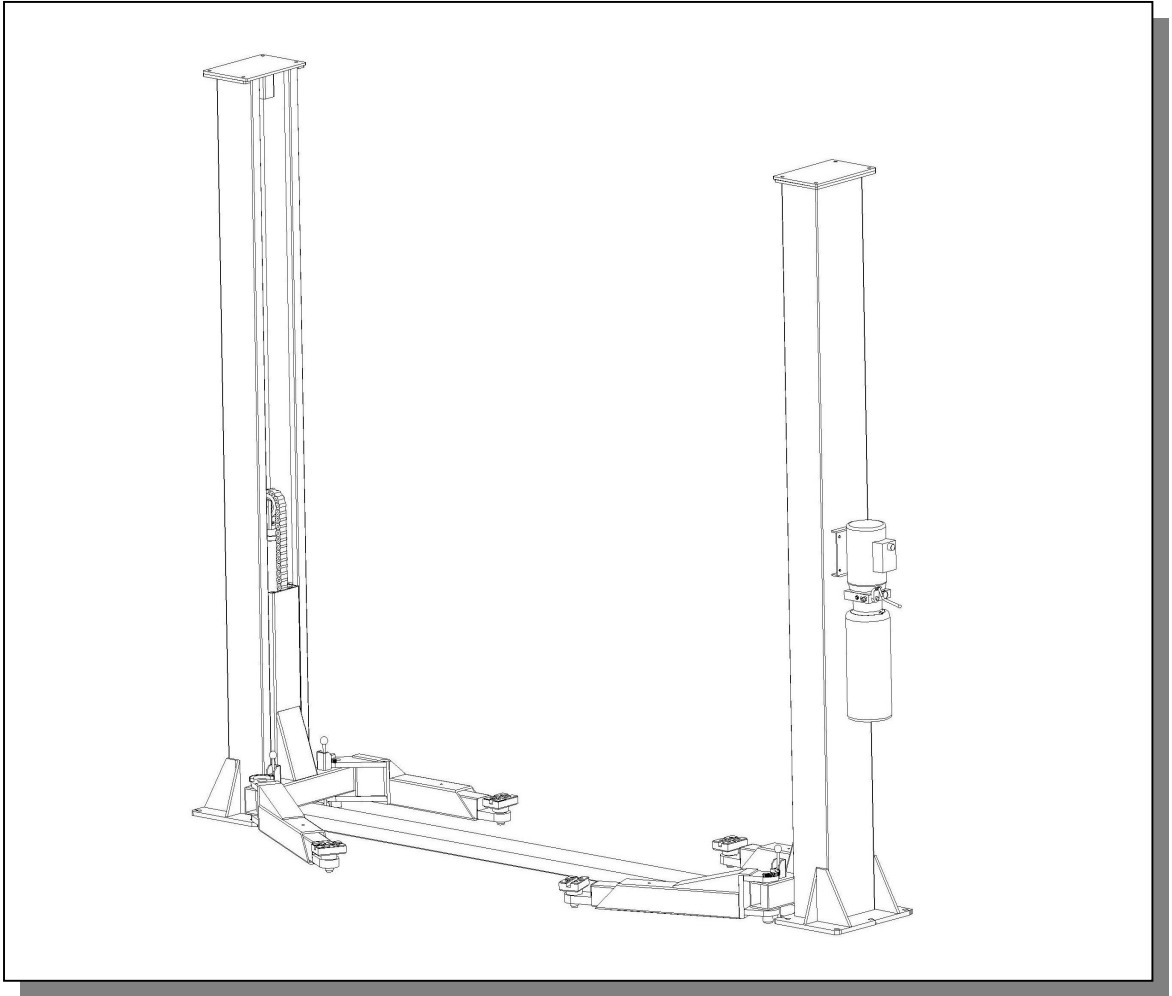


# HC240PE MANUAL

## TWO POST LIFT



# USER'S MANUAL

## TWO POST LIFT

### Manufacturer:

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## INSTRUCTION

- I Though we have considered about the machine safety during design and manufacture, proper training and frequent operation can be better for the safety. Forbid to operate or repair the lift without reading this user's manual.
- I Check the nameplate on motor and currency request on nameplate, only professional electrician is allowed to connect the power.
- I Forbid to load vehicle over 4000KG!
- I Read the warning content in user's manual carefully!
- I We do not take responsibility to the damage due to improper use or operation.



Manufacturer owns the right to make little changes for the manual owing to the improvement of technology, take the real object as the standard.

## Catalogue

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Discharge the outside packing and other packing material, to check whether any damage or missing during transportation according to “packing list”. If find damage or missing, should notice the carrier immediately.

## PACKING

**Standard scheme:** main post and its components, sub post and its components (1 #) , hydraulic unit (2 #) , standard equipments totally 2 cases.

## Chapter 2 Description of machine

### 2.1 USAGE

This two post lift can lift various vehicles which weight is less than 4000kg. And it is suitable for vehicle test, repair, maintenance and care.

