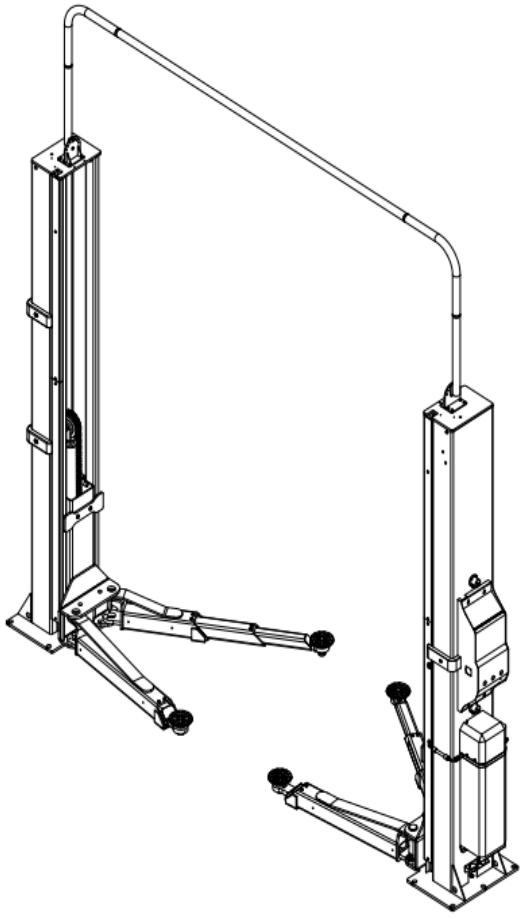
The operator must read the instruction carefully
Improper operation can cause injury to personnel

USER'S MANUAL

BASELESS DOUBLE COLUMN LIFTER

MODEL: **WK2240S**



Baseless double column lifter

Operation and Precautions

(Non-professionals without training approval are not allowed to operate the lifting machine)

Warnings

No double-column operation instructions

1. Please read the user manual carefully before operating the lifting machine.
2. Regularly inspect and repair the lifting machine according to the instructions.
3. Do not use the lifting machine when it is damaged or under maintenance.
4. It is strictly forbidden to use the lifting machine in case of malfunction.
5. Unapproved non-professionals are not allowed to approach or operate the lifting machine.
6. The lifting machine should not lift any objects other than vehicles.
7. Prevent hands, feet, and clothing from being pressed or hooked by the lifting machine.
8. Ensure that all safety locks are in good condition, and it is prohibited to modify or damage their safety devices.
9. If there is a risk of falling of the lifting vehicle, on-site personnel must evacuate quickly.
10. It is prohibited to operate the lifting machine when there are people inside the lifting vehicle. Unrelated personnel should not be in the lifting work area during operation.
11. If the expansion screws are loose or there are cracks in the surrounding concrete, the lifting machine should be stopped immediately and reinstalled according to regulations.
12. Overloading the lifting machine is prohibited. The weight of the lift vehicle must not exceed the limit of the lifter weight capacity.
13. When lifting, the rocker arm must be placed in a suitable position below the vehicle to maintain the same weight supported by each rocker arm.
14. Each rocker arm should share the total weight of the vehicle as evenly as possible.
15. Avoid moisture on the motor of the hydraulic station. The hydraulic oil used in this machine is N46 or N68.
16. When you leave the lifting machine or are working on a vehicle on the lifting machine, you must place the lifting machine in the position of the mechanical safety lock.
17. When the vehicle is on the ground or locked at a certain height, and the vehicle is not stationary (without stalling), do not attempt to lift the vehicle again.

Check and repair (inspect once a month)

1.Regularly check the condition of the rocker arm. If it is deformed or sagging, it must be replaced.
2.Whether the oil cylinder chain and sprocket are well lubricated.
3.Check the connections of all bolts, nuts, and screws to ensure they are tightened.
4.Make sure all safety locks are in a safe position during operation.
5.Lubricate the slider with a small amount of lubricant every month.
6.Check the strength and connection of the expansion screw.
7.Check whether the electrical switch of the lift is working properly.
8.Check that the tray extension sleeve is firmly installed.

Lifting process

1.Read and understand the operating instructions before using the lift.
2.Support the pad in the raised position recommended by the vehicle manufacturer.
3.The vehicle should be parked in an appropriate position between the two pillars, so that the center of gravity of the vehicle should be kept as close as possible to the center of the two pillars to ensure that all the cushions are supported smoothly.
4.Be very careful when using the tray extension sleeve. The extension sleeve added to each rocker arm of the lifting machine should not exceed 220mm and should be consistent.
5.When the pad on the lifter rocker arm is placed, raise the lifter so that the pad is in contact with the corresponding position under the vehicle.
6.Lift the vehicle to any of the compartments in the safety lock and check its stability.
7.Ensure the stability of the lift when working on the vehicle.

Descending process

Check the underside of the lift to ensure that there are no debris under the lift when it descends. When the vehicle descends to the ground, remove the rocker arm from under the vehicle to ensure that there are no obstacles when the vehicle is driven away.

TABLE OF CONTENTS

1. General information

This chapter contains warning instructions for proper operation of the lift and to prevent injury to the operator or items.

The user manual is written for the use of the lifting machine by technicians and professional maintenance personnel.

The instruction manual is part of the complete machine and must be kept throughout the life of the machine.

Read each section of the instruction manual carefully before operating the lift, as you will get the following information:

- the safety of personnel;

- safety of the lift;

- The safety of the car being lifted.

It is not possible for the manufacturer to indicate all possible problems, damages, accidents, etc. in the instruction manual.

Only the manufacturer's authorized dealer or service center professionals are allowed to lift, transport, install, adjust, set up, maintain, repair and remove the lift.

	**The manufacturer will not be responsible for any possible damage to personnel, vehicles, and articles due to non-professional operation of the lift or improper use.**
	**Any person who is not familiar with the operating procedures and instructions is prohibited from operating the machine.**

1.1 Storage of the instruction manual

To better use the instructions, please follow the following recommendations:

- Place it near the machine and easily accessible;

- Keep in a moisture-proof place;

- Use correctly without damage.

The instruction manual is part of the complete machine, and if the lift is resold, the instruction manual should be given to the new user.

1.2 Failure Liability

	**Follow the explicit instructions contained in the following sections in the event of a failure.**

1.3 Operation safety warning

When operating the machine, the operator must not be under the influence of sedatives, drugs, or alcohol.

	**Before operating the machine, the operator must be familiar with the position and function of all controls and the machine characteristics described in the section "Debugment and operation of the equipment."**

1.4 Warnings

	**The manufacturer will not be responsible for any damage to the goods and personnel caused by unauthorized changes to the machine. Do not move or disable the safety device, otherwise it will violate the safety operating procedures.**
	**The use of impure parts may cause damage to people or items.**
	**Any use different from the machine manufacturer's regulations must be strictly prohibited.**

A statement of warranty and limitation of liability

Manufacturers have spent a lot of effort in writing instructions, trying to ensure that the information in the instructions is correct, up-to-date, and complete, but it is not easy to write without any mistakes. At any time, the manufacturer reserves the right to make appropriate changes to the instruction manual due to technical improvement of the product.

2. Product identification

Confirm the identification data of the machine according to the label, which is consistent with the instruction manual.

Model:

No.:

Year of production:

Lifting capacity:

Voltage:

Power:

Maximum pressure:

	Based on the above data, you can order components or inquire with the manufacturer. It is strictly forbidden to move the sign.

2.1 Product warranty card

The product warranty card is valid for 12 months from the date of purchase of the invoice.

If the machine or parts are modified without permission, the warranty certificate will be invalidated.

