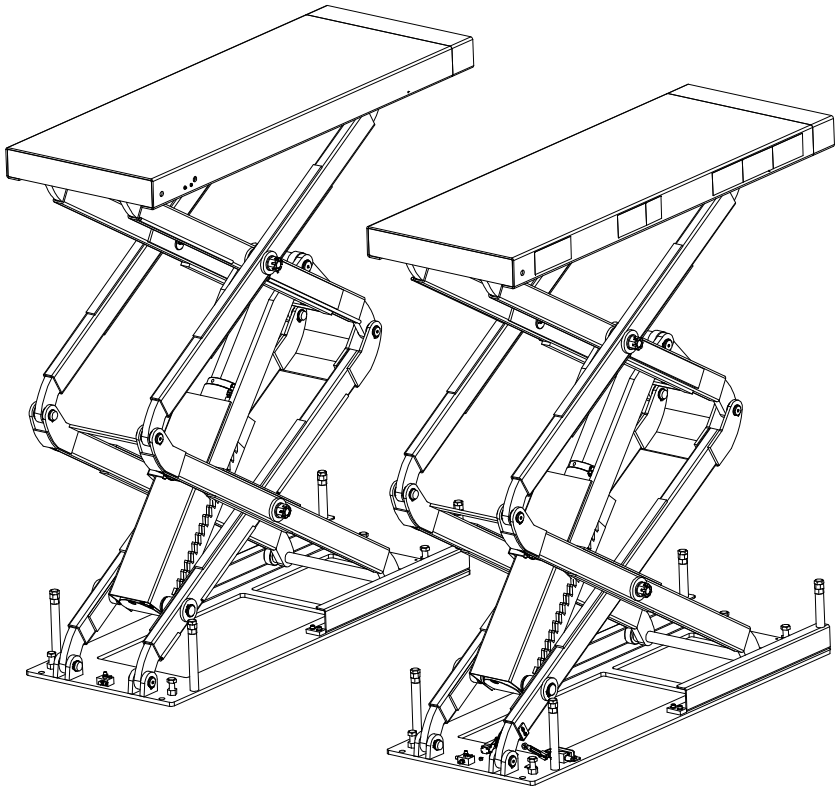
GLOMSTAD MOTOR

USE
AND
MAINTENANCE
MANUAL

DOUBLE SCISSOR LIFT
FLUSH MOUNTED

GM - 8503 PRO



PRINTING CHARACTERS AND SYMBOLS

Throughout this manual, the following symbols and printing characters are used to facilitate reading:

	Indicates the operations which need proper care
	Indicates prohibition
	Indicates a possibility of danger for the operators
	Indicates the direction of access for motor vehicles to the lift
BOLD TYPE	Important information

	**WARNING: before operating the lift and carrying out any adjustment, read carefully chapter 7 "installation" where all proper operations for a better functioning of the lift are shown..**

CONTENTS

CHAPTER 1 – GENERAL INFORMATION

This chapter contains warning instructions to operate the lift properly and prevent injury to operators or objects.

This manual has been written to be used by shop technicians in charge of the lift (operator) and routine maintenance technician (maintenance operator).

The operating instructions are considered to be an integral part of the machine and must remain with it for its whole useful life.

Read every section of this manual carefully before operating the lift and unpacking it since it gives helpful information about:

- SAFETY OF PEOPLE

- SAFETY OF THE LIFT

- SAFETY OF LIFTED VEHICLES

The company is not liable for possible problems, damage, accidents, etc. resulting from failure to follow the instructions contained in this manual.

Only skilled technicians of AUTHORISED DEALERS or SERVICE CENTRES AUTHORISED by the manufacturer shall be allowed to carry out lifting, transport, assembling, installation, adjustment, calibration, settings, extraordinary maintenance, repairs, overhauling and dismantling of the lift.

THE MANUFACTURER IS NOT RESPONSIBLE FOR POSSIBLE DAMAGE TO PEOPLE, VEHICLES OR OBJECTS IF SAID OPERATIONS ARE CARRIED OUT BY UNAUTHORIZED PERSONNEL OR THE LIFT IS IMPROPERLY USED.

Any use of the machine made by operators who are not familiar with the instructions and procedures contained herein shall be forbidden.

1.1 MANUAL KEEPING

For a proper use of this manual, the following is recommended:

- keep the manual near the lift, in an easily accessible place.
- keep the manual in an area protected from the damp.
- use this manual properly without damaging it.
- Any use of the machine made by operators who are not familiar with the instructions and procedures contained herein shall be forbidden.

This manual is an integral part of the lift: it shall be given to the new owner if and when the lift is resold.

1.2 OBLIGATION IN CASE OF MALFUNCTION

	**In case of machine malfunction, follow the instructions contained in the following chapters.**

1.3 CAUTIONS FOR THE SAFETY OF THE OPERATOR

Operators must not be under the influence of sedatives, drugs or alcohol when operating the machine.

	**Before operating the lift, operators must be familiar with the position and function of all controls, as well as with the machine features shown in the chapter "Operation and use"**

1.4 WARNINGS

	**Unauthorized changes and/or modifications to the machine relieve the manufacturer of any liability for possible damages to objects or people. Do not remove or make inoperative the safety devices, this would cause a violation of safety at work laws and regulations.**

	**Any other use which differs from that provided for by the manufacturer of the machine is strictly forbidden.**

	**The use of non genuine parts may cause damage to people or objects**

1.5 SCRAPPING

When your machine's working life is over and it can no longer be used, it must be made inoperative by removing any connection to power sources.
These units are considered as special waste material, and should be broken down into uniform parts and disposed of in compliance with current laws and regulations.
If the packing are not polluting or non-biodegradable, deliver them to appropriate handling station.

DECLARATION OF WARRANTY AND LIMITATION OF LIABILITY

The manufacturer has paid proper attention to the preparation of this manual. However, nothing contained herein modifies or alters, in any way, the terms and conditions of manufacturer agreement by which this lift was acquired, nor increase, in any way, manufacturer's liability to the customer.

TO THE READER

Every effort has been made to ensure that the information contained in this manual is correct, complete and up-to date. The manufacturer is not liable for any mistakes made when drawing up this manual and reserves the right to make any changes due the development of the product, at any time.

CHAPTER 2 – PRODUCT IDENTIFICATION

The identification data of the machine are shown in the label placed on the control unit.

LOGO	
Type:	…….
Model:	…….
Serial Number:	…….
Year of manufacturing:	…….
Capacity:	…….
Voltage:	…….
Power:	…….

	**Use the above data both to order spare parts and when getting in touch with the manufacturer (inquiry). The removal of this label is strictly forbidden.**

Machines may be updated or slightly modified from an aesthetic point of view and, as a consequence, they may present different features from these shown, this without prejudicing what has been described herein.

2.1 WARRANTY CERTIFICATE

The warranty is valid for a period of 12 months starting from the date of the purchase invoice.
The warranty will come immediately to an end when unauthorized modifications to the machine or parts of it are carried out.
The presence of defects in workmanship must be verified by the Manufacturer's personnel in charge.

2.2 TECHNICAL SERVICING

For all servicing and maintenance operations not specified or shown in these instructions, contact your Dealer where the machine has been bought or the Manufacturer's Commercial Department.
Only skilled personnel who are familiar with the lift and this manual shall be allowed to carry out packing, lifting, handling, transport and unpacking operations.

CHAPTER 3 - PACKING, TRANSPORT AND STORAGE

3.1 PACKING

The packing of the lift is delivered in following components:

- N. 2 base units each packed in a steel frame, wrapped up in non-scratch material
- N. 1 power unit packed in a plywood box, including N. 8 rubber pads and N. 8 anchor bolts

(If requested, optional accessories are available to satisfy each customer's requirements).

The average weight of the package is 810kg.

3.2 LIFTING AND HANDLING

When loading/unloading or transporting the equipment to the site, be sure to use suitable loading (e.g. cranes, trucks) and hoisting means. Be sure also to hoist and transport the components securely so that they cannot drop, taking into consideration the package's size, weight and centre of gravity and it's fragile parts.

	**Hoist and handle only one package at a time**

3.3 STORAGE AND STACKING OF PACKAGES

Packages must be stored in a covered place, out of direct sunlight and in low humidity, at a temperature between -10°C and +40°C.
Stacking is not recommended: the package's narrow base, as well as its considerable weight and size make it difficult and hazardous.

3.4 DELIVERY AND CHECK OF PACKAGES

When the lift is delivered, check for possible damages due to transport and storage; verify that what is specified in the manufacturer's confirmation of order is included. In case of damage in transit, the customer must immediately inform the carrier of the problem.
Packages must be opened paying attention not to cause damage to people (keep a safe distance when opening straps) and parts of the lift (be careful the objects do not drop from the package when opening).

