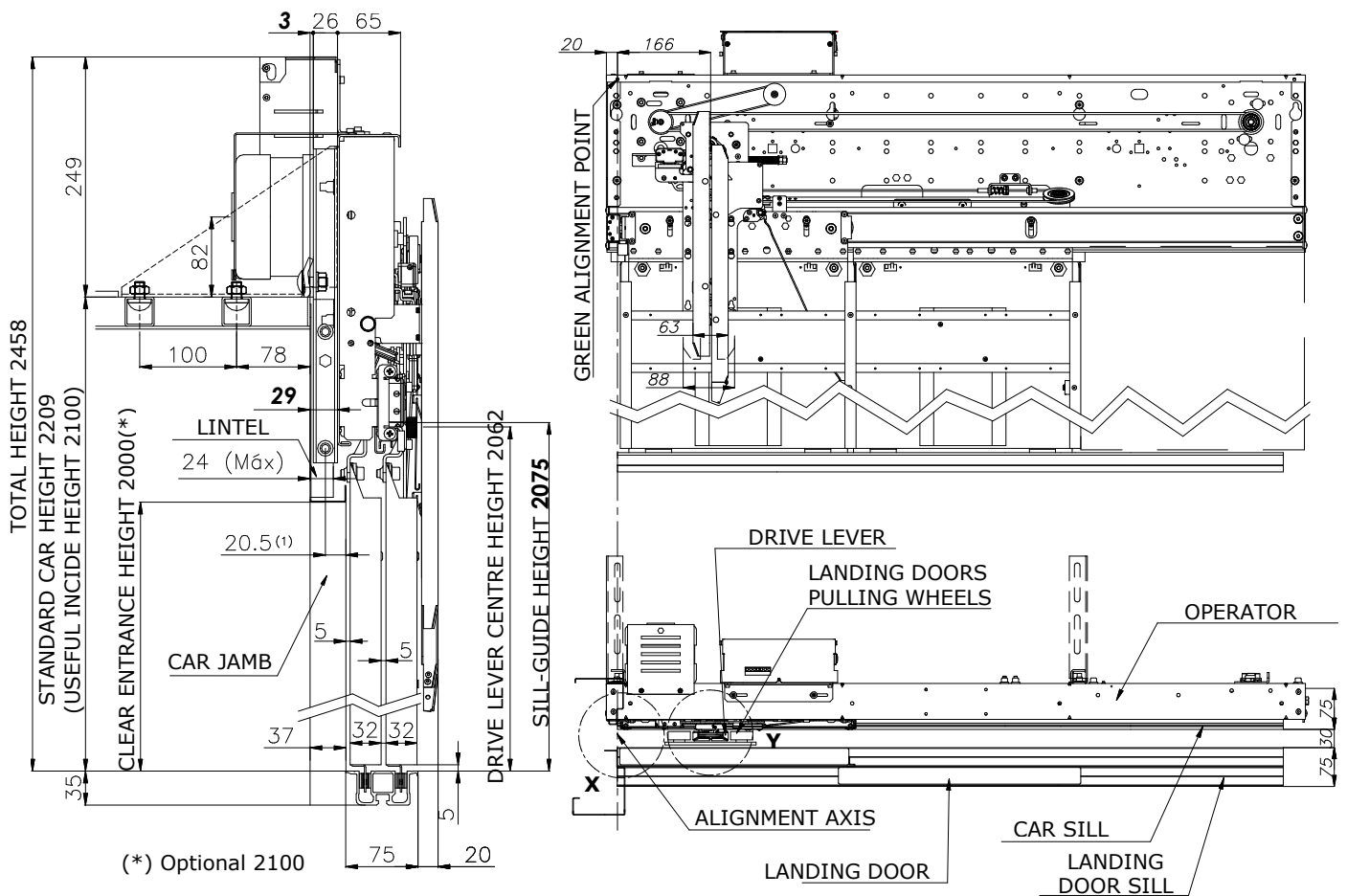
The emergency unlocking kit allows for emergency unlocking from outside the car when stopped out of the unlocking area. The handle of the unlocking system shall be pulled; it is identified by a sticker on the door panel (refer to the chapter about "Assembly of the emergency unlocking").

1.12. Global overviews and assembly measurements

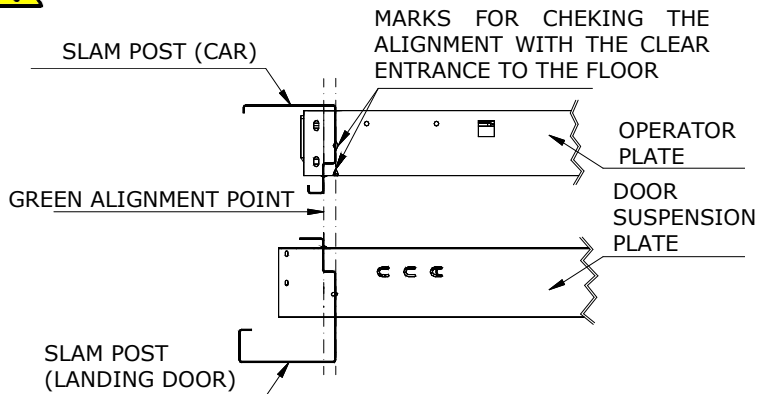
T2 OPERATOR



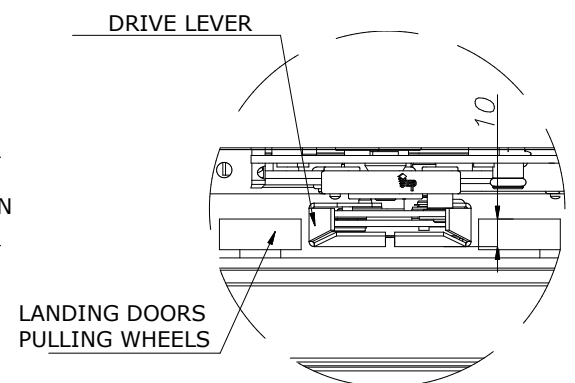
ASSEMBLY DISTANCES



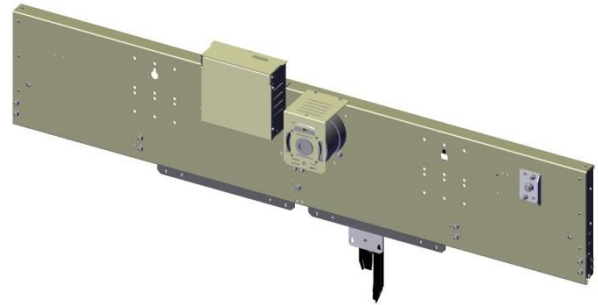
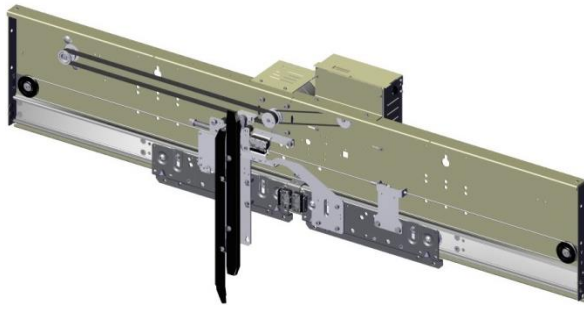
⚠ DETAIL X



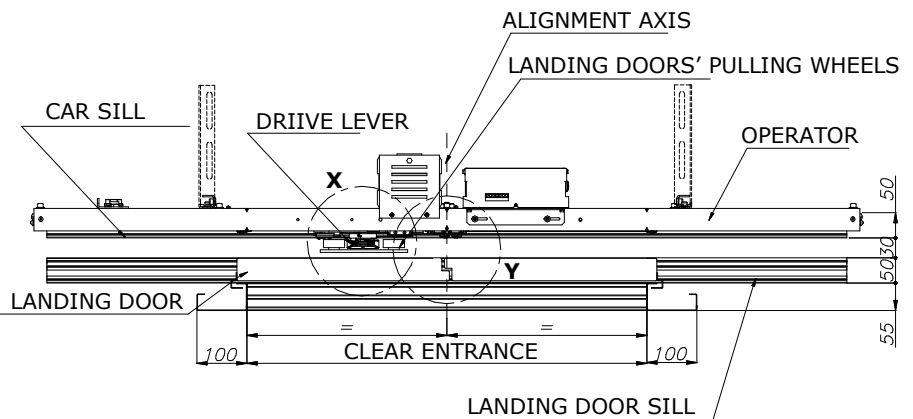
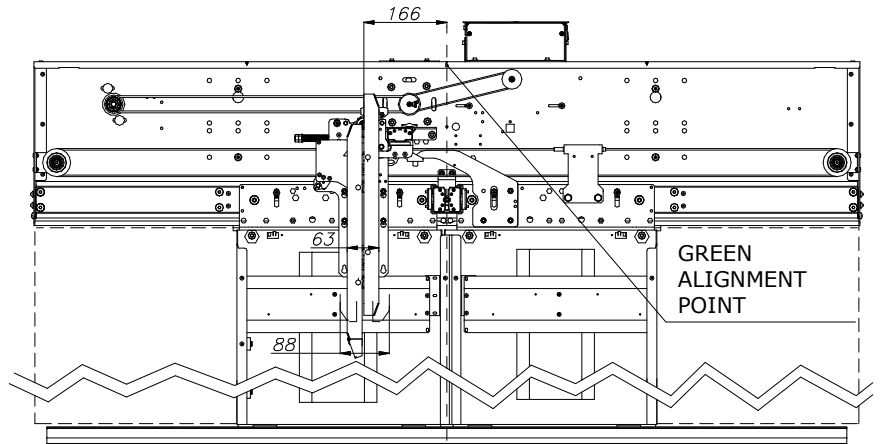
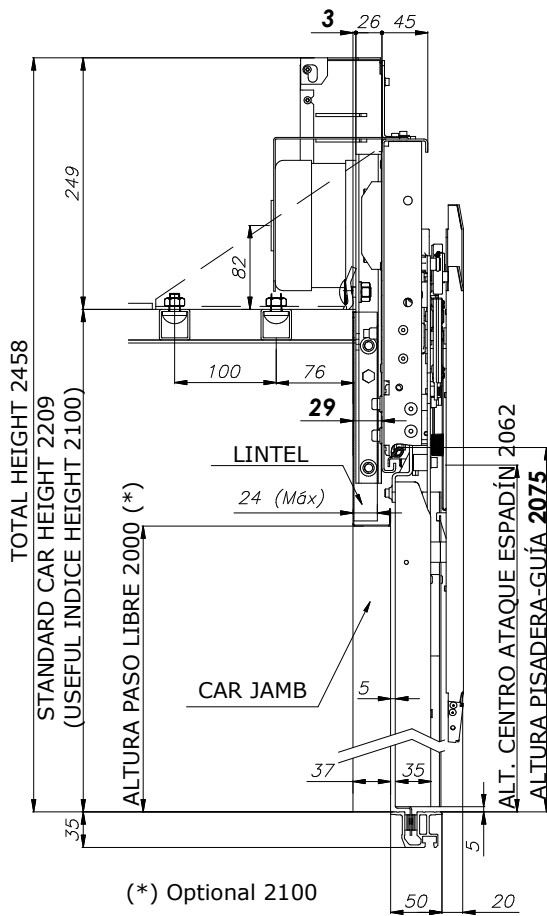
DETAIL Y



