

# TP-270H

## Two Post Parking Lift

### Installation Manual



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## **1. Summary**

### 1.1 Summarize

Standard TP-270H is the two-post hydraulic parking product. You should read the manual carefully before you install and assemble the product, which can help you assemble and use the product in a correct way to avoid the risk and improve the reliability and life of the product.

We will never take responsible for the damage of the device, car and personnel caused by the operation that neglect the manual or the operation fail to submit the operation regulation.

### 1.2 statement

- The operator should operate the device by following the manual, or the operator should hold responsible for anybody damage and injure themselves.
- The user receives the device by the transport company. If the device is damaged during the transportation process, the carrier should take responsible for it.
- To secure safety use, the operator of the lift should be trained professionally, and own strong sense of responsibility. It is forbidden to operate and repair the device before reading the manual in detail or check the safety of the device in detail.
- Our company provide the device with one year's quality guarantee for the machine, the quality guarantee is only confined to the quality problem that caused by the device themselves. It is beyond the guarantee range if the device

is damaged by the abnormal wearing or improper use or maintenance that fails to follow the requirement.

- We commit our self to the update of the technique and the improvement of the product. The improvement is subject to change without prior notice.

## 2. Introduction Of equipment

### 2.1 Equipment description

TP-270H hydraulic parking lift is the parking product that developed through continuous research. The device enjoys great popularity with the features of simple structure, easy assembling and space-saving.

The device is mainly consisting of posts of two sides, carriage of two sides, and wave plate platform. The left and right post can be used in common. The left and right carriage can from double-linked or multiple-linked device with the columns at random.



Pic ( 1 ) one unit

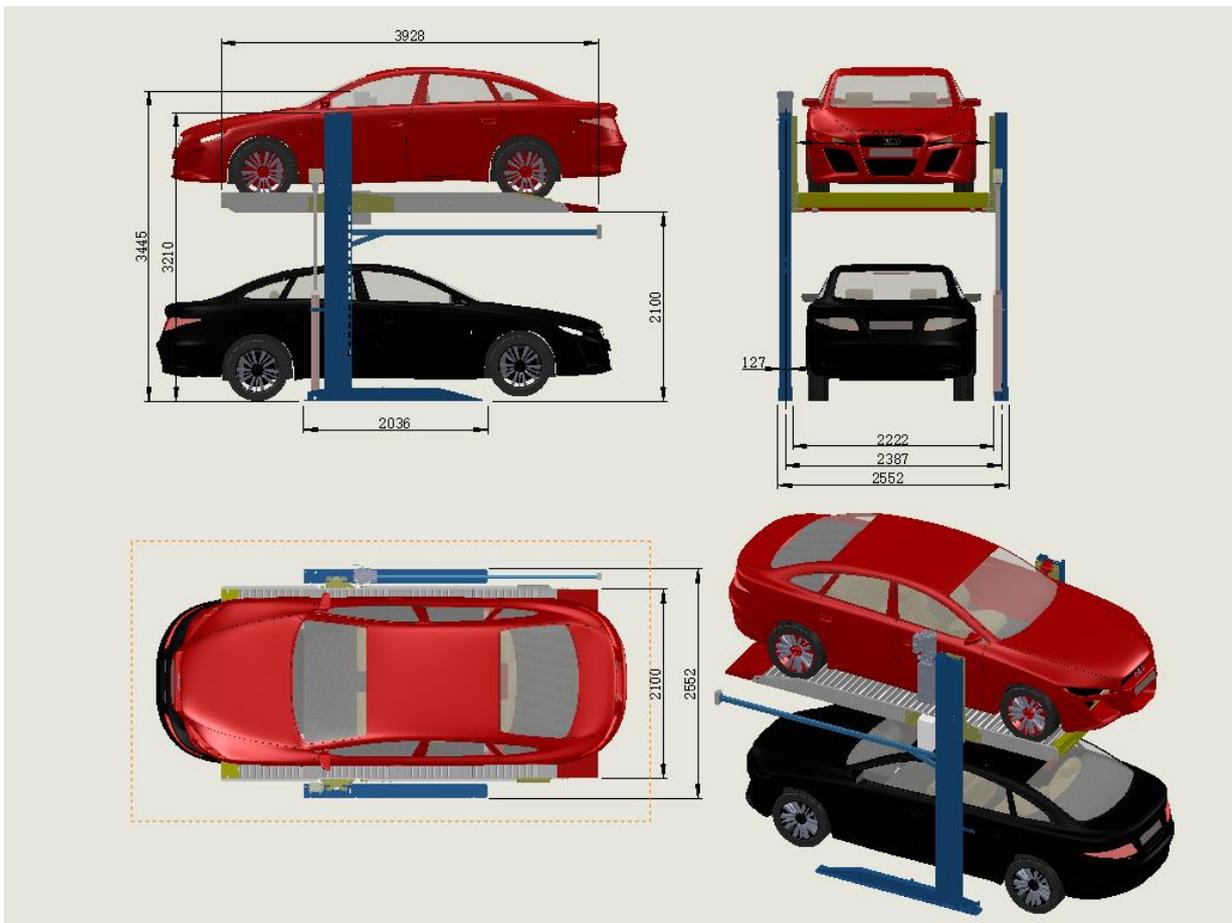


Pic ( 2 ) 2 units combination



Pic ( 3 ) multiple units combination

## 2.2 Equipment dimension



Pic ( 4 )

Parking size	Type	Large car
	Car size(mm)	L×W×H ≤5000×1850×1550
	Car weight	≤2700Kg
Space required	Post height (mm)	3210
	Lifting height (mm)	2100
	Center dimension (mm)	2387
	Outer width(mm)	2552

	Usable platform width (mm)	2100
Motor pump	Hydraulic system	2.2Kw
Rated speed	Lifting speed	2m/min
Driving mode	Hydraulic cylinder	
Power supply	1 phase/3 phase ,50/60Hz Customized for voltage	
Control mode	Key switch / remote control	
Surface finishing	Powder coating . galvanized	

Note : The equipment can be customized as per client' s requests.

### 2.3 Equipment parameter

Rated capacity : 2.7Ton ( approx. 5070 pound )

Rated lifting height : 2.10m ( approx. 84 inch )

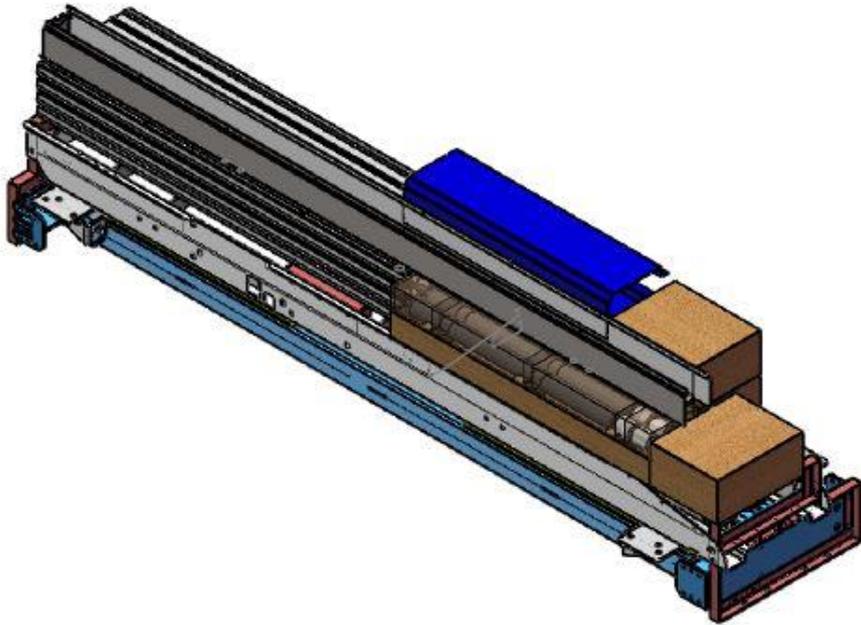
Equipment weight : approx. 910Kg

### 3、 Equipment shipment

The seller has packaged the equipment using packing frame, straps and paper board to avoid damage during the transportation.

Please check if there is any damage or shortage when user receives the equipment. Please record the damage or shortage in document related to find out the reason and guarantee the benefit of the user.

The equipment will be loosed during the jolt of transportation. Before you cut the packing belt used to fix the goods, to avoid of the personnel damage caused by the fallen goods.



## **4、 Equipment assemble**

### **4.1 Attentions**

4.1.1 Before install the equipment, read and learn the safety warning in detail.

4.1.2 Keep the working site clean and tidy.

4.1.3 Check the working environment of the equipment. don' t expose the equipment in the rain, don' t use the equipment in the damp environment. keep good ventilation and enough light of the use area.

4.1.4 Only trained person can operate the parking equipment. The staff untrained should keep away from the working area. All the staff without training is forbidden to operate the lift.

4.1.5 The motor must be grounded to avoid electric shock.

4.1.6 Warning : the power pack voltage of the lift is higher, power off when assemble the device, to secure the safety.

- 4.1.7 keep smart during work to avoid injure. prevent being crushed when the device falls or topples.
- 4.1.8 Operate the equipment in normal way. Do not modify the equipment using the parts which are not from our company.
- 4.1.9 Prohibit dismantling any parts related with safety.
- 4.1.10 Safety locking device should be well protected.
- 4.1.11 When the use lift and lower the vehicle, keep personnel away to a safe area.
- 4.1.12 keep enough space away from the device in case the vehicle on the device is in danger.
- 4.1.13 Warning: The working area should be not flammable as there is electric spark when the switch works.
- 4.1.14  This mark means safety warning.
- 4.1.15 Keep the equipment clean and keep regularly maintenance. Appropriate lubrication and maintenance helps the reliability of the equipment.
- 4.1.16 Keep handle bar and button clean and dry to avoid the oil and grease on the equipment.
- 4.1.17 Check the synchronous situation of the left and right carriage and check if there is any damaged parts, if there is any abnormal situation, you should stop and exclude the fault.

## **4.2 Equipment layout**

Before you install the lift, you should check the following items :

- 4.2.1 The working area should be well designed and has enough space.
- 4.2.2 Avoid barrier like electric wire to exist in installing area.
- 4.2.3 Check carefully if there is crack on the concrete ground that install the lift and check if the strength of the concrete can reach the requirements. The comprehensive strength should be no less than 200kg/cm<sup>2</sup>. And the thickness of concrete basement should be no less than 300mm, the strength should be no less than 250 class, the just finished concrete basement must be solidified and kept over 28 days. Otherwise, the lift will crush the ground, which will cause the damage of equipment and injury & death of people.
- 4.2.4 The installation basement must assure certain levelness; the tolerance is not allowed over 5mm, the tolerance within this limit can be adjusted by using washers. If the ground is uneven seriously, you should fix it up.
- 4.2.5 Not allow to install equipment on the pitch ground or other non-concrete ground.
- 4.2.6 Prohibit installing equipment on the ground with craze or junk concrete ground.
- 4.2.7 Prohibit installing equipment on second floor or higher floor without the approval of architect.
- 4.2.8 If there are no protective measures, please not install the equipment outdoor to avoid something wrong with the motor in rainy days.

4.2.9 Confirm the general installation position of the equipment, and then put columns and platform on their respective places. Place the platform between the two columns.

4.2.10 Confirm the location of the electric cabinet and keep enough space for operation.

4.2.11 Draw up the position of the baseboard of the column with chalk after the confirmation to assure the tolerance within 3mm to avoid effecting the installation of the lift.

4.2.12 Check carefully to assure the layout is correct.

### **4.3 Tools to install the device**

Hammer、 Level、 Open spanner、 Socket head wrench、 Adjustable spanner、 Crow bar、 Chalk or color pen、 Flat screw driver、 Tape measure ( 5m ) 、 Nipper pliers.