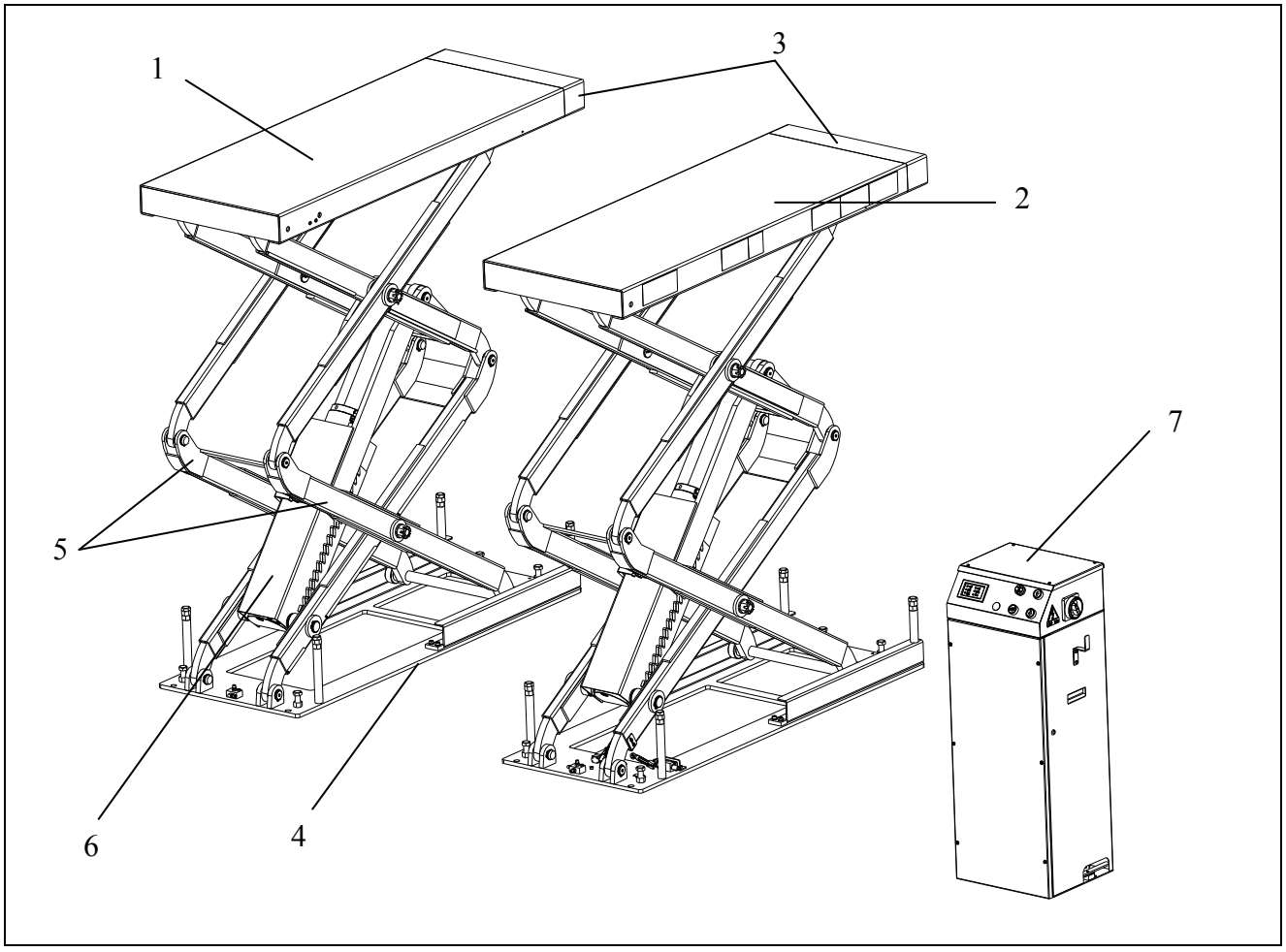
CHAPTER 4 - PRODUCT DESCRIPTION

4.1 LIFT DESCRIPTION (Ref. Figure 1)

The flush mounted lift has been designed for the lifting of motor-vehicles for wheel alignment and maintenance.
The maximum lifting weight is as specified on the serial plate.
All mechanical frames, such as platforms, extensions, base frames and arms have been built in steel plate to make the frame stiff and strong while keeping a low weight
The electro hydraulic operation is described in detail in chapter 8.

This chapter describes the lift's principal elements, allowing the user to be familiar with the machine.
As shown in figure 1, the lift is composed of two platforms: P1 (1) and P2, each equipped with the telescopic extension (3), anchored to the pit foundation by means of two bases (4).
Platforms are linked to the base frame by means of a scissors lifting system.
The lifting system of each platform is composed of a pair of scissors (5) and a cylinder (6).
Lifting and lowering motion of the lift is controlled by the push buttons on the control unit (7) placed next to the lift.
The mechanical safety operating by a pneumatic cylinder is installed under each runway.
Two limit switches are installed in the P2 base: for top position limit and for the safety height limit.

Figure 1 – LIFT



4.2 OPERATION

Platform lifting is carried out by the hydraulic unit which acts upon the cylinders.
The platforms are raised simultaneously owing cross feeding of the hydraulic cylinders.
Lowering, even though electrically controlled, is carried out by the weight of both the platforms and the load lifted.
The hydraulic system is protected by a max pressure valve thus preventing pressure from exceeding the maximum fixed safety limit.
The synchronization of the platforms is carried out by a master/slave circuit and protected by photocells thus preventing the platforms out of synchronization.
Whenever the lift has to be lowered to the ground and the lowering button is pressed, the lift will stop at about *400 mm* from the ground.
In this way, the operator must verify that neither persons nor objects are within the safety area
If so, the final lowering button can be pressed and the lift be lowered. A beep sound is heard during the last travel.

CHAPTER 5 - TECHNICAL SPECIFICATION

5.1 SIZE AND MAIN FEATURES (Ref. Figure 2)

CAPACITY	**3000KG**
Max. lifting height	2030mm
Pit depth	1540 - 1740 mm
Length of the platform	550mm
Width of platform	800mm
Suggested free width between platforms	2040mm
Overall length	60 s
Lifting time	60 s
Compressed air pressure	6 bar – 8 bar
Noise level	80 dB(A)/1m
Working temperature	-10 °C - 40 °C
Average weight of package	810kg

5.2 ELECTRIC MOTOR

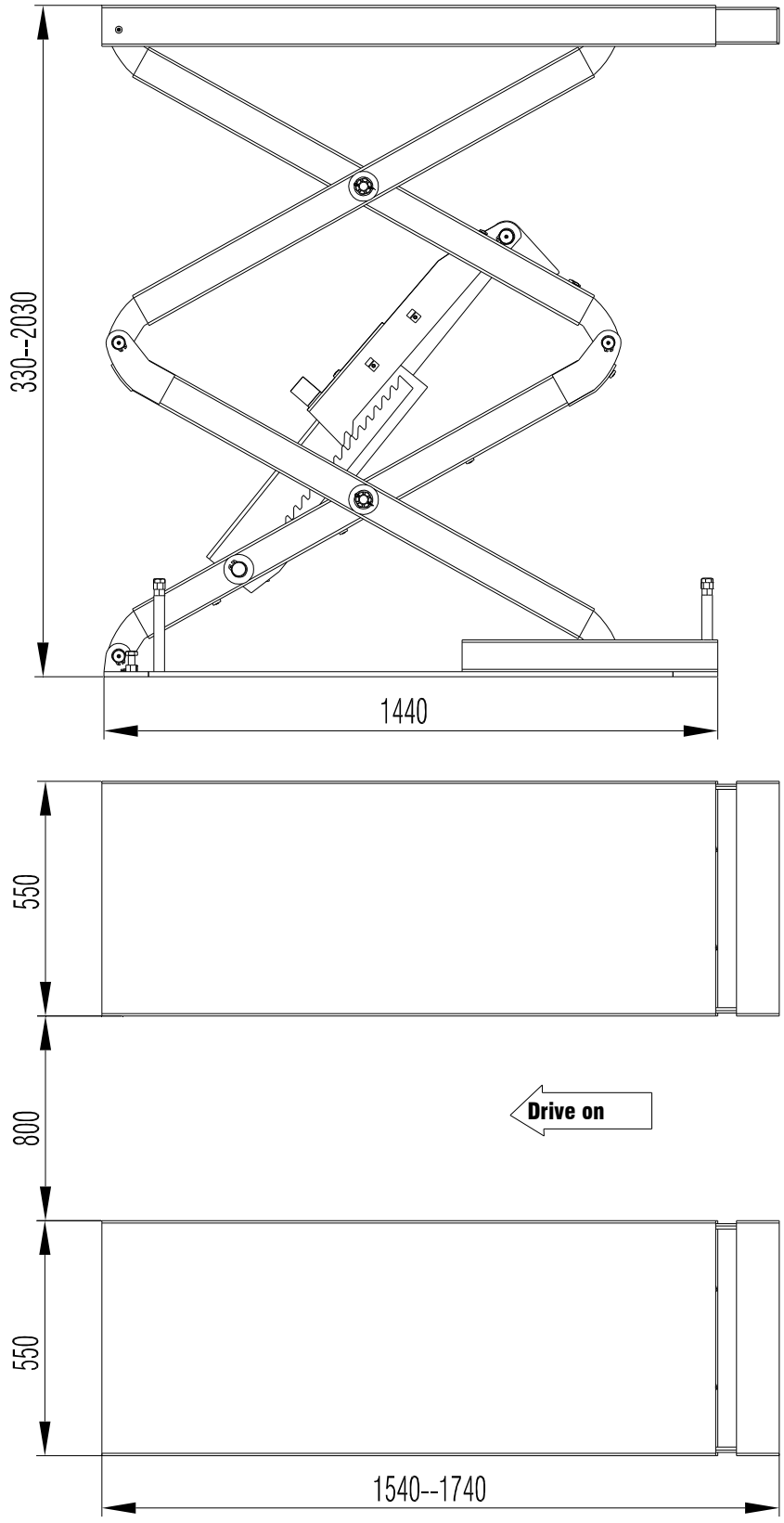
Type	**ML90L2**	**G90N4**
Voltage	230V/220V-1Ph	400V/380V-3Ph
Power	2.2 KW	2.6 KW
N° Poles	2	4
Speed	2800 rpm	1375 rpm
Motor enclosure type	B14	
Insulation class	IP 54	

Motor connection must be carried out referring to the attached wiring diagrams (the figure 5).
The motor direction of rotation is shown in the label placed on the motor.
Before use of the lift, make sure to check if the motor specification shown in the nameplate of the motor conforms to the local electric supply.
If there is over 10% fluctuation on the electrical power supply，it is suggested to use the voltage stabilizer to protect the electrical components and system from overloading.

