

ENGLISH

**PS-900 Panel operation
INSTRUCTION MANUAL**

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Chapter I Introduction to Control System

1.1 Overview

Thank you very much for using the automatic template sewing machine control system of our company!

This system can match with the various types of template machine, satisfying different sewing requirements with satisfactory sewing effect for all sorts of cloth!

Before using, please read the Instruction carefully to ensure the correct use of this system.

Please keep the instruction appropriately in order to check at any time.

In case of discrepancies between actual machine and this Instruction due to different machine configurations and software update, the operating functions shall prevail.

1.2 Functional Description

(1) One machine with multi-purpose, simple operation

Full automatic template sewing machine can replace many kinds of special machinery such as traditional flat sewing machine, long arm sewing machine, bartack sewing machine, embroidery machine, etc. in certain circumstances to achieve multi-usage

After placing the template well, the operating personnel only needs to press the start key, automatic processing can be completed, the operation is quite simple

With standardized operation; the machine can work out amazing effects for a variety of stitches and a variety of fabric!

(2) The man-machine interface is friendly and easy to use

7 inches color LCD touch screen, with clear display, easy to touch

Support display in Chinese, Vietnamese, Korean, Japanese and English

Up to 256M (or 128M) file storage space, to store and process many files

Convenient file Collection (template making), modification, management functions

(3) Precise motion control technology with efficient sewing

Using international advanced DSP chip, fast system run speed, high hardware integration, stable performance

Support step-by-step, closed loop step-by-step, brushless DC, servo drive, using smooth curve for speed governing, smooth operation

Compact mechanical structure, good rigidity, high sewing position precision, low noise

(4) The upper computer graphics editing software is easy to use

Such files in dxf, dst, dsb, ai, plt, edi, tzf format that are generated by software such as Auto-cad, Coreldraw are easily converted into processing files

The software has comprehensive graphics editing functions, supports layer editing and adding various kinds of special sewing stitch lines

With common control instruction set, customizable control instruction (functional code), high dexterity of action

For each layer, each graphic, each stitch point, a variety of mechanical control commands can be inserted into, to meet the diversified and precise automatic sewing requirement

(5) Rich user parameter settings, comprehensive auxiliary functions

Detail settings can be carried out for various mechanical actions

Point position, painting line, automatic mold slot opening function of some equipment can be extended

Support automatic identification of template, U Disk system updates, broken threads detection, continue sewing in power down, processing statistics, forecast for lack of bobbin thread, system self-test, parameter backup and recovery, encryption lock machine...

1.3 Notes

1.3.1 Safety Instruction

In order to avoid the possible risk and prevent damage to the device, please observe the following safety matters:



Note:

- Please don't carry out maintenance and debugging to electric system by non-specialists, this will reduce the safety performance of equipment, enlarge the fault, and even cause harm to the personnel and property losses.
- Some parts inside the case have high pressure; after the system is powered on, please do not open the case cover, in order to avoid accidental injury.
- Please do not pile up sundry around the control box, and in the process of using; remove dust on the surface of control box and the filter regularly, so as to keep good ventilation for the system, which is good for heat dissipation.
- Without authorization of the company, please do not make any change to the product arbitrarily, and the company shall not hold any responsibility for the consequences!



Warning:

- **If it really needs to open the case cover, it must be carried out 5 minutes after cutting off power and guided by professionals to contact components inside the electrical cabinet!**



Danger:

- **When the machine is at work, it is forbidden to contact with any moving part or open the control equipment, plug or pull out motor interface, otherwise it may cause personal injury or the machine not to work!**
- **It is forbidden for electrical equipment to work in places with humidity, dust, corrosive gas, flammable and explosive gas, otherwise it may cause electric shock or fire!**

1.3.2 Work Environment

- Solid, level ground installation
- Good ventilation, healthy environment, less dust
- Temperature in work space: 5 to 40 °C
- Relative humidity in work space: 30% to 90% without condensation

1.3.3 Power Supply Requirement

- Single-phase AC220V/50 to 60 HZ
- It needs to be equipped with the voltage regulation equipment when the power grid voltage fluctuation is more than 10%
- Equipment power is between 1.0 to 2.0KW according to different machine configuration

1.3.4 Grounding Requirement

- In order to prevent electric shock or fire accident of electrical equipment due to causes such as electric leakage, over voltage, insulation, etc., please make sure the electronic control with reliable grounding
- The grounding resistance should be less than 100 ohms, conductor length within 20 meters, conductor cross-sectional area greater than 1.0 square millimeters

Chapter II Description of Main Interface

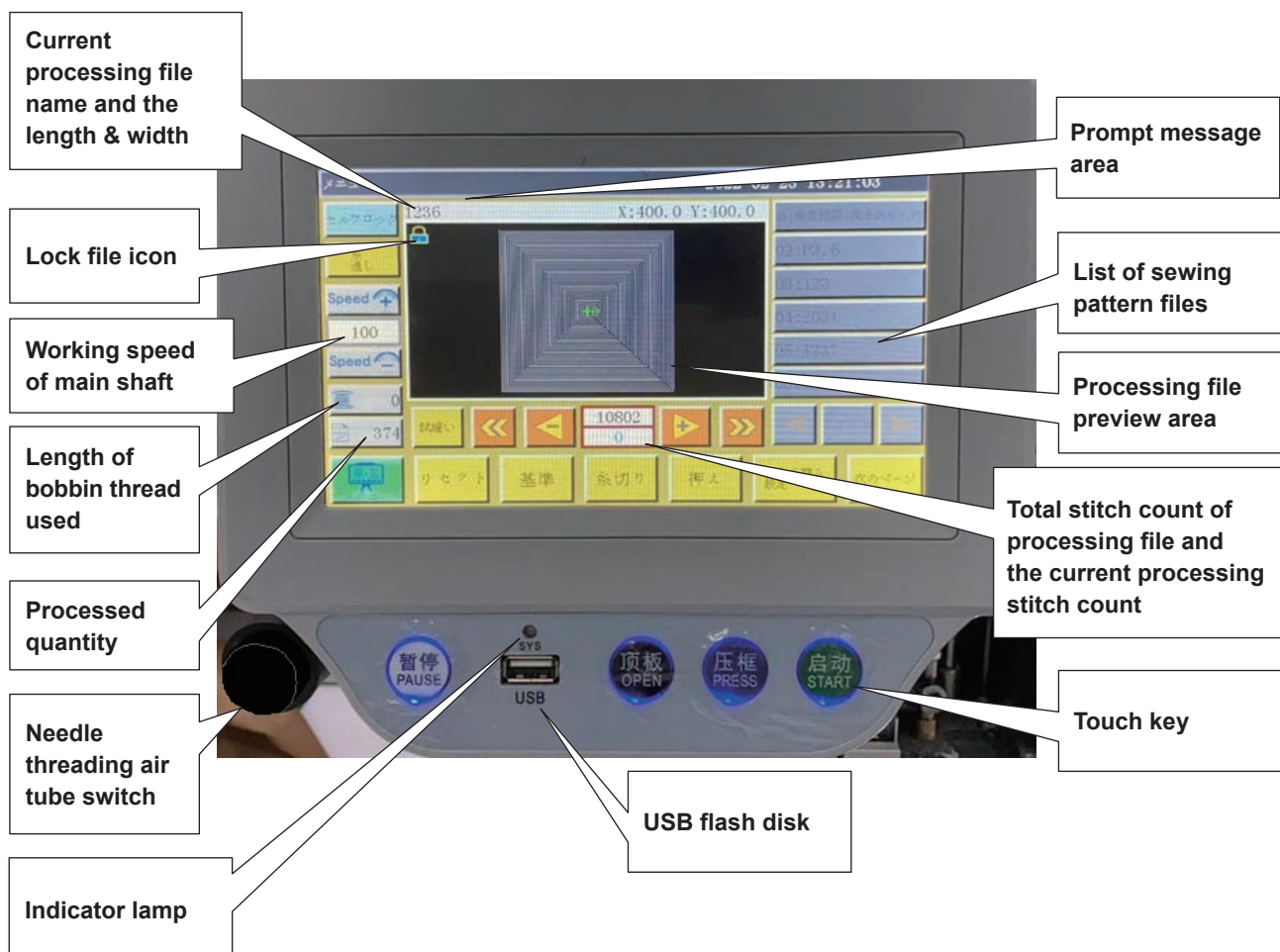
2.1 System Power-up

Upon system power-up, the HMI displays the boot screen, when the main shaft will automatically rotate for testing and reset other parts. The reset action is related to power-up reset parameters setup.

2.2 Main Interface of Processing

2.2.1 Display Instruction for Main Interface of Processing

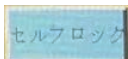
The main interface of processing is automatically activated after the display of boot logo. The main interface of processing is shown below:




Key functions in the main interface of processing are described as follows:

Processing file preview area: Displays the pattern of the currently selected file. Click on this area to switch over the pattern preview mode between the "Full graphic" (the graphic is scaled for optimal display in the preview area) and the "At ratio" (the graphic is displayed using the actual ratio to the processing range). When the processing pattern contains 8,000 stitches or more, only the "Full graphic" display mode is available.

List of sewing pattern files: Displays a list of sewing pattern files. Click on the key to select a pattern.



"Lock file" key: Lock the currently processed file to prevent misoperation. Once a file is locked up, other processing files can't be chosen, when  icon will appear in the preview area. Click once to lock, and click again to unlock.

Note: Automatic template recognition will work only in the locked state of "lock file". The recognized template is displayed in the "prompt message area", and the corresponding numbered file will be automatically selected. If the "template recognition mode" is set to "by file name", electronic label (identifier) will be used to match the file name; if it is set to "by serial number of file", the serial number of file will be matched using a code scanner. For details of the method of using the electronic labels (RFID) and bar codes, refer to the Instruction Manual for the PS-900-13090.



Threading key: Places the sewing machine in the threading state and lowers the presser foot. In addition, the starting operation is automatically locked to prevent accidental startup.



"Acceleration" key: The rotating speed of main shaft increases by 100 rpm. If this key is pressed and held (long-pressed), the speed will increase continuously until the set max speed is reached. Arbitrary change to rotating speed can be prohibited by setting a password.



"Deceleration" key: The rotating speed of main shaft decreases by 100 rpm. If this key is pressed and held, the rotating speed will decrease continuously until the set min. speed is reached. Arbitrary change to rotating speed can be prohibited by setting a password.



Display the current main shaft speed: Click to pop up the "File Speed" setting interface to set the independent speed of the current file. If set to 0, it means no independent processing speed.



"Bobbin thread statistics" key: Show the used length of bobbin thread. Press the key to enter the processing statistics interface.



"Processing statistics" key: Show the finished quantity. Press the key to enter the processing statistics interface.



"Main menu" key Press the key to get into main menu interface.



"Try" key: It is used to simulate the processing process based on graphical trajectory. When this key is depressed, XY axes rotate while the main shaft is stationary.



"Segment fast reverse" key: Manually move back without load to the starting point of the previous continuous curve. Return without load means the main shaft remains stationary while XY axes move. This key is used to preview the designated needle location or start the processing from the designated needle location.



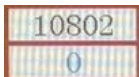
"Segment fast forward" key: Manually move forward to the starting point of next continuous curve, when the main shaft remains stationary.



"Single needle return without load" key: Press the key, and one stitch will retract at single step without load; continuous backward movement is activated when this key is pressed and held.



"Single needle forward without load" key: Press the key, and one stitch will go forward at single step without load; continuous forward movement is activated when this key is pressed and held.



"Total stitch count setup" key: The number in the upper line indicates the stitch count of processing file, while the number in the lower line indicates the current stitch count. Press the key, when the "Jump stitch" setup window pops up.

Note: "Jump Stitch" window description: 0 ... 9 : Number input for set value; CL : The set value returns to 0; + : The set value plus 1; - : The set value minus 1; ← : Delete a digit from right to left; キャンセル : Cancel current modification; 確定 : Confirm current modification;



: Connection with wireless network has been established;



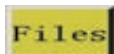
: Connection with cloud server has been established



"Page left" key: Turn the page to the left to view memory files.



"Page right" key: Turn the page to the right to view memory files.



"File" key: View all memory files.



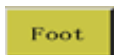
"Reset" key: Press the key, when the shafts start to rotate, while the machine is reset.



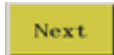
"Reference" key: Press the key to get into XY axes reference point setup page.



Trim key: Press this key to carry out thread trimming.



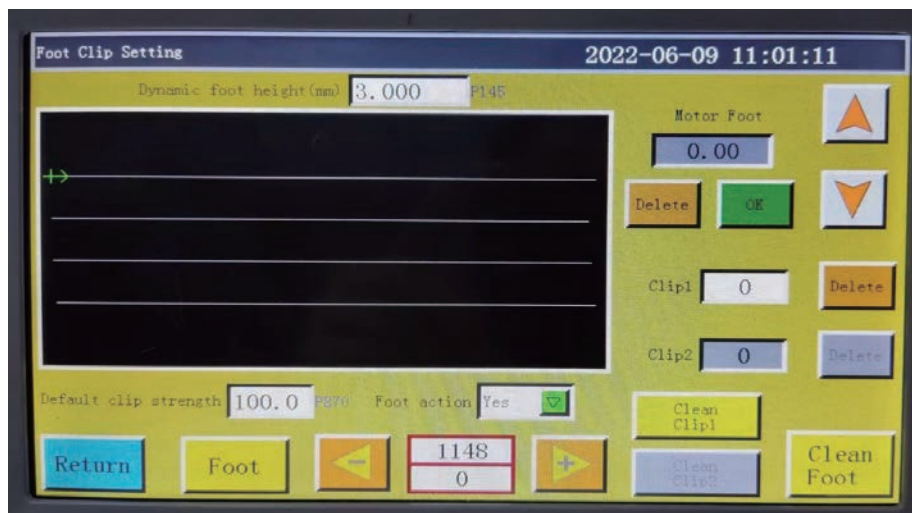
Manual presser UP/DOWN key: Every time this key is pressed, the presser foot status is changed over between lifting and lowering.



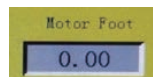
"Next interface" key: Press the key to get into test interface.

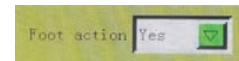


Enter the page for setting the intermediate presser height and the clip strength.

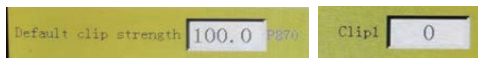


 : Set the intermediate presser stroke.

 **Multi-layered part sewing setting** : Set the height of the intermediate presser when sewing stepped parts of the material during sewing.

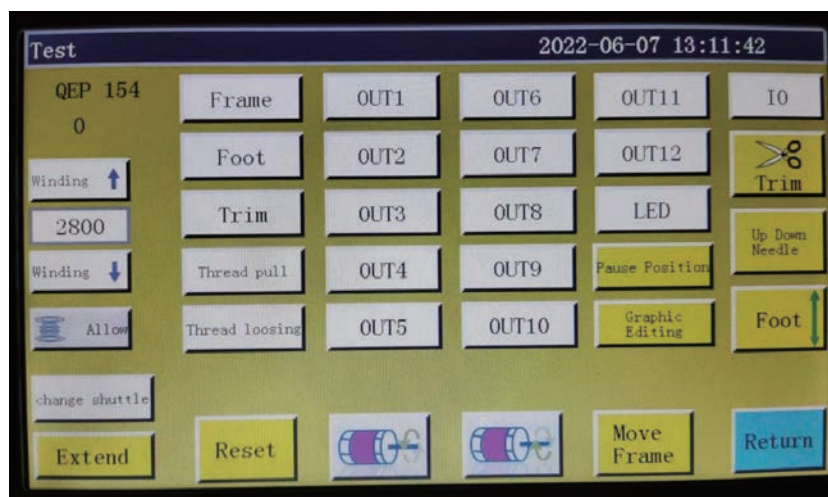
 : Select ON/OFF of the multi-layered part sewing for the pattern that includes the multi-layered part sewing setting.

 : Setting of the multi-layered part sewing is cleared.

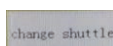
 : Refer to "Method of using the AT" in the Instruction Manual for the PS-900.



2.2.2 Test Interface Display Description

Bobbin thread winding and other manual operations can be performed in the processing assist interface.

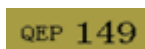


Key functions in the assist interface are described as follows:


 **Auto hook change:** If the machine is designed with "auto hook change" feature, signal will be output for rotating hook change when the key is depressed.

 **"Bobbin thread winding on/off" key:** Press the key to switch between "allow" and "prohibit". Activate "Allow" and press the "Start" switch to start the winding operation, when the main shaft will wind the thread at the speed set in this page. The winding will stop if the start switch or  is depressed again or the set winding time elapses. "Prohibit" means thread winding is prohibited.

 : Show current rotational speed of main shaft.

 : Show current angle of main shaft (0-999).

 : Set the winding speed of main shaft.

 **"Main shaft REV" key:** Press the key, when the main shaft starts to reverse and move slowly.



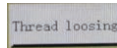
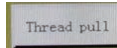
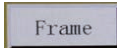
“Main shaft FWD” key: Press the key, when the main shaft starts to rotate forward slowly.



“Needle rod up/down” key: Press the key to switch between upper position (the highest point of needle) and lower position (the lowest point of need).




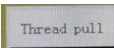
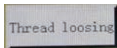
“Trim” key: Press the key, when the machine sews one stitch to realize a complete trim operation.

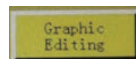


: Press the key, when the corresponding output is turned on; lift the key, when the output is turned off.

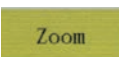
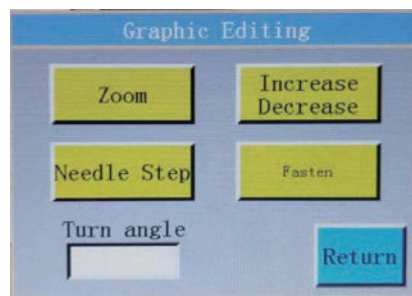


: Press the key, when the corresponding IO output function is always ON; press again to turn off the output. For some electric control, the LED lamp will be always ON.

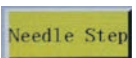
Note: Please don't press and hold the electromagnet control output for long (e.g. , , ); otherwise, the electromagnet connected with this output may get damaged due to overheating!



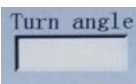
Graphic edit key: Press this key to open the Graphic edit screen. On this screen, scaling, increase/decrease and stitch pitch of the processing file can be set. The interface is as follows



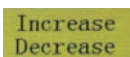
Scaling key: Press this key to open the Graphic scaling screen. On this screen, scaling of the width and length of the processing file is carried out.



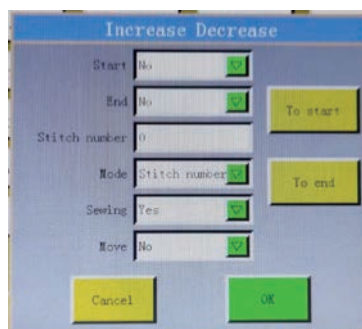
Stitch pitch setting key: Press this key to set the stitch pitch. You can change the stitch pitch of the processed file.



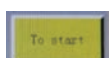
: If the corner of the sewing pattern is equal to or larger than the angle set in this field, the needle bar will rotate immediately before the corner. * This function is provided exclusively for the PS-900.



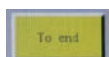
Graphic increase/decrease key: Press this key to open the graphic increase/decrease interface and set the amount of increase/decrease in length of all continuous curves of the processing curves at the same time. The screen is as follows



: Set whether or not increase/decrease in length of each continuous curve is carried out at the start or end of the curve.



: Moves the frame to the starting point of the processing file.



: Moves the frame to the end point of the processing file.



: Sets the increase/decrease mode to allow the selection of the length and the number of stitches.

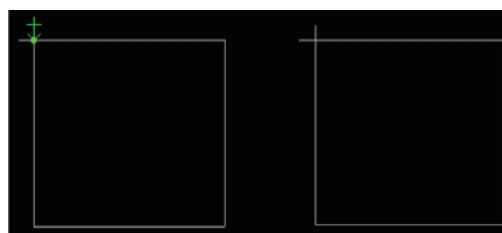
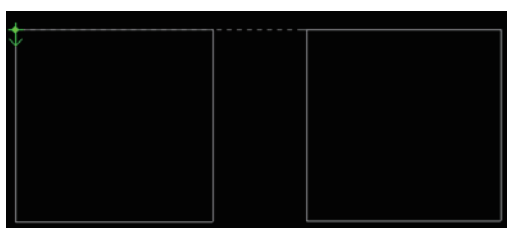


: Sets the length to increase/decrease (in mm) or sets the number of stitches.

When a positive number is input, the curve is extended.

When a negative number is input, the curve is shortened.

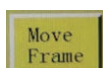
For example, if the stitch length of the current pattern is 3 mm, and the extension is set to 5 mm, the number of stitches of the pattern will be increased by one stitch. (If the extension is set to a value smaller than one stitch length, the setting will be disabled.) When you set as "Start: Yes", "End: Yes" and "Increase or decrease: 9" in the figure at left, the figure will be changed to the figure at right.





