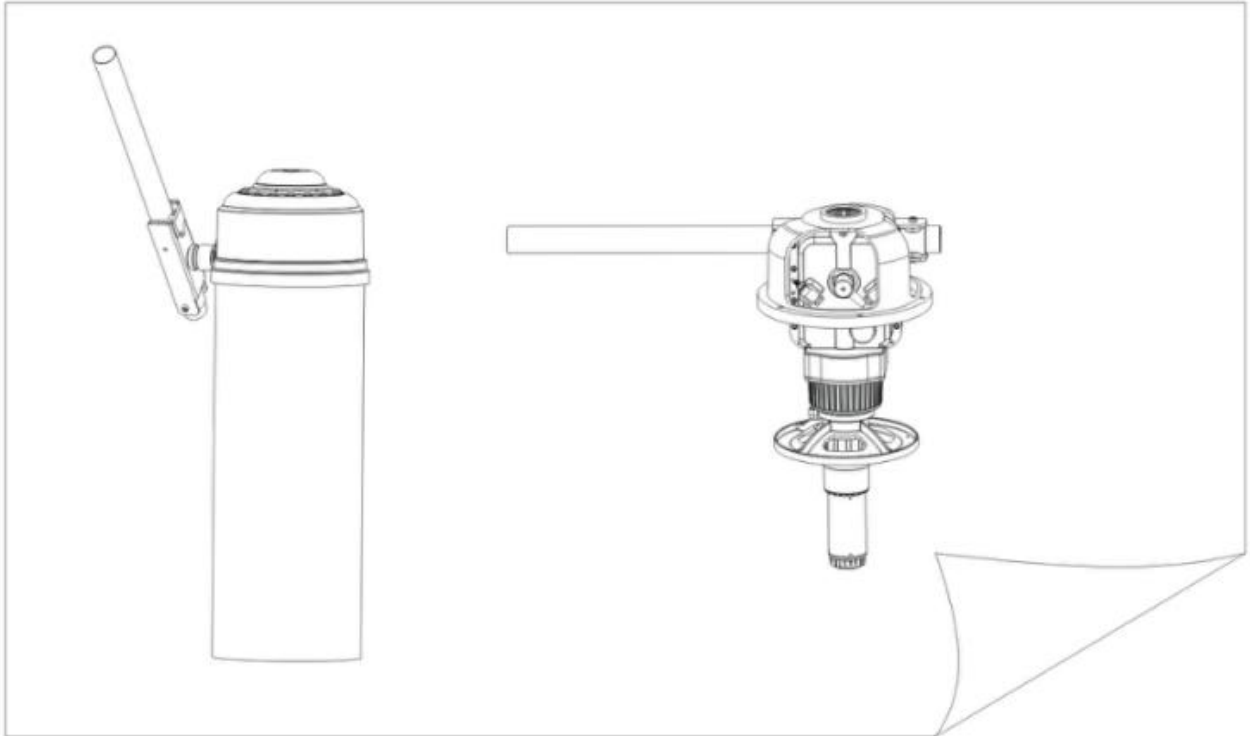


DC Variable-Frequency 3D Barrier Gate

SCB02 (DC24V)

Manual








V1.0.1

Preface

Symbol Stipulations

The meanings of the following symbols which may appear in this manual

Symbols	Meanings
 Danger	Indicates that there is a high level of potential danger, if not avoided, it may cause casualties or serious injures.
 Warning	Indicates that there is a medium or low level of potential danger. If not avoided, it may cause minor or moderate injury to personnel.
 Attention	Indicates potential risks. If you ignore the information, it may cause equipment damage, data loss, equipment performance degradation, or unpredictable results.
 Tips	Indicates that it can help you solve a problem or save your time.
 Note	Indicates that it is the additional information of the main text, which emphasizes and supplements the main text.

Revision Records

Version No.	Revision Content	Release Date
V1.0.0	First Release	2022.02

Safety Instructions

The following is the correct methods of using the product, in order to prevent danger, prevent property damage, etc., please read this manual carefully before using the equipment and strictly follow it during use. Please keep the manual properly after reading.

Operating Environment Requirements

Please transport, use and store the device within the allowable humidity and temperature range.

Please do not let any liquid flow into the device.

Please install the device in a well-ventilated place, and do not block the vents of the device.

Please do not press hard, vibrate violently or soak the equipment.

Please use the factory packaging or materials of the same quality when shipping the equipment.

It is recommended to ground via the grounding hole on the device to improve the reliability.

Operation and Maintenance Requirements

Please do not disassemble the device privately.



Please use the accessories or attachments of the manufacturer for installation and maintenance by professional service personnel.

Please do not provide two or more power supply methods to the device at the same time, otherwise the device may be damaged.

The self-contained boom is not allowed to be lengthened or cut off, and it is also not allowed to add weight to the boom privately.

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1. Production Overview

1.1. Functions and Features

- 1.1.1. Adopting the three-dimensional double-drive no-spring mechanism independently developed.
- 1.1.2. Dual power motors, use two-stage planetary gear and two-stage gear drive combination respectively, rotate up and down and horizontally, and superimpose to form a three-dimensional surface running track.
- 1.1.3. Adopting DC permanent magnet synchronous motor and variable-frequency control, effectively solve the problems of limited speed, life and spring.
- 1.1.4. Breaking the normal operation mode of the barrier gate, the starting point adopts the same-direction driving operation mode with the vehicle passing, to realize the ultra-high-speed and ultra-intensive operation.
- 1.1.5. The boom will be reset after hit and removed, which effectively protects the boom and the mechanism, alarm against abnormal lifting boom.
- 1.1.6. Be able to stop at any position in three-dimensional space, no longer limited height problem.
- 1.1.7. Double protection, one drive failure will not affect the other drive, and the barrier gate can still operate in another space;
- 1.1.8. No spring design, no longer worry about configuring springs and springs broken.
- 1.1.9. Traffic lights on the top cover to better indicate the passage of vehicles.
- 1.1.10. The running direction can be easily changed in two steps.
- 1.1.11 The cabinet is round hollow-out design, with smooth lines and intuitive movement process.
- 1.1.12. Equipped with carbon fiber foam round boom, to effectively protect the vehicle.
- 1.1.13. Large LCD screen display, English visual menu, easy function selection and debugging.
- 1.1.14. Support external radar, coil, infrared anti-smashing function, built-in DC 12V power output, can be used for external radar power supply.
- 1.1.15. Support RS485 communication or RS485 off-line connection.
- 1.1.16. DC12V power supply is optional.

