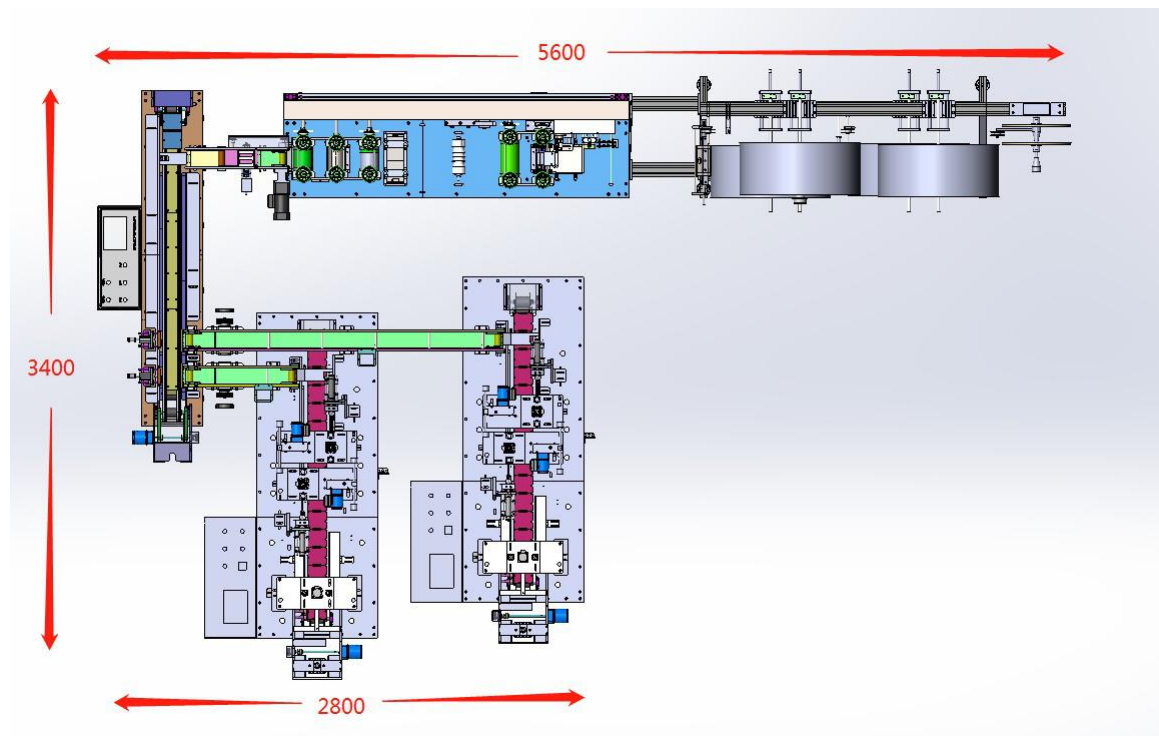




One tow two outer ear mask machine operation manual



Foreword

Welcome to use face mask machine:

Before the first use of the company face mask machine, please read carefully the contents of this "operation manual", it will help you to correct use and maintenance of the machine, to ensure human safety, and give full play to its performance, reduce malfunction, prolong life.

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One. Instruction for use

- ◆ Do not start the machine until you have a clear understanding of the correct operation method and safety regulations.
- ◆ Untrained and authorized personnel are not allowed to use this machine.
- ◆ Before using this machine, you must read this manual carefully and understand all the contents and instructions.
- ◆ The machine must be confirmed to complete the installation and necessary adjustments before operation.
- ◆ Before starting, make sure that no tools and utensils are placed on all the table of the machine.
- ◆ Don't touch the inside of the machine or electrical facilities before turn off the power.
- ◆ The operator must not leave the machine's operating range while the machine is in operation.
- ◆ It is strictly forbidden to touch the sensing device and moving parts during the operation of the machine.
- ◆ Electrical professionals must complete the inspection and maintenance of electrical control circuits.
- ◆ Without the permission of the company, it is not allowed to modify the machine arbitrarily, or connect any device, tool or peripheral equipment not approved by the company to avoid danger.
- ◆ If there are any unclear contents in this manual, or if you encounter problems that cannot be solved according to the instructions in this manual, please consult our company or authorized dealer, and do not handle them without authorization.
- ◆ Do not use the machine under conditions other than the specified environment.

Two. Machine description

1. Application of machine

This machine is a special machine for the manufacture of plane masks. The

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product has a certain filtering effect on the air entering the lungs of the human body. It has a

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very good effect when the respiratory tract infectious diseases are prevalent and when working in a polluted environment such as dust.

