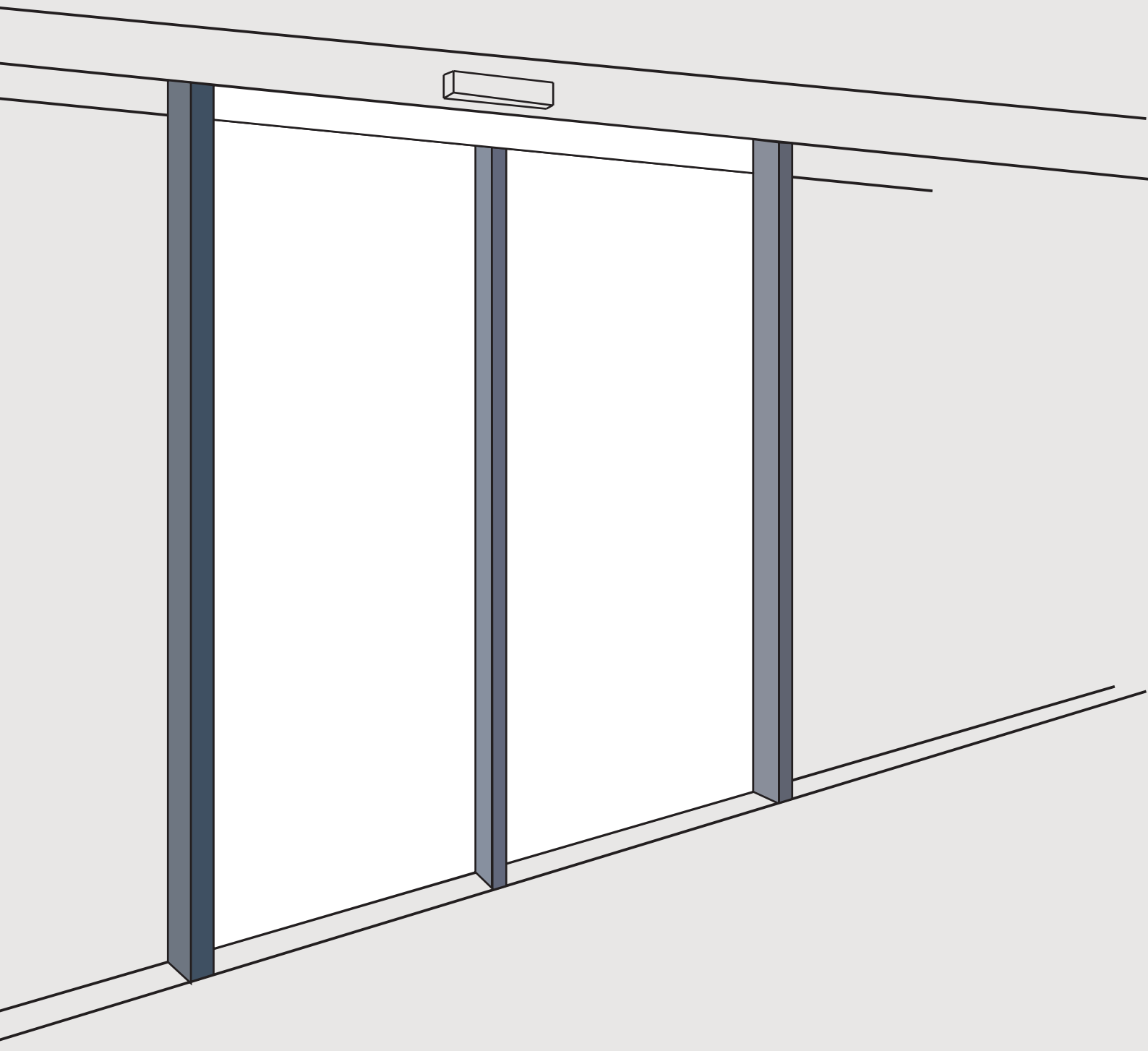
Installation Manual

Auto Sensor Door

Model - SP ACM GD 200-5

www.smartpower.co.in



- 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.

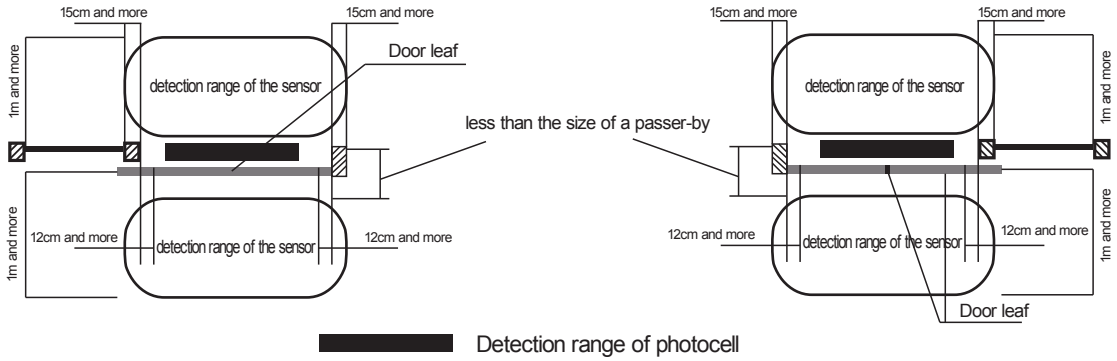
❗ During the installation never allow the pedestrians to pass through the automatic door or approach the work site. Because any tools or parts falling off during the installation will cause injury to the pedestrians.

⊘ 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.



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 2-3 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.

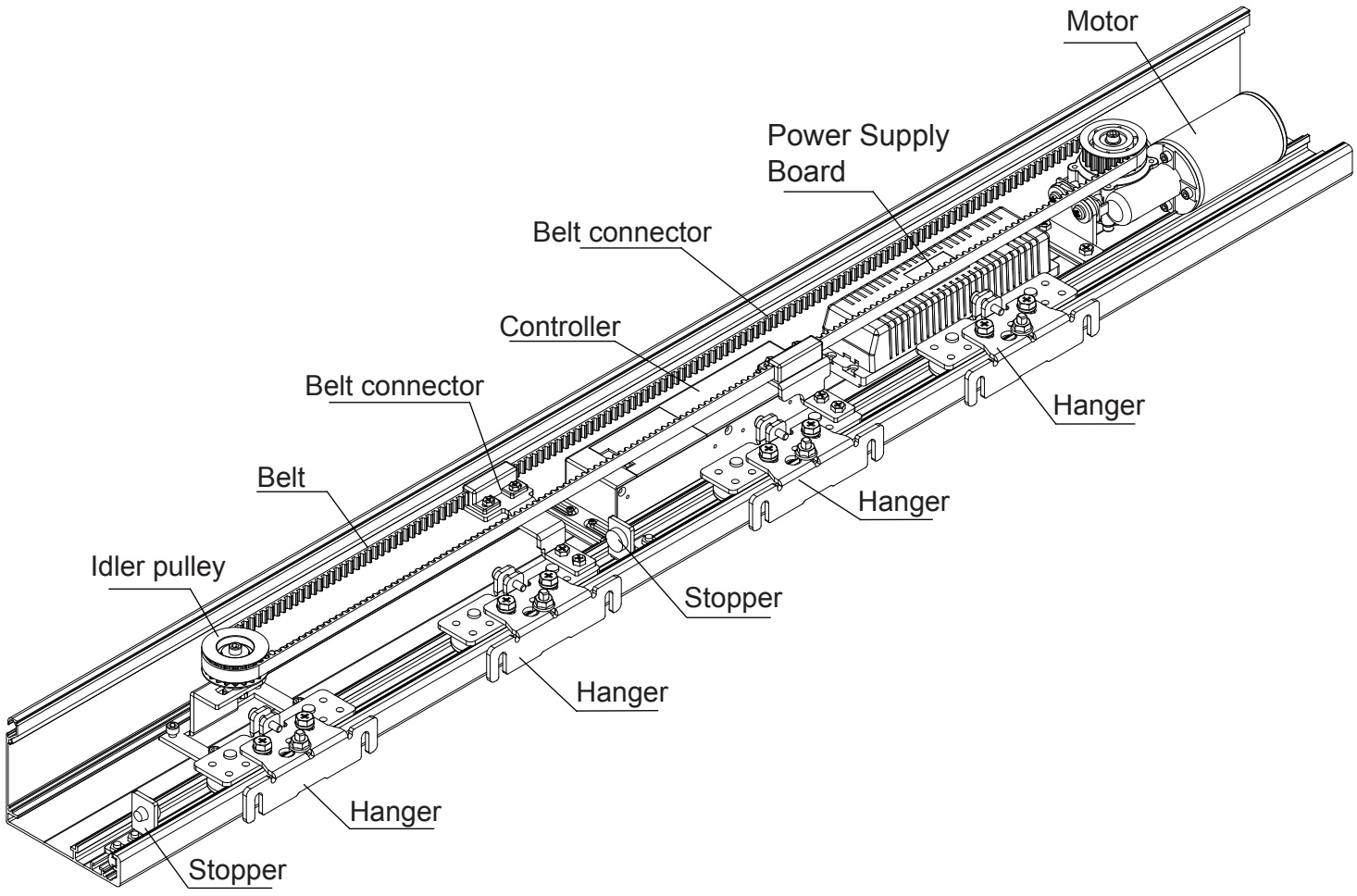
  -Check batteries each half year.

- 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.