If there is a problem with the product quality, it must be verified by the person in charge of the manufacturer.

2.2 Technical Services

For repair and maintenance operation instructions not mentioned in the manual, you can contact the dealer or after-sales service department of the machine you purchased.

3. Packing, transportation and storage

Only specialized personnel who are familiar with the lift and its instructions are allowed to pack, lift, transport and unpack.

3.1 Packing

The lift is divided into several parts for packaging and delivery:

· 2 lift racks with hydraulic cylinders, safety locks

1 power unit with hydraulic pump station (Hydraulic oil pipe, anchor bolts, and user manual are placed inside)

3.2 Lifting and transportation

When the equipment is transferred or transported to the site, ensure that the appropriate lifting method (gantry cranes, forklifts, etc.) is used. The package size, weight, center of gravity, and fragile parts shall be taken into account to ensure safe lifting and transportation and avoid falling.

	**Only one machine can be lifted at a time.**

3.3 Storage and stacking of machines

The packaged machine must be stored in a covered place, away from direct sunlight and moisture, and the temperature should be between -25 °C and 55 °C.

The weight and size of the packaging machine should be considered, and it should not be placed on a too narrow base to avoid danger.

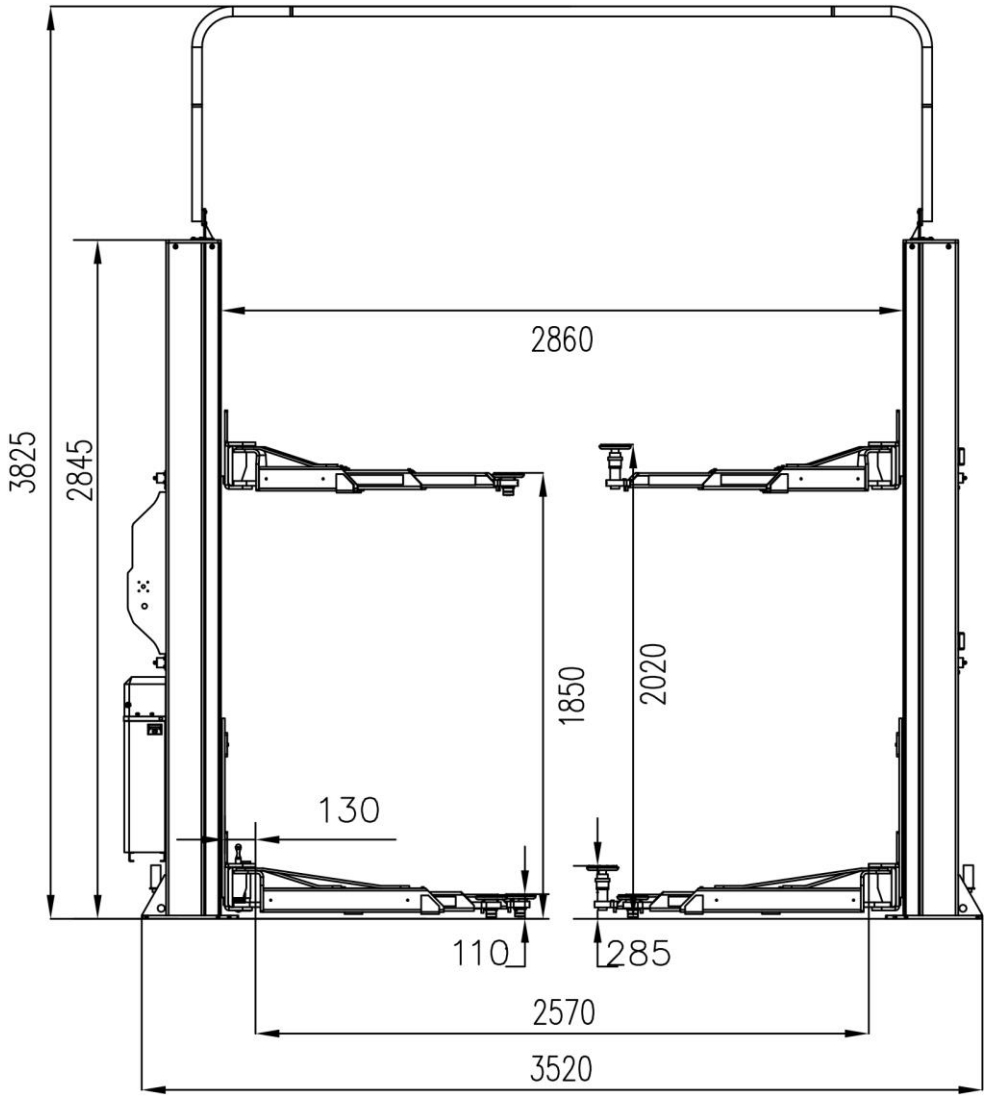
3.4 Delivery and acceptance

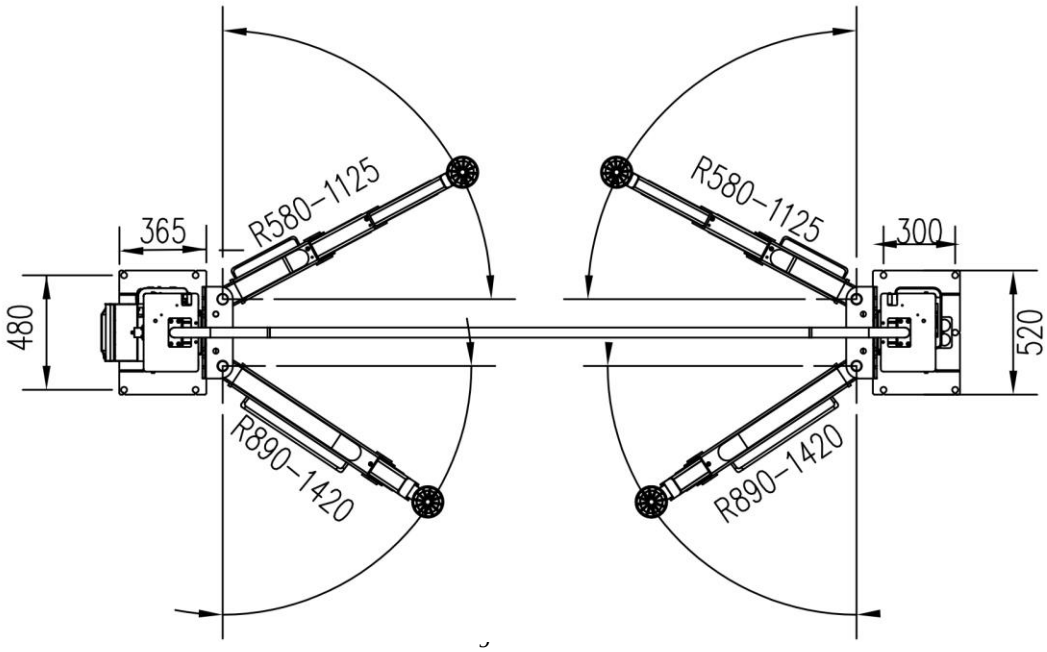
Since the machine may be damaged during transportation and storage, the acceptance inspection shall be carried out according to the configuration and factory condition specified by the manufacturer at the time of ordering; If there is damage during transit, the user must immediately notify the transporter causing the problem.

Be careful when unpacking, and personnel should maintain a safe distance to avoid injury. Also, prevent the parts of the lifting machine from falling and damaging.

