

Fully Automatic Sewing Control System

User Guide

(Generation-II HMI)

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Chapter 1 Introduction to Control System

1.1 Preface

Thanks for using our fully automatic template sewing control system!

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

Before using, please read the manual carefully to ensure that you could use this system properly. Besides, please keep this manual appropriately so that you may read it at anytime when necessary.

If there is any discrepancy between the actual situation and manual caused by the different machine configuration or software version, then actual function shall prevail.



1.2 Function Description

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

- Full automatic template sewing machine can replace various special machinery such as traditional lockstitch sewing machine, long arm sewing machine, bar-tacking sewing machine, embroidery machine, etc. in certain circumstances to achieve multi-usage.
- Just put the material and press the “START” button, then the process remained will be fully automated.
- With standardized operation, the machine can achieve an amazing effect for various types of stitches and fabric.

(2) User-friendly Interface to Control Machine

- 7 inches color LCD touch-screen, with a clear reading and comfortable touch, brings a relaxing and pleasant experience to its users.
- Multi-language system supports to switch language between Chinese, English, Japanese, Korean, Vietnamese, Turkish, etc.
- Large file storage space which is up to 128M, satisfies the storage need during daily process.
- Convenient file Collection (template making), modification and file management functions.

(3) Precise Technology to Control Motion and High Sewing Efficiency

- Using international advanced DSP chip makes the system with a high running speed, so the hardware with a high integration and machine with a stable performance.
- Supporting stepper, closed-loop stepper, brushless DC and servo drive, and achieve speed governing by smooth curves, which make machine runs smoothly.
- Compact mechanical structure, good rigidity, high sewing position precision, and low noise.

(4) Convenient Computer Graphic Editing Software

- Files in dxf, dst, dsb, ai, plt, edi format that are generated by software such as Autocad, Coredraw are easily converted into processing files.
- The software has comprehensive graphics editing functions, supporting layer editing and adding various kinds of special sewing stitch lines.
- With common control instruction set and customizable control instruction (functional code), so it has a high dexterity of action.
- For each layer, each graphic or each stitch, a variety of mechanical control commands can be inserted into to meet the diversified and precise automatic sewing requirements.

(5) Various User Parameters and Comprehensive Auxiliary Functions

- Detail settings can be carried out for various mechanical actions to meet the needs of self-definition.

- Extra functions can be added to some machine, like laser expanding, lines drawing and automatic mold slot opening.
- System upgrade by USB flash drive, detection of thread breaking and continuation sewing in power down are supported. Besides, the system can check the statistics of processing, forecast the lack of bobbin thread, proceed the self-test of the system, fulfill the backup and recovery of parameter and encryption lock of machine. What's more, the system also supports the function of remote control and management. Therefore, this system will be a great help for the integrity of the process, bringing a higher efficiency.

1.3 Cautions

1.3.1 Safety Instructions

To avoid possible hazards and prevent damage to your device, please be sure to observe the following safety matters:



Note:

- Please don't carry out maintenance or debugging to electric system by non-specialists; otherwise, it might reduce the safety performance of equipment, enlarge the fault, and even cause injury to personnel and property losses.
- Some parts inside the case have high voltage; therefore, please do not open the case cover after after the system is powered on to avoid accidental injury.
- Please do not pile debris around the electric control box, and the dust on the surface of the control box and the filter should be cleaned regularly during the use of the equipment to maintain good ventilation and heat dissipation of the system.
- Please do not make any change to the product arbitrarily without authorization, or the company **will not** be responsible for the consequences caused by this!



Warning:

- **If it is really necessary to open the case cover, please carry out this operation after cutting off the power for 5 minutes and under the guidance of professionals. Only in such case are the components inside the control box allowed to be touched!**



Danger :

- Do not touch any moving parts or open the control equipment when the machine is working, as well as plugging or unplugging the interfaces of control box, otherwise it may cause personal injury or machine breakdowns!
- Do not use this electrical equipment in places with humidity, dust, corrosive gas or flammable and explosive gas, otherwise it may cause electric shock or fire!

1.3.2 Work Environment

- Solid and level installation ground.
- Well ventilated and hygienic environment with less dust.
- Temperature of work environment: 5~40°C.
- Relative humidity of work environment: 30%~90% without condensation.

1.3.3 Power Requirements

- Single-phase AC 220V; 50/60HZ.
- If the voltage fluctuation of the power grid exceeds 10%, then voltage stabilizer must be equipped.
- Equipment power is between 1.0~2.0KW depends on the machine configuration.


1.3.4 Grounding Requirements

- To prevent equipment from electric shock or fire accidents caused by leakage, over-voltage, insulation, etc., please make sure the electronic control box with reliable grounding.
- The grounding resistance should be less than 100 ohms, the length of wire should be within 20 meters and its cross-sectional area should be greater than 1.0 square millimeters.

Chapter 2 Description of Home Interface



2.1 System Power-up



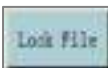

 After powering up, the HMI will enter the boot screen automatically. Besides, the machine spindle will turn automatically for testing and machine will reset the other parts. Kindly note this operation depends on the parameters setting relating to power-on reset.

2.2 Home Interface




The system will enter the home interface automatically after displaying the LOGO, and its figure is as follows.















Instruction of Home Interface's Buttons:

- (1) [Preview area](#): Show the graphic of current selected file; and click it to switch between the "Full" (zoomed for optimum display) and "Proportional" (proportional to the actual processing range) methods. Only the "Full" display mode is available when the machining pattern is larger than 8000 stitches.
- (2) [Memory file list](#): Show the memory files; file can be selected by clicking its name and then showed on the preview area. To page through the list, you can click the  or .
- (3)  : [File lock button](#); lock the currently processed file to prevent misoperation, after locking the system will be prohibited to select other processing files and the preview area will appear . Click this button again to unlock the file.

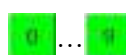






Note: Description of "Automatic Template Recognition"












- A. Automatic template recognition will work only in the state of "lock file".
 - B. The corresponding graphic will be displayed in the "preview area" after recognizing, and the its file name can be seen in the "information area".
 - C. If the "template recognition mode" is set to "RFID", electronic ID card (identifier) will be used to match the file name; if it is set to "Barcode", the serial number of file will be matched using a barcode scanner.
- (4)  : [Threading function](#); machine will perform threading by clicking it. During threading, the presser foot is lowered and the "Start" button is locked automatically to prevent accidental startup.
 - (5)  : [Acceleration function](#); the spindle speed will be increased by 100 rpm for each click. Press and hold (long-pressed) this button, it will increase continuously until the highest speed (Arbitrary change to speed can be prohibited by setting a password).
 - (6)  : [Deceleration function](#); the spindle speed will be reduced by 100 rpm for each click. Press and hold (long-pressed) this button, it will decrease

continuously until the lowest speed (Arbitrary change to speed can be prohibited by setting a password).


- (7)  : [Current spindle speed](#); modify by clicking  or .
- (8)  : [Statistics of bobbin thread](#); to show the used bobbin thread and it will enter the interface of processing statistic by clicking it.
- (9)  : [Statistic of files](#); to show the quality of processed files and it will enter the interface of processing statistic by clicking it.
- (10)  : [Menu button](#); enter the menu page by clicking it.
- (11)  : [Test for sewing](#); to simulate the process based on graphical trajectory (Only the X and Y axes rotate during this process, the spindle is stationary).
- (12)  : [Fast rewind](#); rewind to the starting stitch of previous curve, and the spindle is stationary during this process. (Use to preview the position of processed stitch or make machine start sewing from the specified position).
- (13)  : [Fast forward](#); forward to the starting stitch of next curve, and the spindle is stationary during this process. (Use to preview the position of processed stitch or make machine start sewing from the specified position).
- (14)  : [Single-stitch rewind](#); rewind to the previous stitch, and it will rewind continuously if long-press the button (Use to preview the position of processed stitch or make machine start sewing from the specified position).
- (15)  : [Single-stitch forward](#); forward to the next stitch, and it will forward continuously if long-press the button (Use to preview the position of processed stitch or make machine start sewing from the specified position).
- (16)  : [Display area of processing stitches](#); the upper number indicates the total stitches of the current processed file, and the lower number indicates the current processed stitch. It will enter the interface of “Jump Stitch”.

Introduction of “Jump Stitch” Interface

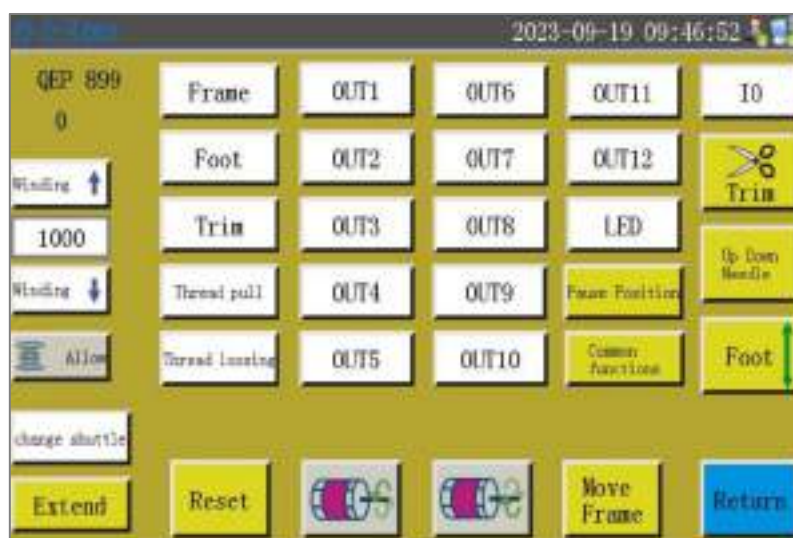
- | | |
|--|---|
|  : skipped stitches number |  : delete a digit from right |
|  : return to zero |  : cancel the modification |
|  : add 1 to the set value |  : confirm the modification |
|  : minus 1 to the set value | |

- (17)  : [Network state](#); connection with wireless network has been established.
- (18)  : [LAN state](#); connection with local area network has been established.
- (19)  : [Page left](#); turn the left page of memory file list.
- (20)  : [Page right](#); turn the right page of memory file list.
- (21)  : [Memory files](#); check all memory files of the display.
- (22)  : [Machine reset](#); all axes will turn and the machine will perform reset.
- (23)  : [Tread trimming](#); machine will perform trimming by clicking it.
- (24)  : [Foot up/down](#); press to toggle between lift-up and press-down of presser foot.
- (25)  : [Presser foot and clamping settings](#); set the height of the presser foot or the strength of clamping (Only in the parameter software will presser foot type set to motor presser foot this function can be used).
- (26)  : [Benchmark button](#); if offset occurs during the sewing process, then timely calibrate to the exact position.
- (27)  : [Next interface](#); enter the interface of “Test”.



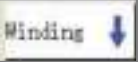

2.3 Test Interface

Click  in the home page to enter the test interface to test machine functions

like “move frame”, “trimming” and others.






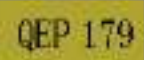
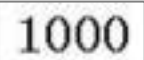


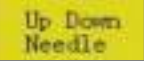
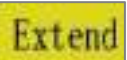
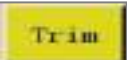
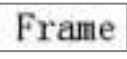
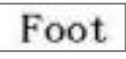

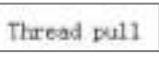
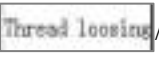
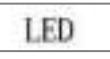
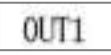

Instruction of Test Interface's Buttons:

- (1)  : [Shuttle-change button](#); if the machine has an automatic shuttle change function, click to output the signal and then change the shuttle.
- (2)  : [Acceleration of winding](#); winding speed will be increased by 100 rpm with each click. Press and hold this button to increase the speed continuously until it reaches the maximum speed.
- (3)  : [Deceleration of winding](#); winding speed will be reduced by 100 rpm with each click. Press and hold this button to increase the speed continuously until it reaches the set minimum speed.
- (4)  : [Winding button](#); each press toggles between “Allow” and “Prohibit”. When “Allow” and click “START” button, the the machine will perform winding with the setting speed. Click “START” or “STOP” button to stop winding. When “Prohibit”, the winding will be prohibited.

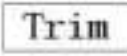
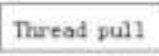




Instruction of Winding Operation

In this interface, press the "START" button then the spindle motor will be wound at the setting speed. It can be stopped by pressing "START" or "STOP" button, and the speed can be adjusted by  and .

- (5)  : [Current winding speed](#); the real-time spindle speed under the winding mode.
- (6)  : [Spindle angle](#); show current angle of spindle (0-999).
- (7)  : [Winding speed](#); set the winding speed of spindle.
- (8)  : [Spindle reversing button](#); click then spindle move reversely.
- (9)  : [Spindle forwarding button](#); click then spindle move forwardly.
- (10)  : [Spindle position button](#); each press toggles between the upper and the lower spindle position.
- (11)  : [Extended axes](#); click to enter the interface of the extended axes.
- (12)  : [Tread trimming](#); machine will perform trimming by clicking it.
- (13)  /  /  /  /  /  : Each press toggles between turning on and turning off the external equipment (For some electric control system, the LED lamp will be always ON).
- (14)  ...  : Each press toggles between turning on and turning off the corresponding IO output function.

**Warm Tips:**

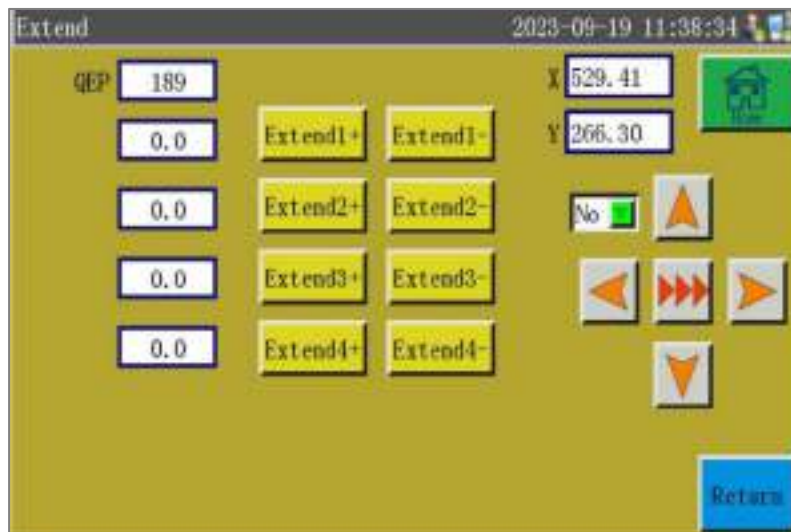
Please do not press the solenoid control output for a long time without lifting, like  ,  ,  and so on, otherwise it may lead to overheating damage to the solenoid connected to this output!

- (15)  : Enter the "Pause Position" interface; the machine will move to the specific position during sewing after the command "Up pause" is inserted. Up to 6 groups can be set, and each corresponds to the sequence of "Up pause" commands in the processing file.




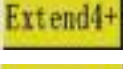
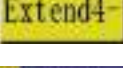


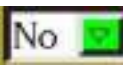

- (16) **Move Frame** : Enter the “Move Frame” interface; mainly used to move the axes (X+/X-/Y+/Y-...).
- (17) **Common functions** : Enter the “Common Functions” interface; used to operate the overall scaling, length increasing and decreasing, stitch editing, stitch length modifying, graphical reinforcing, graphical editing and turn point setting.
- (18) **Reset** : [Reset button](#); click then the machine starts to reset operation.
- (19) **Foot** : [Foot up/down](#); press to toggle between lift-up and press-down of foot.
- (20) **IO** : Enter the interface to test the Output IO and input IO.
- (21) **Return** : Return to the home interface.

2.3.1 Extended Interface


Click **Extend** in the test interface to enter the extended interface and its figure is as follows.

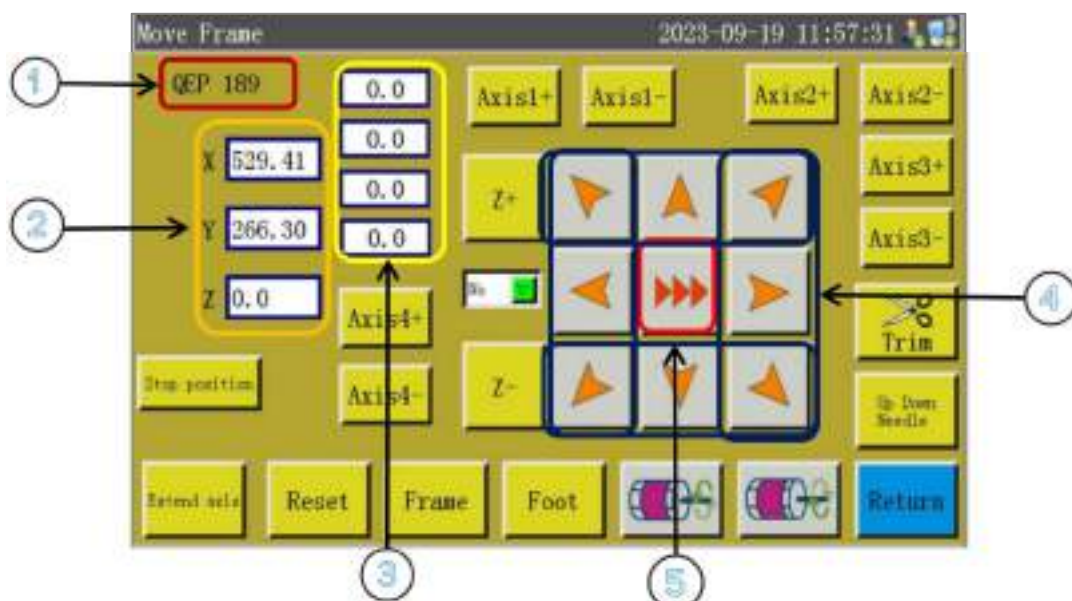


- (1) **QEP 189** : Spindle angle; show current angle of spindle (0-999).
- (2) **Extend1+** : Click then the extended axis 1 moves in the positive direction.
- (3) **Extend1-** : Click then the extended axis 1 moves in the negative direction.
- (4) **Extend2+** : Click then the extended axis 2 moves in the positive direction.

- (5) : Click then the extended axis 2 moves in the negative direction.
- (6) : Click then the extended axis 3 moves in the positive direction.
- (7) : Click then the extended axis 3 moves in the negative direction.
- (8) : Click then the extended axis 4 moves in the positive direction.
- (9) : Click then the extended axis 4 moves in the negative direction.
- (10) : Current X coordinate.
- (11) : Current Y coordinate.
- (12) : Before resetting the machine, if want to move the extended axes then it should choose "Yes", so the axes' motors will be at loosen state.
- (13) : Frame moving speed; totally 3 types.


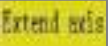
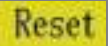
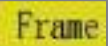
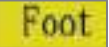


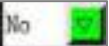
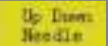






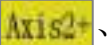




2.3.2 Move Frame Interface

Click  in the test interface to enter the Move Frame interface and its figure is as follows.



- ① Spindle angle
- ② Current X/Y/Z coordinate
- ③ Current 1/2/3/4 coordinate
- ④ Moving arrow buttons (8)
- ⑤ Speed switching buttons (3)

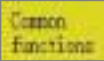
Instruction of Move Frame Interface's Buttons:

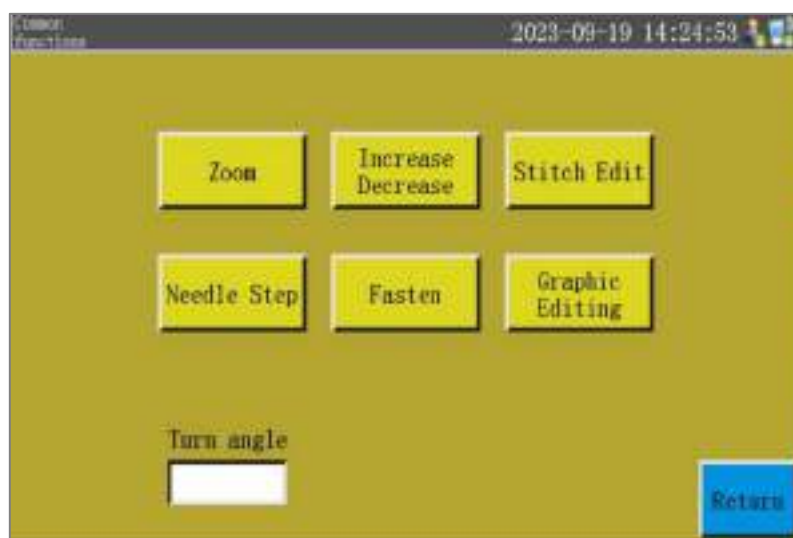
- (1)  : Set the current X/Y coordinates as the stop coordinates of X/Y after the machine is reset.
- (2)  : Enter the extended interface.
- (3)  : Reset the machine.
- (4)  : Frame up/down.
- (5)  : Presser foot up/down.
- (6)  : Spindle reversing button.
- (7)  : Spindle forwarding button.
- (8)  : "No" means moving can be performed before the reset, and "Yes" means can't (if the machine has completed the reset, the function is invalid).
- (9)  : Spindle upper/lower position.
- (10)  : Trim the thread manually.
- (11)  : Moving speed; totally 3 types which corresponding to the "Button speed 1/2/3" in the user parameter. (Low-, Middle-, High-) .
- (12)  : Press to manually move the corresponding axis, like 、、、 (For some machines, some axes are not valid) .
- (13)  : Moving arrow buttons; totally 8 types.

**Instruction of 8 moving arrow buttons**




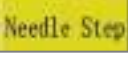
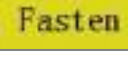


- | | |
|---|---|
|  : Move to upper-left |  : Move to right |
|  : Move upwards |  : Move to lower-left |
|  : Move to upper-right |  : Move downwards |
|  : Move to left |  : Move to lower-right |

2.3.3 Common Functions Interface

Click  in the test interface to enter the Common Functions interface and its figure is as follows.



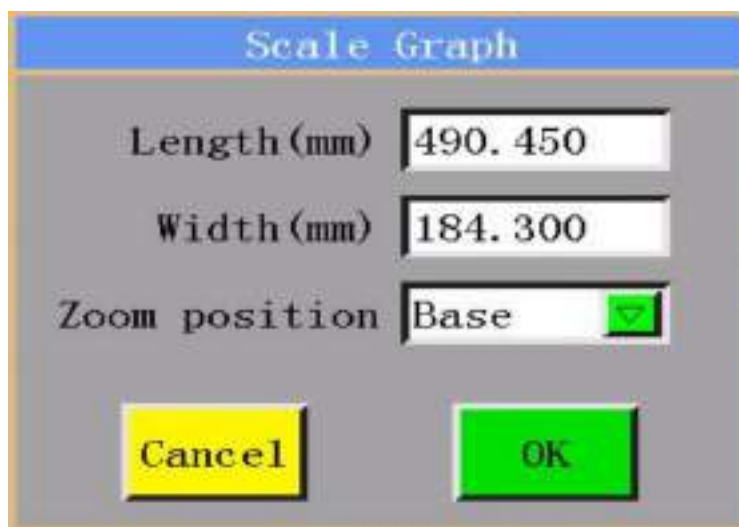
Instruction of Common Function Interface's Interface

- (1)  : Click to popup the “[Scale Graphic](#)” window; scale the graphical length and width by needs after ensuring the zoom position.
- (2)  : Click to popup the “[Increase Decrease](#)” window; increase or decrease the length at the graphical start & end side.
- (3)  : Click to popup the “[Stitch Edit](#)” interface; stitches adding, deleting and translating, benchmark setting and other operations are supported.
- (4)  : Click to popup the “[Needle Step](#)” window; change the overall stitch length of the selected file.
- (5)  : Click to popup the “[Graph Reinforcement](#)” window; set backstitch, shrinkage or zigzag at the graphical start and end side. Also, the reinforcement for closed graphics is supported.
- (6)  : Click to popup the “[Graph Edit](#)” interface; graph deleting, copying, and rotating, sewing direction changing and other operations are supported.
- (7)  : Set the turn point angle; any angle within the complementary angle to

this value is considered as a turn point. E.g. if input value 45, then the speed deceleration will be performed for all angles within 135 degrees.

A. [Scale Graph] Instruction

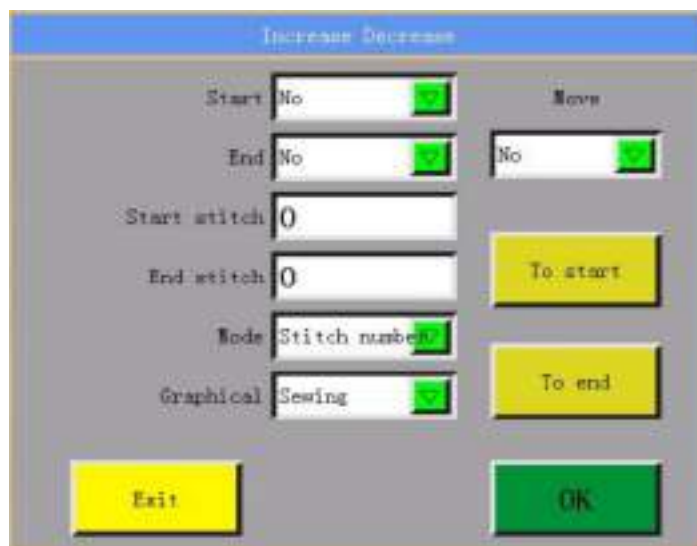
Click **Zoom** in the common functions interface to popup the Scale Graph window, its figure is as follows.



- (1) **Length (mm)** : The final length of graphic after reduction or enlargement.
- (2) **Width (mm)** : The final width of graphic after reduction or enlargement.
- (3) **Zoom position** : Totally 2 types; “Base” and “Center”. If choose “Base”, then the graphical benchmark will keep after scaling; if choose “Center” , then the graphical center will keep after scaling.

B. [Increase Decrease] Instruction

Click **Increase Decrease** in the common functions interface to popup the Increase Decrease window, its figure is as follows.



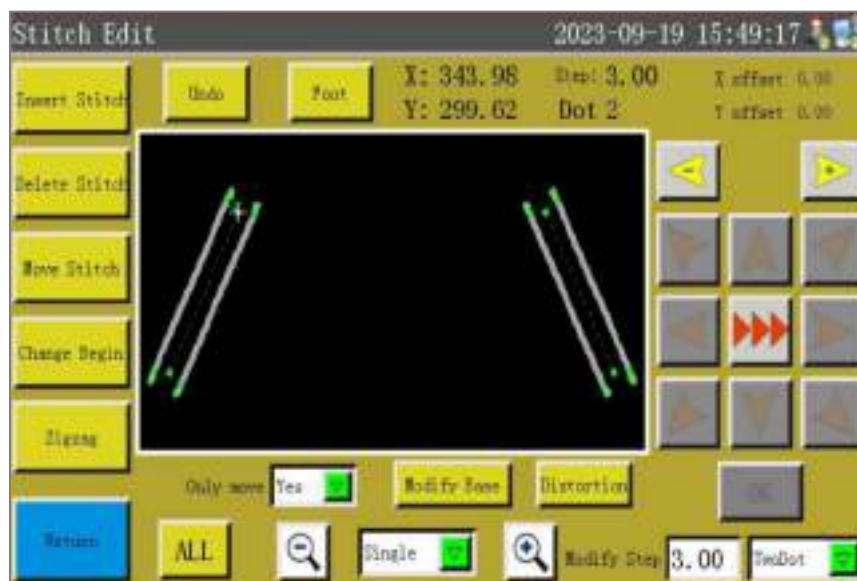
- (1) **Start** : Increase/Decrease length at the graphical start side.
- (2) **End** : Increase/Decrease length at the graphical end side.
- (3) **Start stitch** : This parameter is valid only when "Graphical" is "Sewing" and "Mode" is "Stitch number". A positive value indicates an increase, and a negative value indicates a decrease, using the number of stitches as the unit. If **Start** is selected as "Yes" and **Start stitch** is set to -2, it means the start side is reduced by 2 stitches.
- (4) **End stitch** : This parameter is valid only when "Graphical" is "Sewing" and "Mode" is "Stitch number". A positive value indicates an increase, and a negative value indicates a decrease, using the number of stitches as the unit. If **End** is selected as "Yes" and **End stitch** is set to 4, it means the start side is increased by 4 stitches.
- (5) **Start length** : This parameter is valid only when "Mode" is "Length". A positive value indicates an increase, and a negative value indicates a decrease, using the length as the unit. If **Start** is selected as "Yes" and **Start length** is set to -2, it means the start side is reduced by 2mm.
- (6) **End length** : This parameter is valid only when "Mode" is "Length". A positive













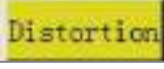
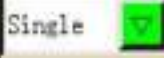



value indicates an increase, and a negative value indicates a decrease, using the length as the unit. If **Start** is selected as "Yes" and **End length** is set to 4, it means the start side is increased by 4mm.

- (7) **Mode** : Totally 2 modes; "[Stitch number](#)" and "[Length](#)". If choose "Length", then should set "start length" and "end length". If choose "Stitch number", then should set "start stitch" and "end stitch".
- (8) **Graphical** : Totally 3 types; "[Sewing](#)" "[Cutting](#)" and "[Only move](#)". The process way of selected file. "Sewing" means the graphic is used to sew; "Cutting" means the graphic is used to cut; "Only move" means the graphic is used to move only. (Kindly note the cutting line can only modified its length by the "Length" mode.)
- (9) **Move** : Choose "Yes" then the machine will move to the target position after increasing or decreasing.
- (10) **To start** : Move to the start point of the operated graphic.
- (11) **To end** : Move to the end point of the operated graphic.

C. Stitch Edit Instruction

Click **Stitch Edit** in the common functions interface to popup the Stitch Edit interface, its figure is as follows.



- (1)  : Add a stitch to a specific position.
- (2)  : Delete the selected stitch.
- (3)  : Move the selected stitch.
- (4)  : Change the graphical start point (the beginning point of the sewing) and this operation is only available when select a closed graphic.
- (5)  : Set zigzag reinforcement to the selected graphic, and at least 2 consecutive stitches need to be selected.
- (6)  : Undo the previous operation.
- (7)  : Presser foot up/down.
- (8)  : Back one stitch and select it.
- (9)  : Forward one stitch and select it.
- (10)  : Frame moving speed.
- (11)  : Moving arrow button.
- (12)  : Popup the “Modify Base” window and change the benchmark (base), or remove the setting benchmark.
- (13)  : Popup the “Distortion” window; transform the shape of the selected segments (**usually segment consists of the selected stitches, and at least select 2 consecutive stitches**).
- (14)  : Stitch selection mode, totally 4 types: single, multi section and all.
- (15)  : Press to reduce the display of graphic.
- (16)  : Press to enlarge the display of graphic.
- (17)  : Press to display the graphic at the optimal scale.

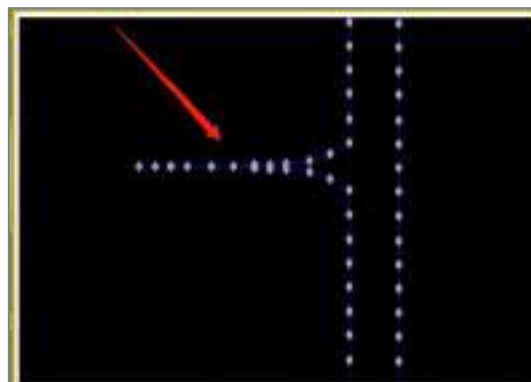
(18) **Modify Step** : Modify the stitch length of the selected stitches.

(19) **TwoDot** : Stitch-length modifying mode; totally 3 types: twodot, current and all graph.

(20) **Only move** : “Yes” means only performing stitch moving when click **Move Stitch** ;
 “No” means the stitches will be added automatically along the moving trajectory.



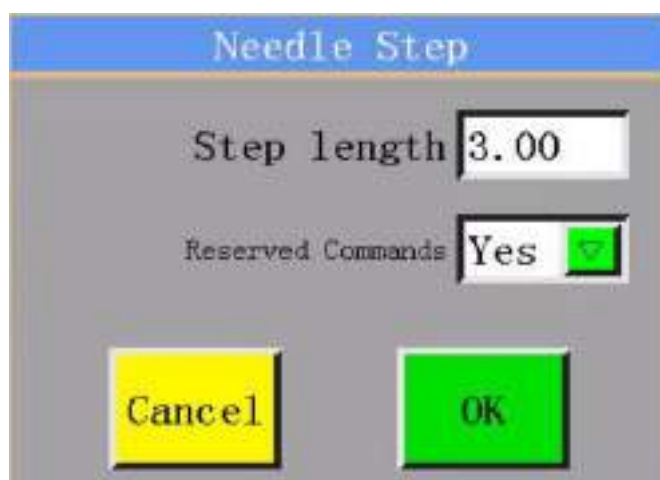
Only move: Yes



Only move: No

D. [Needle Step] Instruction

Click **Needle Step** in the common functions interface to popup the Needle Step window and its figure is as follows.



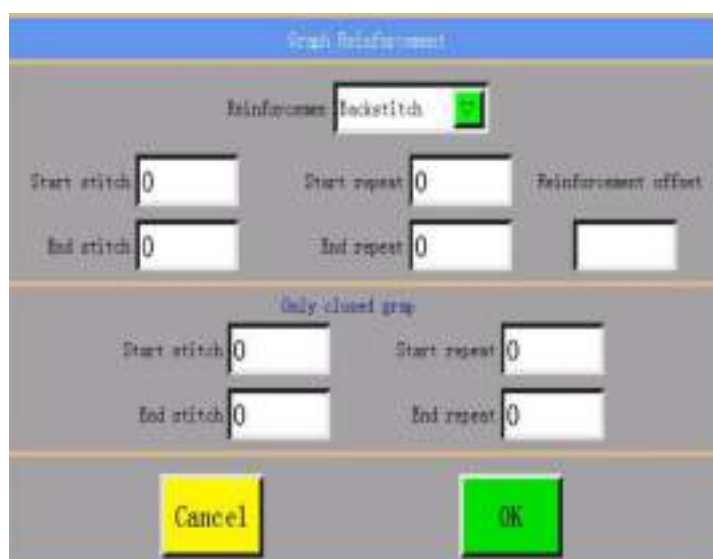
(1) **Step length** : Modify the overall stitch length of selected graphic.

