

Barrier Gate Manual



Version: 2.0

Note: Pictures in the Manual are just for reference, and there will be no further notice if any pictures are changed

(The second version)

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Warning!

For safety, please do follow the instruction strictly to manage this product:

1. It is forbidden to open the barrier gate cap and door when it is working.
2. There must be a grounding connection for the barrier gate cabinet.
3. Make sure there is no person or any obstruction under the boom when it is falling.
4. Before delivery, the barrier gate spring and the boom length are well-balanced. It is not allowed to change the boom length randomly. If needed, please check with the technician.

1. Brief Introduction

Thank you for purchasing our product. This product uses the latest mold design technology, die-casting manufacturing technology and no clutch design. So the quality is reliable. And The mechanism uses the gear worm and crank link structure, which make the boom operate quickly and steadily. And the maintenance will be easy and convenient.

2. Motor Speed and Boom Type

Boom Type	Boom Length (M)	Opening Time(S)	Height Between Boom and Ground(M)
Straight Boom	$6M \geq L > 4.5M$	6S	H=0.8M
	$4.5M \geq L > 3M$	3S	
Articulated Boom, 90 Degree	$5M \geq L > 3M$	6S	
	$3M \geq L$	3S	
Articulated Boom, 180 Degree	$5M \geq L > 3M$	6S	H=0.9M
	$3M \geq L$	3S	
Fence Boom, Two-level	$4.5M \geq L$	6S	H=0.9M
Fence Boom, Three-level	$4M \geq L$	6S	H=1.5M

3. Functions and Features

- 3.1. Open the barrier gate by motor wheel when power off and automatic reset when power on.
- 3.2. Boom running stably with motor transmission of cranks and shafts.
- 3.3. Remote control to operate the barrier gate.
- 3.4. Auto-reverse when boom meets obstruction (only for barrier using digital limit device)
- 3.5. Infrared photocells interface is available (need to install photocell device).
- 3.6. Loop detector interface is available (need to install loop detector) .
- 3.7. Well-integrated with car parking system equipments, with wire control (must be dry contact signal).
- 3.8. Interface for traffic light, dry contact output (traffic light must be less than 10A)
- 3.9. Offering signal of limit status for car parking system (output COM, NC, NO).
- 3.10. Auto-closing function (adjustable from 3s to 30s, factory default off this function).

4. Technical Data

- 4.1. Working voltage: 220V \pm 10%, 50HZ or 110V \pm 10%, 60HZ
- 4.2. Rated Power: 200W
- 4.3. Working temperature (motor and control panel): -35 $^{\circ}$ C \sim + 80 $^{\circ}$ C
- 4.4. Humidity: \leq 90% RH
- 4.5. Distance of remote control: 100M $>$ L \geq 30M in the open place

