Barreras DC
Generation Brushles

Instruction Manual

（Take The Object As The Standard）

Contents

Safety Precautions

    To ensure your safe operation, please strictly in accordance with the provisions of this manual.

1. To avoid personal injury, it is strictly forbidden to open the door or cover when barrier working.

2. The barrier housing must be connected to the ground to prevent inductive electric shock.

3. It is strictly forbidden to stand, walk or place objects under the boom/ arm when barrier working.

4. The boom/arm and the spring have been matched to the balance state before goods leave out our factory. To avoid the danger of the

balance being lost, the length and weight of the boom/arm can not be increased or decreased at random. If you need to change it, please ask the professional for advice.

    This manual is copyrighted and may not be copied, cut, or modified without permission. Once found, the company will retain the contents of the manual without prior notice

1.Product Overview

This product adopts the latest mold design technology, mold die-casting manufacturing technology, brushless control speed technology, and can be quickly interchanged, no clutch design, more reliable quality and more convenient use. The movement adopts two-stage worm gear transmission and curved crank arm three- link structure, and the landing rod is fast and stable. Easy maintenance and long service life .

2. Type Length and Operating Speed Parameters of Sluice Bar

Arm type	Arm Length (L)	Operation time(S)	Height between arm and ground (M)
Straight arm	6M≥L>5M	5S	H=0.83M
	5M≥L≥4.5M	4S	
	4.5M>L≥3M	1.8S-3S	
90 degree folding arm	L≤5M	5S	
180 degree folding arm	L≤5M	5S	

3. Features

3.1 The running speed can be adjusted from 1.8s to 3s
3.2 Can be quickly interchanged
3.3 Open the barrier gate by motor wheel when power off ,automatically reset after power on
3.4 Curved crank arm three- link movement structure, the operation is stable

ONE TECH

3.5 Wireless remote control control open/close

3.6 Auto reverse function（force adjustable）

3.7 Infrared photocells connector is available

3.8 Loop detector connector is available.

3.9 Well-integrated with car parking system equipment,with wire control(must be switch signal)

3.10 Connector for traffic light(AC220V,power less than 40W)

3.11 Offering dry contact signal for car parking system(COM,NC,NO)

3.12Auto-delay when closing(adjustable)

