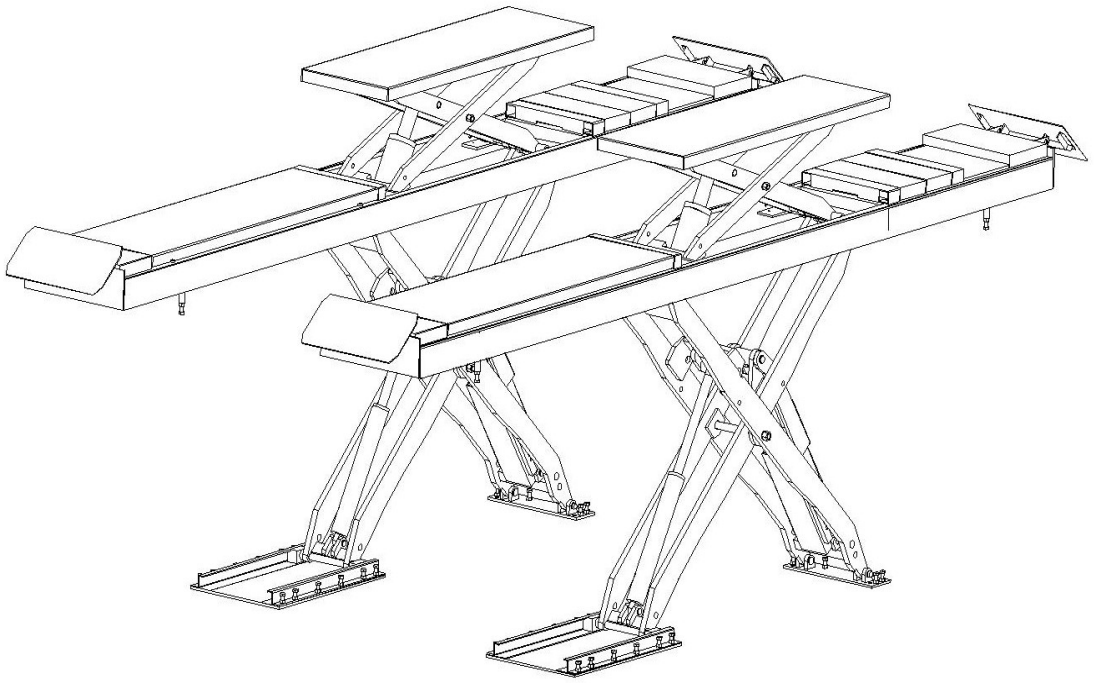
DOUBLE –LEVEL ALIGNMENT SCISSOR LIFT

LJS8255

Lifting height=1850mm ☒

Lifting height=2160mm ☐



User's Manual

Operation Manual & Instruction

HYDRAULIC AUTOMOBILE LIFT

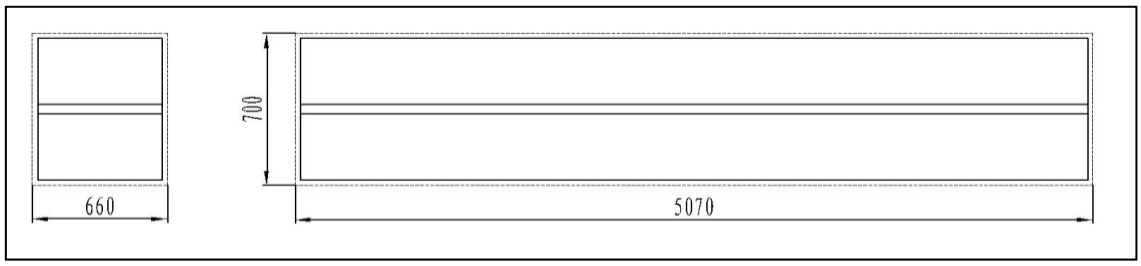
MODEL:	
Serial No.:	
Year of manufacture:	

AUTHORISED SERVICE CENTRE:

Contents

Contents

Packing dimension picture:



Picture 1 (packing dimension）

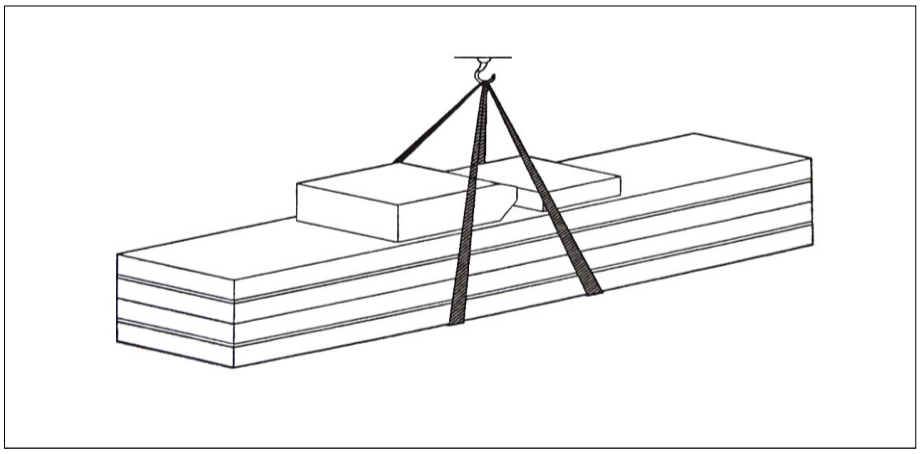
Transport:

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.

Furthermore, during loading and unloading operation goods must be handling as shown in the picture.



Picture 2 (Goods-lifted）

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: -25ºC-- 55ºC

INTRODUCTION

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 manual before carrying out any operation with the lift and/or the packing. 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, which it should always accompany, even if the unit is sold.

The manual must be kept in the vicinity of the lift, in an easily accessible place.

The operator and maintenance staff must be able to locate and consult the manual quickly and at any time.

Attentive and repeated reading of chapter 3, which contains important information and safety warning, is particularly recommended.

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 an service center authorised 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 unauthorised personnel or when the rack has been subject to improper use.

This manual indicates only the operative and safety aspects that may prove useful to the operator and maintenance worker, I better understanding 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.

The words "operator" and "maintenance fitter" used in this manual are construed as follows:

-OPERATOR: person authorised to use the lift

-MAINTENANCE FITTER: person authorised for routine maintenance of the lift.

NOTE: Manufacturer own the right to make little change for the manual

Chapter 1 DESCRIPTION OF THE MACHINE

Machine Application:

This Scissor lift is suitable for use in four wheel alignment, vehicle tests, maintenance and care for various types of small automobiles.

Features:

-Independent control box. Low-voltage controls (24V), has high security.
-Graceful outlook, with concealing structure for the two levels, take up small space.
-Hydraulic-volumetric synchronism of hydraulic cylinders.
-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 valve in case of explosive pipe.
- Device for manual lowering in case of power failure(manual pump is prepared by user.).

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.

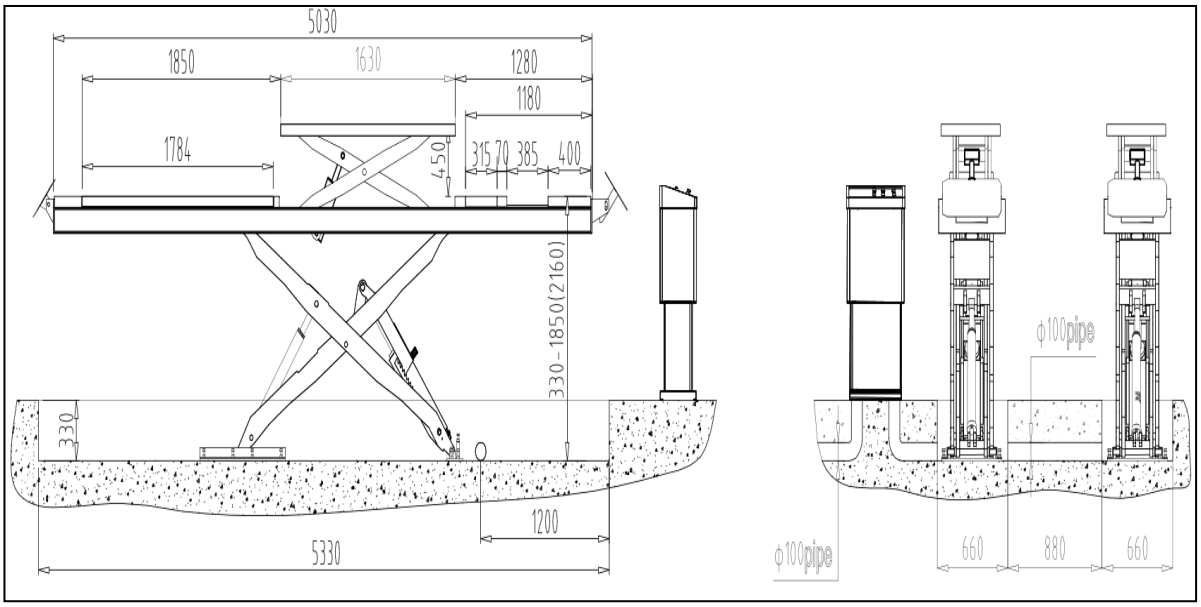
Scissor lift is designed and built to lift all kinds of vehicles, all other use are unauthorised. In particular, the lift is not suitable for: washing and re-spray work, creating raised platforms or lifting personnel, use as a makeshift press for crushing purposes, use as good lift. And not lift the vehicle which weight exceeds the maximum weight.