This lift is designed to lift vehicles, not for other usage.

- Forbid to use for washing and spraying vehicles!
- Forbid to lift vehicle which weight is over 4000KG!

### 2.2 FEATURES

- Design and manufacture according to relevant standard, and machine performs stable and reliable.
- With hydraulic locking and mechanical locking system, safety and reliable.
- With safety valve and antiknock valve in case of hydraulic failure or over loading, to prevent the lift from lowering quickly when oil pipe bursts.
- Double cylinder drive, to lift and lower stably.
- Adopt imported hydraulic and electrical components from Italy, Germany and Japan.

### 2. 3 MAIN FABRIC PRINCIPLE:

- Lifting fabric: Each post has one cylinder, when pump the oil into the cylinder, the cylinder pole will move upwards, to hold the carriage move upwards.
- Support fabric: After driving the vehicle into the working area, adjust the angle of arms and length of extension arms, to ensure the arms support on the effective vehicle bearing point. Fix the position of vehicle by arm orientation fabric, in case of slipping. Then adjust the screw to fit different height chassis.
- Balance fabric: To keep the balance during lifting, connect the two carriages with two steel cables

to ensure the synchronization of the two. Then tighten the steel cable, or it will not synchronize.

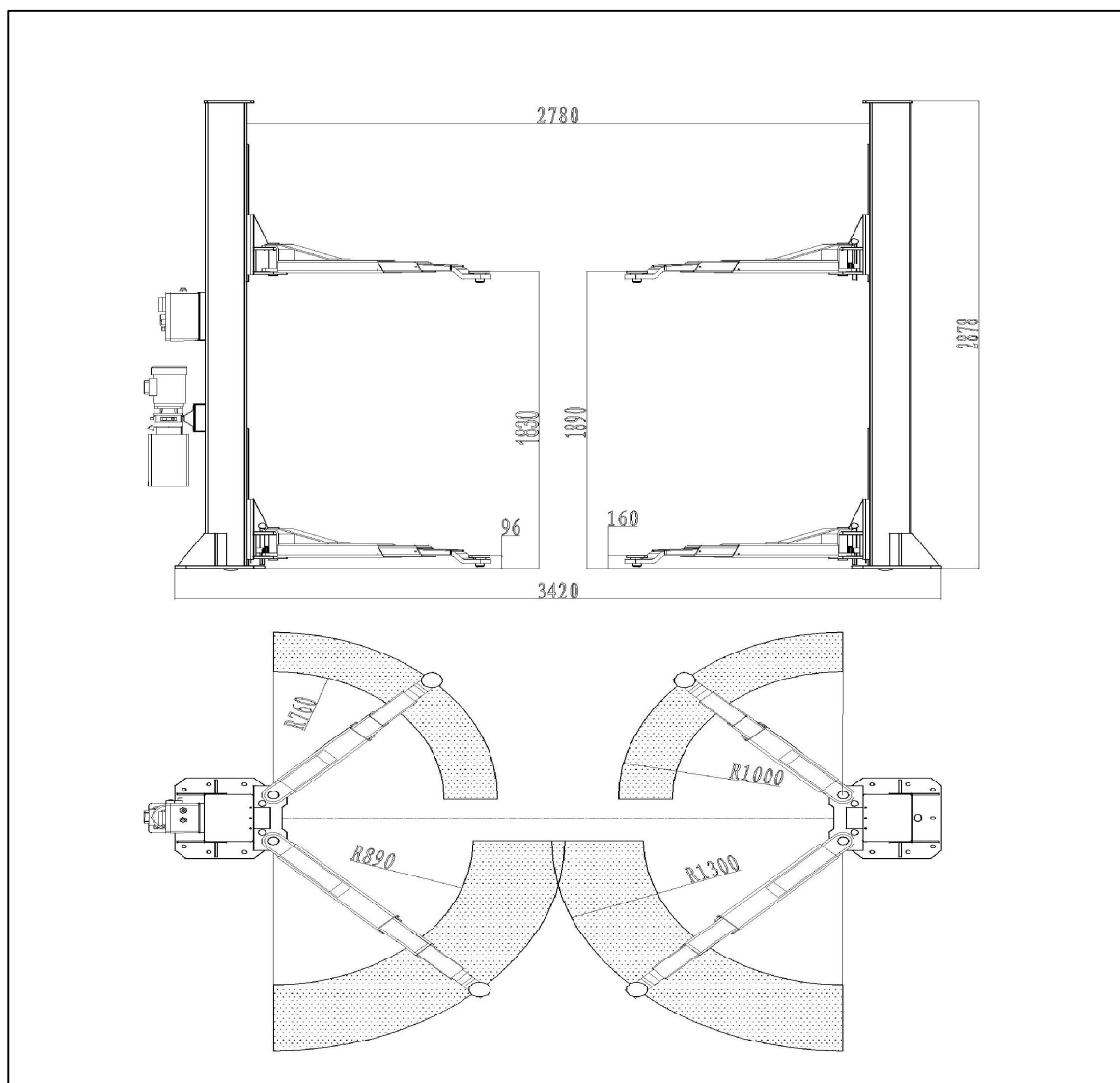
If carriages, arms are not in level, adjust the steel cable nut, to ensure the carriages and arms in level. Then tighten the cables to ensure the synchronization.