Components of mechanism

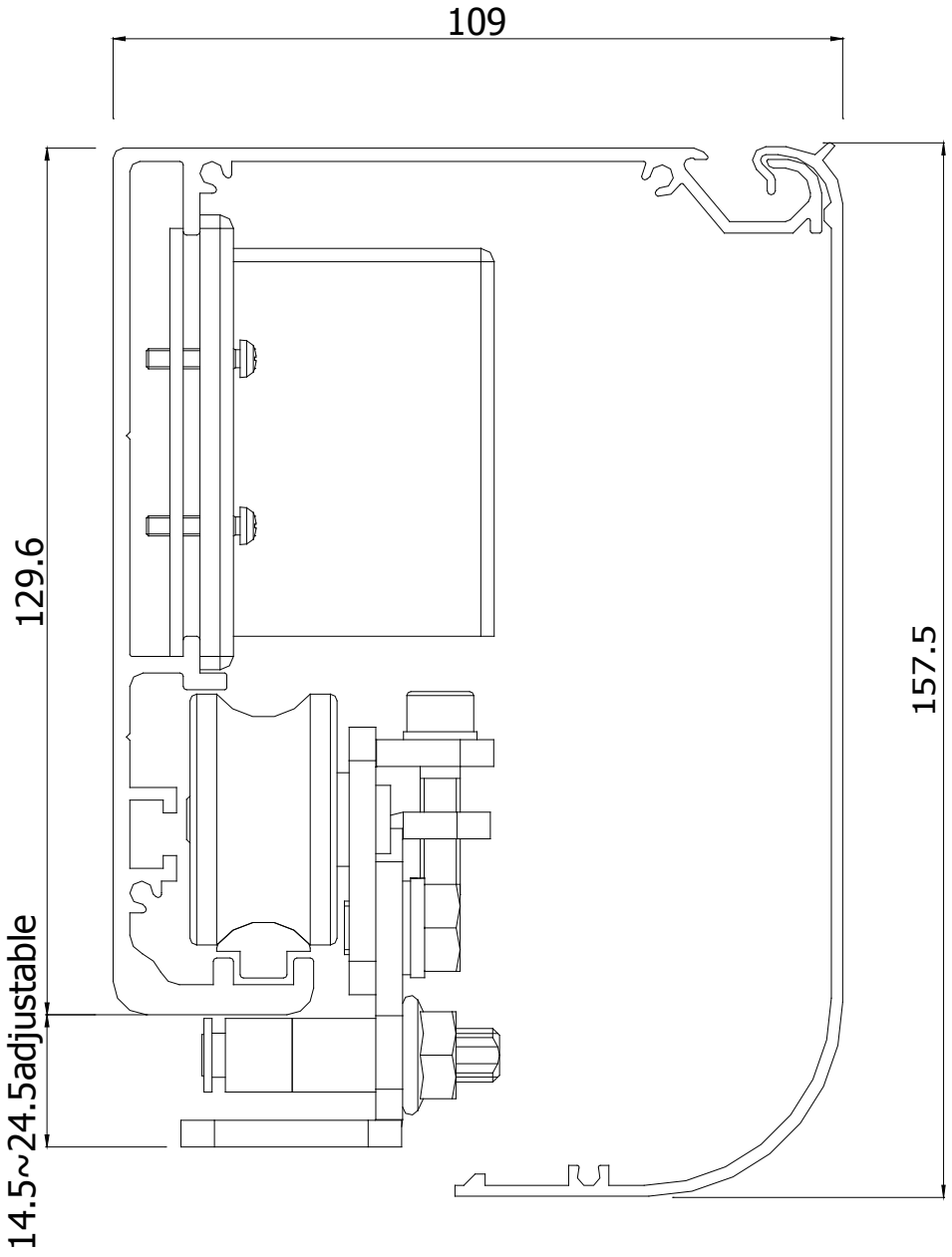
- Name of components



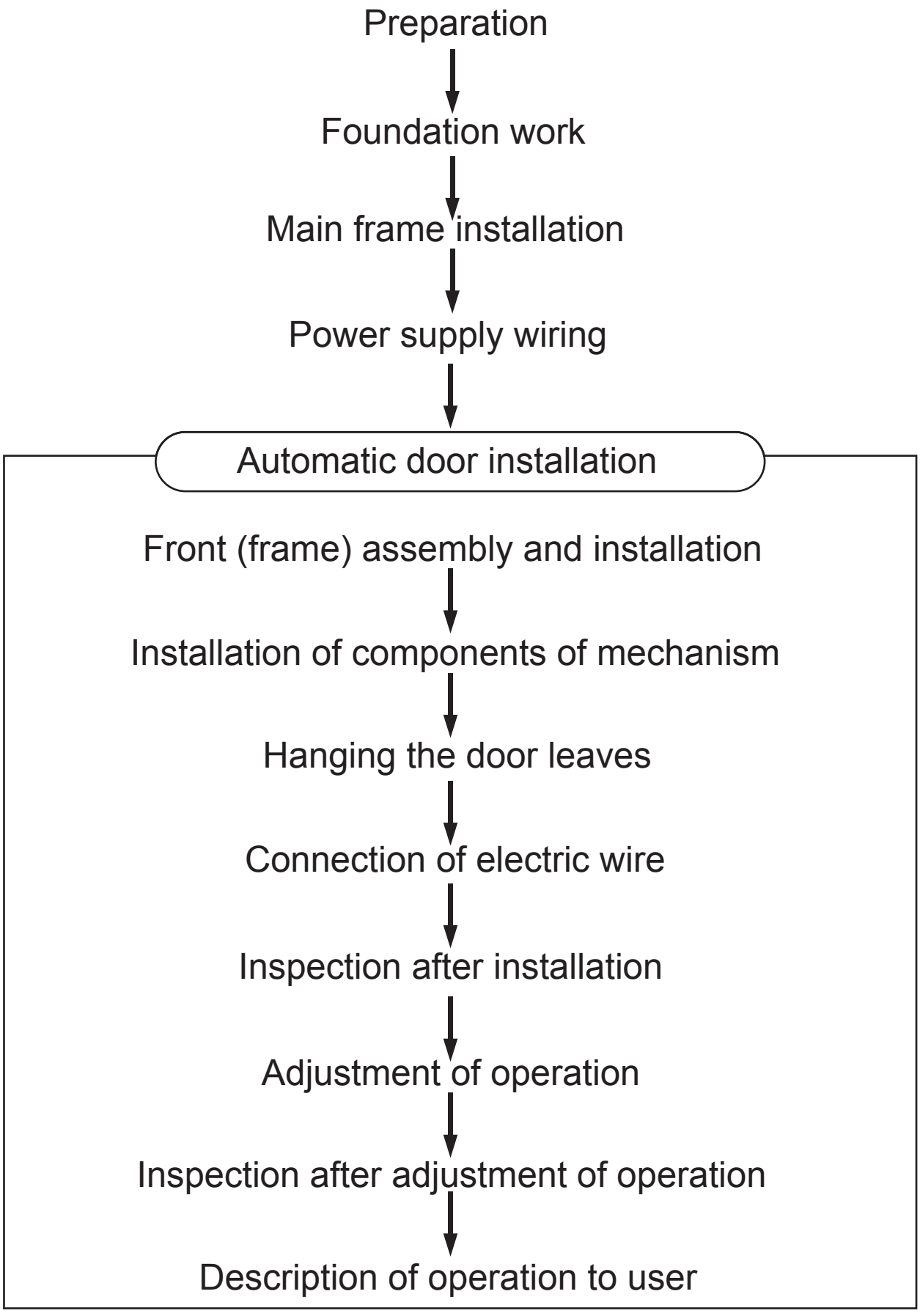
Sectional View of track and cover

● Sectional view

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



Installation process



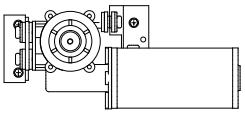
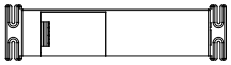
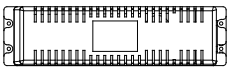
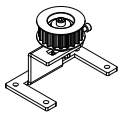
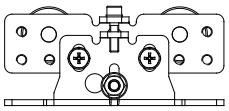
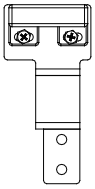
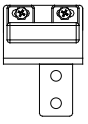
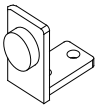
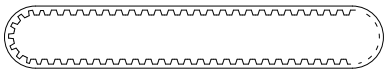
Product feature

- Intelligent micro control and precision machinery manufacturing
- Smart self-learning system
- Double track and rubber design, low noise, open and close smoothly
- Brushless DC motor, long working life, and power strong
- Built-in reciver working with learning code remote
- Special track and hanger design to make safe working
- Various terminal, work with access keypad, photcell, UPS, interlock, function switch, and so on

Technical specification

Specification	V50	
Door leaf mode	Single-open	Double-open
Door leaf weight	MAX 160KGS	MAX 150KGS
Door leaf width	DW=400-2000mm	DW=400-1500mm
Voltage	AC≤16.5±5%V DC≤24.5V	
Opening speed	15-50cm/s (adjustable)	
Closing speed	15-50cm/s (adjustable)	
Opening time	0-20s (adjustable)	
Manual open force	<40N	<50N
Motor	DC24V, 55W Brushless motor	
Operating temperature	-20℃ ~ +70℃	

Components List

Description	Schematic diagram	Quantity	
		Single-leaf	Double-leaves
Motor		1	1
Controller		1	1
Power Supply Board		1	1
Idler pulley		1	1
Hanger		2	4
Belt connector(A)		0	1
Belt connector(B)		1	1
Stopper		2(left & right)	2(left & right)
Toothed Belt		1	1
Fastenings		1 set	1 set
Installation Manual		1 set	1 set

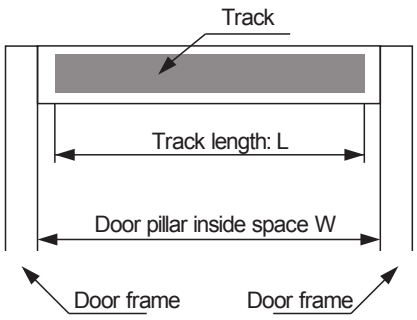
Track's cutting and installation

● Cutting

Standard length of track: 4200mm.

Over-length track can be customized.

L= W - 10mm



● Installation

The track is installed at a height of DH+30mm from the ground (based on the bottom of the track).

(1) Drill holes in aluminum track.