5. Mechanism Structure

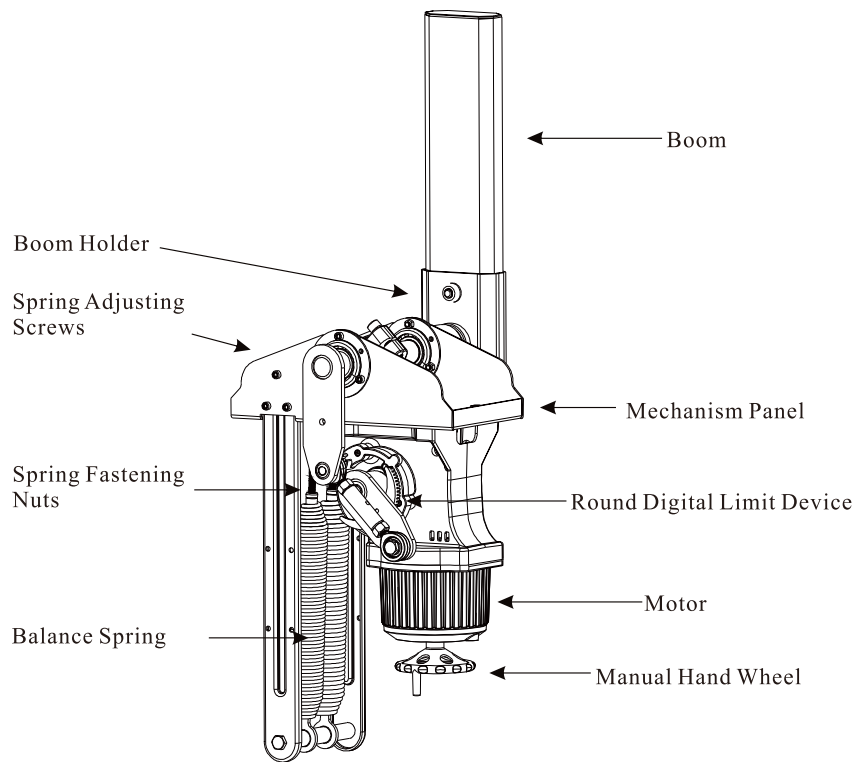


Figure 1

6. Installation Direction Definition.

When placing the order, please confirm “left-installed” or “right-installed”.
Figures as below:

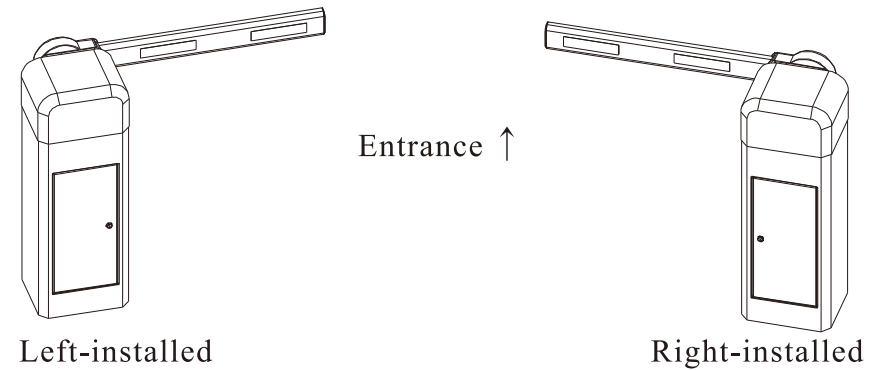


Figure 2

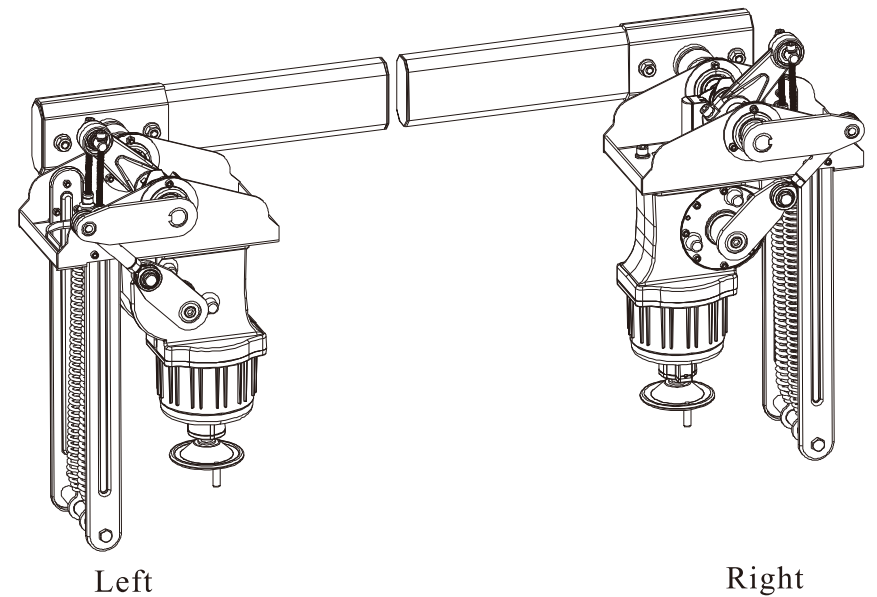


Figure 3

7.2.3. Spring Distinguish

The spring is stretchable one, and the specification and color as following:

Item	Diameter Φ (MM)	Spring Color
1	$\Phi 4.5$	Red
2	$\Phi 5.5$	Blue
3	$\Phi 6.0$	Green
4	$\Phi 6.5$	Yellow

