

User Manual

TW-FB2000 (Flap Barrier)

Revision history

Serial number	Description of revisions	The revision date	Revised version number	Revised one
1	parameter	07 / 10-2023	V1.0	

Notes (very important) :

- Do not connect the line between the machine and the motherboard in the state of power, plug and remove the terminal, so as not to cause damage to the motherboard
- This product has finished the internal wiring when leaving the factory, do not change any line, in addition to the manual has done Instructions. The company is not responsible for any damage caused by unexplained changes.
- The casing must be grounded, and a leakage protection switch should be installed at the power supply end.
- Do not open the door and cover of the box when the pedestrian passage gate is working to avoid personal accidents.
- Install video link: <https://youtu.be/pFrovHR2yjs>



CATALOGUE

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1. Introduction to channel gate products

Channel gate is my company after years of development, production of intelligent channel management equipment. The equipment will be mechanical, electronic, microprocessor control and a variety of reading and writing technology organic integration.

The appearance of the equipment is made of stainless steel plate laser welding molding, beautiful and generous, rust proof, durable, and external standard electrical interface, can easily bar code card, ID card, IC card reader integrated in the equipment, to provide civilized and orderly way for people to access, but also to prevent illegal personnel access; In addition, the system is also specially designed to meet the fire requirements of the function, in an emergency, to ensure that the channel is unimpeded, convenient personnel timely evacuation;

2. Channel gate function features

- 1) with zero self-test function, convenient for user maintenance and use;
- 2) Illegal entry has alarm function;
- 3) anti-flush function, when the opening signal is not received, the swing door will automatically lock or alarm;
- 4) infrared anti-clap function;
- 5) with time-out automatic reset function, pedestrians read the valid card, if the system does not pass within the specified time, the system will automatically cancel the permission of the pedestrian;
- 6) Unified standard external electrical interface, can be connected with a variety of card readers, and can achieve remote control and management through the management computer.

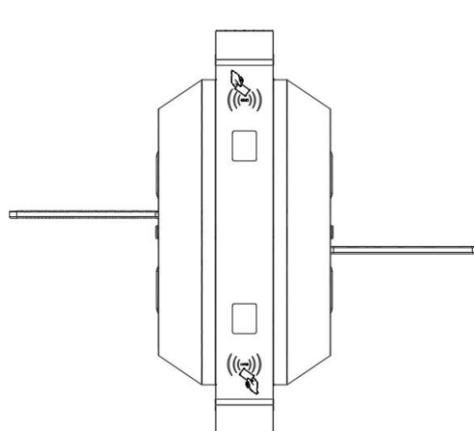


4. Channel gate product definition

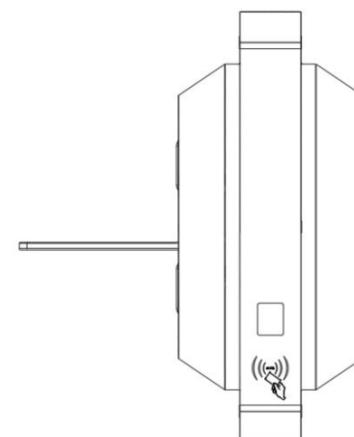
4.1. Definition of channel gate movement

Single movement swing brake: One movement is installed in the case.

Double movement swing brake: Install two movements in the case, as shown below.



Double movement



Single movement

4.3. Distinguish between master and slave of channel gate

Open the gate door on the side of the gate machine. As shown in Figure

4.3.1.the one equipped with a large rectangular circuit board is the speed pass door host machine, and as shown in Figure

4.3.2.the one equipped with a small square circuit board is the speed pass door slave machine.

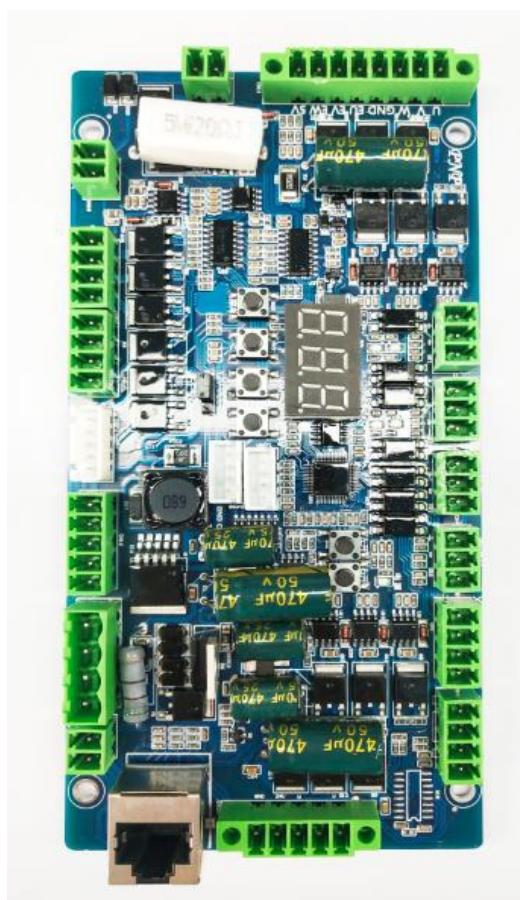
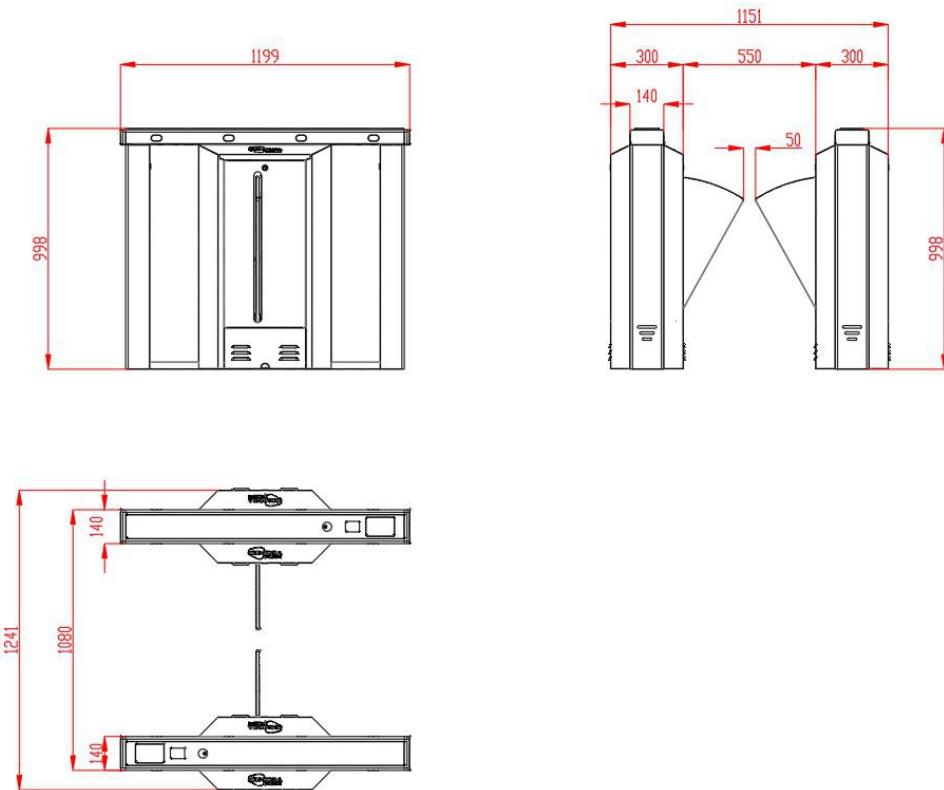