### **4.4 Installation steps**

4.4.1 To ensure the site is clean before installation. There is no odds, avoid loss of small parts.

4.4.2 Draw the lines on ground after cleaning the site. ( difference models with different drawing size )



4.4.3 Checking the levelness of ground and record the elevation.

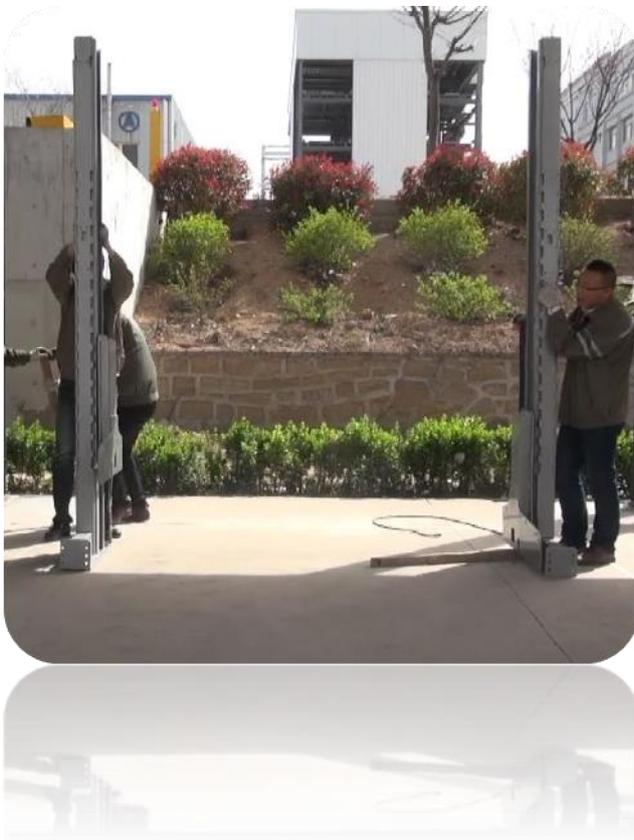


4.4.4 Checking the pulley, wheel of chain, slider and parts fixed tightly. Put the slider in columns, slide several times, check normal or not . Without blocking.

( note : all sliders are installed finished, without installing other parts )



4.4.5 please erect left and right post, ready for installation.



4.4.6 Install left and right beam, then fasten bolts.



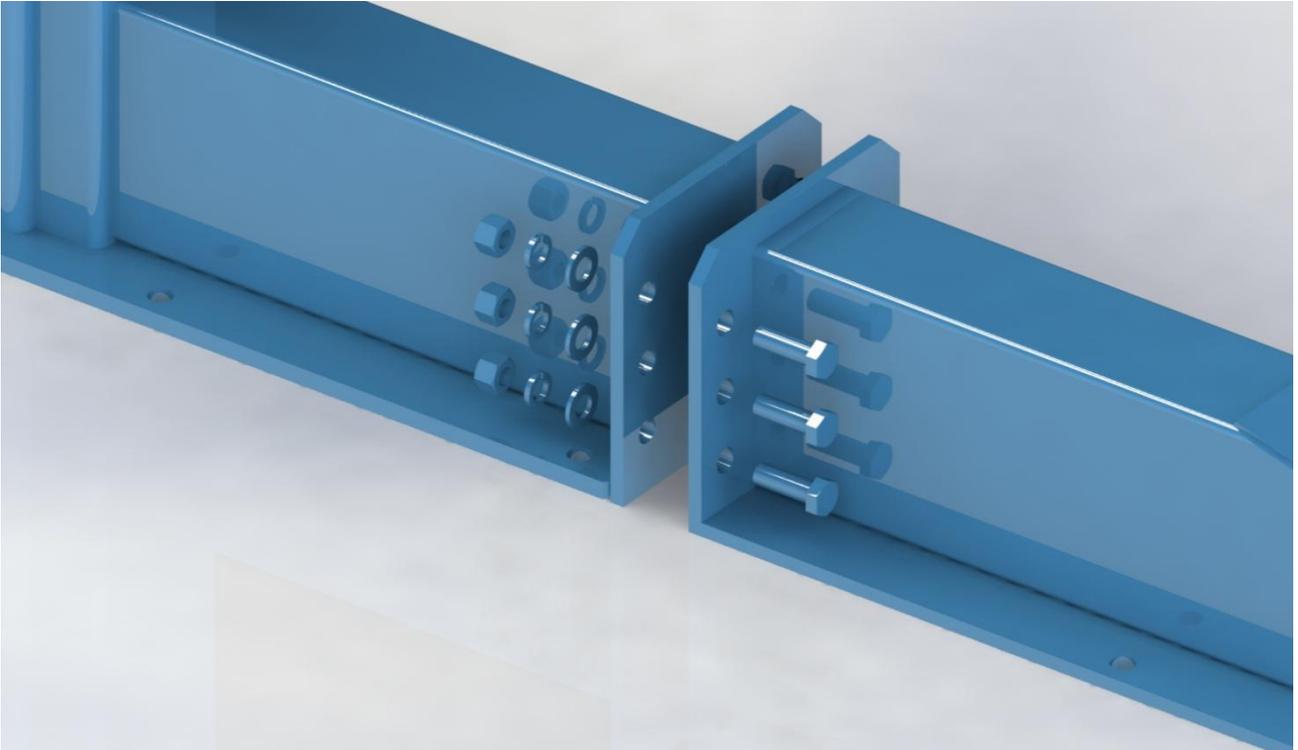
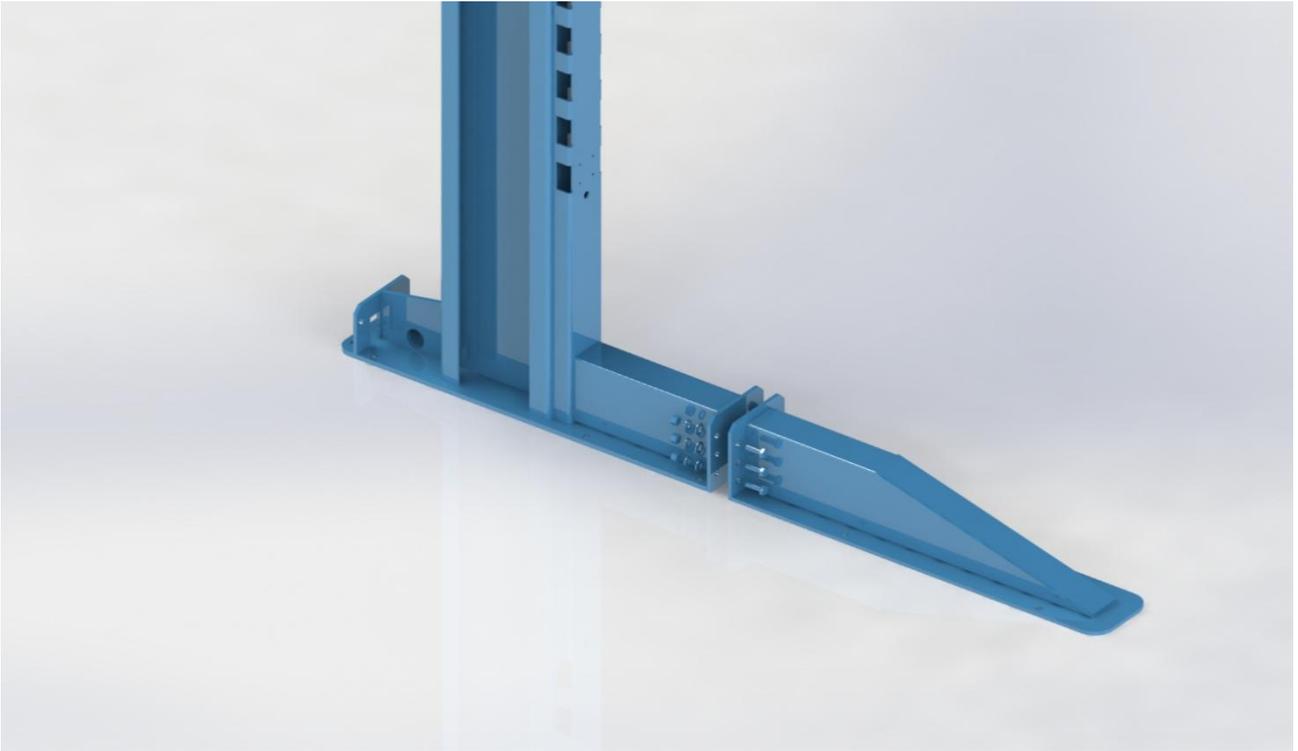
Grade A Type "1" Hexagon nut with coarse screw M20  
 Spring washer 20  
 Flat washer grad C  
 Hexagon nut with coarse screw bolt M20X50(8 ↑/side)



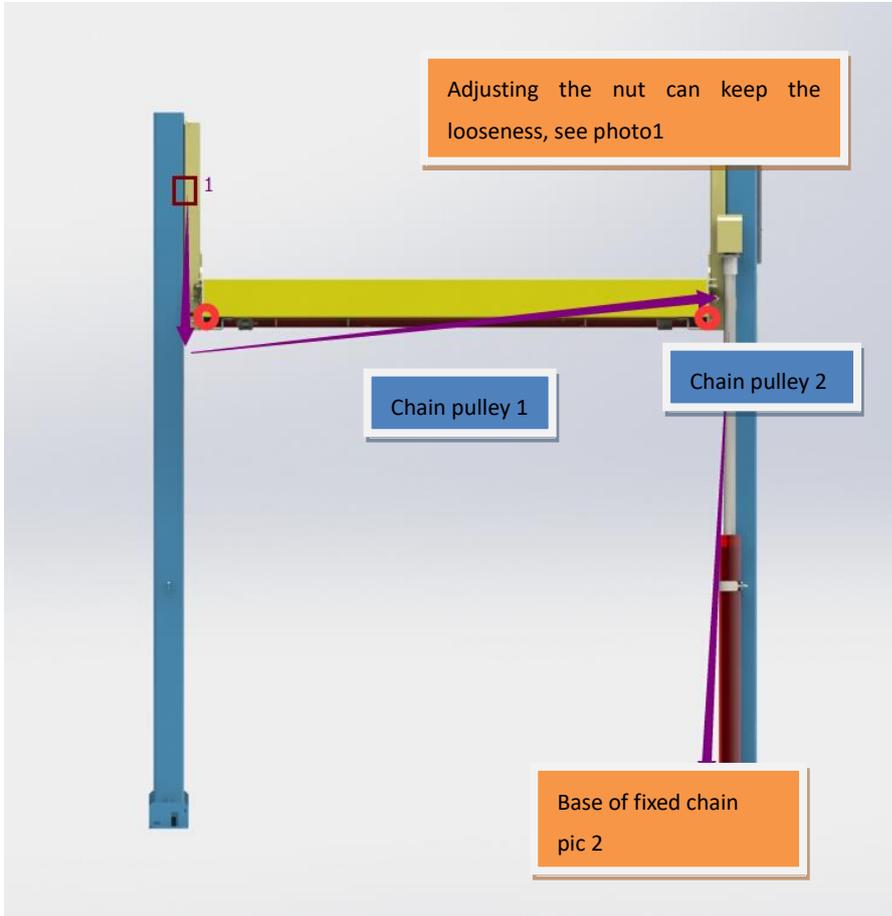
4.4.7 Firstly connect left beam, right beam and back stop-plate together, then install link levers and fasten bolts.



Post base connection :



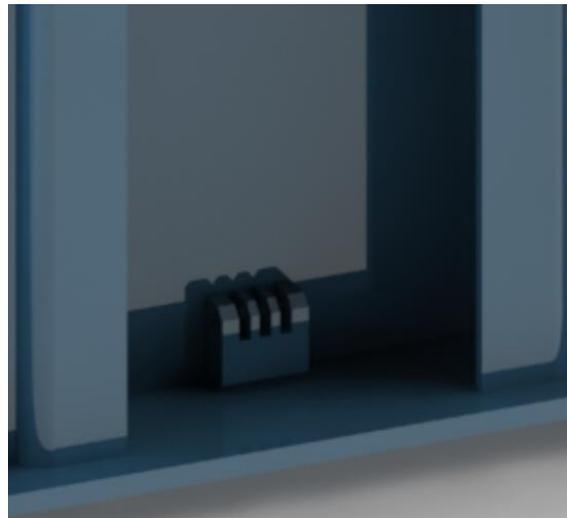
4.4.8 Fixed the chain at bottom of one post, cross two pulley (see direction), then out and fixed on top of another post.



