ASC400

Automatic Computerized Control System for Sewing Machine

Version：2014-01

3006722

Foreword

Thank you for using our Computerized Control System for Special Sewing Machine.

It is appreciated that you do read this manual carefully, so that you can operate the machine correctly and effectively. If the user operates the machine contrary to regulations herein, thus causes loss to user or third party, we will not take any responsibility. Besides that, you should keep this manual for future use. For any fault or problem of machine, please ask the professionals or the technicians authorized by us for repair service.

Safety Matters for Attention

1. Signs & Definitions of Safety Marks

This User's Manual and the Safety Marks printed on the products are to enable you to use this product correctly so as to be away from personal injury. The signs and definitions of Marks are shown in below:

⚠ Danger	The incorrect operation due to negligence will cause the serious personal injury or even death.
⚠ Caution	The incorrect operation due to negligence will cause the personal injury and the damage of mechanism.
	This kind of marks is "Matters for Attention", and the figure inside the triangle is the content for attention. (Exp. The left figure is "Watch Your Hand!")
	This kind of mark is "Forbidden".
	This kind of mark (Black Circle) means "Must". The figure in the circle is the contents that have to be done. (Exp. The left figure is "Ground!")

2. Safety Matters for Attention

⚠ Danger	
	For opening the control box, please turn off the power and take away the plug from socket firstly, and then wait for at least 5 minutes before opening the control box. Touching the part with high voltage will cause the personal injury.
⚠ Caution	
Usage Environment	
	Try not to use this sewing machine near the sources of strong disturbance like high-frequency welding machine. The source of strong disturbance will affect the normal operation of the sewing machine.
	The voltage fluctuation shall be within 20% of the rated voltage. The large fluctuation of voltage will affect the normal operations of sewing machine, Therefore a voltage regulator is needed in that situation.
	Working temperature: 5℃~35℃. The operation of the sewing machine will be affacted by environment with temperature beyond the above range.
	Relative Humidity: 45%~85%(No dew inside the machine), or the operation of sewing machine will be affected.
	The supply of compressed gas shall be over the consumption required by the sewing machine. The insufficient supply of compressed gas will lead to the abnormal action of sewing machine.
	In case of thunder, lightning or storm, please turn off the power and pull plug out the socket. Because these weather factors will have influence on the operation of sewing machine
Installation	
	Please ask the trained technicians to install the sewing machine.
	Don't connect machine to power supply until the installation is finished. Otherwise the action of sewing machine may cause personal injury once the start

	switch is pressed at that situation by mistake.
	When you tilt or erect the head of sewing machine, please use both of your hands in that operation. And never press the sewing machine with strength. If the sewing machine loses its balance, it will fall into floor thus causes the personal injury or mechanical damage.
	Grounding is a must. If the grounding cable is not fixed, it may cause the electric-shock and mistake-operation of machine
	The entire cables shall be fixed with a distance at 25mm away from the moving component at least. By the way, don't excessively bend or tightly fixed the cable with nails or clamps, or it may cause the fire or electric shock.
	Please add security cover on the machine head.

Sewing	
	This sewing machine can only be used by the trained staff.
	This sewing machine has no other usages but the sewing.
	When operating the sewing machine, please remember to put on the glasses. Otherwise, the broken needle will cause the personal injury in case the needle is broken.
	At following circumstances, please cut off the power at once so as to avoid the personal injury caused by the mistake operation of start switch: 1.Threading on needles; 2. Replacement of needles; 3. The sewing machine is left unused or beyond supervision
	At working, don't touch or lean anything on the moving components, because both of the above behaviors will cause the personal injury or the damage of the sewing machine.
	During working, if the mistake operation happens or the abnormal noise or smell is found at the sewing machine, user shall cut off the power at once, and then contact the trained technicians or the supplier of that machine for solution.
	For any trouble, please contact the trained technicians or the supplier of that machine.
Maintenance & Inspection	
	Only can the trained technicians perform the repair, maintenance and inspection of this sewing machine.
	For the repair, maintenance and inspection of the electrical component, please contact the professionals at the manufacturer of control system in time.
	At following circumstances, please cut off the power and pull off the plug at once so as to avoid the personal injury caused by the mis-operation of start switch:. 1.Repair, adjustment and inspection ; 2.Replacement of the component like curve needle, knife and so on
	Before the inspection, adjustment or repair of any gas-driven devices, user shall cut off the gas supply till the pressure indicator falls to 0.
	When adjusting the devices needing the power supply and gas supply, users can't be too careful to follow this Safety Matters for Attention.
	If the sewing machine damages due to the unauthorized modification, our company will not be responsible for it.

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1 General Information

1.1 General

SC400 Series Computerized Control System for Industrial Sewing Machines: 1) Adopt the world leading AC servo control technology on main shaft motor, which features high torque, good efficiency, stable speed and low noise; 2) Diversified design of control panel can meet the special requirements of users on assembling ; 3) System adopts German style structure, which offers easy installation and repair to users; 4) The control software can be updated through remote communication, which helps users to improve the function of products constantly.

1.2 Functions & Specifications

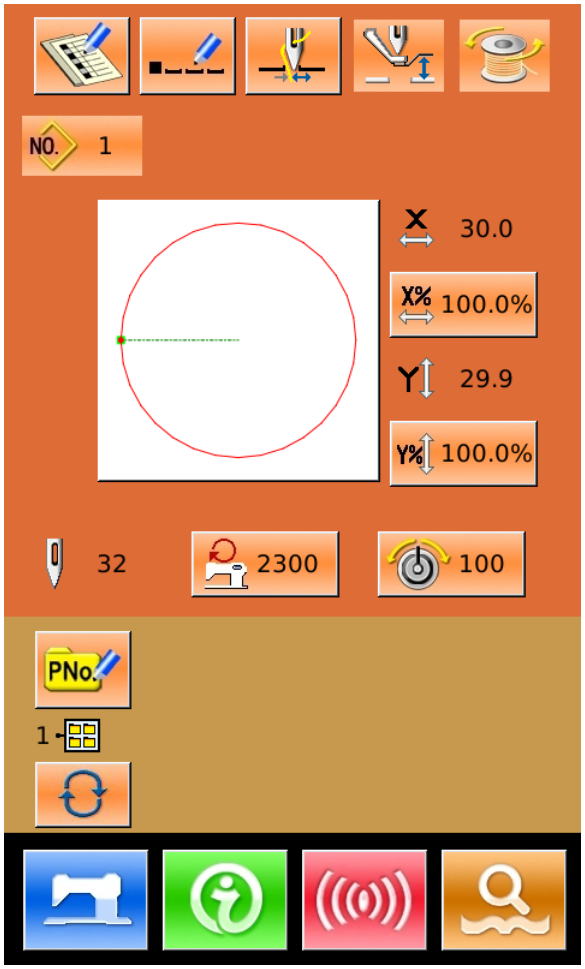
Type of Controller	ASC400 Computerized Control System for Pattern Sewing Machine
Sewing Range	X(Left/Right) Y（Front/Back） 1000 x 750
Max Sewing Speed	2500rpm（when sewing pitch is below 3mm）
Stitch Length	0.1～12.7mm（Min. Resolution : 0.05mm）
Presser Feeding Motion	Intermittent Feed (2-shaft drive by stepping motor)
Stroke of Needle Bar	41.2mm
Needles	DP×5、DP×17
Lift of Feeding Frame	Max 25mm（Pneumatic type: Max 30mm）
Intermediate Presser Stroke	Standard 4mm（0～10mm）
Lift of Intermediate Presser	20mm
Shuttle	Double-capacity semi-rotary hook
Memory of Pattern Data	U Disk
Pause Function	Used to stop machine during the sewing
Scale Function	Enable a pattern to be enlarged or reduced in X or Y direction individually when sewing a pattern Scale: 1%～400%（adjust 0.1% in each step）
Scale Method	Method for changing the length of each sewing stitch
Limitation of Sewing Speed	200～2500rpm（change 100rpm in each step）
Function for Selecting Pattern	Pattern Number Selection Method
Bottom Thread Counter	Up/Down Method（0～9999）
Sewing Counter	Up/Down Method（0～9999）
Setting of 2nd Origin	Use manual switch to move the needle to a random position within the sewing range and set that position as 2nd origin.

Sewing Motor	Servo Motor
Function of stopping needle at highest position	After the completion of sewing, the needle can be brought up to its highest position.
Power	500W
Voltage of Power Supply	AC220-240V

Product Standard：QCYXDK004—2012《Computerized Control System for Industrial Sewing Machine》.

1.3 Standarization

The function keys are using the publicly-known figures, which are recognizable to users at every country.



1.4 Operation Method

By adopting the advanced touching operation technology, user-friendly interfaces and easy operation, the panel of SC400 brings a revolution to the regular usage. Touching the panel with their fingers or other objects, users can finish the corresponding operations. However, during their usage, users should avoid touching the screen with the sharp objects so as to prevent the touching screen from suffering permanent damage.

1.5 Introduction of Simplified Interface

In order to provide convenience to the users，We update the Panel of the ASC400 Automatic Computerized control system and integrate the commonly used functions into one interface!

1-1

1.5.1 Shift to Simplified Interface from Normal Interface

① Turn on Power

After power-on, user can press  to display the Function operation interface.
（as shown in 1-1）

② Select Interface Shift Button

In the current interface, user can press  to Turn the interface into blue. Then user can press  To have access to relating operation, as shown in 1-2.

1-2

After user presses  , the background of LCD displayer will turn to blue, which is the Simplified Interface （As Shown in 1-3.

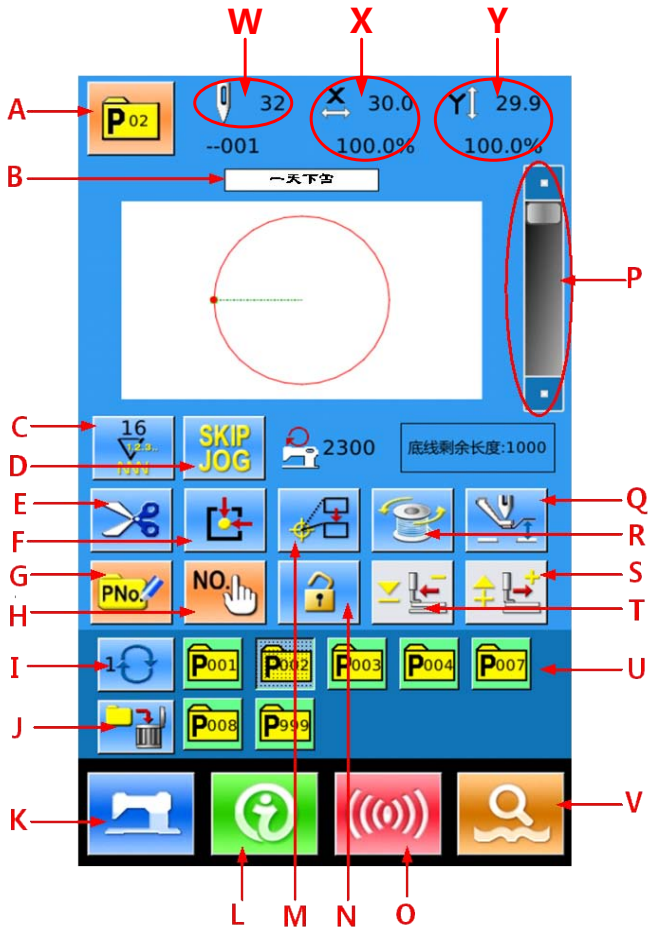
Note: Only when the system has P pattern, can user enter The simplified interface

1-3

1.5.2 Introduction of Functions in Simplified Interface

（1）Introduction of Functions in Simplified Interface

The simplified interface is shown in Figure 1-4. For the detailed introduction of functions, please refer to the Function List



1- 4

（2）Table of Function Keys：

No	Functions	Content
A	Current P Pattern	Edit current P pattern
B	Pattern Naming	Normal pattern name quoted by the current P pattern
C	Counter Setting	Press to select the type of counter and set the value of the counters  : Sewing Counter  : No. of pcs. Counter
D	Skip	Move pressing frame to the position of the input stitch
E	Trim	
F	Origin	Display the number of the pattern selected at present
G	New Pattern	Prompt Pattern (P Pattern) Registration. It is used to create the new P pattern, and 999 P patterns can be registered at most.
H	Search	Search the P pattern via pattern number or pattern name
I	P Pattern File Folder Selection	Shift the P pattern file folder number orderly. Enable to select 100 P pattern file folder
J	Deletion	Delete P pattern
K	Ready Key	Shift between data input interface and sewing interface.
L	Information Key	Shift between data input interface and information interface
M	Standard	Move the sewing start point
N	Lock	Lock the pattern under current edition to avoid the pattern-shifting
O	Communication Key	Shift between data input interface and communication interface
P	Sewing Speed Setting	Change sewing speed
Q	Intermediate Presser Setting	Press it to have access to the interface for setting the height of intermediate presser.
R	Winding	Enter the winding interface. Press  to wind.
S	Forward	Move the presser to front side
T	Backward	Move the presser to back side
U	P Pattern Selection	Display the registered P pattern. Press it to enter the interface for inputting P pattern data. This button is hidden at initial status.
V	Mode Key	Mode Key → shift between data input interface and details setting interfaces
W	Pattern Stitch Number	Display the stitch number of current pattern
X	X Actual Size Display	Display the X actual size and scale rate of the selected pattern.
Y	Y Actual Size Display	Display the Y actual size and scale rate of the selected pattern.

1.5.3 Introduction of New Function Buttons

（1）Current P Pattern Button

Press  to enter the interface for selecting normal pattern. Then user can select a pattern. After that (like 1-5,1-6, the current P pattern will be replaced by the Selected normal pattern.

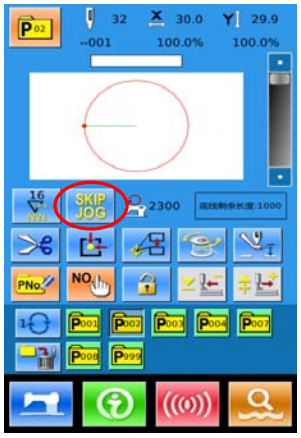
1-5

1-6

（2）Skip Button

Skip：Move the pressing board to the position of the input stitch.

Press  to enter the skipping interface, where user can input the stitch number of skipping, as shown in1-7 at right.



1-7

（3）Standard Button

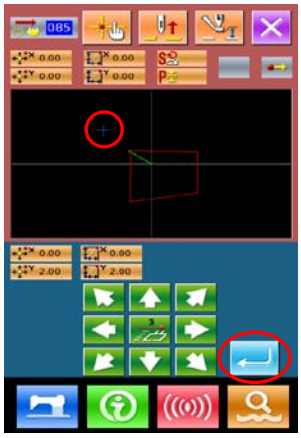
Standard：Move the sewing start point.

Pres  to enter the interface, as shown in1-8.

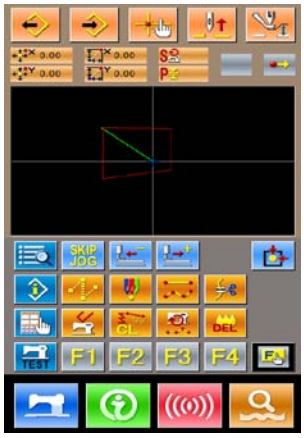
1-8

Move the sewing start point to the pointed position, as shown in 1-9。

Press  to finish the operation. Then the entire figure is moved to the Pointed position, as shown in 1-10.



1-9



1-10

（4）New Pattern

New Pattern： The hotkey to create new normal pattern And at most 999 patterns can be registered

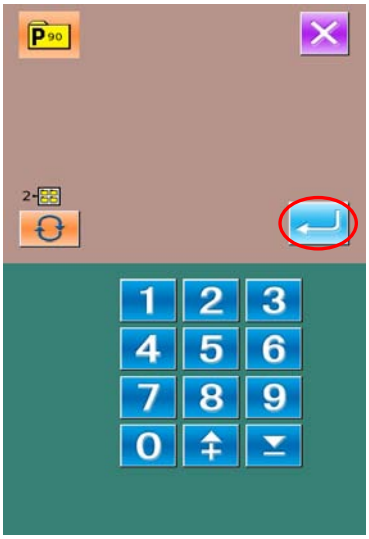
1-11

Press  to enter the interface for creating prompt pattern, as shown in 1-11. Then user can select normal pattern No.41, and set the prompt number 90.

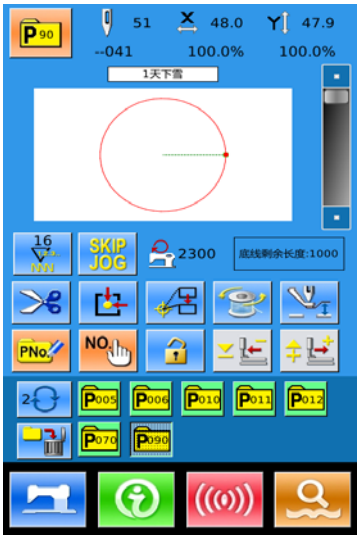
Press  to finish the operation. (as shown in 1-12)

Press  to save that pattern into the No.90 P pattern

Then the P pattern No.90 will be saved in the simplified Interface, which is easy for user to use, as shown in 1-13.



1-12

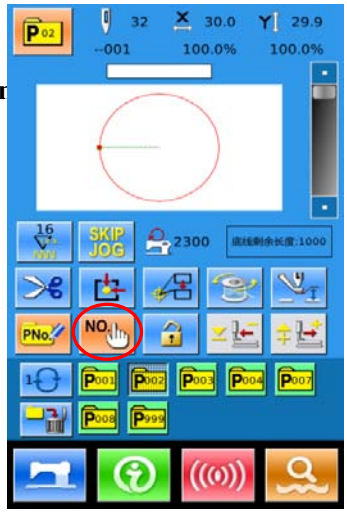


1-13

（5）Search

Search：Search the P pattern via pattern number or pattern name；

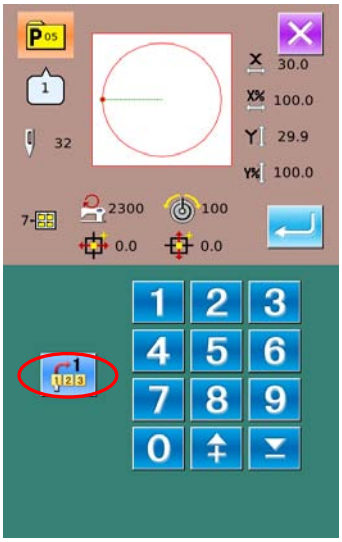
Press  to enter the search interface , as shown in 1-14 and 1-15.



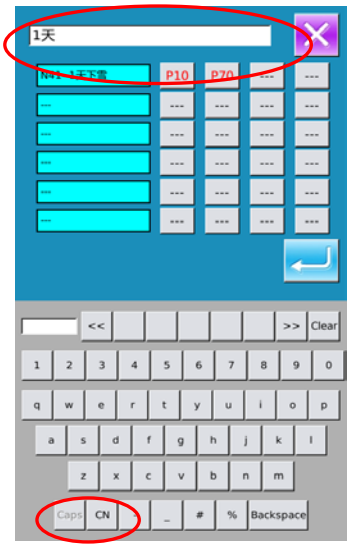
1-14

Press  to enter the senior search interface， where user can shift the languages between Chinese and English,

Search the pattern with the number or the name, as shown in 1- 16.



1-15



1-16

（6）Lock

Lock：Lock the pattern under current edition and avoid Pattern-shifting, as shown in 1-17

1-17

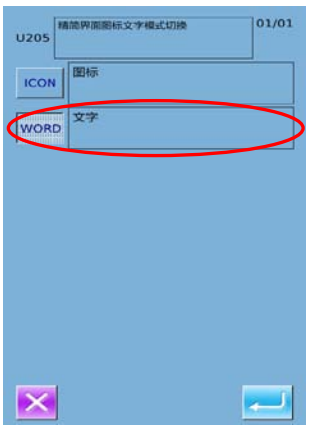
1.5.4 Shift Between Picture Mode and Word Mode in Simplified Interface

Press  to enter the function interface, and select level 1 parameter U205 to shift the display mode.

Then user can select word. （the system will display in the order of 1-19,20,21,22）

1-18

1-19



1-20

1-21

2 Operating Instruction

2.1 General Keys

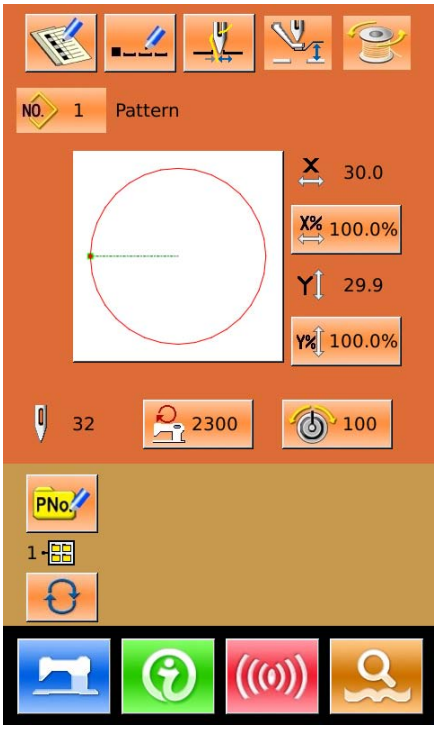
The keys for general operations in each interface of SC400 controller are shown in below：

No.	Figure	Functions
1		Escape → Quit the existing interface. Can terminate the changing data at data changing interface
2		Enter → Confirm the changed data.
3		Plus → Increase the value.
4		Minus → Decrease the value.
5		Reset → Release the error.
6		Number Input → Activate the number keyboard to input number
7		Ready → Shift between data input interface and sewing interface
8		Information → Shift between data input interface and information interface
9		Communication → Shift between data input interface and communication interface
10		Mode → Shift between data input interface and other detail setting interface

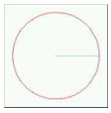
2.2 Basic Operations

①Turn on the Power

Turn on the power to activate the interface for inputting data.



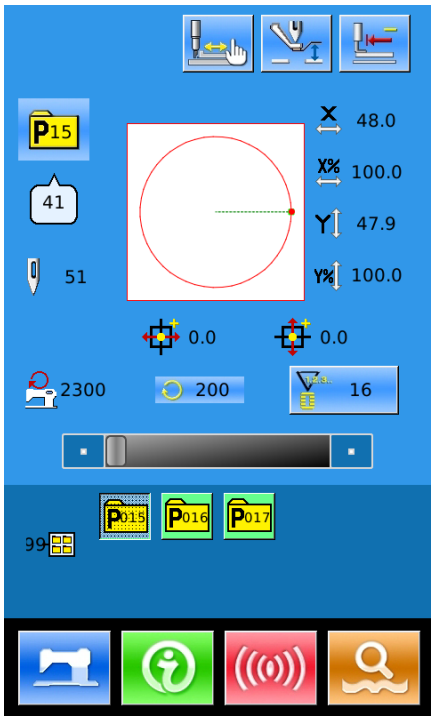
②Select the No. of the Desired Pattern

At the existing interface, the number of the selected pattern will be displayed. Press  to select the pattern number.

For the operations about the pattern selection, please refer to [2.8 Pattern Selection].

③Enter the Sewing Ready Status

After  is pressed, the background color of LCD screen will be changed to blue, which means the machine enters the “Sewing Ready” status.



④Start Sewing

Put the material for sewing to the presser. Step on the pedal to lower the presser and to start the machine for sewing.

2.3 Normal Pattern Operation

（1）Interface for Inputting Sewing Data

The data input interface is shown as the figure at right. For the detailed descriptions on functions, please refer to the Table of Function Keys.

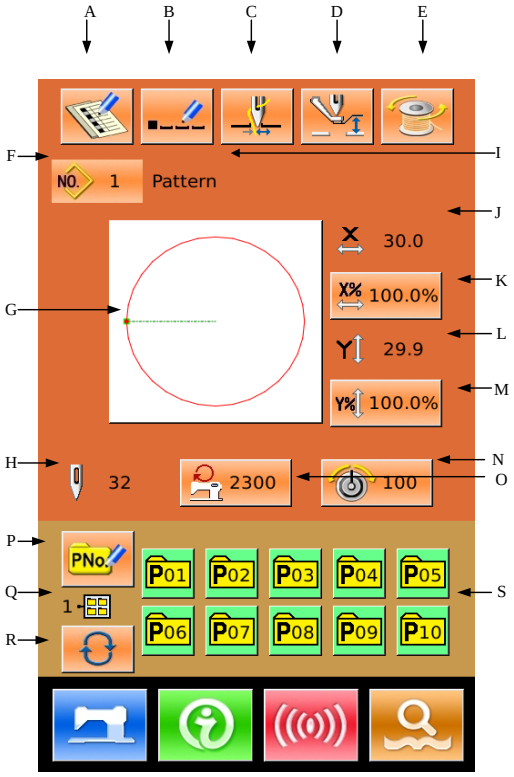


Table of Function Keys：

No.	Functions	Description
A	Pattern Registration	999 normal patterns can be registered.
B	Pattern Naming	14 figures can be inputted at most.
C	Thread-catching Button	Select the thread-catching function effective/ineffective. This is affected by parameter U35.  ： Thread-catching Ineffective (Displayed in light)  ： Thread-catching Effective (Displayed in dark)
D	Intermediate Presser Setting	Press it to have access to the interface for setting the height of intermediate presser. And then press  for entry.
E	Winding	Enter winding interface. Before winding, user have to press  .
F	Pattern No. Display	Display the number of the pattern selected at present.
G	Sewing Shape Selection	The shape of the existing pattern is displayed on the button. Press this button to have access to the interface for selecting pattern

H	Stitch Number of Pattern Display	Display the stitch number of the pattern sewn at present.
I	Name of Pattern	Display the name of the selected pattern.
J	X Actual Size Display	Display the actual size of the selected pattern in X direction User can input the actual size with the parameter U64, at that time the keys for adjusting the X actual size will be displayed.
K	X Scale Rate Setting	The X scale rate of the selected pattern is displayed on the button. Press it to have access to the interface for setting. This value is affected by parameters U64 and U88.
L	Y Actual Size Display	Display the actual size of the selected pattern in Y direction User can input the actual size with the parameter U64, at that time the keys for adjusting the Y actual size will be displayed.
M	Y Scale Rate Setting	The Y scale rate of the selected pattern is displayed on the button. Press it to have access to the interface for setting. This value is affected by parameters U64 and U88.
N	Thread Tension Setting	Display the basic value of the thread tension. Press that key to set this value.
O	Max. Speed Limitation	Display the Max Speed, which can be set after this button is pressed.
P	Prompt-pattern (P Pattern for short) Registration	Use for registering the P pattern, and 50 P patterns can be registered at most.
Q	P Pattern File Folder Number Display	Display the number of the current P pattern file folder.
R	P Pattern File Folder Selection	Shift the P pattern file folder number orderly.
S	P Pattern Selection	Display the registered P patterns. Press that key to have access to the interface for inputting P pattern data. This button is not displayed at the initial status.

（2）Sewing Interface

Press  to have access to the sewing interface as shown in right. For detailed descriptions on functions please refer to the Table of Function Keys.

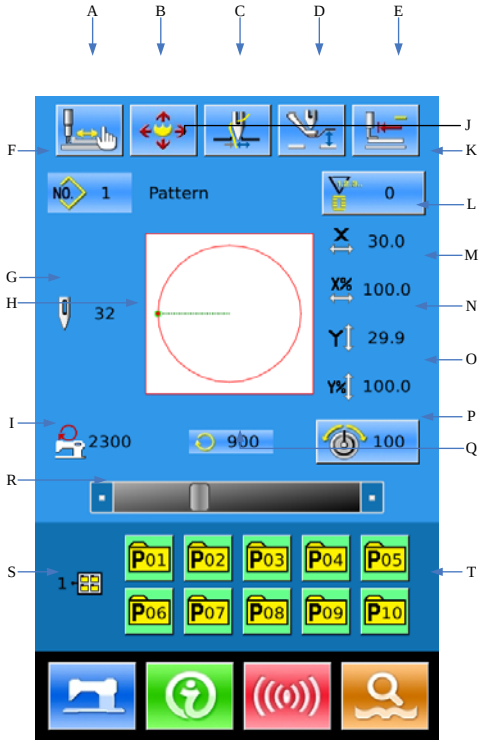


Table of Function Keys：

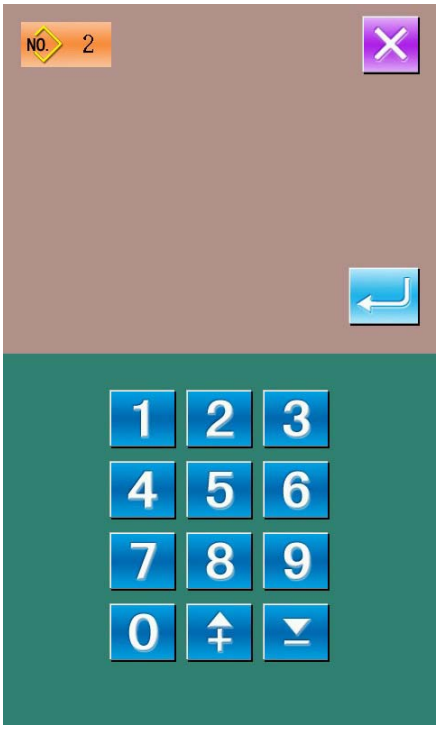
No.	Functions	Descriptions
A	Thread-catching Button	Select the thread-catching function effective/ineffective. This is affected by parameter U35.  ： Thread-catching ineffective (Displayed in light)  ： Thread-catching effective (Displayed in dark)
B	Trial Sewing	Press it to have access to the interface of trial sewing. The shape of pattern can be set.
C	Move Frame	Press it to lower the frame, and the pattern moving interface is displayed. This is affected by parameter U89.
D	Intermediate Presser Setting	Press it to have access to the interface for setting the height of intermediate presser.
E	Return to Origin	This button returns the presser to the start sewing point.
F	Pattern No. Display	Display the number of the selected pattern.

