

# ELECTROHYDRAULIC 2 POST LIFT

Installation, operation and maintenance  
manual



MODEL: WK3460

*Please read this manual carefully before operating the equipment. It is the user's responsibility to read and take appropriate measures to ensure the safety of personnel and prevent damage to the equipment.*

Thank you for purchasing our products. Please read this manual carefully for the safe and correct operation of the car lift, and keep it handy for future reference.

- This manual is for model: WK3460
- Please read this manual regarding the safety of the car lift design.
- Ensure that this manual is delivered to the end user to ensure the safe operation of the equipment
  
- Do not use the car lift in a potentially explosive atmosphere.

ANY PART OF THIS MANUAL MAY NOT BE REPRODUCED IN ANY FORM WITHOUT PRIOR PERMISSION.

THE TEXT OF THIS MANUAL IS SUBJECT TO CHANGE

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## Chapter 1 DESCRIPTION EQUIPMENT

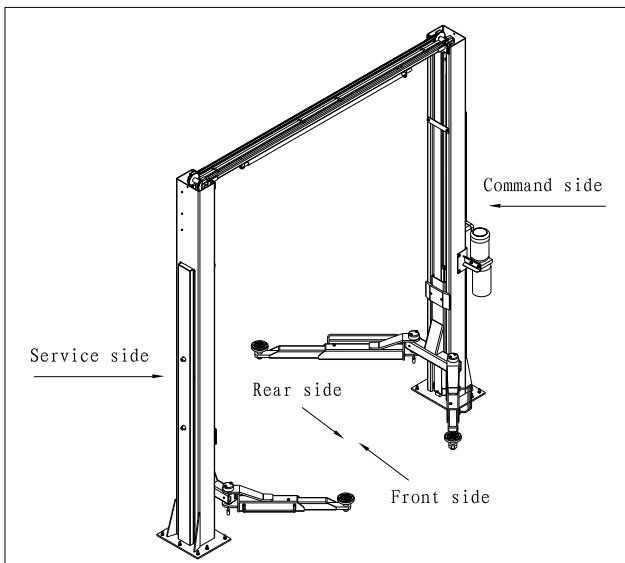
Electro-hydraulic 2 post lift

- this is a structure attached to the floor with anchor bolts, designed to lift and hold the car at a certain height from the floor

The lift consists of the following parts:

- ◆ fixed structure (racks);
- ◆ moving blocks (carriages + paws);
- ◆ lifting mechanisms (hydraulic cylinders + power unit);
- ◆ safety devices.

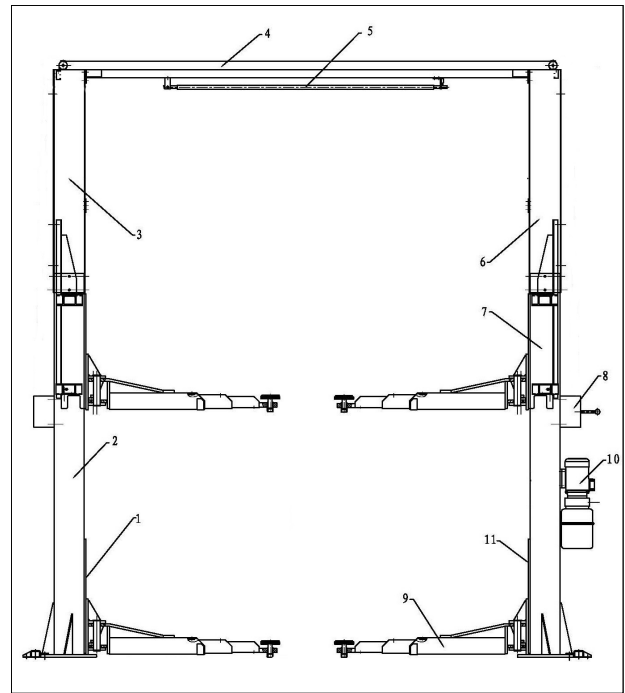
**Rice. 1** illustrates the working area of the lift, within which the operator operates.



rice. 1

- ◆ **Main stand:** on this stand lift control box
- ◆ **Auxiliary stand:** located opposite the main stand.

rice. 2 illustrates the components of the lift



pic 2

### 1.1 FIXED DESIGN

The design consists of:

- ◆ **racks, (auxiliary (Fig.2-2) and main (Fig.2-6) rack)** made of bent steel sheet. The base is welded to a plate with holes through which the stand is fixed with anchor bolts to the floor. The hydraulic power pack (Figure 2-10) is attached to the main column. Inside each rack there are moving blocks, thanks to which the vehicles are lifted.

- ◆ **The top bar (Fig.2-4)** manufactured made of bent steel sheet and attached to the top of the uprights with bolts.

### 1.2 MOVING BLOCKS

Each block consists of:

- ◆ **both carriages (Fig.2-7)** made welded steel sheet. It is connected to the hydraulic cylinder by a chain and cables, and at the bottom to the legs of the lift by means of pins.
- ◆ The carriage moves up and down inside the rack, on plastic guides.
- ◆ **Two paws with telescopic elements (Figure 2-9)** made from tubular steel. At the end of each leg there is a pickup, the height of which is adjustable depending on the type of vehicle that needs to be lifted. On the opposite side of the paws are holes for

attachment to the carriage.

### 1.3 LIFTING MECHANISM

Comprises:

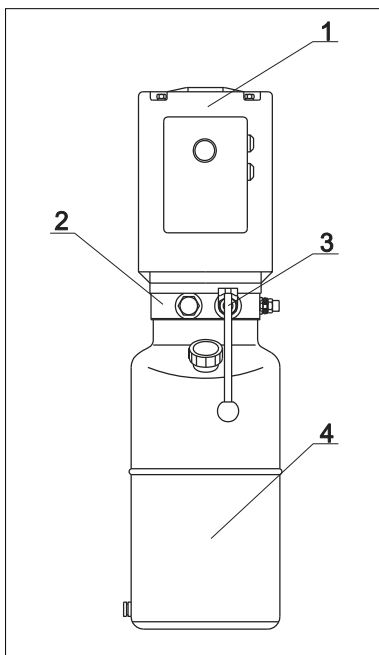
- ◆ **2 hydraulic cylinders** carry out lift the carriages with the help of chains. The carriages are synchronized with steel cables.
- ◆ 1 hydraulic block (Fig. 2-10) located on the main rack, which controls the operation of the cylinders.

### 1.4 HYDRAULIC POWER UNIT

The hydraulic power unit consists of:

- ◆ electric motor (... **3-1**);
- ◆ gear hydraulic pump (**rice.3-2**);
- ◆ manual oil drain valve serves to lower the carriages; (Fig. 3-3) (See chapter Operation and Maintenance)
- ◆ maximum pressure valve;
- ◆ oil reservoir (**rice.3-4**);
- ◆ flexible supply and return hoses hydraulic oil to cylinders

**Note: The hydraulic oil supply hose may be under pressure.**



**rice. 3 Hydraulic power unit**

### 1.5 SAFETY DEVICES

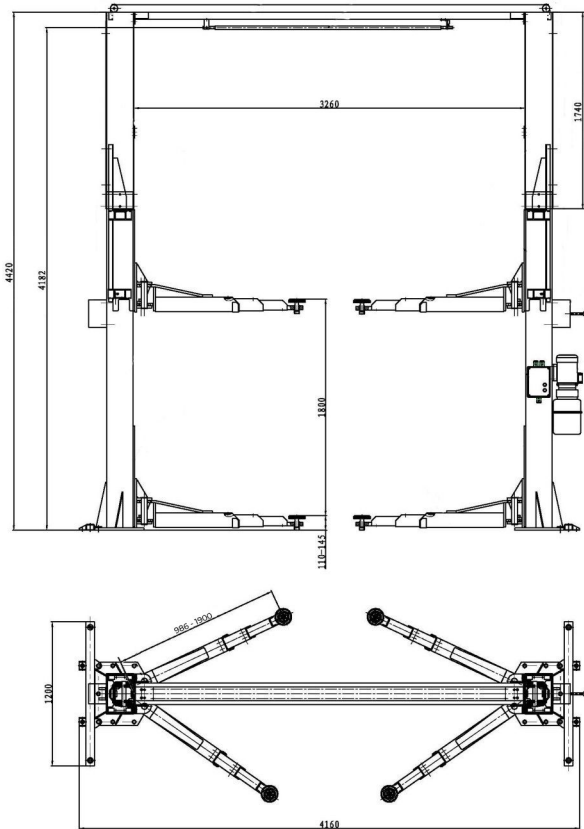
Safety devices include:

- ◆ mechanical safety devices carriages;
- ◆ paw blocking system;
- ◆ 4 fuses on the paws;
- ◆ synchronizing device controlling movement of carriages;
- ◆ limit switch;
- ◆ general electrical safety devices;
- ◆ general hydraulic safety devices.

