

# Automatic Door Systems



## AD-R9

Curved type door / Round type door



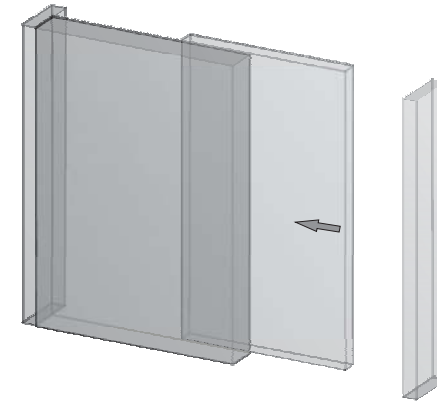
<http://www.kth-automaticdoor.com/>  
e-mail : [kth@kthtw.com](mailto:kth@kthtw.com)

## OPERATION INSTRUCTION



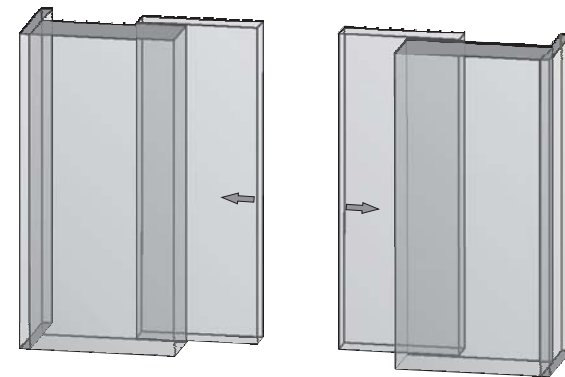
Our company has the following series of automatic door, please contact with our distributors/representations.

### SINGLE-WINGED



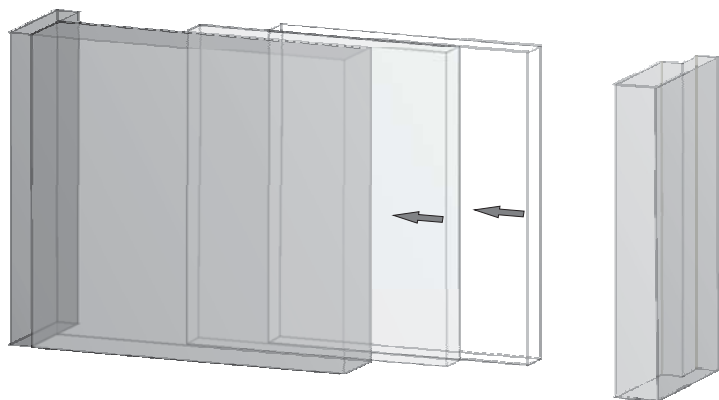
Installation: Please in accordance with the instruction of Sliding Door.

### BI-PARTING



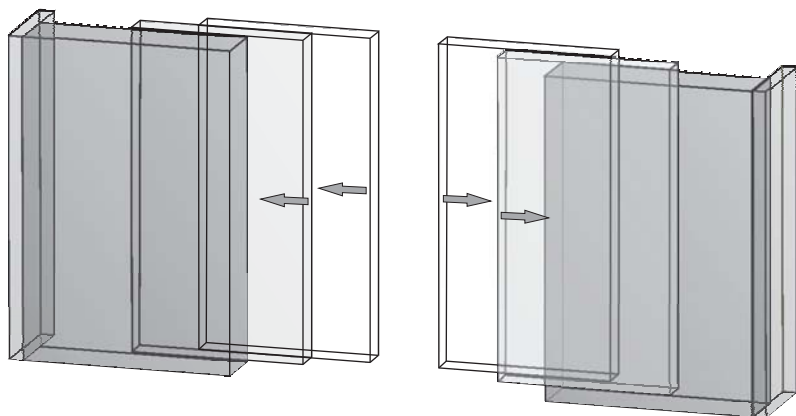
Installation: Please in accordance with the instruction of Sliding Door.

### Telescopic 2-winged Sliding Doors.



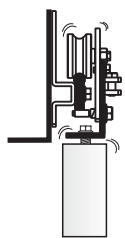
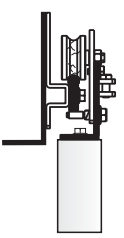
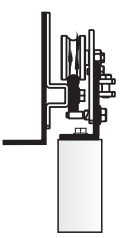
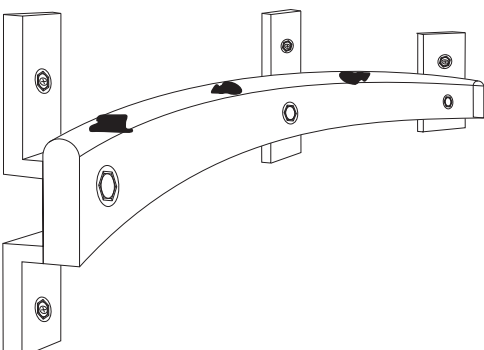
Installation: Please in accordance with the instruction of Telescopic 2-winged Sliding Doors.

