Version: 25UF043052

Serial No.: _____

Production Date: _____

USER'S MANUAL

ELECTRO-HYDRAULIC SCISSOR LIFT

MODEL: WK501TS.HR

TABLE OF CONTENTS

PREFACE

This manual has been prepared for workshop personnel expert in the use of the lift (operator) and technicians responsible for routine maintenance (maintenance fitter). Read the User's Manual carefully before carrying out any operation with the lift. 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 accompany with.

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

Attentively read 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 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 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 User's 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 fitter, who must also possess specific and specialized knowledge (mechanical and 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 owns the right to make little change for the manual owing to the improvement of technology.

PACKING, TRANSPORT AND STORAGE

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

PACKING:

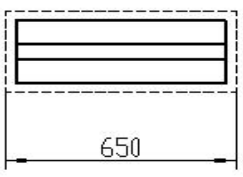


Fig. 1

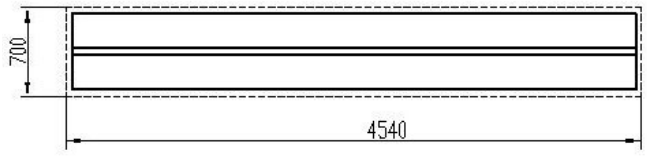


Fig. 2

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.

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. In case of missing parts possible defects or damage may due to transport operations.

If finding missing parts, possible defects or damage may 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. ***(Fig. 3)***

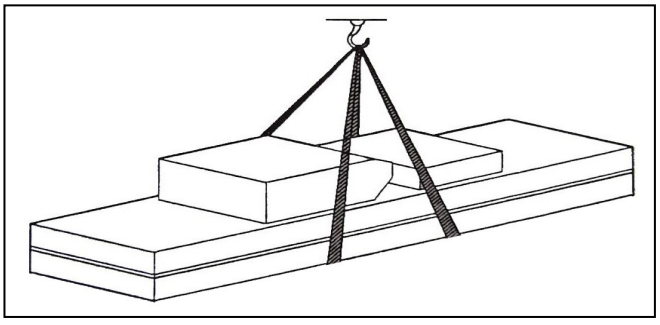


Fig. 3

STORAGE:

- The machine should be stocked in the warehouse, if stocked outside, should do the anti-water things.
- 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 : -25ºC-- 55ºC

Chapter 1 DESCRIPTION OF THE MACHINE

1.1 APPLICATION

TS401.HR scissor lifts suitable for use in four wheel alignment, vehicle tests, maintenance and care for various types of small automobiles.

1.2 STRUCTURE FEATURES

- Independent control box. Low-voltage controls (24V), has high security.
- Graceful outlook, with concealing structure for the two levels, take up the space small.
- Hydraulic-volumetric synchronism of hydraulic cylinder. Device for synchronization of platforms.
- Easy for type mount and dismount and chassis maintenance.
- The position of the front wheel turntable (optional part) is movable so that the slide plate can be fit for more cars.
- Double mechanical safety ratchet.
- Safety valve in case of hydraulic failure and overloading.
- Device for antiknock and locked valve in case of explosive pipe.
- Device for manual lowering in case of power failure.

1.3 CONSTRUCTION

Equipment:

- Machine basement
- Machine frame
- Control box

Frame:

Make up for steel connecting rod, main lifting platform, sliding board, pneumatic double tooth, 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.

Chapter 2 SPECIFICATIONS

2.1 MAIN TECHNICAL PARAMETERS

MODEL	WK501TS.HR
Drive	Electrical hydraulic
Max lift weight	5000 kg
Main machine Lift height	2160 mm
Sub machine lift height	460.38 mm
Platform initial height	330 mm
Main machine platform length	5000 mm
Sub machine platform length	1535 – 1835mm
Main machine platform width	623 mm
Main machine Lifting time	≤50S
Main machine lowering time	≤60S
Sub machine Lifting time	≤20S
Sub machine lowering time	≤30S
Overall width	Approximately 2110 mm
Overall length	5592 mm
Power	AC 400 or 230V±5% 50 Hz
Hydraulic oil	23L 20# high abrasive hydraulic oil
Temperature	5-40℃
Working humidity	30-95%
Noisy	76 db
Installation height	≤1000M
Storage temperature	-25-55C

2.2 DIMENSION

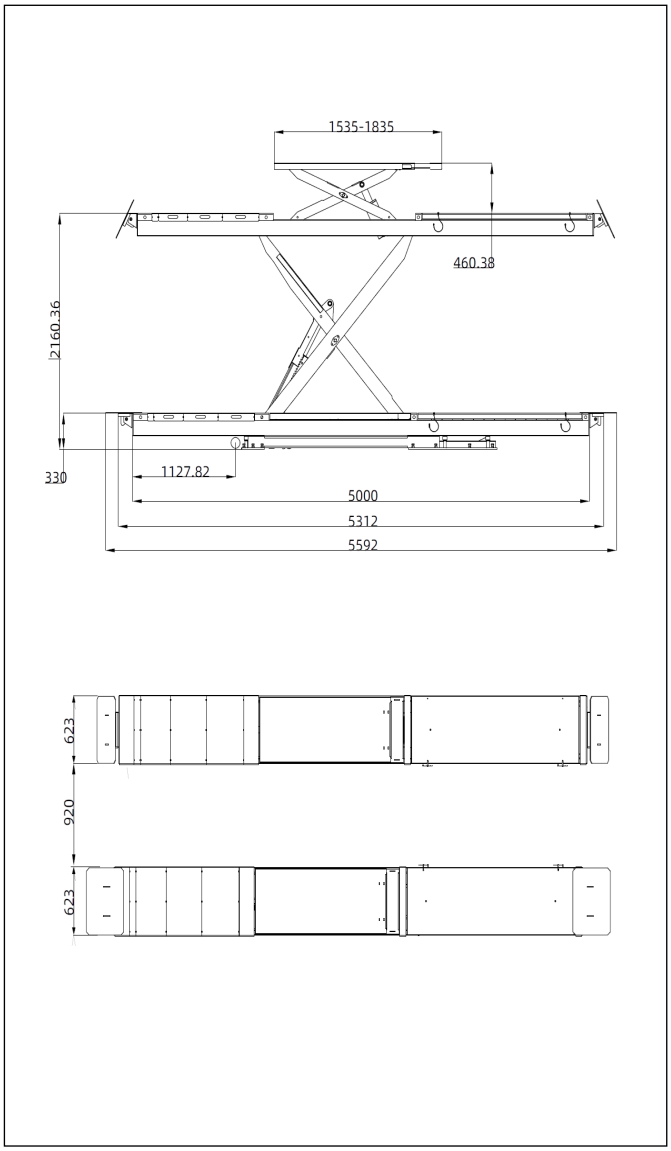


Fig. 4

Motor:

Type……..……Y90L

Max. Power……...……..…… 2.2kw

Max. Voltage……..……AC 400 or 230V ±5%

Max. Electricity……..……...… 400V:5A

……...……..230V:10A

Max. Frequency……...……50/60Hz

Poles……..…….…… 4

Speed……....…1450 r.p.m./min

Building Shape……...…… B14

Insulation Class……...……F

When connecting the motor refer to the enclosed diagrams, and the motor direction is clockwise.

Pump:

Type……P4.3

Model……gear pump

Max. Flux…….……...……4.3cc/r

Joint Type……...……Joint

Overfull valve:

Continuous Working Pressure……...……210bar

Intermittent Working Pressure……...……150~300bar

Inject 20 litters of wearable hydraulic oil into the oil tank.

2.3 INSTALLATION SCHEME

To install the lift it is necessary to execute suitable foundations with the following characteristics:

Supply at the same time:

- Connect to the power supply jack of control box (400V or 230V 15A)
- Connect to the compressed air-entering pipe of control box (ϕ8×6mm)

Requirements:

- Concrete type 425#, the period of desiccation is 15 days.
- Clean the basic layer, thickness of concrete≥150mm, the leveling of whole length≤10mm.

4800

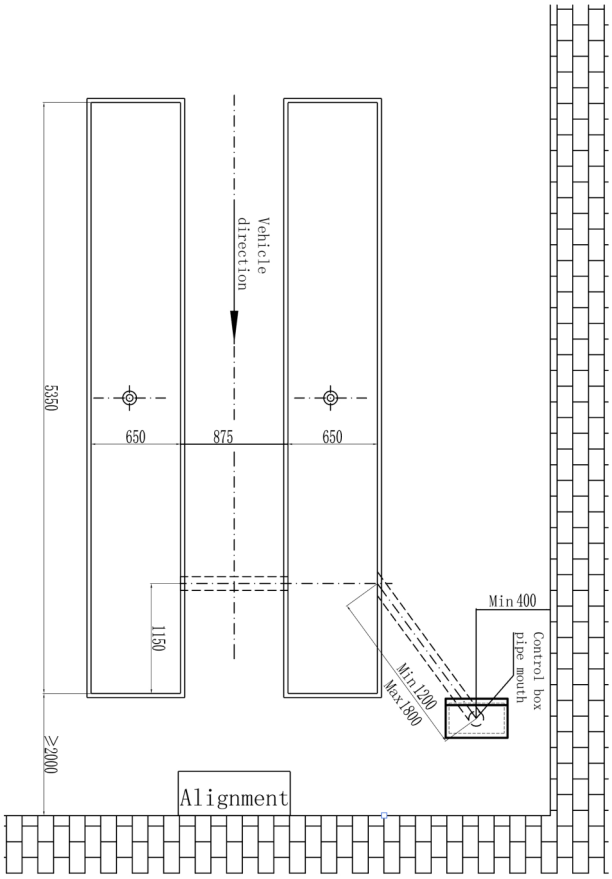


Fig. 5

Remarks:

- The two pits level between ≤5mm.
- Control box location can exchange from left to right.

