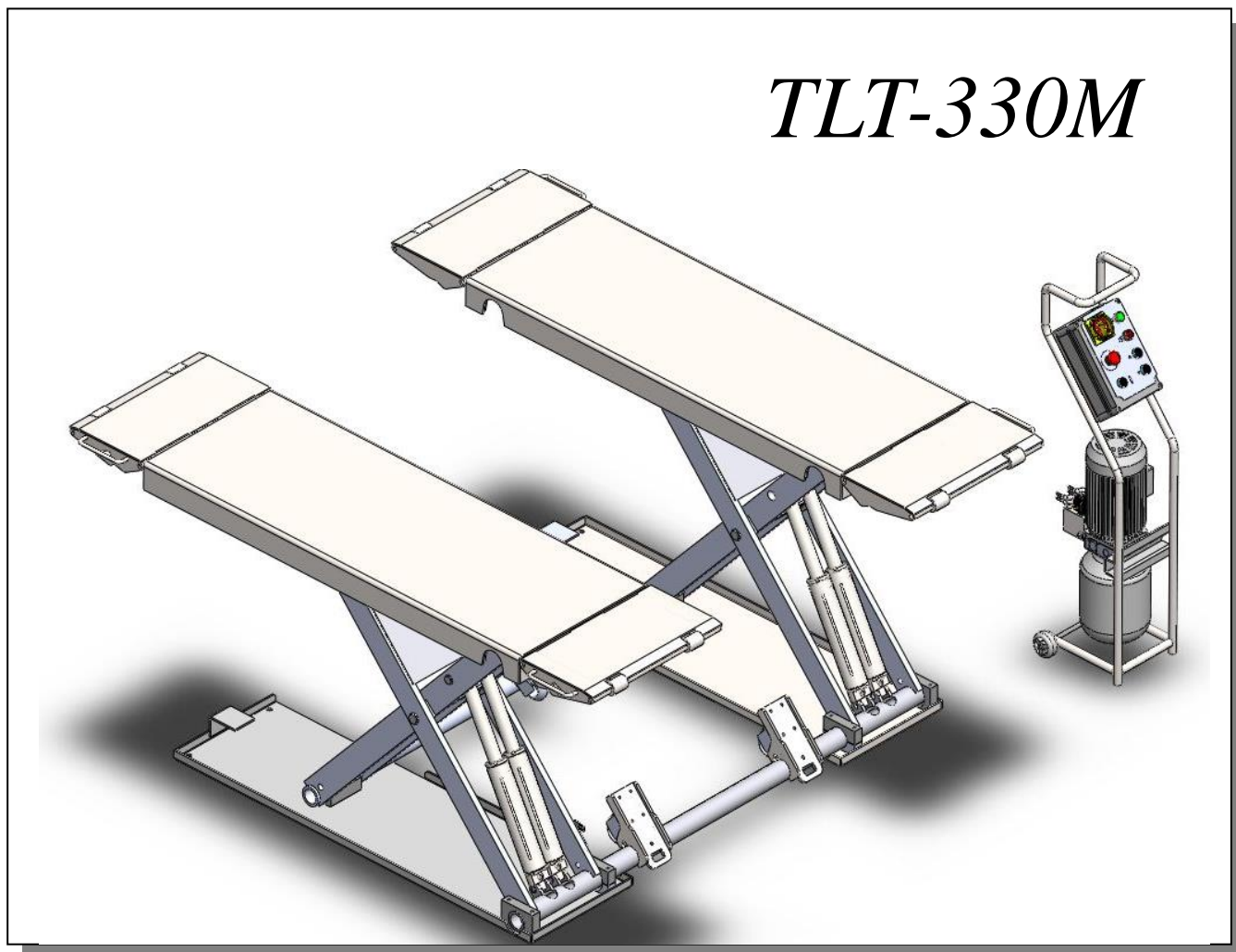




Hydraulic Automobile Lift

TLT-330M



USER'S MANUAL

Operation Manual & Instruction



Contents

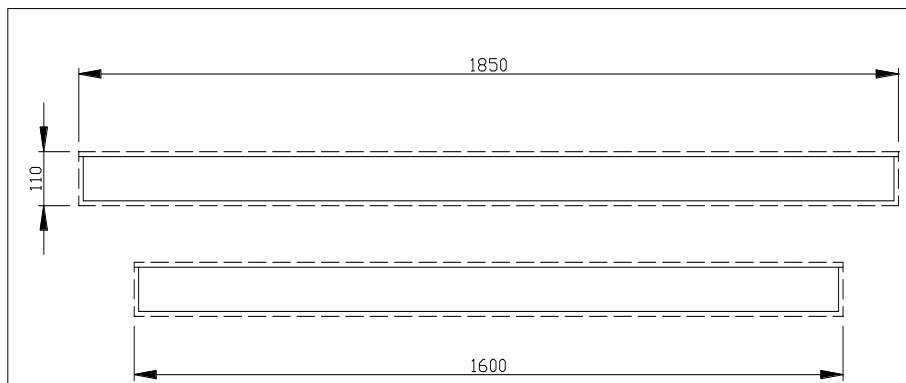
Manufacture and service

Packing, transport and storage

Introduction

- Description of the machine
- Technical specifications
- Safety
- Installation
- Adjustment
- Operation
- Maintenance and care
- Troubleshooting
- Accessory

PACKING (Picture 1)



Picture 1

Transport (Picture 2)



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.

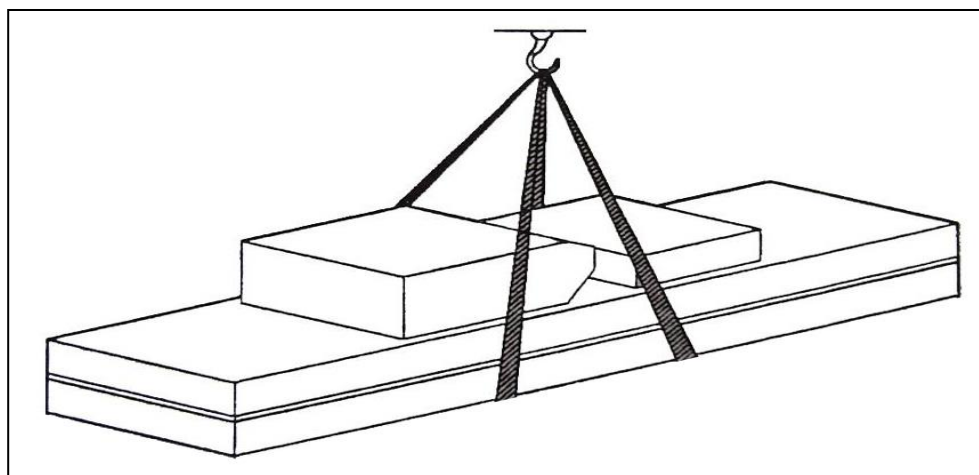
During loading and unloading operation, goods must be handled by vehicles or ships.