These safety devices will be described in more detail in subsequent chapters.

## Chapter 2 TECHNICAL SPECIFICATIONS

### 2.1 GENERAL DIMENSIONS



*rice.4*

modelNo.	WK3460
load capacity	6,000kg
overall height	4420mm
overall width	4150mm
min. lifting height	110mm
Max. lifting height	1945mm
Width between uprights	And 3260mm
Leg length	986~1900mm
Rise time	≤60s
Descent time	≤40s

**Table 1**

### 2.2 ELECTRIC MOTOR

	3 phase	
power	3.0 kW	
voltage	400V 3ph +/-5%	
frequency	50Hz	
Current consumption	400V: 5.9A	
number of poles	4	
speed	1400 rpm	
design	B14	
Insulation class	And IP54	
type	90L4	

**table 2**

The motor must be connected according to the attached wiring diagram.

The direction of rotation of the motor must be the same as shown by the arrow on the pump: otherwise the electrical connections must be changed. (see **Chapter 4 Installation - Electrical connection**)

### 2.3 HYDRAULIC PUMP

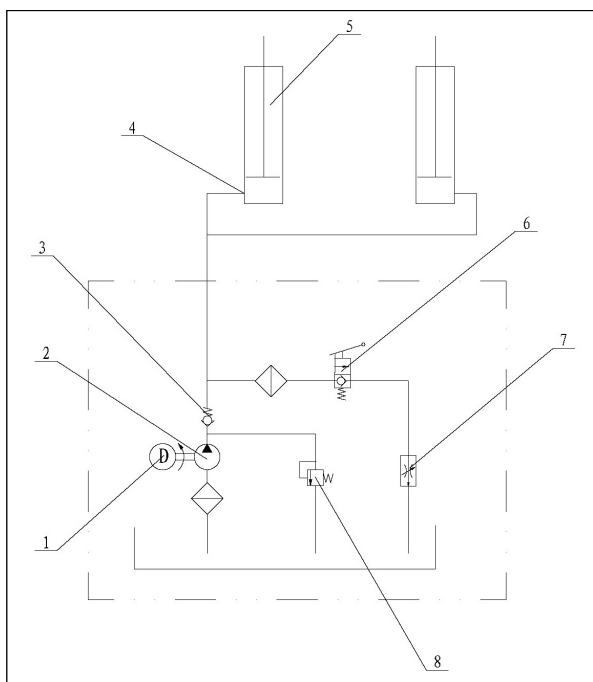
	ENGINE	
	3.0 kW	
type	R	
model	PHC	
size	7.8cm <sup>3</sup> / g	
drive: connecting type	E32	
continuous working pressure	And 180bar	
operating pressure.	180bar	

**table 3**

### 2.4 HYDRAULIC OIL

The reservoir contains hydraulic mineral oil in accordance with ISO/DIN 6743/4 with a pollution level not exceeding class 18/15 in accordance with ISO 4406, such as IP HYDRUS OIL 32, SHELL TELLUS OIL T32 or equivalent. (Oil not included)

## 2.5 HYDRAULIC PRINCIPLE DIAGRAM



1	Motor	5	Cylinder
2	Pump	6	manual release valve
3	check valve	7	flow control valve
4	pressure valve	8	drain valve

rice.5

## 2.6 WEIGHT AND DIMENSIONS OF THE VEHICLE FACILITIES

The lift can be applied to almost all vehicles weighing no more than 6000kg, whose dimensions do not exceed the following options: :

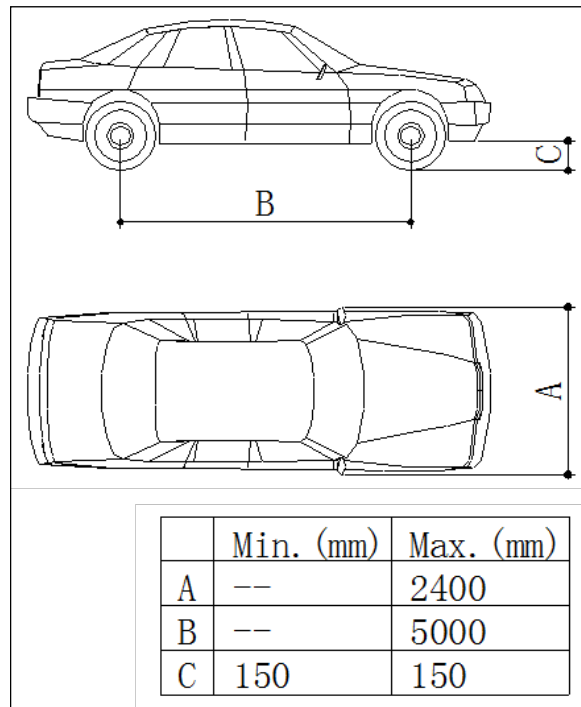
Max. width: 2400mm  
max wheelbase: 4200mm

## 2.7 MAXIMUM DIMENSIONS OF THE VEHICLE TO BE LIFTED

*vehicles with low ground clearance may be damaged when operating this lift. It is necessary to carefully monitor the installation of sports cars on the lift.*

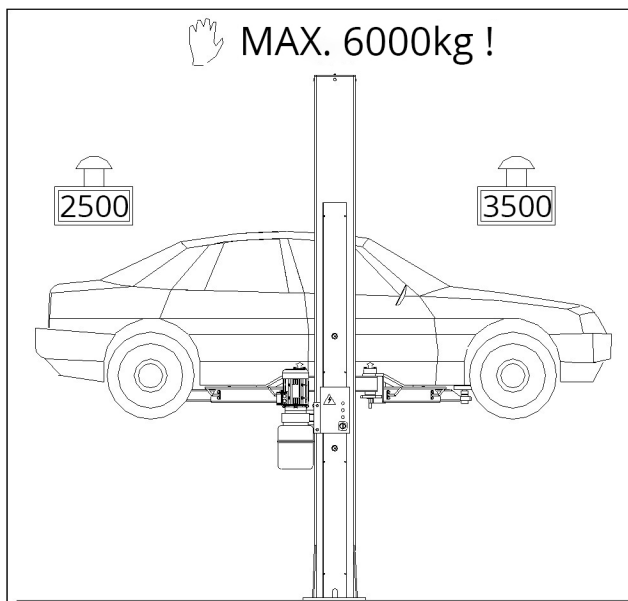
The safety zone depends on the size of the car.

The diagrams below illustrate the criteria for determining the limits of use of the lift.



rice.6

**Necessarily check maximum load capacity And distribution means. Maximum car weight lifted Not must exceed: 6000kg.**



rice. 7 load distribution



## Chapter 3 Precautions

It is very important to read this chapter of the manual carefully and from beginning to end, as it contains important information about the risks to which the operator of the lift and the technician who maintains it may be exposed in case of incorrect operation of the lift.

This chapter provides clear explanations regarding certain hazardous situations that may arise during the operation and/or maintenance of the lift; safety systems, their installation and correct operation; residual risks and operating procedures (general and specific precautions to eliminate potential hazards).

### ATTENTION

Lift intended For rise And keeping vehicles at the required height in indoor workshops. The use of the lift for any other purpose is not permitted. In particular, the lift is not intended for:

- ◆ cleaning and painting work
- ◆ staff recovery
- ◆ use as a press
- ◆ use as an elevator
- ◆ use as a jack for lifting the car body or changing wheels.

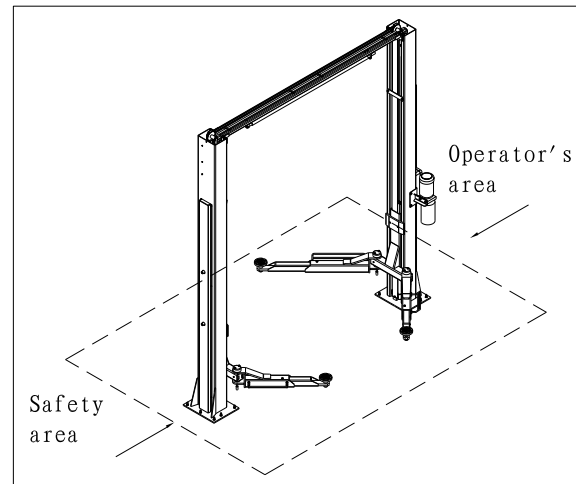
**The manufacturer is not responsible for personal injury, damage to vehicle or other property damage resulting from improper use of the lift**

When lifting and lowering, the operator must be in the control zone, as shown in figure 8. The presence of people in the danger zone is prohibited. When performing work, it is allowed to stay in the area under the car if it is raised and fixed in the raised position.