Main technical parameter

Item	Parameter	
	Lifting height=1850mm ☐	**Lifting height=2160mm** ☐
Drive	Electrical hydraulic	
Lifting weight	5500 kg	
Second lift lifting weight	5500 kg	
Main lift lifting height	1850mm	2160mm
Second lift lifting height	450mm	
Platform initial height	330mm	
Main lift platform length	5030 mm	
Second lift platform length	1630 mm	
Main lift platform width	620 mm	
Second lift platform width	550 mm	
Main lift lifting time for Chinese pump	≤55.2S	
Main lift lifting time for Italian pump	≤49S	
Main lift lowering time	≤60S	
Second lift lifting time	≤20S	
Second lift lowering time	≤30S	
Overall width	Approximately 2160 mm	
Overall length	5510 mm	
Overall weight	2800 Kg	2850 Kg
Voltage	AC 400 or 230V ± 5% 50 Hz/(60 HZ--optional choose), for details please the see name plate on control box.	
Hydraulic oil	20L 20# high abrasive hydraulic oil (prepared by user)	
Air supply	4~6bar	
Temperature	5-40℃	
Working humidity	30-95%	
Noise level	<76 db	
Installation height	Height above sea level ≤1000M	
Storage temperature	-25-55C	
Installation place	Indoor	

Table 1

Lift dimension picture:



Picture 3 dimension drawing (H=1850MM ☐ H=2160MM ☐)

Motor

Type……Y90L

Power…… 3.0 kw

Voltage……AC 400 or 230V ±5%

Current…… ……400 V: 5A

……230V:10A

Frequency…50(or 60 HZ----special ordered)

Poles…… 4

Speed……2800 r/min

Building shape…… B14

Pump

Type……gear pump

Model……P4.3

Flux……4.3 cc/r(50HZ)/3.2cc/r(60HZ)

Joint type……direct joint

Overflow valve

Setting pressure……

240 bar（lifting height 1850mm)/

260 bar (lifting height 2160mm)

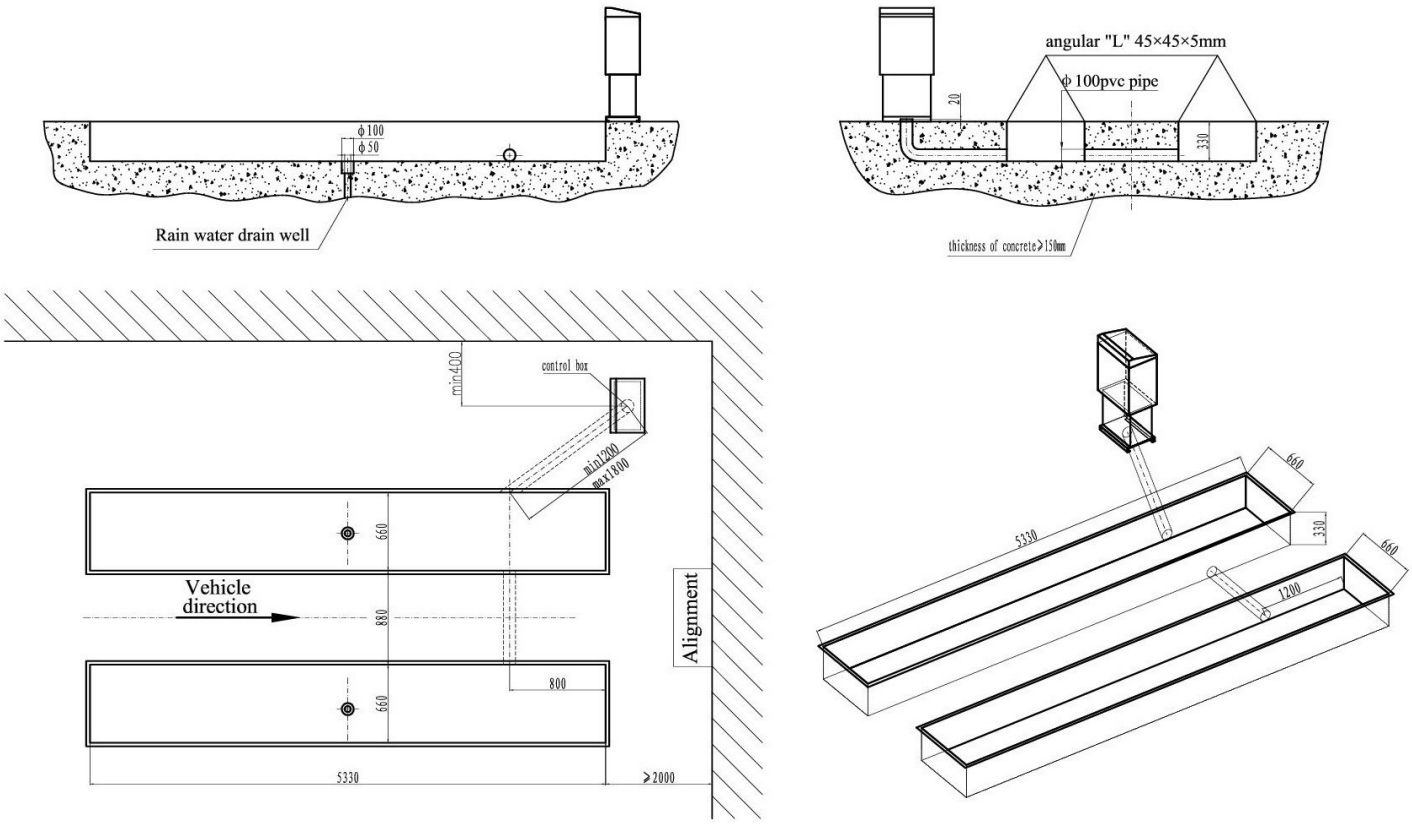
Adjustable working pressure…150~300 bar

Installation scheme for lift

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

-Concrete type 425#.

-Thickness of concrete≥150mm, the allowed level error ≤5mm.



Remarks:

1.The two pites level between ≤5mm

2.Control box location can exchange from left to right

Picture 4 (Installation drawing)

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.

Types of vehicles suitable for being lifted and overall dimensions

This lift is suitable for virtually all vehicles with total weight of no more than 3500 kg.

The lower parts of the vehicle 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 and re-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 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 these regulations can cause serious injury to persons, and irreparable damage to the lift and the vehicle begin 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:

WARNING: indicates situations and/or types of maneuvers that are unsafe and can cause minor injury to persons and /or death.

CAUTION: indicates situations and/or types of maneuvers 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 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:

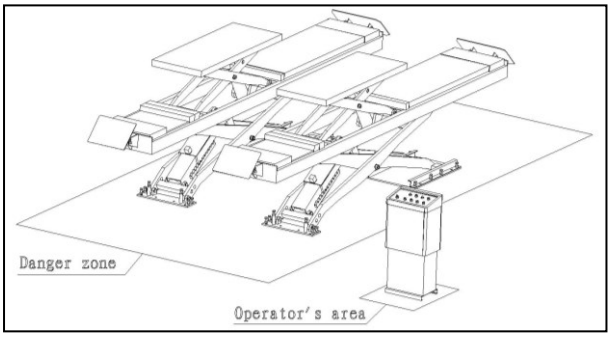
For optimal personal safety and safety of vehicles, observe the following regulations:

-Do not enter the danger zone while vehicles are being lifted (Picture 6).

-Switch off the engine of the vehicle, engage a gear and engage the hand brake,

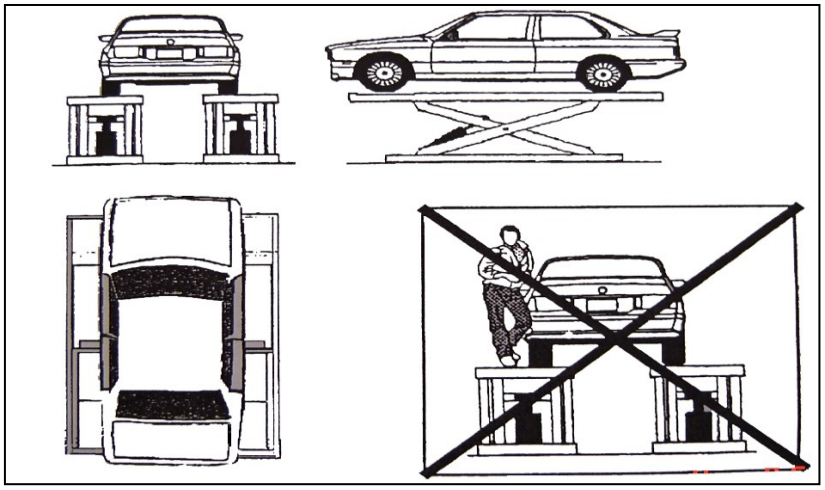
-Make sure the vehicle is positioned correctly. (Picture 7).

-Be sure to lift only approved vehicles, never exceed the specified carrying capacity, maximum height, and projection (vehicle length and width);



Picture 6

-Make sure that there are no people on the platforms during up and down movements and during standing (Picture 7).



Picture 7

GENERAL RISKS FOR LIFTING OR DESCENT:

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

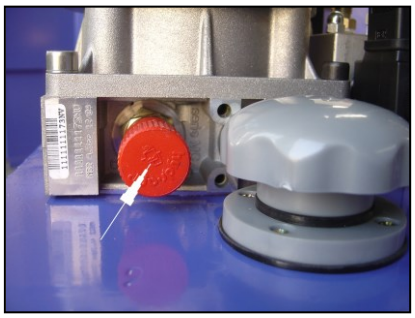
In the condition of over loading, the overflow valve will open and directly return oil to the oil tank. (Picture 8)

Each bottom of oil cylinder is equipped with anti-falling 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. (Picture 9)

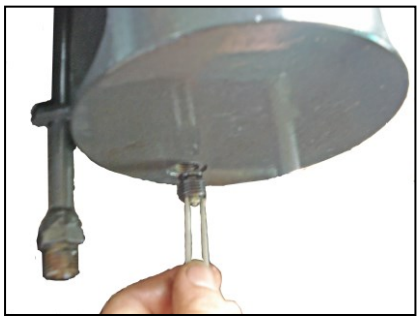
The protection of safety tooth is the assurance of the safe homework, so make sure the

safety tooth has occluded completely (Picture 10&11).

