MAUSER
SPEZIAL

Touching Panel Type Manual book

1900E
1903E
1906E

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Collier Equipment
The home of CEDAR Special &
CEDAR Systems Automated Sewing Devices

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Forewords

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

3. Signs and Definitions

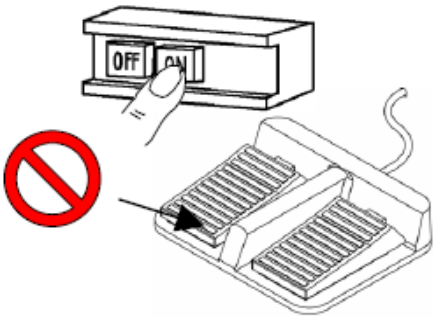
This User's Manual and the Safety Marks printed on the products are to enable you to use this product correctly so as to be away from personal injuring. The signs and definitions of Marks are shown in below：

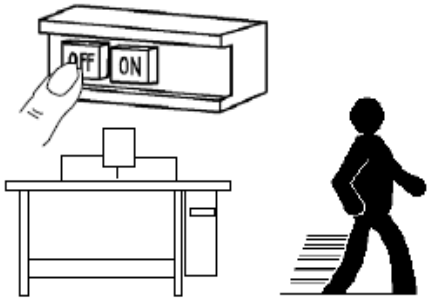
Danger	The incorrect operation due to negligence will cause the serious personal injury or even death.
Caution	The incorrect operation due to negligence will cause the personal injury and the damage of mechanism.
	This kind of marks is "Matters for Attention", and the figure inside the triangle is the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

4. Safety Matters for Attention

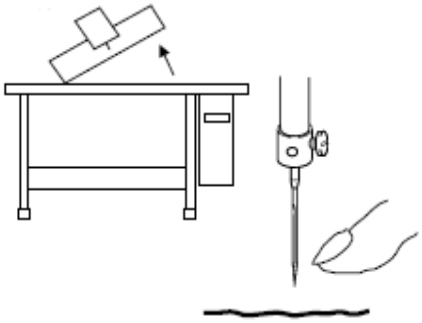
Danger	
	For opening the control box, please turn off the power and take away the plug from socket firstly, then wait for at least 5 minutes before opening the control box. Touching the part with high voltage will cause the person injury.
Caution	
Using Environment	
	Try not to use this sewing machine near the sources of strong disturbance like power cable disturbance and static disturbance. The source of strong disturbance will affect the normal operation of the sewing machine.
	The voltage fluctuation shall be within ±10% of the rated voltage. The large fluctuation of voltage will affect the normal operations of sewing machine, and the regulator will be needed in that circumstance
	Working temperature: 0℃~45℃. The operation of the sewing machine will be affected by environment with temperature beyond the above range.
	Relative Humidity: 35%~85 %(No dew inside the machine), or the operation of sewing machine will be affected.
	The supply of the compressed gas should be over the consumption of the sewing machine. The insufficient supply will be cause the abnormal operation of the machine.
	In case of thunder, lightning or storm, please turn off the power and pull plug out off the socket. Because these will have the influence on the operation of sewing machine
Installtion	
	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 the trained technician can perform the maintenance and the inspection of the sewing machine
	For the repair, maintenance and inspection, user should contact the professionals at manufacturer on 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.

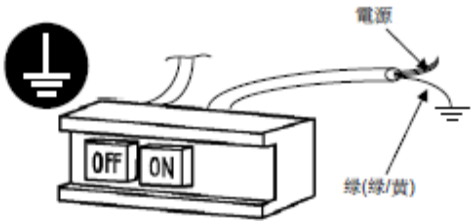




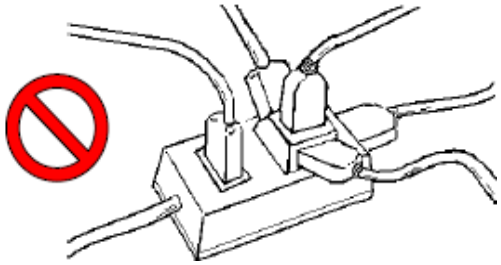
3、如要横倒头部或更换机针或穿面线时，请务必要关掉电源。



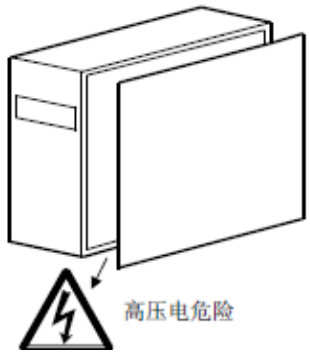
4、接地线要做好接地。



5、不要用家庭用多插孔式延长线。

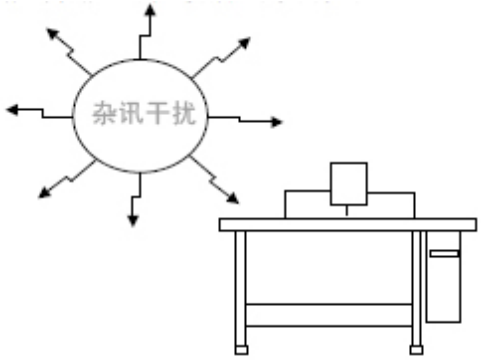


6、控制箱内部存有危险的高压电，所以关掉电源后等候 5 分钟才可打开控制箱盖。

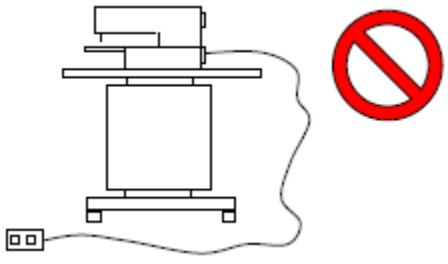


7、更换电机后，请务必参照本资料所示设置主轴电机安装角度。

8、请远离会产生高周波噪声干扰的机器。



9、如利用外接信号插座接应用附属装置时，其连接线长度请尽量越短越好，长线可能会导致误动作，连接线请用隔离线缆。



10、如保险丝烧断时，请先把原因排除后再换相同容量的保险丝。

1 General Information

1.1 General

This computerized control system for sewing machine features the following advantages: 1) Adoption of the world leading AC servo control technology on main shaft motor provides high torque, good efficiency, stable speed and low noise; 2) Diversified design of control panel can meet the special requirement of users on attachment; 3) System adopts German style structure, which offers easy installation and maintenance to users; 4) The system control software can be updated via the remote communication, which is easy for user to improve the performance of machine.

1.2 Technical Parameters

No.	Model / Items	SC20X /MSC20X/MASC20X
1	Usage	Doubling & Tacking, Button Sewing
2	Sewing Range	X(Left/ Right) Direction 40mm × Y(Forward/Backward) Direction 30mm
3	Max Speed	Doubling & Tacking：3200rpm Button Sewing：2700rpm
4	Min Sewing Unit	0.1mm
5	Cloth-feeding	Indirect Cloth-feeding (Pulse Motor Dual-shaft Drive)
6	Stroke of Needle Rod	45.7mm
7	Needle	DP ×5 #14 (DP×5 #11(F,M), (DP×17#21 Thick Fabric))
8	Presser-lifting Device	Pulse Motor
9	Presser Height	Standard 14mm, Max 17mm(at Reverse Lifting)
10	Standard Pattern Number	50/100
11	Thread-wiping Method	Interaction by lifting presser with pulse motor

12	Needle Thread Tension	Electronic Thread-holder
13	Hook	Semi-rotation standard hook or Semi-rotation double hook
14	Oiling Method	Rotation Part：Slight Oiling
15	Oil	Sewing machine oil
16	Lubricating Grease	Lubricating grease for sewing machine
17	Data Memory	U Disk
18	Scaling Function	Independent scaling1% ~400% at X direction and Y direction respectively（1% for each step）
19	Scaling Method	Change Stitch form length and stitch interval
20	Sewing Speed	400-3200rpm(100rpm per step)
21	Patten Selection	By selecting the number of pattern (1-999)
22	Bottom Thread Counter	Up/Down Method（0～9999）
23	Motor	500W Small AC Servo Motor (Direct Drive Mode)
24	Size	263mm×153mm×212mm
25	Weight of Control Box	About 1.4Kg
26	Power	770W
27	Working Temperature	0℃～45℃
28	Working Humidity	35%～85%（No Dew）
29	Voltage Input	AC 220V ± 10%；50/60Hz

※ At daily usage, please lower the max sewing speed according to the sewing condition.

※ Effective standard for product:QCYXDK0004—2016《Computerized Control System for Industrial Sewing Machine》.

1.3 Matters for Safe Using

- **Installation**
  - Control Box
    - Please install the control box according to the instruction

- Attachments
  - If other attachments are needed, please turn off the power and pull off the power plug.
- Power Cable
  - Do not press power cable with force or excessively twist power cable.
  - The power cables shall be fixed with a distance at 25mm away from the rotating component at least
  - Before powering the control box, user shall carefully check the voltage of power supply and position of power input on control box. If the power transformer is used, user should also check it before powering the machine. At this moment, the power switch of sewing machine must be set as “Off”.
- Grounding
  - In order to avoid the noise disturbance and shock caused by electrical leakage, user should ground the grounding cable.
- Attachments
  - If the electrical attachments are needed, please connect them to the proper positions.
- Disassemble
  - When removing the control box, user should turn off the power and pull off the power plug.
  - At pulling off the power plug, user should hold the plug and remove it, instead of pulling the power cable only.
  - The control box contains the dangerous high voltage power. 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.

Maintenance, Inspection and Repair

- Only can the trained technicians perform the repair and maintenance of this machine.
- When replacing the needles and shuttles, user has to turn off the power.
- Please use the spare parts from the authorized manufacturers

Others

- Do not touch the rotating or moving part of the machine, especially the needle and belt, when the machine is working. User should also keep his/her hair away from those moving parts, so as to avoid the danger.
- Do not drop the control device on the floor, nor insert ant stuff into the slot on the control box.
- Do not run the machine without the cover shells
- If this control device is damaged or unable to work normally, please ask the technicians to adjust or repair it. Do not run the machine when the problem is not solved
- Please do not change or modify the control device without authorization

Abandonment

- Dispose it as common industrial trash.

● Warning and Danger

- The mistake operation may cause danger. For the serious level, please refer to the figure at below

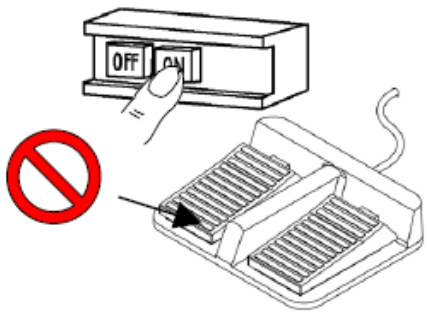
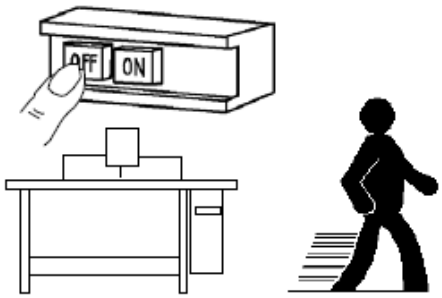
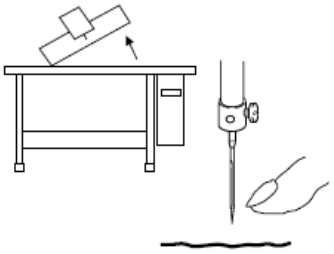
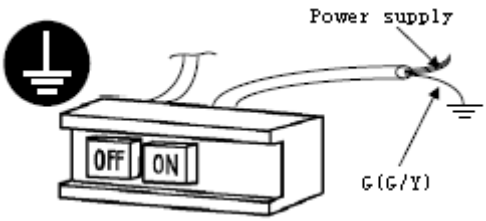
⚠警告	Mistake operations may cause serious injury or death.	⚠注意	Mistake operations may cause injury or damage to the house or properties.

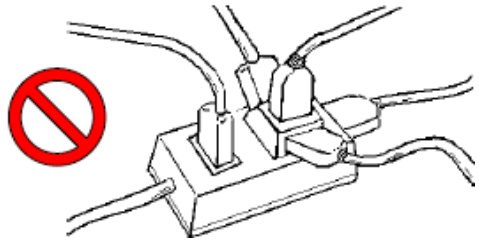
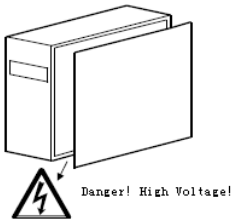
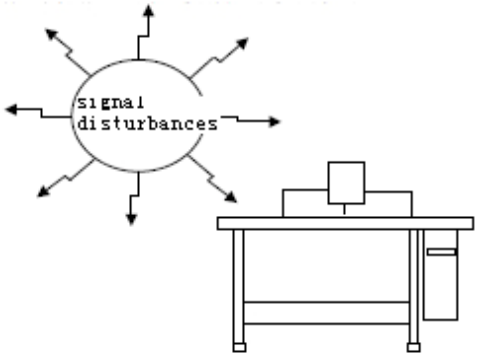
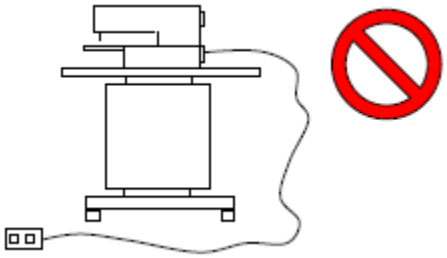
- The meaning of the figure are shown at below:

⚠	Please follow the instructions.	⚠	Watch the high voltage!
⚠	Watch the high temperature!	⏚	Grounding is must.
⊘	Operation is prohibited.		

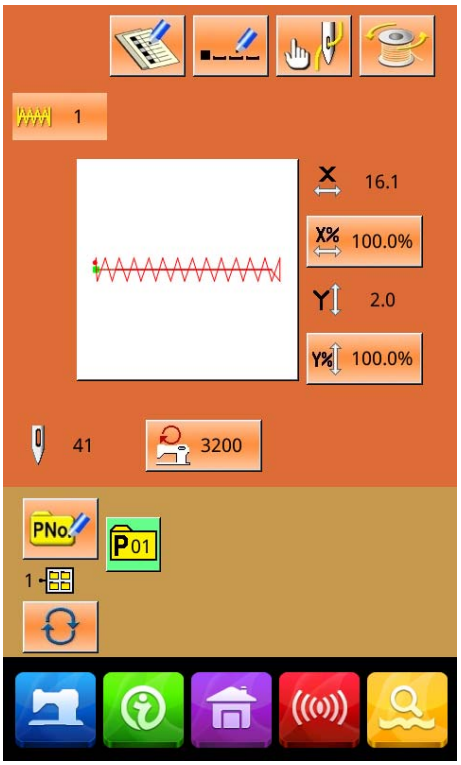
1.4 The Preventions on Usage

⚠Warning

1、When you press [ON], leave the feet from pedal. 	2、When you leave the machine, please turn it off. 
3、If user needs tilt the head or replace the needle or thread the Needle thread, please turn off the power 	4、Ground the machine with ground cable 
5、Do not use the household terminal block to let machines to share one power supply	6、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

<table>
<tr><td>  </td><td>before opening the control box
 
</td></tr>
<tr><td colspan="2">7、After replacing the motor, please set the installation angle of main motor according to this documents.</td></tr>
<tr><td>8、Please keep it away from the machine creating the high cyclic disturbance
 
</td><td>9、If user needs the external signal socket to connect the attachments, the connecting wire shall be as short as possible. The long cable may cause the wrong operation. And the connection cable shall be the isolated cable
  </td></tr>
<tr><td colspan="2">10、If the fuse is burnt, please solve the problem before replacing a new one with same capacity</td></tr>
</table>

1.5 Standardization

The button using the common figure can be understood by the users from different countries.	

1.6 Operation Method

We use the advanced touching operation technique on the operation panel, whose friendly interface and simple operation will bring the big changes to users in their usage. Users can finish the relating operations by using their fingers or other object to touch the screen. **Never use sharp object to touch the screen, otherwise the touching panel will suffer the permanent damage.**

The function keys include Ready Key, Information Key, Mode Key and Communication Key. For the specific operation, please refer to the chapters at below:

Warning

Never use sharp object to touch the screen, otherwise the touching panel will suffer the permanent damage

2 Operating Instruction

2.1 Common Buttons

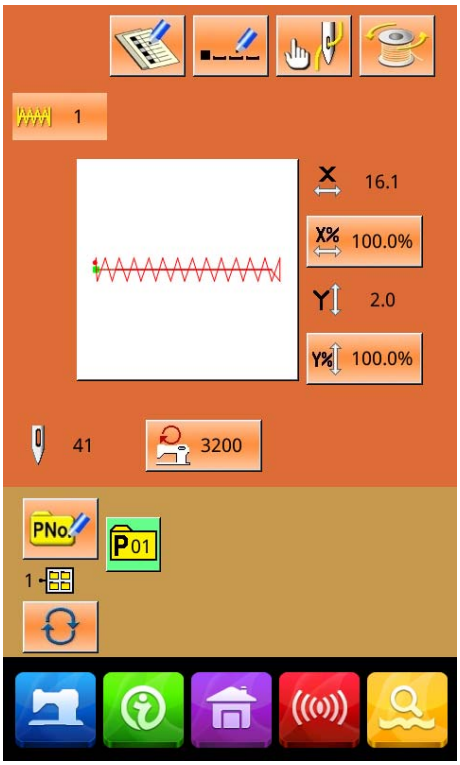
The buttons for the common operation in each interface are shown at below:

No.	Figure	Functions
1		ESC → Quit the current interface. At data change interface, it is for canceling the change of data.
2		Enter → Confirm the changed data.
3		Plus → Increase the value
4		Minus → Decrease the value
5		Reset → Release the Error
6		Number Input → Display the number keyboard and input the number.
7		READY Key → Shift between the data input interface and sewing interface
8		Information Key → Shift between the data input interface and information interface
9		Communication Key → Shift between the data input interface and communication interface
10		Mode Key → Shift between the data input interface and communication interface
11		Home Key→One click back to main interface。

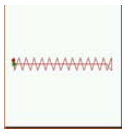
2.2 Basic Operation

① Turn on the power

Turn on the power to display the data input interface.



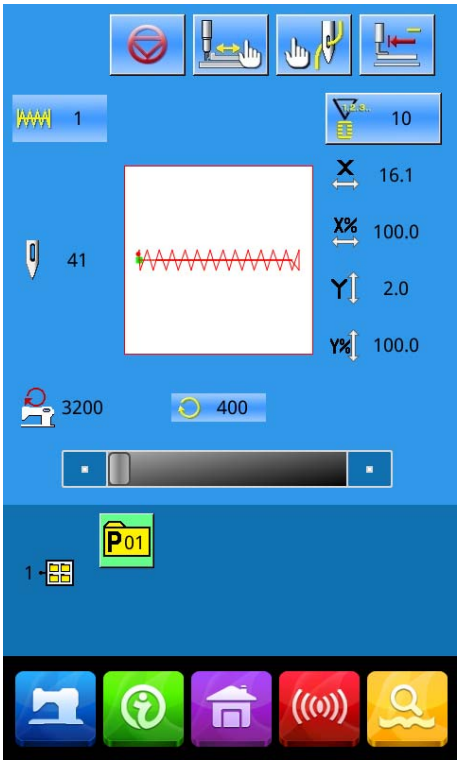
② Select the wanted pattern No.

At current interface, the selected pattern No. will be displayed. Press  to select pattern number.

For the operation of pattern selection, please refer to【2.7 Pattern Selection】.

③ Set machine to Ready Sewing Status

Press READY key  . The back-light of LCD displayer changes to blue color and the machine is ready for sewing.



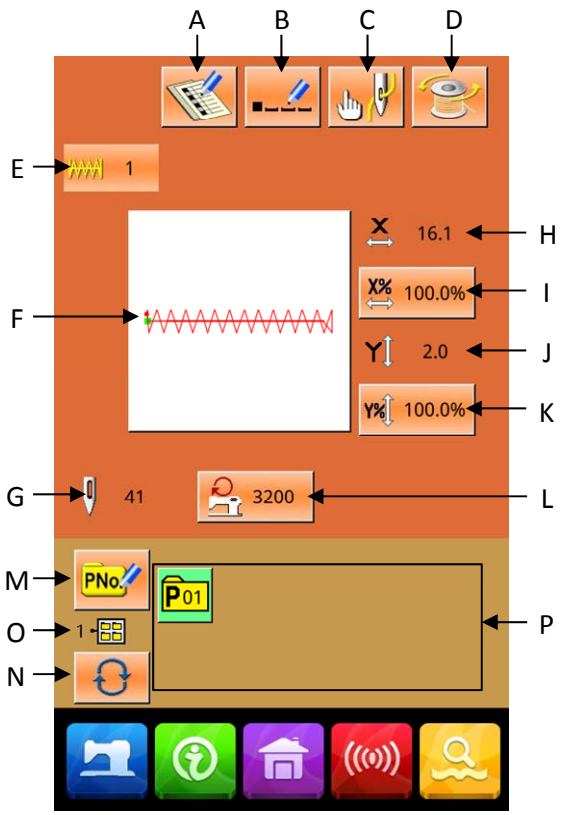
④ Start Sewing

Set the sewing product to the presser position; operate the pedal to start the sewing machine, and sewing starts

2.3 Operation of Normal Pattern

（1）Sewing Data Input Interface

The data input interface is shown at right. For the detailed functions, please refer to the Function Key List



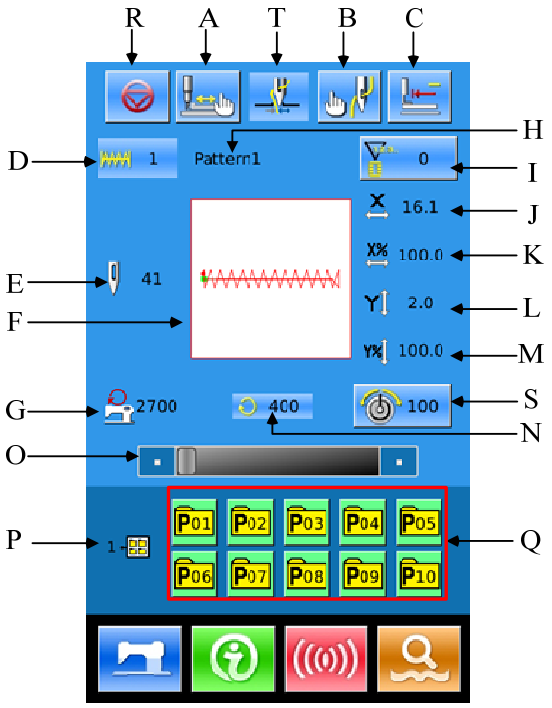
Function Key List:

No.	Function	Content
A	Pattern Registration	At most, 999 normal patterns can be registered.
B	Pattern Naming	At most, 14 figures can be input.
R	Thread-catching (Displayed according to the actual condition of machine)	Activate the thread-catching function. It is affected by parameter U35.
C	Threading	Lower the presser to display the interface. For lifting the presser, please press “Presser Up” button.
D	Winding	Press  to start winding.

E	Pattern No. Display	Display the current pattern number
F	Sewing Pattern Selection	The button will display the shape of the current pattern. Press it to enter the interface for selecting patterns
G	Pattern Stitch Number	Display stitch number of the current pattern
H	X Actual Size	Display the actual size of current pattern at X direction. Use parameter U64 to input the actual size, at this moment the X Actual Size button is displayed.
I	X Scale Rate	The button will display the X scale rate of the current pattern. Press it to enter the interface for setting. It is affected by parameters U64 & U88.
J	Y Actual Size	Display the actual size of current pattern at Y direction. Use parameter U64 to input the actual size, at this moment the Y Actual Size button is displayed.
K	Y Scale Rate	The button will display the Y scale rate of the current pattern. Press it to enter the interface for setting. It is affected by parameters U64 & U88.
L	Max Speed	Display the Max Speed. Press this button to set the speed
M	Prompt Pattern (P Pattern) Registration	It is used for P pattern registration. At most, 50 P patterns can be registered.
O	P Pattern File Folder Number	Display the file folder number of current P pattern
N	P Pattern File Folder Selection	Shift P pattern file folder number orderly.
P	P Pattern Selection	Display the registered P pattern. Press it to enter the interface for inputting P pattern data. This button is not displayed at initial status.

（2）Sewing Interface

Press  to enter the Sewing Interface shown as the figure at right. For detailed functions please take the Function Key List for reference.



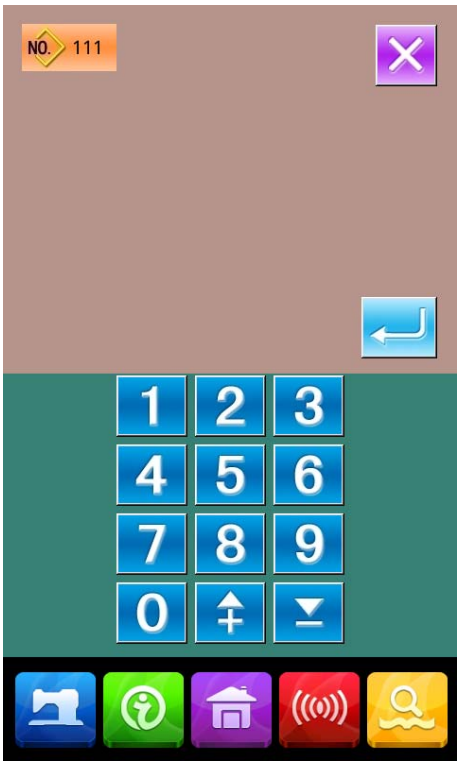
Function Key List:

No.	Function	Content
A	Trial Sewing	Press it to enter the trial sewing interface, where the pattern shape can be set.
T	Thread-catching (Displayed according to the actual condition of machine)	Activate the thread-catching function. It is affected by parameter U35.
B	Presser Down	Lower presser to display the presser down interface. For lifting the presser, please press the “Presser Up” Button.
C	Return to Origin	Press it to have presser return to the start sewing point and go up.
D	Pattern Number	Display the number of the current pattern
E	Pattern Stitch Number	Display the stitch number of the current pattern

F	Pattern Shape	Display the shape of the current pattern
G	Max Speed	Display the Max Speed
H	Counter Setting	Press it to set the counter type and current counter value  ：Sewing Counter  ：No. of piece counter
I	X Actual Size	Display the X actual size of current pattern
J	X Scale Rate	Display the X scale rate of current pattern
K	Y Actual Size	Display the Y actual size of current pattern
L	Y Scale Rate	Display the Y scale rate of current pattern
M	Sewing Speed	Display the current sewing speed
N	Set Sewing Speed	Change the sewing speed
O	P Pattern File Folder Number	Display the number of the current P pattern file folder
P	P Pattern Selection	Display the registered P pattern. Press it to enter the interface for sewing P pattern. This button is not displayed at initial status.
Q	Pause	Press it to stop the machine. It is affected by parameter U31. When this button is selected, the interface will only display this button

2.4 Pattern Registration

999 normal patterns can be registered for the most. press  to enter the interface of Pattern Registration （shown as the right figure）:



② **Input Pattern No.**

Input the pattern No. via keyboard. If the pattern number is already existed in the system, the look and relevant information of the registered pattern will be shown on the upper interface.

by pressing  ,  user can search the unregistered number.

② **New Pattern Registration**

After confirming the pattern number, user can press  . The displayed pattern data will be copied to the newly registered pattern. Afte the operations, the system will return to the interface for inputtting data of the newly registered pattern

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

Note：the Basic pattern cannot be replaced

2.5 Pattern Naming

Press  to enter the interface for naming pattern (as shown in the right figure), 14 figures can be inputted at the most.

 : Icon Right-moving

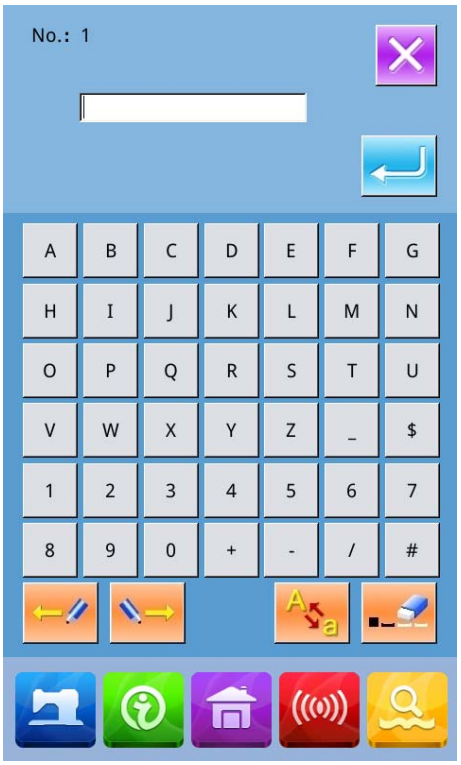
 : Icon Left-moving

 : Caps Locks

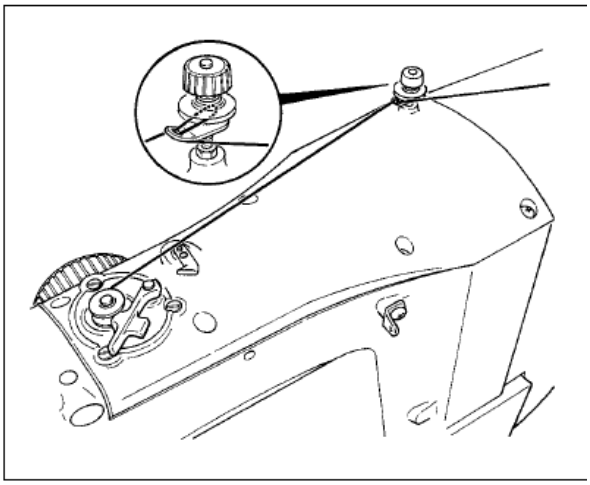
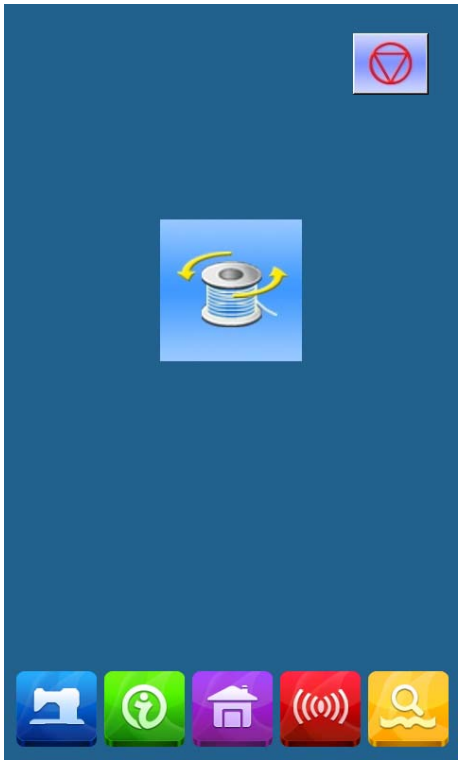
 : Eraser

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

The position of figure can be determined by moving the icon, the Eraser is used to delete the figure

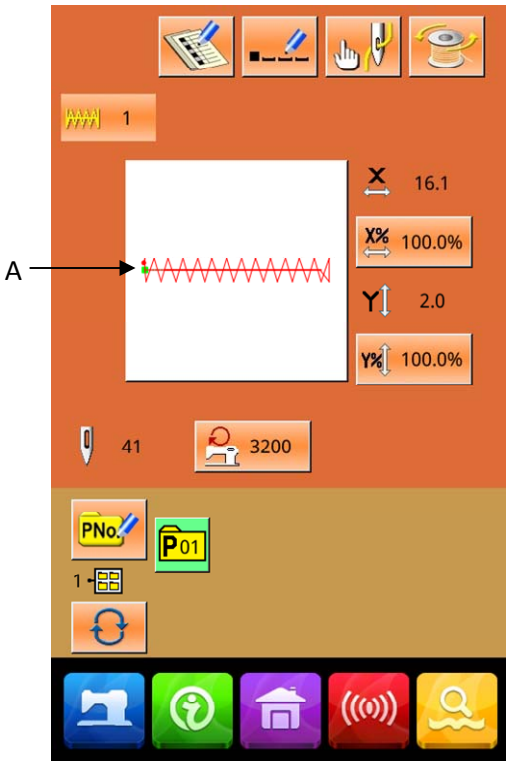


2.6 Winding

① **Install the shuttle core** Fit the shuttle core fully onto the winder shaft. (as shown in the figure in right)	
② **Display the bottom thread winding screen** Press  in the data input interface, and then the winding interface will be displayed (as shown in the right figure) ③ **Start Winding** Step the start pedal, and then the sewing machine runs and starts winding bottom thread. ④ **Stop the sewing machine** Press STOP button  to stop the sewing machine. The system will return to the normal mode. By the way, in the bottom-thread winding mode, stepping the start pedal will stop the machine at this mode. Step the pedal again to resume winding. This function can be used at winding several shuttle cores.	

Note: After user turns on the power, or changes to main controller input, the system will not perform the winding action. Please set the pattern and press the  to display the sewing interface.	

2.7 Pattern Selection

① Enter Pattern Selection Interface In the data input interface (as shown in right), click Sewing Shape (A) to enter the interface for selecting patterns.	

The upper area of the pattern selection interface is the sewing shape of the current pattern. Below that it is the number of the registered pattern.

: Preview the pattern

: Input the number to inquire pattern

: Delete the pattern

Click button A to shift between the basic patterns and user patterns, if the system has the normal patterns

② Pattern Selection

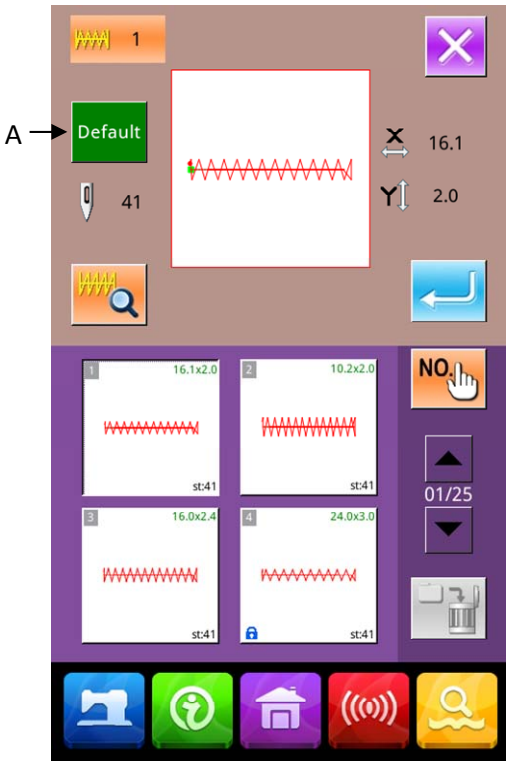
If the patterns are the basic patterns, 4 pattern numbers can be displayed in one page; for the user patterns, 20 pattern numbers can be displayed in one page.

