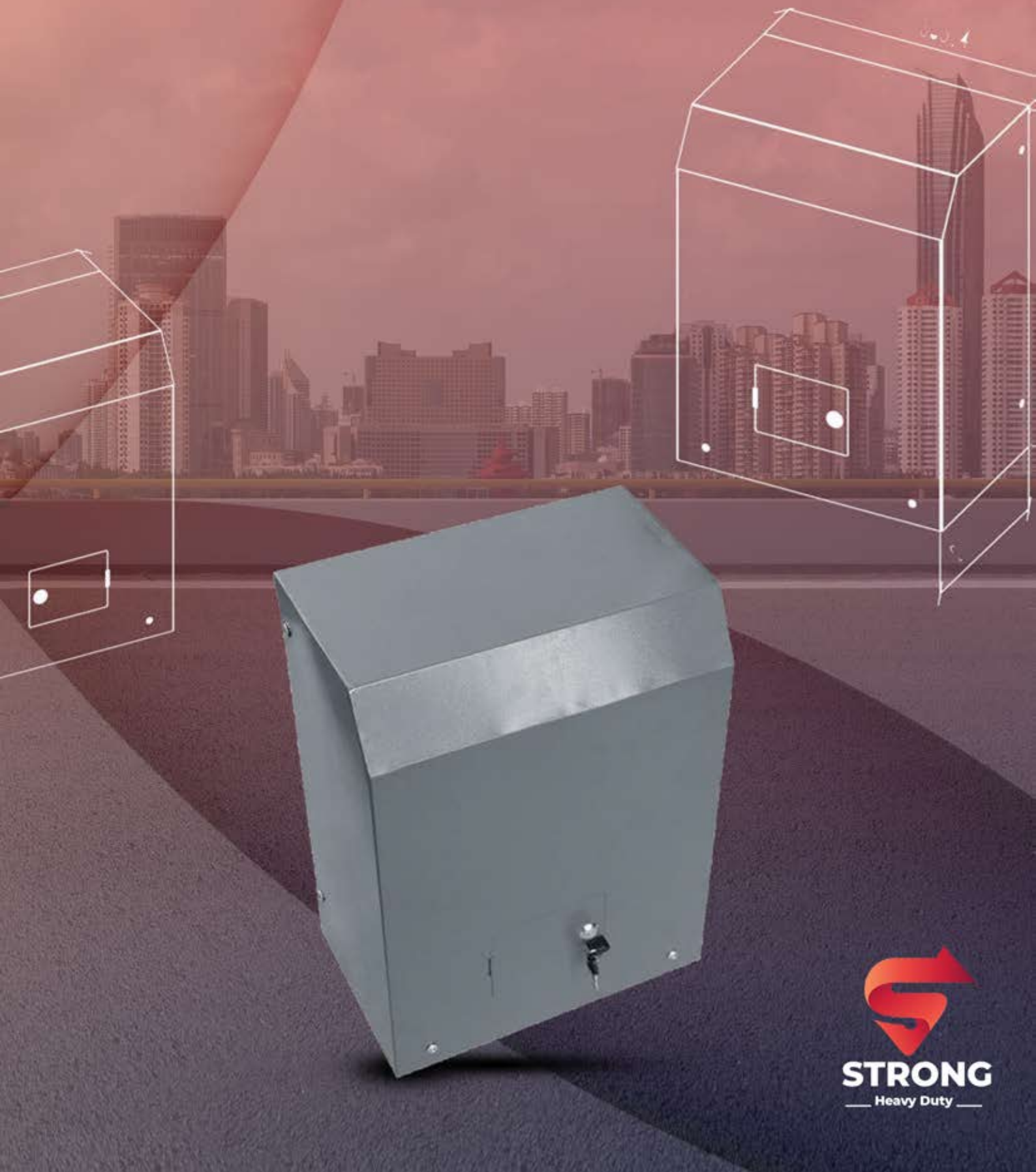
# 3000KG SLIDING GATE

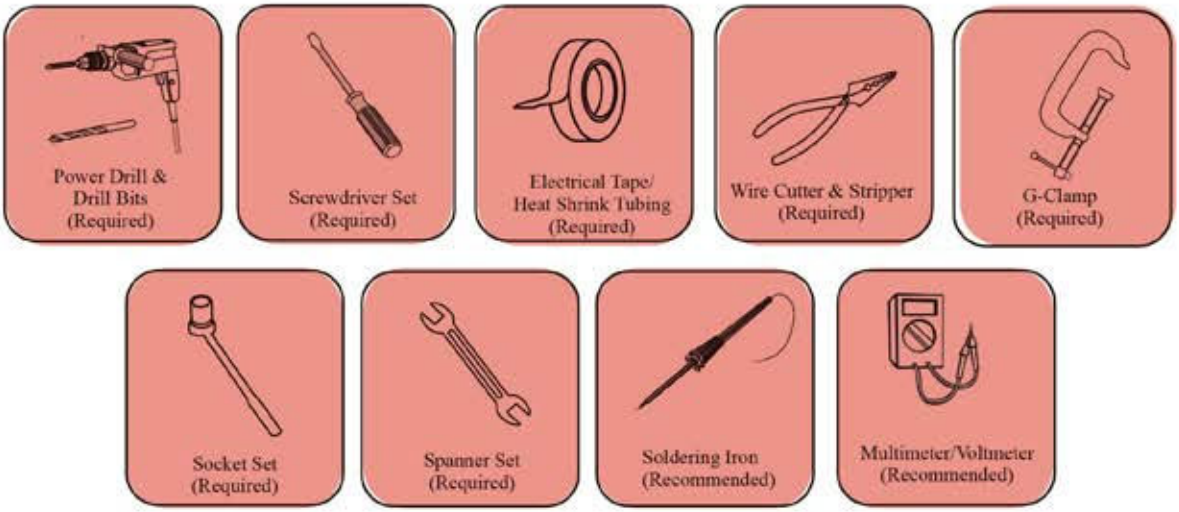
## OPENER user's manual



STRONG
Heavy Duty

- ★ Please read and follow all warnings, precautions and instructions before installation and use
- ★ Periodic checks of the opener are required to ensure safe operation.
- ★ For residential use only
- ★ Save this manual

1.Tools Required




## 1. Important safety information

Carefully read and follow all safety precaution and warnings befoer attempting to install and use this operator, incorrect installation can lead to server injury.

*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 installit 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.

