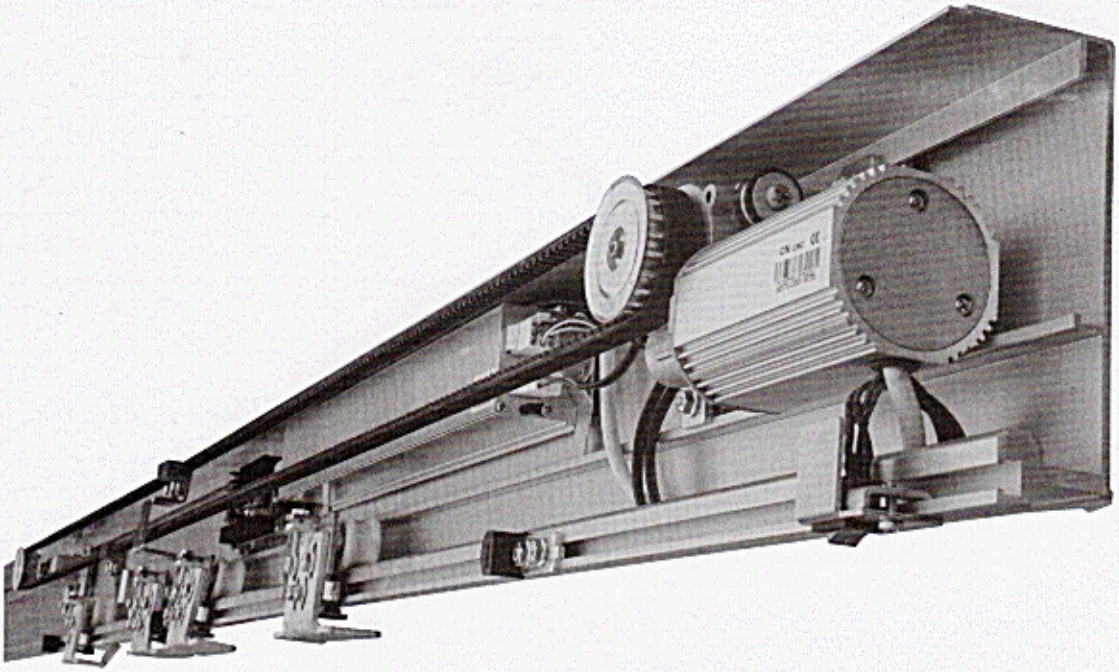
ADVANCED REFRIGERATION TECHNOLOGY

Operator For Automatic Sliding Door

ART-150

Operating Instructions



Notice to Installer: This manual must be left with the End User. Personally deliver to the End User's attention.

Contents

Features and Advantages

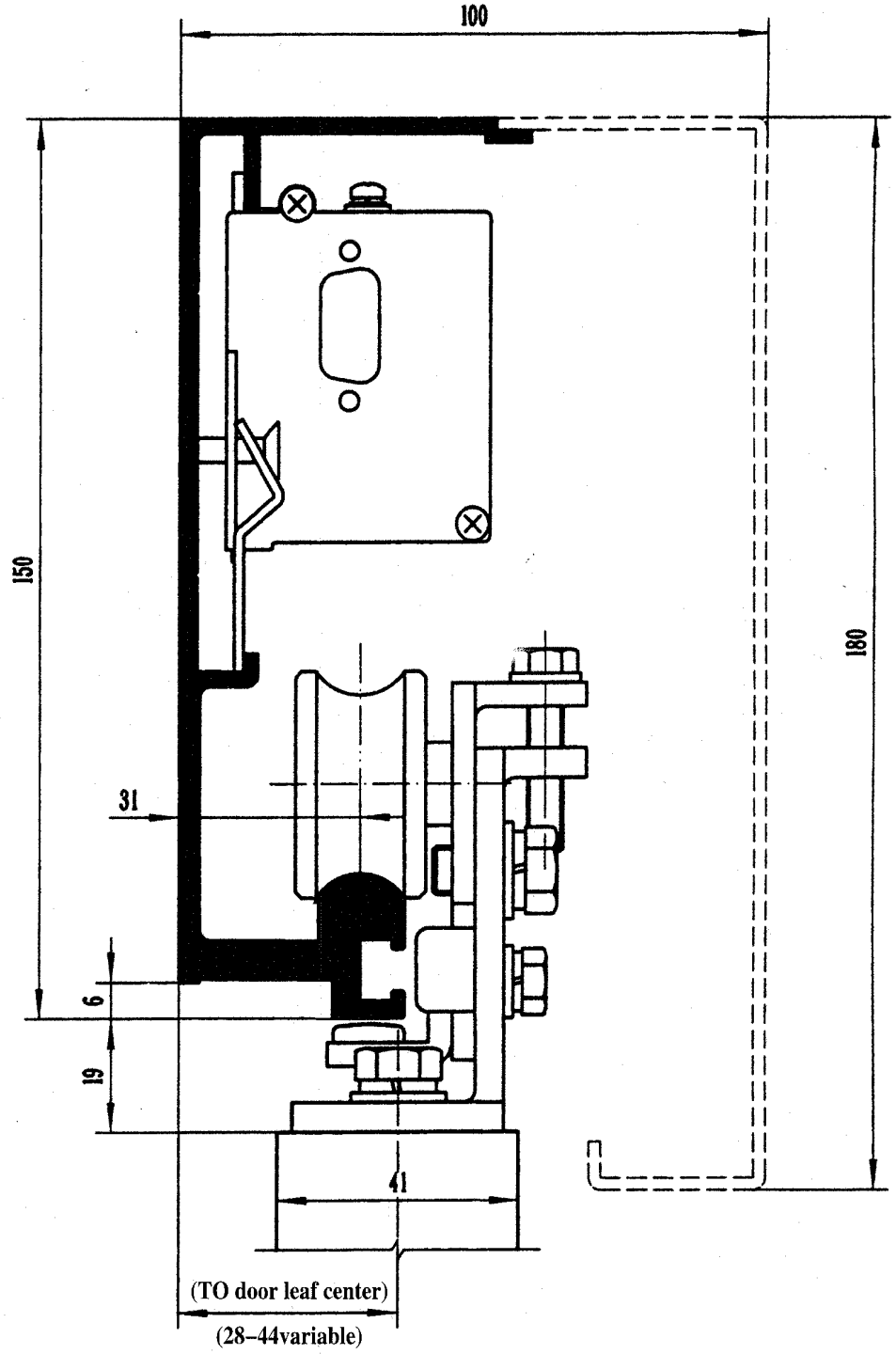
■ Microprocessor intelligent control and advanced mechanical manufacturing

- ■ Wide range of power-supply operation, low power consumption, energy saving at waiting status.
- ■ Intelligent control system, with different adjustable parameters.
- ■ Drive equipment with low noise, simple and easy installation
- ■ Advanced brushless motor, worm-wheel and reducer are integrated, with high efficiency, great torque, and long life.
- ■ Special self-locking function without any additional components, fully remote contorolling device, safe and reliable
- ■ Safety sensor to guarantee the pass of guests.
- ■ With different triggered door opening modes
- ■ Double door interlock function,only one door can be opened at one time.
- ■ Optional backup power supply to ensure the normal operation
- ■ When door is closed,it shall be locked and kept closed.
- ■ Slow starting, the door moving more smoothly.
- ■ Safety function, automatic protecting, automatic reset, motor lock.