The thickness and leveling of the base concrete are essential and the leveling adjustment ability of the machine itself cannot be relied upon to excessively.

2.4 TYPES OF VECHLES SUITABLE FOR

This lift are suitable for virtually all vehicles with total weight and with dimensions not exceeding the below data.

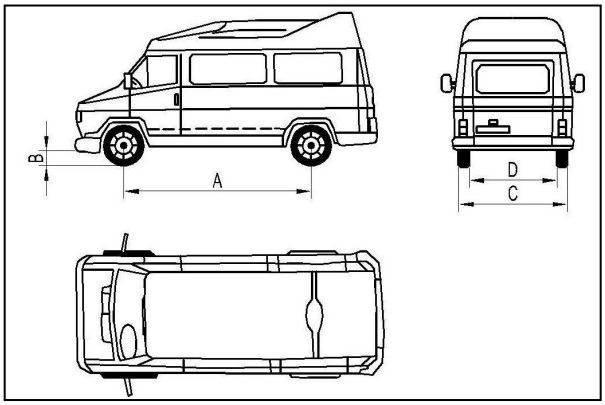
MAXIMUM WEIGHT:

Maximum weight not exceed the rated capacity:

WK501TS.HR: 5000kg

THE MAX DIMENSION OF VEHICLE:

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



	5000 kg	
	Min. (mm)	Max. (mm)
A	1900	4000
B	100	
C		1900
D	900	

Fig. 6

THE LOWER PARTS OF THE VECHILE 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.

Chapter 3 SAFETY

 ***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).

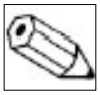
 ***Lifts are designed and built to lift vehicles and hold them in the elevated position in an enclosed workshop. All other uses of the lifts are unauthorized. In particular, the lifts are not suitable for:***

- 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 PROTECION DEVICES OR WITH THE PROTECTION DEVICES INHIBITED.***

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

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 safety zone while vehicles are being lifted.

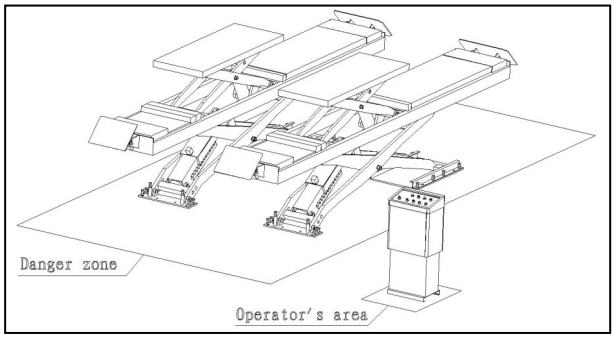


Fig. 7

- Make sure the vehicle is positioned correctly.
- 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.

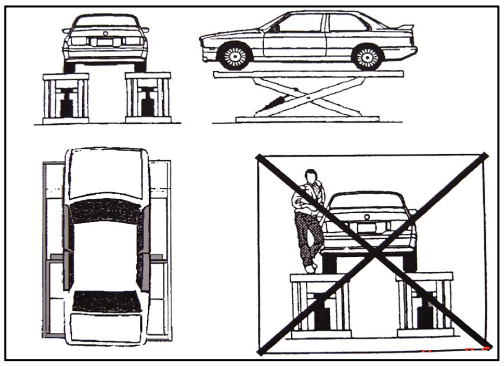


Fig. 8

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 over-falling valve will open and directly return oil to the oil tank. ***(Fig. 9)***

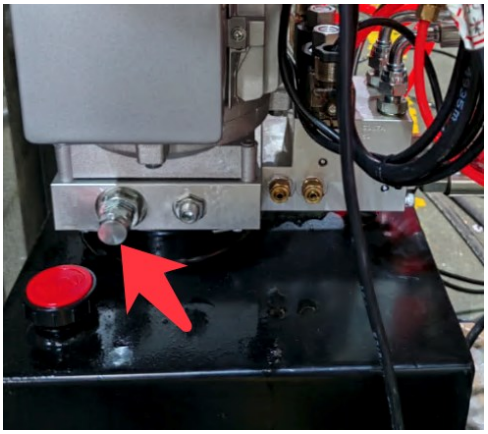


Fig. 9

- Each bottom of oil cylinder is equipped with antiknock and locked valve. When the oil pipe is burst in the circuit of hydraulic pressure, the relevant antiknock and locked valve will work and limit the speediness of platform. ***(Fig. 10)***

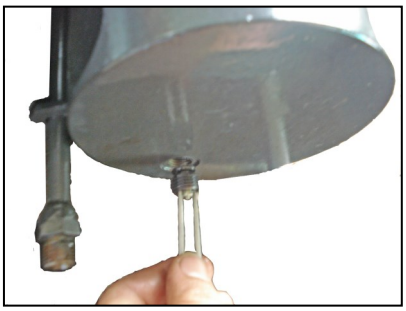


Fig. 10

- Safety tooth and gear module are parts which guarantee the safety of personnel beneath the machine in failure condition of other protections. So make sure the integrity of gear module and that the safety tooth has occluded completely. ***(Fig. 11)***

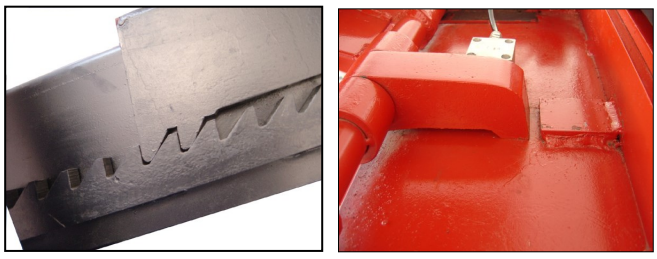


Fig. 11

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.

RISK OF CRUSHING

Possible if the operator controlling the lift is not I 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 CRUSHING (PERSONNEL)

When the platforms and the vehicle are lowering personnel are prohibited from entering the area beneath the movable parts of the lift. The lift operator must not start the maneuver unit it has been clearly established that there are no person in potentially dangerous positions.

RISK OF IMPACT

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.

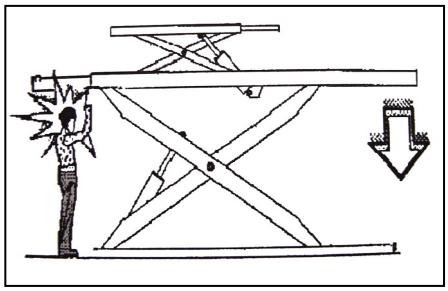


Fig. 12

RISK OF VEHICLE MOVING

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

In the case of large or particular heavy vehicles, sudden movement could create an unacceptable overload or uneven loads haring. Therefore, before lifting the vehicle and during all operations on the vehicle-make sure that it is properly stopped by the hand brake.

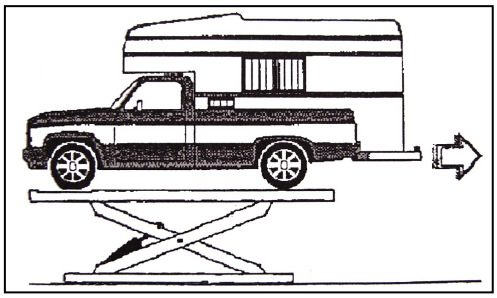


Fig. 13

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.

RISK OF VEHICLE FALLING FROM LIFT

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

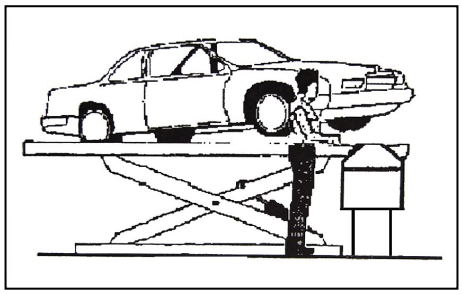


Fig. 14

Never attempt to perform tests by driving the vehicle while it is on the platforms

Never leave objects in the lowering area of the movable parts of the lift.

RISK OF SLIPPING (Fig. 15)

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.

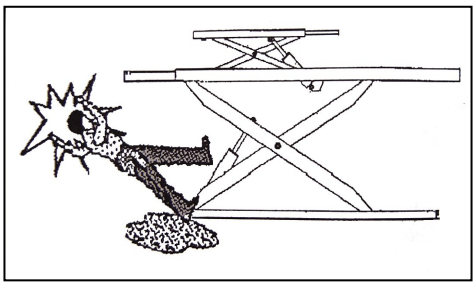


Fig. 15

RISK OF ELECTRIC SHOCK

Risk of electric shock in areas of insulated shattered electric equipments.

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.

RISK OF COMPONENT FAILURE DURING OPERATION

The manufacturer has used appropriate materials and construction techniques in relation to the specified use of the machine in order to manufacture a reliable and safe lift. Note however, that the lift must be used in conformity with manufacturer's prescriptions, and the frequency of inspections and maintenance works recommended.

