



5.5-TON FOUR-POST HYDRAULIC LIFT
MODEL RBL-5.5X
USER MANUAL



REDBACK AUTOMOTIVE EQUIPMENT

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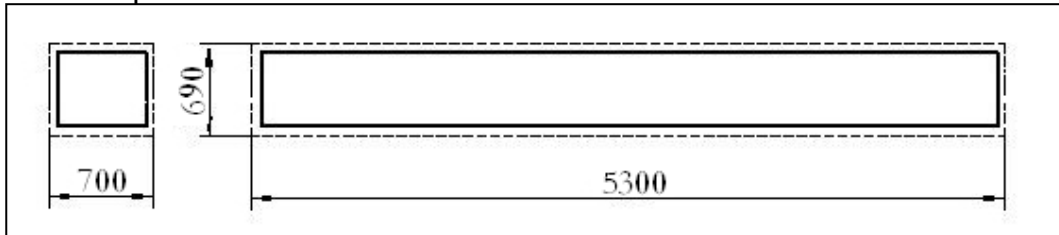
PACKING, TRANSPORT AND STORAGE



ALL PACKING, LIFTING, HANDLING, TRANSPORT AND UNPACKING OPERATIONS ARE TO BE PERFORMED BY EXPERIENCED PERSONNEL.

PACKING

Standard equipment: hydraulic station and accessory, main and sub beam, front and back crossbeam, front post, back post, left and right approaching ramp, rolling jack, total is 7 pieces.



TRANSPORT



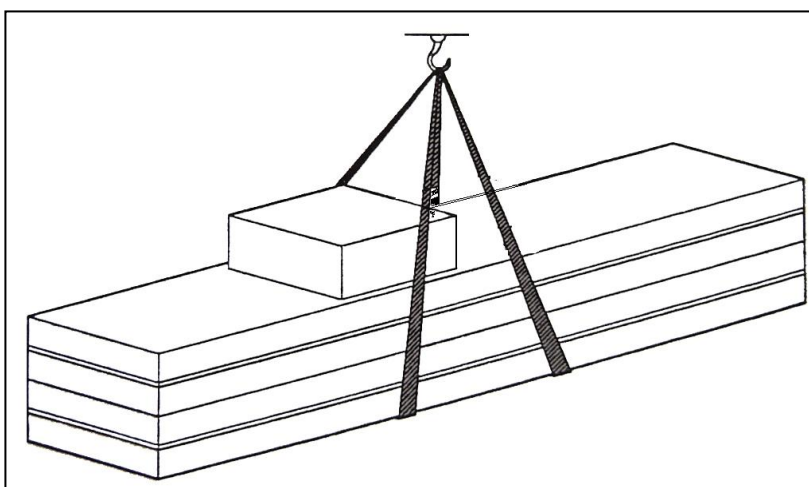
PACKING CAN BE LIFTED OR MOVED BY LIFT TRUCKS, CRANES OR BRIDGE CRANES.

IN CASE OF SLINGING, A SECOND PERSON MUST ALWAYS TAKE CARE OF THE LOAD, IN ORDER TO AVOID DANGEROUS OSCILLATIONS.

At the arrival of the goods, check for possible damage due to transport operations. Also verify that all items specified in the delivery notes are included. In case of missing parts, possible defects or damage due to transport, the person in charge or the carrier must be immediately informed.

MACHINES ARE ALL HEAVEY GOODS! DON'T MOVE OR LOAD THEM MANUALLY. SAFETY IS MOST IMPORTANT.

Furthermore, during loading and unloading goods must be handled as shown in the picture below.



STORAGE:

Machines must be stored undercover in a moisture free environment.
Temperature range between: -25~55 degrees celcius.



THIS MANUAL HAS BEEN PREPARED FOR WORKSHOP PERSONNEL TRAINED IN THE USE OF THE LIFT (OPERATOR) AND TECHNICIANS RESPONSIBLE FOR ROUTINE MAINTENANCE (MAINTENANCE FITTER); PLEASE READ THE MANUAL BEFORE CARRYING OUT ANY OPERATIONS

With regard to the lifting and/or the packing, this manual contains important information regarding:

- The personal safety of operators and maintenance workers.
- The safety of installation
- The safety of operating lift.

CONSERVING THE MANUAL



THIS MANUAL IS AN INTEGRAL PART OF THE LIFT, WHICH SHOULD ALWAYS BE KEPT WITH IT IN AN EASILY ACCESSIBLE PLACE AS THE OPERATOR AND MAINTENANCE STAFF MUST BE ABLE TO LOCATE AND CONSULT THE MANUAL QUICKLY AND AT ANY TIME.



IMPORTANT – ENSURE TO READ CHAPTER 3 WHICH CONTAINS IMPORTANT INFORMATION AND SAFETY WARNINGS

THE LIFT IS DESIGNED AND MADE TO EUROPEAN STANDARDS

The lifting, transport, unpacking, assembly, installation, starting up, initial adjustment and testing, extraordinary maintenance, repair, overhauls, transport and dismantling of the lift must be performed by specialized personnel from the licensed dealer or a service center authorized by the manufacturer.

The manufacturer declines all responsibility for injury to persons or damage to vehicles or objects when any of the above mentioned operations has been performed by unauthorized personnel or when the rack has been subject to improper use.

This manual covers only the operative and safety aspects that may prove useful to the operator and maintenance worker for better understanding of the structure and operation of the lift and for best use of the same.

In order to understand the terminology used in this manual, the maintenance and repair activities, the ability to interpret correctly the drawings and descriptions contained in the manual and be the country in which the machine has been installed.

The same applies to the maintenance fitter, who must also possess specific and specialized knowledge (mechanical, engineering) needed to perform the operations described in the manual in complete safety.

OPERATOR: person authorized to use the lift

MAINTENANCE FITTER: person authorized for routine maintenance of the lift.



MANUFACTURER HAS THE RIGHT TO MAKE CHANGES TO THE MANUAL WITHOUT NOTIFICATION

CHAPTER 1 - DESCRIPTION OF THE MACHINE

Application:

Four post and hydraulic four post four wheel alignment is suitable for use in four wheel alignment, vehicle tests, maintenance and care for various types of small automobiles.

Features:

- Imported electric components.
- The alignment level of the lift can be adjusted in high precision, which is ideal equipment for four-wheel alignment.
- The position of the front wheel turning table (optional part) is adjustable so that the side slide plate can be used for more cars. (F4)
- Device performs stable and liable work with anti-breaking rope safety insurance.
- A second lifting trolley guide rail can optionally be added.

Equipment:

- Machine frame
- Lift frame
- Hydraulic system
- Control box

Basic frame:

Made of concrete

Frame:

Post, main and sub beam, front and back crossbeam.

Hydraulic Pump:

Make up for hydraulic pump, pump motor, oil tank.

Control box:

Controlled by electricity system.

