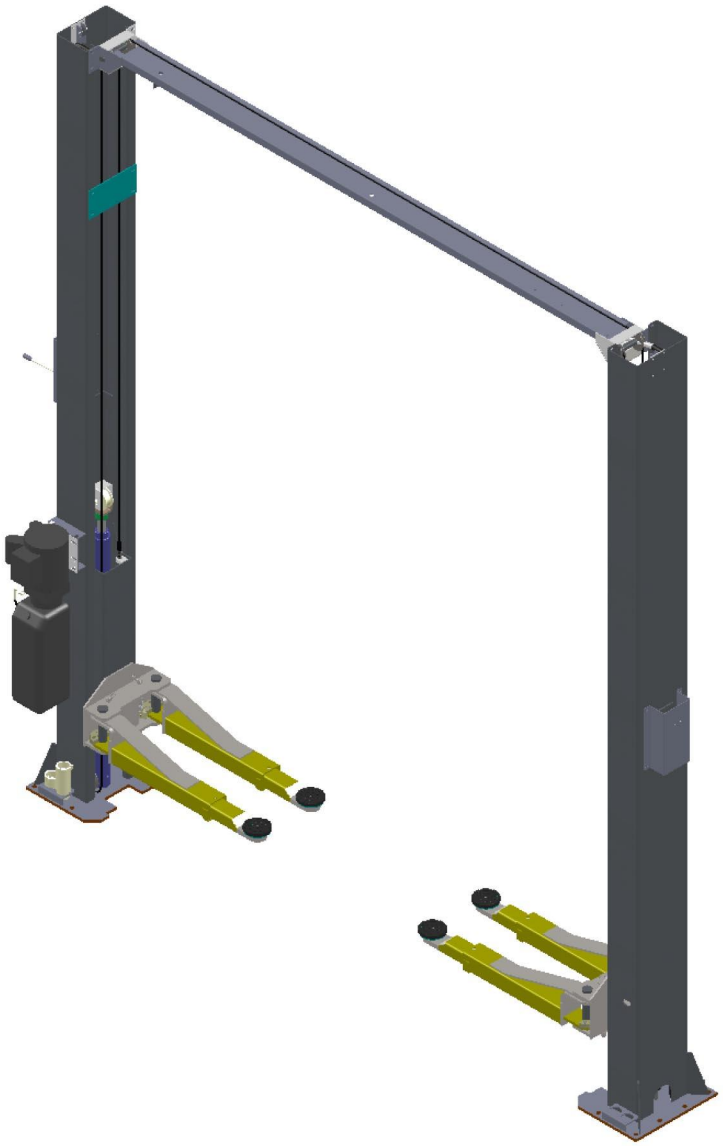
Two post lift clear floor series(HPL9/HPL10)

Operating Manual



Contents

1. Safety Instruction and Attentions

1.1 Cautions with Words

Pay special attention to the parts connected with product safety. Here are some examples:

If there is this signal before any passage, it means that operation like this is wrong and will lead to big casualty or heavy damage to the device. The figure appearing before passage shows that it is not allowed to operate according to the passage, or the potential risk will develop into big casualty and heavy damage to the lift. The passage besides this signal lists the notice points and security requirements during the process of normally using, maintenance and care of the lift.

1.2 Safety Caution Signal

Please read Safety Signage carefully, understand and remember them.

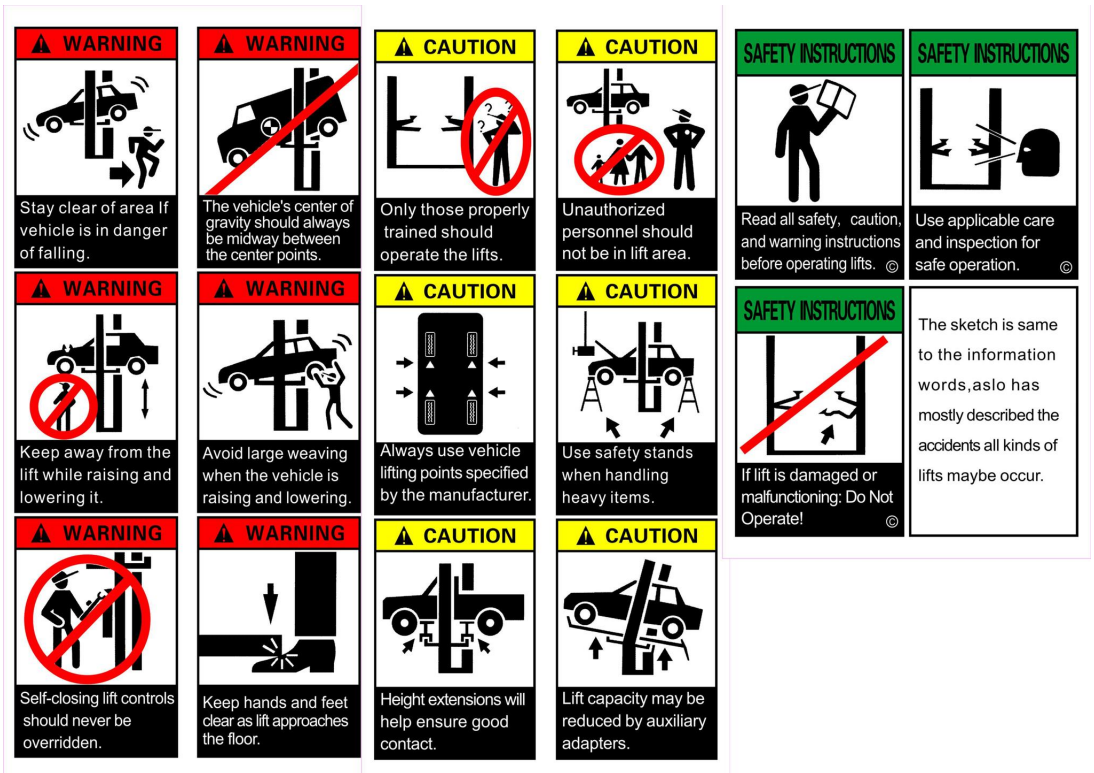
Only trained person can operate and use the lift.