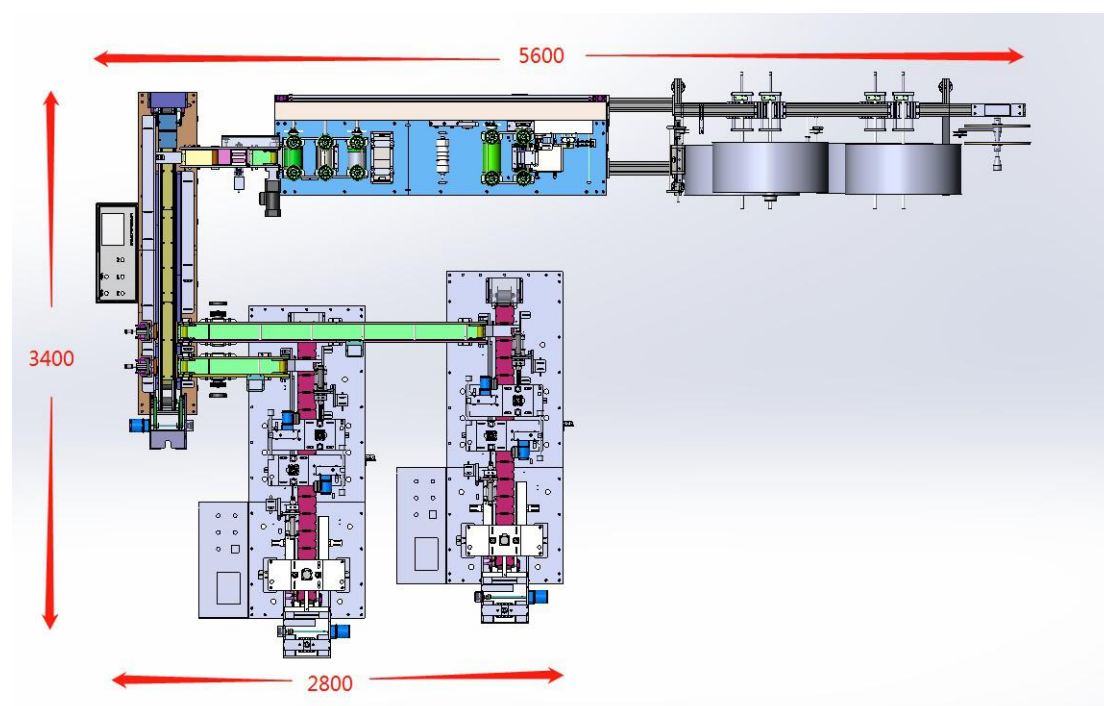
2. Structural features

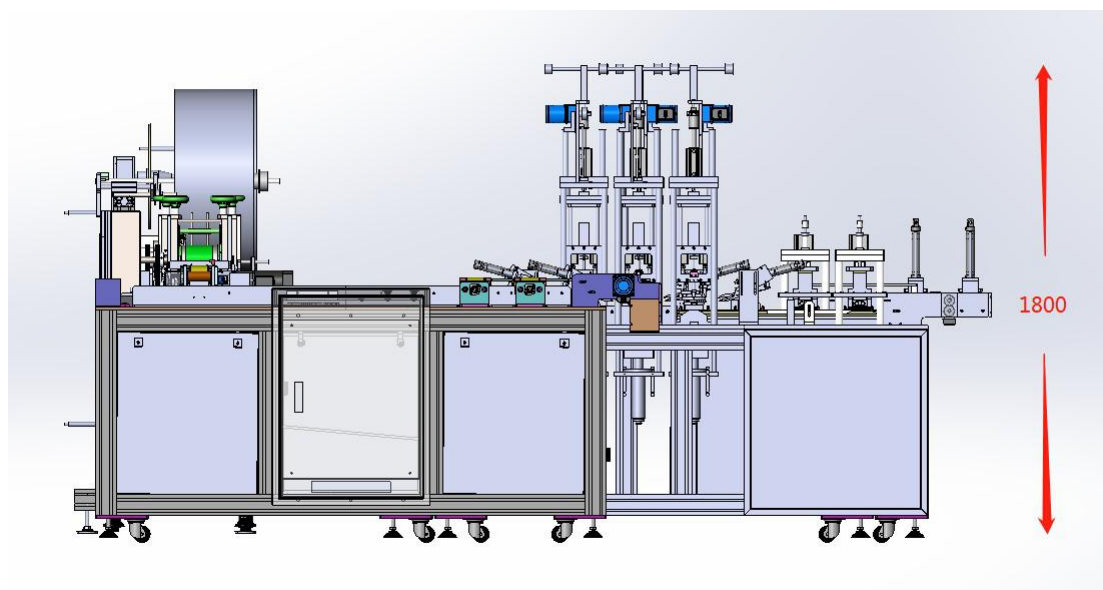
- The automatic operation is simple and the efficiency is high.
- A variety of nose bridge wire are shared, easy to replace.
- Ultrasonic welding saves time and effort, and is environmentally friendly.
- Text type man-machine interface, convenient and fast parameter setting.
- Fault self-diagnosis function, the fault display is clear at a glance.
- The transmission system is simple, the work is more reliable, and the maintenance is more convenient.
- All control is realized by software, which is convenient for function adjustment and technical upgrade.

Three. Machine installation

1. Equipment volume

Equipment specification: (L) 5600× (W) 3400× (H) 1800





2. Environmental requirements

Ambient temperature: 0 ~ 45 °C

Relative humidity: 20 ~ 90% RH

Power supply: AC 220V

Voltage fluctuation range: $\pm 10\%$

Frequency: 50Hz

Compressed air: pressure: 5 ~ 6.5kgf / cm² (water and oil must be filtered out, filtration accuracy $\leq 40\mu\text{m}$), pressure fluctuation 10%

Four. Machine operate

1. Start in gup

Check whether the air source and power supply are normal; if there is no electricity and the air source alarms on the touch screen, the air source and power supply are not normal, you need to check whether the air source power supply is normal (the power supply diagram on the left and the air supply diagram on the right) check the feeding conveyor if there are different types of work pieces left over from the last time; check whether the "Emergency Stop" button on the electrical cabinet box is released

2. Run

Before operation, carefully check whether each part of the machine is installed properly, and there are no obstacles around the site; Keep the machine clean and drain the oil-water separator regularly; pay attention to observe whether the cable and air pipe are broken or damaged; Always keep the conveyor line free of iron filings, sand and other foreign objects; pay attention to see if the machine has loose screws.

Connect the air source first, then the power supply, and turn on the power switch on the electrical cabinet. (Select switch) Check whether there is an alarm, if there is an alarm, clear the alarm and press reset. Select the touch screen panel manual automatic button to automatic, press the start button, the device enters the automatic operation state.

3. Pause

- ◆ The pause button is located on the right side of the touch screen panel (Stop /Stop)
- ◆ When the equipment operator needs to temporarily stop the equipment in the automatic operation state, press the "stop button"

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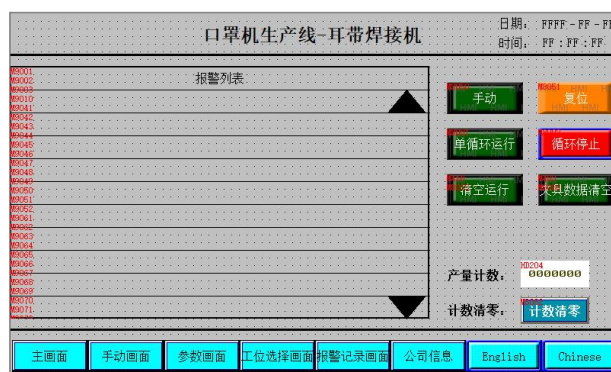
on the display panel to temporarily stop the equipment. When the

device needs to continue to run, just press the "Start Button" again, and the device will continue to run normally.



4. Alarm reset

- ◆ The reset button is located on the right side of the touch screen panel (Reset /Reset)
- ◆ When the equipment has a failure during operation, the equipment is in a stopped state, check what kind of failure, enter the "manual page" to recover the cylinder corresponding to the failure; when dealing with serious failures, you must first press the emergency in the unit Stop the button or press the "Auto / Manual" button on the touch screen to the "Manual" state, and then turn off the air source before the relevant processing. After troubleshooting, if it is not a serious fault, just press the "Reset" button in the touch screen to eliminate the alarm, and then press the "Start" button, the device continues to run; if the device has a serious fault, after the fault is removed, it is necessary Long press the "Reset" button 3S, all stations of the equipment return to the initial state



5. Emergency stop

- ◆ Emergency stop button is located on the left side of the touch screen (/E-STOP)
- ◆ When is necessary to clean the work piece on the conveyor line, check the line, and troubleshoot, press the emergency stop button to ensure that all the equipment stations are in a stopped state under the safety guarantee, and then perform the relevant processing.

6. Manual debugging

Manual debugging can help to check the fault. Each button on the manual debugging screen has a corresponding output point Y. Click the button PLC to output the Y point signal on this button. If there is an output, there will be a corresponding action. It is necessary to detect the peripheral circuit.

