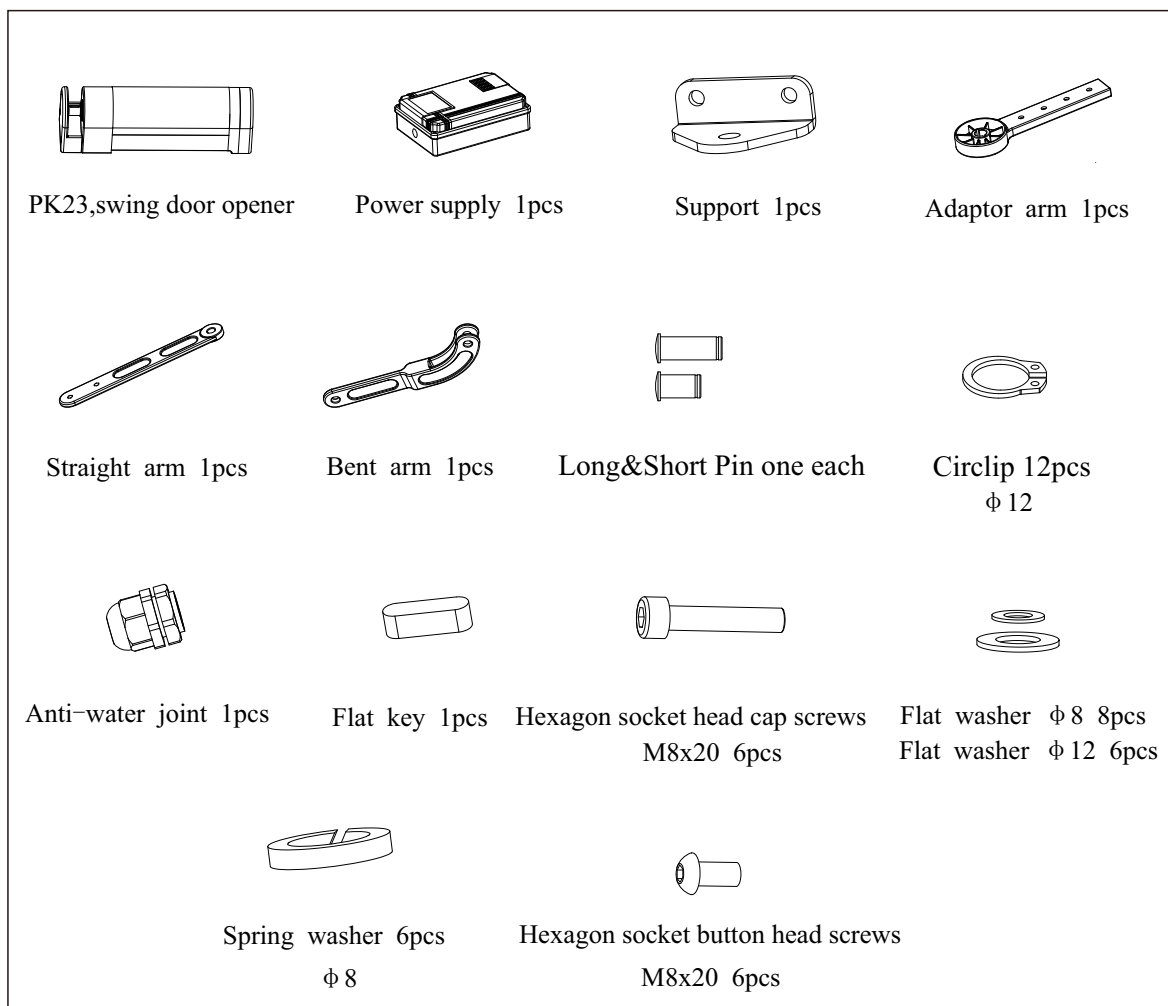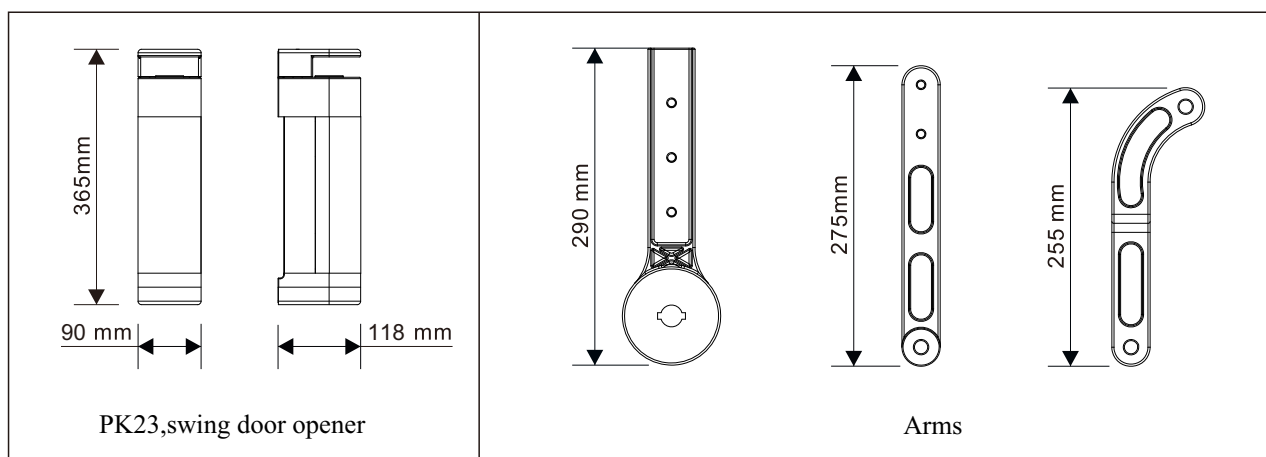# User Manual

Swing Door Motor

SDO-PK23

WARNING TO THE INSTALLER GENERAL SAFETY OBLIGATIONS

1) CAUTION! For personal safety it is important to follow all the instructions carefully. Incorrect installation or misuse of the product may cause serious injury to people .

2) This product must be installed, debugged and maintained by professional and qualified personnel.

3) The power supply voltage must match the design requirements of this product and comply with electrical safety regulations.

4) This product was designed and manufactured strictly for the use indicated in this document. Any other usage not expressly indicated in this Document, may damage the product and/or be a source of danger.

5) The company is not responsible for losses caused by improper use .

6) Before carrying out any work on the product, turn off the Power supply.

7) This product must be equipped with an independent 6 A circuit breaker.

8) Do not make any alterations to the components of the automatic mach- ine (Opener and Accessory).

9) Keep the instructions in a safe place for future reference.

