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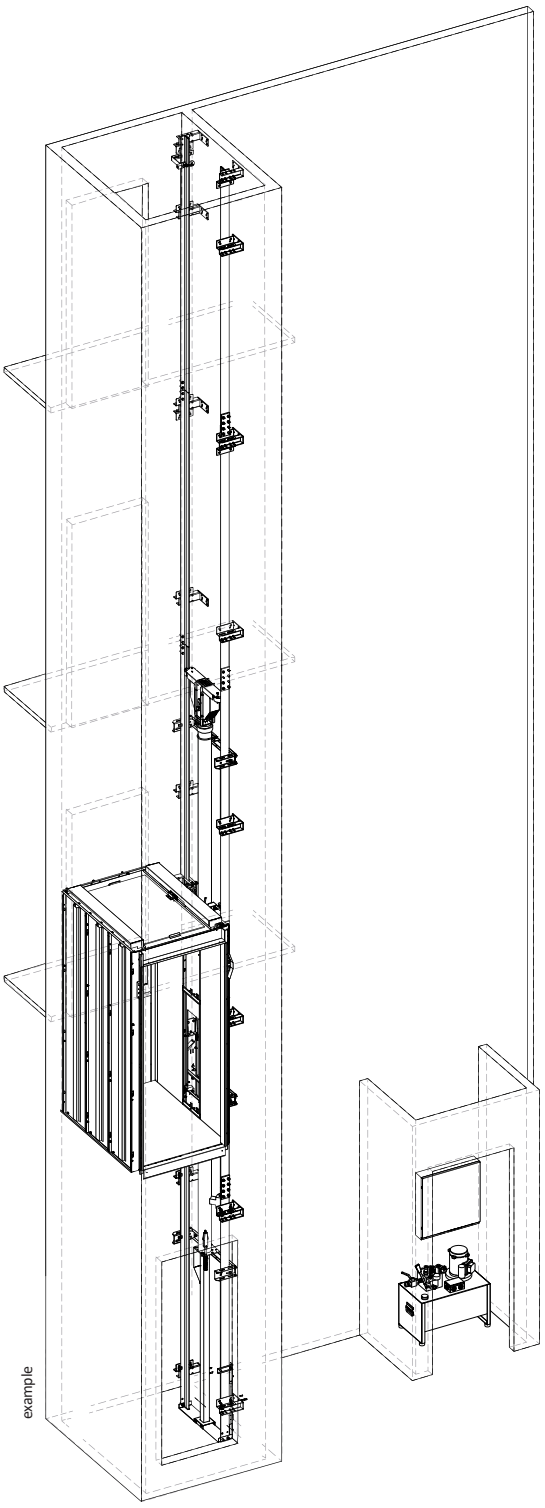
inDOMO HP

Platform lift



MAINTENANCE INSTRUCTIONS

As far as the following items are concerned : general instructions, safety instructions, responsibility and warranty, material receiving and storage on site, packing, waste disposal, cleaning and maintenance, please consult the manual "**SAFETY AND MATERIAL HANDLING ON SITE**".

INDEX

6.1	Insertion p. 9 - Maintenance in case of counter-ceiling	16.05.2018
6	General update and new layout	30.01.2013
5	Nomenclature update	26.05.2010
4	Detail revision	02.05.2010
Rev.	*Descrizione*	*Data*

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0 MANUAL READING GUIDE

0.1 CHAPTER SYMBOLS

	General information		Positioning		2:1 lift specification
	Box content		Installation		1:1 lift specification
	Preliminary advice		Commissioning		
	Read carefully		Electrical Wiring		

0.2 IMPORTANT ITEMS

	General safety warning		Important notice		Read carefully
	Risk of electric shock		Risk of bodily injury (e.g. due to sharp angles or protruding parts)		Risk of damage to mechanical parts (e.g. during incorrect installation)
	Fire hazard		Hanging load		Risk of skin injury
	Risk of falling		No entry		Materials to be protected against bad weather conditions

0.3 INDIVIDUAL SAFETY DEVICES

	Hard hat		Ear protection		Safety harness and other accessories
	Overalls		Safety steel-toe boots with ankle protection		Safety glasses
	Dust masks		Work gloves Rubber gloves		First aid kit

The words **WARNING** and **CAUTION** are used to highlight the following risks of injury and damage:

WARNING	Serious danger to safety
CAUTION	Risk of damage to materials which may lead to safety risks

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1 TEST PROCEDURE

The platform lift has been designed to reduce the necessity of periodical maintenance.
The safety components have been certified in accordance with the current regulations. The platform lift has been certified in accordance with Machine Directive 2006/42/CE, to guarantee the maximum realibility of the products and the complete user's safety.
The actual maintenance requirements comprise a periodical check by an authorized Body, to be effected every two years. We recommend that maintenance operations be effected to ensure the correct functioning of the lift.
The owner of the lift is invited to plan and strictly follow the maintenance operation schedule. Should any irregularity or trouble occur, the maintenance personnel must be notified immediately.