The solenoid valve can also be used to detect the status of the operation by the manual button of the solenoid valve when the machine is not energized. The manual button of the solenoid valve has a lock function. Please reset this button after commissioning.

Five. Machine maintenance

1. Daily maintenance

- ◆ Clean the machine table and conveyor line every day, first blow off the dust on the surface with an air gun, wipe it with a cleaning cloth to keep the table clean and tidy.
- ◆ Wipe the detection sensor every day to ensure the detection reliability.

2. Weekly maintenance

- ◆ The air source filtration system releases water and the filter element is cleaned. Drain and clean on time.

3. Monthly maintenance

- ◆ Replace butter every month; including slide rail sliders, bearings, gears and other related moving parts.

Six. Equipment repair

1. Repair method

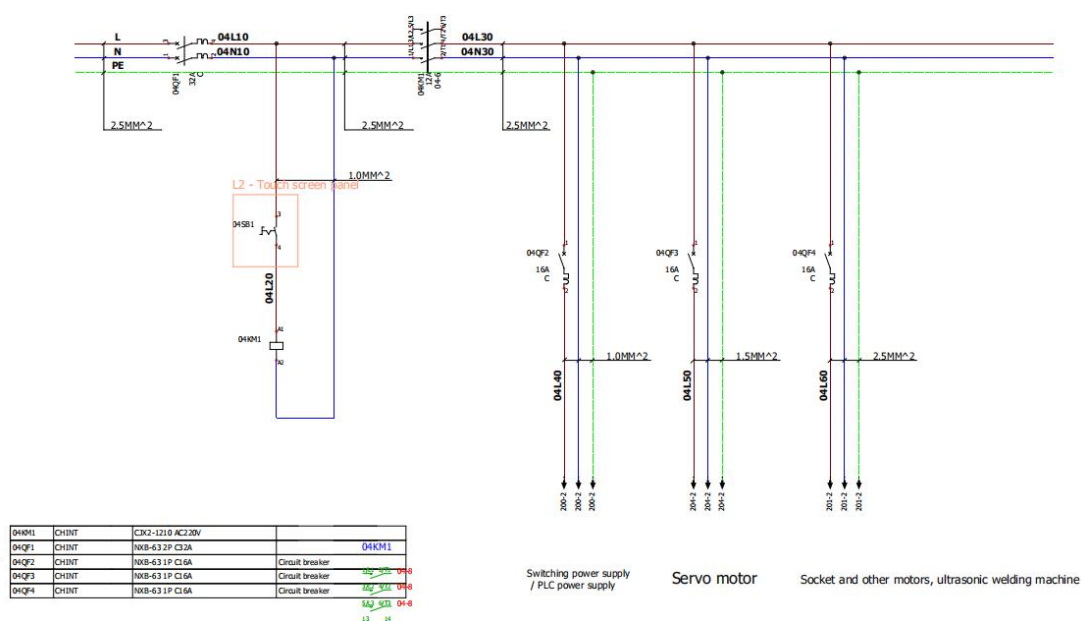
Fiber replacement: the fiber of the fiber sensor in each place should be arranged smoothly to avoid breakage, damage and squeezing of heavy objects.

2. List of parts and wearing parts, drawings of parts and

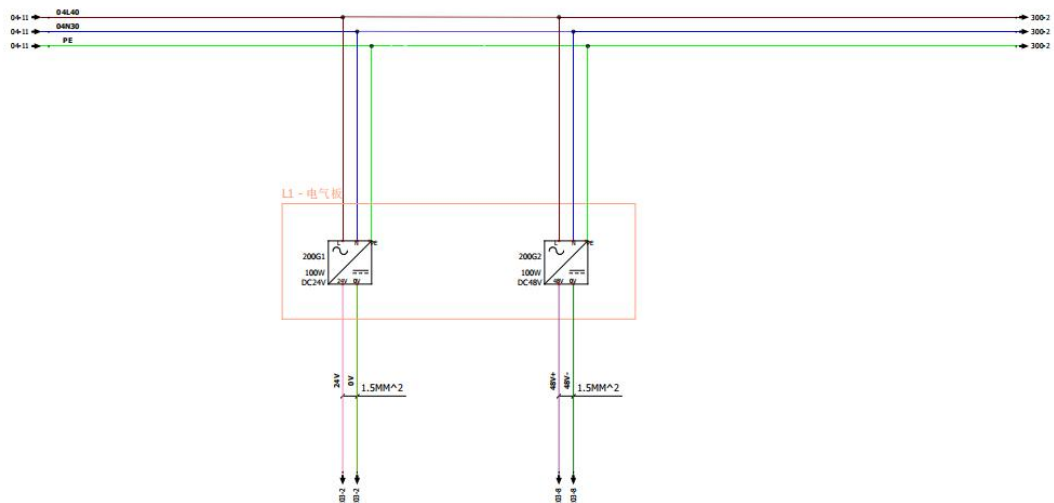
wearing parts. (It is required to mark the drawing number on the wear ingparts)

3. Electrical wiring diagram

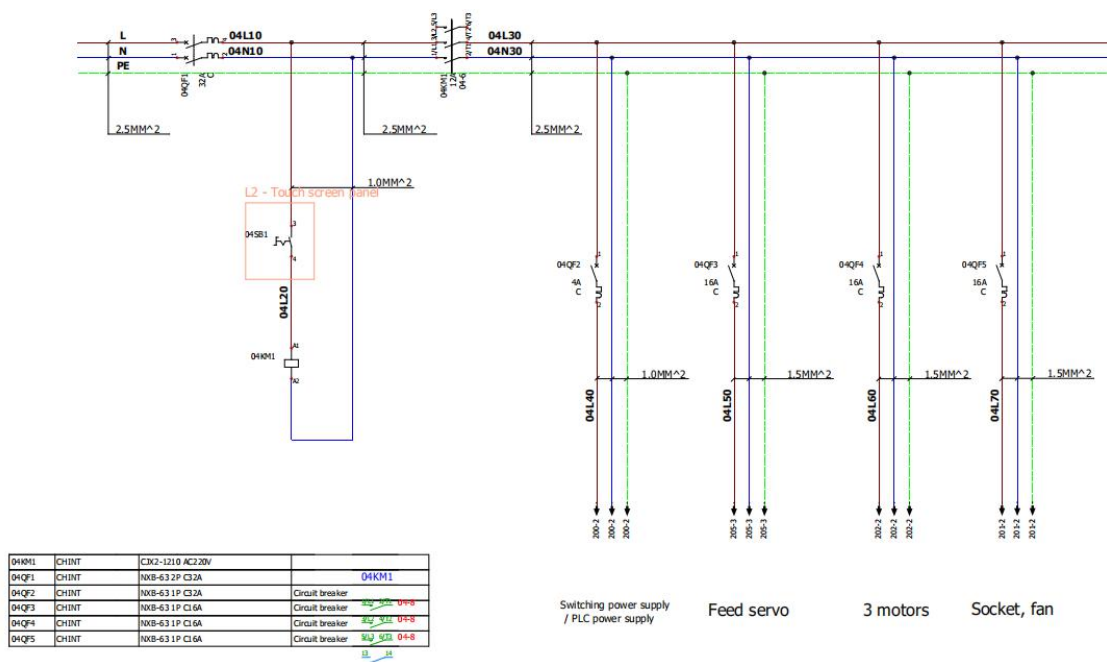
- ◆ Schematic diagram of the main circuit