Chapter 3 SAFETY

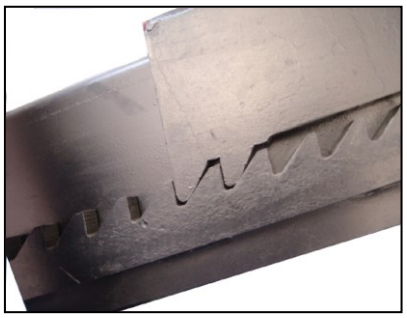


Picture 8 (overflow valve)



Picture 9 (antiknock valve)

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



Picture 10

Picture 11

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.

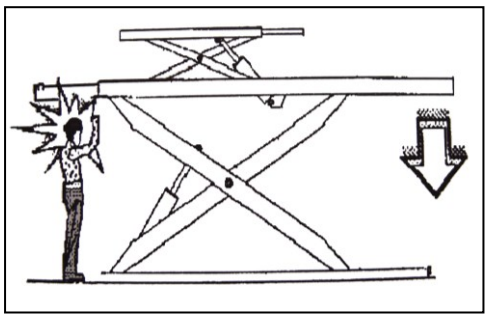
RISK OF CRUSHING (PERSONNEL)

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

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 color.

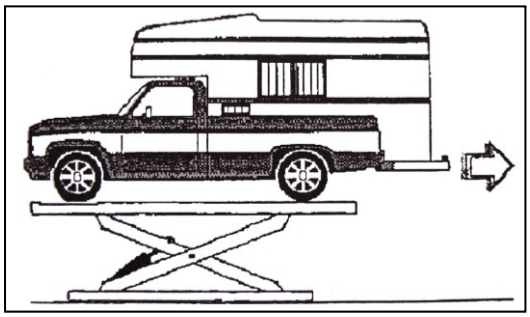


Picture 12

RISK OF VEHICLE MOVING

Caused by operations that 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.



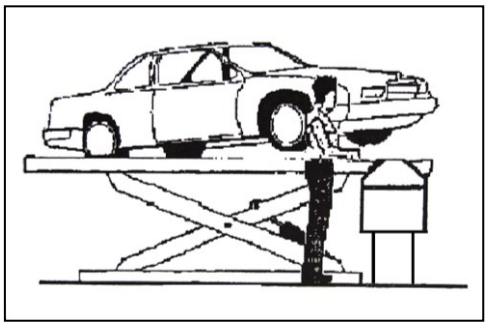
Picture 13

RISK OF FALLING (VEHICLE)

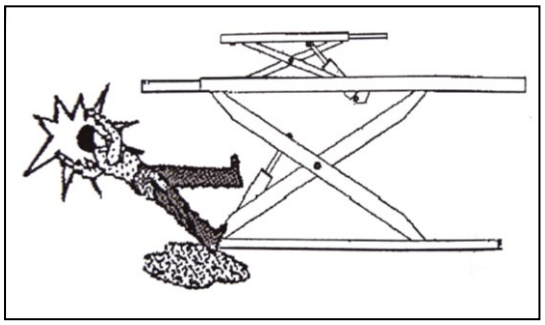
This hazard may arise in the case of incorrect positioning of the vehicle on the platforms, overweight of the vehicle, or in the case of vehicles of dimensions that are not compatible with the capacity of the lift.

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.



Picture 14



Picture 15(slide）

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 SLIDE

Caused by lubricant contamination that 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.

When the lift is fully down, do not walk over the platforms or the cross-pieces in places that are lubricated with a film of grease for functional requirements.

Reduce the risk of slipping by wearing safety shoes (Picture 16).

RISK OF ELECTRIC SHOCK

Risk of electric shock that in area 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 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.

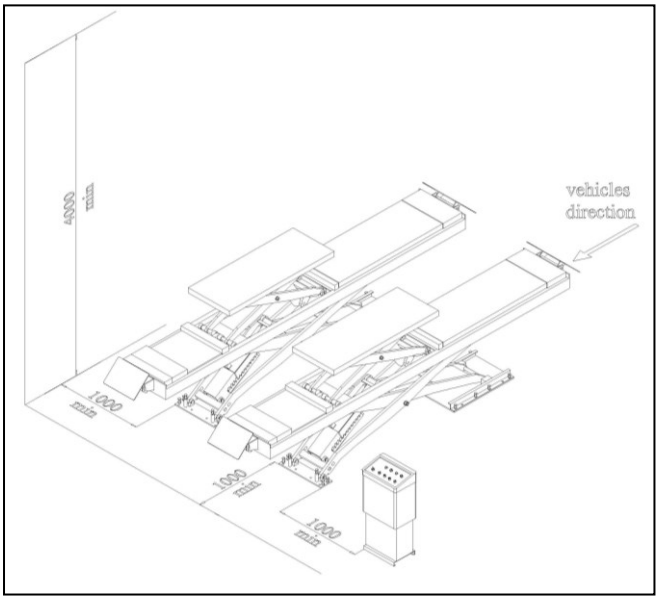
It is therefore essential to adhere scrupulously to all regulations regarding use, maintenance and safety contained in this manual.

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 cleared of people.

Skilled technicians only appointed by the same manufacturer or by authorized dealers, are allowed to install the car lift. Serious damage to people and equipment can be caused if this rule is not followed.

INSTALLATION REQUIREMENTS

The car lift must be installed according to the specified safety distances from walls must be 1000 mm at least, 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; 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.



Picture 16

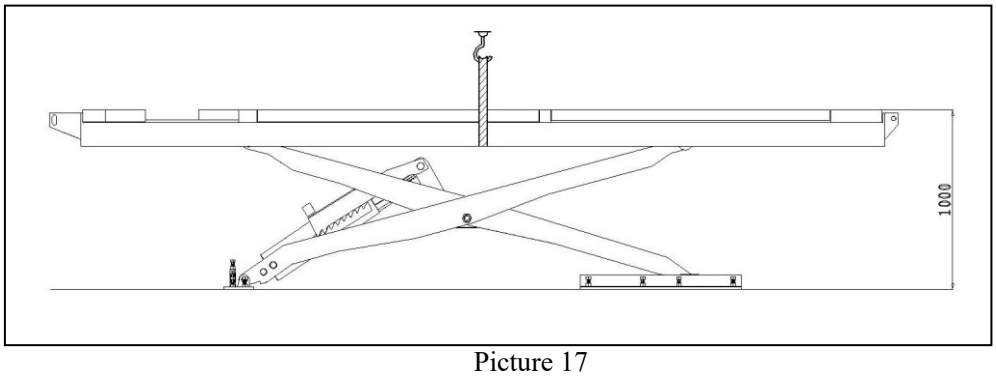
-All parts of the machine must be uniformly lit with sufficient light to make sure that the adjustment and maintenance operations specified in the manual can be performed safely, and without areas of shadow, reflected light, glare and avoiding all situations that could give rise to eye fatigue.

-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

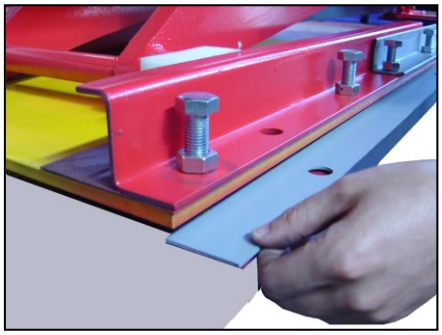
-Thickness of concrete≥150mm, the allowed level error ≤10mm.

LOCATION OF CAR LIFT

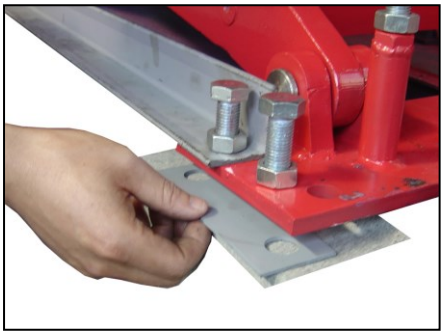


Picture 17

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 (picture 18 &19).

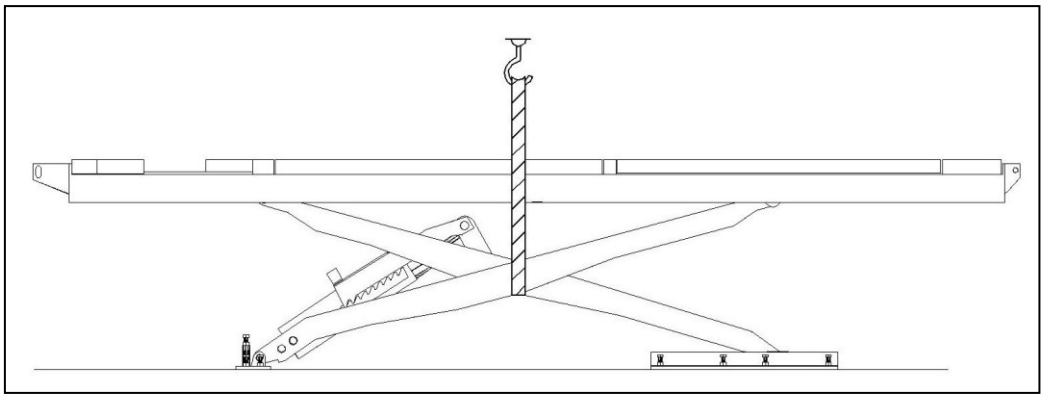


Picture 18



Picture 19

Place the lift as required following the instructions shown on picture 4.
Lift the two platform (picture 17&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.