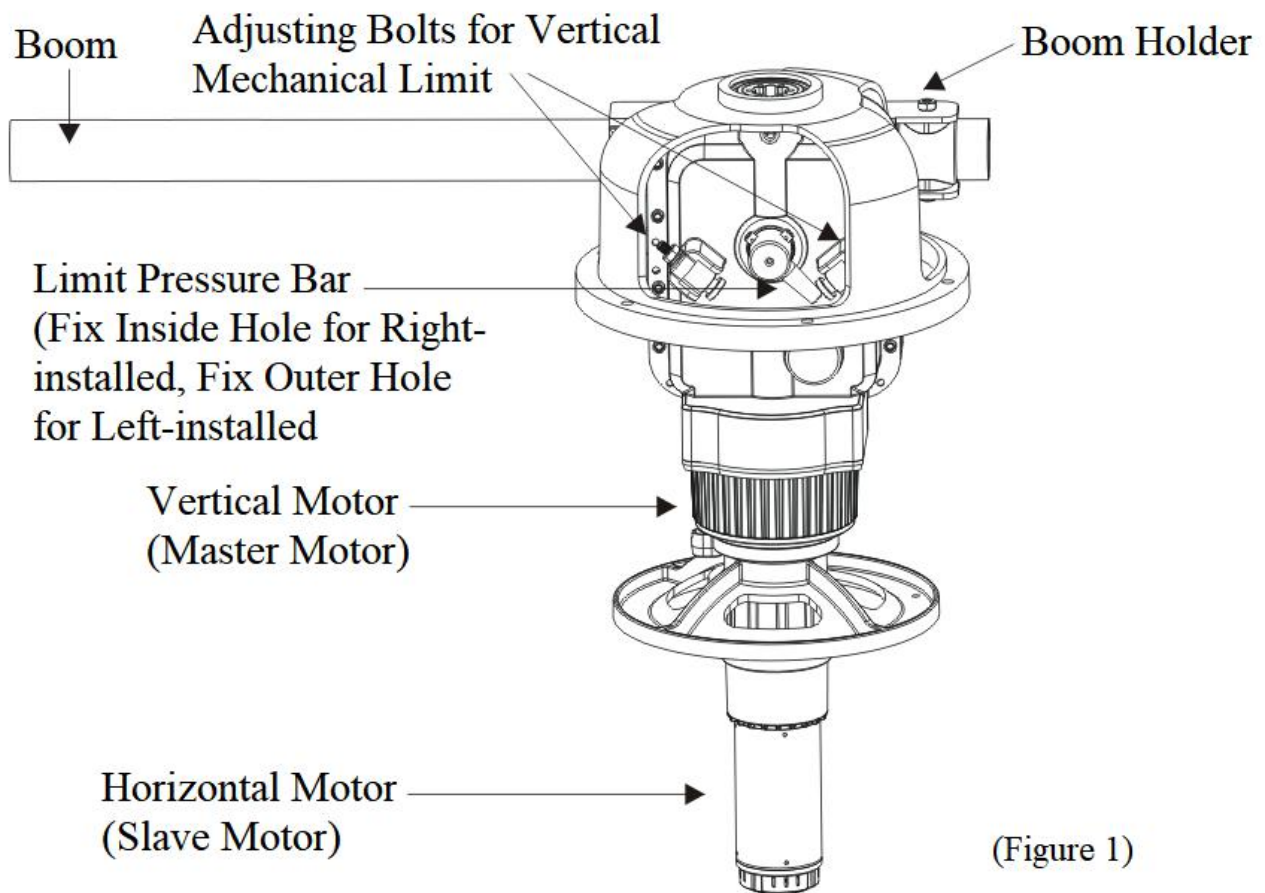
1.2. Technical Data

- 1.2.1. Working temperature (motor): $-35^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- 1.2.2. Power supply input voltage: $\text{AC}110 \pm 10\%$, $\text{AC}220\text{V} \pm 10\%$

- 1.2.3. Controller input voltage: DC24V±10%, 10A
- 1.2.4. Motor power: up and down power 180W; horizontal power 60W
- 1.2.5. Relative Humidity: 30%~80%, No condensation
- 1.2.6. Distance of remote control: $L \geq 30M$
- 1.2.7. Running Speed: 0.3 seconds MAX
- 1.2.8. MTBF: 8,000,000 times

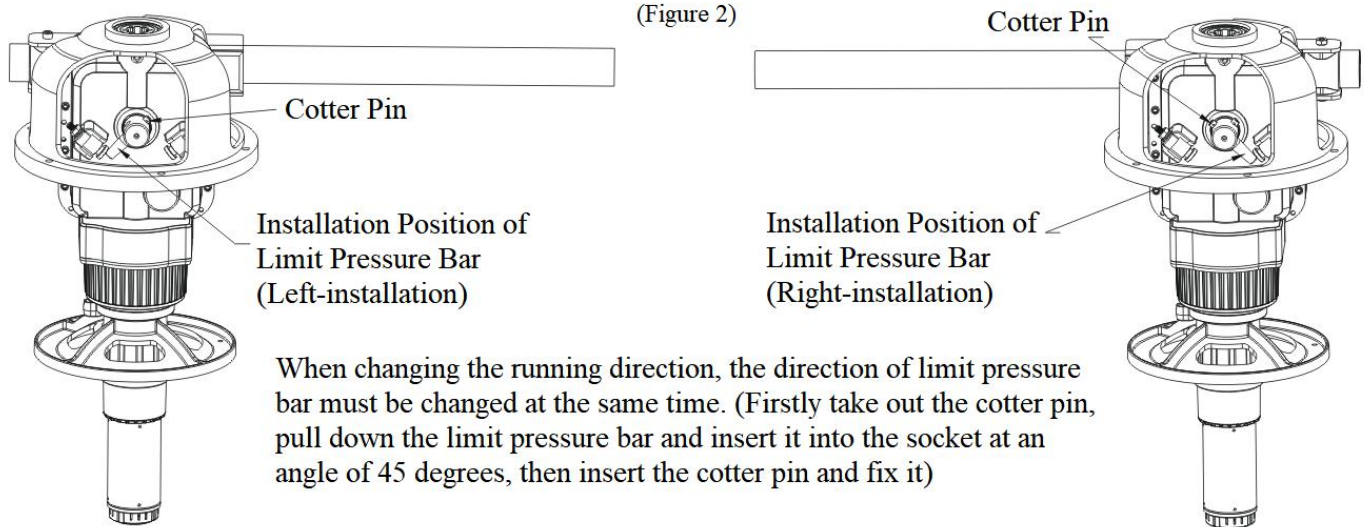
2. Product Structure

2.1. Mechanism Structure



(Figure 1)