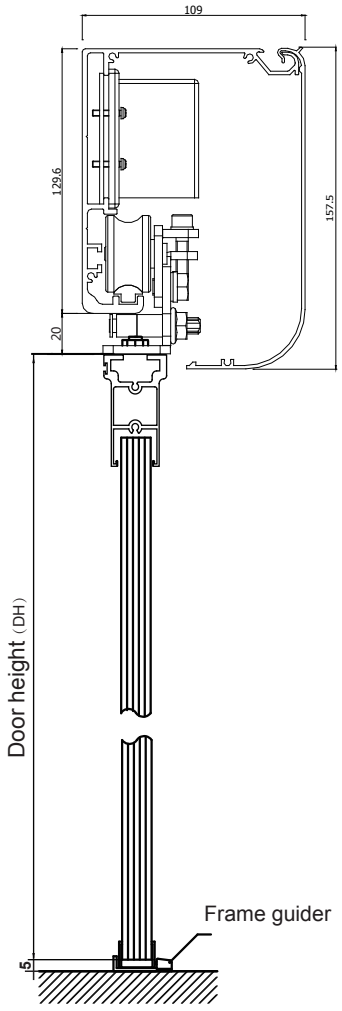
(2) Fix one end of aluminum track, check the level by gradienter, then fix another end of track.

(3)Install the rial by screw onto steel structure or wall temporary

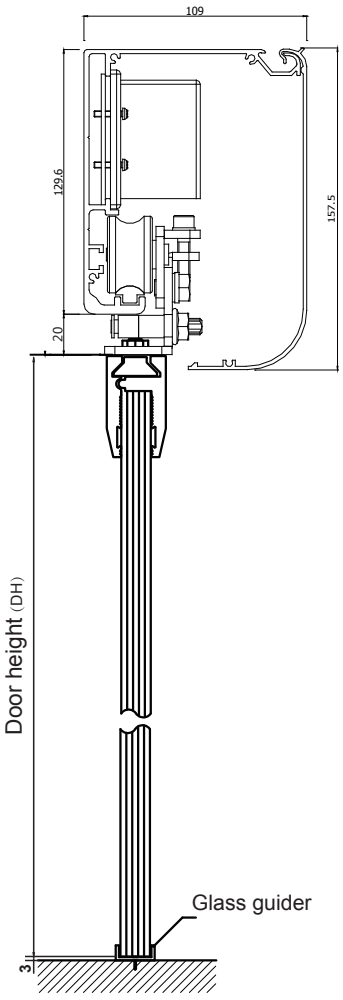
(4)Fix one end of aluminum track,check the level by gradienter,Then fix another end of track

(5)Fix the aluminum track to steel structure firmly

1. Frame door



2. Frameless door

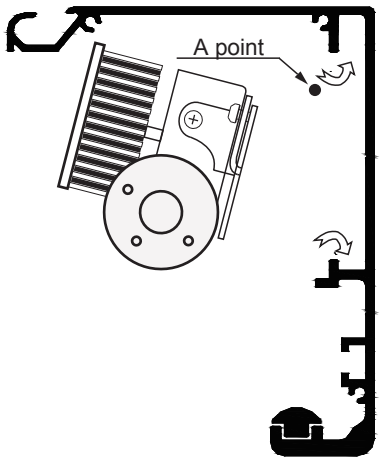


Caution
(1) The track must be level.

(2) The height of movable door leaf is DH

(3) The clearance height over the track should be more than 50mm.

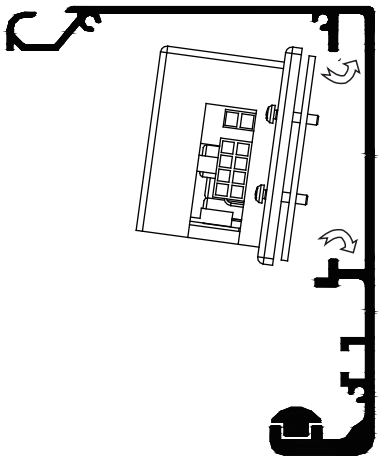
Installation of motor



1. The lead wire with a connector is put before the motor.
2. The mounting part is inserted into the upper groove of the track properly.
3. Then it is inserted into the lower groove.
4. The motor is moved to the right end of the track.
5. Tighten the mounting bolts.
6. The lead wire with a connector passes through the upper part of the motor as A and goes beyond the left side. See to it that the lead wire should never be dragged.

Caution: Misoperation in step 2 、 3and5 will result in falling off.

Installation of controller



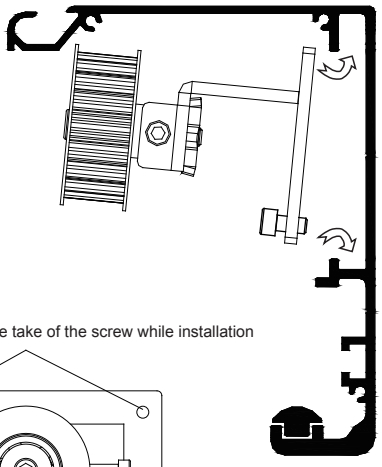
1. The controller is firmly inserted into the upper groove.

2. It is firmly inserted into the lower groove.

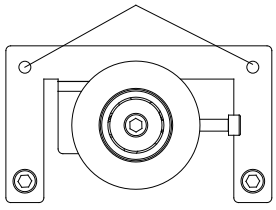
3. The motor and flexible wire of the terminal blocks are moved to the connecting position.

4. The mounting bolts are tightened.

Installation of idler pulley



attention: Please take of the screw while installation



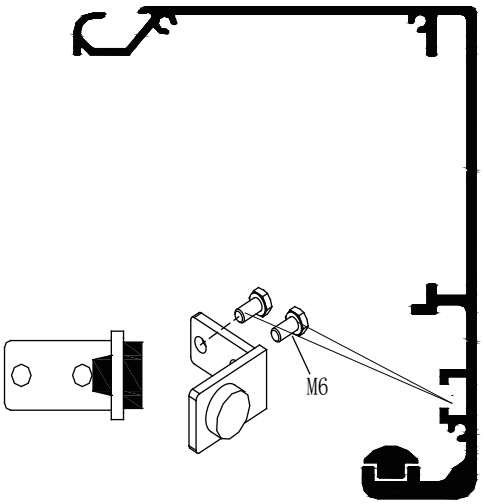
1. The mounting part of the idler pulley is firmly inserted into the upper groove of the track.

2. It is firmly inserted into the lower groove.

3. The idler pulley is fixed temporarily with a fixing bolt so that it can be moved slightly.

Caution: Misoperation in step 1 and 2 will result in falling off.

Installation of stopper



1.Loosen the mounting screw of the stopper

2.Put the stopper inside the rail

3.Find out the open and close position,and confirm the stoppers' position

4.The mounting bolts are tightened firmly with a socket screw wrench

Installation of hanger

1.loosen nut A of hanger,take off anti-drop device from hanger.

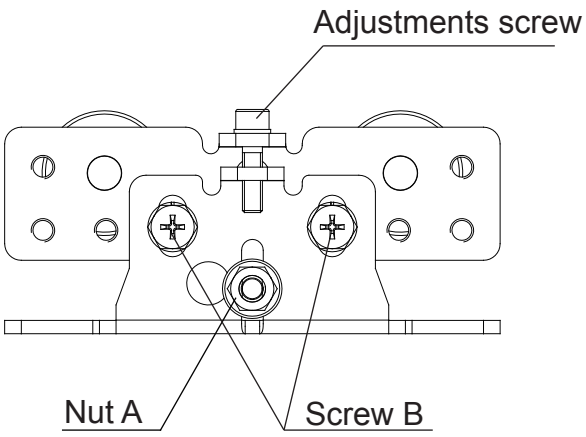
2.Use Hanger bolt （M8*20） , fix the door leaf in suitable position（P11).

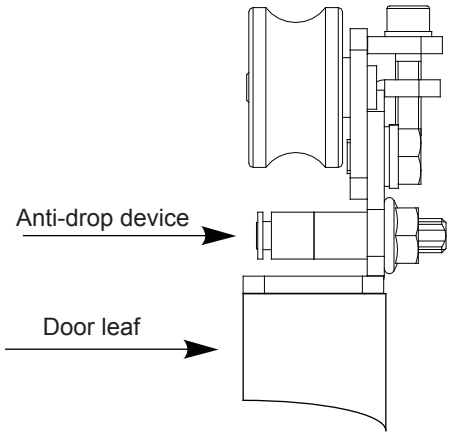
3.Hange the door leaf onto track（P12).

4.Loosen screw B of hanger,Moving door leaf to ensure smoothly working，then tighten Screw B.

5.Put the anti-drop device back to hanger again and tighten it.

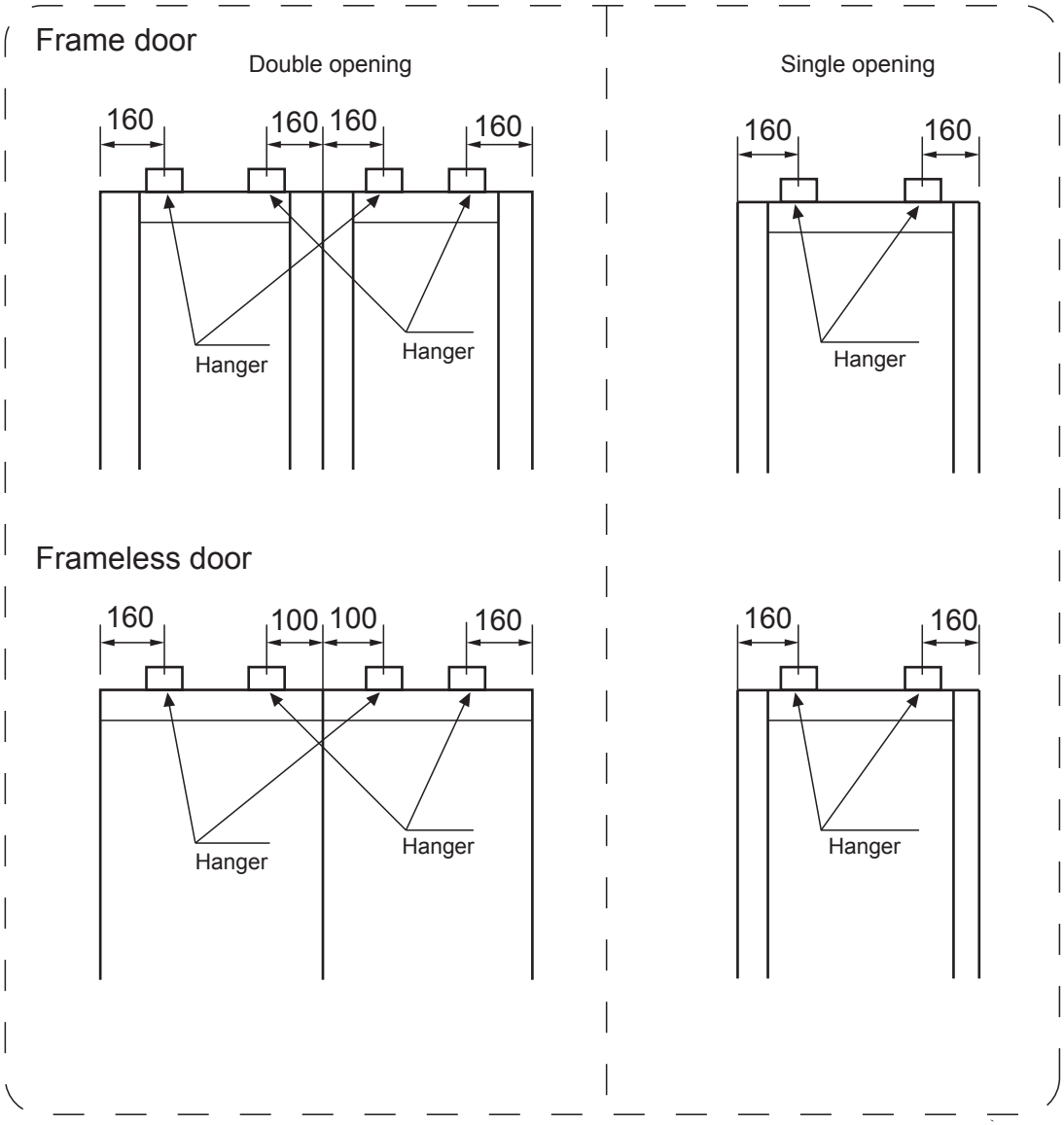
6.While hange the door leaf to the rail，Please install the anti-drop device before adjust the height of door leaf.





