User´s manual

GARUDAN®

GZ-539 Series

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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 in order to operate the machine correctly and effectively. If the user operates the machine contrary to regulations herein, thus cause loss to user or third party, we will not take responsibility. Besides, 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

Signs & Definitions of Safety Marks

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

Danger	The incorrect operation due to negligence will cause the serious personal injury or even death.
Caution	The incorrect operation due to negligence will cause the personal injury and the damage to 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!")

Safety Matters for Attention

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

Installation	
	Please ask the trained technicians to install the sewing machine.
	Don’t connect machine to power supply until the installation is finished. Otherwise the action of sewing machine may cause personal injury once the start switch is pressed at that situation by mistake.
	When you tilt or erect the head of sewing machine, please use both of your hands in that operation. And never press the sewing machine with strength. If the sewing machine loses its balance, it will fall into floor thus causes the personal injury or mechanical damage.
	Grounding is a must. If the grounding cable is not fixed, it may cause the electric-shock and mis-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 mis-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 to the sewing machine.
	During working, if the mis-operation happens or the abnormal noise or smell is found at the sewing machine, user shall cut off the power at once, and then contact the trained technicians or the supplier of that machine for solution.
	For any trouble, please contact the trained technicians or the supplier of that machine.
Maintenance & Inspection	
	Only can the trained technicians perform the repair, maintenance and inspection of this sewing machine.

	For the repair, maintenance and inspection of the electrical component, please contact the professionals at the manufacturer of control system in time.
	At following circumstances, please cut off the power and pull off the plug at once so as to avoid the personal injury caused by the mis-operation of start switch:. 1.Repair, adjustment and inspection ; 2. Replacement of the component like curve needle, knife and so on.
	Before the inspection, adjustment or repair of any gas-driven devices, user shall cut off the gas supply till the pressure indicator falls to 0.
	When adjusting the devices needing the power supply and gas supply, users can't be too careful at following the entire Safety Matters for Attention.
	If the sewing machine damages due to the unauthorized modification, our company will not be responsible for it.

Table of Content

1 General Information

1.1 Summary

Computerized control system for high-speed zigzag sewing machine: 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.

1.2 Specification

Application	Thin Material ~ Middle/Thick Material
Max Speed	5000rpm
Max Swing	10mm
Max Feeding Amount	5 mm (Both direction), only available at dual-stepping model
Thread-trimming	Yes, only available at dual-stepping model
Feeding Method	Standard Feeding (Computerized control), only available at dual-stepping model
Power supply	AC175~265V（50~60HZ）
Power	500W
Memory	U Disk
Patterns	20 kinds of Patterns

Effective standard for product:QCYXDK004—2012《Computerized Control System for Industrial Sewing Machine》.

1.3 Matters for Safe Using

- **Working Environment**

Do not use this control device in the following environments:

- Power Voltage
  - Voltage fluctuation beyond ±10% of the standard voltage
  - Capacity of power supply doesn't meet the requirement

- Electrical Disturbance
  - Beside the wave launcher with strong electrical wave and magnetic field or the high cyclic machine.
- Temperature/ Humidity
  - Temperature below 0℃or above 35℃
  - Outdoors or the area directly shined by sun
  - Beside stove (heater).
  - Relating humidity below 5% or above 95% or the area without dew
- Air
  - Dusty area or area with corrosive gas
  - Area that is easy to have air explosion or oil explosion
- Vibration
  - If the location of the sewing machine usually has excessive vibration, please move the control box to other place.

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 install 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 any stuff into the slots 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:

Warning	The wrong operation may cause serious injury or death

Caution	The wrong operation may cause personal injury or loss of property

- The meaning of the figure are shown at below:

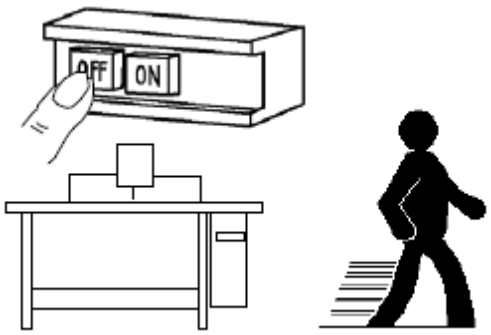
	Please operate machine according to instruction
	Caution: High Temperature
	Never do this

	Caution: High Voltage
	Grounding is a must

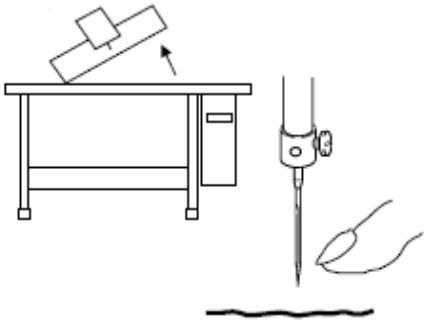
1.4 The Preventions on Instruction

Warning

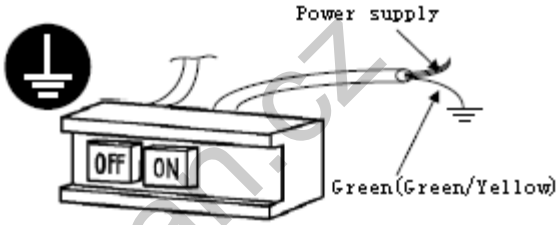
1、When you leave the machine, please turn it off.



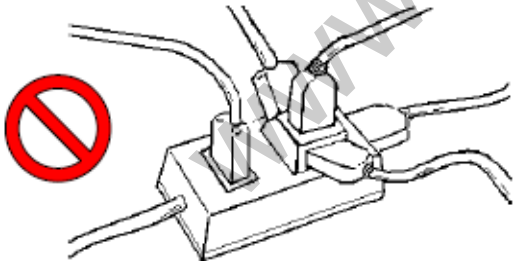
3、If user needs tilt the head or replace the needle or thread the upper thread, please turn off the power



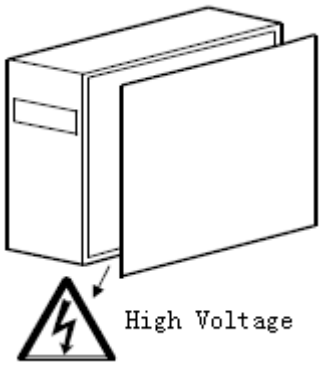
4、Grounding the machine with ground cable.



5、Do not use the household terminal block to let machines to share one power supply

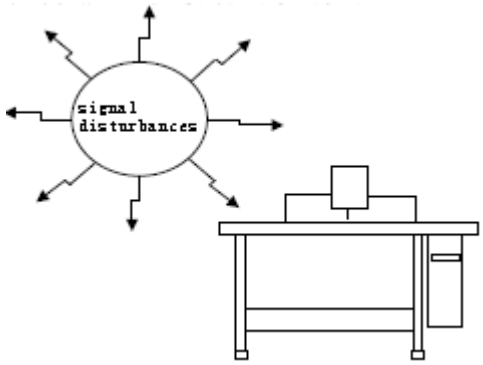
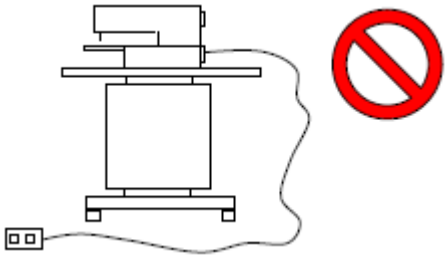


6、For opening the control box, please turn off the power and take away the plug from socket firstly, and then wait for at least 5 minutes before opening the control box.



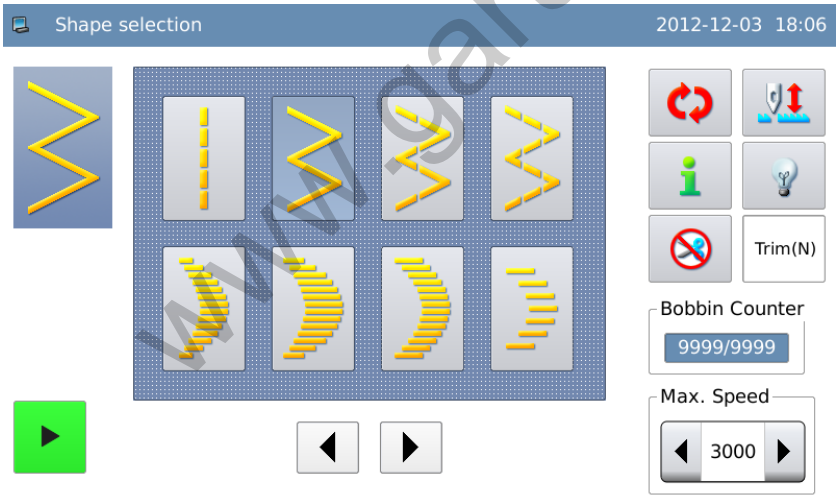
8、Please keep it away from the machine creating the high cyclic disturbance

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

	
10、、If the fuse is burnt, please solve the problem before replacing a new one with same capacity.	

1.5 Operation Method

The touching panel of zigzag sewing controller adopts the advanced touching operation technology, whose friendly interface and easy control bring the revolutionary changes to the daily usage of the users. For performing the relating operations, user can use his fingers or other objects to touch the screen.



Warning **Don’t use the sharp object to touch the screen so as to avoid causing the permanent damage to the touching panel.**

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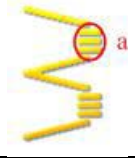
1.6 Sewing Pattern List

Name		Stitch Form	Stitch Number	Max Swing Width
Line			1	-
2-point zigzag			2	10
3-point zigzag			4	
4-point zigzag			6	
Scallop (Right)	Standard		24	
	Lunar			
	Average 24 Stitches			
	Average 12 Stitches		12	
Scallop (Left)	Standard		24	
	Lunar			

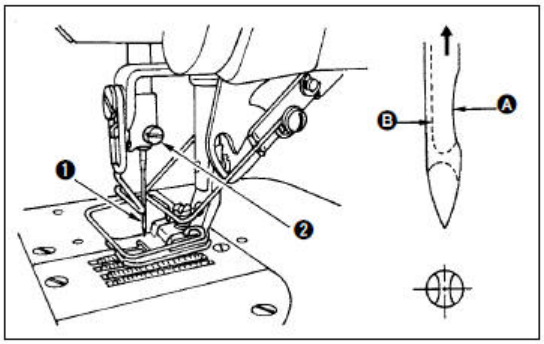
	Average 24 Stitches			
	Average 12 Stitches		12	
Blind Stitch Form (Left)			2+a	
Blind Stitch Interval (Right)			2+a	
Left T (this pattern does not exist at Single Stepping Model)			3	
Right T (this pattern does not exist at Single Stepping Model)				
Pattern 1 (this pattern does not exist at Single Stepping Model)			6	
Pattern 2 (this pattern does not exist at Single Stepping Model)				
Pattern 3 (this pattern does not exist at Single Stepping Model)				
Pattern 4 (this pattern does not exist at Single Stepping Model)				
Customized Pattern		-	500	

2 Preparation before Sewing

2.1 Installation of Needle

Warning

In order to avoid the personal injury due to the sudden move, user should perform the operation after the motor stops completely.



1) Turn the wheel to lift the needle to the highest position.

2) Loosen the needle screw○,2 and turn the slot○,B on the needle○,1 to front.

3) Insert the needle in the direction of arrow deeply

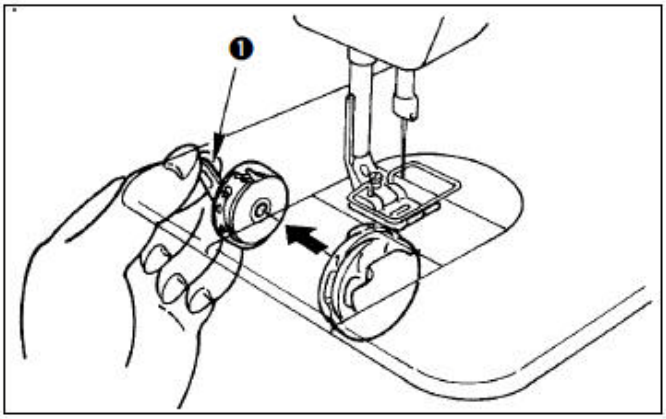
4) Fix the needle screw○,2.

5) Make sure the slot○,B on the needle is facing the front.

2.2 Installation of Bobbin Case

Warning

In order to avoid the personal injury due to the sudden move, user should perform the operation after the motor stops completely.



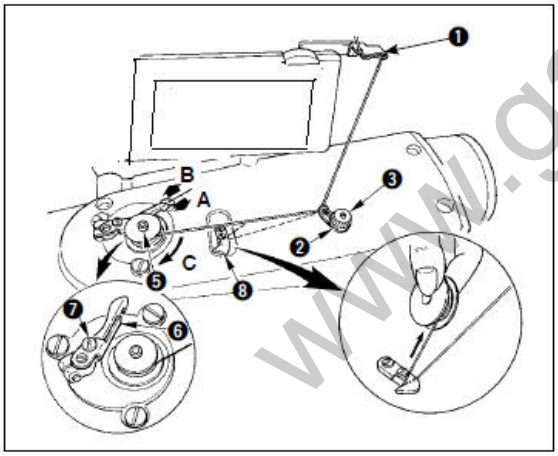
1) Turn the wheel to lift the needle to the highest position.

2) Draw the handle○,1 on the bobbin case and take it off

2.3 Wind the Bottom Thread

Warning

In order to avoid the personal injury due to the sudden move, user should perform the operation after the motor stops completely.



1) Put shuttle core on the winding shaft○,5.

2) Thread in order from○,1 to ○,8, and then wind the thread on the shuttle core for several loops.

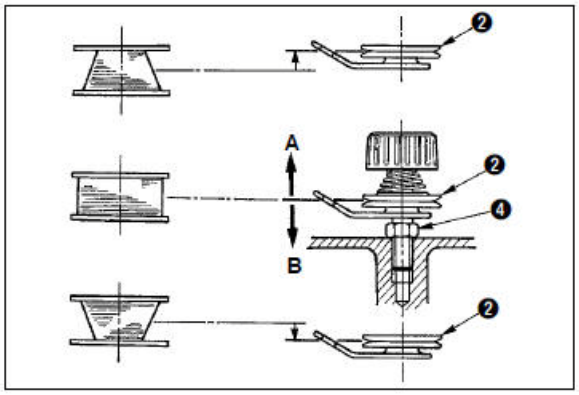
3) Press the winding lever○,6 in direction A and run the sewing machine. The shuttle core will rotate in direction C and the thread will be wound on the shuttle core. After the winding, the winding shaft ○,5 will stop automatically.

4) Remove the shuttle core and use cutting plate ○,8 to cut thread

5) When adjusting the winding amount of bottom thread, user needs loosen the screw○,7, move the winding adjustment plate ○,6 in direction A or B and fix the screw○,7.

Direction A：Reduce the amount

Direction B：Increase the Amount

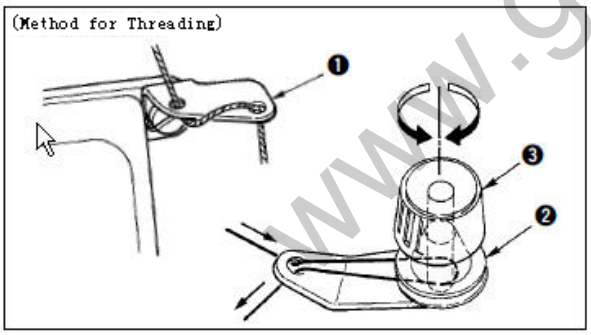


6）If user can not wind the thread smoothly, user should loosen the nut○,4, turn the winding tension device and adjust the height of the thread tension plate○,2.

The standard position is that the center height of shuttle core is same as that of tensions plate.

When the lower side has more threads, user needs move thread tension plate○,2 in direction A, or user should move the tension plate to direction B.

After adjustment, fix the nut○,4.



When adjusting the bottom thread tension, user needs turn the thread tension nut ○,3 and adjust it.

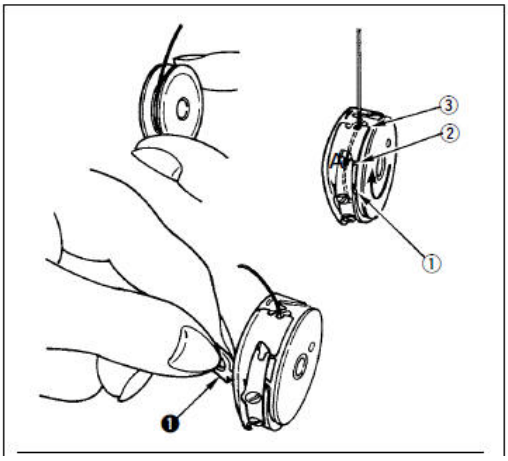
[Note 1] At winding the bottom thread, please tighten the thread between the shuttle core and tension plate○,2 firstly.

[Note 2] When winding the bottom thread not in the status of sewing, user needs remove the upper thread on the slot of down jump thread rod and take out the shuttle core from the shuttle

2.4 Method for Putting Shuttle Core

Warning

In order to avoid the personal injury due to the sudden move, user should perform the operation after the motor stops completely.



1) Turn the wheel to lift the needle to the highest position.

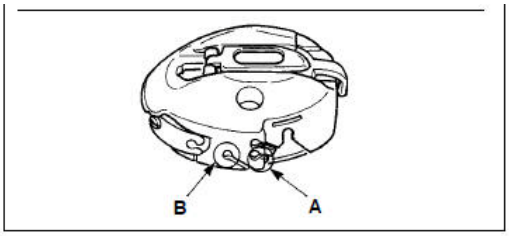
2) Pull the about 5cm thread from the shuttle core and put them into the bobbin case.

3) Thread in the order of the number. Pull thread form the opening. Pulling the bottom thread will have the shuttle core to rotate in the direction of arrow.

4) Draw the handle○,1 on bobbin case.

5) At this moment, put thread from the lower shield handle and insert it into the inner shuttle shaft

6) Close the handle on the bobbin case



Usage Method of Thread Hole on Bobbin Case:

1) Hole A is used at the sewing beyond the 2-points zigzag sewing and scallop zigzag sewing.

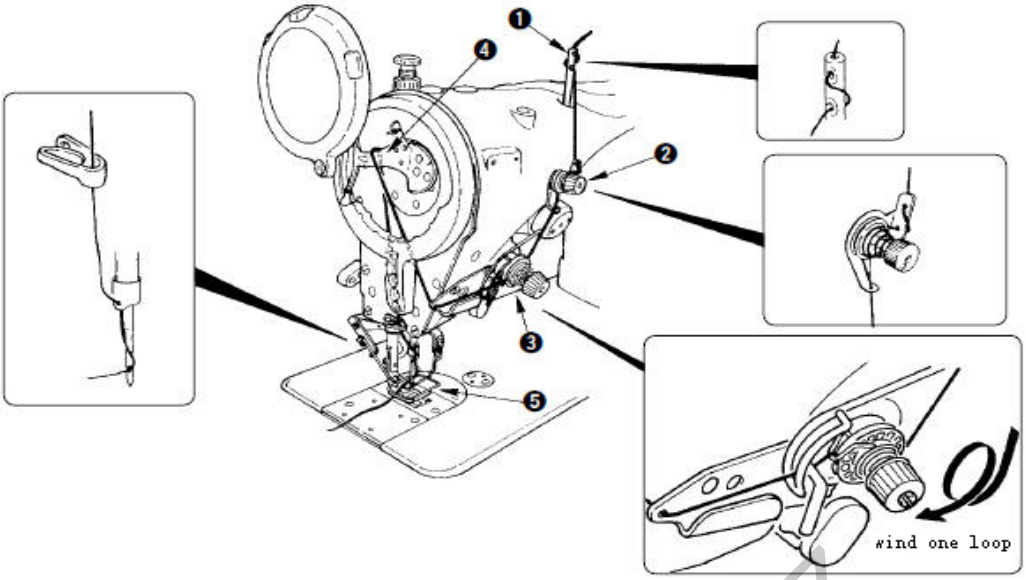
2) Hole B is used at the 2-points zigzag sewing and scallop zigzag sewing mainly.

[Note] At Hole B, after machine cuts the long fiber thin thread, the first few stitches may be hard to get knotted. Therefore, please use other thread hole or start sewing from right

2.5 Threading Method of Upper Thread

Warning

In order to avoid the personal injury due to the sudden move, user should perform the operation after the motor stops completely.

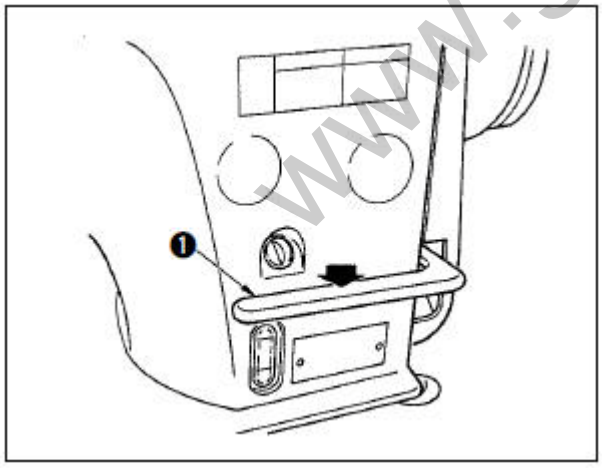


1) Turn the wheel to lift the needle to the up position

2) Thread according to the number order on picture.

3) Draw the thread out of needle at about 10cm.

2.6 Adjustment of Cloth-feeding Length



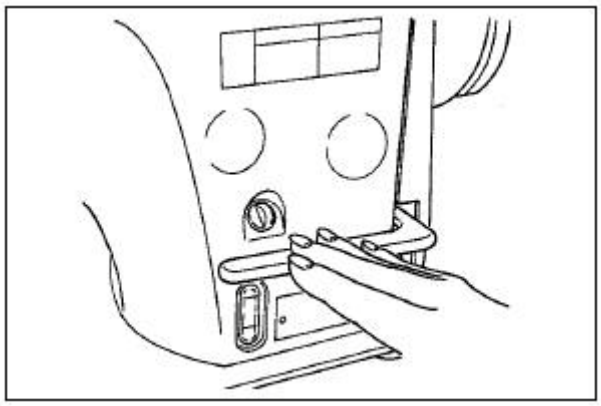
1) Use the operation panel to adjust the length of feeding cloth.

Normal Feeding : Press to have access to the interface for setting normal feeding.

Contrary Feeding : Press to have access to the interface for setting contrary feeding.

2) At reverse sewing, press the feeding bar○,1 to down position for perform the reverse sewing. The bar will return to the original position after you release it. Then the machine will return to feed cloth normally. **【Note】This function is only available for dual-stepping model**

2.7 Adjustment of Contraction Sewing



The contraction sewing is to operate the feeding bar to reduce the feeding interval to stop sewing at the sewing start or sewing end.

1) Adjust the feeding length via the operation panel.

Contrary Feeding : Press  to have access to the interface for setting the contrary feeding. Set the contrary feeding amount at 0, then it will turn to the stop sewing.

2) The stop sewing is related to the normal sewing. Please adjust it according to the sewing condition.

【Note】This function is only available for dual-stepping model

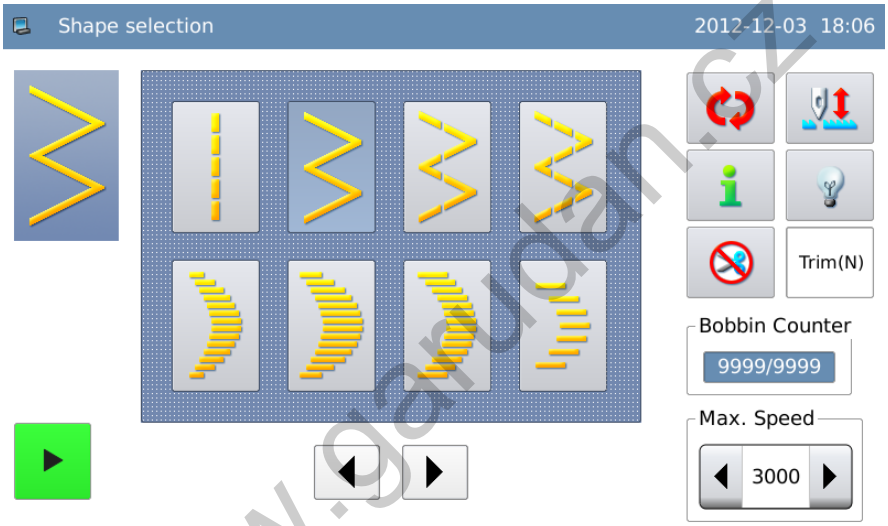
3 Operations

3.1 Basic Operations

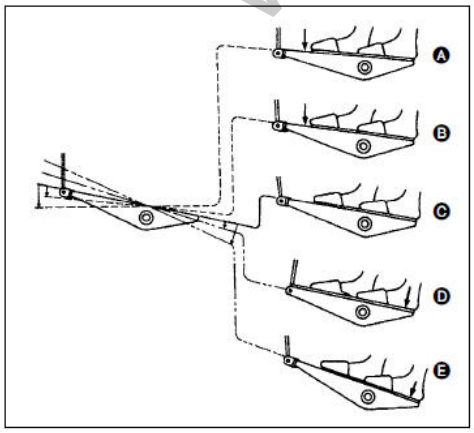
1、Turn on Power Switch When the needle rod is not at the upper position, the system will give "Needle Up Posi. Error". At this moment, user has to turn the wheel to move the needle rod to the upper position.

2、Select the Pattern

Select the pattern for sewing at current interface.



3、Start Sewing



The pedal has four levels.

1) Stepping front part of pedal slightly is for slow speed sewing ○,B.

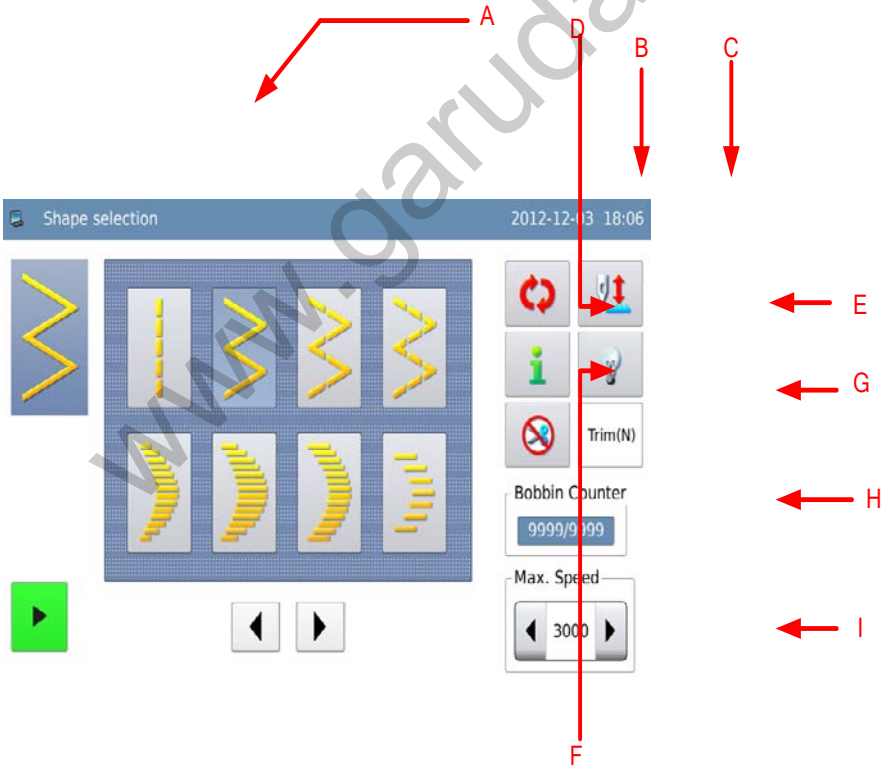
2) Stepping front part of pedal again is for high speed sewing ○,A (When the auto reverse sewing switch is set, the machine will start high speed sewing after the reverse sewing).

3) Step the pedal slightly and release, the machine will stop○,C (The needle stops at upper or down position)

4) Stepping the rear part of pedal is to lift the presser○,D,

stepping that part again is to cut thread○,E.

3.2 Buttons



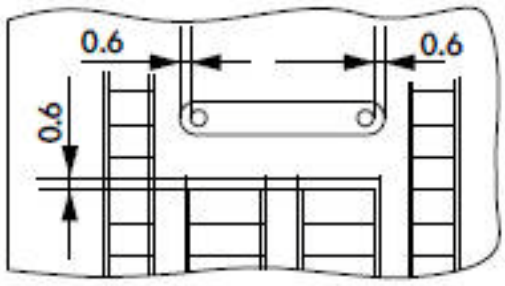
Functions：

No.	Functions	Content
A	Title	The left part of it will display the title of interface, while the right part of it will display the date and time. When user presses a button, the left part of the title will be refreshed to the function description of that button.
B	Shift	Shift the main operation interface in cycle
C	Half-stitch Compensation	Used for the half-stitch compensation at sewing **[Note]: User can shift it between the half-stitch and one-stitch via parameter 「Others」 -> 「Panel Compensation Setting」.**
D	Information	Press it to have access to the interface of information mode.
E	Light Switch	Set the status of light  : Light On  : Light Off
F	Trimming Switch	Set the action of knife  : Trimming Permitted  : Trimming Forbidden
G	Auto Trimming Display	Used for displaying the trimming status in current sewing mode.  : No Auto Trimming  : Auto Trimming
H	Counter	Display the information of trimming counter or the bottom thread counter **[Note]: Use「Counter」->「Counter Display」 to shift the type of counter.**
I	Max Speed Limits	Limit the Max sewing speed **[Note]: it is affected by parameter「Special」-> 「Max Speed」.**

3.3 Before Setting Pattern

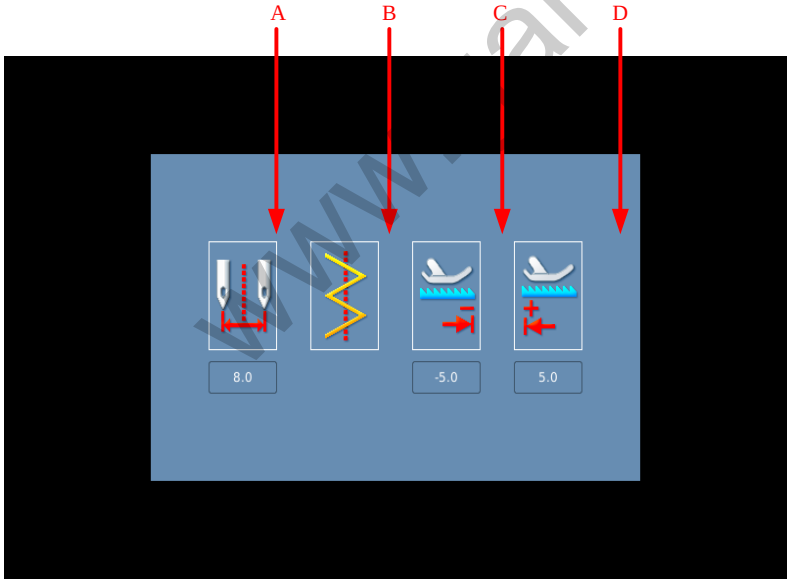
Caution

en user uses the presser, needle plate and feeding ice beyond the standards, the incorrect value may se the crashes between needle and needle plate s causes the needle-breakage) or the feeding ice and needle plate. Therefore, user has to follow rules on the value limits according to the scale d.



standard, the Max swing of needle is 8mm.
Max feeding is 5mm
er the change of scale, user needs to adjust the rval among needle, presser and needle plate, as l as the interval between needle plate and feeding ice to more than 0.6mm.

When power is on, the system will display the Max swing limits, base line, normal feeding limits and contrary feeding limits.



Functions：

No.	Description
A	Max Swing Limits (The figure will change when the pointed position is different)
B	Base Line
C	Max Contrary Feeding Limits

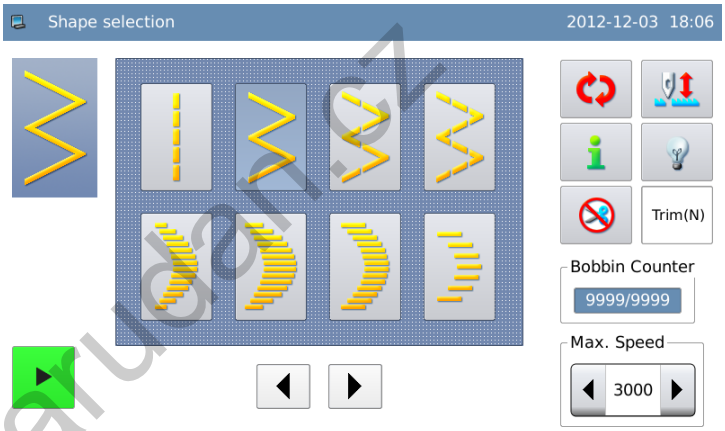
D	Max Normal Feeding Limits

[Note] Use parameter「General Setting」->「Swing Limits Display」to turn off the display of the limits value at power-on.

Setting Method：

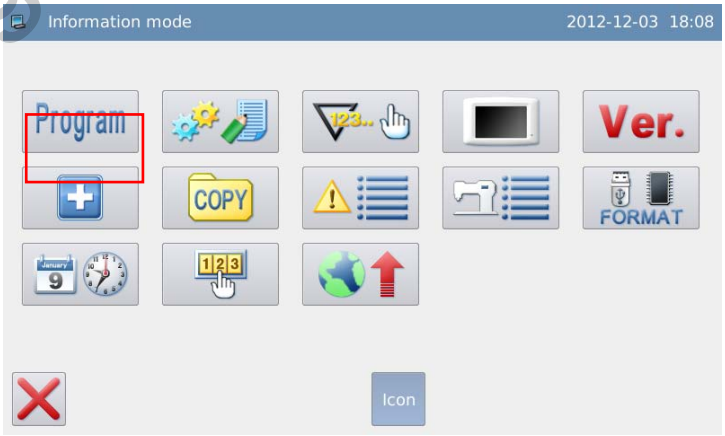
Have access to Information Mode

Press  in main interface to have access to the interface of information mode



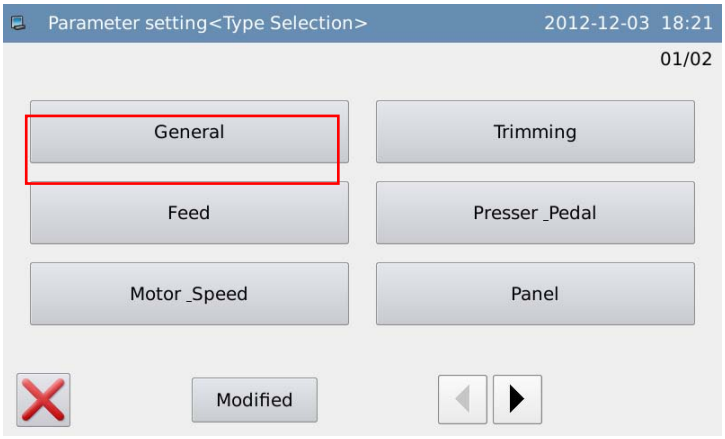
Have access to parameter setting

In the interface of information mode, press  to have access to the interface for setting parameters.



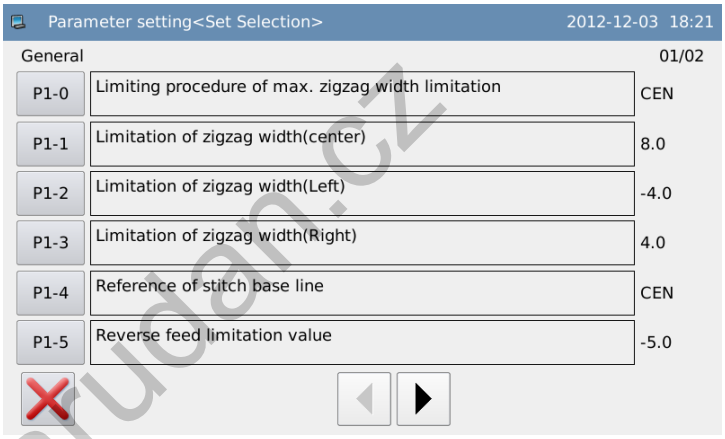
Select「General Setting」parameter

In the parameter setting interface, select 「General Setting」



Parameter Setting

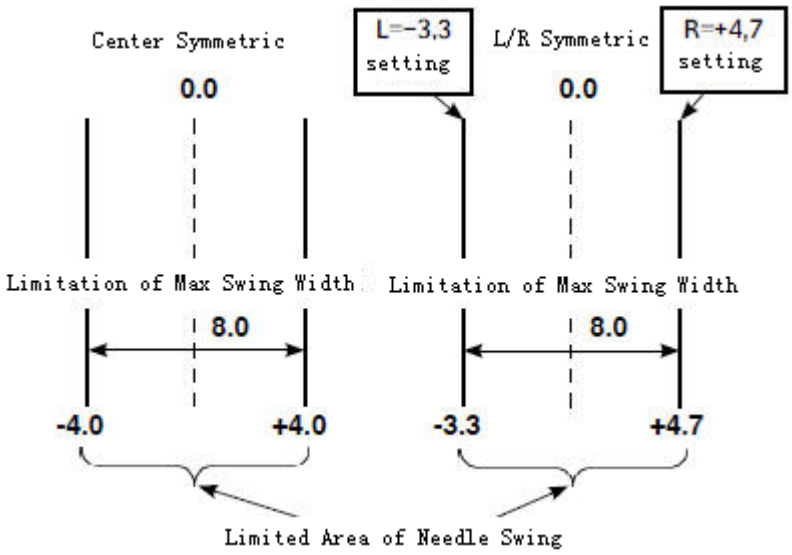
Open this parameter group. Then user can set the parameters like Max Swing, Base Line, Max Contrary Feeding Amount and Max Normal Feeding Amount.