As far as the following items are concerned : general instructions, safety instructions, responsibility and warranty, material receiving and storage on site, packing, waste disposal, cleaning and maintenance, please consult the manual "**SAFETY AND MATERIAL HANDLING ON SITE**".

1.1 GENERAL INFORMATION

A. The stops are indicated as 0, 1, 2, 3, "0" meaning the lowest floor: the COP numbering may be different according to the customer's needs (example –1, 0, etc.);

B. The other reference documents are as follows:
- Project drawings referred to the lift;
- Electrical schemes an instructions;
- Hydraulic scheme.

C. For threaded fixings coupling, please respect the below table.
All the screws used for the lift assembly, have been tightened using the parameters stated in the below table.

SCREW	COUPLE MAX (Nm)	COUPLE MIN (Nm)
M3	1.2	1.0
M4	2.6	2.1
M5	5.1	4.1
M6	9.0	7.0
M8	21.0	17.0
M10	42.0	34.0
M12	71.0	57.0
M16	175.0	145.0

In case of necessity, consult the table.

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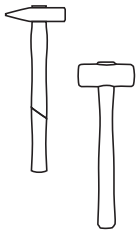
1.2 MAINTENANCE TOOLS

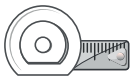
The lift maintenance operations must be carried out by qualified personnel, authorized in accordance with the current legislation.

Hammer

Rubber hammer

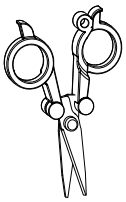


Tape measure



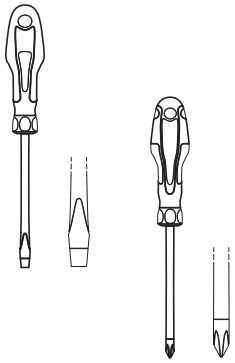
Insulation tape

Scissors for electricians



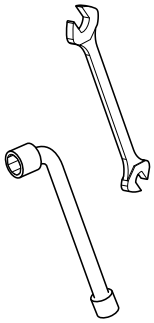
Flat-blade screwdriver

Phillips screwdriver



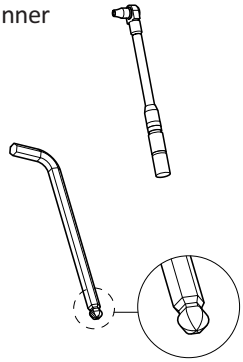
Spanner
5 ÷ 27 mm
2 each size

Socket wrench
5 to 27 mm



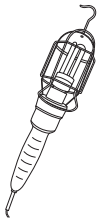
Ratcheting ring spanner
13 to 19 mm

Allen key
with ball end
2,5 to 8 mm



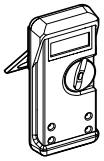
Adjustable pliers

Portable lamp

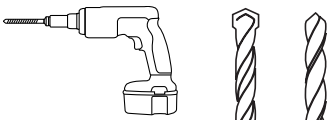


Platform or foldable safety ladder, 5 steps

Digital Multimeter



Drill



for Brickwork 6 to 22 mm
Metal 2 to 13 mm

Chronometer

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1.3 OUT OF SERVICE MODE

The following instructions describe the out of service procedure.
1. Make sure the car is empty;
2. Bring the car to the lowest floor;
3. Wait for the busy signal to be off;
4. Open all the circuits of the power supply board;
5. Check if all the other landing doors are closed correctly;
6. Arrange the “out of service” boards to be placed on all landings.

On completion of the above listed operations, the lift can be considered out of service, and cannot be used.

1.4 MAINTENANCE OPERATIONS

The frequency and the description of the operations are stated in the table, paragraph **1.5**. The recommended frequency is referred to the normal use of the lift, which means 1200 runs per month; a more frequent use requires a more frequent maintenance. The commissioning operations fare listed in the Installation Manual; these are to be repeated, should there be a time gap of more than six months between the installation and the commissioning dates, or should the service be suspended for more than six months.
Should any element need to be replaced, we recommend using original components from the supplier LIFTINGITALIA S.r.l.

The operations described below are to be effected by qualified personnel only.

The following maintenance areas have been identified:
1. IN FRONT OF THE CONTROL BOARD;
2. IN THE PIT;
3. ON THE PLATFORM (“CAR”).

The following table shows the maintenance areas in connection with paragraph **1.5**.

maintenance area	*N. of operation*
In front of the control board	2, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 27, 28, 30, 31
In the pit	7, 8, 9, 15, 18, 23, 24, 25, 26, 31
Inside the car	1, 2, 3, 4, 5, 7, 8, 9, 16, 21, 22, 23, 24, 25, 26, 29

Make sure that all the safety measures are taken, before starting to work in the maintenance areas.

1.4.1 IN FRONT OF THE CONTROL BOARD

Several operations are to be effected in front of the control board under power.

- disable power by means opening the main switch;
- close the main switch only if required, paying attention to the safety rules to be followed in presence of components under power.

