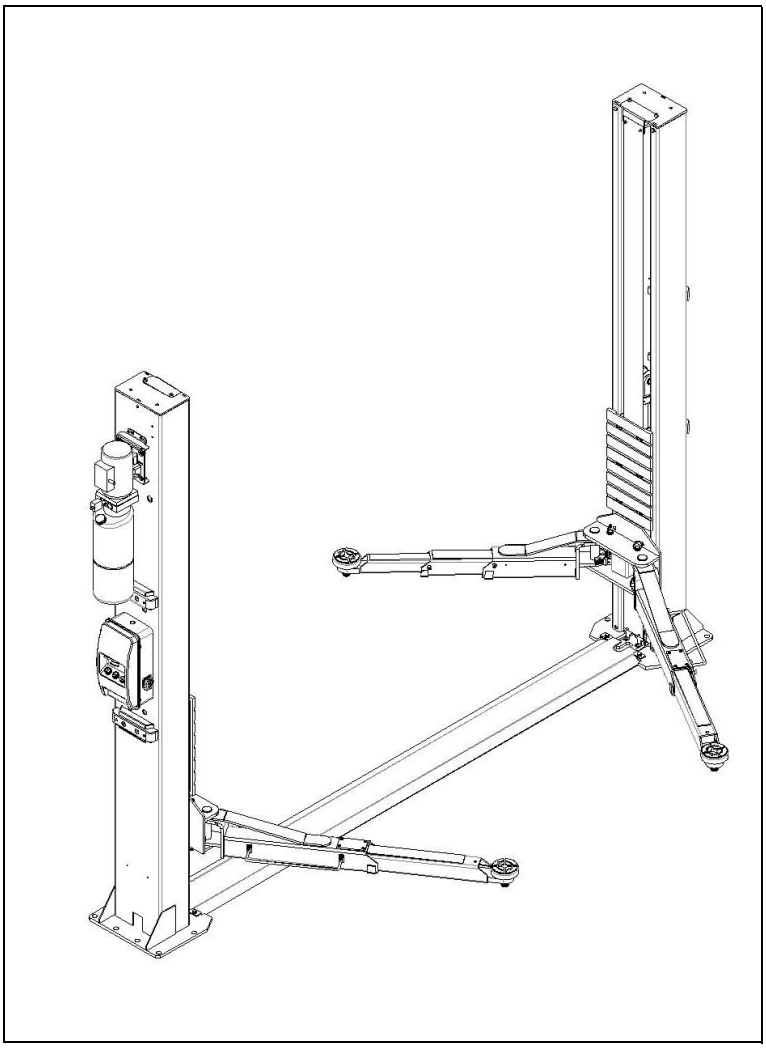
CLD 4000 SLP
Electro-hydraulic 2-post lift
Installation, Operation and Maintenance Manual



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1. Safety Precautions

1.1 After receiving the complete equipment, count the number of structural components of the whole machine before installation.
1.2 Read this instruction manual carefully before using the equipment. Operation of the lift by personnel who have not read this manual is strictly prohibited.
1.3 Installation and commissioning personnel must possess certain mechanical and electrical knowledge.
1.4 The lift shall be installed in a sufficiently large space to ensure unrestricted operation and maintain a safe distance from surrounding objects.
1.5 The lift must be installed on a ground of sufficient strength. Do not install it on loose and brittle ground such as asphalt or ceramic tiles, nor on concrete with major defects.
1.6 Do not install the lift near facilities such as heating radiators, air conditioners, water sources, stoves or humidifiers.
1.7 Do not install the lift in an environment with a large amount of dust, chemicals and other corrosive media.
1.8 Check whether the power supply conforms to the markings on this manual and the lift nameplate before installation.
1.9 Do not install the lift on the floor of an upper floor or basement without the permission of the construction department.
1.10 The pre-embedding of wire conduits and power supply connection in other forms must comply with relevant wire installation regulations.
1.11 Clear obstacles around and beneath the platform before operation.
1.12 No person shall stand on the left or right side of the lift during lifting and lowering operations, and no occupants are allowed in the vehicle being lifted.
1.13 The weight of the vehicle to be lifted shall not exceed the lifting capacity of the machine.
1.14 Cut off the power supply when the lift is not in use.
1.15 Maintain the machine in strict accordance with this manual, and conduct frequent and careful inspection and maintenance of key parts.
1.16 Equip the work site with fire extinguishers and other fire prevention devices (provided by the user).
1.17 Before driving the vehicle to the lifting position, swing open the four support arms first to ensure an unobstructed vehicle passage. Do not kick the support arms with feet, as this will damage the teeth of the support arms.
1.18 Ensure that all support arm teeth are fully engaged before lifting a vehicle.

1.19 Always use four support arms to lift a vehicle simultaneously; lifting a vehicle with fewer than four support arms is prohibited.
1.20 After lifting a vehicle, the mechanical locking operation must be performed. Working under the vehicle without mechanical locking is prohibited.
1.21 Swing the support arms back to their initial positions before the vehicle drives out of the lift to ensure no interference with the vehicle.
1.22 Install short support arms at the front and long support arms at the rear (for vehicles with front-mounted engines in general).

Note: The safety warnings and instructions in this manual do not cover all possible situations. Operators must have sufficient safety knowledge.

2.Brief Introduction to Lift Features

This lift has a carefully designed structure for safety and reliability. Its hydraulic drive provides smooth operation, straightforward handling and low noise. Two hydraulic cylinders provide stable lifting and lowering. Two steel wire ropes synchronize the two carriages and help prevent the vehicle from tilting. The electrically released safety lock provides safety and reliability. The arm locking mechanism uses widened toothed blocks to prevent the lifting arms from slipping and make vehicle lifting safer.

3.Main Technical Parameters of the Lift

Note: Products with different voltages and frequencies can be provided according to user requirements (see the equipment nameplate for specific parameters)

Maximum lifting capacity (kg)	4000
Lifting Height (mm)	1900
Full-stroke lifting time (s)	60
Power Supply	230 V / 400 V
Motor Power	2.2KW
Rated Oil Pressure	20 MPa

4.Overall Dimensions of the Lift

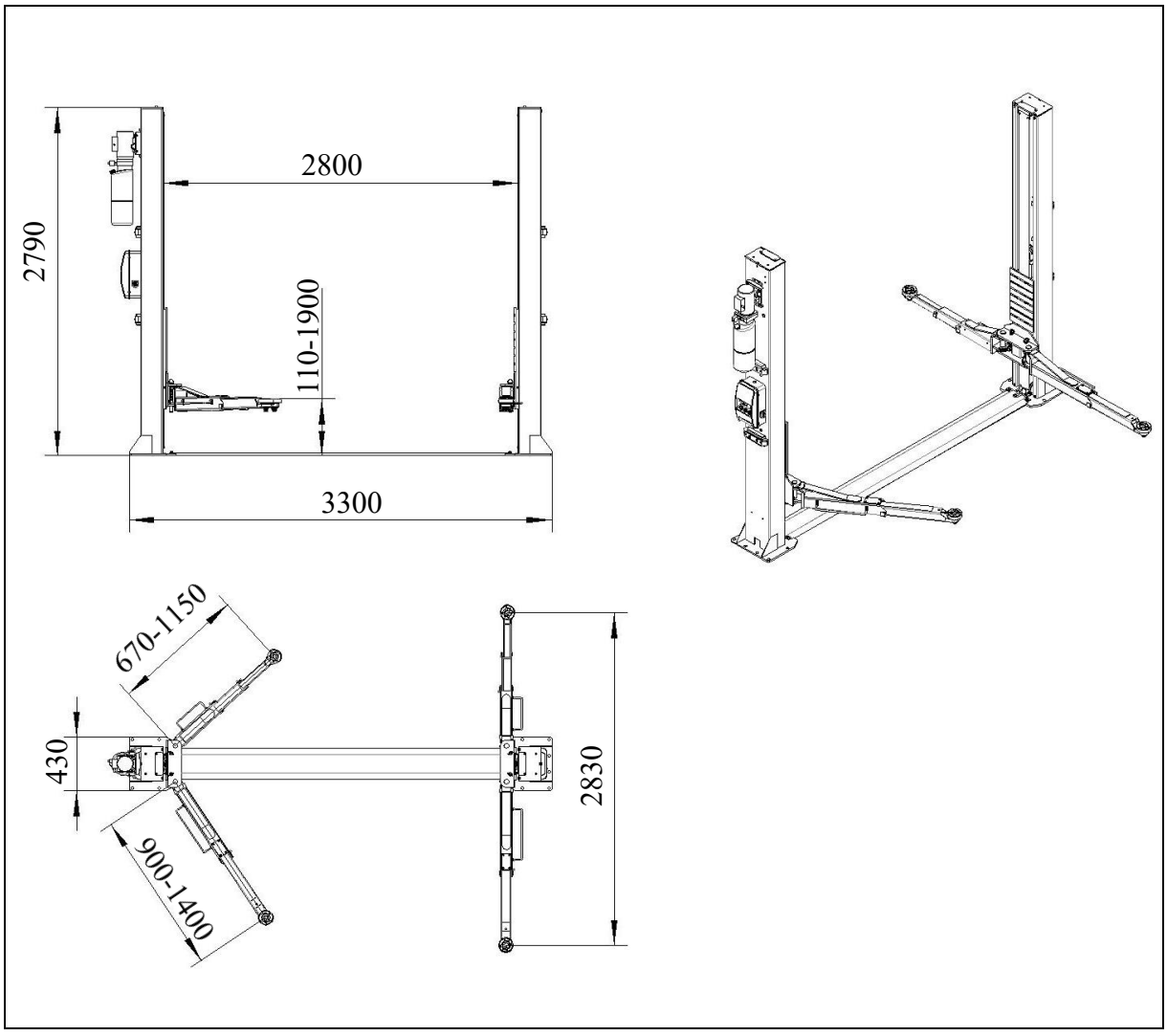


Figure 1 Overall Dimensions of the Lift (Unit: mm)

5.Foundation Dimensions of the Lift

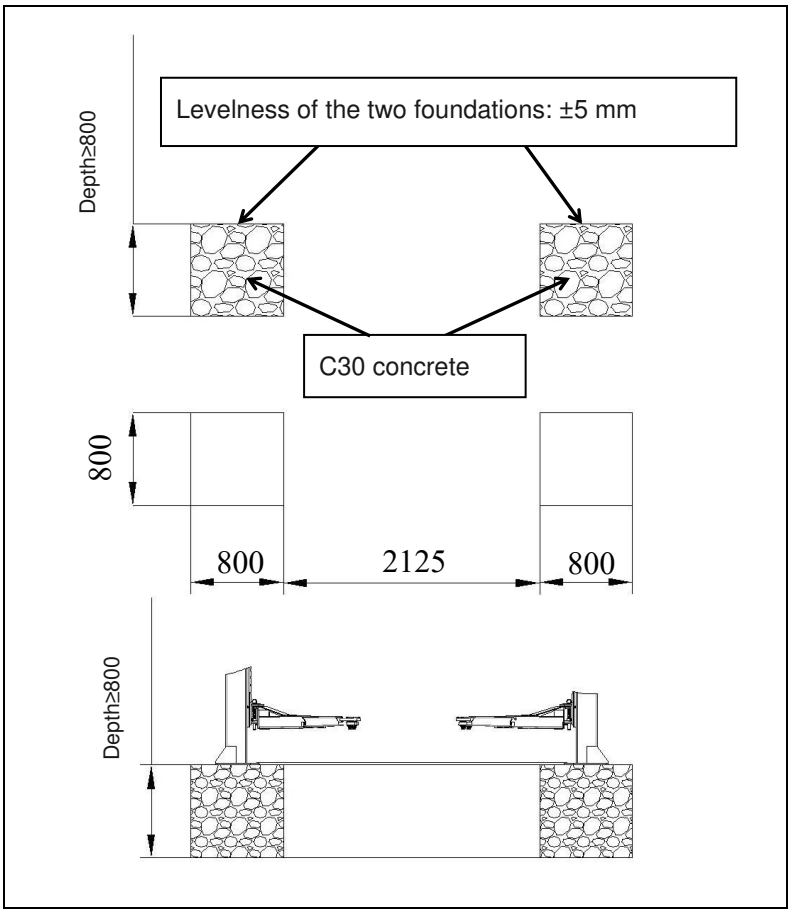


Figure 2 Foundation Dimensions of the Lift (Unit: mm)

6.Structure and Working Principle of the Lift

This lift consists of a main column, an auxiliary column, a bridge plate, sliding carriages, support arms, hydraulic cylinders, a power unit, an electrically unlocked mechanism, a control box, chains, etc. (see Figure 3).