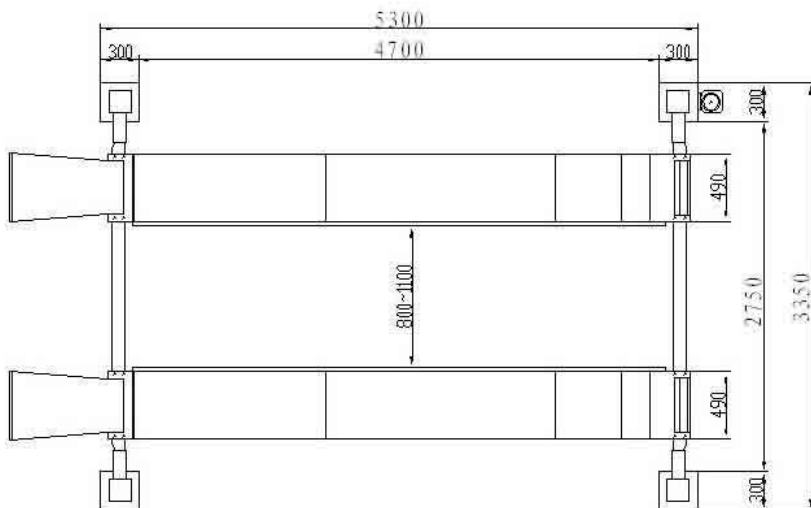
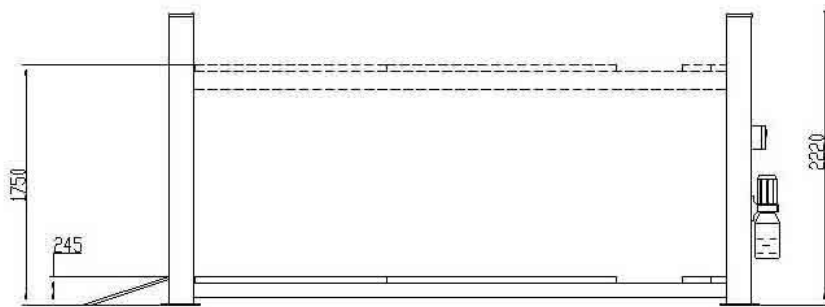


THE SCISSOR LIFT IS DESIGNED AND BUILT TO LIFT VEHICLES AND TO HOLD THEM IN THE ELEVATED POSITION IN A CLOSED WORKSHOP. ALL OTHER USE IS UNAUTHORIZED. IN PARTICULAR, THE LIFT IS NOT SUITABLE FOR: WASHING AND SPRAY WORK, CREATING RAISED PLATFORMS OR LIFTING PERSONNEL, USE AS A MAKESHIFT PRESS FOR CRUSHING PURPOSES, USE AS GOODS LIFT AND NOT TO LIFT A VEHICLE WHOSE WEIGHT EXCEEDS THE MAXIMUM WEIGHT.

Technical Specification

| | |
|------------------------------------|---|
| MODEL | RBL-5.5X |
| Drive | Electrical hydraulic |
| Max lifting weight | 5500kg |
| Lift height | 1800mm |
| Platform initial height | 245mm |
| Platform length | 5300mm |
| Platform width | 530mm |
| Lifting time | ≤55S |
| Lowng time | ≤50s |
| Overall width | 3350mm |
| Overall length | 6400mm |
| Overall weight | 1350kg |
| Power | AC 400 or 230V 50Hz |
| Hydraulic oil | 11 L 20# high abrasive hydraulic oil |
| Rolling Jack lifting Weight | 3000Kg |
| Rolling jack lifting height | 260mm |
| Rolling jack lifting length | 870-1400mm |
| Rolling jack wheel distance | 780-1100mm |
| Rolling jack lifting time | ≤5s |
| Rolling jack lowering time | ≤10S |
| Rolling jack weight | 120kg |
| Pneumatic RJ voltage | 6-8Kg/cm2 |
| Temperature | 5-40°C |
| Moisture | 30-95% |
| Noise | <76db |
| Installation height | ≤1000M |
| Storage temperature | -25-55°C |
| Optional | 2nd Rolling jack |

Technical specifications



MOTOR PUMP:

- Type-----Y90L
- Power-----2.2KW
- Voltage-----AC 400V or 230V ±5%
- Frequency-----50Hz
- Poles-----4
- Speed-----1450rpm/min
- Building shape-----B14
- Isolation class-----F

When connecting the motor refer to the enclosed wiring diagrams on the data plate on casing.

Technical specifications

PUMP:

- Model-----C55
- Displacement-----4.3 cc/r-
- Transmission: joint type-----Director
- Relief valve-----210 Bar
- Continuous working pressure-----250 bar
- Intermittent working pressure-----150~300 bar

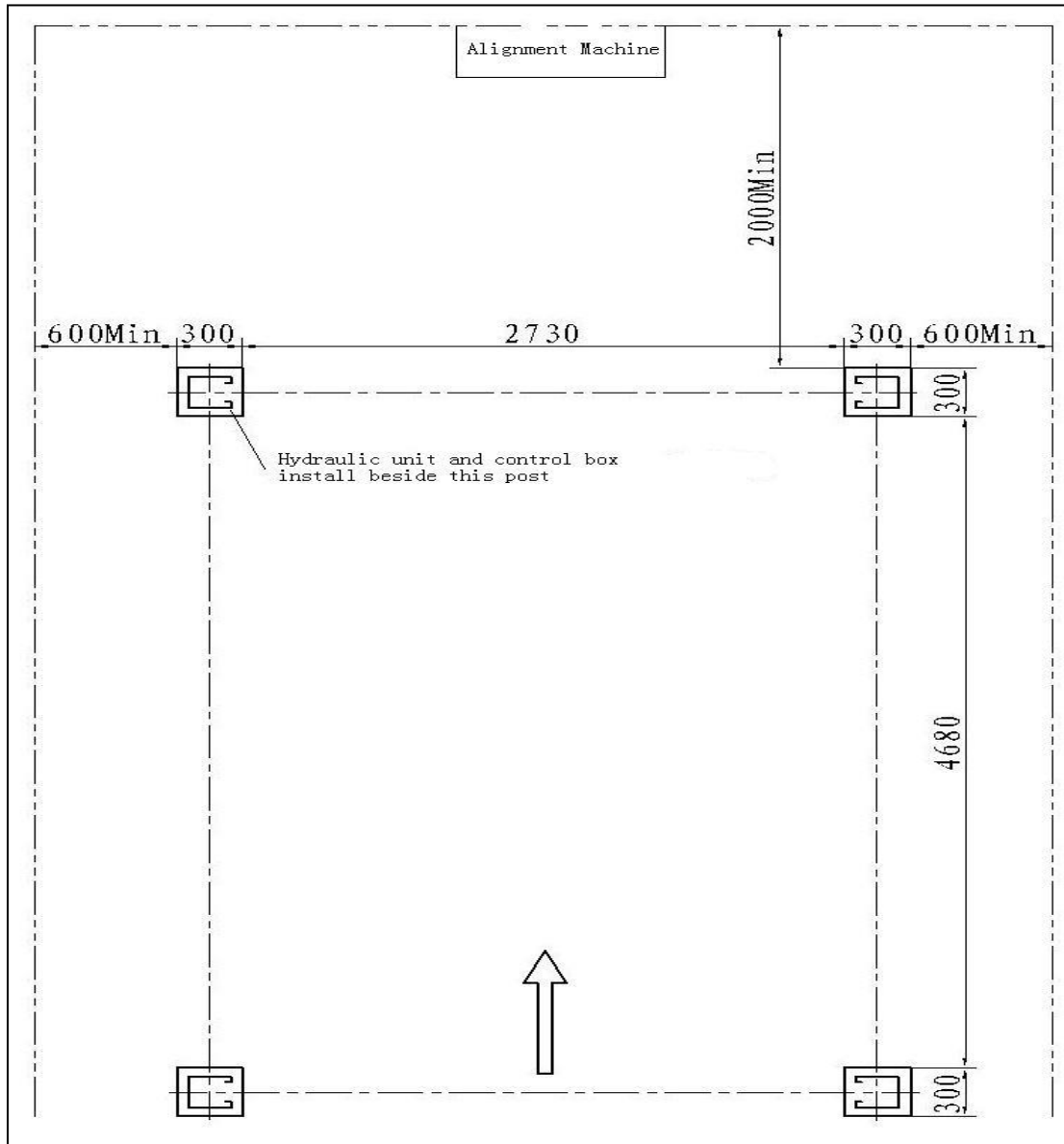
Oil:

Inject 10 liters of hydraulic oil into the oil tank.

INSTALLATION SCHEME FOR LIFT

NOTE: Installation of the lift requires suitable foundations with the following characteristics:

- concrete type 425, the drying days are 15 days.
- thickness of concrete≥150mm, the leveling of whole length≤10mm
- perfect parallelism between holes.



Technical specifications



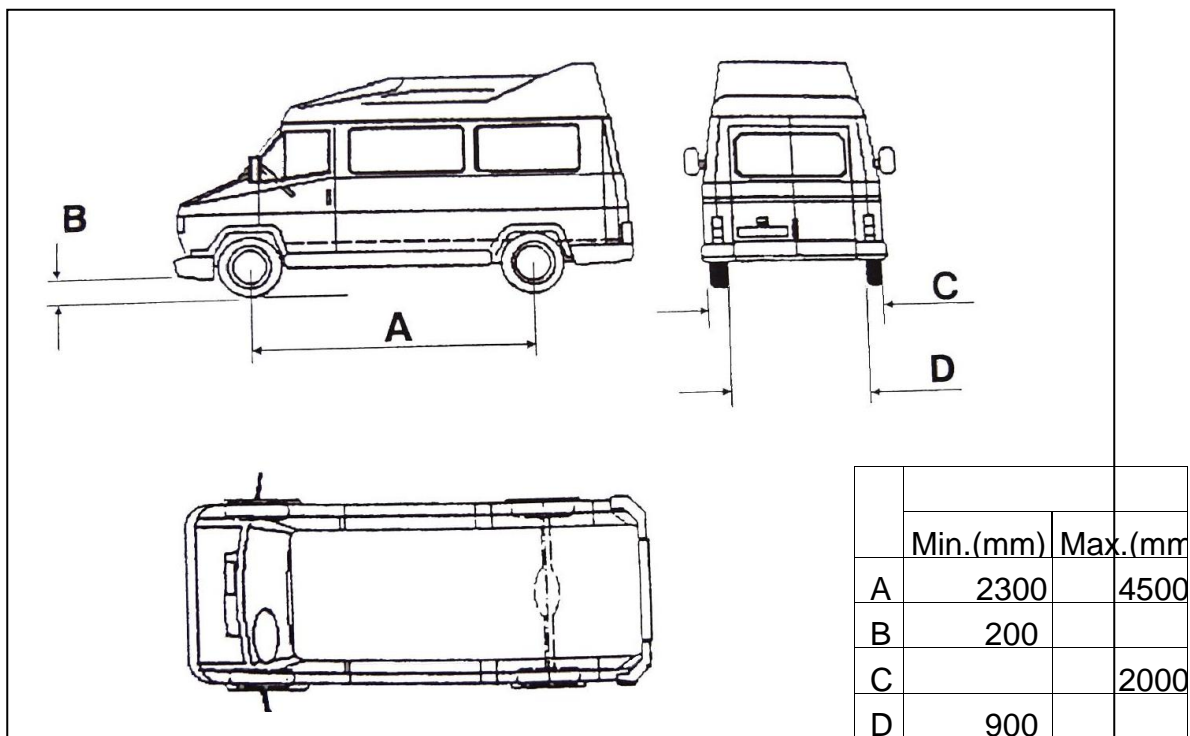
NOTE: THE THICKNESS AND LEVELLING OF THE BASE CONCRETE ARE ESSENTIAL AS THE LEVELLING ADJUSTMENT ABILITY OF THE MACHINE ITSELF CANNOT BE RELIED UPON EXCESSIVELY.

TYPES OF VEHICLES SUITABLE FOR BEING LIFTED AND OVERALL DIMENSIONS

The Lift is suitable for virtually all vehicles with total weight of no more than 4000 Kg and with dimensions not exceeding the below data.

MAXIMUM WEIGHT:

The following diagrams illustrate criteria used to define the operating limits of the lift.



CAUTION: THE LOWER PARTS OF THE VEHICLE UNDERBODY COULD INTERFERE WITH STRUCTURAL PARTS OF THE LIFT, TAKE PARTICULAR CARE WITH LOWER PARTS OF SPORTS CARS.

The lift will also handle customized or non-standard vehicles, provided they are within the maximum specified carrying capacity.

Also the personnel safety zone must be defined in relation to vehicle with unusual dimensions.

CHAPTER 3 SAFETY



READ THIS CHAPTER CAREFULLY AS THERE IS IMPORTANT INFORMATION OF THE SAFETY FOR THE OPERATOR OR OTHERS IN CASE OF IMPROPER USE OF THE LIFT.

IN THE FOLLOWING TEXT THERE ARE CLEAR EXPLANATIONS REGARDING CERTAIN SITUATIONS OF RISK OR DANGER THAT MAY ARISE DURING THE OPERATION OR MAINTENANCE OF THE LIFT.



LIFTS ARE DESIGNED AND BUILT TO LIFT VEHICLES AND HOLD THEM IN THE ELEVATED POSITION IN AN ENCLOSED WORKSHOP. ALL OTHER USES OF THE LIFTS ARE UNAUTHORIZED.

In particular, the lifts are not suitable for:

- washing and cleaning work;
- creating raised platforms for personnel or lifting personnel;
- use as a press for crushing purposes;
- use as elevator;
- use as a lift jack for lifting vehicle bodies or changing wheels.