Quality index

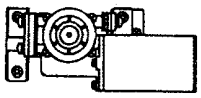
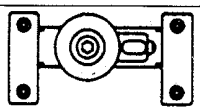
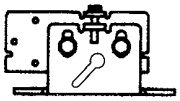
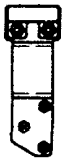
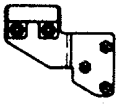
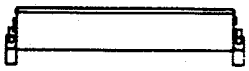
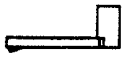
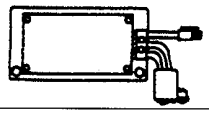
Standard	Light type		Heavy type	
Door body type	Single door	Double door	Single door	Double door
Door leaf weight	Maximum150kg	2 × Maximum150kg	Maximum250kg	2 × Maximum250kg
Door width	DW=700mm~1300mm	DW=650mm~1050mm	DW=750mm~1600mm	DW=650mm~1250mm
clear passenger width	DW=1350mm~6000mm	DW=2500mm~6000mm	DW=1450mm~6000mm	DW=2500mm~6000mm
Installation Style	Surface mounting			
Power voltage and frequency	AC100V~250V 50~60HZ			
Opening speed	100~500mm/s (Adjustable)			
Closing speed	100~500mm/s (Adjustable)			
Slow speed	30~100mm/s (Adjustable)			
Opening time	0~9S (Adjustable)			
Close force	200N<F<400n			
Manual force	<100N			
Power consumption	<150W			
Noise	≤50dB			
Operating temperature	-20℃~+50℃			

Section drawing of dynamic girder (Surface mounting)

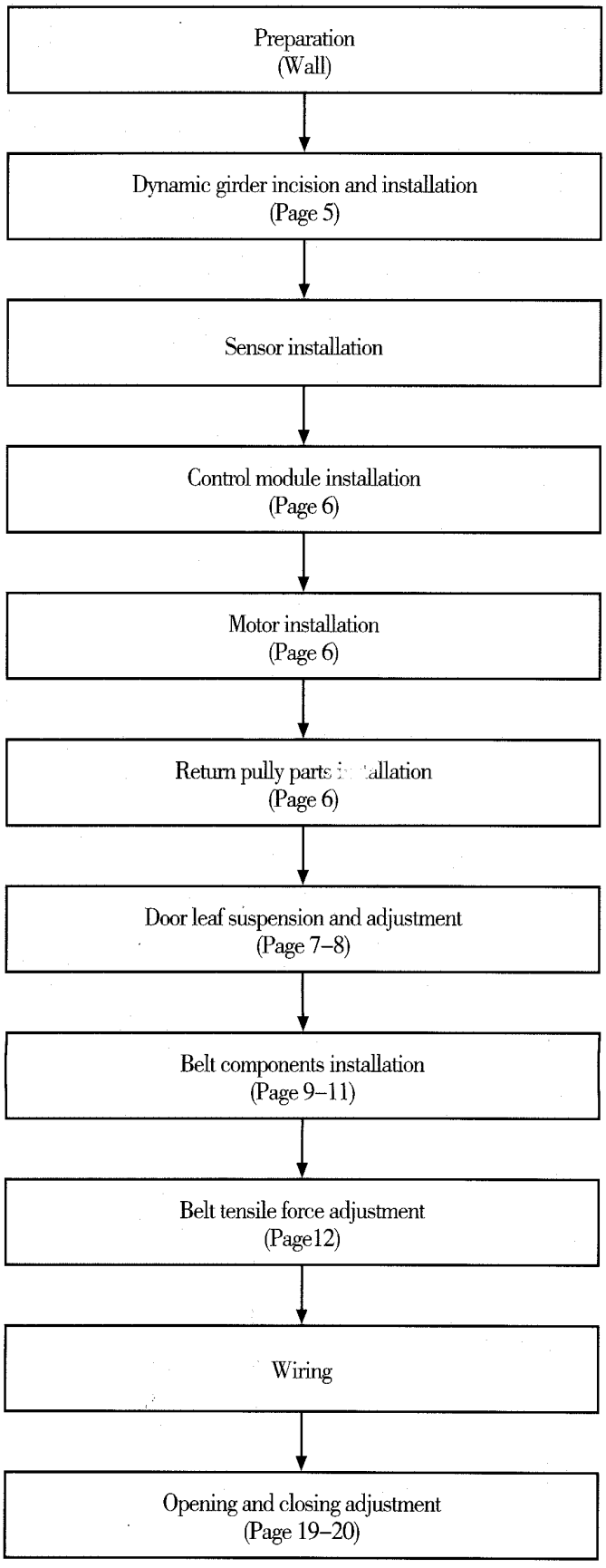


Drive unit spare parts list (Surface mounting)

■ The following parts inside package box of dynamic girder assembly

Title	Components type	Picture	Quantity		
			Single door		Double door
Dynamic girder assembly type			200X-01		200X-02
Motor equipment	8101		1		1
Return pulley parts	8106		1		1
Hanger parts	8105		2		4
Up connection bracket	8107		To left	1	1
			To right	–	
Down connection bracket	8108		To left	–	1
			To right	1	
Belt	8109		1		1
Control module	8102		1		1
Door retainer	8110		2		2
Function linking PCB	8103		1		1
Belt bracket	8111		–		For girder above 4200
Fastener	8113		One set		One set

Mounting process



Dynamic girder incision

(Surface mounting)

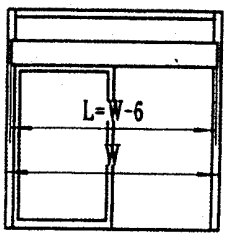
■ Standard length of dynamic girder

Dynamic girder type	Length(mm)
8117	4200
8118	6100

■ Incise dynamic girder

Incise dynamic girder to the following length

* Incision length L=W-6(mm)
* Distance between external door=W



Dynamic girder incision

(Surface mounting)

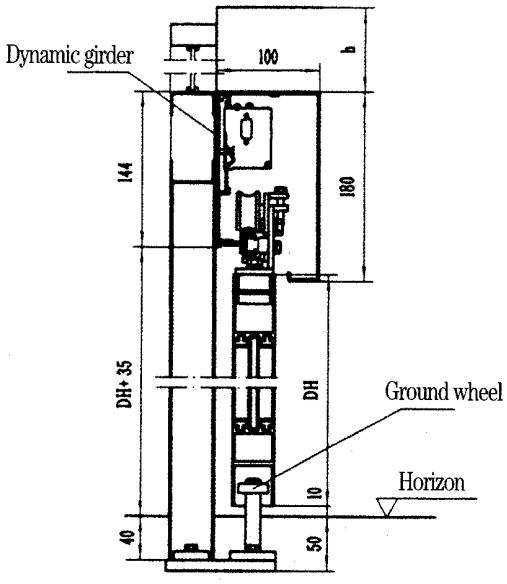
■ Install dynamic girder at position above horizon DH+35(mm)

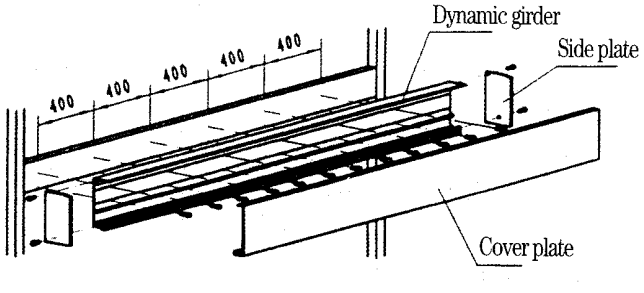
(1) Drill on dynamic girder and horizontal window (or wall) to install dynamic girder.

(2) Drill on dynamic girder and cover to pass on power wire and sensor wire.

(3) Fasten dynamic on horizontal window (or wall) with bolts (or M8 steel inflated bolt).

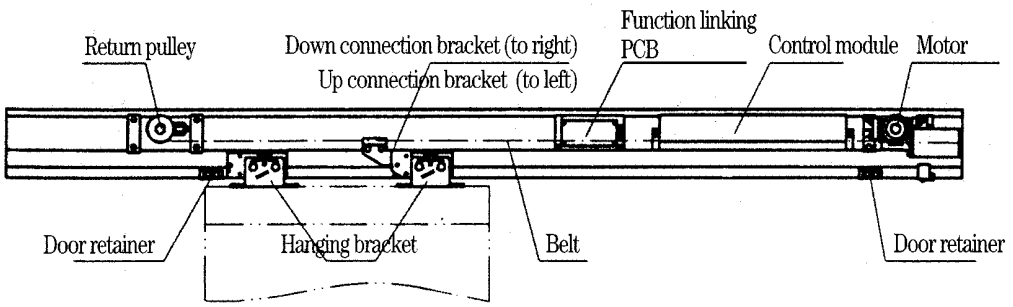
* Confirmed dynamic girder is horizontally installed.
* Height of active door is equal to DH.
* Net height above girder is more than 50mm.