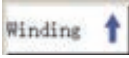

: Enter the pause position interface and insert the "Upper stop" command into the sewing pattern. After you have inserted this command, the "Upper pause" command will be executed during sewing. Then, the sewing machine will move to the automatically-set pause position. As many as six groups of pause positions can be set. Each group of pause positions corresponds to the order of the "Upper stop" commands in the sewing pattern.



"Previous interface" key: Press the key to go back to the main interface of processing.





Manual feed key: Enters the manual feed operation main interface.

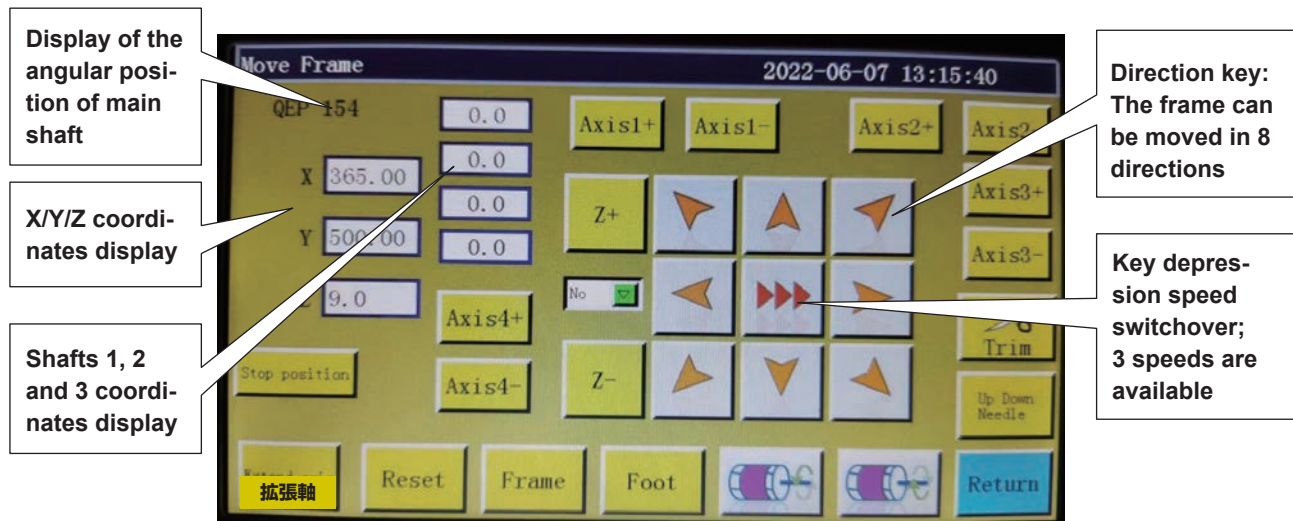
Thread winding: Press touch key “Start” at the bottom of the screen in this interface, and confirm, when the main shaft motor will rotate for thread winding at the set speed, while  key appears at original position of ; click this key to stop winding operation. The winding operation can also be stopped by pressing “Start” and “Emergency stop” buttons. The speed can be regulated through   during winding operation.

 **IO output key:** Enters the IO output interface.




 **Test interface extension key:** Enters the extension interface.


2.2.3 Display Instruction for Manual Frame Movement Interface

Click on  and  successively in the main interface of processing to get into the manual frame movement interface. In the manual frame movement interface, it's possible to move the frame manually and control the rotation of each shaft.





Key functions in the manual frame movement interface are described as follows:


, ,  **“Frame movement speed switching” key:** Click to switch among low, medium and high speeds. Correspond to patterning speeds 1, 2 and 3 in “user parameters”.

 **8 direction keys:** Move in X and Y directions.

“Z+”, “Z-”, “shaft 1+”, ... “shaft 3-”: Rotate corresponding shafts manually; some of the shafts have no effect on certain machines.

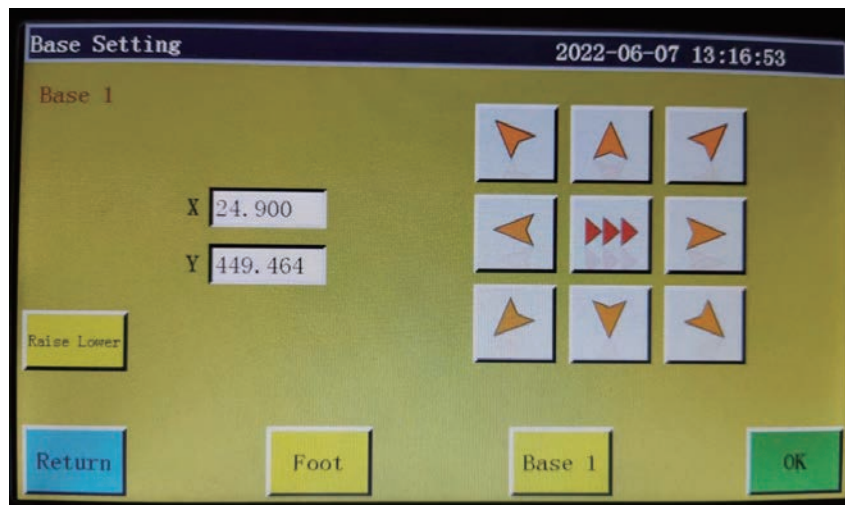
 **Stop position:** The current X and Y coordinates are set to the stop coordinates of X and Y axes after resetting.

 **Up/Down Needle:** Enter the head offset interface for setting the offset position of heads 2 and 3 in relation to head 1. Head 1 is a sewing head. Desired functions such as laser cutting head and brush head can be assigned to heads 2 and 3.

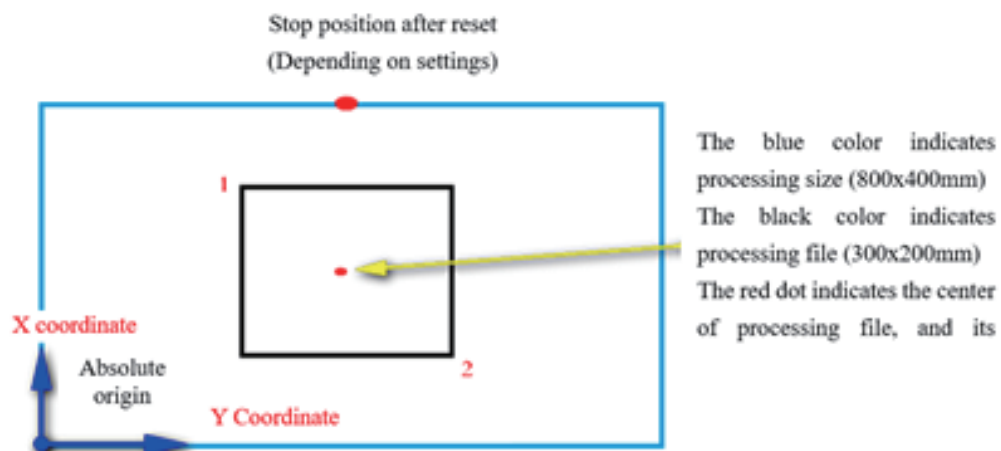
 **“Return” key:** Press the key to return to the previous operation interface.

2.2.4 Display Instruction for Reference Setup Interface

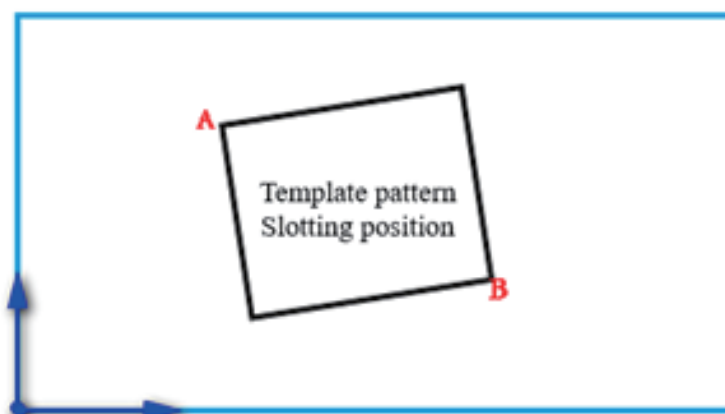
Click **Base** in the main interface of processing to get into the reference point setup interface.
The template reference point can be set in this interface.



Reason for reference point setup: When the processing file generated through the software in upper computer is imported into the memory and previewed for the first time, the system puts the file at the center of the processing range (click the “Processing file preview area” to switch the display mode), and writes this position information into processing file. As shown in the figure below:







The fabricated template is placed on workbench in the position that may be as shown in the figure below:

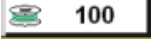



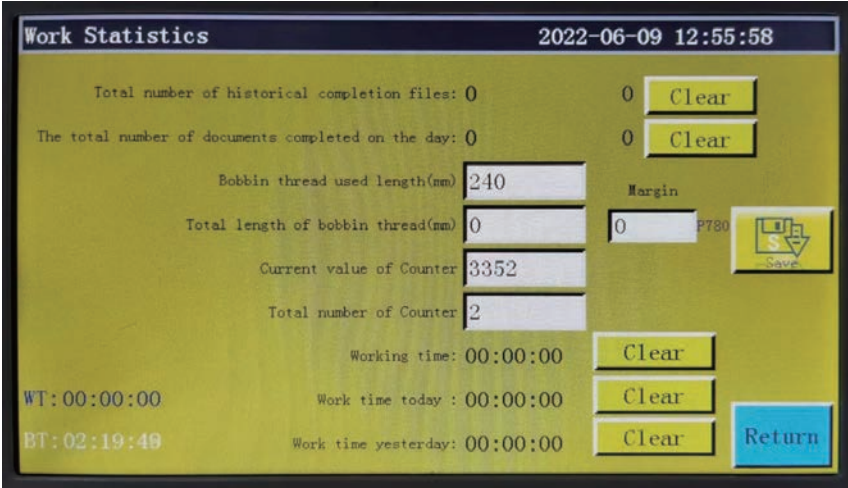
Hence, it's necessary to align reference point 1 with A, and reference point 2 with B. Adjust the position of processing pattern in the system so that it corresponds to the template slotting position.

Detailed steps are as follows:

- 1) Select the file for which the reference point should be set up in the main interface of processing, and place the corresponding template. Click  to enter the reference point setup interface, and the system will automatically move the frame to reference point 1.
- 2) If dual reference points are set up in upper computer software, the upper left corner of the interface will indicate "set up reference point 1". See whether the reference point 1 is located at template slot A; in the case of offset, click the arrow keys to move the point until they coincide with each other.
- 3) Click  to finish the setup of reference point 1. The system automatically moves frame to reference point 2, when the upper left corner of interface indicates "set up the second reference point". Click direction keys to move the frame so that reference point 2 coincides with the position of template B. To return to re-set reference point 1, click  key to switch to reference point 1 for setup.
- 4) Click  to finish the setup of reference point 2, when the system automatically returns to the main interface of processing. The system will write this position into processing file, while the processing preview area pattern will be adjusted to correspond to the position of template. Upon the completion of reference point alignment, additional alignment is not needed as long as you don't modify this file and template. If the upper computer does not set up dual reference points, the sewing start point will be taken as reference point 1 by default, in which case the system will return to main interface of processing after the alignment of reference 1. By setting up system parameters, it is possible that reference alignment is not needed at the first use. Please consult the manufacturer for detailed settings.

2.2.5 Process Statistics Interface Display Instruction

Click  100 or  100 in the main interface of processing to enter the processing statistics interface. In this interface, you can view the processing quantity, time, bobbin thread length and other information.



The interface is described as follows:

Cumulative total number of files completed: Displays the cumulative number of processing files completed up to the present. Click Clear to clear 0.

Total number of files completed by today Displays the cumulative number of processing files completed on the day. Click Clear to clear 0.

Current value on counter: Refers to the total number of processed documents. Each time the processing is completed, it will automatically add 1, which cannot be closed.

Total number on counter: Displays the target number of processing files.

Select "Menu", "User Parameters" and "Statistics Settings" in the written order.

Then, set as follows:

- "Continue work after the counter has reached the target value (P47)" ⇒ No
- "Enable counter setting (P48)" ⇒ Yes

With the aforementioned settings, the sewing machine will stop operation after the current value on the counter reaches the preset total number.

Use length of bobbin thread (mm): Displays the used length of the bobbin thread.

Total length of bobbin thread (mm): Sets the total length of the bobbin thread wound on the bobbin (initial state). When using the bobbin winder, the total length of the bobbin thread can be estimated by the "average bobbin circumference length x number of revolutions x bobbin winding time".

- "Stop operation after bobbin thread has run out (P50)" ⇒ Yes
- "Enable bobbin thread counter setting (P50)" ⇒ Yes
- "Bobbin thread count mode (P779)" ⇒ Default

With the aforementioned settings, an error will be output to stop the operation in the case "(Total length of bobbin thread) - (Amount of bobbin thread used) < (Remaining amount of bobbin thread)".

"Working hours": Show the total processing time. Just count "working..." state time.

"Man-hours of the day": Show the processing time of the day. Click Clear to clear 0.

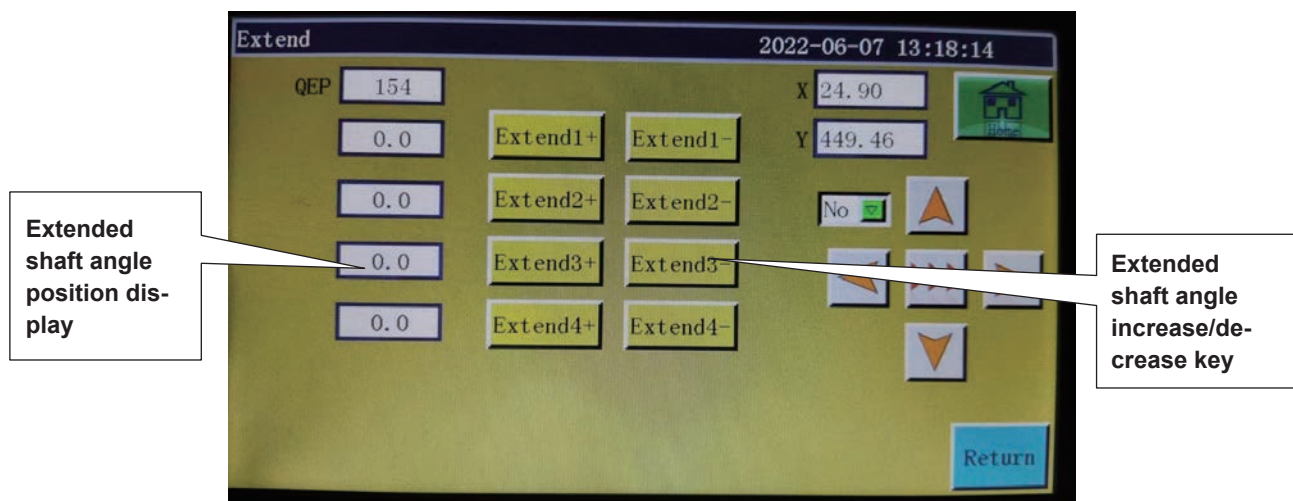
Man-hours of the previous day": It shows the processing time yesterday. Click Clear to clear 0.

WT : Previous operating time (time from power on to off during last use)

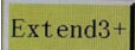
BT : Current operating time (time from power on to off during the current use)

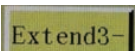
2.2.6 Explanation of display of the extended interface

In the test interface, press  key to enter the extended interface.




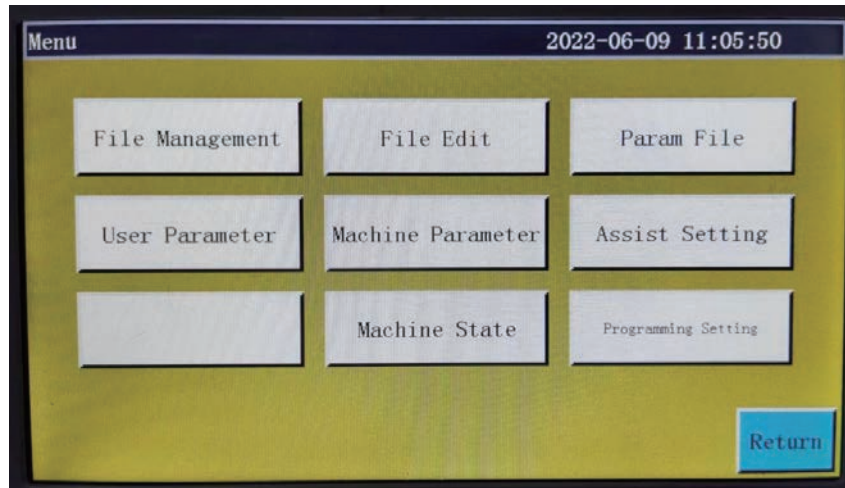
The functions of the Test interface keys are described as follows.

 : Increases the angle of rotation of the needle bar and hook driving shaft saddle.

 : Decreases the angle of rotation of the needle bar and the hook driving shaft saddle.

2.3 Main Menu Interface

Press  key in main interface of processing to enter the main menu interface, as shown in the figure:



File management: Manage, import and export the files in memory and USB flash disk.

File edition: Create new sewing graphics or edit & modify original graphics.

Parameter file: Write parameters into the system, and export system parameters in the form of file; the transfer of files between memory and USB flash disk, etc.

User parameters: The parameters frequently used by user; parameters are adjusted based on processing requirements to realize convenient processing and improve processing efficiency.

Machine parameters: Only accessible to machine assemblers.

Assist settings: Used for processing assist settings and testing, etc.

Network file: (Temporarily unavailable)


Machine state: For remote administration device to report various status of machine for solutions.

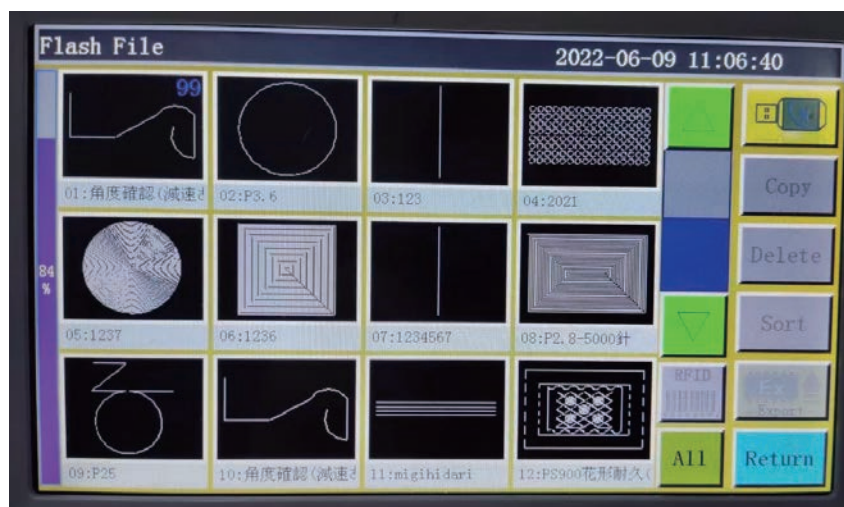
Programming setting: With this button, enter the programming setting interface. Call the programming parameter for the programming software.

Chapter III File Management

File management is performed to import, export and delete files in USB flash disk and memory. The system only recognizes the processing files with extensions .SLW. Processing files are created with PC graphic edition software delivered with machine or through file capture.

3.1 Memory File Management


Press  key in main menu interface to enter file management interface as shown in the figure below:





The system memory can store up to 999 processing files, of which the total size shall not exceed 128M. Support file names in Chinese and English (case sensitive); each file name can consist of up to 15 Chinese characters or 30 characters (the displayed number of characters may vary depending on the interface). In the case of wrong format of processing file or file corruption, no preview is displayed here.


Click to select a file, when the selected file turns red; the selected file shall be handled as needed.

Key description:

 **Copying file:** Copy the currently selected file. File copy can be created by clicking "Copy" and entering the new file name.

 **Deleting selected file:** Delete the currently selected one or more files.

 **Sorting file:** Insert the currently selected one or more files into designated location.

For example, select "002:TEST2", click  , enter "1" into the pop-up dialog box, and click "OK". The file ranks first and turns into "001:TEST2".



“Electronic label (RFID) and barcode write” key: The function is determined by “User parameters” - “Other settings” - “Template recognition mode: By electronic label/barcode”. If the recognition is by “barcode”, it means the processing file is matched by scanning barcode with scanner. Method of binding processing file to barcode: Click this key after selecting the processing file, enter the desired barcode value into the pop-up “Barcode” window, and click OK to return. At this point, the set barcode value is displayed on the graphic. If “By electronic label” is selected, it means the file name in IC card is recognized using electronic label reader so as to match processing file. Method of binding processing file to electronic label: Click this key after selecting the processing file, and click “Yes” in the pop-up confirmation window; when the card reader beeps once, it means the file name has been successfully written into electronic label; at this point, the interface title bar shows that file name. For details of the method of using the electronic labels (RFID) and bar codes, refer to the Instruction Manual for the PS-900-13090.