### Telescopic 4-winged Sliding Doors.

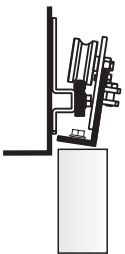

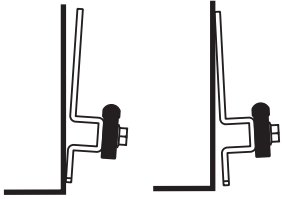


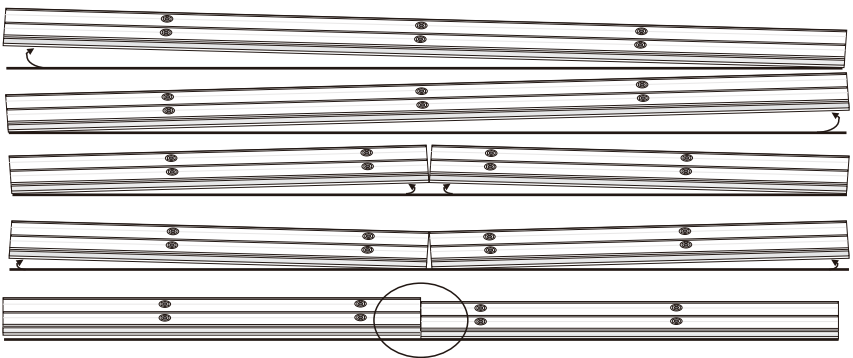
Installation: Please in accordance with the instruction of Telescopic 4-winged Sliding Doors.

The Door-Leaf sends out abnormal noise in operating.

<p><b>Cause 1</b> The SCREW of the HANGING TWIN-WHEEL is loose.</p>  <p><b>How to solve:</b> Refasten the SCREW of HANGING TWIN-WHEEL.</p>	<p><b>Cause 2</b> HANGING TWIN-WHEEL is broken.</p>  <p><b>How to solve:</b> Replace a new one HANGING TWIN-WHEEL.</p>	<p><b>Cause 3</b> HANGING TWIN-WHEEL is dirty.</p>  <p><b>How to solve:</b> Clean the HANGING TWIN-WHEEL.</p>
<p><b>Cause 4</b> ALUMINUM PROFILE is dirty.</p>  <p><b>How to solve:</b> Clean the ALUMINUM PROFILE.</p>		

**Door-Leaf isn't smooth in operating.**

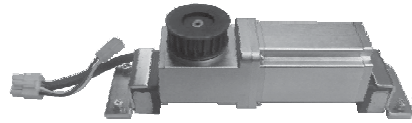
<p><b>Cause 1</b> HANGING TWIN-WHEEL is not at vertical position.</p>  <p>How to solve: Readjust the HANGING TWIN-WHEEL.</p>	<p><b>Cause 2</b> 1. Door touches Ground Rail. 2. Ground Rail is dirty.</p>  <p>How to solve: 1. Readjust the distance between Door and Ground Rail. 2. Clean up the Ground Rail.</p>	<p><b>Cause 3</b> ALUMINUM PROFILE is not vertical.</p>  <p>How to solve: Readjust the vertical position of the ALUMINUM PROFILE.</p>
---	--	---

<p><b>Cause 4</b> ALUMINUM PROFILE is not at vertical position.</p>  <p>How to solve: Readjust the level position of the ALUMINUM PROFILE.</p>
--

- 1. COMPONENTS SPECIFICATION.....P1
- 2. TECHNICAL SPECIFICATION.....P2
- 3. SECTIONAL DRAWING.....P3
- 4. INSTALLATION DRAWING.....P4
- 5. INSTALL PROCEDURE.....P5
- 6. INSTALL THE BELT ROLLER .....P6
- 7. ALUMINUM PROFILE DRAWING.....P7
- 8. INSTALL THE RACK BELT .....P8
- 9. ADJUST THE DOOR-LEAF.....P9
- 10. CONNECTION.....P10
- 11. OUTPUT CONNECT.....P11
- 12. TEST AND ADJUST.....P13
- 13. ADJUSTMENT.....P14
- 14. BROKEN CHECKING.....P16
- 15. TROUBLESHOOTING.....P17
- 16. TROUBLESHOOTING(ILLUSTRATED).....P18



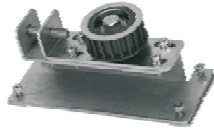
MICRO-CONTROLLER



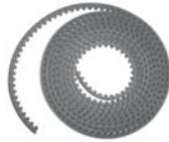
WORM GEAR MOTOR



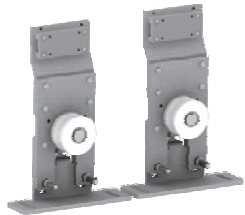
COMBINED TERMINAL BLOCK



BELT ROLLER



RACK BELT



HANGING TWIN-WHEEL  
2 PCS(INCLUDE ACTIVE/  
PASSIVE BRACE)



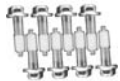
MOTOR/BELT ROLLER-2 PCS



DRIVE BELT ROLLER-16 PCS



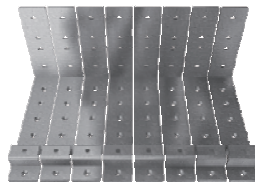
HANGING TWIN-WHEEL  
2 PCS



BLOCK SCREW-8 PCS



FIXED SUPPORT for Motor  
and Belt Roller-4 PCS



FIXED SUPPORT for Drive Belt  
Roller and Aluminum Profile-8 PCS



CONNECTING BRACE



SUPPLEMENTARY  
BRACE-4 PCS



HANGING BRACE-4 PCS



STOPER-2 PCS

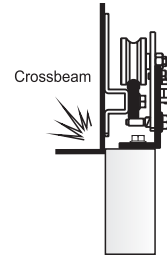


DOOR SCREW-8 PCS



Door can't be opened or closed.

**Cause 1**  
Above the Door-Leaf touched  
with the crossbeam.



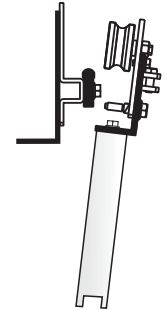
**How to solve:**  
Adjustment the interval between the  
Door-Leaf height and Crossbeam.

