

Caution

Our company shall be not responsible for any loss due to the violation of these warnings below, does not also provide a free warranty in case the machine is damaged!

- ⚠ Please use the power supply complying with the provisions!**
- ⚠ To ensure a reliable grounding!** The metal materials are used for the automatic door machine's housing, which it is a good conductor of electricity. Automatic door must be well grounded. Especially when the metal door is used, because the back of the automatic door is the metal, the door is connected directly to the automatic door machine, to form a good conductor of electricity. Therefore, the reliability of grounding should be strictly monitored.
- ⚠ To prevent the intrusion of water vapor!** The complex electronic components are equipped in the automatic door, the water vapor is not allowed in it, but in order to dissipate the heat, the housing is not sealed. Therefore, the intrusion of water vapor shall be prevented.
- ⚠ The backup power used to the external device provided by the automatic door machine shall be not used in case of exceeding the standard!** Otherwise, it will likely lead to the power overload and electronic components in some circuits are damaged!
- ⚠ It is not allowed to open or close the door quickly and violently by hand!** It is not allowed to open or close the door by hand quickly and violently in the running or when the power is off, to prevent the overload of automatic door machine from causing damage to the automatic door machine.
- ⚠ To prevent the danger caused by colliding the person, the safety light ray is used!** If the safety light ray is not installed, you will likely be collided by the movement door within the operating area of the door. So the safety light ray is used when there are old people and children and senior citizens, and the lower opening and closing door speed and longer opening door holding time are adopted.
- ⚠ To prevent the danger caused by clamping the hand, the safety light ray shall be used!** If the safety light ray is not installed, the hand may be clamped when locking the door. In general, the hand is clamped rarely (the door is locked very slowly within the range of 7 to 12 degrees when locking the door), the harm is very little; but it is still dangerous when using a larger locking door force. The safety light ray shall be used and a smaller locking door force is used if possible.
- ⚠ Except that the housing shall be opened when installing, the interior structure is not allowed to open.** Once the internal structure is opened, our company will not be responsible for any losses caused by the product safety reduction, degradation of the product performance, and losing the power of free warranty.
- ⚠ Any person other than our company or who is not designated by our company shall does not repair, change the internal circuit!** When you find that the automatic door machine is failed, do not try to open the automatic door machine for the repair. Any change will likely have serious consequences!
- ⚠ The frameless glass with small door clamp is used, its width must be less than 90 mm, and glass must be tempered for security reasons.**

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Chapter 1 Product Overview

In order to use this device more effectively, please read this manual carefully before use.

Automated System for Leaf Door is an intelligent digitally-controlled automatic equipment. With superior performance and powerful function, it can be connected to different kinds of identification-based door lock systems, including bank card readers, magnetic card readers, imprint machines and fingerprint identification systems. It can also be connected to interphone controlled entrance doors, body sensors, smoke alarms, mechanical switches and other TTL, CMOS control circuits.

This model is equipped with anti-clamping protection function, the door can be automatically opened when the door collides people or objects.

UPS provides emergency power in case of power failure.

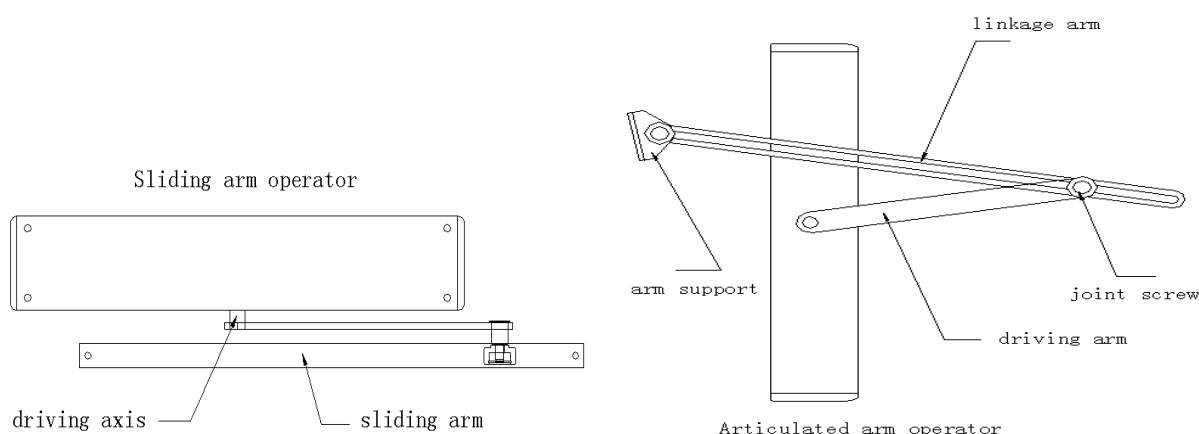


Figure 1

1.1 Corresponding state of indicator light

Automatic state (green indicator light is on): automatic door machine runs automatically according to the basic procedures

1.2 Main Parameters

- Opening angle: $90^{\circ} \sim 130^{\circ}$
- Applicable for single leaf swing door: max weight 65Kg, max width 900mm
- Opening/closing speed adjustable: 3-6s
- Hold- open time adjustable: 0-20s
- Power supply: $220\text{ V} \pm 10\%$ 50~60 HZ
- Safety System: Automatic protection against overheating, excess voltage, overcurrent and barriers
- Power Output: 12V DC, 0.5A, to be used by exterior devices, including body sensors, entrance guards, control switches and electric switch locks.
- Rated power: 45W
- Static power: 5W
- Dimensions of the main engine: 450mm(L)*80mm (W)*80mm (H)

Chapter 2 Installation

2.1 Installation Notice

- The operator is available both for left handling and right handling door (can be mounted on the hinge side or on the opposite hinge side).
- Articulating arm and sliding arm both can be used to this operator. When sliding arm is used for specified (left or right) handling door, there will be some changes on the connection between the sliding arm and the main operator. (See Figure 2)

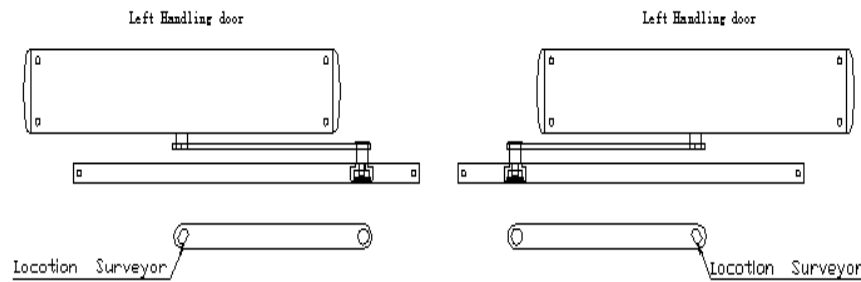
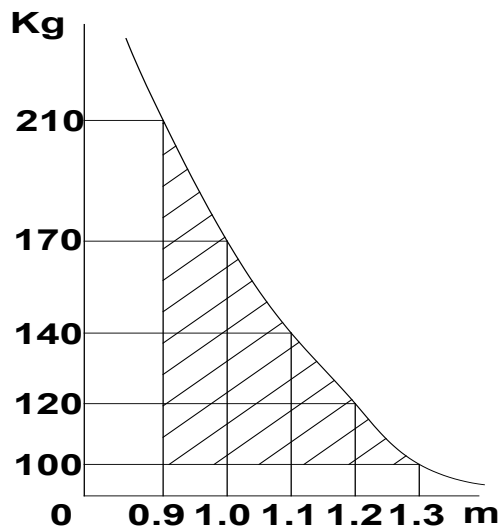


Figure 2

- Door leaf max weight and width: Please refer to the max limit of the door application, overweight will affect the capacity of the operator. (See below diagram)



- Installation measurement: The operator must be installed exactly as the measurements stipulated by the instruction manual, the improper installation will decrease the operation of the operator, even cause malfunction and damage.
- When the operator is supplied with power, the driving axis will rotate 360°. This is normal action, when it is fixed onto the doorleaf, it will perform normally.

