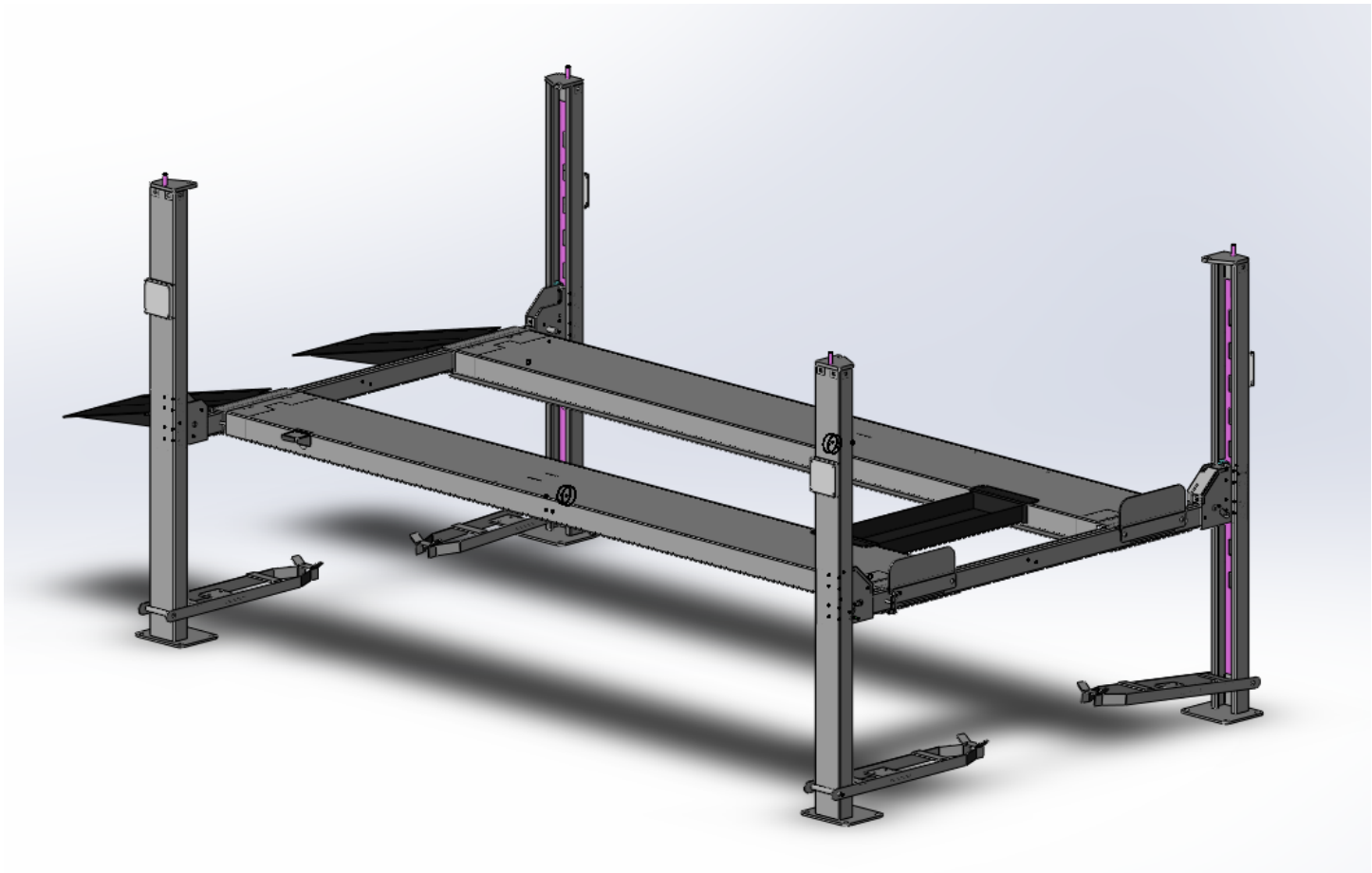




Electro-hydraulic powered
Four Post Parking Lift
Original Operating Manual
Part Number 4PMXL-8



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1 Foreword

1.1 Introduction warning
















This manual has been prepared for workshop personnel expert in the use of the parking lift (operator) and technicians responsible for routine maintenance (maintenance fitter): read the manual before carrying out any operation with the parking lift and/or the packing. This manual contains important information regarding:

-  The personal safety of operators and maintenance works;
-  Parking lift safety;
-  The safety of lifted and/or packed vehicles;

1.2 Conserving the manual

The manual is an integral part of the parking lift which it should always accompany even if the unit is sold. The manual must be kept in the vicinity of the parking lift in an easily accessible place so that the operator and maintenance staff must be able to locate and consult the manual quickly at any time.