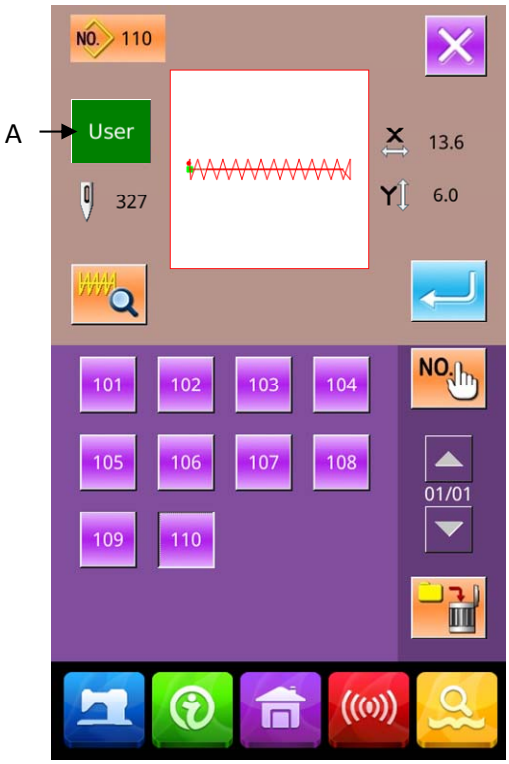
For the basic pattern, at each pattern number, the system will also display the shape and x/y range of the pattern. For the user patterns, only the pattern number will be displayed.

Select the registered pattern number. Then the system will display the content of that pattern in upper area. At this moment, press to finsh the selection.

③ Pattern Inquiry

Press to activate the interface of Pattern Inquiry, input the number of





pattern via the number keys. **④ Pattern Deletion** Select the registered pattern and then press  , the pattern will be deleted. However, the patterns registered to P pattern can't be deleted. **Note: Patterns are divided into basic pattern and normal pattern. The basic patterns are the default patterns, which can't be deleted. The normal patterns are the patterns made, copied or input by user, which can be deleted or modified.**	
⑤ Pattern Preview Press  to preview the current pattern in full screen (White Background).	 

2.8 Sewing Data Setting

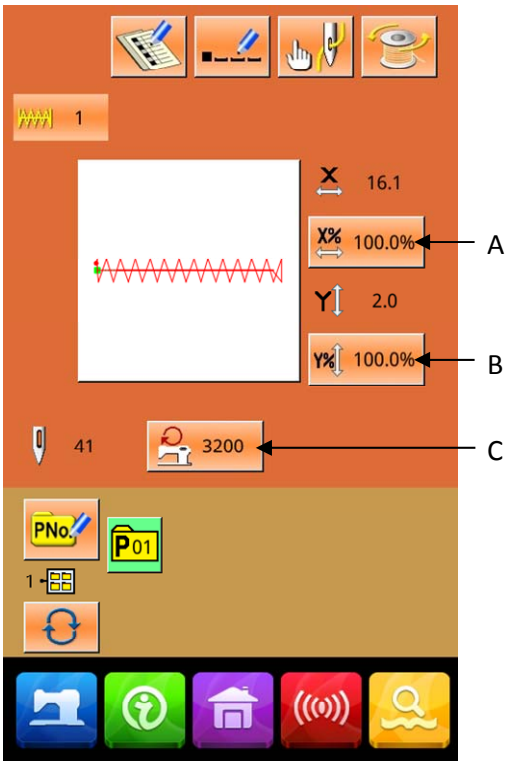
① **Enter Interface for Setting the Sewing Data**

In data input interface, pressing button A, B or C can enter the scale rate setting interface and speed limitation interface respectively.

	Item	Input Range	Default Value
A	X Scale Rate	1.0~400.0%	100.0%
B	Y Scale Rate	1.0~400.0%	100.0%
C	Max Speed	400~2700rpm (Different among different models)	2700rpm

Note 1: Parameter U64 can shift between the setting of scale rate and the setting of actual size.

Note 2: The range and the default value of Max speed are affected by the parameter U01.



② **Set Scale Rate**

The right figure is the interface for setting the scale rate. The upper part is for setting X scale rate, while the lower part is for setting the Y scale rate.

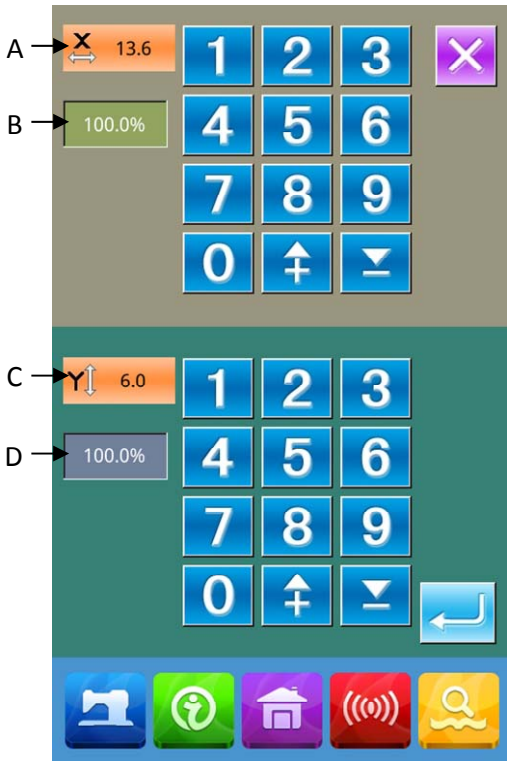
A：X Actual Size

B：X Scale Rate

C：Y Actual Size

D：Y Scale Rate

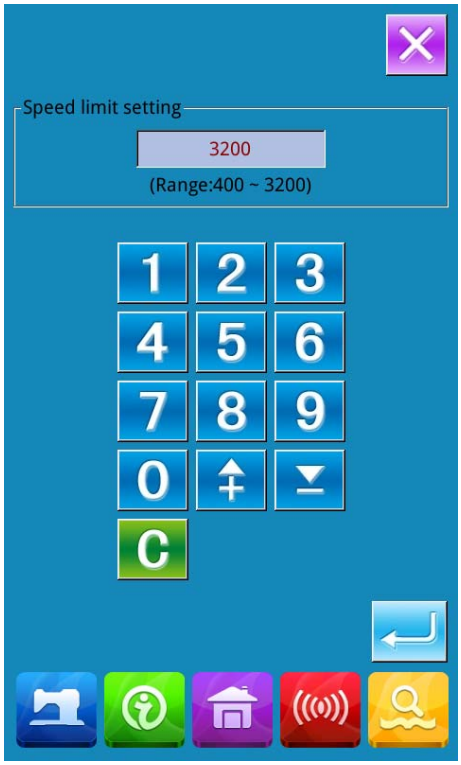
Use 0 ~ 9 and number keyboard or & to input the value. The input value will be inserted to the first place of the figure. The number input at before will be moved forwards. Press to finish the operation and return to data input interface.



③ Set Max Speed

The right figure is the interface for setting the max speed.

Use 0 ~ 9 and number keyboard or & to input the value. The input value will be inserted to the first place of the figure. The number input at before will be moved forwards. Press to finish the operation and return to data input interface.



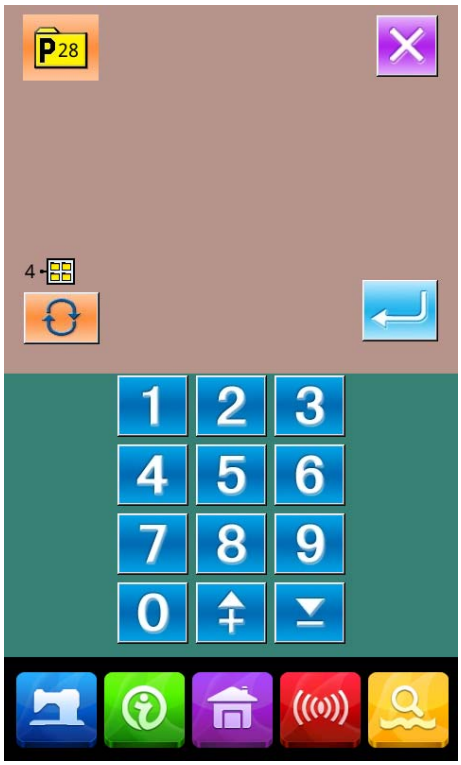
2.9 P Pattern Registration

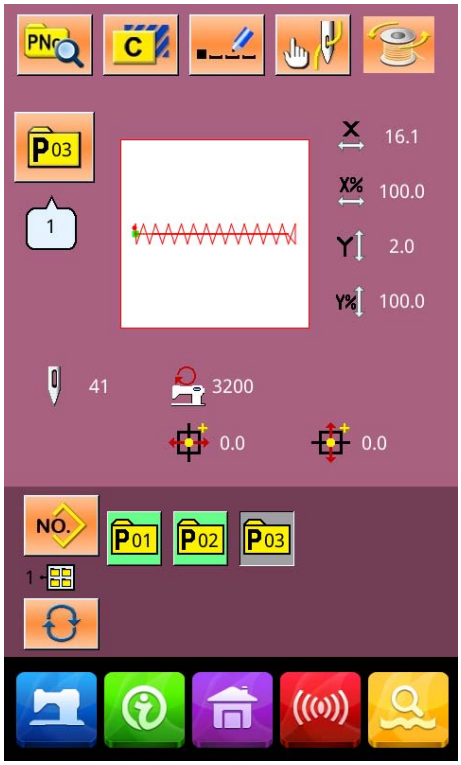
① Enter P Pattern Registration Interface

In data input interface, press PNo to enter the interface of P Pattern Registration（shown as the right figure）

② Input P Pattern Number

Use 0 ~ 9 and number keyboard or & to input the number for registration. If the input number has been registered in the system before, the interface will display the shape and relating data of that registered pattern. In this situation, the new pattern can not be registered with this number



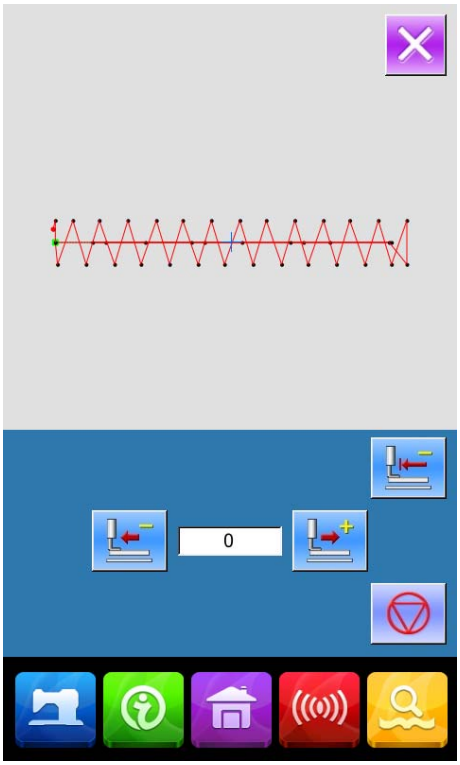
③ **Select File Folder Number** P pattern number can be registered into 5 file folders, and each folder can contain 10 P patterns at most. Press  to select folder in order. ④ **Confirm Pattern Number** Press  to finish the Rgistration of P Pattern and return to the input interface of P Pattern Data	

2.10 Trial Sewing

① Display the interface of sewing

At data input interface, press  , the background of screen will change to blue, and the system enters the interface for sewing

② Display of Trial Sewing

In the sewing interface. Press  to enter the trial sewing interface (As Shown at Right)：  ：Return to Origin  ：Return  ：Forward  ：Stop	

③ Start Trial Sewing

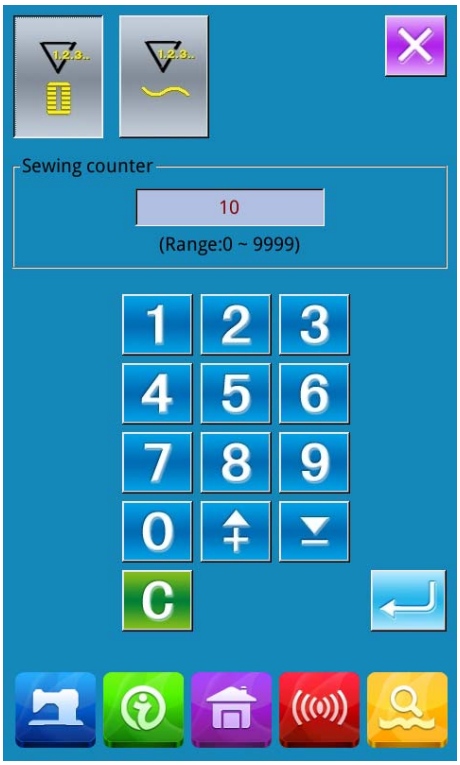
Step the pedal to lower the presser. Use  and  to confirm the shape. After user holds that button for a while and then release it, the presser will still keep moving. At this moment, please press  to stop it

Press  to have needle return to origin. And the system will return to the sewing interface.

④ End Trial Sewing

Press  to quit the trial sewing interface and return to sewing interface. When the pattern is not at the start position or end position, user can carry out sewing in the middle by stepping the pedal. For quit, please press  and turn off the activated interface. Then the sewing interface will displayed and the system returns to the sewing start position.

2.11 Counter Operation

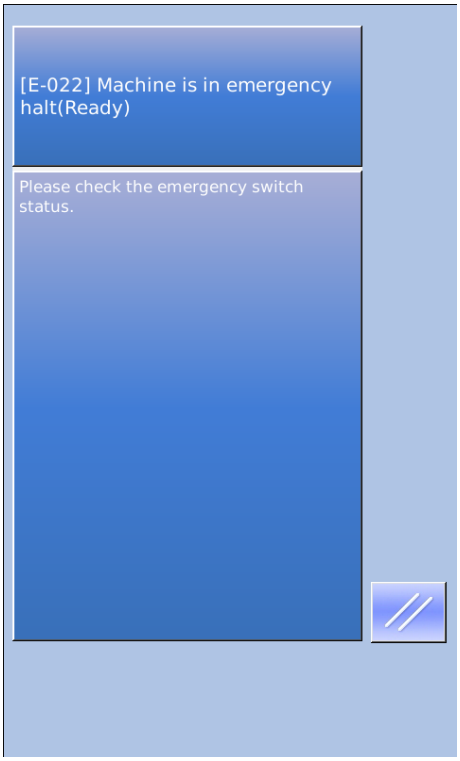
③ Display the counter interface In the sewing interface, press  ()，the interface of counter setting comes out.  ：Sewing Counter  ：No. of Pieces Counter **④ Selection and Setting of Counter** The user can set the type of counter by choosing  and  , and set the value of counter	

2.12 Emergency Stop

By setting parameter U31 to select pause method:

User can select among Invalidity, Panel and EXT to set the pause method.

When the pause button is pressed, the interface will display the  .



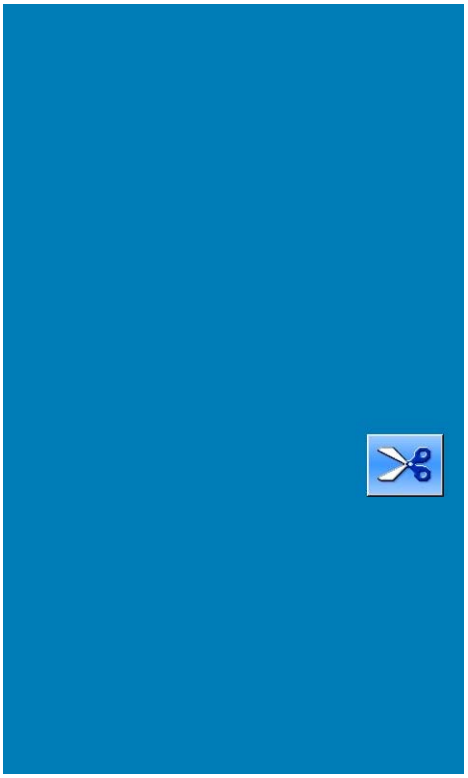
① Release the Error

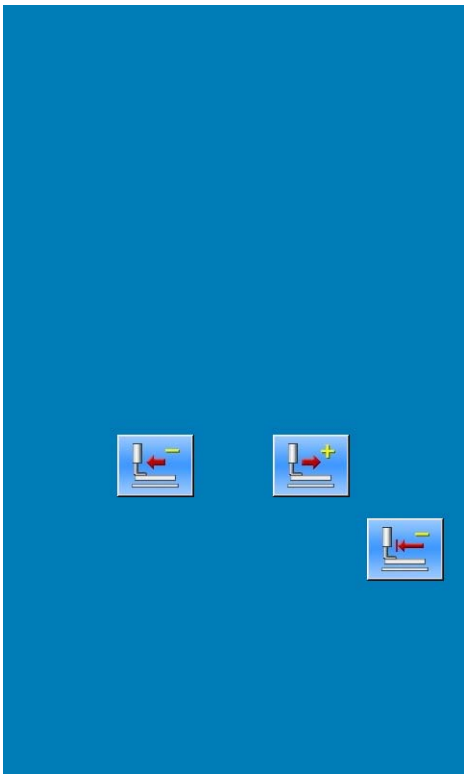
Press Pause button at sewing to stop sewing machine. At this moment, the error interface is displayed, which hints user the pause key is pressed. At this moment, press  to release the error.

② Trimming

Press  to cut thread and enter the procedure setting interface.

Note：When the Parameter U97 is set at Auto Trim at Pause, the system will enter procedure setting directly.



② **Set procedure and adjust the presser to re-sewing position** Press  to enter proceure setting interface.  : Backward feeding  : Forward feeding  : Return to Origin Press  or  to move presser to the re-sewing position ③ **Restart sewing** Step pedal to restart sewing	

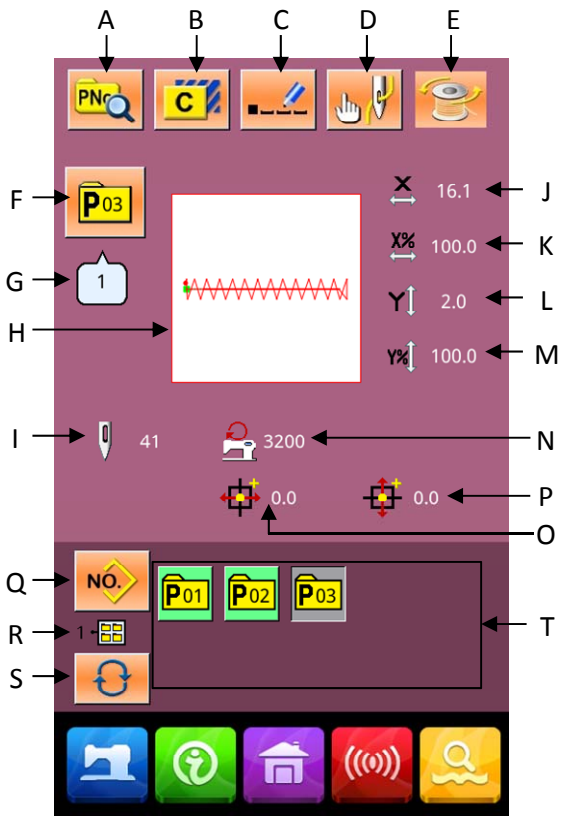
3 Operations on Prompt（P）Pattern

3.1 P Pattern Data Input

The Prompt pattern is called P Pattern for short, which contains a normal pattern and its relating sewing parameters, like X scale rate, Y scale rate, speed limitation and so on. If selecting a P pattern, user will get rid of the trouble for setting the parameters of the pattern at each time sewing

In the right picture, is shown the P Pattern Data Input Interface.

50 P patterns can be registered at most.



List of Function Keys:

No.	Functions	Content
A	P Pattern Edition	Edit the content of P pattern
B	P Pattern Copy	Copy the content of existing P pattern to an empty pattern number.
C	Pattern Naming	14 figures can be inputted at most.
D	Threading	Presser it to lower the presser.
E	Winding	Wind the thread with a press on 
F	P Pattern Number Display	Display the number of the selected pattern.
G	Sewing Shape Number Display	Display the number of the normal pattern quoted in the existing P pattern.

No.	Functions	Content
H	Sewing Shape Selection	Display the sewing shape of the current pattern
I	Pattern Stitch Number Display	Display the stitch number of the currently selected pattern.
J	X Actual Size Display	Display the X actual size of current pattern
K	X Scale Rate Setting	Display the X scale rate of current pattern
L	Y Actual Size Display	Display the Y actual size of current pattern
M	Y Scale Rate Setting	Display the Y scale rate of current pattern
N	Max Speed Limitation	Display the Max Speed
O	X Travel Amount Display	Display the X travel amount of the currently selected pattern
P	Y Travel Amount Display	Display the Y travel amount of the currently selected pattern
Q	Return to Normal Pattern Data Input	Return to the interface for inputting normal pattern data
R	P Pattern File Folder Display	Display the file folder number of the current P pattern
S	P Pattern File Folder Selection	Shift the file folder number of P pattern in sequence.
T	P Pattern Selection	Display the registered P pattern

3.2 P Pattern Edition

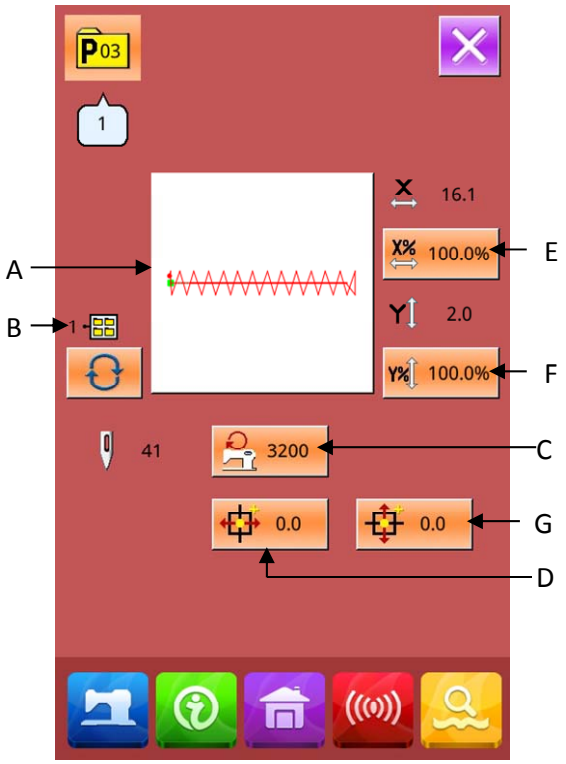
① **Have Access to P Pattern Edition Interface**

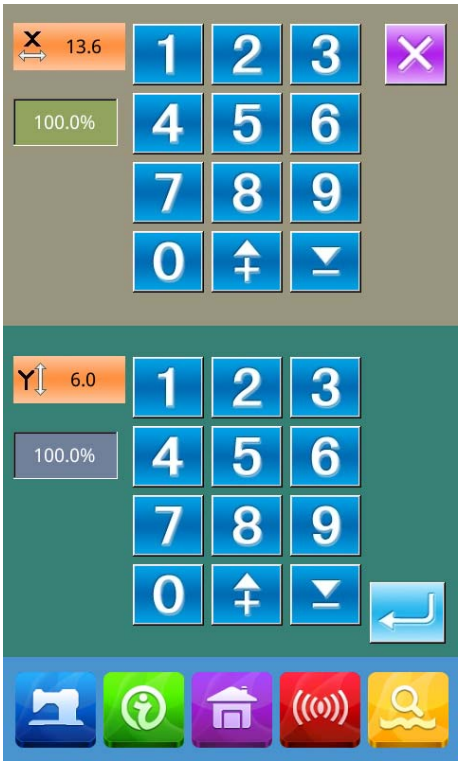
Press  to have access to P Pattern Edition Interface (as shown at the right picture)

② **Change the Item Data**

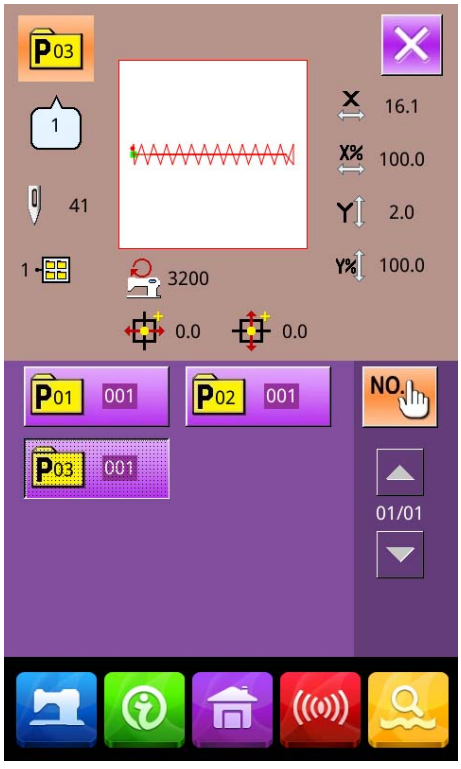
Select the item for changing and set the value.

	Item	Range	Default Value
A	Sewing Shape		
B	File Folder Number	1~5	
C	Max Speed Limitation	400~3000rpm	3000rpm
D	X Travel Amount	-30.0~30.0mm	0
E	X Scale Rate	1.0~400.0%	100.0%
F	Y Scale Rate	1.0~400.0%	100.0%
G	Y Travel Amount	-30.0~30.0mm	0
H	Thread Tension	0~200	100



③ **Confirm the Change of Data** Take the edition of "X Travel Amount" as example: With 0 ~ 9 and keyboard or , user can input the value. Press to finish the operation. ④ **Quit the Edition** Press to close P Pattern Edition Interface and the system will return to the Interface for Inputting Sewing Data.	

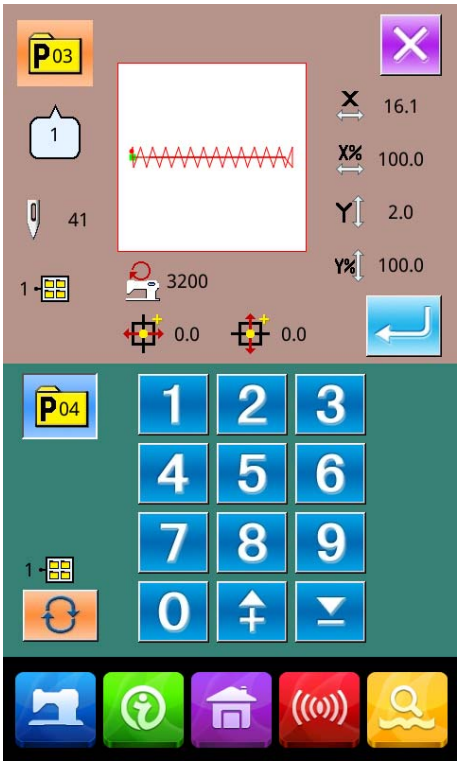
3.3 P Pattern Copy

① **Select a Pattern to Be Copied** Press to have access to P Pattern Copy Interface (as shown at right picture). Select the number of the pattern that needs copying among the registered ones, and then press NO.	

② **Input newly Registered Pattern Number**

The Pattern to be copied is displayed at the upper side of the interface. By using number keys, user can select the unregistered pattern number. The registered pattern number is unable to be registered again.

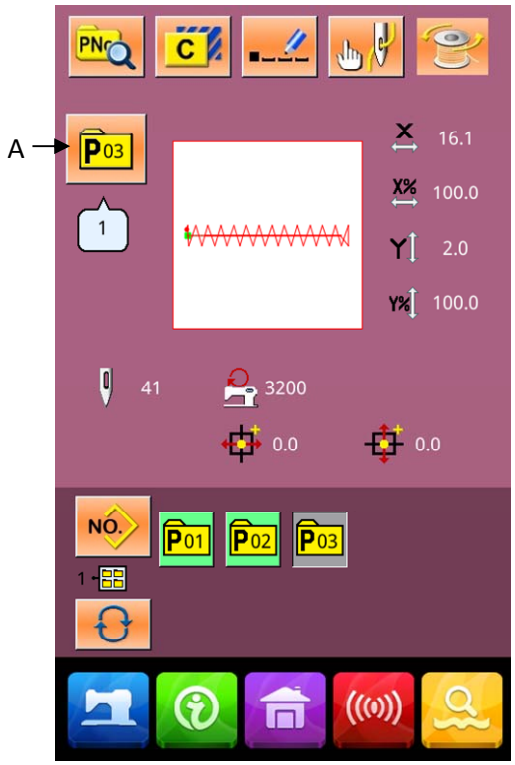
When pressing  , user can select the file folder for saving. Press  to finish the operations for copying the pattern, and the system will return to the Interface for Copying P Pattern



3.4 P Pattern Selection

① Have Access to P Pattern Selection Interface

As shown in right picture, user can press Key (A) to have access to P Pattern Selection Interface



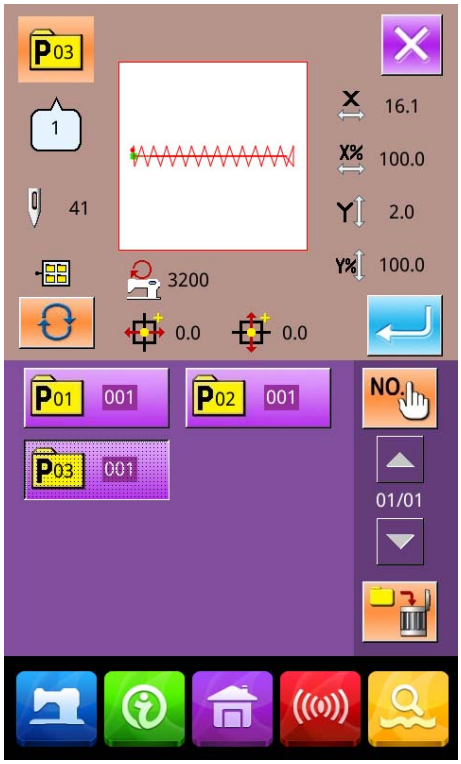
② Select Pattern Number

The relating information of the currently selected pattern is displayed at the upper side of the interface.

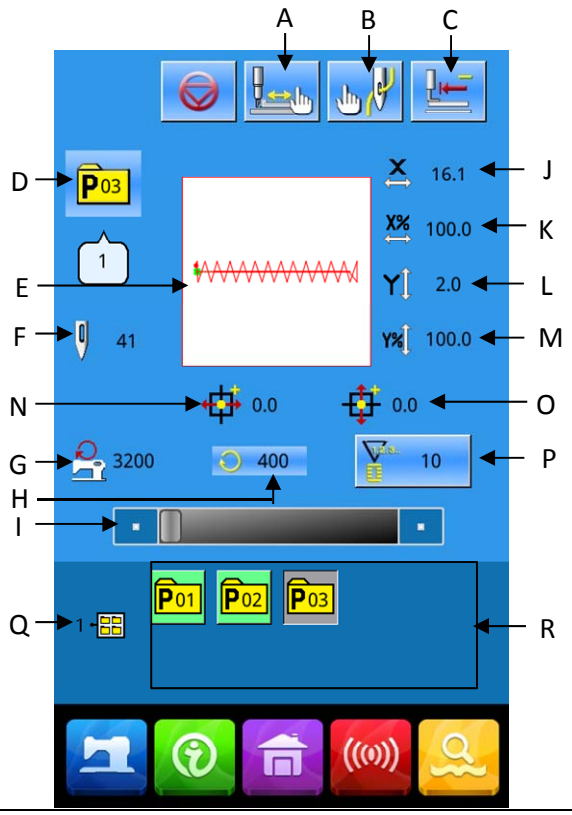
When user presses  to shift the status of concealing the file folder number, the entire registered P patterns can be displayed.

③ Confirm the Selection of Pattern

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



3.5 P Pattern Sewing

At the Interface for Inputting P Pattern Data, User can press  to have access to the Sewing Interface (as shown in right).	

List of Functions Keys:

No.	Functions	Content
A	Trial Sewing	Press it to have access to Trial Sewing Interface, where user can determine the shape of f pattern.
B	Threading	Press it to lower the presser.
C	Return to Origin	Press it to have the presser return to the start point.
D	P Pattern Number Display	Display the number of the currently selected pattern.
E	Sewing Shape Number Display	Display the number of the normal pattern quoted in the existing P pattern.
F	Pattern Stitch Number Display	Display the sewing stitch number of the currently selected pattern
G	Max Speed Limitation	Display the Max Speed Limitation

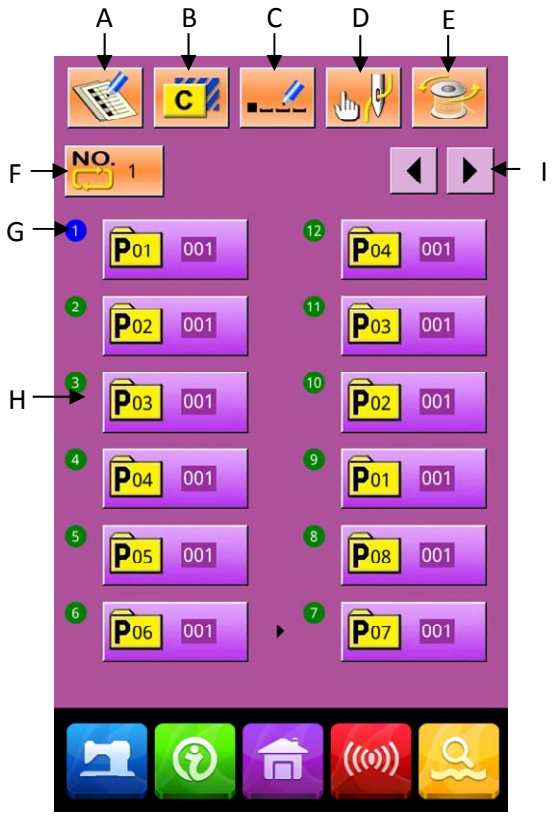
No.	Functions	Content
H	Sewing Speed Display	Display the current sewing speed
I	Sewing Speed Setting	Change the sewing speed
J	X Actual Size Display	Display the X actual size of current pattern
K	X Scale Rate Setting	Display the X scale rate of current pattern
L	Y Actual Size Display	Display the Y actual size of current pattern
M	Y Scale Rate Setting	Display the Y scale rate of current pattern
N	X Travel Amount Display	Display the X travel amount of the currently selected pattern
O	Y Travel Amount Display	Display the Y travel amount of the currently selected pattern
P	Counter Setting	Press it to set the type and the present value of counter.  ：Sewing Counter  ：No. Pieces Counter
Q	P Pattern File Folder Number Display	Display the file folder number of the current P pattern
R	P Pattern Selection	Display the registered P pattern

4 Operations on Combination（C） Pattern

4.1 C Pattern Data Input

The combination pattern, called as C pattern for short, consists of a group of P patterns, which can contain 50 sub-patterns at most. In this model, 50 C patterns can be registered into the system at most.