4.Structure principle and parameters of the equipment

4.1 Base size



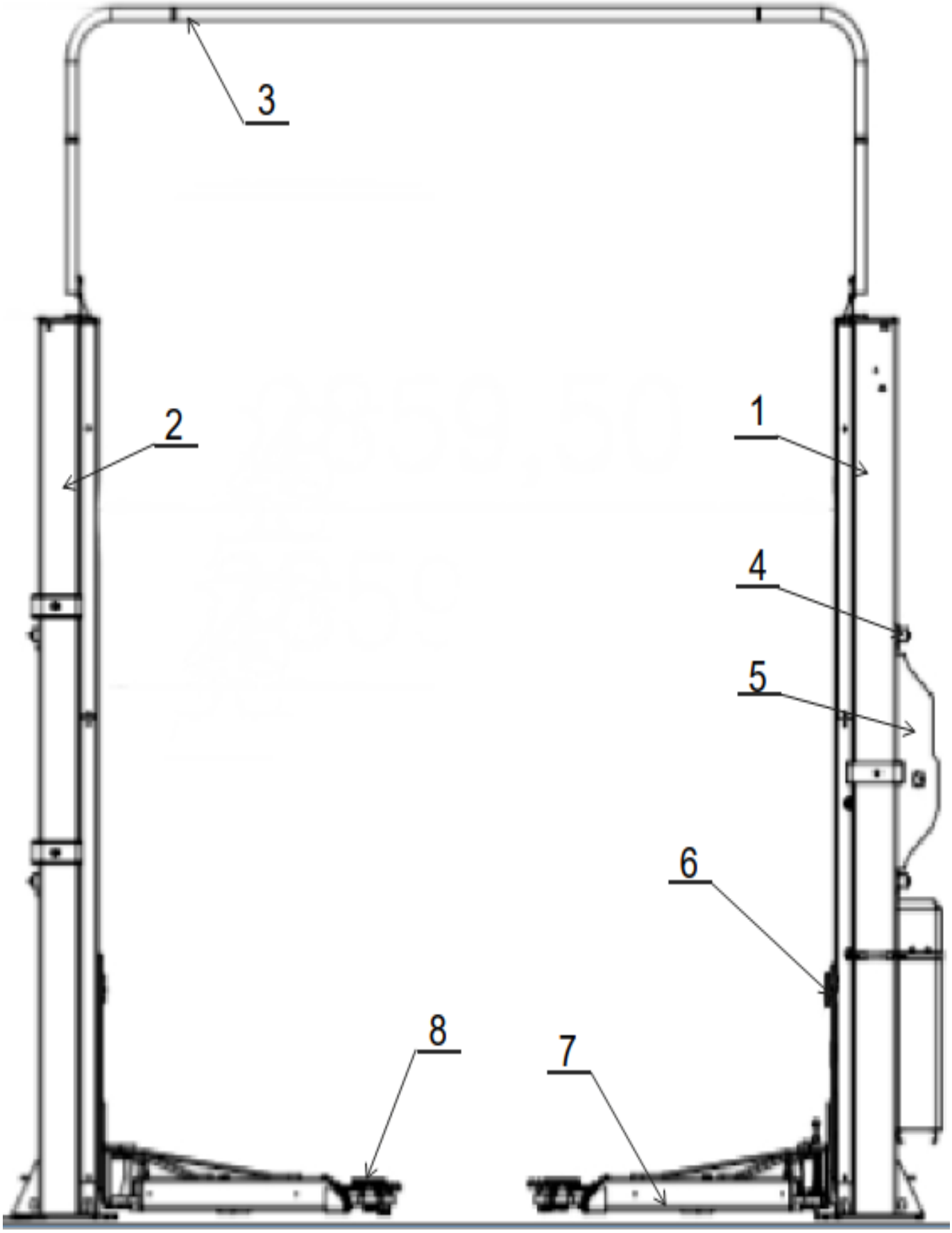


4.2 Basic parameters of the equipment

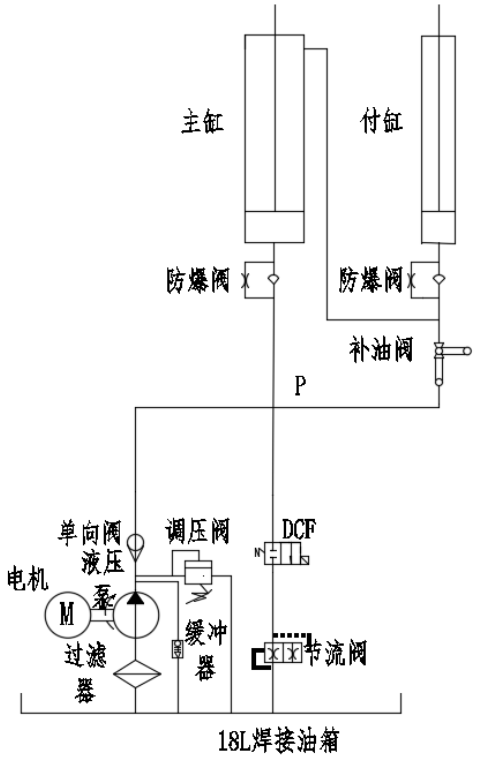
Machine model	**QYF-9SE**
Control mode	electro-hydraulic system
rated lifting weight	4000kg
Lifting time	≤60s
total height	3825mm
total width	3520mm
Through the width	2560mm
Sliding table travel	1850mm
Weight of the whole machine	620kg
Power supply	AC 380 or 220V ± 5% 50Hz
Power of the whole machine	2.2kw
hydraulic oil	46# or 68# wear-resistant hydraulic oil (purchased by
hydraulic pressure	20MPa/cm2
Working environment temperature	5-40℃
Humidity of working environment	30-95%
machine noise	< 70db
Machine installation height	≤1000M
machine storage temperature	-25℃~55℃

4.3 Main structure

No	name	quantity
1	Main column	1
2	secondary column	1
3	Upward cable tube	1
4	electromagnet	4
5	electric control box	1
6	Sliding platform	2
7	support arm	4
8	Three-section adjustment screw	4


