



Two Post One Side Handle Release Hydraulic Lift

4.5 Ton Base Plate

FC-4.5T-BP



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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, an operation like this is wrong and will lead to a big casualty or heavy damage to the device. The figure before the passage shows that it cannot operate according to the passage, or the potential risk will develop into a big casualty and heavy damage to the lift. The passage beside this signal lists the notice points and security requirements during normal use, maintenance, and care of the lift.

1.2 Safety Caution Signal

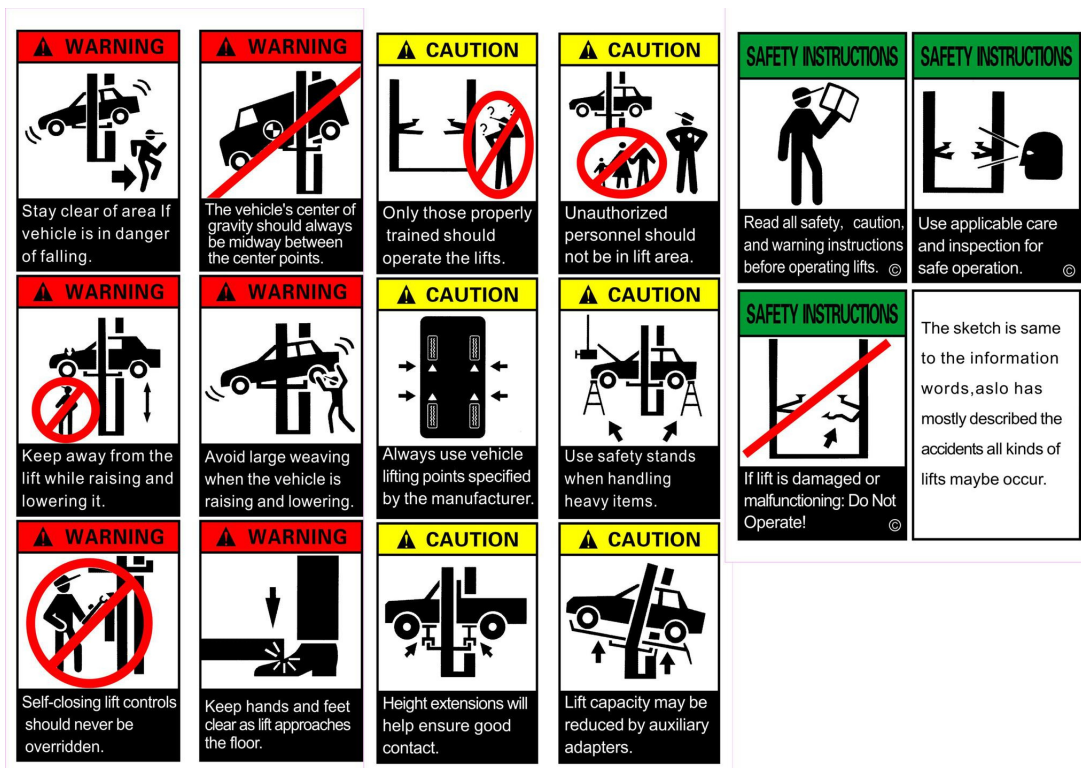
Please read the Safety Signage carefully, understand it, and remember it. Only a trained person can operate and use the lift.

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

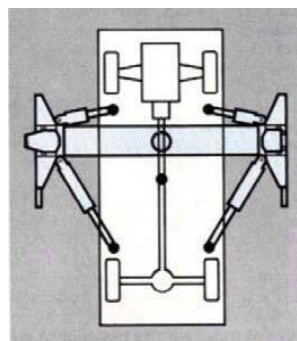
It's suggested by the manufacturer that the raising position should be the points of support. When installing and moving some big or heavy parts on, The car during the maintenance, bracket should be used to keep the car's balance. Use the high bracket if necessary.

The supplementary bracket will reduce the heavy burden of the car on the lift when rises.