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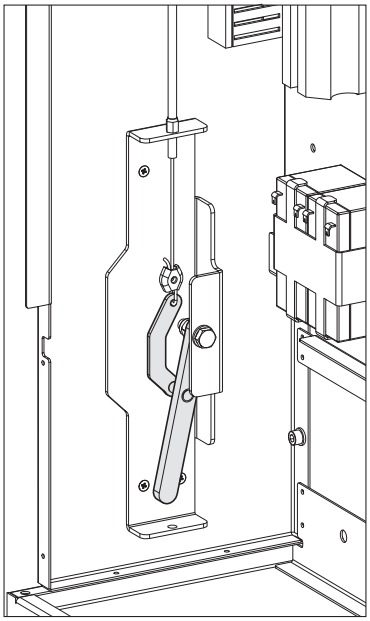
1.4.2 IN THE PIT

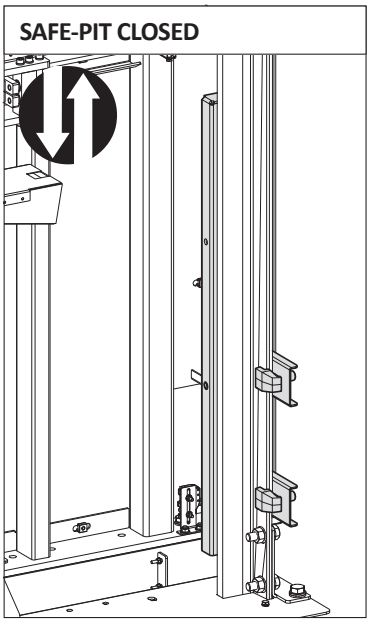
As clearly stated in the adhesive plate, the “Safe Pit” device must be enabled before accessing the pit, by means of the following sequence of operations:

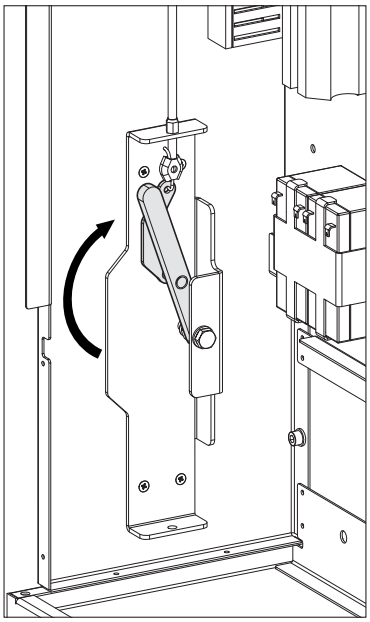
Should any operation in the pit be required, it is necessary to open the main switch located on the power supply board., then enable the “Safe Pit” device.

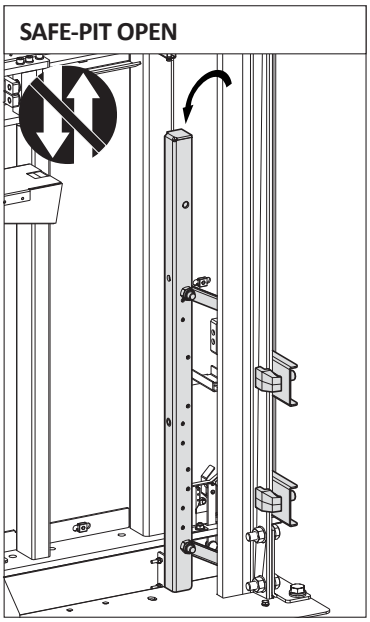
- bring the car to one of the upper floors, possibly at the minimum height of 2500mm from the pit bottom. In this way, the Safe Pit device can be easily enabled;
- open the landing door using the unblocking key;
- as soon as the landing door has been unblocked, a light and sound emergency signal will be enabled, to remind the maintenance operator of the “Safe Pit” device to be activated; utilized a special lever

- should you have trouble when positioning the Safe Pit device, and should the light and sound signal still be on, it means that the car is too close to the pit bottom. So, close the landing door, reset the control board and send the car to the upper floor. Get back to the previous sequence of steps;
- as soon as the light and sound signal is deactivated, pit access and maintenance operations inside are possible;
- upon the work completed, leave the pit and close the Safe Pit. The light and sound signal will be active again untile the device has returned to the resting position. Close the landing door and check it is locked off correctly.
- make sure all the landing doors are closed and locked off;
- reset the control board in order to put the lift into operation.









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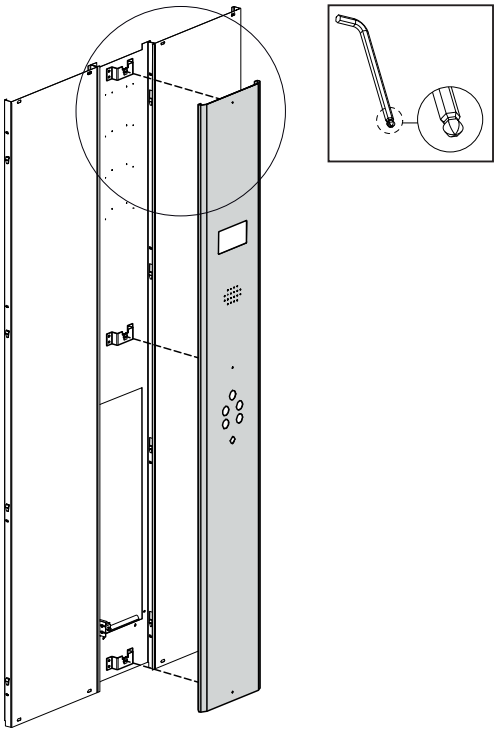
1.4.3 INSIDE THE CAR