Select all files: U Select all files under the directory.



Export file: Copy one or more files from the memory into the root directory of USB flash disk. If a file exists with the same name in the USB flash disk, a message will appear reading “The file already exists. Do you want to overwrite it?”




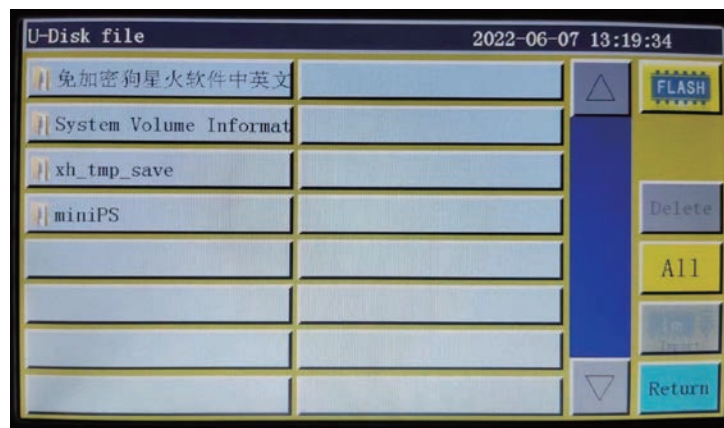
83 % : The current storage space occupancy ratio, through which you can make clear understanding of the storage occupancy.



File in USB flash disk: Click to enter the “U-disk file” interface.

3.2 Management of Files in USB Flash Disk

Insert the USB flash disk, and press  key in memory management interface to switch to the USB flash disk file management interface as shown in the figure:



USB flash disk file management supports up to 15 Chinese characters or 30 characters display. If USB flash disk is accessed through file management, the files and folders in .slw formats under root directory of the USB flash disk are displayed by default; if USB flash disk is accessed through parameter file, the files and folders in .xhp format under root directory of USB flash disk will be displayed by default. Support multi-level folder operation; it is recommended that folders be used for classification management where there are a lot of files. Click to select a file, when the selected file turns red; the selected file shall be handled as needed.

Key description:



Import files: Copy the selected one or more files from USB flash disk to the memory space, and replace the file with the same name (if any).



"Delete" key: Delete one or more selected files.



Select all key: selects all files in the USB flash disk.



Memory file: Click to return to the memory file interface.



"Return" key: Return to the main menu interface or parent folder.

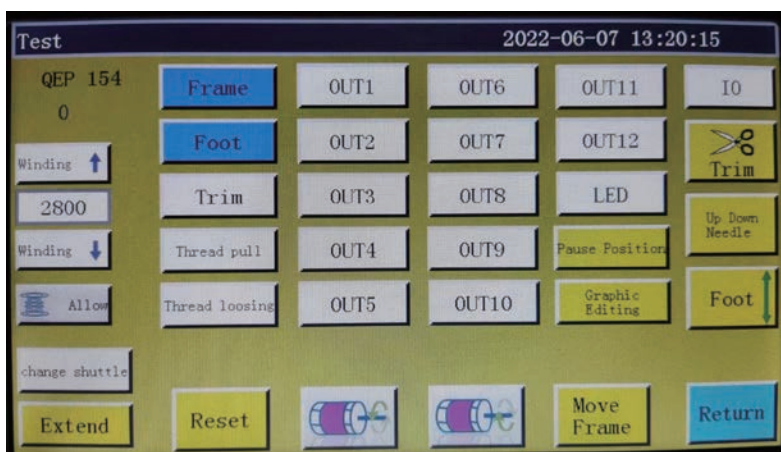
Note: If the processing file in .SLW format can't be recognized or imported, Please upgrade the motherboard program directly to the latest version. See ["7.7 System Upgrade"](#).

3.3 Interchangeability of patterns

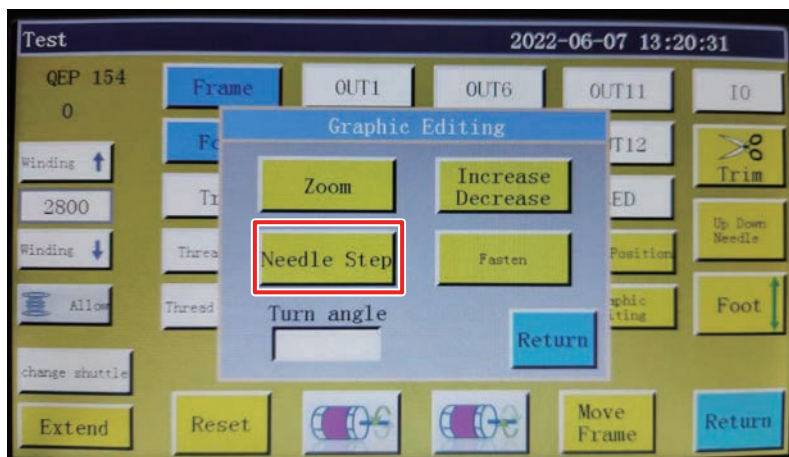
If it is necessary to use a pattern file for the PS-800, use the following method to set it up.

Insert the USB flash disk that contains the target PS-800 pattern file. Then, write the PS-800 pattern file on the operation panel. Refer to "3.2 Management of Files in USB Flash Disk" for how to write the pattern file.

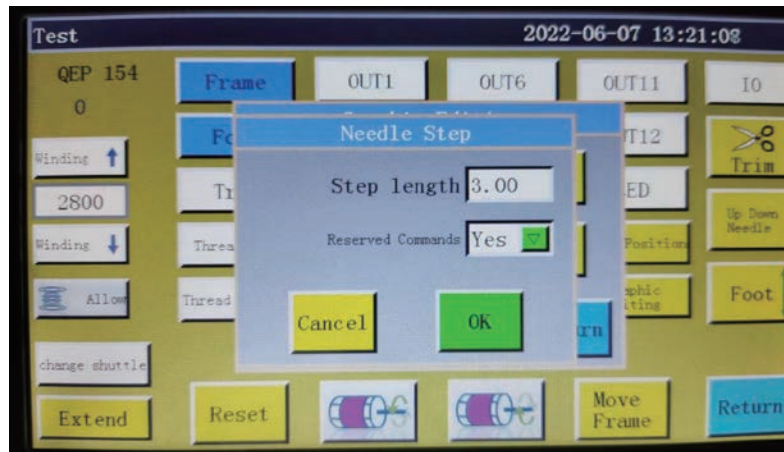
After you have written the pattern file, return to the initial screen. Then, press the "Next" button to open the test screen.



Press the Graphic Edit key to display the graphic edit screen.



Press the Stitch pitch setting key to display the stitch pitch setting screen.

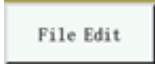


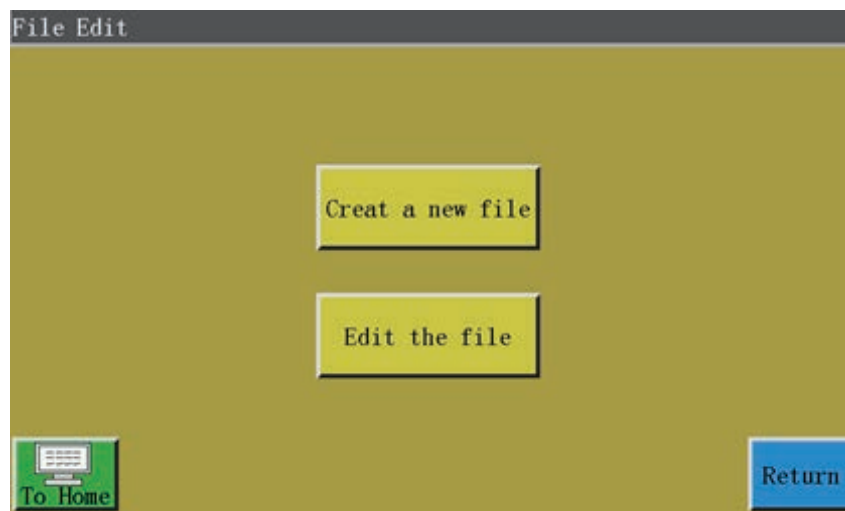
Press the OK key on the stitch pitch setting screen. In order to ensure that the needle bar rotation setting exists on the graphic file, the data has to be saved again.

Chapter IV File Editing


File capture (patterning) is used to create new processing files, or to add sewing paths, etc. to existing processing files. Where it's necessary to create complex and accurate graphics, the included sewing control software is recommended for better results.

4.1 Main Interface of File Editing


Press  key in the main menu interface to enter the main interface of file editing as shown in the figure:

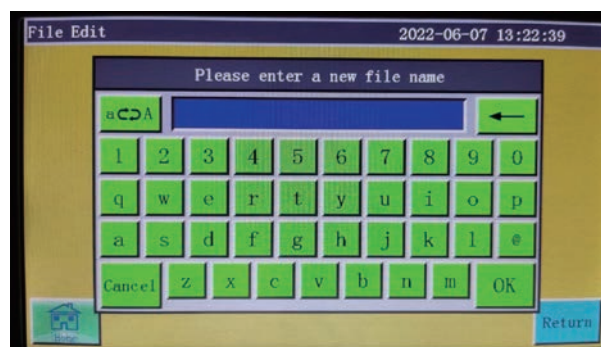


 : Create new capture file.

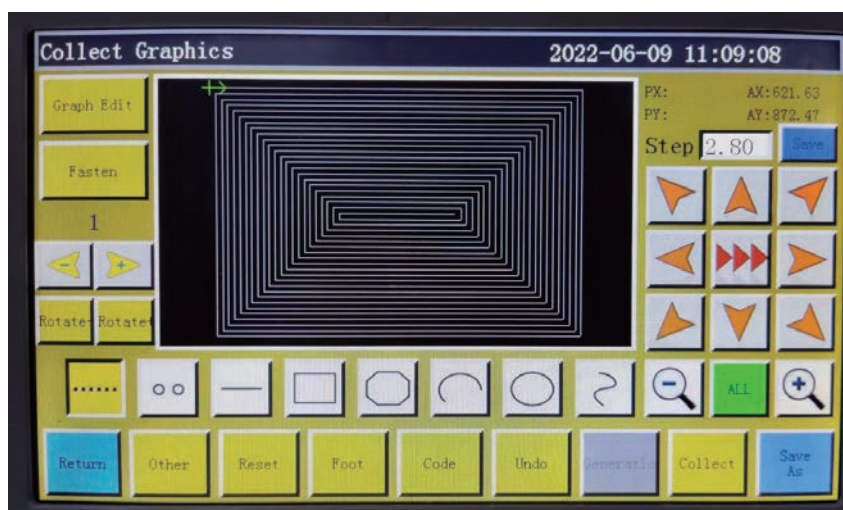
 : Make modification or other edits based on the file selected in the main processing interface.

4.2 Capturing Graphics

Pressing  in file editing interface pops up a new file naming window. See the figure below:




After entering the name, press  or  to enter graphic capture interface as shown in the figure below:



The function keys of capture interface are as follows:

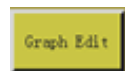
"PX", "PY": Indicate the X and Y coordinates of current cursor point with respect to the previous capture point.

"AX", "AY": Indicate the coordinates of current cursor point with respect to the absolute origin.

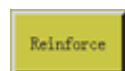
 : The distance between stitches in sewing settings; the default is 3.0mm, while the range is 1~50mm.



"Frame movement speed switching" key: Click to switch among low, medium and high speeds.

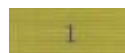


"Graphic Edit" key: The key will only light up when graphic is captured. Press the key to enter the curve editing interface for curve editing.



Reinforcement preset key: key into reinforcement preset settings, open preset and click

"OK", collection page "Reinforcement preset" into blue characters. Close the default and click "Cancel" to change the "Reinforce the default" of the collection page to black, and the default is "Close". When the reinforcement preset is set up, the corresponding reinforcement is automatically carried out for each new line segment collected. If you want to reinforce the edited graphics, you can operate in "Graphic Edit".



: Displays the curve number. The numeric character represents the curve number.



Curve selection decrease key: Press this key to select the previous curve.




Curve selection increase key: Press this key to select the next curve.





"Idle capture" key: Press the key once; when the background turns yellow, the current capture segment is idle. It is displayed with dotted line.





: Press the key once, when the background turns yellow, the current capture segment is straight line.


 : Press the key once, when the background turns yellow, the current capture segment is rectangle (determined with 2 points).


 : Press the key once, when the background turns yellow, the current capture segment is polyline segment.


 : Press the key once, when the background turns yellow, the current capture segment is arc (arc determined with 3 points).


 : Press the key once, when the background turns yellow, the current capture segment is circle (circle determined with 3 points).


 : Press the key once, when the background turns yellow, the current capture segment is curve (curve determined with more than 3 points).


 **"Zoom-out" key:** Press the key to zoom out of the captured file graphic. Click on the graphic preview area to move the graphic.


 **"Zoom-in" key:** Press the key to zoom into the captured file graphic.


 **"Display switch" key:** Press the key to switch between full-scale display and proportional display.


 **"Insert function" key:** Press the key to access function code inserting operation.


 **"Cancel capture" key:** Press the key once to cancel the capture of previous step.

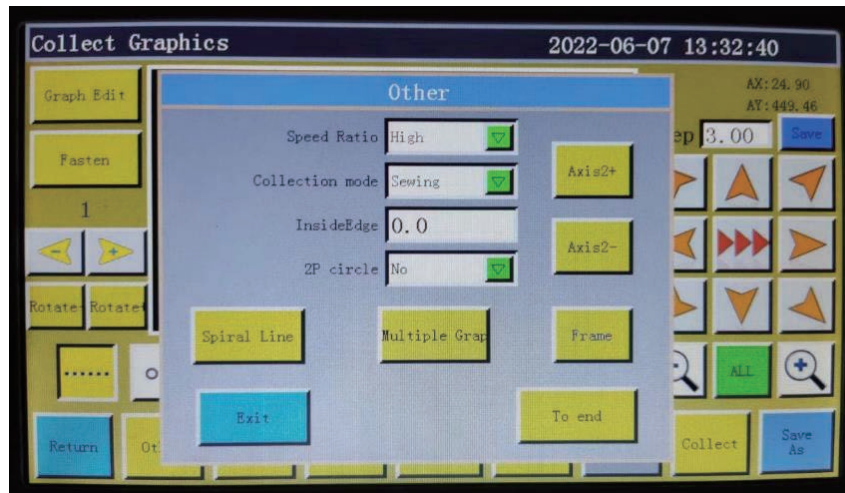
 **"Curve generation" key:** When polyline segment and curve are captured, press the key to finish the capture of current segment.

 **"Capture" key:** Press the key to determine the current cursor location or finish the capture of current segment. If some areas of the generated graphics go beyond the processing range, they can't be generated.

 **"Save file" key:** Press the key to save the current capture file. The saved file can be displayed directly in the preview area of main interface.

 **Separate-save graphic key:** Press this key to save the current graphic to a file with a different name.

 **Other key:** Press this key to open other editing interfaces. The interfaces are as follows.

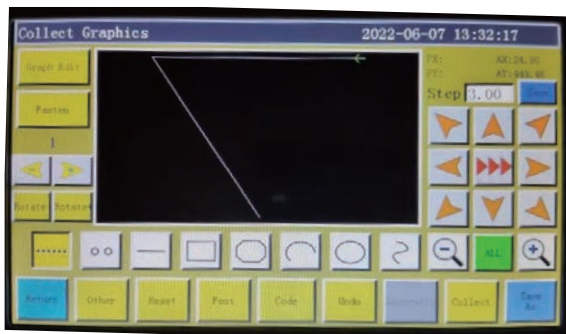


Speed Ratio : You can select the sewing speed of the graphic. There are four sewing speeds such as the high speed, medium high speed, medium low speed, and low speed. Select the "Menu", "User Param" and "Speed ratio" in the written order. Then, the percentage according to the speed ratio can be set.

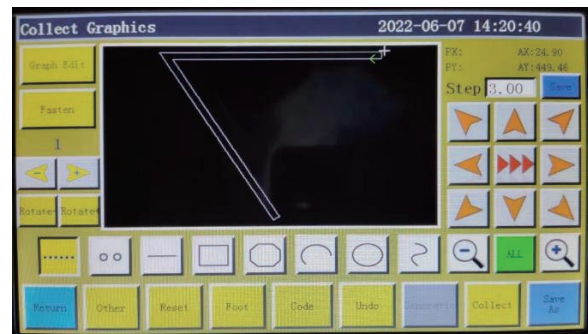
Collection mode : The position of the sewing (head 1), head 2 or head 3 can be selected. Head 2 and head 3 can be defined independently as a required function. For example, the laser knife type head, pen holder type head, etc.

InsideEdge : Set the numerical value of the internal offset in this field.

[Screen before and after setting when the internal offset value is set to 20]



Before setting




After setting

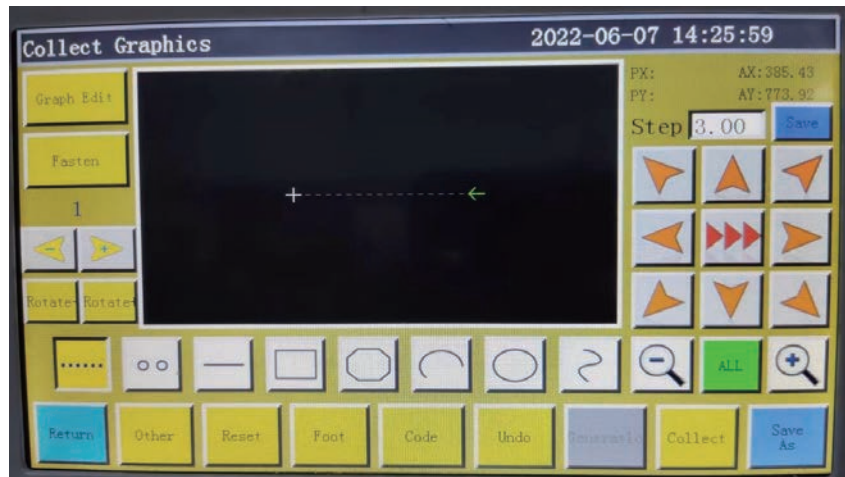
2P circle : If you select the circle drawing method and set it to "Yes", you can draw a circle using the center point of the circle and one points on the circle.

Spiral Line **Spiral line key**: With this key, a spiral pattern can be created automatically as needed.


Multiple Graph **Multiple graphic key**: Use this key to enter the multiple sewing setting.

4.3 Idle Capture

Press  key in "capture graphic interface, when the key background turns yellow (idle mode is activated automatically when the capture interface is activated for the first time), which means the current segment of capture is in idle mode (idle: Only frame is moved, while the main shaft is not sewn) as shown in the figure below:




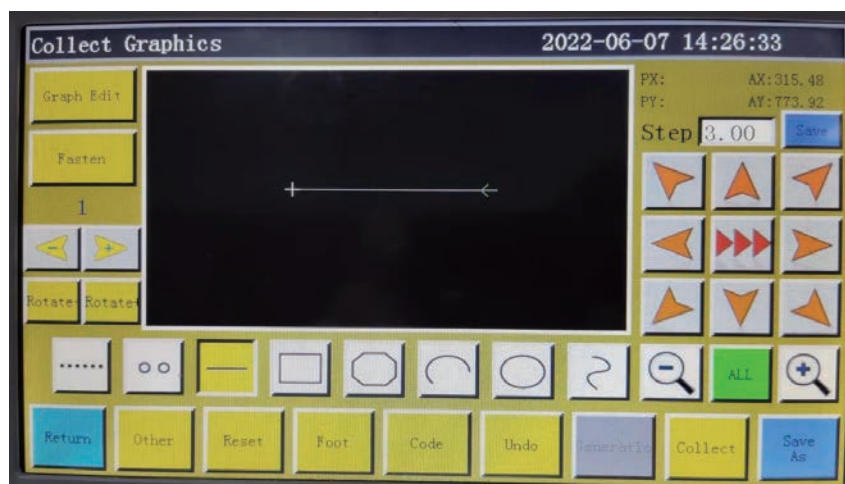
In the case of idle capture, two points generate an idle segment.


The absolute origin or the end point of previous capture segment is the first point of idle capture and displayed as red cursor. Press the key to move cross cursor to desired position, and press  key to generate idle segment.

If it's necessary to insert function code at the end of this segment, please refer to the operation procedure for function code setup. This operation can be performed at any time before the generation of graphic.