**Cause 2**  
The Door-Leaf touched with the  
Ground Guide Rail.



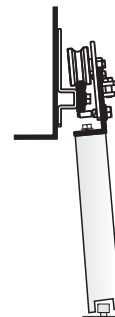
**How to solve:**  
Adjus the Door-Leaf height.

**Cause 3**  
Door-Leaf derails the  
ALUMINUM PROFILE.



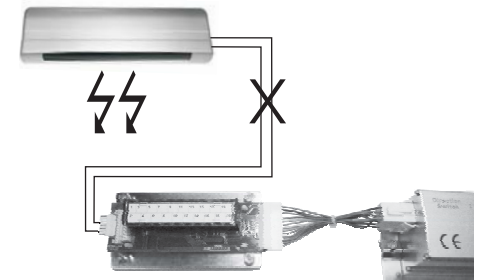
**How to solve:**  
Put the Door-Leaf into the  
ALUMINUM PROFILE again.

**Cause 4**  
Door-leaf is not vertical.



**How to solve:**  
Adjust the Ground Guide  
Rail/Wheel position.

**Cause 5**  
SENSOR is broken or disconnects to the MICRO-CONTROLLER.

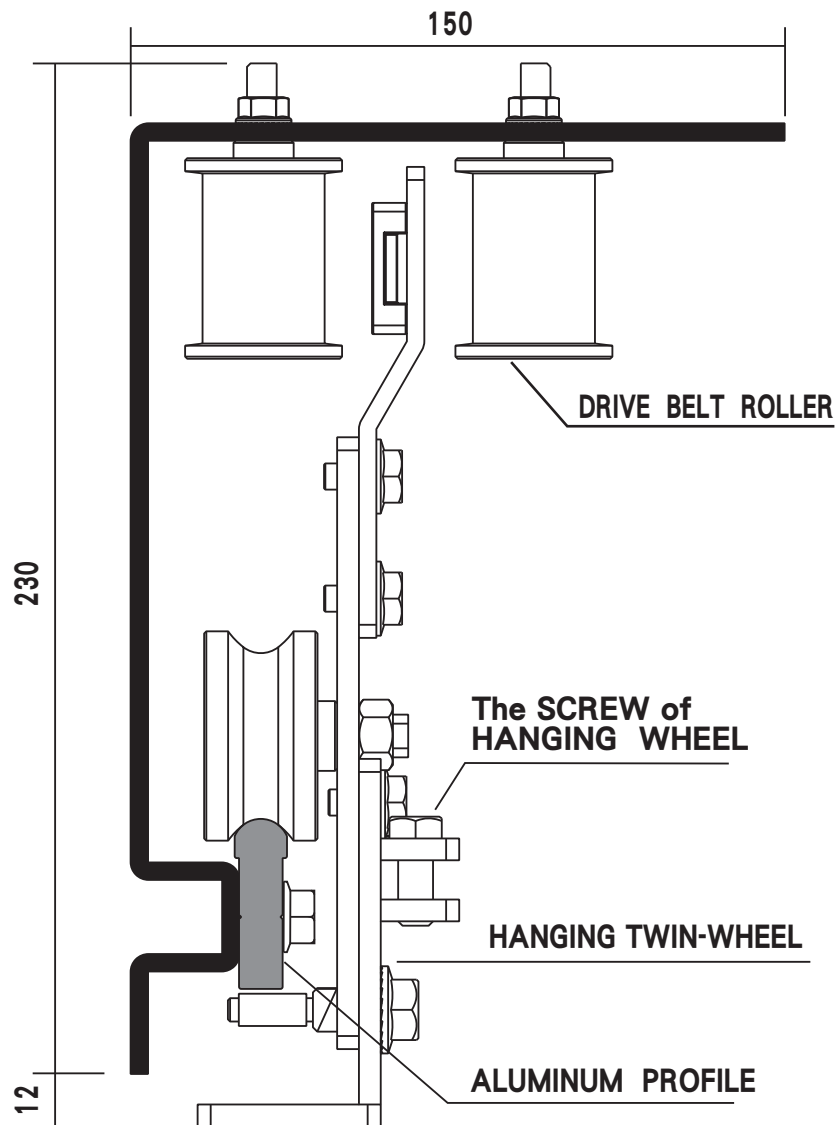


**How to solve:**  
1.If SENSOR is broken please change a new one.  
2.Check SENSOR whether it connects to the MICRO-CONTROLLER.



PROBLEMS	REASONABLE	CHECK	HOW TO SOLVE
DOOR CAN'T BE MOVED.	1.No power.	Broken circuit.	Check the broken circuit position.
		The Power Switch is not opened.	Open the POWER SWITCH.
	2.The door is locked.	Door is locked and no movement action.	Open the DOOR LOCK.
3.The sensor is broken.	Signal light is WORKING.	Signal light is WORKING.	Check the MICRO-CONTROLLER.
		Signal light is OUT OF WORKING.	Check the CIRCUIT OF SENSOR or change a new one SENSOR.
SPEED	1.Speed is too slow.	Check the Speed at KNOB of MICRO-CONTROLLER.	Adjust the Speed of Open/Closed Door.
	2.Door runs into the obstructor, then cause the Door moving slow.	Installation problem or dirty.	Reinstall or clean the ALUMINUM PROFILE.
	3.Door is difficult to move.	Turn off the power. Use hand to move the Door, besides, check the round Guide Rail whether it is dirty.	Clean the Ground Guide Rail.
		Check the HANGING TWIN-WHEEL whether it is broken.	Change a new one.
		Check the Door Bolt in the door bottom whether it is oosen.	Fix the Door Bolt.
Check whether the Ground Wheel is broken.	Change a new Ground wheel.		
DOOR CAN'T FULL OPEN.	In the Half-Open way.	Check the Knob/Switch.	Turn on to Full Open.
DOOR CAN'T CLOSE.	1.In the Full-Open way.	The SENSOR keeps working.	Check wiring or change a new SENSOR.
	2.The Door opens suddenly while it is moving to close .	The SENSOR probably is installed with something wrong.	Adjust the SENSOR or change a new one.