WORKING ON THE BACK SIDE OF THE CONTROL BOARD

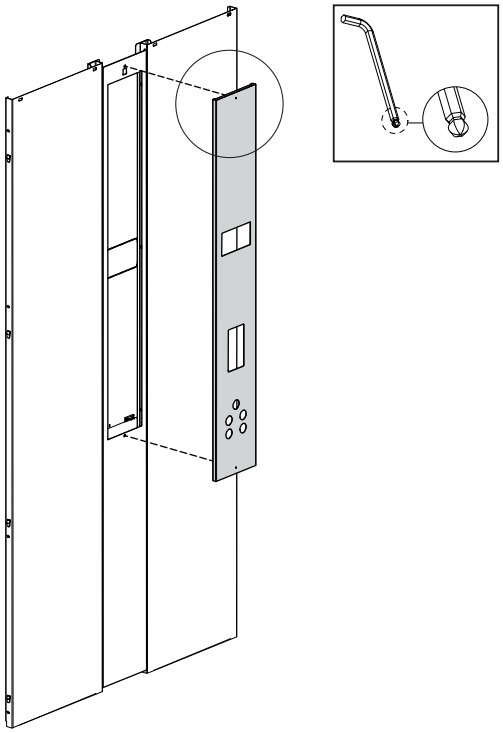
The Platform lift has been designed to guarantee an easy access to the safety brake directly from the car.
Follow the below instructions:

- with the car stationary at one of the stops, open the Mains Supply Switch, press the STOP button in car and make sure that the lift cannot be commanded from the control board;
- remove the service panel unscrewing the safety screws;

Hull height COP



Half height COP



- put the service panel aside;

Make sure the wires are not pulled during the panel removal.

- effect the necessary operations on the safety brakes;
- re-position the service panel and fix it with the safety screws;
- unblock the STOP button in the car, close the Mains Supply Switch and check the correct functioning of the lift.

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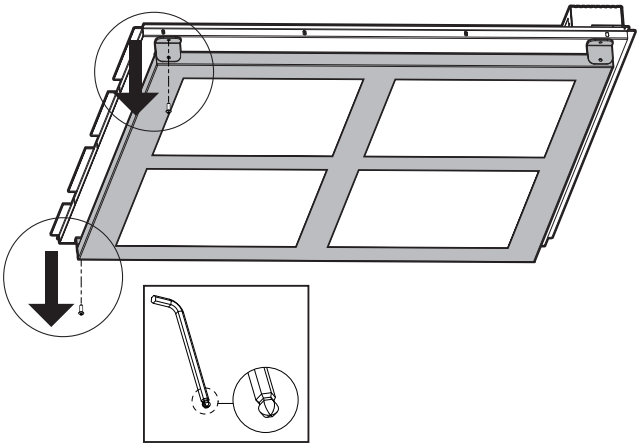
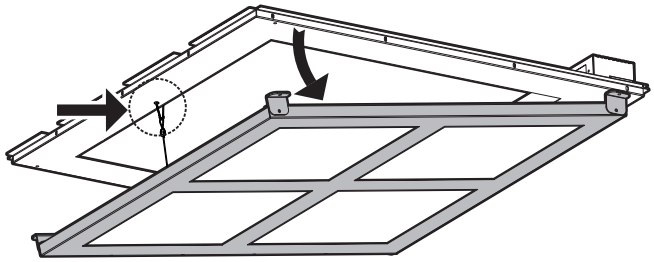
ACCESSING THE UPPER PART OF THE LIFT

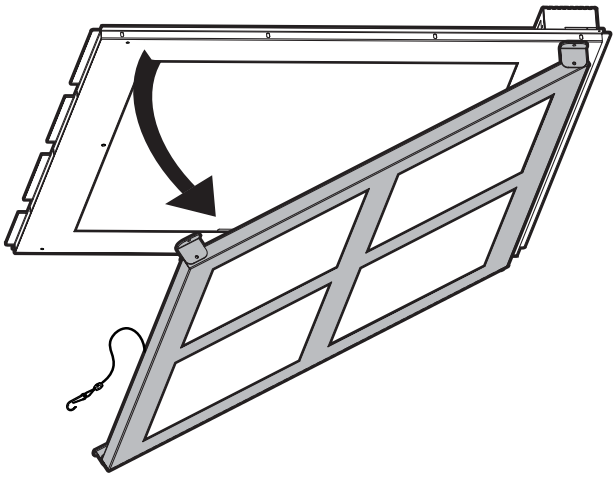
The Platform Lift has been designed in order to avoid maintenance operations on the car roof that is normally not bearing: all the sensors are fixed above the frame, so that the operator can access easy them, by leaning over the car ceiling while working inside the car. The same thing concerns magnets and overrun switch positioning in the shaft. Should the maintenance require accesing components located on the roof, follow the below instructions:

