

## User Manual

Barrier Gate BP-BG158



For Inquiries, Please contact:

Security Shop  
Vladimira Popovica 6/6/A606  
11070 Novi Beograd, Serbia  
Tell: +381 11 318 68 68  
office@securityshop.rs

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*Enjoy it.*

Dear User:

Thanks for your trust. Please read this user manual carefully before using barrier gates.

The manual includes: main functions (our own advantages), dimensions, parameters, main board wiring diagram, installation instructions, testing, and packing list.

The user manual can help you to know more details about barrier gate, such as mechanical working theory, using guide, matters need attention.

We should use the swing barrier in right way to ensure the working life.

The user manual also analyzes some problems which maybe appear during using.

And you can find out the way to solve each problem in the manual.

At the same time, we sincerely hope that you can give us some suggestions to make our barrier gates better and better.

Thanks!

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### 1. Mechanical features

- Nice designed cabinet: strong, waterproof, can be used outside.
- Integrative machine core: all part is made by mold, so all parts can be more accurate. And so, the barrier gate can be much more stable;
- 60W turbine worm transmission deceleration induction motor, saving energy, motor with fan, prevent overheating, could working 24 hours without stop: Drive Steady, Noise Lower, Structures Compact, can realize self-locking;
- Accurate link mechanism: link mechanism can release boom's shake and motor load, o the barrier gate can move more stable and barrier gate's working life can be longer;
- Lock or open the boom by hand: we can turn motor handle to lock or open the boom when power is off.

### 2. Electrical features

- High integrated level, Powerful function;
- Shut down functions (motor will be shut down automatically after 6 seconds) and thermal protection functions can effectively protect our motor;
- Intelligent limited sensor to check open & close position automatically
- Anti-smash function
- Open and close speed are adjustable
- With LED indicator, easier to use and maintenance.
- Imported high-power MOSFET, contactless control motor switch
- Using imported photoelectric isolated protection circuit to ensure signals' stability;
- Support standard remote control and 10 groups can be added
- Using imported Magnetic core transformer to ensure working performance in damping situation;

### 3. Safety features

- Auto bounce back function, make sure car and facilities' safety
- Pressure sensor - Anti-crash functions: If the boom meets something during closing process, the boom will be opened automatically;
- Loop detector - Anti-crash functions: If car stands under the boom, the barrier gates cannot be close. And the barrier gates will be closed automatically when the car passes the boom;
- Open first functions: no matter the boom locates any position, it will be opened if barrier gate gets open signal;
- Plastic strips: we can install plastic strip into our boom, it can decrease accident damages.

### 1. Dimensions

Boom type	Boom Length(M)	Open time (S)	Close time(S)	The height of boom support
LED Arm	≤3	1.8	2	890mm
	≤4	3	3.5	
Telescopic boom	≤3.5	1.8	2	
	≤4.5	3	3.5	
	≤6	5	6	

