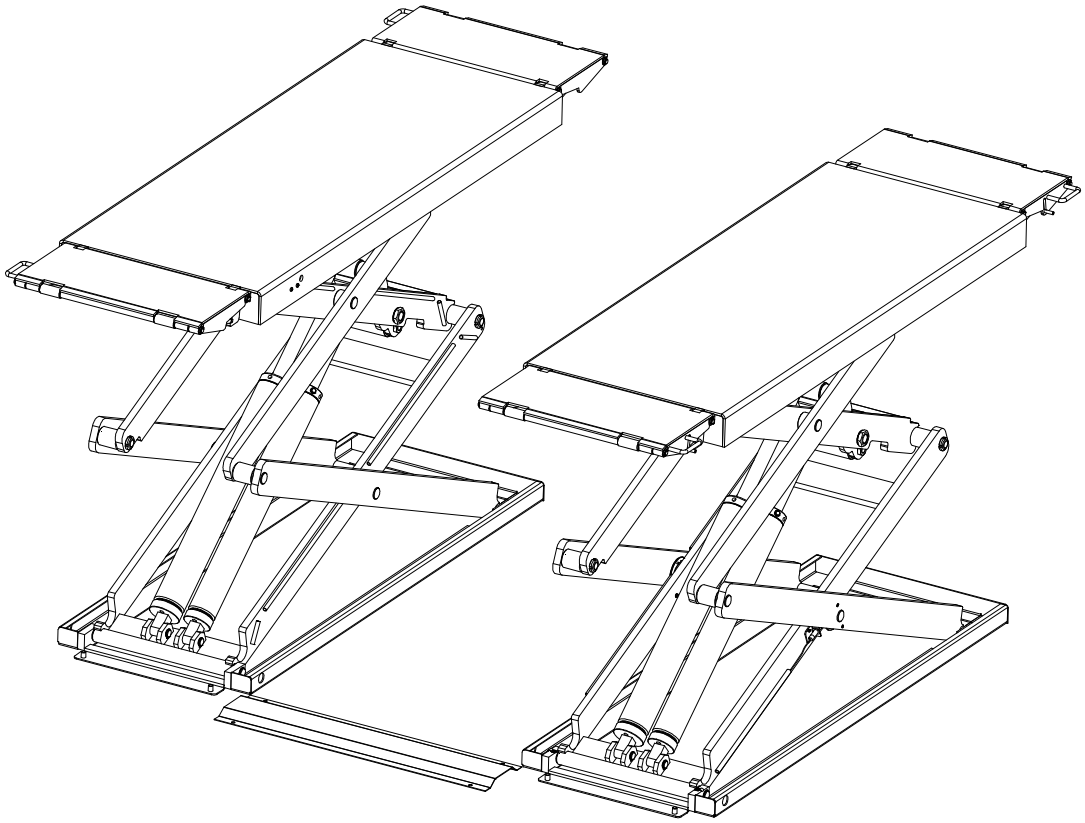
GLOMSTAD MOTOR

USE
AND
MAINTENANCE
MANUAL

LOW PROFILE SCISSOR LIFT
SURFACE MOUNTED

GM - 8504 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.

CHAPTER 3 - PACKING, TRANSPORT AND STORAGE

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.

3.1 PACKING

The packing of the lift is delivered in following components:

- N. 2 base units packed in a steel frame, wrapped up in non-scratch waterproof material and sealed with 2 straps
- N. 1 power unit packed in a plywood box
- N. 4 drive-on ramps wrapped up in non-scratch waterproof material, including N. 4 rubber pads, N. 4 hydraulic hoses and N. 8 anchor bolts.

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

The average of the package is *830 kg.*

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).