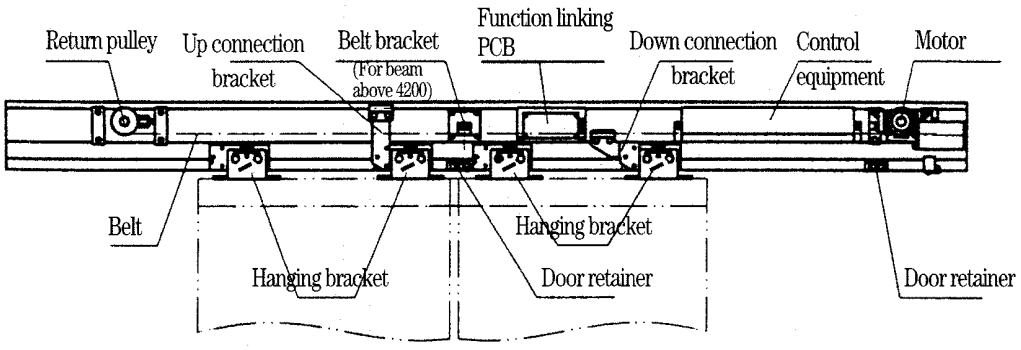


Dynamic components location

■ Similar location of components
(Single door)



(Double Door)



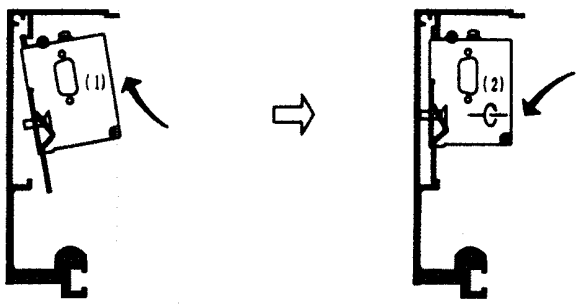
Mounting of different components

■ When motor, control module,return pulley,belt bracket and link PCB are installed, they are installed into grooves of dynamic girder and smoothly moved.

(1) Install all equipment components into up groove of dynamic

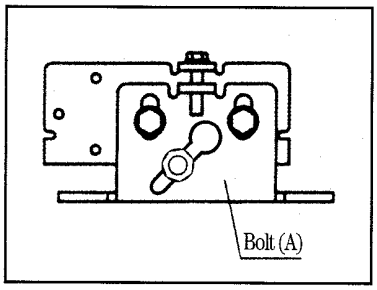
(2) Smoothly move them into down groove of dynamic girder.

(3) After they are located, fasten fixed bolt.



Door leaf suspension

■ Mounting door suspension and carrier according to the following procedures.



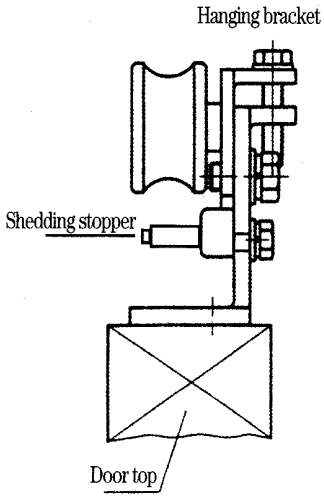
(1) Loose bolt (A), place support plate on hanging bracket components to the minimum position.

(2) Install hanging at specific position with bolt (M8x16)

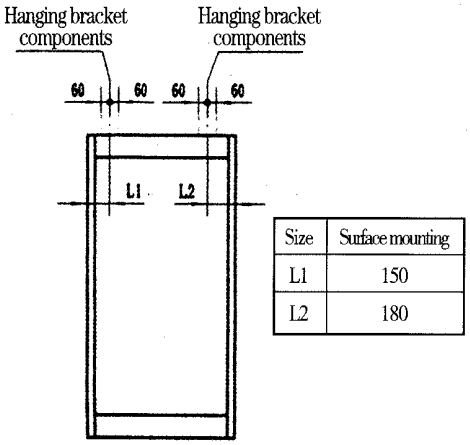
* When Install the hanging bracket, keep guide wheel grooves center of hanging bracket parallel to door body.

(3) Suspend door leaf on dynamic girder.

Note: Insure guide wheel of nylon is just on the curve rail of dynamic girder.

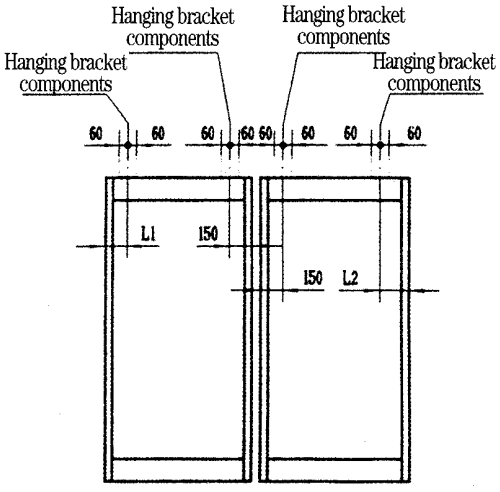


(single-door)



Size	Surface mounting
L1	150
L2	180

(double-door)



Door leaf adjustment

Adjustment procedures

(1) Horizontally install left and right hanging bracket on door leaf.

(2) After door leaf is suspended on guide track, if door leaf can be moved in left or right direction, dynamic girder is not horizontally mounted and should be adjusted.

(3) When door leaf is suspended on track it should be gently opened or closed manually.

(4) Active door leaf should be vertically suspended.

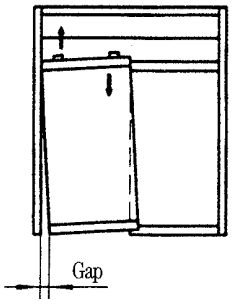
* when up gap and down gap between sliding leaf and fixed leaf is not equal, loose and adjust the bolt of hanging bracket or ground wheel (long groove on ground), and keep gap consistent with specific requirement.

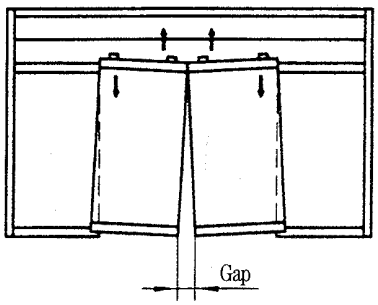
* when silding door leaf is declining like following,adjust the height of the bolt on hanging bracket and make it vertical.

(5) Dynamic girder, cover plate, fixed door leaf and horizontal support etc should be frictionless.

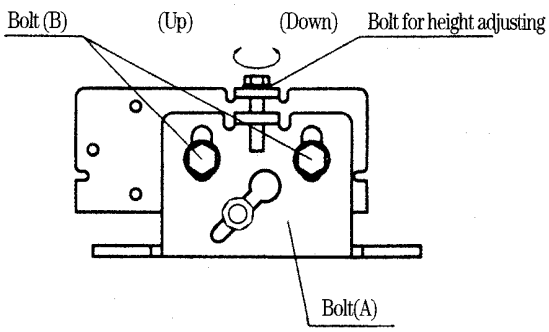
Note: Don' t paint oil on track, otherwise,guide wheel on hanging bracket would move to make door leaf is wavering that will effect moving.

* Adjust the height of door body to meet installation requirement.





Adjustment of carrier parts



(1) Loose Bolt (A) and (B) on hanging bracket.