### 2. Parameters

Voltage: DC24V

Motor power consumption: 100W

Working temperature: -30°C ~ 80°C

Humidity: ≤ 90%

Boom length: ≤ 6M

Open/Close time: 1.8S ~ 3S/3S ~ 6S

The height of boom support: 890mm

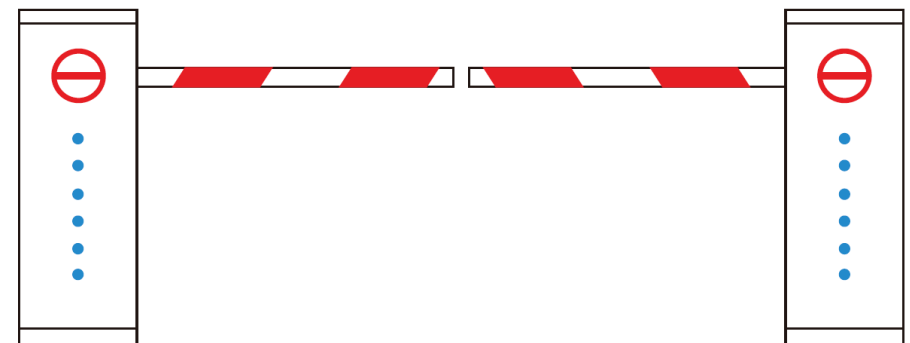
Remote control distance: ≤ 30M

IP: IP54

Input interface: Switch signal

Remote control requencey

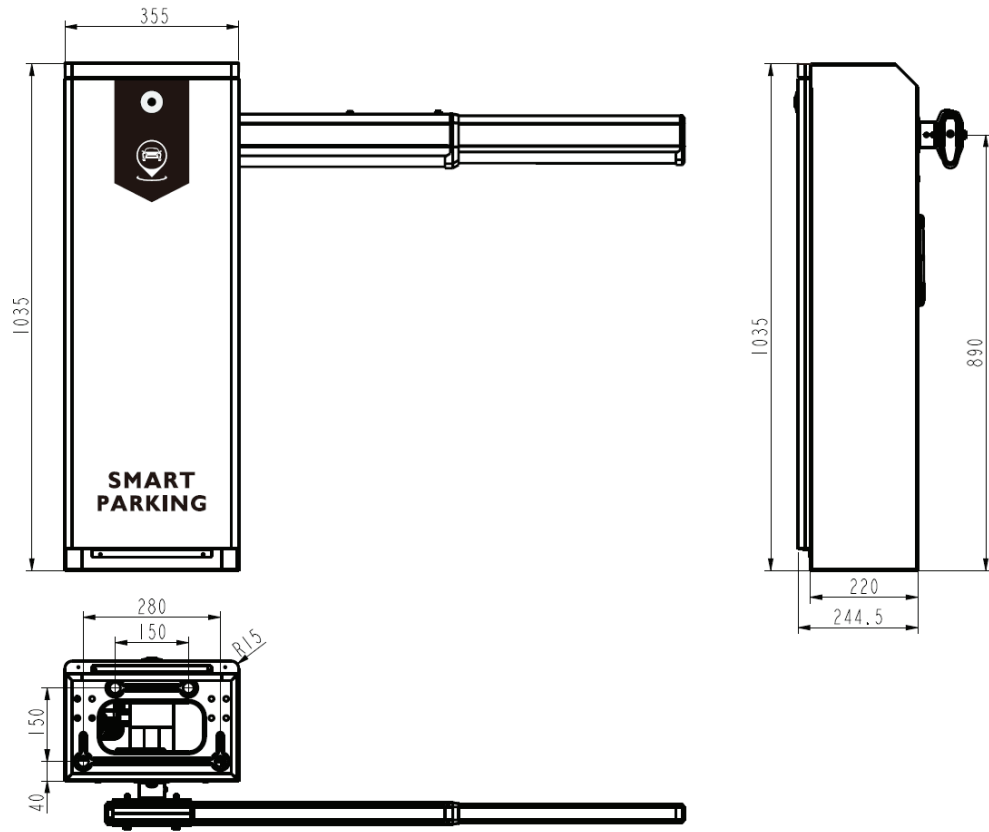
### 3. Direction



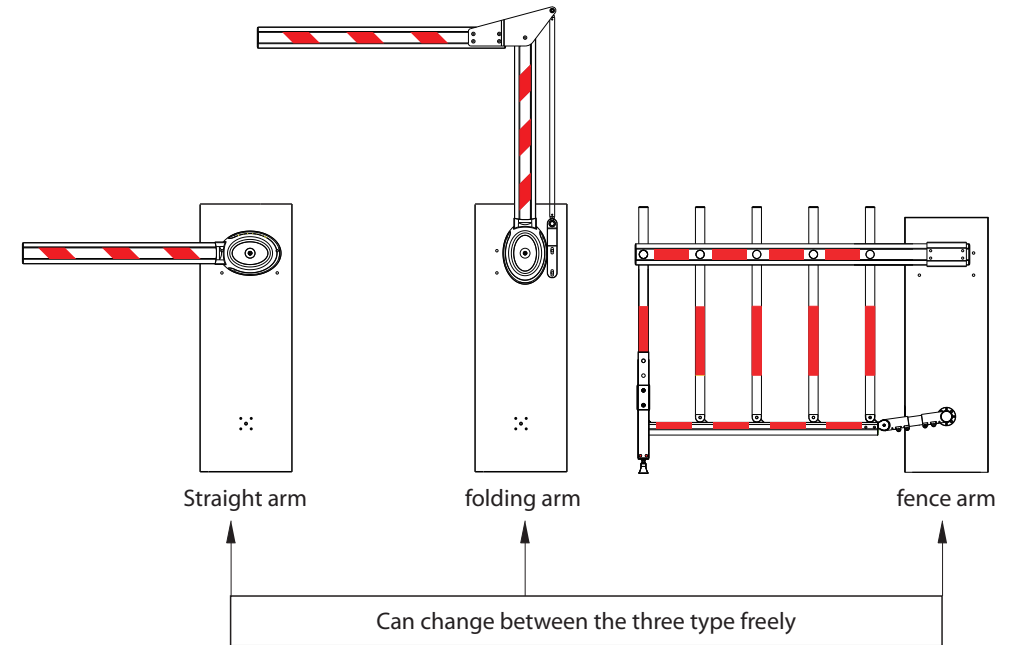
Left-hand version

Right-hand version

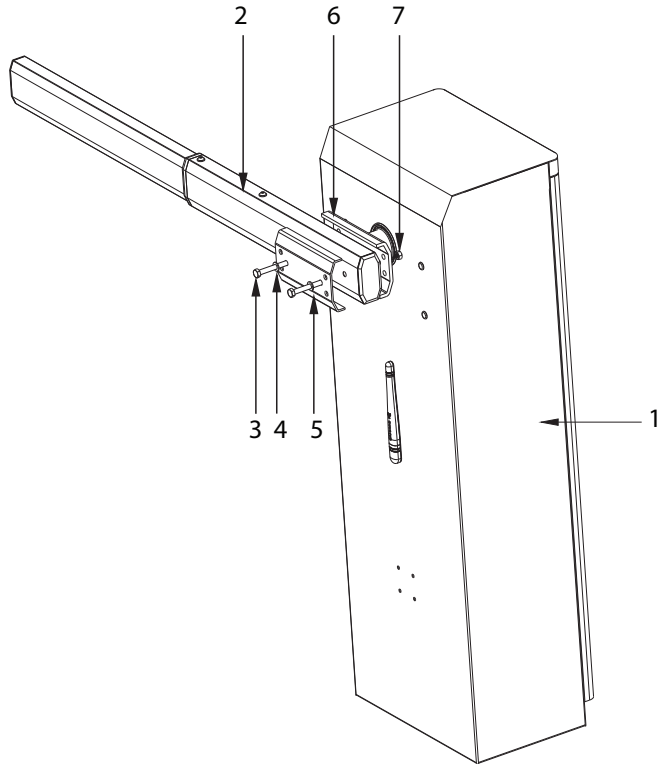
### 4. Housing structure



### 5. Boom type



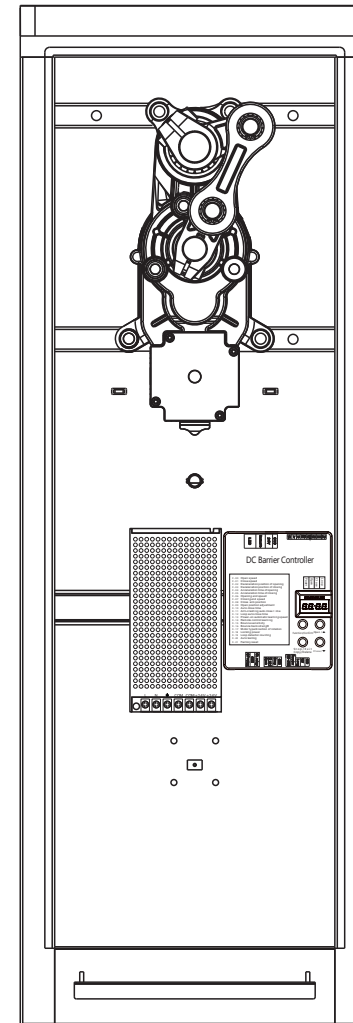
## 1. Barrier structure



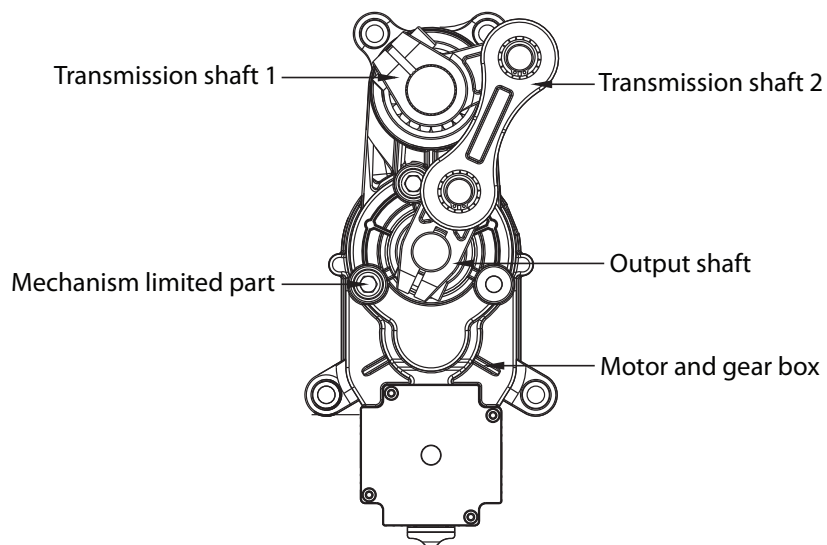
NO	Name	Quantity
1	Cabinet	1
2	Arm	1
3	Hexagonal socket screw M8*65	2
4	Flat gasket $\phi 8$ (SUS304)	2
5	Arm cover	1
6	Arm holder	1
7	Hexagonal socket screw M8	2

## 2. Inner structure

Its internal structure is operated by the output shaft of the all-gear reducer, and the movement is transmitted to the main shaft through the plane four-bar linkage mechanism, and the high-precision