1.3 Important safety instructions

-  Read and understand all safety warning procedures before operating equipment.
-  Keep hands and feet clear. Remove hands and feet from any moving parts. Keep feet clear of lifting when lowering. Avoid pinch points.
-  Keep work area clean. Cluttered work areas invite injuries.
-  Never allow untrained operators to use this equipment. Only trained users should operate this equipment. All non-trained personnel should be kept away from work area. Never let non-trained personnel come in contact with, or operate equipment.
-  Children must be closely supervised when the lift is being used.
-  Use correctly. Use the equipment in the proper manner. NEVER exceed rated capacity. NEVER use lifting adapters other than what is approved by the manufacturer.
-  Do not override self-closing lift controls.
-  Remain clear of parking lift when rising or lowering vehicle.
-  Clear area if vehicle is on danger of falling.
-  Always insure that the safeties are lowering vehicle.
-  Dress properly when operating parking lift.
-  Guard against electric shock. This parking lift must be grounded while in use to protect the operator from electric shock.
-  Danger! The power unit used on this equipment contains high voltage. Disconnect power at the receptacle before performing any electrical repairs. Secure plug so that it cannot be accidentally plugged in during service.
-  The key of main switch must be removed whenever the lift is not in use to prevent unauthorized operation.
-  Warning! Risk of explosion. This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors. This equipment should not be located in a recessed area of below floor level.

- ✚ Maintain with care. Keep the equipment clean for better and safe performance. Follow manual for proper lubrication and maintenance instructions. Keep control handles and/or buttons dry, clean and free from grease and oil.
- ✚ Stay alert. Watch what you are doing. Use common sense. Be aware.
- ✚ Check for damaged parts. Check for alignment of moving parts, breakage of parts or any condition that may affect its operation. Do not use the equipment if any component is broken or damaged.
- ✚ Never remove safety related components from the parking lift. Do not use the equipment if safety related components are damaged or missing.

2 Intended use

The Four Post Parking Lift is used to lift vehicles and park it in the garage. It cannot be used to service the vehicle!

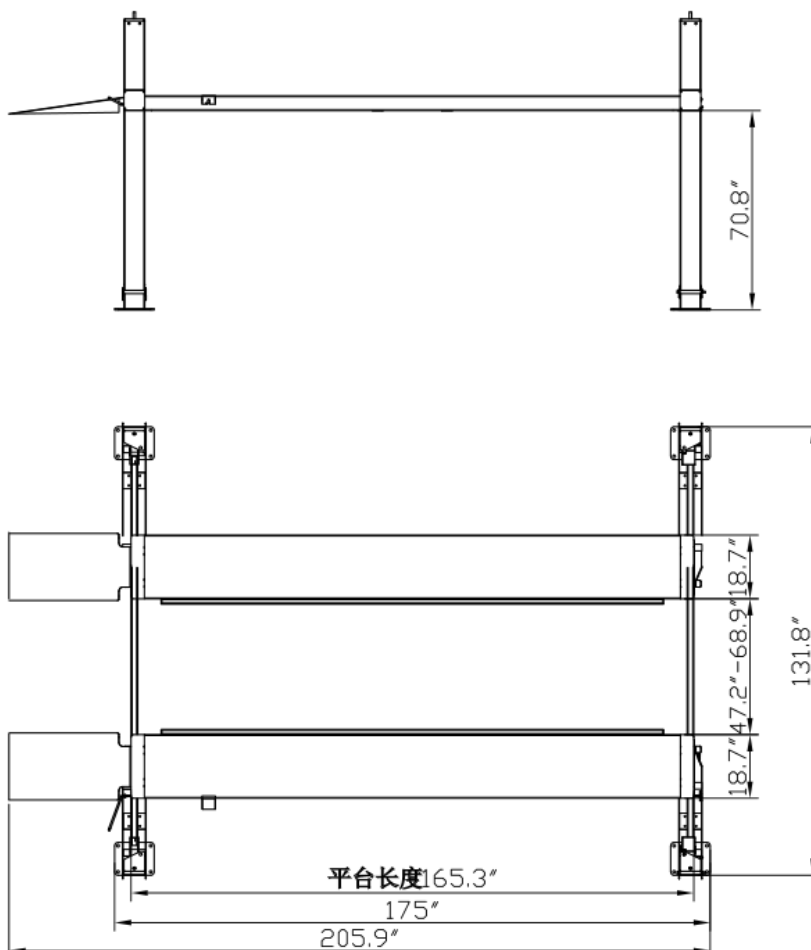
Other usages are prohibited!