(2) Rotate bolt for height adjusting to meet installation requirement (Up maximum height is 3mm, down maximum height is 7)

(3) After adjustment, tighten bolt (B)

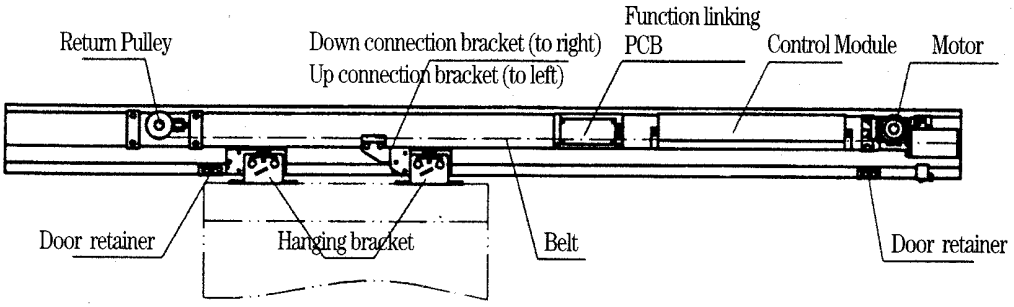
* When bolt for height adjusting in clockwise, raise door leaf; when bolt to adjust rotates in anti-clockwise, down the door leaf.

(4) Adjust the position of shedding stopper to keep the distance between the down gap of the rail and plastic pulley of shedding stopper is 1mm, then tighten bolt (A).

Belt components installation(single-door) (Continuous)

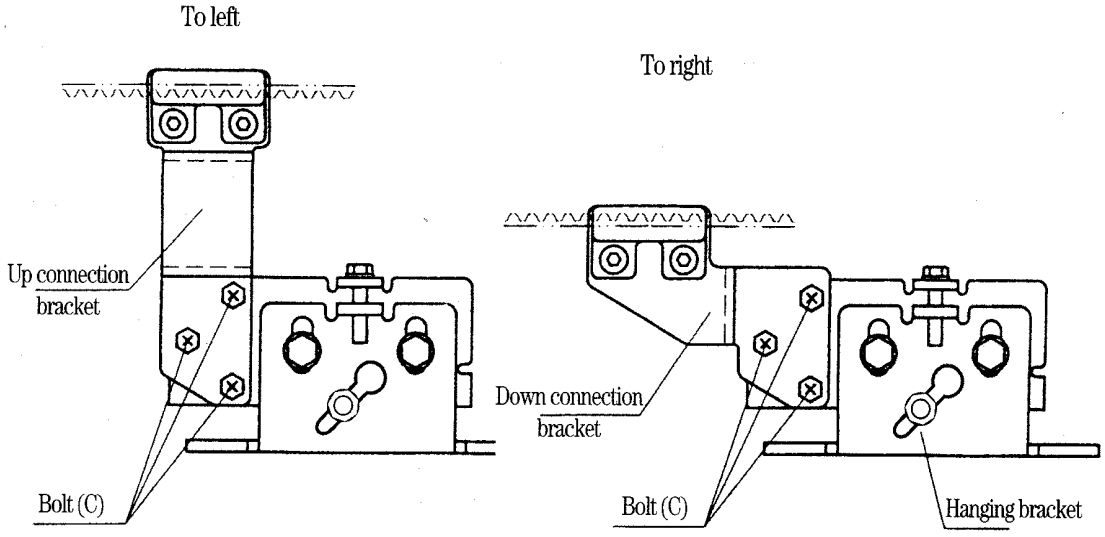
(Belt and hanging bracket connection)

(1) Set belt on left and right wheel of dynamic girder.



(2) Fasten connection bracket (to left) or down connection bracket (to right) on hanging bracket with three bolts (C).

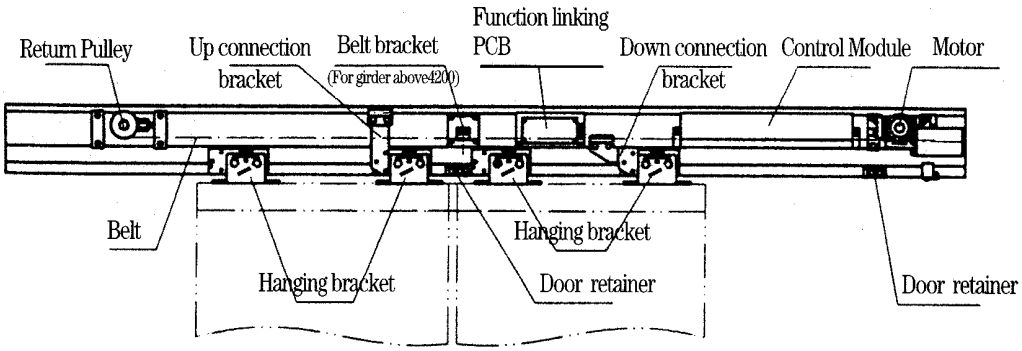
(3) Adjust belt tensile force.



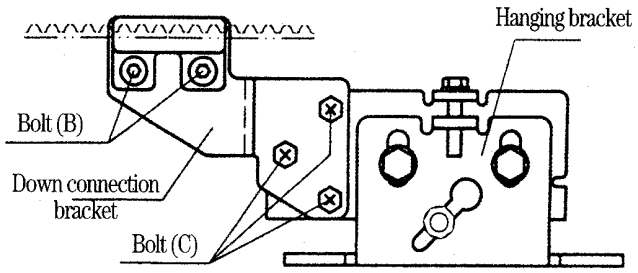
Belt components installation(double-door) (Continuous)

(Belt and hanging bracket connection)

(1) Set belt on left and right wheel of dynamic girder.



(2) Fasten down connection bracket on hanging bracket with three bolts (C).



(3) Adjust belt tensile force.

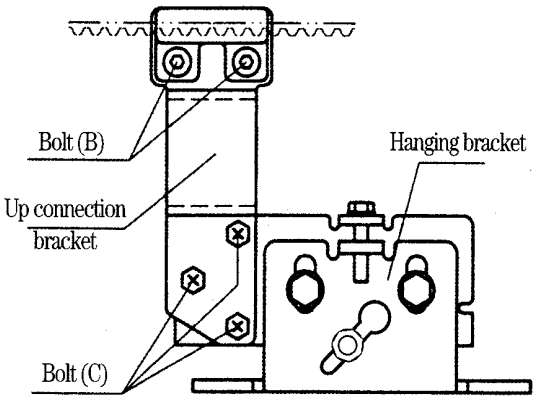
(4) After belt tensile force is adjusted, continue to carry out connection.

1) Loose blot (B), remove belt clamp.

2) Fasten up connection bracket on hanging bracket with three bolts (C).

3) Join the left and right door leaf at the center.

4) Align belt clamp teeth to belt and insert belt referring to the following figure tighten bolt (B), attach belt clamp to connection bracket. Use bolt (B) to adjust central position of two door leaves.



Belt tensile force adjustment

■ Adjust the position of belt tension pulley components to adjust belt tensile force.

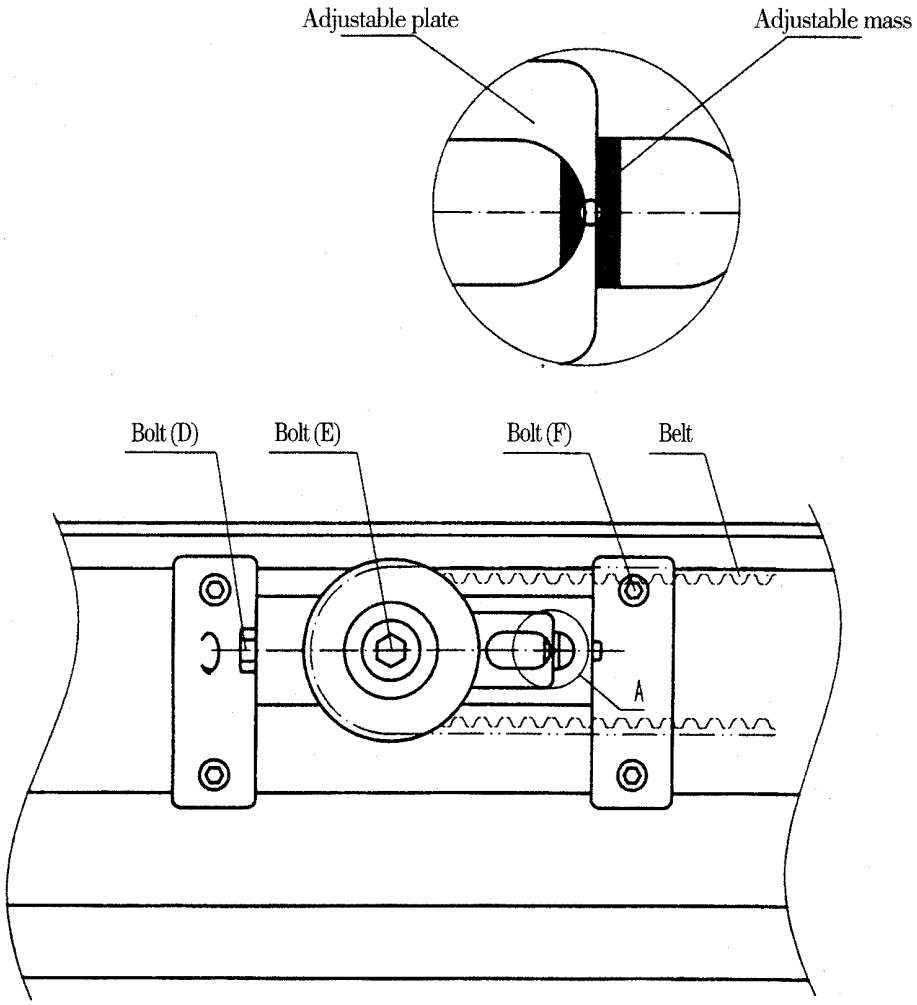
(1) Manually pull tension pulley to the right position to keep the belt is tight, tighten 4 bolts(F).