7.2.4. Spring Selection Table:

Boom Type	Boom Length (M)	Spring Selection
	Boom Dimension: 100*45*1MM	Diameter Φ (MM)
Straight Boom	$L=6$	$\Phi 6.0 + \Phi 4.5$
	$6 \geq L \geq 5$	$\Phi 5.5 + \Phi 4.5$
	$5 > L \geq 4.5$	$\Phi 6.0$
	$4.5 > L \geq 3.5$	$\Phi 5.5$
	$3.5 > L \geq 2.5$	$\Phi 4.5$
Straight Boom with Rubber	$6 \geq L > 5$	$\Phi 6.5 + \Phi 4.5$
	$5 \geq L \geq 4.5$	$\Phi 5.5 + \Phi 4.5$
	$4.5 > L > 4$	$\Phi 6.0$
	$4 \geq L \geq 3.5$	$\Phi 4.5 + \Phi 4.5$
	$3.5 > L \geq 2.5$	$\Phi 5.5 \Phi$
Articulated Boom	$6 \geq L > 5$	$6.5 + \Phi 4.5$
	$5 \geq L > 4$	$\Phi 5.5 + \Phi 4.5$
	$4 \geq L \geq 3$	$\Phi 4.5 + \Phi 4.5$
Fence Boom, Two-levels	$5 \geq L$	$\Phi 6.5 + \Phi 6.5$
	$5 > L > 4$	$\Phi 6.5 + \Phi 5.5$
	$4 \geq L \geq 3$	$\Phi 5.5 + \Phi 4.5$
Fence Boom, Three-levels	$4 \geq L > 3$	$\Phi 6.5 + \Phi 5.5$
	$3 \geq L \geq 2$	$\Phi 5.5 + \Phi 4.5$

Notice: Please do not change the boom length, increase or reduce the boom weight, or disassemble the spring, for the mechanism is well-adjusted before delivery. If you must do so, please select a new suitable spring to readjust it. (Adjustment introduction: Tighten the spring if the boom shake when falling down; Loosen the spring if the boom shake when rising up).

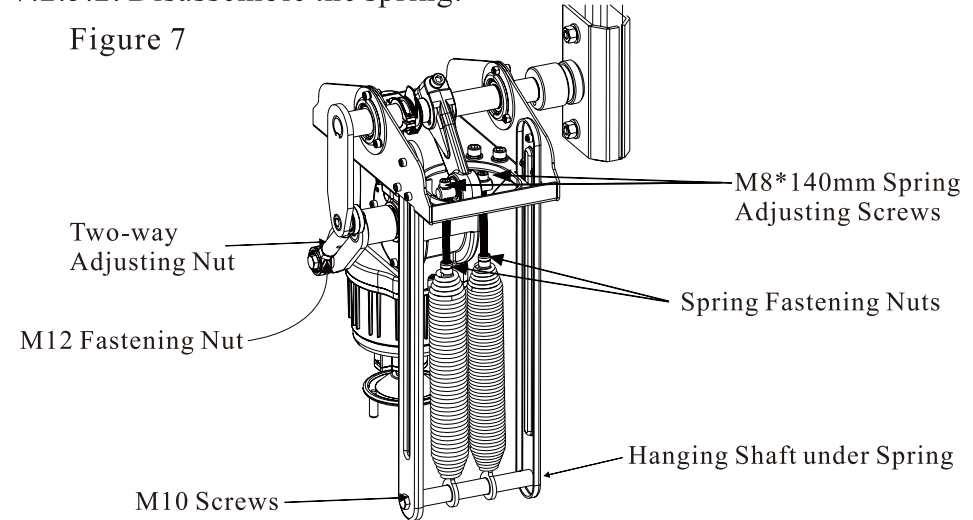
7.2.5. Installation, Disassembly, Adjustment of Spring.

The steps as following: keep the boom at vertical position.

7.2.5.1. Loosen the spring fastening nuts, unscrew the M8*140 spring adjusting screws by a hexagonal spanner.

7.2.5.2. Disassemble the spring.

Figure 7



The steps for installing and disassembly the spring are the opposite!

7.2.6. Boom Balance Adjustment

7.2.6.1. Firstly, please adjust the boom horizontally and vertically through two-way adjusting nut to lengthen or shorten the connecting bar. After adjusting well, then tighten M12 fastening nut.

7.2.6.2. According to the boom balance status, repeatedly adjust M8*140 screws, to make the boom well balanced.

7.2.6.3. For the barrier gate using double spring, please adjust the springs simultaneously to make the boom well balanced.

