Automatic angle pressing and chamfering machine

OPERATION INSTRUCTIONS

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STATEMENT

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一、Preface

Thank you for purchasing and using the Automatic stainless steel crimping machine. This manual is the use and maintenance information of this equipment.

In order to ensure the safety of the operator and maintain the excellent performance of the equipment for a long time, before using the equipment, please read this manual carefully and save it for subsequent use to avoid danger or damage to the machine during operation.

This machine equipment is upgraded or updated at any time without notice, please understand! If you have any further technical or use problems, please contact our company in time.

二、Product working conditions

2.1Working conditions

·Ambient air range

Working hours	5 ～40℃
During transportation and storage	0℃ ～40℃

·Air relative humidity

At 35℃	≤50%
At 20℃	≤90%

·The content of dust, acid, corrosive gas and other substances in the surrounding air does not exceed the normal content.

·The altitude does not exceed 1000 meters

·Grid voltage fluctuation: ≤±10% (when the grid frequency is the rated value)

·Grid frequency fluctuation: ≤±1% (when the grid voltage is the rated value)

2.2 Working environment

The product should be placed in a dry, ventilated and dust-free environment away from direct sunlight, rain, gas vapor, chemical deposition and corrosive media that seriously affect the use of the equipment, and avoid violent vibration and turbulence.

三、Safety Precautions

3.1 Electricity safety

The basic principle of preventing electric shock is not to touch the two poles of voltage electrical equipment at the same time. The specific precautions are as follows:

1、Before operation, you must wear qualified protective equipment, such as safety gloves, insulating shoes, and all labor protection equipment must be dry and undamaged;

2、Before servicing and testing the equipment, cut off the power supply to prevent electric shock.

3.2 Mechanical equipment hurts

When the equipment is working, be sure to keep hands, hair, clothing and tools away from mechanical movement, pneumatic actuators and other operating mechanisms. Pay attention to pneumatic and mechanical pressure components that hurt people. Operators are not allowed to wear loose clothing and accessories.

3.3Comprehensive preventive measures

1、Ensure equipment power safety measures;

2、Only skilled electricians can work on high-voltage equipment;

3、The equipment safety warning signs must have clear signs and be readily available;

4、During the operation of the equipment, the lubrication and maintenance of the equipment cannot be carried out.

3.4 Precautions for installation and debugging

1.After opening the package, confirm whether it is the model you ordered.

2.Check whether the equipment is damaged during transportation. If there is any

damage, please contact our after-sales service.

3.Our company will not bear any responsibility for equipment damage or other losses caused by not strictly complying with the operating requirements specified in this manual.

4.After 7 days of installation and commissioning, our company cannot return the goods without reason.

5.Before installation and commissioning, please prepare 5 square meters of three-phase five-wire wires (the number of meters required according to your company's operating site), one 40A power switch, one bucket of purified water, about 20L, and several 10 mm air pipes. Compressed air less than 0.6MPa, steel strip materials, etc.

6.After installation and commissioning, our after-sales personnel will teach your company how to operate. Please be sure to send someone to study carefully.

四、Equipment introduction

4.1Equipment picture:

4.2Equipment introduction:

The full-automatic chamfering and pressing machine is an automatic line for glass lid production. It is an indispensable process. It has the advantages of high efficiency, high quality, high energy saving, low cost, simple and convenient operation, and wide application range. It is ideal for the glass lid industry and other kitchenware manufacturing industries. device of. Below, we will elaborate on its operating principles, conditions of use, functions of each part, and daily maintenance.

1.The full-automatic crimping and chamfering machine is an ideal special equipment designed and manufactured by Ningbo Jinshihong Machinery Equipment Co., Ltd. according to the requirements of the kitchenware industry;

2.The equipment has a wide range of applications, using touch screen digital input to control operation settings, simple and convenient operation, and easy to replace products;

3.Equipment accessories (panel racks, control systems, drive motors, pneumatic components) are all world-renowned brand products, and are equipped with high-precision planetary deceleration devices, which can improve the positioning accuracy of the product;

4.The equipment adopts programmable controller as the main control unit, the circuit is simple, highly integrated and intelligent, which reduces the failure rate and is convenient for maintenance and maintenance;

5.The chamfering press machine uses a press wheel and a chamfer wheel to pull the steel ring to achieve the effect of squeezing the edges together and chamfering the upper surface.