Installation of hanger (to be continued)

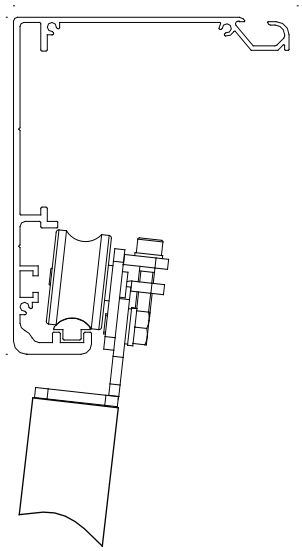
● Hanger installation



Caution: In installation the pulley center of the hanger should be in full parallel with the door leaf.
If not, the service life of the pulley will be shortened.

Installation and adjustment of door leaf

- Double open



As shown in the left figure, lean the door leaf onto the rail， then make the door leaf straightly

1.Loosen the fix screw of hanger

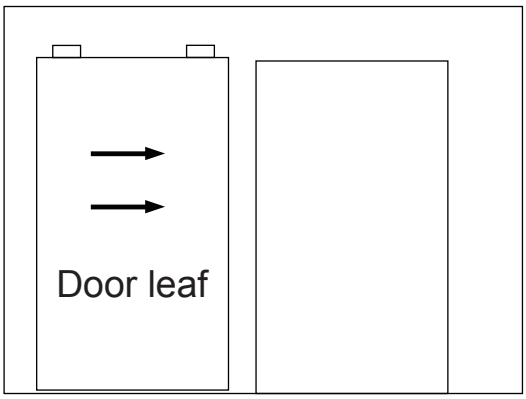
2.Adjust the height by adjustment screw
Turn Clockwise,the door will ascend
Turn Counterclockwise,the door will descend

3.Tighten the nut that fixes the hanger

4.Slowly moving the door leaf,tighten the screw after confirm wheel of hanger is good working

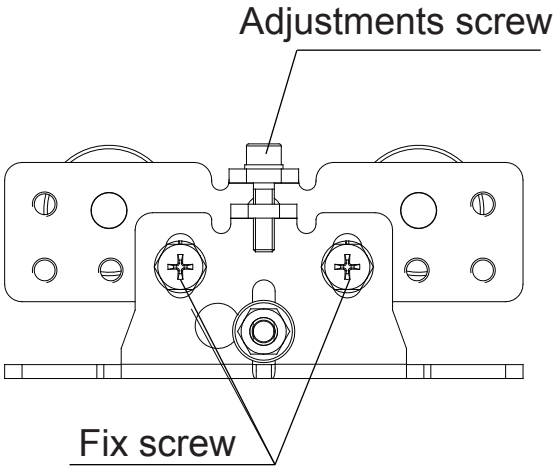
5.Confirm the resistance during the operation

- Single open



As show in the left figure,Slide door leaf from the end of rail when install a single open door

Loosen screw if hanger ,move the door leaf,make sure wheel of hanger is on the rail,then tighten the fix screw



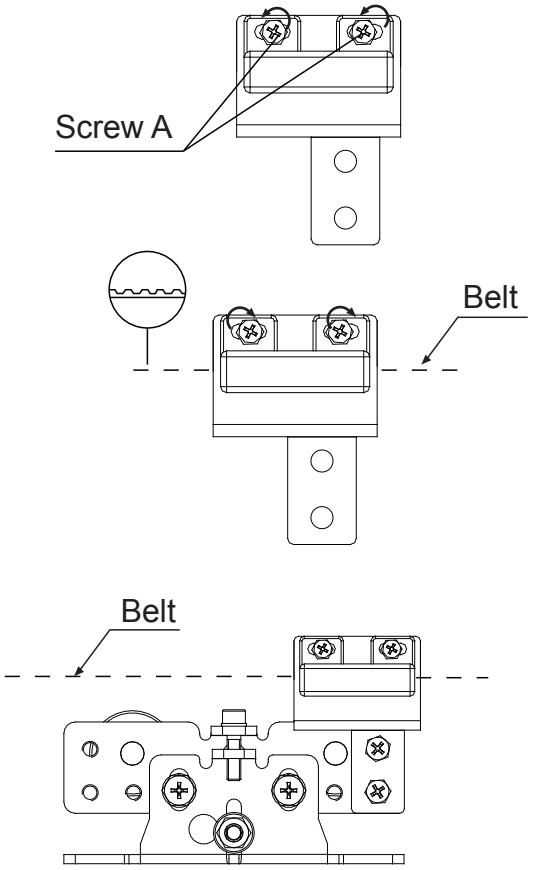
If the door leaf is hard to move ,the following items should be check to solve the problem

（1） Hanger is mounted vertically on the leaf

（2） Any friction between hanger and rail

（3） Any friction between door leaf and frame（make sure tighten the screw）

Belt Installation of single opening



1. Remove the bolt and take off the belt fastening part from the belt connector part.
2. Cut the belt according to the belt cutting table.

Caution: Cut the belt at the center of the valley bottom.

3. Both ends of the belt are put into the fastening part from the center of the fastening part.

Caution: Never have the belt twisted in installation.

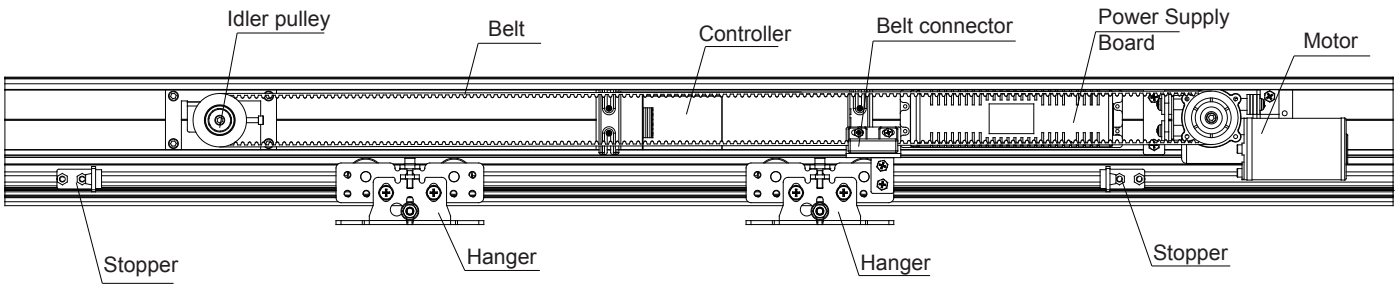
4. Fix the fastening part to the belt connector part.

Caution: the direction of the belt fastener

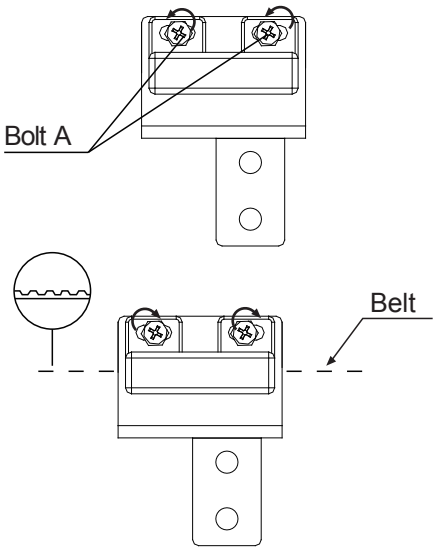
5. Fix the belt connector part to hanger.

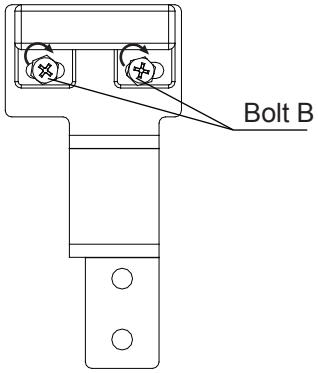
Caution: Do tighten the bolts firmly.