G	Pattern Stitch Number Display	Display the total number of the selected pattern.
H	Pattern Shape Display	Display the shape of the selected pattern.
I	Max Speed Limitation	Display the Max Speed.
J	Pattern Name	Display the name of the selected pattern
K	Counter Setting	Press to select the type of counter and set the value of the counters  : Sewing Counter  : No. of pcs. Counter
L	X Actual Size Display	Display the X actual size of the selected pattern.
M	X Scale Rate Setting	Display the X scale rate of the selected pattern.
N	Y Actual Size Display	Display the Y actual size of the selected pattern.
O	Y Scale Rate Setting	Display the Y scale rate of the selected pattern.
P	Thread Tension Setting	Display the basic value of the thread tension. User can set this value after pressing this button.
Q	Sewing Speed Display	Display the current sewing speed.
R	Sewing Speed Setting	Change the sewing speed.
S	P Pattern File Folder Number Display	Display the number of the current P pattern file folder.
T	P Pattern Selection	Display the registered P pattern. Press this button to have access to the P pattern sewing interface. This button is not displayed at initial status.

2.4 Pattern Registration

999 normal patterns can be registered at most.

Press  to have access to the pattern registration interface (as shown in right figure):



① Input Pattern Number

Use the number keys to input the desired pattern number. If the existed pattern number is inputted, the upper side of the interface will display the shape and relating data of the registered pattern. With  &  , user can find the unregistered pattern number.

② Register New Pattern

After the pattern number is set, user can press  to copy the displayed pattern data to the newly registered pattern. The system will return to the interface for inputting the data of the newly registered patterns.

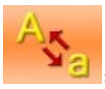
If the existed pattern number is inputted, the system will ask user whether to replace the saved pattern.

2.5 Pattern Naming

Press  to have access to the interface for naming pattern (as shown in right figure), and at most 14 figures can be inputted to name a pattern.

 : Move icon to right

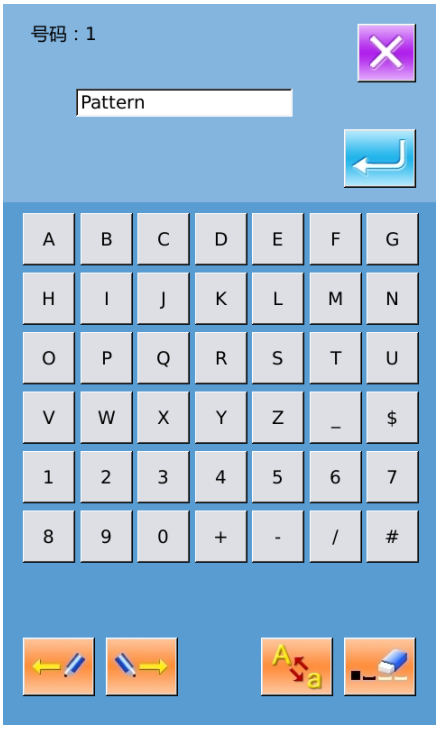
 : Move icon to left

 : Cap lock

 : Eraser

Select the wanted figure; press  to end the operation of naming pattern.

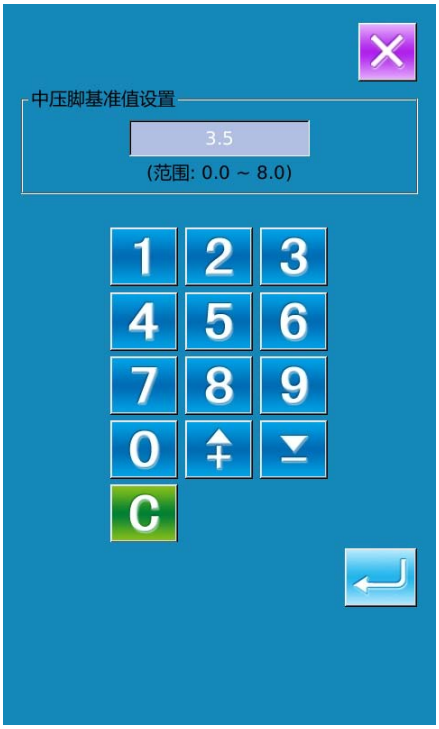
By moving the icon, user can set the position of the figure. The Eraser is used to clear the figure at that position.



2.6 Intermediate Presser Setting

Press  to have access to the interface for setting the intermediate presser.

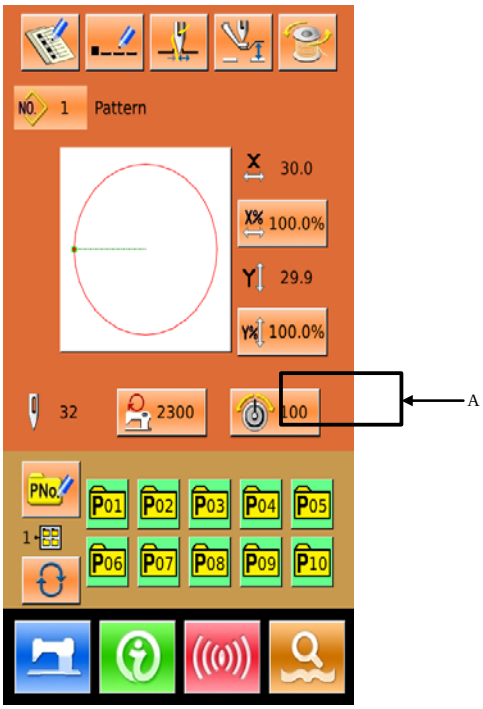
By using the 0 ~ 9 and number keys or  &  , user can input the wanted figure. The inputted number will be placed in the most right position, following the figures inputted formerly. Press  to finish this operation and return to the data input interface.



2.7 Thread Tension Setting

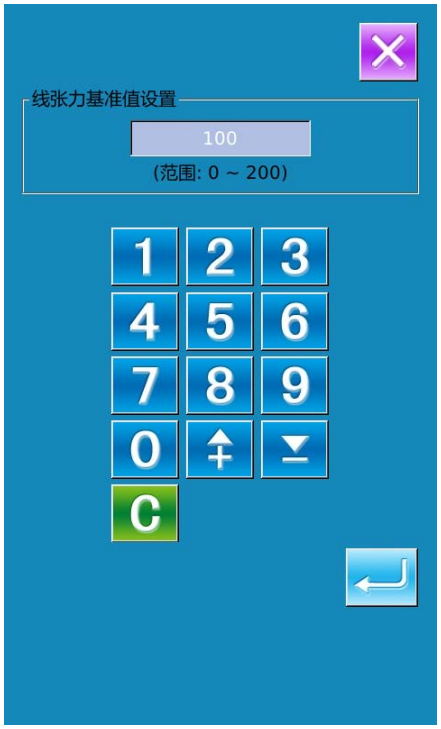
① Have Access to Interface for Selecting Pattern

In data input interface (as shown at right), user can press Key A to have access to the interface for setting thread tension.



② Set Thread Tension Value

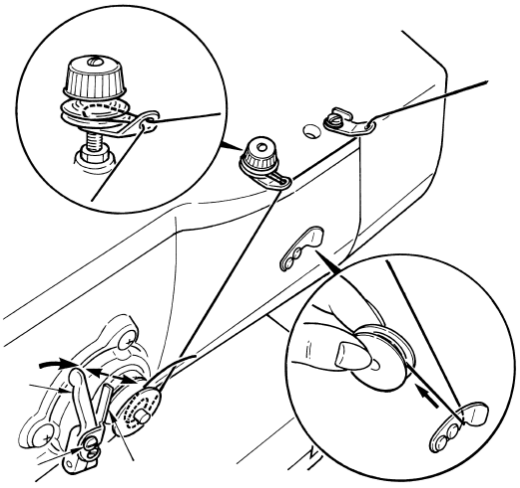
The operation is same to that in the Intermediate Presser Setting.



2.8 Winding

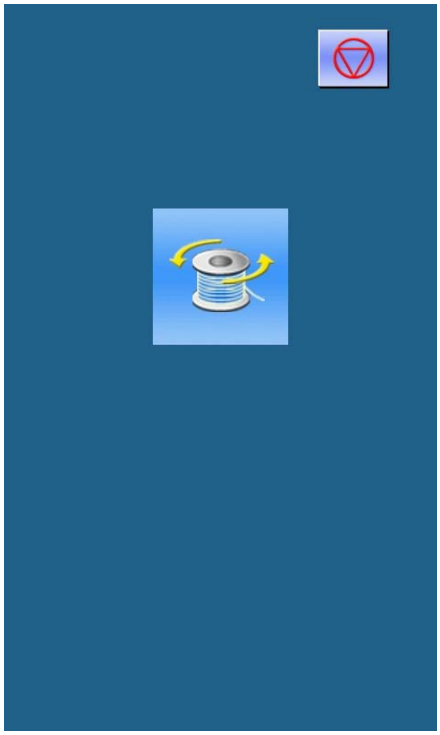
① Installation of bobbin

Put the bobbin onto the winding axis, then press the bobbin guide in the direction of arrow (as shown in right picture).



② Display the Interface for Winding Bottom Thread

In the data input interface, user can press  to activate the interface for winding （as shown in right）.



③ Start Winding

Press the start pedal to start sewing machine. At this moment, the machine starts to wind bottom thread.

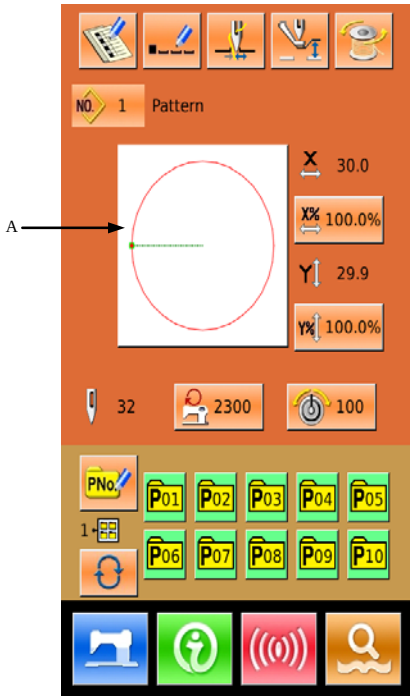
④ Stop Sewing Machine

After user presses  , the sewing machine will stop and return to normal mode. Additionally, if the pedal is pressed in the process of winding bottom thread, the sewing machine will be stopped in winding mode. Therefore, when user steps the pedal again, the sewing machine will continue winding. This function can be used when several bobbins are wound.

2.9 Pattern Selection

① Have Access to Pattern Selection Interface

Press Sewing Shape (A) in the data input interface (the right picture) to have access the Pattern Selection Interface.

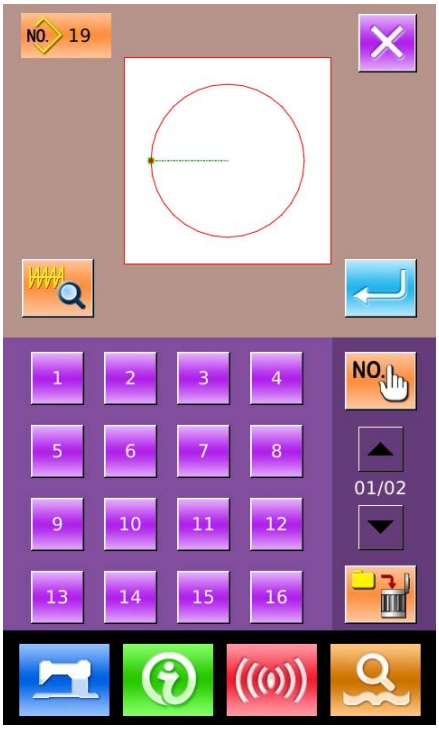


In the pattern selection interface, the upper side is the shape of the selected pattern; the lower side is the registered pattern number.

 : Preview Pattern

 : Inquire Pattern by No.

 : Delete Pattern

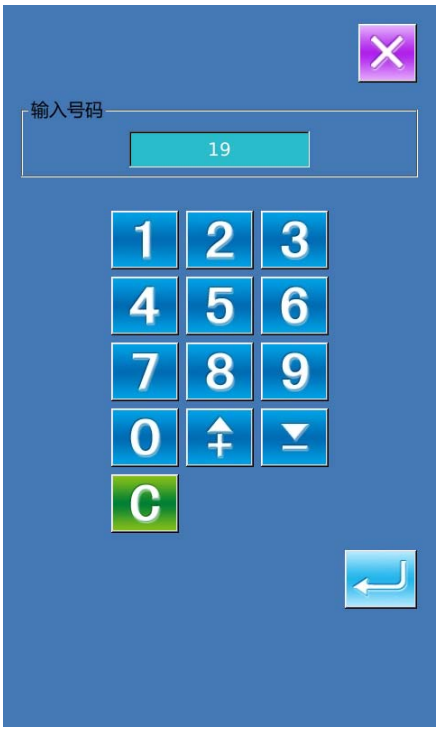


② Pattern Selection

16 pattern codes are displayed in each page. When user selects a registered pattern number, the content of pattern will be displayed at the upper side of screen. Press  to finish the selection

③ Pattern Inquiry

Press  to activate the pattern inquiry interface. Use number keys to input the pattern number directly.

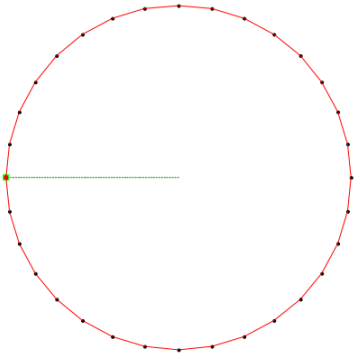


④ Pattern Deletion

Select a registered pattern at first, press  to delete this pattern, however, the patterns registered to P can't be deleted.

⑤ Pattern Preview

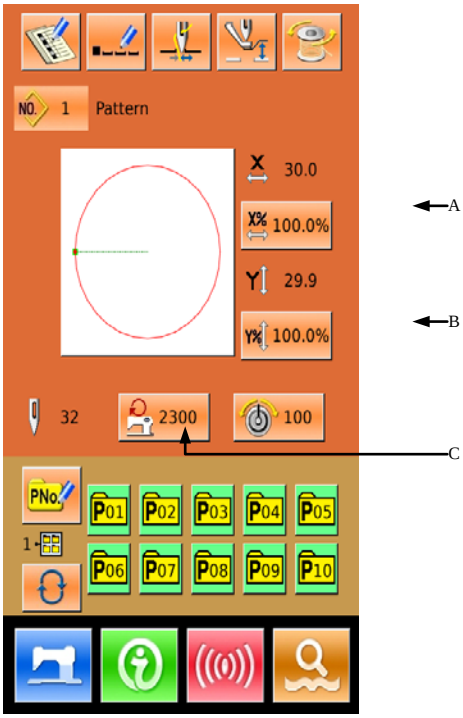
Press  to preview the present pattern in full screen.



2.10 Sewing Data Setting

① Have Access to Interface for Setting Sewing Data

Pressing keys A, B or C in the interface of data input to have access to the interface for setting scale rate or the interface for setting the speed limitation respectively



	Item	Input Range	Default
A	X Scale Rate	1.0~400.0%	100.0%
B	Y Scale Rate	1.0~400.0%	100.0%
C	Max Speed Limitation	200~2500rpm	2300rpm

Reference 1：Parameter U64 is used to shift the selection between the scaling rate and actual size.

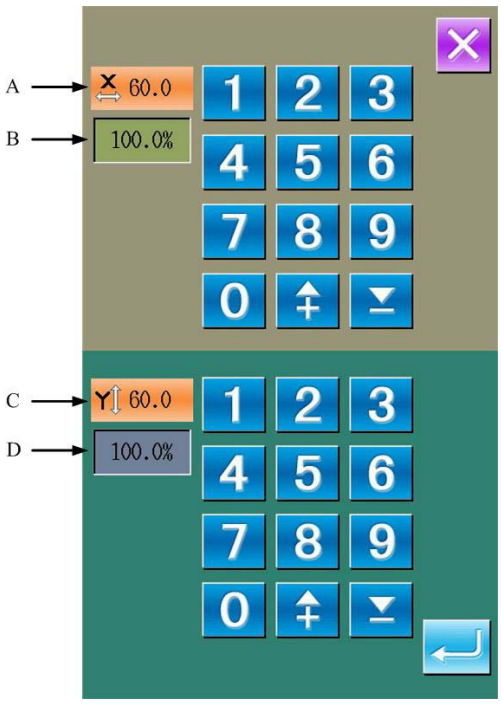
Reference 2：The input range and initial value of

Max speed is affected by the parameter U01.

② Scale Rate Setting

The right figure is the interface for setting the scale rate. The upper side is for setting that in X direction, while the lower side is for Y direction.

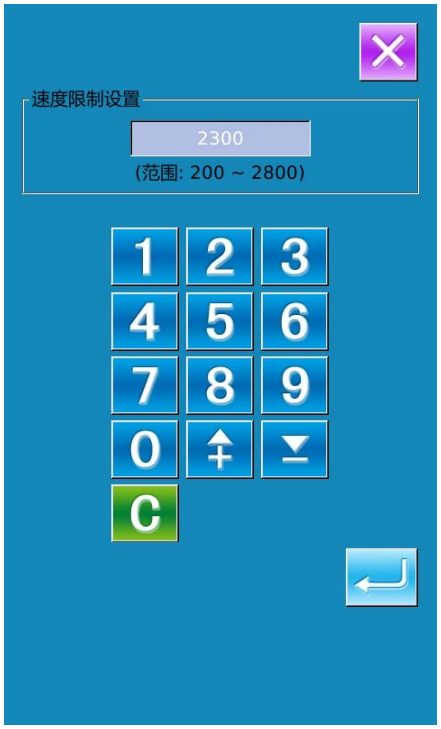
A：Actual value in X direction
B：Scale rate in X direction
C：Actual value in Y direction
D：Scale rate in Y direction



With 0 ~ 9 and number keyboard or 、 to input the wanted value. Press to finish the operation and return to data input interface.

③ Max Speed Limitation Setting

The operation is same to that at above

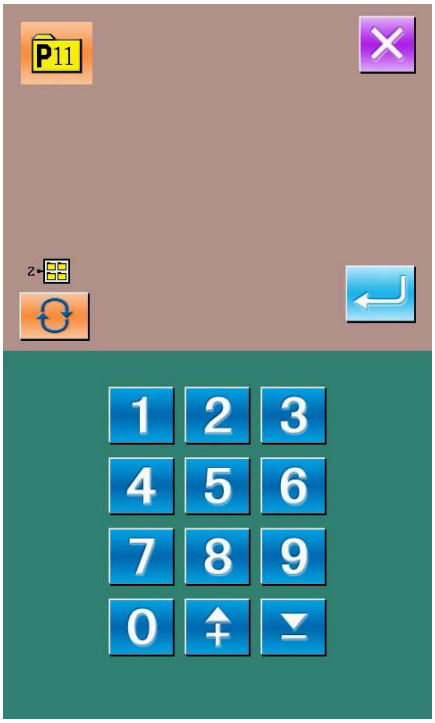


2.11 P Pattern Registration

① Have Access to P Pattern Registration Interface

In the data input interface, press 

to have access to the P pattern registration interface (as shown in right)



② Input the P Pattern Code

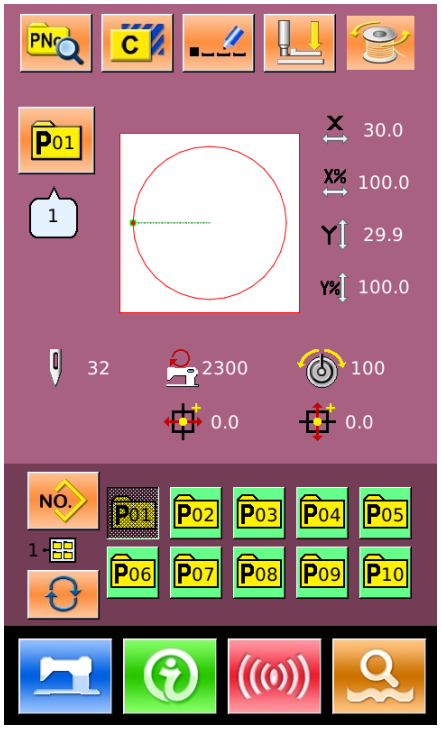
By using the number keyboard, user can input the wanted code. If the inputted pattern code is registered, the upper side of the interface will display the registered sewing shape and relating data. At this moment, no new pattern can be registered.

③ Select File Folder Number

P Pattern number can be registered into five folders, 10 P patterns in each folder at most. User can use  to select orderly

④ Confirm the Pattern Number

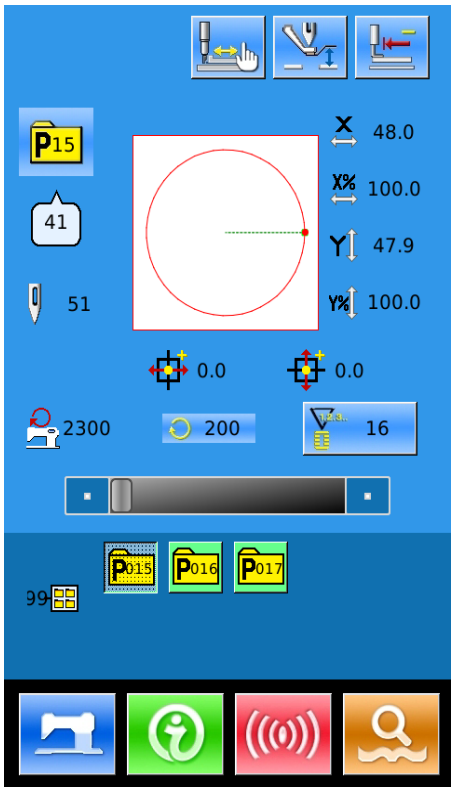
Press  to finish the P patter registration, and the system returns to the interface for inputting the P pattern data



2.12 Trial Sewing

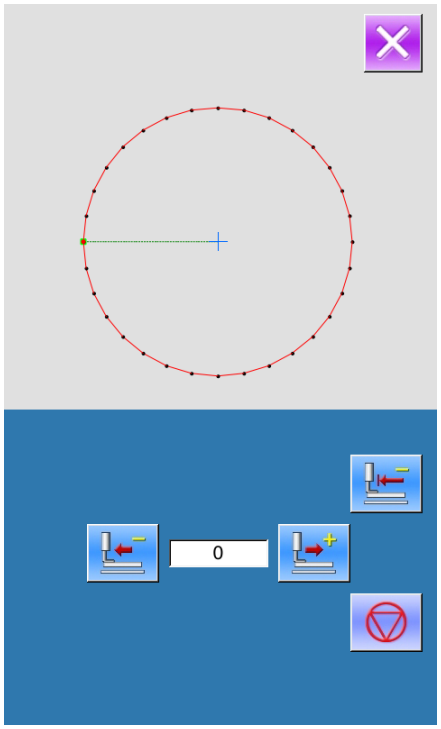
① Display Sewing Interface

In the data input interface, press  to turn the background of LCD to Blue, when the system goes into the sewing interface.



② Display of Trial Sewing Interface

In the sewing interface, press  to enter the interface of trial sewing（as shown in right）:



 : Return to Origin

 : Presser Fallback

 : Presser Forward

 : Stop

③ Start Trial Sewing

Press pedal to lower the presser. Use  and  to set the shape. When the button is held for a fixed period of time, the presser will continue to move even when the button is detached. When wanting to stop it, user can press  .

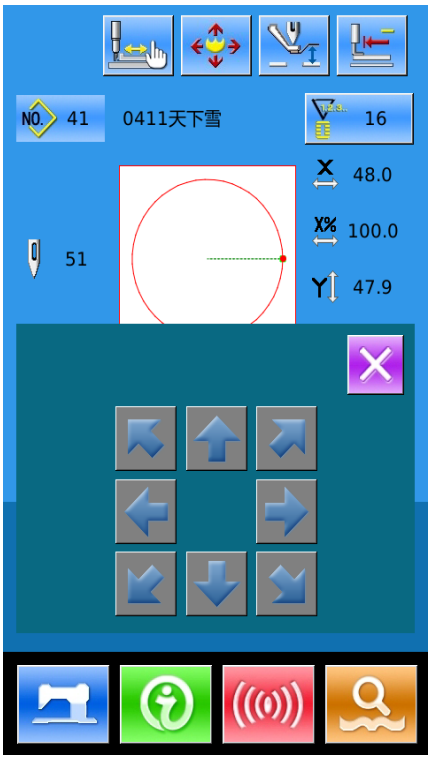
When  is pressed, the needle will return to origin and the system return to sewing Interface.。

④ End Trial Sewing

User can press  to return to the sewing interface from trial sewing interface. When the pattern is not at the start sewing position or the end position, user can press pedal to start the sewing in the midway.

2.13 Frame-moving Operation

① Have Access to Frame-moving interface



When the sewn material is hard to be placed due to the head needle, user can move the frame to set a 2nd origin.

Press  in the sewing interface, the user can have access to the interface for moving frame.

Reference：This function can be forbidden by the parameter U89.

② Operation of Frame-moving

When the presser is lowered, user can press the direction to move the frame. Pressing  is to end the operation.

2.14 Operation of Counter

① Display Counter Interface

In the sewing interface, press  or  to have access to the interface for setting counters.

 : Sewing Counter

 : No. of Pieces Counter

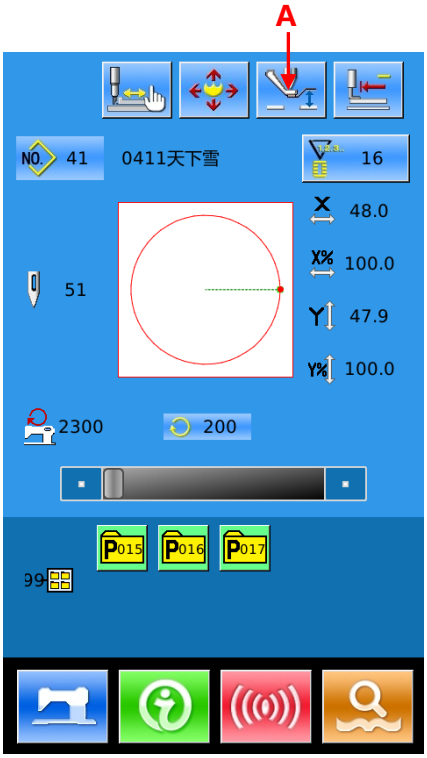
② Counter Selection & Value Setting

With  &  , user can set the type and the value of counter.

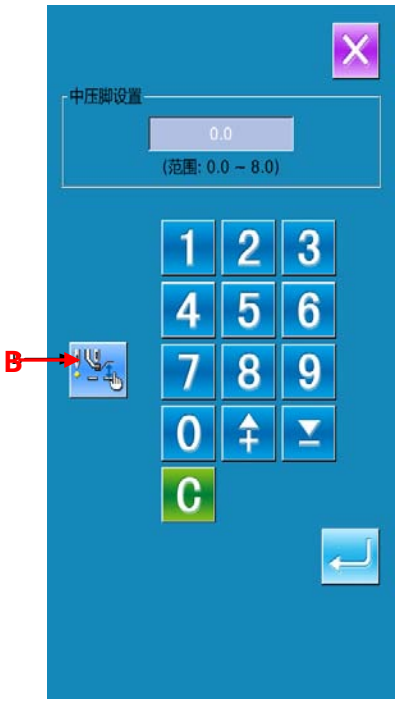
2.15 Single –stitch Intermediate Presser Setting

① Have Access to Interface for Setting Single-stitch Intermediate Presser

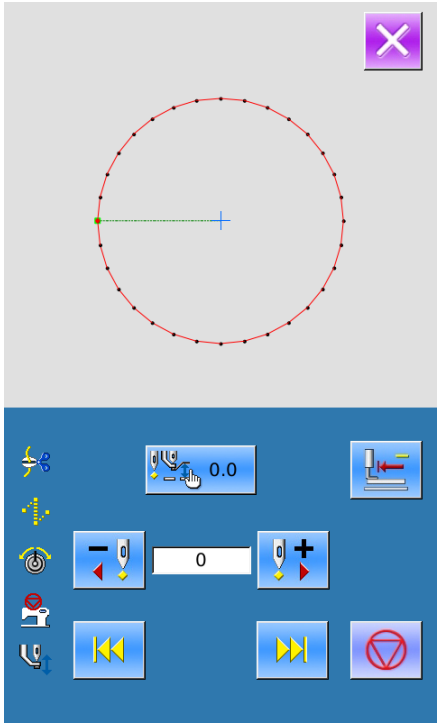
In the sewing interface (the right figure), press Intermediate Presser Setting (A) to have access to the interface for setting the intermediate presser.

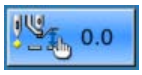


In the interface for setting the intermediate presser (the right figure), press the Single-stitch Intermediate Presser Setting (B) to have access to the interface for setting the single-stitch intermediate presser



② Set Value of Single-stitch Intermediate Presser



Presser  to have access to the interface for setting intermediate presser, the setting method is same to that in 2.6.

With  or  , the needle moves by one stitch in rear or front when the frame goes down. With  or  , needle moves to the needle entry point where the intermediate presser commend locates in front or rear. For stop, please press  .

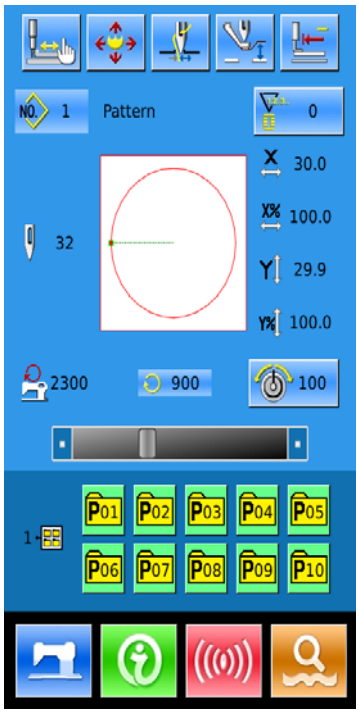
Press  to move to origin

The displayed value is the absolute value (intermediate presser height value + intermediate presser increase/ decrease value)

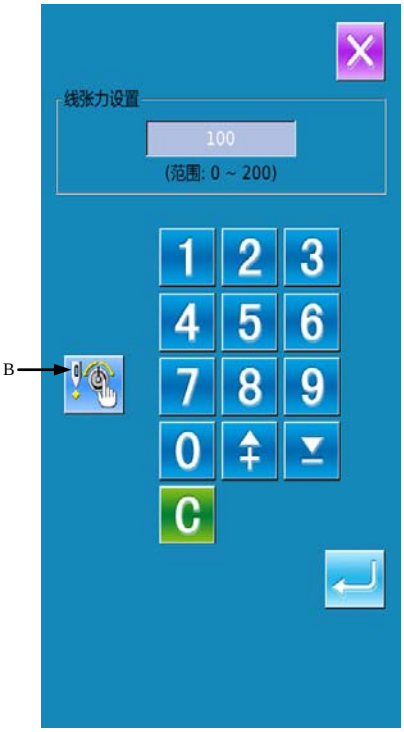
2.16 Single-stitch Thread Tension Setting

① Have Access to Interface for Setting Single-stitch Thread Tension

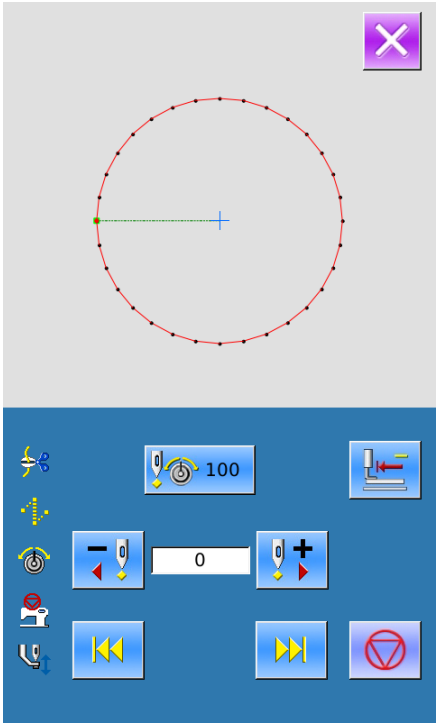
In sewing interface (the right figure), press Thread Tension Setting (A) to have access to the interface foe setting thread tension.



