# ST190

# Installation Manual

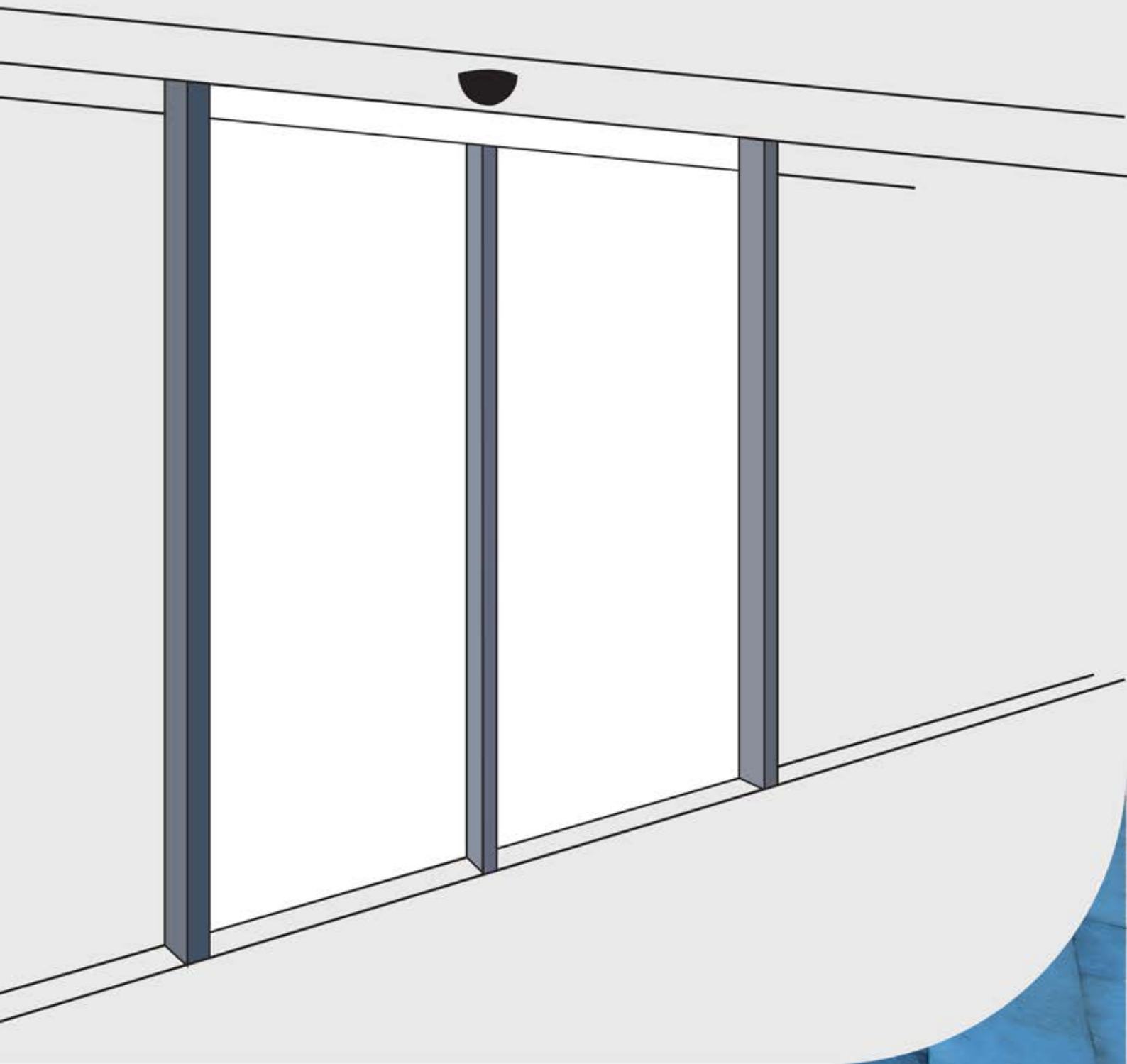
guider

# Installation Manual

ST90

STRONG

Heavy Duty



- Installation of automatic door should be entrusted to the appointed distributer or professional installation personnel, or it may be dangerous.
- Installation must be performed by professional installation personnel according to local law.
- This manual must be kept well for maintenance.

# Contents

# Safety Precautions

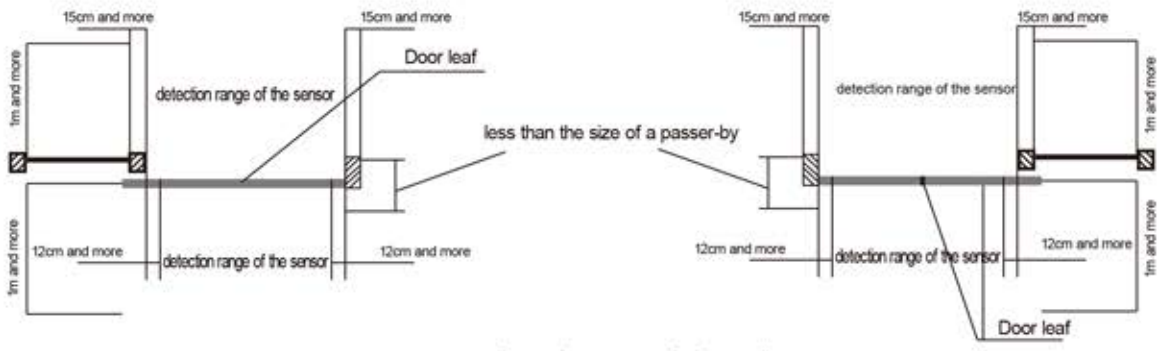
The contents and categories a user must abide by are presented and described by the following graphic expressions.

| | |
|---|---|
| ⚠ Warning | Misoperation may cause injury even death to the operator. |
| ⚠ Caution | Misoperation may cause injury or physical loss to the operator. |

| | |
|---|---|
| ⊘ This stands for the contents prohibited. | ❗ This stands for compulsory contents. |

## ⚠ Warning

- ❗ Installation and adjustment must be carried out according to the Installation Manual. Carelessness in installation and adjustment will lead to such accidents as fire, electric shocks or fall off.
- ❗ During the installation never allow the pedestrians to pass through the automatic door or approach the work site. Because any tools or parts falling off during the installation will cause injury to the pedestrians.
- ⊘ Never remodel the parts, otherwise fire, electric shocks or fall will occur.
- ⊘ Never use the power beyond the stipulated voltage or frequency, otherwise fire or electric shocks will occur.
- ❗ The sensor should be set and adjusted to make sure that the opening area of the door will fully fall into the range of sensor detection without any blind area. If the detecting range is too small or having blind area, the pedestrians will be collided or squeezed by the door, causing injury.
- ❗ Do fix up photocell to ensure the detecting range for the walking area of the door leaf, otherwise the pedestrians will be collided or squeezed by the door leaf, causing injury.




Detection range of photocell

# Safety Precautions

## ⚠ Caution

- Never use the door in a place subject to dampness, vibration or corrosive gas,otherwise it will cause such accidents as fire, electric shocks or fall.
- Make sure that a space of over 30mm should be available when the door is opened, otherwise your fingers may be squeezed by the door leaf and upright column,causing injury.
- Never cut off power when the door is in operation, otherwise it will cause injury of the pedestrians.
- Please use sticker on door leaves. If not,it will cause injury to the passer-by who has lost sight of the door leaf.
- Never install an electric device with a capacity of >DC24V 300mA to the controller, otherwise it will cause fire.

## Other precautions

- Never use a door leaf that exceeds the specified weight, otherwise it will cause failure.
- For selection of batteries

  - Please use them after charging for 24 hours.

  - The service life of batteries lasts for 3-5 years at an ambient temperature of 0℃-40 ℃. Excessive temperature will shorten the service life of batteries.

  - If after charging 24 hours the battery still doesn't work, it shows the service life has expired. Replace it immediately.