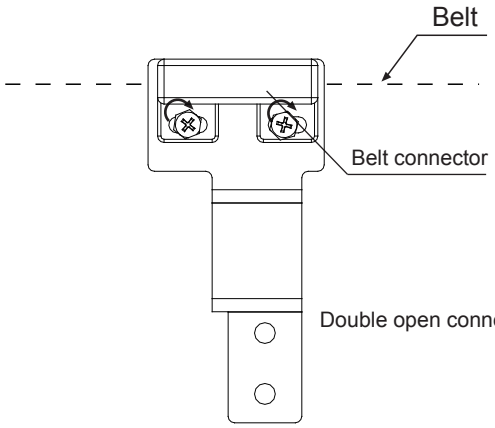
Installation position of belt fastener (single-leaf belt)



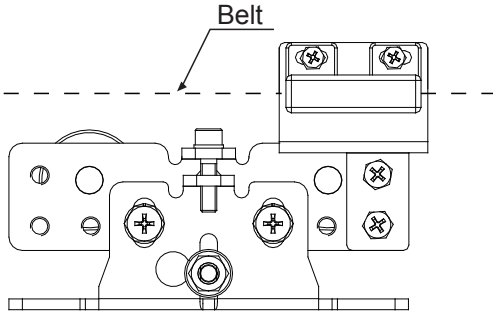
Belt installation of double opening

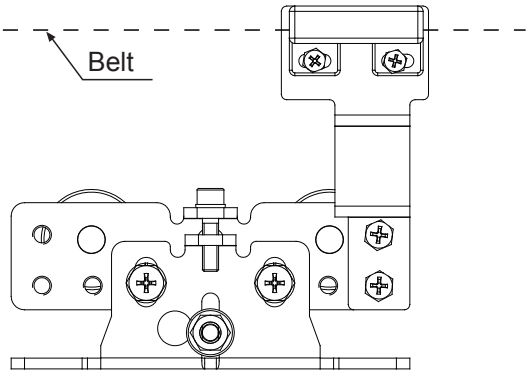






Double open connection accessories





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2. Cut the belt according to the belt cutting table.

Caution: Cut the belt at the center of the valley bottom.

3. Both ends of the belt are put into the fastening part from the center of the fastening part.

Caution: Never have the belt twisted in installation.

4. Fix the fastening part to the belt connector part.

Caution: the direction of the belt fastener

5.hange the belt on the motor drive wheel, then another side to tension pulley

6. Fix the belt connector part to hanger.

Caution: Do tighten the bolts firmly.

7. Adjust the tension of belt refer to adjustment.

8. Keeping the two leaves closing.

9. Remove bolt B from the belt fastener and take it out from the belt fastening part.

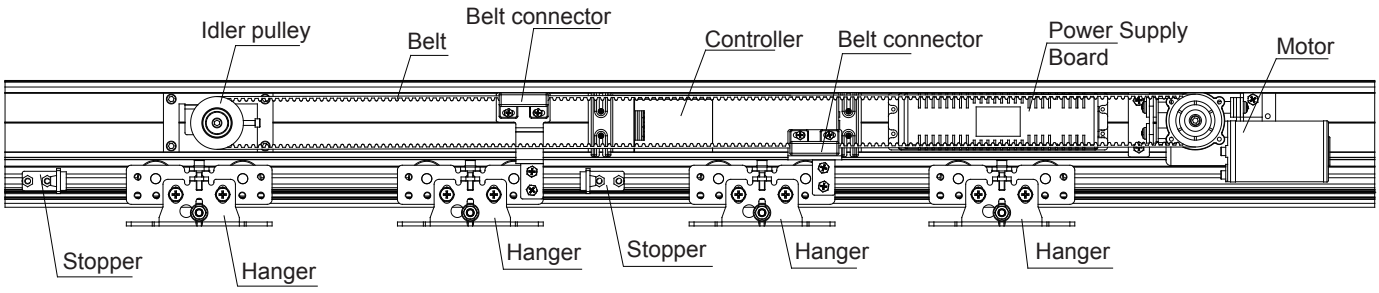
10. Install the belt fastener into the belt and tighten it then.

11. Fix the belt fastener with bolts.

12. Tighten Bolt B after adjusting the door position.

Notice: Do tighten the bolts.

Installation position of belt fastener (belt of double-leaves)



Belt Length table

- Zoom table for minimum belt length (for reference only)

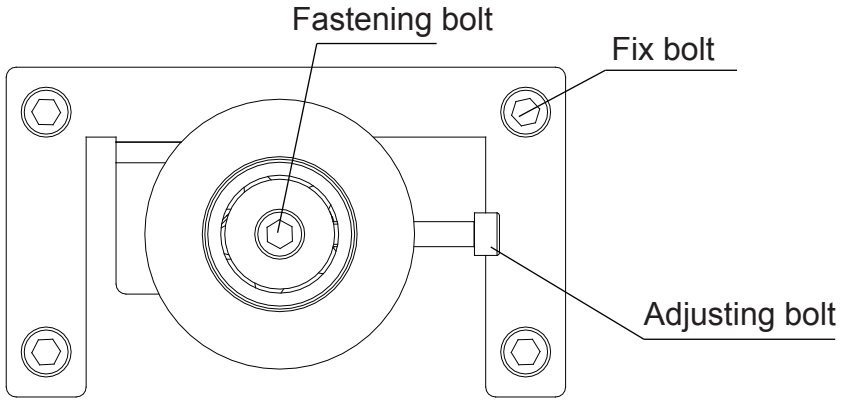
Door width	Belt length
650	4100-4200
700	4400-4500
750	4700-4800
800	5000-5100
850	5300-5400
900	5600-5700
950	5900-6000
1000	6200-6300
1050	6640

Adjustment of idler pulley

1.Pull belt from idler pulley to another side ,make the belt tense，tighten 4 fix screw.

2.Loosen fix screw（one circle is enough）.

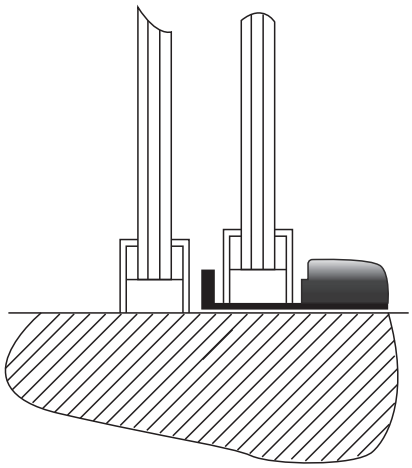
3.Turn the tension adjusting bolt clock so that the tension plate will be moved to the left and belt tension increased gradually,adjust the belt tension to tighten belt suitably.



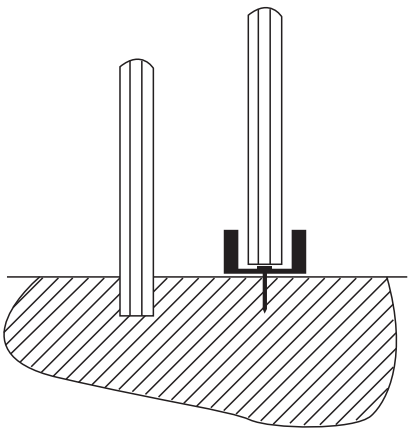
After using for some time the belt will be stretched slightly and then the belt tension should be readjusted by repeat step 1-3

Installation of door leaf guide

- Two type of door leaf guider



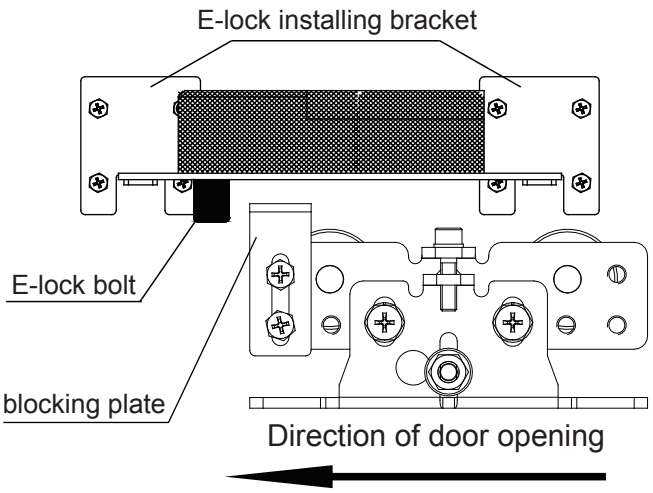
Suitable for frame door(adjustable door guider)



Suitable for frameless door (U door guider)

- Door guider should be install at the same line of the moving door leaf, axis and door leaf central line
- Two door guide center distance should lees than width of two door leaf

Installation of electronic lock



1.Connect the electronic lock with the E-lock installing bracket.

2.Inset the E-lock installing bracket to the

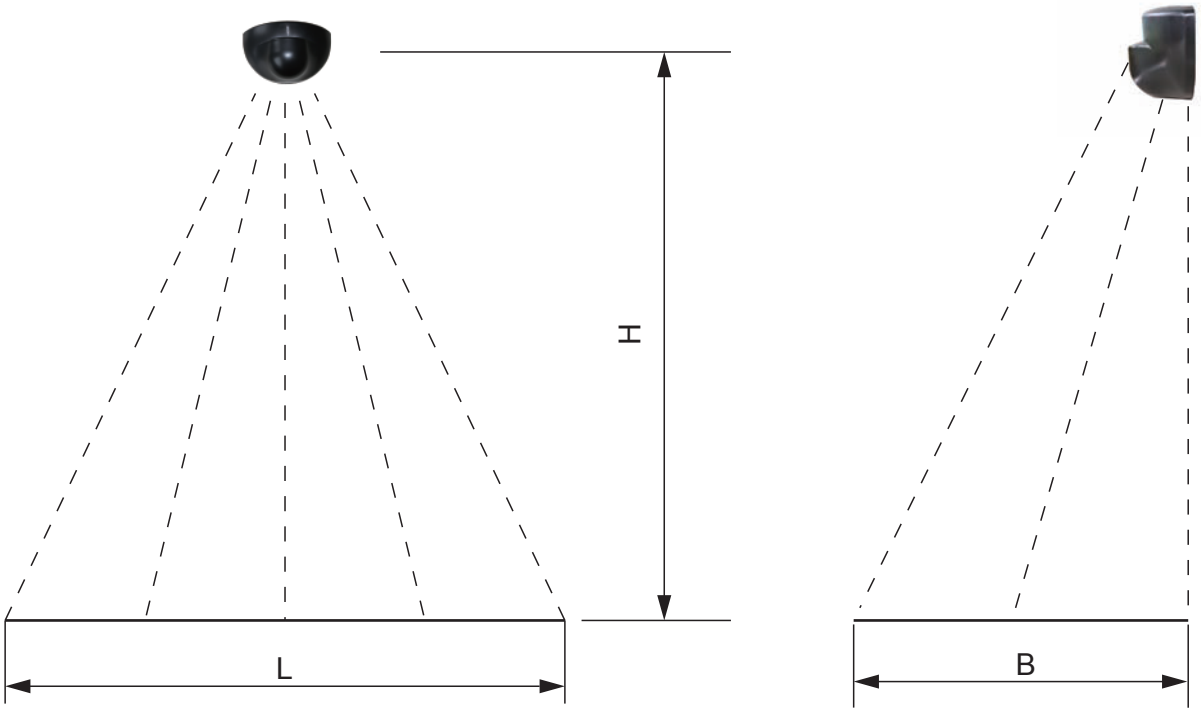
3.Connect the magnet holder with the hanger.