TYPE	AD-R9	
MODEL	SINGLE-WINGED	BI-PARTING
DOOR WEIGHT	120kg X1(door)	100kg X2(door)
DOOR WIDTH	DW=500mm~2500mm	DW=500mm~2500mm
INSTALL WAY	Surface install	Surface install
MOTOR	DC24V 75W WORM GEAR MOTOR	
CONTROL	USER-FRINEDLY MICRO-CONTROLLER	
POWER CONSUMPTION	75W	
VOLTAGE	Either AC100V~240V	
ENVIRONMENTAL TEMPERATURE	-20°C~+50°C	
VOLUME	60decibel(max.)	
STARTING SPEED	600mm/secondX1 door	550mm/secondX2 doors
STARTING TIMES	0~20 sec. (regulable)	
TRANSMISSION IMPORTANT CONDITION	RACK BELT S8M	
OPENING DOOR RANGE	FULL/HALF-OPEN (regulable)	
PFC POWER EFFICIENCY	0.95(in AC100V Full load)	
TRACTION FORCE	4.5 kg	



MEASURE : mm

1. Turn off power.  
2. Use your hand to move the Door-Leaf.

Preliminary analysis

Running isn't Smooth

Running smooth

Check the circuit

1. Turn on power.  
2. Take out the sensor signal line.  
3. Test the circuit of SENSOR.

Running check

Running smooth

Running isn't Smooth

The PROBLEM of the MOTOR  
1. Wiring connects fault.  
2. Spare parts of the MICRO-CONTROLLER broken.

1. Check the distance between Door and Wall / Crossbeam.  
2. HANGING TWIN-WHEEL is broken.  
3. The GROUND RAIL is dirty.  
4. The Door-Leaf becomes deformed.  
5. Check BLOCK SCREW whether need to adjust.  
6. The GROUND GUIDE WHEEL is damaged.  
7. Check the LOCK whether it is broken.  
8. Check the ALUMINUM COVER whether it isn't fixed.  
9. There is dirt inside the ALUMINUM PROFILE.

The PROBLEM of the SENSOR  
1. Check the SENSOR whether it is broken.  
2. Check the SENSOR whether the wire is broken or short circuit.





**Fingered Switch**

**1 Slowing Range of Opening**

Short  Long

**2 Slowing range of closing**

Short  Long

**3 4 Open incomplete**



Long Short

**5 Reverse Switch:**

in order to control opening and closing direction of the Door-Leaf after power resumes.

OFF  ON

OFF: Normal mode, after power resumes, the Door-Leaf opens the door first.

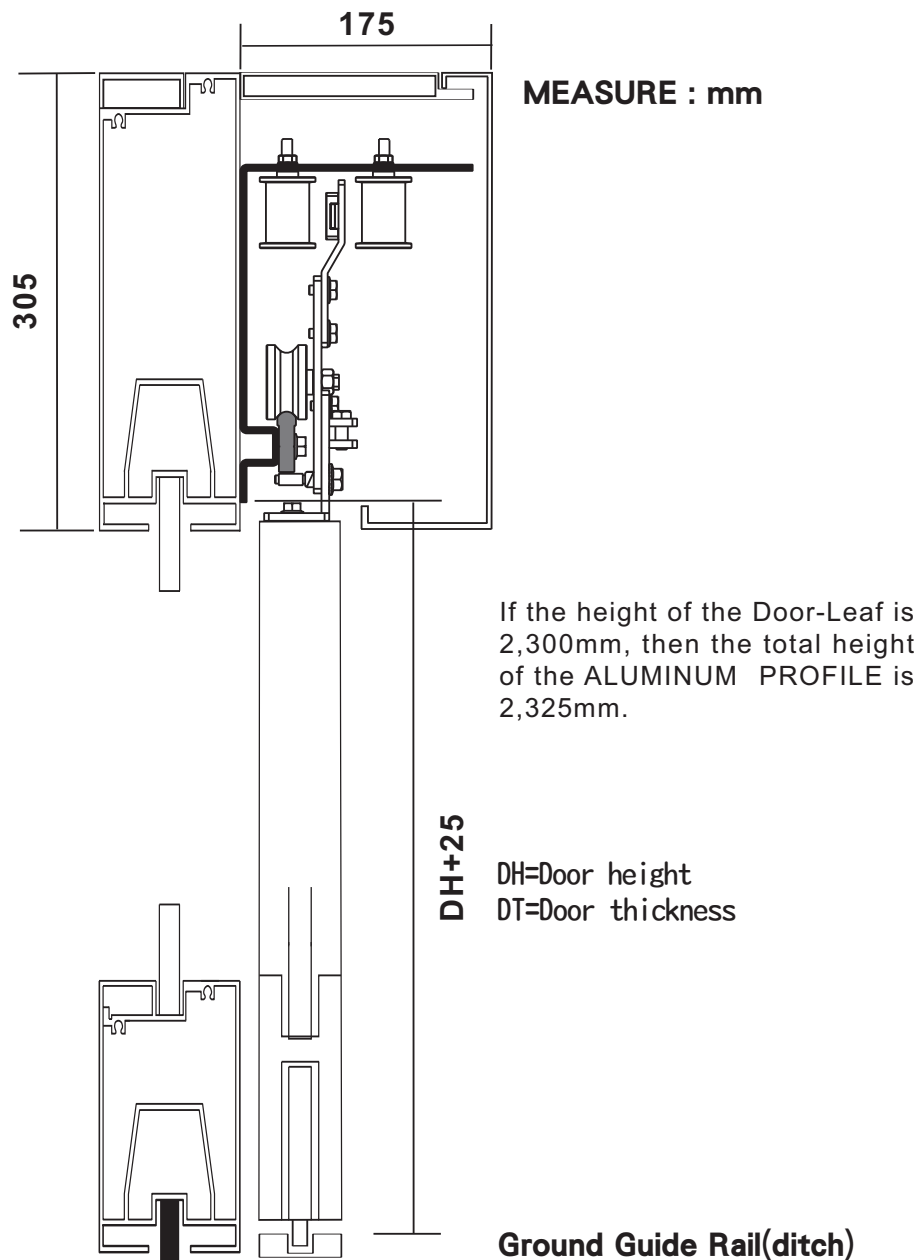
ON: suitable for Security System, after power resumes the Door-Leaf closes the door first.