(2) **Reserved Commands** : “Yes” means the inserted commands will be kept after

modifying the stitch length.

E. [Fasten] Instruction

Click **Fasten** in the common functions interface to popup the Graph Reinforcement window and its figure is as follows.



Reinforcement: Reinforcement mode, totally 3 types: backstitch, shrinkage and zigzag.


■ Backstitch---non-closed graphics (straight lines, curves, etc.)

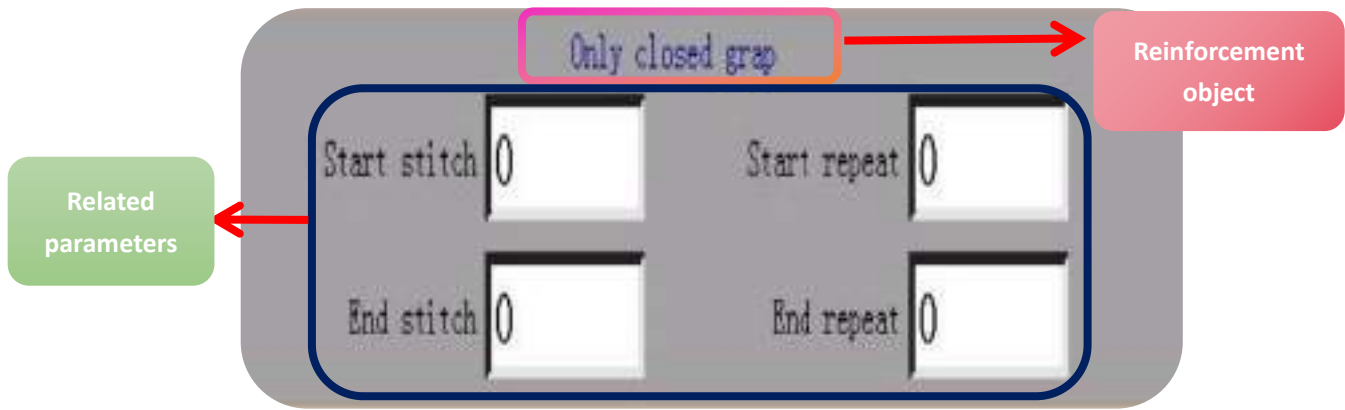
- (1) **Definition:** Repeat sewing back and forth several times for reinforcement at the start or the end of the sewing graphics.
- (2) **Operation:** Set the backstitch number and stitches by needs (if any value is set as 0, the backstitch of specific position will be canceled), finally click **OK** to save the settings.
- (3) **Related parameters:**
 - ① **Start stitch:** Backstitch stitches at the graphical start position [cancel the starting backstitch if this value is 0].
 - ② **Start repeat:** Backstitch number at the graphical start position [cancel the starting backstitch if this value is 0].
 - ③ **End stitch:** Backstitch stitches at the graphical end position [cancel the ending backstitch if this value is 0].

- ④ **End repeat:** Backstitch number at the graphical end position [cancel the ending backstitch if this value is 0].
- ⑤ **Reinforcement offset:** The backstitch will be started after the specific stitches, e.g. if input the value 2, then 2 stitches after the selected stitch will be the start point of backstitch.

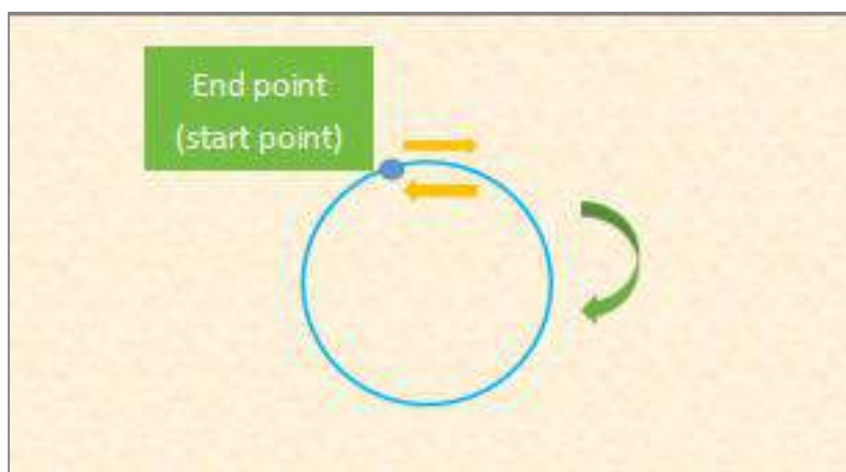


■ Backstitch---closed graphics (rectangles, circles, etc.)

- (1) **Definition:** The graphical first and last points coincide totally, such as circles, rectangles, polygons, etc..
- (2) **Operation:** Set the backstitch number and stitches then finally click  to save the settings.
- (3) **Related parameters:**
- ① **Start stitch:** Backstitch stitches at the graphical start position [cancel the starting backstitch if this value is 0].
- ② **Start repeat:** Backstitch number at the graphical start position [cancel the starting backstitch if this value is 0].
- ③ **End stitch:** Backstitch stitches at the graphical end position [cancel the ending backstitch if this value is 0].
- ④ **End repeat:** Backstitch number at the graphical end position [cancel the ending backstitch if this value is 0].

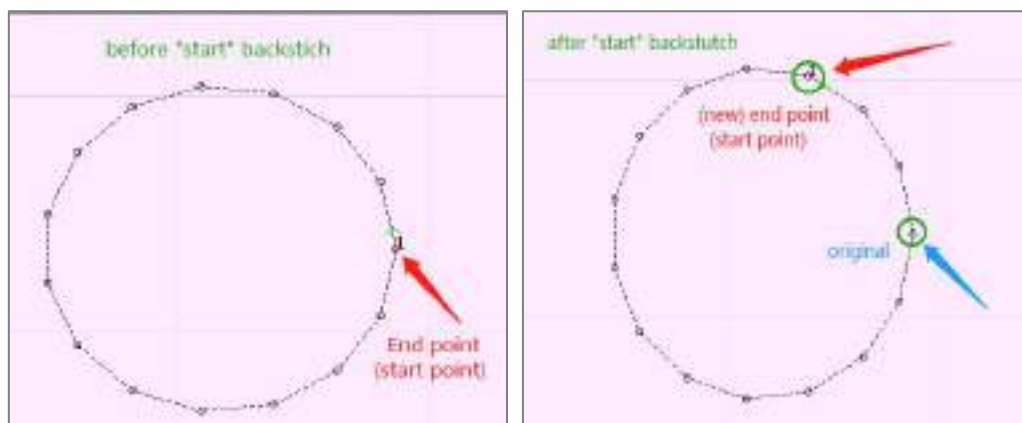


(4) **Indicator figure:**

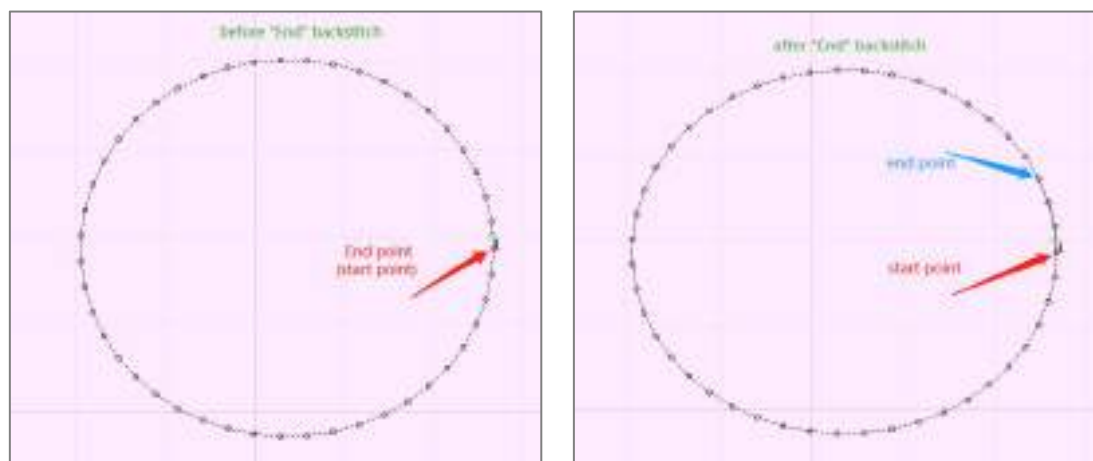


 **Warm Tips:**

- ❖ After setting the “Start” backstitch for the closed graphic, its starting point will be changed. The value of "Start stitch" will be used as the forwarding numbers, and the new starting point will generate after moving. After sewing to the original starting point, the sewing will then be processed in the previous direction.

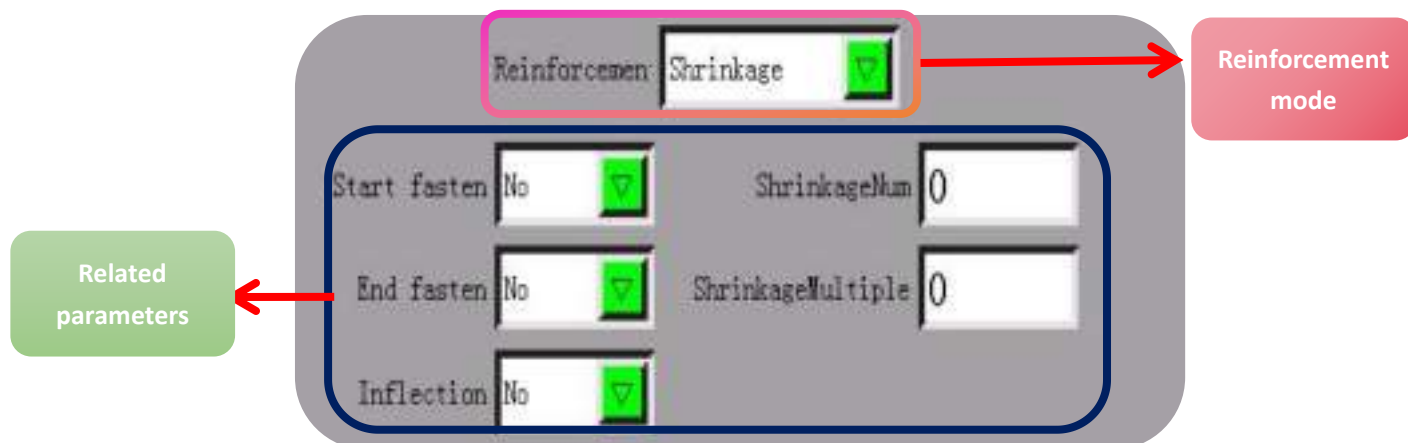


- ❖ After setting the “End” backstitch for the closed graphic, its ending point will be changed. The value of "End stitch" will be used as the backward numbers, and the new ending point will generate after moving. After sewing to the original ending point, the sewing will continue for the specific stitches.



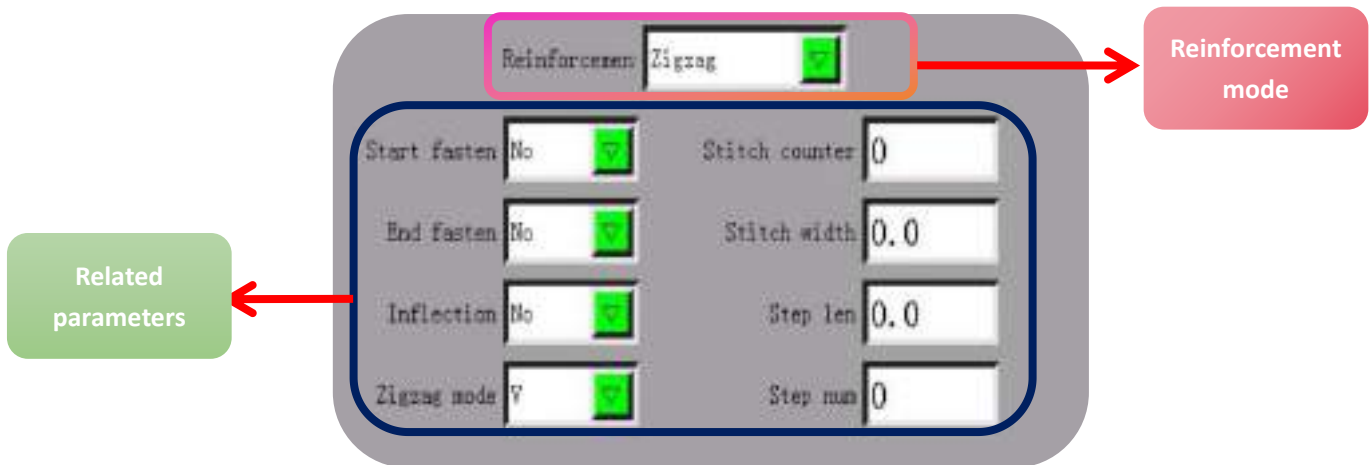
■ Shrinkage

- (1) **Definition:** Reduce the stitch length based on the original for reinforcement.
- (2) **Operation:** Set the position, stitch number and multiples of shrinkage, (if any value is set as 0, the shrinkage of specific position will be canceled), then click **OK** to save the setting.
- (3) **Related parameters:**
 - ① **Start fasten:** Perform shrinkage at the graphical start position.
 - ② **End fasten:** Perform shrinkage at the graphical end position.
 - ③ **Inflection:** Perform shrinkage at the graphical inflection.
 - ④ **Shrinkage Number:** Shrinkage stitches at the start, end or inflection position [cancel the shrinkage if this value is 0].
 - ⑤ **Shrinkage Multiple:** The change multiple of shrinkage at the start, end or inflection position [cancel the shrinkage if this value is 0].

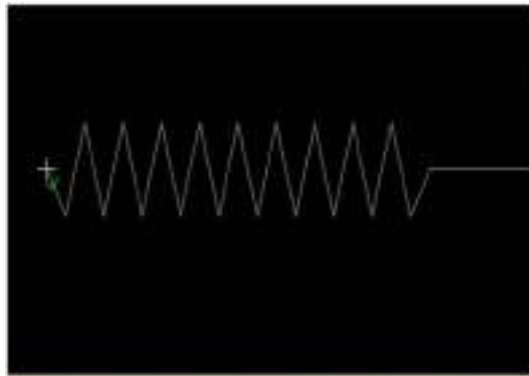


■ Zigzag

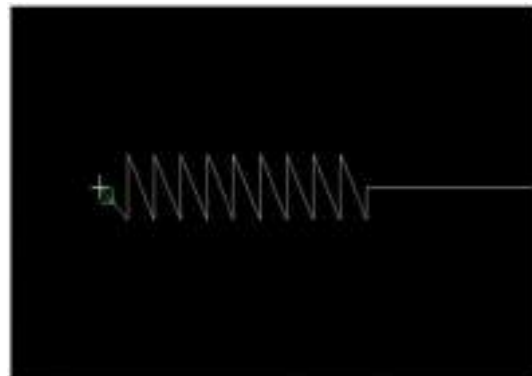
- (1) **Definition:** Perform the reinforcement with V-shape or N-shape, also called as “Renzi” stitch.
- (2) **Operation:** Set the position, stitch number, mode of zigzag, stitch counter, stitch width and step length (if any value is set as 0, the shrinkage of specific position will be canceled), then click **OK** to save the setting.
- (3) **Related parameters:**
 - ① **Start fasten:** Perform zigzag at the graphical start position.
 - ② **End fasten:** Perform zigzag at the graphical end position.
 - ③ **Inflection:** Perform zigzag at the graphical inflection.
 - ④ **Zigzag mode:** Zigzag shape, totally 2 types: N and V.
 - ⑤ **Stitch counter:** The zigzag number at the start, end or inflection position [cancel the zigzag if this value is 0].
 - ⑥ **Stitch width:** The horizontal distance from the leftmost zigzag knot to the rightmost zigzag knot.
 - ⑦ **Step length:** Stitch length of the zigzag stitch.
 - ⑧ **Step number:** The stitch numbers between 2 zigzag knots.



(4) **Zigzag mode: V-shape v.s. N-shape**

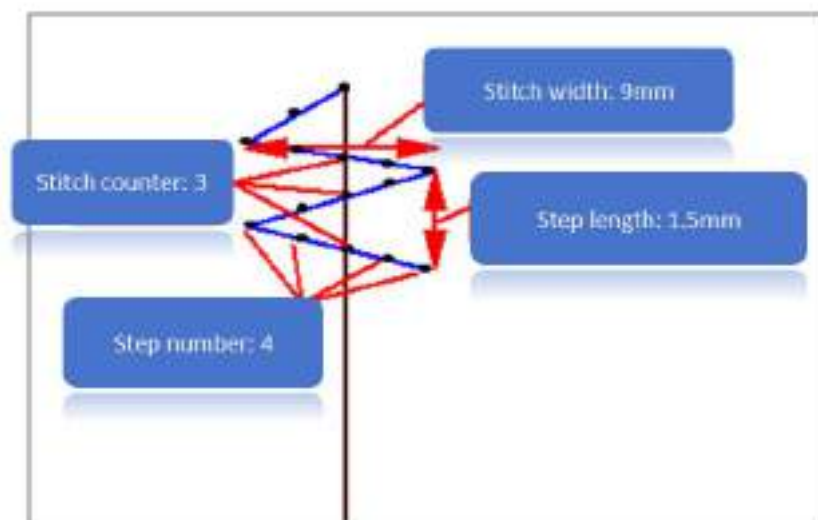


Zigzag mode: V



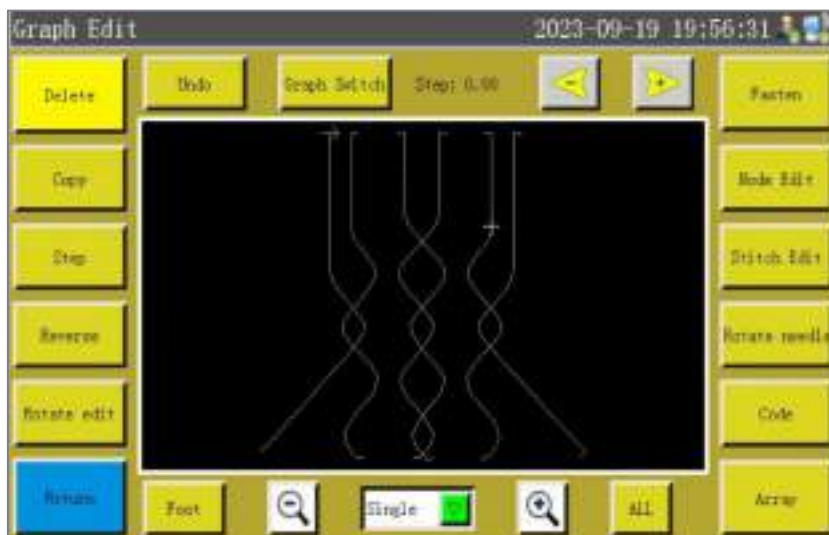
Zigzag mode: N

(5) **Indicator figure of zigzag parameters**



F. [Graphic Edit] Instruction

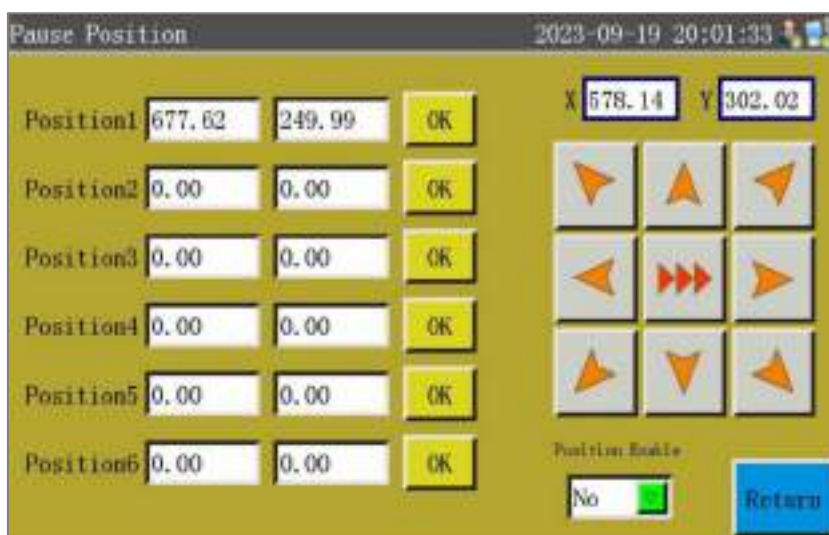
Click **Graphic Editing** in the common functions interface to enter the Graph Edit interface and its figure is as follows.



The button instructions and the related operations please take the chapter 8-8.2.5 as a reference.

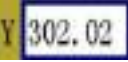
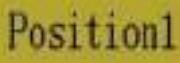
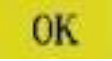
2.3.4 Pause Position Interface

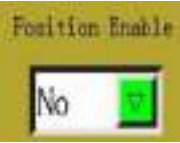
Click **Pause Position** in the test interface to enter the Pause Position interface and its figure is as follows.




Instruction of Pause Position Interface's Interface

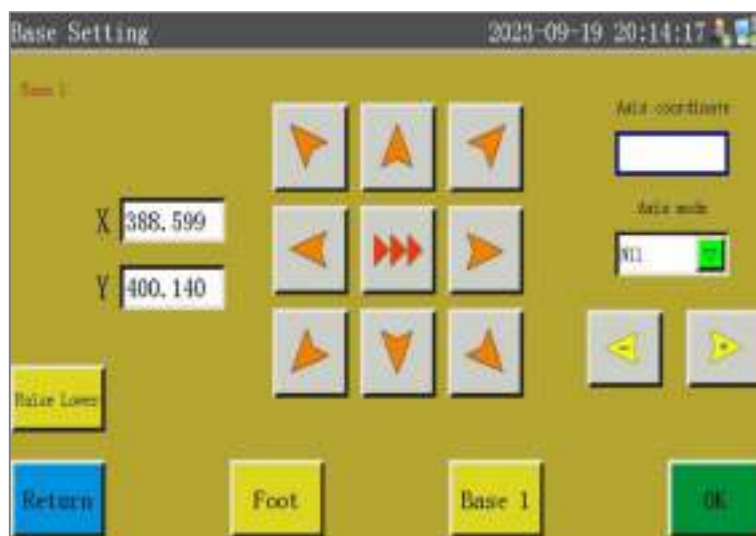
(1) **X 578.14**: Current X coordinate.





- (2)  : Current Y coordinate.
- (3)  : The coordinates of the 1st stop command which added to the processed file; same for "Position 2", "Position 3", "Position 4", etc.
- (4)  : After moving to the target position, click this button to confirm real-time coordinates as the coordinates of "Position1/2/3/.../6".



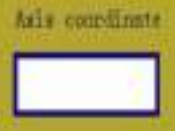
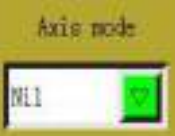


- (5)  : Choose "Yes" then "Pause Position" function will be executed.

2.3.5 Base Setting Interface

Click  in the home interface to enter the Base Setting interface and its figure is as follows. The benchmark (base) of template can be adjusted by actual.

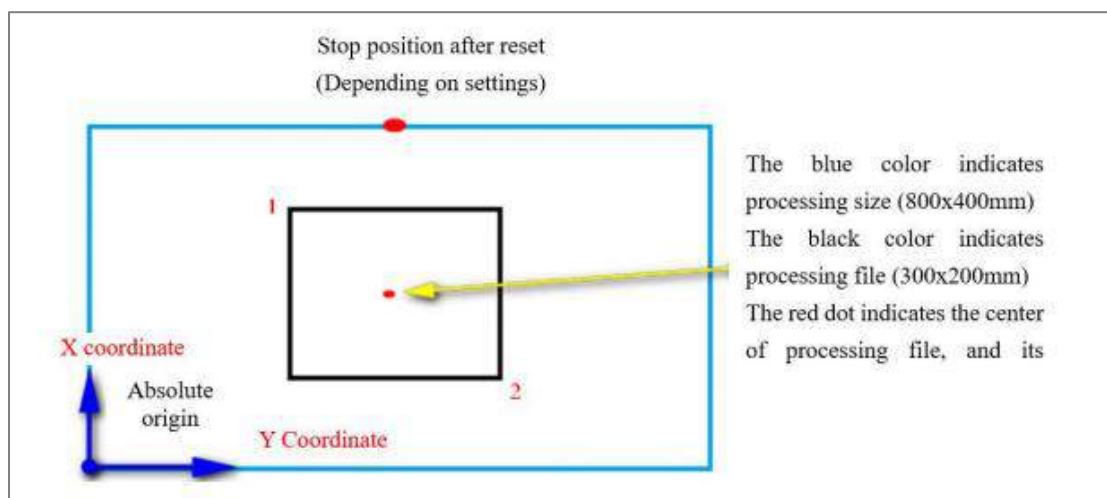


- (1)  : Rise/fall function is mainly used for "rotary head" type machine, and outputting IO corresponds to the set parameters (P249) which toggles between high and low level.
- (2)  : Presser foot up/down.
- (3)  : Confirm the settings.
- (4)  : Set as the reference point (benchmark) 1.

- (5)  : Current X coordinate.
- (6)  : Current Y coordinate.
- (7)  : Used in conjunction with "Axis mode" to show the coordinates of the selected axis.
- (8)  : Switch to "Axis mode", and can choose Axis 1/2/3/4/5/6.
- (9)  : Used in conjunction with "Axis mode" , press and then the corresponding axis move in positive direction.
- (10)  : Used in conjunction with "Axis mode" , press and then the corresponding axis move in negative direction.

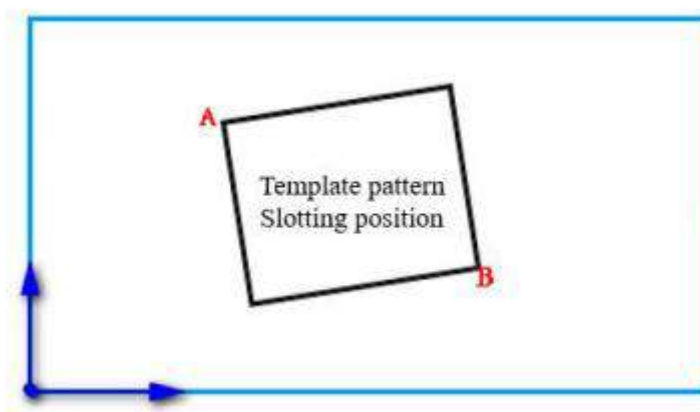
A. Reason for setting base (benchmark):

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



However, the sewing 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 to adjust the position of processing pattern in the system, so it can correspond to the template slotting position.

B. Steps for setting base (benchmark):

- (1) Select the file for which the reference point should be set up in the main interface of processing, and place the corresponding template.
- (2) Click **Base** to enter the reference point setup interface, and the system will automatically move the frame to reference point 1 (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 **OK** 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 **Base 1** to switch to reference point 1 for setup).
- (4) Click **OK** 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.

- (5) 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.

2.3.6 Work Statics Interface

Click  /  in the home interface to enter the work statistics interface.

In this interface, viewing the processing quantity, time, bobbin thread length and other information is supported. Its figure is as follows.



Instruction of Statistics Interface's Buttons

- (1) **Total number of historical completion files:** : [To show the number of historical processing files](#). The left value refers to the total processing times of the machine; and the right value refers to the total processing times of the selected graphic.
- (2) **The total number of documents completed on the day:** : [To show the number of today's processing files](#). The left value refers to the total number of files processed by the

machine on that day; and the right value refers to the total number of selected file processed on that day.

(3) **Bobbin thread used length(mm)** : [To show the used length of bobbin thread.](#)

(4) **Total length of bobbin thread(mm)** : [To show the total length of bobbin thread.](#) It can set the initial length and the margin of the bobbin thread according to the actual situation.

(5) **Current value of Counter** : [To show the total number of processed files.](#)

This value is automatically increased by 1 for each completed process (This value corresponds to the value of the icon on the home page).

(6) **Total number of Counter** : [To show the target numbers of processed files.](#) Once reach this target number, the machine will stop the processing work (Related function needs to be supported).

(7) **Working time:** : [To show the total processing time of the machine.](#) Only the processing time when the machine is in “Working...” state is counted.

(8) **Work time today:** : [To show the today’s processing time of the machine.](#) Only the processing time when the machine is in “Working...” state is counted.


(9) **Work time yesterday:** : [To show the yesterday’s processing time of the machine.](#) Only the processing time when the machine is in “Working...” state is counted.


(10) **WT: 00:00:00** : [Work time; to show the last processing time.](#) This value in blue is at the lower-left corner of the interface.

(11) **BT: 14:12:28** : [Boot time; to show the total time of this startup.](#) This value in white is at the lower-left corner of the interface.

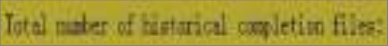
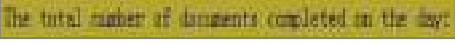
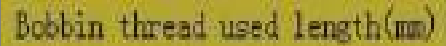
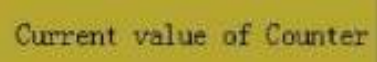
(12) **Clear** : [Clear the corresponding statistics.](#) Click this corresponding button

of each statistics area then the value will be zeroed out.

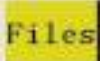
(13)  : Save all modifications.

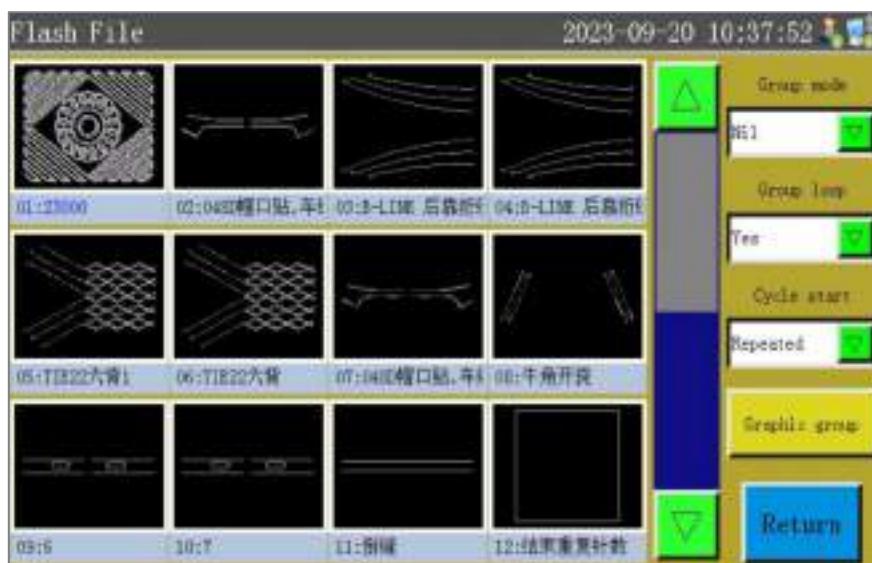
(14)  : Return back to the home page.

❖ **Note:**


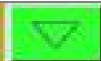





- ① When choose the different processing file, the left value of the  will keep the same, while the right value will change into the historical processed numbers of the corresponding file.
- ② When choose the different processing file, the left value of the  area will keep the same, while the right value will change into today's processed numbers of the corresponding file.
- ③ Once the file has been processed, the length of bobbin thread to be used to this file will be added automatically to .
- ④ **The total length of the bobbin thread** can be estimated by the following formula.
Total length=Average circumference of the spindle*Working speed*Winding time.
- ⑤ Once the file has been processed, the value of  will be added 1 automatically, and this count function cannot be disabled.
- ⑥ Only the processing time when the machine is in “Working...” state is counted to the work time.
- ⑦ The count settings for bobbin thread and processing file are effective only when the corresponding function is enabled.

2.3.7 Flash File Interface

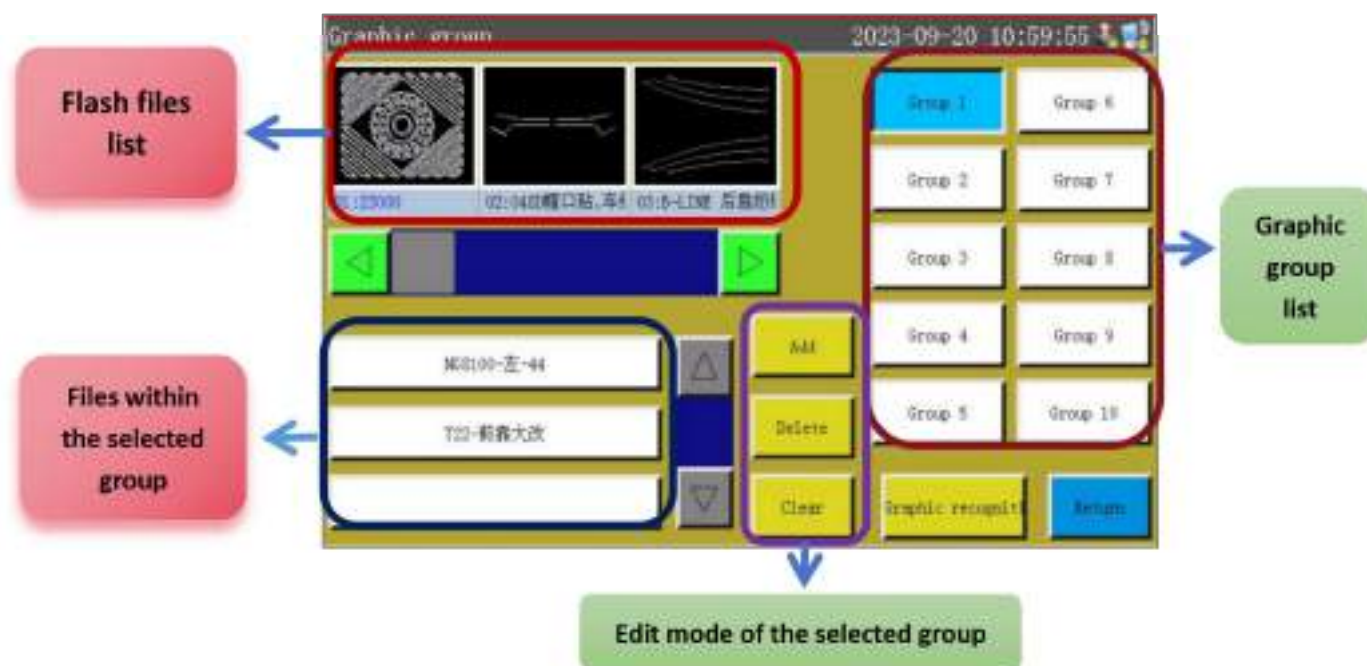
Click  in the home interface to enter the flash file interface. In this interface, setting group mode and choosing files is supported, and its figure is as follows.



