

Introduction

Thank you for choosing a unit manufactured by VI.BE.MAC. S.p.A

Carefully read and comply with all information in this manual for proper and safe operation of the unit. Please operate in accordance with the method specified in this manual. Otherwise, the company will not be liable for any losses caused by illegal operations. In addition, please keep this manual and the accessories attached to the device in a safe place for future reference.

It is forbidden to copy any part of this manual without the permission of VI.BE.MAC.S.p.A.

Without prior notice, VI.BE.MAC reserves the right to make necessary changes to the contents of this manual. If you need additional backups, please contact our company.

"We welcome any suggestions for amendments"

SAFETY SIGNALS

	<p>ELECTRICAL SHOCK DANGER: BEFORE OPENING THE COVER OR DOING THE OPERATION SWITCH OFF THE MAIN POWER.</p>
	<p>MECHANISM MOOVING: BEFORE PERFORMING THE OPERATION, MAKE SURE THAT THE UNIT IS COMPLETELY STOPPED AND THE MAIN SWITCH IS TURNED OFF.</p>
	<p>DANGER: BE SURE TO FOLLOW THE ISTRUCTION.</p>
	<p>DANGER: THE TEMPERATURE WILL BE OVER 70C °-160F °.</p>
	<p>DON'T REMOVE SAFETY PROTECTIONS.</p>
	<p>DON'T LUBRIFICATE OR ADJUST WHILE MOVING.</p>
	<p>TURN OFF THE MAIN POWER SWITCH BEFORE OPERATING ON THE UNIT.</p>
	<p>THE USE OF EAR PROTECTION IS MANDATORY.</p>
	<p>IT IS MANDATORY TO USE THE GOGGLES.</p>

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1、 Conditions for Use

All operations that comply with the following conditions are considered “normal”:

- the user applies all instructions in this manual and CE directives
- all safety standards are respected, not removing the casing or safety catches installed by the manufacturer
- the power supply is constant and does not fluctuate by more than 10%
- the unit has to be connected under an automatic cut-out switch of 30mA
- the unit is connected to an earthing system in order to prevent disturbances or electric shocks
- the unit is connected to an electric circuit with separate NEUTRAL and EARTH wires
- the unit is not used at high temperatures (over 40 °C) or low temperatures (below 10 °C)
- water or other fluids are not permitted to enter the motor
- water or other fluids are not permitted to come into contact with the control card, the solenoid valves and the cylinders
- the machine is not used in the presence of explosive gases, dust or oil fumes
- the machine is not connected to a compressed air system containing water or other fluids in the pressurized circuit
- the unit is connected to a compressed air system with minimum constant internal pressure of 5.5 bar
- the unit is installed in a factory not over 1000 mt from sea level
- the unit is installed on a flat service with no inclination
- only qualified personnel are permitted to commission the machine and carry out extraordinary maintenance work

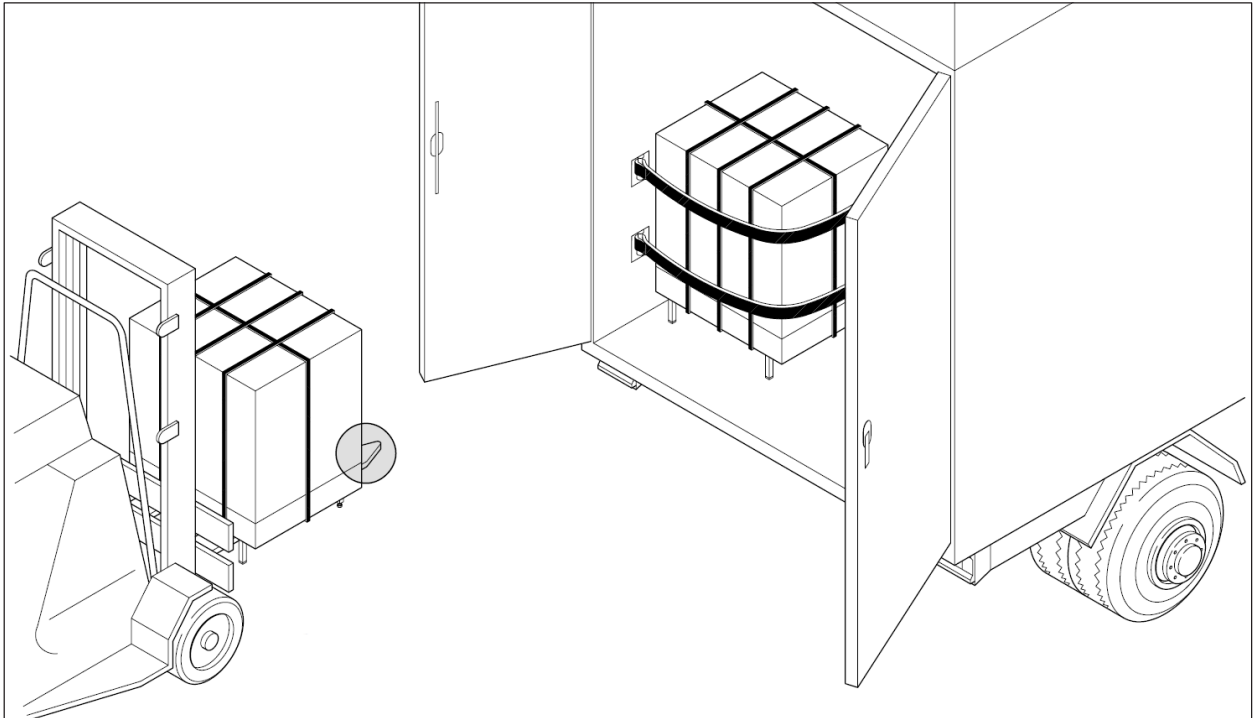
The manufacturer declines all responsibility for damage caused to people or things by the machine if:

- the machine was not commissioned by qualified personnel
- any repairs to the machine were not made by qualified personnel
- the power supply is not constant or does not correspond to requirements
- the machine is not earthed, or there are electronic problems in the electrical system
- the motor has not been subjected to the scheduled maintenance operations
- original or model-specific spare parts have not been used
- the user demonstrates total or partial failure to observe the instructions
- rain or snow get in contact with the unit

It is absolutely prohibited to:

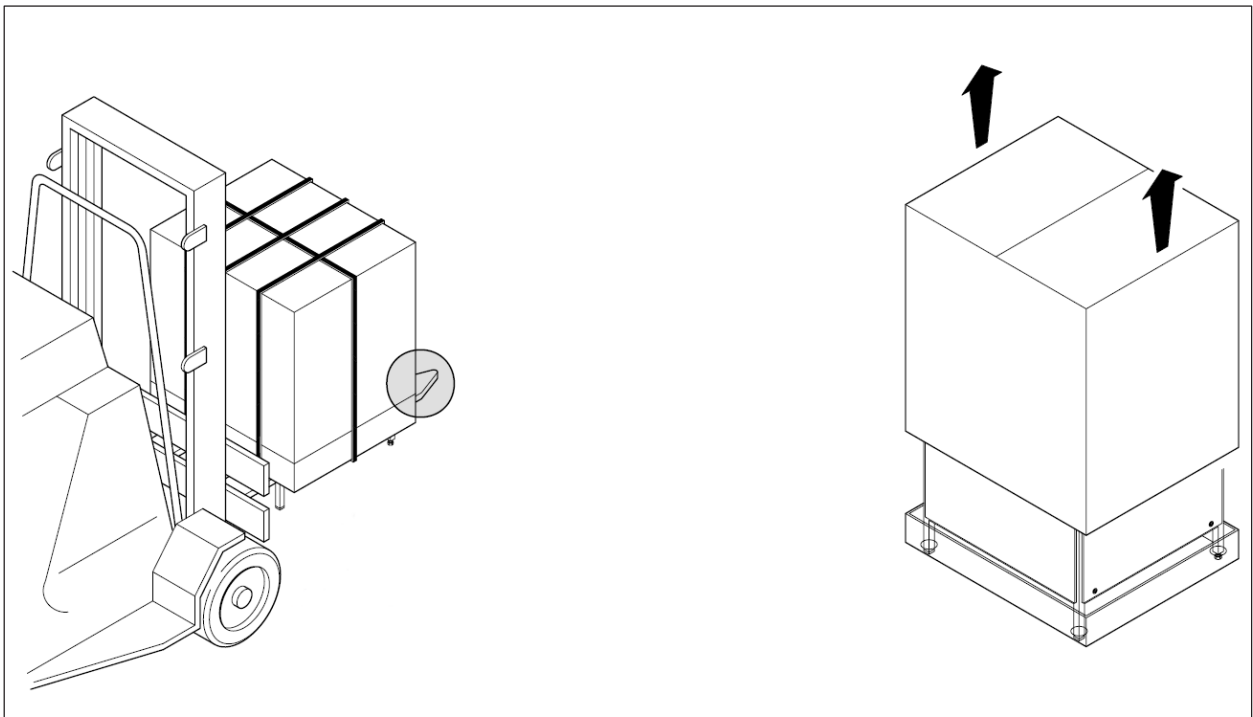
- remove the casing and safety devices from their positions, thereby posing a risk to the user
- remove the eye protection mirror without equipping the user with special eye protection glasses in compliance with the law
- deactivate the safety catches installed by the manufacturer, thereby posing a risk to the user
- make changes to the machine without authorization from the manufacturer, thereby posing a risk to the user