4.Adjust the position of the electronic lock to make the distance between E-lock and magnet holder max 5mm, then tighten the

Caution: the position of hanger is the position when door closed.

Installation of sensor

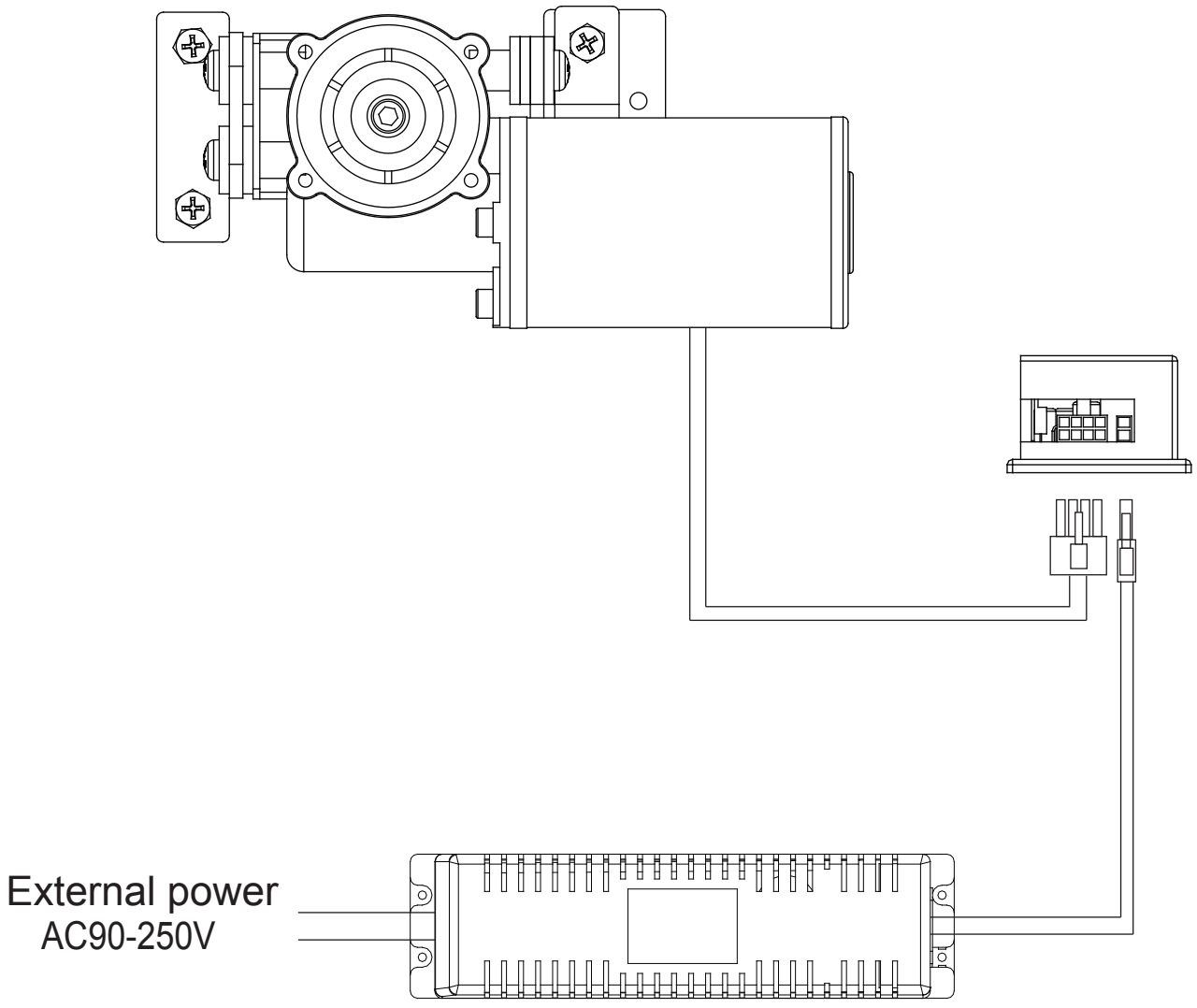
The sensor should be installed at the center of the door leaf.
The max installing height of sensor is 3m.



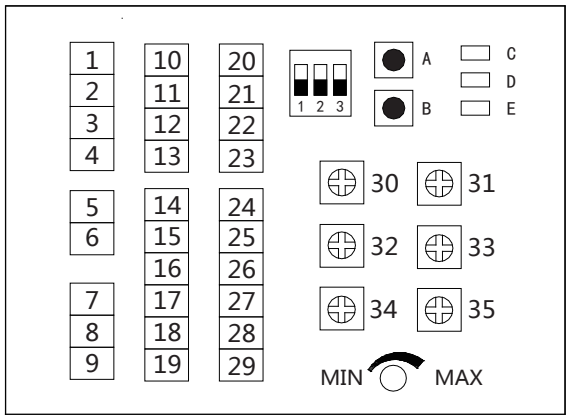
Caution: Please use our brand sensor. If not, please choose good quality sensor.

Connection of motor ,controller and power switch

Caution: All connection should be finished under the power off status



Terminal details of controller



1.+24V
2.GND
3.COM
4.Outside sensor
5.Electronic lock+
6.Electronic lock-
7.UPS-
8.UPS+
9.Interlock

10.+24V
11.GND
12.COM
13.Inside sensor
14.+12V
15.GND
16.Inside sensor
17.Inside sensor
18.GND
19.+24V

20.+24V
21.GND
22.COM
23.Photocell
24.+24V
25.GND
26.Exit only
27.Half open
28.Full lock
29.Fire alarm

30.Buffer distance when closing
31.Buffer distance when opening
32.Closing speed
33.Opening speed
34.Buffer speed(open and close)
35.Opening time（0~20S)

DIP Switch:

1.L-R Switch:Down-Left ; Up-Right

2.Lock Switch: Down- Lock by signal,Up- Lock automatically everytime

3.Down-toggle operating Up-normal operating ①

Push button:

A： Remote learning button，keep pressing 3 seconds to added remote （see page23 ）

B：TEST：Press then open and close one time.

LED light:

C ： Working status indicator

D ： Remote setting indicator

E ： Power indicator

Knob switch：

30:Adjustment of close buffer distance, Turning counterclockwise will reduce close buffer distance while clockwise will increase distance.

31:Adjustment of Open buffer distance, Turning counterclockwise will reduce open buffer distance while clockwise will increase distance.

32:Adjustment of Closing speed, Turning counterclockwise will reduce Close speed while clockwise will increase speed.

33:Adjustment of Opening speed, Turning counterclockwise will reduce Open speed while clockwise will increase Speed.

34:Adjustment of buffer speed, Turning counterclockwise will reduce buffer speed while clockwise will increase Speed.

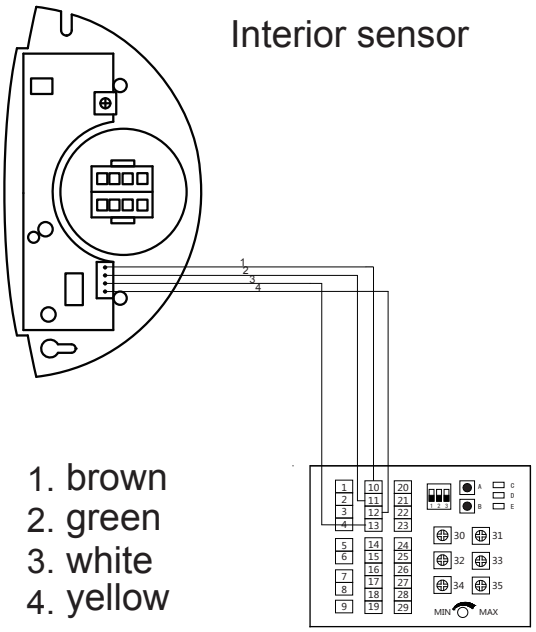
35:Adjustment of Opening time, Turning counterclockwise will reduce Open time while clockwise will increase time.