(2) Loose bolt (E).

(3) Rotate bolt (D) in clock wise to adjustable plate towards left, thus belt tensile force rise slowly, see the following figure, pole of adujstable mass to the elbow of adjustable plate.

(4) Tighten bolt (E).

(5) After belt is running for a certain period, it could be little stretched. At the time please adjust belt tensile force again,repeat proceduresl–4.



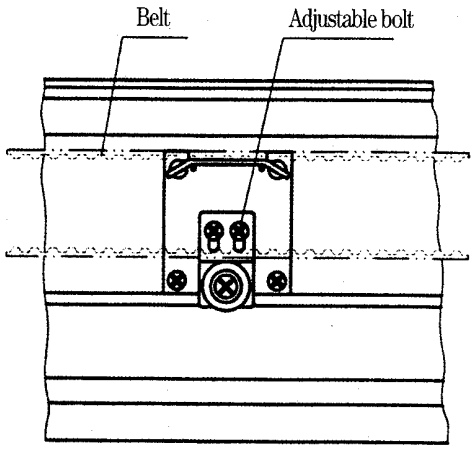
Belt bracket installation (double door)

(1) Belt bracket should be installed near belt center to prevent belt from vibrating.

(2) Loose two adjustable bolts to keep belt horizontal, then fasten them.

(3) If door leaf is frequently opened and closed, spray a little talcum powder on frictin position of belt and bracket to reduce noise caused by friction.

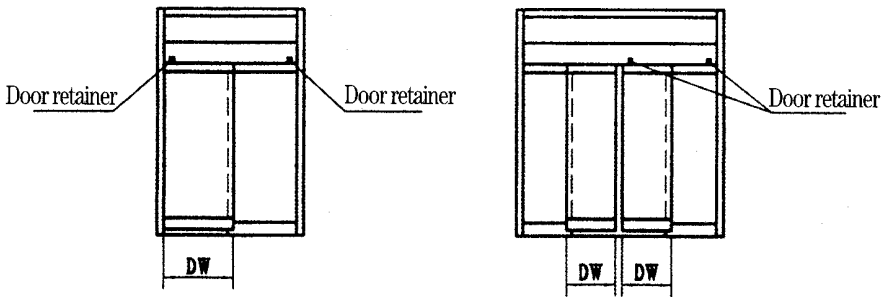
* For rail above 4200



Door retainer installation

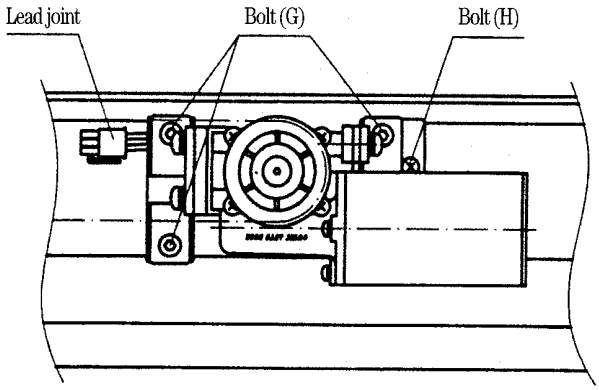
(1) Install door retainer to fix the stopping position of door leaf.

(2) Door retainer position refers to the following figure.



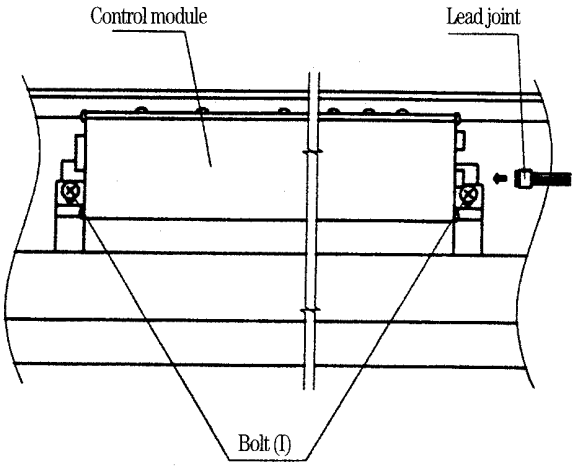
Motor installation

(1) Install motor into the groove of dynamic girder (verify installation position).
(2) Tighten three bolts (G).
(3) Tighten bolt (H).
(4) Pass on lead joint to top of gear box.



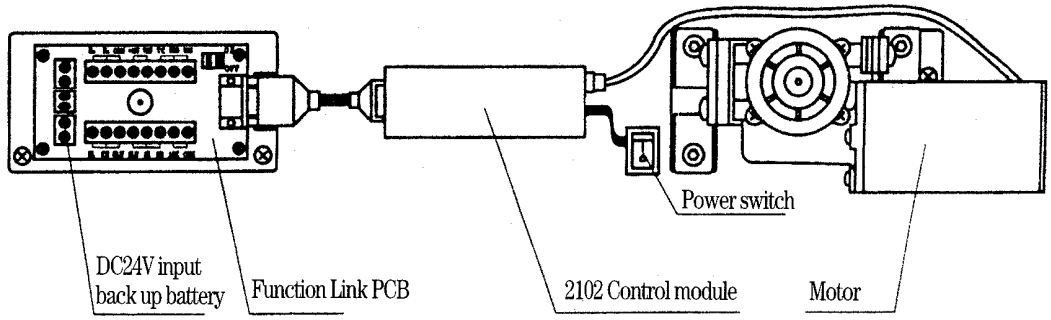
Control module installation

(1) Install control module into the groove of dynamic girder. So that the lead join of motor can plug socket of the control module.
(2) Tighten Bolts (I) on both sides of control module.



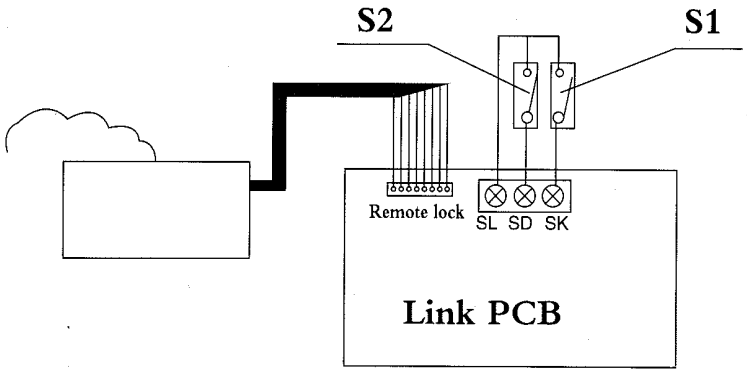
Connection for function linking PCB with control module and motor

■ All wiring operations should be going on when power off.



Connection for function linking PCB with remote control switch and key switch

■ All wiring operations should be going on when power off.