At the arrival of the goods, verify that all items specified in the delivery notes are included.

If finding missing parts, possible defects or damage due to transport, one should examine damaged cartons according to 'Packing List' to verify the condition of damaged goods and missing parts, also the person in charge or the carrier must be immediately informed.

The machine is heavy goods! Don't take manpower load and unload and transporting way into consideration, the safety of working is important.

Furthermore, during loading and unloading operation, goods must be handled as shown in the picture. (Picture 2)



Picture 2

Storage:

-The machine equipment should be stocked in the warehouse, if stocked outside should do the disposal well of waterproof.

-Use box truck in the process of transport, use container storage when shipping.

-The control box should be placed perpendicularly during the transport; and prevent other goods from extrusion.

-The temperature for machine storage: -25°C-- 55°C



This manual has been prepared for workshop personnel expert in the use of the lift operator and technicians responsible for routine maintenance fitter.

Workers should read the 'Maintenance & User Manual' carefully before carrying out any operation with the lift. This manual contains important information regarding:

- The personal safety of operators and maintenance workers.
- Lift safety
- The safety of lifted vehicles



CONSERVING THE MANUAL

This manual is an integral part of the lift.

The manual must be kept in the vicinity of the lift, so that the operator and maintenance staff must be able to locate and consult the manual quickly and at any time.

Attentively reading Chapter 3, which contains important information and safety warning, is particularly recommended.

The lift is designed and manufactured according to European Standard



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 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 indicates: the operative and safety aspects that may prove useful to the operator and maintenance worker. For better understanding the structure and operation of the lift and for best use of the same, workers must read the 'Maintenance & Use Manual' carefully before carrying out it.

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 and the maintenance fitter must also possess specific and specialized knowledge both in mechanical and engineering field.

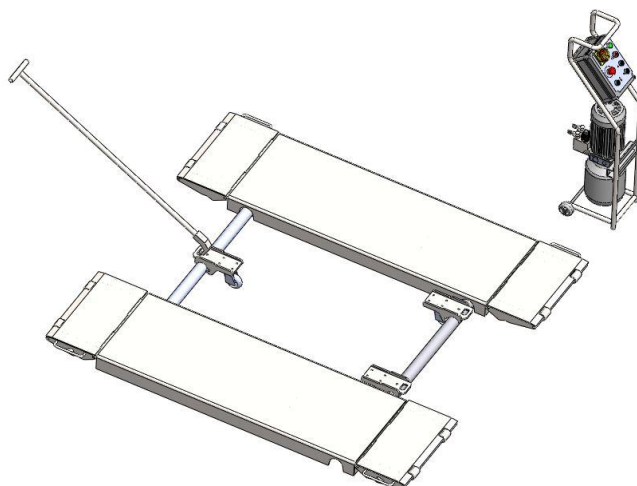
- OPERATOR: person authorized to use the lift
- MAINTENANCE FITTER: person authorized for routine maintenance of the lift.



Manufacturer owns the right to make little change for the manual owing to the improvement of technology.

Chapter 1 DESCRIPTION OF THE MACHINE**Machine Application:**

This lift can lift each kind of vehicle which weight is not over 3000kg, and is suitable for use in vehicle tests, maintenance, and caring for automobiles, which is particularly suitable for use in the basement or on the floor without hole. Meanwhile, this model can be movable with the following device (optional parts--pole and wheels).

**Structure Features:**

- Use hidden and thin scissor structure, dispense with construction, the occupation is small.
- Independent and movable control box, low-voltage controlling, good security.
- Own protection of safety valve and burst-proof equipment for hydraulic failure and over loading. So when the oil pipe bursts, the machine will not fall quickly.
- Use high quality hydraulic or electric element parts made in Italy, Germany, Japan and so on.
- Own manual lowering operation when the power is cut off.
- Movable.

Equipment:

- Machine basement (The position and space of equipment installation)
- Machine frame (The main structure of lift and insurance institution)
- Control box (Machine-controlled part)

Basic structure

The machine basement is made of cement and concrete.

Frame

Make of steel connecting rod, main lifting platform, sliding board, pneumatic double tooth, and hydraulic oil tank.

Control box

Under the control box is hydraulic oil tank and hydraulic pump, valve and other control system. On the control box is electrical system.



Scissor lift is designed and built to lift all kinds of vehicles, all other use are unauthorized. In particular, the lift is not suitable for washing spray work. And not lift the vehicle whose weight exceeds the maximum weight.

Main technical parameter

Machine type	Parameter
Drive	Electrical hydraulic
Lifting weight	3000kg
Lifting height	960mm
Platform initial height	100mm
Platform length	1450mm
Platform width	530mm
Lifting time	≤50s
Descent time	≤60s
Whole machine length	2036mm
Whole machine width	1850 mm
Weight	500kg
Voltage	AC 400V or 230V ± 5% 50Hz(60HZ--special ordered)
Power	2.2kw
Hydraulic oil	6L corresponds to wearable hydraulic oil (prepared by user)
Working temperature	5-40℃
Working humidity	30-95%
Noisy level	< 70db
Installation height	Height above sea level ≤ 1000M
Storage temperature	-25℃~55℃
Installation place	Indoor