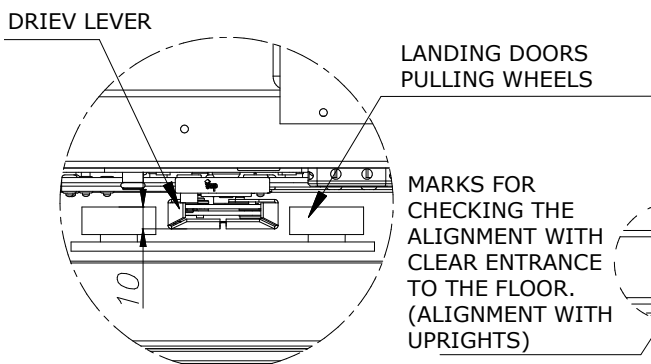
C2 OPERATOR



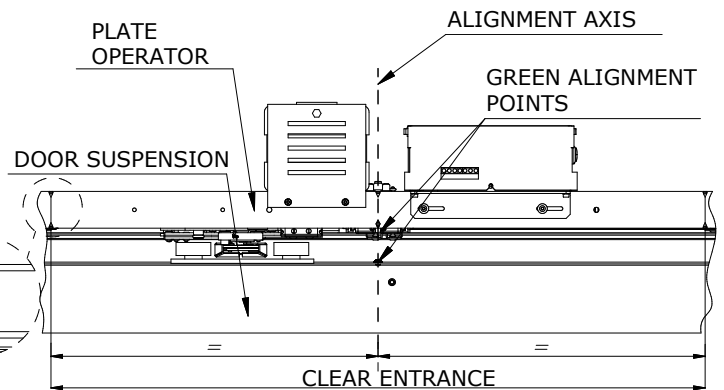
ASSEMBLY DISTANCES



DETAIL X



DETAIL Y

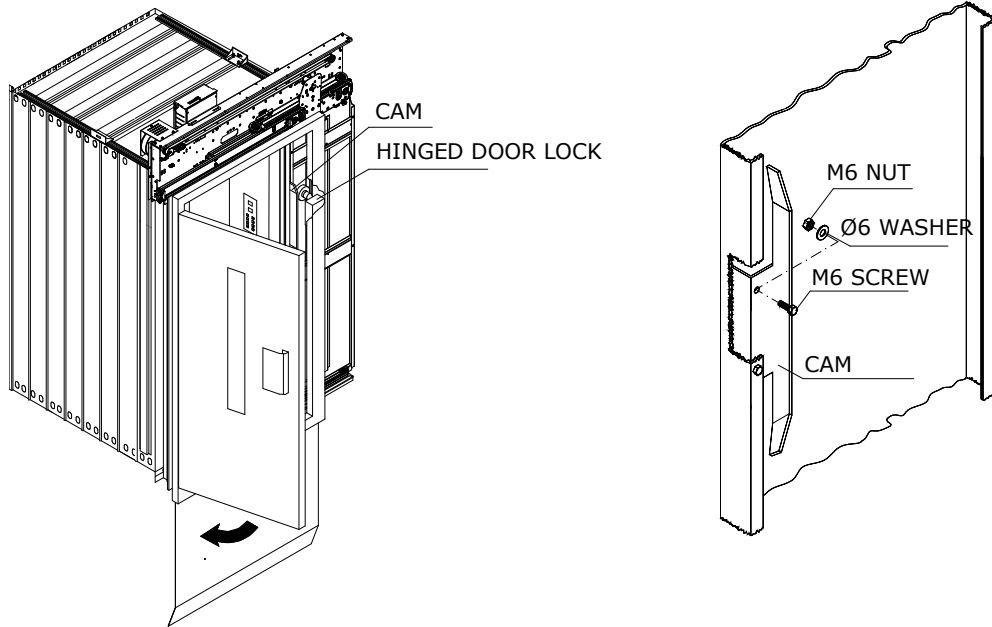


1.13. Fixed cam assembly

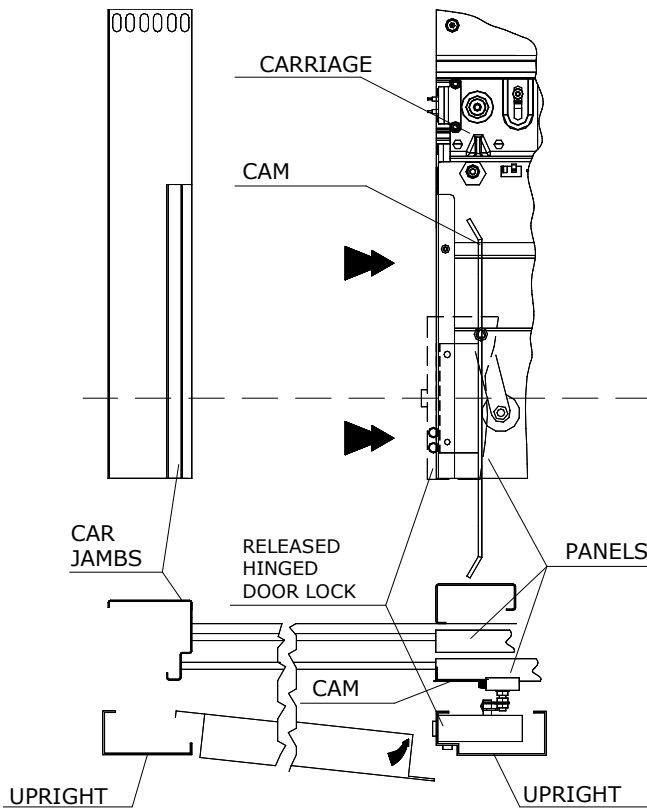
Actuation A-S: Automatic car door with hinged landing door.

The fixed cam is the optional device for the actuation of hinged landing doors, in the following car doors:

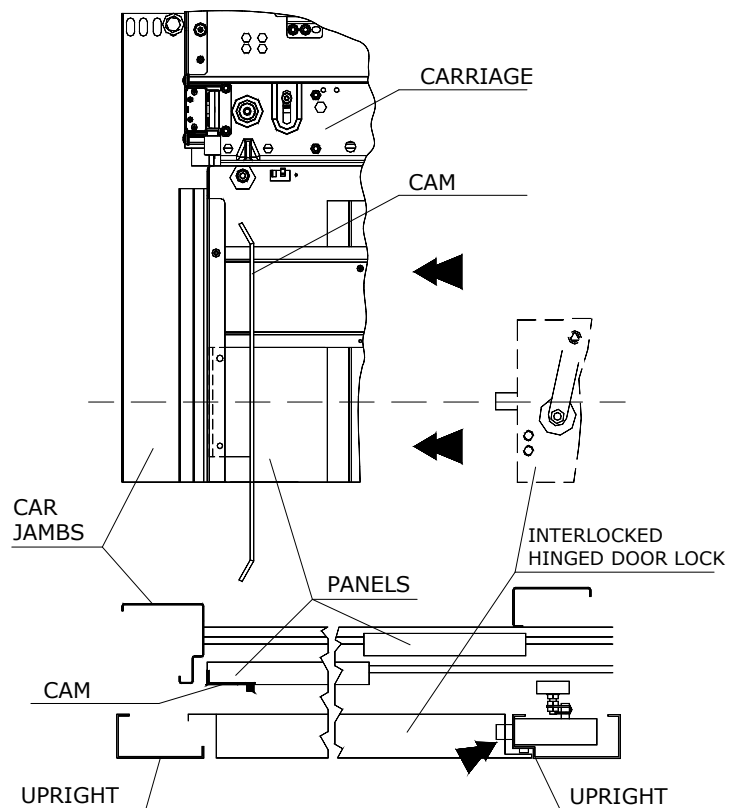
1. Centre-opening door.
2. Side-opening door with the opening in the opposite direction compared to the turn of the hinged landing door.



RELEASED LOCK IN LANDING DOOR



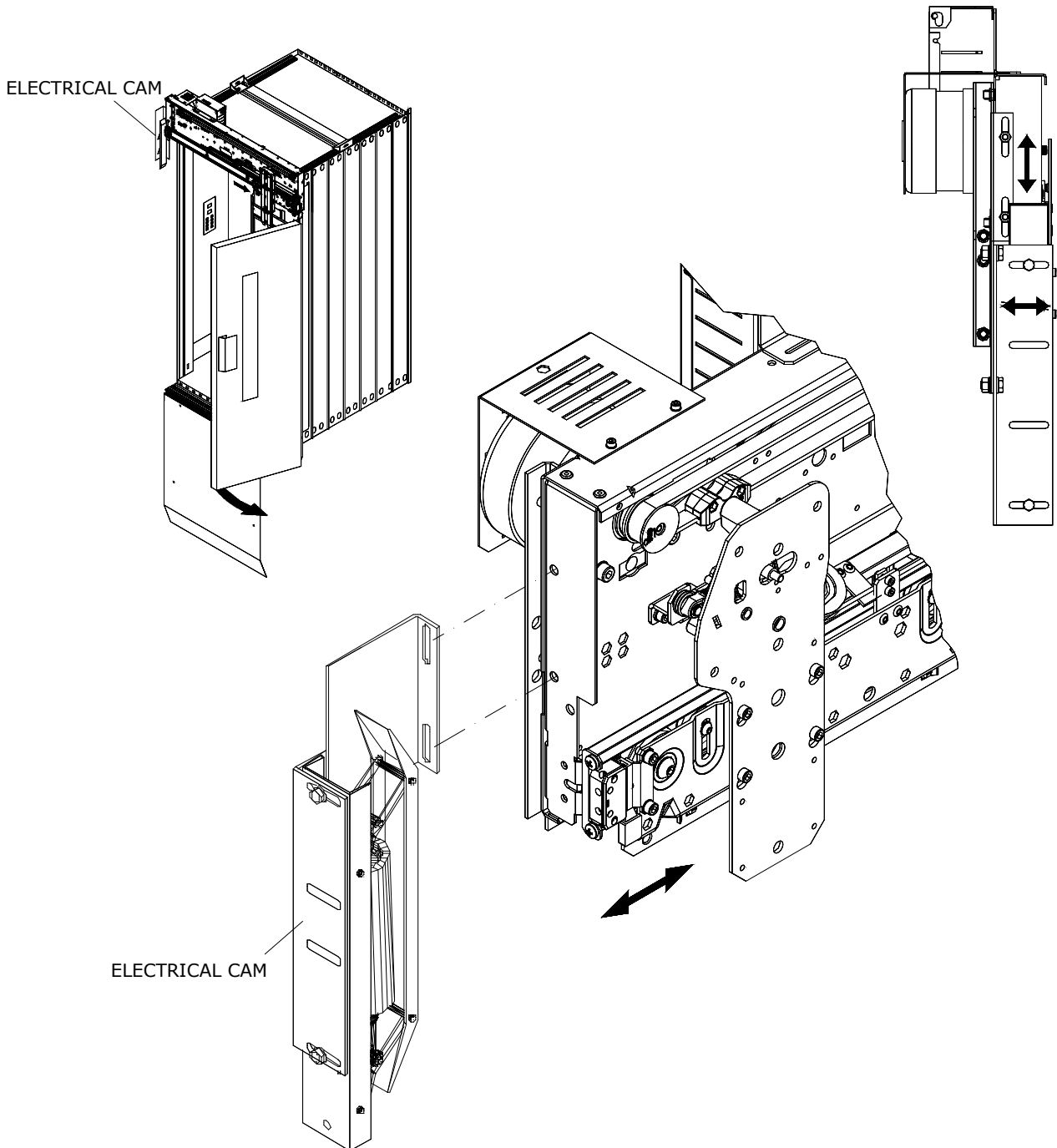
INTERLOCKED LOCK IN LANDING DOOR



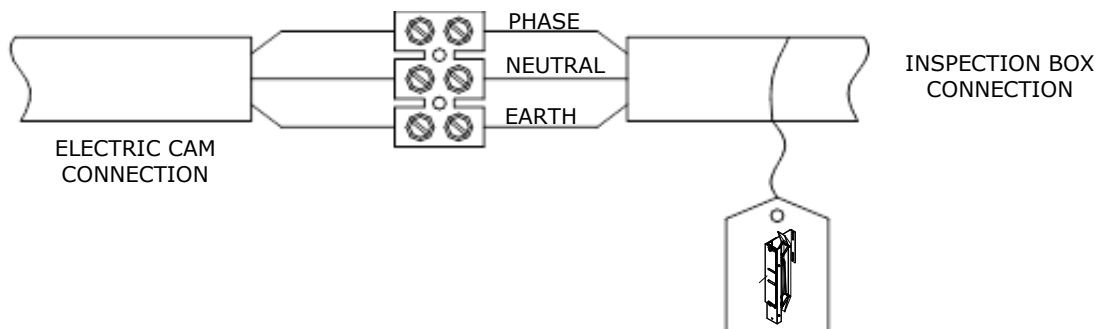
1.14. Electrical cam assembly

Actuation A-S: Automatic car door with hinged landing door.