3 Production information

3.1 Specifications



The properties indicated apply to lifts running at operating temperature (-10~40°C). The parking lift only can be used in indoor environment.



Control panel



Technical reference

Lifting capacity	3500kg
Max. lifting height	1800mm
Raising/lowering time	Approx. 51s
Total height	2130mm
Total width	2630mm
Runway length	4200mm
Max. drive-through clearance	2398mm
Runway width	474mm
Power supply	400V, 3Ph, 50Hz, 10A
Power	2.2KW
Net weight	750kg
Hydraulic pressure	18MPa
Noise	≤70dB(A)



Specifications are subject to change without notice.

3.2 Safety warnings

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



4. Packing, transport and storage



All packing, lifting and handling, transport and unpacking operations should be performed exclusively by expert personnel with knowledge of the parking lift and the content of this manual.

4.1 Packing

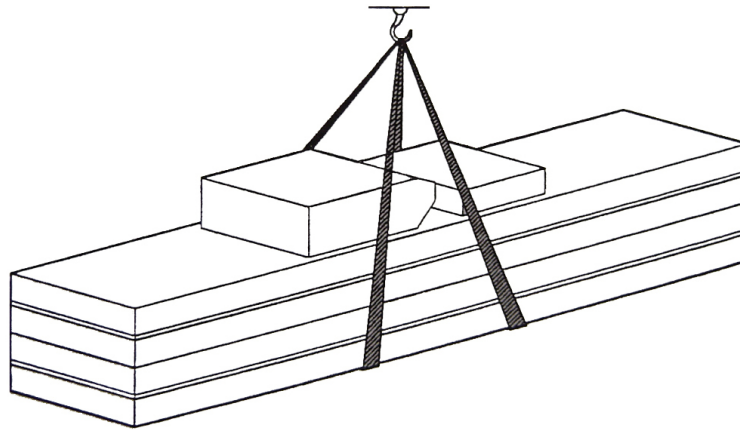
Standard configuration: Total 12 pieces for standard configuration including one hydraulic pressure station (1# packaging), one main girder and one auxiliary girder (2# and 3# packaging), one front beam and one rear beam (4# and 5# packaging), one main vertical post (6# packaging), three auxiliary vertical posts (7#, 8# and 9# packaging respectively), one car loading board (10# packaging), one automobile blocking board (11# packaging) and one accessories box (12# packaging).

Packaging list:

Box No.	Name	Name and quantity of accessories
1	Hydraulic pressure station	One
2. 3	Main and auxiliary girder	One for each (completely assembled)
4. 5	Front and rear beam	One for each (completely assembled)
6	Main vertical post	One (completely assembled)
7, 8, 9	Rear vertical post	Three (completely assembled)
10	Car loading board	Two
11	Car blocking boards	Two
12	Accessories box	One (different accessories for different machine types)

4.2 Lifting and handling

When loading/unloading or transporting the equipment to the site, be sure to use suitable loading (e.g. cranes, trucks) and hoisting means. Be sure also to hoist and transport the components securely so that they cannot drop, taking into consideration the package's size, weight and centre of gravity and its fragile parts.



4.3 Storage and stacking of packages

Packages must be stored in a covered place, out of direct sunlight and in low humidity, at a temperature between -10°C and +40°C.

4.4 Delivery and check of packages

When the parking 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 damage in transit, the customer must immediately inform the carrier of the problem.

Packages must be opened paying attention not to cause damage to people (keep a safe distance when opening straps) and parts of the parking lift (be careful the objects do not drop from the package when opening).