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 covered place, out of direct sunlight and in low humidity, at temperatures between -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 is specified in the manufacturer's confirmation of order is included. In case of a package damaged in transit, the customer must immediately inform the carrier of the problem and must be open, 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)

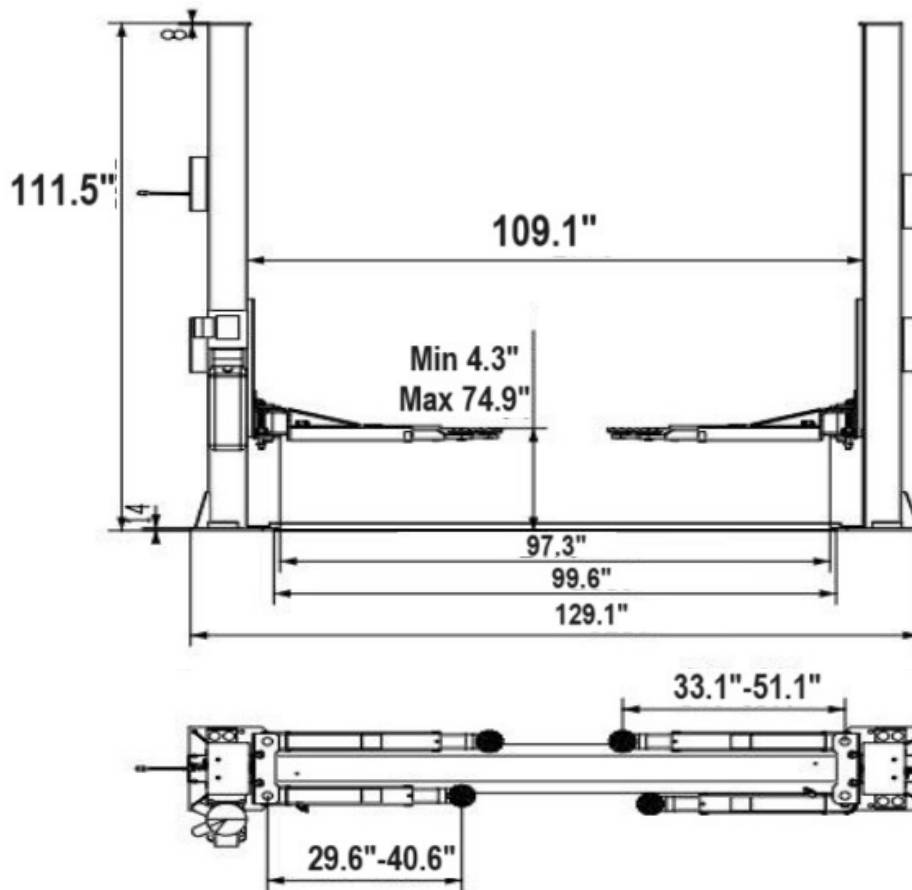
1.4 Safety Notice Points

- . Operators should read the manual carefully to avoid accidents.
- . Operators should be familiar with all functions and operating methods of the lift. Check before operating, and regular checks must be carried out, too.
- . If there is any abnormal sound during rising and lowering, stop to use the lift.
- . Never use the lift to raise the vehicle whose weight is above 4.5 ton.

2. Main Parameters of The Equipment

Model	FC-4.5T-BP
Total height	111.11 inches (9.3 Ft)
Lifting/Dropping time	≈45/25s
The Maximum lifting Height	74.8 Inches (6.2 Ft)
Minimum Height of rubber Pad	100mm (3.9 Inches)
Adjusting the Range of bracket Arm	R750~R1030mm R840~R1300mm,
Width between pillars	109.1 Inches (9 Ft)
Width of the Rack	129.1 Inches (10.7 Ft)
The Biggest width for passing the vehicle	97.2 Inches (8.1 Ft)
Rated Load	4500kg (9920 Lbs)
Motor Power	2.2kw
Working Voltage	220V1PH 60Mpa
Noise Level	≤75dB(A)
Oil Pressure	20MPa