Chain installation diagram

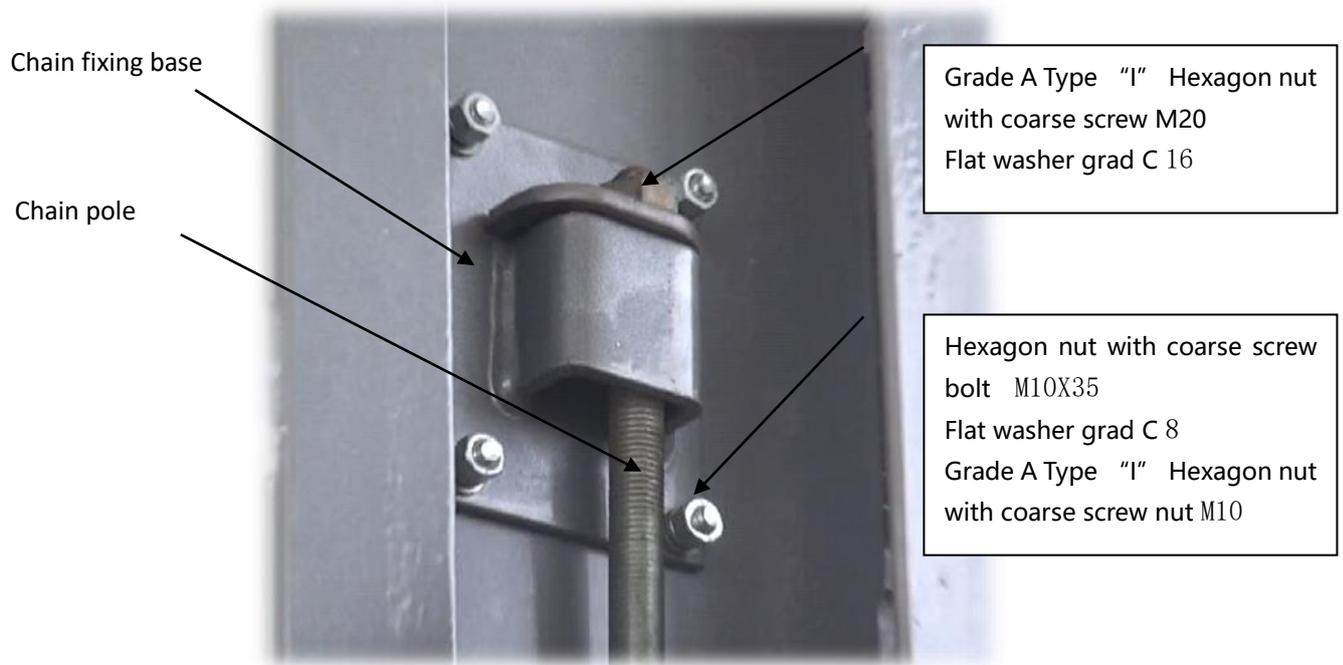


Pic 1

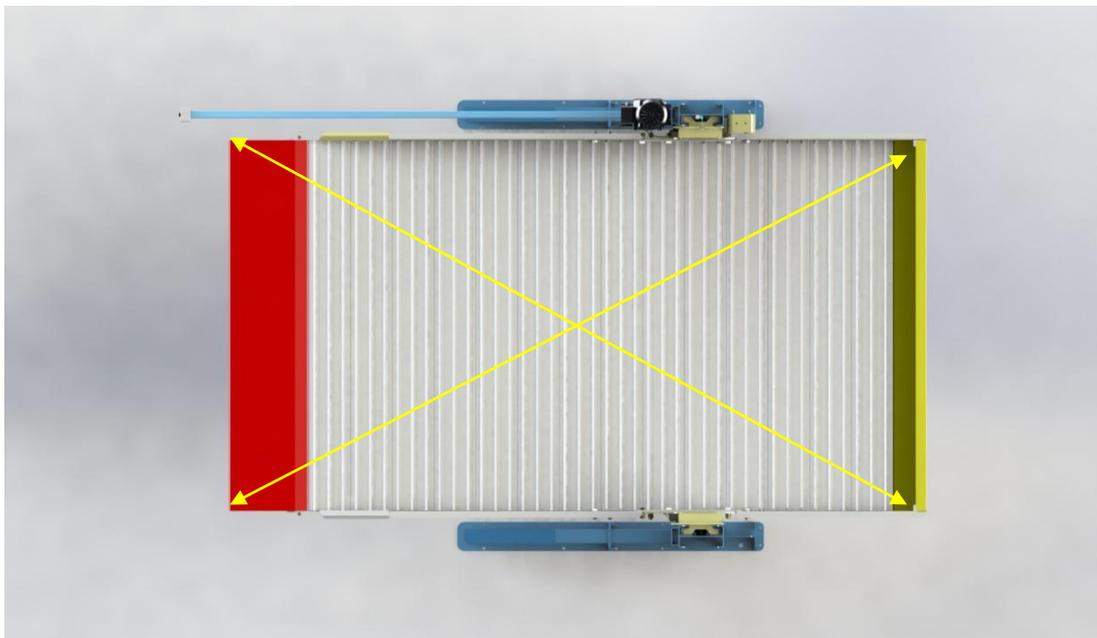


Pic 2

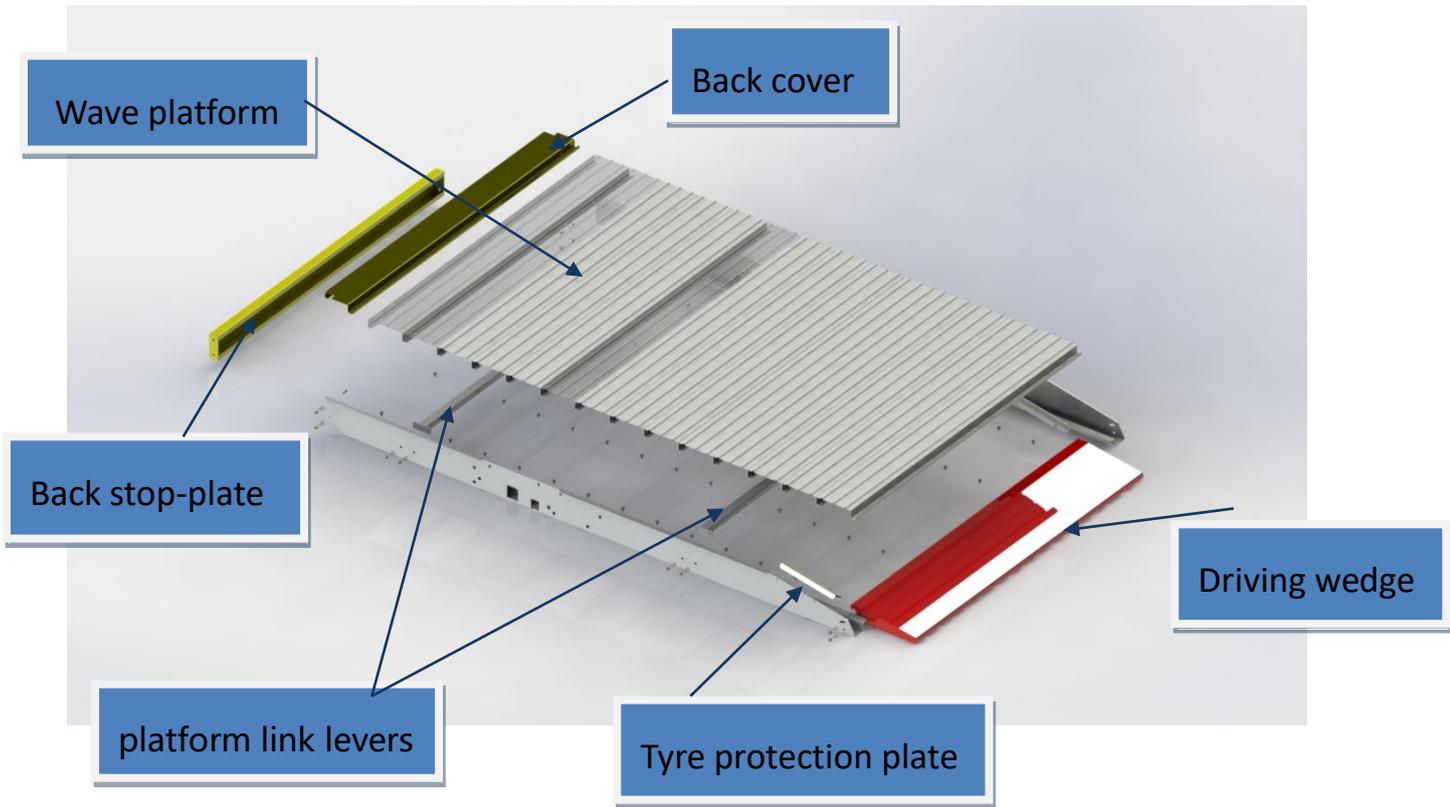
4.4.9



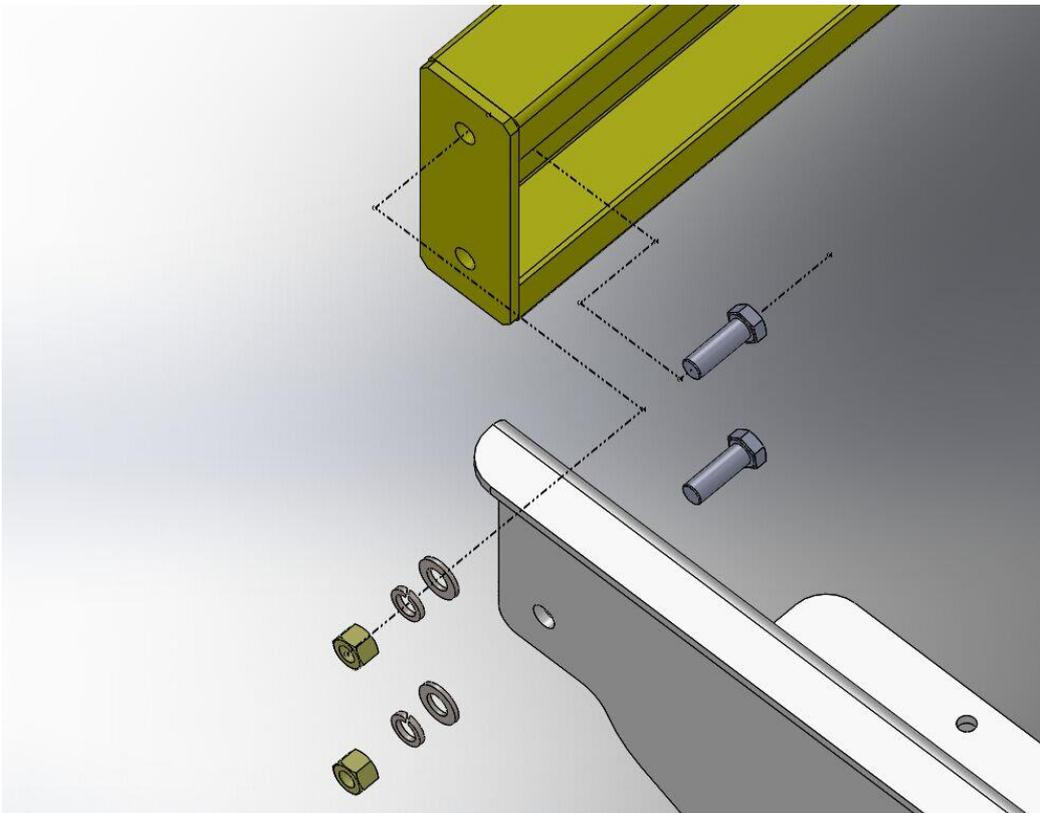
4.4.10 Install driving wedge, 14 pieces wave platform, back cover, back stop plate, adjust the diagonal line and the distance less than 20mm.



