Installation Guide

Version 2

Swing Gate Opener

☑ Standard
☑ Solar

1. Features

1. Manufacturer has patent for manual release mechanism. Use this feature in case of power failure, during installation or maintenance.
2. Easy Self-learning feature
3. Commercial power & solar energy power source can be connected at the same time.
4. Over current immediate stop function (A0~A1/ B0~B1)
5. Adjustable time of fast speed & slow speed (A2~A5/ B2~B5)
6. Adjustment of force during fast speed & slow speed (A6~A7/ B6~B7)
7. Auto Close function with adjustable closing time delay
8. Optional electric lock connection facility
9. Single or dual swing
10. Use max up to 50sets of remote controllers
11. DC 24V backup battery (Optional)
12. Flashing light AC 220V/110V & DC 24V (Optional)
13. Optional Device: DC24V gate lock, photocell, keypad, push button, extensional receiver box

2. Technical Specifications

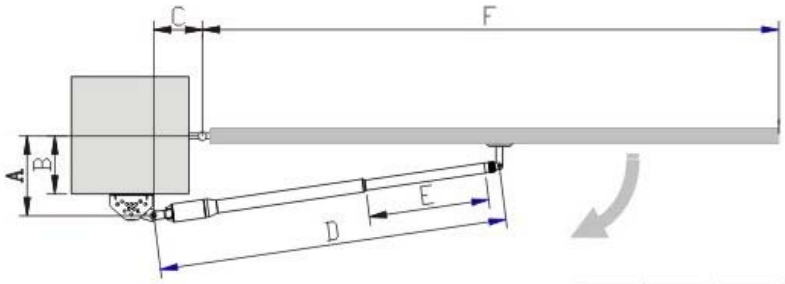
Electrical

Operating Voltage	DC 24V
Electronic Controller	Microcontroller Based
Safety Detection	Over Current Detection
Safety Barrier	Infrared Beam Sensor (Optional)
IP Rating	IP66

Mechanical

Swing Type	SWS2L	SWD2
Max. Piston Stroke	450 mm	350 mm
Max. Length of motor	1255 mm	1030 mm
Max. Leaf's Weight	250 kg/ Leaf	300 kg/ Leaf
Suitable Leaf's Length	2 to 3.5 meter/ Leaf	1.5 to 2.5 meter/ Leaf
Frame Housing	Stainless Steel / Aluminum Alloy	
Driving Method	Screw Driven Piston Type	
Opening Degree	0 to 110 degree	
90 Degree Rotation Time	8 to 12 seconds	
Temperature	-20℃ to +55℃	

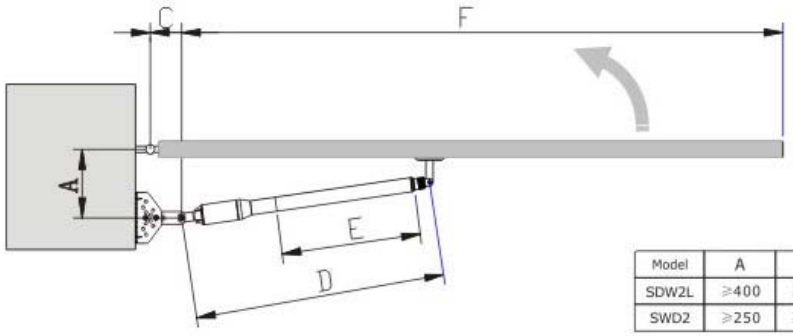
3. Mechanical Installation



Inward Swing

Measurement: mm

Model	A	B	C	D	E	F
SDW2L	≤275	≤200	≤180	1320	450	≤4000
SWD2	≤225	≤150	≤130	1086	350	≤2500