2、 Lifting and Transport



Make sure that during lifting the whole machine rests on the forklift forks.

Position on the truck surly fixed with straps or balts that will insure the stability during the transport



Make sure that during unloading the whole machine rests on the forklift forks. Place it on a hard flat surface repaired from weather

Remove straps, and loosen the fixing screws, remove the top part of the packing box by pulling it upwards.

3、 General Description

3.1 General features

The S2250 unit has two releasable needles, the unit allows selection of the mode to be used via the digital touch screen panel: parallel needle stitching (PLC mode) and corner sewing (CORNER mode). Changing the mode is quick and easy and can be done by the operator at any time for style/fashion or production reasons. The special compensating foot is divided into two parts to adapt to any type of fabric/seam. The latest innovations that characterise the unit are its stand design and a special cylinder inside the support column that allows height adjustment of the worktop.

3.2 Dimensions and weight

With packaging	
Width	76cm
Length	120cm
Height	113cm
Weight	145Kg

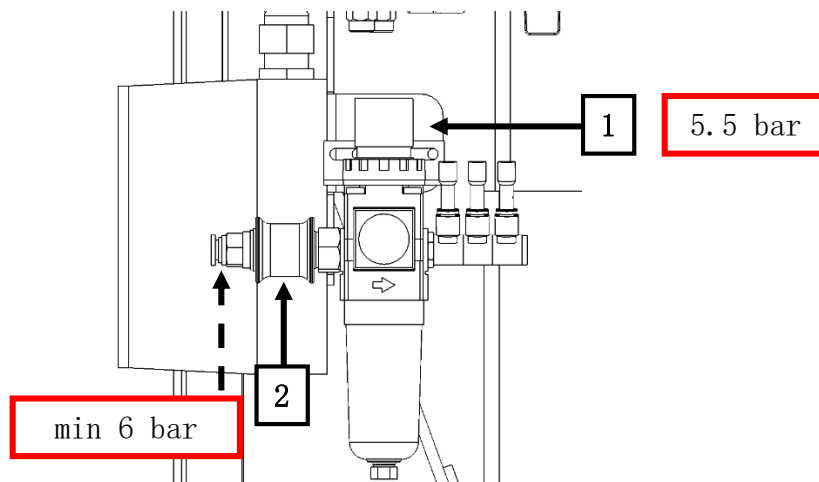
Without packaging	
Width	60 cm
Length	105 cm
Height	130 cm
Weight	110 Kg

3.3 Electrical power

Power voltage is 220Volt single-phase 50/60 Hz. (maximum oscillations of $\pm 10\%$ are permitted) Maximum consumption is equal to approximately 750 Watt.

3.4 Pneumatic power

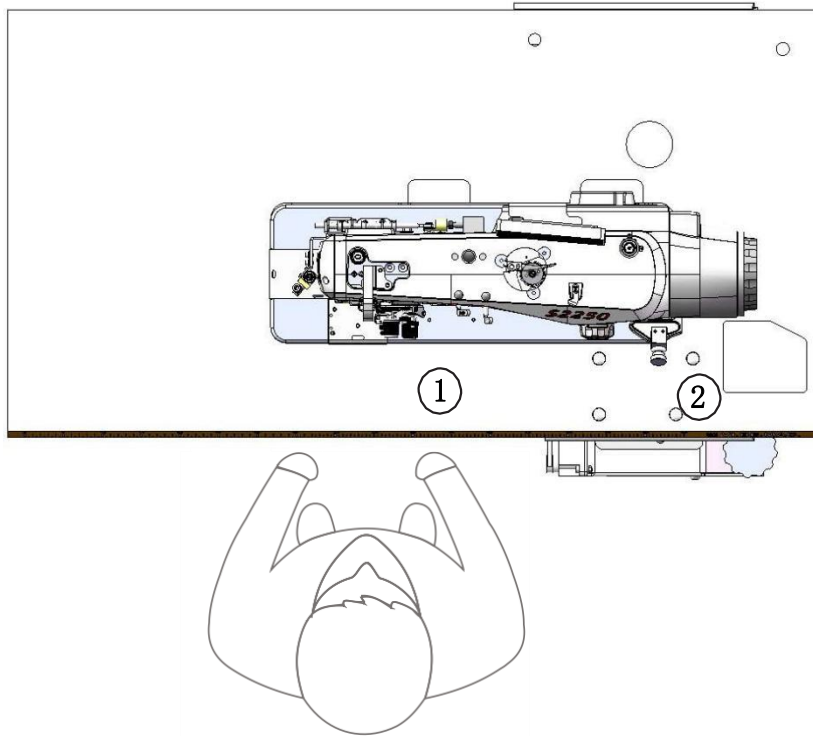
Consumption is approximately 3 litres per minute at maximum productivity. The unit must be powered pneumatically with a pressure of at least 6 bar. The internal pressure, adjustable via the corresponding regulator (1), must be 5.5 bar. Simply slide the slide valve (2) forward to pneumatically supply/discharge the unit.



3.5 Working position

The user works seated with:

- The speed control platform (1) at one' s feet, fixed to the table,
- The main power supply switch (2) to the right side below the worktop,



4、 Installation



The user must prepare the location where installation is to be carried out in accordance with machine requirements as illustrated in this manual, in accordance with the technical specifications of the unit and the need for suitable space for maintenance/adjustment.



Machine installation must be carried out by personnel from VI.BE.MAC. or authorized by them.

4.1 Flooring

The user must provide compact, smooth and horizontal concrete floor for unit housing, suitable to support the weight of the machine and to ensure its stability.

4.2 Unit placement

The area available for installation must be chosen taking into account the overall size (width 60 cm, length 105 cm, height 130 cm) and space required for use and maintenance of the unit. Its position with respect to fixed obstacles must be such as to permit easy passage for use and maintenance. In particular, the minimum clearance for the passage of persons must be 650 mm. The minimum distance between moving parts and fixed obstacles must be minimum 500 mm to avoid crushing of the entire body.

! ATTENTION !

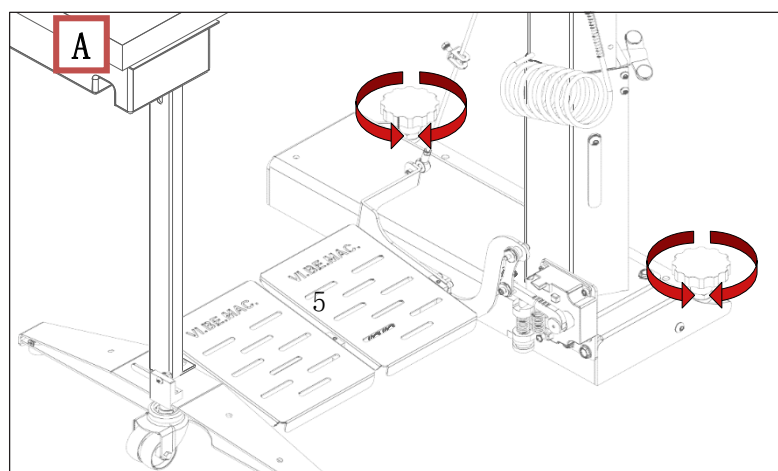
When preparing where the unit will be housed, the user must also take into consideration the overall dimensions of the machine, in all the positions it assumes when its parts are moving.