3.13 RS485 or CAN network communication interface（no need to install module）

3.14 Counting interface

3.15 24V backup battery interface（Can be charged by using solar energy）

4. Technical parameters

4.1 Working temperature(motor): -35℃~+85℃

4.2 Rated voltage：DC24V

4.3 Running speed：1.8s-3s

4.4 Rated current：8.58A

4.5 Rated power：140W

4.6 No-load speed：1850rpm

4.7 Rated speed：1400rpm

4.8 Output Power：56.8N.m

4.9 Relative humidity：≤90%

4.10 Remote control distance：≤100M（in the open place）

4.11 IP Degree：IP44

4.12 Max length of arm：4.5M

5. Mechanism

ONE TECH

5.1 diagram of 2nd DC brushless mechanism
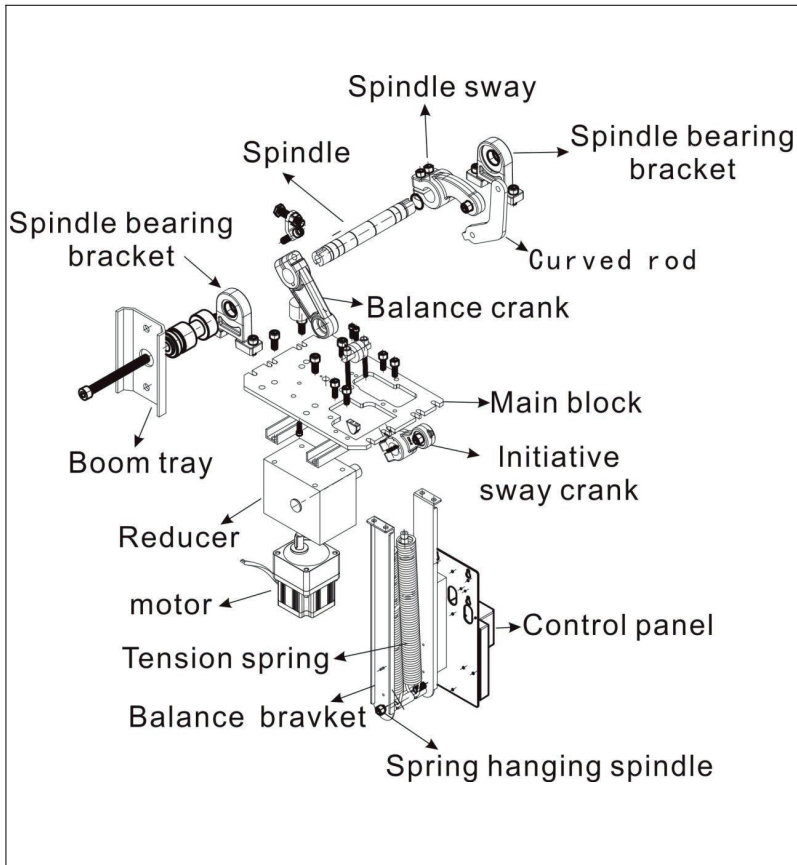
## 5.2 Interchange descriptions

The product direction can be interchanged, divided into 6 steps.
Step 1: remove the M8X20 inner hexagonal screw,take out the machine core;
Step 2: remove the electrical supporting plate from left side to the right side;
Step 3: remove the M10*30 fixed screw on the boom tray (see figure 1);
Step 4: using the M14*150 screw to pull out the boom tray head(see figure 2);
Step 5: install the boom tray head from the original left to the right side,or the original right to the lest side;
Step 6: put the machine core back into machine case, fixed the M8*20 hexagonal screw, direction interchange is completed, no need to adjust other Settings.

5.3 Diagram of disassembly Interchange

M10X30
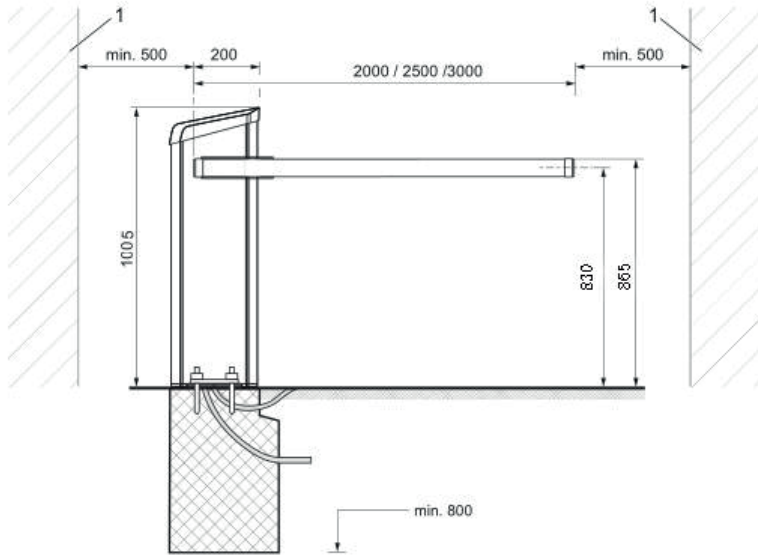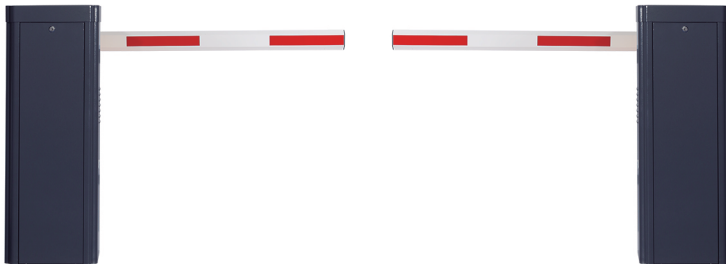
（Fig.1）