2.2. Running Direction Setting



Controller Setup Requirements

1. Advanced menu of master motor - 3.2 motor type: 129 rotates forward.
2. Advanced menu of slave motor - H-05: 2

Controller Setup Requirements

1. Advanced menu of master motor - 3.2 motor type: 129 rotates reverse.
2. Advanced menu of slave motor - H-05:3

3. Cabinet Installation

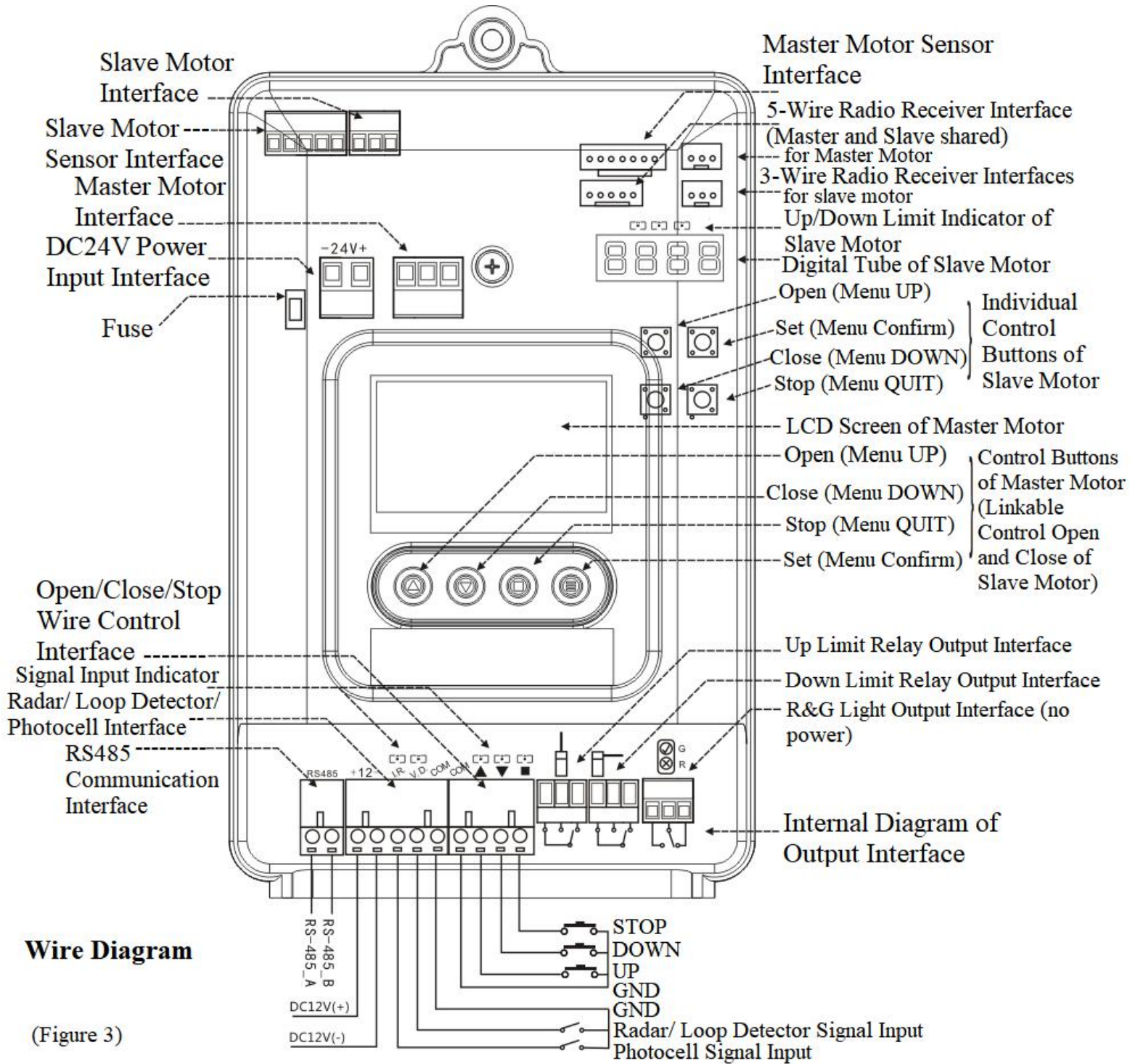
According to the specific conditions of the site, select the barrier gate of the appropriate specification, and use the expansion bolts to fix the cabinet on the ground with 4 sets M16*150 expansion bolts. At the location where the cabinet is installed, the barrier foundation should be made according to the site conditions, and the cast-in-place foundation should be made for the non-concrete ground.

4. Controller Explanations and Instructions



Note

All the electrical connections are done before delivery. The necessity is to connect the power and grounding connection.



4.1. Controller Interface Explanations

Item	Explanation
Wire Control Interface	<p>This interface is available for parking system, also available for external controller to control barrier gate.</p> <p>UP: Short circuit "UP" and "GND"</p> <p>Down: Short circuit "Down" and "GND"</p> <p>Stop: Short circuit "Stop" and "GND"</p>

Item	Explanation
Anti-smashing Interface	<p>Infrared Photocell: boom will lift up when short circuiting “Infrared photocell interface” and “GND” during boom down.</p> <p>Loop Detector: boom will lift up when short circuiting “loop detector interface” and “GND” during boom down; in up limit position, boom will fall down automatically after these two interfaces disconnected.</p>
RS485 communication interface	It is used for controlling the barrier gate or checking the status of the barrier gate by computer or system; also used for online controlling the paired barrier gates synchronously.
Limit Relay Output Interface	It is used for the system to checking the status of the barrier gate by the opening and closing times; users can also change to other output modes via option 4 of the advanced menu.
DC12V Power Output	Provide 1A current output, available for radar or small light strips.
Interface for R&G lights	Available to connect with R&G lights, to indicate the working status of the barrier gate.
Buttons of Mater Motor	<p>The 4 buttons have two working status: normal working status and menu setting status, the function of normal working status is that “▲” is the opening function, “▼” is the closing function, (in normal working status of slave motor also link-able to open and close), “■” is the stopping function, “≡” is the setting function which is invalid when it is short pressed under normal working status; Long press “≡” for 2 seconds to enter the menu setting status. In the menu setting status, “▲” and “▼” are used to adjust menu items or parameters, “■” is to cancel the set value or exit the menu setting status, “≡” is used to enter the next menu or save the set value. (Note: These buttons can only set the menu of master motor)</p>

