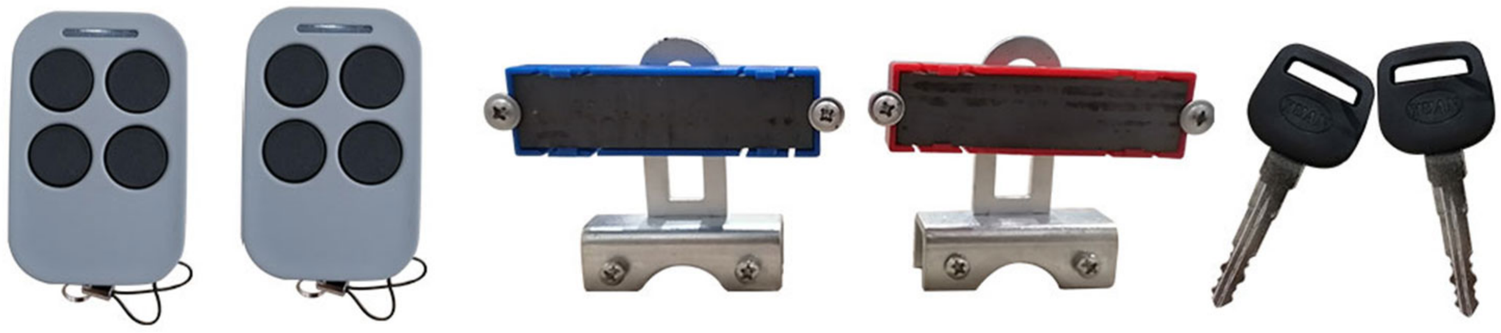
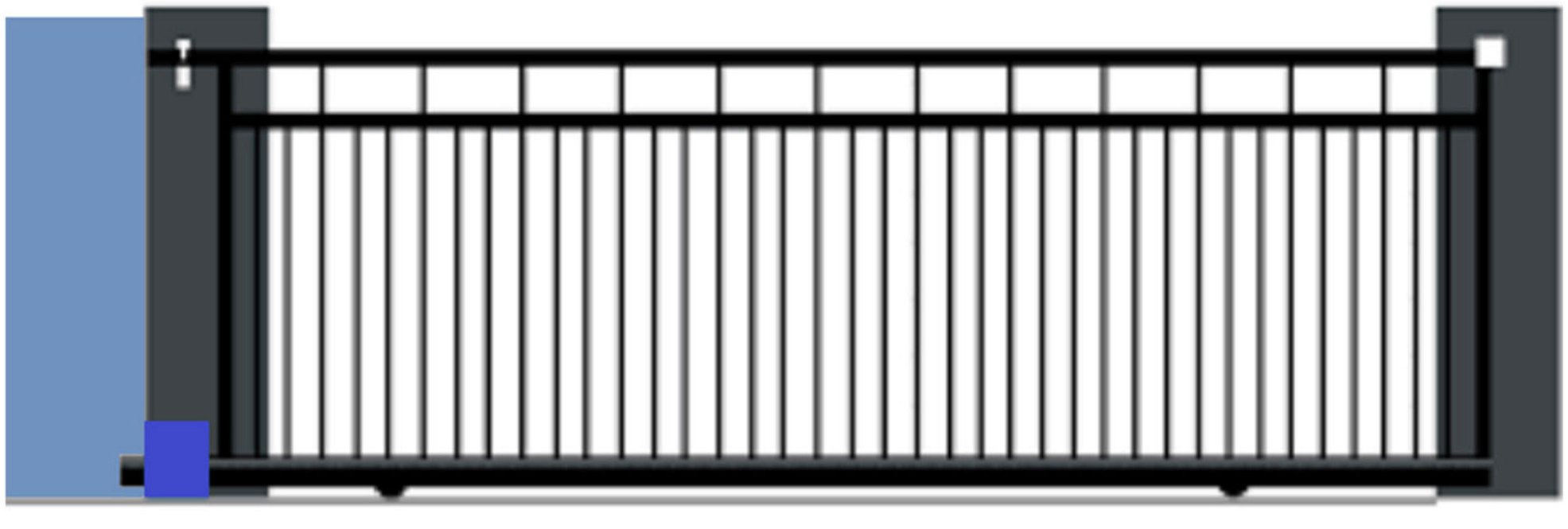
# AUTOMATIC SLIDING GATE OPENER
# SL-22013
# USER MANUAL

1300KG





# I. Important Safety Information:

* The gate operator should be installed by qualified technician; otherwise, serious personal injury or property damage may occur.
* When opening or closing the gate, do not attempt to walk or drive through the gate.
* Children should not be allowed to play near or operate automatic gates.
* Install the gate operator on the inside of the property. Do NOT install it on the outside of the property where the pubil has access to it.
* Be careful when in close proximity to moving parts where hands or fingers could be pinched.
* The operator should be switched off before repairing it or opening its cover.

# II. Sliding Gate Opener Main Functions:

The gate operator is used to drive the sliding gate. It is featured with powerful starting strength, capable of overload in a short time. When overloaded, it will be protected electrically. In the event of power failure, an emergency release key allows you to operate the gate manually.

* Totally integrated electrical mechanical system (excludes racks)
* Single button control circularly /three buttons control can be choosed
* Control board interface for optional impact-proof infrared photocells
* Alarm lamp interface
* Automatic delayed closing
* Pedestrian mode
* Adjustable resistance sensitivity
* Gate will auto stop and re-open when an obstacle is encountered
* Wireless remote control or wired remote control are optional

# III. Technical Specifications:

| | |
|---|---|
| **Power Supply:** AC110V/220V± 10v, 50Hz | **Motor Speed:** 1400rpm |
| **Gate Moving Speed:** 12m/min | **Output Torque:** >18N.m |
| **Limit Switch:** Magnetic | **Gross Weight:** 11KG |
| **Environment Temperature:** -25°C - +55°C | **Loading weight:** 1300 KG |

