



REACH
GARAGE EQUIPMENT

U-T60EB

TWO POST LIFT

USER'S MANUAL V1.1 202303

INSTRUCTION & MAINTENANCE MANUAL



READ THIS ENTIRE MANUAL CAREFULLY AND COMPLETELY
BEFORE INSTALLATION OR OPERATION OF THE LIFT

TWO POST LIFT INSTRUCTION MANUAL

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1. Packing, transport and storage



All packing, lifting, handling, transport and unpacking operations are to be performed exclusively by expert personnel.

1.1 Packing

Standard configuration	1 # carton
Power unit	1pc

Standard configuration	2 # carton
Main and sub column	1pc each
Main and sub higher column	1pc each
top beam	1pc
Lifting arm	4pcs
Control box	1pc
Accessory	1pc

Table 1

1.2 Transport



Packing can be lifted or moved by lift trucks, cranes or bridge cranes. In case of slinging, a second person must always take care of the load, in order to avoid dangerous oscillations.

During loading and unloading operation, goods must be handled by vehicles or ships.

At the arrival of the goods, verify that all items specified in the delivery notes are included. In case of missing parts possible defects or damage may due to transport operations.

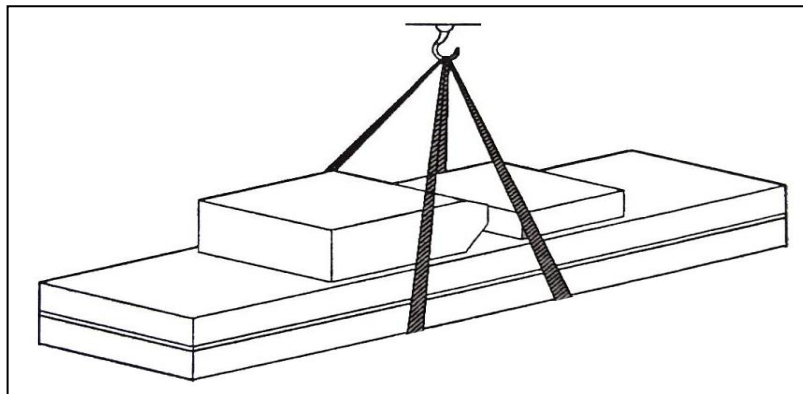
If finding missing parts, possible defects or damage due to transport, one should examine damaged cartons according to <<Accessories Packing List.>> to verify the condition of damaged goods and missing parts, also the person in charge or the carrier must be immediately informed.



The machine is heavy goods! Don't take manpower load and unload and transporting way into consideration, the safety of working is important.

Furthermore, during loading and unloading operation goods must be handled as shown in the picture.

(Picture 1)



Picture 1 (Goods-lifted)

1.3 Storage

- The machine equipment should be stocked in the warehouse, if stocked outside should do the disposal well of waterproof.
- Use box truck in the process of transport, use container storage when shipping.
- The temperature for machine storage : -25°C-- 55°C

2. Manual introduction



This manual has been prepared for workshop personnel expert in the use of the lift operator and technicians responsible for routine maintenance fitter.

Workers should read the <<Instruction & Maintenance Manual>> carefully before carrying out any operation with the lift. This manual contains important information regarding:

- The personal safety of operators and maintenance workers.
- Lift safety.
- The safety of lifted vehicles.



Several tips should be done by the operator as follow:

1. Well conserving the manual. Manufacturer owns the right to make little change for the manual owing to the improvement of technology.
2. Good disposal the used oil.
3. The machine must be demolished by authorized technicians, just like for assembling

3. Description of the machine

3.1 Machine Application

Two post lift can lift each kind of vehicle whose weight is less than 6000kg, suitable for use in vehicle tests, maintenance and tyre mounting/demounting.



Lifts are designed and built to lift vehicles and hold them in the elevated position in an enclosed workshop. All other uses of the lifts are unauthorized. In particular, the lifts are not suitable for:

- Washing spray work;
- Use in outdoors;
- Creating lifting personnel;
- Use to lift loose-packed and fractured goods
- Use as elevator;
- Vehicle with severely tilted or bent frame, or with deformed wheels.



The manufacturer is not liable for any injury to persons or damage to vehicles and other property caused by the incorrect and unauthorized use of the lifts.

3.2 Structure Features

- Electrical lift oil tube is fully hidden, good-looking appearance.
- The international standard of mechanical safety device and electrical unlocking device are totally united as one.
- Double insurance self-locking protection device, safe and easy operation.
- Using two wire ropes synchronous connection, forcing two slider moving simultaneously, effectively prevent the vehicle tilting
- The lowest lifting height is 110mm, adapted to high-grade car maintenance.
- Equipped with high precision to the lifting arm rotating angle locking device to prevent accidents.
- Heavy loading chain, safe and reliable.

3.3 Equipment

- Machine basement (The position and space of equipment installation)
- Machine frame (The main structure of lift and insurance institution)
- Power unit (Hydraulic control part)
- Control box (Machine-controlled part)

Base structure

- Make of cement concrete structure.

3.4 Frame

- Make of column , lifting arm, and top beam.

Power unit

- Make of hydraulic pump、 pump motor and oil box.

3.5 Control box

- Under the control box is hydraulic oil tank and hydraulic pump, valve and other control system.
On the control box is electrical system.

Function of each valve on the power unit	
Name	Function
Gear pump	Extract hydraulic oil and provide high pressure.
Connecting block	Connect the motor and the gear pump.
Motor	Provide power for the gear pump.
Overflow valve	Adjust oil pressure.
Throttle valve	Adjust the speed of falling.
Lowering solenoid valve	Control flow of the hydraulic oil.
One-way valve	Control the one-way flow of hydraulic oil.
Ball valve	Debugging and control the returned oil.

Table 2

4. Specifications

4.1 Main technical parameter

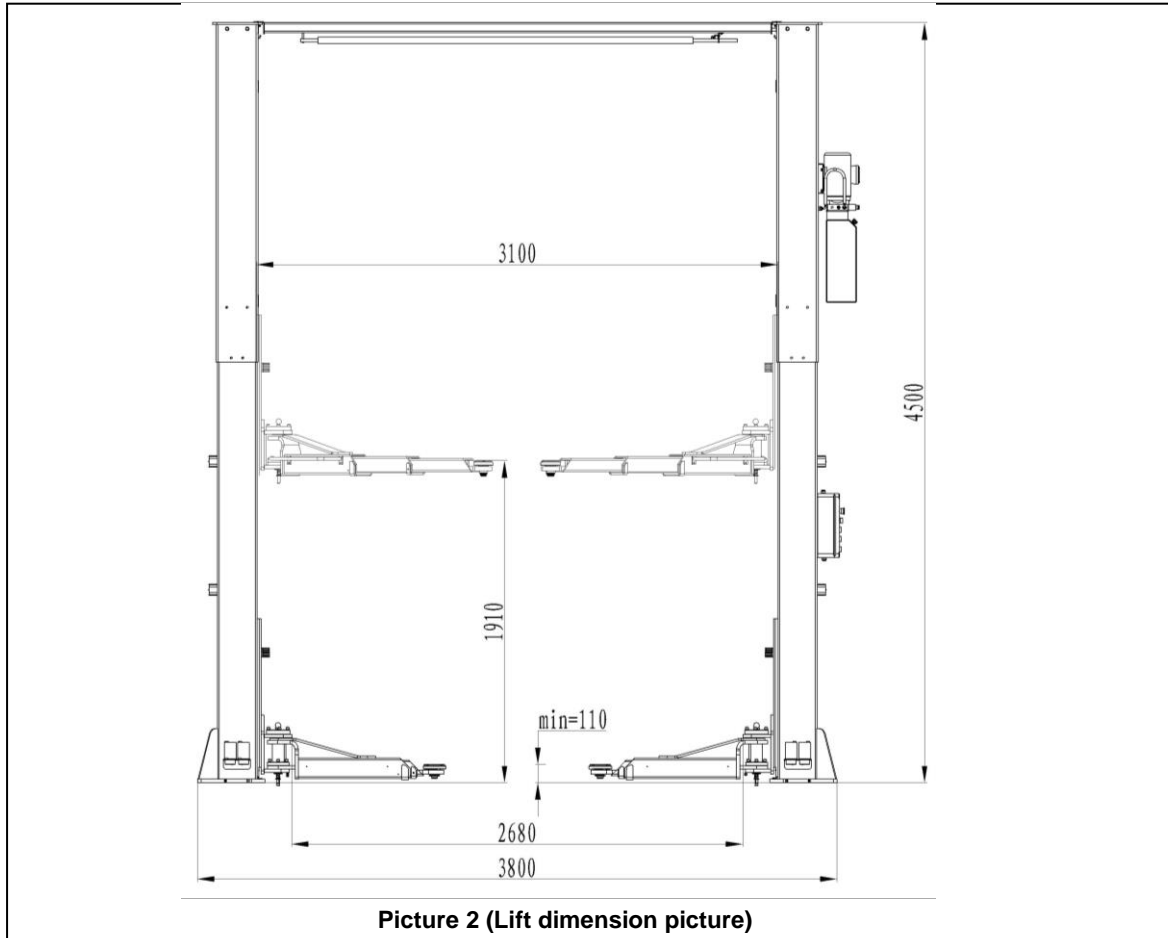
Machine type	6T
Machine weight	1400kg
Lifting capacity	6000kg
Machine lift height	1910mm
Platform initial height	110mm
Machine height	4500mm
Machine width	3800mm
Machine lifting time	≤55s
Machine descent time	about 55s
Standard power supply	3/N/PE~380V, 50Hz, 16A
Whole machine power	3kw
Hydraulic oil	12L corresponds to wearable hydraulic oil
Working temperature	5-40°C
Working humidity	30-95%
Noisy	< 70db
Storage temperature	-25°C~55°C

Table 3

Requirements

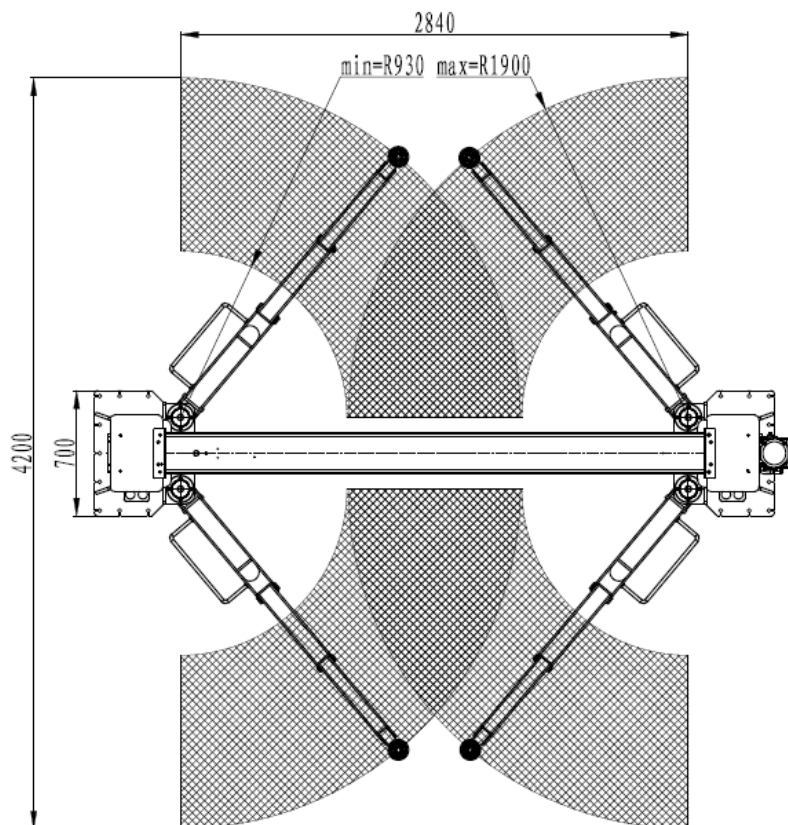
- Portland cement with strength grade above C20, the period of desiccation is ≥ 15 days
- Clean the basic layer, thickness of concrete ≥ 300 mm, the leveling of whole length ≤ 5 mm

4.2 External dimension drawing



Picture 2 (Lift dimension picture)

4.3 Lifting arm dimension drawing



5. Safety notes

5.1 General precautions



Workers should read the <<Instruction & Maintenance Manual>> carefully before carrying out any operation with the lift



The manufacturer is not liable for any injury to persons or damage to vehicles and other property caused by the incorrect and unauthorized use of the lifts.

The operator and the maintenance fitter are required to observe the prescriptions of safety regulation in force in the country of installation of the lift.

Furthermore, the operator and maintenance fitter must:

- Always work in the stations specified and illustrated in this manual;
- Never remove or deactivate the guards and mechanical, electrical, or other types of safety devices;
- Read the safety notices placed on the machine and the safety information in this manual.



In the manual all safety notices are shown as follows:

Warning: indicates following operations that are unsafe and can cause minor injury to persons and damage the lift, the vehicle or other property.



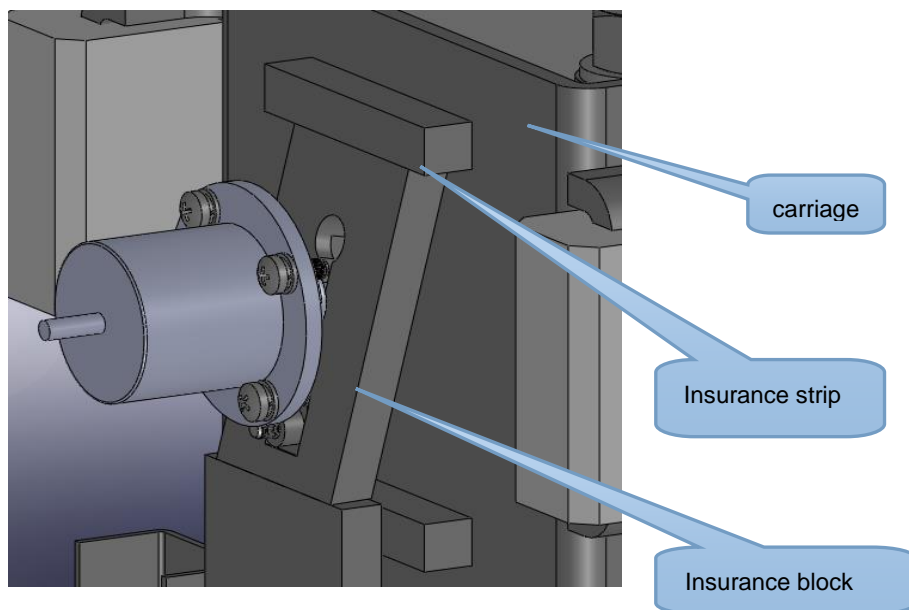
Risk of electric shock: a specific safety notice placed on the lift in areas where the risk of electric shock is particularly high.

5.2 protection devices



The safety protection devices use to protect the operator in case of overload or machinery failure:

- In the case of overload, the overflow valve of the pump will open, the hydraulic oil will return to the oil tank.
- The mechanical insurance works automatically to prevent the carriage from falling off when the oil cylinder loose pressure.



Picture 4

-Operators will hear the sound when the insurance claw falls on the insurance strip in the case of normal use. If not, this machine is prohibited to use. Operator can check the insurance device by opening the decorated box. If the insurance device is blocked, adjust the screw on the insurance claw till the sound can be heard when the insurance claw falls on the insurance strip.

-Only press "LOCK" button after the machine is lifted, vehicle maintenance can be permitted.

-If the two carriages are not in the same plane, adjust the nut on steel cable to keep them in the same plane. Tighten the steel cable, or the two carriages can not be synchronous.

-Locking devices are installed in each lifting arm, it can lock automatically when lifting arm rotate to any needed angle. When the carriage in the lowest position, the lifting arm can rotate freely. In order to prevent the lifting tray from falling, we adopt the adjustable thread lifting tray to make it more safe and convenient



Risk for extrusion

During up and down operations, personnel leave the said area without following the rule and instruction.

During up and down operations, no person is admitted to work beneath the movable parts of the lift, should work in the safe zone.



Risk of impact

Before the operator begins up and down movements, make sure that there are no personnel inside the danger zone. When, due to operational reasons, the lift is stopped at relatively low elevations (lower than 1.75m above the ground) personnel must be careful to avoid impact with parts of the machine not marked with special labels.