Function programs can be selected by remote lock as below:

1. Close and full lock mode

When power is on at first, the door would check the operation one time automatically. After closed, it would be locked (the sensors can' t be activated). At the normal operation case, please press the " 🔒 " key for 2 seconds, the door is closed and locked.

2. Automatic mode

Press the " 🔓 " key for 2 seconds, the door can be opened via sensors.

3. Permanent Opening

Press "A" key for 2 seconds the door opens and will remain open until the program switch setting is changed

4. Exit only

Press "B" key for 2 seconds the door can only be activated from one side, the activator serving the other side is disenabled

5. Enter only

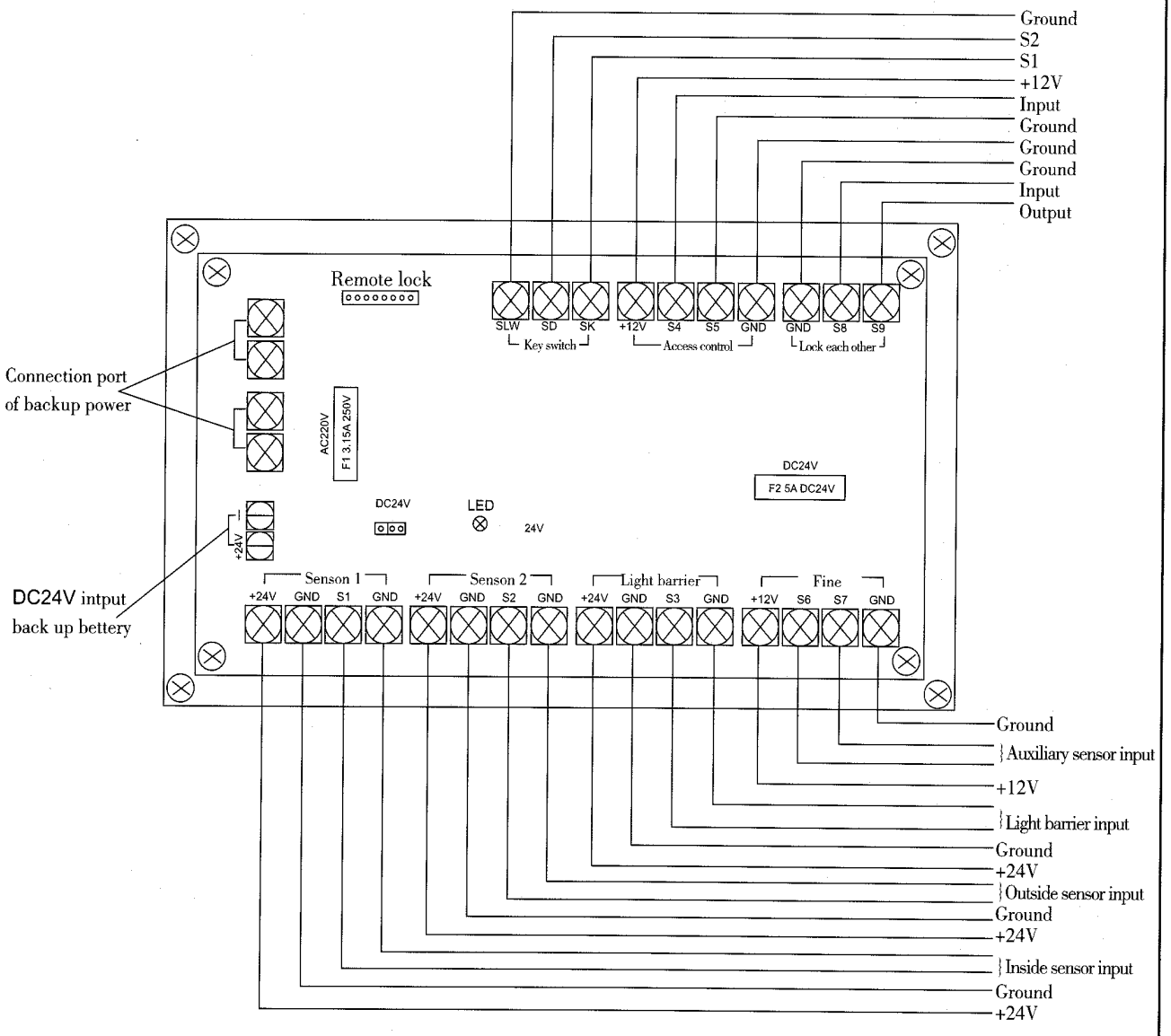
Press "B" and " 🔓 " key for 2 seconds at the same time, the door only can open from the outside, but the inside sensor is no use

6. Partial Opening

Press "A" key and " 🔓 " key for 2 seconds at the same time, the door can be open by the 2 sensors, it is stayed width reducing of opening mode (please refer to the parameter setting adjusting for the width reducing of opening).

Connection for Function Linking PCB with sensors, safety sensors (optional), remote control switch (optional), card reader (optional) and so on

■ All wiring operations should be performed during power off.

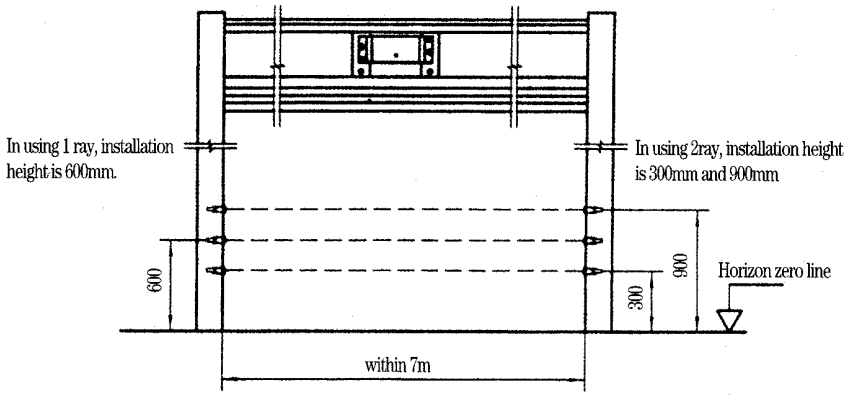


Note: Remote lock could keep door leaf partial open, full open, full close,exit only.

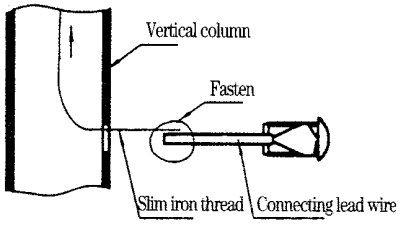
Safety sensor(optional)installaiton

(1) Drill installation hole (ϕ 12) on vertical column. Hole position should keep lens of photoelectric head at the same horizon.

Caution: setting distance keeps within 7m, otherwise, door could keep full open.

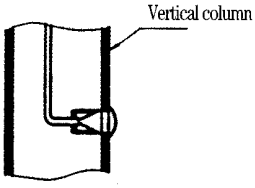


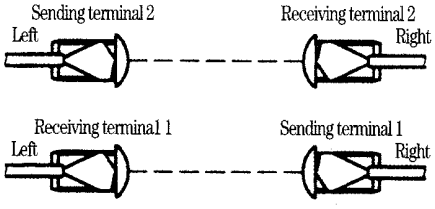
(2) Put a sufficient slim iron thread into vertical column from dynamic girdre, then pull it from installation hole, fasten it with connecting lead of safety sensor, then pull slim iron thread up to pull connecting lead wire of safety sensor into dynamic girder.



(3) Reliably install photoelectric head into installation hole.