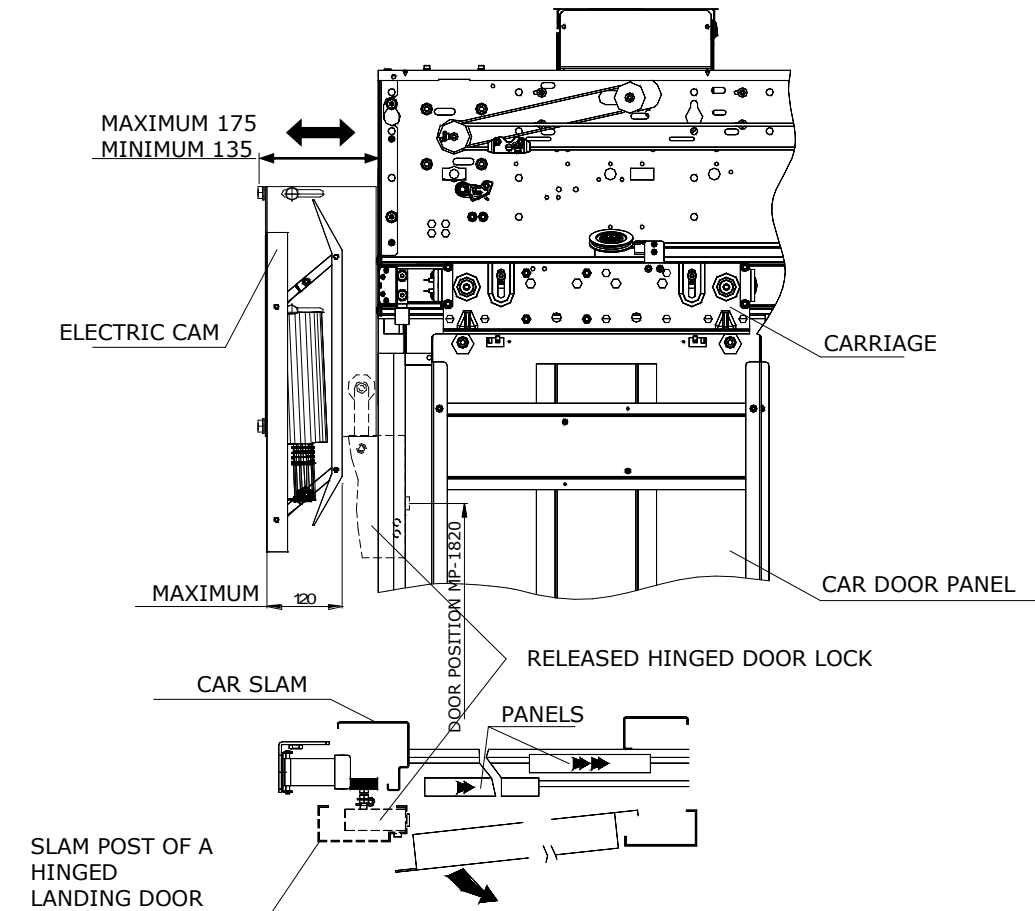
The electrical cam is the optional device for the actuation of a hinged landing door with an automatic side-opening car door, opening in the same direction.



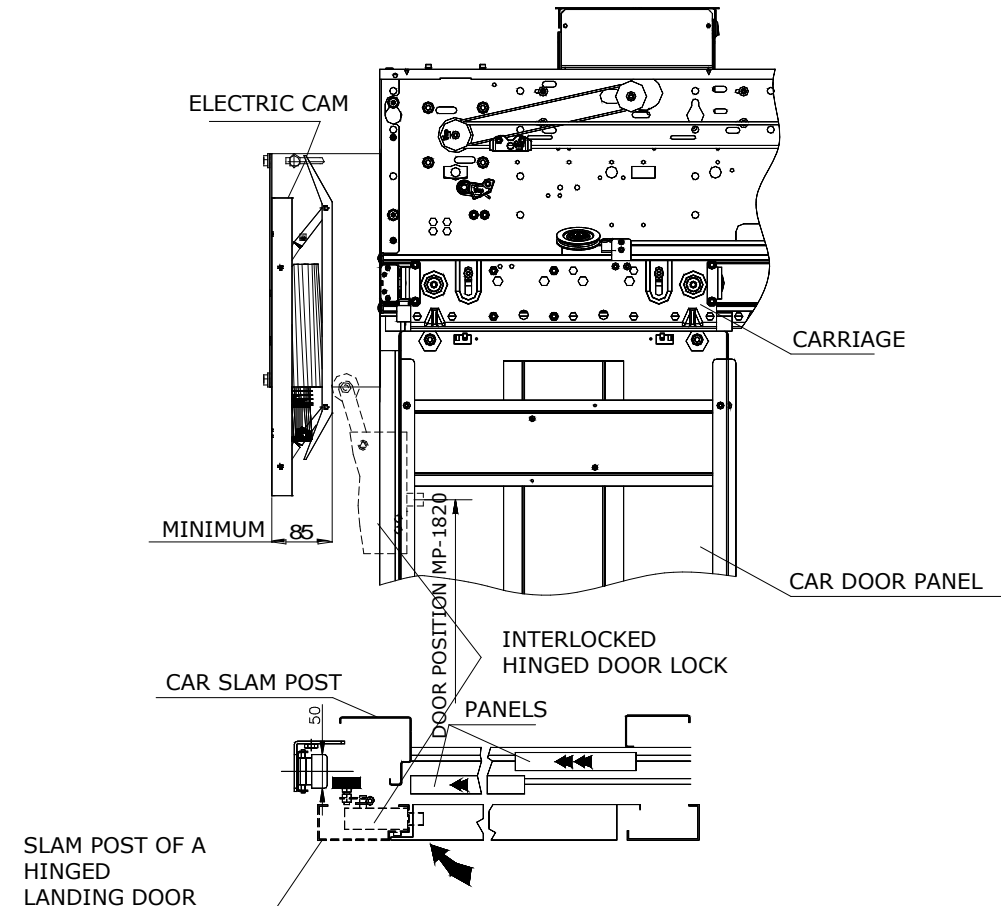
ELECTRICAL CONNECTION OF THE ELECTRICAL CAM (MODEL MAC-170)

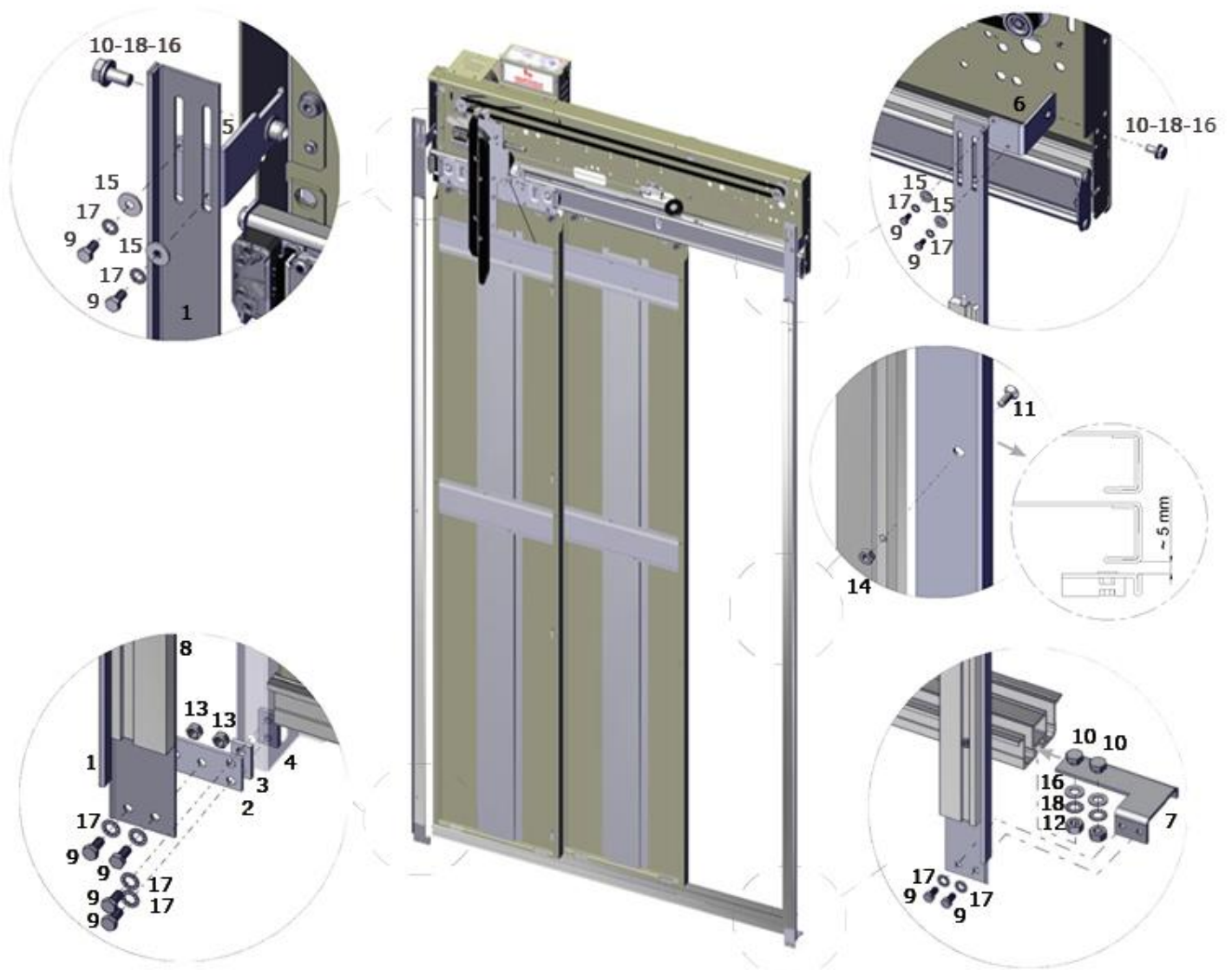
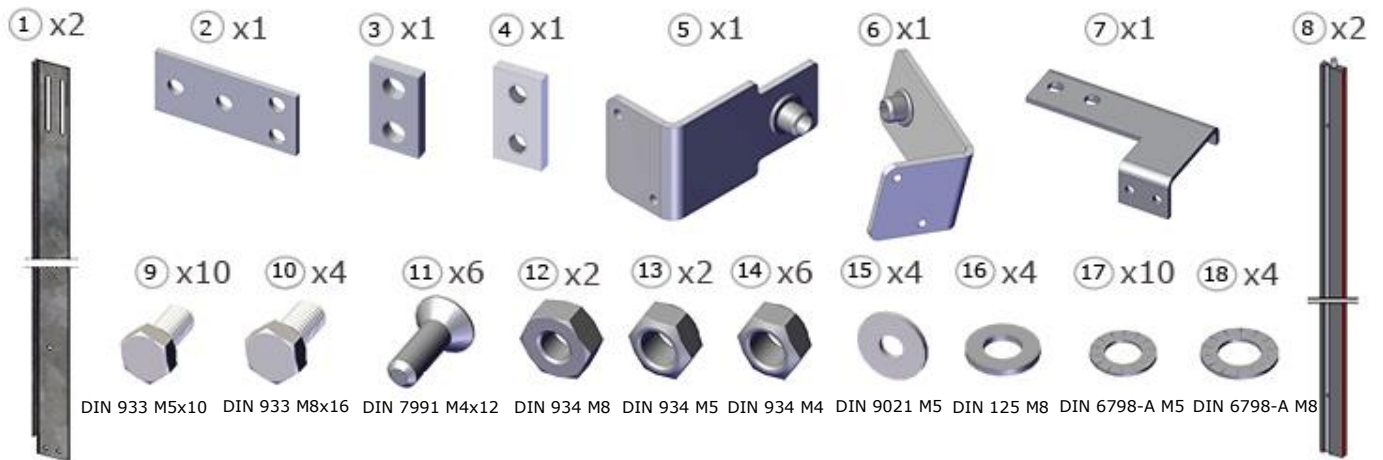