5 Installation





Only skilled technicians must be allowed to carry out installation. Serious damage to people or parking lift can be caused by incorrect installations.

5.1 Space required

The vehicle lift must be settled down on a level concrete floor.

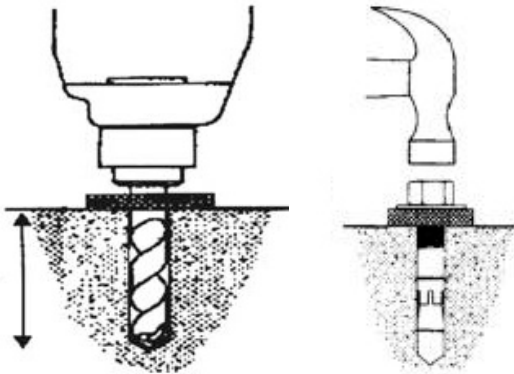
The foundation has the following requirements:

-  The concrete grade is C25 (25N/mm², 28 day strength).
-  The area size of the foundation is 4460mm (length) × 2630mm (width) × 300mm (thickness).



The construction of foundation bolt shall be undertaken after the expiration of maintenance for concrete. Otherwise the strong quality shall be affected.

- Adjust the diagonal of the beam, position and verticality on the four posts (which must stand against the beam nylon blocks).
- Impact drill hammer of $\Phi 18$ shall be drilled to the deep hole of 120mm from ground through base hole of platform with electric hammer pinch and entrance to hole shall be cleaned.
- Foundation bolt shall be installed in the holes with light hammer (without installing the central expansion nail of foundation, it shall be installed after leveling adjustment is completed).



5.2 Beam installation

- Place the front and rear beams on the ground according to the installation positions (the beam with handles is placed in the front of loading direction and the installation screw holes are located on the left side of loading direction).
- The beam will be blocked up by 100~300mm with blocks of wood or iron from the bottom.
- Eight nylon anti-collision blocks are installed on the inner side and outer side of the two ends of the beam (the gap is vertical outward).

5.3 Installation of girder platform

- The main girder is at the left side of the beam and auxiliary girder is at the right side of the beam. Trolley guide rails face the inside (the direction of loading).
- Place the main girder (with the oil cylinder) on the position of tapped hole at the left side of the beam and make it in with compressed air from the bottom of oil cylinder (with muffler); four people pull the wire ropes out of the main girder at both ends (one long rope, one short rope).
- Make the wire rope pass through wire rope hanging wheel slots at both ends of front and rear beams, along the inside of the of the beam.



Wire rope must not twist. Make the short rope pass through left beam hanging wheel slot;

Remove the wire rope head nut and at the same time, loosen the wire rope hanging wheel shaft inside the beam. After making it pass, install the hanging wheel shaft.

- Insert front and rear beams into both ends of main platform girder and tighten them with screws (It is not needed to tighten the auxiliary girder with bolts in order to facilitate adjusting platform spacing).

5.4 Installation of posts

- Remove the screw at the safety rack inside the post.
- The post is at the end of beam and connects to nylon stop block on the beam. Insert the safety rack into the safety slot.



The main post is located at the left-front position in the loading direction; (5T four posts are located at right-front position). When you place other posts, note that waist-shaped hole on the upper safety rack lean to the outside.

- Make the wire rope head screw stem pass through the hole at the post top and tighten the rope head nut.
- Install and fasten the control box and hydraulic station at the main post.
- Check the platform spacing and diagonal line of both beams and make relevant adjustment.

5.5 Pipeline connection

Make circuit and oil line connection according to “Electrical connection diagram” and “Oil line connection diagram”.



The oil pipe and wire cannot be damaged; during oil pipe connection, special attention shall be paid to protection of pipe joint to prevent sundries from entering the oil line and air line and damaging the hydraulic system.

5.6 Electrical connection



Electric mounting operation shall be only carried by professionals with electric operation qualification.

Electric circuit shall be connected in accordance with the Electrical Diagram.

5.7 Hydraulic connection

Connect the hydraulic oil pipes according to “Hydraulic diagram”.