4.3 Unit assembly

The unit is delivered to the customer pre-assembled in its core parts. During transport and handling, it is disconnected from electrical and pneumatic power supplies. These are connected during installation by VI.BE.MAC. personnel or persons authorized by them.

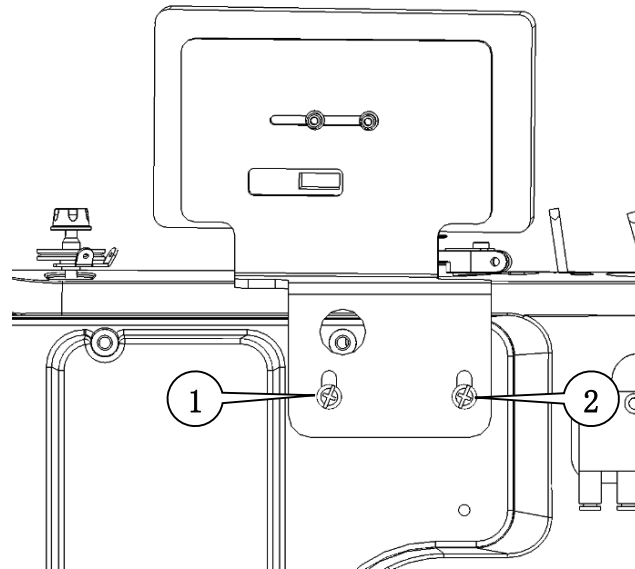
The securing and levelling of components that compose the unit are carried out by persons authorized by VI.BE.MAC. In particular:

- The unit is equipped with support points for positioning and levelling it on the floor, as shown in figure(A).



4.4 Fix back operation panel

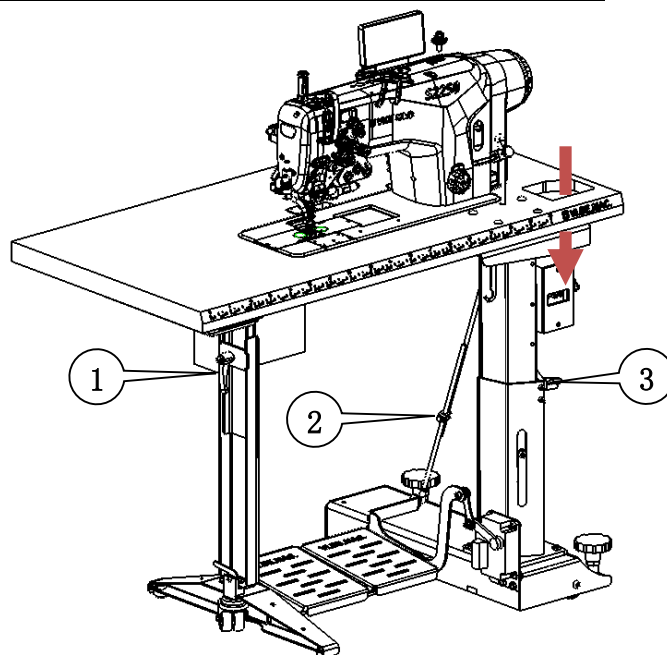
When the user uses the machine for the first time, loosen the 2 fixing screws shown in the figure, and re-fix it in the direction shown in the figure to fix the panel back.



4.5 Height

The height of the unit worktop can be adjusted and depends on the height of the operator (the taller the operator, the higher the worktop will need to be raised). Loosen the screws identified with number 1-2-3 and push the worktop downward or pull it upward to adjust the worktop to the desired height.

Note: Remember to re-tighten the previously loosened screws 1-2-3.



5、 Description of controls



The S2250 unit is characterized by the division in two parts of the pedal located at the base of the unit.

5.1 Right pedal controls (sewing)

The right part of the pedal used for sewing is positioned at the base of the unit and has three positions:

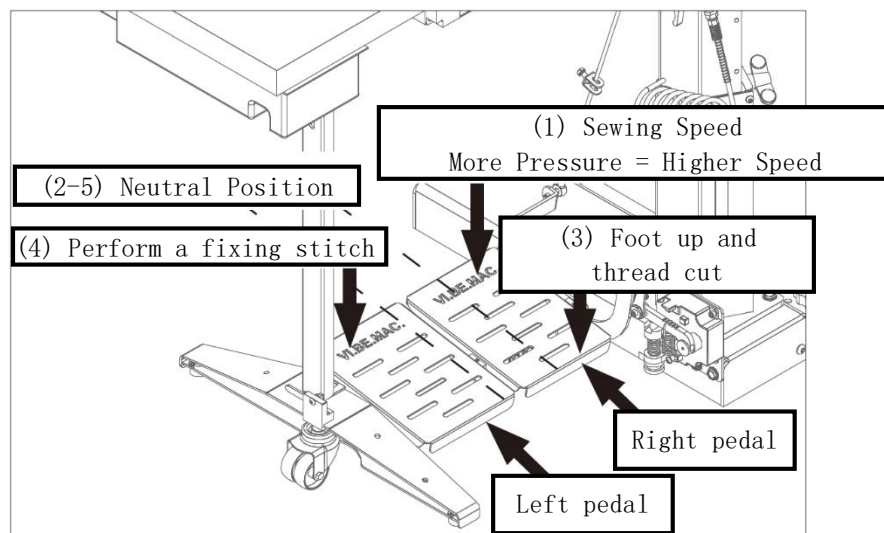
1. Press forward to increase sewing speed,
2. Neutral,
3. Press backwards to raise the pressure foot and cut the thread.

5.2 Left pedal controls (fixing/tacking stitches and stitch length adjustment)

The left part of the pedal is used to perform fixing/tacking sewing stitches. If pressed, it also lets you change the length of the stitch during the end of stitching so as to obtain a 100% perfect seam. It is positioned at the base of the unit and has two positions:

1. Press forward to perform tacking/fixing stitch of the fabric and to change the stitch length.

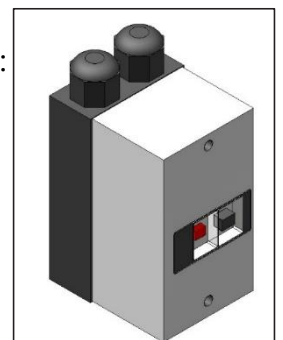
2. Neutral



5.3 Main power switch

This switch is positioned on the right side under the worktop and has two buttons:

- The BLACK button on the right is used to electrically power the unit.
- The RED button on the left is used to cut off electrical power from the unit.



6、Panel Operation Introduction


6.1 Main Interface Introduction

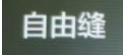
After correctly connecting the power supply and the wiring harness terminal, the operation panel lights up and displays the logo, the initialization of the start-up completes, and finally enters the main interface of the operation panel as shown in Figure 2-1. The main interface covers most of the function display and provides methods to enter the interface of various settings. The main interface of menu is the core interface for completing most commonly used functions and entering the auxiliary interface.





Figure 6-1 Main interface of control panel

In the operation interface shown in Figure 6-1, the corresponding functions of each display area are as follows:

 : Main stitch setting area; used to display and modify the pattern and stitch number of the main stitch.

 : Sewing mode switching area; used to switch the sewing mode and switch the programming program.

 : Front fixing/tacking stitches setting area; used to display and modify the pattern and number of stitches of the front reinforcement.

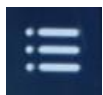
 : Rear fixing/tacking stitches setting area; used to display and modify the pattern and number of stitches after reinforcement.



: Fixing/tacking stitches setting area; used to set the number of front and rear reinforcement seam stitches.



: Screen lock setting area; used to set screen lock and unlock.