RISK RELATED TO IMPROPER USE

Persons are not permitted to stand or sit on the platforms during the lift maneuver or when the vehicle is already lifted.

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.

Chapter 4 INSTALLAION

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.

4.1 INSTALLATION REQUIREMENTS

- The car lift must be installed according to the specified safety distances from walls, pole and what other equipments stated. ***(Fig. 16)***

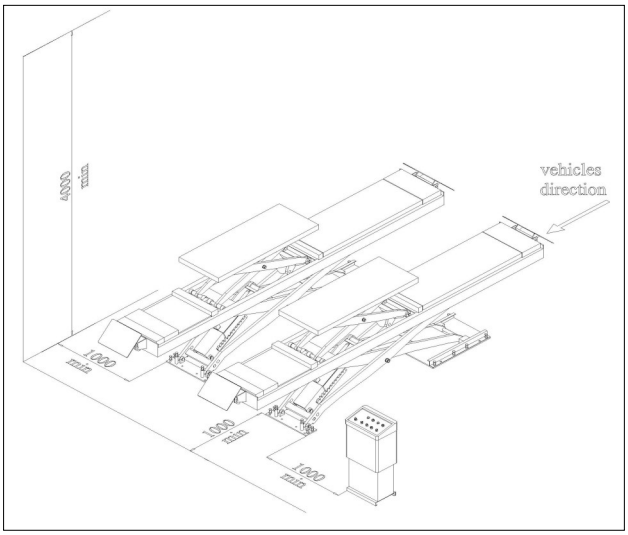


Fig. 16

- The specified safety distances from walls must be 1000 mm at least, taking into consideration the necessary space to work easily. Furthermore, 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 4000 mm in height. At least, the car lift can be placed on any floor, as long as it is perfectly level and sufficiently resistant.
- The car lift can be placed on any floor, as long as it is perfectly level and sufficiently resistant. (≥250kg/ cm²,the thickness of concrete≥150mm)
- 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 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≥150mm, the leveling of whole length≤10mm.

4.2 INSTALLATION

4.2.1 PLATFORM INSTALLATION

Before positioning the lift on the ground check, check the level of the equipment basic. If it is not a flat basic, insert the adjustment feet on the base ***(Fig. 17 & 18)***.

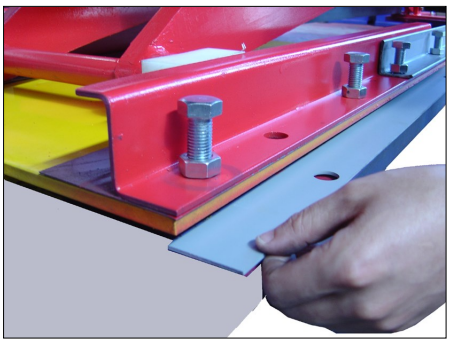


Fig. 17

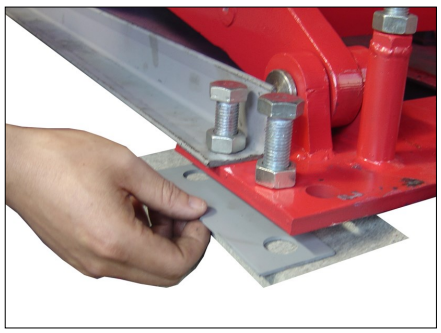


Fig. 18

Place the lift as required following the instructions shown on ***Fig. 4***.

Lift the two platform ***(Fig. 19 & 20)*** using a crane; place them at the height of about 1000 mm. and make sure the mechanical safety device are on.

The cutouts for the alignment turning plates are positioned at the front of the direction of moving vehicle. The yellow and black safety stripes are applied to the sides of the ramp.

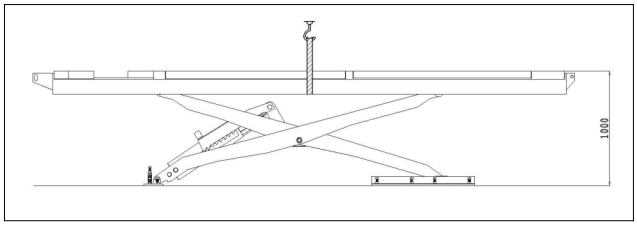


Fig. 19

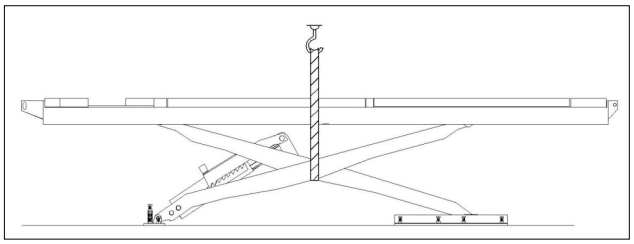


Fig. 20

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.

To insert the lift into the recess, sling the lift as described Fig. 20 and pay attention not to damage the hoses and electrical cables.

Before placing the pneumatic and hydraulic hoses to the control unit, stick adhesive tape on the pipe fittings in order to protect the hoses from dust and impurities which could damage the hydraulic system.

Perform electric, hydraulic and pneumatic connections, follow carefully the relevant numbering. Regarding the proper connections necessary to make the car lift perfectly working, see the following chapters.

4.2.2 LINE CONNECTION

It is critical that you protect the connections and fittings of the hydraulic pipes and that you take measures to prevent debris from entering the pipes. Lay out the hydraulic pipes for the lift. Connect the hydraulic pipes to the lift according to the hydraulic connection diagram. And connect the air hoses to the lift according to the air hose diagram. The supply line (8 mm × 5 mm) is connected to the air inlet connection to the solenoid air valve inside the control box ***(Fig. 21)***.

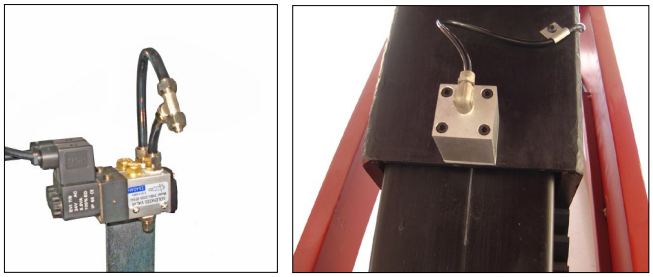


Fig. 21

4.2.3 ELECRIC CIRCUIT CONNECTION

Connect the electrical according to the electric wiring diagram.

4.2.3.1 Connection of power supply

The electrical service to the lift should be installed only by qualified personnel. Before connecting the electrical service to the lift, be sure main power has been turned OFF.

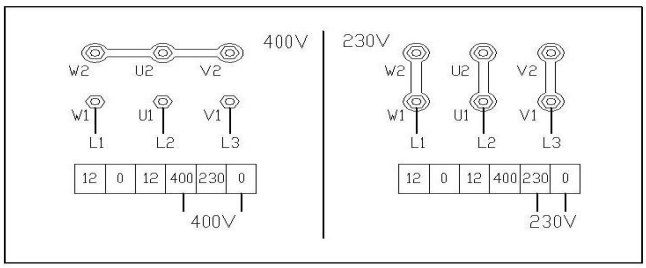


Fig. 22

The electric wiring diagram is arranged by the manufacturer for operating at 400V three-phase. Connect the live wires (3×2.5 mm2) for the power supply to terminals L1#, L2# & L3# inside the control box. And connect the earth wire (1×1.5 mm2) to the terminals PE#. If the power requirement for the lift is 220 VAC connect the electrical according to wiring diagram of 230V two-phase. Live wire connect to terminal L3, and neutral wire connect to terminal N#. The control box/panel must be properly grounded for safety.

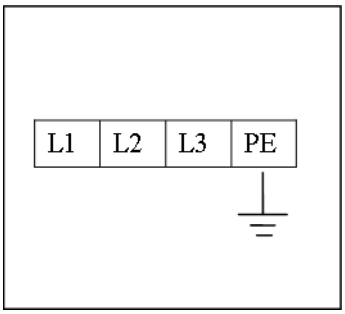


Fig. 23

4.2.3.2 Connection of limit switch

Connect the 100, 102# for main limit switch ***(Fig. 24)*** to terminals 100#, 102# inside the control box. And connect the 100#, 108# for sub limit switch ***(Fig. 25)*** to terminals 100#, 108# inside the control box.

Fig. 24

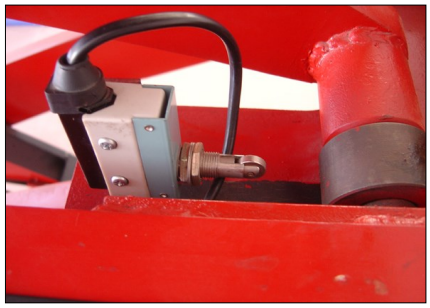


Fig. 25

4.2.4 Ramps installation

4.2.4.1. Positioning the ramps:

Mark the installation position of the ramp on the ground according to the design requirements of the underground scissor lift and the optimal parking position of the vehicle. Ensure that the position of the ramp matches the lifting mechanism of the lift so as to guarantee that the vehicle can be placed stably on the ramp during the lifting process.

