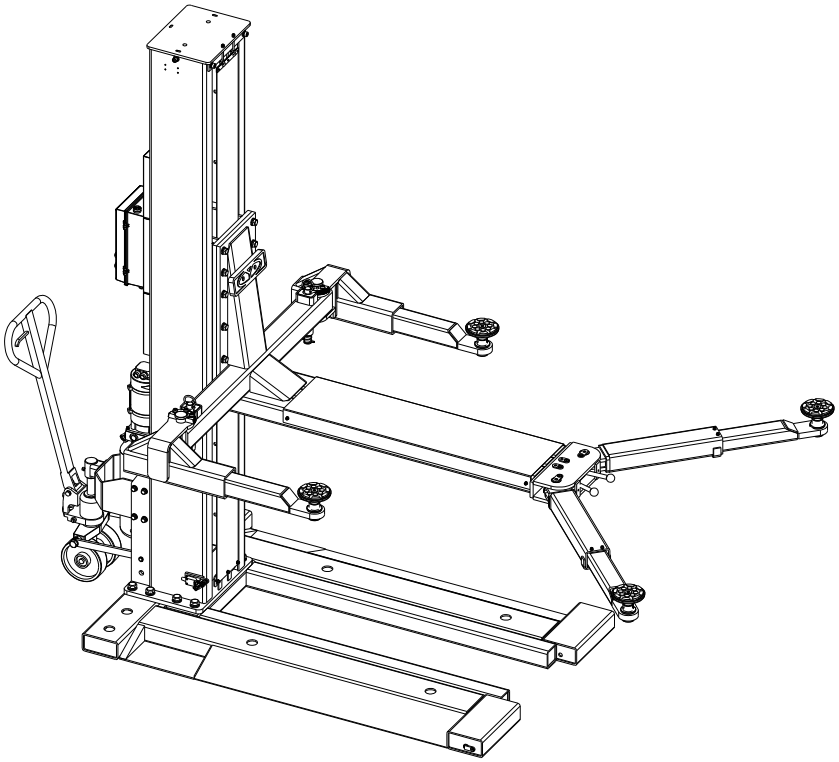
USE
AND
MAINTENANCE
MANUAL

ELECTRO-HYDRAULIC
MOBILE SINGLE POST LIFT

GM - EA700E
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

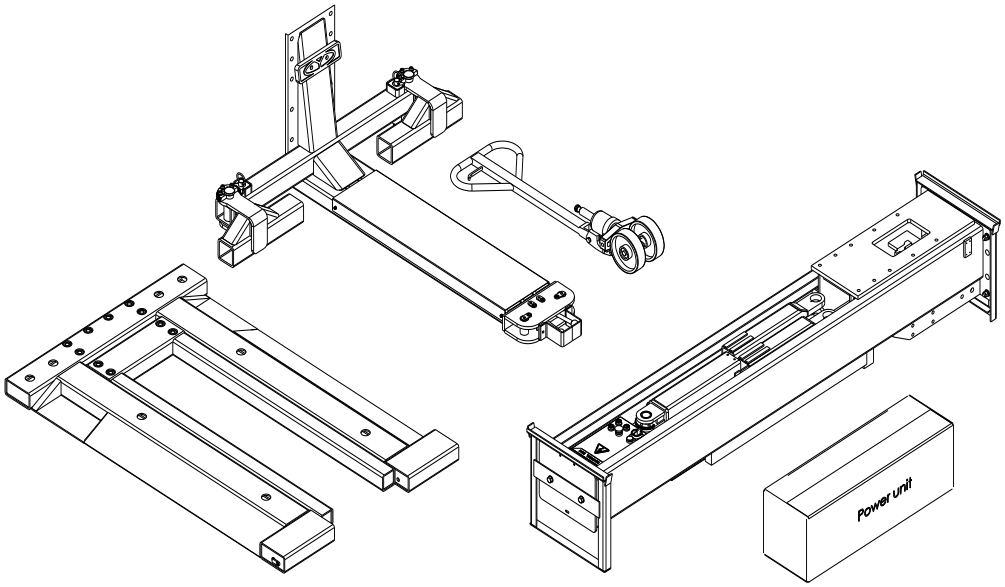
3.1 PACKING (ref. fig.1)

The lifting set is delivered in following components as shown in the figure 1.

- N. 1 column unit packed in a steel frame, wrapped with plastic films including accessories.
- N.1 base unit wrapped with plastic films.
- N.1 arm frame, wrapped with plastic films.
- N.1 mobile jack wrapped with plastic films.
- N. 1 power unit packed in a carton box.

The average weight of packages is *900kg*.
If requested, optional accessories are available to satisfy each customer's requirements.

Figure 1 –PACKING



3.2 LOADING/UNLOADING AND TRANSPORTATION

When loading/unloading or transporting the equipment to the site, be sure to use suitable hoisting means as shown in the figure 2. Be sure also to hoist and transport the components securely so that they cannot drop, taking into consideration the package's size, weight and center of gravity.

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

Fig. 2a

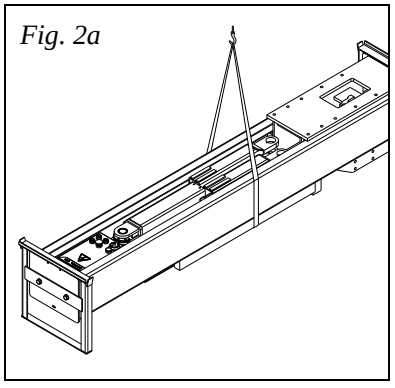


Fig. 2b

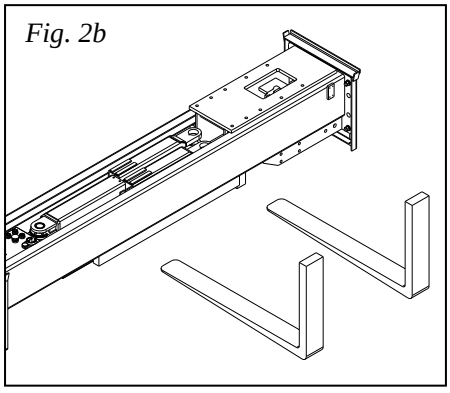
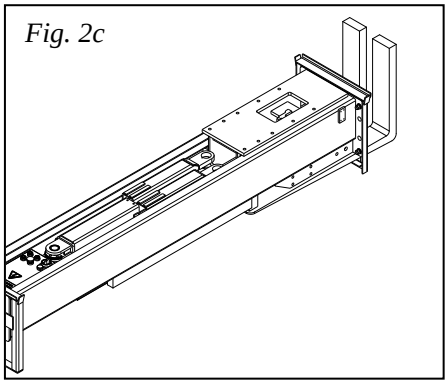


Fig. 2c



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 ℃ and +40 ℃.
Stacking is not allowed.

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).