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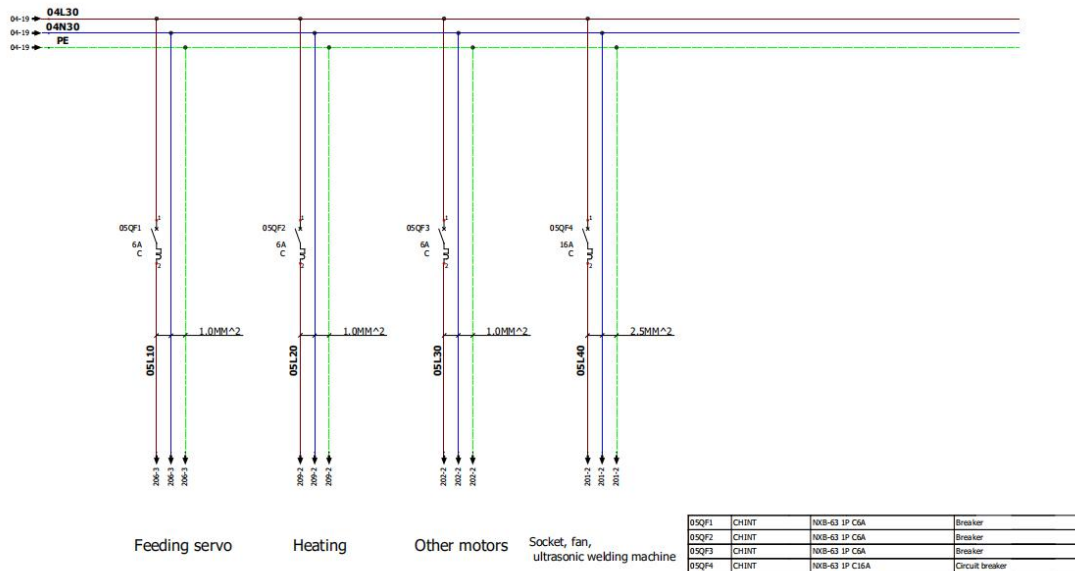
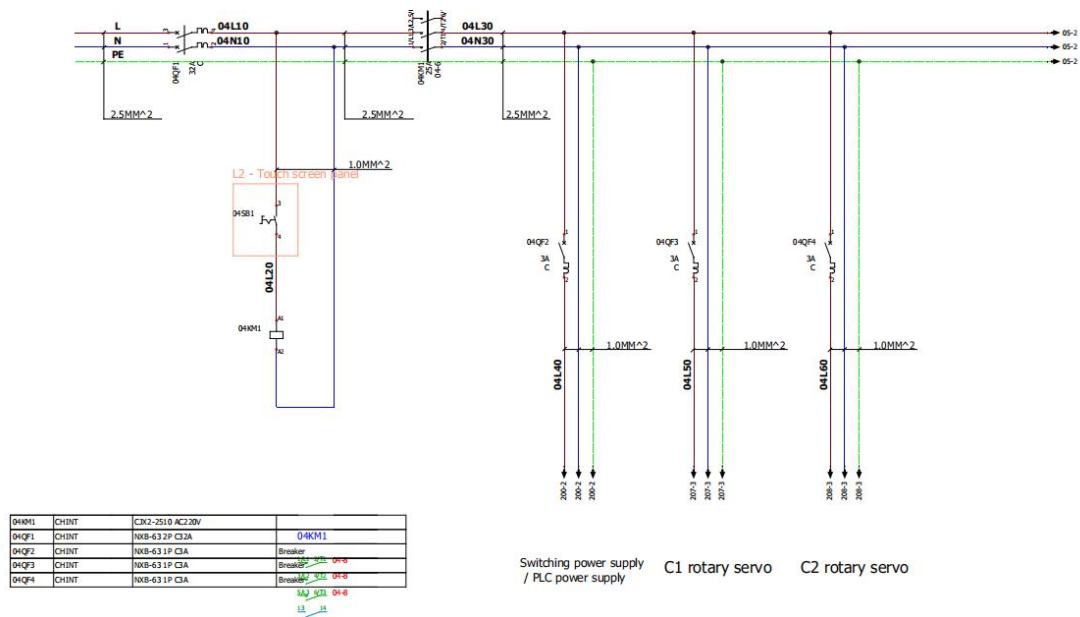


Schematic diagram of the main circuit of the main unit



Schematic diagram of the main circuit of the feeder

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Schematic diagram of the main circuit of the earband welding machine

4. Fiber Optic debugging

- (1) The reason for the abnormal fiber sensing: the ambient light around the fiber is too bright; the ports of the two fiber cables are not cut flat, the fiber cables in the fiber amplifier are not plugged in; the sensitivity of the fiber detector is not adjusted to the best state; the fiber amplifier has always detected The signal may not have been detected; the fiber amplifier has no input power; the fiber amplifier is broken.
- (2) Fiber amplifier sensitivity adjustment method: when there is no signal output when the fiber senses an object, the sensor sensitivity of the fiber amplifier should be increased.

Turn the sensitivity knob clockwise to increase the sensor sensitivity. You can also insert one of the two fiber lines in the fiber amplifier a little deeper. To increase the sensitivity, that is, the longer the sensing distance of the optical fiber, when the optical fiber does not sense an object and the signal is output, the sensing sensitivity of the optical fiber detector should be reduced. Turn the sensitivity knob counterclockwise to reduce the sensing sensitivity. Pull out one of the optical fiber lines to reduce the sensitivity, that is, the shorter the sensing distance of the optical fiber.

- (3) When the main body distributor turns on the electric fiber sensor of the material tray, the material tray will find the origin at a slow speed once. When the distributor material tray is misaligned during operation, please check whether the synchronous wheel of the material tray servo motor is loose. Or if there is no induction feeder going all the time, please adjust the sensitivity of the feeder fiber sensor.

5. Welding wheel failure and debugging

- (1) Fault problem: relative position adjustment of welding wheel

Solution: Loosen the screw of the drive shaft sleeve sprocket behind the welding wheel, and turn the welding wheel to adjust the relative position.