-Electromagnetic safety locking fabric: During lifting, each post has safety-locking device to ensure the lift can stop reliable without falling.

-Principal of electromagnetic safety locking: The upper side of safety racks adhibit on the safety teeth for the angle and deadweight. The carriages push the safety rack and go up step by step. If failure of lift and begins to lower quickly, safety rack will clip on the teeth to stop the carriage to stop lowering. (See picture 9 and 10)

-There are orientation device on the arms, to lock arms when they are in proper position, which can prevent the vehicle from slipping.

## 2.4 CONFIGURATION DRAWING:



Picture 1 (dimension drawing)

## Chapter 2 Description of machine

## 2.5 TECHNICAL PARAMETER

Item	Parameter
Drive	<b>Electrical hydraulic</b>
Max lifting weight	4000kg
Lifting height	1830mm/1890mm
Original height	96/160mm
Lifting time	≤50S
Lowering time	≤60S
Pass width	2780mm
Overall width	3420mm
Overall weight	870 kg
Voltage	AC 400V or 230V ± 5% 50Hz
Machine power	2.2 KW
Hydraulic oil	7L 20# high abrasive hydraulic oil(prepared by
Working	5-40℃
Working humidity	30-95%
Noisy level	< 76db
Installation height	Height above sea level ≤1000M
Storage temperature	-25℃~55℃
Installation place	Indoor

Table 1

### 3. 1 INSTALLATION NOTIC

- Improper installation will cause damage to machine or personnel. We do not take responsibility to any direct or indirect damage due to improper installation or operation.
- The proper installation floor should be level, to ensure level lifting and lowering. Any slant can affect the performance of the machine.
- Forbid to install the machine on asphaltum floor. According to the floor requirement, can only install machine on good condition concrete floor, no crack and other defects.
- Without certify permit from architect, forbid to install machine on the floor which has empty room downstairs.
- Avoid installing machine near warming device, water faucet, air humidifier and ingle.
- Power supply: Before installation, get ready for the power supply.

### 3.2 INSTALLATION PROCESS

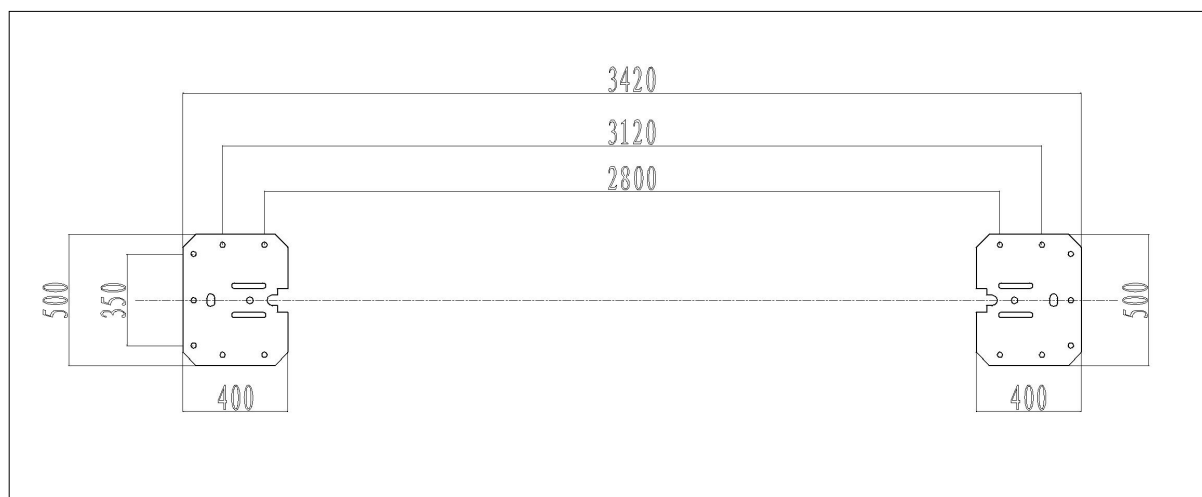
#### 3.2.1 GENERAL ORIENTATION

- Lift can only be installed on concrete with steel to reinforce.
- Thickness of concrete  $\geq 200\text{mm}$ , to ensure the intensity reach to 3000PSI ( $2.1\text{Kg/mm}^2$ ) upwards.
- Height of indoor should be over 4000 mm, regard to hold enough space for all lifting vehicles(approximate 4m from the lift center)
- Distance from post to wall should be at lease 1200mm. In case of emergency situation or working convenience, should consider about enough space for safety channel.