For having access to the Interface of Combination Pattern Data Input (as shown at right), please refer to the content in [8.5 Change Sewing Type]



List of Function Keys:

No.	Function	Contents
A	C Pattern Registration	Register a new C pattern.
B	C Pattern Copy	Copy the content of Current C pattern to an empty pattern number.
C	Pattern Naming	14 figures can be inputted at most.
D	Threading	Press it to lower the presser.
E	Winding	Wind the thread with a press on  .
F	C Pattern Number Selection	The number of the currently selected pattern is displayed on the button. Press it to have access to the C Pattern Selection Interface.

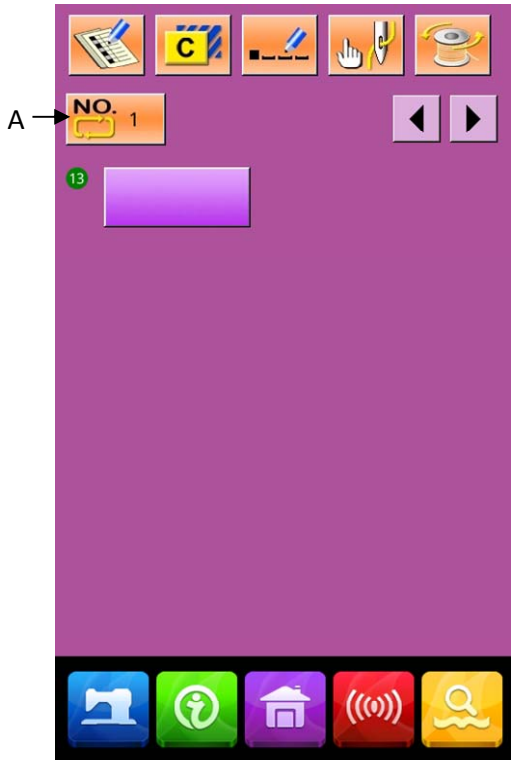
No.	Function	Contents
G	Sewing Sequence Display	Display the sewing sequence of the currently selected pattern. The pattern with a blue marks is the initial sewing pattern.
H	C Pattern Shape Selection	Press it to have access to C Pattern Edition Interface. Operator can select a P pattern to input.
I	Page	50 C patterns can be registered at most, and 12 C patterns can be displayed on each page at most.

4.2 C Pattern Edition

① Have Access to C Pattern Edition Interface

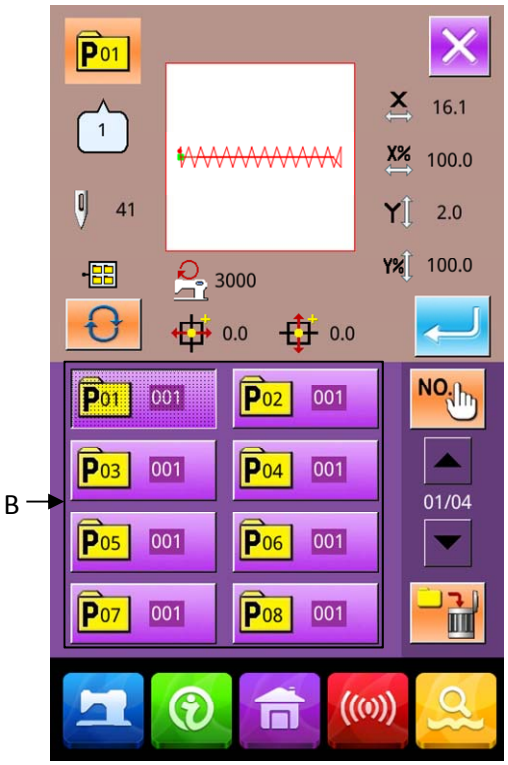
At Interface of C Pattern Data Input, user can press A to have access to C Pattern Edition Interface.

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



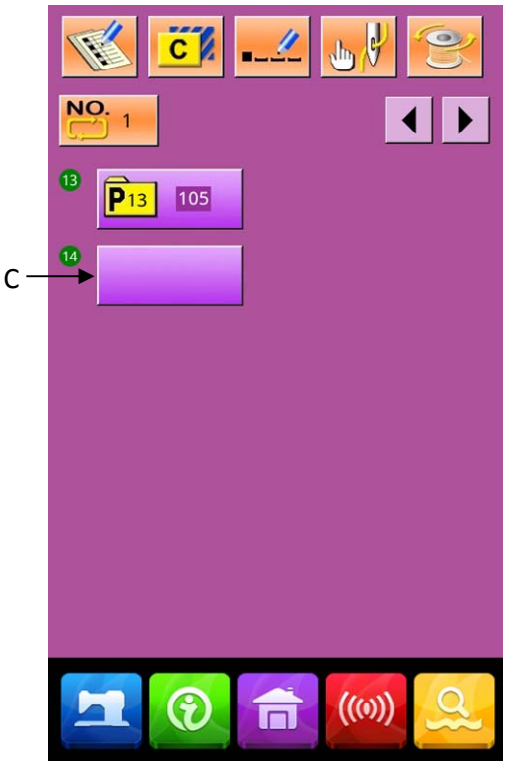
② Select Shape

At C Pattern Edition Interface (the right figure), user can select the P Pattern (B) for registration and then press  to finish the selection.

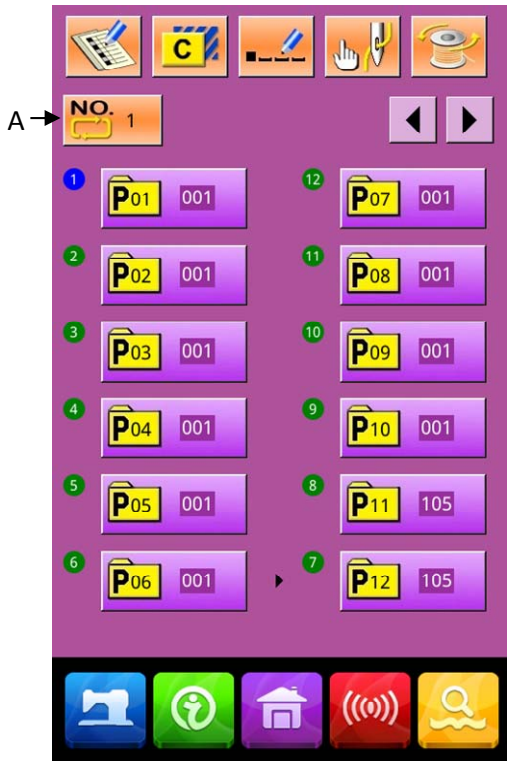
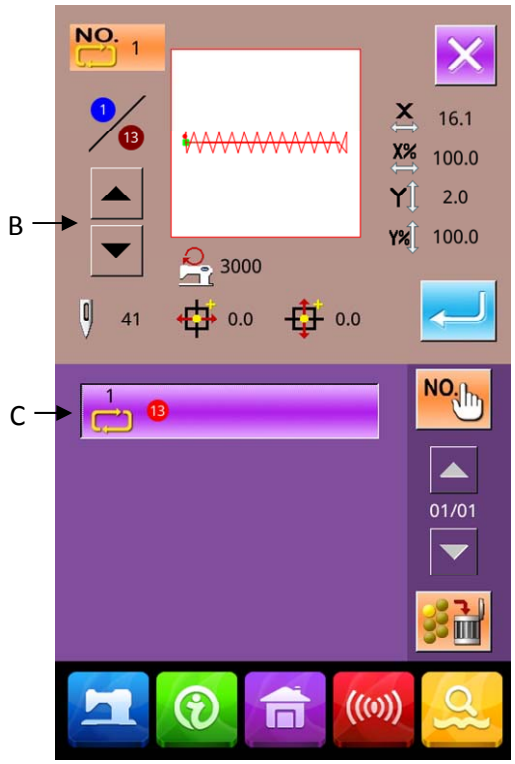


③ Repeat the Registration

When the 1st pattern is registered, the Selection Key (C) for the 2nd pattern is displayed. Repeat the operations at above so as to register other patterns.

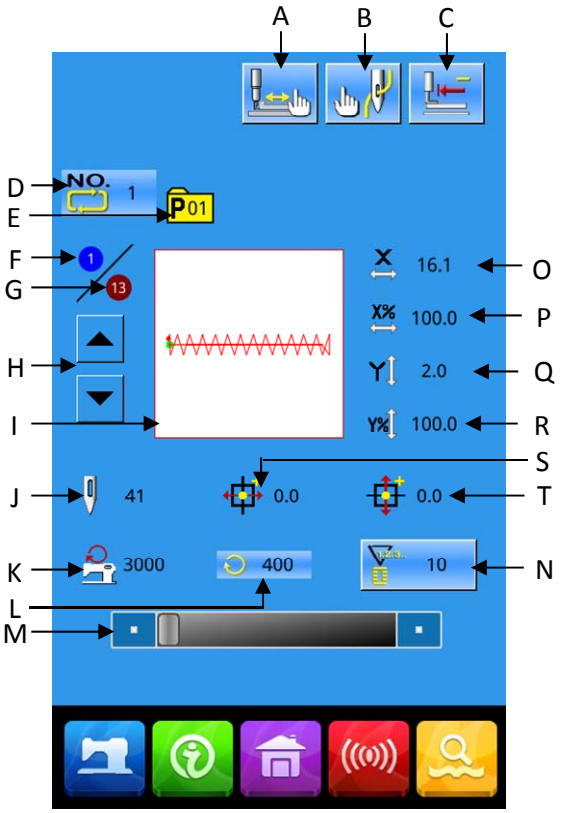


4.3 C Pattern Selection

① Have Access to C Pattern Selection Interface As shown on the right picture, user can have access to C Pattern Selection Interface by pressing Figure A.	
② Select C Pattern Number At C Pattern Selection Interface (the right figure), user can press B to change the data information of P patterns within the current C pattern in sequence. Confirm the number of the needed C pattern (C), and then press  to finish selection	

4.4 C Pattern Sewing

At Interface of C Pattern Data Input, user can press  to have access to Sewing Interface (as shown in right picture).



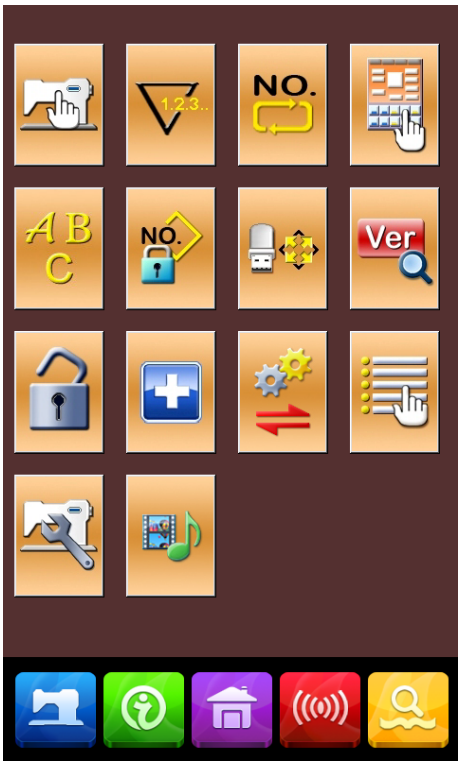
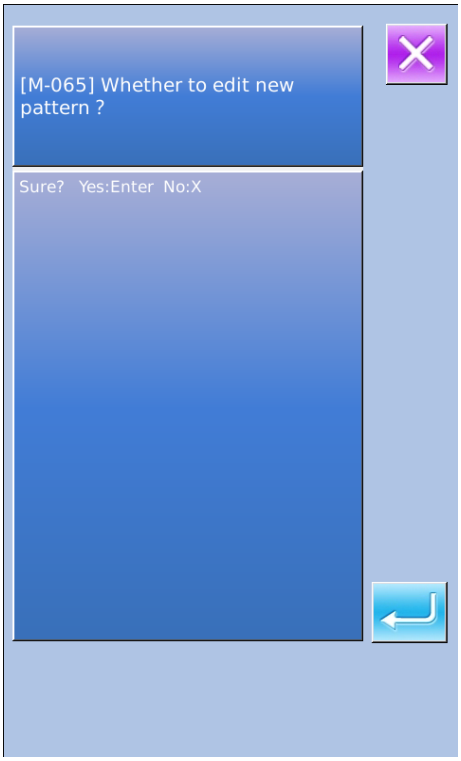
List of Function Keys：

No.	Functions	Contents
A	Trial Sewing	Press it to have access to Trial Sewing Interface, where user can determine the shape of f pattern.
B	Threading	Press it to lower the presser.
C	Return to Origin	Press it to have the presser return to the start point.
D	C Pattern Number	Display number of current C pattern
E	Sewing Shape Number Display	Display the number of the sewing shape registered under the current C pattern
F	Sewing Sequence Display	Display the sewing sequence number at current pattern
G	Total Number Display	Display the total number of sub-patterns registered in the current C pattern

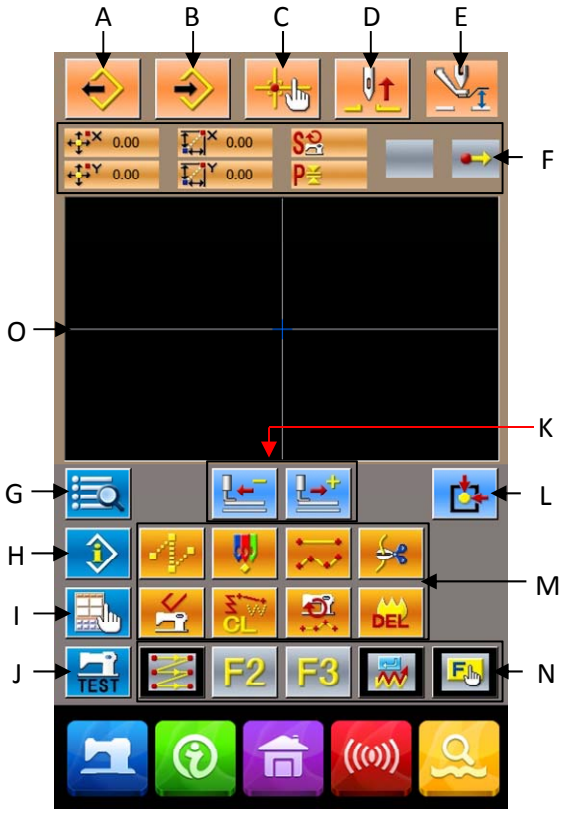
No.	Functions	Contents
H	Sewing Sequence Forward/Backward	Select the previous or next shape for sewing.
I	Pattern Shape	Display the shape registered at current sewing
J	Patten Stitch Number Display	Display the stitch number of the shape registered at current C pattern.
K	Max Speed Limitation Display	Display the Max speed at sewing this shape
L	Sewing Speed Display	Display current sewing speed
M	Sewing Speed Setting	Enable to change sewing speed
N	Counter Setting	Press it to set the type and the present value of counter.  ：Sewing Counter  ：No. Pieces Counter
O	X Actual Size Display	Display the actual size of the selected pattern in X direction.
P	X Scale Rate Setting	Display the X scale rate of the selected pattern.
Q	Y Actual Size Display	Display the actual size of the selected pattern in Y direction.
R	Y Scale Rate Setting	Display the Y scale rate of the selected pattern.
S	X Travel Amount Display	Display the X travel amount of the currently selected pattern
T	Y Travel Amount Display	Display the Y travel amount of the currently selected pattern

5 Pattern Edition

5.1 Have Access to Pattern Edition Mode

User can press  to shift the data input interface to the Mode Selection Interface (as shown at right picture), where user can make some detailed settings and editions. For the detailed operations and settings at Mode Selection Interface, please refer to 【8 Mode and Parameter Setting】.	
Press  the system will ask user whether to have access to Pattern Edition Interface.	

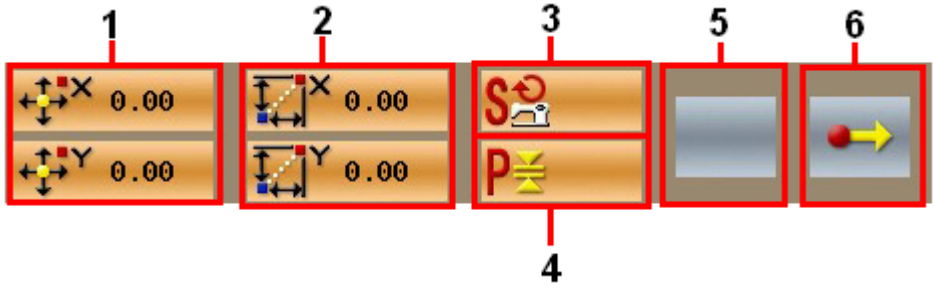
Press  to have access to Standard Interface for Pattern Edition, as shown in the right picture：



List of Function Keys：

No.	Function	Contents
A	Load Pattern	Display the Pattern Loading Interface
B	Input Pattern	Display the Pattern Input Interface
C	Needle-entry Point Inquiry	Promptly locate the needle entry point; when editing the patterns, user can input the coordinates of the sewing point directly.
D	Lift needle	Make needle return to the highest point
E	Move Intermediate Presser	Lift or lower the intermediate presser
F	Current Needle Position Information	Display the position information of needle at present
G	Code List	Display the entire available editing functions. Please refer to [List of Editing Functions] for details.
H	Information Display	Display the detailed information of the currently edited pattern
I	Display Setting	Enable wide-angle setting, needle entry point display setting and so on

No.	Function	Contents
J	Trial Sewing	Sew the currently edited pattern through a trial sewing
K	Forward· Backward Feeding	Move one stitch from the current position（forwards  ; backwards  ）
L	Return to Origin	Return the needle from current position to origin
M	Function Keys	Call the functions on the buttons directly
		1  : Empty feeding
		2  : Point Sewing
		3  : Normal Sewing
		4  : Thread-trimming
		5  : Cancellation of Mechanical Control Order
		6  : Element Deletion
		7  : Changes on Sewing Speed Section
		8  : Delete Current Pattern
N	Hot Keys	By using Function of Selection and Setting (Function Code 112), user can distribute the needed functions to each button. After the distribution, the figure of that function is displayed in the corresponding key.
O	Pattern Shape Display Area	Display the pattern

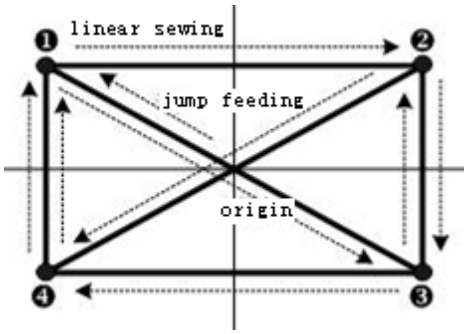


No.	Item	Content
1	Absolute Coordinate	The absolute coordinate of current needle position relative to the origin
2	Relating Coordinate	The relating coordinate of current needle position
3	Speed	The sewing speed or empty feeding speed of current point.

No.	Item	Content
4	Interval	The length of current element stitch. (If the stitch is scaled, the value before the scaling will be displayed.)
5	Type of Element	Types of current elements. At setting sewing data, the system will displayed the element types, like jump feed, broken line, free curve and so on). At setting the mechanical orders, the type of the control order will be displayed (like thread-trimming).
6	Types of Needle Entry	The types of the needle entry position:
		Start of Design: the start point (Origin) of a 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

Use Function of Pattern Edition to input the following pattern.



Input Point：

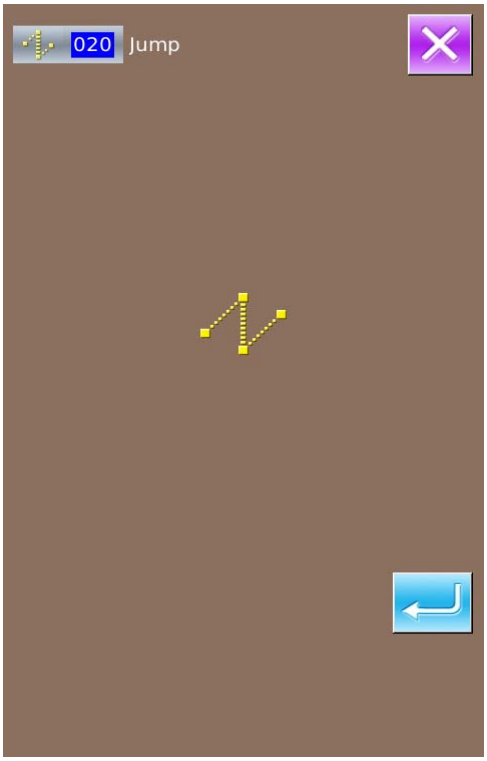
	X (mm)	Y (mm)
❶	-20.00	15.00
❷	20.00	15.00
❸	20.00	-15.00
❹	-20.00	-15.00

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

① Input of Empty Feeding

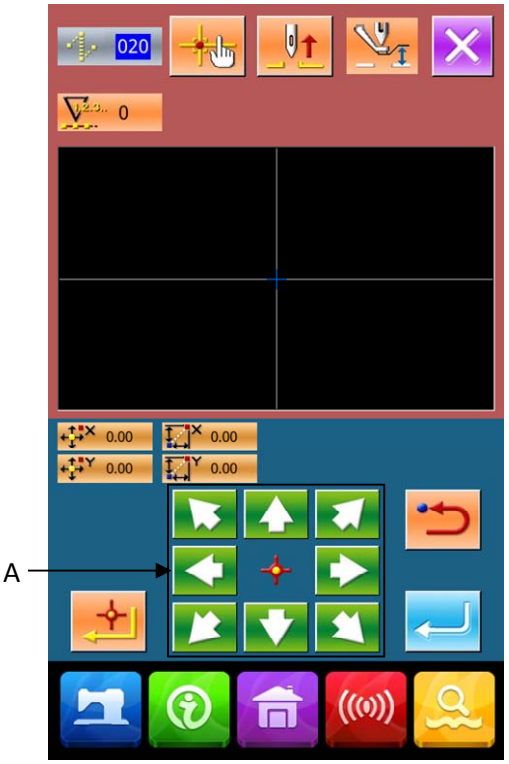
At Standard Interface for Pattern Edition, user can press  to activate the Interface for Setting Empty Feeding:：

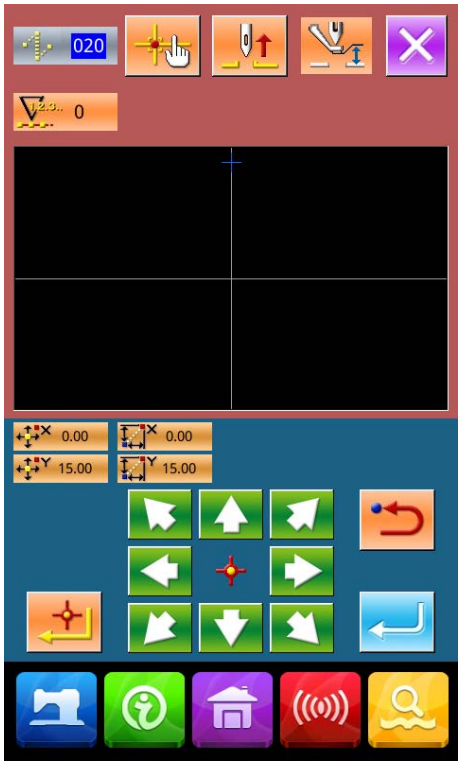
Note: user can also select “020: Empty Feeding” from function code list to enter the interface

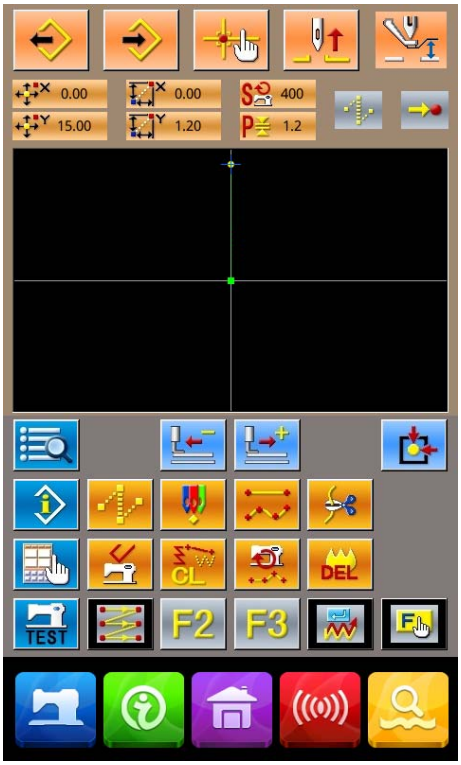


After user presses  , the Interface for Locating the Empty Feeding Position will be displayed：

At that Interface, user can use Direction Key (A) to move the icon (needle position) to the position with coordinate (0, 10). After pressing  for confirmation, user need press  to save the settings. After that, the system will return to the Standard Interface for Pattern Edition and display the empty Feeding stitch

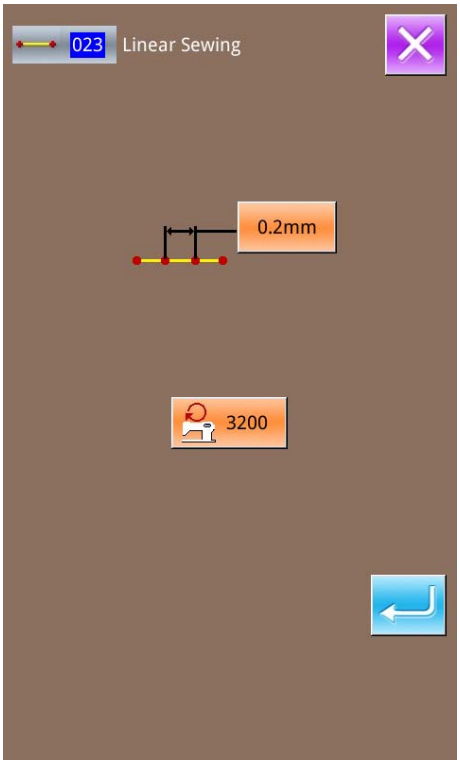


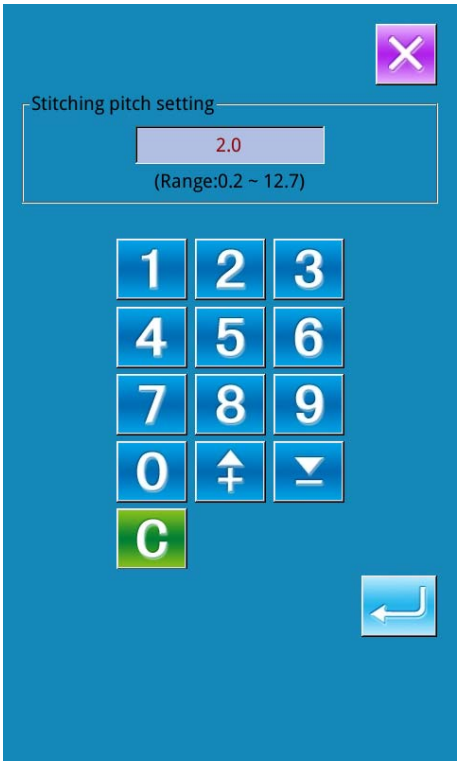
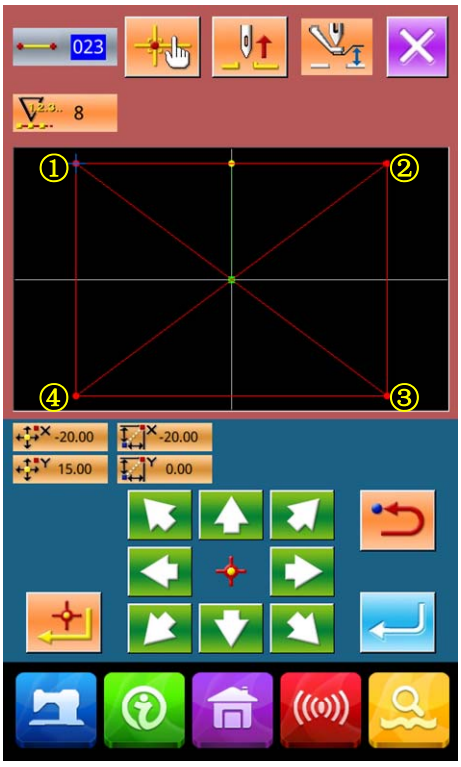


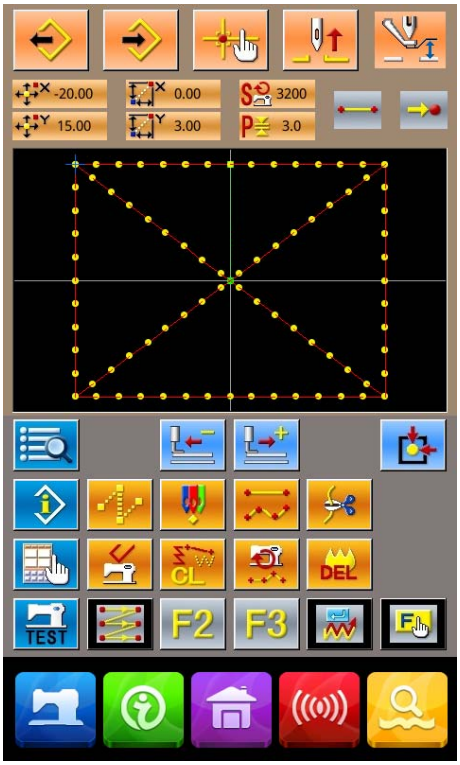


② Input of Linear Normal Sewing

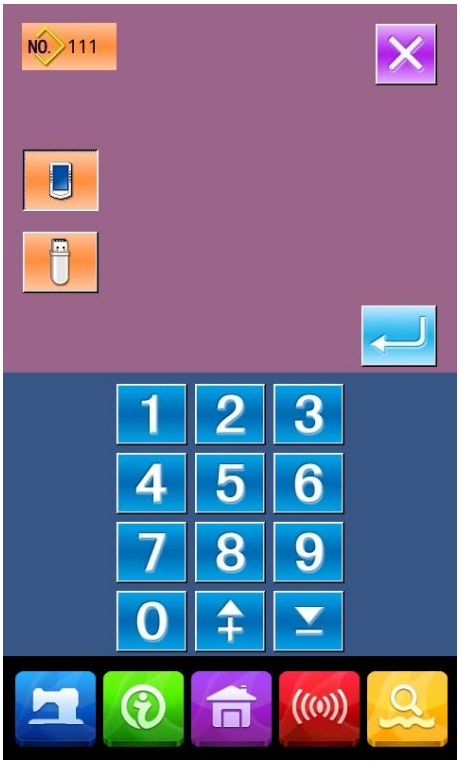
At Function Code List, select “023 Linear Normal Sewing”, and then press  to have access to Interface for Setting Linear Normal Sewing

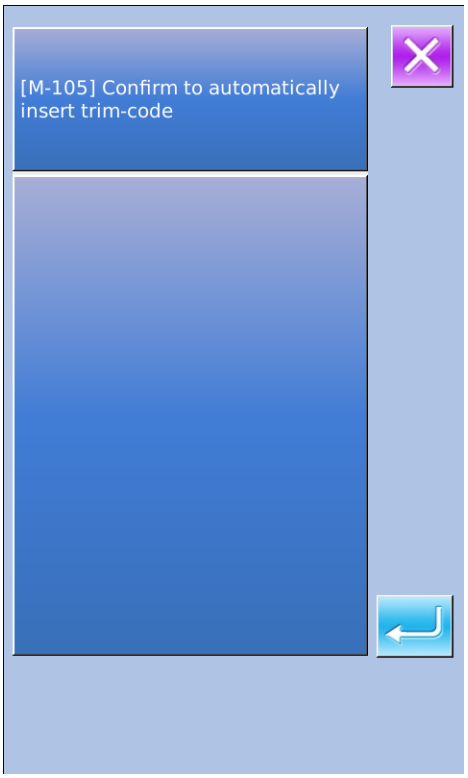


At Interface for Setting Linear Normal Sewing, press  to have access to the interface for setting the sewing stitch length, as shown in right picture. Press  and  in order to change the sewing length to “3.0”, and then press “ENTER” to save value and have the system return to the Interface for Setting Linear Normal Sewing Note: Press  to clear the value.	
After confirming the value “3.0mm” as the length of sewing stitch, user can press  to have access to the Interface for Setting Linear Normal Sewing. In that interface, user needs press Direction Keys to move the icon (where the needle locates) from ❶ to ❷, and then press  . Repeat the above operations to move the icon in the order of ❷→❸→❹→❶→❸→❷→❹→❶, as shown in right picture.	

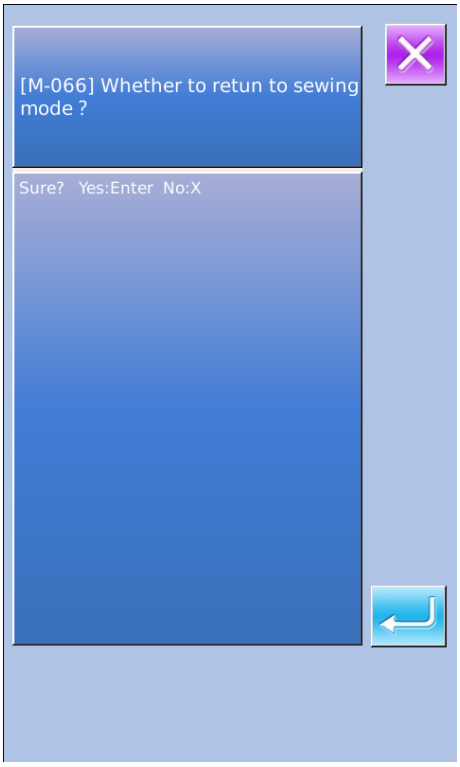
After confirming the pattern design, user can press  to create the pattern data and have system return to Standard Interface for Pattern Edition, where the pattern will be displayed.	

③ Save Pattern

Press  to have access to Pattern Saving Interface to save the edited pattern, as shown in right pictures. The system will set the pattern number automatically; user can also input the value with  ~  and keyboard or  . With  and  , user can select the location for saving the pattern. Both the U disk and the memory on operation panel will be available for saving the pattern.	

Press  to save pattern. Then the system will ask user whether to insert thread-trimming automatically, as shown at right picture. Press  to add automatic thread-trimming action; Press  to cancel the insertion of automatic thread-trimming action After the operations, the system will return to Standard Interface for Pattern Edition. **For the detailed operations and instructions of pattern edition, please refer to <SP510 Pattern-making Operation Manual>.**	

5.3 Quit Pattern Edition Mode

At Standard Interface for Pattern Edition, user can press  to have access to Mode Selection Interface, as shown at right picture. Pressing  is to quit from Pattern Edition Mode and to head for Sewing Mode.	

6 Information Functions

The 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.