- (2) Fault problem: insufficient welding fastness

Solution: adjust the two limit screws to the same height to make the welding wheel fully press on the ultrasonic mold; debug the ultrasonic gear.

6. Cutter wheel failure and debugging

- (1) Fault problem: the cutter is adjusted relative to the welding position

Solution: For the first adjustment, insert the fabric, loosen the fixing screw on the cutter wheel, and turn the cutter wheel to align the cutter position with the welding position.

- (2) Fault problem: how to pad the knife

Solution: first clean the magazine in the cutter gap on the cutter wheel, then put the paper with a thickness of 0.02mm-0.1mm, and then put the blade too; note that the pad should not be too high at a time to avoid cutting. The knife is damaged.

7. The principle of the ear belt conveyor

(1)Actual drawings:



(2)Co Conveying principle: The ear band wire is wound and wound on the rotating disc. With the rotation of the rotating disc, the ear band line is pulled close to drive the induction ring upward. The ear band induction switch senses that the induction ring is tightened and turns on the motor switch. The motor Drive the ear belt pulling wheel to convey the ear belt. It.

8. Position adjustment of the feeding tray of the feeding device

(1)Actual drawings:



- (2) Solution: Turn the conveying tray to the middle position of the rotating tray, and then align the gap of the induction disc with the position of the sensor until the sensor is off.

9. Adjust the welding fastness of the ear strap line as shown:



- (1) Solution: For the first adjustment, the height of the ultrasonic mold should be adjusted to be lower than the thickness of a mask on the feed tray, loosen the screw; 3, then adjust the screw; 4, can make the entire ultrasonic part adjust up and down, left and right adjustment can loosen the screw; 5. Move the screws left and right; 6. Lock, after adjusting the correct position of the ultrasonic mold, adjust the height of the welding head of the earband to loosen the nut; 7. Turn the adjusting nut 7 of the cylinder to adjust the spot welding head After pressing down the height and fixing the nut; 8, loosen the screw; 9, move the position and fix the left and right positions of the spot welding head.
- (2) Note: The ultrasonic mold must be parallel.

10. Angle adjustment of the turntable shown in the figure:



- (1) Solution: The angle adjustment of the rotating disk is mainly the induction disk. You can first adjust the angular position of the rotation disk, loosen the screw and rotate the induction disk to adjust, so that the position of the gap is aligned with the sensor, and the bright light of the sensor shall prevail.

11. Fault judgment of the small bird clip shown in the figure



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Solution: The most trouble is the wear of the bird clip, the wear of the steel ball, and the spring steel sheet is excessively fatigued, which causes the bird clip to be inseparable or not elastic; Always installed, if the damage is serious, it needs to be replaced.

12. Ear strap machine unloading mechanism

(1) Actual drawings

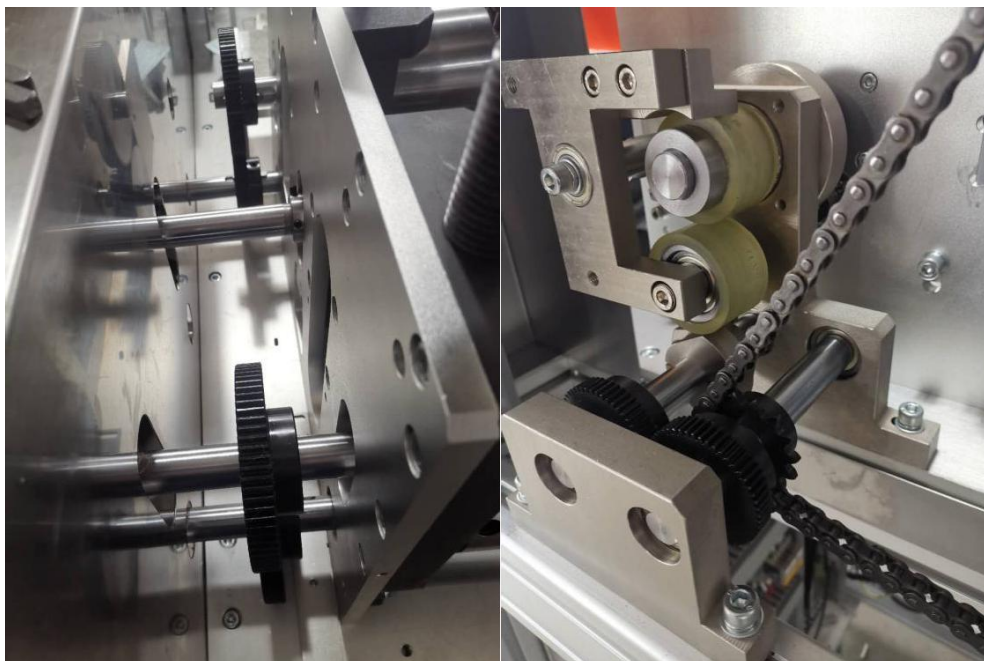


(2) Simple principle: The feeding mechanism of the ear belt machine is mainly a motor that drives the conveyor belt to transport the finished product to the position of the discharge port. The finished product is sensed by the optical fiber and the cylinder is pressed down

(3) to drive the finished product.

13. Nose wire section

(1) Actual drawings



- (2) Conveying principle: The fan cam rotates to transmit power to the rubber wheel, and then to the nose wire pulling wheel through the rubber wheel. The nose wire pulling wheel pulls the nose wire into the nose wire cutter. After the nose wire is cut, it enters the nose wire The horn positioning is sent to the welding wheel for welding.
- (3) fault problem and debugging
- (4) Problem: adjustment of the length of the nose
- (5) Solution: Rotate the angle of the two fan-shaped cams, the greater the arc formed by the two fan-shaped cams, the longer the nose line length, and the smaller the arc, the shorter the nose line length.
- (6) Fault problem: adjust the position of the nose wire horn
- (7) Solution: First, the discharge end of the nose wire horn should be parallel to the ultrasonic mold, and the other end should be inclined downward, and the position of the nose wire outlet should be aligned with the position of the welding wheel.
- (8) Note: The nose wire horn must not touch the ultrasonic mold.

14. Components of ultrasonic welding machine

- (1) How the machine works

The 220V / 50HZ power supply is converted into 20KHZ or 15KHZ high-voltage electrical energy, which is converted into mechanical energy by the transducer. The mechanical

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vibration is amplified by the two-stage rod and transmitted to the work piece by the welding head. The effect of friction welding.

(2) installation steps



(3)

A. Plug the power cord and plug the other end into the socket (see Figure1).

B. Connect the control wire and connect the other end to the intermediate relay of the electrical cabinet (as shown in Figure2).

C. Connect the output line and the other end to the welding head (as shown in Figure3)

(3) Generator installation and maintenance

Power adjustment switch: select the appropriate output amplitude of the welding head to meet the requirements of the work. When the welding effect is satisfied, try to select a lower amplitude.