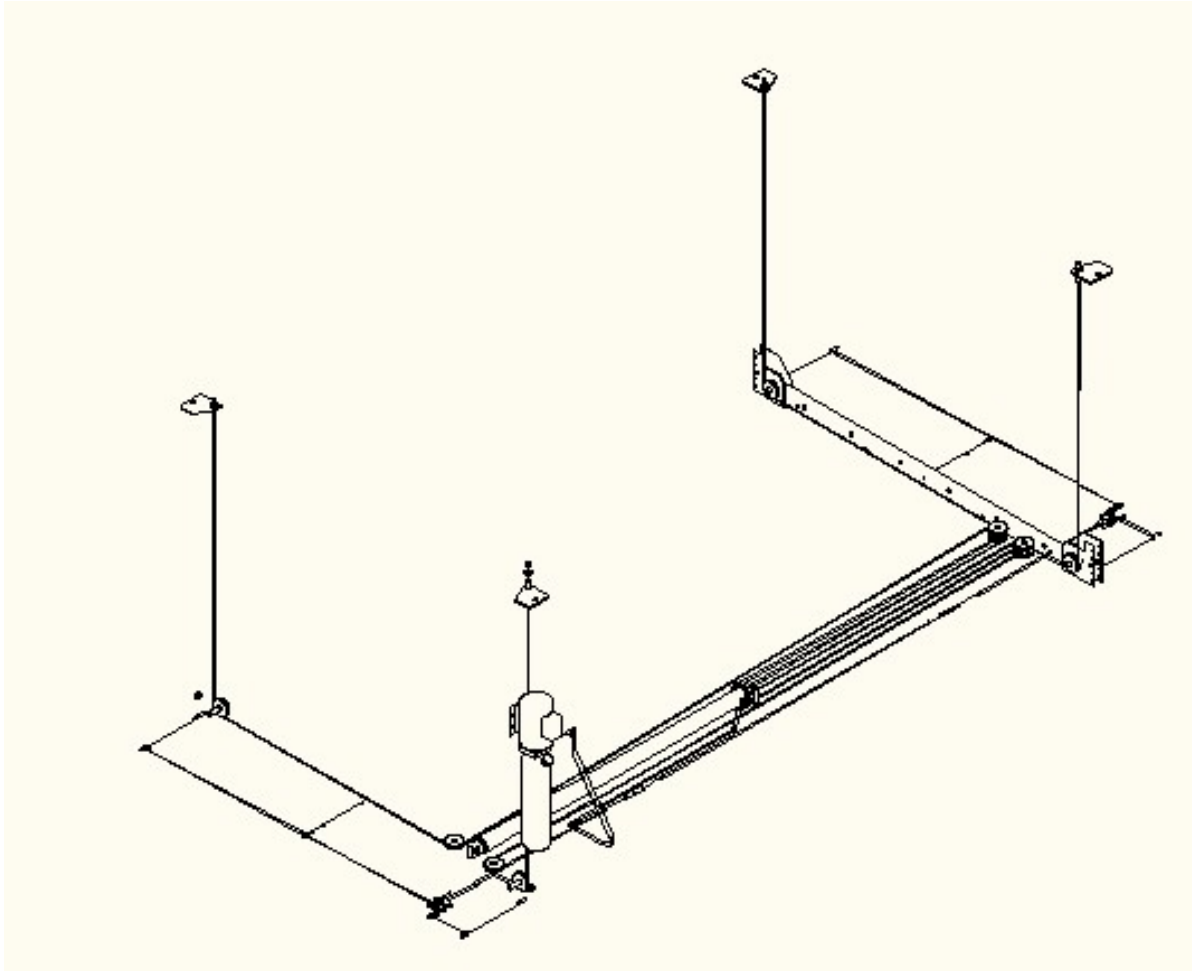
Only authorized professional and technical personnel can engage in the installation of hydraulic circuit.

Special attention shall be paid to protection of oil pipe joint to prevent sundries from entering the oil line and causing failure.

- Connect the high-pressure oil pipes from the oil outlet of the hydraulic pump station to oil cylinder of the main platform.
- While connecting the oil pipes, pay attention to protection of oil pipes joints to prevent sundries from entering the hydraulic circuit.

5.8 Wire rope connection

Connect the wire rope according to the follow diagram.



5.9 Add oil and check phase sequence

After hydraulic circuit, electrical circuit and air-way are connected according to the annex, operate according to the following procedures:

- Remove the cover of the control cabinet and fill 18 L that is the same as “ESSO-NUTO H20” wear-resistance hydraulic oil to the oil tank with funnel (users prepare hydraulic oil by themselves).



