Manual introduction

This manual is prepared specifically for operator and equipment daily maintenance technicians of this car lift.

Operator should read this maintenance and use manual carefully before operating the lift. This manual includes:

- Safety of operations and maintenance personnel
- Safety of equipment itself
- Safety of the lifted car

Manual store

- This manual is part of the Lift

- This manual should be placed near the lift. In this case, operations and maintenance staff can quickly refer to any relevant instructions in this manual

- Note that reading the first chapter, where some important information and description of a security warning, which should be paid special attention to.

Catalog

Chapter 1 SAFETY PRECAUTION

1.1 SAFEGUARDS

- *Please read carefully this chapter first for safe and proper use of the car lift. This company will not be held responsibilities for any injuries or accidents which occur due to the car lift being operated without having understood the contents of the instruction manual. Keep the Instruction Manual close to the car lift so that anyone can refer to when necessary. Also, designate a person to take care of the manual.*

- *This document provides the information required for the intended use of car lift. The documentation is written for technically qualified personnel such as engineers or maintenance specialists who have been specially trained and who have the specialized knowledge required in the field of industrial machinery. A knowledge of the safety instruction and warnings contained in this document and their appropriate application are prerequisites for safe installation and commissioning as well as safety in operation and maintenance of the car lift described. Only qualified personnel have the specialized knowledge that is necessary to correctly interpret the general guidelines relating to the safety instructions and warnings and implement them in each particular case.*

- *For the sake of clarity, not all details of all versions of the product are described in this documents, nor can it cover all conceivable cases regarding installation, operation and maintenance. Should you require further information or face special problems that have not been dealt with insufficient detail in this document, please contact the manufacturer specified on cover page.*

- *We would also point out that the contents of this product documentation shall not become a part of or modify any prior or existing agreement, commitment or legal relationship. The purchase agreement contains the complete and exclusive obligations of GUANGZHOU GUANGLI CO.,LTD. Any statements contained in this document do not create new warranties or restrict the existing warranty.*

1.2 Qualified Personnel

- *Persons who are not qualified should not be allowed to handle the car lift. Non-compliance with the warnings contained in this document or appearing on the car lift can result in severe personal injury or damage to property. Only qualified personnel should be allowed to work on this car lift.*

- *Qualified persons as referred to in the safety precautions in this document as well as on the car lift itself are defined as follows:*

  a) Operating personnel who have been trained work with the car lift and are conversant with the contents of the documents in as far as it is connected with the actual operation of the car lift;

- *b) Service personnel who are trained to repair such the car lift and who are authorized to energize, clear, ground and tag circuits, equipment and systems in accordance with established safety practices.*

1.3 Danger Notices

The safety precautions in this manual are classified into the following four levels. Please be particularly careful when performing operations that have a high degree of danger. DANGER : Failure to follow this safety precaution may result in a great physical danger to the operator, or even death.

WARNING Failure to follow this safety precaution may result in an injury to the operator, or damage to the car lift.

CAUTION *Failure to follow this safety precaution may result in a great physical danger to the operator, or severe damage to the car lift.*

NOTICE Failure to follow this safety precaution may result in damage to the car lift.

1.4 Principle safety objective

1.4.1 The principle safety objective is to remove the possibility of any hazard or risk to the health or safety of the car lift's operator or service personnel.

1.4.2 Extreme caution must be exercised while servicing or installing the car lift.

1.4.3 The only safe policy when working or inspecting the car lift is to follow the instructions in this manual. Wherever possible shut off all electrical power and follow the procedures outlined in this manual.

1.4.4 Accident prevention should become part of the standard working, operating and maintenance procedures, and training should be provided to ensure safety standards are understood. Part of safety training should include the instructions detailed in this section.

1.4.5 Always ensure servicing and maintenance tasks are carried out by suitable qualified personnel. The operator should understand the limits of their responsibility, and the training should reinforce the importance of not exceeding them.

1.5 Safety notices

- *To protect the operator or service personnel from any injuries or accidents during operating the car lift, please read this section and carefully for safe and proper use of the car lift.*

- *General Safeguards:*

A) *Please read carefully this instruction manual for safe and proper use of the car lift.*

- B) *Only qualified personnel should be allowed to work on this car lift.*

- C) *Checking before operation and routine inspection should be carried out in accordance with the procedures described in the manual.*
-

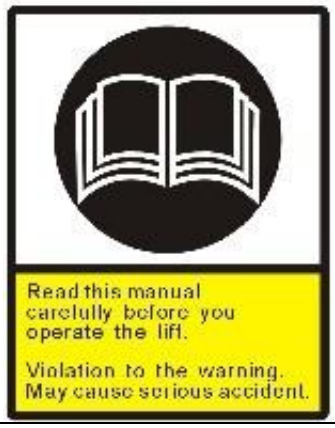
D) *When the abnormal condition not specified at this instruction manual is occurred during operating, stop the operation of car lift and contact the manufacturer specified on cover page or distributor.*

This car lift should be only for repairing the car.

DANGER	
	*Do not enter under the car lift during lifting the car. You may result in a great physical danger or even death to you.。*
	*Do escape to the safety zone without staying under car lift when the car is possible to fall down. You may crush under car and then, result in a great physical danger or even death.*

WARNING	
	*Do not lower the lift in the state of supporting a car by a stick to attach or detach components. The car may fall down.*
	*Do not shake the lifted-up car. The car may fall down.*
	*Do not move up the lift in the condition of putting only one side of car into the lift. A car may fall down or damage. And also, the lift may damage.*

	*Never modify the safety devices. If the safety devices are not operated, a serious accident may be happened.*
	*During lowering the lift, be careful to not put foot under a table. Serious injury may be happened.*

⚠ CAUTION	
	*Use the lift after reading carefully the instruction manual and understand the contents of them for safe and proper use of the car lift. If a user does not follow warnings, a serious accident may be happened.*

	*When the car enters into the lift, keep the balance of before and behind, and right and left of the car. A car may fall down during vibration, attachment or detachment of components.*
	*Electric shock. When opening a control box, be careful to the electric shock. Serious injury or death may be happened.*

1.6 Essential Safety Checks (ESC's)

- *The essential safety checks are the most important part of the operator's responsibility. The purpose of the ESC's is to ensure the safety features of the car lift are functioning properly, and thus the car lift is in a safe condition for use.*

- *In addition to the operator it is recommended that regular additional ESC's are carried out by the responsible person and that a record is maintained in accordance with the EU machinery Regulations.*

- *If any of the ESC's are in the "Fail" condition do not operate the car lift, immediately notify the responsible person within the company and contact the manufacturer as soon as possible.*

ESSENTIAL SAFETY CHECKS (ESC'S):

GROUP 1 GENERAL -Visual Inspection

ESC	***Description***	***O.K.***	***Fail***
1A	*Machine guarding*		

1B	*Electrical system including protective earth grounding*		

GROUP 2 Electrical isolator switch

Set the electrical isolator switch to OFF position and check the following conditions.