Never let non-trained personnel come in contact with Lift.

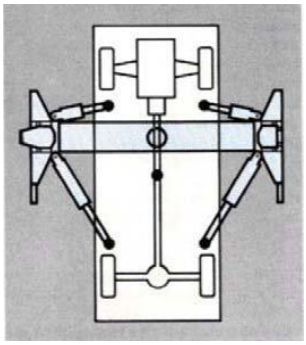
It's suggested by the manufacturer that the raising position should be the points of support.When install and move some big or heavy parts on ,The car during the maintenance, bracket should be used to keep the car's balance. Use the high bracket if necessary.

Supplementary bracket will reduce the heavy burden of the car on the lift when rise.

The safety warnings of the machine are placed on the column.



In principle, the lift is designed for both approach directions.
For a long service life, we recommend to use the short support arms for engaging the engine side of the vehicle.



1.3 Storage and stacking of packages.

Packages must be stored in a coveredplace, out of direct sunlight and in low humidity, at a temperature b etween-10°C and +40°C.

Delivery and check of packages.When the lift is delivered, check for possible damages due to transport and storage; verify that what isspecified in the manufacturer's confirmation of order is included. In case of packages damage in transit, the customer must immediately inform the carrier of theproblemmust be opened paying attention not to cause damage to people (keep a safe distance when opening straps) and parts of the lift (be careful the objects do not drop from the package when opening)

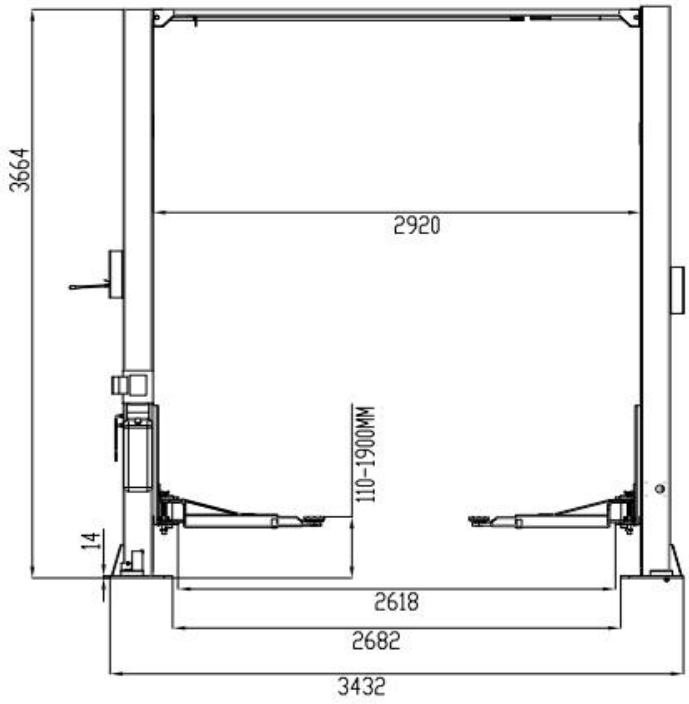
1.4 Safety Notice Points

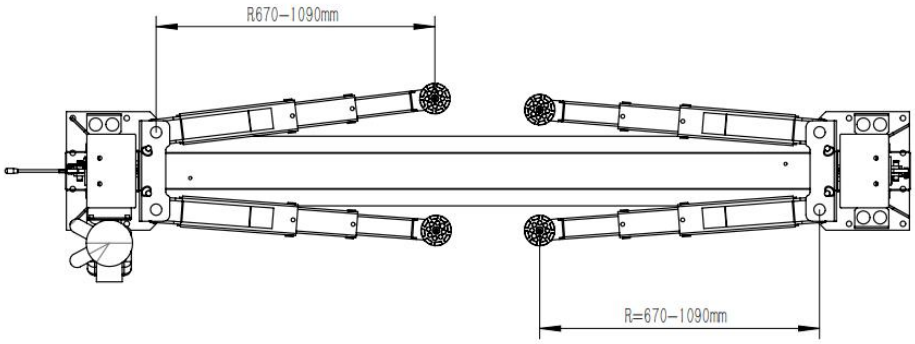
i. Operators should read the manual carefully to avoid accidents.
ii. Operators should be familiar with all functions and operating methods of the lift
iii. Check before operating and regular check must be carried out too.
iv. If there is any abnormal sound during rising and lowering, stop to use the lift.