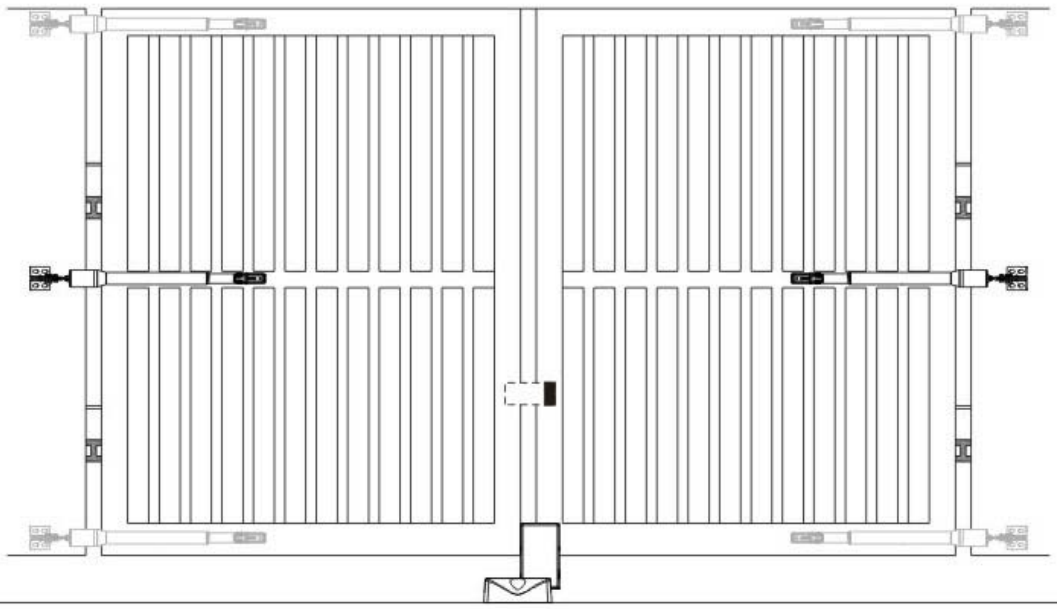


Outward Swing

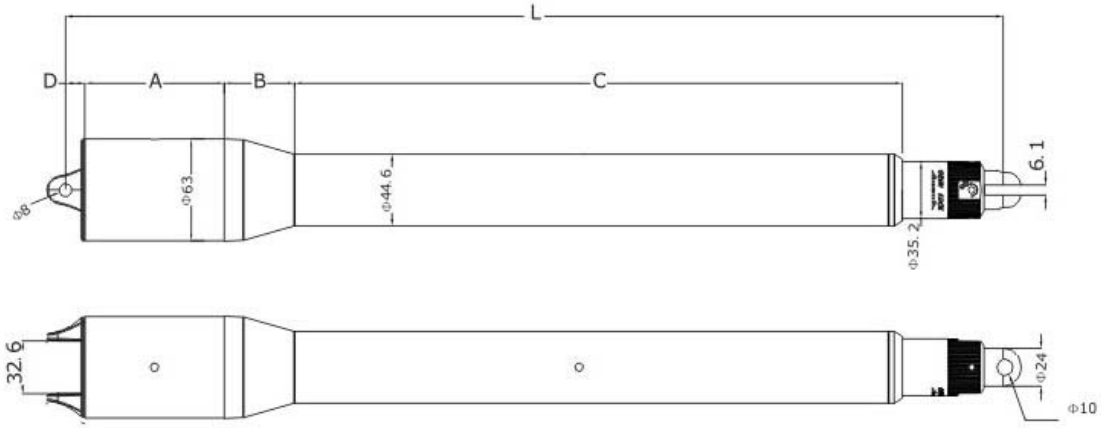
Measurement: mm

Model	A	C	D	E	F
SDW2L	≥400	≥180	870	450	≤4000
SWD2	≥250	≥100	736	350	≤2500

Diagram Installation



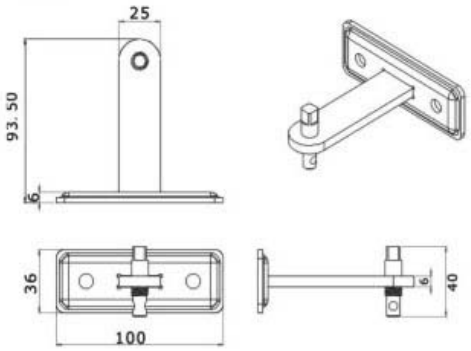
Opener Dimension



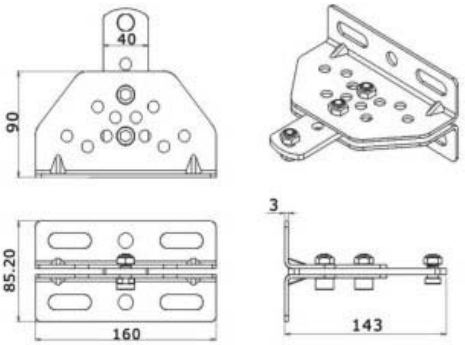
Measurement: mm

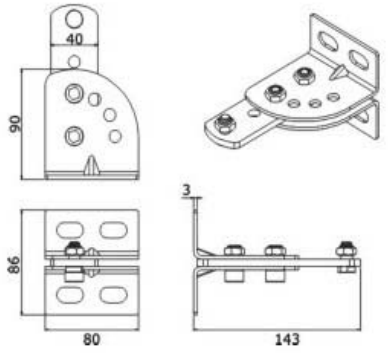
Piston Stroke	A	B	C	D	L
350	135	45	425	12.5	680/1030
450	135	45	550	12.5	805/1255

Bracket Dimension



Gate Bracket



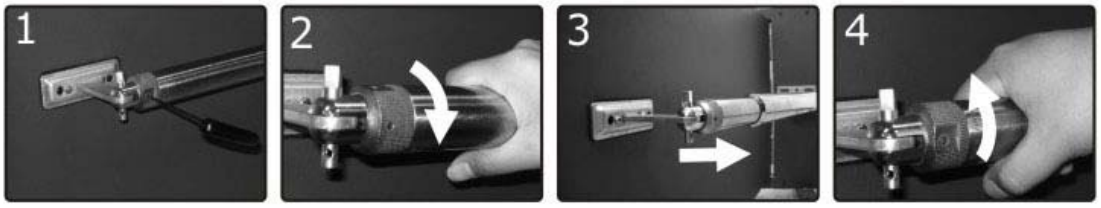


Post Bracket **Post Bracket**

4. Manual Release

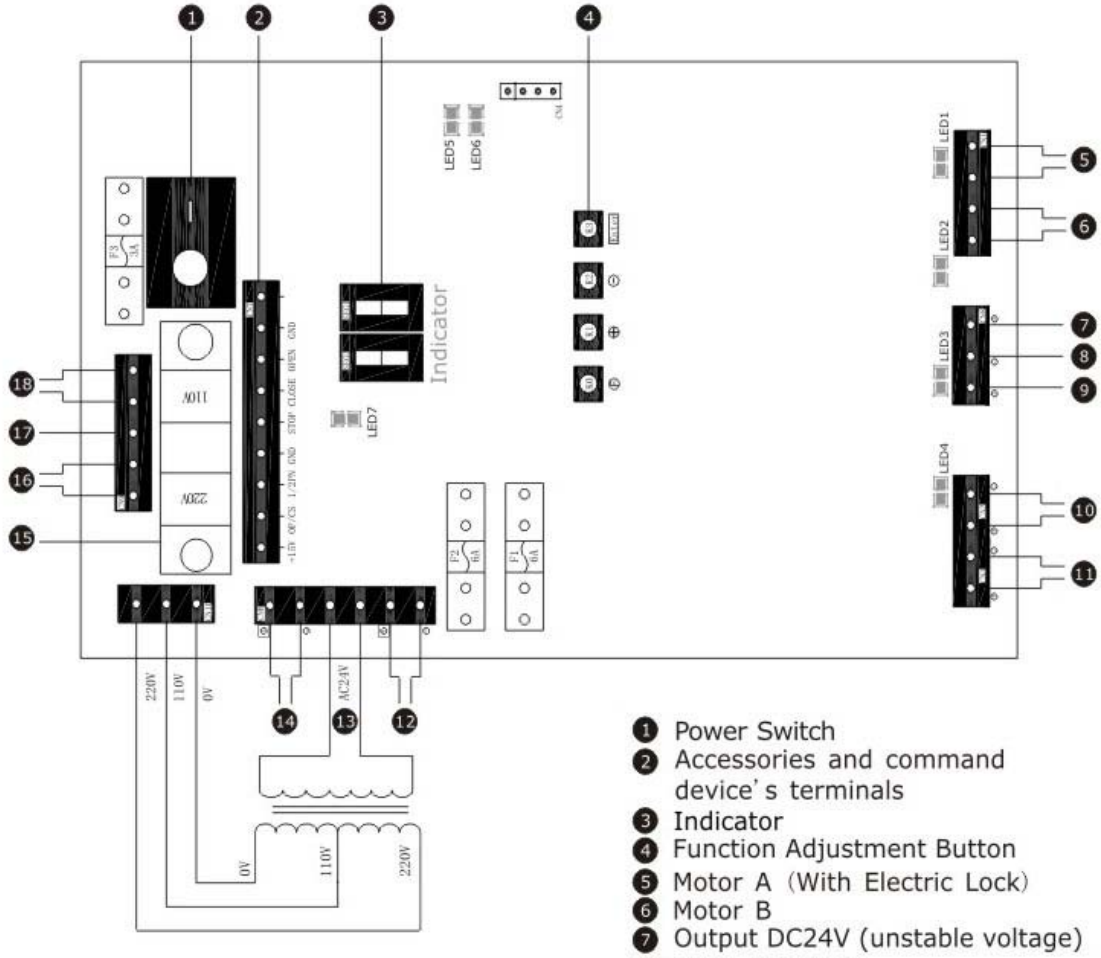
In case of power failure, the operator can be disengage from the gate. Follow the directions below to release and rotate the operator to enable the manual release function.