#### 3.2.2 FLOOR LAYOUT

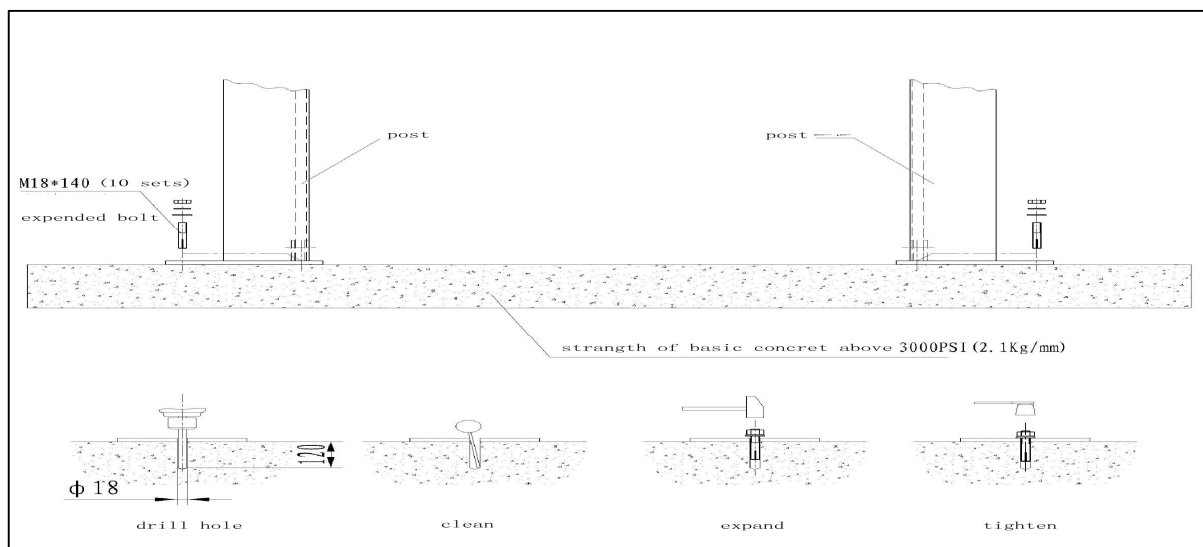


It's very important for the floor layout (picture 2). If it's not correct, there may be some problems during installation and operation. The total level error is less than 4mm, which can decrease the problems during final installation.



Picture 2 (floor layout)

### 3.2.3 INSTALLATION DRAWING OF POST



Picture 3 (post installation)



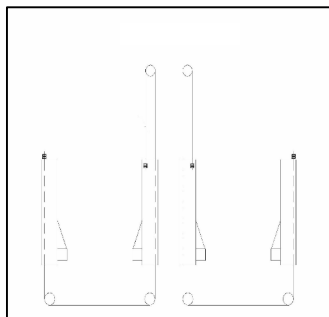
**Notice:** Drill hole with  $\phi 19\text{mm}$  aiguille and then anchor with pneumatic tools. The depth of hole and bolts should be the same and insert the bolt. The air anchor, made against the washer to under the post. When fastening to the use of torque wrench, do not use impact tools to tighten.

### 3.2.4 STEEL CALBE INSTALLATION

Assemble one side of steel cable with nut on the carriage fix hole (picture 4), then thread the cable from the top cover of post circle to the bottom (picture 6), and circle to the carriage in the other post with nut fixation.



**Ensure no cross and mistake installation of cables, and the cables are on top the pulley.**



Picture 4 cable installation



Picture 5



Picture 6



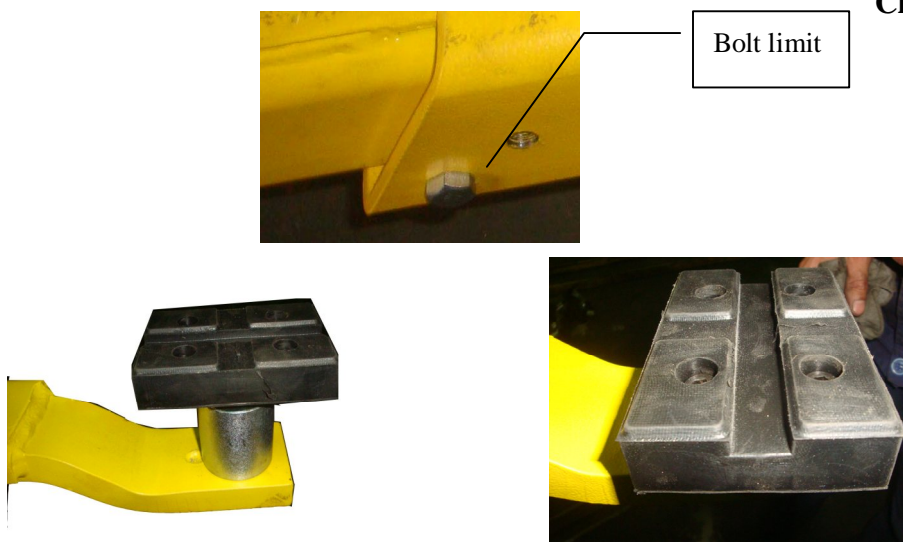
Picture 7

### 3.2.5 INSTALLATION OF ARMS

- Fix the long and short sway arms with hinge axis on the carriage according to the floor layout.
- Install the correspond long and short extension arms and fix with  $M8 \times 12$  bolt to avoid slipping.
- Put the adapter to the holes on extension arms (can choose differ height adapter to suit different height chassis)