Risk of falling (vehicle)

This hazard may arise in the case of incorrect positioning of the vehicle on the lifting arms, overweight of the vehicle, or in the case of vehicles of dimensions that are not compatible with the capacity of the lift.

When the lifting arm is being tested, the vehicle engine can not be turned on.

There is nothing should be placed on the lift-lowering area and the movable parts of the lift.



Risk of slipping

The floor caused by lubricant contamination of around the lift. The area beneath and immediately surrounding the lift and also the platforms must be kept clean. Remove any oil spills immediately. (Picture 14)



Risk of electric shock

Risk of electric shock in areas of insulated and shattered electric equipments

Do not use jets of water, steam solvents or paint next to the lift, and take special care to keep such substances clear of the electrical control panel.



Risks related to appropriate lighting

The operator and the maintenance fitter must be able to assure that all the areas of the lift are properly and uniformly illuminate compliance with the laws in force in the place of installation.

During up and down operations, the operator should continually observe the lift and can operate it only in the position of operator. When lifting and lowering the vehicle, the cushion needs being put in the bottom of chassis.



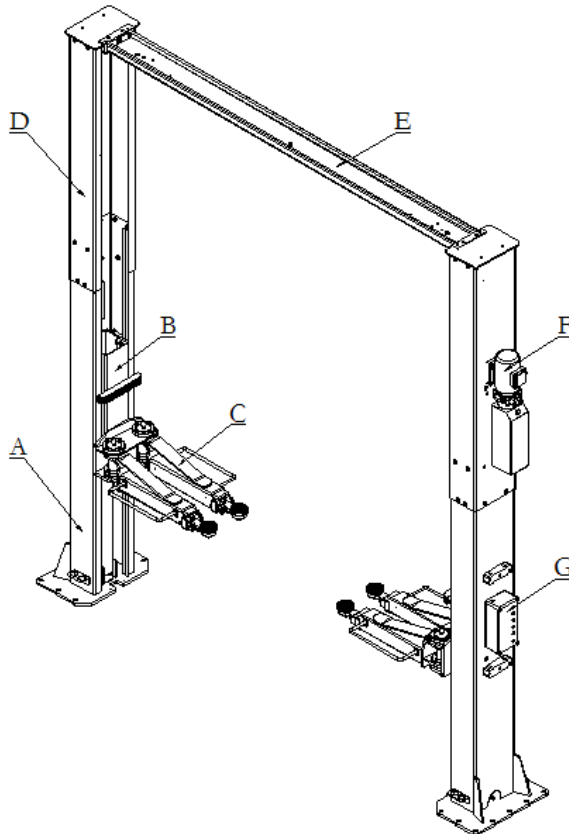
The handling of safety devices is strictly forbidden. Never exceed the maximum carrying capacity of the lift, make sure the vehicles to be lifted have no load.

6. Machine structure and drive principle

6.1 machine structure:

-This machine is made of column, carriage, lifting arm, spindle parts, safety lock device, oil cylinder, power unit, oil hose, control box and electric wire. mechanical lock and hydraulic lock double safety device ensure its security.

Instruction of each part



A	column
B	carriage
C	lifting arm
D	higher column
E	top beam
F	power unit
G	control box

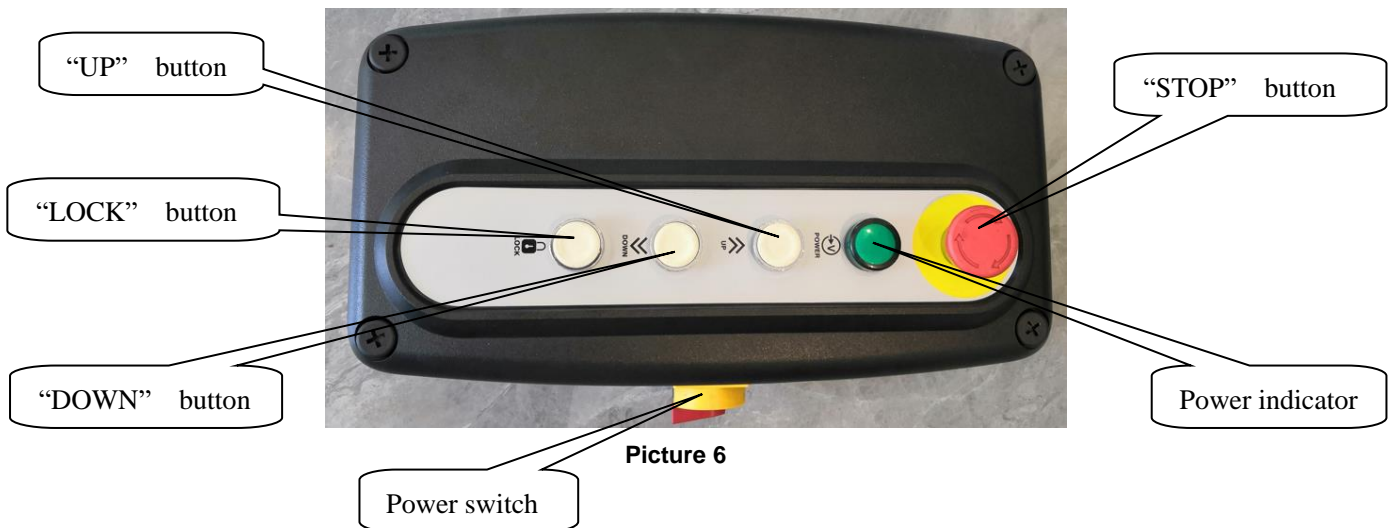
Table 5

Picture 5

6.2 Drive principle:

-Press button "UP", the contactor and motor work. Motor drives the gear pump, the hydraulic oil goes through the one-way valve, oil hose finally reach the in the downward cavity of oil cylinder. The piston rod is pushed by the oil pressure. The oil cylinder drives the lifting arm synchronously with the steel cable and roller wheel and chain.

. When do the vehicle maintenance, operators press the "LOCK" button, the lower solenoid valve works and the electromagnets do not work when the carriages is locked. When lower the lift, press the "DOWN" button, the time relay works, the lift raises for 2-3 seconds and lower solenoid valve works at the same time. The weight of vehicle and lift extrude the hydraulic oil into the oil tank. Finish the lowering operation.



7. Installation

7.1 Installation requirement

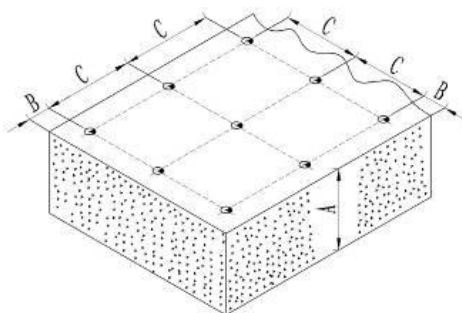
-Two post lift must keep install under the safe distance requirement from the wall, column and other equipment.

Minim distance from wall is 800mm, consider the urgency situation and convenience work, the distance of exit passageway should considered having enough rooms.

Please make sure there is power supply for the control unit.

The indoor height should not be less than 5200mm.

Indoor ground is available for installation, only the ground level meets the installation requirement and have enough endurance capacity (Concrete grade above C20, concrete thickness must reach 300mm and above), otherwise, please pour concrete 1000 * 1000mm in installation space, thickness must reach 500mm and above.



Picture 7

A	concrete thickness must reach 500mm and above
B	side- hole to the concrete edge must reach 150mm
C	machine baseboard installation distance

Table 6

Make sure there is enough and gentle light when install the machine, to ensure a safe work and machine adjustment, do not provide strong light and get eyestrain.

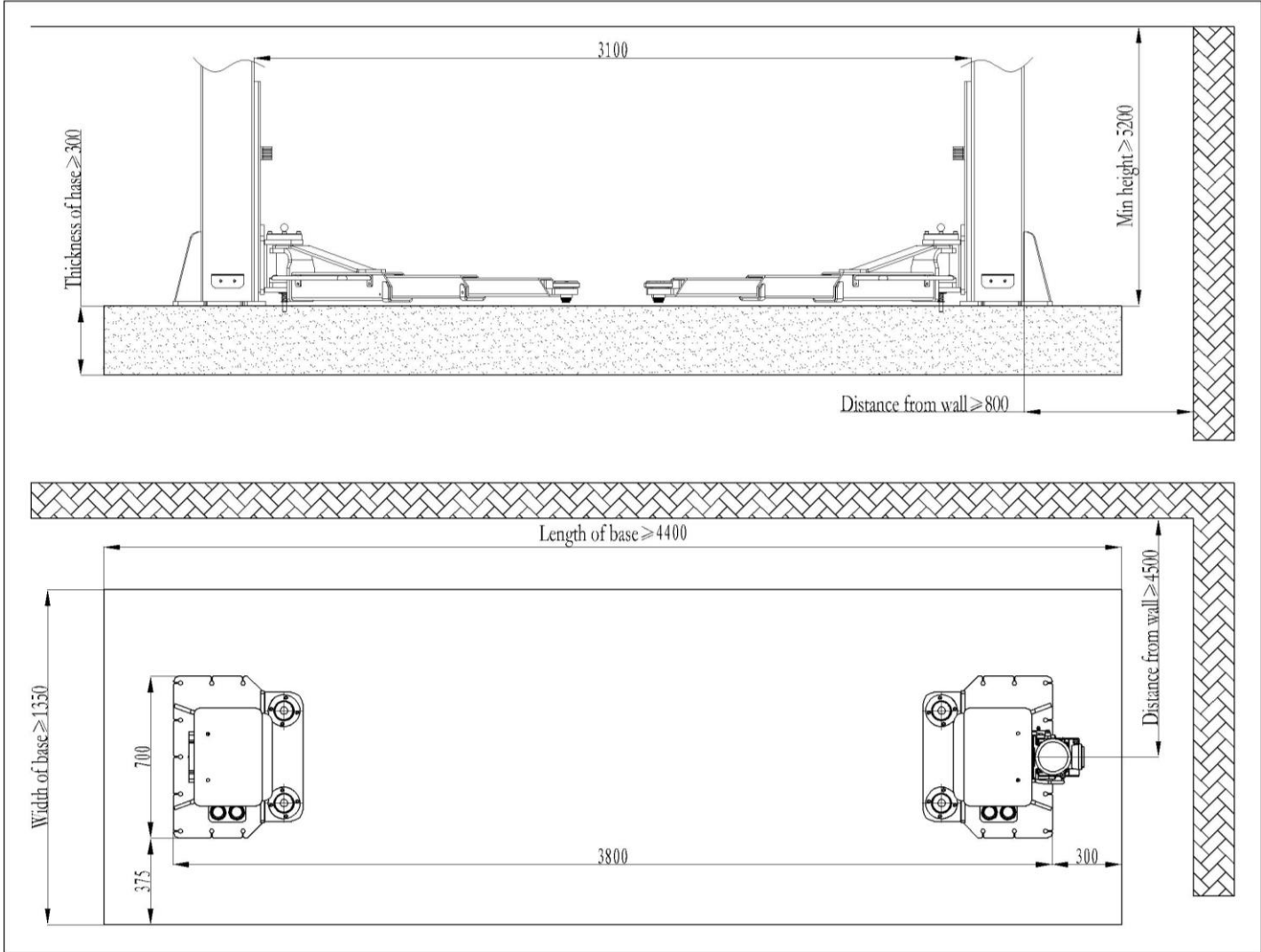
7.2 Base requirement

Portland cement with strength grade above C20, drying period ≥ 15 days.

Clean the raw surface, concrete thickness ≥ 300 mm, ground level degree ≤ 5 mm

Power supply for control unit (380V or 220V)

Foundation drawing



Picture 8



Only the trained and qualified technician is allowed to install the machine, please careful read and follow below instruction before installation, in order to avoid any damage or personal safety.

Examination before installation

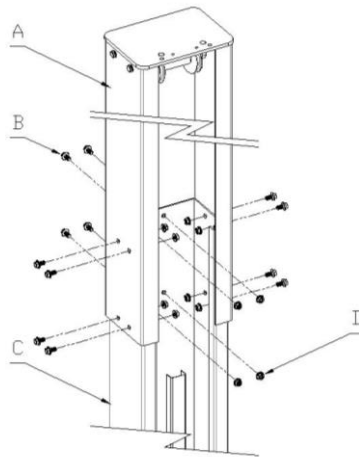
- Foundation drying period and concrete strength must meet the requirement.
- Completeness of the machine (refer to the “packing list”)
- Power supply connects with the control unit.
- Hydraulic oil is qualified

7.3 Installation

Column installation

a. Install the extendable column

Take the extendable column A, slide it from column C till the position as picture shows, aim at the screw holes. Locking the holes with screw M12 *25 the hex flange bolts B and then fasten them with the M12 hex flange nuts D(refer below picture).



A	higher column
B	M12x25 hex flange bolt
C	column
D	M12 hex flange nut

Picture 9

b. Set up the column

set up the installed main and sub columns on the concrete foundation, with distance at 3004mm which is suitable to install the oil hose cover plate, make sure the two columns are in same level.(refer below picture).

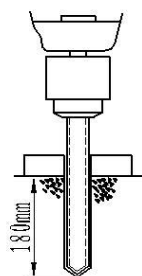
c. Install the expansion bolt

The expansion bolt must work after finished the maintenance of the concrete foundation, otherwise, it will affect the locking quality.

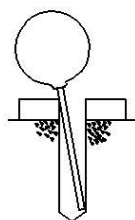
-Adjust the position & vertical degree of the two columns.

-Use a hammer clip with $\phi 18\text{mm}$ impact bit(the length of the bit $\geq 180\text{mm}$)drill the hole from the base plate hole till depth 160MM, and clean the hole with dust cleaner

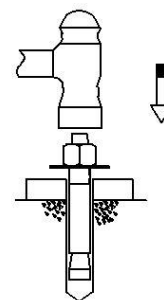
- Use the light hammer to knock the expansion bolts to the 18 holes (no need to insert the center expansion nail, fix it after finished the level adjustment)



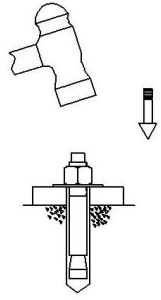
Picture 10



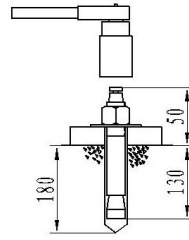
picture 11



picture 12



Picture 13



picture 14

d. Level adjustment

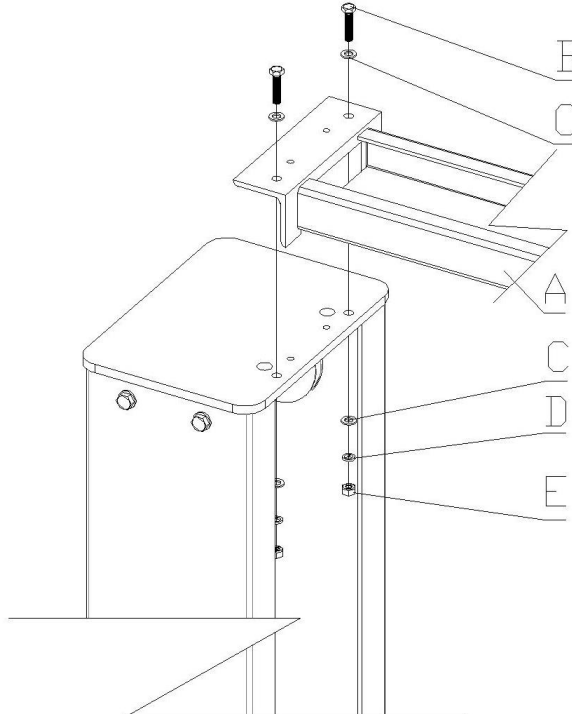
- Use a transparent horizontal tube or gradienter to exam the all around level of the master & vice column, if level degree is no problem, insert the center expansion nail, heavy hammer knocks the center expansion nail, tighten the nuts after finished to install the top beam and the master & vice column is still in level degree.

e. Top beam installation

After the vertical column is fixed, the top beam shall be lifted by crane or crane to the top of the fixed two vertical columns and fixed with screws.

Note: when installing the top beam, the top beam should slide down to avoid injury.