3.3.1 Set Max Swing of Needle

There are two ways to limit the max needle swing：

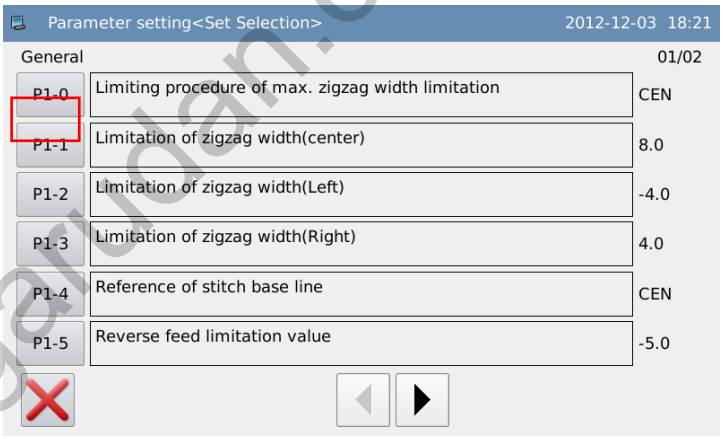
Set the swing width at both sides (Symmetric in center)
Point the positions at both sides



Setting Method：

1、Select「Swing Type」

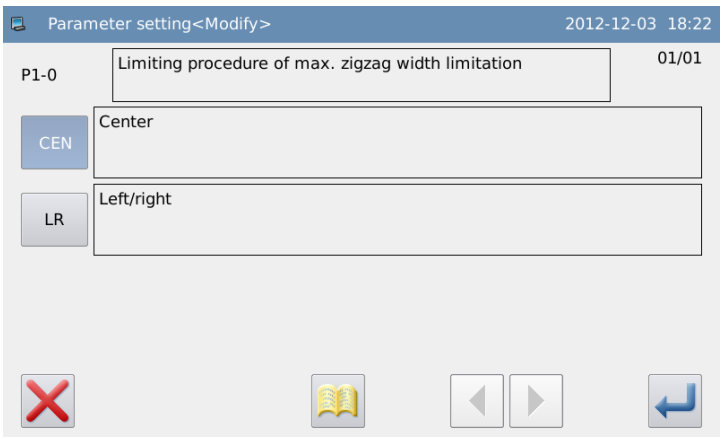
Follow the steps 1~4 at above to enter the interface for setting the general parameters. Select “Swing Type” and press “P1-0”.



2、Set Swing Type

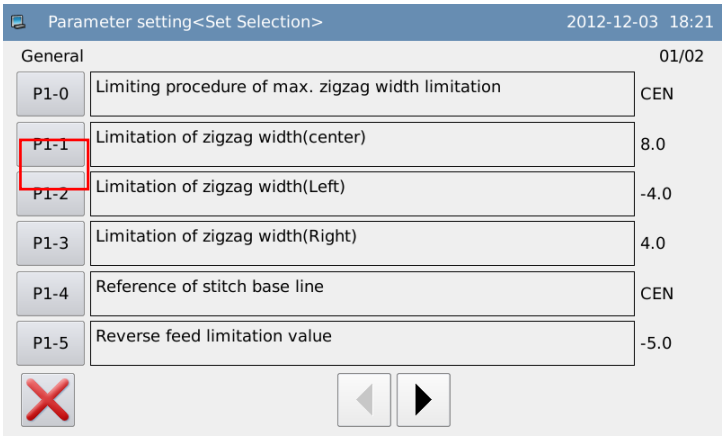
As the picture shows, user can select “Center Symmetric” or “L/R Symmetric”.

Press  to confirm the selection.



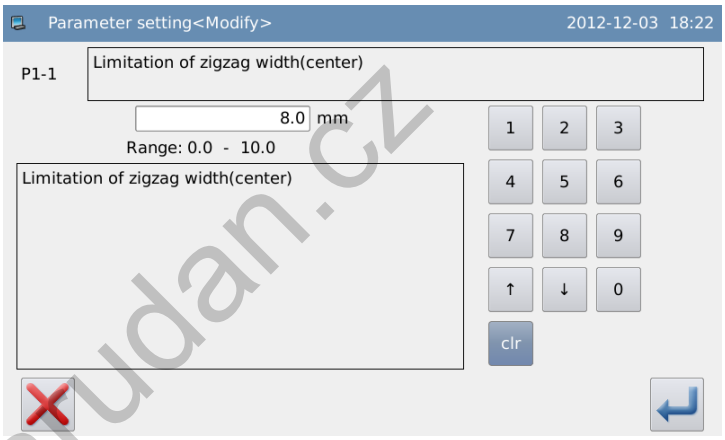
3、 Select “Center Symmetric Swing Limits”

Return to the setting interface of general parameter and select “Center Symmetric Swing Limits” and press “P1-1”.



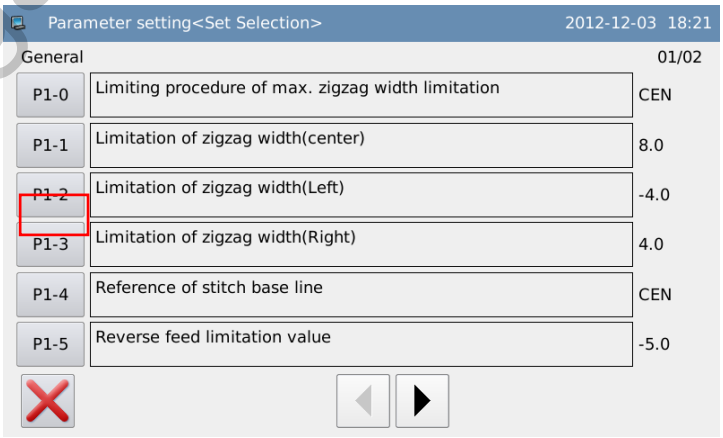
Set “Center Symmetric Swing Limits”

Use number keys to input the value and press  to confirm.



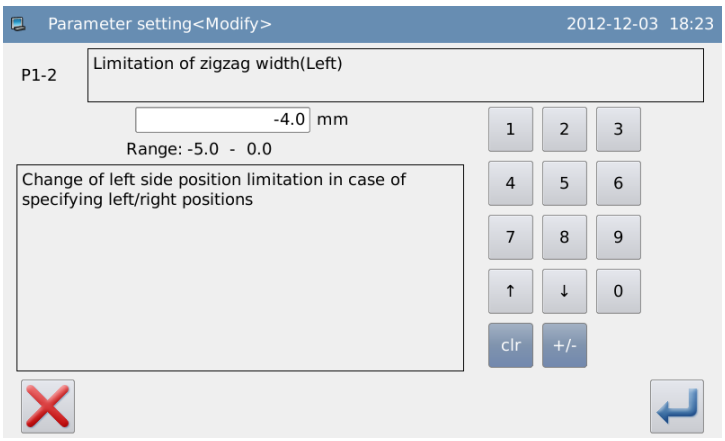
Select “Swing Left Limits”

When the swing type is set at “L/R Symmetric”, user needs select “Swing Left Limits” and press “P1-2”.



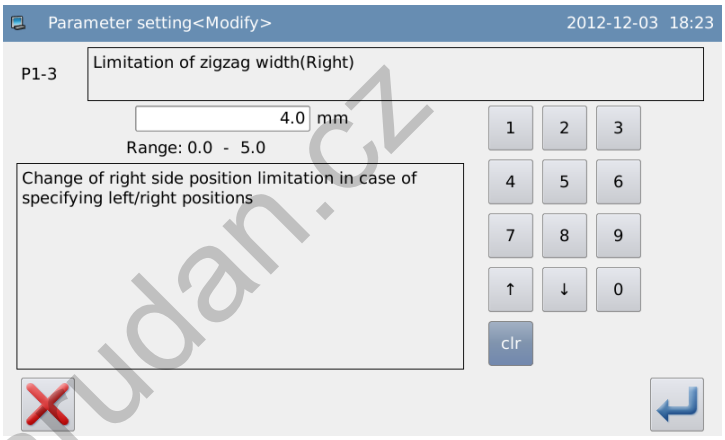
Set “Swing Left Limits”

Use number keys to input the value and press  to confirm.



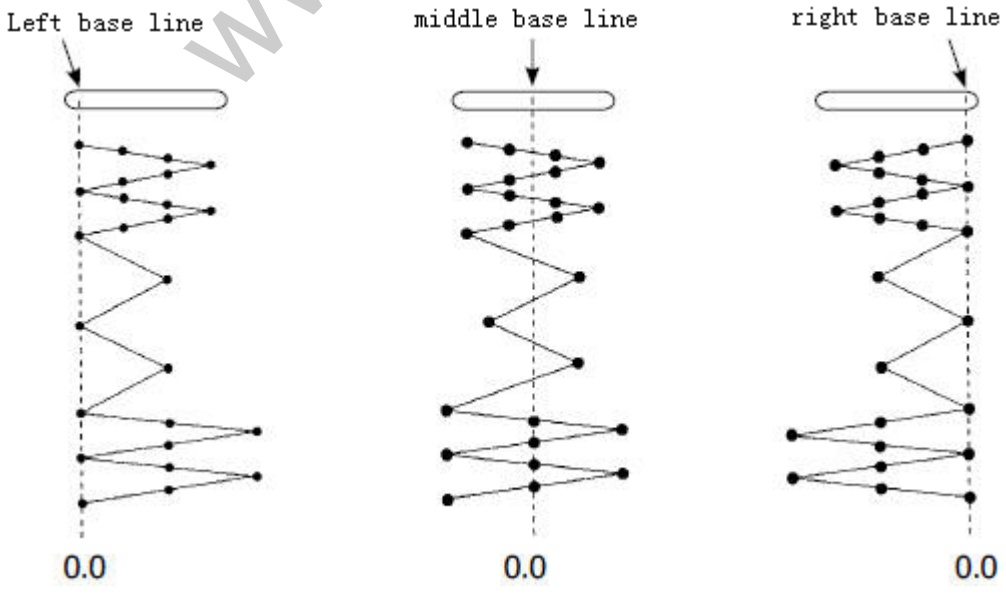
Set “Swing Right Limits”

The setting method is same as that in above.



3.3.2 Setting of Base Line

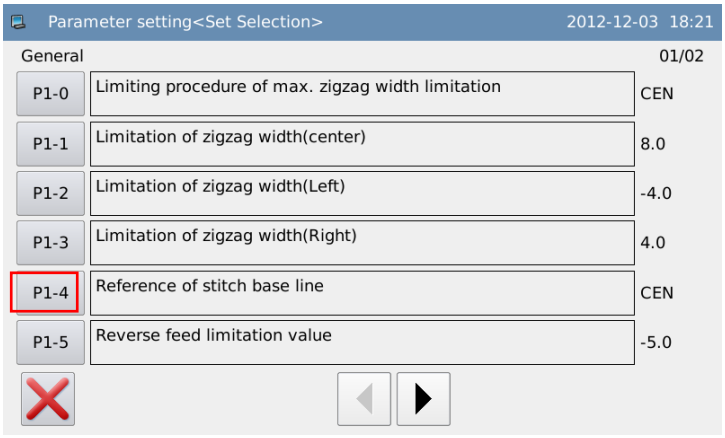
User can set the position of the base line at Left, Right or Center.



Setting Method：

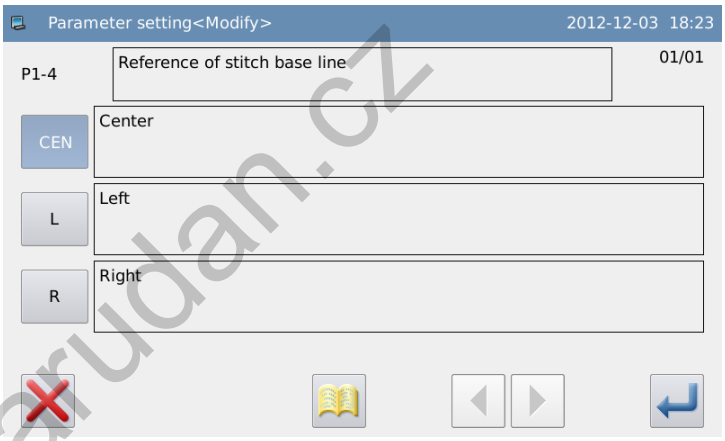
1、Select “Base Line Position”

Enter the interface for setting general parameter, select “Base Line Position” and press “P1-4”.



2、Set Position of Base Line

As shown in right picture, there are “Center”, “Left” and “Right”. Press to confirm the selection.



3.3.3 Setting of the Feeding Amount

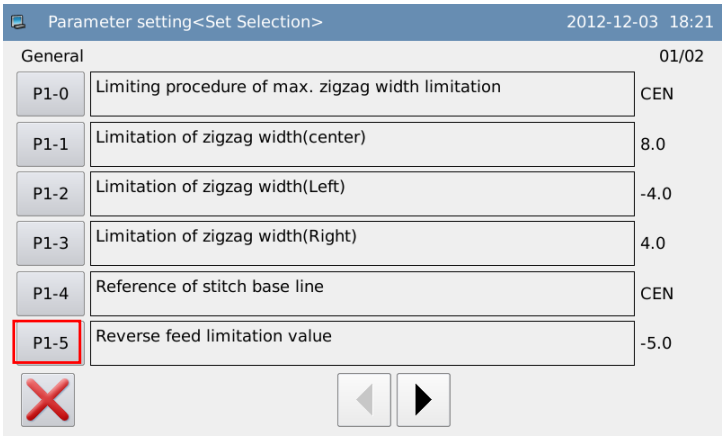
When user uses the different standard parts, he can set the max feeding in normal direction and the max feeding in contrary direction.

【Note】This function is only available for dual-stepping model。

Setting Method：

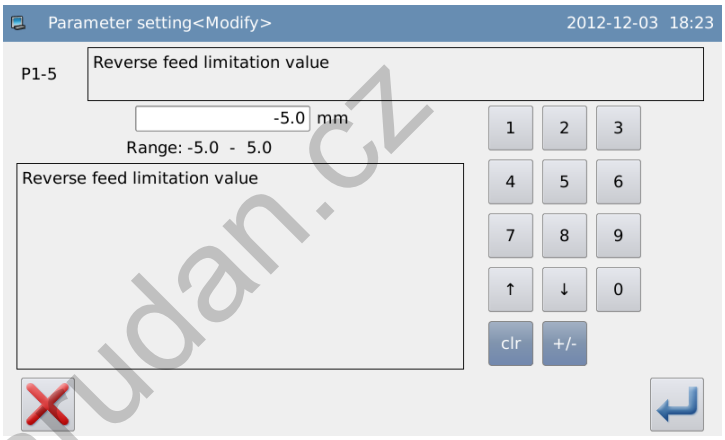
1、Select “Contrary Feeding Limits”

Have access to the interface for setting general parameters, select “Contrary Feeding Limits” and press “P1-5”



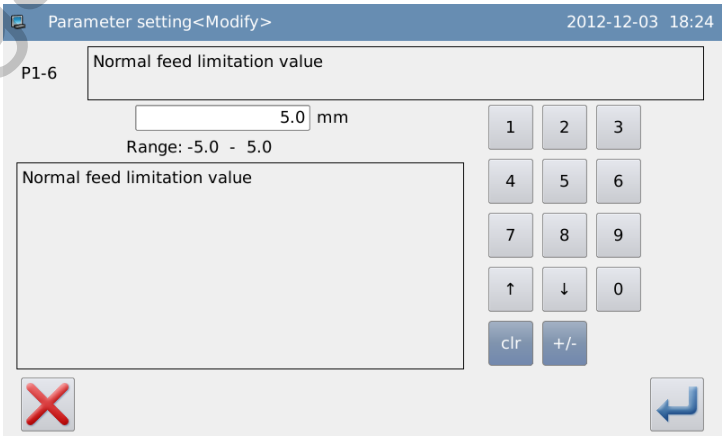
2、Set “Contrary Feeding Limits”

Use number keys to input the value and press  to confirm.



3、Set “Normal Feeding Limits”

Refer to the operations in steps 1~2 and select “Normal Feeding Limits” to input value.



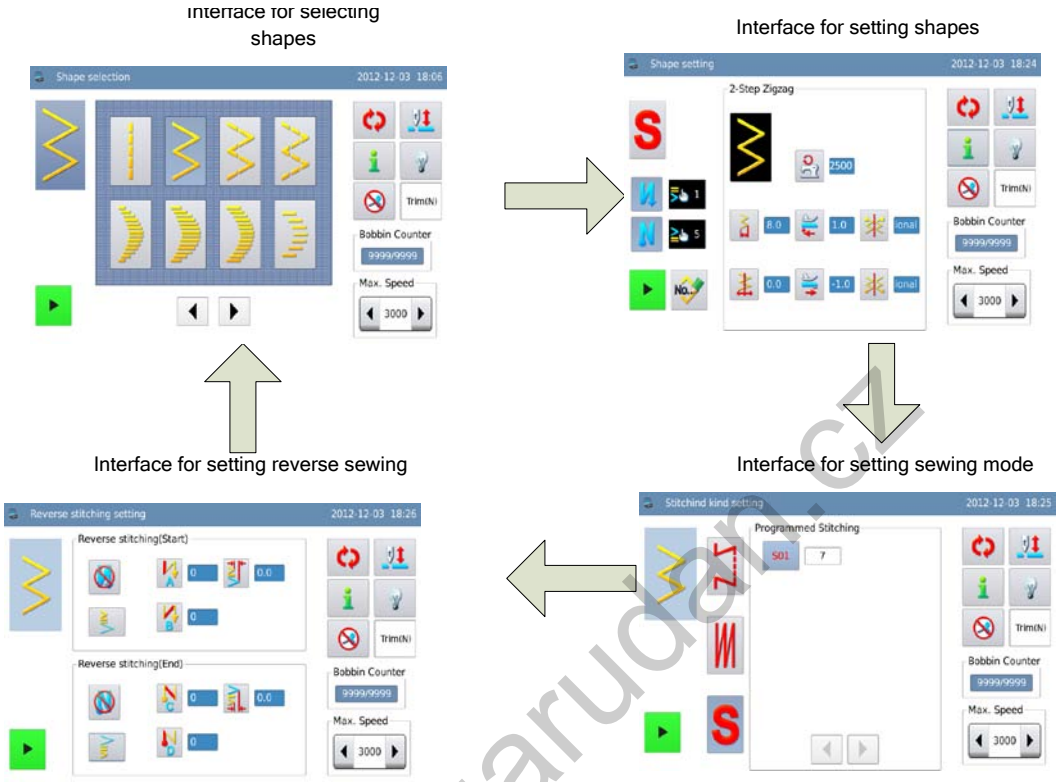
3.4 Main Interface

Turn on the power. The interface at operation panel will be the main interface before the power-off.

Press  to shift the main interface in the following order (The contents displayed may be a little different, which are depended on the specific setting).

Example：

We use 2-points zigzag (Program Sewing Mode) as the example:



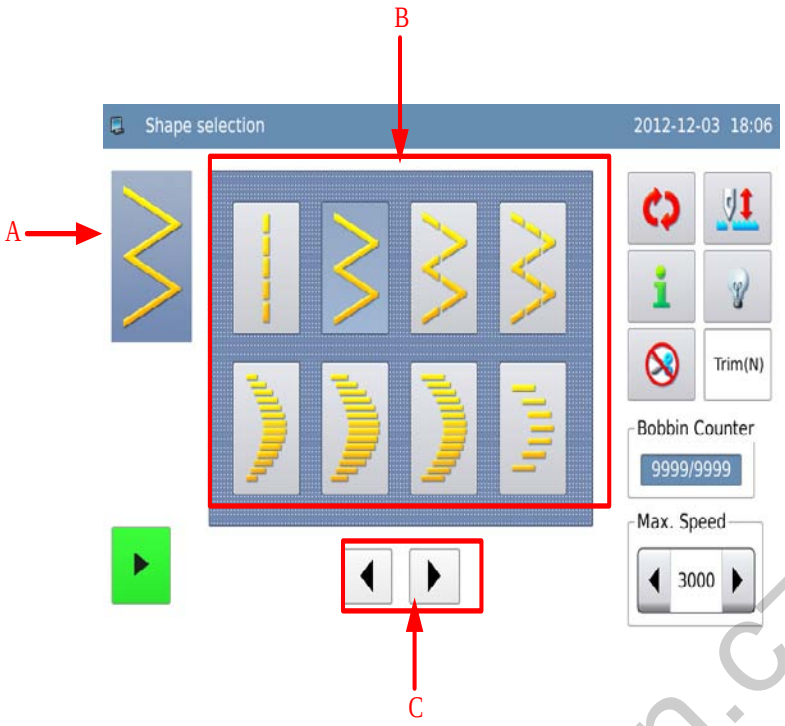
[Note 1]: if you select free sewing mode, the system will not enter the sewing mode setting interface at pressing .

[Note 2]: if you select overlapped sewing mode, the system will not enter the interface for setting reverse sewing at pressing .

3.5 Patten Selection

How to select a pattern for sewing:

Shift to interface for selecting the shape, where user can select 20 basic patterns, customized patterns, memory patterns, continuous sewing or cyclic sewing. (Single Stepping Model is 14)



Functions：

No.	Functions	Contents
A	Current Pattern	Display the pattern selected currently
B	Pattern Selection Area	Select 20 basic patterns, customized patterns, memory pattern, continuous sewing and cyclic sewing. (Single Stepping Model is 14)
C	Page Key	Turn the pages for display

Description of Pattern Selection：

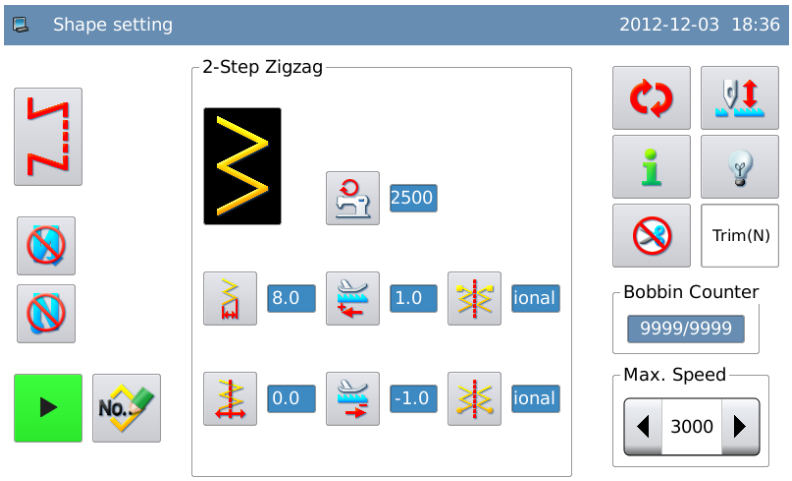
Figures	Description
	Line
	2-points Zigzag
	3-points Zigzag

	4-points Zigzag
	Right Standard Scallop
	Right Lunar Scallop
	Right 24-stitch Average Scallop
	Right 12-stitch Average Scallop
	Left Standard Scallop
	Left Lunar Scallop
	Left 24-stitch Average Scallop
	Left 12-stitch Average Scallop
	Left Blind Stitch
	Right Blind Stitch

	Left T Sewing(this pattern does not exist at Single Stepping Model)
	Right T Sewing(this pattern does not exist at Single Stepping Model)
	Pattern 1(this pattern does not exist at Single Stepping Model)
	Pattern 2(this pattern does not exist at Single Stepping Model)
	Pattern 3(this pattern does not exist at Single Stepping Model)
	Pattern 4(this pattern does not exist at Single Stepping Model)
	Customized Pattern
	Saved Pattern
	Continuous Sewing
	Cyclic Sewing

3.5.1 Standard Pattern Selection

In shape setting interface, user can press basic pattern button. There are 20 basic patterns for selection. After the successful selection, the system will enter the interface for setting shape.



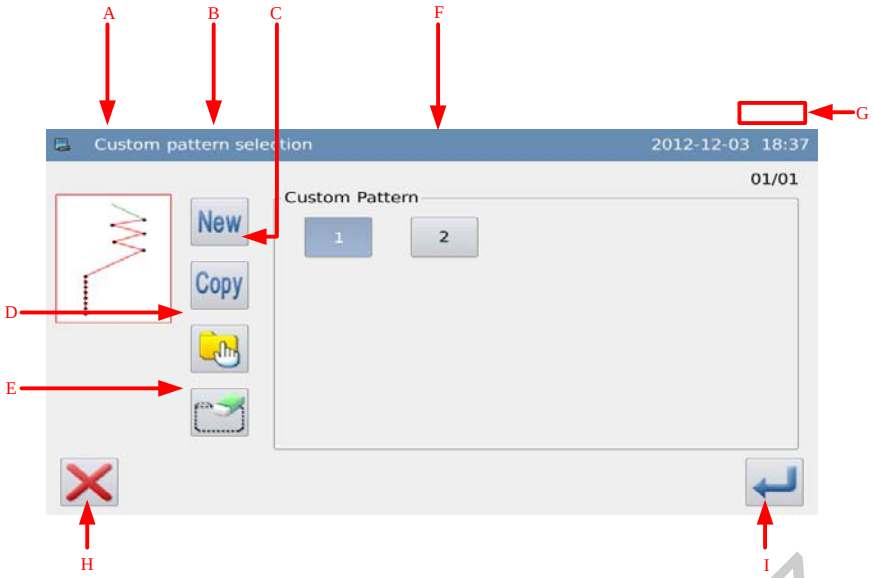
【Note】This sitting does not have and for Single Stepping Model.

3.5.2 Customized Pattern Selection

In the shape setting interface, press to have access to the interface for selecting customized pattern.

At most 500 customized patterns can be saved.

[Note]: If the operation panel has no customized pattern, the system will enter the interface for creating customized pattern.



Functions：

No.	Functions	Contents
A	Pattern Display	Display the shape of the selected pattern
B	New Pattern	Create a new customized pattern
C	Copy	Copy the customized pattern that is selected
D	Single Selection/ multi-selection	Shift the sing-selection / multi-selection. The multi-selection enables user to select several patterns at one time, which is used at pattern deletion  : Single Selection  : Multi-selection
E	Deletion	Delete the selected pattern. **[Note] The pattern being embroidered can not be deleted**
F	Pattern Selection Area	Display the number of the customized pattern saved in operation panel.
G	Page No.	Display current page/ total page
H	Page Key	Turn the pages
I	Cancel	Cancel the current operation and quit
J	Enter	Confirm the selection of current pattern and have access to the interface for setting the customized pattern. **[Note] This button can only be used at single selection status**

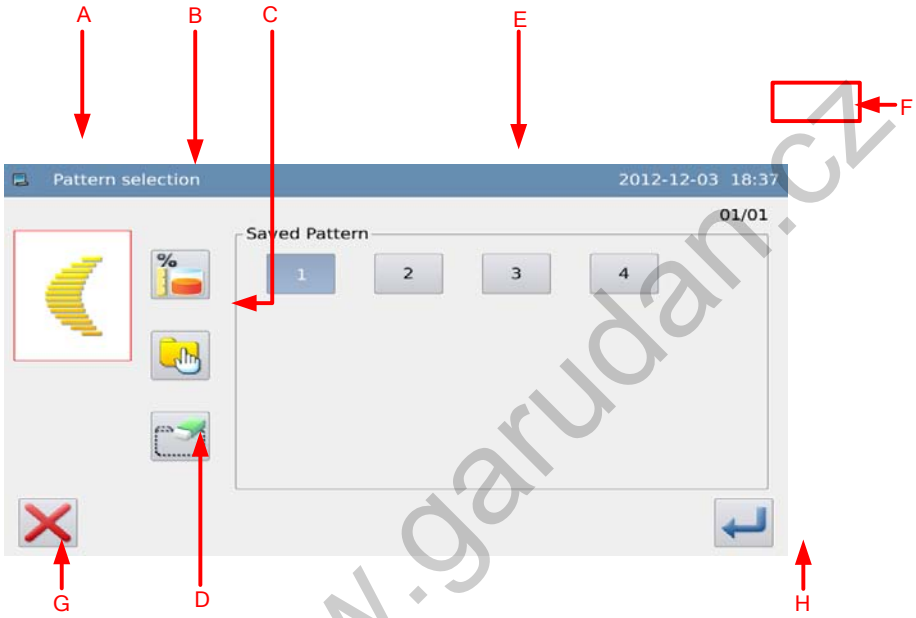
3.5.3 Selection of the Saved Pattern

After the registration, the basic patterns or the customized patterns will become the saved pattern. The parameters, sewing mode and reverse sewing of the saved pattern are independent.
At most, 500 saved patterns can be registered in the memory.

In the interface of setting shape, user can press 

to have access to the interface for selecting the saved patterns.

[Note] If the operation panel doesn't contain any saved pattern, the system will display "No Registered Pattern in Memory".



Function：

No.	Functions	Contents
A	Pattern Display	Display the shape of the selected pattern
B	Free Memory	Display the rest free memory
C	Single Selection/ multi-selection	Shift the sing-selection / multi-selection. The multi-selection enables user to select several patterns at one time, which is used at pattern deletion  : Single Selection  : Multi-selection
D	Deletion	Delete the selected pattern. **[Note] The pattern being embroidered can not be deleted**
E	Pattern Selection Area	Display the number of the available saved pattern in operation panel.

F	Page No.	Display current page/ total page
G	Page Key	Turn the pages
H	Cancel	Cancel the current operation and quit
I	Enter	Confirm the selection of current pattern and have access to the interface for setting the saved pattern. **[Note] This button can only be used at single selection status**

3.5.4 Continuous Sewing Selection

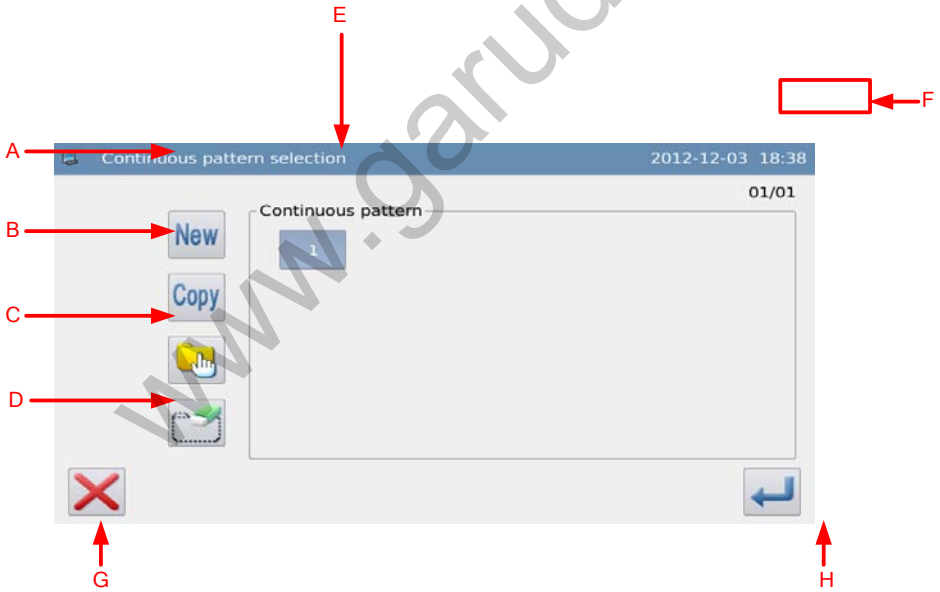
The continuous sewing is the function to connect the different patterns or sew the pattern whose estimated stitch number is over 500 stitches. The continuous sewing pattern can be recognized by the system as one pattern.

In the interface of setting shape, user can press 

to have access to the interface for selecting the continuous sewing.

At most, 20 continuous sewing patterns can be saved.

[Note] If the operation panel doesn't contain any continuous sewing pattern, the system will enter the interface for creating the continuous sewing pattern.



Functions：

A	New Pattern	Create a new continuous sewing pattern
B	Copy	Copy the selected continuous sewing pattern
C	Single Selection/ multi-selection	Shift the sing-selection / multi-selection. The multi-selection enables user to select several patterns at one time, which is used at pattern deletion

		: Single Selection : Multi-selection
D	Deletion	Delete the selected pattern. **[Note] The pattern being embroidered can not be deleted**
E	Pattern Selection Area	Display the number of the continuous sewing pattern saved in operation panel.
F	Page No.	Display current page/ total page
G	Cancel	Cancel the current operation and quit
H	Enter	Confirm the selection of current pattern and have access to the interface for setting the continuous sewing pattern. **[Note] This button can only be used at single selection status**

3.5.5 Cyclic Sewing Selection

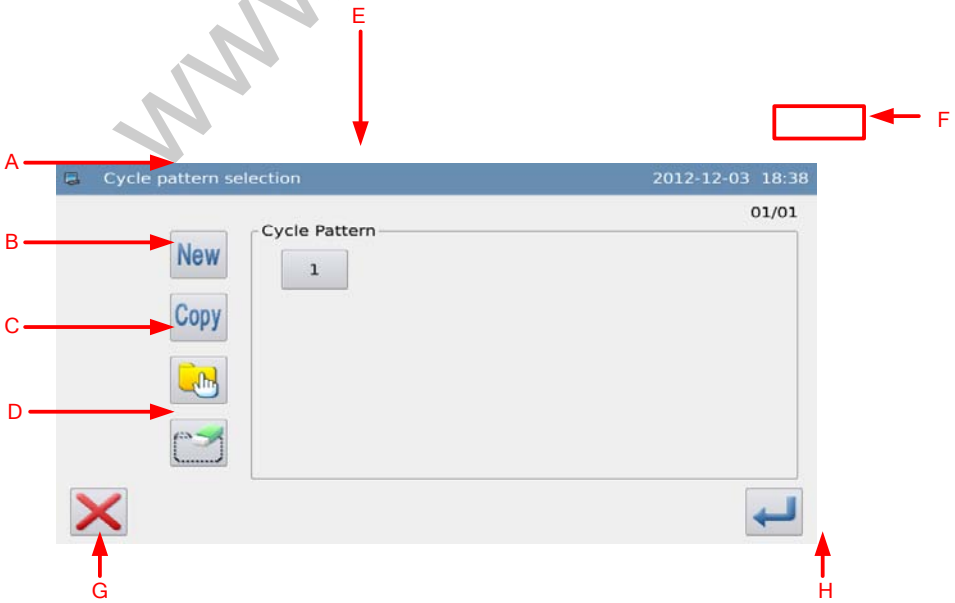
Cyclic sewing is to sew the different patterns in order.

In the interface of setting shape, user can press 

to have access to the interface for selecting the cyclic sewing.

At most, 20 cyclic sewing patterns can be saved.

[Note]: If the operation panel doesn't contain any cyclic sewing pattern, the system will enter the interface for creating the cyclic sewing pattern.



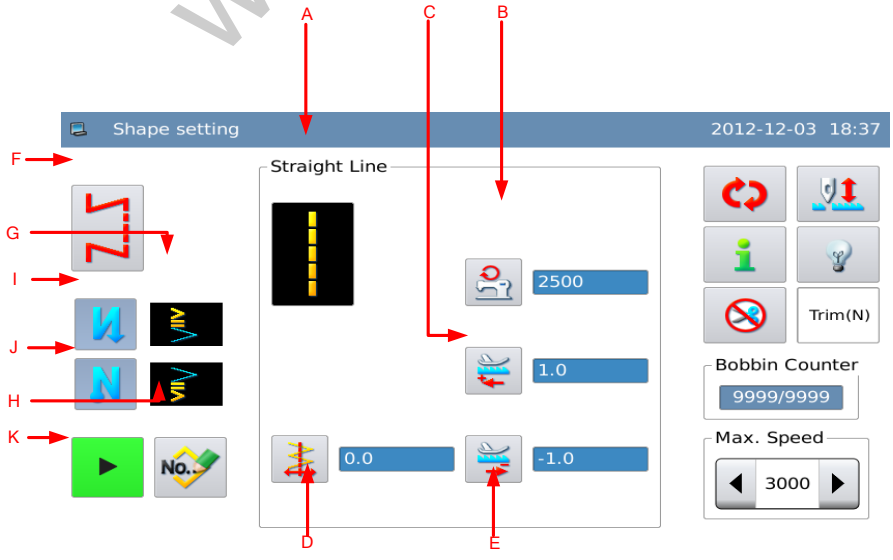
Functions：

A	New Pattern	Create a new cyclic sewing pattern
B	Copy	Copy the selected cyclic sewing pattern
C	Single Selection/ multi-selection	Shift the sing-selection / multi-selection. The multi-selection enables user to select several patterns at one time, which is used at pattern deletion  : Single Selection  : Multi-selection
D	Deletion	Delete the selected pattern. **[Note] The pattern being embroidered can not be deleted**
E	Pattern Selection Area	Display the number of the cyclic sewing pattern saved in operation panel.
F	Page No.	Display current page/ total page
G	Cancel	Cancel the current operation and quit
H	Enter	Confirm the selection of current pattern and have access to the interface for setting the cyclic sewing pattern. **[Note] This button can only be used at single selection status**

3.6 Setting of Basic Pattern

How to set the swing width, base line, cloth feeding amount and speed of basic pattern
The basic patterns are the 20 default patterns saved in the system at beginning.

