USER INSTRUCTIONS MANUAL

Rev. 20

ÉQUIPEMENT: **VERTICAL PLATFORM LIFT FOR PEOPLE**

MODEL: **DHM-400**

CONSTRUCTOR

DIFUSION HIDRAULICA LLUIS s.a.

Read this document carefully before using the platform lift and keep it in an accessible and safe place. In case of doubt, ask the installer.

The design of this machine has been made solely and exclusively for the vertical lift of people with reduced mobility.

EC DECLARATION OF CONFORMITY

The Company: DIFUSIÓN HIDRAÚLICA LLUIS, S.A.
P. I. Vilamalla – C/. Garbí, 21-25
17469 – Vilamalla (Girona – España)
Tel. 972 52 50 12 / Fax 972 52 54 77

Declares, under their only responsibility, that the **Vertical Platfom Lift for people:**

Trademark / Type	**DHLLUIS / DHM**
Serial Number	**M –17914**
Manufacturing year	**2017**
Capacity (Kg)	**400**
Speed (m/seg)	**0.15**
Round (mm) / Stops	**3900 / 2**
Useful Surface (m^2)	**1.54**
Power (CV)	**3**

Installation Address:

Owner:WESTFIELD SPORTS PAVILLON
LIFT 2
Street:
City: SHEFFELD
PC: S20 SAQ
Country: UK

Has obtained an EC certificate of type with ***TÜV*** number: 01/205/0836/13

Sent by the following notified organism:

TÜV Rheinland Industrie Service GmbH
Organism Number *NB 0035*
Alboinstaße 56
12103 Berlin (Germany)

This is in conformity with the dispositions of the Board of Security of Machines 2006 / 42 / CE, as well as to the Board of Fall Tension 2014/35/EU and to the Managerial electromagnetic accounting 2014/30/EU

According to Harmonized Norms: YES X (EN 81-41 :2010)
NO □

Procedure of reference: EN 12100:2010

Vilamalla, a

DIFUSION HIDRAULICA LLUIS s.a.
Fabricación de Elevadores
Polígono Ind. de Vilamalla, C/. Garbí, 21-23
17469 - VILAMALLA (Girona) - ESPAÑA
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Fdo. Jaume Llobet Daunis
Dep. Técnic

With each Conformity CE declaration you'll receive a CE plate like the one below:

Difusión Hidráulica Lluís informs you that the CE certificate included in this User Instructions Manual is provisional.

The final CE certificate will be provided once we'll receive the checklist included in the Installer Instructions Manual called "Controls before the start-up", complete and signed.

1. INTRODUCTION

The aim of the instructions guide hereby is to facilitate information for:

- The proper use of the Vertical Platform Lift for People with Reduced Mobility by the user of the machine.
- The execution of works or rescue operations, in case any user gets trapped inside.
- The performance of any required maintenance works for the proper execution of the machine “Vertical Platform Lift for People with Reduced Mobility”. All these works shall be executed by qualified personnel and duly registered companies.

DIFUSION HIDRAULICA LLUIS, S.A. will not be held responsible for the installation of the machine, the construction of the pit, the placement of the cupboard with the control panel and the hydraulic unit, nor for any problem derived from the improper use of the machine, nor for the problems which may arise by a lack of maintenance works or the use of spare parts which are not authorized by DIFUSION HIDRAULICA LLUIS, S.A.

2. CHARACTERISTICS OF THE MACHINE

The machine described in the guide hereby “Vertical Platform Lift for People with Reduced Mobility” Model DHM manufactured by DIFUSIÓN HIDRAULICA LLUIS, S.A., has been designed to vertically lift people with reduced mobility, covering a maximum elevation distance of 14 m high, with a maximum speed of movement of 0,15 m/s and a maximum load of 400 kg.

TECHNICAL DETAILS	
Speed	0,15 m/S
Maximum Height	14 m
Nominal Load	400 kg
Minimum Height pit	200 mm
Minimum escape, upper part	2400 mm
Maximum surface platform	2 m^2
Voltage	220 V
Frequency	50 Hz
Power	3 CV

3. INSTRUCTIONS OF USE

Before the start-up of the platform lift, the installer shall carry out all appropriate checking and verification tests and leave the machine on.

Situations of risk or danger will not arise provided that the sequence of start-up commands of the machine is strictly followed, since at the beginning of the start-up process all precaution measures will be activated.

3.1. INSTRUCTIONS OF NORMAL USE

The guide hereby provides information about the correct use of the platforms according to Regulation prEN 81/41.

- ***PLANNED USE OF THE PLATFORM***

Vertical platform lifts for people with reduced mobility by DIFUSIÓN HIDRÁULICA LLUIS model DHM are manufactured for the upright transportation of passengers whose weight must not exceed the net weight by which they have been designed. In case of overloading the platform, this will not lift.

The machine can only be started by the voluntary action of the operator, which consists of a double activation system, firstly by the security/control key and afterwards by steady pressure on the buttons, which make the platform automatically stop at the established levels.

For safety reasons, all pushbuttons work by pulse hold; when the user eases the pressure, the platform lift stops.

There is a pushbutton of external call on each floor and its function is to carry the platform to the desired floor. Furthermore, there is a security/control key to activate the function of the pushbuttons.

When pressing the button of the floor where the platform actually is, the system will not work.

The stop order is activated by easing the pressure on the ascent-descent button.

To go to an upper floor, the user should keep steady pressure on the corresponding button, thus activating the electro hydraulic motor unit and starting up the platform, which will progressively ascend and reach the corresponding floor. The platform will automatically stop.

To go to a lower floor, the user should keep pressure on the corresponding button, then the platform lift will start the descent without activating the hydraulic unit, the platform lift descends by its own weight.

In case the platform lift stops above or below the stop level due to load variations, the platform lift will automatically re-level to the correspondent level stop.

NOTE: When the platform does not meet the harmonized standard EN 81-41: 2010 but still meets the Machinery Directive 2006/42 / EC it is not mandatory placement railing or use the latchkey (both in the cabin and outdoors). When cabin doors, pressing both cabin and exterior can be automatic and can be replaced with mushroom stop latching pushbutton.

➢ *SYMBOLS AND DEFINITIONS*

Following are the descriptions of the buttons used in the platforms.

BUTTON PANEL DISCONNECTION KEY
In case the key is not connected, the platform buttons will not work.

EMERGENCY STOP MUSHROOM BUTTON (red)

REOPENING DOORS BUTTON

ALARM BUTTON (yellow)

BUZZER PILOT FOR OVERLOADING

DESTINATION BUTTON

PLATFORM CALL BUTTON

➢ *INFORMATION ABOUT THE NORMAL USE OF THE PLATFORM*

INFORMATION ABOUT THE NORMAL USE OF THE PLATFORM

The user must know the instructions of use of the platform lift. The instruction manual must be kept near the hydraulic unit and/or electrical panel so that they can be easily reached in case the user needs consulting. The manual contains detailed instructions to be followed in case of emergency stop and the instructions for the manual operation of rescue or the electrical operation of rescue and the unlocking key of floor doors.

- **Actions requiring assistance of fully-qualified personnel:**

a.- Execution of rescue operations

b.- The use of the emergency key for doors

The rescue/disembarking operations will be executed quietly, avoiding people standing on the threshold door hindering the way, and carried out by duly qualified personnel.

- **Maintenance:**

The owner of the platform lift must employ a qualified enterprise to execute all maintenance works. Such enterprise will keep a log book in which there will be recorded all assistance works carried out.

In case of detecting an abnormal function of the platform, the user will promptly contact the maintenance enterprise.

4. CONTRAINDICATIONS OF USE

The platform has been designed to offer specific facilities, for this reason the machine will not be used to work over its maximum indicated capacity. If doing so, deformities and overstrain on the different parts may appear and cause damage on them.

As far as possible, it is recommended to avoid knocking on hydraulic and electrical components, as they are the most fragile parts. In case any malfunction is detected, as minor as it may seem, the operation should be immediately stopped.

No modifications will be carried out on the machine without being previously checked by qualified technicians. Some changes may derive on malfunction of the machine and the risk that these may imply. In case modifications are carried out by non authorized personnel, the guarantee for the platform will immediately lose its validity.

5. SAFETY INSTRUCTIONS

- **The use of the emergency key** to open the doors when the platform is not on the landing is limited to qualified personnel. Otherwise there may be the risk of not closing the doors properly. Another user may try to open the door without noticing that the platform is not on its position and may fall down the shaft.

- **Platforms without doors on the cab** do not approach the outer entrance, photoelectric cell covers exclusively the free way of the door to the height of 1,8 m (180 cm).

DON NOT LAY THE HAND OR ANY OTHER OBJECT OVER THIS DISTANCE, OVER THE PHOTOELECTRIC CELL.

Make sure not to approach the outer entrance, there is the risk of getting trapped.

