

Manual of side-mounted swing door operator

OB-DO-01-V1.0



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1、 Warning

1.1 Safety warnings

Important! This manual contains important safety- related information. Improper installation may result in serious safety accidents. Please read this manual thoroughly before installation. If you have any questions in installation, stop and contact the opener bear's technical service center.

Important! Please Store this manual for future reference.

1.2 Installation warning

Before installation, please confirm whether the product meets the application requirements (see "3.1 Pre-installation check"). If not, do not install the product. All installation, commissioning and maintenance work must be carried out with the main unit power cut off.

* The door operator body must have a safe grounding measure.

When installing, be careful not to touch this product, avoid collision, compression, dropping or contact with any liquid. This product should be placed away from high temperature and open flame. The above situation may cause motor damage. If this problem occurs, stop installation immediately and contact the opener bear's technical service center.

Do not modify any part without authorization. Otherwise, such operation may cause equipment failure. opener bear declines all liability for any equipment damage caused by modification of products.

If the door body of this product is installed with a small door, the automatic door system should be installed with a control device, which can not run the automatic door when the small door is open to ensure safety.

Packaging materials and other wastes of this product shall be disposed of in accordance with local laws.

1.3 Use a warning

This product is not suitable for use by children, persons with disabilities, or person without relevant knowledge and experience.

Children, the elderly and pregnant women must be supervised when passing through to avoid accidental injury caused by contact.

Prevent children from touching motors and control equipment, and keep remote controller out of their reach.

2、Product Information

2.1 application range

Side-mounted swing door operator are divided into two types: crank-linkage type and crank-slider type, this manual is only for crank-linkage type.

Side-mounted swing door operator is designed for automatic control of Inward-swinging or outward-swinging doors with single-leaf or double-leafs, KFC style door leafs, aluminum alloy door leafs, fire door leafs, wooden door leafs, etc. It can be automatically controlled by access control equipment, face recognition equipment, mobile phone remote and other devices.

2.2 Product specifications

Item	Specification
Working voltage	220VAC $\pm$ 15% 50Hz
Motor operating voltage	24VDC
Power of motor	40W
Rated torque	24.6Nm
Angular speed	69.7°/s
Maximum opening Angle	$\pm 90^\circ$
Maximum length of door leaf	1.5m (single door)
Thermal protection on motor winding	F Class 155℃
Operating frequency	Continuous running below 70℃
Operating ambient temperature	-25-70℃
Working environment	Indoor or sheltered outdoor environments
Running noise	≤ 60 dB
Temperature rise	$\leq 15^\circ\text{C}$
Weight of equipment packaging	6.4kg
Body size (length * width * thickness)	89.6*355.7*105.7mm
Packing size	400*280*110mm

3、 Check before installation

3.1 Applicability check

Before starting installation, check that the product components are complete and that the selected model is suitable for the intended use and installation environment.