3.6.1 Setting of Line



【Note】This sitting does not have  and  for Single Stepping Model.

Functions：

A	Current Pattern	Display the current patterns. User can press it to return to the interface for selecting the shape
B	 Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.
C	 Display & Setting of Normal Feeding	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding
D	 Display & Setting of Base Line Position	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」 -> 「Base Line Position」 : Left :  Center :  Right : 
E	 Display & Setting of Contrary Feeding	Display the contrary feeding value. Press it to have access to the setting interface of the contrary feeding
F	Sewing Mode	Display the current sewing mode. Press it to have access to the interface for setting the sewing mode
G	Front Reverse Sewing Type	Display the front reverse sewing type of the current pattern **[Note]: When the front reverse sewing switch is at Off, the front reverse sewing type will not be displayed.**
H	Back Reverse Sewing Type	Display the back reverse sewing type of the current pattern **[Note]: When the back reverse sewing switch is at Off, the back reverse sewing type will not be displayed.**
I	Front Reverse Sewing Switch	Turn on/off the front reverse sewing  : Effective

		: Ineffective
J	Back Reverse Sewing Switch	Turn on/off the back reverse sewing : Effective : Ineffective
K	Registration	Register the current pattern. **[Note] The registration is only available at free sewing or overlapped sewing.**

Instructions on Parameter Setting：

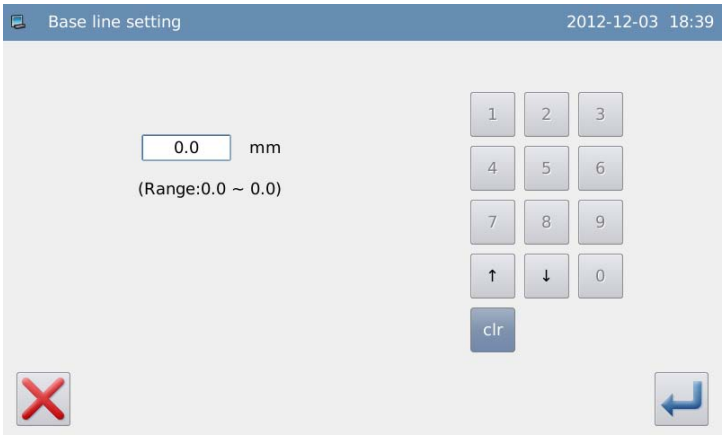
At here, we will explain how to set the Max Speed and the Position of Base Line. The method for setting the normal feeding amount and contrary feeding amount is same as that of Max Speed

Set the Max Speed

In the interface for setting shape, user needs press to have access to the interface for setting the Max Speed. Use the number keys to input value and press to finish the operation.

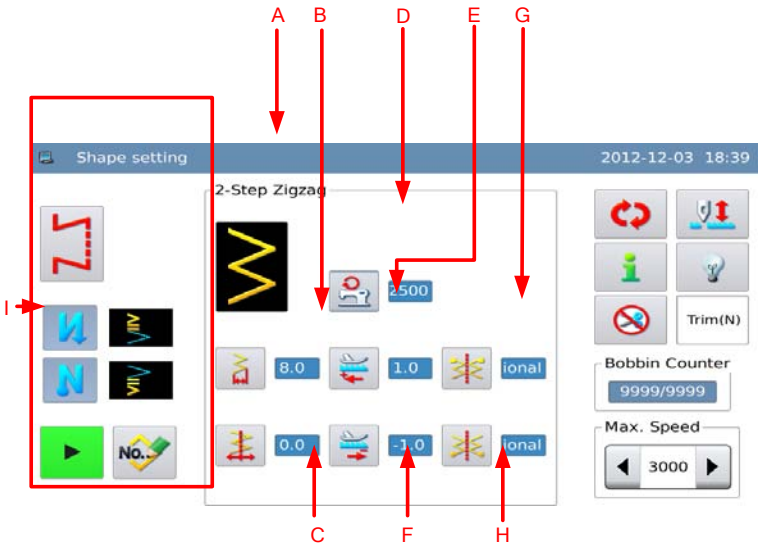
Set Base Line

In the interface for setting shape, user needs press to have access to the interrace for setting the Base Line. Use ↑ or ↓ to set the position of the base line. The needle position will change along with the setting. Press to finish the operation.



3.6.2 Setting of X-points Zigzag Sewing (X can be 2, 3 and 4)

At here, we will introduce how to make 2-points zigzag sewing.



【Note】This sitting does not have and for Single Stepping Model.

Functions：

A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
C	Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」 -> 「Base Line Position」 ： Left： Center： Right：
D	Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.
E	Display & Setting of Normal Feeding	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding.

F	 Display & Setting of Contrary Feeding	Display the contrary feeding value. Press it to have access to the setting interface of the contrary feeding.
G	 Display & Setting of Start Point	Display the position of the start point. Press it to have access to the interface for setting the start point.  : Random  : Right  : Left
H	 Display & Setting of End Point	Display the position of the end point. Press it to have access to the interface for setting the end point.  : Random  : Right  : Left
I	-	Refer to the description in Line Setting

Instructions on Parameter Setting :

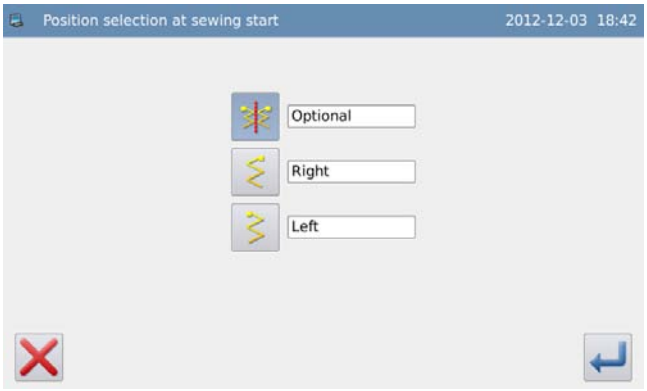
At here, we will explain how to set the swing width and the position of the start point. The setting method of the end point is same as that of the start point.

1、Set Swing Width

In the interface for setting shape, user needs press  to have access to the interface for setting the swing width, where user can use  or  to set the value. The needle will move along with the change of value. Press  to finish the operation.

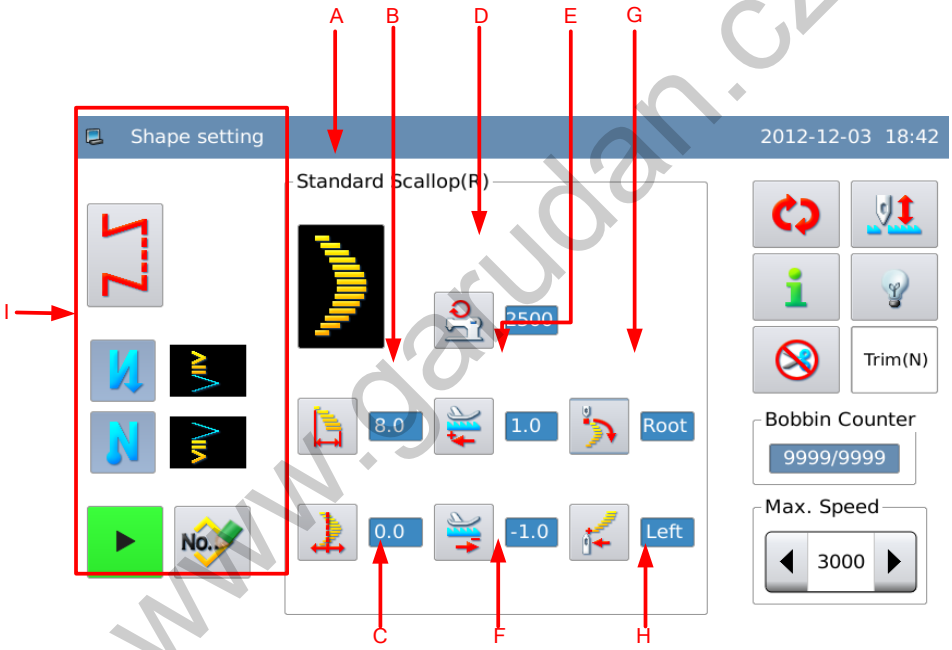
Set Start Point

In the interface for setting shape, user needs press  to have access to the interface for setting the start point. Find a proper position and press  to finish the operation.



3.6.3 Set Scallop

We use the right standard scallop as the example.

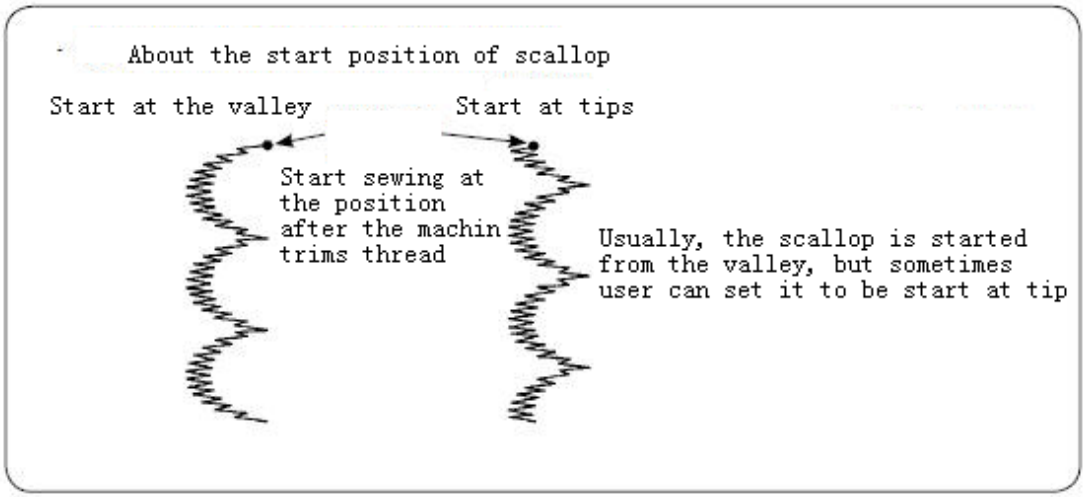


【Note】This sitting does not have  and  for Single Stepping Model.

Functions：

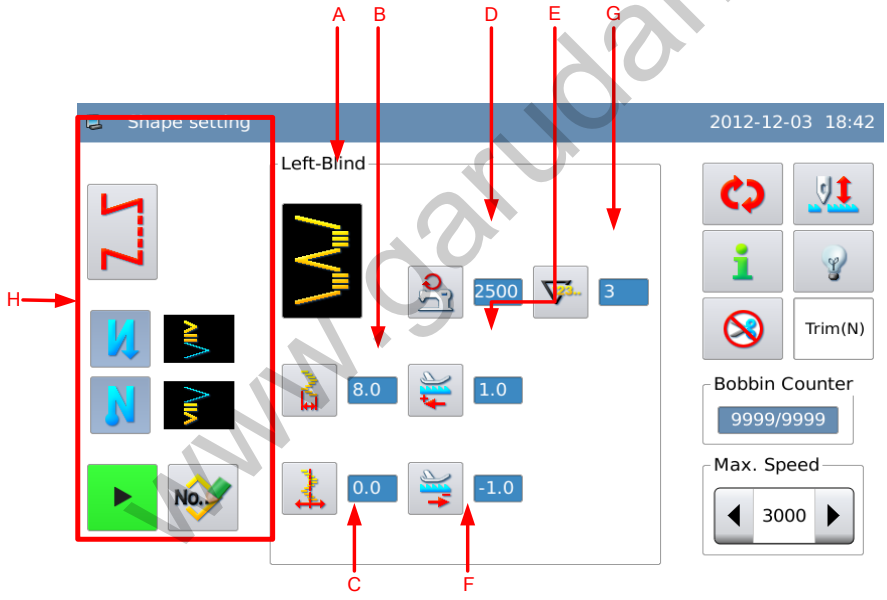
A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	 Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
C	 Display and Setting of	Display the position of the base line. Press it to have access to the interface for setting the base line

	Base Line	The figure displayed can be changed via 「General Parameter」 -> 「Base Line Position」: Left :  Center :  Right : 
D	 Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.
E	 Display & Setting of Normal Feeding	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding
F	 Display & Setting of Contrary Feeding	Display the contrary feeding value. Press it to have access to the setting interface of the contrary feeding
G	 Display & Setting of Start Point	Display the position of the start point. Press it to have access to the interface for setting the start point.  : Valley  : Peak
H	 Display & Setting of End Point	Display the position of the end point. Press it to have access to the interface for setting the end point.  : Left  : Right  : Random  : Valley
I	-	Refer to the description in Line Setting



3.6.4 Set Blind Stitch

We use the left blind stitch as example.



【Note】This sitting does not have and for Single Stepping Model.

Functions：

A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.

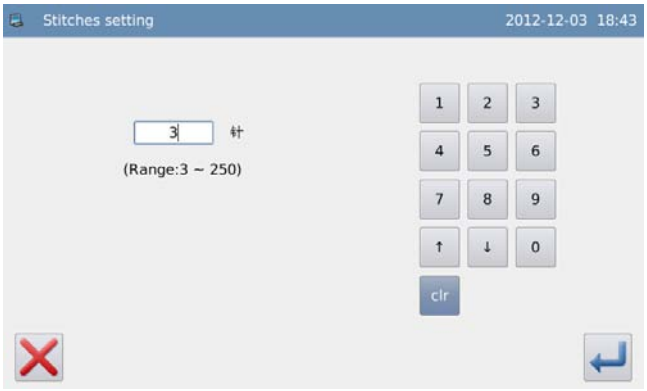
C	 Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」-> 「Base Line Position」: Left :  Center :  Right : 
D	 Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。
E	 Display & Setting of Normal Feeding	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding
F	 Display & Setting of Contrary Feeding	Display the contrary feeding value. Press it to have access to the setting interface of the contrary feeding
G	 Display & Setting of Blind Stitch Number	Display the number of blind stitch. Press it to have access to the interface for setting the blind stitch.
H	-	Refer to the description in Line Setting

Instructions on Parameter Setting：

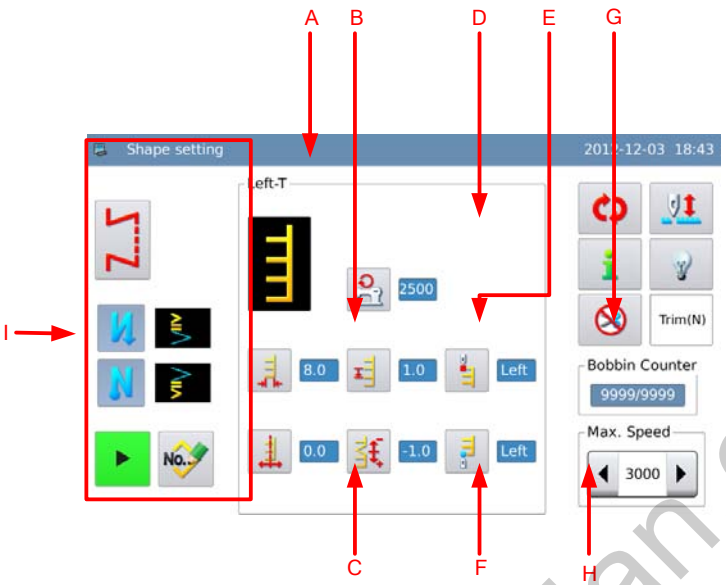
We give the example on how to set the blind stitch number

1、Set Blind Stitch Number

In the interface for setting shape, user needs press  to have access to the interface for setting the stitch number, where user can input the value vai keyboard on screen. Press  to finish the operation.



3.6.5 Set Left T Sewing(Not Available in Single Stepping Model)

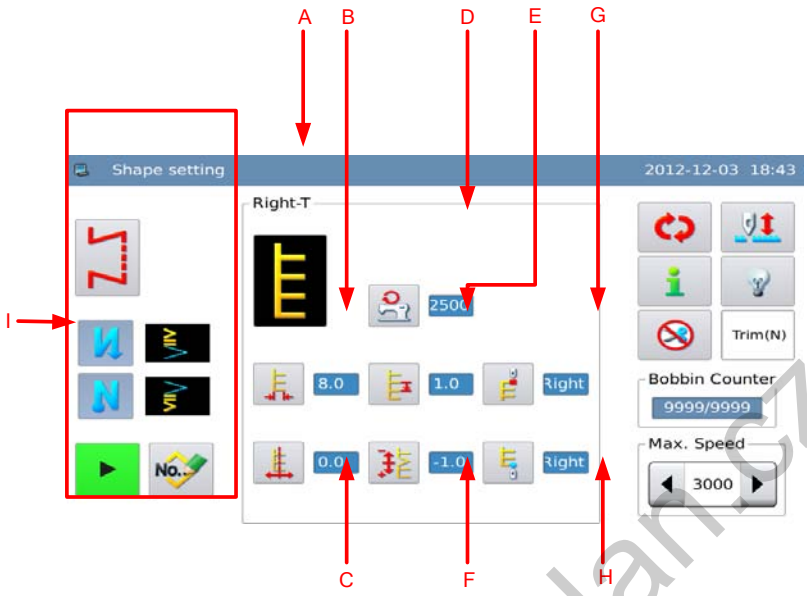


Functions：

A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	 Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
C	 Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」-> 「Base Line Position」： Left：  Center：  Right： 
D	 Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。

E	 Display & Setting of Normal Feeding	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding
F	 Display and Setting of Compensation	Display the compensation value. Press it to have access to the interface for setting the compensation value.
G	 Display & Setting of Start Point	Display the position of the start point. Press it to have access to the interface for setting the start point.  : Left  : Right 1  : Right 2  : Random
H	 Display & Setting of End Point	Display the position of the end point. Press it to have access to the interface for setting the end point.  : Left  : Right 1  : Right 2  : Random
I	-	Refer to the description in Line Setting

3.6.6 Set Right T Sewing(Not Available in Single Stepping Model)

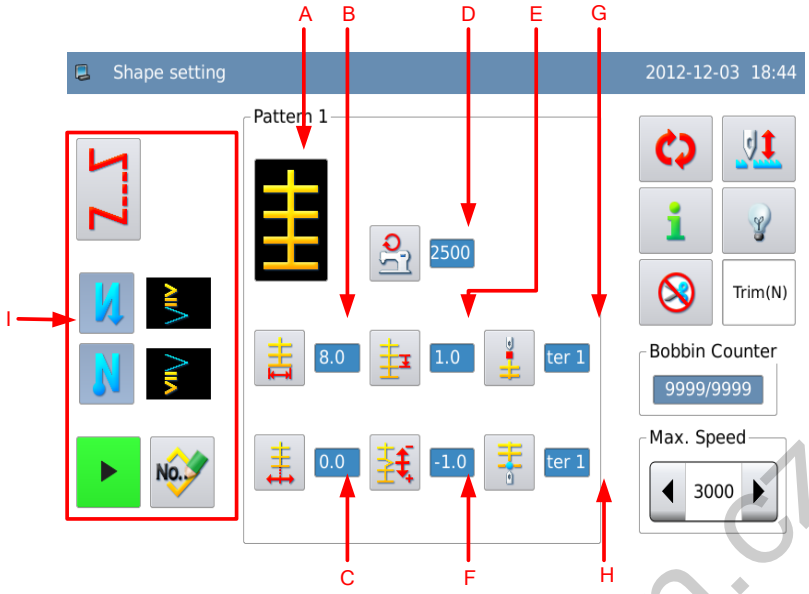


Function：

A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	 Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
C	 Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」-> 「Base Line Position」： Left：  Center：  Right： 
D	 Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。

E	 Display & Setting of Normal Feeding	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding
F	 Display and Setting of Compensation	Display the compensation value. Press it to have access to the interface for setting the compensation value.
G	 Display & Setting of Start Point	Display the position of the start point. Press it to have access to the interface for setting the start point.  : Right  : Left 1  : Left 2  : Random
H	 Display & Setting of End Point	Display the position of the end point. Press it to have access to the interface for setting the end point.  : Right  : Left 1  : Left 2  : Random
I	-	Refer to the description in Line Setting

3.6.7 Set Pattern 1(Not Available in Single Stepping Model)

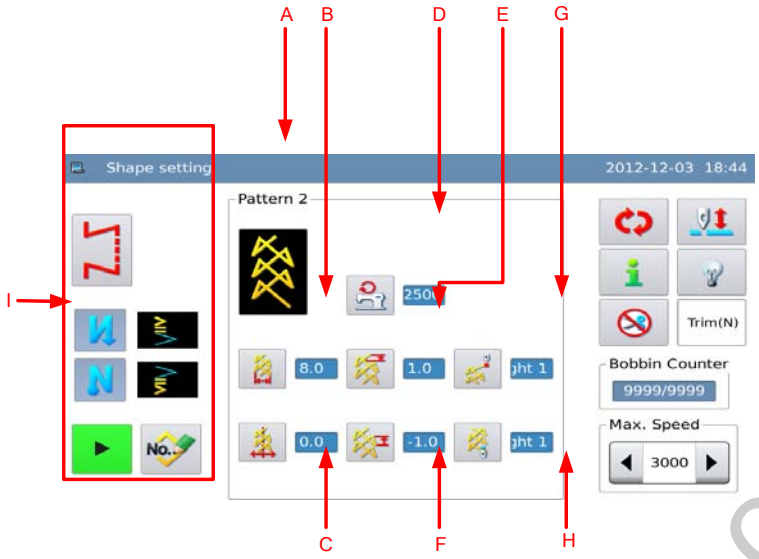


Functions：

A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
C	Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」-> 「Base Line Position」： Left： Center： Right：
D	Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。
E		Display the normal feeding value. Press it to have access to the setting interface of the normal feeding

	Display & Setting of Normal Feeding	
F	 Display and Setting of Compensation	Display the compensation value. Press it to have access to the interface for setting the compensation value.
G	 Display & Setting of Start Point	Display the position of the start point. Press it to have access to the interface for setting the start point.  : Center 1  : Center 2  : Left  : Center 3  : Right  : Random
H	 Display & Setting of End Point	Display the position of the end point. Press it to have access to the interface for setting the end point.  : Center 1  : Center 2  : Left  : Center 3  : Right  : Random
I	-	Refer to the description in Line Setting

3.6.8 Set Pattern 2(Not Available in Single Stepping Model)

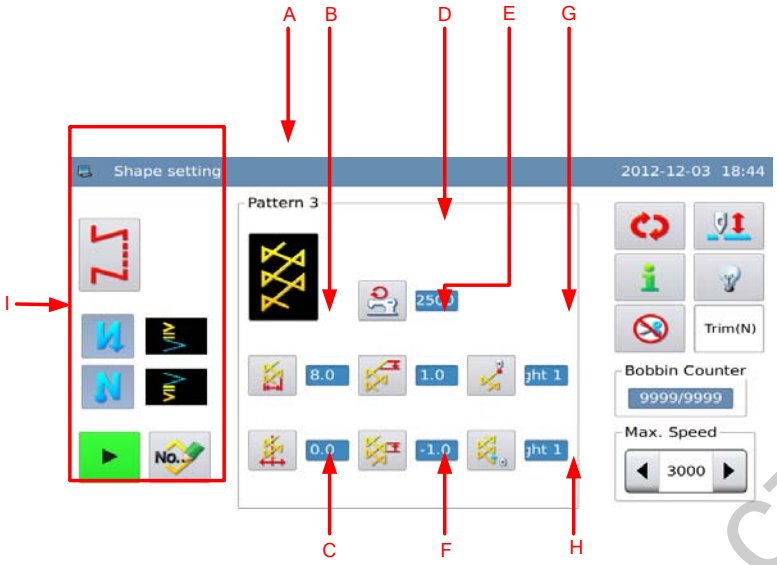


Functions：

A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
C	Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」-> 「Base Line Position」： Left： Center： Right：
D	Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。
E	Display & Setting of	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding

	Normal Feeding	
F	 Display & Setting of Contrary Feeding	Display the contrary feeding value. Press it to have access to the setting interface of the contrary feeding
G	 Display & Setting of Start Point	Display the position of the start point. Press it to have access to the interface for setting the start point.  : Right 1  : Center 1  : Left 1  : Left 2  : Center 2  : Right 2  : Random
H	 Display & Setting of End Point	Display the position of the end point. Press it to have access to the interface for setting the end point.  : Right 1  : Center 1  : Left 1  : Left 2  : Center 2  : Right 2  : Random
I	-	Refer to the description in Line Setting

3.6.9 Set Pattern 3(Not Available in Single Stepping Model)

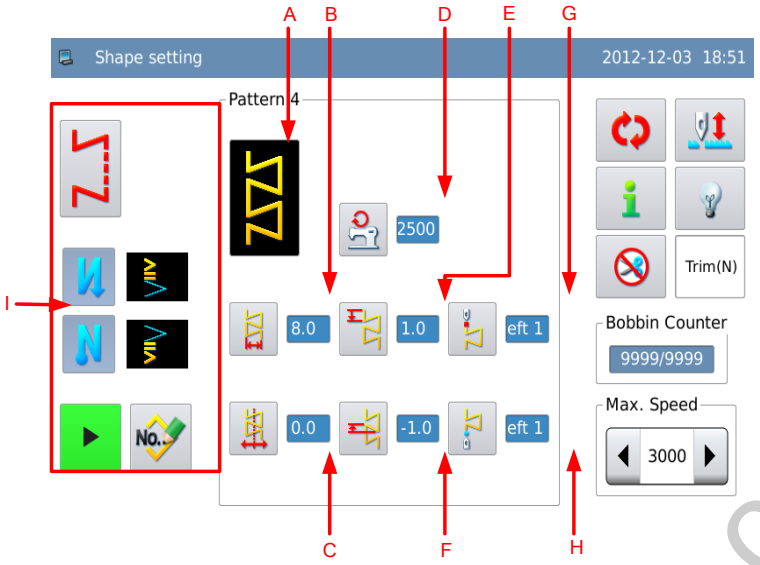


Functions：

A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
C	Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」-> 「Base Line Position」： Left： Center： Right：
D	Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。
E	Display & Setting of	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding

	Normal Feeding	
F	 Display & Setting of Contrary Feeding	Display the contrary feeding value. Press it to have access to the setting interface of the contrary feeding
G	 Display & Setting of Start Point	Display the position of the start point. Press it to have access to the interface for setting the start point.  : Right 1  : Center 1  : Left 1  : Left 2  : Center 2  : Right 2  : Random
H	 Display & Setting of End Point	Display the position of the end point. Press it to have access to the interface for setting the end point.  : Right 1  : Center 1  : Left 1  : Left 2  : Center 2  : Right 2  : Random
I	-	Refer to the description in Line Setting

3.6.10 Set Pattern 4(Not Available in Single Stepping Model)



Functions：

A	Current Pattern	Display the current pattern. Press it to return to the shape selection interface.
B	 Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
C	 Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line The figure displayed can be changed via 「General Parameter」-> 「Base Line Position」： Left：  Center：  Right： 
D	 Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。
E	 Display & Setting of	Display the normal feeding value. Press it to have access to the setting interface of the normal feeding

	Normal Feeding	
F	 Display & Setting of Contrary Feeding	Display the contrary feeding value. Press it to have access to the setting interface of the contrary feeding
G	 Display & Setting of Start Point	Display the position of the start point. Press it to have access to the interface for setting the start point.  : Left 1  : Left 2  : Right 1  : Right 2  : Right 3  : Left 3  : Random
H	 Display & Setting of End Point	Display the position of the end point. Press it to have access to the interface for setting the end point.  : Left 1  : Left 2  : Right 1  : Right 2  : Right 3  : Left 3  : Random
I	-	Refer to the description in Line Setting

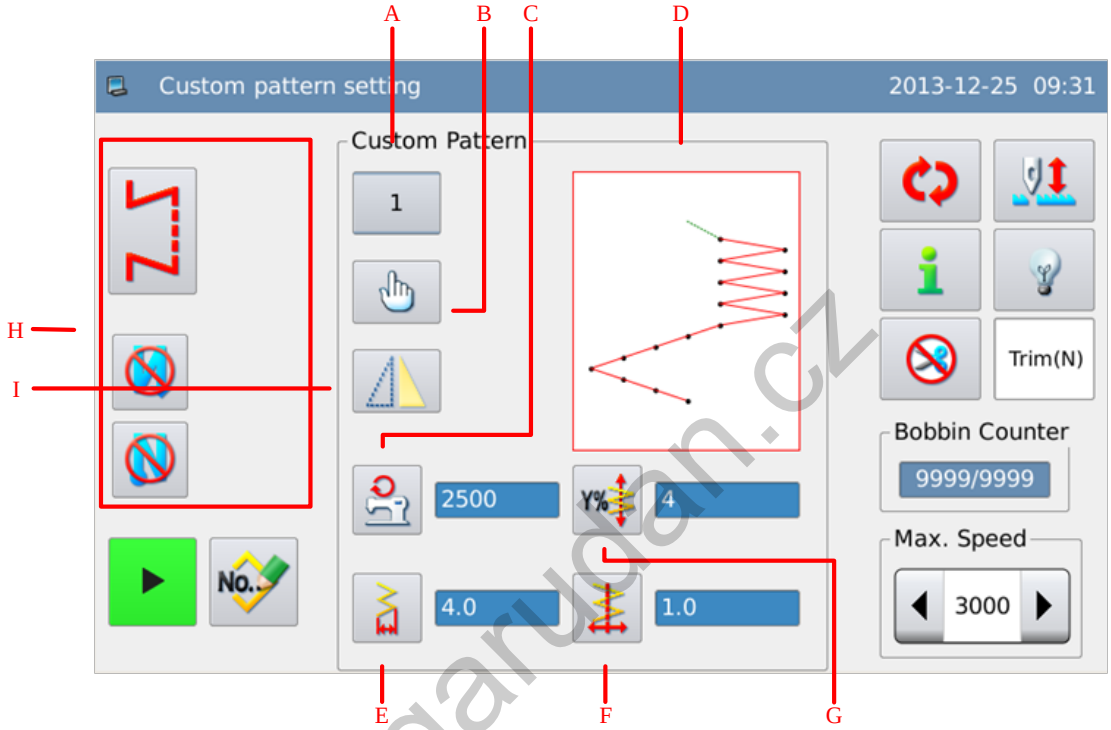
3.7 Customized Pattern

The customized pattern is the pattern with free needle entry position that user can edit it at will. The customized pattern can created at the operation panel or imported from outside.

At most 500 customized patterns can be saved, and each pattern can contain 500 stitches.

3.7.1 Set Customized Pattern

According to the content in [3.5.2 Customized Pattern Selection], user can have access to the interface for setting customized pattern.



Functions：

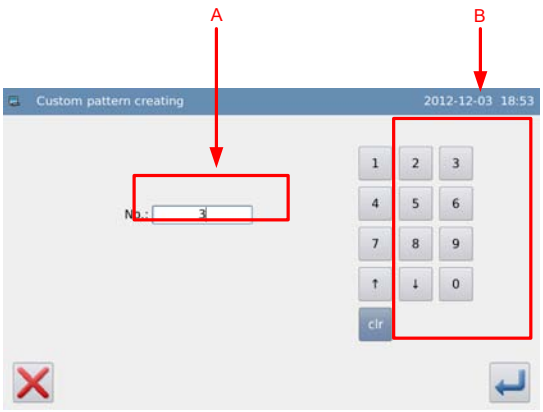
A	Pattern Number	Display the current pattern number. Press it to have access to the interface for selecting the customized pattern.
B	Edition	Press it to have access to pattern edition interface
C	Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。
D	Pattern Display	Display the shape of the current pattern
E	Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
F	Display and Setting of	Display the position of the base line. Press it to have access to the interface for setting the base line

	Base Line	The figure displayed can be changed via 「General Parameter」-> 「Base Line Position」: Left： Center： Right：
G	Y Scale Setting	Set Y scaling ratio (Only available in double stepping model)
H	-	Refer to the description at the setting of basic pattern.
I	Y Mirror	Press this button, the system will make the mirror of the pattern along Y axis

3.7.2 Create the Customized Pattern

Refer to the content in [3.5.2 Customized Pattern Selection], user can press New to have access to the interface for creating the customised pattern.

The Number Area (A) will display the empty number for saving, and user can set it with Keyboard (B).



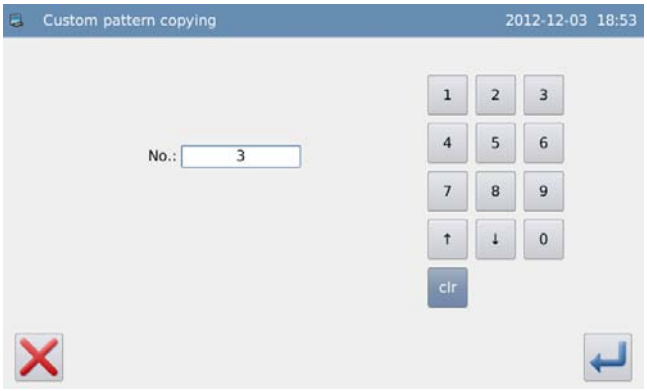
After the number is set, user can press to finish the operation and enter the edition interface of the customized pattern or press to cancel the operation and return to the previous interface

[Note] If the inputted number has existed, the system will hint "Pattern Number Exists"

3.7.3 Copy Customized Pattern

According to the content in [3.5.2 Customized Pattern Selection], user needs select the pattern for

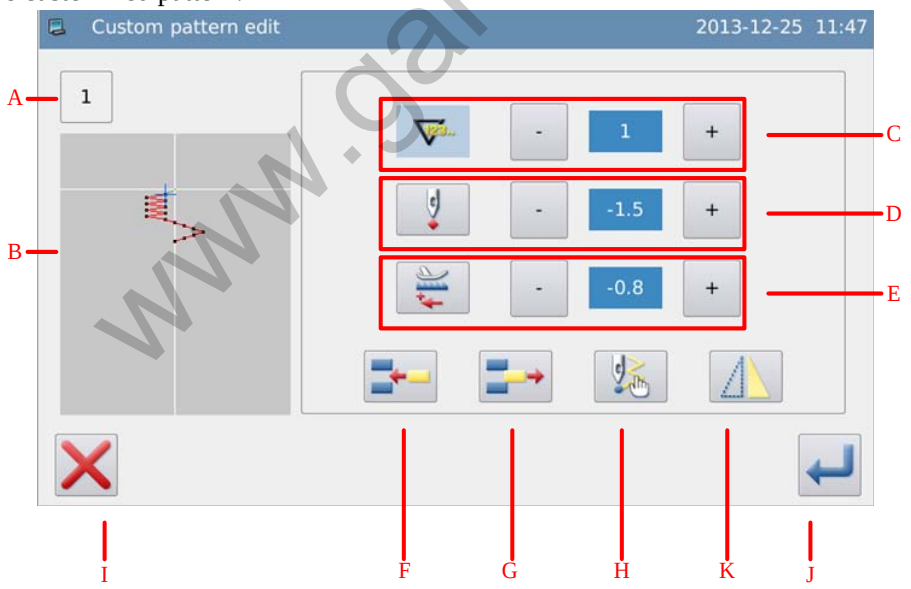
copy and press Copy to have access to the interface for copying the customized pattern. Its operation method is same as that in creating the customized pattern. Press to quit, while press to confirm the operation and to return to the interface for selecting the customized pattern.



[Note] If the inputted number has existed, the system will hint user "Replace the Pattern in Memory?"

3.7.4 Edit the Customized Pattern

After creating the customized pattern, user needs activate the edition interface or press in the customized pattern setting interface. After the operation, the system will enter the interface for setting the customized pattern.



Functions

A	Pattern Number	Display the number of customized pattern
B	Pattern Display	Display the stitch form on pattern and the position of icon
C	Display and Setting of Stitch Number	Display the needle number that is in edition status at present.