**IT IS FORBIDDEN TO OPERATE THE LIFT WITHOUT THE SAFETY DEVICES OR WITH THE**

**DEVICE PROTECTION FEATURES.**

**FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN SERIOUS INJURY TO PERSONNEL AND DAMAGE TO THE LIFT AND TO THE VEHICLE.**



*rice. 8 working area*

### 3.1 GENERAL PRECAUTIONS

The operator and installer must comply with the regulations and requirements of national standards.

Moreover, the operator and installer must:

- ◆ always work in a designated area, as stated in the manual;
- ◆ never remove or disable safety devices, mechanical, electrical or any other kind of safety devices;
- ◆ read the notes regarding security safety instructions attached to the lifting mechanism and the safety information described in this manual.

Safety notes in this manual:

**DANGER:** indicates dangerous situations and/or actions that could result in serious injury or death.

**WARNING:** indicates situations and/or activities that are unsafe and may result in varying degrees of injury or death.

**ATTENTION:** indicates dangerous situations and/ or actions that may cause minor injury to service personnel and/or damage to the lift, vehicle, or other property.

### 3.2 RISK OF ELECTRIC SHOCK

special symbols relating to safety are attached to the lift in places where there is a risk of electric shock is potentially high

### 3.3 HAZARDOUS SITUATIONS AND SAFETY DEVICES

It is necessary to assess the likelihood of danger to operators and servicemen if the vehicle is installed on platforms in a raised state, and be aware of the protective devices provided by the manufacturer to reduce their occurrence to a minimum.

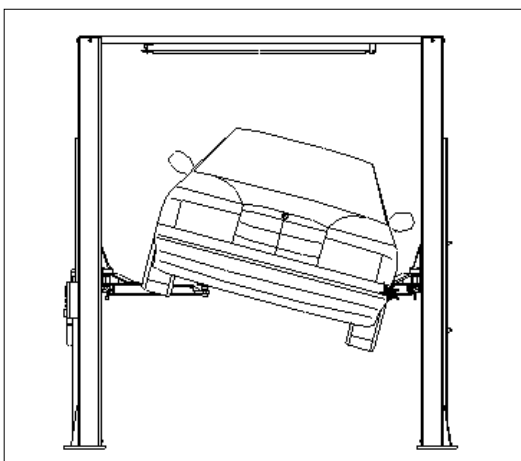
### 3.4 LONGITUDINAL AND TRANSVERSE OFFSET

Longitudinal displacement is the displacement of the lifted vehicle forward or backward.

Lateral displacement - displacement of the vehicle to the left or right, especially when lifting.

Such displacements can be eliminated by correctly installing the car on the lever arms, their height must first be adjusted to the height of the car

It is forbidden to move the car on the lifting arms and adjust the supports until the car is completely lowered to the floor, that is, after the supports are out of contact with the car.



*rice. 9 Danger of falling vehicle*

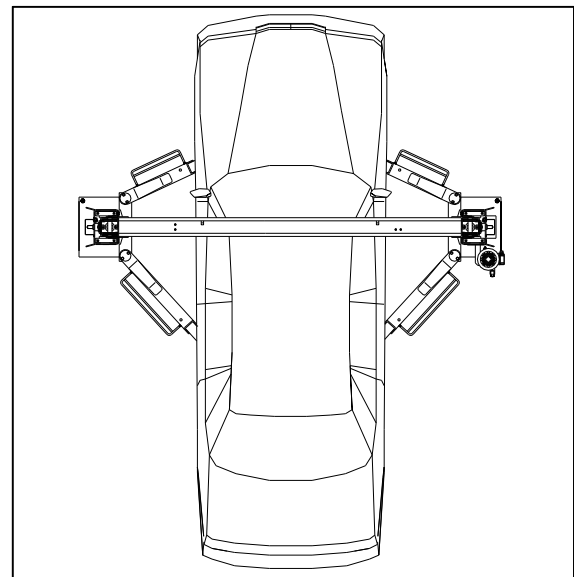
### WARNING

**DO NOT ATTEMPT TO MOVE A VEHICLE THAT IS MOUNTED ON THE LIFTS.**

You need to install automobile on lift so that its weight is correctly distributed on the legs (Fig. 10). For the safety of the lift and the employee, remember:

- ◆ The engine must be stopped, the clutch and parking brake are on.
- ◆ The vehicle is correctly positioned on lift (fig.10)

Dimensions And weight car Not must exceed the permissible maximum values (Fig.6-7).



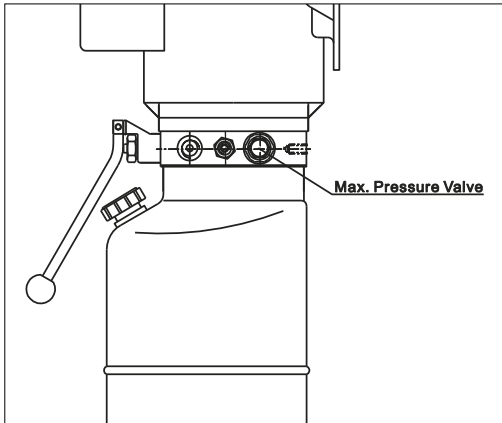
*Rice. 10 Proper vehicle weight distribution*

### 3.5 RISKS WHEN LIFTING THE VEHICLE

Next safety devices installed to protect the lift in case of overload and malfunction:

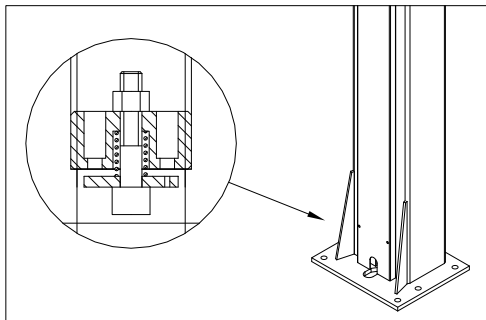
- ◆ the thermal relay is installed in the electrical unit and is activated when the motor is overloaded.

◆ Maximum pressure valve (Fig.11) is installed in the hydraulic unit and is activated when the lift is overloaded.



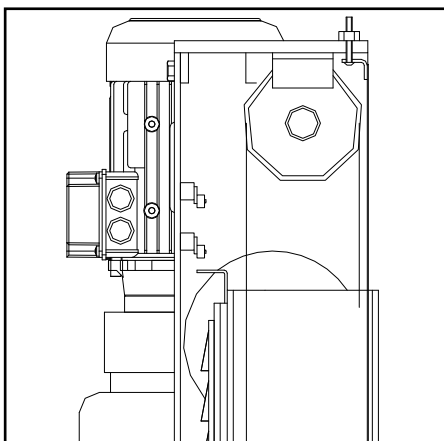
*rice. eleven*

◆ In the event of an unexpected large leak in hydro chains (damaged a tube), block valves at the bottom of each cylinder will operate. (*rice.12*)



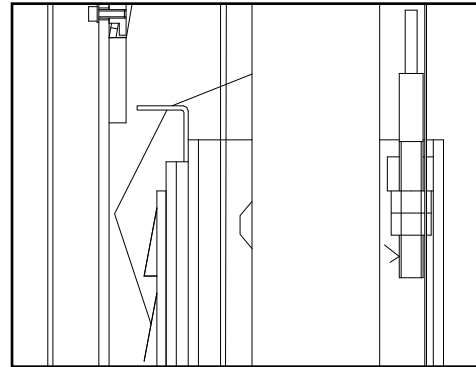
*rice. 12*

◆ When climbing to the maximum height lift limit sensor is triggered (Fig. 13)



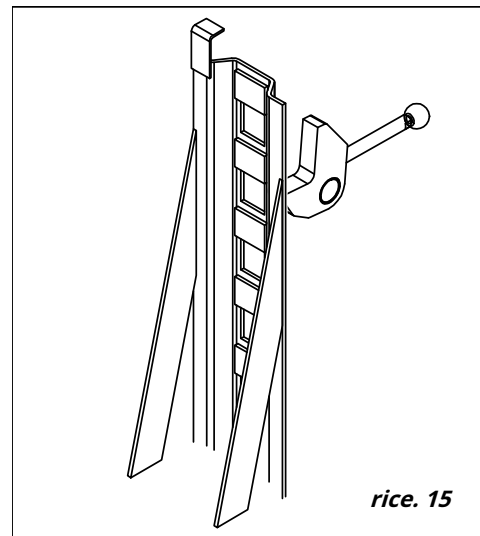
*rice.13*

◆ Both cables must be synchronized when lifting and lowering (Fig.14)



*rice. 14*

◆ In the event of a hydraulic cylinder failure, safety stoppers (Fig. 15) in the racks. They move under the action of a spring and immediately stop the carriages, preventing them from falling.



*rice. 15*

◆ If the carriage rises to a height, corresponding to the allowable value, a sensor-limiter is located on the upper part of the control post and it works as a stop (Fig. 14) of the control post carriage. If the first sensor is defective, the second sensor will turn on 3 seconds after the carriage has moved.