M14X150
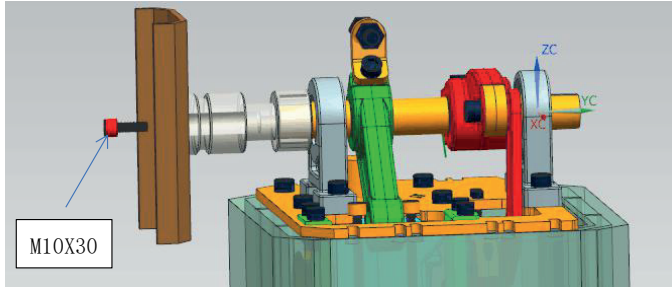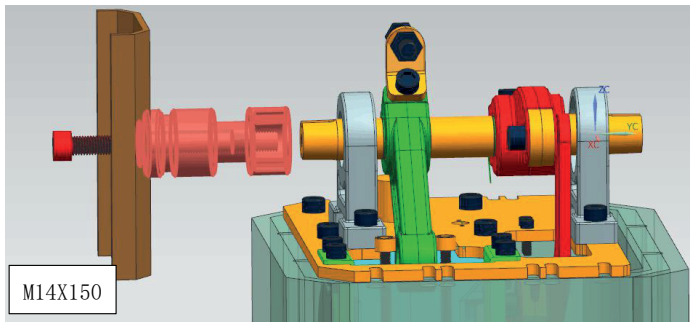
（Fig.2）
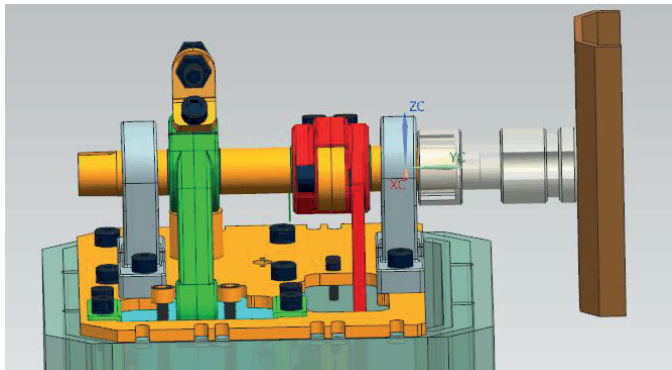
（Fig.3）

6.Installation direction definition

Arm directions definition:

(Barrier gate fix at left side of the gate)   (Barrier gate fix at right side of gate)

7.Installation, commissioning and use

7.1 Equipment installation

7.1.1   Please select the correct type of barrier gate according to the specifications of the pace,and then fix the barrier cabinet with expansion bolts(refer to Figure 3).

　　After determined the position,the barrier gate foundation should be done according to the site conditions,and also make the cast-in-place basement for the non-concrete ground.
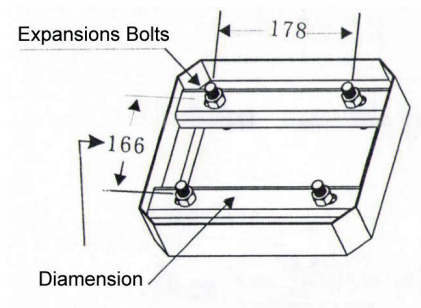
Figure 3   Press plate of case

7.2 Select and commission spring

7.2.1 The barrier gate is well-adjusted before delivery.For further adjustment,please follow below instructions.

7.2.2 Before remove the barrier cap,please keep the boom in vertical position(refer to Figure 6)

7.2.2.1 Unscrew two screws on the cap and inside of boom holder;

7.2.2.2 Open the barrier gate door,and unscrew the two screws of top spot inside the barrier cabinet.

7.2.2.3 Remove the barrier cap.

7.2.3 Selection of spring
The spring is stretchable one and
  the specification is as follows:

Diameter   4.5MM   red color
Diameter   5.5MM   blue color
Diameter   6.5MM   yellow color
Diameter   7.0MM   white color

igure 6

The spring length is subject to the actual product. Design changes will be notified separately.