5.3 PUMP

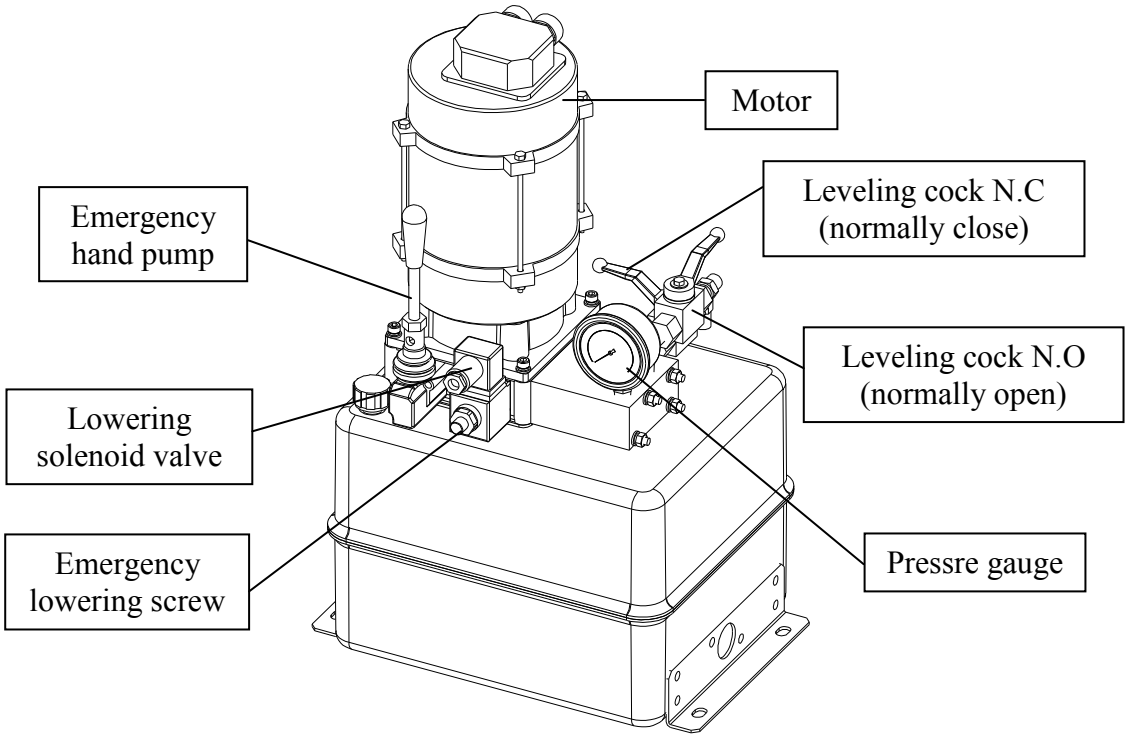
Type	Gear	
Flow rate	2.1 cm^3/g	4.8 cm^3/g
Continuous working pressure	230 bar	
Peak pressure	240 bar	

Figure 2 - LAYOUT



5.4 HYDRUALIC POWER UNIT

FIG. 3 – HYDRAULIC POWER UNIT



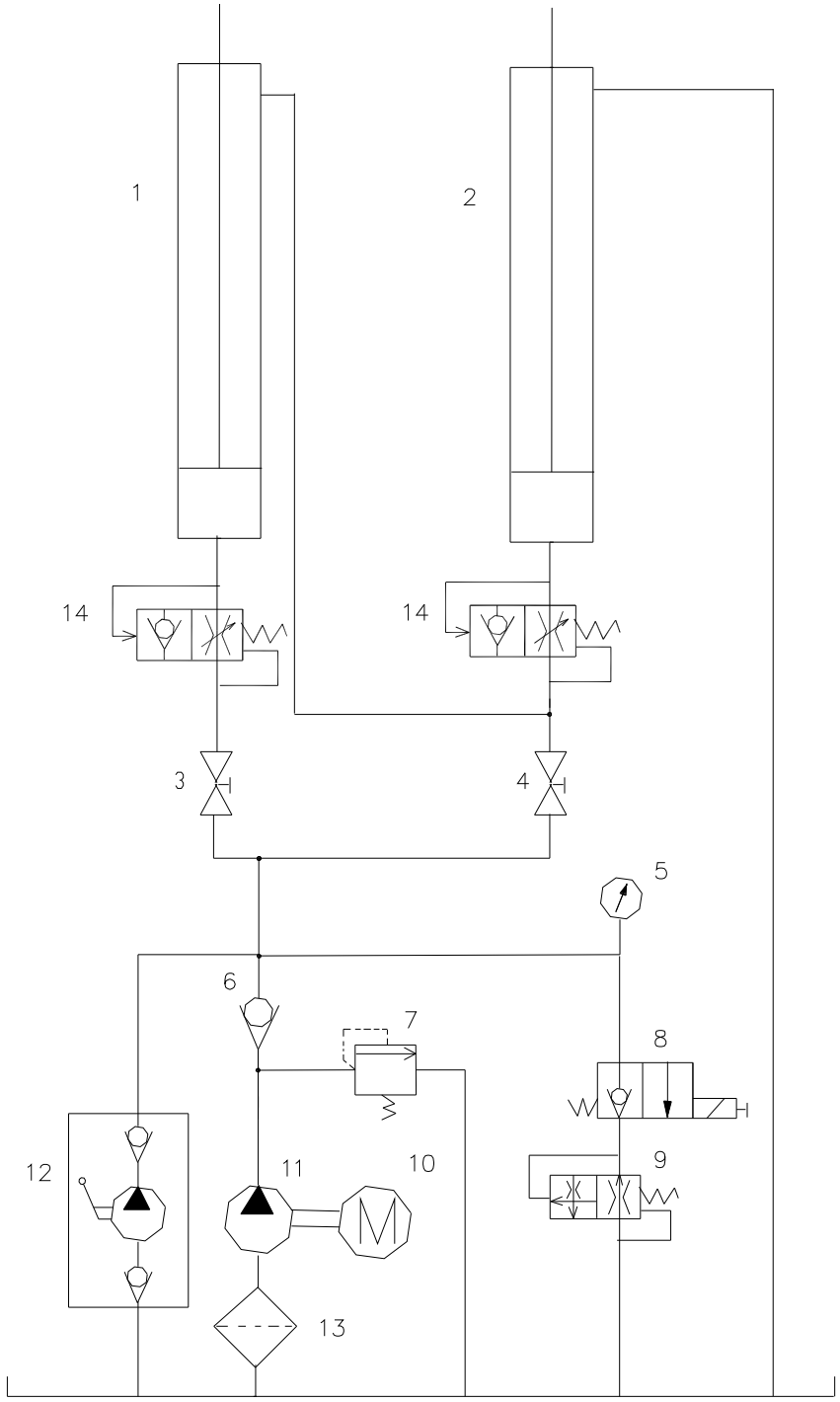
5.5 OIL

Use wear proof oil for hydraulic drive, in conformity with *ISO 6743/4* rules (HM class). The oil with features similar to those shown in the table is recommended.