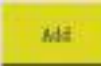






Instruction of Flash File's Buttons

- (1)  : Swipe up the memory file list to select a file.
- (2)  : Swipe down the memory file list to select a file.
- (3)  : Select the graphic group as required to process files within group, such as graphic group 1, etc. The files within group need to be added manually.
- (4)  : "Yes" or "No"; set cyclic working mode for the files within group.
- (5)  : 3 types: No, Single, Repeated. The numbers of cyclic working.
- (6)  : Enter the interface of graphic group to edit the files within group.
- (7)  : Return to the home page.


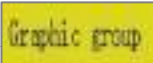

A. Graphic Group Interface

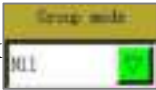




- (1)  : Swipe up the memory file list to select a file.
- (2)  : Swipe down the memory file list to select a file.
- (3)  : Add the selected file to the selected group.
- (4)  : Delete the selected file within selected group.
- (5)  : Clear all files with selected group.
- (6)  : Select the group to perform editing operations, like adding, deleting and so on.
- (7)  : Enter the graphic recognition interface.


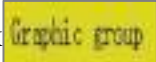
B. Graphic Group Settings

■ Set the group mode


- ① Click  in the home interface into the flash file interface.
- ② Click  to edit the processing files within group.
- ③ Click  back to home interface.

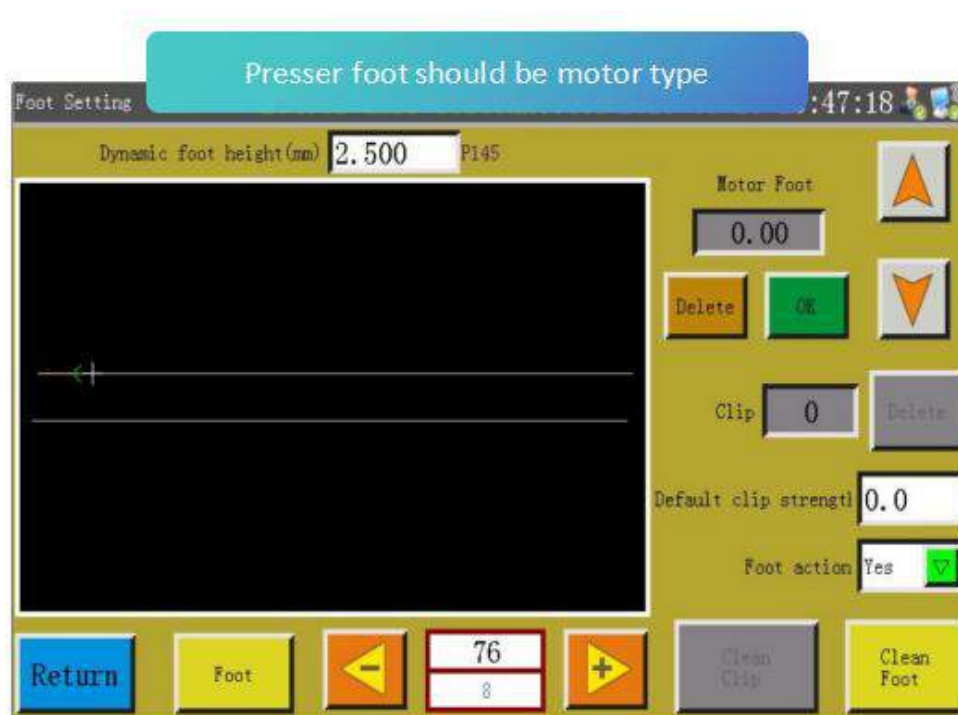
- ④ Click  to select the set group.
- ⑤ Click  and choose Yes.
- ⑥ Click  and set parameter by needs.

■ Cancel the group mode


- ① Click  in the home interface into the flash file interface.
- ② Click  and choose “Nil”.

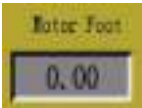




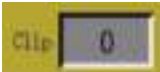
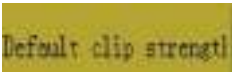
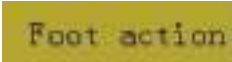


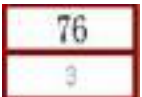





2.3.8 Foot Setting Interface

Click  in the home interface to enter the foot setting interface. In this interface, setting motor presser foot’s height and clamping strength is supported, and its figure is as follows.











Instruction of Foot Setting Interface’s Buttons

- (1)  : Current presser foot’s height when following, and this value consists of the value set by “Menu-Machine Parameter- Dynamic Foot”.

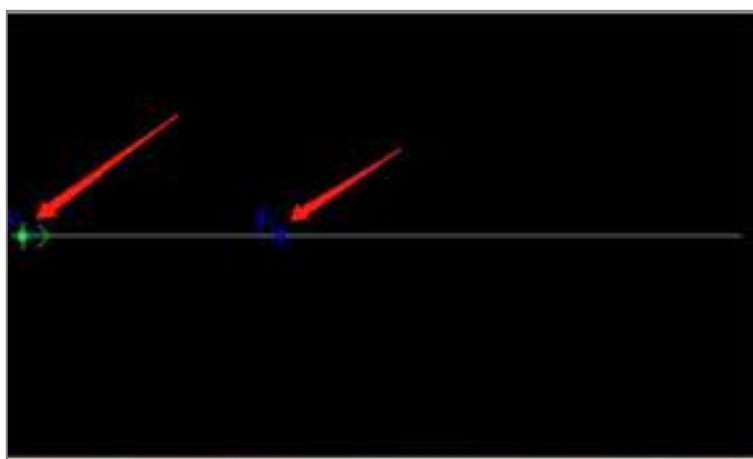
- (2)  : Height to lift up the presser foot when sewing to the specific stitch.
- (3)  : Delete the height of the presser foot set at the selected stitch.
- (4)  : Set the height of the presser foot at the selected stitch.
- (5)  : Increase the height to lift up the presser foot.
- (6)  : Decrease the height to lift up the presser foot.
- (7)  : The clamping strength set at the selected stitch.
- (8)  : Set the default clamping strength.
- (9)  : “Yes” means the presser foot will lift down automatically when click  /  ; “No” means the presser foot only lifts down manually.
- (10)  : The upper number indicates the total stitches of the file, and the lower number indicates the selected stitch.
- (11)  : Move forward to the next stitch.
- (12)  : Move backward to the previous stitch.
- (13)  : Presser foot up/down.
- (14)  : Clear all set presser foot heights in the graphics file.
- (15)  : Clear all set clamping strength in the graphics file.

■ Steps for setting presser foot's height during sewing

- ① Modify parameters: Menu- Machine Parameter- Dynamic Foot- choose “No” for “Follow the spindle sewing”
- ② Set the height of specific stitch
- Back to home interface and choose the processing file, then place the template.


- Click , and then click  /  to select the target stitch.
 - Click  to lift down the presser foot.
 - Click  /  to set the height and then click .
- ③ Click  to confirm all modifications.

■ Indicator figure after setting presser foot's height



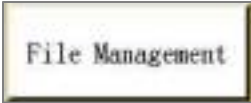
Letter F means the stitch has been set a height of presser foot


2.4 Menu Interface


Click  in the home interface to enter the menu interface. In this interface, different buttons refer to different operations and functions, such as file management, file edit, parameter files, user parameters and so on. Its figure is as follows.




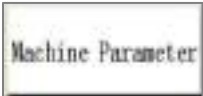
Instructions of Menu Interface's Buttons


 : Enter the [flash file interface](#), managing, importing and exporting the files in memory and USB flash disk.

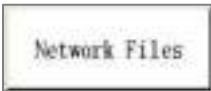
 : Enter the [file edit interface](#), creating new sewing graphs or editing & modifying original graphs.


 : Enter the [flash parameter file interface](#), importing, exporting, deleting, or writing to a parameter file.

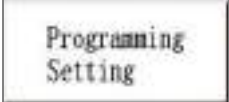
 : Enter the [user parameter interface](#), adjusting the parameters based on processing requirements to realize quick processing and improve efficiency.

 : Enter the [machine parameter interface](#), and kindly note this interface is only accessible to machine assemblers.



 : Enter the [assist setting interface](#), upgrading system, checking current system version, switching language, etc.

 : Enter the [network file interface](#), downloading shared processing files from the server over the network (this function is not enabled yet).

 : Enter the [machine state interface](#), performing remote administration to machine, report various status of machine for solutions, etc.

 : Enter the [programming setting interface](#), corresponding to the self-programming software which used to call the software parameters.



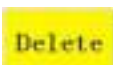


Chapter 3 Description of File Management


 Click the button  in the menu interface then enter the interface of flash file. Copying, deleting, sorting, exporting of graphic files in memory and on a USB flash drive are supported [The system only recognizes processing files in .SLW or .xdg format, which are created by the accompanying PC-based graphic editing software, or generated by using the file capture function].

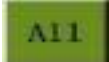
3.1 Flash File Management




Instruction of Flash File Interface's Buttons

- (1)  : Enter the interface of U-disk file management to edit the U-disk files.
- (2)  : Copy the selected file; the copied file will be shown at the end of the list after naming it.
- (3)  : Delete the selected file.
- (4)  : Sorted the selected file; this file will be inserted to the required position on the list after confirming the sorting number.
- (5)  : Export the selected file to the U disk. (If the file in the U disk has the same name with the exported file, then it will appear the message, "The file already exists. Do you want to overwrite it?")

(6)  : Read and write the file through electronic tag or bar code (Determines by “User parameter- Other setting- Template recognition mode”).

(7)  : Select all files under the directory.

(8)  : Swipe up the list of memory files.

(9)  : Swipe down the list of memory files.

Note:

① The maximum number of processing files that can be stored in the system (display) is 999, and the total size cannot exceed 128M.

② File name support for English and Chinese, which is case sensitive. And the file name contains a maximum of 15 Chinese characters or 30 characters (the actual number varies depending on the interface).

③ If the processing file is not in the right format or if it is corrupted, the preview image will not be displayed here.


④ Click the file to select it and its name will turn red. Select the file before deleting, sorting, etc.

⑤ Use IC card to read file (RFID Function)


A. Recognition mode→”Barcode”

Indicates that the processing file is read by the barcode by using the scanning grab, and the steps are as follows:

❖ Connect the scanning grab with the display.

❖ Click to choose the processing file and then click .

❖ Input the target desired barcode value in the pop-up window.


❖ Click  to confirm and then the set barcodes are displayed on the graphical thumbnails in the flash file interface.

B. Recognition mode→”RFID”

Indicates that the processing file is read by the IC card and the steps are as follows:






- ❖ Place the IC card in the induction area on the machine.
- ❖ Enter the flash file interface, and then set.

3.2 U-Disk File Management

Click  in the flash file interface to enter the interface of U-disk file (as shown below). The operations like deleting, importing U-disk files can be performed in this interface (need to insert the U-disk)



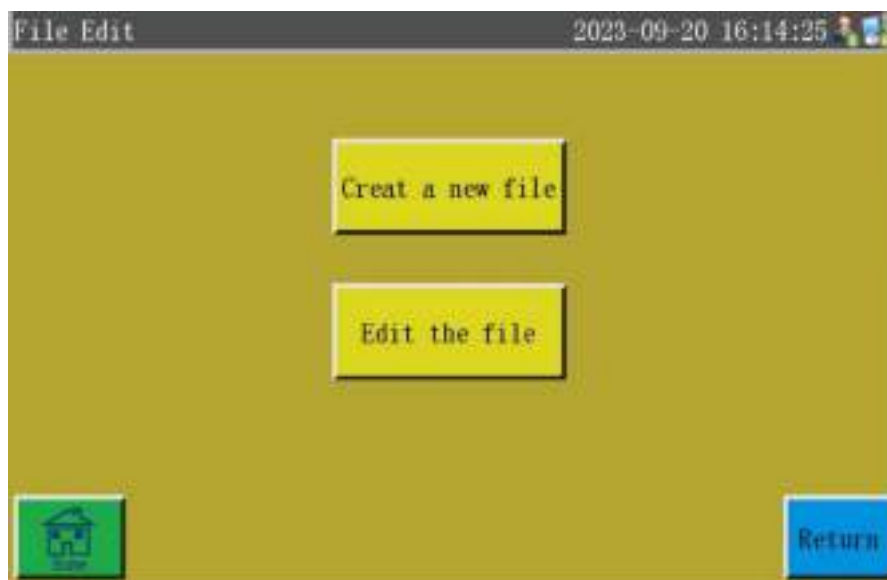
Instruction of U-Disk File Interface's Buttons

- (1)  : Return to the interface of memory file management.
- (2)  : Delete the selected file.
- (3)  : Select all files under the directory of U-disk file.
- (4)  : Import the selected file; the file will be imported to the list of memory files. (If there is a file with the same name, it will be replaced by the new one).
- (5)  : Return to the previous level of directory.

Chapter 4 Description of File Edit

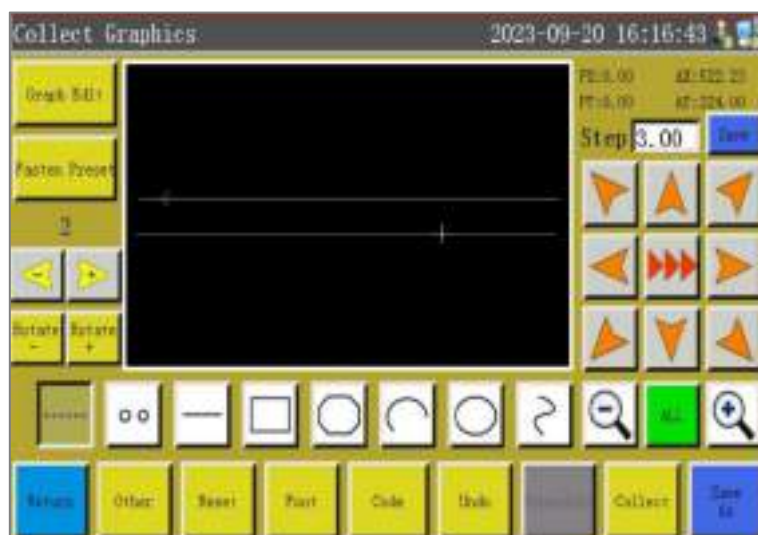




Click **File Edit** in the menu interface then enter the interface of file edit (as shown below). The operations like creating the new processing file and editing the selected file can be performed in this interface (If the complex and precise files need to be created, it's recommend using our drawing software).













Instruction of File Edit Interface's Buttons

- (1) **Creat a new file** : Create a new processing file, and it will enter the interface of collect graphics after entering its file name.
- (2) **Edit the file** : Edit the selected processing file, and it will enter the interface of collect graphics after clicking it.






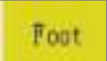







- (1) **Graph Edit** : Enter the interface of graph edit to delete, copy, switch the graphic, etc. (This function is only available when the graphic is present).
- (2) **Fasten Present** : Enter the interface of fasten; the new collected graphics will be reinforced automatically according to the parameters set in this interface.
- (3)  : The number here is not constant and it shows the serial number of the displayed graphic. It can be changed by clicking .
- (4) **PX: 0.00** : The X coordinate of the current cursor location relative to the one of the previous collection point.
- (5) **PY: 0.00** : The Y coordinate of the current cursor location relative to the one of the previous collection point.
- (6) **AX: 522.23** : The X coordinate of the current cursor location relative to the one of the absolute origin.
- (7) **AT: 224.00** : The Y coordinate of the current cursor location relative to the one of the absolute origin.
- (8) **Step 3.00** : The stitch length of selected graphic, click to enter the interface for setting the stitch length. The default value of stitch length is 3mm and its range is

0.05~50mm。


- (9) : Speed for moving frame.
- (10) : Moving arrow buttons.
- (11) : [Non-sewing collection mode](#); the color of this button's background turns into yellow when clicked. Then collected segment will be a non-sewing line segment which showed with dotted line segment.
- (12) : [Single-stitch collection mode](#); the length of collected segment is the same as the length between the stitch and its maximum length is not more than 12.7mm.
- (13) : [Straight line collection mode](#); the color of this button's background turns into yellow when clicked, meaning the collected segment will be a straight line segment.
- (14) : [Rectangle collection mode](#); the color of this button's background turns into yellow when clicked, meaning the collected segment will be a rectangle. (2 points need to be collected to determine the size and location).
- (15) : [Multi-line collection mode](#); the color of this button's background turns into yellow when clicked, meaning the collected segment will be a polyline segments.
- (16) : [Arc collection mode](#); the color of this button's background turns into yellow when clicked, meaning the collected segment will be an arc. (3 points need to be collected to determine the size and location).
- (17) : [Circle collection mode](#); the color of this button's background turns into yellow when clicked, meaning the collected segment will be a circle. (3 points need to be collected to determine the size and location).
- (18) : [Curve collection mode](#); the color of this button's background turns into yellow when clicked, meaning the collected segment will be a curve. (3 points

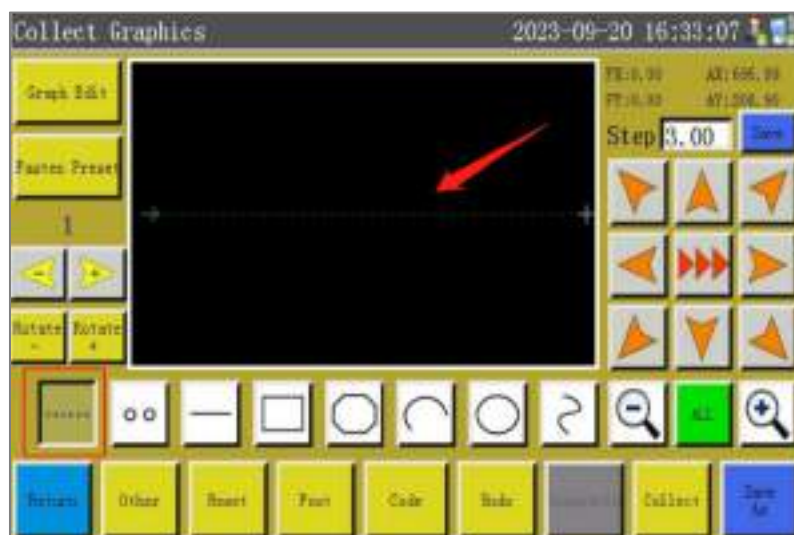
need to be collected to determine the size and location).

- (19)  : Zoom out the collected graphic.
- (20)  : Zoom in the collected graphic.
- (21)  : Display mode switch; “maximized” and "Proportional".
- (22)  : Enter the interface to set the other parameters of graphic to be collected, like “Multiple graphics” and “Spiral line”.
- (23)  : Machine reset.
- (24)  : Foot up/down.
- (25)  : Enter the “New command” interface to set instructions for the new graphic to be collected.
- (26)  : Cancel the previous modification.
- (27)  : Finish collecting the graphic if it is “curve collection mode” or “Multi-line collection mode”.
- (28)  : To determine the current location of cursor or to confirm the current location as a collected point. If the range of the graph to be generated beyond the processing range, this operation cannot be performed.
- (29)  : Save the modified file by renaming it.



4.1 Collect Graphic- Collection Mode

4.1.1 Non-sewing Collection Mode


Click  in the interface of “Collect Graphics” to switch into the non-sewing collection mode. (This mode is activated automatically when enter this interface for the first time; non-sewing line segment: only move frame but not sew) .



Note:



- ① In the non-sewing collection mode, two collected points generate a non-sewing line segment.
- ② The absolute origin or the end point of previous collected segment is the first point of non-sewing line segment, which showed with a red cursor.
- ③ Click  then move the cross cursor to the target location, and then click  to generate the non-sewing line segment.
- ④ If it's necessary to insert function codes (or instructions) at the end, please refer to the steps for setting the function. This operation can be performed at any time before the generation of graphic.

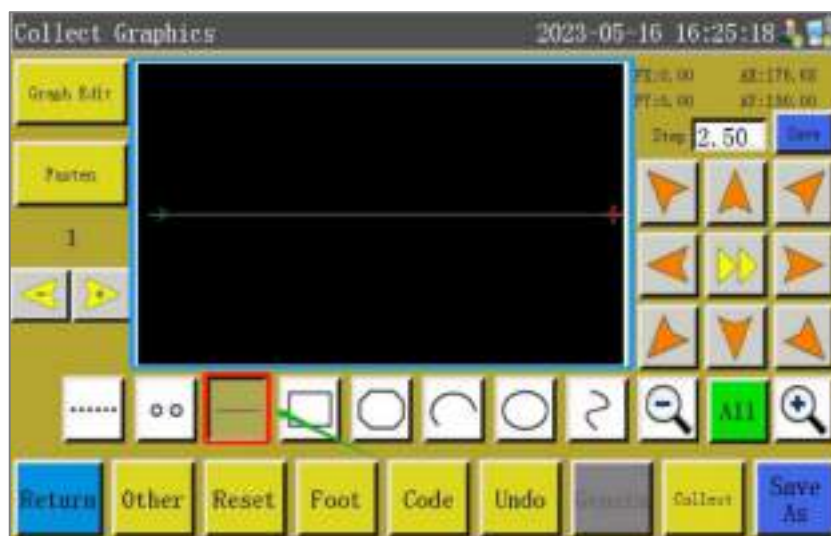
4.1.2 Single-stitch Collection Mode

Click the  in the interface of “Collect Graphics” to switch into the single-stitch collection mode.

Note:

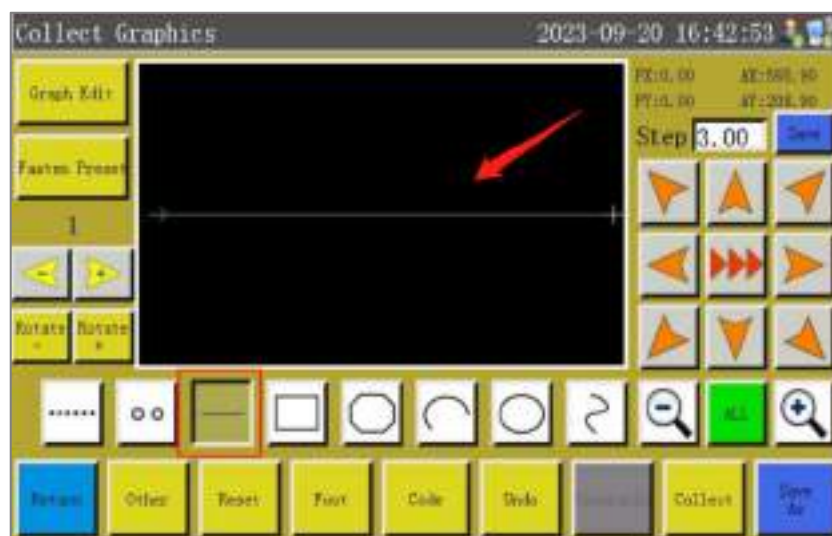
- ① In the single-stitch collection, the length of each collected segment is the same as the length between the stitch.
- ② The maximum length of this collected segment is not more than 12.7mm, or the collection is invalid (the PX, PY can be considered as the reference to check its length).

- ③ Click  then move the cross cursor to the target location, and then click  to generate the line segment.





4.1.3 Straight Line Collection Mode

Click the  in the interface of “Collect Graphics” to switch into the straight line collection mode.



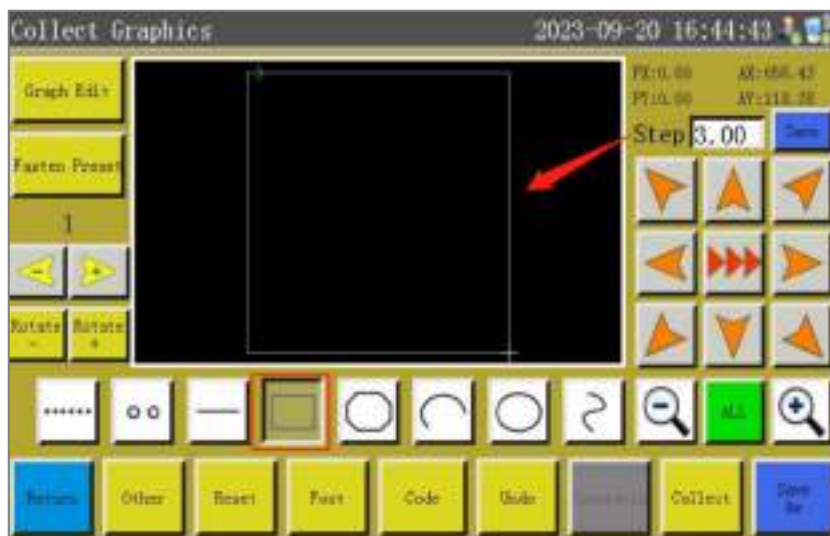
Note:

- ① In the straight line collection mode, at least two points need to be collected as two points generate a straight line segment.
- ② The absolute origin or the end point of previous collected segment is the first point of the straight line segment, which showed with a red cursor.



- ③ Click  then move the cross cursor to the target location, and then click  to generate the straight line segment.

4.1.4 Rectangle Collection Mode


Click the  in the interface of “Collect Graphics” to switch into the rectangle collection mode.

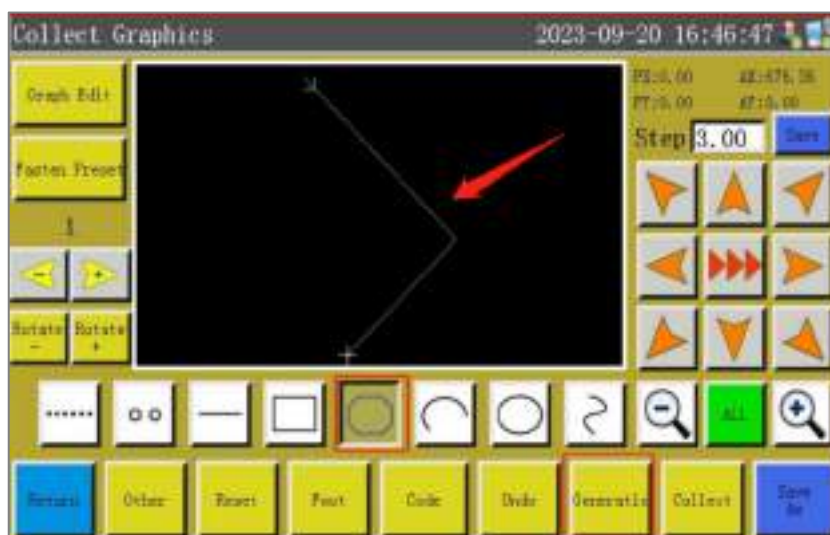


Note:




- ① In the rectangle collection mode, two points with different X/Y coordinates need to be collected to generate a rectangle.
- ② The absolute origin or the end point of previous collected segment is the first point of the rectangle, which showed with a red cursor.
- ③ Click  then move the cross cursor to the target locations, and then click  to generate the rectangle.

4.1.5 Multi-line Collection Mode


Click the  in the interface of “Collect Graphics” to switch into the multi-line collection mode.




Note:

- ① In the multi-line collection mode, a maximum of 127 consecutive points can be collected; and two points generate a line segment.
- ② The absolute origin or the end point of previous collected segment is the first point of the multi-line graphic, which showed with a red cursor.
- ③ Click  then move the cross cursor to the target location, and then click  to confirm the collected point. Click  to generate the multi-line graphic after confirming the collection points.

4.1.6 Arc Collection Mode

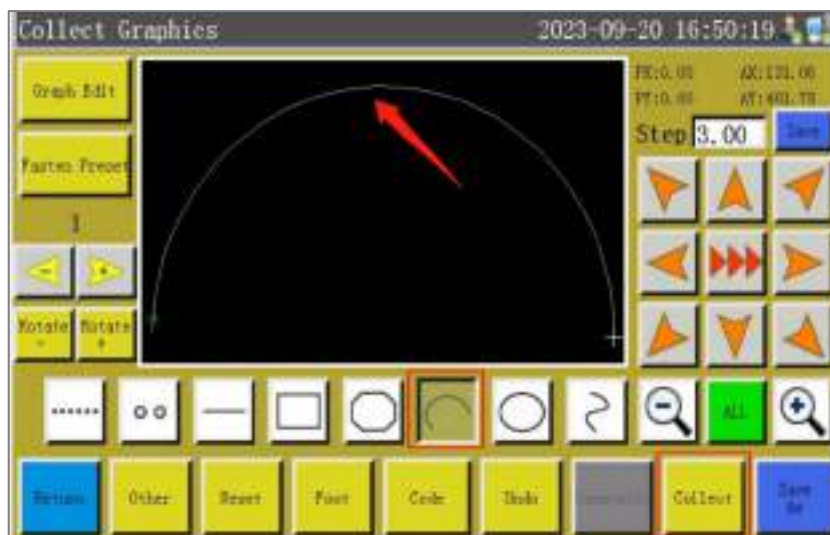
Click the  in the interface of “Collect Graphics” to switch into the arc collection mode.

Note:

- ① In the arc collection mode, any three points that are not on the same line generate an arc, so three collected points need to be confirmed.
- ② To collect an arc, the first point is the start point, the second point is the height reference point, and the third point is the end point.
- ③ The absolute origin or the end point of previous collected segment is the first point of the arc, or the start point.
- ④ Click  then move the cross cursor to the target locations of three points one

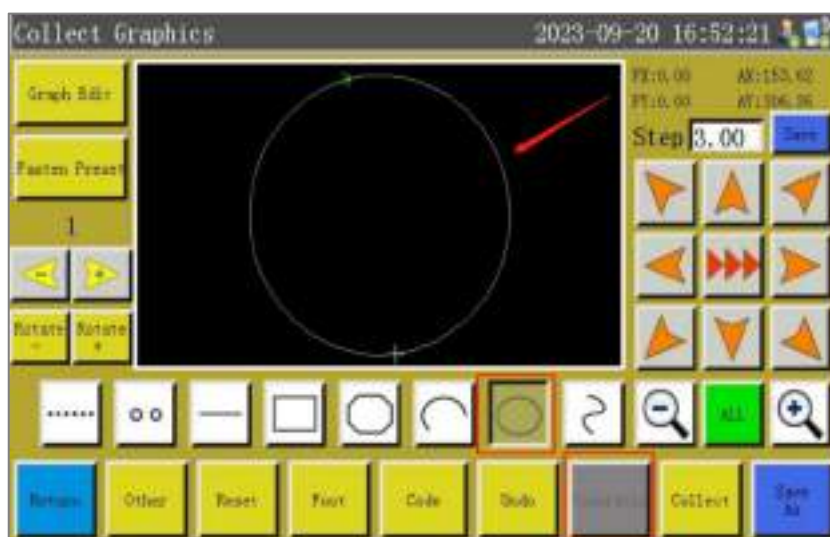
by one, then click  to generate the arc.

⑤ To draw an accurate arc, its coordinates need to be considered as reference. And it's necessary to make the height reference point in the perpendicular bisector of line between start point and end point.



4.1.7 Circle Collection Mode

Click the  in the interface of “Collect Graphics” to switch into the circle collection mode.





Note:

- ① In the circle collection mode, any three points that are not on the same line generate a circle, so three collected points need to be confirmed.
- ② The processing sequence of the collected circle is: 1st point(start point)>2nd

point>3rd point>1st point(end point).

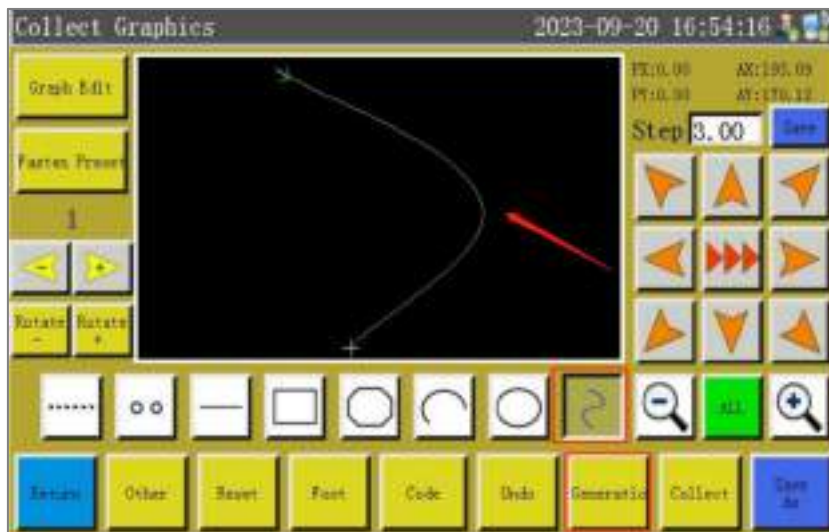
③ The absolute origin or the end point of previous collected segment is the first point of the circle, or the start point, or the end point.

④ Click  then move the cross cursor to the target locations of three points one by one, then click  to generate the circle.

⑤ To draw an accurate circle, its coordinates need to be considered as reference and it is recommended to take the length between the 1st and 2nd points as the diameter . Besides, it's necessary to make the 3rd point falls on the perpendicular bisector of the diameter line formed by the 1st and 2nd points, and its length from the diameter line should be the radius of circle.

4.1.8 Curve Collection Mode

Click the  in the interface of “Collect Graphics” to switch into the curve collection mode.




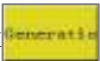
Note:

① In the curve collection mode, a maximum of 127 consecutive points can be collected; and four points generate a bezier curve (the collected point shall be as dense as possible at the turning to achieve the optional curve effect).




② The curve cannot be generated if there are less than 3 collected points.