7.2.4 Adjust the Position of Barrier Arm

To adjust the position of the arm (for example, after exerting excessive force), please take the steps as below:
1. open the barrier gate door and remove the cover
2. loosen the two fasten screws of the DZ-1 on the boom shaft with the M12's Allen wrench, so that the boom can be re-positioned by hand.
3. adjust the position of the boom (horizontal position, as shown in picture 1).
4. Use the hexagonal wrench to tighten the two fastening screws (72 Nm)

Adjust the horizontal screw
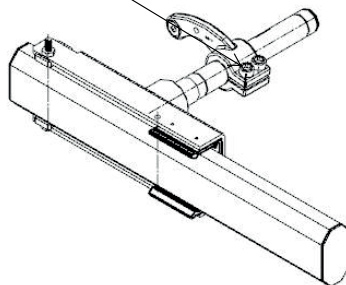
Spring Selection:
Balance spring:
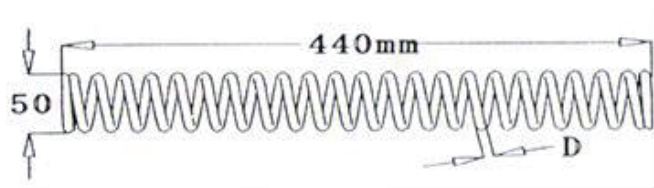
The length of the boom from 5.5 to 6meters has additional instruction for inbuilt spring.

In order to make a safe and steady performance and to decrease the metal fatigue for the balance spring, 3 inbuilt springs covered with PVC pipe are inserted into the 65.mm compressed spring and separated with rubber cushion.

The parameter for selecting the balance compressed spring

Number	The length of boom (L=meter)	Diameter of the spring (D=mm)	Link hole selection
1	2.5＜L＜3.5	D=4.5	Link hole 2
2	3.5≤L≤4.0	D=5.5	Link hole 1
3	4.0＜L＜5.5	D=6.5	Link hole 2
4	5.5≤L≤6.0	D=6.5	Link hole 1

The parameter for selecting the balance tension spring

Arm Type	The Length of arm	Selection Spring	
		Type	Spec.(diameter*Length)
Straight Arm/Folding Arm	6M≥L＞5M	Extension Spring	（ø5.5x280）+（ø4.5x280）
	5M≥L≥4.5M		（ø5.5x280）
	4.5M＞L≥3M		（ø4.5x280）
Fence Arm	5M≥L≥4M		（ø6.5x280）+（ø6.5x280）
	4M＞L≥3M		（ø5.5x280）+（ø4.5x280）

(the parameter is based on the company's arm)

7.2.5 Installation,dismantlement and adjustment of spring
The steps as follows:
please keep the boom in the vertical(boom open)position.
7.2.5.1 Unscrew the M8*140MM screw with a hexagonal spanner

ONE TECH

M12 adjust the boom position

M8*140 SCEM

7.2.5.2 Unscrew the M10 screw in the hanging scroll,Pull the spring plank open and take off the spring

The installation steps are just the opposite of disassembly!

direction of arrow is the
arm UP direction

rotate to the anti-clockwise direction

6MM hexagonal spanner
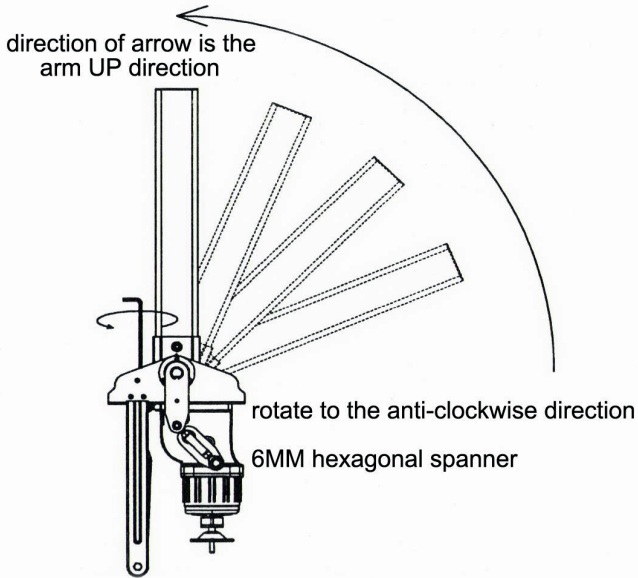
the boom fluttered when arm up,it's spring force too enough
---should to loose the spring.