A	top beam
B	M10×35 Hexagon head bolt full thread
C	φ 10 plain washer
D	φ 10 spring washer
E	M10 hexagon nut



If the concrete foundation is under the maintenance, please do not knock in the center expansion bolt. The space between the base plate and ground must fill with cement mortar after adjust the level degree.



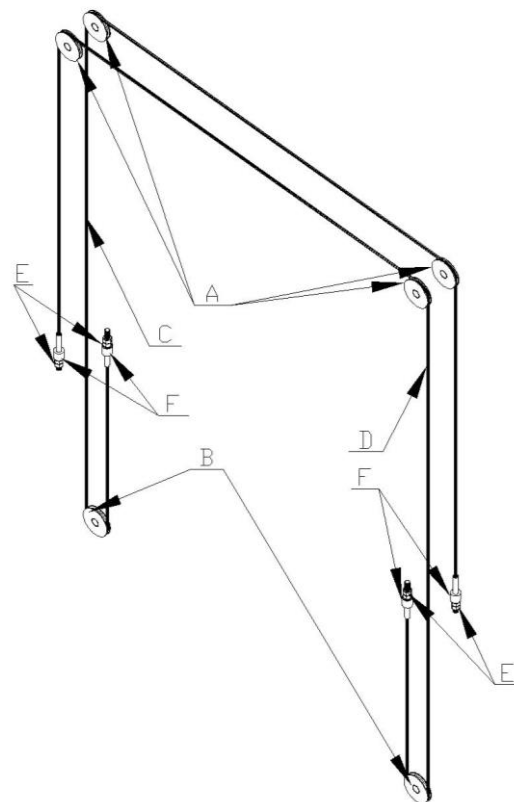
Steel cable installation.

- After pull the synchronous steel cable 1 (that draw from the lifting carriage of main vertical column) pass the bottom of column steel cable pulley B, through the bottom of sub column steel cable pulley B, upward through the sub column top beam pulley A , then fix the steel cable by M20 nut in the hole of the fixed seat F ,which on the carriage of deputy vertical column. Similarly to draw the steel cable 2 from the lifting carriage of deputy vertical column , and fixed it in the hole of the fixed seat F , which on the main vertical column carriage.
- Check the left carriage and the right carriage, watch if they are at the same height. If not, please loose the nut that located on the hole of fixed plate C , which on the main vertical column. And then make the carriage of main vertical column drop down. Or tighten up the nut that located on the hole of fixed plate C , which on the deputy vertical column. And then make the deputy vertical column lift up. Similarly, when the carriage of main vertical column is lower than the one of deputy vertical column, reversed adjustment



The adjustment is required to both reach to the same height, two carriage (left and right) must be in the same height, the steel cable must be tighten up, not allow any loose, moreover, the steel cable must be inside the skating slot of steel cable roller, parallel to each other, not allow any cross, otherwise, two carriages can't have synchronization effect. Please as per following photo :

A	top beam pulley
B	base plate pulley
C	steel cable 1
D	steel cable 2
E	M20 hexagon nut
F	steel cable hanger rod fixed seat

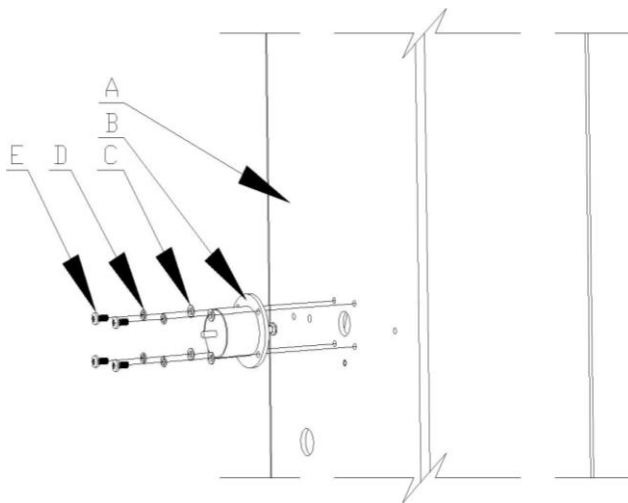


Picture 15

Install the complete insurance device assembly

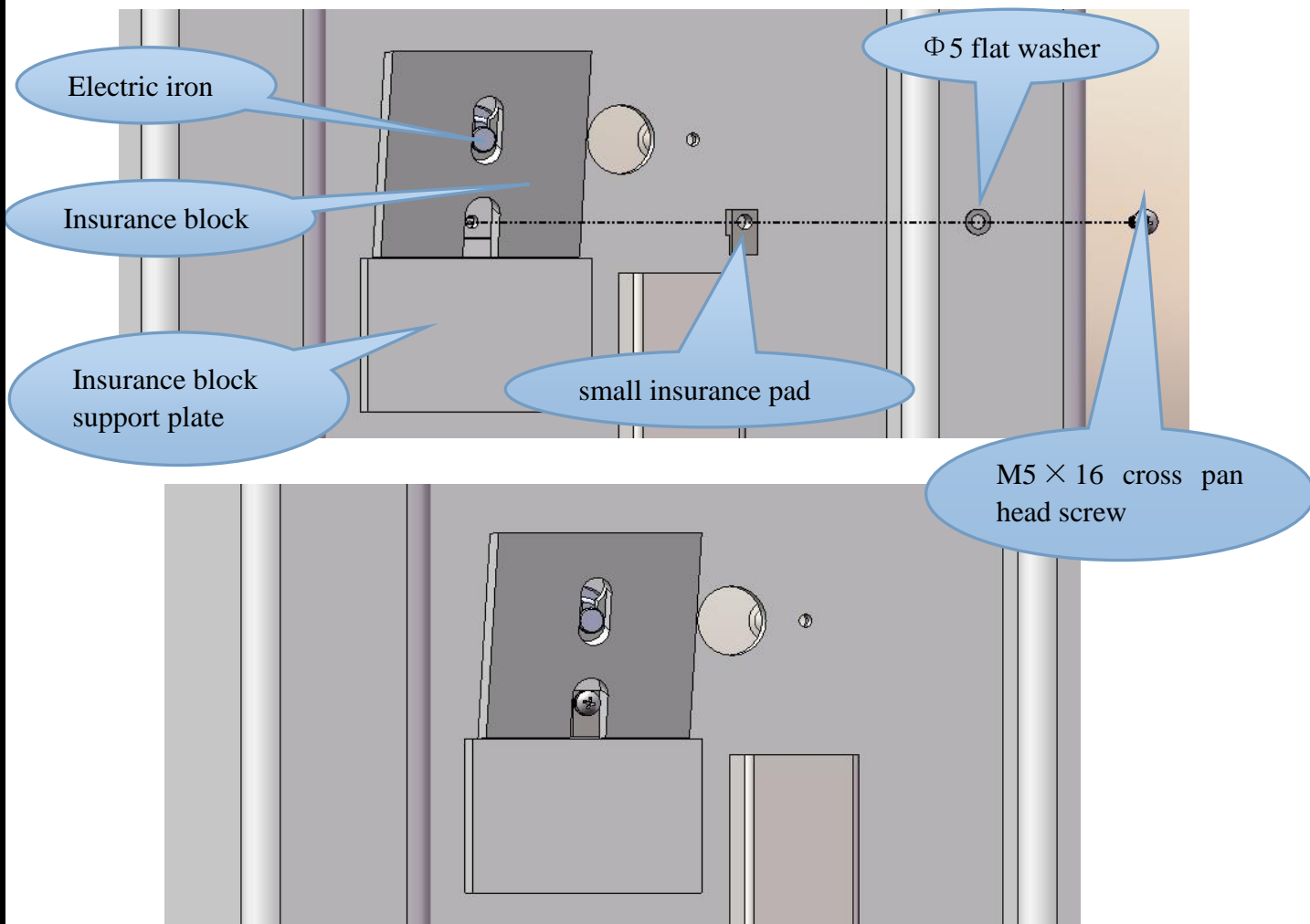
- Install the insurance electromagnet assembly on the column.
- Insurance block set on the electromagnet assembly on the inside of column.

A	column
B	electromagnet
C	Φ5 plain washer
D	Φ5 spring washer
E	M5×12 cross recessed pan head screw



Picture 16

Blocking insurance installation schematic



Picture 17

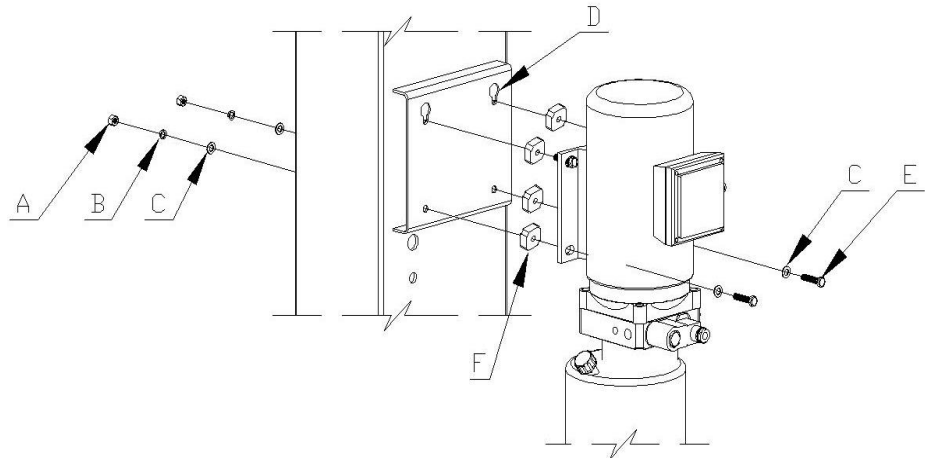
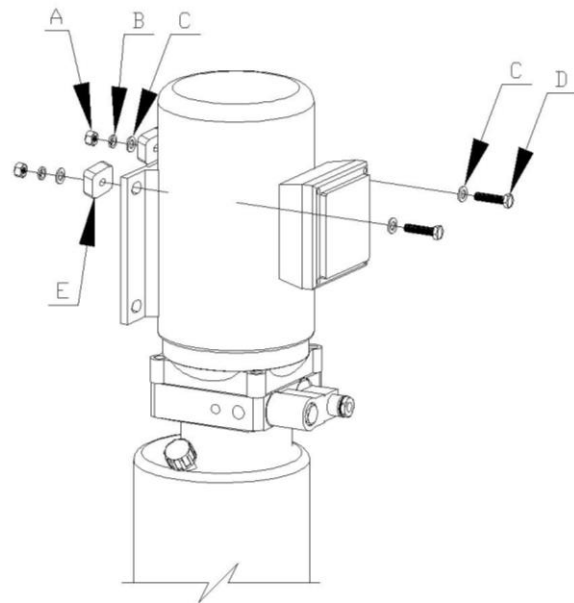


Test the flexibility of insurance device after installation, any phenomenon of blocking insurance device is not allowed

Install the power unit.

- Install the two bolts on the power unit, do not locking, there should be a certain gap
- Then installing the power unit from the motor hanging hole D to the main column
- Install the two remaining bolts from the holes of power unit

A	M8 hexagon nut
B	φ8 spring washer
C	φ8 plain washer
D	M8×45 hexagon head bolt full thread
E	motor cushion



Picture 18

A	M8 hexagon nut
B	φ8 spring washer
C	φ8 plain washer
D	motor hanging hole
E	M8×45 hexagon head bolt full thread
F	motor cushion

Lifting bracket arm installation

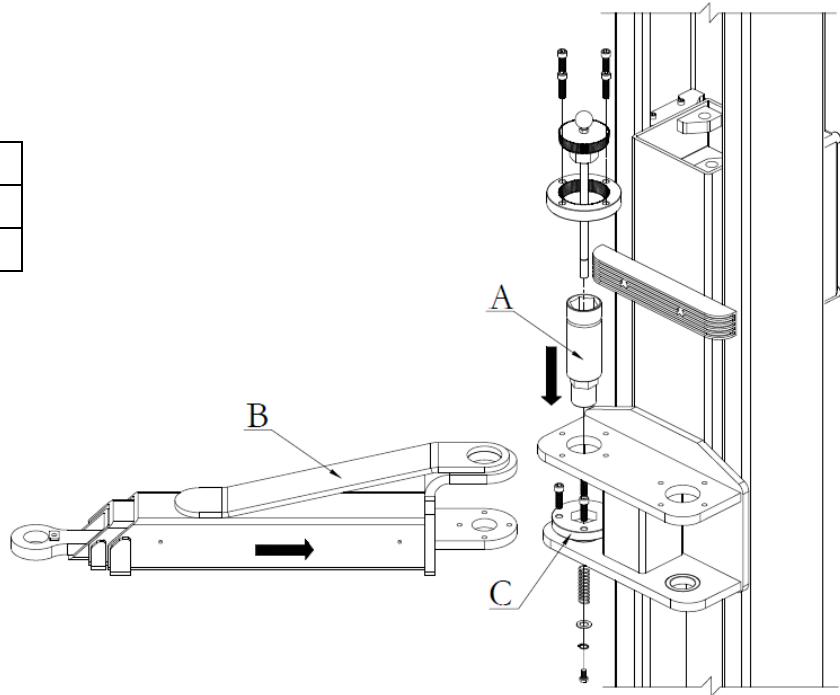
-Two post lift equips symmetric arm, which are installed on the main carriage and sub carriage.

Lifting arm installation steps:

-install the lifting arm B on the carriage's support lug, Place the Arm bolt sleeve fixed block C on the upper end of the lower ear of the lifting arm, then insert sleeve assembly A.

Please as per below photo:

A	sleeve assembly
B	lifting arm
C	sleeve fixed block

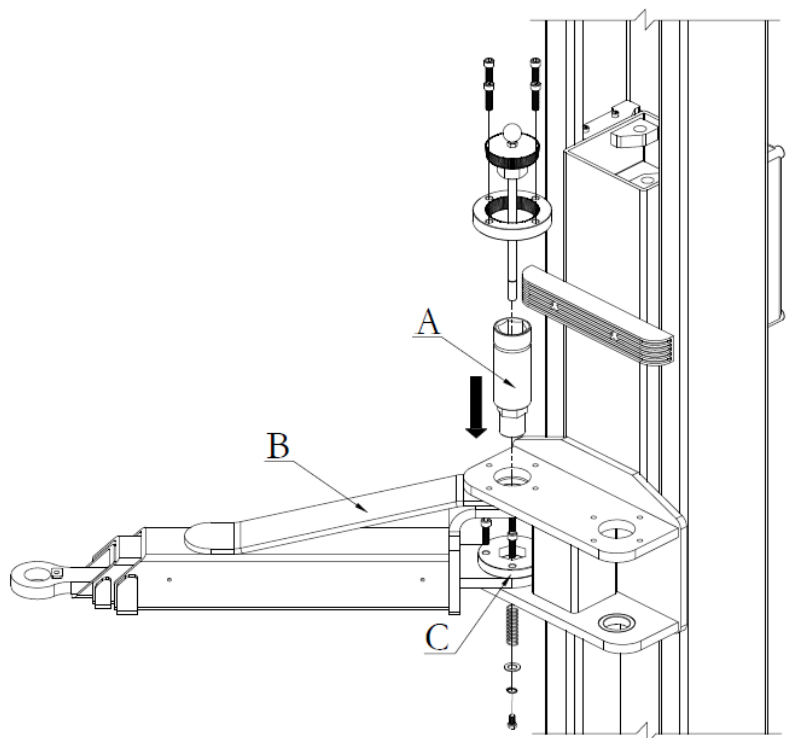


Picture 19



Aligning the hole, arm bolt needs vertical align with the hole to install

A	sleeve assembly
B	lifting bracket arm
C	sleeve fixed block



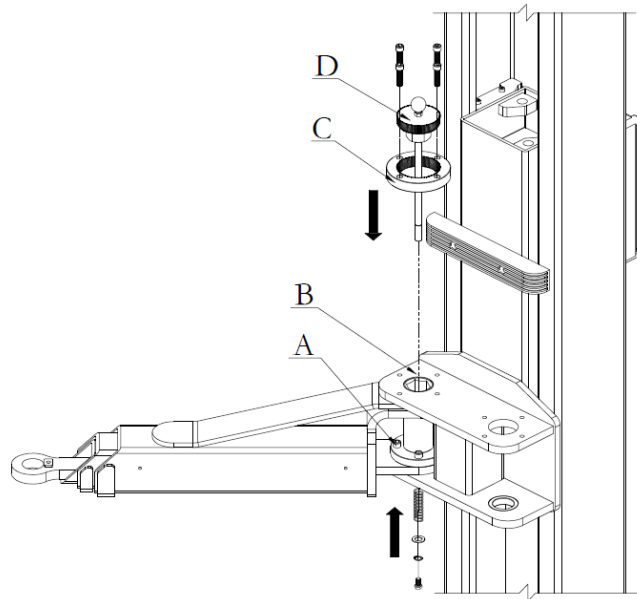
Picture 20



There are five mounting holes in the downside arm support lug, it can adjust semi-circle block and teeth block meshing well

tightened and locked sleeve block A by M12×40 hexagon socket head cap screw , put cone internal tooth C on the upper ear of the carriage B, then put cone outside tooth D into sleeve assembly , please as per below photo:

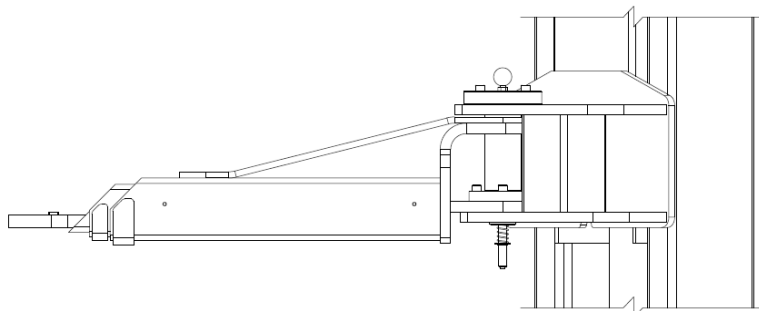
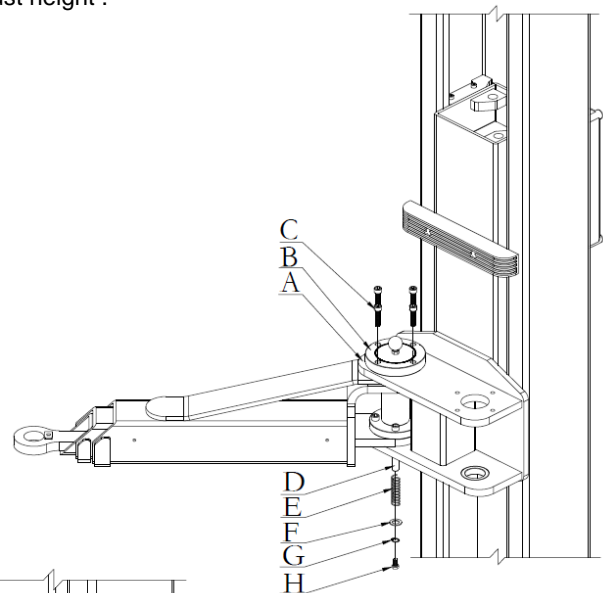
A	sleeve block
B	upper ear of the carriage
C	internal tooth
D	outside tooth



Picture 21

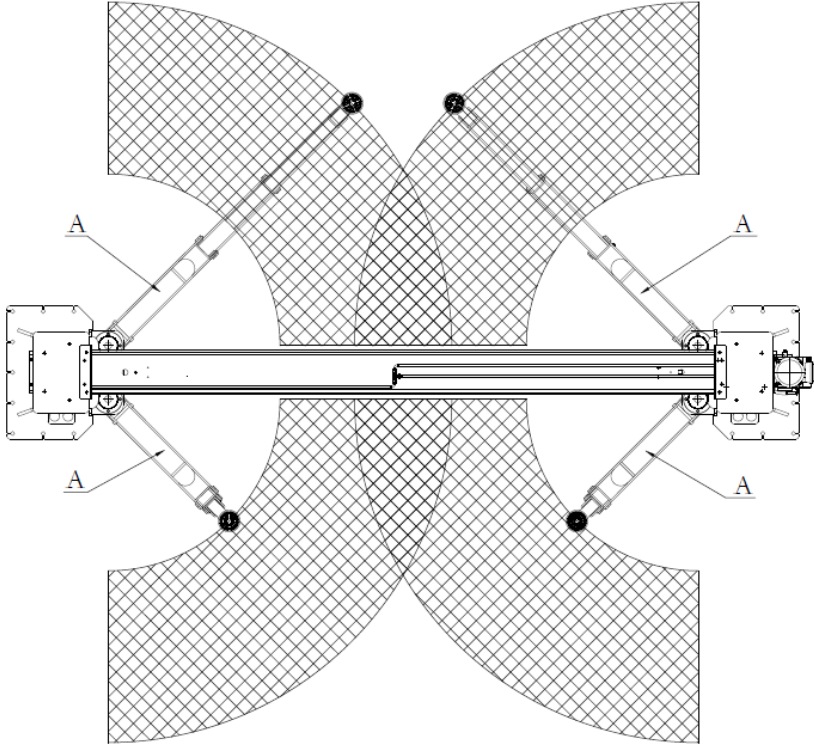
With M12 x 45 hexagon socket head cap screw C through the cone internal tooth B fixed on the upper ear of the carriage A , insert spring E into the pull rod D and then put Φ 16 plain washer F into the bottom of the spring, with Φ 16 circlip G to limit clamping, finally H is installed on D to adjust height .

A	upper ear of the carriage
B	cone internal tooth
C	M12*45 hexagon socket head cap screw
D	pull rod
E	spring
F	Φ 16 plain washer
G	Φ 16 circlip for shaft
H	M8×16 hexagon head bolt full thread



Lifting arm assembly diagram

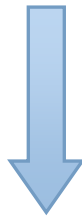
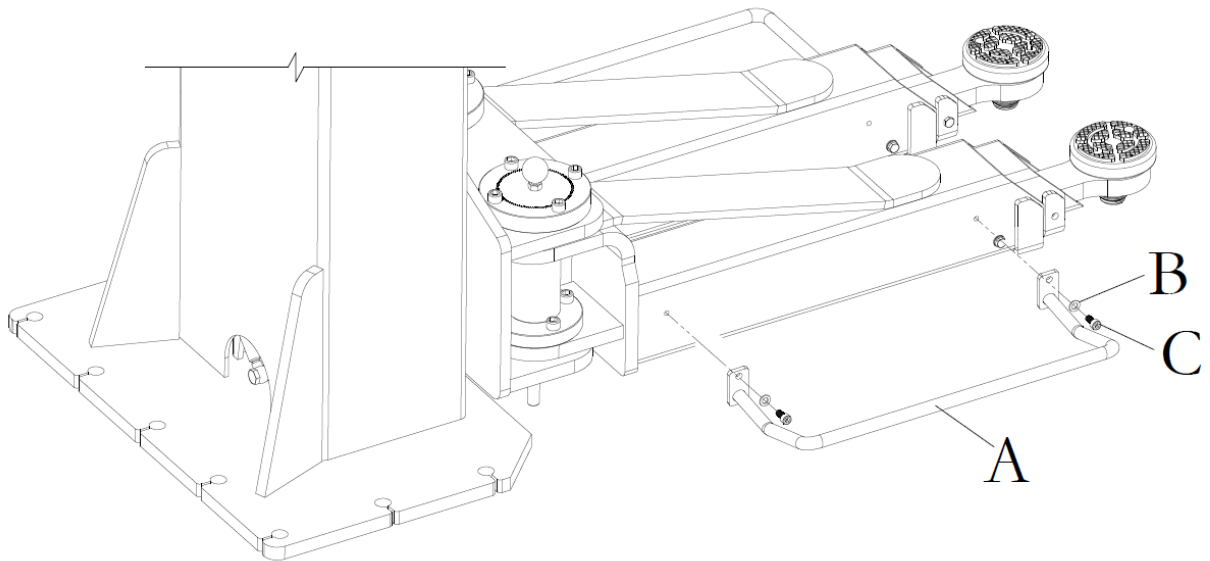
A	Lifting bracket arm
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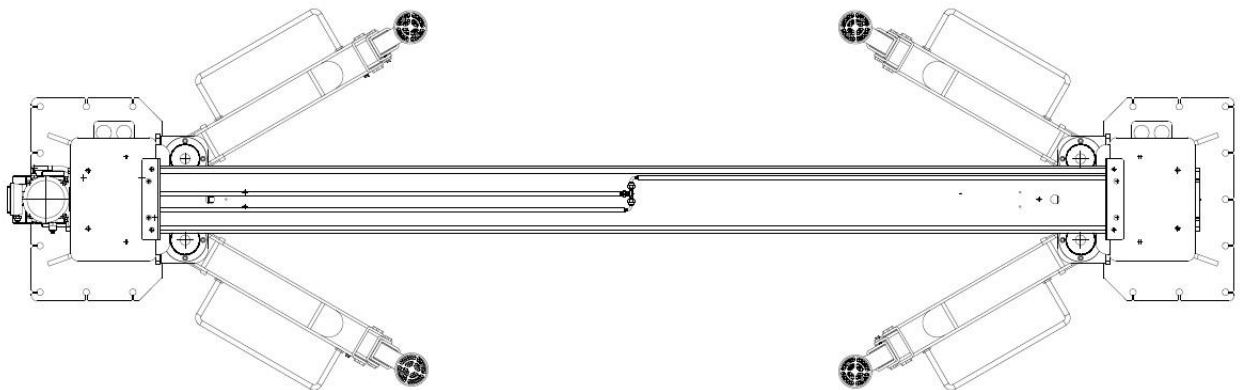
Picture 22

Press-proof foot assembly installation:

- the installation holes of press-proof foot assembly and lifting arm are correspond.
- with M8×12 hexagon socket head cap screw to lock, please as per below photo:

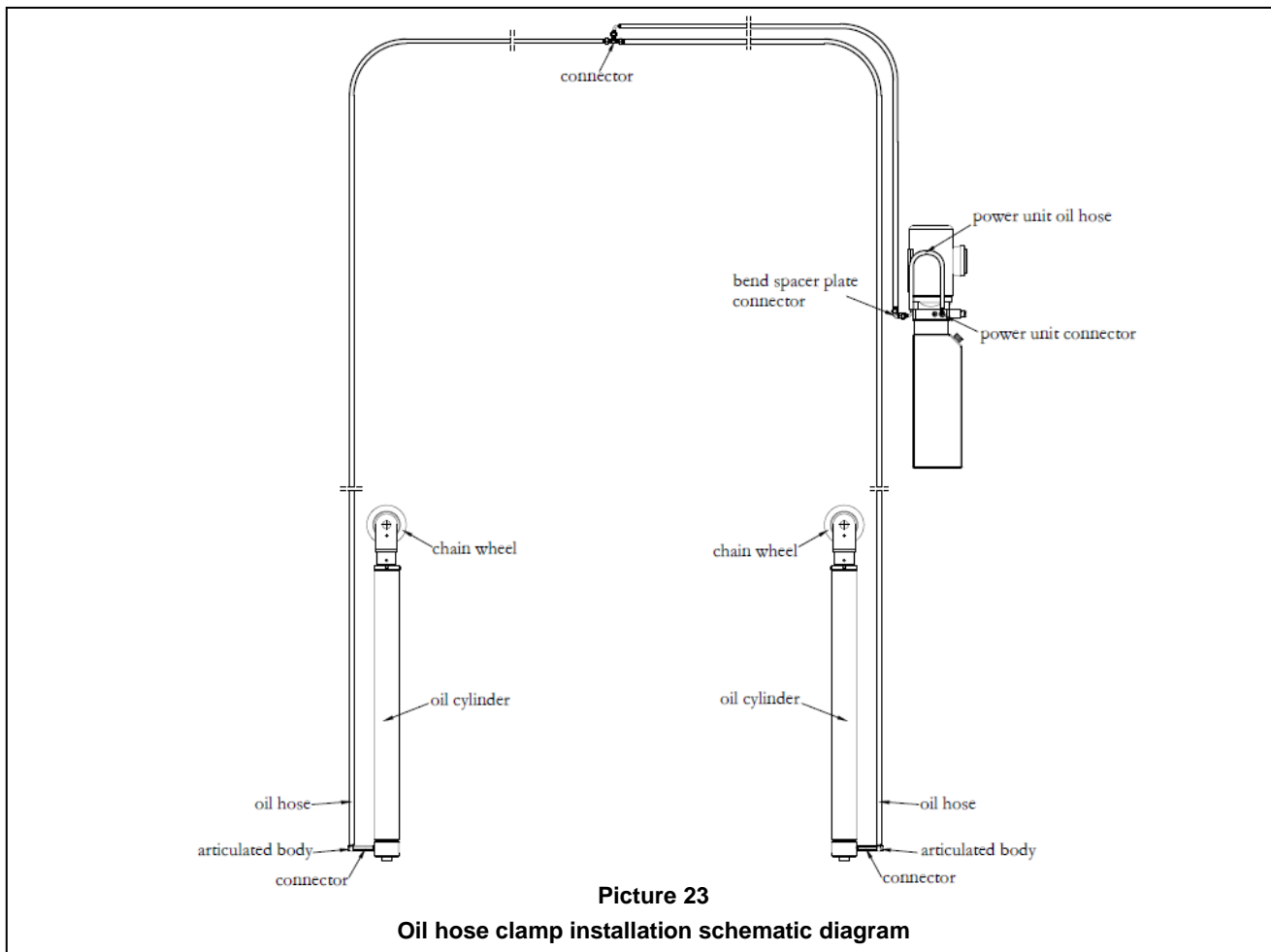


A	foot protection assembly
B	φ8 plain washer
C	M8*12 hexagon socket head cap screw



Hydraulic oil hose clamp installation

Hydraulic connection:



Only the trained and qualified technician is allowed to install the machine,

Please pay more attention oil hose clamp connection protection, in order to prevent foreign body into the oil tube failure.

- High pressure tubing from the pump outlet connected to the 90 ° bend clapboard connector(Please refer to above hydraulic connection)
- High pressure tubing from the 90 ° bent bulkhead connector from the hose connector on the master cylinder
- Finally main oil cylinder with sub oil cylinder connect the high pressure oil tube
- Tightening the oil connector, to avoid it oil leaking
- When connecting tubing, attention to the oil connector protection, prevents foreign bodies from entering the hydraulic circuit

7.4 Electrical Circuit Connection:

Electrical circuit should be connected in accordance with the wire diameters and line numbers specified in the Electrical Wiring Diagram.



Only electrical professionals are qualified in the operation of electrical installation work.

- As per the wire diameters and line numbers specified in the Electrical Schematic Diagram, connect the electrical circuit.

- Make sure the power switch is off and hang the warning sign "DON'T TURN ON THE POWER".
- For 380V, wire the 4×1.5mm² cable of the control box to the power input terminals.
- For 220V, wire the 3 × 2.5mm² cable to the power input terminals.
- Connect bicolor ground wire to the grounding bolt.
- Circuit connection for safety electromagnet:** Insurance electromagnets mounted on the column, the wires pass through the slot and connect the four fuses in parallel to the terminals 300 and 301 in the control box.
- Circuit connection for top limit switch:** The top limit switches are installed on the top beam, the wires pass through the slot and connect to the terminals 102 and 104 in the control box.
- Circuit connection for upper limit switch:** The upper limit switches are installed on the main column, the wires pass through the slot and connect to the terminals 102 and 111 in the control box.
- Decreased solenoid valve coil connection:** Decreased power unit solenoid valve coil wires through the column slot and connect to the terminals 200 and 201 in the control box.

8. Commissioning

8.1 Fill hydraulic oil

After the hydraulic and electric circuits have been connected as instructed, operate as per the below steps:

- Fill 12L corresponds to wearable hydraulic oil (supplied by the user) into the oil tank.



Before filling, ensure the hydraulic oil is clean, in order to prevent any impurities from entering the oil-way and causing it unsmooth.

8.2 Commissioning

Check Phase Sequence:

- Turn on the power switch on the control box and the power indicator lights. Press the UP button to see if the lifting slipways go up or not. If not up, cut off the power and adjust the power phase sequence to enable the oil pump to supply oil normally. Then check if the joints between the oil pipe and the oil cylinder leaks oil or not. If yes, check if the joints loosen or not.