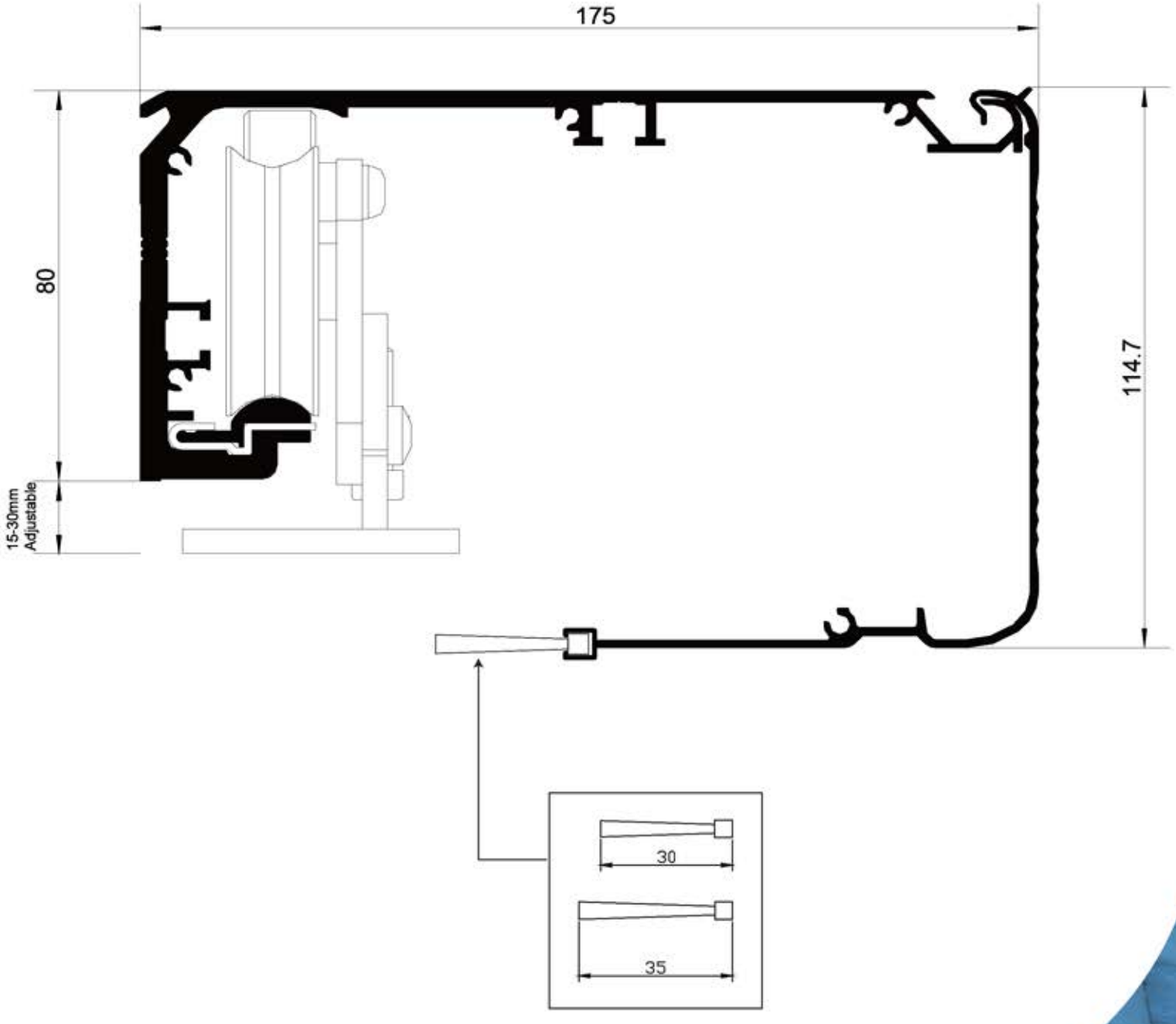
  -Check batteries each half year.

- For selection of electronic lock
  Never use it in an environment excess an ambient temperature of 0℃-40℃ , otherwise it will cause malfunction.

- Using our brand electronic lock, and special installing brackets. If not using our lock, please make sure the quality of lock, or the bad electronic lock will damage.

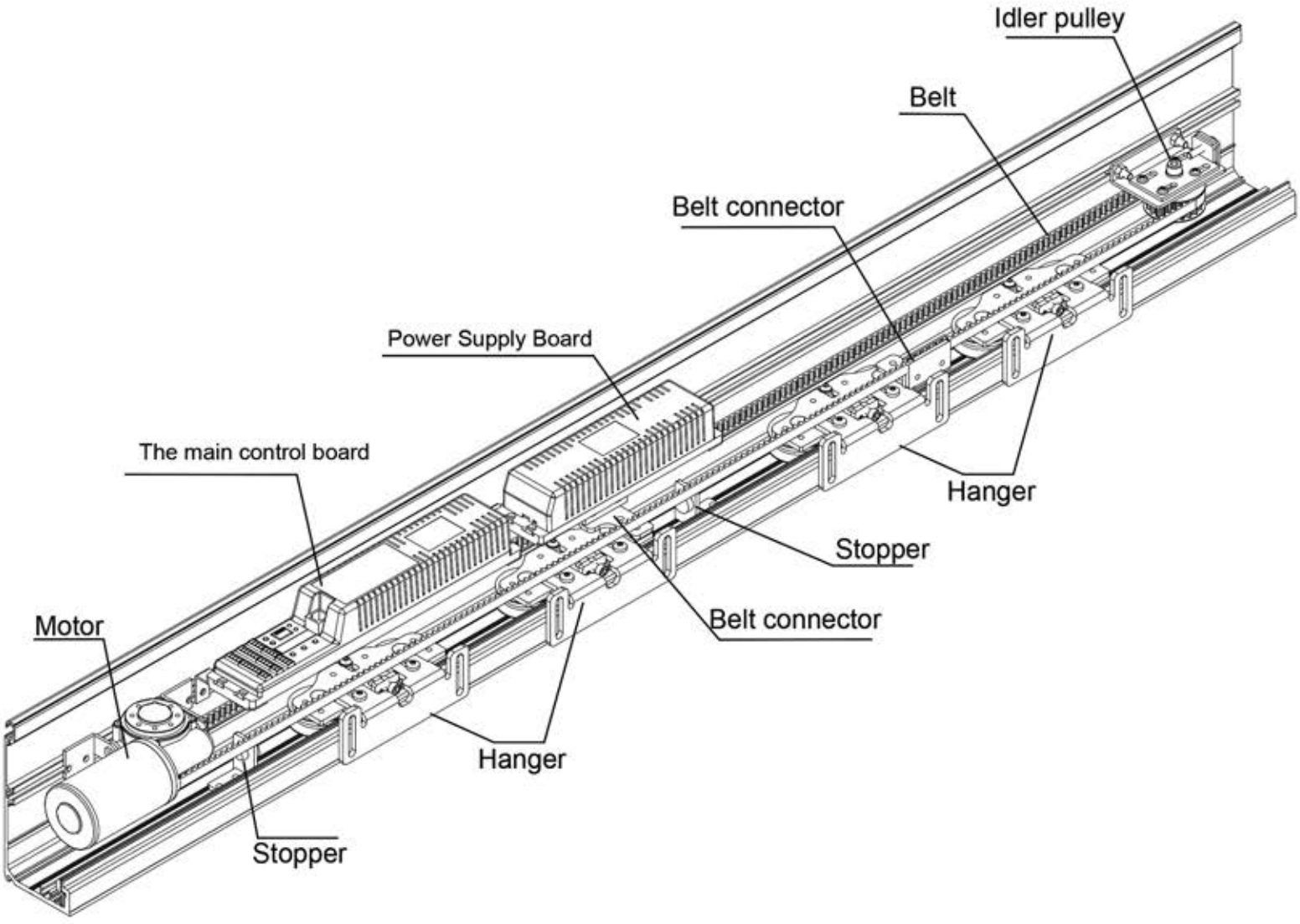
# Sectional view of track and cover

- Sectional view
  Caution: This view is not in a scale of 1:1.



# Components of mechanism

- Name of components



# Installation process

Preparation

↓

Foundation work

↓

Main frame installation

↓

Power supply wiring

↓

## Automatic door installation

Front (frame) assembly and installation

↓

Installation of components of mechanism

↓

Hanging the door leaves

↓

Connection of electric wire

↓

Inspection after installation

↓

Adjustment of operation

↓

Inspection after adjustment of operation

↓

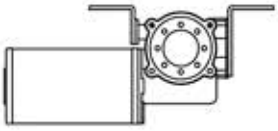
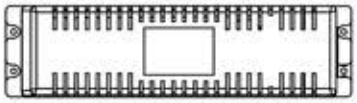
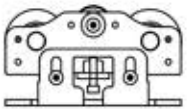
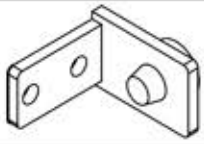
Description of operation to user

# Components List

- The design of three wheels and double track make the door move stable.
- The anti-clamp function is workable when open and close, and the force can be adjusted.
- Rubber is used in track. And it reduce the noise.
- Function terminals for electronic lock, access keypad, function keypad, function remote and so on.
- Receiver can be installed in controller, and one receiver can match 15 pieces remotes.
- There are terminals for extral photoecll and interal photocell.
- Controller with built-in remote control receiver module and photocell module.

| Specifications | ST90 | |
|---|---|---|
| Door leaf mode | Single-opening | Double-opening |
| Door leaf weight | Max 150kg | Max 2*140kg |
| Door leaf width | DW=700-1500mm | DW=600-1250mm |
| Voltage | AC 90-250v 50-60Hz | |
| Opening speed | 15-50cm/s (Adjustable) | |
| Closing speed | 15-50cm/s (Adjustable) | |
| Opening hold time | 0-60second (Adjustable) | |
| Manual open force | <40N | <50N |
| Motor | 24V 55W 2300rpm brushless DC motor | |
| Operating temperature | -10℃ ~ +70℃ | |