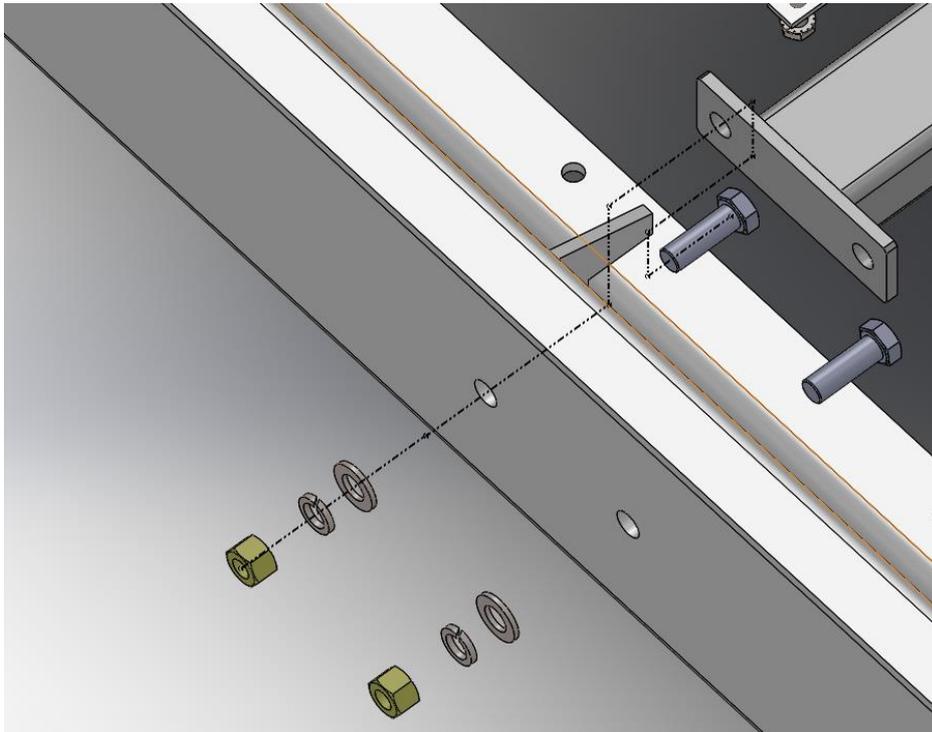
Platform assemble



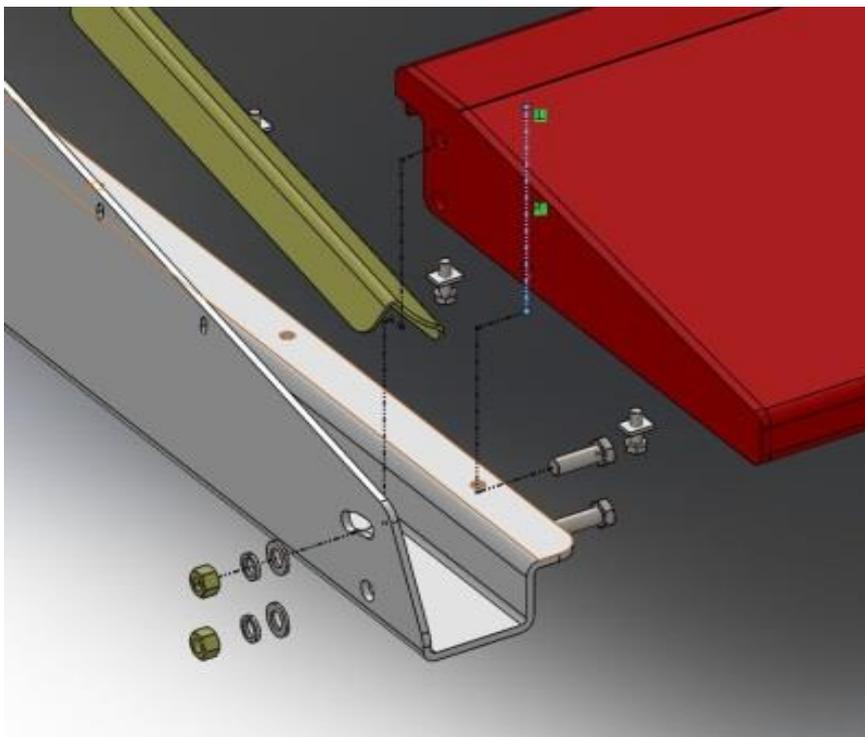
Back stop plate installation diagram :



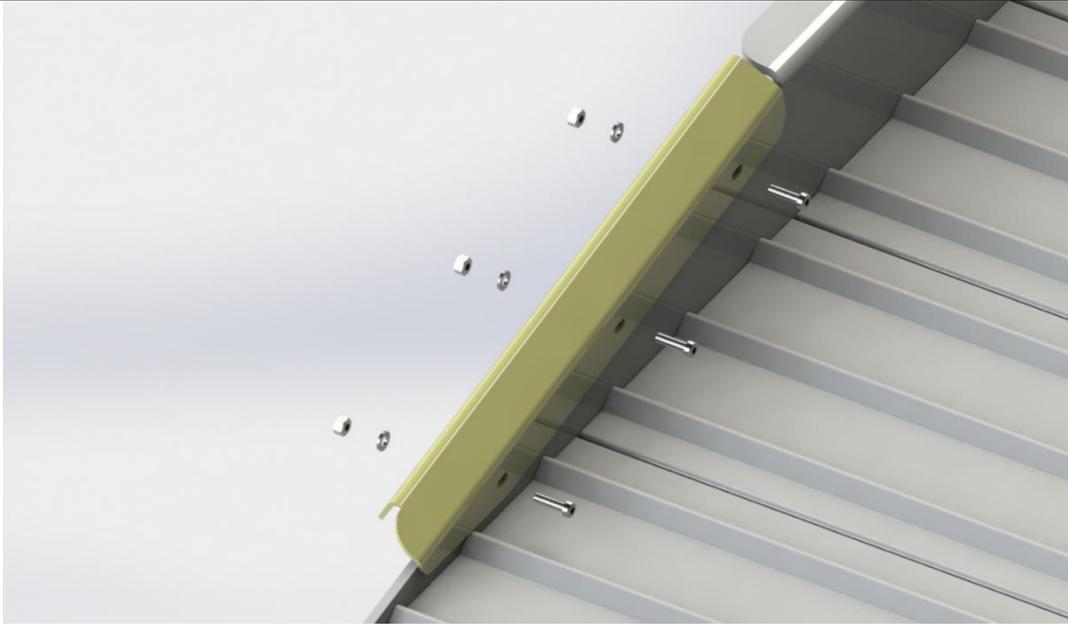
Platform link levers diagram :



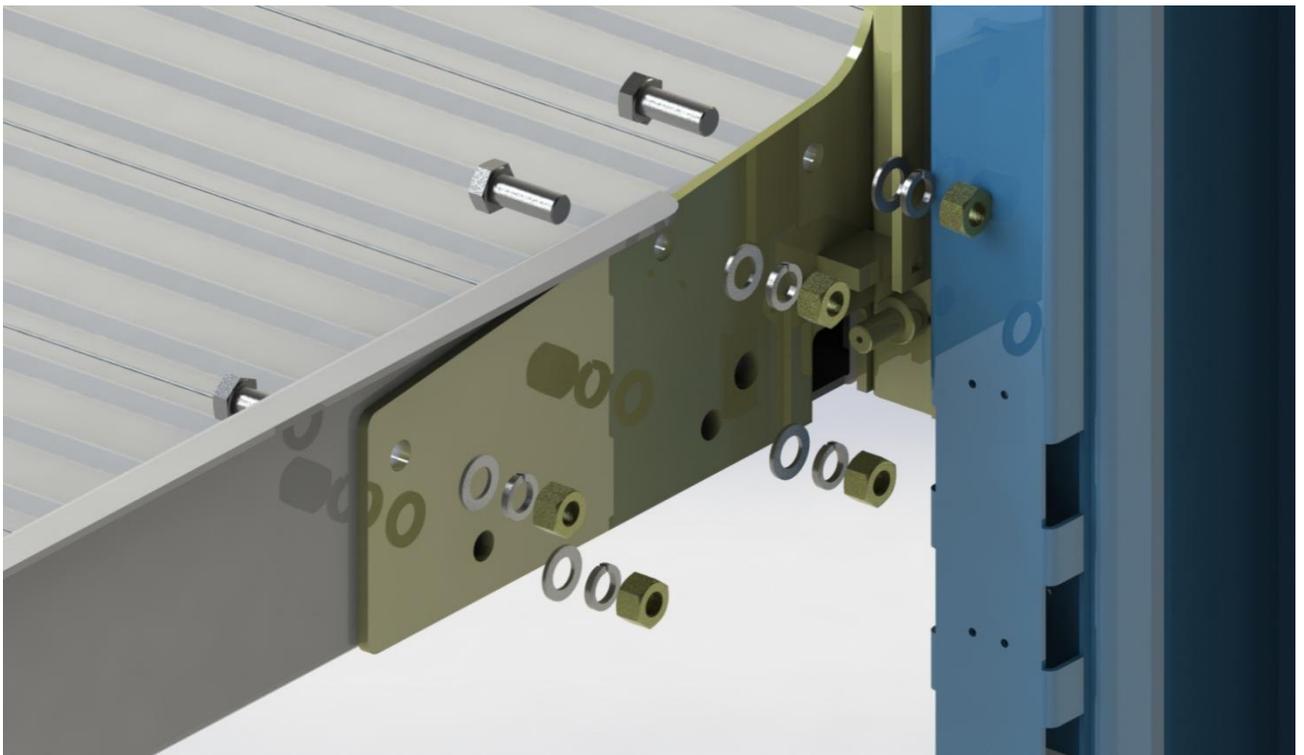
Driving wedge installation diagram:



Tyre protection plate : ( right and left , total 2 pieces )

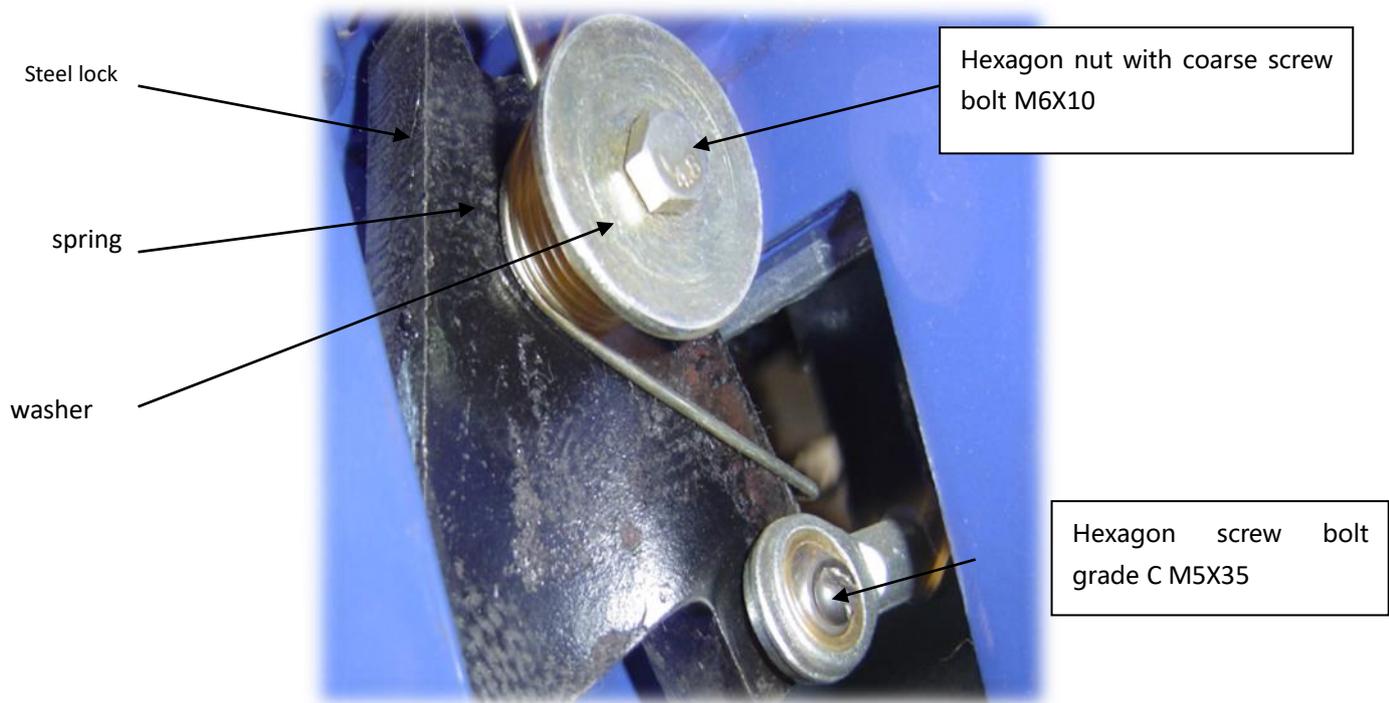


Slider connection diagram :