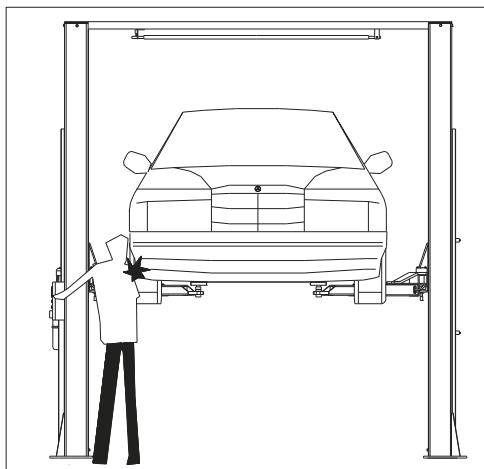
◆ In the event of a sensor failure, the carriage stops a few mm higher. At this moment, the rod in the hydraulic cylinder occupies the limit position and the maximum pressure valve (in the hydraulic unit) is turned on.

### 3.6 HAZARD TO THE HEALTH OF PERSONNEL

This paragraph illustrates the hazardous situations that may be exposed to the operator, installer or any other person located in the working area of the lift, in case of improper operation of the installation

### 3.6.1 RISK OF INJURY (OPERATOR)

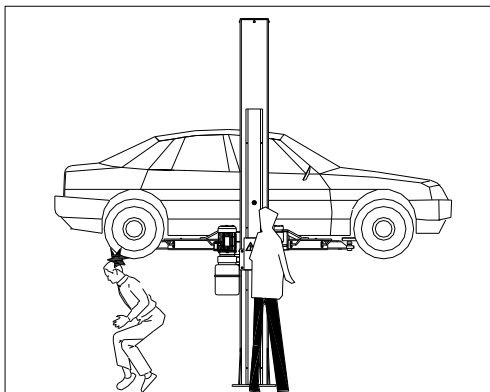
Occurs if the mechanic is not near the control panel. When lowering the vehicle, the mechanic must never be in the area of the moving mechanisms. It should be at the control post. **(Fig. 16)**



*rice. 16*

### 3.6.2 RISK OF INJURY (PERSONNEL)

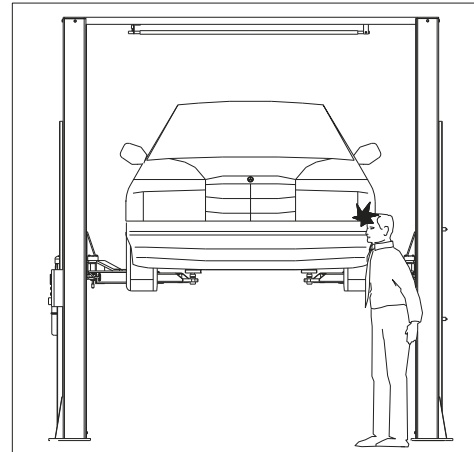
At the time of lowering the vehicle, personnel are prohibited from being under the moving mechanisms of the lift (Fig. 17). The mechanic must not lower the vehicle if there are people in the danger zone.



*rice. 17*

### 3.6.3 IMPACT HAZARD

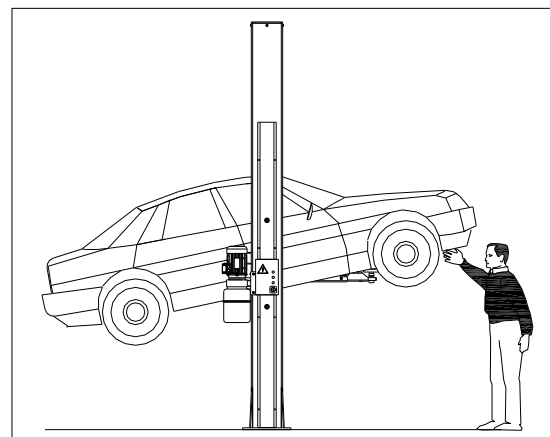
Occurs when the car is at the level of a person's head. When hanging the vehicle at a low height (less than 1.75 m from the floor), people may be injured if they accidentally hit parts that are not marked with a color **(rice. 18)**



*rice. 18*

### 3.6.4 VEHICLE DISPLACEMENT HAZARD

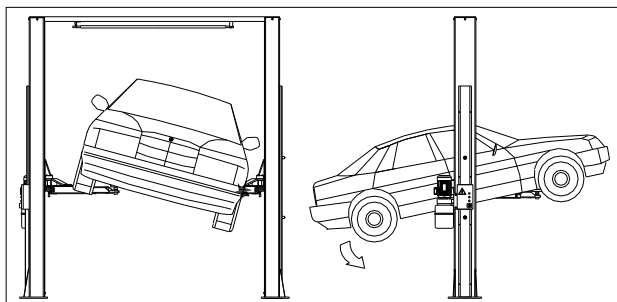
The displacement of the vehicle can occur during the performance of work as a result of the influence of a force sufficient to displace (Fig. 19). If the vehicle is large or heavy, misalignment can cause overload and loss of stability. Measures should be taken to prevent it.



*rice. 19*

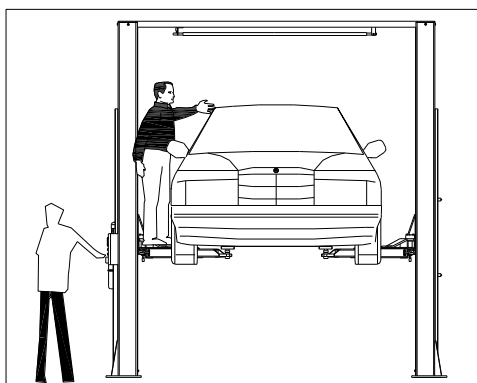
### 3.6.5 FALLING HAZARD

It is associated with the wrong position of the car on the pickups (Fig. 20) or the wrong installation of the pads on the paws themselves.



rice. 20

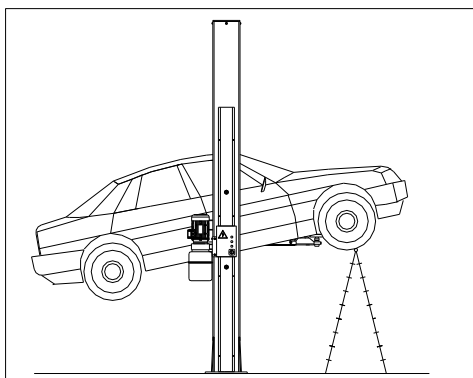
**IT IS FORBIDDEN TO CLIMB THE LIFT OR START THE ENGINE WITH THE VEHICLE LIFTED (Fig. 21)**



rice. 21

**NOT LEAVE ITEMS BETWEEN SUPPORTS OR IN ZONE MOVING MECHANISMS.**

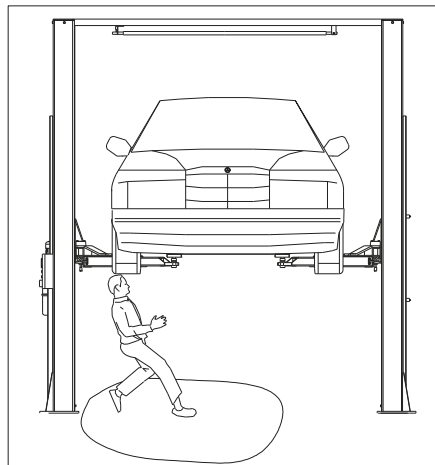
This may prevent lowering or cause the vehicle to fall during lowering. (Fig. 22)



rice. 22

### 3.6.6 SLIPPER FLOOR

Danger of injury due to oil stains on the floor near the lift. (Fig. 23)



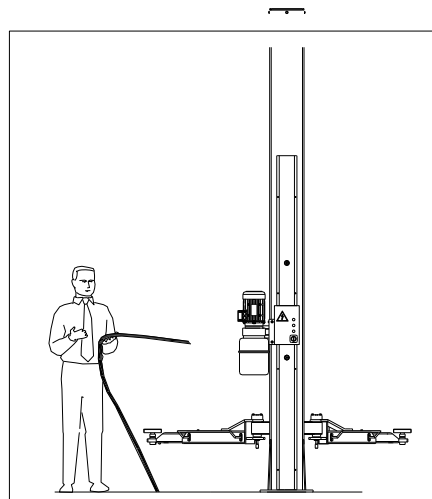
rice. 23

**ALWAYS KEEP CLEAN AND REMOVE OIL STAINS IN THE WORK AREA**

To avoid the risk of slipping, it is recommended to wear protective clothing (shoes on non-slip sole).

