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Barrier Gate User Manual

(STD115 series)

(Version 2)

Dear User:

Thanks for your trust.

Please read this user manual carefully before using SHINING 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 SHINING barrier gate, such as mechanical working theory, using guide, matters need attention. We should use the 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

- 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 can avoid 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, so the barrier gate can move more stable and barrier gate's working life can be more 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;
- Using imported high power relay to ensure power stability;
- Using imported photoelectric isolated protection circuit to ensure signals' stability;
- Integrating wireless remote control receiving module to ensure wireless controlling stability;
- Using quench circuit to ensure main board working life;
- Using imported magnetic core transformer to ensure the machine's working in damping situation;
- Support both hall limited sensors and angle limited sensor(configuration). Angle limited sensor has auto bounce back function and auto adjust limited position function;
- Have RS485 interface;
- Auto-fall down function(configuration: 10seconds);
- Close loop bounce back function: main board will not receive loop single when the arm angle is less than setting value.

3. Safety features

- 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 closed. 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	Sub-Model	Max Boom length(M)	Speed(S)	Support Height(MM)
Rubber boom	STD115-JH(A)	≤4.5	3	890
	STD115-JM(A)	≤6	6	
Straight Boom	STD115-ZH(A)	≤4.5	3	
	STD115-ZM(A)	≤6	6	
Telescopic Boom	STD115-SH(A)	≤4.5	3	
	STD115-SM(A)	≤6	6	
Fence Boom	STD115-2LM(A)	≤5	6	
	STD115-3LM(A)	≤4.5	6	

Boom type: Z-Straight Boom; J-Rubber boom; S-Telescopic boom; L-fence boom(2L: two fence, 3L: three fence)

Speed type: M -- slow speed H-medium speed K-- fast speed

Case type: A type-- without Light B type---with LED

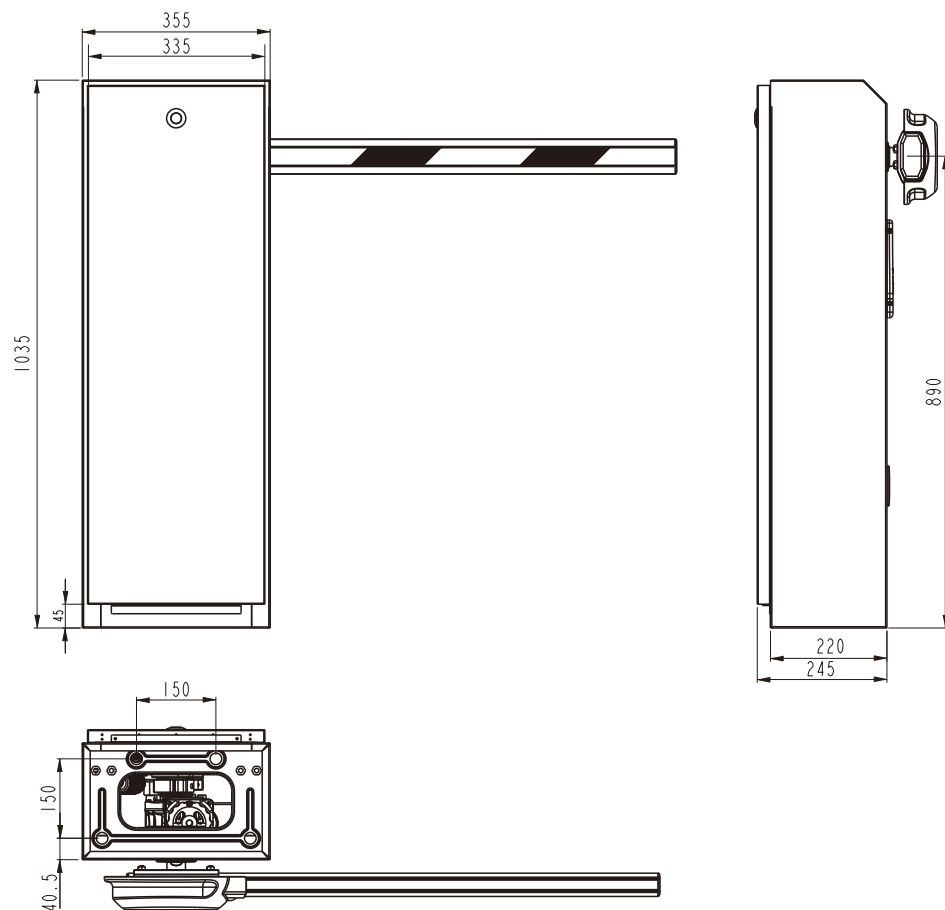
2. Parameters

Voltage	AC220/AC110 50/60HZ
Humidity	≤95%
Boom length	customize according to spot
Open/close time	3s/6s
The height of boom support	890mm
Remote control distance	≤30m
IP	IP54
Input interface	+12V relay signal or ≥100MS pulse signal
Remote control frequency	430.5MHz