(4) Transducer group: The transducer part is composed of three parts: transducer; horn; welding head.

The welding head cannot be modified arbitrarily, otherwise it will change its resonant frequency and mechanical strength, which may easily cause damage to the transducer or electrical parts.

(5) Ultrasonic testing:

In order to achieve the best use effect and maintain the performance of this machine, it is very important to adjust the resonance between the generator and the transducer system.

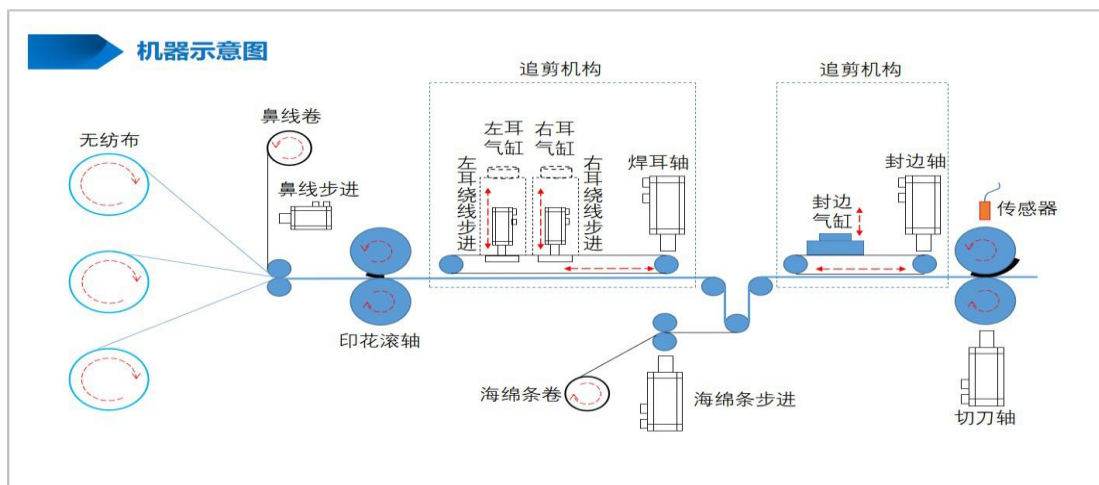
A. Before tuning, make sure that the welding head and the horn must be locked. When tuning, the welding head should not touch the upper die, flower wheel and other components.

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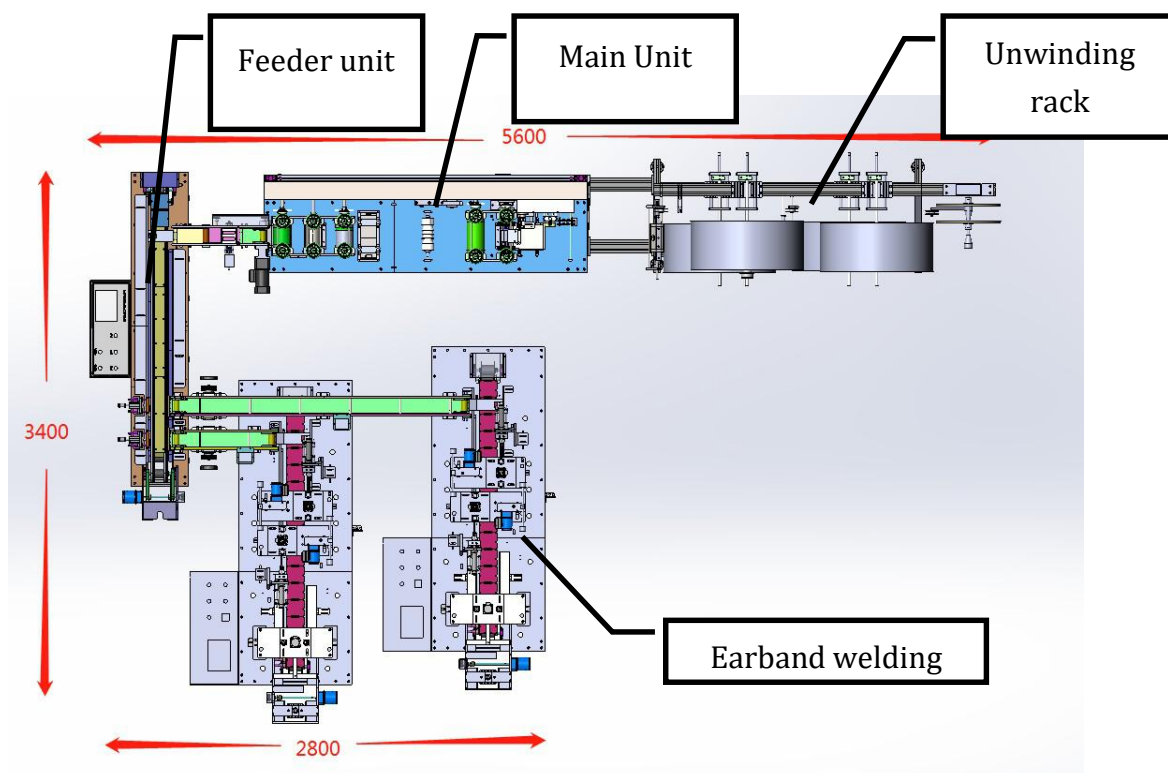
B. Turn on the power switch, and the power indicator is on.

C. Press the ultrasonic test switch and observe the amplitude and load table.

Seven. Equipment flow chart



Eight. Schematic diagram of equipment



Nine. Detailed description on HMI operation

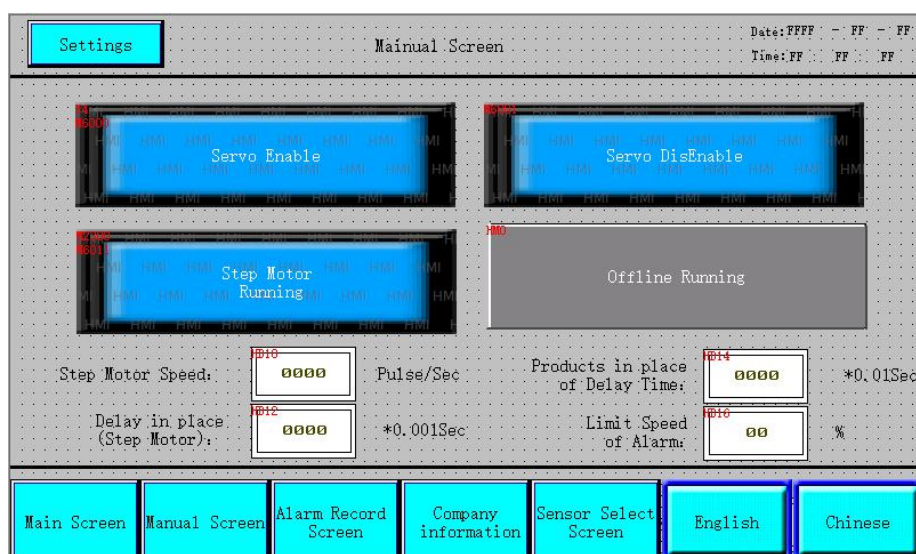
1. Main unit basic operation of touchscreen