## 2. 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.

## 3. Technical parameters

* Power supply: 220V±10v, 50Hz
* Rate power:750W
*Max gate loading weight:3000KG
* Motor speed: 1400r/min
* Gate moving speed: 12m/min
* Output torque: >20N.m
*Protect class: IP55
* Gear modulus:4
* Limit switch: spring limit switch
* Environmental temperature: -10 to + 55 degree
*Teetch:23T

## 4. Wroking principle and main structure

The dimension is shown in Fig.1. The gate operator is composed of a single-phase motor, worm 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 movine the gate.

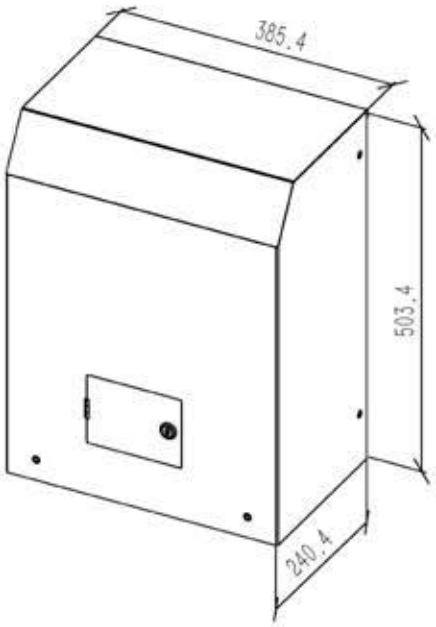



Fig 1

The structure of motor and worm is shown in Fig2. Output torque can be adjusted by pressure screw, tighten ( or release ) the pressure screw to increase ( or decrease ) the output torque.