2.2 Installation scheme

Want your door to be

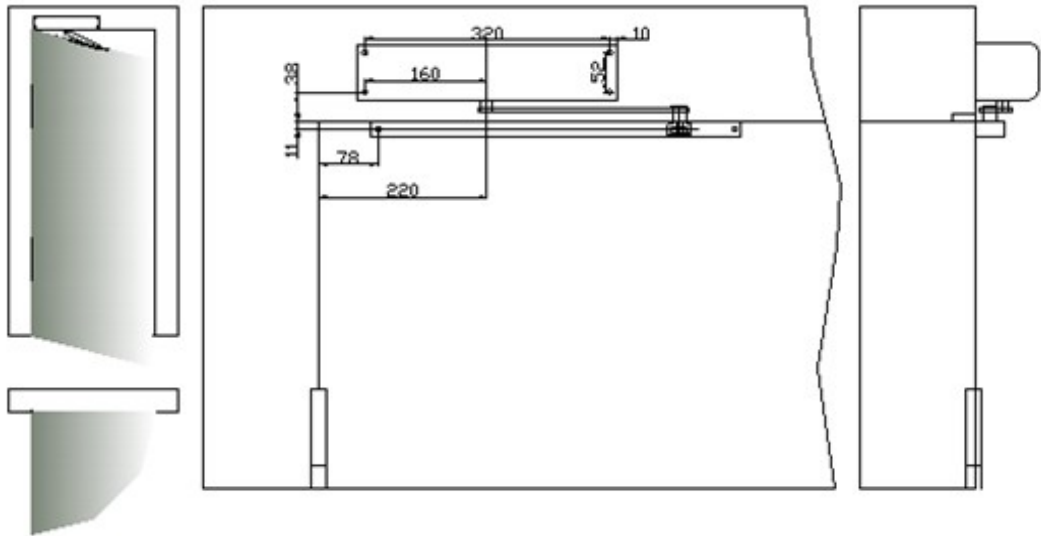
- Become inductive automatic door by connecting sensor inductor.
- Become identifying automatic door by connecting code remote control or card reader and other door access control system.

- Become apartment automatic door by connecting building intercom system.
- Become long-distance wiring control automatic door by connecting push button on the table or wall.
- Automatic open/close set as required when on fire by connecting to fire alarm equipment.
- Automatic close on pilferage by connecting to theft alarm equipment.
- Become double leaf automatic doors by simultaneous performance of 2 operators.