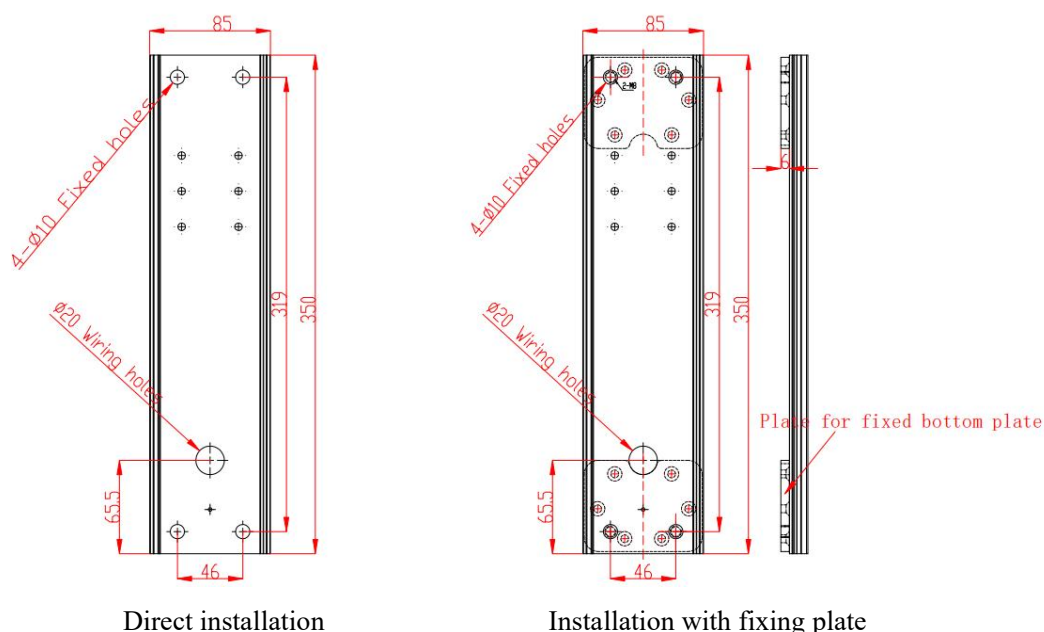
- Check that all accessories are in good condition and suitable for the intended use, and verify that the size and weight of the door leaf comply with usage limits;
- Check that the limit switch is installed on the door structure in the closed state (not provided). Manually move the door leaf to a arbitrary certain position, then release and check whether it remains stationary;
- Check whether the mechanical structure of the door is suitable for automatic installation (for example, whether the hydraulic hinge can be adjusted). This product shall not be used on door leafs in poor condition or with potential safety hazards;
- Check whether the fixing area meets the installation dimensions of the door operator. Ensure that the surface of the mounting and fixing area is sufficiently solid and has firm holding capacity;
- Ensure all equipment installation positions are protected and shall not be exposed to environments liable to accidental impact.

3.2 Installation instructions

Incorrect installation may cause serious injury to the installer or user. Before starting the installation, check in strict accordance with 3.1 and proceed with installation only after all requirements are met.

3.2.1 Installation and positioning of door operator

Before installation of the door operator, confirm the installation direction according to the type door operator(side-mounted) and door opening direction. After the direction is confirmed, perform positioning based on the mounting hole dimensions of the bottom plate in accordance with the type. The positioning diagram is shown below:



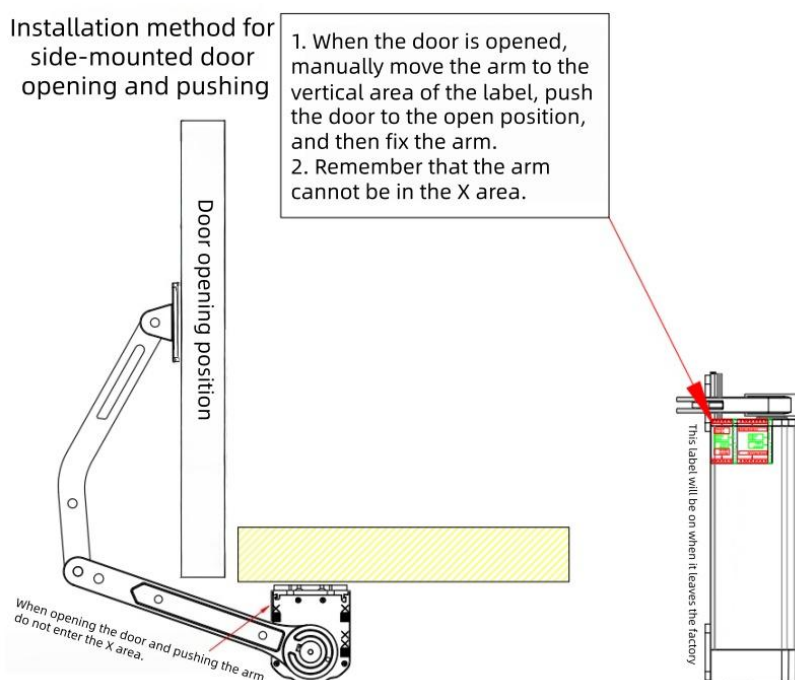
Direct installation

Installation with fixing plate

Installation dimension diagram of side-mounted swing door operator

Precautions:

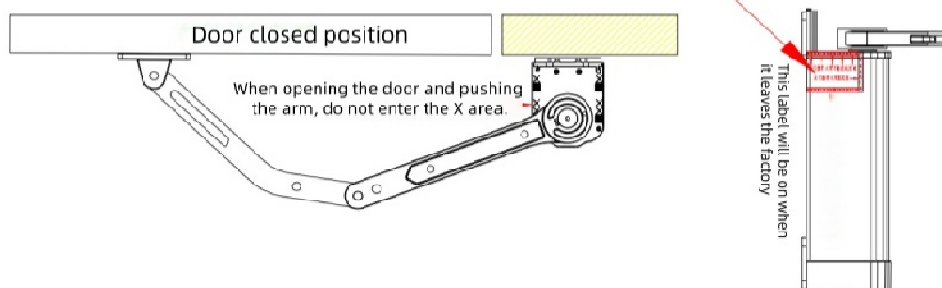
1. When installing the side-mounted door operator (crank-linkage), ensure the distance between the center of the door operator body and the wall is no less than 350 mm for clearance;
2. The mounting height of the door operator shall be no less than 1.2m as required.
3. If direct installation is not available, we can install with help of fixing plate.



Schematic diagram of side-mounted door open

Installation method for side-mounted door closing push

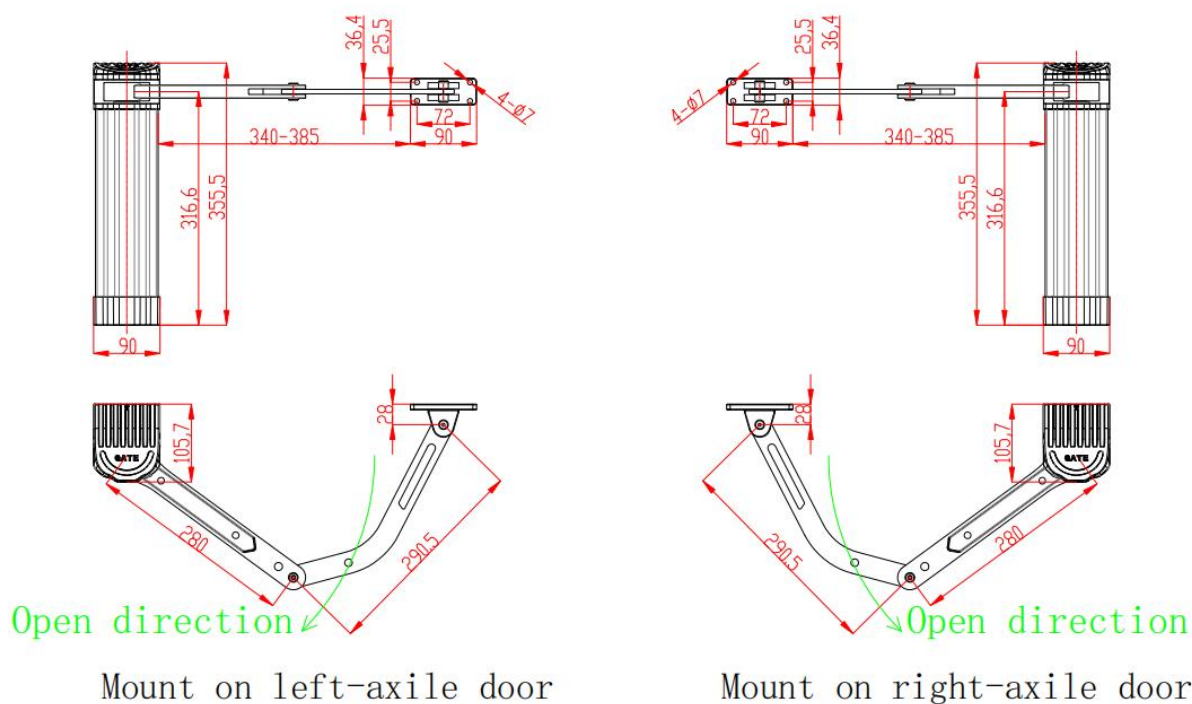
1. When closing the door, manually swing the upper arm to the vertical position of the label. Simultaneously push the door to the closed position, then secure the lower arm.
2. Remember that the upper arm should not be in the area marked with an X.