The manufacturer is not liable for any injury to persons or damage to vehicles and other property caused by the incorrect and unauthorized use of the lifts.

During lifting and lowering movements the operator must remain in the control station.

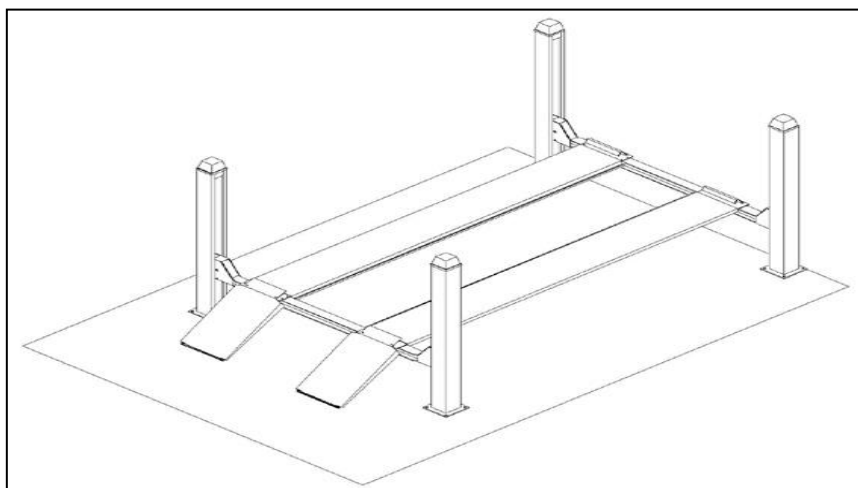
The presence of persons inside the danger zone indicated is strictly prohibited.

During operations persons are admitted to the area beneath the vehicle only when the vehicle is already in the elevated position, when the platforms are stationary, and when the mechanical safety devices are firmly engaged.



DO NOT USE THE LIFT WITHOUT PROTECTION DEVICES OR WITH THE PROTECTION DEVICES INHIBITED.

FAILURE TO COMPLY WITH THIS REGULATION CAN CAUSE SERIOUS INJURY TO PERSONS, AND IRREPAIRABLE DAMAGE TO THE LIFT AND THE VEHICLE BEING LIFTED.



GENERAL PRECAUTIONS



THE OPERATOR AND THE MAINTENANCE FITTER ARE REQUIRED TO OBSERVE THE PRESCRIPTIONS OF SAFETY REGULATION IN FORCE IN THE COUNTRY OF INSTALLATION OF THE LIFT.

Furthermore, the operator and maintenance fitter must:

- always work in the stations specified and illustrated in this manual;
- never remove or deactivate the guards and mechanical, electrical, or other types of safety devices;
- read the safety notices placed on the machine and the safety information in this manual.

IN THE MANUAL ALL SAFETY NOTICES ARE SHOWN AS FOLLOWS:



INDICATES IMMINENT DANGER THAT CAN RESULT IN SERIOUS INJURY TO PEOPLE OR PROPERTY.



INDICATES SITUATIONS AND/OR TYPES OF MANOEUVERS THAT ARE UNSAFE AND CAN CAUSE MINOR INJURY TO PERSONS AND/OR DEATH.



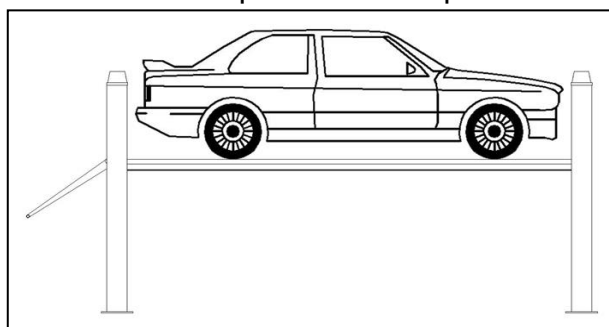
INDICATES SITUATIONS AND/OR TYPES OF MANOEUVERS THAT ARE UNSAFE AND CAN CAUSE MINOR INJURY TO PERSONS AND/OR DAMAGE THE LIFT, THE VEHICLE OR OTHER PROPERTY.

RISK OF ELECTRIC SHOCK: a specific safety notice placed on the lift risk and protection devices

We shall now examine the risks that operators or maintenance fitters may be exposed to when the vehicle is standing on the platforms in the raised position, together with the various safety and protection devices adopted by the manufacturer to reduce all such hazards to the minimum:

For optimal personal safety and safety of vehicles, observe the following regulations:

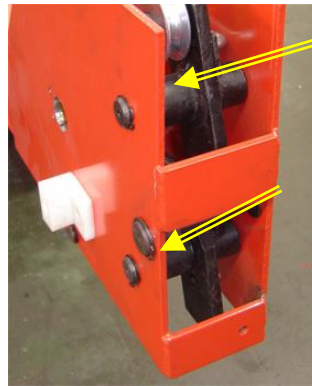
- do not enter the areas that are unsafe when vehicles are being lifted.
- switch off the engine of the vehicle; engage a gear and the hand brake,
- make sure the vehicle is positioned correctly on the platform.
- be sure to lift only approved vehicles, never exceed the specified carrying capacity, maximum height, and projection (vehicle length and width);
- make sure that there is no person on the platforms during up and down movements.



RISKS FOR PERSONNEL



This heading illustrates potential risks for the operator, maintenance fitter, or any other person present in the area around the lift, resulting from incorrect use of the lift.



RISK OF CRUSHING



Possible if the operator controlling the lift is not in the specified position at the control panel.

When the platforms (and vehicle) are lowering the operator must never be partly or completely underneath the movable structure. Always remain in the control zone.

RISK OF IMPACT



Caused by the parts of the lift or the vehicle that is positioned at head height.

When, due to operational reasons, the lift is stopped at relatively low elevations personnel must be careful to avoid impact with parts of the machine not marked with special colour.



RISK OF OPERATOR FALLING



No person is permitted in the platform or in the vehicle when the lift lifting and lowering.

RISK OF VEHICLE MOVING

Caused by operations involving the application of force sufficient to displace the vehicle.

RISK OF VEHICLE FALLING FROM LIFT

This hazard may have caused of incorrect positioning of the vehicle on the platforms, incorrect stopping of the vehicle, or vehicles of dimensions that are not compatible with the capacity of the lift.

NEVER ATTEMPT TO PERFORM TESTS BY DRIVING THE VEHICLE WHILE IT IS ON THE PLATFORMS



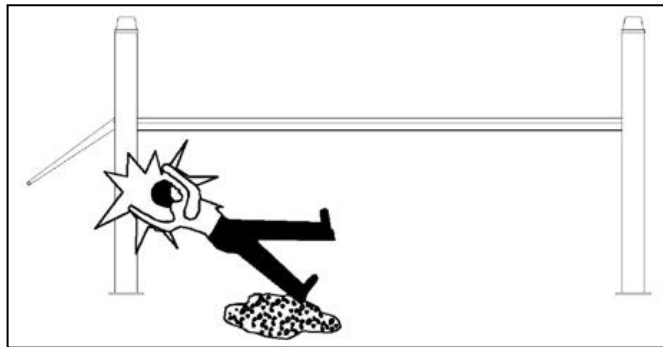
NEVER LEAVE OBJECTS IN THE LOWERING AREA OF THE MOVEABLE PARTS OF THE LIFT.