3
2
1
4
5
6
8
7

a. hydraulic principle drawing



b. List of hydraulic components

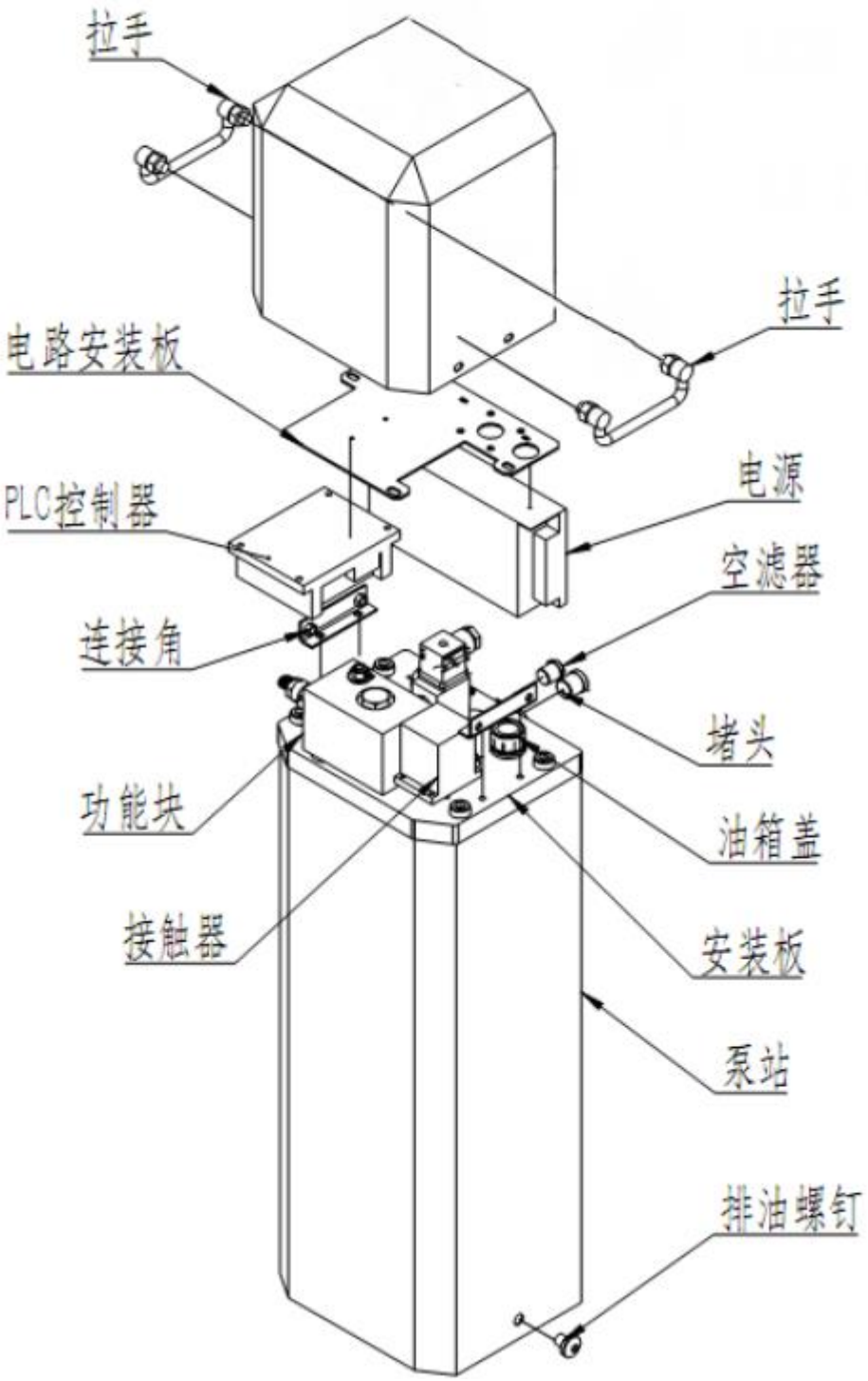
No	name
1	Main cylinder
2	Auxiliary cylinder
3	Electromagnetic unloading valve
4	Throttling valve
5	Motors
6	Coupling
7	gear pump
8	One-way valve
9	overflow valve
10	explosion-proof throttling valve
11	buffer valve
12	Emergency unloading valve

c. hydraulic and electrical principle drawing

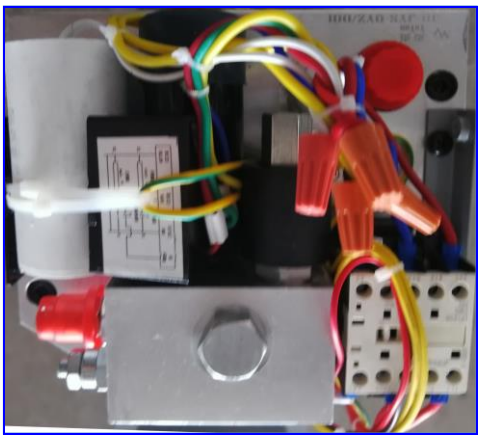
a When the up button is pressed, the pump station motor contactor JQ is powered on, and the lifter rises

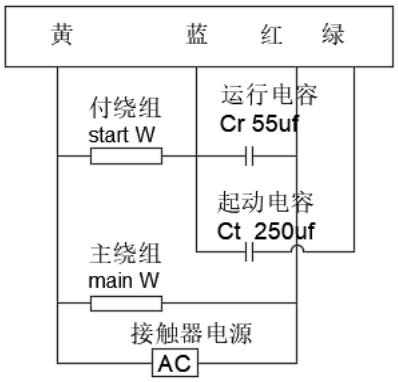
b When the drop lock button is pressed, the pump station unloading solenoid valve DCF is powered on, and the lifting machine is locked down

C When the down button is pressed and held,The PLC controller X01 is powered on,COM1 normally open contact closes for 1.3 seconds and then opens. (JQ is powered on, and the lifter rises for 1.3 seconds first),The COM1 normally closed contact is closed,PLC controllers X02, 03, 04 are powered on,The COM2 normally open contact is closed and held,The normally open contacts of COM3 and COM4 are closed for 2 seconds and then open. At this time, only the normally open contact of COM2 is closed.DC1 and DC2 are connected in series, DCF is powered through the diode, and the lifting machine descends until the lowering button is released to stop descending.

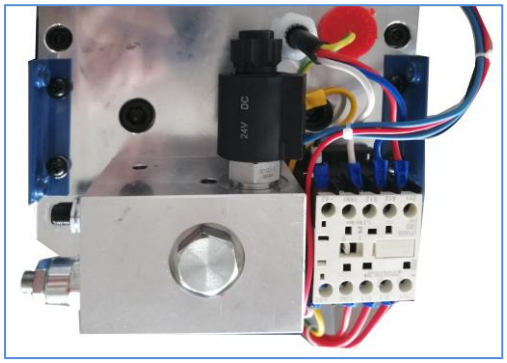

拉手
拉手
电路安装板
电源
PLC控制器
空滤器
连接角
堵头
功能块
油箱盖
接触器
安装板
泵站
排油螺钉

Single phase oil-immersed motor

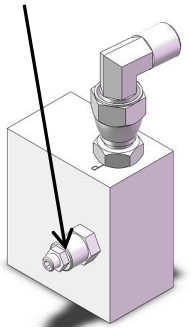


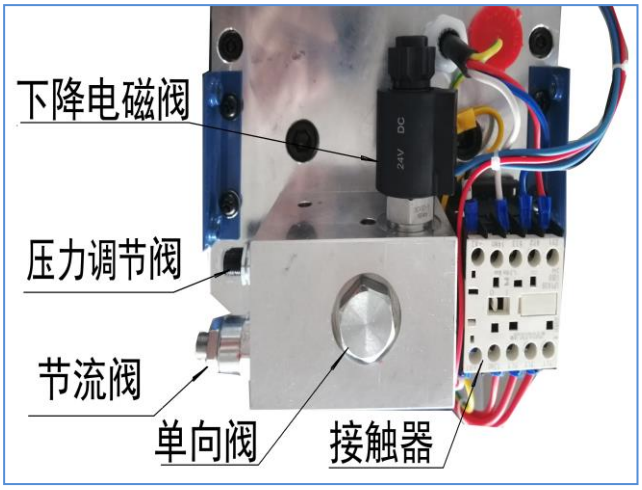


Three-phase oil-immersed motor



Manual oil filling valve





Lowering solenoid valve: Controls lowering when the safety tooth is disconnected.

Throttling valve: Adjust the movement speed of the frame.