2. Main Parameters of The Equipment

Model	HPL9/HPL10
Total height	3664mm
Lifting/Dropping time	Approx. 50s
The Maximum lifting Height	1900mm
Minimum Height of rubber Pad	100mm
Adjusting Range of Bracket Arm	R670~R1090mm
Width Between Pillars	2920mm
Width of the Rack	3432mm
The Biggest width for passing the vehicle	2618mm
Rated Load	4000kg/4500kg
Motor Power	2.2kw
Working Voltage	220V 1PH 380V 3PH
Noise Level	≤75dB(A)
Oil Pressure	20MPa

New change on technical Parameter will not be informed of again.



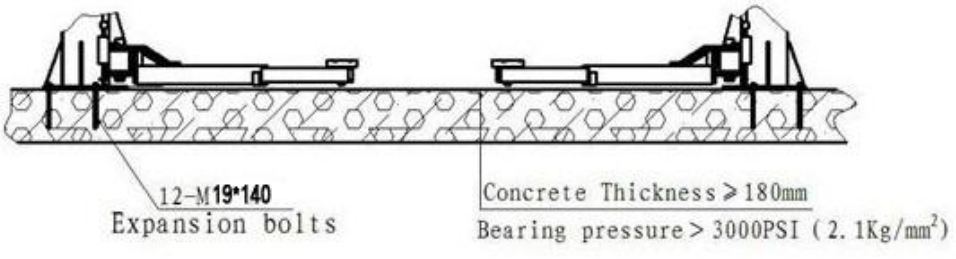


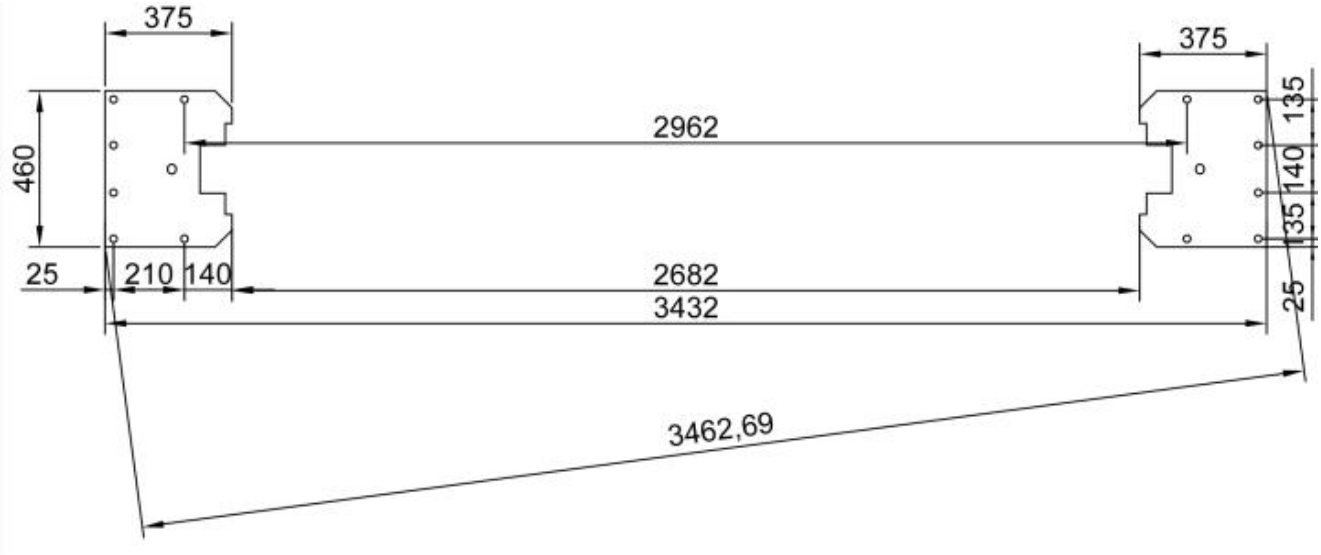
4. Installation of Equipment

Step1. Preparation before Installation

ⅰ.Necessary Tool: lifting equipment, churn drill, marking pen, spanner,measuring tape, sinker.

ⅱ. Installation area picture (See figure below.)

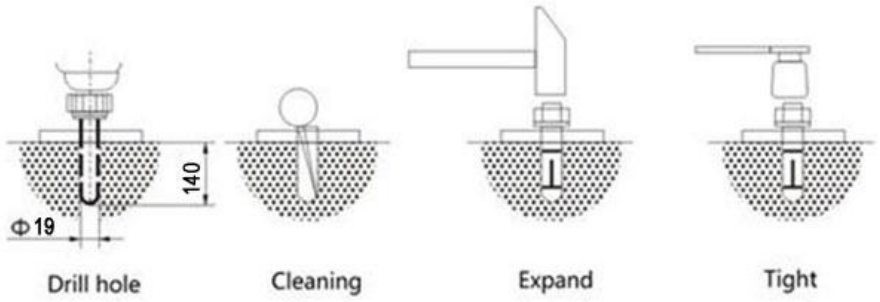




Step2.Installation of main and supplementary columns

Set up the two columns, mark with the marking pen according to the dimension of the foundation, and fix the two columns with expansion anchor bolt as the following shows. (See figure below)

Don’t install the column if the foundation is not strong enough.