FIG 4.3.1 master control



FIG 4.3.2 sub control

4.4. External dimensions of channel gate equipment



5. Composition and principle of channel gate equipment

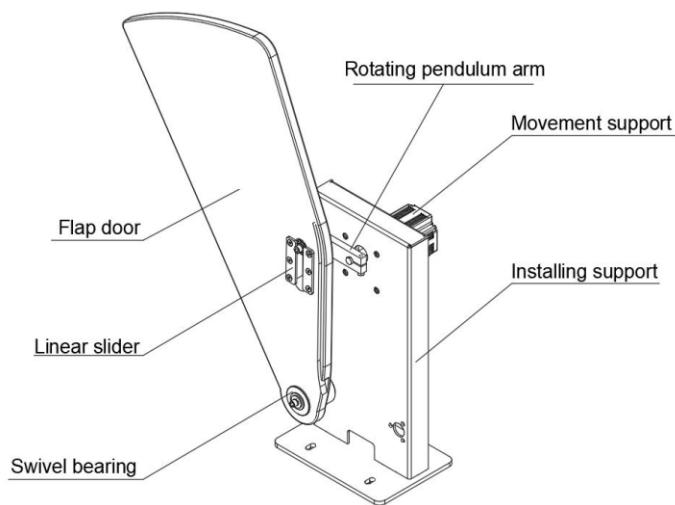
5.1. Composition of channel gate products

5.1.1 Channel gate mechanical system

The channel gate mechanical system is divided into two parts: chassis and movement. As a carrier, the chassis is equipped with a direction indicator, reading and writing device, infrared sensor, etc. The main components of the movement are motor, frame, transmission shaft, gate.

The machine structure





5.1.2 Channel gate electronic control system

The electric control system consists of access control system, main control board, infrared sensor, direction indicator board, alarm, transformer, etc.

- ◆ Access control system: through the swipe card or face recognition and other ways of processing, to the main control board to send an application through the signal (switch signal).
- ◆ Main control board: the control center of the system, which receives signals from the card reader and infrared sensor, and logos these signals After judgment and processing, the direction indicator, motor, counter, alarm issued the execution command
- ◆ Infrared sensor: detect the position of pedestrians and play a role in safety protection.
- ◆ Direction indicator light: display the current status of the passage signs, and guide pedestrians through the passage safely and orderly.
- ◆ Alarm: when the system detects the pedestrians who illegally enter the channel, it will issue an alarm.

The serial number	The name of the	function
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1	Entrance guard system	IC/ID card access control, fingerprint machine, face recognition, two-dimensional code equipment, gate
2	Control panel	machine control panel opening signal, remote The control center of the system, it receives the signal of the card reader and infrared sensor, and the logical judgment and processing of these signals, and then to the direction indicator, motor, counter, alarm issued the execution command.
3	Infrared sensor	Detect the position of pedestrians and play a role in safety protection
4	Direction indicator	Indicates the current status of the passage signs to guide
6	light Alarm (horn)	pedestrians through the passage. When the system detects a pedestrian who has illegally
7	The motor	entered the passage, it will issue an alarm. Drive the movement to run
8	Switching power supply	Control panel power supply

5.2. System working principle

- ◆ Turn on the power and the system enters the working state after self-test.
- ◆ When the card reader reads the effective card, the peak buzzer will emit a pleasant sound, prompting pedestrians to read the card successfully. At the same time, the information read from the card will be judged and processed, and the main control panel will issue the application through signal.

The main control board receives the card reader and infrared sensor signal, and after comprehensive processing, to the direction indicator and motor to send out effective control signals, so that the direction indicator sign into the green arrow pass sign, at the same time the gate issued a setting voice, the main control board control motor operation, the gate open, allow pedestrians to pass.

- ◆ Pedestrians according to the direction indicator sign instruction through the channel, infrared sensor sensed the whole process of the pedestrian through the channel, and continue to signal to the main control board, until the pedestrian has completely through the channel.
- ◆ If the pedestrian forgot to read the card or read the invalid card to enter the channel, the system will prohibit the pedestrian to pass, and will issue a voice alarm, until the

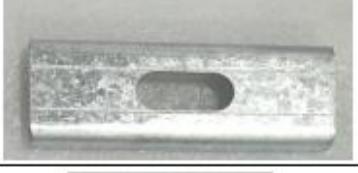


pedestrian exit the channel, to remove the alarm; Re-read the valid chi-square to allow the passage.