4.4 Single needle acquisition

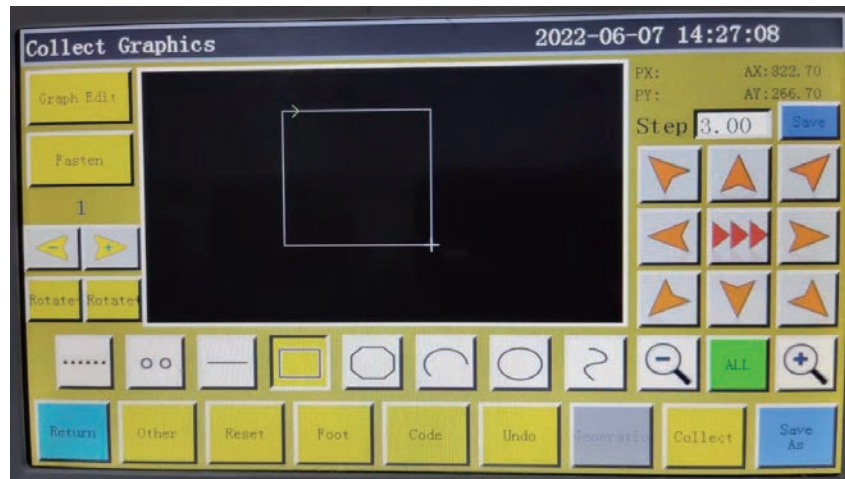
Depress the  key in main interface of file capture, when the key background turns yellow, which means the capture of current segment is in straight line mode as shown in the figure:




In the case of straight line capture, two points generate a segment of straight line. The absolute origin or the end point of previous capture segment is the first point of straight line capture. Press the key to move cursor to desired position, and press  key to generate straight line.


4.5 Rectangle Capture

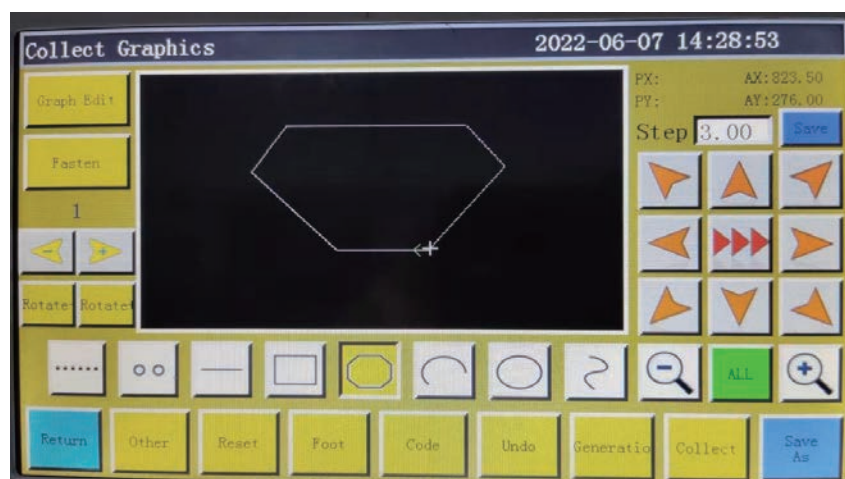
Press  key in main interface of file capture, when the key background turns yellow, which means the current segment capture is in rectangle mode as shown in the figure:





In the case of rectangle capture, two points with different X and Y coordinates generate a rectangle. The absolute origin or the end point of previous capture segment is the first point of rectangle capture. Press the key to move cursor to desired position, and press  key to generate rectangle.

4.6 Polyline Segment Capture


Press  key in main interface of file capture, when the key background turns yellow, which means the current segment capture is in polyline segment mode as shown in the figure:

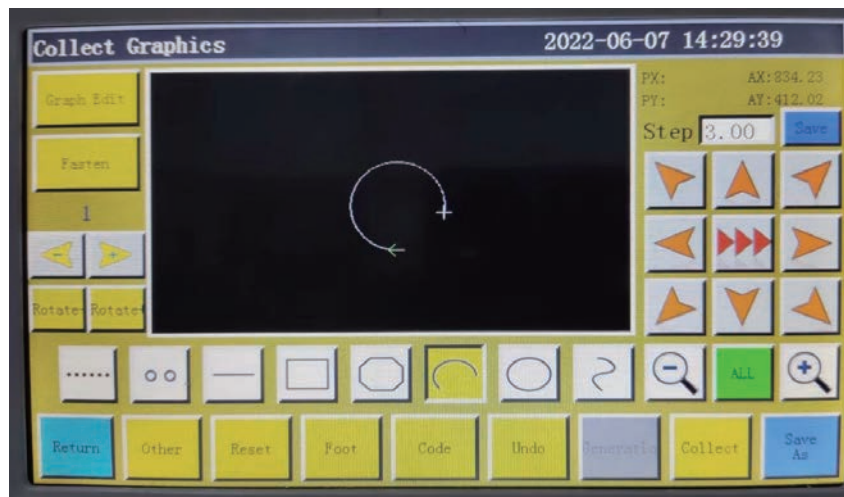


In the case of polyline segment capture, up to 127 consecutive points can be handled, and the line segment will be generated by two points determining straight line.



The absolute origin or the end point of previous capture segment is the first point of polyline segment capture. Press the key to move cursor to desired position, press  key to identify the capture point, and move for several times to determine capture points; upon completion, press  key to generate the polyline segment linking the points up.

4.7 Arc Capture

Press  key in main interface of file capture, when the key background turns yellow, which means the current segment capture is in arc mode as shown in the figure:




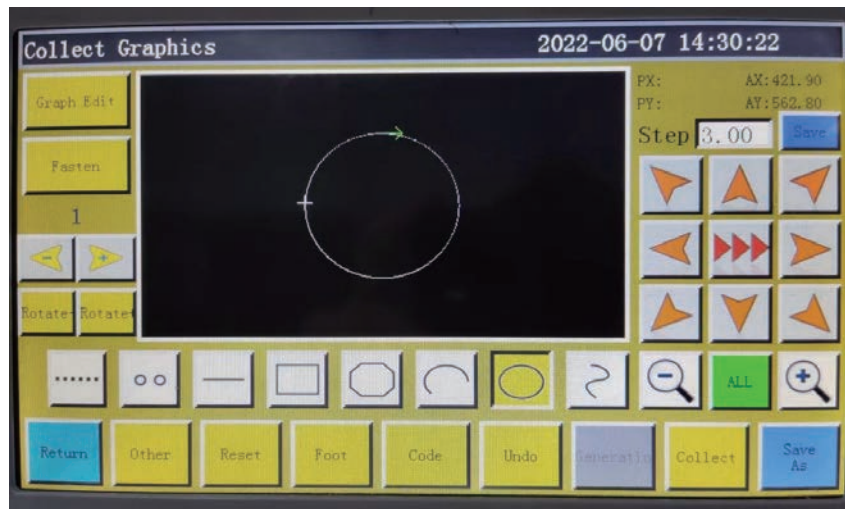
In the case of arc capture, any 3 points that are not in the same straight line generate an arc: The first point is the start point of arc, the second point being the height reference point of arc, and the third point being the end point of arc.

The absolute origin or the end point of previous capture segment is the first point of arc capture. Press the key to move cursor to desired position, and press  key to identify the arc height reference point; press key to move to the desired position, and press  key to determine the end point of arc to generate the arc.

To draw accurate arc, reference coordinate values are needed, and it's necessary to make the height reference point in the perpendicular bisector of line between start point and end point.


4.8 Circle Capture


Press  key in main interface of file capture, when the key background turns yellow, which means the current segment capture is in circle mode as shown in the figure:



In the case of circle capture, any 3 points that are not in the same straight line generate a circle. The processing sequence: The first point (start point) > The second point > The third point > The first point (end point).


The absolute origin or the end point of previous capture segment is the first point of circle capture (the start point and end point of circle). Press the key to move cursor to desired

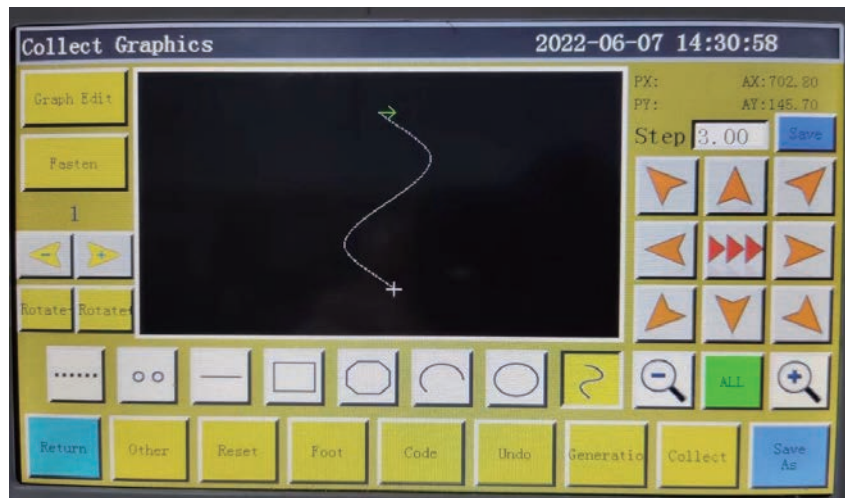
position, and press  to identify the second reference point; press the key to move to the

desired position, and press  key to determine the third reference point to generate the circle automatically. In the meantime, the press frame moves to the start point of circle.



Where accurate circle is needed, it is recommended that the distance between the first and second points should be the diameter of circle; the third point should be in the perpendicular bisector of the diameter line determined by the first and second points, and its distance from the diameter line should be the radius of circle.

4.9 Curve Capture

Press  key in main interface of file capture, when the key background turns yellow, which means the current segment capture is in curve mode as shown in the figure:

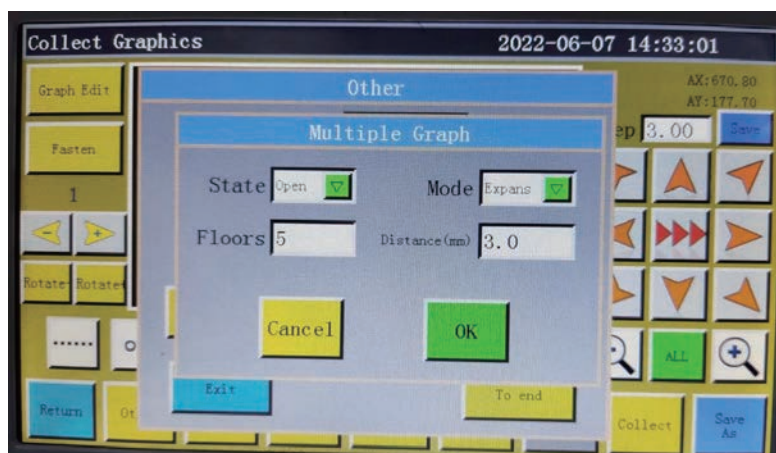


In the case of curve capture, up to 127 consecutive points can be handled, and the Bezier is generated by the degree of arc of the neighboring 4 points. The capture point shall be as dense as possible at the turning so as to achieve optimal curve effect. The capture of less than 3 points can generate curve.

The absolute origin or the end point of previous capture segment is the first point of curve capture. Press the key to move to desired position, press  key to identify the capture point, and move for several times to determine capture points; upon completion, press  key to generate the curve.

4.10 Multiple Curves

In the case of file capture, if the current capture curve (except idle and straight line capture) requires multiple sewing, it's necessary press  key to get into multi-curve setup interface as shown in the figure:



State : State ON/OFF. Determine whether multi-curve sewing is employed or not for next capture.

Mode : Mode selection. There are two modes available for selection, i.e. internal shrinkage and external expansion. Internal shrinkage means the offset shrinkage at designated spacing based on capture graphic; external expansion refers to the offset expansion at designated spacing based on capture graphic.

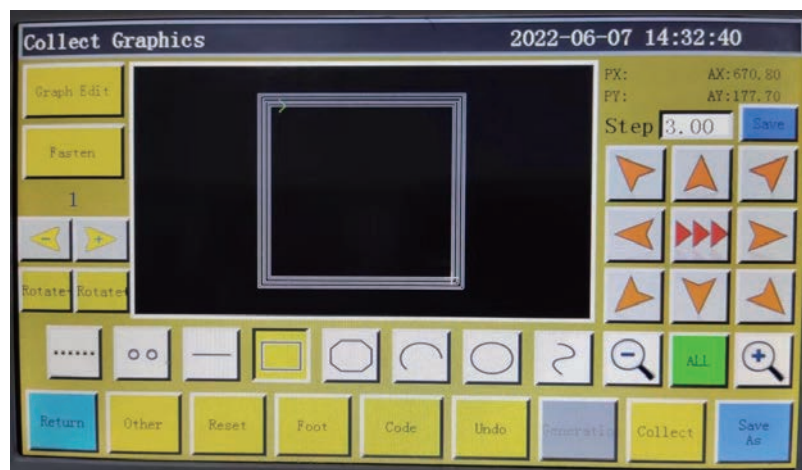
Floors : Indicate the increased number of curves; the range of entry: 1~20.

Distance(mm) : Indicate the distance between stitch threads; the range of entry: 0.1~20.0mm.

Select multiple sewing as needed, and set the offset distance and the number of offset layers.

Upon completion of the setup, press **OK** key to save current settings and go back to the main interface of capture graphic.

For instance: Set the state to "OPEN", the mode to "internal shrinkage", the number of layers to "5", and the spacing to "3.0"; click **OK** and perform a "rectangle capture" to get the curve as shown below; all the 5 rectangles inside are generated on a multi-curve basis.



4.11 Reinforcement Preset

If current file capture segment requires start & end or overlap reinforcement sewing, press

Reinforce key to enter reinforcement setup interface as shown in the figure below. Upon completion of setup, the


OK key must be depressed to put the settings into force. If the subsequent graphics require no reinforcement, you can click **Cancel** or set the value to 0, and press

OK .

The screenshot shows the 'Reinforce' dialog box. At the top, 'Reinforcement Mode' is set to 'Backstitch' with a green checkmark icon. Below this, there are two rows of input fields. The first row has 'Start stitch' set to 3 and 'Start repeat' set to 1. The second row has 'End stitch' set to 3 and 'End repeat' set to 1. A yellow box highlights a section labeled 'Only closed graphics are applicable', containing 'Start switch' set to 0, 'Start repeat' set to 0, 'End switch' set to 0, and 'End repeat' set to 0. At the bottom left is a blue 'Cancel' button. At the bottom right is a green 'OK' button. In the center bottom, there is a label 'The number of ending repeated stitches' followed by an input field set to 0.

This is a close-up of the 'Reinforcement Mode' dropdown menu. It shows 'Backstitch' selected with a green checkmark icon.

Reinforcement mode selection: There are three reinforcement modes available, i.e. backstitch, shrinkage suture, and zigzag stitch.

Backstitch: Perform overhanding near the start point or end point of sewing curve for reinforcement. Set the backstitch count and stitch count as needed. If the set value is 0, no backstitch will be performed. Upon completion of the setup, press  key to save current settings.

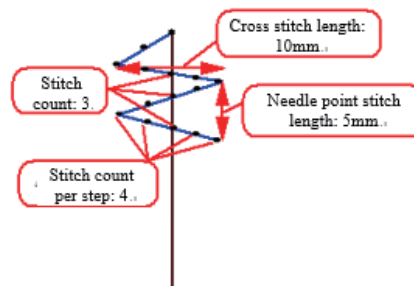
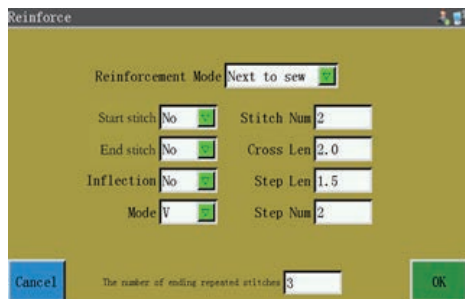
Closed graphic reinforcement means to sew designated number of stitches forward after the end point (i.e. stitch start point) is reached, and then return to the stitch start point; overlapping reinforcement is performed between these two points. Closed graphics refer to enclosed graphics composed of circle, rectangle, and polygon whose start points are completely coincident with end points.

Shot stitch: The stitch length is reduced based on the default stitch length for bar tacking sewing. If the default stitch length is 3mm, the parameters set as shown in the figure below mean all stitch lengths within the distance of 9mm from start point of curve are 1.5mm, while the stitch length in other parts is 3mm by default.

The screenshot shows the 'Reinforce' dialog box with 'Shrinkage' mode selected. The 'Start' dropdown is set to 'No' with a green checkmark icon. The 'End' dropdown is also set to 'No' with a green checkmark icon. The 'Inflection' dropdown is set to 'No' with a green checkmark icon. To the right of these, 'ShrinkageNum' is set to 2 and 'ShrinkageMul' is set to 1. At the bottom left is a blue 'Cancel' button. At the bottom right is a green 'OK' button. In the center bottom, there is a label 'The number of ending repeated stitches' followed by an input field set to 0. The top right corner of the dialog box shows the date and time: '2022-06-07 15:01:50'.

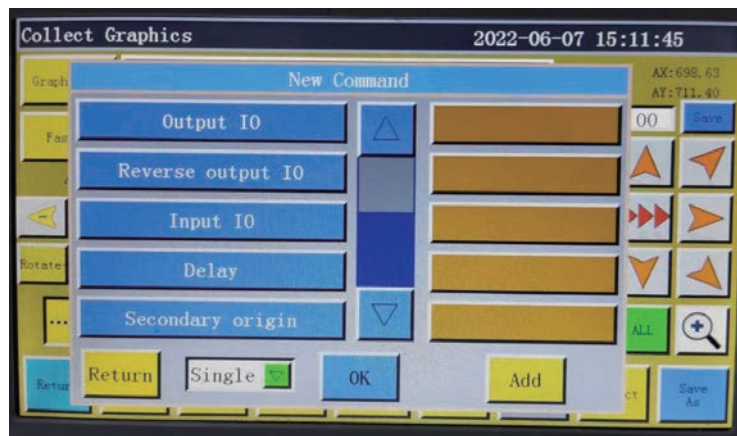
The number of ending repeated stitches : At the end of the seam line, set the number of overlap stitches to be sewn at the same needle entry point.

Zigzag stitch : V or N-shaped bar tacking sewing. The parameters set as shown in the left figure below bring about the reinforcement effect shown in the right figure.



4.12 Function Code

If it's necessary to add function code the latest completed capture segment during file capture, you can press **Code** key to enter function code setup interface as shown in the figure:



There are 36 function codes:

Output IO Set the IO number to be output and its high and low levels; when the function code is encountered, the corresponding IO outputs corresponding level.

Reverse output IO **Inverted output IO:** Set the IO number that needs to be inverted and its high/low levels and inversion content. When this function code is encountered during sewing, the IO is inverted according to the number or the state.

Input IO Set the level for which the entered IO number should be detected. If the function code is encountered, subsequent operations shall be performed when the corresponding IO is at high or low level.

Delay Set the delay time. The delay time that corresponds to the "single point" or "all points" function code.

SecondaryOrigin	Move directly to the set sub-origin position.
Back Origin	Return to the stop position after reset.
Up Pause	Upper pause function code; when this function code is encountered, the main shaft stops at upper stop position.
Down Pause	Lower pause function code; when this function code is encountered, the main shaft stops at lower stop position.
Main Speed	"Main shaft speed" instruction. It changes the current working sewing speed temporarily.
Move speed	The jump speed function code adjusts the jump stitch speed when this function code is encountered during sewing.
Reset Speed	The "Recovery Speed" instruction restores the speed at which the preamble is modified by the "Main shaft Speed" instruction to the working speed set by the interface.
Cut	Trim function code; when this function code is encountered, the thread is cut without stopping the main shaft.
Z-axis movement	Edits the coordinates of the Z axis. When this function code is encountered during sewing, the Z axis moves to the position of the edited coordinates.
Z Axes Speed	The "Z Axes speed" instruction temporarily changes the speed of Z axis.
Extend move	Edits the coordinates of the extended axis. When this function code is encountered during sewing, the extended axis moves to the position of the edited coordinates.
Extend speed	Edits the speed of the extended axis. When this function code is encountered during sewing, the speed of the motor for the extended axis is adjusted to the edited speed.
Up Table	When this function code is encountered, the press frame goes up, while the main shaft stops at upper part.
Down frame	The clamp presser function code lowers the clamp when it is encountered during sewing.
Rotate	"Rotate along the trajectory" command, "Cutting trajectory" is used for rotary cutting of cutter, and "Sewing trajectory" is used for rotary sewing of machine head.
RotateEnable	The "Rotation Enabler" command temporarily closes or turns on the "Rotation along the Track" function.
Frame Pause	Detection of the current frame pressing state, when the frame pressing is lifting state, stop working and error "frame pressing is not pressed down".
Graph head	Select the head function code and select the head 1, head 2 or head 3. When this function code is encountered during sewing, the head is changed over to the selected one.
Cancel foot up	Cancels the function code for lifting the presser foot. When this function code is encountered during sewing, the presser foot lifting setting is cancelled.
XY ABS Move	Absolute motion function code; when this function code is encountered, XY move absolute to each other.

 When the presser lifting function code is encountered during sewing, the presser foot goes up after the completion of sewing.