- press the STOP button in the car and make sure that the lift cannot be commanded from the control board; the STOP must be enabled every time the safety mode is to be activated;
- disable the STOP button and bring the car to the height of 300mm under the upper landing level. In case of doorless car, it is an easy operation, while in presence of car doors, different attempts must be made, using COP buttons and remaining inside the car;
- in the required position, press the STOP button in the car and make sure that the lift does not move. Remove the roof lid unscrewing the two safety screws, and then pushing the away from the COP side. Now, a sound signal will warn that the headroom spacer must be enabled;

MAINTENANCE IN CASE OF COUNTER-CEILING







- Remove the fixing screws on one side of the counter-ceiling
- Unhook the safety karabiner
- Completely reverse the counter-ceiling to access the platform roof.

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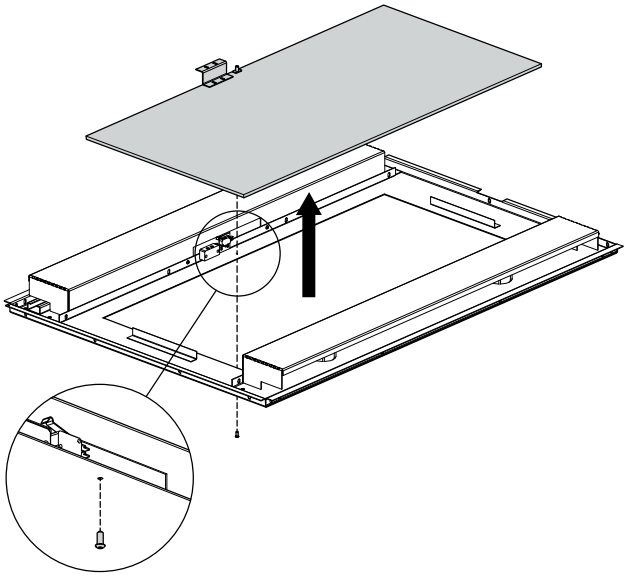
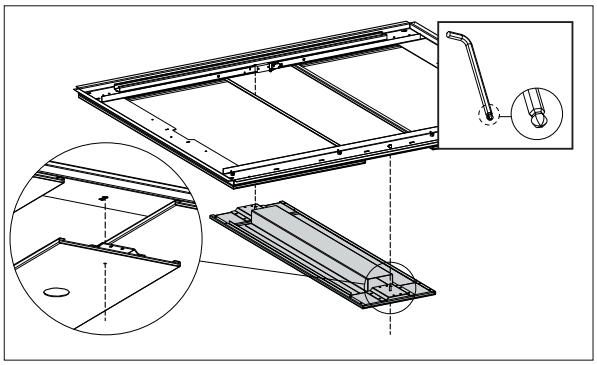
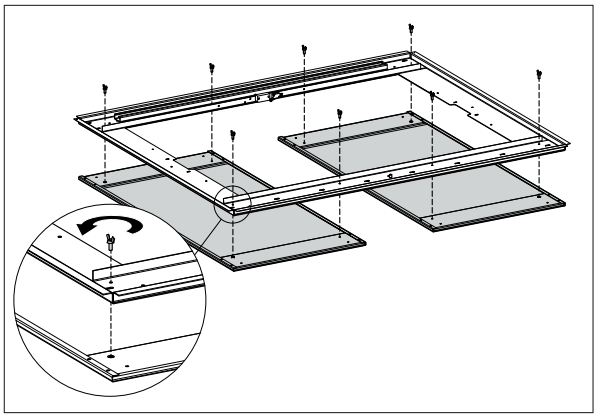
CABIN ROOF ACCESS

1-piece ceiling



3-piece ceiling





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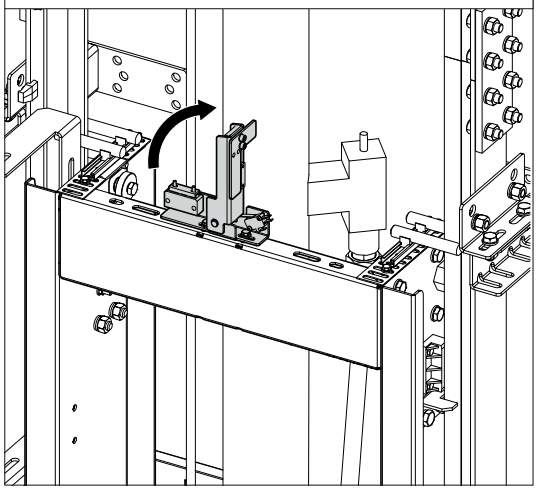
The car roof is not bearing. Do not step on the roof, or on the rims.