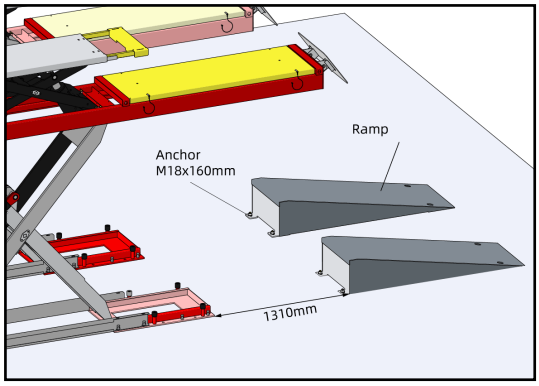


Fig. 26

Chapter 5 ADJUSTMENT

5.1 ADD HYDRAULIC OIL

Add 18 litters of hydraulic oil into the oil tank (the hydraulic oil is provided by the user). It is suggested that Dexron III ATF oil be used.

Fig. 28

5.3 MAIN MACHINE OIL MAKE-UP ADJUSTMENT

- Open the oil make-up stop valve for main machine in the control box ***(Fig. 29)***.
- Press the "UP" button, and the sub platform is raised to about 1000mm. （Be careful not to raise the auxiliary platform to the highest position as it may cause damage to the machine）
- Press the "DOWN" button to lower the sub platform to the lowest position.
- Then raise it approximately 1400mm.

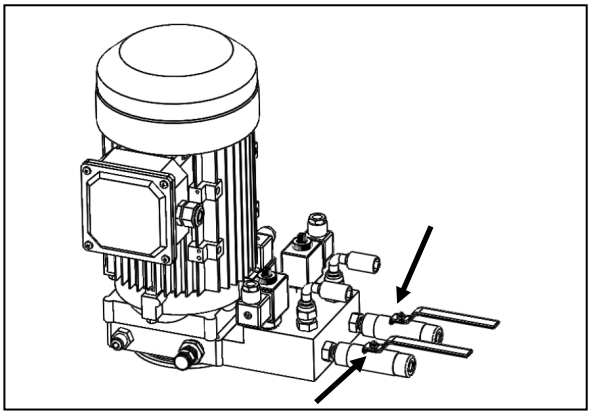


Fig. 29

- Repeat the lifting and lowering process 5~6 times to bleed air.

- After this, raise the right platform to 1400mm. Now the two platforms are at the same height.
- Close the oil make-up stop valve for main machine for oil make-up
- Main machine oil make-up adjustment is over.

5.4 SUB MACHINE OIL MAKE-UP ADJUSTMENT

- Open the oil make-up stop valve in the control box ***(Fig. 29)***.
- Press the "UP" button, and the sub platform) is raised to about 300 mm.
- Press the "DOWN" button to lower the sub platform to the lowest position, and then raise it approximately 400 mm.
- Press the "UP" button to raise the main platform (looking from the front of the lift) to about 300mm.
- Repeat the lifting and lowering process 8~9 times to bleed air.
- Then lift the left platform to 400mm (two platforms of the main machine are lifted to the same height).
- Close the oil make-up stop valve for oil make-up .
- Sub machine oil make-up adjustment is over.

5.5 LIMIT SWITCH POSITION ADJUSTMENT

5.5.1 LIMIT SWITCH OF SUB MACHINE ADJUSTMENT

- Turn "SA1" to "submachine", press "SB1", and thus the sub machine platform is lifted to about 450mm, adjust the limit switch "SQ2".
- Lower the submachine platform, lift the submachine platform to 450mm, to check the efficiency of the sub machine.

5.5.2 LIMIT SWITCH OF MAIN MACHINE ADJUSTMENT

- Turn the "SA1" to "main machine", press "SB1" and then lift the platform to 1700mm, adjust limit position of SQ1.
- Lower the main machine platform, lift main machine platform to the limit position several times to check the efficiency of the limit position of the main machine.

If the ceiling is lower than 4000mm, it should do the limit adjustment after lift the vehicle.

5.6 ANCHOR BOLTS INSTALLATION

- Adjust the parallel of the platform and the distance of two platforms.
- Lock the machine in one safety teeth.
- Pad a shim ***(Fig. 17)***
- Fix the anchor bolts (16 bolts) with a percussion electric drill (percussion drill bit is of 16, drill to 120 mm hole and clean the hole. Insert a peg to has a temporarily immobility.

5.7 LEVEL ADJUSTMENT OF THE LOWEST POSITION

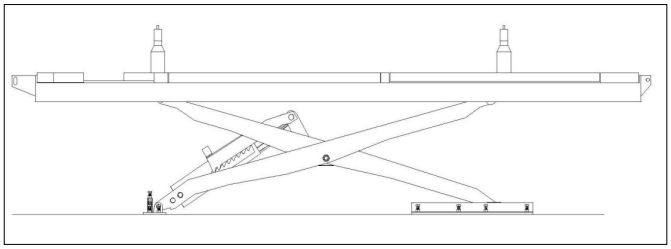
Adjust the level through the adjustment screws ***(Fig. 30)*** when the main platform at the lowest position.

Fig. 30

5.8 LEVEL ADJUSTMENT

Raise two platforms, and lock them on the three or four teeth.

Check the level of two platforms with level bar or the horizontal pipe. ***(Fig. 31)***



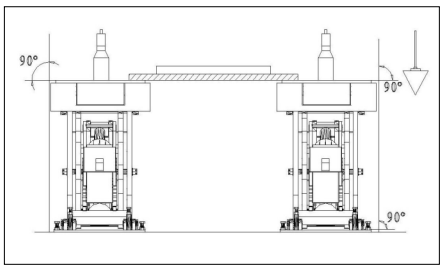


Fig. 31

Adjust the adjustment bolt ***(Fig. 32)*** at tow sides of the base plate. Adjust the level of two front turntables and the slide plates on two sides at back, thus keep the levelness of error of the two platform≤5 mm, and keep the height difference between the two platform ≤10 mm.

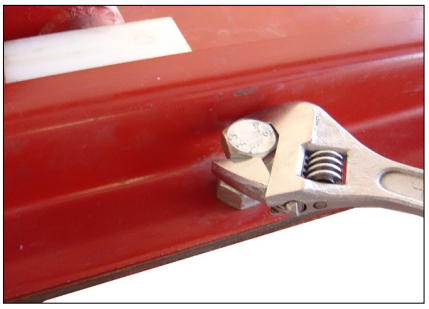


Fig. 32

5.9 NO-LOAD TEST

- Turn on the power QS.
- 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 and thing leave under or on the lift.

5.10 TEST WITH VEHICLE

When functioning all the above are normally test the lift with a vehicle load. If the lift operates normally under load, it can then be put into service.

Chapter 6 OPERATION

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

6.1 OPERATION NOTICES

- ***Clear obstacles around the lift before operation.***
- ***During lifting or lowering, no person is allowed to stand neat the two sides and beneath the machine, and no person is allowed on the two platform.***
- ***Avoid lifting super heavy vehicles or other goods.***
- ***When lifting vehicle, the vehicle chassis 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 lowering vehicle, lift the platform a bit firstly, notice that whether two safety pawls and safety teeth have been disengaged completely. If not, stop lowering.***
- ***When the equipment is not used for a long time or over night, the machine should be lowered to the lowest position on ground, and remove vehicle, and cut off power supply.***

6.2 INSTRUCTIONS ON ELECTRIC OPERATION

Fig. 33

6.3 OPERATION

6.3.1 WORK AND ADJUST SELECTION

In the control box—near the motor ***(Fig. 27)***, turn the rotary switch SA2 to the "WORK" position or "ADJ". This can make the lift in the fettle of work or adjust.

6.3.2 MAIN LIFT AND SUB LIFT SELECTION

Turn the main selector switch on the control panel to either the "MAIN LIFT" or "SUB LIFT" position. Then the selection can be made to raise or lower the main lift or sub lift.

6.3.3 LIFTING

Press the "UP" button to raise either the main lift or sub lift. When the motor starts, the hydraulics will raise the lift immediately. After approximately a couple of seconds, the air solenoid energizes, allowing air to flow through the air lines lifting the safety latches.

Releasing the "UP" button stops the motor from operating, which causes the main lift or sub lift to stop immediately. Then, the air solenoid valve is de-energized—stopping air flow—causing the safety latches to engage.

6.3.4 LOCKING

To perform vehicle maintenance or alignments, the lift must be locked before repairs or adjustments can be conducted. To lock the lift, press the "LOCK" button. The main lift will be lowered slightly to allow the safety mechanism to fully engage.

6.3.5 LOWERING

When the "DOWN" button is pressed, the lift will first rise slightly for a couple of seconds to disengage the safety mechanism, and then automatically lower. (This ensures that the safety mechanism can easily disengage itself). When the lift is being lowered, the air solenoid valve is energized allowing air to flow through the air lines, thus keeping the safety latches raised.

6.3.6 LIMIT SWITCH PRECAUTION

When the main lift is raised to its set-limit height, the main lift will stop because of the limit switch. At this height, in order to lower the main lift, you must press and hold the

"DOWN" button for a couple of seconds for the lift to automatically lower.

6.3.7 EMERGENCY STOP

When the machine has abnormal or car maintenance, push "emergency stop" button and locking, cut off all the operation circuit, other operation can not be work.

The operation when hydraulic pipe burst:

When the main lift work and its hydraulic pipe burst, we must stop the operation of "lifting" or "lowering" immediately. Press the "lock" button to allow the safety mechanism to fully engage. If the lock is failure, shut off the headstream of air.