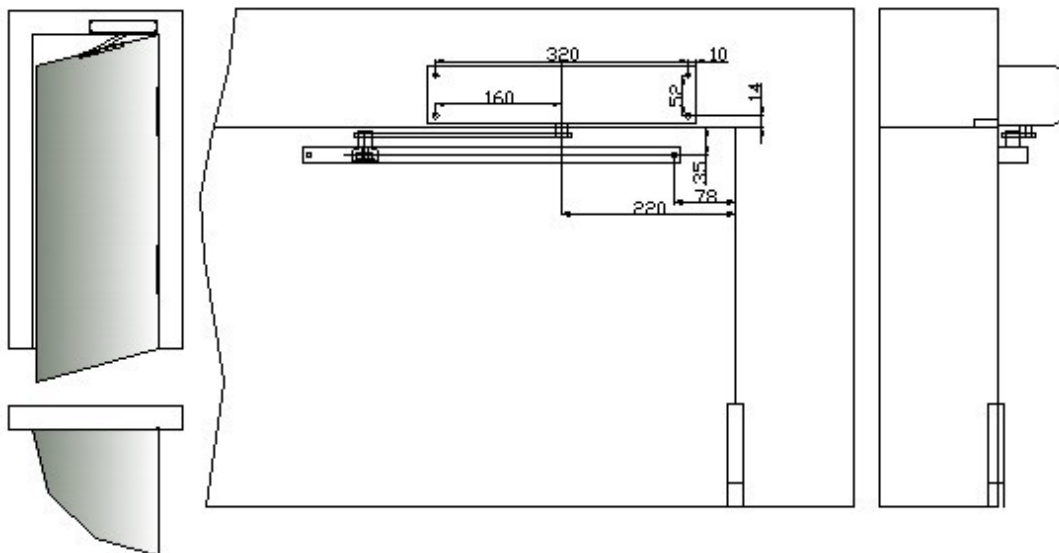
2.3 Installation measurement and mode

A. Sliding Arm Model

Sliding arm model, left or right **outward** opening installation



Sliding arm model, left or right **inward** opening installation



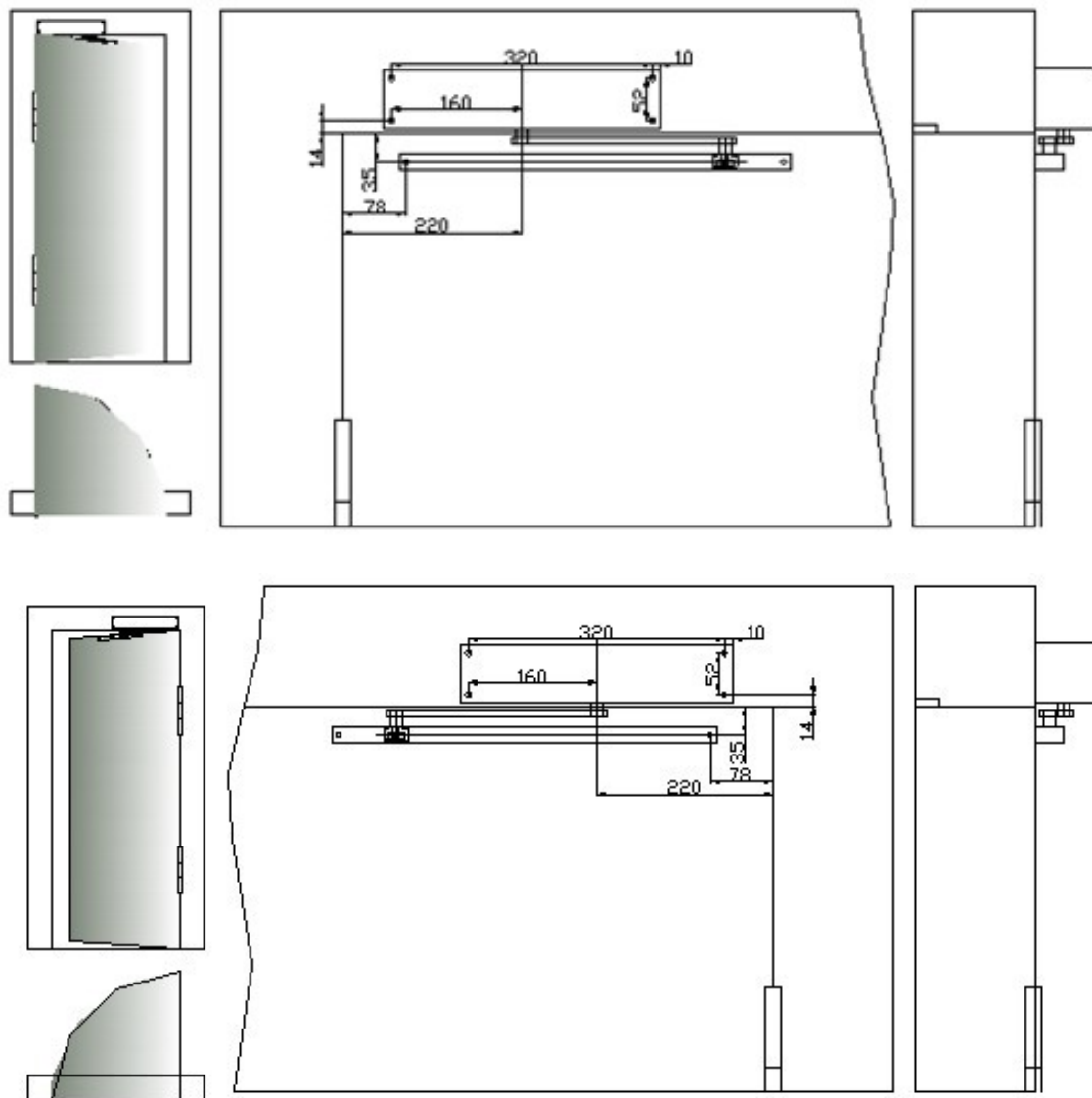
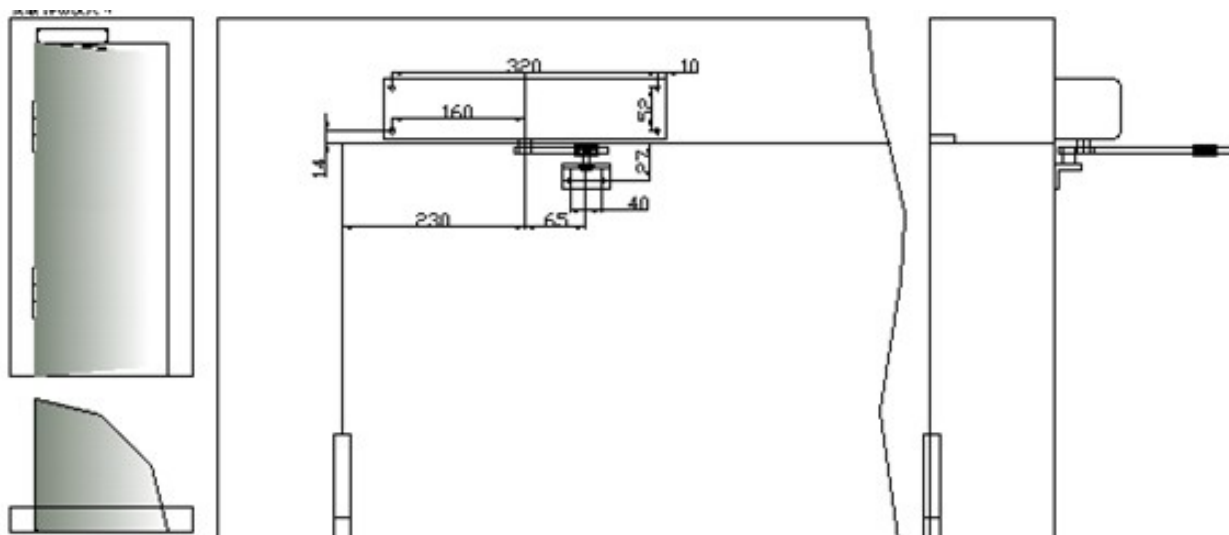


Figure 3

B. Articulated arm model

Left or right hand location measurement is the same, you can refer to the left hand measurement when amounting right hand on right side.

Articulated arm model, left handing, outward open installation



Articulated arm model, left handing, inward open installation

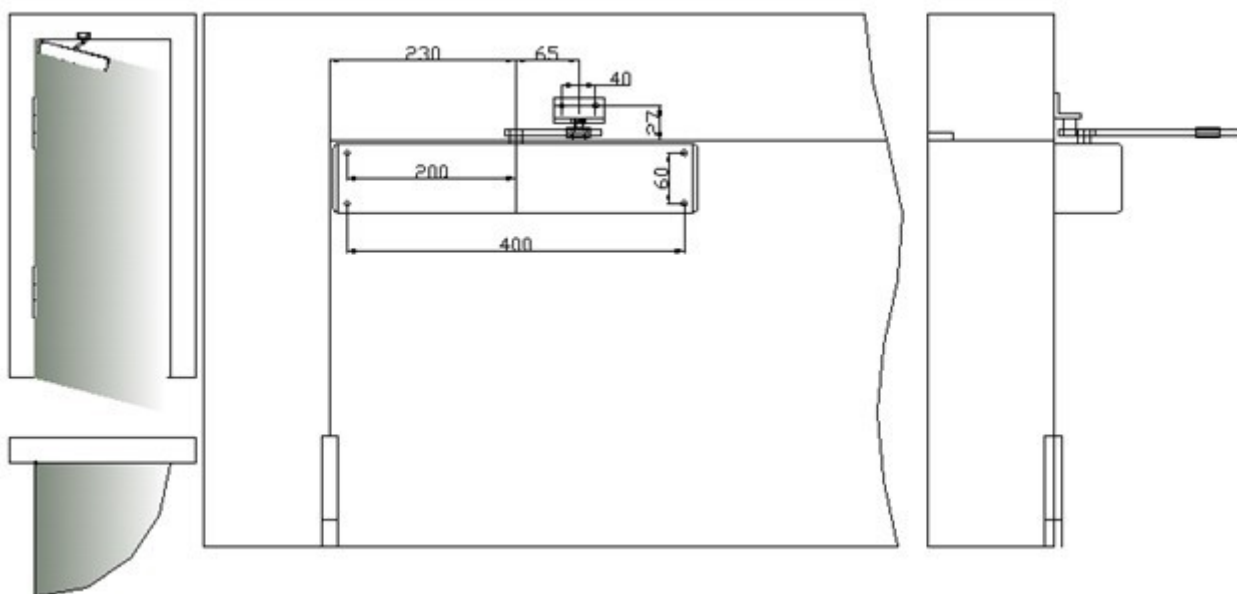


Figure 4

Supplement Notice

- When driving arm is vertical to the doorframe, the buffer latching angle is 12° (see Figure 5, Figure 6); while the driving arm is fixed at 75° angle to the doorframe, the buffer latching angle is 7° (see Figure 6). It is suggested to use the latter fixing way for normal people; to avoid the possibility to be nipped by the latching door for elder or children, it shall be adjusted to 12° buffer latching angle if the door is too wide and heavy, or the brake and buffer action is not enough.
- When the door is fixed at the largest depth of doorframe (see Figure 9, Figure 10, Figure 11), it should be noticed that the angle between door frame and driving arm should be more than 60° (see Figure 7) for articulating arm model, and less than 20° for sliding arm model (see Figure 8).
- The accuracy of the installation measurement will affect the opening angle and capacity parameters of swing door operator. It is highly suggested to fix the articulated operator with the paper mould (see packing list at the last page)