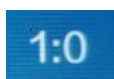
: Function menu area; enter the setting menu.



: Trigger mode.



Thread trimming count and bobbin thread count switching area; used to switch thread trimming counter and bobbin thread counter.



Bottom thread count and thread trimming count display area; used to display the corresponding upper limit of the count and the current count value information.



Speed setting area; used to display and modify the sewing speed of the main stitch of this section.



Thread trimming function setting area; you can control the thread trimming function switch.



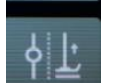
Needle stop position setting area; you can set the stop needle position or stop needle position.



Sweeping thread suction mode; can control the switch of sweeping thread suction function.



Soft start button.



Presser foot lifting mode control area; you can raise the presser foot after thread trimming, stop lifting the presser foot midway, raise the presser foot after trimming and midway stop, and switch between four modes without lifting the presser foot

after thread trimming and midway stop.



Emergency stop mode.



Parameter enter button.



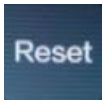
Program control mode entrance.



Corner mode entry, used to set corner related parameters.



User login entrance.



After modifying the parameters and saving, long press this key to restore the parameters to before modification

6.2 PLC program control mode

It can be entered in the main interface or corner mode, as shown in Figure 6-2 and Figure 6-3.



Figure 6-2

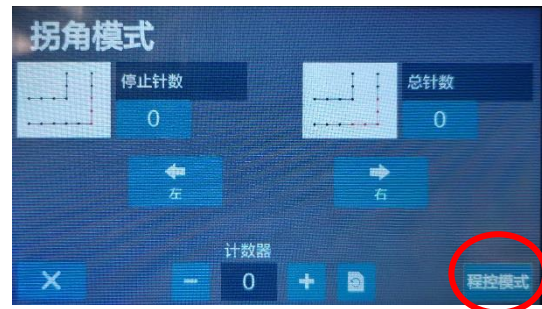
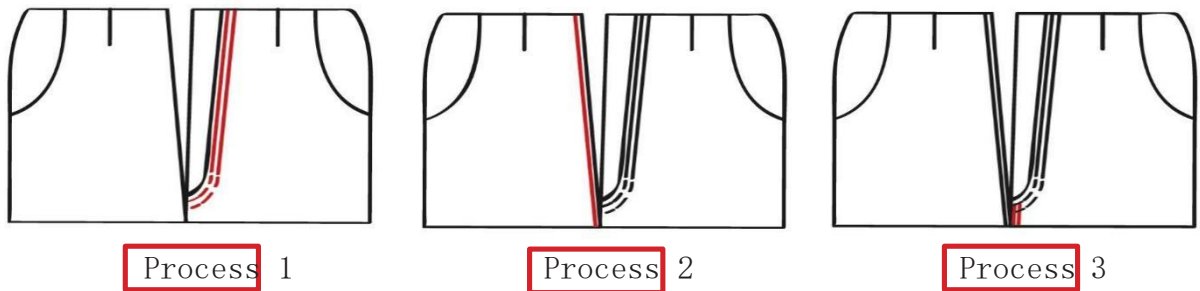


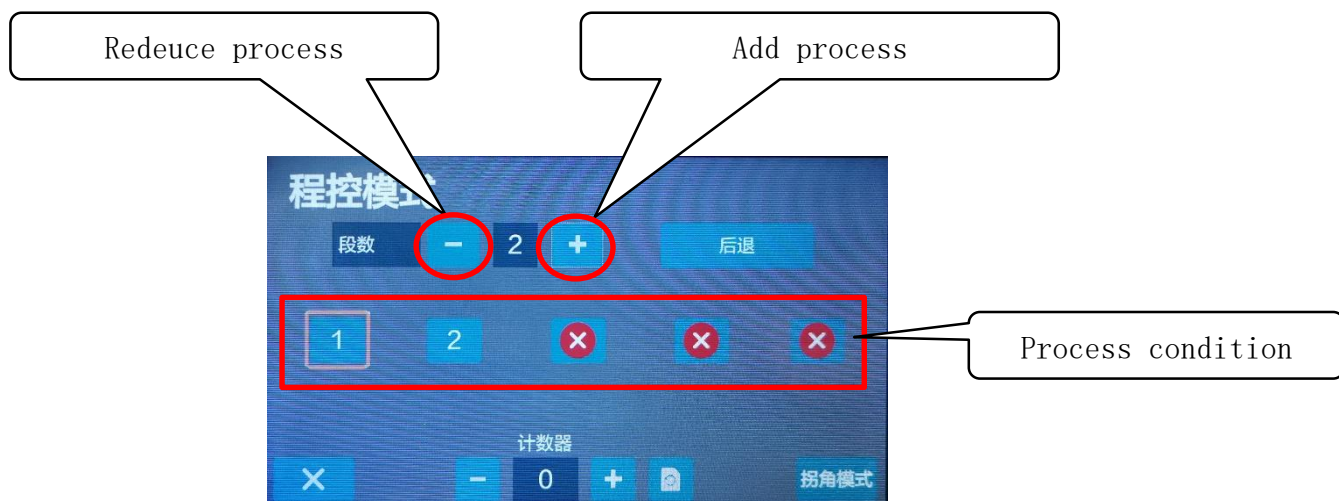
Figure 6-3

In the PLC program control mode, single and double needles can be switched for sewing up to 5 processes (steps), which significantly reduces wasted time.



6.2.1 Process adjustment

Use the button "+" or "-" at the top of the display to increase or decrease the number of processes. When performing this step, the middle button can be enabled/disabled.



6.2.2 Select the needle in each process

Single/double stitch sewing can be selected in each process. To switch the number of stitches for sewing, press the corresponding icon on the display to switch between numbers 1-2. This value indicates the number of needles used in sewing the process.



6.2.3 Select the previous process

You can return to the previous process by pressing the "Back" button.



Return to the previous process

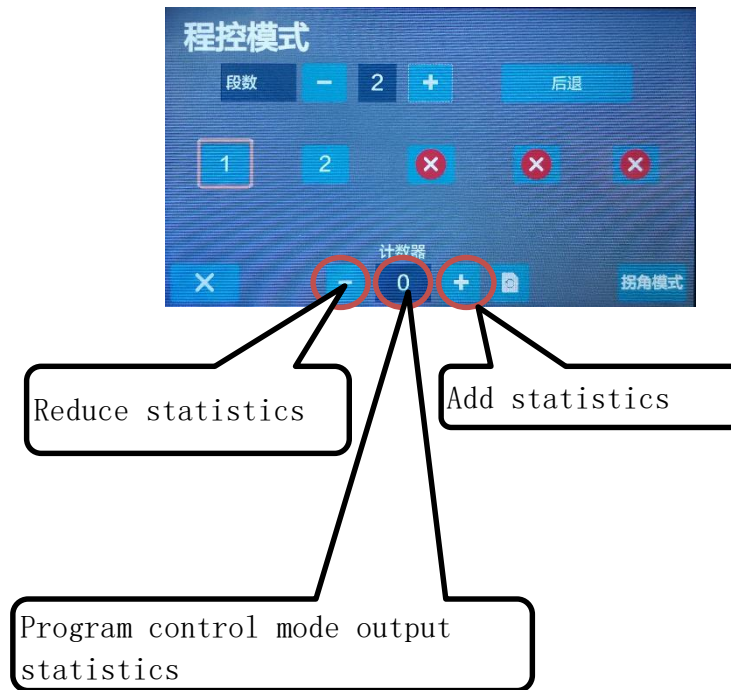
6.2.4 Program control mode lock

When the machine executes the work cycle (in the program control mode), this icon is displayed on the screen, indicating that no modification can be made to the previously set value.



6.2.5 Program control mode output count

The machine can help users count the output. In the case of abnormality or user error, the statistical quantity can be changed by pressing the +-button.



6.2.6 Program control mode output counter reset

The statistics can be cleared to zero by pressing the button shown in the figure. The user clears the value before each production (for example, at the beginning of each working day) to facilitate statistics on the production of the day.