1. Main Parts

PK23,swing door opener

Power supply 1pcs

Support 1pcs

Adaptor arm 1pcs

Straight arm 1pcs

Bent arm 1pcs

Long&Short Pin one each

Circlip 12pcs
Φ12

Anti-water joint 1pcs

Flat key 1pcs

Hexagon socket head cap screws
M8x20 6pcs

Flat washer Φ8 8pcs
Flat washer Φ12 6pcs

Spring washer 6pcs
Φ8

Hexagon socket button head screws
M8x20 6pcs

2.Dimensions

365mm

90 mm

118 mm

PK23,swing door opener

290 mm

275mm

255 mm

Arms

3.Technical Data

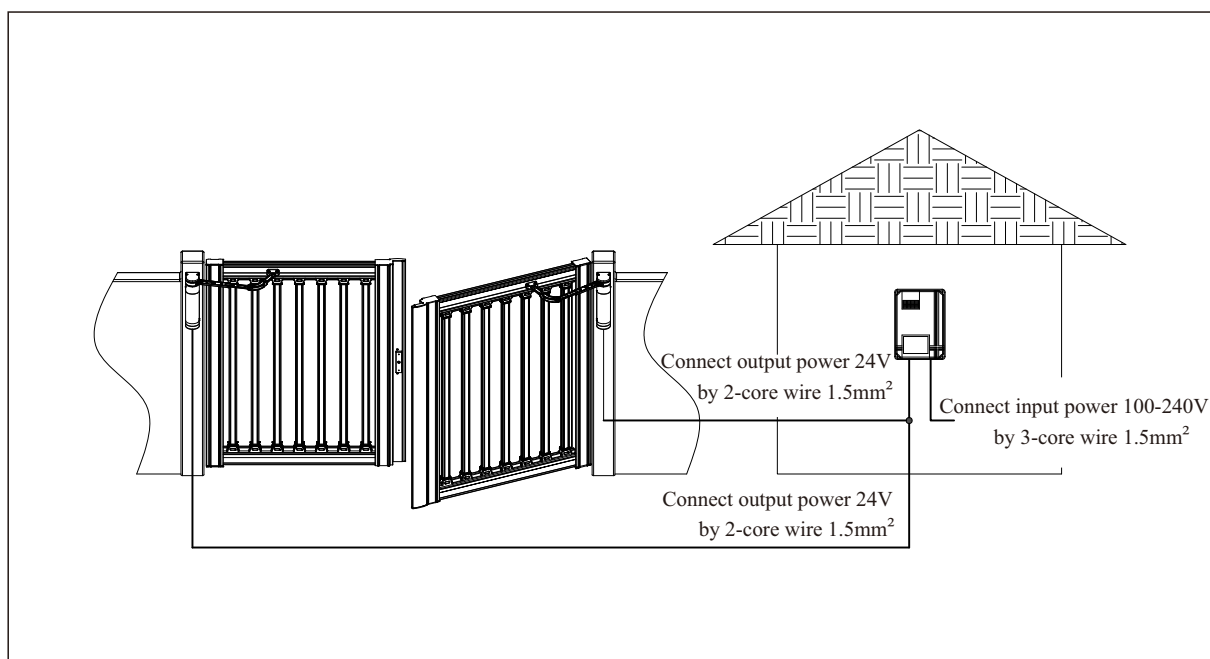|	
Power supply	100V~240V AC
Power of motor	24VDC/40W
Rpm of motor	3000rpm±10%
Open/close time	3-10S（adjustable）
Current of motor	2.8A±10%
Maximum door width	1500mm
Maximum door weight	150Kg
Working temperature	-20℃～50℃
Maximum opening angle	20°~90° adjustable

4.Features

* Pull or push to activate the door opener operation.

* Automatic learning open-limits and close-limits when power on.

* Soft stop before open and close limits.

* Automatically Return when encountering resistance.

* Protection and access control equipment can be connected, such as radar, infrared sensor, card reader, electromagnetic lock, electric bolt lock, etc.

* With Fire alarm linkage interface.

5.Installation
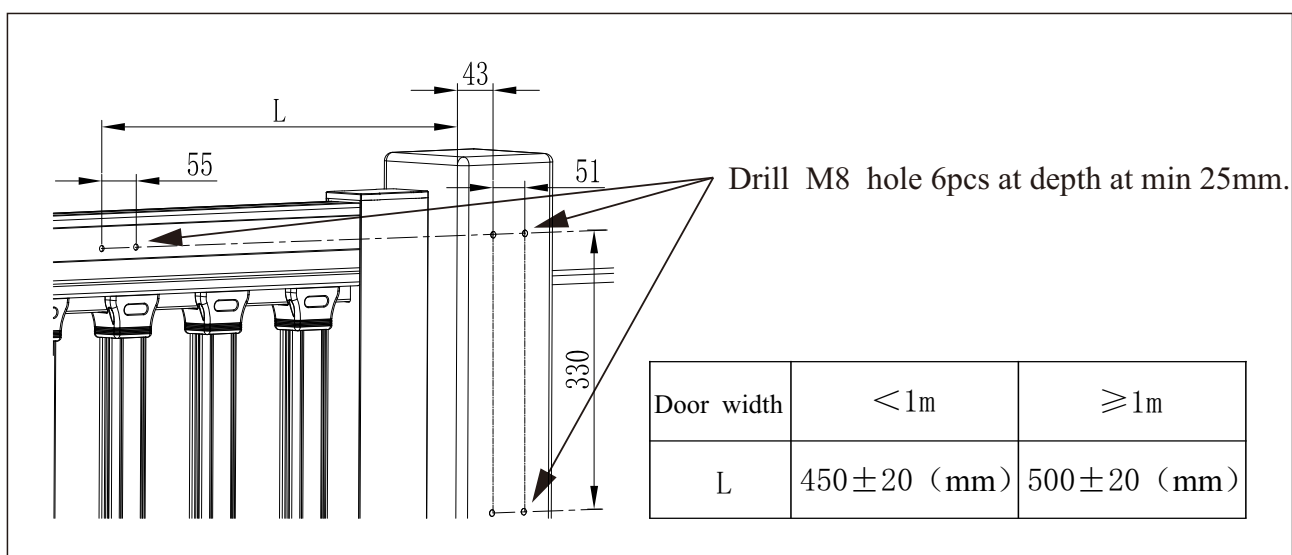
5.1 Installation diagram

Connect output power 24V
by 2-core wire 1.5mm²

Connect input power 100-240V
by 3-core wire 1.5mm²

Connect output power 24V
by 2-core wire 1.5mm²

Very Important Notice!

Both the door frame and the door must be firm and strong.

Ensure the fixed points that the door opener installed on the door frame and the door are firm and reliable, and will not loosen during operation!

5.2 Installation steps of PULLING OPENER

5.2.1 Installation location and measurement

43

L

55

51

Drill M8 hole 6pcs at depth at min 25mm.