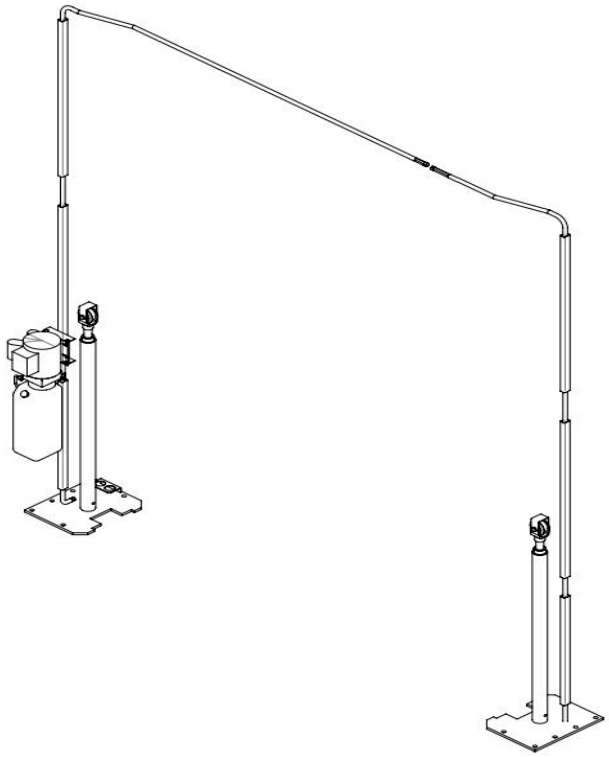


Step 3: Install the power unit onto the main column.

Step 4: Install the oil system.

Remove the drive plate, lift the carriage to the height of 600-800mm, and drop it, and make it in the safety locking condition, and make sure it won’t drop again and the two carriages are in the same height level. Connect the main and supplementary cylinders, and connect the two cylinder with oil hoses, then use tight clips to fit the oil hose, the aim is to avoid the steel cable of mechanical locking system. See the following picture of oil connection hose.