control system is used to accurately locate the position of the boom during operation, so as to realize the control of the boom. (Please refer to the illustration for details).



### 3. Machine core structure



### 4. Spring hanging hole illustration

Barrier can use different length boom. Should change hole to meet different length.

Boom type	Boom length	Spring quantity & type
Telescopic Fence	$L < 4M$	1 * $\phi 6.5$
	$4M \leq L \leq 5M$	2 * $\phi 6.5$

Notes: we must change spring type and hole, adjust the corresponding parameters if we change boom length.

### 1. Installation

- Check packing list to make sure all in right way
- According to barrier arm direction and actual situation to confirm fixplace. If ground isn't concrete foundation or it is a slop, suggest to build a horizontal concrete foundation; After installation, barrier box should be perpendicular to ground
- According control center or security room position, reference (GB 232 electrical device installation and check before acceptance standard)'s relative rules to set power wires and signal wires (the two type wires should be set in different pipes)
- Use expansion screw (follow packing list part to confirm install number) to fix barrier gate cabinet then start to use
- Adjust boom arm to horizontal position by hand switch to confirm boom holder fix position (this step is optional)
- Connect and check all wires to barrier main board according to wiring diagram

**Notes: Should cut off power during installations.**

### 2. Instruction Details

1) Line pre-buried

build concrete basement if it is needed (basement size should be bigger about 100-150mm than barrier base size). Bury power wires and signal wires between barrier and control center.

2) Fix barrier box

Choose the right place and fix barrier box by expansion screw.

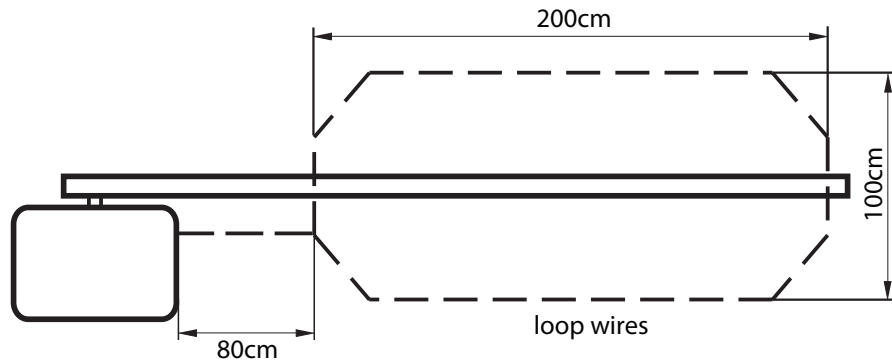
3) Install boom

After fix barrier cabinet, install boom arm onto arm holder. Confirm boom arm in right place then fix screws. If we need to install barrier arm holder, adjust arm to horizontal position by hand switch to check holder fixing position, then fix arm holder.