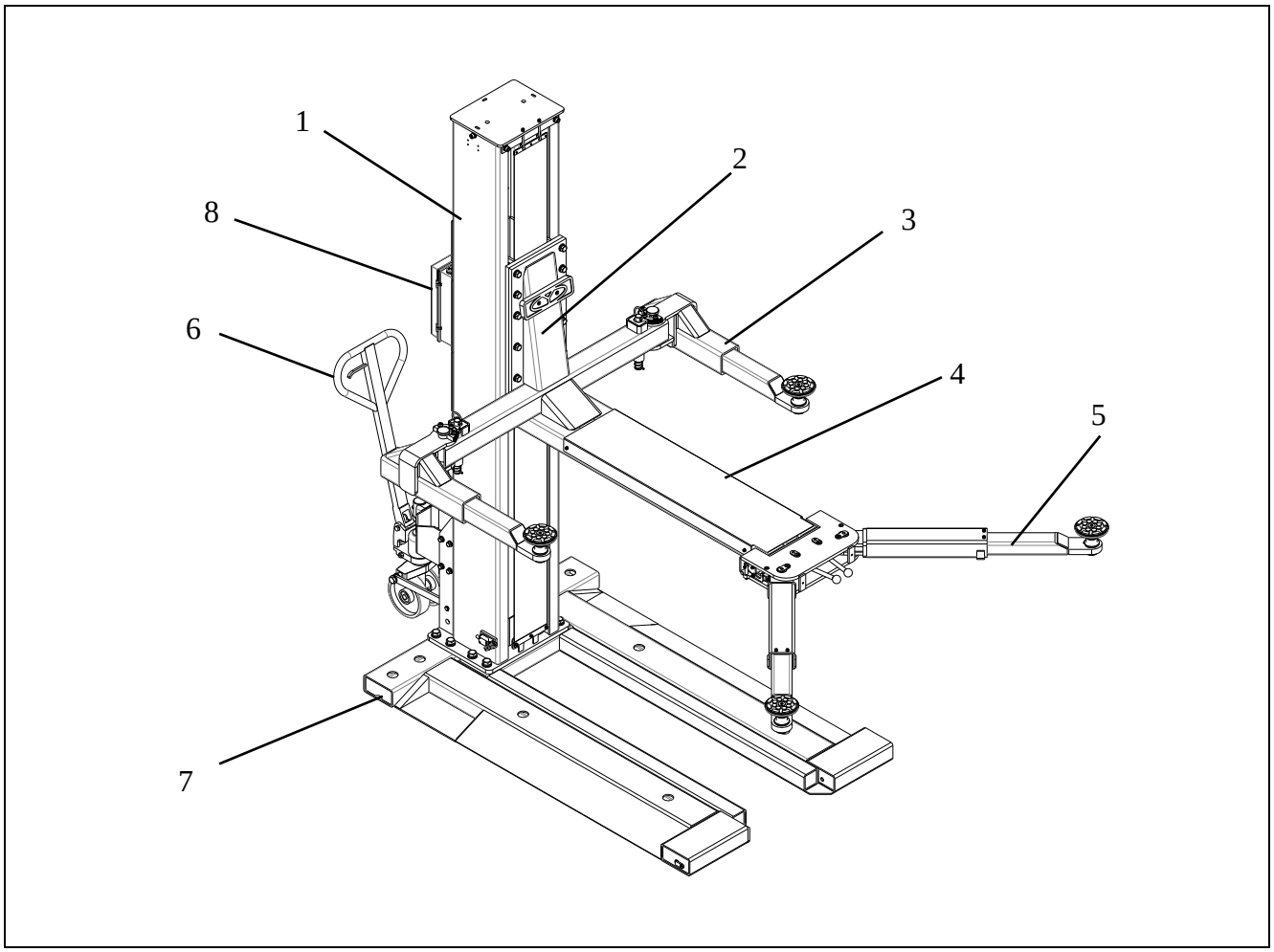
CHAPTER 4 - LIFT DESCRIPTION

4.1 LIFT DESCRIPTION (ref. fig.3)

The lift is suitable for lifting a vehicles having maximum weight 2500kg.
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 lift.
As shown in figure 3, this lift is composed of the single column (1), the carriage (2), rear telescopic arms (3), H arm (4) and front telescopic arms (5).
By operation of the mobile jack (6), the lift can be moveable.
The lift can be anchored to floor by means of the base (7).
Raising motion is carried out by pushing the lifting button on the control panel (8) to operate a power unit to deliver the hydraulic fluid to cylinder inside the columns.
Lowering motion is controlled by pushing the lowering button on the control panel and carried out under the carriage weight and the load lifted.
The mechanical safety is built in the carriage and can be released by means of the electromagnet when the lowering button is pressed.
Two limit switches are installed on the lift. One is for the max. lifting height, another is for the safety height from which the alarm can be heard till the lift is lowered fully.

Figure 3 – LIFT SET



CHAPTER 5 - TECHNICAL SPECIFICATION

5.1 SIZE AND MAIN FEATURES (ref. fig. 4)

CAPACITY	**2500Kg**
Max. lifting height	1870mm
Overall height	2602mm
Min. lowered height	115mm
Lifting time	65 s
Noise level	75 dB(A)/1m
Working temperature	-10 ℃ ～ 40 ℃
Package weight	900Kg

5.2 ELECTRIC MOTOR

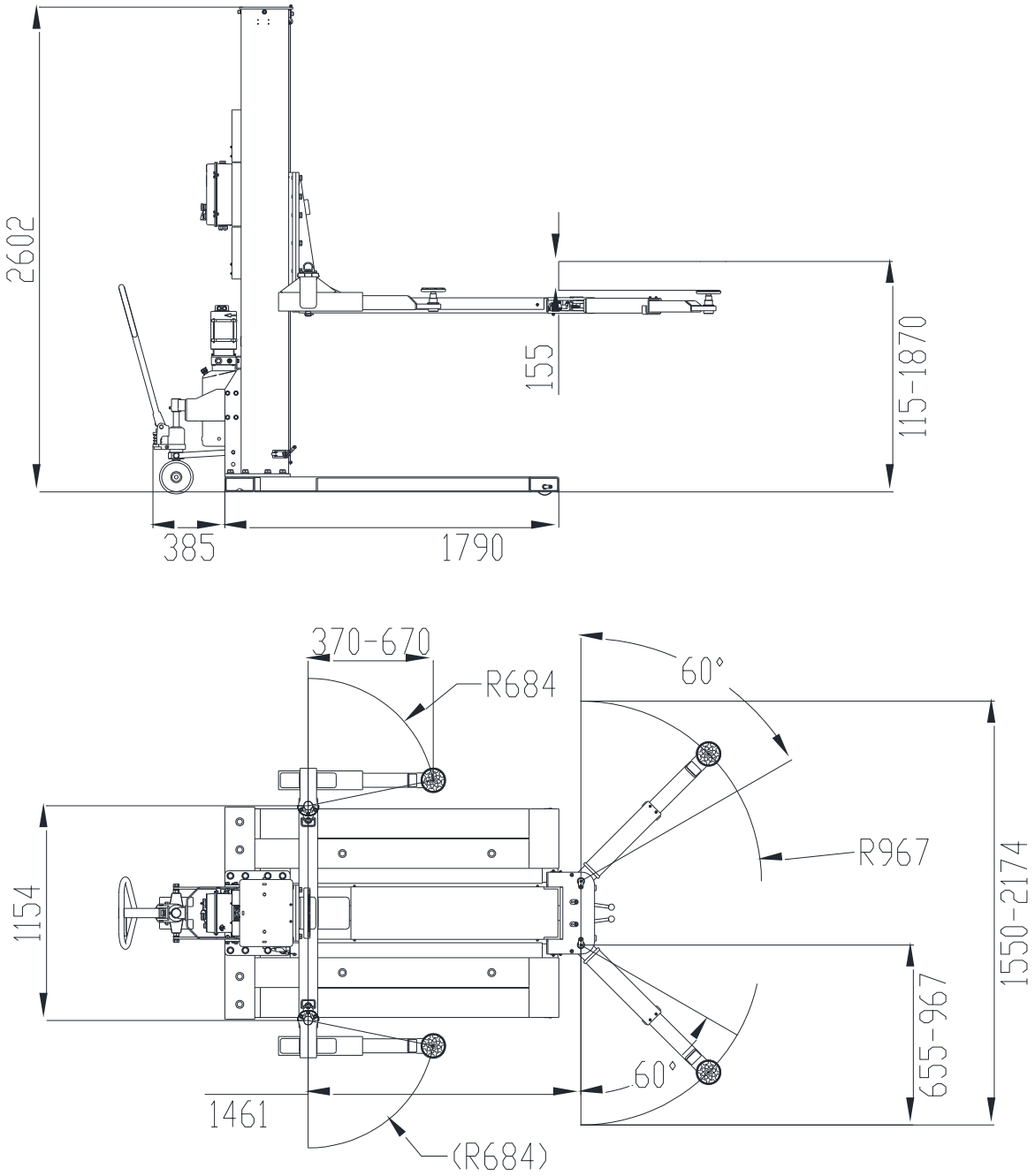
Type	**MS90L4-B14**	**ML90L4-B14**
Voltage	400V/50Hz/3Ph	230V/50Hz/1Ph
Power	1.5 KW	1.5 KW
N °Poles	4	4
Speed	1450 rpm	1450 rpm
Motor enclosure type	B14	
Insulation class	IP 54	