RELEASED LOCK IN LANDING DOOR

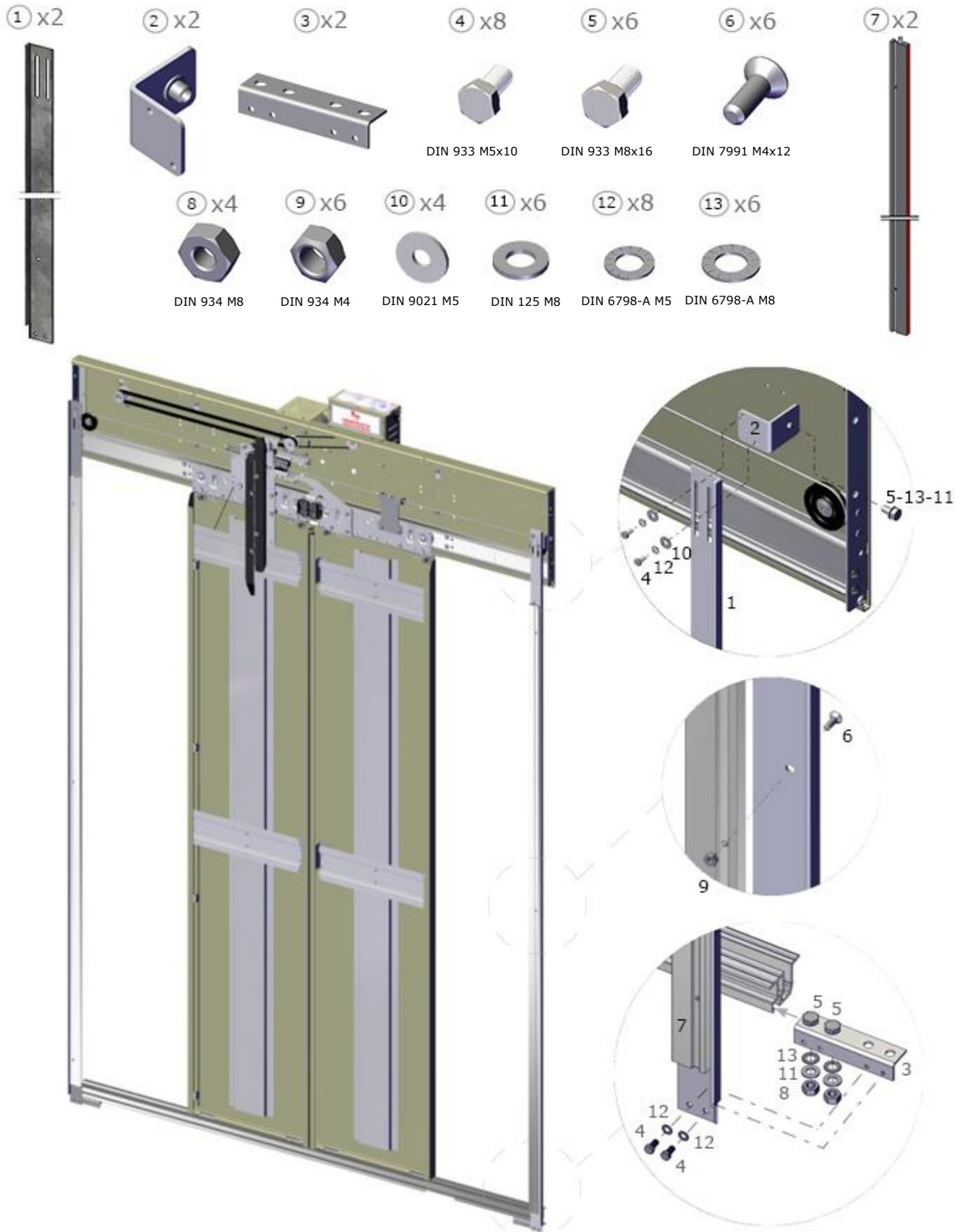


INTERLOCKED LOCK IN LANDING DOOR



1.15. Hardware assembly for curtain static photocell
1.15.1. T2 REVECO-GO! car door


1.15.2. C2 REVECO-GO! car door



2. OPERATOR COMMISSIONING

2.1. Previous checks

Once the operator is assembled on the car with panels and the other fixed elements, commissioning and verification of the correct operation takes place.

1. Before making the connection, check that the assembly and alignment are correct. To this end, perform an opening and closing operation pushing the fast carriage with your hand and verifying that there are no signs of shocks or rubbing between panels and between panels and the frame.

2. Make the electrical connections following the instructions of next chapter "Electric part of the Operator REVECO-GO!".

2.2. Electrical circuit of the REVECO-GO! operator

WARNING: VERY IMPORTANT

1. DOCUMENTATION

Perform the operations in the equipment once you have read this documentation throughout. Familiarize yourself with the equipment as to guarantee a correct installation.

2. CONNECTIONS

When making the electrical connections, handle the connectors without interfering in the electronic components.

3. HANDLING - COMFIGURATION

When handling the equipment, make sure that it is not powered. Turn off the general switch and wait some minutes until the red leds located in position 1 of the upper bank of leds and the one located approximately in the centre of the circuit are totally off. Do not open the electronic box or handle the connectors while they are on.

There is residual stress in the electronic circuit and there is a risk of electric discharge and components wear.

2.2.1. General description

The electronic system, which constitutes an indivisible part with the door operator REVECO-GO! enables fast and progressive opening and closing of doors, through the regulation of the traction motor speed, thus regulating the comfort level.

Speed regulation is obtained with frequency variation / voltage variation (VVVF), operating in closed loop.

The reading of door speed, position and direction of movement is made through double pulse encoder, integrated into the electronic circuit. It is located behind the reading pulley, next to the motor, which transmits the motor rotation through the gear-tooth belt.

This information enables removing all the traditional contacts of door operators (final limit switches, sensitivity microswitch...).

2.2.2. Electrical features

Power supply (connections V1-V2)..... 230 VAC \pm 10% single-phase.

Consumption..... 1.2 A_{rms}.

Open / close command..... (connections C1, C2, C3, C4) See the following table.

OPENING AND CLOSING OPERATION MODE	
MODE ⁽¹⁾	Connections: C1, C2
	Connexions: C3, C4
MODE B ⁽²⁾	OPEN DOOR.....(C1, C2) = 0 VAC/VDC..... and (C3, C4) = 48 ÷ 220 VAC/VDC CLOSE DOOR.....(C1, C2) = 48 ÷ 220 VAC/VDC..... and (C3, C4) = 0 VAC/VDC LOW CLOSING SPEED.....(C1, C2) = 48 ÷ 220 VAC/VDC..... and (C3, C4) = 48 ÷ 220 VAC/VDC DOOR WITHOUT MOVEMENT.....(C1, C2) = 0 VAC/VDC..... and (C3, C4) = 0 VAC/VDC
MODE A ⁽³⁾	CAM SIGNAL: OPEN DOOR.....(C1, C2) = 0 VAC/VDC CLOSE DOOR.....(C1, C2) = 48 ÷ 220 VAC/VDC ADDITIONAL SIGNAL: LOW CLOSING SPEED = 48 ÷ 220 VAC/VDC (NO OBSTRUCTION DETECTED)
NOTES	
(1) THE OPERATION MODE WILL BE CHANGED BY MEANS OF THE PARAMETERS LOADING (CHECK IN THE MANUAL) OR THROUGH THE PC CONNECTED TO THE PORT SERIES. (2) FACTORY-DEFINED OPERATING MODE, EXCEPT WITH 042 EMERGENCY DEVICE OR MicroBASIC WITH RELAY KSG IN CONTROLLER. (3) ONLY WITH 042 EMERGENCY DEVICE OR MicroBASIC WITH RELAY KSG IN CONTROLLER.	

Presence detector contact output ...(Connections OB2 – OBX)... Output through voltage-free contact (NC, from factory): 30 VDC, 4 A; 250 VAC, 2A.

2.2.3. Electrical connection of the operator



Before performing the electrical connection of the operator, make sure that the general power supply of the lift is off.

A) Access to the electronic card (see drawing):

Loosen the 4 screws **(1)**, it is not necessary to take them off. To do so, use an Allen key no. 3.

1. Remove the rear cover **(2)**.

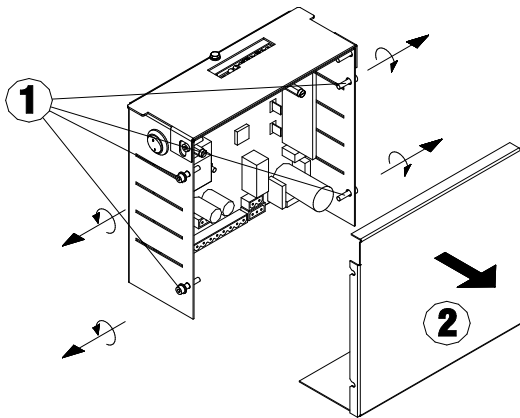
B) Electrical connection (see photos):

1. Remove the female connector P12 from the electronic board. Then, remove the safety chain connectors of car door (XPC), the ones for the monitoring of closed doors (XMPC) and the ones for door open (XARP), according to EN 81-28, (see chapter "General diagram of connections").

2. Connect each of the single-pole cables from the control unit hose (from the inspection box, in case of MP electrical installation) to the connectors which were previously removed. To his end, bear in mind the wiring indications of the electrical connection scheme (See chapter "General diagram of connections" and the label located inside the rear cover).

3. Secure the group of cables to the anti-jerk flange fixed to the lower part of the box, leaving enough cable length as to permit the connection and disconnection of the connectors.

4. Re-place the rear part and fix tightening the 4 side screws **(1)**, using the Allen wrench no 3.



Connector XARP
(acc./EN 81-28). Open car door contact

Connector XPC
(Door contact in the safety chain)



Connector XMPC for the monitoring of doors closed, when the controller is in bypass mode of the lock contact in the safety chain. Main connector P12



The electronic boards can be provided with a specific software version for the model in which they are included. Any exchange with another operator's ones may cause a device malfunctioning. If required, refer to after-sales service for technical support.



Installation of the main connector P12, wired according or the electrical connection scheme in the electronic card.



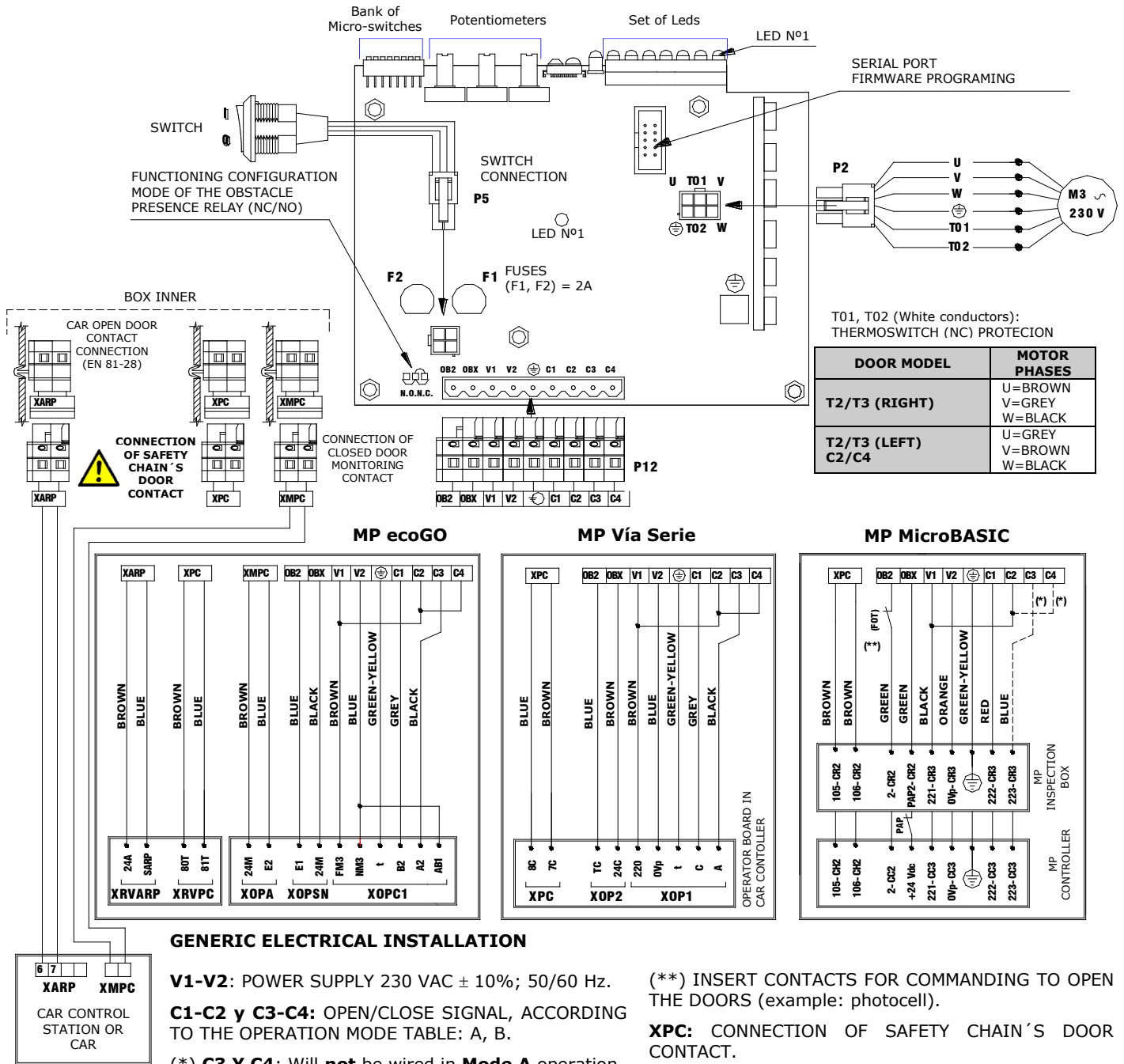
Installation of connectors XPC, XMPC and XARP already wired, in the side of the electronic box.