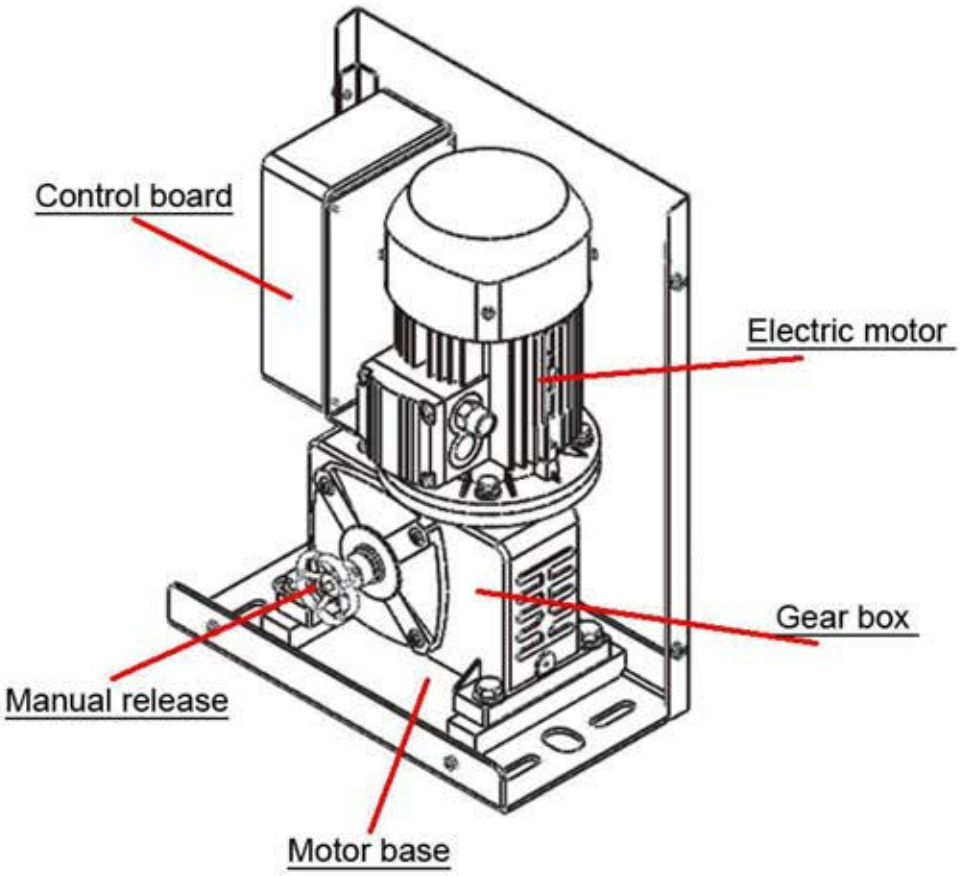



Fig 2

## 5. Installation and adjustment

The gate operator operates by forcing a drive rack past a drive gear. To guarantee the safety, it is highly recommend to install limit switch to prevent the gate from sliding out of the rails. The rails must be installed horizontally.

### Conduit

In order to protect the wires, conduit must be preset into the concrete when it is poured. Wires within the conduit shall be located or protected so that no damage can result from contact with any rough or sharp parts.

### Installation

Installation motor base plate

Depending on the installation size of the motor and mounting height of racks, after determine 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.

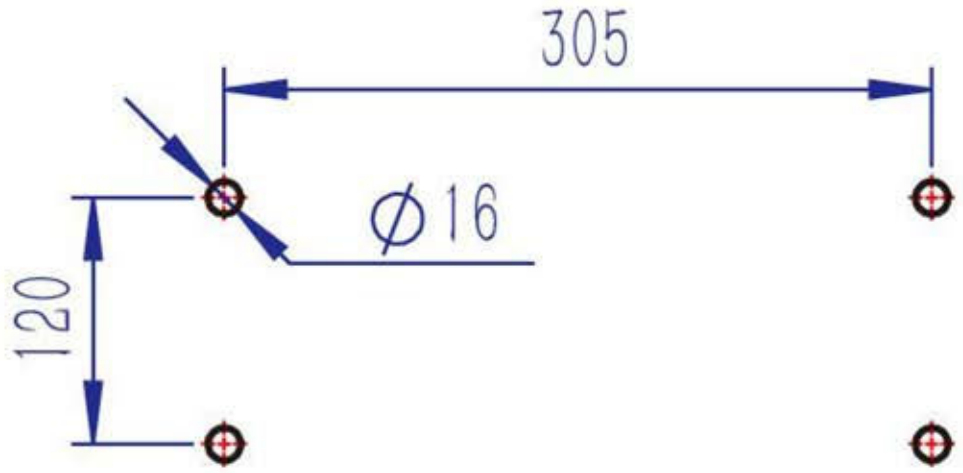



Fig 3

Then Lay out the cable on the floor, the recommended cable no less than 2.5mm square