330

Door width	＜1m	≥1m
L	450±20（mm）	500±20（mm）

5.2.2 Installation of OPENER

Top cover

Led cover

Fix braket by M8x20mm screws
+sping washer
+flat washer
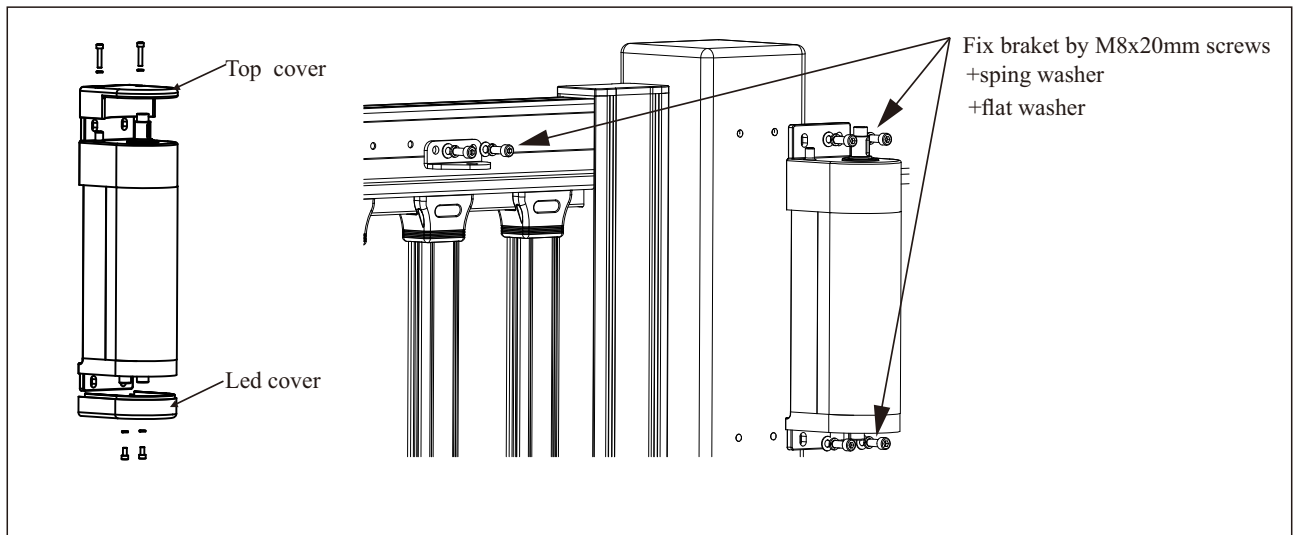
5.2.3 Installation of adaptor arm

Adaptor arm

6×20mm Flat pin 2pcs

Fix flat pin, then install adaptor arm as arrow direction.
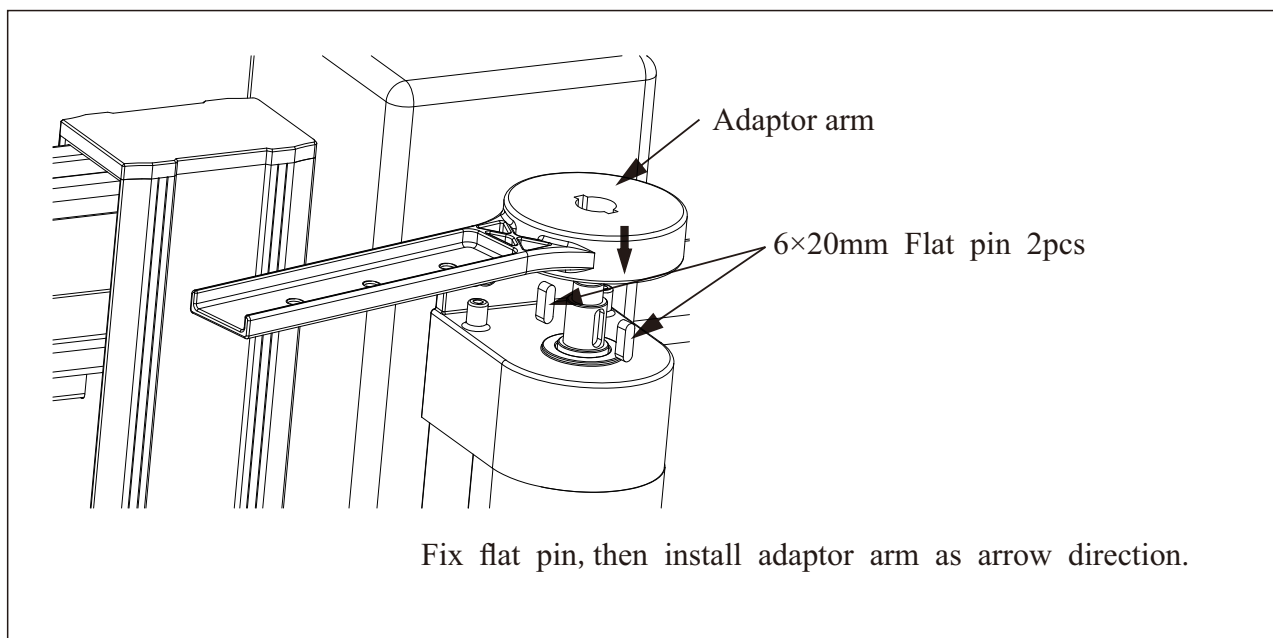
5.2.4 Installation of top cover