# IV. Preparing The Installation Site:

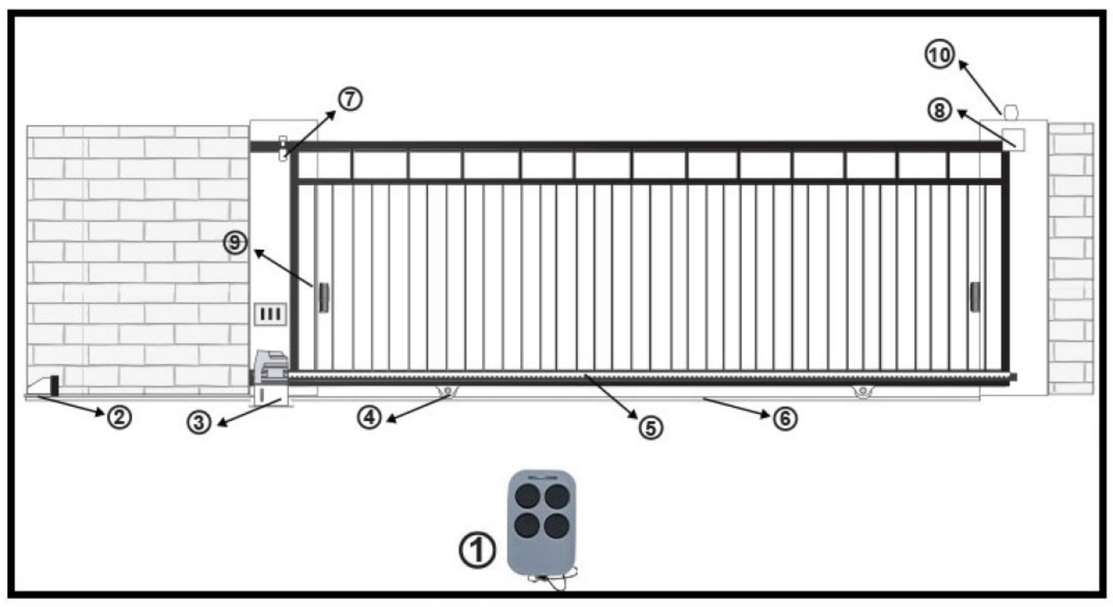



Figure 1

1. Remote Control
2. Rubber Stopper
3. Sliding Gate Opener Motor
4. Roller
5. Gear Rack
6. Ground Track
7. Guide Bracket
8. End Catcher
9. Photocell Sensor (optional)
10. Flashing Light (optional)

# V. Working Priciple and Main Structure

**The dimension is shown in Fig. 2. The gate operator is composed of a single-phase motor and worm gear. The main shaft of the motor rotates the worm with the clutch engaged, the worm rotates the worm gear and output gear, which pushed racks attached to the sliding gates, thus moving the gate.**

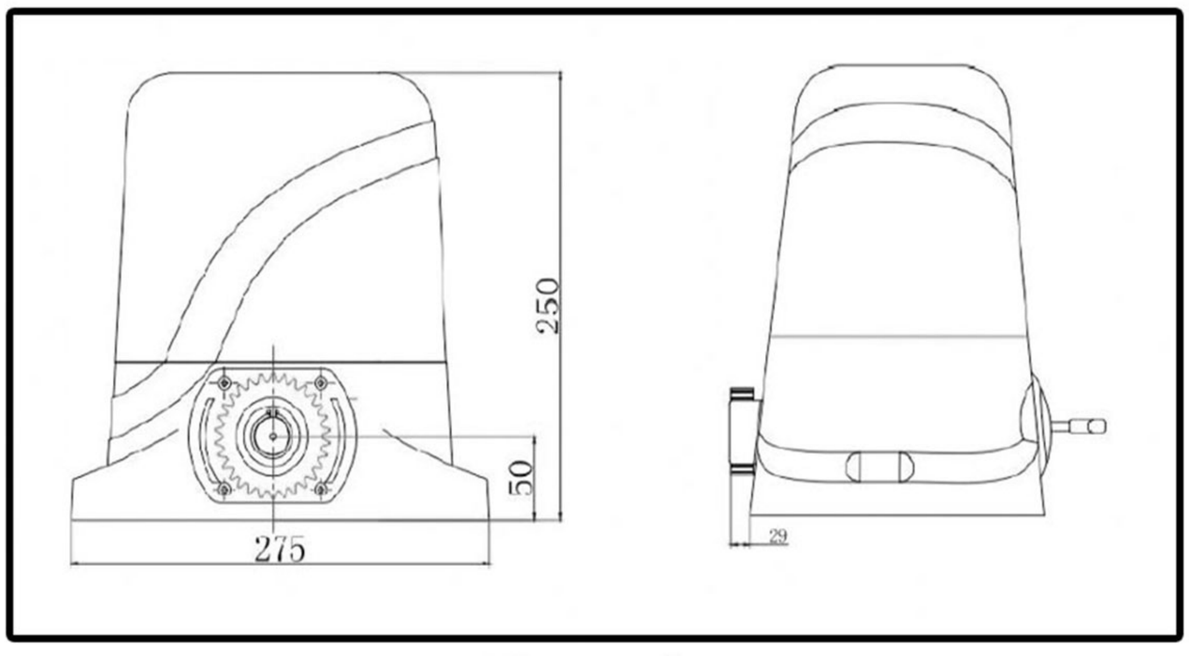



**Figure 2**

# VI. Installation

**6.1 Installation of Motor Base Plate**

**1. Depending on the installation size of the motor and mounting height of racks, after the installation position of the motor base plate, first let the bolt embedded or use expansion bolt to make base plate fixed on watering good cement foundation. See Fig 3**