6. Installation and commissioning of channel gate equipment

Check and organize the accessory package



Sg-07 Parts List (Brushless Motor model - Single channel)			
num	name	count	figure
1	Synchronization wire (10 cores)	1	
2	Expansion screw (M12*100)	4	
3	Base mounting fastener	4	
4	The M3 nut	5	
5	Hex wrench M5	1	
6	Card reader fastener	2	

6.1. Installation of access gate equipment

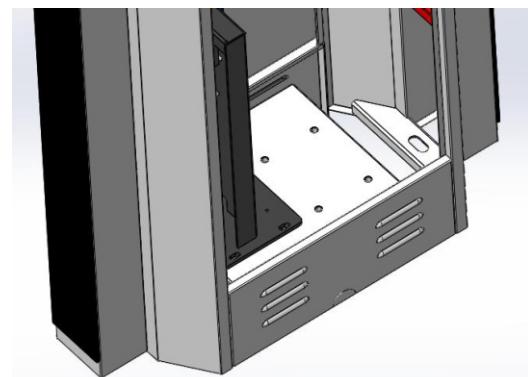
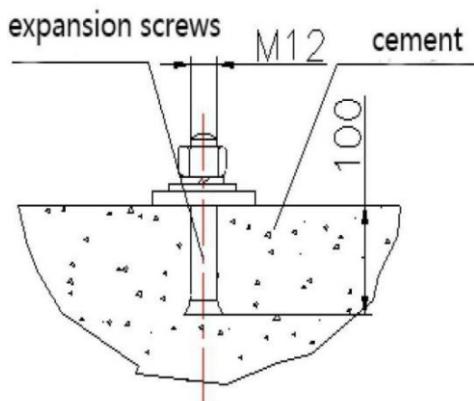
- ◆ Prepare the equipment installation tools and count the accessories according to the packing list.
- ◆ After the foundation for installing devices is finished, arrange the devices and ensure that they are aligned horizontally.
- ◆ After locating the holes, drill the holes and bury the anchor bolts or expansion bolts of the M12.
- ◆ Open a wire slot, the strong electric cable and the factory configured synchronization line, and the self-prepared synchronization network cable are respectively threaded

with 3/4 "PVC pipe, and buried in the corresponding position with cement.

- ◆ Put the equipment back to the installation position, and fix the gate machine with the factory configured layering and expansion bolts.
- ◆ Refer to the wiring diagram, connect the power cable, synchronization cable, and synchronization network cable, and connect the system ground cable to protect the device.

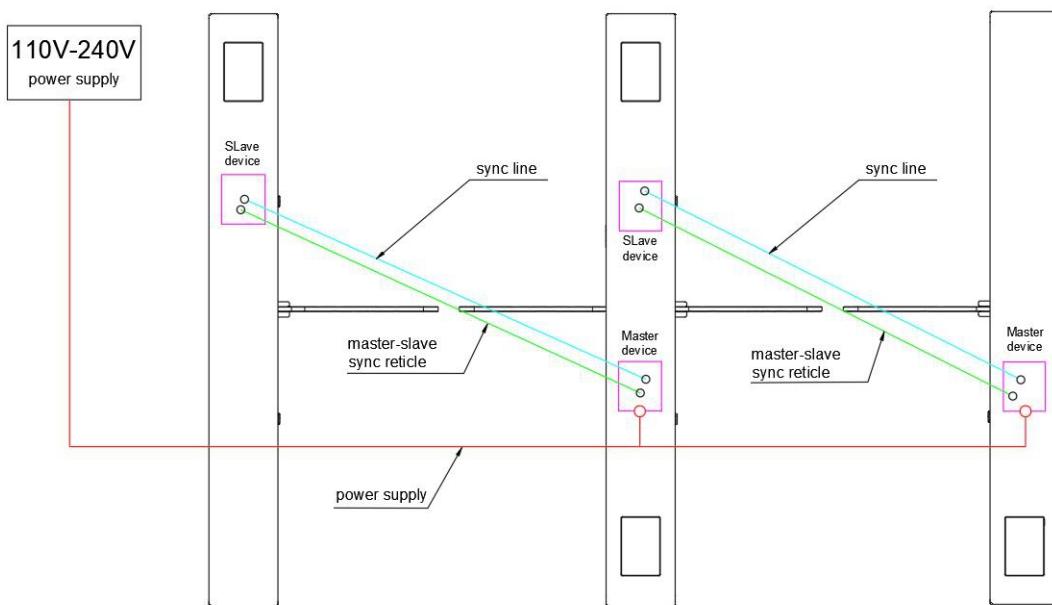
The following function debugging can be carried out only after the device status check is normal!

Check the mains wiring according to the wiring diagram, check the power wiring and other wiring of the whole device are correct, and then power on debugging.

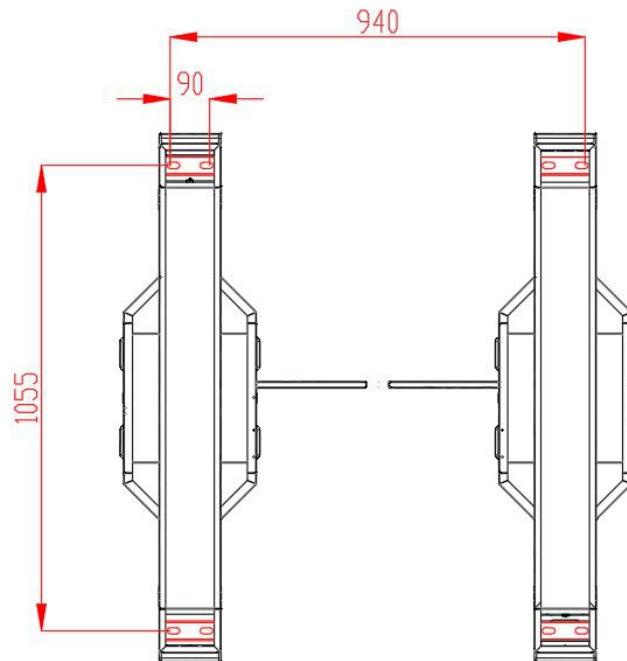


Layering fixed





Schematic of base installation



Material connection diagram of motherboard

6.2.1, air switch and power supply connection (Figure 6.2.1)