When the sub lift work and its hydraulic pipe burst, we need to press "down" button to put up the safety-jaw. And that the platform will lower in the control of anti-falling valve. If there is the pipe or sub platform, the sub platform will lower more swiftness to slant the vehicle. But it's ok.

Chapter 7 MAINTENANCE AND CARE

- The upper and lower sliding blocks must be kept clean and lubricate.
- All bearings and hinges on this machine must be lubricated once a month by using an oiler.
- The side sliding plates must be disassembled and greased once a year.
- The hydraulic oil must be replaced one time each year, the oil tank and filter should be cleaned when replacing hydraulic oil. 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.
- The compressed air used in pneumatic safety devices must be filtered through water to ensure long time reliable operation of the cylinder and air valve DQ for driving the safety pawl .

Chapter 8 TROUBLE SHOOTING

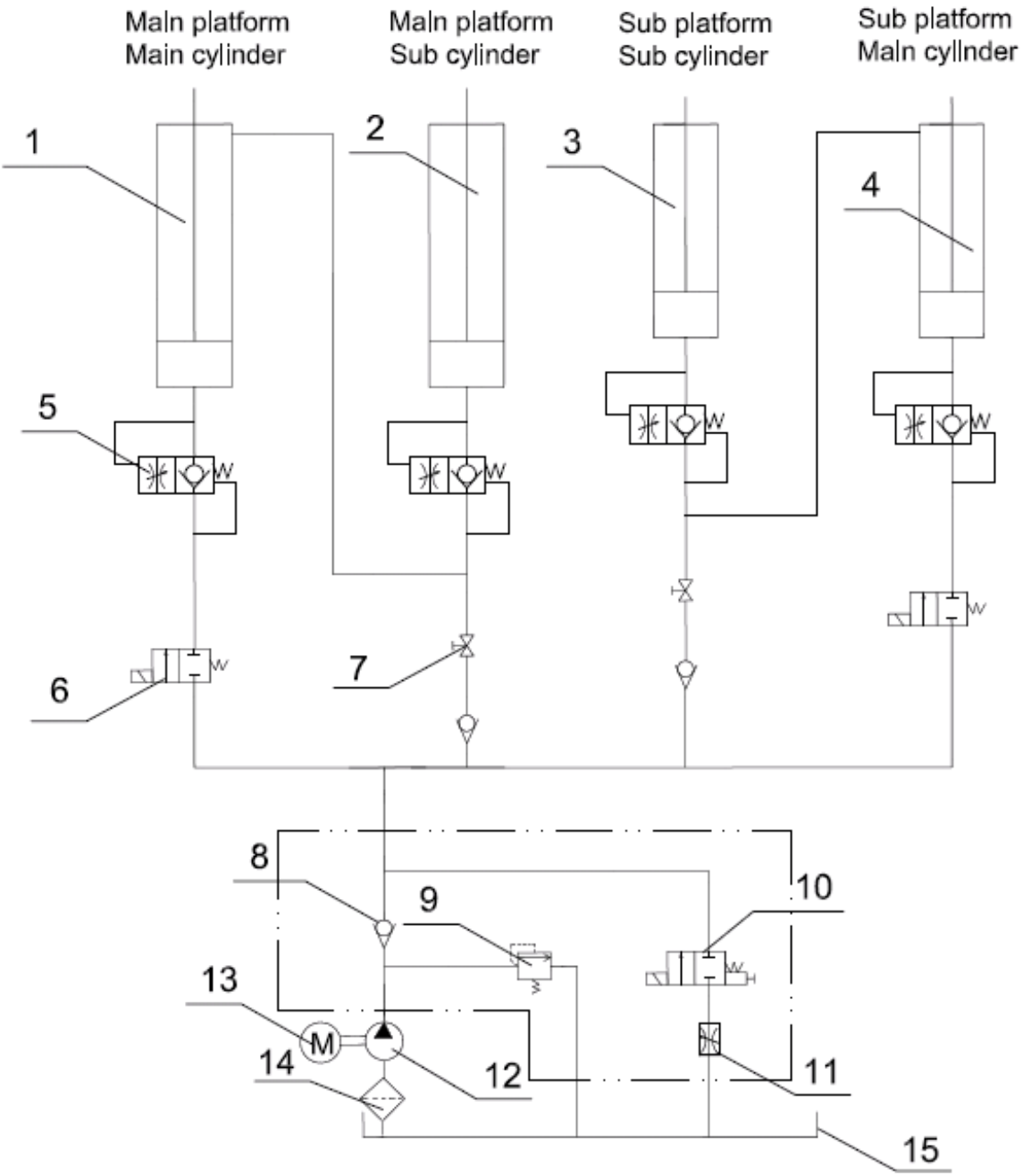
 ***Skilled personnel only are allowed to perform the operations.***

See the following page.

Failure Phenomena	Cause and Phenomena	Resolutions
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.
	The limit switch is not closed.	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 closed.	Screw down the "Operation stop valve".
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, the safety pawl is stuck or the air pipe is broken off, adjust pressure, check the air pipe and replace it.
	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.
	⑤The "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.	①The 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.	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".
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 "5.2 Oil Make-up 'Adjust' Operation".
	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.
Noisy lifting and lowering.	①Lubrication 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 or pad the base.