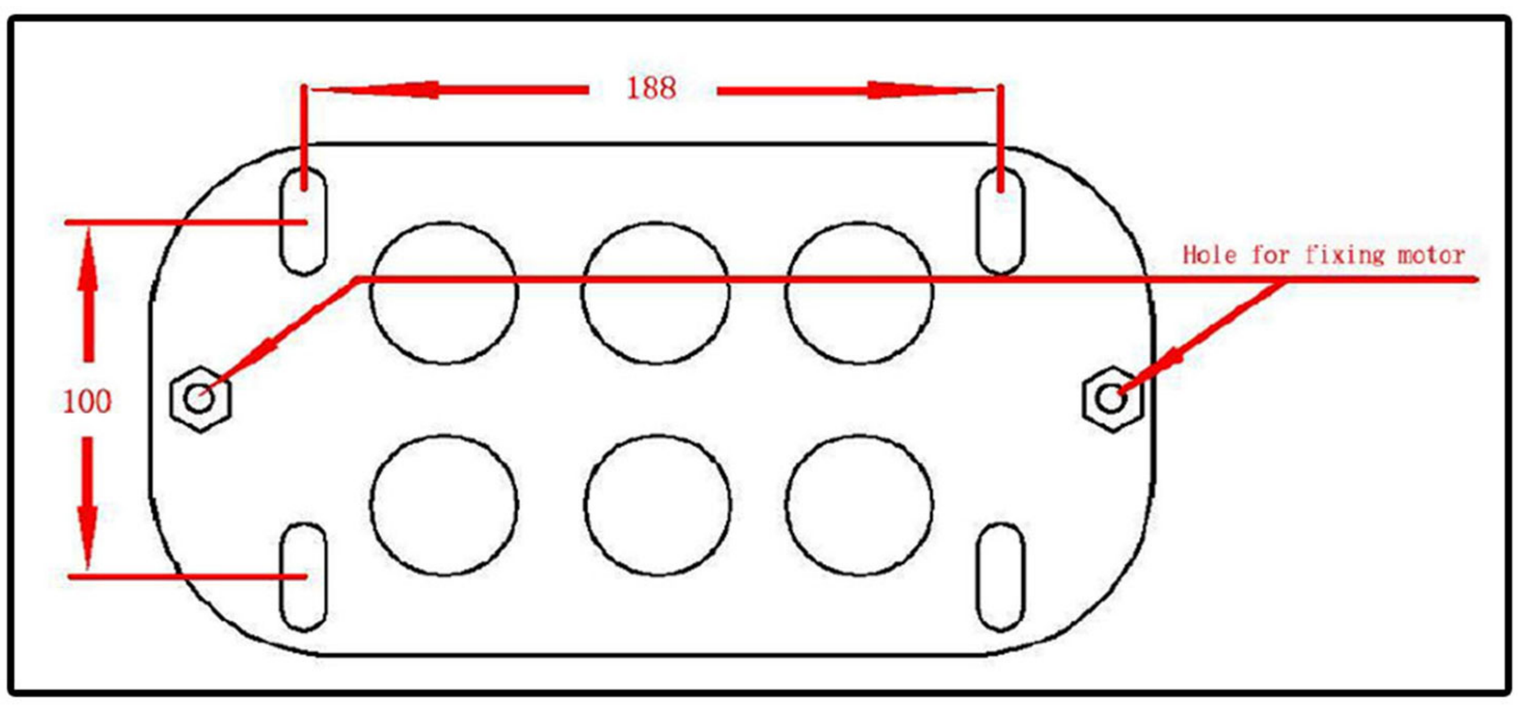



**Figure 3**

**2. If the rack has been installed on the door, the motor can be fixed on the base plate. use an Allen key rotation to the clutch “off” position, the motor and the gear rack so as to better determine the position of the motor base plate, then remove the motor and fixed base plate.**

**6.2 Installation of Gate Opener**

**. 1.Let the sliding gate opener put on the base plate. use a random matching hexagon screw make the motor fixed on the base plate.**

**2. Unscrew the motor cover, and then remove the motor cover. according to the electrical wiring diagram connected the power cord. Adjust in a good position, then install cover and use screws.**

6.3 Installation of Racks

1. After the motor is installed, the racks teeth the down ,then put the gear on the motors. and final connected with screws and gate. push the door with hand. so can let door sliding it and can move it without any problem .after confirmed, fixed the racks.
2. In order to avoid gate run jitter or jam, rack and joint clearance must be corrected. As suggested, see Fig 4. With a small correction, after connecting right with racks 1 and racks 2 ,then fixed racks 1 and 2.

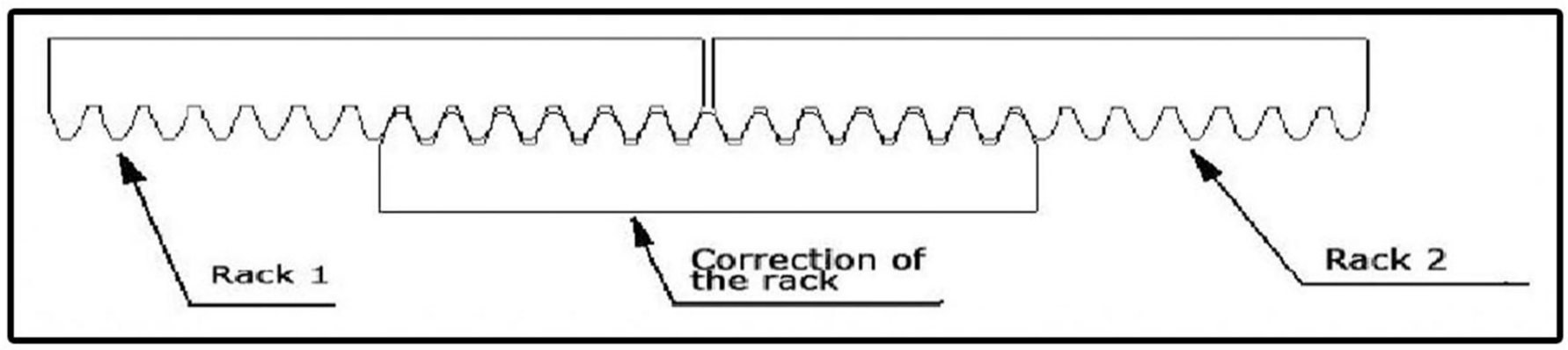



**Figure 4**

6.4 Installation of Limit Magnet

There are 2 limit magnet supplied. Note there is a left hand and a right hand magnet. The magnet should be installed one at either end of the rack. See Fig 5

To install the magnet in the correct position, open the clutch door aud press the 'CLOSE' button on the remote, the motor will run but will not drive the gate. Close the gate manually and adjust the limit magnet to contact the toggle switch aud switch the motor off at the desired gate position. To adjust the stop position to of the gate when it is open, press the 'OPEN' button, manually open the gate aud adjust the other limit magnet to contact the toggle switch and switch the motor off.