Motor connection must be carried out referring to the attached wiring diagrams.
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 5% 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	3.2 cm^3/g
Continuous working pressure	180 bar
Peak pressure	200 bar

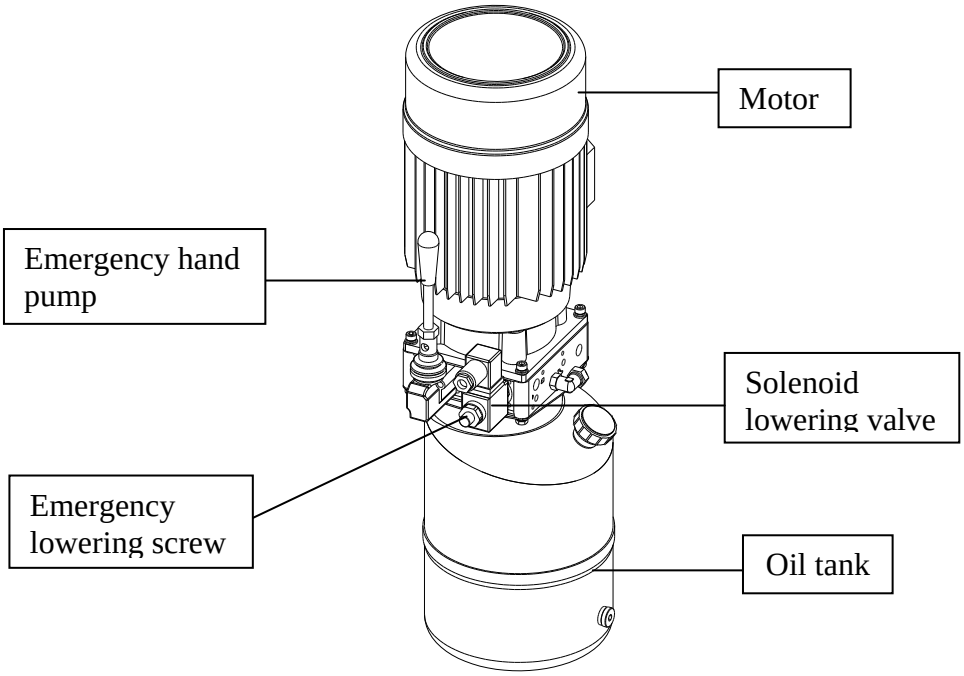
Figure 4 – LIFT LAYOUT



5.4 HYDRAULIC POWER UNIT

The power unit is equipped with

Figure 5 – POWER UNIT



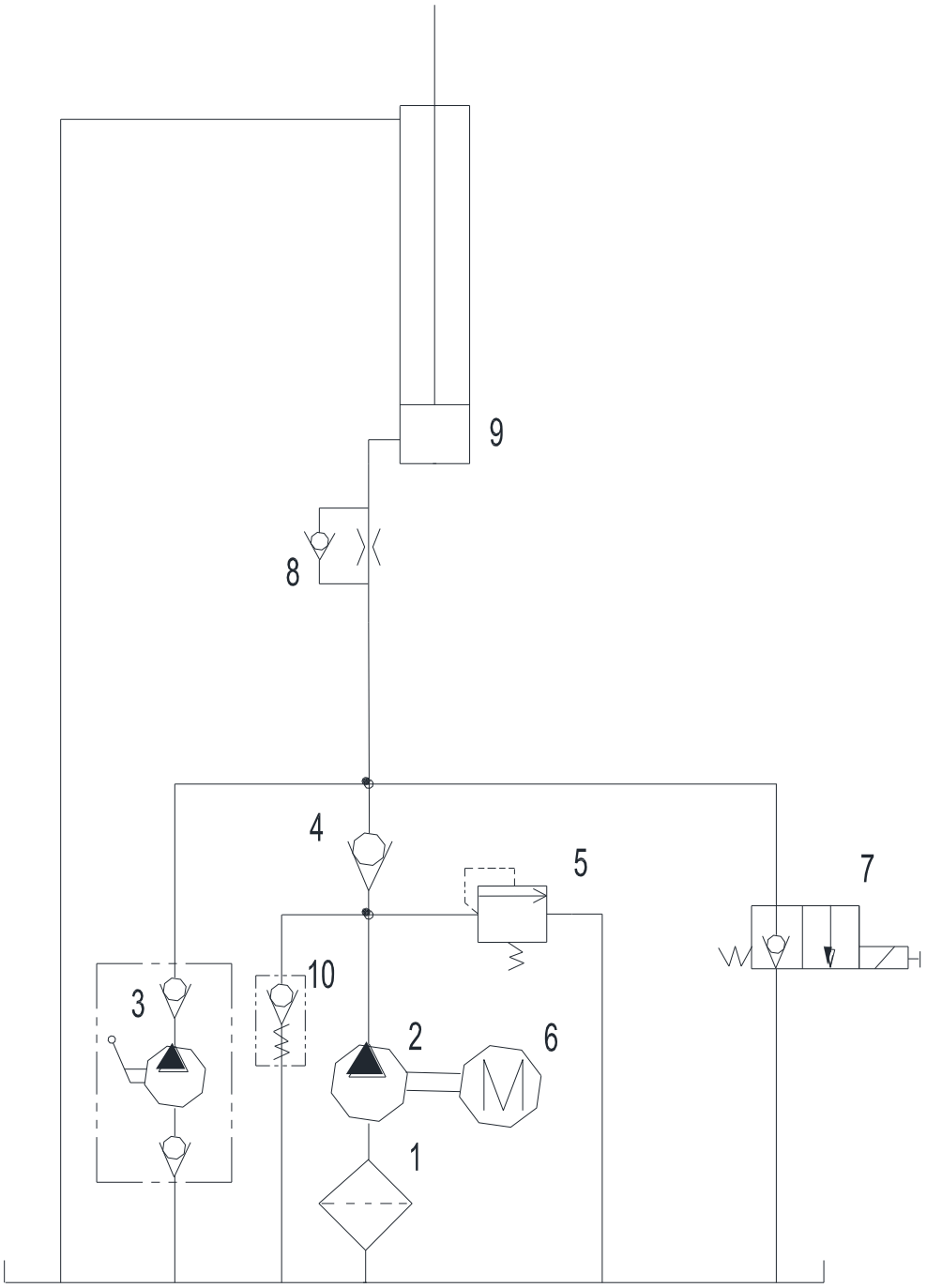
5.5 OIL

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 ℃	0.8 kg/l
ASTM D 445	Viscosity 40 ℃	32 cSt
ASTM D 445	Viscosity 100 ℃	5.43 cSt
ASTM D 2270	Viscosity index	104 N °
ASTM D 97	Pour point	~ 30 ℃
ASTM D 92	Flash point	215 ℃
ASTM D 644	Neutralization number	0.5 mg KOH/g