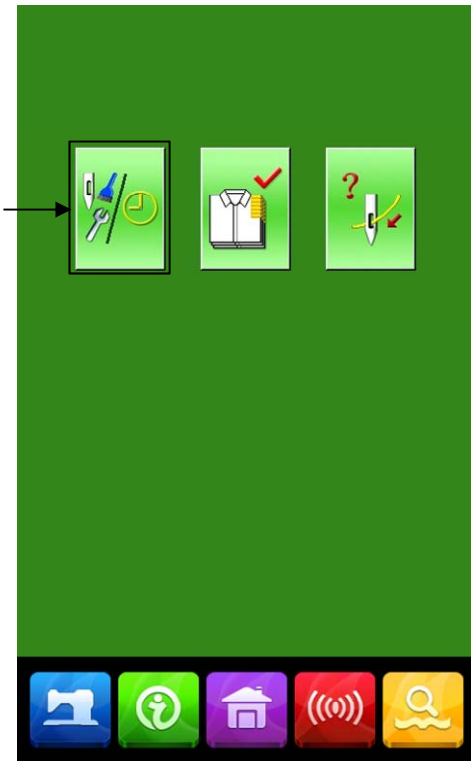
3）Display the threading picture

6. 1 Maintenance & Repair Information

① **Display Information Interface** At Sewing Data Input Interface, user can Press Information Key (A) to activate the Information Interface.	

② Display Maintenance & Repair Interface

Please press  (B) at Information Interface



At Maintenance & Repair Interface, the system will display the information of the following three items

 : Needle Replacement (Thousand Stitches)\

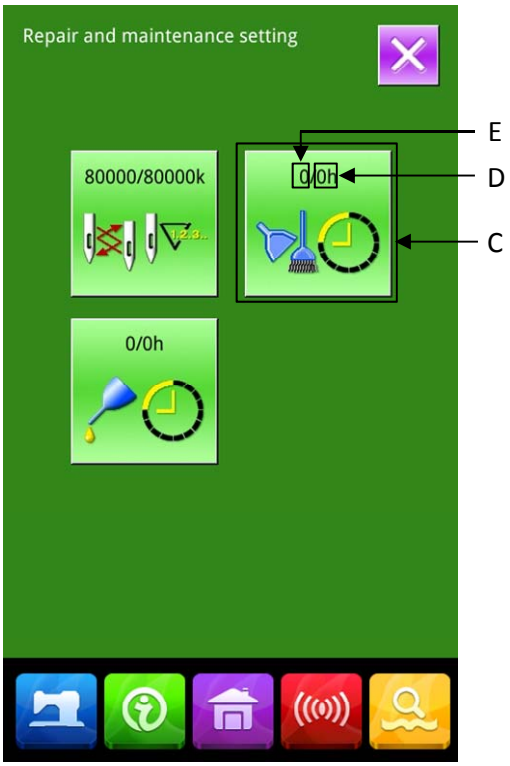
 : Cleaning Time (Hour)

 : Oil Replacement Time (Hour)

The figure of each item is displayed on the button (C), the time interval for the repair notice is displayed at (D), and the time left to the replacement is displayed at (E)

Additionally, the time left to the replacement can be cleared by users.

Press  to quit to information interface.



6. 2 Input Time for Maintenance & Repair

⑥ Display Information Interface （Maintenance Level）

At Interface for Inputting Sewing Data, user can hold the Information Key (A) for about 3 seconds to activate the Information Interface (Maintenance Level).

At that level, there are 6 buttons displayed on the interface

⑦ Information Interface

At Maintenance level, there are 6 functions displayed as below:

 : Maintenance & Repair

 : Production Control

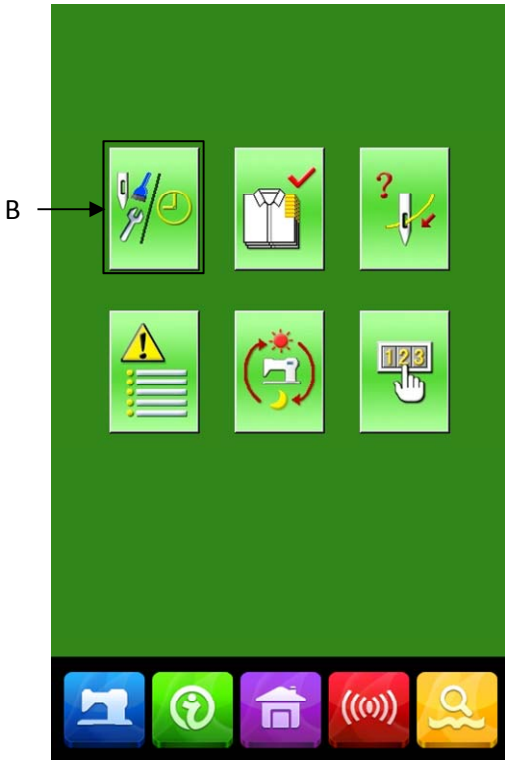
 : Threading

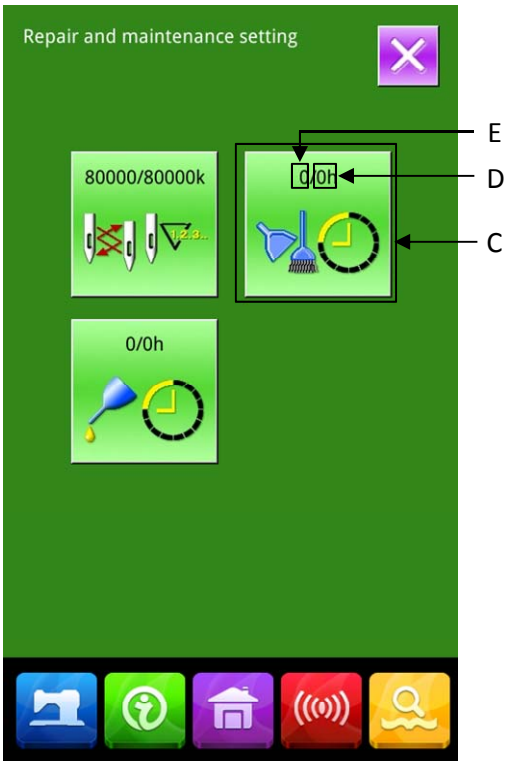
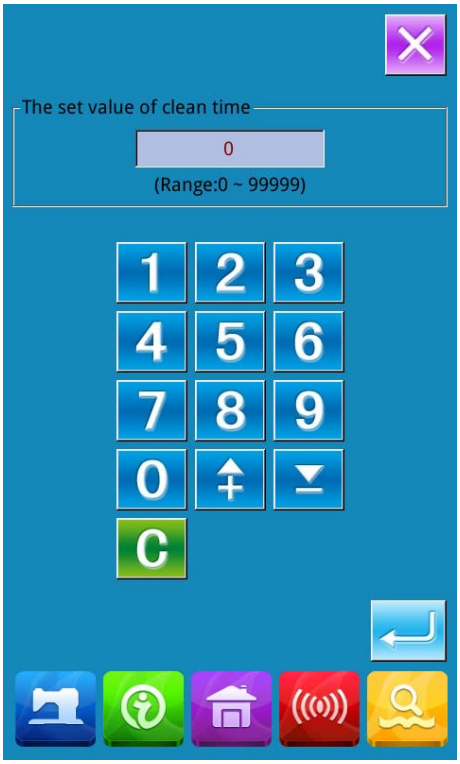
 : Alarm Record

 : Running Records

 : Periodical Password

Please press Maintenance & Repair Information Key  (B) to activate the interface.



⑧ Setting of Maintenance & Repair At Maintenance & Repair Information Interface, the information displayed is as same as that on the ordinary Maintenance & Repair Information Interface. Press the Item Button C (for changing the repair and maintenance time) to activate the relating input interface. Exp. Pressing  is to set the cleaning time Press  to return to the information interface directly	
⑨ Set Maintenance & Repair Item If the value of this item is set at 0, the function of maintenance & repair will be stopped. The items for setting include: ◆ Needle Replacement Time ◆ Cleaning Time ◆ Oil Replacement Time Press the figure to enter the corresponding interface： A、Input the value via keyboard B、Press  to confirm the input. C、Press  to return to the interface for repair & maintenance directly	

6. 3 How to Release Alarm

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  . 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 prompt code for each item

•Needle Replacement ： M-052

•Oil Replacement Time：M-053

•Cleaning Time：M-054

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, as long as the user fixes the time of start.

There are two ways to activate the production control interface:

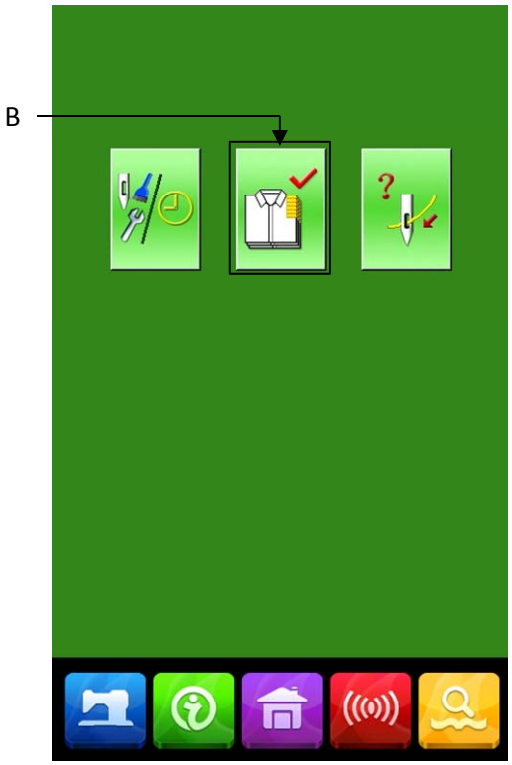
- Via Information Interface
- Via Sewing Interface

6. 4. 1 Via Information Interface

① **Display the Information Interface** At Interface for Inputting Sewing Data, press Information Key (A) to activate the Information Interface.	

② Display the Production Control Interface

Please press Production Control Button (B) at the Information Interface so as to display the Production control interface（as shown at right picture）.



There are five items displayed on the production control interface

A：Existing Target Value

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

B：Actual Result Value

Automatically display the amount of pieces sewn

C：Final Target Value

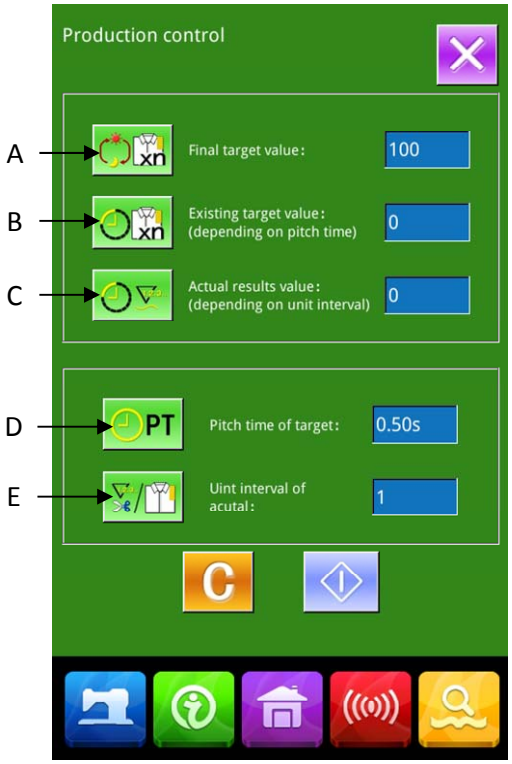
Set the final Target amount of production

D：Pitch Time of Target

Set the pitch time (Second) among each working process

E：Unit Interval of Actual

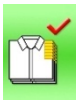
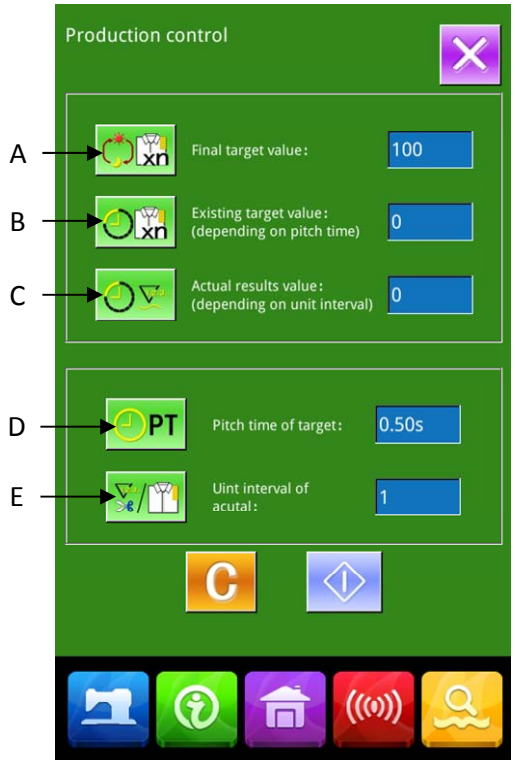
Set the actual time for finishing one process

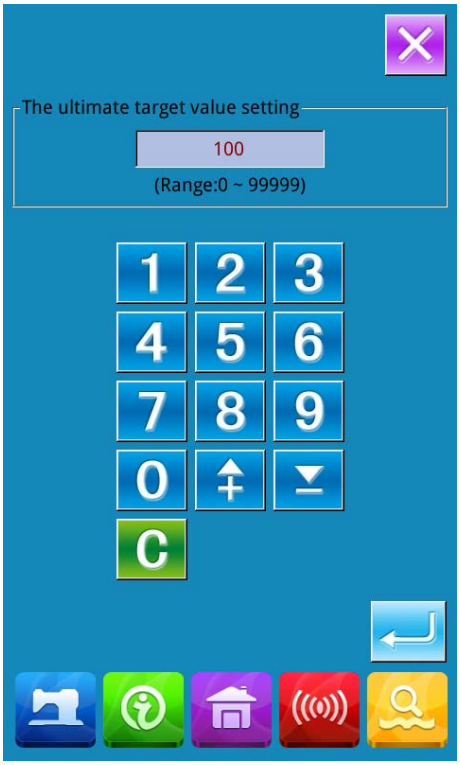
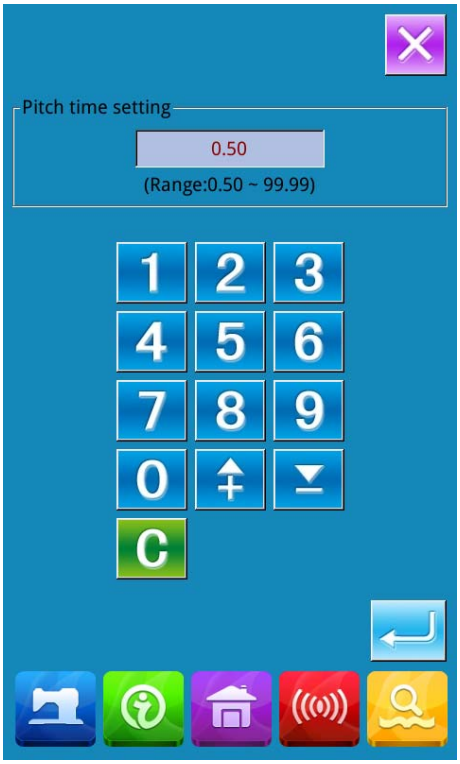


6. 4. 2 Via Sewing Interface

① **Display Sewing Interface** At Interface for Inputting Sewing Data, user can press  to activate the Sewing Interface.	
② **Display Production Control Interface** At Sewing Interface, user can press Information Key (A) to activate the Production Control Interface. The displayed content and the functions are same to the content in Chapter 6.4.1 at above.	

6. 4. 3 Setting on Production Control

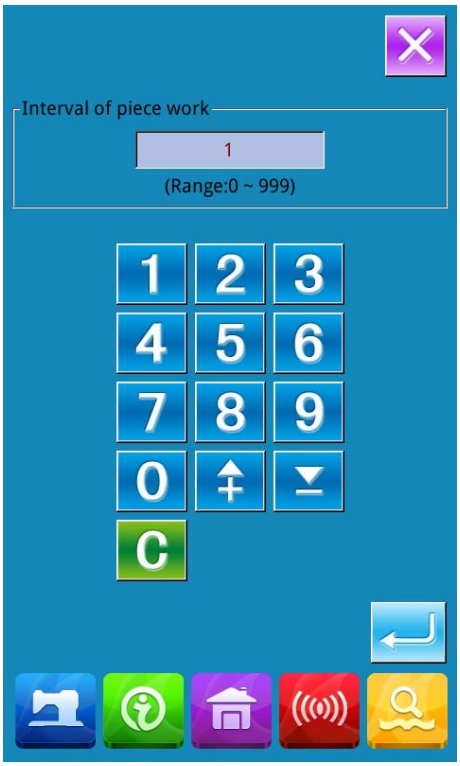
① **Display Production Control Interface** Press  to display the Production Control Interface	

② Input Final Target Value Firstly, please input the number of production target pieces to which the sewing is performed from now on. Press Final Target Amount Key  (C) to activate the Target Value Input Interface. Please use the number keys or +/- keys to input the wished value. After the input, please press  to confirm. Press  to quit.	
③ Input Pitch Time of Target Then, input the pitch time needed for one process. By pressing the Pitch Time of Target Key  (D), user can activate the Pitch Time Input Interface. Please use the number keys or +/- keys to input the wished value. After the input, please press  to confirm. Press  to quit.	

⑩ Input Unit Interval of Actual

Then, input the time for trimming at one process in average. By pressing Unit Interval of Actual Key  (E) at previous page, the user can activate the Interface for Inputting Trimming Time

Please use the number keys or +/- keys to input the wished value. After the input, please press  to confirm. Press  to quit.



⑤ Start to Count Amount of Production

Press  (I) to start counting the number of production amount, the [Final Target Amount], [Target Amount at Present] and [Actual Amount] will turns to dark

Final Target Value： Can be used as the time reference

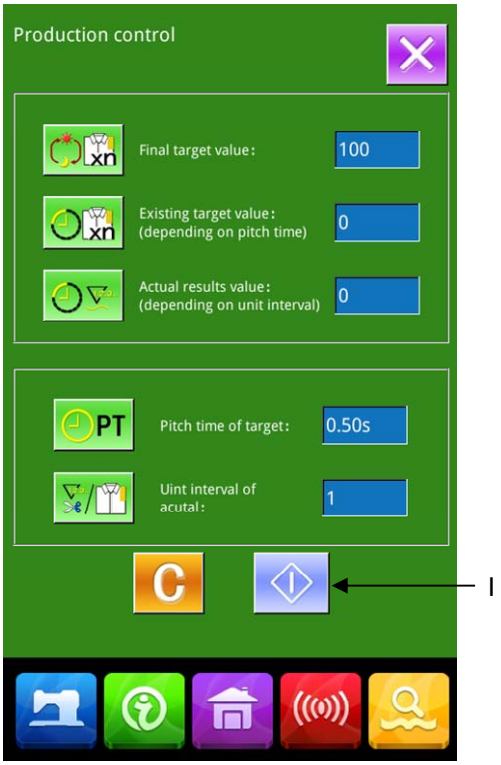
Existing Target Value： The target value adds 1 after each time pitch set [Pitch Time of Target]

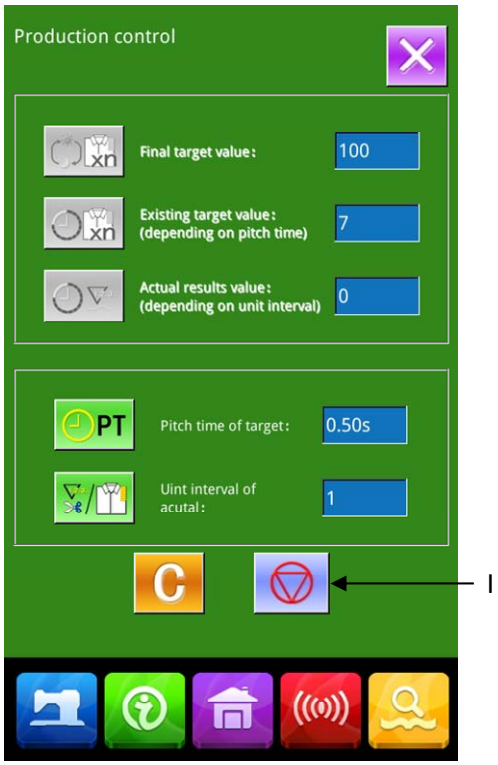
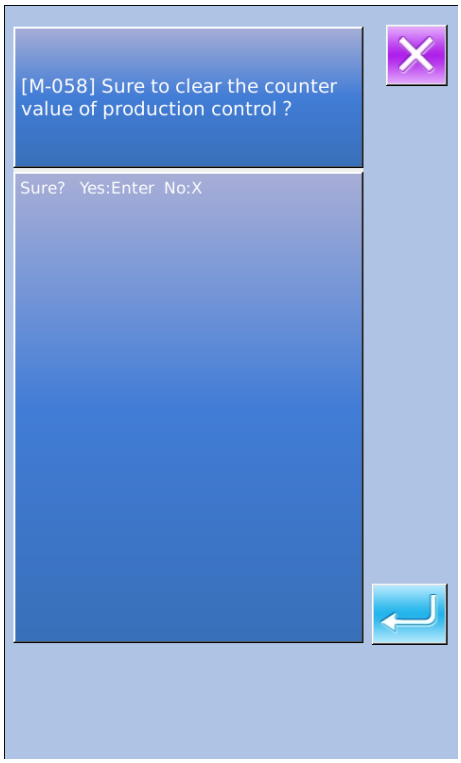
Actual Result Value： After entry from the "6.4.2 Via Sewing Interface", the system will start count the actual value by adding 1 at finishing each piece

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

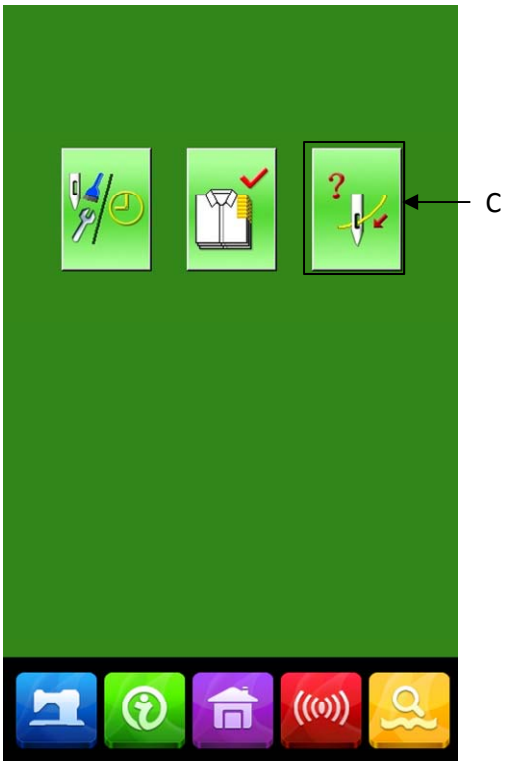
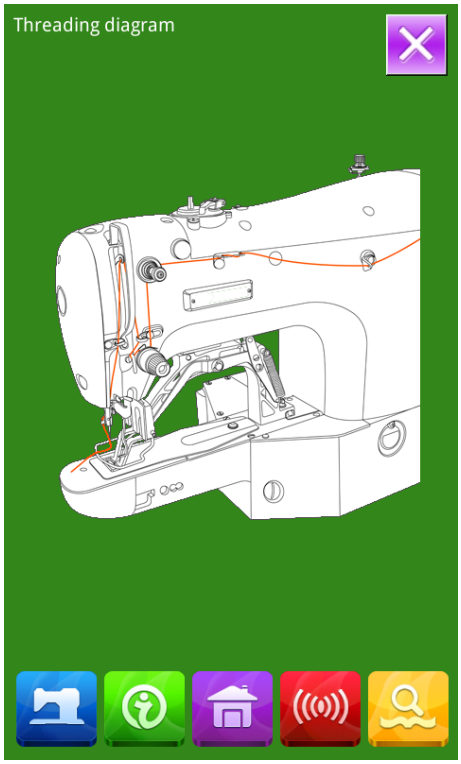
⑥ Stop Counting

In the status of counting, you can see the  displayed on the screen. Press



<table>
<tr>
<td>to stop counting. After stop, the Counting Key will take the position of. If user wants to continue counting, please press. Without pressing C, the value will be kept.
Press to quit directly</td>
<td> 
</td>
</tr>
<tr>
<td>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.
(Note: 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. Press to quit.</td>
<td> 
</td>
</tr>
</table>

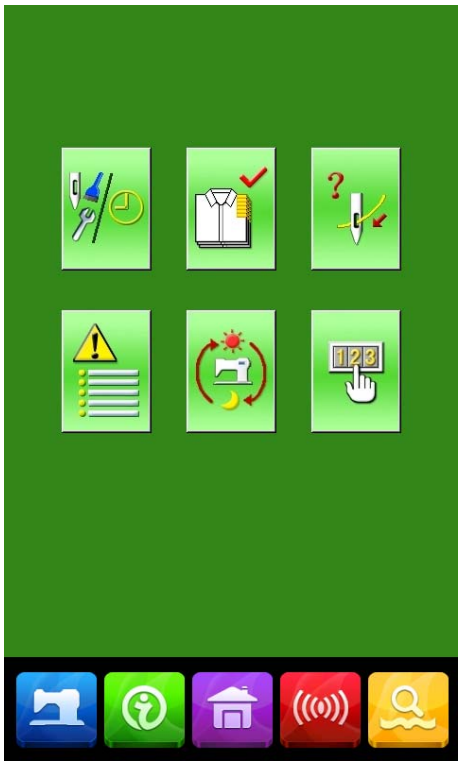
6. 5 Display Threading Figure

At Information Interface, user can press Threading Button  (C) to activate the Threading Figure, which can be taken reference when user threads the machine.	
Threading diagram.	

6. 6 Alarm Record

① At Data Input Interface,Long press the information button for 3~4 seconds,the interface will be displayed. alarm records,operation record,installment function keys.

② **At Maintenance Level, press**  **to inquire the alarm records.**



③ **Press**  **to check the records**

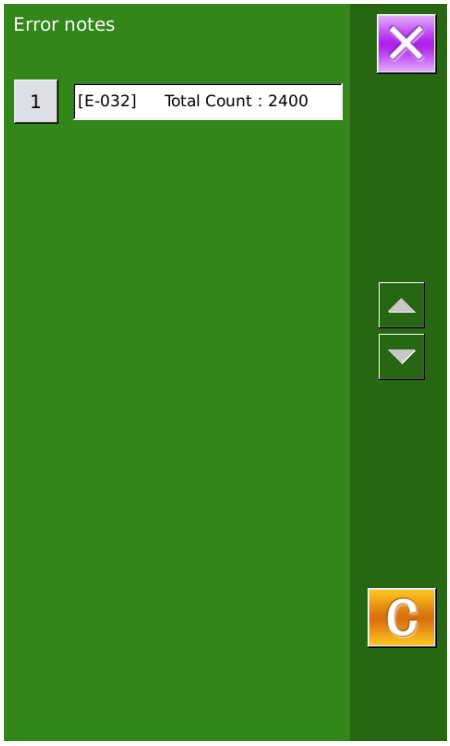
As in the picture, the warning information and the times of occurrence are displayed

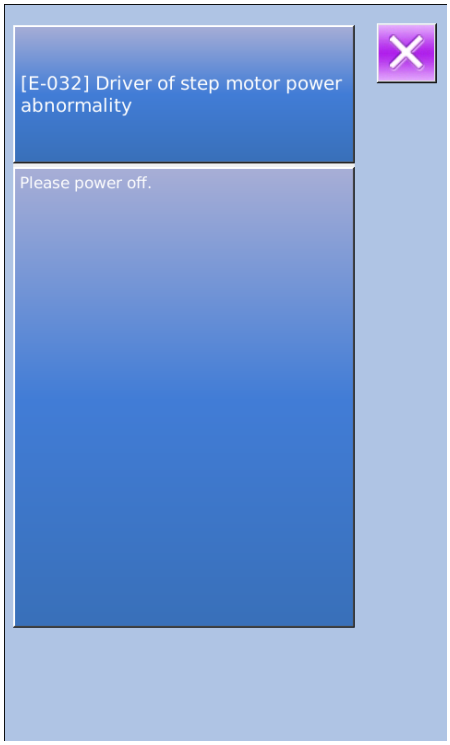
Function of Keys：

A、Press  or  to turn pages

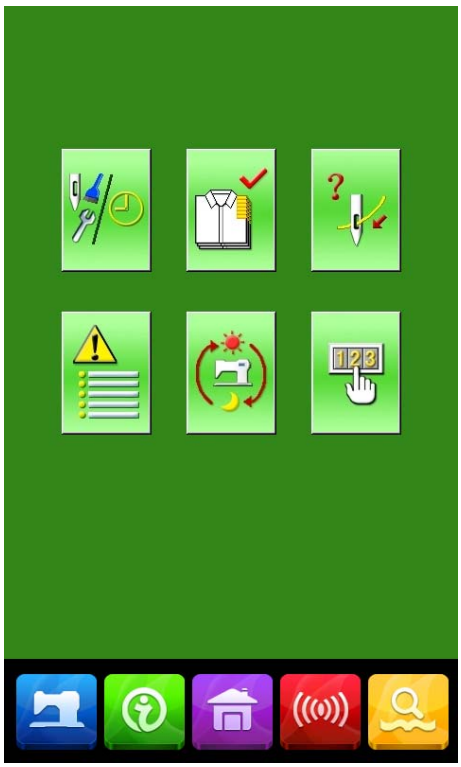
B、Press  to quit the inquiry

C、Press  to clear the filed record



④ **Press the number key at the left of the column to display the details of the warning records** Press  to quit	

6. 7 Running Record

③ In the interface of maintenance level, press  to check the running information of the machine	

④ **The Running Records contain：**

a) :Accumulated running time（Hour）

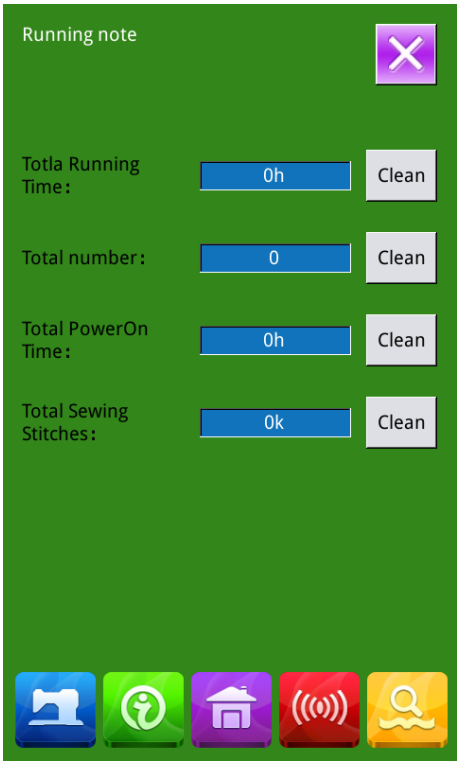
b) :Accumulated quantity of sewing

c) :Accumulated time of power-on (Hour)

d) :Accumulated number of sewing needle number（1000stitch）

A、Press  to quit

B、Press Clear to clear the record



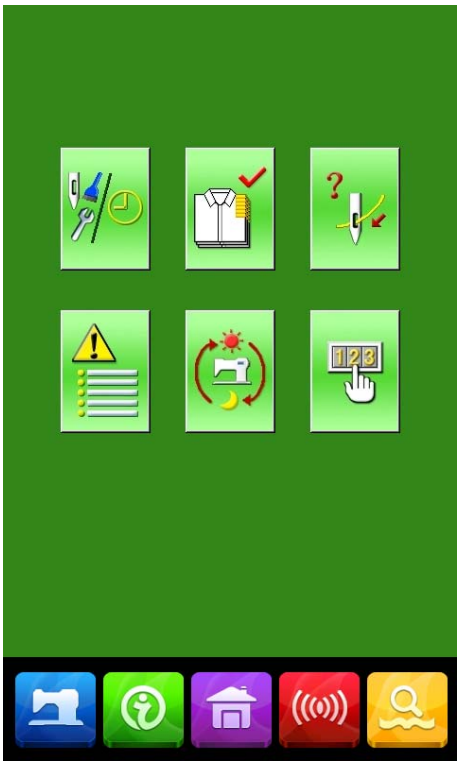
6.8 Setting of Periodical Password

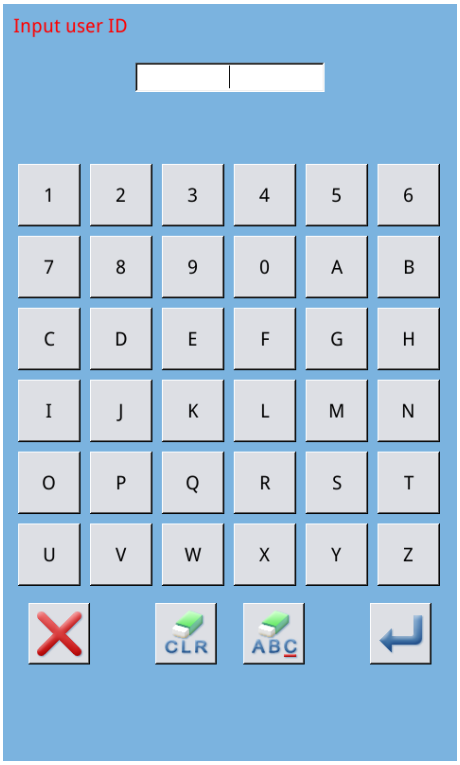
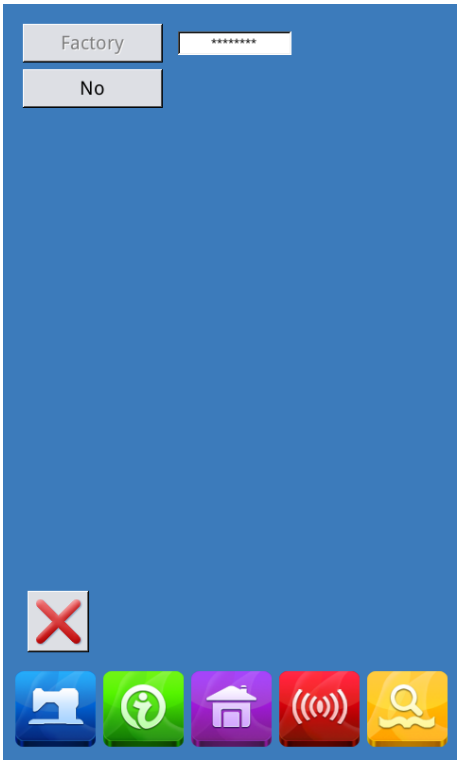
13) **In maintenance level, Press**  **to set periodical password**

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.