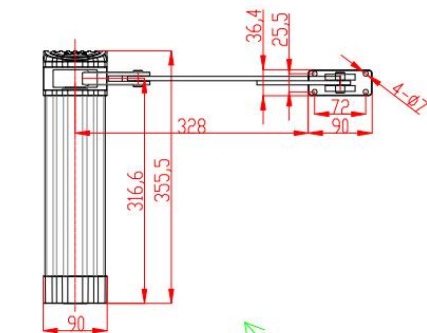
Schematic diagram of side door close

3.2.2 Installation of side-mounted swing door operator

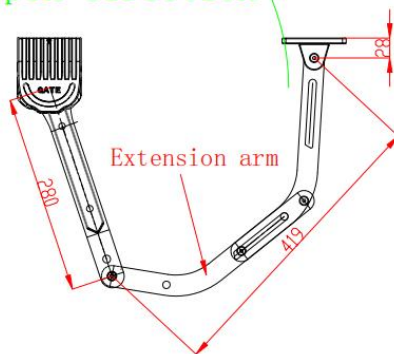
The installation dimensions are as follows (the door opens on the same side as the main unit):



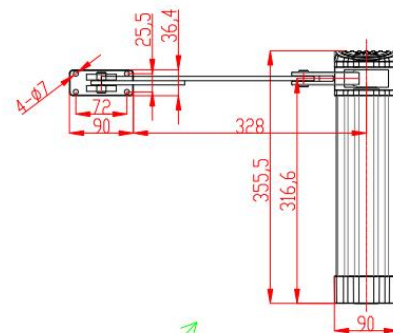
The installation dimensions are shown below (the door opening direction is on the other side of the main unit):



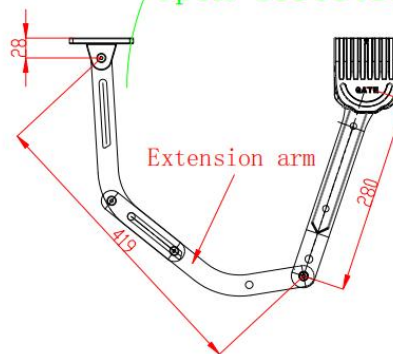
Open direction



Mount on left-axle door



Open direction



Mount on right-axle door

The installation effect diagram is as follows:



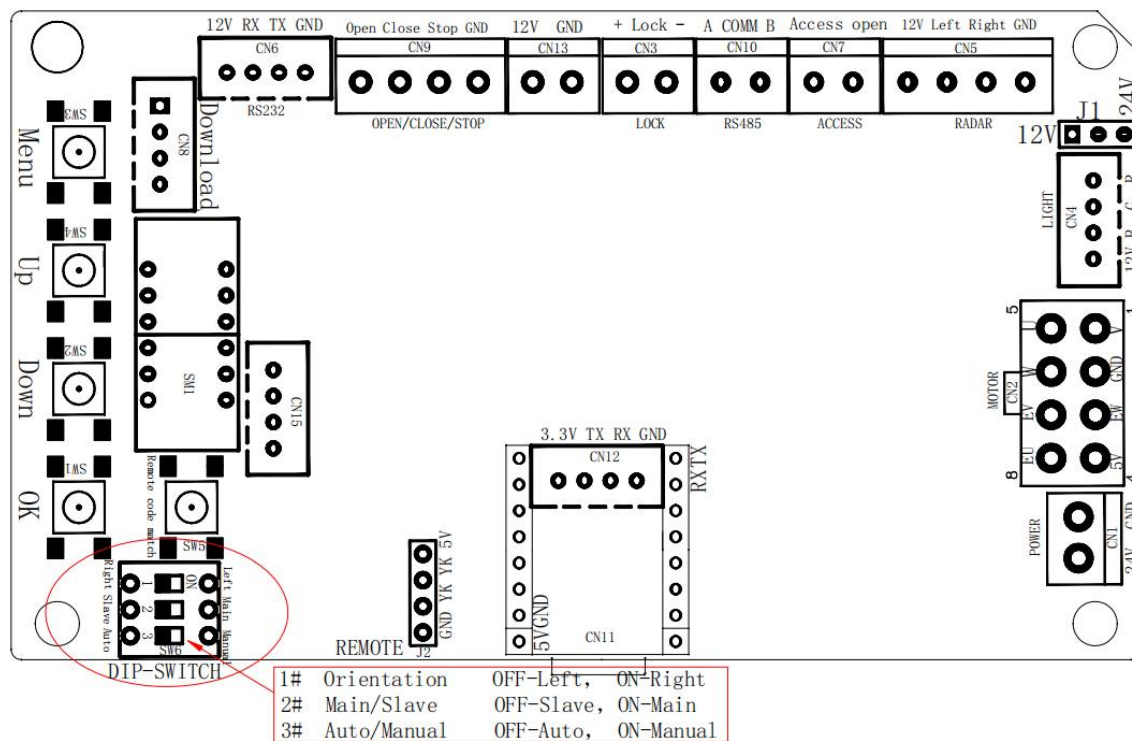
Mount on left-axle door installation



Mount on right-axle door installation

4、Power on and motherboard instructions

4.1 Wiring instructions of top-mounted swing door operator



Note:

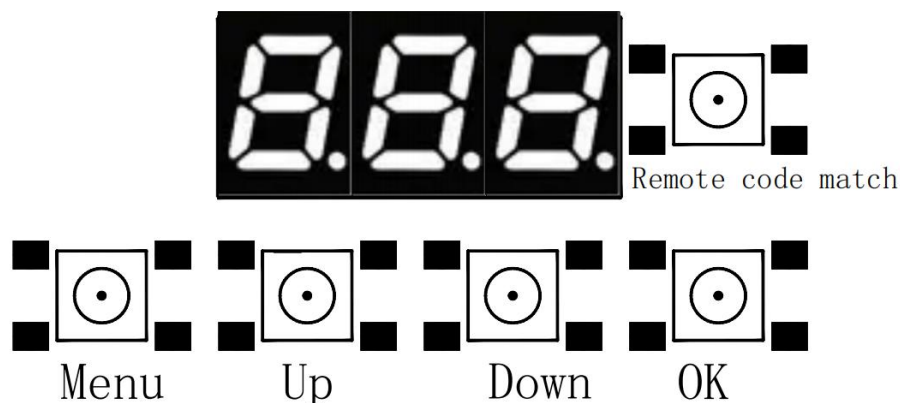
1. First of all, connect the external equipment in accordance with the definitions of the wiring terminals shown in the figure;
2. After connecting the external equipment, check and confirm that the wiring is correct, then power on;
3. Follow the operation instructions in 4.2.

Interface Description :

Terminal SN	Terminal definition	Remarks
CN1	24V GND	Power interface
CN2	U GND EW 5V U W EV EU	Motor\Hall interface
CN4	12V BLUE	External indicator

	GREEN RED	light
J1	12V 24V	jumper
CN5	12V LEFT RADAR RIGHT RADAR GND	Left and right radar signals
CN7	M+ M-	Access control signals
CN10	A B	RS485
CN3	LOCK+ LOCK -	External lock
CN13	12V GND	12V output
CN9	OPEN CLOSE STOP GND	Control signal input
CN6	12V RX TX GND	Serial port
CN8	3.3V DIO CLK GND	Download port
CN15	GND SDA CLK 5V	Seven-segment display
J2	GND YK YK 5V	Remote control interface
CN12	3.3V RX TX GND	Bluetooth Module
CN11	SPARE SPARE SPARE SPARE SPARE SPARE RX TX 5V GND SPARE SPARE SPARE SPARE SPARE SPARE	WIFI module
SW6	1 # Reset Direction 2# Master/ Slave 3# Automatic/Manual Close	OFF-Right ON-Left OFF-Slave ON-Master OFF-Automatic ON-Manual
		DIP-SWITCH

4.2 Controller operation instructions



"Up": In normal operation, this button opens the door. When in the settings mode, it is used to select menu items upward. On the parameter setting interface, one time press increases the value by one unit each time; press and hold enables continuous increment until the maximum value is reached, and then it cycles upward from the minimum value.

"Down": In normal operation, this button closes the door. When in the settings mode, it is used to select menu items downward. On the parameter setting interface, one time press reduces the value by one unit each time. Press and hold enables continuous decrement until the minimum value is reached, after which it cycles downward from the maximum value.

"Menu": Enter the setting interface and return to the parent menu.

"OK": Enter the setting value or return to the primary menu.

"Remote code Match": Remote controller code match or clear.