**6 Directional function**

OFF  ON

OFF: Normal mode.

ON: Push once, open the door.  
Push again, close the door.



**1 Prepare** Should correct the height and the leveling of the ALUMINUM PROFILE



**2 Cut and install the ALUMINUM PROFILE**



**3 Install the SENSORS**



**4 MOTOR**



**5 MICRO-CONTROLLER**

**6 Install the BELT ROLLER**



**7 Hang and adjust the Door-Leaf**



**8 Install and adjust the BELT**



**9 Power connect**



**10 Test and adjust**

When USER regulates the Speed the Range and the Brake; it will start to accord what USER sets after twice running.



**A Brake power**  
The Door-Leaf is slight, the BRAKE POWER is less. Please choose 0~2 if the Door-Leaf is under 50kg. Please adjust number from number 5 if the Door-Leaf is over 80kg.



**B The opening speed of the door**  
Adjust the OPEN SPEED. Higher number, faster speed. CAUTION: please adjust the number one by one from low to high.



**C The closing speed of the door**  
Adjust the CLOSED SPEED. Higher number, faster speed. CAUTION: please adjust the number one by one from low to high.



**D The slowing speed of the door**  
Adjust the SLOW SPEED. Higher number, faster speed. CAUTION: please adjust the number one by one from low to high.



**E Opening hold time**  
Adjust the HOLD OPEN TIME. Higher number, the hold time is longer.

NUMBER	0	1	2	3	4	5	6	7	8	9
SECOND	0	1	2	3	4	5	6	10	15	20

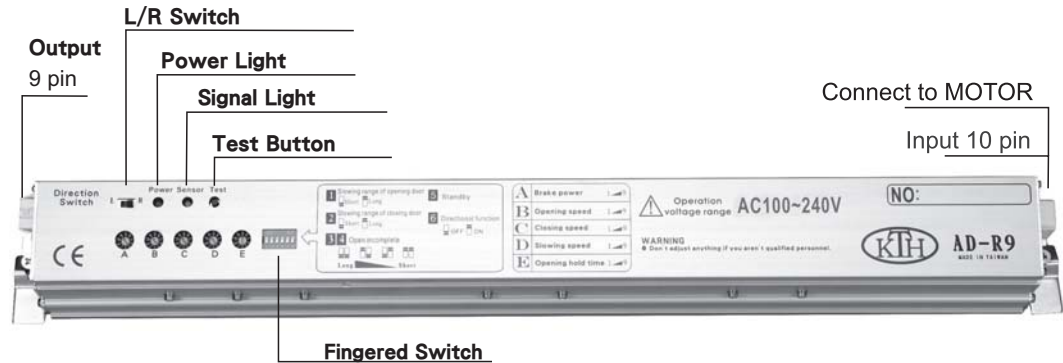
Before turn on the power, make sure the Door-Leaf can be smoothly moved, and the electric link is correct at first.

### 1.SYSTEM PROGRAM REMEMBER

After turn on the power, the MICRO-CONTROLLER will remember the distance and the range.