1. Using Allen Key (Special Key) to unlock the manual release function.
2. Toward the "open" direction to rotate 90 degree or 1/4 turn.
3. Now the manual release function is enabled when maintaining or no power.
4. After maintaining, rotate 90 degree back to the locked position, then use special key to lock the moving part.



Control Box Setting

1. Wiring



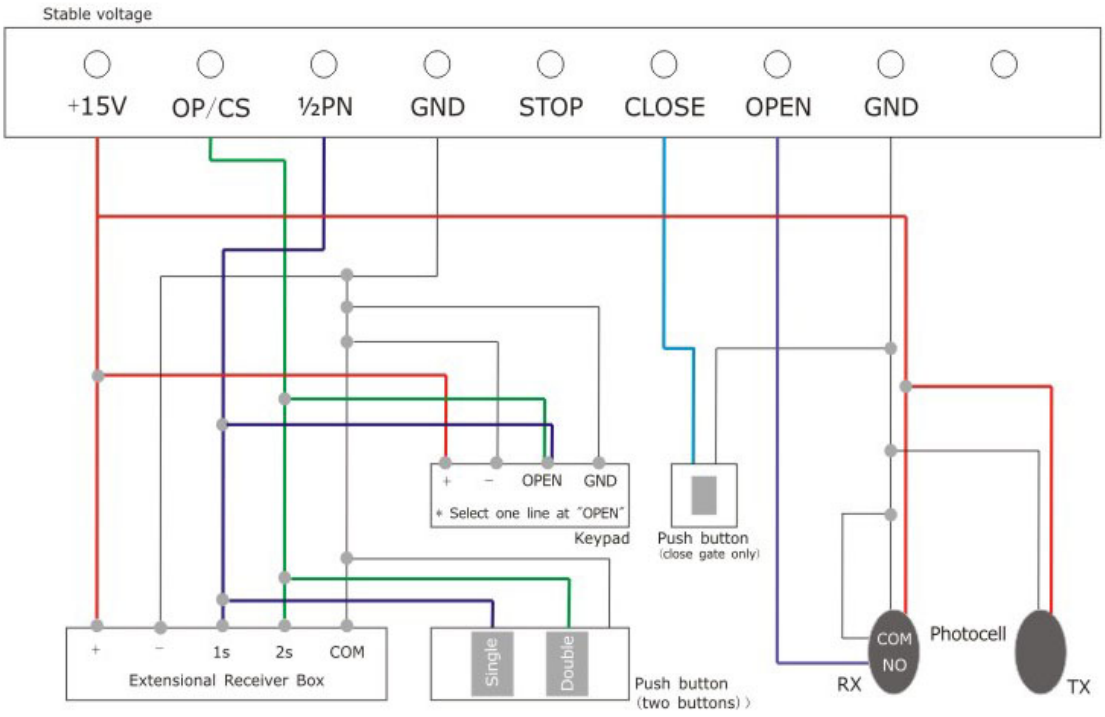
1. Power Switch
2. Accessories and command device's terminals
3. Indicator
4. Function Adjustment Button
5. Motor A (With Electric Lock)
6. Motor B
7. Output DC24V (unstable voltage)
8. 0V "- " output
9. Output DC15V stable voltage
   (load current can't be over 500mA)
10. DC24V Electric Lock
11. DC24V Flashing Light
    ** Photocell (see page 16)
12. Backup Battery(12V 7Ah X 2 in series)
13. Connector for adaptor
14. Solar Panel
15. Switch (AC 220V & 110V)
16. Power Supply (AC 220/110V)
17. Earthed
18. AC Flashing Light

LED Diagram

Power On, LED5 will blink.

LED1 Motor A open LED
LED2 Motor A close LED
LED3 Motor B open LED
LED4 Motor B close LED
LED5 Power LED
LED6 Received signal for remote control LED
LED7 Push button LED

2. Wiring for Optional Accessories



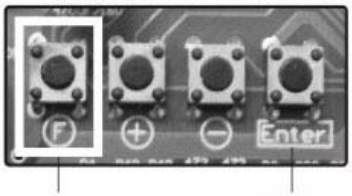
Item	+15V	OP/CS	1/2PN	GND	STOP	CLOSE	OPEN	GND	Reserved	Remarks
Description	Stable voltage output	Dual Open	Single Open	"-" & "Concentration line"	Stop	Close	Normally opening signal	"-" & "Concentration line"		
Extensional Receiver Box (single gate)	●		●	●●						
Extensional Receiver Box (dual gate)	●	●	●	●●						
Keypad (single open)	●		●	●●						
Keypad (dual open)	●	●		●●						
Push button (two buttons)		●	●	●						
Push button (one button)						●		●		close gate only
			●					●		single open
		●						●		dual open
Photocell (sender)	●							●		
Photocell (receiver)	●						●	●●		

"●"Means the connection port

3. Remote Control Setting

Press and hold "F" button of approximately 2 seconds (without pressing the button of remote control), until the indicator show "FF" and keep blinking, release the "F" button, then start to the setting (Do step 3.1 or 3.2)

Function adjustment button



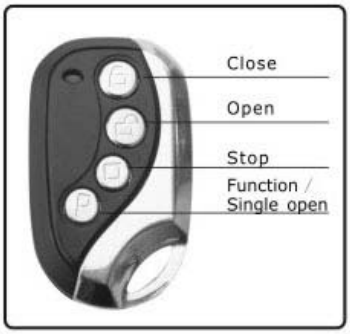
Ⓕ/Exit Enter

3. 1 Activating the Remote Control

Keep pressing any button on the remote control, if the indicator retain lighting, it means the remote controls are valid (50 remote controls can be set at most)

*Verify the remote control is activated by pressing the remote control button. The LED will be on/Off (see notes LED Diagram)

433MHZ Remote control



The remote control cyclic form is " open - stop - close "

3. 2 Erasing the code

Press and Hold on "Enter" button on the PCB for over one second until the indicator retain lighting. Then all the remote controls are invalid.