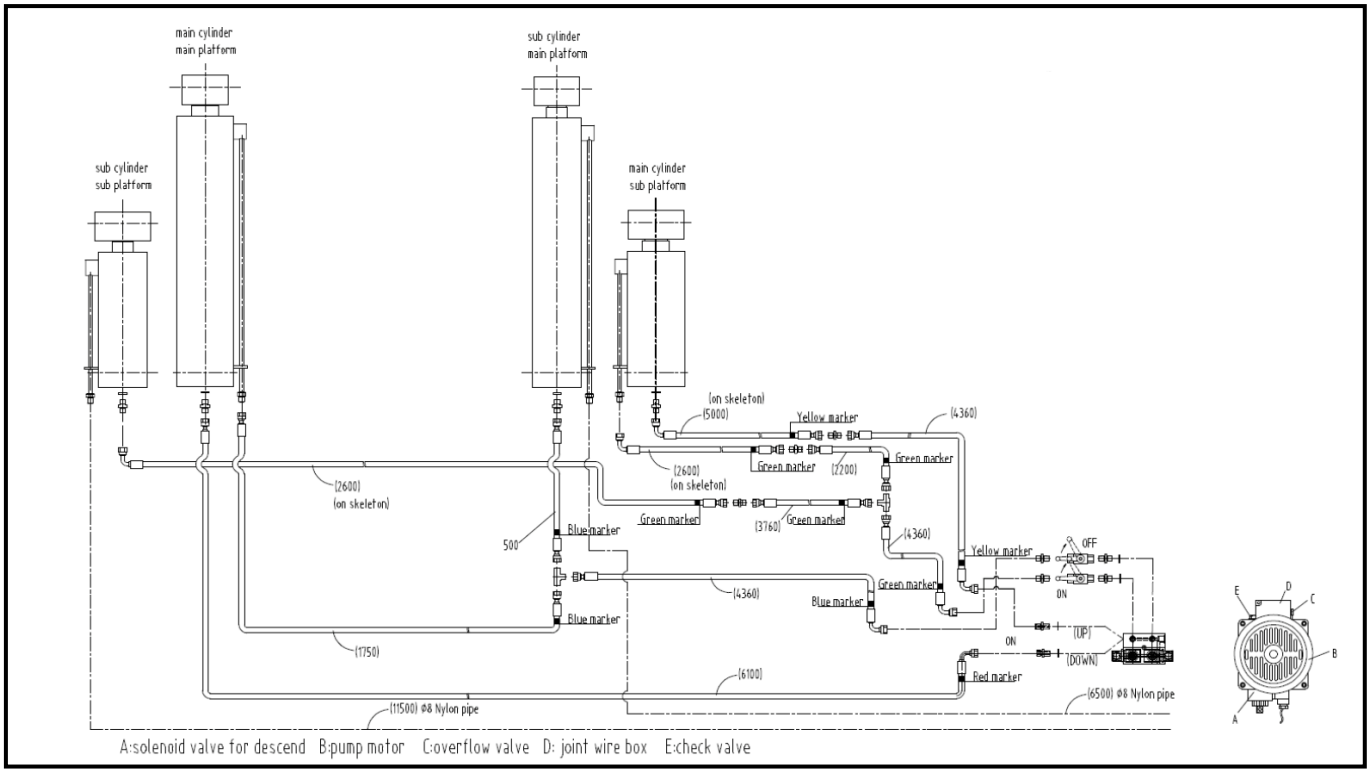
APPENDIX

HYDRAULIC PRESSURE ELEMENTS DIAGRAM

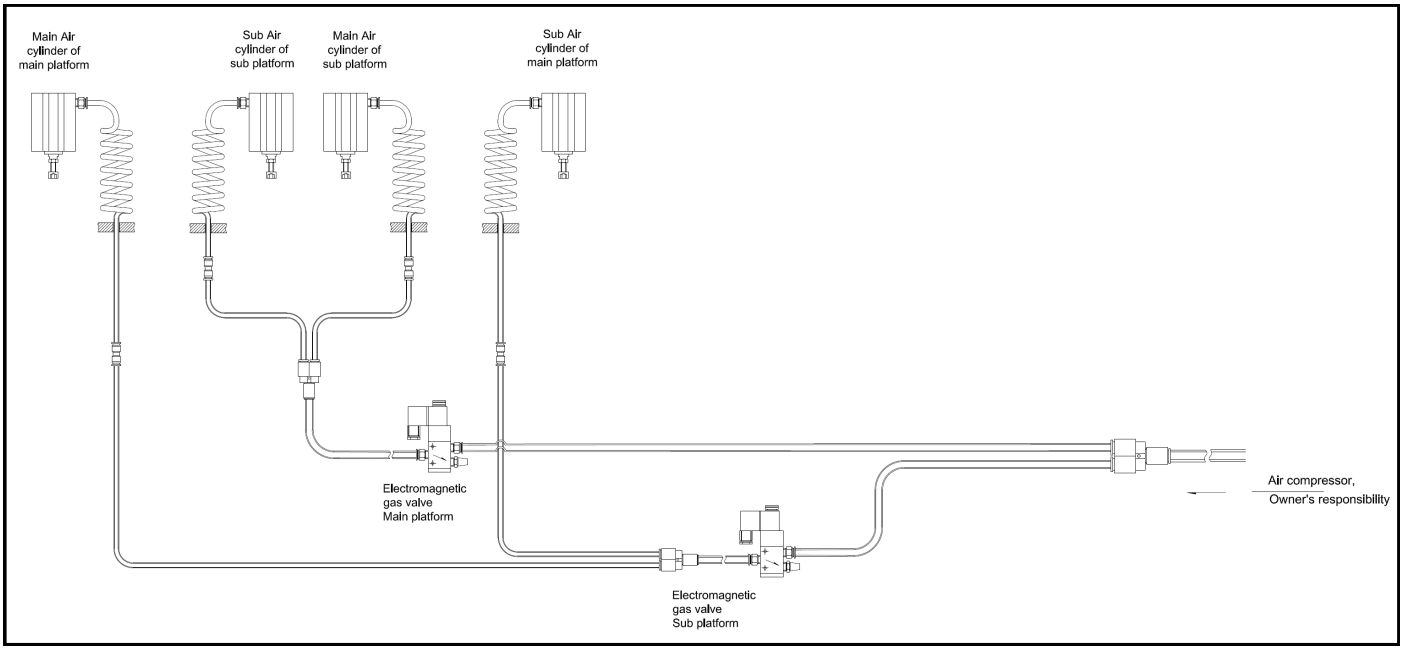


1.Main platform main cylinder
2.Main platform sub cylinder
3.Sub platform sub cylinder
4.Sub platform main cylinder
5.Anti-falling valve
6.Solenoid unloading valve
7.Stop valve
8.One-way valve
9.Overflow valve
10.Descending solenoid valve
11.Flow control valve
12.Gear pump
13.Motor
14.Filter
15.Oil tank