When hydraulic oil is injected into the oil line, ensure that the hydraulic oil is clean and prevent any sundries from entering the oil line and causing blocking.

- Switch on power supply and press “Up” button to check whether the direction of rotation for the motor is correct; if the motor reverse, cut off the power supply and adjust the phase sequence of power supply.



After the power supply is connected, high-voltage electric shock inside the control panel is likely to occur. Operation shall be only carried out by professionals with electric operation qualification and it is necessary to prevent electric shock (Control box selection).

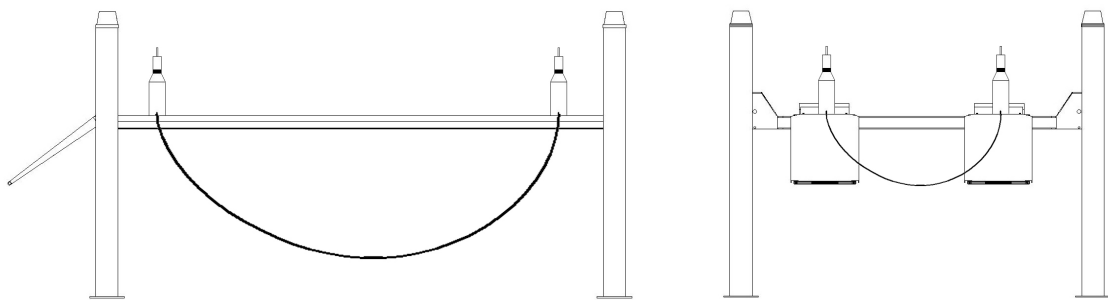
5.10 Debugging of the parking lift

- Press “Up” button to lift the girder to the position of 1000mm from the ground surface.
- Press “Down handle” to check weather the safety mechanism has dropped in place and been reliable.
- Fasten the screw at the bottom of the safety rack in the post.
- While pressing the “pressing and holding down handle”, press and hold the safety handle on the front beam to bring the platform down.



5.11 Leveling adjustment

- Inspect the levelness on all sides of plan for left and right platform with transparent leveling pipe or level-mete.



Horizontal adjustment on the safety rack:

- When uneven foundation brings unevenness of the platform, we can adjust the height of the safety rack in the post.
- Lift the platform about 1000mm and then press “Down handle” to make the safety rack fall in the hole on the same layer.
- Loosen the bolt at the bottom of the post; observe the horizontal line and adjust the screw nuts at the upper end of the safety racks of the four posts up and down.
- After finishing the horizontal adjustment, fasten the bottom end bolt and upper end screw nut of the safety rack.

- Insert the central expansion nail of anchor bolt; hammer the expansion nail in and then tighten the anchor screw cap.



When the guarantee period of concrete is not expired and central expansion nail of foundation bolt shall not be installed.

After leveling, the space between base plate and ground shall be filled with cement mortar.

Horizontal adjustment on wire rope:

- Lift the platform about 1000 mm.
- Observe the horizontal line and adjust the screw nuts at the wire rope ends in the four posts up and down.
- After finishing the horizontal adjustment, fasten the screw nut at the wire rope end.

No-load testing on the main platform:

- Switch on the power supply.
- Press “Up” button to make the main platform ascend.
- While pressing “Down handle”, press and hold the safety handle to make the platform descend.
- Press “Down handle” once and the four trolley safeties will be locked in place.
- Check whether the main platform lifting is stable, the safety locking position is reliable and the oil line is leaking.



During test, there shall not be persons and other articles in the lifter rising and falling or regulated area.

Load testing on main platform:

- Drive the car which does not exceed the maximum lifting weight to the platform and personnel in the car leave the car and the platform.
- Press “Up” button to lift the main platform platform and then check whether the platform is stable.
- Check whether there is abnormal sound about the lift frame and the hydraulic pump station.
- Press “Down handle” and check whether the main safety mechanism is correct and reliable.



During test, there shall not be persons and other articles in the lifter rising and falling or regulated area.

The weight of tested vehicle can not exceed the minimum lifting capacity of the lifter. Inspect whether there exists oil or gas leakage in oil-way and gas-way. For any abnormal conditions, shut down the machine timely and commission once again after the failure is removed.