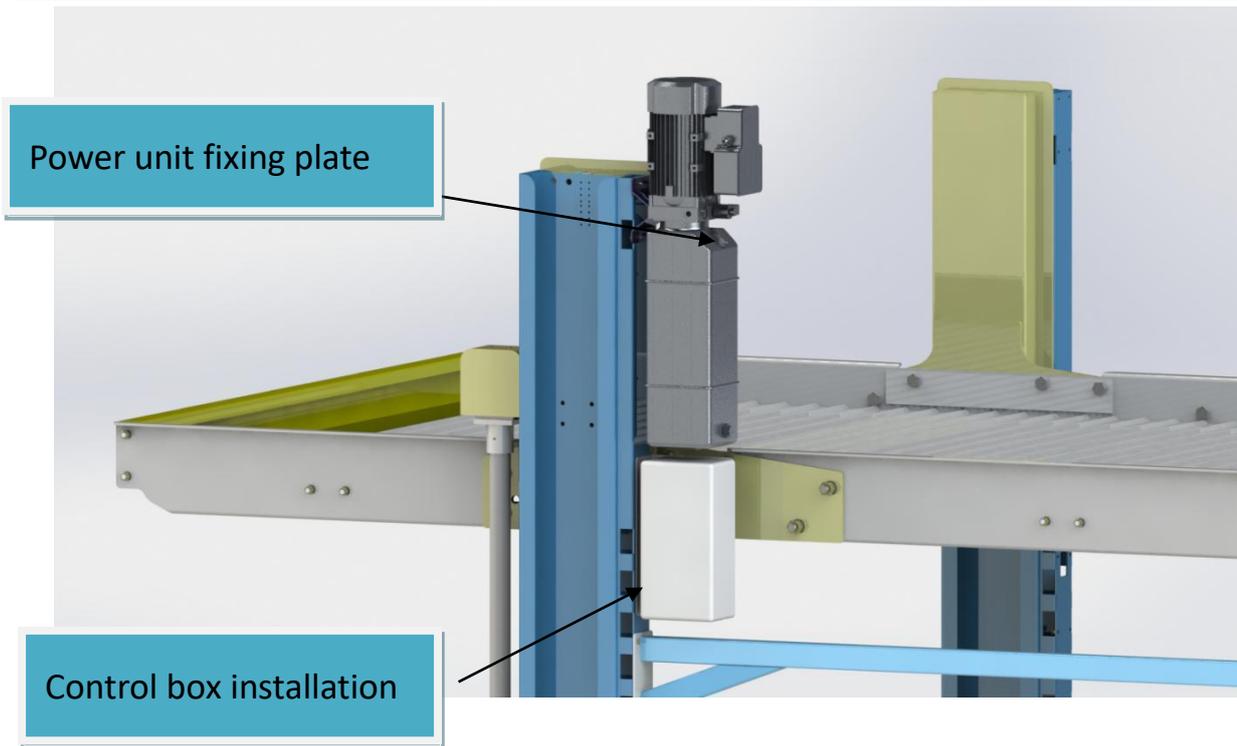
#### 4.4.13 connection locking device

Connect knuckle bearing and pulling pole together , then connected with electromagnet, adjust screw nut to control looseness.

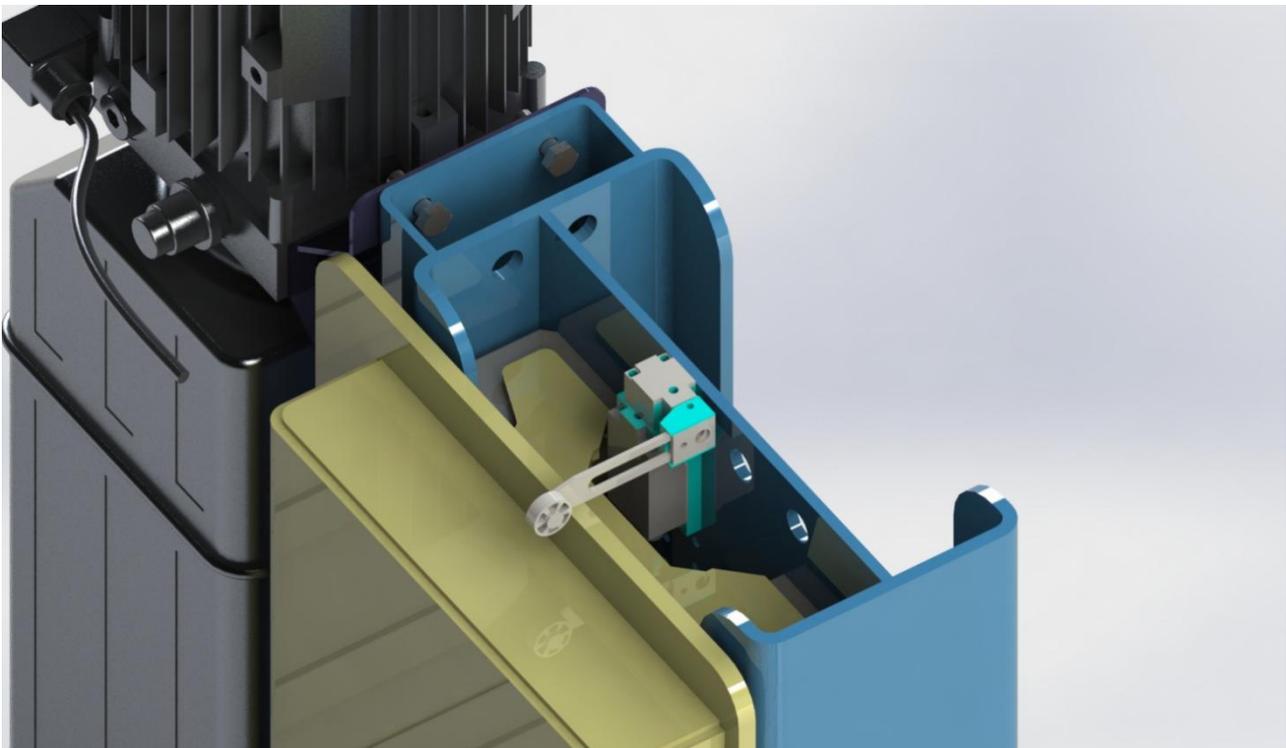


Pic ( 27 )

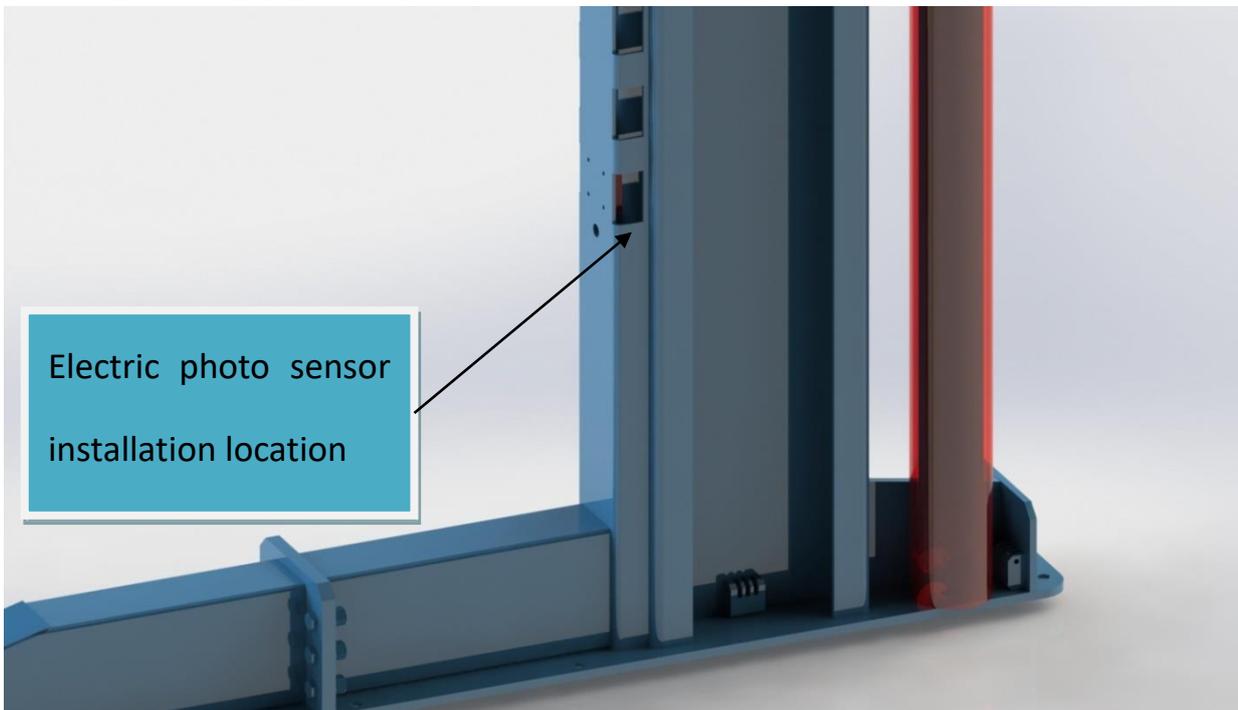
Power unit installation diagram :



Limit switch installation location : (note : adjust limit switch as per your parking demands)

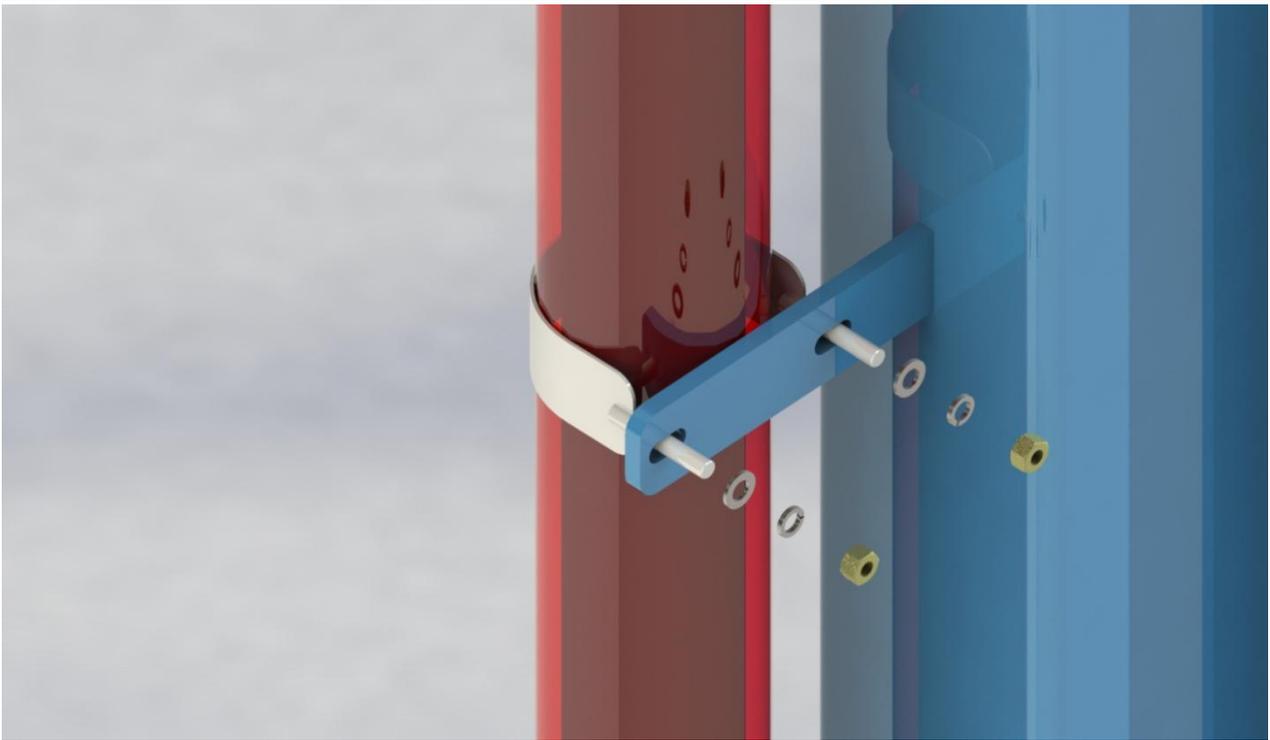


Electric photo sensor installation diagram :



Hydraulic cylinder installation :