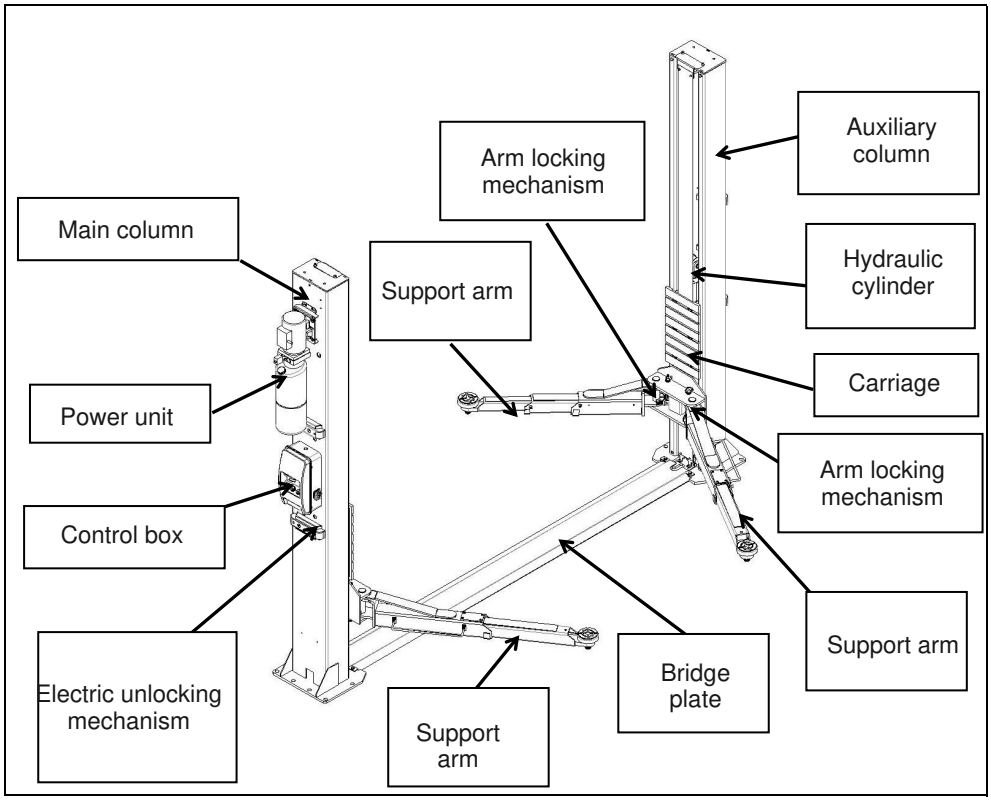


Figure 3 Main Structure of the Lift

• Column: A basic component for installing driving devices such as sliding carriages and hydraulic cylinders.
• Carriage: A lifting component installed inside the column for vertical sliding.
• Support Arm: A lifting component installed with the sliding carriage, which contacts the vehicle's supporting points to lift the vehicle.
• Bridge Plate: A connecting component placed at the bottom, through which the balance steel wire ropes, oil hoses, safety ropes, etc. pass from the main column to the auxiliary column.
• Electrically Unlocked Mechanism: A safety component; when the oil pressure is released, the locking teeth push up the sliding carriage lock block to keep the sliding carriage stationary.
• Hydraulic cylinder: A transmission component; when the hydraulic station is in operation, high-pressure oil is pumped into the hydraulic cylinder, the piston rod rises, and drives the sliding carriage to rise through the chain.

• Power Unit: A power component; the motor runs to drive the pump to work, suck oil through the filter screen and deliver high-pressure oil.
• Arm locking mechanism: A safety component that locks the support arms to prevent them from rotating.
• Chain: A transmission component with one end fixed to the column base plate and the other end fixed to the sliding carriage. When the hydraulic station is in operation, high-pressure oil is pumped into the hydraulic cylinder, the piston rod rises to drive the chain up, and the chain then drives the sliding carriage to rise.
• Control Box: Controls the lifting and lowering actions of the lift.

Working Principle Lifting: The motor on the hydraulic station drives the oil pump to deliver hydraulic oil into the hydraulic cylinder. Under the action of oil pressure, the piston rod of the hydraulic cylinder extends, and drives the sliding carriages and support arms to rise synchronously through the chains to complete the lifting work. Lowering:Open the oil return hose line of the hydraulic station; the sliding carriages discharge the hydraulic oil in the hydraulic cylinder back to the oil tank under their own weight to complete the lowering work.

7.Installation and Commissioning of the Lift

Installation Precautions
• Incorrect installation may cause damage to the lift or personal injury. The manufacturer shall not be liable for any direct or indirect damage caused by incorrect installation or use of this product.
• The lift shall be installed on a level ground to ensure horizontal lifting. Slight ground inclination can be compensated with appropriate thin gaskets. Any large inclination will affect the horizontal lifting performance of the device. If the ground has suspicious inclination, visual inspection shall be conducted, or a new level concrete ground shall be poured if possible. In short, the levelness of the equipment during lifting depends on the levelness of the installation ground under the optimal horizontal lifting condition; do not expect it to offset severe ground inclination.
• Do not install the device on any asphalt surface. In addition to concrete, do not install the device on any other surface in accordance with the minimum specifications in the general ground requirements. Do not install the device on concrete with large cracks, fissures or defects; please check with a structural engineer.
• Do not install the device on the second floor with a basement without the written approval of a structural engineer.
• Headroom Obstacles: There shall be no headroom obstacles such as heaters, building supports, electrical conduits in the area where the lift is installed.
• Ground Drilling Test: Installers can determine the thickness of concrete at each site through ground drilling tests. If multiple lifts are installed at one site, it is recommended to conduct drilling tests at each installation position.
• Power Supply: The power supply shall be prepared before installation. It is recommended that all electrical wiring be performed by a certified electrician.

Read the instruction manual carefully before installing the machine, understand the machine structure clearly, check whether the machine is damaged during transportation and handling and whether the accessories are complete, and then proceed in the following steps:

7.1 The equipment shall be installed in a dust-free and pollution-free indoor environment with sufficient illumination (illuminance not less than 100 Lx). The lift columns must be installed at the specified safe distance from walls, columns and other equipment, with a minimum distance of 1000mm from the wall. Sufficient space shall

be reserved at the front and rear of the lift to accommodate all vehicles (see Figure 4). For emergency response and operational convenience, sufficient space shall be reserved for the safety passage, and the indoor height shall not be less than 4000mm.

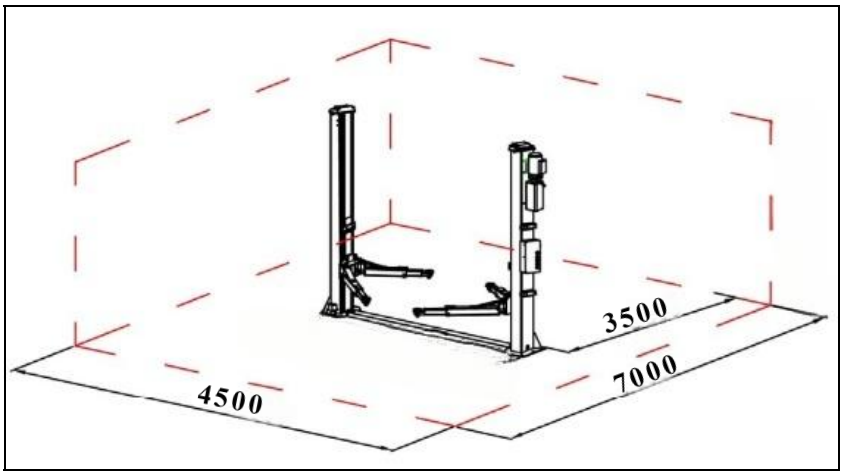


Figure 4 Layout Space(Unit: mm)

7.2 The lift can only be installed on a concrete ground with C30 concrete foundation, thickness greater than 800mm and horizontal level error less than 5mm. Newly poured concrete needs to be cured for more than 20 days (see Figure 2).

7.3 Place the main column on the foundation, drill holes with an impact drill, clean the residual dust in the bolt holes with a vacuum cleaner, and gently tap the expansion bolts into the holes with a hammer. The height of the expansion bolts exposed above the ground shall not exceed 50mm, and do not tighten the nuts for the time being (see Figure 5).

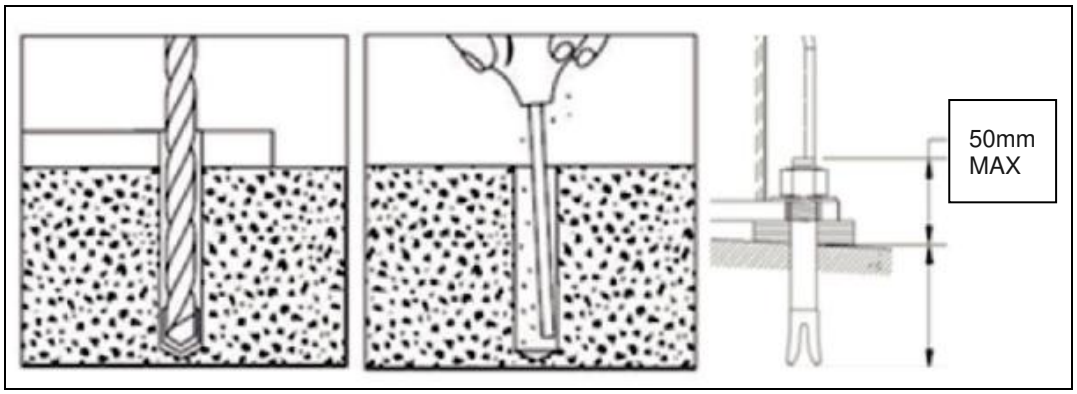


Figure 5 Drilling Notes
1. Do not use excessively worn or damaged drill bits. 2. Ensure the drill bit is perpendicular to the ground when drilling.

3. Do not apply excessive force when drilling; take out the drill bit occasionally to clean debris in the hole.
4. The drilling depth is equal to the length of the expansion bolt. The distance from the bolt head to the concrete ground shall not be less than twice the bolt diameter. If drilling fails, move the lift to another position for re-installation and drilling.

7.4 Fix the auxiliary column by referring to the method of the main column. According to the dimensions in Figure 6, confirm that the difference in the diagonal distance of the base plates of the two columns is within 3mm.

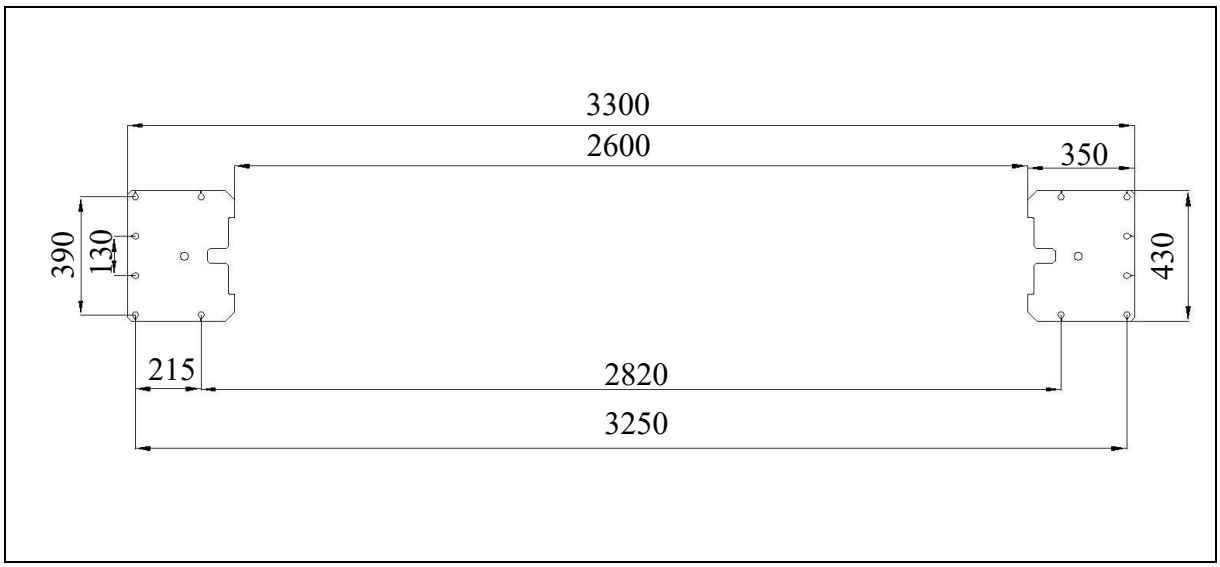


Figure 6 Base Plate Layout Drawing (Unit: mm)

7.5 Tighten the expansion bolts, and confirm the verticality of the columns with a level at the same time. If necessary, insert gaskets at the bottom of the columns for level adjustment (see Figure 7).

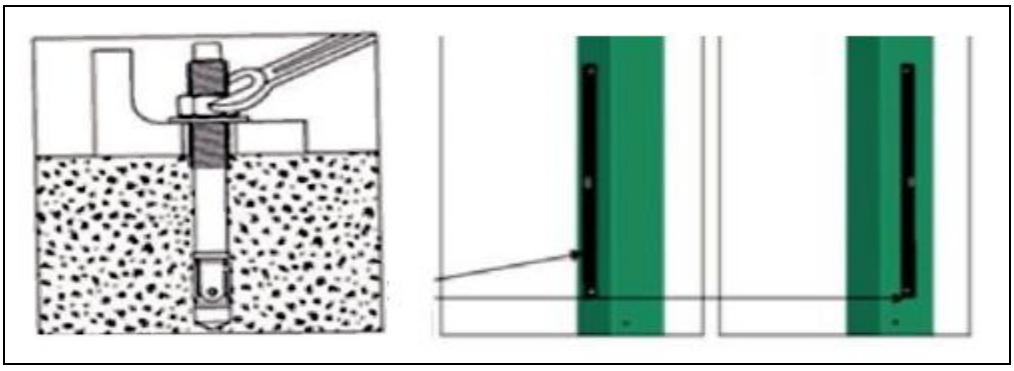


Figure7

Note:

1. Only a torque wrench can be used to fasten the anchor bolts; do not use impact tools for fastening.

2. The cumulative thickness of gaskets added at the same position under the base plate shall not exceed 5mm, and the surrounding of the column base plate shall be fully padded, otherwise the support arms will shake when lifting a vehicle.

7.6 Install the balance steel wire ropes. Ensure that the sliding carriages on both sides are at the first gear of the safety device, and install the balance steel wire ropes according to the track shown in Figure 8. Do not tighten the nuts for the time being; adjust the tightness of the two steel wire ropes during the synchronization commissioning. Note: During adjustment, ensure that the sliding carriages on both sides are locked at the same height. The two steel wire ropes shall be adjusted to a specified and consistent tension to guarantee synchronous movement of the two sliding carriages.