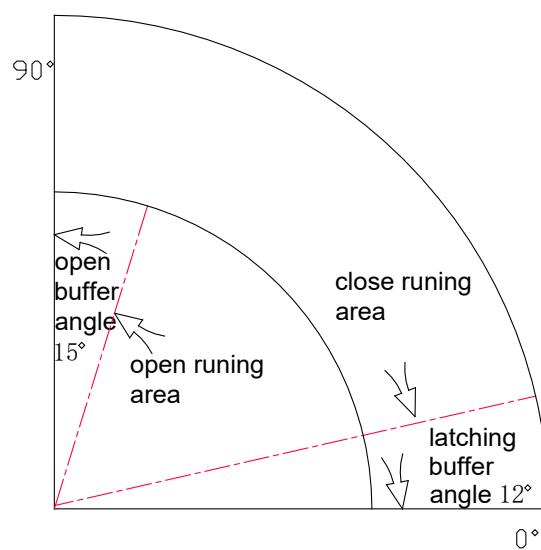


Figure 5

Driving arm angle:

driving arm correct angle model

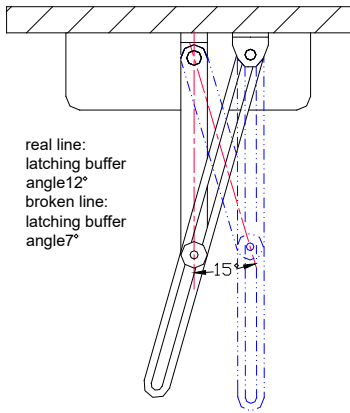


Figure 6

driving arm tolerable deviation

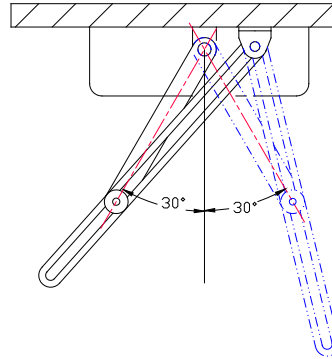


Figure 7

utmost angle for sliding arm

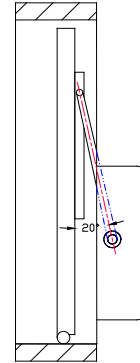


Figure 8

Door leaf depth position:

on the edge of inner frame

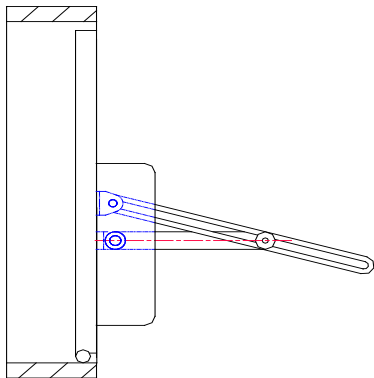


Figure 9

in the middle of frame

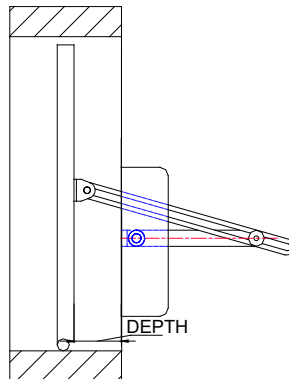


Figure 10

on the edge of outer frame

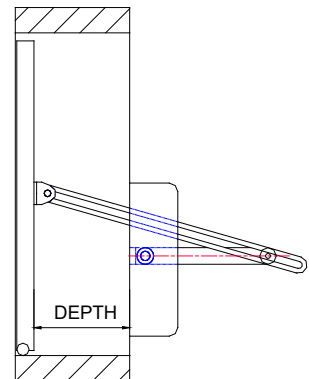
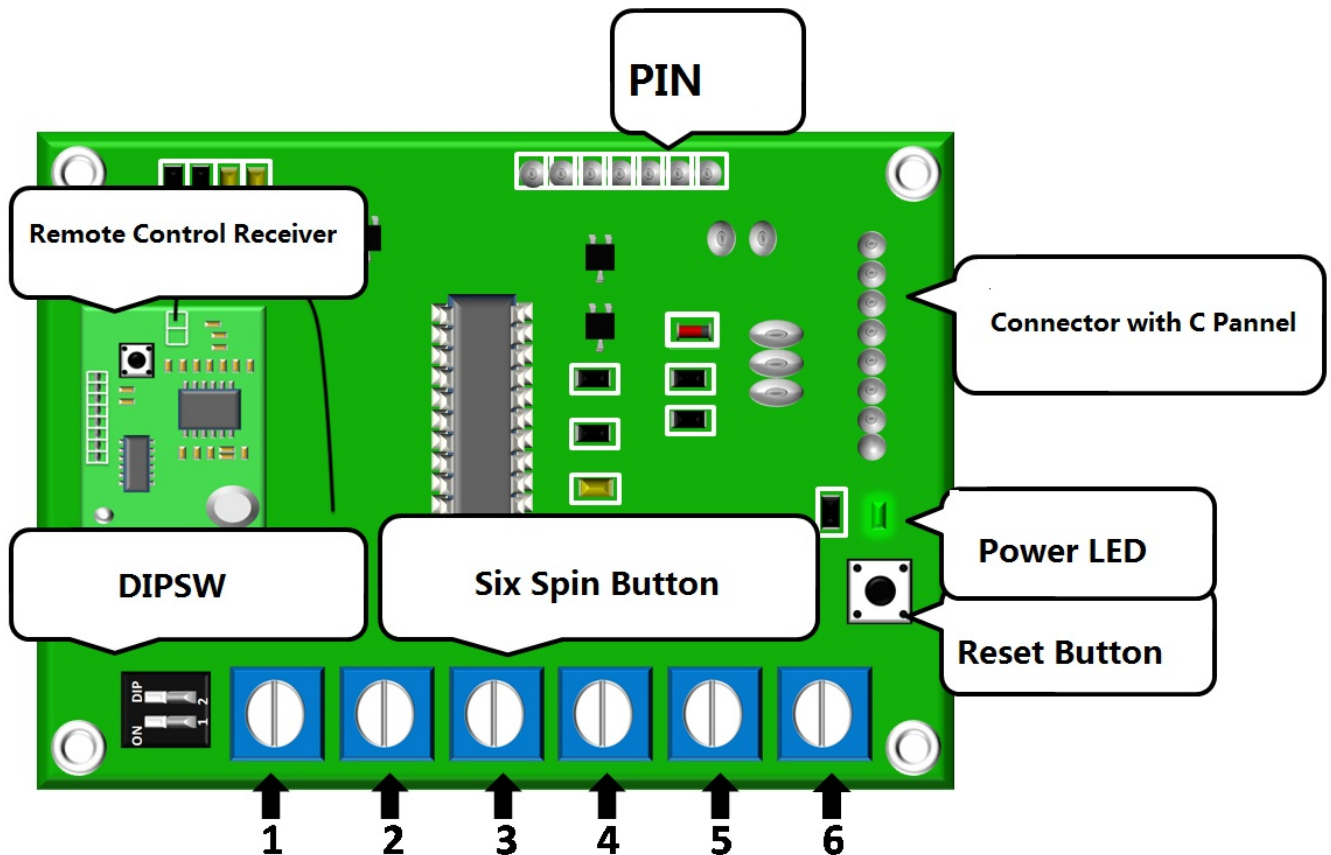


Figure 11

Note: Figure 10, the door leaf depth shall be less than 80mm for the normal existing linkage arm; Figure 11, the linkage arm shall be specially tailored longer if the door leaf depth is more than 80mm. (please inquire your distributor for the special longer linkage arm)

Chapter 3 Control System Introduction

A circuit board of the controller



Front view of A circuit board of the controller

Potentiometer



Controller is equipped with six potentiometers (rotary button). The potentiometer is turned up in the direction of the clockwise rotation, the potentiometer is turned down in the direction of the counterclockwise rotation.



Clockwise rotation



Counterclockwise rotation

For the convenience of later description, the full rated rotation speed of the motor is hereinafter to be referred as Full Speed.

The functions of each potentiometer are described as follows.