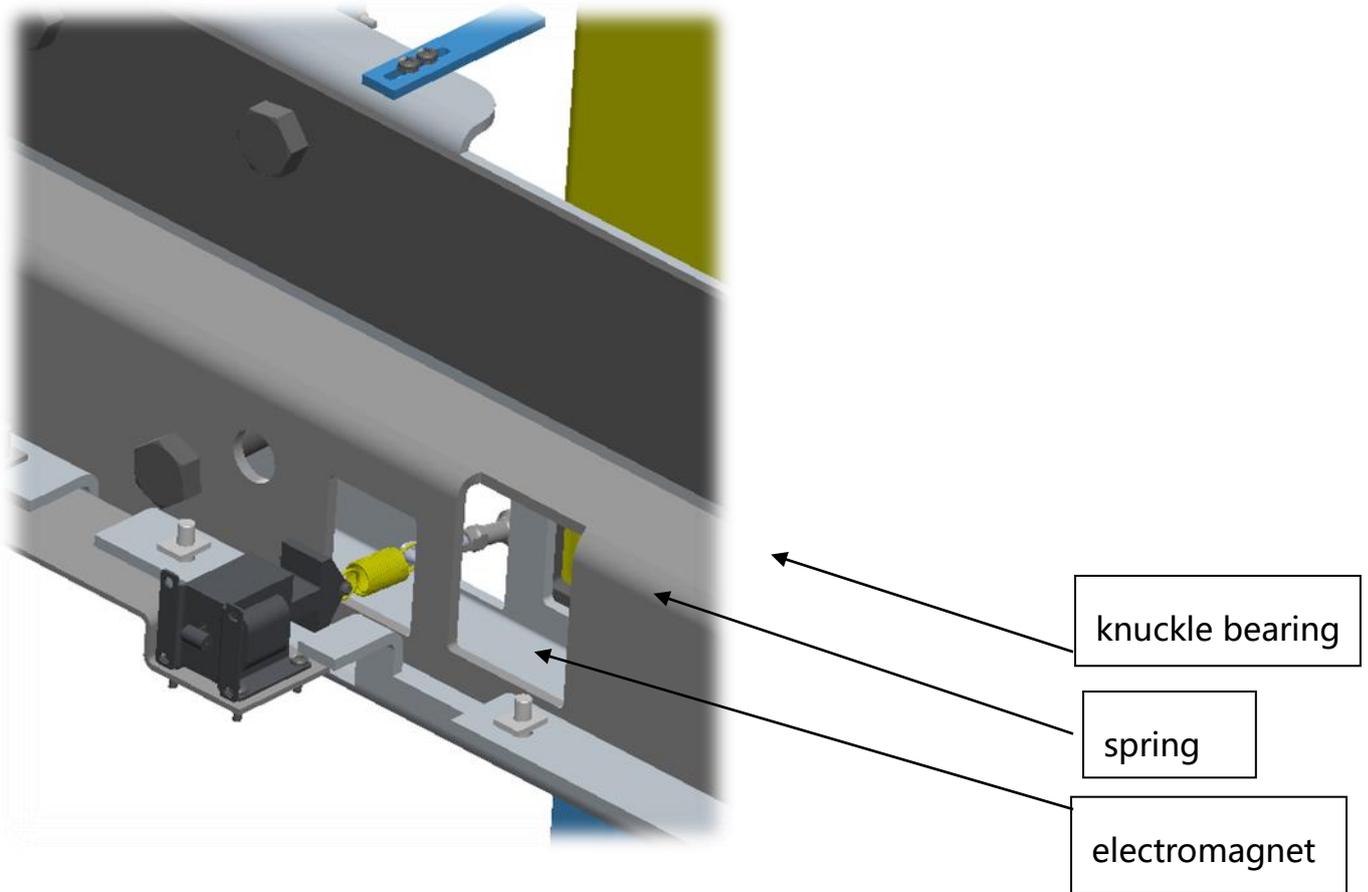


#### 4.4.14 Fasten screws

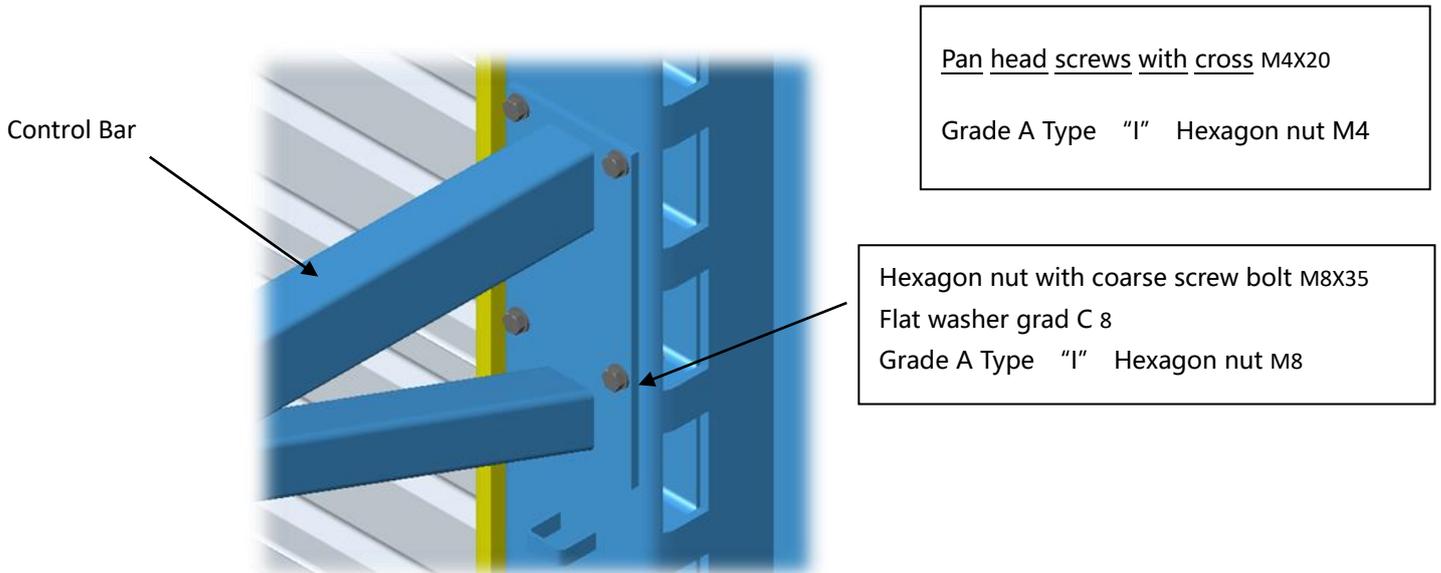
Inject the oil in power unit, power on, then start motor to lift platform, stop at the height of 1m position, then fasten all the screws of slider and platform.

#### 4.1.15 Installing electromagnet

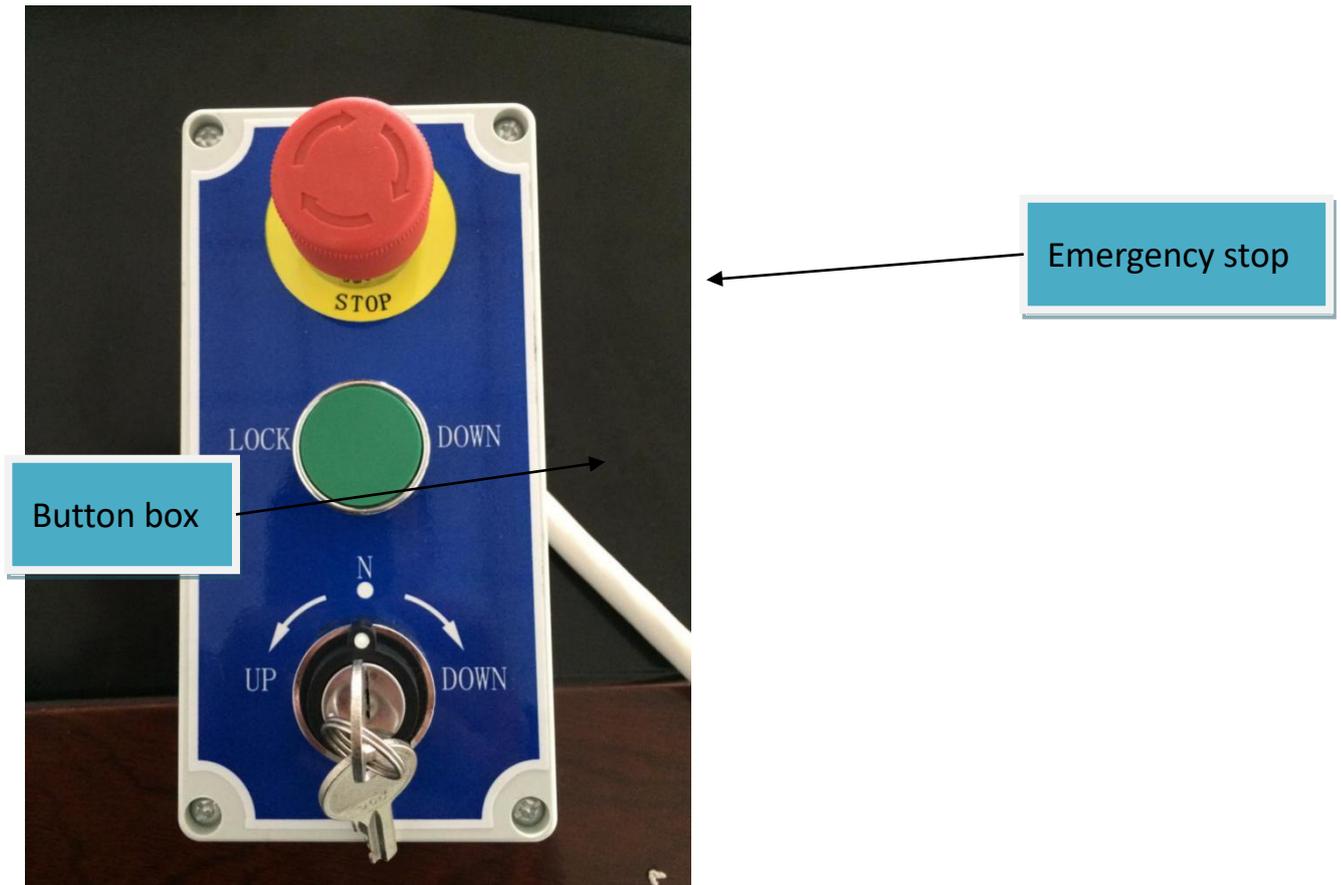
electromagnet, spring and knuckle bearing have installed together, the user only fix the electromagnet and connect with steel lock.



#### 4.4.18 Control bar & button box



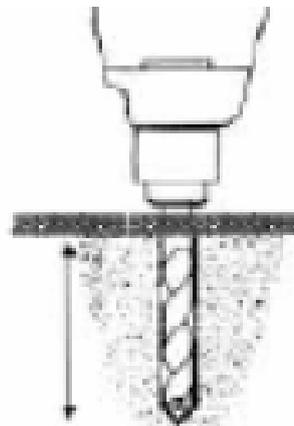
Note : If the customer choose remote control, the control bar can be removed.



Pic ( 38 )

4.4.19 Take base plate of post as a template to drill hole with electric hammer on the concrete ground. These holes should be about 120mm deep. Prohibit expanding the hole or shaking the hammer. After drilling hole, clear the inside of the hole and check the alignment of the base plate and chalk line.

Pic ( 39 )

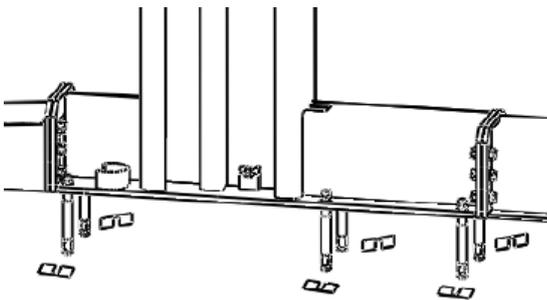


4.4.20 Hammer the stone bolt into the hole, until the washer touches the basement plate, if you want to underlay the U-type thin slice for the basement plate, set apart enough screw length.



Pic ( 40 )

4.4.21 If the column is uneven with the ground, you need to insert U-type thin slice to adjust. After fixing the stone bolt, the column will be vertical to the ground.



Pic ( 41 )

4.4.22 Fix the chain, the tightness should be moderate, adjust the column of two sides to make them parallel.

4.4.23 Rotate the key switch on the control box, the lift rise, the cylinder begin to work, there will be crawl phenomenon.

4.4.24 when the lift rise to the highest position, stop rotating the key switch, to avoid the damage of the cylinder.

4.4.25 Then continue to rotate key switch, lower down the lift with safety. And then

repeat to lower it down for several times, discharge the air in the cylinder.

Note : During the whole lifting process, observe all the operation parts, check the correctness of the installation and the debugging , only when you confirm that there are no any mistakes finally can you start the lift.