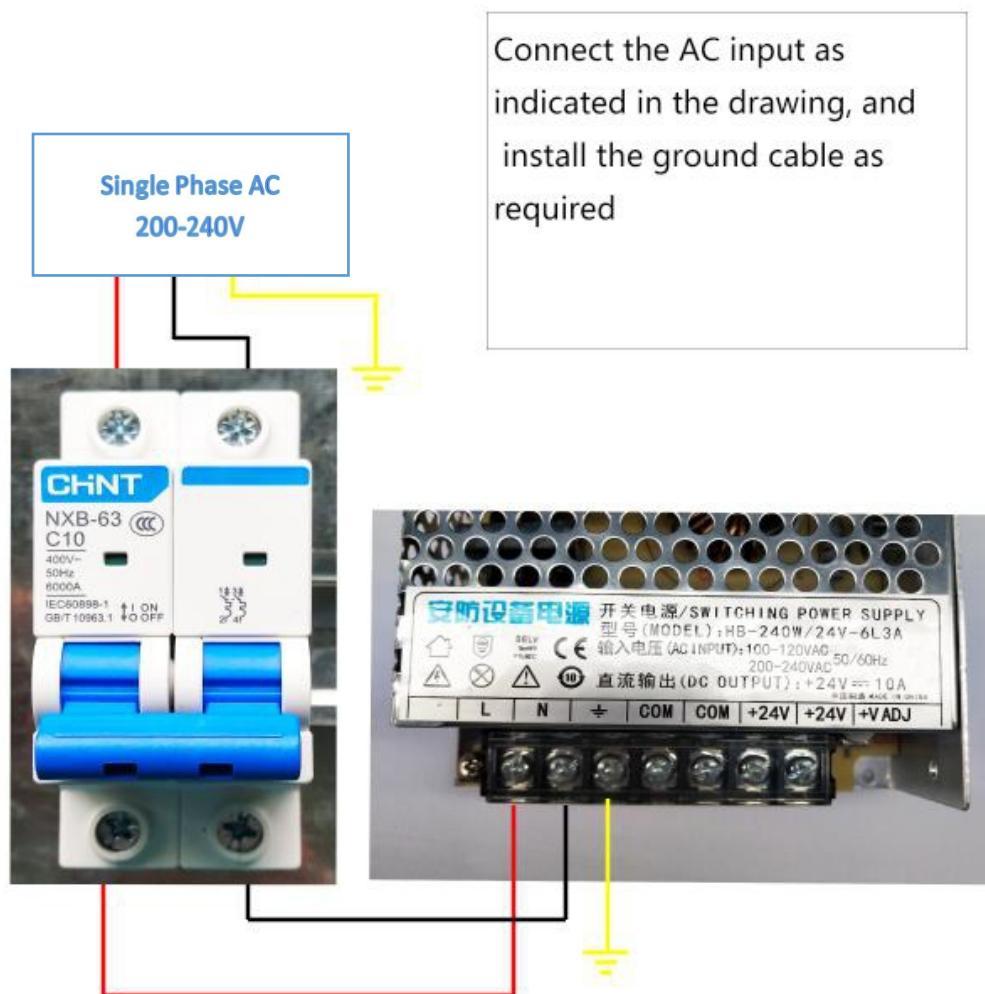


Figure 6.2.1

The 220V power supply is connected to the air switch and the slave machine does not need to be connected to the power supply. The power supply is connected to the main machine



6.2.2, Schematic diagram of power supply and motherboard connection (Figure 6.2.2)

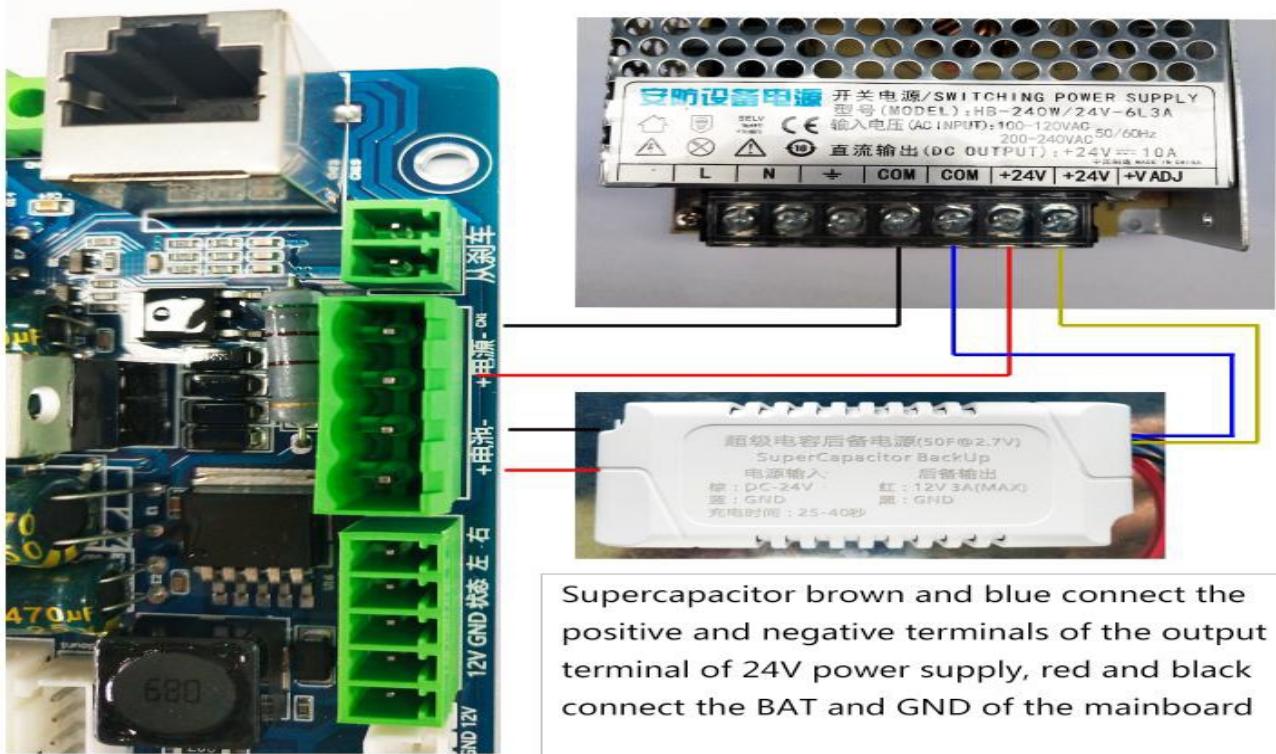


Figure (6.2.2)

6.2.3, Motherboard connected to infrared (Figure 6.2.3)