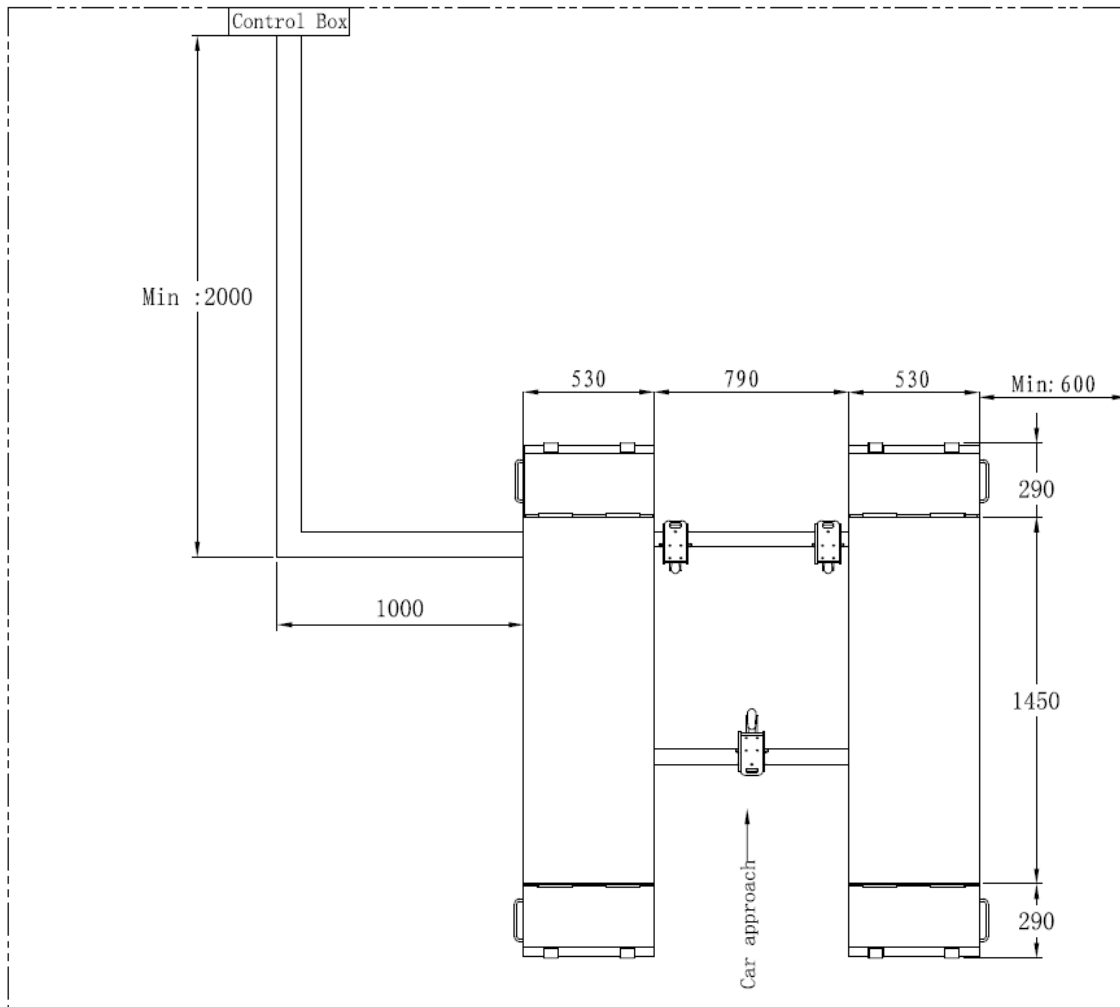
Table 1

Supply at the same time

- Connect to the power supply jack of control box (400V or 230V)
- Connect to the compressed air-entering pipe of control box ($\phi 8 \times 6\text{mm}$)

Requirements:

- Concrete type 425#, the period of desiccation is 15 days.
- Clean the basic layer, thickness of concrete $\geq 150\text{mm}$, the leveling of whole length $\leq 5\text{mm}$.



Picture 4(Installation drawing)



Note: The foundation of the end of the lift platform P1, P2 is the structure of concrete. When the thickness of inside level ground is less than 150mm, the end of P1, P2 should be irrigated the acreage: 2500×2500mm and thickness of concrete $\geq 150\text{mm}$. The basic thickness of concrete and leveling are keys, shouldn't egregiously expect the ability of level adjustment of machine-self.



THE LOWER PARTS OF THE VEHICLES UNDERBODY COULD INTERFERE WITH STRUCTURAL PARTS OF THE LIFT, TAKE PARTICULAR PARTS OF THE SPORTS-CAR.

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.



Read this chapter carefully and completely since important information for the safety of the operator or others in case of improper use of the lift is included.

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, the safety device installed and the correct use of such systems, residual risks and operative procedures to use (general specific precautions to eliminate potential hazards).



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 spray 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.

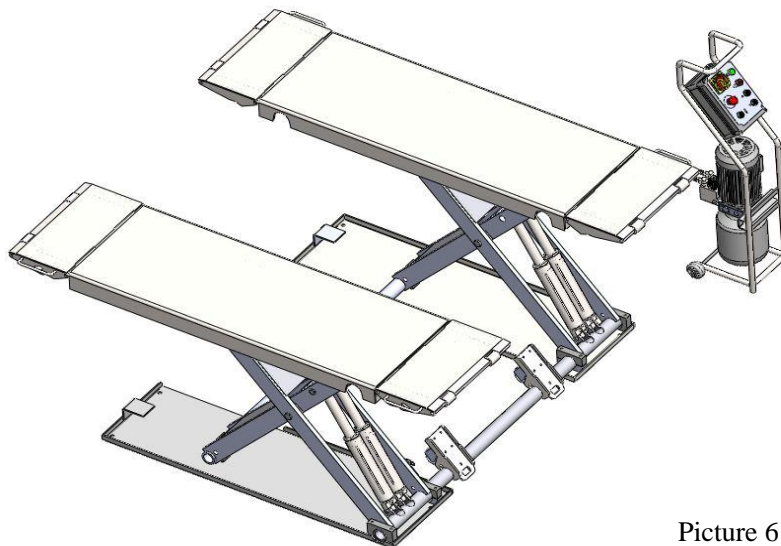
During lifting and descent, the operator must remain in the control station as the diagrams illustrated.

As the diagrams illustrated, 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 (e.g.: the safety gear is completely locked).



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

FAILURE TO COMPLY WITH THESE REGULATIONS CAN CAUSE SERIOUS INJURY TO PERSONS, AND IRREPARABLE DAMAGE TO THE LIFT AND THE VEHICLE BEING LIFTED.



Picture 6

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:

WARNING: indicates following operations that are unsafe and can cause minor injury to persons and damage the lift, the vehicle or other property.



CAUTION: indicates possible danger that can result in serious injury to people and damage property.



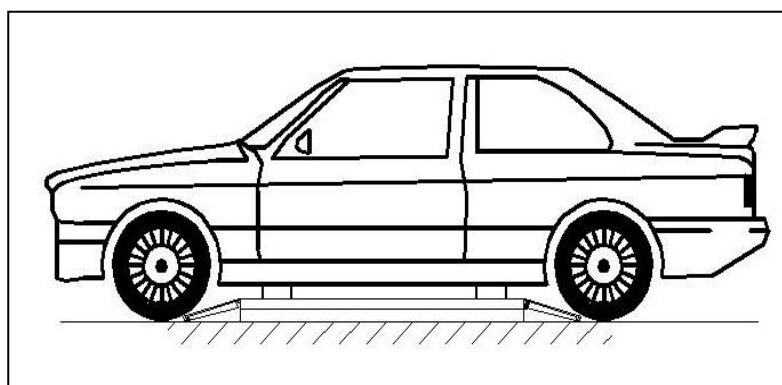
RISK OF ELECTRIC SHOCK: a specific safety notice placed on the lift in areas where the risk of electric shock is particularly high.

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 danger areas when vehicles are being lifted. (Picture 6)
- Make sure the vehicle is positioned correctly. (Picture 7)
- 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 and during standing.



Picture 7

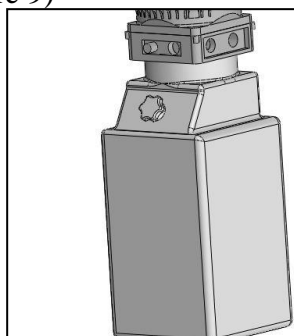
GENERAL RISKS FOR LIFTING OR DESCENT:

The following safety equipments are used to protect over loading or the possibility of engine failure.