Item	Explanation
Buttons of Slave Motor	The 4 buttons have two working status: normal working status and menu setting status, the function of normal working status is that “▲/+” is the opening function, “▼/-” is the closing function, “■QUIT” is the stopping function, “ $\frac{\text{Menu}}{\text{Confirm}}$ ” is the setting function which is invalid when it is short pressed under normal working status; Long press “ $\frac{\text{Menu}}{\text{Confirm}}$ ” for 2 seconds to enter the menu setting status. In the menu setting status, “▲/+” and “▼/-” are used to adjust menu items or parameters, “■QUIT” is to cancel the set value or exit the menu setting status, “ $\frac{\text{Menu}}{\text{Confirm}}$ ” is used to enter the next menu or save the set value. (Note: These buttons can only set the menu of slave motor)
LCD Screen	It is used to display the information of the master motor of the barrier gate, such as the working status, parameters, menu items.
LED Digital Tube	It is used to display the information of the slave motor of the barrier gate, such as the working status, parameters, menu items.

4.2. Controller Parameter Setting of Master Motor

Long press “≡” button for 2 seconds to enter the regular menu setting status. Select menu items by short press or long press “▲” and “▼” buttons, short press once to increase or decrease by one, long press to continuously increase or decrease. When the required diameter displayed by the LCD, press “≡” button again to enter the setting of the specified item, and press the “■” to return to the previous level or exit the setting. When the specified parameter setting is completed, you must press “≡” button to confirm it to take effect. The currently set parameters is invalid if pressing “■” button.



Note

The recommended range specifically refers to the 2m carbon fiber boom.

4.3. "Regular Menu" Command List of Master Motor

4.3.1. Opening operation parameters

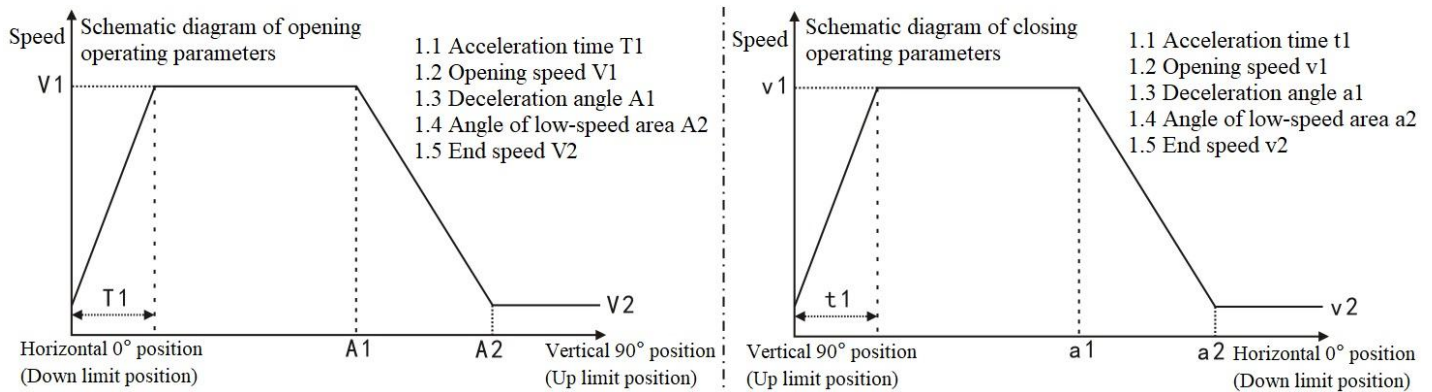
Sub-menu	Defaults	Range	Recommended Values	Remarks
1.1 Acceleration Time	3	1-20	≥ 3	The smaller the value, the faster the speed

1.2 Opening Speed	100	15-100	90-100	The bigger the value, the faster the opening speed
1.3 Deceleration Angle	65	10-80	60-70	The angle at which deceleration begins in the opening process; if the boom shakes after it is opened in place, users can reduce this value.
1.4 Angle of Low-speed Area	90	45-90	90	The angle at which the boom enters a low-speed area in the opening process; if the boom shakes after it is opened in place, users can reduce this value.
1.5 End Speed	8	1-50	6-8	The minimum speed at which the barrier gate is opened in place; if the boom shakes after it is opened in place, users can reduce this value.
1.6 Learning Speed	25	10-50	25	The speed at which the the barrier gate begins to learn the up limit position after the power is turned on for the first time.

4.3.2. Closing operation parameters

Sub-menu	Defaults	Range	Recommended Values	Remarks
2.1 Acceleration Time	1	1-20	1-3	The smaller the value, the faster the speed
2.2 Closing Speed	100	15-100	90-100	The bigger the value, the faster the opening speed
2.3 Deceleration Angle	35	10-80	33-38	The angle at which deceleration begins in the closing process; if the boom shakes after it is closed in place, users can increase this value.
2.4 Angle of Low-speed Area	0	0-45	0	The angle at which the boom enters a low-speed area in the closing process; if the boom shakes after it is closed in place, users can reduce this value.
2.5 End Speed	4	1-50	2-5	The minimum speed at which the barrier gate is closed in place; if the boom shakes after it is closed in place, users can reduce this value.
2.6 Learning Speed	25	10-50	25	The speed at which the the barrier gate begins to learn the down limit position after the power is

				turned on for the first time.
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1.3 The Deceleration Angle

It is used to set the angle at which deceleration begins in the opening process. The angle is 0 degree when the barrier gate is opened in place(in horizontal position) and 90 degrees when it is closed in place(in vertical position). This parameter indicates that deceleration begins when the barrier gate is opened to this angle. If the boom shakes after it is opened in place, users can reduce this value. (Chapter 2.3 has the similar operation)

1.4 The Angle of Low-speed Area

It is used to set a low-speed area in the opening process. When the opening angle reaches the set angle, the barrier gate will run at the end speed that chapter 1.5 set until it is opened in place. If the value is 90, the function is invalid. If the boom shakes after it is opened in place, users can reduce this value appropriately. (Chapter 2.4 has the similar operation)

1.5 The End Speed

This is the minimum speed at which the barrier gate is opened in place. The barrier gate will run at the this speed until it is opened in place. If the parameter is set too large, the boom will shake when it is opened in place. (Chapter 2.5 has the similar operation)

4.3.3. Quick operation parameter

Sub-menu	Model Type	Remarks
Auto setting of opening and closing operating parameter according to different models	SCB02	Quickly set parameters according to different models

Notice: this device can quickly set the opening and closing operating parameters according to the model types, which shorten the debugging time. If the effect is still

not good after setting, you can adjust the corresponding parameters appropriately.