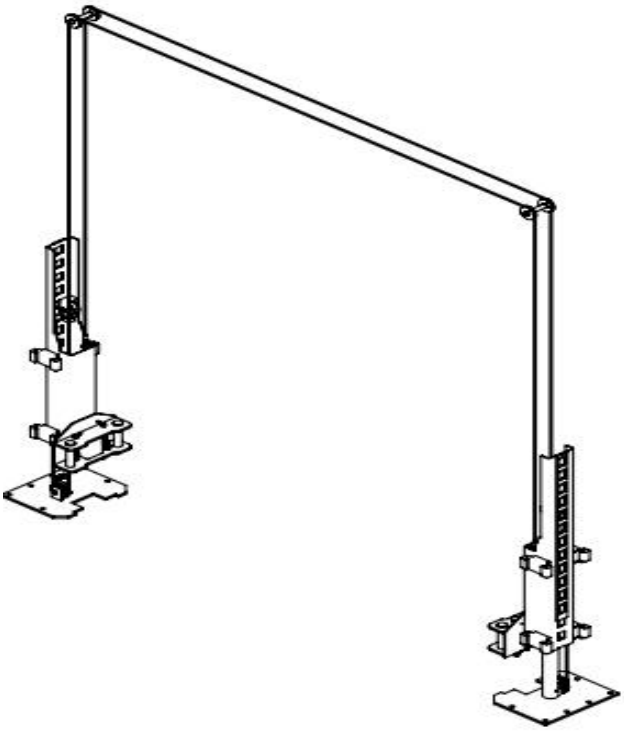
Hydraulic system connection picture



Step 5: Installation of steel cable

Install synchronical cables according to the picture

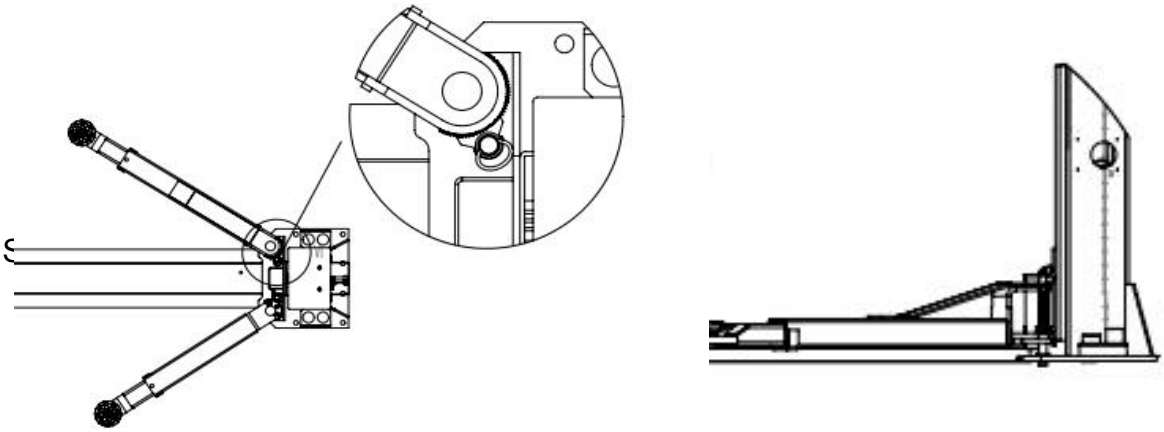
Steel cable connection picture



Step 6: Installation of arms

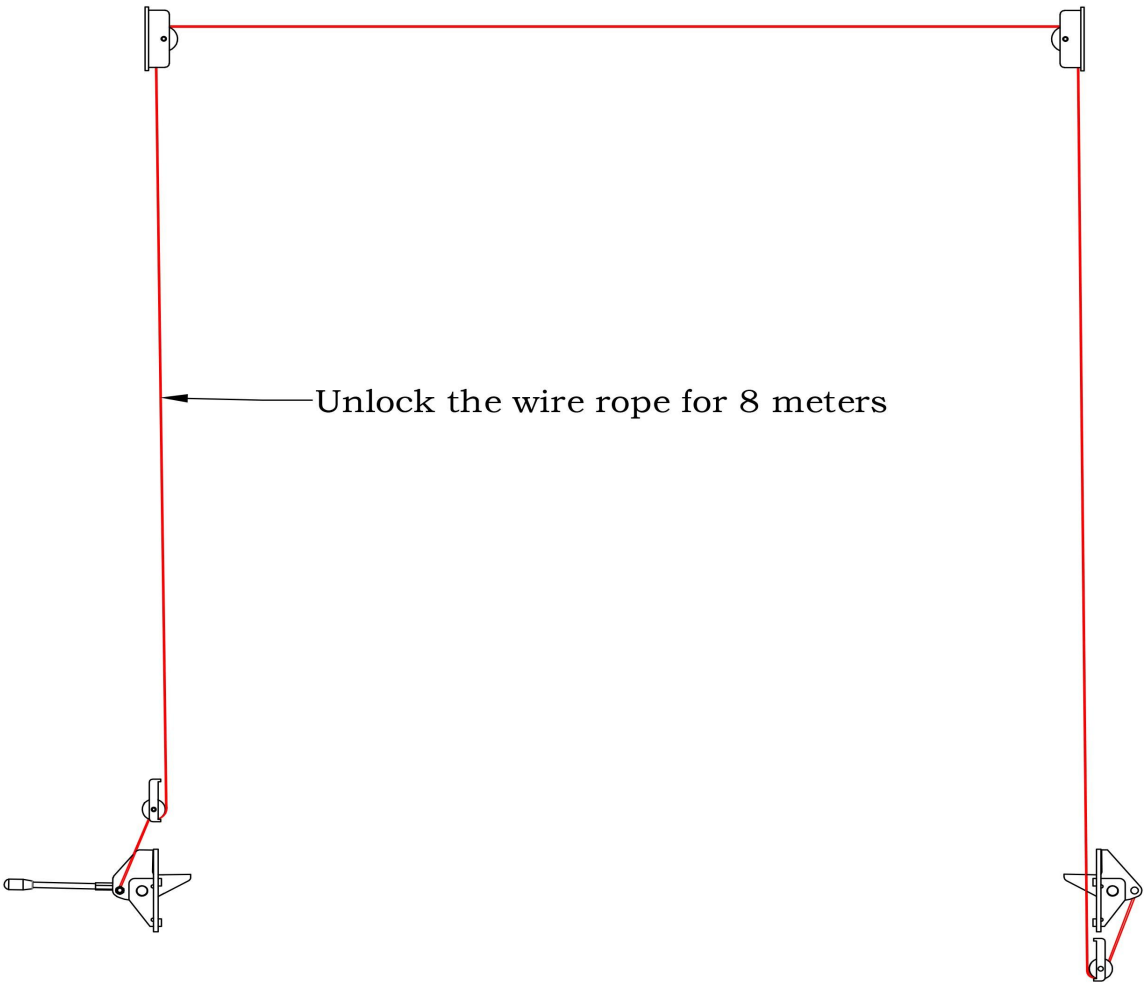
Install four arms on the two columns, swing the arms to make sure the gear and teeth match Installation arms picture.

Arms installation picture



Step 7: the connection and adjustment of steel cable of mechanical locking System

Connecting picture of steel cable of mechanical locking system



Step 8: Fill the hydraulic oil
Fill in 10 liters of N46 hydraulic oil

Step 9: Connecting the power
According to introduction stick of motor, it is requested to install main switch near the lift to make it convenient to maintain and cut the power in emergency.

All electrical system should be operated by specialized electrician.

Step 10: Put some lubricating grease on the inside rail of the two columns.
Step 11: Try the lift

1. Check the steel cable of mechanical locking system, check weather thelift is in locking state when the carriage is rising; When drop, pull the handle tomake the locking in the unlocking state, and check wether the four locks are unlocked. If not, adjust the length of correspondent chain to make the lock unlock.

2. Try the tension of the steel cable, make the two carriages move synchronically by adjusting the steel cable.

Step 12: Check wether the hydraulic system is normal.