# Components List

| Description | Schematic diagram | Quantity | |
|---|---|---|---|
| | | Single-leaf | Double-leaves |
| Motor |  | 1 | 1 |
| The main control board |  | 1 | 1 |
| Power Supply Board |  | 1 | 1 |
| Idler pulley |  | 1 | 1 |
| Hanger |  | 2 | 4 |
| Belt connector |  | 1 | 2 |
| Stopper |  | 2 | 2 |
| Toothed Belt |  | 1 | 1 |
| Fastenings | | 1 | 1 |
| Installation Manual | | 1 | 1 |

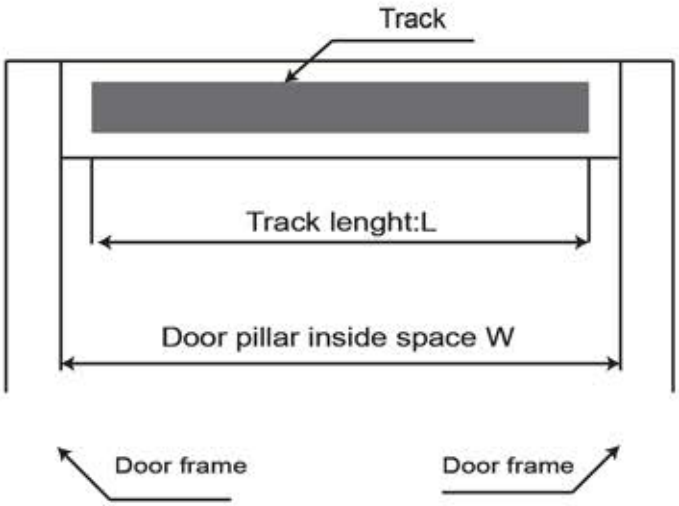
# Track's cutting and installation

## ● Cutting

Standard lenght of track:4200mm.

Over-lenght track can be customized.

L=W-10mm



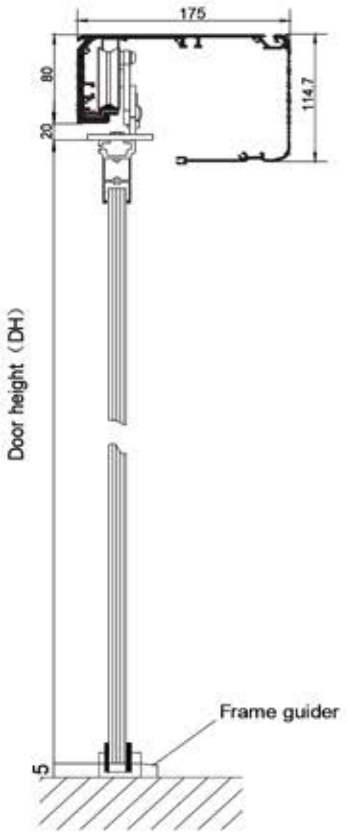

## ● Installation

(1)Drill holes in aluminum track.

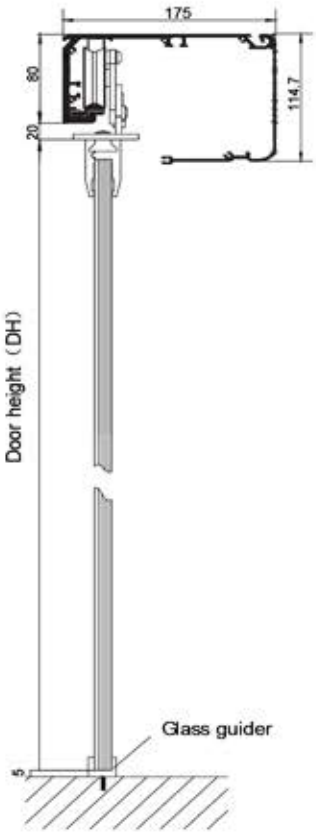
(2)Fix one end of aluminum track,
check the level by gradienter,
then fix another end of track.

(3)Fix the aluminum track to steel
stucture firml.

1.Frame door




2.Frameless door




## ● Caution

(1)The track must be level.

(2)The height of movable door leaf is DH

# Track's cutting and installation

## ● Cutting

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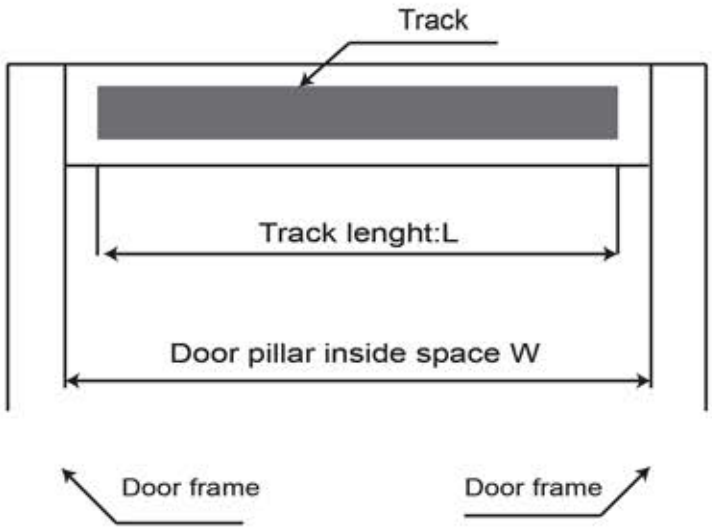


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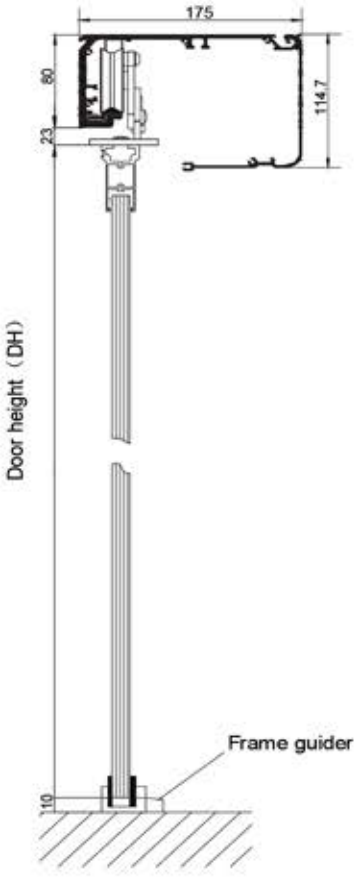
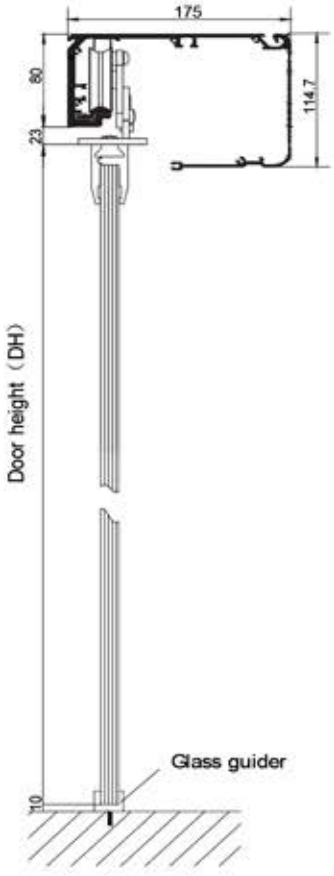



2.Frameless door

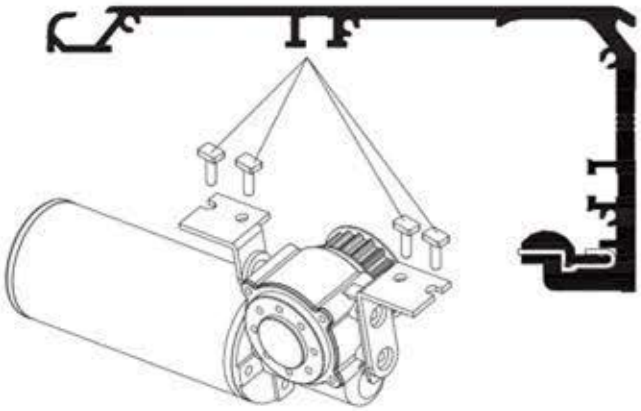



## ● Caution

(1)The track must be level.