ESC	***Description***	***O.K.***	***Fail***
2A	*All functions have been disabled*		

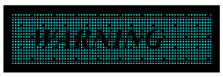
1.7 Safety Signs and Warnings location

1.8 Illumination

This machine is not provided with a local lighting since it is designed for indoor use only. The sufficient illumination of the working area must be fulfilled by the factory in accordance with the appropriate code of practice and factory regulations. Minimum 300 lx is required. Flicker, dazzling, shadows and stroboscopic effects must be avoided to prevent a risk.

1.9 Level of sound pressure

The equivalent continuous A-weighted sound pressure levels of car lift do not exceed 85dB (A).



The factory must provide operator(s) with the appropriate measures including but not limited to an ear protection and a warning sign(s) if the sound pressure of 85dB (A) is exceeded.

1-10 Training

Contact the manufacturer specified on cover page for information on training courses to aid you in becoming familiar with this car lift.

Chapter 2 PACKING, TRANSPORT AND STORAGE

ALL PACKING, LIFTING, HANDLING, TRANSPORT AND UNPACKING OPERATIONS ARE TO BE PERFORMED EXCLUSIVELY BY EXPERT PERSONNEL

2-1

The packing dimension as the picture

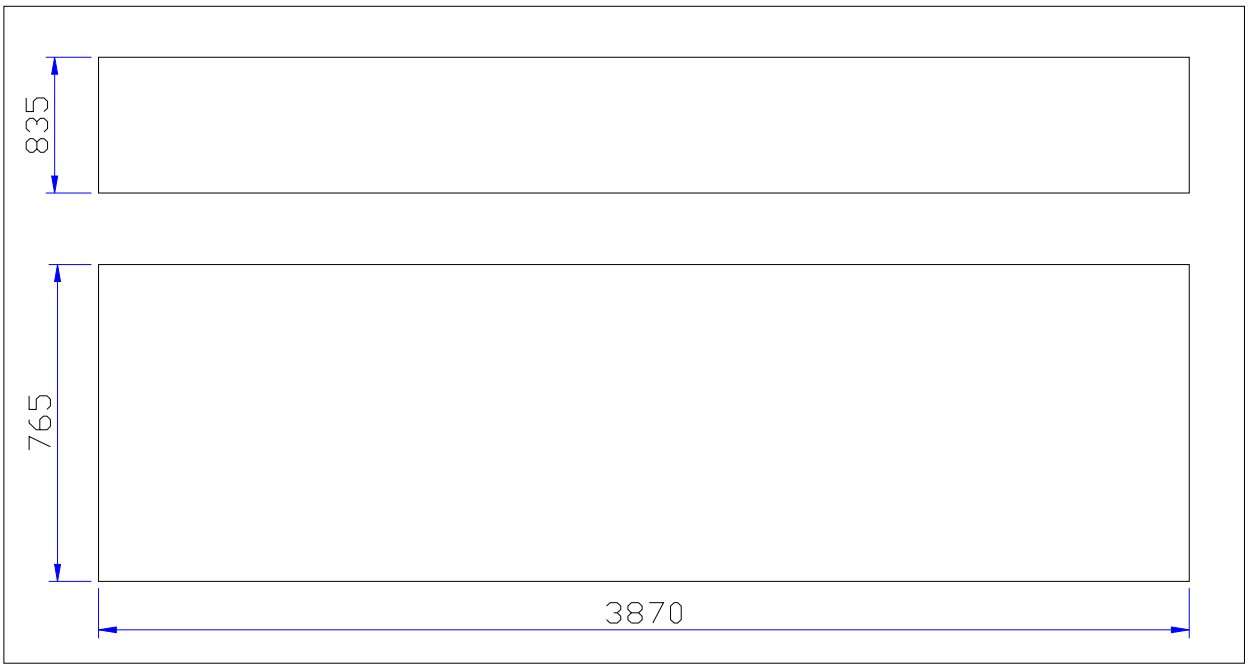


Fig.1

Standard equipment: oil line and accessory (1# CTN), main and sub beam (2 #CTN), control box (3# CTN), total is 3pieces.

No.	Name	Remark
1#	*oil line and accessory*	High press oil pipe D3/8-3110 1pc, D3/8-950—1pc,M16 *ground bolt* 12 sets， gas pipe D3/8-3540—2pcs，Gas pipe connector(three mouths) 3-G3/8—1pc, Manual Qualification certificate 1piece; Packing list 1piece.
2#	*Control box*	*Control box and power unit.*
3#	*Mainframe*	*Whole mainframe*

2.2 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.