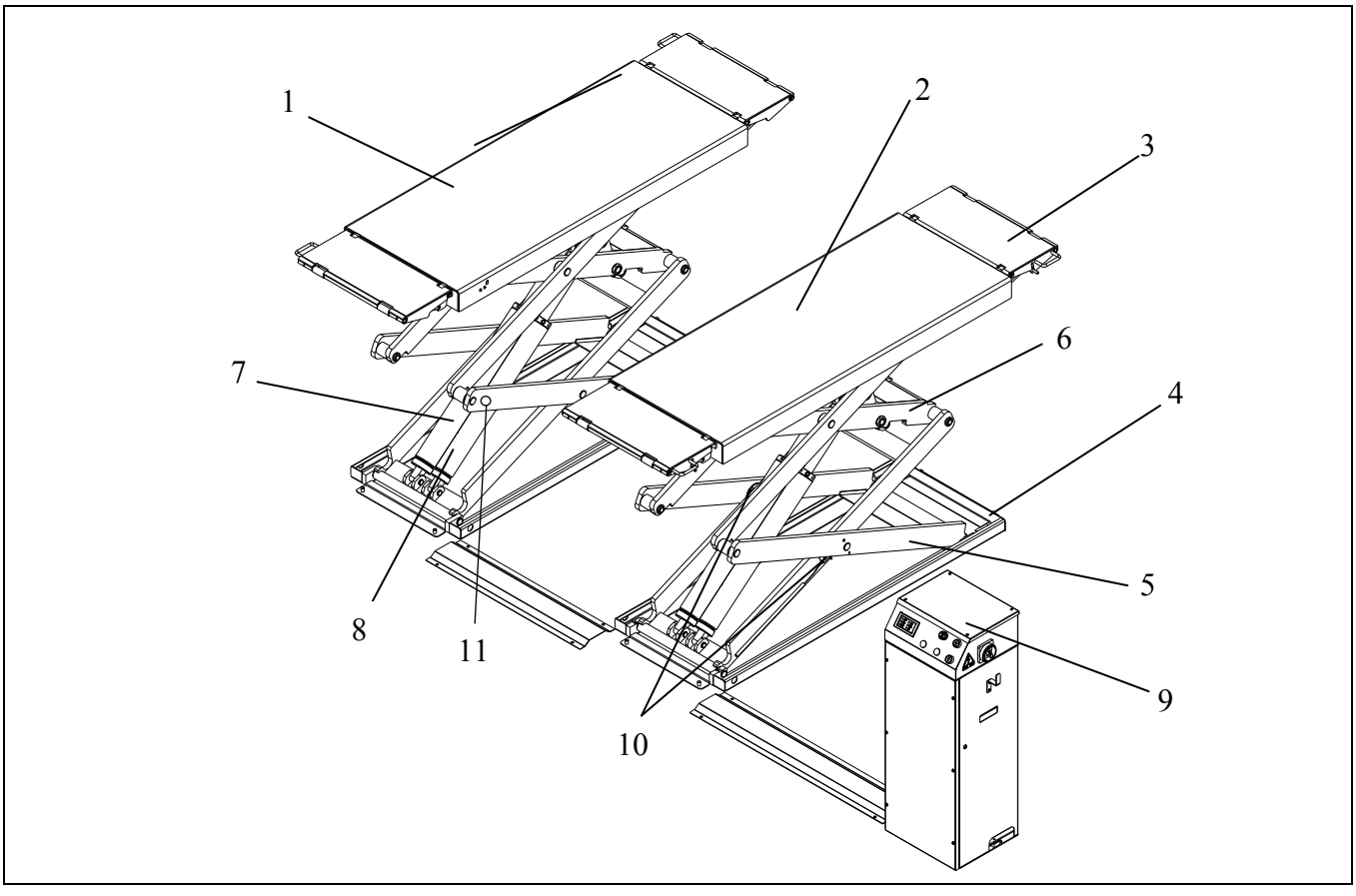
CHAPTER 4 - PRODUCT DESCRIPTION

4.1 **LIFT** (ref. Figure 1)

The lift has been designed for the lifting of motor-vehicles and for making them stand at any level between the minimum and maximum height.
The maximum lifting weight, including any additional load on the vehicle, 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 2, the lift is composed of two platforms: P1 (1) and P2 (2) each equipped with the drive-on/off ramps (3) which can be locked to the platforms as extensions, anchored to the ground by means of bases (4).
Platforms are linked to the base by means of a scissors lifting system.
The lifting system of each platform is composed of N.4 arms: two inferior (5) and two superior (6), and a couple of cylinders: master (7) and slave (8).
Motion is transmitted by a lever system, from the cylinders to the lever on each scissor system.
Lowering and lifting are carried out by means of a control unit (9), placed next to the lift.