3. Direction

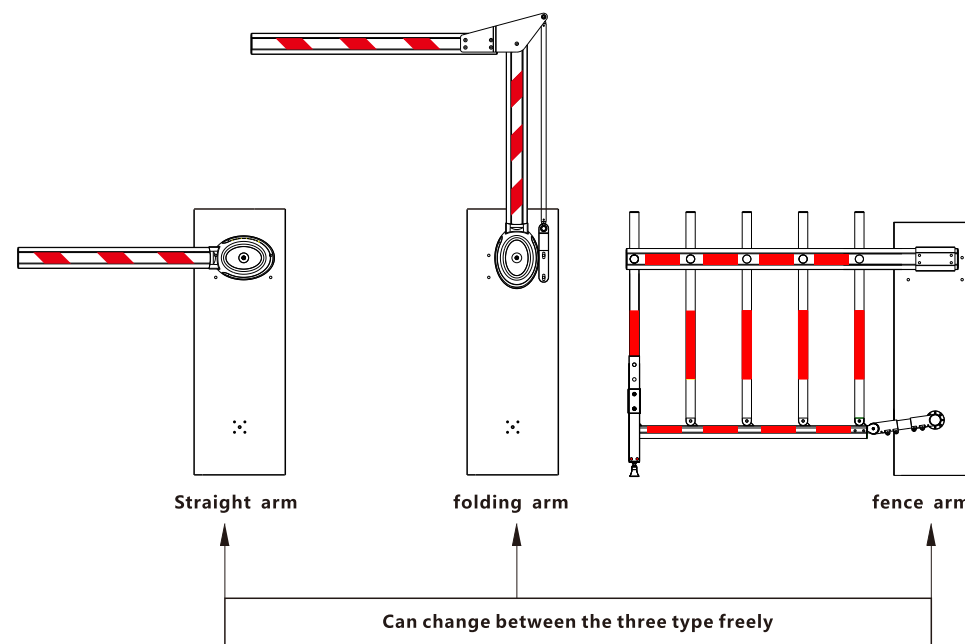


4. Housing structure



STD115

5. Boom type



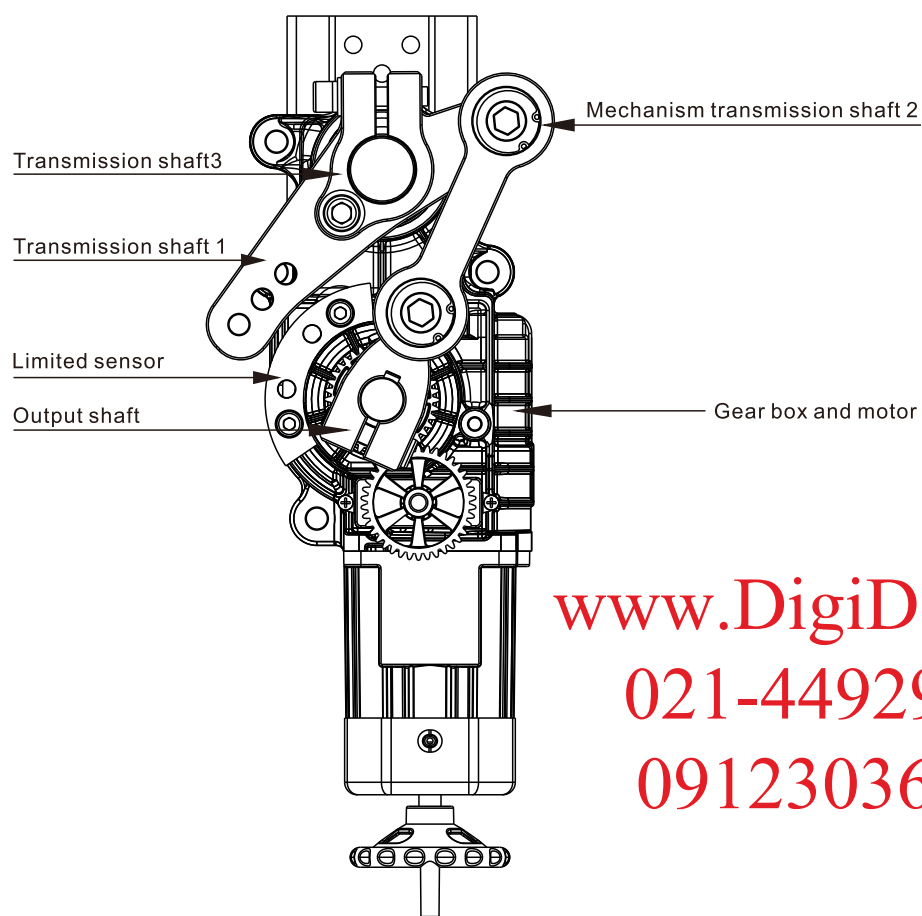
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6. Machine core structure