4) Install other devices

You can connect and debugging other devices according to wiring diagram.

## 5) Install loop detector



5.1. Draw loop coil shape: width is 1000mm, length depend on arm length, two sides is narrower than the arm 700mm to 1000mm, make a chamfer at 4 corners to prevent wires damages.

5.2. Use cutting machine to cut a groove according to the draw. Groove dimension: width 3-5mm, depth: 30mm, and cut a groove to barrier gate cabinet.

5.3. Put one end of the coil with enough length into cabinet, then circle it along the groove 5 times, then twist wires and connect them to loop detector ports 7 & 8.

5.4. Test the loop sensor to sure all right. Then use cement to bury the groove.

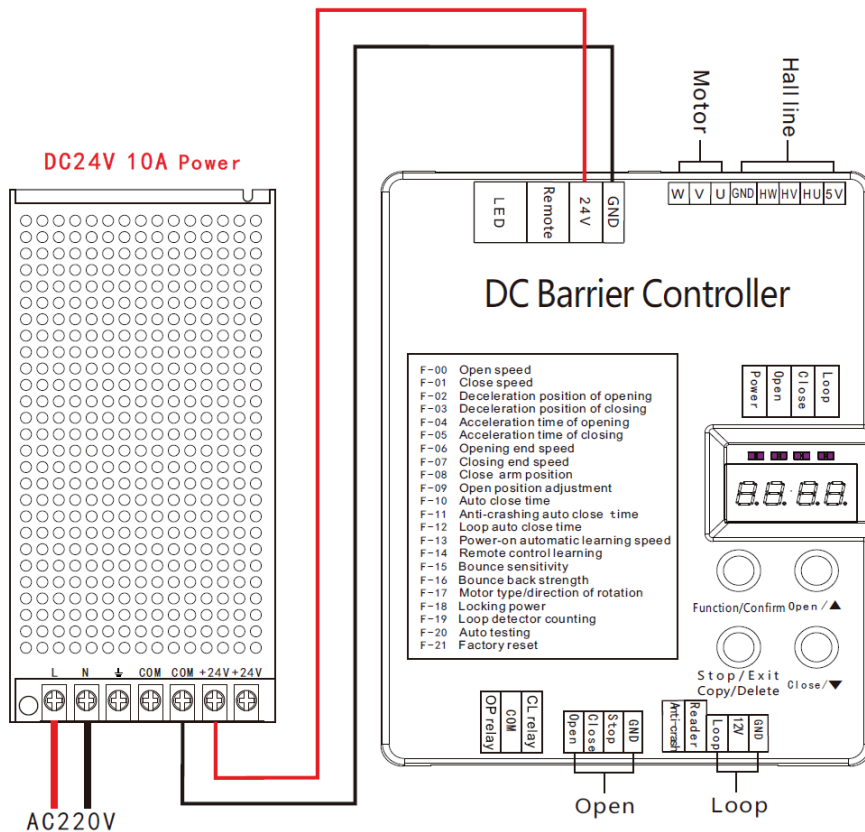
## 1. Debugging Instructions

Item	Test way
Boom isn't in close position/open position	1. Loosen the two locking screws of the main transmission shaft, turn the boom lever to the horizontal position, tighten the screws to re-learn the limit. 2. Setting open angle parameters of F-09/close angle parameters of F-08.
Boom shake during open	1. Open speed is too large, decrease the parameters of F-00. 2. Adjust the parameters deceleration position of opening of F-02. 3. Spring strength is too large, adjust the spring hole position or loosen the adjusting boom to adjust the spring strength.
Boom shake during close	1. Close speed is too large, decrease the parameters of F-01. 2. Adjust first closing deceleration supervising the parameters of the F-03. 3. Spring strength is too small, adjust the spring hole position or tighten the adjusting boom to adjust the spring strength.