2-M5×25mm（Hexagon socket head cap screws）
（+Spring washer）

Top cover

Install top cover as arrow direction

5.2.5 Connet arms group

Bent arm　　　Long pin　　　　　Straight arm

Flash washer

Circlip

connect straight arm and bent arm as picture

5.2.6 Installation of arms group

Braket　　Short pin

Flash washer

Circlip　　　　　　　　　　　　　Arms

Install arms as picture
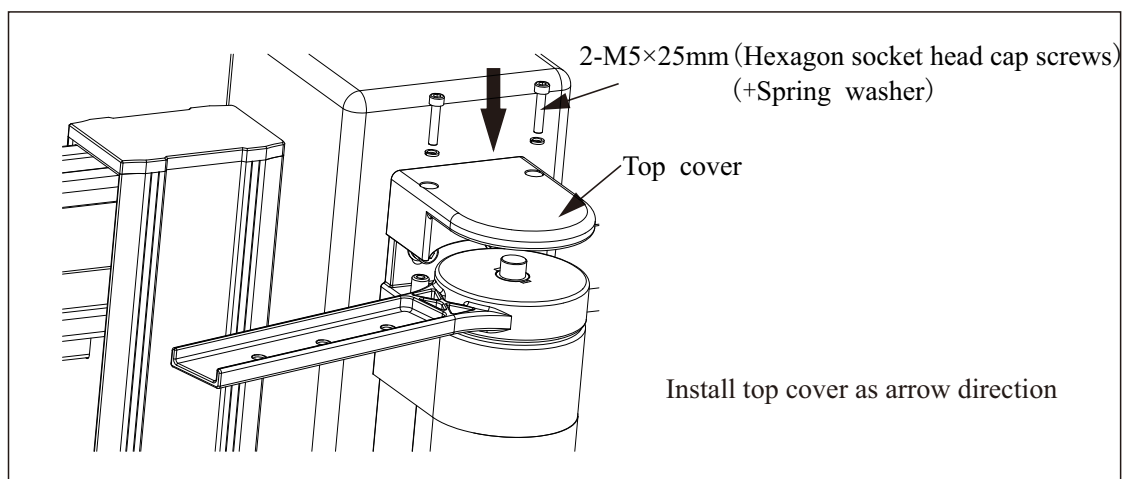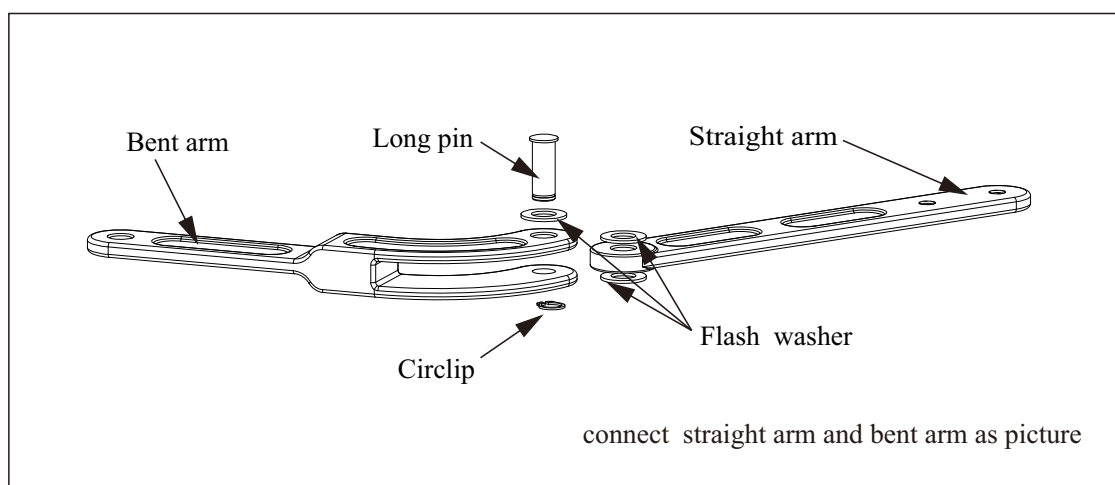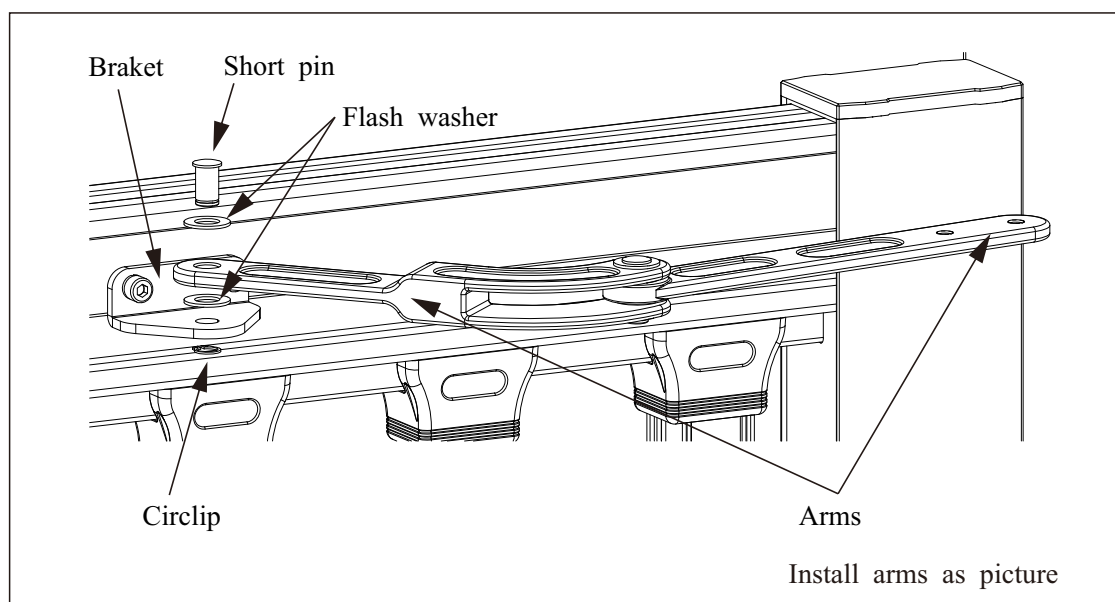
5.2.7 Installation of arms group to adaptor arm

There are 3 installation holes, fix 2 holes by 2pcs M8X20mm scews and flat washer as arrow position to connect arms group and adaptor arm.