### 2.ADJUST

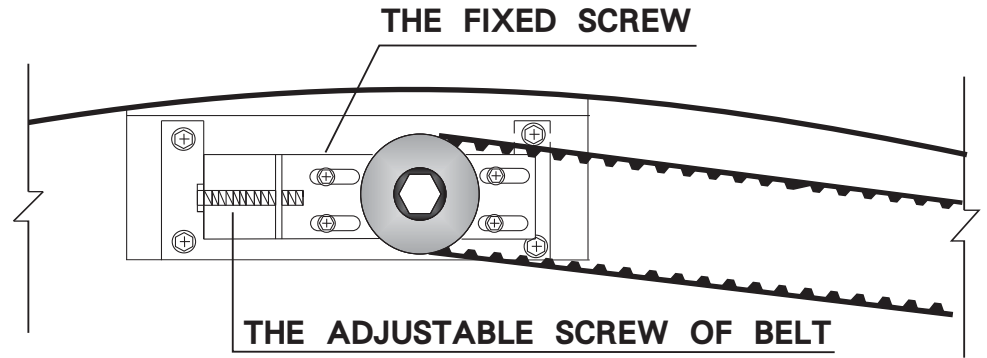
The FACEPLATE of MICRO-CONTROLLER



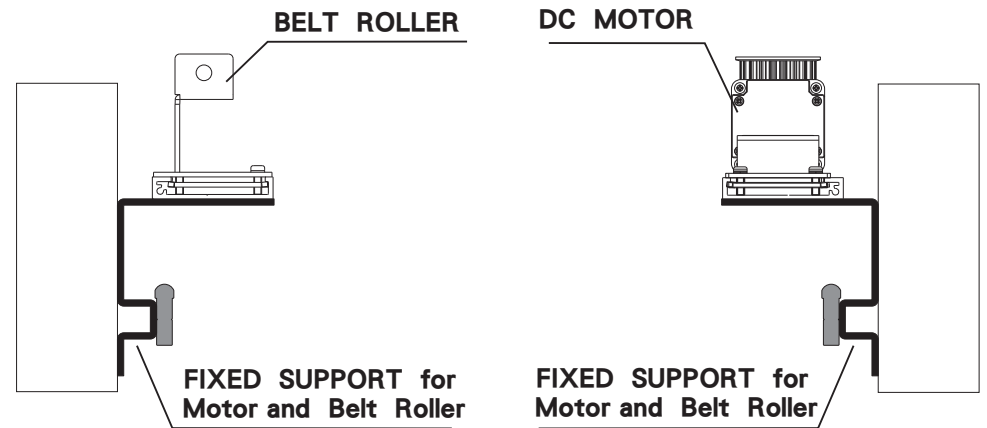
Red LED-Power is connected.

Green LED-Input the open door signal.

L/R switch-The direction of the door opening: right/left(R/L).

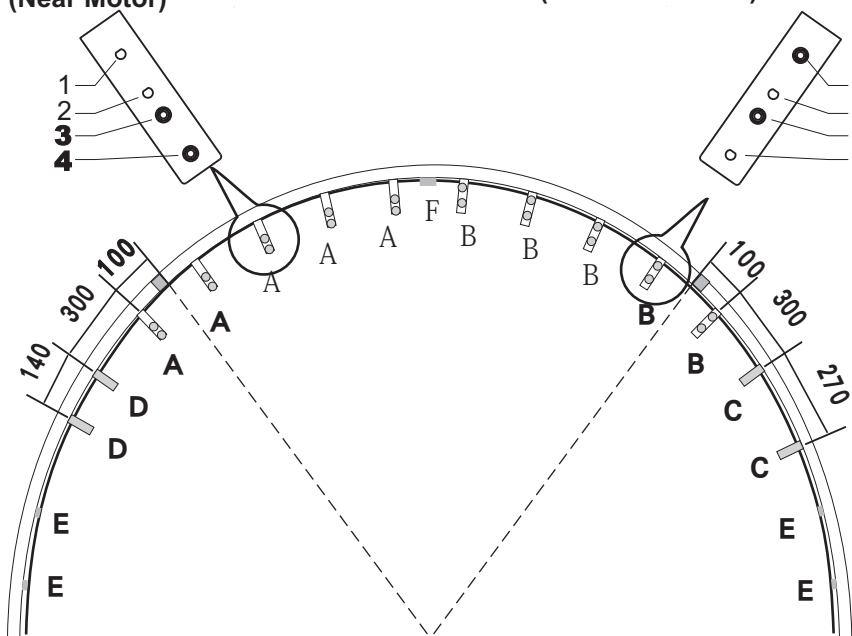


TENSION of BELT can be adjusted by the ADJUSTABLE SCREW of BELT, after that, must tighten the FIXED SCREW of BELT.



**A. Position of drive belt roller (Near Motor)**

**B. Position of drive belt roller (Near Belt-Roller)**

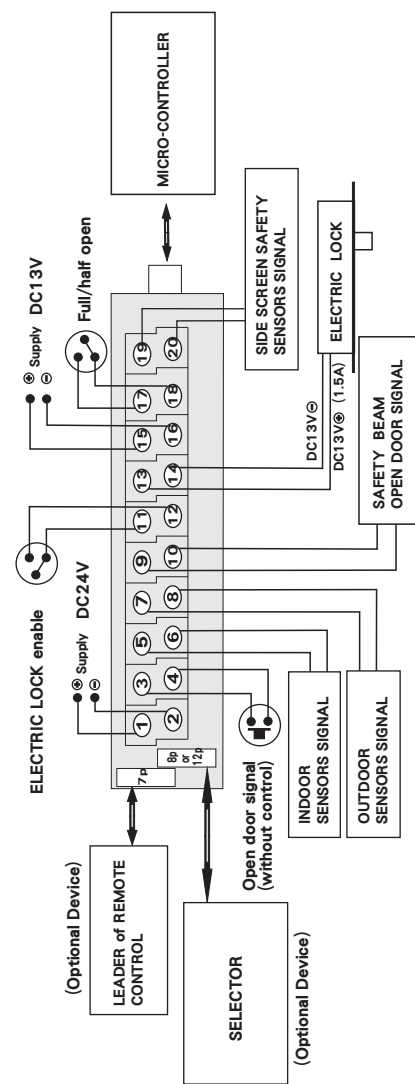


**MEASURE : mm**

(A),(B),(C),(D),(E),(F) are different FIXED SUPPORT for different function and position.

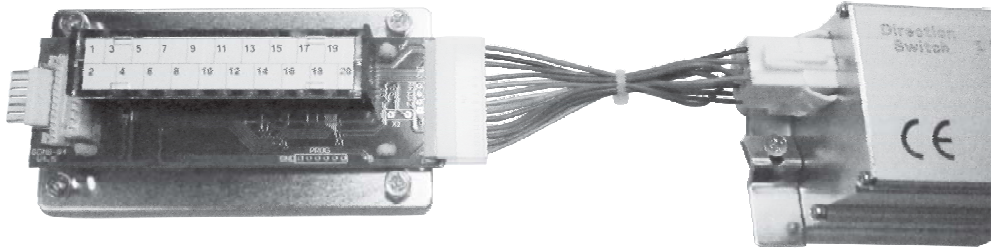
- (A): for Drive Belt Roller and Aluminum-Profile (Near Motor)
- (B): for Drive Belt Roller and Aluminum-Profile (Near Belt-Roller)
- (C): for Motor
- (C): for Belt-Roller
- (E): for Aluminum-Profile and wall (if need)
- (F): In the middle place, for connect two pieces of Aluminum-Profile