6.3 Corner Mode

This mode can sew right-angle stitches, which is an ideal tool for sewing corners, pockets, and pocket covers. In addition, any needle can be selected for sewing during the sewing process



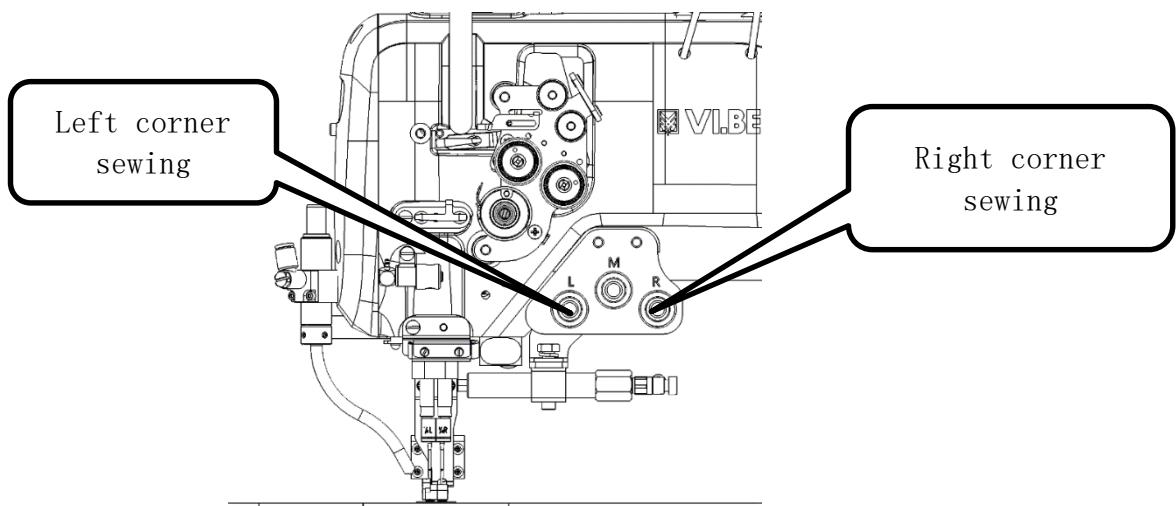
In the main screen that appears, choose right or left for angle seam. It is possible to set the number of stop stitches before turning and the total number of stitches in the turning process.

(1) After selecting the left or right angle seam, the number of stitches to stop sewing before the corner

(2) The total number of stitches in the cornering process



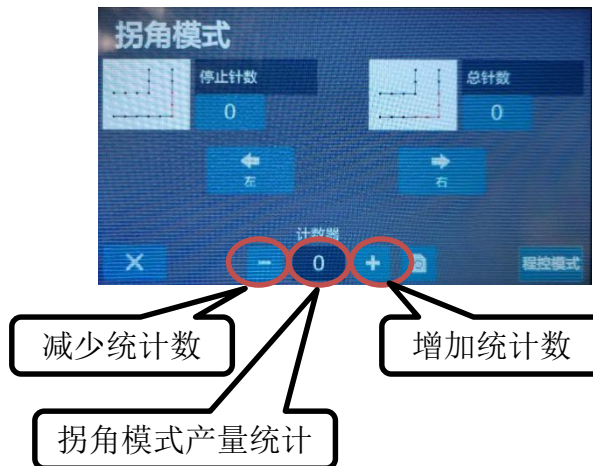
Only when the user manually selects the left/right corner sewing through the two buttons in the figure below, the machine program will start to count the number of stitches.



6.3.1 Corner mode output count

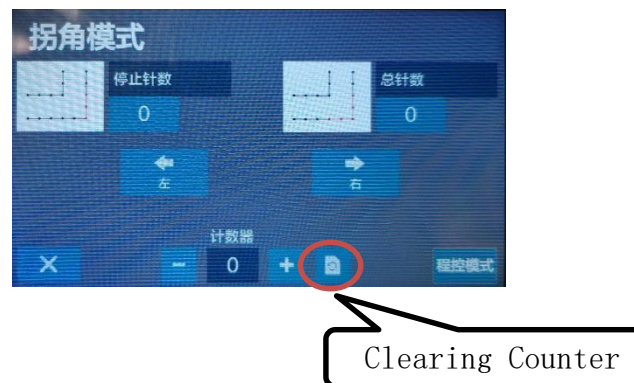
The machine can help users count the output.

In the case of abnormality or user error, the statistical quantity can be changed by pressing the +/-button.



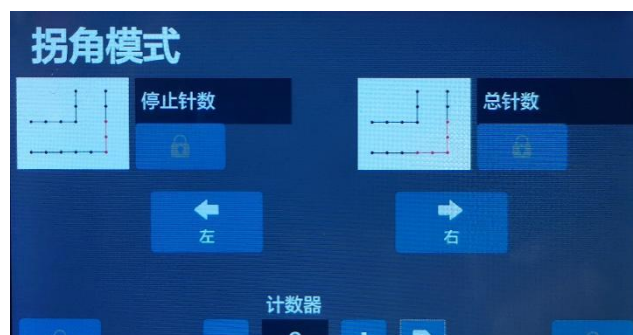
6.3.2 Corner mode output counter reset

The statistics can be cleared to zero by pressing the button shown in the figure. The user clears the value before each production (for example, at the beginning of each working day) to facilitate statistics on the production of the day.



6.3.3 Corner mode lock


When the machine is performing a work cycle (in corner mode), this icon is displayed on the screen, indicating that no modification can be made to the previously set value.



6. 4 P-level parameter setting

The P parameter setting enters as shown in the Figure. On the system standby interface, press the button to enter the P parameter interface.



In the parameter number input box at the top, enter the parameter number to be viewed, and click the View button  to display the parameter value corresponding to the parameter number in the updated value box at the bottom.




In the parameter setting interface, click the  button to clear the data, re-enter the value to be changed, and click the  button to implement the parameter setting. The specific parameter definitions are shown in Table 6-1.