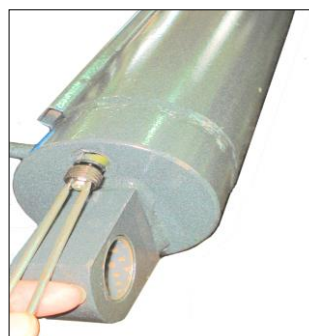
In the condition of over loading, the overflow valve will open and directly return oil to the oil tank. (See Picture 8)

Chapter 3 SAFETY

Each bottom of oil cylinder is equipped with antiknock valve. When the oil pipe is burst in the circuit of hydraulic pressure, the relevant antiknock valve will work and limit the speediness of platform. (See Picture 9)



Picture 8



Picture 9



There is nothing abnormal should be left on the safety modules to prevent safety gear from occlude normally.



RISKS FOR PERSONNEL

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



RISKS FOR EXTRUSION

During up and down operations, personnel leave the said area without following the rule and instruction.

During up and down operations, no person is admitted to work beneath the movable parts of the lift, should work in the safe zone. (Picture 6)



RISK OF IMPACT (Picture 10)

Before the operator begins up and down movements, make sure that there are no personnel inside the danger zone. When, due to operational reasons, the lift is stopped at relatively low elevations (lower than 1.75m above the ground) personnel must be careful to avoid impact with parts of the machine not marked with special colors.



RISK OF FALLING OFF (PERSONNEL)

During up and down operations, personnel are prohibited from entering the platforms and the vehicle to avoid falling off.



RISK OF FALLING (VEHICLE)

This hazard may arise in the case of incorrect positioning of the vehicle on the platforms, overweight of the vehicle, or in the case of vehicles of dimensions that are not compatible with the capacity of the lift.

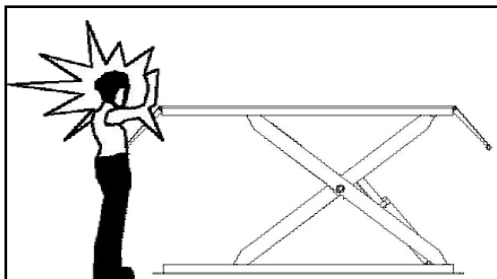


When the platform is being tested, the vehicle engine cannot be turned on. There is nothing should be placed on the lift-lowering area and the movable parts of the lift.

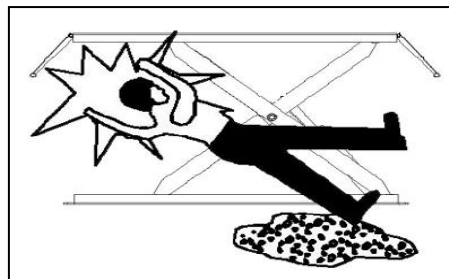
RISK OF SLIPPING (Picture 11)



The floor caused by lubricant contamination of around the lift. The area beneath and immediately surrounding the lift and also the platforms must be kept clean. Remove any oil spills immediately.



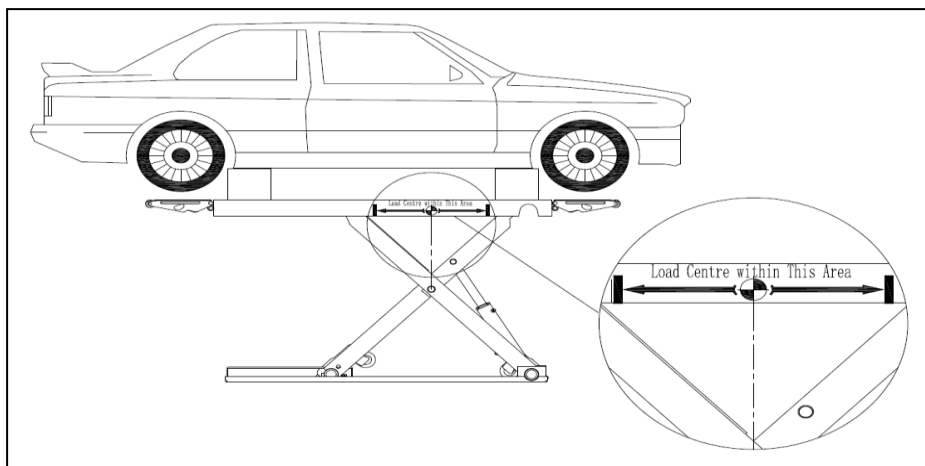
Picture 10



Picture 11

RISK OF VEHICLE IF ITS GRAVITY CENTER NOT INSIDE THE MARKED AREA

The gravity center of vehicle must be placed in the center area of the lift as marked in the following picture. (Picture 12)



Picture 12

RISK OF ELECTRIC SHOCK



Risk of electric shock of the areas of insulated in electric equipments were shattered. 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 illuminate compliance with the laws in force in the place of installation.

During up and down operations, the operator should continually observe the lift and can operate it only in the position of operator. When lifting and lowering the vehicle, the cushion needs being put in the bottom of chassis.

The handling of safety devices is strictly forbidden. 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.

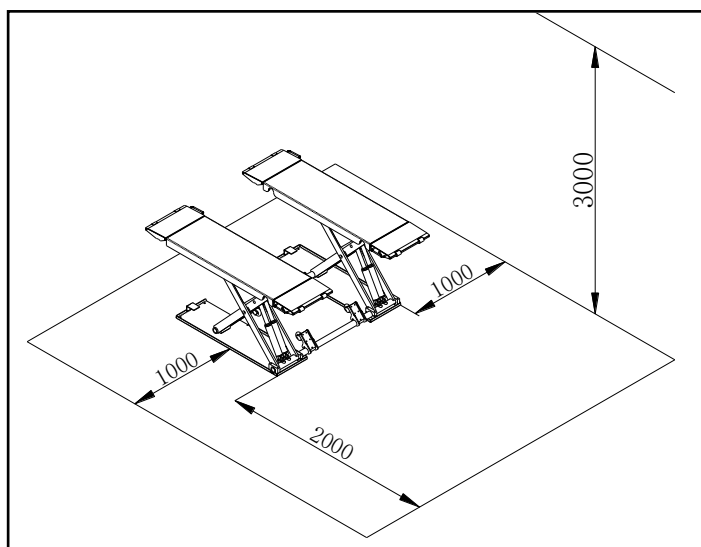


SKILLED AND AUTHORIZED PERSONNEL ONLY SHOULD BE ALLOWED TO PERFORM THESE OPERATIONS, FOLLOW ALL INSTRUCTIONS SHOWN BELOW CAREFULLY, IN ORDER TO PREVENT POSSIBLE DAMAGE TO THE CAR LIFT OR RISK OF INJURY TO PEOPLE.

Skilled technicians only appointed by the same manufacturer or by authorized dealers, are allowed to install the car lift.