TEST STANDARDS	FEATURES	VALUE
ASTM D 1298	Density 20°C	0.8 kg/l
ASTM D 445	Viscosity 40°C	32 cSt
ASTM D 445	Viscosity 100°C	5.43 cSt
ASTM D 2270	Viscosity index	104 N°
ASTM D 97	Pour point	~ 30 °C
ASTM D 92	Flash point	215 °C
ASTM D 644	Neutralization number	0.5 mg KOH/g

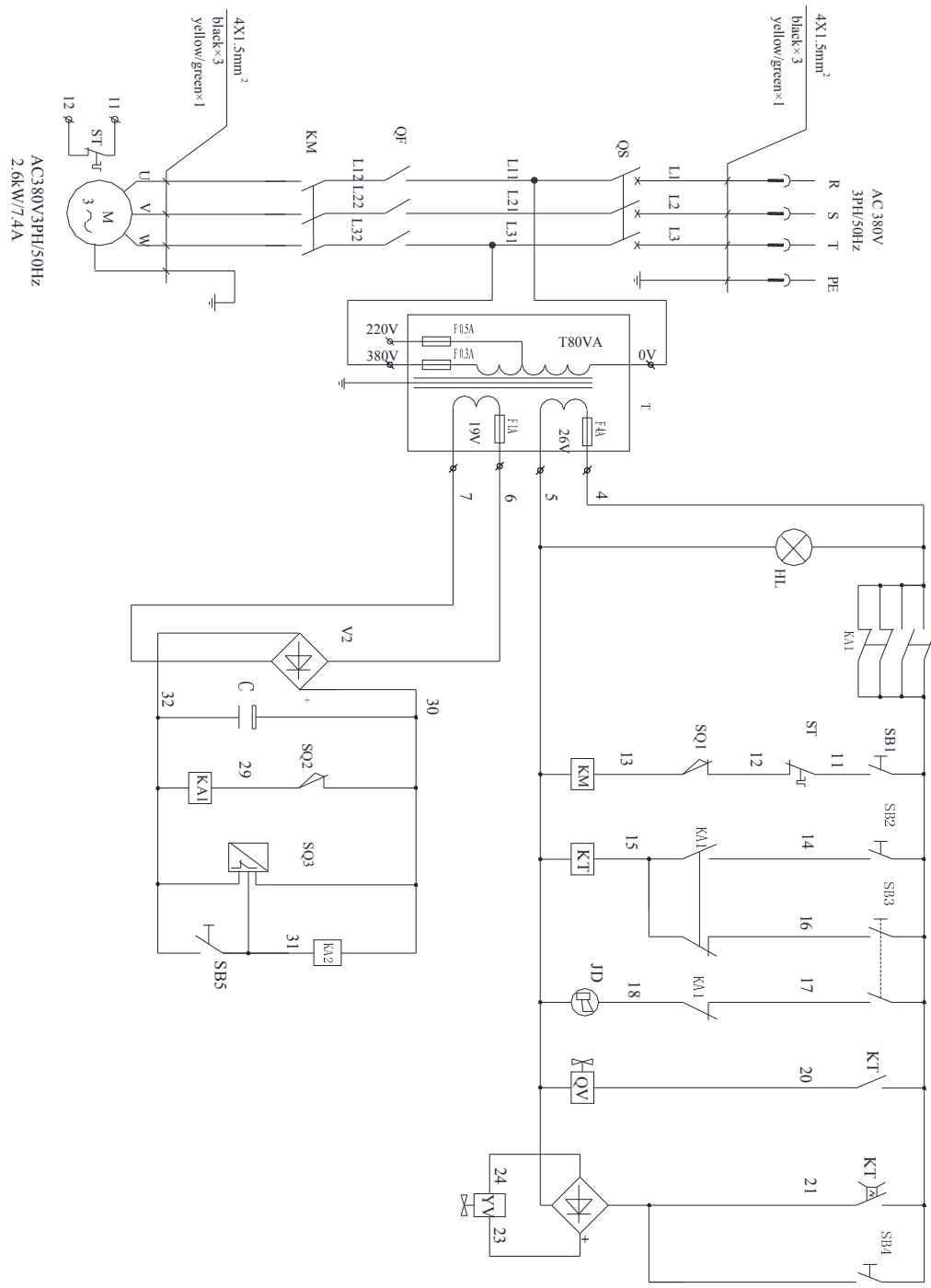
	CHANGE HYDRAULIC OIL AT 1 YEAR INTERVALS

Figure 4 – HYDRAULIC PLAN



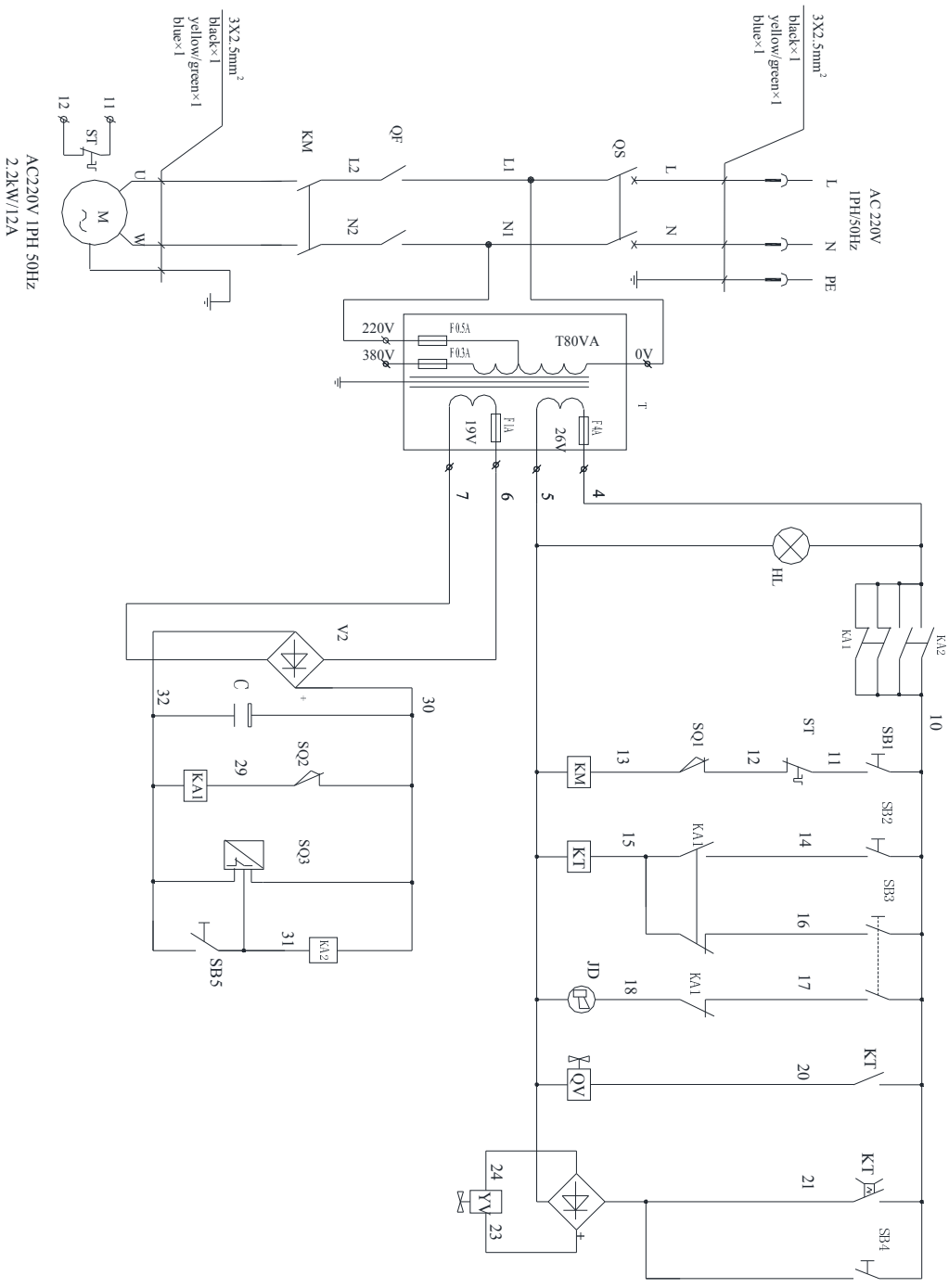
1	Master platform cylinder P1	8	Lowering solenoid valve
2	Slave platform cylinder P2	9	Lowering speed control
3	Leveling cock N.O (normally open)	10	Motor
4	Leveling cock N.C (normally close)	11	Gear pump
5	Pressure gauge	12	Emergency hand pump
6	Non return valve	13	Oil filter
7	Pressure overload valve	14	Parachute valve

Figure 5a – ELECTRIC DIAGRAM (380V/400V - 3PH)