		Press - and + to adjust the needle number. At same time, the icon in pattern display area will move along with the setting.
D	Display and Setting of Swing Width	Display the needle swing width of the current stitch. That value stands for the X absolute coordinate. Press - or + to adjust the value, the range of it is -5.0~5.0mm.
E	Display and Setting of Feeding Amount	Display the feeding amount of the current stitch. That value stands for the Y relevant coordinates Press - or + to adjust the value, the range of it is -5.0~5.0mm。
F	Insert a Stitch	Insert a stitch at the current stitch. The inserted stitch has the same swing width as the current stitch. And system will add 1.0mm to the feeding amount. **[Note]: when the total stitch number is 500, this operation is unavailable.**
G	Delete a Stitch	Delete the needle entry point of current stitch, and the following stitches will move forwards. **[Note]: when the total stitch number is 1, this operation is unavailable.**
H	End Mark	Input the end mark. Once you input the end mark at the current stitch, the stitches after the current stitch will become invalid.
I	Cancel	Cancel the current operation and return to the previous level
J	Enter	Confirm the operation and save the editing result. The system will enter the interface for setting the editing pattern
K	Mirror	Press this button to select the mirror method for the pattern： X：Make the mirror along X axis Y：Make the mirror along Y axis

3.8 Saved Pattern

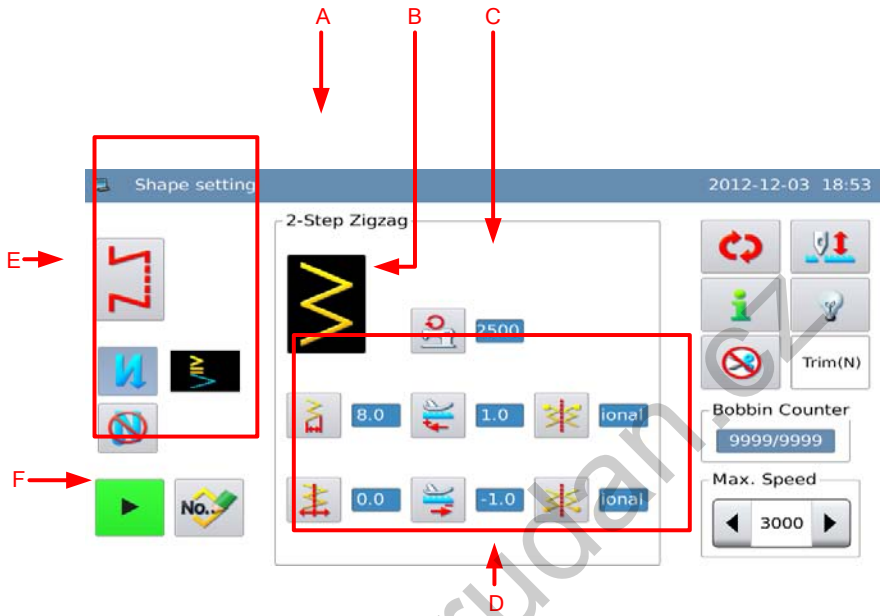
After the registration, the basic patterns or the customized patterns will become the saved pattern. User can only register the pattern in free sewing mode and overlapped sewing mode.

After the registration: user can not edit the data of the saved pattern from the customized pattern,

while he can edit the parameters of the saved pattern from the basic pattern.

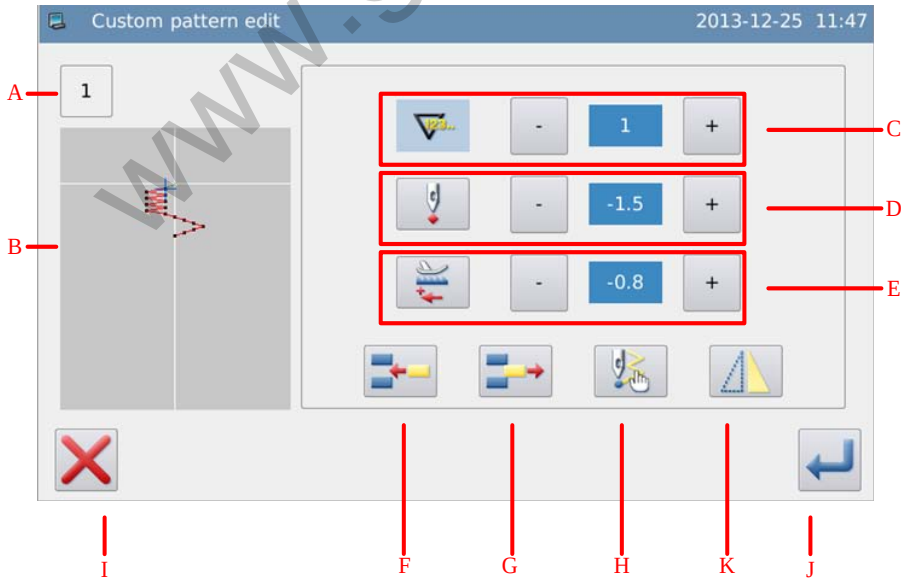
3.8.1 Set the Saved Pattern

According to the contents in [3.5.3 Selection of the Saved Pattern], user can have access to the interface for setting the saved pattern.



The saved pattern registered from the basic pattern

【Note】This sitting does not have and for Single Stepping Model.



The saved pattern registered from the customized pattern

Functions：

A	Pattern Number	Display the pattern number. Press it to have access to the interface for selecting the saved pattern.

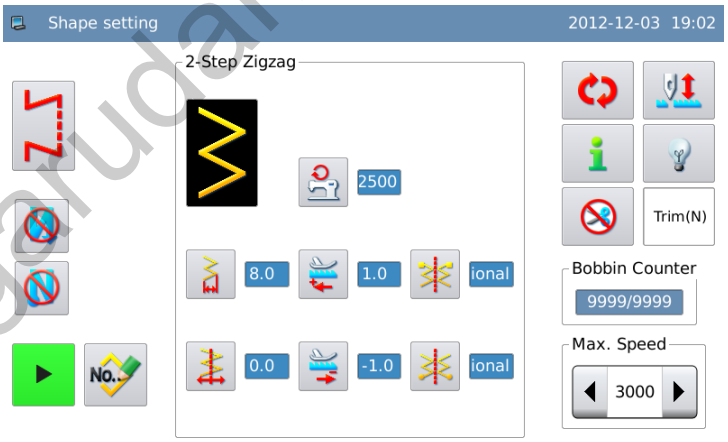
B	Pattern Shape at Registration	Display the shape of pattern at registration.
C	Display & Setting of Max Speed	Display the Max speed. Press it to have access to the setting interface of speed.。
D	Pattern Parameter	Display the parameters corresponding to the registered shape at present. For the setting method and the displayed content, please refer to the relating section in basic pattern and customized pattern.
E	-	Refer to the description in basic pattern setting
F	Copy	Press it to have access to the interface of pattern copy

3.8.2 Register Pattern

We use the 2-points zigzag sewing as example:

Select Pattern for Registration

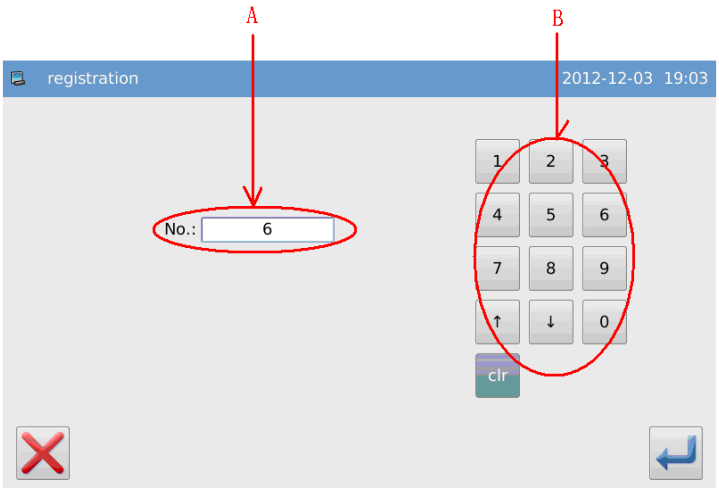
Set the pattern for registration and its sewing mode and reverse sewing. Then, have access to the interface for setting the pattern. Press  to enter the pattern registration interface.



Input Registration Number

In number display area (A), the system will give the empty number for saving, user can also input the number via the keyboard (B)

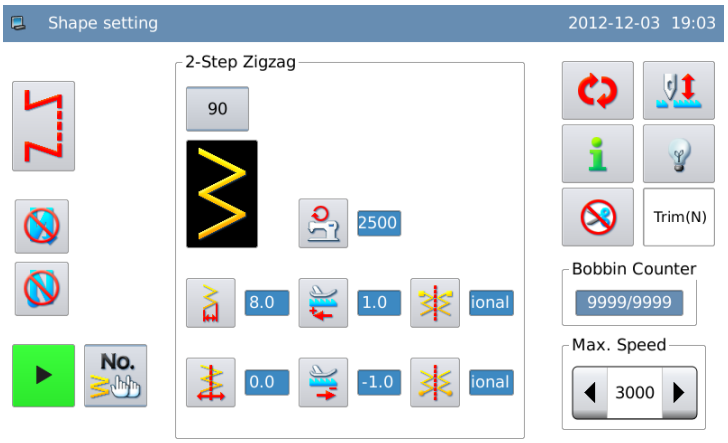
Press  to cancel the operation and return to the previous level interface, press  to finish the operation



[Note] If the inputted number has existed, the system will hint user "Replace the Pattern in Memory?"

End Registration

After the successful registration, the system will enter the pattern setting interface, where the registered pattern will become the current sewing pattern.

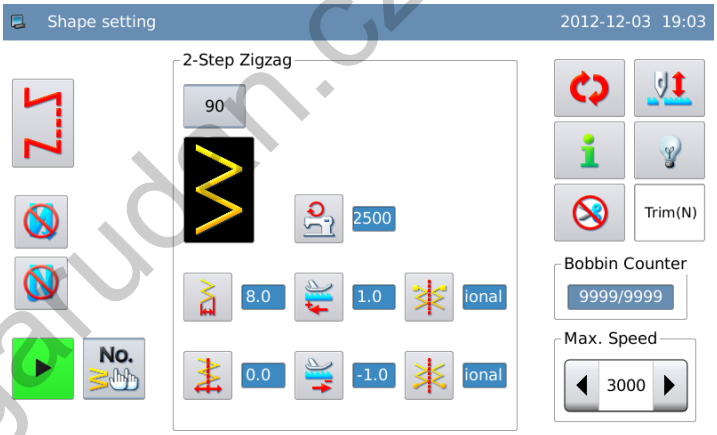


3.8.3 Copy the Saved Pattern

1、Have Access to Pattern Copy Interface

In the interface for setting the saved pattern, press 

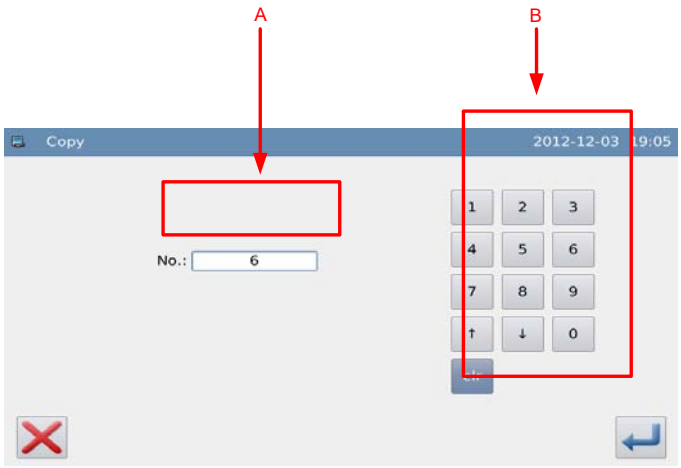
to have access to the pattern copy interface.



2、Copy Pattern

The number display area (A) will display the empty number for copy; user can use the keyboard (B) to input the number to copy.

Press  to cancel the operation; Press  to finish the operation and return to the interface for setting the saved patterns

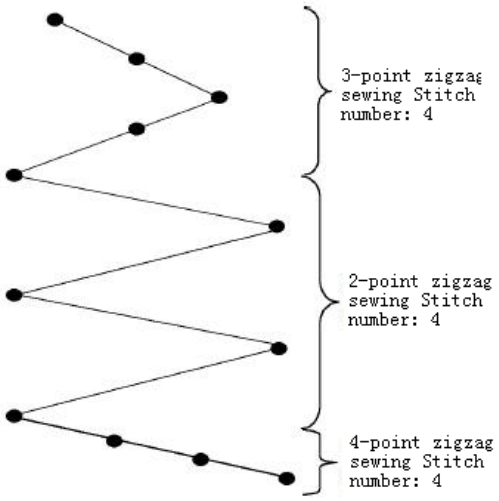


[Note] If the inputted number has existed, the system will hint user "Replace the Pattern in Memory?"

3.9 Continuous Sewing

The continuous sewing is formed by one or more saved patterns. The continuous sewing can contain 32 steps at most, and user can set at most 500 stitches in each step.
The continuous sewing is sewn as one pattern.

Example：



1、 As the left picture shows, user can register the 2-points zigzag sewing as pattern 1, 3-points zigzag sewing as pattern 2 and 4-points zigzag sewing as pattern 3.

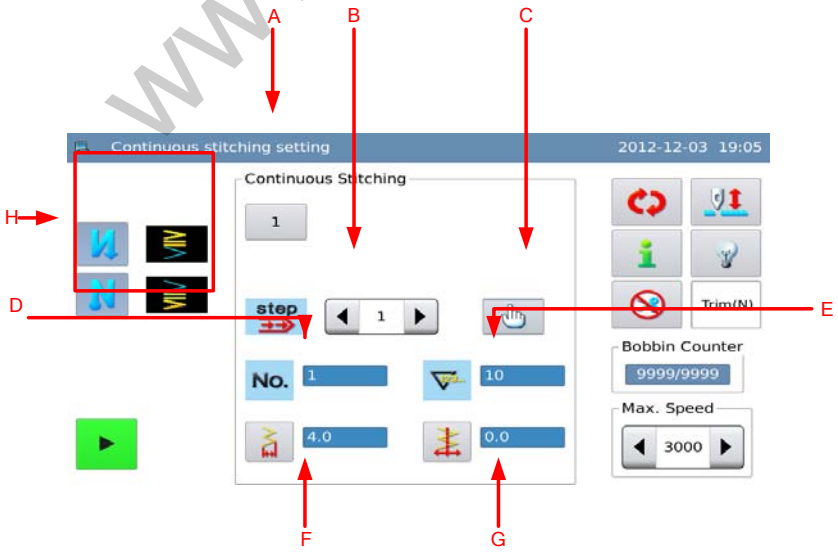
2、 Design the stitch number as below:

Step	Pattern No.	Stitch Number
1	2	4
2	1	4
3	3	4

3、Press ↵ in edition interface to finish the operation.

3.9.1 Set Continuous Sewing

According to the content in [3.5.4 Continuous Sewing Selection], user can have access to the interface for setting the continuous sewing.



Functions:

A	Pattern Number	Display the pattern number. Press it to have access to the

		interface for selecting the continuous sewing pattern.
B	Steps of Continuous Sewing	Display the continuous sewing steps. Use  to shift the registration information of steps in the continuous sewing
C	Edition	Press it to have access to the interface for editing the continuous sewing.
D	Quoted Number	Display the number of saved pattern quoted in the current step.
E	Step Stitch Number	Display the stitch number at current step.
F	Display and Setting of Swing Width	Display the swing width. Press it to have access to the interface for setting the swing width.
G	Display and Setting of Base Line	Display the position of the base line. Press it to have access to the interface for setting the base line
H	Reverse Sewing Setting	Please refer to the description in basic pattern section

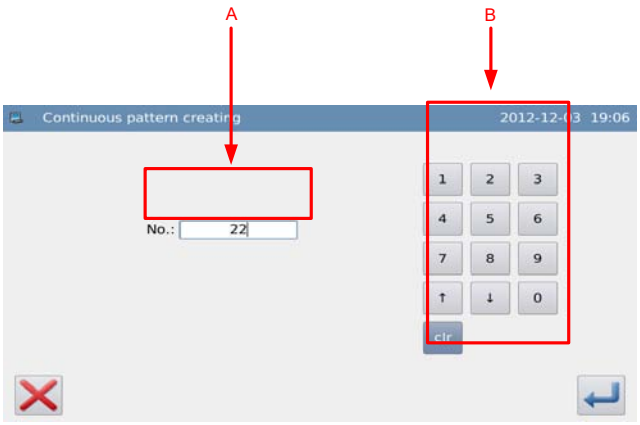
3.9.2 Create Continuous Sewing

According to the content in [3.5.4 Continuous Sewing Selection], user can press 

to enter the interface for creating the continuous sewing.

1、 The number display area (A) will display the empty number for saving; user can use the keyboard (B) to input the number wanted

2、 After confirming the number, user can press  to finish the operation and enter the continuous sewing edition interface. Press  to cancel the operation and return to the previous interface

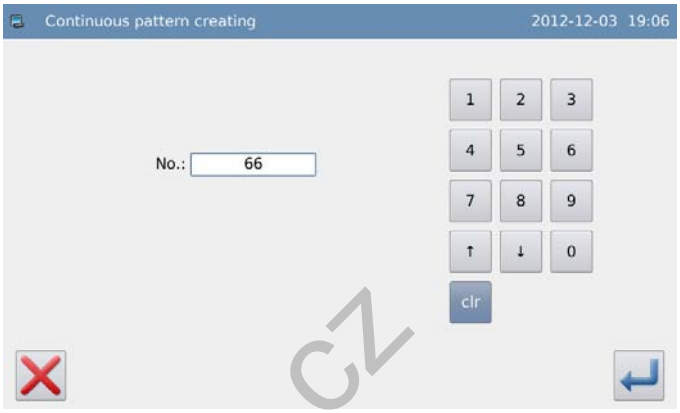


[Note] If the inputted number has existed, the system will hint "Pattern Number Exists"

3.9.3 Copy Continuous Sewing

According to the contents in [3.5.4 Continuous Sewing Selection], user can select the pattern for copy and press Copy to have access to the continouse sewing copy interface.

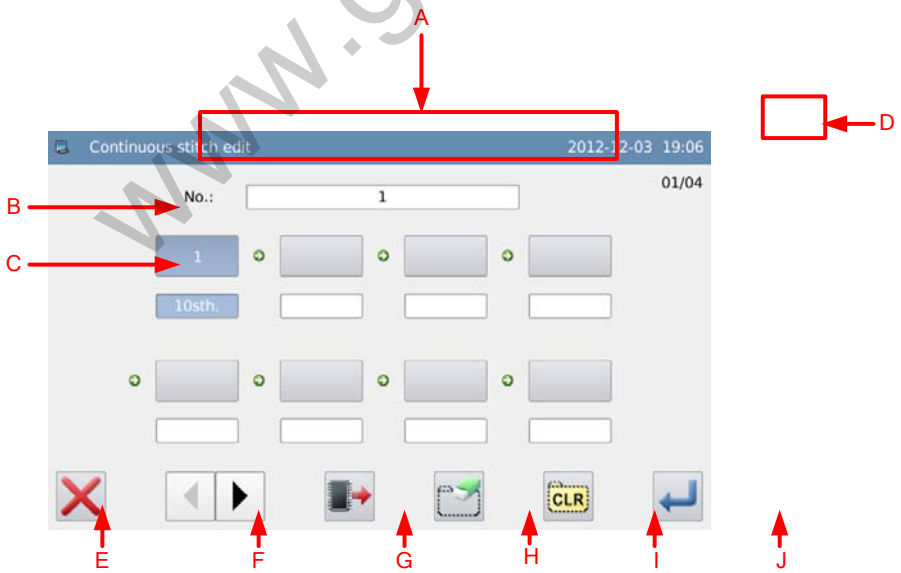
The operation is same as that in the creation of continuous sewing. Press to cancel the operation, press to confirm the operation and return to the continuous sewing selection interface.



[Note] If the inputted number has existed, the system will hint user "Replace the Pattern in Memory?"

3.9.4 Edit Continuous Sewing

After creation of the continuous sewing, the system will enter the edition interface; or user can press in continuous sewing setting interface to enter the edition interface.



Functions：

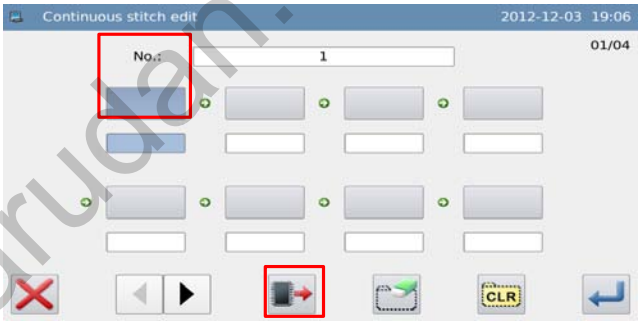
A	Pattern Number	Display the number of the continuous sewing
B	Quoted Number	Display the number of saved pattern quoted in the current step.

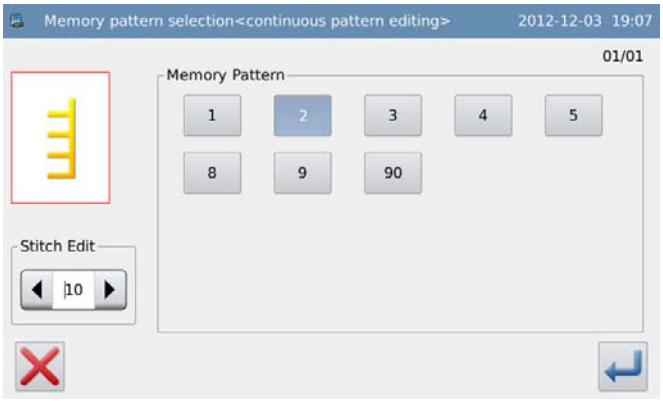
C	Stitch Number of Step	Display the stitch number in current step.
D	Page Number	Display the current page/ total pages
E	Cancel	Cancel the operation and quit
F	Page Key	Turn the page.
G	Load Pattern	Press it to have access to the selection interface of quoted patterns. It is used to set the quoted pattern and its stitch number in current step.
H	Step Deletion	Delete the selected step. The steps following will move forward.
I	Clear	Clear the entire content in the continuous sewing
J	Enter	Confirm the operation and quit

Operation：

1、 Edit Current Step

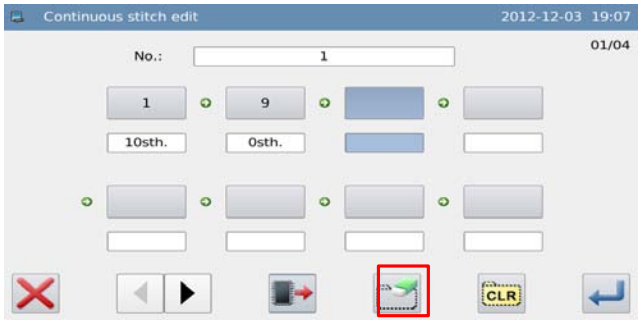
Press  to enter the interface for selecting the quoted pattern and select the saved pattern for adding. We select No.8 pttern and set the stitch number of the current step at 10. Press  to confirm the selection.





[Note]: the step edition shall be done in order

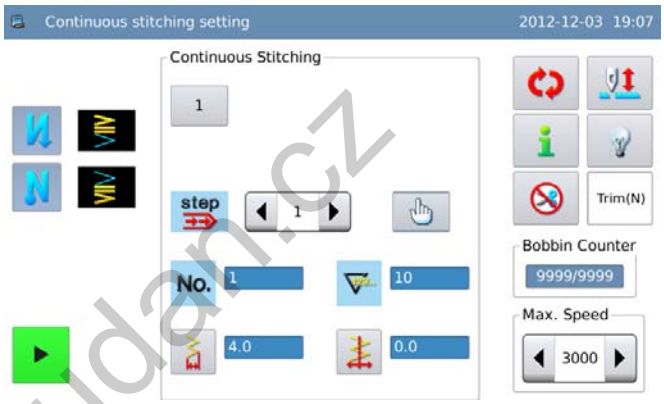
2、 Continue Editing Steps



Repeat the operation at above to add new quoted patterns (Here, we added No.5, No.1 and No.10 pattern in order).

If user wants to delete a quoted pattern, he should click its number and press  .

3、 Save Continuous Sewing



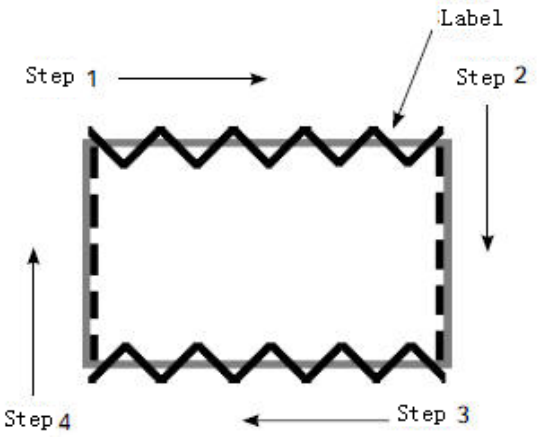
Press  to confirm the saving and return to the setting interface of continuous sewing.

3.10 Cyclic Sewing

- The cyclic sewing is formed by one or more saved patterns. It can contain 32 steps at most, in which the machine will sew the different patterns.
- The cyclic sewing can be deemed as the machine performs several program sewing according to the set stitch numbers.

Example：

After user sets the stitch number at cyclic sewing, the pattern in each step can be sewn in different length.



1、 Register the 2-points zigzag sewing to pattern 1 and register the line to pattern 2

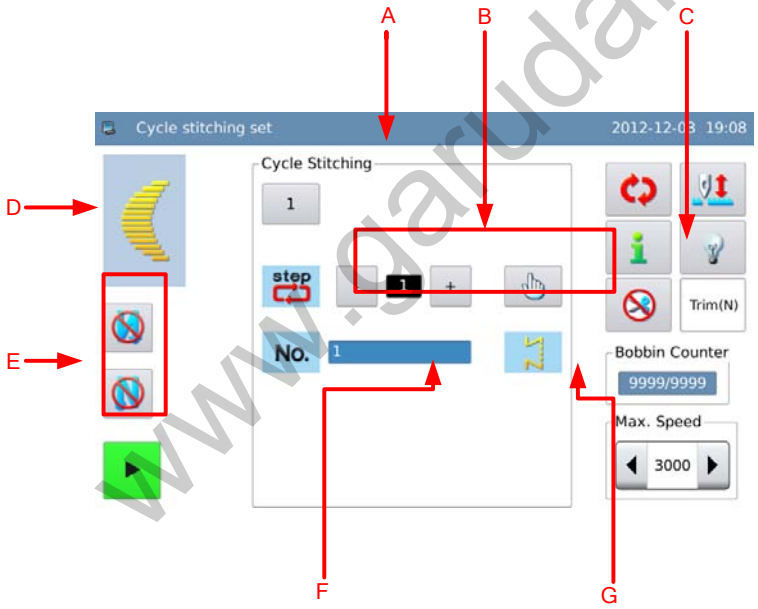
2、 Set the stitch number as shown in table below:

Steps	Pattern No.	Stitch Number
1	1	100
2	2	50
3	1	100
4	2	50

3、In edition interface, press  to finish the operation.

3.10.1 Set Cyclic Sewing

According to the contents in [3.5.5 Cyclic Sewing Selection], user can have access to the interface for setting the cyclic sewing.

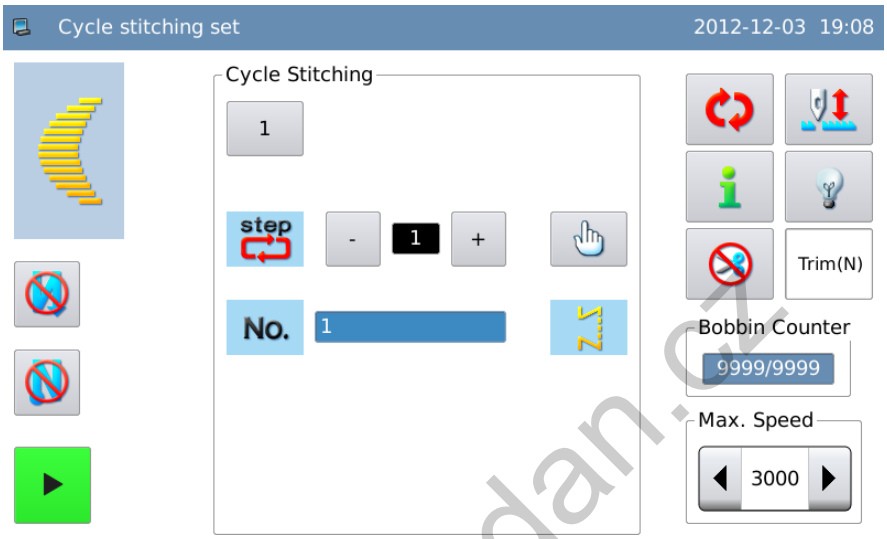


Functions:

A	Pattern Number	Display the current pattern number. Press it to have access to the cyclic sewing selection interface.
B	Cyclic Sewing Step	Display the cyclic sewing step. Use - or + to shift the cyclic sewing steps
C	Edition	Press it to have access to the interface for editing the cyclic sewing.
D	Quoted Pattern Display	Display the pattern quoted at current step.

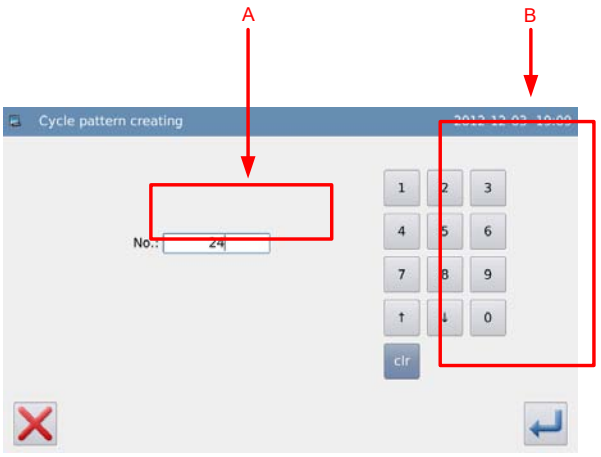
E	Reverse Sewing Setting	Refer to the description at Basic Pattern
F	Quoted Number	Display the number of saved pattern quoted in the current step.
G	Sewing Method	Display the current sewing method

[Note]: If the sewing mode of the pattern quoted in current step is free sewing or overlapped sewing, the system will not display the stitch number, stop status, presser stop position and presser up time as below:



3.10.2 Create Cyclic Sewing

According to the contents in [3.5.5 Cyclic Sewing Selection], user can press New to enter the interface for creating the cyclic sewing.



1、The number display area (A) will display the empty number for saving; user can use the keyboard (B) to input the number wanted as well

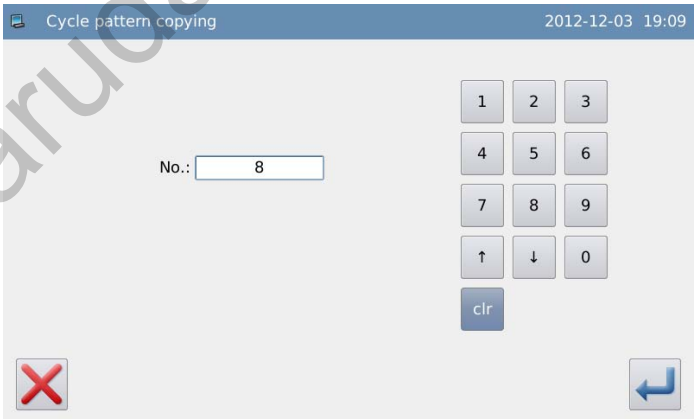
2、After setting the number, user can press to finish the operation and enter the cyclic sewing edition interface; Press to cancel the operation and return to the previous screen

[Note] If the inputted number has existed, the system will hint "Pattern

Number Exists"

3.10.3 Copy Cyclic Sewing

According to the contents in [3.5.5 Cyclic Sewing Selection], user can select the pattern for copy and press Copy to have access to the cyclic sewing copy interface.

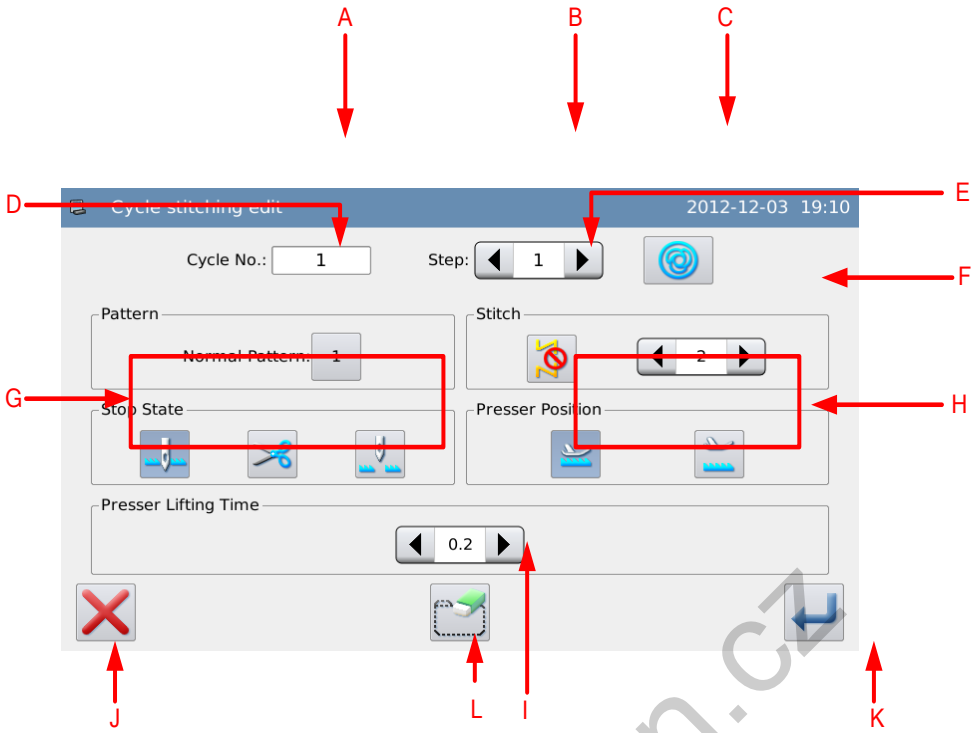


The operation is same as that in the creation of cyclic sewing. Press to cancel the operation; press to confirm the operation and return to the cyclic sewing selection interface.

[Note] If the inputted number has existed, the system will hint user "Replace the Pattern in Memory?"

3.10.4 Edit Cyclic Sewing

After creation of the cyclic sewing, the system will enter the edition interface; or user can press in cyclic sewing setting interface to enter the edition interface.



Functions：

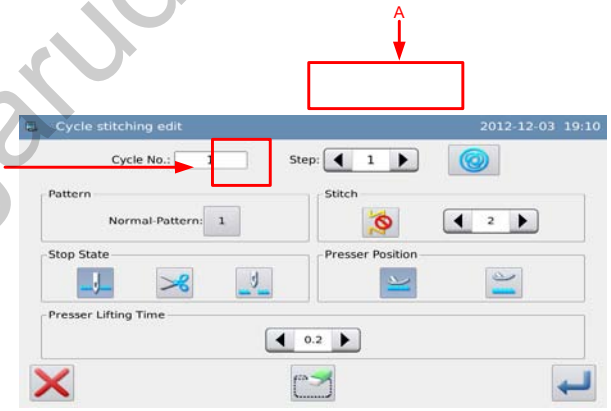
A	Cyclic Sewing Number	Display the cyclic sewing number.
B	Step	Display the current step
C	Single Sewing	Set whether the current step is single sewing. **[Note 1]: If the current step is free sewing, the current step can not be set as single sewing.** **[Note 2]: If the current step is overlapped sewing, the current step can only be the single sewing.**
D	Quoted Pattern Number	Display the number of pattern quoted at current step. Press it to enter the interface for selecting the quoted pattern.
E	Current Step Sewing Mode	Display the sewing mode at current step. Press it to turn to the free sewing switch. **[Note]: It can not be set when the current step is overlapped sewing**
F	Stitch Number Setting	Set the stitch number at current step; Range: 1~500 stitches **[Note] It can not be set when the current step is overlapped sewing or free sewing**
G	Stop Status	Set the stop status of current step ：Needle Down Stop ：Trimming

		: Needle Up Stop **[Note] It can not be set when the current step is overlapped sewing or free sewing**
H	Presser Position	Set the presser position of current step : Presser Down Stop : Presser Up Stop **[Note] It can not be set when the current step is overlapped sewing or free sewing**
I	Presser Up Time	Set the presser up time at current step. Range:0.1~99.9s
J	Cancel	Press it to cancel the operation and quit
K	Enter	Press it to save the settings and enter the interface for setting the cyclic sewing.
L	Step Deletion	Delete the current step

Operation：

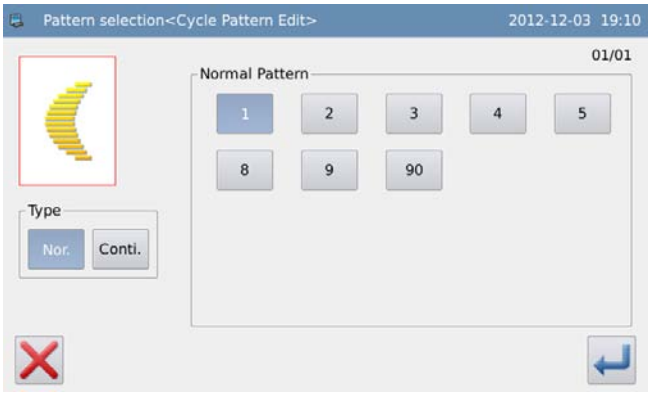
1、Edit Current Step

Enter the edition interface of cyclic sewing. Adjust A to select the current step and check the information. In this example, all the steps are empty, so user has to start the edition from step 1.