See picture 8:



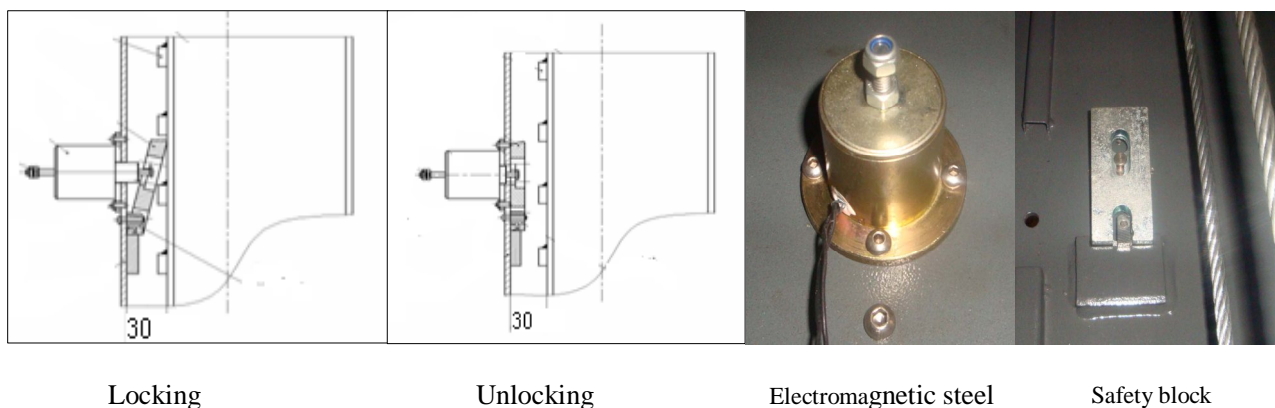


Picture 8

### 3.2.6 INSTALLATION OF ELECTROMAGNETIC UNLOCKING

- Install the electromagnetic steel on the correspond position on post and fix with bolt.
- Hang the safety block on the electromagnetic pulling pole form the inboard post.

**Adjust the pole nut to make safety block tip contact with carriage surface (the distance between post inner side and carriage is 30~34mm, then tighten the pole nut. (See picture 9)**



Locking

Unlocking

Electromagnetic steel

Safety block

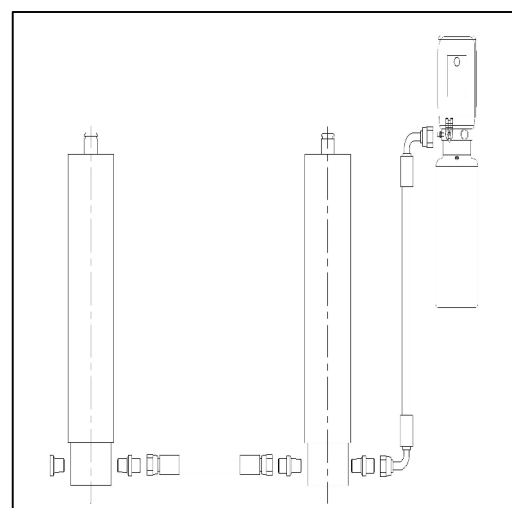
Picture 9

### 3.2.7 INSTALLATION OF UP LIMIT SWITCH

Install the up limit switch on hole of the main post tip, then adjust the sway arm angle to make it contact with carriage.

### 3.2.8 INSTALLATION OF HYDRAULIC PUMP AND OIL PIPES

- Fix the hydraulic pump on post located on the right side.
- Connect the oil pipes as picture, and then cover the oil pipe cover.



Picture 10 oil pipe connection

### 3.2.9 INSTALLATION OF CONTROL BOX OF WIRES

-Fix the control box on the post with bolt.

-Connect the wires according to electrical diagram and air loop according to air loop diagram.

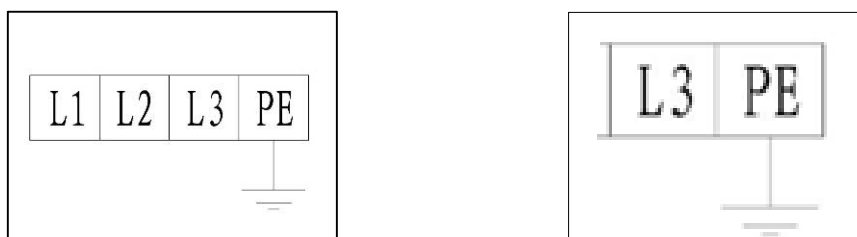
**Only authorized qualified personnel can install the electrical part.**

-Open the control box cover first.