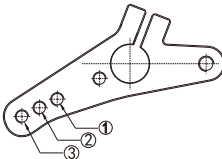
Use gear drive mechanism and bearing turning mechanism to control the boom movement, and angle sensor can accurately control boom's vertical position and horizontal position.



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7. Spring hanging hole illustration

When install and debug, should change hole to meet different arm length.



Boom type	Boom length range	Hole	Spring quantity& type
Rubber boom	$L \leq 3M$	1	2* $\Phi 4.5$
	$3M < L \leq 3.5M$	3	2* $\Phi 4.5$
	$3.5M < L \leq 4.2M$	1	2* $\Phi 4.5$
	$4.2M < L \leq 6M$	2	2* $\Phi 4.5$
Straight boom	$L \leq 3.2M$	1	2* $\Phi 4.5$
	$3.2M < L \leq 3.7M$	2	2* $\Phi 4.5$
	$3.7M < L \leq 4M$	3	2* $\Phi 5.5$
	$4M < L \leq 4.7M$	1	2* $\Phi 5.5$
	$4.7M < L \leq 6M$	2	2* $\Phi 5.5$
Telescopic boom	$L \leq 4.2M$	1	2* $\Phi 5.5$
	$4.2M < L \leq 4.7M$	2	2* $\Phi 5.5$
	$4.7M < L \leq 6M$	1	2* $\Phi 5.5$
2-fence boom	$L \leq 2.2M$	2	2* $\Phi 5.5$
	$2.2M < L \leq 2.5M$	1	2* $\Phi 5.5$
	$2.5M < L \leq 2.8M$	2	4* $\Phi 4.5$
	$2.8M < L \leq 3M$	3	4* $\Phi 4.5$
	$3M < L \leq 3.5M$	1	4* $\Phi 4.5$
	$3.5M < L \leq 4M$	2	4* $\Phi 4.5$
	$4M < L \leq 4.5M$	3	4* $\Phi 4.5$
	$4.5M < L \leq 5M$	3	4* $\Phi 6$
3-fence boom	$L \leq 2.7M$	3	2* $\Phi 5.5$
	$2.7M < L \leq 3.2M$	2	4* $\Phi 5.5$
	$3.2M < L \leq 4M$	3	4* $\Phi 5.5$
	$4 < L \leq 4.5M$	3	4* $\Phi 6$

1. Independent key

- (1) "UP": Used to open barrier. Keep press the key, barrier gate will not close
- (2) "DOWN": Used to close barrier
- (3) "STOP": Used to Stop barrier
- (4) "Copy/Delete": Used to add or delete remote controller.

Add remote controller: Press the key 3s to enter add remote controller program (Working indicator light fast flicking during copy mode), then press any key on remote controller 5s. If we hear long buzzing noise, copy is succeeded. Or else repeat above steps;

Delete remote controller: Press the key 5s to delete all remote controller.

2. Combination key (Using way: press keys one by one, don't loose any key during pressing)

- (1) "COPY/DETECT+UP": Under manual setting mode, its function is to set open limited position; Under auto setting mode, its function: first, find open limited position; second, auto find close limited position; third, judge barrier direction; forth, calculate barrier speed.(Pls loosen combination key when status light flash at 0.1s frequency.)
- (2)"COPY/DETECT+DOWN": Under manual setting mode, its function is to set close limited position; Under auto setting mode, its function: first, find close limited position; second, auto find open limited position; third, judge barrier direction; forth, calculate barrier speed.(Pls loosen combination key when status light flash at 0.1s frequency.)
- (3) "COPY/DETECT+STOP": Auto testing (Pls loosen combination key when indication light flash at 0.1s frequency)
- (4)" STOP+UP+DOWN": Set limit mode (hall sensor or angle limited sensor). angle limited sensor has auto bounce back function.