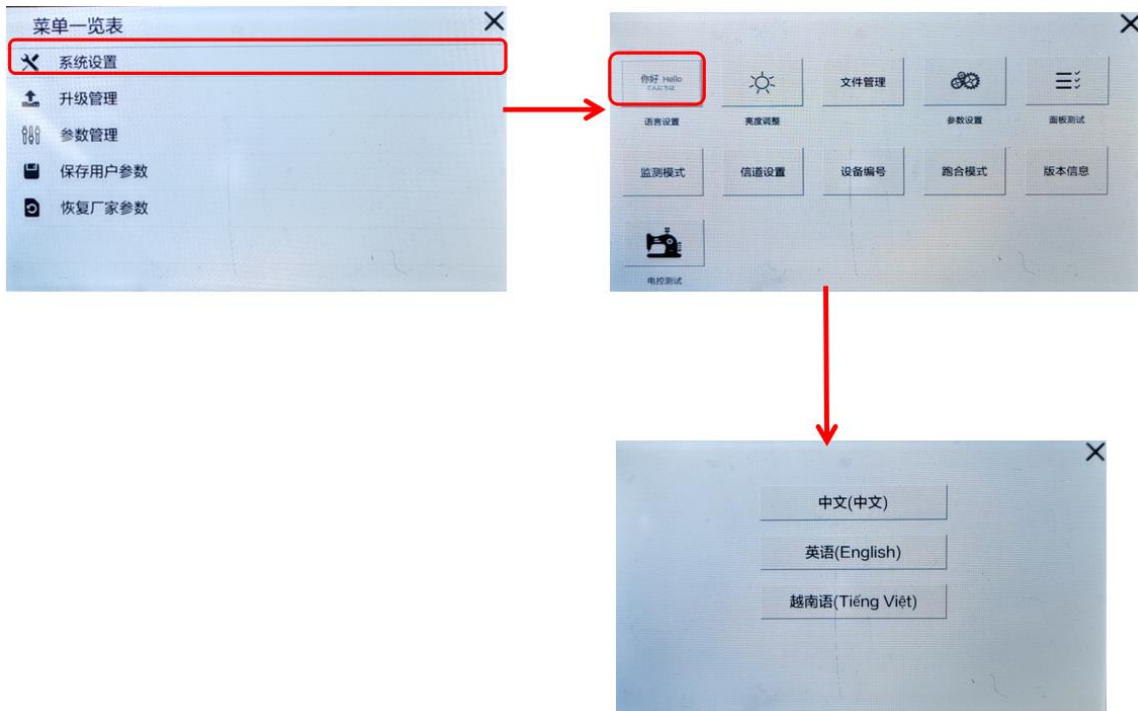
Table 6-1 P Parameter

No.	Factory Value	Value Range	Description of Parameter
P01	2700	200~3000	Free stitch maximum speed (global maximum speed limit)
P03	0	0 / 1	Up and down stop needle selection (0: for lower stop needle; 1: for upper stop needle)
P04	1500	200~3000	Front reinforcement speed
P05	1500	200~3000	Back reinforcement speed
P06	1500	200~3000	Continuous back to seam speed (W seam)
P07	0	0-720	Loose wire solenoid start angle LS (relative to the lower needle position angle) (after the motor runs to the target angle, open the thread clamp solenoid)
P09	0	0 / 1	Slow sewing start switch (0 is off, 1 is on)
P15	0	0 / 1 / 2	Button compensation mode: 0: press the time control; 1: fill half a needle; 2: fill a needle
P16	30	1-3000	Adjust the response time, the corresponding time after the induction presser foot detects that there is cloth
P17	800	0~9999	Sensitivity setting of auto-sensing presser foot lift (between the maximum and minimum values displayed by parameter 02C)
P18	62	1~120	Front fixed stitch stitch compensation 1 (pull-in compensation) (the parameters of the front reinforcement stitch and the continuous return stitch are the same as JACK P32)
P19	27	1~120	Front fixed seam stitch compensation 2 (release compensation) (The parameters of the front reinforcement seam and the continuous return seam are the same as JACK P33)
P22	800	0~9999	Threshold value of reverse stitch closing when stitching
P24	80	0~1024	Pedal trimming position



P25	62	1~120	Back reinforcement stitching compensation 1
P26	27	1~120	Back reinforcement stitching compensation 2
P27	0	0-3	Presser foot induction mode selection (0-2) 0 is off, 1 is effective after thread trimming, 2 is effective
P30	0	0~31	Motor low-speed afterburner function switch: 0: normal function 1 ~ 31: Low-speed afterburner capacity
P31	50	10-199	Thread trimming augmentation coefficient (motor augmentation)
P32	50	1~500	Full output time of clamped solenoid
P33	1	0~100	Closing electromagnet closing time per cycle ms (clamping force)
P37	1	0~100	Opening time of wire clamp solenoid per cycle ms
P45	1	0~100	Turn-on electromagnet opening time per cycle ms
P46	1	0~100	Reverse seam solenoid closing time per cycle ms
P47	360	60~360	Pull back after thread trimming (can realize the function of trimming and pulling back)
P49	180	100~500	Trimming speed
P50	50	1~500	Lifting foot electromagnet full output time ms
P51	1	0~100	Opening time of electromagnet of lifting foot per cycle ms
P52	100	1~800	Presser foot delay time (ms)
P53	4	0-30	Definition of output function 3 (presser foot)
P54	1	0~100	Lifting foot electromagnet off time per cycle ms
P56	1	0 / 1	Automatically find the needle position after power on: 0: Not found 1: find
P57	0	0~600	Lifting foot electromagnet protection time 100ms
P60	2700	200~5500	Maximum speed of fixed-length sewing (automatic test speed)
P62	0	0 / 1 / 2 / 3/4	Special operating modes: 0: Operator selection (normal) 1: Simple sewing mode 2: Measure the initial angle of the motor (no need to remove the belt) 3: Calculate the transmission ratio mode (Needle stop sensor is required, and the belt cannot be removed) 4: Automatic test mode 1 (automatic test with stop needle position, run 5S, stop 5S)
P66	2	0-30	Definition of input function of No. 2 electromagnet (function setting of switch button of turntable)
P68	2700	200~6000	Maximum speed limit of machine head
P71	1	0-50	Slow release pressure foot level adjustment, the smaller the value, the faster the release; (overclock open time)
P76	300	1~500	Full output time of reverse stitch electromagnet ms
P78	120	1-359	Angle of starting line
P79	320	0-359	End angle of clamping line

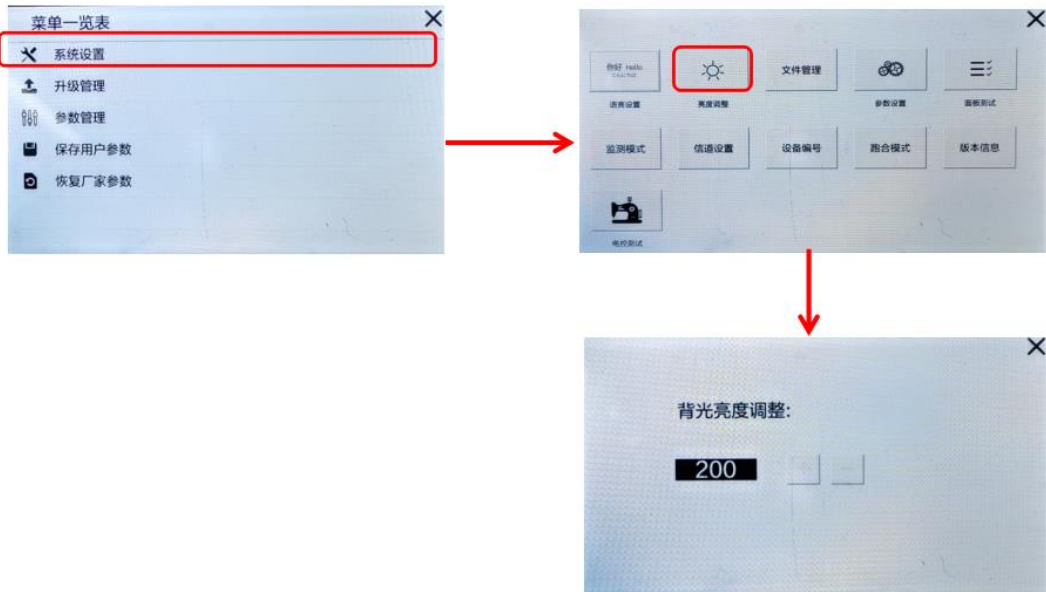
6.5 Language Setting

As shown in Figure, click the main interface button  to enter the menu interface, select the system setting option, enter the system setting interface, press the language setting button under the system setting interface to enter the language selection interface, click Chinese, and restart the system, the system Language switch to Chinese. Similarly, click English or Vietnamese, and restart the system, the system language is switched to English or Vietnamese.



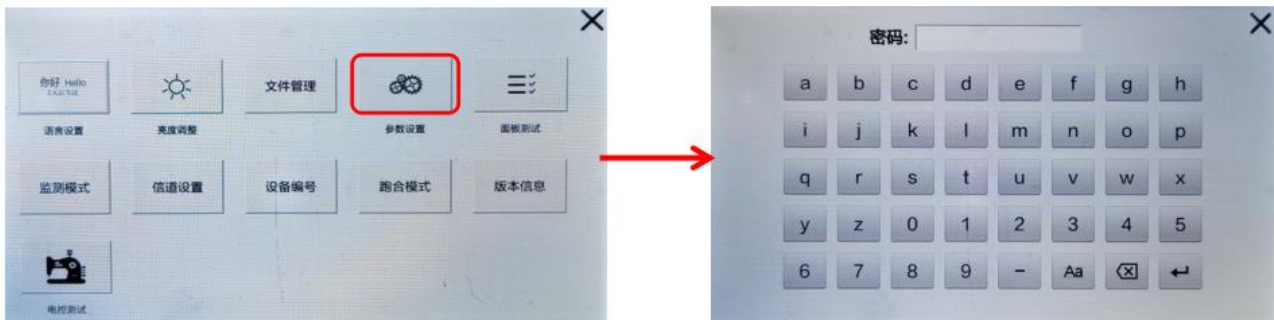
6.6 Brightness Adjustment

As shown in Figure, enter the system setting interface through the above steps, press the brightness adjustment button to enter the brightness adjustment interface, and click the icon on the right   to increase or decrease the screen backlight brightness.