5. Check Points before Using

5.1 General Checking points

item	detail	method	How to avoid
①	Lifting has abnormal sound	visual listen	Lubricating,cleaning replacement
②	the overall appearance oftheliftgetdamageandskew	visual	
③	Rubber pad, chain wheel, wire wheels get deformation and damage	visual	replacement
④	lifting hydraulic system has abnormalsoundandoil spills	visual listen	
⑤	Hastrashinsidethe column	visual	Remove,maintenance and replacement
⑥	Pullfourinsurance manipulation handles	visual	Take off guard, adjust steel cable and replace new one

5.2 Important Checking Points

No.	Contents for check	Method	Remedy
①	Checkthechain,thesteel cable is normal nodamage	Visual	New replacement
②	Check if the connection is loose bolts parts	Visual	Re-strengtheningand fixed
③	Check the sprocket, the steel cable wheel whether they are normal no rupture and so on	Operation and visual	New replacement
④	Check the chain, the steel cable wheel if their rotation are normal	Operation and visual	OilingLubricating、cleaning、new replacement
⑤	Check whether the arm and its telescopic are normal	visual	Repair、new replacement
⑥	Check up and down movement of two landslide is normal, comfortable and non-jitter	Operation	Foreignbodycleaning 、oiling cleaning
⑦	Check the action of the four insurance block if it's normal and comfortable (with automatic insert action), check the insurance	Operation 、visual、listen	Foreignbodycleaning 、oilingcleaning、adjustmentornew replacement
⑧	Whether it is automatically stopped when no-load up to the highest location	Operation	Repair、new replacement
⑨	Check power unit is working properly without abnormal noise	Operation 、listen	Repair、new replacement
⑩	Inspect tanks, oil hoses and connecting joints is normal no leakage	Operation 、visual	Repair、new replacement

6. Operation Instruction

1. Operate the up and down movement several times before placingvehicle on, and ensure the safety lock is in the correct place and the equipmentis normal. Check all joints, especially the safety mechanism, to ensure that no abnormal things exist when the lift is used, such as ifinsurance device failure, lift should not be put into use.

2. Adjust the height of four rubber pad before lift is put into use so that all thesupporting points maintained at the same high plane, while arms are extended in orderto obtain more room for the convenience of vehicle to entry, open the shorter arm as far as possible to support the front (engine) direction.

3. Vehicles must be at the center of lift of the lifting range, when the vehicleget rise to 100mm from the ground, we should stop rising, and then waving carsto check whether the lift bearing is reasonable safety and lift operation is normal.If everything is normal, the lifting work could be starting.

4. In the lifting process, the operators and other personnel must stand in a safe area. When vehicles reach the required height, press the lock button to make the lift into the insurance state, then the maintenance staff could go on the following maintenance operations.

5. When maintenance staff is not working under the vehicle, the power must be cut off to prevent the accident caused by the misuse of non-operating personnel.

6 · During the dropping process of the lift, the ground below the arms should be clean, otherwise the device will be damaged.

7. Add about 10L N46 hydraulic oil into the hydraulic pump tank or No. 8 (winter), No. 11 (Summer) diesel oil. Replace the hydraulic oil after lift'srunning for six months.

8. When the lift needs to be dropped, press the up button and unload a slight rise, then release the down handle.

9. During the car maintenance, please cut off the power when the operator leave or the machine is not i used.

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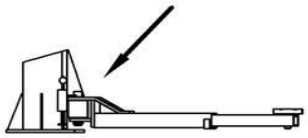
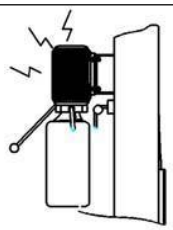
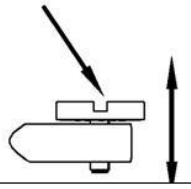
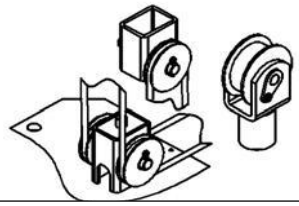
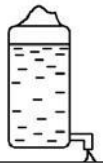
7. **Equipment Maintenance and Repair**7.1 Day Care

No.	Contentof maintenance	Method	Sample drawing
①	Checkiftwosliding body and four corbel areinthesame horizontal plane	Adjust two wire nuts on theslidingmassto achieve level balance	
②	Seeiftwolandslide move smooth and do notshake,pullthe insurance rope to see ifthefourinsurance blocks are open at the same time	Clean the debris on the contact surfacebetween thenylonslideofthe slidingbodyandthe column,plusbutter-lubricatingregularly, regulatetheinsurance wire rope	
③	See if the 4 insurance blocks are in the normal state	Automatically join in when rising or pressing the lock button, if the abnormal cases happennecessary adjustmentshould be done.	
④	See the joints of cylinders, tubing, fuel tank if there's no leakage	Clean and fix	
⑤	See power unit and the internal movement of the pumping station, the sound are normal or not	Ensure enough oil	
⑥	View the parts connecting bolts, nuts of the lift are normal	Visual, hand-shaking to make re-strong Visual	