Mainpage



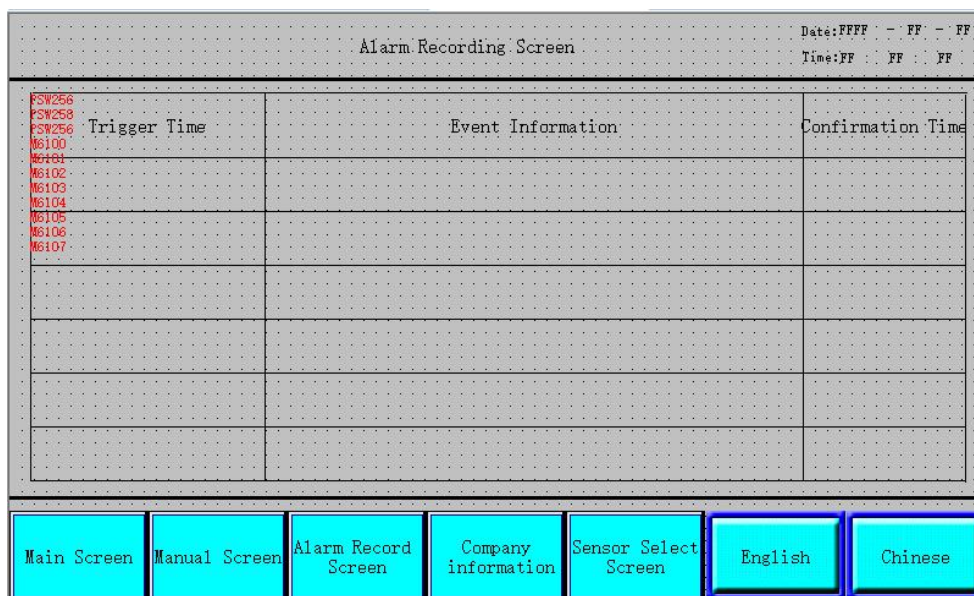
This page can set the rotation speed of the tablet machine and the production quantity display according to the production needs. There are 5 speed setting shortcut keys in the middle, namely "10%" "30%" "50%" "80%" "100%", Production data clearing function. Below is the page switch button.

Manualpage



This screen can manually control the servo motor of the film maker to enable ON / OFF and control the rotation of the flipping stepper motor.

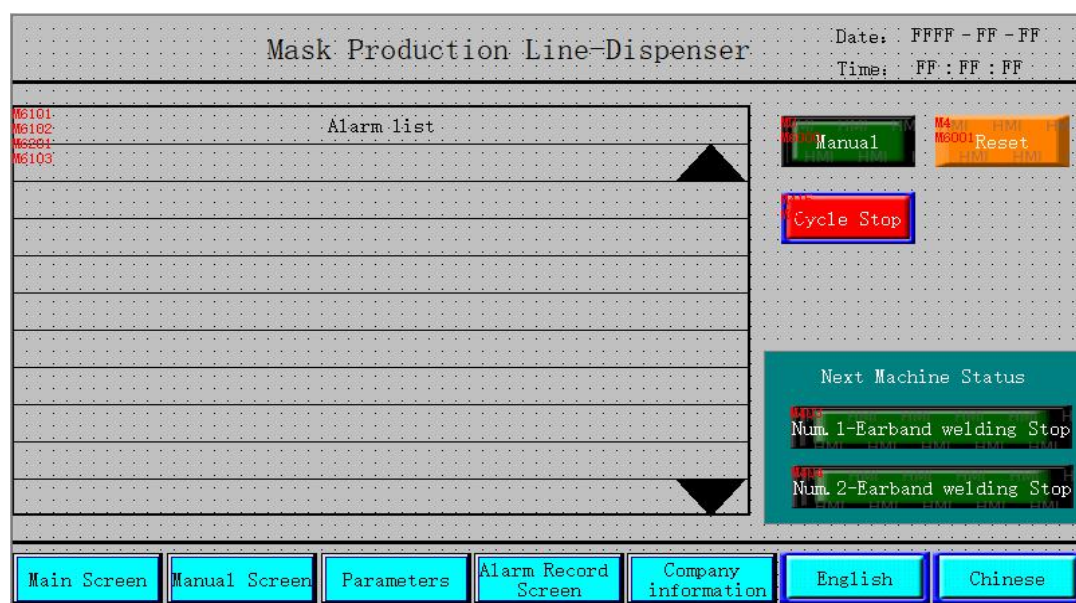
Alarm recordpage



This screen displays historical alarm records, which is convenient for handling and analyzing faults.

2. Feeder basic operation of touchscreen

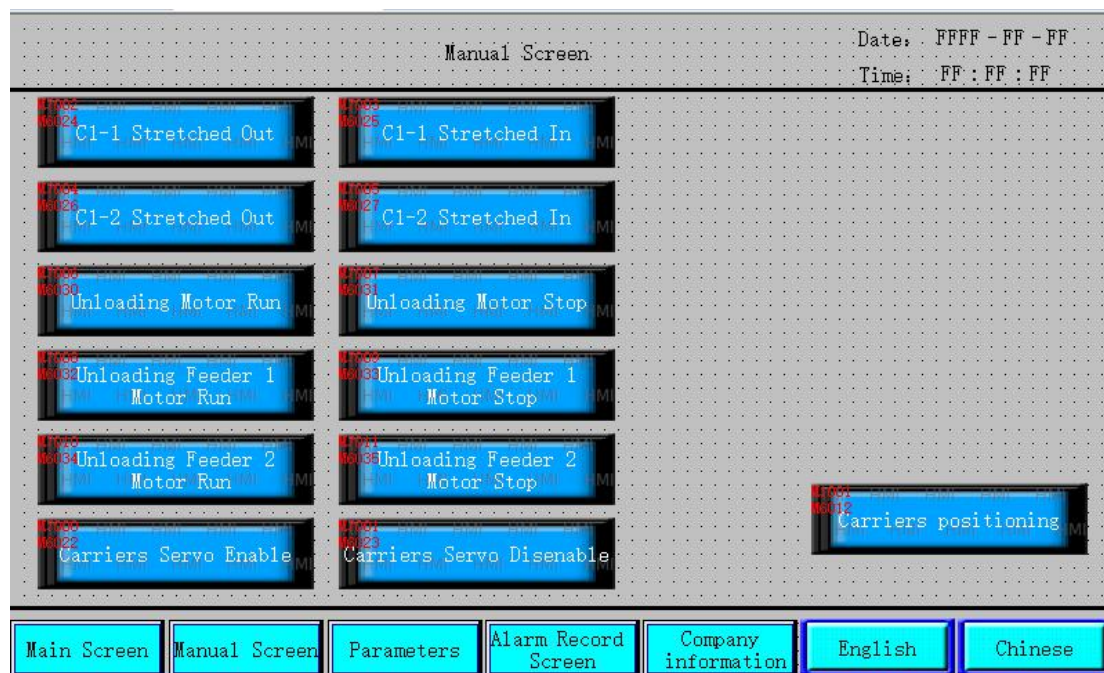
Mainpage



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The top is the device name and time and date display, the left is the real-time alarm display, the right is the button operation, and the bottom is the screen switching button.