After the power is turned on, there is a possibility of high voltage electric shock in the control box. Thus this operation should be engaged by authorized professionals with qualifications and experience in electric operation, to avoid the risk of electric shock.

No-load Test:

- Press the UP button SB1, and observe if the main and auxiliary carriages are in the same height or not, while the lift carriages and arms are rising. At the same time, listen to the safety block's sound and judge the position of slipways is high or low. Readjust the steel cable correctly to make the safety blocks' position in the same height. That is, the main and auxiliary slipways are in the same height.
- Press the DOWN button SB2. The oil pump works, the carriages rise first, the time relay is electrified, the mechanical lock and the drop solenoid valve open in 2-3 minutes, and the hydraulic oil inside the oil cylinder is pressed back to the oil tank by the weight of working table. Then the decline completed.
- Press the LOCK button SB3. The drop solenoid valve is electrified, and the mechanical lock is not energized. Then the slipways decline and the mechanical lock reset under the mechanical spring force to lock the slipways. The Locking completed and next operation can start safely.



During no-load test, observe if the host lifting is stable or not, the mechanical lock is properly placed or not, and the oil-way leaks oil or not.

Load test:

- lubricating grease shall be applied to each lubricating point and surface. In addition, the inspection on whether oil leakage phenomenon exists in oil-way or whether the foot margin assembly is fasten. After the above is normal, the

load test can be carried out.

- Drive the vehicle that weighs within its outmost lifting capacity between two posts, persons shall not approach the vehicle, put pads on lifter arm.
- Press UP button SB1, rise the carriage, observe whether the vehicle rise steady or not.
- Press DOWN button SB2, observe whether the vehicle lower steady and smooth or not.
- Check whether the rack and pump station got abnormal noise or not, press LOCK button SB3, observe the insurance assembly works well or not.



Make sure the safety lock of the lift is engaged before start working under the vehicle and no people under the vehicle during lifting and lowering process.

The testing vehicle weight can not exceed the maximum weight of the lifting capacity.

Check whether oil leakage phenomenon exists, stop using the machine when find abnormal situation, test the machine after trouble is shot.

After load test, the length of steel cable will be slightly extended. Thus, the leveling shall be carried out once again. The machine can be put into use after step 7.3.2 is repeated.

9. Operation



Only these qualified people, who have been properly trained, can operate the lift.

Please inspect the machine according to the following cautions before operating the machine.

9.1 Pre-commissioning:

- The barriers around lifter and people inside of vehicle shall be removed before work.
- Observer whether the two carriage up-and-down smooth and synchronization or not;
- Whether the machine's insurance claw works flexible and reliable or not;
- Whether the oil tank, oil pipe, connector leaks or not;
- Whether the running sound of motor, pump is normal or not.
- The weight of vehicle capacity can never be beyond lift capacity of the lifter.

9.2 Operating process:

- Drive the vehicle that weighs within its outmost lifting capacity between two posts, speed should be kept in 5 km/h.
- Stop the car, the manual brake of car shall be well pulled, adjust the arm and pad, make sure the supporting point support the surface supporting of the vehicle.
- Press UP button, lift the vehicle 200~250MM upper from the ground, check whether two carriage are synchronous and if there is other abnormal situation or not.
- Continue pressing UP button, lift the vehicle to the desired height
- Observer whether the two carriage are synchronous or not, and if there is other abnormal situation, stop using the lifter, reuse it after trouble is shot
- It's required to "LOCK" the machine when care and maintenance the lifter, and make sure the two carriage are locked at same height, the vehicle maintenance can be carried out after the lifter is locked.
- Before lowering the lifter, observe whether there are foreign matter or person around lifter, carriage or inside of

vehicle or not.

-Press DOWN button, time relay electrified, the mechanical lock and decline solenoid valve open 2~3 seconds later, then the carriage is lowering. when insurance claw trip out from the hole of insurance rack, otherwise the lifter can not descend.

- Lower the carriage to its lowest position and do remember to cut off the power source when service finishes.

9.3 Electrical operation instructions:

Lift raising

-Press UP button SB1, motor drives the gear pump work, cylinder piston drives the platform move up, the carriage is raised

-Loosen SB1, the cylinder stop working and carriage stop rising.

Lift lowering:

- Press DOWN button SB2, oil pump work and carriage rise at first, time relay electrified, the mechanical lock and decline solenoid valve open 2~3 seconds later, then the carriage is lowering.

-Loosen SB2, the mechanical lock and decline solenoid valve are shut off, the carriage stop lowering.

Lift locking:

- Press LOCK button SB3, the carriage is lowering, when insurance claw fall over to hole of insurance rack, the carriage stop lowering and locked.

10. Maintenance and care

Skilled personnel only is allowed to perform the operations

Daily checking items:

The user must perform daily check. Daily check of safety system is very important – the discovery of device failure before action could save your time and prevent you from great loss, injury or casualty.

- Always wipe clean, keep the machine clean.
- Clear barriers and ground oil, keep the working condition clean.
- Check the integrity of each safety devices, ensure the motion is flexible and reliable.
- Check the reliability of limit switch motion.
- Check whether oil/air leakage of the machine exist.

Weekly checking items

- All bearings and hinges on this machine must be lubricated once a week by using an oiler
- Check the working conditions of safety parts.
- Check the amount of oil left in the oil tank. Oil is enough if the carriage can be raised to highest position. Otherwise, oil is insufficient.
- Check whether the expansion bolts well anchored.

Monthly checking items

- The safety gear, the upper and lower sliding blocks and other movable parts must be lubricated one month.

- Check whether the foundation bolts well anchored.
- Check the abrasion and leakage of oil/air hose.

Yearly checking items

- The hydraulic oil must be replaced one time each year. The oil level should always be kept at upper limit position.
- Check abrasion and damage of all the active parts.
- Check the lubrication of sliders. Lubricate it if drag phenomenon exist.



The machine should be lower to the lowest position when replace hydraulic oil, then let the old oil out, and should be filtering the hydraulic oil.

-Each team checks the agility and reliability of pneumatic safety equipment.

Storage after use

When the machine does not use for a long time:

- Cut off the power supply and air source.
- Lubricate all the active parts.
- Drain the hydraulic oil of oil cylinder, oil hose and oil tank.
- Sheathe the machine with dust-proof cover.

11. Trouble shooting table

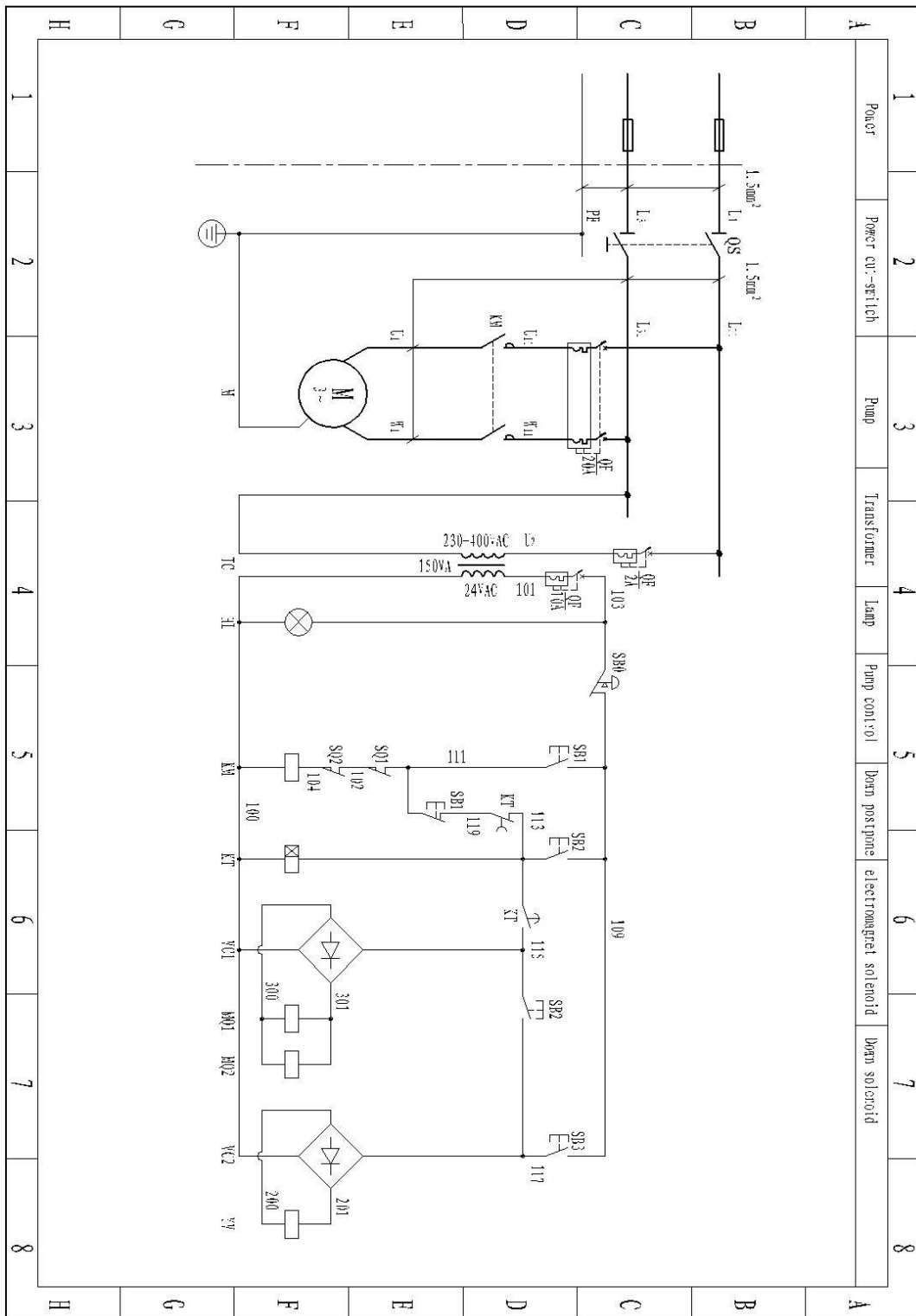


Skilled personnel only is allowed to perform the operations

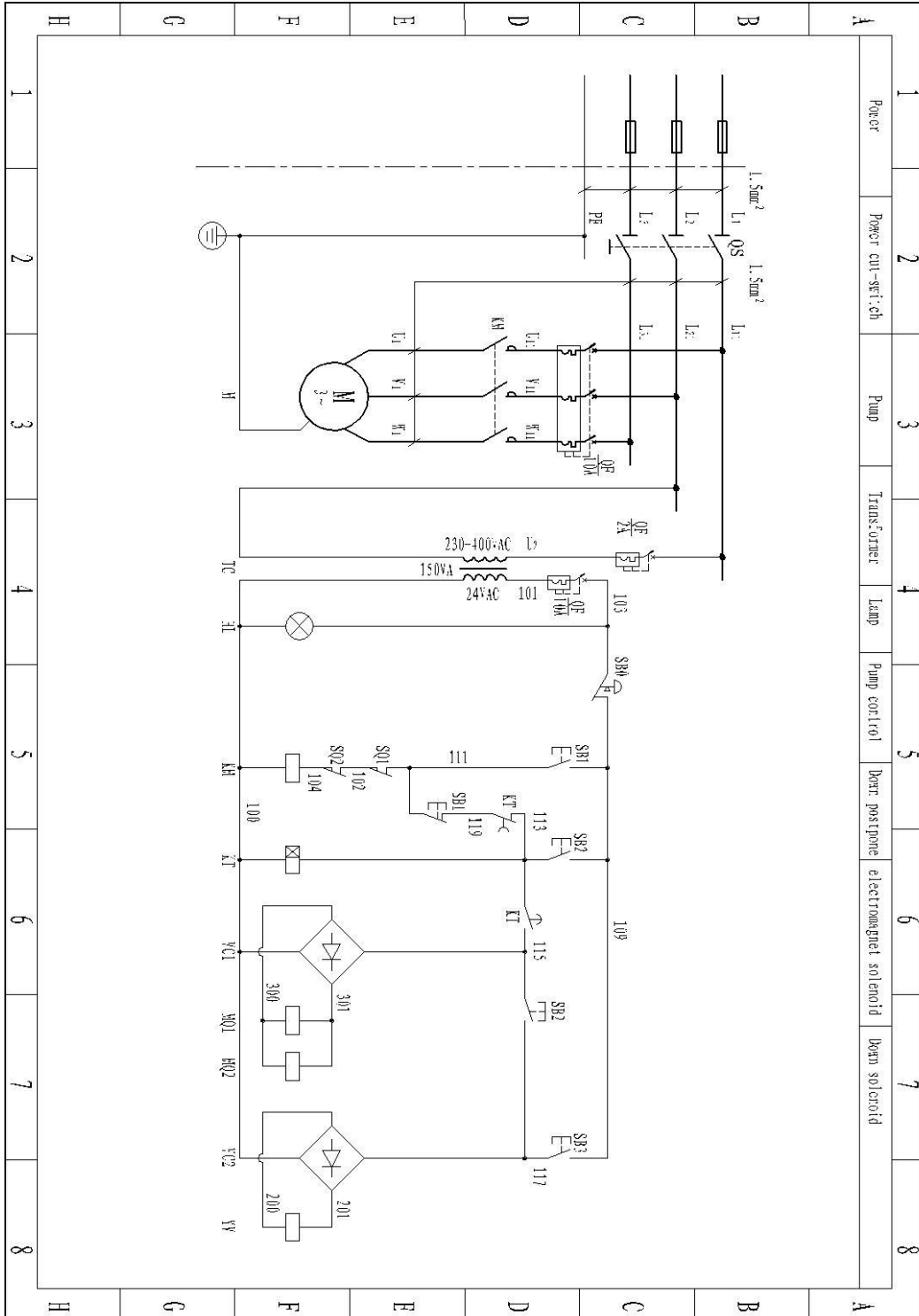
Failure Phenomena	Cause and Phenomena	Resolutions
The motor does not run in lifting operation.	①Power supply is abnormal	Check and correct wire connection
	②There is a short in the AC contactor in the circuit	Check the wire of AC contactor
	③The limit switch is broken	Check the limit switch, wires and adjust or replace the limit switch.
The motor has noise but can not run	Motor phase loss	Stop run the motor and check the wire
In lifting operation, the motor runs, but there is no lifting movement.	①The motor turns reverse.	Change the phases of the power supply wires.
	② The amount of hydraulic oil is not enough.	Add hydraulic oil.
	③There is some air in the pump due to the transport, causing the air block-up	Dismount the one-way valve and raise the lift a little(pay attention to the oil). Mount the one-way valve if the oil outflow from the hole.
	④ Throttle valve is out of order	Check the valve element and seal rings of throttle valve , clean the valve element and replace the seal rings
	⑤Some block in the valve element of oil return solenoid valve	Clean the valve element
	⑥Seal rings in the oil pump outlet are damaged	Demount the gear pump and replace the seal rings
	⑦Motor runs heavily. Out net of oil filter blocks seriously	Clean the oil filter
The lift raises slowly	Seal rings in the oil pump outlet are damaged	Demount the gear pump and replace the seal rings
The lift trembles in the lifting operation	①There is some air in the oil hydraulic circuit	Raise the lift up and down to exhaust the air
	②Air leakage on the upper connector of absorbing oil hose	Check the absorbing oil hose of oil pump
	③The oil filter blocks	Clean the oil filter
The lift can raise but can not fall	①The button is out of order	Replace with hydraulic oil in accordance with the instruction book.
	②The insurance claw is not divorced from the insurance plate	Check the electromagnet, replace it if it is damaged. If not, adjust the insurance to make it normal