7.2.6.4. If boom shaking seriously when lifting up or falling down (see Figure 8). Adjustment as following: If the boom shaking seriously when lifting up, that means the spring is too tight, please loosen the spring repeatedly; if the boom shaking seriously when falling down, that means the spring is too loose, please tighten the spring repeatedly.

7.2.6.5. Before adjusting the balance spring adjusting screws, please loosen the spring fastening nuts firstly, after boom well balanced, tightening the fastening nuts.

7.2.6.6. Vertical or horizontal fine adjustment, see Figure 9.

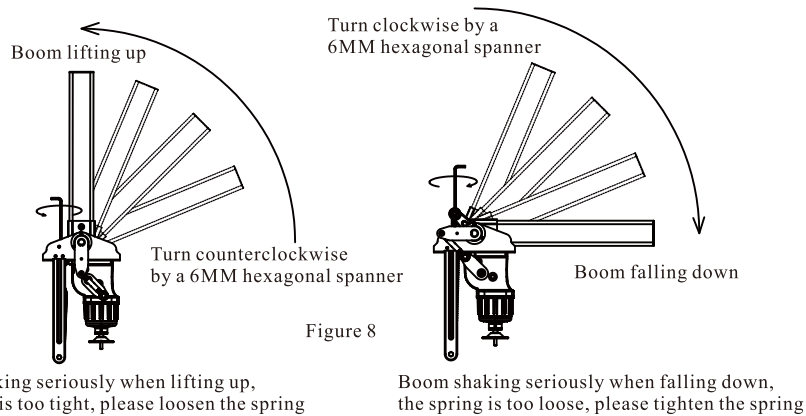


Figure 8

Horizontal adjusting: When UP limit indicator is on, keep pressing “SET” button, then press UP button (if the angle is over 90°) or DOWN button (if the angle is less than 90°) of the remote controller. The adjusting number is between 0 and 10 degree. Loosen SET button, the adjustment is done.

Vertical adjusting: When DOWN limit indicator is on, keep pressing “SET” button, then press UP button (if the angle is below 0°) or DOWN button (if the angle is over 0°) of the remote controller. The adjusting number is between 0 and 20. Loosen SET button, the adjustment is done.

Note: When press STOP button of the remote controller in adjustment, the function indicator will shine. The times it shines means the adjusted number.

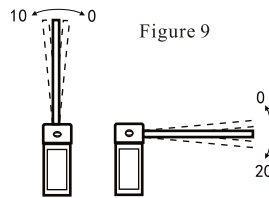


Figure 9

7.3. Electrical diagram explanations and instructions

All the electrical connections are done before delivery and please do not change it randomly. The necessity is to connect the power and grounding connection. Explanations and instructions for the main functions and interfaces as following (from left to right):

7.3.1. Up limit/down limit relay output interface: this interface is for up limit (or down limit) relay (no power, switch signal) output, systems can get the signal of boom position from this interface.

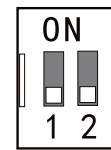
7.3.2. Infrared photocell and loop detector interface: the left 2 interfaces is for DC12V power output, can provide power (currency less than 1A) for photocell; the right 3 interfaces are photocell signal input, loop detector signal input, and COM. The dry contact signal NO and COM on the receiver part of the photocell, connecting to “Photocell signal input” and “COM” interfaces of the control board. The dry contact signal NO and COM on the output part of loop detector, connecting to “Loop detector signal input” and “COM” interfaces of the control board.

7.3.3. Wire control input interface: This interface is dry contact input signal, UP (or DOWN, or STOP) connect with “COM”, control board will response accordingly. User can use this interface to connect IC card system or parking system, and also can connect button switch to control the barrier.

7.3.4. R&G light interface: this interface is no power, same as switch, “COM” need to connect with corresponding power of the R&G light. When boom falling down to horizontal position, red light will keep lighting; when boom lifting up the vertical position, green light will keep lighting. During the boom falling down or lifting up, the red and green light will light alternately.

7.3.5. Function Setting

7.3.5.1. DIP switch Setting:



DIP switch 1: Limit type selection

“ON”: blade limit

“OFF”: digital limit

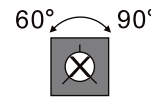
DIP switch 2: Buffer function switch for boom UP/DOWN

“ON”: buffer function is closed

“OFF”: buffer function is open

(Note: For 3s barrier gate, it's better to open the buffer function)

7.3.5.2. Up angle adjusting



Counter-clockwise to the end is 60° ;

Clockwise to the end is 90° ;

Middle is $65^\circ \sim 85^\circ$

7.3.5.3. Auto-closing setting

Power off firstly, keep pressing “SET” button, then power on. When the function indicator is on, the auto-closing function is off; When the function indicator shines, the auto-closing function is on. The times it shines is the time for auto-closing.