Remark: ① Toggle operation mean active opening and active closing
Normal operation mean active opening and automatic closing

Connection of sensor

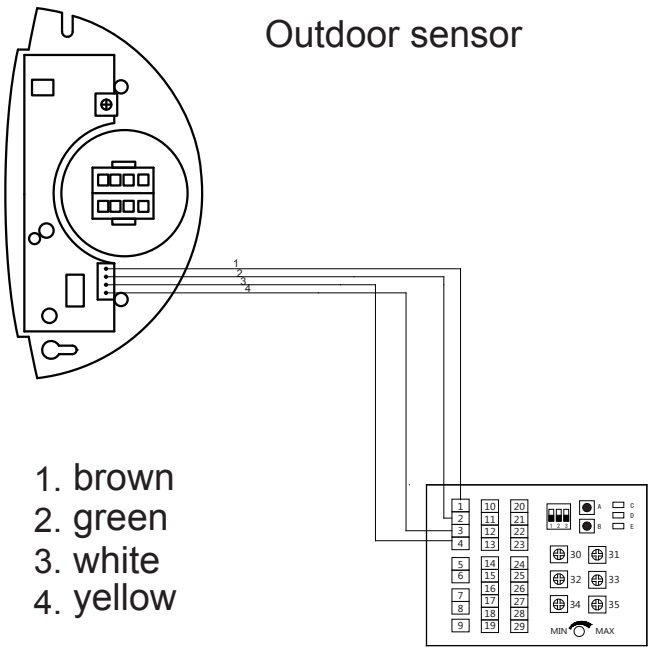
Caution： all connection should be conducted under the power off

Interior sensor



1. brown
2. green
3. white
4. yellow

Outdoor sensor



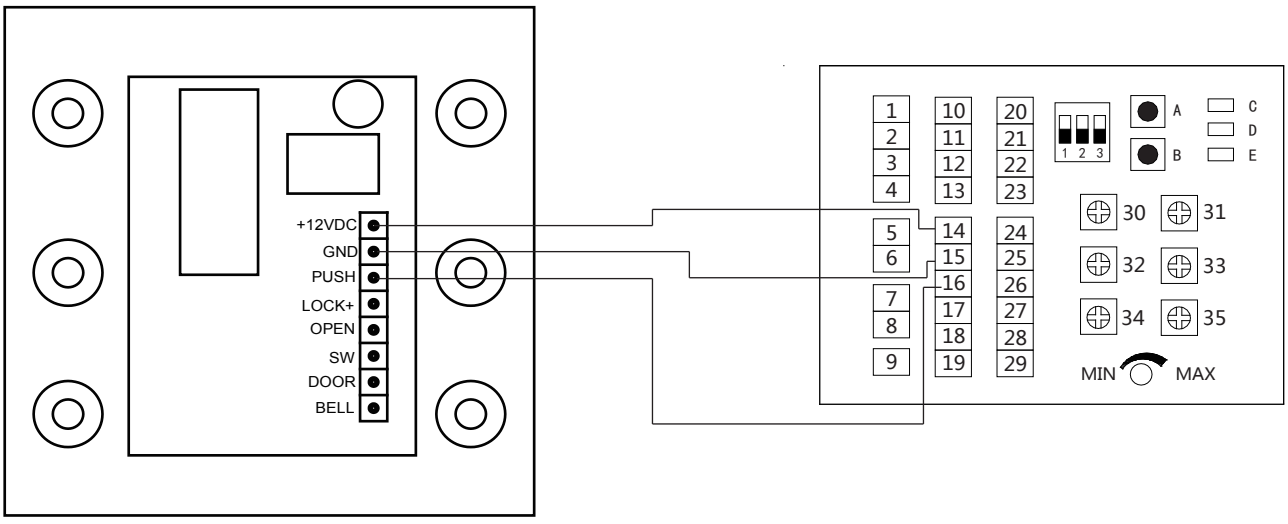
1. brown
2. green
3. white
4. yellow

Connection of access keypad

Caution： all connection should be conducted under the power off

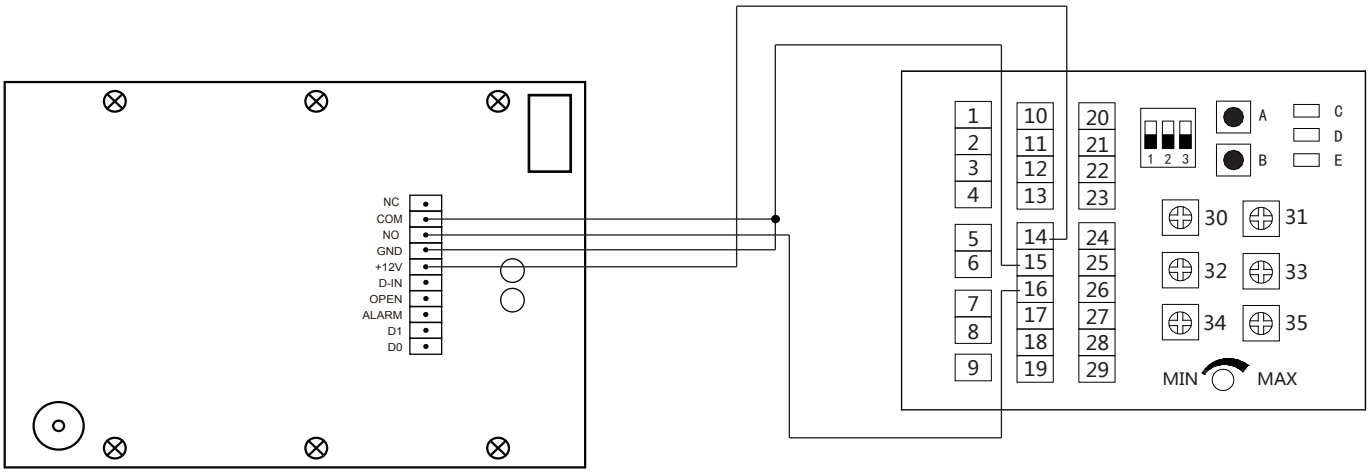
When connect the access keypad should pay attention
of positive and negative poles.