Anti-jerk flange for cables
View of the electronic card with the wired connectors in place and cables secured with the anti-jerk flange located on the lower part of the box.

2.2.4. General diagram of connections

Diagram of electrical connections



GENERIC ELECTRICAL INSTALLATION

V1-V2: POWER SUPPLY 230 VAC \pm 10%; 50/60 Hz.

C1-C2 y C3-C4: OPEN/CLOSE SIGNAL, ACCORDING TO THE OPERATION MODE TABLE: A, B.

(*) **C3 Y C4:** Will **not** be wired in **Mode A** operation.

(**Mode A:** Required with 042 emergency device or MicroBASIC with relay KSG in controller).

OB2-OBX: DOOR OPENING CONTACTS: 30 VAC, 2 A/250 VAC, 2A. SIGNAL OUTPUT FOR DOOR OPENING VIA THERMAL SWITCH, FOR OPENING DUE TO OBSTACLE AND FOR PHOTOCELL WITH MicroBASIC CONTROLLER.

(**) INSERT CONTACTS FOR COMMANDING TO OPEN THE DOORS (example: photocell).

XPC: CONNECTION OF SAFETY CHAIN'S DOOR CONTACT.

XMPC: CONNECTOR FOR CLOSED DOOR MONITORING, IN BYPASS MODE OF THE LOCK CONTACT IN THE SAFETY CHAIN.

XARP: CONNECTOR FOR THE CAR OPEN-DOOR CONTACT (NO), ACCORDING TO EN 81-28.

2.2.5. Relevant elements of the electronic circuit

A. CONNECTORS

1. MAIN connector (P12):

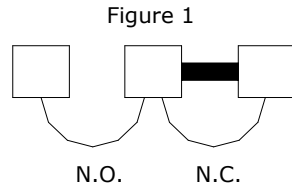
C1- C2; C3- C4: Open/close signal.

OB2 - OBX: Presence detector contact output (Relay `presence of obstacle`). Normal mode NC (normally closed) bridged.

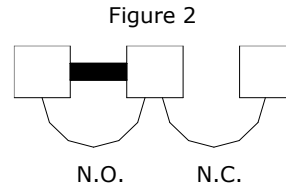
(V1 - V2): Supply.

Earth.

NOTE: The electric equipment is supplied with the factory configuration regarding the relay 'presence of obstacle' in NC mode (normally closed). In the case the client prefers the NO mode configuration (normally open), proceed as follows.



FACTORY CONFIGURATION



OPTIONAL CONFIGURATION

* In the case you wish the electronic equipment to be supplied with N.O. configuration, please indicate in the order. NC is the default configuration supplied.

2. MOTOR connector (P2):
U - V - W: Three-phase supply of motor.
TO1 - TO2: Thermal protection of motor (Thermo-switch, NC).
EARTH.
3. Main switch (P5)
4. Door series safety contact (XPC)

B. FUSES (F1 - F2 / 2A)

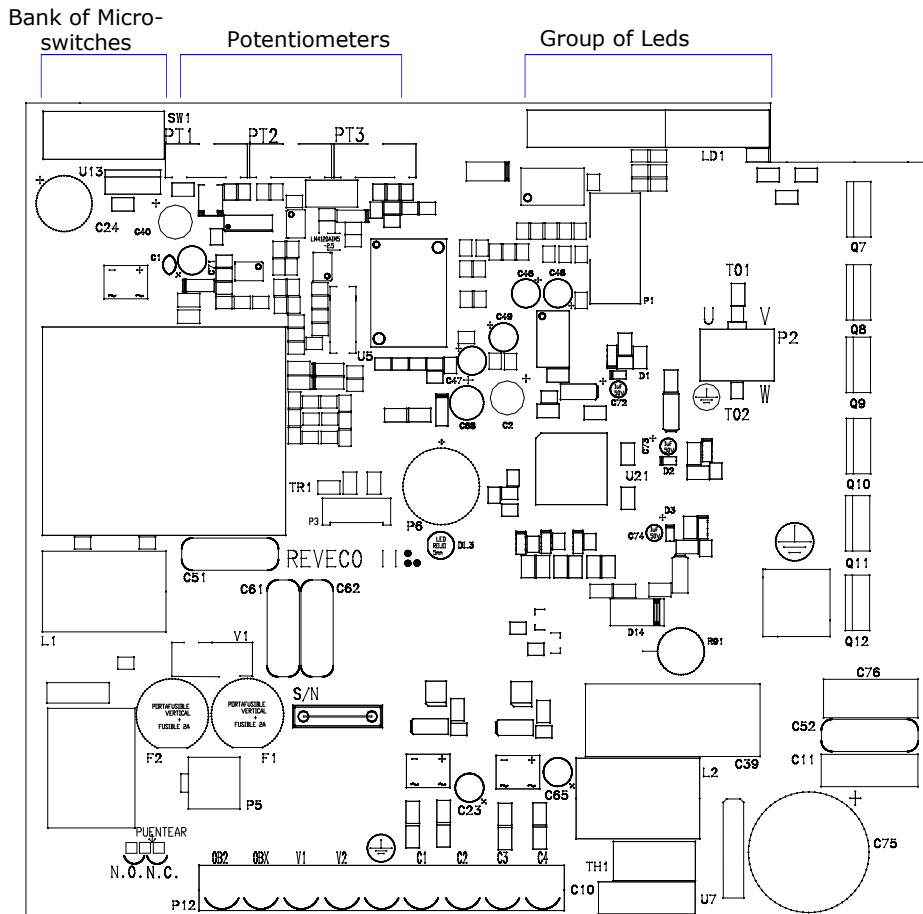
They protect both supply phases. The destruction of one or several fuses leads to a power cut in the power and control area. If you need to replace them, firstly disconnect the power to the equipment. Use 2A fuses.

VERY IMPORTANT NOTE:

If fuses F1 and F2 repeatedly blow when powered, the electronic circuit should be replaced.
If fuses F1 and F2 are in good working order but led 1 is not activated when powered, the electronic circuit should be replaced.

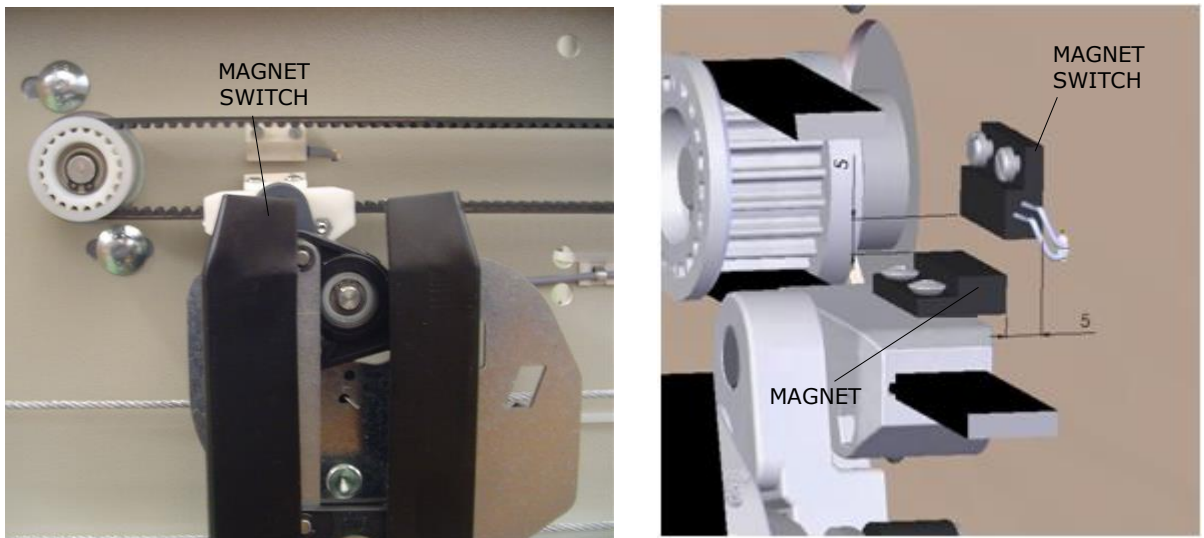


2.2.6. Printed circuit serigraphy

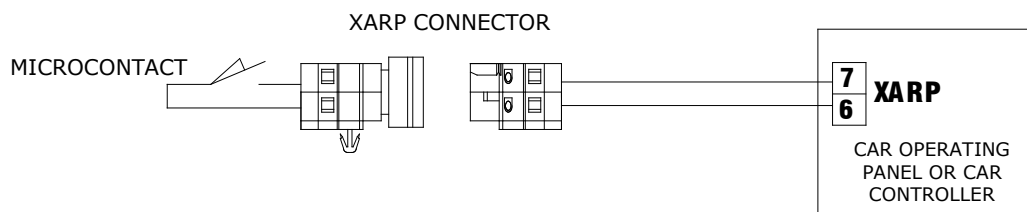


2.2.7. Car open door contact (EN 81-28 and EN 81-70)

The operator is optionally provided with a magnet switch (NO-normally open) that gives the “car door full opening” signal for filtering of emergency calls, according to EN 81-28 and EN 81-70.



DOOR OPEN MICROCONTACT SET
(MICROCONTACT NORMALLY OPEN)



2.2.8. General switch and operation start

A. GENERAL SWITCH

1. It can be actuated from the outside of the box and enables, upon deactivation (position 0), interruption of the power to the equipment and stopping the door movement immediately.

NOTE: Led 1 will remain on while there is residual stress in the electronic circuit. If the wiring or the inside of the electronic box need to be handled, wait some minutes for the circuit to be discharged, that is until led 1 of the upper and internal front of the electronic card is totally turned off. Otherwise, there is a risk of electric discharge and destruction of the equipment.

2. Upon activation of the general switch (position I) to return to normal operation of the operator, led no. 1 of the equipment will switch on and the present working mode will start. That is, in normal mode (microswitch 1 in OFF position) POSITION RESET will be actuated and in DOOR SIZE READING mode (microswitch 1 in ON position), this process will start (the operator is supplied with this operation already pre-defined at the factory and in principle there is no need to actuate microswitch 1). Keep reading.

B. START OF NORMAL OPERATION (POSITION RESET)

When the equipment is energized in normal operation (microswitch no. 1 in OFF position), the starting process will be as follows:

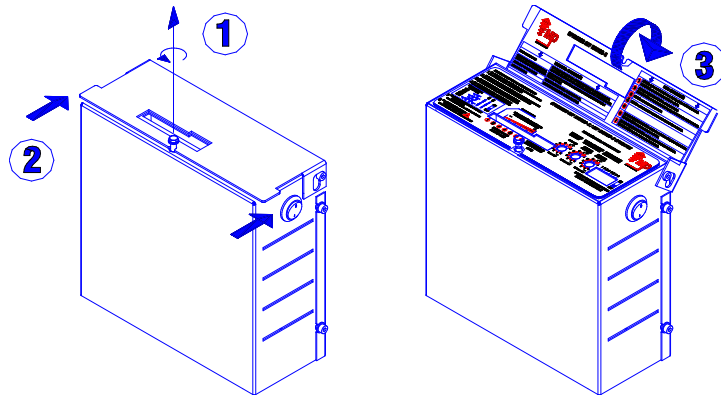
If there is no command for closing doors: It will slowly open doors until reaching the totally open position. Position zero will then be attained and it will operate in normal mode meeting the open/close order. If during slow opening an order is received to close, it will ignore it until reaching position zero.

If there is no command for closing doors, it will close doors slowly. It may even close them completely. When the order to close doors disappears, it will execute the above-mentioned process.

NOTE: If led 5 is activated (clear entrance read not supported), as well as the permanent error acoustic signal, when the equipment is energized, and the position RESET operation is not performed, the door size reading process must be previously carried out. In the event of electronic card replacement.