In the interface for setting the thread tension (right figure), press Single-stitch Thread Tension Setting (B) to set the value



② Set Single-stitch Thread Tension



Press 

to have access to the interface for setting thread tension, the setting method is same to that in 2.7.

With  or  , the needle moves by one stitch in rear or front when the frame goes down. With  or  , needle moves to the needle entry point where the intermediate presser commend locates in front or rear. For stop, please press 

Press  to move to origin.

The displayed value is the absolute value (intermediate presser height value + intermediate presser increase/ decrease value).

2.17 Emergency Stop

① Release the Error

During the sewing, press the stop switch to stop the machine. And the screen will display the right interface. Press  to release the error, and then activate the interface for setting the emergency stop.

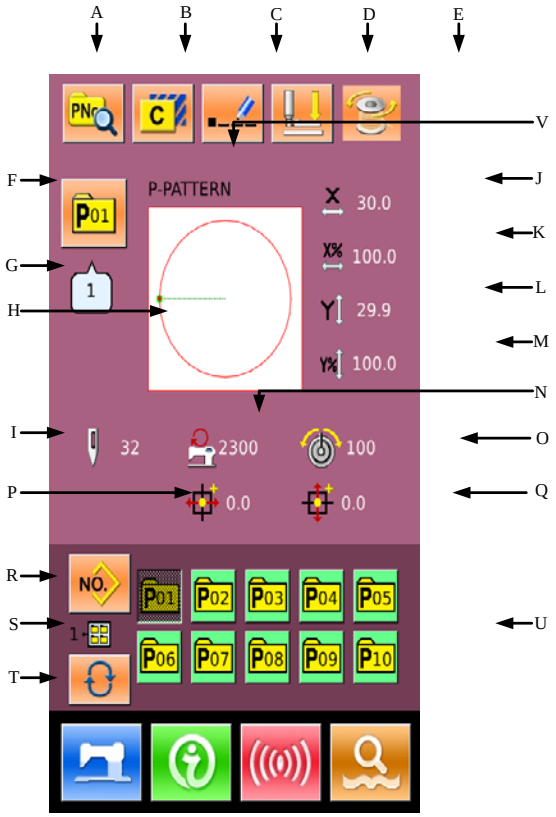
3 Operation of Prompt Pattern (P Pattern)

3.1 P Pattern Data Input

The prompt pattern is called as “P pattern” for short, which consists of a normal pattern and relating sewing parameters (like X Scale Rate, Y Scale Rate, Speed Limitation and so on). User needn’t set the parameter at each time when using P pattern.

Right is the P Pattern Data Input interface

50 P patterns can be registered at most.



Function List:

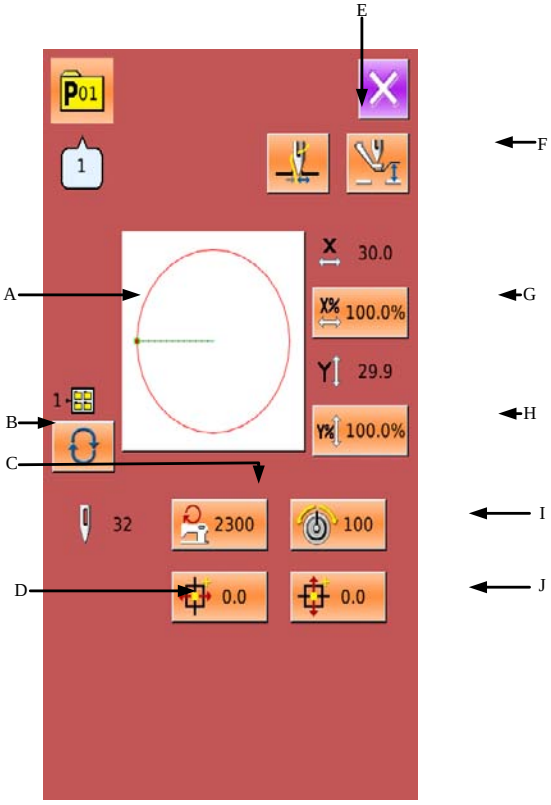
No.	Functions	Descriptions
A	P Pattern Edition	Edit the content of P pattern.
B	Copy P Pattern	Copy the current P pattern, and save it as a new pattern.
C	Pattern Naming	14 figures can be inputted at most.
D	Threading	Press it to lower the intermediate presser
E	Winding	Enter winding interface Press it and  for winding
F	P Pattern Number Display	Display the number of the selected pattern

No.	Functions	Descriptions
G	Sewing Shape Number Display	Display the number of the normal pattern quoted in the current P pattern.
H	Sewing Shape Selection	Display the sewing shape of the current pattern
I	Pattern Stitch Number Display	Display the stitch number of the current pattern.
J	X Actual Size Display	Display the actual size of the current pattern in X direction.
K	X Scale Rate Setting	Display the scale rate of the current pattern in X direction.
L	Y Actual Size Display	Display the actual size of the current pattern in Y direction.
M	Y Scale Rate Setting	Display the scale rate of the current pattern in Y direction.
N	Max Speed Limitation	Display the Max speed
O	Thread Tension Value	Display the basic value of thread tension in this pattern
P	X Travel Amount Display	Display the X travel amount of the current pattern
Q	Y Travel Amount Display	Display the Y travel amount of the current pattern
R	Return to Normal Pattern Data Input	Return to the interface for inputting normal pattern data.
S	P Pattern File Folder Number Display	Display the file folder number of current P pattern
T	P Pattern File Folder Selection	Shift the P pattern file folder number orderly.
U	P Pattern Selection	Display the registered P pattern.
V	P Pattern Name	Display the name of current pattern

3.2 P Pattern Edition

① Have Access to Interface for Editing P Pattern

Press  to have access to the interface for editing P pattern（as shown in right）.



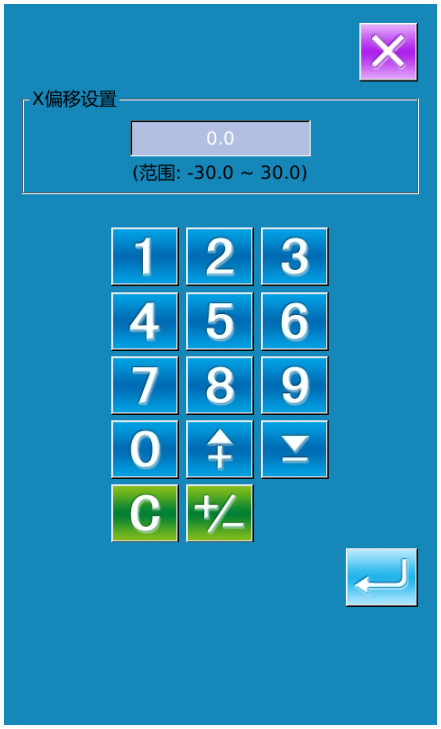
② Edition of Data

Select the item for change and set the value.

	Item	Input Range	Default value
A	Sewing Shape		
B	File Folder Number	1~5	
C	Max Speed	200~2800rpm	2300rpm
D	X Travel Amount	-30.0~30.0 mm	0
E	Thread-catching Switch		
F	Intermediate Presser Height	0.0~8.0mm	0
G	X Scale Rate	1.0~400.0%	100.0%
H	Y Scale Rate	1.0~400.0%	100.0%
I	Thread Tension Value	0~200	100
J	Y Travel Amount	-30.0~30.0 mm	0

③ Confirmation of Data Change

Take “X Travel Amount” as example, user can input the value with number keyboard. Press  to finish the operation.



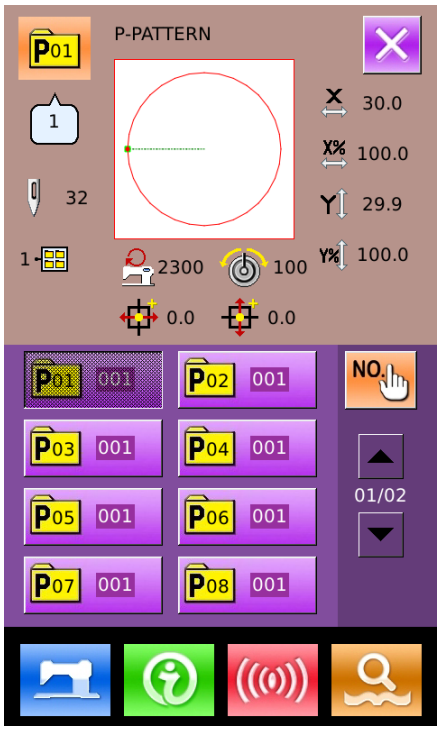
④ Quit the Edition Interface

Press  to close the P pattern edition interface and return to data input interface.

3.3 Copy P Pattern

① Select the Pattern for Copy

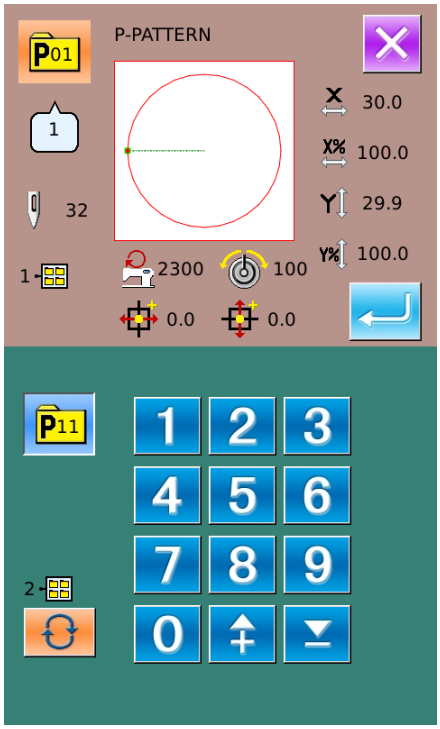
Press  to have access to the interface for copying P pattern (as shown in right). Select the copied pattern number among the registered patterns and press  .



② Input the Number for Newly Registered Pattern

At the upper of the interface, it is the copied pattern. User can select an unregistered pattern number for it with the number keys. The registered pattern number can't be registered repeatedly.

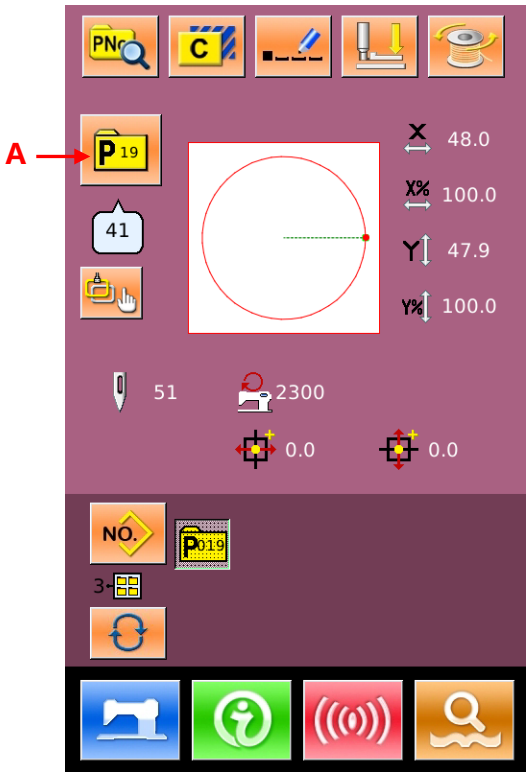
Press  to select the file folder for saving pattern. Press  to finish the operation of copying the pattern and return to the interface for copying the P pattern.



3.4 P pattern Selection

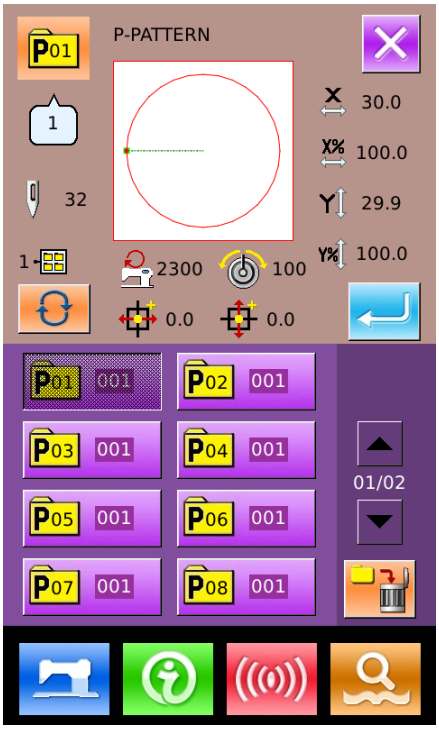
① Have Access to Interface for Selecting P Pattern.

As shown in right figure, press button A to have access to the interface for selecting P pattern.



② Selection of Pattern Number

The upper side of the interface is the information of the selected pattern. Press  to hide file folder number. At this moment, the entire registered P pattern will be displayed.

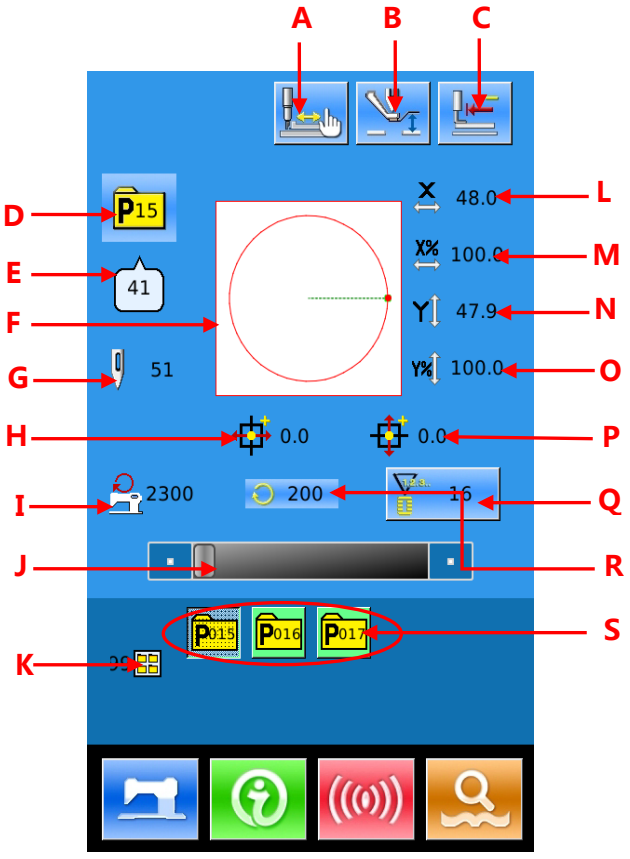


③ Confirm the Pattern Selection

The operation is same to that of the normal pattern selection. Please press  to end the selection.

3.5 P Pattern Sewing

In the interface for inputting P pattern data, user can press  to have access to the Sewing interface (as shown in right).



Function List:

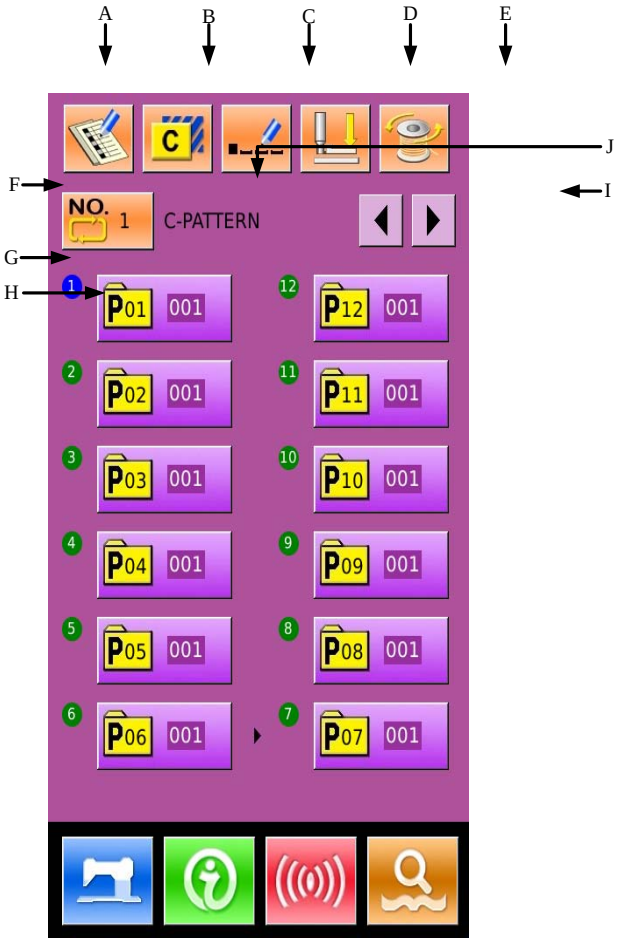
No.	Function	Description
A	Thread-catching Button	Select the thread-catching function effective/ineffective. This is affected by parameter U35.  : Thread-catching Ineffective  : Thread-catching Effective
B	Threading	Press it to lower the intermediate presser.
C	Return to Origin	This button returns the presser to the start sewing point.
D	P Pattern No. Display	Display the number of pattern selected at present
E	Sewing Shape No. Display	Display the number of the normal pattern that is quoted by the current P pattern.
F	Pattern Shape Display	Display the shape of selected pattern.
G	Pattern Stitch Number Display	Display the total number of the selected pattern.
H	X Travel Amount Display	Display the X travel amount of the current pattern
I	Thread Tension Setting	User can have access to the interface for setting thread tension after pressing this button.
J	Sewing Speed Setting	Change the sewing speed.
K	P Pattern File Folder Number Display	Display the file folder number of current P pattern
L	X Actual Size Display	Display the X actual size of the selected pattern.
M	X Scale Rate Setting	Display the X scale rate of the selected pattern.
N	Y Actual Size Display	Display the Y actual size of the selected pattern.
O	Y Scale Rate Setting	Display the Y scale rate of the selected pattern.
P	Y Travel Amount Display	Display the Y travel amount of the current pattern
Q	Counter Setting	Press to select the type of counter and set the value of the counters  : Sewing Counter  : No. of pcs Counter
R	Sewing Speed Display	Display the sewing speed at present.
S	P Pattern Selection	Display the registered P pattern.

4 Operation of Combination Pattern (C Pattern)

4.1 C Pattern Data Input

The combination pattern is called as “C Pattern” for short, which consists of a group of P patterns. In a C pattern, 50 P patterns can be inputted at most. And 50 C patterns can be registered in system at most.

Please refer to the content in [8.5 Change Sewing Type] to have access to the interface for inputting C pattern data (as shown in right).



Function List:

No.	Functions	Descriptions
A	C Pattern Registration	Register a new C pattern.
B	Copy C Pattern	Copy the content of current C pattern, and save it as a new pattern
C	Pattern Naming	14 figures can be inputted at most.
D	Threading	Press it to lower the intermediate presser
E	Winding	Enter winding interface. Press it and  for winding
F	C Pattern Number Selection	The number of the selected pattern is displayed on the button. Press it to have access to the interface of C pattern selection.

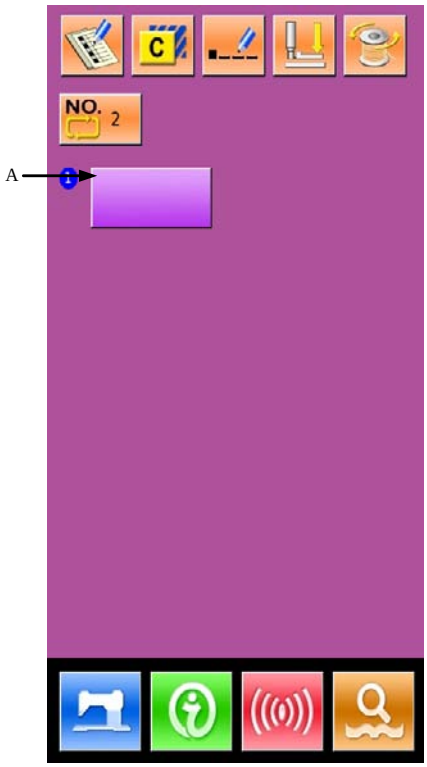
No.	Functions	Descriptions
G	Sewing Sequence Display	Display the sewing sequence of the selected pattern. The one attached the blue number is the initial sewing pattern.
H	C Pattern Shape Selection	Press the button to have access to the C pattern edition interface. User can select a P pattern to input.
I	Page Key	50 shapes can be registered in a C pattern at most. 12 shapes can be displayed in each page.
J	C Pattern Name	Display the name of C pattern.

4.2 C Pattern Edition

① Have Access to C Pattern Edition Interface

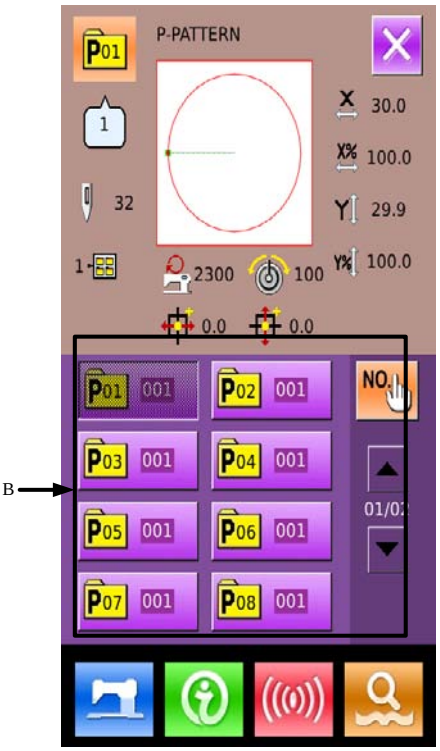
In the interface for inputting C pattern data, user can press button A to have access to the C pattern edition interface.

In the initial status, because no P pattern is registered as the sewing shape, the first shape is displayed as blank.



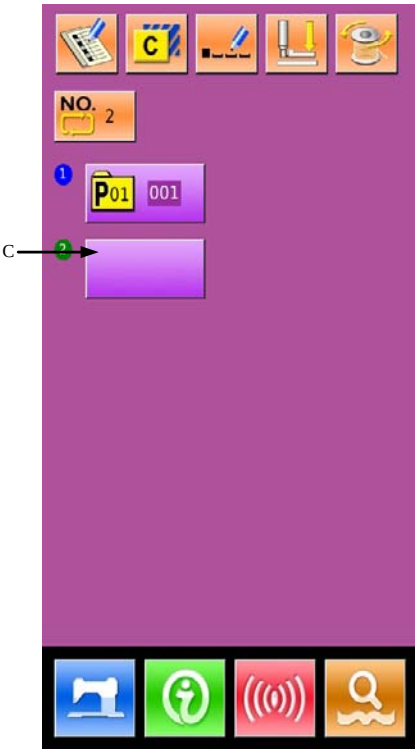
② Select a Shape

The right figure is the interface is C pattern edition. User can select a P pattern (B) which is wanted registering. At last press  to end the selection.



③ Repeat the Registration of the Rest Shapes

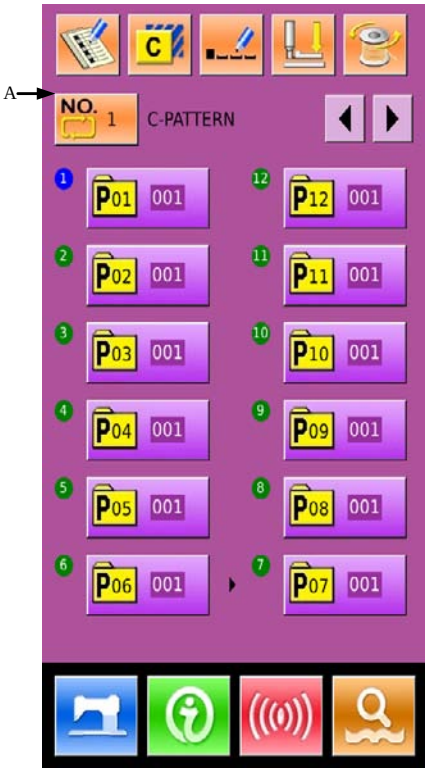
When the first shape is set, the selection key (C) for the second shape is displayed. Repeat the above operation to register the rest shapes.



4.3 C Pattern Selection

① Have Access to Interface for Selecting C Pattern

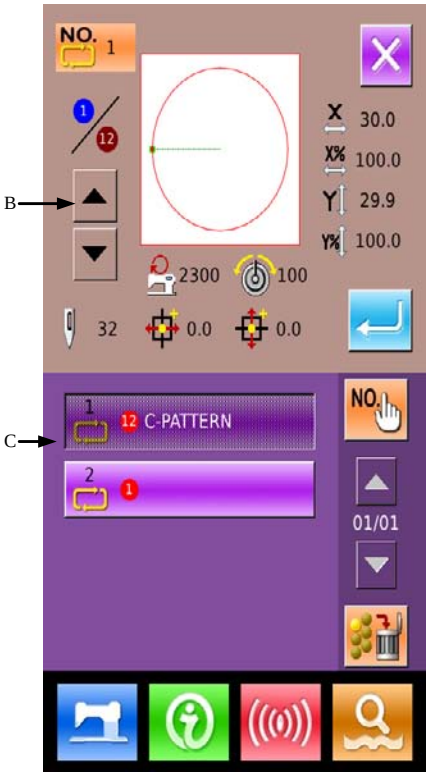
Press the figure A in the right interface to have access to the C pattern selection interface.



② Select the C Pattern Number

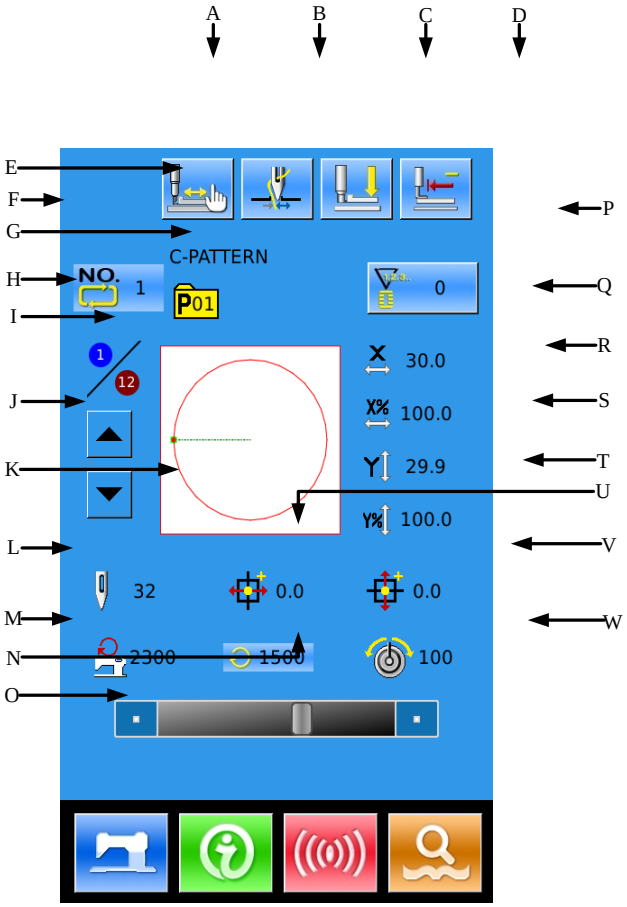
It is the C pattern selection interface at right. After pressing button B, user can orderly change the data of P patterns which are inputted in the current C pattern.

To confirm the selected C pattern number, please press  .



4.4 C Pattern Sewing

In the interface of C pattern data input, press  to have access to the sewing interface (as shown in right).



Function List:

No.	Function	Description
A	Thread-catching Button	Select the thread-catching function effective/ineffective. This is affected by parameter U35.  : Thread-catching Ineffective  : Thread-catching Effective
B	Trial Sewing	Press it to have access to the Trial Sewing interface, where user can confirm the shape of pattern.
C	Threading	Press it to lower the intermediate presser.
D	Return to Origin	This button returns the presser to the start sewing point.
E	C Pattern Name	Display the name of current pattern.

No.	Function	Description
F	C Pattern Number Display	Display the number of the selected pattern.
G	Sewing Shape Number Display	Display the sewing shape number registered under the current C pattern.
H	Sewing Sequence Display	Display sewing sequence number in the current C pattern
I	Total Registration Number Display	Display the total number of shapes registered in this current pattern
J	Sewing Sequence Forward /Backward	The sewing shape can be moved forward/ backward by one.
K	Pattern Shape Display	Display the registered shape that is sewn at present.
L	Pattern Stitch Number Display	Display the stitch number of the current registered sewing shape.
M	Max Speed Limitation Display	Display the Max speed of the current registered sewing shape.
N	Sewing Speed Display	Display the current sewing speed
O	Sewing Speed Setting	Change the sewing speed.
P	Counter Setting	Press to select the type of counter and set the value of the counters.  ：Sewing Counter  ：No. of pcs Counter
Q	X Actual Size Display	Display the X actual size of the registered sewing shape.
R	X Scale Rate Setting	Display the X scale rate of the registered sewing shape.
S	Y Actual Size Display	Display the Y actual size of the registered sewing shape.
T	Y Scale Rate Setting	Display the Y scale rate of the registered sewing shape.
U	X Travel Amount Display	Display the X travel amount of the current registered sewing shape
V	Y Travel Amount Display	Display the Y travel amount of the current registered sewing shape
W	Thread Tension Display	Display the basic value of thread tension.