### 3.6.7 RISK OF ELECTRIC SHOCK

Electric shock hazard in the area wiring. Forbidden direct jets of water, steam towards the lift, use high-pressure washers pressure, solvents or paint in close proximity to the ski lift. Avoid getting these substances on the electric control panel of the lift. (Fig. 24)



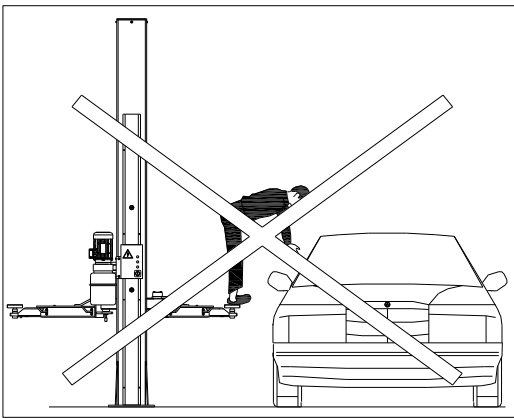
### 3.6.8 RISK OF DAMAGE TO LIFT COMPONENTS DURING OPERATION

Manufacturer uses certain materials and production technologies in the production of the lift to ensure reliable and safe operation. The lift should be used in accordance with the manufacturer's instructions, serviced according to the recommended intervals, as indicated in **section 6 "MAINTENANCE"**.

- ◆ Maintenance of electrical equipment must be carried out by qualified electricians.
- ◆ It is forbidden to remove or disable safety devices.
- ◆ Disposal of harmful substances must be carried out in accordance with applicable law.

### 3.6.9 HAZARD DUE TO INCORRECT OPERATION

It is forbidden to sit or stand on the legs of the lift, including after lifting the car (Fig. 26). Any improper use of the lift can cause injury to people, including those working near the lift. Therefore, it is important to comply with all operating, maintenance and safety requirements of this manual.



*rice. 25*

### 3.7 INSTRUCTIONS FOR SAFE MAINTENANCE

- ◆ Maintenance and repair should be performed only by specialists.
- ◆ Turn off and lock the main lift switch before servicing or repairing the lift.
- ◆ Repair of sensors and impulse generators must only be carried out by qualified personnel.

## Section 4 INSTALLATION

THE FOLLOWING OPERATIONS MUST BE CARRIED OUT BY QUALIFIED PERSONNEL WHO IS AUTHORIZED BY THE MANUFACTURER OR DEALER. IN

OTHERWISE, PERSONNEL MAY BE SERIOUSLY INJURED AND/OR THE LIFT MAY DAMAGE WITHOUT THE POSSIBILITY OF SUBSEQUENT REPAIR.

### 4.1 REQUIRED CONDITIONS FOR INSTALLATION

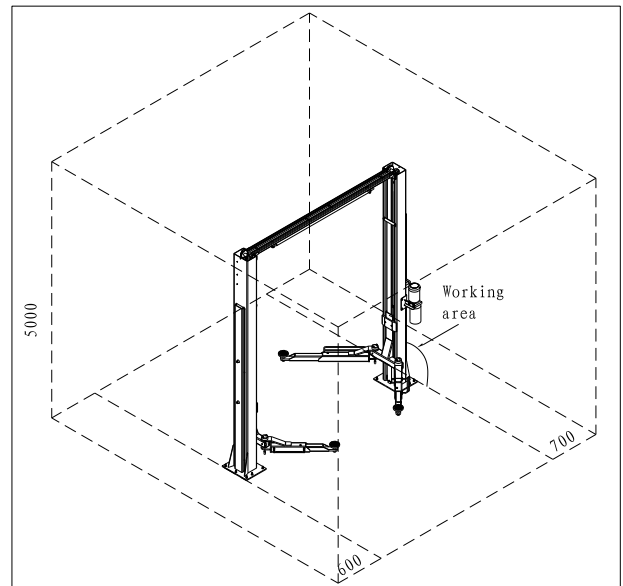
Lift intended For work V enclosed spaces protected from rain. The installation site must be clean, there should not be washing and painting posts next to it. The lift must be installed away from paint and solvent storage areas and must not be operated in an area with an explosive atmosphere.

**INSTALLATION LOCATION SHOULD HAVE SUITABLE DIMENSIONS AND SAFE SIZE.**

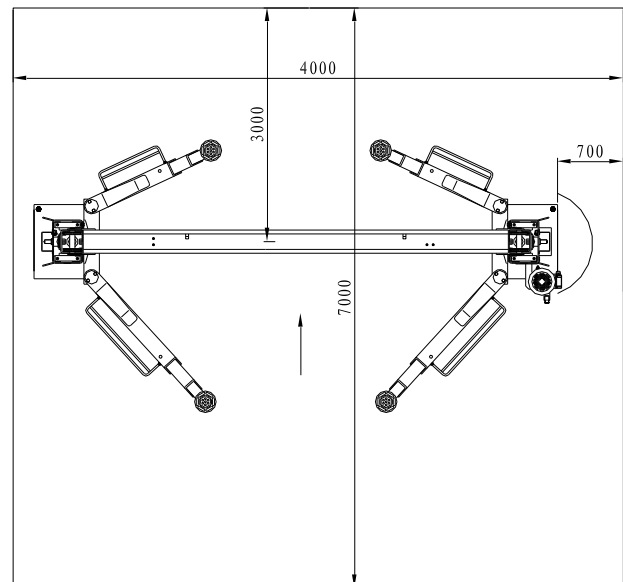
Lift necessary install on a certain distance from obstacles: walls, columns, other equipment, etc., which is marked in fig. 26 and in accordance with the requirements of the legislation of the country

#### You need to check:

- ◆ **Minimum Height:**5000 mm, taking into account the height of the car, the maximum height of the levers (1900 mm), the height of the racks (2828 mm).
- ◆ **Minimum distance from walls:** 600 mm.
- ◆ **Minimum working area width:**700 mm
- ◆ Additional zone for the control unit
- ◆ service area, vehicle access and escape routes.
- ◆ position relative to another equipment
- ◆ Proximity to energy sources



rice. 26



rice. 27

### 4.2 LIGHTING REQUIREMENTS

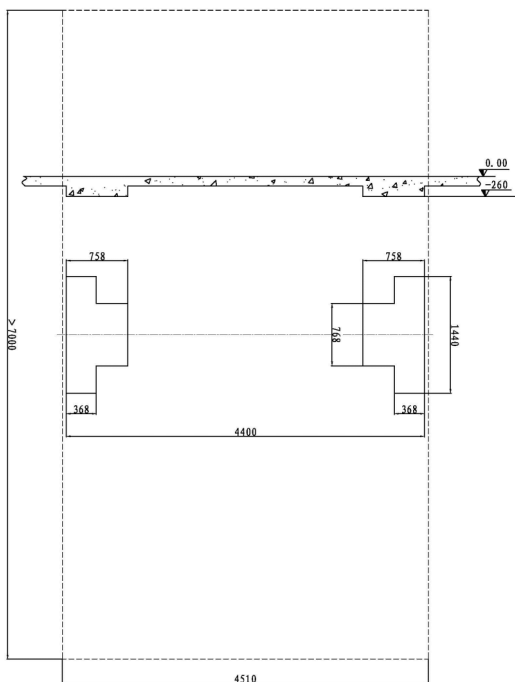
All parts of the lift must be well lit in order to make the correct adjustments.

And service. dark areas, areas of glare and reflection should not be. Lighting must comply with the applicable laws of the country in which

operated lift (adjustable by lighting specialist).

### 4.3 FLOOR REQUIREMENTS

The lift must be installed on a flat concrete floor with a minimum thickness of 300 mm and a resistance of more than 80N/mm<sup>2</sup>. The floor must be level (permissible level deviation - 10mm). The manufacturer should be consulted for special conditions.



rice. 28

#### 4.4 INSTALLATION

##### **WARNING**

**INSTALLATION MUST ONLY BE PERFORMED BY AN AUTHORIZED AND QUALIFIED PERSONNEL.**

When assembling the lift, take into account the weight of the individual parts to ensure a minimum load capacity of 500 kg and a maximum lifting height of 2900 mm.

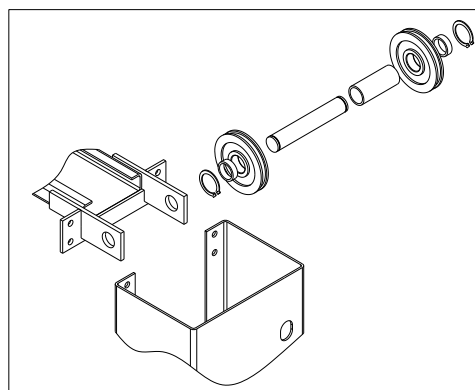
Before starting assembly, check the availability of the necessary parts

##### 4.4.1 INSTALLING STANDS

◆ Install the racks on the base, while the open part of the rack must be turned inward.