4.3.4. Position setting

Sub-menu	Range	Model Type	Remarks
4.1 Position learning mode	Find up and down limit/ find up limit only/ find down limit only	Find up limit only	Learning mode after the power is turned on for the first time. For straight boom which is over 5 meters long or fence boom, it is recommended to select the "Find up limit only" mode; when the barrier gate is installed under an eaves, please select the "Find down limit only" mode.
4.2 Manual learning f up and down Limit	None; operate according to the prompts on the screen.		In manual mode, learn the up and down limit.
4.3 Manual learning of up limit	None; operate according to the prompts on the screen.		In manual mode, learn the up limit only.
4.4 Manual learning of down limit	None; operate according to the prompts on the screen.		In manual mode, learn the down limit only.
4.5 Horizontal fine adjustment	1-3000	275-290	Boom horizontal fine adjustment
4.6 Vertical fine adjustment	1-3000	2-8	Boom vertical fine adjustment

Boom horizontal fine adjustment		Boom vertical fine adjustment	
Find up and down limit or find up limit only	Find down limit only	Find up and down limit or find up limit only	Find down limit only

Tip: When modifying the opening and closing indents, pay attention to observe whether the position of the limit pressure bar and the limit adjusting bolt is sufficient, and use a 4mm Allen wrench to adjust the position of the bolt appropriately.

4.3.5. Remote controller learning

Sub-menu	Remarks
5.1 How to match code	Press the setting button to enter the learning state of the remote controller, and press any buttons of the remote controller to learn. Users can learn up to 60 remote controllers
5.2 How to clear code	Press the Setting button to invert the color of the +- symbol on the screen, and press ▲ and ▼ at the same time to clear the code of all remote controllers.

4.3.6. RS485 setting

Sub-menu	Defaults	Range	Remarks
6.1 Address	1	0-255	When RS485 is online, the host is set to 0, and the slave is set to 1. When it is connected to the host computer, 1-255 can be set.
6.2 Baud Rate	19200	9600/19200	19200 baud rate is a multi-functional communication protocol; 9600 is compatible with the protocol of old DZ5 control board.

Notice: please contact the manufacturer for detailed communication protocol.

4.3.7. Auto-closing function

Defaults	Range	Remarks
OFF	0-255, 0 is OFF	auto-closing time when no vehicle is passing. Unit:

		second.
--	--	---------

Notice: when no loop detector or radar is installed, this function can be used for auto-closing. It can also be used with counting function to prevent the situation that the barrier gate is not closed because of over-counting.

4.3.8. Counting function

Defaults	Range	Remarks
OFF	OFF-ON	store the times of opening signal, and the barrier gate will be auto closed when the number of the leaving vehicles is the same as the number of the opening signal.

4.3.9. Sensitivity of auto-reversing on obstacle

Defaults	Range	Remarks
100	50-400	Auto-reversing response time: the bigger it is, the lower the sensitivity is; the smaller it is, the higher the sensitivity. Unit: millisecond.

4.3.10. Restore factory defaults: press the setting button to invert the color of the +- symbol on the screen, and press ▲ and ▼ at the same time to restore the default values of all parameters.

4.4. "Advanced Menu" Command List of Master Motor

"Advanced Menu" access method: simultaneously long press the "☰" and "■" button for 2 seconds to enter the menu setting status.



Warning

Advanced menu is for professional technician, general users should use it with caution!

4.4.1. Auto-aging test

Sub-menu	Defaults	Range	Remarks
1.1 Time Interval	OFF	0-5, 0 is OFF	Time interval for auto aging test; unit: second.
1.2 Boom up angle	0	0-90	Boom up angle after switching from off to on. If the value is odd, it will keep switching from off to on all the time, if the

			value is even, it will turn from off to on once and then completely turn off once again, and repeat continuously.
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4.4.2. Auto-open when power off

Sub-menu	Defaults	Range	Remarks
2.1 Low voltage actuation time	OFF	0-5000, 0 is OFF	The time when the voltage is lower than the set threshold and continues to exceed the threshold, it will turn on automatically. Unit: millisecond.
2.2 Low voltage threshold	21	15-23	The operating voltage is lower than the threshold; unit: V.

Notice: This function needs to be equipped with a backup power module.

4.4.3. Motor setting

Sub-menu	Defaults	Range	Remarks
3.1 Power value when closing	0%	0-12%	When the spring force is not enough and the boom may sag down when the barrier gate closes at down limit position, users can increase this value appropriately to get some force.
3.2 Motor type	129 Rotates Forward	129 Forward/ Reverse -CB03 Forward/ Reverse	It is used for matching the motor type. This model must be set as 129 rotates forward for left-installation, 129 rotates reverse for right-installation.

4.4.4. Relay output mode

The control board has two limit output relays. Users can set different output modes to meet different application requirements.

Limit output: when the barrier gate opens to up limit position, the open relay will close; when the barrier gate closes to down limit position, the down limit replay will close; during the barrier gate opening or closing or stopping, these two relays are disconnected. This function can be used with the system to monitor the status of the barrier gate.

Alarm for boom swinging away: in this mode, "infrared signal input" and "GND"

interface are used as the signal interface of boom installation. If they are short-circuited, it means that the boom works normally; if disconnected, it means that the boom swings away. When the boom swings away, the barrier gate will open to up limit position automatically and after then the up limit replay will stay in closing status. When the boom is installed correctly and work normally (the signals are short-circuited) again, the up limit replay will work normally.

Notice: This function needs to be equipped with inductive switch for detecting the status of the boom.