· put the headroom spacer in verticall position. The acoustic signal will be disabled, which means that the maintenance in the headroom is possible;

HEADROOM SPACER OPEN



· lean over the roof, using a safety ladder or platform, and effect the necessary maintenance operations;

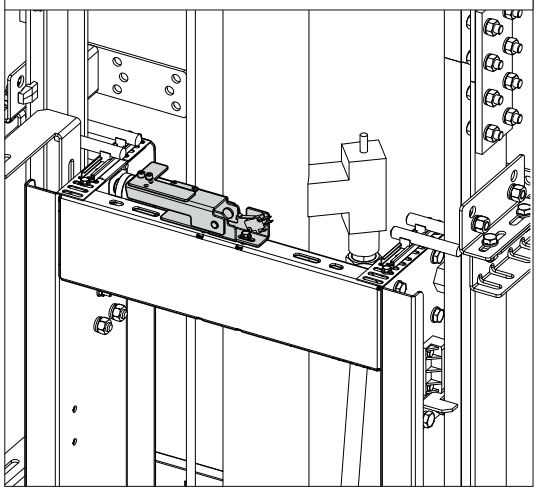
Do not step on the roof. It is not bearing.

· to move the car during the maintenance operations, return inside the car completely, bring the headroom spacer to the resting position, close the safety lid completely and unblock the STOP button in the car;

· Do not force any operation with the operator leaning over the car roof, descent included.
· Do not force any operation with the safety lid up – risk of collision (with shaft elements) exists.

· on maintenance completed, return inside the car completely, bring the headroom spacer to the resting position, close the safety lid completely and unblock the STOP button in the car; then check the correct functioning of the lift.

HEADROOM SPACER CLOSED



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1.5 MAINTENANCE OPERATIONS : FREQUENCY AND DESCRIPTION

OPERATION	RECOMMENDED FREQUENCY			
	1st run	every 6 months	every 1/2 year(s)	every 5/10 years
1. CAR MOVEMENT AND FLOOR LEVELLING Check the correct car movement and stops using the related commands. A. from the car: try to send the lift to each of the stops (both during ascent and descent), checking the correct automatic stop, with the maximum difference in height of 10 mm above or under the landing level; B. in absence of car doors: the lift must stop immediately when the car button is released; inside the levelling zone the lift will stop at the landing level; C. from all the landings: try to call the lift, checking the correct automatic stop and the "busy" and "present" lights functioning; D. make sure that the lift cannot be commanded from the COP without the enabling key.	•	•		
2. EMERGENCY POWER SUPPLY Check the efficiency of the emergency power supply unit, as far as alarm, car emergency lighting and forced descent to the lowest floor are concerned. A. bring the car to the upper floor; B. switch the power off by opening the power supply switch (not the Driving Force one) located on the power supply board; C. car emergency light will be enabled; D. push the alarm button: the siren will be activated; E. press and hold any call button: the car will descend and stop at the lowest stop level, then the door can be opened (sliding doors open automatically). For battery replacement (batteries inside the control board) follow the below instructions. F. open the Driving Force Switch and enable the control board lighting; G. disconnect the battey connectors, trying to avoit shorts; H. replace batteries and re-connect the connectors; I. close the Driving Force Switch, disable the control board lighting and repeat test operations from A. to E.; J. dispose of the exhausted batteries bringing them to the authorized points (as special and dangerous waste).	•	•		

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OPERATION	RECOMMENDED FREQUENCY			
	1st run	every 6 months	every 1/2 year(s)	every 5/10 years
3. PHOTOCELLS OR LIGHT BARRIERS (if any) Check the efficiency of all the photocells or light barriers. WITHOUT car doors: A. remain in car and command the ascent; B. outside the floor levelling zone, intercept the photocell area; the lift will stop until the obstacle has been removed and the ascent has been newly commanded; C. repeat with each photocell; D. repeat inside the floor levelling zone. WITH car doors: A. Intercept the barrier area during the automatic closure; the door will re-open.	•	•		
4. LOCKS Check the locks of all the landing doors. A. Check the correct opening-closing movement, with and without the emergency key; B. Check if the removable bridge on the fixed contact, as well as the lock chain in the doorleaf hole have been assembled properly; C. Check the independence between the chain contact and the preliminary half-closing contact.	•	•		
1:1 **5. PISTON SYNCHRONISM** Check if the two stems arrive to the end-of-run simultaneously (car in lower overrun).	•	•		
6. MAUAL PUMP - EMERGENCY DESCENT BUTTON Check the efficiency of emergency ascent and descent devices. A. open the Driving Force main switch located on the power supply board; B. with the car stationary at the lowest stop, activate the manual pump for some ten cycles; C. open the door with the emergency key and check the car lifting; close the door D. press and hold the red “Emergency descent” button; check if the descent has taken place.	•	•		
7. PISTON SEALS TEST Check the oil quantity in the recovery bottle (500 ml): it does not have to be filled for two further tests.	•	•		