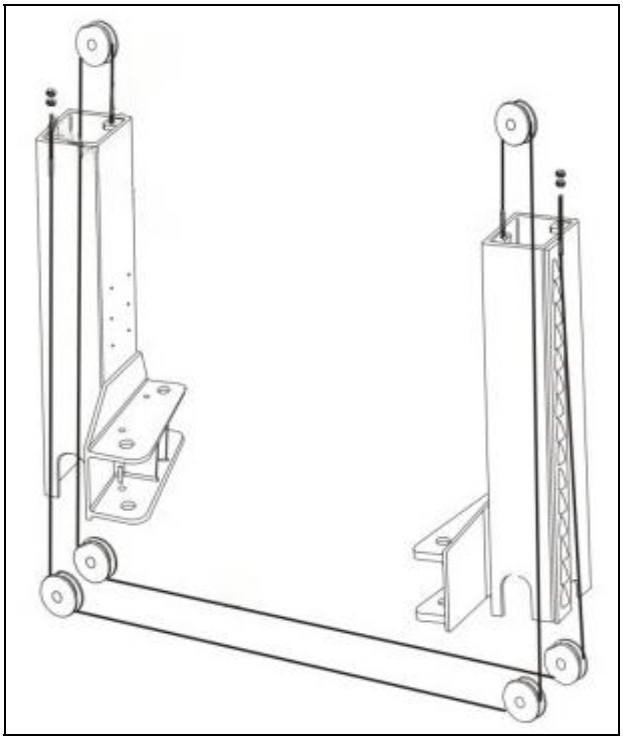


Figure 8 Steel Wire Rope Pulley Block

7.7 Install the support arms. Install the four support arms into the sliding carriages through pin shafts, with short support arms at the front and long support arms at the rear. (Note: Use short support arms at the front of the vehicle; install circlips on each support arm shaft. Before use, always check whether the positioning tooth mechanism at the end of the support arms is engaged, which can be adjusted by tightening the screws fixing the half gears. Lubricate the support arms and

sliding carriage accessories during installation to allow free movement of the support arms.) (see Figure 9，Figure 10)

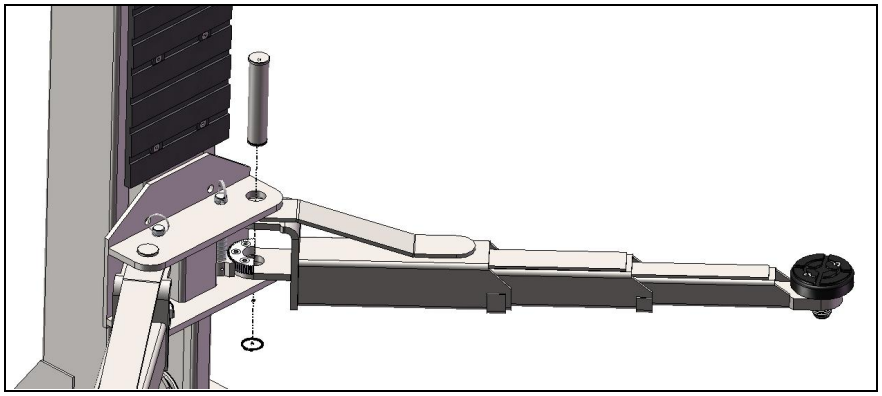


Figure 9 Install Support Arms

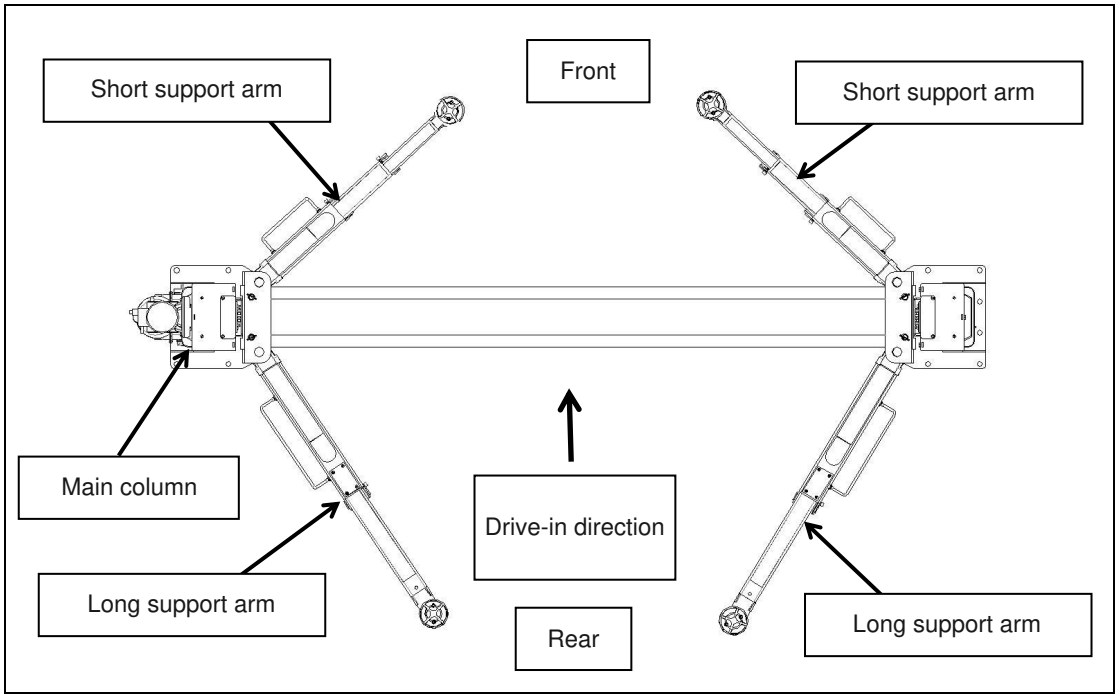


Figure 10 Support Arm Layout Diagram

Note: The support arms can only be installed after the columns are fixed with expansion bolts.

7.8 Mount the power unit and control box onto the main upright column and fasten them with bolts (see Figure 11). Install the electromagnets and safety retainer plates on the two upright columns (see Figure 12), and mount the limit switches of the main upright column (see Figure 13). The control box is pre-wired with a 5-meter cable fitted with a power plug at the front end. Insert the plug into the pre-prepared power socket, and the equipment will be powered on.
Note: The plug shall be inserted into the matching power socket in accordance

with the voltage specification marked on the equipment nameplate.

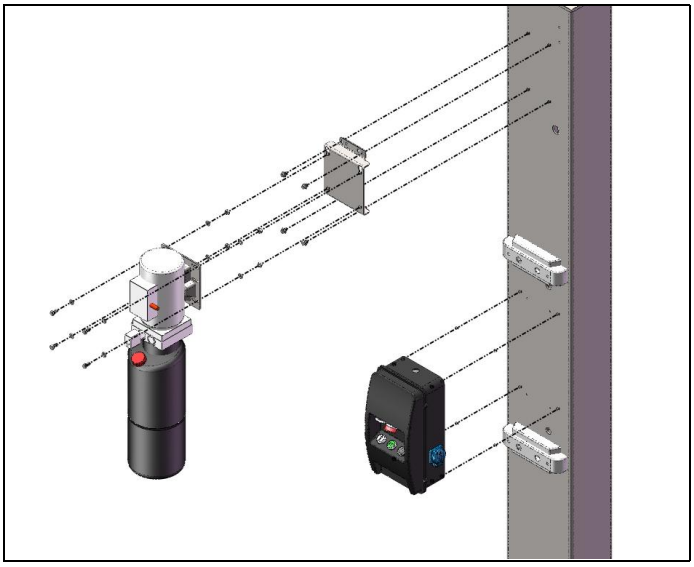


Figure 11 Install Power Unit and Main Control Box on Main Column



Figure 12 Installation of Electromagnets and Safety Plates



Figure 13 Install Limit Switch

7.9 Hydraulic System Connection: For the initial installation and use of the lift, pay attention to the motor rotation direction (clockwise) during wiring; incorrect motor rotation direction for a long time may damage the gear pump. Unscrew the oil tank cap and add 10L of No.46 anti-wear

hydraulic oil, with the oil level at a maximum of about 10mm below the top of the oil tank and a minimum of about 30mm below the top (check with the dipstick on the oil filling air cover of the oil tank when the lift is at the lowest position). (No.46 anti-wear hydraulic oil is preferred; consider using No.32 anti-wear hydraulic oil when the temperature is below 10°C.) Note: Mixing of hydraulic oils of different brands and models is not allowed.

Connect the hoses according to the hydraulic connection diagram in Figure 14. The pressure relief valve is factory-set. Adjustment is restricted to authorized qualified personnel; do not exceed the rated pressure of 20 MPa or the rated capacity of 4,000 kg. Do not increase lifting capacity by adjusting the valve. During normal operation, lower the lift using the DOWN button as described in section 8.2.5.

Note:
• Protect the hose line joints during the oil hose threading process and strictly prevent sand and soil from entering the oil circuit.
• If the hoses need to pass through the column during installation, ensure that the hose lines do not touch any moving components.
• After the oil hose connection of the lift is completed, straighten the oil hoses inside the columns and fix them to avoid friction between the oil hoses and sliding carriages, steel wire ropes, pulleys, etc.
• There may be air in the hydraulic system due to new installation, which needs to be vented. Require the hydraulic cylinder to be at the lowest position when connecting the hoses (the air cavity is the smallest at this time), and then repeat the lifting and lowering operations several times during the no-load test for venting.

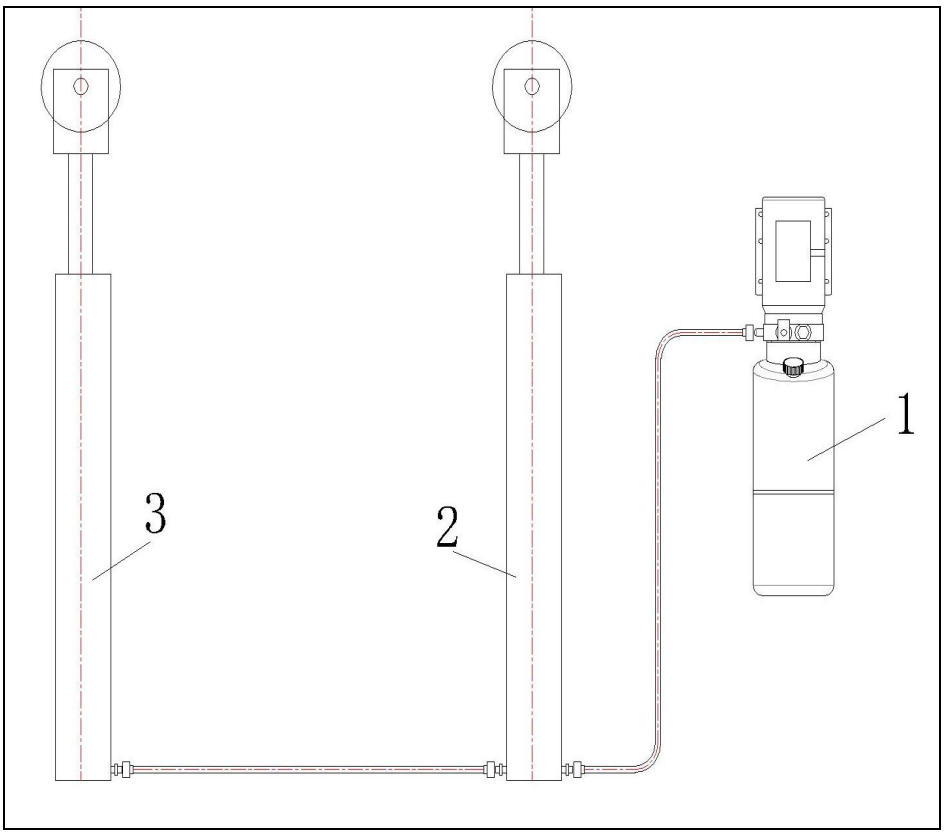


Figure 14 Lift Hydraulic System Connection Diagram

Lift Hydraulic System Component List		
Serial No.	Name	**Quantity**
1	Power Unit	1
2	Main Column Hydraulic Cylinder	1
3	Auxiliary Column Hydraulic Cylinder	1

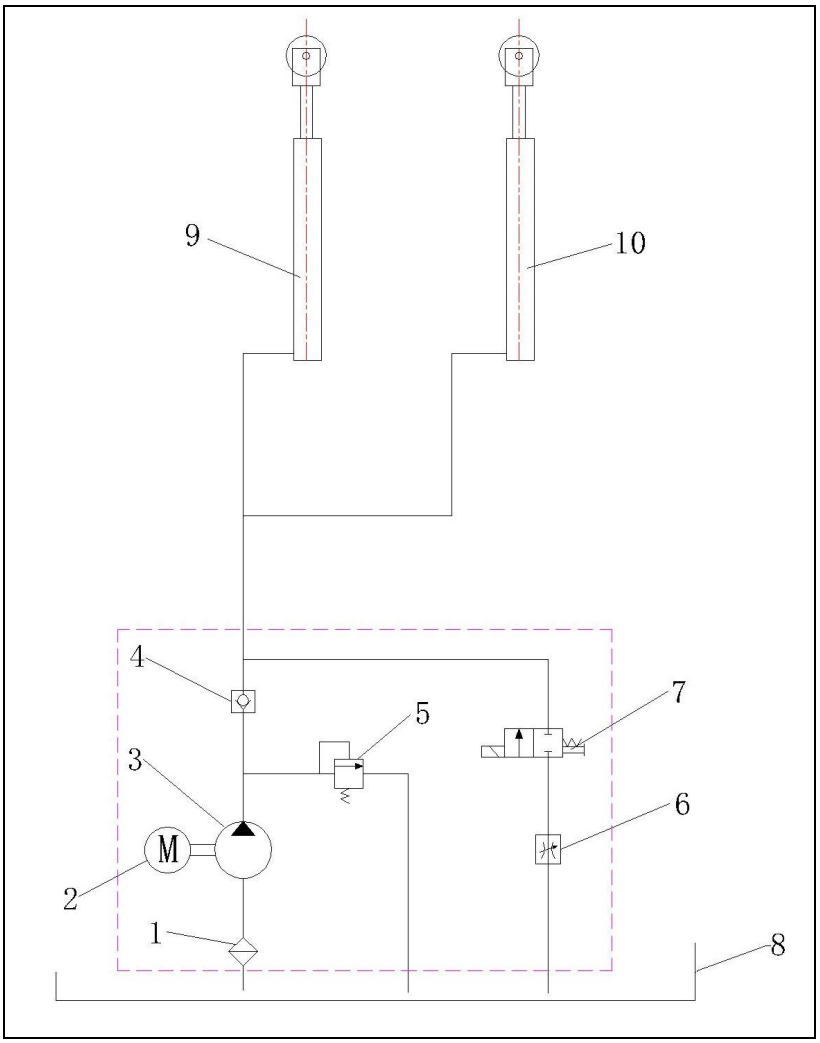


Figure 15 Hydraulic System Schematic Diagram

Serial No.	Name	Quantity
1	Oil Filter	1
2	Gear Pump	1
3	Motor	1
4	Check Valve	1
5	Relief Valve	1
6	Throttle Valve	1
7	Unloading Valve	1
8	Oil Tank	1
9	Main Column Hydraulic Cylinder	1
10	Auxiliary Column Hydraulic Cylinder	1