INSTALLATION REQUIREMENTS

- The car lift must be installed according to the specified safety distances from walls, pole and what other equipments stated. (Picture 13)
- The specified safety distances from walls must be 1000 mm at least, taking into consideration the necessary space to work easily. Because space for the control site and for possible runways in case of emergency is also necessary.
- The room must be previously arranged for the power supply and pneumatic feed of the car lift.
- The room must be 3000 mm in height, at least.
- The car lift can be placed on any floor, as long as it is perfectly level and sufficiently resistant. ($\geq 250 \text{ kg/cm}^2$, the thickness of concrete $\geq 150 \text{ mm}$)



Picture 13

- All parts of the machine must be uniformly lit with sufficient light to make sure that the adjustment and maintenance operations can be performed safely, and without reflected light, glare that could give rise to eye fatigue.
- The integrity of arrived goods should be checked before the lift is installed.
- Moving and installing lift should follow the process as the picture instructs.

The transport and storage of machine refers to “TRANSPORT AND STORAGE” on page 4.

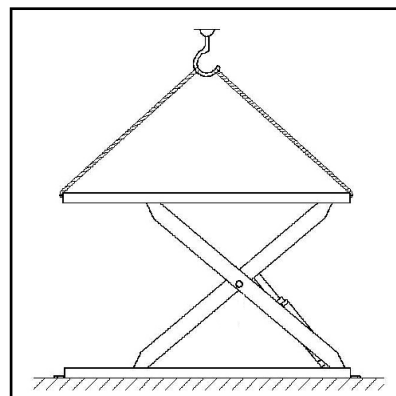
Platform Installation:

- Place two platforms on the position of the location.
- The bottom of hydraulic cylinder is located in the frontage of machine (the direction of driving on the vehicle)
- Use fork lift or other lifting equipments to lift the platform (Picture 14) and insert a wood in the middle part of joint pole.



Prohibit working beneath the lift when hydraulic system is not completely equipped with hydraulic oil and take the action of up and down operations.

- When moving the lift platform, adjust the space between two platforms; make sure that the two platforms are parallel.



Picture 14

LINE CONNECTION

Connect the electrical and oil line according to 'the electrical diagram' and 'oil pipe connection diagram'.



Only after connecting the hydraulic system can connect the air loop, cannot damage oil pipe, wire.

In the process of connecting oil pipe, pay particularly attention to the protection of pipe tie-in to prevent abnormal thing from entering oil loop, then damaging hydraulic system.

ELECTRIC CIRCUIT CONNECTION:

Follow the stated line- pathway and line-number of the 'electrical diagram' to connect electric circuit.



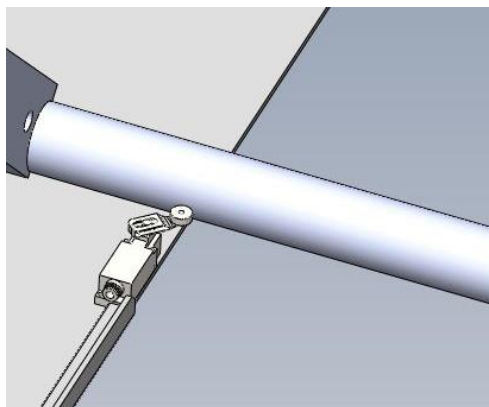
Only skilled person is allowed to perform the operations.

- Open the control box front cover.

-Connection of power supply: the 400V three-phase and five-line connection wires (3×2.5 mm²+2×1.5 mm² cable wire) for power supply are connected to the terminals in control box. And to connect the ground cable.

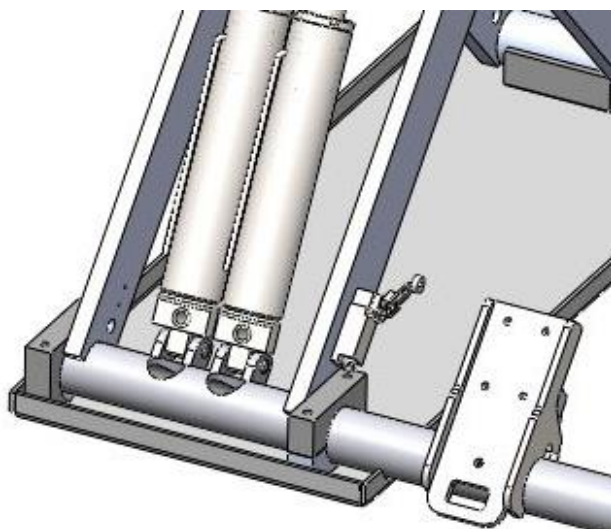
-If the lift is operated at 230V three-phase, connect the cables according to the circuit diagram.

-Connection of up limit switch (SQ1) (Picture 16): For detail connection, please see electrical drawing



Picture 16

-Connection of lower limit switch (SQ2) (Picture 17): For detail connection, please see electrical drawing.



Picture 17

Oil PIPE CONNECTION:

Follow “oil pipe diagram “to connect the oil pipes.

Only skilled and authorized person is allowed to perform the operations. And pay particularly attention to the protection of oil pipe fitting.



-Following oil pipe number to lead the oil pipe from control box to the cylinder. (Refer to “oil pipe diagram”)

-When connecting oil pipes, pay attention to the protection of oil pipe tie-in to prevent impurities from entering hydraulic circuit.

When connect the oil pipes, be careful not to mistake each oil pipe number.



During the standard installation, control box is in the nearside of vehicle-entering direction. If placed on the right should adjust relevant oil pipe.

**Add oil and check the order of phase.**

After installing lift as Picture 4 required and connecting hydraulic circuit and electric circuit, operate it as following:

-open the hydraulic oil tank, add 12L of hydraulic oil into the oil tank, the hydraulic oil is provided by the user.



Make sure the clean of hydraulic oil, prevent any impurity into the oil line, lead the digest of the oil line and no working of the electromagnetic valve.

-Turn the "MAIN SWITCH" to turn on power, and click the 'UP' button, check whether the motor turns clockwise (looking downward), if not press **power** button, change the phase of the motor.

When turn on power, the high voltage will exist in the control box, only authorized person can operate it.

No load of main machine test:

-Turn on 'MAIN SWITCH' to turn on the power.

-Press "UP" button, pay attention to the synchronization and placidity of the lifting.

-Check whether the oil line are leakage.



When testing the lift, no person or other things are allowed to stand or be put near the two sides or beneath the machine. If any abnormal is found, turn off "MAIN SWITCH" to stop it immediately. After clearing obstacles, do the test again.

Load of machine test:

-Drive the vehicle which weight doesn't exceed maximum lift weight to the platform, and then the driver leaves it.

-Put the lift rubber on the platform.

-Press 'UP' button, lift the platform and pay attention to the synchronization and placidity of the lifting.

-Check whether the oil line are leakage.



When beginning load of machine test, no person or other things are allowed to stand or be put near the two sides or beneath the machine.

Test vehicle whose weight doesn't exceed maximum lift weight.