Two sensors (10) are installed on the P2 scissors for the top position limit and the safety height limit.
The photocells (11) are located in the scissor arm to check the synchronization of the platforms.

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 the double 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	**3000 kg**
Maximum lifting height	1900 mm
Minimum height of lift	116 mm
Length of the platform	1495 - 2030mm
Width of platforms	600 mm
Suggested free width between platforms	800 mm
Overall length	2030mm
Overall width	2000mm
Lifting time	55 s
Lowering time	60 s
Noise level	70 dB(A)/1m
Total weight of the lift	830 kg
Working temperature	-10 °C - 40 °C

5.2 ELECTRIC MOTOR

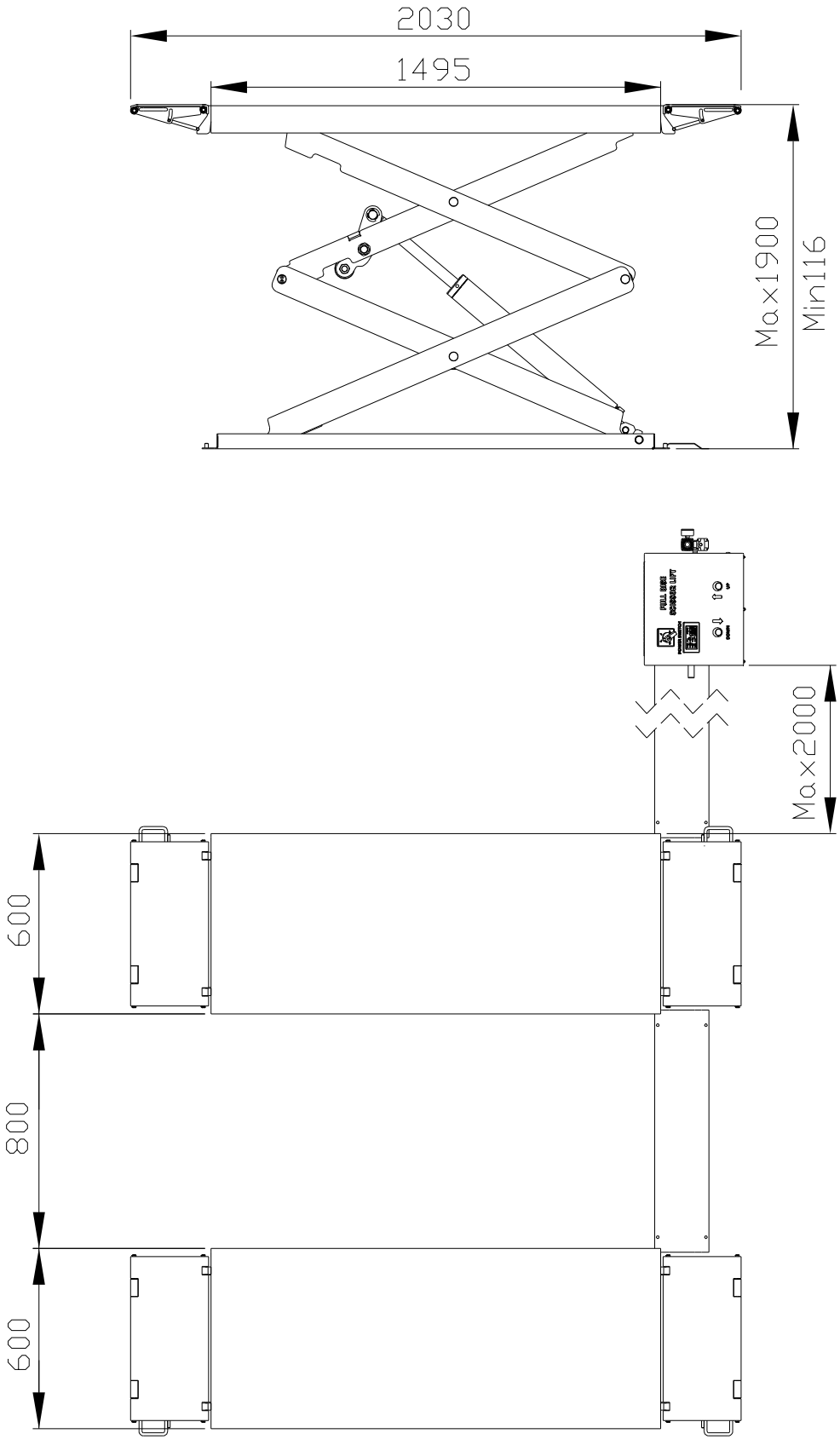
Type	**ML90L2**	**G90N4**
Voltage	230V/220V-1Ph	400V/380V-3Ph
Power	2.2 KW	2.6 KW
N° Poles	2	4
Speed	2800 rpm	1375 rpm
Motor enclosure type	B14	
Insulation class	IP 54	