6 Operation



Parking lift operation by authorized personnel over 18 years only.

Apply the parking brake after positioning the vehicle on the parking lift.

Do not allow anyone to stay in parking lift area during raising and lowering cycles.

Closely watch the vehicle and the parking lift during raising and lowering cycles.

6.1 Raising

With the power source connected, turn “OFF” position to “ON” position.
Press the “UP” button and raise the equipment.

6.2 Stopping

Loose the “UP” button and allow the parking lift to stop.

6.3 Parking

Press “DOWN” handle, jog in several seconds until it locks.

6.4 Lowering

- While pressing “Down handle”, press down the safety operating handle and the platform will descend; if loosen the handle, it will stop descending.
- When the safety mechanism exists in the safety rack, first lift the platform a little (make the safety catch and tooth separate) and then press “Down handle”.
- Press “Down handle” once to make the platform descend; when the safety mechanism fall on the next safety rack hole position, descending will stop and the platform will be locked.

Pay attention during operation:

- Before lowering the parking lift, the user must raise it at least 2s in order to clear the safety locks. Fail to do so may cause one side of the parking lift to “hang up” on descent making the equipment unstable and may cause personal injury or death.
- When drive car on the equipment or drive away should keep the car axes synchronizing with the parking lift axes. Avoid any damage of parking lift due to inclining to one side.
- When the vehicle leaves the ground (100~150mm), rock the car a bit checking that parking lift is safe to operate.
- During the parking lift operation, no one is allowed to stay under the parking lift or around it.
- When lifting a certain height must keep the parking lift in locking position and then the other car can be drive in.

6.5 E-stop

When the machine has abnormal condition, the operator could turn off the main switch at the operation position to cut off all the operation circuit, and other operation can not be worked.
After clearing obstacles, restart the work again.

7 Maintenance



Authorized personnel only!

The maintenance intervals indicated below apply to average workshop use.

The parking lift should be frequently wiped down to maintain cleanliness. Before wiping, cut the power supply at first.

7.1 Regular check-up



Establish a periodic preventive maintenance procedure to ensure trouble free operation and long service life.

7.1.1 Check the safety features of the lift every day before work. The magnets should be operating normally, the locking plate should be in position, the mounting plate of the lift collar should be free of damage, etc. If you discover something abnormal, make prompt adjustments, repairs or changes.

7.1.2 Every day, check that the space between the collar chain and the hydraulic cylinders is correct. Check if the flat-runged chain and the nut connecting it to the collar have become loose or detached.

7.2 Cleaning

- Periodically wash off aggressive substances and treat the parking lift with oil or wax spray.
- The work area about the parking lift should be swept up. If large amounts of dirt accumulate, this will accelerate the rate of wear-and-tear on the machine and reduce its natural life span.

7.3 Maintenance of the hydraulic system

6.3.1 Cleaning, Oil Change

Three months after the first full usage of the lift, clean out the oil tank and change the oil. Once per year afterwards, clean the hydraulic system and change the oil.

6.3.2 Replacing the Seals

After the lift has been used for a period of time, if you discover any oil leakage, make a thorough inspection. If the leakage is due to from wear of the seals, then replace parts immediately following regulations.