③ The absolute origin or the end point of previous collected segment is the first

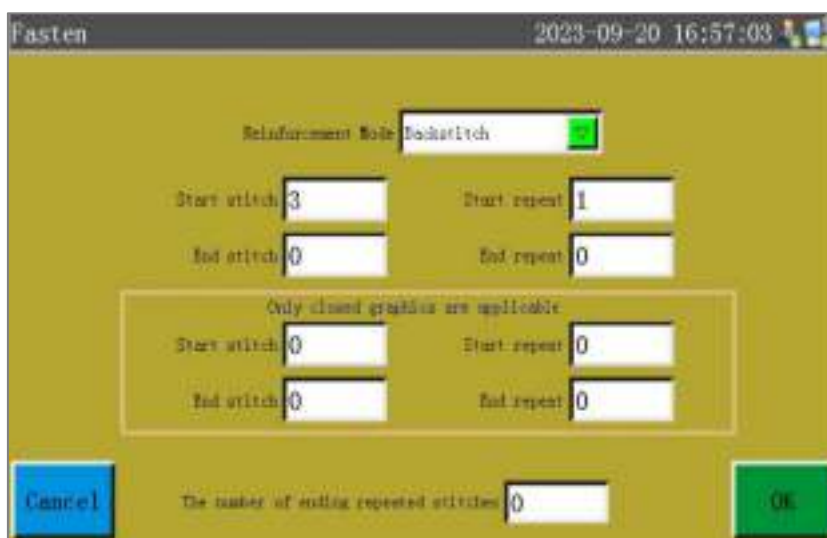
point of the curve.


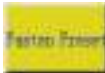

- ④ Click  then move the cross cursor to the target locations of three points one by one, then click  to generate the curve.


4.2 Collect Graphics-Fasten Preset

If the reinforcement operation needs to be performed automatically during collection, then we need to click  to set the related parameters before collecting the graphics. After collecting, the reinforcement effect can be checked in the interface of “Stitch Edit” by clicking  and  in turns.

If the subsequent graphics do not need to be reinforced, we can click  to re-enter the interface to reset the related parameters or click  to cancel the reinforcement mode.




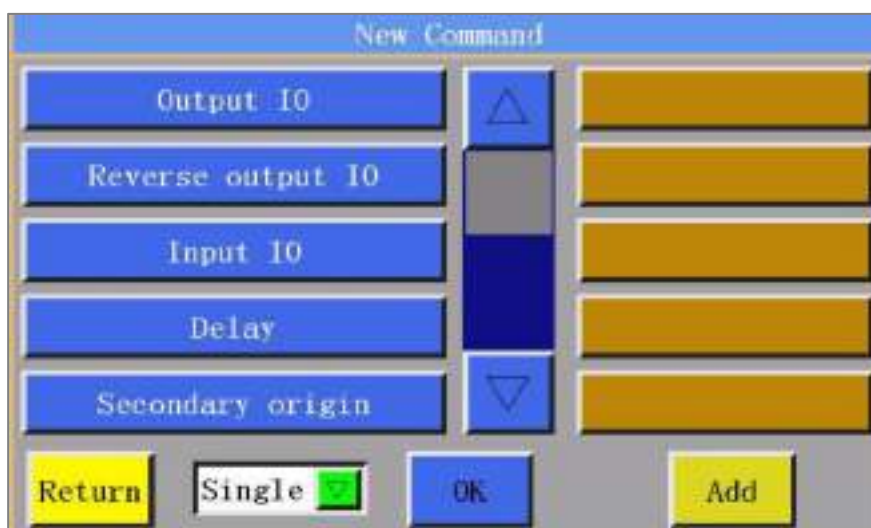
- ❖ **Note:**
- ◆ See [chapter 3- 3.3.5](#) for the definition of the parameters.
- ◆ Click  in the reinforcement preset interface to enable the preset function, at this time the icon  changes into blue.
- ◆ Click  in the reinforcement preset interface to disable the preset function,



at this time the icon  changes into black.

- ◆ After setting the reinforcement preset, each new line segment will be automatically reinforced accordingly. If want to reinforce the edited graph, please operate by entering the Graph Edit interface.

4.3 Collect Graphics-Function Code

If the function code needs to be added for the latest collected graphic, then we need to click  at the “Collect Graphics” interface to enter the “New Command” (as shown below) interface to set codes by needs.



- ① Blue Area: Instruction list of all single instructions (codes), it can be used to add the single instruction by needs.
- ② Yellow Area: Instruction list of instruction group, it can be used to add a group of instructions. (The instruction group can be customized and packaged into .xcc format file by “Xinghuo Graphics Command Software”, and it can be imported and updated in the upgrade mode of “Instruction”).
- ③  : The position to add the function code; it can be switched between “Single” and “All”.
- ④  : Confirm the selected function code; if there is related parameters to be set, then setting window will be popup.

⑤ **Add** : Add the selected function code; it will back to the interface of “Collect Graphics” after clicking.

Below is the instruction of some function codes:

Output IO : Set the corresponding output IO to a high level or a low level (High=Open; Low=Close).

Input IO : Set the corresponding input IO to a high level or a low level (High=Open; Low=Close).

Delay : Set the duration of the corresponding instruction. For instance, if this instruction is set after laser cutting and its value is 50s, then there will be a 50s laser cutting.

Secondary origin : The machine will move to the sub-origin which is set.

Back origin : The machine will move to the original point (the stopping position after machine resetting).

Up pause : The machine stops running and the spindle stops at the upper position.

Down pause : The machine stops running and the spindle stops at the lower position.

Main speed : The spindle speed will be changed into the speed which is set.

Move speed : The speed of “Special move” will be changed into the speed which is set.

Recovery speed : Restore the spindle speed which is changed by the instruction to the speed that is set on the interface.

Cut : The machine will perform the thread-cutting operation.

Z-axis movement : The Z-axis will move to the position that is set.

Z axis speed : The Z-axis speed will be changed into the speed that is set.

Extend move : The selected extend axis will move to the position that is set.

Extend speed : The selected extend axis speed will be changed into the speed that is set.

Up frame : The machine stops running, then the spindle stops at the upper position and frame is lifted up.

Down frame : The frame will be pressed down.

Sewing rotation : There are two modes for rotation, cut and sew. The former one is used for rotary cutting of the cutter and the latter one is used for the rotary swing of the machine head.

Rotate enable : Open the rotary instruction or close it.

Graph head : Choose the working head; generally, head 1 is used for sewing, head 2 is used for marking pen and head 3 is used for laser cutting.

XY ABS move : The X/Y axis will move to the position that is set; there are 3 modes, "XY move", "X move" and "Y move" ("XY move" means moving the X axis and the Y axis simultaneously, "X move" means moving only the X axis, and "Y move" means moving only the Y axis).

Foot up : The presser foot will be lifted up.

Foot down : The presser foot will be pressed down.

Foot height : The height of the presser foot will be changed into the height that is set.

Cancel foot up : Cancel the next operation of lifting up the presser foot.

Cancel Cut : Cancel the next operation of pressing down the presser foot.

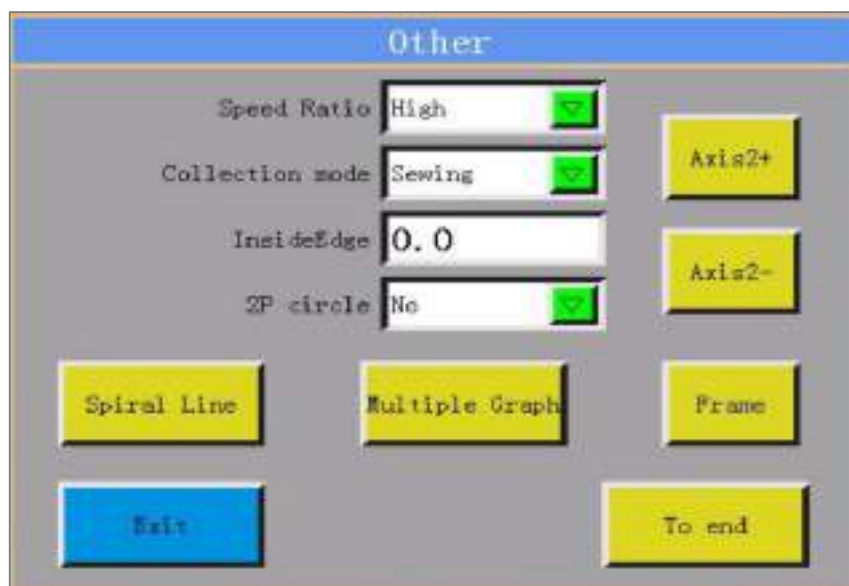
Frame pause : The machine stops running when the frame is in the raised state.

Turn start : To show this position is the start point of the turning point.

Turn Speed : Set the spindle speed at the turning position.


Turn End : To show this position is the end point of the turning point.


4.4 Collect Graphics-Other

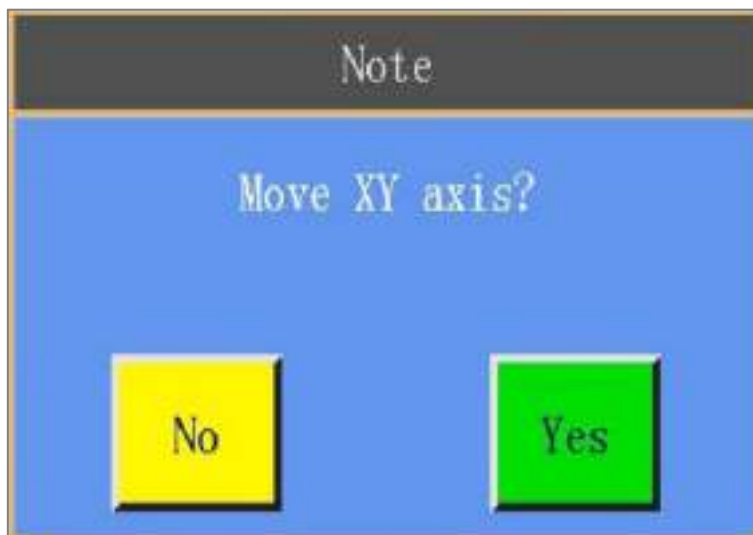


Instruction of Other Interface's Buttons

- (1) **Speed Ratio** : Totally 4 types: High/Mod-high/Mid-low/Low.
- (2) **Collection mode** : Totally 3 types: Sewing/Head2/Head 3.
- (3) **InsideEdge** : Collect the inner edge lines; value range: 1.00~100.0mm
- (4) **2P circle** : Yes or No; select "Yes" to collect 2 points to generate a circle, and the distance of 2 points is the radius of the collected circle; select "No" to collect at least 3 points to generate a circle.
- (5) **Spiral Line** : Enter the spiral line interface and set the relevant parameters.
- (6) **Multiple Graph** : Enter the multiple graph interface, which generates multiple identical machining graphs at the next acquisition according to the set parameters.
- (7) **Frame** : Presser frame up/down.
- (8) **Axis2+** : Extended axis 2 moves in the positive direction (only useful for some machines).
- (9) **Axis2-** : Extended axis 2 moves in the negative direction (only useful for some machines).

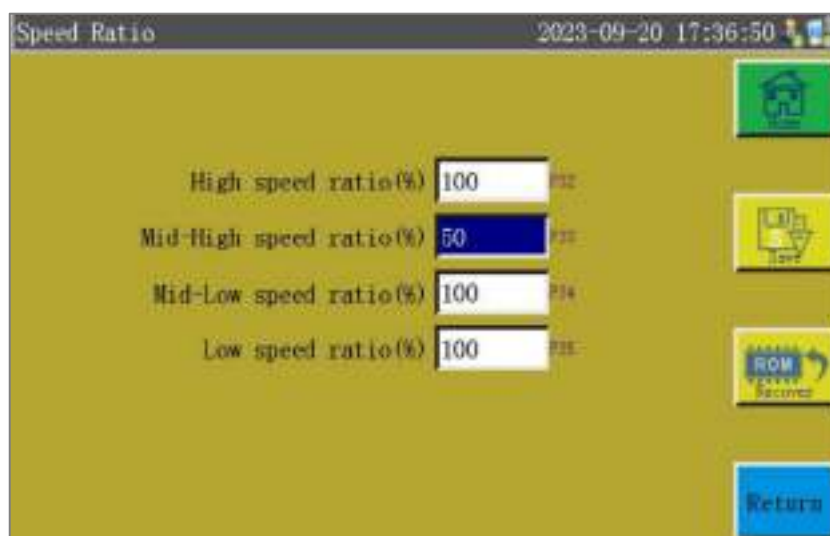
(10)  : Exit the popup window.

(11)  : Click to pop up box below to confirm moving the machine's X and Y axes to the end point of the captured graphic.



A. Other-Speed Ratio

There are 4 types of speed ration for collecting and its value can be set by clicking "Menu - User Parameters - Speed Ratio", as shown below. For example, if the "Mid-high speed ratio" set as 50, and select "Mid-high speed ratio" as "Speed Ratio" in [Other]. Then, when current Spindle speed is 2000, the actual speed for collecting will be 1000 ($2000 \times 50\% = 1000$).

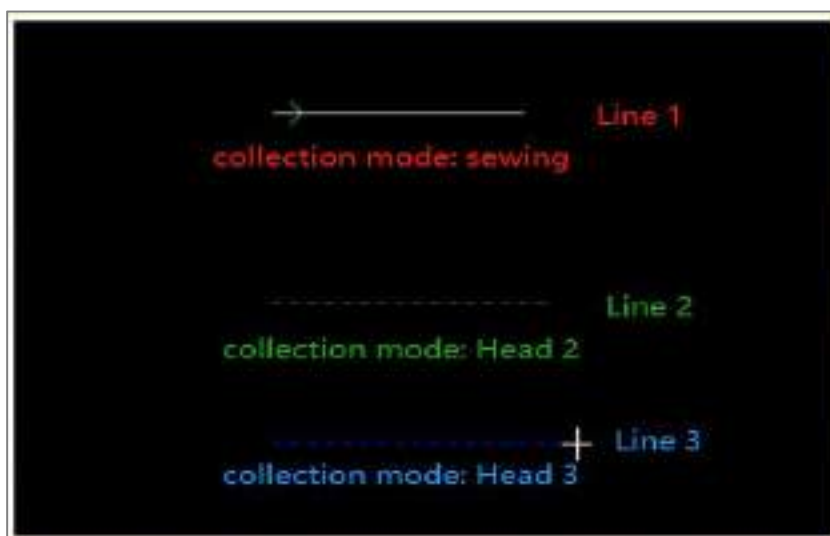


B. Other-Collection Mode

Usually, the sewing mode is the default processing mode. The captured graphic is represented by a solid line under this mode, as shown in line 1 in the figure below.

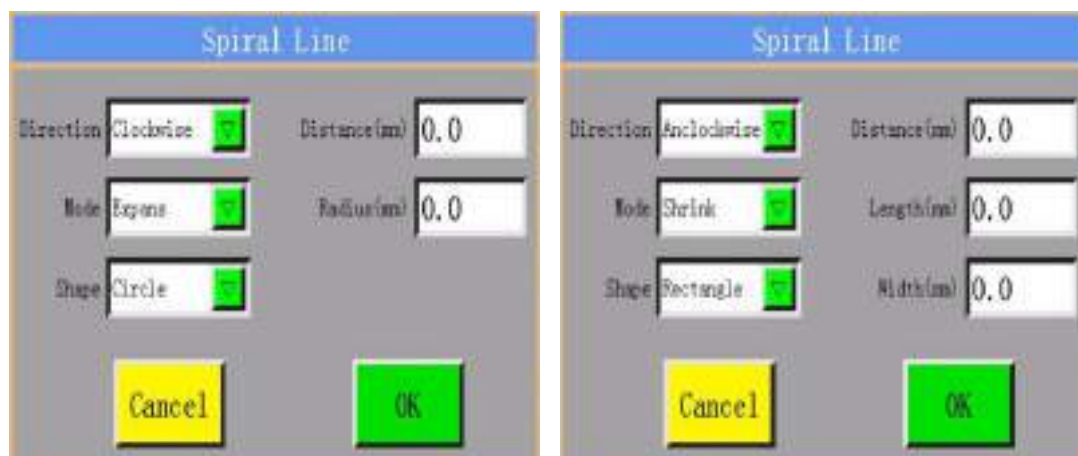
The head 2 mode is the brush mode, and the captured graphic is represented by a dotted line under this mode, as shown in line 2 in the figure below.

The head 3 mode is the laser cutting mode, and the captured graphic under this mode is represented by a dotted line, as shown in line 3 in the figure below.



C. Other-Spiral Line

Enter the spiral line interface and its relevant parameters are as follows.



Instruction of Spiral Line Interface's Buttons

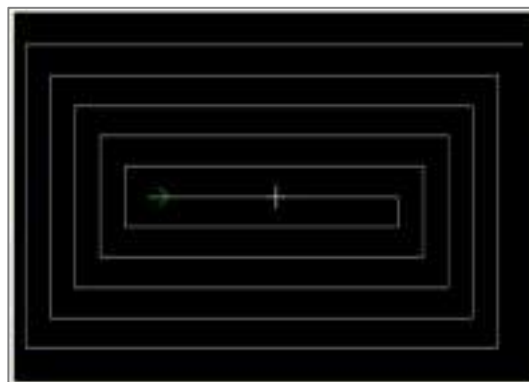
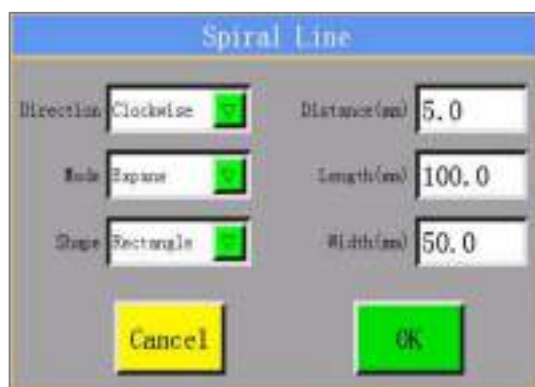
- (1) **Direction**: 2 types; clockwise and anticlockwise.
- (2) **Mode**: 2 types; expand and shrink.

- (3) **Shape** : 2 types; rectangle and circle.
- (4) **Distance(mm)** : The distance between 2 spiral lines.
- (5) **Radius(mm)** : Enabled when choose circle as **Shape** , meaning the horizontal distance from the center of the circle to any point on the edge of the circle.
- (6) **Length(mm)** : Enabled when choose rectangle as **Shape** , meaning the horizontal distance of the rectangle.
- (7) **Width(mm)** : Enabled when choose rectangle as **Shape** , meaning the vertical distance of the rectangle.
- (8) **OK** : Confirm to enable the spiral line function.
- (9) **Cancel** : Confirm to disable the spiral line function.

◆ Spiral lines parameters and indicator figures

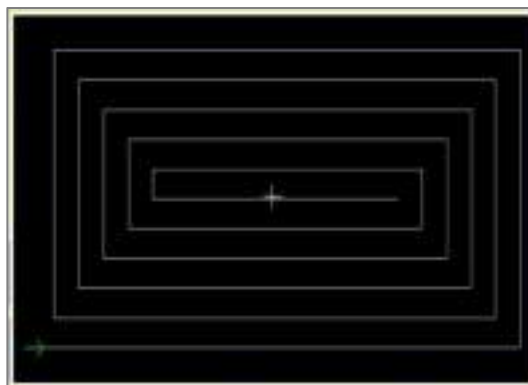
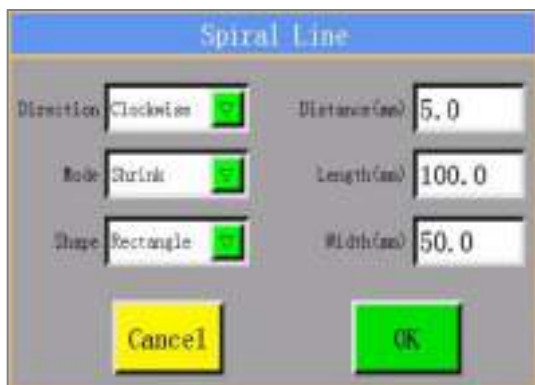
1. Example 1 and its parameters

- (1) Direction: Clockwise (3) Shape: Rectangle (5) Length: 100mm
 (2) Mode: Expand (4) Distance: 5mm (6) Width: 50mm



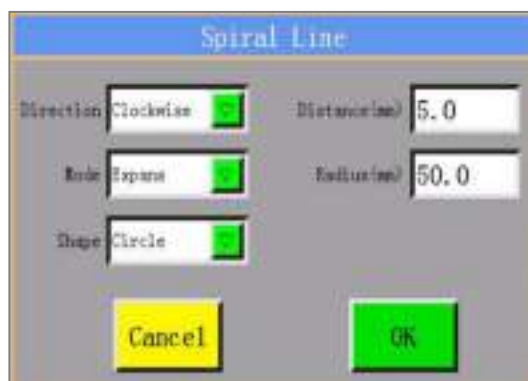
2. Example 2 and its parameters

- (1) Direction: Anticlockwise (4) Distance: 5mm
 (2) Mode: Shrink (5) Length: 100mm
 (3) Shape: Rectangle (6) Width: 50mm



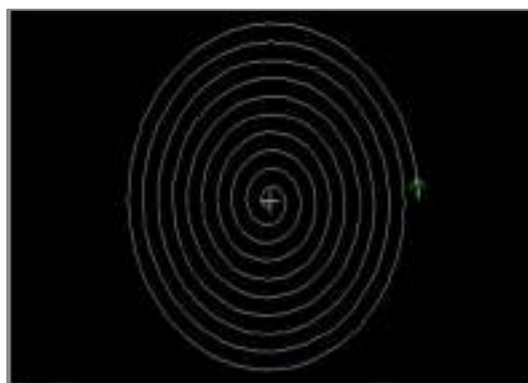
3. Example 3 and its parameters

- (1) Direction: Clockwise
- (2) Mode: Expand
- (3) Shape: Circle
- (4) Distance: 5mm
- (5) Radius: 50mm



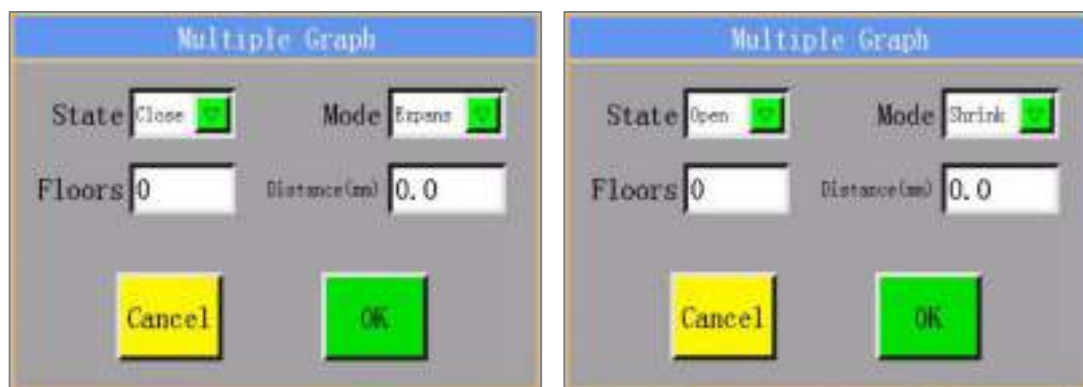
4. Example 4 and its parameters

- (1) Direction: Anticlockwise
- (2) Mode: Shrink
- (3) Shape: Circle
- (4) Distance: 5mm
- (5) Radius: 50mm



D. Other-Multiple Graphic

Enter the multiple graphic interface and its relevant parameters are as follows.



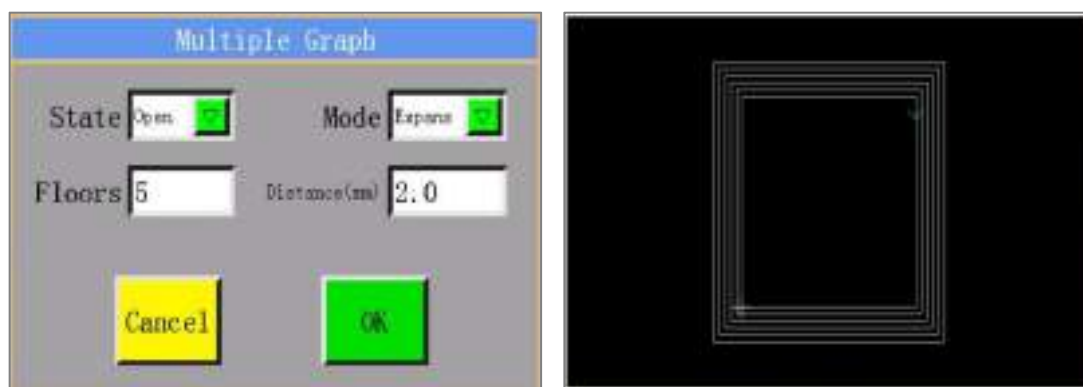
Instruction of Multiple Graphic Interface's Buttons

- (1) **State** : 2 types; close and open. Close means the multiple graphic function will be disabled; Open means the multiple graphic function will be enabled.
- (2) **Mode** : 2 types; expand and shrink. "Expand" refers to multiplication from the periphery of the figure; "Shrink" refers to multiplication within the figure.
- (3) **Floors** : The number of times the graph is multiplied, ranging from 1 to 20.
- (4) **Distance(mm)** : The distance between 2 multiple graphics.

◆ Multiple graphics parameter and indicator figures

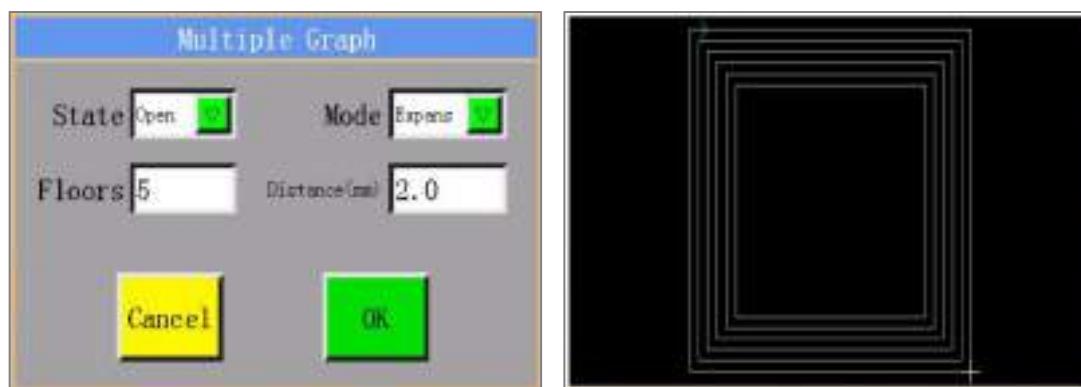
1. Example 1 and its parameters

- (1) State: Open (2) Mode: Expand (3) Floors: 5 (4) Distance: 2mm



2. Example 2 and its parameters

- (1) State: Open (2) Mode: Shrink (3) Floors: 5 (4) Distance: 2mm



4.5 Collect Graphics-Graph Edit







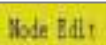

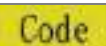
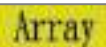



Click **Create a new file** or **Edit the file** to enter the collect graphics' interface, and then click **Graph Edit** to enter the the interface of Graphic Edit (as shown below). The selected graphic file can be edited or modified in this interface.

Note: If enter this interface by clicking **Create a new file**, then the operation of “Graphic Edit” cannot be performed without a collected graphic, and the icon will be shown as




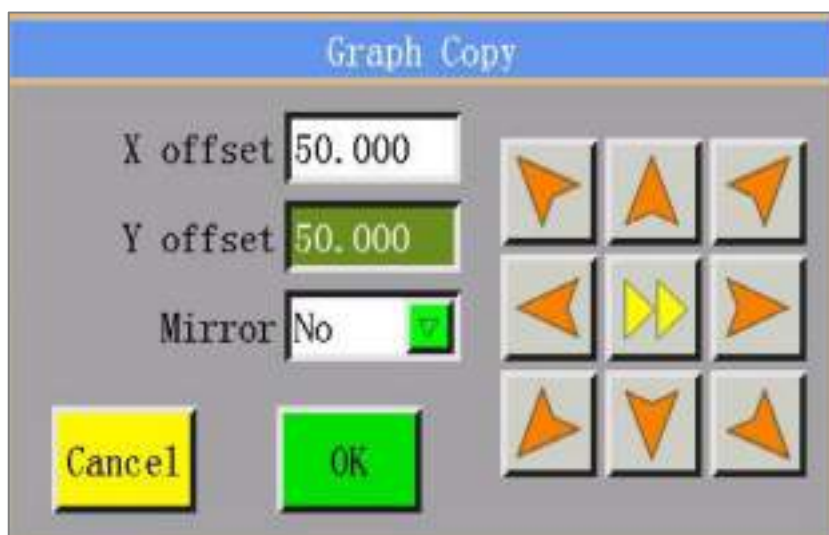
Instruction of Collect Graphics Interface's Buttons

- (1) **Delete** : Delete the selected graphic.
- (2) **Copy** : Copy the selected graphic, and a window will popup to set the location of the replicated graphic.

- (3)  : Modify the stitch length of the selected graphic.
- (4)  : Reverse the processing direction of the selected graphic.
- (5)  : Cancel the previous modification.
- (6)  : Enter the interface of “Graphic Switch” to translate, stretch, rotate, mirror the selected graphic and so on.
- (7)  : Choose the graphic to edit and the selected graphic will turn blue.
- (8)  : Set the reinforcement, backstitch, shrinkage or zigzag.
- (9)  : Enter the interface of “Node Edit” to add, delete nodes and so on.
- (10)  : Enter the interface of “Stitch Edit” to add, delete the stitches and so on.
- (11)  : Enter the interface of “Code” to add, delete the instructions and so on.
- (12)  : The alignment graphic is automatically copied and pasted according to the related parameters that is set.
- (13)  : Switch the mode to select graphics. There are 3 types, “Single”, “Multi” and “All”.
- (14)  : Enter the rotate edit interface to set rotation angle for the specific stitch or check its rotation angle.
- (15)  : Enter the rotate needle interface to set rotation angle for the specific line segment.

4.5.1 Copy Graphics

Select the graphic and then click  to enter graph copy interface for setting its related parameters (as shown below). And the accurate position of replicated graphic can be confirmed by setting the X offset and Y offset.



Instruction of Copy Graphics Interface's Buttons

- (1) **X offset** : The X-direction offset of the copied position relatives to the original position; this value can be set with the moving arrow buttons, or by inputting the value directly.
- (2) **Y offset** : The Y-direction offset of the copied position relatives to the original position; this value can be set with the moving arrow buttons, or by inputting the value directly.
- (3) **Mirror** : Yes or No; "Yes" means that the copied graphic is vertically mirrored to the original graphic, "No" means that the copied graphic is identical to the original graphic except for its position.

❖ Steps to copy graphics:

- ① Select the graphic to be copied and then click **Copy**.
- ② Confirm the position of replicated graphic by setting the value of X offset and Y offset or by moving the direction buttons.
- ③ On-demand setting of graphics to be mirrored or not.
- ④ Finally click **OK**.

❖ The indicator figures before and after copying are as follows:



Figure 1

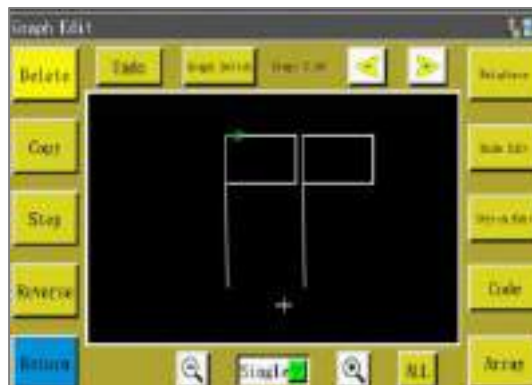
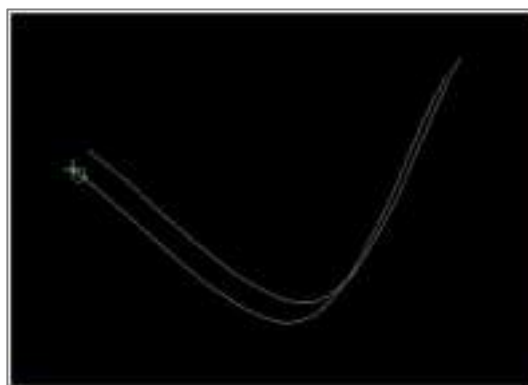
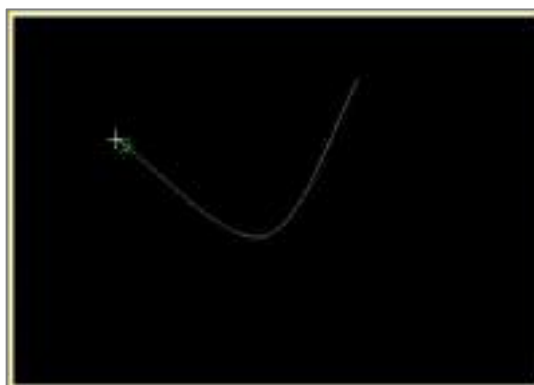


Figure 2

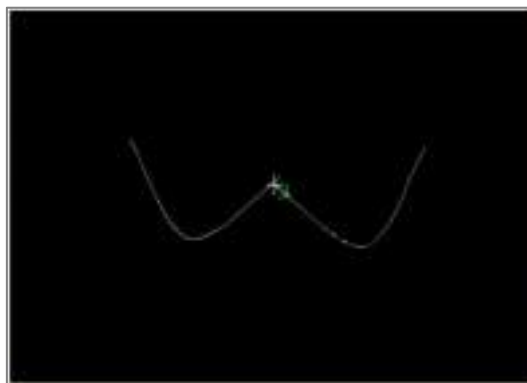
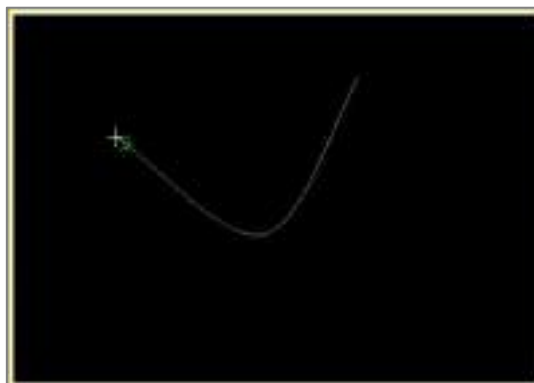
1. Example 1 and its parameters

- (1) X offset: 20mm (2) Y offset: 20mm (3) Mirror: No



2. Example 2 and its parameters

- (2) X offset: 20mm (2) Y offset: 20mm (3) Mirror: Yes



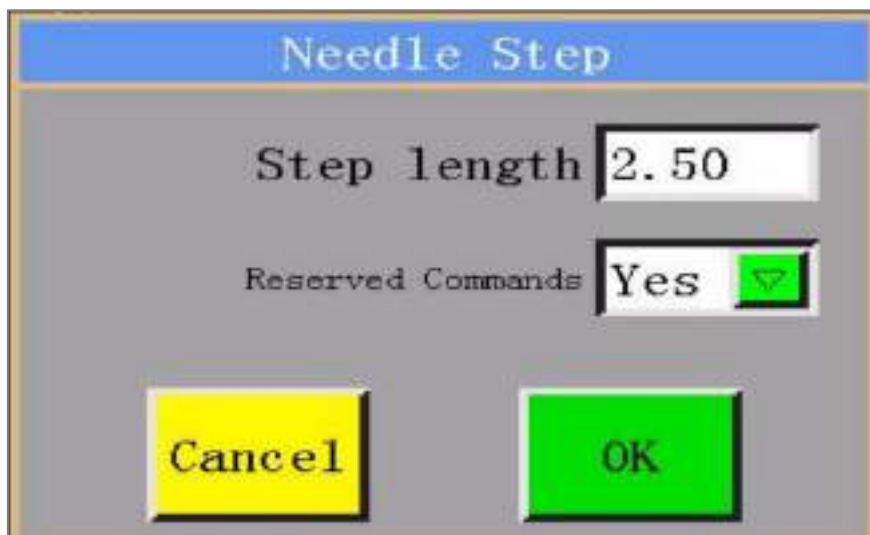
4.5.2 Modify Stitch Length

To modify the stitch length of the selected graphic, there are two methods which

will be introduced.