2、Select the Quoted Pattern

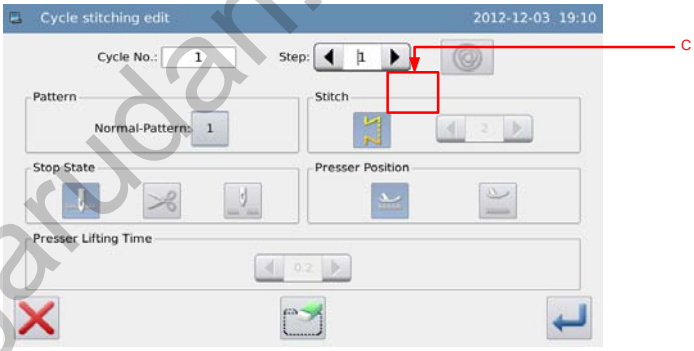
Press button (B) to enter the interface for selecting the quoted pattern, where user can select the saved pattern or the continuous sewing for adding. Here, we select No.1 pattern, please press  to confirm it.

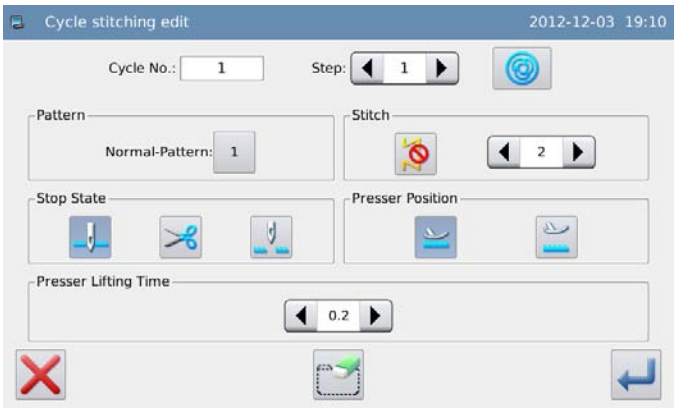


3、 Set Step Parameter

After the pattern selection, user can use C to check the sewing mode of current step. The default setting to use the original sewing mode of the quoted pattern. In this example, the No.1 saved pattern is the free sewing.

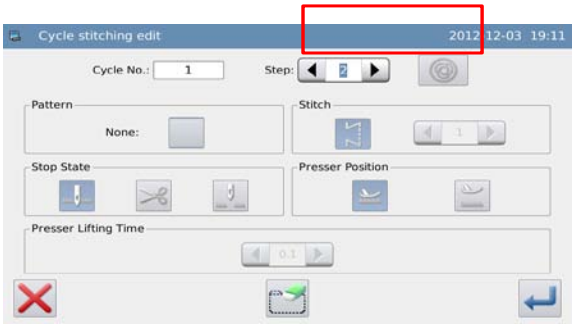
Press button C to turn off the free sewing, and set the stitch number at 20, as well as the parameters like stop status, presser position, presser up times and so on.





4、 Continue Editing Step

Set the current step as 2. Repeat the operations at above and add more quoted patterns.

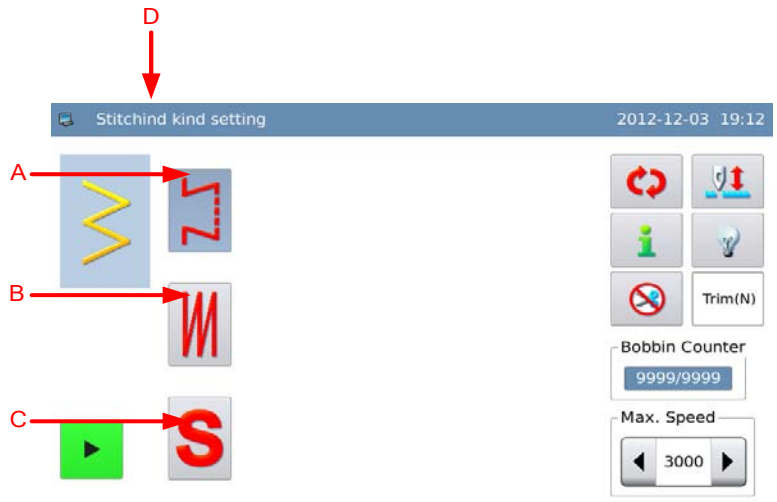


5、 Save Cyclic Sewing

Press ↵ to confirm saving and enter interface for setting cyclic sewing.

3.11 Sewing Mode Setting

- According to the contents in [3.4 Main Interface] and [3.6.1 Setting of Line], user can use or press sewing mode button at pattern setting interface to enter the setting interface of sewing mode.
- The sewing mode contains free sewing, overlapped sewing and program sewing.

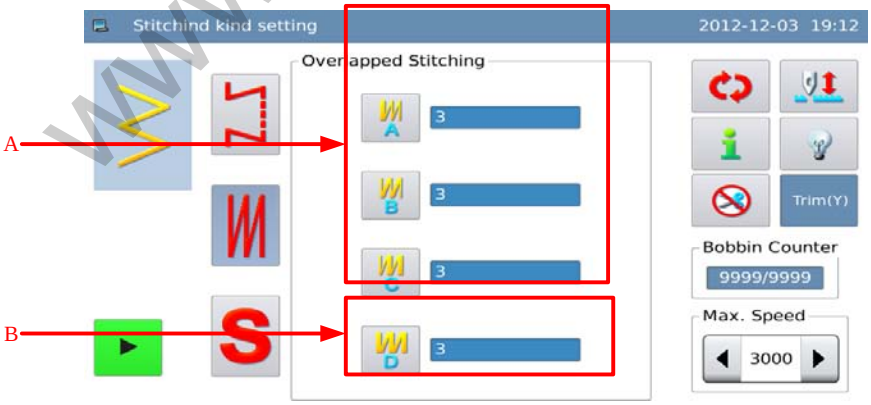


Functions：

A	Free Sewing	Press it to select free sewing mode
B	Overlapped Sewing	Press it to select overlapped sewing mode.
C	Program Sewing	Press it to select program sewing mode
D	Current Pattern	Display the shape of current pattern

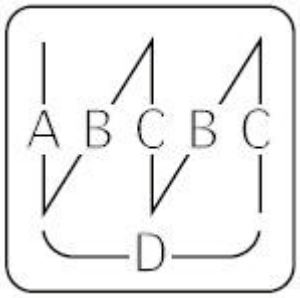
3.11.1 Overlapped Sewing

- In overlapped sewing, the system will open the auto trimming and single sewing as default.



Functions：

A	Display & Setting of Stitch Number in Steps A, B and C	Respectively display the stitch number in step A, B and C. Press the setting button to enter the setting interface of overlapped sewing. Range: 0~19 stitches
B	Display & Setting of	Display the total step number of A, B and

	Step D	C. Press the setting key to enter the overlapped sewing setting interface. Range: 0~9。 

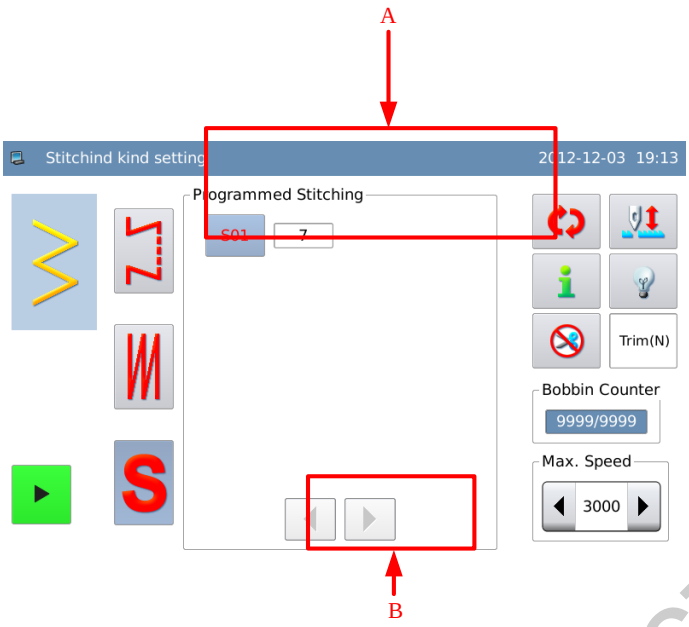
Operation：

Press A, B, C or D to enter the overlapped sewing setting interface.

At here, we set the stitch number of step A, B and C at 4 respectively. The total step number (D) at 5. Therefore the system will perform the step A for once, step B for twice and step C for twice. After the setting, user can press  to save and quit.

3.11.2 Program Sewing

- In program sewing, user can set 20 steps at most, and each step can contain 500 stitches at most.
- In the program sewing, if one step is set as thread-trimming or its stitch number is set at 0, the following steps will be canceled.



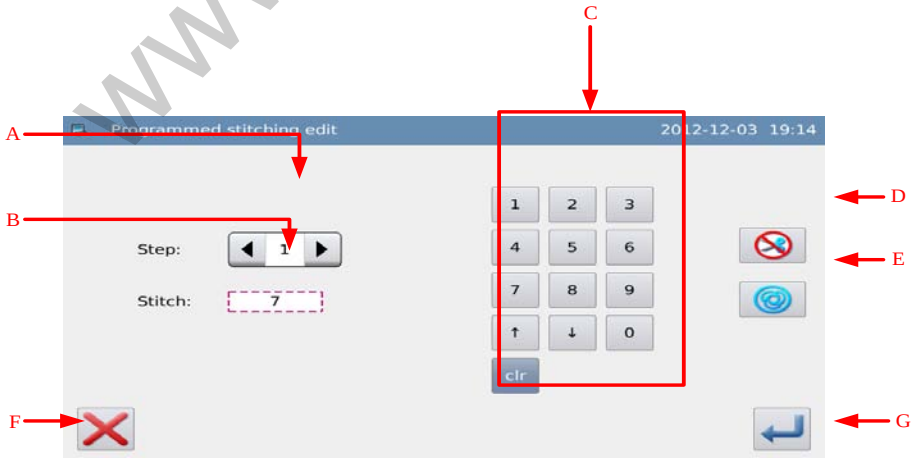
Functions：

A	Step Information	Display the stitch number of each step in the program sewing. Press it to enter the setting interface of program sewing.
B	Page Key	Press it to turn the pages **[Note]: Only display when the step number is over 10.**

Set Program Sewing：

Example: Press 

to enter the setting interface of program sewing.



No.	Descriptions
A	Display current step. Pressing the arrows in  will change the current step.

	If the current step is the last one, pressing the right arrow will add a new step. At most 20 steps can be set. **[Note]: If needing to add new step, user should set the auto trimming in current step as Ineffective.**
B	Display stitch number in current step.
C	Input the stitch number in current step.
D	Set auto trimming。 **[Note] The step set with the auto trimming will become the last step.**
E	Set single sewing. Select it to set the single sewing. After user sets the single sewing, the system will automatically sew to the stitch number of that step.
F	Cancel the setting and quit.
G	After all the steps are set, the system will save the setting the quit.

3.12 Set Reverse Sewing

- Reverse Sewing is used for strengthening the parts at sewing start and sewing end. It contains standard reverse sewing, 2-points contraction sewing and customized reverse sewing
- Pressing front reverse sewing switch (or) and back reverse sewing switch (or) can activate or deactivate the reverse sewing.

Front reverse sewing	**Ineffective**	**Effective**	**Ineffective**	**Effective**
Pattern				
Back reverse sewing	**Ineffective**	**Ineffective**	**Effective**	**Effective**

Setting Method:

1、Enter Setting Interface of Reverse Sewing

Press  to enter the interface for setting the reverse sewing. At here, we use the standard front reverse sewing as the example: Press the front reverse sewing type key to enter the interface for setting the front reverse sewing.

2、Select Reverse Sewing Type

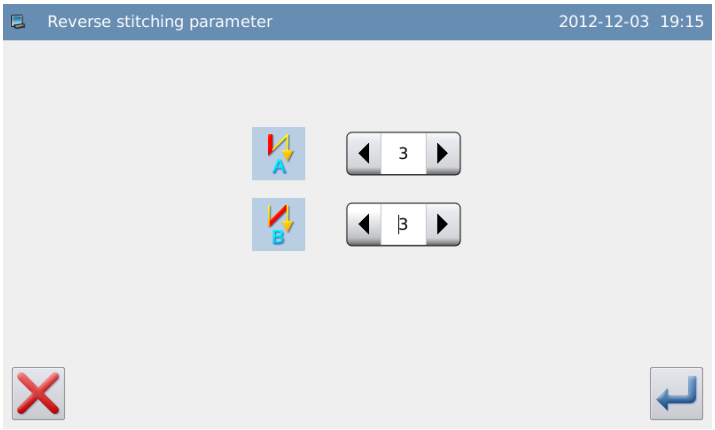
As shown in the picture, after user select the sewing type, user needs press  to back to the reverse sewing setting interface.

3、 Set Reverse Sewing Parameters

In the reverse sewing setting interface, user can press step button A or B to enter the parameter setting interface

4、 Input the Stitch Number in Step

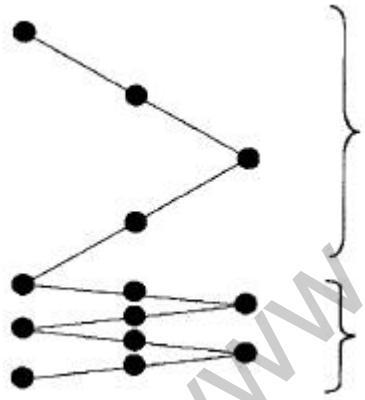
As the picture shows, press the arrows to input the stitch number in steps. press  to return to the reverse sewing setting interface



3.12.1 Standard Reverse Sewing

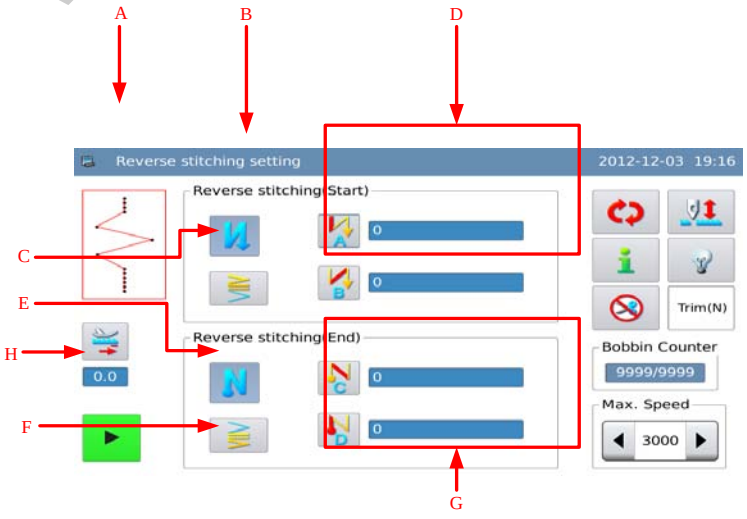
- At the standard revere sewing, user can perform the reverse sewing with the needle entry points same to the current pattern.

Example：



Current Pattern
3-points zigzag sewing

Standard reverse Sewing
Step C: Set at 4 times



Functions：

A	Current Pattern	Display the shape of the current pattern
B	Front Reverse Sewing Switch	Turn-on/off the front reverse sewing  ：Effective  ：Ineffective
C	Front Reverse Sewing Type	Display the type of the front reverse sewing. Press it to enter the selection interface of front reverse sewing type.  ：Standard Front Reverse Sewing
D	Front Reverse Sewing Step A & B	Display the stitch number of front reverse sewing A &B. Press the Set button to enter the interface for setting front reverse sewing parameters.
E	Back Reverse Sewing Switch	Turn-on/off the back reverse sewing  ：Effective  ：Ineffective
F	Back Reverse Sewing Type	Display the type of the back reverse sewing. Press it to enter the selection interface of back reverse sewing type  ：Standard Back Reverse Sewing
G	Back Reverse Sewing Step C & D	Display the stitch number of back reverse sewing C &D. Press the Set button to enter the interface for setting back reverse sewing parameters.
H	Display & Setting of Cloth-feeding	Display the cloth-feeding amount. Press it to have access to the interface for setting the cloth-feeding amount. **[Note]: Only when the current pattern is the customized pattern, can the system display this item**

According to the difference of the pattern, there are two ways for setting the reverse sewing:

1）At the line, scallop, blind stitch, customized pattern and continuous sewing, user can use the stitch number to set it.

Front reverse sewing –> A（feeding in positive direction）: Can set 0~19 stitches.

B（feeding in opposite direction）: Can set 0~19 stitches.

Back reverse sewing –> C (feeding in opposite direction) : Can set 0~19 stitches.

D (feeding in positive direction) : Can set 0~19 stitches.

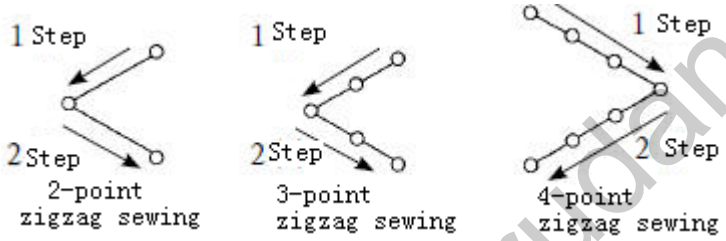
2) At 2-points zigzag, 3-point zigzag and 4-points zigzag, user can use the times of the needle swing pattern, which is the pattern part between the return points

Front reverse sewing –> A (feeding in positive direction) : can set 0~19 times

B (feeding in opposite direction) : can set 0~19 times

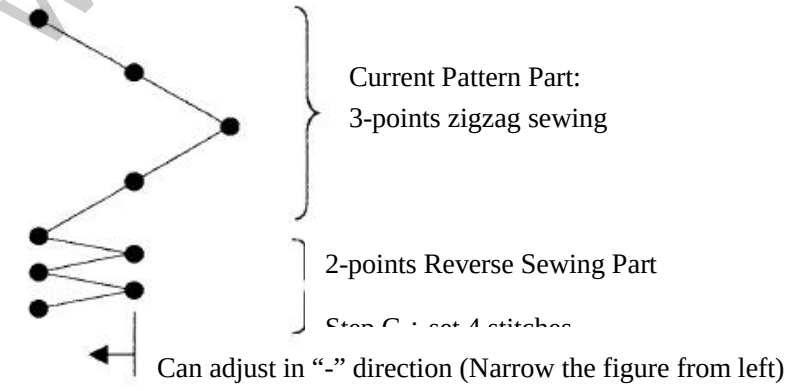
Back reverse sewing–> C (feeding in opposite direction) : can set 0~19 times

D (feeding in positive direction) : can set 0~19 times

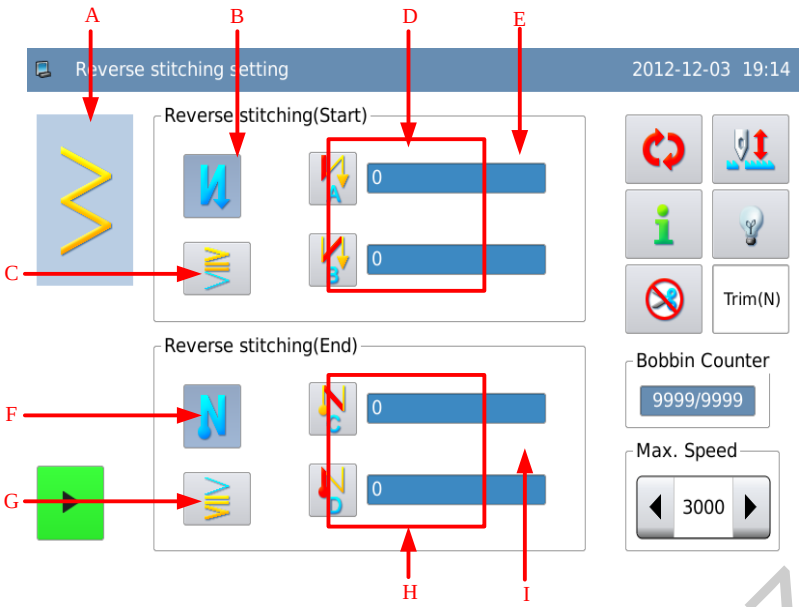


3.12.2 2-points Contraction Sewing

- With the 2-points contraction sewing function, user can make the reverse sewing between the current needle entry point and the next needle entry point.
- The width between two point can be adjusted in "-" direction.



Can adjust in "-" direction (Narrow the figure from left)



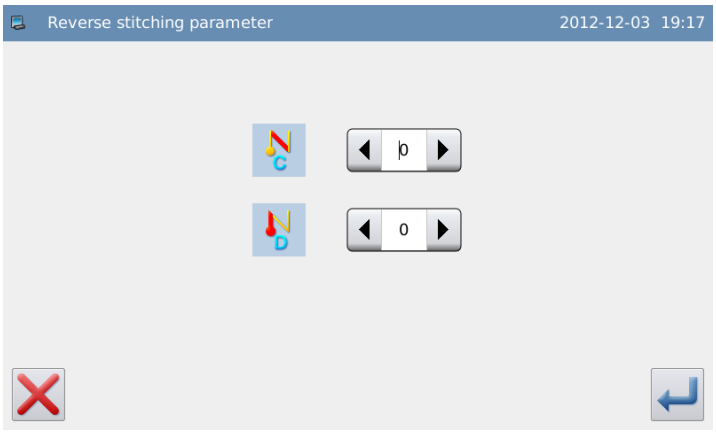
Functions：

A	Current Pattern	Display the shape of the current pattern
B	Front Reverse Sewing Switch	Please refer to description in standard reverse sewing
C	Front Reverse Sewing Type	Display the type of the front reverse sewing. Press it to enter the selection interface of front reverse sewing type : 2-points contraction sewing (Front)
D	Front Reverse Sewing Step A & B	Please refer to description in standard reverse sewing
E	Front Reverse Sewing Contraction Distance	Display the contraction distance of Front Reverse Sewing. Press the button to enter the interface for setting front reverse sewing parameters.
F	Back Reverse Sewing Switch	Please refer to description in standard reverse sewing
G	Back Reverse Sewing Type	Display the type of the back reverse sewing. Press it to enter the selection interface of back reverse sewing type : 2-points contraction sewing (Back)
H	Back Reverse Sewing Step C & D	Please refer to description in standard reverse sewing
I	Back Reverse Sewing Contraction Distance	Display the contraction distance of Back Reverse Sewing. Press the button to enter the interface for setting back reverse sewing parameters.

Description of Setting Contraction Distance：

Example: how to set the 2-points contraction distance of the front reverse sewing

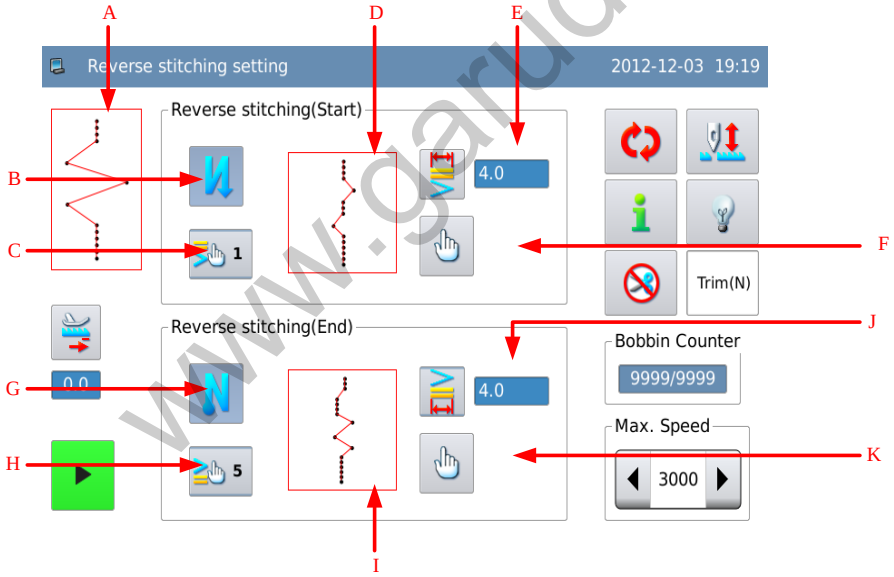
In the reverse sewing setting interface, press  to enter the interface for setting the reverse sewing parameters, as shown in left picture. Adjust the arrow to set the contraction distance. Press the  to return to the interface for setting the reverse sewing。



The width adjustment can narrow the distance from the original needle entry point to the next needle entry point at reverse sewing (no adjustment when the value is 0)

3.12.3 Customized Reverse Sewing

- This enable user to perform reverse sewing at any inputted needle entry point.
- At most, 64 stitches can be supported.



Functions：

A	Current Pattern	Display the shape of the current pattern
B	Front Reverse Sewing Switch	Please refer to description in standard reverse sewing
C	Number of Customized Pattern in Front Reverse Sewing	Display the number of the customized pattern in the front reverse sewing. Press it to enter the interface for selecting the customized pattern in the front reverse sewing.
D	Customized Pattern in Front Reverse Sewing	Display the shape of the customized pattern in front reserve sewing
E	Front Reverse Sewing Width	Display the sewing width of the front reverse sewing.

		Press the button to enter the interface for setting front reverse sewing parameters
F	Edition of Front Reverse Sewing	Press the button to enter the interface for editing the customized pattern in front reverse sewing
G	Back Reverse Sewing Switch	Please refer to description in standard reverse sewing
H	Number of Customized Pattern in Back Reverse Sewing	Display the number of the customized pattern in the back reverse sewing. Press it to enter the interface for selecting the customized pattern in the back reverse sewing.
I	Customized Pattern in Back Reverse Sewing	Display the shape of the customized pattern in back reserve sewing
J	Back Reverse Sewing Width	Display the sewing width of the back reverse sewing. Press the button to enter the interface for setting back reverse sewing parameters
K	Edition of Back Reverse Sewing	Press the button to enter the interface for editing the customized pattern in back reverse sewing

1）Set Swing Width of Customized Reverse Sewing Pattern：

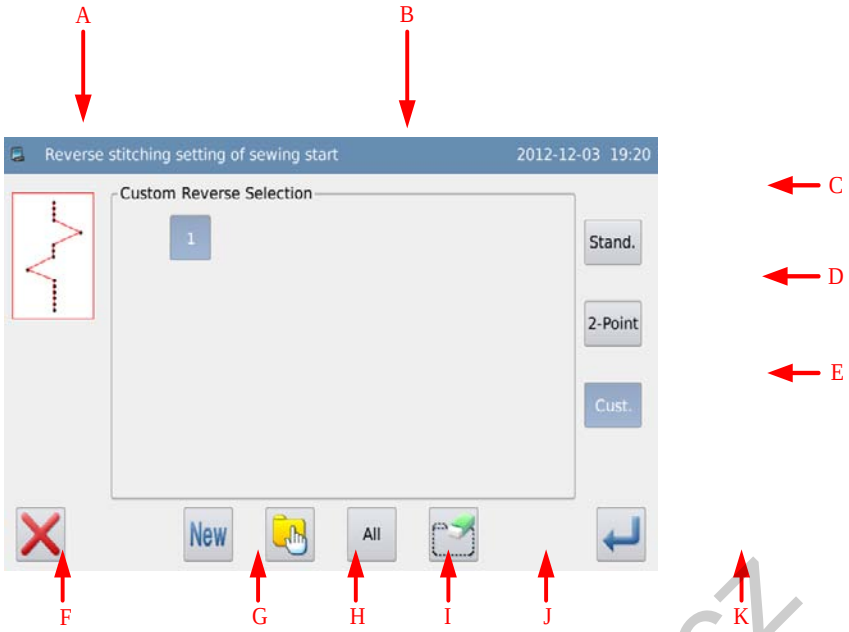
Example: how to set the swing width of the customized pattern in front reverse sewing.

In the interface for setting the reverse sewing, press  to have access to the interface for setting the reverse sewing parameters, as shown in right picture. Adjust the arrow to set the swing width. Press  to return to the reverse sewing setting interface.

[Note]: please set it within the Max swing range

2）Select Customized Reverse Sewing Pattern：

We take the front reverse sewing as the example. Press  to have access to the interface for selecting the customized reverse sewing pattern.



Functions：

No.	Functions	Contents
A	Pattern Display Area	Display the shape of the selected pattern
B	Pattern Selection Area	Display the number of customized reveres sewing pattern in operation panel
C	Standard Reverse Sewing	Shift the type to standard reverse sewing
D	2-points Contraction Sewing	Shift the type to 2-points contraction sewing
E	Customized Reverse Sewing	Press it to enter the selection interface of customized reverse sewing
F	Cancel	Cancel the current operation and quit
G	New Pattern	Create a new customized reveres sewing
H	Single Selection/ Multi-selection	Shift between single selection and multi-selection. In multi-selection, user can selection several customized reverse sewing at same time, which can be used for deleting patterns.  : Single Selection  : Multi-selection
I	Select All	Select all the customized reverse sewing patterns. It can be used in the operation of deletion
J	Deletion	Delete the selected pattern.
J	Enter	Confirm the selection of the current pattern and enter the reverse sewing setting interface.

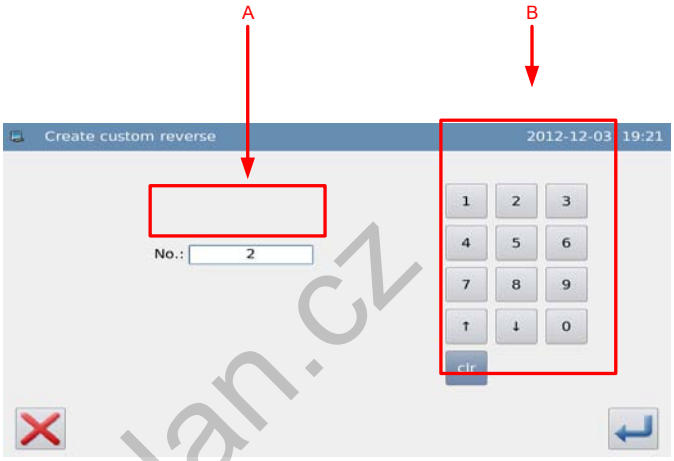
		[Note] The Enter can only be used in single selection status

3）Create the Customized Reverse Sewing Pattern：

Referring to the contents in above sector, user can press New to enter the interface for creating the customized reverse sewing pattern.

1、 The number display area (A) will display the empty number for saving; user can use the keyboard (B) to input the number wanted as well.

2、 After confirming the number, user can press ↵ to finish the operation and return or press ✕ to cancel the operation and return.



[Note] Can not use the existing number.

4）Edit the Customized Reverse Sewing Pattern：

After creation of the customized reverse sewing, the system will enter the edition interface; or user can press ☝ in reverse sewing setting interface to enter the edition interface.

For the operation methods, please refer to [3.7.4 Edit the Customized Pattern]. The max permitted stitch number for the customized sewing is 64 stitches

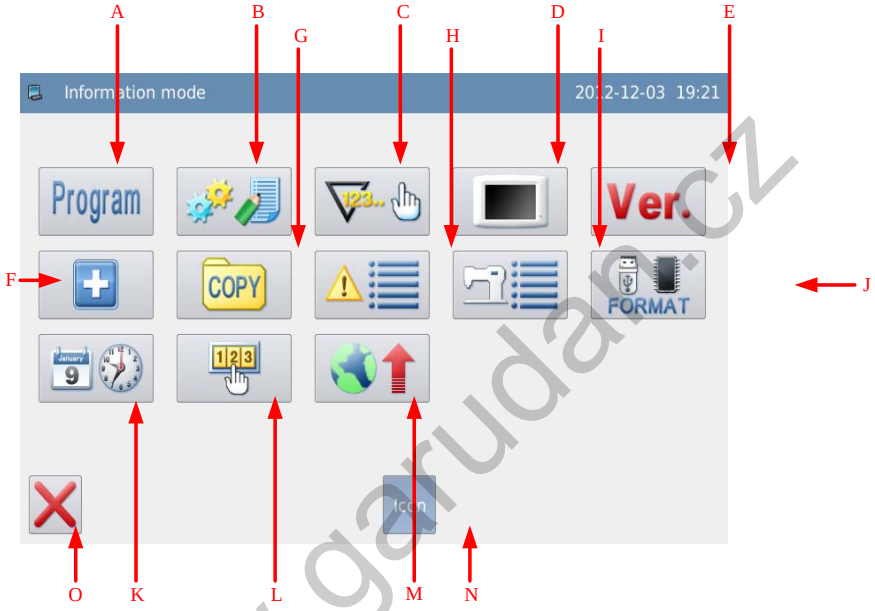
3.12.4 Comparison of Reverse Sewing Patterns

	Standard Reverse Sewing		2-points Contraction Sewing		Customized Reverse Sewing	
	Front Reverse	Back Reverse	Front Reverse	Back Reverse	Front Reverse	Back Reverse

	Sewing	Sewing	Sewing	Sewing	Sewing	Sewing
Line						
Other patterns						

3.13 Information Mode

In the main interfaces, press  to enter information mode.

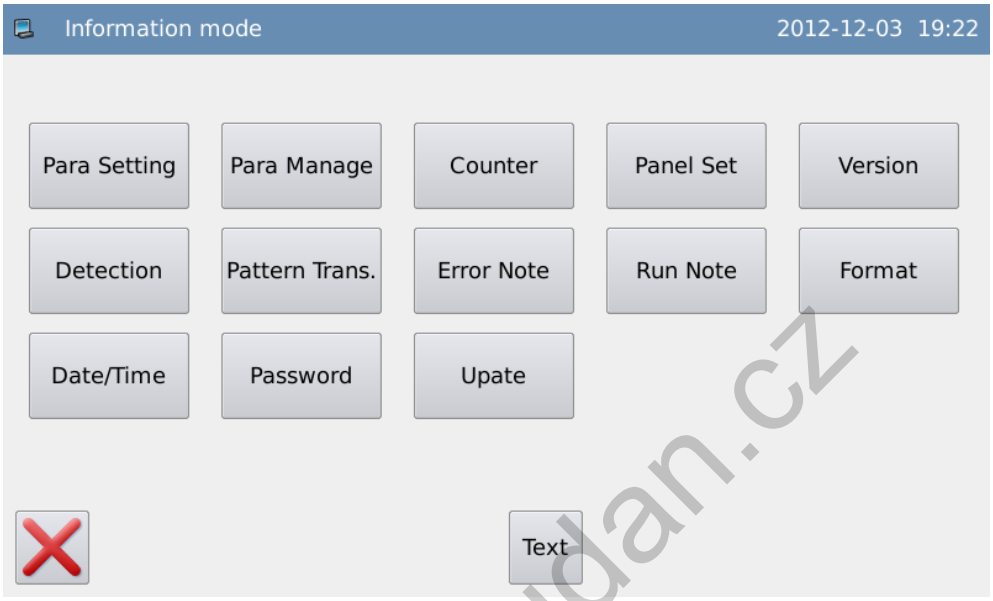


Functions：

No.	Functions	Contents
A	Parameter Setting	Enter parameter setting interface
B	Parameter Management	Provide the functions of parameter transfer, parameter restoration and parameter encryption
C	Counters	Set the thread-trimming counter and the bottom thread counter
D	Display Setting	The settings of display, such as back light, keyboard lock and screen protect and so on.
E	Version Inquiry	Inquire the version of system software
F	Test	Enter the system test interface
G	Data Transfer	Transfer the patterns between the operation panel and the U disk
H	Alarm Record	Check the alarm statistic information。
I	Working Record	Check the running information of machine
J	Format	Formatting the U disk and pattern
K	Date and Time	Set date and time
L	Password Mode	Activate the periodical password for user

M	Software Update	Enter software update mode
N	Display Shift	Shift the display between the Text and Figure
O	ESC	Return to main interface

In the information mode, the system supports two display styles: Figure and Text
This is the text style:



3.13.1 Parameter Setting

The parameter setting is used to set the parameters. For the description of each parameter, please refer to [3.13.4 Parameter List].

Setting Method：

1、Enter Parameter Setting：

In main interface, press  to enter the information mode, as shown in right. And then press  .

2、Parameter Setting Interface

In the parameter setting interface, there are many parameters for selection. User can use  to turn the pages.

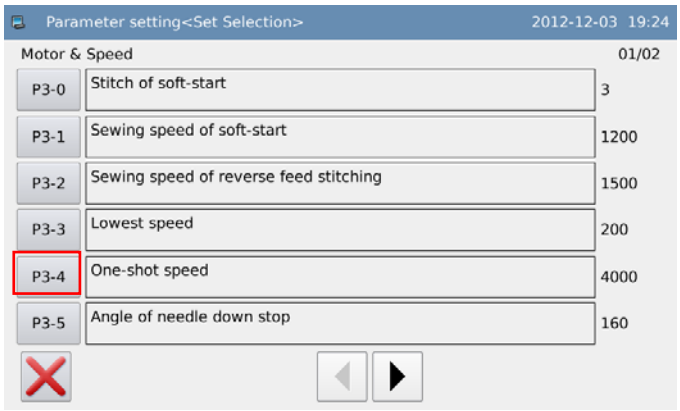
3、Examples：

① Select Parameter Type

The parameters are divided in types. We select “Main-shaft and Speed”.