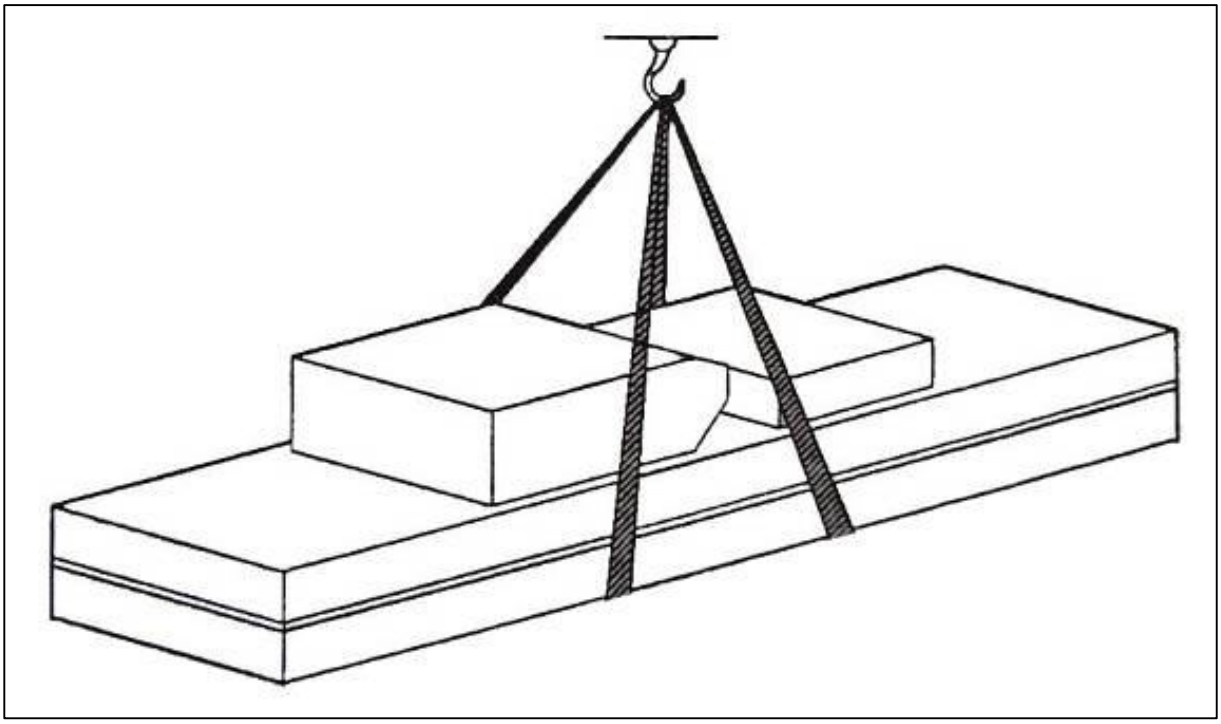
During loading and unloading operation, goods must be handled by vehicles or ships.

- *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 due to transport operations.*

- *If finding missing parts, possible defects or damage due to transport, one should examine damaged cartons according to <<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 2)



2.3 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 control box should be placed perpendicularly during the transport; and prevent other goods from extrusion.

-The temperature for machine storage: -25ºC-- 55ºC

Chapter 3 SPECIAL FEATURE

3.1 Special feature

This lift (see Fig.3-1) is suitable for cars' service and maintenance, its characteristics is as follows:

a) The safety insurance of its two column is controlled by a switch for release

b) Stand column is formed as a whole by one time, hydraulic power drives lifting

c) Double insurance and self-locking protection devices, Use the chain to lift rope for balance system

d) Adopt mechanical height limit of insurance device, and impact-proof type height limit of insurance device

e) Use asymmetry type bracket arm, lifting more stable and reliable

f) hydro-cylinder inversion and pump station

Fig.3-1.main structure

3-2 Main specs

a) Lifting capacity: 4000 kg

b) Lifting height: 1900mm

c) Lowest height: 130 mm

d) Lifting time: *50 s*

e) Descending time: *90 s*

f) Electrical source : *3/N/PE--380V/50Hz*

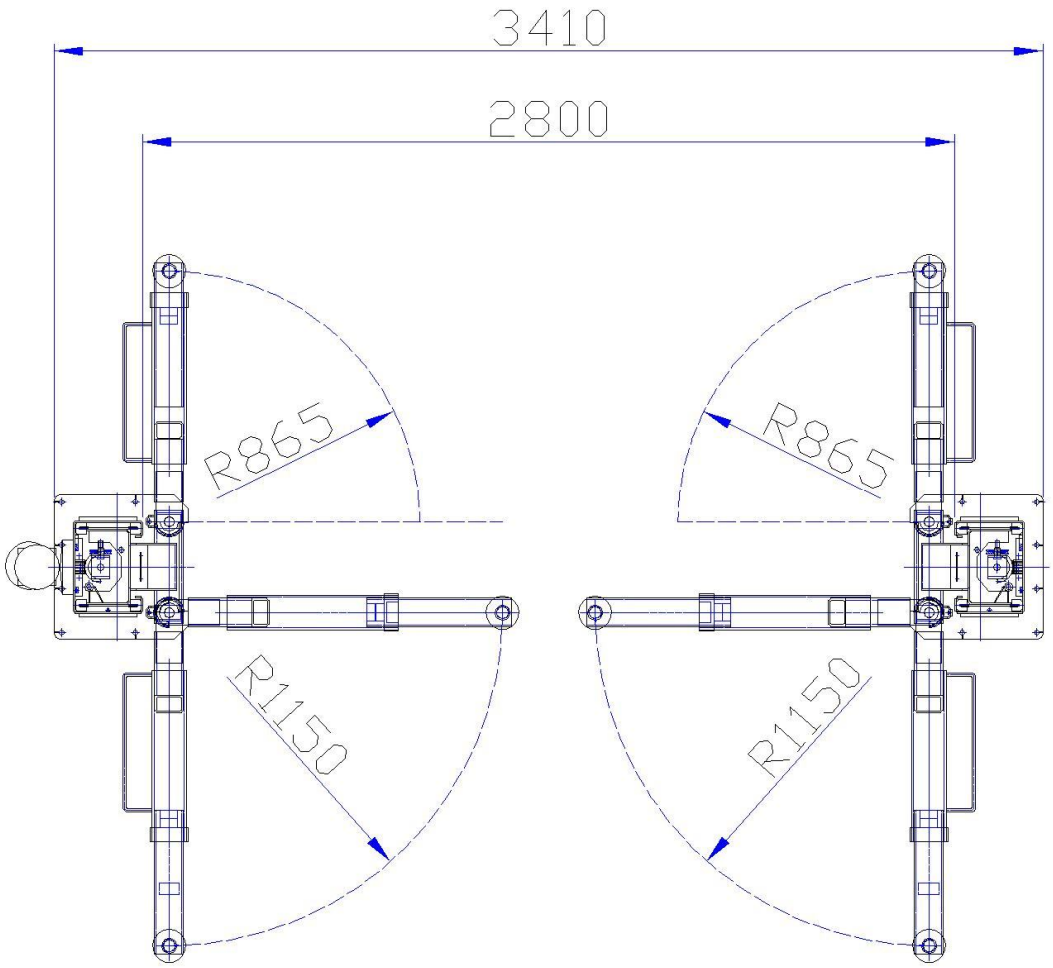
g)Motor power : *2.2kW/400V/50Hz*

h) Type of oil: *30 #*

i) Rated oil pressure : *12 Mpa*

j) Net weight : *650 kg*

3.3 External view dimension (see Fig. 3-2)



3.4 MARKING

- *On reception of the lift verify the presence of the identification nameplate that has to correspond to that which is shown below. The nameplate is applied on the generator unit.*
- *the data which is reported, is to be communicated to our technical backup service for the dispatch of spare parts or however for any information on the lift.*