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OPERATION	RECOMMENDED FREQUENCY			
	1st run	every 6 months	every 1/2 year(s)	every 5/10 years
8. GUIDE RAIL SHOES The play of the shoes must be 1-2 mm. Major gaps can be made up for, by means of shoe bearers adjustment; ortogonal gaps require shoe replacement.	•	•		
9. GUIDE RAILS The guide rails must be lubricated by a mix of oil (grade ≥ 220 cst, EP-free) and grease (50-50). The lowest piece must be lubricated from the pit.	•	•		
10. OIL LEVEL Let the air escape from the cylinder. Check if the oil level in the cylinder is above the minimum (or covers the pump completely) when the car is stationary at the upper stop. For topping up, use ISO VG 46 oils.	•		• 1	
11. OIIL FILTER (if present) Check the oil injection filter of the pump and clean it, if necessary.	•		• 1	
12. VALVE HYDRAULIC SEAL (eseguire la prova con olio a temperatura ambiente). A. open the throttle of the pressure gauge, close the injection valve and switch the power off by opening the Driving Force main switch located on the power supply board; B. use the manual pump to bring the dispenser to the nominal pressure; C. wait for 5 minutes and check for possible pressure drops; D. open the valve, close the throttle of the pressure gauge and switch the power on.	•		• 1	
13. OVERPRESSURE VALVE Check if the intervention pressure does not exceed the standard value (1.4 the maximum static pressure). A. close the injection valve and open the throttle of the pressure gauge; B. command the ascent (ex. from an upper floor); C. read the maximum pressure value on the gauge (must be ≤ 63 bar); D. open the injection valve and close the throttle of the pressure gauge.	•		• 1	

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OPERATION	RECOMMENDED FREQUENCY			
	1st run	every 6 months	every 1/2 year(s)	every 5/10 years
14. BLOCK VALVE Check the block valve activation with the car fully loaded and stationary at the upper landing level. A. switch the power by opening the Driving Force main switch located on the power supply board; B. remove the calibration from the downspeed adjuctment screw (as described in the manual of the hydraulic unit); C. press and hold the red "Discesa di emergenza" emergency descent button and the central pin of the EVD valve; D. the car will stop; E. restore the calibration of the downspeed adjuctment screw (as described in the manual of the hydraulic unit).	•		• 1	
15. OIL PIPING SEAL Check for possible oil leakage from different components: hose break valve, hydraulic unit, joints, pipes etc. Verify the good condition of the hose and the related joints.	•		• 1	
16. UPPER OVERRUN Check the safety contact. A. send the empty car to the upper floor; B. command the ascent, using the manual pump, until the activation of the overun contact (make several attempts: the contact is activated when the lift does not react to calls).	•		• 1	
17. GROUNDING Verify the efficiency of the grounding and the electrical circuit insulation, as described in the electrical scheme.	•		• 1	
18. LIGHTING Check the correct functioning of the lighting systems: in the car, in the shaft (if foreseen) and in the control cabinet.	•		• 1	
19. OIL FEATURES Make sure that the oil has preserved the original features. Every two ears, pick up some oil from the tank, to check its clearness; replace completely, if needed			• 1	

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OPERATION	RECOMMENDED FREQUENCY			
	1st run	every 6 months	every 1/2 year(s)	every 5/10 years
20. MAXIMUM STATIC PRESSURE WITH FULL LOAD Make sure that the working pressure has not been changed (fully loaded car). A. bring the car to an upper stop; B. open the throttle of the pressure gauge; C. read the indicated value; D. close the throttle of the pressure gauge.	•		• 2	
21. OVERLOAD Make sure the operation mode with overloaded car is disabled. A. load the car; B. bring the car to the first stop; C. open the landing door and enter the car; D. close the door; E. make sure that the lift does not react to the inner not outer commands.	•		• 2	
2:1 **22. PULLEYS** Effect a complete run and make sure that the pulleys rotate onto the pins.	•		• 2	
2:1 **23. SUSPENSION ROPES** Inspect the ropes and the related joints, to detect the presence of broken, worn out or oxidised elements. A. verify if the rope clamps are well closed, both on the side of the car and on the side of the shaft; B. check the uniform tension of the two ropes; C. Inspect the ropes, to detect the presence of broken, worn out or oxidised wires. Maximum 10 broken wires are acceptable on a 70mm's rope length ; the section may be reduced by 2 mm^2 maximum due to wear or abrasion (even in absence of broken wires); corrosion or oxidation on ropes and joints are NOT acceptable.	•		• 2	

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OPERATION	RECOMMENDED FREQUENCY			
	1st run	every 6 months	every 1/2 year(s)	every 5/10 years
24. SAFETY BRAKE DEVICE Verify the correct functioning (empty car). A. check the synchronizing leverism of the two brakes; B. prepare the rope slackening device for use, by removing the screws; C. test procedure: C1. one operator works by the control board, another one - at the lowest stop; C2. bring the car to 1 m height from the pit bottom; C3. command the descent by means of the red emergency button; C4. pull the rope to activate the rope slackening device; C5. continue the descent, so eventually the ropes are slackened with the related springs, and the car is suspended on brakes only; make sure the yoke has not been lowered due to the absence of weight; C6. command the ascent of the lift: the car must remain idle; C7. restore the ropes tension, using the manual pump, then continue the ascent to unblock the brakes; C8. check the correct position of the ropes and all the mobile parts, then reset the safety brake contact using the control board; C9. command the ascent electrically: the start must be regular; bring the car to the 2.5m distance from the pit bottom; C10. enter the pit (enable the SafePit device beforehand) and reload the rope slackening device ; C11. check the two imprints left on the guide rail, the imprints must have the same length (±10mm) and be located at the same height (±20mm); C12. restore the lift operation mode.	•		• 2	
25. ELECTRICAL WIRING Check the integrity of the lines, either fixed and mobile.	•		• 2	
26. SHAFT CONTACTS Check the integrity of the following contacts: doorlock block exclusion and floor levelling .	•		• 2	
27. CONTACTORS Check the contactors and their integrity.	•		• 2	