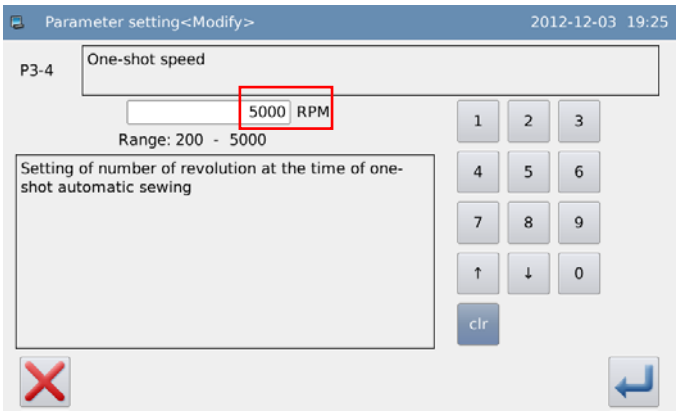
② Interface for Setting the Internal Parameters

Enter the interface for setting the internal parameters. We can see the information of all the parameters in the current group. Here, we press「P3-4」.



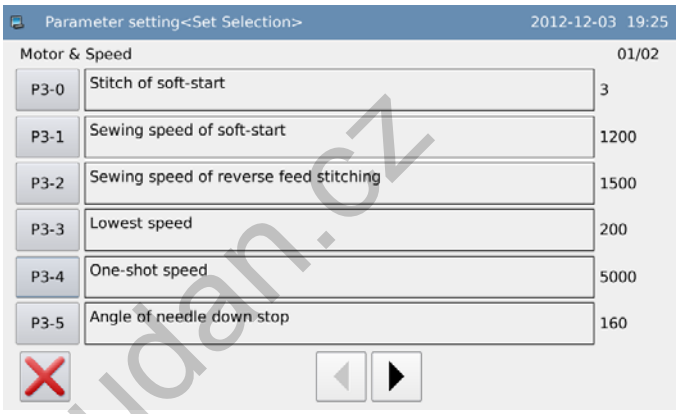
③ Change the Parameter Value

Use the number keyboard to input the new value and then press ↵ to confirm.



④ Check the Parameter Value after Change

Return to the interface for setting the internal parameters and check the value after the change. Press ✕ to quit.



⑤ Return to Interface for Selecting Parameter Type

Return to the interface for selecting the parameter type. Because the original value is changed, the Changed Parameter will be displayed

Press ✕ to back to information mode interface.

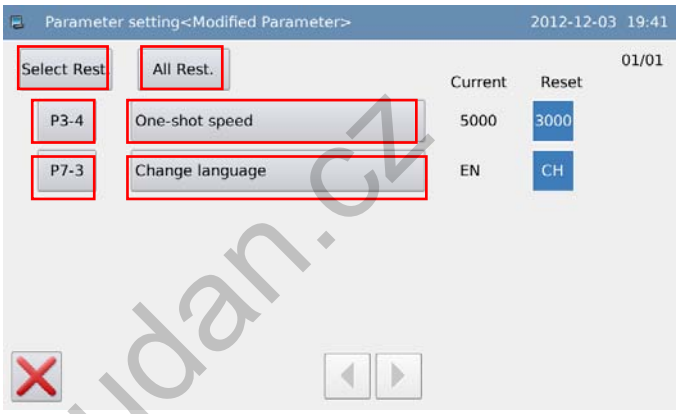
To check the content of the changed parameter, please press “Changed Parameter”

⑥ Check the Content of Changed Parameter

a) Enter Password Input Mode

Press “Changed Parameter” to enter the password input mode. Input the right parameter to enter the changed parameter setting mode (For setting password, please refer to [3.13.5 Parameter Encryption])

b) Enter the Setting Mode of Changed Parameter



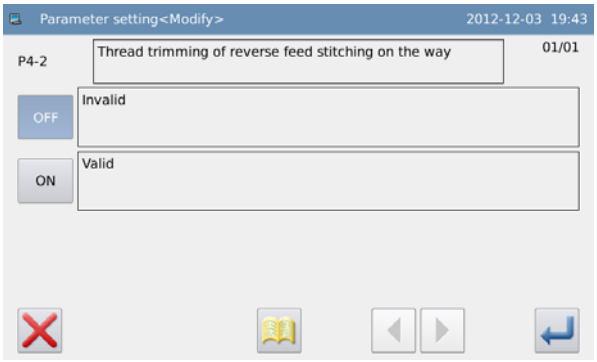
In this interface, the system will display the changed content of the parameter. If user needs change the value again, he can change it again (at here, please press「P1-9」).

If user wants to restore the changed parameter, please press that parameter (at here, user can press Swing Limits or Sewing Speed at One Time) and “Restore”, then follow the hint to operate the machine.

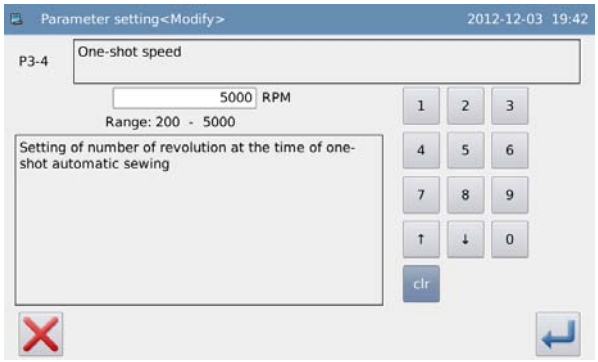
If user wants to restore all the changed parameters, please press “Restore All” and then follow the hint to operate the machine.

Instruction of Parameter Setting Classification：

The setting of the parameters contains two types, one is the input type, the other is the input type, as shown at below：



Selection Type



Input Types

[Note] Pressing  **will display the detailed**

description on that parameter.

3.13.2Parameter List

1、General Parameters：

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P1-0	Swing Type	Set the swing method in system			0:CEN:Center Symmetry 1:LR:LR Symmetry	0	Selection
P1-1	Center Symmetry Swing Limits	The swing range at center symmetry	mm	0.1	0~10.0	10.0	Input
P1-2	Swing Left Limits (LR Swing)	Set down left limits in LR Swing method	mm	0.1	-5.0~0	-4.0	Input
P1-3	Swing Right Limits (LR Swing)	Set down right limits in LR Swing method	mm	0.1	0~5.0	4.0	Input
P1-4	Base Line Position	Base line position setting			0:CEN:Center 1:L:Left 2:R:Right	0	Selection
P1-5	Contrary Feeding Limits	Set the contrary feeding limits	mm	0.1	-5.0~5.0	-5.0	Input
P1-6	Normal Feeding Limits	Set the normal feeding limits	mm	0.1	-5.0~5.0	5.0	Input

P1-7	Symmetry Function Setting	Set the symmetry function			0:SIG:Single Pattern Symmetric Inversion 1:CON: Continuous Symmetric Inversion	0	Selection
P1-8	Base Line Position of Customized Reverse Sewing	Set the base line position of customized reverse sewing			0:COM: Linkage 1:FIX:Fixed	0	Selection
P1-9	Swing Limits Display	Display the setting on Swing limits at power-on.			0:ON: Display 1:OFF: Not Display	0	Selection

【Note 1】：P1-5 and P1-6 are only available for Single Stepping Model.

【Note2】：The range of parameter P1-5 and P1-6 could be different for different manufactory.

2、Reverse Sewing

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P2-0*	Midway Reverse Sewing	Set the reverse sewing function in midway			0:OFF:No 1:ON:Yes	ON	Selection
P2-1*	Midway Reverse Sewing Stitch Number	Set the reverse sewing stitch number in midway		1	0~19	4	Input
P2-2	Midway Reverse Sewing Setting at Stop	Midway reverse sewing setting at stop			0:OFF: Ineffective at Machine Stop 1:ON: Effective at Machine Stop	ON	Selection
P2-3*	Stop Function at Starting the Reverse Sewing	Set the stop function at starting the reverse sewing.			0:OFF:No 1:ON:Yes	0	Selection
P2-4	Deceleration Function at Reverse Sewing Start	Decelerating function at reverse sewing start			0:OFF:Not Decelerate 1:ON: Decelerate	0	Selection
P2-5*	Reverse Sewing Holding Time	Set the holding time of the reverse sewing solenoid	s	1	2~250	60	Input

P2-6*	Reverse Sewing Total Pressure Output Time	Set the total pressure control time of the reverse solenoid	ms	1	50~250	100	Input
P2-7*	Reverse Sewing Output Duty Cycle	Set the current when the reverse solenoid is holding		1	0~100	40	Input

***The parameters with mark "*" should be changed under the guide of the professional technicians.**

3、Main-shaft and Speed:

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P3-0	Soft Start Stitch Number	Set the stitch number of soft start at sewing	Stitch	1	0~9	3	Input
P3-1*	Soft Start Speed	Set the speed at soft start	rpm	50	150~5000	1200	Input
P3-2*	Reverse Sewing Speed	Set the Max speed at reverse sewing	rpm	50	150~3000	1500	Input
P3-3	Min Speed	The Min Speed	rpm	10	20~400	200	Input
P3-4	Sewing Speed at One Time	Set the speed at an automatic sewing	rpm	50	200~5000	3000	Input
P3-5*	Down Needle Stop Angle	Down Needle Stop Angle	Degree	10	120~200	160	Input
P3-6	Needle Conversion at Trimming	Set the function for converting the needle after trimming			0:OFF: No 1:ON:Yes	0	Selection
P3-7	Conversion Needle Angle	Set the angle for converting the needle	Degree	1	0~45	20	Input
P3-8*	Main shaft angle adjustment	Adjust the main shaft angle. It is only effective for the integrated motor.	Degree	1	-30~6	0	Input
P3-9*	Main motor Selection	Select the type of main shaft motor			0：Normal Motor 1：Integrated motor	1	Selection

***The parameters with mark "*" should be changed under the guide of the professional technicians.**

4、Thread-trimming：

Code	Brief	Description	Unit	Step	Range	Default	Type

				Lengh		Value	
P4-0	Trimming Function	Set the trimming function			0:OFF:Ineffective 1:ON:Effective	1	Selection
P4-1*	Trimming Speed	Set the speed at trimming	rpm	10	20~300	300	Input
P4-2	Midway Reverse Sewing Trim	Set whether to trim thread automatically at reverse sewing			0:OFF:Ineffective 1:ON:Effective	0	Selection
P4-3*	Thread-stirring Time	The holding time for stirring thread	ms	1	0~250	70	Input

***The parameters with mark "*" should be changed under the guide of the professional technicians.**

5、Presser and Pedal：

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P5-0*	Presser Control Method	Select the device control the action of presser			0:MAG:Solenoid 1:AIR:Valve 2:MEC:Mechanism (No presser auto up function)	0	Selection
P5-1	Presser Up at Pedal in Middle	Lift presser when pedal at middle position			0:OFF:Ineffective 1:ON:Effective	0	Input
P5-2	Auto Lift Presser	Activate the presser auto up function			0:OFF:Ineffective 1:ON:Effective	1	Input
P5-3*	Pedal Stroke at Start	Pedal stroke at sewing start		1	10~50	30	Input
P5-4*	Pedal Stroke at Accelerating	Pedal stroke at starting acceleration		1	10~100	60	Input
P5-5*	Pedal Stroke at Presser Down	Pedal stroke at presser down		1	-60~-10	-21	Input
P5-6*	Pedal Stroke at Presser Up	Pedal stroke at presser up		1	8~50	10	Input
P5-7*	Pedal Stroke at Trimming Start 2	Pedal Stroke at Trimming Start 2		1	-60~10	-51	Input
P5-8*	Pedal Stroke at High-speed Running	Pedal stroke at high-speed running		1	10~150	150	Input
P5-9*	Correction of Pedal Middle	Correction of pedal's middle position		1	-15~15	0	Input

	Position						
P5-10*	Presser Auto Up Holding Time	The holding time of presser auto-up	s	1	2~250	10	Input
P5-11*	Pedal Stroke at Trimming Start 1	Pedal Stroke at Trimming Start 1		1	-60~10	-51	Input
P5-12*	Presser Action Time	Time for lowering the presser after up		10	0~250	140	Input
P5-13	Presser up after Trim	Presser up after trimming			0:OFF:No 1:ON:Yes	1	Selection
P5-14*	Presser up Full Output Time	The time for full pressure output at presser up	ms	5	50~250	150	Input
P5-15*	Presser up Output Duty Cycle	Output duty cycle at presser up		1	0~100	30	Input
P5-16	Soft Down at Presser up	Soft down after presser is up			0:FAS:Fast 1:SLW:Slow	0	Selection
P5-17*	Select Pedal Curve	Select pedal curve		1	0~2	0	Input
P5-18	Presser Force Level	Presser force level					
P5-19	Pedal Selection	Pedal selection					

***The parameters with mark "*" should be changed under the guide of the professional technicians.**

6、Operation Head：

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P7-0	Buzzer Voice	Set the voice of buzzer			0:OFF:No Voice 1:PAR:Panel Voice 2:ALL:Panel + Alarm Voice	2	Selection
P7-1	Backlight Auto Off	Backlight auto off switch			0:OF:No Auto Off 1:ON: Auto Off	0	Selection
P7-2	Backlight Auto Off Time	Backlight auto off waiting time	min	1	1~9	3	Input
P7-3	Language	Select language			0:CH:中文 1:EN:English	0	Selection

P7-4	Customized Pattern Display Setting	Set display of customized pattern			0:STH:Stitch 1:SHP:Shape Outline	0	Selection

7、Counter：

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P8-0	Trim Counter Mode	Trim counter mode			0:OFF:Forbidden 1:ON:Permitted	1	Selection
P8-1	Bottom Thread Counter Mode	Bottom thread counter mode			0:OFF:Forbidden 1:ON:Permitted	1	Selection
P8-2	Clear Counter at Repower	Clear counter value at repowering machine			0:CLR:Clear 1:RSV:Reserve	1	Selection
P8-3	Cannot Change Trim Counter	Cannot change trim counter			0:OFF:Permit Changing 1:ON:Forbid Changing	0	Selection
P8-4	Cannot Change Bottom Thread Counter	Cannot change bottom thread counter			0:OFF:Permit Changing 1:ON:Forbid Changing	0	Selection
P8-5	Machine Action at Trim Counter set Value	Action of sewing machine when the set value of trim counter is reached			0:OFF:Stop Sewing 1:ON:Keep Sewing	0	Selection
P8-6	Machine Action at Bottom Thread Counter Set Value	Action of sewing machine when the set value of bottom thread counter is reached			0:OFF:Stop Sewing 1:ON:Keep Sewing	0	Selection
P8-7	Counter Display	Counter Display Setting			0:OFF: Not Display 1:UP:Trim Counter Display 2:DN:Bottom Thread Counter Display	1	Selection
P8-8	Bottom Thread Counter Unit	Unit for Bottom Thread Counter			0:10:10 Stitch 1:15:15 Stitch 2:20:20 Stitch	1	Selection

8、Others：

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P9-0	Stop Position	The pointed needle rod position for			0:DN:Down Position	0	Selection

		stopping the sewing machine			1:UP:Up Position		
P9-1	Panel Compensation Key Setting	Set compensation key of panel			0:HAF:Half Stitch 1:ONE:1 Stitch	0	Selection
P9-2	Forbid Compensation after Turn Wheel	Forbid the compensation action after turning the wheel			0:OFF: Compensation Effective 1:ON: Compensation Ineffective	1	Selection
P9-3	Half Compensation Additional Function	Additional function of Half Stitch Compensation			0:GEN:General Action (Half Stitch Compensation) 1:ONE: One Stitch Compensation (Up Stop→Up Stop)	0	Selection
P9-4	Thread Loose Number at Start	Thread-loosing stitch number at sewing start		1	0~9	0	Input
P9-5*	Pick Thread	Activate function for picking thread			0:OFF:Ineffective 1:ON:Effective	1	Selection
P9-6	Lightness	Adjust lightness of lamp		5	0~100	50	Input

***The parameters with mark "*" should be changed under the guide of the professional technicians. 。**

9、Repair & Maintenance：

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P10-0	Needle Replacement Rest Value	Rest stitches for needle replacement	1000 Stitch	1	0~9999	0	Input
P10-1	Needle Replacement Set Value	Set stitches for needle replacement	1000 Stitch	1	0~9999	0	Input
P10-2	Clearing Time Rest Value	Rest hours for clearing	Hour	1	0~9999	0	Input
P10-3	Clearing Time Set Value	Set hours for clearing	Hour	1	0~9999	0	Input
P10-4	Oil Replacement Rest Value	Rest hours for oil replacement	Hour	1	0~9999	0	Input
P10-5	Oil Replacement Set Value	Set hours for oil replacement	Hour	1	0~9999	0	Input

[Note 1]: Parameters, like "P10-0", "P10-2" and "P10-4" can not be set. User can only check them in the Internal Parameter Setting Interface

[Note 2]: After the modification of parameters for repair and maintenance, the corresponding parameters of "Rest Value" will be changed to the set value

[Note 3]: After the parameter value of repair and maintenance are set (value over 0), the corresponding counting function for repair and maintenance will be activated as well.

10、Special：

（Parameter List for Double Stepping Model）

Code	Brief	Description	Unit	Step Length	Range	Default Value	Type
P10-0*	Max Speed	Max Speed of Head	rpm	50	50~5000	4000	Input
P10-1*	Frame-moving Method	Set frame-moving method		1	0~5	1	Input
P10-2*	Swing Motor Current	Set the current of swing motor		1	0~15	5	Input
P10-3*	Swing Motor Half Current Coefficient	Set the half current at swing motor		1	0~15	4	Input
P10-4*	Feeding Motor Current	Set the current of feeding motor		1	0~15	5	Input
P10-5*	Feeding Motor Half Current Coefficient	Set the half current at feeding motor		1	0~15	4	Input
P11-6	Display of Pause Button	Display the pause button or not			NO：Not display YES：Display	YES	Selection
P11-7*	Pick-up Delay Time	Delay time at picking up thread	ms	1	0~250	170	Input
P11-8*	Swing Action Angle Adjustment	Adjustment of swing action angle		1	-50~50	0	Input
P11-9*	Feeding Action Angle Adjustment	Adjustment of frame-moving angle at feeding		1	-50~50	0	Input
P11-10*	Thread-trimming Angle Adjustment	Adjustment of thread-trimming angle		1	-30~30	0	
P11-11	Main Controller Burning Address				0xA0000 0xB0000 0xC0000 0xD0000	0xA0000	
P11-12	The origin of waving-motor adjustment	The origin of waving-motor adjustment			-4.0-4.0	0	Input
P11-13	The origin of	The origin of			-10.0-10.0	1.0	Input

	feeding-motor adjustment	feeding-motor adjustment					

***The parameters with mark "*" should be changed under the guide of the professional technicians.**

【Note1】: The range of parameter P11-12 and P11-13 could be different for different manufactory.

（Parameter List for Single Stepping Model）

Code	Name	Description	Unit	Step	Range	Default	Type
P11-0*	Max Speed	Set Max speed for each head	rpm	50	50~5000	3000	Input
P11-1*	Frame-moving Method	Set frame-moving method		1	0~5	1	Input
P11-2*	Swing Motor Current	Set swing motor current		1	0~15	5	Input
P11-3*	Swing Motor Semi-current Value	Set swing motor semi-current		1	0~15	4	Input
P11-4	Display of Pause Button	Display the pause button or not			NO：Not display YES：Display	YES	Selection
P11-5*	Pick-up Delay Time	Delay time at picking up thread	ms	1	0~250	170	Input
P11-6*	Feeding Action Angle Adjustment	Adjustment of frame-moving angle at feeding		1	-50~50	0	Input
P11-7*	Thread-trimming Angle Adjustment	Adjustment of thread-trimming angle		1	-30~30	0	
P11-8	Main Controller Burning Address				0xA0000 0xB0000 0xC0000 0xD0000	0xA0000	

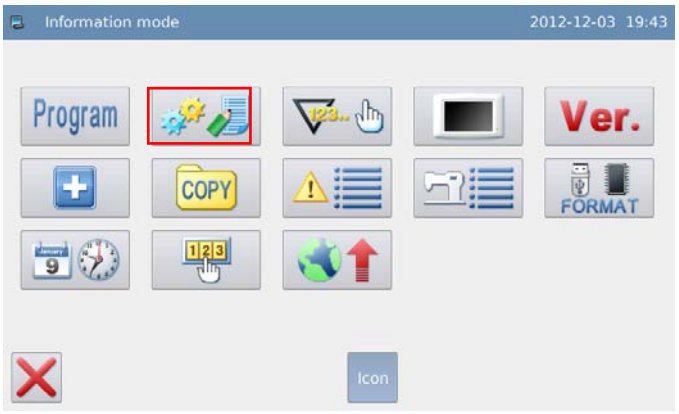
***The parameters with "*" shall be modified under the guide of the professional technician**

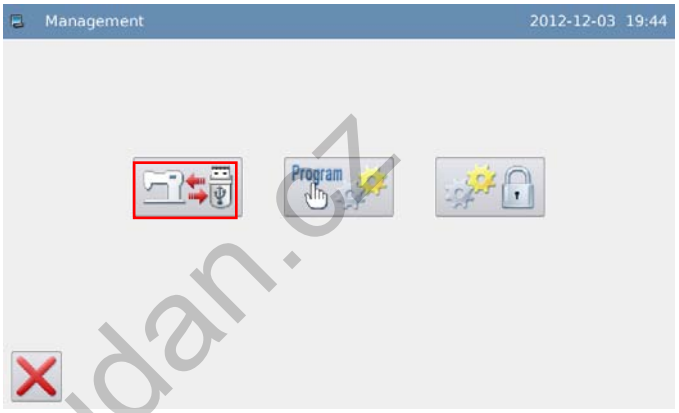
3.13.3 Parameter Recovery and Back-up

User can save the changed parameter into U disk for the recovery operation in future

1、Enter Parameter Transfer Interface：

Press  in Information Mode interface to enter the parameter management interface, where user needs press  .





2、Back up Parameters

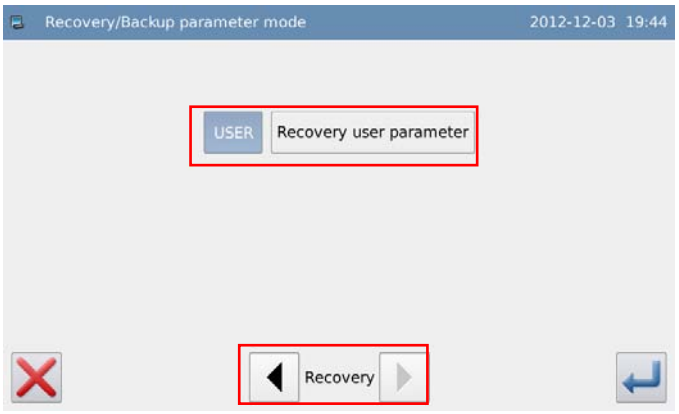
In the interface of parameter recovery and back-up, the default setting is to back-up the parameters.

After inserting the U disk, user needs press  . After the operation, the system will create catalogue called as “bakParam” in U disk automatically. The file “backup. param” within that catalogue is the parameter back-up file

[Note]: the file with the same name will be replaced with new data. The original data will be lost.

In parameter recovery operation, user can press  to shift to recovery mode.

3、Parameter Recovery

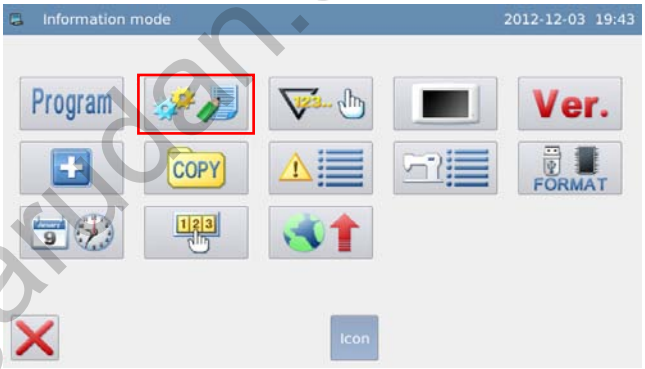


At recovery mode, press  to recover the parameters. After the operation, the system will return to the previous level.

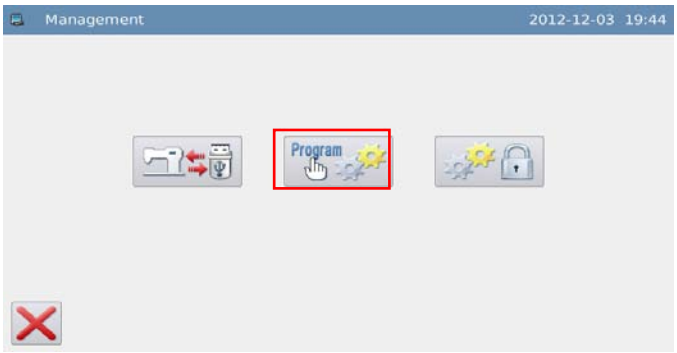
3.13.4 Default Parameter Recovery

User can restore the parameters to their default values. Additionally, user can also save the set parameters for the usage in future.

1、Enter Default Parameter Recover Interface：



Press  in Information Mode interface to enter the parameter management interface

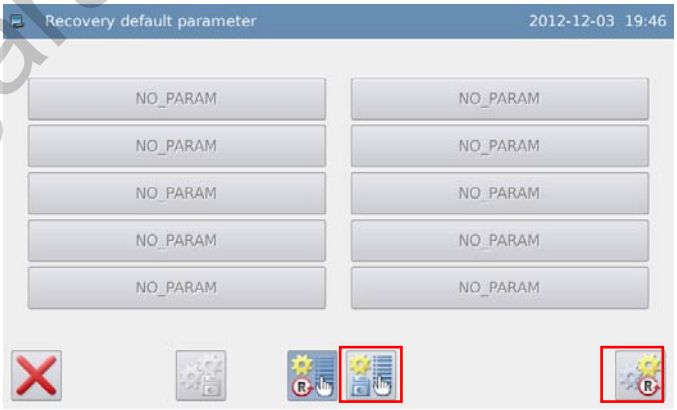


In parameter management interface, press  and then input the password (the original password is the manufacturer ID). After user inputs the correct password, user can have access to Default Parameter Mode

Before entering the parameter encryption mode, user needs input passwords (The original password is manufacturer's ID).

If the password is wrong, pressing  at each time will erease the first figure at left of icon. Pressing  will clear all the password inputted.

Input password and press  .



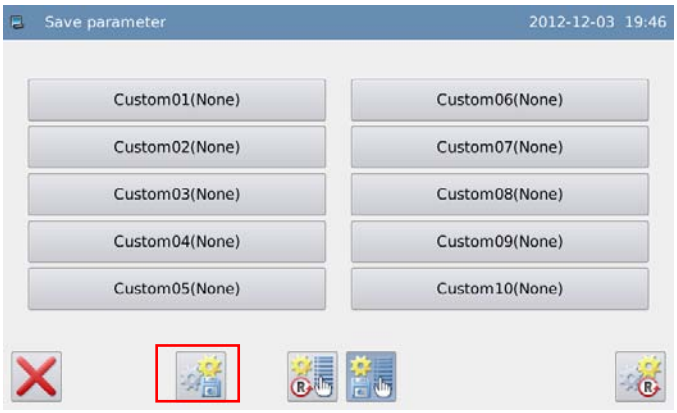
2、Use the Default Parameter

Click the corresponding default parameter and then press  to reload that value

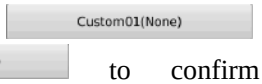
After the reloading, the system will return to the upper interface automatically

[Note] Some important parameters, (like the "Special parameters"), can not be restored in this operation.

3、Save Customized Parameter

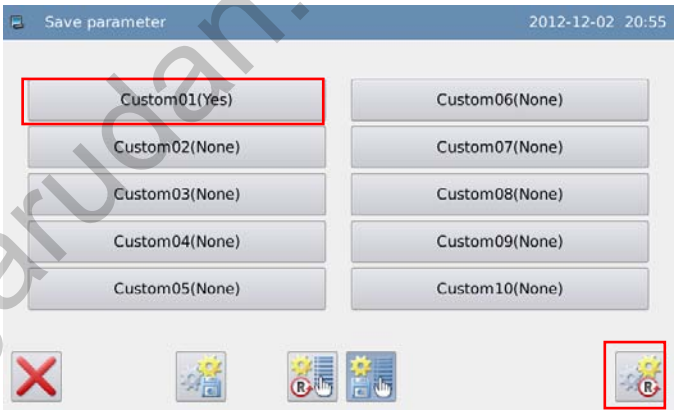


Press  to have access to the interface for saving parameters, where user can save the parameter value after the setting.

Click  to confirm the position for saving that parameter. Then click  to save it.

After the saving, the system will return to the upper interface automatically.

[Note] The parameters for repair and maintenance can not be saved



4、Load Parameters Saved by User

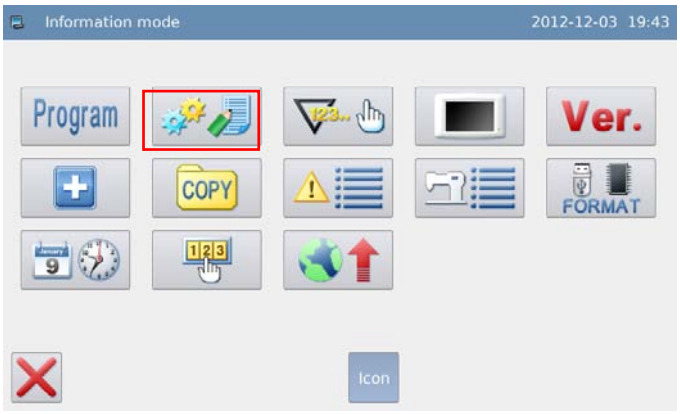
Have access to that interface. Check the content on button "Customized Parameter (Y/N)". If it is Y in the bracket, it means that position has customized parameter.

Click that key and press  to reload the corresponding parameter. After the operation, the system will return to the upper interface.

3.13.5 Parameter Encryption

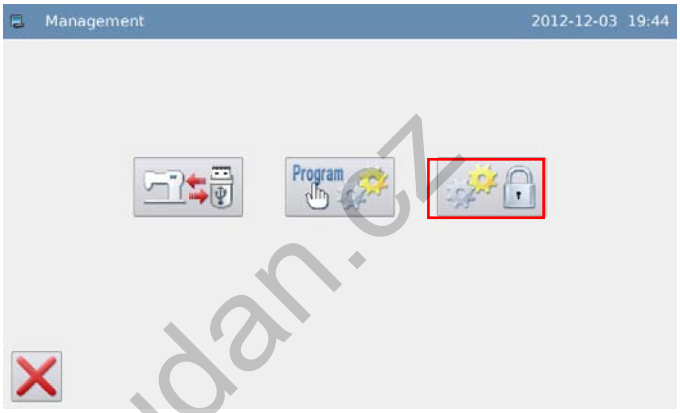
User can set the password in each level under the parameter setting interface, so as to avoid the artificial mis-operation.

1. Enter Parameter Encryption Interface：



In information mode interface, press  to enter the parameter management interface

In parameter management interface, press  , then system will ask for the password (default password is manufacturer ID).



2、Input Password：

If user inputs the wrong figure, pressing  will delete the first figure at left of the icon, while pressing  will delete the entire figures inputted.

Input the password and press  。

2、Select Parameter for Encryption：

As shown in picture, user can select one or many parameters for encryption. (Here, we select “Presser and Pedal”.)

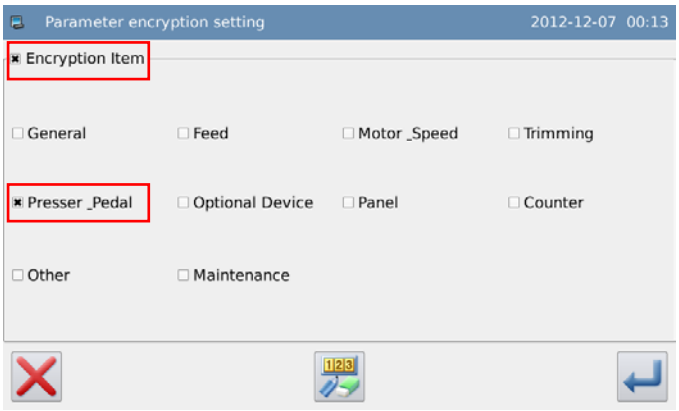
Presser _Pedal ：Selected

Presser _Pedal ：Unselected

After selecting the parameter for encryption, user can press .

From then on, user has to input password when setting the parameter that was encrypted.

For changing password, please press .



[Note] User has to input password at having access to the Special Parameter in each time.

3、Change Password

In the interface of setting new password, press Cur-Password: , New-Password: & Confirm: in order and input the current password, new password, confirmation respectively. At last press .

[Note]: The original password is the manufacturer ID. After setting the password, the “Current Password” is the password set at last time

3.13.6 Counter

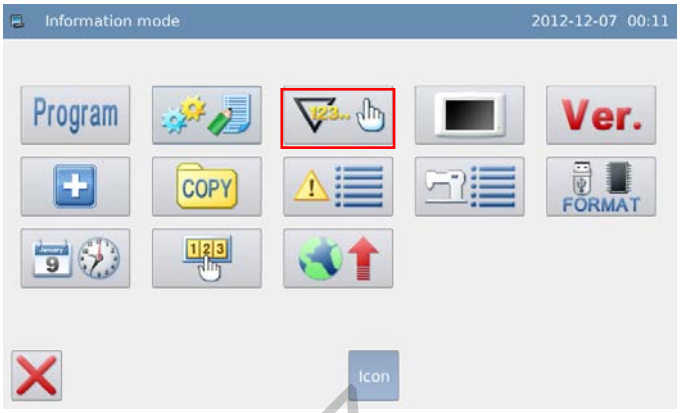
- The counter contains the trimming counter and bottom thread counter. User can shift the type of counter via “Counter” → “Counter Display”.
- At trimming in each time, the value of trimming counter will increase. When it reaches the

set value, the system will give warning.

- Bottom thread counter is to reduce the number set at “Counter” → “Bottom Thread Counter Unit” in each sewing. When the value reaches 0, the system will give warning

1、Enter interface for setting counter

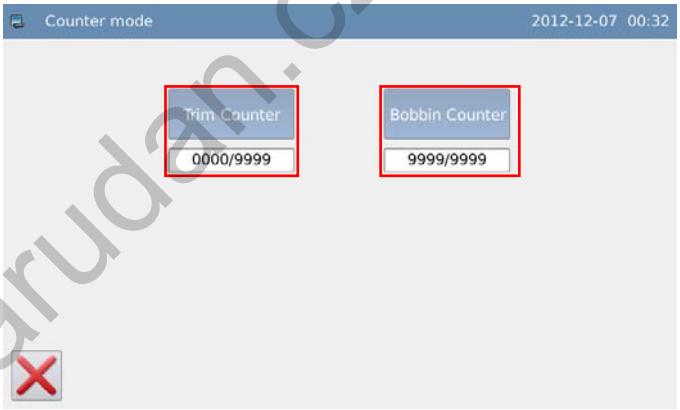
In information mode interface, press  to enter counter mode.



2、Select the Counter for Setting

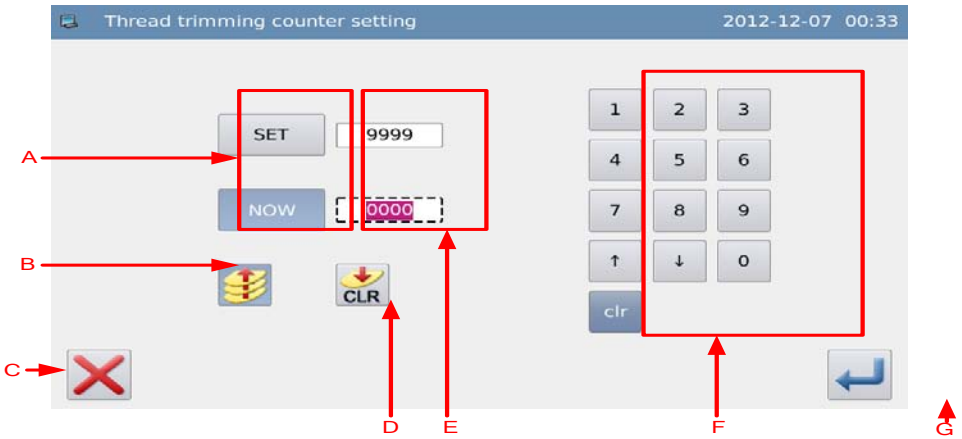
In counter mode interface, user can check the current value and set value of each counter.

If the counter is selected, the counter will be opened, which is determined by parameter “Counter” → “Trim Counter Mode” & “Bottom Thread Counter”.