****Pedestrian opening push "Ⓟ" button to perform single swing opening**

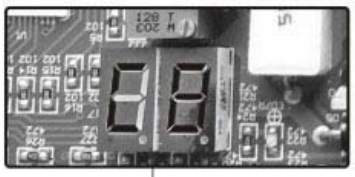
4. Self-learning (Easy and Smart)

Checking before self-learning

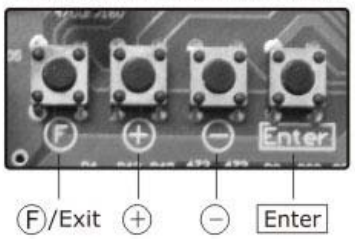
1. Check the wiring of motors
2. Check the manual release in locked position
3. Make sure both gates are at fully opened position. For single gate , gate should be at fully opened position as well
4. There should be hard stoppers at both fully opened positions and fully closed position

Self-learning setting (motor setting)

1. Press "F" button on the PCB , the indicator will show "C8",
   (if no "C8" displaying, you can press "+" or "–" to reach it)
2. Keep pressing "Enter" button on the PCB above 3s till the indicator blinking, release the "F" button, then the motor will turn to self-learning mode.
3. The indicator will be "C8" and no blinking at the same time after self-learning finished, then you can use the remote directly.



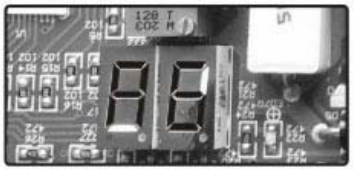
PCB Function adjustment button

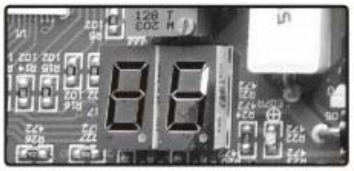


* Do not operate remote control during the above self-learning process. Press "F" button exit learning mode if meet emergency stop. Then repeat the self-learning process.

  If you find problems of gate operation, in heavy windy days or with other obstacles, it's better to do "Motor setting" and Total timer adjustment manually.

PCB Manual Adjustment





After self-learning if needed manual adjustment to get optimum parameters, please following below:

If opening or closing doesn't reach required positions, you can increase the force during slow speed (A6,B6) by 10 and then repeat the self-learning process.

If speed is not slowing down at ends of the cycle decrease A6 and B6 by about 5 and then repeat the self-learning process.

Note:

1. After the above adjustment, still opening or closing doesn't reach designated position or slow speed no function , Following reason maybe caused:

   a. The motor can not work well if the supply voltage instability. Please confirm it within ±10% for voltage fluctuation to study.
   b. Advise to choose above 2.5 square mm with copper wire. It will be better to increase the wire diameter if long distance wiring.
   c. Adjust the motor installed position.

2. In case if you have changed the parameters, make sure to restore factory default settings before proceed with self-learning procedure. (Set D2)

STEP 2

If the self-learning succeed, you can ignore the operation from 10 to 13 page.

Motor Setting

Overload protection/ Total timer adjustment

Make sure the batteries are fully charged / connected to power supply before carrying out the below procedures

1. Motor Setting for Overload Protection

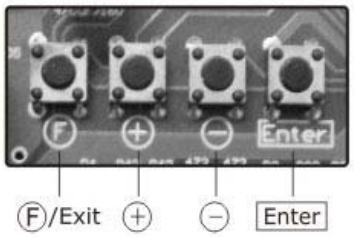
Motor A : A0/ A1

Go to learning mode adjustment on PCB

First press the "+" button on the PCB for around 2 seconds, the indicator will show "AA" and keep blinking This means the system is ready to set motor A

Then proceed to overload protection setting.

PCB Function adjustment button



Overload Protection Setting use Remote Control

The gate can be in any position, not necessary to be in fully closed/ opened position

a) Overload Protection Setting on opening ▢+🔓

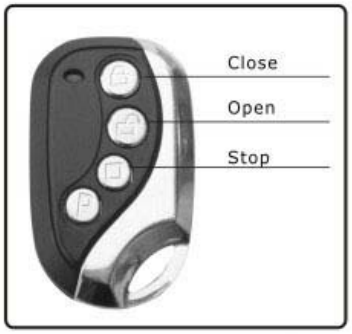
Press and hold the " □ " and " 🔓 " buttons on the remote control simultaneously until the indicator starts blinking, then release both buttons.

While the gate is opening (within 5 seconds) block the gates movement (force it to stop). After 1 -2 seconds the motor will stop. This indicates the controller has recognized it has hit an object. Electronics memorises the overload settings when opening the gate.

b) Overload Protection Setting on closing ▢+🔒

Press and hold the " □ " and " 🔒 " buttons on the remote control simultaneously until the indicator starts blinking, then release both buttons.

While the gate is closing (within 5 seconds) block the gates movement. After 1 -2 seconds the motor will stop. This indicates the controller has recognized it has hit an object. Electronics memorises the overload settings when opening the gate.



Overload Protection Setting of Motor A

Exit the learning mode Ⓕ

After the above steps, please press "F" to exit the learning mode, and press "close" button to close the gate fully.

*Check the parameters of A0/ A1 (see page 14) after setting to make sure the adjustment is valid

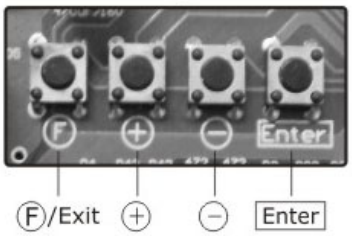
Motor B : B0/ B1

Go to learning mode adjustment on PCB

First press the "-" button on the PCB for around 2 seconds, the indicator will show "BB" and keep blinking This means the system is ready to set motor B

Then proceed to overload protection setting.