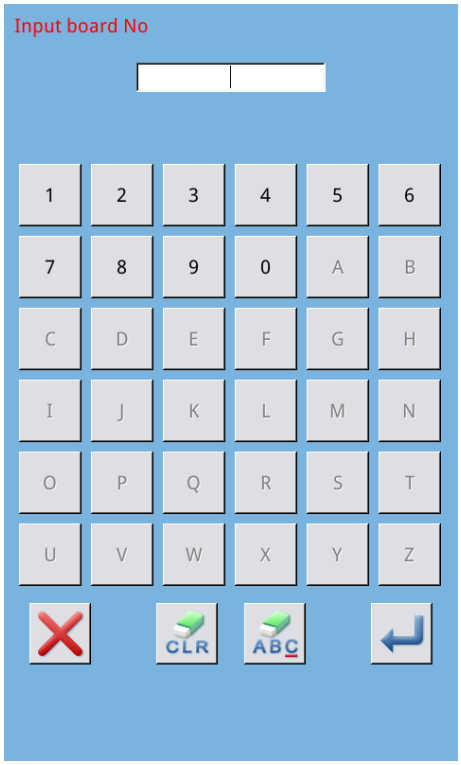


14) Press  To input User ID	
15) Input the Correct Factory ID to enter the password setting interface Procedure for setting the periodical password: A、Continue inputting other periodical passwords	

16) Input Board Number

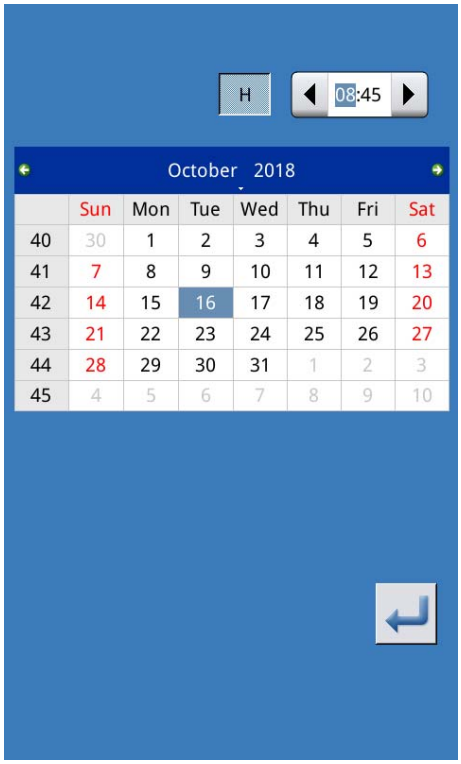
Press 【Board Number】 to enter the board number input interface. Input the board number and press  to finish the input

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



17) Input System Clock

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

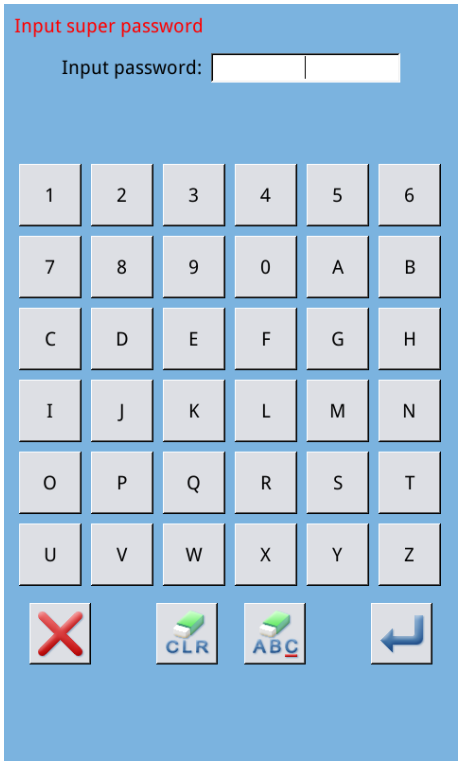


18) Input the super password

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

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

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

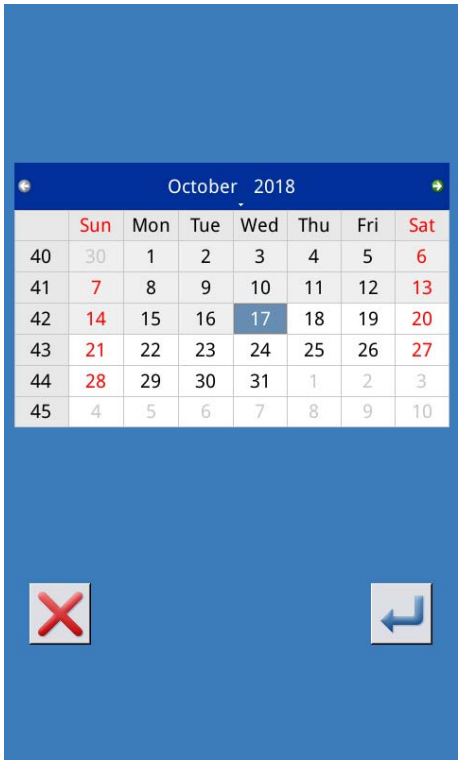


19) Input periodical password

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**

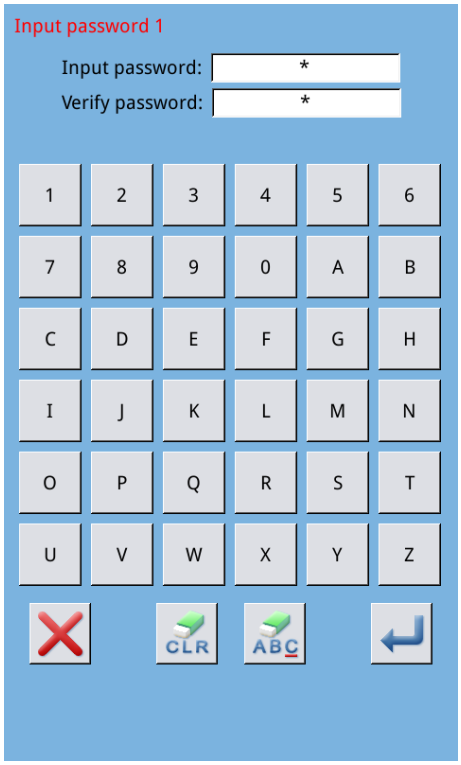
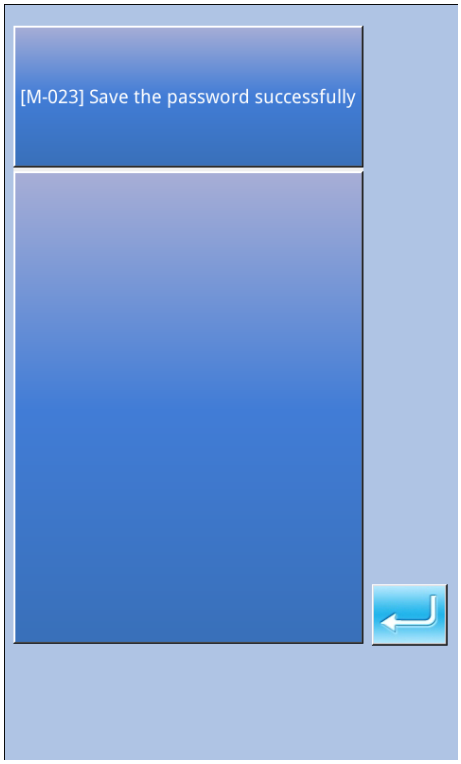
※ **At the password confirmation, make sure the two input passwords are same**



20) Input other periodical password

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.

<table>
<tr>
<td></td>
<td> 
</td>
</tr>
<tr>
<td>21) Save Password
A、After inputting the password, please press  to save it.
B、After the password is saved, the system will display【Save the password successfully】. Press  to finish the operation and return to the main interface of information.</td>
<td> 
</td>
</tr>
</table>

22) 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.

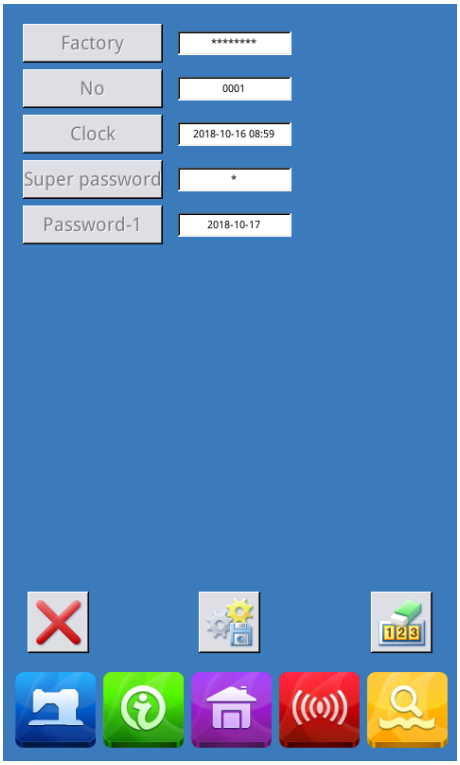
C、The system will display current clock and the activation dates

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.



11 Clear Password at Activation

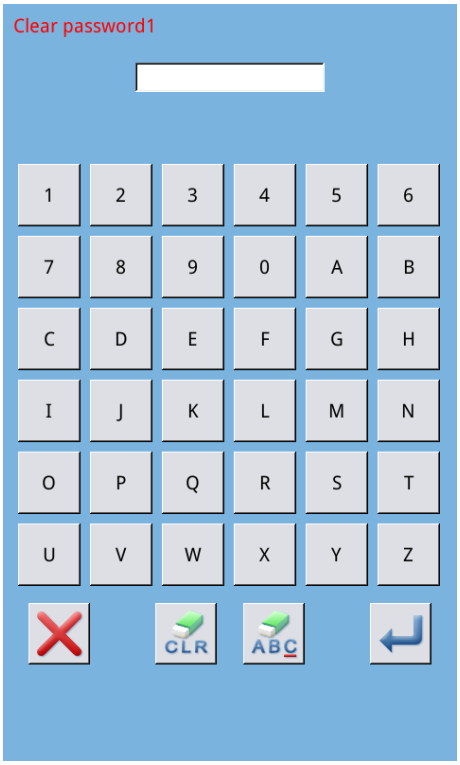
If the system has password and that password is still effective, it will be activated at the activation day.

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.

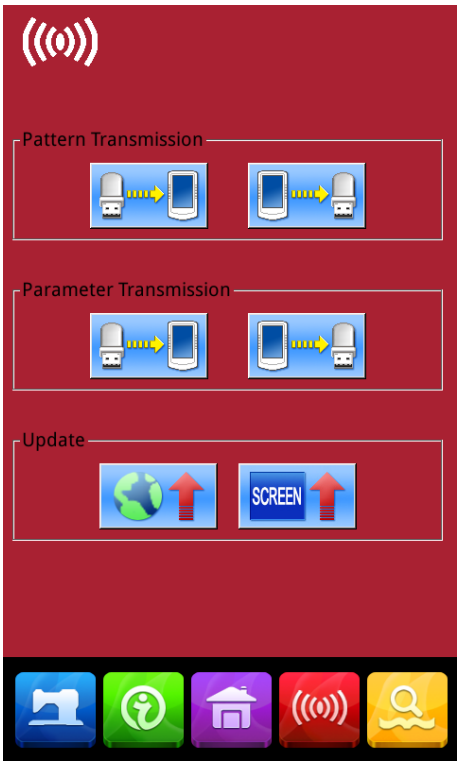
② Select the relating operations

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**

In communication interface, press:

A: Input patterns from U Disk to Operation Panel

B: Output patterns from Operation Panel to U Disk

Path of U Disk：DH_PAT

※ **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:：

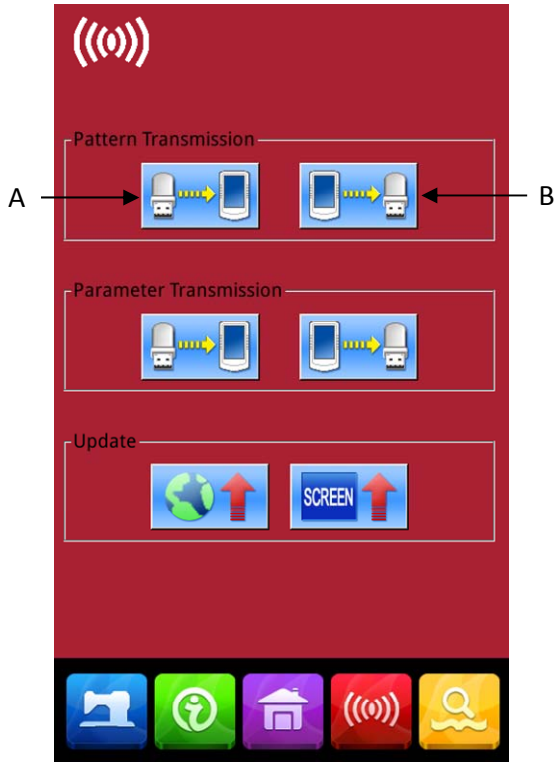
File Name：3 figures，001~999

Suffix：vdt（no matter at CAP or not）

Example：

Right Names： 100.vdt、102.VDT

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



② **Press button A to enter the interface for inputting patterns from U Disk**

Note：If the pattern in U disk has the same name to the pattern within the panel, the pattern number will be displayed in red. The pattern with red code can only be inputted with button F, as shown in figure 1

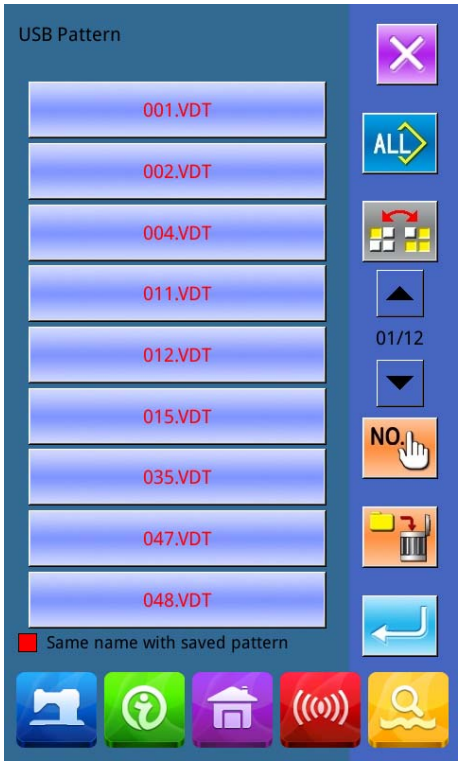


Figure 1

A、Use【Up Arrow】,【Down Arrow】 to turn the page

B、Use these three methods to select patterns

- Press  to select all the patterns
- Press  to select in contrary way
- Input Pattern Number

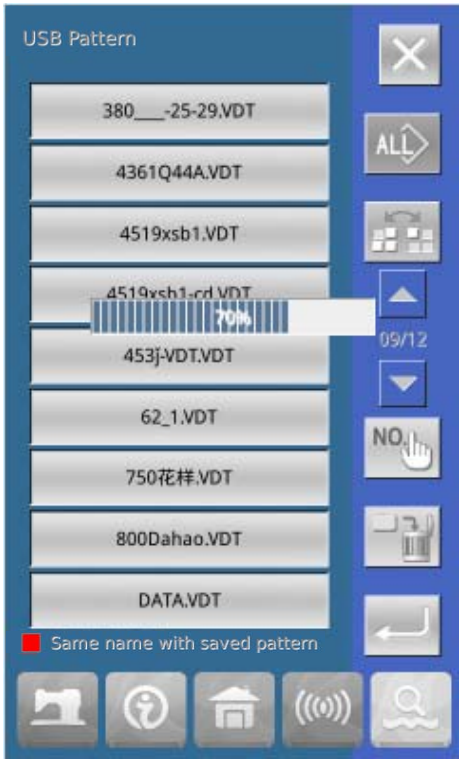


Figure 2

C、Press  to finish pattern input. At this moment, the patterns inputted and the patterns selected share the identical pattern number, as shown in figure 2

D、Press  to delete the selected pattern

E、Press  to quit Communication Interface

F、Select a pattern and then press  to display the interface shown as figure 3.

Input the pattern number for saving;

G、If user selects several patterns, he will be unable to perform the above operation.

Press  to quit to the previous r interface

Attention：If the selected pattern number exists in operation panel, the screen as the figure 4 will be displayed. If the data is in other format, the panel will automatically turn it to the vdt format and save it into memory.

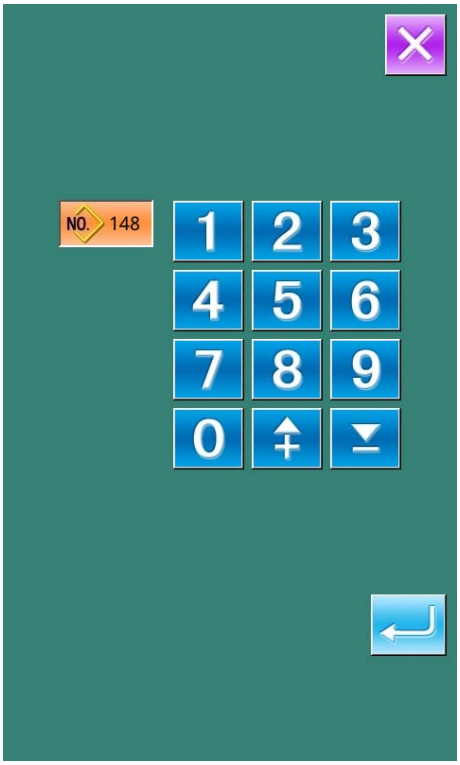


Figure 3

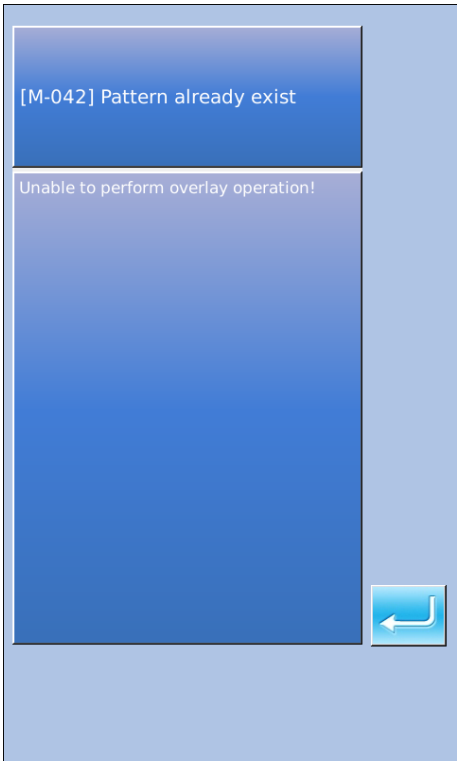


Figure 4

③ Press Button B to enter the interface for outputting patterns from panel to U Disk.

A、A、Use【Up Arrow】,【Down Arrow】 to turn the page

B、Use these three methods to select patterns

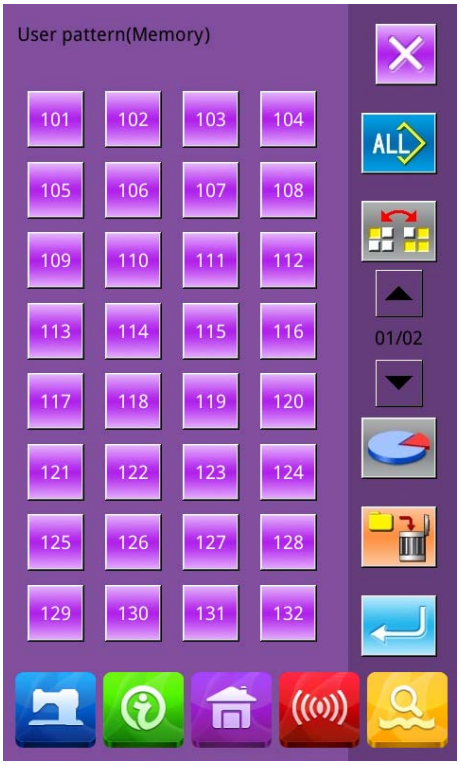
- Press  to select all the patterns
- Press  to select in contrary way
- Input Pattern Number

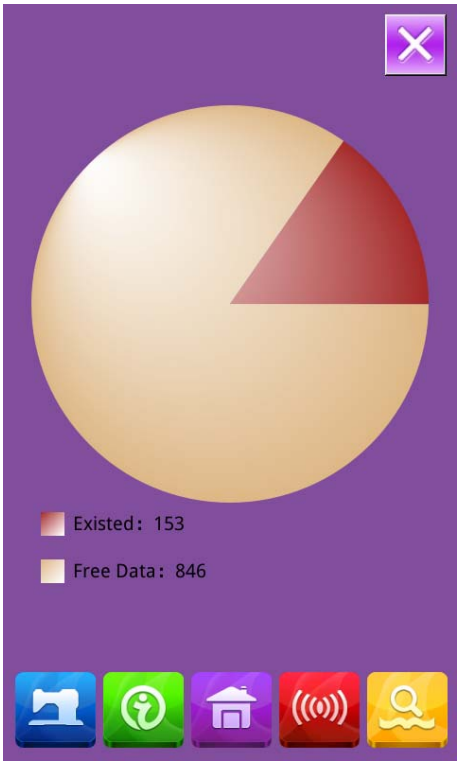
C、Press  to delete the selected pattern

D、Press  to finish pattern output

E、Press  to quit Communication Interface

F、In this interface, press  to display the free room of the memory and the number of pattern.





7. 4 Parameter Transfer

① **Display the Communication Interface**

In communication interface, press:

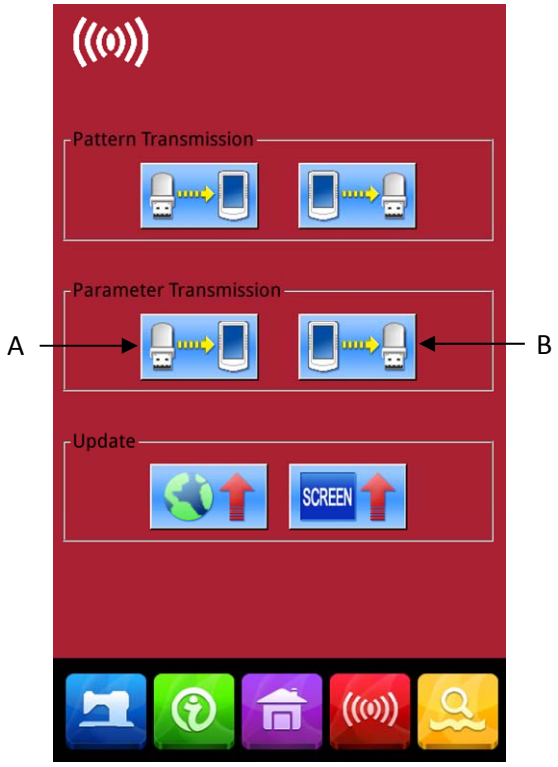
A: Input parameters from U Disk to Operation Panel

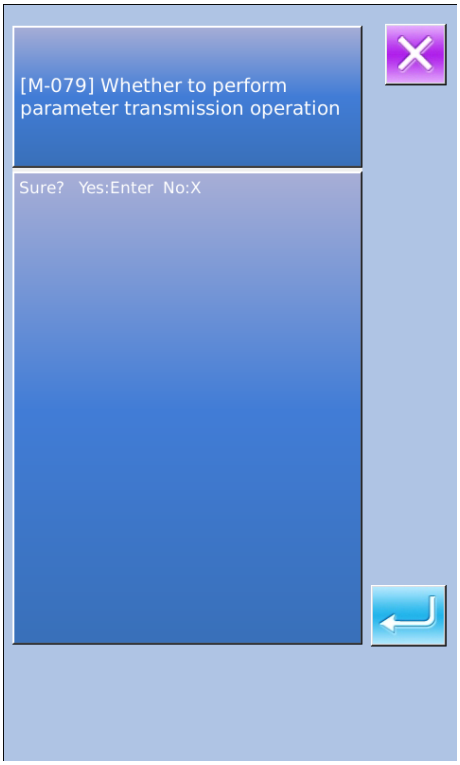
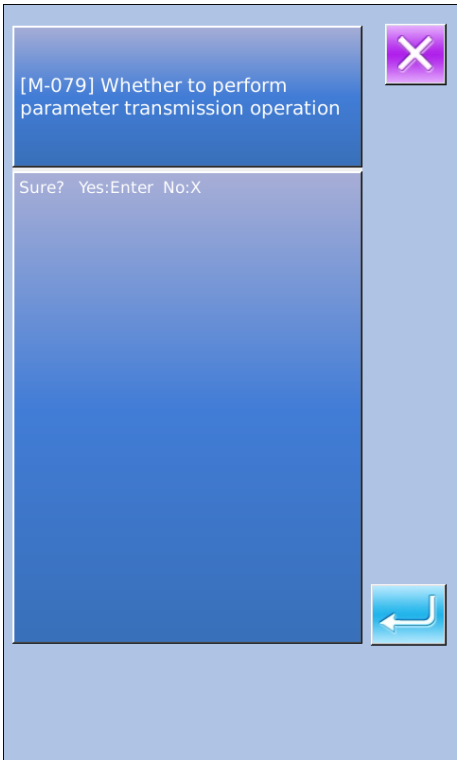
B: Output parameters from Operation Panel to U Disk

※ **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 on PC, or the file may be damaged**

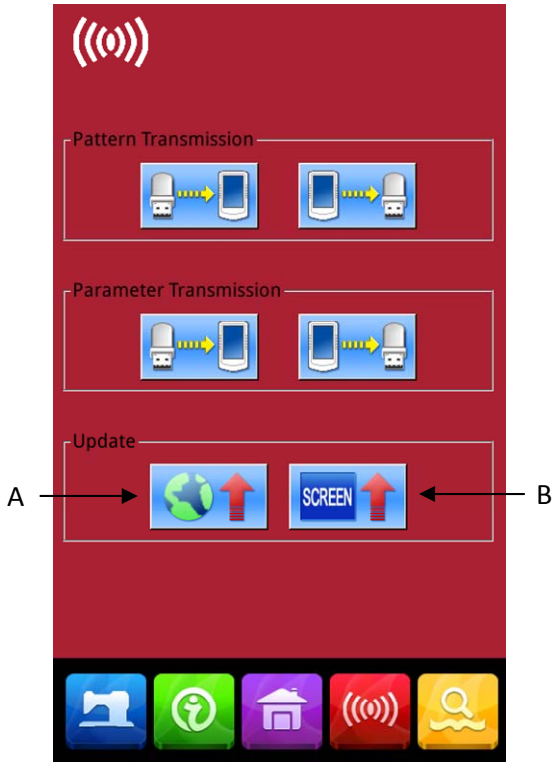


② **Press Button A to Input Parameters from U Disk to Operation Panel** A、Press  to input the parameters and quit B、Press  to quit directly.	
③ **Press Button B to Output Parameters to Operation Panel** A、Press  to output parameters from operation panel to U disk and quit B、Press  to quit directly	

7.5 Software Update

1） **Display the Interface**

In Communication interface, press A to enter Software Update Interface



2） **Update Selection**

The software update contains：

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

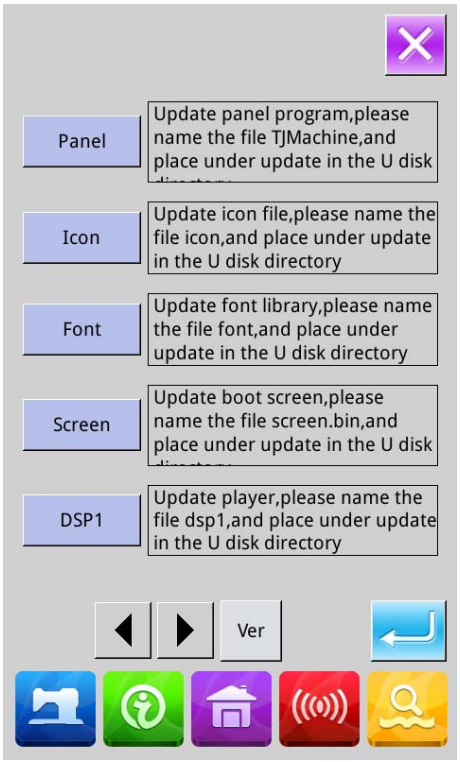
Press ◀ and ▶ to turn the page

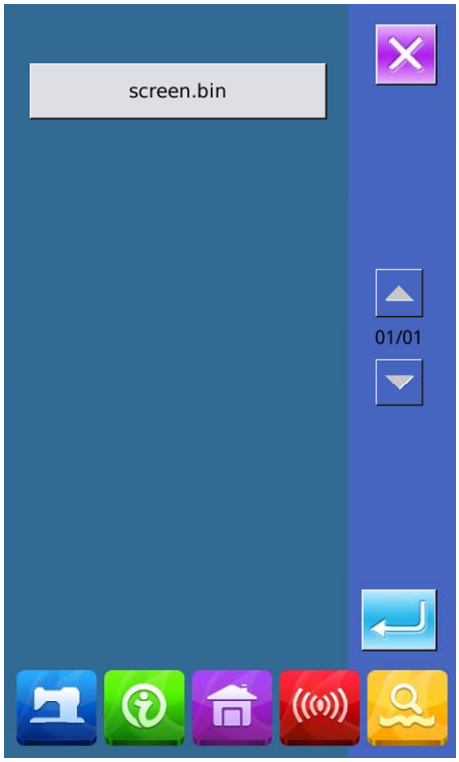
A、Press ↵ to finish the selected update and quit

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.

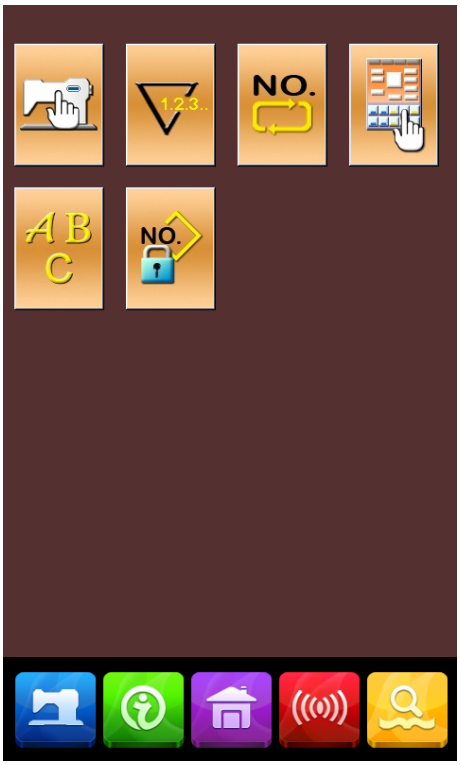


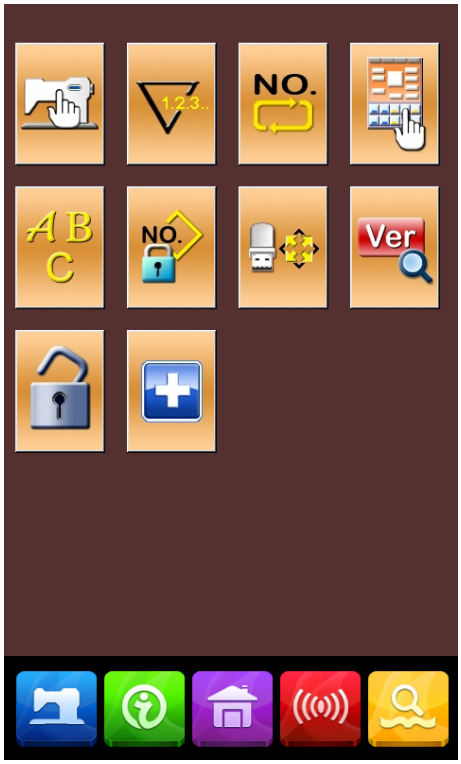
3） **Press B to enter the interface for updating the power-on screen** Put the bin file (generated from the power-on screen) into the “Update” catalogue in U disk. Select the bin file and then press  to finish the update.	

8 Mode & Parameter Setting

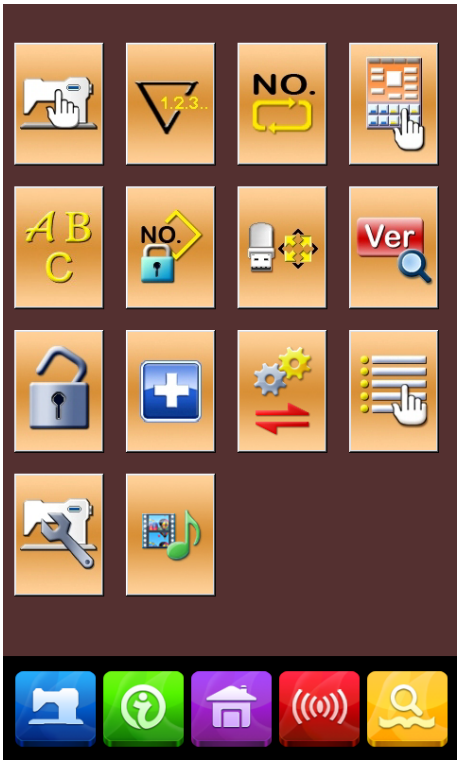
Press  to shift from the Data Input Interface to the Mode Interface (as shown in right figure), where user can perform some detailed settings and editions.

Hold  for 3 seconds to have access to Mode Setting Level 2 Interface; hold for 6 seconds to have access to Mode Setting Level 3 Interface.