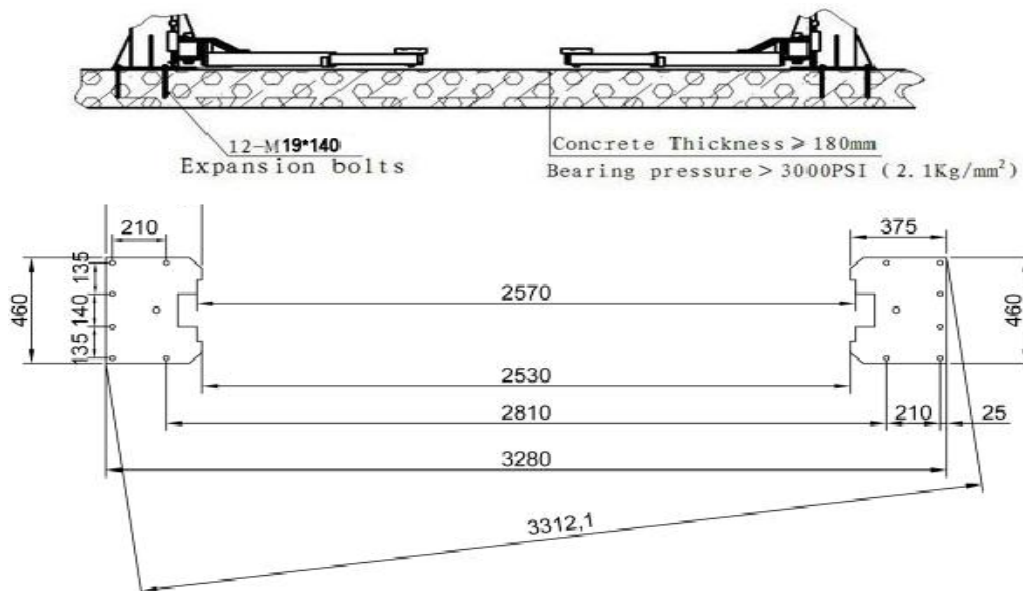
New change on technical Parameter will not be informed of again.



4. Installation of Equipment

Step1. Preparation before Installation i .Necessary Tools: lifting equipment, churn drill, marking pen, spanner, measuring tape, sinker.

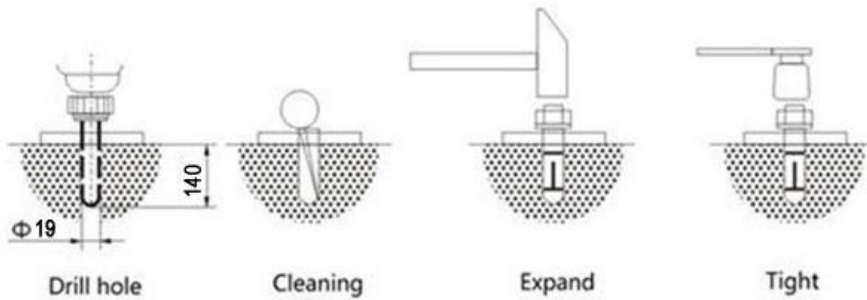
ii . Installation area picture (See figure below.)



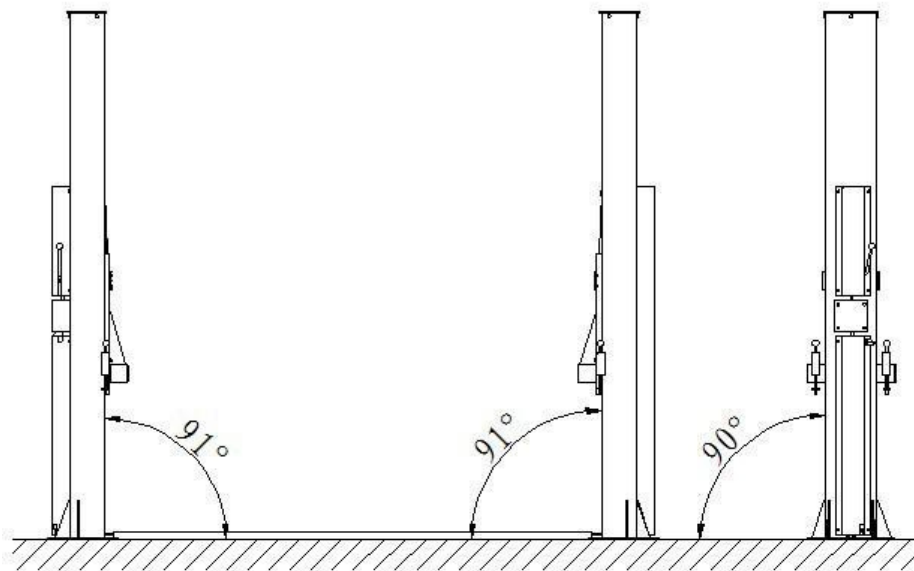
Step 2. Installation of main and supplementary columns