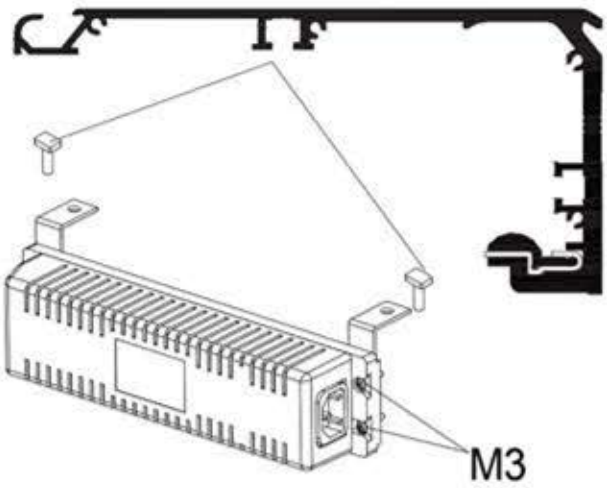
(2)The height of movable door leaf is DH

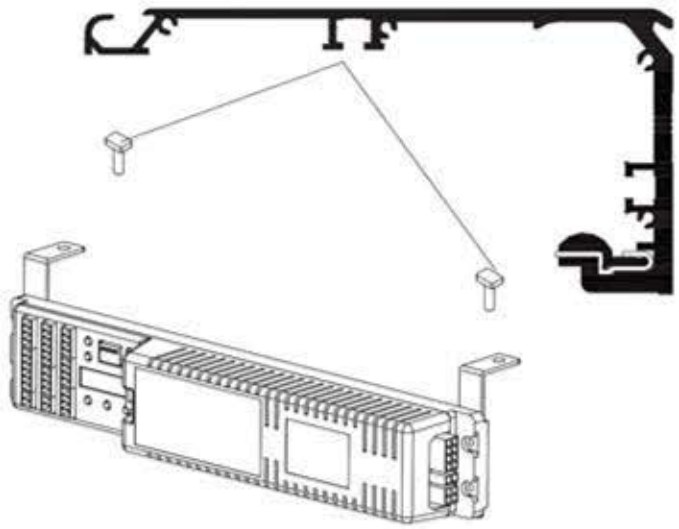
## Installation of motor



1.Put the square-head bolt into groove
2.Fix the motor as the left fig showing.

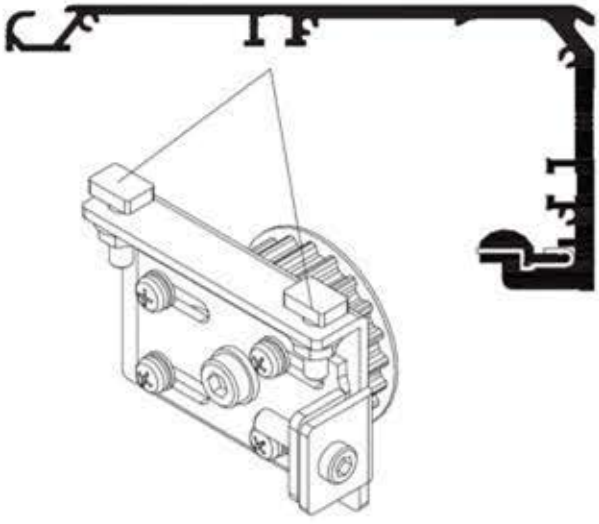
## Installation of controller



1.Put square-head bolts into groove.
2.Fix it as the left fig showing.
3.The sqecific installation position please refer to page3.

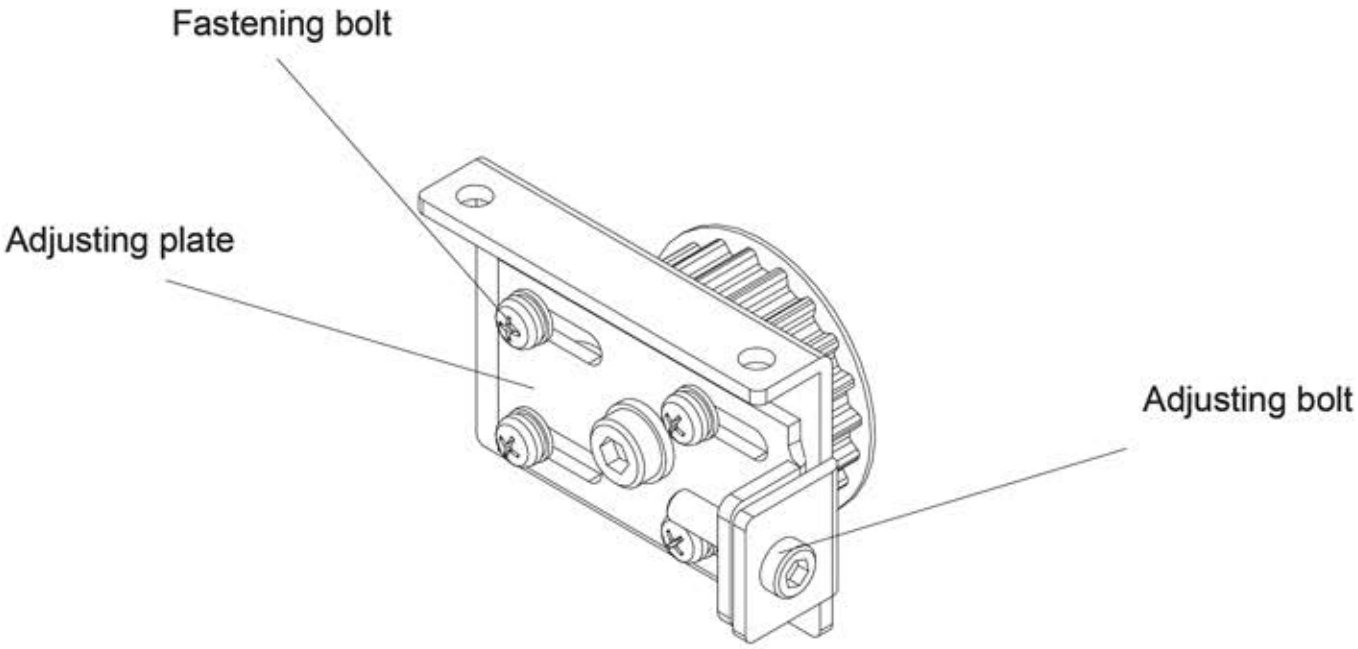
## Installation of idler pulley



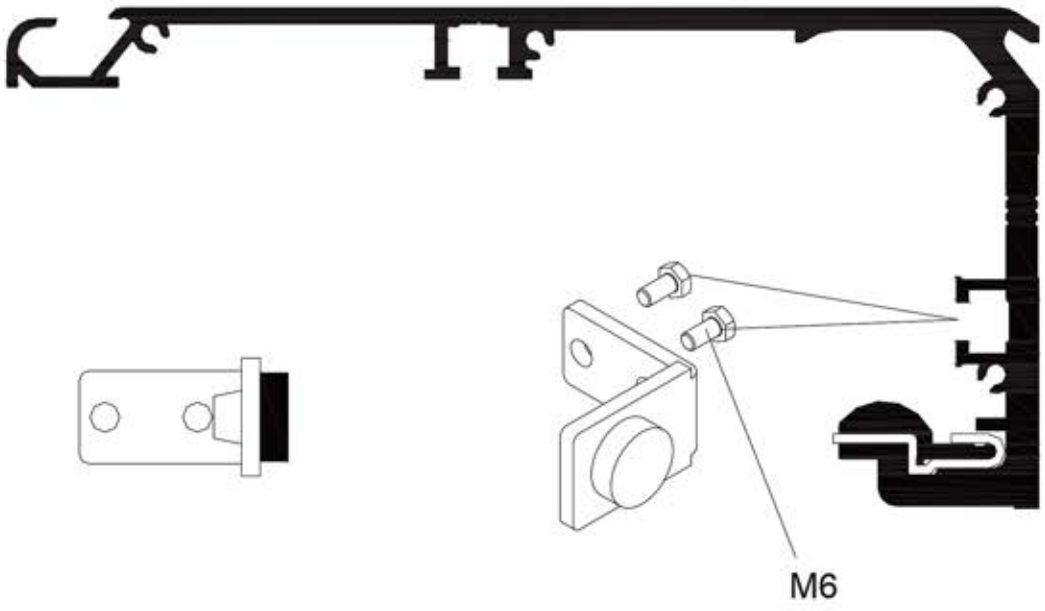
1.Put square-head bolte into groove.
2.Fix it as the left fig showing.

# Adjustment of idler pulley

1.lose 4 pieces fastening bolt,and screw the adjusting bolt to move adjusting plate at the left position.
2.Put the belt on pulley and screw adjusting bolt to fasten the belt.
3.Fix the 4 pieces faslening bolt.