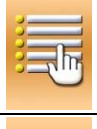


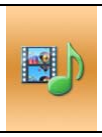
Mode Setting Level 2 Interface



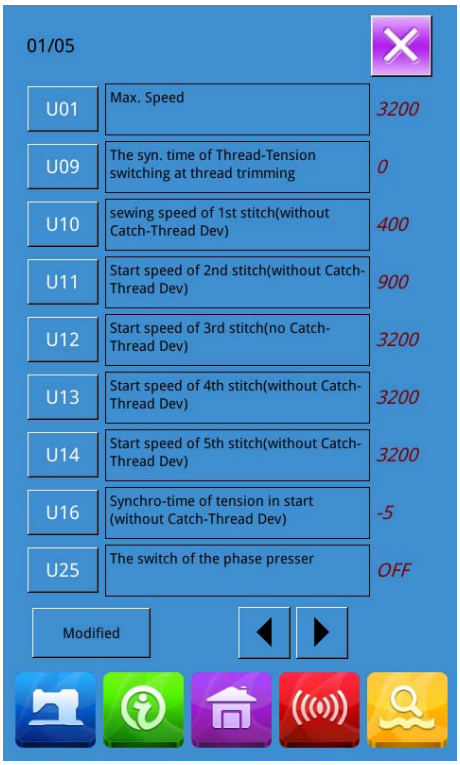
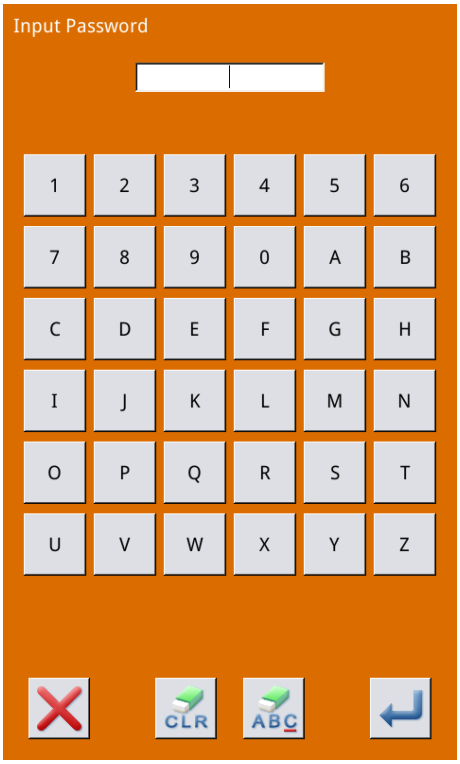
Mode Setting Level 3 Interface

8. 1 List of Function Keys

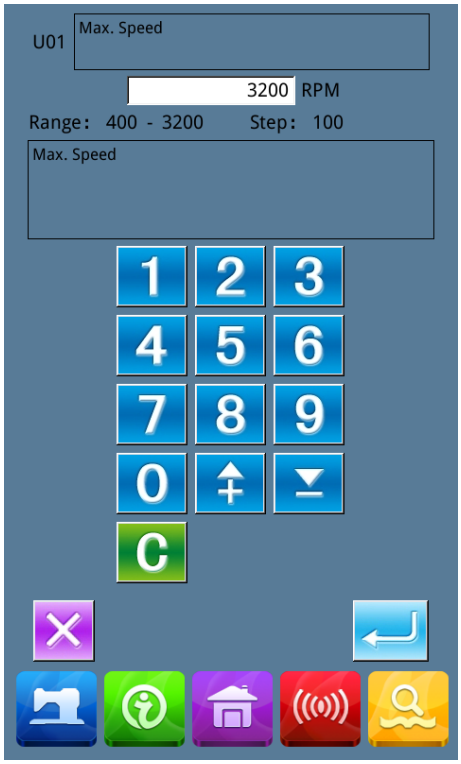
No.	Figure	Functions	Content
1		Level 1 Parameters Setting	Set the Level 1 (U) parameters
2		Counter Setting	Set the type of counter, counting value and default value
3		Sewing Type Setting	Shift between normal pattern sewing and combination pattern sewing
4		Pattern Edition	Have access to pattern edition status
5		Letter embroidery	For letter pattern edit
6		Pattern Lock	Enter the interface for locking pattern
7		U Disk Initialization	Initialize the U disk.
8		Software Version Inquiry	Inquire the versions of the current panel, main controller and motor
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	Content
14		Play Video	Play the video

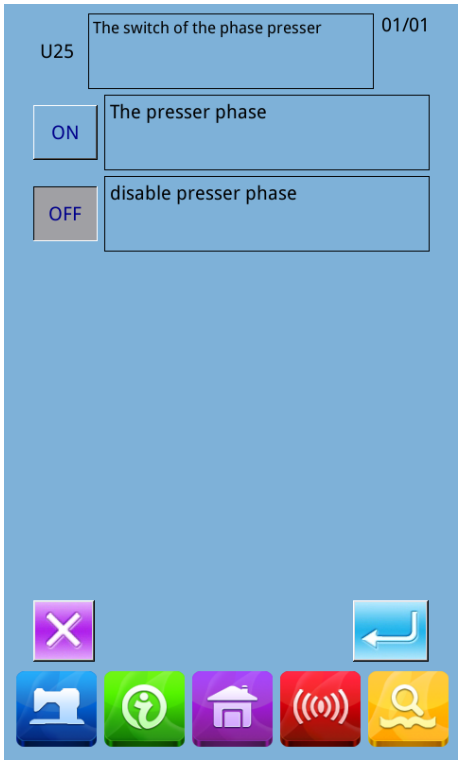
8. 2 Level 1 Parameters Setting

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.	
After you select the paramenters you want to modify,you will enter the pass word input screen,press to clear all the input,and press to delete one character at a time.Enter the parameter setting interface after erteing the correct password. Parameter settings are divided into data input type and selection type. Examples are as follows:	

Select U01 and enter the interface below



Select U25 and enter the interface below



② Check the changed parameter

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

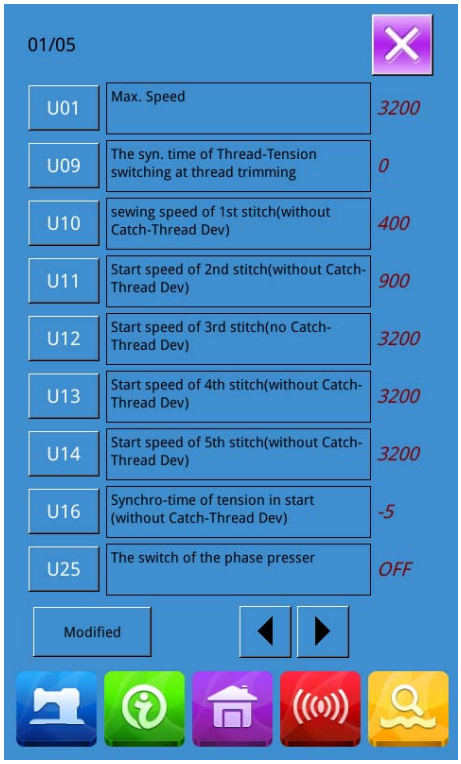
B、In the parameter setting interface, press【Modified】 to check the changed parameters.

At first, the system will ask user to input the password. For the operation at password input interface, please refer to the “A” at ②. After inputting the right password, user can enter the interface for inquiring changed parameters.

C、Under the interface of changed parameter inquiry, user can find the list containing all the changed parameters with their current value and default value.

In that interface：

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



values

- Click Parameter Name, like【Presser Type】and then press【Select Rest.】to restore this parameter to the default value. User can select many parameters at here.
- Press Parameter Number, like【U14】to enter the parameter setting interface, where user can reset the parameter value.
- When the pages are more than one, user can use arrow key to turn the page
- Press  to quit the interface.

③ List of Level 1 Parameters

No.	Function	Adjustment Rang	Default Value
U001	Max Speed of Sewing （it can be set by an increment of 100rpm）	400～3000	3000
U002	Sewing speed of 1st Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～1500	1500
U003	Sewing speed of 2nd Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～3000	3000
U004	Sewing speed of 3rd Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～3000	3000
U005	Sewing speed of 4th Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～3000	3000
U006	Sewing speed of 5th Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～3000	3000
U007	Thread tension of 1st Stitch (thread-catching)	0～200	200

No.	Function	Adjustment Rang	Default Value
U008	Thread tension at the time of thread-trimming	0～200	0
U009	Changeover time of thread tension at thread-trimming	－6～4	0
U010	Sewing speed of 1st Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～1500	400
U011	Sewing speed of 2nd Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～3000	900
U012	Sewing speed of 3rd Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～3000	3000
U013	Sewing speed of 4th Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～3000	3000
U014	Sewing speed of 5th Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～3000	3000
U015	Thread tension of 1st Stitch (no thread-catching)	0～200	0
U016	Changeover timing of thread tension at the sewing start (no thread-catching)	－5～2	0
U025	Presser Foot Division	0: Divided 1: Not divided	1
U026	Adjustment of presser foot height in section level 2	50～90	70
U030	The voice switch	0: close 1: open	1
U031	Use keyboard (Clear Key) to stop sewing machine	0: invalid 1: RESET key 2: External emergency stop	0
U032	Buzzer forbidden	0: no voice 1: panel operation voice	2

No.	Function	Adjustment Rang	Default Value
		2: panel operation voice and alarm voice	
U033	Set number of stitches that thread-catching releases	1～7 stitches	2
U034	Time deferrable in catching thread	－20～0	0
U035	Forbid the control on catching upper thread	0: Normal 1: Forbidden	1
U036	Select the Feed time. When stitches are not well tightened, set the value in "–" direction.	－8～16	12
U037	Presser foot status at sewing end	0: Back to sewing start and then lift 1: Back to sewing start and at the same time lift 2: lift the presser foot manually by stepping the pedal	1
U038	When the presser foot doesn't lift, sewing can only be done by starting switch	0: Normal 1: Forbidden to lift presser foot	0
U039	Search origin at sewing end	0: Not search origin 1: Search Origin	0
U040	Search origin at cyclic sewing	0: Not Search origin 1: Search origin after the finish of each pattern	0
U041	Search origin at sewing of P pattern	0: Not search origin 1: Search Origin	0
U042	Stop position of needle bar	0: upper position 1: highest position	0
U043	Brightness of LED spotlight at the machine head	0～10 The larger value, the brighter; 0 means off.	5
U046	Forbid thread-trimming	0: normal	0

No.	Function	Adjustment Rang	Default Value
		1: forbid thread-trimming	
U049	Set winding speed	800～2000	1600
U055	Forbid start bar tacking at button sewing	0: start bar tacking 1: no start bar tacking	0
U063	Setting method of X/Y scale rate	0: by percentage 1: by size	0
U135	Presser foot movement order before sewing	0: stand-by at the sewing start 1: stand-by at the origin	0
U200	Language	Set language	Simplified Chinese
U212	Air valve separate presser foot lowering order	0: lower at the same time 1: lower left presser first and then right presser 2: lower right presser first and then left presser	0
U213	Air valve separate presser lifting order	0: lift at the same time 1: lift left presser foot first and then right presser foot 2: lift right presser foot first and then left presser foot	0
U214	Overturn Presser Foot Availability	0: forbidden 1: available	1
U245	Clear lubricating alarm error	Press RESET to clear	Display the accumulated number of sewn stitches

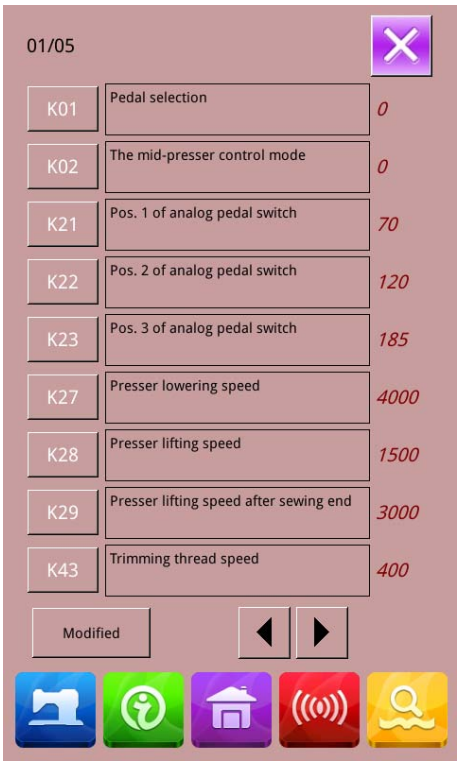
8. 3 Level 2 Parameters Setting

① Parameter Setting

At Mode Setting Level 3 Interface, press  to have access to Level 2 Parameter Setting Interface (as shown in right picture). For the operation methods, please refer to descriptions at 8.2 Level 1 Parameters Setting.

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

Press  to quit the setting interface

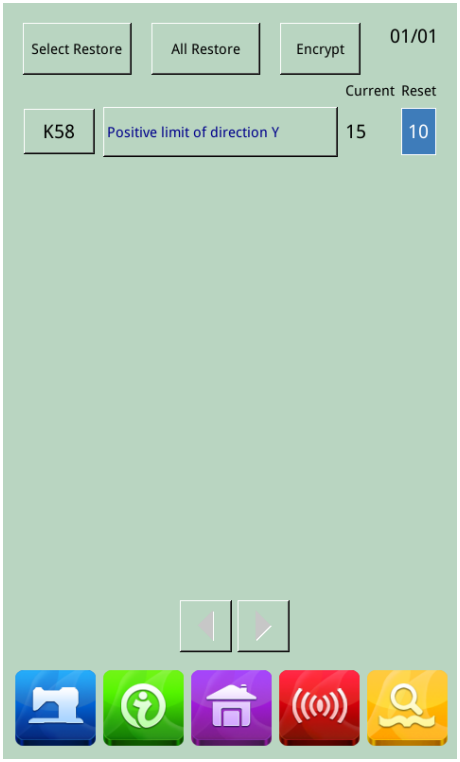


② Check the changed parameters

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

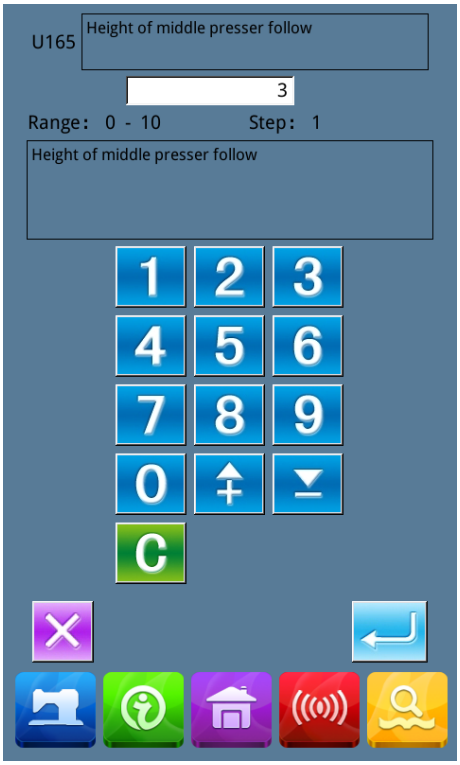
In the parameter setting interface, press【Modified】 to check the changed parameters. User can also reset the parameters here.

For the specific operation, please refer to “8.2 Level 1 Parameter Setting”



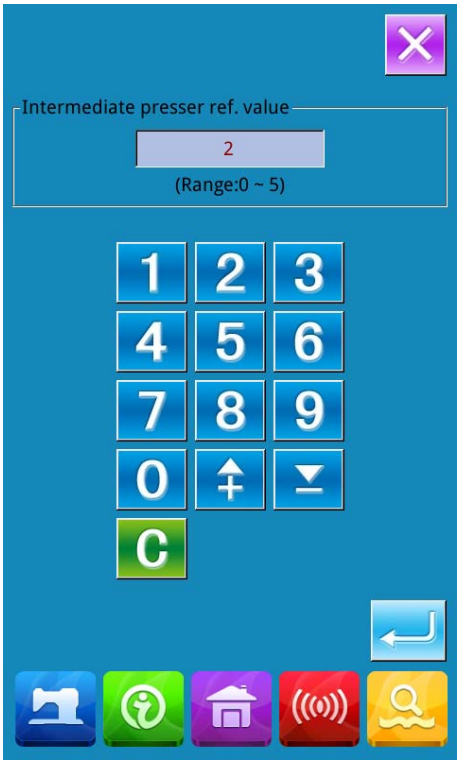
③ Height of middle presser follow

When the model is 1906,the U-parameter list will display the U165 Height of middle presser follow parameter.The middle presser foot can be set follow-up height.



④ Intermediate presser ref.value

When the model is 1906,the main screen will display Intermediate presser ref.value key  ,Hold it Intermediate presser ref.value key  ,configurable Intermediate presser ref.value.



⑤ List of Level 2 Parameters

No.	Function	Adjustment Range	Default Value
K001	Pedal Type	0: Analog Single Pedal	0

No.	Function	Adjustment Range	Default Value
		1: Digital Single Pedal 2: Double Pedals 3: Double Pedals, but only the operation pedal controls	
K002	Intermediate Presser Foot Control Method	0: no control 1: not used 2: solenoid control 3: mechanical control	0
K019	Lifting time of pneumatic outer presser foot	0～90	30
K021	Positions of standard pedal & pedal switch	50～200	70
K022	Position of standard pedal & stroke switch of high/low section.	50～200	120
K023	Position of standard pedal & start switch	50～200	185
K027	Dropping speed of presser foot at depressing pedal	100～4000pps	4000
K028	Lifting speed of presser foot at stepping pedal	100～4000pps	1500
K029	Lifting speed of thread-trimming presser foot at sewing end	100～4000pps	3000
K043	Selection of machine rotating number at thread-trimming	3～8	8
K044	Selection on whether to feed cloth in the direction for easy thread-trimming	0: Not Feed 1: Feed	0
K045	Guide diameter of needle hole for feeding cloth at thread-trimming (by an increment of 0.2mm)	16～40（1.6mm～4.0mm）	16
K056	Limited range of motion in +X direction (Right)	0～50mm	20
K057	Limited range of motion in -X direction (Left)	0～50mm	20
K058	Limited range of motion in +Y direction (Back)	0～30mm	15

No.	Function	Adjustment Range	Default Value
K059	Limited range of motion in -Y direction (Front)	0～30mm	15
K064	Select thread wiping method	0: solenoid 1: motor	1
K066	Impulse number for coactions of presser foot and wiper	30～60	45
K074	Presser foot control mode shift	0: air valve control 1: motor control	1
K095	Thread-trimming angle	－10～10	0
K097	Thread-trimming method at pause	0: automatic thread-trimming 1: manual thread-trimming	1
K102	X stepping motor full-current parameter	0～15 Effective after restart	7
K104	Y stepping motor full-current parameter	0～15 Effective after restart	11
K106	Thread-catching stepping motor full-current parameter	0～15 Effective after restart	2
K108	Presser stepping motor full-current parameter	0～15 Effective after restart	14
K109	X stepping motor semi-current parameter	0～15 Effective after restart	7
K110	Y stepping motor semi-current parameter	0～15 Effective after restart	6
K111	Presser foot stepping motor semi-current parameter	0～15 Effective after restart	5
K112	Main shaft stop correction	－10～10	0
K120	Stitch number for alarm to add lubricating oil	3000～12000 Unit: ten thousand stitches	5000

No.	Function	Adjustment Range	Default Value
K121	Counter Lock	0: Clear and Plus/Minus; 1: Clear Only; 2: Plus/Minus Only; 3: Neither Clear nor Plus/Minus	0
K122	OC length adjustment	－128～128	0
K123	OD length adjustment	－128～128	0
K124	BD length adjustment	－512～512	0
K125	OC length	1780～2380	2080
K126	OD length	1440～2040	1740
K127	BD length	430～630	530
K128	Stepping Drive Type	0: DSP1 Close DSP2 Close 1: DSP1 Open DSP2 Open 2: DSP1 Close DSP2 Open 3: DSP1 Open DSP2 Open Effective after restart	0
K135	Thread-separating delay	－10～30	0
K137	Thread clamp release angle at sewing start	－150～150	0
K138	Thread clamp holding time after trimming at sewing start	－2～1 -2 means thread holding action prohibited after thread-trimming at sewing start	0
K140	Thread Tension Control Method	0: electronic 1: mechanical	0
K141	Suction force adjustment of branch thread tension solenoid	－20～20	0
K142	Holding force adjustment of branch thread tension solenoid	－40～40	0

No.	Function	Adjustment Range	Default Value
K150	Invalidity of head tilt safety switch	0: Normal 1: The safety status of tilt head is invalid.	0
K160	Prohibit stepping the pedal backward for emergency stop	0～1 0:Allowed 1:Prohibited	0
K168	Medium pressure foot action mode	0 ~ 1 0: pedal 1 medium pressure foot down Step 1: step 1 medium pressure foot lift	1
K172	Set stitch number for thread breakage detection	0～10 Value bigger than 0 means the stitch number after thread breakage before emergency stop 0 means thread breakage detection is off.	0
K174	Sensor availability at the cutter position	0: forbidden 1: in use	1
K227	Main Shaft Motor Type	0: 0830-F11 1: 0830-F01 Effective after restart	0
K241	Function Selection	0: Bar-tacking 5: Pattern bar-tacking 7: Button sewing	0
K242	Extended model ID	0 ~ 255 Set extended model function	0

8. 4 Counter Setting

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

Procedure：

① **Counter Selection**

Select Sewing Counter or No.of Pcs Counter

② **Set the Current Value and the Set Value of Counter**

At the set type, press the “Current” or “Setting” to perform the relating operation.

③ **Select Up Counter or Down Counter**

At the selected type, please press “Up” and “Down” to perform the relating operations

Press  to quit counter setting interface

Press  to finish setting and quit.

Sewing UP Counter ：

Every time the sewing of one shape is performed, the existing value is counted up 1. When the existing value is equal to the set value, the interface of counter exceed warning will be displayed.

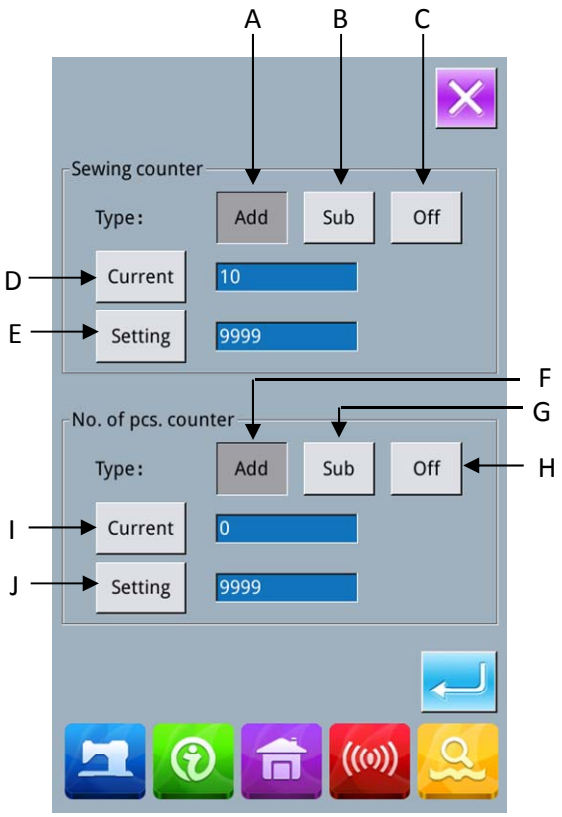
Press  to restore the existing value to 0

Sewing DOWN Counter ：

Every time the sewing of one shape is performed, the existing value is counted down 1. When the existing value is reached to "0", the interface of counter exceed warning will be displayed.

Press  to restore the existing value to the set value.

No of piece UP counter ：



Every time a cyclic sewing or a continuous sewing is performed, the existing value is counted up 1. When the existing value is equal to the set value, the interface of counter exceed warning will be displayed. Press  to restore the existing value to 0 **No of piece DOWN counter：** Every time a cyclic sewing or a continuous sewing is performed, the existing value is counted down 1. When the existing value is reached to "0", the interface of counter exceed warning will be displayed. Press  to restore the existing value to the set value. ④ **Turn Off Counter** At the selected counter type, press “Off” to turn off the counter.	

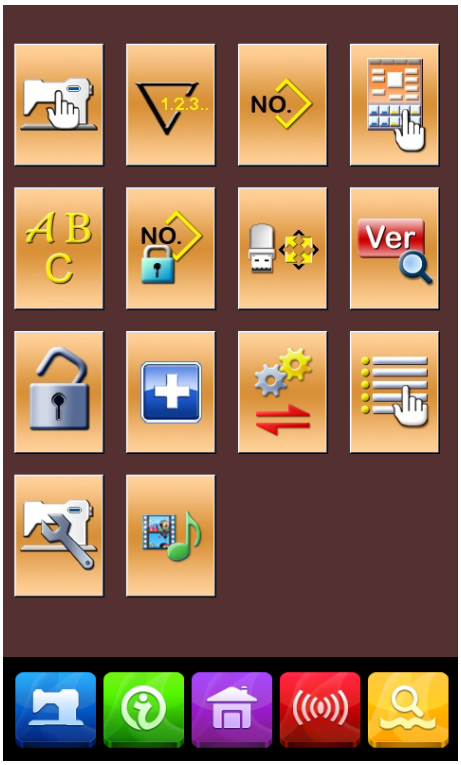
8. 4. 1 Functions

No.	Function
1	Sewing Add Counter
2	Sewing Down Counter
3	Sewing Counter Off
4	Set Current Sewing Counter Value
5	Set the Setting Value of Sewing Counter
6	No.of Pcs Add Counter
7	No.of Pcs Down Counter
8	No.of Pcs Counter Off
9	Set Current No.of Pcs Counter Value
10	Set the Setting Value of No.of Pcs Counter

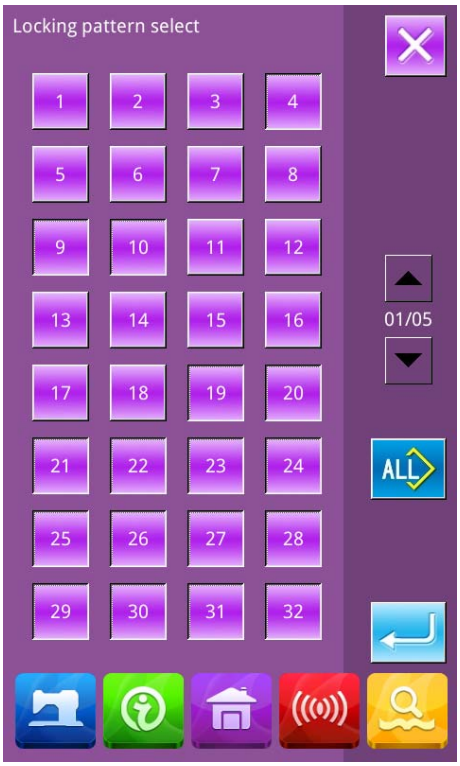
8. 5 Change Sewing Mode

Press to enter the interface of sewing type selection ：Normal Sewing ：Cyclic Sewing After confirming the sewing type, press to end the operation. Press , then the data input interface of the selected sewing type is displayed. Press to quit and the original sewing type remains.	

8. 6 Have Access to Pattern Edition

Press  ,Prompt whether to enter the Pattern Edition interface	

8. 7 Set Pattern Lock

In Setting Mode Level 1, press  to enter the interface for setting pattern lock, where the entire pattern number will be dislayed. 32 pattern numbers are in each page. For locking a pattern, user only needs to press the pattern number. The seelcted pattern numer will be displayed in dark. Press  to save the setting. The selected patterns will be locked.	

8. 8 Initialization

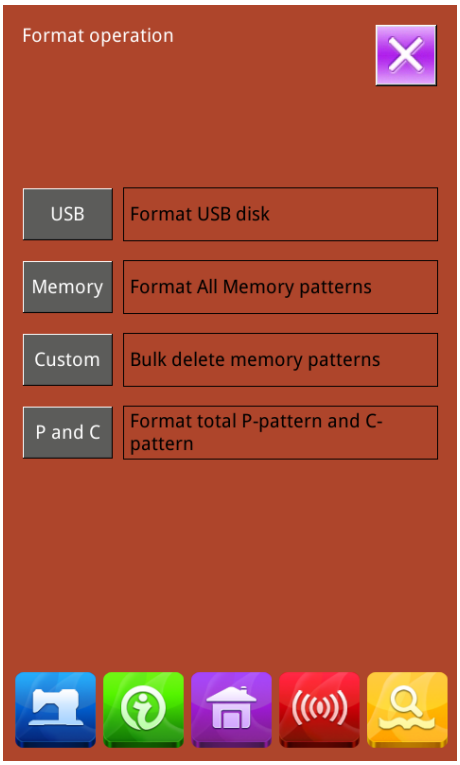
① **Press**  **to enter the Initialization interface.**

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.

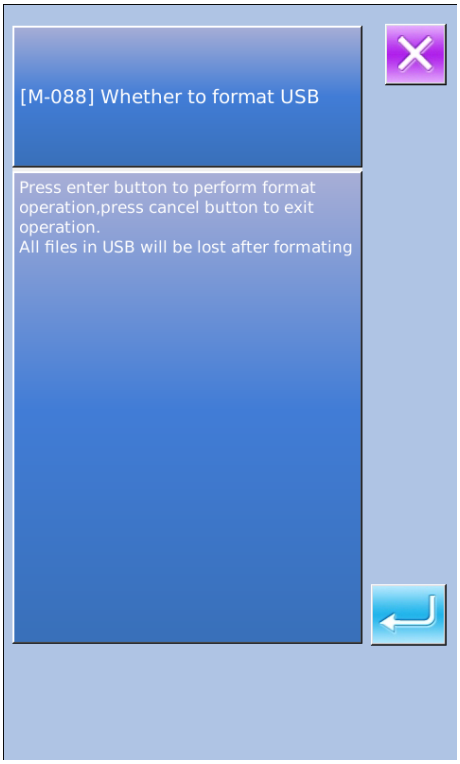
Press  to quit.

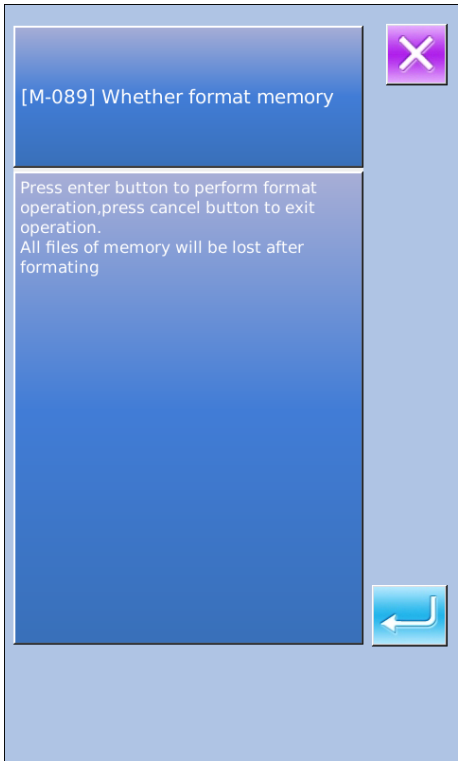
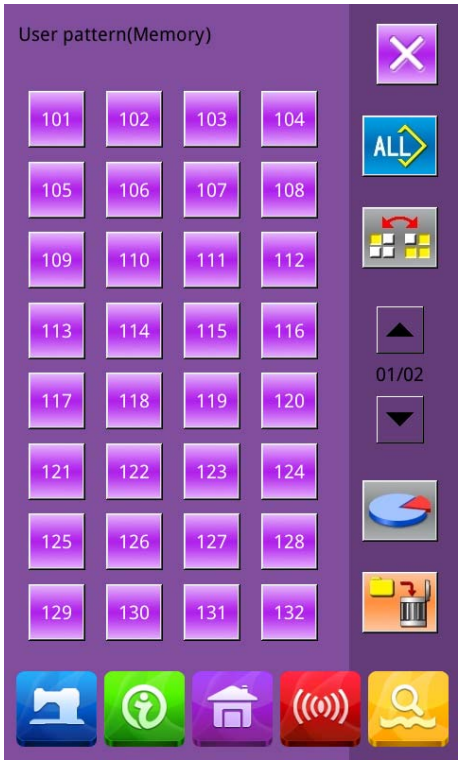


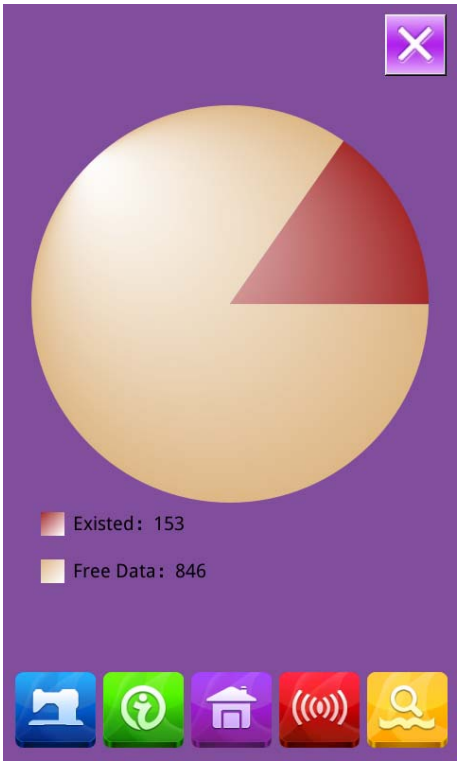
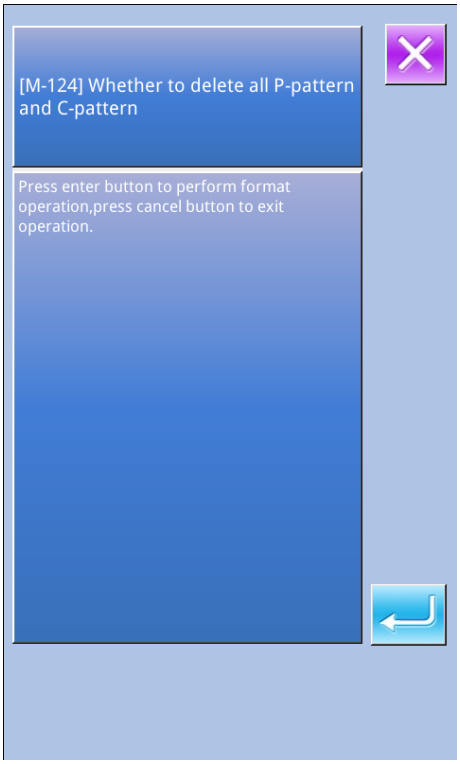
② **Press "USB" to Initialize U Disk Files**

Press  to initialize all the U disk files

Press  to quit U disk initialization



③ **Press "Memory" to initialize memory patterns** The following patterns can be initialized: ■ Normal Pattern (Basic Patterns & User Patterns) ■ Cyclic Sewing Pattern ■ Registered P Pattern Press  to initialize all the files in memory Press  to quit **※Caution! This operation will delete all the patterns within the memory!**	
④ **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. Operations at this function: A. Use "Up Arrow", "Down Arrow" to turn the page B、Use the following three operations to select patterns a) Press  to select all the patterns b) Press  to select pattern in contrary way c) Input pattern number C、Press  to delete the patterns in batch D、Press  to quit Initialization Interface	

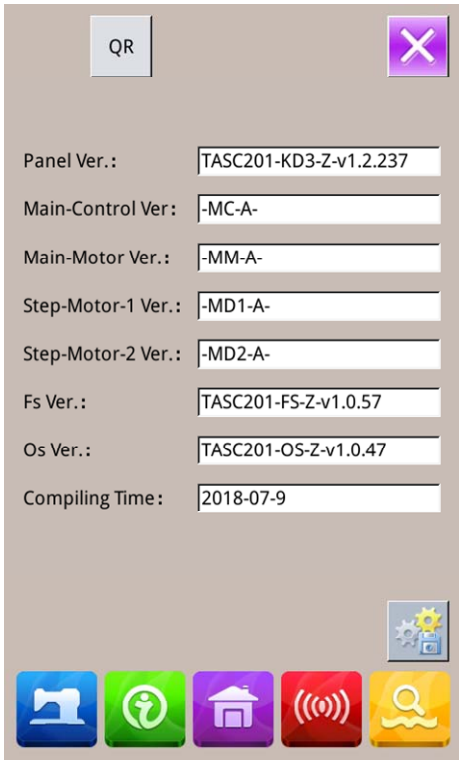
⑤ **Under the Interface of Custom Initialization, press**  **to display the free room of the memory and the number of patterns in each format.** Press  to return to the upper interface.	
⑥ **Press "P" and "C",Enter the ability to delete all the Pattern(P) and Pattern(C).** Pattern included: ■ Cyclic Sewing Pattern C ■ Registered Pattern P Press  to delete all the patterns Press  to quit **※Deleting paterns could delete all the (P) Pattern and (C) Pattern in the memory.Please be careful !**	

8. 9 **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.