① Click **Step** in the interface of “Graphic Edit”

Enter the interface of “Needle length” (as shown below), and modify the stitch length of the whole graphic.



- (1) **Step length** : The length between 2 stitches; the larger the value, the denser the stitch.
- (2) **Reserved Commands** : Confirm to keep the original function codes (instructions) after modifying the stitch length.

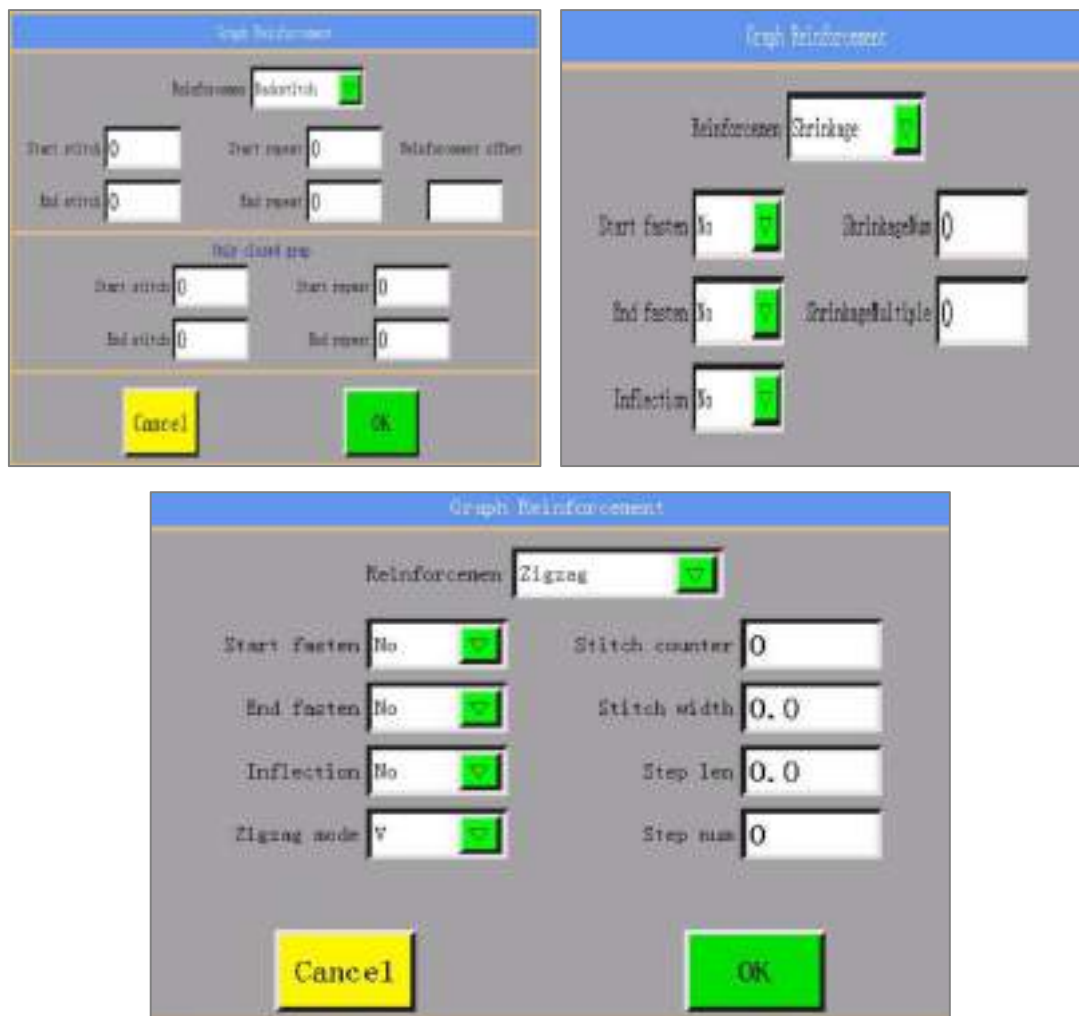
② Click **Stitch Edit** in the interface of “Graphic Edit”

Click **TwoDot** at the lower-right corner to confirm the modified range (Two Dot, Current, All graph) , and then click **Modify Step** to modify its stitch length.



4.5.3 Set Reinforcement/Fasten

Perform the reinforcement operation on the selected stitches or graphics, and please take [Chapter 3-3.3.5](#) as a reference to set related parameters.


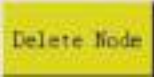

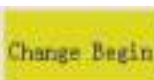
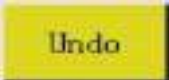
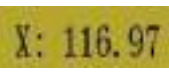

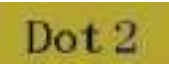





4.5.4 Edit the Node

Click **Node Edit** in the interface of “Graphic Edit” to enter the interface of “Node Edit” (as shown below), then the node of selected graphic can be added, edited, translated and so on.



Instruction of Collect Graphics Interface's Buttons

- (1)  : Add a new graph node at a specific location.
- (2)  : Delete the selected graph node.
- (3)  : Move the selected graph node.
- (4)  : Only closed graphics can be used this operation, which sets the selected node as the start point.
- (5)  : Cancel the previous operation.
- (6)  : Current X coordinate.
- (7)  : Current Y coordinate.
- (8)  : Select the node and show its corresponding serial number.
- (9)  : X offset relatives to the original position after moving the node.
- (10)  : Y offset relatives to the original position after moving the node.
- (11)  : 3 types; Single, Multi and All. Single means only one node is selected; multiple means two or more nodes can be selected; all means all nodes

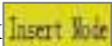

can be selected.

1. Add the Node

◆ Definition

Add a new node at the specific position (select a node first).

◆ Operation Steps



- ① Click .
- ② Choose a node and then move to the target position by moving buttons.
- ③ Click  to confirm the modification.

2. Delete the Node

◆ Definition

Delete the selected node of selected graphic.

◆ Operation Steps


- ① Select the node to be deleted and then click .
- ② Click  to confirm the modification.

3. Move the Node

◆ Definition

Move the selected node of the selected graphic.

◆ Operation Steps

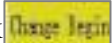

- ① Select the node to be moved and then click .
- ② Move to the target position by moving buttons.

4. Change the Begin

◆ Definition

Change the start point of the selected graphic (only for closed graphics).

◆ Operation Steps

- ① Click  in the interface of “Node Edit” after selecting the node to be set as the start point.
- ② Click  to confirm the modification.

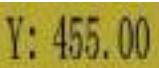
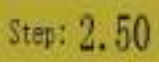
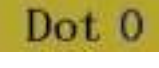
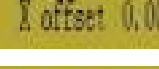
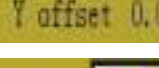
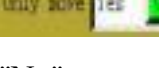


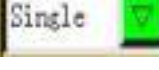
4.5.5 Edit the Stitch

Click **Stitch Edit** in the interface of “Graphic Edit” to enter the interface of “Stitch Edit” (as shown below), then the stitch of selected graphic can be added, edited, translated and so on. Besides, the operations like reinforcement, reference modification, graphic distortion and stitch length modification can be completed in this interface.



Instruction of Collect Graphics Interface's Buttons

- (1) **Insert Stitch**: Add a new stitch at a specific location.
- (2) **Delete Stitch**: Delete the selected stitch.
- (3) **Move Stitch**: Move the selected stitch.
- (4) **Change Begin**: Only closed graphics can be used this operation, which sets the selected stitch as the start point.
- (5) **Zigzag**: Set zigzag reinforcement, and at least select 2 consecutive stitches.
- (6) **X: 116.97**: Current X coordinate.





- (7)  : Current Y coordinate.
- (8)  : Stitch length of current selected graphic.
- (9)  : Select the node and show its corresponding serial number.
- (10)  : X offset relatives to the original position after moving the stitch.
- (11)  : Y offset relatives to the original position after moving the stitch.
- (12)  : Yes or No; "Yes" means only performing moving operations; "No" means stitches will be generated according to the moving trajectory.
- (13)  : Modify the graphical base (benchmark).
- (14)  : Modify the selected graphic's shape.
- (15)  : 4 types; Single, Multi, Section and All. Single means only one stitch is selected; multiple means two or more stitches can be selected; section means a segment consisting of stitches can be selected; all means all stitches can be selected.

1. Add the Stitch

◆ Definition

Add a new stitches at the specific position.

◆ Operation Steps



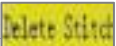

- ① Click .
- ② Select the stitch by clicking  / , and the selected stitch will turn red.
- ③ Then move to the target position by moving buttons.
- ④ Click  to confirm the modification.

2. Delete the Stitch

◆ Definition

Delete the selected stitches of graphics.

◆ **Operation Steps**


- ① Select the stitches to be delete by clicking  / .
- ② Click .
- ③ Click  to confirm the modification.

3. Move the Stitch

◆ **Definition**

Move the selected stitches of the graphic.

◆ **Operation Steps**

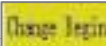

- ① Select stitches to be moved then click .
- ② Then move to the target position by moving buttons.

4. Change the Begin

◆ **Definition**

Change the start point of selected graphic (only for closed graphics).

◆ **Operation Steps**


- ① Click  after selecting the stitch to be set as the start point.
- ② Click  to confirm the modification.

5. Set the Zigzag

◆ **Definition**

Set the zigzag reinforcement to the selected stitches, and at least 2 consecutive stitches need to be selected to ensure the operation is valid.

◆ **Operation Steps**

- ① Click  after selecting the stitches to be reinforcement.
- ② Input the related parameters in the interface of “Zigzag (as shown below).

- ③ Click **OK** to confirm the modification.



6. Modify the Reference Point

◆ Definition

Set the selected stitch as the reference point of the graphic (the reference point is not necessarily the start point).

◆ Warm Tips

- 1) Click **Base1** to set the selected stitch as the 1st reference point.
- 2) Click **Base2** to set the selected stitch as the 2nd reference point.
- 3) Click **Remove Base** to cancel all reference points and the start point will be the reference point by default.



◆ Operation Steps

- ① Select the stitch to be set as the reference point and then click **Modify Base**.
- ② Set the parameters by needs in the interface of “Modify Base” (as shown above).
- ③ Click **Return** to confirm the modification.

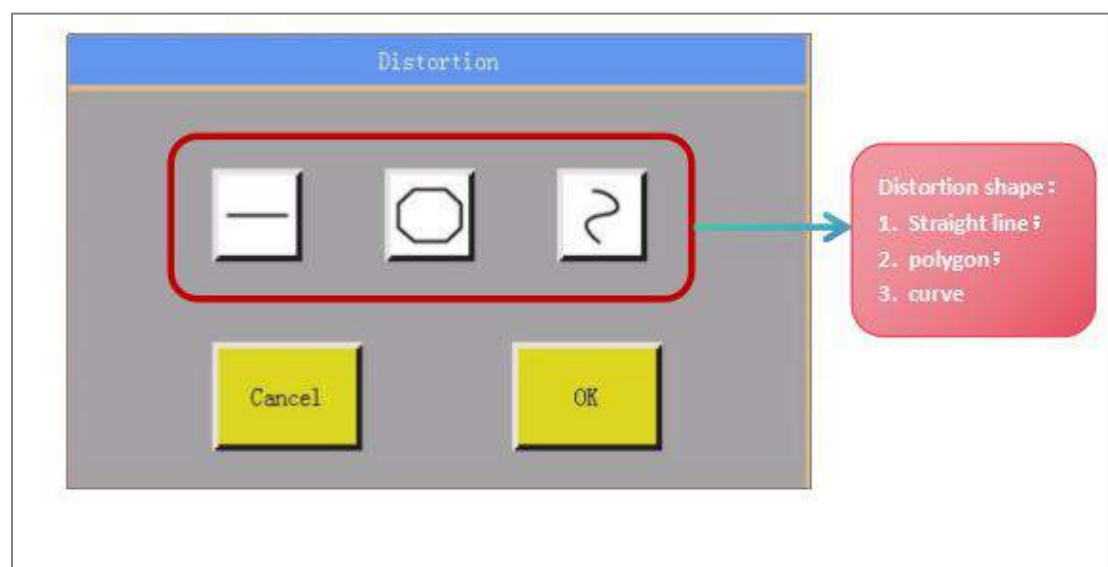
7. Distortion

◆ Definition

Change the graphic shape of selected stitches, and at least two consecutive stitches need to be selected to ensure the operation is valid.

◆ Operation Steps

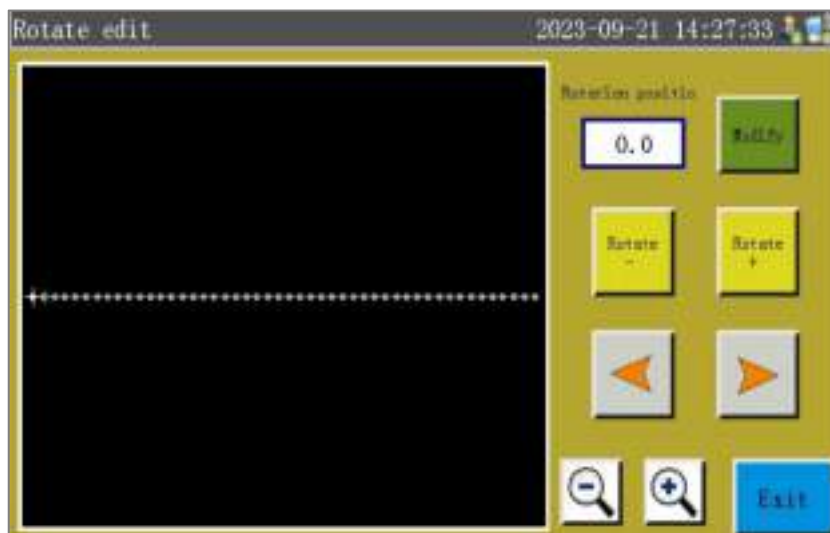
- ① Select the stitches to be distorted and then click **Distortion**.
- ② Select the graphic mode by needs in the “Distortion” interface (as shown below).
- ③ Click **OK** to confirm the modification.



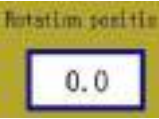





4.5.6 Rotate Edit

Click **Rotate edit** in the interface of “Graphic Edit” to enter the interface of Rotate edit, and its figure is as follows.


Warm tips: This function mainly corresponds to rotary machine.



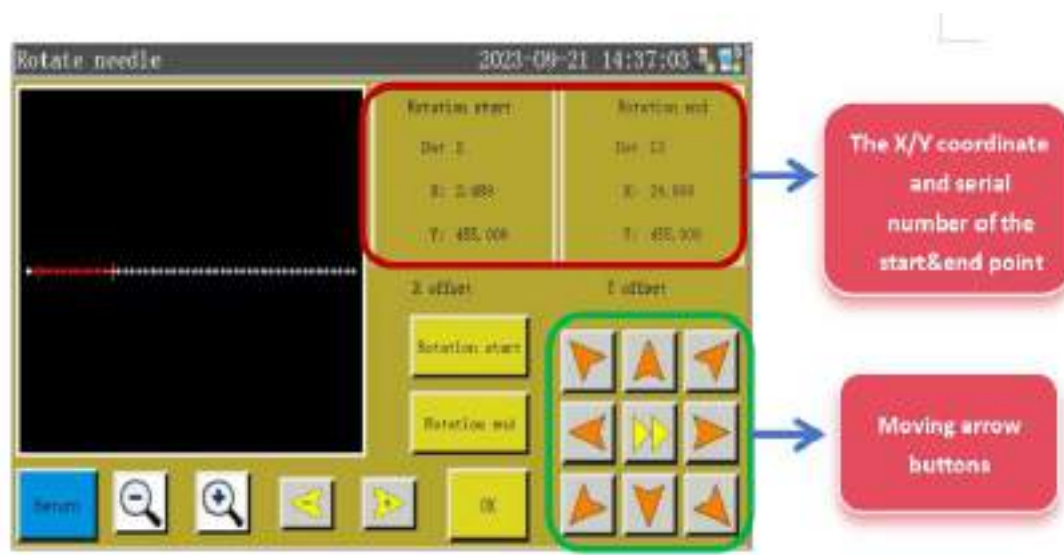
Instruction of Collect Graphics Interface's Buttons

- (1)  : The rotation angle of the currently selected stitch.
- (2)  : After setting the rotation angle, press to confirm the modifications.
- (3)  : Rotate the sewing angle of the stitch in the positive direction.
- (4)  : Rotate the sewing angle of the stitch in the negative direction.
- (5)  : Move forward to the next stitch.
- (6)  : Move backward to the next stitch.

4.5.7 Rotate Needle

Click  in the interface of “Graphic Edit” to enter the interface of Rotate needle, and its figure is as follows.

Warm tips: This function mainly corresponds to rotary machine.



Instruction of Collect Graphics Interface's Buttons

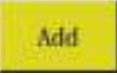
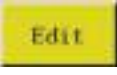




- (1) **X offset** : Offset of the current X coordinate relative to that of the original.
- (2) **Y offset** : Offset of the current Y coordinate relative to that of the original.
- (3) **Rotation start** : Confirm the selected stitch as the start point for rotation.
- (4) **Rotation end** : Confirm the selected stitch as the end point for rotation.

4.5.8 Function Code

Click **Code** to enter the corresponding interface (as shown below), and the code can be added, edited, deleted or cleared.






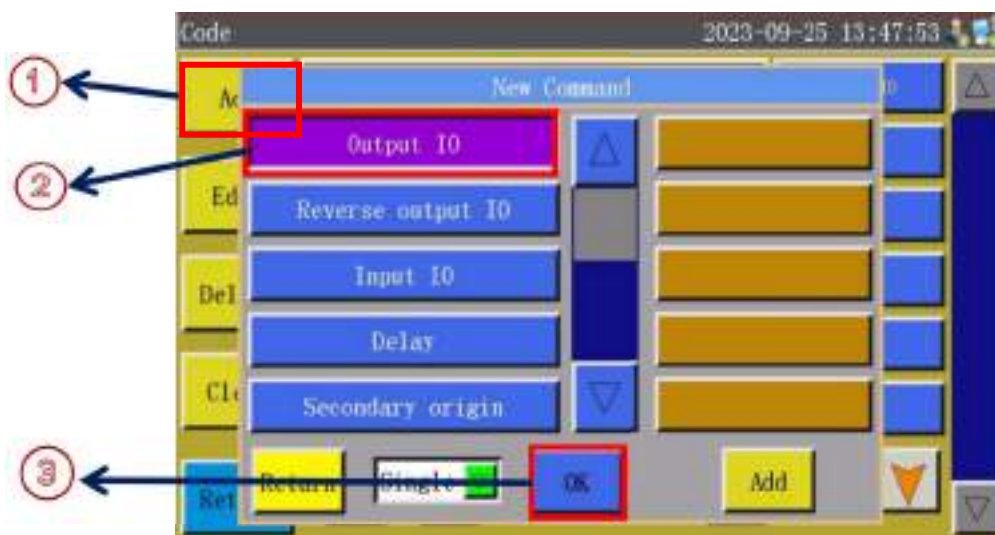
Instruction of Code Interface's Buttons

- (1)  : Add the selected code to the specific stitch.
- (2)  : Edit the parameters of the selected code.
- (3)  : Delete the selected code.
- (4)  : Clear all the added codes of the selected stitch.
- (5)  : Move the order of the selected added code upwards.
- (6)  : Move the order of the selected added code downward.

1. Add the Code

Add the selected code to the specific position and it should be noted that the code can only be added at the single stitch, not a segment. The steps are as follows.

- ① Select the stitch to be added the code and then click .
- ② Click the code and then click  to input the related parameters if is needed.
- ③ Click  in this interface (as shown below) to confirm the modification.

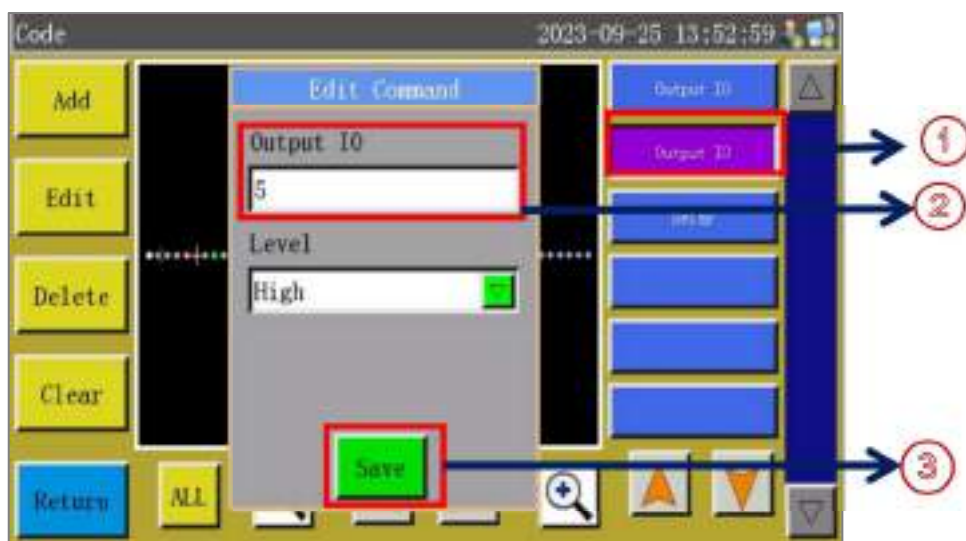


2. Edit the Code

Edit the selected code which has been added already and the steps are as follows.

- ① Select the code to be edited on the right list.

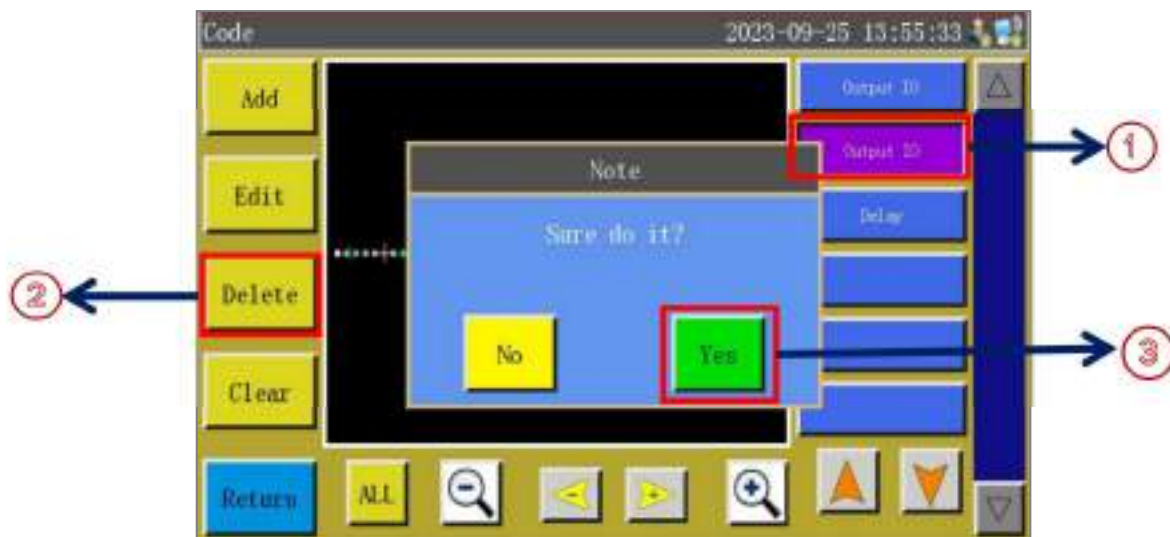
- ② Then click **Edit** to modify the parameters by needs.
- ③ Click **Save** to confirm the modification.



3. Delete the Code

Delete the selected code and the steps are as follows.

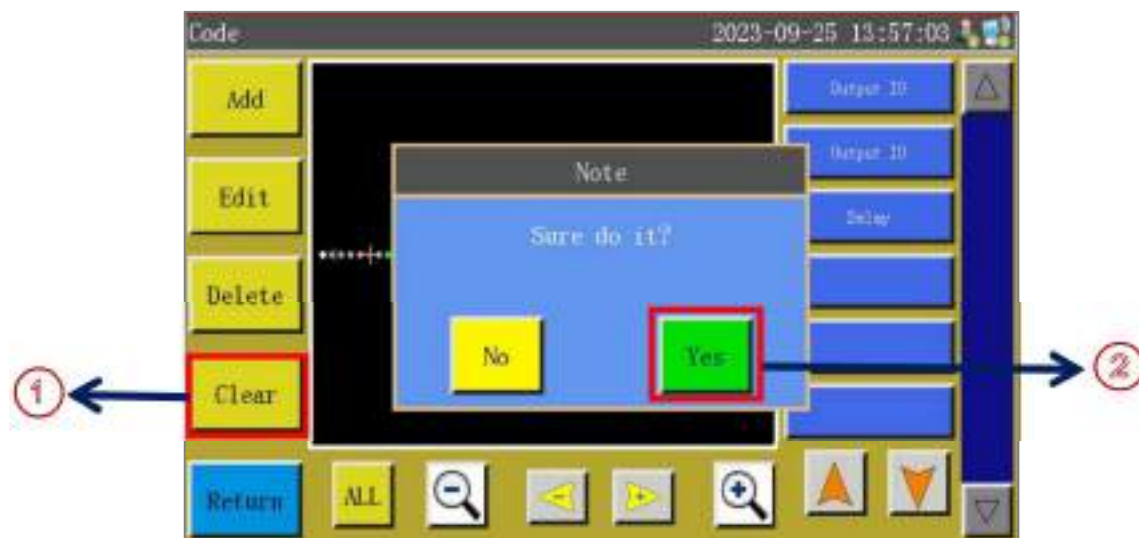
- ① Select the code to be deleted on the right list.
- ② Then click **Delete**.
- ③ Click **Yes** to confirm the modification.




4. Clear the Code

Clear all the codes which have been added to this stitch and the steps are as follows.

- ① Click **Clear** in this interface.
- ② Then click **Yes** to confirm the modification.

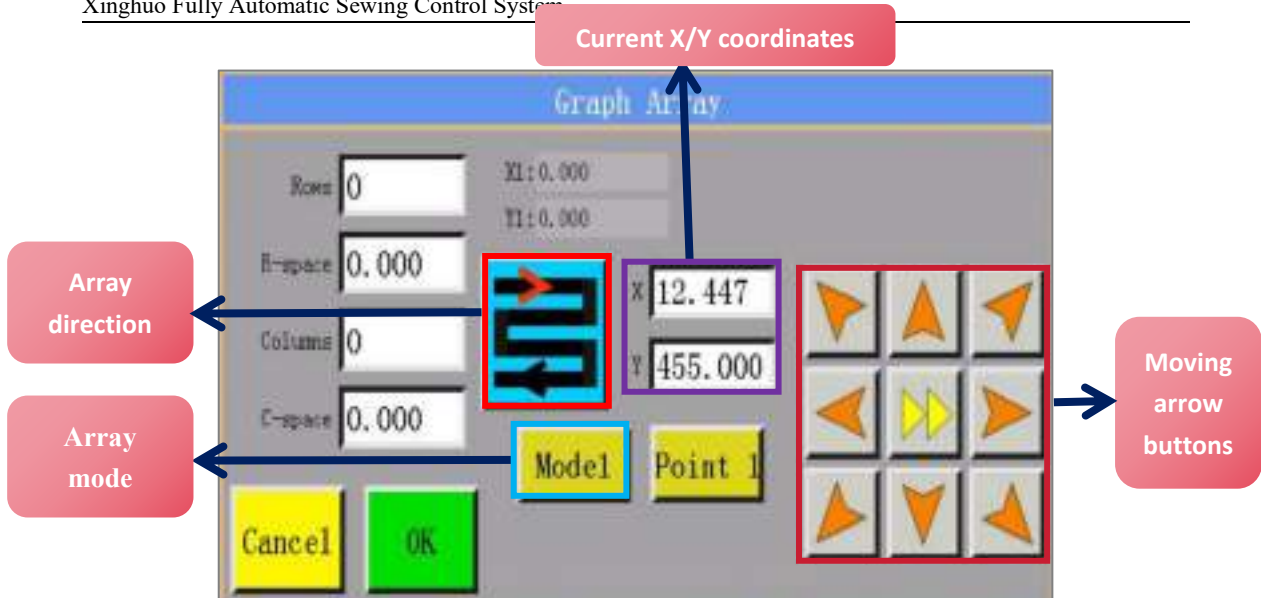


Warm tips:





- ① The Code interface is displayed in the mode of stitches. If a stitch is displayed in green, it means it contains commands.
- ② The selected stitch can be switched by clicking . When the selected stitch turns red, then it can be added, edited, deleted or cleared codes.
- ③ When the black blank area is clicked, it indicates that the position before sewing of the thread segment is selected.

4.5.9 Array the Graphic


Click **Array** in the interface of “Graph Edit” to enter the corresponding interface (as shown below). the alignment graph is automatically copied according to the set number of rows and columns and spacing.

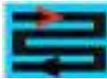




Instruction of Graph Array Interface's Buttons


- (1)  : Direction of the array graphics, click to toggle between different types.
- (2)  : Mode of the array graphics, click to toggle between mode 1, mode 2 and mode 3.
- (3)  : Graphic array with current parameters.
- (4)  : Cancel the graphic array.


1. Array direction


In the graphic array interface, click  to switch different array directions, currently there are 16 directions.


- ①  : Successive left to right first, then top to bottom. Meaning when pasting graphics, horizontally from left to right; and then from right to left after changing rows. Vertically, paste the graphic from top to bottom.
- ②  : Successive right to left first, then top to bottom. Meaning when pasting graphics, horizontally from right to left; and then from left to right after changing rows. Vertically, paste the graphic from top to bottom.
- ③  : Successive left to right first, then bottom to top. Meaning when pasting graphics, horizontally from left to right; and then from right to left after changing


rows. Vertically, paste the graphic from bottom to top.


- ④  : Successive right to left first, then bottom to top. Meaning when pasting graphics, horizontally from right to left; and then from left to right after changing rows. Vertically, paste the graphic from bottom to top.


- ⑤  : Successive top to bottom first, then left to right. Meaning when pasting graphics, vertically from top to bottom; and then from bottom to top after changing rows. Horizontally, paste the graphic from left to right.


- ⑥  : Successive bottom to top first, then left to right. Meaning when pasting graphics, vertically from bottom to top; and then from top to bottom after changing rows. Horizontally, paste the graphic from left to right.


- ⑦  : Successive top to bottom first, then right to left. Meaning when pasting graphics, vertically from top to bottom; and then from bottom to top after changing rows. Horizontally, paste the graphic from right to left.

- ⑧  : Successive bottom to top first, then right to left. Meaning when pasting graphics, vertically from bottom to top; and then from top to bottom after changing rows. Horizontally, paste the graphic from right to left.


- ⑨  : Change row, left to right first, then top to bottom. Meaning when pasting graphics, horizontally from left to right; and then continue pasting from left to right after changing rows. Vertically, paste the graphic from top to bottom.


- ⑩  : Change row, right to left first, then top to bottom. Meaning when pasting graphics, horizontally from right to left; and then continue pasting from right to left after changing rows. Vertically, paste the graphic from top to bottom.


- ⑪  : Change row, left to right first, then bottom to top. Meaning when pasting graphics, horizontally from left to right; and then continue pasting from left to right after changing rows. Vertically, paste the graphic from bottom to top.


- ⑫  : Change row, right to left first, then bottom to top. Meaning when pasting graphics, horizontally from right to left; and then continue pasting from right

to left after changing rows. Vertically, paste the graphic from bottom to top.

⑬  : Change column, top to bottom first, then left to right. Meaning when pasting graphics, vertically from top to bottom; and then continue pasting from top to bottom after changing columns. Horizontally, paste the graphic from left to right.

⑭  : Change column, bottom to top first, then left to right. Meaning when pasting graphics, vertically from bottom to top; and then continue pasting from bottom to top after changing columns. Horizontally, paste the graphic from left to right.

⑮  : Change column, top to bottom first, then right to left. Meaning when pasting graphics, vertically from top to bottom; and then continue pasting from top to bottom after changing columns. Horizontally, paste the graphic from right to left.