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

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



Check and make sure that angle between the column and the ground is between 90 degree and 91 degree.

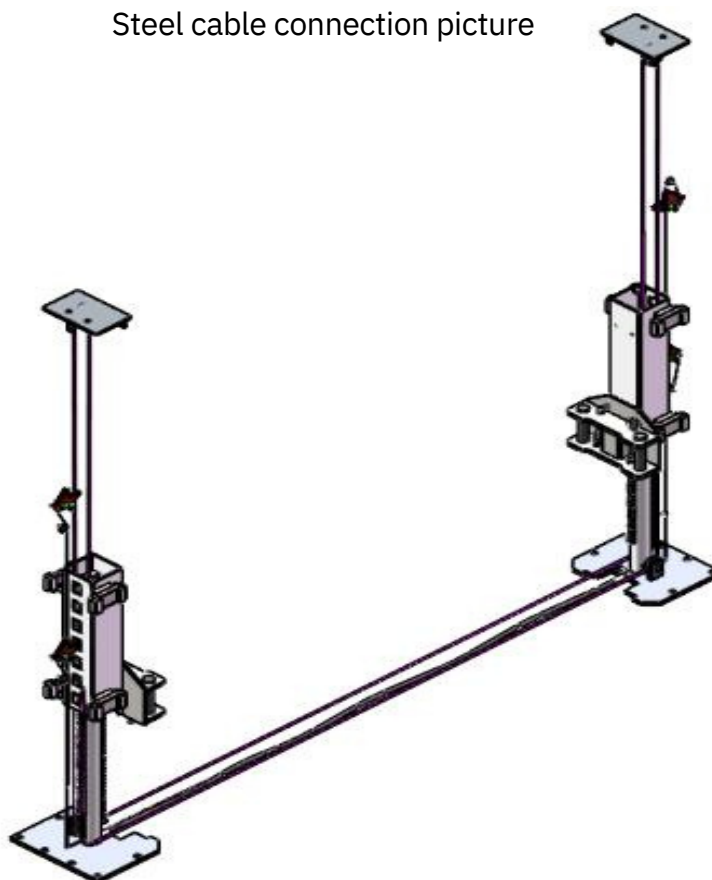


Step 3: Install the power unit onto the main column.