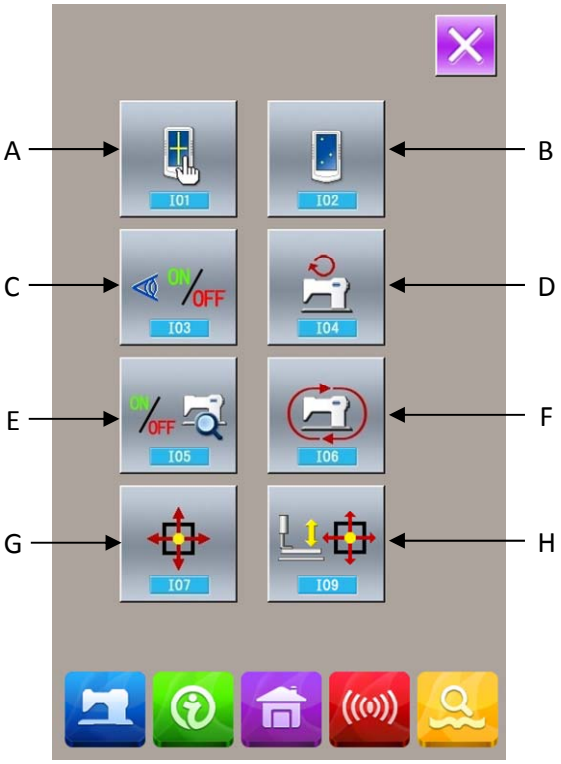
8. 10 **Test Mode**

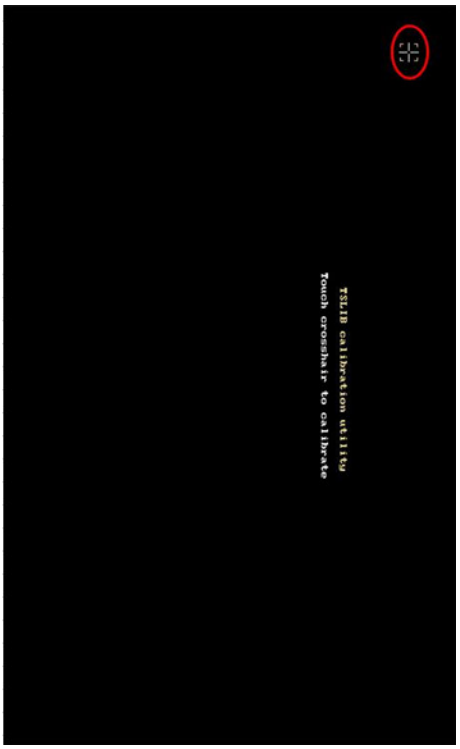
At Mode Setting Level 2 Interface, user can press  to have access to the Test Mode Interface (as shown in right picture)

The following is the list of each figure

No.	Name
A	I01 Touching Panel Correction
B	I02 LCD Test
C	I03 Input Test
D	I04 Speed Test
E	I05 Output Test
F	I06 Continuous Running
G	I07 XY Motor Origin Test
H	I09 Presser·/ Origin Sensor Test

Press  to quit the Test Mode



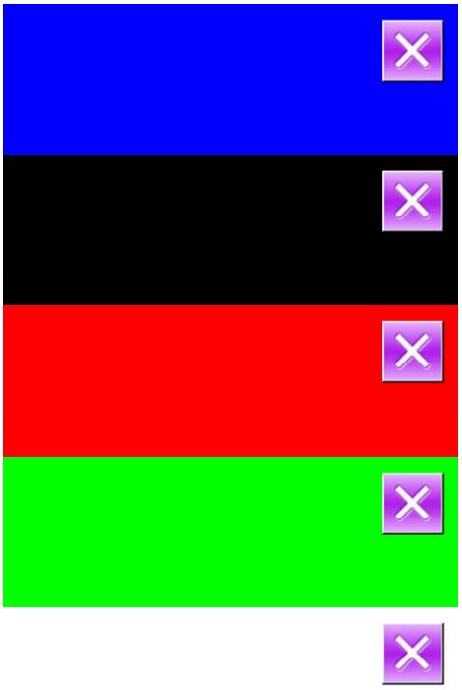
interface	
1）Correction of Touching Panel A、 In the interface of Mode Inspection, Press  (I01 Correction of Touch Panel). Then system will hint user【Enter Touching Panel Correction Mode?】. Press  to enter the interface for Touch Panel Correction (as shown in right figure). Press  to quit the correction status. B、 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. ※ **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）Inspection of LCD Display

In the interface of Mode Inspection, press  (I02 Inspection of LCD Display) to enter the interface of LCD Display Inspection (as shown in right figure). Check whether the LCD fades in that status.

Touch the panel to have the screen display in the cycle of "Blue — Black — Red —Green — White".

Press  to quit the interface of LCD Display Inspection



（3）Input Signal Test Method

In the interface of Test Mode, press  (I03 Input Inspection) to enter the interface of input inspection interface (as shown in right). Users can confirm the input status of each switch and sensor.

ON： Turn On

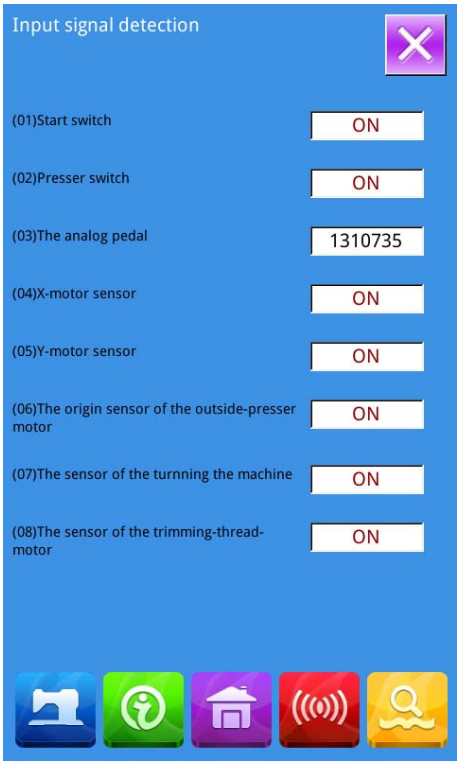
OFF： Turn Off

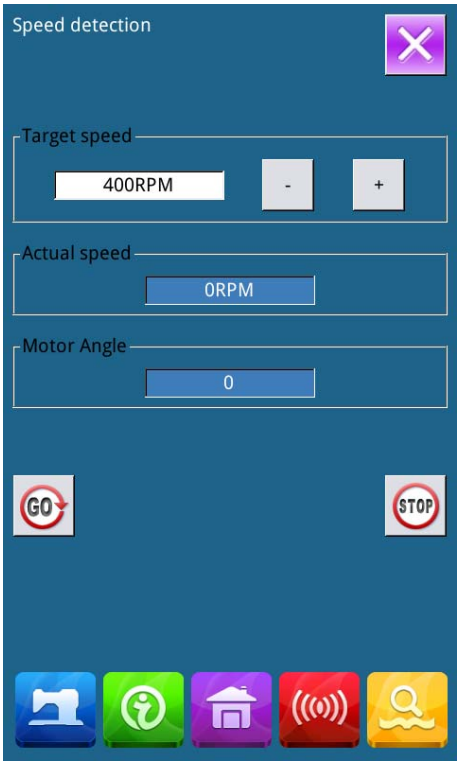
01：Start Switch

02：Presser Switch

03：Analog Pedal

04：X Motor Sensor



05：Y Motor Sensor 06：Origin Sensor of Outside-presser Motor 07：Sensor of Head Reversion 08：Sensor of Thread-trimming Motor	
（4）Speed Test **① Interface for Speed Test** In the interface of Mode Inspection, Press  （I04speed test） to enter the interface for Speed Test (as shown in right figure). The speed of main shaft motor can be tested in that interface. Press  to quit the interface for speed test. **② Speed Test Setting** Press “+” & “-“ to set the speed of the main shaft motor. Press  , then the motor will run at the set speed. At this moment, the actual tested speed is displayed in the interface.. Press  to stop the machine	

（5）Output Inspection

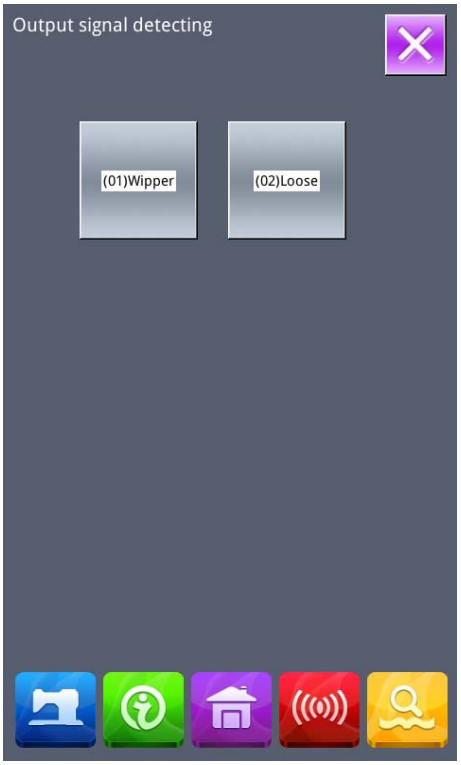
In the interface of Mode Inspection, Press  (I05 Output Inspection) to enter the interface of Output Inspection (as shown in the right figure). The following output status of the solenoid can be checked under that interface.

01：Thread-releasing Solenoid Test

02：Needle Thread Solenoid Test

Press  to quit output inspection interface

※ Attention: Sewing machine will perform relating actions.



（6）Continuous Running

① Display the interface for continuous running

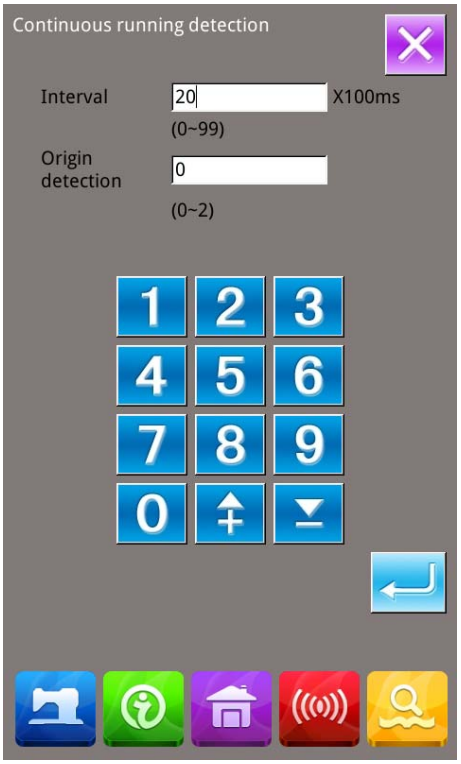
In the interface of Mode Inspection, Press  （ I06 continuous running ）to enter the interface of continuous running (as shown in right figure).

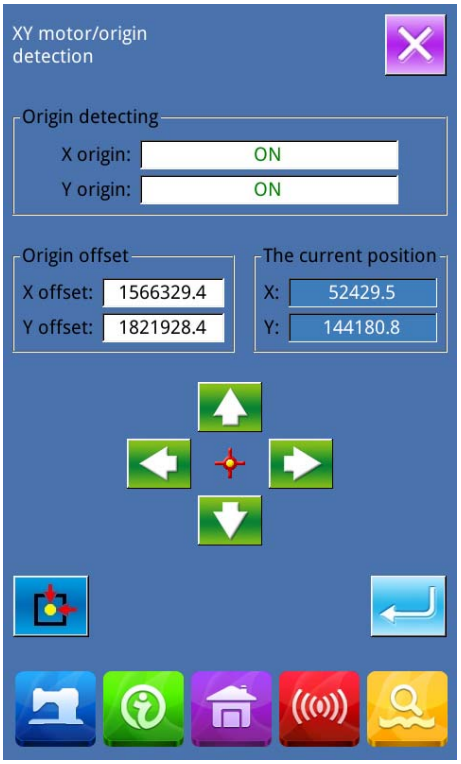
A：Action interval

B：Origin Detection

Press  to quit that interface.

② Continuous running setting



Click the columns under the interface of Continuous Running to set the Action interval and Origin Detection. Set the value with the number keys. Press  and step the pedal to start the continuous running. During the running, user can use the pause switch to stop machine or he can stop machine by stepping the pedal or pressing pause switch at action end	
（7）XY Motor Origin Sensor Test At Test Mode Interface, user can press  (I07XY Motor Origin Test) to activate XY Motor/Origin Output Test Interface (as shown in right picture). If user turns on the machine without entering the Ready Status and pressing  to search the origin, user can directly press the direction keys to move the motor and display the On/Off statuses of Sensors at both XY sides. In this way, user can test the working condition of the XY Motor Driver and their sensors. If user enters the Ready Status after power-on or presses  to search origin, the user will have to press  to serach origin at each entry to the I07 mode in future so that he couuld use direction keys to move XY motors. This is the manual adjustment of the XY origin. The coordinates displayed at left is the	

deviation value of the origin, while the coordinates displayed at right is the current position of presser frame.

User can press  to set current position as the reference value of the origin.

（8）Presser Motor / Origin Sensor Detection

According to the status  of the presser origin sensor, the position A displays the status (ON/OFF) of presser origin sensor; position B displays the status of trimming sensor.

By using  &  , the user can drive the presser motor at each pulse

Additionally, pressing  is to drive presser motor to the position pointed at below, whose figure is displayed in dark.

A：Presser Sensor B：Trimming Sensor

C：Presser down Position

D：Thread-trimming Wait Position

E：Trimming Finish Position

F：Thread-stirring Position

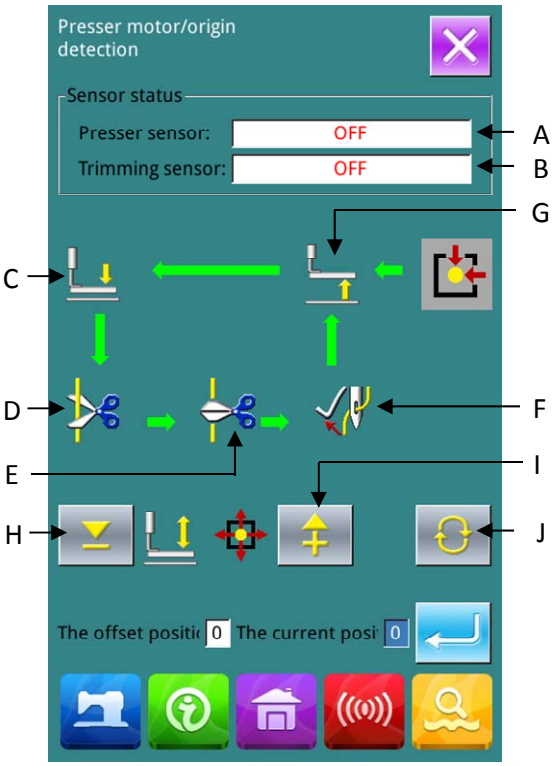
G：Presser Up Position

H：Forward one Step

J：Move to Next Position

I：Backward one Step

Note：Use Switch to search the origin of presser & thread-trimming motor, then this function will be effective.



8. 11 **Keyboard Lock**

At Setting Mode Level 2 Interface, user can press  to activate Keyboard Lock Setting Interface.

① Operation for Keyboard Lock

 : Keyboard Unlocked

 : Keyboard Locked

Select  and then  to finish the operation of locking keyboard. Press  to quit the keyboard lock operation.

② Display of Keyboard Lock Status

Close Parameter Setting Mode Interface, and have system return to Sewing Data Input Interface (as shown in right picture.), where user can see a lock figure under the pattern number. In the Keyboard Locked status, only the available figures can be displayed.

③ Range of Keyboard Lock

1、Interface of Normal Sewing Data Input:

7） Pattern Registration

8） Pattern Naming

9） Scale Rate Setting

10） Max Speed Limitation

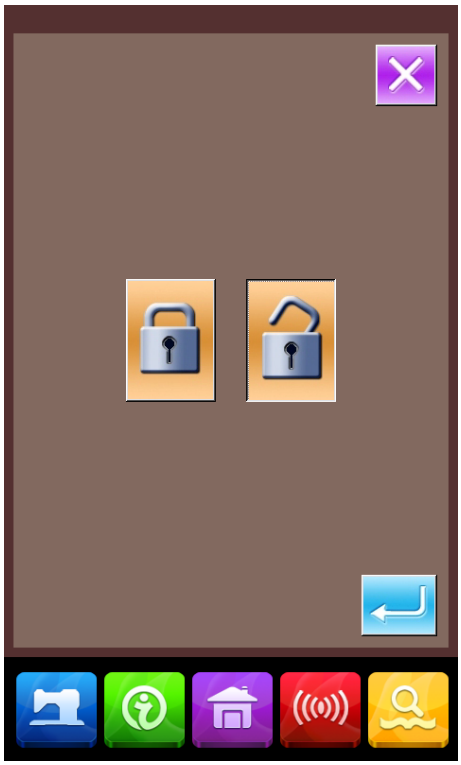
11） P Pattern Registration

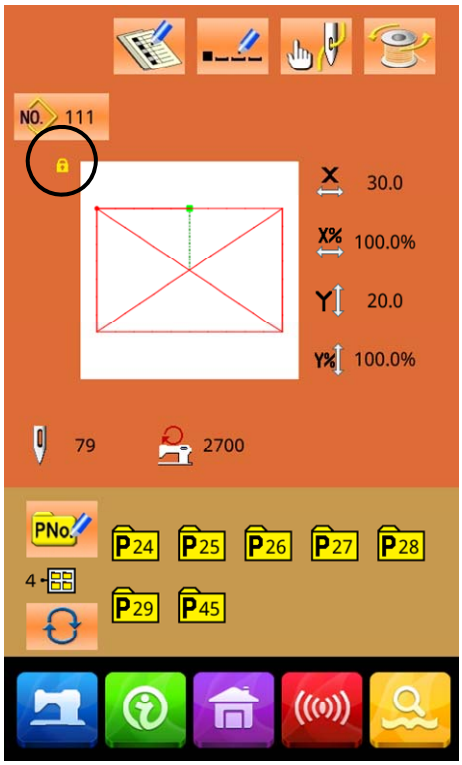
12） Pattern Deletion

2、Normal Sewing Interface:

3） Frame-moving

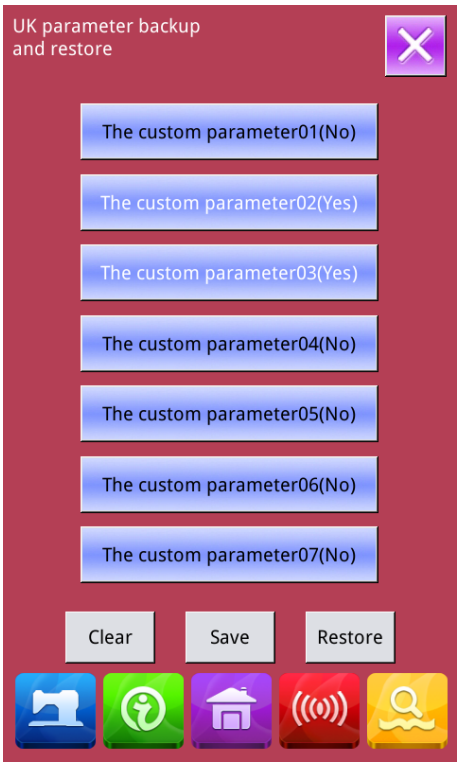
4） Counter Setting





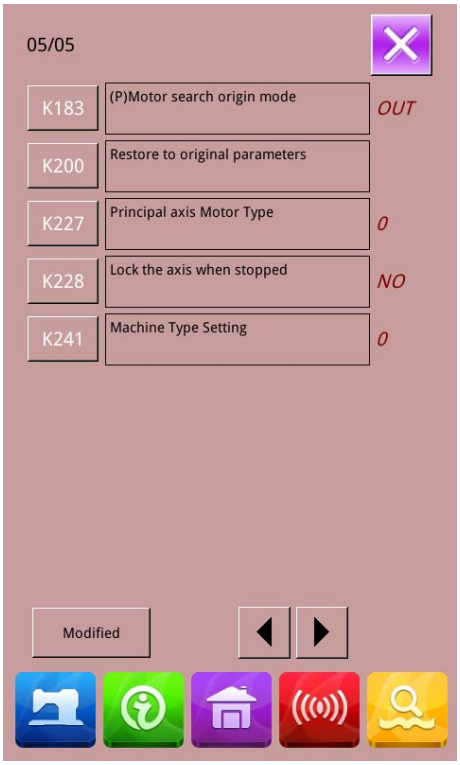
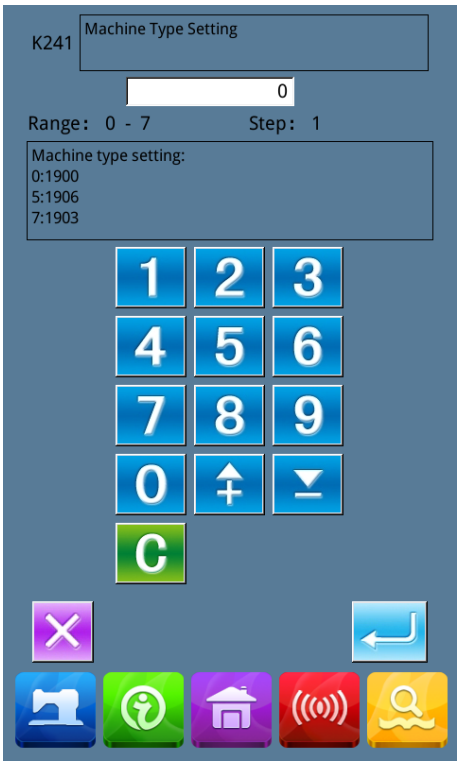
3、P Pattern Input Interface： 2） P Pattern Edition 2）P Pattern Copy 3）P Pattern Naming 4）Pattern Deletion 4、P Pattern Sewing Interface： 1） Counter Setting 5、C Pattern Data Input Interface： 6） C Patten Registration 7） C Pattern Copy 8） C Pattern Naming 9） C Pattern Edition 10） Pattern Deletion 6、C Pattern Sewing Interface： 1） Counter Setting 7、parameter Setting Mode： 3） Level 1 Parameter 4） Level 2 Parameter 3）Counter edition 4）Test Mode 5)：Pattern Lock Setting	

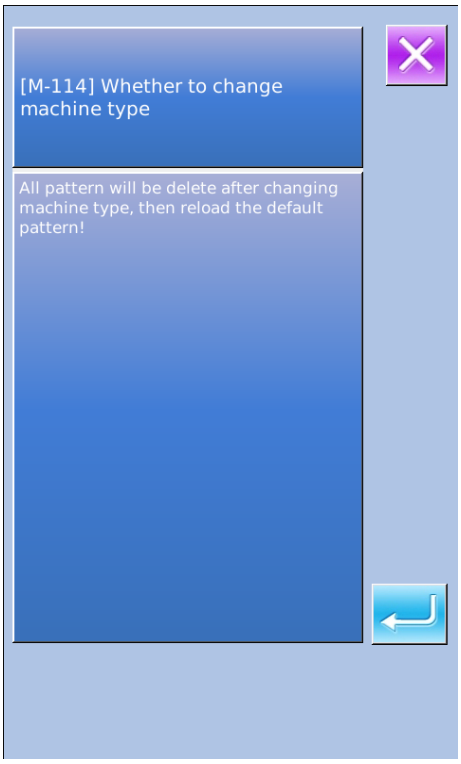
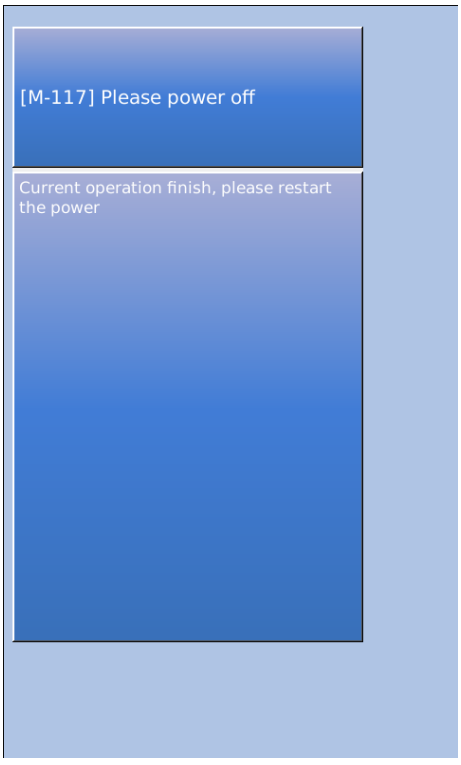
8. 12 **Parameter Back-up**

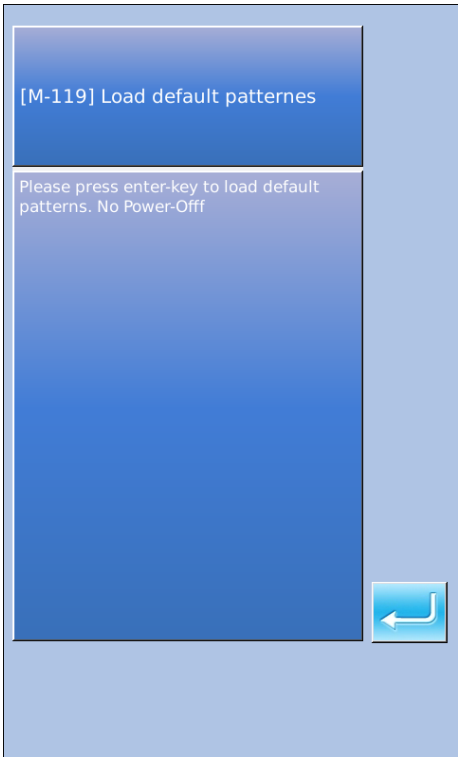
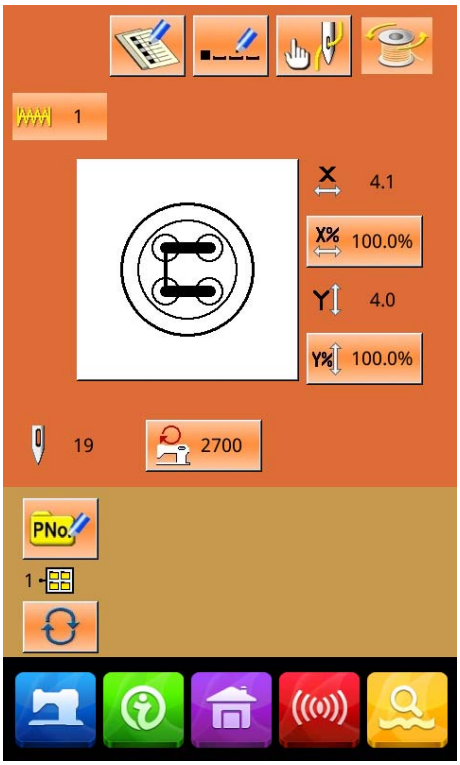
In setting mode level 3, press  to enter the interface of parameter back-up & restoration, as shown in right: Clear： Clear all the customized parameters that are saved. Save：Save current parameters Restore ： Restore the current parameters ① Click any key among The custom parameter01(No) ~ The custom parameter07(No) 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 The custom parameter02(Yes)。 ③ Select the button with parameters,	

press 「 Restore 」 to reload the corresponding parameter values ④ Press「Clear」to delete all the saved parameters	

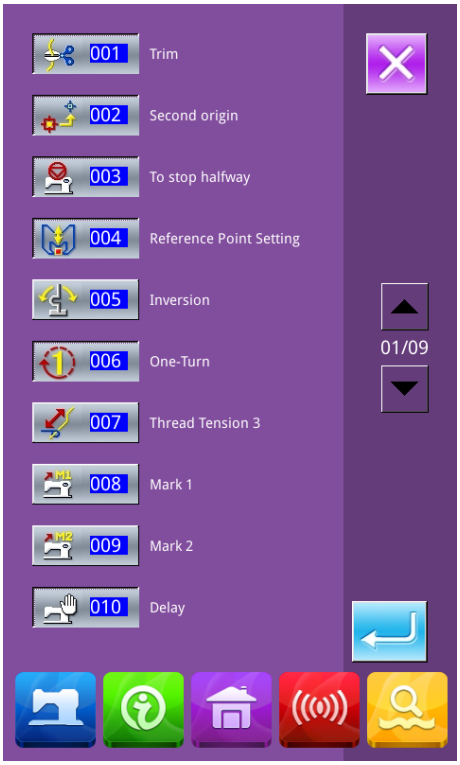
8.13 Button-stitching Function Setting

① Parameter Setting Operation At Setting mode Level 3 Interface, user can press  to have access to Level 2 Parameter Setting Interface (as shown in right figure). For the operating methods, please refer to the descriptions in Level 1 or 2 Parameter Setting. Press Key K241 to activate the next interface	
The right figure is the model selection interface. Press 7 to select button sewing function. Press  to finish the selection. **Note：When the model is changed, the system will clear the entire saved pattern and reload the pattern for the newly selected model. Therefore, users have to pay attention to the back-up of patterns before changing the model.**	

It this moment, the Hint Interface will be displayed, as shown in right picture. Pressing  is to cancel the settings, while pressing  is to confirm clearance of the existed patterns in the old model.	
After clearing the pattern of old model, user has to turn off power, as shown in the right picture.	

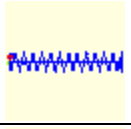
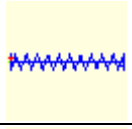
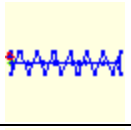
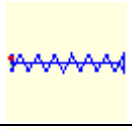
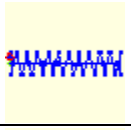
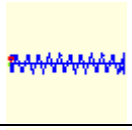
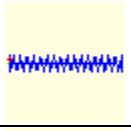
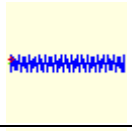
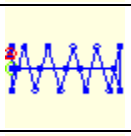
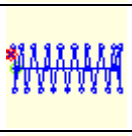
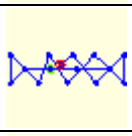
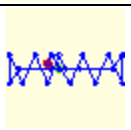
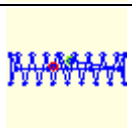
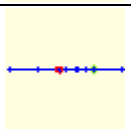
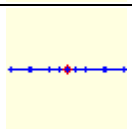
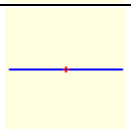
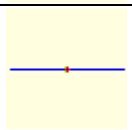
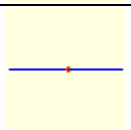
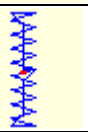
Re-power the machine. The hint interface for reloading patterns of new model will be displayed, as shown in the right picture. The user only needs to press  .	
When loading the basic patterns for the new model successfully, the system will activate the Main Interface of Pattern N, as the right picture shows. Button-sewing function is set successfully!	

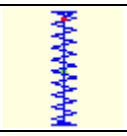
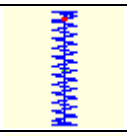
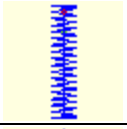
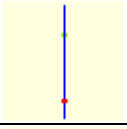
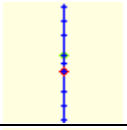
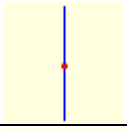
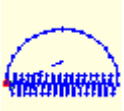
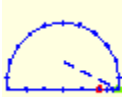
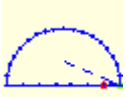
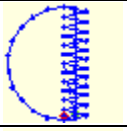
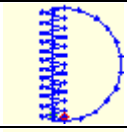
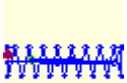
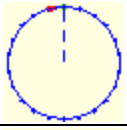
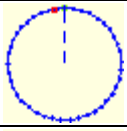
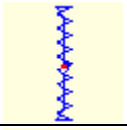
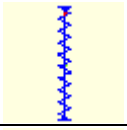
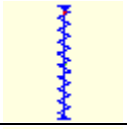
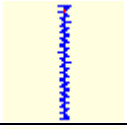
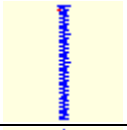
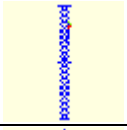
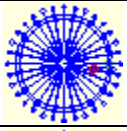
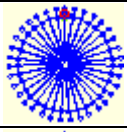
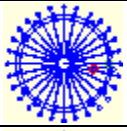
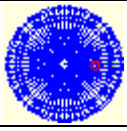
8.14 Pattern Edition Parameter Setting

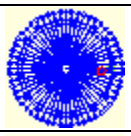
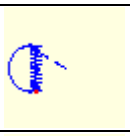
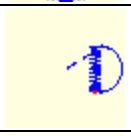
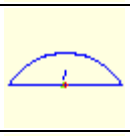
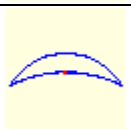
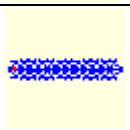
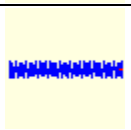
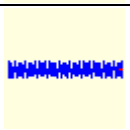
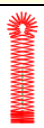
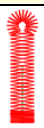
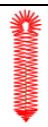
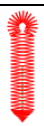
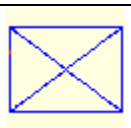
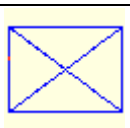
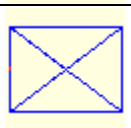
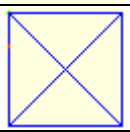
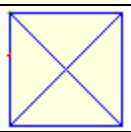
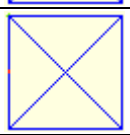
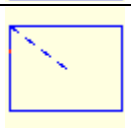
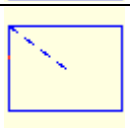
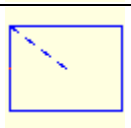
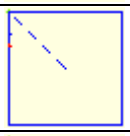
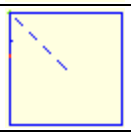
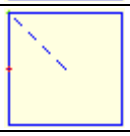
At Setting Mode Level 3 Interface, user can press  to activate the Interface for Setting Pattern Edition Parameters. The figures of the available functions are displayed in dark, while the figures of the unavailable functions are displayed with highlight. Edit the parameters according to your needs, press  to finish the setting.	