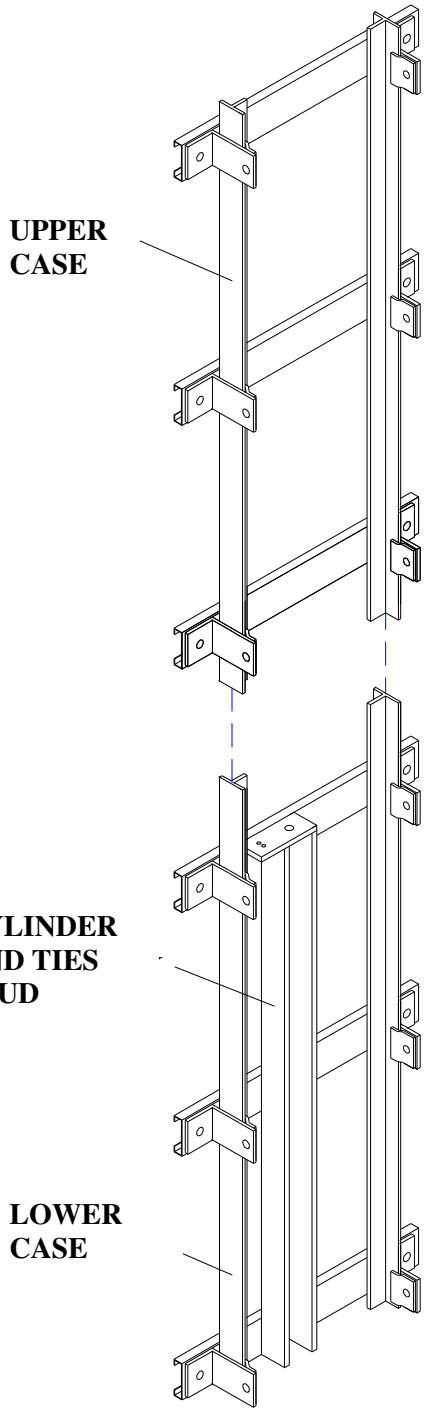
- **Electric panel** The manipulation of or accessibility to the electrical panel is not allowed to non qualified people and without respecting the normal practices demanded by the rules of Security and Hygiene at work.

6. PLATFORM DESCRIPTION

6.1 WARNING AND RESCUE DEVICES

The platform lift is equipped with the following warning and rescue devices:

- Emergency light in case of failure on the electrical supply
- Bi-directional telephone
- Alarm
- Emergency batteries:
    - For the emergency descent
    - For the alarm
    - For the opening of cab / landing doors



6.2. GUIDES

The platform lift is designed to vertically transport handicapped people to different levels and to a maximum height of 14m.

The guides of the platform are supplied in stretches of 2.5m and in different pieces according to its length to facilitate the manipulation and placement in the shaft or wall where it should be placed.

The guides may be fixed In the wall on three different ways:

- Screwed or welded fixing lugs (Image 1)
- Fixing lugs to embed (on request) (Image 2)
- Fixing lugs with bulkhead fittings (on request) (Image 3)

Image 1. Screwed fixing lugs

Image 2. Lugs to built-in

Image 3. Bulkhead fittings.

It exists the possibility to weld the lugs directly to the metal rails on the inner part of the shaft.

The guides are manufactured with two standardized rails for lifts (T 70x65x9) over which the platform is built. Its structure is hard enough to support a normal functioning.

On the upper part of the pedestal there is a flan iron surface which is used to lean the cylinder and anchor the struts.

A pictogram must be placed on the lower part of the guides which should warn about:

- Not to enter under this platform while it is not mechanically blocked.
- Qualified personnel only.

To block the platform mechanically, it is equipped with a security post with an electric contact. The platform will not work if the electric contact is not in its home position.

Closed prop

Image 4. Guídes, pedestal and closed prop unit.

Open prop

Image 5. Guídes, pedestal and open prop unit.

6.3. FRAME

The frame is delivered fixed. During the assembly process of the platform, the rest of the cab components are placed.

The frame includes 4 angles on the base bearings and 4 oblong holes on the carriage for the cab movement.

6.3.1. Guiders

Image 7. Guider, rubbing plate and M-shapped piece

Each frame is equipped with 4 guiders with their respective fittings (rubbing plates FS-9).

The guiders are fixed to the frame with screws, nuts and oblong holes to allow a later adjustment to the floor level.

The machine comes equipped with the rubbing plates and 2 M-shaped pieces to avoid an exceeding looseness between the guides and the frame

6.3.2. Adjustment wheels

2 adjustment wheels are located on the lower/upper part of the frame car. This regulation system adjusts the base level to the floor level.

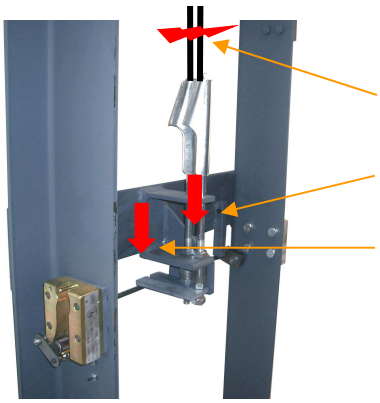
The adjustment unit is made up of the axis, a Vulkolan wheel and screws.

Image 8. Adjustment wheel unit.

Mechanical grip gear and wire loosening

The grip gear is a security system so that the suspension wires do not break or loosen.

HOW IT WORKS



1. When one or two wires break or loosen
2. The spring pulls the struts downwards
3. When the releasing levers trigger the assembly strip.

Image 9. Mechanical grip gear unit

4. The connecting rods which turn the axes are located at both ends of the assembly strip.
5. The wedge rollers are triggered. The axes turn.
6. The frame/cab unit is fixed by the wedges on the guides.

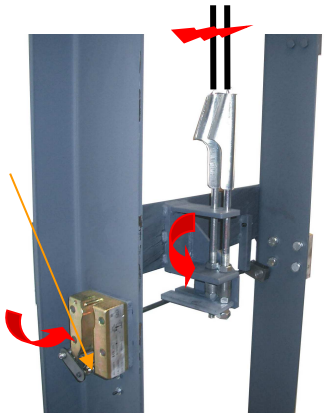


Image 10. Mechanical grip gear unit.

One of the connecting rods is equipped with a bracket which triggers the wire loosening micro in case of the wire loosens of breaks.

Image 11. Wire loosening mechanical grip gear micro

6.4. CYLINDER

The cylinder has a precise length and diameter, according to the length of run and dimensions:

The cylinder is made up of:

- Ground steel and chrome-plated axis
- Tubular case
- Back top equipped with oil intake
- Barrel unit – barrel holder –tightness kit

TIGHTNESS SPARE PARTS AND BARREL DISASSEMBLY

	Cylinder Ø 60	Cylinder Ø 70
1 METAL-RUBBER SCRAPER	60 x70x7/10	70x80x7/10
2 O-RING SEALS	69x3	82x3
1 BALSELE SEAL	B-275.236 NI 60x70x8	B-314.275 NI 70x80x12.8

ARTICULATED KEY FOR FRONT DRILLS

The cylinder is guaranteed under hydraulic test of maximum pressure of 220 Bar.

NOTE: In material loading/unloading operations special care must be taken with the hydraulic cylinder as the barrel is made of cast iron and it could crack without noticing it. This could later result in oil leakages.