Caution: If photoelectric head Declining, ray could not into hole,this would keep door open

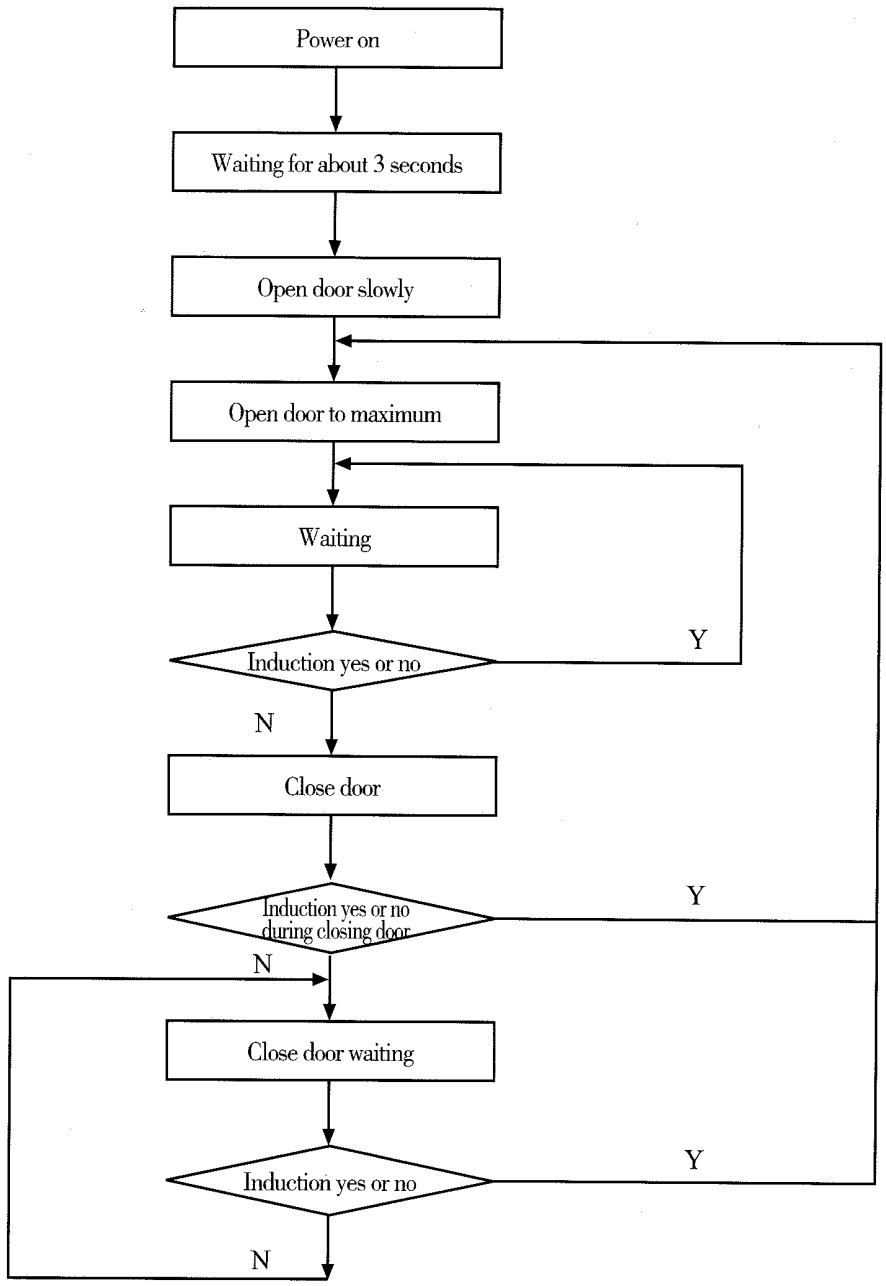




Caution:

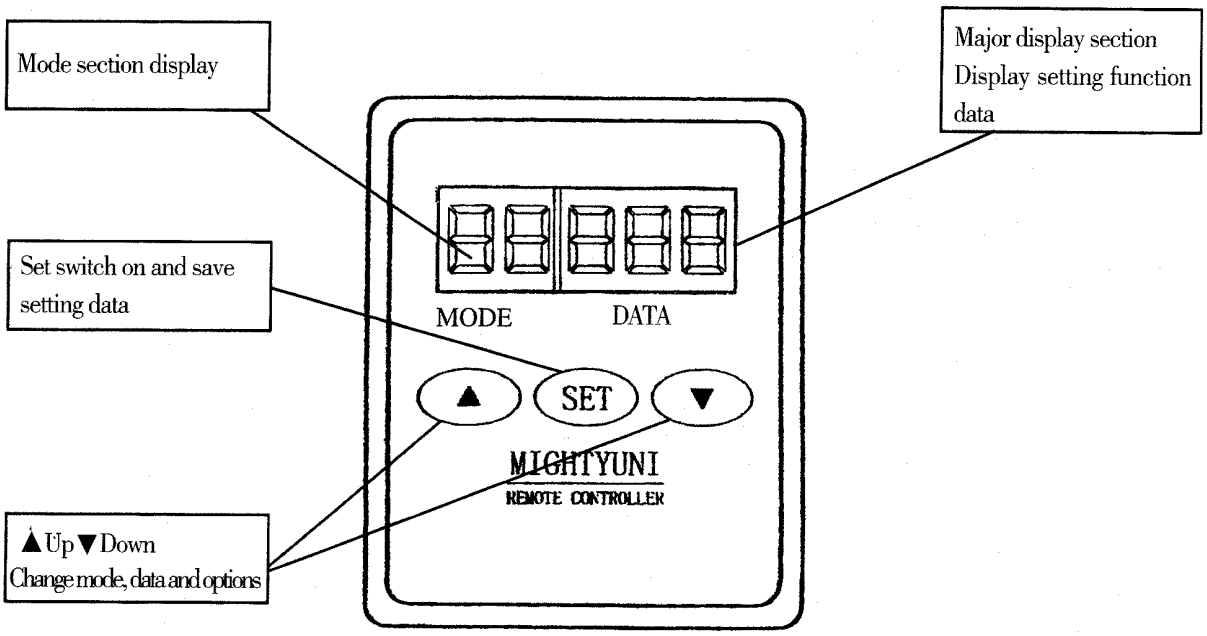
* When set ray 2 safety sendor, please set sending ray and receiving ray referring to the left figure; If direction is different, this could cause safety sensor abnormal operation

Door leaf operating process controlled by 8102 controller



Program display operation procedure

1. Program display panel functional keys specification



2. Power on

Operation procedures	Main display part
1) Put soft lead of program display into controller 2) Connect the power of the control. 3) The system would wait for about 3 seconds,program is initialized from close status of door, door fan is slowly running towards opening direction until it comes up against open retainer, verify its journey and close, inner micro computer could record its journey by open and close loop.	terminal 0 1 0 8 0 MODE DATA

Caution: Manually open and close door for several times before power on, insure that drive system is correct during opening and closing period.

Program display operation procedure

3. Operation procedure

First Press △ or ▽ key to select a mode needed to adjust items in the following list.

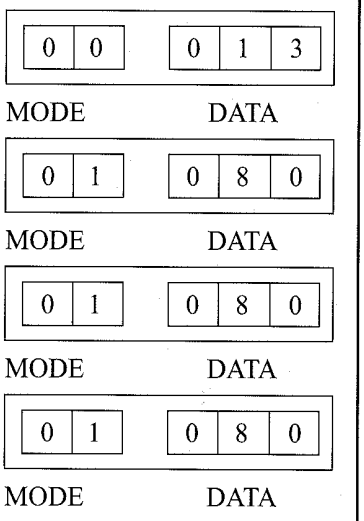
Second When mode needed to adjust is assured, then press (SET) key, and DATA area on the left of programmable display would flash.

Third Please refer to setting items list, Press △ or ▽ key select needful DATA values.

Fourth After comfirm DATA values. Press (SET) key to 00

Notes: When automatic sliding door leave factory, it has been set based on the standard. when you confirm need to change the door leaf operation please vary them according to the above and refer to the setting item list.