 "Pressure foot height" command, temporarily changes the pressure foot height.

 This function code cancels the thread trimming cancellation function code. When it is encountered during sewing, thread trimming is cancelled.

 The thread tension release ON function code allows the thread clamp to loosen the thread when it is encountered during sewing.

 The thread tension release OFF function code allows the thread clamp to tense the thread when it is encountered during sewing.

 When the wiper ON function code is encountered during sewing, the wiper operates after thread trimming.

 When the wiper OFF function code is encountered during sewing, the wiper does not operate after thread trimming.

 The clamp lifting stop function code detects the current state of the clamp when it is encountered during sewing. If the clamp is in its upper position, the sewing machine temporarily stops and the error "Clamp fails to clamp" is displayed.

 The tension 1 function code temporarily adjusts the AT clip strength when it is encountered during sewing.

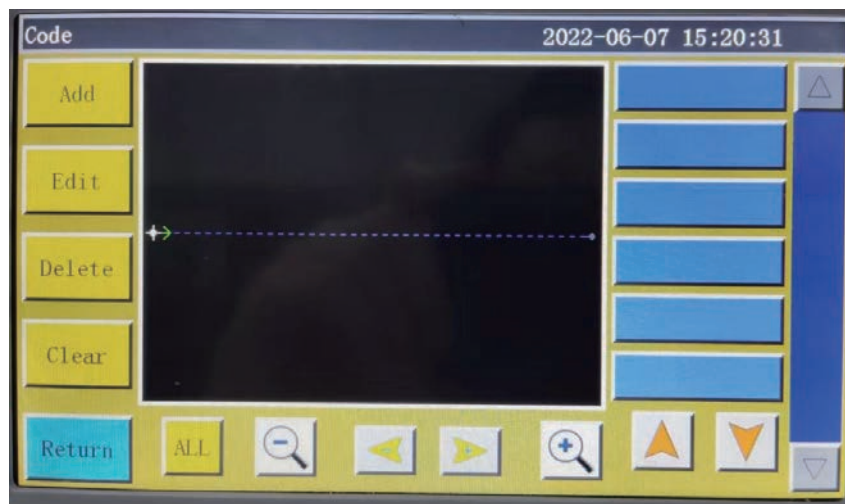
 Without function

 Knee start function code; when this function code is encountered, knee is started.

 Knee speed function code; when this function code is encountered, the main shaft rotates at the function code speed.

 Knee end function code; when this function code is encountered, knee sewing comes to an end while the sewing speed is restored.

Press the key to add function code as needed; choose "single point" or "all points" for adding function code; select necessary instructions; set the corresponding requirements; click "Save" to add. Alternatively, you can edit the graphics in capture graphic interface, click  to enter graphic editing interface, use   to choose the graphics to be handled (the graphics turn blue when chosen), and click  to get into the following interface:



The graphic is displayed in the form of needle points in this interface; select the position you want to edit (when a certain needle point turns red), when function codes can be added, edited, deleted and removed at the location of that needle point. When a function code is assigned to a certain point, that point will turn green. Click on this point, when the set function code appears on the right.



4.13 Graphic Editing

"Curve editing" means to edit the captured graphics more comprehensively.

Light up **Graph Edit** after the graphic is edited, which indicates the editing is available. Click

Graph Edit to enter the following interface:



The function keys can't be edited unless the graphics to be handled are selected (turn blue if chosen) using   .

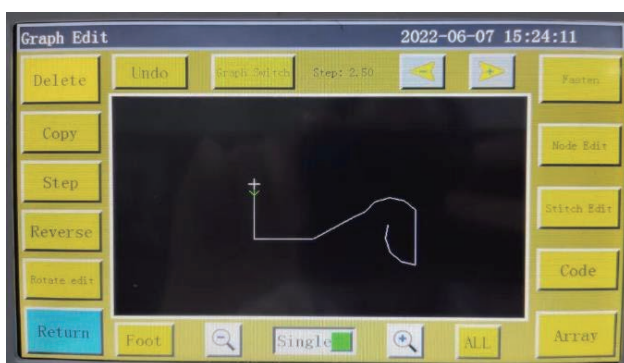
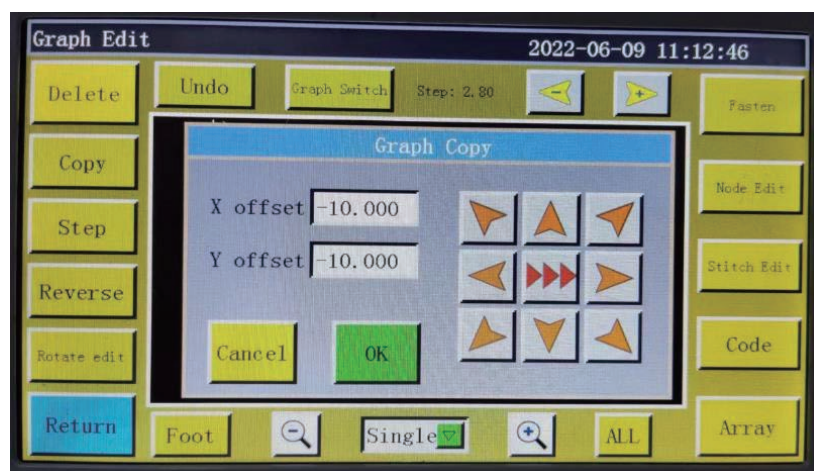
Step : Set the stitch length of graphic to be handled (the stitch length ranges from 1 to 50)

Reverse : Reverse the sewing process of the selected graphic, that is to say, the stitching is performed in reverse order.

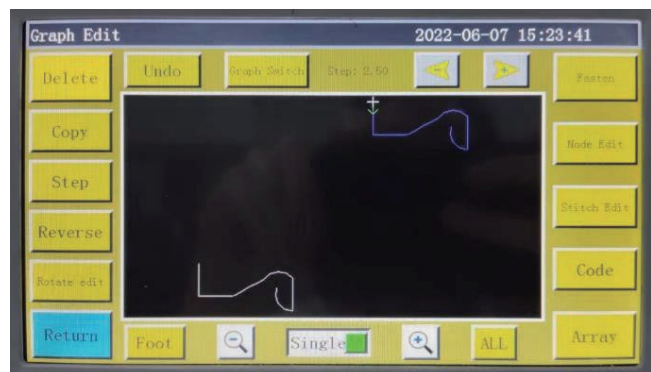
Undo : Revoke key, back to the state before the last modification.

Delete : Delete the currently selected graphic

Copy : Select the image to be copied and set its offset, that is, determine the location of the replicated image, as follows:



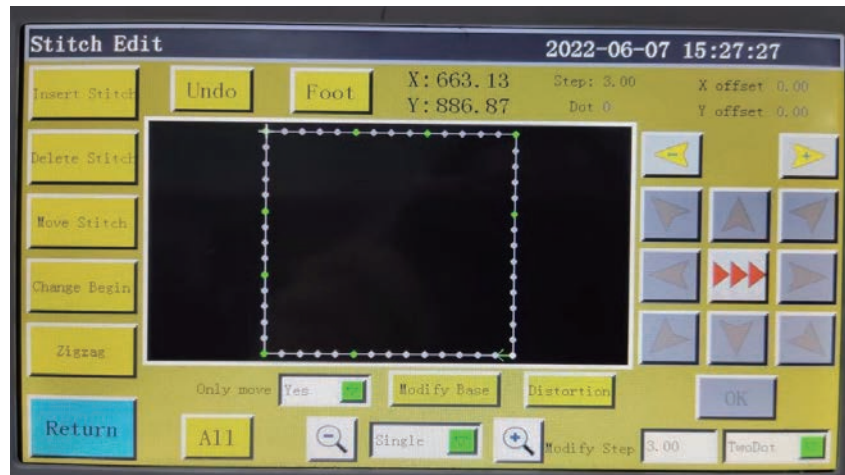
Before copying



After copying

Array **Array key**: This is an unused function in the PS-900.

Stitch Edit : Click this key after selecting the graphic, when all needle points are displayed on the graphic; the interface is as follows:



A certain needle point can be added, deleted, translated or changed. (When a point turns green, it means the function code has been assigned to that point)

Add needle point and translation needle point: Select this function, then select a point through, the selected needle point becomes red, move the cursor to the position where needle point needs to be added or translation needle point through the direction key, and then click the "OK" key to complete the corresponding operation.

Delete needle point: Turn a point into a red one, and click on "Delete needle point" to delete that point.

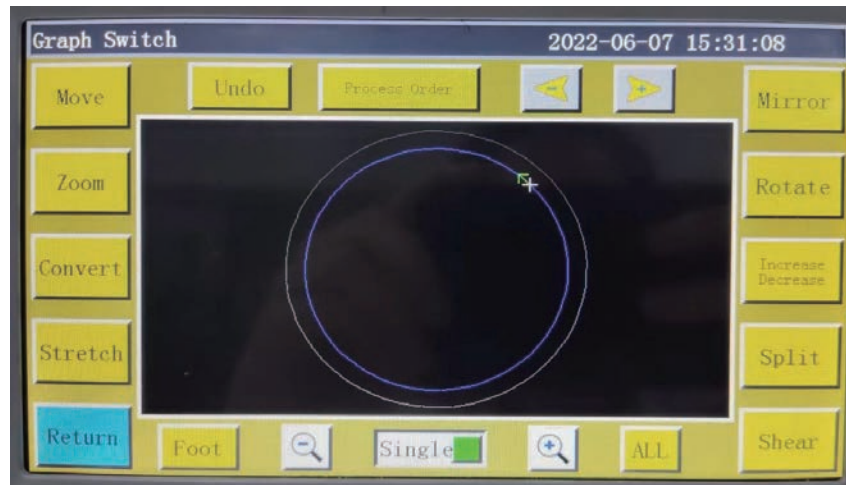
Change start point: Turn a point into a red one, and click "Change start point" to set that point to the start point. (Closed graphics only)

Node Edit : The entire curve is presented in the form of many nodes so that the curve can be changed by adding, deleting and translating the nodes. Moreover, even the start point and the direction of the entire curve can be changed (the key operation mode is the same as needle point editing). The interface is as follows:



Copy : Copy the same curve with certain X and Y offset from the original curve.

Graph Switch : Graphic transformation. Enter the curve transformation interface as follows:



This graphic can be changed or edited by setting up parameters such as pan, stretch, scale, rotation, mirroring, increase/decrease, and shear.

Select mode **Single** Select the method and select the curve you want to edit through



Undo : Undo the edition of the previous step.

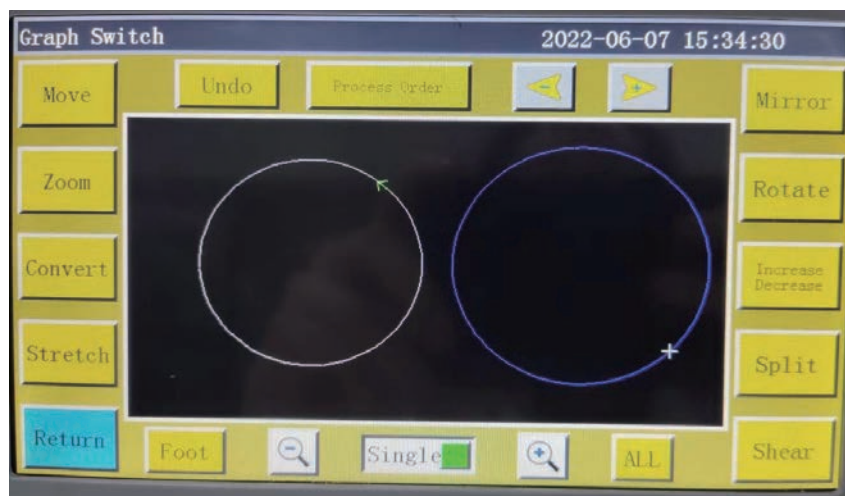
Process Order : Enter the processing sequence interface to view the processing sequence of graphic.

Move : Set the position of X and Y of the graphic that will be selected for translation, and move the curve to that position. (Note: It can only be seen when zoomed out)

Before translation:



After translation:



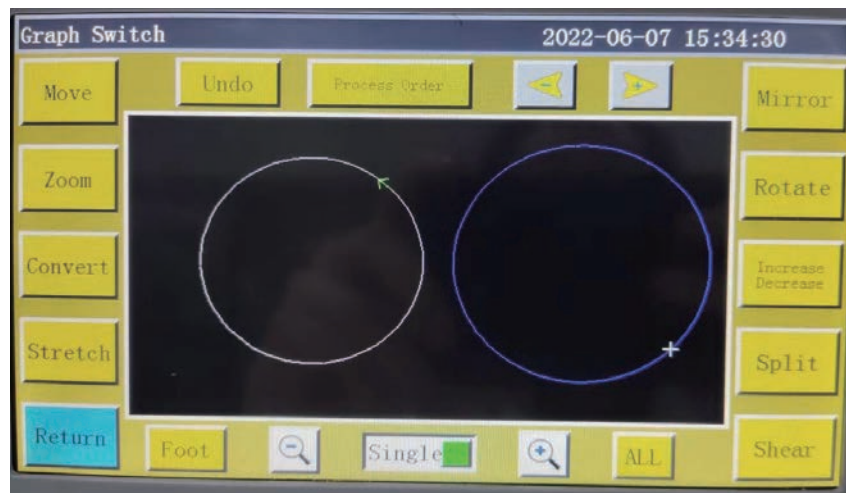
Stretch : Select the graphic to be handled, set the horizontal-to-vertical ratio of the curve, and click “OK”, when the graphic will be stretched based on the set parameters.

Zoom : The selected graphic is scaled by the set graphic ratio.

Mirror : Make horizontal and vertical mirroring changes to the selected graphic. As follows:

Before the change:

Before the change:



After horizontal mirroring change:



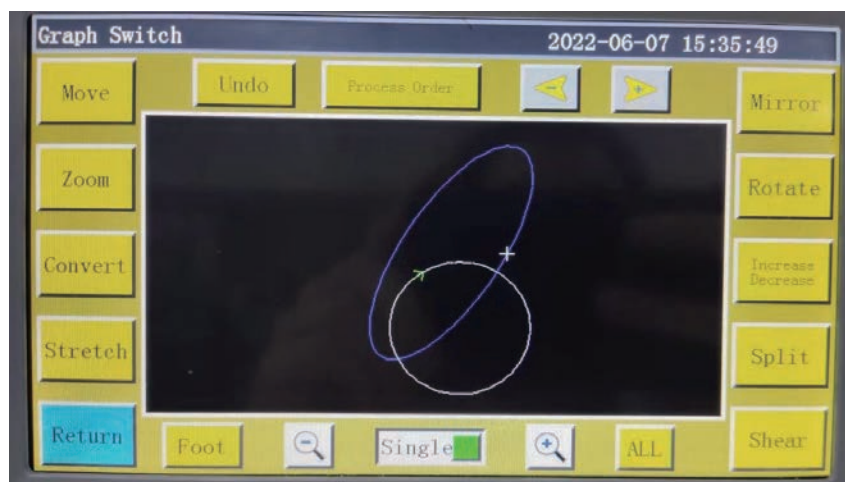
Shear

Cut the selected graphic at a set angle as shown below:

Before cutting:



The graphic vertically sheared by 45 degrees:



Increase Decrease : Choose to increase or decrease the graphic by a number of millimeters at the start or end of the selected graphic. Refer to **Graph Edit** in "[2.2.2 Test Interface Display Description](#)".

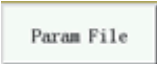
Convert : Changes over the selected pattern between the sewing mode and the jump mode.

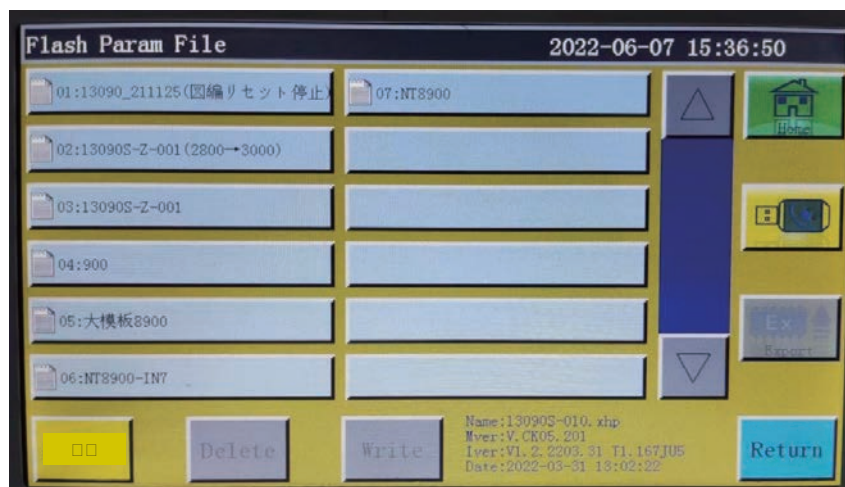
Split : Splits a selected graphic or combines the selected graphics.


Chapter V Parameter File

Parameters may vary depending on usage scenarios. The parameter file management interface is used to import and export parameter files, manage multiple parameter files, and select one of the parameters in memory as the parameter actually used in the system.

5.1 Memory parameter file interface

Press  key in the main menu interface to enter the memory parameter file interface as shown in the figure:





The interface displays parameters files stored in the system. Click on the file name to make it red, and then click , when a prompt message pops up reading "In progress, please wait..." and then reading "Operation succeeded"; then, the system returns to the main interface, which means the selected parameters have taken effect. All the set values and other hidden parameters in "User parameters" and "Mechanical parameters" will be modified by this parameter file.


The key functions are described as follows:


 : Write the selected parameter file into control board as a parameter actually used.


The parameter file imported to the system from USB flash disk can't take effect unless "Write" is clicked on.


 : Delete one or more selected parameter files.


 : Export all the parameters used by the current system to USB flash disk. Click "Export" to enter the new file name, when the specified file name will be generated in USB flash disk with extension .xhp.

 : Return to the menu page.

 : Return to the main page.

 : Copy one or more files from the memory into the root directory of USB flash disk. If a file exists with the same name in the USB flash disk, a message will appear reading “The file already exists, overwrite ?” Make the choice at the end.

 : Click to enter the “parameter file in USB flash disk” interface. The system will list the files and folders with extension .xhp, and support multi-level folder operations.

Select the name of the parameter file to be imported into the machine in the USB flash disk parameter file interface, and click  to copy the file to the memory space. Select the file

in the way as mentioned above, and click  to make the parameter take effect.

Note: The parameter file varies depending on equipment model. Mixing is prohibited. Even the equipment of the same model may have different optimal factory parameter configurations due to slight differences in their mechanical structures. Hence, it is recommended, after the purchase of machines, to export factory parameters for each machine and save them with different file names for future use.

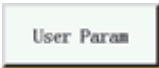
The detailed steps for exporting parameters:

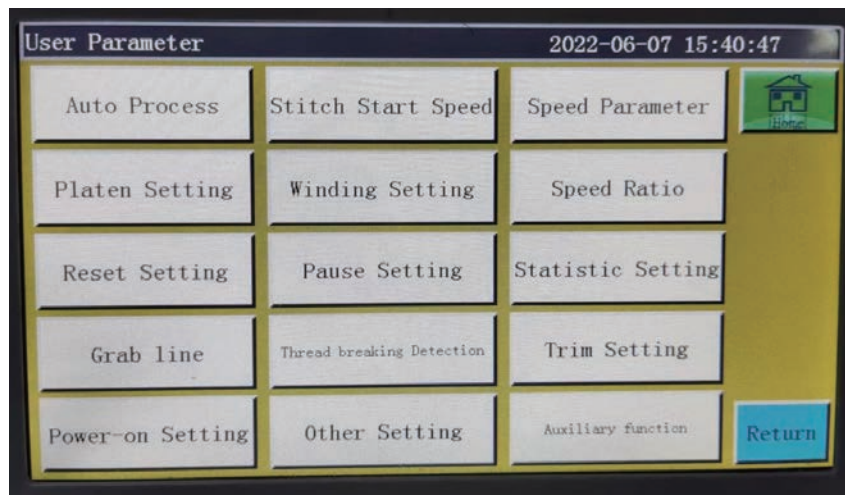
- 1) Insert USB flash disk;
- 2) Enter the "Parameter file" interface, and click "Export";
- 3) In the pop-up dialog box, enter numbers or letters as the file name of exported parameter, and click OK to save it to the USB flash disk.

Chapter VI User Parameters

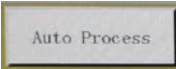
User parameters are principally used by users. Parameters are adjusted based on processing requirements so as to realize convenient processing and improve processing efficiency.

6.1 User Parameters Interface

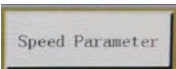
Press  key in main menu interface to enter the user parameters interface as shown in the figure:

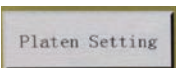


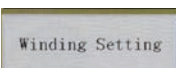
Parameter classification description:

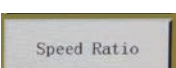
 : Set the parameters of sheet pressing, thread cutting and foot pressing, etc. during automatic processing.