Potentiometer No.1: it is used to control fast opening speed, and is divided into 10 stalls

Specific data:

Stall position	Effectiveness
First stall	100% Full Speed
Second stall	92.5% Full Speed
Third stall	85% Full Speed
Fourth stall	77.5% Full Speed
Fifth stall	70% Full Speed
Sixth stall	62.5% Full Speed
Seventh stall	55% Full Speed
Eighth stall	47.5% Full Speed
Ninth stall	40% Full Speed
Tenth stall	32.5% Full Speed

Potentiometer No.1: it is used to control fast opening speed, and is divided into 10 stalls

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Sixth stall	62.5% Full Speed
Seventh stall	55% Full Speed
Eighth stall	47.5% Full Speed
Ninth stall	40% Full Speed
Tenth stall	32.5% Full Speed

Potentiometer No.3: it is used to control the buffer speed, and is divided into 10 positions

Specific data:

Stall position	Effectiveness
First stall	25% Full Speed
Second stall	23.5% Full Speed
Third stall	22% Full Speed
Fourth stall	20.5% Full Speed
Fifth stall	19% Full Speed
Sixth stall	17.5% Full Speed
Seventh stall	16% Full Speed
Eighth stall	14.5% Full Speed
Ninth stall	13% Full Speed
Tenth stall	11.5% Full Speed

Potentiometer No. 4: it is used to control the opening angle, and is divided into 10 positions

Specific data:

Stall position	Effectiveness
First stall	87°
2 档 Second stall	89.5°
Third stall	92°
Fourth stall	94°
Fifth stall	96°
Sixth stall	98.5°
Seventh stall	100.5°
Eighth stall	103°
Ninth stall	105°
Tenth stall	110°

Potentiometer No. 5: it is used to control the waiting time that fully opens the door, and is divided into 10 stalls

Specific data:

Stall position	Effectiveness
First stall	20 秒 Seconds
Second stall	18 秒 Seconds
Third stall	16 秒 Seconds
Fourth stall	14 秒 Seconds
Fifth stall	12 秒 Seconds
Sixth stall	10 秒 Seconds
Seventh stall	8 秒 Seconds
Eighth stall	6 秒 Seconds
Ninth stall	4 秒 Seconds
Tenth stall	2 秒 Seconds

Potentiometer No. 6: it is used to the control the allowable current of the motor (i.e., torque), and is divided into 10 stalls

Specific data

Stall position	Allowable current
First stall	1A
Second stall	1.5A
Third stall	2A
Fourth stall	2.5A
Fifth stall	3A
Sixth stall	3.5A
Seventh stall	4A
Eighth stall	4.5A
Ninth stall	5A
Tenth stall	5.5A

The opening speed and closing speed are generated from the motor running that is controlled by the controller.

To protect the controller from damage to the over-current and over-pressure, the voltage and current of the motor shall be mutually restricted, to prevent the damage to the motor.

Power supply LED



Power indicator, it indicates that there is the external voltage when the green light is on, the power indicator is off when the external power source is turned off or fuse is burned out.

Reset button:



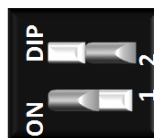
When this button is pressed, no matter what state the controller is in, the first step of the procedure will be directly operated.

Dip switch:



The black plug-in unit is the two-stall dip switch, two-stall options (1, 2). The position as shown in the picture is in the OFF state. If it is necessary to open a function, its corresponding DIP switch is opened up to the ON position. Its function is as follows:

Dip switch No.1: clockwise / counterclockwise selector switch. When DIP switch No.1 is the OFF state, it is turned on in the counterclockwise direction. When DIP switch No. 2 is in the ON state, it is turned on in the clockwise direction.



Dip switch No. 2: locking every time / remote locking selector switch. When Dip switch No. 2 is in the OFF state, it is automatically locked after the door is closed. When Dip switch No. 2 is in the ON state, it will be not locked after the door is closed each time. It can be automatically locked only after the door is closed by pressing the "stop" on the remote control button.



Pin header:

Pin header is divided into the pin header head and pin header seat, the pin header head is located in the A circuit board, the pin header seat is located in the B circuit board. Controller is equipped with the pin header with 7 cores, the upper and lower parts shall be aligned when connecting.

Remote Control

As shown below, the remote control has 4 buttons, i.e., each corresponding to “CLOSE”, “NORM”, “STOP” and “OPEN” respectively. The remote control can be used for debugging or controlling.



The respective functions of the four buttons are described as follows:

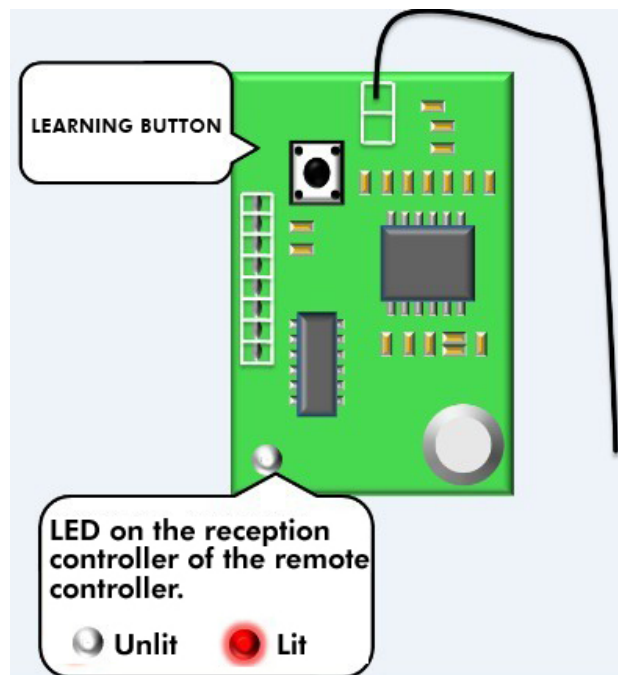
“B”: For closing the automatic door. Once the door is completely closed, the operation is finished.

“D”: For closing the automatic door and canceling all the opening signals except for fire alarm. The operation is not completed until any other remote control button is pressed.

“A”: The door will open automatically once each time the button is pressed. The operation is completed once the door is opened.

“C”: For confirming the program. When the adjustment of all options is finished, by pressing “NORM”, the door will open once, and the debugging data will be stored in the controller. No data will be lost even in case of power failure.