12. Circuit diagram

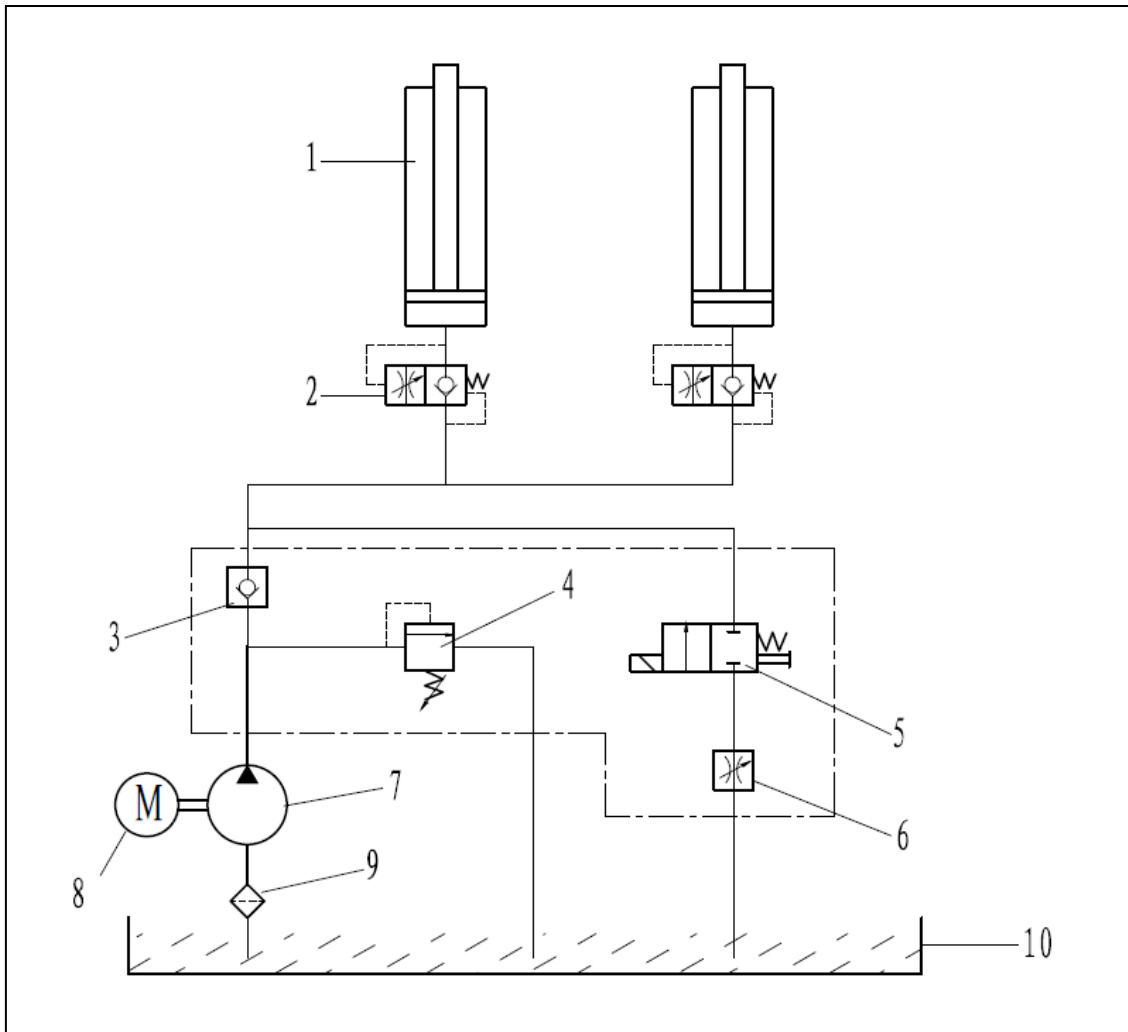
1PH



3PH



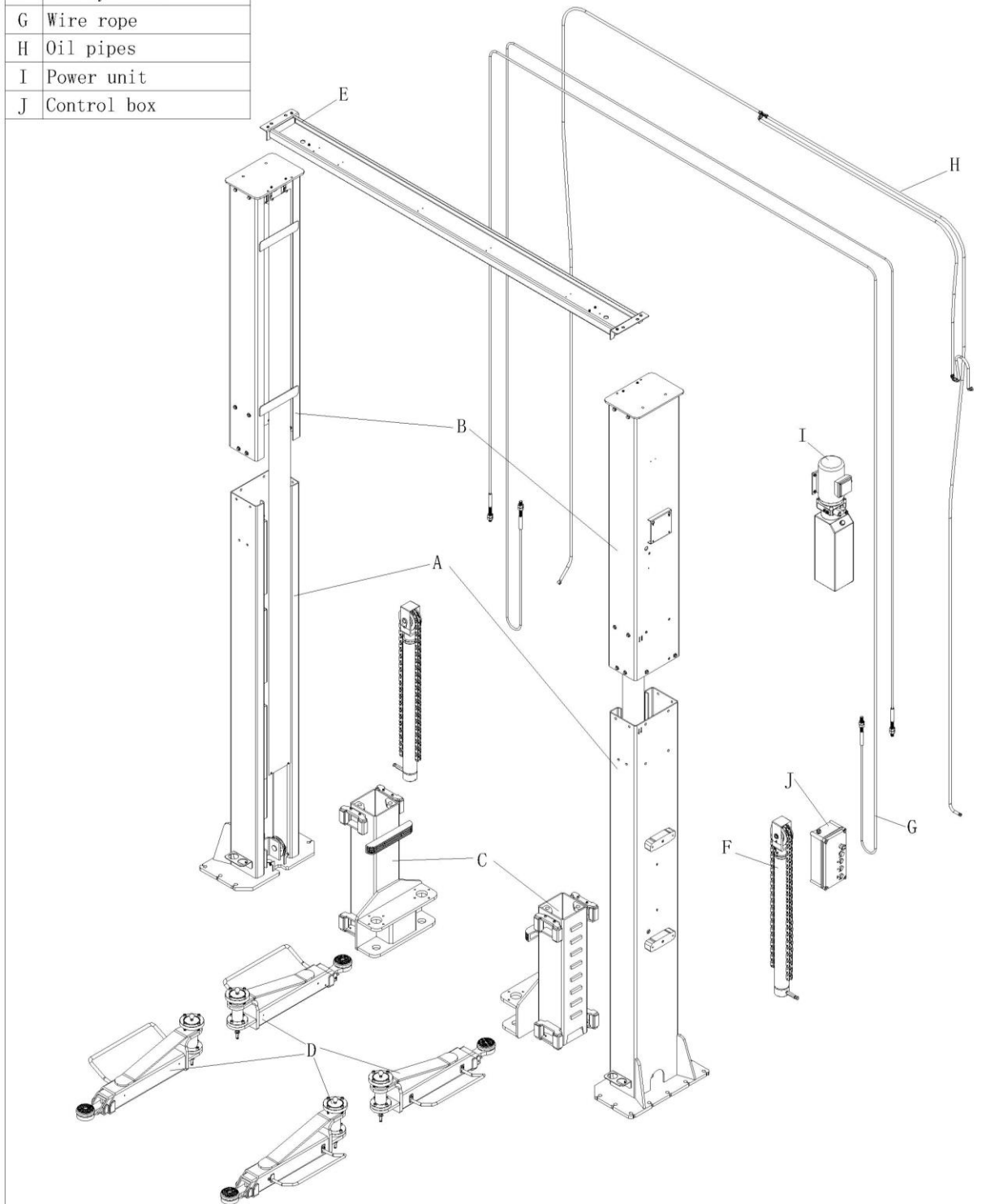
13. Hydraulic pressure elements diagram



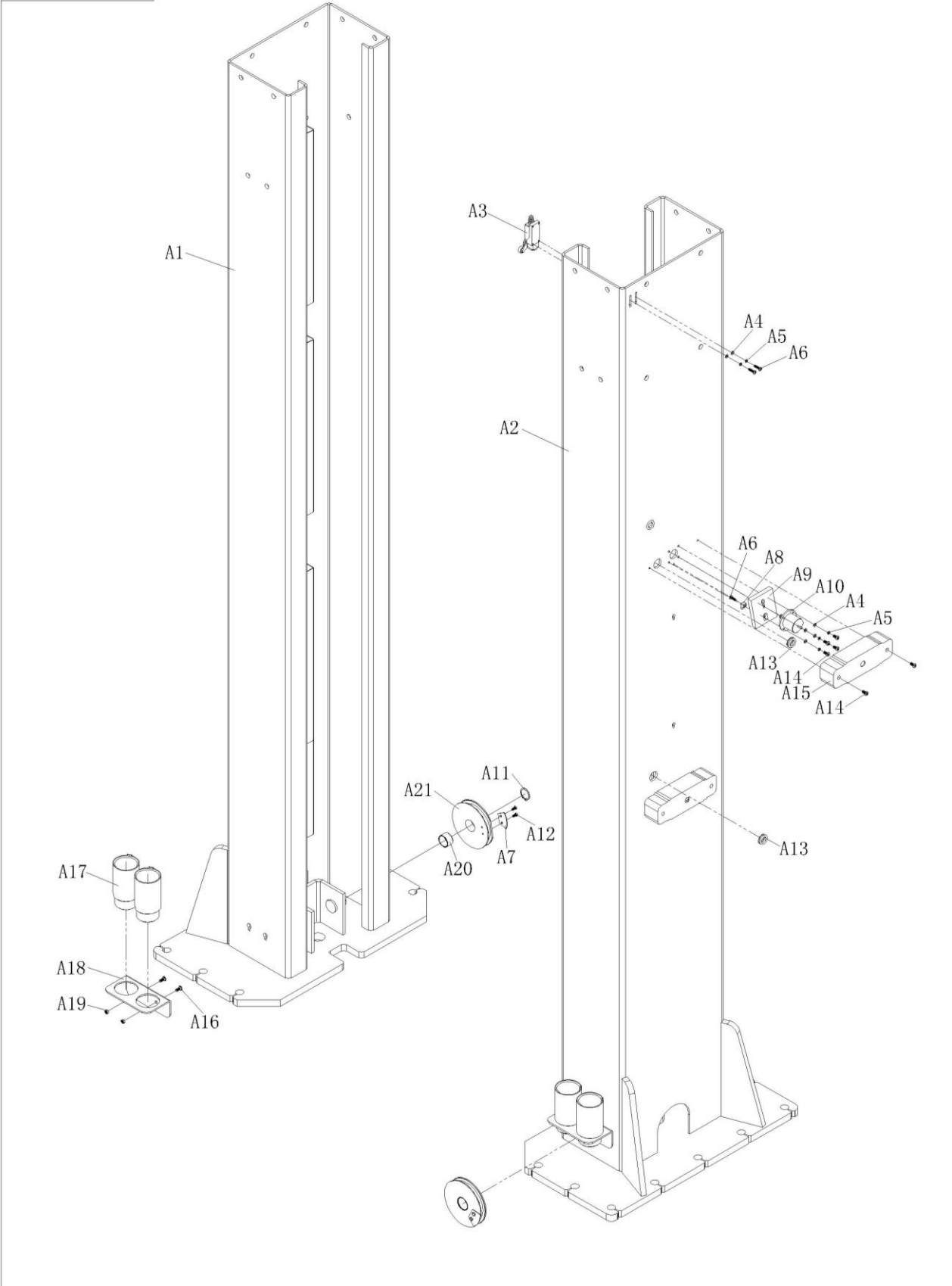
Item	Description
1	Cylinder
2	Anti-surge valve
3	One-way valve
4	Overflowing valve
5	Descent valve
6	Throttling valve
7	Gear pump
8	Pump motor
9	Filter
10	Oil tank

14.Explosion drawing

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A	Column
B	Higher column
C	Carriage
D	Lifting arm
E	Top beam
F	Oil cylinder
G	Wire rope
H	Oil pipes
I	Power unit
J	Control box