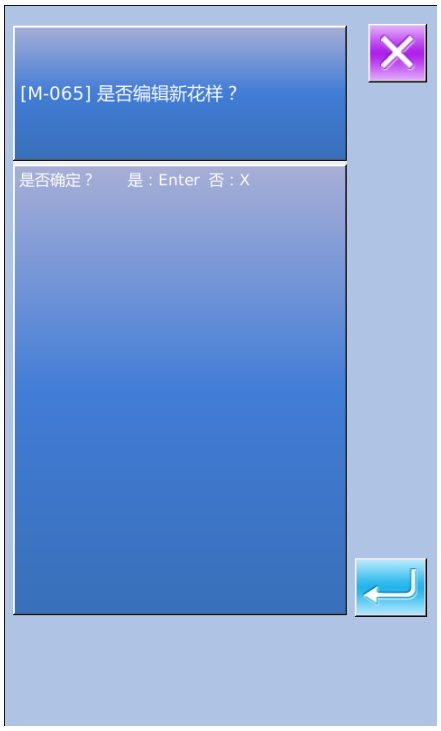
5 Pattern Edition

5.1 Have Acces to the Pattern Edtion Mode

Press  to shift the data input interface and the mode selection interface (shown in right). In the mode selection interface, user can do some detailed settings and editions.

For the detailed operations and setting within the mode selection interface, please refer to [8. Mode& Parameter Setting] .

Press  to have access to the interface for selecting the edit mode or sewing mode, as shown in right

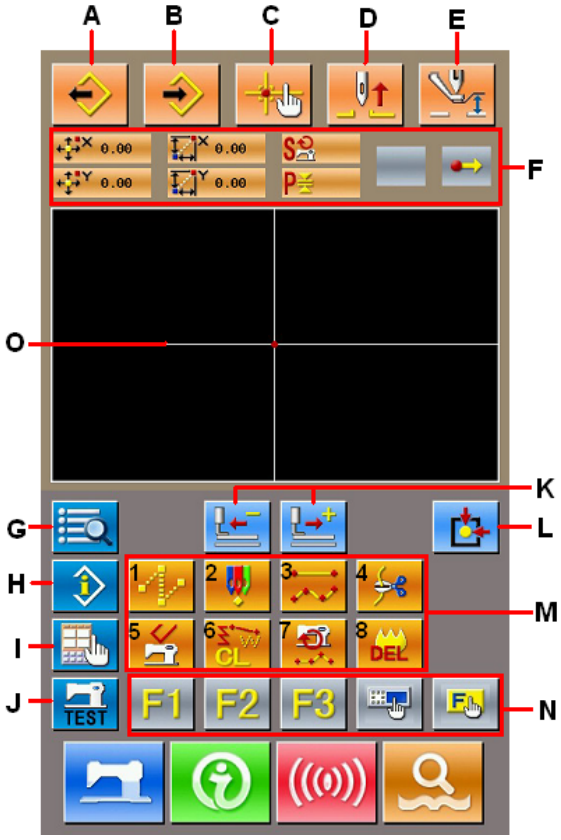


 ：Sewing Mode

 ：Edit Mode

Select  and then press  again, the system will quit from mode selection interface. At this moment, system will ask user whether to enter the pattern edition interface

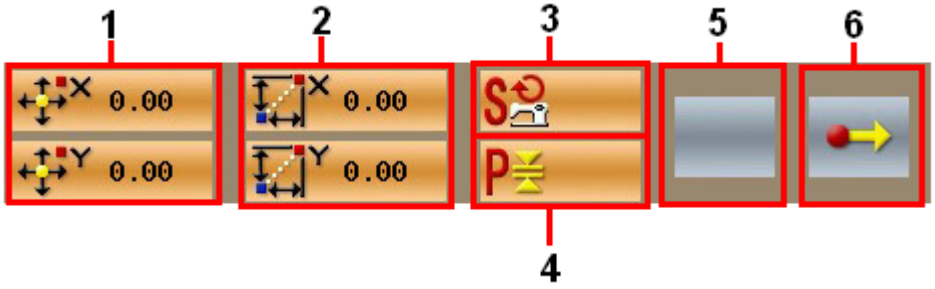
Press  to have access to the pattern edition standard interface, as shown in right:



Function List:

No.	Functions	Descriptions
A	Load Design	Display the interface for loading design
B	Input Design	Display the interface for inputting design
C	Needle Entry Inquiry	Quickly locate the needle entry point; during the pattern edition, user can input the coordinates directly.
D	Needle-lifting	Return the needle to the highest point
E	Intermediate Presser Adjustment	Lift or lower the intermediate presser
F	Current Needle Position Information	This part will show the position information of current needle.
G	Code List	Display the entire available functions on edition, please refer to [Editing Function List]
H	Information Display	Display the detailed information of the pattern edited at present
I	Display Setting	Set wide-angle, display of needle entry point and so on
J	Trial Sewing	Trial sewing on the pattern edited at present

No.	Functions	Descriptions
K	Feeding Forward· Backward	Move one stitch from the current needle position (Forward  ; Backward )
L	Return to Origin	Return the current needle position to the origin
M	Function Buttons	Enable to call the functions on the buttons
		1  : Jump Feed
		2  : Point Sewing
		3  : Normal Sewing
		4  : Thread-trimming
		5  : Release Mechanical Control Order
		6  : Elements Deletion
		7  : Modification on Sewing Speed Range
		8  : Delete Pattern Edited At Present
N	Function Hot-key	User can use Functional Selection· Setting (Functional code 112) to assign the needed functions to each button, thus uses these buttons as hot keys. After the assignment, the figure standing up for that function will be displayed on that key.
O	Pattern Display Area	Display the pattern.

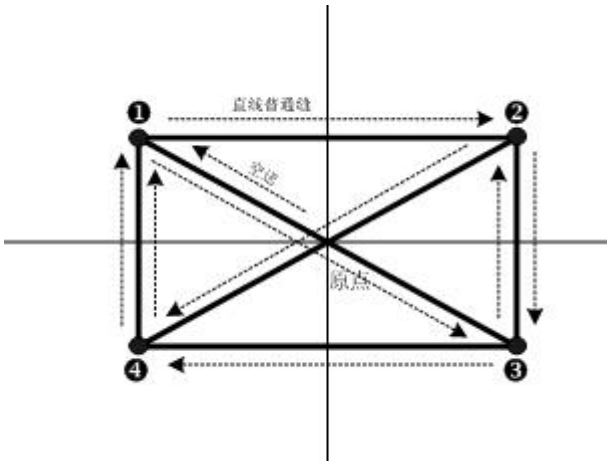


No.	Project	Content
1	Absolute Coordinate	The absolute coordinate of the current needle position
2	Relating Coordinate	The relating coordinate of the current needle position

No.	Project	Content
3	Speed	The sewing speed or jump feed speed of the current point
4	Interval	The length of current element stitch. (If the stitch is scaled, the value before the scaling will be displayed when the value is loaded).
5	Type of Element	Type of present element. For sewing data, the type of element will be displayed (like jump feed, broken line, free curve and so on). For the mechanical orders, the type of the control order will be displayed (like thread-trimming).
6	Type of Needle Entry Position	The types of the needle entry position
		Start of Design: Start point (origin) of the design
		Middle Point of Element: the middle point of the element (neither the top point nor the ending point of the element).
		Top Point: the top point of a broken line.
		End Point of Element: the ending point of the element
		End Point of Pattern: the ending of pattern.

5.2 Pattern Edition

By using the pattern editing functions, user can input the following pattern



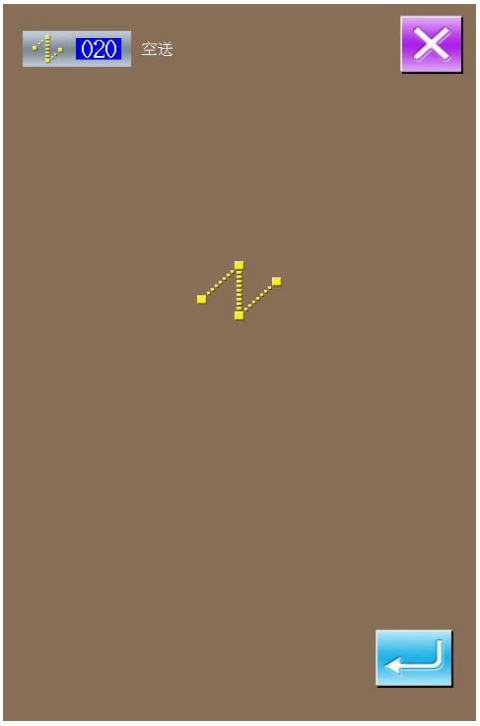
Input Points：

	X (mm)	Y (mm)
❶	-40.00	25.00
❷	40.00	25.00
❸	40.00	-25.00
❹	-40.00	-25.00

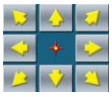
Input order：It is shown as the dotted arrow in the left.

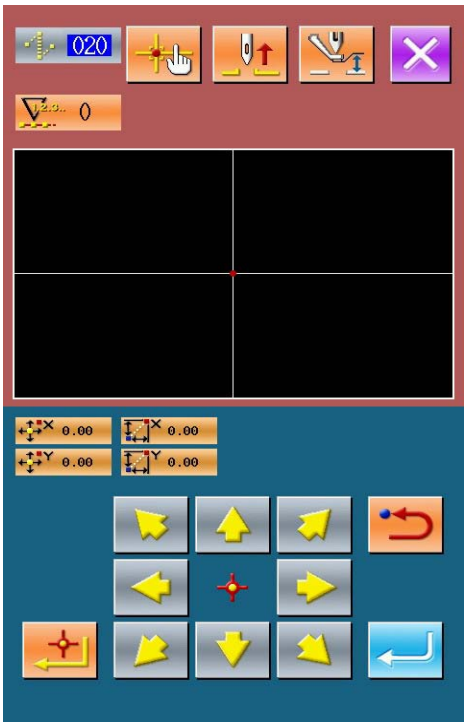
① Input of Jump Feed

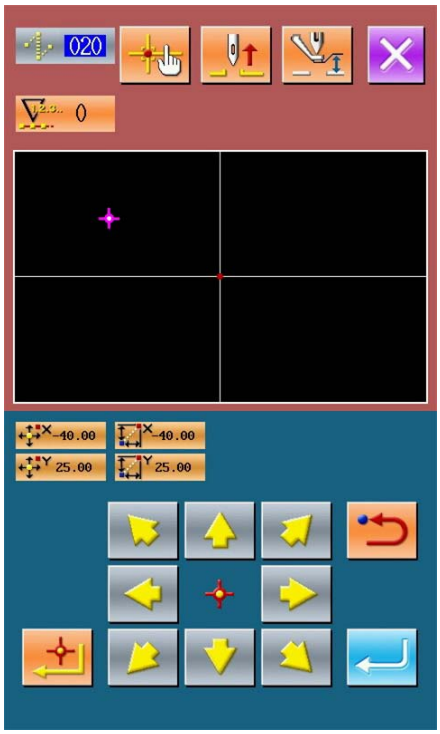
In the standard interface for pattern edition. Press  to display the interface for setting the jump feeding.

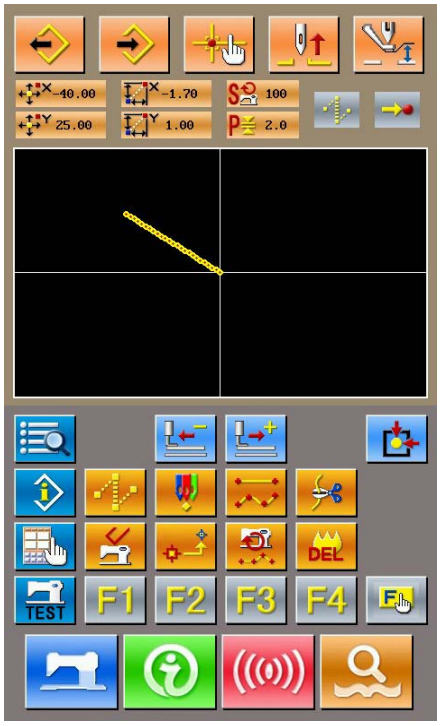


Press  to display the interface for locating the jump feed position;

In the jump feed location interface, user can use  to move icon (needle position) to (-40, 25). Press  for confirmation, and then press  for saving. After that the system will return to the standard interface for pattern edition and display the stitch form of jump feed：

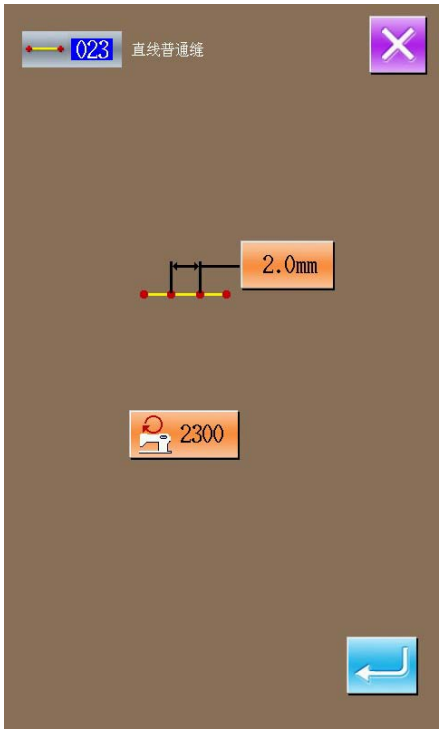






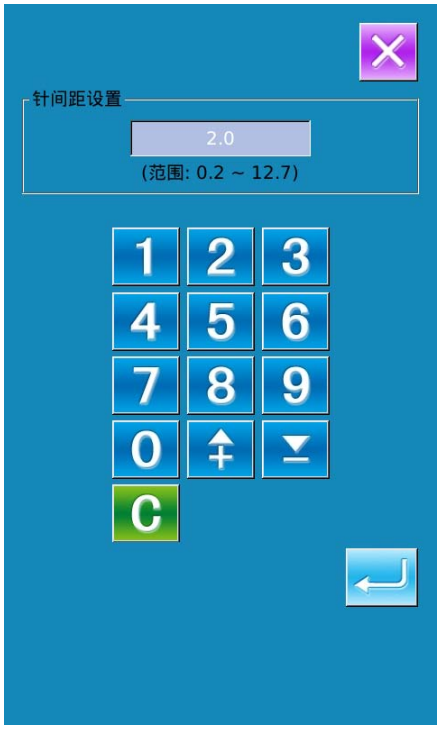
② Input of Linear Normal Sewing

In the “Function Code List”, select the “023 Linear Normal Sewing” and then press  to have access to the interface for setting the linear normal sewing：



In the interface for setting the linear normal sewing, press 

to have access to the interface for setting the stitch length, as shown in right.

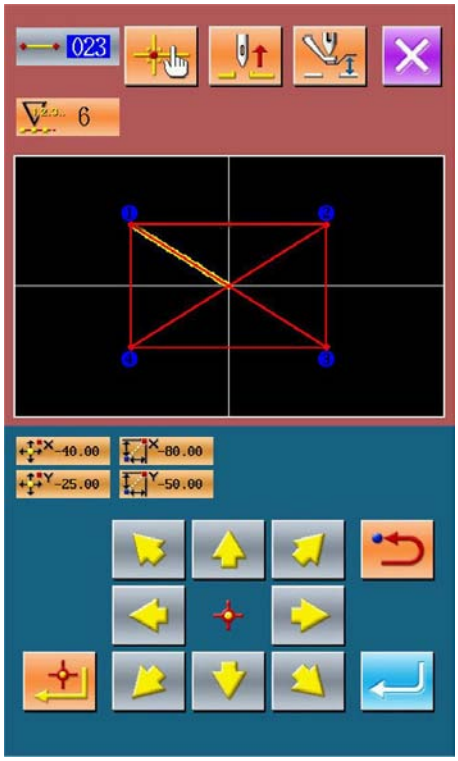


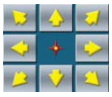
Press 

& 

in sequence, to change the stitch length to “3.0”. Press “Enter” for saving, and system will return to the interface for setting linear normal sewing

After confirming the value on “Sewing Stitch Length Button” is “3.0mm”, user can press 
to have access to the interface for setting the linear normal sewing.

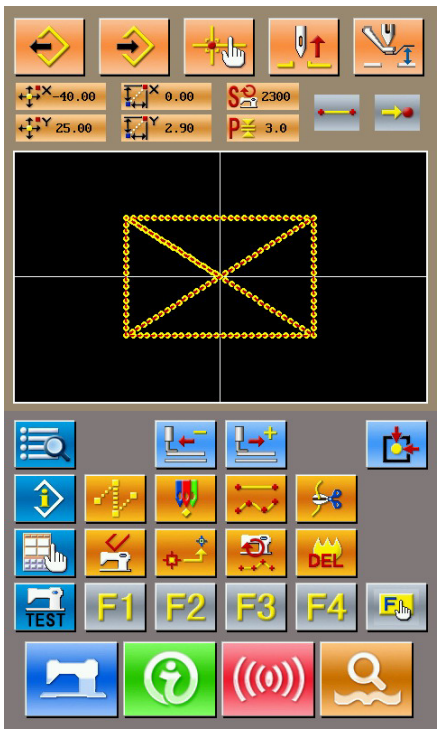


In this interface, press  to move the icon（needle position）from ❶ to ❷, and then press  . Repeat the above operation to move the icon in the order of

❷→❸→❹→❶→❸→❷→❹→❶,

which is shown in right figure

After confirming the pattern, user can press the  to create the pattern data. Then the system will return to the standard interface of the pattern edition and show the shape of pattern



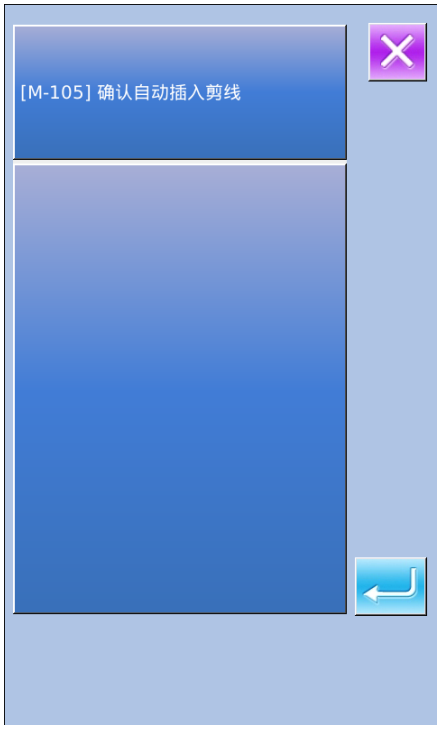
③ Save Pattern

Press  to have access to the interface for saving the pattern, where the edited pattern will be saved, as shown in right.

The system will set the number automatically, the user can also input the wanted number with number keyboard

With  , user can select the storage position of the pattern. User can save the pattern at the storage media on operation panel, or save it at a U disk.

Press  to save the pattern. At the moment, the system will ask the user whether to insert the thread-trimming automatically. The interface at that time is shown as the right picture.



Press  to add the thread-trimming;

Press  to cancel adding the thread-trimming

After the operation, the system will return to the standard interface of pattern edition.

For the specific operations and descriptions on pattern edition, please refer to "SP510 Pattern-making Operation Manual"

5.3 Quit Pattern Edition Mode

In the standard interface for pattern edition, press  to have access to the mode selection interface, as shown in right.

Press  to shift between the sewing mode and edition mode:

 : Edition Mode

 : Sewing Mode

Press  again to quit the interface for mode selection. At this time the system will ask user whether to return to the sewing mode.

Press  to return to the sewing mode from the pattern edition mode.

6 Information Function

Information Functions contain the following three functions:

1）The oil replacement (grease-up) time, needle replacement time, cleaning time, etc. can be specified and the warning notice can be performed after the lapse of the specified time。

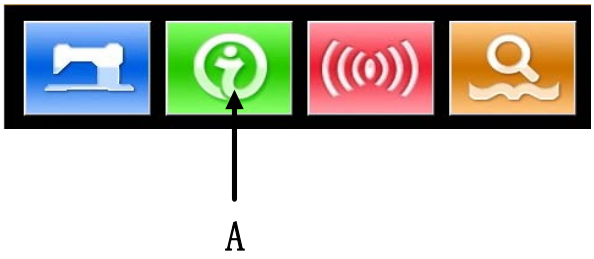
2）Speed can be checked at a glance and the target achieving consciousness as a line or group is increased as well by the function to display the target output and the actual output.

3）Display the threading figure.

6.1 Information for Maintenance & Repair

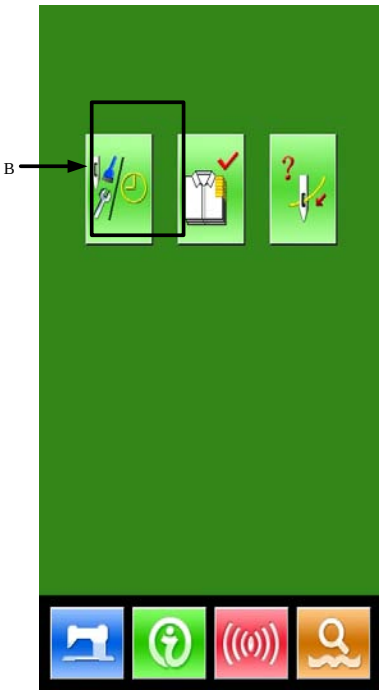
① Display of Information Interface

In data input interface, press the Information Key (A) to activate the information interface.



② Display of Maintenance & Repair Interface

Please press the button  (B) to call the maintenance & repair interface



In the interface for maintenance and repair, the following three items are displayed.

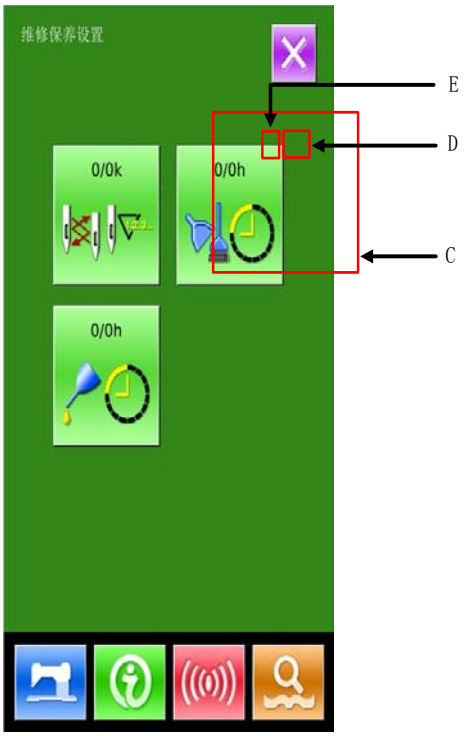
 ：Needle replacement (thousand stitches)

 ：Cleaning time(hour)

 ：Oil replacement time (hour)

The displays of the items are at button C. The interval of repair (maintenance) is at D; the left time for replacement is at E.

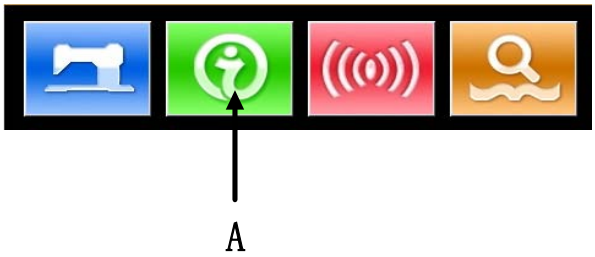
Additionally, user can clear the left time for replacement.



6.2 Maintenance & Repair Time Input

①Display of Information Interface（Levels of Maintenance）

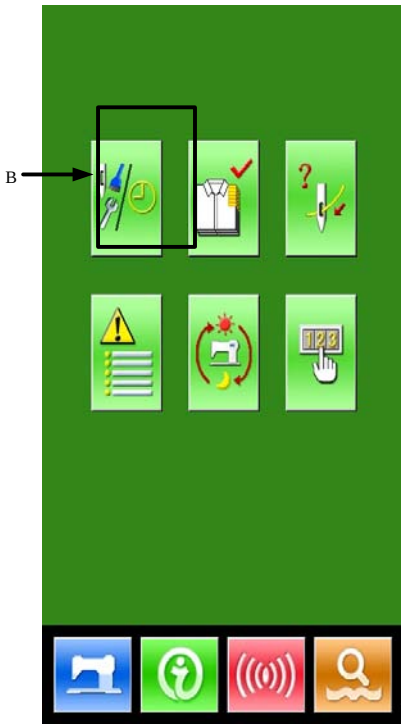
In the interface of data input, hold the Information Key (A) for 3 seconds to activate the interface of information (Maintenance level).



In that interface, there are six keys

② Display of Interface for Maintenance & Repair

Please press the Maintenance & Repair Information Key  （B）



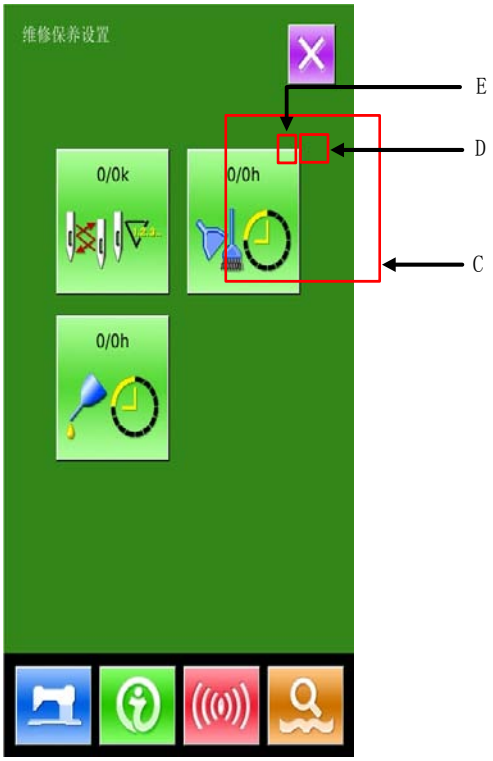
※ The descriptions about the three following buttons on the down part of this interface:

 ：Alarm Record

 ：Running Records

 ：Periodical Password

In the interface of maintenance and repair information, the system displays the content same to that on the ordinary maintenance and repair interface. Press the Item Button C (for changing the repair and maintenance time) to activate the relating input interface.

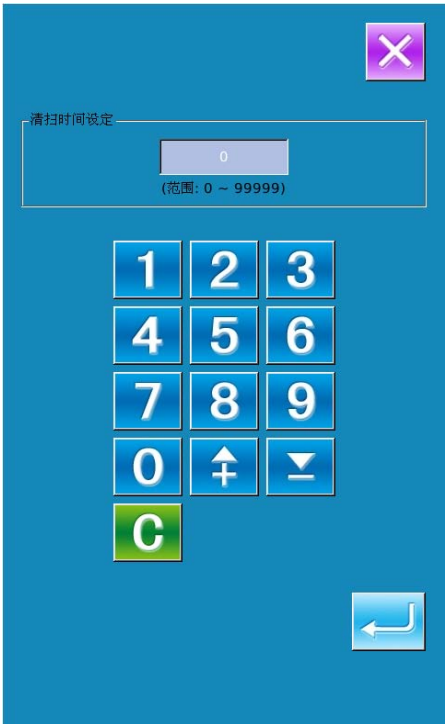


For an example, press  to set the cleaning time.

③ Set Item for Maintenance & Repair

If the value of this item is set at 0, the function for maintenance and repair is stopped.

Use the number keyboard to input the set value of this item, press  to confirm the input.



6.3 Alarm Release

When it comes to the pointed time for maintenance or repair, the system will activate the prompt interface. If user wants to clear the maintenance and repair time, please press Enter. Before the clearance of the maintenance and repair time, the information prompt interface will be displayed after each one sewing task.

The following are the information prompt code for each item:

•Needle Replacement：M052

•Clean Time：M053

•Oil Replacement Time：M054

6.4 Production Control

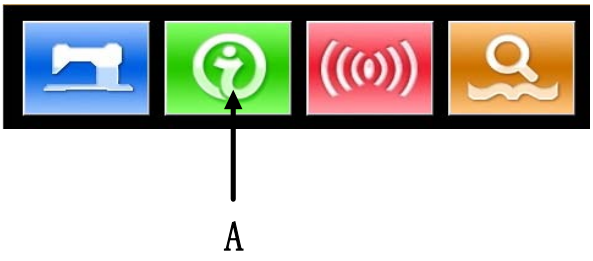
In the interface of production control, the system will be able to display the amount of products from the beginning to now and the target producing amount. The two methods for displaying the interface of production control are shown at below：

- Via Information Interface
- Via Sewing Interface

6.4.1 Via Information Interface

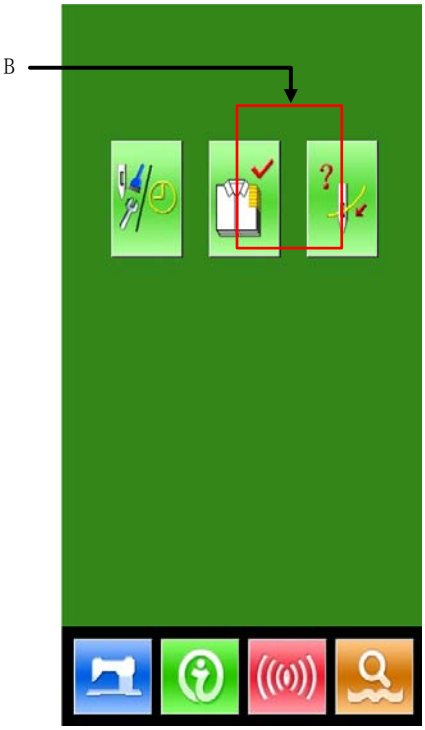
①Display of Information Interface

In the interface of data input, please press the information key (A) to activate the interface of information.



② Display of Production Control Interface

Press the key (B) in the interface of information to activate the production control interface (as shown in right).



There are five items displayed on the interface of production control.

A：Existing Target Value

According to the pitch time, the target amount of sewing up to now is displayed automatically.