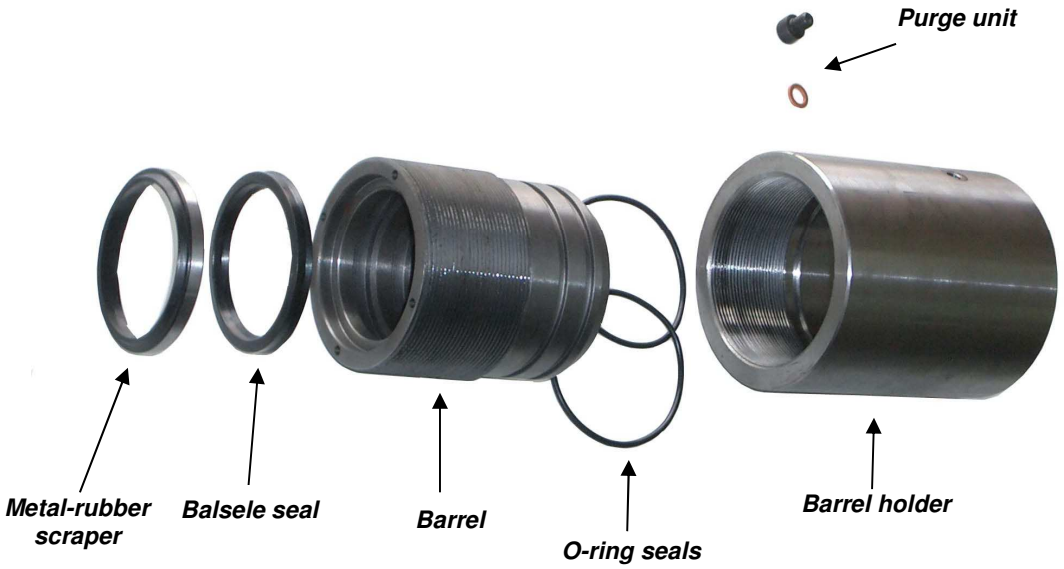
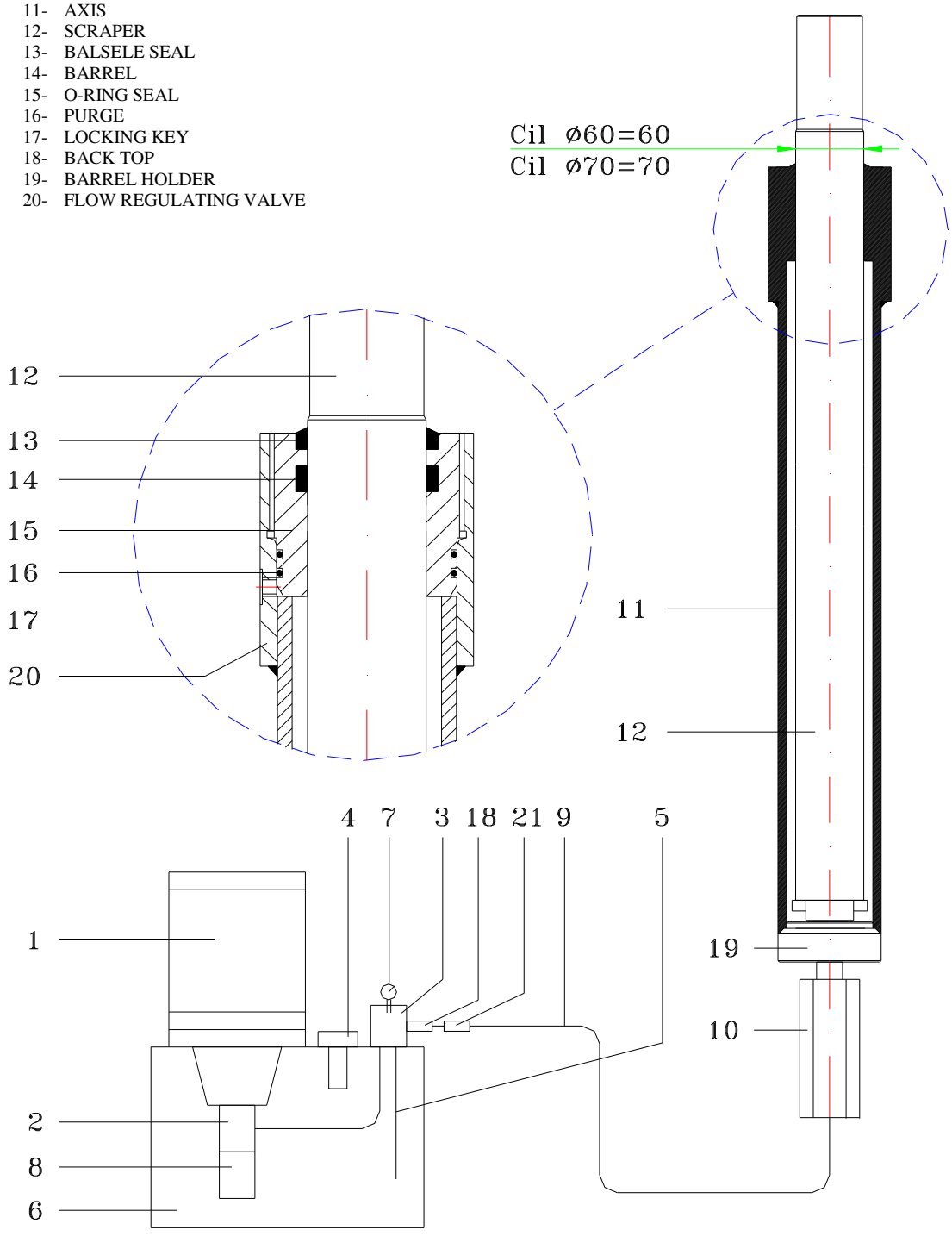


Image 12. Barrel – barrel holder – cylinder liner

OLEODYNAMIC UNIT

1. ENGINE
1- PUMP
2- VALVE
3- FILLER PLUG
4- OIL-RETURN
5- TANK
6- PRESSURE GAUGE
7- INTAKE STRAINER
8- BRIDLE WIRE
9- GRIP GEAR VALVE
10- CASE
11- AXIS
12- SCRAPER
13- BALSELE SEAL
14- BARREL
15- O-RING SEAL
16- PURGE
17- LOCKING KEY
18- BACK TOP
19- BARREL HOLDER
20- FLOW REGULATING VALVE



6.5. HYDRAULIC UNIT

These are the main parts:

- 1 Screw-operated pump (low noise)
- 2 Filler tap (1")
- 3 Heating system (on request)
- 4 Pass key
- 5 Bridle wire(3/8")
- 6 Level display (3/4")
- 7 Presostate
- 8 Drain plug (1/2")
- 9 Silentblocks (M8)
- 10 Tank
- 11 Compensated progressive valve
- 12 Engine

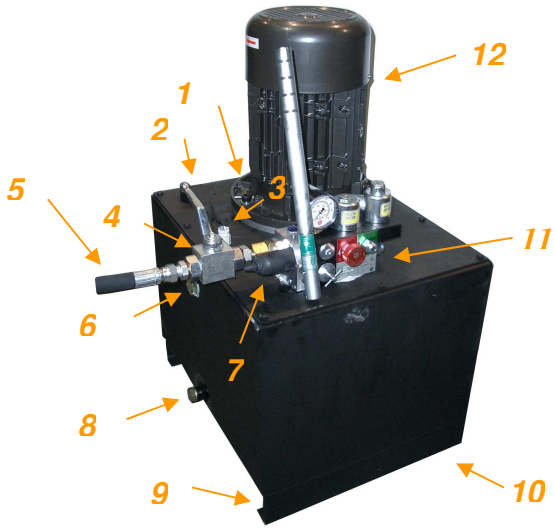


Image 13. Hydraulic group

The 3CV engine can be monophasic or triphasic according to order.

The hydraulic unit includes a compensated progressive valve which can be regulated according to nominal load.

The valve is equipped with a manual pump to enable the platform ascent in case there is no power supply as well as a presostate to control the load.

The hydraulic unit is guaranteed under hydraulic test of maximum pressure of 150 bar.

The work pressure of the hydraulic unit is comprised between 80 y 120 bar according to its adjustments and load.

The vertical displacement speed provided by the hydraulic unit is lower than 0.15 m/s.

The pass key is located at the hydraulic unit outlet. It is used to avoid the descent of the platform for maintenance works below it as well as to prevent the bridle and the cylinder to empty, avoiding having to refill it and purge it.

Any maintenance works on the hydraulic bridle wire must be carried out with the platform stopped on the lower level, thus avoiding squashing hazards under the platform. The connection between the bridle wire and the cylinder can be reached from inside the platform, disassembling the protection panel between the platform and the case, as shown in image 20.

To avoid the projection of pressurized fluid in case the bridle breaks, the user must fix the bridle with staples on the wall or fixed elements thus avoiding its projection or uncontrolled movement.
The hydraulic bridle type is: MF 200 – 6 (3/8")

Inner synthetic rubber tube. Double metal support. Normal synthetic rubber sheath. Working temperature from –40ºC to +100ºC.

- Inside Diameter: 9.5 mm
- Outside Diameter: 21.4 mm
- Working pressure: 344 Bar
- Breaking pressure: 1360 Bar
- Bending radius: 130 mm
- Weight: 0.643 Kg./m

Officially approved according to DIN 20022 – 2 ST and UNE EN – 853.

A pictogram must be placed near the electro-hydraulic motor unit warning about:

- Electro-hydraulic motor working pressure.
- Emergency manual descent.
- Qualified personnel only.

6.6. CONNECTION BETWEEN THE HYDRAULIC UNIT AND THE CYLINDER

Any maintenance works on the hydraulic bridle wire must be done in the pit with the prop open blocking the platform mechanically.

The grip gear valve is located at the end of the bridle wire or hose which connects the hydraulic unit with the cylinder. The valve must be placed just before the inlet/outlet cylinder for its correct working order. (See point 6.8).

The hydraulic bridle wire is supplied in lengths of 4 metres minimum.

To avoid the projection of pressurized fluid in case the bridle breaks, it will be compulsory to fix the wire with staples on the wall or any other fixed element which may prevent its projection or uncontrolled movement.

The hydraulic unit is equipped with a compensated progressive valve whose working instructions and adjustment may be seen in section 7.

6.7. LUBRICANTS

Normal fluid grease type ARGA – 2 by CEPSA or equivalent is recommended to operate the machine.

It is recommended using hydraulic oil with non-wearing properties, developed for the industrial sectors where: ISO 6743/4 – Class HM. DIN 51524/2 – Class HLP is required.

Main features:

- Viscosity: 46,3
- Flammability point: 210ºC
- Freezing point: -15ºC
- Viscosity index: 97

The hydraulic oil does not cause any harmful effects when it is used in recommended applications and respecting at all times the normal practices of Security and Hygiene at work.

6.8. GRIP GEAR VALVE

Image 14. Grip gear valve disassembly

It is located at the entrance of the cylinder and its function is to detect a platform fall in case the hydraulic bridle wire breaks.

In case the hydraulic bridle wire breaks, the grip gear valve operates immediately and stops the platform, or reduce its speed to a very slow speed until it gets the pit floor

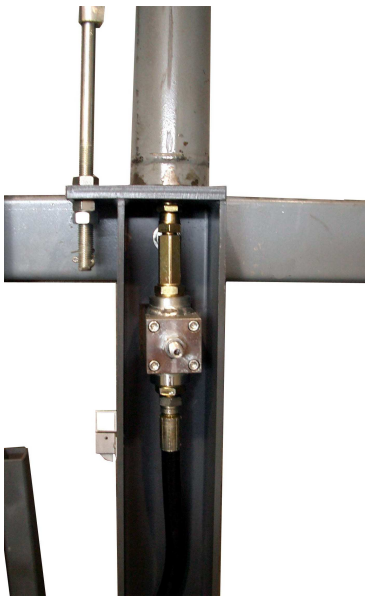


Image 15. Grip gear valve assembly

6.9. HEAD

The vertical displacement of the head is guaranteed by the two guiders on its ends. Each guider is equipped with a fitting (rubbing plate – FS9).