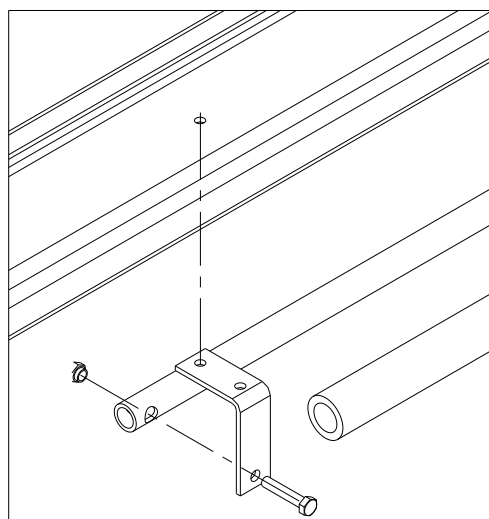
◆ install a limit switch at the top of the main column.

Attach cross bars to both posts as shown in fig. 29

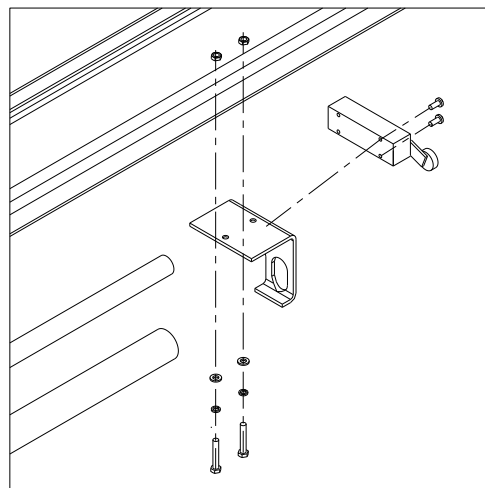


rice.29

◆ install a protective arc, as shown in Fig.30 and 31



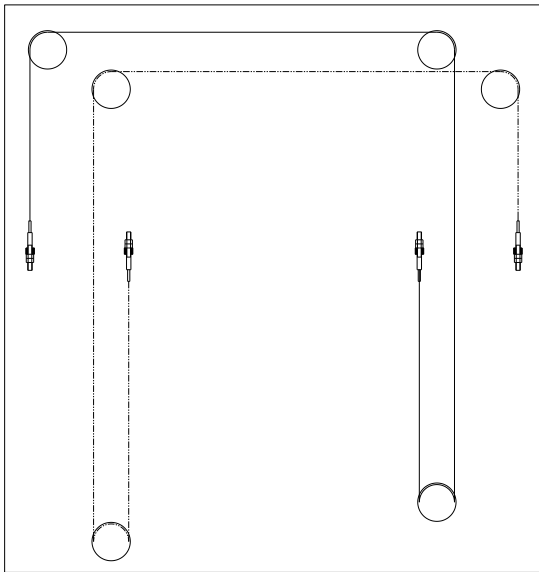
rice.thirty



rice.31

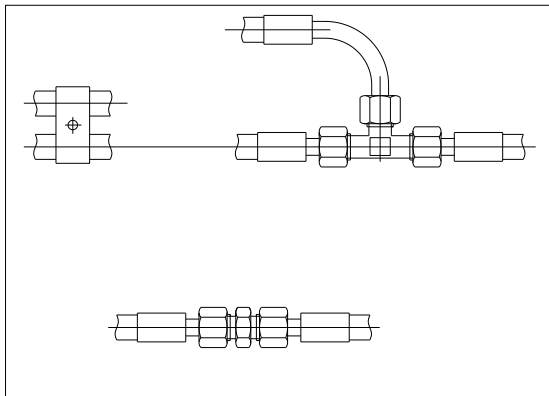


- ◆ Position the timing cable according to *rice.32*.



*rice.32*

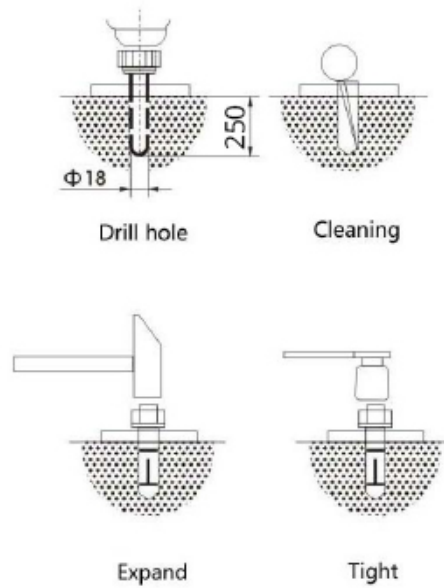
- ◆ Connect a long hose to both racks according to fig.33, fix it (connect the upper part to the main stand, the lower part to the auxiliary). Secure the oil line with a clamp.



*rice.33*

- ◆ Attach the main stand (Make sure that the carriage is fixed, do not allow it to move)

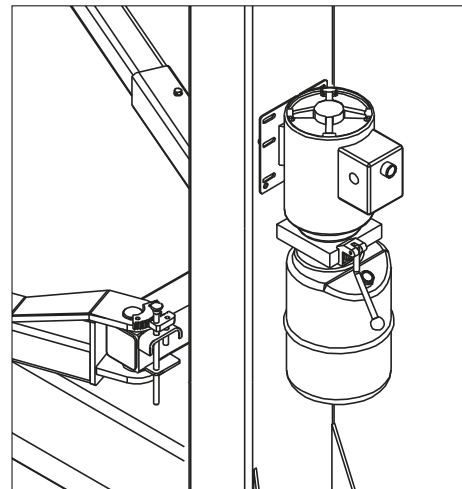
Adjust the upright vertically and install the expansion bolt as shown on *rice.34*.



*rice.34*

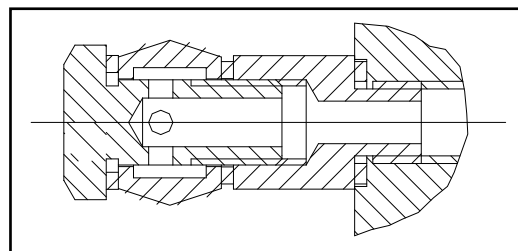
#### 4.4.2 HYDRAULIC PLANT

- ◆ Install the pump on the block according to fig.35 and fix it on the base of the control post.



*rice.35*

- ◆ Connect the hydraulic unit to the circuit with using a flexible hose (fig. 36)



*rice.36*

- ◆ Tighten all fasteners securely, including including factory installed
- ◆ Pour into tank 8 liters of hydraulic fluid ISO 32 such as IP HYDRUS OIL 32, SHELL TELLUS OIL T32 or equivalent (see section 2 "TECHNICAL DATA")
- ◆ Remove filler cap oil and replace it with the drain cap provided.

#### 4.4.3 CONNECTING TO THE MAINS

##### **WARNING**

*Subsequent work must be carried out by a qualified person.*

**4.4.3.1** Before connecting the electrical system make sure that

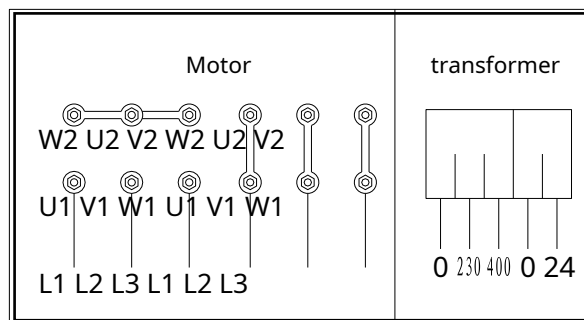
- ◆ The power supply system of the lift is equipped with safety device in accordance with the standard in force in the country where the equipment is installed.

- ◆ The electrical cable must be following section:

voltage 400V, 3 phases.....min. 2.5mm<sup>2</sup>

- ◆ Voltage fluctuations must be within allowable values

Manufacturer supplies lift With 400V three-phase power supply system.



*rice.37*

**4.4.3.2** Connect the power cable and limiter sensor wire to the terminal block of the motor mounting block according to the diagram on page 23.

**4.4.3.3** Wires should be secured with nylon clamp.

**4.4.3.4** Close the cover of the electrical box,, press the UP button, the direction of rotation of the motor must match the arrow on the pump housing.

**WARNING: A pump rotating in the wrong direction for a long time can cause serious damage.**

**4.4.3.5** Make sure the end caps switches work properly when activated manually.

#### 4.4.4 INSTALLATION OF THE LIFTING LUGS

- ◆ Press the start button, raise the carriages to a height 70 cm above the floor

- ◆ Apply lubricant to holes  $\phi 40$  at the ends of the paws.

- ◆ Install the paws in the carriage supports and insert pins into holes, fig.38. The profile of the paws corresponds to the position of the car at the time of arrival.