Final the motor base on the ground with expansion bolt,as picture Fig 4

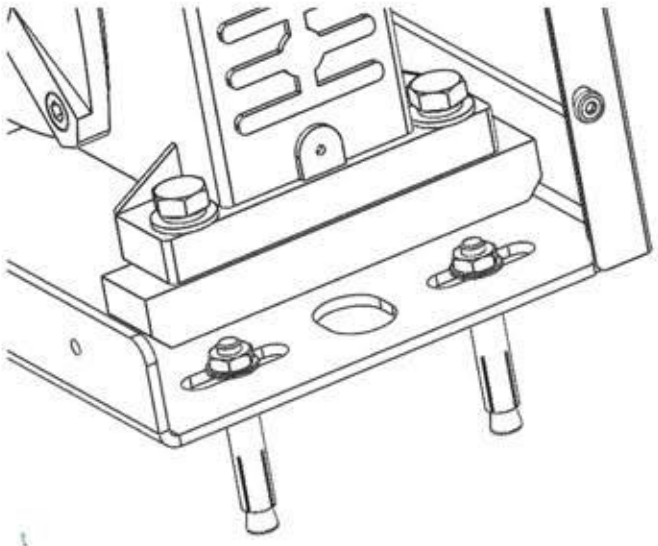


Fig 4

**Installation Rack on the gate (see Fig 5)**

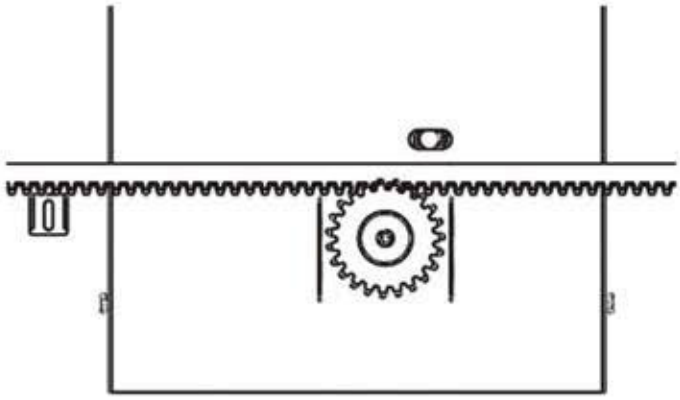


Fig 5

**Install spring limit switch**

To ensure safety, it is recommend to install limit devices at both ends of the gate to prevent the gate from sliding out of the rails. The rails must be installed horizontally.

Install the limit block as shown in Fig.6 The spring limit switch and blocks are used to control the position of the gate. Release the gear clutch with the key and push the sliding gate manually pre-determine the position, fix the block to the rack and then tighten the gear clutch with the key. Moving the gate electrically, adjust the block to the proper until the position of the opening and closing meet the requirement.

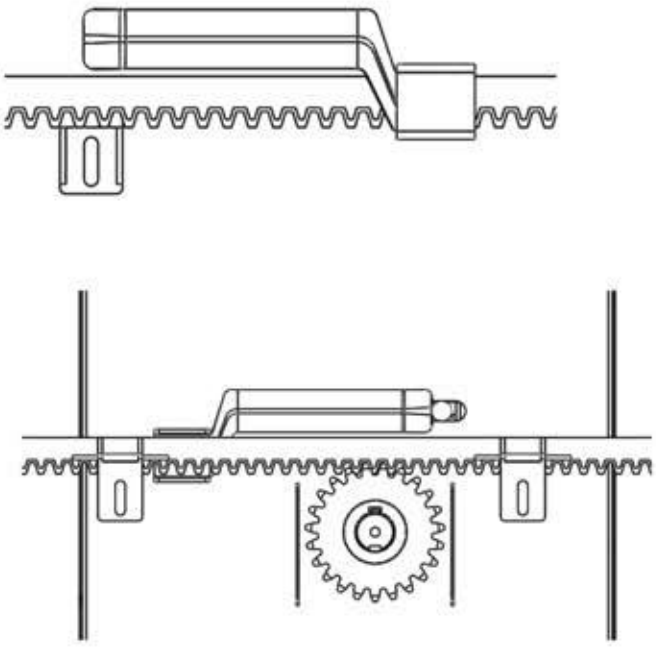


Fig 6

**Manual opeartion**

If the gate has to be operated manually due to a power cut or malfunction of the automated system, use the release key, as follow:

* Use the supplied key to open the small door on the motor house

*Clockwise rotate to release the manual,anticlockwise rotate to close the manual

Note: If the gate bamps the mounting post and cannot be electric opened, move the gate back a few inches manually, thus you can release the operator with manual

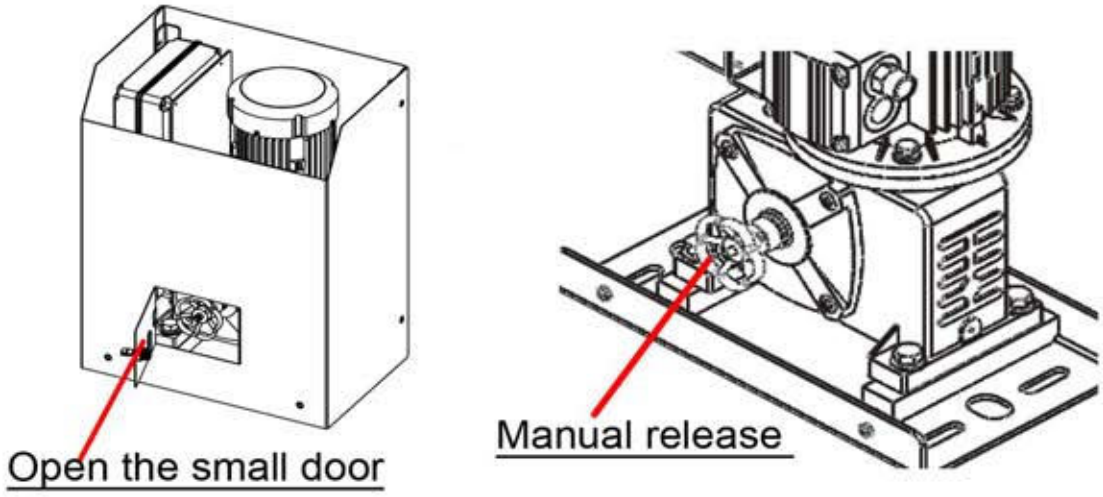



Fig 7

## 6. Installation diagram of electrical parts (Fig 8)

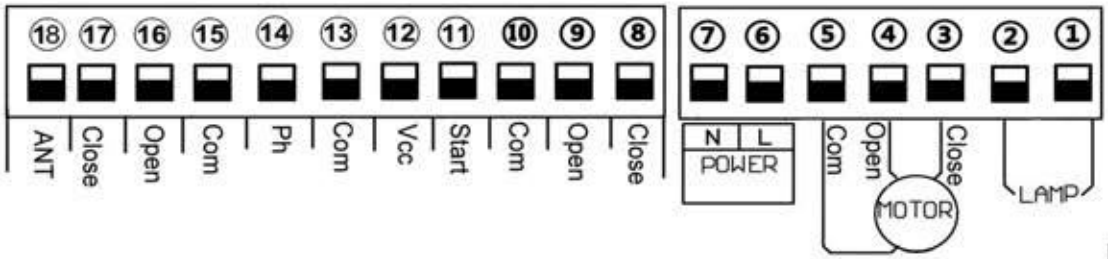



**Fig 8**

6.1. Terminal⑥ and ⑦it for connecting to 220V power

6.2. Connect to sliding gate motor Fig 9

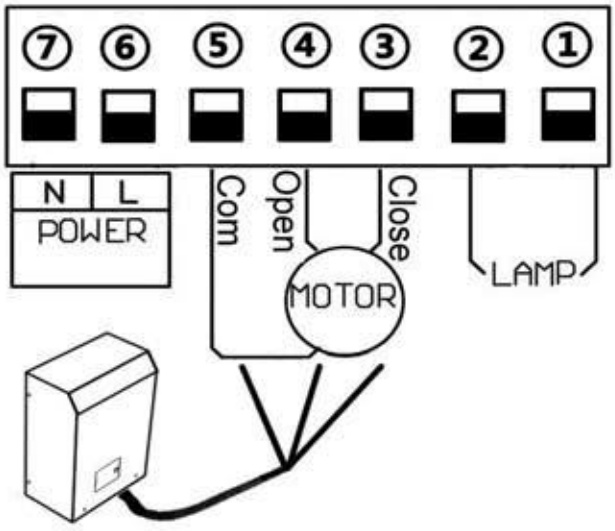



**Fig 9**

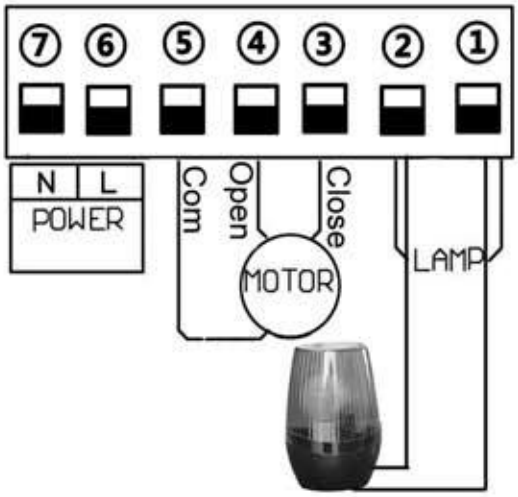
Terminal ③, ④ ,⑤ is for connecting motor wire.

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

Terminal ⑤ is terminal for Com(GND)