The pulley has a double duct for 8 millimetre wires, so it can hold 2 wires. It is equipped with two Teflon, self-lubricated bearings (Ref. 6305ZZ) for a long-lasting life and to enable a better turn on the axis.

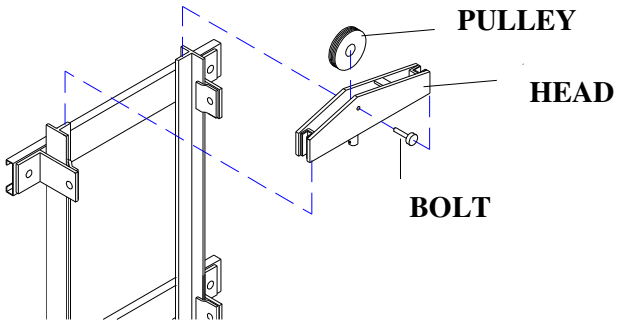


Image 16. Head disassembly.

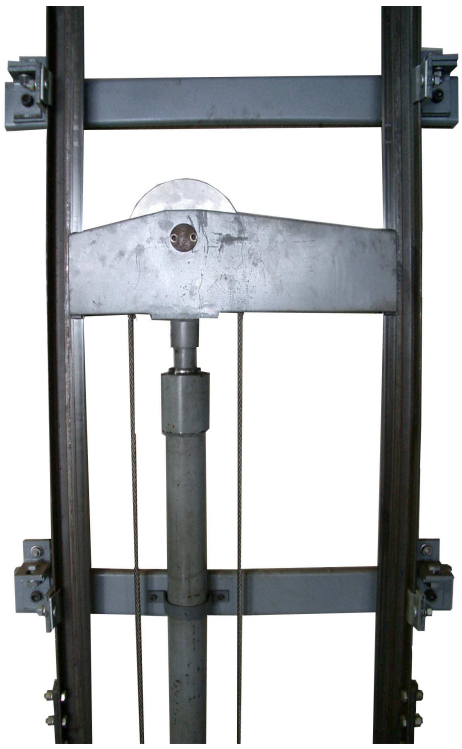


Image 17. Head assembly.

6.10. WIRES AND STRUTS

The wires used to lift or bear the load are not equipped with a connection and are officially approved for lifting. A quality certificate is available and its main features are:

- Composition: 6x19+1
- Diametre: 8 mm
- Endurance: 140-180 Kg/mm2
- Breaking load: 3390 Kg.
- Coiling: right
- Surface: black
- Length: according to length of run

The wires are fixed by a strut which allows its adjustment and it is interspersed with a wedge

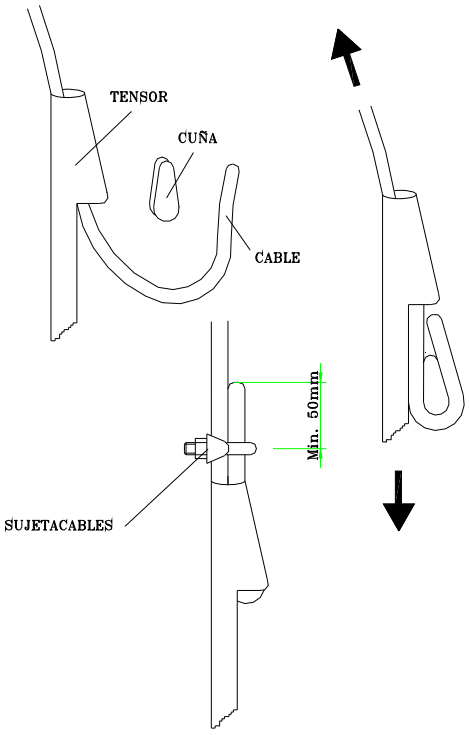


Image 18.Strut assembly.

which ensures fixing and, for extra security, the wire is fastened with a wire-shutter.

There are two drilling holes on the upper part of the pedestal for the struts.

These struts have a fixed position and are assembled without springs but with a nut on the upper part and two on the lower part.

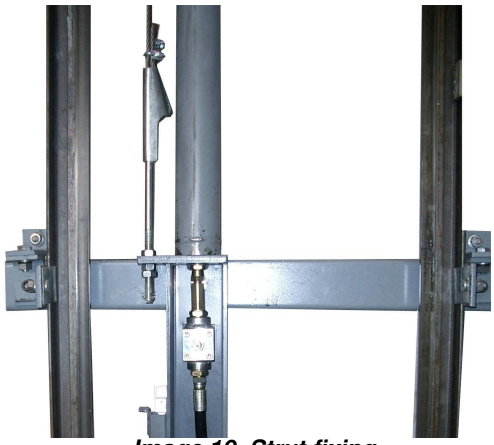


Image 19. Strut fixing.

The other two struts are located on the frame. Their assembly is shown in point 6.3.3.

NOTE: once the frame is suspended, loose the upper nut bolts of each strut at its maximum so that the mechanical grip gear can operate.

Both the wire assembly and maintenance must be carried out with the platform on its lower level, thus avoiding accidents under the platform.

The wires may be accessed from the inner part of the platform, disassembling the protection panel between the platform and the case.

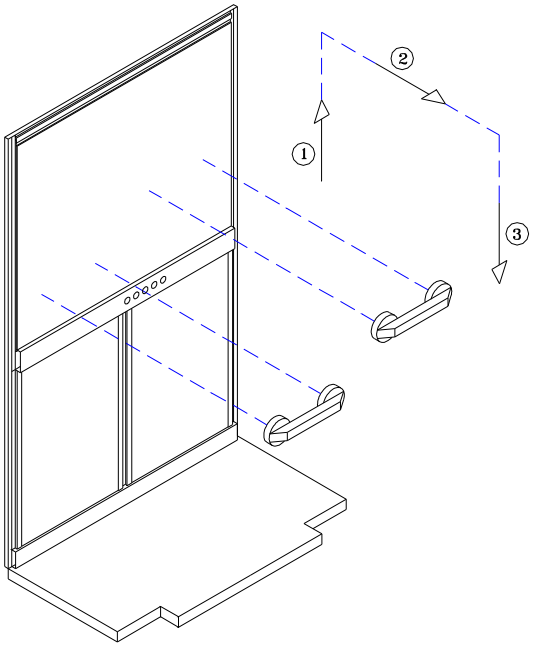


Image 20. Sequence to disassemble the protection panel.

6.11. PLATFORM / CABIN

The platform has been designed to perfectly guarantee its stability and verticality while operating. Eight anchoring points on the platform frame ensure its continuance and good working order.

The inner surface of the platform is coated with antiskid rubber to avoid accidents.

The platform has been designed so that its assembly/disassembly could be carried out from the inside.

To reach the button panel, the mechanical grip gear adjustment, the wire and strut loosening and the wire replacement, remove the mirror as shown on the descriptive sketch in point 6.10. (Image 20).

6.11.1 CEILING

The ceiling is made of a tubular structure.

The whole lighting system is assembled by default (fluorescent or halogen lightings / transformers) when there is a lack of electrical connections.

The diffuser grid is also assembled by default. It is retractable inwards the platform unscrewing the two Allen screws.

Image 22. Ceiling unit.

NOTE: it is strictly prohibited to step on the platform ceiling; hence its design provides an inwards retractable platform ceiling. The access to the inspection box, sensors, magnets adjustment, lighting replacement, wire greasing… must be done retracting the ceiling and going up a little ladder from inside the platform.

A pictogram must be placed on the outer part of the ceiling warning about:

- Do not step.
- Qualified personnel only.

6.12. ELECTRICAL INSTALLATION

The electric supply lines to the panel must be protected with Magneto-thermal and Differential protection (max. 6.5A in triphasic and 16A in monophasic), according to the Electro-technical Low Voltage Regulation.

Furthermore, the whole installation (electric panel, guides, platform and hydraulic unit) must be connected to a ground lead lower than 20 Ohm thus avoiding any electrostatic shock risk of the machine electric parts.

There is no contact risk with active parts on voltage, since there is not any active part with an easy access.

The electrical installation is made up of:

6.12.1. Preassembled shaft electric installation
6.12.2. Electric board
6.12.3. Several supports
6.12.4. Stop detector (CRD)
6.12.5. Reset detector (RST)
6.12.6. Disengagement area detector (ROD)
6.12.7. Wire loosening microswitch(AFC)
6.12.8. Prop detector (PNT)
6.12.9. Pit stop
6.12.10. Landing doors opening systems
6.12.11. Lighting
6.12.12. Switchboard and control elements
6.12.13. Connection box
6.12.14. Telephone

6.12.1. Preassembled shaft electric installation

It meets the required specifications according to pre-regulation EN81/41.

On request it can be furnished with shaft wiring pre-installation.

All electric hoses are equipped with fast and different identifiable connectors to avoid possible connection allocation errors.

All cable ducts, rawlplugs and pipe clamps flanges are also supplied.

The connection allocations diagram is furnished with the preassembled installation and they can be found inside.

6.12.1. Electric board

It meets all the specifications according to pre-regulation EN81/41.

On request it can be furnished with shaft wiring pre-installation.

All the electric hoses come equipped with fast and different identifiable connectors to avoid possible connection allocations errors.

It can only be manipulated by qualified personnel.

It is equipped with a security device which prevents its opening unless a tool which only the user has is used.

The platform automatic control system is operated by means of a non-reprogrammable electronic board.