RISK OF SLIPPING

Caused by lubricant contamination of the floor around the lift.

The area beneath and immediately surrounding the lift and also the platforms must be kept clean.

Remove any oil spills immediately.

**RISK OF ELECTRIC SHOCK**

Risk of electric shock in areas of the lift housing electrical wiring.

Do not use jets of water, steam solvents or paint next to the lift, and take special care to keep such substances clear of the electrical control panel.

RISKS RELATED TO INAPPROPRIATE LIGHTING

The operator and the maintenance fitter must be able to assure that all the areas of the lift are properly and uniformly illuminated in compliance with the laws in force in the place of installation.



NEVER EXCEED THE MAXIMUM CARRYING CAPACITY OF THE LIFT, MAKE SURE THE VEHICLES TO BE LIFTED HAVE NO LOAD.



IT IS THEREFORE ESSENTIAL TO ADHERE SCRUPULOUSLY TO ALL REGULATIONS REGARDING USE, MAINTENANCE AND SAFETY CONTAINED IN THIS MANUAL.

CHAPTER 4 INSTALLATION WARNING

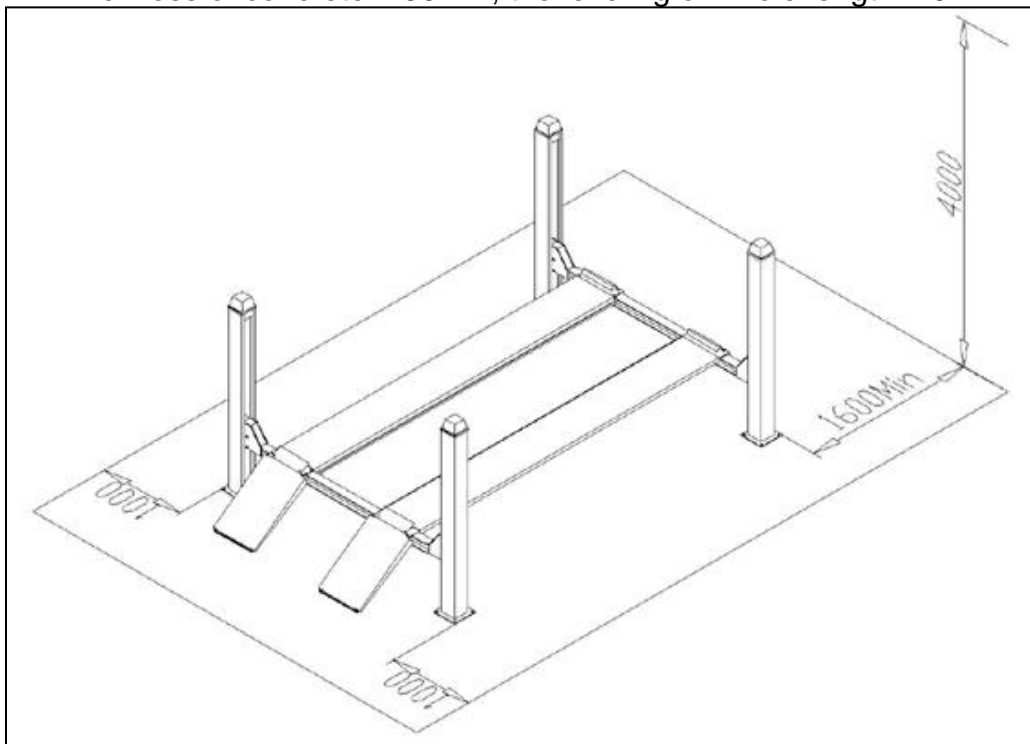


SKILLED AND AUTHORIZED PERSONNEL ONLY SHOULD BE ALLOWED TO PERFORM THESE OPERATIONS. FOLLOW ALL INSTRUCTIONS SHOWN BELOW CAREFULLY, IN ORDER TO PREVENT POSSIBLE DAMAGE TO THE CAR, LIFT OR RISK OF INJURY TO PEOPLE. BE SURE THAT THE OPERATING AREA IS CLEAR OF PEOPLE.

INSTALLATION REQUIREMENTS

The car lift must be installed according to the specified safe distance from walls, being at least 1000 mm, taking into consideration the necessary space to work easily. Further space for the control site and for possible runways in case of emergency is also necessary and the room must be previously arranged for the power supply and pneumatic feed of the car lift. The room must be at least 4000 mm in height and the car lift can be placed on any floor as long as it is perfectly level and sufficiently resistant. ($\geq 250\text{kg/cm}^2$)

- All parts of the machine must be uniformly lit with sufficient light to make sure that the adjustment and maintenance operations specified in the manual can be performed safely, and without areas of shadow, reflected light, glare and avoiding all situations that could give rise to eye fatigue.
- The lighting must be installed in accordance with the laws in force in the place of installation.
- The thickness and leveling of the base concrete are essential
- Thickness of concrete $\geq 150\text{mm}$, the leveling of whole length $\leq 10\text{mm}$.



CROSSBEAM INSTALLATION

- fix the front and back crossbeam on the floor.
- Put a wood or an iron under the crossbeam in order to raise 100-300mm.
- fix eight nylon anti-crashes inner and outer of the crossbeam.

Beam installation:

- Put two beams on the transom, the main beam should be located on the left side of the moving vehicle direction, the sub-beam located on the right side, the rolling wheel notch on the beam should be inside.
- check two platforms and the diagonal of two transoms are straight, then put four posts on the side of the transom, and fix the nuts on the roof of the post with steel line, put the safety teeth trough the limit axis, also fix the nuts on the roof of the post.

Post installation:

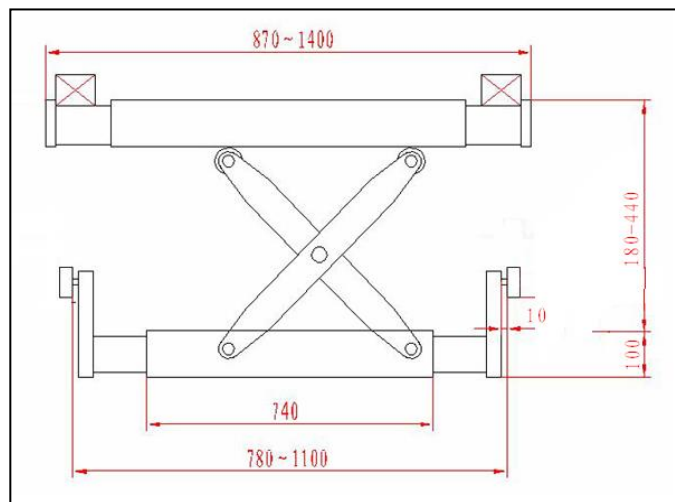
Unload the spoon under the insurance in the post.