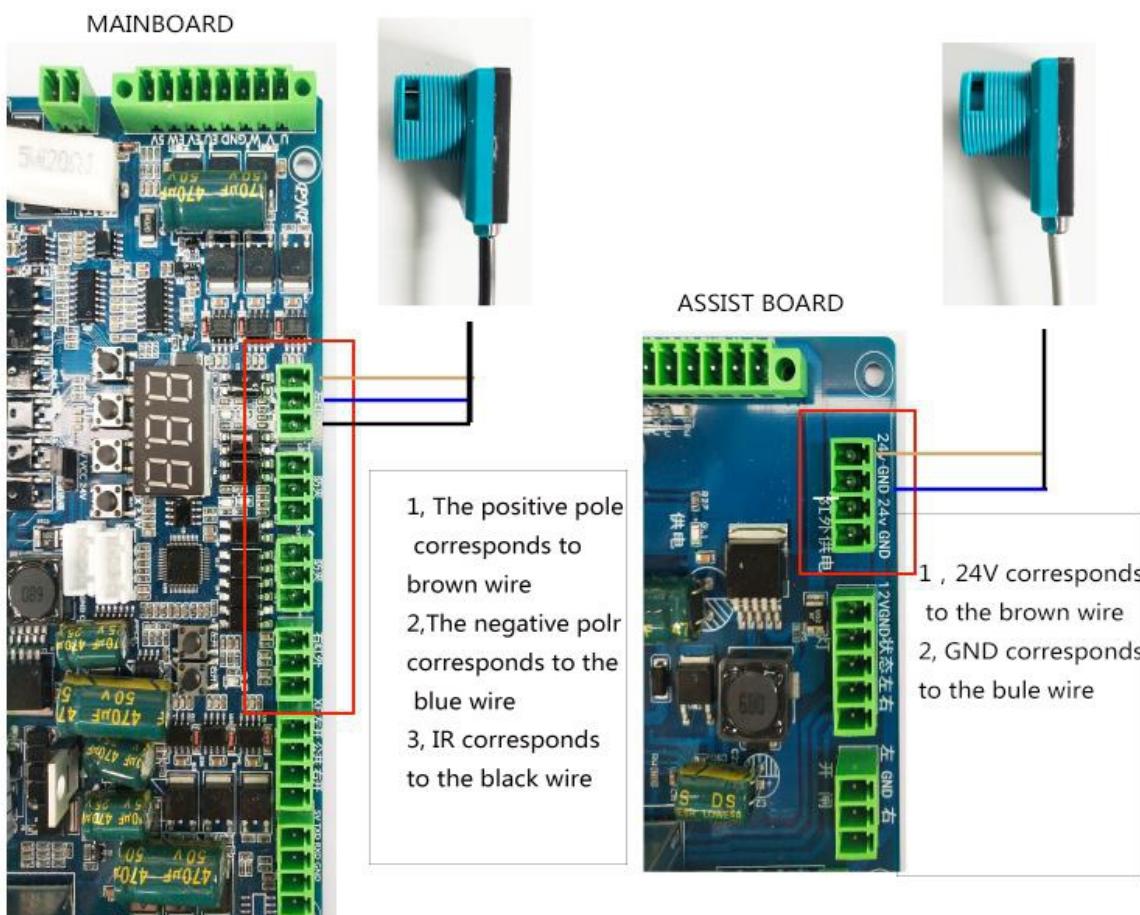
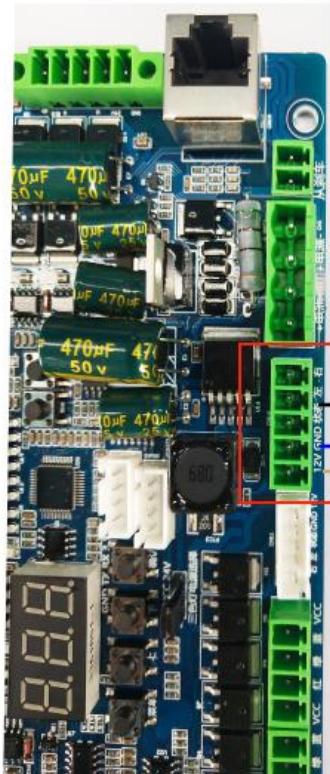


Figure 6.2.3

6.2.4, connecting the motherboard to the arrow indicator on the top cover





- 1 , Connect 12V to the brown cable of the indicator
- 2 , Connect GND to the bule cable of the indicator
- 3,Connect 左/右 to the black cable of the indicator