3.5 manufacturer identification

Guangzhou Guangli Electromechanical Faciltes Enineering Co.,Ltd

2nd Floor，Xingchen Building，NO.158 Guangyuan Zhong RD.，Guangzhou，China
Tell:+86-20-86569629 Fax:+86-20-865869
E-mail：glrtgs@163.net Http：//www.gzguangli.com.cn

Chapter 4 INSTALLATION AND ADJUSTMENT

The equipment should be installed in a room without dust and other pollution. The room should have enough illumination (not lower than 100 lx). Control unit should be put at a safe place. Prepare the electrical source: 400V/50Hz/3Ph.Working temperature: -25^{0}C～55^{0}C.Humidity: 30～95%.And it

must have fire extinguisher at the workshop.

4.2 Base preparation

Prepare ground base according to machine's dimensional size (see Fig.3-2). The thickness and levelness of the concrete is important， and machine's adjustment is limited. The concrete's thickness should be ≥150mm and the error of levelness should be ≤5mm when the ground condition is good.

4.3 Direction of the oil-pipe' over

Equipment on its position Oil-pipe's cover should be identical with the driving-in direction.

4.4 Power and air source connection

Connect power line according to the electric diagram (see Fig.6-1) (provided by user). The three black lines are phase wire and a blue line is N wire. A yellow and green line is ground wire which should be connected to the ground reliably.

4.5 Adding hydraulic oil

Pour 16 liters of L-HM32 anti-wear hydraulic oil (provided by user) into oil tank. The highest level should be 20mm from the top of the tank and the lowest level should be 40mm from the top of the tank (check with the detective ruler on the oil pouring air cover).

4.6 Pipe connection

Connect the high-pressure oil pipe (protect the pipe connecting end and let no soil into the pipe) according to the oil-pipe connecting method of "Connecting diagram of hydraulic system" (see Fig.5-1)

4.7 Oil-adding adjustment

- *Connecting power, the indicator is on. Touch UP button (see Fig.4-2); judge the rotating direction of the motor. Whether the direction is clockwise (see Fig.4-2), or oil can be out from the high-pressure rubber pipe, Otherwise cut off power and change phase. When the direction is correct, do the adjustment of adding oil and air eliminating:*

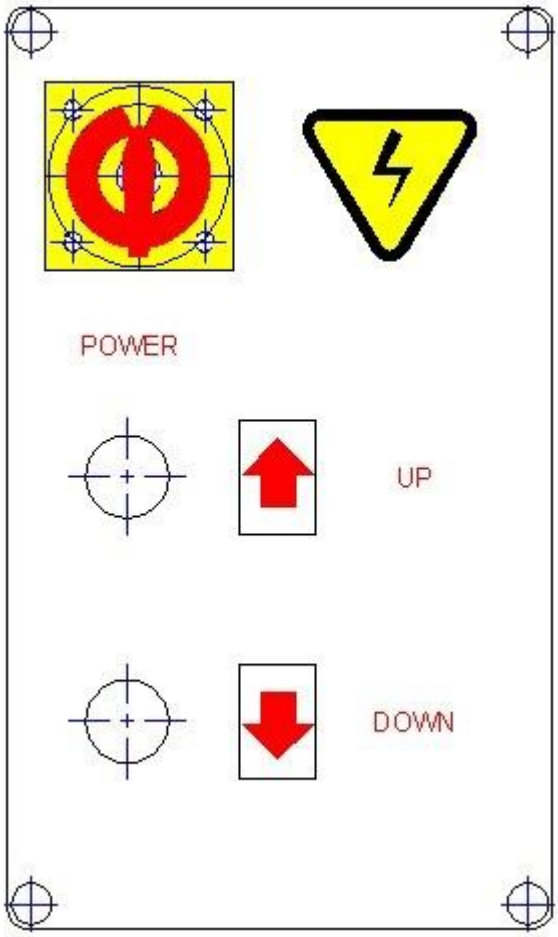


Figure 4-1 Control Panel

Open the valve under no-load situaton, like the one in Figure 5-1, press the UP button, and then press the DOWN button (Remarks: open the valve to release the air in the cylinder when lifting down, close the valve when lifting up), repeat several times until the air is completely released. You can normally operate the lift after these steps.

4-8 Foundation Structure and Level Adjustment

Turn up the lift to certian height: Intsall the anchoring bolt(M16×150, 12pcs) withΦ16 electric drill, adjust the bolts to the foundation, make sure the margin of error between two levels is less than 5mm.

The two level margin of error should be less than 10mm when the lift is at the max. height.Fill the foundation with concrete or steel plates, knock the bolt into the foundation to be firm then adjust items to be exact.