Check whether the oil line are leakage. If any abnormal is found, turn off "MAIN SWITCH" to stop it immediately. After clearing obstacles, do the test again.



Only skilled and having been trained personnel is allowed to perform the operations. Check proceedings as following.

Operation Notices:

- Clear obstacles around the lift 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 to lifting over weight vehicles or other goods.
- When lifting vehicle, the chassis of the vehicle should be filled up with rubber cushion.
- Pay attention to the synchronization of the lifting and lowering. If any abnormal is found, stop the machine timely, check and remove the trouble.
- When the equipment is not used for a long time or overnight, the machine should be lowered to the lowest position on ground, and remove vehicle, then cut off power supply.

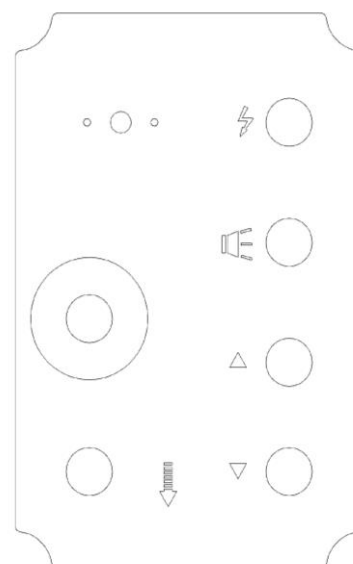
Instructions on electric operation: (see the operation panel)

LIFTING:

- Press 'UP' button, the oil pump will work immediately. Hydraulic oil is sent to hydraulic cylinder, and the platforms are being lifted.
- Release 'UP' button, the oil pump will stop immediately. The platforms stop lifting.

DESCENT:

- Press 'DOWN' button, and the platforms descend.
- Release 'DOWN' button, platforms stop descending. But when keep pressing 'DOWN' button, the platform will stop automatically around 200~300mm height when reach the lower limit switch. Release "DOWN" button and press button "SECOND DOWN", the two platforms will descent again. During the whole lowering process, the buzzer rings all the time.



Picture 24

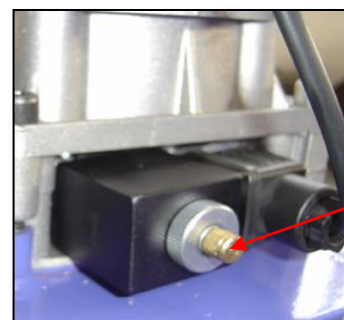


EMERGENCY MANUAL OPERATION FOR LOWERING (POWER FAILURE):

When lowering through manual operation, should observe the condition of platform at any time because there is vehicle on the platforms. If there is something abnormal, screw down oil loop valve immediately.

The process of manual operation:

- Switch off the power button (avoid abruptly incoming electricity). Open the back cover of control box to find the electromagnetic valve A for lowering.
- Loosen manual oil loop stud at the end of lowering electromagnetic descent valve core, and then the platforms begin to descend.
- After the machine has been descended, screw down descent valve's stud timely. The process of manual lowering comes to the end.



Picture 25



Skilled personnel only are allowed to perform the operations.

- All bearings and hinges on this machine must be lubricated once a week by using an oilier.
- The upper and lower sliding blocks and other movable parts must be lubricated once a month.
- The hydraulic oil must be replaced one time each year. The oil level should always be kept at upper limit position.



The machine should be lower to the lowest position when replace hydraulic oil, then let the old oil out, and should be filtering the hydraulic oil.

- Each team checks the agility and reliability of pneumatic safety equipment.

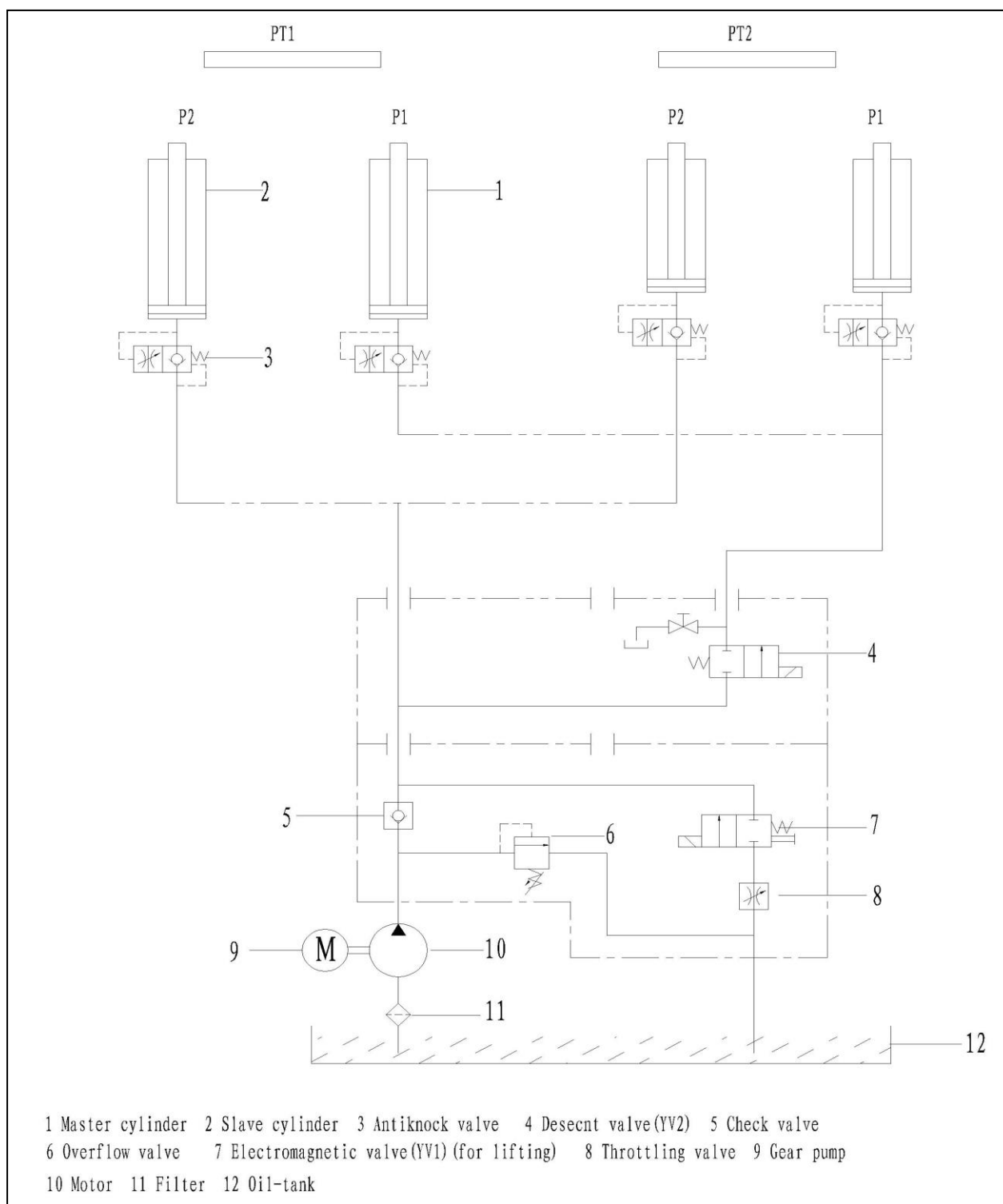


Skilled personnel only are allowed to perform the operations.