4.3Equipment technical parameters:

Name	Unit	technical parameter
Equipment size	mm	2500*900*1500
Equipment weight	kg	300
Total power	KW	4.5
Required air pressure	Mpa	0.5~0.7
Input voltage	V	380VThree-phase five-wire
Rated frequency	HZ	50
External cable standard		4*3+2.5*2（U V W N PE)
speed	pcs/min	8-12

4.4 Equipment characteristics:

1、Angle pressing machine is a process of steel ring after crimping and stretching. It is an indispensable process in glass line industry and automatic line industry.

2 、 The forward and backward movement, angle pressing wheel and manipulator movement are all controlled by Huichuan servo motor. The position of product reclaiming, the position of manipulator reclaiming, the position of manipulator discharging and the depth of edge extrusion are all controlled by parameters. It has the advantages of high control precision, low failure rate and simple operation.

3、The angle pressing and chamfering machine adopts two angle pressing wheels and one angle meeting wheel to achieve the effect of edge extrusion and chamfering.

4 、 The pneumatic components adopt Taiwan Yadeke and Japan SMC executive components, with long service life and high reliability.

五、Maintain

5.1Equipment maintenance:

1、All guide rails and screw rods shall be greased every six days, and the surface shall be cleaned before filling.

2、All mechanical moving parts shall be inspected every three days without looseness or damage.

3、Various faults encountered during commissioning shall be recorded, such as fault problems and solutions, so as to facilitate the next rapid processing.

5.2Daily maintenance:

1.During operation, the pressure of air source treatment duplex must be adjusted to 0.5-0.6mpa

2. Filter drainage operation shall be carried out at least once per shift (8 hours). Drainage method: cut off the air source, treat the inlet air source of the duplex, exhaust the pressure gas in the air path, and the pressure gauge value is 0. In this state, the filter will drain automatically. After the operation is completed, it must be confirmed that the water collected in the filter has been discharged

3. Check the oil level of the oil cup of the oil feeder once a week to ensure that there is oil in the oil cup. The oil feeder uses isovg32 or lubricating oil of the same level. The oil output is adjusted by the knob above the oil feeder. It is recommended to adjust it to the number 2.

4、All guide rails and screw rods shall be greased every six days, and the surface shall be cleaned before filling.

六、Common fault analysis and elimination

Fault phenomenon	Cause of failure	resolvent
No response after startup	Power failure or phase loss	Restore power
Servo alarm	Check whether the material is jammed	Clear the alarm or power on again according to the servo alarm code
Cannot reset	1、The origin switch is damaged and the welding station cannot move back. 2、The device is in alarm state.	1、Check whether all cylinder switches are in position, and replace the welding origin switch in time. 2、Clear alarm

During edge extrusion, the product flies out	1、The position of the lower angle pressing wheel is high. 2、The front and rear servo runs fast.。	1、Reduce the servo stroke of the angle roller. 2、Reduce the running speed of front and rear servo.

七、Operation essentials

7.1Operation preparation:

1.Connect the air source so that the indication of the pressure gauge is 0.5-0.7mpa.

2.Connect the 380V power supply, turn on the circuit breaker switch of the control box, and unscrew the emergency stop button on the panel to keep the machine powered on.

3.When the cylinder servo motor is at the specified position, in the manual state, press any button on the manual screen to carry out manual operation.

4.Automatic working conditions of the machine: the equipment has no alarm, the full axis reset is completed, and the equipment is in automatic state.

八、Controller introduction

8.1Characteristics of control system

·The control system of the machine adopts Delta PLC, Fanyi touch screen and Huichuan servo driver. It can adjust the crimping depth, reclaiming position, crimping position and crimping speed, which is more convenient to control.

8.2Introduction to touch screen button switch

·On the premise of connecting the power supply, press the "emergency stop" button on the lower board of button 1, the work indicator on the panel is on and the touch screen is displayed.

Initial page·

·After the machine is powered on, the initial state of the touch screen displays the startup screen, which displays the equipment name, company address, contact telephone, Chinese and English buttons and the "enter operation" button.