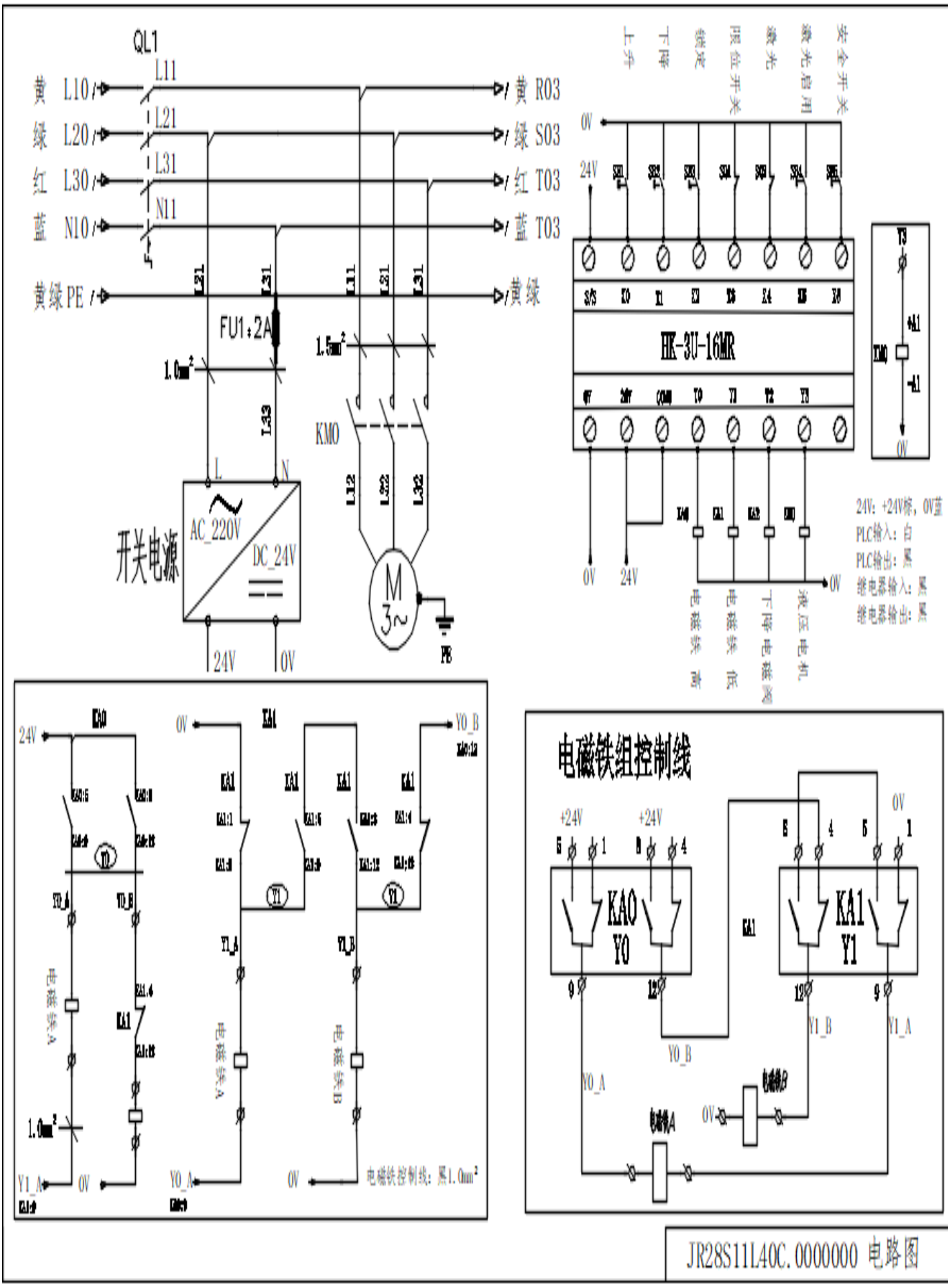
Pressure regulating valve (overflow valve): Adjust the weight of the lift.

Check valve: Controls the direction of oil flow.

Contactor: Open and close the motor.

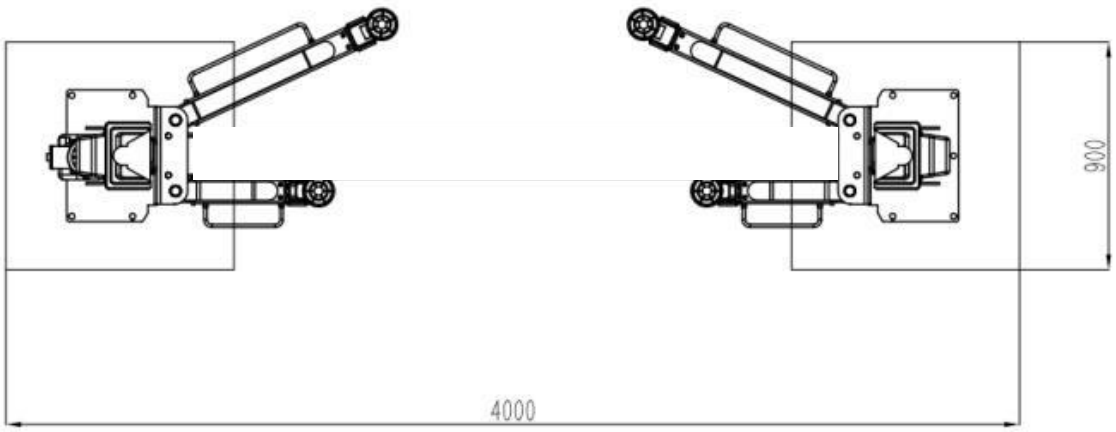
Manual pressure regulating valve: The regulating valve core is manually replenished with oil.

d. electrical principle



5. Equipment installation and accessories details

5.1 Foundation diagram



5.2 Installation of cable ducts

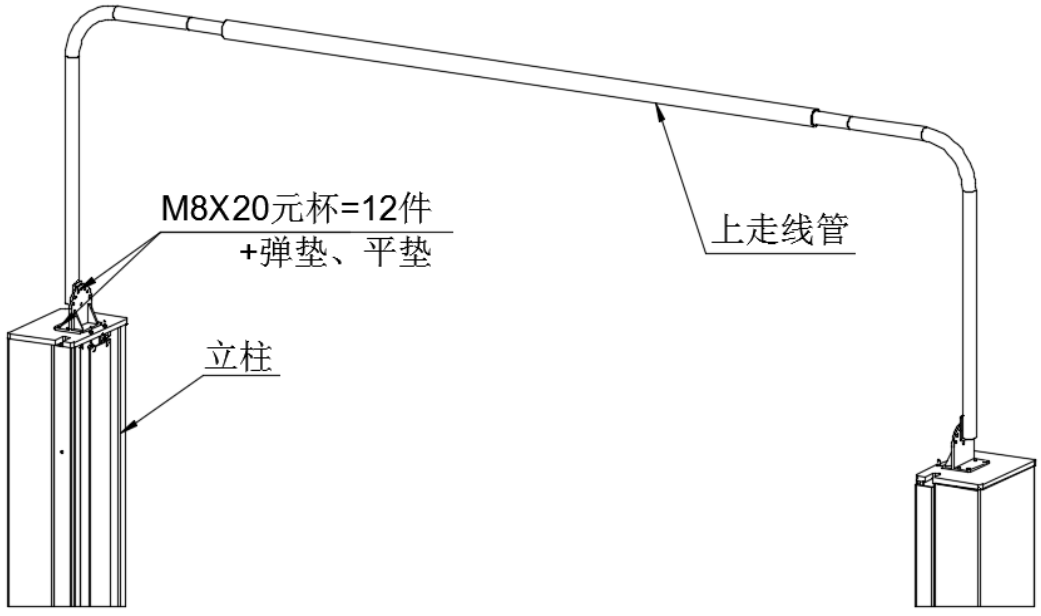
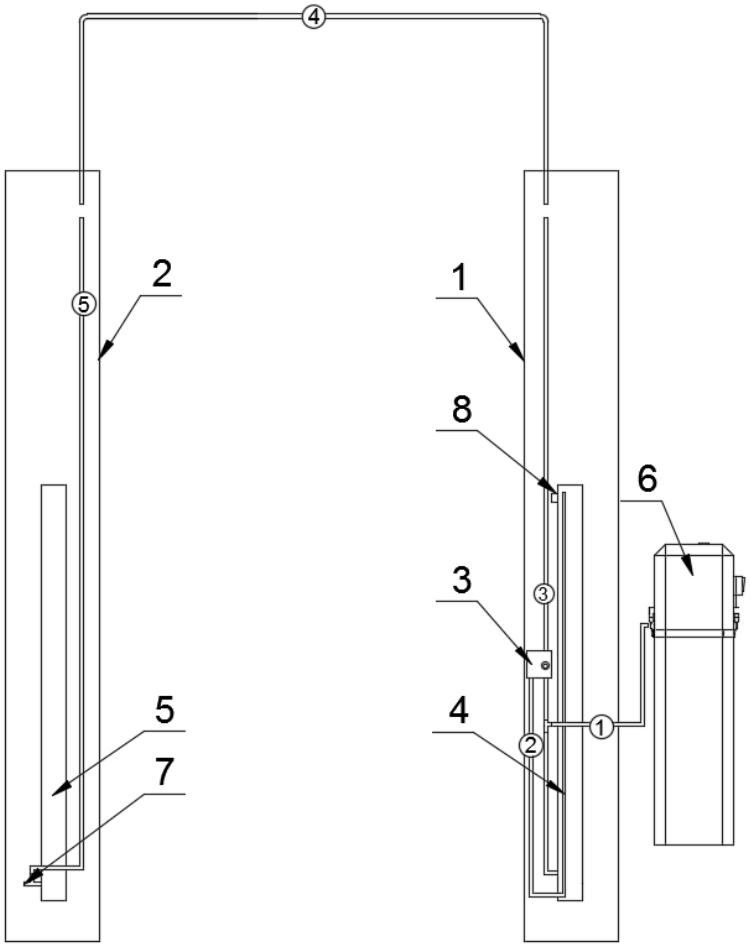