5、Parameter setting and debugging

The opening and closing time of the door and other parameters can be set through the setting keys under the seven-segment display. The keys are defined as shown in the figure above. The setting is divided into parameter setting, one-key recovery and remote controller match.

5.1 Parameter setting

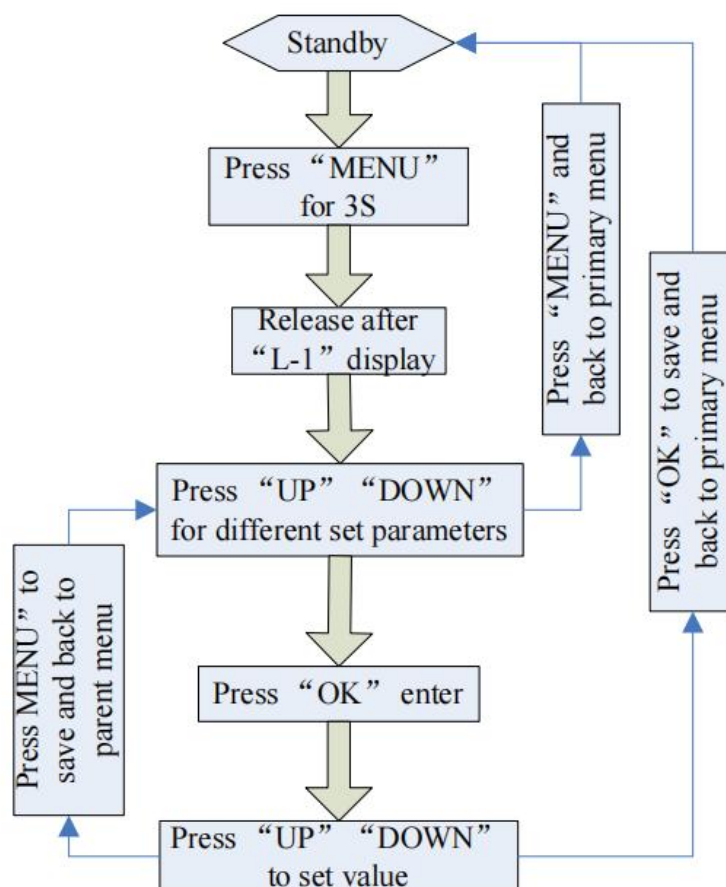
5.1.1 Quick parameter entry

-Press the "Stop" button of the remote controller for 6S to enter the door open position setting;

-Press the "Stop" button the remote controller for 2 seconds to save the door position setting.

5.1.2 Function parameter setting

The parameter setting method is shown as follow:



The parameter setting table is as follows:

SN	Parameter	Content	Default(factory setting)	Remarks
L menu (to enter the menu: press "Menu" for 3S to display L-1, press "UP" and "Down" keys to select the Settings menu, and press "OK" to enter the setting value)				
1	L-1	Adjust the door opening Angle. When opening the door at 90°, press the "Stop" button on the remote controller for 6S to enter the setting. After the setting is completed, press the "Stop" button on the remote controller for 2S to save.	90	
2	L-2	Adjust the door closing Angle. When opening the door, press the "Stop" button on the remote controller for 6S to enter setting and press the "Stop" button on the remote controller for 2S to save.	-30	
3	L-3	Door opening end speed,setting range: 0-100 S.	15	
4	L-4	Door closing end speed,setting range: 0-100 S.	15	
5	L-5	Rebound sensitivity: the smaller the value, the higher the rebound sensitivity, setting range: 0.1-10.0, accuracy 0.1.	0.5	
6	L-6	Rebound Response Time,Unit is S. 0.5 represents 0.5S; Setting range: 0.0–50.0S, accuracy 0.1.	3 represents 0.3S	
7	L-7	Automatic Closing Time: The door will close automatically after waiting for X seconds upon opening. For example, 10 means the door closes automatically after 10S delay. If set to 0 and controlled by the DIP-switch, this function will be disabled. Setting range: 1–999S.	20	
8	L-8	End-of-stroke force for door closing,Setting range: 10–100	60	
9	L-9	Duration of end-of-stroke force for door closing, Setting range: 0.0-10.0.	1.0S	
10	L-10	Electric Lock On-Off Mode Selection: 0-unlock when power on, 1-unlock when power off, setting range: 0-1.	0	
11	L-11	Slave Door Opening Waiting Time, Setting range: 0–9.0S.	1.0	
12	L-12	Main Door Closing Safety Time, setting range: 0–9.0S.	2.0	
13	L-13	Door opening speed,setting Range: Advanced 1-999, Normal 1-15.	10	
14	L-14	Door closing speed,setting Range: Advanced 1-999, Normal 1-15.	5	