Motor connection must be carried out referring to the attached wiring diagrams (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	1.6 cm^3/g	3.3 cm^3/g
Continuous working pressure	260 bar	
Peak pressure	280 bar	

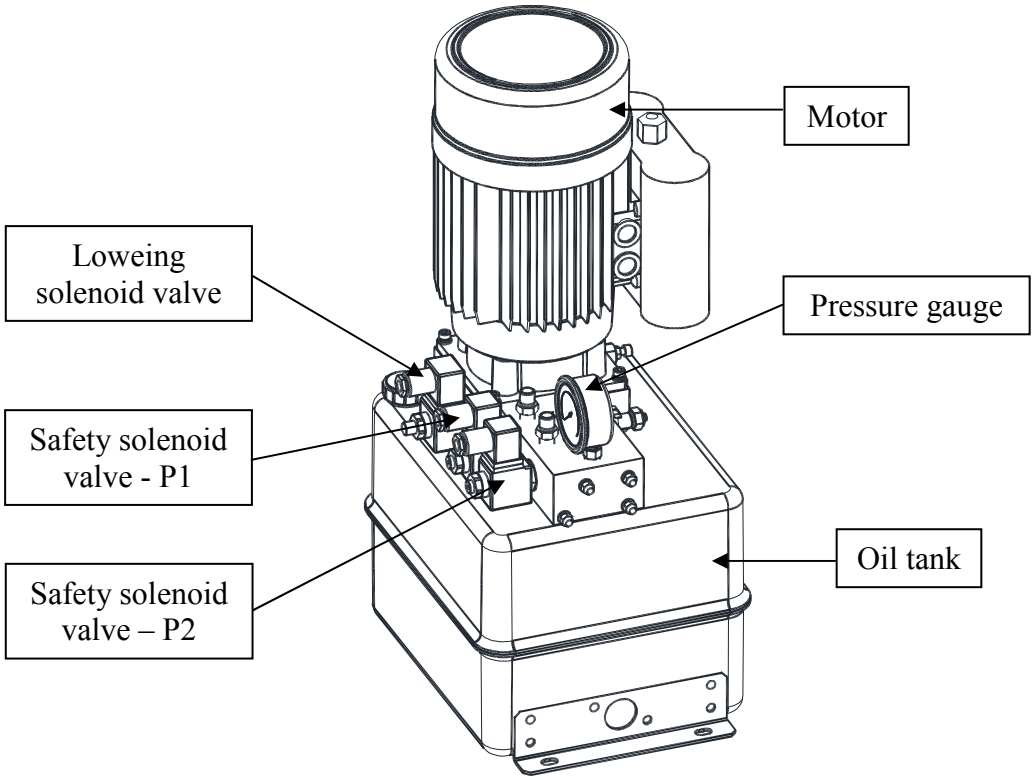
Figure 2 – LAYOUT



5.4 HYDRAULIC UNIT

The hydraulic unit is equipped with a

Figure 3 – HYDRAULIC POWER UNIT



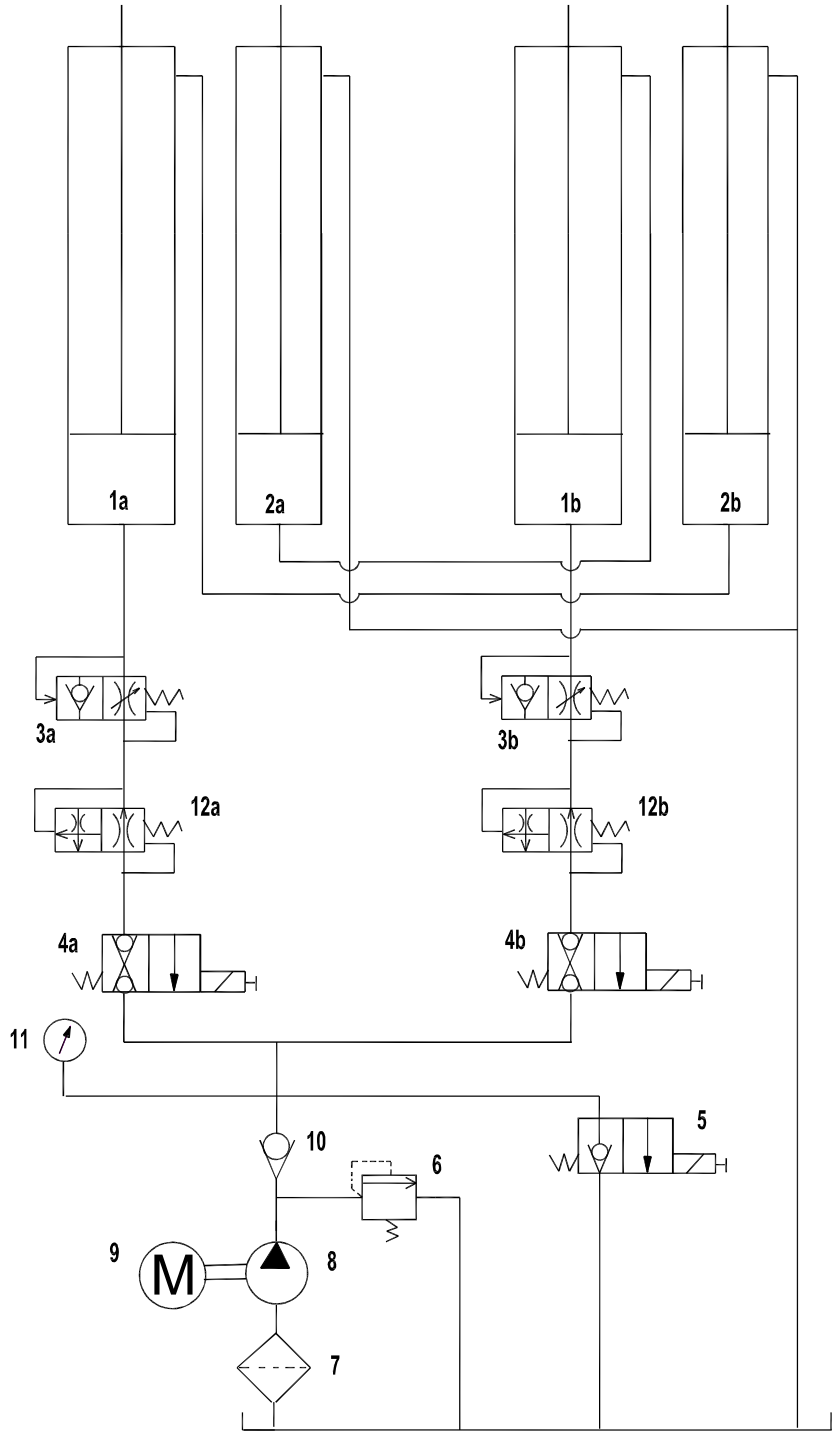
5.5 OIL

Use wear proof oil for hydraulic drive, in conformity with *ISO 6743/4* rules (HM class).