Picture 20

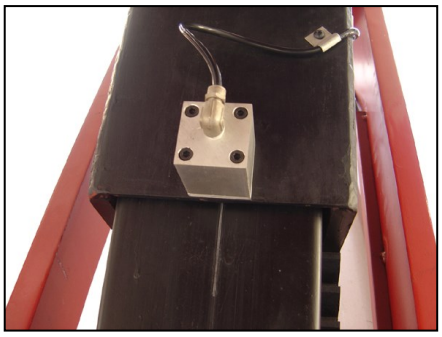
To avoid the unexpected lift closure due to mechanical safety device release insert wooden pieces in the inner part of the base frame.
Pay attention not to work under the lift until the hydraulic system has not been completely filled with hydraulic oil.
To insert the lift into the recess, sling the lift as described picture 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.

Hydraulic line and air line installation for lift:

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 diagram on page-24. And connect the air hoses to the lift according to the air hose diagram on page-24 The supply line (8 mm × 5 mm) is connected to the air inlet connection to the solenoid air valve inside the control box (picture 21).

Picture 21 (solenoid air valve)



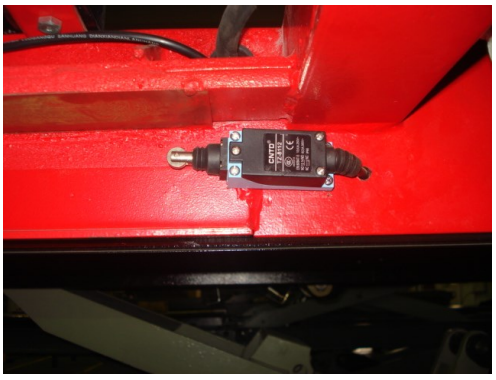
Picture 22 (air cylinder）

Connection of Electrical

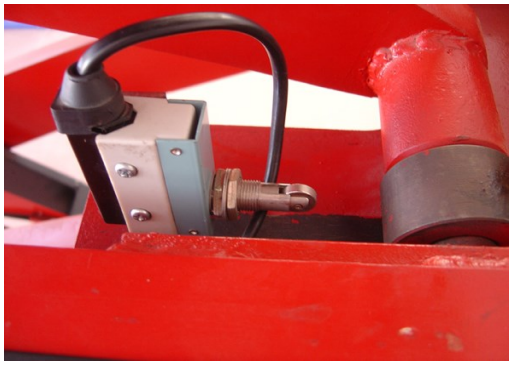
Connect the electrical according to the electric wiring diagram.

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. The electric wiring diagram is arranged by the manufacturer for operating at 400V three-phase. Connect the live wires (3×2.5 mm^2) for the power supply to terminals L1#, L2# & L3# inside the control box. And connect the earth wire (1×1.5 mm^2) 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.



Picture 24(up limit switch of main machine)



Picture 25(up limit switch of second lift)

Connection of up limit switch(SQ1--for main lift; SQ2--for second lift):

For detail connection, please see the electrical drawing.

Anchor bolts installation

-Adjust the parallel of the platform and the distance of two platforms.

-Lock the machine in one safety teeth.

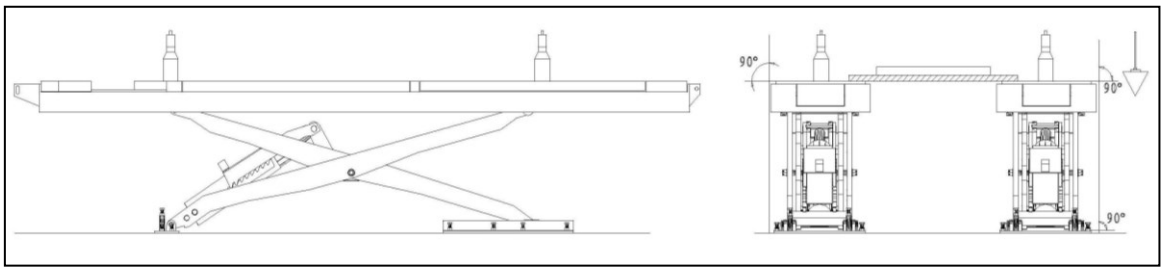
-Pad a shim (picture 18).

-Fix the anchor bolts (16 bolts) with a percussion electric drill (percussion drill bit is of 16, drill to 120 mm depth hole and clean the hole. Insert a peg to has a temporarily immobility.

Level adjustment:

Raise two platforms, and lock them on the third or forth teeth.

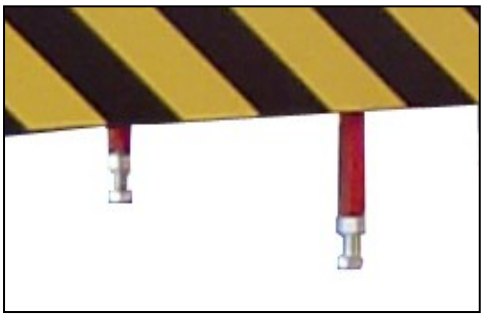
Check the level of two platforms with level bar or the horizontal pipe (picture 28).



Picture 28

Adjust the adjustment bolt (picture 29) at two 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.

Picture 29(adjustment bolt）



Picture 30(adjustment bolt）

The gap between the base plate and ground after adjustment must be filled with iron plate or concrete and then tighten the anchor bolts.

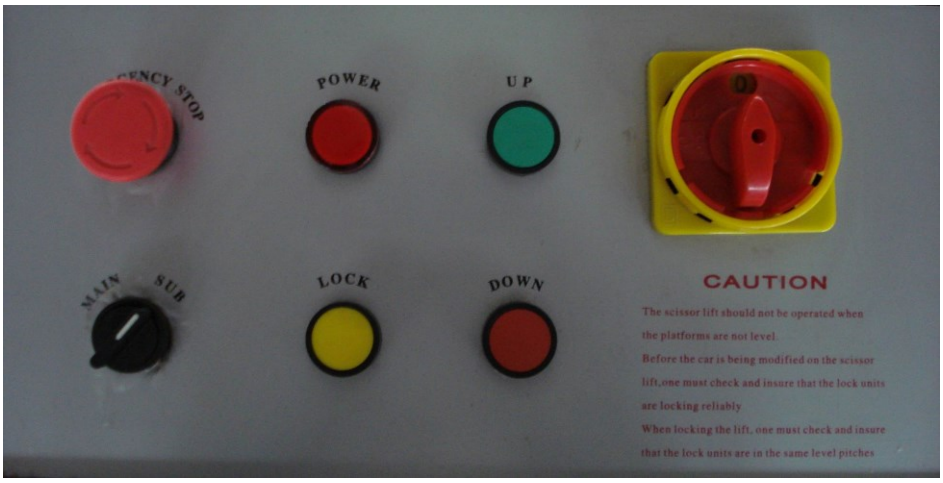
Level adjustment of the lowest position:

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

Add Hydraulic Oil check the order of phase:

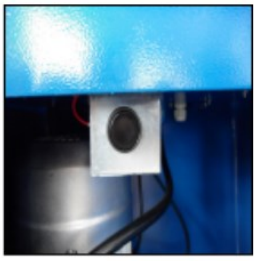
Add 20 litters of hydraulic oil into the oil tank (the hydraulic oil is provided by the user). It is suggested that Dexron III ATF oil be used.

On the control panel(picture 31), turn the "**MAIN SWITCH**" button to turn on power, and then turn the main selector switch to the "**MAIN LIFT**" position. Clicking the "**UP"** button, check whether the motor turns clockwise (looking downward), if not turn "**MAIN SWITCH**" to turn off the power, change the phase of the motor.



Picture 32 (operation panel）

Main machine oil make-up adjustment



--Turn the select switch on control panel to '**MAIN LIFT**' position.

--Press UP button on control box to make the main lift reaching to the top.

--Open the control box.and press the round black button as right side while pressing UP button till both platforms is rised to the highest position.

--When both platforms are up to the highest position,pls release above two buttons and waiting for about 2minutes till oil is coming back to hose pipe you can see.

And oil make-up process is over.

Oil make- up adjustment of second lift:

--Turn the select switch on control panel to '**SECOND LIFT**' position.

--Press UP button on control box to make the second lift reaching to the top.

--Open the control box.and press the round black button as right side while pressing UP button till both platforms is rised to the highest position.

--When both platforms are up to the highest position,pls release above two buttons and waiting for about 2minutes till oil is coming back to hose pipe you can see.

And oil make-up process is over.

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

-Clear obstacles around 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 platform.
-Avoid lifting super heavy vehicles.
-When lifting vehicle, the wheel chocks and hand brake should be used
-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 locking the main machine, the two platforms should be kept at the same height.
-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.

Main Lift and Second Lift Selection:

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

Lifting:

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

Release "**UP**" button to stop the motor from operating, which causes the main lift or sub lift to stop immediately. Then, the solenoid air valve is not energized—stopping air flow—causing the safety latches to engage. During lifting process, the lift will stop automatically when reaching the up limit switch.

Locking:

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

Lowering:

Press "**DOWN**" button, the lift will first go up 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 solenoid air valve is energized allowing air to flow through the air lines, thus keeping the safety latches raised.

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.