Alarm against artificial lifting boom: in this mode, the up limit relay is used as an alarm signal output. When the barrier gate closes at down limit position, if the boom is artificially lifted up to a certain angle, the up limit relay will be closed for 15 seconds as an alarm output. An external alarm can be connected for alarm.

Down Limit Pulse Signal :After the boom runs to down limit position, the down limit relay will send closing signal for a second. This function can be used as the opening signal for the other barrier gate or other control system. The up limit replay was closed when boom falls down, the signal during boom falling down and boom at down limit position can be used as R&G light signal, or used for detecting the barrier gate running status.

4.4.5. Buffer time for boom from closing to opening

Pressing open button in the process of closing, this parameter is used to set the buffer time of the controller from receiving the command to starting to open.

4.4.6. Buffer time of barrier gate stopping

Pressing stop button in the process of barrier gate opening or closing, in order to make the barrier stop smoothly, set a buffer time. This time is the time from the barrier gate receiving the stop command to stopping completely.

4.4.7. Open the barrier gate by remote control to enter the motorcade mode

Open the barrier gate by remote control to enter motorcade mode directly. At this time, the loop detector is invalid until closing the barrier gate. Closing barrier gate both by wire control and by remote control can exit the motorcade mode. Opening the barrier gate by wire control does not enter the motorcade mode. The default is "OFF".

Tip: When it is set to "OFF" in the up limit position, long press the "UP" button of the remote controller for 4 seconds can also enter the motorcade mode; or pressing "STOP" button on the controller with the program version of "10824" or above at the up limit position can also enter this mode.

4.4.8. Valid time of loop detector signal

In the process of opening or up limit position, the duration time of the loop detector signal needs to exceed the setting time, and the auto-closing action will be executed after the loop detector signal disappears, avoiding that the loop detector signal is too short and triggers the auto-closing action to hit the vehicles. The default time is 200ms. Range: 100ms-900ms.

4.4.9. Beep of Loop detector signal

There is loop detector signal (there is vehicle on the loop wire) when boom is at up limit position, the buzzer will emit a hint tone. "ON" has a sound, and "OFF" has no sound. "ON" is default.

4.4.10. Failure angle of loop detector anti-smashing

During the closing process, when the boom arrives at the setting angle from the horizontal level, it will not respond to the signal of loop detector, to prevent vehicle from being followed by other vehicles, and can also prevent the misoperation of the loop detector from triggering the opening of the barrier gate. The default value is 5 degrees.

4.4.11. Failure angle on obstacle

During the closing process, when the boom arrives at the setting angle from the horizontal level, if the boom meets on obstacle, it will not respond to barrier gate opening. The default value is 10 degrees.

4.4.12. Switching angle of R&G light

When the boom opens to the setting angle, the relay of R&G light will close. The default value is 60 degrees.

4.4.13. Wire control signal type measurement

"Infrared photocell", "loop detector/radar" and "stop" signals of the wire control interface can be set to normal open input and normal close input, and the default is normal open input.

4.5. Controller Parameter Setting of Slave Motor

Long press “ $\frac{\text{Menu}}{\text{Confirm}}$ ” button for 2 seconds to enter the regular menu setting status. The LED digital tube will display “F-XX”. Select menu items by short press or long press

"▲/+" and "▼/-" buttons, short press once to increase or decrease by one, long press to continuously increase or decrease. When the required diameter displayed by the LED digital tube, press " $\frac{\text{Menu}}{\text{Confirm}}$ " button again to enter the setting of the specified item, and press the "■/QUIT" to return to the previous level or exit the setting. When the specified parameter setting is completed, you must press " $\frac{\text{Menu}}{\text{Confirm}}$ ' button to confirm it to take effect. The currently set parameters is invalid if pressing "■/QUIT" button.

4.6. "Regular Menu" Command List of Slave Motor

Menu	Function	Defaults	Range	Recommended Values	Remark
F-00	Boom Up Speed	100	15-100	90-100	The larger the value, the faster the boom up speed
F-01	Boom Down Speed	100	15-100	90-100	The smaller the value, the faster the boom down speed
F-02	Boom Up deceleration position	40	10-80	35-45	The angle at which the boom up starts to decelerate, unit: degree
F-03	Boom Down deceleration position	45	10-80	40-55	The angle at which the boom down starts to decelerate, unit: degree
F-04	Low-speed working angle of boom up	90	15-90	90	The angle of the last section of low-speed zone during boom up
F-05	Low-speed working angle of boom down	0	0-75	0	The angle of the last section of low-speed zone during boom down
F-06	Boom up limit position speed	5	1-50	4-8	Boom up limit position speed
F-07	Boom down limit position speed	2	1-50	2-6	Boom down limit position speed
F-08	Position adjustment of horizontally	140	1-600+	130-140	Adjustment horizontal position of the barrier gate

	closing to limit				
F-09	Swing range adjustment of horizontally opening to limit	40	1-600+	40-50	Adjustment the vertical position of the barrier gate
F-10	Delay auto-close time	1	0-255	1	Auto drop off time when no car passes, unit: second
F-11	Locking time of opening to up limit	5	0-255	5	Lock the gate for a period of time after opening in place, unit: second
F-12	Locking time of closing to down limit	0	0-255	5	Lock the gate for a period of time after closing in place, unit: second
F-13	Power-on self-learning speed	15	10-80	12-20	Find up and down limit at this speed
F-14	Remote control learning	0	0-30		Learning remote control
F-15	Sensitivity of Auto-reversing on obstruction	5	1-40	3-10	Obstruction response time, unit: 0.05 second

4.7. "Regular Menu" Command Explanation:

F-02 Boom up deceleration position

It is used to set the starting position of deceleration in the process of boom lifting up. The unit of angle is 0 degrees when the barrier gate is in the horizontal position and 90 degrees when it is in the vertical position. This parameter indicates that the barrier will start to decelerate when the boom lifts up to this angle. If the boom shakes when lifting to up limit position, this parameter can be reduced.

F-03 Boom down deceleration position

It is used to set the starting position of deceleration in the process of boom falling down. The unit of angle is 0 degrees when the barrier gate is in the horizontal position and 90 degrees when it is in the vertical position. This parameter indicates that the barrier gate will start to decelerate when the boom falls down to this angle. If the boom shakes when falling to down limit position, this parameter can be increased.