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

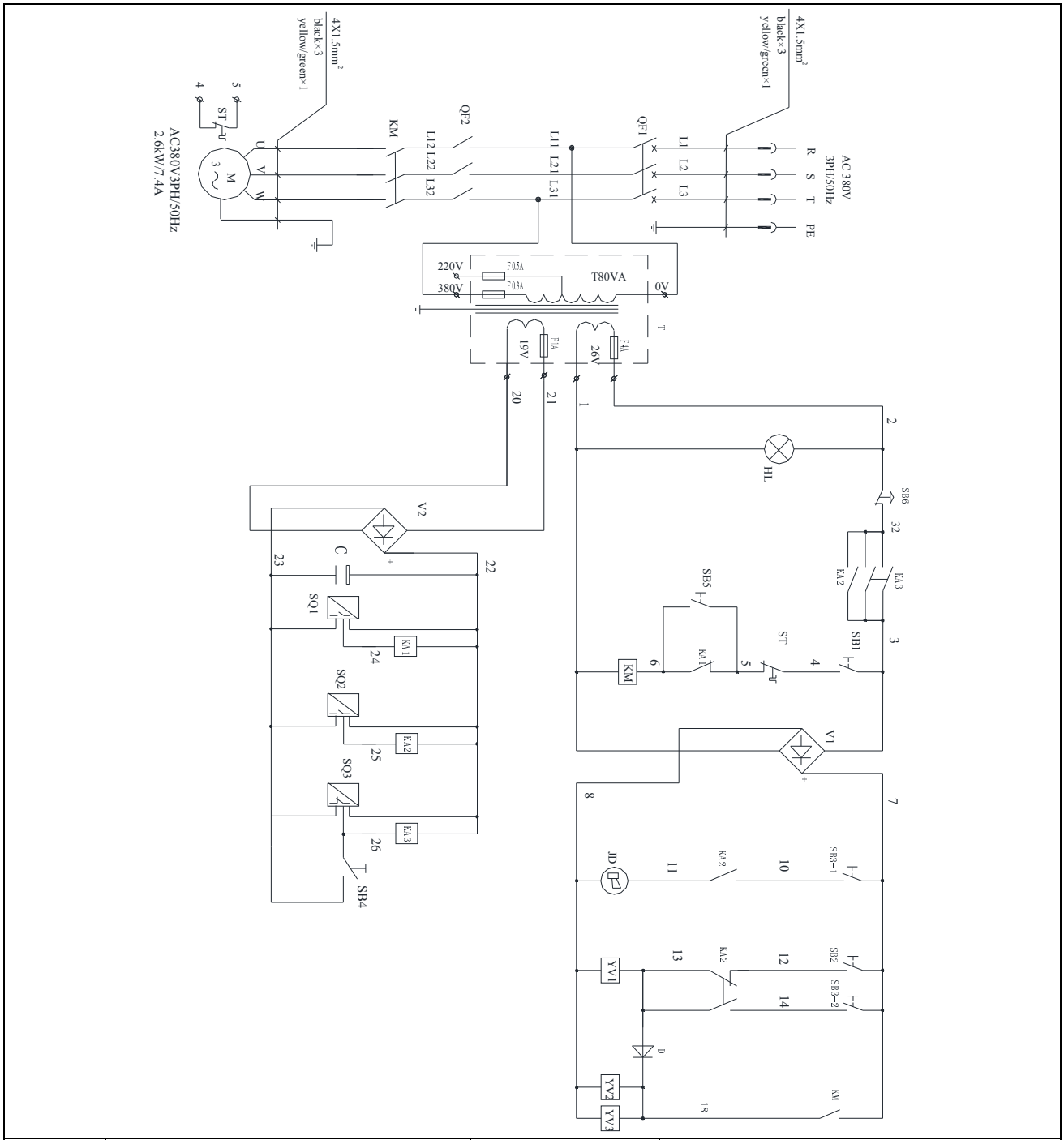
	CHANGE HYDRAULIC OIL AT 1 YEAR INTERVALS

Figure 4 - HYDRAULIC PLAN



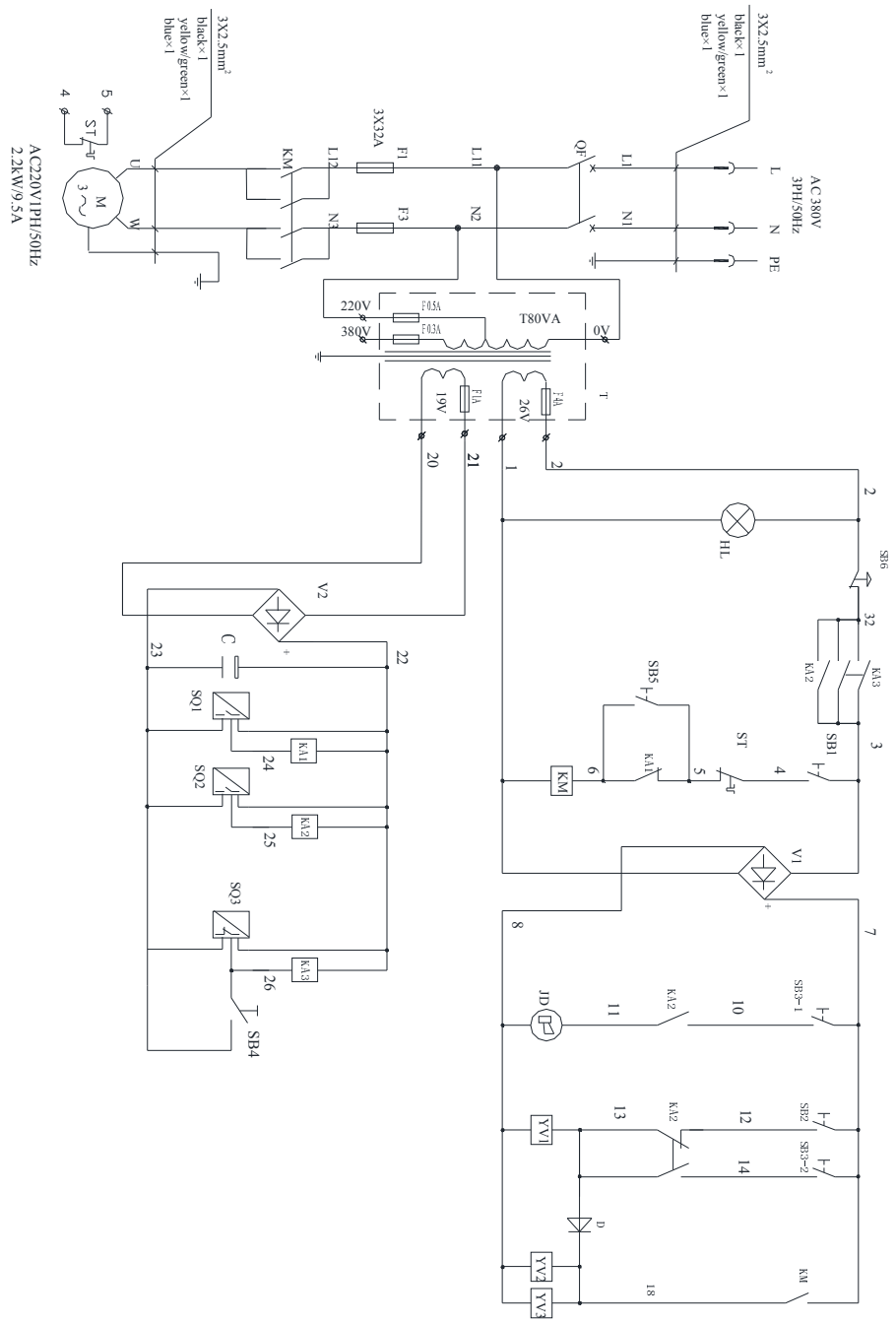
1a	Platform P1 master cylinder	6	Pressure overload valve
1b	Platform P2 master cylinder	7	Oil filter
2a	Platform P1 slave cylinder	8	Gear pump
2b	Platform P2 slave cylinder	9	Motor
3a	Parachute valve - P1	10	Non return valve
3b	Parachute valve - P2	11	Pressure gauge
4a	Safety solenoid valve - P1	12a	Lowering control valve - P1
4b	Safety solenoid valve - P2	12b	Lowering control valve - P2
5	Lowering solenoid valve		