Main screen of angle pressing and chamfering machine：

The host operation touch screen displays the above screen. In the automatic state, the equipment has no alarm and the full axis reset of the equipment is completed. Press the "start" button on the screen to start the machine normally. The corresponding induction switch indicator light is also displayed on the screen, and the indicator light on the screen will be on. If it is not in the starting position, switch to manual, press the "reset" button, and the machine will automatically return to the starting position.

In the process of automatic operation, press the "stop" button, the equipment will complete the current product, run to the next round, and the equipment will stop automatically. When the equipment fails, the corresponding alarm information appears in the alarm information column, which is convenient for the user to find out the corresponding fault in time. After the fault is handled, press the "alarm reset" button to clear the alarm information in the alarm information column. When there are alarm information such as servo alarm, the equipment can process the alarm information when it is powered off and restarted.

·In the main operation interface of the touch screen, press the "manual operation" button, and the screen will jump to the continuous manual screen. In the manual state, jog the buttons "belt motor start", "servo servo" and "chamfer wheel motor" on the screen, the corresponding motor will start, and the button indicator light will be on during operation. Adjust the hand wheel shaft to the "X" gear and the speed gear of the hand wheel to the ideal speed. When shaking the hand wheel, the edge

pulling servo motor will move forward or backward, and the data of the edge pulling servo position will also change. During shaking the hand wheel, pay attention to avoid collision of mechanical parts. Press and hold the "standby position", "fast position" and "slow position" buttons in the touch screen, and the servo will run according to the parameters set in the parameter screen. Before these position buttons, ensure that the corresponding parameters in the parameter screen conform to the actual position of the servo, so as to avoid collision and damage to mechanical parts.

X axis manual operation page·

Y axis manual operation page·

·On the X-axis manual operation interface of the touch screen, click the "Next Page" button, or directly turn the handwheel gear switch to "Y", the screen jumps to the Y-axis manual operation screen, the operation method is the same as the X-axis, the screen is as shown below Shown.