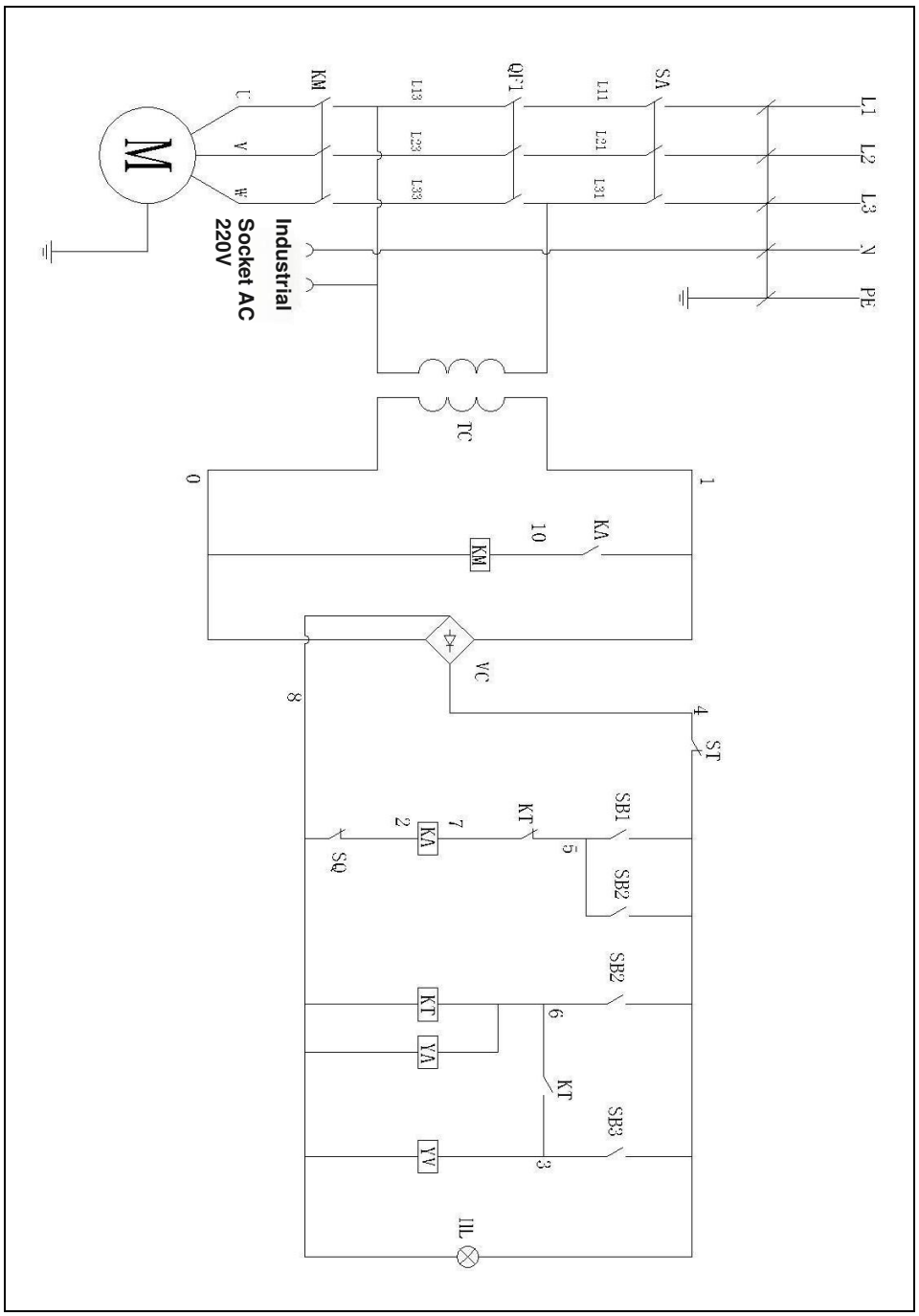


Fig. 16: Electrical schematic, 400 V three-phase (source drawing: 380 V)

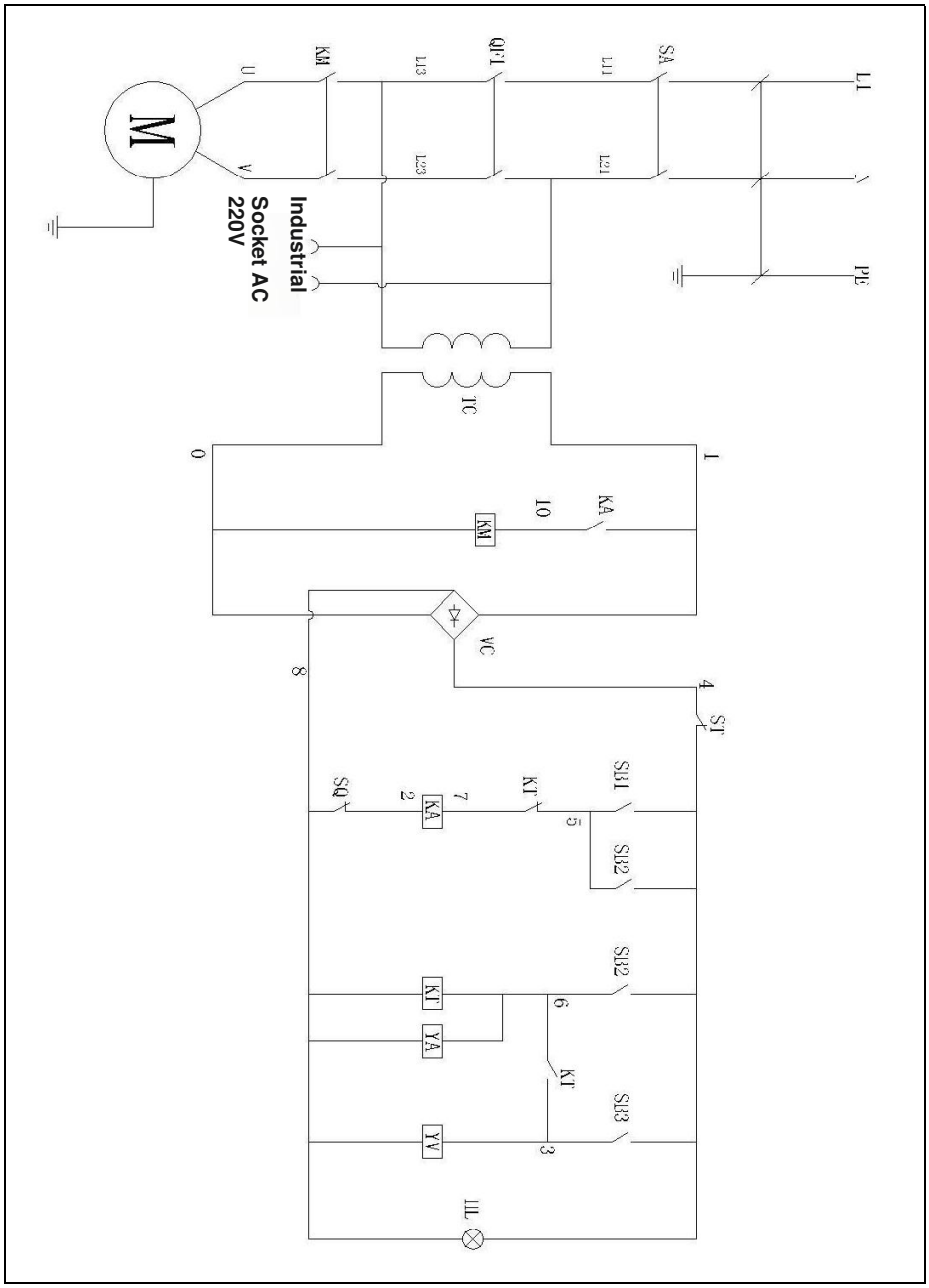


Fig. 17: Electrical schematic, 230 V single-phase (source drawing: 220 V)

No.	Name	Quantity	No.	Name	Quantity
SB1	Lift button	1	KT	Time relay	1
SB2	Down button	1	HL	Power light	1
SB3	Lock button	1	KA	Intermediate relay	1
TC	Transformer	1	VC	AC to DC converter	1

YA	Unlocking electromagnets	1	KM	AC contactor	1
YV	Solenoid valve	1	QF	Circuit breaker	1
ST	Emergency-stop button	1	SA	Power switch	1
SQ	Limit switch	1			

Note: Ensure the oil tank is filled with oil; do not run the hydraulic station without oil. Test by pressing the lift button; if the motor does not run, or abnormal noise and heating occur, stop the machine immediately and check whether the electrical connection is correct.

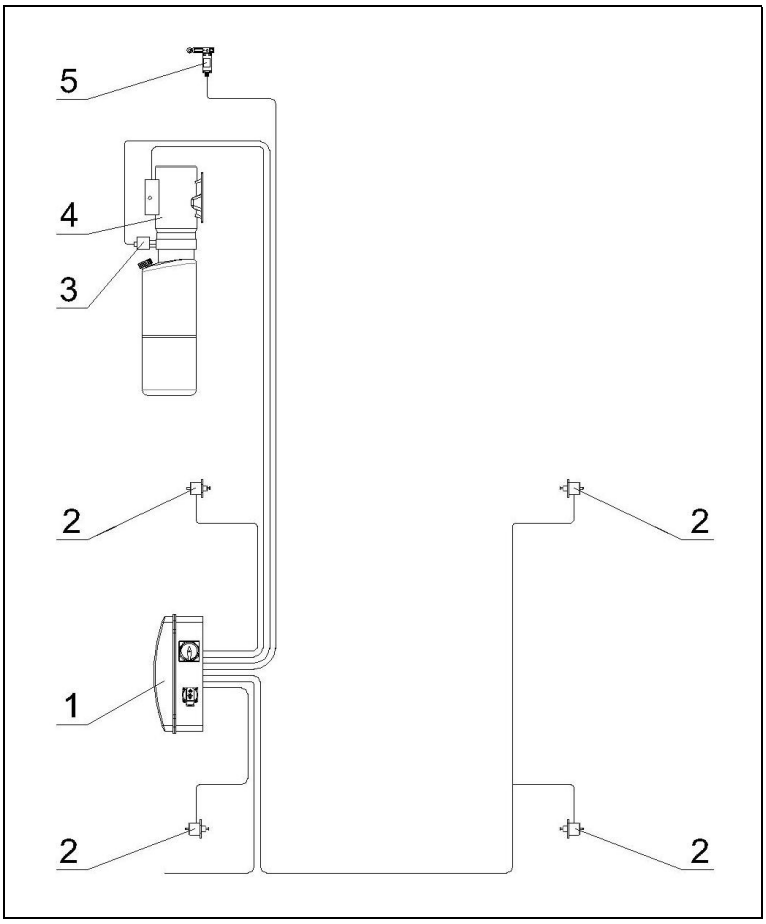


Figure 18 Electrical Wiring Diagram

No.	Description	Qty
1	Main-column control box	1
2	Unlocking electromagnet	4
3	Electric lowering valve	1
4	Hydraulic power-unit motor	1
5	Main-column limit switch	1
6	Second control box: not fitted to SLP	-

7.10 Adjust the Plate Chain Install and adjust the plate chain to a proper position (see Figure 19), that is, the support arms can swing unobstructed without scratching the ground when at the lowest position. This step has been initially adjusted at the factory, and the customer can make fine adjustments after installation according to specific conditions (adjustable after the installation of the electrical and hydraulic systems). During adjustment, lift the sliding carriages to a high position, lock them and lower for 2 seconds, adjust the adjusting nuts to the required position, then lift the sliding carriages and operate as needed after the lock is released.