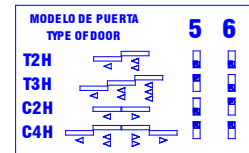
2.2.9. Equipment configurations: adjustments


For its control and adjustment, the equipment has a bank of microswitches, a bank of leds, a buzzer (acoustic signals), potentiometers and communication with PC (Via Serial port). They are located on the upper part of the electronic card box and can be accessed by lifting and turning the top cover of this box. Layout is indicated below:



MICROSWITCHES

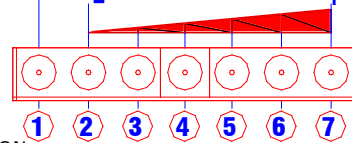
- 1 ON: DOOR SIZE READING PROCESS
OFF: NORMAL OPERATION
- 2 ON: HINGED LANDING DOOR
OFF: AUTOMATIC LANDING DOOR
- 3 ON: SLOW OPENING SPEED
OFF: FAST OPENING SPEED
- 4 ON: SLOW CLOSING SPEED
OFF: FAST CLOSING SPEED



- 5
- 6
- 7 ON: RESTORE PARAMETERS
OFF: NORMAL OPERATION
- 8 ON: FIRMWARE PROGRAMMING 
OFF: NORMAL OPERATION

HIGH VOLTAGE

POTENTIOMETER REGULATION SCALE

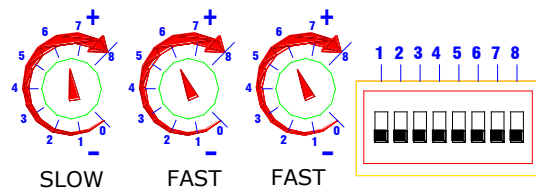


BANK OF LEDS

POTENTIOMETERS

SENSIBILITY OPENING BRAKING CLOSING BRAKING

HIGH PROGRESSIVE PROGRESSIVE



BANK OF MICROSWITCHES

2.2.10. Microswitches



1. In principle, IT IS NOT NECESSARY TO OPERATE MICROSWITCHES, since the equipment is supplied factory-configured. It is only necessary to operate microswitches 3 and 4, as appropriate, turning to ON position in order to achieve slow speed in opening and closing. For the rest of microswitches, only operate in special situations, as described below.

2. For a change of the microswitches configuration to be activated, it is necessary to disconnect and re-connect the power supply to the equipment with the general switch.

- **Microswitch 1:** IT MUST REMAIN IN THE OFF POSITION, so that the operator can perform normal door opening and closing operations. Only when a reading procedure of door size or clear entrance dimensions is required, this microswitch will be shift to the position ON (see chapter about "reading of clear entrance or door size"). It determines the operation in mode B when it is activated along with microswitch 7 during the parameter loading.
- **Microswitch 2:** The OFF position is defined for the cases where the operator activates an automatic landing door. The ON position, in the case of hinged landing door.
- **Microswitch 3:** With REVECO-GO! it shall be in **ON position** during the parameter loading procedure, along with microswitch 7. It manages the opening speed of the door. The OFF position is related to a quick speed (position defined at the factory), the ON position is for a slow speed.
- **Microswitch 4:** It controls speed of door closing. The OFF position corresponds to fast speed (factory-defined position), while the ON position implies slow speed.
- **Microswitches 5-6:** Joint operation of both microswitches enables selection of the door model, according to the above diagram. The operator is supplied with microswitches 5-6 positioned. (Only operate in the case of electronic card replacement).

NOTE: All the door control software (speeds, sensitivity, acceleration and deceleration zones) depends on the type of door configured.

- **Microswitch 7:** Restore / load factory parameters. It must remain in OFF position. For further information, read point "parameter loading" below.
- **Microswitch 8:** IT MUST REMAIN IN THE OFF POSITION, so that the operator can perform normal door opening and closing operations. Only operate this microswitch in case of special operation (firmware programming of the operator).



WARNING: In the ON position the operator remains non-operating.

2.2.11. LEDES

In normal operation, leds 1 (permanent) and 2 (blinking in movement; stable with no movement) are activated and the rest are activated only in special situations, as described below:

- **Led 1:** When it is on, it informs that the equipment is energized (230 +- 10% VAC single-phase), or that once disconnected, there is still residual stress in the electronic circuit.
IMPORTANT: Do not try to access the inside of the box or handle the electronic card when this led is on. Wait some minutes for the discharge, until led 1 of the upper and inside front of the electronic card totally switched off.
When it is off, the operator is turned off.
- **Led 2:** If represents reading of the encoder pulses, when the operator is functioning, opening and closing doors. This led blinks if there is panel movement.
- **Led 3:** When it is on, it indicates that the operator is reading the clear entrance or the door size. When it is blinking, it informs that the door closes at low speed and without detection of obstacles.
- **Activation or ignition sequence of leds no. 2 to 7:** it takes place in the following conditions:
 1. When any of the potentiometers is operated for regulation; the led sequence turns on gradually from led 2 to 7, as the potentiometer goes from the minimum level (0) to the maximum level (8).
 2. When the equipment loads or restores factory parameters. This takes place at the end of door size reading.
- **Leds 4, 5, 6 and 7:** These leds remain off while the operator works correctly and it only turns on (they remain on or they blink) when the equipment detects an error or an anomaly in the operation. (See chapter "display of the information provided by the electronic equipment").

2.2.12. Acoustic signals (buzzer)

To get more information or to show the state of the operation which the operator is in, the electronic equipment has a buzzer (warning acoustic signal). See chapter "display of the information provided by the electronic equipment".

2.2.13. Communication with PC

The equipment has a connection serial port for the communication with PC. Through a PC reading and re-programming of parameters can be made (opening and closing speeds, acceleration and deceleration zones, etc...).

This operation can be performed from the landing or floor, without getting up to the car roof and it is just necessary connect the PC to the electronic board through the serial part, and access to the communication program on the PC.

2.2.14. Potentiometers

The potentiometers can be used to achieve the regulation or adjustment that most suits the client, depending on the installation conditions, regarding the sensitivity for detecting obstacles and the moment at which the door ends its acceleration when opening and closing.

NOTE: The adjustment of the potentiometers when the operator leaves the factory is between 5 and 7, an adjustment margin that is considered optimal. However, they must be adjusted to the required value during setting up, once the civil work is finished and after cleaning the door track and guide rail.

Sensitivity

The sensitivity potentiometer is used to alter the behaviour of the door when it detects an obstacle in its way during closing.

- With a near minimum value (0), "low sensitivity", the door re-opens when the force preventing its closure is high: "hard door".
- With a near maximum value (8), "high sensitivity", the door re-opens immediately when it detects a minimal force preventing its closure: "soft door". In the maximum sensitivity position (8), the door may open continually due to small blockages (dirt on the door track, installation misalignments, etc.).

REMARK:

The final operator sensitivity adjustment must be made in the installation itself since it leaves the factory with a medium adjustment. Once construction has finished and with the door track and guide rails clean, it must be adjusted during setting up to slightly below the maximum value, thus ensuring an increased sensitivity without causing re-openings for minimal blockages (dirt on the door track, etc.).



When the installation should comply with the Standard **EN 81-1** or **EN 81-20**, check that the effort needed to prevent the door closing does not exceed **150 N**. (This measurement shall not be made in the first third of the travel of the door. In addition, it should be carried out keeping the dynamometer in contact with door, while ensuring there is no knock).

Likewise, the kinetic energy, calculated or measured at the average closing speed, shall not exceed **10 J**. This checking can be made through a dynamometer with a known constant, as mentioned in the Standard.

• Opening braking

This potentiometer alters the moment during door opening when the door ends its deceleration.

- With a near maximum value (0), "rapid opening braking", the door ends its deceleration immediately after it passes the mid-point of its path.
- With a near maximum value (8), "progressive opening braking", the door ends its deceleration so near the end of its path that a light blow may occur at the end. In installations with standard doors, the potentiometer should normally be adjusted to between 5 and 7.

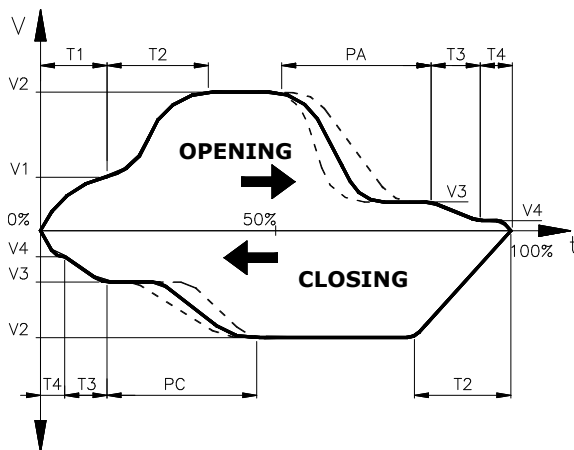
• Closing braking

This potentiometer alters the moment during door closing when the door ends its deceleration.

- With a near minimum value (0), "rapid closure braking", the door ends its deceleration immediately after it passes the mid-point of its path.

NOTE: An adjustment near to the minimum value could be suitable in installations with very heavy doors, due to the inertia itself, or when considerable travel at very low speed is desired before the door closes completely ("soft" trapping).

- With a near maximum value (8), "progressive closure braking", the door ends its deceleration near the very end of its travel. In installations with standard doors, the potentiometer should normally be adjusted to between 5 and 7.

2.2.15. Setting of opening/closing curves


Parámetros de las curvas de apertura y cierre:
(Se indica entre paréntesis el dispositivo que permite configurar su valor)

- V1:** Velocidad de arranque (PC)
- V2:** Velocidad nominal (Micro-interruptor 3 o 4 / PC)
- V3:** Velocidad de aproximación (PC)
- V4:** Velocidad de parada (PC)
- T1:** Tiempo curva espadín: Desenclavamiento (PC)
- T2:** Tiempo curva aceleración (PC)
- T3:** Tiempo curva desaceleración (PC)
- T4:** Tiempo curva parada (PC)
- PA:** Final de la desaceleración en apertura (Potenciómetro "Frenada de apertura")
- PC:** Final de desaceleración en cierre (Potenciómetro "Frenada de cierre")

2.2.16. Reading of clear entrance or door size

(Parameter loading: microswitches 7 and 3; Clear entrance: microswitch1)

This function enables the electronic circuit to know the door size or the clear entrance. Acceleration and deceleration points will thus be calculated without using external contacts.

This operation is made at the factory and must only be made once, so IT MUST NOT BE PERFORMED FOR THE INSTALLATION and commissioning of the equipment.

It will only be made:

- If an error of clear entrance not supported or memory (led 5) reading occurred.
- If the electronic card is replaced.
- In order to change the opening mode of the operator (go from mode A to mode B, or vice versa). **See the operating modes logic in the table in chapter 2.2.2.**

PROCESS FOR READING THE DOOR SIZE:



NOTE: In case of optional **mechanical locking** car door, this drive lever, unlike the standard one, incorporates car door locking when the car is out of the unlocking area. For this reason, the clear entrance reading and parameter loading, whenever possible, must be done with the car at landing level. Otherwise, the car door opening will be locked and the process interrupted, unless following indications are followed:

With the door closed, before starting the movement in the opening direction, manually press the drive lever slats so that the lock swings and releases the mechanical locking. Should the slats not be pressed before starting the clear entrance reading process, the movement will be blocked by the lock and the clear entrance reading process cannot be completed. For more details about the case of optional mechanical lock, consult the specific manual of mechanical locking

When the door is released and its opening begun, the drive lever slats can be released and the opening will be completed.

After the completion of the clear entrance reading, the procedure of parameter loading can be performed as described below.

1. With the general switch in the OFF position (O), set microswitch no. 1 in the ON position.
2. Place the doors at half the travel.
3. Energize the circuit. For this purpose, set the general switch in the ON position (I).
4. Door size reading will automatically be performed:
It will first open the doors, then it will close them and re-open them.

(During this reading process, led no. 3 remains on and the buzzer or acoustic signal is blinking each 0.5 sec.).

NOTE: When the door is at half the travel, the reading process must start with the door opening movement. Otherwise, disconnect the equipment (general switch in position O), wait for the residual stress to be discharged (led 1 off) and exchange connections U and V from the MOTOR group. Return to the initial point. Be especially careful not to leave metal parts of these wires visible when making the connections.

5. When the reading process finished correctly a long whistle is heard (buzzer) for 3 sec. In the case reading is incorrect, the buzzer will be blinking each 0,1 sec.

NOTE: Should any problem arise in the reading process check that:

- a) The opening and closing travel is carried out correctly and there are no obstacles during the run.
- b) If the opening clear entrance is not supported by the software version, led no.5 remains on.

6. Load the parameters and activate the operating mode: Depending on whether **operating mode A or B** has been selected for the operator operating mode, it will be activated or changed as detailed below:

MODE B:	Factory-defined operating mode, except with emergency 042 device or MicroBASIC with relay KSG in controller.
MODE A:	Only with emergency 042 device or MicroBASIC with relay KSG in controller.