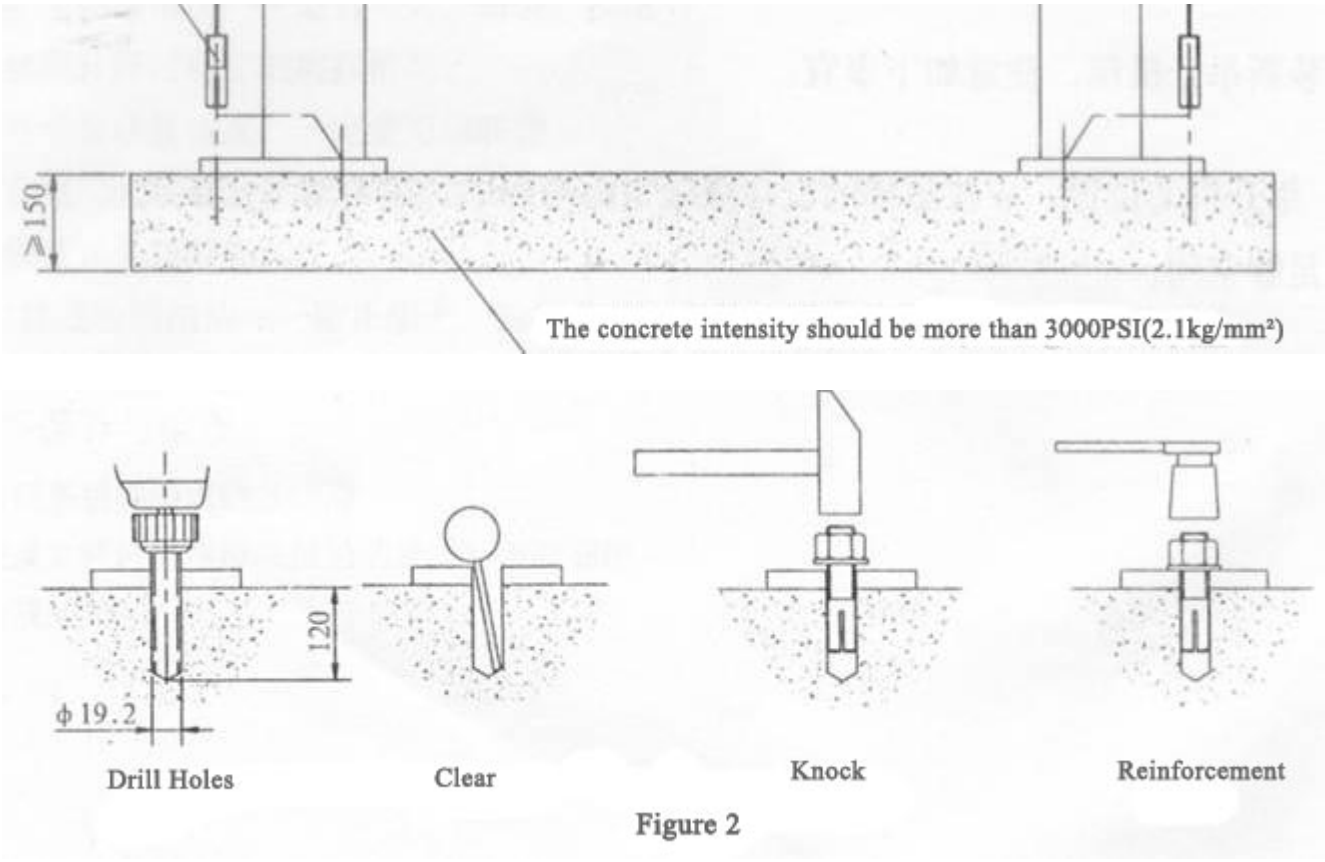


Figure 2

4-9 Load Testing

Check the oil channel wether it leaks or not, foundation to be firm and stable enough. Fristly do the no-load testing, if there are no problems after more than twice no-load testing, then do the load testing with 3500kg capacity, lift UP and Down more than twice. The initial lifting should not be too high, it will be better to increase the height gradually, until there is no abnormal noise or oil leaks. Close the testing if all the lifting time and height meets the technical parameters.

If they are not in the same level, do the operation 5.7 and 5.8 to see there is no air in the return circuit, then adjust the lift to be stable and level, which can be also done after the load testing.

Chart 5 Hydraulic System

5.1 Hydraulic System Structure

The hydraulic system is installed in the contraol panel. Open the front cover to see like the Figure 4, pump, motor, circuit board, vavle and the oil channel connecting as the Figure 5-1. The working principle of hydraulic system is shown in the Figure 5-2; Adjust the throttle valve to change the low preesure oil supply quantity, adjust the release valve to change the system pressure(already set by manufacture) and lifting capacity(Remarks:not allowed to rated oil pressure 16Mpa)

Figure 5-1 Hydraulic System

No.	Name	Quantity	No.	Name	Quantity
1	Cylinder	2	4	Cylinder Connector	
2	Cylinder Connector	2	5	Oil Pipe “T” triangle	
3	High-pressure Pipe	1pc	6	Motor	

5.2 Motor Rotation Direction

Firstly notice the motor rotation direction after connecting the electrical wires like Figure 4. The gear pump of motor may be damaged in the wrong rotation direction for a long time.

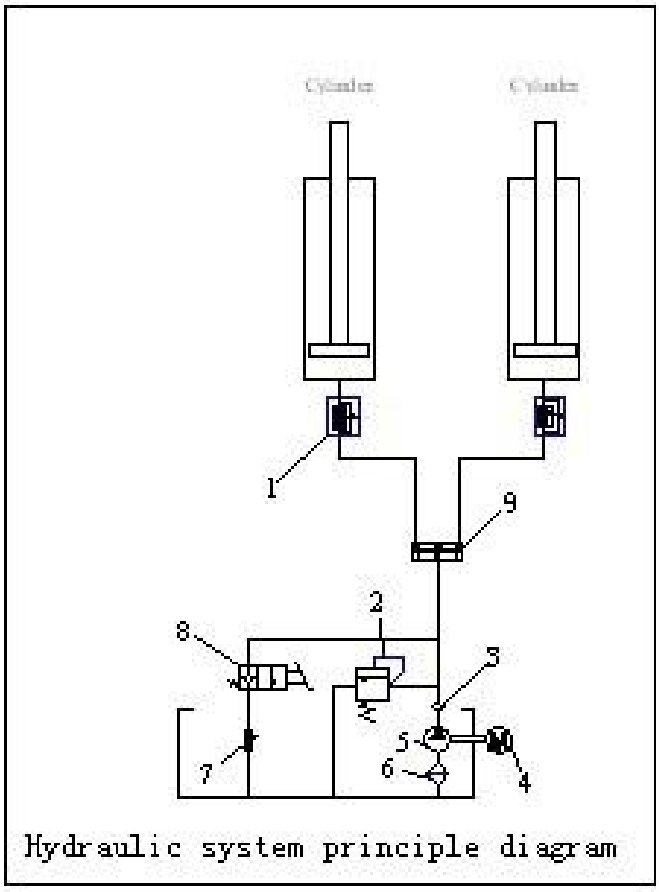


Figure 5-2 Hydraulic System Principle Diagram

No.	Name	Quantity	No.	Name	Quantity
1	Anti-explosion Valve	2	6	Filter Net	1
2	Overflow Valve	1	7	Down throttle valve	1
3	Check Valve	1	8	Motor	1
4	Motor	1	9	Diverting Valve	1
5	Gear Pump	1	10		

5.3 Down under Sudden Power Failure

If you want to lift down the lift under sudden power failure situation, firstly, turn off the power, open the front cover of control panel, then rotate the switch of solenoid pressure release valve in counterclockwise direction, until the lift to the bottom, after that, screw up the valve switch quickly, otherwise the lift will not work even with normal power.