rotate to the clockwise direction

6MM hexagonal spanner

direction of arrow is the
arm DOWN direction
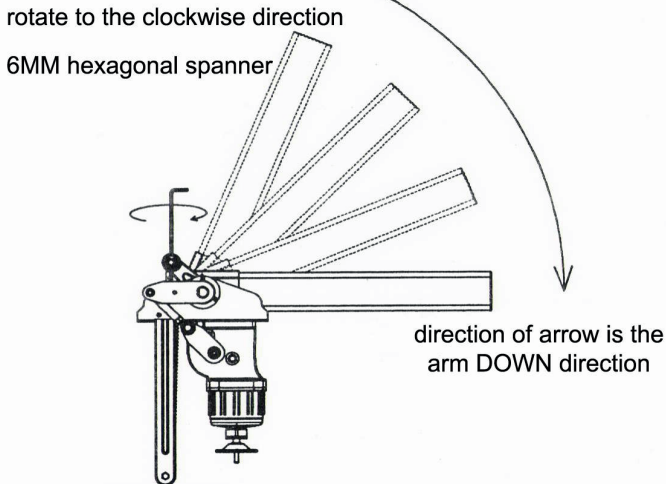
the boom fluttered when arm down,it's spring force not enough
---should to tight the spring.

ONE TECH

7.2.6 Boom position adjustment

7.2.6.1 First please set the arm horizontally and vertically through regulation nut to lengthen or shorten the connecting rod.And then tighten M12 safety nuts.

7.2.6.2 To make the arm well balance,please adjust the M8*140MM spring regulating screw accordingly.

7.2.6.3 For the barrier gate with double springs,please adjust the two springs simultaneously.

7.2.6.4See the above picture when the arm is shaking during opening and closing. When the arm is shaking during opening, that means that the spring is too tight, you can try to loosen the spring repeatedly. When the arm is shaking during closing, that means that the spring is too loose. You can try to tighten the spring multiple times。

7.3 Electrical installation, wiring diagram

7.3.1 All the electrical connections are done before delivery and please do not change it randomly.The necessity is to connect the AC110V power and grounding connection.

7.3.2 Traffic light connector:it can connect power no more than 40W.

7.3.3 Infrared photocells an-hit connector: connect the switch signal for receiver output.

7.3.4 Loop detector connectors:it supports both externally and internally loop detector(only one way can be chosen).

If external type is selected,just connect the switch signal for loop detector output.

If the internal type is selected,need connect the wire signal to vehicle detector wire interface.

7.3.5 Car parking system connectors: connect the system switch signal to this connector,then it can control the barrier gate operation.