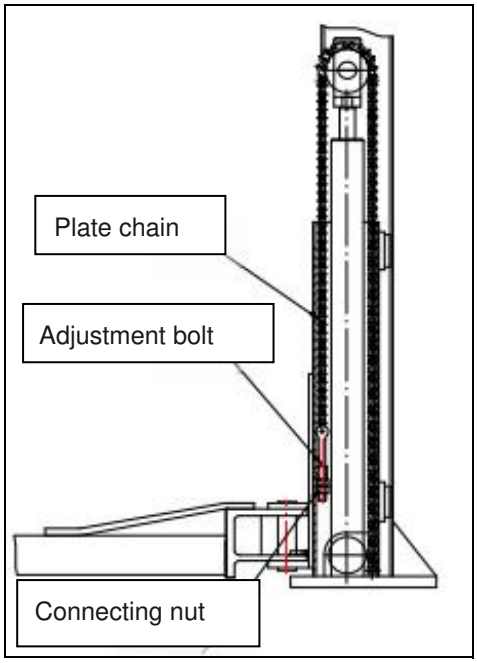


Figure 19 Plate Chain Installation Diagram

7.11 Install the bottom approach bridge plate at the position shown in Figure 1 to cover the oil hoses and steel wire ropes from the main column to the auxiliary column, and install accessories such as column curtains, sliding carriage anti-collision strips and support arm guardrails.

7.12 No-Load Test and Adjustment
• Clean the site to ensure no oil stains on the ground. Keep the lift unloaded and apply general lithium-based grease to the moving contact surfaces of the sliding carriages, requiring uniform coating on all sliding surfaces from top to bottom.
• Switch on power, press UP button to raise the carriage; halt lifting at any position then engage pawl lock button to seat both left & right carriages into the same locking notch for safety catch.
• Tighten the nuts of balance steel wire ropes to ensure consistent tension for the two balance cables.
• Press DOWN button to lower the carriage all the way to bottom limit position.
• Press UP button for full-stroke lifting: when reaching top limit position, motor cuts off and overflow valve opens for hydraulic oil return to stop upward travel.

Check synchronism of left/right carriage arms during lifting; readjust balance rope nut tension to eliminate offset until both carriages move synchronously.
• There may be air in the hydraulic system due to new installation, which needs to be vented; repeat the lifting and lowering operations several times during the no-load test for venting.

7.13 Load Test and Adjustment
• Lower the sliding carriages to the lowest position, retract the four support arms to the minimum length and fully open them to ensure an unobstructed lane space.
• Drive the vehicle into the lift, centered left and right with reference to the line connecting the two columns. The front-rear placement distance ratio of the vehicle is approximately 2:3 (for vehicles with front-mounted engines); move the vehicle appropriately backward when the vehicle weight is more than 3.5 tons.
• Rotate the support arm pallets to the supporting points of the vehicle chassis.
• Press the lift button to lift the support arms and confirm that the four support arm locks are fully engaged.
• Continue to jog the lift button to lift; stop lifting if any rubber pallet contacts the chassis supporting point, then adjust the remaining rubber pallets to make them all contact the supporting points.
• Press the lift button to lift the vehicle slowly; stop lifting when the vehicle tires are off the ground. Gently push the rear of the vehicle to check the contact condition, ensuring the vehicle is safe and stable and the support arm locks are fully engaged.
• Press the UP button to continue lifting the vehicle, check if the car stays level front-to-rear and side-to-side during lifting. Stop lifting when the carriage rises to the 3rd or 4th safety locking notch, then press the pawl lock button; the hydraulic power unit switches to oil return and the carriage drops into mechanical lock. Recheck vehicle levelness. (If obvious height difference exists between left and right sides, adjust the nuts of balance steel wire ropes.)
• Continue lifting up to the topmost locking notch and halt movement, press the pawl lock button for oil return and lock engagement, inspect the lift for smooth operation without shaking or vibration.
• Press the DOWN button: the carriage lifts slightly first before descending. Release the DOWN button at any intermediate travel position; the safety pawl springs back automatically, the carriage locks and descent stops. Repeat this full operation cycle no less than three times to verify reliable performance of mechanical safety latches.
• During the vehicle lifting process, observe whether there is abnormal noise and whether the steel wire ropes rub against or interfere with other components.
• After several up and down operation cycles, it may be necessary to refill the oil tank with hydraulic oil. After refilling, the maximum oil level shall be about 10mm below the top of the oil tank, and the minimum oil level shall be about 30mm below the top (check with the dipstick on the oil filling air cover of the oil tank).

8. Operating Instructions for the Lift

8.1 Operating Precautions

8.1.1 Different vehicles have different center of gravity positions. Understand the vehicle's center of gravity position first; when the vehicle enters the lift, keep its center of gravity close to the plane formed by the two columns. Ensure the lifting points are at the positions recommended by the vehicle manufacturer.
8.1.2 Pay attention to the position of the vehicle roof when lifting the vehicle; do not get close to crossbeams or other headroom obstacles to avoid accidents.
8.1.3 The hydraulic valves have been adjusted at the factory; users are not allowed to adjust them without permission, otherwise the user shall be responsible for all consequences arising therefrom.
8.1.4 Certain parameters in the manual can be changed according to actual needs.
8.1.5 Do not operate the lift with damaged ropes or damaged/falling parts.
8.1.6 Before use, always check whether the positioning lock tooth mechanism at the end of the support arms is engaged, whether the steel wire ropes have broken strands, and whether the rubber pads are deformed.
8.1.7 All support arms must be used when lifting a vehicle.
8.1.8 Before lifting a vehicle, check all hose line joints and ports for oil leakage. Do not use the lift if leakage is found.
8.1.9 After the vehicle is lifted, use a jack to support the vehicle to keep it balanced when adding or removing any heavy objects.
8.1.10 Cut off the power supply when the lift is not in operation.
8.1.11 This lift is designed for lifting the entire vehicle body and shall not be used for other purposes.
8.1.12 Check the area above and below the vehicle; the area shall be free of obstacles before the lift is operated.
8.1.13 Perform a full-stroke no-load lifting and lowering before lifting a vehicle to ensure the lift is in good condition before load operation.
8.1.14 The operator shall keep an eye on the load device throughout the operation of the lift.
8.1.15 Lock the mechanical safety device before entering the area under the lifted vehicle.
8.1.16 Avoid excessive shaking of the vehicle when it is on the lift.
8.1.17 Climbing onto the lifted vehicle or load device is prohibited.
8.1.18 Only authorized personnel are allowed to enter the lifting area.

8.1.19 No person is allowed to stand in the lifting area when the lift is in operation.
8.1.20 Attempting to lift over wide or overlong vehicles is prohibited.
8.1.21 Removing, interfering with or modifying the safety devices of the lift is prohibited.

The above precautions do not cover all possible situations and conditions. Operators must have sufficient safety awareness.

8.2 Operating Steps

To avoid personal injury and property loss, only trained personnel are allowed to operate the lift. After familiarizing with the operating instructions, practice the lift control through several test lifting and lowering strokes. Always use the four pallets of the lift to support the vehicle; lifting only one end or one corner of the vehicle is prohibited. The lift can only be used to lift vehicles after it is fastened and stable.

8.2.1 Vehicle Positioning
- **Guide the vehicle to drive into the working position slowly.**
- **Park the vehicle at the center of the lift and pull the handbrake tightly.**
- **Place wheel chocks to fix the rear wheels.**

8.2.2 Support Arm Adjustment
- **Select suitable rubber pads [optional].**
- **Adjust the support arms to the specified lifting points of the vehicle [refer to the vehicle maintenance manual].**

8.2.3 Test lifting
- **Press the UP button to lift the vehicle 10-15 cm off the ground.**
- **Check stability by gently pushing the vehicle as described in section 7.13. Avoid excessive rocking.**
- **Check that all support pads firmly contact the lifting points.**

8.2.4 Full Lifting
- **Continue lifting to the working height.**
- **Confirm the safety lock is in the tooth locking state.**

8.2.5 Lowering Operation
- **Clean tools and debris under the equipment.**

• Press and hold the DOWN button. The carriages first rise briefly, the safety catches release electrically, and the lift then lowers.
• Keep the DOWN button pressed while lowering. Releasing it stops the downward movement and the safety catches automatically return to the locking position.
• Lower fully until the support arms are unloaded, then swing the arms back to the parking position.

Emergency Handling 1. Stop operation immediately if abnormal noise is found. 2. Cut off the power supply and report for repair if hydraulic oil leakage occurs.

9. Maintenance and Upkeep of the Lift

9.1 Keep Clean
• Wipe and clean the machine with a dry cloth frequently to keep it clean. Cut off the power supply before wiping and cleaning to ensure safety.
• The working environment of the machine shall be cleaned frequently to keep it clean. Excessive dust and sand in the working environment will accelerate the wear of machine parts and shorten the service life of the machine.
9.2 Daily Inspection Items
• Check all hydraulic joints, oil hoses and hydraulic cylinders for oil leakage and wear.
• Check all electrical connection wires for damage.
• Check all moving parts for excessive wear; replace immediately if wear is found.
• Clean oil stains on the rubber pallets and observe whether the rubber pallets are excessively worn.
• Check whether the safety device is normal.
• Check whether the connection of steel wire ropes is normal and whether the tension is appropriate.
• Check whether the connecting nuts of the plate chain and sliding table are loose or falling off .

• Check whether the support arm locks are fully engaged.

9.3 Monthly Inspection Items
• Replace the grease in the column slide ways and add grease to the pulleys and gears.
• Inspect and tighten the nuts of the expansion bolts.
• Lubricate the chains and steel wire ropes.
• Check all hydraulic hose lines for wear; replace immediately if wear is found.
• Retighten the anchor bolts. (Note: All anchor bolts shall be fully tightened; if any bolt fails for any reason, the lift shall be shut down until the bolt is replaced.)
9.4 Semi-Annual Inspection Items
• Adjust the balance steel wire ropes and safety ropes to ensure synchronous horizontal lifting and lowering.
• Inspect all moving parts for possible wear, interference or damage.
• Check the verticality of the columns.
• Check the lubrication of all pulleys; add an appropriate amount of lubricating oil to the wheel axles if the pulleys drag during lifting and lowering.

9.5 Hydraulic System Maintenance Clean the hydraulic oil tank and replace the hydraulic oil 6 months after the machine is first put into use; clean the hydraulic system and replace the hydraulic oil every year thereafter. Replace the hydraulic oil immediately if it turns black or there is dirt in the oil tank. Clean the oil tank and oil filter thoroughly when changing the hydraulic oil.
9.6 The operator shall frequently inspect the visible and fixed parts of the steel wire ropes. Replace the steel wire ropes with new ones in a timely manner if any of the following situations occurs (see Figure 20):
9.6.1 Fracture of the entire rope strand.
9.6.2 More than 9 external broken wires within an 80mm length or more than 20 broken wires within a 350mm length.
9.6.3 The outer diameter reduction due to wear exceeds 15%.
9.6.4 Broken wires gather in the same strand or a very short range.
9.6.5 Severe corrosion of the steel wire ropes.
9.6.6 Twisting of the steel wire ropes.

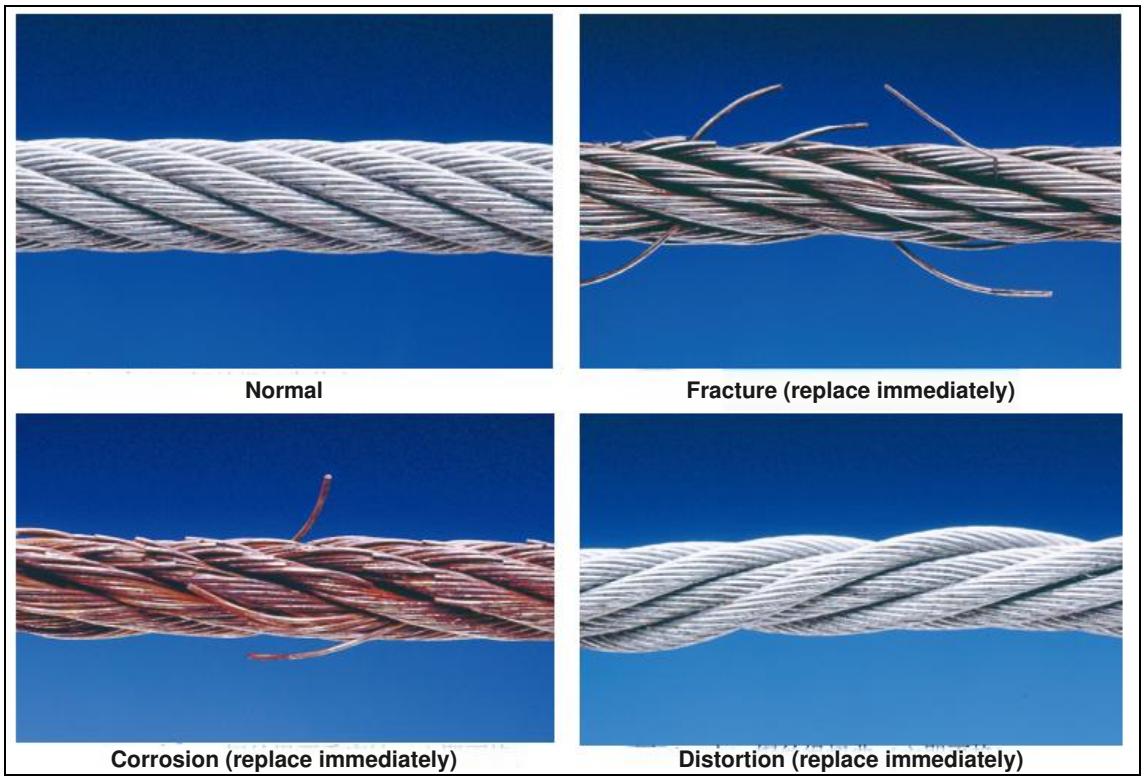


Figure 20 Replacement of steel wire rope

10. Noise Statement

The noise level of the lift during operation is less than 80dB(A).