Chart 6 Electrical System

See the below electrical working principle and operation.

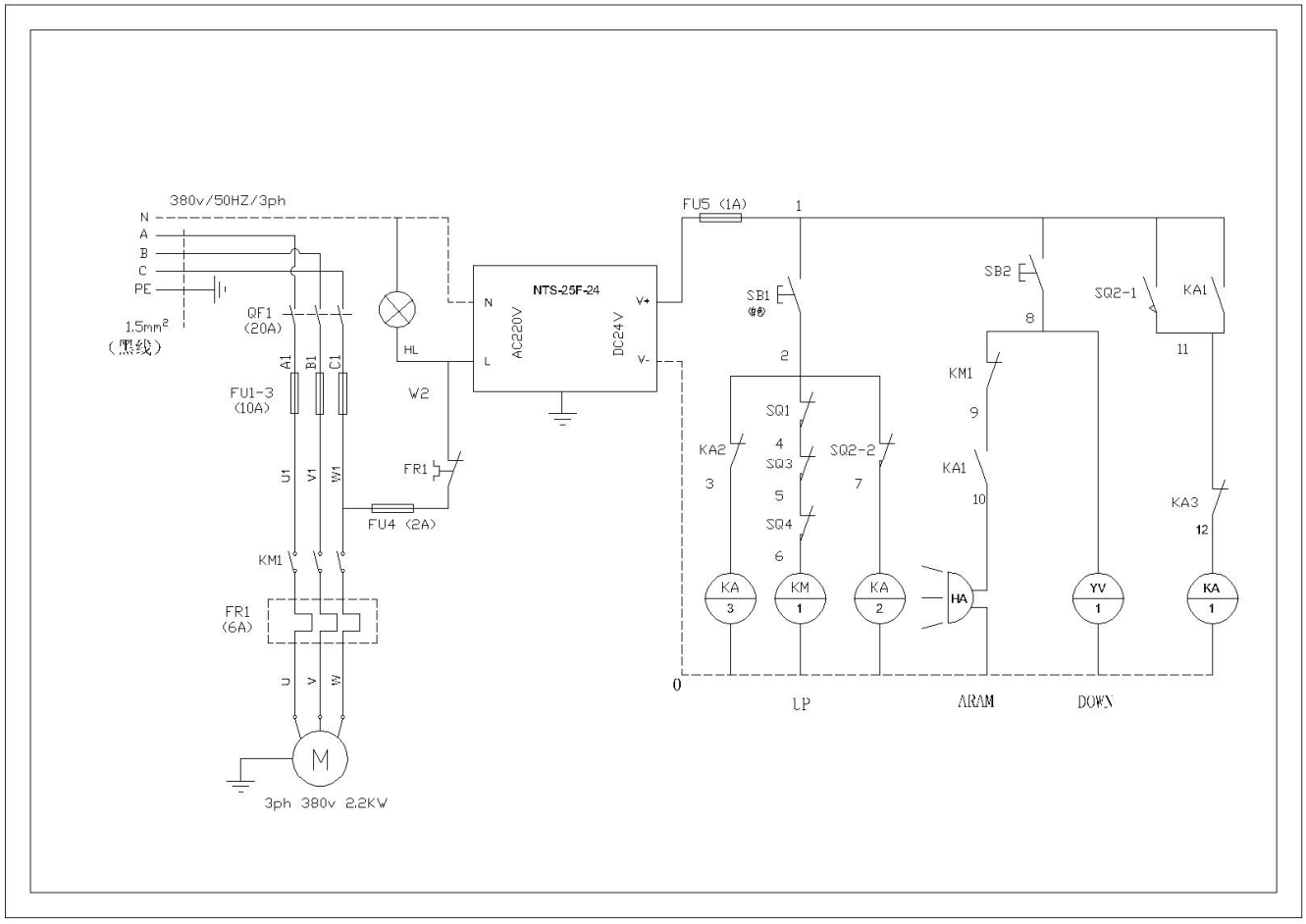


Figure 5-1 Electrical System Working Principle

No.	symbol	name	model	qty	REMARKS
1	M	motor	2.2KW	1	
2	QF	power	NTS-25F-24	1	
3	KM	contactor	DC24V	1	
4	HL	indicator	DC/24V	1	
5	SQ	Stroke switch	TZ8018	2	
6	SB1	Press switch	5A	4	
7	FU5	Safety tube	1A	1	
8	FU4	Safety tube	2A	1	
10	FU1-3	Safety tube	10A	3	
11	FR	thermal relay	6A	1	
11	KA1-3	middle relay	6A	3	