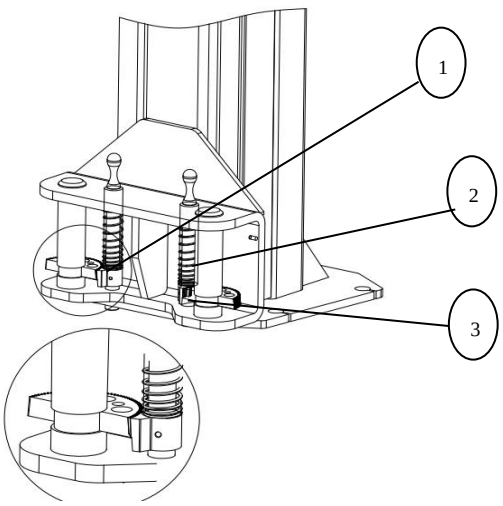
Figure 12

5.3 Hydraulic oil pipe installation: 5 main oil pipes ①-⑤, 7 and 8 are air screws of the auxiliary main oil cylinder respectively



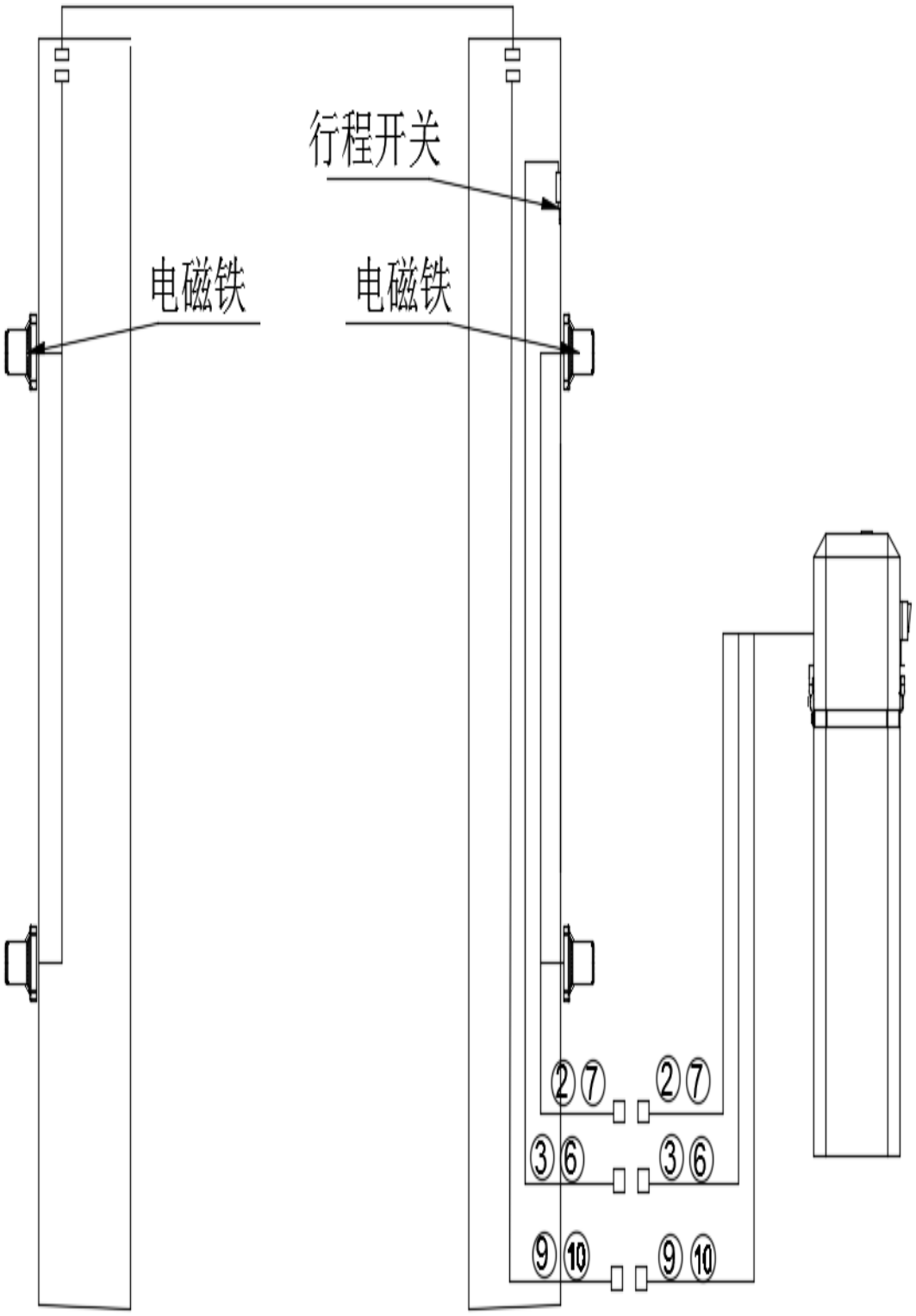
No	name	quantity
1	Main column	1
2	secondary column	1
3	manual oil filling valve	1
4	Main cylinder	1
5	Auxiliary cylinder	1
6	electric control box	1
7	Auxiliary cylinder air screw	1
8	Main cylinder air screw	1

5.4 The safety tooth diagram



No	name
1	safety tooth large gear
2	tension spring
3	safety tooth pinion

5.5 Electrical connections



5.6 Main Structure (Serial No. 4.3)

Lifting mechanism: The hydraulic cylinder is installed inside the two columns. When the hydraulic oil enters the lower chamber of the piston rod, the cylinder barrel moves upward and directly acts on the slide table through the cylinder barrel, causing it to rise. (No. 5.3)

Support mechanism: When the car enters the working area, the support pad is moved to the position of the effective support point of the car through the angle and extension adjustment of the four rocker arms. The height of the support pad can also be adjusted according to the height of the car chassis. It is equipped with an adjustable sleeve for selection.

Security lock mechanism: Both slides are equipped with safety locks (4 electromagnets), which automatically lock a certain position after the car is raised. When starting the operation, ensure that the position is reliable and will not fall. Because two sets are installed, it plays a double insurance role.