It is equipped with a master blocking switch at point 0 for the installation manipulation.

It is compulsory that the operation is set so that it Works in the presence of a person or if the pulsing is maintained, not only the inner push buttons but the outer ones as well.

It is equipped with a timer which disconnects the operation by means of a failure stop detector, once the mechanical stop has been triggered because the length of run has been exceeded.

It is equipped with an emergency battery which acts in case of failure on the electric supply to go down to lower floors with no need of electric supply. If the platform is not on its lowest level when the electric supply is restored, the platform will automatically descend to the lowest floor to re-set its position.

Attention: Before operating on the manoeuvre or platform, disconnect the master switch and remove the F1 fuse spinning the plug ¼ turn anticlockwise.

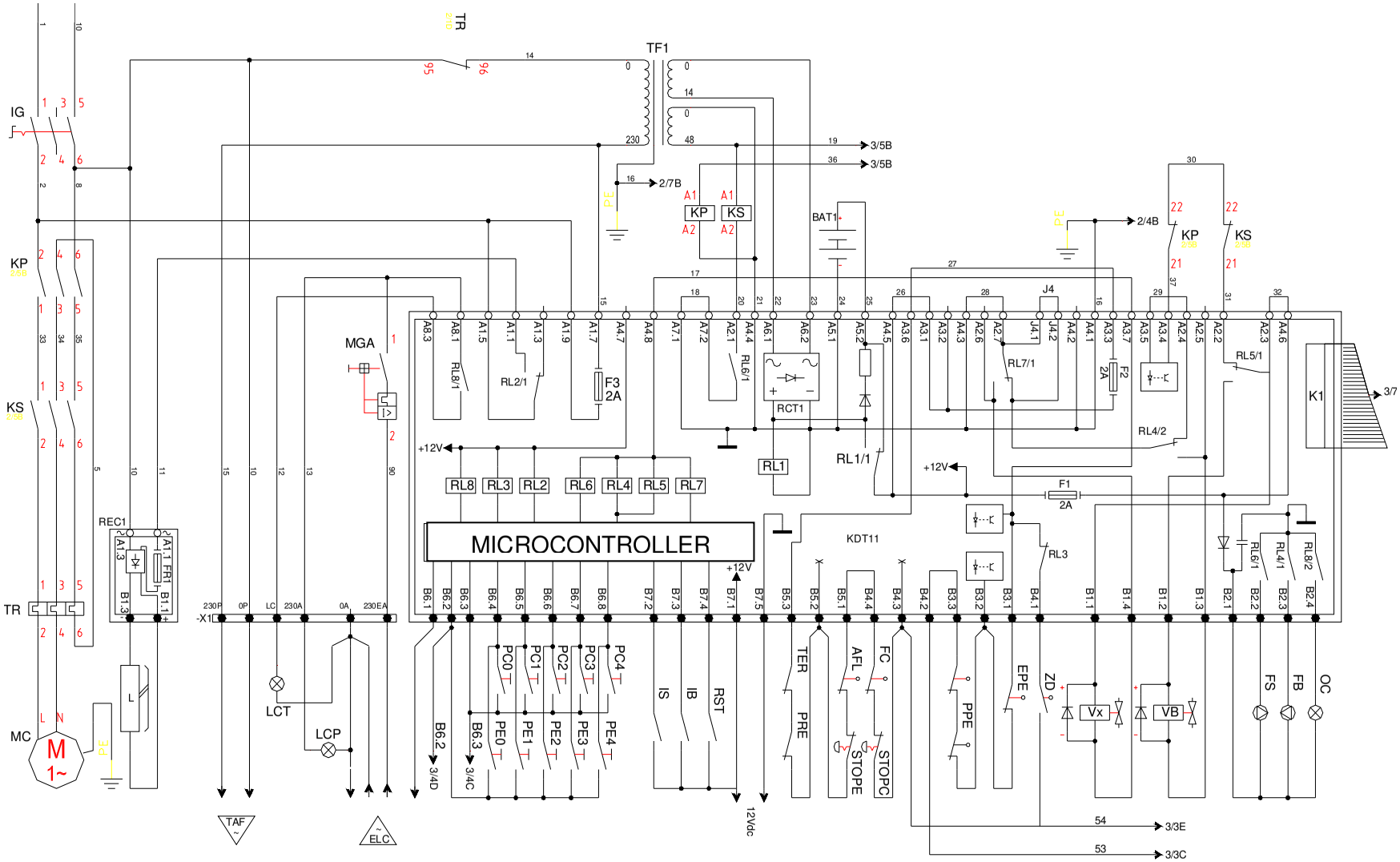


Image 24. Electric plate diagram KDT-11.

6.12.2. Several supports

First the stop detector (CRD), the reset detector (RST) and the disengaging area detector (ROD) have to be installed using the screws that fix the ceiling to the lateral frame.

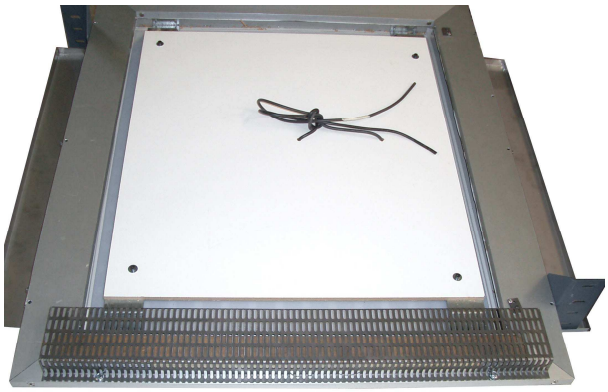


Image 25. Stopper support base.

As the photograph shows, position the CRD, RST and ROD detectors.

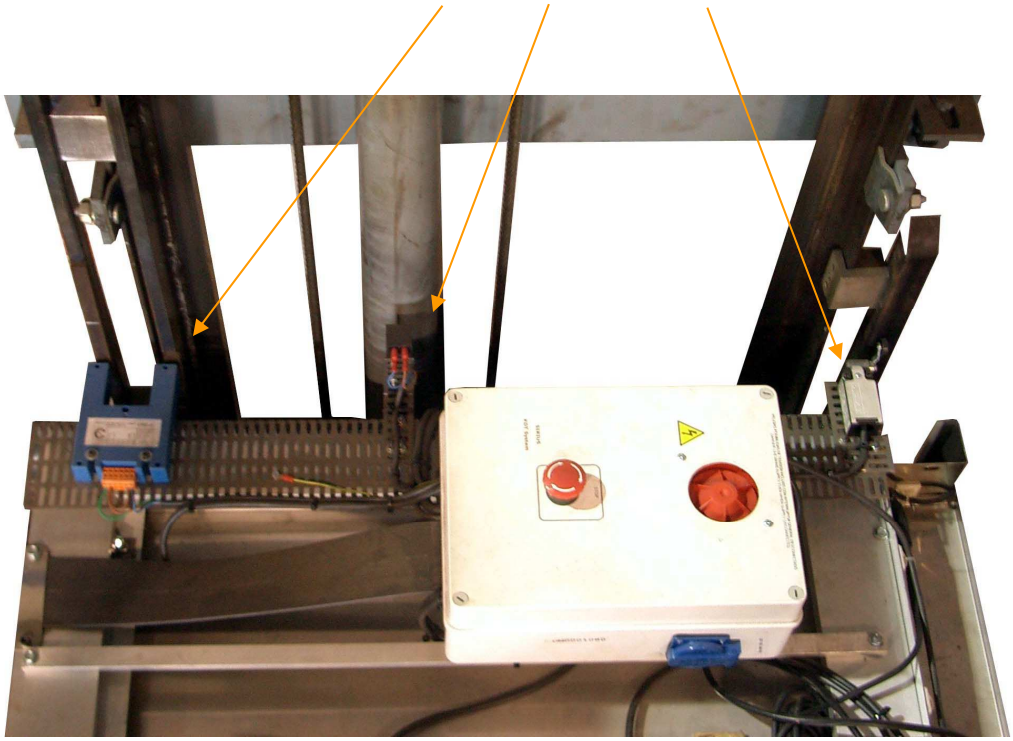


Image 26. Stoppers situation

With the platform lying on the lower floor, fix the magnets support base and the disengagement area support base.

The magnets support base must be fixed so that they are placed in a central position with respect to the CRD and similarly with respect to the disengagement area.

Position the RST magnet in a cylinder higher than the lower level stop magnets, with the side marked “north” towards the detector.

The detectors support base is made of perforated plate of ∅ 5, 2 mm thick and is screwed to the upper part of the platform ceiling as shown in image 25.

6.12.3. Stop detector (CRD)

Two magnets and a support base for each stop are supplied on request together with the stop detector. Its function is to detect the desired stop level.

The stopping detector meets all the protection regulations according to the machines guidelines security as well as protection and security.

This sensor detects the stop or floor level and re-levels the lift over-run.

It needs two magnets (see image 25) for its proper operation, one detects the ascent (IS) and the other one the descent (IB).

Magnets positioning in ascent: first IB enters (right) and nothing happens, then IS enters (left) and the ascent coil disconnects automatically but the engine goes on for 0.3 more seconds (stop ramp – see point 7).

Position of magnets in descent: first IS enters (left) and nothing happens, then IB enters (right), it disconnects the engine, producing a non-adjustable stop ramp.

The more adjusted the magnets (see electric panel handbook), the more precise the stop, and on the contrary, the less adjusted the magnets, the less inaccurate the stop.