PCB Function adjustment button



Overload Protection Setting use Remote Control

a) Overload Protection Setting on opening □+🔓

Press and hold the " □ " and " 🔓 " buttons on the remote control simultaneously until the indicator starts blinking, then release both buttons.

While the gate is opening (within 5 seconds) block the gates movement (force it to stop). After 1 -2 seconds the motor will stop. This indicates the controller has recognized it has hit an object. Electronics memorise the overload settings when opening the gate.

b) Overload Protection Setting on closing □+🔒

Press and hold the " □ " and " 🔒 " buttons on the remote control simultaneously until the indicator starts blinking, then release both buttons.

While the gate is closing (within 5 seconds) block the gates movement. After 1 -2 seconds the motor will stop. This indicates the controller has recognized it has hit an object. Electronics memorise the overload settings when opening the gate.

Overload Protection Setting of Motor B

Exit the learning mode Ⓕ

After the above steps, please press "F" to exit the learning mode, and press "close" button to close the gate fully.

* Check the parameters of B0/ B1 (see page 14) after setting to make sure the adjustment is valid

* After completed completing the above procedures, the motor will have the safety stop feature upon hitting obstacles during opening/closing. It will also perform soft start and soft stop in each movement.

* Note: During overload protection setting, if press "open" button but gate close, that means motor wire is inverse. Need to disconnect power and correct the wiring then restart the setting again

2. Total Timer Adjustment

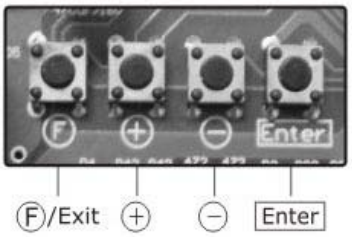
Make sure the gate is fitted with mechanical end stop
These end stops can be removed after programming

Motor A : A2/ A3/ A4/ A5

Go to learning mode adjustment on PCB

First press the "+" button on the PCB for around 2 seconds, the indicator will show "AA" and keep blinking

PCB Function adjustment button



a) Setting on opening Ⓟ+🔓 use Remote Control

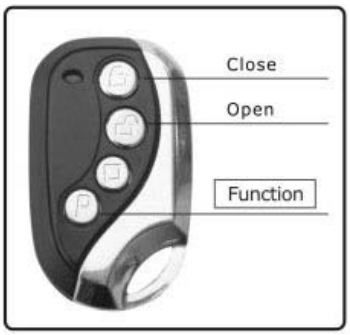
Make sure the gate is fully closed before proceeding

Press and hold the "Ⓟ" and "🔓" buttons on the remote control simultaneously until the indicator starts blinking, then release both buttons. The gate will now open until the end and hit the end stop.
Now gate opening limit is learned.

a) Setting on closing Ⓟ+🔒 use Remote Control

Make sure the gate is fully opened before proceeding

Press and hold the "Ⓟ" and "🔒" buttons on the remote control simultaneously until the indicator starts blinking, then release both buttons. The gate will now open until the end and hit the end stop.
Now gate opening limit is learned.



Total Timer Adjustment of Motor A

Exit the learning mode Ⓕ

After the above steps, please press "F" to exit the learning mode, and press "close" button to close the gate fully.

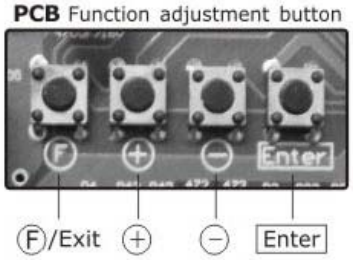
*Check the parameters of A2/ A3/ A4/ A5 (see page 14) after setting to make sure the adjustment is valid

Motor B : B2/ B3/ B4/ B5

Go to learning mode adjustment on PCB

First press the "-" button on the PCB for around 2 seconds, the indicator will show "BB" and keep blinking

PCB Function adjustment button



a) Setting on opening Ⓟ+🔓 use Remote Control

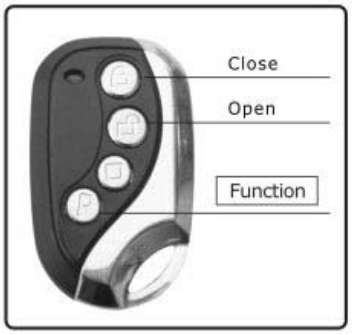
Make sure the gate is fully closed before proceeding

Press and hold the "Ⓟ" and "🔓" buttons on the remote control simultaneously until the indicator starts blinking, then release both buttons. The gate will now open until the end and hit the end stop.
Now gate opening limit is learned.

b) Setting on closing Ⓟ+🔒 use Remote Control

Make sure the gate is fully opened before proceeding

Press and hold the "Ⓟ" and "🔒" buttons on the remote control simultaneously until the indicator starts blinking, then release both buttons. The gate will now open until the end and hit the end stop.
Now gate opening limit is learned.



Total Timer Adjustment of Motor B

Exit the learning mode Ⓕ

After the above steps, please press "F" to exit the learning mode, and press "close" button to close the gate fully.

*Check the parameters of B2/ B3/ B4/ B5 (see page 14) after setting to make sure the adjustment is valid

*After completed completing the above procedures, the system will automatically initialize the total time of opening/closing and allocate the time of fast speed and slow speed operations.

Function Adjustment

(Follow the steps below)

Step 1: Press "F" button, the indicator will show "C8"

Step 2: Press "+" button, it'll show in turn "C9, D0, D1, D2, A1, A2, A3, A4, A5, A6, A7, C0, C1, C2, C3, C4, C5", Press "−" button, it'll show reversely