When you are satisfied the limit magnet are in  the correct positions, tighten the screws in the limit magnet to clamp them to the rack, close the clutch door and using the remote control check the gate opens and closes to the desired positions. Adjust the limit magnet if necessary.

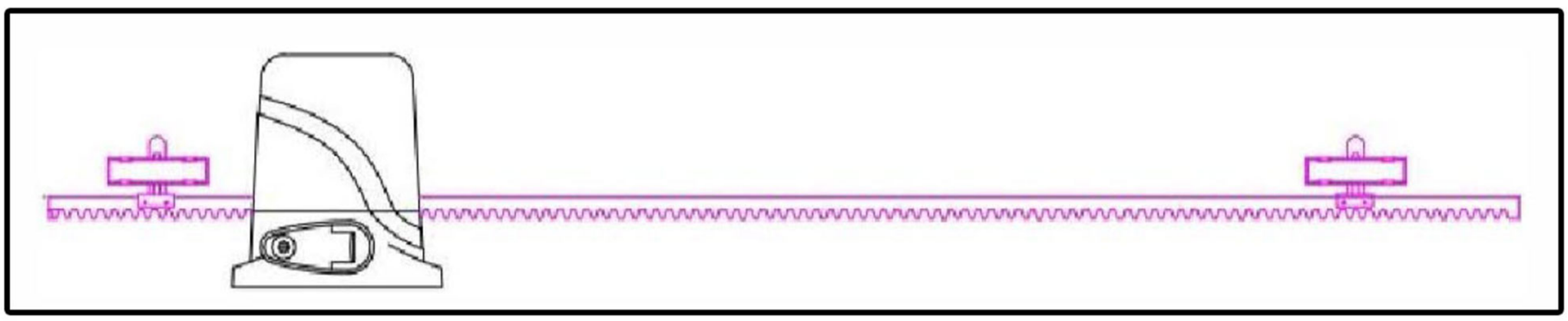


**Figure 5**

6.5 Function of clutch

When the clutch is opened to the open position, you can manually push the door; when closing the clutch, electric door can run on, off, when touching limiting the bezel will stop automatically.