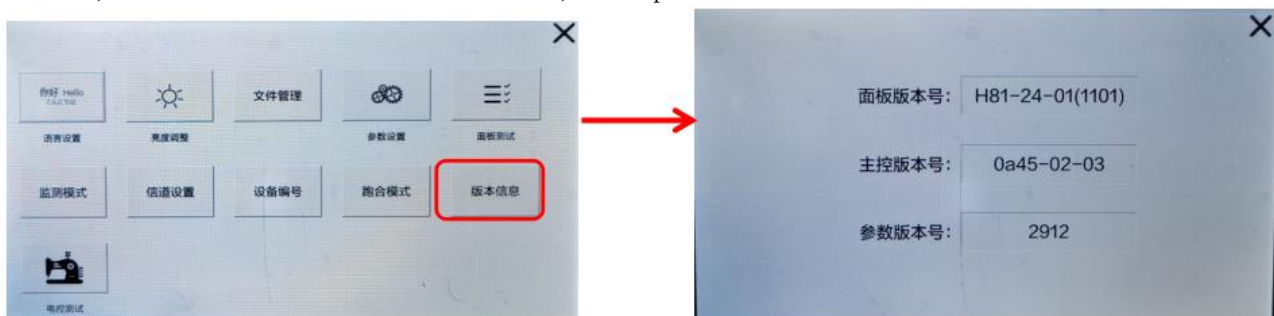
6.7 Parameter Setting

The parameter setting enters as shown in Figure 3-4. Press the parameter setting button to enter the password input interface, enter the password and click the confirmation interface to enter the parameter input interface.



6.8 Version Information

As shown in Figure 3-8, in the system setting interface, press the version information button to view the system version information. The version information includes the version number information such as the panel version number, main control version number, and parameter version number.

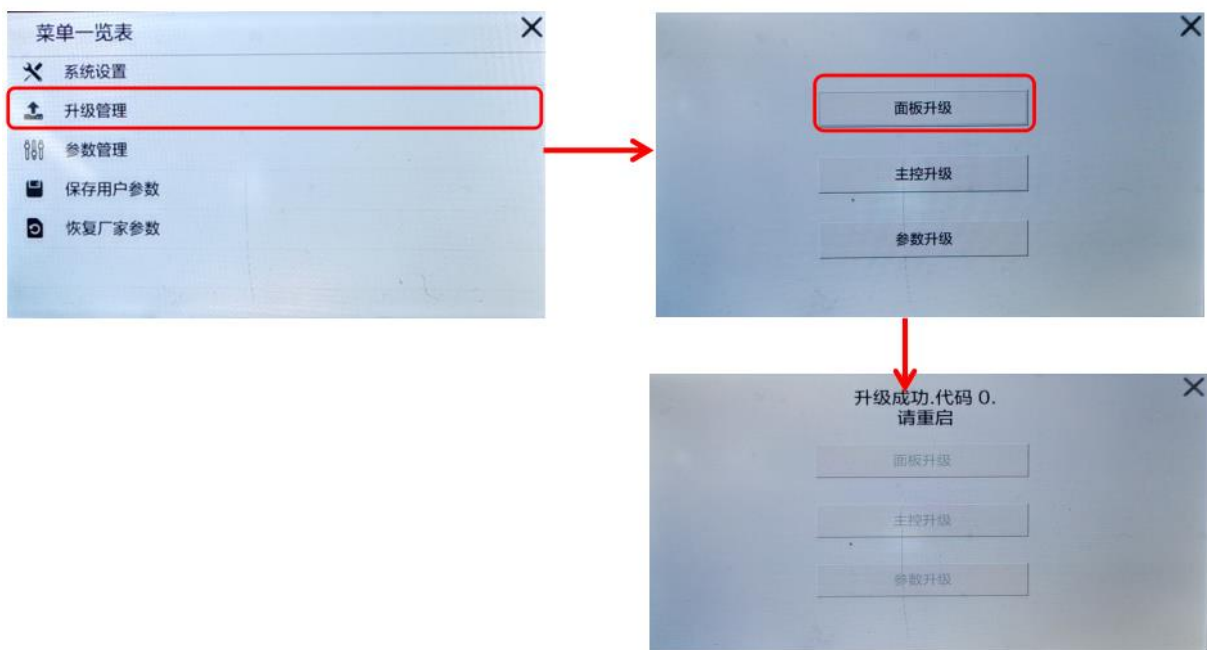


6.9 Upgrade Management

Note: During the process of factory restoration and upgrade, please ensure that the power supply is stable. Turning off the power supply during the upgrade may cause the drive to be upgraded incompletely. Please restart after the upgrade is complete. After the upgrade process fails, please do not continue to use the drive to avoid damage to the machine and personal property damage!

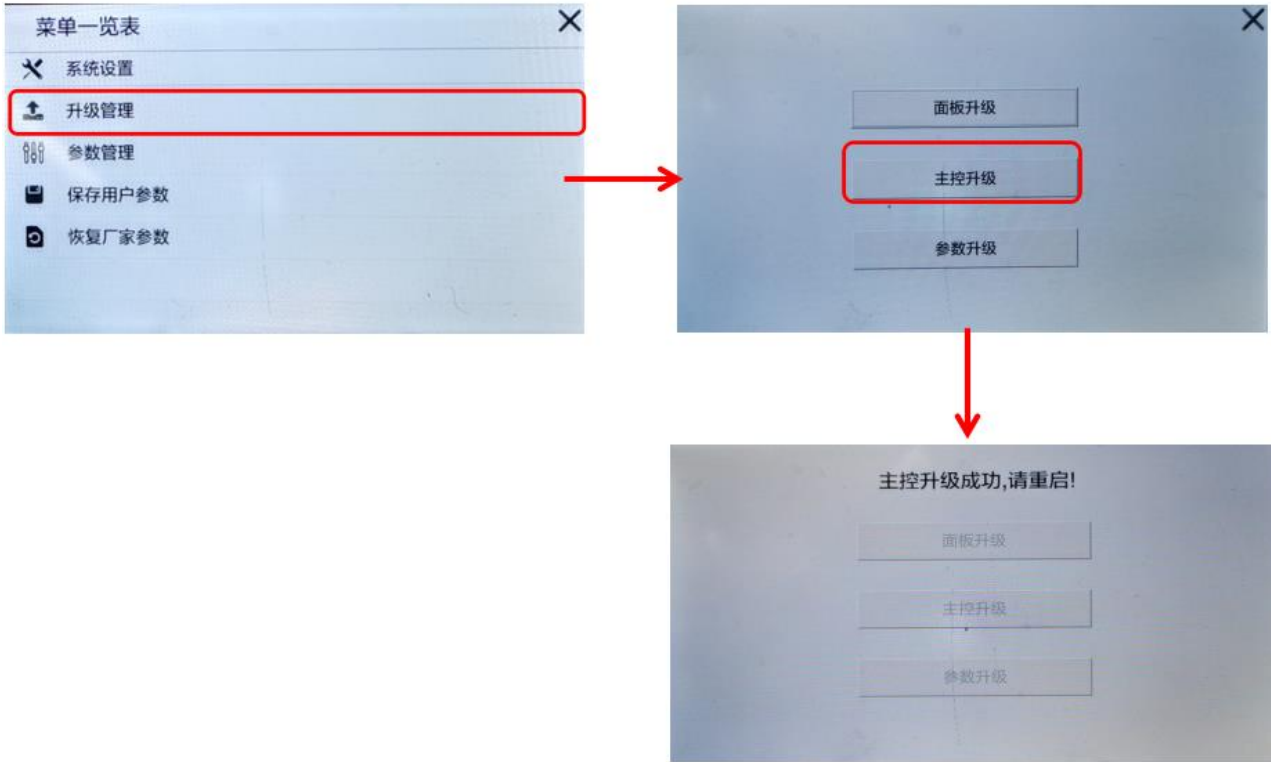
6.9.1 Panel upgrade

The 2250 double-needle machine provides a panel upgrade function. The panel upgrade package format is a Release.tar-type compressed package file. Copy Release.tar to the root directory of the U disk, insert the U disk into the USB socket of the operation panel, click Figure 5-1 In the HMI upgrade button, please don't cut off the power supply at this time. After about 20 seconds, the panel has been upgraded, and the new version of the program will be restarted.