Front install   Rear install

L	450±20 (mm)	500±20 (mm)
Installation	Front install	Rear install

5.2.8 Open the cover

Press one side of the cover to geit it out of the slot, turn it over and take it out
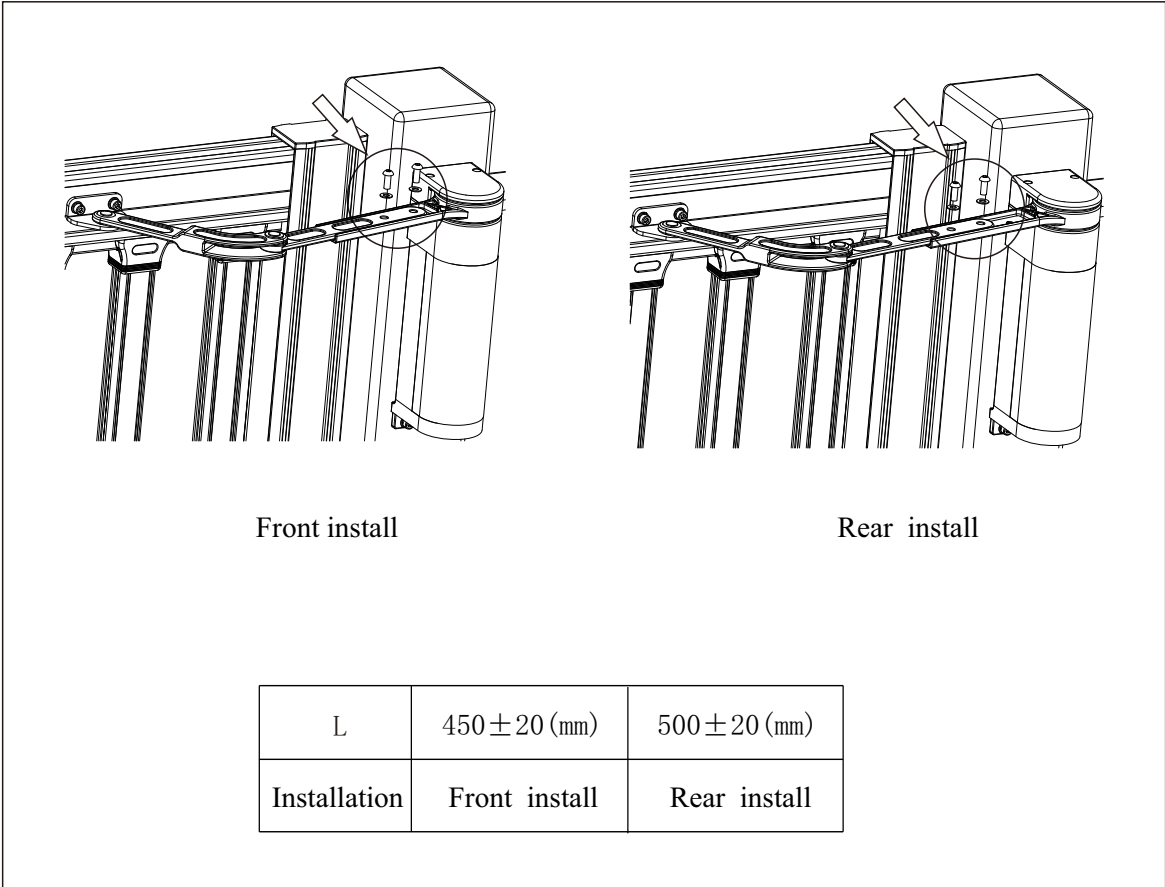
Remove motor cover
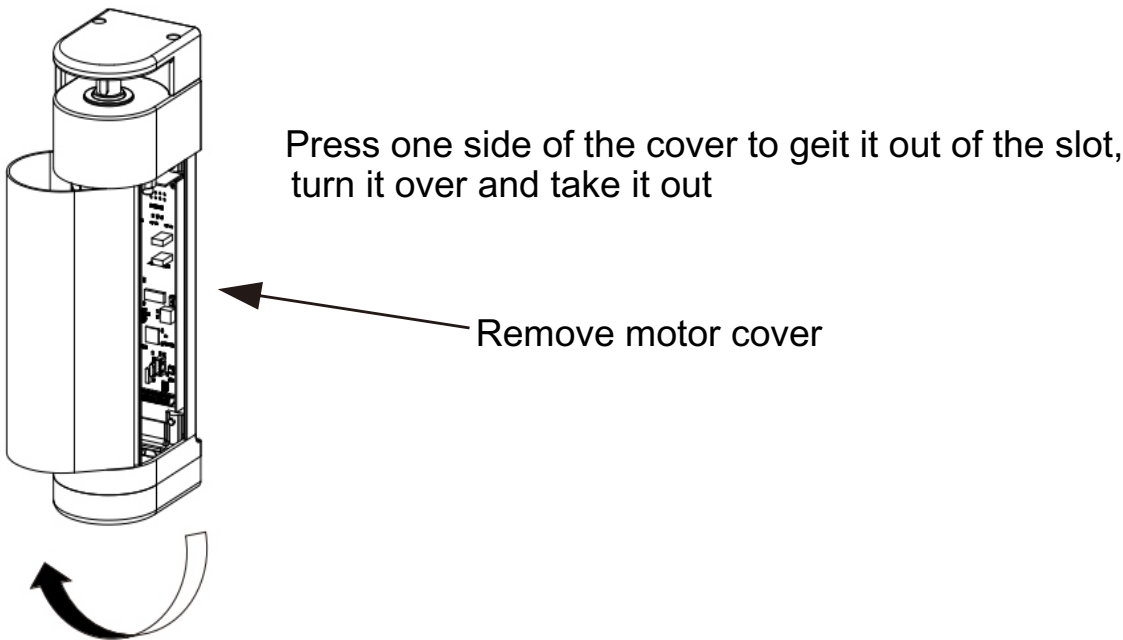
5.2.9 Install the LED cover and connect wires.

Connect power cable and led cable to
PCB board, please refer to page
Fix led cover by 2pcs M5X10mm screws.