**Please 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 ③and 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 work)**

6.3.Connect to flashing light. Fig 10




**Flashing light** **Fig 10**

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 turn off

6.4. Terminal ⑧⑨ and ⑩ is for external limit switch.

6.5. Connect to infrared sensor. Fig11

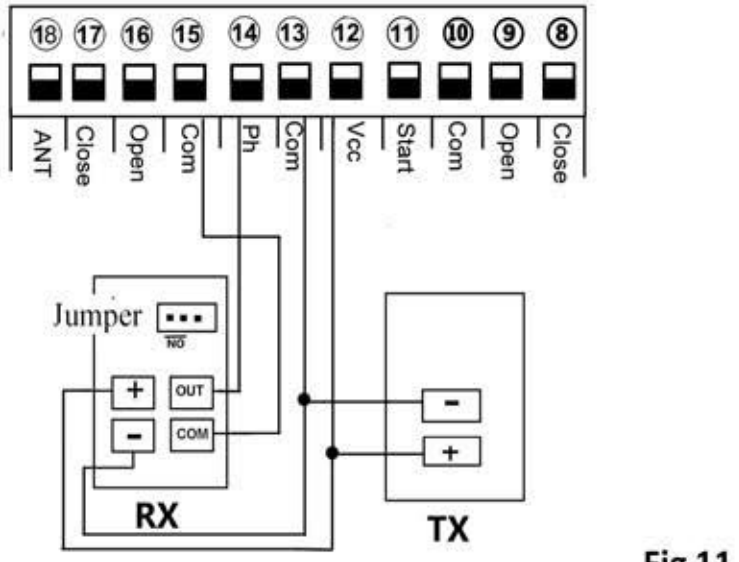



**Fig 11**

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.

So, connect terminal ⑫ to the "+ "of photocell RX and TX.

connect terminal to ⑬ the "-"of photocell RX and TX.

6.6.Connect to start terminal. Fig 12

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.**

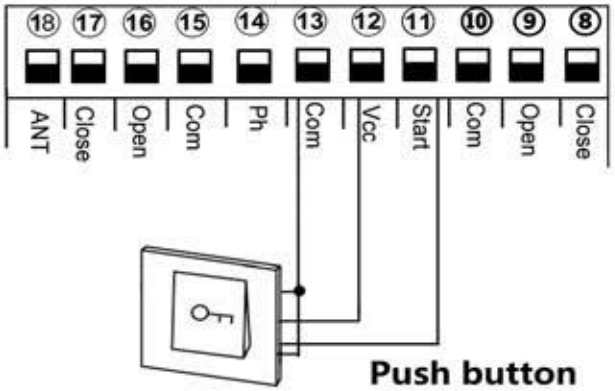



**Fig 12**

Example for push button;
Terminal ⑪ and ⑬ connect to push button. Terminal ⑫ and ⑬ to supply power for push button