B：Actual Result Value

Automatically display the amount of pieces sewn

C：Final Target Value

Set the final target amount of production

D：Pitch Time of Target

Set the pitch time (Second) among each working process

E：Unit Interval of Actual

Set the time for completing one process in actual

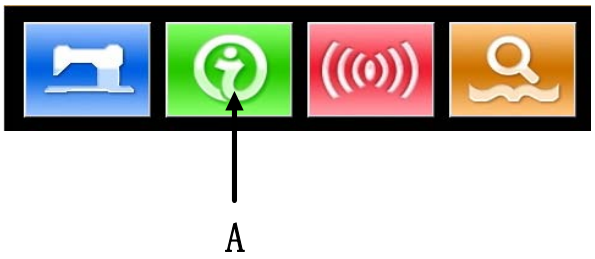
6.4.2 Via Sewing Interface

①Display of Sewing Interface

After user presses  in the data input interface, the sewing interface is displayed.

② Display of Production Control Interface

Press Information Key (A) in the sewing interface to activate the production control interface.

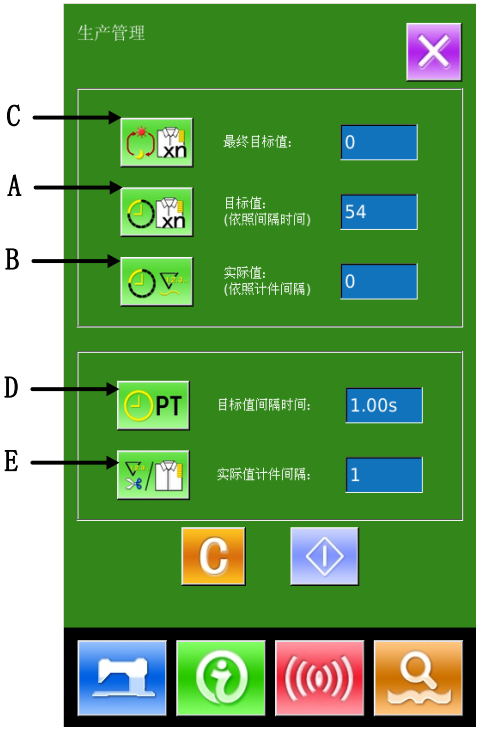


The displayed content and the functions are same to the content at above section

6.5 Setting on Production Control

①Display of Production Control Interface

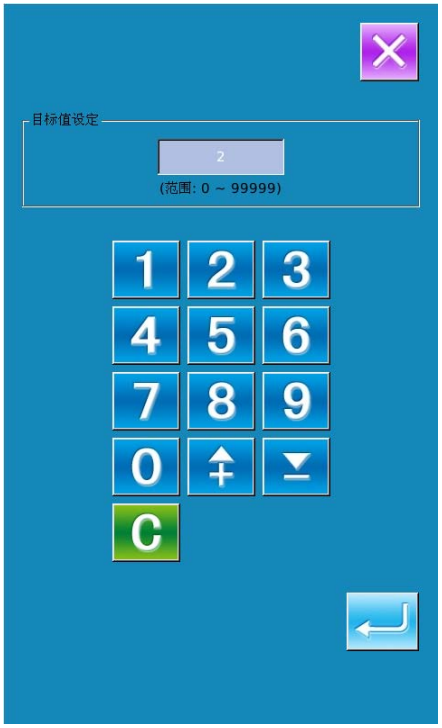
Please refer to the Chapter 6.4 to have access to the interface of production control.



② Input Final Target Value

At first, please input the number of the production target pieces to which the sewing is performed from now on. Press final target value key  (C) to activate the interface of final value input.

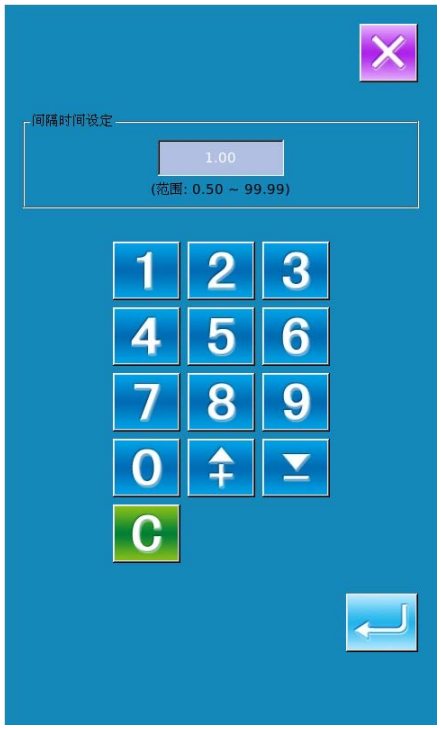
After the input of value, please press  for confirmation.



③ Input Pitch Time of Target。

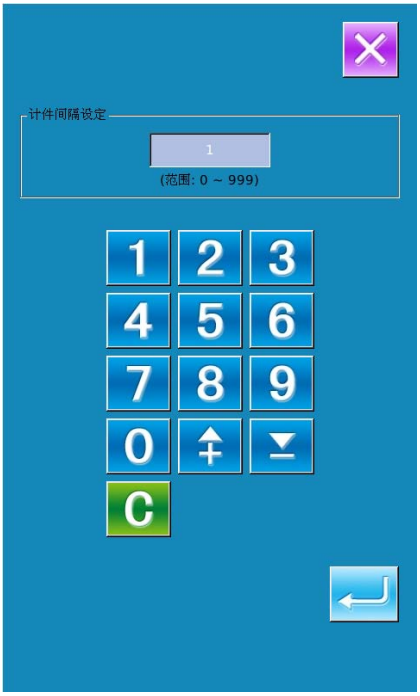
Then, please input the pitch time at each process. Press the pitch time key  (D) at previous page to activate the interface for inputting the pitch time.

Input the desired figures. After the input, please press  to confirm.



④ Input Unit Interval of Target

Then please input the average times interval of piece work. Press the Unit Interval of Target Key  (E) in previous page to activate the interface for inputting



⑤ Start to Count Amount of Production

Press  (I) to start counting the number of production amount, the [Final Target Value], [Existing Target Value] and [Actual Result Value] will turns to dark.

Final Target Value：Can be used as the time reference

Existing Target Value：The target value adds 1 after each time pitch set [Pitch Time of Target]

Actual Result Value：According to the value set at [Unit Interval of Actual] the system will start count the actual value by adding 1 at finishing each piece

By setting the Target Value and the Actual Result Value, user can find out the change of productivity.

⑥ Stop Counting

In the status of counting, you can see the  displayed on the screen. Press  to stop counting. After stop, the Counting Key  will take the position of  . If user wants to continue counting, please press  . Without pressing  , the value will be kept.

⑦ Clear the Data in Counter

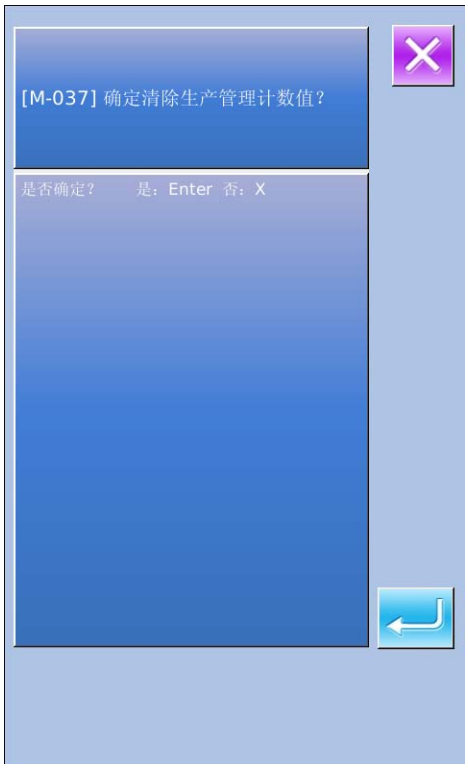
For clearing the value of the counter, the user should stop the counter at first and then press C.

The values of  and  can be cleared both.

(Reference: the clear key can only be displayed when the counter is stopped.)

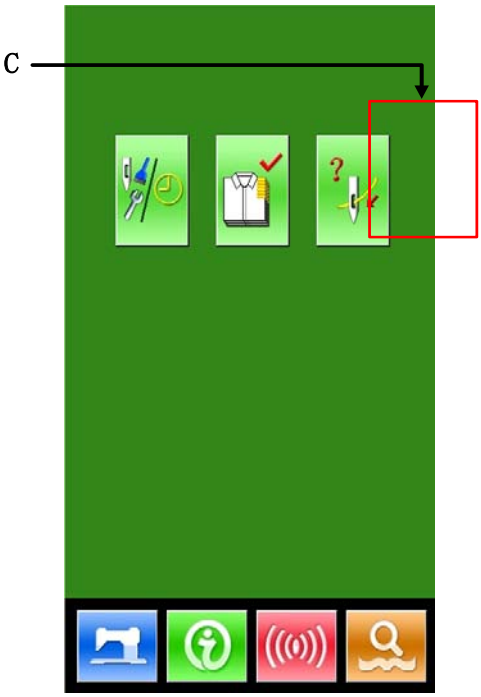
After pressing C, the interface for confirming clearance is activated.

In the interface for confirming clearance, user can press  to confirm the clearance.

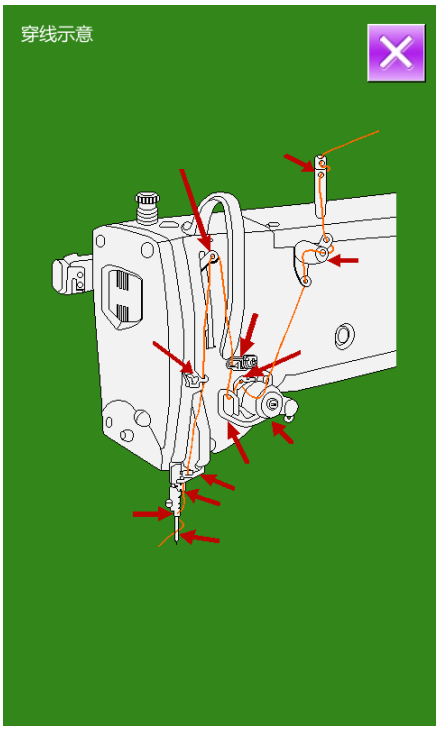


6.6 Display of Threading Figure

In the interface of information, press threading key  (C) to activate the threading figure.



User can take reference when threading



6.7 Alarm Record

At Maintenance Level, press  to enter the alarm record interface (as shown in right). The interface displays the information of the fault occuring at the system. The smaller number means the later occurance.

Additionally, system also records the production value at each alarm.

User can use  or  to turn the page, so as to check more alarm information.

Press  to clear all the fault record.

6.8 Runnning Records

In the interface of maintenance level, user can press  to inquire the running information of machine.

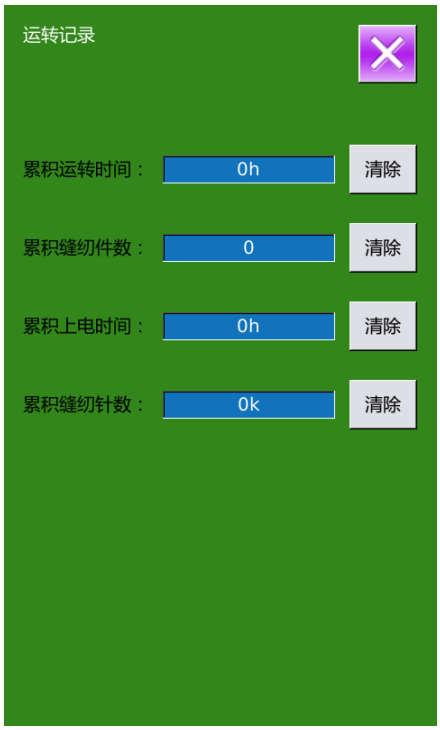
Total Running Time：accumulated running times (hour)

Total Number: accumulated number of sewn pieces

Total Power-on Time: accumulated time of power-on（hour）

Total Sewing Stitches: accumulated number of stitch (1000 stitches as a unit).

Press “Clear” to clear the record value

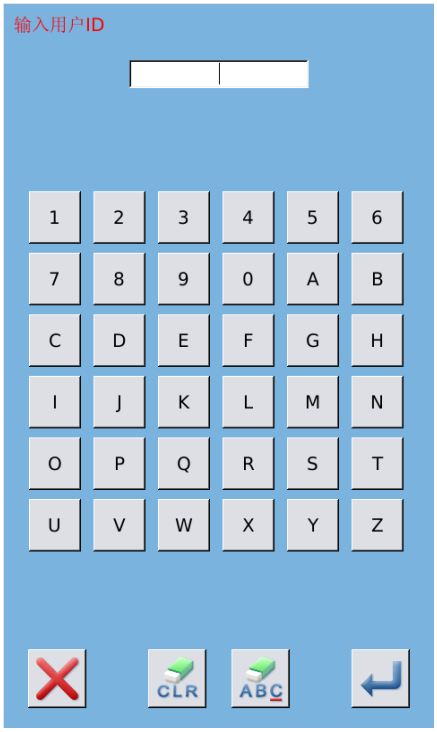


6.9 Setting of Periodical Password

1) **In maintenance level, Press**  **to set periodical password**

In this interface, the system will ask user to input the User ID. Input the right manufacturer ID to enter the password management mode, where user can set and manage the periodical passwords.

- ◆ At most ten periodical passwords with different activation dates can be set
- ● The system will display the information of passwords set by manufacturer.



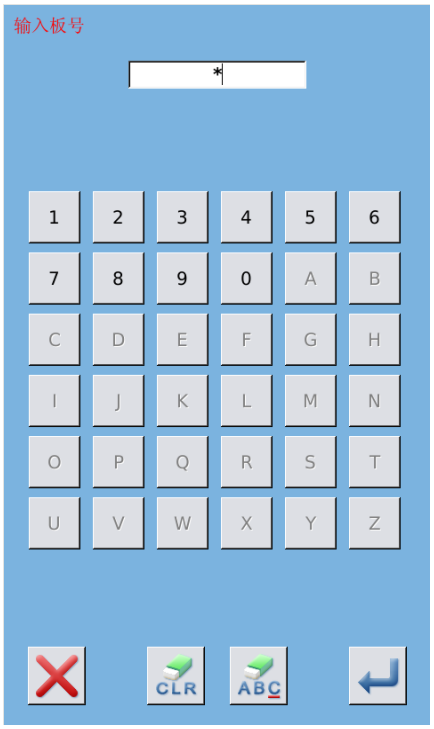
2) Input the Correct Factory ID to enter the password setting interface

Before setting the password, user has to set board number and system clock

3) Input Board Number

Press【Board Number】 to enter the board number input interface. Input the board number and press  to finish the input

※ The board is a four-figure number, from 0~9999



4) Input System Clock

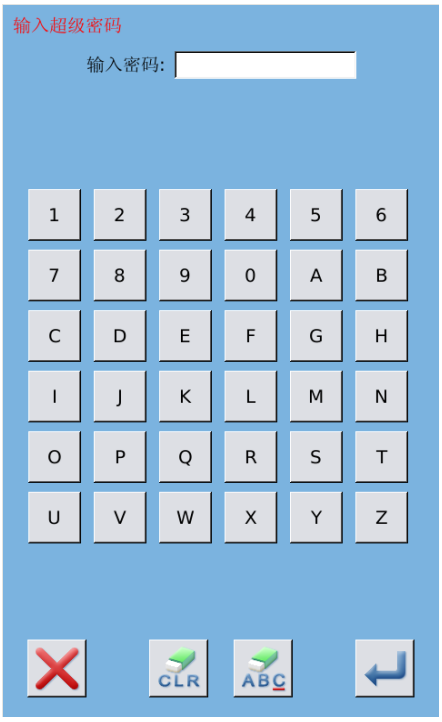
Press【Clock】 to enter the interface for setting the system clock. And set the time.

5) Input the super password

Press the【Super Password】 to enter the interface for setting super password

※ **At most, nine-figures super passwords can be input**

※ **At the password confirmation, make sure the two input passwords are same**



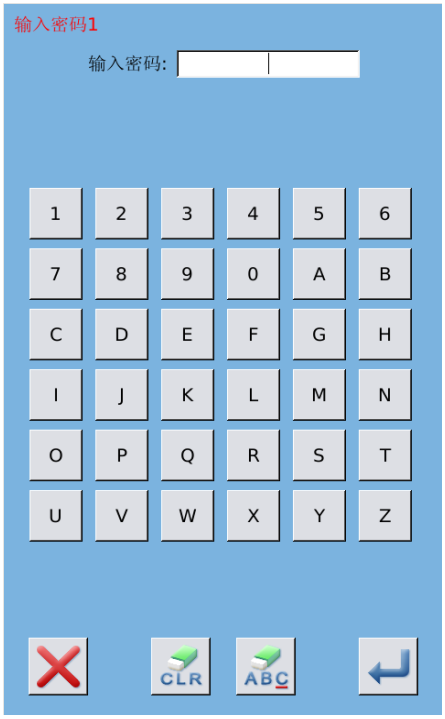
6) Input periodical password

Press 【Password-1】 to enter the first password date, where user can input the first date for activation. After selecting the proper date, user can press  for confirmation.

Then enter the password setting interface to input the password.

※ **The date should not be earlier than the system date**

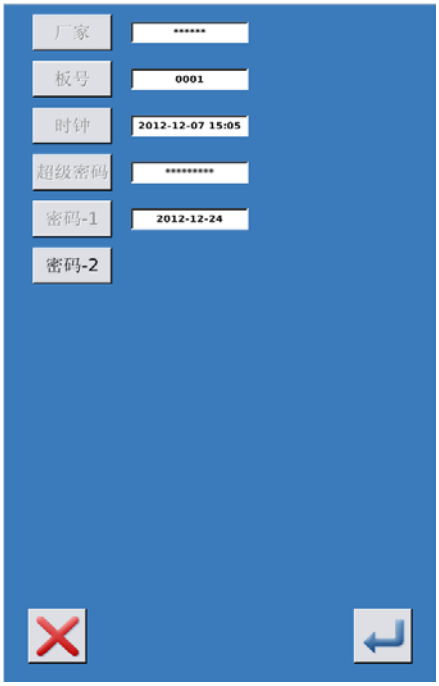
※ **At the password confirmation, make sure the two input passwords are same**



7) Input other periodical passwords

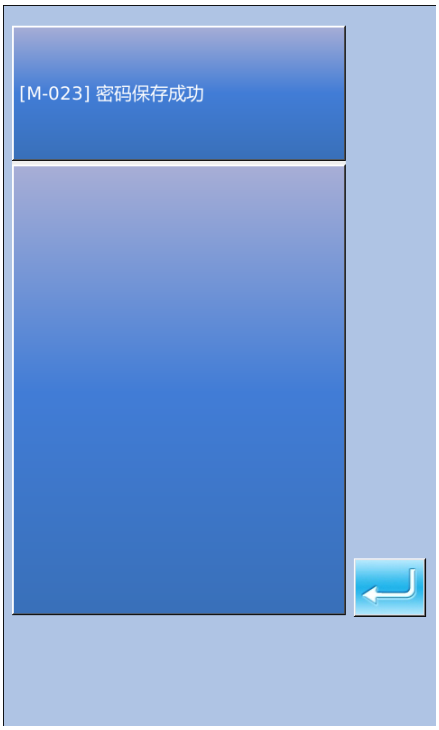
The setting of other periodical password is same to that in step ⑦. Please take the reference to that

※ **The next activation date shall be later than the previous date.**



8) Save Password

After inputting the password, please press  to save it. After the password is saved, the system will display【Save the password successfully】, as shown in right figure.



9) Clear Password before Activation

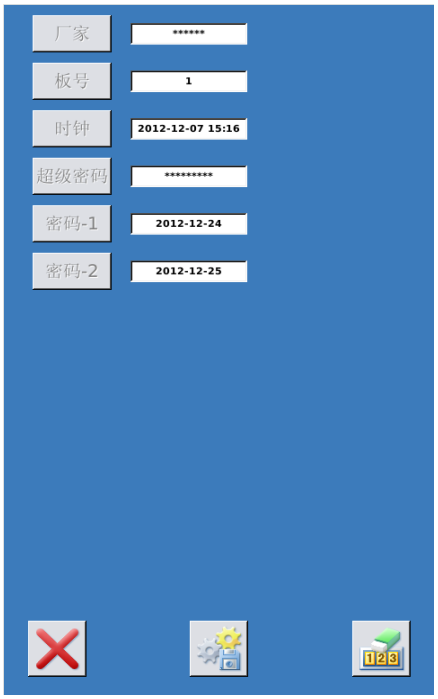
It is to clear the passwords before its activation.

A、The method for entering the password interface is same to that of the password setting

B、Input the right factory ID to activate the right interface.

C、The system will display current clock and the activation dates

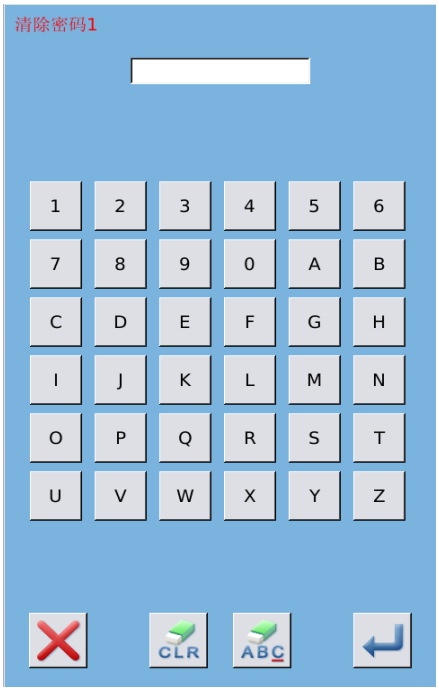
D、Press  to delete the password orderly



Input the right periodical password to clear the current password. If the super password is input, all passwords will be cleared;

After the deletion of the password, the date of that password will be displayed in red.

If all the passwords are cleared, the system will automatically quit to the main interface of information.



10) Clear Password at Activation

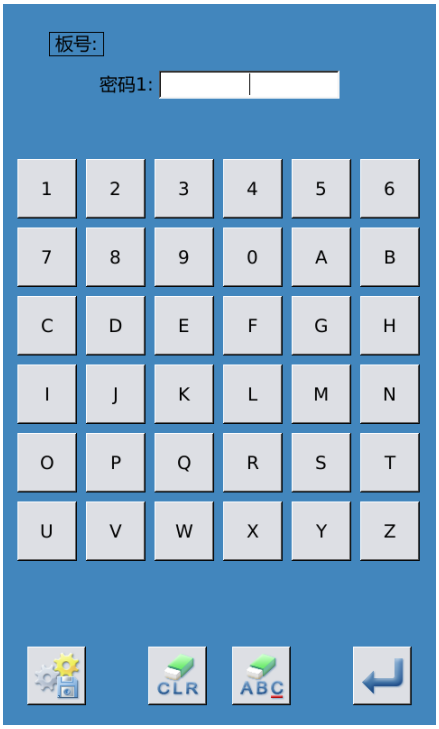
If the system has password and that password is still effective, it will be activated at the activation day.

If user wants to use the machine he should input the right password.

A、The effective passwords include current password and super password

B、If the current password is input, the current password will be deleted. After user clears the current password, if it is the last password in machine, no more activation of password will happen in future.

C、If the super password is input, all the periodical passwords will be deleted.



7 Communication Functions

At Communication, user can perform the following functions:

- Download the sewing data made at other sewing machines or produced by the pattern-designing software to the sewing machine；
- Load sewing data to U disk or computer
- Load parameters from U disk
- Input the parameters within the operation panel to U disk
- Update the software within the operation panel

7.1 About the Available Data

The available data is sewn at below, as well as the data type:

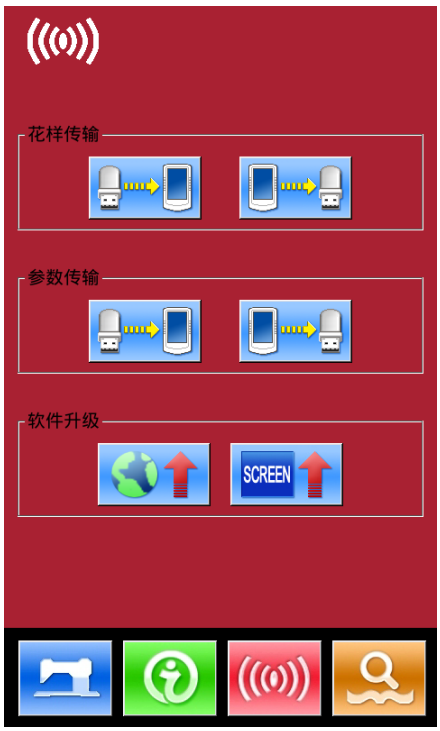
Data Type	Standard Type
VDT	[0-9][0-9][1-9].vdt
DXF	[0-9][0-9][1-9].dxf
DST/DSB	[0-9][0-9][1-9].dst/ [0-9][0-9][1-9].dsb
B/BA	[0-9][0-9][1-9].(1-599)/ [0-9][0-9][1-9].(600-999)
PAT	[0-9][0-9][1-9].pat

When saving data to the U disk, user needs save it to the DH_PAT folder. Otherwise, the file is unable to be read.

7.2 Operations

① Display the Communication Interface

In the data input interface, press  to display the communication interface.



② Select the relating operations

The following three kinds of functions can be selected in this interface:

- Pattern Transfer
- Parameter Transfer
- Software Update

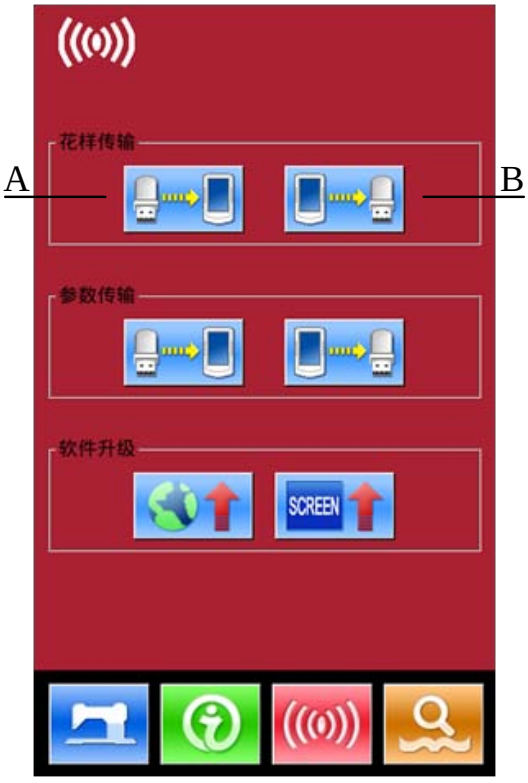
Click the corresponding figure to perform the operations.

③ Press  to quit the Communication

7.3 Pattern Transfer

① Display the Communication Interface

A: Input patterns from U Disk to Operation Panel
B: Output patterns from Operation Panel to U Disk



※ **When inputting patterns from U disk, user has to save the pattern into the DH_PAT in the U disk.**

※ **When outputting patterns from operation panel, user has to save the pattern into the DH_PAT in the U disk**

Naming Method of Patterns within U Disk:

When inputting patterns from U disk, user needs follow the naming rule at below:：

File Name：3 figures，001~999

Example：

Right Names： 100.vdt、102.VDT

Other naming methods are wrong, which can not be recognized by machine

In default condition, the file name is the storage position after the file is copied to operation panel.

7.3.1 Input Pattern from U Disk

Press  （A） to enter the interface for inputting pattern from U disk to panel

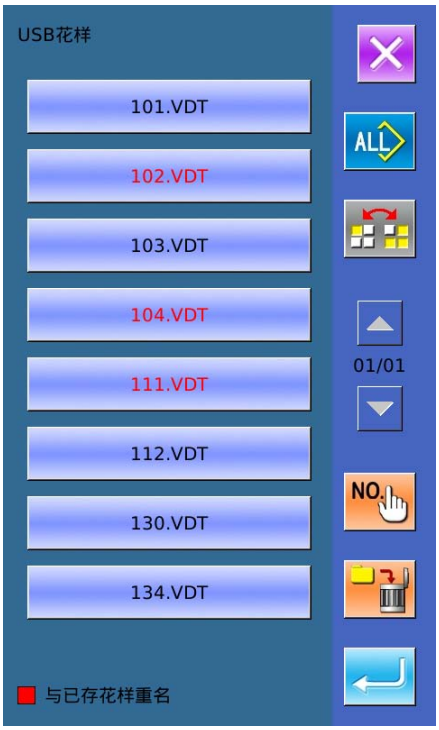
：Select All


：Contrary Selection

：Input Saved Number

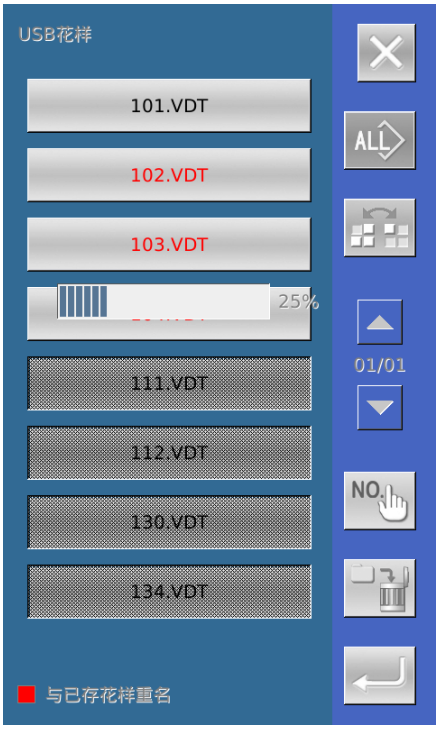
（Available at selecting one pattern）


：Delete Pattern



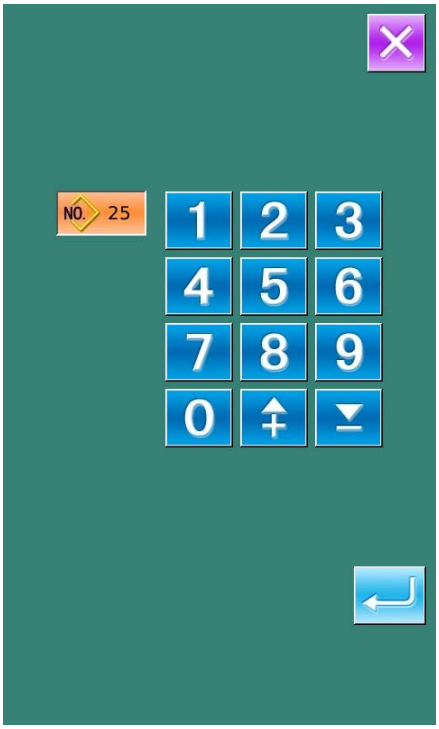
Press  to finish pattern input. At this moment, the saved position in panel is same as the number of the selected pattern.