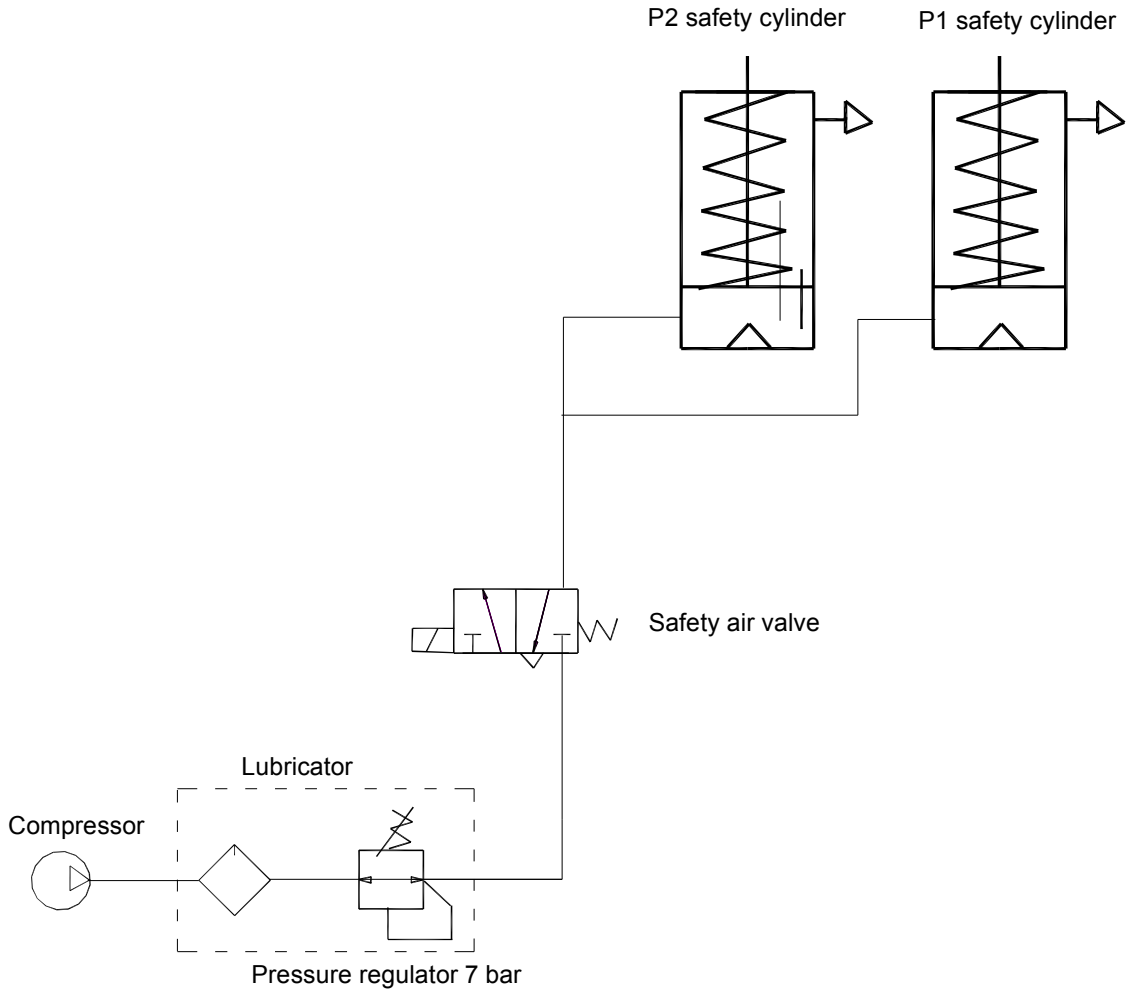
QS	Power switch	SB2	Lowering button
QF	Breaker	SB3	Final lowering button
M	Motor 2.6KW 3PH	SB4	Safety engaging button
ST	Thermal relay	SB5	Photocell pass-by button
T	Transformer	SQ1	Top limit switch
KM	Contactor AC	SQ2	Safety height limit switch
YV	Lowering solenoid valve	SQ3	Photocell
QV	Safety air valve	JD	Beeper
SB1	Lifting button	KA	Relay

Figure 5b – ELECTRIC DIAGRAM (220V/230V - 1PH)



QS	Power switch	SB2	Lowering button
QF	Breaker	SB3	Final lowering button
M	Motor 2.2KW 1PH	SB4	Safety engaging button
ST	Thermal relay	SB5	Photocell pass-by button
T	Transformer	SQ1	Top limit switch
KM	Contactor AC	SQ2	Safety height limit switch
YV	Lowering solenoid valve	SQ3	Photocell
QV	Safety air valve	JD	Beeper
SB1	Lifting button	KA	Relay

Figure. 6 – PNEUMATIC PLAN



	Lubricator/pressure regulator can be supplied by the manufacturer on request. **The pressure in the pneumatic line must be kept around 6bar – 8 bar.**

CHAPTER 6 – SAFETY

Read this chapter carefully and completely because it contains important information for the safety of the operator and the person in charge of maintenance.

	**The lift has been designed and built for lifting vehicles and making them stand above level in a closed area. any other use is forbidden, including the following operations:** **The manufacturer is not liable for possible damages to people, vehicles or objects resulting from an improper or unauthorized use of the lift.**

For operator and people safety, a safety area at least 1m free away from the lift must be vacated during lifting and lowering. The lift must be operated only from the operator's control site in this safety area.
Operator's presence under the vehicle, during working, is only admitted when the vehicle is lifted and platforms are not running.

	**Never use the lift when safety devices are off-line. People, the lift and the vehicles lifted can be seriously damaged if these instructions are not followed.**

6.1 GENERAL WARNINGS

The operator and the person in charge of maintenance must follow accident-prevention laws and rules in force in the country where the lift is installed

They also must carry out the following:

- neither remove nor disconnect hydraulic, electric or other safety devices;
- carefully follow the safety indications applied on the machine and included in the manual;
- observe the safety area during lifting;
- be sure the motor of the vehicle is off, the gear engaged and the parking brake put on;
- be sure only authorized vehicles are lifted without exceeding the maximum lifting capacity;
- Verify that no one is on the platforms during lifting or standing.

6.2 RISKS DURING VEHICLE LIFTING

To avoid overloading and possible breaking, the following safety devices have been used:

- A maximum pressure valve placed inside the hydraulic unit to prevent excessive weight.
- The mechanical safety system, in case of pipeline failure, to prevent sudden lift lowering.

	**The maximum pressure valve has been preset by the manufacturer to a proper pressure. DO NOT try to adjust it to overrun the rated lifting capacity.**

6.3 RISKS FOR PEOPLE

All risks the personnel could run, due to an improper use of the lift, are described in this section.

6.4 PERSONNEL CRUSHING RISKS

During lowering of runways and vehicles, personnel must not be within the area covered by the lowering trajectory. The operator must be sure no one is in danger before operating the lift.

Fig. 7a

Fig. 7b

Fig. 7c

6.5 BUMPING RISK

When the lift is stopped at relatively low height for working, the risk of bumping against projecting parts occurs.

Fig. 8

6.6 RISK OF THE VEHICLE FALLING FROM THE LIFT

Vehicle falling from the lift can be caused when the vehicle is improperly placed on platforms, and when its dimensions are incompatible with the lift or by excessive movement of the vehicle.
In this case, keep immediately away from the working area.

Fig. 9a

Fig. 9b

Fig. 9c

6.7 SLIPPING RISKS

The risk of slipping can be caused by oil or dirt on the floor near the lift.

Fig. 10

	**Keep the area under and around the lift clean. Remove all oil spills.**

6.8 ELECTROCUTION RISKS

Avoid use of water, steam, and solvent, varnish jets in the lift area where electric cables are placed and, in particular, next to the electric panel.

6.9 RISKS RESULTING FROM IMPROPER LIGHTING

Make sure all areas next to the lift are well and uniformly lit, according to local regulations.

6.10 RISKS OF BREAKING COMPONENT DURING OPERATION

Materials and procedures, suitable for the designed parameters of the lift, have been used by the manufacturer to build a safe and reliable product. Operate the lift only for the use it has been designed for and follow the maintenance schedule shown in the chapter “Maintenance”.

Fig. 11

6.11 RISKS FOR UNAUTHORIZED USES

The presence of unauthorized persons next to the lift and on the platforms is strictly forbidden during lifting as well as when the vehicle has been already lifted

Fig. 12

	Any use of the lift other than that herein specified can cause serious accidents to people in close proximity of the machine.

CHAPTER 7 – INSTALLATION

	**Only skilled technicians, appointed by the manufacturer, or by authorized dealers, must be allowed to carry out installation. Serious damage to people and to the lift can be caused if installations are made by unskilled personnel.**

7.1 CHECKING FOR ROOM SUITABILITY

The lift has been designed to be used in covered and sheltered places free of overhead obstructions.
The place of installation must not be next to washing areas, painting workbenches, solvent or varnish deposits. The installation near to rooms, where a dangerous situation of explosion can occur, is strictly forbidden. The relevant standards of the local Health and Safety at Work regulations, for instance, with respect to minimum distance to wall or other equipment, escapes and the like, must be observed.

7.2 LIGHTING

Lighting must be carried out according to the effective regulations of the place of installation. All areas next to the lift must be well and uniformly lit.