-Power connection:

Connect the 3 phase five wires ( $3 \times 2.5\text{mm}^2 + 2 \times 1.5\text{mm}^2$ ) for the power supply to terminals L1#, L2# & L3# and N# inside the control box and PE to the earth marked bolt.

If for 230V connection, connect to L3#, N# to terminals in control box and PE# to the earth marked bolt.



Picture 11

-Unlocking electromagnetic steel connection:

Connect the 230# and 200# of the steel to the same no in control box.

-Up limit switch connection:

Connect the 102# and 100# of the steel to the same no in control box.



Picture 12 (up limit switch connection)

### 4.1 PREPARATION BEFORE ADJUSTMENT

-Upright adjustment:

Use plumb to fix the top of post and check whether its install position is upright.

Then hammer the expanded bolt and tighten the ground bolt cap.

**Only can hammer the expanded bolt after the expired period of the concrete and the gap between base plate and ground surface must be filled with iron plate or concrete and then tighten the anchor bolts.**

-Check whether the connection of power is correct, pay attention to the turning of 3 phase motor.

-Ensure all bolts are tightened enough.

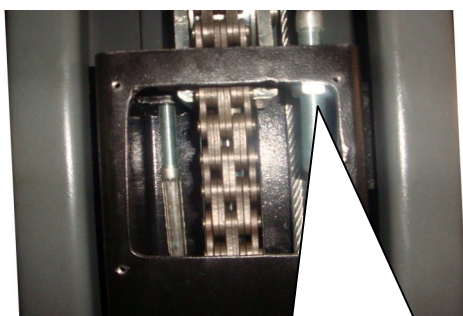
-Press “UP” button, safety board goes up with carriage and releases the lock. Release the button, carriages stop lifting.

- Press “DOWN” button, to pull-in electromagnetic steel, and the carriages lower. Release the button, carriages stop lowering.

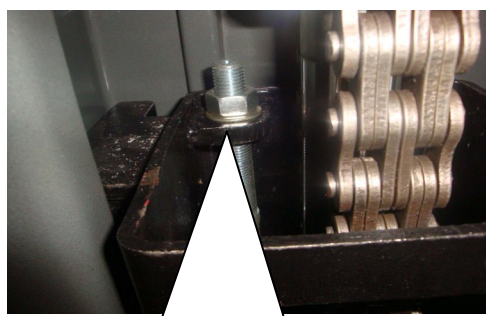
### 4. 2SYCHRONIZATION ADJUSTMENT

-Repeat to lift and lower the lift several times, to ensure the tensile force of two steel cables. If not, adjust the cable nut.

-Press “UP” button, to check whether the lifting and lowering of carriage is synchronized. If not, adjust the cable nut.



Rotate the nut to adjust the cable length for the leveling of two carriages.



Rotate the nut to adjust the cable length for the leveling of two carriages.

Picture 13

### 4. 3 LOADING TEST

To check whether hydraulic system works normally when loading heavy weight.



**Notice:**

-Check every oil pipe and fitting, to ensure no leakage before operating the lift.

-Use all the arms when lifting vehicle on the recommended point of the chassis. Vehicles barycenter must be in the middle of two support arm.

- Remove or install any heavy part, one should use safety support like jack to keep the balance of vehicle.
- When lifting or lowering with loading, forbid personnel to stand under the arms or vehicle and keep in case of danger.
- Cut off all the power when lift is not on work.

## Chapter 5 Maintenance and care

### Notice



#### ATTENTION:

- All bearings and hinges on this machine must be lubricated once a month



- The lock latch, steel cable, and some other moving parts should be lubricated monthly.

-The hydraulic oil must be replaced once a year. The oil level should always be kept at upper limit position.

-Check the steel cable every three months and if there is some abrasion, something wrong, stops using and contact with the manufacturer.

-Check the integration of the insurance system every day.



**When change hydraulic oil, put machines to the lowest position, have the oil tank empty, when add new oil, should be filled by filter.**