11. Exploded Views and Part Lists of the Lift

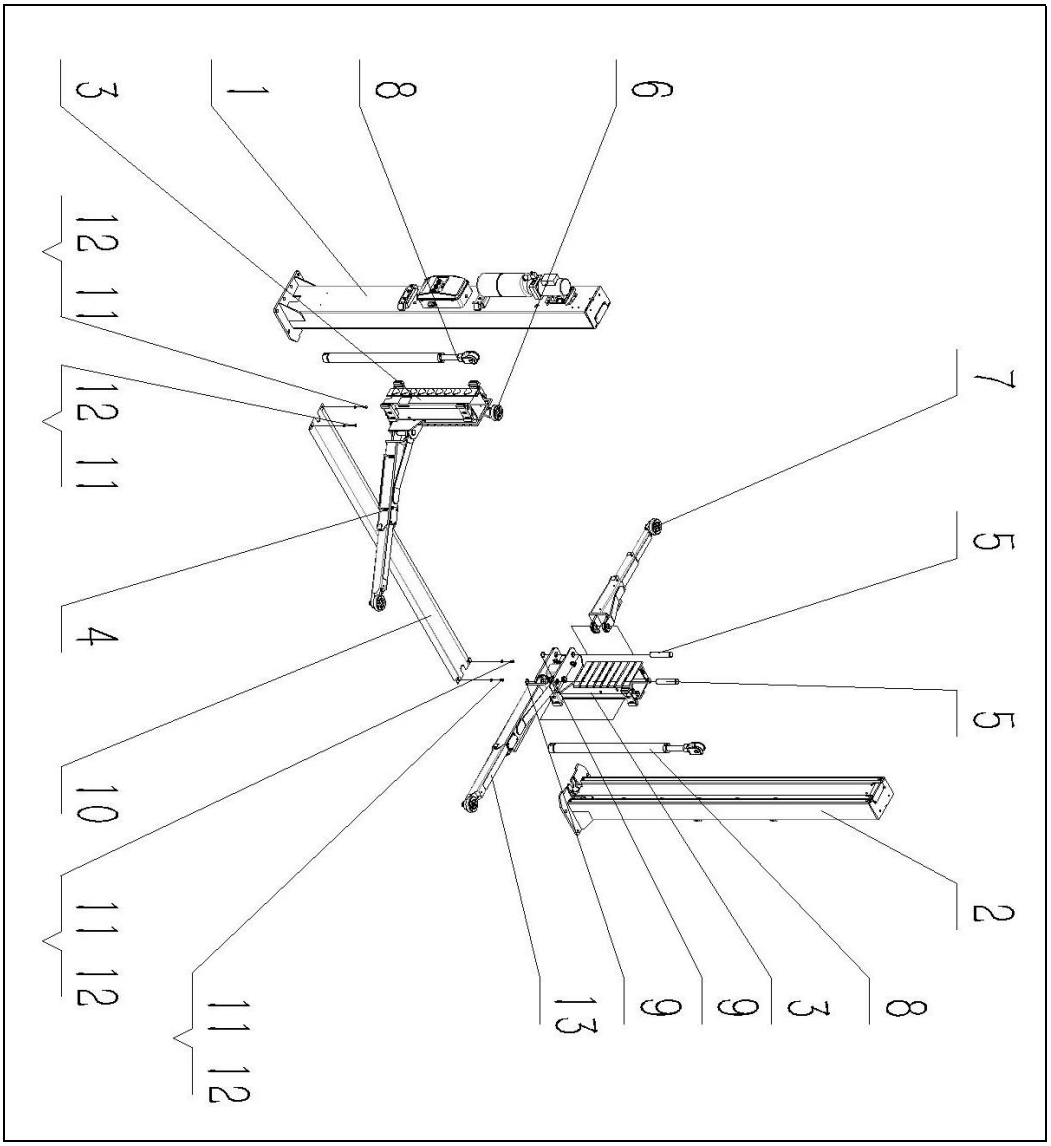
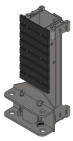
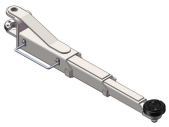
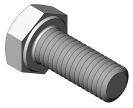


Figure 21 Overall Exploded View of the Lift

Part List of the Lift			
No.	**Preview**	**Name**	**Qty**
1		Main Column Assembly	1

2		Auxiliary Column Assembly	1
3		Carriage Assembly	2
4		2-Section Long Support Arm Assembly [A]	1
5		Support Arm Shaft	4
6		3-Section Short Support Arm Assembly [A]	1
7		3-Section Short Support Arm Assembly [B]	1
8		Hydraulic Cylinder	2
9		Shaft Elastic Retaining Ring 38	4
10		Column Middle Bridge Plate Weldment	1
11		Hexagon Head Bolt, Full Thread M10×20	4
12		Flat Washer, 10	4
13		2-Section Long Support Arm Assembly [B]	1

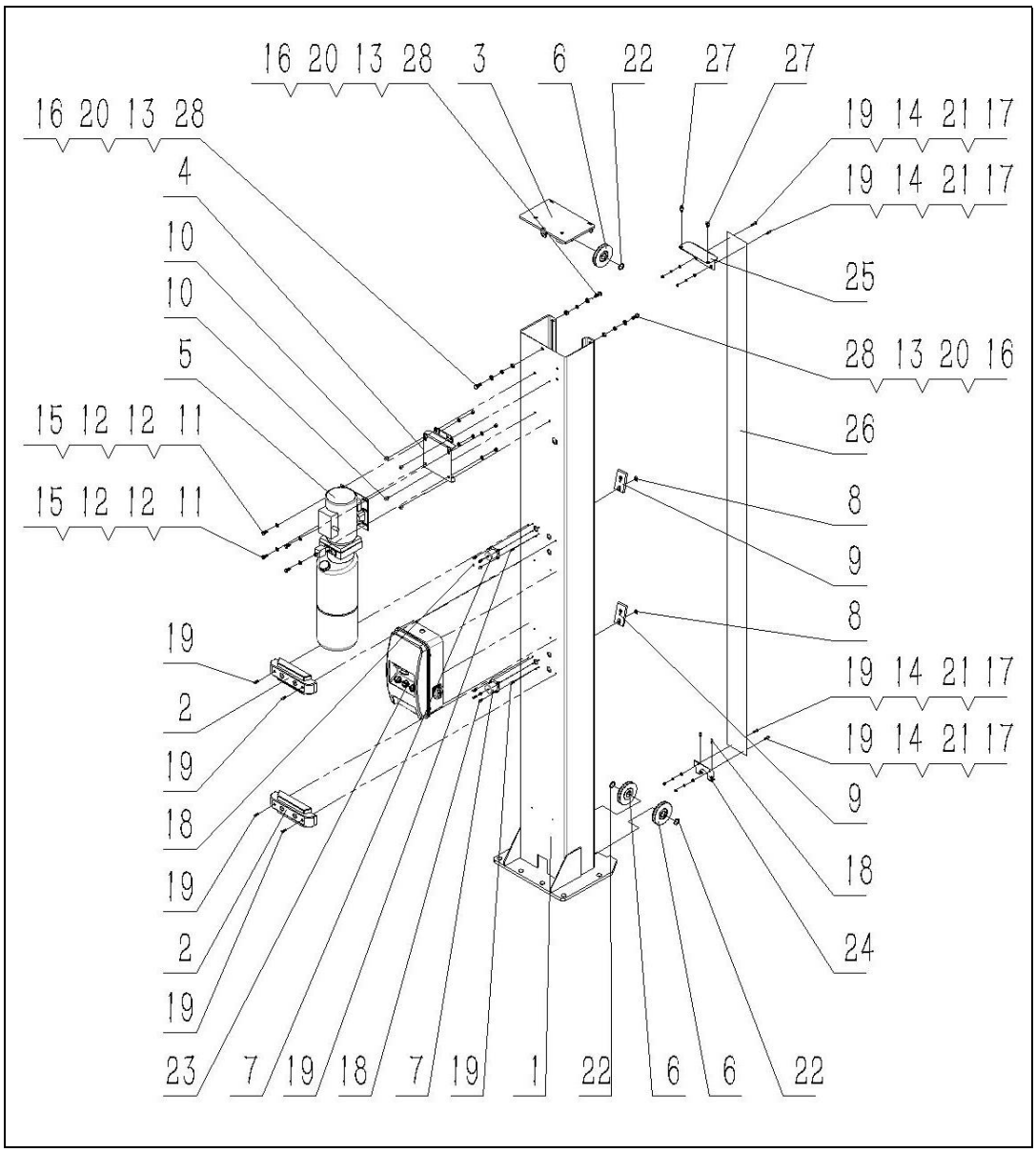
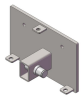
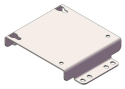
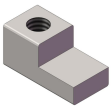
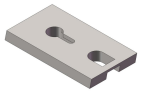
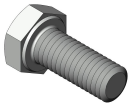
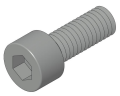


Figure 22 Exploded View of the Lift Main Column

Part List of the Lift Main Column			
No.	**Preview**	**Name**	**Qty**
1		Main Column Weldment	1
2		Electromagnet Cover	2

3		Column Top Cover Weldment	1
4		Power Unit Mounting Bracket	1
5		Power Unit	1
6		Rope Pulley	3
7		Cylindrical Electromagnet	2
8		Lock Plate Fixing Block	2
9		Locking Plate	2
10		Hexagon Head Flange Bolt M8×10	4
11		Hexagon Head Bolt, Full Thread M8 ×20	4
12		Flat Washer, 8	8
13		Flat Washer, 10	3
14		Flat Washer, 6	4
15		Hexagon Nut, M8	4
16		Hexagon Nut, M10	3

17		Hexagon Nut, M6	4
18		Hexagon Socket Head Cap Screw M6×10	10
19		Hexagon Socket Head Cap Screw M6×16	10
20		Spring Washer 10	3
21		Spring Washer 6	4
22		Shaft Elastic Retaining Ring, 25	3
23		Control Box	1
24		Base Dust Curtain Bracket of Column	1
25		Top Cover Dust Curtain Bracket of Column	1
26		Dust Curtain	1
27		Hexagon Socket Head Cap Screw M10×12	2
28		Hexagon Head Bolt, Full Thread M10×25	3

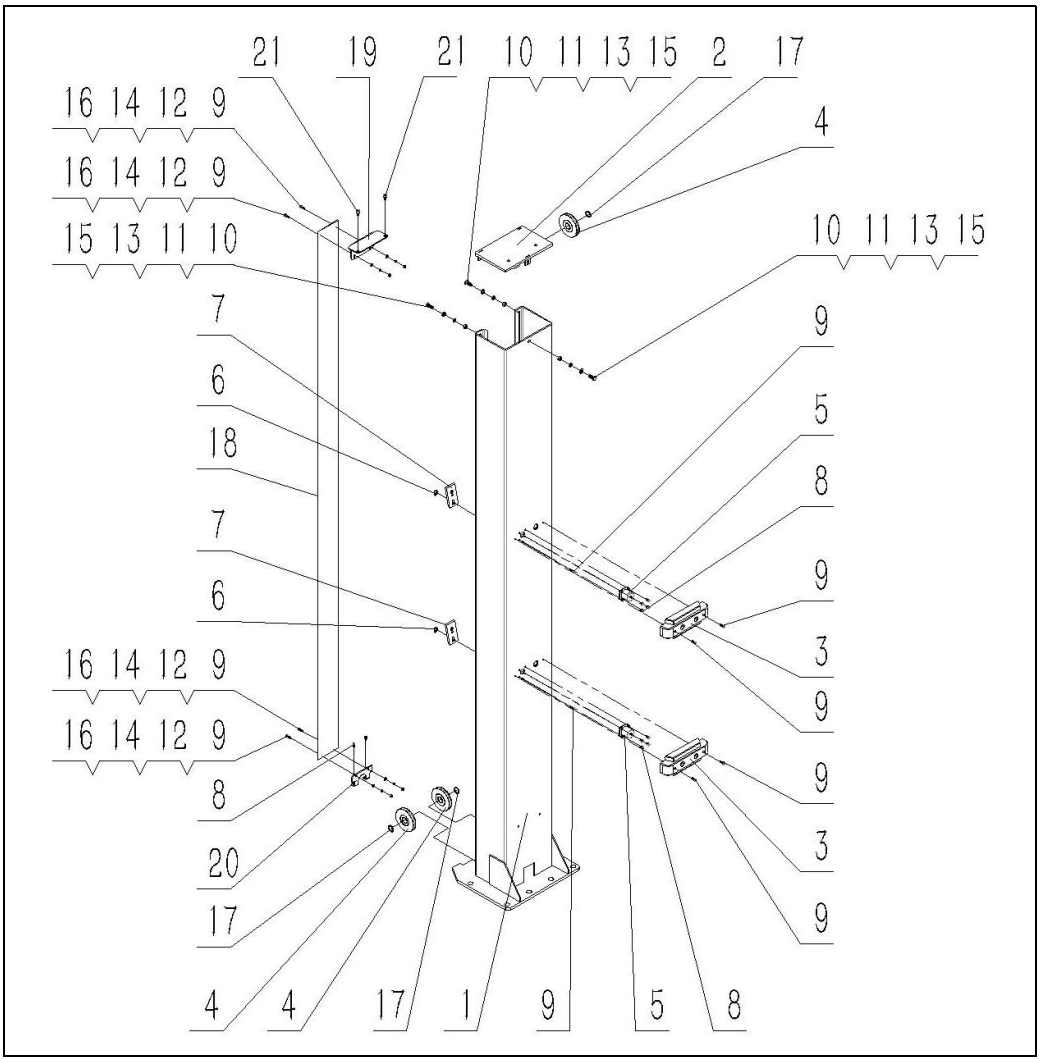
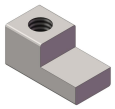
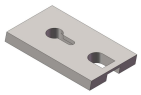
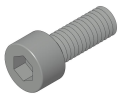
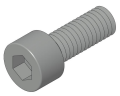