*rice.38*

- ◆ Lock snap ring at the end pin.

### **WARNING**

***Need to check connection overload control devices before turning on the power supply of the lift.***

#### **4.4.5 ANCHOR BOLTS**

- ◆ Run 14 holes in the base with a 18mm cone bit 180mm deep. Use the base of the support as a template.

- ◆ ***Install anchor bolts according to rice.28.***

### **4.5 TESTING AND VERIFICATION BEFORE COMMISSIONING**

#### **4.5.1 MECHANICAL TESTS**

- ◆ Fasten and tighten bolts, fittings and connections.
- ◆ Free moving parts.
- ◆ Clean lift parts.
- ◆ Install protective device.
- ◆ Activate the paw lock.

#### **4.5.2 ELECTRICAL CHECKS**

- ◆ connection corresponds to the installation scheme
- ◆ grounding of the lift

#### **4.5.3 CHECKING THE OPERATION OF THE FOLLOWING DEVICES**

- ◆ limit switch
- ◆ trigger handles
- ◆ hydraulic station descent valve

#### **4.5.4 HYDRO SYSTEM TEST**

- ◆ Sufficient oil level in the reservoir.

- ◆ No leaks

- ◆ Hydraulic cylinder operation

***Note: in case of lack of oil, fill the reservoir of the power unit the required amount of oil. See procedure in section 6: "MAINTENANCE".***

#### **4.5.5 CHECKING THE DIRECTION OF ROTATION**

The electric motor must rotate in the direction indicated by the arrow on the pump housing. Check with short starts (each start lasts no more than 2 seconds). If there is a malfunction in the hydraulic unit, see the table in section 7 "Troubleshooting".

### **4.6 COMMISSIONING**

#### **WARNING**

***THESE OPERATIONS MUST BE PERFORMED ONLY BY AUTHORIZED BY QUALIFIED SPECIALISTS OF THE PRODUCT DISTRIBUTOR'S TECH SUPPORT CENTER.***

#### **4.6.1 "NO LOAD" TEST**

You need to check:

- ◆ UP button health
- ◆ Raising the carriages to the maximum height.
- ◆ Absence of vibrations in racks and paws.
- ◆ Safety wedges engage with metal supports under the carriages.
- ◆ Activation of limit switches.
- ◆ Safety wedge engagement
- ◆ After performing these checks, make sure that the height difference of the lifting arms on both sides does not exceed 1 cm. Otherwise, it is necessary to adjust the level of the feet by adjusting the locknuts on the metal synchronizing cables.

When carrying out the tests mentioned above, it is necessary to raise and lower the carriages 2-3 times. This will remove air from the lift hydraulic system. .

#### 4.6.2 TESTS UNDER LOAD

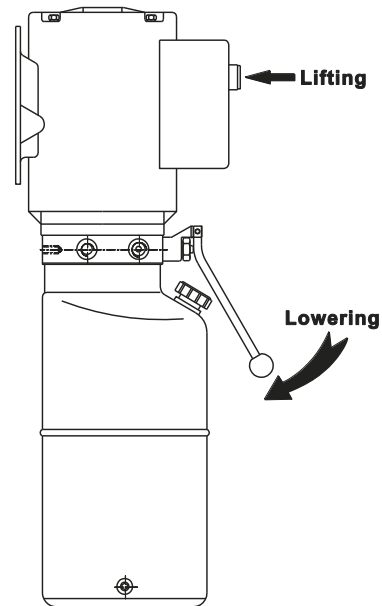
Repeat these tests with the vehicle on the lift.

After checking the lift under load, visually assess the serviceability of the lift and recheck the tightness of the bolts of all connections.

## Chapter 5 OPERATION

*Lift controls*

*presented on rice.39.*



*rice.39*

### 5.1 CONTROLS

#### 5.1.1 LIFT BUTTON

When pressed, the electric motor turns on and the mechanisms raise the carriage.

#### 5.1.2 RELEASE LEVER

When pressed, the pressure relief valve is activated. The oil from the hydraulic cylinders flows into the tank. The carriages are lowered.

### 5.2 SEQUENCE PERFORMANCE OF WORK

Place the legs of the lift under certain points on the bottom of the car, adjust the height of the support pads on the legs.

After each lowering of the carriages, check the position of the supports on the bottom of the vehicle before raising the carriages again.

#### 5.2.1 LIFTING

Press the start button to raise the vehicle to the desired height. At the end of the lift, the safety wedges automatically engage in the metal supports under each carriage. See pages 6, 7 limit sensors and

safety devices, "VEHICLE LIFTING HAZARD".

### 5.2.2 FIXING

After lifting the car to the required height, press the lowering lever on the power unit. The movement of the carriages will automatically stop, the safety wedges enter the connection with the first hole in the downward direction of the carriages.

### 5.2.3 Descent

Before lowering the carriages, the safety wedges must be disengaged. Press the lift button to raise the carriage about 3 cm. Then pull the lock cable of both carriages to disengage the safety wedges (fig. 40)

A long press on the release lever lowers the carriages down. The lowering speed is controlled by a throttle in the pump. The lowering stops after the complete unloading of the hydraulic cylinders. At this point, the lever release device is activated and the levers can be turned.

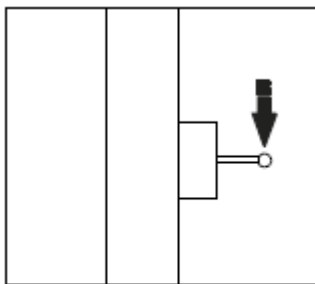


Fig. 40

## Chapter6 MAINTENANCE

### 6.1 PRECAUTIONS

#### **WARNING**

**MAINTENANCE SHOULD BE PERFORMED ONLY BY QUALIFIED PERSONNEL Familiar with the OPERATION OF THE LIFT.**

Precautions must be observed when performing maintenance on the lift **TO AVOID UNINTENTIONAL ACTIVATION:**

- ◆ The lift must be disconnected from power source.
- ◆ When performing maintenance, be aware of the possible danger and follow the safety instructions in section 3 "**RISK ELECTRIC SHOCK**, working with the power supply terminal block.

**DO NOT APPLY LUBRICANTS AND DO NOT**

**MAINTENANCE ON MOVING PARTS.**

#### **IMPORTANT**

**When servicing cables:**

- ◆ Only original spare parts and tools designed to perform these works.
- ◆ Observe maintenance intervals specified in the instructions: these parameters are mandatory and must be strictly observed.
- ◆ Quality service means constant monitoring of the operation of the lift. The cause of any malfunction should be found immediately, such as noise, overheating, leaks, etc.

**Pay special attention to:**

- ◆ the state of the blocks responsible for lifting (cylinders, hydraulic station)
- ◆ safety devices (microswitches, safety wedges)

Refer to the following documents for proper maintenance of the lift:

- ◆ wiring diagram main and auxiliary equipment
- ◆ Hydraulic diagram with spare parts list parts and maximum pressure values.
- ◆ Drawings with data required for ordering spare parts.
- ◆ List of possible malfunctions and recommended ways to eliminate them (section 7 of this manual).

## 6.2 PERIODIC MAINTENANCE

### 6.2.1 INTERVAL OF WORK

For efficient operation of the lift, it is necessary to observe periodicity service.

The manufacturer is not responsible and does not accept claims for damage resulting from non-compliance with the instructions in this manual.

#### **NOTE**

*The indicated frequency of work refers to standard working conditions. In difficult operating conditions, the frequency of work should be different.*

**ALL MAINTENANCE WORK SHOULD BE PERFORMED WITH THE LIFT STOPPED AND THE MAIN SWITCH LOCKED.**

**After installing the lift, check:**

- ◆ tightening the anchor bolts fixing the base racks
- ◆ Tightening the screws securing the cross member of the uprights.
- ◆ Carriage level.
- ◆ Oil level in the power unit. At necessary, add oil.

### 6.2.2 MONTHLY

#### HYDRAULIC UNIT

- ◆ Check the oil level with a dipstick on the oil cap. If necessary, add oil to the required level. Oil types are listed in the section "**TECHNICAL CHARACTERISTICS**"
- ◆ After the first 40 hours work check the condition of the filters, the level of oil contamination. **(Clean the filter and change the oil in case of heavy contamination).**

#### HYDRAULIC SYSTEM

Check absence leaks oils V hydraulic circuit between the power block and the hydraulic cylinder and in the hydraulic cylinder itself. Check the condition of the gaskets and replace them if necessary.

### 6.2.3 EVERY THREE MONTHS

#### HYDRAULIC PUMP

At normal conditions exploitation check the absence of noise in the power unit and the fastening of the bolts.

#### SYNCHRONIZATION SYSTEMS

- ◆ Check condition and efficiency safety devices (as indicated on p.6,7), wear of safety wedges and pins. Lubricate the pins on the wedges with oil. Replace if heavily worn

safety wedges and or pins.