3、Set Counter

Example: How to set trim counter. The operation for setting the trim counter is similar to that of bottom thread counter. The only difference is at Bottom Thread Counter Activate( )



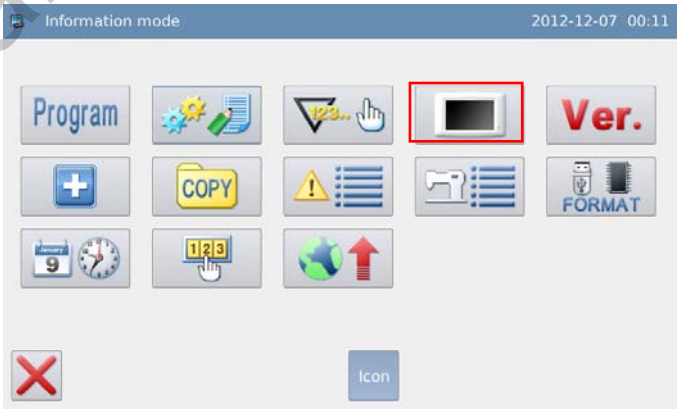
Functions：

No.	Content
A	Shift the input between the set value and the current value (The button in shadow is the selected one).
B	Up Counter Switch (This button will be effective when it is in blue background).
C	Quit counter setting mode and return to previous interface.
D	Clear current value。
E	Display the set value and current value (User can input the value in the spot line frame)
F	Number keyboard, used to input set value and current value  Clear the value inputted currently
G	Confirm setting

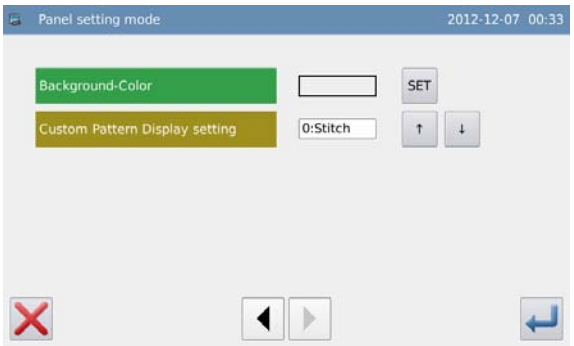
[Note] if the parameter "Counter" → "Cannot Change Trim Counter" and "Cannot Change Bottom Thread Counter" is set at Forbid Changing, user will not enable to set the current value of counter

3.13.7 Display Setting

In information mode interface, press  to enter the display settting mode, where user can set Backlight Auto Turn-off, Keyboard Lock and so on.



The setting content of display is shown as below:



1、Backlight Auto Turn-off

By the set time, the backlight of screen will be turned off automatically.

Range：1～9 min

Default Value: Invalid

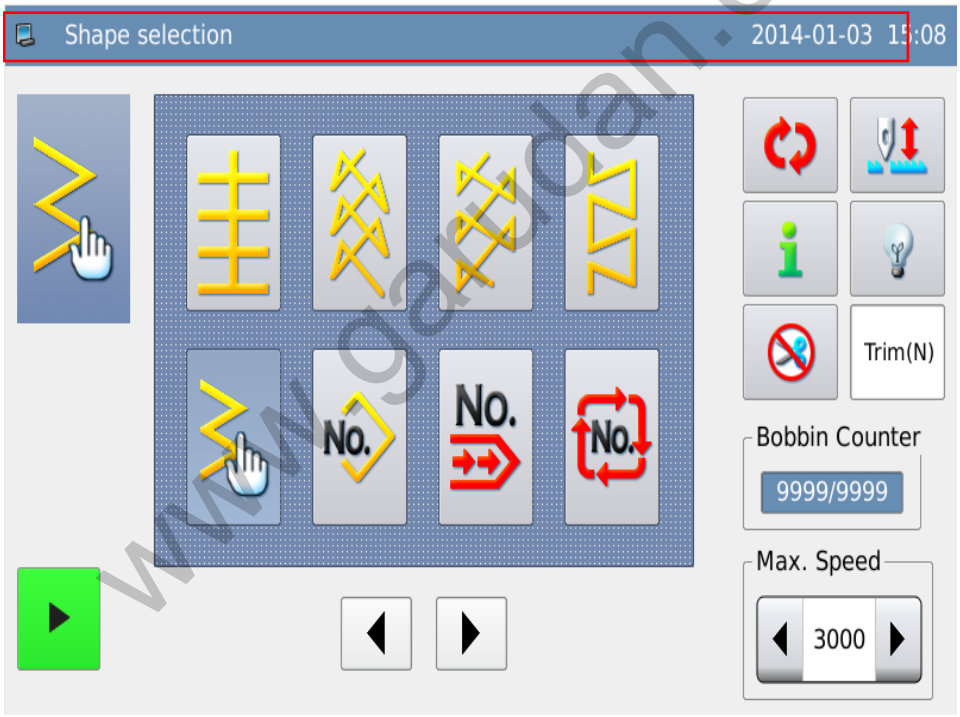
Releasing Method: If the backlight is off, user can touch any position on the panel to turn it on.

2、Keyboard Lock

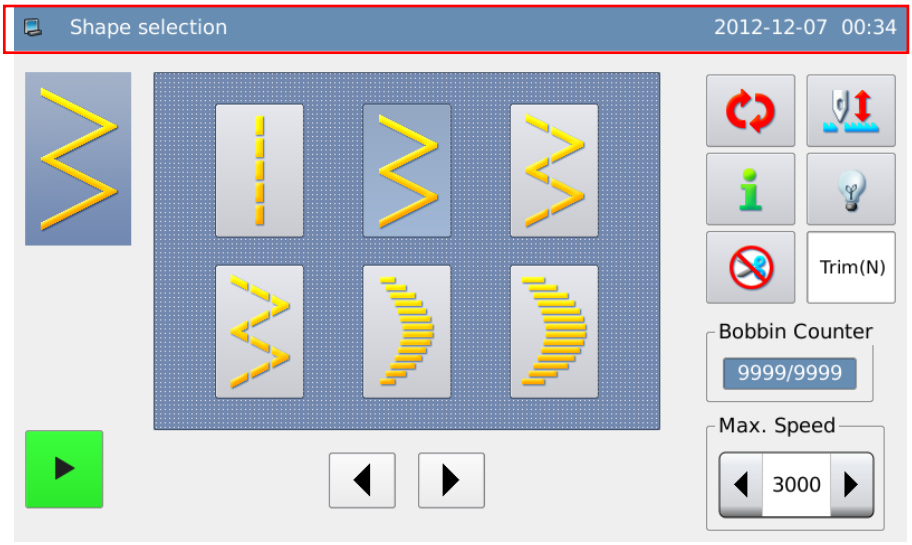
When it is set as “Valid”, all the buttons will turn to grey in display and become useless. Pressing  will directly return to main interface

Default Value: Invalid

Releasing Method: Hold the title bar at main interface for over 5 seconds, until user hear “Bee--m”. After that the lock is released. (After the releasing, this function will be set as Invalid)



(**dual-stepping model**)



(**Single Stepping Model**)

3、Turn off Buzzer

When it is set as “Valid”, system will keep silence when user presses button. Default Value: “Invalid”

4、Lightness Control

Adjust the lightness of the LCD screen. The larger value is, the lighter will be

Range：1～100

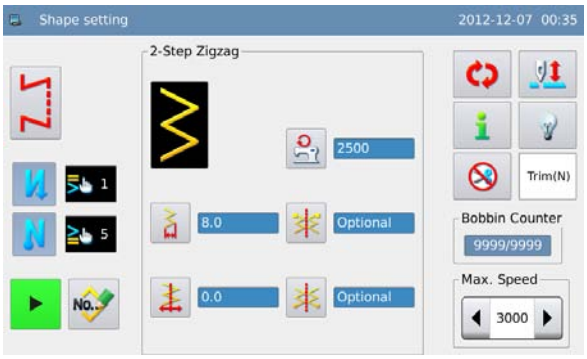
Default Value：50

5、Panel Display Style

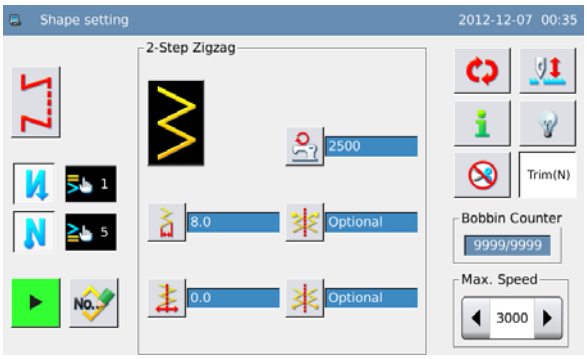
Adjust the panel display style

Range：0~1（0：plastique，1：windows）

Default Value：0



Plastique Style

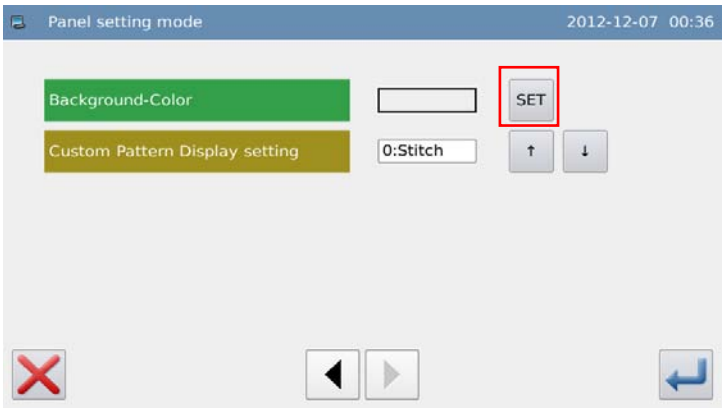


Windows Style

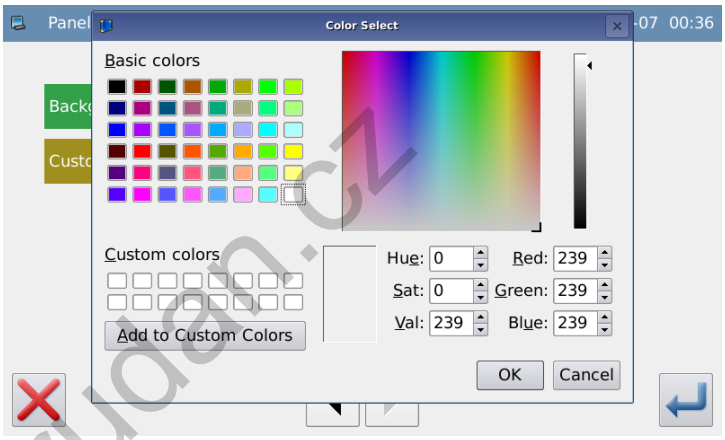
6、Main Interface Background Color

Set the background color of the main interface

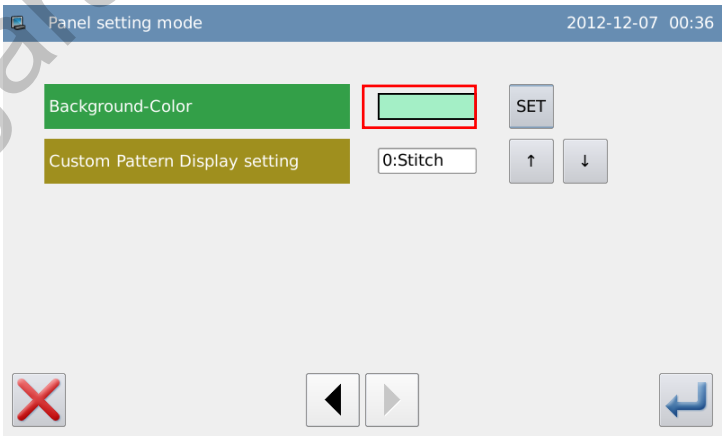
Press “Set” to open the color board



Select the color and press “OK”.



At this moment, the color display area will display the selected color. Press to save and quit.

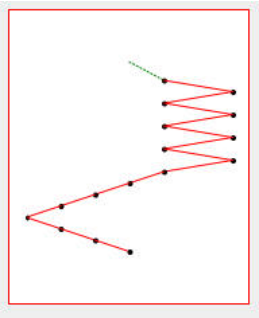


7、Customized Pattern Display Setting

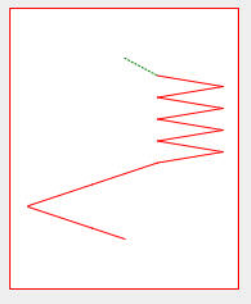
Set the display of customized pattern

Range：0~1（0: Stitch Form; 1: Shape Outline）

Default Value：0



Stitch Form



Shape Outline

3.13.8 Software Version

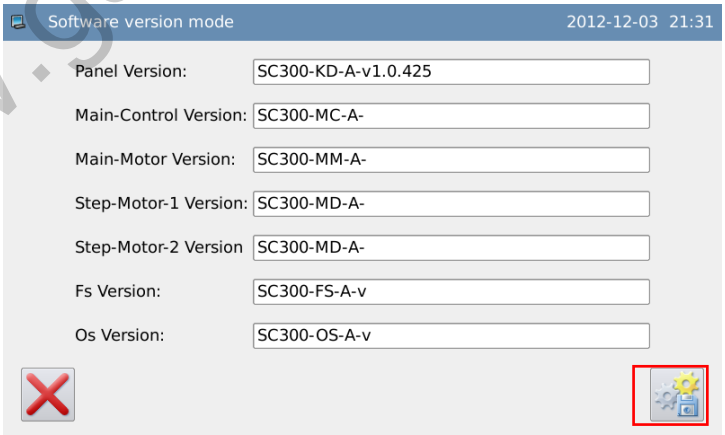
1、Enter the interface for checking software version:

Press 

in information mode interface to enter the software version mode.

2、Version Inquiry and Output

Check the software version in current interface. Press  to output the software version to the base catalogue of the U disk with name “version.png”.

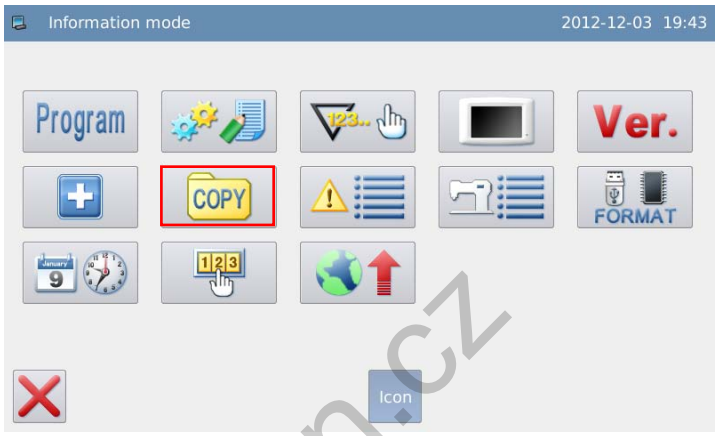


3.13.9 Pattern Transfer

- Two ways are provided: “Memory to U Disk” and “U Disk to Memory”.
- Enable to import/export customized pattern, customized front reverse sewing pattern and customized back reverse sewing pattern
- The supported versions are VDT, DST, DSB, SBK and JZQ
- U Disk Copy Path：

- Customized Pattern：rand_pat
- Customized Front Reverse Sewing：h_pat
- Customized Back Reverse Sewing：t_pat

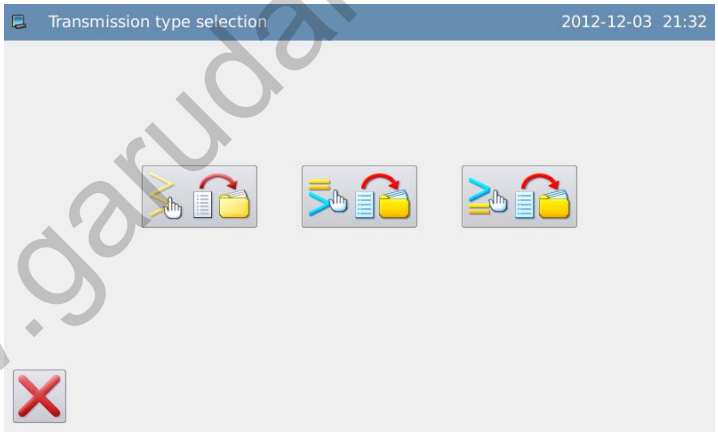
1、Enter Pattern Transfer Mode:



In Information Mode interface, press 

to enter pattern transfer mode.

2、Transfer Type

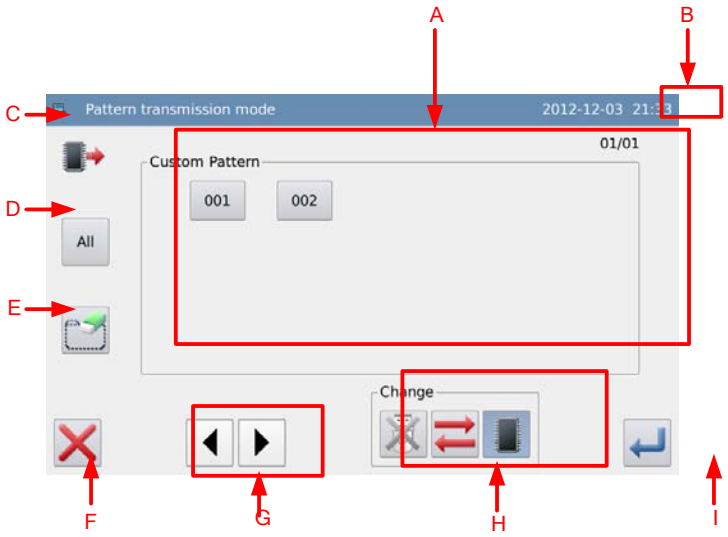



：Customized Pattern


：Customized Front Reverse Sewing


：Customized Back Reverse Sewing

Here, we use the “Customized Pattern Transfer” as the example. Press  to enter the interface for pattern transfer.



Functions：

A	Pattern List	Display the pattern list of panel or U disk
B	Page	The current page/total pages are displayed
C	Copy Mode Display	: Memory Pattern List : U Disk Pattern List
D	Select All	Select all the patterns。
E	Delete	Delete the selected pattern
F	Quit	Quit and Return to Upper Interface
G	Page Key	Turn the page。
H	Copy Mode Selection	Load pattern from memory or U disk : Activate the Memory Load Mode: At this moment, user cannot load pattern from U disk. : Deactivate the Memory Load Mode: At this moment, user can load pattern from U disk. : Activate the U Disk Load Mode: At this moment, user can not load pattern from memory. :Deactivate the U Disk Load Mode: At this moment, user can load pattern from memory. : Shift between U Disk and Memory
I	Enter	Confirm the operation.

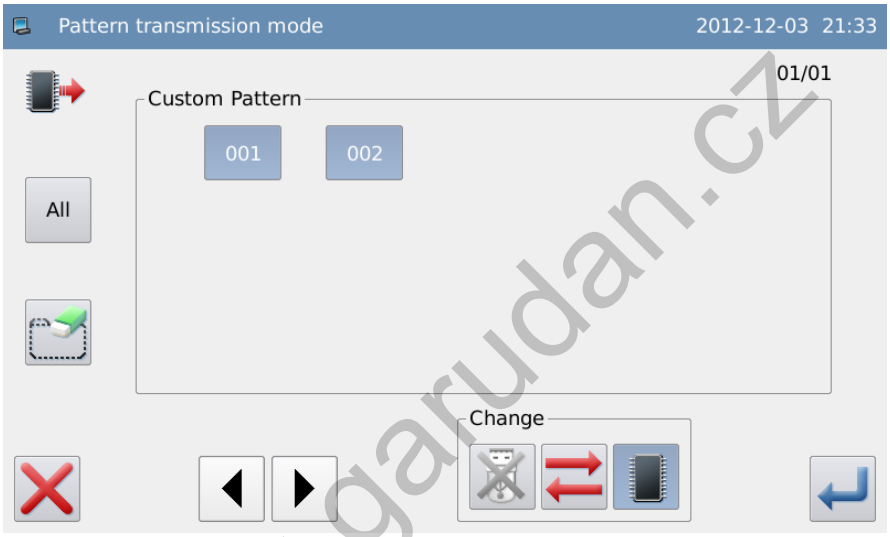
Operation:

1、Copy Mode Selection

The default setting is to copy pattern from memory to U disk, user can press  to change the copy mode.

2、File Selection

Select the pattern for copy in the pattern list (here, we select No.001, 002, 003, 004 and 005). If the patterns are so many, please use  to turn the page.



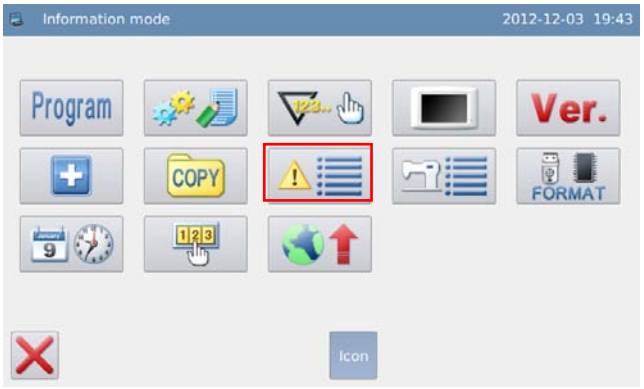
For copying all the patterns, please press  . For deletion, please press  .

3、Confirm the Copy

After selection, please press  . Then the system will display “Copy the Selected Pattern”, user can press  to perform the operation. If the pattern is copied from memory to U disk, the system will automatically create a directory at the base catalogue of U disk and save the pattern at there.

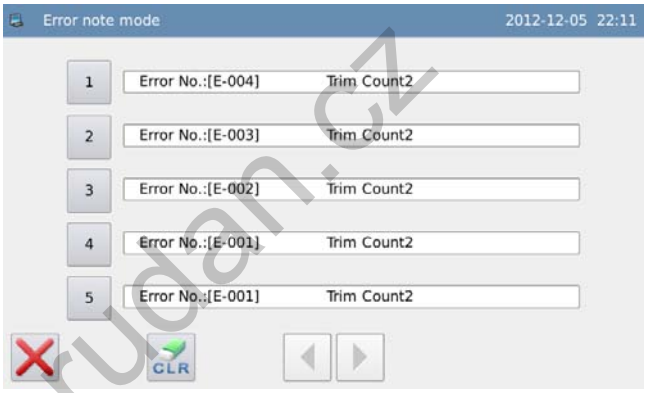
[Note]: At the process of copy, if the memory contains the pattern with the number same to that of the pattern in the U disk, the new pattern will replace the old one.

3.13.10 Alarm Records



1、Enter Alarm Record Mode：

In the information mode interface, press  , then system will ask for the manufacturer ID. After user gives the right ID, the system will have access to the alarm record mode.



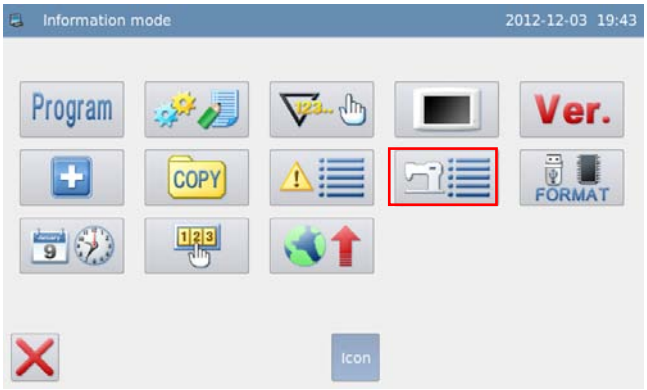
2、Inquire Alarm Record

In this mode, the recent alarms will be recorded. The smaller number means the later the alarm is.

Additionally, it also records the thread-trimming numbers at alarm.

Press  to clear all the alarm records.

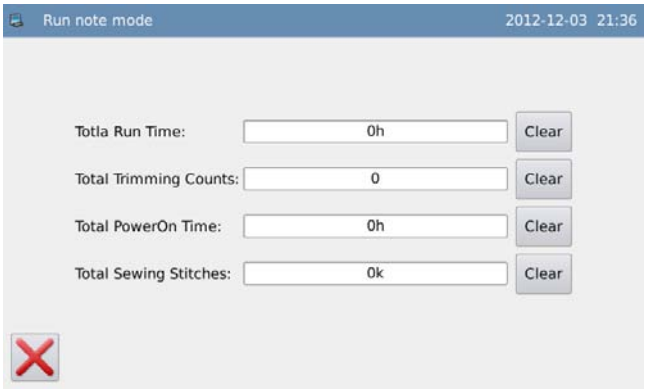
3.13.11 Running Records



1、Enter Running Record Mode：

In the information mode interface, press  then system will ask for the manufacturer ID. After user gives the right ID, the system will have access to the running record mode

2、Check Running Records



① Accumulated Running Time: Record total sewing time of machine.

② Accumulated trimming Pieces: Record the total number of the trimming.

③ Accumulated Power-on Time: Record the total time of power-on

④ Accumulated Stitch Number: Record the total stitch number of the machine.

Additionally, click “Clear” to cleat the counting value

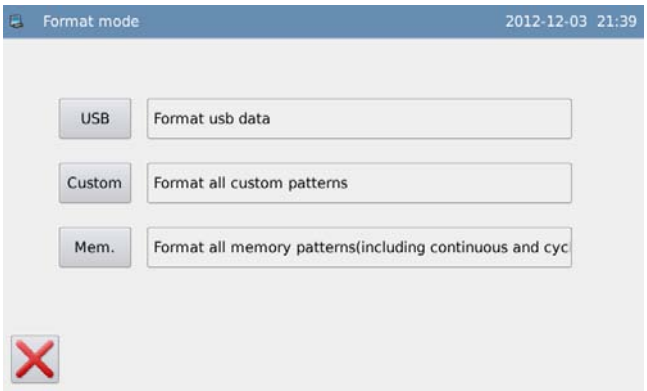
3.13.12 Formatting

1、Enter Formatting Mode：

In the information mode interface, press 

to enter formatting mode.

2、Formatting Operation



1）**USB Formatting**：

Press “USB” to delete all the patterns within the U disk. So user needs back up the data if necessary.

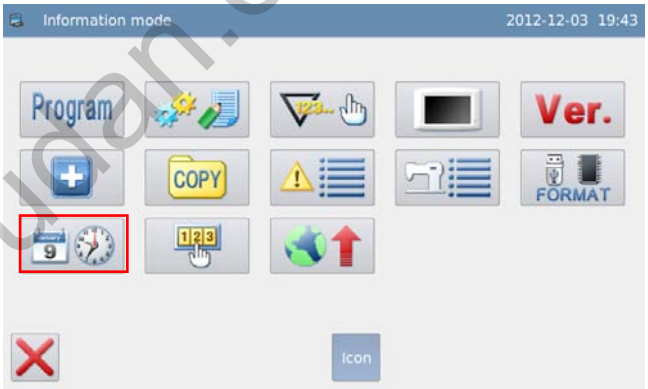
2）Customized Pattern Formatting

Press “Customized” to delete all the customized patterns within the USB.

3）**Memory Formatting**

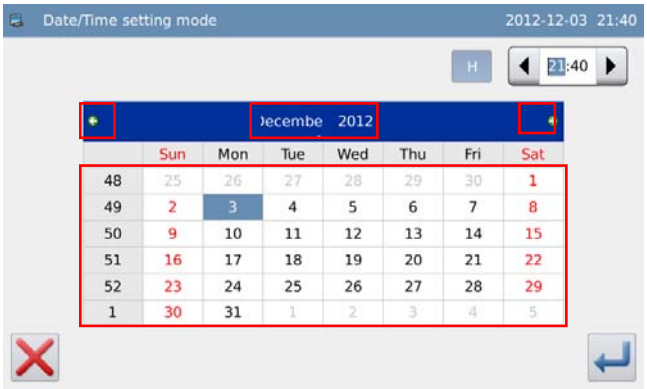
Press “Memory” to delete all the patterns (Customized pattern, cyclic sewing patterns and continuous sewing patterns) within the memory.

3.13.13 Date and Time Setting



1、Enter Date and Time Setting Mode：

In the information mode interface, press  to have access to the date and time setting mode.



2、Method for Setting Date：

Click “Year” (At here, it is 2012.)to display two arrows to adjust it

Click “Month” (At here, it is June) to display the list of months. User can select the proper month.

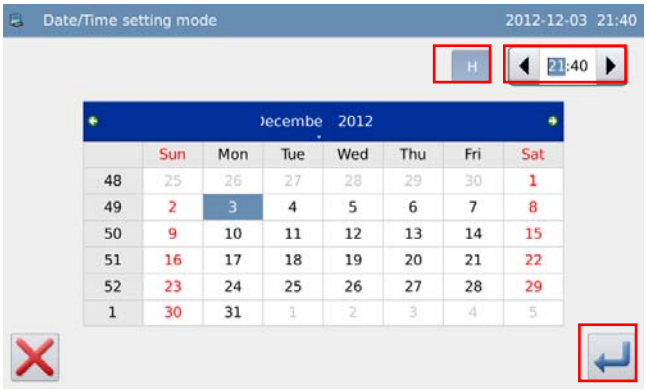
After the setting, the display of year and month will be refreshed to the right ones.

User can also use  &  to check the content in calendar.

Click the day to complete the setting.

[Note]: User has to set year, month and date to finish the setting. Only setting the year and month will not complete this operation.

3、 Method for Setting Time：



In default, user has to set hour firstly. Press “hour” to shift the setting to minute (Pressing “hour” is to change it to “minute”) and then press the arrows to change the time

User can also click the display area to shift between hour and minute.

After the setting of date and time, please press  to save it.

4、 Forbid to Change System Time

Once the machine is attached with the periodical passwords, the system will deny the change on the system time. After all the passwords are cleared, the system will unlock the setting of the system time.

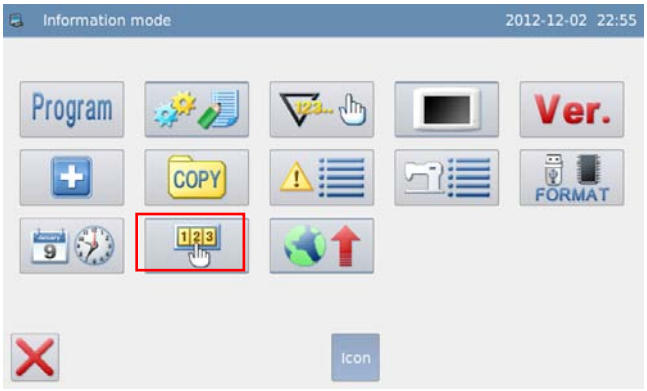
3.13.14 Password Mode

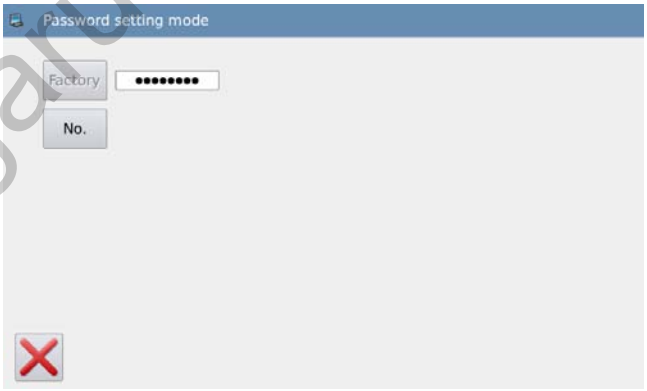
- The password mode is used for setting the periodical password and payment date, which the system will ask the user to input for unlocking the machine.
- User needs set the board number carefully at setting the password. The board number is used to manage the password.
- At most 10 periodical passwords can be set.。

In the information mode interface, press  to activate the interface for inputting the user ID. Input the correct manufacturer ID to have access to the password management mode, where is used to set and manage the periodical password.

① At most 10 different password action times can be set.

② System can display the password information of the manufacturer.



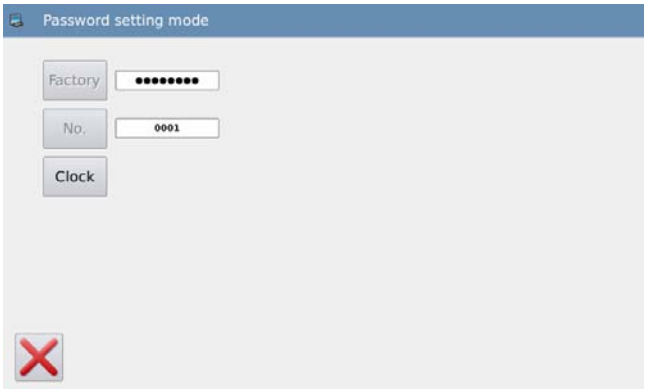


1、 Input Board Number

Press “Board Number” to enter the interface for inputting the board number. The board is formed by four figures; the range is from 0000 to 9999. This can be used for the management of the password by the manufacturer. After inputting the board number, user can press  to finish the operation and return to the previous interface. (At here, we input 0001 as the board number).

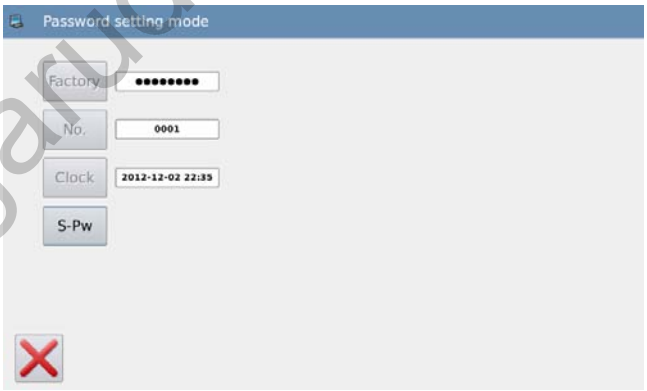
2、 Confirm the System Clock

Press “Clock” to have access to the interface for setting system time and date. For changing the system clock, user needs press  after the modification (Refer to [3.13.13 Date and Time Setting], or press  to quit.



3、 Input the Super Password

Press “Super Password” to have access to the interface for inputting the super password.



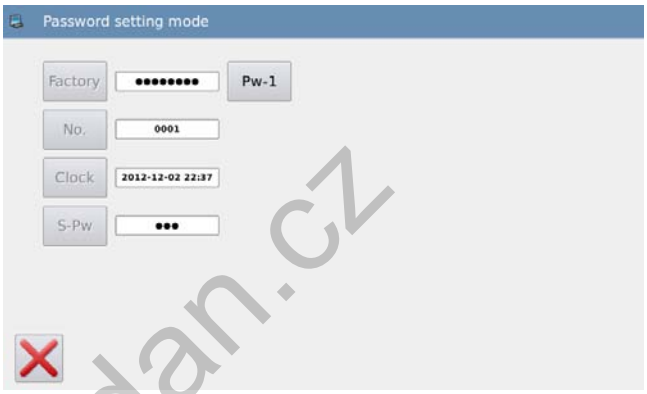
At most 9 figures can be inputted, which are displayed as "·". After user presses , the system will ask user to input that password again for confirmation.

If the inputted passwords in these two times are different, the system will ask user to input the super password again. After these two inputted passwords are same, user can press to save it and quit.

4、 Input Activation Time and Periodical Password

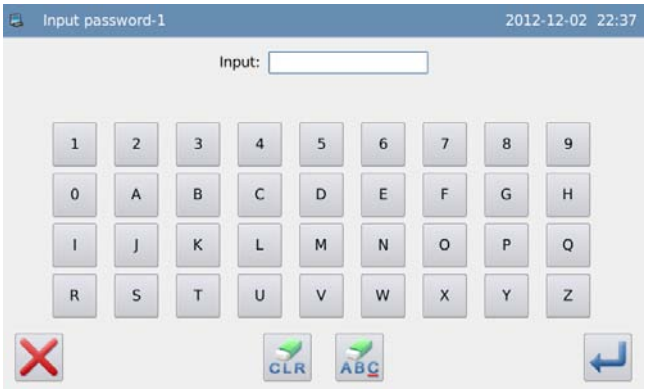
Input "PW-1" to input the first activation date.

The activation date is the first time that the password is activated. This date shall be later than the system date。



Select the proper date and press to finish the operation. At this moment, the system will turn to password input interface

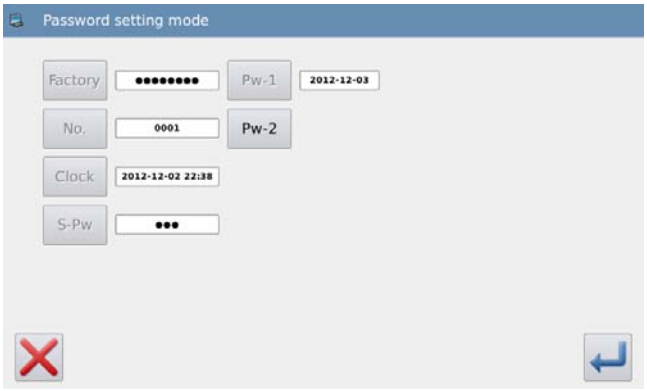
The input method of the periodical password is same as that of the super password. After the confirmation, user needs press to quit.



5、 Continue Inputting Periodical Password

If user needs input the next activation date and password, he should repeat the operation at above. At most, ten dates and passwords can be inputted.

[Note]: The next date shall be later than the previous one.