Turning on auto-closing function: Press the “UP” button (of the remote controller), then the auto-closing time is 3 seconds, every time you press “UP” button, the time will add by one second, and the max auto-closing time is 30s.

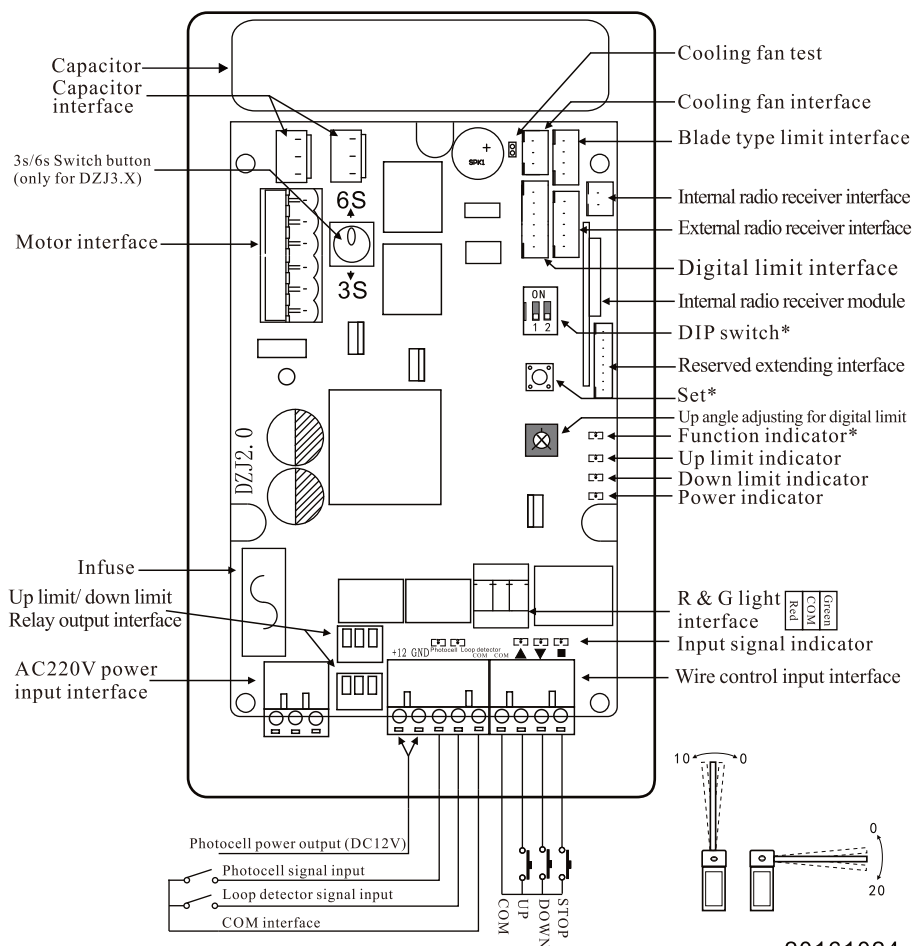
Turning off auto-closing function: Press the “STOP” button (of the remote controller). When the function indicator is on, it means the auto-closing function is off.

Auto-closing time definition: Press the “DOWN” button (of the remote controller), then check the indicator. The times it shines means the auto-closing time.

Loosen the “SET” button and the program will be saved.

(Note: During setting, please keep pressing, and don't loosen “SET” button)

DZJ2.X/3.X Wire Diagram



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7.4. Remote Control Coding

Two types of remote control, multi frequencies for choice. If need to add or change remote control, methods as following:

7.4.1. Learning type

Learning method 1: Before connect power to the barrier gate, keep pressing button “STOP”; then connect to power, after about 6 seconds, LED of receiver from lighting to flashing 4 times then off. That means learning well. (during learning, please don't loose the button, or you need to relearn)