## Chapter 6 Trouble Shooting

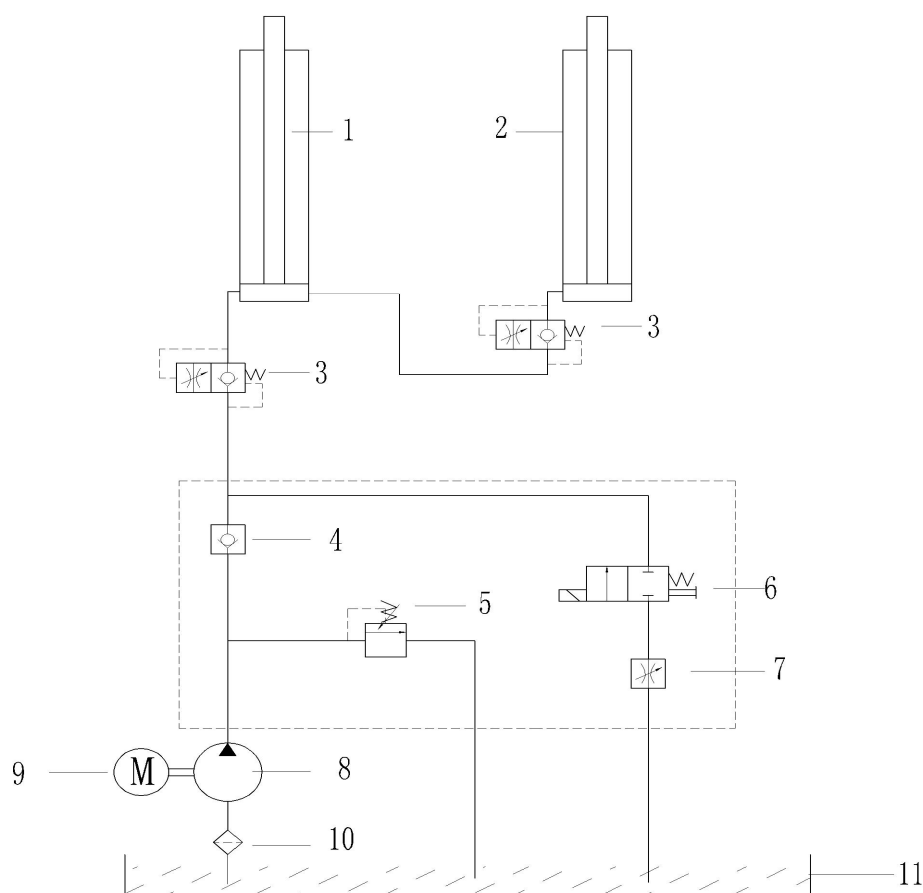
Failure phenomenon	Cause and Phenomena	Resolutions method
The motor doesn't run in lifting operation	connection of power supply wires or zero wire is not correct	Check and correct wires connection
	the AC contactor in the circuit of the motor does not pick up	If the motor operation when forcing the contactor down with an isolation rod, check the control circuit. If the voltage at two ends of the contactor coil is normal, replace the contactor.
	UP button failure	Check the contact point of the button and wires connection and exclude.
When lifting operation, the motor runs but it is no lifting movement	the motor turns reverse	Exchange the phases of the power supply wires
	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.
	the amount of hydraulic oil is not enough	Add hydraulic oil
	the descend valve is not closed fastened	Check the descend valve and exclude.
When press lower button, the lift is not lowering	① the safety pawl are not released from the safety teeth	First lift a little and then lowering
	he solenoid air valve does not work	Check the solenoid loop circuit and solution
Two carriages are not synchronized when lift	The force of two steel cable different or force not enough.	Adjust the cable adjustment nut.
Leak oil	Oil pipe fitting loosen	Screw down the pipe fitting

### 7.1 HYDRAULIC SYSTEM

-When pressed “UP” button to start the motor, to pump oil from oil tank to cylinder, and to push the cylinder piston to move. Overflow valve is closed and the pressure is set before packing in factory, to ensure the maximum loading of lift. When the system pressure is over max pressure, overflow valve will work to have the oil back to oil tank.