CHAPTER VII Parts Connection

7.1 Parts 1.6-1

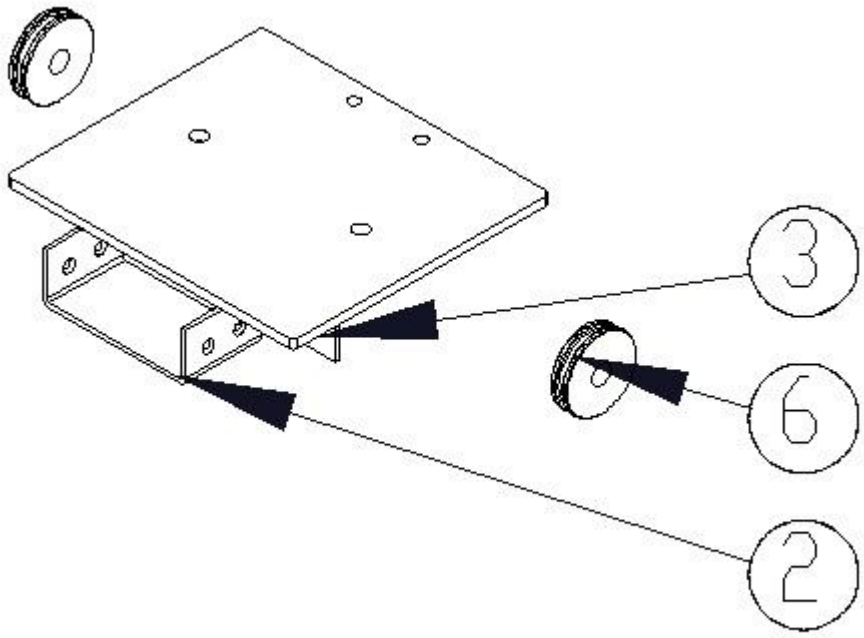


Fig.6-1 Parts connection diagram

No.	Name	QTY	No.	Name	QTY
2	Connecting rod plate	2			
3	Column interconnect	4			
5	Sheave seat	2			
6	Sheave	4			
8	Bolt (M12*30)	8			
9	Nuts	8			
10	Washer	8			
11	Spring Washer	8			

7.2 Part 2 link shown.6-2

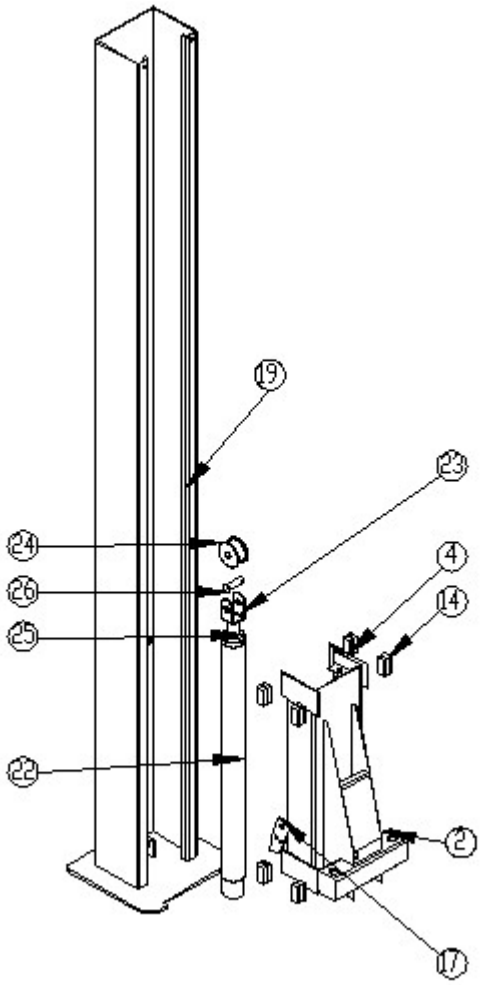


Fig.6-2 Parts connection diagram

No.	Name	QTY	No.	Name	QTY
2	Corbel lock seat	2	25	Chain	1
4	Carriage	1	26	Chain wheel	1
14	Slider	8	27	Insurance rope	1
17	Security locks	1			
19	Column	1			
22	Cylinder	1			
23	Sprocket Block	1			
24	Chain wheel	2			