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 second lift work and its oil pipe burst, we need to press **"DOWN"** button to put up the safety-jaw. And that the platform will lower in the control of antiknock valve. If there is the pipe or sub platform, the sub platform will lower more swiftness to slant the vehicle. But it's OK.

Emergency manual operation for lowering (power failure):

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

The process of manual operation (lowering main platform):

-Firstly connect a manual pump (prepared by user) to the main hydraulic line (picture 34), and lift the lift to disengage the safety mechanism. Use thin iron bar to fill up safety mechanism.

-Switch off the power button (to avoid abruptly incoming electricity).

-Press the valve core of working valve as picture 35.

-Open the small round cover of control box to find the electromagnetic descent valve for main lift.

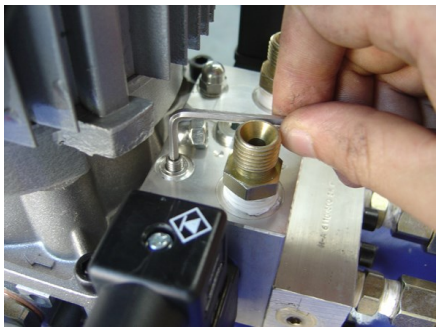
--The operator can use his hand to release and tighten the valve core.

--Turn left is to release and platforms can lower slowly(oil can come back to the oil tank) in case of no electrical supply, before doing this please ensure that the lift is not locked.

--Turn right is to tighten it for normal use

--Pay attention that one must tighten the valve core when the lift is for normally use!

Picture 34(manual pump)



Picture 35

Chapter 7 MAINTENANCE AND CARE

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 oilier.

-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 .

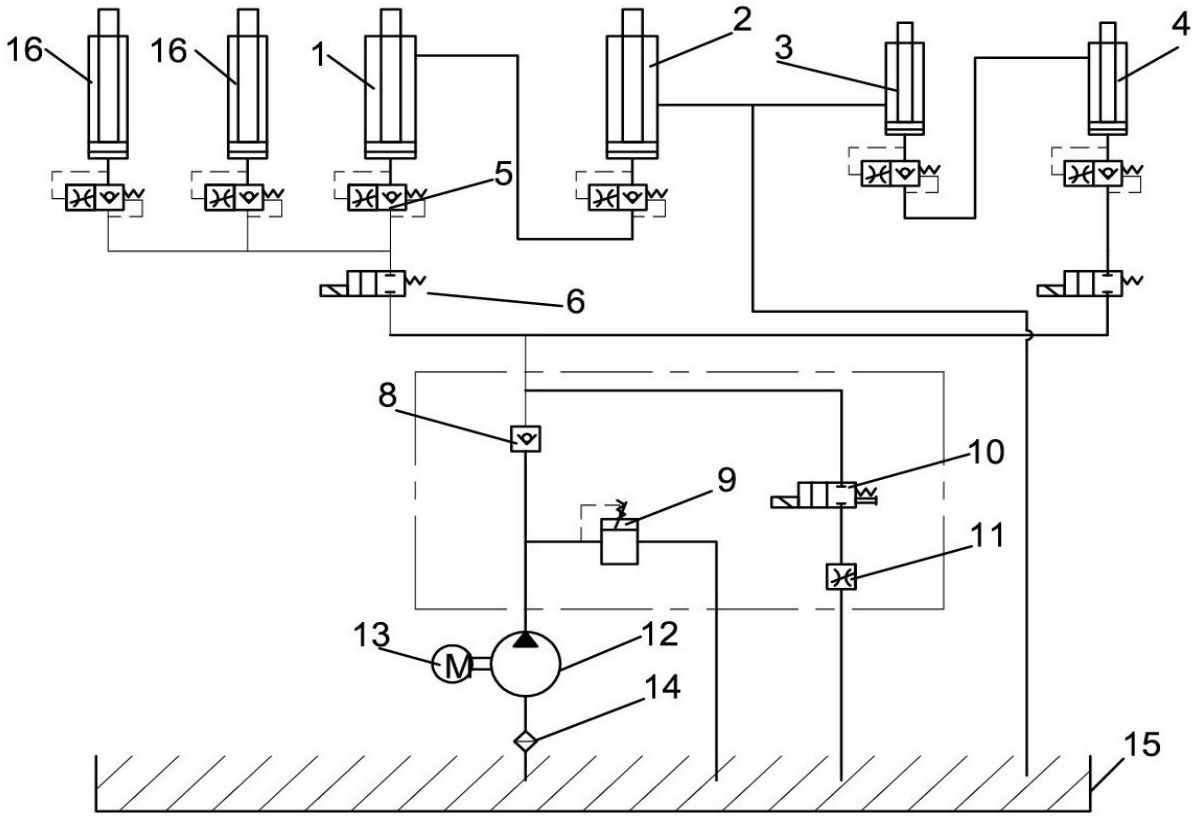
Chapter 8 TROUBLESHOOTING

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 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 X6# and 0V#, 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 safety pressure of the overflow 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 "**DOWN**" 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 descent 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".
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 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.
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 or pad the base.

Appendix

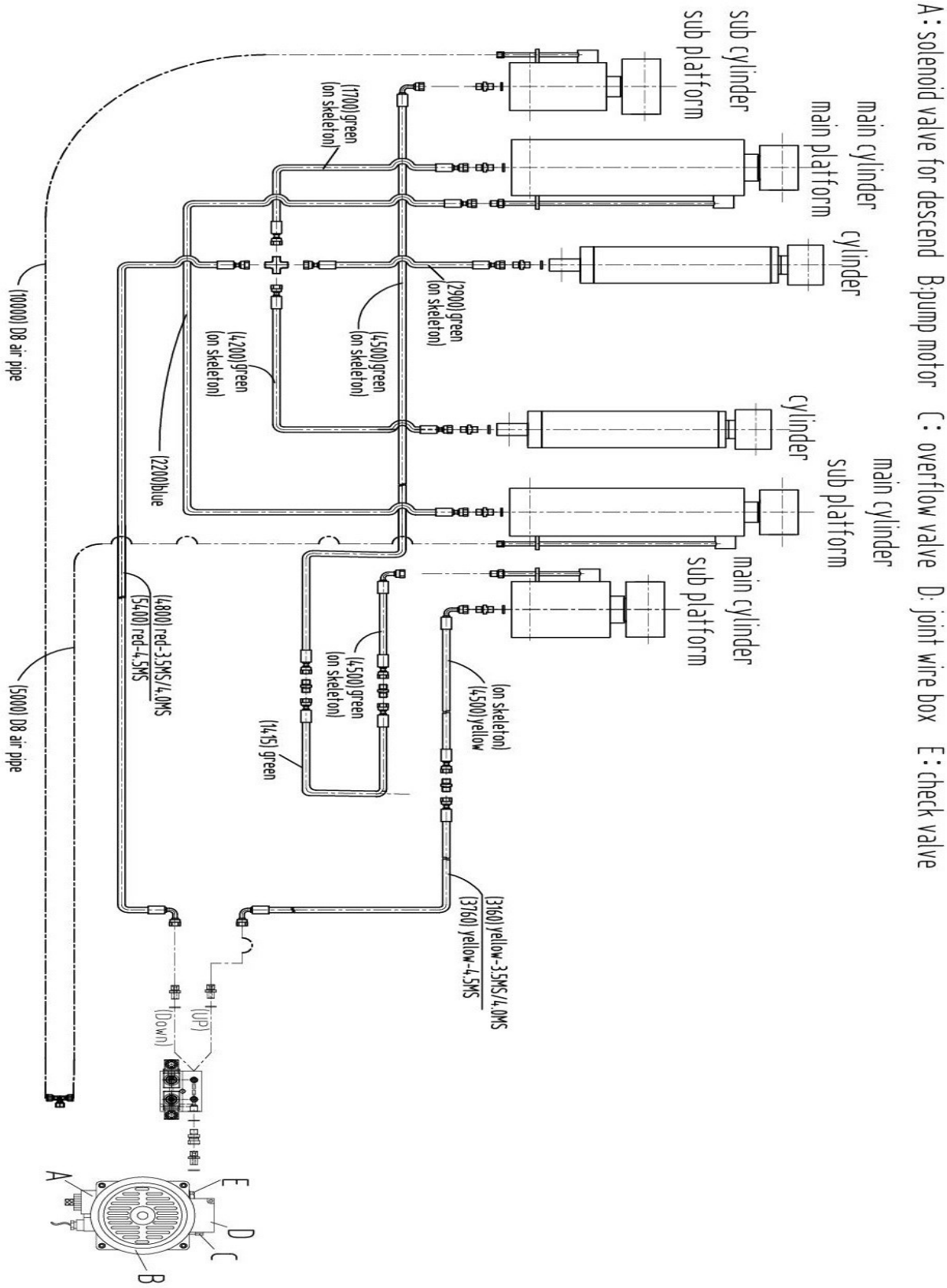
Hydraulic pressure illustrative diagram:



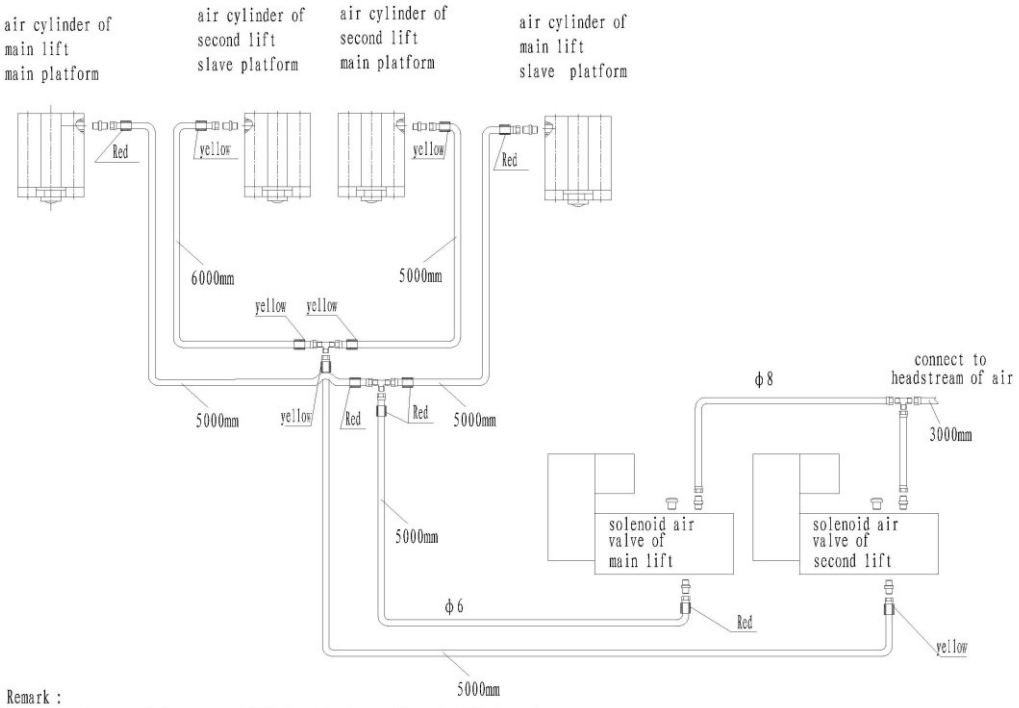
1 main cylinder of main lift
2 slave cylinder of main lift
3 slave cylinder of second lift
4 main cylinder of second lift
5 antiknock valve
6 electromagnetic valve
8 check valve
9 overflow valve
10 descent valve
11 flow control valve
12 gear pump
13 pump motor
14 filter
15 oil tank
16 assistant cylinder

Appendix

Hydraulic pipe connection diagram:



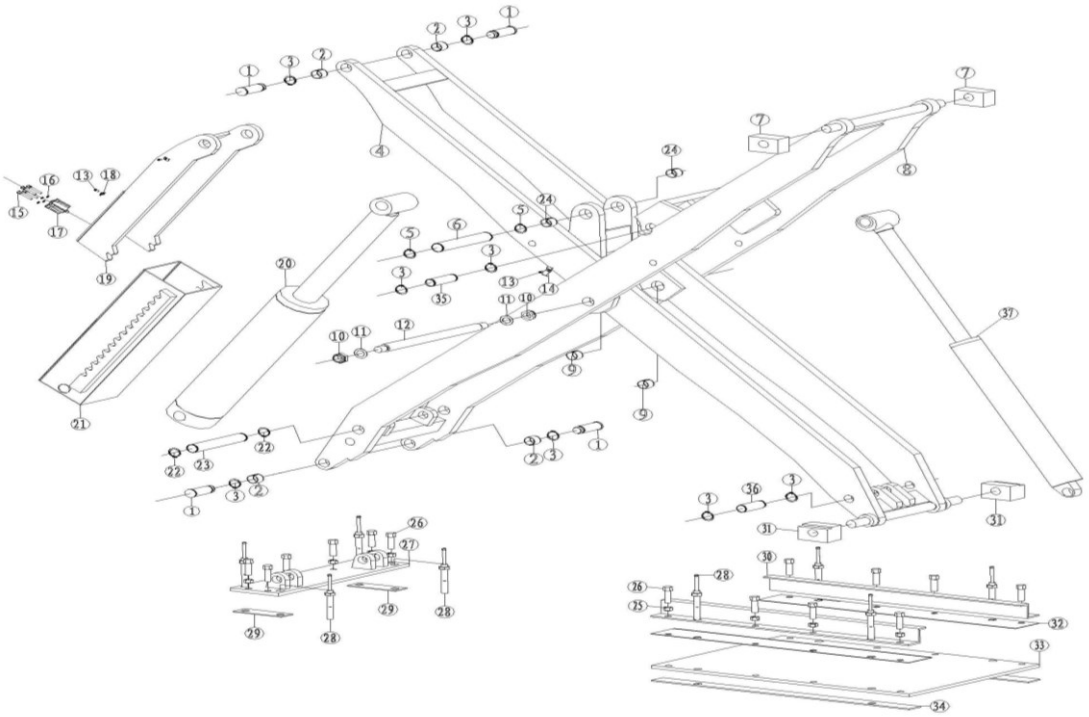
Air hose connection diagram:



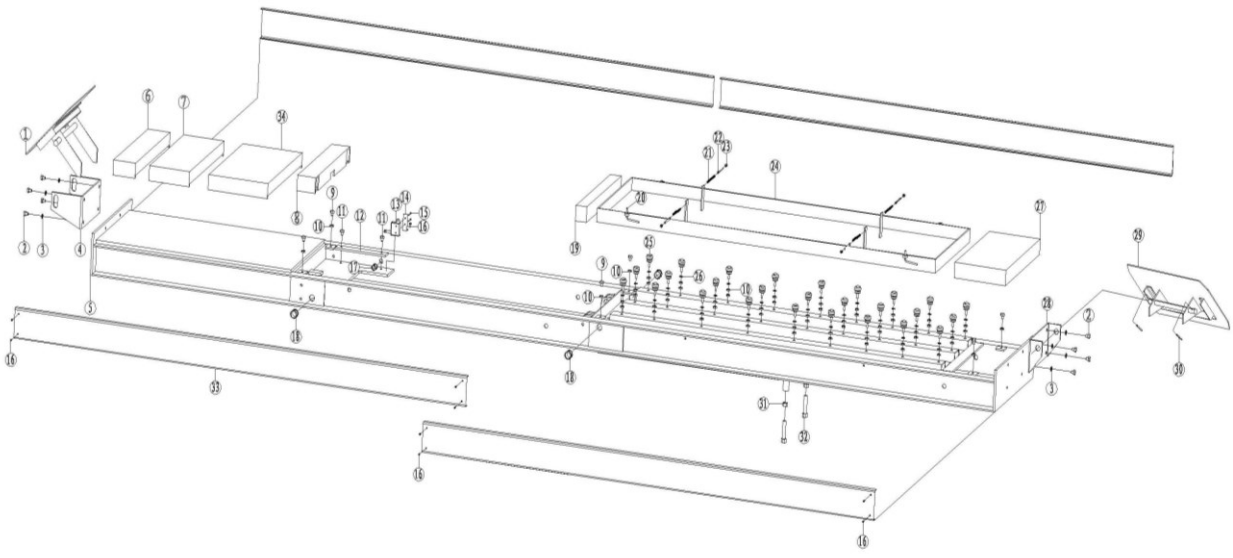
Remark :
When open the control box cover, find that the inner side solenoid air valve is for connecting to main lift while external side is for connecting to second lift.

Appendix

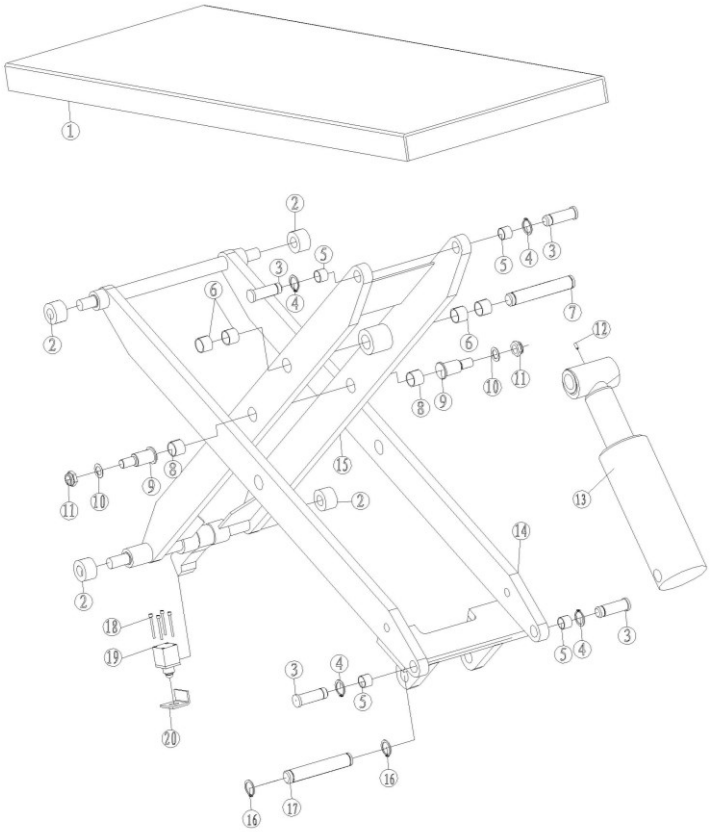
Exploded view of connecting rod:



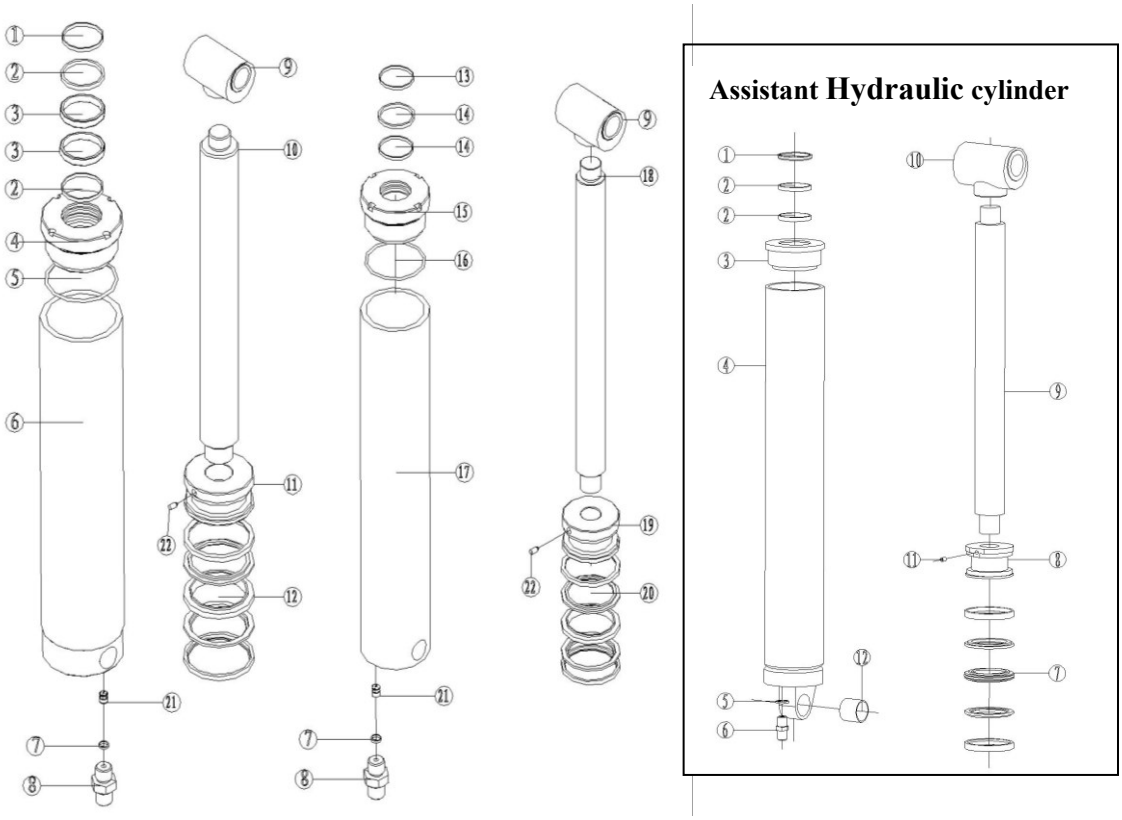
Exploded view of crossbeam:



Exploded view of second lift:

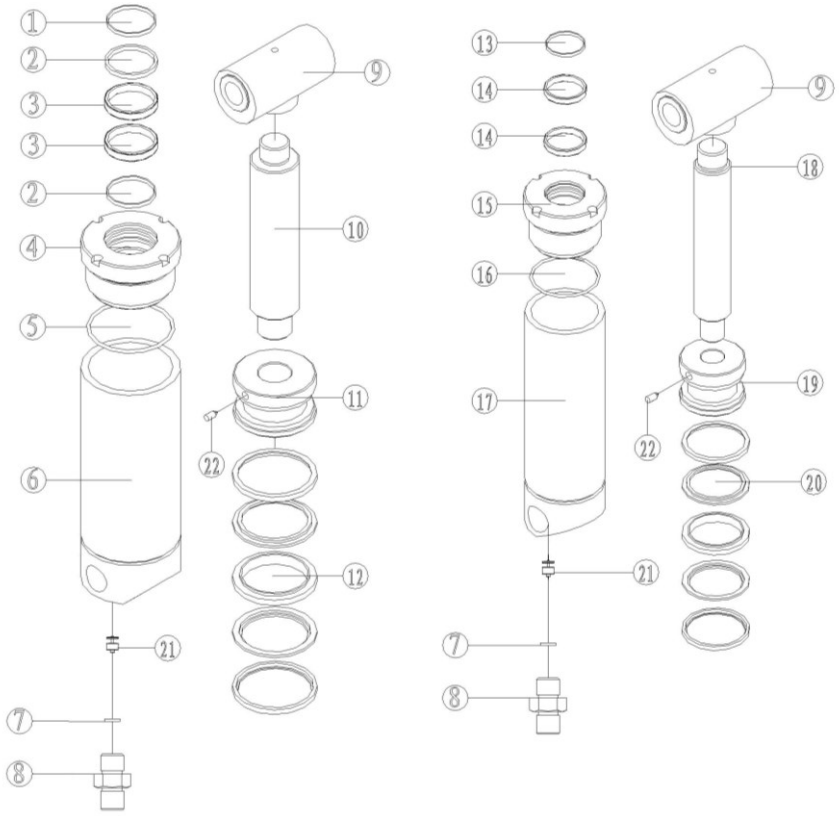


Hydraulic cylinder for main lift exploded view:



Appendix

Hydraulic cylinder for second lift exploded view:



Appendix

exploded view list						
exploded view of connecting rod list:						
Item	Description	Qty		Item	Description	Qty
1	Vertically pin axle of main lift	8		21	Lock device(for big cylinder)	1
2	Oil-less axletree 3030	8			Lock device(for small cylinder)	1
3	Snap ring φ30	18		22	Snap ring φ34	2
4	Sub connecting rod	2		23	Cylinder ream-axle(big)	1
5	Snap ring φ36	4			Cylinder ream-axle(small)	1
6	Piston Rod Supporting Hinge Axle	2		24	Oil-less axletree 3625	4
7	Upper slide block	4		25	Nut M16	32
8	Main connecting rod	2		26	hexagon head bolt M16×50	28
9	Oil-less axletree 3645	4		27	Down bracket stand	2
10	Locknut M24	4		28	Ground bolt	16
11	Washer φ24	4		29	Short adjust shim	4

12	Centre ream-axle	2		30	lower guide notch	4
13	screw M5×10	11		31	lower slide block	4
14	hose block	3		32	Attrition-lessen board	4
15	socket cap screw M5×50	8		33	lower slide stand board	2
16	spring (lock) washer φ5	8		34	Long adjust shim	4
17	Air cylinder	2		35	Piston Rod Supporting Hinge Axle 2	2
18	Air hose block	6		36	Cylinder ream-axle 2	2
19	Safety-jaw	2		37	assistant cylinder	2
20	Hydraulic Cylinder 120	1				
	Hydraulic Cylinder 100	1				

exploded view of crossbeam list:

Item	Description	Qty		Item	Description	Qty
1	Front wheel stop	2		18	rubber jacket（big）	9
2	hexagon head bolt M10×15	16		19	Guide block	2
3	Washer φ10	16		20	Sliding-proof pin	4
4	Front wheel stop rack	2		21	Spring	8
5	crossbeam	2		22	Haul hook	8
6	turntable keeps off the block(90)	2		23	Nut M6	8
7	turntable keeps off the block(295)	2		24	Side slide plate	2
8	block	2		25	Ball	54
9	hexagon head bolt M8×25	12		26	Washer φ8	54
10	hes nut M8	96		27	Block up	2
11	hexagon head bolt M8×15	8		28	Back wheel stop rack	2
12	Lower roller shim	4		29	Back wheel stop	2
13	Limit switch for sub lift	1		30	Placket pin φ3	4
14	Limit switch stand	1		31	Nut M16	4
15	screw M4×35	2		32	hexagon head bolt M16×70	4
16	screw M5×10	34		33	Guard board of beam	8
17	rubber jacket（small）	1		34	turntable keeps off the block(400)	2

exploded view of second lift list:

Item	Description	Qty		Item	Description	Qty
1	Top plate	2		12	screw M8×12	2
2	roller	8		13	Hydraulic Cylinder 100	1
3	Vertically Hinge Axle for sub lift	8			Hydraulic Cylinder 120	1
4	Snap ring φ25	8		14	Main connecting rod for sub lift	2
5	Oil-less axletree 2525	8		15	sub connecting rod(small) for sub lift	2
6	Oil-less axletree 3030	8		16	Snap ring φ30	4

7	Piston Rod Supporting Hinge Axle for sub lift	2		17	Oil Cylinder Bearing Pin(big)	1
8	Oil-less axletree 3025	4			Oil Cylinder Bearing Pin(small)	1
9	Centre ream-axle for sub lift	4		18	socket cap screw M4×35	8
10	Washer φ20	4		19	Air cylinder	2
11	Locknut M20	4		20	Air cylinder bracket	2