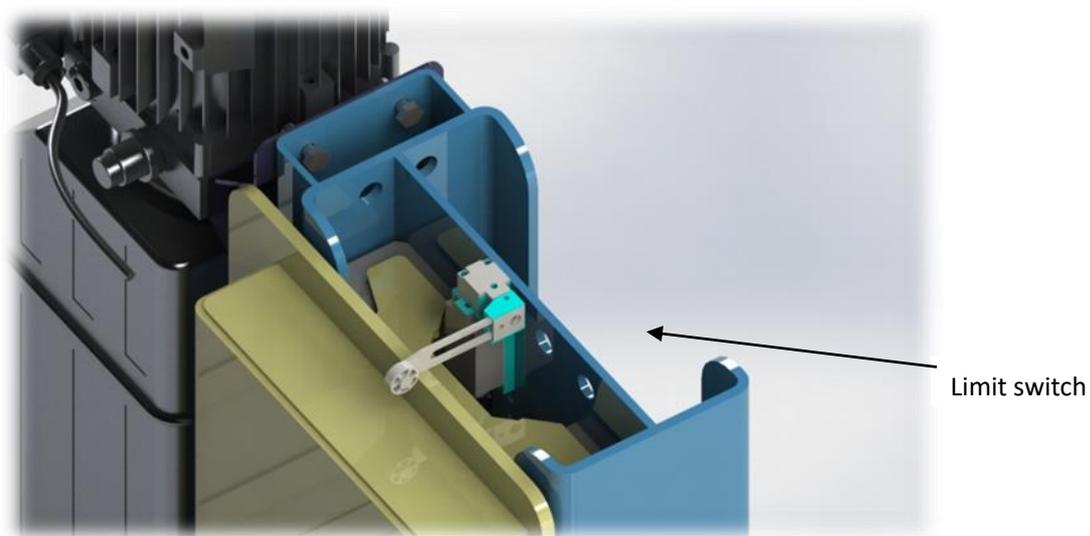
4.4.27 After the installation and the debugging, lubricate each sliding parts with the lubricant (supremely).

## 5、 Introduction of control system

TP-270H can equip control cabinet individually, and also can be controlled by PLC , to satisfy different request from customer.

### 5.1 Control principle

The equipment installed the limit switch at top of column, to control the limit height, the user can adjust the height as per the parking demands.



Pic ( 48 )

The lifting of platform can be dot move controlled by contactor as per parking demands. Besides you can control equipment by turning the key-switch on control bar.

When retrieving the car, you should rotate the key switch to let the car rising for some distance ( about 50mm ) to release the lock , then rotate the key switch in the opposite direction to lower it down.

Besides the key switch on the button box, there is an emergency stop switch on control bar, you can press down the button under emergency to power off. But after excluding the fault, rotate the button to reset it.

If you choose PLC control system, there is a limit switch at the bottom of post, the same with top limit switch, the main function is to send control signal to PLC to close electron magnetic valve, and achieve function of automatic control.

## 5.2 Control matters need attention

When assembling, confirm the fastness of the wiring; check if there is any visible wire end to avoid short circuit.

When handling the equipment or parts, take measures to avoid breaking the line, otherwise, it will cause short circuit.

If short circuit occurs, the fuse protector will take effects. So, the fuse should be changed.

The failure of the control system should be maintained by professional technicians. It is forbidden for the staff without electric service related knowledge to repair the device, to avoid of the body damage caused by electric shock or device

damage caused by wrong wiring.

Prohibit exposing electric elements in damp environment to avoid short circuit.

### 5.3 Partial control problems

phenomenon	Possible reason	Exclusion methods
There is no reaction when rotate the key switch.	The fuse of control circuit is burned.	Check and change the burned fuse.
	The power cord is open circuit.	Check the wire circuit to confirm the wire connection.
There is no reaction when rotate the key switch.	The emergency stop switch is pressed down.	Rotate the emergency stop switch to reset it.
The platform can't rise when rotate the key switch, but can be lowered down when rotate it in opposite direction.	The platform has been in the highest position.	Normal phenomenon
	Wiring of limit switch is in bad condition.	Check the circuit of limit switch to guarantee good connection.

## 6、Equipment usage

### 6.1 Attention items

**6.1.1** If the equipment will be not in service for a long time, the main power supply should be closed to avoid accident and to save energy.

**6.1.2** If the equipment has not been in service for a long time, please lubricate it

and check if there is any damage and rust corrosion before using it again. Check if the equipment is in good condition through no-load running.

**6.1.3** Do not use the equipment if the floor or any component is damaged.

**6.1.4** Do not operate the equipment if there is person or other obstacles under it.

**6.1.5** Prohibit using the equipment for other purpose.

**6.1.6** Safety lock device should be in good condition at any time.

**6.1.7** Do not let the unlocked equipment in a certain height, and leave.

**6.1.8** Keep the motor dry. We are not responsible for the motor damage caused by damp.

**6.1.9** Warning marks :





## **6.2 Parking**

**6.2.1** Drive the car on the appropriate position of the platform. Avoid collision with the control cabinet and the rear of the platform.

**6.2.2** Pulled the hand brake after the car on the position.

**6.2.3** Open the car door carefully to avoid any collision with the car door.

**6.2.1** The driver left the drive cabin.

**6.2.4** Press down the up button, lift the car to the appropriate position, and lock the lift. Take notice that the safety locking device should always be valid.

**6.2.2** You can park other vehicles under the platform, but before parking, check and confirm that all the vehicle height of the parked vehicle should be no more than platform height, to avoid the vehicle being scratched.

## **6.3 Taking the car**

**6.3.1** Be sure there is no person or obstacle under the car, if there is car parked under the platform, drive the car away from the device, to ensure not affect platform come down and pick up the car.

**6.3.2** Turning the key switch “down” to lower the car, the equipment will lift a little, then lowered to ground.

**6.3.3** Driving the car to drive out platform.

## **7、 Maintenance and service**

### **7.1 overhaul**

Conduct the maintenance every month regularly to ensure the use safety of the device and prolong the use life.

1. Check if the carriage can work normally.
2. Check if the chain and its connector, chain pin shaft, cotter pin can work normally.
3. Check if the expansion bolt is loose. You should tighten the expansion bolt if it is loose.
4. check whether the locking device can work normally, if the work of it is abnormal, find out the reason and exclude the fault.
5. Check if there is any distortion of the column. Check is the column is vertical to the ground. You should stop operating the device if there is any serious distortion of the column caused by overload and abnormal use.
6. Add the grease on the slide block that in the column.

## 7.2 Common fault and repair method

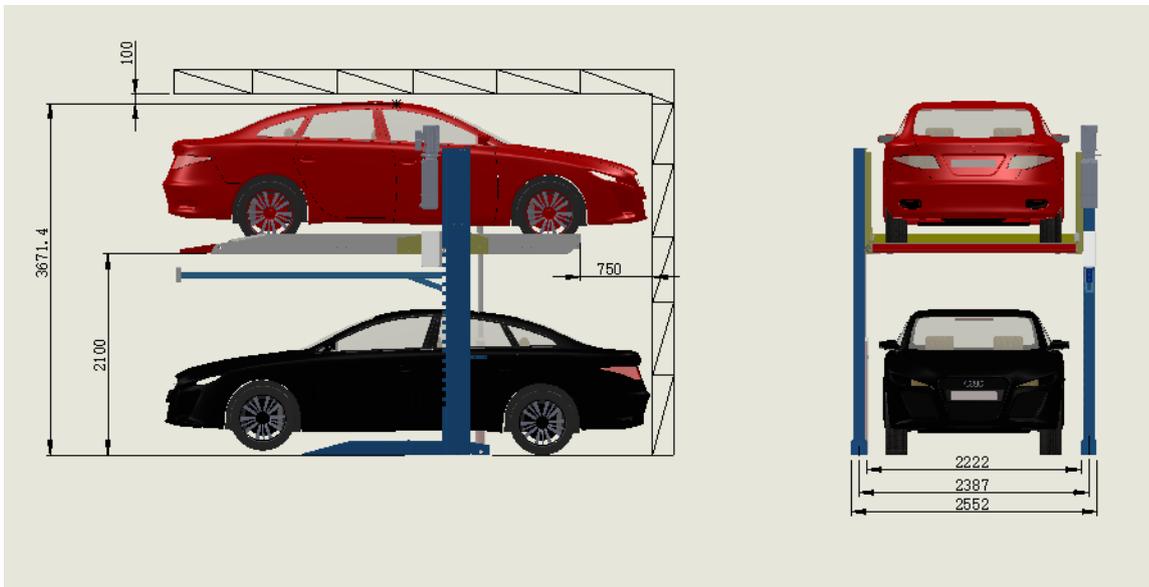
phenomenon	Possible reason	Exclude method
The motor works, no hydraulic leakage, the sound is abnormal, but the platform can't rise	There is air in the hydraulic oil.	Lift with idle load to the highest position, and keep for seconds and then lower down, when lowered to the half-height, screw to open the oil hose connector, discharge the air and then screw down.
	the hydraulic oil solidifies or viscosity of the hydraulic	discharge the hydraulic oil, refilling qualified hydraulic oil.

	oil is too big as surrounding temperature is too low.	
	The load is over weight	Check and confirm that lift weight is less than rated load.
Hydraulic oil leakage of oil hose connector.	The connector is loose.	Screw down the tube connector.
	The connector is damaged.	Change the connector.
Hydraulic leakage of the cylinder.	The hydraulic seal kit is damaged.	Change the seal kit or cylinder.
Motor do not work.	The motor is burned	Change the motor after check and confirm that the power is correct.
	The voltage is too low.	Check and confirm that the voltage is the regulated voltage.
	The fuse is burned.	Change the fuse.
	The limit switch is damaged.	Change the limit switch.
Platform can't lower.	The platform is locked.	Control the platform lift, after lock release lower the platform down.
Platform lowered slowly	The hydraulic oil viscosity is too big.	Change to the regulated hydraulic oil or consult local hydraulic manufacturer
	The plug valve of the	take apart the valve part to wash(pay attention

	power unit is jammed.	to dust proofing)
	The oil hose or the hose connector is jammed.	Dredge the oil hose and hose connector.
Motor rotate reversely	Wrong wiring	Rewiring according to the circuit drawing

### 8. Ordering information

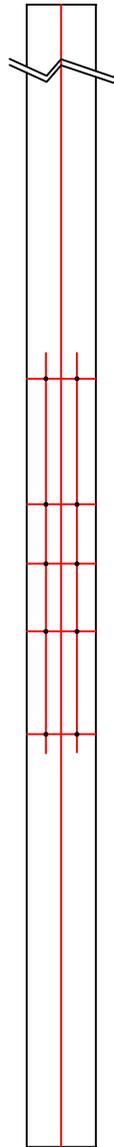
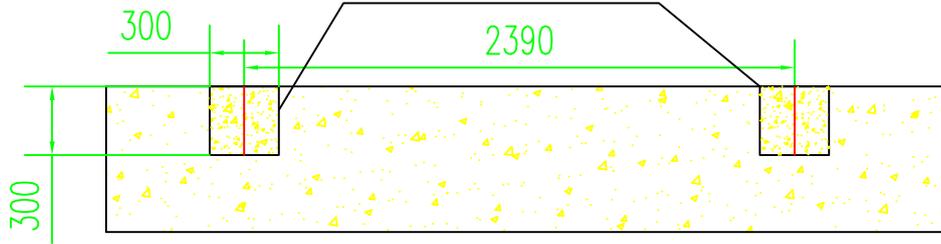
To ensure order the device correctly, please read the following instruction.



- 1、 Please confirm the parking car size and weight.
- 2、 Please provide parking site CAD drawing or parking site outline drawing.
- 3、 Inform sales people the stereoscopic parking space, above the line whether there is the erection, construction beam so on; if necessary, need to carry out site measurements
- 4、 Please confirm the parking project from the sale people and signature.
- 5、 To ensure your customized equipment can quickly and efficiently process completed during the customization, please think about below wave plate

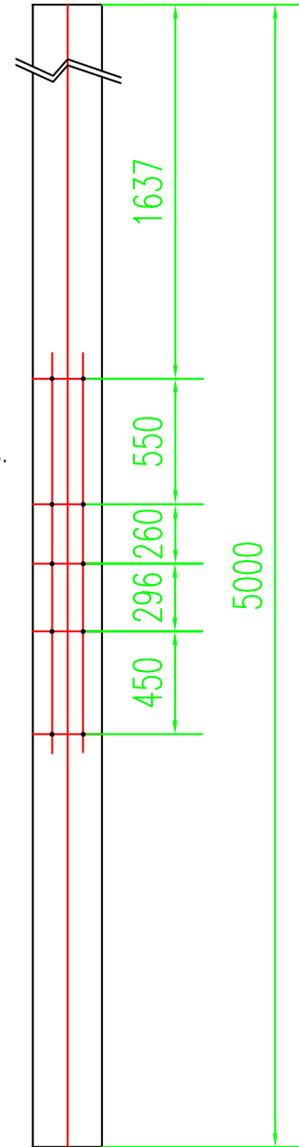
firstly: 1800, 1900, 2000, 2100, 2200, 2300. Try using the standard wave plate length to shorten delivery times. Make a note of your computing platform width value obtained to use when ordering the equipment.