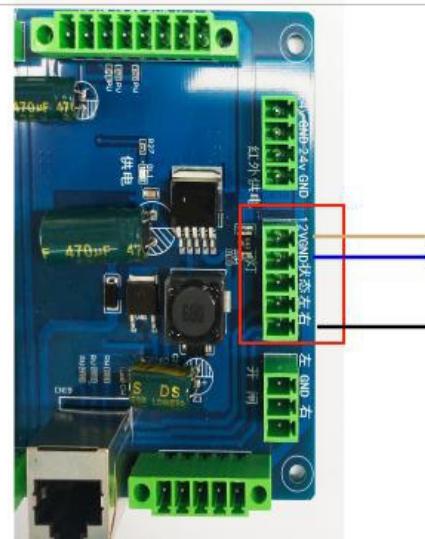


Figure 6.2.4



6.2.6, the motherboard is connected to the horn

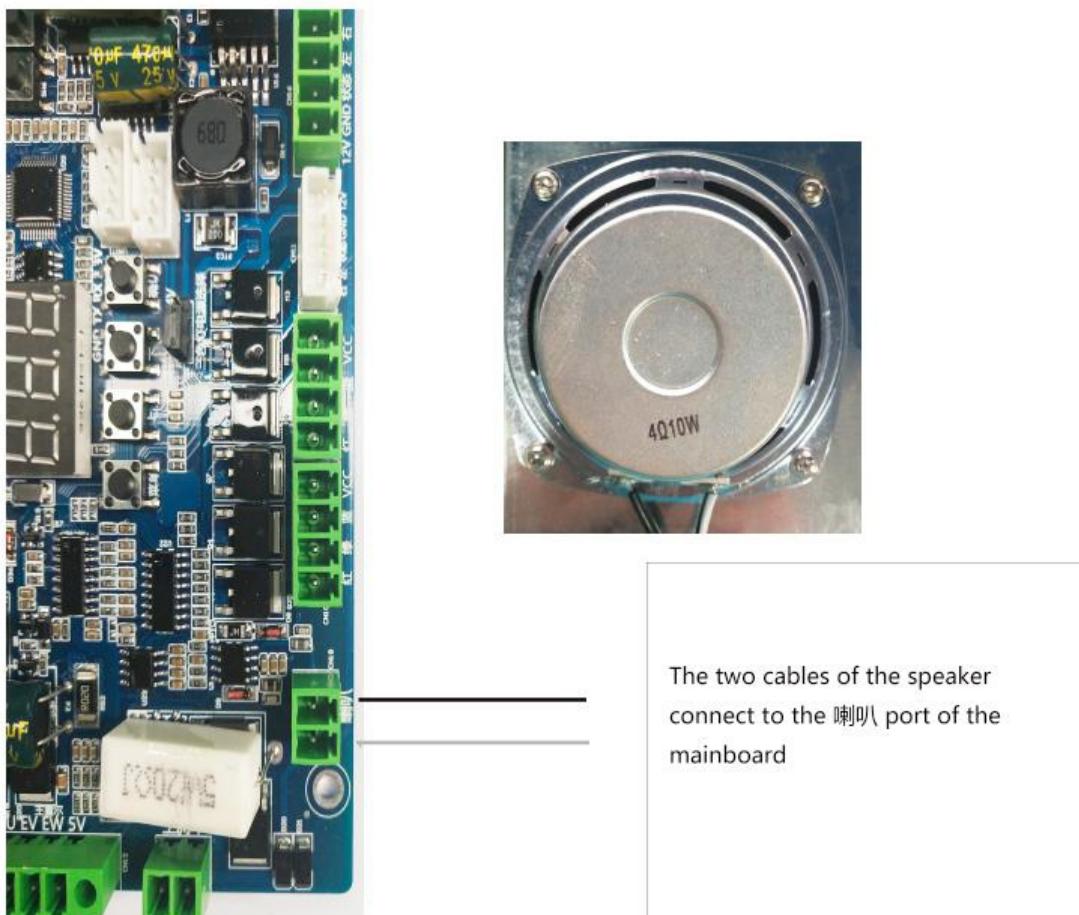


Figure 6.2.6

6.2.7, schematic diagram of synchronization wire connection

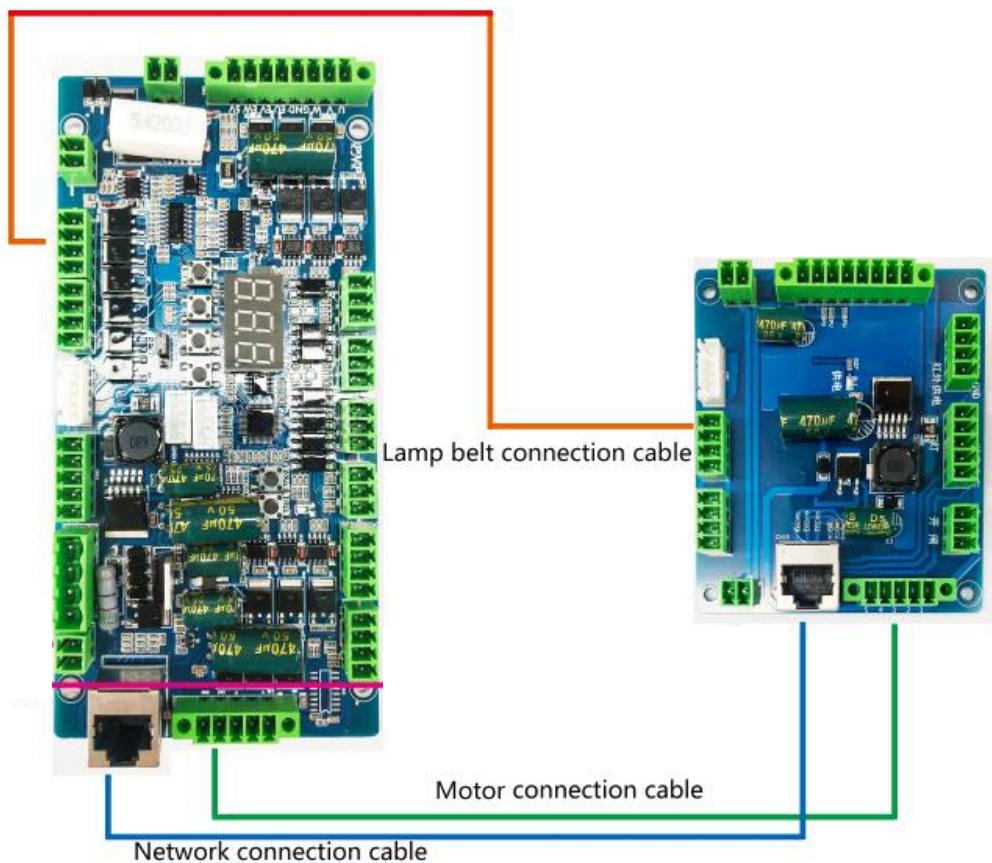


Figure 6.2.7

6.3. Functional commissioning of channel gate equipment

(Note: the gate of our company has been properly adjusted in the workshop according to the order requirements before leaving the factory. Now it is installed as required without debugging. For fine tuning, please refer to the following parameter description and contact after-sales guidance)

6.3.1 Button description

Long press the Menu key for 3 seconds - to enter the L-series, press the Up key to add the value L-2.

Then press "Confirm" to enter H-series and adjust the value "Up key - add value" and "Down key - subtract value", press "Menu key" to return and save, press "Confirm" to exit the setting options

Long press "Menu Key" for 3 seconds - enter L-1 and then press "Down Key" to add value D-2.

Then press "Confirm" to enter H-series to adjust the value "Up key - add value" and "Down key - subtract value", press "Menu key" to return and save, press "Confirm" to exit the setting options

6.3.2 Function Parameter Settings

< L-1 > ENTRY/EXIT OPENING DURATION (DEFAULT: 6 SECONDS)

Set the opening time of swing door after swipe card authorization

< L-2 > SET THE WORKING MODE OF THE GATE

0: indicates that the left swipe card and the right swipe card

1: Left infrared card swiped right

2: indicates right infrared left swipe card

3: represents left and right infrared

< L-3 > DELAY CLOSING TIME

Set the closing time of the swing door after the brake machine passes through.(default 0.2/ second)

Time can be set to (0-50/ SEC)

< L-4 > LEFT PASS VOICE

Default: 1 means: Welcome to light again

Voice set numeric codes from 0 to 18

For example: 0 means: Welcome, 1 means: Welcome again light

< L-5 > VOICE ON THE RIGHT

Default: 15 for: Safe flight

Voice setting numeric codes from 0 to 18

For example: 0 means: Welcome, 1 means: Welcome again light



< L-6 > INFRARED STACKING TIME (IN SECONDS)