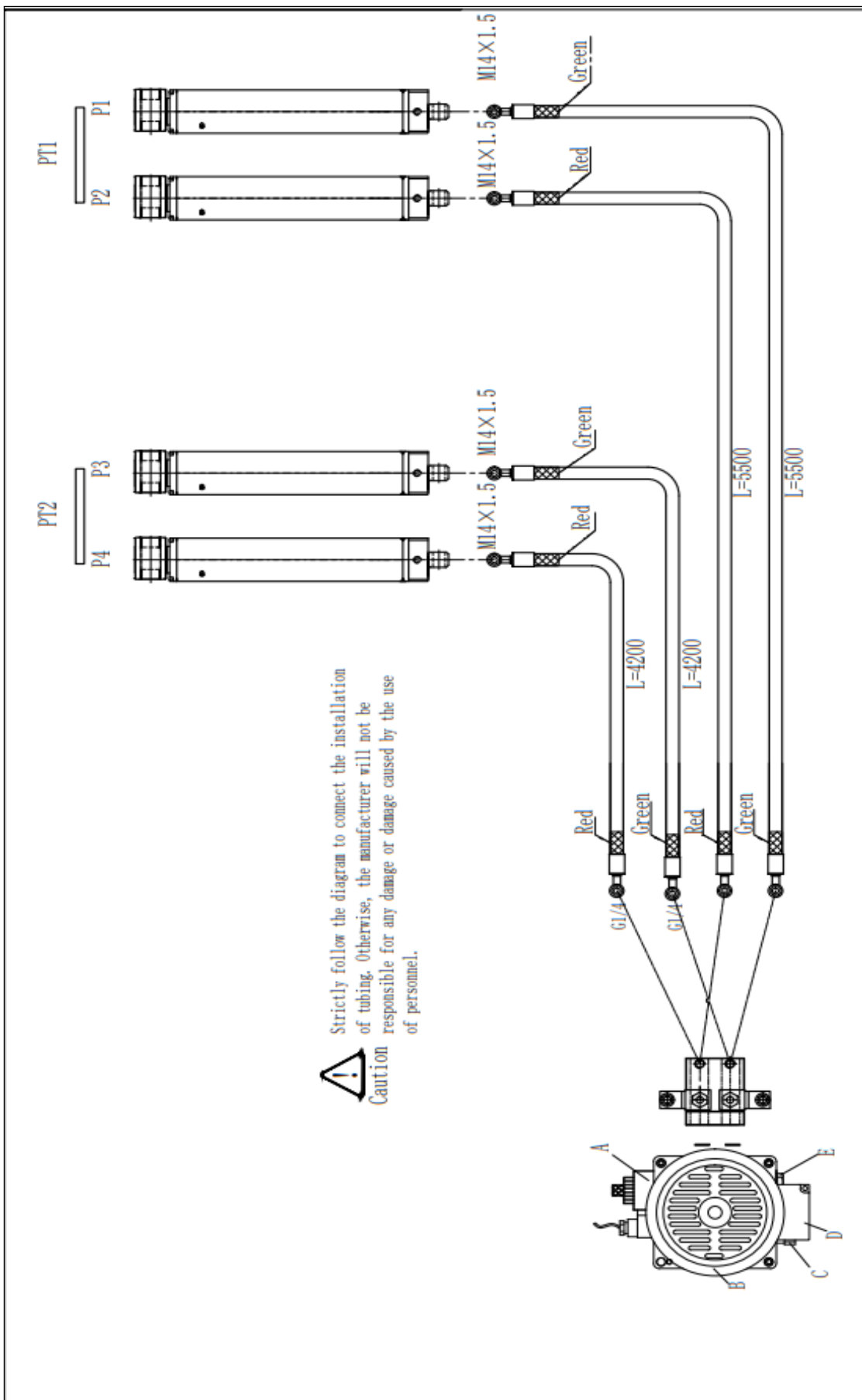
Failure	Cause	Troubleshooting
The motor does not run in lifting operation.	① Connection of power supply wires is not correct.	Check and correct wire connection
	② The AC contactor in the circuit of the motor does not pick up.	If the motor operates when forcing the contactor down with an isolation rod, 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.	Check the limit switch, wires, to 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 for 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.
When press "Lower" button, the machine is not lower	① The descent valve is energized but does not work.	Check the plug and coil of the descent valve and check the right turn tightness of its end copper nut and so on.
	② The 'antiknock valve' is blocked.	Remove the 'antiknock valve' from the oil supply hole at the bottom of the oil cylinder, and clean the "antiknock valve".
The machine lowers extremely slowly under normal loads.	① The hydraulic oil has too high viscosity or frozen, deteriorated (in Winter).	Replace with hydraulic oil in accordance with the instruction book.
	② The "antiknock valve" for preventing oil pipe burst is blocked.	Use a wood block on the bottom plate to lock the lift, then remove the "antiknock valve" from the oil supply hole at the bottom of the oil cylinder, and clean the 'antiknock valve'.
The right and left platforms are not synchronous and not in the same height.	① The air in the oil cylinder is not vent completely.	Refer to 'Oil Make-up adjustment'.
	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" cannot 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.
Noisy lifting and lowering.	① Lubrication is not enough.	Lubricate all hinges and motion parts (including piston rod) with machine oil
	② The base or the machine is twisted.	Adjust again the levelness of the machine, and fill the pad the on base.