6.12.4. Reset detector (RST)

A magnet is supplied together with the reset detector. Its function is to detect whether the platform lift is at its lower level. It has to enter in detection before the stop magnets at the lower level.

The reset meets all the protection regulations according to the machines guidelines security as well as protection and security.

This sensor only operates on the lower and its function is to inform the electric panel that the platform is on the lower floor.

ATTENTION: This is a bistable detector and it only detects the NORTH side of the magnet. For this reason, the magnet must be positioned so that the marked side is visible.

It is considered that the platform is within the reset area (led nº 7 on), when it is on the lower level. In case of failure on the electric supply, the following situations will be given when the supply is restored:

- If the platform is within the reset area (led nº 7 on), the platform is already in position.
- If the platform is out of the reset area (led nº 7 off), the platform descends automatically towards the reset area until finding the floor level.

Position the RST magnet on a higher cylinder with respect to the stopping magnets of lower level with its marked side (north) towards the detector.

6.12.5. Disengagement area detector (ROD)

It is supplied with a support for each stop on request.

The detector meets all the protection regulations according to the machines guidelines security as well as protection and security.

This detector consists on two open contacts and it has two functions:

1.- It operates in case there is a failure on the electric supply (emergency situation) to allow the descent to lower floors.

Image 26. Cam bearing.

When an electric supply failure occurs, the electrocam is disconnected (unfolded). When the descent starts and before the stop, the electrocam will automatically connect the door opening (opening the series) and the operation will disconnect the descent before the platform reaches the stop. The sensor checks off the series until the platform reaches the lower floor.

ATTENTION: Through the descent, the sensor must come into contact with the disengaging area before the electrocam comes into contact with the door lock.

2.- In case the platform is supplied with automatic doors (bus type / telescopic), if the detector free contact is connected in serial with the door opening signal, it will only allow the door opening in the disengagement area.

6.12.6. Wire loosening microswitch (AFC)

It is supplied with a top to protect the connections, two screws, nuts and washers to fix it. Its function is to deactivate the electric control in case one or the two wires loosen or break.

Image 27. Micro AFC.

The microswitch meets all the protection regulations according to the machines guidelines security as well as protection and security.

The detector is assembled at the inner part of the platform frame, just below the wedge.

6.12.7. Prop detector(PNT)

It is supplied with two screws and washers to fix it.

Its function is to detect the prop at the standstill area or normal operating area of the machine. In case the prop is unfolded, the operation will be deactivated.

The sensor meets all the protection regulations according to the machines guidelines security as well as protection and security.

Image 28. Prop detector.

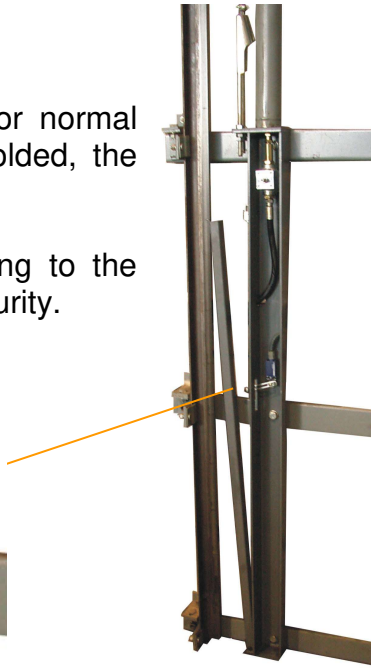


Image 29. Prop detector location.

6.12.8. Pit stop

Its installation is compulsory. Its function is to disconnect the operation to avoid possible accidents when a technician is in the shaft below the platform performing installation or maintenance works.

This element of command/safety meets all the protection regulations according to the machines guidelines security as well as protection and security.

6.12.9. Landing doors opening systems

It is absolutely prohibited to use fixed guiding shoes.

There are three systems to open the landing doors:

1.- Semi-automatic and photoelectric curtain

A 190V electrocam is used to open the doors (on request). Its use is compulsory as it gives the mechanical order to open the doors once on the correct floor.

The electrocam supplied with the platform lift by the manufacturer meets all the protection regulations according to the machines guidelines security as well as protection and security.

The manufacturer accepts no responsibility if the electrocam is not installed or in case of an unsuitable installation of the door electric security.

2.- Semi-automatic and bus door

To open these doors an electrocam (bus-like) is supplied with the bus-like door. It is compulsory as it mechanically triggers the doors opening once on the correct floor.

The mechanical cam supplied with the platform lift by the manufacturer meets all the protection regulations according to the machines guidelines security as well as protection and security.

The manufacturer accepts no responsibility if the mechanical cam is not installed or in case of an unsuitable installation of the door electric security.

3.- Telescopic on landing and telescopic in cabin

In this situation, the landing doors opening is executed by the cabin door, since the operator located on the upper part of the platform triggers the cabin door opening and, at the same time, the cab door opens the landing door.

The landing door may be semi-automatic and the cabin door can be telescopic. In such cases, by means of a guiding shoe, the cabin door triggers the permission to open the semi-automatic landing door.

The manufacturer accepts no responsibility if the fixed guiding shoe is not installed or in case of an unsuitable installation of the door electric security.

6.12.10. Lighting

In case of having a simple platform without ceiling, it is compulsory to fit a shaft light as it is not equipped with an inner light.

It is recommended installing some lightning in the platform lift access, minimum 50 lux.

The inner platform lift light through fluorescent tubes or halogenous lamps is automatically turned on when movement is detected. The replacement of flourescent tubes or halogenous is done during maintenance works. See point 6.11.1. (Image 22)

The emergency light is automatically turned on when a power failure is detected.

6.12.11. Switch board and control elements

The control orders are carried out electrically by means of pushbuttons located in the box, so as no piece under power is accessible to the user.

The control systems are reliable and safe as all the components are guaranteed by its own manufacturer's quality certificate

They have been foreseen for their conception and dimensioning to endure the established normal working conditions and the external influences. The control systems have been designed and manufactured so as no dangerous situations arise in case of operation logic error.

The control elements:

- Are clearly visible and identifiable and will be marked appropriately for each floor.
- Are positioned so as they can be safely operated, without hesitations or losses of time and unequivocally.
- Are positioned out of the danger area.
- Their operation does not cause any additional danger.
- As designed so as a dangerous situation can only arise in case of a deliberate operation.
- Are designed so as they can take foreseeable efforts.
- Will be maintained or continuous pulsing elements.

The control / security bolt key guarantees an exclusive and unique use by qualified staff.

The call switchboard has a continuous pressing push button, a security/control bolt key and a pilot in case of doors without sight glass.

The platform inner switchboard has continuous push buttons to select the destination, an overload pilot/buzzer, security/control bolt key, mushroom with stop lock and a push button which triggers the acoustic alarm.

To disassemble the platform switchboard, see sketch 6.10. (Image 20).

Both the inner switchboard and the call switchboard on each floor are located at an appropriate height so as they are easy manipulated.

On request a positional display in the cabin and/or landings can be supplied.

NOTE: When the platform does not meet the harmonized standard EN 81-41: 2010 but still meets the Machinery Directive 2006/42 / EC it is not mandatory placement railing or use the latchkey (both in the cabin and outdoors). When cabin doors, pressing both cabin and exterior can be automatic and can be replaced with mushroom stop latching pushbutton

6.12.12. Connection box

The platform has an connection box on the upper part of the ceiling and all the derivations towards the other electric components that travel with the platform go out from this box. All the hoses are perfectly identifiable to avoid possible errors.

The connection box has an acoustic alarm to ask for help in case of emergency and a battery which feeds the emergency light in case of a power failure.

Image 31. Connection box .

6.12.13. Telephone

A bidirectional communication system is supplied and it is part of the telephone line installation.

The manufacturer accepts no responsibility in case the telephone is not installed on the platform.

7. PROGRESSIVE VALVE WORKING MANUAL

Ascent: Start with integrated cushioning. Stop with adjustable cushioning with the engine still working ½ seconds during this interval.

Descent: Start with adjustable cushioning. Adjustable descent speed. Stop with integrated cushioning.

7.1. ASCENT ADJUSTMENT (gentle stop)

7.1.1. Diversion valve: if the pump starts up with the empty platform and solenoid**" A"** is excited, the platform has to remain standstill for a period of **1** second before the first movement. For a shorter period turn the adjustment screw **1** to the right, for a longer period, turn it to the left.

7.1.2. End of ascent stop: at the stop, solenoid **"A"** is disconnected. A timed relay allows the pump to go on working for 1/2 seconds more, so that when the solenoid **"A"** disconnects, according to adjustment **5,** turning it to the right the stop is gentler, and turning it to the left the stop is sharper. **Preventive adjustment:** with solenoid **"A"** disconnected and the pump working, adjustment **5** has to be turned until the platform accelerates upwards. Then it has to be turned slowly anticlockwise until the platform brakes again.

7.1.3. Alternative with passengers: at a relatively high speed and by means of a timed relay, as in "gentle stop", the platform will over-travel the stop some centimetres. This over-run will excite the creep speed solenoid **"D"** downwards (re-leveling) and the platform will go back to its stop position

7.1.4. Security Valve S: Turned to the right the maximum pressures increases. Turned to the left it decreases.

7.1.5. Manual pump B: to ascend the platform without power supply moving the handle forwards and backwards.

7.1.6. Purge PU: the manual pump has to be purged so that it works.

Warning: the purge screw must not be totally removed, as it contains an inner tiny ball without which the manual pump does not work.