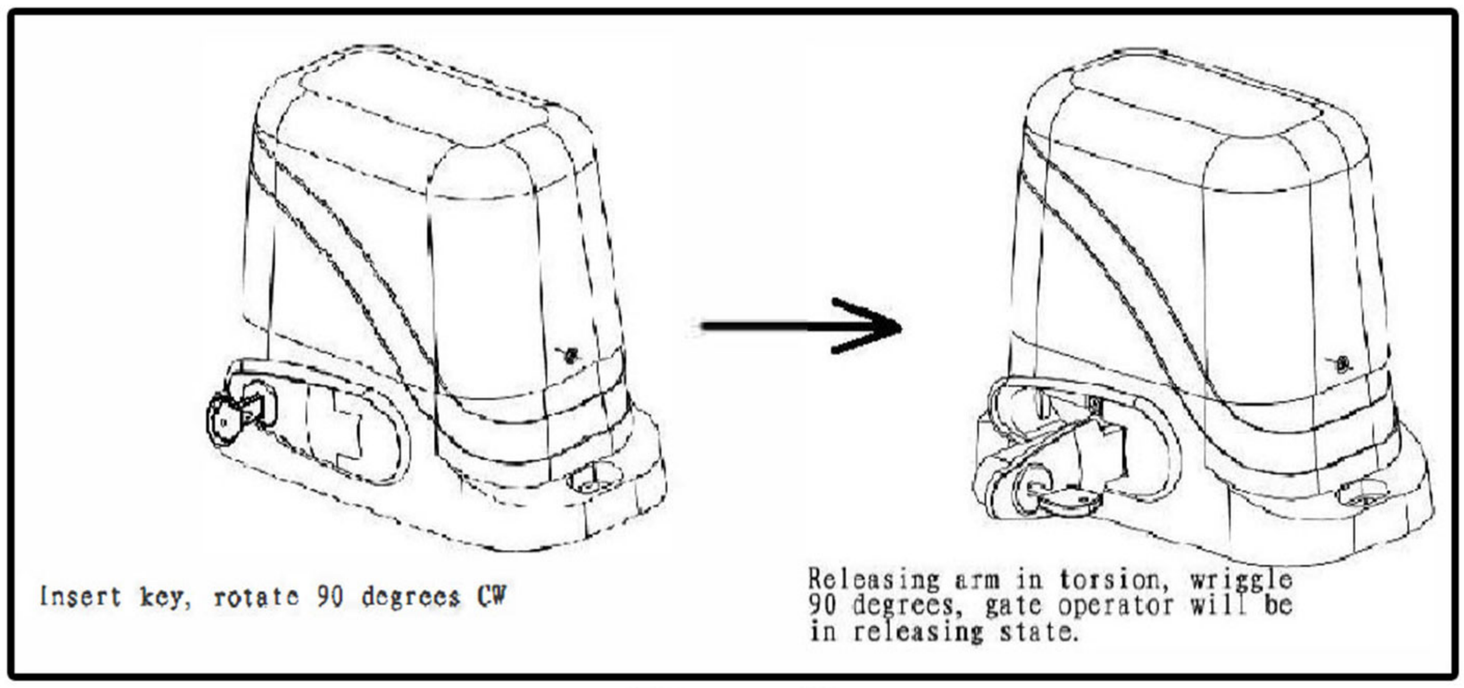



Figure 6

# VII. Installation Diagram of Electrical Parts

7.1. Terminal 6 and 7 for connecting to 220V power

7.2. Connect to sliding gate motor (Fig 8)

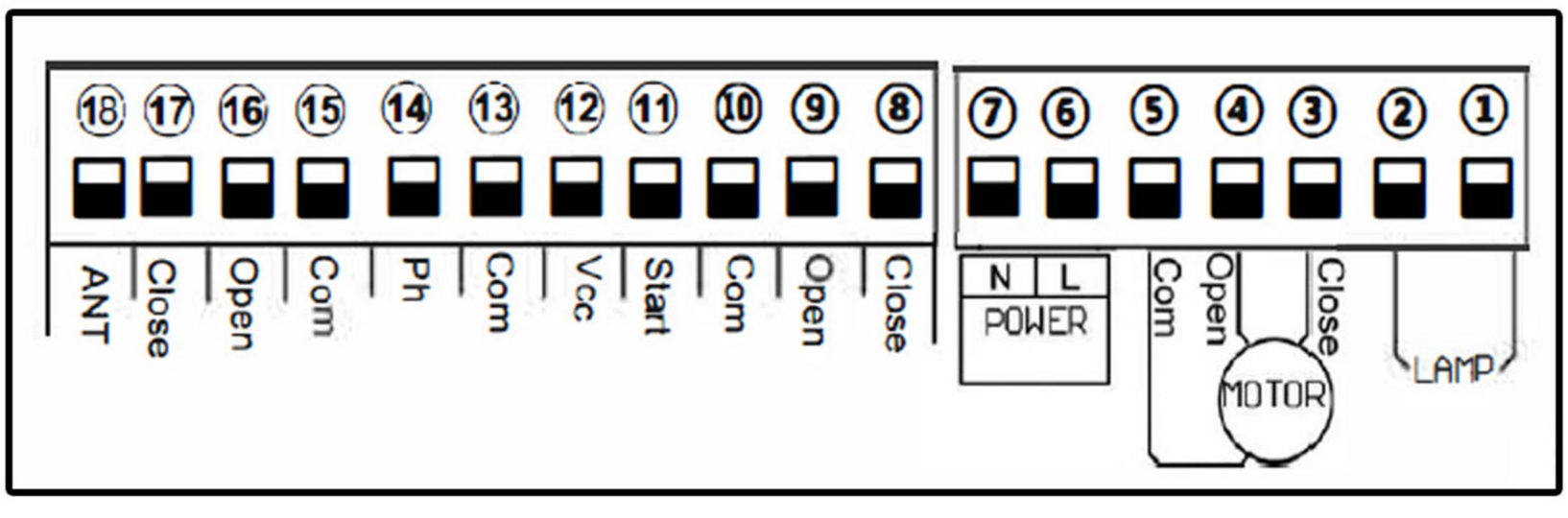



Figure 7

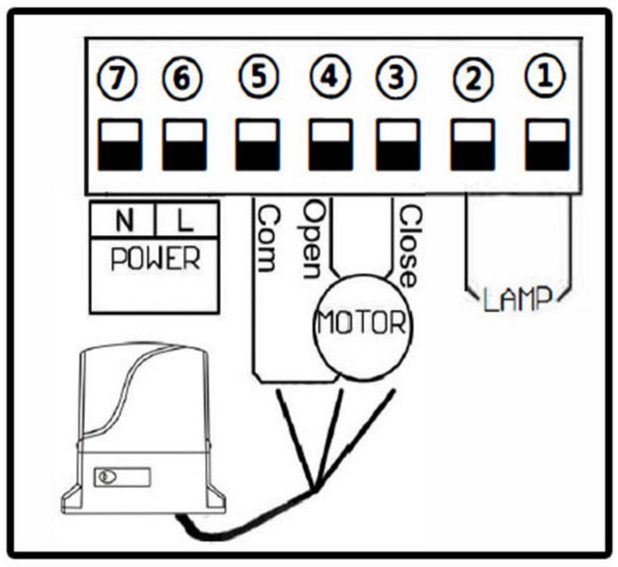



Figure 8

Terminal 3, 4, 5 is for connecting motor wire.

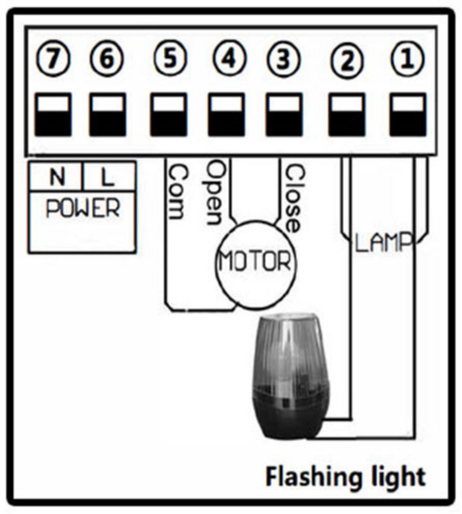
Terminal 3, 4 determines the forward and backward direction of the motor

Terminal 5 is terminal for Com (GND)

Note: Our factory setting is install motor on the right of gate! When you want to install motor at the left of gate ,please exchange 3 and 4 motor wire. After exchange, please check if the motor can close and stop normally. If can't ,please up or down the "J1" to the opposite direction. ("J1" includes two pcs short circuit caps, you need to adjust the caps simultaneously, then it will work)

7.3.Connect to flashing light

Figure 9



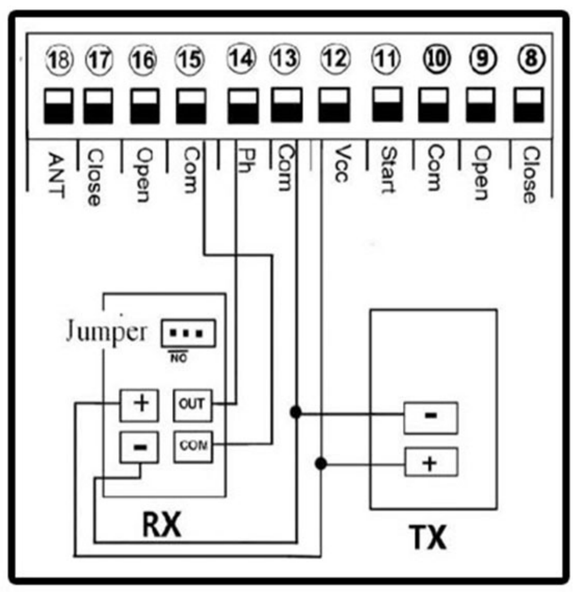

Terminal 1 and 2 is for flashing light.