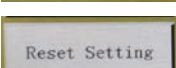
 : Set the start speed of the first stitches, and whether stitching should be started slowly or not.

 : Set the running speed of main shaft and XY axes.

 : Set relevant parameters for sheet pressing.

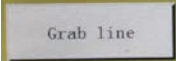
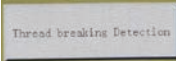
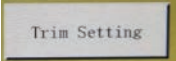
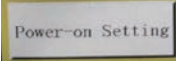
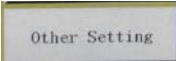
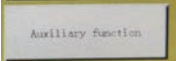
 : Set winding parameters.

 : Set the main shaft processing speed override.

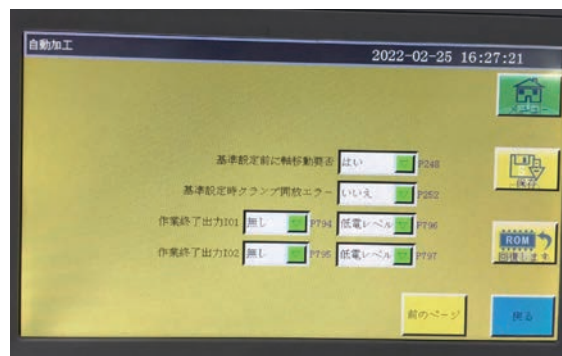
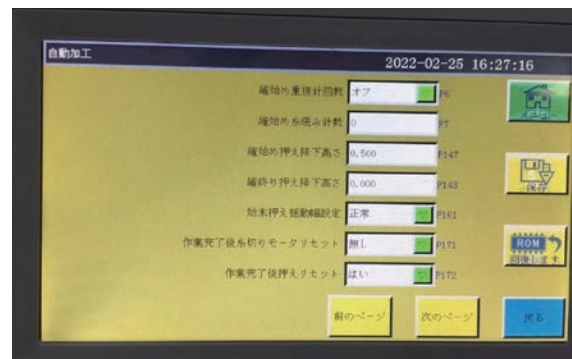
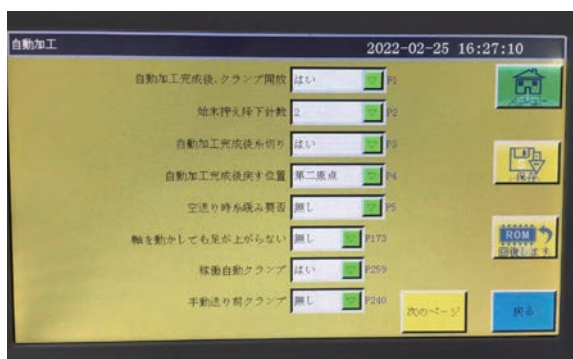
 : Set relevant parameters such as the speed at the time of reset, and whether the pressure plate is put down or not.


 : Set the parameters used when pausing.

 : Set related parameters of processing statistics.

-  : Set the thread trimming and stitching start thread grab position parameters.
-  : Set relevant parameters for break detection.
-  : Set relevant parameters for trimming.
-  : Set the parameters that need to be initialized when the machine is powered on.
-  : Set parameters relating to cycle processing and interface display.
-  : Sets whether or not the air is blown at the start and end of sewing, and sets whether or not the introduced graphic is located at the center of the processing area.


Take automatic processing as an example, where the interface is as follows:




-  : The "Restore" key can be used to restore the pre-modification parameters before the set parameters are saved.

6.2 Introduction to User Setting Parameters

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Auto Process	Platen uplifting after work end	Yes/No	Yes	When the sewing machine completes one cycle of continuous sewing, the cassette clamp is lifted.
	Head and tail foot down needle number	0 - 8	2	The number of stitches at the beginning and end of sewing to be sewn with the intermediate presser held at its lower position.
	Trimming after work end	Yes/No	Yes	Thread trimming is carried out after the completion of one cycle of continuous sewing.
	To the position after work end	Origin/Secondary origin	Secondary origin	The "origin" means absolute coordinate origin; "Secondary origin" refers to the secondary origin (offset point) added to the file
	Sewing loose thread enable	Yes/No	No	This parameter specifies whether the thread clamp is placed in OFF during jump.
	Sewing loose thread enable	Yes/No	No	This parameter selects the state of the presser foot during adjustment of the second origin.
	Automatic press for starting work	Yes/No	Yes	The parameter specifies whether the cassette clamp is placed in ON at the beginning of sewing.
	Manual move axis front press	Yes/No	No	This parameter specifies whether the cassette clamp is placed in ON in prior at the time of manual feed operation.
	Number of repeated stitches at the start of sewing	OFF/1/2/3	OFF	When this parameter is set to "1", "2" or "3", the sewing machine repeats sewing at the first stitch position at the start of sewing, i.e., once, twice or three times, before proceeding to the next stitch.
	Threads for loosening	0 - 255	0	The thread clamp is placed in OFF while the sewing machine sews the set number of stitches from the beginning of sewing.
	With the dynamic pressure foot sewing drop height	0 - 4	0.5	Height of the intermediate presser at the beginning of sewing
	With the dynamic pressure foot sewing end drop height	0 - 4	0	Height of the intermediate presser at the end of sewing.
	Motor presser foot by half	Normal/Halve/Enlarge	Normal	This parameter sets the height of the presser foot at the beginning and end of sewing.
	Trim motor reset after work	Yes/No	No	The thread trimming motor is reset at the end of sewing.
	Follow foot reset after work	Yes/No	Yes	The intermediate presser motor is reset at the end of sewing.

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Auto Process	Movement of the axis when setting the second origin	Yes/No	Yes	This parameter specifies whether the axis is moved when setting the second origin.
	Clamp error when setting the second origin	Yes/No	No	This parameter specifies whether the error is output when the cassette clamp fails to operate when setting the second origin.
	End-of-work output IO1	No / OUT1 - OUT12 High level / Low level	Not set, Low level	The OUT signal is output when sewing of one sewing pattern is completed. Specify the output number and the signal status.
	End-of-work output IO2	No / OUT1 - OUT12 High level / Low level	Not set, Low level	The OUT signal is output when sewing of one sewing pattern is completed. Specify the output number and the signal status.
Stitch Start Speed	Speed of the first stitches (sti/min)	100 - 3000	300	(Adjusted as needed) Acceleration from standstill to maximum sewing speed requires up to 5 stages. Excessively high acceleration may cause the initial stitches to be smaller.
	Speed of the second stitches (sti/min)	100 - 3000	600	
	Speed of the third stitches (sti/min)	100 - 3000	900	
	Speed of the fourth stitches (sti/min)	100 - 3000	1500	
	Speed of the fifth stitches (sti/min)	100 - 3000	2100	
	Back needle speed (sti/min)	100 - 3000	1200	Reverse stitching speed
	Slow speed start	Yes/No	Yes	This parameter specifies whether the sewing machine starts under the low-speed mode.
	Start 2 needle is low speed	Yes/No	Yes	Slow: Increased at fixed rate; above-noted acceleration settings are invalid
	End 2 needle is low speed	Yes/No	No	Sewing speed employed to sew two stitches at the end of sewing is slow.
Speed Param	The highest speed of the main shaft (sti/min)	100 - 4500	3000	Limit the max. working speed in the main interface of processing.
	Frame moving speed (mm/min)	100 - 100000	35000	The moving speed of press frame in idling segment during normal sewing operation
	Frame inching speed (mm/min)	100 - 20000	5000	Preview stitching press frame's moving speed when capturing or modifying files
	Simulation speed (mm/min)	100 - 60000	8000	Moving speed of test sewing track
	Button of speed 1 (mm/min)	100 - 20000	500	The speed that corresponds to  icon among the 8 direction keys during manual frame shift or file capture.

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Speed Param	Button of speed 2 (mm/min)	100 - 20000	1500	The speed that corresponds to ►► icon among the 8 direction keys.
	Button of speed 3 (mm/min)	100 - 20000	8000	The speed that corresponds to ►►► icon among the 8 direction keys.
	Graphic editing speed (mm/min)	0 - 100000	0	Jump speed during editing of a graphic
	Head 2 speed (mm/min)	0 - 2000	60	XY moving speed of head 2 (e.g., for laser cutting)
	Head 3 speed (mm/min)	0 - 2000	0	XY moving speed of head 3 (e.g., for laser cutting)
	Continuous inching speed	Reduce/Lowest/Normal	Reduce	The moving speed during creation of a pattern
	Reverse speed (sti/min)	0 - 3000	0	Working speed of reverse sewing
	No pull line blowing output IO	No / OUT1 - OUT8	No	This parameter specifies whether the air blower substitutes the wiper function.
	The last few needle speed limit	0 - 30	0	This parameter sets how many stitches from the end of sewing to reduce the sewing speed.
	The last needle speed	100 - 1800	100	Reduced sewing speed for sewing the set number of stitches at the end of sewing.
Clamp Setting	Prohibit sewing when uplifted	Yes/No	Yes	Sewing is prohibited when the cassette clamp is lifted to its upper position.
	Lower the frame whenever moving the axis.	Yes/No	Yes	Travel of the axes is prohibited when the cassette clamp is lifted to its upper position.
	Main shaft is unchanged when moving the axes.	Yes/No	No	Main shaft is stopped in its upper position when the axis is moving.
	Delay in lifting of the double frame (ms)	0 - 10000	0	This is not used in the PS-900.
	Delay in lowering of the double frame (ms)	0 - 10000	0	This is not used in the PS-900.
	Pedal operating sequence	Normal/Special	Normal	Sequential order of operation of the pedal
	Pedal operating mode	1STA/1STB/1STC/2ST/3ST	2ST	There are different operation modes for pedal switches of different mechanical structures (with or without self-locking, etc.).
	Sewing clip line start angle	1 - 990	10	Angle at which the thread clamp is turned ON at the beginning of sewing
	Sewing clip line end angle	1 - 990	10	Angle at which the thread clamp is turned OFF at the beginning of sewing

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Clamp Setting	Trim clip line start angle	1 - 990	930	Angle at which the thread clamp starts clamping the thread at the time of thread trimming
	Trim clip line end angle	1 - 990	60	Angle at which the thread clamp stops clamping the thread at the time of thread trimming
Winding Setting	Winder machine status	Allow/Prohibit	Allow	Set the  允许 default state of processing assist interface
	Winding speed (sti/min)	100 - 4500	2800	Bobbin winding speed
	Winding timer (s)	1 - 63000	200	Set the time from start to automatic stop of winding in processing assist interface
Speed Ratio	High speed ratio (%)	1 - 100	100	Actual speed of main shaft in main interface = Set speed * High speed override
	Med-high speed ratio (%)	1 - 100	100	Refer to the above description.
	Med-low speed ratio (%)	1 - 100	100	Refer to the above description.
	Low speed ratio (%)	1 - 100	100	Refer to the above description.
Reset Setting	Reset when the clamp down	Yes/No	Yes	The cassette clamp comes down at the time of return to origin.
	Manual reset after lifting clamp	Yes/No	Yes	The cassette clamp goes up at the time of return to origin by pressing the Reset button.
	Return origin mode	No / XY / X priority / Y priority	XY	"XY " means to return to the origin simultaneously; : "X priority" means X axis returns to the origin first, and then Y axis returns thereto.
	Back to the origin of speed (mm/min)	100 - 20000	15000	X and Y axes speed when returning to the origin
	Extension axis reset speed (mm/s)	1 - 2000	1	Return-to-origin speed of the OP axis
	XY axes 0-bit buffer on return to origin	No / X axis / Y axis / XY axes	XY axes	This parameter sets the axis speed of which is decreased when resetting the origin.
	Receipt of return-to-origin alarm prompt	Yes/No	No	Error is displayed in the case resetting of the origin has failed.
	IO-enable for return-to-origin is output	No / OUT1 - OUT30	No	Error occurs when the signal of OUT1 to OUT30 is output without resetting the sewing machine after turning the power ON.
	Output I/O before resetting	No / OUT1 - OUT15 / High power level / low power level	OUT4, Low power level	

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Reset Setting	Output I/O before resetting	No / OUT1 - OUT15 / High power level / low power level	OUT6, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	OUT9, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
	Output IO for resetting captured graphics is enabled.	Yes/No	No	
	Output IO after resetting	No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
		No / OUT1 - OUT15 / High power level / low power level	No, Low power level	
Pause Setting	Trimming threads in pause	Yes/No	No	"Yes": Automatic thread trimming. "No": No automatic thread trimming
	Stitches position in pause	Down position/ Up position	Up position	Position of the needle bar at the time of pause

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Pause Setting	Uplifting the plate in pause	Yes/No	No	This parameter specifies whether the clamp is lifted at the time of pause.
	Pause switch type	Self lock/Ordinary	Self lock	"Self lock" means the switch cannot automatically bounce when depressed; "Ordinary" means the switch can automatically bounce when depressed.
	Presser foot is not lifted during pause	Yes/No	No	The presser foot is lifted during the pause.
	Restore to the last working position in graphic	Yes/No	No	The operating position is moved from the end position of the pattern to the origin.
Statistic Setting	Bobbin line reset when power on	Yes/No	No	"Yes" means the "used length of bobbin thread" is cleared after power-up
	Stopping working after the Bobbin line	Yes/No	No	"Yes" means the operation is stopped when the used length of bobbin thread reaches the total length
	Effective of the Bobbin line alarm	Yes/No	No	"Yes" means automatic statistics of the used length of bobbin thread during operation
	Piecework reset when power on	Yes/No	No	"Yes" means "current value of count by piece" is zero-cleared after power-up
	To continue after work piece	Yes/No	No	"No" means the operation stops when "current value of count by piece" reaches the "total count by piece".
	Sewing counter function	Yes/No	No	This parameters specifies whether the sewing counter is enabled.
	Work time statistics	Yes/No	No	"Yes" means the processing time statistics feature is enabled.
	Bobbin counting mode	IN1 - IN7/ Default	Default	Bobbin thread quantity statistics mode
	Bottom line margin adjustment (mm)	0 - 600000	0	Adjustment of the remaining amount of the bobbin thread
	Additional length of bobbin thread to count	0 - 50	0	Length of the added bobbin thread (Total length of the bobbin thread = Length of the added bobbin thread + Length of bobbin thread)
Grab line	Thread trimmer thread clamp position	0 - 200	0	This is not used in the PS-900.
	Thread clamp position at the beginning of sewing	0 - 200	0	This is not used in the PS-900.
	Laser output IO	No / OUT1 - OUT12	No	
	Conversion point of graphics that are not for sewing	Yes/No	No	

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Grab line	First pin clamp IO starting	No / OUT1 - OUT12	OUT3	IO port communication is executed by starting the first stitch. This parameter is mainly used for clamping. This is not used in the PS-900.
	Screw clamp IO after sewing	No / OUT1 - OUT12	OUT3	IO port signal is output after the completion of sewing. This parameter is mainly used for clamping. This is not used in the PS-900.
Break Line Detection	Automatic break detection	Yes/No	Yes	"Yes" means to stop the operation and give a prompt when thread break is detected
	Cutting for the break line	Yes/No	No	"Yes" means the thread is automatically cut upon detection of break
	Ignore the pin number when sewing	1 - 255	5	No break detection is performed for the initial set stitch number
	Check threads of the broken in effect	1 - 255	15	Thread break is confirmed by continuous detection of break at the set stitch number
	Delay when broken threads (s)	0.01 - 255.00	5	Set the delay time and take actions against break after confirming thread break
	QEP2 as bobbin thread detection	Yes/No	No	Some machines employ B encoder for bobbin thread detection
	Thread breakage output IO	No / OUT1 - OUT12	No	After the detection of thread breakage, the output IO that corresponds to the thread breakage maintains the high level output.
	Number of stitches to return at the time of thread breakage	0 - 20	0	This parameter sets whether or not the sewing machine returns by some stitches before re-starting sewing after the detection of thread breakage and presentation of the thread breakage alarm.
Trim Setting	Speed of the main shaft trimming (sti/min)	10 - 500	200	Speed of main shaft for thread trimming
	Starting delay of trimming (s)	0.01 - 6.55	0.01	Delay time at the beginning of thread trimming
	Duration of drawing threads (s)	0.01 - 6.55	0.15	Wiper operating time
	Wiper startup delay after lifting the presser foot	0.01 - 6.55	0.25	Time to be elapsed after the presser foot goes up until the wiper starts wiping
	Delay for loosening threads (s)	0.01 - 6.55	0	Delay time to turn ON the thread clamp
	Whether to trim threads after moving empty	Yes/No	Yes	This parameter specifies whether thread trimming is carried out at the time of jump.

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Trim Setting	Whether to use the pull thread	Yes/No	Yes	"No" means the wiper is turned off
	Motor trim thread mode	Back and forth/single	Back and forth	Motor thread trimming mode
	Trim thread travel motor	1 - 100	23	Thread trimming motor stroke
	Flat knife grip delay (ms)	1 - 350	1	Thread take-up time for thread trimming
	Back a knife speed ratio	10 - 100	100	Rotary knife speed ratio
	Loose line start mode	Angle/Delay	Delay	Thread clamp OFF actuation timing method
	Loose line angle	0 - 999	730	Off angle of the thread clamp
	Knife section speed	Yes/No	No	This parameter specifies whether the knife projecting speed is changed step-wise.
	The first knife length	0 - 100	0	1-step projecting length of knife
	The knife first speed (mm/s)	0 - 300	10	1-step projecting speed of knife
	The knife second speed (mm/s)	0 - 300	10	2-step projecting speed of knife
Power-on Settings	Stitches to the up position when powered on	Yes/No	No	Needle bar is at upper position when turning the power ON
	Frame automatic back to the origin	Yes/No	No	Cassette automatically returns to its origin when turning the power ON
	Motor lock when powered on	Yes/No	No	Lock the motor when turning the power ON
	Presser foot lift when powered on	Yes/No	No	Presser foot goes up when turning the power ON
Other Setting	Air-pressure detection	Yes/No	Yes	"Yes" means stoping and alarming if the air pressure is low when working.
	Whether to circular processing	Yes/No	No	"Yes" means the same file is processed in a cyclic manner after startup
	Circular work time (min)	1 - 65535	1440	Total cycle time; cycle processing is stopped when time is up
	Circular work gap (s)	0 - 20	2	The interval between the completion of processing and the restart of processing during processing cycle
	Work end position	Origin/Right/Sewing POS/Default/End position	Origin	Origin: The point where the XY axis coordinates are both 0 Right: Rightmost point of the processing range Default: The first sewing point of processing file End position: Stop after processing

Parameter classification	Parameter name	Range	Default	Parameter meaning and remarks
Other Setting	Template recognition mode	Barcode/ RFID	RFID	File Number: Barcode recognition mode File Name: Electronic label recognition mode
	Interface style	Classic/ Simplicity	Classic	Classic: Three-dimensional keys Simplicity: Flat keys
	Motion mode before starting work	XY /X priority/Y priority	XY	This parameter sets the axis that is given priority when the axes move from the current position to the sewing starting position.
	Empty movement mode in working process	XY /X priority/Y priority	XY	Travel mode for jump
	The needle back	0 - 160	0	Reverse feed angle when the main shaft stops
	Connect extension screen	Yes/No	No	"Yes" means the display screen can be connected to extension screen to display working files and other information
	Voice prompt	Middle/High/Low/Close	Close	"High", "Medium" and "Low" represent the volume of the audio respectively.
	Enable Blackout Memory	Yes/No	Yes	After restarting the electricity, continue sewing progress before power failure, continue sewing.
	Files are enabled when electronic labels are separated.	Yes/No	No	The file is written after the electronic label has separated.
Accessibility	Blow air at the start of sewing	OUT1 - OUT12	Not set	
	Blow air when sewing is finished	OUT1 - OUT12	Not set	
	Time to continue blowing air	0 - 5000	0	
	Copied file is not automatically centered. (For benchmark)	Yes/No	Yes	After a pattern file is imported, the pattern file is displayed at the center of the operation panel.