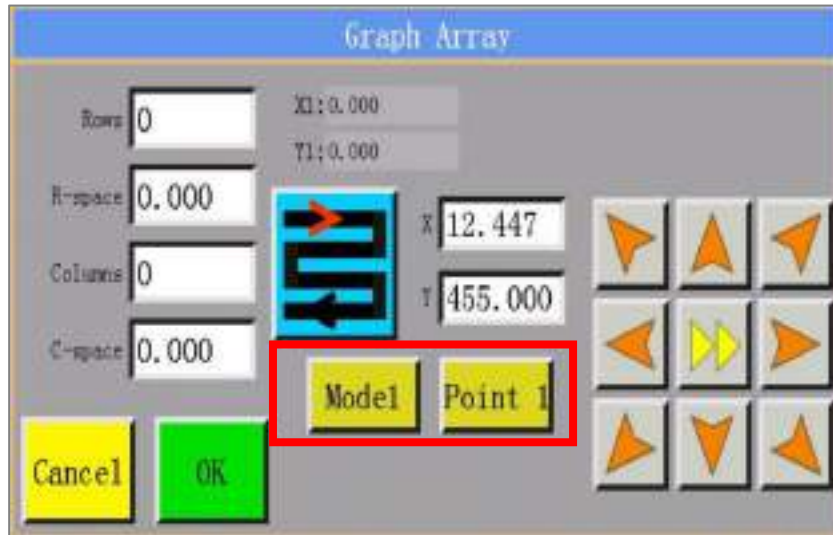
⑯  : Change column, bottom to top first, then right to left. Meaning when pasting graphics, vertically from bottom to top; and then continue pasting from bottom to top after changing columns. Horizontally, paste the graphic from right to left.

2. Array mode

In the graphic array interface, click  to switch different array modes, currently there are 3 modes.

① Mode 1:

According to the set parameters like [Rows], [R-spacing], [Columns], [C-spacing], etc to array the graphics. The first point (X1, Y1) indicates the **offset of the starting position of the array.**

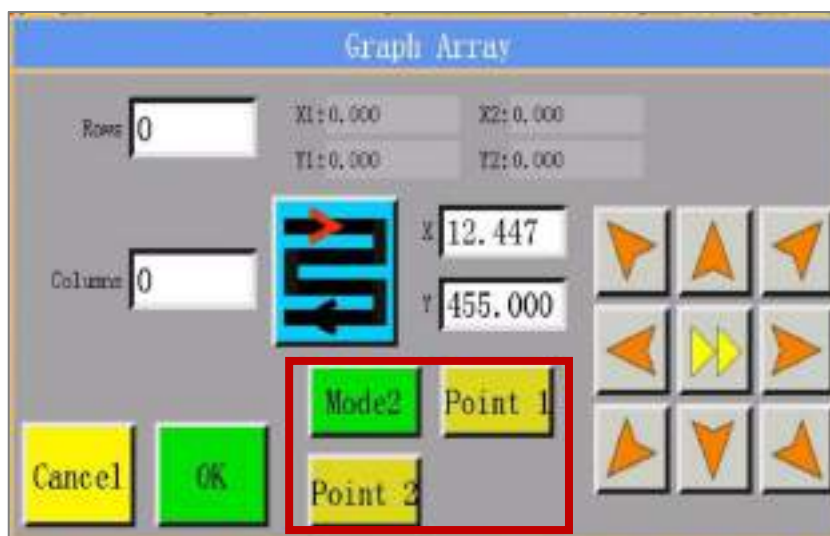


- (1) **Rows** : Number of rows to paste the graphic.
- (2) **R-space** : Distance between the first points of two adjacent horizontally pasted graphics.
- (3) **Columns** : Number of columns to paste graphic.
- (4) **C-space** : Distance between the first points of two adjacent vertically pasted graphics.
- (5) **Point 1** : After moving to the target position, click to determine the current coordinates as the first point coordinates.
- (6) **X1: 0.000**
Y1: 0.000 : The X and Y coordinates of the first point coordinates, these can be reset by clicking **Point 1**.
- (7) **x** 12.447
y 455.000 : Current X and Y coordinates.

② Mode 2:

According to the set parameters like [Rows], [Columns], array area, etc to automatically calculate row and column spacing and then array the graphics. The first point (X1, Y1) is the start position and the second point (X2, Y2) determines the height and width. And these two points are the diagonal points of the rectangle,

calculating the array area.

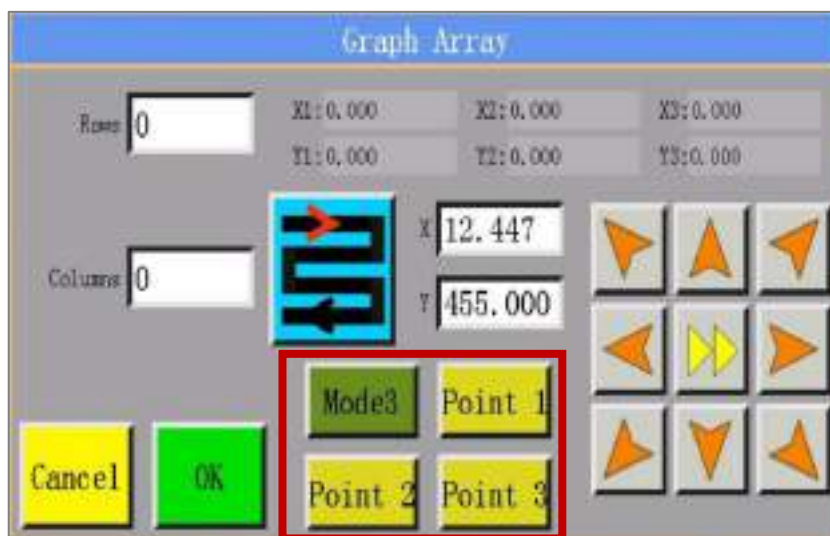


- (1) **Rows** : Number of rows to paste the graphic.
- (2) **Columns** : Number of columns to paste graphic.
- (3) **Point 1** : After moving to the target position, click to determine the current coordinates as the first point coordinates.
- (4) **Point 2** : After moving to the target position, click to determine the current coordinates as the second point coordinates.
- (5) **X1: 0.000**
Y1: 0.000 : The X and Y coordinates of the first point coordinates, these can be reset by clicking **Point 1**.
- (6) **X2: 0.000**
Y2: 0.000 : The X and Y coordinates of the second point coordinates, these can be reset by clicking **Point 2**.
- (7) **x 12.447**
y 455.000 : Current X and Y coordinates.

③ Mode 3:

According to the set parameters like **[Rows]**, **[Columns]**, array area, etc to automatically calculate row and column spacing and then array the graphics. The first

point (X1, Y1) is the start position, the second point (X2, Y2) determines the width and tilt angle, and the third point (X3, Y3) determines the height. And these three points determines the array area.



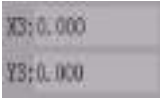
- (1) **Rows** : Number of rows to paste the graphic.
- (2) **Columns** : Number of columns to paste graphic.
- (3) **Point 1** : After moving to the target position, click to determine the current coordinates as the first point coordinates.
- (4) **Point 2** : After moving to the target position, click to determine the current coordinates as the second point coordinates.
- (5) **Point 3** : After moving to the target position, click to determine the current coordinates as the third point coordinates.
- (6)

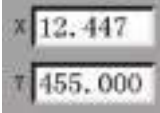
X1: 0.000
Y1: 0.000

 : The X and Y coordinates of the first point coordinates, these can be reset by clicking **Point 1**.
- (7)

X2: 0.000
Y2: 0.000

 : The X and Y coordinates of the second point coordinates, these can be reset by clicking **Point 2**.

- (8)  : The X and Y coordinates of the third point coordinates, these can be reset by clicking **Point 3**.

- (9)  : Current X and Y coordinates.

4.5.10 Graphic Switch

Click **Graph Switch** to enter the corresponding interface (as shown below), then the selected graphic can be moved, zoomed, converted, stretched, mirrored, rotated, increased and so on.



Instruction of Graph Switch Interface's Buttons

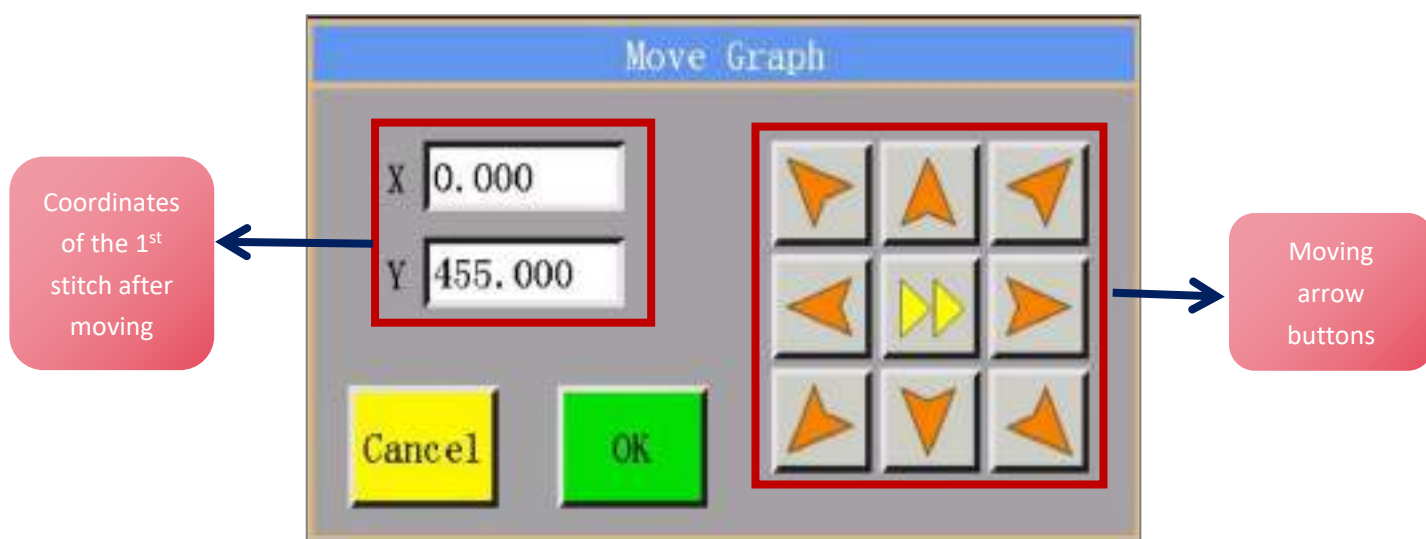
- (1) **Move** : Change the sewing position of the selected graphic (click **ALL** to switch to actual format size mode).
- (2) **Zoom** : Scale the selected graphic to the set graphic ratio.
- (3) **Convert** : Convert to other processing types, like sewing.
- (4) **Stretch** : Stretch the selected graphic according to the set parameters.
- (5) **Process Order** : Enter the process order interface to check or modify the processing order of the segments.

- (6) **Mirror** : Mirror the selected graphic horizontally or vertically.
- (7) **Increase Decrease** : Increase or decrease the length of the selected graphic at the start or end position.
- (8) **Split** : Split the selected line into completely separate segments, or combine the separate segments into a whole line.
- (9) **Shear** : Cut the selected graphic at a set angle.

1. Move the graphic

Move the selected graphic and the steps are as follows.

- ① Select the graphic to be moved.
- ② Then click **Move**.
- ③ Set the coordinates of the first point.
- ④ Click **OK** to confirm the modification.

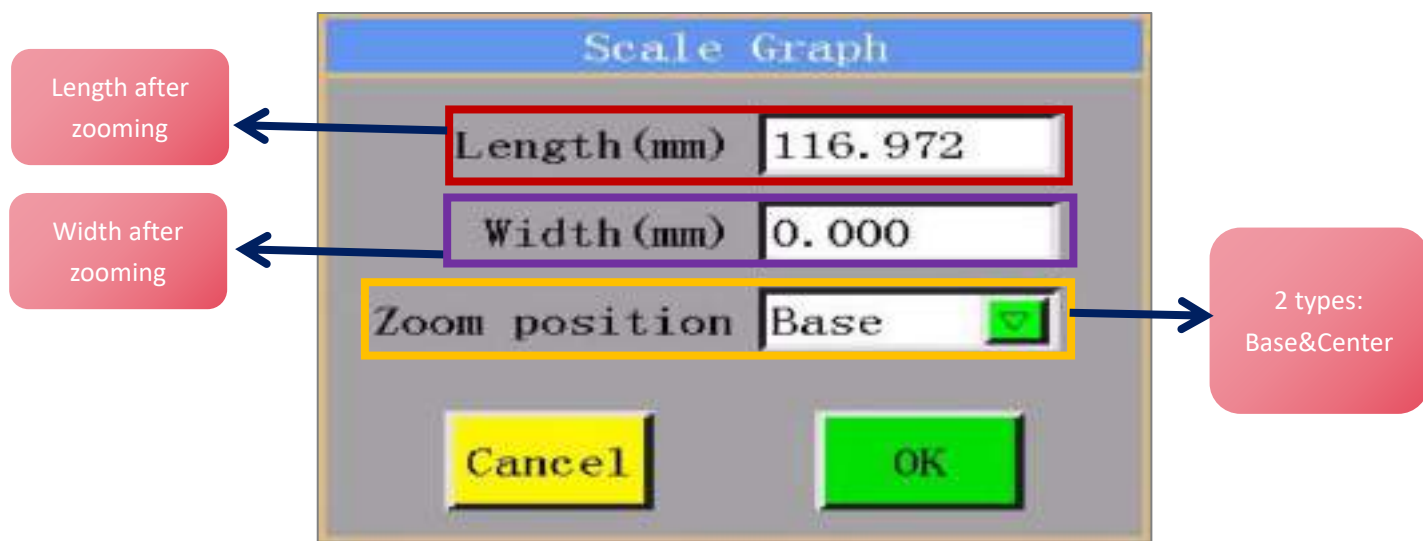


2. Zoom the Graphic

Zoom the selected graphic and the steps are as follows.

- ① Select the graphic to be zoomed.

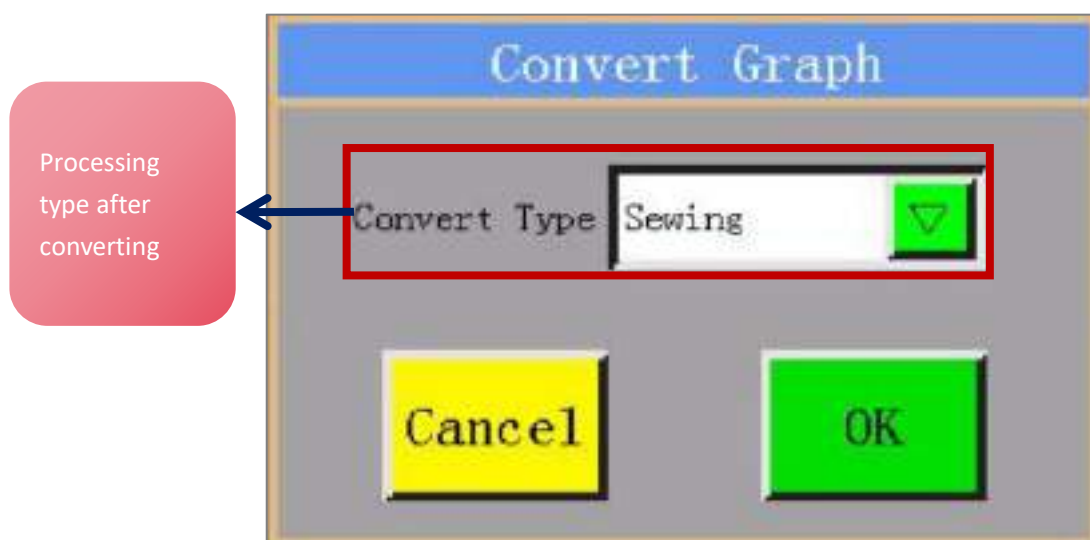
- ② Then click **Zoom** to set its related parameters by needs.
- ③ Click **OK** to confirm the modification.



3. Convert the Graphic



Convert the selected graphic into other processing types, like sewing and only move. Here are the steps.

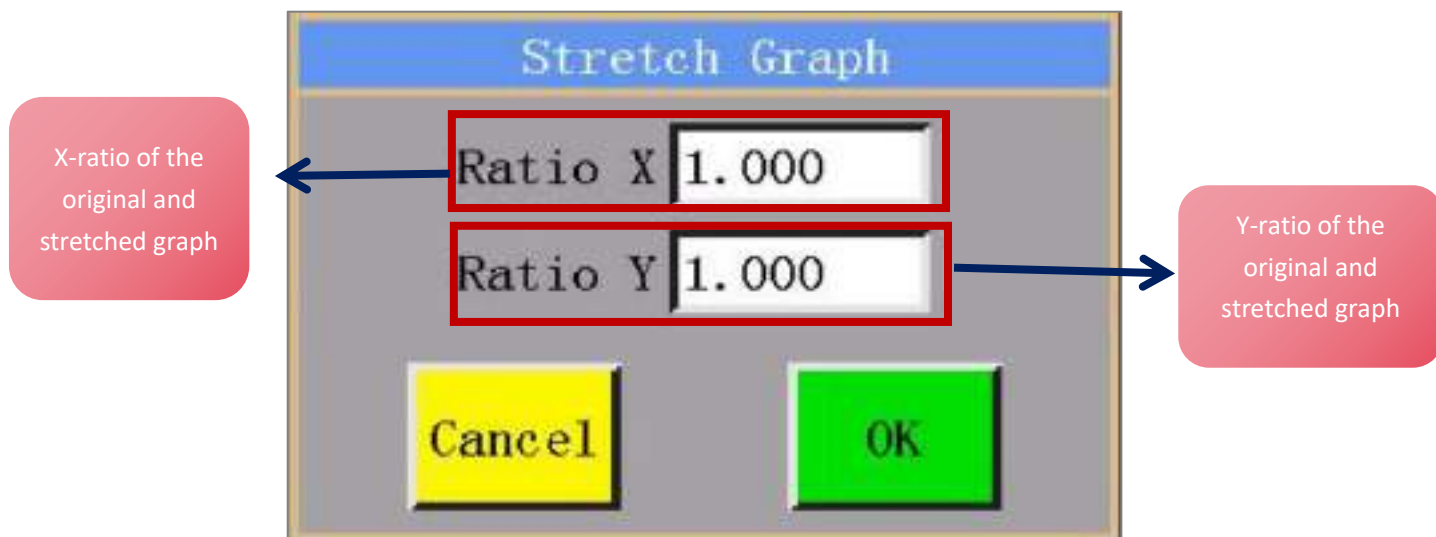
- ① Select the graphic to be converted.
- ② Click **Convert** to set the related parameters.
- ③ Then click **OK** to confirm the modification.



4. Stretch the Graphic

Stretch the selected graphic and the steps are as follows.

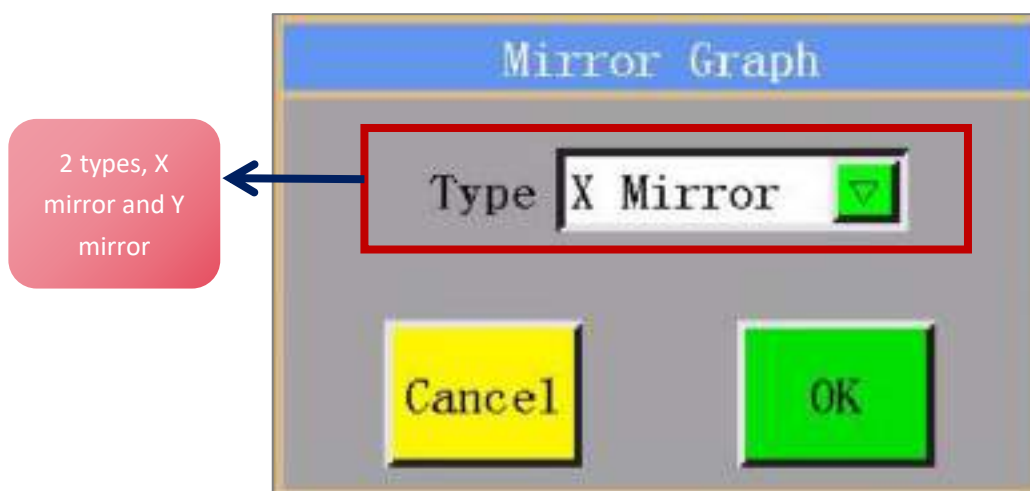
- ① Click **Single** and then   to select the graphic to be stretched.
- ② Click **Stretch** to set the related parameters.
- ③ Then click **OK** to confirm the modification.



5. Mirror the Graphic

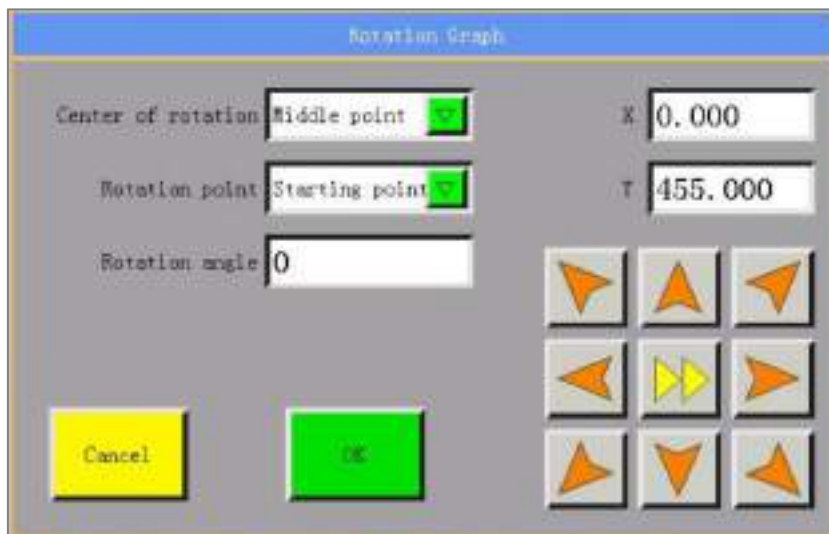
Mirror the selected graphic and the steps are as follows.

- ① Select the graphic to be mirrored.
- ② Click **Mirror** to set the related parameters.
- ③ Then click **OK** to confirm the modification.



6. Rotate the Graphic

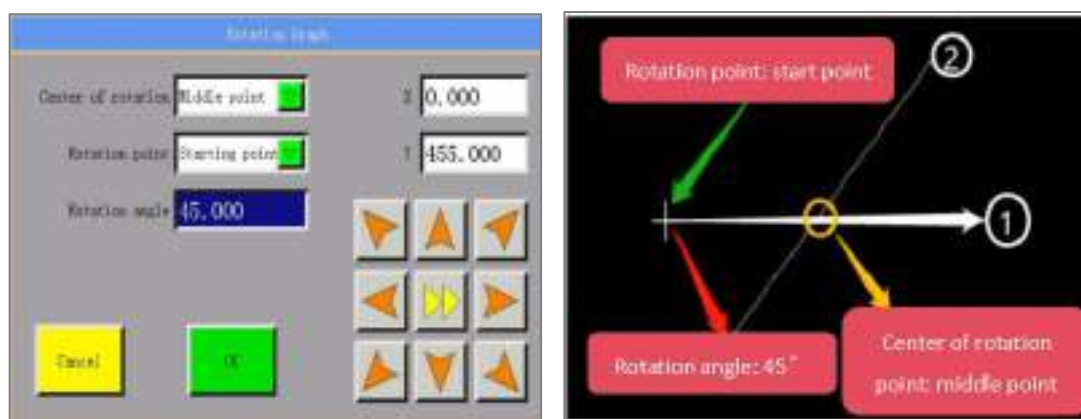
Rotate the selected graphic.



- (1) **Center of rotation** : The center point of rotation; there are 3 types: starting point, middle point and end point
- (2) **Rotation point** : Current spindle position; there are 3 types: starting point, middle point and end point.
- (3) **Rotation angle** : The angle of clockwise rotation when the graph rotate with the center point and the value is $-180^{\circ} \sim 180^{\circ}$.
- (4) **X 0.000** : Current X coordinate.
- (5) **Y 455.000** : Current Y coordinate.

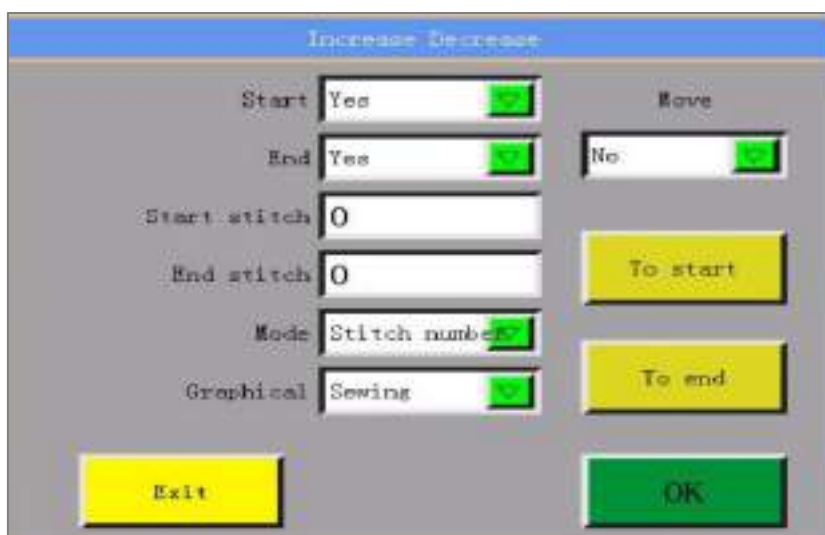
Operation steps: [The following line 1 is the original position; line 2 is the position after rotating].

- ① Select the graphic to be rotated.
- ② Click **Rotate** to set the related parameters, like angle.
- ③ Then click **OK** to confirm the modification.



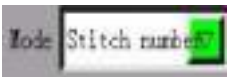
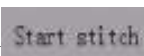
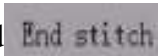
7. Increase/Decrease the Graphic


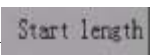
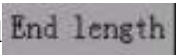
Increase or decrease the length of the selected graphic.

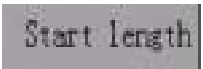


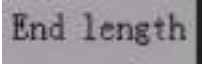
- (1) **Start** : Increase/decrease at the start position; [Yes] means increase/decrease is executed, [No] means not executed (need to be used with **Start stitch** together).
- (2) **End** : Increase/decrease at the end position; [Yes] means increase/decrease is executed, [No] means not executed (need to be used with **End stitch** together).
- (3) **Start stitch** : The number of stitches to be increased/decreased at the start position, ranging from -20 to 20 (positive values are for increasing, negative values are for decreasing).
- (4) **End stitch** : The number of stitches to be increased/decreased at the end position, ranging from -20 to 20 (positive values are for increasing, negative

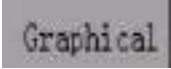
values are for decreasing).


- (5)  : When it's [Stitch number], it means to [increase/decrease by the number of stitches](#) (need to be used with  and  together).


- (6)  : When it's [Length], it means to [increase/decrease by the length](#) (need to be used with  and  together).


- (7)  : [The actual length to be increased/decreased at the start position](#), ranging from -20 to 20 (positive values are for increasing, negative values are for decreasing).

- (8)  : [The actual length to be increased/decreased at the end position](#), ranging from -20 to 20 (positive values are for increasing, negative values are for decreasing).


- (9)  : Totally 3 types, sewing, cutting and only move. Indicating [the processing type of the graphics](#) to be increase/decrease.

- (10)  : [Yes] means that the machine move to the graphical location after increasing/decreasing; [No] means the machine keep at the original after increasing/decreasing.

- (11)  : Click and choose [Yes] then the machine will move to the graphical start point.

- (12)  : Click and choose [No] then the machine will move to the graphical end point.

Operation steps:

- ① Select the graphic to be increased or decreased the length.
- ② Click  to set the related parameters, like modify mode.

- ③ Then click **OK** to confirm the modification.

8. Split the Graphic

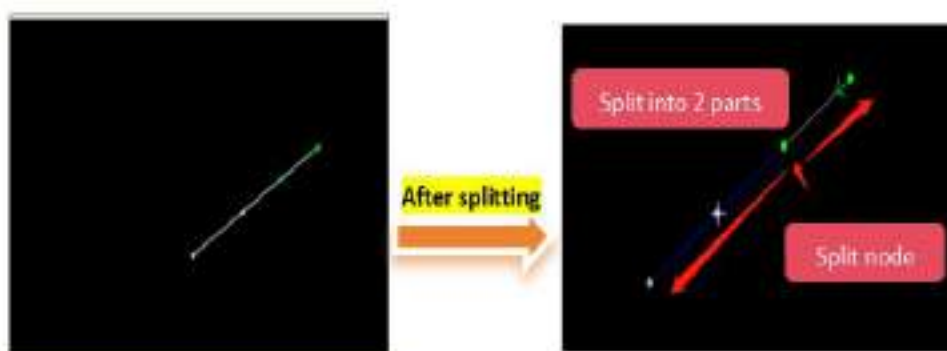
Split the selected graphic into several separate segments or combine some segments into a whole.



Operation steps:

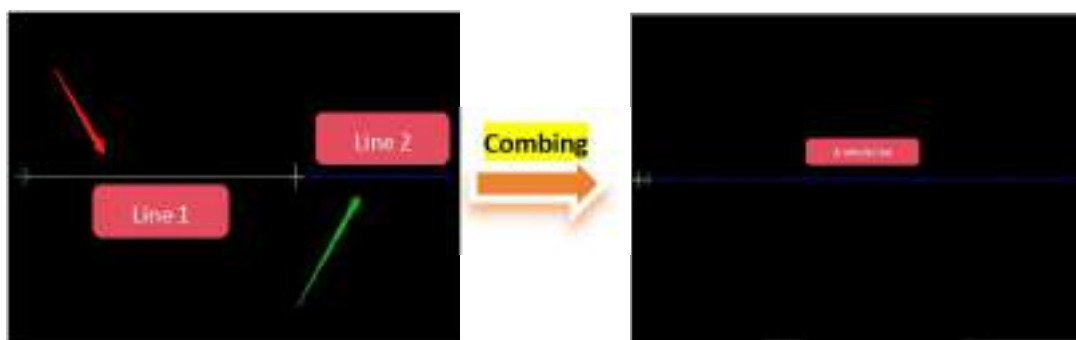
(1) Split segments

- ① Click **Split**.
- ② Select the graphic to be split.
- ③ Select the node and then move to the target position.
- ④ Click **Insert Node**.
- ⑤ Switch or ensure the current mode is **Split**.
- ⑥ Click **OK** to confirm to split.



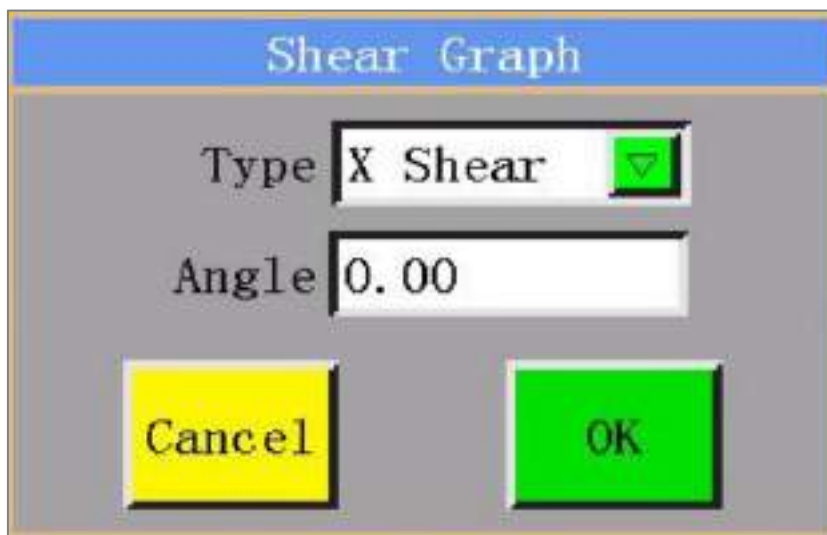
(2) Combine segments

- ① Click **Split**
- ② Click **Split** to switch into the combination mode **Combine**
- ③ Select the segments to be combined one by one.
- ④ Then click **OK** to confirm the combination.



9. Shear the Graphic

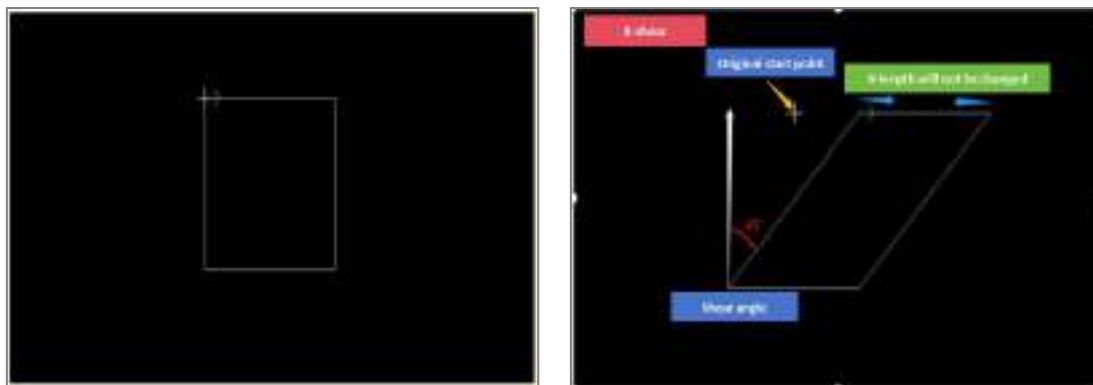
Shear the selected graphic with the specific angle.



● Shear type

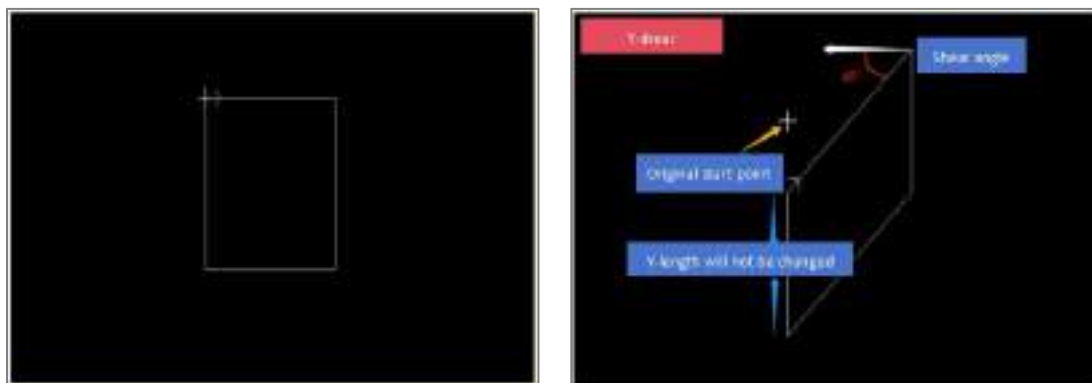
A. X shear

Keep the X-length of the graphic after shearing; as shown in the figure below, the left is the graphic before the shearing, and the right is after shearing. The angle is 45° .