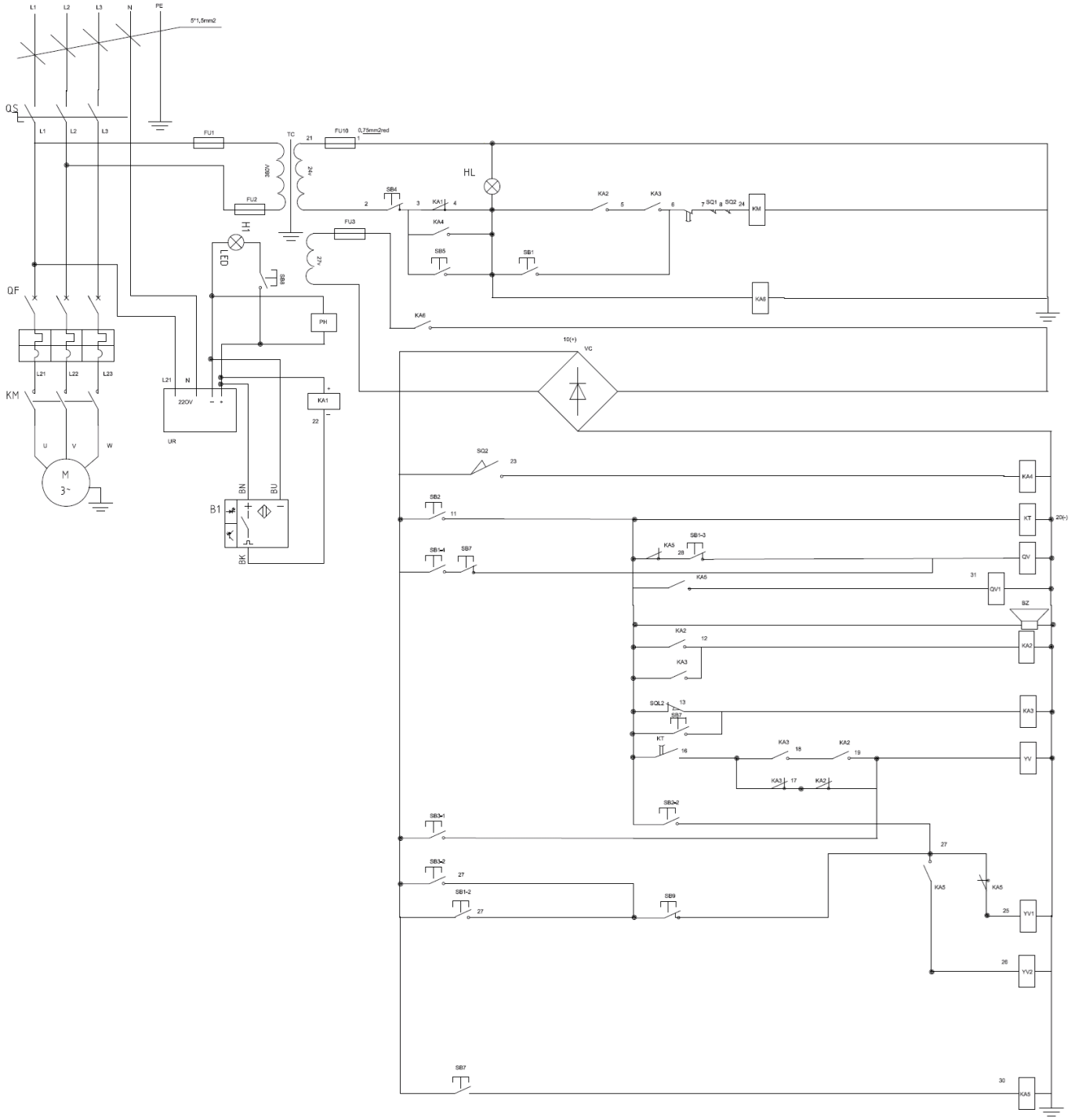
HYDRAULIC PIPE CONNECTION DIAGRAM



AIR HOSE CONNECTION DIAGRAM

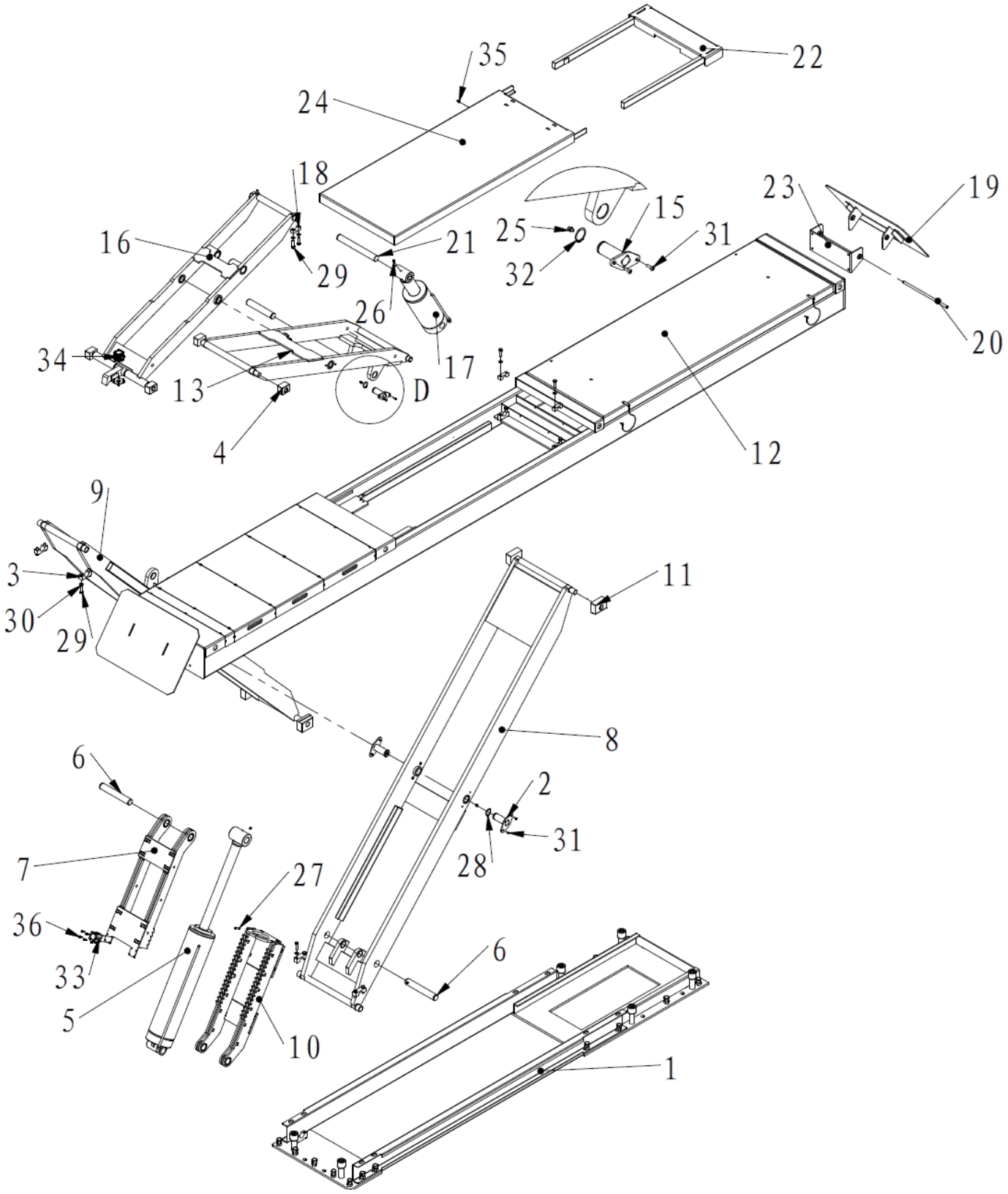


CIRCUIT DIAGRAM



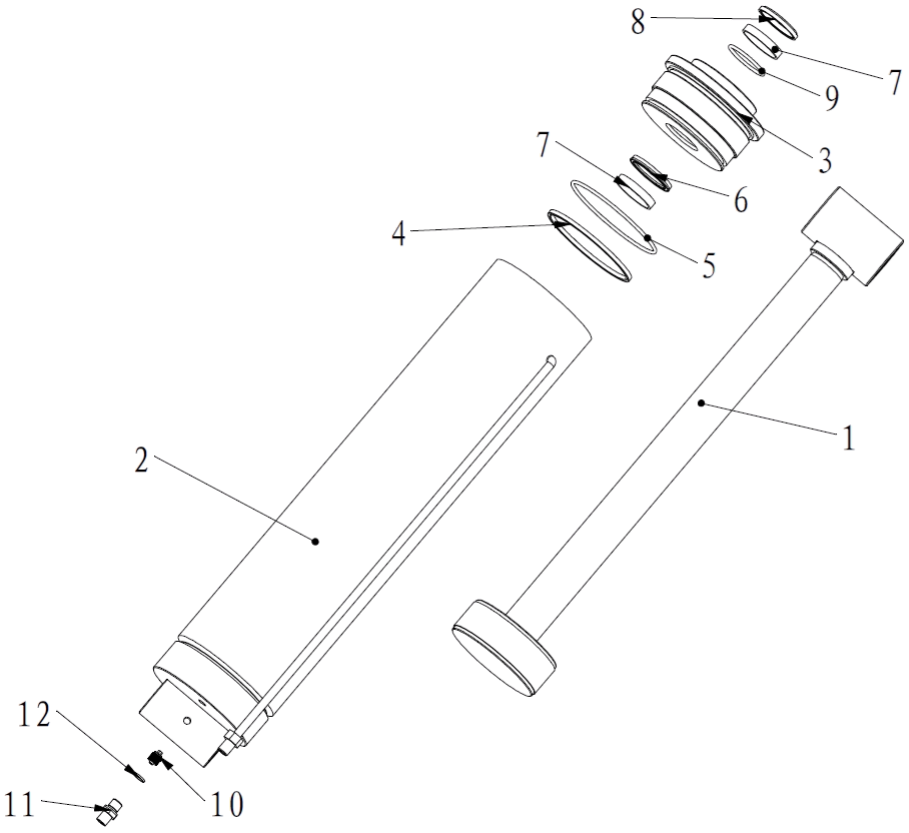
Item	Code	Name	QTY
1	SB1	Up button	1
2	SB2	Down button	1
3	SB3-1	Lock	1
4	SB4	Emergency stop button	1
5	SB5	Photocell switch	1
6	SB6	Leveling button	1
7	SB7	Sub-and-Main Platform Switch Button	1
8	SB8	Lighting switch	1
9	SB9	Leveling switch	1
10	KT	Time relay	1
11	KA1	Auxiliary relay	1
12	KA2	Auxiliary relay	1
13	KA3	Auxiliary relay	1
14	KA4	Auxiliary relay	1
15	KA5	Auxiliary relay	1
16	SQ1	Up limit switch for main platform	1
17	SQ2	Up limit switch for sub platform	1
18	SQL2	Down limit switch	1
19	HL	Power lamp	1
20	BZ	Buzzer	1
21	PH	Photocell balance	1
22	KM	AC contactor	1
23	QV	Air valve for main platform	1
24	QV1	Air valve for sub platform	1
25	YV	Unloading valve	1
26	YV1	Solenoid valve	1
27	YV2	Solenoid valve	1
28	QS	General switch	1
29	QF	Circuit breaker	1
30	TC	Transformer	1

EXPLOSION DIAGRAM

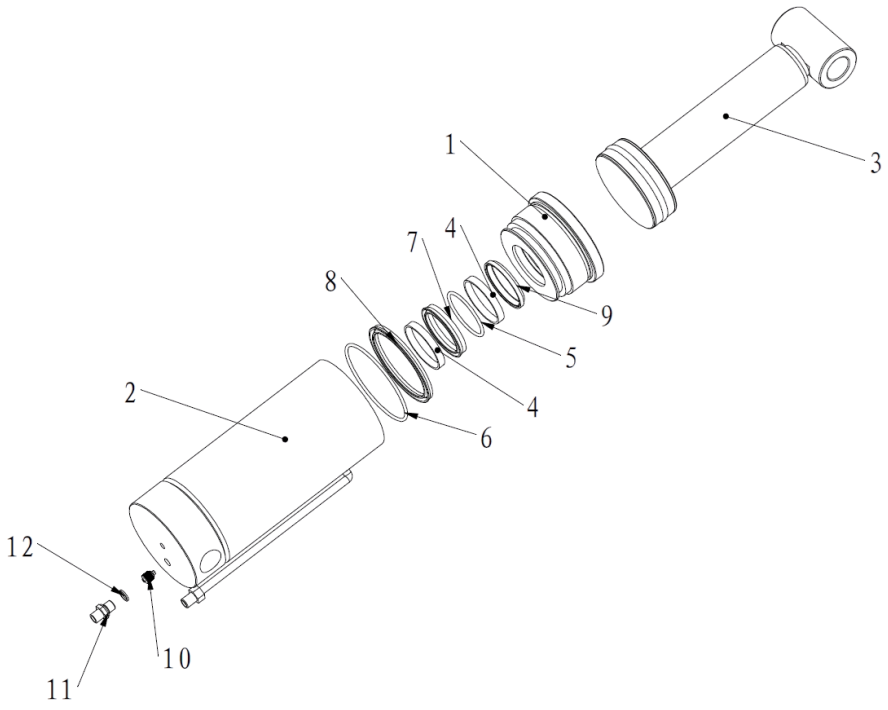


Serial number	Description	Quantity
1	Base joints	1
2	Support arm central shaft welding	2
3	Female shear hinge shaft cover	4
4	Sub-scissors slider	4
5	Main platform Sub cylinder	1
6	Mother shear cylinder bottom shaft	2
7	Lock box welding	1
8	Mother shear outer support arm fittings	1
9	Mother shear inner arm fittings	1
10	Lower lock box welding	1
11	Mother shear slider	4
12	5m platform fittings	1
13	Zishear outer arm joint	1
14	Lower shaft of secondary cylinder	1
15	Sub-shear arm middle axis welding	2
16	Sub-shear inner arm clutch	1
17	Sub platform Main cylinder	1
18	Ear press cover	4
19	Bridge plate welding	2
20	Car board hinge	2
21	Secondary cylinder upper shaft	1
22	Pull cover combination	1
23	Welding of fixed base of lead bridge	2
24	Single pull platform welding	1
25	Oil cup	4
26	Screw M10X10	4
27	Screw M6X12	1
28	Elastic washer 35	2
29	Bolt M10X40	16
30	Washer 10	16
31	Screw M6X16	8
32	Elastic washer 30	2
33	Small cylinder 32-25	1
34	Small cylinder	1
35	Screw	2
36	Bolts M6X20	4