Note： the saved pattern can not be replaced.



The pattern with red name can not be input, because its name is same to the existing pattern with the panel. User has to input number manually.

Press  to enter the number input interface. The default number is the current empty number. User can also input number manually. Press ENTER to finish the operation.



Note：For the patterns with same name, user has to input it one by one. At selecting several patterns, user can not use  **key.**

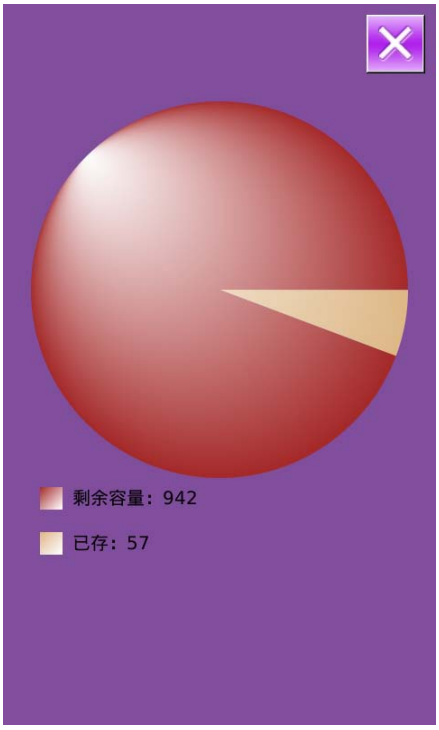
7.3.2 Output Pattern to U Disk

Press  (B) to enter the interface for outputting pattern to U disk.

Select the number and press  to finish the operation.

User can also delete patterns in batch at current interface

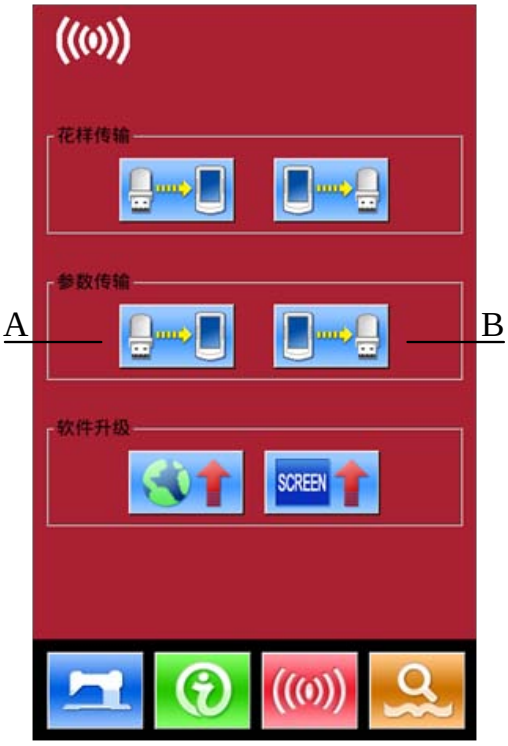
In this interface, press  to display the free room of the memory



7.4 Parameter Transfer

① **Display the Communication Interface**

A: Input parameters from U Disk to Operation Panel
B: Output parameters from Operation Panel to U Disk



※ **When inputting patterns from U disk, user has to save the parameters into the DH_PARA in the U disk with name ukParam.**

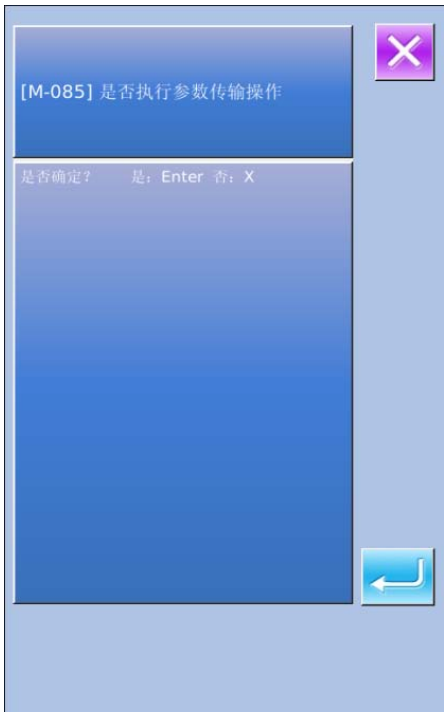
※ **When outputting patterns from operation panel, user has to save the parameters into the DH_PARA in the U disk with name ukParam.**

※ **The parameter file is the binary file, which is operated on the control panel. User can not change that file manually, or the file may be damaged**

② **Press Button A to Input Parameters from U Disk to Operation Panel**

A、Press  to input the parameters and quit

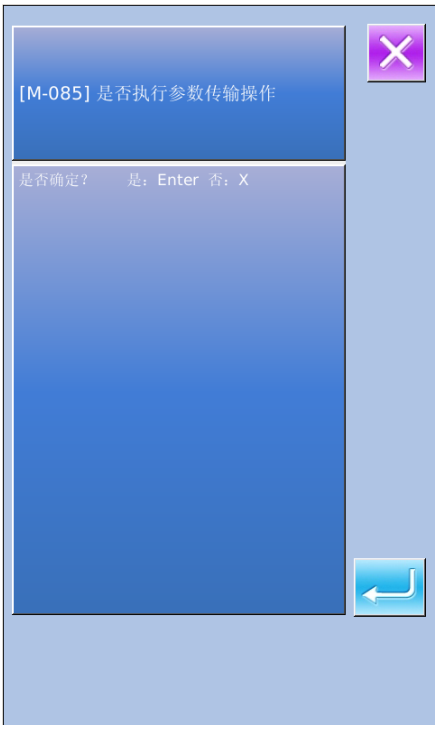
B、Press  to quit directly



③ **Press Button B to Output Parameters to Operation Panel**

A、Press  to output parameters from operation panel to U disk and quit

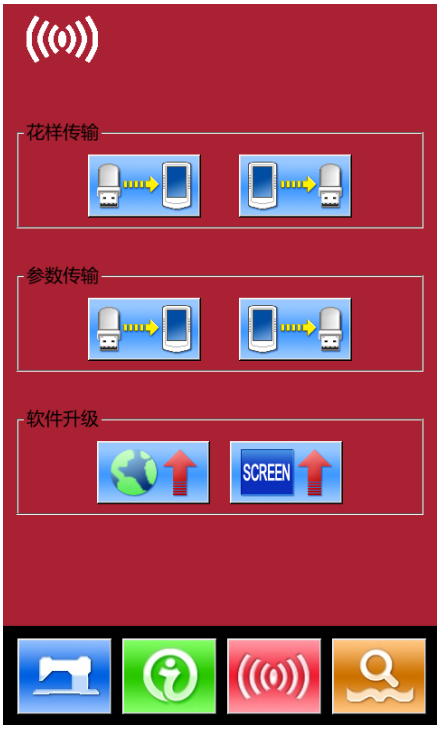
B、Press  to quit directly



7.5 Software Update

1） Display the Interface

In Communication interface, press  to enter Software Update Interface.



2） Update Selection

The software update contains：

- Operation Panel Software
- Icon
- Font
- Power-on Screen

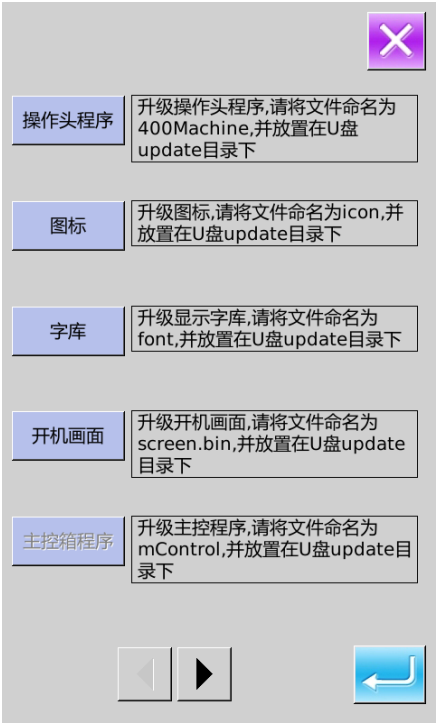
Press  and  to turn the page

A、Press  to finish the selected update and quit

B、press  to quit directly

C、User can select several items for update at same time. The system will perform the update according to the order

D、After the update, please restart the machine.

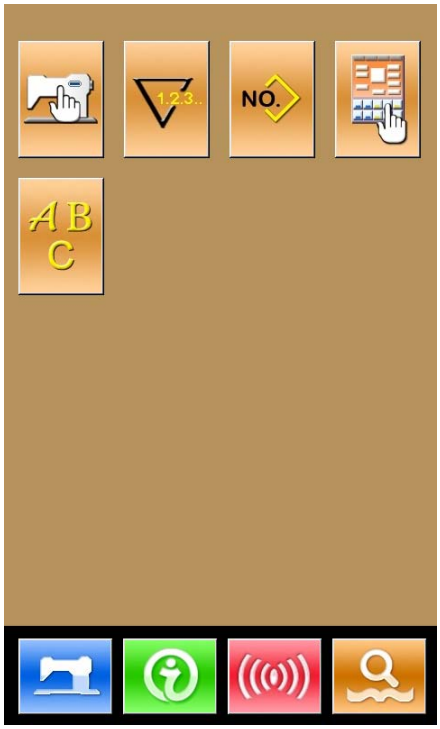


8 Mode & Parameter Setting

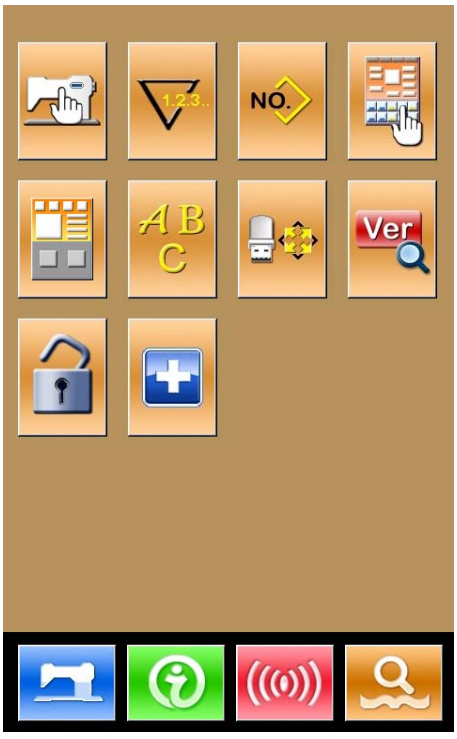
8.1 Have Access to Mode and Parameter Setting

Press  to shift between the data input interface and the mode interface (as shown in right), where the detailed settings and editions can be performed..

Hold  for 3 second to have access to Mode Setting Level 2 status; hold that key for 6 second to have access to Mode Setting Level 3 status.



Mode Setting Level 1

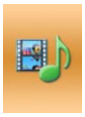


Mode Setting Level 2

Mode Setting Level 3

Function List:

No.	Figure	Functions	Description
1		Level 1 Parameter Setting	Set parameters in level 1 (U)
2		Counter Setting	Set type of counter, counting value and default value
3		Sewing Type Setting	Shift between the normal pattern sewing and combination pattern sewing.
4		Pattern Edition	Have access to pattern edition status
5		Simplified Interface Key	Enter the simplified interface
6		Letter Sewing Edition	Set letter sewing
7		Initialization	Initialize the system
8		Software Version Inquiry	Inquire the versions of the current panel
9		Keyboard Lock	Lock some functions that can be set.
10		Test Mode	Set the mechanical devices and LCD
11		Parameter Back-up	Backup or recover the current parameters
12		Activate Parameter Edition	Activate or deactivate the edition of parameters
13		Level 2 Parameters Setting	Set the Level 2 (K) parameters

No.	Figure	Functions	Description
13		Play Video	Play the video

8.2 Level 1 Parameters Setting

① Set Parameter

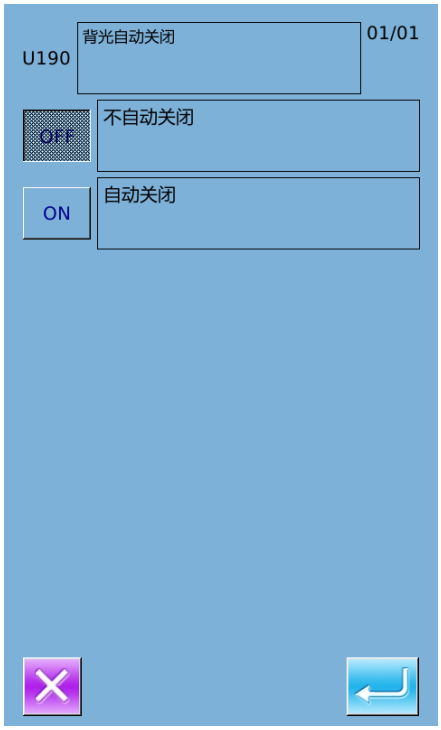
Select  to enter the interface of Level 1 parameter setting (shown as the figure at right).

Press  to quit the setting interface. When some parameters are changed, the system will display the “Modified” in the parameter setting interface.

Select the parameter for changing; Then the system will enter the setting status. The parameters are separated as “Data Input Type” and “Selection Type”. Please refer to the example at below:

Select U191 and enter the interface below (Input)

Select U190 and enter the interface below (Selection)



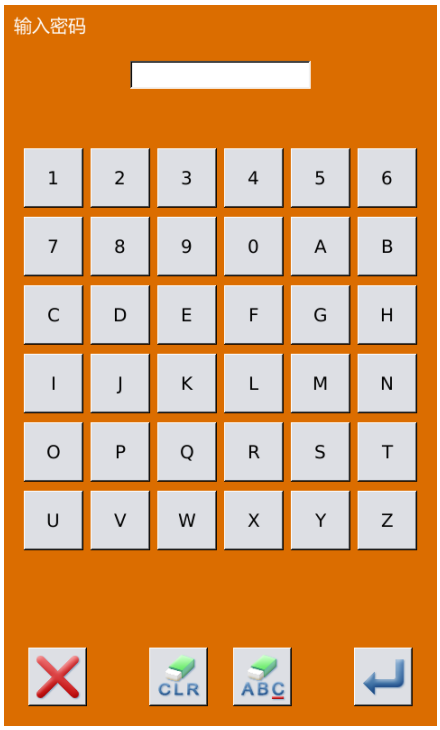
② Parameter Encryption

Press “Encryption” to enter the password input interface.

※ Press CLR to clear all the content

※ Press ABC to erase one figure at each pressing

※ the default password is the manufacturer ID



Input the right password to enter the interface for parameter encryption Select the parameter for encryption.

※ Press【Select All】to attach password to all the parameters

※ Press【Reverse】 to select parameter for encryption in reverse way

※ Press【Change】to change the password, the default is the manufacturer ID

Press  to quit the encrypting function

③ Check the changed parameter

When parameter is changed, the system will display “Modified” key at parameter setting interface.

In the parameter setting interface, press【Modified】 to check the changed parameters.

A、 At first, the system will ask user to input the password. After inputting the right password, user can enter the interface for inquiring changed parameters

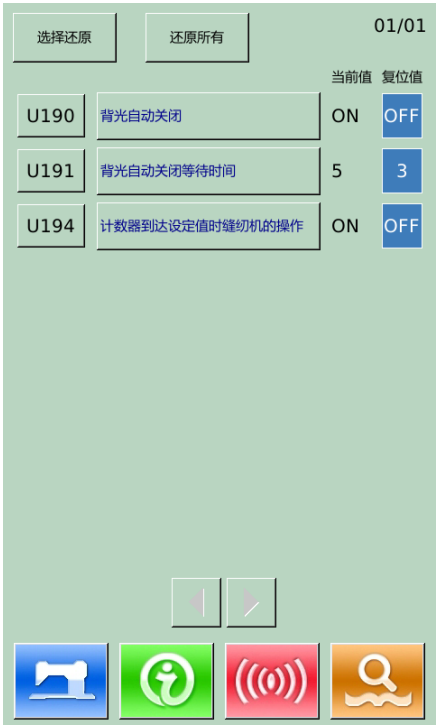
B、Under the interface of changed parameter inquiry, user can find the list containing all the changed parameters. In that interface:

※ Press【All Rest】will restore all the changed parameters to their default values

※ Click Parameter Name, like【 Back Light Auto Off】 and then press 【Select Rest.】 to restore this parameter to the default value. User can select several parameters’ name in the interface.

※ Press Parameter Number, like【U190】 to enter the parameter setting interface, where user can reset the parameter value.

※ Press  to quit the interface



8.2.1 List of Level 1 Parameters

No.	Parameter	Range	Unit	Default value
U01	Max Sewing Speed	200~2800	100rpm	2700rpm
U02	Start Speed of 1st Stitch (with thread-catching function)	200~2700	100rpm	300rpm
U03	Start Speed of 2nd Stitch (with thread-catching function)	200~2700	100rpm	500rpm
U04	Start Speed of 3rd Stitch (with thread-catching function)	200~2700	100rpm	1000rpm
U05	Start Speed of 4th Stitch (with thread-catching function)	200~2700	100rpm	1500rpm
U06	Start Speed of 5th Stitch (with thread-catching function)	200~2700	100rpm	2000rpm
U07	Thread Tension of 1st Stitch (with thread-catching function)	0~200	1	200
U08	Thread-tension at Thread-trimming	0~200	1	0
U09	Thread Tension Changeover Timing at Thread-trimming	-6~4	1(4°)	0
U10	Start Speed of 1st Stitch (No Thread-catching)	200~1500rpm	100rpm	200rpm
U11	Start Speed of 2nd Stitch (No Thread-catching)	200~2700rpm	100rpm	600rpm
U12	Start Speed of 3rd Stitch (No Thread-catching)	200~2700rpm	100rpm	1000rpm
U13	Start Speed of 4th Stitch (No Thread-catching)	200~2700rpm	100rpm	1500rpm
U14	Start Speed of 5th Stitch (No Thread-catching)	200~2700rpm	100rpm	2000rpm
U15	Thread Tension of 1st Stitch (No thread-catching function)	0~200	1	0
U16	Thread Tension Changeover Phase at Sewing Start (No thread-catching function)	-5~2	1	-5
U25	Sewing Counter Unit	1~30	1	1
U26	Presser Height at 2 step scrolling	50~90	1	70
U32	Buzzer Sound Setting OFF：No Buzzer PAN：Operating Sound ALL：Operating Sound + Alarm	0：OFF：No Buzzer 1：PAN：Operating Sound 2：ALL：Operating Sound + Alarm		2
U33	Number of stitch on which thread clamp is set at releasing	1~7	1	2
U34	Thread Clamp Delay Timing	-10~0	1(4°)	0
U35	Thread clamp control is forbidden? ON ：Permitted OFF：Forbidden	0：Permitted 1：Forbidden		0
U36	Selection of feeding Action Timing Set the timing in "-" direction when the thread is not well-tightened	-8~16	1(4°)	3

No.	Parameter	Range	Unit	Default value
U37	Presser status at the end of sewing	0：Presser goes up after sewing starts 1：Presser goes up immediately after sewing ends 2：Pedal goes up after sewing starts.		0
U38	Presser goes up when sewing is ended.	0：ON：Permitted 1：OFF：Forbidden		0
U39	Perform Origin Retrieval at Sewing End?	0：OFF：No Origin Retrieval 1：ON：With Origin Retrieval		0
U40	Set origin search at combination sewing.	0：OFF：Without Origin Search 1：PAT： At Each Pattern Ending 2：CLC：At Each Circle Ending		0
U41	Presser status at Order of Pause	0：Presser goes up automatically 1：Presser goes up with pedal pressed.		0
U42	Needle Stop Position	0：UP：Up Position 1：DEAD：Highest Position		0
U46	Trimming	0：ON：Permitted 1：OFF：Forbidden		0
U48	Set Route for Returning Start Sewing Point	0：Linear Return 1：Reverse Return of Pattern 2：Original Retrieval		0
U49	Winding Speed Setting	200~2700	100rpm	1300rpm
U51	Thread-stirring switch	0：OFF：Off 1：ON：On		1
U64	Select Unit in Changing Size	0：%：Input Percentage 1：SIZ：Input Actual Size		0
U68	Thread Tension Output Time at Setting Thread Tension	0~20s (0：No Tension Output)	1	0
U69	Bend Position for Holding Thread	0：S：S Type 1：H1：H Type Thin Thread (#50~#8) 2：H2：H Type Intermediate 3：H3：H Type Thick Thread (#5~#2)	1	0
U70	Thread-catching position	0：Standard (Front Position) 1：Rear Position		0
U71	Thread –breakage detection	0：OFF：Invalid 1：ON：Valid		0
U72	The number of stitch without thread-breakage detecting at sewing start	0~15	1	8
U73	The number of stitch without thread-breakage	0~15	1	3

No.	Parameter	Range	Unit	Default value
	detecting at midway of sewing			
U81	Frame control – pedal on/ off	(Solenoid Presser) 0：1-step 1：2-step stroke (Use the presser switch to lower the presser further) 2：2-step stroke (Re-lowering the presser with the start switch) 3：2-step stroke(With presser switch 1, control presser to intermediate, lowest and up position) 4~99：1-step (Air-control Presser) 0：Solid Presser 1：Left/right separated presser (Without priority of right or left) 2：Left/right separated presser(In the order of right to left) 3：Left/right separated presser(in the order of left to right) 4：Solid Stroke 5：Left/right separated left stroke (Without priority of right or left) 6：Left/right separated left stroke (in the order of right to left) 7：Left/right separated left stroke (in the order of left to right) 8~99：Solid Presser	1	0
U82	Frame Control- On/off at Midway Stop	(Solenoid Presser) 0：1 Stroke 1：2-step stroke (Use the presser switch to lower the presser further). 2：2-step stroke (Re-lowering the presser with the start switch) 3：2-step stroke (With presser switch 1, control presser to intermediate, lowest and up position) 4~99：1-step (Air-control Presser) 0：Solid Presser	1	0

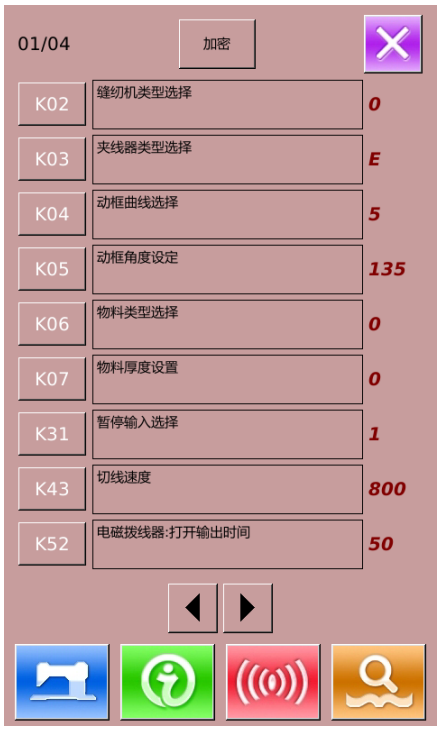
No.	Parameter	Range	Unit	Default value
		1： Left/right separated presser (Without priority of right or left) 2：Left/right separated presser(In the order of right to left) 3：Left/right separated presser(in the order of left to right) 4：Solid Stroke 5：Left/right separated left stroke (Without priority of right or left) 6：Left/right separated left stroke (in the order of right to left) 7：Left/right separated left stroke (in the order of left to right) 8~99：Solid Presser		
U83	Pedal Type Selection	0：S：Single Pedal 1：D：Double Pedal		1
U84	Pedal SW1 Lock	0：OFF：No 1：ON：Yes		1
U85	Pedal SW2 Lock	0：OFF：No 1：ON：Yes		1
U86	Pedal SW3 Lock	0：OFF：No 1：ON：Yes		1
U87	Pedal SW4 Lock	0：OFF：No 1：ON：Yes		1
U88	Scale Mode	0：OFF：Forbidden 1：PIT：Change at Interval 2：STI：Change at Stitch Number		1
U89	Motion Mode	0：Forbidden 1：Parallel Motion 2：Set 2nd Origin		2
U91	Retainer Compensation Motion	0：OFF: No 1：ON：Yes		0
U94	Select the highest point at origin retrieval	0：OFF：No 1：ON：Yes		0
U97	Pause–Thread-trimming Operation	0：AUT：Auto Thread-trimming 1：MAN：Manual (Thread-trimming by turning Stop SW ON again)		1
U101	Main Motor X/Y Feeding Synchronized Control	0：2700rpm /3.0mm 1：2200rpm 3.0mm 2：1800rpm		0

No.	Parameter	Range	Unit	Default value
		/3.0mm 3：1400rpm /3.0mm		
U103	Intermediate Presser Control	0：No（Lowering is fixed） 1：Yes（Lowering with sewing data during the operation） 2：Yes（Lowering even at the time of feeding forward/backward）		1
U104	Intermediate Presser Lowering Timing	0：Before the start of the sewing machine head 1：Synchronized with the last frame		0
U105	Intermediate presser /thread-stirring device sweeping position	0：Sweeping above 1：Sweeping above (get to the lowest position). 2：Sweeping below		0
U108	With/ without Air Pressure Detection	0：OFF：No 1：ON：Yes		0
U112	Intermediate Presser Lowering Position Setting	0~7.0mm	0.1	3.5
U129	With/without Needle Cooler Control	0：OFF：No 1：ON：Yes		0
U132	Lubrication Interval	0~65535	1	90
U133	Lubrication Working Time	0~65535	1	1000
U190	Back Light Auto Off	0：OFF：Not Auto Off 1：ON： Auto Off		0
U191	Back Light Off Wait Time	1~9 min	1	3
U192	Back Light Adjustment	20~100	1	100
U193	Modify the Counter Value	0：OFF：Permit 1：ON：Forbid		0
U194	Operation at Reaching set value of Counter	0：OFF：Stop Sewing 1：ON：Continue Sewing		0
U195	Voice Column	30~63	1	30
U196	Pattern File Selection	0：Number 1：Name		1
U200	Language	0: Chinese 1：English		0
U201	Set Language at Power-on	0：OFF：No 1：ON：Yes		0
U203	Support 是否支持大花样针数	0：OFF：No 1：ON：Yes		1
U204	Main Control Loading Address	0：0XA0000： 1：0XB0000 2：0XC0000		3

No.	Parameter	Range	Unit	Default value
		3：0XD0000 4：0XE0000		
U205	Display Mode Shift at Simplified Interface	0：Figure 1：Letter		0

8.3 Level 2 Parameters Setting

In the interface of Mode Setting Level 3, press  to have access to the interface for setting parameters of Level 2 (as shown in right). For the operation, please take the description in Level 1 Parameter Setting for reference.



8.3.1 List of Level 2 Parameters

No.	Parameter	Range	Unit	Default value
K02	Sewing Machine Selection	0~3	1	0
K03	Thread-holder Selection	0：M：Mechanical 1：E：Electronic	1	1
K04	Frame-moving Curve Selection	0~10	1	5
K05	Frame-moving Angle Selection	130~250	1	135
K06	Material Selection	0：Thin； 1：Middle； 2：Thick	1	0
K07	Material Thick Selection	0~15	1	0
K08	Origin-returning Speed	0~9	1	2
K09	Start Point Return Speed	0~9	1	2

No.	Parameter	Range	Unit	Default value
K10	Idling Speed	0~9	1	2
K11	Frame-moving Speed at Edition	1~3	1	2
K13	Thread-loosing Solenoid Open Current	0~255	1	0
K18	Bar-tacking Mode at Sewing Start	0：No Bar-tacking 1：First Stitch Bar-tacking 2：Several Bar-tacking		1
K19	Bar-tacking Number at Start	-4~4	1	3
K20	Bar-tacking Mode at Sewing End	0：No Bar-tacking 1：Bar-tacking at 0.1mm before end 2：2 Bar-tacking stitches before end		1
K31	Selection of Pause Inputting	0：Ineffective 1：Effective 2：Use Pause Switch to trim thread or start machine when the machine is paused		1
K42	Search Origin Adjustment at trimming	-50~50	1	0
K43	Thread-trimming speed	0：400rpm 1：800rpm		1
K52	Solenoid Sweeper — Time for Turning on	10~500ms	10ms	50ms
K53	Solenoid Sweeper — Time for Turning off	10~500ms	10ms	80ms
K54	Thread-stirring output phase selection when stopping at highest point	0：UP：Upper Position 1：DEAD：Highest Position		0
K56	Move Range +X Direction	0~255mm	1	76
K57	Move Range -X Direction	0~255mm	1	76
K58	Move Range +Y Direction	0~255mm	1	51
K59	Move Range -Y Direction	0~255mm	1	51
K60	3-Level Pedal	0：OFF：Invalid 1：ON：Valid		0
K61	Main Motor Stop Angle	30~80	1	53
K63	Selection on Effectiveness of Needle Bar Stop & Needle Movement Stop	0：OFF：Invalid 1：ON：Valid		1
K67	Thread Tension Output of Thread Sweeper	0：OFF：No Output（Keep the tension at thread-trimming） 1：MAX：Max Output		0
K74	Solenoid/ Air-control Presser Selection	0：MAG：Solenoid Presser 1：AIR：Air-control Presser		0
K75	Time Postponement at Lowering the Air-control Presser	0~1000ms	10ms	100

No.	Parameter	Range	Unit	Default value
K92	Selection of Path for Origin Retrieval/ Origin Search at Normal	0：STD：Standard 1：REV：Reverse 2：Y2X：Y Axis→X Axis 3：X2Y：X Axis→Y Axis		0
K93	Selection of Path for Origin Retrieval/ Origin Search at Reverse	0：STD：Standard 1：REV：Reverse 2：Y2X：Y Axis→X Axis 3：X2Y：X Axis→Y Axis		0
K95	Standard Trimming Phase	-10~10	1	0
K96	Reverse Trimming Phase	-10~10	1	0
K98	Empty Feeding- Top Point Stop Time	0~100ms	10ms	20
K100	End Order – Stop Controlling	0：OFF：No 1：ON：Yes		0
K110	Reverse Device and Stretching Presser Control	0：OFF：No 1：ON1：Yes 2：ON2：Stretch Presser Out		0
K110	With Reverse Device?	0：OFF：No 1：ON：Yes		0
K111	Reverse device: auto reversing Y coordinates	0~100.0mm	0.1	17.0
K112	Stretching Presser Out Delay	0~255ms	1	0
K113	Stretching Presser Up Delay	0~255 ms	1	0
K114	Stretching Presser Down Delay	0~255 ms	1	0
K115	Stretching Presser Position at Sewing	0：Up 1：Down		0
K121	Main Motor Type	0：550：550W Motor 1：750：750W Motor		1
K122	Pen X Axis Deviation	-500~500	1	0
K123	Pen Y Axis Deviation	-500~500	1	0
K124	Pen Moving Speed	1~9	1	1
K125	Model Recognizing Function Switch	0：Off 1：On		1
K127	X Motor Rotation	0：Order 1：Reverse		1
K128	Y Motor Rotation	0：Order 1：Reverse		0
K129	Model Recognizing Device	0：Sensor 1：Barcode		0

No.	Parameter	Range	Unit	Default value
K130	Lightness Adjustment	0~100		50
K131	Presser goes up when machine pauses for mistake?	0：OFF：NO 1：ON：Yes		0
K132	Motor Working Method	0：Close Loop 1：Open Loop		0
K133	Bottom Thread Alarm Length	1~255		100
K134	Bottom Thread Alarm Method	0：Length 1：Stitch Number		1
K135	Thread-breakage Sensor Activation Method	0：Low Level 1：High Level		1
K136	Bottom Thread Alarm Setting	0：Alarm at Sewing 1：Alarm in Advance		0
K137	Enter Ready Status at Power-on	0：No 1：Yes		1
K138	Twice Start Setting	0：Off 1：On		0
K139	Trimming Mode	0~2		0
K200	Restore Default Parameters			

8.4 Counter Setting

Press  to have access to the Counter Setting Interface (as shown in right picture).