3.Dip switch function illustration

There are four dip switches, they are S0, S1, S2, S3

S0 function: Memory function (record relay signal times): "ON" function is open, "OFF" function is closed.

S1 function: Set open position and close position way. "ON" auto setting mode, "OFF" manual setting mode. (when we use angle limited sensor only)

S2 function: Close loop detector relay signal (function board will close loop relay signal if the angle between arm and horizontal is less than 20 degree)." ON "means open," OFF" means close.

S3 function: Auto close function (10s). "ON" open the function," OFF" close the function.

5. Status indicator light

5.1. Normal operation condition:

The light will flash at 0.5s frequency when we use angle limited sensor.

S3 dip is in "ON", the light will flash at 0.1s frequency when barrier is fully open, and the light flashes at 0.5s frequency when barrier is fully closed. When S3 dip is in "OFF", it flashes at 0.5s frequency.

5.2.Add remote controller condition: After press the key 3s,light keeps on 250ms and off 250ms,then loosen the key to add remote controller: if controller is added, the light flashes at 0.5s frequency; if press the key over 5s, start to auto delete controller, the light will flash at 0.1s frequency during the process.

5.3. Parameter setting condition: The light will flash at 0.1s frequency if combination key is working (combination key includes " COPY/DELETE+UP, COPY/DELETE+DOWN, COPY/DELETE+STOP, STOP+UP+DOWN")

6. Debugging steps

6.1. After power on, put dip switch S1 to ON

6.2. Auto set limit: Adjust boom at open limited position(or at close limited position) manually, press "COPY/DELETE+UP" (or "COPY/DELETC+DOWN), current position is set as open position, then barrier will find close position automatically (or current position is set as close position, then barrier will find open position automatically)

6.3. Adjust limit position manually: Put dip switch S1 to OFF, adjust boom at open limited position manually, press "COPY/DELETE+UP", current position is set as open position; adjust boom at close limited position manually, press "COPY/DELETE+DOWN", current position is set as close position.

6.4. Add remote controller: After add 3s, light keeps on 250ms and off 250ms, then loosen the key to add remote controller.

NOTES:

1. First time debug or change new control board, we must set limited position. Or else, barrier gate cannot work normally, and hear buzzing noise 2 times each 1s, interval time is 0.2s.

2. If motor jams during auto set limit, it means auto set limit lose. It needs to increase distance between fully open position (or fully close position) and mechanical stopper, and ensure motor operation time is over 0.3s

3. We must use auto set limited position function first if barrier has problem and need to reset limited position. (Only we use angle limited sensor)

4.Limit mode illustration (Default: manual setting mode)

4.1. Manual setting mode: manual set open and close limit position

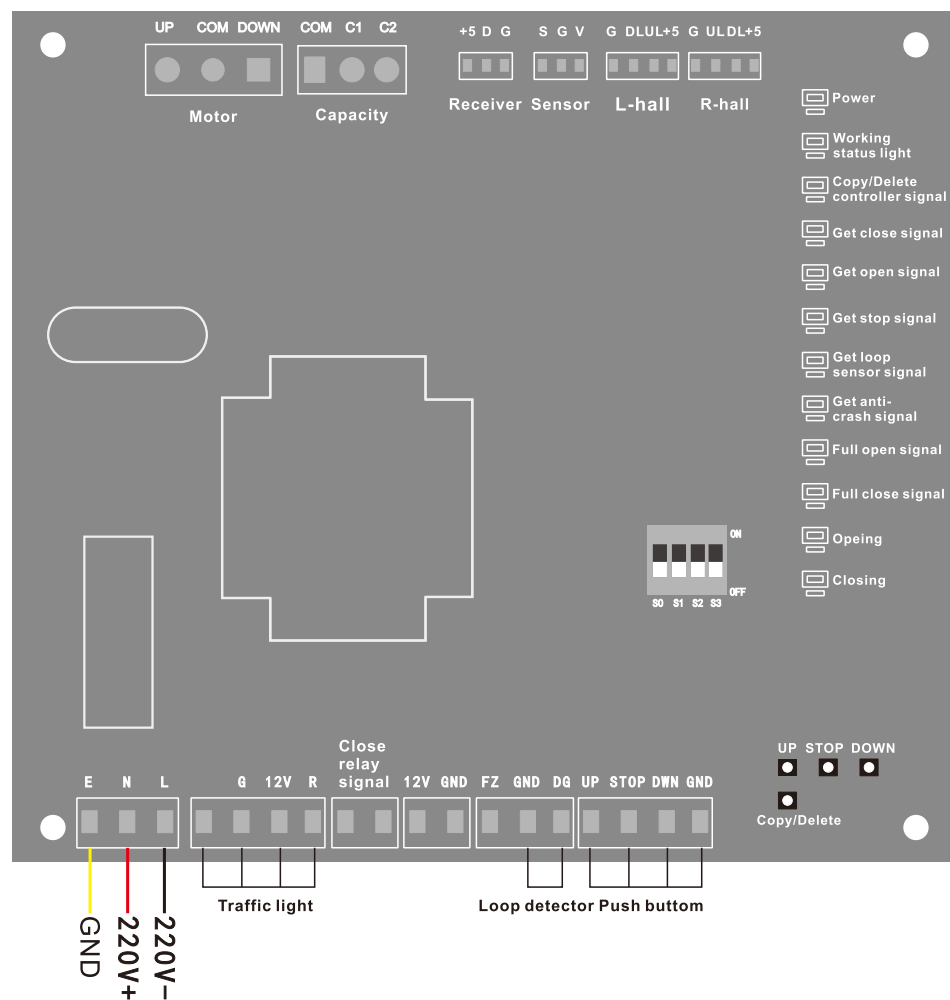
4.2. Auto setting mode: Find current position as open limit (or close limit), then auto find close limit (or open limit), and judge barrier direction.