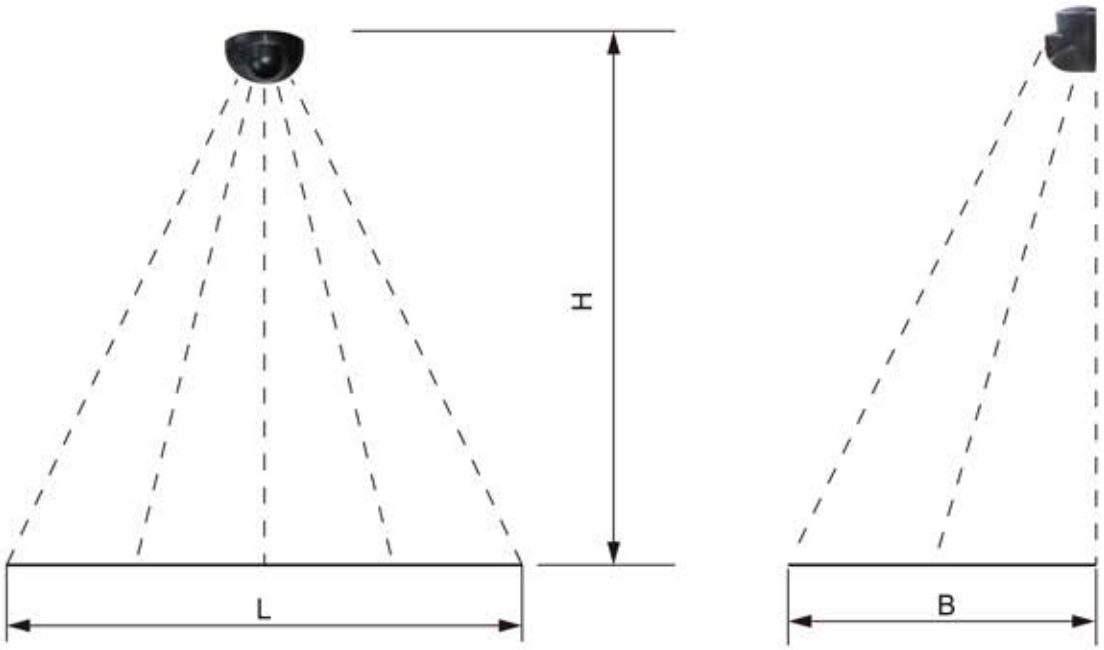



# Installation of stopper



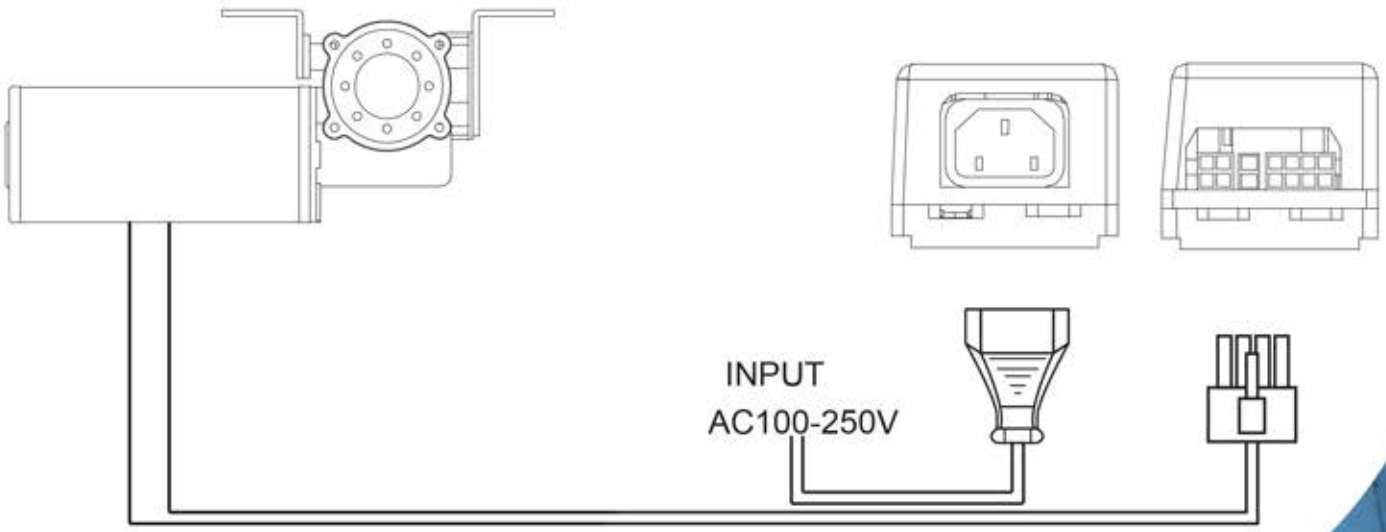
# Installation of sensor

The sensor should be installed at the center of the door leaf.
The max installing height of sensor is 3m.




Caution: Please use our brand sensor. If not, please choose good quality sensor.

# Connection of motor,controller and power switch



# Terminal details of controller


1. Sensor inside
2. Com
3. Gnd
4. +24v
5. +12v
6. +24v
7. Gnd
8. Com
9. Presence sensor
10. Sensor inside
11. Interlock
12. Com
13. Sensor outside
14. Com
15. Gnd
16. +24v
17. +24v
18. Gnd
19. Open
20. Half open
21. Exit only
22. Lock
23. Lock+
24. Lock-
25. Photocell
26. Com
27. Gnd
28. +24v
29. Emitter 1 +
30. Emitter 1-
31. Receiver1+
32. Receiver1-
33. Emitter 2+
34. Emitter 2-
35. Receiver2+
36. Receiver2-

DIP switch

(ON)
1:Two groups
2:Detect distance near
3:Normal
4:Auto lock each time when closed
5:Right switch

(OFF)
1:One group
2:Detect distance far
3:Toggle
4:Closed by remote or swich
5:Left switch

A. Learning button
B. TEST
C. Remote control Led
D. Photocell Led
E. Data adjuster
F. Motor
G. UPS
H. Power

# Learning cycle setting

At first time using, power on, the door will do self-learning. After first learn cycle, the controller will record the working cycle.

If you want to do self-learning cycle again, please do following steps.

1. When power is off, press the TEST key.

2. Then power on, press the TEST key always 3 second. then the led will show the number '12121'.

3. The door start learning cycle.

# Function remote

## ● Installation of receiver

Install the reciver as following picture.

FC04-A:

FC04-B:

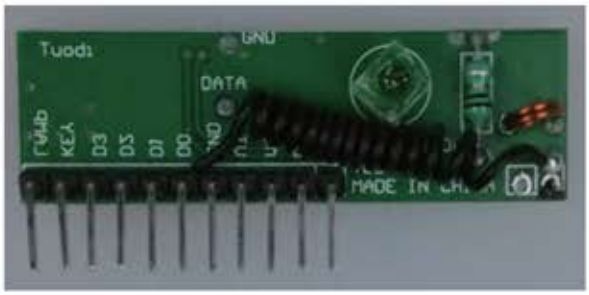
FC05:

| | | | | |
|---|---|---|---|---|
| FC04-A: | A: Automatic | B: Full lock | C: Always open | D: Exit Only |
| FC04-B: | A: Always open | B: Automatic | C: Exit Only | D: Full lock |
| FC05: | 1:Automatic<br>5:Half Open | 2:Lock<br>6:Open one time | 3:Full Open | 4:Exit Only |

## ● Selection of receiver

attention : remote should suit for receiver

please select correctly

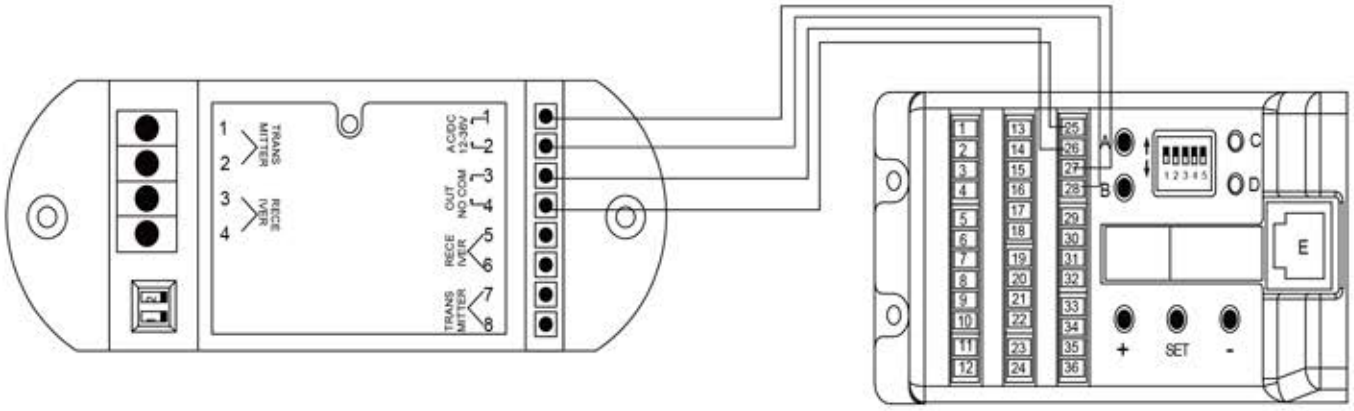



FC05

Add remote control:press learning button , till to indicator C turn to green, then press any button of remote control , the indicator C flash , the remote control is Successfully added if the indicator is not turn to red ,the receiver will exit the learn mode after 3 seconds . keep pressing learning button 6 seconds

Delet Remote control : press the learning button , when the indicator C flash 6 times with buzzing , the all learned remote control is been delete (attention : make sure you keep pressing the learn button when you delet the remote control) .