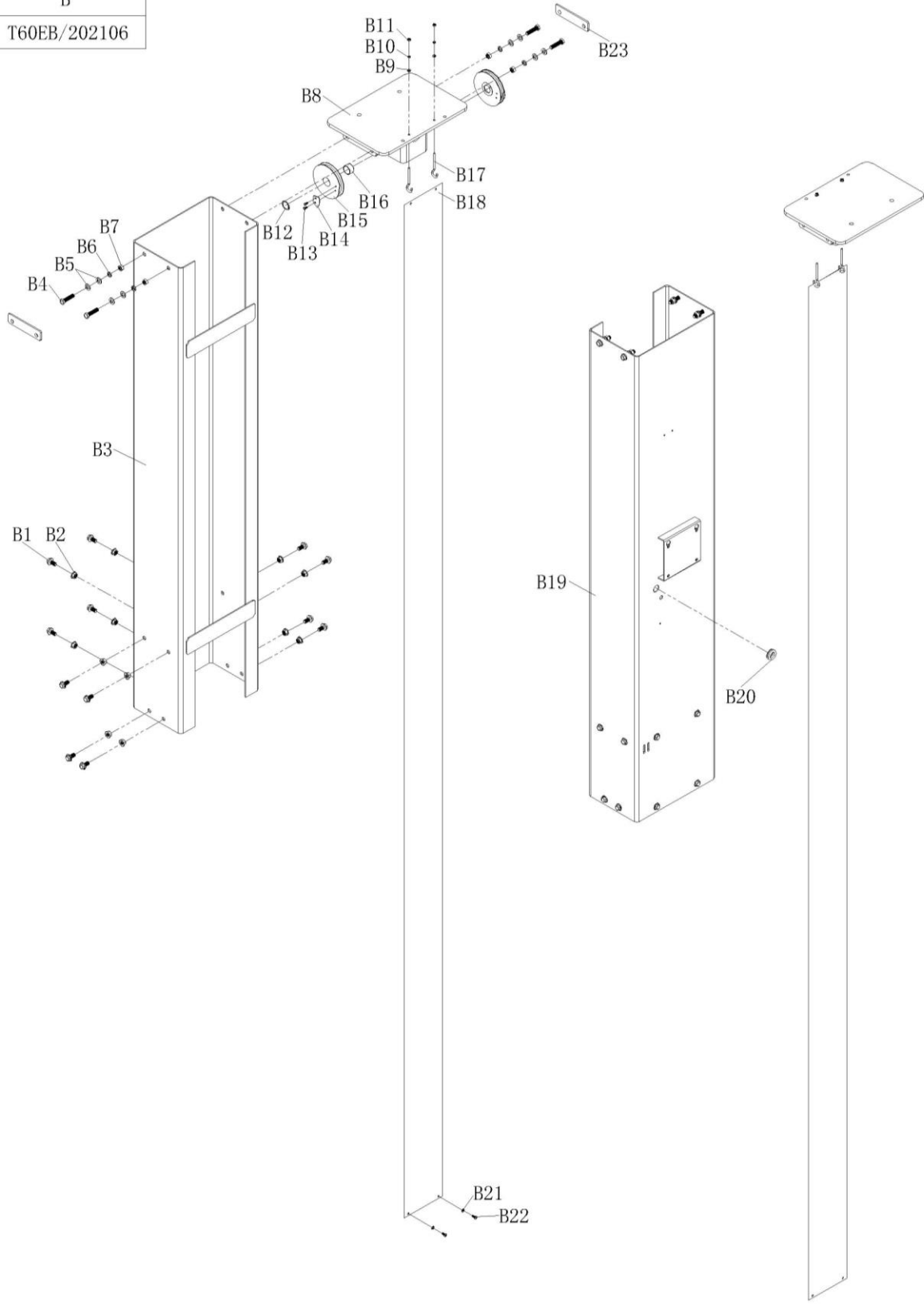


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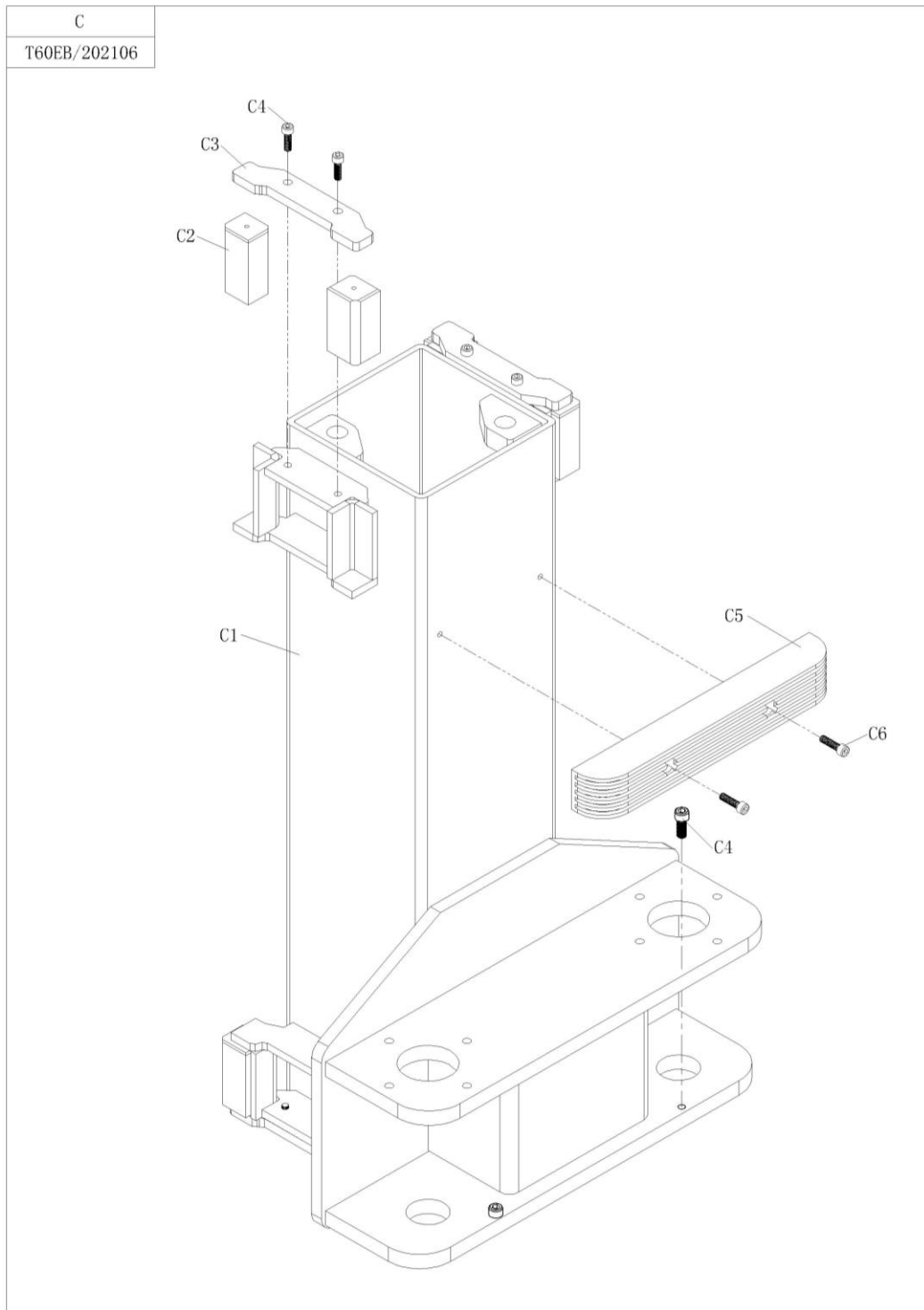


A1	JZ08036022183	main column assembly
A2	JZ08036022184	sub column assembly
A3	DD03009001593	limit switch
A4	FJ04002003880	plain washer Ø5
A5	FJ04002003787	spring washer Ø5
A6	FJ04006004339	cross recessed pan head screw M5×16
A7	JZ03030016421	steel cable damper
A8	JZ03030016419	small insurance block
A9	JZ03036016448	insurance block
A10	FJ03001003703	electromagnet MQZ2×5N×12mm
A11	FJ04001003743	circlip for shaft Ø30
A12	FJ04009004846	hexagon head bolt full thread M5×10
A13	JZ09027024167	coil
A14	FJ04006004337	cross recessed pan head screw M5×12
A15	JZ09030024207	decorate box
A16	FJ04006004040	cup head square neck bolt with large head M6×20
A17	JZ09036024311	higher column 70
A18	JZ08036022196	higher column support
A19	FJ04008004513	hexagon nut M6
A20	S-040-003020-0	shaft sleeve 343020
A21	JZ09036024297	roller

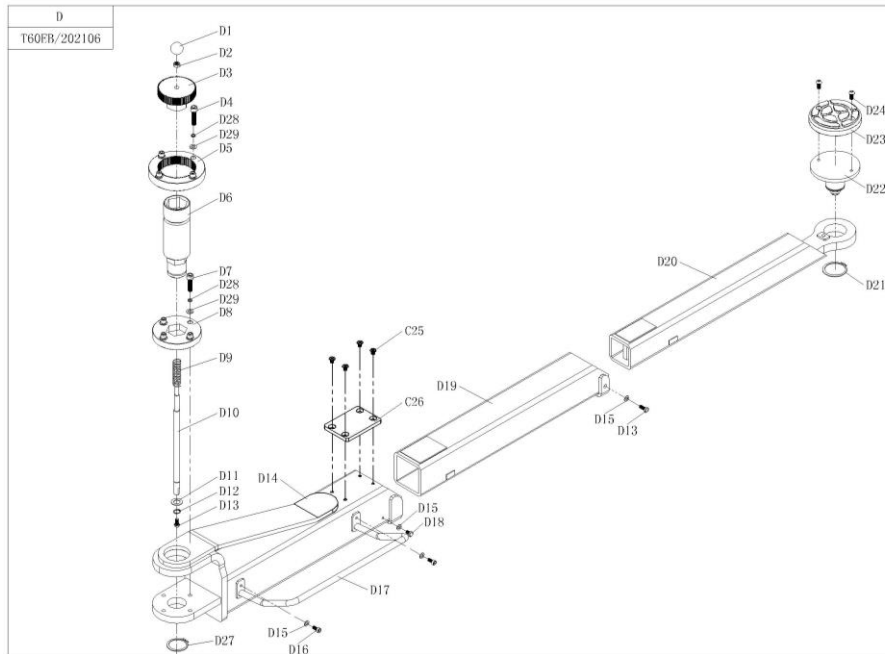
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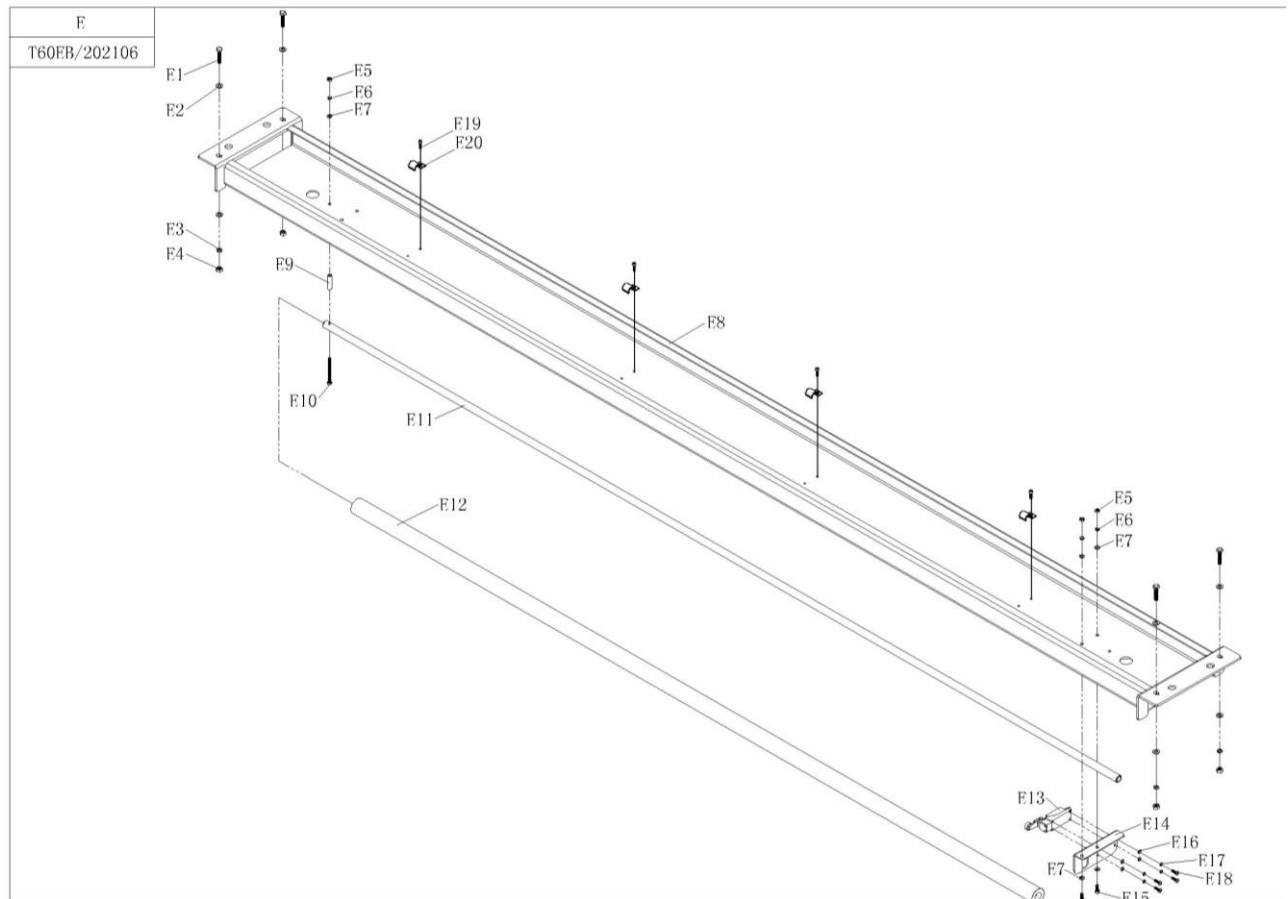
B1	FJ04009004560	hexagon flange bolt M12×25
B2	FJ04008004474	hexagon flange nut M12
B3	JZ08036022208	sub higher column assembly
B4	FJ04009004802	hexagon head bolt full thread M12×50
B5	FJ04002003812	plain washer Ø12
B6	FJ04002003774	spring washer Ø12
B7	FJ04008004496	hexagon nut M12
B8	JZ08036022200	top plate assembly
B9	FJ04002003889	plain washer Ø6
B10	FJ04002003789	spring washer Ø6
B11	FJ04008004513	hexagon nut M6
B12	FJ04001003743	circlip for shaft Ø30
B13	FJ04009004846	hexagon head bolt full thread M5×10
B14	JZ03030016421	steel cable damper
B15	JZ09036024297	roller
B16	S-040-003020-0	shaft sleeve 343020
B17	JZ09030024203	dust cloth hanger
B18	JZ09036024292	dust cloth
B19	JZ08036022202	main higher column assembly
B20	JZ09027024167	coil
B21	FJ04002003880	plain washer Ø5
B22	FJ04006004337	cross recessed pan head screw M5×12
B23	JZ08036022206	baffle



C1	JZ08036022185	carriage assembly
C2	JZ09036024296	slider
C3	JZ03036016454	slider damper
C4	FJ04009004579	hexagon socket head cap screw M10×25
C5	JZ09036024291	protection rubber mat
C6	FJ04009004711	hexagon socket head cap screw M8×35

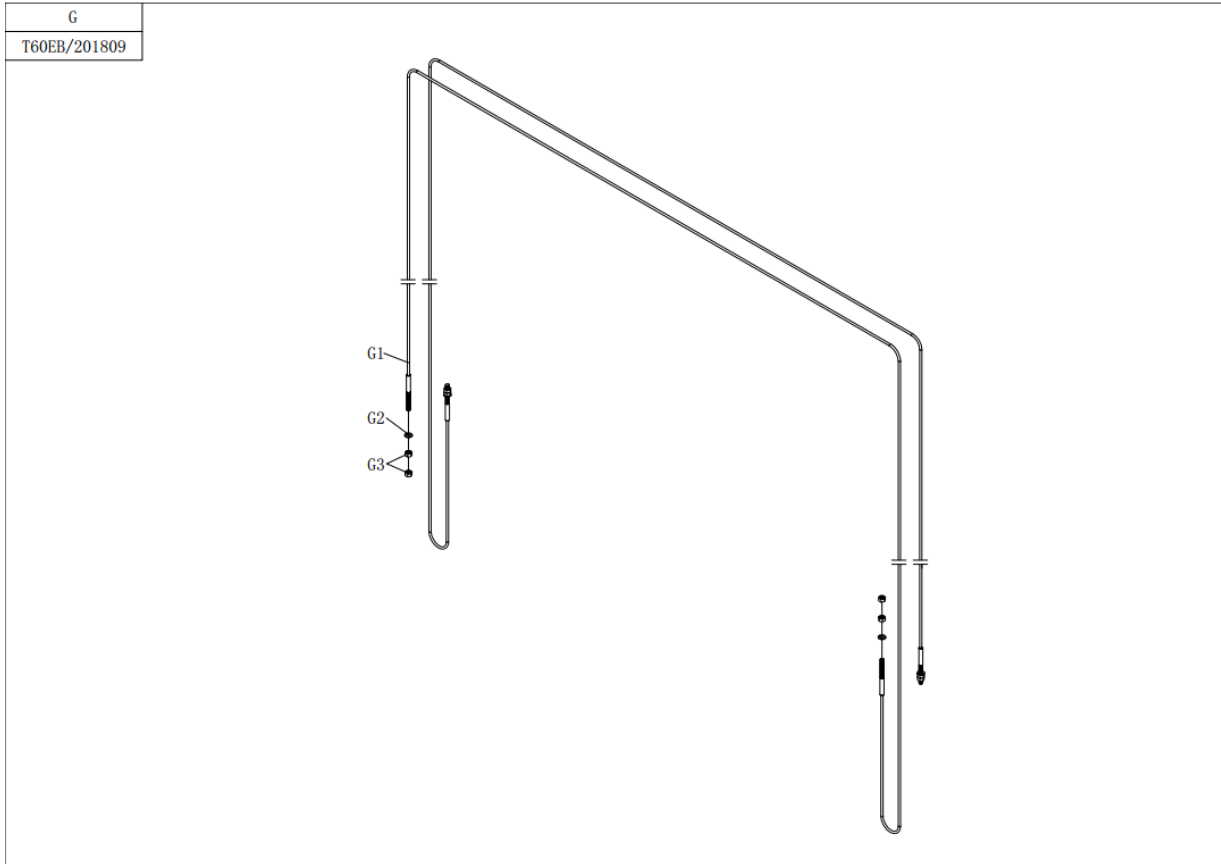


D1	FJ01003003511	handle ball M10×35
D2	FJ04008004493	hexagon nut M10
D3	JZ09036024308	conical outside tooth
D4	FJ04009004608	hexagon socket head cap screw M12×45
D5	JZ09036024309	conical inside tooth
D6	JZ03036016461	six way ferrule shaft
D7	FJ04009004607	hexagon socket head cap screw M12×40
D8	JZ03036016455	sleeve fixed block
D9	JZ09036024316	compression spring
D10	JZ03036016458	pull rod
D11	FJ04002003889	plain washer Ø16
D12	FJ04001003741	circlip for shaft Ø16
D13	FJ04009004876	hexagon head bolt full thread M8×20
D14	JZ08036022197	outside lifting arm assembly
D15	FJ04002003902	plain washer Ø8
D16	FJ04009004703	hexagon socket head cap screw M8×16
D17	JZ02042013384	lifting arm guardrail assembly
D18	FJ04009004868	hexagon head bolt full thread M8×10
D19	JZ08036022198	middle lifting arm assembly
D20	JZ08036022199	inside lifting arm assembly
D21	FJ04001003756	circlip for shaft Ø60
D22	JZ09037024366	three pallets
D23	JZ09036024307	135 rubber mat
D24	FJ04006004107	hexagon socket button head screw M10×16
D25	FJ04006004223	cross recessed countersunk head screw M8×12
D26	JZ09030024232	arm rubber mat
D27	FJ04001003754	circlip for shaft Ø50
D28	FJ04002003774	spring washer Ø12
D29	FJ04002003812	plain washer Ø12