F-04 Low-speed running angle of boom up

This parameter sets a low-speed uniform speed zone during the opening process. During the boom up process, after reaching this angle set by F-04, it will run at the boom up speed set by F-06 until it is completely closed. If this parameter is set to 90, this function is invalid. If the boom shakes when lifting to up limit position, this parameter can be reduced.

F-05 Low-speed running angle of boom down

This parameter sets a low-speed uniform speed zone during the closing process. During the boom down process, after reaching this angle, it will run at the boom down speed set by F-07 until it is completely closed. If this parameter is set to 0, this function is invalid. If the boom shakes when falling to down limit position, this parameter can be increased.

F-06 End speed of boom up

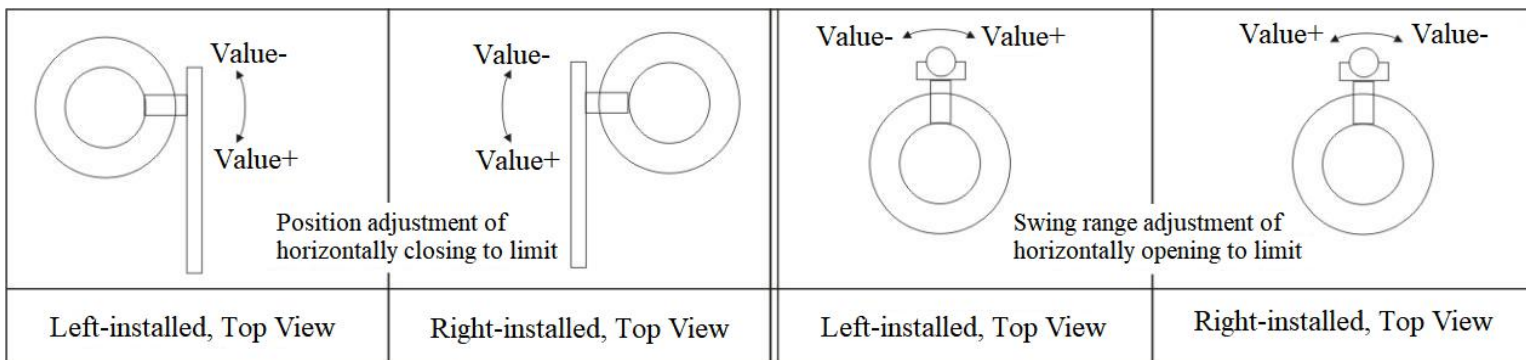
The speed for boom moves to up limit. The boom will end moving at this speed when boom lifts up. If the parameter is set too large, the gate lever will shake when it is opened.

F-07 End speed of boom down

The speed for boom moves to down limit. The boom will end moving at this speed when boom falls down. If this parameter is set too large, the gate lever will shake when it is closed.

F-08 Position adjustment of horizontally closing to limit

If the position of horizontally closing to limit is deviation, this parameter can be used to fine-tune. Please see the left photo below.



F-09 Swing range adjustment of horizontally opening to limit

You can fine-tune this parameter to adjust the swing range of horizontally opening to limit. Please see the right photo above.

F-10 Delay auto-closing time

After the barrier gate is opened, if the time set by this parameter passes and the ground sensor does not detect the passing of the vehicle, the barrier gate will automatically close. That means, the horizontal motor will swing to closing position automatically after opening to limit position. If set to 0, the barrier gate will remain

open until a car passes by or the close button is pressed.

F-11 Locking time of opening to up limit

After horizontally opening to limit position, it will lock the barrier motor for a period of time according to the set value.

F-12 Locking time of closing to down limit

After horizontally closing to limit position, it will lock the barrier motor for a period of time according to the set value.

F-13 Power-on self-learning speed

This command can set different speeds for finding the up limit and down limit. After entering the menu, the first setting is the speed for finding the up limit. The LED displays "1-XX". XX means the speed for finding the up limit. The speed can be adjusted by pressing the two buttons of "▲/+" and "▼/−". After the up limit speed setting is completed, press the " $\frac{\text{Menu}}{\text{Confirm}}$ " button, the LED displays "2-XX", and XX indicates the speed of finding the down limit. The speed can also be adjusted by pressing the two buttons "▲/+" and "▼/−". Finally, after the $\frac{\text{Menu}}{\text{Confirm}}$ and down limit speeds are set well, press the " $\frac{\text{Menu}}{\text{Confirm}}$ ' key to save the parameters. If you press the "■/QUIT" key during the setting process, the set parameters are invalid.

F-14 Remote control learning

This item is used for the remote control learning of the 3-wire radio receiver of the slave motor. It is only used when the main motor fails and the slave motor is used to control the barrier gate. After entering the remote control learning menu item, the number of remote controls currently learned is displayed. Long pressing and hold any button on the remote controller for 1 second, the digital tube displays the number of learned remote controllers plus 1. After the learning is completed, press the " $\frac{\text{Menu}}{\text{Confirm}}$ " or "■/QUIT" to exit the learning.


Note: Clear the remote controller in the H-09 item of the advanced menu.

F-15 Sensitivity of Auto-reversing on obstruction

When the barrier gate is blocked and stopped for more than the set time, the gate will rebound and turn to open, and the LED will display the word Er.ob. The smaller the value, the higher the sensitivity, otherwise the lower the sensitivity.

4.8. "Advanced Menu" Command List of Slave Motor

"Advanced menu" access method: Simultaneously long press the " $\frac{\text{Menu}}{\text{Confirm}}$ " and "■/QUIT" button for 2 seconds to enter , the LED will display "H-XX".

 **ATTENTION** The advanced menu is used by professional technicians, and general use it with caution! Do not change the menu of the serial number not listed in the table at will, it may cause abnormal operation of the barrier gate.

Menu	Function	Defaults	Range	Remark
H-05	Motor rotation direction	2	2-3	2: Rotation direction for left-installed. 3: Rotation direction for right-installed.
H-09	Reset	0	0-255	5: clear remote controller 10: reset
H-35	Manually learn horizontal limit	no	no	Manually learn horizontal limit
H-38	The motor applies force in the closing direction after closing to limit	1	0-1	0: On 1: Off

4.9. "Advanced Menu" Command Explanation:

H-05 Motor rotation direction

The rotation direction of horizontal motor is related to the left-installed or right-installed of the cabinet, and the rotation direction of the motor needs to be set correctly according to the fixed direction of the cabinet. The left-installed of the cabinet is set to 2, the right-installed of the cabinet is set to 3.