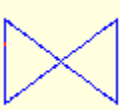
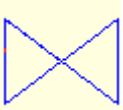
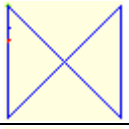
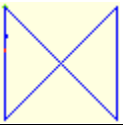
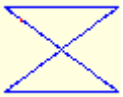
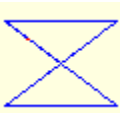
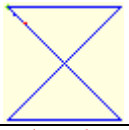
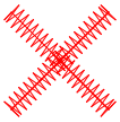
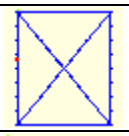
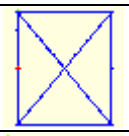
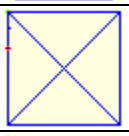
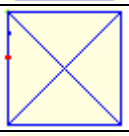
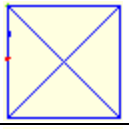
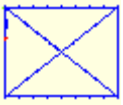
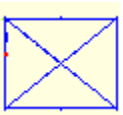
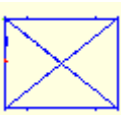
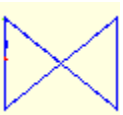
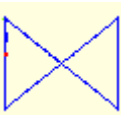
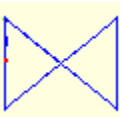
9 Controller System Principle

9.1 List of Patterns in 1900A Controller

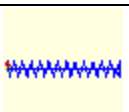
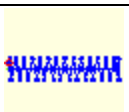
NO.	Patterns	Stitch Number	Length × Width (mm)	NO.	Pattern	Stitch Number	Length × Width (mm)
1		41	16.1×2	2		41	10.2×2
3		41	16×2.4	4		41	24×3
5		27	10.1×2	6		27	16×2.4
7		35	10.1×2	8		35	16×2.4
9		55	24×3	10		63	24×3
11		20	6.1×2.4	12		27	6.2×2.4
13		35	6.1×2.4	14		14	8×2
15		20	8×2	16		27	8×2
17		20	10×0	18		27	10×0
19		35	24.8×0	20		40	25.2×0
21		43	35×0	22		27	4×20

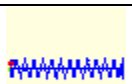
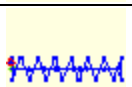
23		35	4×20		24		41	4×20
25		55	4×20		26		17	0×20
27		20	0×10		28		27	0×20
29		51	10.1×7		30		62	12.1×7
31		23	10.2×6		32		30	12×6
33		47	7×10		34		47	7×10
35		89	24×3		36		27	8×2
37		25	11.8×12		38		45	12×12
39		28	2.4×20		40		38	2.4×25
41		38	2.4×25		42		57	2.4×30
43		75	2.4×30		44		41	2.4×30
45		89	8×8		46		98	8×8
47		86	8×8		48		100	8×8
49		129	8×8		50		149	8×8

51		130	7.9×7.9	52		51	12.4×10.2
53		50	12.4×10.2	54		52	21×6
55		57	21×6	56		99	19×3
57		115	40×5	58		115	40×5
59		136	6.6x25	60		158	6.6x25
61		178	6.6x25	62		135	6.6x25
63		155	6.6x25	64		176	6.6x25
65		308	6x25	66		257	6x20
67		108	40×30	68		80	40×30
69		64	40×30	70		96	30×30
71		76	30×30	72		60	30×30
73		52	40×30	74		40	40×30
75		32	40×30	76		44	30×30
77		36	30×30	78		28	30×30

79		60	40×30		80		48	40×30
81		36	40×30		82		56	30×30
83		44	30×30		84		67	40×30
85		39	40×30		86		35	30×30
87		145	16.2x16.2		88		153	12x12.4
89		74	20×24		90		54	20×24
91		65	20×20		92		49	20×20
93		39	20×20		94		63	25×20
95		51	25×20		96		45	25×20
97		42	25×20		98		33	25×20
99		27	25×20		100		88	30×25

9.2 List of Patterns in 1906A Controller

NO.	Patterns	Stitch Number	Length × Width (mm)		NO.	Patterns	Stitch Number	Length × Width (mm)
1		41	16.1×2		2		41	10.2×2

3		41	16×2.4		4		41	24×3
5		27	10.1×2		6		27	16×2.4
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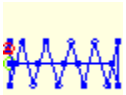
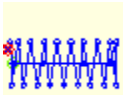
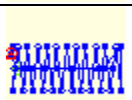
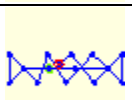
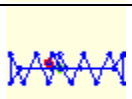
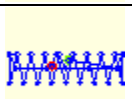
9		55	24×3		10		63	24×3
11		20	6.1×2.4		12		27	6.2×2.4
13		35	6.1×2.4		14		14	8×2
15		20	8×2		16		27	8×2
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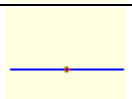
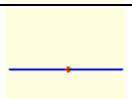
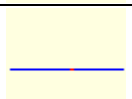
19		35	24.8×0		20		40	25.2×0
21		43	35×0		22		27	4×20
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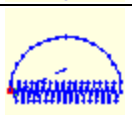
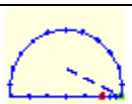
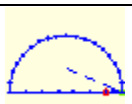
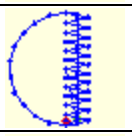
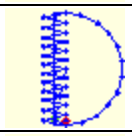
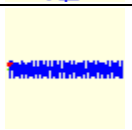
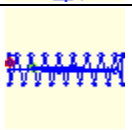
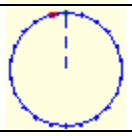
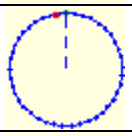
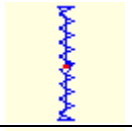
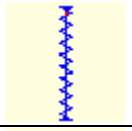
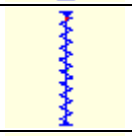
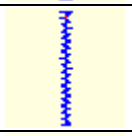
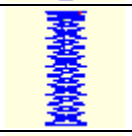
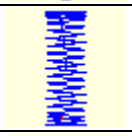
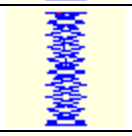
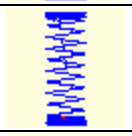
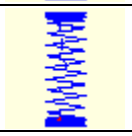
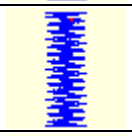
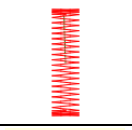
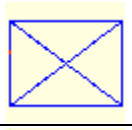
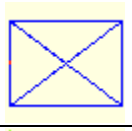
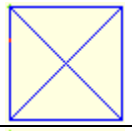
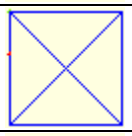
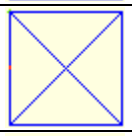
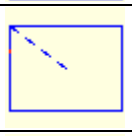
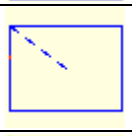
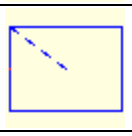
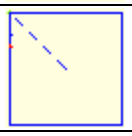
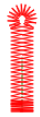
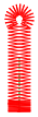
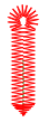
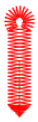
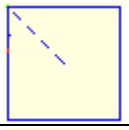
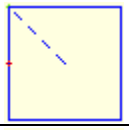
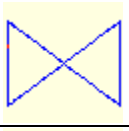
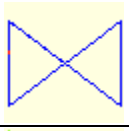
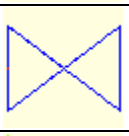
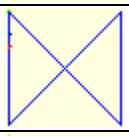
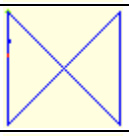
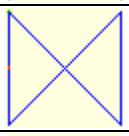
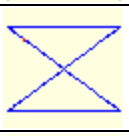
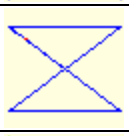
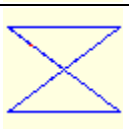
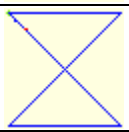
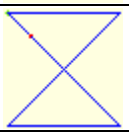
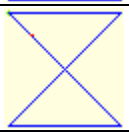
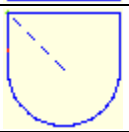
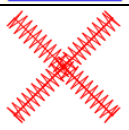
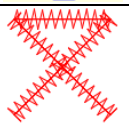
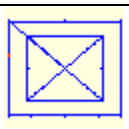
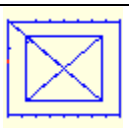
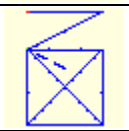
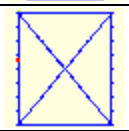
29		51	10.1×7		30		62	12.1×7

31		23	10.2×6		32		30	12×6
33		47	7×10		34		47	7×10
35		89	24×3		36		27	8×2
37		25	11.8×12		38		45	12×12
39		28	2.4×20		40		38	2.4×25
41		38	2.4×25		42		57	2.4×30
43		141	10×30		44		122	10×30
45		97	10×30		46		109	10.1×30
47		122	10.1×30		48		265	10×30
49		160	10x40		50		80	40×30
51		64	40×30		52		96	30×30
53		76	30×30		54		60	30×30
55		52	40×30		56		40	40×30
57		32	40×30		58		44	30×30

59		136	6.6x25		60		158	6.6x25
61		178	6.6x25		62		135	6.6x25
63		155	6.6x25		64		176	6.6x25
65		36	30×30		66		28	30×30
67		60	40×30		68		48	40×30
69		36	40×30		70		56	30×30
71		44	30×30		72		36	30×30
73		67	40×30		74		51	40×30
75		39	40×30		76		55	30×30
77		43	30×30		78		35	30×30
79		42	30×30		80		145	16.2x16.2
81		153	12x12.4		82		103	30×25
83		82	30×25		84		80	20×30
85		80	30×20		86		74	20×24

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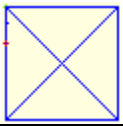
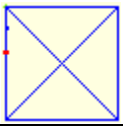
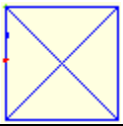
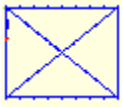
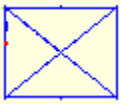
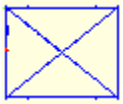
89		308	6×25		90		257	6×20
91		65	20×20		92		49	20×20
93		39	20×20		94		63	25×20
95		51	25×20		96		45	25×20
97		42	25×20		98		33	25×20
99		102	60×50		100		128	60×50

9.3List of Patterns in Button-sewing Controller

No.	Pattern	Thread Number	Standard Sewing Length X(mm)		No.	Pattern	Thread Number	Standard Sewing Length X(mm)
1		18	3.6x3.8		2		22	3.6x3.8
3		26	3.6x3.8		4		30	3.6x3.8
5		24	3.8x3.9		6		26	3.5x3.8
7		30	3.5x3.8		8		34	3.5x3.8
9		19	4x4		10		22	3.7x3.9
11		26	3.7x3.9		12		18	3.6x3.8
13		22	3.6x3.8		14		26	3.6x3.8

No.	Pattern	Thread Number	Standard Sewing Length X(mm)		No.	Pattern	Thread Number	Standard Sewing Length X(mm)
15		24	3.9x3.9		16		26	3.7x3.6
17		30	3.7x3.6		18		11	3.8x0.5
19		13	3.8x0.5		20		15	3.8x0.5
21		17	3.8x0.5		22		21	3.8x0.5
23		12	0.5x4.3		24		15	0.4x4.2
25		17	0.4x4.2		26		19	4x3.7
27		26	3.8x3.6		28		24	4x3.7
29		30	3.9x3.7		30		20	3.2x2.8
31		29	3.2x2.8		32		20	3.2x2.8
33		29	3.2x2.8		34		19	4x3.8
35		22	3.6x3.8		36		24	3.7x3.8
37		26	3.6x3.8		38		19	3.9x3.8
39		22	3.7x3.9		40		19	3.8x3.8
41		22	3.6x3.8		42		24	3.8x3.8
43		26	3.7x3.6		44		12	4.2x0.4

No.	Pattern	Thread Number	Standard Sewing Length X(mm)		No.	Pattern	Thread Number	Standard Sewing Length X(mm)
45		13	3.7x0.2		46		12	0.4x4.2
47		19	3.8x3.6		48		24	3.8x3.6
49		20	3.2x2.8		50		20	3.2x2.8

9.4 List of Warning

Code	Name	Content	Solution
E-001	Pedal not in the middle position	Pedal is stepped down when entering the ready sewing status	Make sure the pedal is not stepped down when entering the ready sewing status
E-002	Pause	RESET key is pressed while sewing machine is running. The machine pauses.	Restart or return-to-origin after pressing RESET key for thread-trimming.
E-003	Head Tilt Error	Head tilt detection switch is set as ON.	The sewing machine cannot be operated with the head tilted. Return the sewing machine head to its proper position. Technicians can use short circuit board to short circuit the 2P blue plug on the head board.
E-004	Low Voltage Error	The voltage of power is too low.	Sampling UZKIN analog quantity is too low. Confirm the voltage of power and related circuit.
E-005	Overvoltage Error	The voltage of power is over the specified value.	The detected signal of AC_OVDT is high. Confirm the voltage of power and related circuit.

Code	Name	Content	Solution
E-007	Main shaft driver abnormal	The error is detected in main shaft driver.	Turn off the power and repower the machine after a while.
E-008	24V power supply error	24V over-current	Turn off the power supply and then turn it on again after a while.
E-009	24V power supply error	24V voltage is too low	Turn off the power supply and then turn it on again after a while.
E-010	Air valve (fan) problem	After start, the system detects abnormal signal about the voltage of the air valve or fan.	Shut down the machine to check if there is any short circuit
E-012	Presser Foot Position Error	Presser foot is not at proper position.	Turn off the power and check connection of the CZ025 at the head signal circuit board. If the connection is ok, check the optocoupler.
E-013	Encoder Disconnection	The system can't detect ADTC signal.	Turn off the power, and confirm whether plug X5 is connected properly.
E-014	Motor Running Abnormal	When the main shaft motor is running, the range of the electrical angle is abnormal at 0°	Shut down the machine to check the motor encoder.
E-015	Beyond Sewing Area	The sewing area is beyond the limit.	Press RESET switch to confirm the pattern and its X/Y scale rate. Triggering condition: pattern computation error.
E-016	Needle Bar Up Position Error	The needle bar is not at UP position.	The main shaft stop position error may be caused by main shaft drive, or may be caused by human error. Turn the hand wheel to return the needle bar to its UP position.

Code	Name	Content	Solution
E-018	Cutter Position Error	The cutter is not at the right position.	Turn off the power and check the connection of the CZ024 at the head signal circuit board. If the connection is ok, check the optocoupler.
E-019	Emergency Stop Switch Not at Normal Position	Before start, the emergency stop switch is found pressed down	Manually solve the problem
E-020	Stepping Software Version Error	The software version for the stepping board is false.	Change the stepping board or update the stepping board program.
E-022	Machine Stop Due to Aging	After entering aging mode, the machine stops.	Shut down the machine
E-023	Thread-catching Position Error	The thread-catching device is at wrong position.	Turn off the power and check the connection of the CZ026 at the head signal circuit board. If the connection is ok, check the optocoupler.
E-025	X Origin Search Error	X origin sensor doesn’t change.	Turn off power and check the connections of CZ021 on head signal circuit board and X9 on control box.
E-026	Y Origin Search Error	Y origin sensor doesn’t change.	Turn off power and check the connections of CZ022 on head signal circuit board and X9 on control box.
E-027	Presser Origin Search Error	Presser origin sensor doesn’t change.	Turn off power and check the connections of CZ025 on head signal circuit board and X9 on control box.
E-028	Thread-catching Origin Search Error	Thread-catching origin sensor doesn’t change.	Turn off power and check the connections of CZ026 on head signal circuit board and X9 on control box.
E-030	Communication Error between Main-board and Stepping Board	Communication between Main-board and Stepping Board is down.	Turn off the power and repower the machine after a while. Check the

Code	Name	Content	Solution
			connections of the communication cable, main board and drive board.
E-031	Stepping driver Error	Over-current occurs to stepping drive board.	Turn off the power and repower the machine after a while.
E-034	Main shaft driver abnormal	The error is detected in main shaft driver.	Turn off the power and repower the machine after a while.
E-035	Main Board IPM Sudden Over-current	The current for the main board IPM drive module is too much within a short period of time	Turn off the power and repower the machine after a while. Change the main shaft motor to check if the motor is damaged; if problem remains, change the main board.
E-036	Main Board IPM Multiple Over-current	Over-current happens repeatedly to the main board IPM drive module after power on	Turn off the power and repower the machine after a while. Change the main shaft motor to check if the motor is damaged; if problem remains, change the main board.
E-037	Main Shaft Over-current	Motor stops.	If there is no mechanic problem, check the connection of the main shaft encoder
E-038	Machine Lock Error	The main-shaft of sewing machine can't rotate due to some problem.	After user sending order to rotate the main shaft, the main shaft motor doesn't respond. Check the PWM curve of the main shaft motor, the signal of the encoder and whether there is mechanic problem.
E-039	Main Shaft Over-speed	The system detects the actual speed of the main shaft motor exceeding the speed limit	Turn off the power and repower the machine after a while.

Code	Name	Content	Solution
E-040	Current Abnormal When Stop	Over-current occurs during the stop process of the main shaft	Turn off the power and repower the machine after a while. Change the main shaft motor to check if the motor is damaged; if problem remains, change the main board.
E-043	Thread-trimming Motor Origin Search Error	Thread-trimming origin sensor doesn't change.	Turn off power and check the connections of CZ026 on head signal circuit board and X9 on control box.
E-044	Machine Head Board Parameter Abnormal with Lower Computer	The lower computer read abnormal parameter from the machine head board.	Check the machine head board and the connection of X9 cable. Press RESET key to use parameter No. 67 to restore the parameters of the machine head board.
E-056	Stepping Close Loop DSP1(X25/X27) Communication Error	The verification of the received order at stepping board is failed	Check the connection of SPI communication cable
E-057	Stepping Close Loop DSP1 1st Route (X27) Over-Current	Large current is detected by hardware	At first, please check motor. Then check the resistance and sensor value. If the motor is ok, user should check the hardware on stepping board
E-058	Stepping Close Loop DSP1 1st Route (X27) Position Error	The detected encoder response position is not consistent with the position set in the order.	Change the stepping motor to open loop mode and run it. If the motor can work normally, the motor is ok. If the motor can't work normally, user should check the driving part on the stepping board and the motor itself. After the above operations, user should check the encoder. Make sure the connection and the condition of

Code	Name	Content	Solution
			the encoder cable is ok. And make sure the signal response part on the stepping board and the encoder itself is ok.
E-059	Stepping Close Loop DSP1 1st Route (X27)Over- speed	The system will give this warning when it detects the abnormal motor speed via the encoder response signal.	The checking method is the same with that for Position Error
E-060	Stepping Close Loop DSP1 2nd Route (X25) Over-Current	Large current is detected by hardware	At first, please check motor. Then check the resistance and sensor value. If the motor is ok, user should check the hardware on stepping board
E-061	Stepping Close Loop DSP1 2nd Route (X25) Position Error	The detected encoder response position is not consistent with the position set in the order.	Change the stepping motor to open loop mode and run it. If the motor can work normally, the motor is ok. If the motor can't work normally, user should check the driving part on the stepping board and the motor itself. After the above operations, user should check the encoder. Make sure the connection and the condition of the encoder cable is ok. And make sure the signal response part on the stepping board and the encoder itself is ok.
E-062	Stepping Close Loop DSP1 2nd Route (X25) Over- speed	The system will give this warning when it detects the abnormal motor speed via the encoder response signal.	The checking method is the same with that for Position Error

Code	Name	Content	Solution
E-063	Stepping Close Loop DSP2(X21/X23) Communication Error	The verification of the received order at stepping board is failed	Check the connection of SPI communication cable
E-064	Stepping Close Loop DSP2 1st Route (X23) Over-Current	Large current is detected by hardware	At first, please check motor. Then check the resistance and sensor value. If the motor is ok, user should check the hardware on stepping board
E-065	Stepping Close Loop DSP2 1st Route (X23) Position Error	The detected encoder response position is not consistent with the position set in the order.	Change the stepping motor to open loop mode and run it. If the motor can work normally, the motor is ok. If the motor can't work normally, user should check the driving part on the stepping board and the motor itself. After the above operations, user should check the encoder. Make sure the connection and the condition of the encoder cable is ok. And make sure the signal response part on the stepping board and the encoder itself is ok.
E-066	Stepping Close Loop DSP2 1st Route (X23) Over- speed	The system will give this warning when it detects the abnormal motor speed via the encoder response signal.	The checking method is the same with that for Position Error
E-067	Stepping Close Loop DSP2 2nd Route (X21)Over-current	Large current is detected by hardware	At first, please check motor. Then check the resistance and sensor value. If the motor is ok, user should check the hardware on stepping board

Code	Name	Content	Solution
E-068	Stepping Close Loop DSP2 2nd Route (X21) Position Error	The detected encoder response position is not consistent with the position set in the order.	Change the stepping motor to open loop mode and run it. If the motor can work normally, the motor is ok. If the motor can't work normally, user should check the driving part on the stepping board and the motor itself. After the above operations, user should check the encoder. Make sure the connection and the condition of the encoder cable is ok. And make sure the signal response part on the stepping board and the encoder itself is ok.
E-069	Stepping Close Loop DSP2 2nd Route (X21) Over-speed	The system will give this warning when it detects the abnormal motor speed via the encoder response signal.	The checking method is the same with that for Position Error
E-070	Stepping Board 90V Power Supply Error	Stepping board 90V is over-current	Turn off the power supply and then turn it on again after a while.
E-071	Abnormal position of lifting head	The lifting head is not in the correct position.	Check whether the signal of the lifting head sensor is normal.
E-072	The following middle pressure foot motor origin retrieval is abnormal	The motor cannot find the origin.	Need to enter the detection mode to check whether the motor power line or the encoder line is connected stably and whether the motor is running normally.
E-073	Abnormal large XY stitch spacing	XY needle spacing over 12.7mm.	Reduce the stitch spacing.
E-090	USB upgrade stepping error	Query step state timeout.	Check if the step board procedure is correct.

Code	Name	Content	Solution
E-093	Step closed loop DSP1(X25/X27) communication packet calibration error	Master and step communication error.	Check whether the master and step communication lines are stable and reliable.
E-094	Step closed loop DSP1(X25/X27) communication packet invalid command	Master and step communication error.	Check whether the master and step communication lines are stable and reliable.
E-095	Step closed loop DSP2(X21/X23) communication packet calibration error	Master and step communication error.	Check whether the master and step communication lines are stable and reliable.
E-096	Step closed loop DSP2(X21/X23) communication packet invalid command	Master and step communication error.	Check whether the master and step communication lines are stable and reliable.
E-097	Master control software and motherboard hardware types are inconsistent	Wrong use of main control panel.	Replace the main control panel of the corresponding product.
E-098	Error in CRC calibration of step DSP1 curve data	Abnormal step curve data.	Update the step curve of DSP1.
E-099	Error in CRC calibration of step DSP2 curve data	Abnormal step curve data.	Update the step curve of DSP1.
E-100	System parameter version changes	System parameter version changes	Automatic recovery of system parameters
E-101	System parameter range exception	System parameter range exception	Automatic recovery of abnormal parameters

9.5 Hint List

Code	Name	Content	Solution
M-300	Memory Abnormal	There exists error with the data	Internal error: user need update the

Code	Name	Content	Solution
		defined by the operation panel.	panel program.
M-301	Memory Abnormal	Panel memory data abnormal	Internal error: user need update the panel program.
M-302	Machine Type Parameter Error	The machine type data read by the operation panel is not within the set range.	Press RESET key to automatically enter parameter No. 241 to select and save the defined machine type.
M-303	UK Parameter Abnormal	Abnormal range of the parameter read by the panel from EEPROM	Press RESET key to enter the system menu and recover the default setting.
M-304	Head Board Parameter Abnormal	Abnormal range of parameters received by panel from down computer	Press RESET key to enter the system menu and recover the default setting.
M-305	Normal Pattern Parameter Abnormal	When using pattern parameter, the panel detects abnormal parameter range.	Press RESET key to enter the system menu and recover the default setting.
M-306	Pattern Not Found or Locked	The prepared pattern No. hasn't been registered to ROM or set as not to be read. The pattern No. is displayed as 0.	Press RESET key, confirm the pattern No. and make sure the pattern is unlocked.
M-307	Pattern Data Abnormal	When the panel reads the sewing data of the pattern, the data format is found to be abnormal.	Select other patterns.
M-308	Sewing Data Too Large	When being computed, the size of the pattern data is found to be too large and beyond normal range.	Select other patterns for sewing.
M-309	Pattern beyond Sewing Range	When being computed, the pattern is found to be beyond sewing range.	Press RESET key, confirm the size of the pattern is within the set range of parameters K056, K057, K058 and K059.

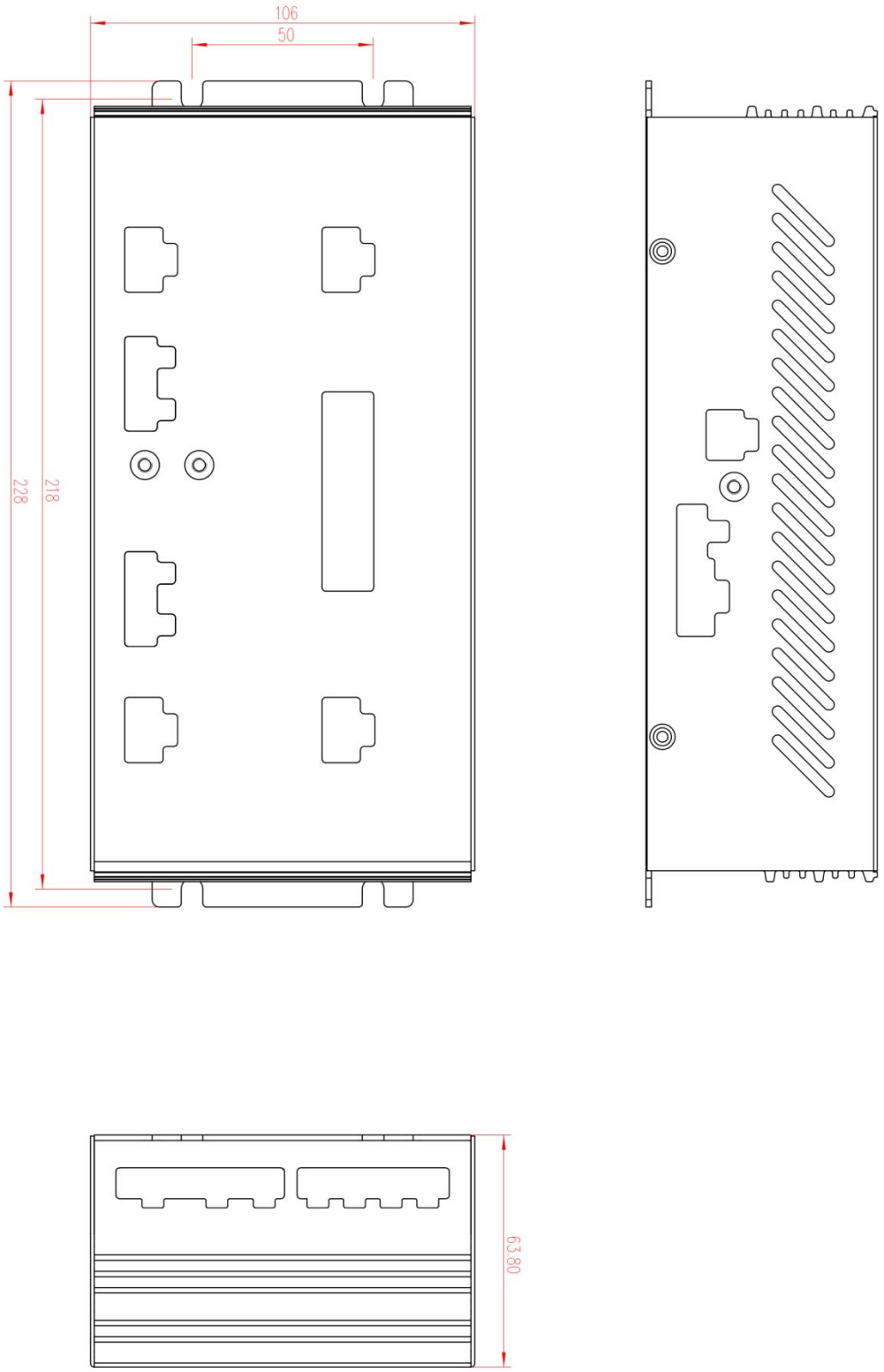
Code	Name	Content	Solution
M-310	Stitch Length beyond Normal Range	When being computed, the stitch length is found to be beyond normal range.	Press RESET key, confirm the pattern and X/Y scaling up rate.
M-311	Pattern Data Communication Abnormal	Error occurs when the panel sends pattern data to the main control.	Check the pattern and the cable connection between the panel and the main control.
M-312	Normal Pattern Lock Abnormal	The panel can't read the normal pattern lock data from EEPROM.	Press RESET key to enter the system menu and recover the default setting.
M-313	Present Pattern Parameter Abnormal	The panel can't read the pattern parameter data from EEPROM.	Press RESET key to enter the system menu and recover the default setting.
M-314	Parameter Setting beyond Normal Range	The set value of the parameter exceeds normal range.	Press RESET key and change the set value.
M-315	Counter Abnormal	The panel can't read the counter data from EEPROM.	Press RESET key to enter the system menu and recover the default setting.
M-316	Counter Exhausted	The counter has reached the upper limit after the sewing.	Press RESET key.
M-317	Communication Error between Main Board and the Panel	There is no communication or communication error between main board and the panel.	Turn off the power and repower the machine after a while. Check the communication cable, the main board and the panel.
M-318	The Storage Space for External Patterns Full	When patterns are imported to the control panel via USB, the storage space for such patterns is found full.	First export the internal patterns before deleting them, and then import patterns again.
M-319	External Patterns Format Abnormal	Pattern data is found abnormal when its format data is read by the control panel	Enter the parameter import/export mode of the system and delete such patterns.

Code	Name	Content	Solution
M-320	Imported Pattern Already Exist	When importing pattern from USB storage device, pattern with the same number is found to exist already in the panel.	Change the number of the pattern in the USB storage device to be imported.
M-321	Imported Pattern Not Found	When importing pattern from USB storage device, the pattern to be imported is not found.	Select existing patterns in the USB storage device.
M-322	Pattern Deletion Error	When deleting external pattern, it is found to be not exist.	Select existing pattern for deletion.
M-323	Pattern Read Error	There is problem with reading pattern data from external pattern storage area.	Please select other patterns.
M-324	USB Device Not Connected	When importing or exporting patterns, the panel detects abnormal USD storage device.	Change another USB storage device
M-325	The Size of Imported Pattern Too Large	When importing patterns, the panel detects that the imported pattern is too beyond the size limitation.	Make sure the imported pattern is within the size range.
M-326	External Pattern Not Found	Under sewing ready status, the external pattern to be read is not found.	Please select other patterns.
M-327	P Pattern to Be Deleted is Cited by C Pattern	When being deleted, the P pattern is found to have been added to certain C pattern.	First delete the P pattern from the C pattern and then delete the P pattern.
M-328	USB Patterns Not Found	The pattern number to be imported can’t be found after USB connection	Make sure the pattern is correctly named and saved under the designated directory of the USB storage device.
M-329	No Registered P Pattern	Before entering the P pattern or C	Please register P patterns before

Code	Name	Content	Solution
		pattern copy/deletion mode, no P pattern has been registered.	entering those modes.
M-330	All Normal Patterns Shut Down	Before entering P pattern registration mode, all normal patterns are found to have been shut down.	Please unlock normal patterns.
M-331	No More Registration of P Patterns	Before entering P pattern registration mode, it is found that all P patterns have been registered.	Please delete some P patterns before registering new ones.
M-332	No Deletion of the Last C Pattern	The C pattern to be deleted happens to be the last one.	The deletion of the remaining last C pattern is prohibited.
M-333	Alarm to Lubricate the Machine	It is time to add lubricating oil to certain parts of the machine, so the machine stops working.	Restart the machine, enter parameter No. 245 and press RESET key, and then power on again
M-999	Undefined Error	Undefined error of the operation panel	Shut down the machine and update the control panel program.

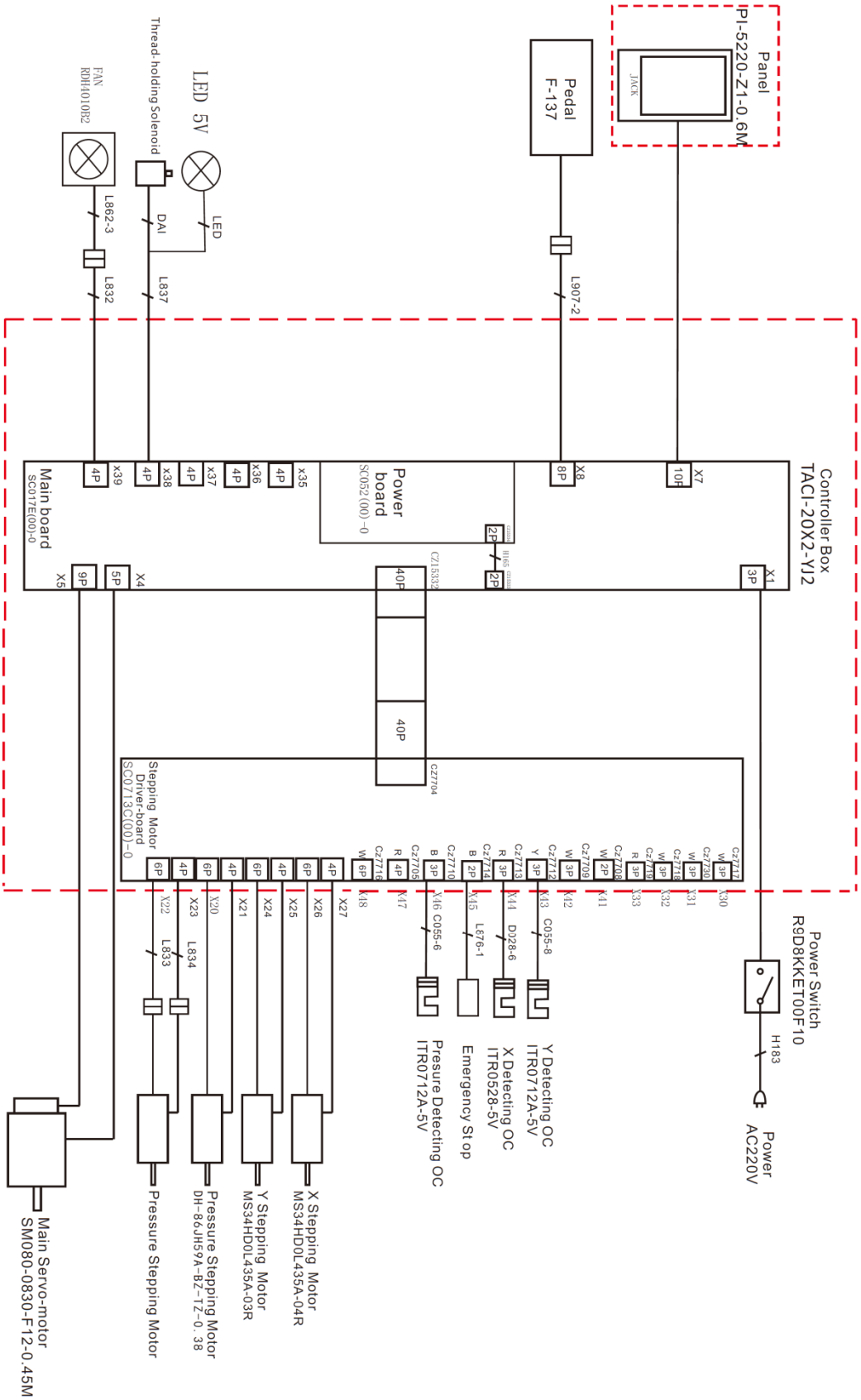
9.6 Structure of Control System

9.6.1Installation Size of Control Box



9.6.2 The Control System Diagram

1、TASC201-2J/Z



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