Sewing Counter: The counter adds/ decreases 1 at sewing one piece.

No.of Pcs Counter：The counter adds/ decreases 1 ar sewing one cycle.

The No. of Pcs Counter is mainly for counting the C Pattern. For any other sewing types, the function of sewing counter and No. of Pcs counter are same.

1） Counter Setting

：Press it to set the Current Value of counter.

：Press it to set the Setting Value of counter. When the Setting Value is 0, the counter can not be used.

2） Counter Type Setting

：Set the counter as Up Counter. When current value reaches the setting value, the system will give alarm.

：Set the counter as the Down Counter. When the current value is 0, the system will give alarm.

：Turn off Counter

Note 1：When parameter【U193】is set at “Forbid”, user can not enter this interface.
Note 2: When parameter【U194】is set at “Continue Sewing”, the system will not give alarm when the current value is over the setting value. The current value will return to the target value automatically (Up Counter will return to 0 while down counter will return to the set value).

8.5 Change Sewing Type

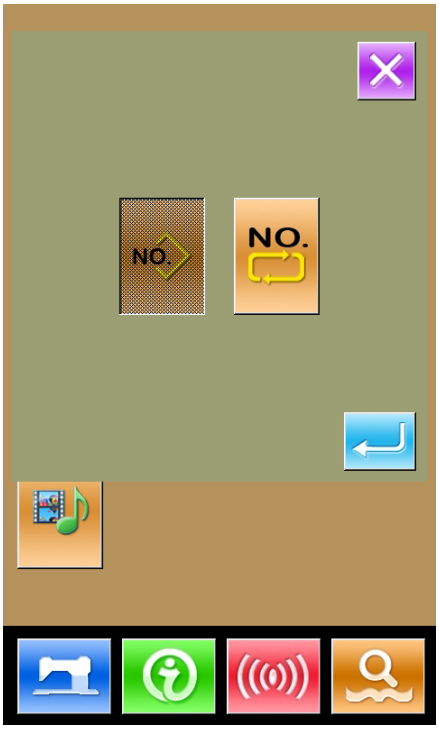
Press 

to have access to the interface of sewing type selection (as shown in right).

：Normal Sewing

：Combination Sewing

After confirming the sewing type, user can press 
to end the operation. And then press 
to activate the interface for inputting data of the selected sewing type.



8.6 Entry to Pattern Edition

Press  to shift between the following two figures. Select the corresponding mode and then press  to enter the pattern edition mode.

For the specific operation, please refer to 【5 Pattern Edition】

 : Sewing Mode

 : Edition Mode

8.7 Initialization

Press  to enter the interface for setting the initialization, where user can do the following operations.

In this interface, user can operate：

- U Disk Initialization
- Memory Initialization
- Customized Initialization
- P and C Pattern Initialization

Press the relating functions keys and enter the corresponding interface.

1）Press “USB” to Initialize U Disk File

Press  to initialize all the U disk files

Press  to quit U disk initialization

2）Press “Memory” to initialize memory patterns

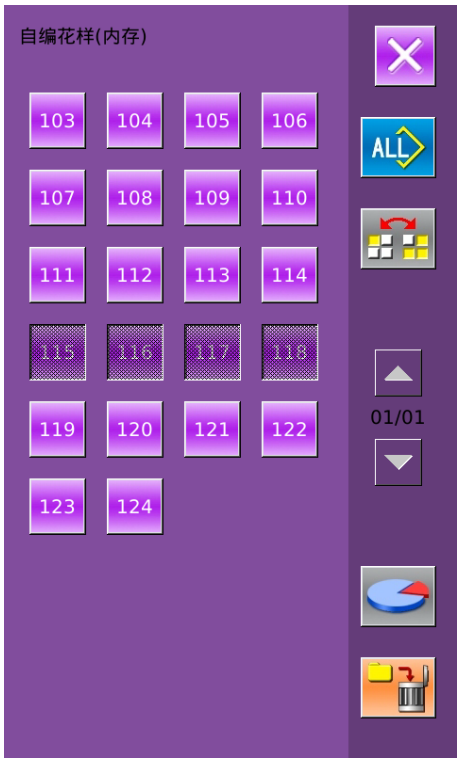
Press  to initilize memory; Press  to quit

After the initialization of memory, the entire patterns will be deleted, including the C patterns and P patterns. Then the system will load the default patterns again.

※Caution! This operation will delete all the patterns within the memory!

3） Press “Custom” to perform the batch deletion

In this interface, the system will display all the pattern files within the memory. Click the corresponding button to perform the batch deletion.



4） Press “P & C” to delete the entire P patterns and C patterns

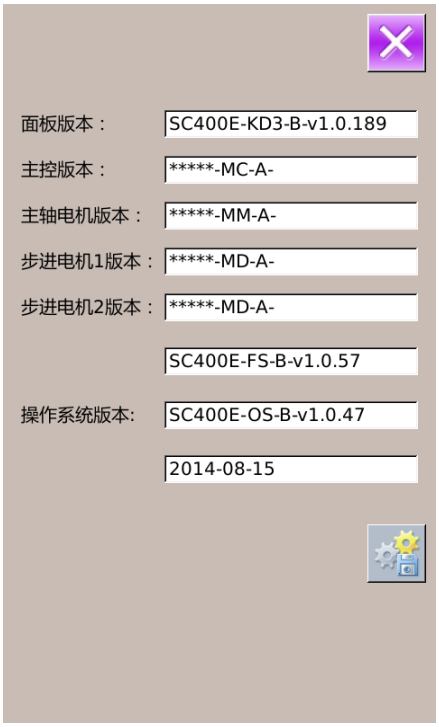
Press  to delete the entire P patterns and C patterns. Press  to quit.

8.8 Software Version Inquiry

At Mode Setting Level 2 Interface, user can press 

to check the software version of system.


：Save the Current version information to the root directory of U disk.



8.9 Keyboard Lock

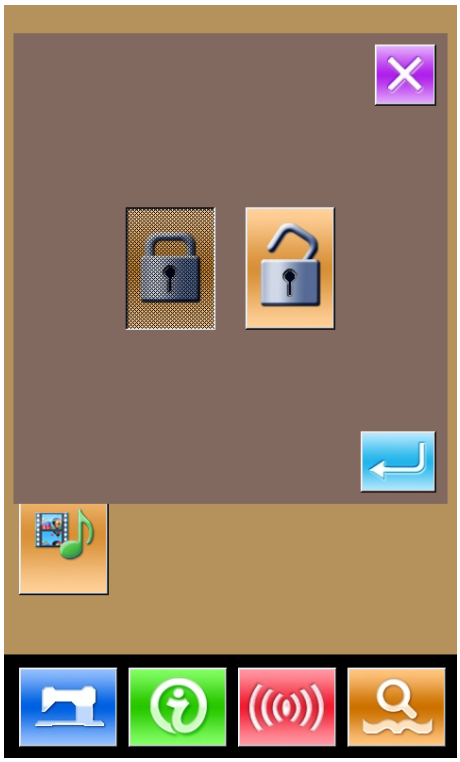
In the interface of setting mode level 2, press  to have access to the interface of keyboard lock setting.

1）Operation for Locking Keyboard


：Keyboard Unlocked

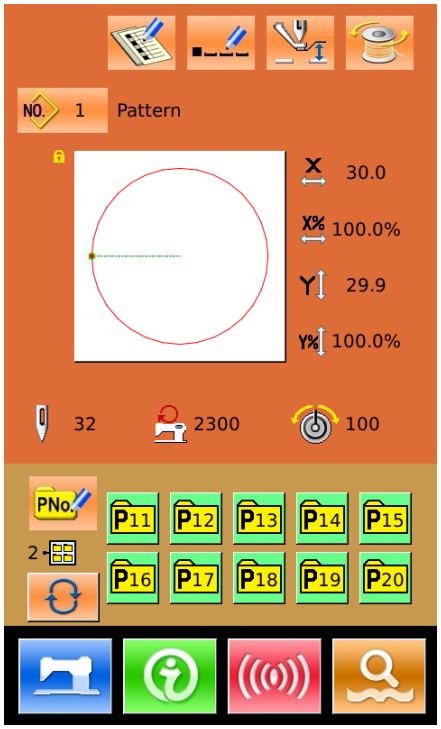

：Keyboard Locked

Select  and press  to lock keyboard.



2）Display of Keyboard Lock Status

Close parameter setting mode interface and return to data input interface (as shown in right). We can see a small figure “  ” under the pattern number, which means the keyboard is locked.



3） Range of Keyboard Lock

1、Interface of Normal Sewing Data Input：

- Pattern Registration
- Pattern Naming
- Scale Rate Setting
- Max Speed Limitation
- P Pattern Registration

2、Normal Sewing Interface：

- Counter Setting
- Thread-tension Setting

3、P Pattern Input Interface：

- P Pattern Edition
- P Pattern Copy
- P Pattern Naming

4、P Pattern Sewing Interface：

- Counter Setting

5、C Pattern Data Input Interface：

- C Pattern Registration
- C Pattern Copy
- C Pattern Naming
- C Pattern Edition

6、C Pattern Sewing Interface：

- Counter Setting

7、Parameter Setting Mode：

- Parameter Level 1
- Parameter Level 2
- Counter Edition
- Test Mode

8.10 Parameter Back-up & Recovery

In setting mode level 3, press  to enter the interface of parameter back-up & restoration, as shown in right:

Clear：Clear all the customized parameters that are saved.

Save：Save current parameters

Restore：Restore the current parameters

① Click any key among  ~  to set the position for saving the parameter. And then press「Save」to save that parameter.

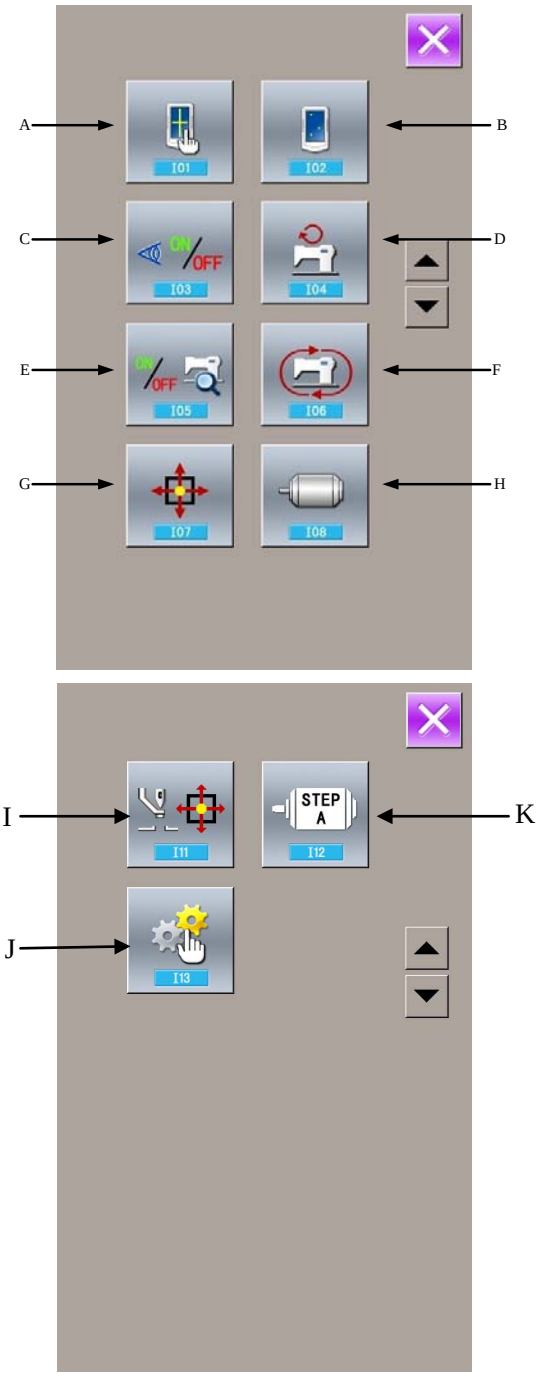
② Check the content on「Custom xx（On/Off）」. If「On」 is displayed in bracket, that means this position has the user parameter, for an example  。

③ Select the button with parameters, press「Restore」to reload the corresponding parameter values

④ Press「Clear」to delete all the saved parameters

8.11 Test Mode

In the interface of Setting Mode Level 2, press  to have access to the interface of testing mode (as shown in the right figure).by using  &  to turn the page.



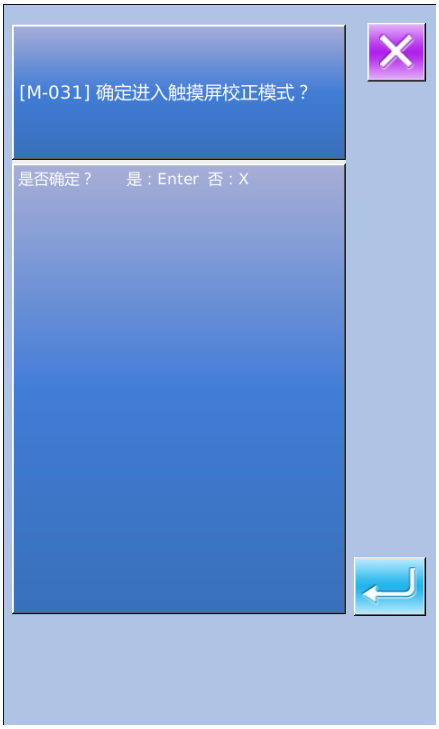
For the detailed function of the figures, please refer to the following form：

No.	Name
A	I01 Touching Panel Correction
B	I02 LCD Test
C	I03 Input Test
D	I04 Speed Measurement
E	I05 Output Test
F	I06 Continuous Running
G	I07 XY Motor Origin Test
H	I08 Main-shaft Motor Correction
I	I09 Presser· Thread-trimming Motor/ Origin Sensor Test
J	Stepping Motor Current Test
K	Main-shaft Correction

1）Touching Panel Correction

In the interface of test mode, press 

(I01Touching Panel Correction). At this moment, the system will display “Sure to enter the touch panel calibration mode?”. Press  to enter the touching panel correction interface.



Because the corrections for five spots are needed, the user had better click the cross icon on the screen with tools like touching pen. After the correction, the system will tell user that this operation is successful or not.

【Note】During the correction, please do perform the operation according to the positions of crosses. Otherwise, the touching panel will be unable to work normally after the correction.

2）LCD Test

In the interface of testing mode, press 

(I02 LCD Test) to have access to the interface for testing LCD (as shown in right), where user can test whether the LCD is OK.

3）Test Method on Inputted Signal

In the interface of testing mode, press 

(I03 Input Test) to enter the interface of input test (as shown in right). User can confirm the input status of the various sensors and switches in that interface.

ON：Turn On

OFF：Turn Off

（1）Start Switch（Pedal）

（2）Presser Switch（Pedal）

（3）Pause Switch

（4）Thread-breakage Detection

（5）X Motor Sensor

（6）Y Motor Sensor

（7）Presser Motor Origin Sensor

（8）Presser Motor Sensor

（9）Thread-catching Motor Origin Sensor

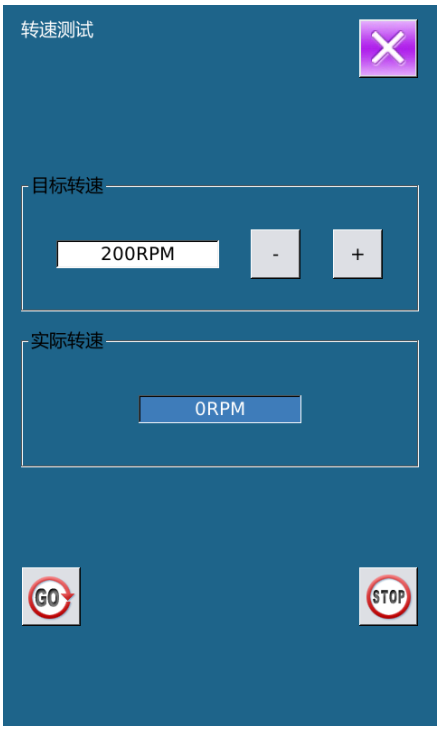
（10）Thread-catching Motor Sensor

（11）Intermediate Presser Motor Origin Sensor

（12）Head Tilting Switch

4）Speed Measurement

①Display of Speed Measurement Interface



In the interface of testing mode, press  (I04 Speed Measurement) to have access to the interface of speed measurement (as shown in right). Users can test the main motor speed in this interface.

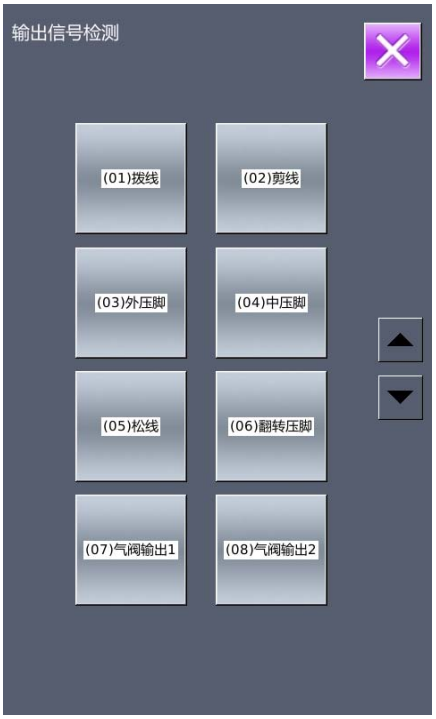
② Speed Measurement Setting

By using + & -, user can set the main motor speed. After user presses  , main motor will run in the set speed. At this moment, the actually measured speed will be displayed at the input column.

Press  to stop the machine.

Press  to return to the upper interface.

5）Output Test



In the interface of testing mode, press  (I05 Output Test) to have access to the interface of Output Test (as shown in right). In that interface, the output status of the solenoid can be tested.

（1）Thread-stirring
（2）Thread-trimming
（3）Outer Presser
（4）Intermediate Presser
（5）Thread-loosing
（6）Reverse Presser
（7）Valve Output 1
（8）Valve Output 2

Press the corresponding figures to test the output of each external device.

6）Continuous Running

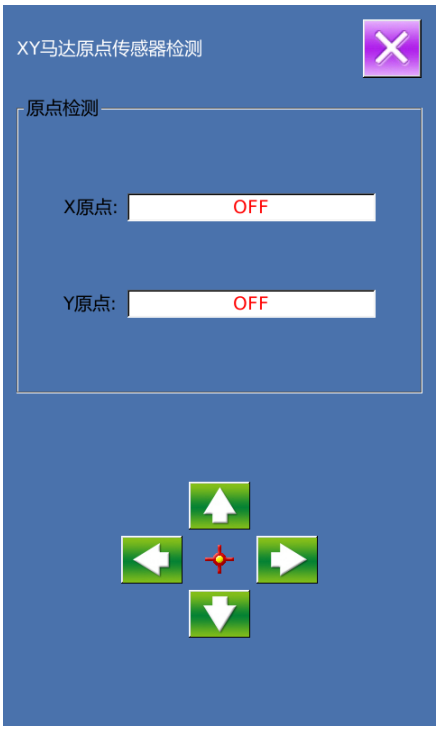
①Display of Continuous Running Interface

In the interface of testing mode, press  (I06 Continuous Running) to have access to the continuous running interface (as shown in right).

② Continuous Running Setting

In the interface of continuous running, press the setting figure to set the action interval and gusseting origin test. Press  to return to the interface for inputting data. Then press  and step the pedal to allow machine to run continuously.

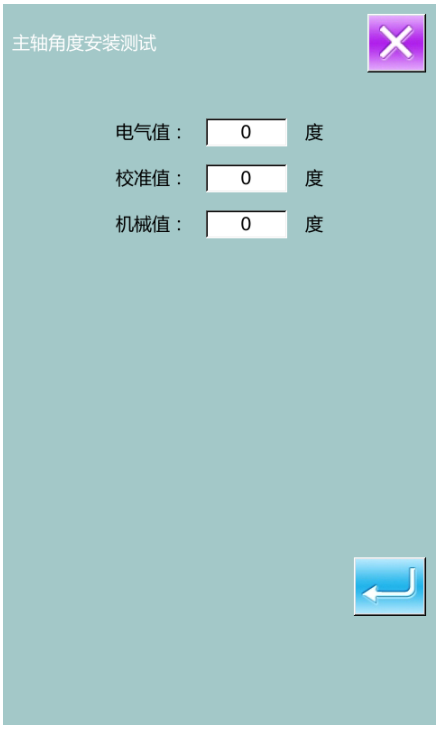
7）XY Motor Origin Sensor Test



In the interface of testing mode, press  (I07XY Motor Origin Test) to have access to the output test interface (as shown in right). In that interface, user can drive motor to move by using the direction keys, and the ON/OFF status of sensor can be displayed.

8）Main-shaft Motor Correction

In the interface of testing mode, press  to have access to the interface of main-shaft motor correction (as shown in right).



In this interface, remove the main motor. Turn the hand wheel on the machine to move the needle bar to the highest position. Then turn the joint linkage of the main shaft to have the electronic angle displayed within 30 degree. Install the main motor again and press  .

8.12 Pattern Edition Parameter Setting

In the interface of Setting Mode Level 3, press  to have access to the interface for setting pattern edition parameters.

The figures in dark are the available functions, while the figures in bright are the functions forbidden.

Set the edition parameters according to the needs, press  to finish the settings.

8.13 Letter Embroidery Editions

8.13.1 Parameter Setting

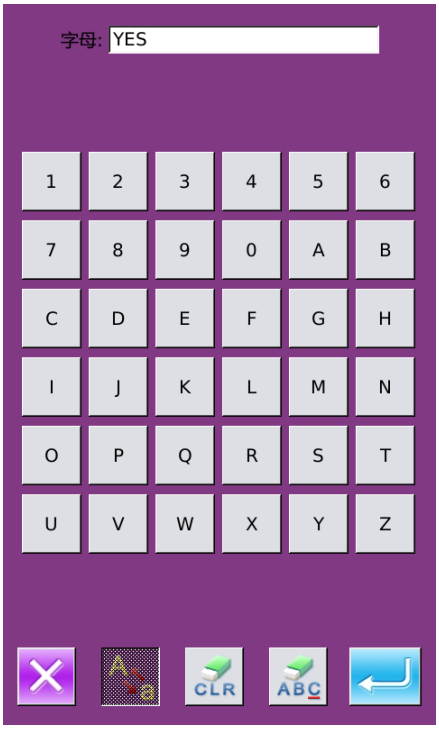
Press  to have access to the interface for setting letter embroidery parameters (as figure at right).

Function List:

Name	Function	Content
Input	Input figure	Input figure. At most, 20 figures can be input.
Font	Select Font	Support 28 kinds of font
Arrange	Method of Array	Four kinds of array method: Horizontal Line, Vertical Line, Convex Arc and Concave Arc
Space	Letter Interval	Set the interval between neighboring letters
Density	Satin Density	Set the density of satin. The larger the set value is, the denser the satin will be.
Height	Height Scaling	Scale the height of letter, range from 50~200.
Width	Width Scaling	Scale the width of letter, range from 50~200.
Rotation	Rotation/Follow （not Follow）	When the array method is line (Horizontal or Vertical), this button will be displayed as Rotation, so that user can use it to set rotating angle of letters; When the array method is arc (Convex Arc or Concave arc), this button will be displayed as Follow (Not Follow), so that user can use it to set whether the figure rotates along with arc.
Thread-trimming	Trim/ No Trim	Make sure whether to insert thread-trimming automatically.

1、Figure Input

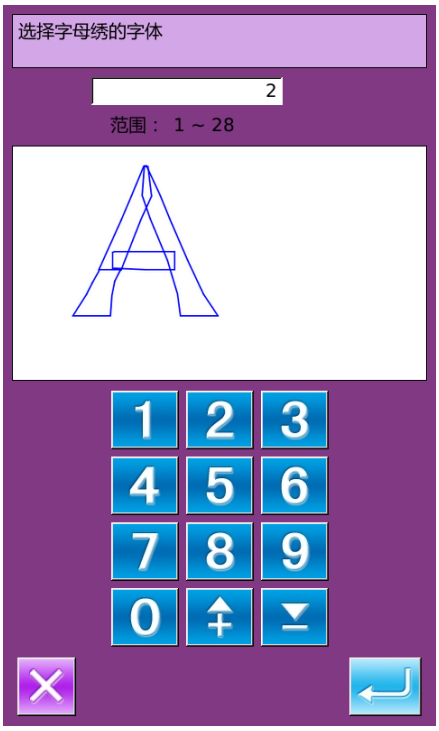
Press「Input」to enter the figure input interface. User needs at least input 1 figure, while 20 figures can be input at most. Press  to save it and quit.



2、Select Font

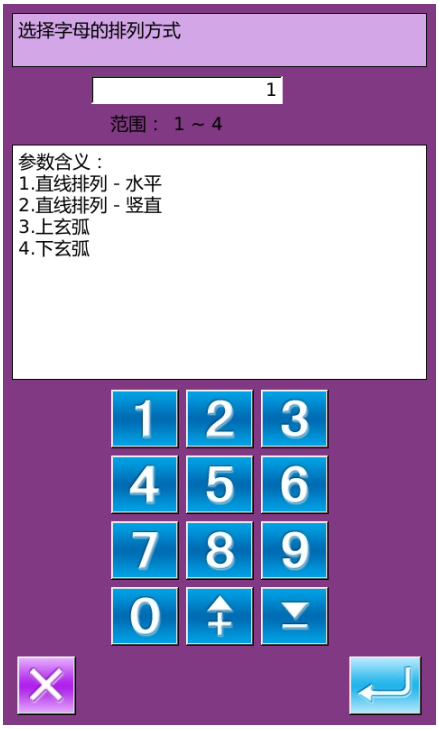
Press「Font」 to enter the font selection interface. The system provides 28 kinds of font. User can input figure from 1 to 28 to select it. Press  to save it and quit.

In this interface, the shape of font will be displayed



3、Arrangement Method

Press「Array」to enter the interface for setting the array method. In this interface, user can select Horizontal Line, Vertical Line, Convex Arc or Concave Arc. Press  to save it and quit.



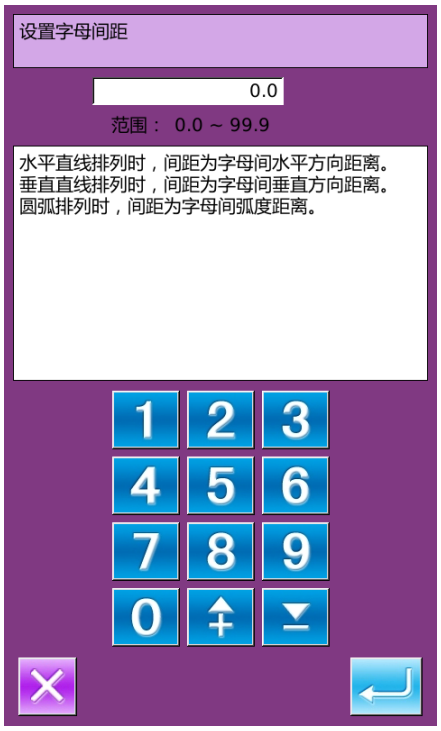
4、Letter Interval

Press「Interval」to enter the interface for setting. At horizontal arrangement, the interval is the horizontal distance.

At vertical arrangement, the interval is the vertical distance.

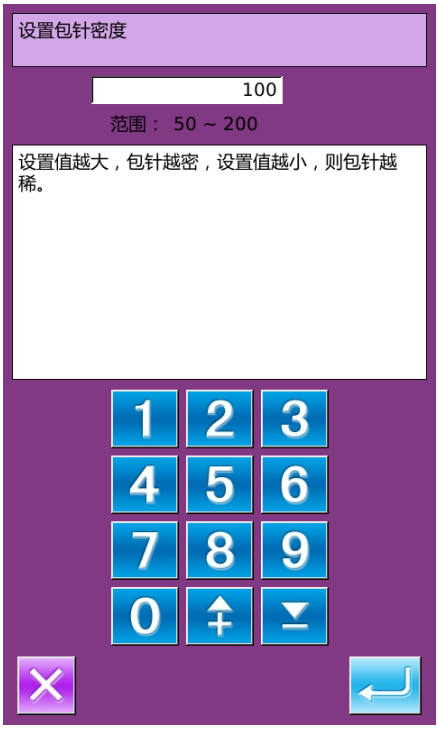
At arc arrangement, the interval is the distance between the letters on the arc.