5.7 Equipment installation

- Pour the foundation as shown in the foundation drawing (No. 5.1). After the concrete is completely solidified, install and assemble the equipment. Use the M18 x 160 expansion bolts to fasten the cable. The two fastened columns are perpendicular to the ground plane. Ensure the safety of the equipment during operation.
- Assembly key points: (No. 5.1-5.5)
- The positions of the two main columns are erected (number 4.1). Fasten the upper cable pipe with bolts. (No. 5.2)
- Install the two oil cylinders into the slide table, and install the oil pipe and joint. (No. 5.3)
- Apply grease to the guide rails in the inner cavity of the two columns
- The power connection method will be determined according to the motor nameplate requirements. It is required that a main power switch be installed next to the lift to cut off the power supply during maintenance and emergency.
- Heavy-duty test run: Check whether the hydraulic system is working properly.

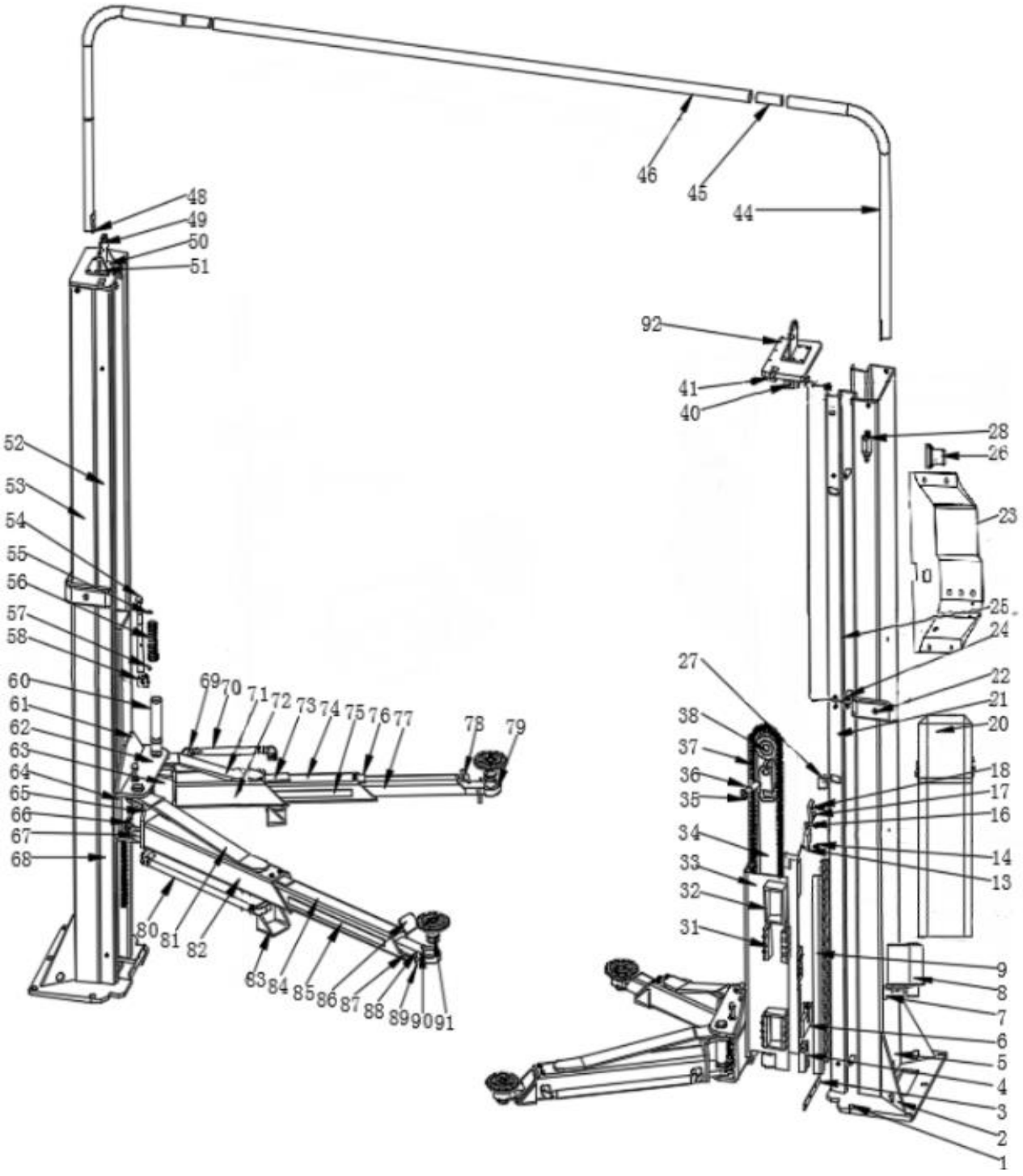
⚠ Special attention: If the foundation does not meet the required strength, do not install it!

Travel switch (limit) installation diagram

Line connection assembly, connected with the same number

The position and direction of the rocker

5.8 Exploded drawing



No	Code	Name	Quantity	Material
1	JR28S40A.01000000	Double-column base plate combination without base plate (8 channels)	2	Q235B T=14
2	JR321A.01000002	triangle plate	4	Q235B T=6
3	JR32S40A.00000014	pad plate	2	Q235B T=4
4	JR210A.01010002	chain bottom connecting block	2	Q235B T=22

5	JR28S40A.01000001	Main column without base plate (8 channels)	2	Q235B T=5
6	JR28S40A.03010002	Top connecting block of chain (8 channels)	2	Q235B T=18
7	JR310A.00000003	Gantry heightening column base (14 channels)	2	Q235B T=3
8		heightening column	4	Outsourced
9	JR261A.03010002	Cutter plate (6 channels)	2	Q235B T=8
13	JR261A.01000006	safety tooth welding block	2	Q235B T=14
14	GBT70.2-2008	Hexagonal flat round head screw M8x20 (blackened 10.9 grade)	2	Outsourced
16	JR261A.09000001	Safety block (6 channels)	2	Q235B T=10
17	JR261A.09000002	Fuse block pin (six)	2	Cold-drawn round steel Φ6
18	JR261A.000000002	Safety tooth fixing block (6 channels)	2	Square iron 14x14
20		WH-20220630-2 Two-column oil-immersed side oil outlet 20220706		Outsourced
21	JR28S40A.00000002	No bottom plate, double column main oil tank plate (8 channels)	2	Q235B T=1.5
22	JR32S40A.00000013	Double-column iron wire trough cover without base plate (8 channels)	1	Outsourced
23	KZ814A.00000000	Electric control box (column type + PLC + flip cover)	1	Outsourced
24	JR210A.01000008	Oil tank fixed shaft	8	Cold-drawn round steel Φ18
25	JR28S40A.00000003	No bottom plate, double column main oil tank plate top (8 channels)	1	Q235B T=1.5
26		MQZ2-10 electromagnet	4	Outsourced
27	JR32S40A.00000012	Rotating head (8 channels)	1	Cold-drawn round steel Φ22
28		TE-8104 vertical limit switch	1	Outsourced
31	JR28S40A.00000001	No bottom plate slider	16	Outsourced
32	JR28S40A.03010101	Sliding block fixed seat	8	Q235B T=8
33	JR28S40A.03010001	Sliding platform frame (8 channels)	2	Q235B T=8
34	85-40-914	No bottom plate double column main cylinder	2	Outsourced
35		425 round snap spring	4	Outsourced
36	JR210A.00000011	Oil cylinder top fixed shaft	2	40Cr
37		Single-section external chain combination of chain	2	Outsourced
38	JR32S40A.00000007	No bottom plate cylinder top roller (8 channels)	2	Hot-rolled round steel Φ120
40	JR28S40A.04000002	Top cover plate connection	8	Q235B T=8
41	GBT70.2-2008	Hexagonal flat round head screw M10x25 (blackened 8.8 grade)	8	Outsourced