- ◆ Use a torque wrench to checking the tightening of the anchor bolts of the supports, as well as the connecting bolts.
- ◆ Clean and lubricate the guides and moving components of the carriages.
- ◆ Check the fastening of all bolts.

- ◆ Check the function of the blocking system lifting legs
- ◆ Apply lubricants to moving parts details.

#### 6.2.4 EVERY HALF YEAR

##### HYDRAULIC SYSTEM

Check the condition of the oil. Contaminated oil is the main cause of valve and wiring failures, which shortens the life of drive pumps.

##### SYNC CABLE

Check the condition of the pulleys and pulley bearings. Check the condition of the cable for wear by measuring for damage to the wiring and other faults. Lubricate the cable with a brush to prevent corrosion and damage from oxidation.

#### 6.2.5 ANNUALLY

**General check:** visual control of all details of the structure and mechanisms serves as a guarantee of the absence of malfunctions.

**Electrical system:** qualified electricians (contact the service center) must test the electrical system, including the electric motor, wiring, limit switch

##### HYDRAULIC OIL IN THE SYSTEM

Change the oil following the instructions below:

- ◆ Lower the lift to the minimum height floor).
- ◆ Make sure that the piston of the hydraulic cylinder is at the end of your move.
- ◆ Disconnect lift from source power supply.
- ◆ Drain the oil from the hydraulic circuit, by unscrewing the plug at the bottom of the power tank block.

- ◆ Screw in the drain plug
- ◆ Fill the unit with oil through the hole, located in the upper part of the reservoir of the power block.

The oil must be filtered:

- ◆ Characteristics and types of oil are given in technical specifications (section 2, page 3)
- ◆ Screw on the oil filler cap.
- ◆ Connect power supply
- ◆ Perform two or three cycles of lifting and lowering carriages (to a height of 20-30 cm), so that the oil fills the hydraulic system

At shift oils use only recommended oil or equivalent, do not fill with long shelf life oil. It must be disposed of according to requirements **Appendix A, p.22**

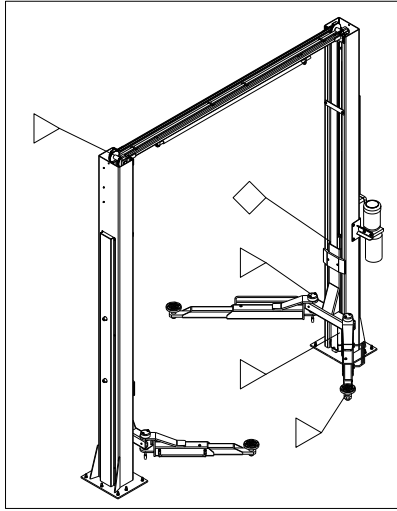
***AFTER MAINTENANCE IS PERFORMED, THE LIFT MUST BE RETURNED TO ITS ORIGINAL CONDITION, INCLUDING THE REMOVED SAFETY DEVICES.***

For quality service it is important:

- ◆ Use only those suitable for tools and original spare parts for this work.
- ◆ Follow the maintenance schedule
- ◆ Detect faults in a timely manner and immediately eliminate their causes (high noise, overheating, fluid leakage, etc.).
- ◆ Monitor the condition of moving mechanisms (hydraulic cylinders) and safety devices.
- ◆ Use all documentation provided by the manufacturer (wiring diagrams, etc.).

### 6.3 SCHEME OF PERIODIC APPLICATION LUBRICANTS

Apply lubricating materials on details lift as shown in fig..41 Grease should be taken from closed tins. Old or unsuitable grease can cause damage to the lift.



*rice 41*

△ apply lubricant every 3 months

□ apply lubricant every 6 months

## Chapter 7 TROUBLESHOOTING

### 7.1. TROUBLESHOOTING GUIDE

Troubleshooting and repairs are carried out in accordance with the SAFETY REQUIREMENTS noted in Section 6 "MAINTENANCE" and Section 3 "SAFETY".

### 7.2 POSSIBLE PROBLEMS AND WAYS TO REMOVE THEM

*(See next page.)*



PROBLEM	POSSIBLE REASON	SOLUTION
Carriages do not rise when button is pressed (motor does not turn on)	Blown fuse Low voltage Malfunction in the electrical unit  Limit switch failure Motor failure	Replace fuse Connect power supply Contact technical support
When pushing the start button, the carriages do not rise. (motor turns on)	Low oil level Drain valve open The maximum pressure valve is activated Leaks in the hydraulic circuit	Pour oil Clean or replace drain valve  Relieve load  Repair hydraulic circuit
The carriages continue to move after the lift button is released	lift button defective	Disconnect the lift from the mains and contact technical support
Carriages don't go down	- Presence of foreign objects - Solenoid valve blocked  - Malfunction of the electrical unit - Safety locks do not turn off  - Interlock valves included	- Remove foreign objects - Replace the valve (contact technical support)  - Contact technical support - Perform the correct sequence of operations for lowering carriages - Repair hydraulic circuit
Carriages are not rise to maximum height	not enough hydraulic oil	add oil to the reservoir of the hydraulic unit
After letting go buttons lifting the carriage stop and then slowly descend	Drain valve does not close due to clogging Faulty drain valve	Simultaneously press the button for lifting and lowering the carriages to clean the valve Replace valve (contact technical support)
Overheating of the electric motor of the power unit	Motor failure Incorrect voltage	Contact technical support Check voltage
Noise in the pump of the power unit	contaminated oil Incorrect node assembly	Change oil Contact technical support
Oil leakage from hydraulic cylinder	Gaskets damaged Contamination in the unit	Replace damaged gaskets Clean all parts Check valves

## **APPLICATIONA SPECIAL NOTES**

### **A.1 DISPOSAL OF USED OILS**

Waste oil must be disposed of as a contaminant in accordance with the laws of the country in which

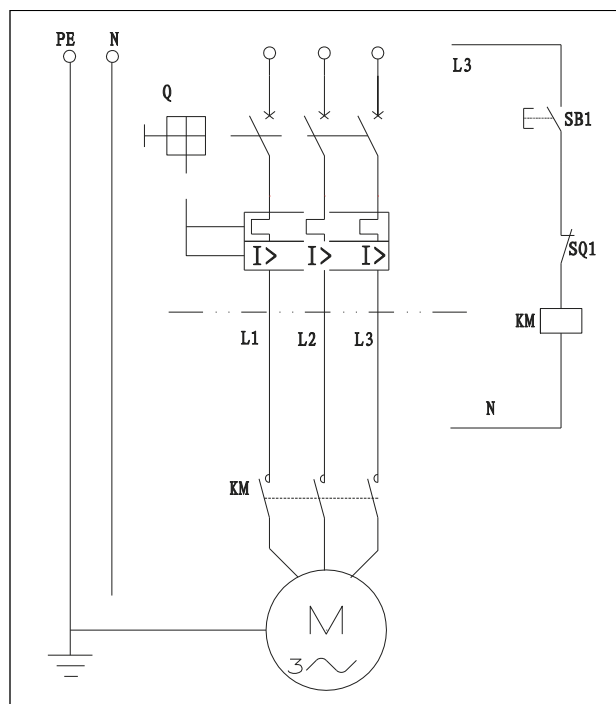
lift installed.

### **A.2 DISPOSAL OF THE EQUIPMENT**

***DISASSEMBLY OF THE LIFT MUST BE CARRIED OUT IN ACCORDANCE WITH ALL SAFETY REQUIREMENTS IN SECTION 3 THAT RELATE TO INSTALLATION***

The lift is disassembled only by specialists, as during installation. Metal parts are scrapped. All lift materials must be disposed of in accordance with applicable legal requirements. The process of dismantling the lift should be noted in the current reporting, as well as in other documents, the execution of which is required by law.

## APPENDIX B INSTALLATION DIAGRAM



380V/50Hz/3Ph

CODE	DESCRIPTION
Q	circuit breaker
SB1	lift button
SQ1	terminal switch
KM	AC contactor

## APPENDIX WITH SPARE PARTS

### C.1 SPARE PARTS

When replacing spare parts and performing repairs, observe ALL SAFETY REQUIREMENTS of the section **6 MAINTENANCE** and section **3 SAFETY**.

Take all necessary measures **TO AVOID UNINTENDED STARTING OF THE LIFT**.

- ◆ Main switch in control panel must be in position "0" be fixed in this position
- ◆ The key to the lock must be kept by the technician when lift maintenance.

### C.2 PROCEDURE FOR ORDERING SPARE PARTS

#### DETAILS

To order spare parts:

- ◆ Specify the serial number of the lift and the year of manufacture
- ◆ Specify the code for the required part (see column with CODES in tables).
- ◆ Specify the required number of parts.

The order must be sent to the distributor equipment