7.3.6 Limit switch signal of up/down:with output COM,NO,NC,it monitoring the status of the barrier gate.

7.3.7 RS485 connector:after chosen the options RS485 module,it can manage MAX 15 pieces of barrier gates by PC software.

Controller wiring diagram

ONE TECH

13
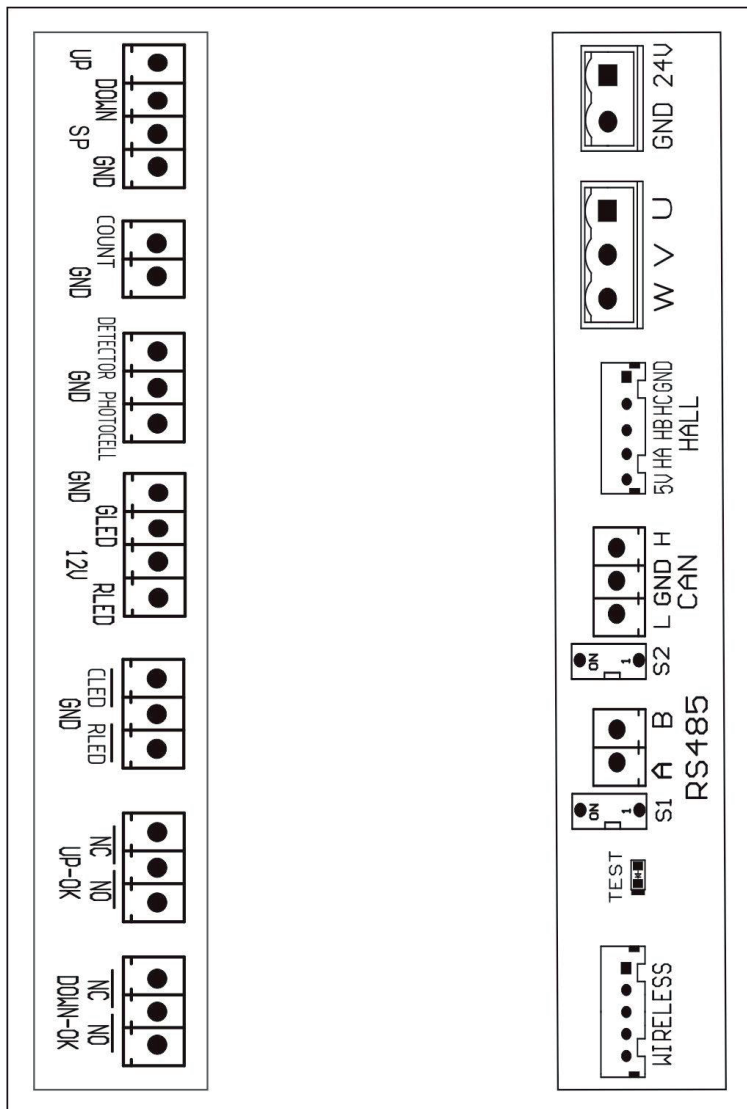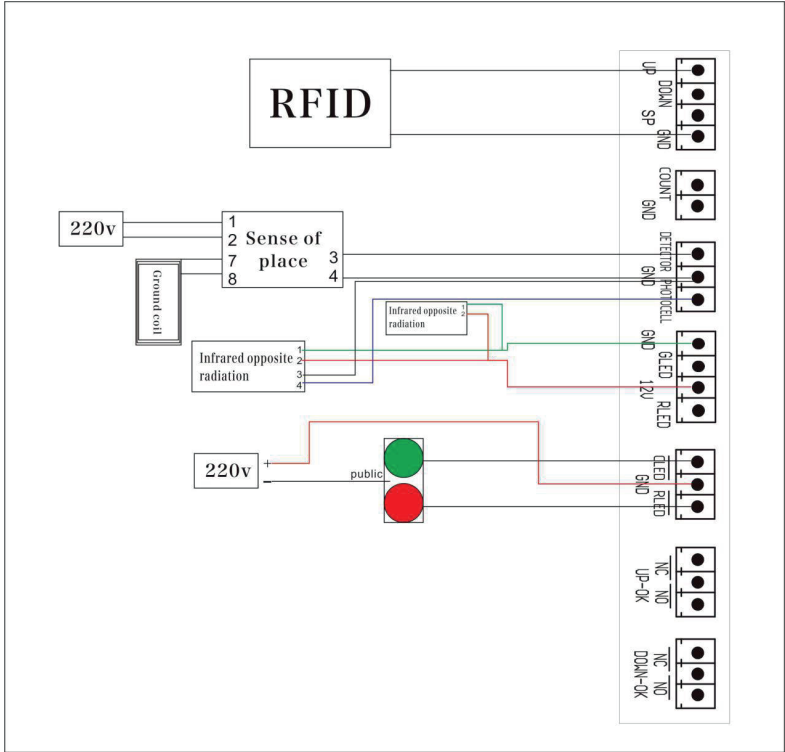
Function setting description:

When setting the function, please press the menu button on the control panel, the digital tube displays H00-00 or H00-other numbers, we correspond to the function parameter table code to enter the required function parameter setting, for example,

H00-00 is the open speed adjustment, and then press the confirm key Enter the parameter setting, display the number on the digital tube, then press the up or down key to set the required starting speed digits, and then press the confirm key to complete the setting of the open speed.

Other function settings are just as usual.

7.4 Function setting parameter table

| Menu code	Parameter Name	Parameter scale	Default	Unit	Remark
H00-00	Open speed adjustment	25-95	40		Corresponding PWM duty cycle 25%-95%, step size is 1
H00-01	Close speed adjustment	25-95	40		Corresponding PWM duty cycle 25%-95%, step size is 1
H00-02	Open in place decelerate angle	5-40	35		The larger the angle value, the less likely it is to shake the arm when it is in place.
H00-03	Close in place decelerate angle	5-40	35		The larger the angle value, the less likely it is to shake the arm when it is in place.
H00-04	Open accelerate adjustment	1-20	1	ms	The smaller the number, the faster the speed
H00-05	Close accelerate adjustment	1-20	8	ms	The smaller the number, the faster the speed
H00-06	Open in place angle	1-30	1	degree	step size is 1

ONE TECH

H00-07	Close in place angle	1-30	1	degree	step size is 1
H00-08	Auto reverse force adjustment	7-13	10	A	step size is 1
H00-09	Delay closing adjustment	0-90	0	SEC.	step size is 100；0 is not closing automatically,，Other value will be closing automatically;This parameter is for when there is no loop detector signals and non-automatic operation occasions
H00-10	Self-check speed adjustment	10-50	30		Corresponding PWM duty cycle 10%-50%, step size is 1
H00-11	Self-check mode	0-2	0		0：no operate automatically；1：operate automatically,remove after power off；2：operate automatically，Power failure memory
H00-12	Self-lock force adjustment（Invalid）	0-5	3		
H00-13	Motor deceleration time when paused	1-20	5		The larger the setting, the longer the pause time will take
H00-14	The default direction of operation after self-test	0-1	0		0：Closing，1：opening
H00-15	Number of pole pairs（Invalid））	1-10	4		Only used to correctly display motor speed values
H00-16	RS485communication address	1-32	1		Up to 32 slaves can be connected
H00-17	RS485communication rate	0-2	0		0:9600，1:19200，2:38400；Change the parameter and will be valid after power on again.
H00-18	self-test after power	0-1	1		0：no self-test after power on，1：self-test after power on

	on				
H00-19	Manual self-test adjustment	0-3	2		0：Manually invalid，1：Keyboard SET button，2：remote control valid，3，Keyboard SET button and remote control both valid
H00-20	Monitoring parameter setting index	0-15	7	0	0XD000	Rotate speed

				0	0XD000	Rotate speed
				1	0XD001	Motor feedback angle
				2	0XD002	Busbar voltage（V）
				3	0XD003	Current output
				4	0XD004	Hall state
				5	0XD005	Commutation number
				6	0XD006	Reserve
				7	0XD007	Run time(ms)
				8	0XD008	Cumulative running times
				9	0xD00A	Time of automation operation
				10	0xD00C	Collision frequency
				11	0xD00E	The number of times of the arm is in place
				12	0xD010	Power on time(minute)
				13	0xD012	Power supply power on times
				14	0xD014	Running status
				15	0xD015	Fault code
				16		UP arm number
				17		DOWN arm number
				18		STOP number
				19		Loop detector number
				20		Photocell number