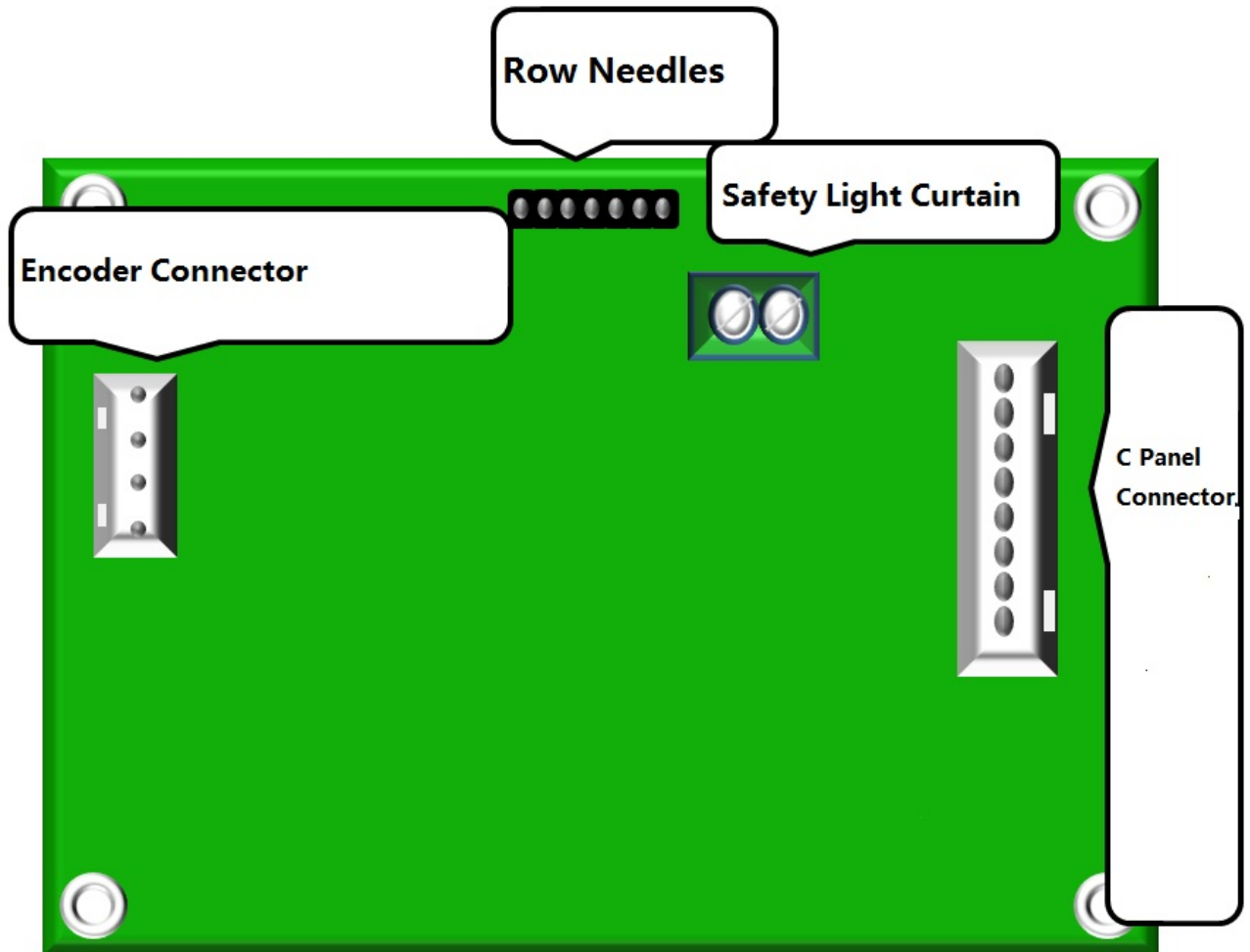
Remote Control Receiver



Use of Remote Control Receiver

Learning Function: (Up to 15 signals from the remote control transmitter can be stored. When learning the 16th signal, the first signal will be erased automatically). Press Learning button (for about 1 second) until the LED is lit to enter Learning state. At this time, by pressing any button on the remote control transmitter, the LED will blink and then turn off. The transmitter is ready for use.

Erasing Function: Press the Learning button, and the red LED on the remote control receiver will glow. Keep the status for 10 seconds, and then the red LED will turn off. At this time, all the signals from remote control transmitter that have been learned will be erased. Then the transmitter can be used until a re-learning course is finished.



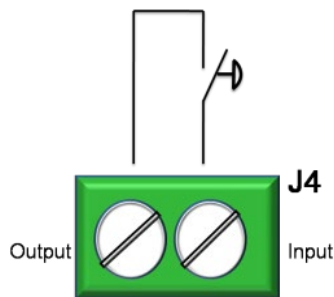
Reverse side of the A circuit board of the controller

Encoder's connector:



The encoder's connector is connected to the four-core connecting wire leading out from the encoder behind the motor.

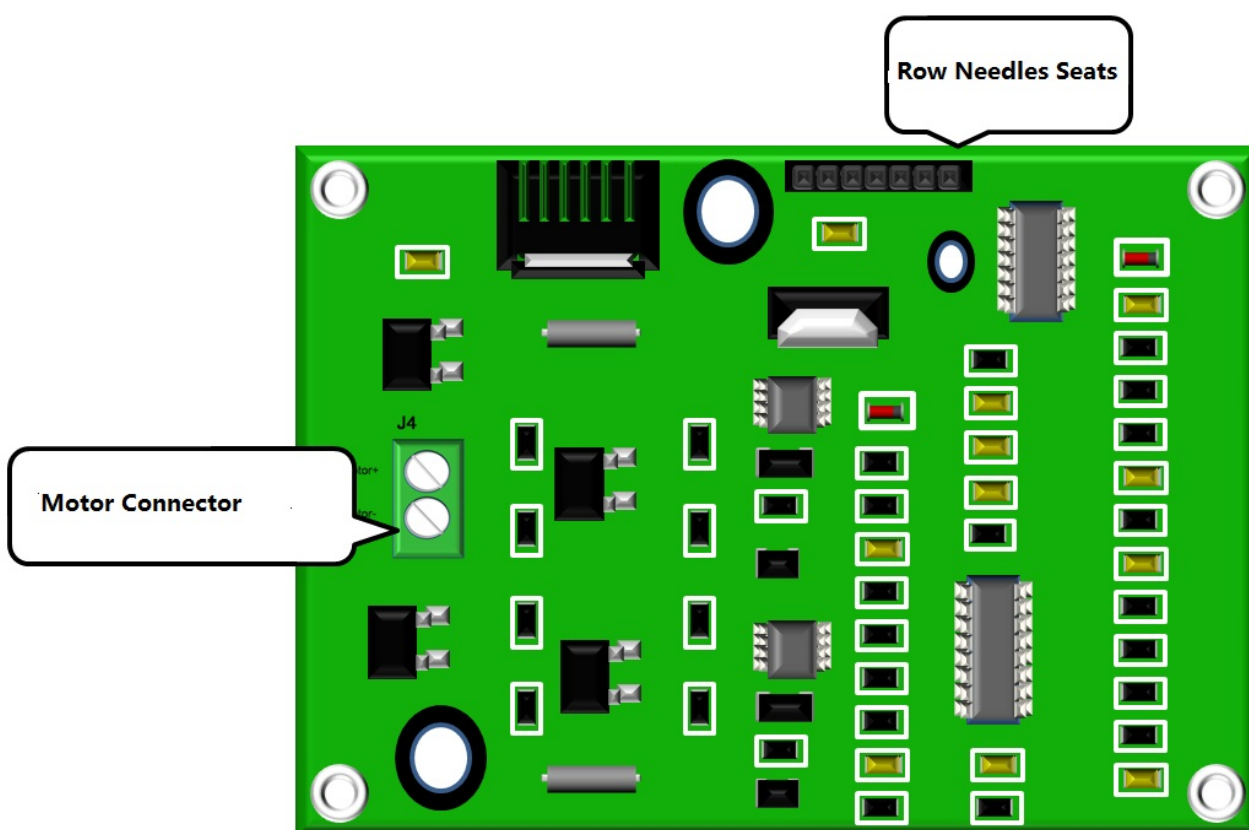
Safety screen:



Security screens

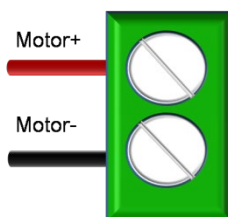
If the security screen is not used, the encoder's connector remains in the normally open state. If it is externally connected to the security screen, the normally open is set in normal circumstances; if it is triggered by a person, the encoder's connector is closed.