Led cable

24V power cable

2-M5×10mm
（Screws and spring washers）
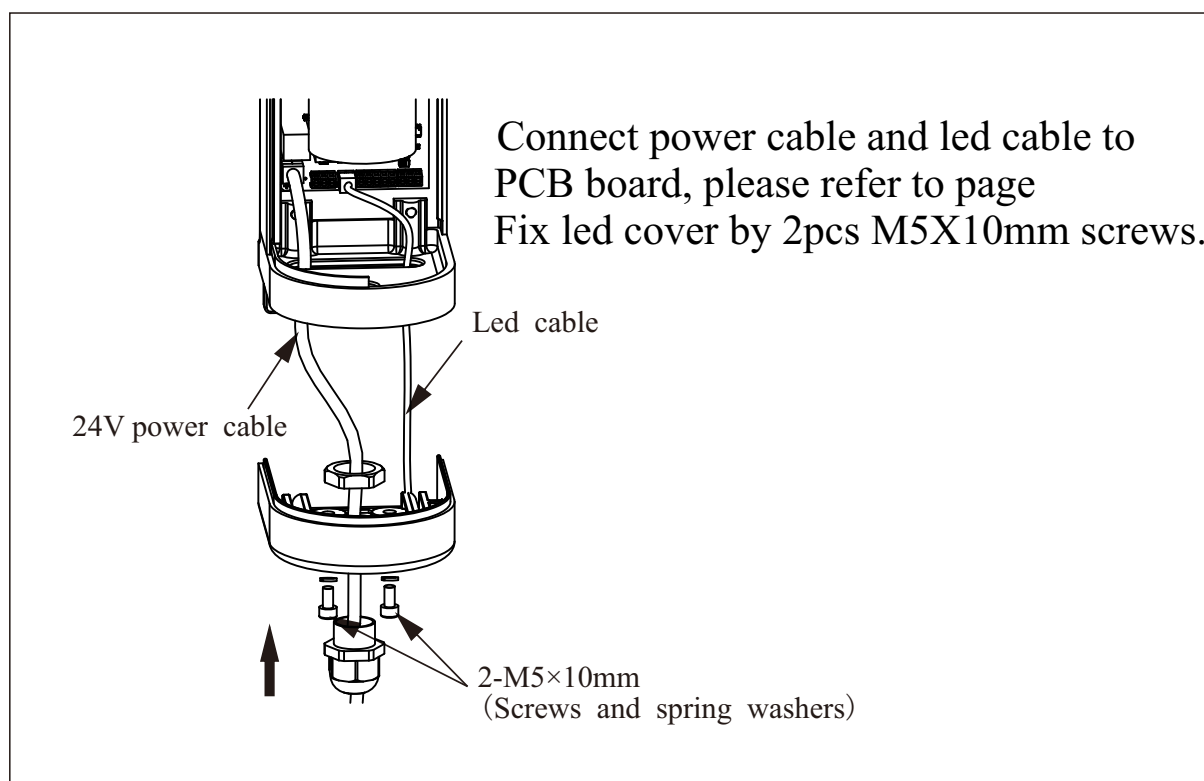
5.2.10 Assemble the cover.
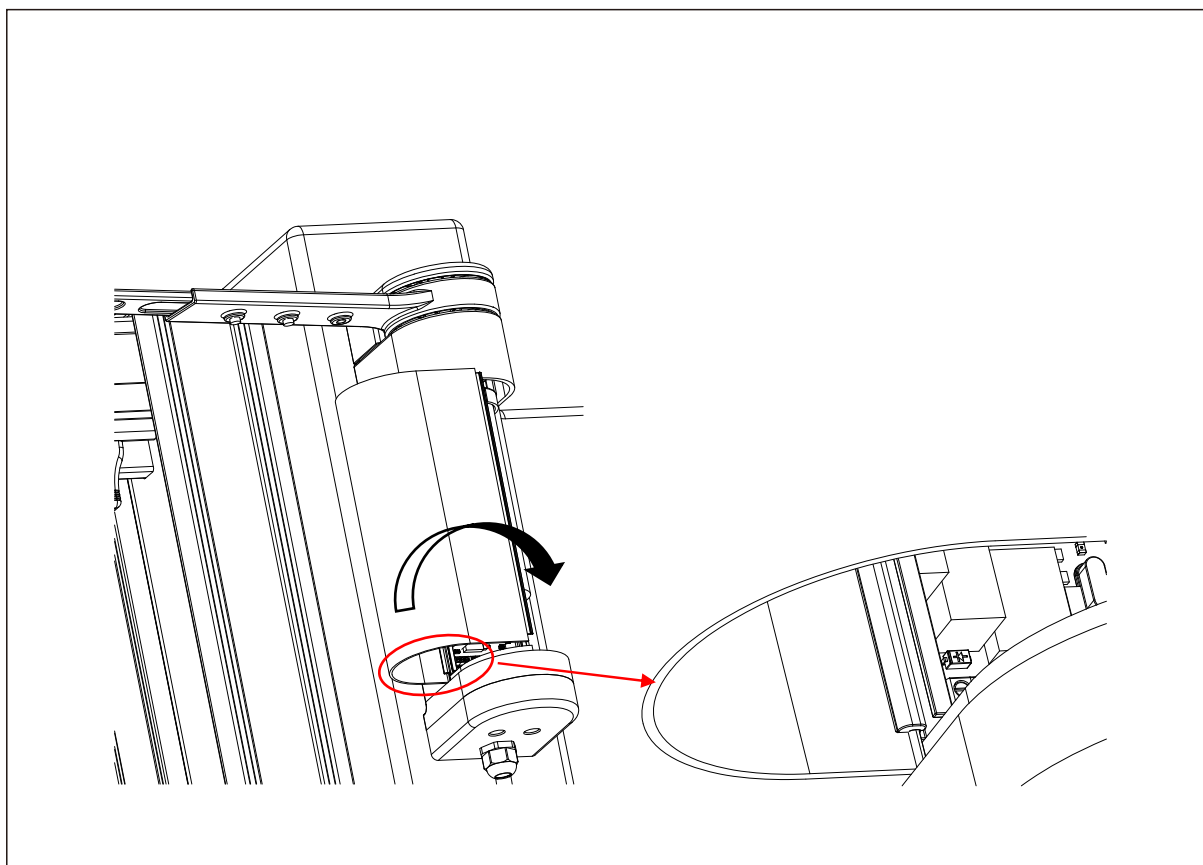
6.1 Sketch map
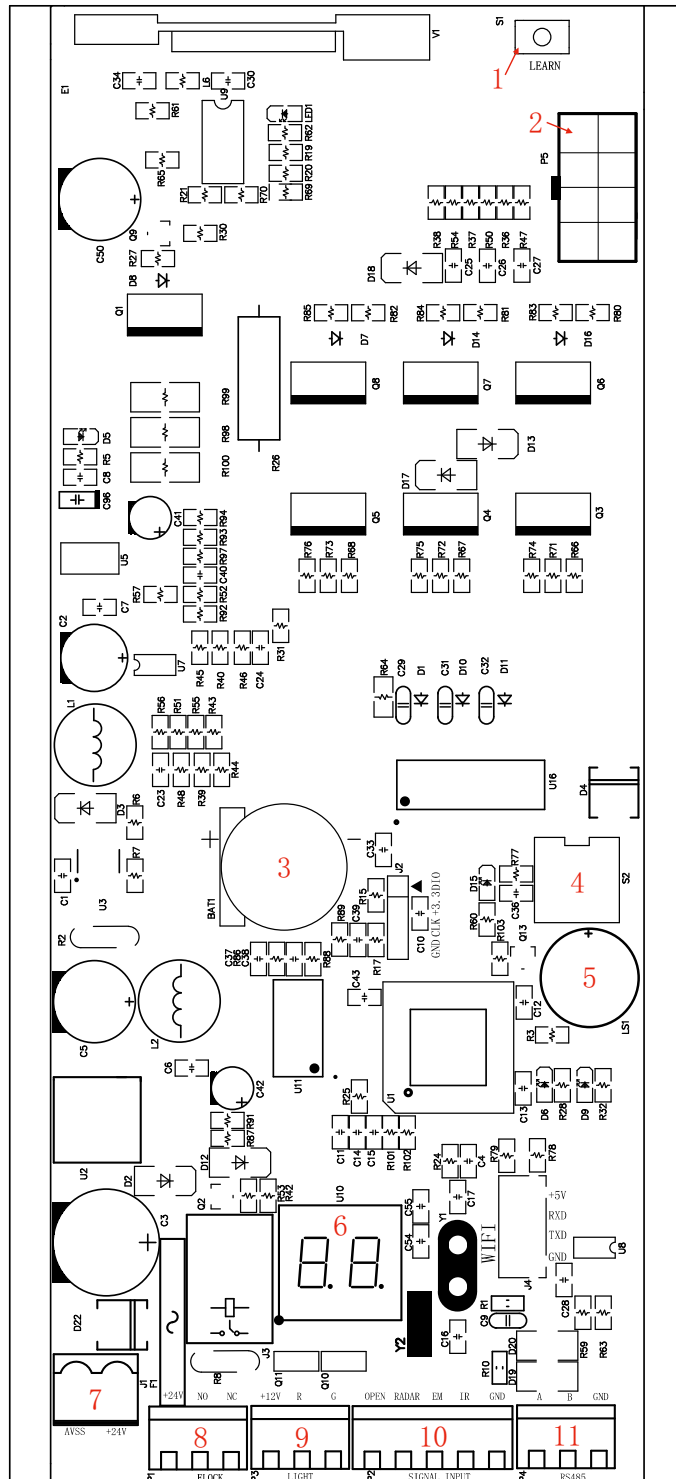
1.Learn button