- AK02



Connection of access keypad

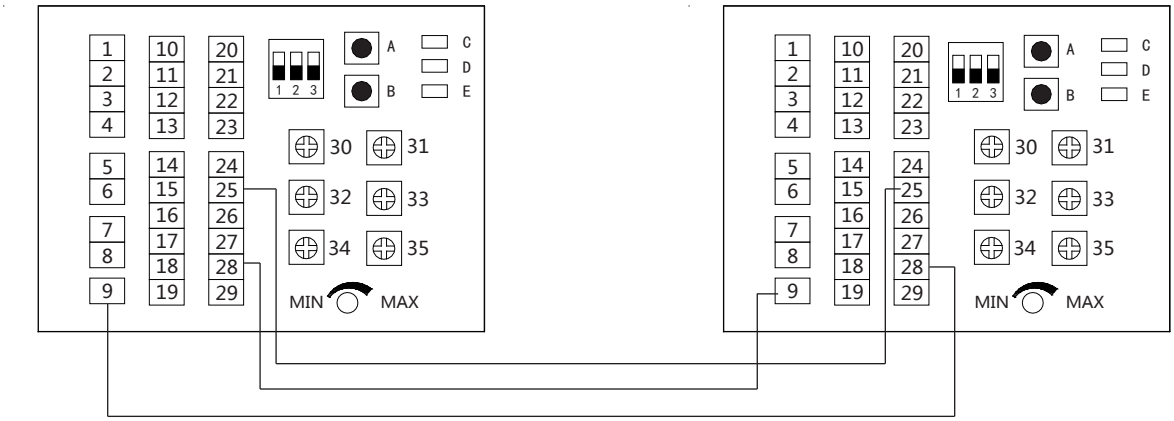
● AK04



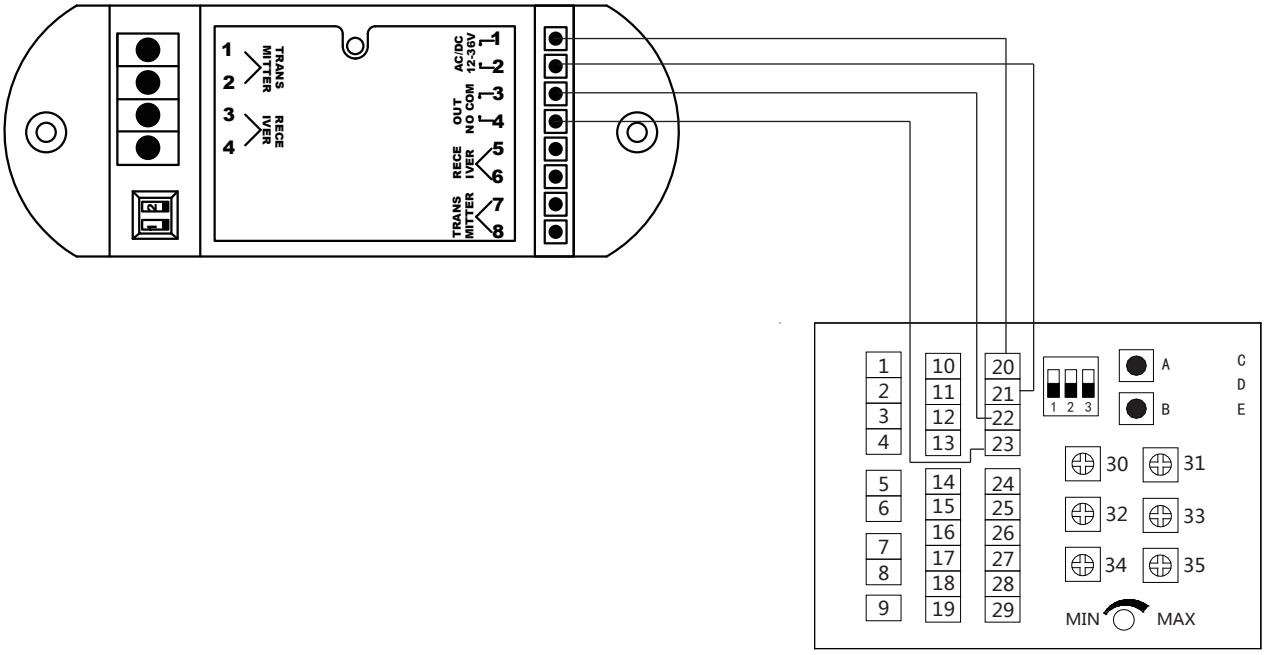
Connection of interlock

controller 1

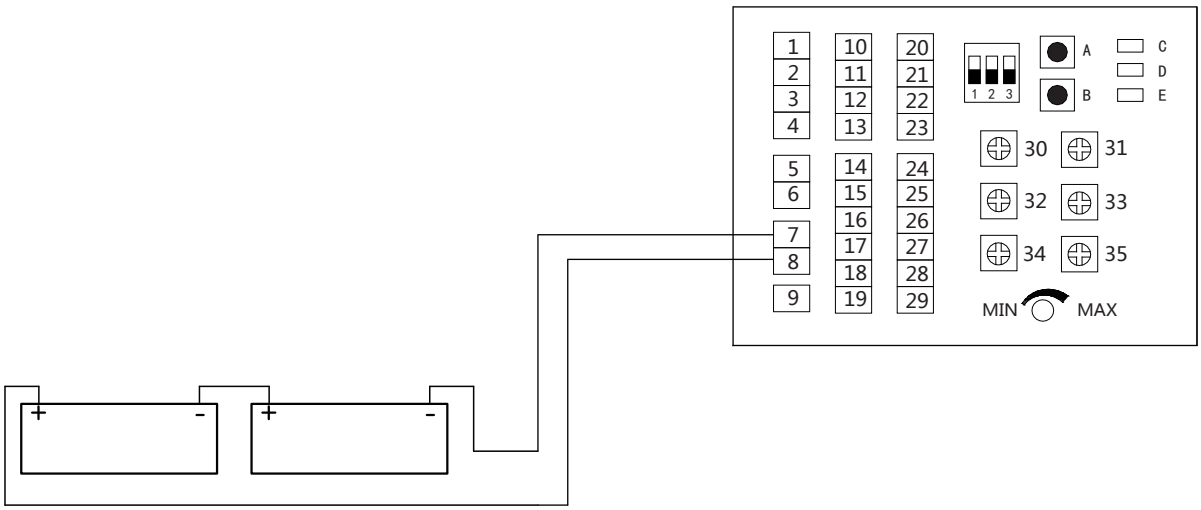
controller 2



Connection of photocell

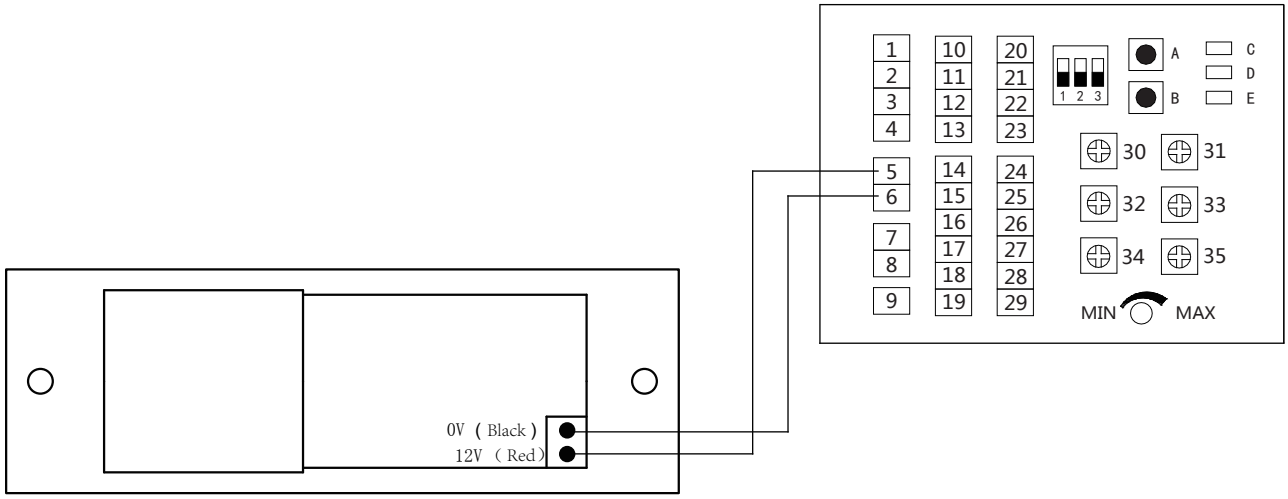


Connec ion of ups



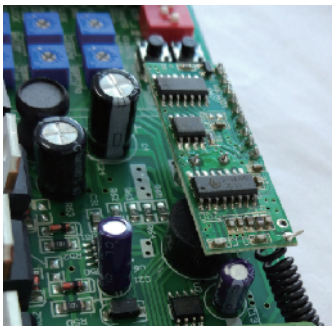
The controller can charge the battery by itself when power supply is on.

Connection of electronic lock

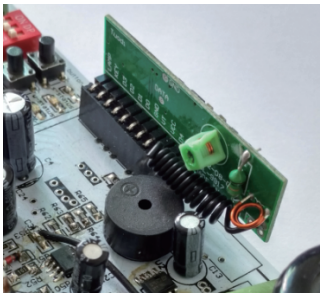


Connection of remote control

- Built-in remote receiver



FC04:



FC05:

Standard type

FC04: **A:** Open **B:** Automatic **C:** Exit only **D:** Lock

FC05: **1.** Automatic **2.** Lock **3.** Open
4. Exit only **5.** Half open **6.**Open and close one time

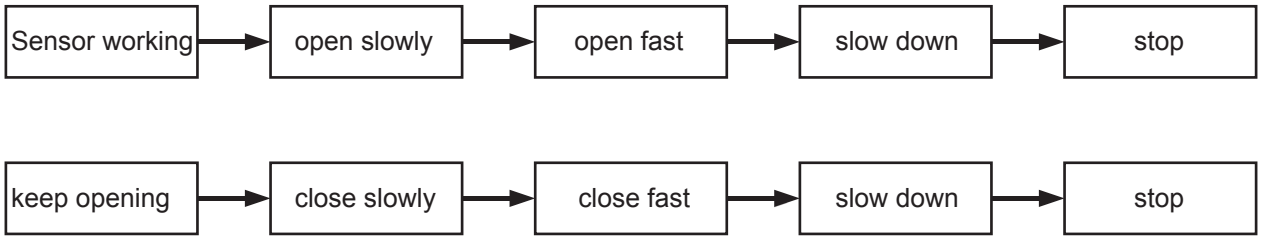
Add remote: Keep pressing Button A , While the indicator D turn bule, Press any button on remote , Blue indicator offf and with Voice, setting successfully.

Delet remote control: keeping press button A, The indicator D from Off to on, then to off,press any button on remote ,All remote control will delete after the indicator flash 3 time (attention Please keep pressing learning button while delet remote control).

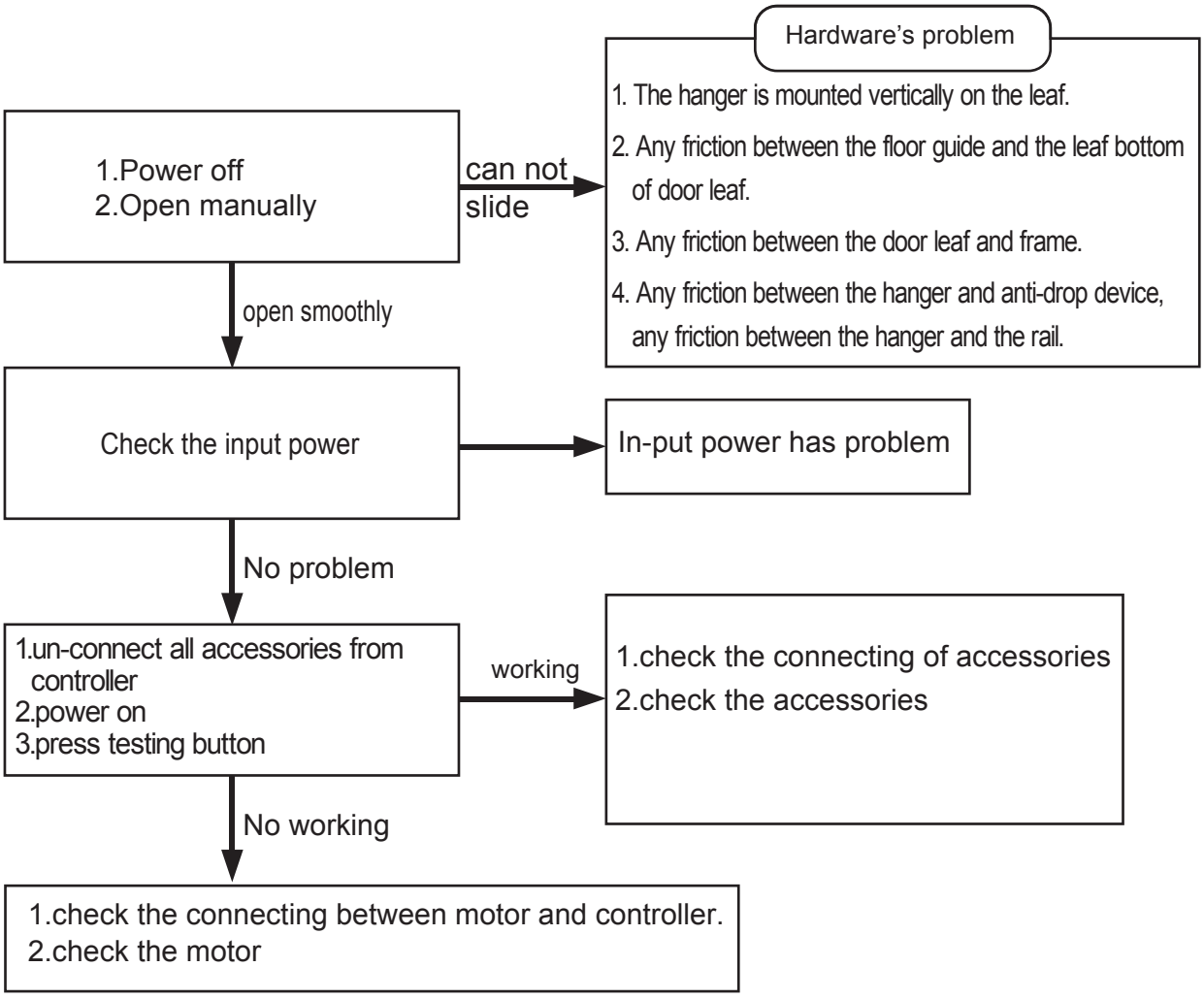
Description of operation

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. Fixe the guide at the right position. 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.

Trouble shooting

Door does not close	Photocell is working.	Check the receiver and emitter are at same level or not.	Adjust position of receiver and emitter at same level.
		The surface of receiver and emitter is clean or not.	Clean the surface.
		Connection is good or not.	Connect the photocell the controller well.
	Function keypad or remote is working.	Check the button of always opening.	Re-set the function.
Door open by itself	Sensor work mistakes	Any stuff at the detecting area.	Move the stuff out the detecting area.
		Any fluorescent light near sensor.	Don’t install the fluorescent light near sensor.
		Any strong microwave machine working near sensor.	Move the machine away sensor.