Set time Settings for sensing multiple IR simultaneously (default 3/ SEC)

< L-7 > POWER OFF SWITCH DIRECTION

Set the direction of the door opening after the brake is powered off

Default: 0 to the left to open the door, according to the site pedestrian traffic needs to be set

0 for: open left

1: Right open

< L-8 > BREAKING AND ENTERING ALARM VOICE

Default: 0 For: Trespassing please swipe your card

0: swipe your card for trespassing. 1: beep

< L-9 > ENTRY AND EXIT MEMORY SWIPE CARD CONTINUOUSLY

Set group ticket, continuous card swipe mode

Default: 0 means: no memory function

0: no memory function, 1: memory function

< L-10 > INFRARED ANTI-CLIP ACTION

Set whether the anti-clamp infrared swing door is closed or not closed when triggered by pedestrians and other circumstances.(Default: 1 stands for: lock off)

0: Disable 1: Disable

< L-11 > NUMBER OF IR

The default is 4 pairs of infrared, and the corresponding value is selected according to the actual number of red layout of the gate.

0 for: 4 and 1 for: 6

< L-12 > VOICE VOLUME

Set the maximum amount of voice broadcast on the gate. (0-15) 0 is the minimum voice, 15 is the maximum voice, and the default value is 15.



< L-13 > VOICE TEST

After entering the voice test, the gate will automatically broadcast all the voice, which can be used to test the gate all the voice is not normal and convenient for users to quickly understand what voice options are contained in the gate. For example: exit the voice test mode please press the main board confirm button.

< L-14 > BURN-IN TEST

After entering aging mode, the swing door of the brake machine will automatically open and close the door into aging mode.

For example: to exit the aging mode, please press the menu key on the main board.

< L-15 > MAIN MOTOR TYPE SELECTION

Select the corresponding value according to different brands of motor. The default value is 1. Do not change it at will.

< L-16 > CHOOSE THE TYPE OF MAIN MOTOR

Select the corresponding value according to different brands of motor. The default value is 1. Do not change it at will.

< D-1 > CLOSING POSITION ZERO SETTING

When the swing door in the channel is not aligned or in the middle position, you can use this parameter to adjust the position of the swing door. Enter the parameter Settings and manually move the swing door to the desired position according to the voice prompt and press confirm to save.

< D-2 > SET THE POSITION OF THE LEFT DOOR

When the swinging door is opened and the opening Angle is not the position you want, you can enter the parameter Settings and manually move the swinging door to the left according to the voice prompt to the position you want and press confirm to save.

< D-3 > SETTING OF THE RIGHT DOOR OPENING POSITION

When the swinging door is opened and the opening Angle is not the position you want, you can enter the parameter Settings and manually move the swinging door to the right according to the voice prompt to the position you want and press confirm to save.

< D-4 > Opening and closing speed setting

Set the opening and closing speed of the swing door of the brake machine. In the Value 1-10, 1 is the fastest speed and 10 is the slowest speed.



< D-5 > Type of gate

Set the brake type: such as swing brake, wing brake, "0 is swing brake, 1 is wing brake" this parameter according to the factory default Settings.Do not change at will.

< D-6 > If there is a clutch

According to the movement Settings corresponding to the brake configuration, the parameter "0 is no clutch, 1 is clutch" is set according to the factory default.Do not change it randomly.

< D-7 > Resistance rebound mode

When there is a situation of swinging the door and hitting people in the passage, whether to open the door or continue to close the door after swinging the door and hitting people.Default setting: 0

0: After hitting the person, it bounces back and continues to drive

1: After hitting the person, pause and continue to drive

< D-8 > Strength of confrontation

When the swing door of the brake machine is closed and not working, the size of the reverse force adjustment is made when the swing door is forced open by external force.The larger the value, the greater the force. Value 1-10 Default value: 10

< D-9 > Reset time

Set the brake card swipe interval Value 0.1-10 Default value: 0.1

< D-10 > The closing buffer of the host

The larger the value, the faster the closing speed and the larger the vibration. The smaller the value, the slower and smoother the closing speed.**Value 50-150 Default value: 35**

< D-11 > Main motor strength

The larger the value, the greater the closing force and the greater the vibration. The smaller the value, the smaller the closing force and the smaller the vibration.**Value 1-100 Default value: 40**

< D-12 > Buffer strength from the door

The larger the value, the faster the closing speed and the larger the vibration. The smaller the value, the slower and more stable the closing speed.**Value 50-150 Default value: 35**

< D-13 > Slave power

The larger the value is, the greater the closing force is and the greater the vibration is. The smaller the value is, the smaller the closing force is and the smaller the vibration is.**Value 1-100 Default value: 40**



< D-14 > Power supply

Adjust the power of the mainboard. Value 1-10 Default value: 6 Do not change the power.

< D-15 > Zero change speed

When the gate is powered on and started, swing the door to find the middle zero speed. The larger the value, the faster the speed. Value 1-10 Default value: 5 Do not change it at will.

< D-17 > Physical anti-clamp sensitivity

When passing, swing the door to hit people or bounce open the door when encountering obstacles. The smaller the value, the more sensitive. Note: The resistance rebound mode needs to be opened to be effective. Value 1-99 Default value: 75

< D-18 > Physical anti-clip current time

When passing, swing the door to hit people or bounce open the door when encountering obstacles. The smaller the value, the more sensitive. Note: It needs to be set at the same time as D-17 to be effective. Value 1-99 Default value: 10

< D-19 > KP

Set motor parameters Value 1-999 Default value: 160 Do not change it at will.

< D-20 > KI

Set motor parameters Value 1-200 Default value: 0 Do not change it at will.

< D-23 > Physical anti-clip reaction time

Contact the manufacturer's technical personnel for adjustment. Value 1-100 Default value: 0 Do not change the value at will.