7.1.7. Non-return AT: in order to ascend the platform, this screw must be off.

7.2. DESCENT ADJUSTMENT (1 descent speed)

7.2.1. Descent start: if solenoid **"D" is** excited, the descent accelerates according to adjustment screw **6**. Turned to the right the descent start will be gentle, turned to the left it will be sharp. **Preventive adjustment:** turn screw **6** to the top to the right and then connect solenoid **"D"**. Then turn screw 6 anticlockwise until the platform accelerates the descent.

7.2.2. Descent speed: the descent speed is controlled by screw **9**. Turn it to the right for a slower speed; turn it to the left for a faster speed.

7.2.3. End of descent stop: at the stop, solenoid **"D"** remains dead. The platform stops according to the integrated cushioning. No need to be adjusted.

7.3. ADJUSTMENT POSITIONING

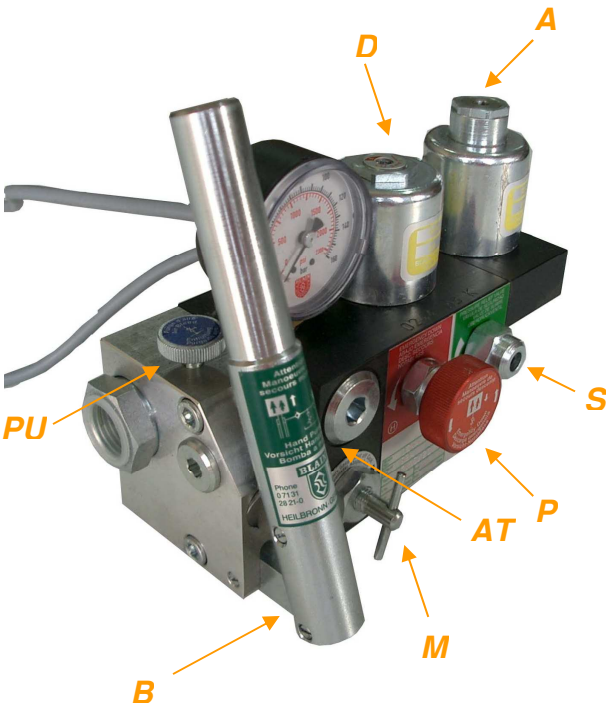


Image 32.Progressive valve.

Image 33. Adjustment points.

A – ascent solenoid
D – descent solenoid
M – pressure gauge protection tap
S – pressure adjustment
P – manual descent
B - manual pump
PU – purge
AT – non-return (manual pump)

8. SECURITY AND PROTECTION MEASURES ON THE PLATFORM

8.1. General requirements

- They are made solid and resistant and of an antiskid surface.
- They will not cause any supplementary dangers.
- They will not be cancelled easily or put out of order easily
- The upward or downward movement speed will not exceed 0.15m/s.

8.2. Fixed security devices

They will be integrated on the platform so that

- The lateral protections are solidly secure to the platform. They are screwed between them, the base and the ceiling (if there is one) so that tools are required to disassemble them.
- The platform user must not be in contact between the guides of the platform and their jutting elements.

It is advisable to eliminate them, in case the shaft is not completely smooth in the platform accesses in the whole of its length of run so that blockings can occur between them and the platform.

8.3. Protection devices in the cabin

It is compulsory that the platform comes fitted with the following devices:

- Mechanical grip gear (double wedge)
- Manoeuvre with pulse hold
- Alarm
- Telephone
- Hand hold
- Stop with mushroom like fixing (in the cabin, in the inspection box on the cabin and in the pit)
- Presostate (acoustic and visible warning)
- Grip gear valve connected to the piston base.

8.4. Protection devices of the accesses

The installation of a type of protection device in the platform access is compulsory (under previous order).

There are three types:

1.- Photoelectric curtain in cabin and electrocam with semi automatic doors in landing.

2.- Bus door in cabin and mechanical cam with semi automatic doors in landing.

3.- Telescopic door in cabin and guiding shoe with semi automatic doors or telescopic in landing.

The manufacturer accepts no responsibility if the platform lift is assembled or used incorrectly.

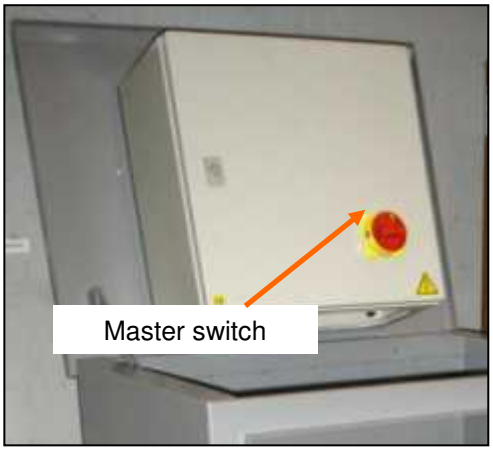
The manufacturer accepts no responsibility if the platform lift is used incorrectly.

9. RESCUE INSTRUCTIONS IN THE CABIN

9.1. Rescue from outside the cabin

Both the rescue operation and the opening of the door with the emergency key ***will be carried out by qualified personnel only***.

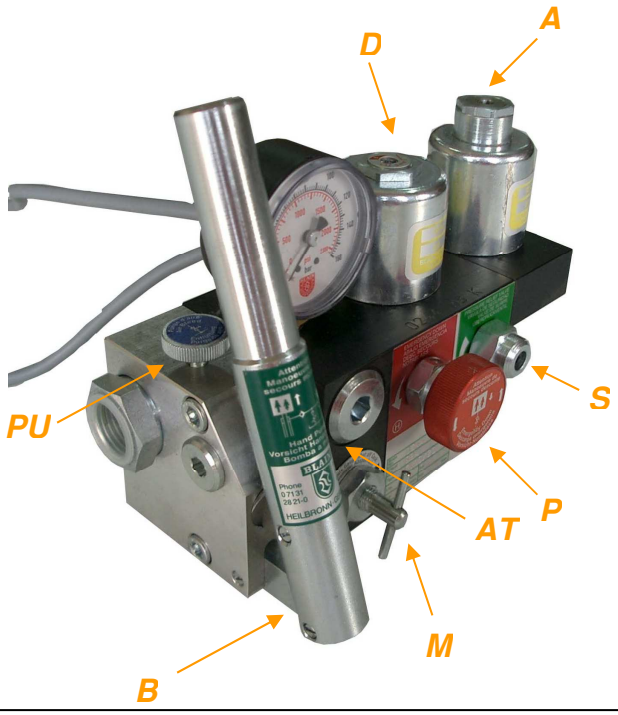
All safety devices should be kept active and disconnect the master switch. This will be kept apart with a padlock so that nobody can connect it while the rescue operation is being carried out.



We shall make sure that all landing doors are properly closed and we will place an **OUT OF ORDER** sign on each door.

We will find the **emergency manual descent tap** (P) located in the hydraulic station. To make the platform descend, turn left intermittently, checking, during the pausing intervals, the cabin position until finding the desired position.

In case the platform gets blocked caused by either hydraulic or mechanical blocking (**pressure = 0 in pressure gauge**), proceed to its disengagement using an emergency manual pump. (B).



A – ascent solenoid	D – descent solenoid
M – pressure gauge protection tap	S – pressure adjustment
P – manual descent	B – manual pump
PU – purge	AT – non-return (manual pump)

Next we can proceed to open the floor doors with the emergency key and free the passengers. Do not try to rescue the people in case the cabin is not at ground level, since there is danger of falling inside the platform shaft. Once the passengers are free, make sure that the open doors are now closed.

The floor doors will only open on the disengagement area, near the floor level ± 50 mm (5 cm over the level or 5 cm below the floor level)

Inform the maintenance enterprise about the emergency.

In case you are unable to move the cabin manually as these instructions show, you should immediately inform the maintenance enterprise.

9.2. Rescue from inside the cabin

In case the user gets trapped inside the platform due to a failure of electricity supply, the inner plate or emergency light of the cabin will turn on.

The user can descend to the ground floor pushing the corresponding button. Once the cabin reaches the desired floor, the user will manage to open the landing door and get out easily.

The rescue is possible thanks to the emergency battery which the operation contains.

During this process and in case there is no door in the cabin, the photoelectric panels will continue working although there is no electric supply.

10. MAINTENANCE

Platform lifts do not need much care after its installation. If the machine is used properly and its working capacities are not exceeded, no problems will arise.