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OPERATION	RECOMMENDED FREQUENCY			
	1st run	every 6 months	every 1/2 year(s)	every 5/10 years
28. PLATES - SCHEMES Verify the presence of the followings schemes and plates: A. pit plate (danger in case of access, safety devices required; B. car roof plate (not bearing surface); C. control board plate (electrical hazard, access forbidden); D. control board plate (beside the board, emergency procedure); E. red emergency button identification plate; F. landing door plate (use reserved to less able people, for public places only); G. car plate (load, capacity, constructor's name, emergency descent procedure in case of power blackout); H. electrical and hydraulic schemes inside control board (or machine room).	•		• 2	
29. SPEED - PICKUP - SLOWING DOWN Make sure the actual parameters match the set values.	•		• 2	
30. TOTAL HYDRAULIC INSPECTION The hydraulic components must be totally inspected to restore the conditions altered due to oil contamination and ageing. The procedure is as follows: A. filter the oil and clean the tank (using 30 - 40 micron filters); B. disassemble the top of the cylinder and the distribution head; C. check all the seals and replace them if needed; D. check and clean the filters; E. reassemble the components and check the fine tuning as if it were a new installation.				• 5
31. HOSE REPLACEMENT Replace the hose every 10 years.				• 10

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2 USE OF EMERGENCY KEY

Opening doors by means of the triangular emergency key may be dangerous. Be extremely careful.

A difference of height exceeding 30 cm between the car floor and the landing level, may imply a serious risk of falling inside the shaft. Therefore, **NEVER use the intermediate landing door during rescue operations**.

To unblock and open the landing door, first open the driving force main switch, then insert the safety key in the special hole in the jamb, then turn the key. Open the door carefully, making sure of the car posirion in respect to the landing.
Upon the operatin completed, make sure that all the landing doors are locked and blocked.

The car roof is NOT BEARING. Do not step on the roof nor on its edges.

3 UNBLOCKING AFTER SAFETY DEVICE INTERVENTION

3.1 BLOCK VALVE

Should the block valve be activated, follow the below sequence of steps to unblock the lift.

A. check the presence of passengers in car, and their health condition;
B. reassure the passengers and explain the next steps you will take;
C. go to the machine room, open the Driving Force switch and position yourself in front of the hydraulic unit, then identify the manual pump bearing the plate "CAUTION - EMERGENCY ASCENT";
D. act on the pump and lift the car by some centimeters, in order to unblock the valve;
E. should there be any passengers inside, effect an emergency descent manually, pressing the red button bearing the plate "CAUTION - EMERGENCY DESCENT" until the car comes to a stop and the passengers can get out normally;
F. put the lift out of service.

2:1

3.2 SAFETY BRAKE

Should the safety brake be activated, follow the below steps to unblock the lift.

A. check the presence of passengers in car, and their health condition;
B. reassure the passengers and explain the next steps you will take;
C. go to the machine room, open the Driving Force switch and position yourself in front of the hydraulic unit, then identify the manual pump bearing the plate "CAUTION - EMERGENCY ASCENT";
D. act on the pump and lift the car by some centimeters, in order to unblock the safety brake;
E. should there be any passengers inside, effect an emergency descent manually, pressing the red button bearing the plate "CAUTION - EMERGENCY DESCENT" until the car comes to a stop and the passengers can get out normally;
F. put the lift out of service.

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4 REPAIR

Usually a damaged frame (especially if the damage was caused by a bending, excessive heat etc.) cannot be replaced. The damaged parts must be replaced. Only spare parts by LIFTINGITALIA S.r.l. can be used for replacement.

The repair operations must be carried out by qualified personnel, with the maximum care, to guarantee post repair efficiency.

The following operations can be carried out directly in place by qualified personnel:
- Sanding down the rust (caused by painting faults) and anti-rust layer application;
- Shoes (or parts of shoes) replacement;
- Rope replacement.

5 SPARE PARTS LIST

Component	Description	Q.ty	Code
Roller shoes	Roller Ø56	4	F600.05.9055V04
	Roller Ø78	4	F300.04.0014
Sliding shoes	Lateral shoes	4	F300.05.0002V02
	Yoke shoe seals	2	F600.05.9057V04
2:1 Safety brake	Safety brake	1 couple	Plate number is required
2:1 Rope	Suspension rope	2	Plate number is required

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