6.3 List of error codes

Error Code	Error description	Solution
E001	There is no reset	Click the "Reset" button to reset
E002	Couldn't find X zero signal	Inspect whether or not the X sensor has poor contact or has broken.
E003	Couldn't find Y zero signal	Inspect whether or not the Y sensor has poor contact or has broken.
E004	Couldn't find Z zero signal	Inspect whether or not the Z sensor has poor contact or has broken.
E005	Couldn't find U zero signal	Inspect whether or not the U sensor has poor contact or has broken.
E006	Couldn't find Extend zero signal	Check whether or not the shaft sensor has poor contact or has broken.
E007	Main shaft without internal zero signal	Check the main shaft encoder for breakage.
E020	X axis overvoltage	
E021	X axis undervoltage	
E022	X axis hardware over current	
E023	X axis driver software overcurrent	
E024	X axis encoder failure	
E025	X axis disconnected	
E026	X axis overload	
E027	X axis position deviation is too large	
E028	X axis AD sampling module failure	
E029	X axis overheated	
E030	Y axis overvoltage	
E031	Y axis undervoltage	
E032	Y axis hardware over current	
E033	Y axis software over current	
E034	Y axis encoder failure	
E035	Y axis disconnected	
E036	Y axis overload	
E037	Y axis position deviation is too large	
E038	Y axis AD sampling module failure	
E039	Y axis overheated	
E040	Z axis overvoltage	
E041	Z axis undervoltage	
E042	Z axis hardware over current	
E043	Z axis software over current	
E044	Z axis encoder failure	
E045	Z axis disconnected	

Error Code	Error description	Solution
E046	Z axis overload	
E047	Z axis position deviation is too large	
E048	Z axis AD sampling module failure	
E049	Z axis overheated	
E050	Shear driver overvoltage	
E051	Shear driver undervoltage	
E052	Shear driver hardware over current	
E053	Shear driver software over current	
E054	Shear driver encoder failure	
E055	Shear driver open circuit	
E056	Shear driver overload	
E057	Shear driver position difference	
E058	Shear driver AD sampling failure	
E059	Shear driver overheated	
E060	Main shaft overvoltage	
E061	Main shaft undervoltage	
E062	Main shaft hardware over current	
E063	Main shaft software over current	
E064	Main shaft encoder failure	
E065	Main shaft locked rotor	
E066	Main shaft detection for locked rotor	
E067	Y servo hardware protection	
E068	Y servo HOC	
E069	Y servo AD module initial correction fault	
E070	Y servo parameter storage exception	
E071	Y servo system parameter is abnormal	
E072	Y Servo Ad sampling module failure	
E073	Y servo encoder disconnected	
E074	Y servo encoder AB interference	
E075	Y servo encoder Z interference	
E076	Y servo bus undervoltage	
E077	Y servo software over current	
E078	Y servo motor overload	
E079	Y servo motor overload	
E080	Y servo driver overload	
E081	Y servo motor overheated	
E082	Y servo drive overheated	
E083	Y servo fan is abnormal	

Error Code	Error description	Solution
E084	Y servo overspeed	
E085	Y Servo position deviation is too large	
E086	Y servo bus voltage phase failure	
E087	Y servo motor phase sequence error	
E088	Y servo driver Rated current input error	
E089	Y servo brake resistor overload	
E090	Y servo absolute encoder overheat	
E091	Low voltage of Y servo battery	
E092	Y servo position information lost	
E093	Y servo drive and motor mismatch	
E094	Y servo origin regression failure	
E095	Y servo main power supply power off	
E096	Learning failure of Y servo offset angle	
E097	Y servo power break restart	
E098	Y servo initializes LAN9252 error	
E099	Y servo DSP and ESC communication interrupted	
E100	Y servo interrupts communication with host through network cable	
E101	Y servo PDO parameters read only	
E102	Y Servo PDO does not have an index to find	
E103	Y servo PDO setting synchronization time out of range	
E104	Y servo PDO data out of range	
E105	Y servo UVW ground fault	
E106	Y servo inertia identification failed	
E107	Y servo encoder EEPROM read and write failed	
E108	Y servo position positive limit	
E109	Y servo position negative limit	
E110	Y servo electronic gear ratio setting range is wrong	
E111	Y servo input pulse frequency too high error	
E200	XY driver alarm	
E201	X driver alarm	
E202	Y driver alarm	
E203	The main motor error	
E204	The main motor direction error	
E205	Pressure box didn't put down	Click the "Frame" button to lower the press frame

Error Code	Error description	Solution
E206	Failure of head board	The head plate is damaged. Replace the head plate with a new one.
E207	Input IO timeout error	Check whether or not "High" or "Low" of the input signal is present at the input IO.
E208	Air pressure is insufficient	Check whether or not the air supply unit supplies air normally.
E209	Motor scissors are not in place	Check whether or not the zero signal of the scissors motor is normal.
E210	Motor foot fault	Make sure that the zero signal of the presser motor is normal.
E211	Grab line motor is not in place	Check if the zero signal of the wire gripping motor is normal
E212	Cutters are not in place	Check whether or not the zero signal of the cutter motor is normal.
E213	Broken line	Re-thread the machine head before continuing operation or turn OFF the thread breakage detecting function.
E214	The quantity of work is full	The counter has reached the preset total number of counts. The number of counts on the counter is cleared and restarts counting when operation is restarted.
E215	The bottom line has been used up	The bobbin thread hook has to be replaced with a new one.
E216	The file is too large	The number of pins in the graphic file has exceeded the maximum range. The graphic file has to be replaced with a new one.
E217	No working file	Need to re scan or switch graphics files
E218	Waiting for the working data	Graphics data processing latency time differs with the size of the graphics.
E219	Electrical fault, please contact the manufacturer	Contact equipment manufacturer
E220	Wrong upgrade file	The upgrade file has to be replaced with the new one.
E221	Upgrade file type error	Need to select the corresponding type of upgrade file for upgrade
E222	Could not upgrade	Contact equipment manufacturer
E223	Upgrade file not the same OEM manufacturer	Contact equipment manufacturer
E224	Head board can not be connected 1.The connection	Inspect the head plate connection line and the desk head plate for poor contact and/or breakage.
E225	Connecting the main control board...	If the screen line connection is neither bad nor broken, but the motherboard of the display or electrical cables has broken, check that the motherboard has to be replaced with a new one.

Error Code	Error description	Solution
E226	Current file is invalid	If the graphics file is corrupted or the file is not intended to be used by this system type, the graphics file has to be changed.
E227	The file transfer failed	If the screen line connection is neither bad nor broken, but the motherboard of the display or electrical cables is broken, check that the motherboard has to be replaced with new one.
E228	Data outside the range	Check whether or not the current graphics file data exceeds the limited range or the graphics data is abnormal.
E229	The modified Angle is too large	The modified angle of the graphic is too large. Reduce the modified angle value.
E230	Loading graphic data...	Process the necessary graphics data and wait for a while before operating the sewing machine.
E231	Foot follow error	Check if the presser foot motor is normal
E232	No U disk!	Reinsert U disk or replace U disk
E233	File error!	1. Replace graphics files 2. Re insert U disk or replace U disk
E234	Graphic or head offset out of bounds!	1. Reset the reference point position 2. Reset the head offset value of head 2 or head 3. 3. Set the platen size corresponding to the machine
E235	This is not a working file!	Replace Recognizable Graphics File
E236	TF RAM error	Contact equipment manufacturer
E237	Please set the admin password first	Set the administration password first.
E238	Editing is not supported	The instruction or file does not need to be edited.
E239	Please contact the manufacturer	Contact equipment manufacturer
E240	Communication fault 2	CAN communication error or the motherboard program is out of date.
E241	Time anomaly	1. The time is illegally modified 2. The motherboard battery is low.
E242	No work IO	1. Work enable input IO signal is abnormal. 2. Close the "Work enable input IO" function and set the parameter value to 0 (zero).
E243	Waiting for input IO	In wait for the input IO signal in the graphic file
E244	Execution delay	Execute the delay instruction in the graphics file.
E245	The file name is too long	The file name has to be shortened.

Error Code	Error description	Solution
E246	Please lift the presser foot first	Click the "Presser Foot" button to raise the presser foot
E247	Frame is not pressed down	Feeding frame has to be lowered in prior.
E248	Auxiliary frame is not pressed down	Auxiliary frame has to be lowered first.
E249	Frame and auxiliary frame is not pressed down	All back pressure blocks have to be pushed all the way down.
E250	Punched material has run out	Need to replace the new punch base material


Instruction file error list

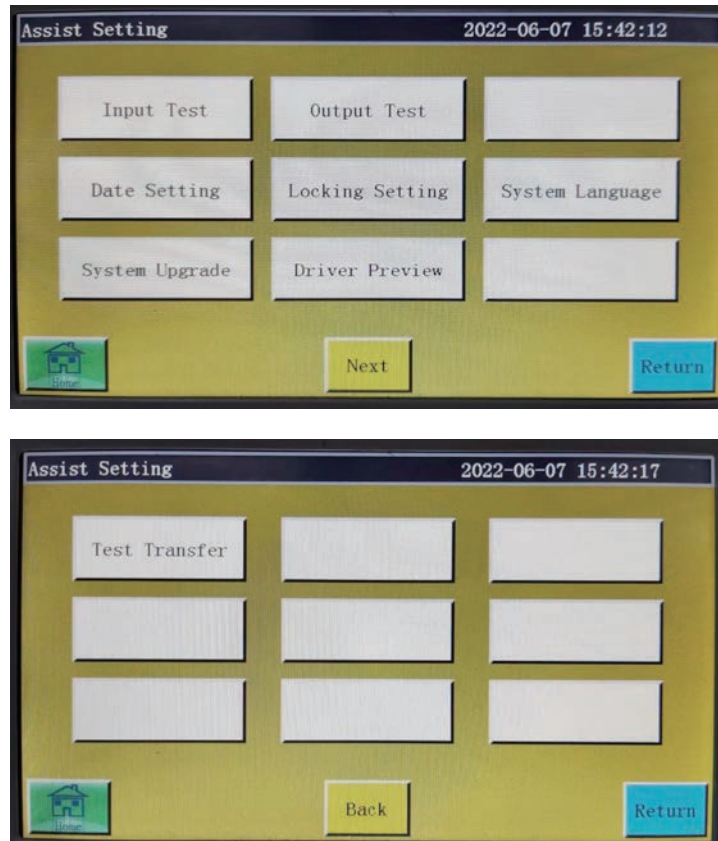
Error Code	Error description	Solution
W001	Warning! The top plate is opened. Correct it.	Close the top plate.
W002	Warning! The cover plate is opened. Correct it.	Close the cover plate.
W003	Oil amount in the sewing machine is insufficient.	Add grease.
W004	Oil amount in the sewing machine is excessive.	Remove the excess grease.

Chapter VII Assist Setting

Auxiliary settings are used to test hardware input & output, network, time and system upgrade, etc.

7.1 Assist Setting Interface

Press  key in main menu interface to enter the assist operation interface as shown in the figure:



The key functions are described as follows:

Input Test: Test if input port is normal.

Output Test: Test if output port is normal.

Date Setting: Set the system time.

Locking Setting: Set the administration password, use restrictions, staged unlocking and so on.

System Language: The screen system language can be selected from nine languages, i.e., Simplified Chinese, Traditional Chinese, English, Vietnamese, Japanese, Korean, Russian, Italian and Turkish.

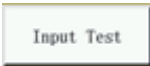
System Upgrade: Used to upgrade the firmware version of motherboard and display screen.

Drive Preview: Preview current, subdivision and other parameters of drive for each shaft. (Modification is not available on screen)

Test Transfer: Used to test whether the communication between display screen and motherboard, and to view logs, etc.

7.2 Input Test

Used to test if the external input circuit is in good condition.


Press  key in the assist operation interface to enter the input test interface as shown in the figure:

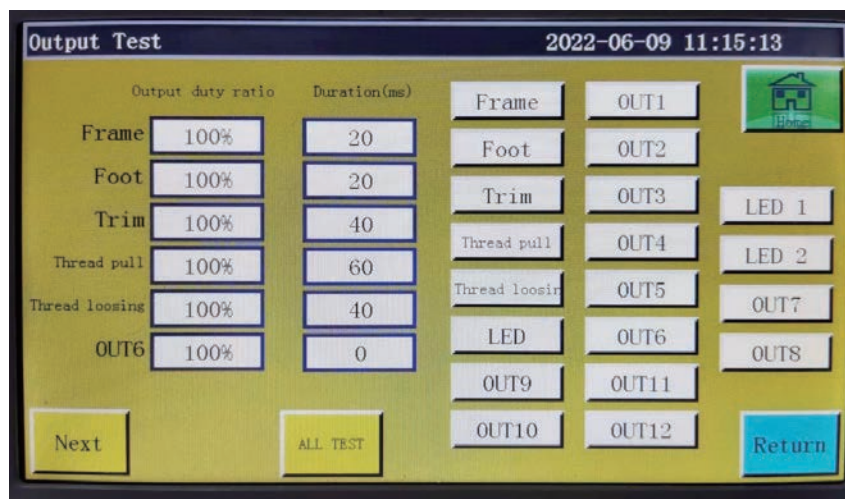


You can manually trigger relevant sensors and check whether the input status has changed, and determine if the sensor or hardware is in good condition.

7.3 Output Test

Used to test whether output control is in good condition.

Press  key in assist operation interface to get into output test interface as shown in the figure:



Test the corresponding output as needed.

For trimming, wiping and relaxation electromagnet outputs, one click corresponds to an on/off cycle of equipment electromagnet; if the key is held, ON state will continue. Holding the key too long may result in overheating induced damage to electromagnet. For solenoid valve outputs such as press frame and press foot, one click corresponds to one motion cycle of cylinder, and another click will return the cylinder to its initial state.

The OUT1, OUT2... function depends on specific device load, and some outputs are not used.

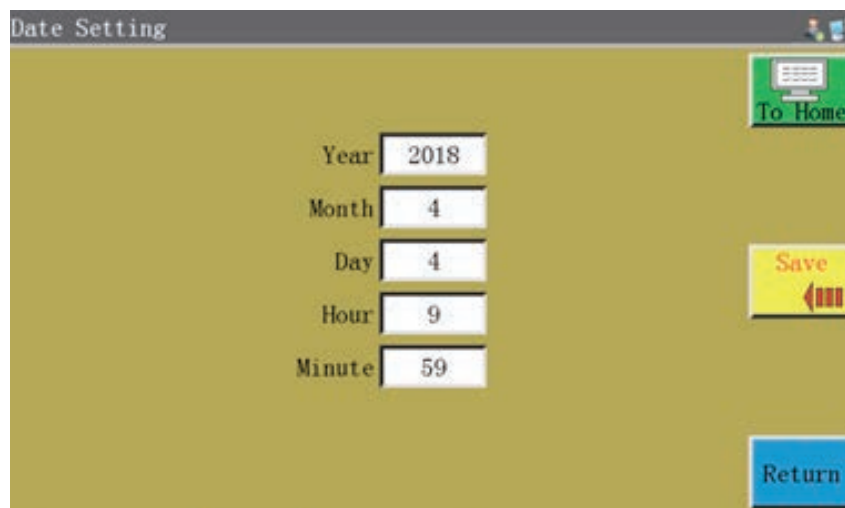
Lamps 1 and 2 are used to control "SYS" indicator lamp ON/OFF on screen, and correspond to red and blue lamps, respectively.

When **ALL TEST** is clicked, it shows the message reading "In progress, please wait...", which indicates a full output test is being performed; the prompt box will not be closed until the test is completed.

7.4 Date Settings

Used to set the system time (e.g., "year, month, day, hour, and minute") displayed in the upper right corner of the screen.

Enter the administration password to get into the setup interface. The interface is as follows:




The time is displayed in a 24-hour system accurate to "second".

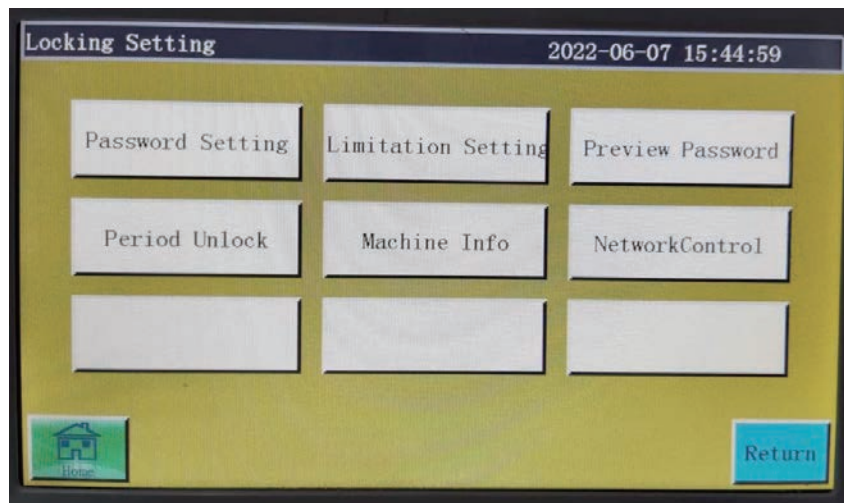


"Save" button : Click this key to save the set date and time. If the motherboard is equipped with a battery, the time is updated at next startup even if the power was turned off so as to ensure accurate time.

Accurate time helps sewing better, and enables the accurate recording of the time of problem in alarm log, thereby facilitating troubleshooting and problem analysis.

7.5 Lock Settings

Press  key and enter the administration password in the assist operation interface to enter the lock setup interface as shown in the figure:



The electric control is designed with four types of passwords, of which the functions are defined as follows:

Administration password: Enabled in "Locking Setting" - "Use limit". Administration password is the password with the highest privilege. You can change other passwords if you know the administration password.

Mechanical parameter password: Enabled in " Locking Setting " - "Password Setting". Once the mechanical parameter password is set up, it's impossible to enter the "Machine Param" setup interface without entering the correct password.

User parameter password: Enabled in " Locking Setting " - " Password Setting ". Once the user parameter password is set up, it's impossible to enter the "user parameter" setup interface without entering the correct password.

Other passwords: Enabled in " Locking Setting " - " Password Setting ". The settings can be established using upper computer parameters software. You have to enter "other passwords" in order to use file management, lock files, adjust the main shaft speed in main interface, and delete processing statistics information.

Lock machine setup interface is used to set whether to lock the machine at a fixed time, manage lock secret code and other related operations. It can realize time-limited use such as installment function.

If the equipment is limited, when the set time is reached, the main processing interface will pop up a dialog box prompting the input of a specific unlock password to unlock the lock.

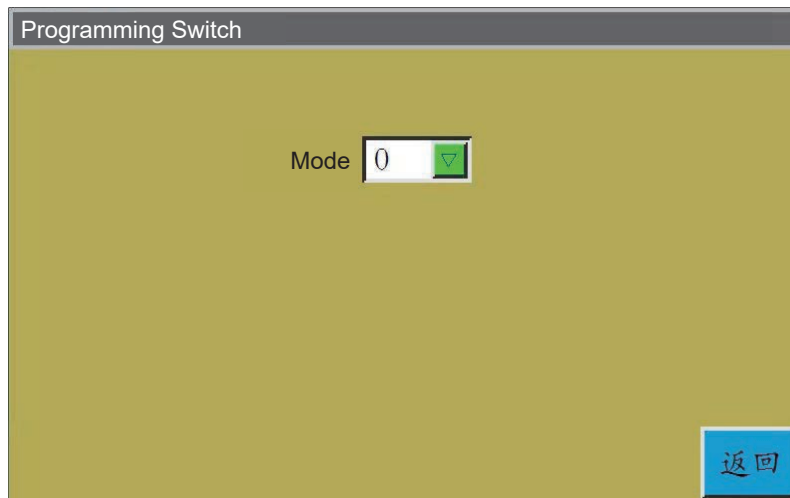
Note: This function is only for manufacturer instead of customers. Improper use of this feature may cause the machine to be locked up.

Network Control: Enters the JaNets linkage mode interface

In the case of using JaNets : Operation mode 2

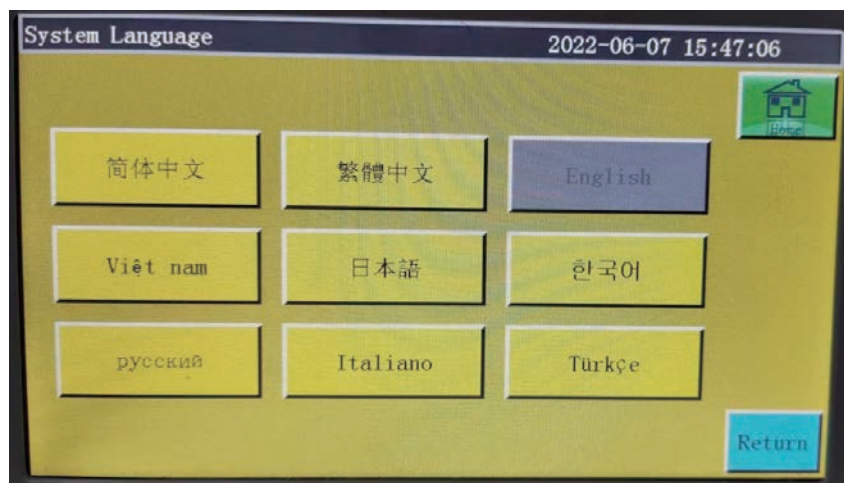
In the case of not using JaNets : Operation mode 0

*** Operation mode is "0" when the bar code reader is used.**




7.6 System Language

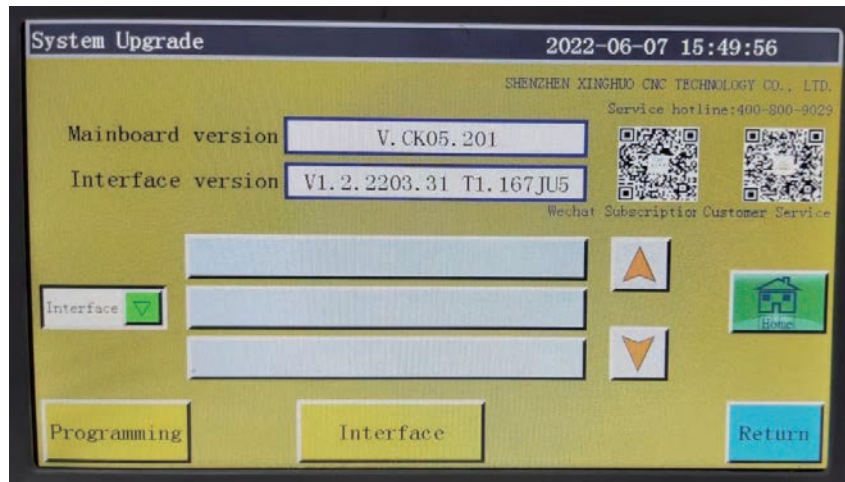
The screen system language can be selected from nine languages, i.e., Simplified Chinese, Traditional Chinese, English, Vietnamese, Japanese, Korean, Russian, Italian and Turkish.