## 2. Problem &amp; solving way

No	Problem	Reason	Solving way
1	Power indicator light is off, press button, no response	1. Don't connect power	1. Connect power
2	Power indicator light is on, but remote controller doesn't work	1. Remote control code doesn't match 2. Receiver module doesn't work 3. Same frequency interference 4. Remote control doesn't copy	1. Recode 2. Change receiver module 3. Change other frequency 4. Copy remote control
3	Power light and working light are on, but motor doesn't work	1. Motor wire loose	1. Remote wires
4	Limited sensor doesn't work	1. Limit sensor learning is wrong	1. Relearn limited position
5	Remote control can't work	1. Battery is power off 2. The control is broken	1. Change battery 2. Change remote control
6	Display E-07	1. Wrong motor type selected 2. Unstable power supply voltage 3. Loose motor wiring 4. Motherboard motor interface	1. Reselect motor type 2. Check the power supply output voltage 3. Reconnect the motor wires 4. Replace the motherboard 5. Replace the motor

## 1. Wiring diagram



## 2. Board parameter settings

### A. Parameters:

- F-00: Open speed
- F-01: Close speed
- F-02: Deceleration position of opening
- F-03: Deceleration position of closing
- F-06: Opening end speed
- F-07: Closing end speed
- F-08: Close arm position
- F-09: Open position adjustment
- F-14: Remote control learning
- F-15: Bounce sensitivity
- F-16: Bounce back strength
- F-17: Motor type/direction of rotation
- F-29: Relay output mode of open limited position

### B. Parameter debugging posit

**Note:** The equipment has been debugged well before leaving the factory, and the barriers and arms can be installed directly. It is recommended not to modify the factory parameters casually.

1. Set Motor type/direction of rotation: First make sure the motor wiring is correct, press the "Function/Confirm" button for 3 seconds to enter the menu, LED shows F-00, and then press "Open/▲" or "Close/▼" button, when the LED shows F-17, Press the "Function/Confirm" button to enter the setting, set the value to 3 for left-hand boom barrier gates, and set the value to 2 for right-hand boom barrier gates, then press the "Function/Confirm" button to save, and press the "Stop/Exit/Copy/Delete" button to exit the menu.

2. Set open speed: When the LED shows F-00, press the "Function/Confirm" button to enter the setting, and press "Open/▲" or "Close/▼" button to increase or decrease the value. The bigger the value, the faster the open speed. After setting, press the "Function/Confirm" button to save, and then press the "Stop/Exit/Copy/Delete" button to exit the menu.

3. Set close speed: When the LED shows F-01, press the "Function/Confirm" button to enter the setting, and press "Open/▲" or "Close/▼" to increase or decrease the value. The bigger the value, the faster the close speed. After setting, press the "Function/Confirm" button to save, and then press the "Stop/Exit/Copy/Delete" button to exit the menu.