exploded view list

Hydraulic cylinder exploded view

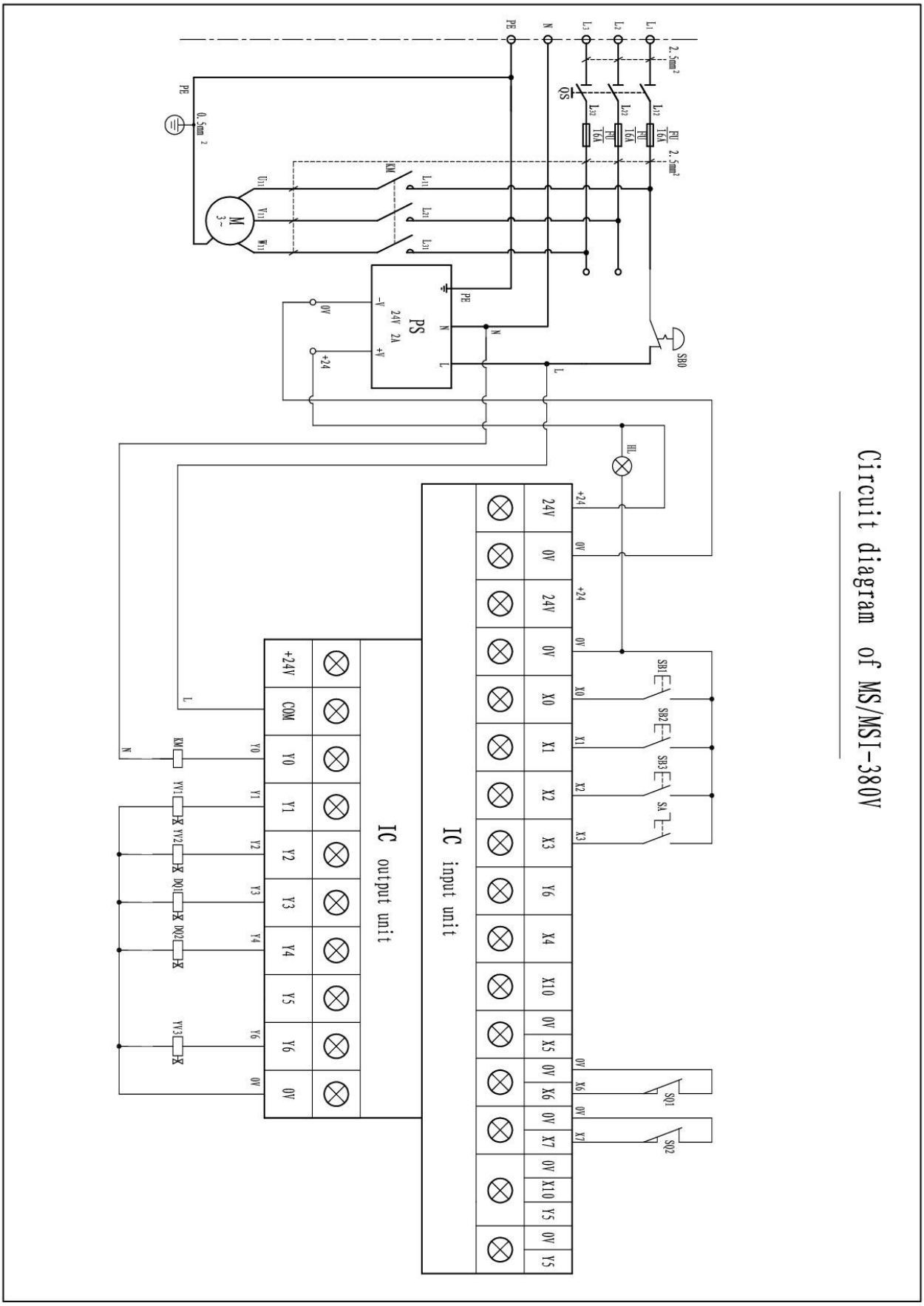
Item	Description	Qty		Item	Description	Qty
1	Dust-proof ring	1		12	Assembled poly	1
2	Wearable ring φ24	2		13	Dust-proof ring	1
3	Poly sealing	2		14	Wearable ring D24	2
4	Hydraulic Cylinder cover 120	1		15	Hydraulic Cylinder cover 100	1
5	O-ring	1		16	O-ring	1
6	Hydraulic Cylinder canister 120	1		17	Hydraulic Cylinder canister 100	1
7	φ14 Assembled ring	2		18	Piston Rod 50	1
8	Hydraulic pipe connecting	2		19	Piston 100	1
9	Piston Rod ring	2		20	Assembled poly	1
10	Piston Rod 66.3	1		21	Anti-explosive valve	2
11	Piston 120	1		22	screw M8×12	2

Hydraulic cylinder for second lift exploded view list

Item	Description	Qty		Item	Description	Qty
1	Dust-proof ring	1		12	Assembled poly	1
2	Wearable ring φ24	2		13	Dust-proof ring	1
3	Poly sealing	2		14	Wearable ring D24	2
4	Hydraulic Cylinder cover 120	1		15	Hydraulic Cylinder cover 100	1
5	O-ring	1		16	O-ring	1
6	Hydraulic Cylinder canister 120	1		17	Hydraulic Cylinder canister 100	1
7	φ14 Assembled ring	2		18	Piston Rod 50	1
8	Hydraulic pipe connecting	2		19	Piston 100	1
9	Piston Rod ring	2		20	Assembled poly	1
10	Piston Rod 66.3	1		21	Anti-explosive valve	2

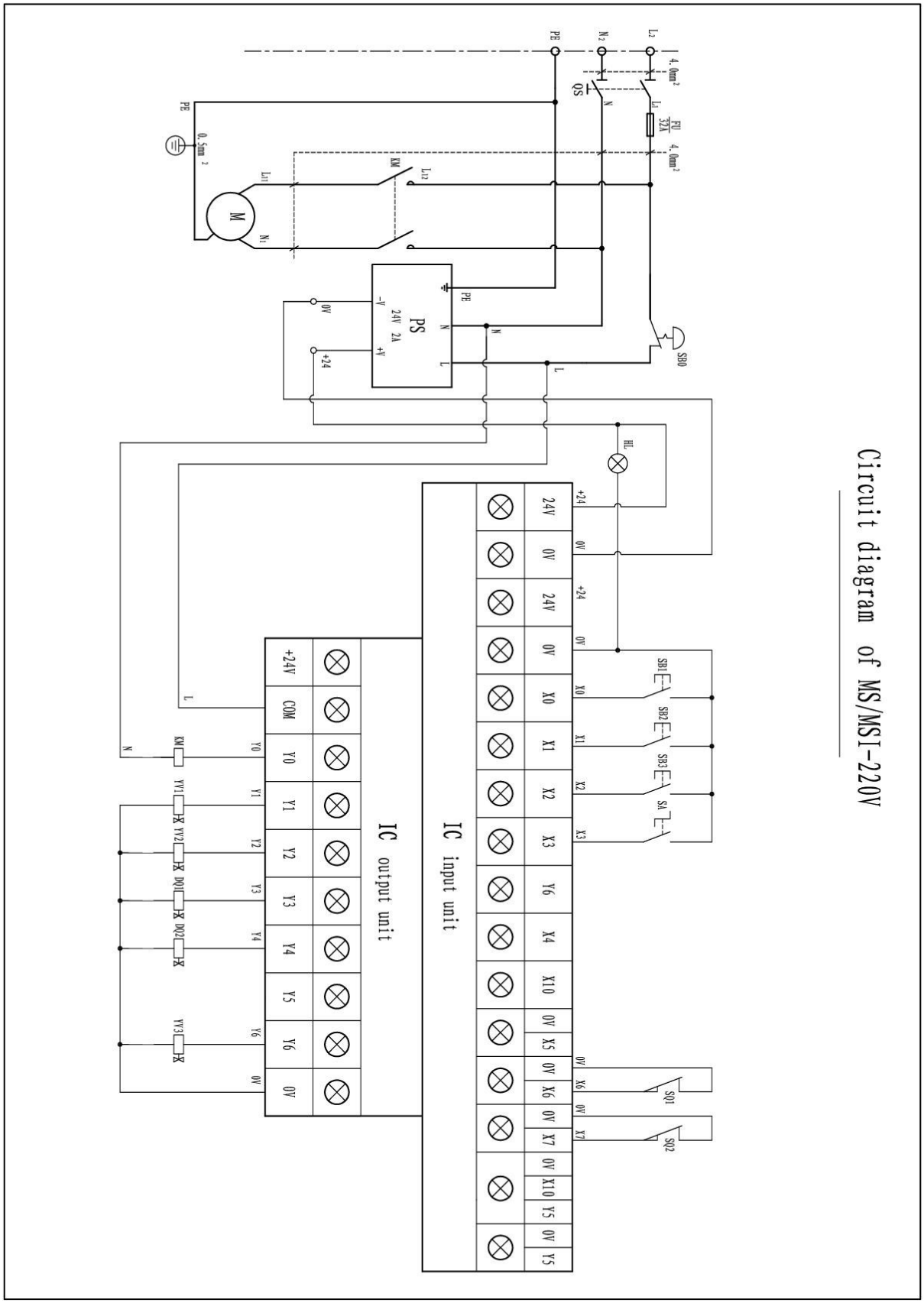
11	Piston 120	1		22	screw M8×12	2
assistant cylinder for second lift exploded view list						
Item	Description	Qty		Item	Description	Qty
1	Dust-proof ring	1		7	Assembled poly	2
2	Wearable ring φ24	2		8	Piston 75	2
3	Hydraulic Cylinder cover 75	2		9	Piston Rod 45	2
4	Hydraulic Cylinder cover 75	1		10	Piston Rod ring	2
5	φ14 Assembled ring	1		11	screw M8×12	2
6	Hydraulic pipe connecting	1		12	Oil-less axletree 3030	2

Circuit diagram（380V）：



Appendix

Circuit diagram（220V）：



Appendix

ELECTRICAL COMPONENTS LIST				
item	code	name	model	qty
1	QS	mains switch	EN60947-3	1
2	KM	contactor	SC-03 24V	1
3	PS	Switching mode power supply	220V-24V-2A	1
4	M	pump motor	Y-90L4(380V 50HZ)	1
5	IC	Programmable controller	20MR	1
6	HL	power lamp	AD16-22D/S	1
7	YV1	electromagnetic valve of main platform	EVH4105F	1
8	YV2	electromagnetic valve of sub platform	EVH4105F	1
9	YV3	electromagnetic valve for descent		1
10	SB0	emergency switch	LA23-MT	1
11	SB1	up switch	XB2 BA31	1
12	SB2	down switch	XB2 BA42	1
13	SB3	lock switch	XB2 BA55	1
14	SA	selector switch	XB2-DB22	1
15	DQ1	Solenoid air valve of main platform	IVBS-2200-3EINC	1
16	DQ2	Solenoid air valve of sub platform	IVBS-2200-3EINC	1
17	SQ1	limit switch of main platform	TZ-8108	1
18	SQ2	limit switch of sub platform	CZ7311	1