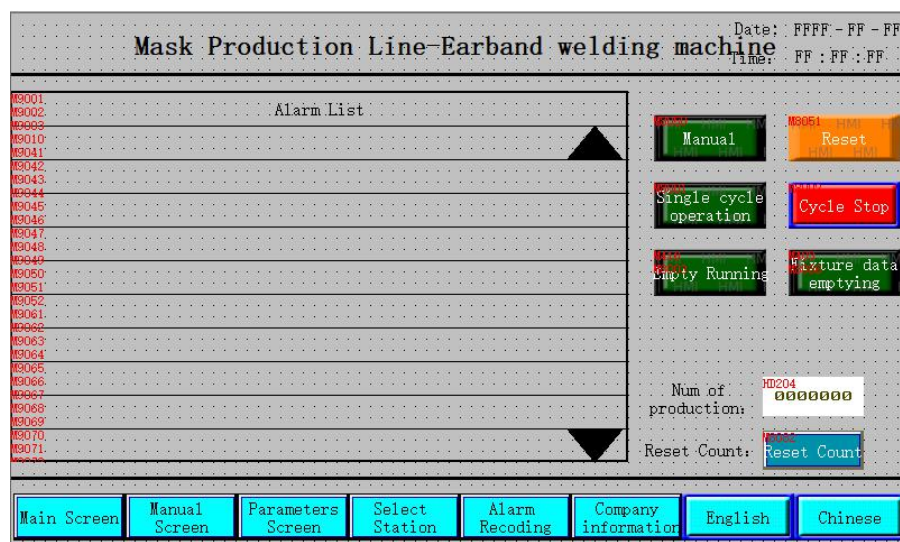
Manualpage



Click the "Manual / Automatic" button on the touch screen panel to the "Manual" state, then enter the main page of manual operation of the device on the "Manual operation" of the touch screen, and then select the action of the corresponding component of the device that needs to be manually operated. We have interlock protection function in all places where the movement between the mechanisms may interfere in the "manual" operation. When switching to the "automatic screen", it is best to return the manual action before switching. "Manual" operation can easily observe the action of each cylinder and the accuracy of each mechanical action, and can be used for troubleshooting and equipment maintenance and debugging.

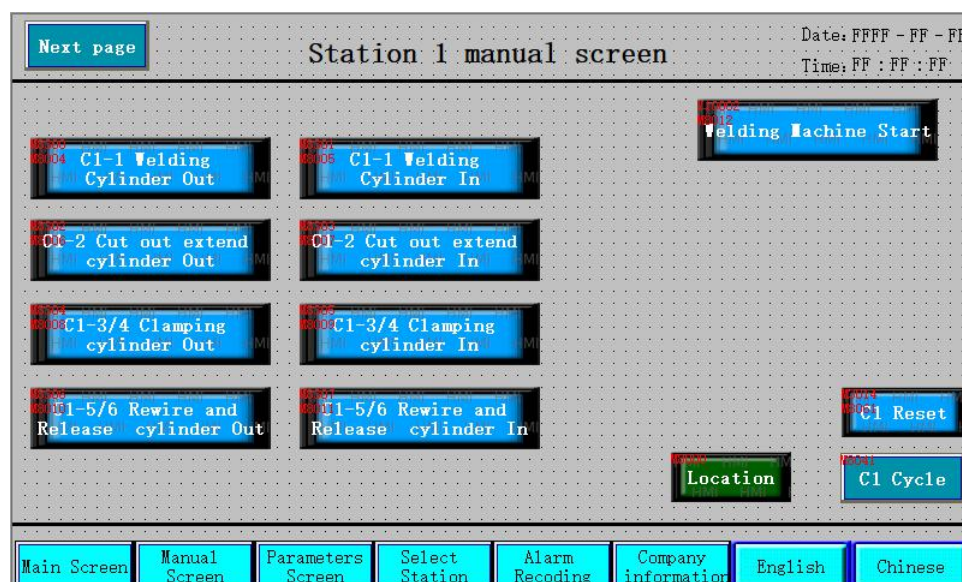
3. Earband welding machine basic operation of touchscreen

Mainpage



The top is the device name and time and date display, the left is the real-time alarm display, the right is the button operation, and the bottom is the screen switching button.

Manualpage



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Parametersetting

Parameters Screen				Date: FFFF - FF - FF
				Time: FF : FF : FF
Carriers Speed	<input type="text" value="0000000"/>	Pulse/S		
Left-Rotating Servo Speed:	<input type="text" value="0000000"/>	Pulse/S	Machine cycle time: <input type="text" value="0.00"/> Sec	
Right-Rotating Servo Speed: ;	<input type="text" value="0000000"/>	Pulse/S	Carrier cycle time: <input type="text" value="0.00"/> Sec	
Unloading-Number of Pallets:	<input type="text" value="0000000"/>	PCS	Station1-Cycle time: <input type="text" value="0.00"/> Sec	
Drop trigger delay time:	<input type="text" value="000"/>	*0.1 S	Station2-Cycle time: <input type="text" value="0.00"/> Sec	
Left ear band welding time:	<input type="text" value="000"/>	*0.01S	Station3-Cycle time: <input type="text" value="0.00"/> Sec	
Right ear band welding time:	<input type="text" value="000"/>	*0.01S	Station4-Cycle time: <input type="text" value="0.00"/> Sec	
C4-1 Stretched out run time:	<input type="text" value="000"/>	*0.01S	Station5-Cycle time: <input type="text" value="0.00"/> Sec	
Unloading line run time:	<input type="text" value="000"/>	*0.1S		
<input type="button" value="Communication"/>				

<input type="button" value="Main Screen"/>	<input type="button" value="Manual Screen"/>	<input type="button" value="Parameters Screen"/>	<input type="button" value="Select Station"/>	<input type="button" value="Alarm Recoding"/>	<input type="button" value="Company information"/>	<input type="button" value="English"/>	<input type="button" value="Chinese"/>
--	--	--	---	---	--	--	--