B circuit board of the controller



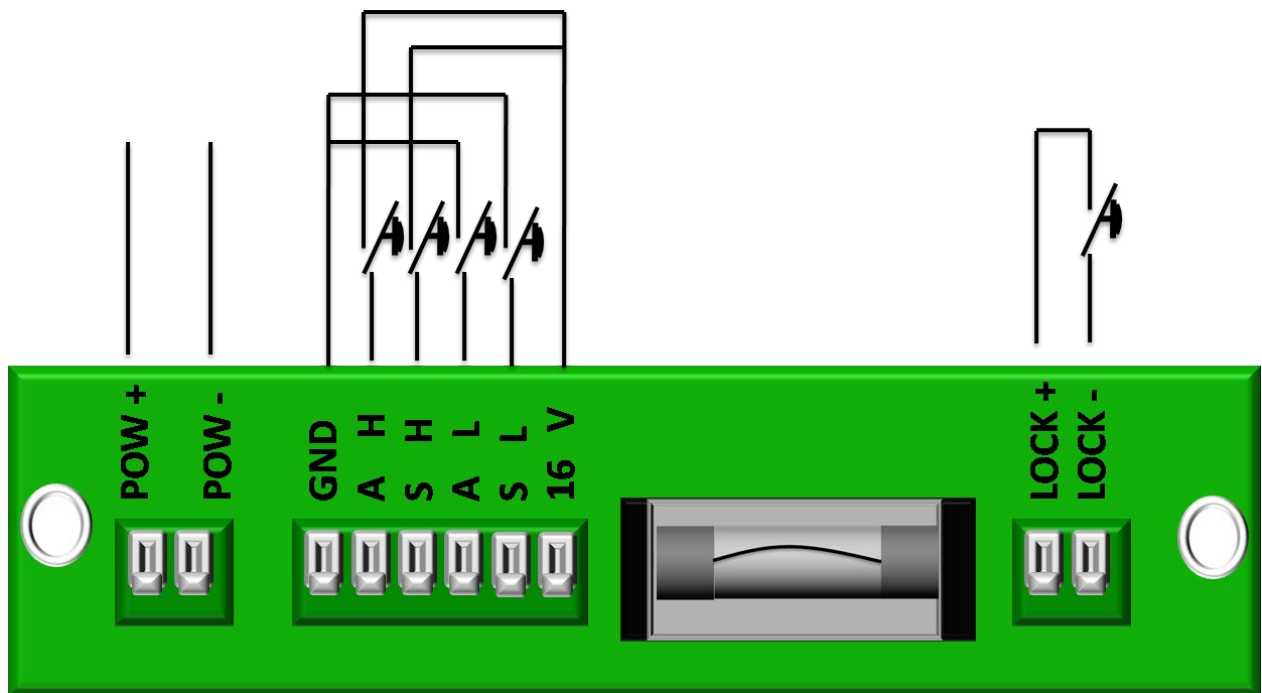
Front surface of B circuit board of the controller

Motor's connector



Two wires of the motor are connected to the connectors of the motor, the red wire leading out from the motor is connected to the motor +, the black wire leading out from the motor is connected to the motor.

C circuit board of the controller



POW-and POW + is the two-way input and output port, the 16V DC voltage (higher than the POW-port) is supplied to the POW + under normal electrified circumstances. At this time, two ports are in the output state or the power transmission state. In the case of power failure, it is allowed to supply the voltage that controls the chip operation through two ports outside (the voltage value is provided at 14V~18V DC), so that the door body can run normally. At this time, two ports are in the input state or electrified state. User can connect two ports to the charger so as to charge the charger under normal circumstances. In case of power failure, the door is supplied the power from the charger. Some power devices with DC of 16V and 16V or below (the partial pressure handling can be simply made for 16V below) can be also connected. Any connection is not made if the external device is not loaded.

Lock+——Lock-:

Lock + and Lock- are the ports that are connected to the electric lock. When loading the external electric lock, Lock + and Lock-are connected with the positive and negative ends of the electric lock. When locking, a 16V DC power supply is provided to the external electric lock by the controller. Any connection is not made if the external electric lock is not loaded.

S L——GND:

S L 1 and GND are the opening signal 1. The signal port is active at the low level. It is normally open under the normal and no signal state, or high level is provided. When there is a signal, two ports must be in closed state or the low level is provided. Opening signal is sent to the controller.

F L——GND:

S L and GND are the fire alarm opening signal 1. The signal port is active at the high level. It is normally open under the normal and no signal state, or high level is provided. When there is a signal, two ports must be in closed state or the low level is provided. Opening signal is sent to the controller.

S H——GND:

S H and GND are the opening signal 2. The signal port is active at the high level. It is normally open under the normal and no signal state, or low level is provided. When there is a signal, two ports must be in closed state or the high level is provided. Opening signal is sent to the controller.

F H——16V:

S H and GND are the fire alarm opening signal 2. The signal port is active at the high level. It is normally open under the normal and no signal state, or low level is provided. When there is a signal, two ports must be in closed state or the high level is provided. Opening signal is sent to the controller

Opening signal

1. S L——GND: Opening signal ①
2. S H——16V: Opening signal ②
3. Remote control button "open": opening signal ③
4. Remote control button " normally ": opening signal ④
5. F H——16V: opening signal ⑤
6. F L——GND: : opening signal ⑥

Opening signals ①, ② are the common signals, the signals ③, ④ are the remote control signals, the signals ⑤, ⑥ are the warning signals

Closing signal

1. Remote control button "open": closing signal ①
2. Remote control button " normally ": closing signal ②

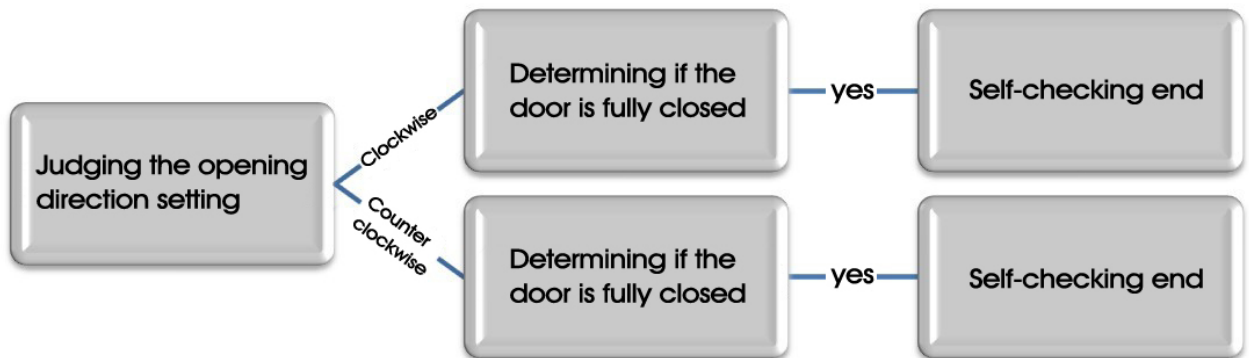
Closing signals are the remote control signals

Signal priority level:

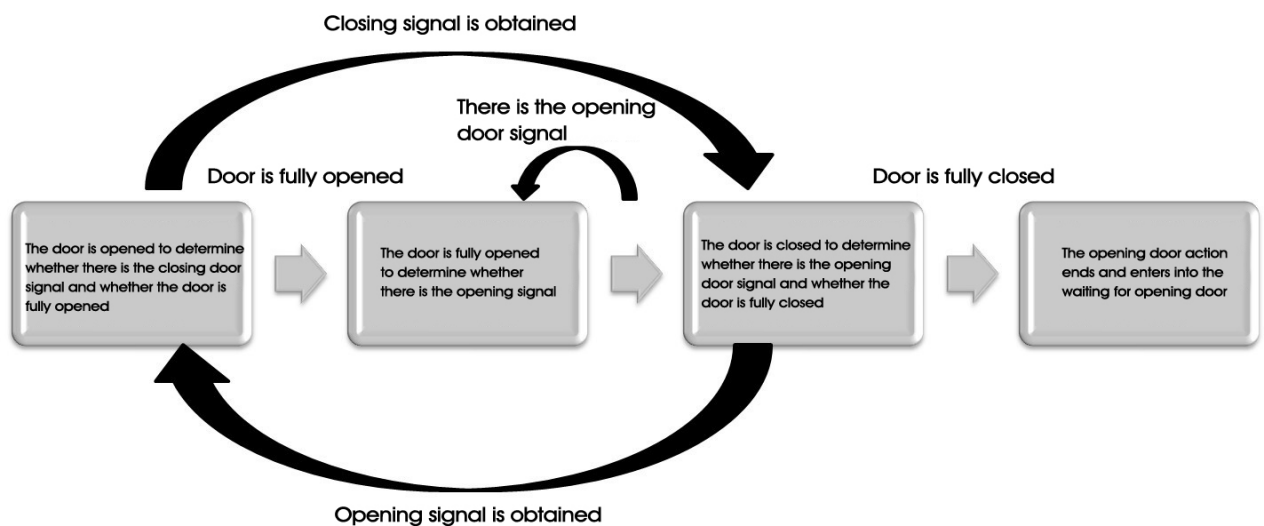
Alarm signal -> remote control signal -> common signal

Run mode

open in the clockwise or counter clockwise direction. The door body is closed according to the settings of the controller.