H-09 Reset

This option has two functions, clearing the remote control and restoring factory settings. In order to prevent misoperation, it needs to set a specific value before pressing " $\frac{\text{Menu}}{\text{Confirm}}$ " button to complete the operation.

5: Clear all learned remote controller of the 3-wire radio receiver of the slave motor.

10: Restore factory settings, restore the set value to the default value, and clear all the learned remote controls at the same time.

H-35 Manually learn horizontal limit

After entering this option, the LED first displays L-00, and after the horizontal motor of the barrier gate finds the mechanical blocking position in the open direction, the buzzer makes a beep, the LED changes to display L-01, and the motor stops. At this time, it is necessary to manually learn the horizontal opening to limit position and closing to limit position. First, press and hold the "▼/-" button and do not release it, move the boom holder to the closing direction until the shaft is in the required opening position (slightly move, reserve a certain space, so that it will not hit when the barrier gate is normally opened when it reaches the mechanical blocking point), release the button and press the " $\frac{\text{Menu}}{\text{Confirm}}$ " button to confirm the opening to limit

position. At this time, the LED displays L-02, indicating that the opening to limit position learning is completed; continue to press and hold the "▼/-" button until the boom holder is in the desired closing limit position, release the button, and press the " Menu / Confirm "button to confirm the closing limit position. After the learning is completed, it will automatically return to the normal working state.

During the entire position learning process, if there is a deviation in the position, you can use the "▲/+" and "▼/-" button to adjust. If it's blocked by the mechanical structure during the adjustment process and keep pressing the button, the buzzer will beep. The device emits a continuous "beep" sound to alarm.

H-38 The motor applies force in the closing direction after closing to limit

Due to there will be more or less gaps in the mechanical assembly, during the normal closing to limit process, the boom will swing slightly laterally, which will affect the aesthetics. In order to avoid horizontal swing, you can turn on the horizontal motor and then apply force in the closing direction (the force is determined by F-07, the larger the value, the greater the force. And the value needs to be set properly, and the boom can be closed to limit position without swinging is ok). Set the pressure of the boom holder on the dead point of the machine core. When this function is turned on, the F-08 can be properly adjusted to close to closing limit position to the mechanical blocking point, and a buffer space of about 2cm can be properly reserved, so that when the boom holder shaft closes to limit position, it leans against the blocking point to reduce the collision sound. Proper adjustment of the F-03 deceleration position can also reduce the collision sound. The default is 1 to enable.

5. Common Malfunctions and Solutions

Malfunction Phenomenon	Possible Causes	Solution
The swing direction of the boom does not match the actual direction	The motor rotation direction setting is wrong	Refer to 2.1 to set the rotation direction of the master and slave motors
The boom is automatically lifted up after falls to the horizontal position	The retraction value of the main motor 4.5 in the closing to limit position is too large, or the mechanical limit adjusting bolt in the	Reduce the retraction value of the main motor 4.5 in the closing to limit, or readjust the mechanical limit adjusting bolt

	closing direction is extended to too much	
The LED digital tube of the slave motor displays IdLE	The slave motor sensor plug is not plugged in or the wire is loose	Check the slave motor sensor plug
	Slave motor sensor failure	Replace the slave motor
LED Prompt: motor sensor is not detected	The main motor sensor plug is not plugged in or the wire is loose	Check the main motor sensor plug, and plug well
	Main motor sensor failure	Replace the main motor
The control board is not powered on	The fuse is blown	Replace the fuse with the same specification
	The power supply has no out put	Check the power supply or power circuit
Boom shakes a lot at up limit position	Opening speed in up limit position is relatively large	Reduce the value of 1.5 in regular menu of the main motor
	Opening deceleration angle is large	Reduce the value of 1.3/1.5 in regular menu of the main motor at the same time
Boom shakes a lot at down limit position	Closing speed in down limit position is relatively large	Reduce the value of 2.5 in regular menu of the main motor
	Closing deceleration angle is large	Reduce the value of 2.3/2.5 in regular menu of the main motor at the same time
Remote control distance is short	The battery voltage of remote controller is too low	Replace the batteries
	High-voltage wires or strong electromagnetic causing serious interference near the barrier gate	Replace the high-power remote controller
Remote control	The remote controller	Contact the manufacturer

learning failed	does not match the receiver	
	The sequence of buttons on the remote controller is incorrect	Confirm whether it is the original remote controller
The vertical motor can move, but the horizontal motor can't move	Enter the menu state of horizontal motor (slave motor)	Exit the menu
There is metal impact sound when the barrier opens to up limit position	The value of Fe-09 on the slave motor is too small, and the reserved buffer space is small	Increase the value of F-09 appropriately
	The open deceleration angle of the slave motor F-02 is too large	Reduce the value of F-02
The metal impact sound of horizontal closing is too large after the barrier open to limit position	The closing deceleration angle of the slave motor F-03 is too small	Increase the value of F-03
	Boom down limit position speed of the slave motor F-07 is too large	Reduce the value of F-07

6. Warranty and Service Items

6.1. Free service is offered for component parts in one year warranty time. (not includes the barrier boom or remote)

6.2. Lifetime service with charge accordingly.

6.3. Technical questions are supported.

6.4. The below items and situations are not included in the range of free service:

6.4.1. The user does not follow the instruction and cause any damage of the product.

6.4.2. The power supply is not stable, over the range of permitted voltage or not accordant to safety electric using standard.

6.4.3. The user installs or uses the product in wrong methods, cause damage to the appearance of product.

6.4.4. Natural disaster causes damage to the product.

6.4.5. Warranty time is over.

6.4.6. Service items are out of our promises.

7. Maintenance

7.1. Keep the barrier gate clean.

7.2. Check the joints every month in case of any loose parts.

7.3. Check the easily worn-out parts every half year and renew it.

7.4. Remote control distance will be shortened or not work in cases like big object screening, battery exhausting, extreme weathers.

8. Packing List

Name	Specification	Quantity	Unit	Application
Screw, Nut, Plastic Cover	M8*10	1	sets	Fixing the boom
Expansion Screws	M16*150	4	sets	Fixing the cabinet
Support Post		1	pc	Optional
Radio Emitter		1	pcs	Optional
Keys		2	pcs	For cabinet door
Remote Controller		2	pcs	
Manual		1	pcs	