AC220V power output, flashing light on when motor start running, after motor stop 30s, the flashing light will turn off

7.4. Terminal 8, 9 and 10 is for external limit switch .

## 7.5. Connect to infrared sensor

**Figure 10**

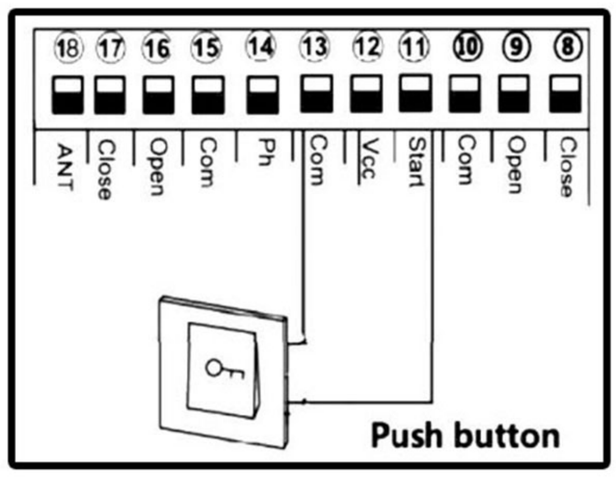



Connect terminal 15 to the COM of photocell RX.
Connect terminal 14 to the OUT of photocell RX.
Terminal is supplying power for external device.
Connect terminal 12 to the "+" of photocell RX and TX.
Connect terminal to 13 the "-" of photocell RX and TX.

## 7.6.Connect to start terminal

When you don't want to use the remote control to control the gate. Terminal 11 is for you connect some external device , such push button, wired keypad, receiver etc.
Control gate open, stop ,close.

**Figure 11**

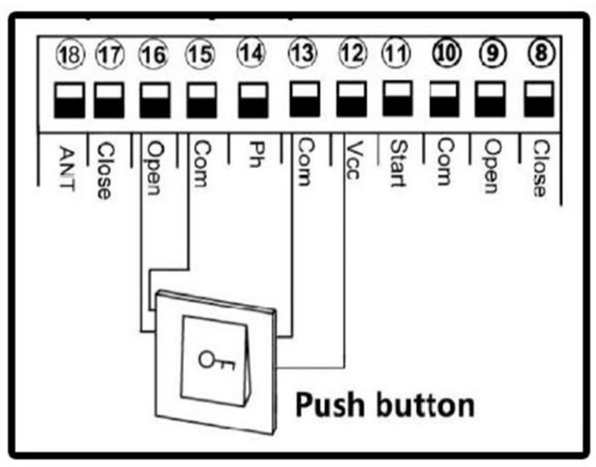



Example for push button;
Terminal 11 and 13 connect to push button.

## 7.7.Connect to open device

Terminal 16 is open only, for external device, such push button, wired keypad, receiver etc.
Only control gate open

**Figure 12**

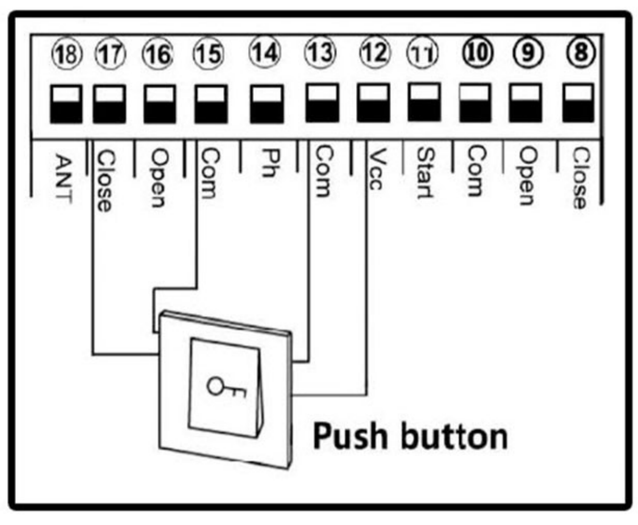



Example for push button;
Terminal 15 and 16 connect to push button.
Terminal 12 and 13 to supply power for push button

## 7.8.Connect to close device

Terminal 17 is cbse only, for external device such push button, wired keypad, receiver etc.
Only control gate close

**Figure 13**




Example for push button;
Terminal 15 and 16 connect to push button.
Terminal 12 and 13 to supply power for push button