B. Y shear

Keep the Y-length of the graphic after shearing; as shown in the figure below, the left is the graphic before the shearing, and the right is after shearing. The angle is 45° .

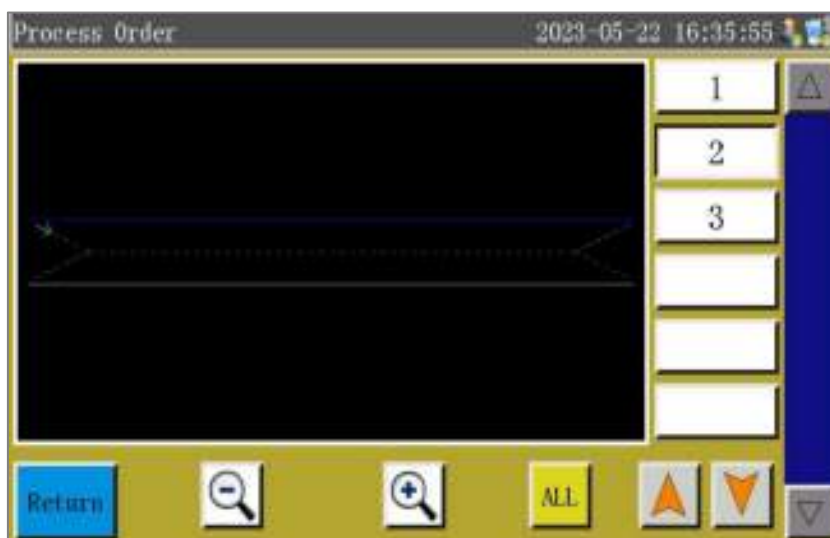


● Operation steps



- ① Select the graphic to be sheared.
- ② Click **Shear** to set the related parameters, like angle and type.
- ③ Then click **OK** to confirm the modification.

10. Modify the Process Order

Modify the processing sequence of the graphics by needs.



Operation steps

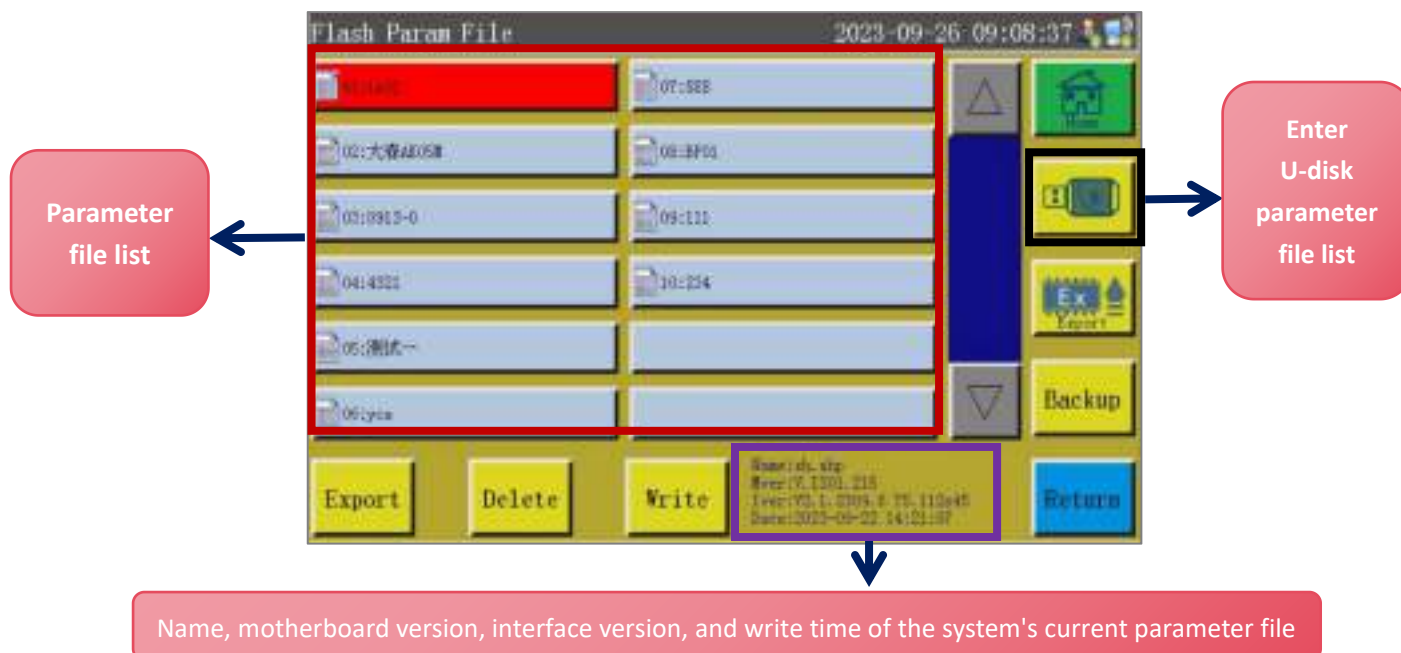
- ① Click **Process Order**.
- ② Select the graphic to be modified the order (it will turn into blue).
- ③ Click  or  to move its sequence up or down.
- ④ Then click **Return** to confirm the modification.



Chapter 5 Parameter File

Click **Param File** in the menu interface to enter the interface of the memory parameter file (as shown below). The parameter files can be managed in this interface, like importing, exporting, deleting and writing the parameter files.

5.1 Flash Parameter File



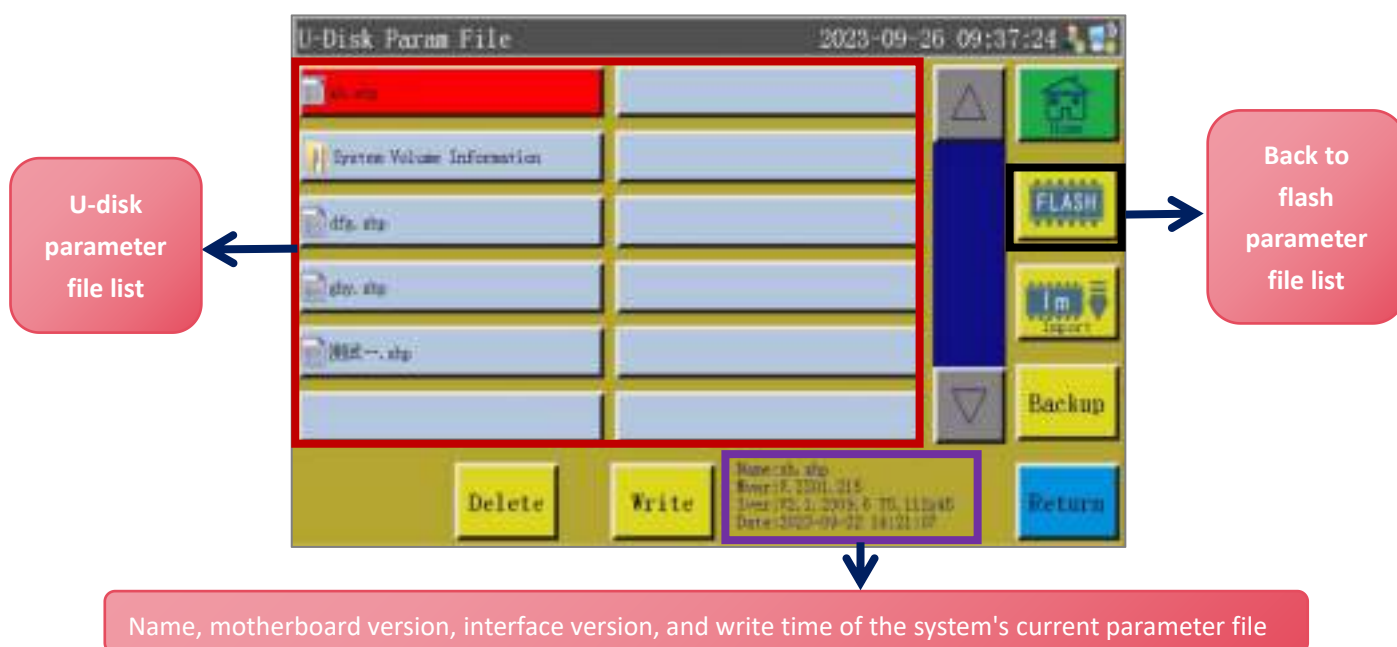
Instruction of Flash Param File Interface's Buttons

- (1) **Export** : Export the the current running parameter file to USB flash disk.
- (2) **Write** : Write the selected parameter file to the system and then the system is run with the new parameter configuration.
- (3) **Delete** : Delete the selected parameter files.
- (4) **Backup** : Backup the current running parameter file in the display, the backed up file will be shown in the file list.
- (5) **Export** : Exported the selected parameter files (files on the display) to the USB flash disk.
- (6) **U-disk** : Click to enter the "U-Disk Parameter File" interface.

Note:


- ① The interface shows parameter files stored in the system. Click on the file name to make it red, and then click **Write**. When a prompt message pops up “Being performed, please wait...” and then “Successful operation!”; then the system returns to the main interface, which means the selected parameters have taken effect.
- ② All the set values and other hidden parameters in[User Parameter] and [Machine Parameter] will be modified by the written parameter file.
- ③ The exported parameter file is generated on the USB flash disk with the specified file name and **.xhp** extension.

5.2 U-Disk Parameter File



Instruction of U-Disk Param Interface's Buttons

- (1) **Delete**: Delete the selected parameter files.
- (2) **Write**: Write the selected parameter file to the system and then the system is run with the new parameter configuration.
- (3) **Backup**: Backup the current running parameter file in the display, the backed up file will be shown in the file list.
- (4) **FLASH**: Back to the flash parameter file interface.


- (5) : Import the selected parameter files into the flash parameter file list.

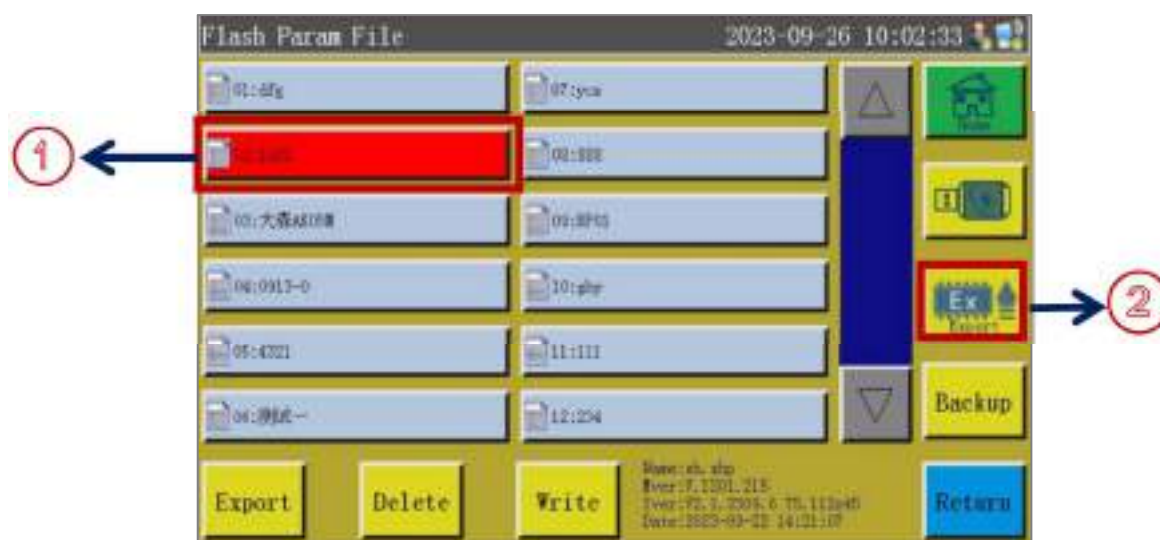
Note:

- ① The parameter file varies depending on equipment model. **Mixing is prohibited.**
- ② The same model of equipment may have different configurations of optimal factory parameters due to slight differences in mechanical construction.
- ③ After purchasing the machine, **it is recommended to export the factory parameters for each machine and save them** as different file names for future use.



5.3 Basic Operations on Parameter Files

(1) Export the parameter file from the display

- ① Select the parameter file to be exported.
- ② Click  to confirm.





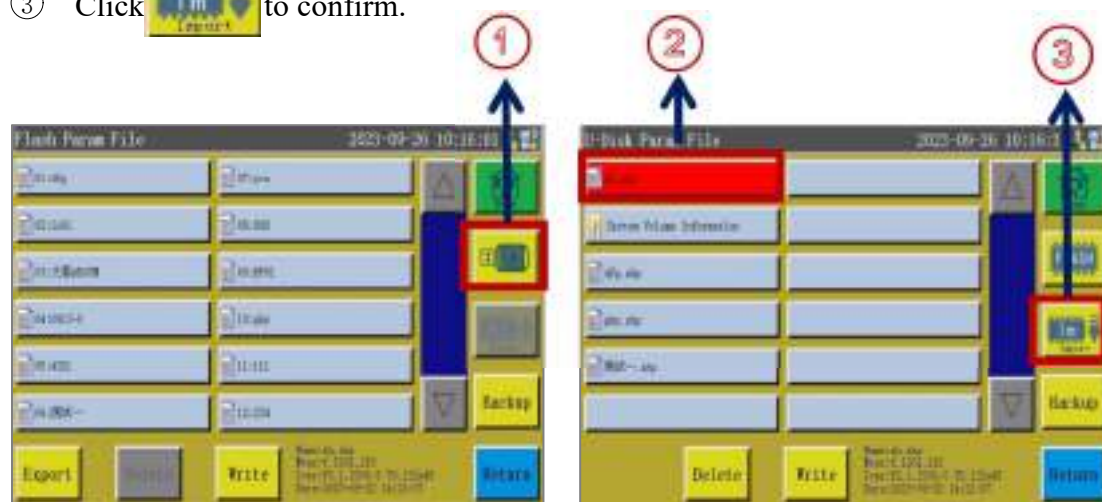
(2) Exported the current running parameter file (U-disk is needed)

- ① Click .
- ② Name the exported parameter file by needs.
- ③ Click  to confirm exporting to the U-disk.




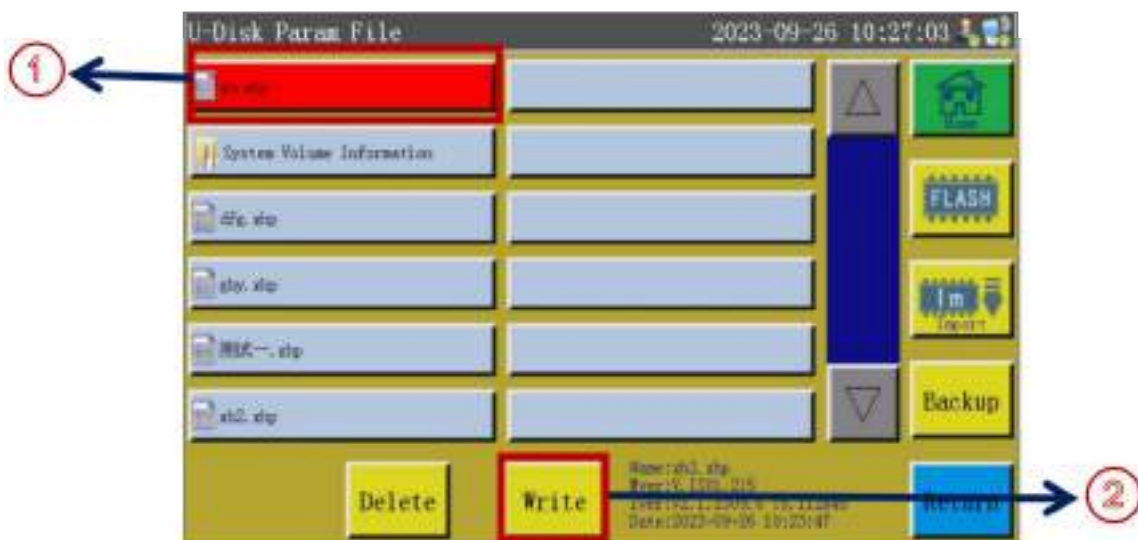
(3) Import the parameter file from U-disk

- ① Click .
- ② Select the parameter file to be imported.
- ③ Click  to confirm.



(4) Write the parameter file from U-disk

- (1) Select the parameter file to be written.
- (2) Click , then prompt message, “Being performed, please wait...” pops up.
- (3) Prompt message, “Successful operation!” pops up and back to home interface automatically, then writing operation is successful.











Chapter 6 User Parameter

Click **User Parameter** in the menu interface to enter the interface of the user parameter (as shown below). The processing parameters can be adjusted by needs in this interface.



Instruction of User Parameter Interface's Buttons

- (1) **Auto Process** : [Auto Process]; set the parameters of frame pressing, thread cutting and foot pressing, etc. during the automatic process.
- (2) **Stitch Start Speed** : [Stitch Start Speed]; set the start speed of the first few stitches, and whether to slow down the speed at the starting.
- (3) **Speed Parameter** : [Speed Parameters]; set the running speed of spindle, X and Y axes.
- (4) **Platen Setting** : [Platen Setting]; set relevant parameters for frame pressing.
- (5) **Winding Setting** : [Winding Setting]; set winding parameters, like the status and speed.
- (6) **Speed Ratio** : [Speed Ratio]; set processing speed ratio of the spindle.
- (7) **Reset Setting** : [Reset Setting]; set the reset speed, whether the frame is lowered, and other related parameters.

- (8)  : [Pause Setting]; set the parameters used when pausing.
- (9)  : [Statistic Setting]; set related parameters of processing statistics.
- (10)  : [Grab line]; set the thread trimming and grab position at the starting and the other parameters.
- (11)  : [Thread Breaking Detection]; set relevant parameters for break detection, like whether cut the thread after breaking.
- (12)  : [Trim Setting]; set relevant parameters for trimming, like trimming spindle speed.
- (13)  : [Power-on Setting]; set the parameters need to be initialized when the machine is powered on.
- (14)  : [Other Setting]; set the relevant parameters for cyclic processing and display, like display style.
- (15)  : [Auxiliary Setting]; set the relevant parameters of sewing start air blowing, end air blowing and air blowing time.

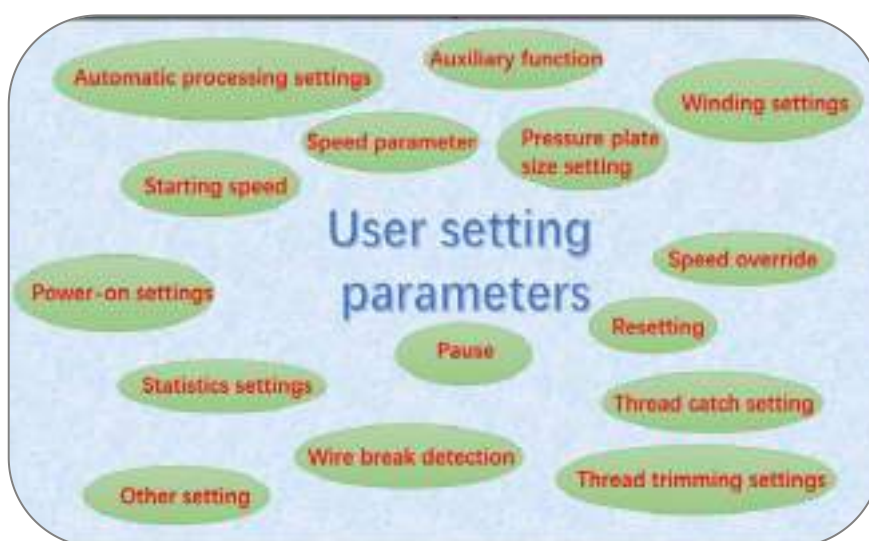
Take [Auto Process] as an example,the interface is as follows:





: Restore the original parameters before the modification is saved.




● **Instruction of User Parameters**




Classification	Parameter name	Range	Default	Parameter meaning and remarks
Auto Process	Lift the platen up after auto process	Yes/No	Yes	
	No. of stitches to lower for Start and End presser foot	0-8	0	
	Trimming after work end	Yes/No	Yes	
	Return to position after auto process	Origin/Secondary origin	Secondary origin	Origin: Mean absolute coordinate origin; Secondary origin: Refer to the

				secondary origin (offset point) added to the file
Whether to loosen during movement	Yes/No	No		
Set the base pressure foot to keep the same	Yes/No	No		
Automatically press the frame when starts work	Yes/No	Yes		
Press frame before manual move axis	Yes/No	Yes		
Start needle repetition number	Close/1/2/3	Close		1/2/3: Mean when the stitching is started, the 1 st needle position is sewn for 1/2/3 additional times before the sewing of next needle position; Close: Mean the sewing is not repeated
No. of stitches for loose tension at start	0~255	0		
Dynamic presser foot height at start of sewing	0.000-4.000	0.000		
Dynamic presser foot height at end of sewing	0.000-4.000	0.000		
First and last presser foot amplitude setting	Normal/ Halve/ Enlarge	Norma		

	Trim motor reset after work	Yes/No	Yes	
	Dynamic presser foot reset after work	Yes/No	Yes	
	Shift the axis before the reference	Yes/No	Yes	
	Error if reference pressure frame doesn't press	Yes/No	No	
	End the work and output IO1	Nil/ OUT1- OUT12; Low/High	OUT1; Low	
	End the work and output IO2	Nil/ OUT1—OU T12; Low/High	OUT1; Low	
Stitch Start Speed	Speed of the first stitch (rpm)	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 stitch (rpm)	100-3000	600	
	Speed of the third stitch (rpm)	100-3000	1000	
	Speed of the fourth stitch (rpm)	100-3000	1600	
	Speed of the fifth stitch (rpm)	100-3000	2000	
	Rewinding needle changes speed	100-3000	1500	

	Start at a slow speed	Yes/No	No	
	The first two stitches start at a slow speed	Yes/No	No	Slow: Increased at fixed rate; above-noted acceleration settings are invalid
	The last two stitches end up with a slow speed	Yes/No	No	
Speed Parameter	The highest speed of the spindle (rpm)	100-4500	2800	Limit the max. working speed in the main interface of processing.
	The speed of frame moving (mm/min)	100~100000	15000	The moving speed of press frame in idling segment during normal sewing operation
	Pressing frame inching speed (mm/min)	100-20000	5000	Preview the press frame's moving speed when capturing or modifying files
	Simulation sewing speed(mm/min)	100-60000	8000	Moving speed of test sewing track
	Button of speed 1 (mm/min)	10-20000	500	The speed that corresponds to  icon among the 8 direction keys during manual frame shift or file capture.
	Button of speed 2 (mm/min)	100-20000	1200	The speed that corresponds to  icon among the 8 direction keys
	Button of speed 3 (mm/min)	100-20000	2600	The speed that corresponds to  icon among the 8 direction keys
	Graph editing speed(mm/min)	0-10000	0	The speed that used to edit the graph

	Head 2 speed (mm/s)	0.000-2000. 000	0.000	XY moving speed of head 2 (e.g., for laser cutting)
	Head 3 speed(mm/s)	0.000-2000. 000	0.000	XY moving speed of head 3 (e.g., for laser cutting)
	Continuous inching speed	Reduce/ Lowest/ Normal	Reduce	
	Reverse speed (rpm)	0--3000	0	Working speed of reverse sewing
	No pull line blowing output IO	OUT1— OUT8/Nil	Nil	
	Limit speed starting from which inverted stitch	0--30	0	
	limit inverted stitch speed	100--1800	0	
Platen Setting	Prohibit sewing when frame is uplifted	Yes/No	Yes	
	The frame must be pressed when moving	Yes/No	Yes	When the frame is lifted, the axis cannot be moved manually
	Double frame lifting delay (ms)	0--10000	0	Interval time between main and auxiliary frames lifting
	Double frame pressing delay (ms)	0--10000	0	Interval time between main and auxiliary frames down
	Thread-holding mode	Thread-loos e/ Thread-hold ing	Thread-lo ose	
	Clip thread compensation	-30-30	0	

	Pedal operating sequence	Normal/ Special	Normal	
	Pedal operating mode	1STA/1STB /1STC/2ST/ 3ST	2ST	Different operation modes for pedal switches of different mechanical structures (with or without self-locking, etc.).
	Sewing clip line start angle	1-990	1	
	Sewing clip line end angle	1-990	1	
	Trim clip line start angle	1-990	1	
	Trim clip line end angle	1-990	1	
Winding Setting	Winder status	Allow/ Prohibit	Allow	Set the  default state of processing assist interface
	Winder speed (rpm)	100-4500	1200	Set the default rotation speed for winding in the processing assist interface
	Timing winder (s)	1-63000	70	Set the time from start to automatic stop of winding in processing assist interface
Speed Radio	High speed ratio (%)	1-100	100	Actual speed of spindle in main interface = Set speed * High speed ratio
	Mid-high speed ratio (%)	1-100	90	
	Mid-low speed ratio (%)	1-100	70	

	Low speed ratio (%)	1-100	60	
Reset Setting	Put down the platen when reset	Yes/No	Yes	
	Lift up the platen after manual reset	Yes/No	Yes	
	Return origin mode	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 there to.
	The speed of back to the origin(mm/min)	100-60000	100	X and Y axes speed when returning to the origin
	Extended axis reset speed(mm/s)	1.000-2000. 000	1.000	
	XY axis 0 bit buffer at reset	X Axis/ XY Axis/ Y Axis/ No	No	
	Press reset alarm prompt	Yes/No	No	
	Output IO before reset	OUT1-- OUT10/无	无	Output IO
		Low/High	Low	Low
	Output IO after reset	OUT1-- OUT10/Nil	Nil	Output IO
Low/High		Low	Level	
Pause Setting	Lift the plate up during pause	Yes/No	Yes	
	Pause switch type	Self	Self lock	"Self lock" means the switch cannot

		lock/ Ordinary		automatically bounce when depressed; "Ordinary" means the switch can automatically bounce when depressed.
	The presser foot does not lift when paused	Yes/No	No	Set the presser foot status when machine pauses
	Restore the last working position of the graph	Yes/No	No	Set axes position status
	Start after pause and ignore one stitch	Yes/No	No	
Statistic Setting	The bobbin line is cleared at power-on	Yes/No	No	"Yes" means the "used length of bottom thread" is cleared after power-up
	Stop working when run out of bobbin line	Yes/No	Yes	"Yes" means the operation is stopped when the used length of bottom thread reaches the total length.
	Bobbin line count setting is valid	Yes/No	Yes	Enable the bobbin thread statistical function
	Zero the piecework at power-on	Yes/No	Yes	Yes" means "current value of count by piece" is zero-cleared after power-up
	Bottom line margin adjustment (mm)	0-600000	0	For special bobbin line detection device, the error residual length of the bobbin line residual length is set
	Piecework setting is valid	Yes/No	Yes	"Yes" means automatic statistics of the used length of bottom thread

				during operation.
	Statistical working time	Yes/No	No	“Yes” to enable the working time statistical function
	Bobbin line counting mode	Default/IN1 -7	Default	No “Default” is used for dedicated bottom line detection devices, where an input IO can be selected as the detection trigger signal
	Continue to work when the number of pieces reaches the requirement	Yes/No	Yes	"No" means the operation stops when "current value of count by piece" reaches the "total count by piece".
	Bobbin count extra length	0-10000	0	
Grab line	Trim catching position	0.0-200.0	0.0	Position to grab the thread when trimming
	Sewing start catching position	0.0-200.0	0.0	Position to grab the thread when starts sewing
	Non sewing graphics convert to point	Yes/No	No	The non-sewing graphics whether to be converted into point-graphics
	Start the first pin clamping IO	OUT1- OUT12/ Nil	Nil	The IO port to clamp the thread when starts sewing
	Thread clamping IO after sewing	OUT1- OUT12/ Nil	Nil	The IO port to clamp the thread when ends sewing
	The first needle start output IO	OUT1- OUT12/ Nil	Nil	The IO port used when the first stitch is sewed
	Output IO opening	0-10000	0	

	angle			
	Output IO off angle	0-10000	0	
Thread Breaking Detection	Automatic break detection	Yes/No	Yes	"Yes" means to stop the operation and give a prompt when thread break is detected.
	Ignore the number of stitches when sewing	1-255	3	No break detection is performed for the initial set stitch number.
	Detect the number of effective stitches when thread is broken	1-255	2	Thread break is confirmed by continuous detection of break at the set stitch number.
	Process delay at broken line detection (s)	0.01-255.00	0.20	Set the delay time and take actions against break after confirming thread break.
	Number of broken wire return stitches	0-20	0	Number of stitches to be automatically retracted in case of thread breakage
	Break thread and output IO	OUT1- OUT12/ Nil	Nil	After the disconnection occurs, the corresponding output IO maintains a high level output for 1 second.
	Broken thread detection mode	Model 1/Model 2	Model 1	
	Rotate back to zero when broken thread	Yes/No	No	
	Take QEP2 as bobbin thread detection	Yes/No	No	Some machines employ B encoder for bottom thread detection.
Trim Setting	Trimming spindle speed (rpm)	10-500	10	


Trim starts to delay(s)	0.01-6.55	0.01	
Duration of wiping thread(s)	0.01-6.55	0.01	
lift up the presser foot during the delay of thread wiping	0.01-6.55	0.01	
Delay of loosing thread(s)	0.00-6.55	0.01	
Whether to trim when move empty after sewing	Yes/No	Yes	
Whether to use wirper	Yes/No	Yes	"No" means the wiper is turned off
Motor trim thread mode	Back and forth/ single	Back and forth	
Motor trimming stroke	1.0-100.0	1.0	
Flat knife grip delay (ms)	1-350	1	
Return knife speed ratio	10-100	100	
Thread loosing start mode	Angle/ Delay	Angle	
Thread loosing angle	0-999	850	
Multi segment thread trimming	Yes/No	Yes	
The first knife length	0.000-100.0 00	0.000	

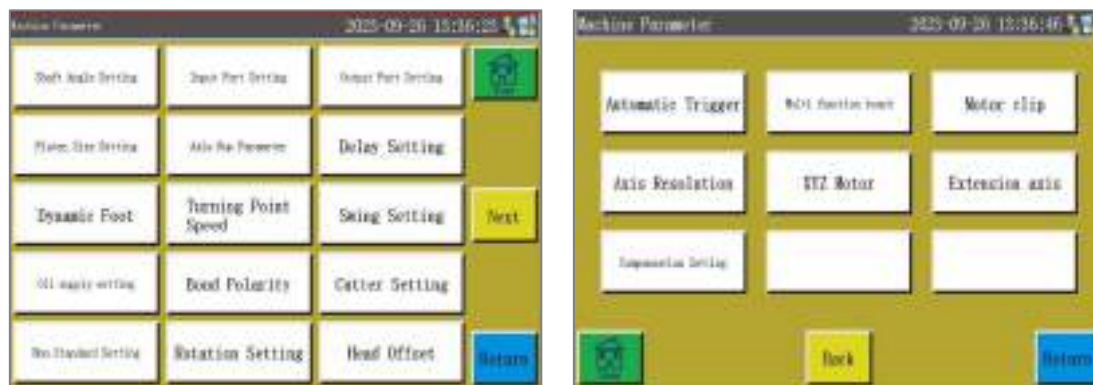
	The second knife length	0.000-100.000	0.000	
	The third knife length	0.000-100.000	0.000	
	The knife first speed(mm/s)	0.000-100.000	0.000	
	The knife second speed(mm/s)	0.000-100.000	0.000	
	The knife third speed(mm/s)	0.000-100.000	0.000	
Power-on Settings	The needle returns to the upper position at power-on	Yes/No	Yes	
	The frame automatically returns to the origin at power-on	Yes/No	No	
	Motor lock when powered on	Yes/No	Yes	
	Presser foot lifts when powered on	Yes/No	Yes	
Other Setting	Air pressure detection	Yes/No	No	"Yes" means stopping and alarming if the air pressure is low when working.
	Whether to work cyclically	Yes/No	No	"Yes" means the same file is processed in a cyclic manner after startup
	Circular work time	1-65535	1	Total cycle time; cycle

	(min)			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	Origin	<u>Origin</u> : The point where the XY axis coordinates are both 0 <u>Right</u> : Rightmost point of the processing range. <u>Sewing POS</u> : The first sewing point of processing file. <u>Default</u> : Stop after processing.
	Template recognition mode	Barcode/ RFID	RFID	
	Interface style	Classic/ Simplicity	Classic	Classic: Three-dimensional keys Simplicity: Flat keys
	Start up pre-work sport mode	XY/X priority/ Y priority	XY	
	Moving mode through the air during working	XY/X priority/ Y priority	XY	
	Spindle stops needling and retracts	0-160	0	
	Connect extension screen	1/2/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	Volume adjustment
	Enable power-down Memory	Yes/No	No	After restarting the electricity, continue sewing progress before power failure, continue sewing
	The file is valid when the RFID leaves	Yes/No	No	When the electronic tag card leaves, whether to keep the read file valid
Auxiliary function	The sewing start to blow	Nil/ OUT1- OUT12	Nil	The IO port to blow when starts sewing
	The sewing end to blow	Nil/ OUT1- OUT12	Nil	The IO port to blow when ends sewing
	Continuous blowing time	0--5000	0	The duration of blowing operation
	Imported graphics are not centered	Yes/No	No	Used for benchmark-free mode
	Open output IO moving	Nil/ OUT1- OUT12	Nil	The IO port used when machine moves
	Laser output IO	Nil/ OUT1- OUT12	Nil	The IO port used for laser cutting
	Regular laser cleaning time (s)	0-63000000	0	The time for cleaning the laser


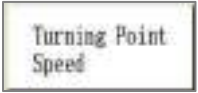

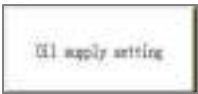
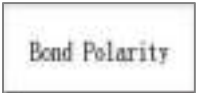




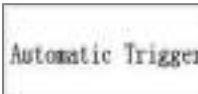

Chapter 7 Machine Parameter

Click  in the menu interface to enter the interface of the machine parameter (as shown below). Machine parameters are available to meet more complex user requirements, allowing users to set mechanical motion properties by needs, provided they are operated by a mechanical assembler.