7.3 FOUNDATION

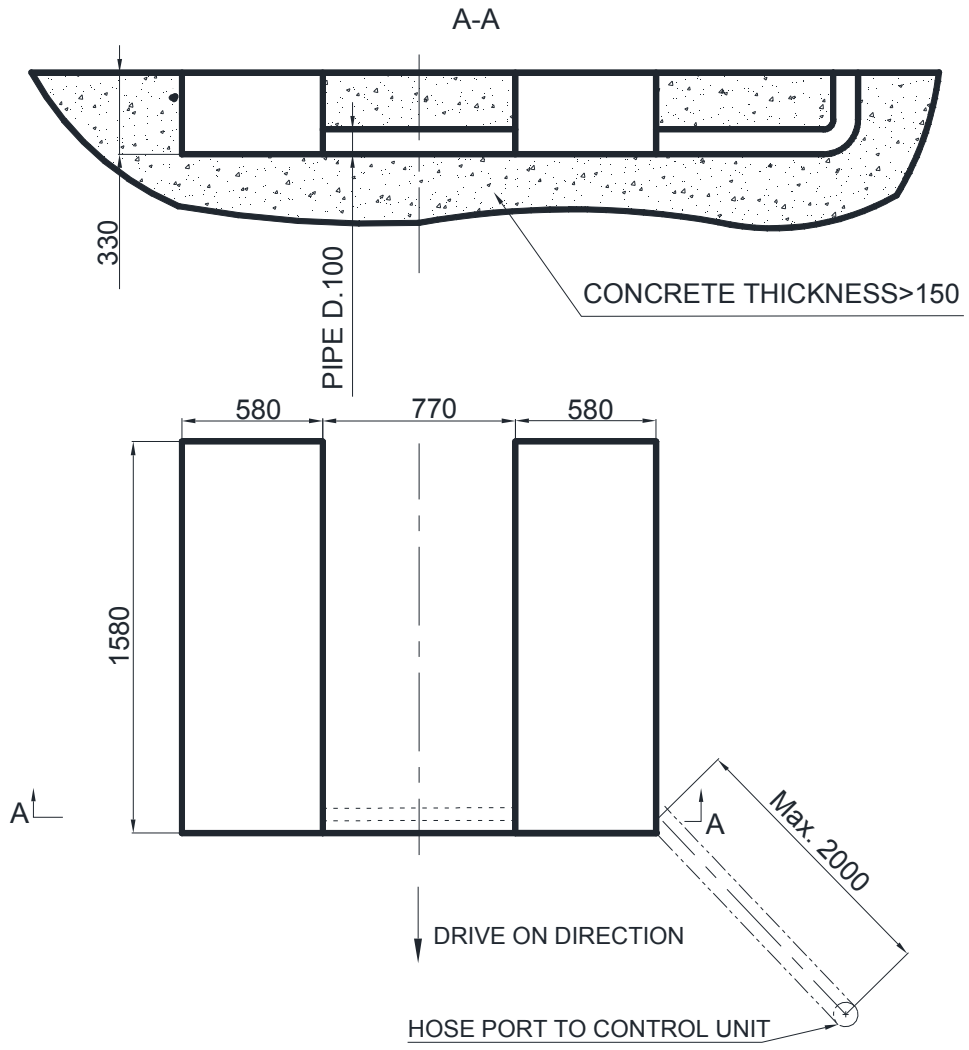
The lift must be placed on a 425 concrete floor with FEB 215 K reinforcement, 15cm thick at least, and in conformity with local regulations.
If a floor covering with the above mentioned requirements is not available, a foundation plate is needed or, some fixing points should be used, for fixing areas at least, having sufficient size and thickness (made of concrete of the same quality, as shown).
The surface where the lift has to be installed must be even and leveled in all directions. An inclination not higher than 2 cm in drive-on lift direction and 1 cm cross-wise can be balanced with leveling wedges.
If an installation is made in a hole, the real side of the hole must be verified (as per drawing sent at the order). For installation on raised surface, the compliance with the maximum carrying capacity of the surface is recommended.
Floor fixing is the same both in on-floor and in-ground installations.
The new concrete must be adequately cured by at least 21 days minimum.

7.4 LIFT POSITIONING

	**Unauthorized persons are not allowed to enter during assembly.**

- Transport each platform lifting system into the location or the foundation pit using hoisting means with load capacity of *500kg* at least. To prevent the platform from dropping during transport, it should be lifted according to its centre of gravity.
- Place the control unit in the position provided for (the control unit can be place in either right side or left side).

Figure 13 – PIT FOUNDATION PLAN



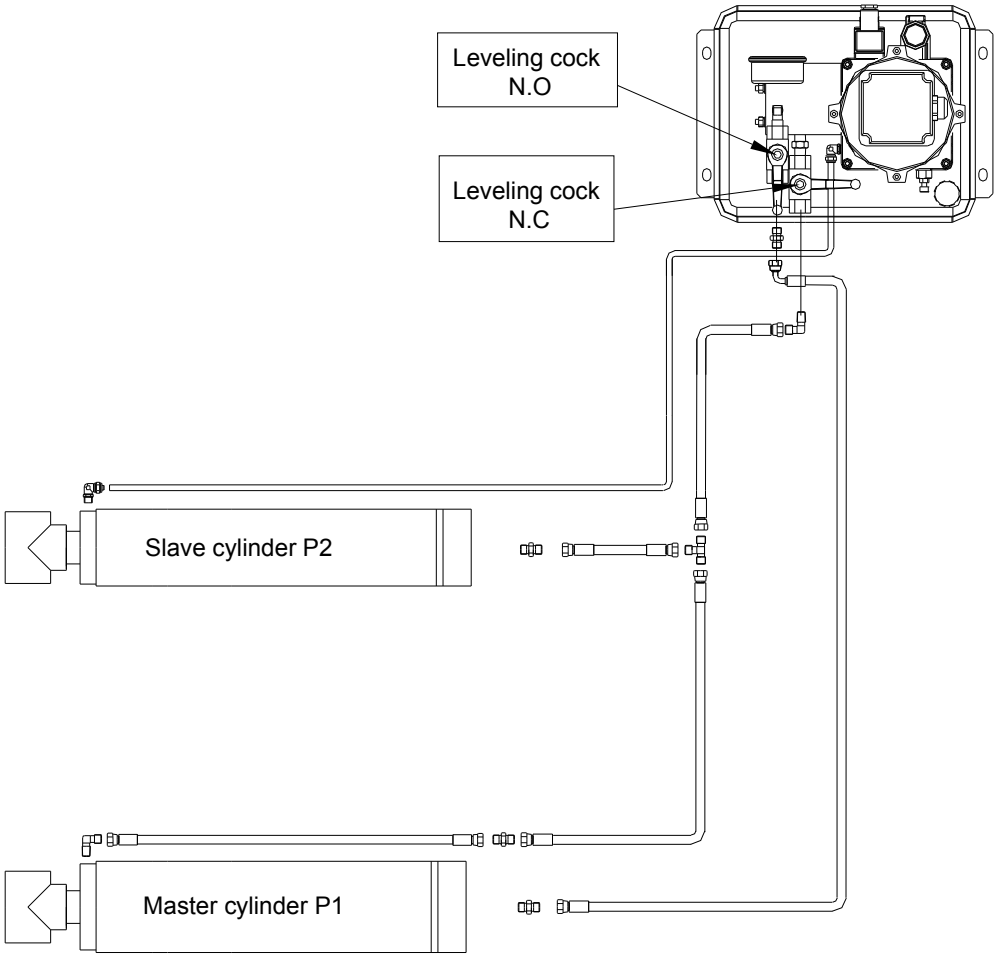
⚠	**Specifications of the pit must be adhered to. Failure to do so could cause lift failure resulting in personal injury or death.**

7.5 HYDRAULIC SYSTEM CONNECTION

- Raise platforms at the half way with auxiliary equipment by using strong ropes, bands or chains.
- Open the front cover of the control unit.
- Referring to the figure 14 route hydraulic lines through the hole in the prepared pit.
- Connect hydraulic hoses to the fittings referring to the letters shown on them.
- Tighten thoroughly.

⚠	**When routing the hydraulic hoses in the pit, make sure that the hose is clear of any moving part, make sure to keep the hoses and fittings clean from dust. Failure to do so may result in hydraulic line failure which may result in damage or personal harm.**

Figure 14 – HYDRAULIC CONNECTIONS



7.6 PNEUMATIC SYSTEM CONNECTION

	**When routing the pneumatic line, make sure that the tube is clear of any moving part. Failure to do so may result in safety failure which may result in damage or personal harm.**

	**The pressure in the pneumatic line must be kept around 6bar – 8 bar.**

The pneumatic supply at site (to which the pneumatic system of the lift is connected) must be equipped with a servicing unit composed of water separator, lubricator and pressure reducer. These devices can be supplied by the manufacturer on request.

For the connection of the pneumatic lines proceed as follows referring to the figure 6:

- Connect the pneumatic lines pre-assembled on the runways to the safety air valve in the control unit;
- Connect the pneumatic system of the lift to the pneumatic supply at site;
- Check the pneumatic control operations for proper performance.

7.7 MAKE ELECTRICAL HOOKUP TO HYDRAULIC POWER UNIT

	**The hookup work must be carried out by a qualified electrician.** **Make sure that the power supply is right.** **Make sure the connection of the phases is right. Improper electrical hook-up can damage motor and will not be covered under warranty.** **DO NOT run the hydraulic unit with no oil. Damage to pump can occur.** **The control unit must be kept dry.**

- Make the electric hookup to the hydraulic power unit referring to the attached wiring diagram (figure 5) using the included cables;
- Make sure the connection of the phases is right and the lift is grounded.

7.8 FEEDING OIL AND BLEEDING

	**During this procedure, observe all operating components and check for proper installation and adjustment.** **DO NOT attempt to raise vehicle until a thorough operation check has been completed.**

7.8.1 START

- Make sure all pins and bolts to insure proper mounting
- Make sure the electrical system feeding voltage is equal to that specified in the nameplate on the motor
- Make sure the electric connections are in compliant with diagrams figure 5
- Make sure no leakage or blow-up in hydraulic line and pneumatic line
- Make sure the lift is connected to the ground
- Make sure the working area is free from people and objects
- Grease sliding seats of blocks placed under platforms and on bases
- Verify that the control unit is powered
- Pour oil in the tank (about *16 liters more than one time*)
- Feed the compressed air
- Feed the lift by Power Switch
- Verify that the motor direction of rotation is that shown on the label by pushing the lifting button. IF MOTOR GETS HOT OR SOUNDS PECULIAR, STOP IMMEDIATELY AND RECHECK THE ELECTRIC CONNECTIONS

7.8.2 FEEDING OII

	**Pay much attention: refill the oil if not enough during this procedure.** **After adjusting level of the lift, reset ordinary operating conditions.**

	**Be sure to extract the platform extensions fully before lowering the lift to the pit. The manufacturer will not be responsible for any damage of the lift because of failure to do so.**