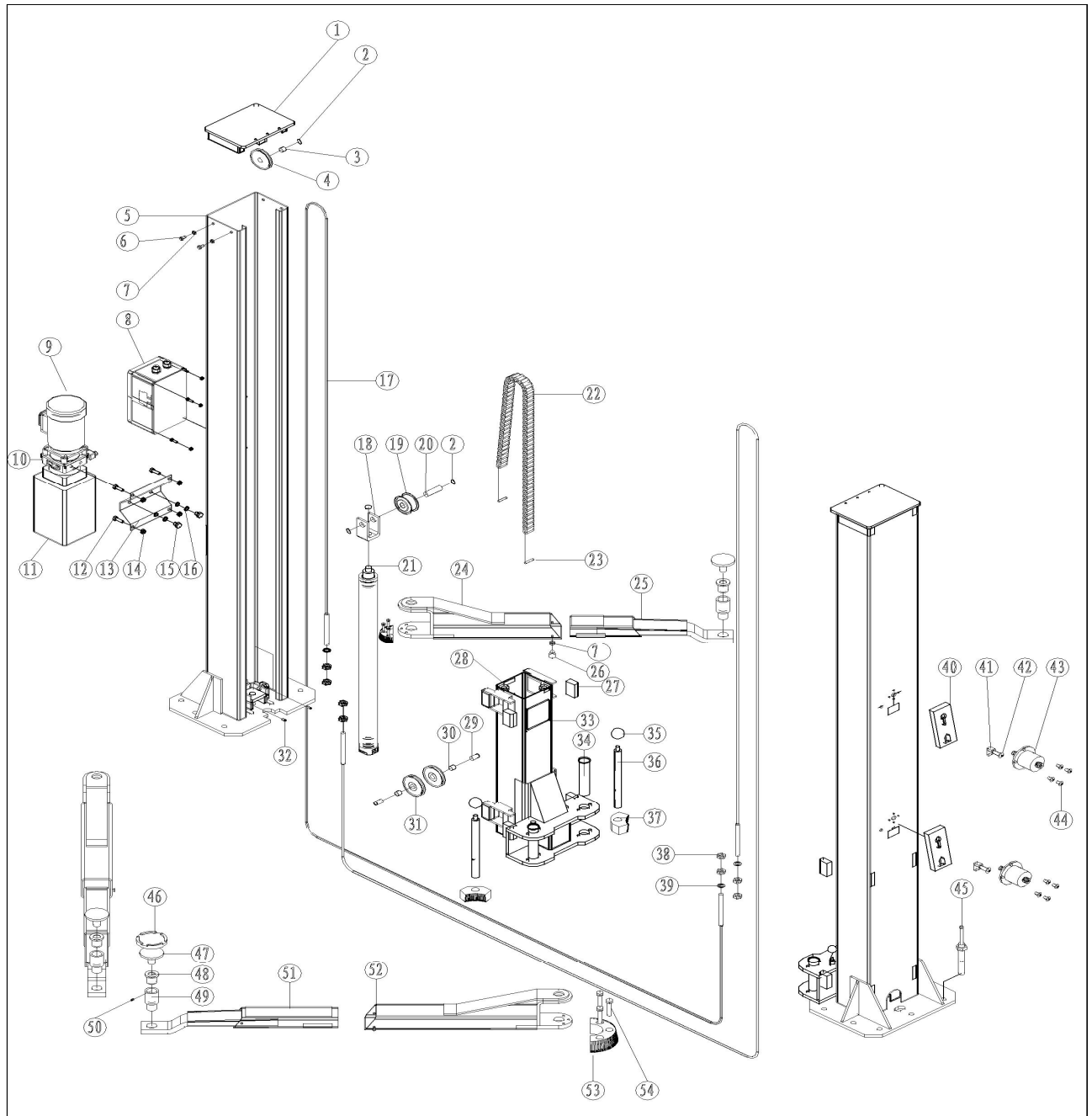
-Release “UP” button, motor stops to work and carriages stop lifting.

-Press “DOWN” button, to connect the electromagnetic steel and open the safety rack, pump begins to have oil back to oil tank and the carriage begins to lower.



- 1、cylinder 2、cylinder 3、anti-explosive valve  
 4、check valve 5、overflowing valve 6、solenoid valve for descent  
 7、flow control valve 8、gear pump 9、pump motor 10、filter 11、oil tank

## 7. 2 EXPLODED DRAWING OF MAACHINE



Machine exploded drawing list

serial	code	description	Quantity	remark
1	4.0TPF-A-02	Coping	2	
2		Snap ring $\phi 25$	8	
3		Oil-less axletree2516	2	
4	4.0TPF-A-03	Tip wheel	2	
5	4.0TPF-A-01	Post	each 1	
6		hexagon head bolt M10×20	8	
7		Nut M10	8	
8		Control box	1	
9		Motor	1	
10		Hydraulic pump	1	

11		Tank	1	
12		Hexagon head bolt M8×25	8	
13		Hydraulic pump bracket	1	
14		Nut M8	8	
15		Hexagon head bolt M10×20	2	
16		Spacer φ8	8	
17		Spring washer φ8	8	
18	4.0TPF-E-05	piston earring	2	
19	4.0TPF-E-06	piston wheel	2	
20	4.0TPF-E-07	Pin of piston wheel	2	
21	4.0TPF-E-00	Hydraulic cylinder 60	2	
22	4.0TPF-B-08	Chain belt	2	
23	4.0TPF-B-09	Pin of φ9×52	4	
24		Short rocker	2	
25		Short extend arm	2	
26		Hexagon head bolt M8×12	4	
27		Nut M8	4	
28		Slipway	2	
29	4.0TPF-A-05	Axes of φ20×36	4	
30		oil-less axletree2018	4	
31	4.0TPF-A-04	Turn around wheel	4	
32		Set screw M6×10	4	
33		Slipway-cover	2	
34		Rocker hinge axle	4	
35		Handle ball	4	
36		Unlock axle	4	
37		Unlock tooth	4	
38		Nut M16	8	
39		Washer φ16	4	
40		Safety block	4	
41		Firm block	4	
42		Half socket cap screwM6×20	4	
43		Electromagnetic steel	4	
44		Half socket cap screwM5×10	16	
45		Ground bolt M18×160	14	
46		Rubber block	4	
47		Adapter tray	4	
48		Adapter bearing	4	
49		Long pole	4	
50		Set screw M8×12	4	
51		Long extend arm	4	
52		Long rocker	4	
53		Safety \ tooth	4	
		Hexagon head bolt M8×45	12	