Figure 23 Exploded View of the Lift Auxiliary Column

Part List of the Lift Auxiliary Column			
No.	**Preview**	**Name**	**Qty**
1		Auxiliary Column Weldment	1
2		Column Top Cover Weldment	1
3		Electromagnet Cover	2
4		Rope Pulley	3

5		Cylindrical Electromagnet	2
6		Lock Plate Fixing Block	2
7		Locking Plate	2
8		Hexagon Socket Head Cap Screw M6 ×10	10
9		Hexagon Socket Head Cap Screw M6 ×16	10
10		Hexagon Head Bolt, Full Thread M10×25	3
11		Flat Washer, 10	3
12		Flat Washer, 6	4
13		Spring Washer 10	3
14		Spring Washer 6	4
15		Hexagon Nut, M10	3
16		Hexagon Nut, M6	4
17		Shaft Elastic Retaining Ring, 25	3
18		Dust Curtain	1

19		Top Cover Dust Curtain Bracket of Column	1
20		Base Dust Curtain Bracket of Column	1
21		Hexagon Socket Head Cap Screw M10×12	2

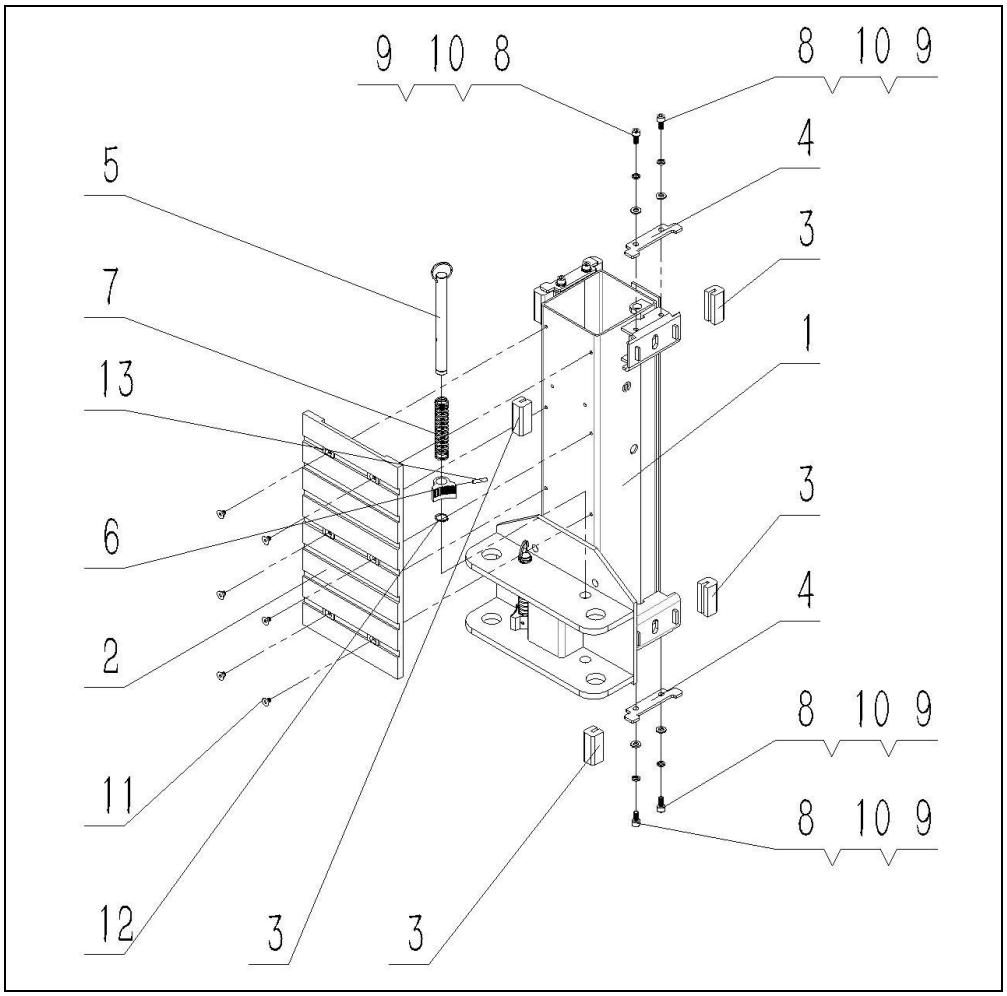
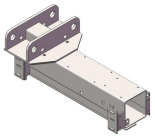
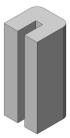
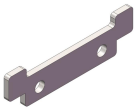
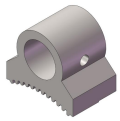
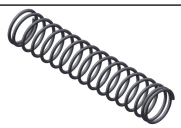
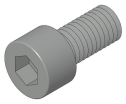
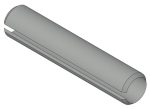


Figure 24 Exploded View of the Lift Carriage

Part List of the Lift Carriage			
No.	**Preview**	**Name**	**Qty**
1		Carriage Weldment	1
2		Carriage Anti-Collision Strip	1
3		Slider	8
4		Slider Frame Pressure Plate	4

5		Carriage Unlocking Shaft Assembly	2
6		Carriage Small Tooth Block	2
7		Carriage Unlocking Shaft Compression Spring	2
8		Hexagon Socket Head Cap Screw M10×20	8
9		Flat Washer 10	8
10		Spring Washer 10	8
11		Cross Recessed Countersunk Head Screw M8×12	6
12		Shaft Elastic Retaining Ring 22	2
13		Spring Dowel Pin 6×30	2

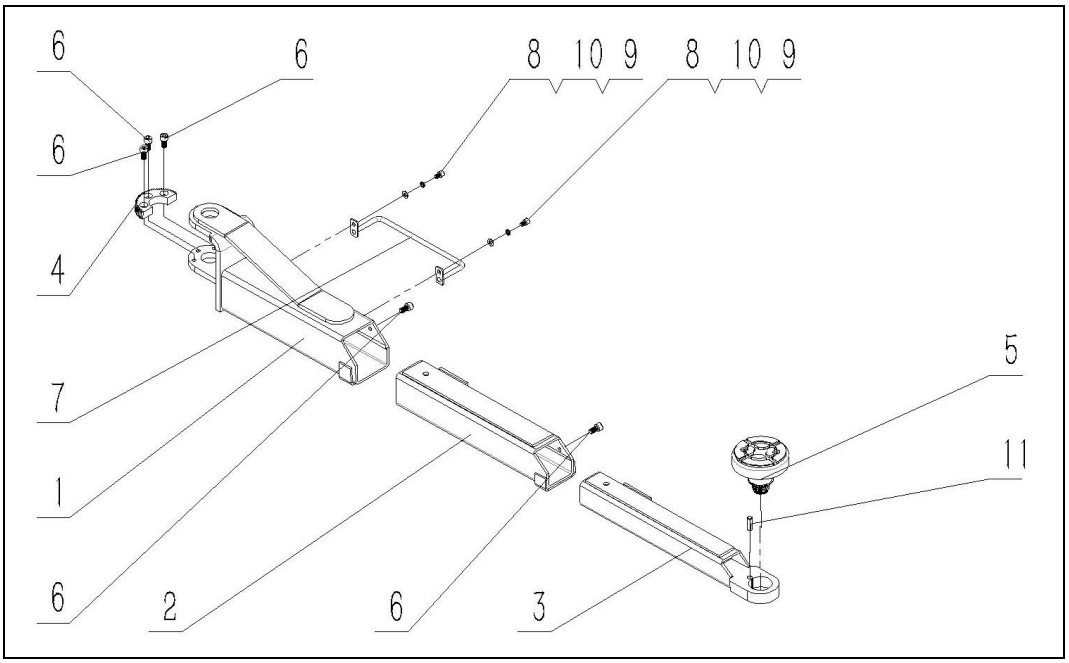
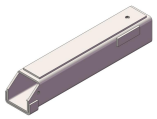
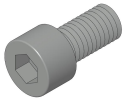


Figure 25 Exploded View of the Lift 3-Section Short Support Arm

Part List of the Lift 3-Section Short Support Arm			
No.	**Preview**	**Name**	**Qty**
1		Head Section Short Support Arm	1
2		Secondary Section Short Support Arm	1
3		Tertiary Section Short Support Arm	1
4		Support Arm Lock Gear	1
5		Pallet Component	1
6		Hexagon Socket Head Cap Screw M10 ×20	5
7		Welded handle	1

8		Hexagon Socket Head Cap Screw M8 ×12	2
9		Flat Washer 8	2
10		Spring Washer 8	2
11		Spring Dowel Pin	1

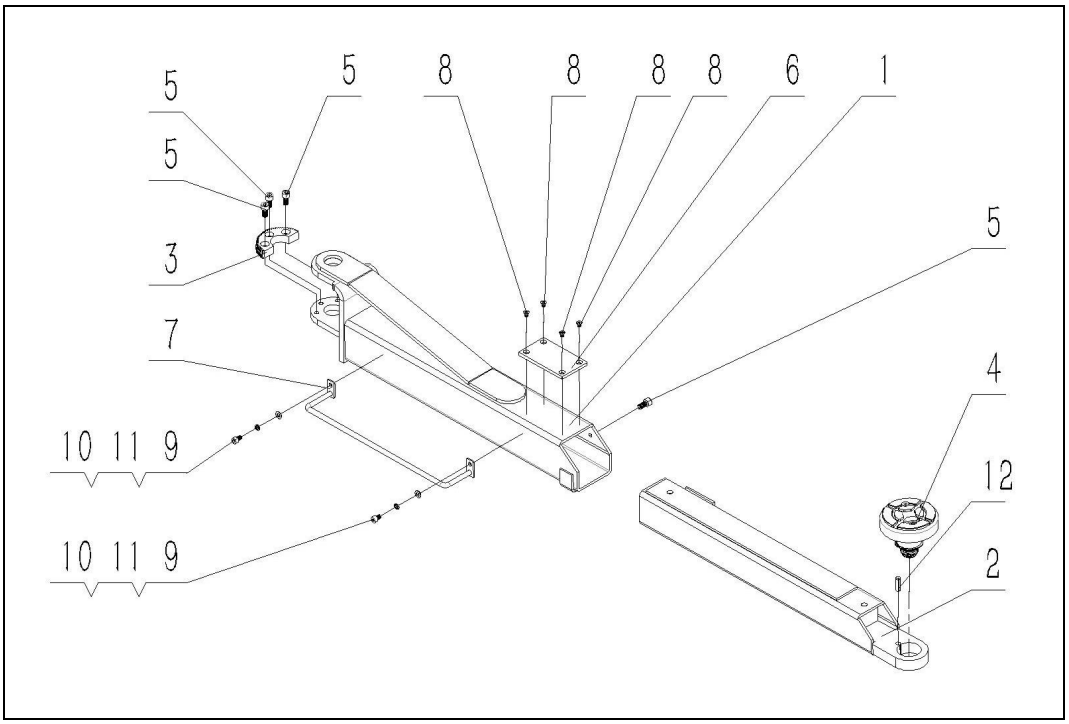
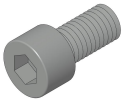
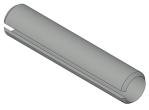


Figure 26 Exploded View of the Lift 2-Section Long Support Arm

Part List of the Lift 2-Section Long Support Arm			
No.	**Preview**	**Name**	**Qty**
1		Head Section Long Support Arm	1
2		Secondary Section Long Support Arm	1
3		Support Arm Lock Gear	1
4		Pallet Component	1
5		Hexagon Socket Head Cap Screw M10×20	4
6		Arm Bracket Rubber Pad	1

7		Welded handle	1
8		Cross Recessed Countersunk Head Screw, M6×10	4
9		Hexagon Socket Head Cap Screw M8×12	2
10		Flat Washer 8	2
11		Spring Washer 8	2
12		Spring Dowel Pin	1

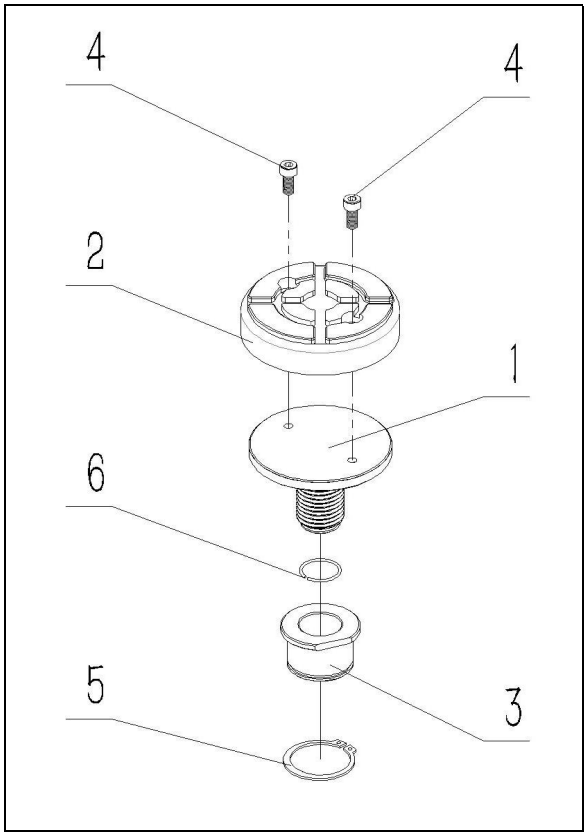
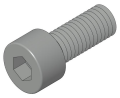


Figure 27 Exploded View of the Lift Pallet Component

Part List of the Lift Pallet Component			
No.	**Preview**	**Name**	**Qty**
1		Pallet Weldment Assembly	1
2		Pallet Rubber Pad	1
3		Pallet Upper Section Nut	1
4		Hexagon Socket Head Cap Screw M8×20	2
5		Shaft Elastic Retaining Ring 50	1
6		Shaft Wire Lock Ring 30	1