- Turn on the leveling cock N.O (fig. 15 - 1);
- Turn off the leveling cock N.C (fig. 15 - 2);
- Press both the lifting button (fig. 16 - 1) and the photocell by-pass button (fig. 16 – 3) to raise the runway P1 (the master runway: the left side from the view toward the vehicle head) until it reaches the maximum height;
- Lower the lift completely by pushing the lowering button (2), If the safety height limit switch is installed, the lift will descend to the safety height. At this height, lower the lift completely by pressing the final lowering button (4). A beep sound is heard during the last travel;
- Raise the runway P1 again until it reaches the maximum height;

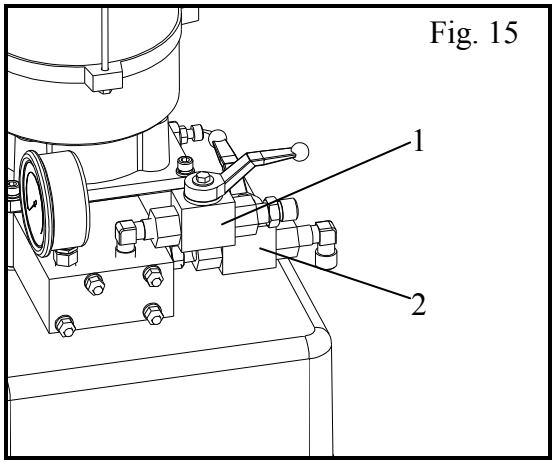


Fig. 15

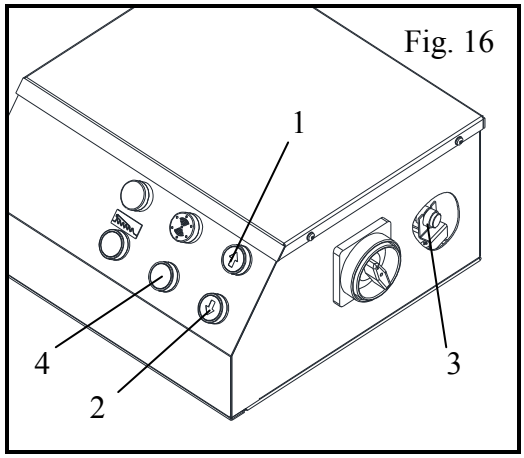


Fig. 16

7.8.3 BLEEDING

- Turn off the leveling cock N.O (fig. 15 - 1) ;
- Turn on the leveling cock N.C (fig. 15 - 2) ;
- Press both the lifting button and the photocell by-pass button to raise the runway P2 (the slave runway: the right side from the view toward the vehicle head) until it reaches the maximum height. Pay attention to refill the oil if not enough;
- Press the lowering button and the photocell by-pass button to lower the runway P2 completely;
- Repeat raise and lower the runway P2 completely at least 5 times;
- Raise the runway P2 to the same height as the runway P1;
- Turn on the leveling cock N.O (fig. 16 - 1);
- Turn off the leveling cock N.C (fig. 16 - 2);
- Lower and raise the runways at least one time to check the level of runways. If not leveled, repeat above procedure.

7.9 ANCHORING THE LIFT

	Verify the distance between the lift base and the bearing surface (floor or pit), after leveling the lift. **If this distance is not exactly the same on the ends, insert shims to prevent the base from bending under the weight of the lift or the vehicle.**

- Place the lift at a height about 1m and engage mechanical safeties. Make sure two runways are in the same position when resting the safeties;
- Using the base frames as guide, drill each hole in the concrete approximately 120mm deep

with the rotary hammer drill D.16. To assure full holding power, do not ream the hole or allow drill to wobble;

- After drilling, remove dust thoroughly from each hole using compressed air or wire brush;
- Assemble the washers and nuts on the anchors then tap into each hole with a hammer until the washer rests against the base plate.
- Verify that the platform is leveled horizontally by means of a water gauge or an air bubble;
- If shimming is required, insert the shims as necessary around the anchor bolts.
- With the shims and the supplied anchor bolts in place, tighten by securing the nut to the base.

7.10 INSTALLATION AND ADJUSTMENT OF LIMIT SWITCHES

	**Only skilled personnel must be allowed to carry out this operation. An improper adjustment of limit switches could cause damages to the lift, objects and people.**

7.10.1 INSTALLATION OF LIMIT SWITCHES

- Fix the limit switches on the brackets as shown in the figure 17 using the included screws.

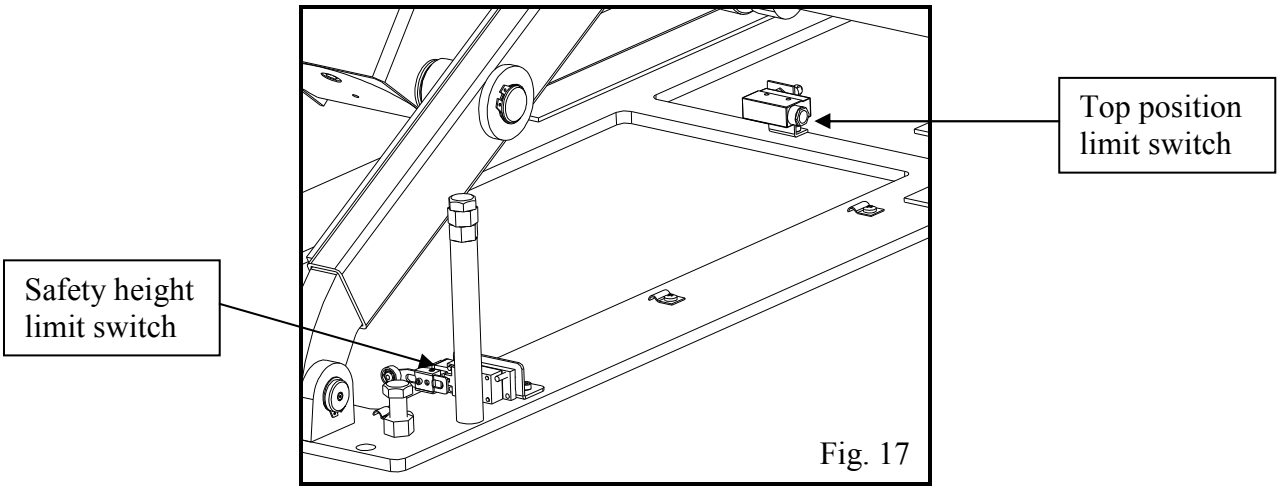


Fig. 17

7.10.2 ADJUSTMENT OF MAX. LIFTING HEIGHT LIMIT SWITCH

- Place the lift at a height of 206*0 mm (from the pit ground).*
- Unloose nuts and adjust it at the desired height;
- Tighten the screws after adjustment.

7.10.3 ADJUSTMENT OF SAFETY HEIGHT LIMIT SWITCH

- Place the lift at a height of about *400 mm;*
- Adjust the lever position to meet the desired height;
- Tighten the screws to fix the lever of switch after adjustment.

7.11 CHECKS LESS LOAD

	**During this procedure, observe all operating components and check for proper installation and adjustment. DO NOT attempt to raise vehicle until a thorough operation check has been completed.**

Carry out two or three complete cycles of lowering and lifting and check:

- the lift fixing to the ground and all anchor bolts tightened
- safeties for proper operation
- proper oil level in the tank
- no leakage and blow-by in hydraulic line
- cylinders for proper operation
- the level of the platforms
- the lift for reaching its maximum height
- the top limit switch for proper operation, adjust if necessary
- the safety limit switch for proper operation, adjust if necessary
- the beeper for proper operation during the final travel
- Photocells for proper operation

7.12 CHECKING WITH LOAD

	**WARNING: please follow carefully the instructions in the coming paragraph for avoiding damages on the lift.**

Carry out two or three complete cycles of lowering and lifting and check:

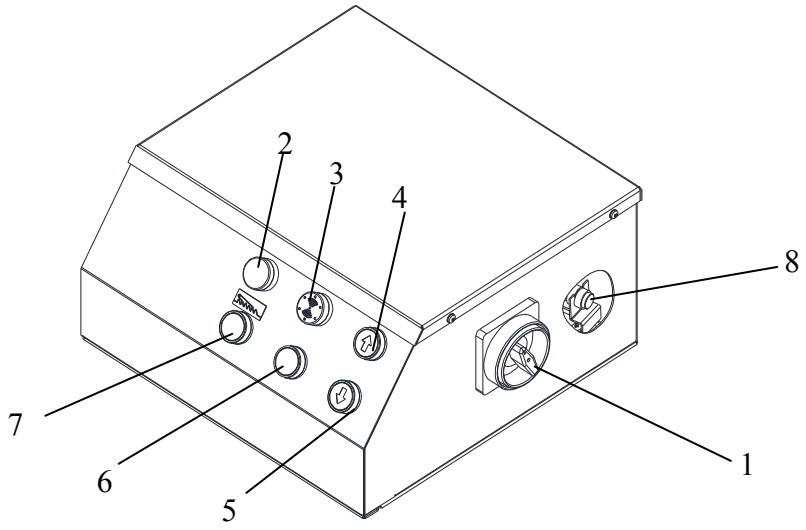
- Repeat the 7.11 section
- Check no strange noise during lifting and lowering
- if the platforms weren't leveled, repeat the 7.8 section

CHAPTER 8 - OPERATION AND USE

	Never operate the lift with any person or equipment below. **Never exceed the rate lifting capacity.** **Always ensure that the lift rests on the safety locks before any attempt is made to work on or near the vehicle.** **If an anchor bolt becomes loose or any component of the lift is found to be defective, DO NOT USE THE LIFT until repairs are made.** **Do not permit the electric control unit to get wet!** **Pay attention to keep the photocell and the reflector clean from time to time.**

8.1 CONTROLS

Figure 18 - CONTROL PANEL



Controls for operating the lift are:

POWER SWITCH (1)
The power switch can be set in two positions:

- **0 position:** the lift electric circuit is not powered; the switch can be padlocked to prevent the use of the lift.
- **1 position:** the main electric circuit is powered.