Operation mode B:

- Disconnect the equipment (main switch in position 0).
- Load the parameters in operating mode B: Place **microswitch 7 and 3** in the **ON** position and **microswitch 1 in the ON** position. Connect the main switch and observe how the LED's illuminate one by one. After they all have illuminated, they turn off. The clear entrance parameters and the corresponding type of opening have now been loaded, and operating mode B has been activated.
- Disconnect the equipment and change microswitches 1, 3 and 7 to the OFF position.

Operation mode A:

- Disconnect the equipment (main switch in position 0).
- Load the parameters in operating mode A: Place **microswitch 7 and 3** in the **ON** position and **microswitch 1 in the OFF** position. Connect the main switch and observe how the LED's illuminate one by one. After they all have illuminated, they turn off. The clear entrance parameters and the corresponding type of opening have now been loaded, and operating mode A has been activated.
- Disconnect the equipment and change microswitch 1, 3 and 7 to the OFF position.

7. Connect the equipment (general switch position I). The equipment will perform a first special opening and closing operation to locate position zero (reset mode). The buzzer activation informs of this self-adjusting operation and will intermittently sound each 0.1 sec during the first two secs. This occurs each time the equipment is powered.
The equipment is ready to function normally.

2.2.17. Parameter loading (microswitches 3 and 7)

Only perform this operation if:

- The equipment clear entrance is read, which is very important, since in 'clear entrance read' function it will assign operation parameters. This operation is necessarily related to the clear entrance reading process and therefore, it is detailed in that chapter.
- The equipment has some internal parameters of operation curves modified (they can only be altered through external handling by the connection of a PC across the serial port) and you want factory parameters to be restored.

In this case it will be enough to simply switch off the equipment (General switch in position 0) and follow the indications in points 6 and 7 of the previous section (according to whether you wish to load the parameters for operation in operation mode A or B).

MICROSWITCHES	1	2	3	4	5	6	7	8
Reading of clear entrance of REVECO-II and REVECO-GO! doors	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Parameter loading: REVECO-GO! + Mode B	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
Parameter loading: REVECO-GO! + Mode A	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
Programming mode (software update REVECO-II and REVECO-GO!)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

2.2.18. Display of the information

AUDIBLE SIGNALS (Buzzer)	
Clear entrance reading process	Reading clear entrance: buzzer blinking each 0.5 sec. End of clear entrance reading process: <ul style="list-style-type: none"> • Reading correct (Finish OK): 1 long whistle for 3 sec. • Reading incorrect (Finish KO): buzzer blinking each 0.1 seconds
First movement in normal operation	First 2 sec, buzzer blinking each 0.1 sec.
Permanent error	Buzzer on for 0.2 sec and off for 10 sec.
Manual operation enabling (PC)	Three quick short audible signals.
Manual operation disabling (PC)	A long audible signal.

LEDS	
Led 1	On: The equipment is energized (single-phase, 230 VAC). Even when it is not powered, there is residual stress in the circuit. Off: No power supply to the equipment or internal residual stress.
Led 2	Display of encoder pulses
Led 3	On: Operator reading clear entrance. Blinking: Door closing at low speed (no detection of obstacles; see operating modes table).
Led 4	On: Error, over-temperature in the motor.
Led 5	On: Clear entrance read not supported. Blinking: Error in E2PROM reading.
Led 6	On: Error, mains voltage low. Blinking: Error, mains voltage high.
Led 7	On: Error, maximum travel time exceeded in opening or closing. Blinking: Short circuit in the motor output.

3. USE OF THE EMERGENCY UNLOCKING KEY AND RESCUE OPERATION

The use of the landing door unlocking key e and the rescue operation requires the intervention of a competent authorized person, properly trained by the maintenance company. The rescue shall be made only through the landing doors.

Operating mode:



1. Switch off the electrical power at mains switch⁴ installed in the controller. By using the emergency unlocking key, open the landing door which is closest to the place where the car is.
2. Pull down the unlocking cable and pull the doors in the opening direction (see chapter 1.10.2).



In order to avoid serious accidents (falling risk or shearing, or death danger) which could result from an unlocking which was not followed by effective relocking, after opening the door, check the effective closing and relocking of the door. Moving by hand the panels in the opening direction, prove that after about 2mm of movement the mechanical interlocking occurs.

Emergency unlocking key: Shall be available on the site of the lift installation and accessible only to authorized persons.

4. MAINTENANCE OF THE INSTALLATION

4.1. Owner of the installation

The Installation owner shall keep it in safe condition of operation. To achieve this, the owner shall use a maintenance organisation according to the requirements of Standard **EN 13015**.

4.2. Periodic maintenance

A maintenance shall be carried out periodically to ensure, in particular, the installation safety.

In determining the frequency of maintenance interventions, the following non-exhaustive list should be considered:

- Number of trips per year, operating time and any non-operating periods of time.
- Age and condition of the installation.
- Location and type of building in which the installation is installed, as well as the needs of the users and/or the kind of goods transported.
- Local environment where the installation is situated, as well as external environmental elements, e.g. weather conditions (rain, heat, cold, etc.) or vandalism.

Therefore, there is no way to determine a regular time period valid for all the installations. But, although depending of each particular installation, it should be considered mandatory to check at least every 4 months the mentioned components.

NOTE: The actual frequency of maintenance interventions can be more accurately determined where a remote monitoring system is connected to the installation.

4.3. Components to be checked

Hereafter, we describe some points to be taken into account in the periodic door checks. These indications together with your experience will ensure a safe and convenient maintenance for the installation.

For a proper operation, it is essential to regularly clean with a brush the dust or other waste that may be collected in door sill guides and channels.

- Check the device for emergency opening and rescue, as described in chapter 1.10.2 and 1.10.3.
- Check the operation of the locking device (safety components) and the electrical contacts (safety chain), as described in chapter 1.11.
- Check the free movement of doors.
- Check the door guidance (top guidance and guide shoe of sill). If there is any obstruction due to wear or deterioration of wheels or guide shoes, replace them as indicated below.
- Check the door clearances (they shall be lower than 10 mm).
- Check the good condition of cable, chain or belt.
- Check the lubrication. (No need to grease guide shoes, wheels, nor guide rails. On the contrary, grease and oil can cause a damage. Refer to the chapter about greasing below).
- Device for re-opening of doors (photocells and re-opening when there is any obstacle); kinetic energy and force required to stop the progress of panels (see details in this manual, chapter 2.2.14. Potentiometers)

4.4. Locking device type EPC-15 for car door

The emergency unlocking and the automatic locking by means of the spring action in front of a power cut shall be checked according to instructions contained in chapters 1.10.3 and 1.11.

⁴ "SMAIN" for MP ecoGO controller / "QIM" for Vía Serie or MicroBASIC controllers.

1. **Manually check that the lock interlocks out of the unlocking area:** Manually move the door until closing position and check that the slats are pressed and that the drive lever lock closes by pulling the upper end of the belt in the opening direction. Release the belt and check that the drive lever moves by itself (due to the spring force) to the fully expanded position. The closing hook must be in the horizontal position of blocked lock during this operation.
2. **Check emergency compression:** The closing hook must rotate freely downwards when the drive lever slats are pressed. Check that the lock arm oscillates until it is below the notch on the Drive lever support plate.
3. **Check the condition of the springs.**
4. **Mechanical overlap of the locking device:** When the lock is completely closed, mechanical overlap must be 10 mm minimum. (See dimensioned sketch in chapter 1.11 "Dimensions, mechanical overlap ...").
5. **Check that the jumper is correctly centred on the contact base:** The contact jumper must be aligned with the centre of the contact holes without touching the entrance edges. If necessary, the contact base will be adjusted in order to meet the correct alignment. The base can be adjusted either in the opening or closing direction. It can be accessed by using the eye set screws located behind its bracket.
6. **Check that there is enough electrical overlap;** clearance between base and jumper must be between 5 and 3 mm. (With a 5-mm separation, a 3-mm electrical overlap is guaranteed). Electrical terminations must be tightened and secure.
7. **Contacts must be clean (visible metal) and present minimum wear.**
8. **Safety circuit must be interrupted if the door opens.**
9. **Check Emergency Opening System** Check rope tightening and that there are no kinks which may engage the rope with the landing door or any other element.
10. **Replace interlocking in case of detecting anomalies.**

4.5. Guide shoe replacement

If vibrations are observed on the panels due to clearances between guide shoes and the step channel, it is advisable to replace the guide shoes in the following way.

- Levering with a screwdriver, remove the deteriorated guide shoes.
- Position the new guide shoes following the instructions in chapter (1.9).

4.6. Greasing

No door component needs greased. Under no circumstances should the wheel track, guides or guide shoes be greased.

4.7. Carriage wheels

The carriage wheels have a tread with a radius profile lower than that of the guide. Due to this they rest on 2 points, leaving a gap between the guide and the bottom of the tread. As they get worn, this gap will get smaller and smaller until the wheel is completely resting on the guide. At this moment, a slight vibration can be observed during panel movement, and as this vibration increases it is advisable to replace the wheels.

If for any reason a bearing had been in some way damaged and the wheels produced a cyclic noise when turning, the faulty wheel should be replaced.

Another possible reason for replacement is the eccentricity that could be produced in the wheels of an assembled door that has remained inactive for a long period of time. If after a period in operation, after start-up, the vibration does not disappear, they can be replaced.

As it is used, gaps tend to form between the small wheels (Ø33x12) and the upper track of the guide. In order to correct this, the screw on the wheel should be gently loosened using a no.5 Allen wrench to slide its axle upwards without losing the interface log. Once the clearance with the upper track is eliminated, the screw will again be firmly tightened.

NOTE: In 2 panel centre opening models (C2), the instructions for changing wheels in the fast carriage will be followed.

4.7.1. Replacing the wheels in the slow carriage

a. Replacing the upper wheels (Ø33 small wheels):

We will follow these instructions:

1. Remove the screws that secure the cable tensioner support to the operator support plate (use a no.5 Allen wrench) to facilitate access to the interior of the slow guide by hand through the drilled hole on the back part of the plate.
2. Move the operator slow carriage until the screw that secures the upper wheel being replaced is accessible through the grommet of the fast guide. Remove it using a no.5 Allen wrench.

Cable tensioner support



Rectangular hole in the plate to make easier the wheel replacement

3. Push the wheel so as it passes through the circular hole on the guide and plate which is just behind it, under the rectangular hole, in such a way that it falls behind the operator plate and remains on the lower folding of the front panel.
4. Insert your hand, along with the new wheel, through the rectangular hole in the plate. We will previously have lifted the steel cable. Put the wheel through the circular hole of the plate and guide, the same hole through which the wheel was removed, and position it using your fingers until the interface of its axle fits into the carriage's grommet. Without releasing the wheel, insert a jackscrew and raise it until it is totally settled on the guide's upper track. Holding it in that position, firmly tighten the screw.



5. Once the wheels have been replaced, secure the cable tensioner support again.

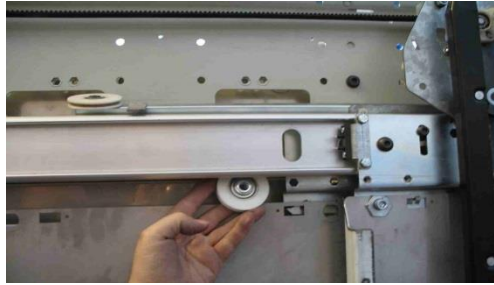
b. Replacing the lower wheels (Ø55 big wheels):

In this case, follow these instructions:

1. To facilitate access to the slow guide interior by hand through the hole in the rear part of the plate, remove the screws that secure the cable tensioner support to the operator support plate (use a no.5 Allen wrench).
2. Take the steel cable out of the groove in one of the pulleys (levering with the help of a screwdriver) to be able to move the carriages freely.
3. Unhook the panel from the carriage and leave it supported on the step. If the fast panel prevents the slow panel from being unhooked due to interference when unlatching it, it is necessary to unhook the panel from the fast carriage first. In this case, it is necessary to unlatch the drive lever first.
4. Gently loosen both upper wheels (Ø33x12) of said carriage.
5. Move the slow carriage until the screw of the wheel is accessible through the grommet of the fast guide and unscrew it.



6. Push on the wheel axle to dislodge it from the carriage and so that the wheel rests on the guide. Push the wheel towards one side of the carriage with the screwdriver or move the carriage to be able to remove the wheel to be replaced. Extract the wheel by inserting your hand between the two guides.



NOTE: It is recommended to replace the wheel that has been removed before removing another, as removing the two wheels simultaneously makes operation quite difficult.