Z axis manual operation page·

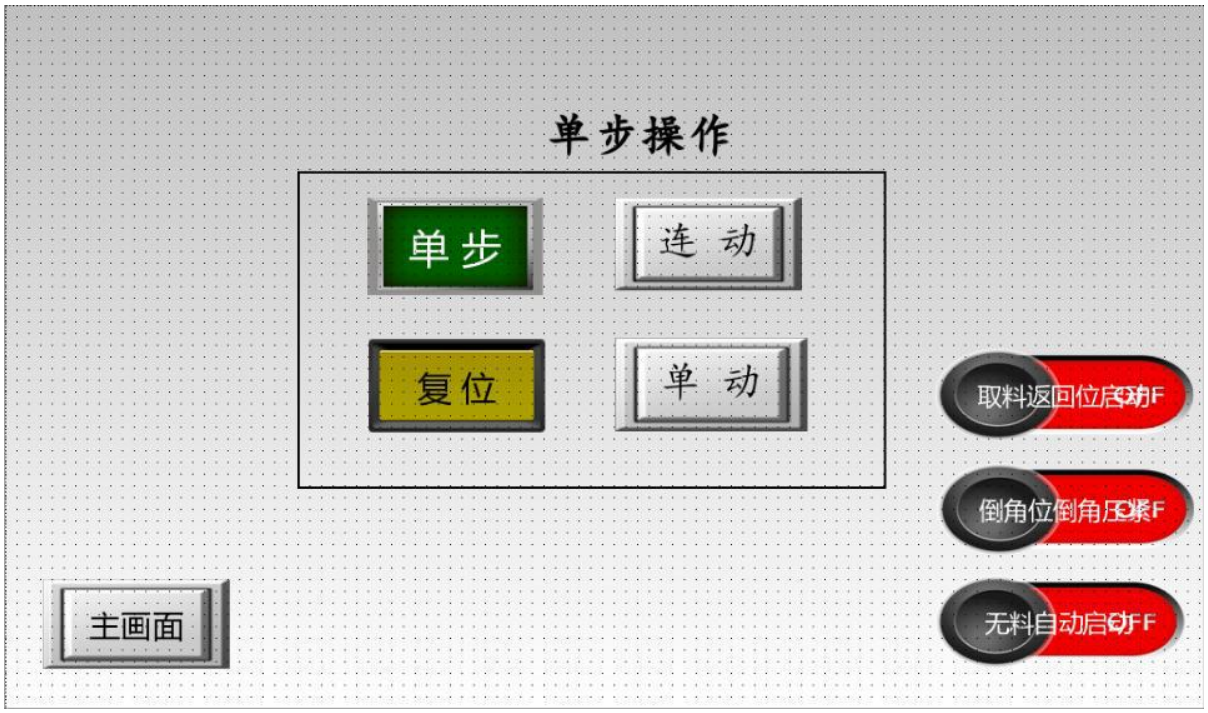
4-axis manual operation page·

·When the edge drawing machine needs to use a variety of models to stretch, it needs to use the formula function. The formula can store parameters of a variety of models and specifications. In the process of use, it can avoid setting parameters again for the models of used products. It can be used only by transferring the formula and changing the mold, which greatly saves the commissioning time. The formula name can be written in English letters and numbers, so that there will be no error when retrieving the formula next time. When you want to store the currently used parameters in the recipe, set the name of the current recipe, click the unused recipe group number in the recipe box, and click the "recipe upload" button to store the used parameters in the recipe, which is convenient for one-time use and can be retrieved directly. Before changing to a new model of product and storing the formula, you only need to click the "formula download" button to use it directly without setting parameters and adjusting the position again. The recipe page is shown in the figure below.

In case of failure and need to re debug or make new models of products, you can run the one-step mode, which is very convenient to find the problem points in the process of use. Click the "single step screen" button on the main screen to enter the single step screen. When the equipment is reset, no alarm and automatic mode, open the "single step" button of the single step screen and click the "single action"

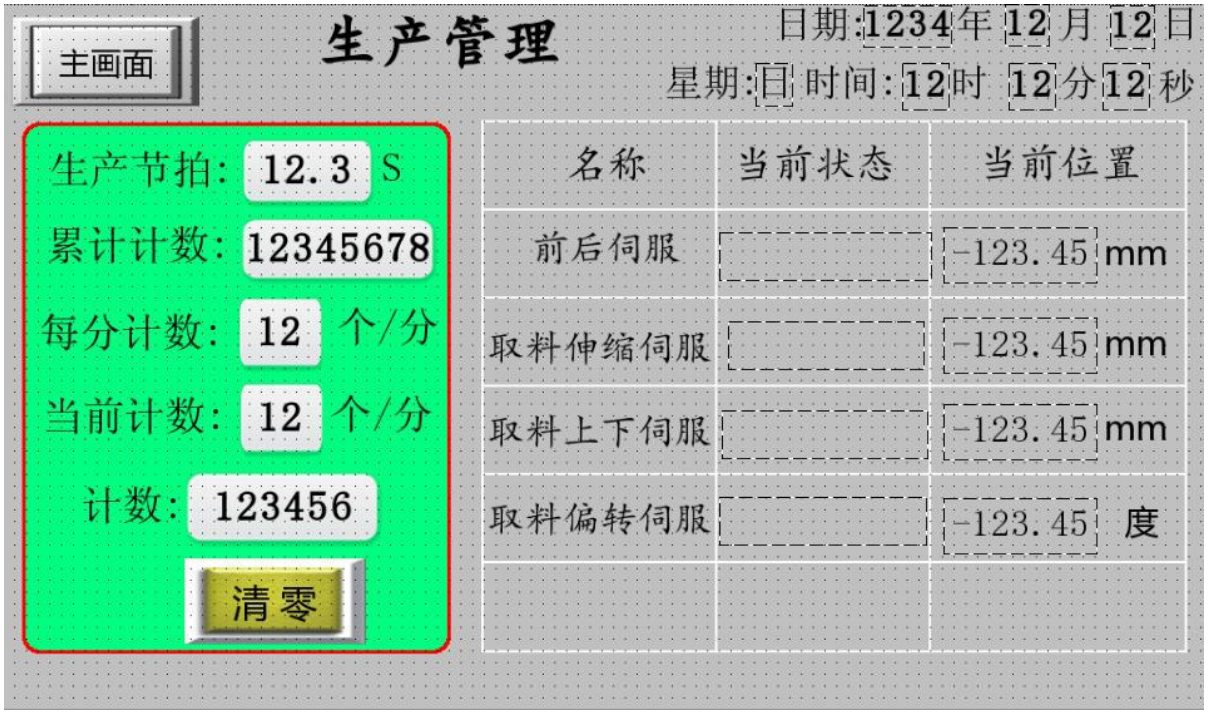
button to realize the single step start of the equipment. In the process of single-step operation, all single action actions operate normally. Click the "linkage" button to realize the single cycle of action linkage. During use, some functions of the equipment can also be switched, which can be set in the single step screen.