Step 3: Press "F" button, after choose the item, the indicator will show numbers

Step 4: Press "+" or "−" button to select levels

Step 5: Press "Enter" button to confirm

Step 6: Press "F" button for return to previous configuration menu

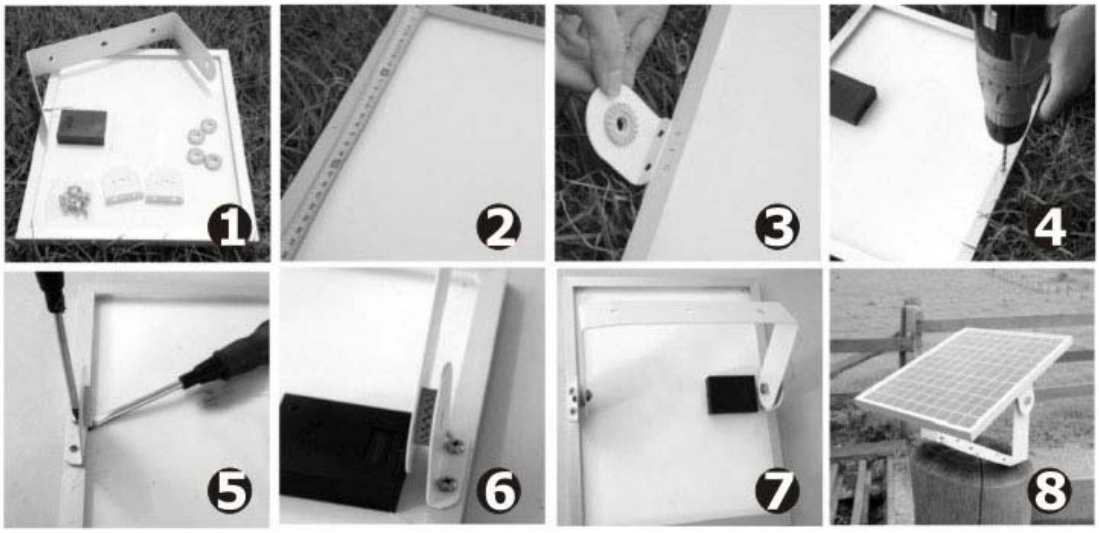
Function Debug Form

Item		Name	Setting Range	Descriptions	Remarks
A0	B0	Overload force adjustment during slow speed	0~99	default setting : 20	A0 to A7 : motor A B0 to B7 : motor B
A1	B1	Overload force adjustment during fast speed	0~99	default setting : 50	
A2	B2	Duration of slow speed when opening	0~99s	default setting : 9	
A3	B3	Duration of fast speed when opening	0~99s	default setting : 10	
A4	B4	Duration of slow speed when closing	0~99s	default setting : 9	
A5	B5	Duration of fast speed when closing	0~99s	default setting : 10	
A6	B6	Adjustment of force during slow speed	0~99	default setting : 56	
A7	B7	Adjustment of force during fast speed	0~99	default setting : 99	
C0		Reverse swing of motor A with electric lock	0~2	" 0 " = neither gate lock or opposite open operation	default setting : 2
				" 1 " = having gate lock operation but no opposite open operation	
				" 2 " = both having gate lock operation and opposite open operation	
C1		Electrical lock	0~1	" 0 " = no gate lock operation when close	default setting : 1
				" 1 " = having gate lock operation when close	
C2		Motor Parameter Setting	0~3	" 0 " motor A single swing	default setting : 2
				" 1 " motor B delay start when opening	
				" 2 " motor A start first during opening motor B start first during closing	
				" 3 " = motor A and B double swing without delay	
C3		Auto close time adjustment	0~99s	" 0 " = cancel auto close	default setting : 0
				" 1-99 " = auto close	
C4		Delay Start time adjustment for both motor A and B	0.1~9.9s	Delay adjustment of start operating time for both motors	default setting : 2
C5		Delay activating time for remote control button (for avoiding misoperation)	0~2	" 0 " = normal operation	
				" 1 " delay 2 seconds then start the operation	
				" 2 " first press stop button for 2 seconds, then close /open button to activate the operation	
C8		Battery capacity display	0~99	Below 30 = Battery soon will be run out 99 = Fully charged	
C9		Reserved terminal for maintainance and testing			
D0		PCB Model Number		Display PCB Model & Software version Number	
D1		PCB Software version			
D2		Restore default setting		" 09 " = restore factory settings	default setting : 00
★ C8		Self-learning feature		Press & hold "Enter" button to turn to self-learning mode	