7. Insert the new wheel between both guides on the lower part and bring it close to its position on the side of the carriage. Insert your hand through the rectangular hole in the plate to access the guide interior through the circular hole and position the wheel using your fingers until the interface of its axle fits into the hole in the carriage. Check that the axle interface is perfectly attached to that of the carriage. Without releasing the wheel, firmly tighten the fixing screw.
8. Position the lower wheels again, ensuring that they roll on the guide's upper track.
9. Hook and adjust panels and attach the drive lever. Screw in the cable tensioner support and guide the cable through the pulleys (by levering with the help of a screwdriver).

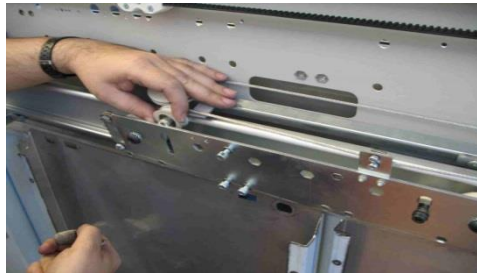
4.7.2. Replacing the wheels in the fast carriage



To facilitate the operation it is necessary to remove the drive lever from the carriage and unhook the fast panel before changing the upper and lower wheels. However, it is not necessary to release the cable tensioner support or remove the steel cable from the pulley, as is the case for the slow carriage.

a. Changing the upper wheels (Ø33 small wheels)

1. Loosen both upper wheels, remove the screw from the wheel to be replaced and remove said wheel on the upper part of the carriage by tipping it gently.
2. Position the new wheel and carry out the whole operation process in reverse order (see photo).



b. Changing lower wheels (Ø55 big wheels)

1. Loosen both upper wheels to be able to turn the carriage.
2. Remove the fixing screw from the wheel and take it out through the upper part of the carriage, tipping it gently.
3. Position the new wheel, inserting it from above and checking that the axle interface is perfectly attached to that of the drilled hole in the carriage.
4. Fasten the wheel with its screw and adjust the upper wheels.
5. Fasten the panel to the carriage and attach the drive lever.



4.8. Sensitivity to reopening due to obstruction



The REVECO-GO! operator has a sensitivity system to reopening due to obstruction, which it can use to adjust the force needed to stop forward movement of the panels. It works using the sensitivity potentiometer, bearing in mind the instructions in the chapter "Equipment configuration. Adjustments. Sensitivity potentiometer."

It should be periodically checked.

4.9. Belt tensioning

Follow the instructions below to adjust the tension of the RPP 5-14 (Movement transmission) and RPP 3-4 (Movement signal transmission) notched belts.

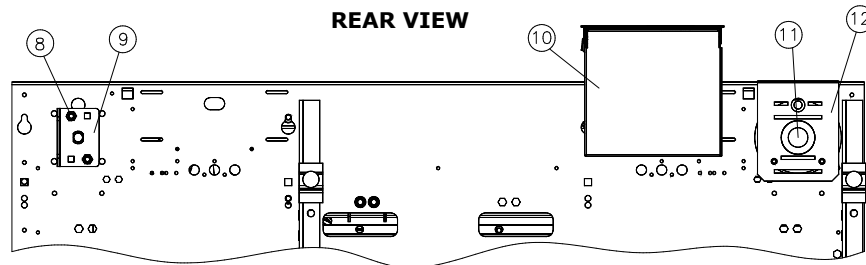
4.9.1. Tensioning the RPP 5-14 notched belt

(mark 1, transmission of movement to the carriages)



THE BELTS SHOULD NOT BE COMPLETELY TENSIONED. A slight sagging/wobbling in the upper section is allowed, as long as it does not touch the lower one.

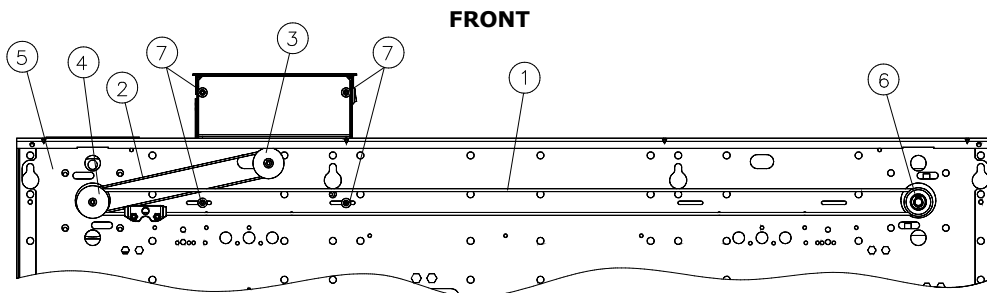
1. Loosen the two DIN 603 M8x16 screws (mark 8).
2. Move the pulley tensioner support (mark 9) in the direction the belt is tensioned.
3. Tighten the two DIN 603 M8x16 screws (mark 8).



4.9.2. Tensioning the RPP 3-4 notched belt

(mark 2, movement signal transmission)

1. Loosen the 4 DIN 912 M4x12 screws (mark 7).
2. Move the electronic card box assembly (mark 10) in the direction the belt is being tensioned until there is no sagging in the straps.
3. Tighten the DIN 912 M4x12 screws (mark 7).



No.	NAME
1	RPP5-14 NOTCHED BELT
2	RPP3-4 NOTCHED BELT
3	POSITION READER PULLEY
4	MOTOR PULLEY
5	OPERATOR PLATE
6	SIMPLE COG BELT ASSEMBLY
7	DIN 912 M4 x 12
8	DIN 603 M8 x 16
9	PULLEY TENSIONER SUPPORT
10	ELECTRONIC CARD BOX ASSEMBLY
11	MOTOR
12	MOTOR COVER

4.10. Belt replacement

Follow the instructions listed below to replace the operator belts (notched belts RPP 5-14 and RPP 3-4).

4.10.1. Replacing notched belt RPP 5-14

1. Loosen the screws (mark 8).
2. Move the pulley tensioner support (mark 9) in the direction that distensions the belt.
3. Remove the jaw (mark 13) of the belt from the axle in which it is inserted by pushing the jaw to the bottom of the operator plate.
4. Unscrew the 2 screws (mark 14) from the jaw.
5. Open the jaw and remove the belt to be replaced (mark 1).
6. Insert the ends of the new belt in each of the jaw parts.
7. Position the other part of the jaw.
8. Close the assembly, positioning the screws and bolts (mark 15) in their corresponding places and tighten the screws.
9. Insert the jaw in the axle.
10. Place the belt on the pulleys (simple and motor).
11. Proceed to belt tensioning.
12. Tighten the screws (mark 8).

4.10.2. Replacing notched belt RPP 3-4

1. The RPP 5-14 belt (mark 1) should be removed first to be able to carry out the RPP 3-4 belt change. The previous instructions will again be followed, loosening the tensioner (mark 9) and without need to open the jaw.
2. Loosen the 4 screws (mark 7).
3. Move the electronic card box assembly (mark 10) in the direction that distensions the belt.
4. Remove the belt and replace it with the new one, which will be placed between the motor pulleys (mark 4) and the position reader pulley (mark 3).
5. Proceed to belt tensioning.
6. Tighten the screws (mark 7).

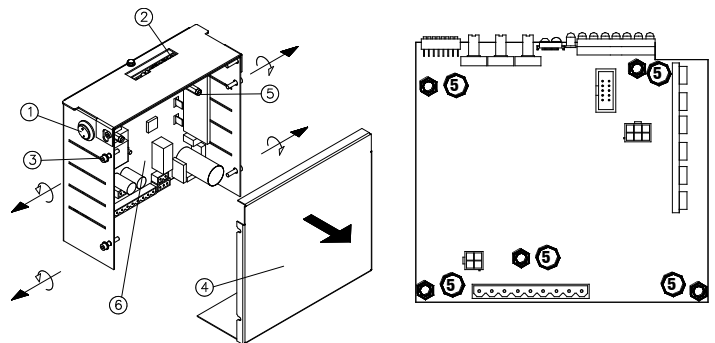
4.11. Replacing the electronic card



The electronic boards can be provided with a specific software version for the model in which they are included. Any exchange with another operator's ones may cause a device malfunctioning. If required, refer to after-sales service for technical support.

To replace operator electronical board, follow these instructions:

No.	NAME
1	SWITCH
2	No.1 LED
3	DIN 912 M4 x 12 (no. 3 Allen wrench)
4	REAR COVER
5	M4 SPECIAL NUT(no.7 socket wrench)
6	ELECTRONIC CARD (PCB)



1. Disconnect the general power supply from the lift and wait a few minutes until led No.1 (2) is completely off.



CAUTION: If you do not wait until it is off, you risk electric shock, damage to the equipment and injury.

2. Loosen the 4 screws (3) that secure the rear cover to the base of the electronic card box using a no.3 Allen wrench. (It is not necessary to remove them).
3. Remove the rear cover (4).
4. Disconnect the electronic card cabling, connectors corresponding to the switch, to the motor terminals, to the panel presence contact plate (door series) and the operator general connector (power supply).
5. Unscrew the 5 M4 special height nuts (5). Use the no.7 socket wrench
6. Remove the electronic card to be replaced (6), handling it carefully so as not to damage the electrical components.
7. Position the new electronic card. In order to do this, bring the card close to the bottom of the box, putting the 5 spindles through the holes in the card until they touch the bottom of the fixing bolts.
8. Position the M4 special bolts.
9. Connect all of the aforementioned connectors to the electronic card.
10. Position the rear cover and secure it with the 4 screws (3) using a no.3 Allen wrench.

11. Before pressing the general power switch for the equipment again, it is to be configured according to the instructions in the following chapters

A) Equipment configuration. Adjustments.

The electronic equipment is adapted as follows to the conditions of the installation.

Microswitches:

- Microswitch 2: Place it in a suitable position according to the type of exterior door (automatic or hinged)
- Microswitches 5-6: Select the door model (T2/T3/C2/C4).

B) Reading of the clear entrance or door size and parameter loading.

C) General switch and operation start.

4.12. REPLACING THE MOTOR

Follow these instructions should it be necessary to replace the motor:

4.12.1. REMOVING THE MOTOR TO BE REPLACED

- Disconnect the power from the operator (switch in position 0) and wait a few minutes until led No. 1 is completely off.



CAUTION: If you do not wait until it is off, you risk electric shock, damage to the equipment and injury.

- Loosen the 4 screws that secure the rear cover to the base of the electronic card box using a no.3 Allen wrench. (It is not necessary to remove them).
- Remove the rear cover.
- Disconnect the P2 connector of the motor from the electronic card.
- Cut the flanges to guide the motor cable through the operator plate.
- Remove the cable from the motor and its connector from the electronic box by passing it through the hole in the operator plate.
- Remove the protective casing on the motor by removing the DIN-912 M4x12 screws using a no. 3 Allen wrench.
- Loosen the 4 screws that secure the motor to the plate using a no.6 Allen wrench, holding the motor so as to remove it after the belts come off.
- Remove the two notched belts from the motor pulley.
- Remove the motor from the operator once the cable is fully removed from the plate.

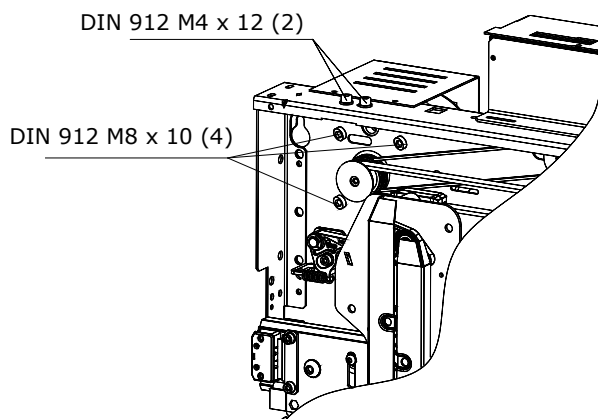
4.12.2. POSITIONING THE NEW MOTOR

- Pass the connector and motor cable through the hole in the operator plate.
- If the motor does not have a pulley on its axle, remove the one from the motor to be replaced and attach it to the new one. Firmly tighten the fixing screw.
- Place the motor on the plate and position the notched belts on the driving pulley.
- Position the 4 screws and secure the motor.



CAUTION: DIN 912 M8 x 10 screws, do not use longer screws as it could damage the motor interior.

- Insert the connector and motor cable inside the electronic box, paying attention to the colour code described in the diagram of connections and on the label on the rear cover of the electronic box.
- Connect the motor connector to the electronic card.
- Secure the cable to the plate using flanges.
- Position the rear cover and secure it using the 4 screws by means of a no.3 Allen wrench.
- Before pushing the general power switch for the equipment, read the instructions in the chapter "General switch and operation start".





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