Figure 5a – ELECTRICAL PLAN (400V/380V – 3PH)



QF1	Power switch	SB2	Lowering button
QF2	Breaker	SB3	Final lowering button
M	Motor 2.6KW 3PH	SB4	Photocell pass-by button
ST	Thermal relay	SB5	Override button
T	Transformer 80VA	SB6	Emergency stop button
V2	Rectifier	SQ1	Top limit switch
KM	Contactor DC	SQ2	Safety height limit switch
YV1	Lowering solenoid valve	SQ3	Photocell
YV2	Safety solenoid valve – P1	JD	Beeper
YV3	Safety solenoid valve – P2	HL	Pilot lamp
SB1	Lifting button	KA1/KA2/KA3	Transfer relay

Figure 5b – ELECTRICAL PLAN (230V/220V – 1PH)



QF1	Power switch	SB2	Lowering button
QF2	Breaker	SB3	Final lowering button
M	Motor 2.2KW 1PH	SB4	Photocell pass-by button
ST	Thermal relay	SB5	Override button
T	Transformer 80VA	SB6	Emergency stop button
V2	Rectifier	SQ1	Top limit switch
KM	Contactor DC	SQ2	Safety height limit switch
YV1	Lowering solenoid valve	SQ3	Photocell
YV2	Safety solenoid valve – P1	JD	Beeper
YV3	Safety solenoid valve – P2	HL	Pilot lamp
SB1	Lifting button	KA1/KA2/KA3	Transfer relay

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.** **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.
- A special design of the hydraulic 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. 6a

Fig. 6b

Fig. 6c

6.5 BUMPING RISK

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

Fig. 7

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.

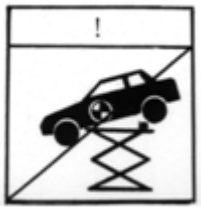


Fig.8a

Fig. 8b

Fig. 8c

6.7 SLIPPING RISKS

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

Fig. 9

	**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. 10

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. 11

	**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.**

	**Before carrying out any operations, remember to insert the safety piece of wood between the lower booms and the base frame**.

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 INSTALLATION SURFACE

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.
For installation on raised surface, the compliance with the maximum carrying capacity of the surface is recommended.
The new concrete must be adequately cured by at least 21 days minimum.

7.4 RUNWAY ASSEMBLY AND CONTROL UNIT POSITIONING

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

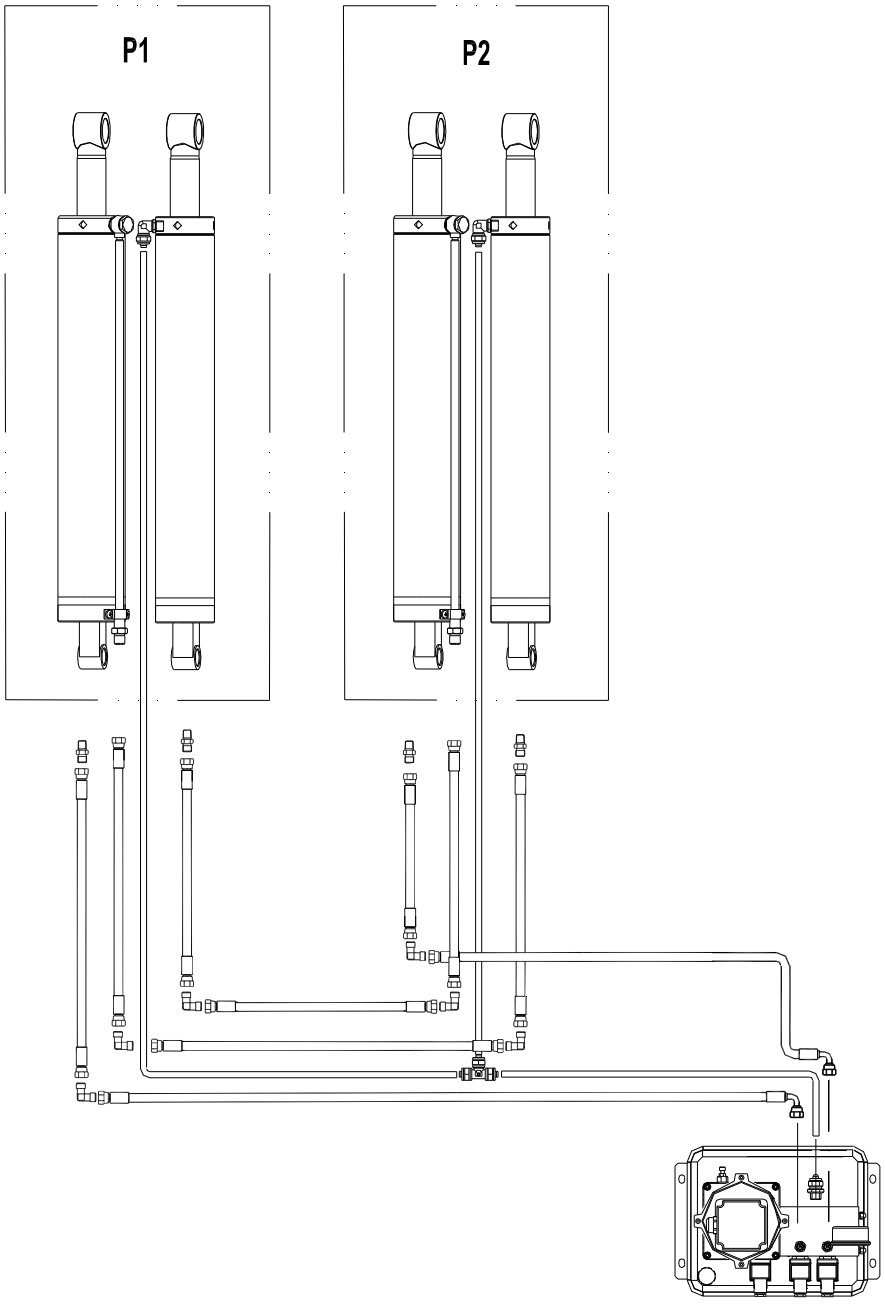
- Now locate the lift according to the figure 2, use a carpenters chalk line to layout a grid for the base locations according to the drive-on direction of the lift.
- Transport platforms to the installation site by using hoisting means with load capacity of *500 kg* at least. To prevent the platform from dropping during transport, it should be lifted according to its centre of gravity.
- Always raise platforms by holding them on the underside of the bases.
- Place the control unit in the position provided for.