Table 2

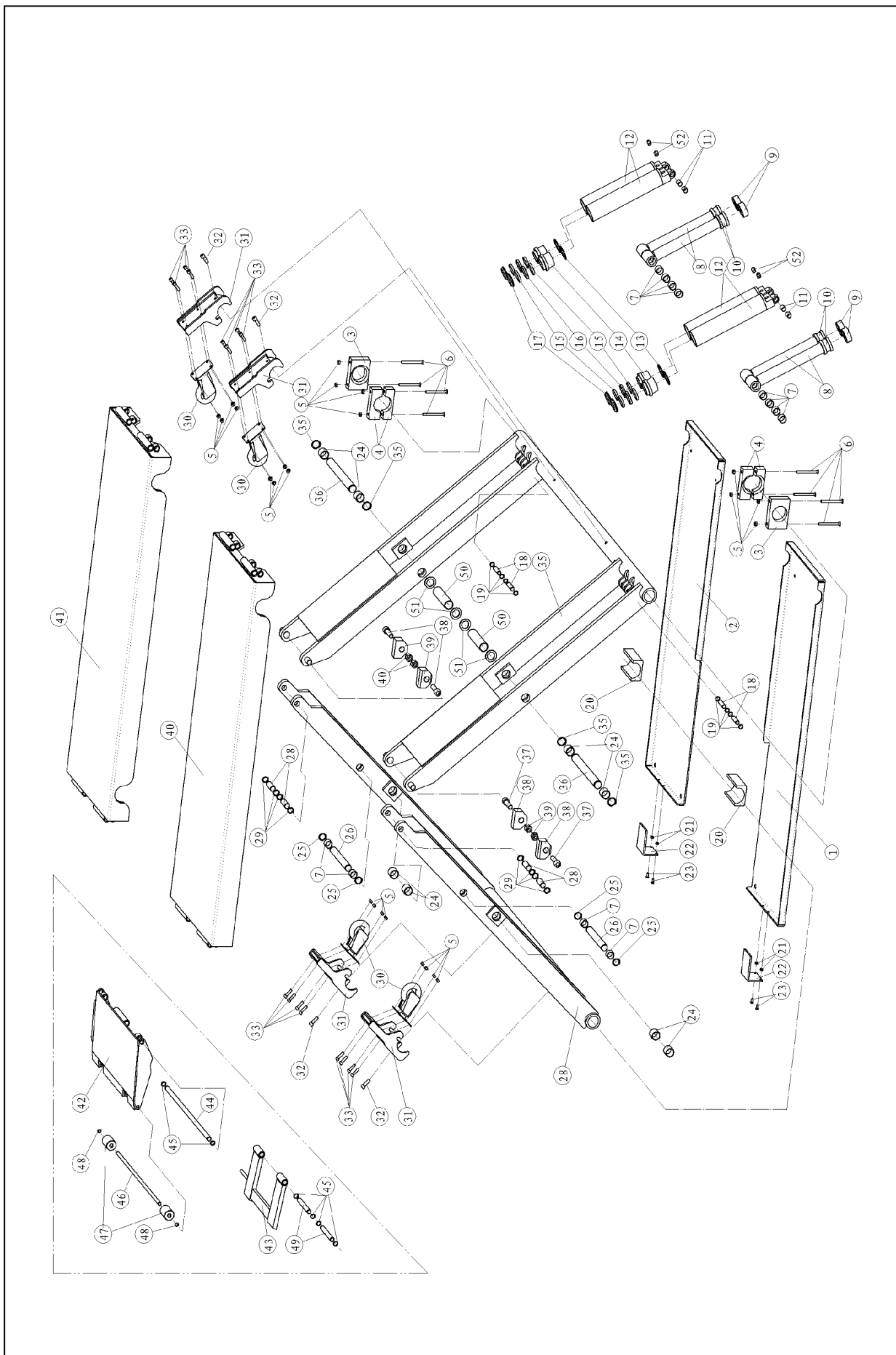
Hydraulic pressure elements diagram



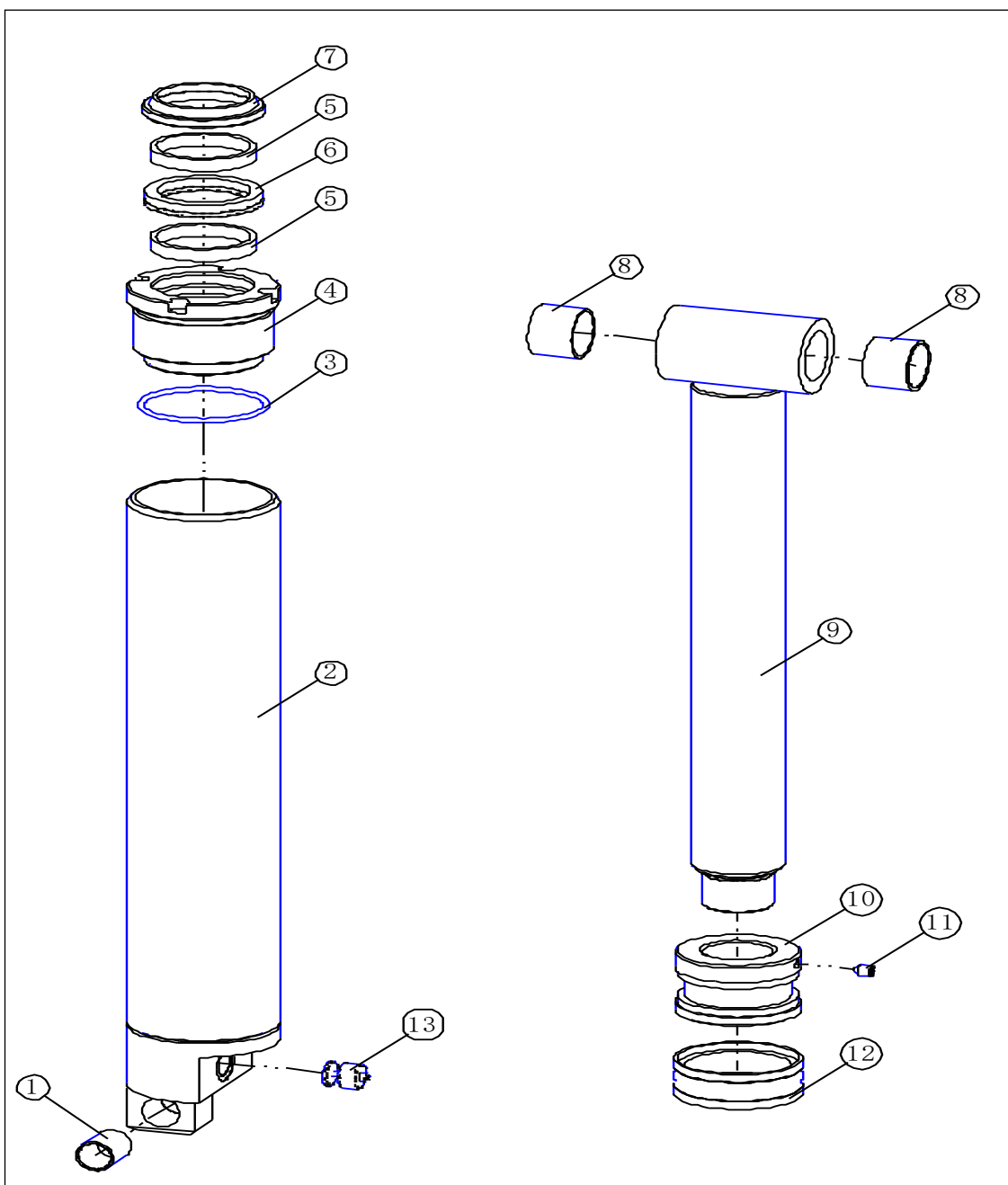
Oil pipe connection diagram



Explosion diagram (please take the actual machine as standard): PLATFORM



Explosion diagram (please take the actual machine as standard): CYLINDER



Explosion diagram (please take the actual machine as standard): CONTROL BOX