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7. Wiring Diagram



1. Installation

- Check packing list to make sure all in right way
- According to barrier arm direction and actual situation to confirm fix place. 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. Details Instruction

A. 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.

B. Fix barrier box

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

C. 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.

D. Install other device

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

3. Using instruction

- Do check power's voltage matches barrier or not. Our standard is 220V±10%, or 110V±10%;
- Press open button, the boom will open to right position and stop.
- Press close button, the boom will open to right position and stop.
- Power off, just turn the handle of motor to open the boom. Power on, press close button, then the barrier can be used.

4. 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 ground regularly, ensure housing is well fixed.

Notices

1. Don't modify the barrier gates at will!!!
2. Please keep the barrier close when there is a gale!!!

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1. The boom shakes when it is on close or open positions

- Screw loose

Solving way: Open the housing, checking all screws. And fix loosening screws.

- Spring is too tight or too loose

Solving way: Boom shakes on open position, spring is too tight; boom shakes on close position, spring is too loose. Just need to adjust the spring. If the spring is out of normal shape or broken, please do replace new one;

- The screw which connects transmission shafts is loosening

Solving way: checking the screws and fix it.

2. Boom cannot close/open to right position, or barrier cannot be opened or closed

- Barrier is in thermal protection situation

Solving way: if the barrier runs frequently and weather is too hot. Barrier motor is too hot and maybe is in thermal protection situation. At this time barrier cannot be open and close, we just need to wait. When the temperature is ok, the barrier can be used normally.

- Main board is broken

Solving way: change a new board.

3. Barrier opens and closes automatically

- Wires to connect limited sensor are loose or fall off

Solving way: check wires and fix them back.

- Short circuit

Solving way: check wires and connect them in right way.

- Main board is broken

Solving way: change a new board.

- Limited sensor's magnet is not the right position

Solving way: amend the position.

4. Boom cannot stand at right position

- Limited sensor's magnet is loose or wire connection is wrong
Solving way: amend magnet's position, or reconnect the wires.
- Transmission shafts are loose or spring is too tight/loose
Solving way: fix the shafts or amend the spring.

5. Abnormal sounds

- Syntony between machine core and housing
Solving way: set a rubber between machine core and housing.
- Transmission shafts is loose
Solving way: fix them.

6. Remote controller cannot control the barrier

- Battery is low power
Solving way: change a new battery.
- Remote controller receiver's wire is loose
Solving way: check all wires, and fix them back if it is needed.

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Packing List

No	Name	Unit	Quantity	No	Name	Unit	Quantity
1	Box	pc	1	2	Boom support(optional)	pc	1
3	Push button (optional)	pc	1	4	Accessories box	pc	1
5	User manual	pc	1	6	Handle	pc	1
7	Certificate	pc	1	8	Remote control	pc	2
9	Key	pc	2				

Notes: Boom support is used for barrier which arm is over 4.5meters only.

Guarantee card

Customer		Tel	
Address			
Purchasing time		Model	
1. Please write your information carefully ,only stamped guarantee card is valid; 2. Guarantee is 1 year; 3. Guarantee does not cover any problems cause by actions not following our user manual.			

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