7.5 HYDRAULIC SYSTEM CONNECTION (ref. fig. 12)

- Open the front cover of the control unit.
- Following the figure 12 connect hydraulic hose to the fittings referring to the letters shown on them.
- Tighten fittings thoroughly.

	**Make sure that the hoses are clear of any moving parts. 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 12 – HYDRAULIC CONNECTION



7.6 MAKE THE ELECTRICAL HOOKUP

	**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. Damage to power unit caused by water or other liquids such as detergents, acid etc., is not covered under warrant.**

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

7.7 PRE-CHECKS

	**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.**

7.7.1 CHECK

- 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 the wiring 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

7.7.2 START

- Be sure the working area is free from people and objects
- Verify that the control unit is powered
- Pour oil in the tank (about *16 liters more than one time*)
- Feed the lift by the 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 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.**

Limit switches must be adjusted during the installation of the lift
Two proximity switches are installed on the scissor P2 for the top position and the safety height.
If limit switches were not functioning properly, it's possible to adjust them in the following way:

7.8.1 ADJUSTMENT OF TOP LIMIT SWITCH (fig.13 - 1)

	As the cylinders need the extra stroke about 70mm for bleeding, NEVER raise the lift higher than the top limit height 1900mm. Manufacturer will not responsible for any damage to the lift if failure to do so.

- Place the lift at a height of *1900 mm;*
- Unloose nuts (fig.13-3) of the limit switch and adjust it at the desired height;
- Tighten the nuts after adjustment.

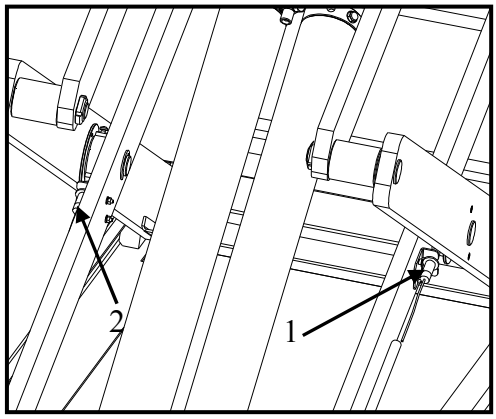
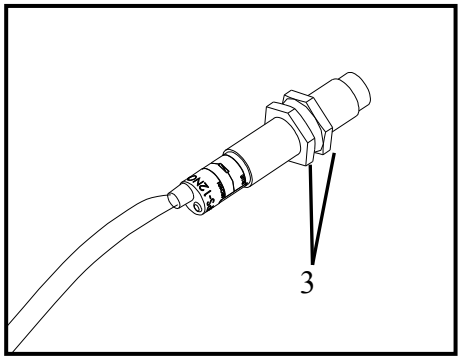


Fig. 13



7.8.2 ADJUSTMENT OF SAFETY HEIGHT LIMIT SWITCH (fig.13 - 2)

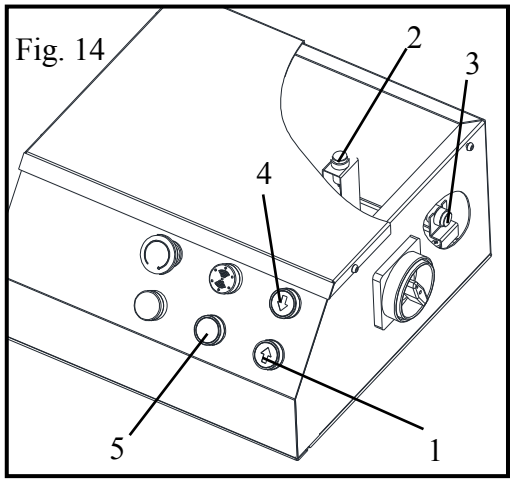
- Place the lift at a height of *400 mm;*
- Unloose nuts (fig.13-3) of the limit switch and adjust it at the desired height;
- Tighten the nuts after adjustment.