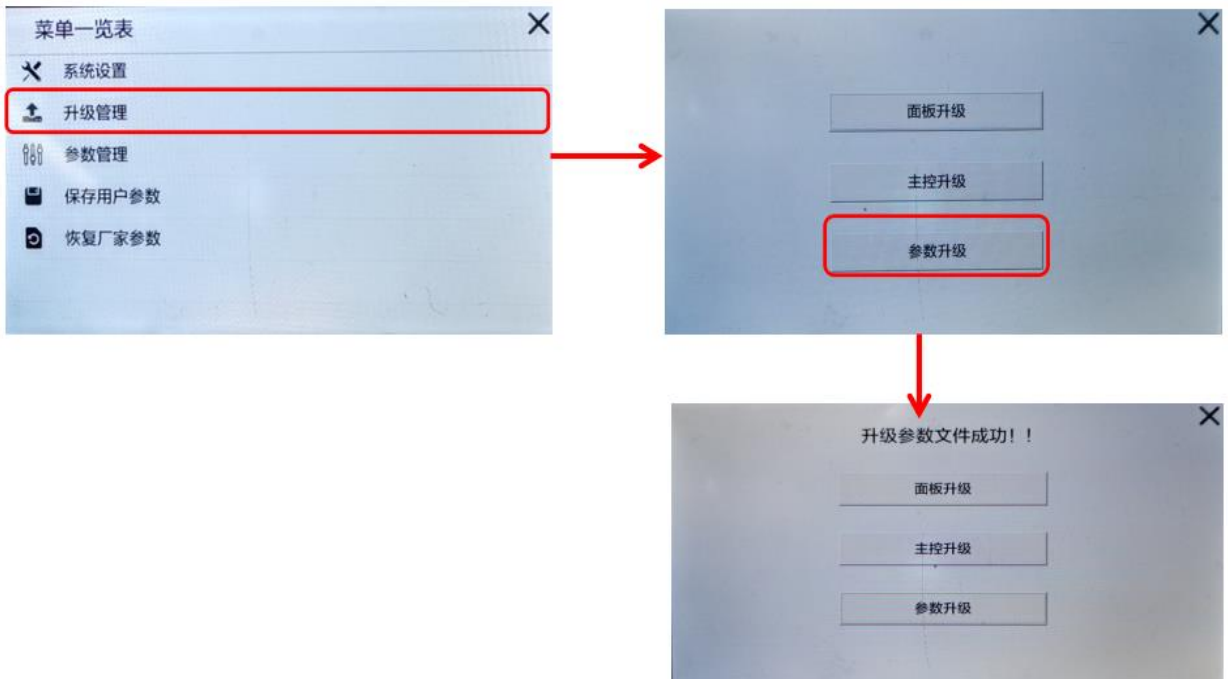
6.9.2 Main Control Upgrade

The 1591 High Posted Sewing Machine provides the main control upgrade function. The main control upgrade package format is a XXX.hex type file. Copy XXX.hex to the root directory of the U disk, click the main control upgrade button in Figure 5-2. Do not cut off the power. After about one minute, the main control upgrade is successful. After restarting, it is the latest version of the program.



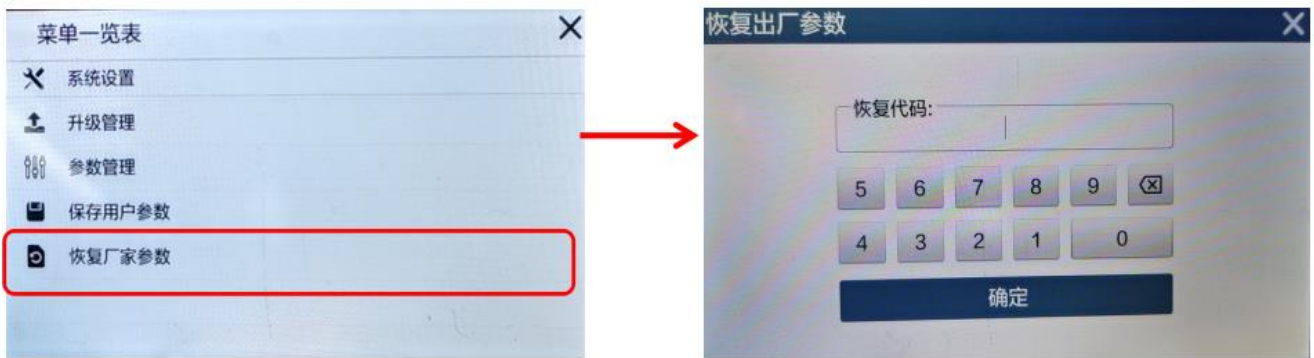
6.9.3 Parameter Upgrade

1591 Roller car provides parameter upgrade function, the development and maintenance personnel will provide a parameter package for upgrade, as shown in Figure 5-3, click the parameter upgrade to complete the corresponding function.



6.9.4 Restore Factory Parameter

The manufacturer recovery function is used to restore the current parameters to the saved custom parameters. Click the button to enter the interface, enter the corresponding recovery code, and click the confirm button to start the recovery process.



Note: After restoring the factory settings, be sure to reset the needle stop position of the machine.

7、 Solution for Fault

Table 7-1 Common faults and solutions

Classification	Fault Display	Solution
Recoverable fault	Power Cut Down	No need to deal with the prompt after the system is powered off.
	Safety Switch	Check whether the safety switch is in good contact and whether the machine head is overturned.
Electricity Failure	Underload Stop	Check whether the power input is normally connected to 220V AC power.
	Overload Stop	Check whether the power input is normally connected to 220V AC power.
	Underload Running	Check whether the power input is normally connected to 220V AC power.
	Overload Running	Check whether the power input is normally connected to 220V AC power.
System Error	Solenoid Circuit Failure	Check whether there is a short circuit in the output wiring of the electromagnet, unplug the electromagnet interface and restart the power. If the fault alarm still exists, please contact the dealer for after-sales service.
	Brake Circuit Failure	Restart the power supply, if the fault alarm still exists, please contact the dealer for after-sales service.
	Quartz Crystal Oscillator Failure	Restart the power supply, if the fault alarm still exists, please contact the dealer for after-sales service.
	CPU Overheating	Restart the power supply, if the fault alarm still exists, please contact the dealer for after-sales service.
Communication Failure	Serial Port Abnormal	Restart the power supply, if the fault alarm still exists, please contact the dealer for after-sales service.
	Feed Motor Communication Failure	
Storage Failure	Flash Read Error	Restart the power supply, if the fault alarm still exists, please contact the dealer for after-sales service.。
	Flash Write Error	
	Flash Check Error	
	Eeprom Read Error	
	Eeprom Write Error	
	Eeprom Check Error	
Servo motor failure	Servo Overcurrent	Restart the power supply, if the fault alarm still happens frequently, please contact the dealer for after-sales service.
	Current Detection Fault	Restart the power supply, if the fault alarm still exists, please contact the dealer for after-sales service.

	Stall Fault	Check whether the motor power cord is connected properly and whether the machine is stuck. If there are the first two problems, restart the drive after removing the fault. If the fault alarm still exists, please contact the dealer for after-sales service.
	Head Positioning Error	Check whether the magnet of the head locator has fallen off. If the problem is eliminated and the power is restarted, the fault alarm still exists.
	Initial Angle Detection Failure	During the process of detecting the initial angle, please check whether the motor power cord is connected or whether the mechanical structure has been stuck.
	Hall Fault	Check whether the optical servo cord of the spindle servo motor is connected well. If the problem is eliminated and the power is restarted, the fault alarm still exists. Please contact the dealer for after-sales service.
Warning	Shortage Of Oil	Check if the amount of oil is sufficient
	Out Of Maintaining Period	When the running time of the machine head reaches the maintenance time, contact the after-sales service for maintenance as soon as possible