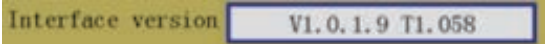
Click on the desired language, when a pop-up window reading "Prompt: Sure do it?" appears Select "Yes", and the language used in the screen will be changed to the set language.

7.7 System Upgrade

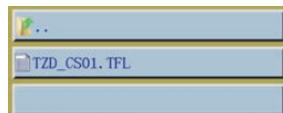
Press  key in assist operation interface to enter the system upgrade interface as shown in the figure:




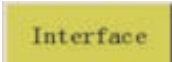



 : Show current motherboard version information. "CS01" represents the type of system, and remains unchanged after upgrade; "029" represents the branch version number that can be changed through upgrade: It can be upgraded to a higher version or fall back to a lower version.

 : Display the current screen interface version information. "058" indicates the branch version number


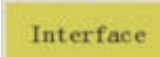
Press  to display the USB interface or the motherboard upgrade file.




 : Upgrade package directory that is automatically read after the insertion of USB flash disk; display the interface or motherboard upgrade files under all folders and current directory.

 **Upgrade key:** There are two types of upgrade keys,  and  . Matching is automatically carried out to select  .

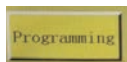
The system upgrade steps in the figure are as follows:

- (1) Receive the corresponding upgrade file from the supplier. The extension of interface upgrade file is .fcav (e.g. XH_HMI_T1_V074.fcav), and that of motherboard upgrade file is .TFL (e.g., TZD_CS01.TFL). Put the file(s) in USB flash disk.
- (2) Insert the USB flash disk and enter the "System upgrade" page.
- (3) Select the desired type of upgrade: Mainboard ,Command or interface.
- (4) Find the upgrade file and select the file to be upgraded.
- (5) Click  or  .

- (6) The prompt message reading "In the upgrade, do not power off!" pops up. Do not turn off the power until this prompt disappears; otherwise, you may need to return the product to its manufacturer for repair.
- (7) In the case of motherboard upgrade, a progress bar  will pop up to show the progress of the upgrade. When you start upgrading, the progress bar reaches 99% approximately within several tens of seconds. Approximately 30 seconds later, the motherboard will reboot and the buzzer will sound to indicate that the upgrade process is successfully completed. In the case of upgrading the interface, the progress bar is not displayed even when you start upgrading. Alternatively, the display reboots approximately 30 seconds later and is upgraded.

Description of related error prompts:

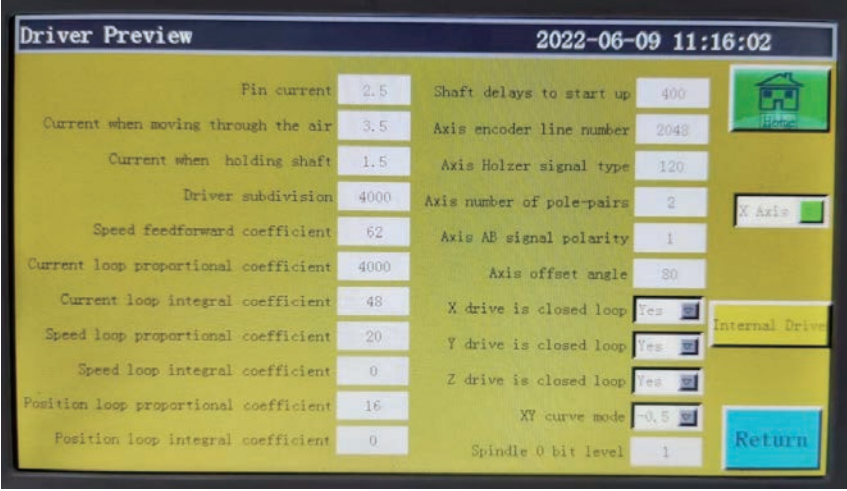
- (1) Upgrade interface prompt: "Error in upgrade file type"
- Cause:** a . The upgrade file is not selected.
b . The upgrade file is corrupted or not suitable for the present system.
- Solution:** Reinsert the USB flash disk or put the correct upgrade file therein.
- (2) For the upgrade of motherboard, the prompt message reading "No valid upgrade file found" appears.
- Cause:** No upgrade file is selected
- Solution:** Insert the USB flash disk, select a valid upgrade file, and click "Upgrade".
- (3) For the upgrade of motherland, a prompt message reading "Wrong upgrade file" appears
- Cause:** The upgrade file is corrupted or not suitable for the present system
- Solution:** Use the upgrade file of which the type is the same as current system type; for example, CS01 can only use the CS01 upgrade file. Check whether the upgrade file in USB flash disk is correct.
- (4) The progress bar remains at 1% after "Motherboard upgrade" is clicked.
- Cause:** The communication between screen and motherboard is abnormal
- Solution:** Check whether the connection wire between screen and electric control is in good condition, and restart. If the problem remains unsolved, the product should be returned to its manufacturer for troubleshooting.



Programming command button: Press this button to open the program command interface. In this interface, programming commands can be written or set to OFF.

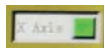
7.8 Driver Preview

Display detailed parameters for each shaft of the system drive. The drive preview interface is as follows.



The screenshot shows a 'Driver Preview' window with a title bar containing the date and time '2022-06-09 11:16:02'. The interface is divided into several sections. On the left, there is a list of parameters with their current values: Pin current (2.5), Current when moving through the air (3.5), Current when holding shaft (1.5), Driver subdivision (4000), Speed feedforward coefficient (62), Current loop proportional coefficient (4000), Current loop integral coefficient (48), Speed loop proportional coefficient (20), Speed loop integral coefficient (0), Position loop proportional coefficient (16), and Position loop integral coefficient (0). On the right, there are more parameters: Shaft delays to start up (400), Axis encoder line number (2048), Axis Holzer signal type (120), Axis number of pole-pairs (2), Axis AB signal polarity (1), Axis offset angle (80), X drive is closed loop (Yes), Y drive is closed loop (Yes), Z drive is closed loop (Yes), XY curve mode (-0.5), and Spindle 0 bit level (1). At the top right, there is a 'Home' button with a house icon. Below it is a 'X Axis' selection box. To the right of the parameters, there is an 'Internal Drive' button. At the bottom right, there is a 'Return' button.

Parameter	Value
Pin current	2.5
Current when moving through the air	3.5
Current when holding shaft	1.5
Driver subdivision	4000
Speed feedforward coefficient	62
Current loop proportional coefficient	4000
Current loop integral coefficient	48
Speed loop proportional coefficient	20
Speed loop integral coefficient	0
Position loop proportional coefficient	16
Position loop integral coefficient	0
Shaft delays to start up	400
Axis encoder line number	2048
Axis Holzer signal type	120
Axis number of pole-pairs	2
Axis AB signal polarity	1
Axis offset angle	80
X drive is closed loop	Yes
Y drive is closed loop	Yes
Z drive is closed loop	Yes
XY curve mode	-0.5
Spindle 0 bit level	1



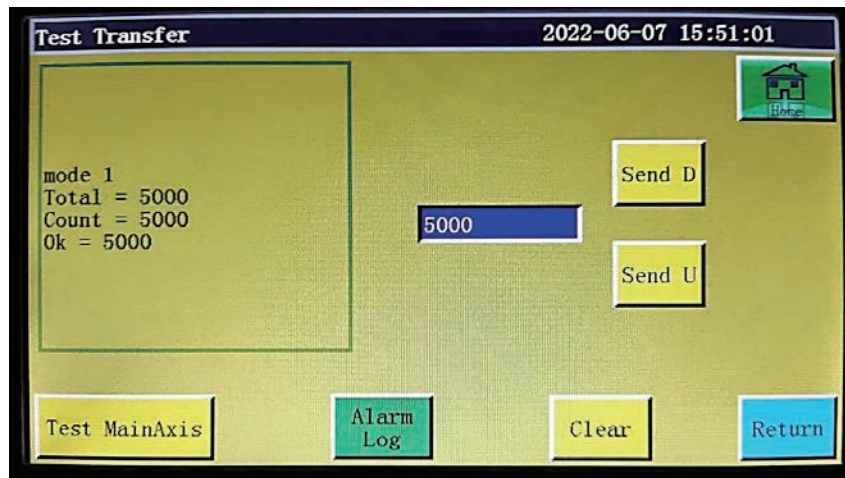
Selection box: Select the drive parameter information to be viewed. (The parameters can't be modified on the screen)



Internal Drive: Press this button to examine the parameter information for the X, Y, Z drives of the system, thread trimming axis, main shaft and Y servomotor.

7.9 Test Transfer

Used to test whether the communication between screen and motherboard is in good condition. The test transmission interface is as follows:

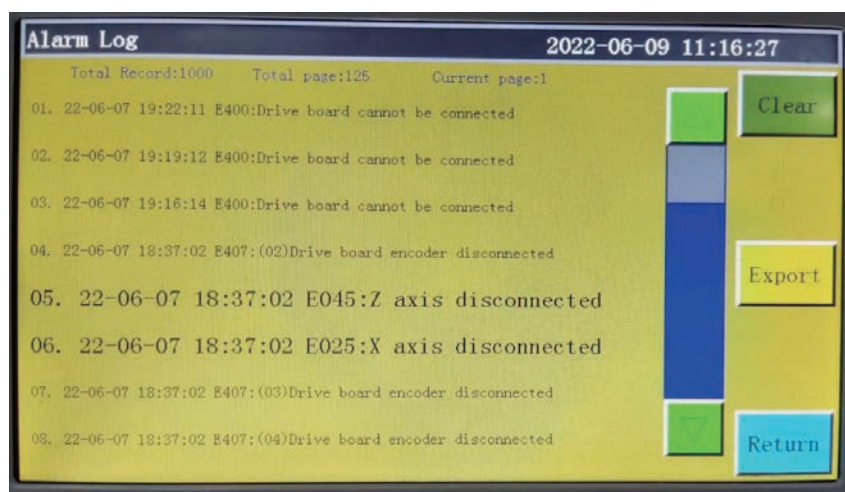


Enter the value you want to test in , and click or , when the test result will appear on the left window. If the values of Total, Count, and Ok are the same or very close to each other (within a difference of 1%), it means the communication between screen and motherboard is normal.

: Clear the test result on the left.

: Click this key once, the running current of main shaft will decrease, and the normal current can't be restored until the power is turned off and restarted. Used to test whether the main shaft can function properly under no load.

: The alarm log can be viewed.



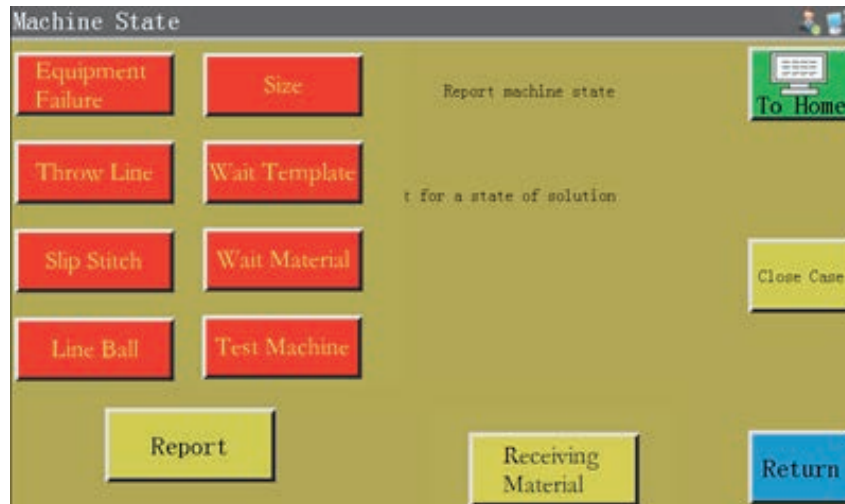
: Export the alarm log as a file to a USB flash disk for convenient troubleshooting and anomaly statistics.

: Clear all contents of alarm log.

Chapter IX Machine State

8.1 Machine status interface

When an operator finds any anomaly in equipment, the abnormal status of equipment can be reported to the LAN server through local area network to prompt technicians to perform maintenance; moreover, the current equipment status is displayed on the console in real time.



The operator shall select the machine status to be reported, and click **Report** to bring up the following interface:



Upon the arrival of technician at the equipment, he/she can click **In Place**, when the machine status displayed on console reads "Waiting for solution". When **Close Case** is clicked after the removal of anomaly, the machine status displayed on console returns to normal.

Appendix I: Information Prompt and Solutions

1. “Pressure box didn’t put down”

Cause: The press frame was not dropped before resetting, processing, file capture and file modification

Solution: Click  to drop the frame.

2. “These is no reset”

Solution: Click  .

3. “X-axis drive open circuit”


Cause: a. X-axis motor is not connected
b. Loose motor interface

Solution: Turn off the power and check the motor line for connection anomaly.

4. “The bobbin thread has been used up”

Cause: The bobbin thread required by pre-processed file is longer than the remaining bobbin thread (total length of processing statistics interface - initial length of bobbin thread)


Solution: a. Use the bobbin thread statistics function to replace the bobbin thread and modify relevant length information;

b. Where the bobbin thread statistics function is not used, you can click  to disable it. See ["2.2.5 Process Statistics Interface Display Instruction"](#) and ["6.2 Introduction to User Setting Parameters"](#).

5. “The quantity of work is full”

Cause: In the processing statistics interface, the "current value of count by piece" increases to the "total count by piece"

Solution: a. If the processing statistics function is used, it's necessary to modify the "current value of count by piece" or the "total count by piece" so that the former is less than the latter.

b. Where the processing statistics function is not used, you can click  to disable it directly. See ["2.2.5 Process Statistics Interface Display Instruction"](#) and ["6.2 Introduction to User Setting Parameters"](#).

6. “File range out of bounds”

Cause: a. The length and width of the processing file are beyond the processing range
b. The length and width of the processing file is within the processing range, but the absolute coordinates are beyond the processing range (if imported first into a machine with large processing range, the file will incorporate absolute coordinates and then be exported to a machine with small processing range)

Solution: a. Reduce the size of processing file
b. Import the processing file generated directly through upper computer. See ["2.2.4 Display Instruction for Reference Setup Interface"](#).

7. “Opening state”

Cause: The touch key on top panel is pressed, thus the top panel being open.

Solution: Click the "top panel" key on touch key pad.

8. "No working file”


Cause: The lock file is open.

Solution: Check whether the graphic interface indicates a lock file flag. If so, just click



9. "The main motor error”

Cause: a. The main shaft motor circuit is open or the encoder cable is not connected.
b. Main shaft motor is damaged

Solution: a. Check if the motor cables are properly connected, and if the encoder cable is connected.
b. If the motor cables are properly connected, it's necessary to replace main shaft motor, test the main shaft with  in powered-on state, or manually rotate the motor to check if QEP changes on the screen.

10. "Connecting the main control board"

“Connecting the main control board”

Cause: a. The connection between motherboard and screen is out of order
b. The screen goes wrong
c. The motherboard is damaged

Solution: a. Check whether both ends of cable are properly connected, restart, and replace screen cable.
b. Replace the screen to check if it functions properly
c. Change motherboard to check if the screen gives a similar alarm.


11. "Couldn't find X zero signal"

- Cause:
- a. X motor direction error;
 - b. X motor position sensor failure;
 - c. Failure to move due to excessively large load in X direction of motor

- Solution:
- a. Enter the manual frame shift interface and test X motor rotation;
 - b. Enter the "input test" interface, and manually trigger the position input signal to check if it can be detected
 - c. Turn off the power and manually push press frame to check if the load is too large and gets stuck.

12. "Motor scissors are not in place"

- Cause:
- a. The encoder cable of motor with Z signal malfunctions
 - b. Parameter setting error

- Solution:
- a. Press  and check if the motor is properly connected or if the motor is in good condition.
 - b. Rotate the motor manually to check whether the W axis/axis limit signal indicator of motherboard changes.
 - c. Check if the parameter settings exhibit conflict.

13. "The main motor direction error"

- Cause: Main shaft rotation direction is wrong

- Solution: Use parameter modification software to correct the main shaft moving direction or modify the main shaft motor direction or main shaft encoder direction in shaft operation mode in mechanical parameters.

14. "X-axis driver hardware over-current"

- Cause:
- a. Poor contact of X-axis motor base
 - b. Damaged X-axis stepping motor or short circuit of motor cable
 - c. Motherboard hardware problem

- Solution:
- a. Confirm that the flashing mode of X stepping motor alarm indicator on motherboard is "1 green and 5 red's"; if not, it means false alarm.
 - b. Reinsert X motor cable and restart the machine
 - c. Change X axis motor
 - d. Change the motherboard

15. "Motor foot in fault"

- Cause: No motor limit signal is detected when motor press foot is reset

- Solution: Check motor press foot related base for looseness; check whether the z signal limit signal input changes in the input test interface;

16. "Head board cannot be connected"

Cause: a. The connection between head board and control board is out of order
b. Head board is damaged

Solution: a. Check whether the connection is abnormal or replace connection cable
b. Change the head board.

17. "Air pressure is insufficient"

Cause: a. Air supply equipment exception results in insufficient air pressure
b. Abnormal input of control board
c. Abnormal parameter settings or wiring error

Solution: a. Check whether the barometric pressure is normal
b. Short-circuit the input and gnd with tweezers and check if the input changes at "Assist settings" - "Input test" side
c. Check whether the parameters are set abnormally. In normal condition, the input is "normally closed". In the case of insufficient pressure, it should be opened, when the LED will light up for alarm.

18. "Electrical fault, please contact the manufacturer"

Cause: Hardware failure

Solution: Contact the manufacturer

19. "Grab line motor is not in place"

Cause: No motor limit signal is detected when motor press foot is reset

Solution: Check motor press foot related base for looseness; check whether the z signal limit signal input changes in the input test interface; check whether the parameters are improper.

20. "Input IO1 timeout error"

Cause: No signal is detected at this input port

Solution: Enter "input test" interface, and manually trigger the position input signal to check whether it can be detected

21. "Foot follow error"

Cause: Press foot zero input port detects no signal

Solution: Check the IO port set for follower press foot alarm in parameter setup software, manually trigger the IO port and check whether it can be detected

Appendix II: Quick Start Guide







(1) Start the machine

Install the equipment and connect the power supply. Turn or press the power switch to start the machine. Get into the main interface of processing as described in Section 2.2.1 after the logo appears.

Where bobbin thread winding is needed, refer to **"2.2.2 Test Interface Display Description"**.




(2) Set up processing file

Copy the .SLW processing file generated by the PC sewing editing software into the USB flash disk; insert the USB flash disk into the USB interface of equipment;

click  →  →  in the main interface of processing to get into "USB flash disk" interface, click the name of the file to be processed to make it turn red, and click  to copy the file into memory. Press  →  to return to the main processing interface. Select the file to be processed on the left, when the processing pattern can be previewed in the middle of interface.

If "file capture" function is used to create processing file, see **"Chapter IV File Editing"**.

(3) Place the template

Put the fabric to be processed into the prepared template, click , and click  to make press frame get into rising state. Place the template under press frame, and click  so that the press frame can go down and press the template.

(4) Align with reference

See **"2.2.4 Display Instruction for Reference Setup Interface"**.

(5) Start the processing

Press start button in the main interface of processing, and the machine will start the processing based on pattern. Upon completion of processing, the system automatically returns to the reset origin or other set points.

Note:

1. If the processing is not performed for the first time (it has been copied into memory for reference alignment, and the automatic template recognition function has been enabled), only two steps will be needed: Place the template → Start the processing
2. If other information prompts are displayed, refer to **"Appendix I: Information Prompt and Solutions"**.
3. If the processing is repeated after processing, you have to click other buttons upon completion of one processing cycle and enter parameter setup interface to cancel cycle processing.