7.9 FEEDING OIL AND BLEEDING (ref. fig. 14)

	During the bleeding procedure, DO NOT load the lift. **The top limit switch must be installed before this procedure.**

- Push the lifting button (1) to feed the oil into the cylinders for approximate 30 seconds;
- Open the top cover of the control panel to locate the override button (2);
- Raise the lift by pressing both the lifting button (1) and the photocell pass-by button (3) (if not leveled) until the lift is raised at the top limit position;
- At the top position, keep pressing the override button (2) for a few seconds until two platforms are in the same height;
- Lower the lift completely by pushing the lowering button (4). If the safety height limit switch is already

Fig. 14



installed, the lift will descend to the safety height. At this height, lower the lift completely by pressing the final lowering button (5). A beep sound is heard during the last travel;
- Follow this procedure and repeat raise and lower the lift at least 2 times to bleed all the air out of the cylinders.

7.10 ANCHORING THE LIFT

- Raise the platforms approximately 1m above the ground.
- 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. Be sure if shimming is required, enough threads are left exposed.
- 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.

7.11 LOAD LESS CHECK

Carry out two or three complete cycles of lowering and lifting and check:
- the lift fixing to the ground and all anchor bolts tightened
- 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
- the photocell for proper operation

7.11 CHECKING WITH LOAD

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

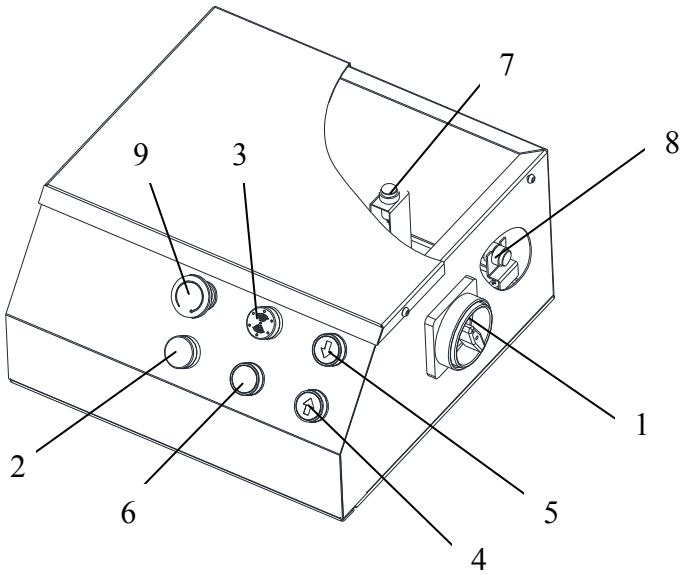
Before carrying out the checks with load, make inspection of the machine and check bolts and nuts for proper tightening.
- repeat checks provided for by 7.11 section with the vehicle loaded
- check no leakage and blow-by
- if the platforms weren't leveled, repeat the 7.8 section

CHAPTER 8 - OPERATION AND USE

	Never operate the lift with any person or equipment below. **Never exceed the rate lifting capacity.** **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!**

8.1 CONTROLS

Figure 15 - 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.

OVERRIDE BUTTON (7)

- When pressed, the top limit switch is overridden and the lift is raised at extra70mm for bleeding the hydraulic system.

PHOTOCELL PASS-BY BUTTON (8)

- When pressed, the photocell is excluded.

EMERGENCY STOP BUTTON (9)

- When emergency occurs, turn this button to stop machines.

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 power switch to 1 position and push the lifting button to lift the vehicle to the required height;
- To rest the lift in standing position by releasing the lifting button.

8.3 LOWERING

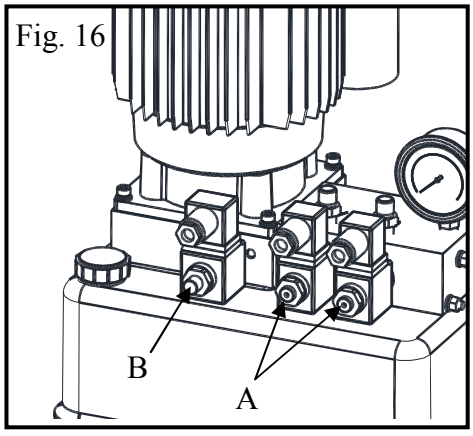
- Press the lowering button;
- The lift will descend, under its own weight and car's one, to the safety height of 400mm;
- Be sure the safety area is free of people and objects;
- Press the lowering button again until the lift is lowered to ground completely. A beep sound is heard during the last travel.

8.4 MANUAL EMERGENCY LOWERING

In the emergency (power failure), the lift can be lowered manually to its initial position as follows (ref. fig.16):

- Padlock the power switch;
- Open the front cover of control unit;
- Unloosen the emergency screw (B) of the lower solenoid valve by turning it anticlockwise and in the meantime keep pushing the slider (A) until the runways are lowered completely;
- Retighten the emergency screw (B) by turning it clockwise after the runways are lowered.

Fig. 16



	After manual lowering of the lift, reset ordinary operating conditions. Lift cannot be lifted if manual lowering valve is 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 of the control desk 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 control desk motor, limit switches and control panel operate properly must be carried out by skilled electricians

CHAPTER 10 - TROUBLESHOOTING

A list of possible troubles and solutions is given below

TROUBLE:	POSSIBLE CAUSE:	SOLUTION:
The lift does not work	The main switch is not turned on	Turn the switch on
	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 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
	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 button and connection for proper operation. Replace, if needed
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 lowering button is faulty	Check the DOWN button and connection for proper operation. Replace, if needed
	The lowering solenoid valve does not discharge	Verify if it is powered and check the magneto for damages (replace if disconnected or burnt)
The lift isn't raising synchronous	Presence of air or dripping in the hydraulic circuit	Bleed the hydraulic circuit
	The cylinder gaskets can be	Check and replace if necessary

	damaged	
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 maximum height 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