5.2 Restore factory Settings

Press the "OK" button until the seven-segment display shows "---", press "UP" "Down" "UP" "Down" "UP" "Down" three times, and then press the "OK" button, finally, power off and restart to restore factory Settings.

5.3 Remote controller match and clear

5.3.1 Remote controller code match

Press the "remote code Match" button for 3S until the seven-segment display shows "--0". Then press any button on the first remote controller to display "--1",

followed by any button on the another remote controller to show "--2", and so on. Continue this process until the display shows "- -N". Finally, press the "OK" button to complete match for all N remote controllers.

5.3.2 Remote Controller Code Clear

Press the "remote code Match" button for 3S until the seven-segment display display "--N "(N represent the number of successfully matched remote controllers). Then press the "UP" key for 3S until the seven-segment display shows "--0", which means remote controller code clearing is successful. Press the "OK" button to return to the normal standby state.

5.4 Motor direction adjustment

If the door opening and closing directions are reversed during debugging, adjust DIP-switch No.1 of SW6. After setting the motor direction, proceed with further debugging.

5.5 Debugging

After the door operator is fully assembled and inspected by QC, power-on testing can be progressed;The seven-segment display shows "000" each time the power is turned on. After the power-on self-check is completed, the seven-segment display shows the door angle, and it displays 0° at the fully closed position.

5.6 Aging

After debugging, the operator can be put into aging test. Press and hold the "DOWN" button for 3S to enter aging mode. During aging, the first segment of the seven-segment display shows a moving pattern converging from top and bottom to the center. The operator runs in reciprocating motion without sensor signal detection throughout the aging test. Press and hold the "DOWN" button for another 3S to exit aging mode.

6、Troubleshooting

SN	Common Problems	Solution
1	Door opening direction is incorrect	Set the door opening direction via DIP switch 1 of SW6
2	Incorrect door opening angle	The door opening angle needs to be set via L-1
3	Seven-segment display doesn't light up	Check the circuit for short circuit or open circuit
4	Magnetic lock fails to unlock	Check L-10 to confirm whether it is unlock by power-on or unlock by power-off.
5	Door opening and closing is not smooth	Check the setting values of L-3 and L-4, and reduce the values
6	The door fails to close	1.Check whether the access control door signal is always on; 2.Check L-7 value,It cannot be set to 0.
7	Seven-segment display shows E-1	Check for short circuits
8	Seven-segment display shows E-2	Check whether the motor wiring is not connected or the contact is poor
9	Seven-segment display shows E-3	Check whether the motor is stuck or blocked
10	Seven-segment display shows E-4	Internal encryption abnormality, main board failure
11	Seven-segment display shows E-6	Check the communication between main and slave door operator
12	Seven-segment display shows E-7	Check for overload
13	Seven-segment display shows E-8	Voltage abnormality, check the power supply voltage
14	Seven-segment display shows E-9	Software overcurrent, waiting to recover, if it persists, control board failure
15	Seven-segment display shows E-13	Rebound in case of encountering resistance, check for blocking obstacles
16	Seven-segment display shows E-14	Motor operation timeout, check if damping is applied.

7、After-sale service

1. Check the contact condition of terminals regularly to ensure a firm connection;
2. Check whether the earthing is good;
3. Check the power supply carefully before use.

8、 Appendix 1: Side-mounted swing door operator packing list (crank-linkage)

Side-mounted swing door operator packing list					
SN	Name	Picture	quantity	unit	Material number
1	Door operator main unit		1	pcs	
2	crank		1	pcs	
3	linkage		1	pcs	
4	External waterproof power supply		1	pcs	
5	fixing plate		2	pcs	
6	Remote controller		2	pcs	
7	Screw kits		1	set	