Single step screen·



Click the "production management" button on the main screen to enter the output setting page, where you can see the product count and cumulative count. Setting the output means that the automatic shutdown function can be realized when the equipment product count reaches the set output setting value. When the output is set to 0, the shutdown function of reaching the output will not be enabled. Press the "reset" button once, the product count value will be cleared, and the production beat, count per minute, current count, current servo position and current state can be monitored.

Production management page·



Press the "Parameter Setting" button on the main screen, touch the screen to enter the parameter setting screen, as shown in the figure below.

Host parameter page·

·The parameter page is to set the servo speed and the cylinder arrival delay during the automatic operation of the angle chamfering machine. Press and hold the blank space in the lower right corner of the parameter setting screen, the touch screen will enter the servo limit parameter setting screen. This screen is for setting the soft limit when the servo is manually cranked, and the low limit stroke and high limit stroke of the servo walking . As shown below.

Servo limit parameter setting·

全 自 动 压 角 机 参 数 表

前后伺服参数		伸缩伺服参数		取料上下伺服参数		取料偏转伺服参数	
H02-02=1	方向选择0-正转，1反转	H00-00=14101	电机编号	H00-00=14101	电机编号	H00-00=14101	电机编号
H04-07=1	报警选择	H02-01=1	绝对值系统选择	H02-01=1	绝对值系统选择	H02-01=1	绝对值系统选择
H05-02=1000	1圈脉冲数	H02-02=1	方向选择0-正转，1反转	H02-02=1	方向选择0-正转，1反转	H02-02=0	方向选择0-正转，1反转
H09-00=1	自调整模式选择	H04-07=1	报警选择	H04-07=1	报警选择	H04-07=1	报警选择
H09-01=15	刚性等级选择	H05-02=20000	1圈脉冲数	H05-02=4000	1圈脉冲数	H05-02=7200	1圈脉冲数
H03-11=1	伺服上电使能	H08-00=100	H08-15=3.00	H09-00=1	自调整模式选择	H08-00=100	H08-15=3.00
RUN	使能状态	H08-01=60	H08-02=10	H09-01=15	刚性等级选择	H08-01=60	H08-02=10
RDY	准备状态	H0C-00=1	伺服轴地址	H0C-00=2	伺服轴地址	H0C-00=3	伺服轴地址
		H0C-02=2	串口波特率设置	H0C-02=2	串口波特率设置	H0C-02=2	串口波特率设置
		H0C-03=0	MODBUS数据格式	H0C-03=0	MODBUS数据格式	H0C-03=0	MODBUS数据格式
		H03-11=1	伺服上电使能	H03-11=1	伺服上电使能	H03-11=1	伺服上电使能
		RUN	使能状态	RUN	使能状态	RUN	使能状态
		RDY	准备状态	RDY	准备状态	H07-09=100	H07-10=100

倒角轮伺服参数		压角轮伺服参数		旋转盘伺服参数			
H02-02=0	方向选择0-正转，1反转	H02-02=1	方向选择0-正转，1反转	H02-02=1	方向选择0-正转，1反转		
H04-07=1	报警选择	H04-07=1	报警选择	H04-07=1	报警选择		
H05-02=2000	1圈脉冲数	H05-02=2000	1圈脉冲数	H05-02=7200	1圈脉冲数		
H09-00=1	自调整模式选择	H09-00=1	自调整模式选择	H09-00=1	自调整模式选择		
H09-01=15	刚性等级选择	H09-01=15	刚性等级选择	H09-01=15	刚性等级选择		
H03-11=1	伺服上电使能	H03-11=0	伺服上电使能	H03-11=1	伺服上电使能		
RUN	使能状态	RUN	使能状态	RUN	使能状态		
RDY	准备状态	RDY	准备状态	RDY	准备状态		