2.Motor connector

3.Button cell

4.Dip switch

5.Buzzer

6.Digital display

7.24V input power connector

8.Electromagnetic lock connector

9.Led connector

10. External input signal connector

11. Rs485 connector

6.2 Wiring diagram
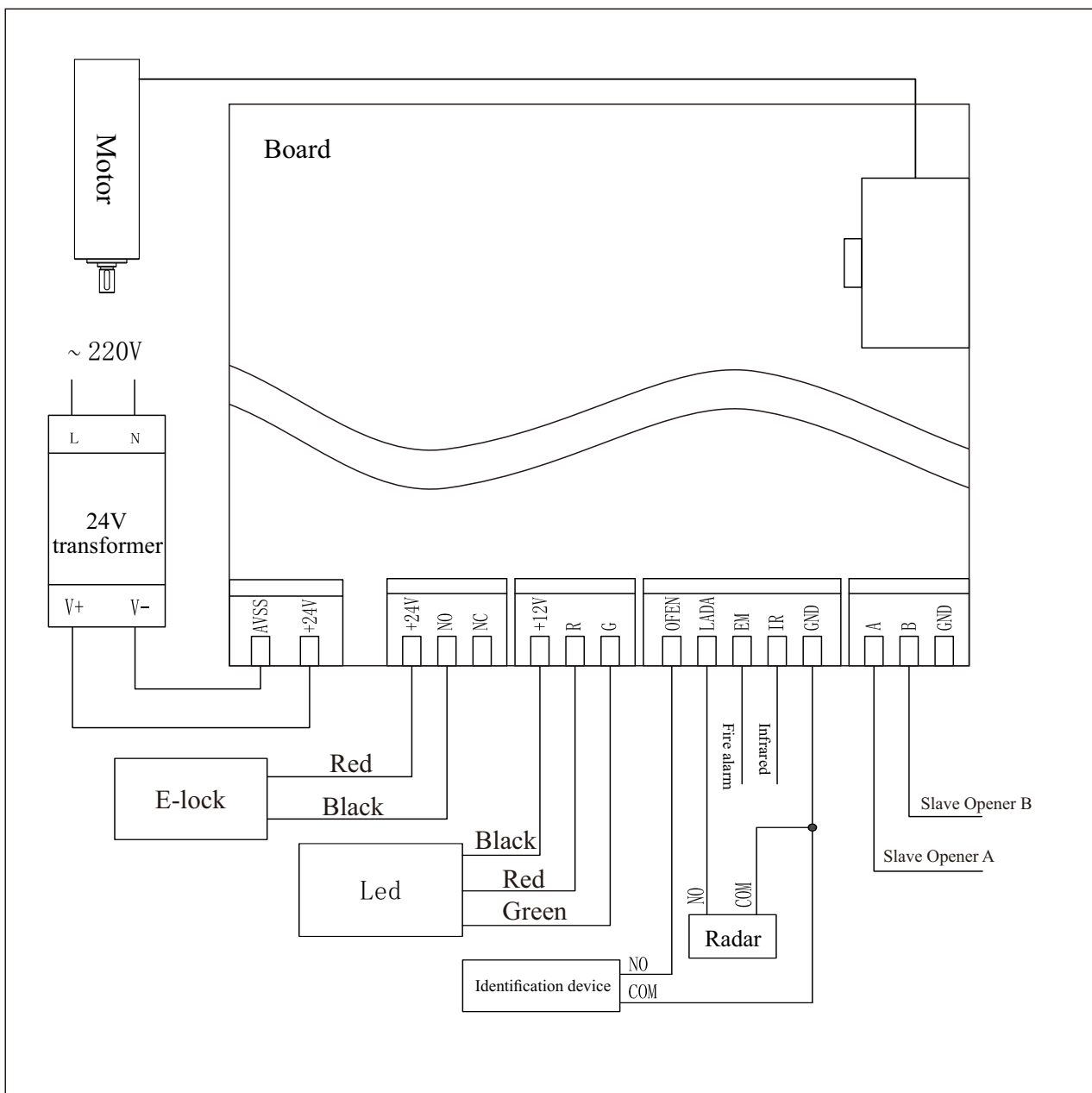
7.1 Definition of Dipswitches and Transmitter

ON 1 2 3 （single door）	ON 1 2 3 （dual door）
ON 1 2 3 （MASTER）	ON 1 2 3 （SLAVE）
ON 1 2 3 （close clockwise）	ON 1 2 3 （close counterclockwise）

OPEN

STOP

CLOSE

SET
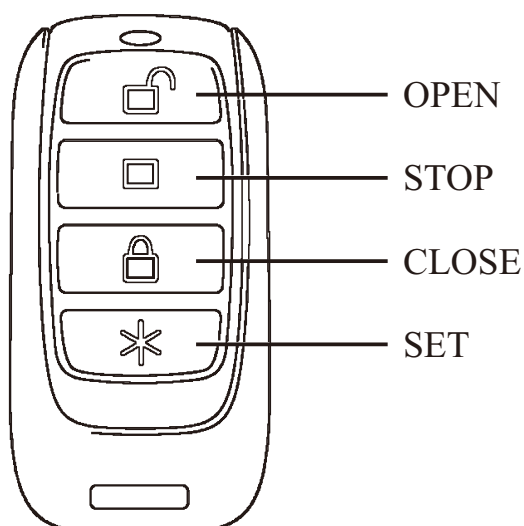
Important:There is only a "learn" button on the door opener control board.Before setting on the Transmitter, it must be coded.

For a dual-door,only the MASTER OPENER code Transmitter. All parameters be set on the Master.

* Functions of Buttons

OPEN: ①Open the door. ②To be set to normally open mode after being pressed and hold for 3 seconds . ③Increase parameter value during setting.

CLOSE: ①Close the door. ②Restore automatic close function after being pressed in normally open mode. ③ Decrease parameter value during setting.

STOP: ①Stop the running door. ②Exit from setting.

SET: ①Enter SETTING after being pressed and hold for 3 seconds.
②Switch menu when entering setting.
③Exit the setting by keep pressing.

7.2 Limits self-learning

The Opener can be used only after the Limits Self-learning (setting) is finished.

Close the doors completely before power on.When the display value of the digital tube changes from 40 to 10, it means that the limits setting is completed.

If the door open after power-on,dial the dip-switch 3 to the opposite , then power off and power on again.

7.3 Transmitter's coding and Erasing

7.3.1 Transmitter's code setting

Press "LEARN"button on the Control Board to the LED light on, then press the button which you choose on the transmitter till the LED flashes and goes out. Now, the transmitter is coded. Other transmitters can be coded as this way.

7.3.2 Erasing the transmitter's code

Press" LEARN"button on the Control Board and hold on to make the "LEARN LED" light on up to go out. Now, all transmitters which had been coded are cleared.

7.4 Parameters setting

7.4.1 Definitions

Menu code	range	Factory settngis	functions	description
P1	15-70	50	Open speed	The larger the value, the faster the speed
P2	15-70	40	Close speed	
P3	10-50	25	Open slow speed	
P4	10-50	20	Close slow speed	
P5	15-99	25	Open deceleration range	The larger the value, the larger the slow-moving range.
P6	15-99	25	Close deceleration range	
P7	5-99	05	Automatic closing time	The larger the value, the longer the door stays open.
P8	20-90	40	Maximum open angle	The larger the value, the larger the open angle.
P9	00-01	01	Mode of opening	00 push to open 01 with E-LOCK
H0	00-99	01	Start interval	Master opener and Slave Opener start interval
H1	10-99	40	Resistance sensitivity	The smaller the value, the higher the sensitivity.
H2	00-01	00	Vigorously close door mode	00 not enabled.01 enabled. This function is activated when there is a brush edge between two doors
H3	1-10	01	Duration of vigorously closing	Unit:second
H4	0-25	05	strength	The larger the value, the greater the force.
H5	00-01	01	Remote control mode	00 Three buttons respectively control open,stop and close 01 one button control open, stop and close
H6	00-01	00	Infrared protector mode	00 normal open 01 normal close
E1	00-01	00	Hall sensor failure	Error code
E2	00-01	00	Run timeout failure	
E3	00-01	00	Door opening is blocked	
E4	00-01	00	Door closing is blocked	
E5	00-01	00	Abnormal voltage	

* P9=00,PUSH TO OPEN. When the door be pushed at the angle ＞5°, it will open automatic.