## 6.7.Connect to open device. Fig 13

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

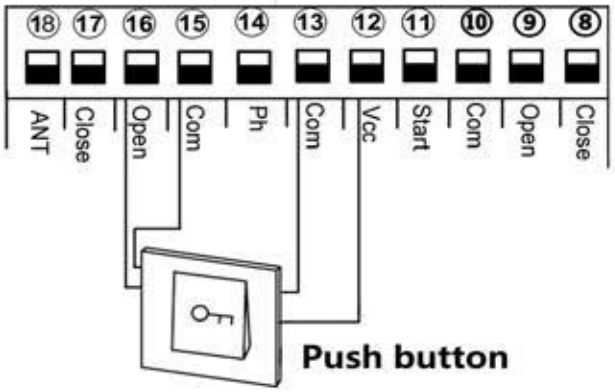



**Fig 13**

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

## 6.8.Connect to close device. Fig 14

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

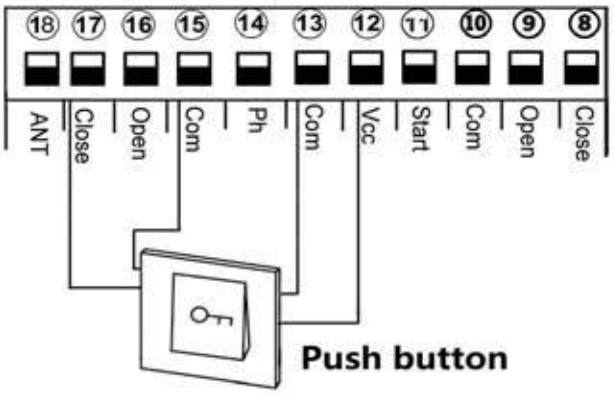



**Fig 14**

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

## 7.Function Testing

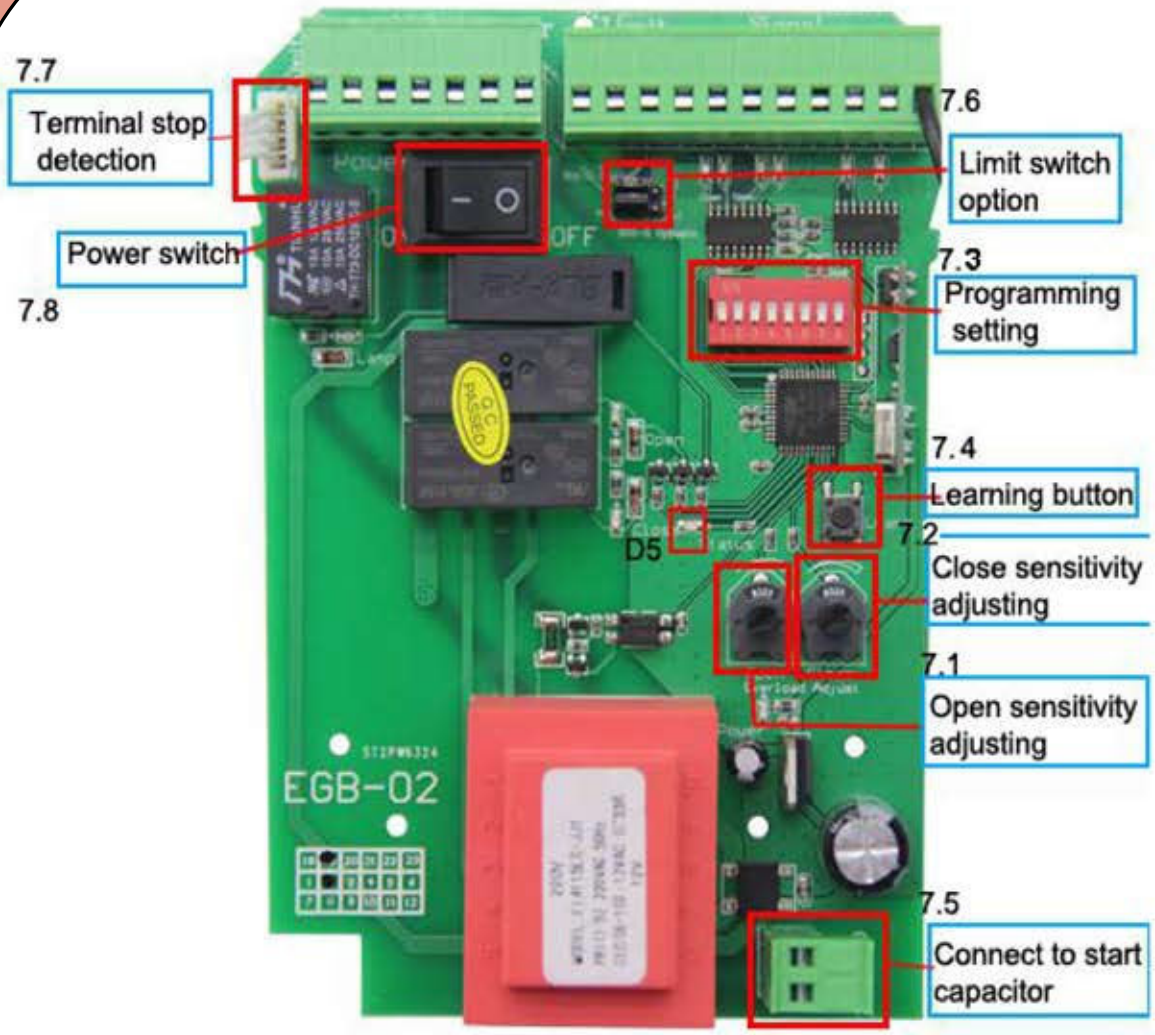



Fig 15

The following functions refer to the picture Fig 15

### 7.1 Gate open blocked detection: Fig 16

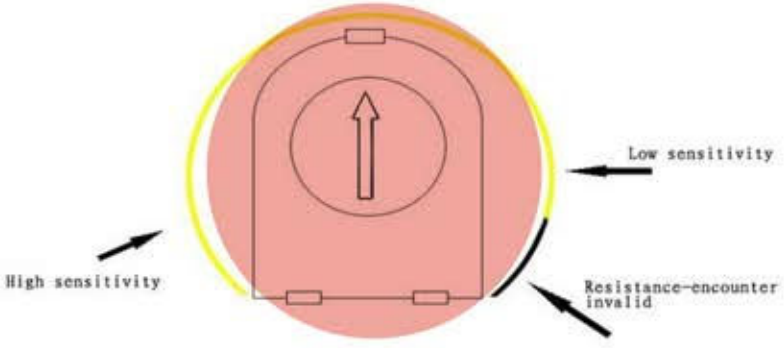



Fig 16

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

### 7.2 Gate close blocked detection: Fig 18

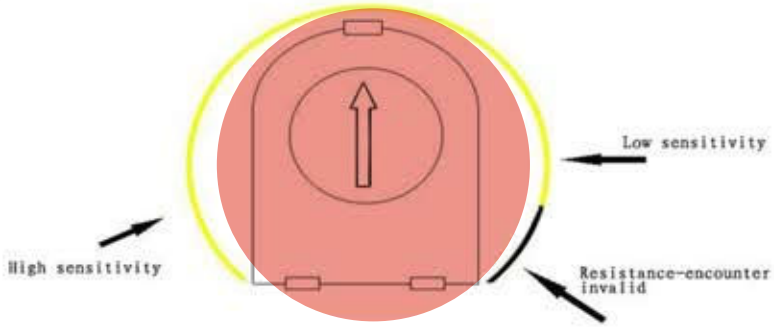



**Fig 17**

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

## 7.3. 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 J1 ,short the cap simultaneously No2 and No3

B. Dial-up 2: 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 to 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: 10S
Dial-up 3 &4, ON-ON: 30S
Dial-up 3 &4, OFF-ON: 60S

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: 5S
Dial-up 5 &6 , ON-ON: 10S
Dial-up 5 &6 , OFF-ON: 30S

**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
Not:Please choose the remote control mode firstly before remote control code clearning to control board

### 7.4 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

### 7.5 Motor Start Capacitors:

Capacitors are connected with control board before use motor, please confirmed the interface of capacitors is secure. Please see picture Fig 16

### 7.6 Limited switch options (J1):

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

### 7.7 Terminal stop detection interface:

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

### 7.8 Power switch:

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

## 8.Trouble Shooting

| Problem | Possible causes | Repair method |
|---|---|---|
| Gate fails to operate | 1. Check the clutch states ,power-driven state or not | Recovery |
| | 2. Power no indication, and power trip. | To restore power |
| | 3. The fuse has broken | Change the fuse |
| | 4. Remote control failure or invalid | Detection or change |
| | 5. Damaged power cable | Detection and Repair |
| | 6. Remote control or motor problem | 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. |

## 9. Important Notes

1. When someone or 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 confirm 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