Concrete Foundation



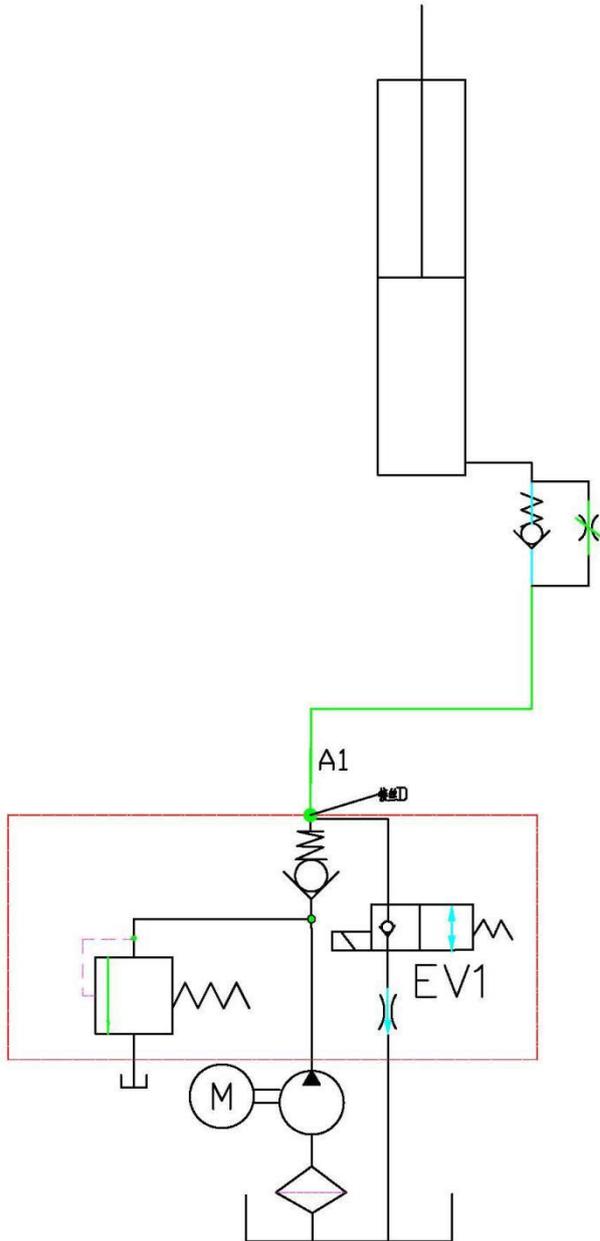
Technical Requirements:

1. The strength level of the concrete should be no less than C30 degree.
2. The depth of the foundation should be no less than 300mm.
3. The unevenness of the concrete surface should be no less than 5mm.
4. The length and width of the bolting foundation area should be at least 100mm more the base of the lift posts. The bolting area should be connected with the around foundation.
5. The newly finished concrete floor must be solidified no less than 28 days.
6. Anchor bolt size: M12×160



				FINISH:		DO NOT SCALE DRAWING		REVISION	
						HTTP://WWW.SOLIDPARKING.COM			
	NAME	SIGNATURE	DATE						
DRAWN									
CHKD									
APPVD									
MFG						DWG NO. <b>TP270H</b> <span style="float: right;">A1</span>			
Q.A									
				MATERIAL:		SCALE:1:1		SHEET 1 OF 1	
				WEIGHT:					

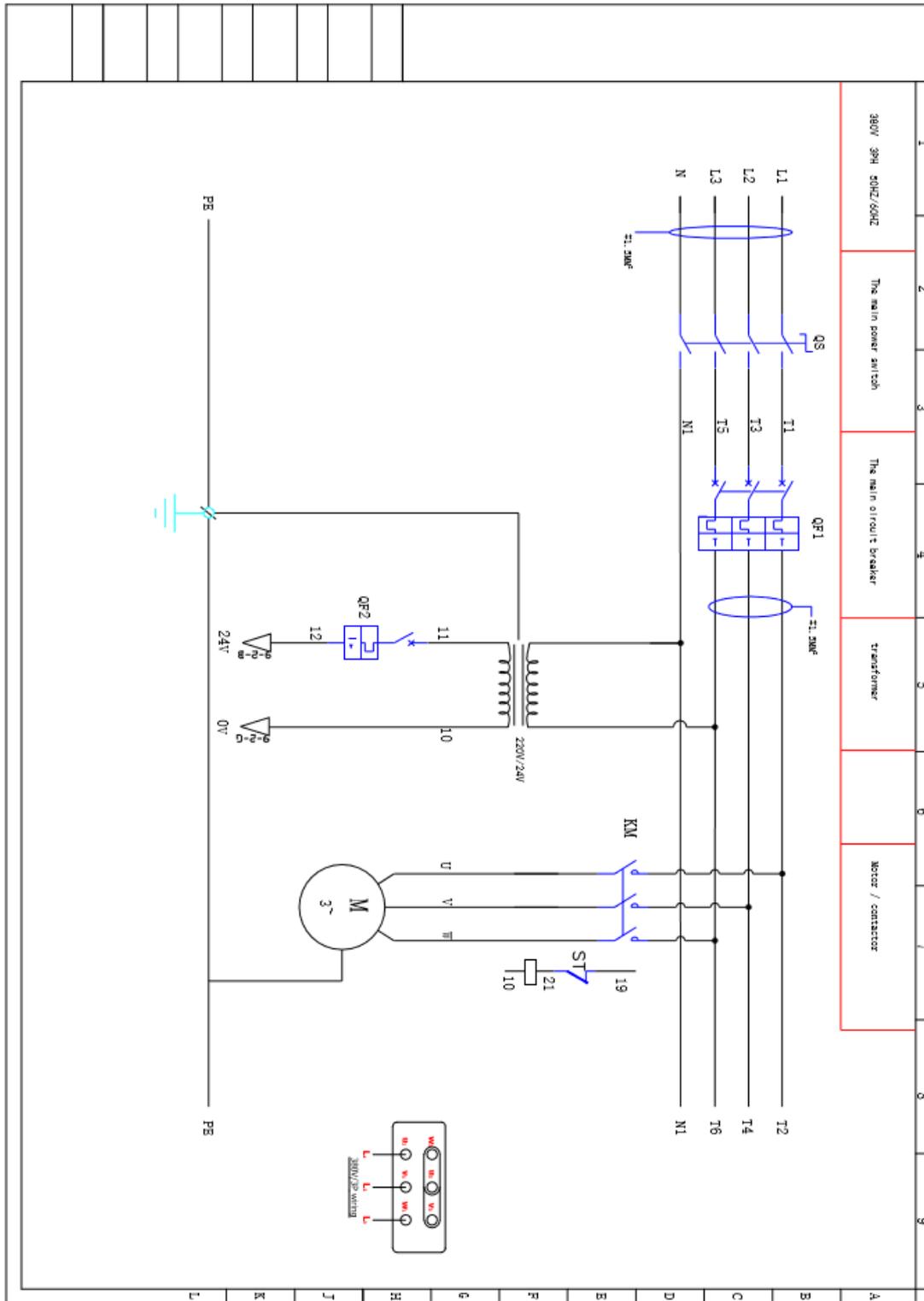
**Attachment 2 : Hydraulic principle**

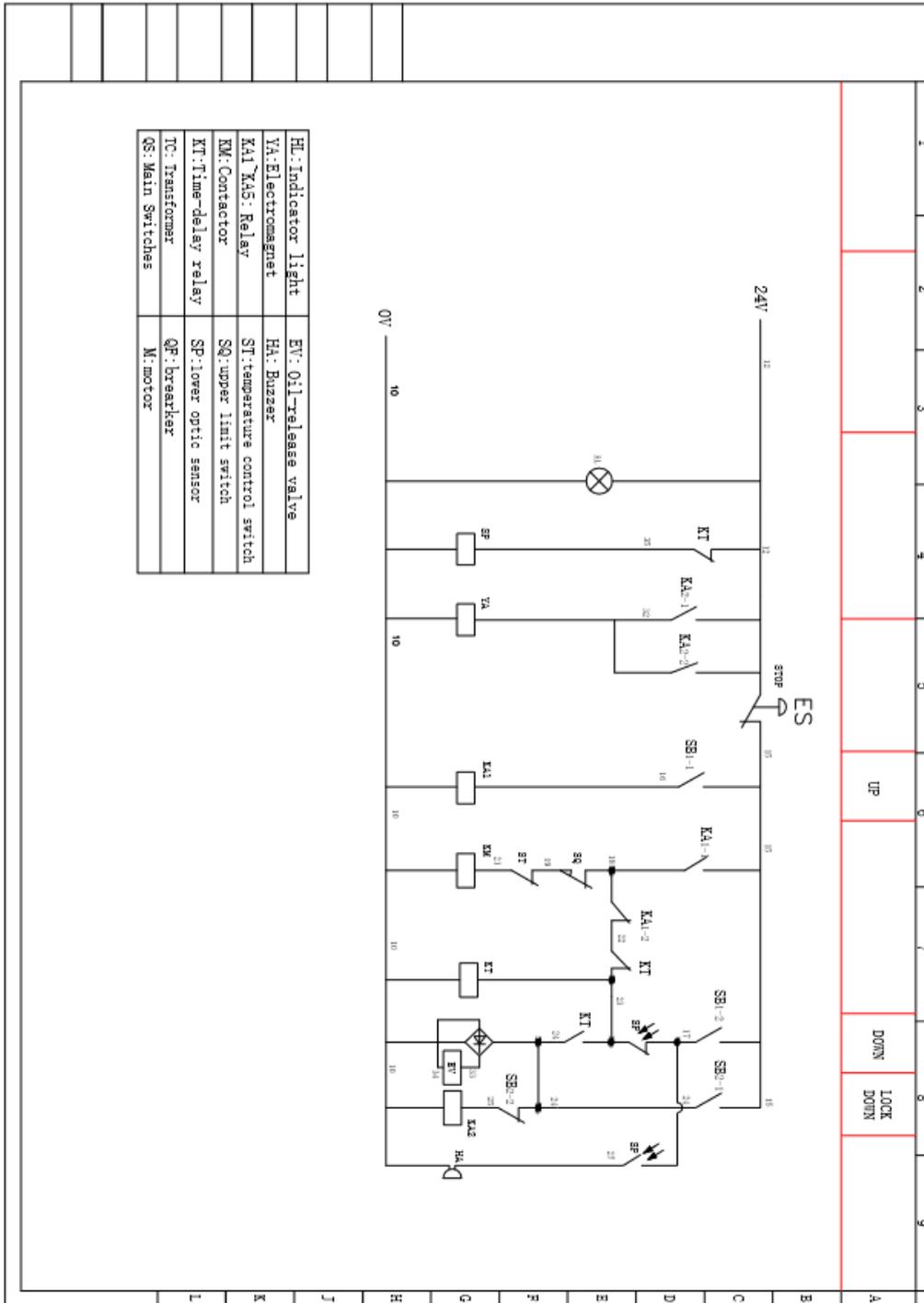


动力单元配置:  
 电机电压: 3PH 400/230V  
 频率: 50HZ/60HZ  
 转速: 2840r/min,  
 齿轮泵排量: 2.5ml/r速度: 7L/min  
 卸荷电压: 24V  
 油箱容积: 12L  
 邮箱材料: 白色塑料

A1: 主供油管  
 D: 接丝  
 E: 三通  
 EV1: 主供油管电磁溢压阀

### Attachment 3 : Electrical principle drawing





#### Attachment 4、 packing list

Equipment model : TP-270H

Item	Name of part	Quantity	备注
1	Post	2	Powder coating
2	Post front base	2	Powder coating
3	Left slider	1	Powder coating
4	Right slider	1	Powder coating
5	Beam( left and right)	2	Powder coating
6	Platform link levers	2	Powder coating
7	Driving wedge	1	Powder coating
8	platform	14	Powder coating
9	Back cover	1	Powder coating
10	Back stop cover	1	Powder coating
11	Accessory box	1	Standard parts packed
12	Electrical parts box	1	
13	Hydraulic cylinder	1	

**Note : customized products as per actual packing list.**

**Attachment 5 : After service**

Address : Middle of jinhuanhai 2nd road, Daxin Industrial Park, Jimo district,  
Qingdao city, Shandong P.R. China 266229

Tel : +086(532)5557 8379 +086(532)5557 8396

Web : [www.solidparking.com](http://www.solidparking.com)