* H2=00,the door will stop when it touches the door frame slightly. H2=01, when the door is close to the door frame the closing force is stronger.

* H5=01,only one button works step by step,open-stop-close-stop-open...

7.4.2 Setting

Press the SET button on the Transmitter and hold till displaying P1 to enter Setting process.Refer to the following steps and the 6.3.1 Definitionstable for parameter setting.

After setting the parameters, keep pressing the SET or STOP to save and exit.

```
            ┌─────────────┐              ◁══════════════════════════╗
            │   default   │                                         ║
            └─────────────┘                                         ║
                   │                                                ║
                   ▼  Press and hold SET for 3 seconds              ║
            ┌─────────────┐   OPEN   ┌─────────────┐                ║
            │     P1      │ ═══════▶ │ OPEN SPEED  │ ═══════▶        ║
            └─────────────┘   CLOSE  └─────────────┘                ║
                   │ SET          STOP                              ║
                   ▼        ═════════════════════▶                  ║
            ┌─────────────┐   OPEN   ┌─────────────┐                ║
            │     P2      │ ═══════▶ │ CLOSE SPEED │ ═══════▶        ║
            └─────────────┘   CLOSE  └─────────────┘                ║
                   │ SET          STOP                              ║
                   ▼        ═════════════════════▶                  ║
            ┌─────────────┐   OPEN   ┌───────────────┐         E    ║
            │     P3      │ ═══════▶ │Open slow speed│ ═══════▶ X    ║
            └─────────────┘   CLOSE  └───────────────┘         I    ║
                   │ SET          STOP                         T    ║
                   ▼        ═════════════════════▶                  ║
            ┌─────────────┐   OPEN   ┌────────────────┐             ║
            │     P4      │ ═══════▶ │Close slow speed│ ═══════▶     ║
            └─────────────┘   CLOSE  └────────────────┘             ║
                   │ SET          STOP                              ║
                   ▼        ═════════════════════▶                  ║
            ┌─────────────┐   OPEN   ┌──────────────────────┐       ║
            │     P5      │ ═══════▶ │Open deceleration range│═════▶ ║
            └─────────────┘   CLOSE  └──────────────────────┘       ║
                   │ SET          STOP                              ║
                   ▼        ═════════════════════▶                  ║
            ┌─────────────┐   OPEN   ┌───────────────────────┐      ║
            │     P6      │ ═══════▶ │Close deceleration range│════▶ ║
            └─────────────┘   CLOSE  └───────────────────────┘      ║
                   │ SET          STOP                              ║
                   ▼        ═════════════════════▶                  ║
            ┌─────────────┐   OPEN   ┌──────────────────────┐       ║
            │     P7      │ ═══════▶ │Automatic closing time │════▶  ║
            └─────────────┘   CLOSE  └──────────────────────┘       ║
                   │ SET          STOP                              ║
                   ▼        ═════════════════════▶                  ║
            ┌─────────────┐   OPEN   ┌──────────────────────┐       ║
            │     P8      │ ═══════▶ │ Maximum open angle   │ ═════▶ ║
            └─────────────┘   CLOSE  └──────────────────────┘       ╝
```

```
        │ SET              ─────── STOP ──────────▶           ▲
        ▼                                                     │
   ┌──────────┐    OPEN    ┌──────────────────┐              │
   │    P9    │   ═══════▶ │  Mode of opening │  ═══════▶     │
   └──────────┘    CLOSE   └──────────────────┘              │
        │ SET              ─────── STOP ──────────▶           │
        ▼                                                     │
   ┌──────────┐    OPEN    ┌──────────────────┐              │
   │    H0    │   ═══════▶ │  Start interval  │  ═══════▶     │
   └──────────┘    CLOSE   └──────────────────┘              │
        │ SET              ─────── STOP ──────────▶           │
        ▼                                                     │
   ┌──────────┐    OPEN    ┌──────────────────────┐          │
   │    H1    │   ═══════▶ │ Resistance sensitivity│ ═══════▶ │
   └──────────┘    CLOSE   └──────────────────────┘          │
        │ SET              ─────── STOP ──────────▶           │
        ▼                                                     │
   ┌──────────┐    OPEN    ┌──────────────────────────┐      │
   │    H2    │   ═══════▶ │ Vigorously close door mode│═══▶  │  EXIT
   └──────────┘    CLOSE   └──────────────────────────┘      │
        │ SET              ─────── STOP ──────────▶           │
        ▼                                                     │
   ┌──────────┐    OPEN    ┌───────────────────────────┐     │
   │    H3    │   ═══════▶ │ Duration of vigorously closing│══│
   └──────────┘    CLOSE   └───────────────────────────┘     │
        │ SET              ─────── STOP ──────────▶           │
        ▼                                                     │
   ┌──────────┐    OPEN    ┌──────────┐    SET               │
   │    H4    │   ═══════▶ │ strength │  ═══════▶             │
   └──────────┘    CLOSE   └──────────┘                      │
        │ SET              ─────── STOP ──────────▶           │
        ▼                                                     │
   ┌──────────┐    OPEN    ┌──────────────────────┐          │
   │    H5    │   ═══════▶ │ Remote control mode   │ ═══════▶ │
   └──────────┘    CLOSE   └──────────────────────┘          │
        │ SET              ─────── STOP ──────────▶           │
        ▼                                                     │
   ┌──────────┐    OPEN    ┌──────────────────────┐  SET      │
   │    H6    │   ═══════▶ │ Infrared protector mode│═══════▶ │
   └──────────┘    CLOSE   └──────────────────────┘          │
```

trouble	Trouble shooting
All LED indicators are off after power on.	• Check the terminal wiring. • Check the power-on switch. • Check the fuse. • Measure the transformer's input and output. • Check the power chip on the control board.
Door opening and closing are inconsistent with control mode.	• Check the dip-switch 3.
Transmitter doesn't work.	• Change the battery. • Re-code. • Code another new transmitter. • After confirming the transmitter is normal,check whether the receiver on the control board works well.If not,change a new receiver.
Motor doesn't work	• Check and rewire the terminals. • Change a new motor and test whether the control board works well. • Change a new control board and test whether the motor works well.
The Master and the Slave openers can not communicate	• Check the communication wiring. • Check the dip-switch 1 and 2 setting correct. • Change control boards.
Unable to set parameters	• Check if the transmitter is coded. • Check if the coded transmitter works normally. • Check the dip-switch2.
Unable to set Limits by self-learning	• Check the communication wiring. • Check whether the Master and the Slave openers set normally. • Change control boards.