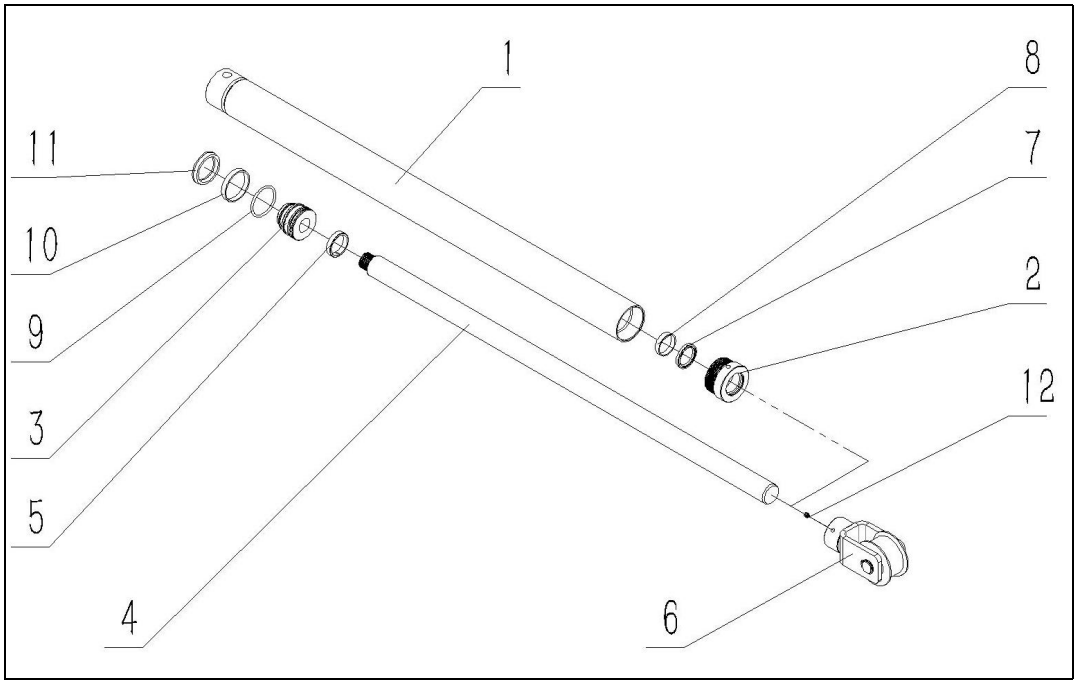


Figure 28 Exploded View of the Lift Hydraulic Cylinder

Part List of the Lift Hydraulic Cylinder			
No.	**Preview**	**Name**	**Qty**
1		Hydraulic Cylinder Barrel	1
2		Guide Sleeve	1
3		Piston	1
4		Piston Rod	1
5		Hydraulic Cylinder Spacer	1
6		Sprocket Frame Assembly	1
7		Dust Ring DH48-40-5-6	1

8		Guide Ring 44-40-9.5	1
9		O-Ring D63×4	1
10		Guide Ring 63-58-9.5	1
11		Sealing Ring UN63-48-10	1
12		Hexagon Socket Cone Point Set Screw M8×10	1

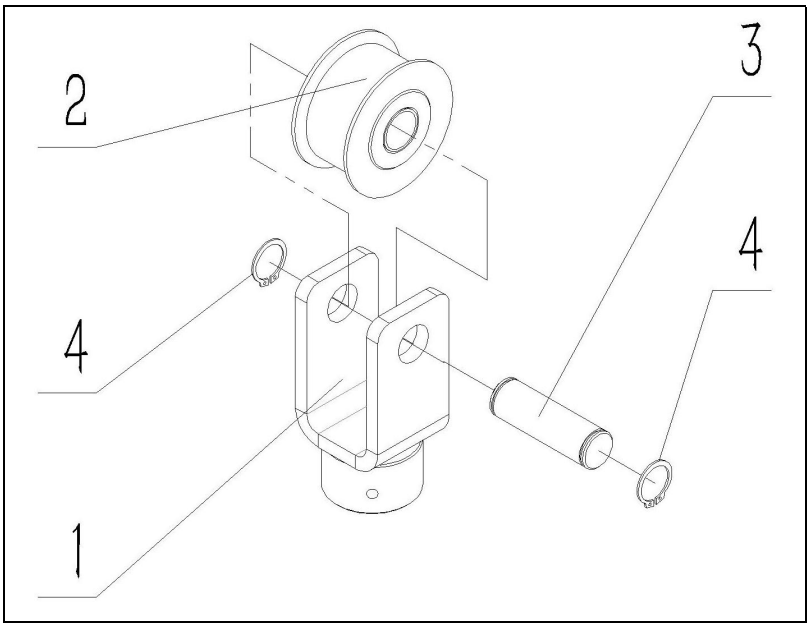


Figure 29 Exploded View of the Lift Sprocket Frame

Part List of the Lift Sprocket Frame			
No.	**Preview**	**Name**	**Qty**
1		Sprocket Frame Weldment	1
2		Chain Wheel	1
3		Chain Wheel Bracket Shaft	1
4		Shaft Elastic Retaining Ring 25	2

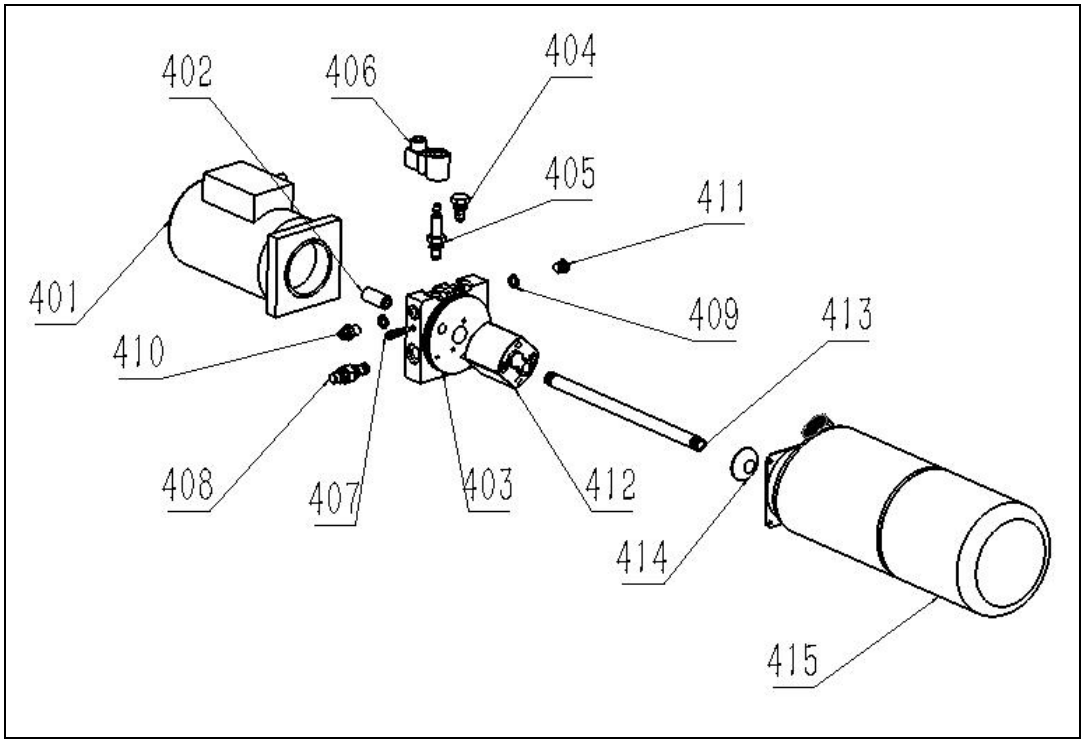
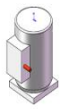
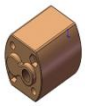


Figure 30 Exploded View of the Lift Power Unit

Part List of the Lift Power Unit			
No.	**Preview**	**Name**	**Qty**
401		Motor	1
402		Connecting Shaft	1
403		Valve Plate [Column Type]	1
404		Check Valve	1
405		Electromagnetic Unloading Valve	1

406		Electromagnetic Unloading Valve Coil	1
407		Throttle Valve	1
408		Relief Valve	1
409		Φ14 Combination Gasket	1
410		M16×1.5 to M14×1.5 Pressure Combination Gasket [Direct Head]	1
411		M14×1.5 Pipe Plug	1
412		Gear Pump	1
413		Oil Suction Pipe	1
414		Filter Screen	1
415		Oil Tank	1

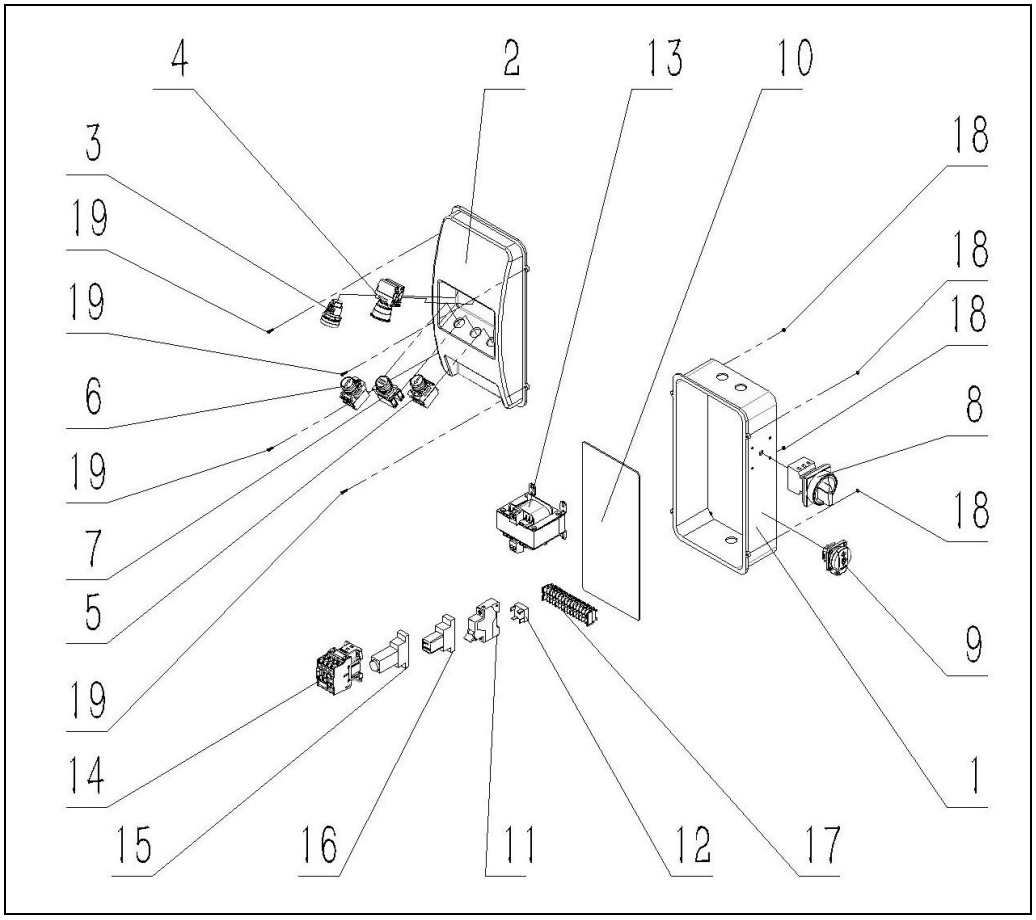
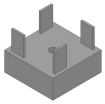
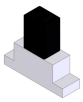


Figure 31 Exploded View of the Lift Control Box

Part List of the Lift Control Box			
No.	**Preview**	**Name**	**Qty**
1		Control Box Base	1
2		Control Box Upper Cover	1
3		Power Light	1
4		Emergency Stop Button	1
5		Down Button	1

6		Lift Button	1
7		Locking Tooth Button	1
8		Power Switch	1
9		Industrial Socket	1
10		Control Box Back Plate	1
11		Circuit Breaker	1
12		Rectifier Bridge	1
13		Control Transformer	1
14		AC Contactor	1
15		Time Relay	1
16		Intermediate relay	1
17		Terminal Block	1
18		Hexagon Nut, M3	4
19		Phillips Pan Head Screw M3×12	4

12. Faults and Troubleshooting Methods

Fault	Causes	Remedies
Motor fails to rotate during lifting	1. Broken circuit in the button switch wiring 2. Open circuit in the AC contact or coil	1. Inspect the button switch wiring 2. Inspect the AC contact or wiring
Motor hums but fails to rotate	Phase loss of three-phase power supply	Stop operation immediately and inspect the motor main circuit for broken wires (phase loss)
Motor rotates but the carriages do not rise	1. Incorrect motor rotation direction 2. Insufficient hydraulic oil 3. Air blockage caused by air in the pump due to transportation, etc. 4. Relief valve malfunction 5. Spool of manual unloading valve or electromagnetic unloading valve stuck by dirt 6. Damaged sealing at the oil pump outlet 7. Severe blockage of the outer filter screen leading to heavy and jittery motor operation	1. Change the motor phase 2. Replenish hydraulic oil 3. Remove the check valve and jog the lift button (beware of oil spray); reinstall and tighten the check valve when oil flows out of the hole 4. Inspect the sealing of the relief valve spool and seals; clean the valve or replace damaged sealing rings 5. Inspect the unloading valve and clean the spool 6. Remove the gear pump and inspect/replace the sealing ring 7. Clean the oil filter
Slow lifting	A damaged pump-outlet seal causes oil leakage.	Remove the gear pump and inspect/replace the sealing ring
Vibration during operation	1. Air in the hydraulic circuit 2. Air leakage at the upper joint of the oil pump suction pipe 3. Oil filter blockage	1. Perform repeated up and down operations for air release 2. Inspect the sealing condition of the oil pump suction pipe connection 3. Clean the oil filter