**Wiring diagram**



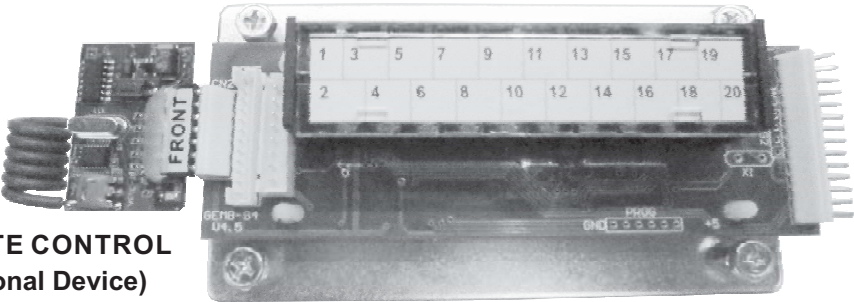
- (A) The FUNCTION of the ELECTRIC LOCK will work when ⑪ and ⑫ are short circuit, then ⑬ and ⑭ will output DC13V for ELECTRIC LOCK after the door closes. ⑮ and ⑯ will not output DC13V if ⑰ and ⑱ are not short circuit.
- (B) The SIGNAL of the SAFETY BEAM is controlled by ⑲ and ⑳. When door is opening and running, ⑲ and ⑳ keep to accept the signal, then the SAFETY BEAM will be working. ⑲ and ⑳ will not work when the door is closed, then the SAFETY BEAM will lose efficacy when the door is closed.
- (C) Please according with the connection way if it was installed "Selector", "Remote", "Sensors of inside and outside" at the same time; The entrance guard is under controlled by "Selector", furthermore, please extra contact ⑳ and ㉑ for the open door signal of "without control". eg. Extra install a BUTTON or CARD READER....
- (D) The signal of Side Screen Safety Sensor is controlled by ⑲ and ⑳. Side Screen Safety Sensors are placed at the rear end of the door to prevent collisions during the opening movement of the moving leaves. When the signal activates, the moving leaves will become slowly, till the door opens fully, then close normally.

The ILLUSTRATED of WIRING.



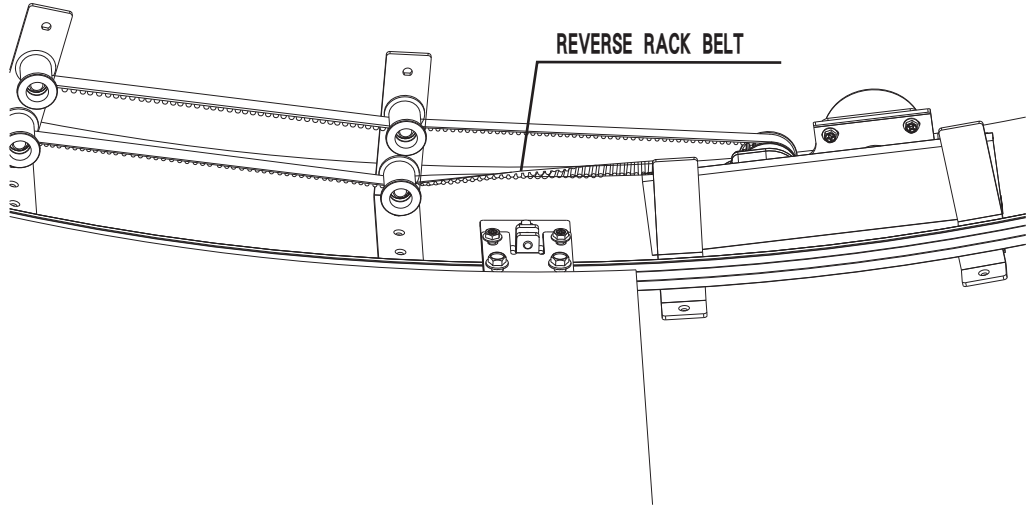
COMBINED TERMINAL BLOCK

MICRO-CONTROLLER

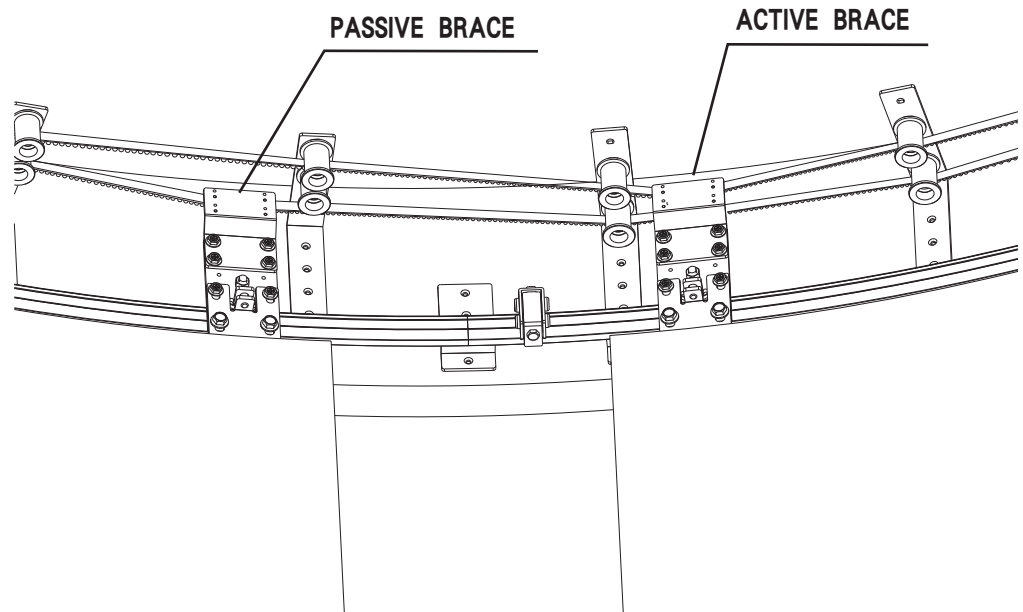


REMOTE CONTROL  
(Optional Device)