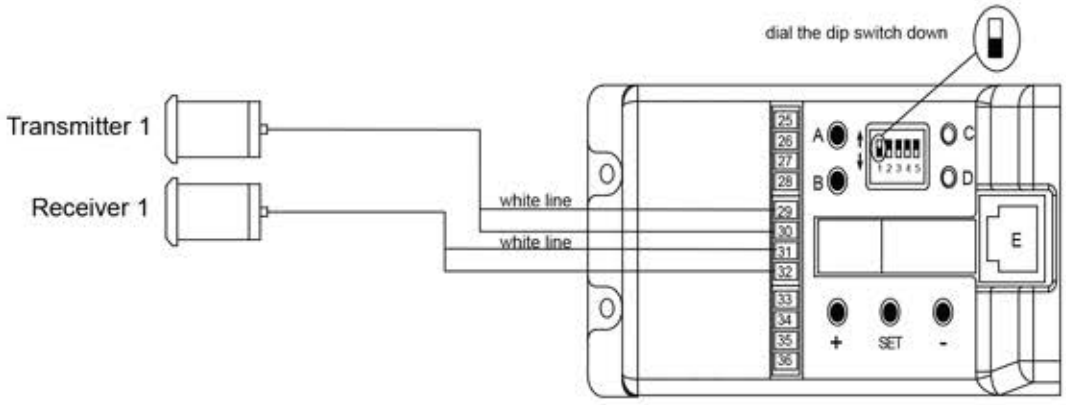
# Connection of extral photocell



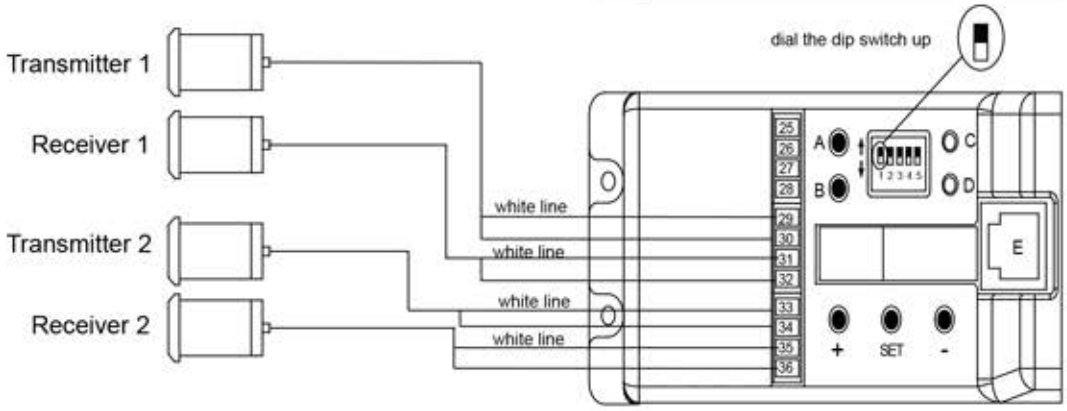

Attention: the 17th function value of controller should be adjust to 01

# Connection of built-in photocell

One group




Two groups

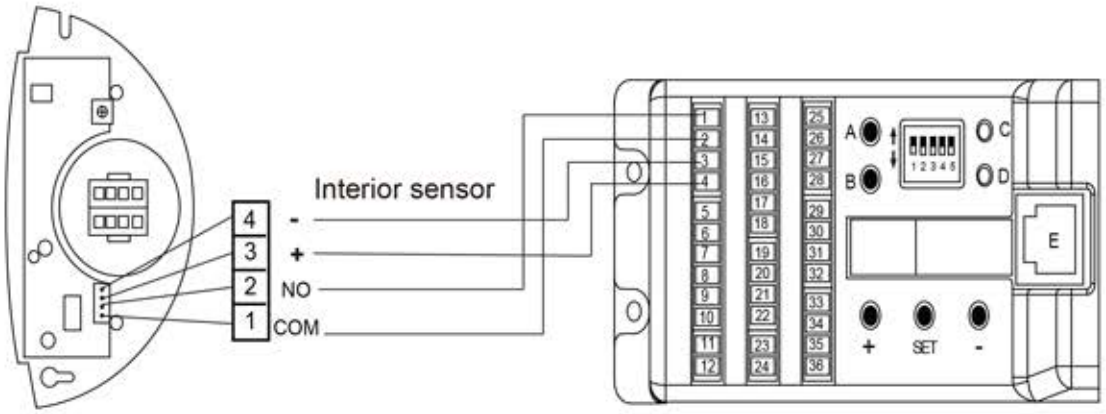


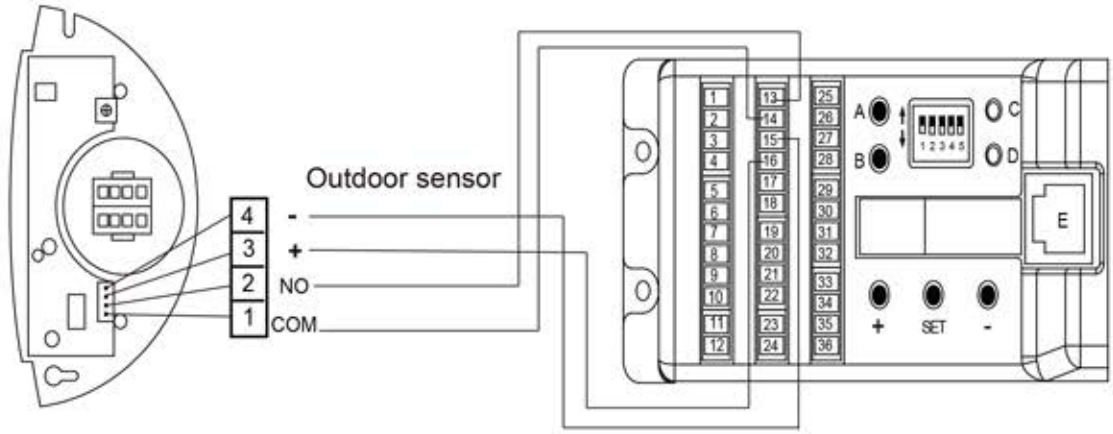

Blue wire is emission contact, black wire is receive contact.

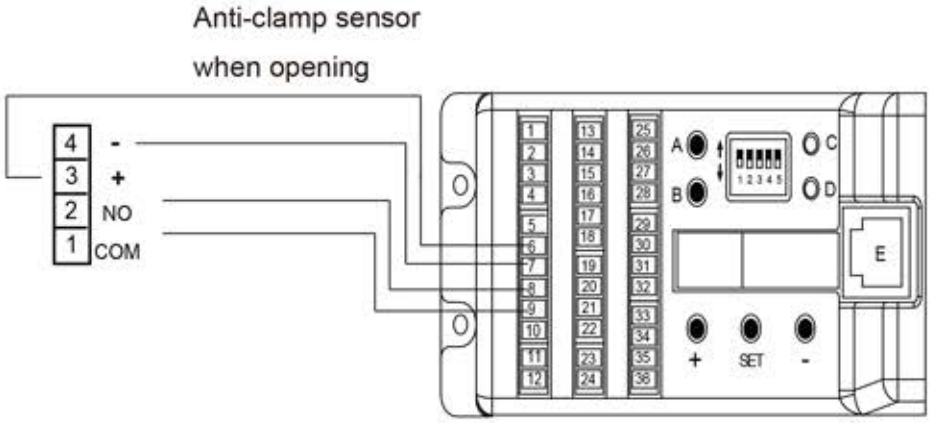
Attention: the 16th function value of controller should be adjust to 01

# Connection of sensor

Caution : All the connection should be conducted under the power off status.