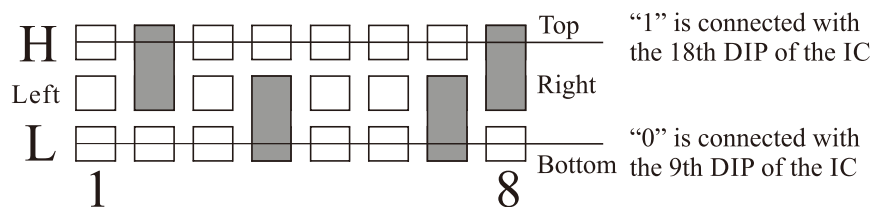
Learning method 2: Press button “UP” and “STOP” of the learning well remote controller at the same time for 4 seconds, LED of receiver keep lighting means going to learning status; during 3 seconds, pressing button “STOP” of the not learning remote controller for 2 seconds (or press 2 times continuously), LED of receiver flash 4 times. That means learning well. If the remote controller doesn't receive any effective signal, it will quit learning status.

Clear the code: when power on, make short circuit on the receiver mould until the LED goes out.

7.4.2. Fixed type

The code of remote controller and remote receiver should be the same.

Coding method: open the remote controller, take out the battery, there is dial plate, the direction is from right to left. The solder between middle port and top port is state “1”. The solder between middle part and bottom port is state “0”. Empty is state “X”. The code mark bellow is 10XX0X1X (Warning: please take out the battery before coding!)



8. Common Malfunctions and Solutions

8.1. Motor works but there is no reaction on the barrier arm.

- 8.1.1. Check up the power supply and the fuse.
- 8.1.2. Check if the remote controller matches the radio receiver; or check up the battery inside and then change it if it is lack of power.
- 8.1.3. Check whether there is disturbance or not.
- 8.1.4. Check up the condition of photocell and loop detector.

8.2. The barrier arm rise up automatically when falling down at 45 degree.

- 8.2.1. If using digital limit, please check DIP “3s/6s switch button”, whether the DIP is same as the speed of the barrier.

8.3. Barrier arm stop after moving a little when falling down or rising up.

- 8.3.1. Check up if the limit switch interface is connected well.

8.4. Barrier arm is not in vertical or horizontal limit position.

- 8.4.1. For Blade type limit, check up the photo electricity limit switch.
- 8.4.2. Check up DIP of up angle is adjusted to the end.
- 8.4.3. Check up the connection rod, and vertical and horizontal position of the barrier arm. (Refer to Page 7)

8.5. Barrier Boom falling down well, but barrier boom rising up is not well.

- 8.5.1. Adjust the balance spring again.

8.6. For dual speed barrier, using 6s speed and well balanced, then changed to 3s speed, the motor blocked.

- 8.6.1. If changing the speed, need to fine readjust the vertical and horizontal position.

9. Warranty and Service Items

- 9.1. Free service is offered for component parts in one year warranty time (not includes the barrier boom).
- 9.2 Lifetime service with charge accordingly.
- 9.3 Technical questions are supported.
- 9.4. The below items and situations are not included in the range of free service.
 - 9.4.1. The user does not follow the instruction and cause any damage of the product.
 - 9.4.2. The power supply is not stable, over the range of permitted voltage or not accordant to safety electric using standard.
 - 9.4.3. The user installs or uses the product in wrong methods, cause damage to the control system.
 - 9.4.4. Natural disaster causes damage to the product.
 - 9.4.5. Warranty time is over.
 - 9.4.6. Service items are out of our promises.

10. Maintenance

- 10.1. Keep the barrier gate clean.
- 10.2. Check the joints ever month in case of any loose parts.
- 10.3. Check the spring elasticity after the barrier gate running 30000 times
- 10.4. Check the easily worn-out parts (like spring, limit switch) every half year and renew it.
- 10.5. Remote control distance will be shortened or not work in cases like big object screening, battery exhausting, extreme weather.

11. Packing List

Name	Specification	Quantity	Unit	Application
Screws, Nuts, Flat Pad	M12*70	2	sets	Fixing the boom
Boom Fixing Bar		1	pcs	
Boom Holder Plastic Cover		1	sets	Optional
Cabinet Fixing Bar		2	pcs	Fixing the cabinet
Expansion Screws	M16*150	4	sets	Fixing the cabinet
Support Post		1	sets	Optional
Radio Emitter		1	pcs	Optional
Keys		2	pcs	
Remote Controller		2	pcs	
Manual		1	pcs	