No.	Content of maintenance	Method	Sample drawing
①	Check if the rubber padofthe4arms are damaged or not	New replacement	
②	Check whether bolts, nuts, pins, etc. on all parts are normal	Reinforcement, clean-up or new replacement	
③	Checktheshaft, sprocket, chain, wire wheels,wirerope positionwhether they are normal	Add butter lubrication, re-adjust	
④	Check the clean of sliding parts and safe insurance situation	Add butter Lubrication、re-adjust or new replacement	
⑤	Check hydraulic system connections and ensure no leakage of fuel tank	Visual and tighten with the wrench, and clean oil	
⑥	Checkifthe hydraulic oil is in the replaceableperiod or the hydraulic oil's	Replace orsupplementthe hydraulic oil if necessary	
⑦	Tocheckwhether the parts go rusty	Rust, oiling, painting	

7.2 Month Care

8. Methods to Avoid Common Problems

Problem	Reason	How to avoid
Electrical failure which cause not working	Missing phase or electrical power failure	Check power supply fuses, contactor in the electrical junction box, micro switch, whether up key is damaged, if damaged replace the damaged components
Motor is roaring.	a. Impeller fan lid become deformed, b. Capacitor is damaged, c. Voltage is too low, d. The equipment is overused.	a. Straighten the impeller fan lid b. Change for a new capacitor c. Look for electrician to check
There is crawling up phenomenon during lifting process	Shortage of oil due to air going to the hydraulic system	Repeatedly lift to remove the air, add oil to the tank
Two carriages doesn't go up synchronously	synchronous steel cable is slack	Re-adjust the steel cable, adjust the screw totighten the steel cable andmake the two carriages in thesame level to achievesynchronization.
Lift noisily.	Sliding parts and rotating parts lack of lubricant, pin wear and tear is too large	Add lubricating oil to the relevant parts and, Replace the damaged pin or slider
Can not lift up	① Power Unit Fault ② Power Single-button device damage ③ Hydraulic system leakage	① Repair or replace the damaged power unit ② Repair or replace the damaged button ③ Clean-up the hydraulic system, Repair the damaged parts or replace the damaged parts with new one
Rise slowly	① Lack of hydraulic oil ② Leakage of hydraulic system ③ Filter blocking at Pump or the fuel tank connector	① add hydraulic oil ② Repair, reinforce or replacement with new ③ dismantling the relevant blocked parts and cleaning
Can not be dropped	① Insurance Block does not open ② Insurance rope is slack or reset springs loose elasticity	①first rise, then drop, try more times. ②Maintenance or replacement with new parts.

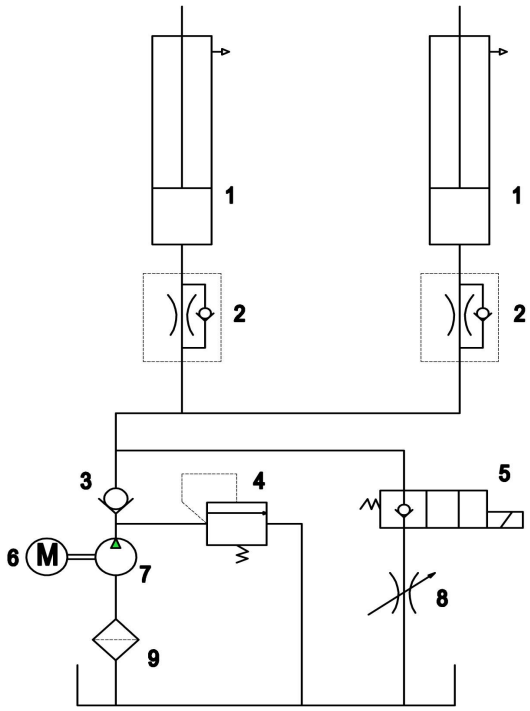
9. Instruction on Structure and Principle of the equipment

9.1 Main Structure of the Equipment:

Lifting structure: hydraulic cylinders installed in two columns. When the hydraulic oil goes into the cylinder under the cavity, the piston rod goes upward, moving the top sprocket through the chain to lift the carriage along the column. Supporting structure: when the car goes into the working area, through the angle and a telescopic arm length adjustment, the rubber pad might be adjusted to a valid car bearing position. You might also adjust the height of the rubber pad according to the height of car chassis. Balance structure: in the car operation process, in order to keep balance of the two carriages, the two steel cables will connect the two carriages to ensure synchronized movement.Security structure: Both of the columns are equipped with a security system, when the car is lifting, it is in an auto-insurance status.