Step 4: Installation of steel cable

Install synchronical cables according to the picture

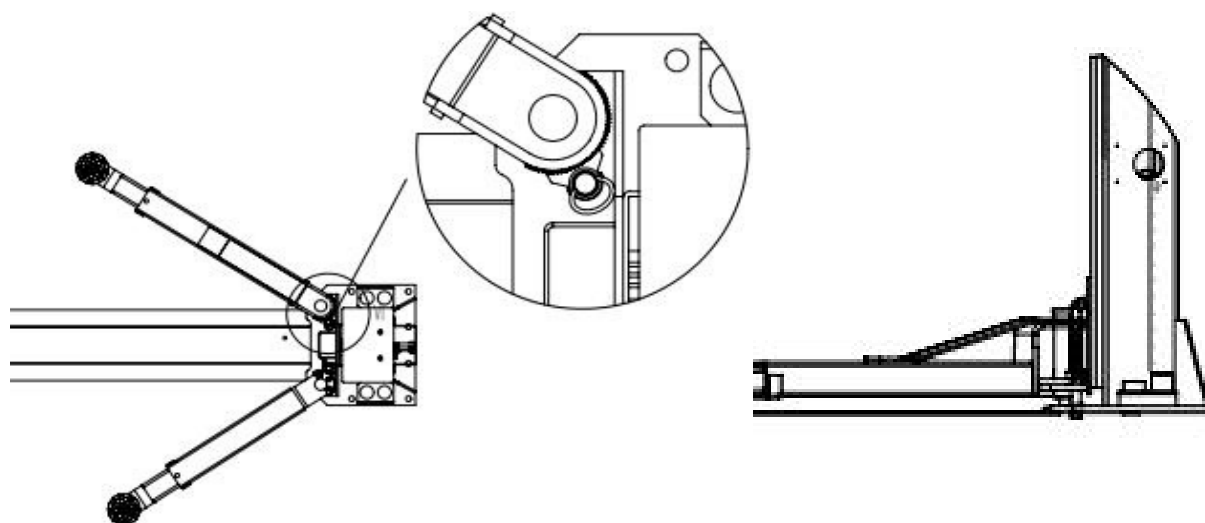
Steel cable connection picture



Step 5: Installation of arms

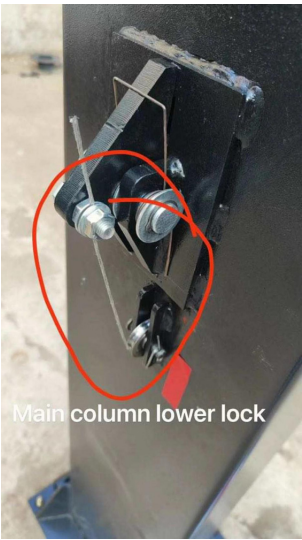
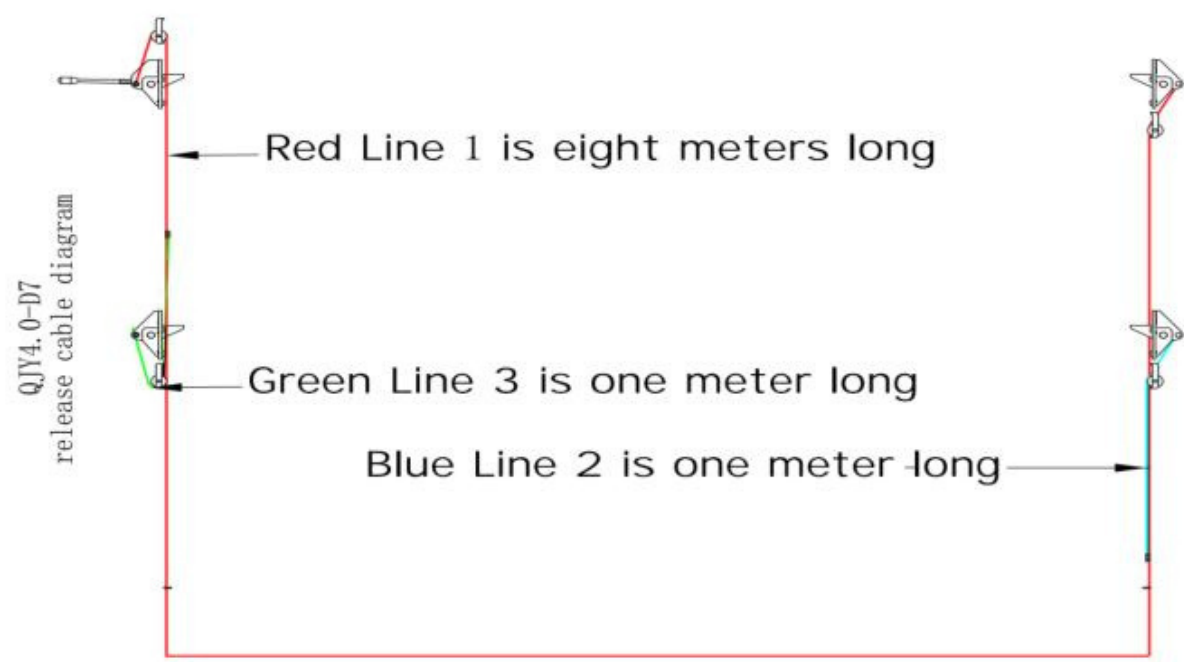
Install four arms on the two columns, swing the arms to make sure the gear and teeth match
Installation arms picture.