Main display area



4. Setting items list

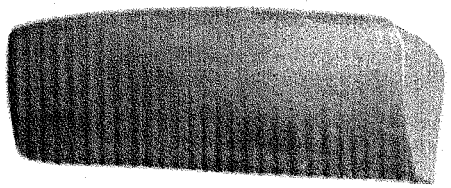
Mode	Functions	Functions description	Setting range	Clefaulf value	Unit
00	Test speed	Speed of testing door length	10~30	13	Level
01	Fast speed for opening	Setting opening speed	25~99	80	Level
02	Fast speed for opening	Setting closing speed	25~99	70	Level
03	Slow opening speed	Setting slow opening speed	05~25	10	Level
04	Slow closing speed	Setting slow closing speed	05~25	10	Level
05	Slow opening distance	Setting slow opening distance	10~50	30	cm
06	Slow closing distance	Setting slow closing distance	10~50	30	cm
07	Test time when door is blocked	Setting test time when door is blocked	01~30	02	Level
08	Automatic press operation	Setting operation when door is blocked	00~01	01	–
09	Door opening time	Time interval from open to close	00~09	02	Seconds
10	Emergency operation	Setting emergency operation of door	00~02	01	–
11	Safety function	Setting of system stoping for cliping person	01~06	03	–
12	Door opening position	Setting ratio of opening width to full opening width	20~90%	60	–
13	Safety sensor	Setting safety sensor	00~03	03	–

Abnormal operating status and solution

■ When exists abnormal operation, firstly cut power for several seconds, and then open power and try it again.

No	Faults	Possible reasons	Solutions
1	Not move, slowly move or move in short distance	1. Malfunction of connection or wiring; 2. Motor jammed; 3. Parameters are so small; 4. Too big mechanical resistance; 5. Malfunction of control mode.	1. Check power and the indication lighting; wiring checking; 2. Change motor; 3. Increase 00, power again after cut off the power; 4. Check all the mechanic parts if have friction phenomenon; 5. Change control mode.
2	Door stopped after inspection operation	1. Remote switch is unlocked; 2. Wrong wiring of sensor; malfunction of sensor wiring; 3. Indication light of sensors are on or not, is it press borken or not; 4. Malfunction of control mode.	1. Press "unlock" key; 2. Crefully check wiring and function of each loop; 3. Check voltage of sensor connected by function mode; 4. Change control mode.
3	Open / close door speed is too slow	1. Open / close door speed parameter is too small; 2. Too big running resistance; 3. Belt is pine, not enough bensile froce.	1. Change para–01 and para–02 2. Cut off power supply and move door leaf by hand to check if there is barrier; 3. Adjust tensile force.
4	Door could not be closed	1. Wrong installation of left / right belt connectors. 2. Remote switch is at "permanent open" status; 3. Deflection of safety sensor axis; interfering objects in the sensor; 4. Malfunction of sensor: S1, S2 or S6 is connected to ground; 5. Malfunction of control mode.	1. Change left / right belt connectors; 2. Press "unlock" key; 3. Adjust the ray axis; clear receiving parts; 4. Change sensor; disconnect the wiring from S1, S2 or S6 to ground; 5. After power off, start for several times, if door couldnot be closed, then change control mode.
5	Door is automatically opened and closed.	1. Have disruptors in the detecting area of sensor; 2. Overlap with other sensor detecting area; 3. Door leaf runs inside the sensor detecting area; 4. Too high sensitivity of sensor; 5. Too small parameter setting.	1. Remove the interfering objects; 2. Adjust the sensor detecting area; 3. Adjust sensitivity of sensor; 4. Adjust para–03 and para–05 to ensure the door completely opened. or par–04 and para–06 to insure the door completely closed.
6	Door panels heavily collide with each other	1. Wrong parameter setting; 2. Malfunction of control mode.	1. Adjust the position of door retainer or increase the door slow "close" door distance, decrease slow speed for closing; 2. Change control mode.
7	Door leaf can only be partially opened	1. Active of partial open mode; 2. Barrier exists or great resistance at stop position; 3. Malfunction of control mode.	1. Press "unlock" key 2. Remove barrier and check the mechanical parts resulting in the resistance; 3. Change control mode.

Microwave Motion Sensor 8008



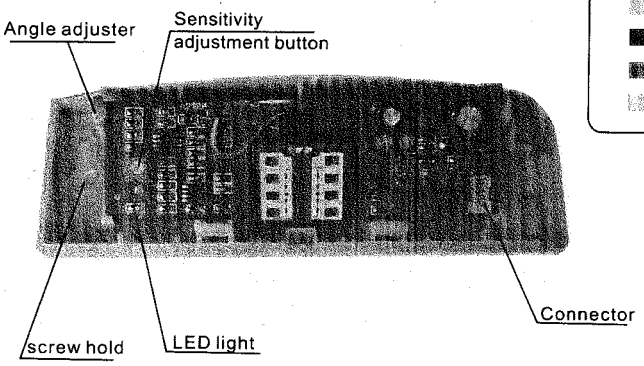
Instruction Manual

This product is a highly sensitive,high performance product that serves to control similar devices for the opening and closing of automatic doors by detecting the movement of humans or object.The emission frequency is:24GHz.Can be widely used in commerce,industry,auto-control field advanced. For the safe and accurate use of the product,please read this instruction manual until the end.

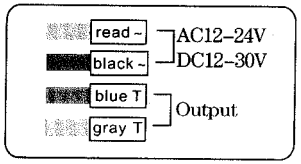
1 Technical specifications

Power supply: DC12-30V,AC12-24V	Current consumption: 150mA(DC12V,+25℃)
Microwave module: 24.125GHz	Contact capacity: 0.5A/125VAC,1A/24VDC
Hold time: 1.2S	Max install height: 3.0M
Detecting feild: 0.5M*0.4M ~ 4M*2M	Operating Tem/Humi: -40℃-+60℃/0-90%
Dimension: 140(L)x45(W)x40(H)mm	Output: Standard relay output

2 General Information



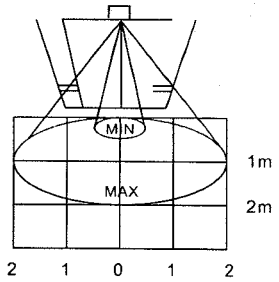
Wiring diagram



3 Installation and adjustment Guide

Adjusting(Please connect the power firstly)

1) Confirming the area of detecting
The detecting area as below

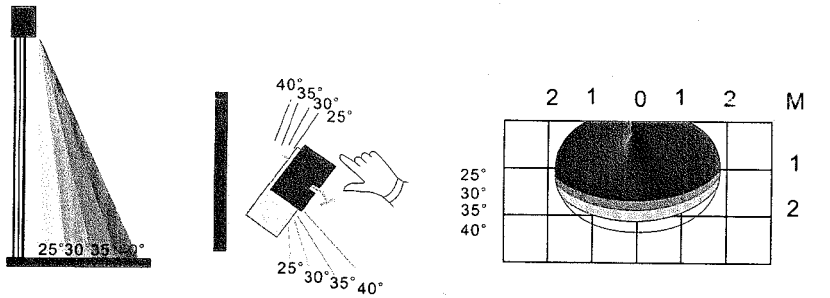


2) Adjusting of sensitivity
Adjust the sensitivity button to obtain different detecting area.

Detecting area:
(Rotate in left to decline,right to laregen)
MIN 0.5mx0.4m
MAX 4mx2m

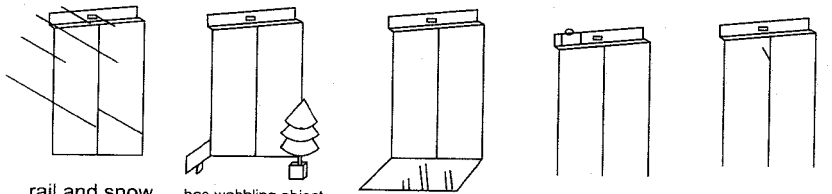
Note:Above data is for installion height 2.2m,antenna 30°
The detecting area data just for reference
The detecting area has deviation more or less as different machines,what's more,also can be caused by the entering speed of people and object,material and environment.Especially when the door,floor or the the wall's material is metal,the area will become larger, so please adjust it approprivately.

3) Adjusting direction of radiation depth
Adjusting area: 15°=5°x3



4 Importance of setting place

According to the sensor's operation principle,please avoid below phenomena when installing, otherwise can cause malfuncion.



rail and snow pour the sensor directly

has wobbling object (plant) and other light source in the detecting area

has iron plate in the detecting area

has emergency before the sensor

light the installing surface wobble