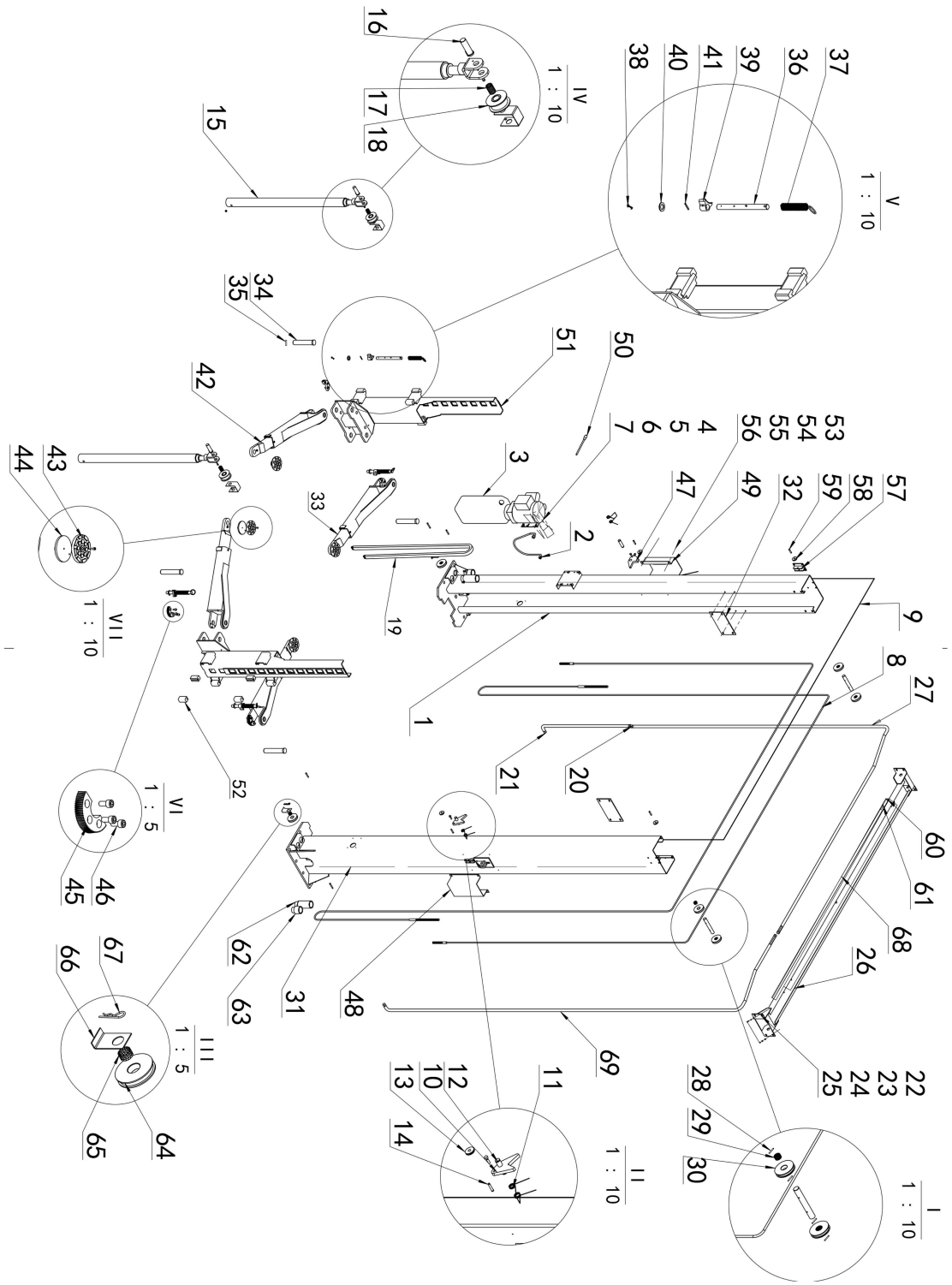
9.2 Hydraulic System

a. Hydraulic schematics



No.	Name	No.	Name	No.	Name
1	cylinder	4	overflow valve	7	gear pump
2	one-way throttle valve	5	unloading valve	8	adjustable throttle valve
3	one-way valve	6	electric motor	9	filter

a. Exploded View



No.	Name	Qty	No.	Name	Qty
1	Main column assembly	1	36	Fixing gear rod	4
2	Hydraulic hose L=570	1	37	Spring	4
3	Power unit	1	38	Elastic pin	4
4	M8*10 nut	12	39	Fixing gear	4
5	D8 washer	12	40	D22 washer	4
6	D8 spring washer	12	41	Cotter	4
7	M8 nut	12	42	Short arm assembly	4
8	Steel cable L=10460mm	2	43	Rubber pad	4
9	Steel line L=8000mm	1	44	Pad weldment	4
10	Main lock plate	1	45	gear	4
11	spring	2	46	M10*20 bolt	12
12	Lock shaft	2	47	Sub-lock plate	1
13	rope sheave	2	48	Deputy cover	1
14	Small tip	2	49	Main cover	1
15	Double hole cylinder	2	50	spanner	1
16	Chain pulley axle	2	51	carriage	2
17	Oiless bearing	6	52	Nylon block	16
18	Chain pulley	2	53	M5*10 nut	8
19	Chain	2	54	D5 washer	8
20	fitting	1	55	D5washer	8
21	Hydraulic hose L=970mm	1	56	D5 spring washer	8
22	M10*30 nut	8	57	Upper pulley plate	2
23	D10 washer	8	58	rope sheave	2
24	D10 washer	8	59	tip	2
25	D10 spring washer	8	60	Limit plate	1
26	crossbeam	1	61	Limit plate switch	1
27	Steel hose L=5170mm	1	62	Middle adaptor	4
28	Top pulley	4	63	Short adaptor	4
29	Oiless bearing	4	64	Bottom pulley	2
30	Pulley check ring	8	65	Oiless bearing	2
31	Sub column assembly	1	66	Pulley stopper	2
32	Column strength plate	2	67	B melt	4
33	Long arm assembly	2	68	The thread pipe	1
34	Arm pin	4	69	Hydraulic hose l=4270mm	1
35	Snap ring	4			