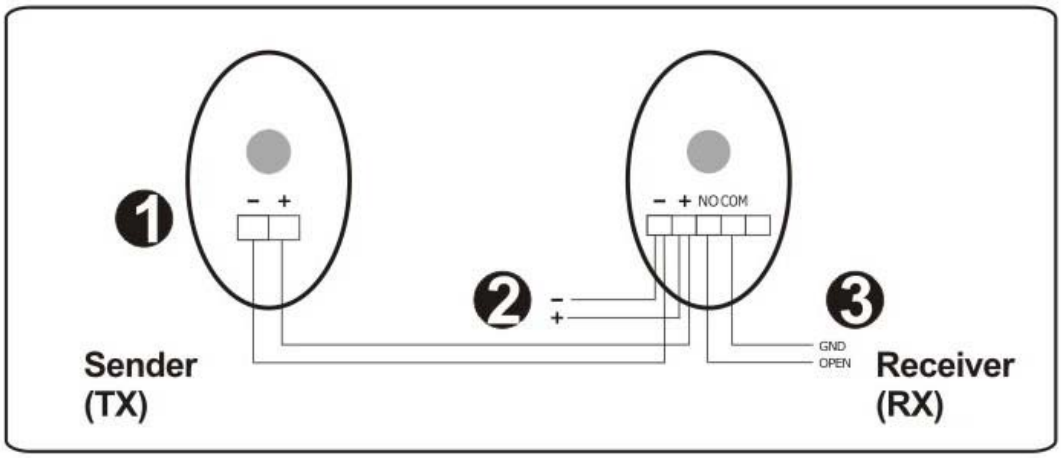
Solar System Wiring

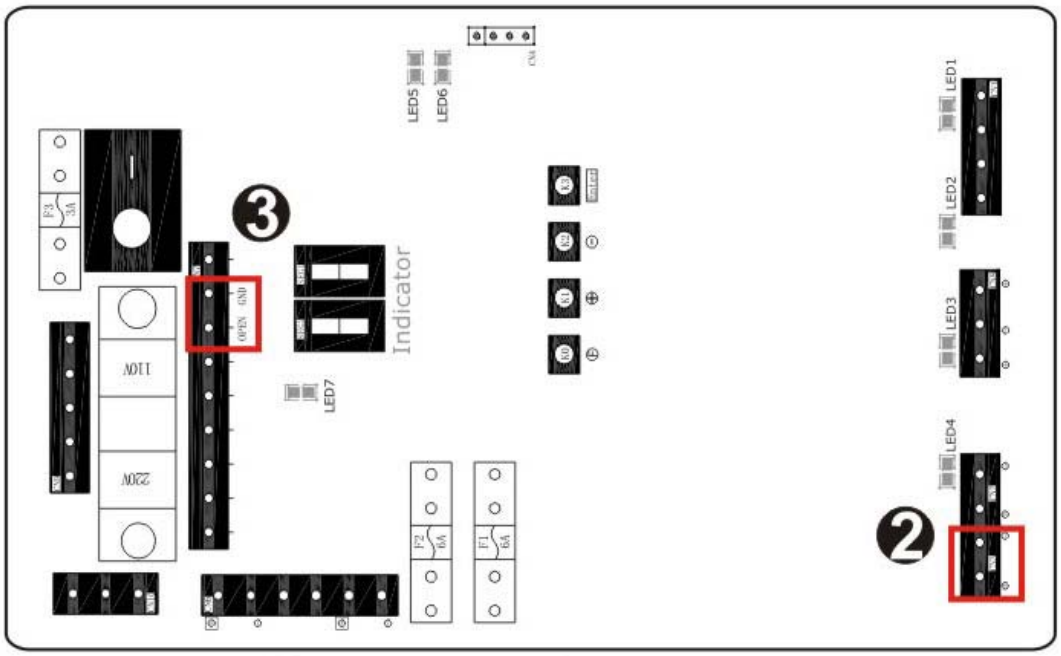
Solar Panel Installation

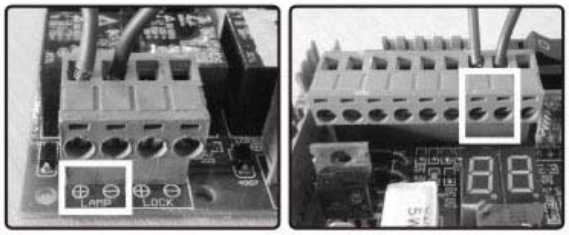
1. Measure and mark halfway along the long sides of both solar panel sides (170mm half way)
2. Place the holding brackets over this halfway point and mark the holes. Attach the plastic washers to the holding brackets and holding arms
3. Carefully drill the 4 holes with a 13/64 drill bit and be suer you don't drill into the glass. Use a piece of thin metal between the frame you are drilling and the white to protect it.
4. Place the holding brackets and use the 10mm screws and bolts to hold in place (You can also use the 4*13mm hex screws included).
5. Install the holding arm to the holding brackets with the 25mm screws and bolts. This can be done after you attach the holding arm to your fence post with the wiring. For maximum sun exposure, align the solar panel so the bottom is facing sunrise and the top is facing sunset.



Photocell Wiring during Solar Applications







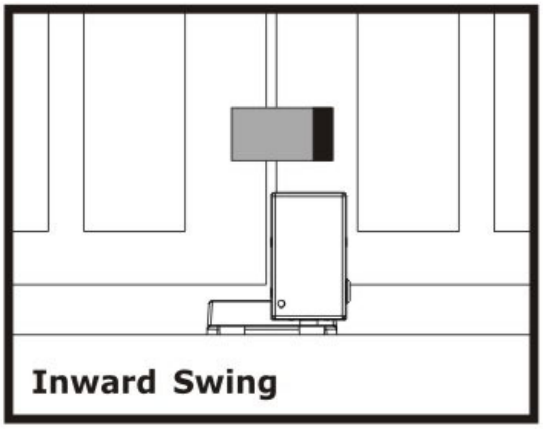
1. Connect TX "-" & "+" respectively to RX "-" & "+"
2. Connect RX "-" & "+" respectively to LAMP "-" & "+"
3. "NO" in RX connected to "OPEN" "COM" in RX connected to "GND"

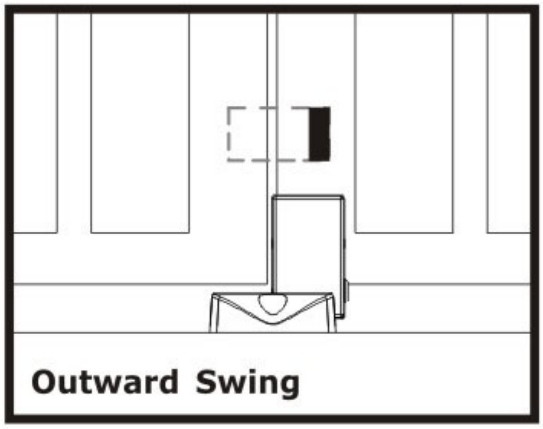
Instructions for photocell

During gates closing, if the photocell detect any obstacles, the gates will stop immediately and then reverse back. Only until the obstacles be removed, the gates will operate according to new command.