Instruction of Machine Parameter Interface's Buttons

- (1)  : [Shaft Angle Setting]; the setting of angle of feeding, trimming and machine needle.
- (2)  : [Input Port Setting]; setting for input IO polarity.
- (3)  : [Output Port Setting]; Output IO duty cycle and duration settings.
- (4)  : [Platen Size Setting]; setting of the size of working breadth and setting of benchmark-free.
- (5)  : [Axis Run Parameter]; setting for direction and polarity of spindle, XY axis, presser foot, etc.
- (6)  : [Delay Setting]; settings of delay or time for foot pressing, plate pressing and shutdown.

- (7)  : [Dynamic Foot]; set the working angle and height of the dynamic presser foot.
- (8)  : [Turning Point Speed]; set the working speed at inflection point.
- (9)  : [Swing Setting]; the setting of the stroke of the swing needle rod and the extended shaft.
- (10)  : [Oil supply setting]; set parameters such as the number of spindle turns, the number of oil supply turns, and the duration of oil supply.
- (11)  : [Bond Polarity]; XYZ axis key polarity, graphics mirror and spindle oil supply settings.
- (12)  : [Cutter Setting]; set the relevant parameters such as “Cutter lifting”, “Cutter rotating”.
- (13)  : [Non Standard Setting]; non-standard special settings.
- (14)  : [Rotation Setting]; settings of machine head rotation type.
- (15)  : [Head Offset]; used to set the position of the head 2 or 3 offset according to the head 1. Head 1 is the sewing head, the head 2 and head 3 can be defined as the required functions, such as laser cutting head, brush head, etc.
- (16)  : [Automatic Trigger]; set IO, level, delay and other related parameters.
- (17)  : [Multi function board]; motor operation, need to contact

after-sales staff to assist in the modification.

(18) **Motor clip** : [Motor clip]; set the clamping zero position and maximum stroke.

(19) **Axis Resolution** : [Axis Resolution]; set the resolution of the XYZ axis.

(20) **XYZ Motor** : [XYZ Motor]; motor operation, need to contact after-sales staff to assist in the modification.

(21) **Extension axis** : [Extension axis]; maximum travel setting for each extension axis.

(22) **Compensation Setting** : [Compensation Setting]; gap compensation when XY axes run.

Note:


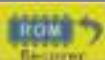
The “Multi function board” and the “XYZ motor” belong to the motor operation, please contact the after-sales personnel to assist in the modification to avoid the machine failure due to improper operation!

Take [Shaft Angle Setting] and [Platen Size Setting] as examples, the interfaces are as follows.

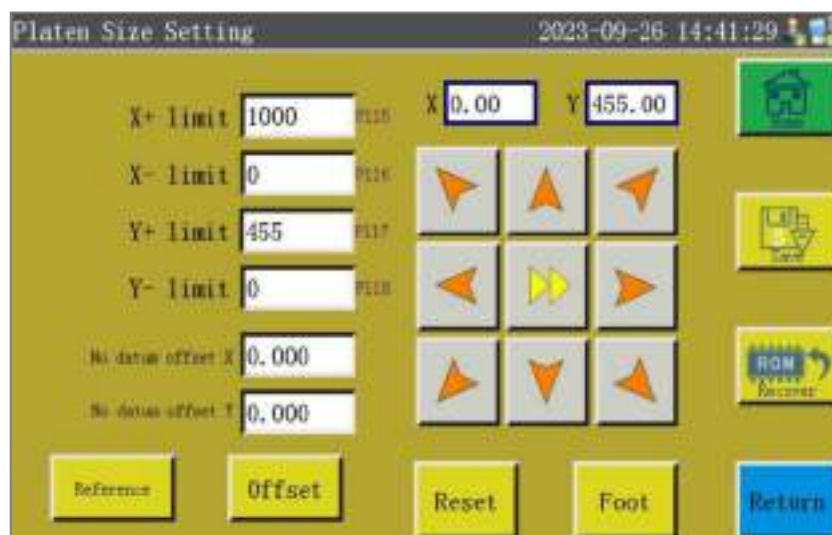







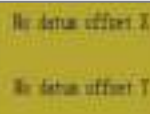





● Interface of [Shaft Angle Setting]



- (1) **Feed start angle** : Modify the angle of feeding at the start.
- (2) **Feed end angle** : Modify the angle of feeding at the end.
- (3) **Trim start angle** : Modify the angle of trimming at the start.
- (4) **Trim end angle** : Modify the angle of trimming at the end.
- (5) **Surface line dialing angle** : Modify the angle to wipe the surface thread.
- (6) **Needle up position** : Modify the position when the needle is at the upper.
- (7) **Needle down position** : Modify the position when the needle is at the lower.
- (8) **QEP difference between lower axis and upper axis** : Modify the lower axis relative to the upper axis QEP difference.
- (9)  : Perform the trimming operation manually.
- (10)  : The parameters set can be restored before they are saved.

● Interface of [Platen Size Setting]



- (1)  : The maximum value of X+.
- (2)  : The maximum value of X-.
- (3)  : The maximum value of Y+.
- (4)  : The maximum value of Y-.
- (5)  : The current coordinates of X and Y.
- (6)  : The offset values of X and Y when the system performs the benchmark-free mode.
- (7)  : Direction keys; there are 8 directions and 3 types of speed.
- (8)  : When adjusting the benchmark-free offset position, you need to set the offset reference point first.
- (9)  : According to the reference position, the reference-free offset position is automatically calculated and set.
- (10)  : Save the modification.
- (11)  : The parameters set can be restored before they are saved.

● **Parameter Instructions related to Machine Parameter**



Classification	Parameter name	Range	Default	Parameter meaning and remarks
Shaft Angle Setting	Feed start angle	0-999	0	QEP value of the spindle at the start of machine feeding
	Feed end angle	0-999	0	QEP value of the spindle at the end of machine feeding
	Trim start angle	0-999	0	QEP value of the spindle at the start of machine trimming
	Trim end angle	0-999	0	QEP value of the spindle at the end of machine trimming
	Surface line dialing angle	0-999	0	QEP value of the spindle at the start of machine pulling thread
	Needle up position	0-999	0	QEP value of the spindle at the upper position
	Needle down position	0-999	0	QEP value of the spindle at the lower position
	Spindle pause time	0-20	10	Spindle back-off delay 0-20


				milliseconds, inversion delay
Input Port Setting Output Port Setting	Input 01--07	Open/Close	Open	Input IO polarity settings are currently only used for input 03 (pause), other standby.
	Pause polarity	Positive/Negative	Positive	
	Output duty ration-Frame	25%; 50%; 75%; 100%	25%	Adjust output strength
	Output duty ration-Foot			
	Output duty ration-Trim			
	Output duty ration-Tread pull			
	Output duty ration-Tread loose			
	Output duty ration-OUT6/OUT7			
	Output mode	Ordinary/ Program	Ordinary	
	Duration (ms)	0-500	0	Duration for related IO port
	Thread-holding mode	Thread-loose/ Thread-holding	Thread-l oose	
Platen Size Setting	X+ limit	10-15000	10	Size in positive direction working range X
	X- limit	0-15000	0	Size in negative direction of

				working range X
	Y+ limit	10-10000	10	Size in positive direction working range Y
	Y- limit	0-10000	0	Size in negative direction of working range Y
	No datum X offset	-5000.000	0.000	Used for benchmark-free mode
	No datum Y offset	-5000.000		
Axis Run Parameter	Spindle motor direction	Positive/ Negative	Positive	
	Spindle encoder			
	X-axis motor direction			
	Y-axis motor direction			
	X polarity			
	Y polarity			
	Spdtrate	ALL; 95%; 90%; 85%; 80%; 75%; 70%。	ALL	
	Presser foot stroke	0-10000	0	
	Presser foot resolution	0-60000	0	
	Presser foot limit polarity	Positive/ Negative	Positive	
	Presser foot polarity	Positive/	Positive	

		Negative		
	X-axis rigidity	-6---6	0	
	Y-axis rigidity			
Delay Setting	Automatic processing delay (ms)	0-5000	0	
	Presser foot delays pressing down (ms)			
	Presser foot delays uplifting (ms)			
	Platen delays operating (ms)			
	Electromagnet presser foot dormancy time(s)	0--300	0	When the solenoid foot is idle, it will automatically enter the dormant state after exceeding the set time (corresponding to the low level of IO output) and turn off this function when the value is 0.
	Downtime of timeout(ms)	0--1800000	0	After the last work, if the work does not continue beyond the set time, the alarm will be prompted. Turn off this function when the value is 0.
	Work enable input IO	0--7	0	If the input IO is set at high level, it can work normally. Otherwise, it can not start or stop working. Turn this off when the value is 0.
	Input detection starts up			Only when the input IO is set at high level can the work be started.

				Turn this off when the value is 0.
Dynamic presser Foot	Rise start angle	5-995	10	
	Rise end angle			
	Drop start angle			
	Drop end angle			
	Dynamic foot height (mm)	0.200-100.000	0.026	
	Y-Axis lifting start angle compensation	-300~300	0	
	Y-Axis lifting end angle compensation			
	Y-Axis dropping start angle compensation			
	Y-Axis dropping end angle compensation			
	Dropping start angle is allowed to be set limited	Yes/No	No	
	Dynamic foot enable	Ordinary/close/ left right	Ordinary	
	Follow the spindle sewing	Yes/No	No	Presser foot follows the spindle
	Foot type	Pneumatic/Mot or	Pneumat ic	The presser foot type
	Turning Point	Inflection slow speed	Yes/No	Yes

Speed				inflection point
	Turning Point Speed	10--5000	0	The speed when machine at the inflection point
	The 1st speed after turning point	10-5000	1200	The speed of the 1 st stitch which after the inflection point
	The 2nd speed after turning point		1300	The speed of the 2 nd stitch which after the inflection point
	The 3rd speed after turning point		1400	The speed of the 3 rd stitch which after the inflection point
	The 4th speed after turning point		1500	The speed of the 4 th stitch which after the inflection point
	The 5th speed after turning point		1600	The speed of the 5 th stitch which after the inflection point
	The 6th speed after turning point		1700	The speed of the 6 th stitch which after the inflection point
	The 7th speed after turning point		1800	The speed of the 7 th stitch which after the inflection point
	The 8th speed after turning point		1900	The speed of the 8 th stitch which after the inflection point
	The 9th speed after turning point		2000	The speed of the 9 th stitch which after the inflection point
	The 10th speed after turning point		2100	The speed of the 10 th stitch which after the inflection point
Swing Setting	Swing start angle	0-999	0	
	Return start angle	0-999	0	
	Swing distance	0.00-360.00	0.00	
	X polarity of swing needle rod	Positive/ Negative	Positive	

	Y polarity of swing needle rod			
	Add a special needle at the end of sewing(mm)	0.0-1.0	0.0	At the end of sewing, sew one more stitch.
Axis Resolution	Actual sewing length	1.0--99999.9	1.0	Distance from the actual movement of the corresponding axis
	Theory length			The distance that the corresponding axis should theoretically move.
	X Axis resolution	1.0000000 -200.0000000	1.000000 0	According to the actual and theoretical input length values, the resolution can be calculated automatically by pressing  .
	Y Axis resolution			
	Z Axis resolution			
	X Axis position	0.000—10	0.000	Current absolute coordinate position of X-axis;
Y Axis position	000.000		Current absolute coordinate position of Y-axis.	
Oil Supply Setting	Number of spindles less than 1500 rpm	0-90000000	0	Set specific spindle rotated numbers to add oil
	Number of spindles less than 2000 rpm			
	Number of spindles less than 2300 rpm			
	Number of spindles less than 2600 rpm			

	Number of spindles less than 3000 rpm			
	The number of turns of oil supplied by spindle	100-90000000	100	After how many turns of the spindle are rotated, the oil supply operation is performed. That is, the corresponding output IO is high level.
	Oil supply duration (s)	0.00-650.00	0.00	The duration of oil supply to the spindle is the time when the output IO maintains a high level.
Bond Polarity	bond polarity of X axis	Positive/ Negative	Positive	
	bond polarity of Y axis			
	bond polarity of Z axis			
	Graphic horizontal mirror	Yes/No	No	X-direction mirror display when displaying graphics.
	Graphic vertical mirror			Y-direction mirror display when displaying graphics.
Motor Clip Setting	Clip line zero 1	0.000-100.000	0.000	
	Clip line zero 2			
	Clip line 1 maximum stroke	1.000—100.00	1.000	
	Clip line 2 maximum stroke	0		
Cutter Setting	Cutter lifting IO	OUT1—	Nil	
	Cutter rotating IO	OUT20 /Nil		
	Cutter rotation during inching			

	Cutter turning point lifting delay (ms)	0—10000	0	
	Cutter turning point drop delay (ms)			
	Cutter compensation (mm)	0.000-8.000	0.000	
	Cutter lifting height (mm)	0—10000	0	
Non Standard Setting	Head 3 mode	Ordinary/ Punching	Ordinary	Change the use of Head 3, generally for laser cutting.
	Output IO	OUT1 —OUT6/Nil	Nil	When the head 3 mode is the punching mode, they are effective and correspond to the output IO of the punching device.
	Input IO	IN1—IN6/Nil	Nil	When the head 3 mode is the punching mode, the parameters are valid, and the IO of the input detection of the punching device corresponds to the IO of the punching device.
	Delay (ms)	0.000-100.000	0.000	When the head 3 mode is the punching mode, the delay time is the interval between "output IO" and "input IO".
	Start the output IO ahead of time(mm)	0.000-8.000	0.000	The parameter "head 3 mode" is valid when the punching mode is used. Before reaching the punching position, the "output

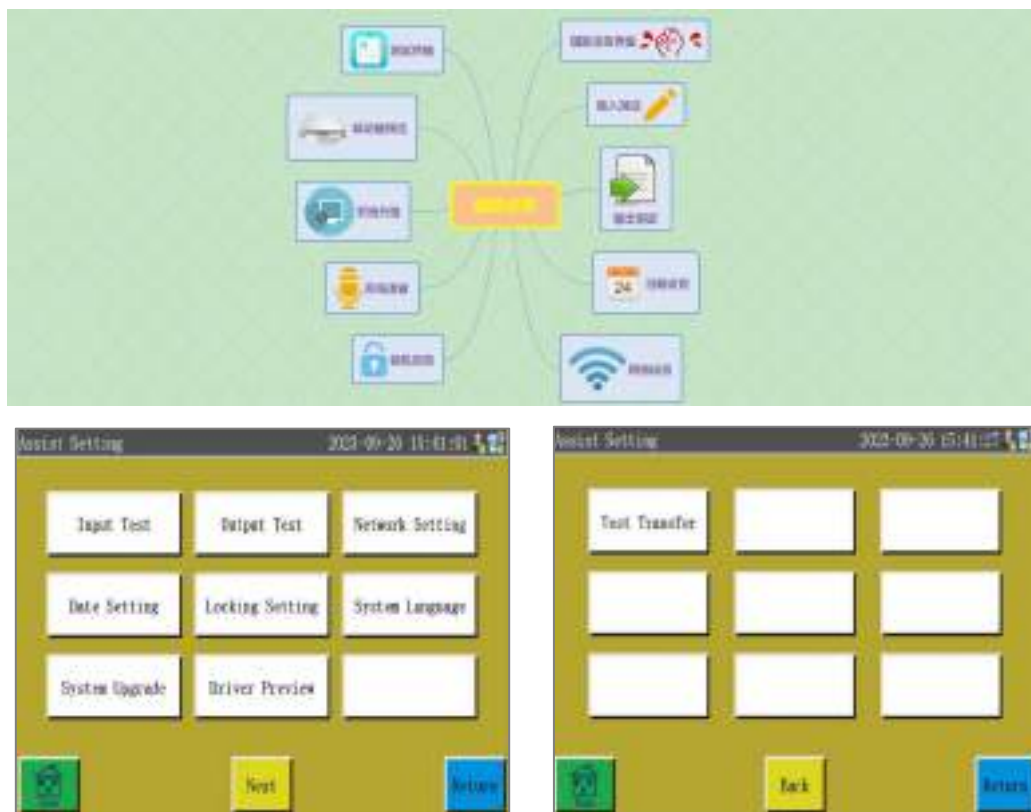
				IO" is turned on as many distances as possible in advance
	Punching feeding length (mm)	0.000-50.000	0.000	The head 3 mode is effective when the punching mode is used, and the length of the punching base material is currently used.
	Punching feeding total length(mm)	0.000-2000000 .000	0.000	When the head 3 mode is the punching mode, it is effective, and the total length of the punching base material.
	Z axis is used as cycloid	Yes/No	Yes	Special settings for sewing electric blankets.
	Cycloid position	0.000-80.000	0.000	The parameter "Z axis is used as cycloid" is valid when it is opened, and the magnitude of the cycloid's oscillation is large.
	Right angle compensation length X(mm)	0.00-1.50	0.00	When the inflection point is right angle, the inflection point moves along the length of X direction.
	Right angle compensation length Y(mm)			When the inflection point is right angle, the inflection point moves along the length of Y direction.
	Frame to Other	Yes/No	No	The head 3 mode is effective when the parameter is punching mode, and the "pressing frame" operation of the main page is automatically changed to manual "punching" operation.

Rotation Setting	Rotate along the graph	Yes/No	No	Automatically insert the instruction "rotate along the graphic track" and rotate when sewing.
	Rotary up and down IO	OUT1- OUT12/ Nil	Nil	Control the output IO of the rotating nose when rise or fall.
	Rotary delays upping and downing	0.0-3000.0	0.0	The duration of IO high level used for "spinning up and down IO".
	Upping and downing only at start and end	Yes/No	No	The lifting action is performed only at the beginning and end of the work.
	Rotate in place before starting	Yes/No	No	The needle is rotated to the angle of the graphic before starting.
	Rotate reset after work	Yes/No	No	Rotate to the reset position when the work is done.
	Close move rotation	Yes/No	No	
	Small angle segments do not rotate	Yes/No	No	When there is a small angle of graphic, the machine will not perform rotation
	Rotation offset initial angel	0--360	0	Rotation-assisted migration starting angle.
Rotation offset radius (mm)	0.000—0.500	0.000	Rotation-assisted migration radius.	
Head Offset	Head 1-5 offset	-5000.000 —5000.000	0.000	
Automatic	Input IO	Nil/	Nil	

Trigger		IN1—IN7		
	Level	Low/High	Low	
	Auto frame only	Yes/No	No	Otherwise work automatically
	Effective detection delay(s)	0.00-650.00	0.00	
	Restart first disconnect delay(s)	0.0-25.5	0.0	


Chapter 8 Assist Setting

Click **Assist Setting** in the menu interface to enter the interface of “Assist Setting” (as shown below). This interface used to test input/output port and their equipment, to set network/time, and to upgrade the system version.



Instruction of Assist Setting Interface's Buttons

- (1) **Input Test** : Test if input port is normal.
- (2) **Output Test** : Test if output port is normal.
- (3) **Network Setting** : Set the wireless network and perform the remote control, etc
- (4) **Date Setting** : Set the system time.
- (5) **Locking Setting** : Set the administration password, use restrictions and etc..
- (6) **System Language** : Set the system language. There are 10 languages, i.e. Simplified Chinese, Traditional Chinese, English, Japanese, Korean, Vietnamese, Russian, Italian and Turkish to be chosen from.

- (8) **System Upgrade** : Upgrade the main board version and display version.
- (9) **Driver Preview** : Preview current, subdivision and other parameters of drive for each shaft. (Cannot be modified on the display).
- (10) **Test Transfer** : Test whether the communication between display screen and main board, and to view logs, etc.
- (11)  : Return to the home page.
- (12) **Return** : Return to the menu interface.

Instruction of Other Interface of Assist Setting

● Interface of Input Test

Used to test if the external input circuit is in good condition. Press **Input Test** in the assist setting interface to enter the input test interface (as shown below):




The relevant sensors can be manually triggered to check whether the input status has changed, and to determine if the sensor or hardware is in good condition.

● Interface of Output Test


Used to test whether output control is in good condition. In the the assist setting, press **Output Test** to enter the output test interface, (as shown below):



***Test the corresponding output as needed.**

- (1) For trimming, wiping and loosing electromagnet outputs. The device solenoid switches on and off with each click, and if held down it will be kept open. (Note: If held down for too long it may cause the solenoid to heat up and be damaged).
- (2) For the output of the solenoid valve, like the presser foot and presser frame. The cylinder move once if click the corresponding button once, and the cylinder will back to the initial state if click the button again.
- (3) For OUT1, OUT2.... functions depend on the specific device load, and some outputs are not used.
- (4) Light 1, light 2 is used to control the screen "SYS" indicator light on/off, corresponding to red and blue lights.
- (5) If click  , the pop-up "Executing, please wait..." means that all the output tests are performed, and the prompt box will be closed after the test.

● Interface of Network Setting



Used to set up wireless network connection. In the assist setting interface, press  to enter the network setting interface (as shown below).

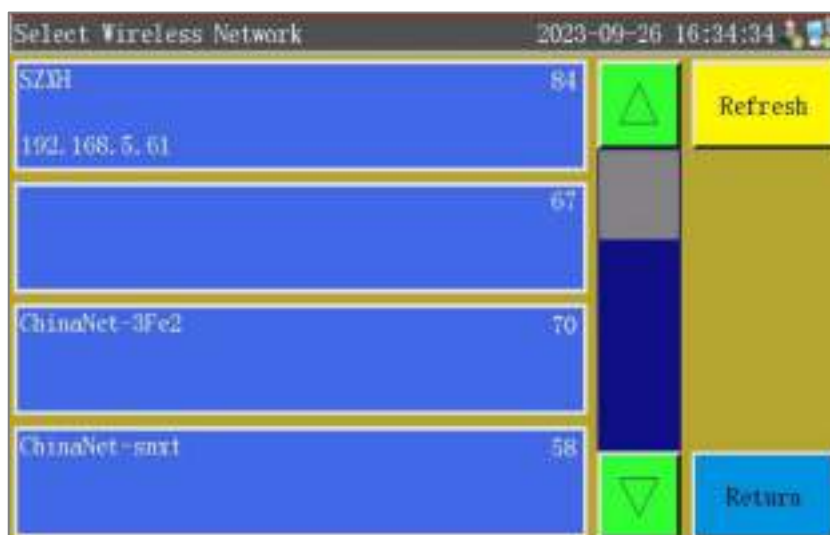


- (1) **Network Type** : The current type of network, and it has two types, wired and wireless.
- (2) **Machine address** : Show the unique address code for the current machine.
- (3) **Server IP** : Connect a server with a specified IP in LAN to perform LAN control &
- (4) management. If one of the four input boxes is blank or 0, it means that an external cloud server is automatically connected.
- (5) **Server port** : Connect a server with designated IP and port on LAN. If the port is 0
- (6) or null, it means an external cloud server.
- (7) **WiFi** : Click to enter the wireless network setup interface and automatically search for hot-spots available for current location (as shown below).

Warm tips:

Click **Refresh** to search for the WIFI again. The number at upper right corner of indicates signal strength; the larger the number, the better the signal. Click on name and enter the password to connect it.

Once the connection is established, the IP address obtained by the current device will be displayed. In the meantime, the  ,  in upper right corner of the screen indicates the established connection with wireless network and server.



- (1) **Authority** : Enter the permission management interface to add and delete the corresponding permissions of the cell phone login of "Xinghuo IOT" APP.
- (2) **Setting** : Enter the page to set the relevant settings of the server.

● Interface of Date Setting

Used to set the system time (e.g., "year, month, day, hour, and minute") displayed in the upper right corner of the screen. In the assist setting interface, press **Date Setting** to enter the date setting interface (as shown below).



Warm tips:

To enter into the "Date setting" interface, the [administration password](#) is needed. And the time is displayed in a 24-hour system accurate to "second".

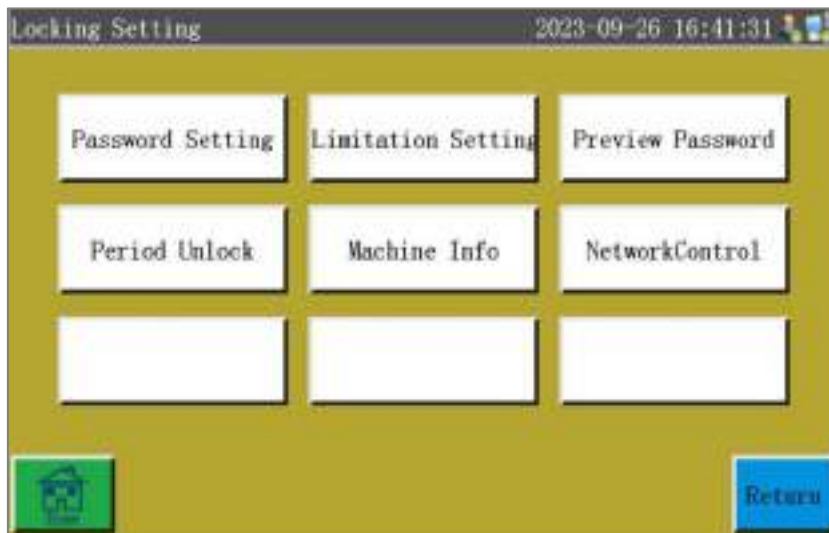



: Save the modification if the date has been set (If the mainboard is equipped with a battery, then the time will be updated at next startup even if the power was turned off to ensure accurate time.

An accurate time can be a better aid to sewing, and a precise time can be recorded in the alarm log to accurately record when the problem occurs and better troubleshoot and analyze the problem.

● Interface of Locking Setting

In the assist setting interface, press  to enter the date setting interface (as shown below).



- (1)  : Modify the machine parameter password, user parameter password and other passwords.

Warm tips: Totally there are 4 passwords, and here are their instructions:

- ① **Administration password:** Enabled in "Locking Setting" - "Limitation Setting". Administration password is the password with the highest privilege.
- ② **Machine parameter password:** Enabled in "Locking Setting" - "Password Setting". Once the mechanical parameter password is set up, it's impossible to enter the "Machine Parameter" setup interface without entering the correct password.
- ③ **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.

④ **Other password:** Enabled in "Locking Setting" - "Password Setting". The settings can be established using upper computer parameters software. You have to enter "other password" in order to use file management, lock files, adjust the spindle speed in main interface, and delete processing statistics information.

(2) **Period Unlock** : If the installment is valid, the machine can be unlocked in advance.

(3) **NetworkControl** : View or set the current device network control status. When turned on, it means accepting whether to lock the machine by a assigned network mode.

Warm tips:

- (1) The lock setting interface is used to set timing lock, manage lock password and other related operations. It can realize time-limited use such as pay on installment.
- (2) If the device is set to time-limited use, when time's up, the processing interface will pop up a dialog box prompting for a specific unlock password to cancel the lock.

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

● Interface of System Language

Press **System Language** to enter the System Language interface (as shown below) to set the language of the system, and currently there are 10 types of language to be selected.





: Switch keys corresponding to each language.


Steps to switch the language: Click the target language—Choose **Yes** on the popped up window—Switch to the target language successfully

● Interface of System Upgrade

Press **System Upgrade** in the assist setting interface to enter the interface of system upgrade (as shown below), upgrading the mainboard, interface, command and name.



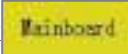
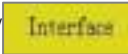



- (1) **Mainboard version** : Show current motherboard version. "IS01" is the motherboard type and does not change after the upgrade; "201" is the branch version number, which can be changed by upgrading. It can be upgraded to a higher version or back to a lower version.
- (2) **Interface version** : Show the current interface version. "207" indicates the branch version number, which can be changed by upgrading. It can be upgraded to a higher version or back to a lower version.
- (3) **Programming** : Programming command files can be closed, deleted, written and other operations or through U disk operation.
- (4) **Interface** : Click to toggle between 4 types, motherboard, interface, command and name. Used to upgrade the corresponding part. Like if the motherboard needs

to be upgraded, then we need to choose  accordingly.

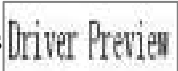
(5)  : Upgrade file, the files and files folders will be read and showed

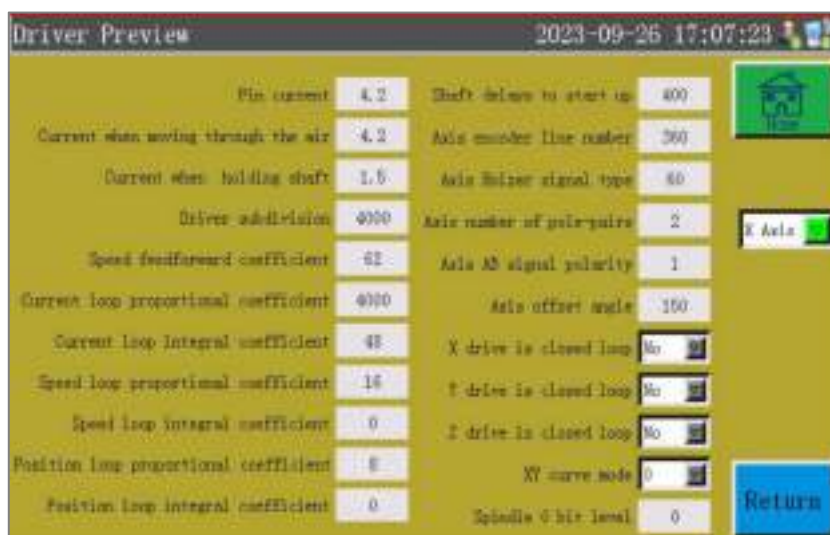
automatically once the U-disk is inserted.


Steps to upgrade the system

- ① Obtain the corresponding upgrade file from suppliers and download them into the U disk.
 - ❖ The motherboard upgrade file suffix is .TFL (such as TZD_CS01.TFL).
 - ❖ The interface upgrade file is suffixed with .fcav (such as XH_HMI_T1_V171.fcav).
- ② Insert the U disk and enter the "System upgrade" interface.
- ③ Select the desired type of upgrade: Mainboard ,Command, Interface or Name.
- ④ Find the upgrade file and then click  /  /  /  .
- ⑤ A pop-up prompt "upgrading, please don't power off! ", **do not power off until this prompt disappears, otherwise it may need to be returned to the factory for repair.**
- ⑥ In the case of motherboard upgrade, a progress bar  will pop up to show the upgrade progress. It takes about 10 seconds to reach 99%. Wait for about half a minute, the mainboard will be restarted, and the buzzer will ring once to indicate successful upgrade.
- ⑦ In the case of interface upgrade, no progress bar will appear. In about half a minute, the display screen will be restarted to indicate successful upgrade.

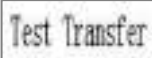
● Interface of Driver Preview

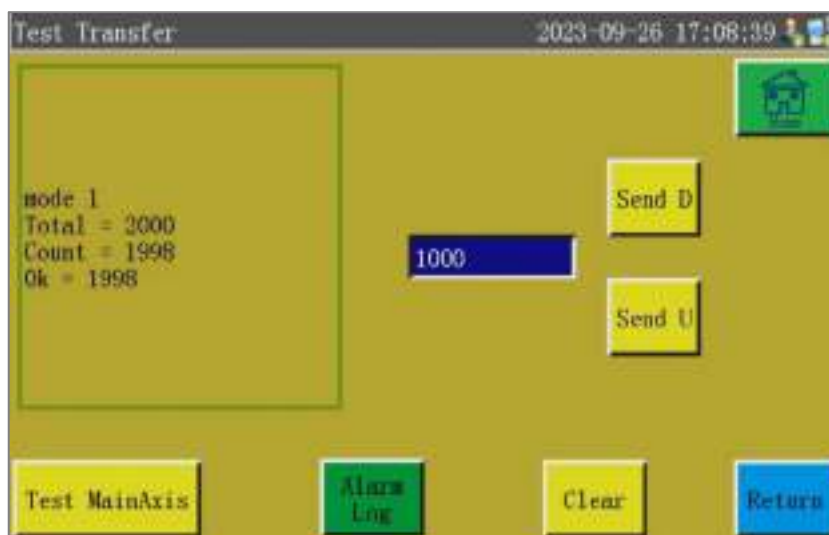
Press  in the assist setting interface to enter the interface of driver preview (as shown below), showing the detail parameters of each axis' driver.









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

● Interface of Test Transfer

Press  in the assist setting interface to enter the interface of test transfer (as shown below), testing whether the communication between screen and motherboard is in good condition.



Warm tips:

Enter the value to test in , and then click  or . The test result will appear on the left window. If the values of , ,  are the same or very close to each other (within a difference of 1%), it means the

communication between screen and motherboard is normal.

- (1) **Clear** : Clear the test result on the left.
- (2) **Test Mainaxis** : Click once, then the running current of spindle will decrease, and the normal current can't be restored until the power is turned off and restarted. Used to test whether the spindle can work well without load.
- (3) **Alarm Log** : View the alarm log and its interface is as follows:



Export : Export alarm logs as files to a USB flash drive.

Clear : Clear all contents of the alarm logs.

Chapter 9 Machine State

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.

Click **Machine State** to enter the machine state interface and the figure is as follows:




- Operator chooses the machine status to report. And then click **Report** to pop up the following interface:



- Upon the arrival of technician at the equipment, he/she can click **In Place** and then 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.

-  : When select "leave the post / refueling", the information will be

automatically reported to the network center, the administrator can grasp the status of the machine and staff on duty.

Appendix I: Quick Start Guide


- **Start the machine**

After installing the machine, plug in the power. Then turn or press the power switch to start the machine. The display will enter the home interface automatically after displaying the logo. To wind the bottom thread, please see the previous chapter as reference.


- **Set up the processing file**

Copy the processing file generated by PC sewing editing software to USB flash disk. And then insert the USB flash disk into the machine. Next import the target processing file to the display according to the previous chapters' instructions. If the file is captured or edited on the machine directly, please see the previous chapter as reference.

- **Place the template**

Place the fabric to be processed into the template, click , and then click "PRESS" again to raise the frame. Next, place the template under the presser frame and click "PRESS" to lower the presser frame to press the template.

- **Adjust the graphic datum**

Click  to enter the Base interface to adjust the benchmark, please take Chapter IV as reference.

- **Start and sew**

In the home interface, press the "START" button and then the machine starts processing according to the work file automatically.