4. Set deceleration position of opening: When the LED shows F-02, press the "Function/Confirm" button to enter the setting, press "Open/▲" or "Close/▼" to increase or decrease the value, the bigger the value, the smaller the open deceleration angle. After setting, press the "Function/Confirm" button to save, and then press the "Stop/Exit/Copy/Delete" button to exit the menu.
5. Set deceleration position of closing: Press "Function/Confirm" button when LED displays "F-03", and then press "Open/▲" or "Close/▼" button to increase/decrease the value. Bigger value, bigger angle, smaller value, smaller angle. Press "Function/Confirm" button to save setting after finish, and press "Stop/Exit/Copy/Delete" button to exit.
6. Set Opening end speed: Press "Function/Confirm" button when LED displays "F-06", and then press "Open/▲" or "Close/▼" button to increase/decrease the value. Bigger value, faster speed, smaller value, slower speed. Press "Function/Confirm" button to save setting after finish, and press "Stop/Exit/Copy/Delete" button to exit.
7. Set Closing end speed: Press "Function/Confirm" button when LED displays "F-07", and then press "Open/▲" or "Close/▼" button to increase/decrease the value. Bigger value, faster speed, smaller value, slower speed. Press "Function/Confirm" button to save setting after finish, and press "Stop/Exit/Copy/Delete" button to exit.
8. Set Close arm position: Press "Function/Confirm" button when LED displays "F-08", and then press "Open/▲" or "Close/▼" button to increase/decrease the value. The bigger value, the smaller angle between arm position and vertical position. The smaller value, the bigger angle between arm position and vertical position. Press "Function/Confirm" button to save setting after finish, and press "Stop/Exit/Copy/Delete" button to exit.
9. Set Open position adjustment: Press "Function/Confirm" button when LED displays "F-09", and then press "Open/▲" or "Close/▼" button to increase/decrease the value. The bigger value, the smaller angle between arm position and horizontal position. The smaller value, the bigger angle between arm position and horizontal position. Press "Function/Confirm" button to save setting after finish, and press "Stop/Exit/Copy/Delete" button to exit.
10. Add remote controller: When the LED displays "F-14", press the "Function/Confirm" button, then press any button on the remote controller, the buzzer on the control panel will give a long beep to complete the copy. (It can also be in working status, press and hold the button for 3 seconds, the buzzer will beep twice, then release the button to enter add remote controller function, long-press any button of the remote controller for 1s to complete the copy.)
11. Bounce back response time: When the LED displays "F-15", press the "Function/Confirm" button, press the "Open/▲" button the number will increase and press the "Close/▼" button the number will decrease. The smaller number, the bigger sensitivity. Press "Function/Confirm" button to save, then press "Stop/Exit/Copy/Delete" button to exit function items.

12. Bounce back strength: When the LED displays "F-16", press the "Function/Confirm" button, press the "Open/▲" button the number will increase and press the "Close/▼" button the number will decrease. The bigger number, the bigger force. Press "Function/Confirm" button to save, then press "Stop/Exit/Copy/Delete" button to exit function items.
13. Relay output mode of open limited position: When the LED displays "F-16", press the "Function/Confirm" button. If the value is 0, the relay output mode is the continuous signal output when fully open. When the value is 1, the relay output mode is the alarm mode, if people lifted the boom to 5 degrees, the relay will have a signal output; each open press on the remote control, the relay will have a signal output.
14. Delete remote controller: Press and hold the "Stop/Exit/Copy/Delete" button for 10 seconds, all remote controller will be deleted.

## 1. Using instructions

- Before use, make sure all wires are ok.
- Press open button, the boom will open to right position and stop.
- Press close button, the boom will close to right position and stop.
- During closing, if car pass the barrier. Press open, barrier will stop and open. Press stop, barrier will stop.
- Power off, use handle to open the boom. Power on, press close button, then the barrier can be used.

## 2. Maintenance

- Clean the housing surface regularly;
- Check wiring diagram regularly, if some wires loose, fix them back;
- keep the barrier in aeration-drying atmosphere to ensure the stability and working life;
- Check transmission shafts regularly, if loose, fix them back;
- Check spring regularly; ensure spring is in good situations.
- Check the connection between housing and grand regularly, ensure housing is well fixed.

## 1. Service items

- The warranty is 1 year

- Provide maintenance all the life time

Not included free maintenance under the damage of following situation

- Damages caused by wrong installation (please follow instruction)
- Using unstable power supply which beyond product's working range or not compliance with national electricity use safety standard
- Irresistible factors, like natural disasters
- Incorrect usage

## 2. Packing list

NO.	Name	Unit	Qty	NO.	Name	Unit	Qty
1	Cabinet	set	1	2	Spare parts	set	1
3	User manual	pcs	1	4	Remote controller	pcs	2
5	Guarantee card	pcs	1	6	Key	pcs	2



## Guarantee card

Client`s name		Telephone	
Client`s address			
Purchase date		Product number	
<p>1. Please write your information carefully, only stamped guarantee card is valid;</p> <p>2. Guarantee is 1 year;</p> <p>3. Guarantee does not cover any problems caused by actions not following our user manual.</p>			