ONE TECH

					21	Camera number
H00-21	reset	0-3	0		1：reset adjustment,2:Cumulative times clearing，3：The cumulative times clean up and restore factory Settings, and return to 0 after execution	
H00-22	LED light output mode	0-1	0		0：Do not flash alternately during operation；1：Allow flashing; 2:Green light when UP arm on 45 Degree	
H00-23	Minimum arm open output	12-30			Minimum can not be less than 12, or it may not be enough to run the motor	
H00-24	Minimum arm close output	12-30			Minimum can not be less than 12, or it may not be enough to run the motor	
H00-25	Starting acceleration	1-20			It is effective when the starting and falling speeds are greater than 90%, otherwise use item 4 and item 5 of the menu	
H00-26	Hall counting direction	0-1				
H00-27		0-1				
H00-28	Camera count timeout(seconds)	0-3000			0：10minutes timeout count cleared。 Non-0 timing close arm	
H00-29	STO key function setting	0-1	0		0：whenever you press pause, you stay in the current state。1：when close arm, press the STIP key to switch the arm up command	
H00-33	Peak pattern	0-1	0-1		Long press remote is not allwed to use IO □;0:No inhibiting effect；1：valid	

Error code：

1：Hall error	Check the motor or wiring	Generally, the motor or motor cable is not connected properly
2.Under-voltage fault	The voltage is lower than 22.0V	Switching power supply or the battery voltage is not enough
3.Overcurrent protection	The load is too heavy or the drive board is damaged, and the motor wiring is incorrect.	Check whether the motor cable is in good contact and replace the drive. Or load
4.Locked rotation protection	The limit has not been reached for 5 consecutive times	Reset the limit point, or eliminate whether there is a problem with the limit device

ONE TECH

7.4.Learning type remote control

The remote control using special IC learning code remote controller, 418MHz wireless frequency, strong anti-interference, long remote control distance, that can up to 100meters in good weather, use easily and durable. The receiver of learning code remote control can store 16 different remote control codes, and support unlimited number of same code remote control. The external receiver learned the remote control within 5 seconds when power on,press the open/close key at the same time to complete the learning, and reset to continue learn when not complete. If repeat the learning, open the external receiver shell, there is a white button on circuit board, hold down 15 seconds to delete the remote control code, continue to learn or press the white button to learn.

8.Arm length speed comparison table

Menu code Parameter / Arm length	Open			Close		
	H00-00	H00-02	H00-04	H00-01	H00-03	H00-05
Medium Octagonal arm 3m 1.5s （without rubber）	95	30	8	95	30	8
Medium Octagonal arm 3m 1.5s （with rubber）	95	25	8	95	25	8
Large Octagonal arm4.5m 3s （without rubber）	45	30	10	45	30	10
Large Octagonal arm 6m 5s （with rubber）	35	40	10	35	40	10
3m around arm 1.5s	95	25	8	95	25	8

（the parameter is based on the company's arm）

9.Service Items

9.1 One year's free servicing is supplied(not including the arm);

9.2 Lifetime charged servicing is offered;

9.3 Technology servicing is supplied.

ONE TECH

The following situations are charged for servicing(or changing):

9.1Broken by the wrong installation.

9.2Broken by improper voltage.

9.3The surfaces of the system destroyed by wrong installation or use.

9.4Broken by natural disaster.

9.5Overdue.

9.6Servicing items out of our promises.

10. Product Maintenance

10.1 Keep the barrier gate clean

10.2 Check the joints ever month in case of any loose parts.

10.3 Check the spring elasticity after the barrier gate running 3000 times.

10.4 Check the easily worn-out parts(like the spring,limit switch),every half year and renew it.

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

11.Packing List

Name	Specification	Qty	Unit	Note
Hexagon screw	M12*70	2	Piece	Fixing the boom
Boom press board		1	piece	
Mounting batten		2	piece	Fixing the case
Expansion bolt	M16*150	4	unit	Fixing the case
Case Key		2	unit	
Remote controller		2	unit	
Instruction		1	piece	

ONE TECH

Appendix
1.Infrared Photocell Installation

The installation method is as shown in Figure 9.

Fig.9