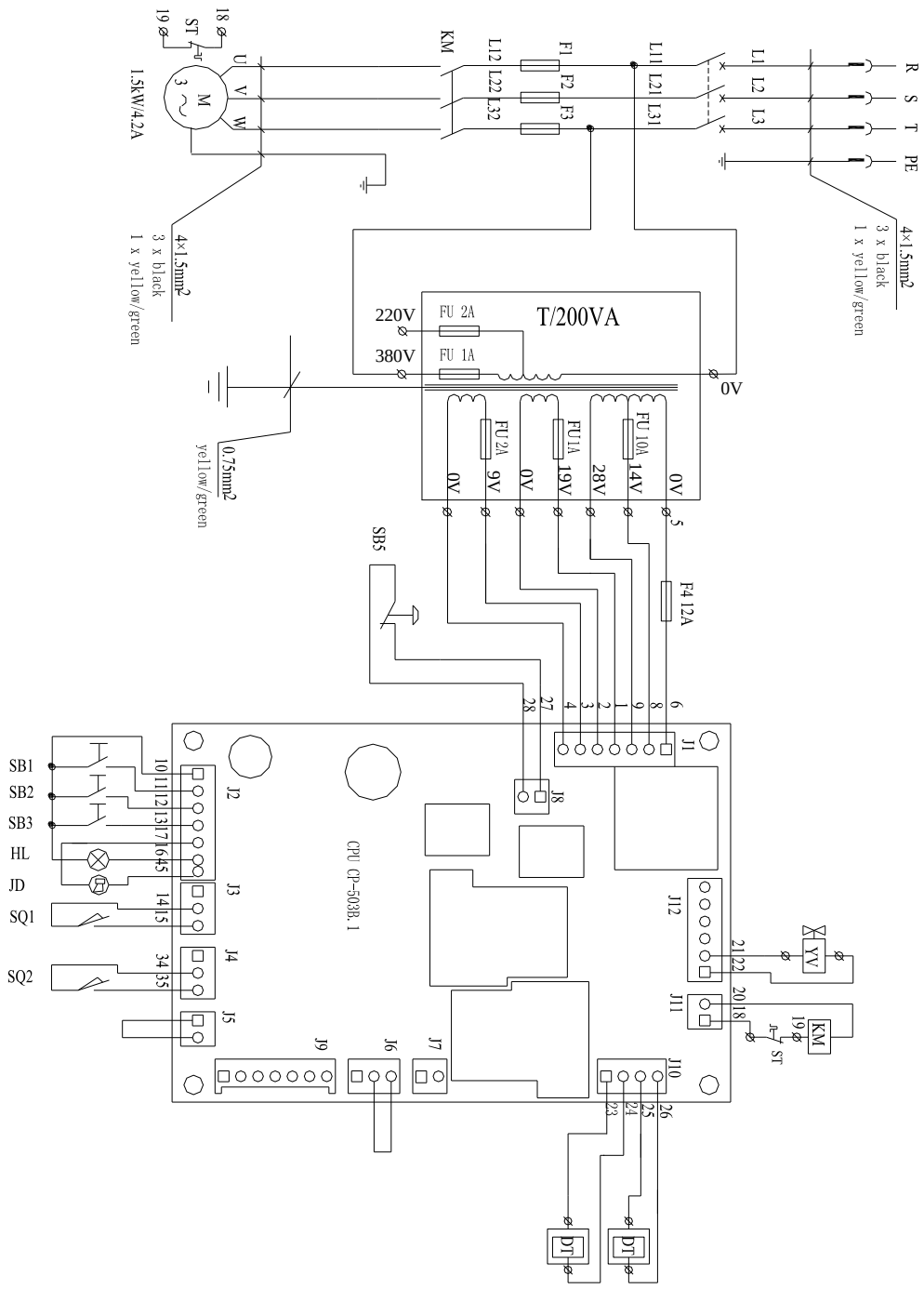
	CHANGE HYDRAULIC OIL AT 1 YEAR INTERVALS

Figure 6 - HYDRAULIC SCHEME



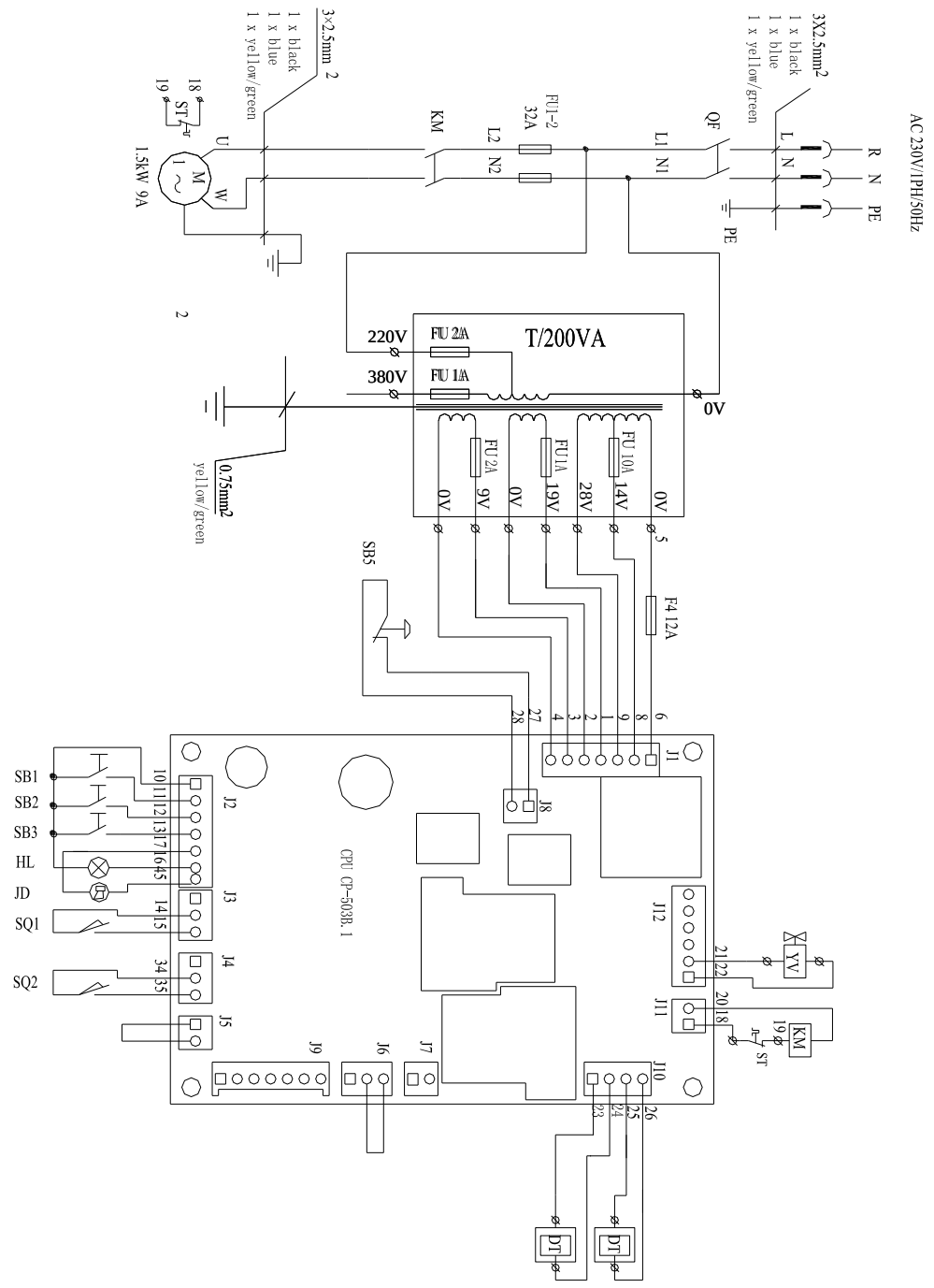
1	Oil filter	6	Motor
2	Gear pump	7	Solenoid lowering valve
3	Emergency hand pump - optional	8	Flow restrictor
4	Non return valve	9	Hydraulic cylinder
5	Pressure overload valve	10	Startup valve - for 1PH power unit

Figure 7a – ELECTRICAL DIAGRAM – 400V/3Ph/50Hz



QF	Power switch	SB5	Emergency stop knob
KM	Contactor DC24V	SQ1	Top limit switch
M	Motor 1.5KW/4P	SQ2	Safety height limit switch
T	Transformer 200VA	JD	Beeper
SB1	Lifting button	HL	Pilot lamp
SB2	Lowering/final lowering button	YV	Lowering solenoid valve
SB3	Safety engaging button	DT	Safety release electromagnet

Figure 7b – ELECTRICAL DIAGRAM – 230V/1PH/50Hz



QF	Power switch	SB5	Emergency stop knob
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T	Transformer 200VA	JD	Beeper
SB1	Lifting button	HL	Pilot lamp
SB2	Lowering/final lowering button	YV	Lowering solenoid valve
SB3	Safety engaging button	DT	Safety release electromagnet