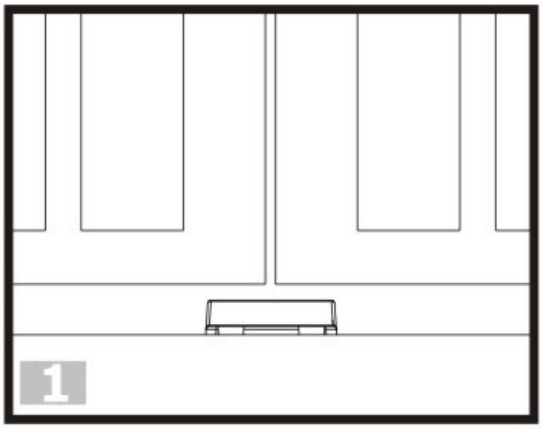
Gate lock installation

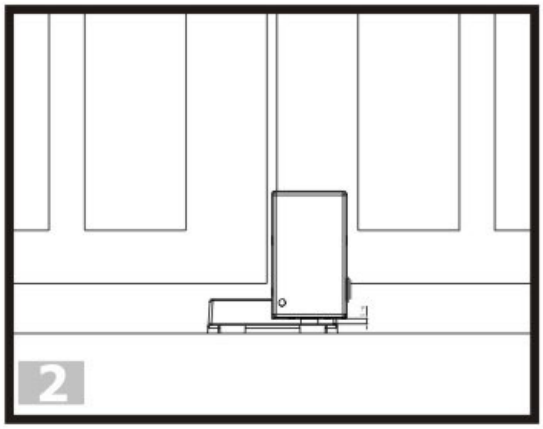
Model: Ds218

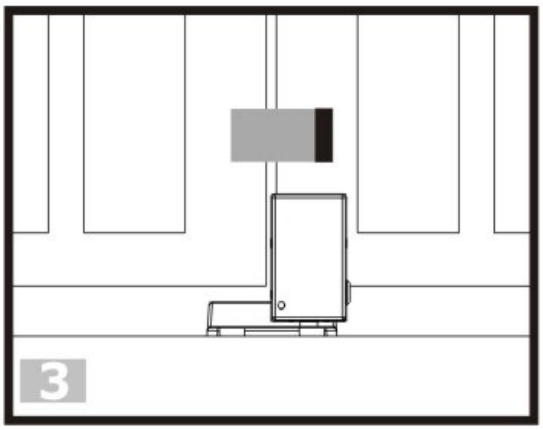




Installation



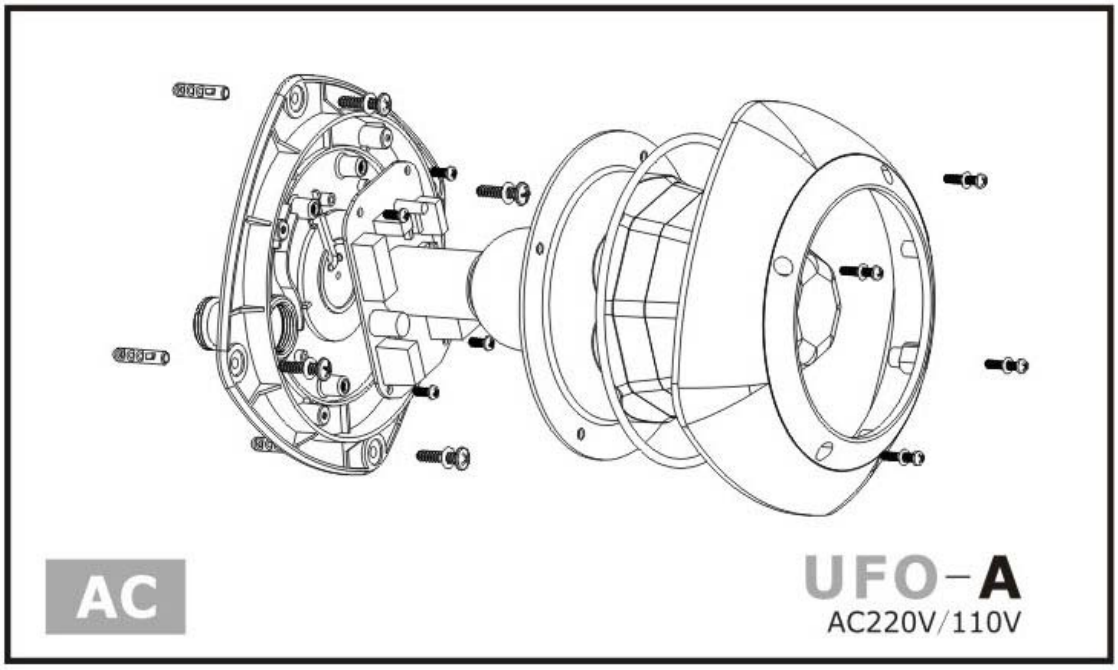


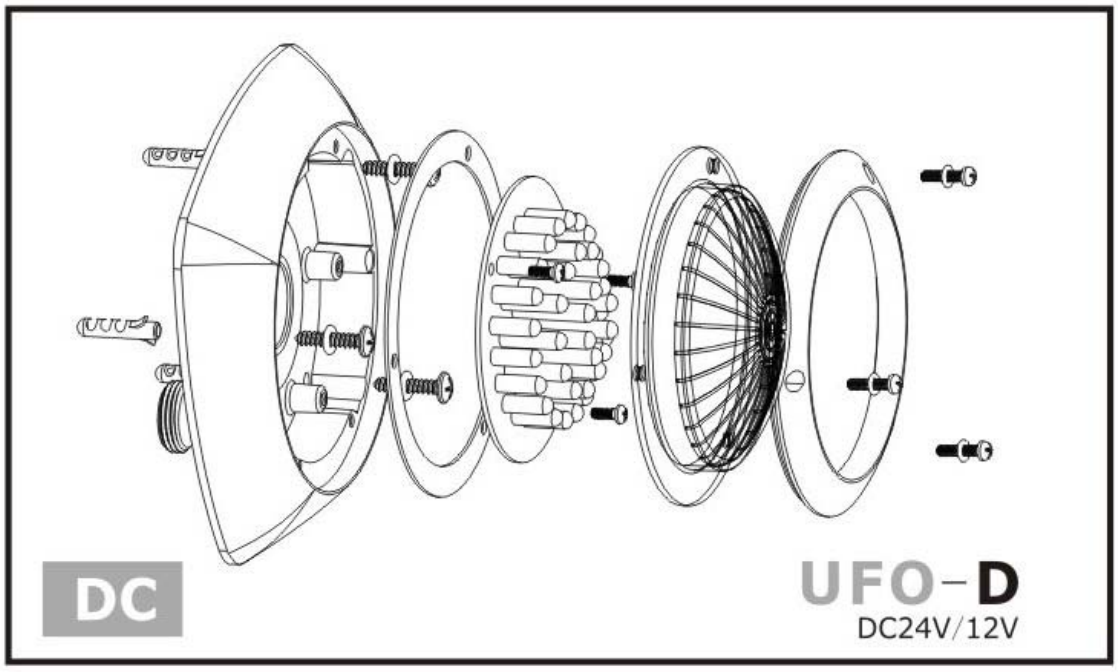


1. Install the stopper
2. Fix the lock body onto the first moving side of the gate leaf, make sure there is at least 5 to 8 mm space between the stopper location hole surface & the bottom of lock body.
3. Install the stopper plate in corresponding position onto the same leaf which installed with lock DS218, this is to make sure when 2 leaves are closed, the stopper plate can limit the leaf which cannot opened either.

* The lock bolt pin must be in vertical position with the bolt pin of the stopper .

Flashing light installation





If using solar systems, connect with DC24V
*wiring for flashing light, (see page 5)

Attention on installations:

1. The doors must be in horizontal lines, make sure the door and the door post are in vertical positions.
2. Make sure the gates can be moved by hand push force, and can be easily stopped anytime.
3. The gates can be operated quietly and stably.
4. Make sure the gates can operated smoothly within the installation area.
5. The opening degree and the push force of the gate operator is related to the installation position of the gate brackets and the post brackets. So please read the manual carefully to make sure the installation is fit into the need of the consumers.
6. Before you fix the gate brackets and the post brackets, please first make sure the gate operator can be in fully horizontal position during both opening and closing gates, and it is no problem to open/close the gates manually.