Range is 0~99.9mm



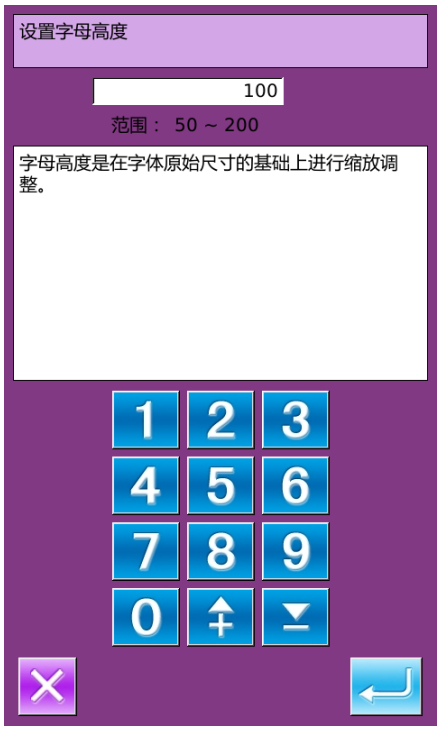
5、Satin Density

Press「Density」to enter the interface for setting the satin density. The range of satin density is 50~200.



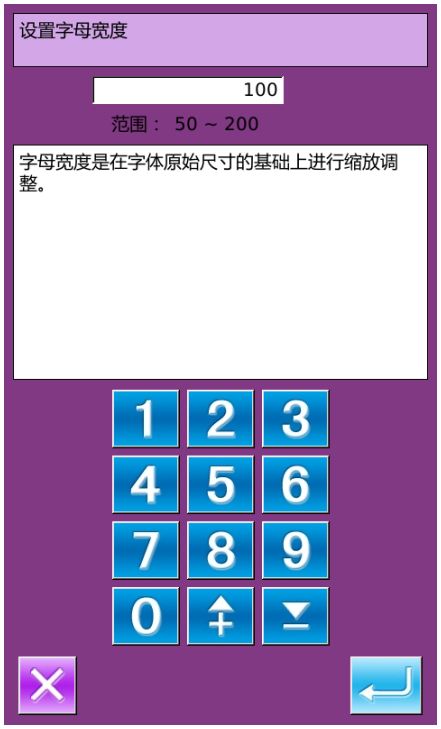
6、Height Scale

Press「Height」to enter the interface for setting the letter height. The scale rate of letter height is 50~200.



7、Width Scale

Press「Width」to enter the interface for setting the letter height. The scale rate of letter width is 50~200.

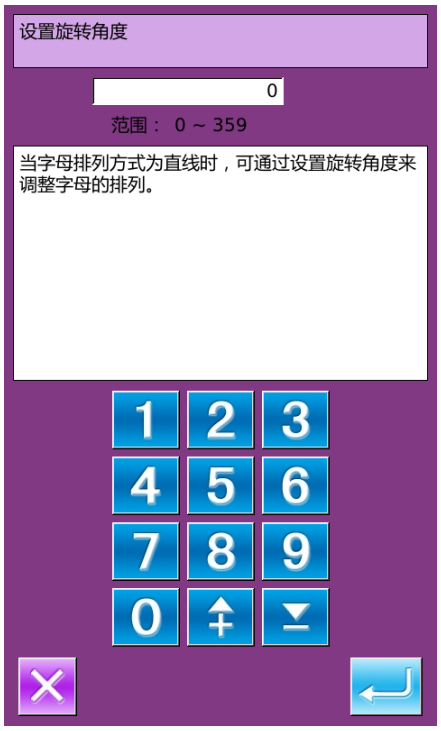


8、Rotation Angle

When the array method is horizontal or vertical arrangement, this button is the rotating angle of letter. Press “Rotation” to enter the interface for setting the rotating angle.

The rotating direction is anti-clockwise, ranging at 0°~359°。

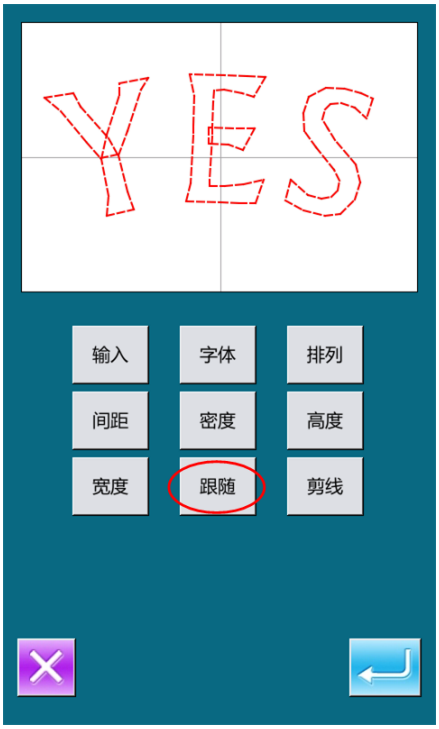
Note: When the arrangement method is convex arc or concave arc, this button will be used to set whether the letter rotates with arc.



9、Follow/ Not Follow

When the arrangement method is convex arc or the concave arc, this button will be used to set whether the letter rotates along with the arc. Press this button to shift between “Follow” and “Not Follow”.

【Note】: When the arrangement method is horizontal line or vertical line, this button is used to set rotating angle.



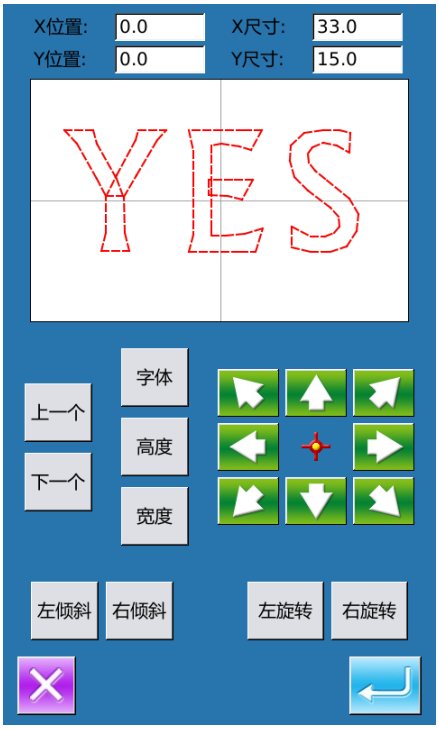
10、Auto Insert Trimming

In default condition, the system will add trimming code automatically, which is to add trimming code at the joint between linear sewing and empty feeding at letter sewing, as well as the sewing end.

Press this button to shift between “Trim” and “Not Trim”. “Not Trim” means the system deactivates the functions for adding trimming code automatically.

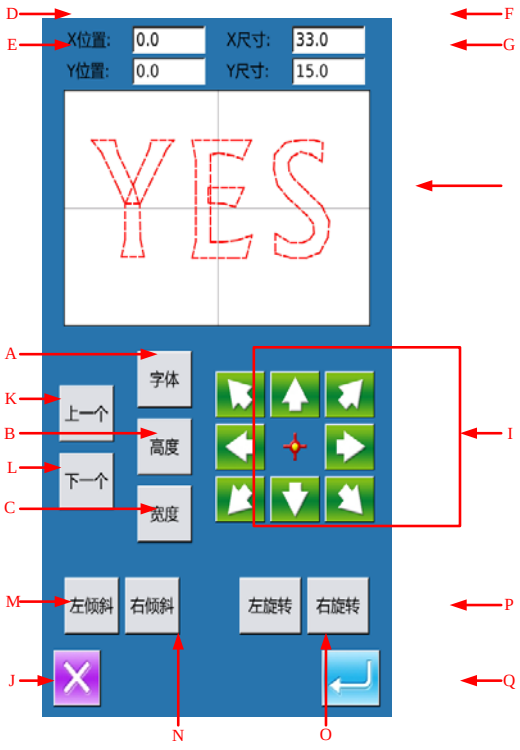
11、Confirm the Pattern

Set the pattern for sewing and press  to enter the interface for adjusting the letter sewing pattern.



8.13.2 Adjustment of Pattern at Letter Sewing

In the interface for setting the parameter of letter sewing, user can set each parameter. Then user can press  to enter the adjustment interface, where user can have the further adjustmetn on the pattern.



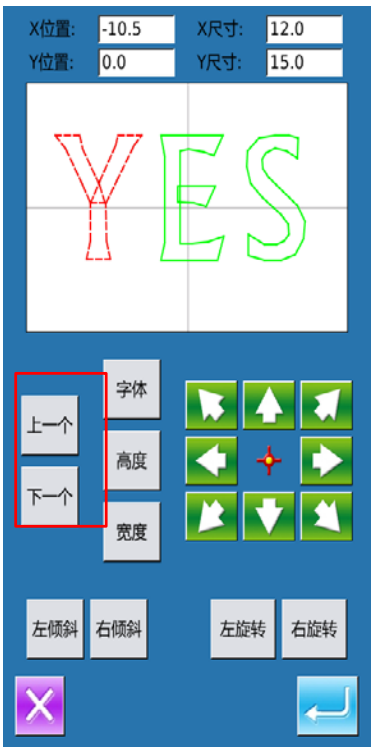
Function List：

No.	Function	Content
A	Font Selection	Change the font of the selected letter. The setting method is same as setting the parameters.
B	Height Scaling	Change the scale rate of the height of the selected letter. The setting method is same as setting the parameters.
C	Width Scaling	Change the scale rate of the width of the selected letter. The setting method is same as setting the parameters.
D	X Position	Display the X coordinate of the center of the selected Letter
E	Y Position	Display the Y coordinate of the center of the selected Letter
F	X Size	Display the width of the selected letter
G	Y Size	Display the height of the selected letter
H	Pattern	Display the shape of the current pattern. The selected letter is displayed in red, while the unselected letters are displayed in green.
I	Direction Key	Change the position of the selected letter.
J	ESC	Return to the upper interface.
K	Figure Selection (Right to Left)	Select the previous letter for adjustment, the selected letter is displayed in red. If user presses it at selecting the last letter, all the letters will be selected.
L	Figure Selection (Left to Right)	Select the next letter for adjustment, the selected letter is displayed in red. If user presses it at selecting the last letter, all the letters will be selected.
M	Left Lean/ Radian Down	When the arrangement method is set as horizontal line or vertical line, this button will be displayed as “Left Lean”. Press it to turn the pattern in counterclockwise as a whole. The origin for the rotation is the circle center. When the arrangement method is the convex arc or concave arc, this button will be displayed as “Radian Down”, press it to decrease the radian of the arc. 【Note】This operation is for the entire pattern.
N	Right Lean/ Radian Up	When the arrangement method is set as horizontal line or vertical line, this button will be displayed as “Right Lean”. Press it to turn the pattern in counterclockwise as a whole. The origin for the rotation is the circle center. When the arrangement method is the convex arc or concave arc, this button will be displayed as “Radian Up”, press it to increase the radian of the arc. 【Note】This operation is for the entire pattern.
O	Left Rotation	Adjust the rotating angle of the selected letter in counterclockwise direction. The rotation center is the center of the letter.
P	Right Rotation	Adjust the rotating angle of the selected letter in clockwise direction. The rotation center is the center of the letter.
Q	ENTER	Press it to enter the pattern saving interface.

Example：

1、 Select one Letter for Adjustment

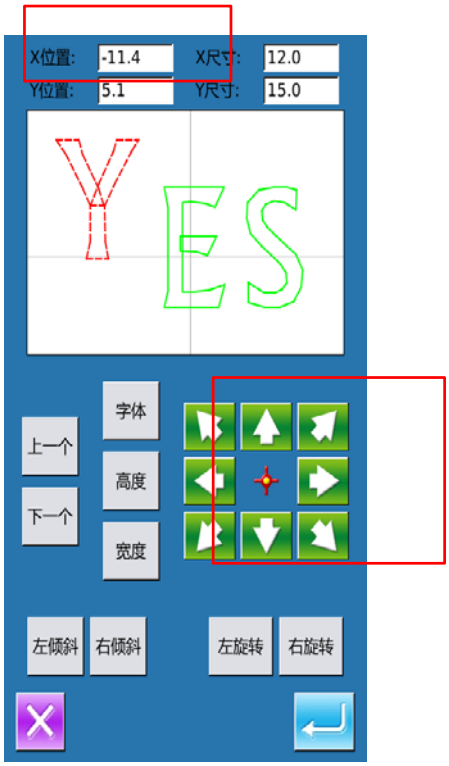
Press「Previous」or「Next」to select one letter for edition. The selected letter is in red, while the unselected letter is in green.



2、 Letter Position Adjustment

Press the direction key to adjust the position of the selected letter. User can use the Y Position and the X Position to check the coordinates.

With the same operation, user can continue adjusting the position of other letters.

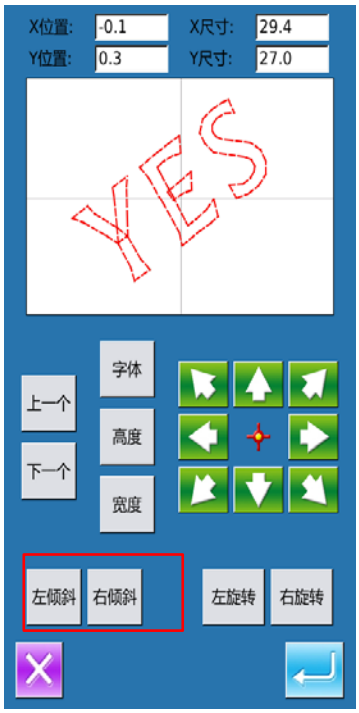


3、 Rotating Angle Adjustment of Entire Pattern

Press「Left Lean」or「Right Lean」 to adjust the rotating angle of the entire pattern.

「Left Lean」： Counterclockwise Rotation

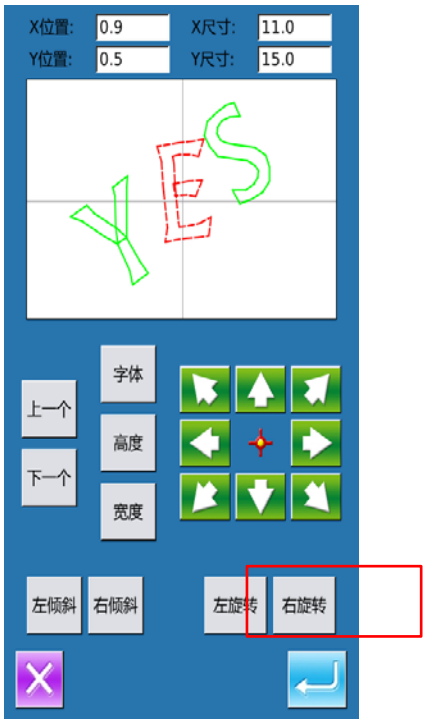
「Right Lean」： Clockwise Rotation



【Note】: When the arrangement method is convex arc or the concave arc, this button will be turned to “Radian Up”/ “Radian Down”, so as to adjust the radian of the entire pattern.

4、 Rotating Angle Adjustment of Single Letter

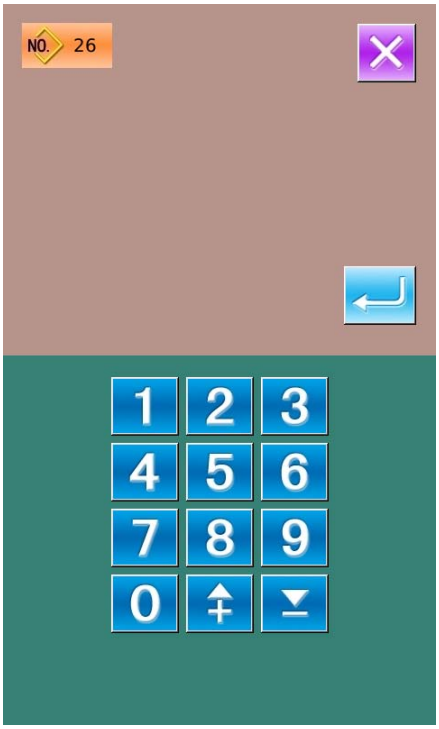
Select a letter then press “Left Rotation” or “Right Rotation” to adjust the rotating angle of the selected letter.



【Note】: When user needs to adjust the rotating angle, user had better to perform the rotation of the entire pattern, and then adjust the single letter. If user adjust the single letter at first then the entire pattern, the adjustment of the single letter will be cancelled.

5、 Save Pattern

After the adjustment, please press  to enter the saving interface. After user inputs the number, the pattern is saved.



9 Appendix 1

9.1 Warning List

No.	Name	Method of Release
E001	Pedal is not at the middle position.	Self-recovery
E002	Machine is in emergency stop	Press 
E004	Main voltage is too low(300V)	Turn Off Machine
E005	Main voltage is too high(300V)	Self-recovery
E007	IPM is over-voltage or over-current	Turn Off Machine
E008	Voltage of assistant device(24V) is too high	Turn off Machine
E009	Voltage of assistant device(24V) is too low	Turn off Machine
E010	Valve short connection or fan blocks	Turn off Machine
E011	X motor over-speed error	Turn off Machine
E012	X motor over-distance error	Turn off Machine
E013	Encoder is error or unconnected.	Turn off Machine
E014	Motor running abnormal	Turn off Machine
E015	Exceeds sewing area	Turn off Machine
E016	Needle bar upper position abnormal	Press 
E017	Thread breakage detection error	Press 
E018	Knife position abnormal	Turn off Machine
E019	Emergency switch is not at the right position	Self-recovery
E020	Stepping version error	Turn off Machine
E023	Thread-catching position abnormal	Turn off Machine
E024	Wrong connection between operation panel and sewing machine	Turn off Machine
E025	X origin detection abnormal	Turn off Machine
E026	Y origin detection abnormal	Turn off Machine
E027	Presser origin detection abnormal	Turn off Machine
E028	Thread-catching origin detection abnormal	Turn off Machine
E029	Intermediate presser origin detection abnormal	Turn off Machine
E030	Stepping driver communication abnormal	Turn off Machine
E031	Stepping motor over-current	Turn off Machine
E032	Stepping driver power supply abnormal	Turn off Machine
E034	Abnormal current	Turn off Machine
E035	IPM over-current 1	Turn off Machine
E036	IPM over-current 2	Turn off Machine
E037	Motor blockage 1	Turn off Machine
E038	Motor blockage 2	Turn off Machine
E039	Motor over speed	Turn off Machine

No.	Name	Method of Release
E040	Over-current at stop	Turn off Machine
E041	Motor overload	Turn off Machine
E042	Bus Voltage Abnormal	Turn off Machine
E043	X motor over-speed error	Turn off Machine
E044	X motor over-distance error	Turn off Machine
E045	Bottom Thread Low	Reach the bottom thread replacement value, please replace bottom thread
E254	Undefined Error	Press 

9.2 Hint List

No.	Name	Content
M-001	Can not find pattern data	Please reload or input from design software
M-002	Set value too large	Please input value within range
M-003	Set value too small	Please input value within range
M-004	Parameter save error	Press Enter to recover default setting
M-005	Communication error	Communication error between operation panel and control box
M-006	Fail to load letter sewing file	
M-007	Operation head not match to control box	Please check the model and the software version
M-008	Over Max stitch pitch	
M-009	Wrong password	Input again
M-010	Clock error	The hardware clock is down, please contact manufacturer for repair
M-011	Letter sewing pattern saved successfully	Enter the pattern selection interface and generate new letter sewing pattern
M-012	SRAM initialization	Clear all the data within SRAM, please turn off machine and restore the DIP switch
M-013	Turning off	
M-014	USB is pulled out	
M-015	Can not find pattern in U disk	
M-016	At least input one letter	Periodical password has been set, can not change system time
M-017	No warning record	
M-018	Wrong user ID	Input again
M-019	Fail to confirm password	Input password again
M-020	Can not change system time	Periodical password has been set, can not

		change system time
M-021	Password file input error	
M-022	Password file load error	
M-023	Password save successful	
M-024	Clear all password failed	Can not delete password file
M-025	Fail to clear password	After clearance of password, the input of file has problem
M-026	Password file is deleted without authorization	Password file is deleted without authorization, please turn off machine
M-027	User ID file damaged	
M-028	Can not input blank	Input password again
M-029	Current password not match	Input current password again
M-030	New password not match	Input new password again
M-031	Enter touching panel correction mode	Are You Sure？Yes：enter No：X
M-032	Correction successful	Correction is successful, please restart machine
M-033	Correction failed	Please perform correction again
M-034	Clear warning record	Are You Sure？Yes：enter No：X
M-035	Periodical password is same to super password error	Input password again
M-036	Pattern data error	Current pattern data error, it will be replaced by default patterns
M-037	Pattern information file open failed	Restore to default pattern configuration
M-038	Memory full	Please delete the unused patterns
M-039	Cover the pattern	Are You Sure？Yes：enter No：X
M-040	P pattern open error	Pattern file has mistake, it will be deleted
M-041	C pattern open error	Pattern file has mistake, it will be deleted
M-042	Pattern is existed	Can not replace the pattern
M-043	Delete pattern data	Press Enter to delete; Press ESC to quit
M-044	Delete the selected pattern	Are You Sure？Yes：enter No：X
M-045	Pattern is used, can not delete	Please release the quotation at P or C pattern
M-046	Save at least one pattern	Can not delete last pattern
M-047	Load default patterns	No pattern in memory, please load default patterns
M-048	No pattern in memory	Press Enter to load default patterns
M-049	Pattern number not exist	Please input again
M-050	P pattern not exist	Please create P pattern
M-051	Save software version successful	Software version is saved to the root directory of U disk
M-052	Replace needle	Needle replacement set value is reached, please replace needle
M-053	Replace oil	Oil replacement set value is reached, please replace oil

M-054	Clean machine	Cleaning machine set value is reached, please clean machine
M-055	Clear needle replacement set value	Are You Sure？Yes：enter No：X
M-056	Clear oil replacement set value	Are You Sure？Yes：enter No：X
M-057	Clear cleaning time value	Are You Sure？Yes：enter No：X
M-058	Clear production control value	Are You Sure？Yes：enter No：X
M-059	Clear calculated running time	Are You Sure？Yes：enter No：X
M-060	Clear calculated sewing number？	Are You Sure？Yes：enter No：X
M-061	Clear calculated power-on time？	Are You Sure？Yes：enter No：X
M-062	Clear calculated sewing stitch number？	Are You Sure？Yes：enter No：X
M-063	Clear calculated over-current times？	Are You Sure？Yes：enter No：X
M-064	Clear calculated stop times？	Are You Sure？Yes：enter No：X
M-065	Edit new pattern？	Are You Sure？Yes：enter No：X
M-066	Return to sewing mode？	Are You Sure？Yes：enter No：X
M-067	Restore all the settings	Are You Sure？Yes：enter No：X
M-068	Restore the selected items	Are You Sure？Yes：enter No：X
M-069	Not select an item	Please select one or several parameters
M-070	Sewing counter reaches set value	Please pres Enter to clear it
M-071	No.of pcs counter reaches set value	Please pres Enter to clear it
M-072	Successful	Current operation is successful
M-073	Failed	Current operation is failed
M-074	Copy failed	Check the room of memory
M-075	Copy failed	Check whether the U disk is pulled out
M-076	File I/O error	File I/O error
M-077	Verification failed at updating main software	
M-078	Can not delete pattern data	The selected sewing data is in use
M-079	Perform parameter transfer	Are You Sure？Yes：enter No：X
M-080	Can not open changed pattern	Please confirm pattern file
M-081	Changed pattern format error	Please confirm pattern file
M-082	Changed pattern data is too long	Please confirm pattern file
M-083	Update successful	Update successful, please restart machine
M-084	Fail to open file	Fail to open file
M-085	Parameter restoration successful	Parameter restoration successful, please restart machine
M-086	Not select update item	Please select at least one item for update
M-087	Selected item for update is not existed	If the item has no update file, the system will cancel the selection. If user wants to update the rest, please confirm again
M-088	Initialize U disk	Press Enter to perform operation; Press ESC to quit. The initialization will delete all the files in U disk
M-089	Initialize memory	Press Enter to perform operation; Press ESC

		to quit. The initialization will delete all the files in memory
M-090	Low memory	
M-091	Fail to select the function	
M-092	Shape point repeated error	
M-093	Can not return	
M-094	Can not find next stitch sewing data	
M-095	Can not find previous stitch sewing data	
M-096	Pattern data is too big	
M-097	Calculation error	
M-098	Pattern-designing error	
M-099	Cannot find the pattern	
M-100	Over moving range	
M-101	Over sewing range	Make sure pattern within sewing range
M-102	Stitch number over range	Reduce stitch number
M-103	Pattern file error	
M-104	Confirm to change point	
M-105	Confirm to insert auto trimming code	
M-106	Delete new pattern?	Press Enter to confirm; Press ESC to quit
M-107	Delete elements?	Press Enter to confirm; Press ESC to quit
M-108	Confirm to perform?	Press Enter to confirm; Press ESC to quit
M-109	Delete mechanical control order?	Press Enter to confirm; Press ESC to quit
M-110	Delete needle entry point	Press Enter to confirm; Press ESC to quit
M-111	Are you sure to move presser?	Press Enter to confirm; Press ESC to quit
M-112	Delete shape point	Press Enter to confirm; Press ESC to quit
M-113	Warning：Initialization will delete entire data in memory!	Press Enter to confirm; Press ESC to quit
M-114	Turn off machine.	Current operation is finished, please restart machine
M-115	Can not modify counter	At modification, please turn off setting
M-116	Restore to default setting?	Press Enter to confirm; Press ESC to quit
M-117	Clear entire custom parameters?	Are You Sure？Yes：enter No：X
M-118	Pattern calculation error	
M-119	Delete all the P and C patterns	Press Enter to confirm; Press ESC to quit
M-120	Over setting range	
M-121	Frame is at up position	Please lower the frame first!
M-122	Can not perform right operation	
M-123	Can not find USB	Pleas insert U disk containing mp3 file
M-124	No video files in vid.avi	Please put vid.avi file into pdat directory in U disk and then enter the update interface to update video files
M-125	Change bottom thread	The setting value of bottom thread

		replacement is reached, please replace the thread
M-126	Clear bottom thread count value?	Are You Sure？Yes：enter No：X
M-127	Bottom Thread Low	Please replace the bottom thread. Press Enter to count again.

10 Appendix 2

10.1 Installation Size of Control Box

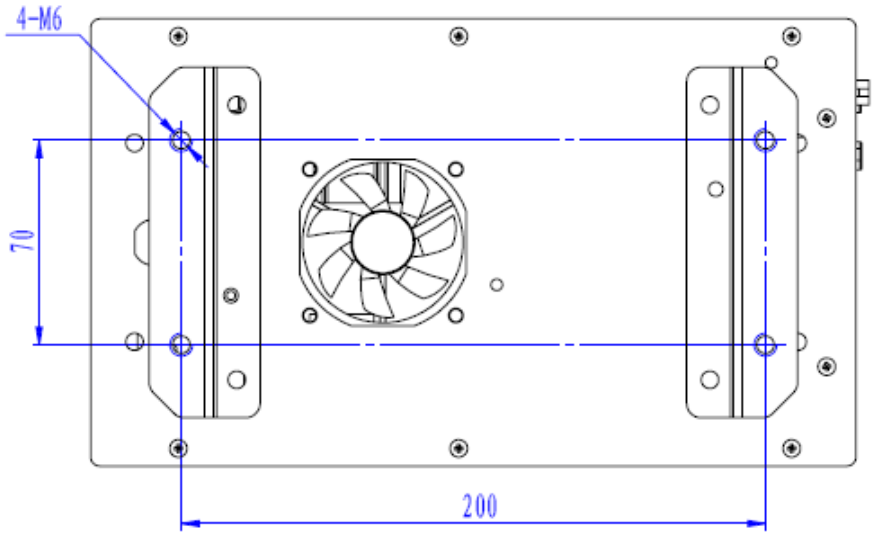


Figure 1 4-hole Installation

10.2 Installation Size of Operation Panel

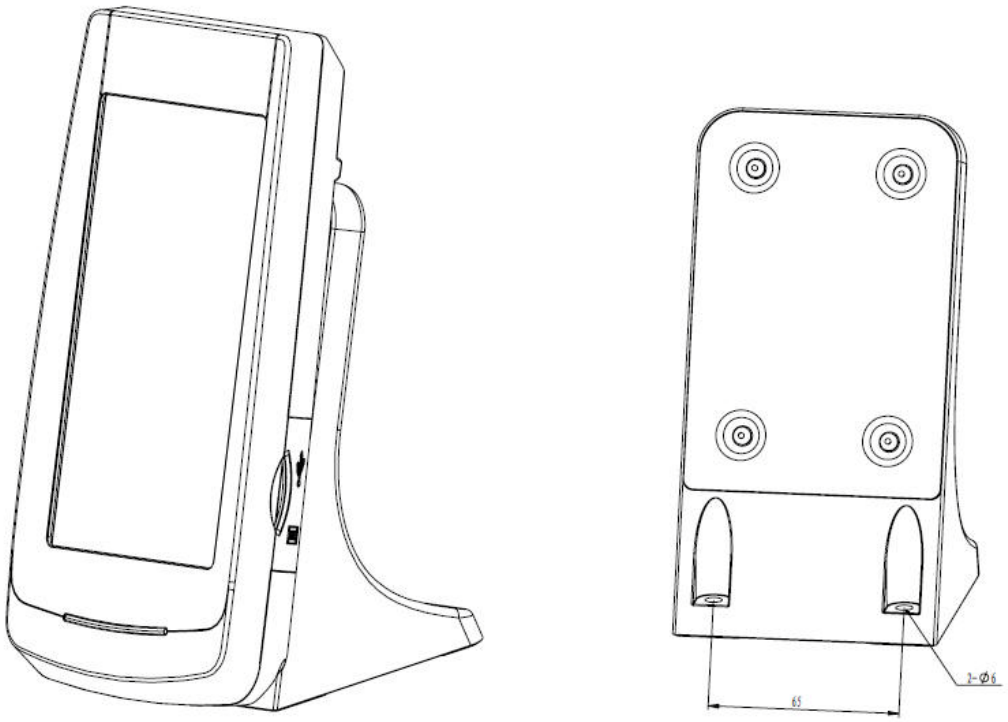


Figure 2 Installation Size of Operation Panel

10.3 Diagram of Zoje SC400-2E-B-MBJ