ROLLING JACK INSTALLATION (optional):

- adjust the distance of the rolling jack; put the rolling jack between the slide track.
- adjust the sub beam to make sure the sliding of the rolling jack.

ROLLING JACK INSTALLATION

- adjust the distance of the rolling jack; put the rolling jack between the slide track.
- adjust the sub beam to make sure the sliding of the rolling jack.



LINE CONNECTION

Connect the electrical and oil line according to the electric wiring diagram and oil line connection



TO AVOID THE UNEXPECTED LIFT CLOSURE DUE TO MECHANICAL SAFETY DEVICE RELEASE INSERT WOODEN PIECES IN THE INNER PART OF THE BASE FRAME.

PAY ATTENTION NOT TO WORK UNDER THE LIFT UNTIL THE HYDRAULIC SYSTEM HAS NOT BEEN COMPLETELY FILLED WITH HYDRAULIC OIL.

Electrical routine connection:



According to the electric connection.

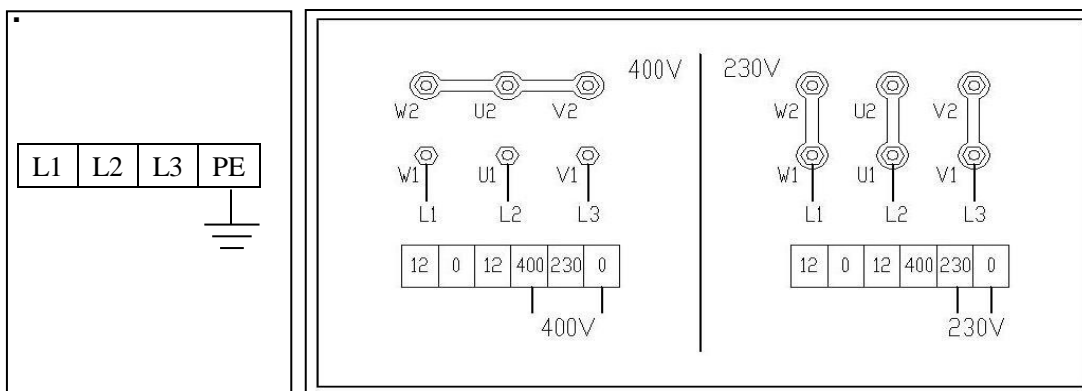
Skilled personnel only are allowed to perform the operations shown below.

-open the control box front cover

-connection of power supply: the 400 three-phase five-wires (3*2.5mm²+2*1.5mm²) for power supply are connected to terminals 1#, 2#, 3#. The PE is connected to the ground wire.

-Electric motor wire connection: connect the control box with U12 # 、 V12#、 W12# electric wire to motor wire box.

-therefore if you wish the lift to operate at 230V three-phase, change the connection on the transformer and motor.



The limit switch connection (equipped with electrical carriage)

Connect the 100, 102# from the control box with metal hoses to the limit switch of electrical rolling jack.

Hydraulic hoses connection

Connect the hydraulic hoses as oil route connection drawing.

Only skilled and authorized personnel can operate.

Be careful about the connection of the oil hoses to protect the hoses from dust and impurities.



ELECTRICAL CARRIAGE OIL LINE CONNECTION:

THE OIL LINE OF ELECTRICAL CARRIAGE FROM MANUAL SELECTOR TO OIL TANK.

CHAPTER 5 ADJUSTMENT

Add oil and check the order of phase

-open the hydraulic oil tank, add 18L of hydraulic oil into the oil tank. The hydraulic oil is provided by the user.



MAKE SURE THE HYDRAULIC OIL IS CLEAN, PREVENT ANY IMPURITIES INTO THE OIL LINE, LEAD THE DIGEST OF THE OIL LINE AND NO WORKING OF THE SOLENOID VALVE.

-press the “power” button to turn on power, clicking the “up” button, check whether the motor turns clockwise (looking downward), if not press “power” button, change the phase of the motor.



WHEN TURNING ON POWER THERE IS HIGH VOLTAGE IN THE CONTROL BOX - ONLY AUTHORIZED PERSONNEL TO OPERATE.

Main machine adjustment

-Turn the selector switch on the control panel to the “main” position. (picture17)

-press “up” button SB1, lift crossbeam approximately 1000mm.

-press “down” button SB2, verify the safety instruction.

-press “down” button SB2, adjust the safety instruction on the frame of the crossbeam. Then lower the platform.

Rolling jack adjustment

If equipped with manual carriage.

-press manual hydraulic hand, lift approximately 300mm

-unfasten the manual, lift the safety rod of rolling jack, lower the rolling jack.

If equipped with pneumatic carriage

-press the pneumatic switch on the pneumatic carriage, lift approximately 300mm.

- press the other side of pneumatic lift the safety rod of rolling jack, lower the rolling jack.

-press the other side of pneumatic pump, verify the insurance instruction.

If equipped with electrical carriage.

-turn the selector switch to “rolling jack” position.

-press “up” button SB1, lift approximately 300mm.

-press “down” button SB2 and lift the safety rod of rolling jack, lower the rolling jack.

-press “down” button SB2, verify the safety instruction is reliable.

Electrical rolling jack limit adjustment

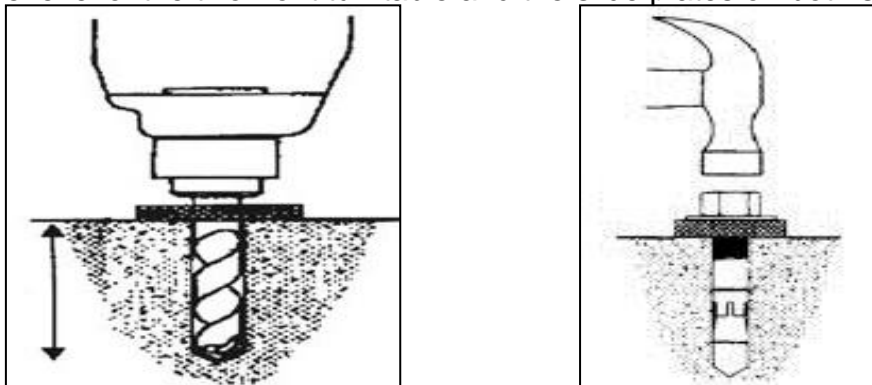
- clicking “up” button SB1, lift approximately 370mm.
- adjust the process of limit switch SQ.
- clicking the procedure of lifting verify the accuracy of rolling jack.

Anchor bolts installation

- affix the lift to the concrete base with 16 anchor bolts using a percussion drill into 120mm.
- At first, no expansion bolts are installed.