MAIN PLATFORM SUB CYLINDER

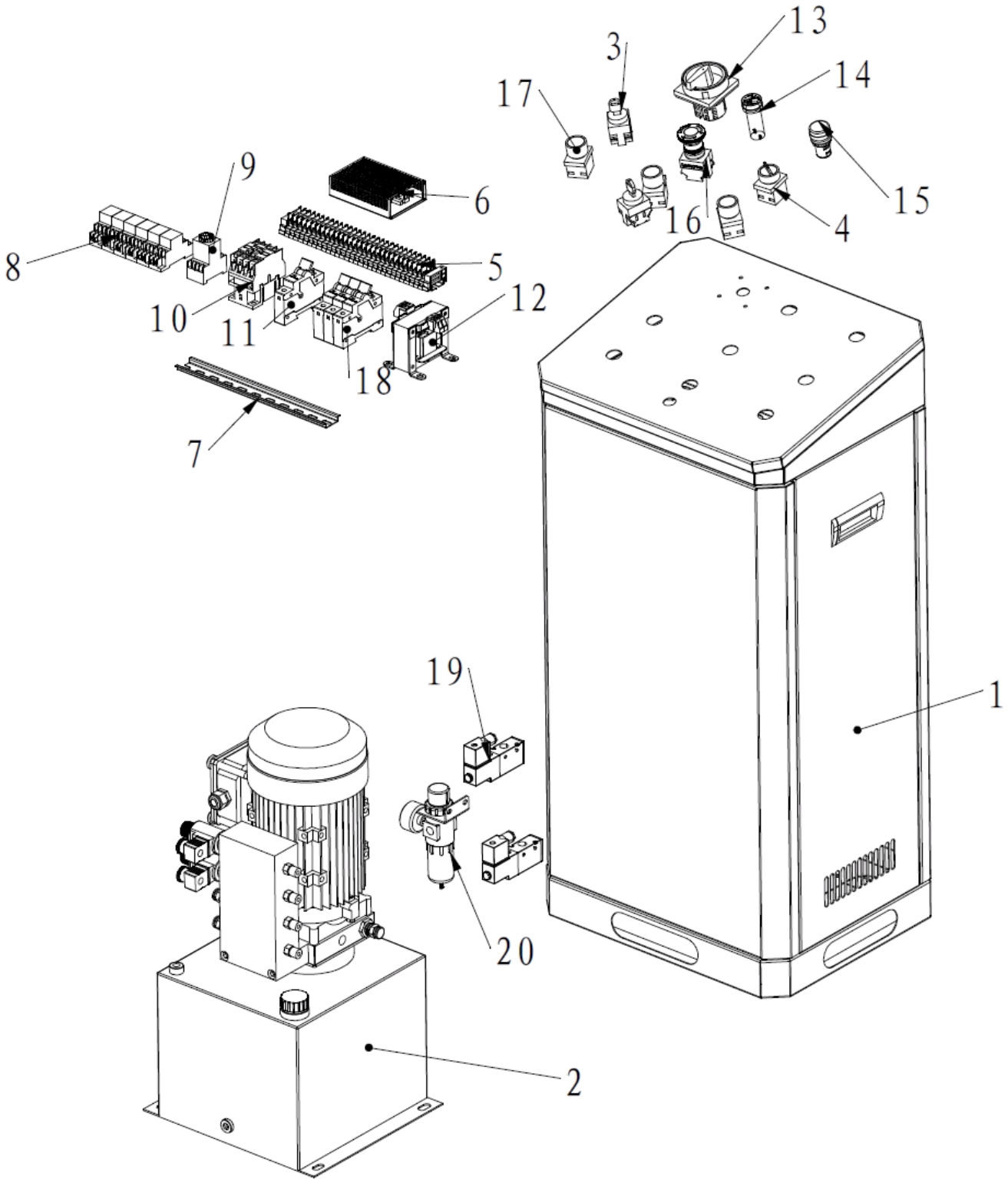


SUB PLATFORM MAIN CYLINDER

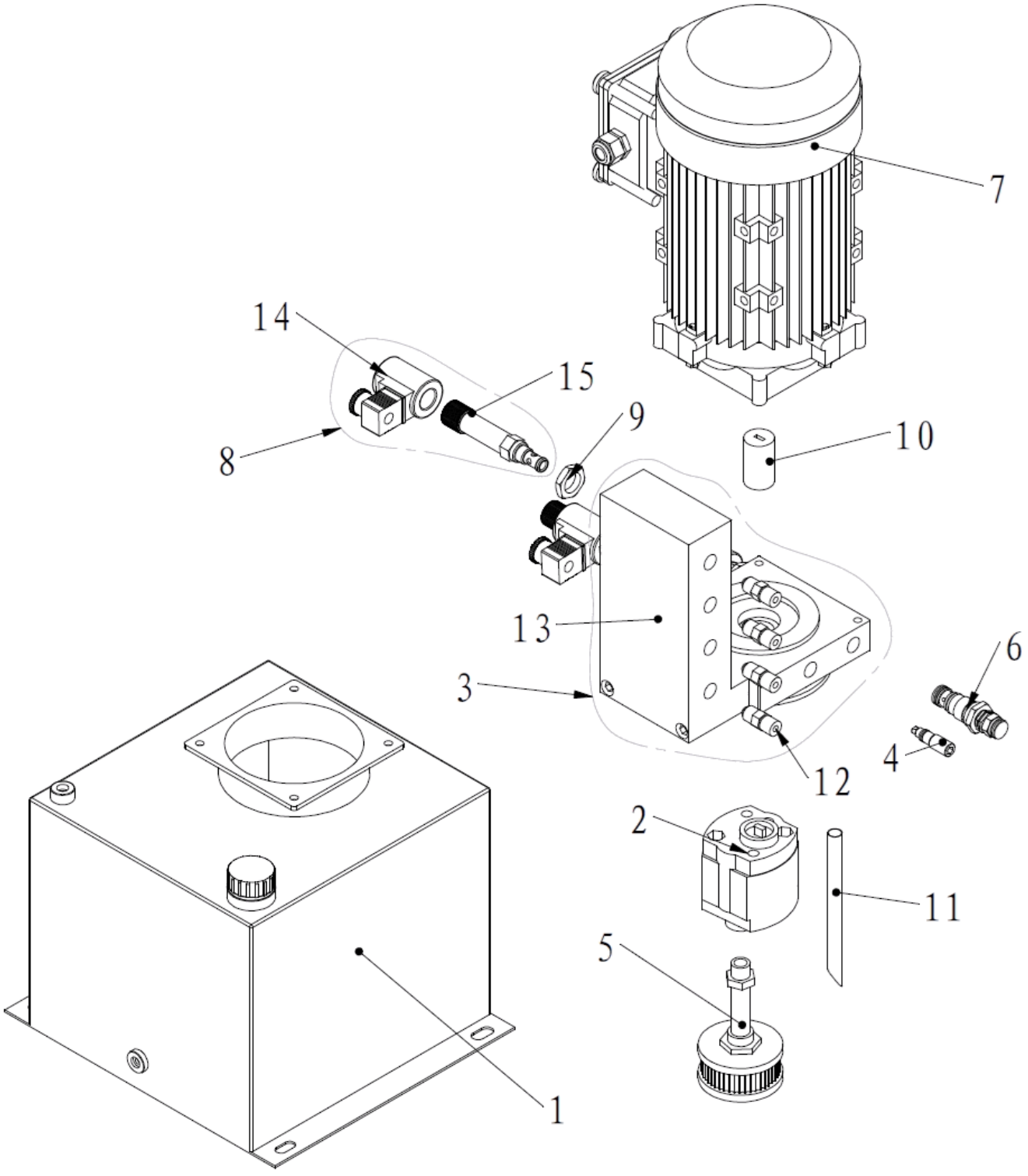


Main platform Sub cylinder		
Serial number	**Description**	**Quantity**
1	Main piston assembly	1
2	Main platform Sub cylinder welding	1
3	Guide sleeve	1
4	Combination seal	1
5	O-ring	1
6	Y-ring	1
7	Guide ring	2
8	Dust ring	1
9	O-ring	1
10	Explosion-proof valve	1
11	Joint	1
12	Washer	1

Sub platform Main cylinder		
Serial number	**Description**	**Quantity**
1	Guide sleeve	1
2	Sub platform Main cylinder welding	1
3	Sub scissor piston assembly	1
4	Guide ring	2
5	O-ring	1
6	O-ring	1
7	Y-ring	1
8	Y-ring	1
9	Dust ring	1
10	Explosion-proof valve	1
11	Joint	1
12	Washer	1


13
3
14
17
9
6
15
16
4
8
5
12
10
11
18
7
19
1
20
2

Serial number	Description	Quantity
1	Control cabinet shell	1
2	Power unit	1
3	Key switch	2
4	Main and secondary machine switching knob	1
5	Terminal strip	1
6	Power supply	1
7	Din rail	1
8	Auxiliary relay	6
9	Time relay	1
10	AC contactor	1
11	Circuit breaker	1
12	Transformer	1
13	General switch	1
14	Buzzer	1
15	Power lamp	1
16	Emergency stop button	1
17	Button	3
18	Circuit breaker	1
19	Air valve	2
20	Air filter	1


7
14
15
9
10
8
13
6
3
4
12
2
11
5
1

Serial number	Description	Quantity
1	Square fuel tank assy	1
2	Gear pump	2
3	Valve plate assy	4
4	Throttle valve	4
5	Oil inlet pipe fitting	1
6	Overflow valve	2
7	ALU Motor	1
8	Solenoid valve assembly	1
9	Nut	1
10	Coupling	1
11	Return pipe	4
12	Joint	1
13	Valve plate	1
14	Solenoid valve	1
15	Solenoid valve coil	2

WARRANTY

The structural components on your new automotive lift are warranted for three years on equipment. Operating components are warranted one year to the original purchaser, to be free of defects in material and workmanship.

The manufacturer shall repair or replace at their option for this period those parts returned to the factory freight prepaid which prove after inspection to be defective.

This warranty only applies to the original purchaser of the equipment. This warranty does not extend to defects caused by ordinary wear, abuse, misuse, shipping damage, or damage as the result of improper maintenance.

This warranty is exclusive and in lieu of all other warranties expressed or implied.

In no event shall the manufacturer be liable for special, consequential or incidental damages for the breach or delay in performance of the warranty.

The manufacturer reserves the right to make design changes or add improvements to its product line without incurring any obligation to make such changes on product sold previously.