< D-26 > Slave antagonism strength

When the swing door of the brake machine is not in the working state, the size of the reverse force adjustment is made when the swing door is forced open by external force. The larger the value, the greater the force. Value 1-20 Default value: 14



6.3.3 Connecting Cables to the Mainboard

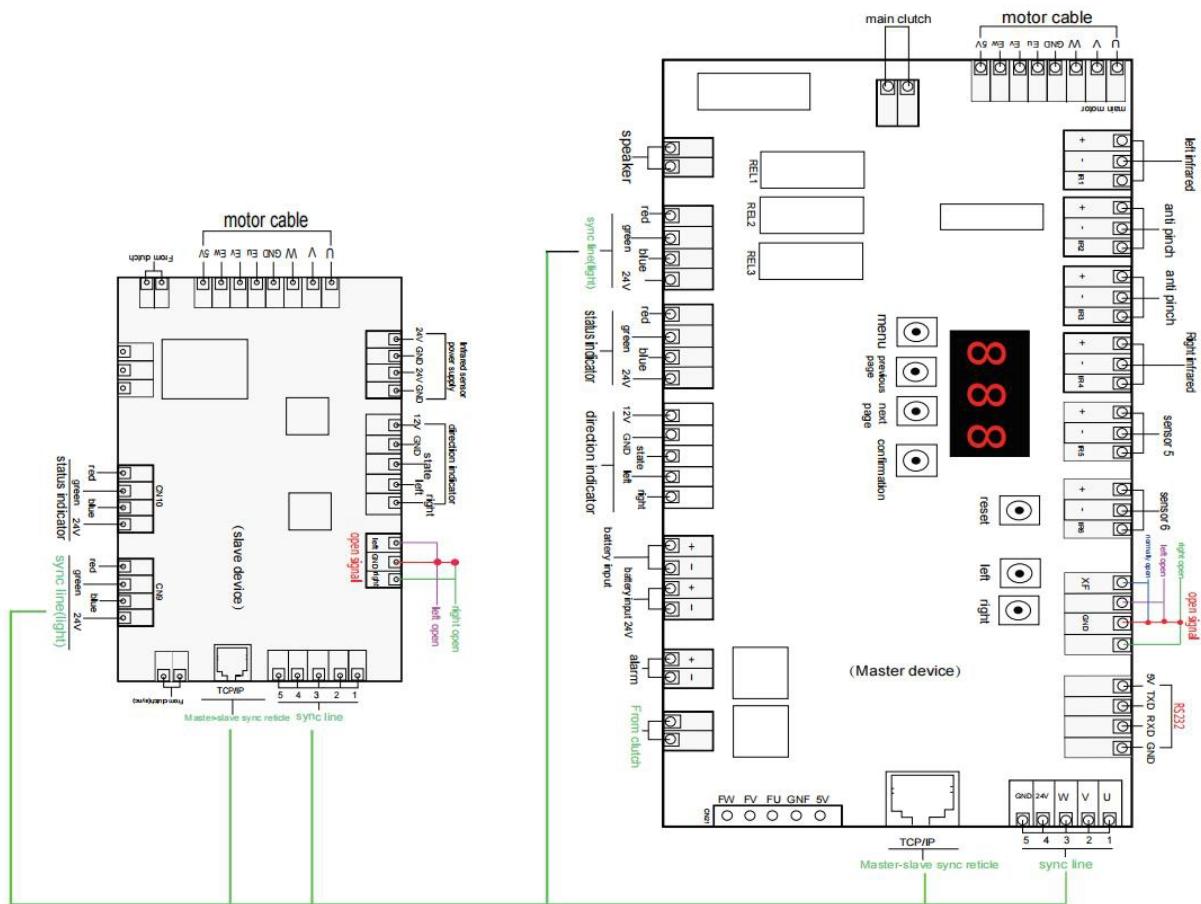
Motor wiring (yellow, blue and green wire motor)

The motor	The name of the	Motor end color	PCB printing
Motor phase	U	Yellow (thick)	U
	V	Green (coarse)	V
	W	Blue (thick)	W
Motor hall	GND	Black (fine)	GND
	Hu	Yellow (fine)	EU
	Hv	Green (fine)	EV
	Hw	Blue (fine)	EW
	5V+	Red (fine)	5V

Motor wiring (Brandy-green wire motor)

The motor	The name of the	Motor end color	PCB printing
Motor phase	W	White (thick)	U
	U	Blue (thick)	V
	V	Green (coarse)	W
Motor hall	GND	Black (fine)	GND
	Hu	White (fine)	EU
	Hv	Blue (fine)	EV
	Hw	Green (fine)	EW
	5V+	Red (fine)	5V





7. Troubleshoot common faults

7.1. After swiping card or face recognition, swing the door and do not open the door without any reaction

Re-check whether the signal cable connection is correct, whether the connection port is loose, manually press the motherboard keys or short connections to see whether the switch is open, if the manual does not open the switch, power off and restart the electric machine will rotate, then the motherboard needs to be replaced.

7.2. If the door keeps switching on and off

Please change D-23 to 50

7.3. After the power failure and restart, the host is in the open state, and the communication cable is removed, the host can open the door



normally

Unplug the terminal and reconnect it again. Check whether the synchronous communication cable is normal. If the cable is normal, replace the motherboard.

7.4. After swiping the card, the host will open the door, and the slave will not open the door

Check whether all infrared sensors are normal. When no one is in the channel, it is normal to control the infrared tail indicator light on the host. If the infrared tail indicator light is on the bright side, the infrared is not aligned or faulty.

The main power is restarted to see whether the host from the mechanical machine can run normally, if not, please replace the motherboard test, replace the motherboard or not to replace the motor side.

7.5. When opening and closing the door after swiping the card, the swing arm is not synchronized:

By adjusting the D-10 host door cache strength and from the door cache strength D-12, the speed is slow to adjust the large.

7.6. When swiping the card or infrared induction opens the gate, the swinging door appears to hit the box body;

1) check whether the swing door is loose, 2) manually reset the left door position, right door position and closing position, 3) check whether the motor and movement assembly lock is loose or displaced, if the above items are normal, the movement needs to be replaced.

7.7. When the swing door of the brake machine is opened or closed, the swing door automatically restarts;

If the swing door automatically restarts, it will automatically return to the normal state within 3 minutes. If the swing door is out of position for a long time, it is faulty.

7.8. When E-1 or E-2 occurs on the main board digital tube of the gate machine;

Please adjust the value of L-15 and L-16 to 1

Meaning of troubleshooting code



Show E-1 main motor Hall error adjusting L-15 to 1

Show E-2 slave motor Hall error adjusting L-16 to 1

Customer service

We are very happy to provide you with help when you encounter problems or product defects in the future. If you are not clear about the use or operation, please contact the after-sales service personnel in time.

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