CHAPTER 6 – SAFETY

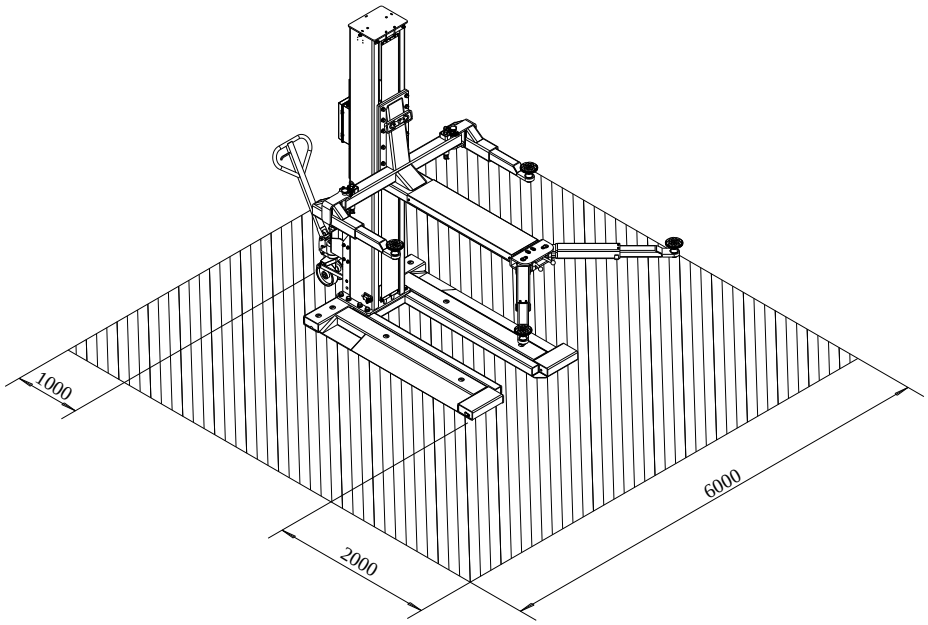
Read this chapter carefully and completely because it contains important information for the safety of the operator and the person in charge of maintenance.

	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, the safety area shown in the figure 8 must be vacated during lifting and lowering. The lift must be operated only from the operator's control site, as shown.
Operator's presence under the vehicle, during working, is only admitted when the vehicle is lifted 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.

Figure 8 - SAFETY AREA



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 SAFETY DEVICES

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

- A pressure overload valve in the hydraulic unit to prevent excessive weight.
- A flow restrictor placed in the hydraulic system to prevent the lift from lowering in case of pipeline failure.
- Alarm can be heard during the final lowering phase to avoid the crushing risks.
- Automatic mechanical back-up safety holds on the lift in the elevated position.

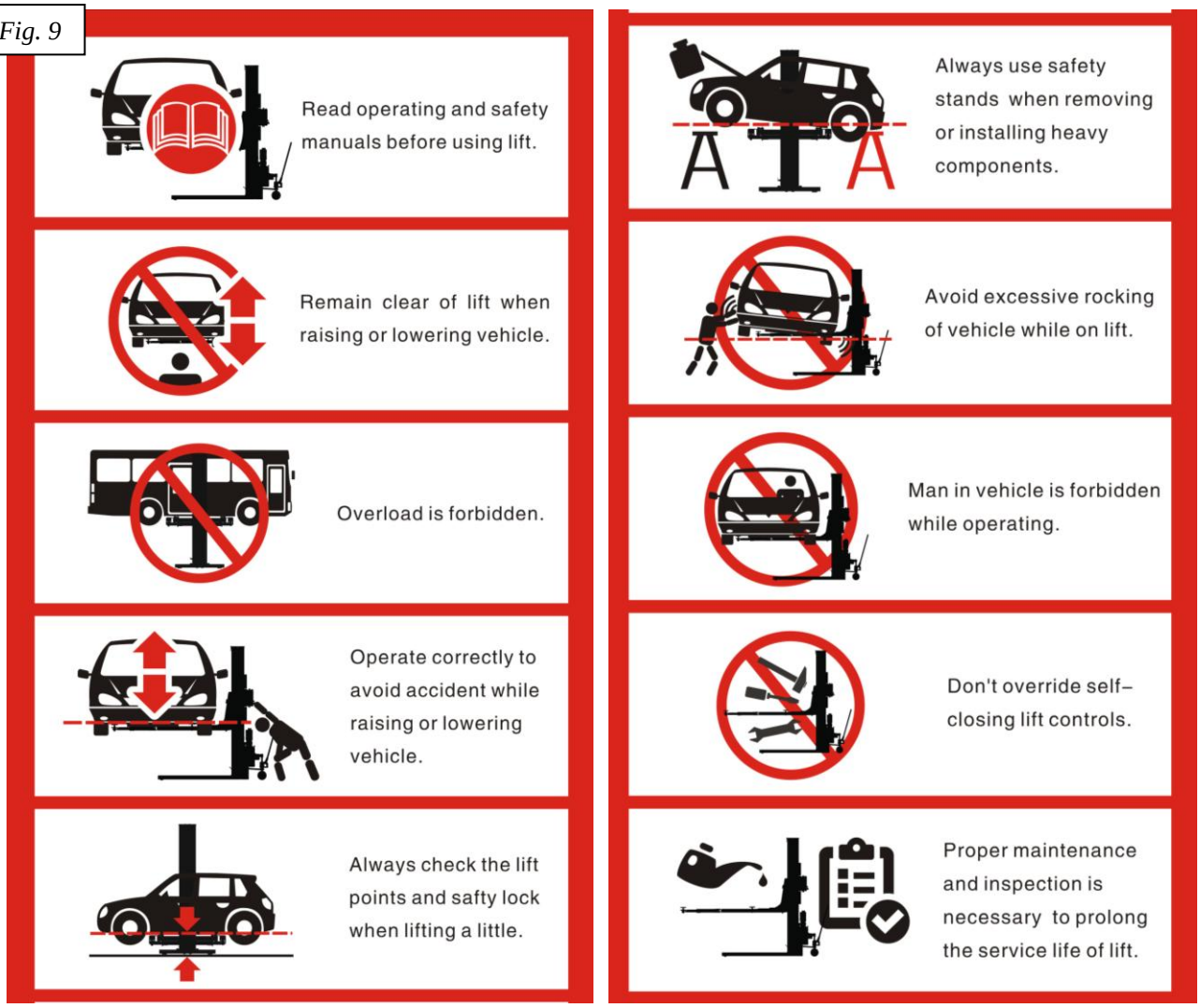
	The pressure overload valve has been preset by the manufacturer to a proper pressure. DO NOT try to adjust it to overrun the rated lifting capacity.

	It is strictly forbidden to modify any safety device. Always ensure the safety device for proper operation during the service.

6.3 SAFETY SIGNS

All safety warning signs (ref. fig.9) displayed on the lift are with the purpose to draw the operator's attention to dangerous or unsafe situations. The labels must be kept clean and they have to be replaced if detached or damaged. Read the meaning of the labels carefully and memorize it.

Fig. 9



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 a place 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 lighted.

7.3 FLOOR REQUIREMENT

The lift must be placed on a concrete floor in conformity with local regulations.
The surface where the lift must be placed must be even and leveled in all directions.

	**The surface where the lift must be placed must be even and leveled in all directions. Small differences in floor slope may be compensated for by proper shimming. Any major slope change will affect the level lifting performance. Failure to do so could cause lift failure resulting in personal injury or death.**