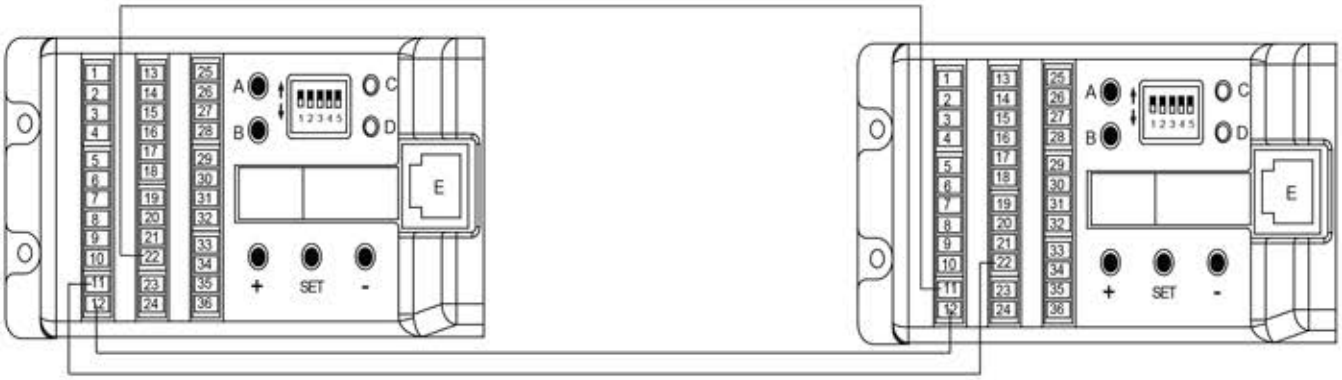




1.Red
2.Black
3.Green
4.Yellow

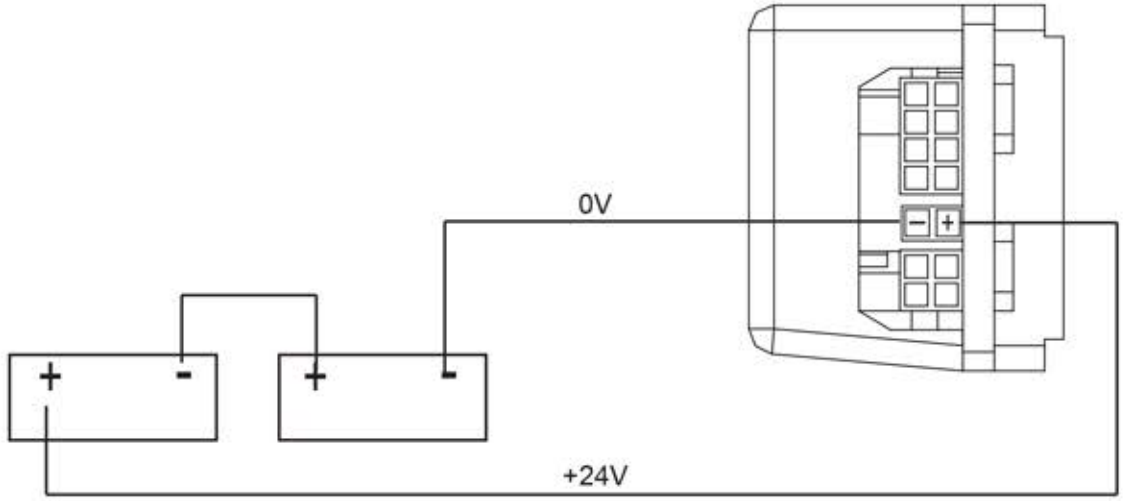
## Connection of inter-lock

DOOR A

DOOR B

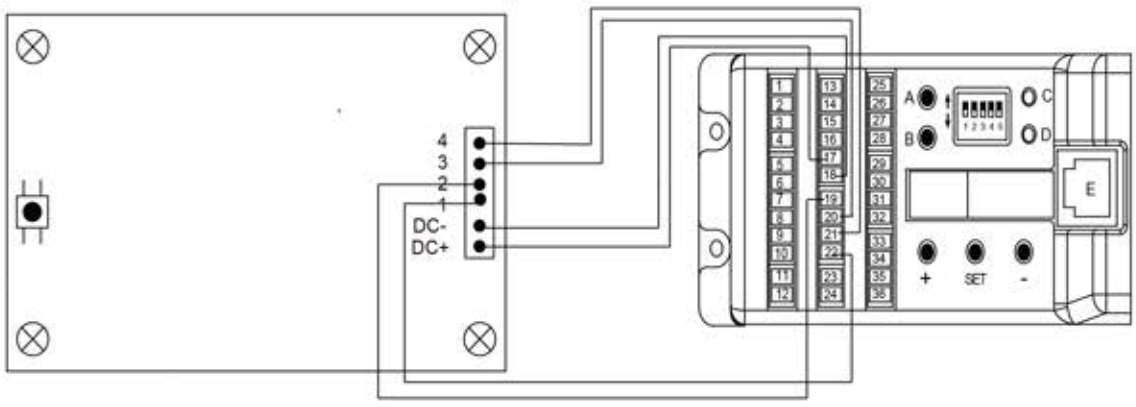



## Connection of UPS




## Components of function keypad

FC03



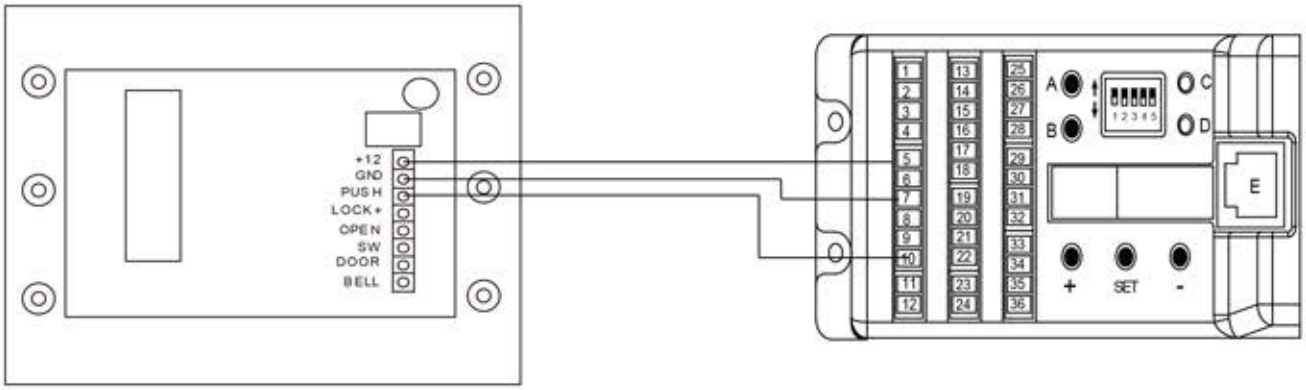
# Connection of access keypad

**Caution**: All the connection should be conducted under the power off status.

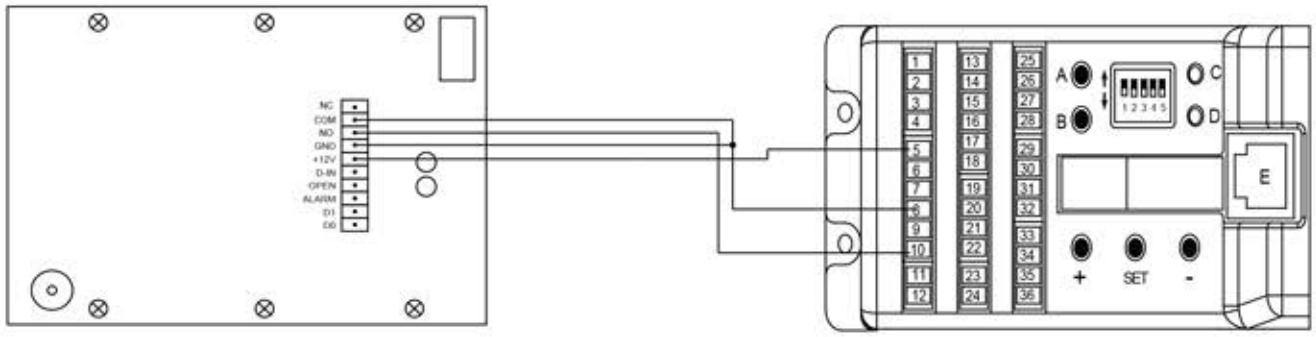
When connect the access keypad should pay attention of positive and negative poles.

If the rate of work for access keypad is more than 6W, it needs the external power of 12V DC power.

## ● AK02




## ● AK04



# Data setting

Attention: Seting neet to pree the test button , Make sure mechanism stable operating, and not adjust data during operating .