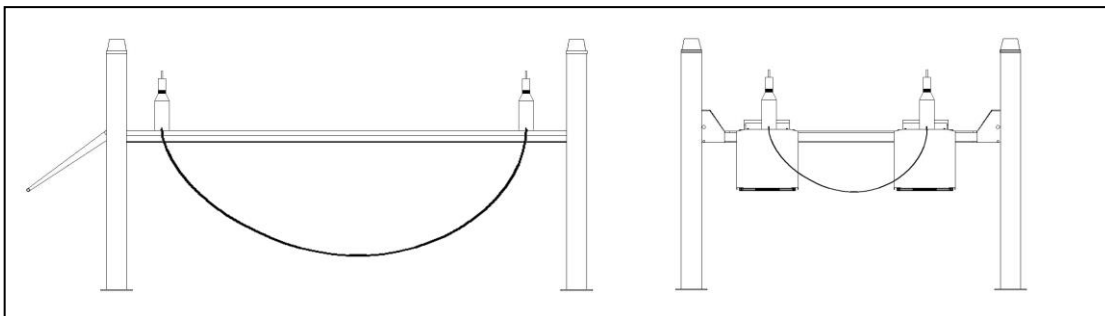
Level adjustment

- adjust the level of the two front turntable and the slide plates on both sides at back.



Insurance level adjustment.

- if the base is unparallel and leads to the platform being unparallel, you can adjust the height of the safety rod.



- lift the platform approximately 100mm; press “down” button let the insurance go into the hole of insurance rod.

Steel line adjustment

- Lift the platform approximately 1000mm.
- Fix the steel line bolts after level adjustment.
- No load of main machine test
- Turn on the power QS. (If equipped with electrical carriage, turn the selector switch to “main machine”)
- Press “up” button SB1, main platform lifted.
- Press “down” button SB2, and press insurance hand, the platform is lower.
- Press “lower”, four insurance locking.
- Check the lift of main machine is placidity, and the locking is secure, check whether



the oil line is leakage.

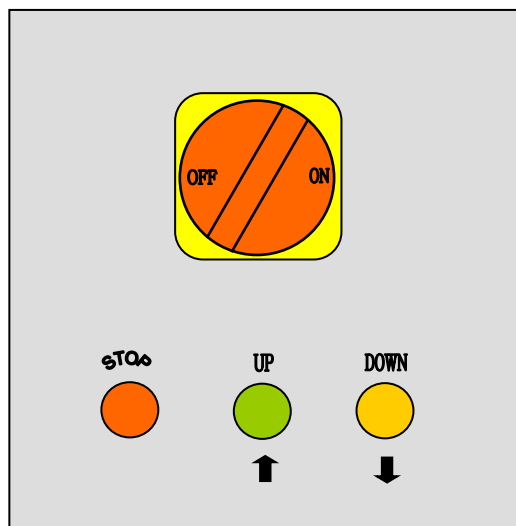
**NO PERSON OR THING IS TO BE LEFT UNDER OR ON THE LIFT.
PRESS BUTTON SB0 IF THERE IS SOMETHING ABNORMAL.**

CHAPTER 6 OPERATION

ONLY A TRAINED PERSON CAN OPERATE AND CHECK AS FOLLOWS:

- clear obstacles around before operation.
- during lifting or lowering, no person is allowed to stand near the two sides and beneath the machine, and no person is allowed on the two platforms.
- avoid lifting super heavy vehicles or other things.
- when lifting vehicle, the hand brake lever of the vehicle should be pulled, and the slide resistant triangle woods should be used.
- pay attention to the synchronization of the lifting and lowering. If any thing abnormal is found, stop the machine immediately, check and remove the trouble.
- when locking the main machine, the two platforms should be kept at the same height.
- when the equipment has not been used for a long time or over night, the machine should be lowered to the lowest position on ground, remove vehicle and turn off power supply.

Instructions on electrical operation :(see the operation panel)



Lift the main machine:

- if equipped with electrical carriage, first turn the manual selector on “main machine” position.
- press “up” button SB1, oil pump working, and the platform lift.
- unfasten SB1, oil pump stop working, and immediately stop lifting.

Main machine lower

- press “down” button SB2, and then press safety manual hand, lower the platform. Unfasten manual hand, stop lower.
- if the insurance is there, lift the platform, and then press “down”

Main machine locking

- single press “lower”, platform lower.

Emergency stop

-press "emergency stop" button SB0 and locking, cut off all the operation circuit when machine is abnormal.

ONLY AUTHORIZED PERSON CAN OPERATE, DOING ALIGNMENT ONLY AFTER "LOCKING" PROCEDURE ROLLING JACK LIFT

Electrical carriage

-turn the selector switch on "rolling jack" position, clicking "up" button, rolling jack is lift.

Note: the speed of rolling jack is fast, can not press "up" button continuously.

Manual or electrical rolling jack

Press rolling jack manual hand or pneumatic switch, drive the rolling jack lift.

Rolling jack lowering

-press "down" button, lift the insurance of rolling jack, rolling jack is lowering.

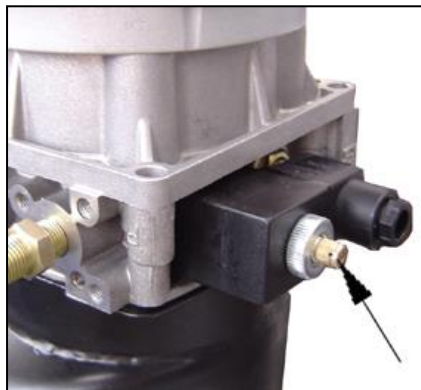
-First lift the rolling jack a little, if rolling jack is fixing, make sure the insurance instruction is off, and then click "off".

Manual or electrical rolling jack

Unfasten the manual pump back oil valve or the other side of pneumatic switch. then lift the rolling jack's insurance the rolling jack is lower.

Rolling jack locking

-single press "down" button or manual pump back oil valve or pneumatic pump switch.



MANUAL LOWERING THE LIFT, IT SHOULD SCREW THE BACK OIL VALVE WHEN ABNORMAL SITUATION, SUCH AS HAVING VEHICLE ON THE PLATFORM.