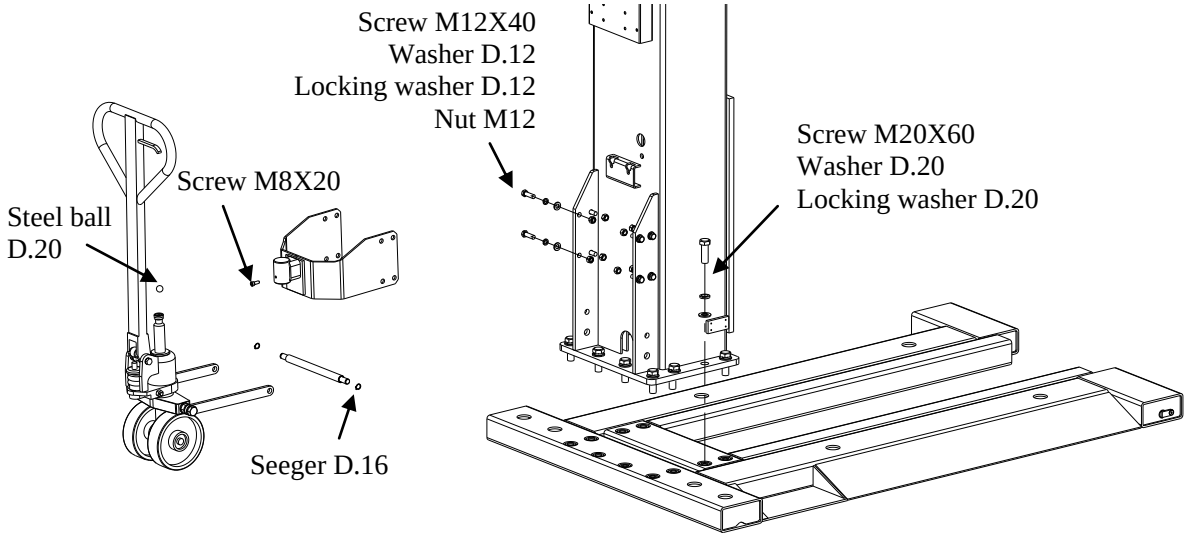
7.4 INSTALLATION OF COLUMN TO BASE (ref. fig.10)

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

	**Once the lift is unpacked, check the machine visually for any sign of damage.** **Keep the packing materials for the possible future transportation.** **Make sure to use caution to prevent the column from falling over during installation process.**

- Transport the packages using the proper hoisting equipment with the load capacity 1000kg at least to the installation site.
- Remove the package of the base and place it on the flat surface.
- Remove the package of the column.
- Take the accessories from the column.
- Install the column to the base using the supplied screws and washers as shown. *Make sure to use caution to prevent the column from falling over.*
- In the meanwhile, install the mobile jack with the column as shown.

Figure 10 – INSTALLATION OF COLUMN TO BASE



7.5 INSTALLATION OF ARMS

- Install the arm frame to the carriage using the supplied screws and washers as shown in the figure 11.
- Fit the telescopic arms to the arm frames as shown in the figure 12.
- Fit adaptors to the arm holes as shown in the figure 12.

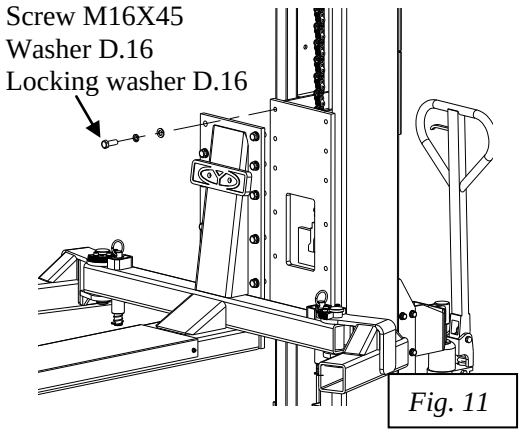


Fig. 11

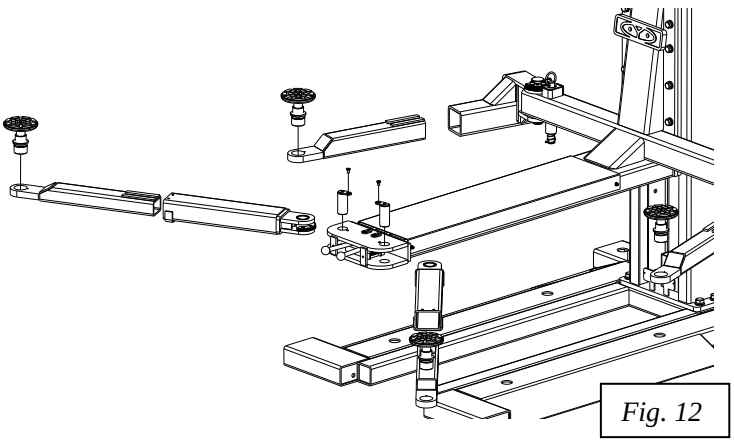


Fig. 12

7.6 INSTALLATION OF POWER UNIT (ref. fig.13)

- Place the power unit onto the bracket on the back side of the column with the screws and washes attached as shown.
- Secure it by tightening the screws.

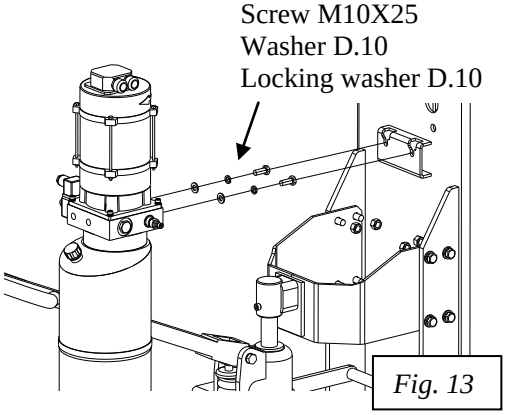


Fig. 13

7.7 CYINDER CENTERING AND CHAIN INSTALLATION

	Make sure to install the chain protection on the pulley. Failure to do so can cause the chain being out of the pulley resulting in the possible accident.

- Fit the cylinder is located in the center hole in the column base as shown in the figure 14.
- Install the chain protection on the pulley as shown in the figure 15.

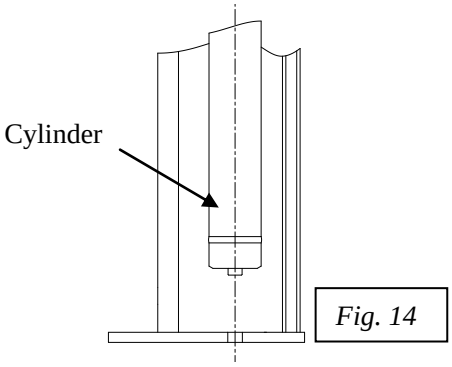


Fig. 14

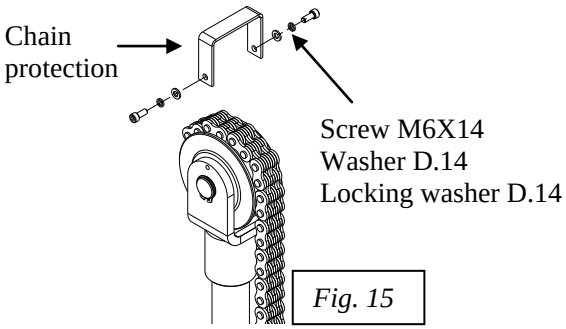
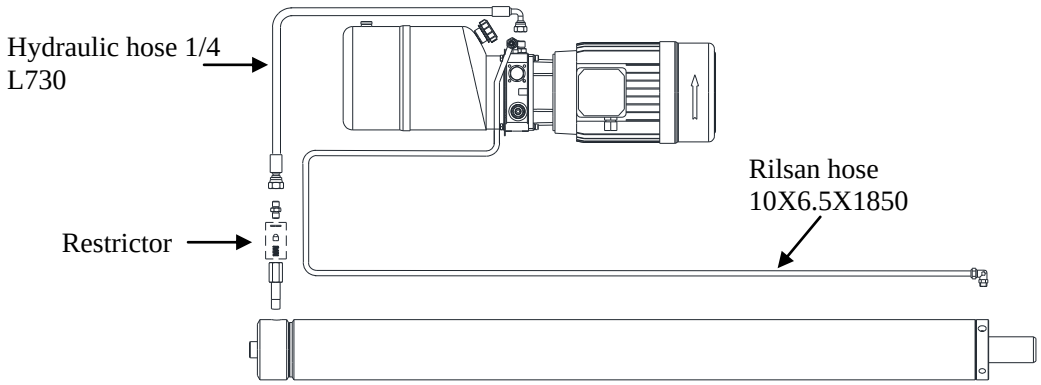


Fig. 15

7.8 CONNECTION OF HYDRAULC HOSE (ref. fig.16)

- Clean the hoses and fittings.
- Inspect all threads for damage and make sure that all hose fittings are in good condition.
- Seal the fittings properly and connect the hoses as shown.
- Tighten the hose fittings thoroughly.