Arms installation picture



Step 6: The connection and adjustment of steel cable of mechanical locking System

Connecting picture of steel cable of mechanical locking syst



Connecting the power

According to the introduction stick of the motor, it is asked to install the main switch near the lift to make it convenient to maintain and cut the power in an emergency.

Specialized electricians should operate all electrical systems.

Step 9: Put some lubricating grease on the inside rail of the two columns.

Step 10: Try the lift

1. Check the steel cable of the mechanical locking system and check whether the lift is in a locking state

when the carriage is rising. When dropped, pull the handle to lock the lock in the unlocking state and check whether the four locks are

unlocked. If not, adjust the length of the 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 11: Check whether the hydraulic system is normal.

5. Check Points before Using

5.1 General Checking Points

Item	Detail	method	How to avoid
①	Lifting has an abnormal sound	visual listen	Lubricating, cleaning replacement
②	the overall appearance of the lift get damage and skew	visual	
③	Rubber pad, chain wheel, wire wheels get deformation and damage	visual	replacement
④	Lifting hydraulic system has abnormal sound and oil spills	visual listen	
⑤	Has trash inside the column	visual	Remove, maintenance and replacement
⑥	Pull to insure 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	Check the chain, the steel cable is normal no damage	Visual	New replacement
②	Check if the connection is loose bolts parts	Visual	Re-strengthening and 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	Oiling Lubricating 、 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	Foreign body cleaning 、 oiling cleaning
⑦	Check the action of the four insurance block if it's normal and comfortable (with automatic insert action), check the insurance steel cable if it's loose injury	Operation 、 visual 、 listen	Foreign body cleaning 、 oiling cleaning 、 adjustment or new 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


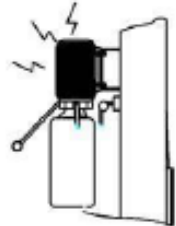
1. Operate the up and down movement several times before placing the vehicle on, and ensure the safety lock is in the correct place and the equipment is normal. Check all joints, especially the safety mechanism, to ensure no abnormal things exist when the lift is used. For example, if the device fails, the lift should not be put into use.
2. Adjust the height of four rubber pads before the lift is put into use so that all the supporting points are maintained at the same high plane while arms are extended to 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 the lift of the lifting range; when the vehicle rises to 100mm from the ground, we should stop rising and then wave cars to check whether the lift bearing is reasonably safe, and lift operation is normal. If everything is normal, the lifting work could start.
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 put the lift into the insurance state, and then the maintenance staff can 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 misuse of non-operating personnel caused the accident.
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 the lift has been running 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 car maintenance, please cut off the power when the operator leaves or the machine is not used.

6. Operation Instruction

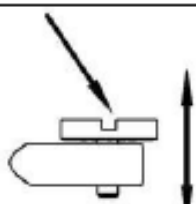
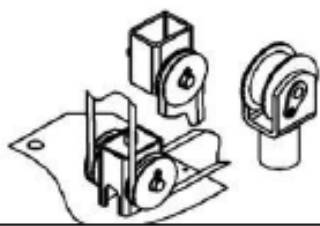

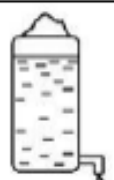
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7. Equipment Maintenance and Repair

7.1 Day Care

No.	Content of maintenance	Method	Sample drawing
①	Check if two sliding body and four corbel are in the same horizontal plane	Adjust two wire nuts on the sliding mass to achieve level balance	
②	See if two landslide move smooth and do not shake, pull the insurance rope to see if the four insurance blocks are open at the same time	Clean the debris on the contact surface between the nylon slide of the sliding body and the column, plus butter-lubricating regularly, regulate the insurance 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 happen necessary adjustments should 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	

7.2 Month Care

No.	Content of maintenance	Method	Sample drawing
①	Check if the rubber pad of the 4 arms 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	Check the shaft, sprocket, chain, wire wheels, wire rope position whether 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	Check if the hydraulic oil is in the replaceable period or the hydraulic oil's	Replace or supplement the hydraulic oil if necessary	
⑦	To check whether the parts go rusty	Rust, oiling, painting	

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 to tighten the steel cable and make the two carriages in the same level to achieve synchronization.
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	① first rise, then drop, try more times. ② Maintenance or replacement with new parts.