# VIII. Function Testing

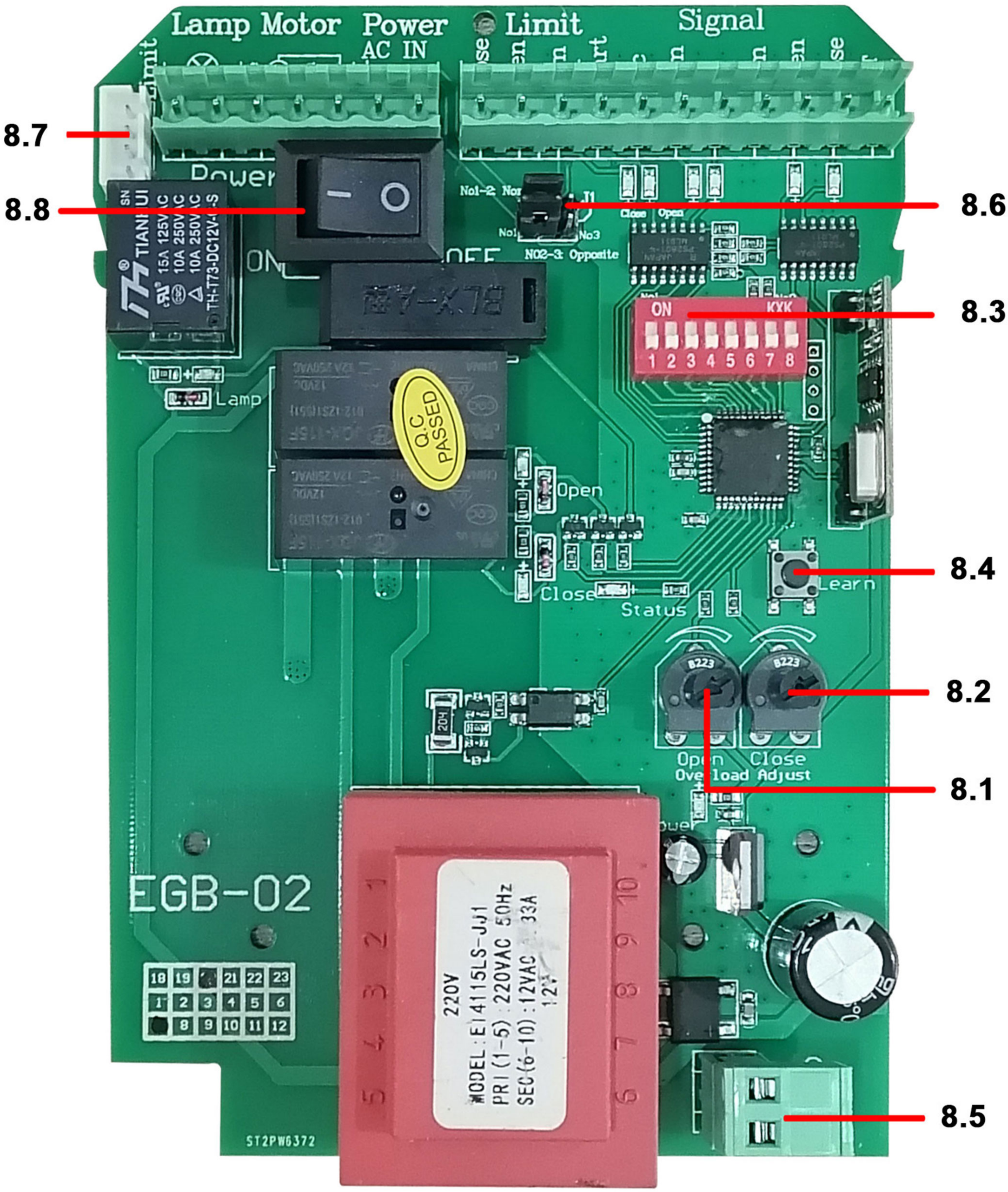



**Figure 14**

8.1: Adjust Open Sensitivity
8.2: Adjust Close Sensitivity
8.3: Programming Setting
8.4: Learning Button
8.5: Connect to Start Capacitor
8.6: Limit Switch Option
8.7: Terminal Stop Detection
8.8: Power Switch

The following functions refer to the picture Fig 14

## 8.1 Gate open blocked detection:

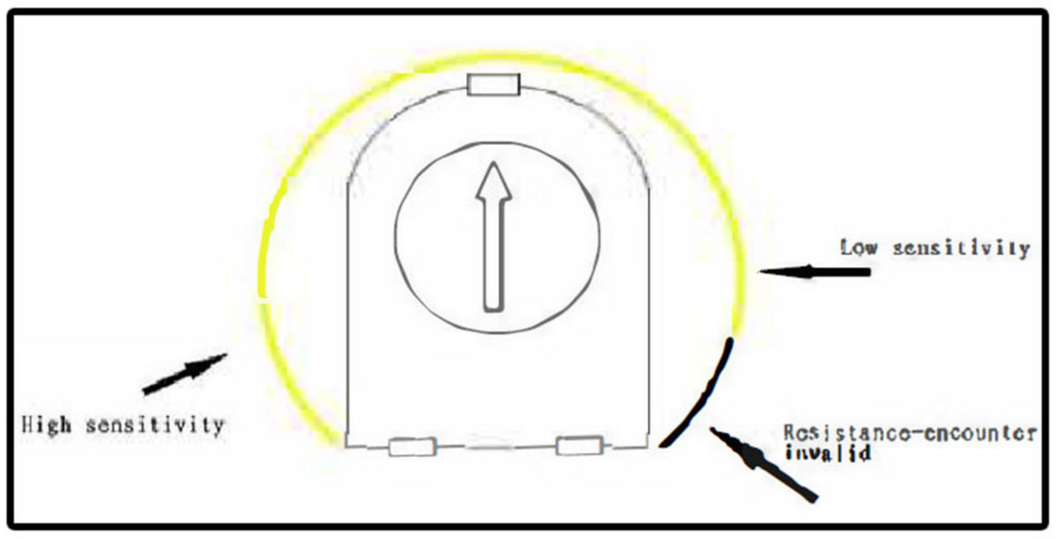



**Figure 15**

As picture show, we can rotate "Open overload " potentiometer to adjust the motor open sensitivity of blocked

A. High sensitivity: when the motor is rotation, will meet some minor resistance, then control board will send a signal to let motor stop rotating.

B. Low sensitivity: when the motor is rotation, will meet greater resistance, then control board will send a signal to let motor stop rotating.

C. As picture show, when pointer rotate to black part ,the control panel will quit this system

## 8.2 Gate close blocked detection:

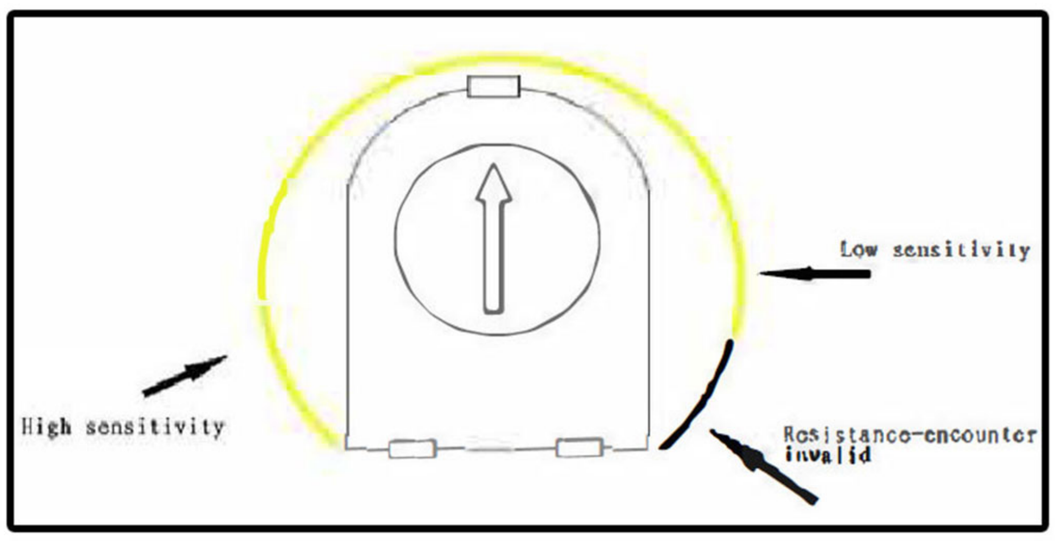



**Figure 16**

As picture show, we can rotate "Close adjust" potentiometer to adjust the motor close sensitivity of blocked

A. High sensitivity: when the motor is rotation, will meet some minor resistance, then control board will send a signal to let motor stop rotating.