Figure 16 – INSTALLATION OF COLUMN TO BASE



7.9 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.** **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.**

- Install the control panel onto the column as shown in the figure 17.
- Check to make sure the motor specification shown in the nameplate of the motor conforms to the local electric supply.
- Make the electric hookup referring to the wiring diagram (ref. fig.7) using included electric cable. The plug must be set in compliance with the local regulation in force.
- Make sure every component is connected properly.
- Make sure the connection of the phases is right and the lift is grounded.

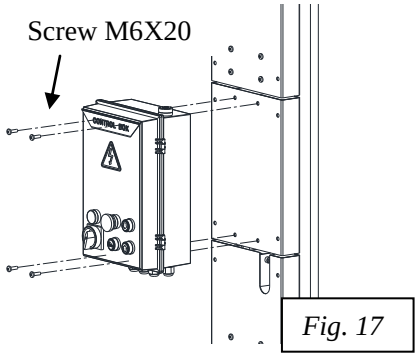


Fig. 17

7.10 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 properly during the installation of the lift

7.10.1 ADJUSTMENT OF TOP LIMIT SWITCH (ref. fig.18)

- Raise the lift at a height of *1870 mm* to check for the proper position.
- If the switch does not function properly, unloosen its lever and adjust it at a proper position until the lift can reach at the desired height.
- Tighten the screw after adjustment.

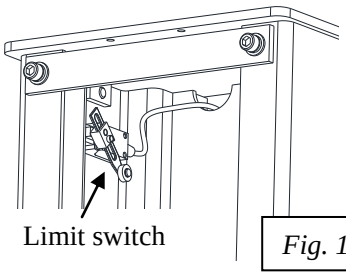


Fig. 18

7.10.2 ADJUSTMENT OF SAFETY HEIGHT LIMIT SWITCH (ref. fig.19)

- Place the lift at a height of *200 mm;*
- If the switch does not function properly, unloosen its lever and adjust it at a proper height (it is suggested to be lower 1-3mm than the cross beam).
- Tighten the screw after adjustment.

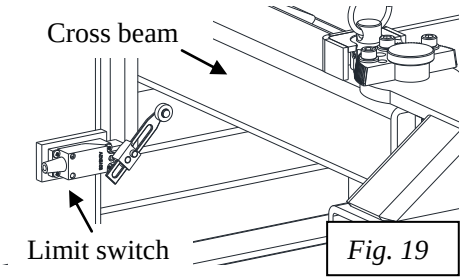


Fig. 19

7.11 OIL FILLING AND BLEEDING

⚠	**DO NOT run power unit with no oil. Damage to pump can occur.** **If motor gets hot or sounds peculiar, stop immediately and recheck the electric connection.**

- Use the hydraulic fluid recommended in the chapter 5.5.
- Remove the oil level plug on the oil tank and pour oil in the tank about 8 liters.
- Raising the lift slowly by pressing the lifting button until the lift reaches the full height. DO NOT continue pressing button after lift reaches full height. Damage to motor can occur if continued.
- Repeat raise and lower the lift completely at least 3 times.

7.12 CHECK BEFORE START-UP

	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.**

7.12.1 GENERAL CHECKS

- Make sure all pins and bolts to insure proper mounting.
- Make sure the chain for proper installation.
- Make sure the electrical system feeding voltage is equal to that specified in the nameplate on the motor, the electric system connection in conformity of the electric plan shown as the electric diagram (fig. 6) and for proper grounding.
- Make sure the lift is connected to the ground.
- Particularly, below checks must be followed:

7.12.2 MECHANICAL SAFETIES FOR PROPER INSTALLATION

- Check to make sure that safeties will properly engage by pushing the locking button and can be released properly but pushing the lowering button.
- When raising the carriages, listen to the safety hook fall into the safety rack. If not, check the cause if necessary.

7.12.3 HYDRAULIC SYSTEM FOR PROPER OPERATION

- Proper oil level in the tank, refill if needed.
- Raise the carriage to the full height and keep the motor running for 5 seconds.
- Check all hoses connections to make sure no leakage. Tighten the connections or reseal if necessary.
- Check the carriage for reaching its maximum height.
- Repeat the air bleeding of cylinders if necessary.

7.12.4 LIMIT SWITCH FOR PROPER OPERATION

- Check to make sure the top limit switch for proper operation. Verify that the power unit stops working when the carriages reaches the maximum height.
- Check to make sure the safety height limit switch for proper operation. Verify the power unit stops working when the carriage is lowered at about 200mm high.

7.13 ANCHORING COLUMNS

	If the lift is chosen to be anchored to floor, the concrete slab should have the compression strength of at least 3000 PSI and the minimum thickness 160mm with an extension of at least 1.5m from anchoring point. **The anchor bolts can be ordered from the manufacturer.**

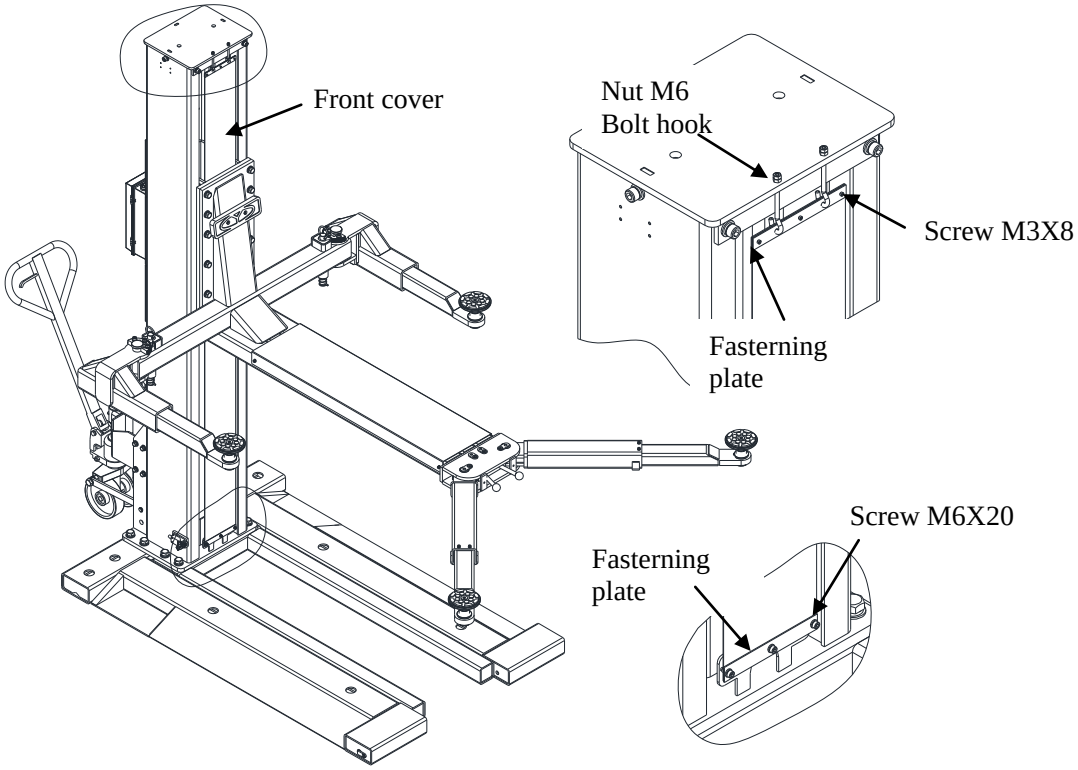
- Using the base plate as guide, drill each hole in the concrete approximately 160mm deep with the rotary hammer drill D.20. To assure full holding power, do not ream the hole or allow drill to wobble.

- 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, the columns will be plumb.
- With the shims and anchor bolts in place, tighten by securing the nut to the base.
- Make sure that the lift is anchored with 8 pieces of M20X160 bolts at least.

7.14 INSTALLATION OF FRONT COVER (ref. fig.20)

- Install the front cover as shown.