Normal operation



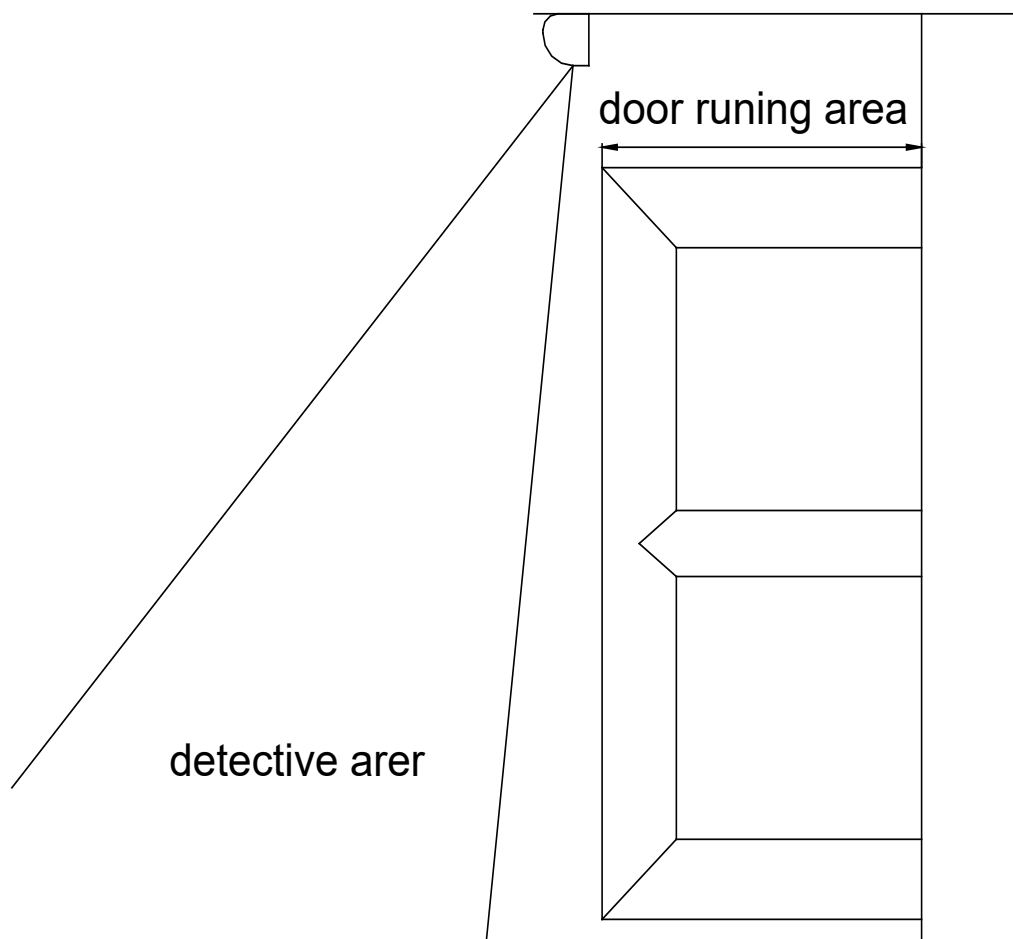
Induction system And Other Equipment Debugging

Please refer to the instruction of inductor and other equipment.

Notice

- Passive Infrared Inductor can only induct the movements of people, it will not act without people's movements; while the other kind of inductors can be acted by all the moving object.

- It is highly suggested to use the **Passive Infrared Inductor**, if you use other inductor, please note that all the objects including door leaf should not be in the detective area .



Chapter 4 Troubleshooting

Breakdown phenomenon	Elimination method
Machine circular telegram latter 360 degrees revolving	<ul style="list-style-type: none"> ● This is the normal phenomenon
After the circular telegram, any indicating lamp is not bright	<ul style="list-style-type: none"> ● Opens organism lagging, inspects the 220v power whether to burn down
The remote control does not work	<ul style="list-style-type: none"> ● With electric wire 3 ports with 7 port connections, if will not accept opens the door, then should inspect the machine power source, if will accept the enabling signal, then further according to below way inspection ● When presses the remote control pressed key, the indicating lamp shines whether

	<p>brightly, if is dark, please turn on the top plate replacement homogeneous battery,</p> <ul style="list-style-type: none"> ● The remote control tries again to the code, if has not been able to affect, considers the receiver breakdown or the remote control expiration
After control device for signal, the kneading board indicating lamp has the transformation, the machine does not move	<ul style="list-style-type: none"> ● Whether only to open the door or not only be able to close, if, possibly will be like the power amplifier burns out, will replace the motherboard to try. ● If cannot move completely, is changes when the electrical machinery changes, the plug has not inserted reliably. ● After inviting the power failure, slowly reversible door, whether to feel nimble, removes the gate, and the rail track, on the scissors arm the lock screw catches possibility. ● Takes down the machine, with the hand uniform rotation connecting rod, looked whether to revolve nimble ● Still could not move, the possible power amplifier to burn out, replaces the motherboard to try.
The connection control device does not have an effect	<ul style="list-style-type: none"> ● Whether the remote control can the normal control, if normal, then explained that the machine is normal ● Inspects each port wiring carefully to be whether correct. ● The connection equipment is whether normal
The opening the door angle less than 90 degrees or surpass 90 degrees	<ul style="list-style-type: none"> ● Opens the door to 70 degrees, when or closes to 10 degrees about, has the deceleration, if does not have, please close the idling speed to reduce. If surpasses 90 degrees, then adjusts the opening the door angle. ● If the angle error is too big, the careful inspection the mounting dimensions to be whether accurate, leaves the doorframe surface including the gate the depth.
When movement stops for no reason, moves again	<ul style="list-style-type: none"> ● Inspection gate body's hinge (hinge) whether to revolve nimble; ● The inspection installs when connecting rod's binding screw installs whether correctly, between the connecting rod and the rocking shaft does rotate whether nimble. ● Inspects the safekeeping of security the sensitivity whether to move excessively high, sensitivity knob to anti-clockwise rotation.
Shaking when the door is closed	<ul style="list-style-type: none"> ● Locks a door the strength to move too in a big way, causes the safekeeping of security to start, will lock a door the strength knob anti-clockwise rotation, ● Opens the door to 70 degrees, when or closes to 10 degrees about, has the deceleration, if does not have, requests transfer slow speed which entire closes
Opens the door to 90 degrees when vibrates	<ul style="list-style-type: none"> ● The gate has the thing nearby 90 degrees to block. ● The gate is not very nimble, on the hinge, refuels. ● Opens the door the cushion speed to be excessively low, please open the door the cushion speed to adjust big.
After the automatic valve closes section of distances, is also redundant opens	<ul style="list-style-type: none"> ● Whether the gate in the installment sensor's induction area the movement, does request transfer the entire sensor induction scope, enables the gate body's path to leave the sensor the induction region. Or uses the passive infrared sensor ● The use pushes when namely opens the function, the sensitivity lowers.
The electricity locks cannot open	<ul style="list-style-type: none"> ● Whether is the shutter distorts, causes sticking the lock ● Whether is locks the tongue not to leave the locking hole then to open the door causes the card lock, will unlock the time to adjust long, ● Please firstly use locks the position holding wire to control the automatic valve machine to open the door (five electricity locks).