B. Low sensitivity: when the motor is rotation, will meet greater resistance, then control board will send a signal to let motor stop rotating.

C. As picture show, when pointer rotate to black part ,the control panel will quit this system

## 8.3. programming setting:

A. Dial-up 1: Limit mode optional

OFF: NC mode(Factory setting)

ON : NO mode

Limit switch direction setting(J1):

Normal :Short circuit cap simultaneously No1 and No2 of J1 (Factory setting)

If motor system install at left of gate . Please adjust the Jl ,short the cap simultaneously No2 and No3

B. Dial-up 1: Infrared mode

OFF: NC mode(Factory setting)

ON: NO mode

If the gate meet obstacles during closing, It will auto stop and auto open. After the gate complete open to its place, it will auto close again if the obstacle disappear within 2s, if not , it will not auto close until the obstacle disappear.

C.Dial-up 3 &4: Auto close time setting

Auto close function activated after gate complete open to its place and stop by limit switch

Dial-up 3 &4, OFF-OFF: Auto close function disabled(Factory setting)

Dial-up 3 &4, ON-OFF: 105

Dial-up 3 &4, ON-ON: 305

Dial-up 3 &4, OFF-ON: 605

D.Dial-up 5&6: Auto close time setting when pedestrian mode activated

When remote control triggers the pedestrian mode (remote control button 2 or 4), the gate will stop after open 6s. If auto close function activated, the gate will auto close after gate open to 6s. Auto close time setting as follows:

Dial-up 5 &6, OFF-OFF: Auto close function disabled(Factory setting)

Dial-up 5 &6, ON-OFF: 55

Dial-up 5 &6 , ON-ON: 105

Dial-up 5 &6 , OFF-ON: 305

Note:

1.When the motor is running, the motor will stop immediately if triggers pedestrian mode

2.After triggering the pedestrian mode to open the gate for 6s, no mater it enter the countdown to close the gate or stop status, If trigger again, the gate will close the gate immediately.

E. Dial-up 7: Condominium mode setting

OFF: Condominium mode disabled(factory setting)

ON: Condominium mode activated

When the gate is opening, trigger remote control and the start interface are invalid until the door is opened. When the gate is closing, trigger remote control and the start interface, the gate will stop to close and auto open until the opening limit is reached (the remote control and the start interface are invalid when the gate is opening).

E. Dial-up 8: Remote control buttons mode

OFF: Single button control circularly

First button control gate open,stop, close, second button use for pedestrian mode

ON: Three buttons control

First button control gate open,second button control gate stop ,third button control gate close , fourth button use for pedestrian mode

Note:Please choose the remote control mode firstly before remote control code learning to control board

8.4 Learn remote control code:

A. Control panel can memory more than 50 pcs remote control

B. Code learning: Press board "LEARN" button, LED indicator light on, press remote control first button, LED indicator flash twice, code learning succeed. If no remote control signals received within 2.6s, the receiver will automatic quit learning functions.

C.Code clearing: Press and hold the button 6 seconds, LED indicator flash twice, all the code that has been memorized in control board will be cleared

8.5 Motor Start Capacitors:

Capacitors are connected with control board before use motor, please confirmed the interface of capacitors is secure. Please see picture Fig 14

8.6 Limited switch options (J1):

Limit switch is used to switch terminal stop detection interface, that direction of open and close the gate

8.7 Terminal stop detection interface:

Terminal for limit switch, such as spring limit or magnetic limit .

8.8 Power switch:

Switch on/off power stop when do some setting on the control board

# IX. Troubleshooting

| Problem | Possible causes | Repair method |
|---|---|---|
| Gate fails to operate | 1. Check the clutch states ,power-driven state or not<br>2. Power no indication, and power trip.<br>3. The fuse has broken<br>4. Remote control failure or invalid<br>5. Damaged power cable<br>6. Remote control or motor problem | Recovery<br>To restore power<br>Change the fuse<br>Detection or change<br>Detection and Repair<br>Detection and Repair |
| Working distance of remote control reduced | 1. Low battery power or damaged<br>2. Interference from equipment using the same frequency<br>3. The receiver of controller was damaged | Replace battery<br>Wait eliminate interference<br><br>Replace the control board |
| Gate fails to stop at start or end position | 1.The terminal stop toggle switch is damaged or obstructed.<br>2. Limit switch of the motor and the limit detection of the interface PCB board plug off.<br>3. Limit of open and close is in wrong position. | Replace toggle switch or remove obstruction<br>Insert and fixed it<br><br>Adjust of limit switch(K1) |
| Press open and close key of motor, but cant working and operate | 1. Blocked sensitivity is too high(set too big)<br><br>2. The gate has lifted off the track and disengaged the drive gear from the rack | Make blocked sensitivity lowered ,and check gear and racks can operate normally.<br>Maintenance and replace. |

# X. Important Notes

1. When there's obstructions between the gate, do not open or close the door to ensure safety.
2. The power supply for the control board should be equipped with a separate switch with a fuse rated at 10AMP.
3. There is strong electricity in the control box. Please cut off the power supply before opening the cover.
4. Motor gear modulus M = 4, number of teeth = 16, use the corresponding racks
5. The gate should be as straight as possible, making sure after racks fixed good and the gate can be in a good position with motor gear.
6. Racks and gear should be controlled in good gap. so can make sliding steady.
7. After confirming the direction of gate movement, please check if the limit block fixed in good position to avoid the motor run out of control due to failure