7.3 Part 3 connection diagram.6-3

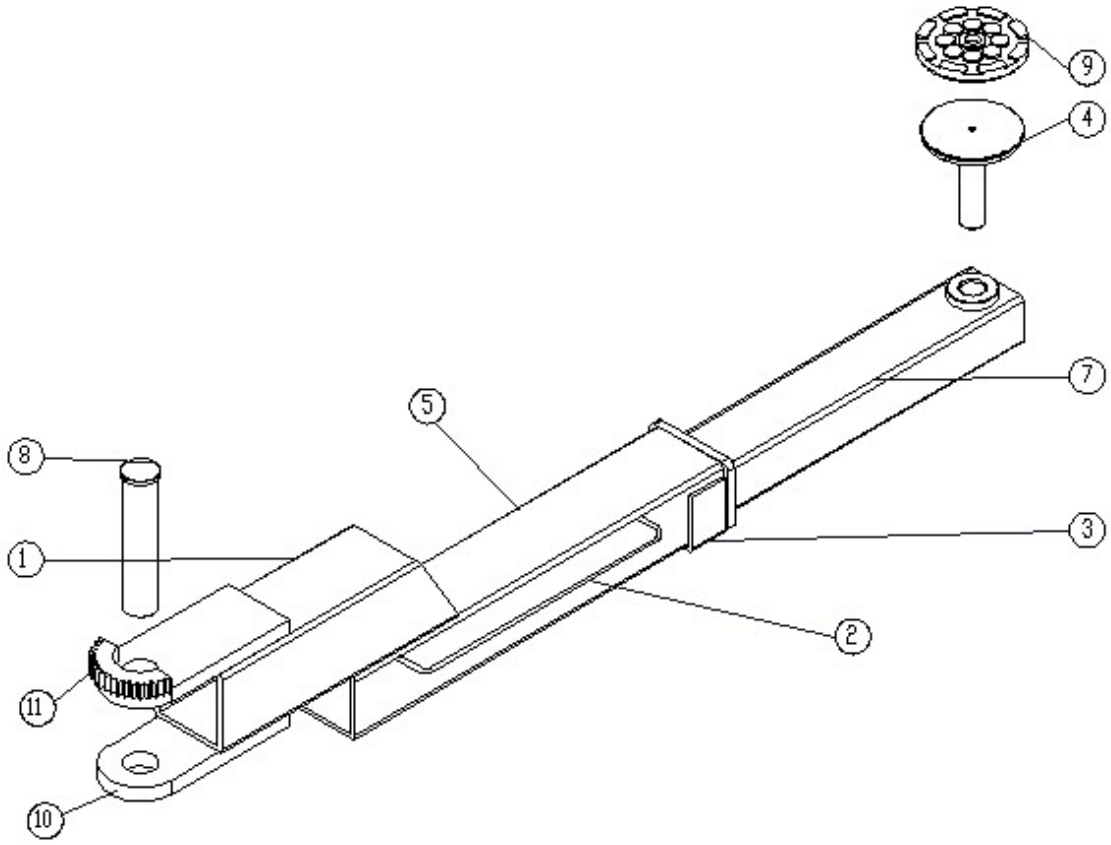
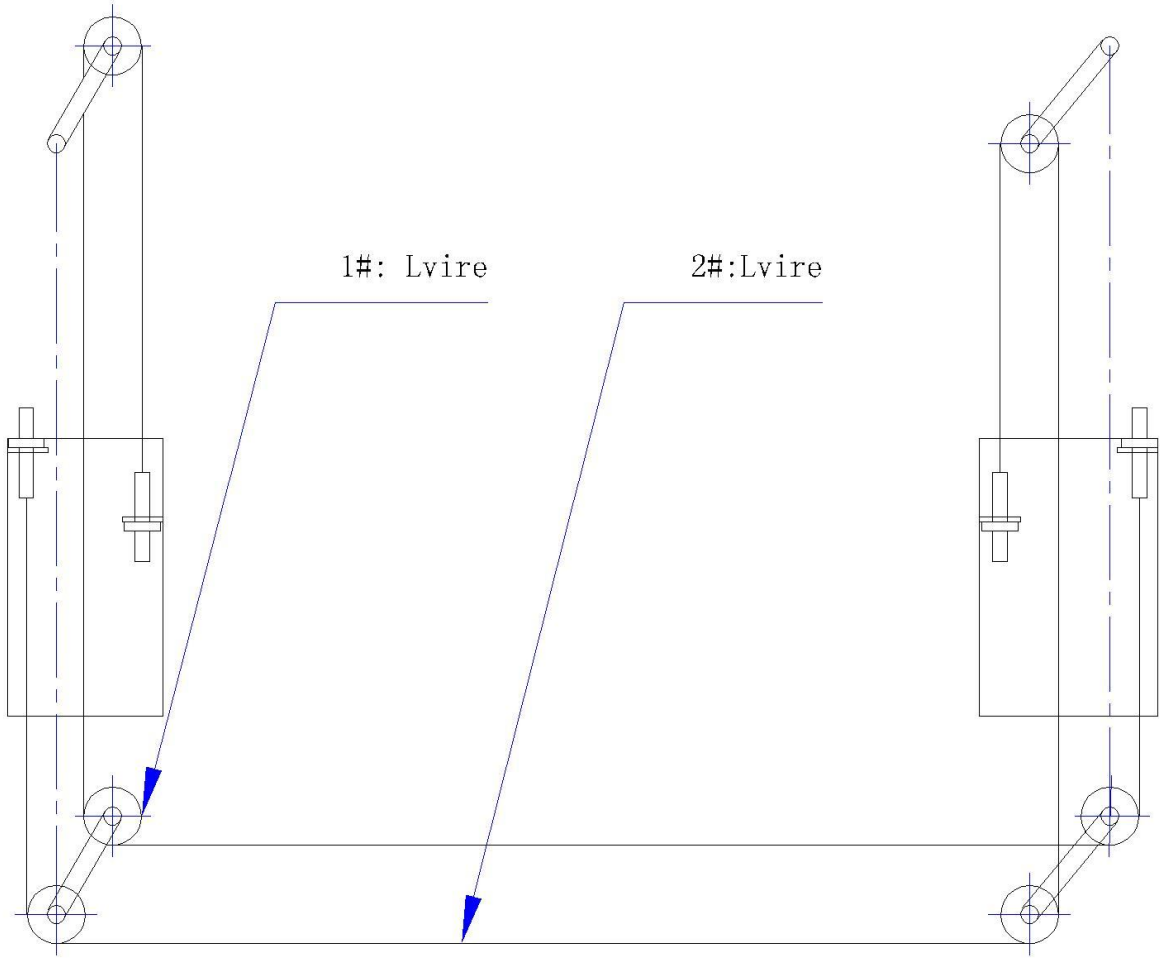


Fig.6-3 Parts connection diagram

No.	Name	QTY	No.	Name	QTY
1	Orthorhombic tube	4	8	Corbel-axis	4
2	Foot rail	4	9	Plastic palm care	4
3	Stiffener	4	10	Interconnect panel	8
4	Palm care	4	11	Positioning teeth	4
5	Outer spacer	4	12	Axis Card	4
7	Inner spacer	1	13	Screw（M6*16）	4

7.4 Wire connection diagram.6-4



Chapter 8 Operation

8.1 Drive vehicle onto lift

Drive vehicle onto lift,chassis support points at pads.Figure 2.

8.2 Rising

Rising:Press UP,motor workes and lift rises.Release UP,motor stops and lift pauses. Maintainance below the vehicle can be carried out when lift rises to a certain height.

8.3 Falling

Falling:Press UP first,then manually release both safety locks by pulling the shafts,and lift falls when motor stops and electromagnetism works to release hydraulic pressure.

8.4 re-electrify

Lift does not work automatically when power is cut off and then turned on.

8.5 Lock

Press UP till lift rises to a certain height, then release UP, and pull the shafts to make sure lift locked in a fixed height and working safely.

Chapter 9 Maintainace

9-1 Inject anti-friction oil L-HM32 to keep oil height after first use and long

time use(more than one month).

9-2Supply lubricant to every holes every week (GB443-84 mechanical oil N15、N22 or N32).

9-3 Keep rails clean and supply it with enough lubricant (GB491-84 calcium lubricant ZG-2~ZG-3).

9-4 Clean pump filtering device every three months. Replace lubricant every year. Clean with gas when replacing.

9-5 Use regulator when local pressure float is beyond 10%.

9-6 Noise should be at most 80db.

Chapter 10 Fixing troubles

Troubles	Reason	Meathods
motor does not work	①Poor contact	check and fix the contact.
	② Contacts don't match.	check and replace contacts.
	③ Height-limitation switch works badly.	repair or replace it.
motor works but lift does not rise	①motor reverses.	exchange power line order.
	② overflow valve does not work	disassemble for elimination.
	③ gear pump is damaged	replace it
	④lack of oil	make up of it