PILOT LAMP (2)

BEEPER (3)

LIFTING BUTTON (4)

- When pressed, the electric circuit for the lift operates the motor and hydraulic circuit to raise the lift

LOWERING BUTTON (5)

- When pressed, the lift begins to descend to the safety height (about 400mm).

FINAL LOWRING BUTTON (6)
When pressed with the lift at the safety height, the lift is lowered to the ground. A beep sound is heard during the last travel.

SAFETY ENGAGING BUTTON (7)
- When pressed, the lowering solenoid valve operates the hydraulic circuit to lower the lift to engage the nearest safeties.

PHOTOCELL BY-PASS BUTTON (8)
- When pressed, the photocell is excluded.

Lift operation can be summarized into following steps:

8.2 LIFTING

- Place the vehicle at the centre of the platform and lock the extensions;
- Check to make sure that the vehicle is secured;
- Place pads under the positions indicated for lifting, by the motor vehicle's manufacturer;
- Set the main switch to 1 position;
- Make sure that the leveling cock N.O is switched on and the leveling cock N.C is switched off;
- Press the lifting button to lift the vehicle to the required height;

8.3 STANDING

- To rest the lift in standing position at the desired height by releasing the lifting button;
- Press the safety engaging button to engage the nearest safeties. Always ensure that safeties are engaged before any attempt is made to work on or near the vehicle;
- Always ensure that two platforms MUST be in equal height when resting on the safety racks, and all safeties are engaged fully.

8.4 LOWERING

	**Be sure to extract the platform extension fully before lowering the lift to the pit. The manufacturer will not be responsible for any damage of the lift because of failure to do so.**

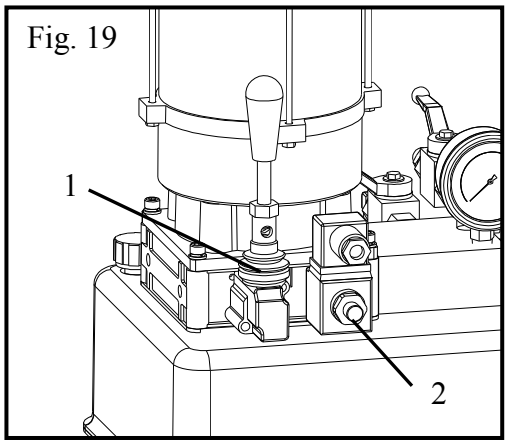
- Push the lifting button to raise the lift a little bit to clear off the safeties;
- Press the lowering button to carry out lowering. The lift will take seconds to release the safeties then it will descend to a safety height;
- Be sure the safety area is free of people and objects;
- Press the lowering button again until the lift is lowered to ground completely. A beep sound is heard during the last travel.

8.5 MANUAL EMERGENCY LOWERING

In case of an emergency (power failure), the lift can be lowered manually to its initial position as follows referring to the figure 19:

- Padlock the power switch;
- Open the front cover of the control unit;
- Operate the emergency hand pump (1) to raise the lift a little bit to clear off the mechanical safeties;
- Keep pressing the emergency button on the safety air valve located in the control unit;
- Unloosen the emergency screw (2) anti-clockwise to lower the lift;
- Retighten the emergency screw by screwing it clockwise after lowering the lift completely.

Fig. 19



	Tip: when a mechanical safety is released, it is advised to use a carton board to put between the safety pawl and the rack to avoid it from engaging. In this case, do not need to press the emergency button continuously. **Screwing or loosing the screw can reduce or increase the lowering speed.** **After manual lowering of the lift, reset ordinary operating conditions. Lift cannot be lifted if solenoid valves are opened**

CHAPTER 9 - MAINTENANCE

	**Only trained personnel who knows how the lift works, must be allowed to service the lift**.

To service properly the lift, the following has to be carried out:

- use only genuine spare parts as well as equipment suitable for the work required;
- follow the scheduled maintenance and check periods shown in the manual;
- discover the reason for possible failures such as too much noise, overheating, oil blow-by, etc.

Refer to documents supplied by the dealer to carry out maintenance:

- functional drawing of the electric and hydraulic equipment
- exploded views with all data necessary for spare parts ordering
- list of possible faults and relevant solutions.

	**Before carrying out any maintenance or repair on the lift, disconnect the power supply, padlock the general switch and keep the key in a safe place to prevent unauthorized persons from switching on or operating the lift.**

9.1 ORDINARY MAINTENANCE

The lift has to be properly cleaned at least once a month using self-cleaning clothes. Lubricate all pivot pins at least once a week.

	**The use of water or inflammable liquid is strictly forbidden.**

Be sure the rod of the hydraulic cylinders is always clean and not damaged since this may result in leakage from seals and, as a consequence, in possible malfunctions.

9.2 PERIODIC MAINTENANCE

Every 3 months	Hydraulic circuit	▪ check oil tank level; refill with oil, if needed; ▪ check the circuit for oil leakage. ▪ check seals for proper conditions and replace them, if necessary;
	Foundation bolts	▪ check bolts for proper tightening
	Hydraulic pump	▪ verify that no noise changes take place in the pump when running and check fixing bolts for proper tightening
	Safety system	▪ check safety devices for proper operation
Every 6 months	Oil	▪ check oil for contamination or ageing. Contaminated oil is the main reason for failure of valves and shorter life of gears pumps
Every 12 months	General check	▪ verify that all components and mechanisms are not damaged
	Electrical system	▪ a check of the electrical system to verify that motor, limit switch and control panel operate properly must be carried out by skilled electricians
	Oil	▪ empty the oil tank and change the hydraulic oil

CHAPTER 10 – TROUBLESHOOTING

A list of possible troubles and solutions is given below

TROUBLE:	POSSIBLE CAUSE:	SOLUTION:
	The power switch is not turned on	Turn the switch on
The lift does not work	There is no power	Check power and restore if necessary
	The electrical wires are disconnected	Replace
	Fuses are blown	Replace
	The one of limit switches is faulty.	Check the switch and relevant connection for proper operation. Replace, if needed.
The lift does not raise when the lifting button is pressed	The motor direction of rotation is not correct	Interchange the phases on the main switch
	The oil in the hydraulic unit is not sufficient	Add some hydraulic oil
	The lifting button is faulty	Check the lifting button and connection for proper operation. Replace, if needed
	The lowering solenoid valve does not close	Check and clean, if dirty, or replace, if faulty
	The emergency screw of lowering valve does not close	Retighten the screw
	The suction pump filter is dirty	Check and clean if needed
	The photocell sees an obstacle as a consequence does not read	Remove the obstacle
	The reflector is defective as consequence the photocell does not read	Replace the reflector
	The platforms aren't leveled and as consequence photocell does not read	Level the platforms
	The photocell isn't correctly positioned as consequence does not read	Restore the correctly position
The lift does not lower when the lowering button is pressed	The motor does not operate properly and does not release the mechanical safeties	Check the motor
	The lift goes up instead of going down	
	-Because solenoid air valve is faulty	Replace air solenoid valve
	-Because the air does not reach the circuit	Verify the compressor and air hose ability
	-Because electric board is faulty	Replace electric board
	The lowering solenoid valve does not discharge	Verify if it is powered and check the magneto for damages (replace if disconnected or burnt)
	The lowering solenoid valve is not operating	Verify if it is powered and check the magneto for damages (replace if disconnected or burnt)

	The lowering button is faulty	Check the lowering button and connection for proper operation. Replace, if needed
	The photocell sees an obstacle as a consequence does not read	Remove the obstacle
	The reflector is defective as consequence the photocell does not read	Replace the reflector
	The platforms aren't leveled and as consequence the photocell does not read	Level the platforms
	The photocell isn't correctly positioned as consequence does not read	Restore the correct position
The lift does not stop at the safety height	The safety height limit switch is not adjusted correctly or it is faulty	Adjust or change the limit switch
	The electric board is faulty	Replace electric board
	The motor does not operate properly and does not release the mechanical safeties	Check the motor
	The lowering button is faulty	Check the lowering button and connection for proper operation. Replace, if needed
The lift isn't raising synchronous	Presence of air or dripping in the hydraulic circuit	Bleed the hydraulic circuit
	The cylinder gaskets can be damaged	Check and replace if necessary
The lifting capacity is not sufficient	The oil in the tank is not enough	Fill oil in the tank
	The pump is faulty	Check the pump and replace if necessary
	The maximum pressure valve is not adjusted correctly	Adjust correctly
The lift does not lift or lower smoothly	Leakages or presences of air into hydraulic circuit	Bleed the hydraulic system
The motor does not stop when reaching it maximum height	The top limit switch does not work	Check the limit switch and replace if needed
The lift does not lift or lower smoothly	Leakages or presences of air into hydraulic circuit	Bleed the hydraulic system
	The pump filter is dirty.	Check and clean if needed.
	The pump suction is blown	Check the seal and replace if needed