Data adjustment is not allowed when door is operating

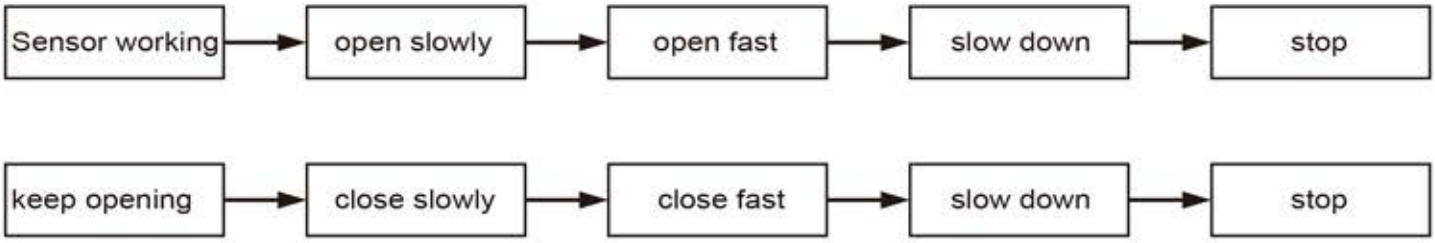
| Code no. | Value range | Default value | Details |
|---|---|---|---|
| 00 | 001 | 001 | Software vision code |
| 01 | 30-99 | 80 | Opening speed |
| 02 | 30-99 | 65 | Closing speed |
| 03 | 01-30 | 06 | Braking speed when opening |
| 04 | 01-30 | 06 | Braking speed when closing |
| 05 | 20-50 | 30 | Braking distance when opening |
| 06 | 10-50 | 30 | Braking distance when closing |
| 07 | 01-03 | 02 | Auto reverse force when opening |
| 08 | 01-03 | 02 | Auto reverse force when closing |
| 09 | 01-03 | 02 | Holding force-closed |
| 10 | 20-90 | 60 | Partial opening(20%-90%) |
| 11 | 00-60 | 02 | Door hold time(0-60s) |
| 12 | 00-01 | 00 | Aux lock type( 00: lock with power, 01: lock without power) |
| 13 | 00-02 | 00 | Battery mode( 00: open/01: Closed/02: automatic) |
| 14 | 00-01 | 00 | Fire alarm mode(00: open:01: Closed) |
| 15 | 00-01 | 00 | Photocell signal (00: no/01: nc) |
| 16 | 00-01 | 00 | built-in photocell status (00: disable/01: enable) |
| 17 | 00-01 | 01 | External photocell status (00: disable/01: enable) |
| 18 | 00-02 | 00 | operating times selection: (00: unlimited 01:100000/02:10000) |

reminder Er001 over-current protection
reminder Er002 Motor error

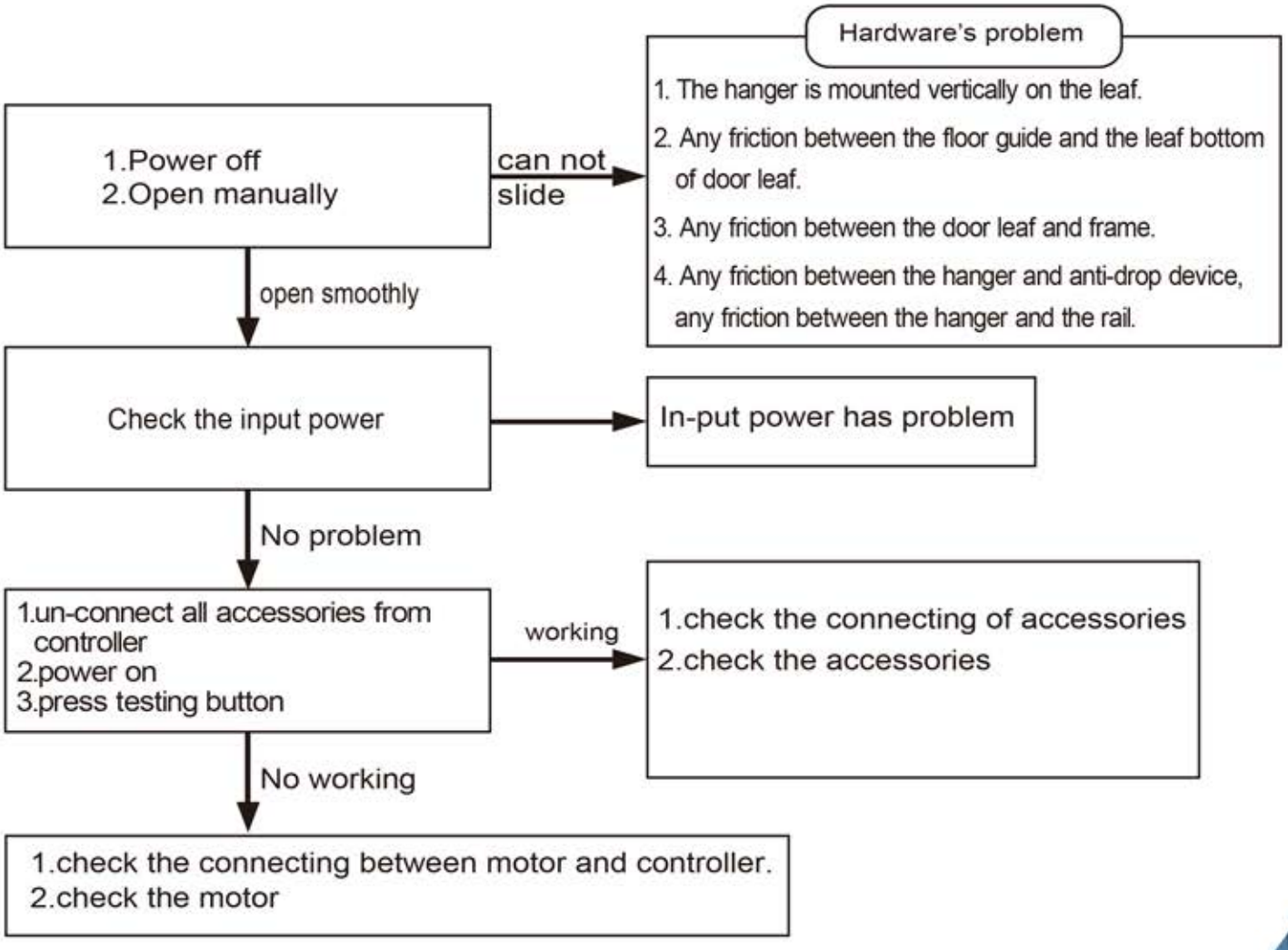
# Description of operation

1.Power on, the mechanism start to self-learning. The door will open and close to find the opening and closing position.

2.The mechanism's working steps are as following:




# Trouble shooting



# Trouble shooting

| Symptoms | Causes | Troubles shooting | Remedy |
|---|---|---|---|
| Door leaves open or close un-smoothly | Opening or closing speed is set too slow | Check the data of opening and closing speed. | Adjust the opening or closing speed. |
| | Too much resistance when no power. | Any damager or loosen at hangers, floor guide or anti-drop device. | Fix the parts strongly.<br>Fixe the guide at the right position.<br>Fix the anti-drop device. |
| | | Any obstacle on the track. | Clean the track. |
| Door leaves hit each other when closing | Stopper is fixed not strongly. | Check the stopper. | Adjust the stopper's position and fix it. |
| | Closing speed is too fast and the buffer distance when closing is too small. | Check the closing speed and buffer distance when closing on controller. | Turn down the closing speed, and turn up the buffer distance when closing. |
| Door not working | No power input. | Check the outside input power. | Connection the power. |
| | | Check the fuse of power switch. | Change a new fuse. |
| | Door is locked. | Check the lock is working or not. | Un-lock the door. |
| | Connection between motor and controller is not good. | Check the connection is good or not. | Connect them strongly. |
| | Inter-lock is working. | Check it works as inter-lock or not. | Waiting another door close. |
| Door does not close | Sensor is working. | Check the sensor is broken or not. | Use a new sensor. |
| | | Check any stuff at the detecting area. | Clean the detecting area. |
| | | Check the sensor is fixed stably. | Fix the sensor well. |

# Track's cutting and installation

| Symptoms | Causes | | Troubles shooting | Remedy |
|---|---|---|---|---|
| Door does not close | Remote control is working | | Check | Press automatic button on remote |
| | Microwave is working | | Any object at the detect area | Remove the object |
| | | | Check the detect area without object to cause mistake working | Change the microwave sensor |
| | Photocell is working | | Check the surface of receiver and emitter is clean or not | Clean the surface |
| | | | Check the receiver and emitter are at same level or not | Adjust position of receiver and emitter to the same level |
| | | | If use built-in photocell, check the selection of single beam or double beam and the distance of detect is correct | Adjust the DIP switch |
| | Other signal wire is wrong connection | | Remove other accessories from controller, and check the door leaf if is closed | Exchange the signal wire |
| Door open by itself | Sensor mistake working | If there is a moving object in detect area | Check | Remove the moving object |
| | | any strong microwave near the door system | Check | Remove the machine with strong microwave |
| | | Any fluorescent light near the detect area | Check | Remove the fluorescent light |
| | Not well setting | | Remove the obstacle | setting again |
| | There is an obstacle on the track | | Check | Remove |



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