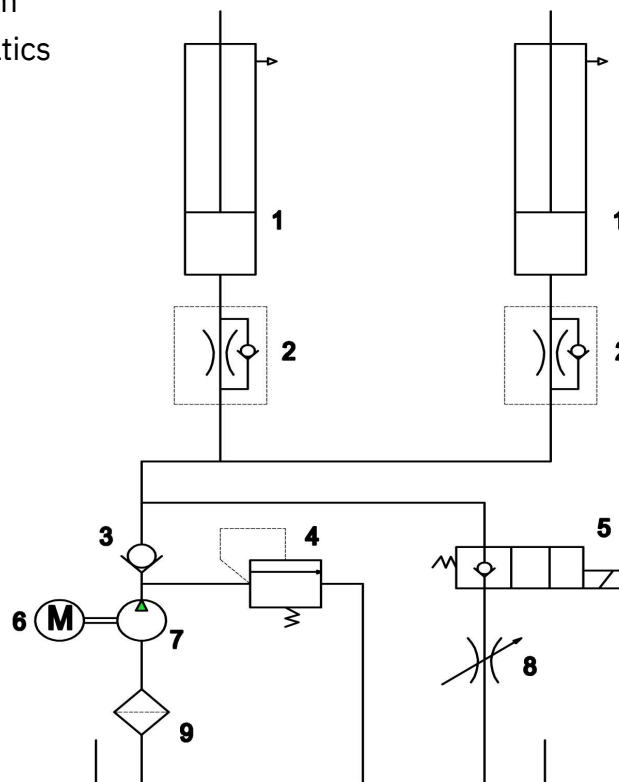
9. Instruction on Structure and Principle of the equipment

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 enters the working area, the rubber pad might be adjusted to a valid car bearing position through the angle and a telescopic arm length adjustment. You might also adjust the rubber pad's height according to the car chassis's height. Balance structure: in the car operation process, to keep the balance of the two carriages, the two steel cables will connect the two carriages to ensure synchronized movement. Security structure: Both columns are equipped with a security system, and when the car is lifted, it is in auto-insurance status.