8 Troubleshooting

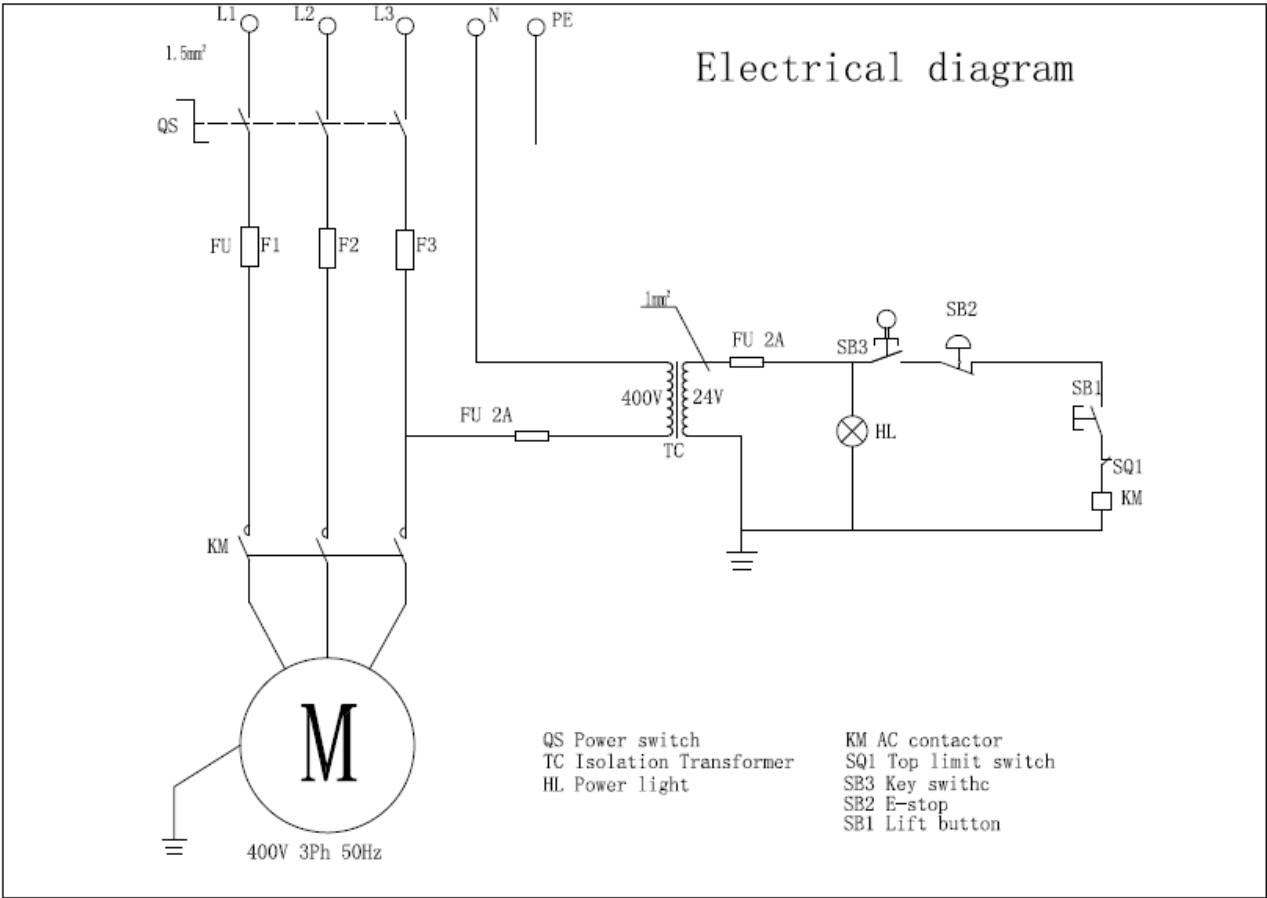
Trouble	Cause	Solution
Motor fails to rotate upon pressing rising	Power is abnormal	After inspecting and eliminating, wires connected
	AC connector of main circuit for motor of pump is not connected	If motor shall operate after pressing motor by insulating rod, inspect control circuit. If the voltage of coil end for contactor is normal, contactor is replaced
	Fault in limit switch occurs	If the faults are eliminated after the terminals connecting limit switch of SQ1 or SQ2 is short connected via wire, such limit switch shall be inspected. Meanwhile, limit switch shall be adjusted or replaced
	Button switch is damaged	Inspect contact point of button and wire for eliminating
Motor can rotate but fail to rise upon pressing rising	Motor rotates in reverse	Change incoming sequence of power supply
	Motor shall rise with light load and it fails to rise with heavy load	Heighten the safety pressure setting of overflow valve by slightly screwing right. If there is dirt in the falling solenoid valve plug, clean the plug
	Hydraulic oil is not sufficient	Fill hydraulic oil
When you press the "Down Button", the lift does not descend	The safety catch is not disconnected from the safety mechanism	First make the platform ascend a bit, and then make it descend
	Error operation leads to seizing of safety mechanism	Make the safety rack out of the safety catch and do not damage relevant parts
Oil leakage	Loose pipe joint	Tighten the pipe joint

9 Disposal

Hydraulic oil should be drained and disposed of to meet local regulations. Rest of equipment contains no hazardous materials and can be disposed of as normal scrap.

11 Attached drawings

Electrical drawing



Hydraulic drawing