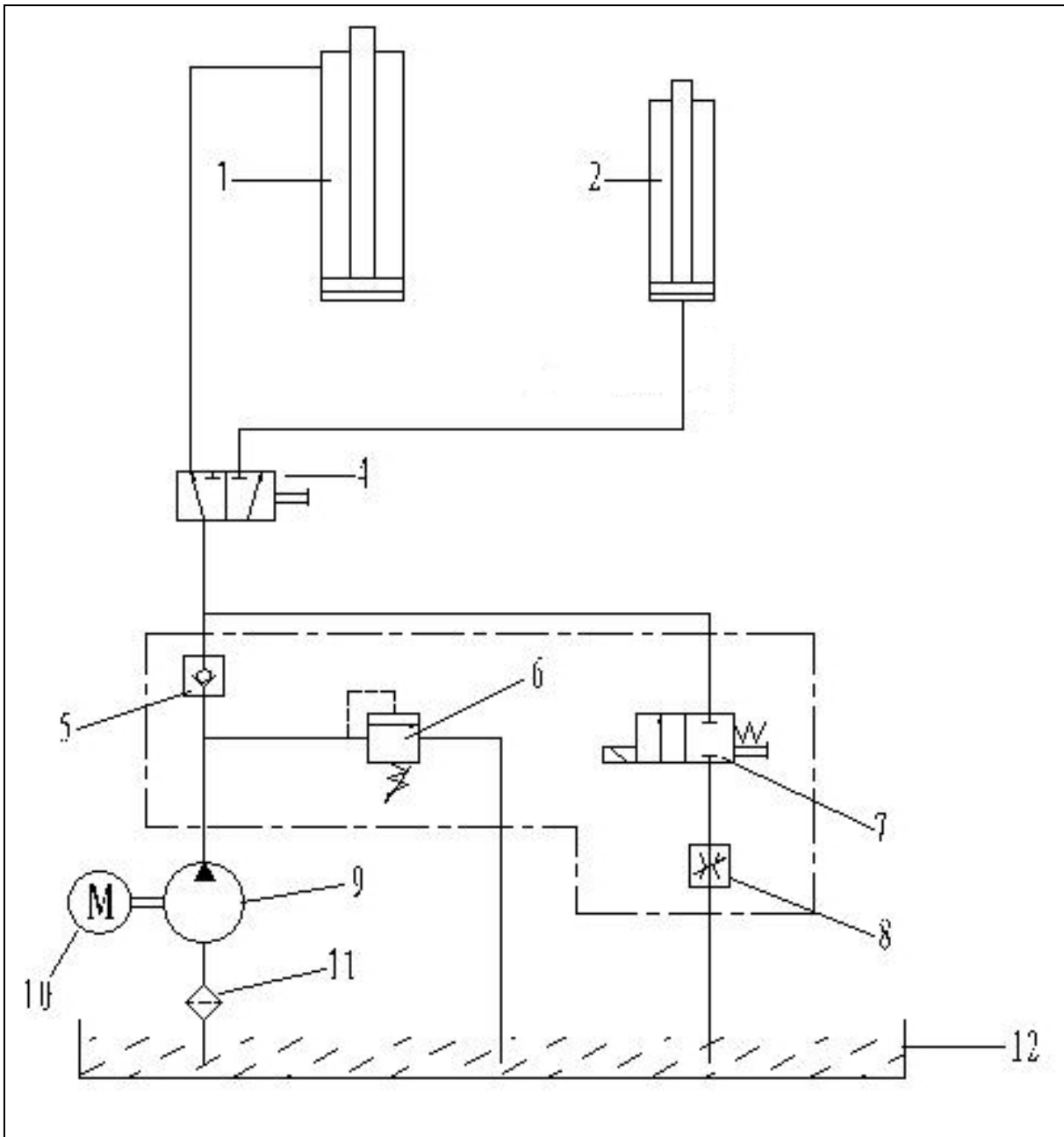
CHAPTER 6 - MAINTENANCE AND CARE

The maintenance and care of the lift must be operated by skilled person.

- The upper and lower sliding blocks must be cleared of foreign objects, and must be kept clean and lubricated.
- All bearings and hinges on this machine must be lubricated once a month.
- The type of F4 of the four-wheel alignment should lubricate yearly.
- The hydraulic oil must be replaced once a year. The oil level should always be kept at the upper limit.
- Check the steel line every three times and if there is something wrong, stop using, and tell the manufacturer.
- The integration of the pneumatic system with an air treatment unit is suggested.
- When change hydraulic oil, put machines to the lowest position, have the oil tank empty, when add new oil, should have the oil cleaned.
- If equipped with rolling jack, check the liability of the switch.

CHAPTER 7. TROUBLE SHOOTING AND RESOLUTIONS

| Trouble | Cause and Phenomena | Resolutions |
|---|---|--|
| The motor does not run in lifting operation. | ① Connection of power supply wires or zero wire is not correct. | Check and correct wire connection. |
| | ② The AC contactor in the circuit of the motor does not pick up. | If the motor operates when forcing the contactor down with an isolation rod, check the control circuit. If the voltage at two ends of the contactor coil is normal, replace the contactor. |
| | ③ The limit switch is not closed. | Short-circuit terminal 10# and 0#, which are connected with the limit switch, and if the trouble disappears, check the limit switch, wires and adjust or replace the limit switch. |
| In lifting operation, the motor runs, but there is no lifting movement. | ① The motor turns reverse. | Change the phases of the power supply wires. |
| | ② Lifting with light load is normal but no lifting with heavy load. | The set safe pressure of the over-flow valve may be increased by turning the set knob right ward slightly. The spool of the lowering solenoid valve is stuck by dirt. Clean the spool. |
| | ③ The amount of hydraulic oil is not enough. | Add hydraulic oil. |
| | ④ The "operation stop valve" is not open. | Turn right and open the "Operation stop valve and supply hydraulic oil to main oil cylinder. |
| When press "Lower" button, the machine is not lowered. | ① The safety pawl are not released form the safety teeth. | First lift a little and then lowering. |
| | ② The safety pawl is not lifted. | The air pressure is not enough or the safety pawl is stuck. |
| | ③ The solenoid air valve does not work. | If the solenoid air valve is energized, but does not open the air loop, check or replace the solenoid air valve. |
| | ④ The lowering solenoid valve is energized but does not work. | Check the plug and coil of the lowering solenoid valve and check the right turn tightness of its end copper nut and so on. |
| | ⑤ The hydraulic oil has too high viscosity or frozen, deteriorated (in Winter). | Replace with 20# hydraulic oil in accordance with the instruction book. |
| The machine lowers extremely slowly under normal loads. | The "antiknock valve" for preventing oil pipe burst is blocked. | Remove or close air supply pipe and thus lock the safety pawl of the machine without lifting of the safety pawl. Remove the "antiknock valve" from the oil supply hole at the bottom of the oil cylinder, and clean the "antiknock valve". |
| | ② Oil leakage on oil pipe or at its connections. | Tighten oil pipe connections or replace oil seals and then make-up oil and adjust levelness. |
| | ③ The "oil make-up stop valve" can not be closed tightly and almost make-up oil and adjust every day. | Replace oil make-up stop valve and then make-up oil and adjust. |
| | ② The base or the machin twisted. | Adjust again the levelness of the machine, and fill or pad the base. |



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| 1. Main platform | 2. Rolling jack |
| 4. Selector valve | 5. One-way valve |
| 6. Overflowing valve | 7. Descent valve |
| 8. Throttling valve | 9. Gear pump |
| 10. Pump motor | 11. Filter |
| 12. Oil tank | |