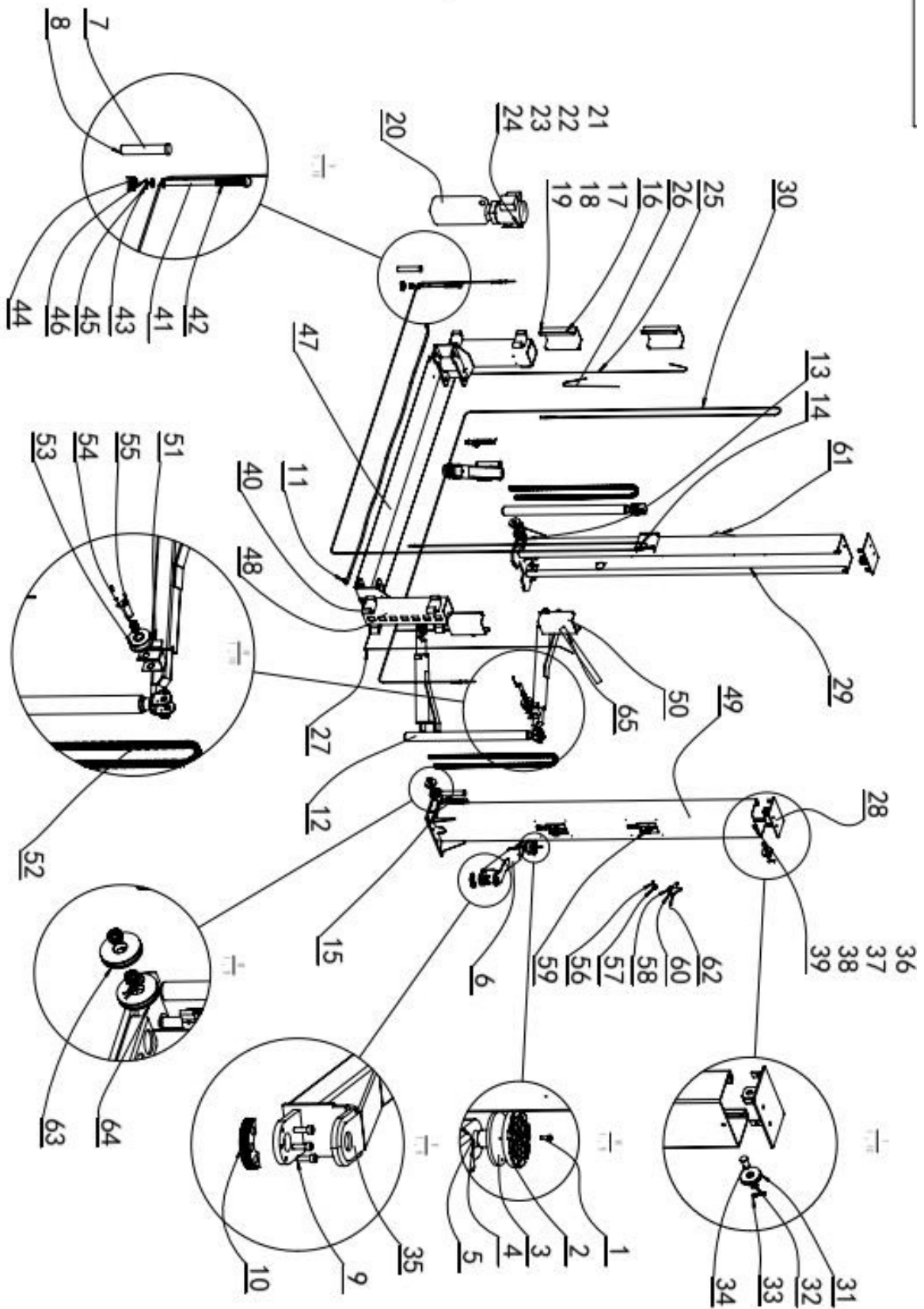
9.2 Hydraulic System

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. Detailed View



No.	Name	Qty	No.	Name	Qty
1	M6*16 hexagon bolt	4	36	M12*45	6
2	Rubber pad	4	37	D12 flat washer	6
3	Pad assembly	4	38	D12was her	6
4	Pad screw	4	39	M12 nut	6
5	D24 circlip	4	40	Nylon block	8
6	Short arm assembly	2	41	rod	4
7	Arm pin	4	42	spring	4
8	D38 circlip	4	43	clip	4
9	M10*20 hexagon bolt	12	44	Positioning gear	4
10	Gear	4	45	Flat washer	4
11	L=2790mm hydraulic	1	46	cottor	4
12	cylinder	2	47	cover	1
13	Throttle valve	2	48	Carriage assembly	2
14	Hydraulic hose	1	49	Sub column assembly	1
15	extension	4	50	Sub column cover	3
16	Main cover	1	51	D 25 circlip	2
17	M5*10 bolt	8	52	chain	2
18	Flat washer	8	53	Chain pulley	2
19	Spring washer	8	54	Oiless bearing	2
20	Power unit	1	55	Pulley chain axle	2
21	M8*10 bolt	4	56	Lock shaft	4
22	D8 flat washer	4	57	Spacer bush	8
23	D8 spring washer	4	58	Release cable pulley	4
24	M8 nut	11	59	Lock cable socket	4
25	Release cable L=8000mm	1	60	Main lock plate	1
26	Release cable L=1000mm	1	61	Sub-lock plate	3
27	Release cable L=1000mm	1	62	pin roll	4
28	Column top cover	2	63	Bottom cable puley	4
29	Main column assembly	1	64	Cable protector	2
30	L=8760steel cable	2	65	Handle	1
31	Top cable pulley	2			
32	Oiless bearing	6			
33	B clip	4			
34	Pulley axle	2			
35	Long arm assembly	2			