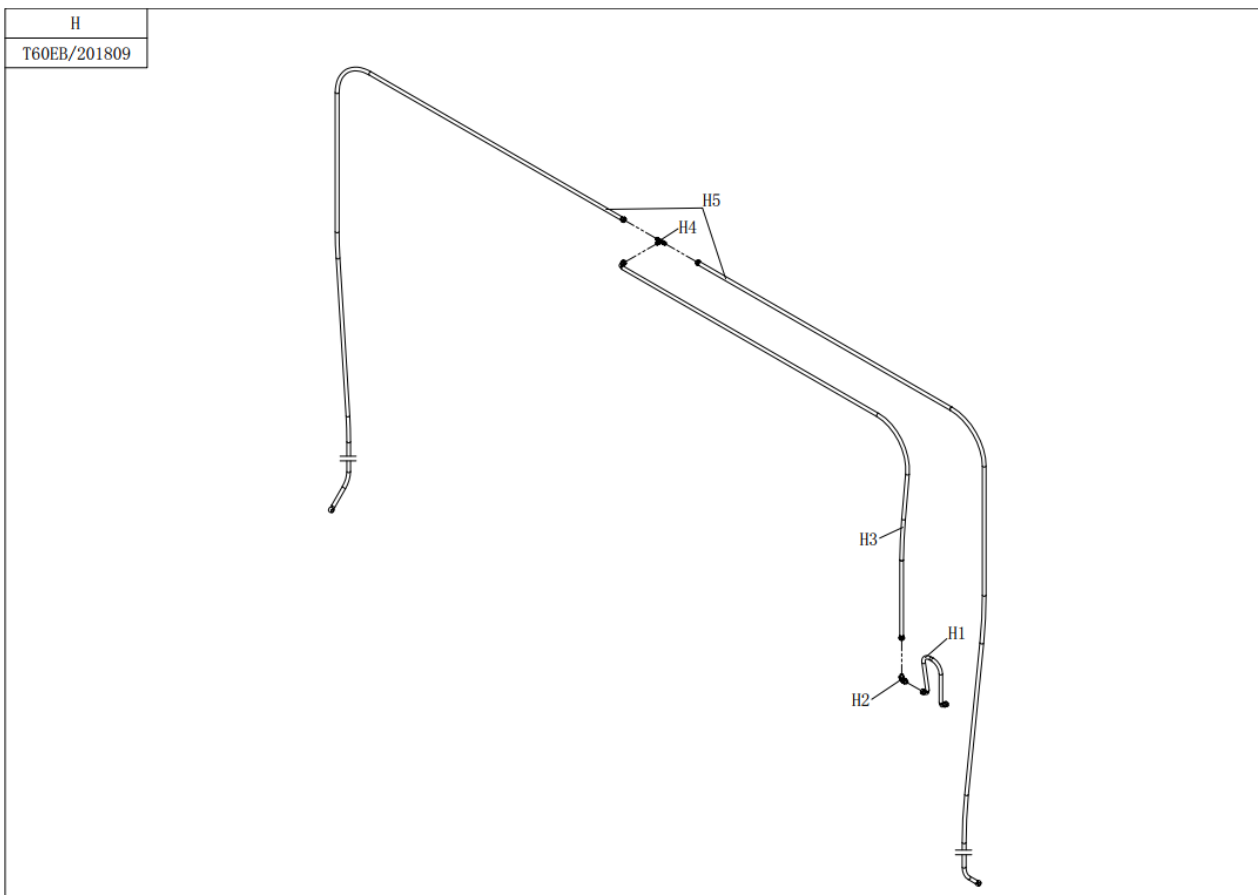


E1	FJ04009004773	hexagon head bolt full thread M10×35
E2	FJ04002003800	plain washer Ø10
E3	FJ04002003772	spring washer Ø10
E4	FJ04008004493	hexagon nut M10
E5	FJ04008004513	hexagon nut M6
E6	FJ04002003789	spring washer Ø6
E7	FJ04002003889	plain washer Ø6
E8	JZ08036022201	top beam assembly
E9	JZ03037016475	limit rod locating sleeve
E10	FJ04009004568	hexagon head bolt full thread M6×70
E11	JZ08036022207	top beam limit rod
E12	CF01003000959	top beam foam tube
E13	DD03009001593	limit switch
E14	JZ02043013445	limit switch support
E15	FJ04009004676	hexagon socket head cap screw M6×16
E16	FJ04002003880	plain washer Ø5
E17	FJ04002003787	spring washer Ø5
E18	FJ04006004337	cross recessed pan head screw M5×12
E19	FJ04009004670	hexagon socket head cap screw M6×12
E20	FJ04005003999	unilateral card

F1	FJ04009004676	hexagon socket head cap screw M6×16
F2	JZ03036016460	chain roller shaft assembly
F3	EQ14002003475	grease nipple
F4	FJ04001003749	circlip for shaft Ø30
F5	JZ03036016459	chain damper
F6	/	chain roller support
F7	JZ09036024299	chain roller
F8	FJ02007003583	plate chain
F9	FJ04009004698	hexagon socket head cap screw M8×12
F10	FJ08006005409	dust-proof ring Ø50×58×6.5
F11	/	cylinder head guide ring
F12	/	cylinder head
F13	/	muffler
F14	/	piston rod
F15	/	steel wire circlip for hole Ø40
F16	/	piston
F17	/	piston O-ring 75×5.7
F18	/	guide ring
F19	/	UHS seal ring 65×75×6
F20	/	chain fixed shaft
F21	FJ06002004984	split pin Ø2.5×40
F22	/	oil cylinder assembly
F23	EQ08005003139	oil cylinder safety valve long joint length 85mm
F24	EQ08005003172	english hinged bolt
F25	FJ02011003698	shaft steel sleeve 393560
F26	FJ08013005436	combined sealing washer
F27	FJ04009004670	hexagon socket head cap screw M6×12
F01	/	oil cylinder seal kit
F02	JZ09036024314	oil cylinder assembly

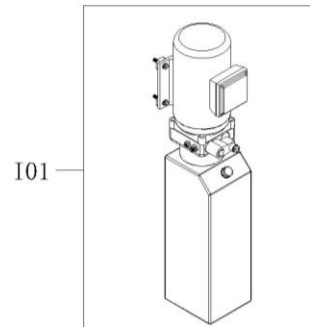
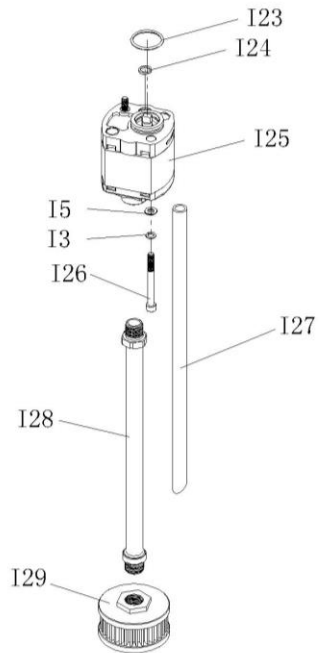
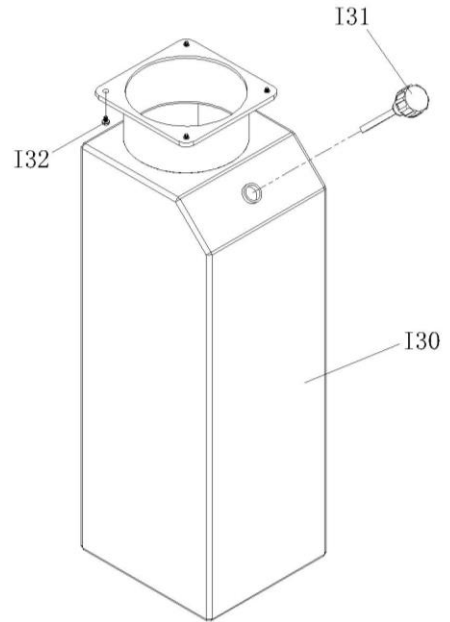
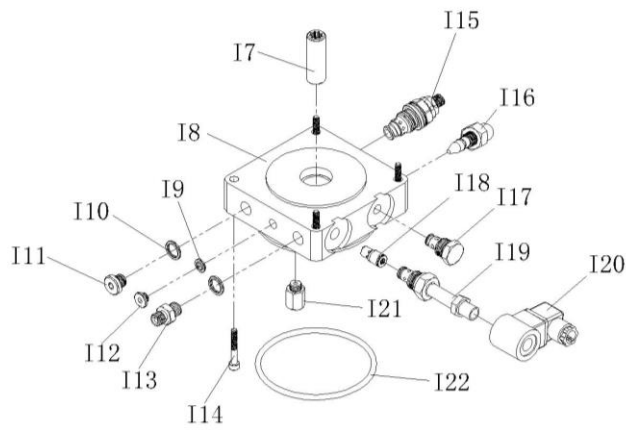
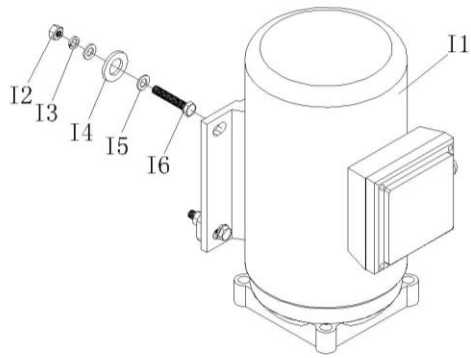


G1	JZ02042013386	steel cable assembly
G2	FJ04002003846	plain washer Ø20
G3	FJ04008004502	hexagon nut M20

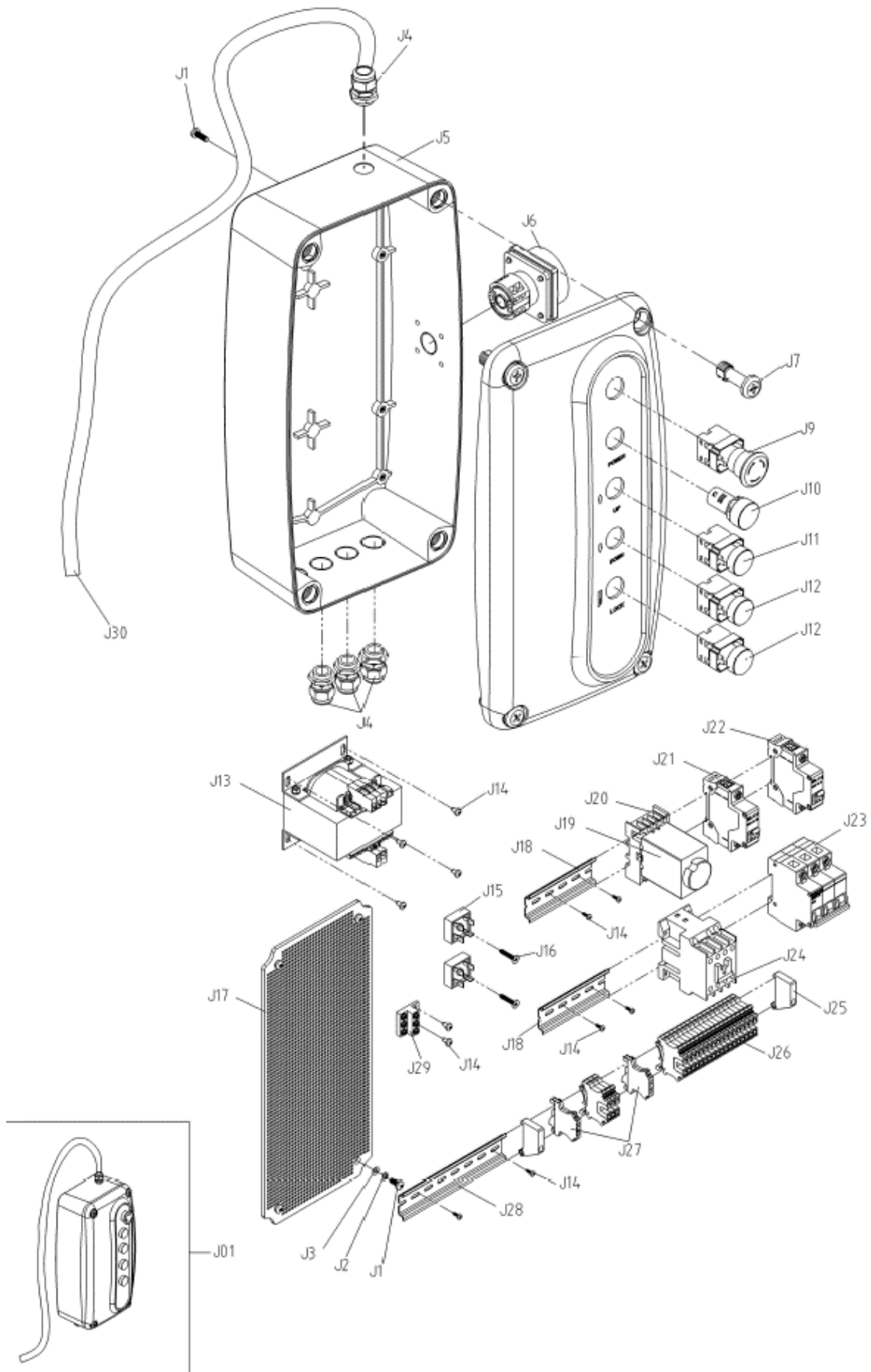


H1	JZ02085015262	high-pressure oil hose 300mm
H2	EQ08004003105	baffle elbow joint
H3	JZ02085015269	high-pressure oil hose 2700mm
H4	EQ08001003093	three-way oil hose joint
H5	JZ02085015275	high-pressure oil hose 6100mm

I
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I1	DD01002001238	3ph motor
I1(optional)	DD01002001224	1ph motor
I2	FJ04008004514	hexagon nut M8
I3	FJ04002003791	spring washer Ø8
I4	JZ09030024212	motor cushion
I5	FJ04002003902	plain washer Ø8
I6	FJ04009004882	hexagon head bolt full thread M8×35
I7	EQ01004002698	coupling
I8	EQ01004002721	center valve socket
I9	FJ08013005443	combined sealing washer Ø8
I10	FJ08013005436	combined sealing washer G1/4
I11	FJ04004003975	plug G1/4
I12	/	plug M8×1
I13	EQ08005003160	oil pipe straight union inner cone G1/4--end face G1/4
I14	/	hexagon socket head cap screw M6×40
I15	/	overflow valve
I16	FJ04004003981	plug G3/8
I17	EQ01004002737	one-way valve
I18	EQ01004002734	balance valve
I19	EQ01004002697	normally closed solenoid valve element
I20	EQ01004002692	normally closed solenoid valve coil
I21	EQ01004002702	cushion valve
I22	/	O-ring Ø109×5.3
I23	FJ08001037060	O-ring Ø32×2.4
I24	/	rectangle seal ring Ø9.5×1.7
I25	EQ01002002681	gear pump
I25(optional)	EQ01002002680	gear pump
I26	FJ04009004720	hexagon socket head cap screw M8×80
I27	EQ01004002703	return tube
I28	EQ01004002716	suction tube
I29	EQ01004002705	filter
I30	EQ01004002709	oil tank
I31	EQ01004002742	oil tank cap
I32	FJ04009004954	hexagon flange bolt M5×18
I01	EQ01001002573	power unit assembly
I01(optional)	EQ01001002568	power unit assembly



J1	FJ04006004337	cross recessed pan head screw M5×12
J2	FJ04002003787	spring washer Ø5
J3	FJ04002003880	plain washer Ø5
J4	DD02001001294	cable screw joint
J5	JZ09030045870	control box body
	JZ09030045871	control box cover
J6	DD03009001612	power switch
J7	JZ09030045876	locking screw
J9	DD03009001598	emergency stop switch
J10	DD03004001476	signal
J11	DD03009001565	button switch 1NO1NC
J12	DD03009001563	button switch 2NO
J13	DD04004001823	transformer
J14	FJ04006004382	cross recessed pan head tapping screw ST4×10
J15	DD04026002386	rectifier bridge
J16	FJ04006004236	cross recessed countersunk head tapping screw ST4×25
J17	JZ09030045873	power panel
J18	DD02011001431	lead rail
J19	DD04015002139	time relay
J20	DD04015002150	relay socket
J21	DD03007001523	circuit breaker
J22	DD03007001518	circuit breaker
J23	DD03007001521	circuit breaker 3phase
J23(optional)	DD03007001524	circuit breaker 1phase
J24	DD03008001545	AC contactor
J25	DD03010001677	fixed terminal
J26	DD03010001679	phoenix terminal
J27	DD03010001659	earth terminal
J28	DD02011001431	lead rail
J29	DD03010001691	grounding strip
J30	DD05001002403	three-phase power wire
J30(optional)	DD05001002400	single phase power wire
J01	JZ02042052017	control box complete 3phase
J01(optional)	JZ02042052016	control box complete 1phase



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