It is compulsory to employ a qualified enterprise to carry out all maintenance works. The points to be checked are:

Pit cleaning	Clean the grease / oil excess coming out from the guides. Remove any dirt fallen from the shaft, ensure there is no filtered water.
Guides greasing and cleaning.	Remove any dirt or dust from the guides using solvent. Grease the guides evenly al along its length.
Suspension wire tension	Ensure all suspension wires are equally tightened, for this, operate on its terminals. Replace in case of possible malfunction.
Rubbing plates	Check looseness; replace in case of excessive movement of the platform.
Vulkolan wheels	Reassemble looseness and replace in case of excessive wear.
Grip gear cleaning	Remove the soller safety cap; remove any existing dirt or grease.
Oil leakages on the cylinder head.	Check the oil humidity around the cylinder head.
Oil leakages in the hydraulic connection to the cylinder.	Ensure there are no oil leakages in the junction between the grip gear valve and the cylinder or in the connection between the pipe and the grip gear valve.
Oil leakages in the hydraulic station.	Check any possible oil leakages in the valves, filter and locking key unit.
Oil level	Check oil level
Oil condition	Check oil condition, change in case of inappropriate aspect: Yellow-white dull aspect, it contains water Black or very dark aspect, it is old or burnt
Grip gear valve	Check its correct operation
Hydraulic unit	Check its correct operation with a 400 Kg nominal load
Manual pump	Check its correct operation
Presostate load	Check its correct operation
Safety contact wire looseness	Check the correct operation of wire looseness safety system
Safety contact lower prop sensor	Check the system and the sensor correct operation
Platform ceiling cleaning	Remove any dirt fallen from the shaft; remove any dust, grease remains...
Operation panel	Ensure the panel is dry, clean and free of any dirt See if there are any rust signs or sparks
Operation elements	Check the correct operation of all internal / external pushbuttons
Rescue, emergency lighting and acoustic alarm operations	Lift the platform to upper levels; disconnect the current and descent to any lower level. Check the correct operation of the emergency light and the acoustic alarm
Protections on the platform accesses	Check the correct operation of the photoelectric curtain/s or automatic doors. Check the rescue batteries of automatic doors.
Protections on the shaft accesses	Check all landing door series
Telephone	Check its correct operation

It is compulsory to register all problems and maintenance works carried out. A sample, indicative sheet is attached.

All adjusting, maintenance, repairing, cleaning and conservation works must be carried out by qualified personnel only.

The platform lift manufacturer accepts no responsibility in case of a different use to the parameters stated on the characteristics panel, an improper installation, an improper care and the use of non-original spare parts.

10.1. REVISION POINTS

GENERAL FOR THE OWER

It is compulsory to employ a qualified maintenance enterprise.

The owner has to appoint one or more people trained to carry out those operations, which can be done by people not employed by the maintenance enterprise:

Cleaning the immediate parts
Cleaning the inner part of the cabin
Check the correct operation of the platform
Rescue operations (trained personnel only)
Put the platform out of order, when allowed

HYDRAULIC PART

1. Oil level in the hydraulic unit (each year)
2. Adjust the stop point (every three months)
3. Observation of noise and vibration level (every year)
4. Observation of oil leakage in the station and pipes (every 3 months)

OPERATION PANEL

1. Verification of general cleaning (every 3 months)
2. Verification of switch conditions, rust and sparks (every 3 months)

PIT

1. Cleanliness and leakages (every 3 months)
2. Operability of the safety system (every 3 months)

PLATFORM

1. Lighting conditions (every 3 months)
2. General condition of walls, floors and ceiling (every 3 months)
3. Operability of pushbuttons (every 3 months)
4. Checking of emergency light (every 3 months)
5. Checking of telephone (every 3 months)
6. Checking of cabin lighting (every 3 months)

FRAME

1. Condition of grip gear (every 3 months)
2. Checking of rubbing plates and Vulkolan wheels looseness (every 3 months)
3. Checking of wire shutter (every year)
4. Checking of tension wires strain (every 6 months)
5. Checking of guides greasing and oil level of tank (every 3 months)
6. Checking of guides fixing on the anchoring wall (every year)

PLATFORM DOORS (in case there are any) **AND FLOOR**

1. Checking looseness between cabin doors and entrance (every year)
2. Checking looseness between cabin doors and landing (every year)
3. Checking between landing doors and doorframes (every year) C
4. General condition of doorframes, doors and spy hole (every 3 months)
5. Checking of mechanical locking and door series (every 3 months)
6. Checking of manual rearm for landing doors.
7. Operability of pushbuttons (every 3 months)

10.2. Safety components

10.2.1. Semi-automatic floor doors

Open the landing door with the presence of the cabin, release the door and check it closes on its own and so do all the series.

11.2.2. Automatic floor doors

If a proper installation has been carried out, the doors do not need much maintenance. The parts to replace depend on their mechanical fatigue (working intensity, cleanliness,…) Points to check:

a.- Open the landing door without the presence of the cabin with the emergency key. Once open, release the door and check it closes on its own and so do all the series.

b.- Clean the rails

c.- Check the suspension wheels of the doors.

10.2.3. Mechanical grip gear

The only point to check on the mechanical grip gear is to verify that after the breakage or looseness of one or the two wires, the two wires (right and left) work.

10.2.4. Grip gear valve

It is absolutely essential to check the proper operation of the grip gear valve once a year.

In case of dubious working conditions, put the platform out of order and replace the valve by a new one. Do not leave the platform working normally without the valve or with a faulty valve.

Do not modify the unit with repaired parts or different from the original.

10.3. Spare parts

It is quite unusual that platform lifts need pieces to be replaced because of breakdowns or defaults. All the necessary spare parts to carry out repairing works will be supplied by the manufacturer. These spare parts will always be original and have the same characteristics as the pieces to be replaced.

Do not replace use spare parts which have not been supplied by the manufacturer, since they could be different to the original and this could cause extra damage.

Difusión Hidraulica Lluis, S.A. accepts no responsibility in case of a different use to the parameters stated on the characteristics panel, an improper installation, an improper care and the use of non-original spare parts.

10.4. Safety instructions during maintenance works

The repairing works will be carried out by qualified personnel only.

This specially involves the repairing works on electric and hydraulic installations and tooling.

Before starting any maintenance or repairing works it is essential that:

- The machine is out of order and the electro-hydraulic motor unit is disconnected.
- A warning sign is placed on the operation panel of the machine or on the electric distribution box with the following information:

  ATTENTION, MAINTENANCE WORKS!
  Do not connect the machine
  Do not activate any operation elements
  This warning will only be removed by Mr......

- The main switch on the electric box should be in “off” position so that the machine can not be activated.

The requirements above can only be omitted when the operations to be carried out need electric supply.

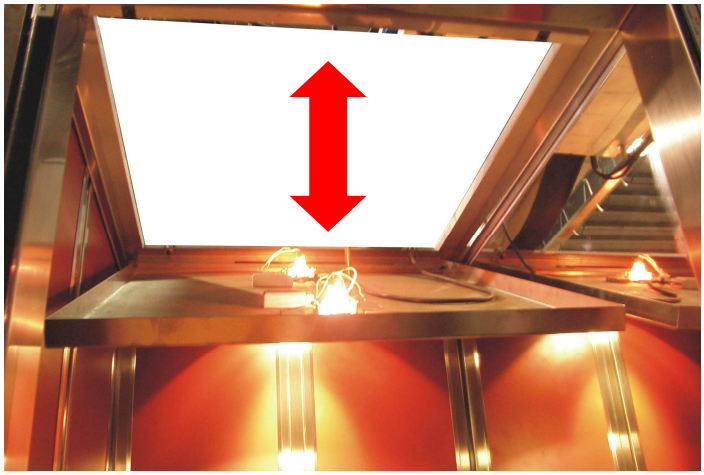
The maintenance with the machine “on” is only permitted when it is essential and is carried out without any risk of accidents for the technician. Safety devices for the works need to be used at all times.

The adjustment points need to be located out of dangerous areas and the maintenance, repairing, cleanliness and conservation works are to be carried out free from any risks.

10.4.1. Maintenance of the upper part of the shaft

The maintenance works on top of the platform or on the upper part of the shaft must be carried out from inside the platform. .

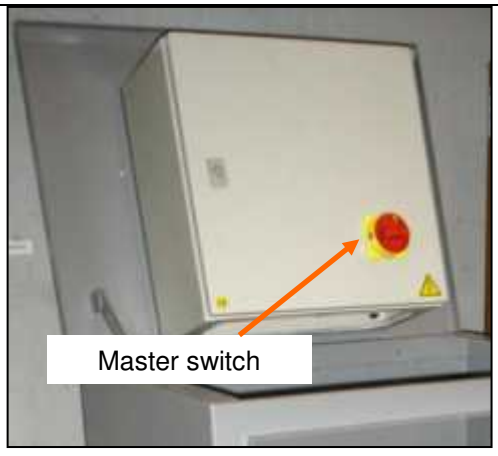
For this, the ceiling can be retracted from the inside of the platform unscrewing the two Allen screws.

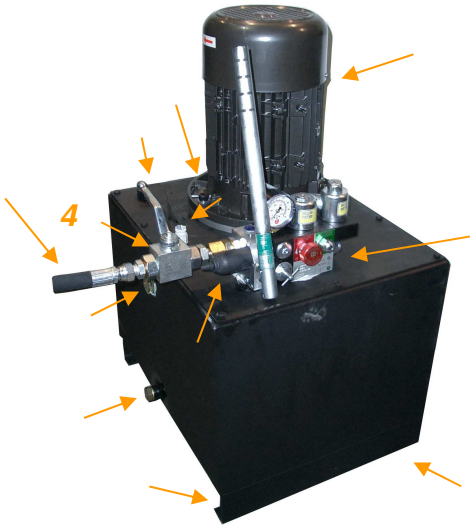


It is strictly forbidden to step on top of the cabin; the ceiling does not support the weight of a person.

10.4.2. Maintenance of the lower part, in the pit

Before entering the pit:

Cut electric supply off	

Turn off hydraulic circuit pass key (Nº 4)	
Open the prop and trigger the emergency stop mushroom.	

11. PROBLEMS REGISTRY AND MAINTENANCE WORKS

DATE	PROBLEM	OBSERVATIONS

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Fax 972 524 477
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info@dhlluis.com - www.dhlluis.com