COMBINED TERMINAL BLOCK

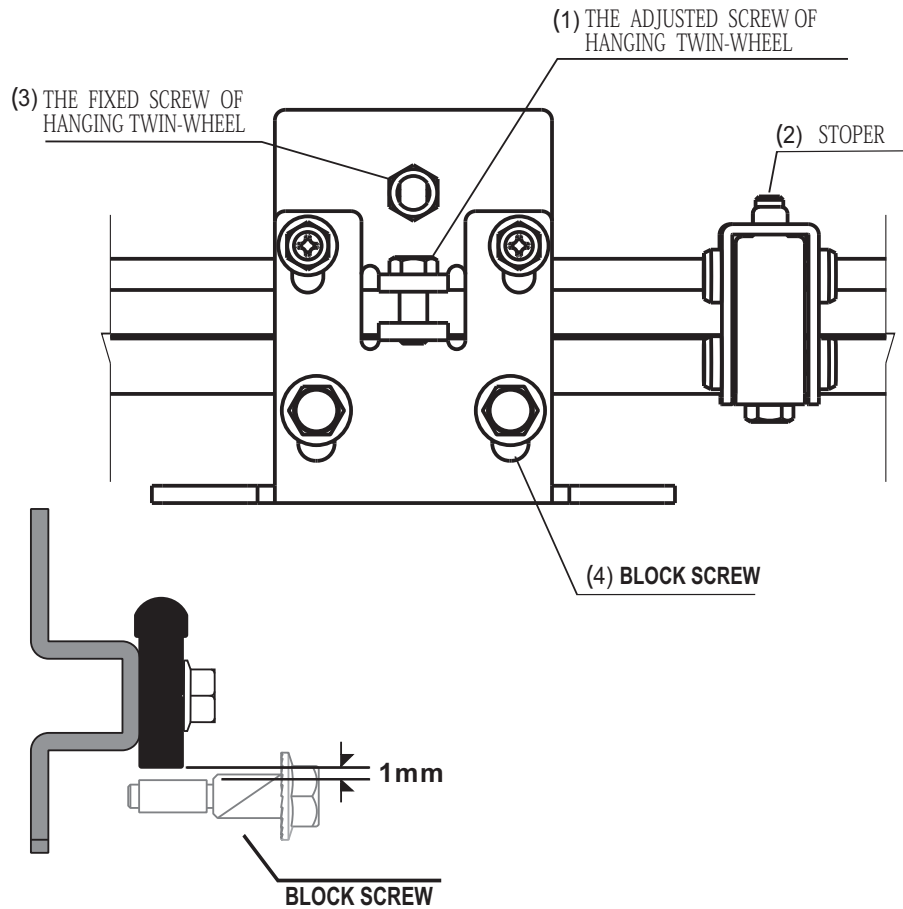


REVERSE RACK BELT

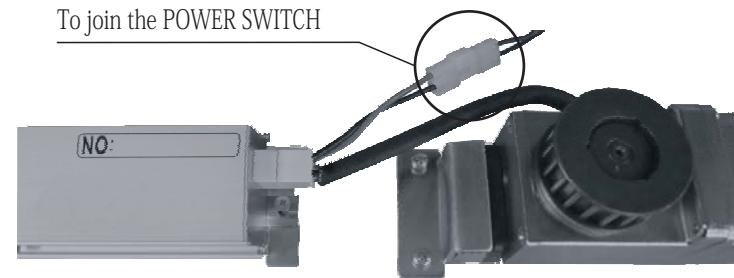


PASSIVE BRACE

ACTIVE BRACE

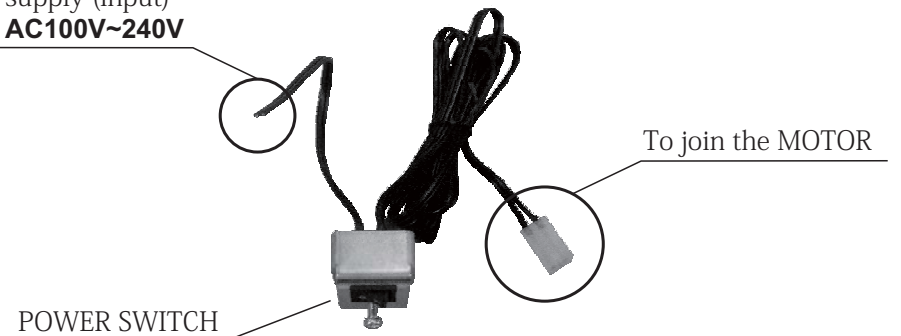


- A** When Door-Leaf height and interval need to adjust, loose (3) & (4) at first, then adjust (1).
- B** Need to fasten (3) & (4) after adjust **A** .
- C** Install above-mentioned (2) after make sure the DOOR OPEN POSITION.



The ILLUSTRATED of CONTROLLER and MOTOR.

Power supply (input)  
Either AC100V~240V



### Warning

Please confirm WHETHER the SENSOR VOLTAGE is the same as the power supply. If different between them, need to add the TRANSFORMER, otherwise the SENSOR would be burned.