44	JR28S40A.07000002	Small straight connection pipe	2	Seamless pipe Φ42xΦ36
45	JR32S40A.00000008	Top connecting pipe (8 channels)	4	Seamless pipe Φ42xΦ32
46	JR32S40A.00000010	Cross beam straight pipe (8 channels)	1	Seamless pipe φ42xφ36
48	JR28S40A.07000001	Top bend pipe welding block	2	Q235B T=8
49	JR28S40A.06000002	Top pipe connection block (8 channels)	2	Q235B T=6
50	JR28S40A.06000001	Top pipe connection block bottom plate (8 channels)	2	Q235B T=6
51	JR28S40A.06000003	Triangular connecting plate (8 channels)	4	Q235B T=6
52	JR32S40A.00000006	No bottom plate, double-column auxiliary oil tank plate top (8 channels)	1	Q235B T=1.5
53	JR28S40A.02000001	No bottom plate double-column auxiliary column (8 channels)	1	Q235B T=4.75
54	JR210A.00000002	safety tooth pull rod shaft on rocker arm	4	Cold-drawn round steel Φ22
55		YH3-30-145 compression spring	4	Outsourced
56		YH3-30-145 compression spring		Outsourced
57		GBT879.2-2000 Elastic cylindrical pin (straight groove) 5x30		Outsourced
58	JR210A.00000013	Rocker arm pinion	4	Outsourced
60	JR210A.00000001	Rocker arm lower safety tooth fixed shaft	4	40Cr
61	JR261A.03000001	Platform reinforcement block (6 channels)	2	Q235B T=10
62	JR28S40A.03020001	Lifting platform rocker arm fixed seat (4T)	2	Q235B T=14
63	JR210A.03020003	Rocker arm fixed seat reinforcing rib	4	Q235B T=14
64	JR210A.05010002	Rocker arm fixed block	4	Q235B T=12
65	JR210A.00000012	Rocker arm large gear	4	Outsourced
66	GBT70.1-2008	Hexagonal cylindrical head screw M10x25 (galvanized 8.8 grade)	12	Outsourced
67	JR210A.05010005	Rocker arm lower safety tooth fixing block	4	Q235B T=20
68	JR28S40A.00000004	No bottom plate, double-column auxiliary oil tank plate bottom (8 channels)	1	Q235B T=1.5
69		anti-pressure foot seat	8	Outsourced
70		Short anti-pressor foot bar	4	Seamless tube
71	JR210A.06010002	Short rocker arm fixed connection	2	Q235B T=10
72	JR210A.06010001	Short rocker arm post A	2	Fangtong 100x100x6
73	JR211A.04020002	Thin rocker arm post pad	2	Q235B T=6
74	JR210A.06020001	Short rocker post B	2	Fangtong 80x80x8
75	JR210A.06020002	Short rocker arm fixing block	2	Q235B T=2
76	JR210A.06030002	Short rocker arm post pad	2	Q235B T=2

77	JR210A.06030001	Short rocker arm square pass small	2	Fangtong 60x60x6
78	JR210A.06030003	Short rocker arm seal plate	2	Q235B T=2
79	JR210A.06030004	Short rocker arm adjustment screw fixing block	2	Q235B T=25
80		Long anti-pressor foot bar	2	Seamless tube
81	JR210A.05010004	Long rocker arm fixed connection	2	Hot-rolled flat steel 75x10
82	JR211A.04010001	Long and thin rocker arm post A	2	Fangtong 100x100x6
83	JR210A.05010003	Rocker column reinforcement block	4	Q235B T=8
84	JR211A.04020001	Long and thin rocker post B	2	Fangtong 80x80x8
85	JR211A.04020003	Long and thin rocker arm fixing block	2	Q235B T=2
86	JR210A.05020004	Long rocker arm seal plate	2	Q235B T=2
87	JR210A.05020003	Long rocker column pad	2	Q235B T=5
88	JR210A.05020005	Long rocker arm adjustment screw fixing block	2	Q235B T=25
89	JR210A.05020006	Rocker stop block	4	Square steel § 20
90	JR210A.05020007	Rocker arm adjustment screw limit block	4	Q235B T=4
91		TJ-01 Three-section adjustment screw	4	Outsourced
92	JR28S40A.04000001	No bottom plate, double column top plate (8 channels)	2	Q235B T=12

6. Commissioning and operation of equipment

● Pre-test preparation

a. Add general lithium-based grease (GB7324-87) to the moving contact surface of the slide table, and apply it evenly on all sliding surfaces from top to bottom.

b Fill the hydraulic station tank with hydraulic system oil N46 or N68.

● Operation process

a Check whether the motor power supply is installed correctly.

b Check whether all connecting bolts are fastened.

c. Press the up, down, and down lock actions on the electric control box to operate normally. Only after completion can normal operation be carried out.

d. Air exhaust method without base plate double column

1theInsert the wires of the electromagnet, 2 and 7, 9 and 10. Limit lines 3 and 6. Connect the oil pipe according to the instruction manual (No. 5.5).

2theFirst, open the oil replenishment valve, and then remove the air screw at the upper end of the master cylinder (No. 5.3-8).

3theTurn on the power supply, press the up button (confirm the motor forward and reverse rotation), and install the air screw after the oil is discharged from the upper end of the master cylinder.

4. Remove the air screw at the bottom of the auxiliary column cylinder, continue to press it up, and install the air screw (serial number 5.3-7) after the oil is discharged from the bottom of the auxiliary column cylinder.

5. Then, install the platform on both sides through the oil replenishment valve. If the auxiliary column is high when it is raised, open the oil replenishment valve, press the lock button for 1-2 seconds, then close the oil replenishment valve, and try again.

If the main column is high when it is raised, open the oil replenishment valve, and jog (click once to release it quickly) the upward button for 1-5 times until it is flat.

● Auto repair operation process and precautions

a Precautions:

★ The center of gravity position of various cars is different. First, understand the position of the car's center of gravity. When the car enters the lifting machine, the center of gravity should be close to the plane formed by the two columns.

Adjust the rocker arm so that the bearing point is supported on the bearing surface of the vehicle. Pay attention to the reliability of the rocker lock after lifting.

★ When lifting with beam lift, pay attention to the position of the roof, do not approach the beam to avoid accidents.

When the ★ is started, do not open the observation hole cover on the column.

★ Read the warning signs carefully.

★ hydraulic valves have been adjusted before leaving the factory, and users are not allowed to adjust them themselves. Otherwise, users are responsible for all consequences.

7. Common troubleshooting method

No	Failure phenomenon	Exclusion method
1	The two slides rise asynchronously	adjustment through the make-up valve
2	Motor and electrical failure	Cut off the power supply in a timely manner, and have professional electricians inspect, repair, and replace.
3	It cannot be lifted under heavy load or automatically descends slowly after lifting	The manual oil discharge valve is not closed tightly. Disassemble the manual valve for cleaning. If damaged, replace it.
4	Oil seepage at oil pipe joint	If the joint leaks oil, connect it again with raw tape and sealant. Oil pipe and joint leak oil, fasten the oil pipe nut once.
5	There are abnormal sounds when rising and falling	Apply grease to the sliding guide rail on the inner side of the column, and add oil to the rotating parts of the chain roller.
6	Other	If you find that the work is not normal and cannot solve the problem on your own, please contact our company. Thank you for your cooperation. The company is dedicated to serving you.