Figure 20 – INSTALLATION OF FRONT COVER



7.15 CHECK WITH LOAD

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

Carried out two or three complete cycles of lowering with the vehicle loaded and lifting and:

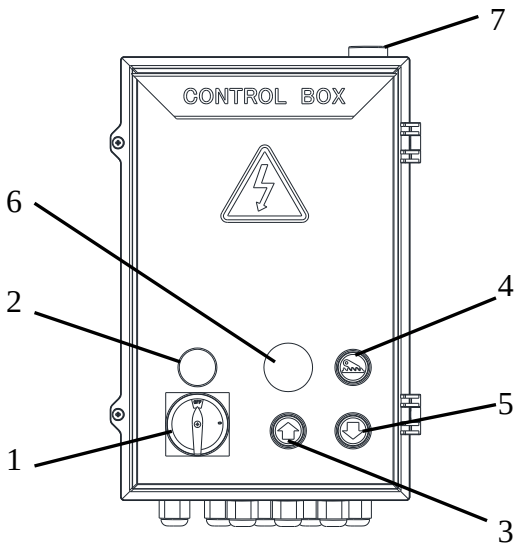
- Repeat the checks provided for by 7.12.
- Check no strange noise during lifting and lowering.

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 mechanical safeties are engaged before any attempt is made to work on or near the vehicle.** **Always lift a vehicle on the lifting pads.** **Never leave the lift in an elevated position unless the safeties are engaged.** **Do not permit the electric control panel to get wet!**

8.1 CONTROLS

Figure 21 - CONTROL PANEL



Controls for operating the lift are:

POWER SWITCH (1)
The 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:** lift electric circuit is powered

PILOT LAMP (2)

- It indicates that the lift electric circuit is powered.

LIFTING BUTTON (3)

- When pressed, the motor and hydraulic circuit are operated and the lift will be raised

SAFETY BUTTON (4)

- When pressed, the lowering solenoid valve operates the hydraulic circuit to lower the lift to engage the nearest safety rack.

LOWERING /FINAL LOWERING BUTTON (5)

- When pressed, the lift takes 1-2 seconds to clear off the safety, and then descends to the safety height.
- 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.

EMERGENCY KNOB (6)

- When pressed, the lift system stops immediately.

BEEPER (7)

8.2 LIFTING

- Make sure the lift is lowered fully.
- Move the lift by means of the mobile jack to the vehicle to be loaded. Pay attention that the column must be in a vertical position and not bump the vehicle.
- Position the arms under the vehicle.
- Adjust arms so that the rubber pads can contact the lifting points of the vehicle recommended by the vehicle manufacturer.
- Set the power switch on.
- Raise the lift by pressing the lifting button until the lifting adaptors contact underside of the vehicle.
- Make sure the vehicle is secured.
- Keep pressing the lifting button until reaching the desire height.

8.3 STANDING

- Press the safety button to engage the nearest mechanical safeties.
- Always ensure that the safeties are engaged before any attempt is made to work on or near the vehicle.

8.4 LOWERING

- Lower the vehicle by pressing the lowering button: the lift will take seconds to release the safety and then begin to descend under the weight of the load lifted.
- Lower the lift by pressing the lowering button to the safety height.
- Check to be sure the safety area is free of people and objects.
- Keep pressing the lowering button until the lift is lowered fully.
- Padlock the power switch.
- Move the lift out of working space. Be careful not to bump the vehicle.

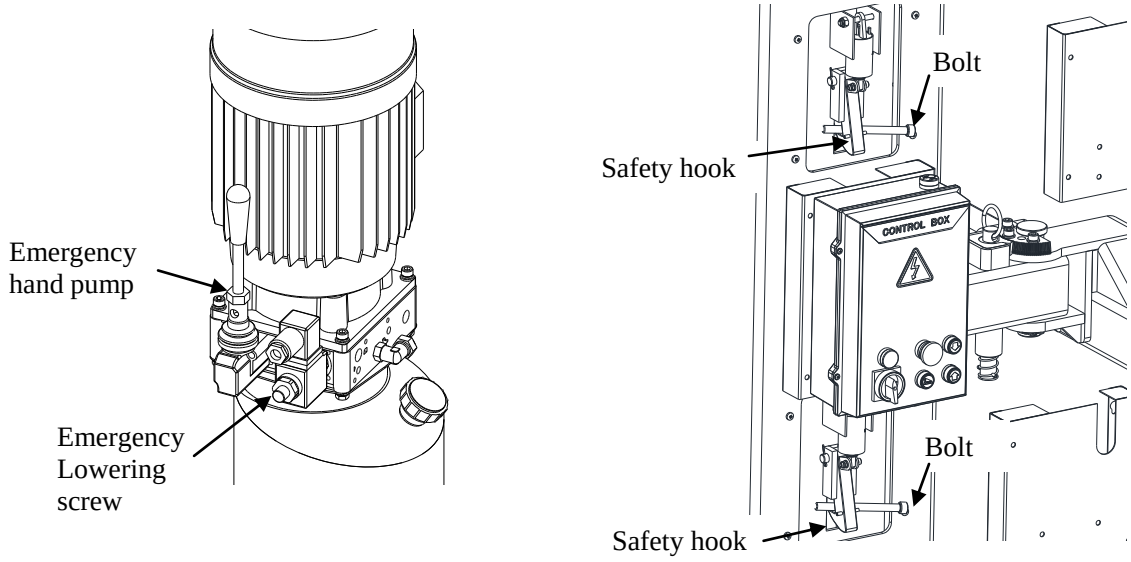
8.5 MANUAL EMERGENCY LOWERING (ref. fig. 22)

In case of emergency with no electric power, lower the loaded vehicle manually to its initial position as follows:

- Padlock the power switch.
- Remove the covers on back of the column to check if the mechanical safeties are engaged.
- If the safeties are engaged, operate the emergency hand pump (if ordered with the lift) to raise the lift a little bit to clear off the safeties.

- After the safeties are clear off, put a proper bolt under each safety hook as shown to keep the safeties released.
- Unscrew the emergency lowering screw by turning it anticlockwise until the vehicle is lowered fully. Screwing or unscrewing can reduce or increase the lowering speed.
- Retighten the emergency lowering screw by turning it clockwise.
- Remove the bolts from the safety hooks.
- Refit the back covers onto the column and tighten the screws.

Figure 22 – EMERGENCY LOWERING



	After manual lowering of the lift, reset ordinary operating conditions. Lift cannot be lifted if 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 manufacture or dealer to carry out maintenance.

	**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.

	**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

Daily pre-operation	• Check hydraulic connections and hoses for leaks • Check safety lock audibly and visually while in operation • Check bolts, nuts and screws are tight
Every 1 month	• Check all chain connections, pins and bolts to insure proper mounting • Check all arm pivot pins. Make sure they are properly secured • Check all lifting pads, replace if necessary • Check the hydraulic oil, fill or replace if necessary • Check hydraulic systems for proper operation
Every 12 months	• Verify that all components and mechanisms are not damaged • Check the electrical system to verify that the motor, limit switch and control panel operate properly (this work must be carried out by skilled electricians) • 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 lift does not work	The main switch is not turned on	Turn the switch on
	There is no power	Check Power on to restore if necessary
	The electrical wires are disconnected	Reconnect
	Fuses are blown	Check for correct voltage
		Replace
The lift does not raise	The lift is overloaded	Check the vehicle weight
	The motor direction of rotation is not correct.	Interchange the two phases on the main switch
	The oil in the power unit is not sufficient.	Add some hydraulic oil
	The UP button is faulty.	Check UP button and connection for proper operation. Replace if needed
	The maximum pressure valve clogged or leaks	Check and clean if dirty or replace if faulty
	The lowering valve does not close.	Check and clean, if dirty or replace if faulty
	The suction tube or pump filter is dirty.	Check and clean if needed.
	Presence of air in the hydraulic system	Bleed the hydraulic system
The lifting capacity is not sufficient	The pump is faulty	Check the pump and replace if needed.
	Oil leakages in hydraulic circuit	Check the circuit for any leakage
The lift does not lower when the lowering button is pressed	The lowering valve does not work properly	Check the valve and replace if needed.
	The electric-magnetic piston for safety lock is faulty	Check, replace if faulty
The motor does not stop when the lift reaches it maximum height	The maximum height limit switch does not work	Check the limit switch and replace if needed

* If the problems remain unsolved, call for technical support**.**