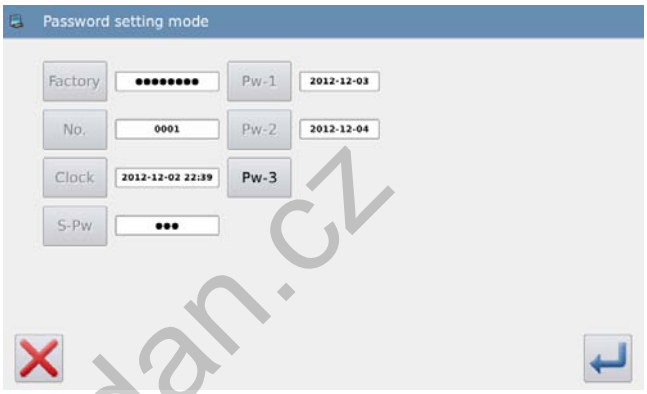


6、 Save Password

Input the needed password, and then press  to save the entire information. The system will display “Password Saved Successful”.

After confirmation, the system will return to the previous interface.

[Note]: Only when user set one periodical password, can  be displayed.

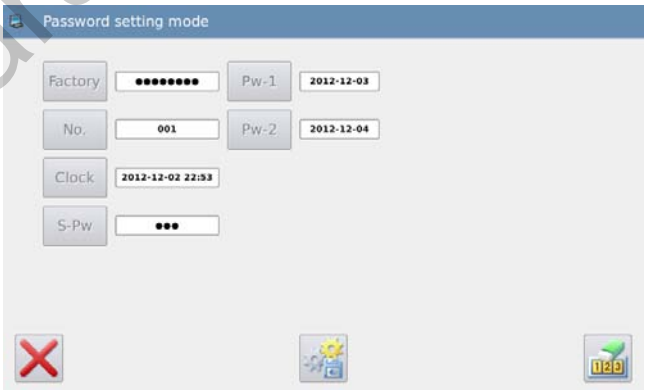


7、 Clear Password before Activation

Clearing password positively is to delete the password before it activates.

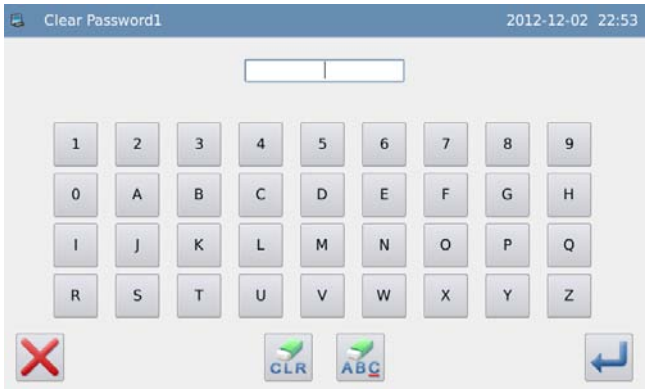
The method for entering the password display interface is same as that of entering the password setting interface

After user input the right manufacturer ID, the system will display the current time and activation dates of periodical passwords, as shown in right figure

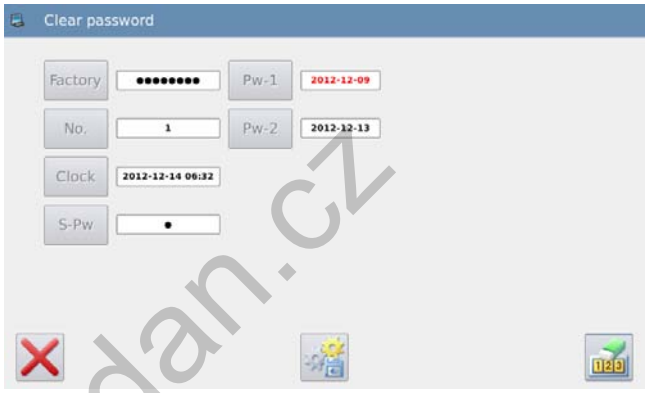


Press  to input the current password. The password is cleared in order of from early to latter

At this moment, user can input two passwords. If the inputted password is the current password, the current password will be deleted. If the super password is inputted, the entire passwords will be deleted. If the current password is deleted and the current password is the last password, the system will have no password any more. Press ↵ to finish the operation.



The deactivated password is displayed in red, as shown in right. If all the passwords are deactivated, the system will automatically return to the previous level.



8、 Clear Password at Activation

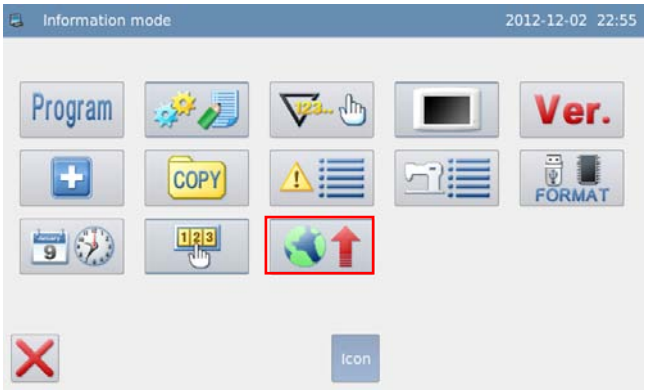
If the system has the password and that password is not canceled, the password will activate at the set date. At this moment, user has to input the effective password to have the machine to work normally.

The effective passwords include the current password and the super password. If the inputted password is the current password, the current password will be deleted. If the super password is inputted, the entire password will be deleted. If the password is current password and the current password is the last password, the system will have no password any more. If the machine still have other passwords other than the current password, the next password will activate according to the set date

3.13.15 Software Update

1、Enter Software Update Mode：

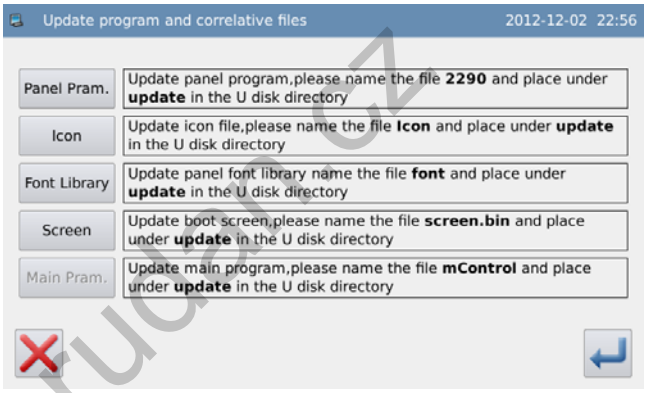
In the information mode interface, press  to enter the software update mode.



2、Instruction

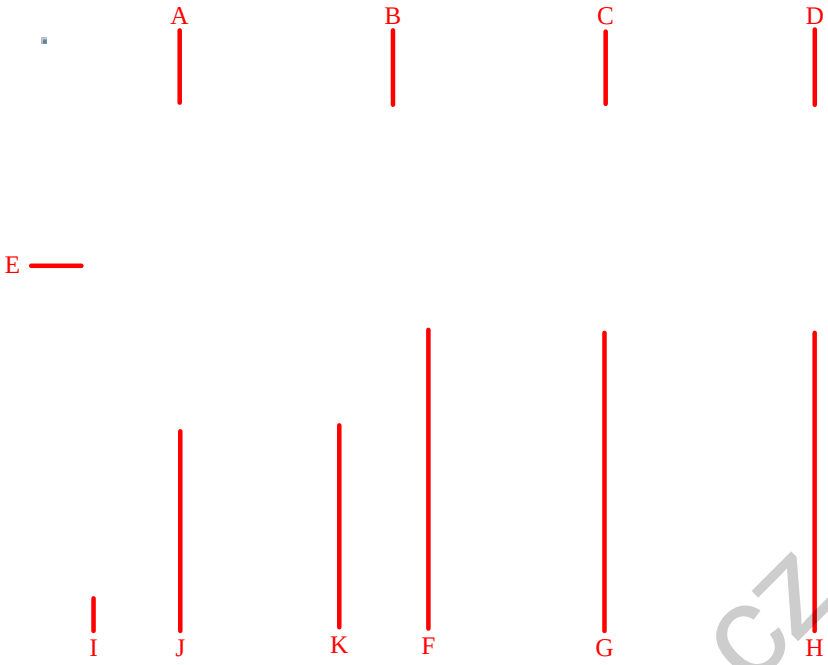
The updating software shall be located in the catalogue “Update” in U disk.

Click the content for update (the content in shadow is the selected), then press  .



3.14 Test Mode

In the information mode interface, press  to have access to the test mode.



Functions：

No.	Functions	Content
A	LCD Test	Test LCD displayer
B	Touching Panel Correction	Correct the touching panel
C	Input Signal Test	Test the input signal of switches and sensors
D	Speed Test	Test the speed of main shaft motor
E	Output Signal Test	Test the output signal of pressers and thread-trimming devices
F	Continuous Running	Set continuous running parameter and enter aging status
G	Swing/ Cloth-feeding Motor Adjustment	Test the origins of swing and cloth-feeding motor
H	Swing Test	Test swing motor individually
I	Quit	Quit test mode and return to main interface
J	Shuttle Adjustment	Adjust the shuttle
K*	Integrated Motor Calibration	Used to calibrate the zero position of the integrated motor

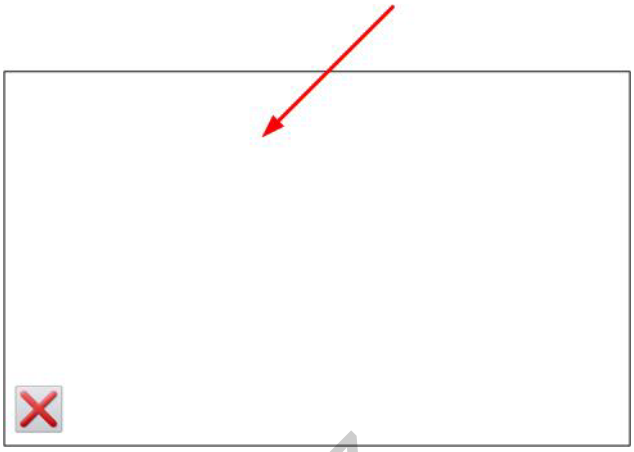
【Note】 When the P3-9 is set as normal motor, K will not be displayed

3.14.1 LCD Test

Function：

In the test mode, press  to activate LCD test function. Click the area other than the  to have LCD screen display white, black, red green and blue so that user can judge whether the LCD screen has problem.

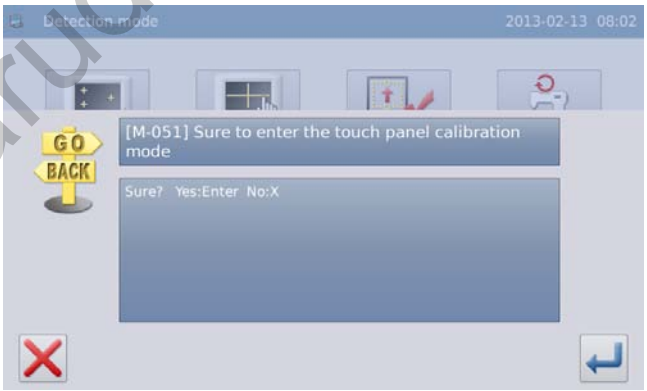
Press  to return to the upper level interface.



3.14.2 Touching Panel Correction

Functions：

In the test mode, press  . At this moment, the system will display “Confirm to enter touching panel correction mode?” Press  to have access to the touching panel correction function.



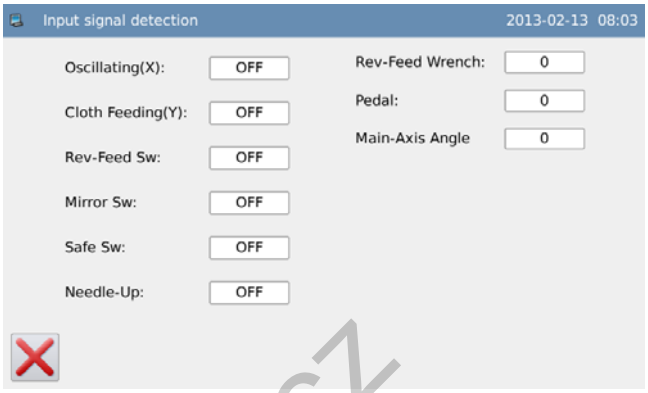
User has to correct 5 spots. The touching pen is recommended to be used at touching the cross icon on the interface. After the correction, the system will display the result of this operation

[Note]: During the correction, please perform the operation strictly according to the position of the cross icon, or the touching panel may become abnormal after the correction.

3.14.3 Input Signal Test

Function：

In the test mode, press  to enter the Input Signal Test Function.



ON：Activation

OFF：Deactivation

Types of Input Signal：

① Swing Motor（X）

② Feeding Motor（Y）

③ Reverse Sewing Switch

④ Mirror Switch

⑤ Upper Needle Position

⑥ Reverse Sewing Lever (Range:0~1023)

⑦ Pedal (Range: 0~1023)

⑧ Main Shaft Angle (Range: 0~359)

Press  to return to the Previous level interface

3.14.4 Main Shaft Speed Test

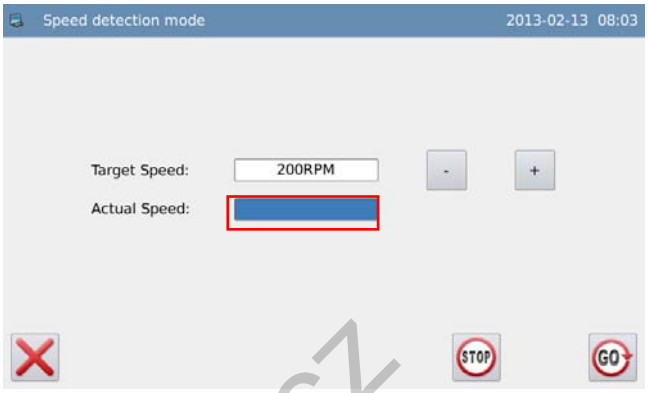
Functions：

In the test mode, press  to set the main shaft speed test function.

Use  and  to set the aim speed of main shaft motor. After user presses  , the main shaft motor will rotate in the set speed. At this moment, the actually measured speed will be displayed in the input column of actual speed.

Press  to stop running

Press  to return to the upper level interface.



3.14.5 Output Signal Test

Functions：

In the test mode, press  to activate the output signal test function.

In this interface, user can press output signal button to test the status of output signals of solenoids

Output signals：

①Thread-stirring

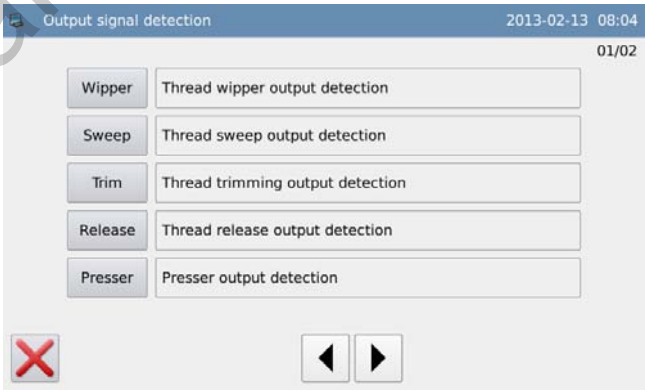
②Thread-wiping

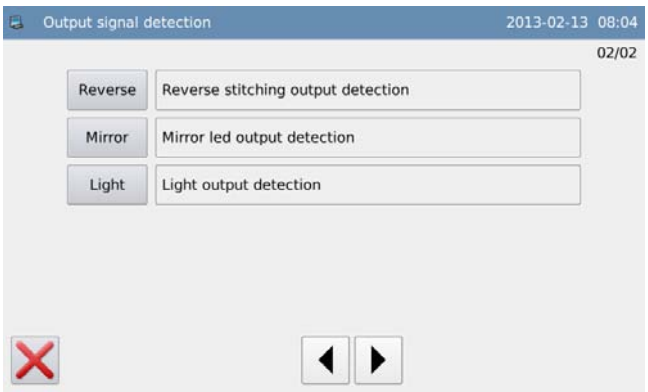
③Thread-trimming

④Thread-loosing

⑤Presser

⑥Reverse Sewing





⑦Mirror LED

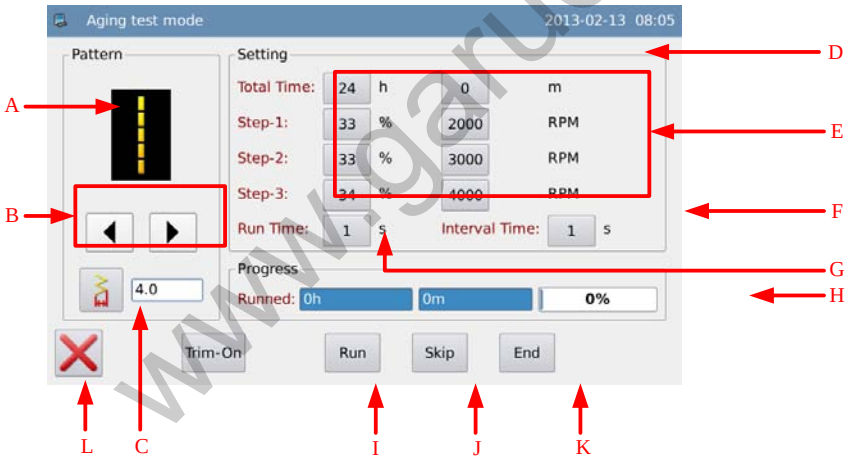
⑧Light

Press  to return to the upper level interface.

[Note]: The sewing machine will have the actual movement.

3.14.6 Continuous Running

In the test mode, press  to set the continuous running function



Functions：

No.	Function	Content
A	Pattern Display	Display the aging pattern
B	Pattern Selection Key	Select the aging pattern from the 20 basic patterns
C	Display and Setting of Swing Width	Display the swing value. Press it to enter the interface for setting the swing width.
D	Aging Time Setting	Please press SET to input the total time for aging
E	Aging Stage	Press it to set the ratio among stage 1, stage 2 and stage 3 and aging speed.
F	Time Interval	Set the time interval at aging
G	Running Time	Set the running time at aging.

H	Aging Process	Display the aging percentage and time used
I	Running	Press it to start aging. During the aging process, this button is displayed as “Pause”.
J	Skip	Change the aging progress. **[Note] when the machine is running, you cannot change the aging progress.**
K	End	End the aging process manually
L	ESC	Quit the aging process and return to the previous level

3.14.7 Swing/ Cloth-feeding Motor Origin Detection

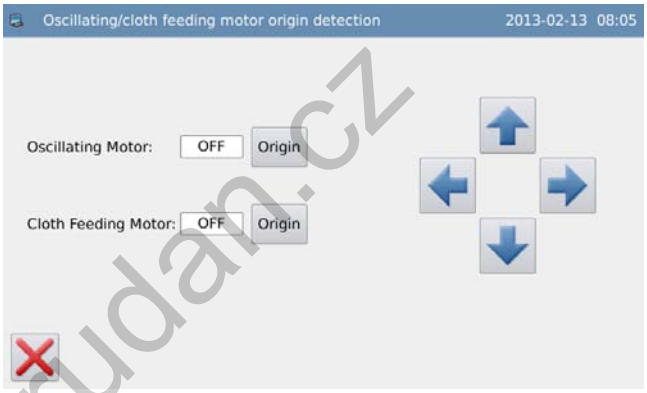
Function：

In the test mode, press  to activate the function for detecting the swing/ cloth-feeding motor origins.

In this interface, moving the XY motor with direction can have system display the real time status of sensors

ON：Sensor Detected

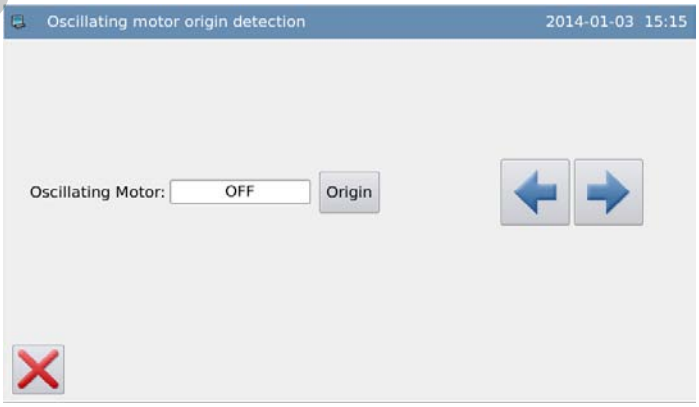
OFF：Sensor Undetected



(dual-stepping model)

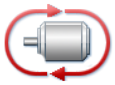
Origin is used to auto-return of motor. Press  to back to the previous level

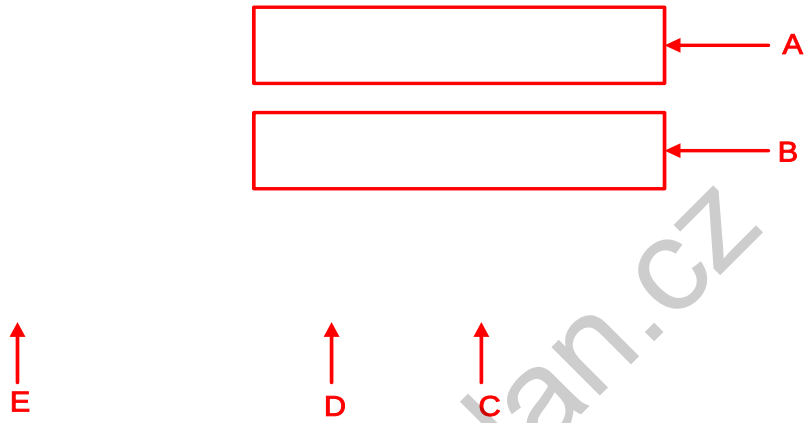
[Note]: The sewing machine will have the actual movement.



(Single Stepping Model.)

3.14.8 Swing Motor Aging

In Test Mode, user can press  to enter the Swing Motor Aging Mode, where user can perform the aging test on the swing motor.

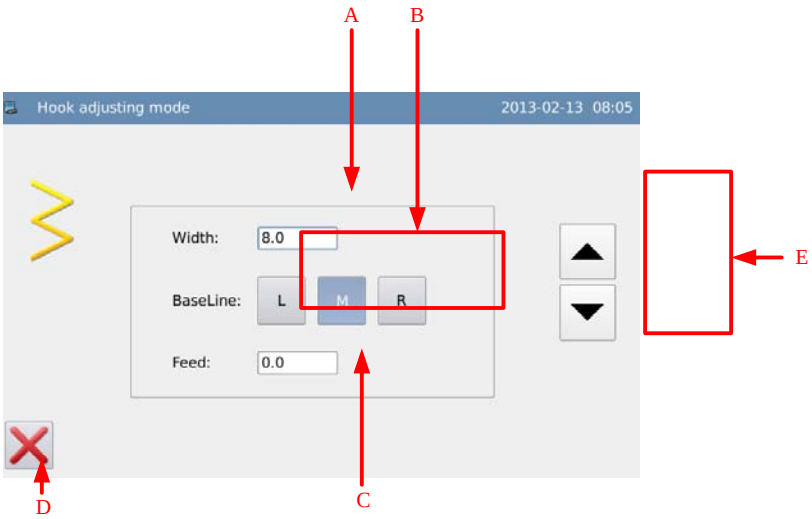


Function List：

No.	Function	Content
A	Set Swing Aging Time	Press “+” and “-” to set the aging time, whose range is at 0~200. Unit: 10ms. When the value is set at 255, the aging will be stopped.
B	Set Stepping Aging Time	Press “+” and “-” to set the aging time, whose range is at 0~200. Unit: 10ms. When the value is set at 255, the aging will be stopped. **【Note】: Single Stepping Model don’t have this parameter.**
C	Stop	Stop Aging
D	Start	Start Aging
E	Quit	Quit Swing Aging Interface

3.14.9 Shuttle Adjustment

In the test mode, pressing  is to enter the shuttle adjustment mode. The tested pattern is the 2-points zigzag at here.



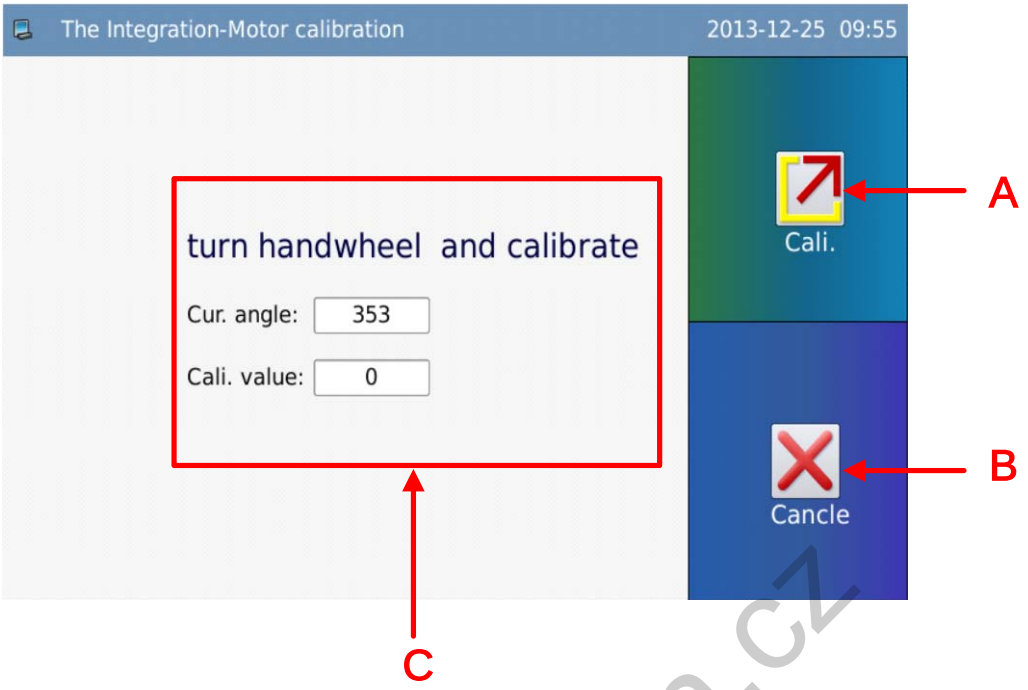
Functions：

No.	Function	Content
A	Swing Width Display	Display the swing width
B	Set base line	Change base line position
C	Cloth-feeding Display	Display the cloth-feeding value【**Note**】**this pattern does not exist at Single Stepping Model**
D	ESC	Quit and return to the previous interface
E	Value Adjustment	Adjust the swing width or cloth feeding amount Clicking the value frame of swing width or cloth-feeding amount is to confirm the value to adjust. Press the arrow to input value.

3.14.10 Integrated Motor Calibration

When the parameter P3-9 (Main Motor Type) is selected as Integrated Motor, user can perform the integrated motor calibration. For normal motorm this function key will not appear.

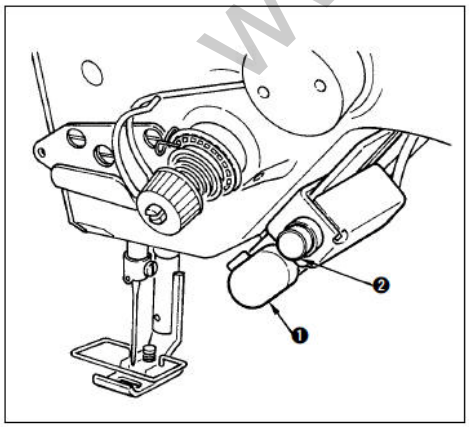
In Test Mode, user can press  to enter the integrated motor calibration mode. User needs to input the password before entering this mode. The calibration of the integrated motor shall be done by the professional technician.



Function List：

No.	Functions	Content
A	Calibration	The calibrated value will be saved at parameter P3-8
B	Quit	Quit without calibration
C	Display of Current Angle and Calibration Value	Display the current angle and calibrated value

3.15 Manual Switches



1）Reverse Feeding Switch ①

After user presses and holds the reverse feeding switch①, the machine will feed the cloth reversely. Release the hand to turn the feeding to normal feeding.

2）Symmetric Sewing Switch②

When user selects scallop, random pattern or continuous sewing, this switch will function as symmetric sewing switch

Symmetric Inversion: when machine stops at the middle of sewing, user can press the symmetric inversion switch to sew the mirror of the pattern.

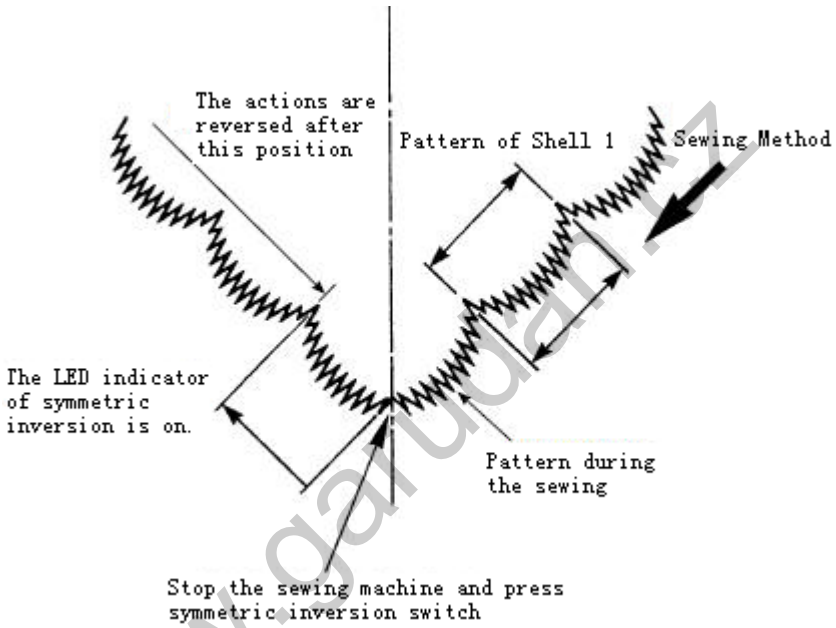
Sewing Method：

1）During the sewing, stop the machine at the position for symmetric inversion sewing

2）Press the symmetric inversion switch②. After the switch is pressed, the LED will be on. (The switch only functions when machine stops, and it will become useless at running.)

3）Use the machine to do the symmetric inversion sewing.

4）Cut the thread or press the symmetric inversion switch again to end the sewing.



4 Appendix 1

4.1 Instruction for Calibration at Power-on

If the main motor is the integrated motor, the system will acquire the main motor calibration at power-on for first time or restoration of parameter values. The interface for main shaft motor calibration is shown at below:

In this interface, user can perform the main shaft calibration, where the current main shaft angle and the calibrated value can be seen. Please turn the wheel to adjust the main motor angle. For the operation for calibration, please refer to Section 3.14.10

At the operation for first time, user must calibrate the main shaft angle of the integrated motor, or the machine will work abnormally

If the motor you use is not the integrated motor, this interface will not display.

5 Appendix 2

5.1 Warning Information List

Number	Name of Malfunction	Sub-information Content
E-003	Head Tilt	Please turn off power 。
E-004	Main voltage is too low(300V)	Please turn off power and check the system hardware.
E-005	Main voltage is too high(300V)	No
E-007	IPM is over-voltage or over- current	Please turn off power and check the system hardware.
E-008	Voltage of assistant device (24V) is too high	Please turn off power and check the system hardware.
E-009	Voltage of assistant device (24V) is too low	Please turn off power and check the system hardware.
E-013	Encoder is error or unconnected.	Please turn off power and check the system hardware.
E-014	Motor running abnormal	Please turn off power and check the system hardware.
E-015	Exceeds sewing area	Please press Enter to release problem
E-016	Needle rod upper position abnormal	Please turn the wheel to adjust the needle rod position
E-020	Stepping software version error	Please turn off power 。
E-025	X origin detection abnormal	Please turn off power 。
E-026	Y origin detection abnormal	Please turn off power 。
E-027	Presser origin detection abnormal	Please turn off power 。
E-030	Stepping driver communication abnormal	Please turn off power 。
E-031	Stepping motor over-current	Please turn off power 。
E-032	Stepping driver power abnormal	Please turn off power 。
E-034	Abnormal current	Please turn off power 。
E-035	IPM over current frequently 1	Please turn off power 。
E-036	IPM over current frequently 2	Please turn off power 。
E-037	Motor is blocked 1	Please turn off power 。

Number	Name of Malfunction	Sub-information Content
E-038	Motor is blocked 2	Please turn off power 。
E-039	Motor over speed	Please turn off power 。
E-040	Over current in stop status	Please turn off power 。
E-041	Motor overload	Please turn off power 。
E-042	Bus voltage abnormal	Please turn off power 。
E-044	Head board EEPROM I/O Error	Please turn off power 。
E-045	Component abnormal	Please turn off power 。
E-046	CRC check error	Please turn off power 。
E-047	Data check error	Please turn off power 。
E-048	X check error	Please turn off power 。
E-049	Y check error	Please turn off power 。
E-050	MD1 stepping over-current	Please turn off power 。
E-051	MD1 X direction not finish	Please turn off power 。
E-052	MD1 Y direction not finish	Please turn off power 。

5.2 Hint Information List

Number	Name of Malfunction	Sub-information Content
M-001	Trim counter reaches set value	Press Enter
M-002	Bottom thread counter reaches MAX value	Press Enter
M-003	Set value is too large	Please input value within valid range
M-004	Set value is too small	Please input value within valid range
M-005	Save parameter abnormal	Press Enter to restore the default values
M-006	Memory full	Please delete the idle sewing data
M-007	Delete pattern data from memory?	Press ENTER to perform the deletion; Press ESC to quit the operation
M-008	Replace pattern data in memory?	Press ENTER to perform the replacement; Press ESC to quit the operation

Number	Name of Malfunction	Sub-information Content
M-009	Can not delete pattern data.	The selected sewing data is being used!
M-010	Format memory?	Press ENTER to perform the operation; Press ESC to quit the operation All the patterns within the memory will be deleted
M-011	Operation head not match to machine type	Please check the model and the software version
M-012	Wrong password	Please input again.
M-013	Hardware clock error	The hardware clock has problem, please contact manufacturer for repair.
M-014	Stitch number beyond range	Please reduce stitch number
M-015	Communication error	Abnormal event occurs in the communication between the operation head and the control box!
M-016	Copy the pointed pattern?	Replace the original pattern？ Yes：Enter No：X
M-017	Copy all pattern data?	Press ENTER to perform the operation; Press ESC to quit the operation
M-018	Restore to default setting?	Press ENTER to perform the operation; Press ESC to quit the operation
M-019	USB is pulled out	U disk is pulled out!
M-020	Cannot find pattern data in U disk	-
M-021	No alarm record	-
M-022	Replace needle	Reach set value for needle replacement, please replace needle!
M-023	Replace oil	Reach set value for oil replacement, please replace oil!
M-024	Clean machine	Reach set value for cleaning machine, please clean machine!
M-025	Wrong User ID	Please input again.
M-026	Fail to confirm password	Please input password again
M-027	Cannot change system time	The periodical password is set. Can not change system time.
M-028	Fail to save password file	-
M-029	Fail to load password file	-
M-030	Password saved successfully	-
M-031	Fail to clear all passwords	Cannot delete password file
M-032	Fail to clear password	After the password is cleared, the file input becomes abnormal
M-033	Password file is deleted without authorization	Periodical password is deleted without authorization, please turn off machine
M-034	User ID file damage	-
M-035	Empty input invalid	Please input passwords
M-036	Password not match	Current password is wrong
M-037	New password is different.	Please input new passwords again and confirm it
M-038	Touching panel correction successful	Correction is successful. Please turn off power to restart.
M-039	Clear alarm records?	Are You Sure？ Yes：Enter No：X

Number	Name of Malfunction	Sub-information Content
M-040	Delete the selected file?	Are You Sure ? Yes：Enter No：X
M-041	Copy all patterns	Cover the original patterns? Yes：Enter No：X
M-042	Fail to copy file	Please check the space in memory
M-043	Fail to copy file	Please check if the USB disk is pulled!
M-044	Fail to open file	Fail to open file
M-045	Format not match	Formats don't match, current load denied
M-046	Parameter over range	Parameter is over range. After confirmation, the parameter over range will be restored according to the default parameters!
M-047	Please create catalogue and file	Please create catalogue bakParam in U disk. Name the back-up file as backup.param and copy it to bakParam catalogue !
M-048	File I/O error	File I/O error!
M-049	Please select file	Select the file for input/ output
M-050	File not exist	Cannot find the corresponding file
M-051	Enter touching panel correction mode?	Are You Sure ? Yes：Enter No：X
M-052	Clear accumulated running time?	Are You Sure ? Yes：Enter No：X
M-053	Clear accumulated trimming times?	Are You Sure ? Yes：Enter No：X
M-054	Clear accumulated power-on time?	Are You Sure ? Yes：Enter No：X
M-055	Clear accumulated stitch numbers?	Are You Sure ? Yes：Enter No：X
M-056	Periodical passwords can't be same to super password	Please input password again
M-057	Cannot change trim counter	At change, please turn off setting
M-058	Cannot change bottom thread counter	At change, please turn off setting
M-059	Not select update item	Please select item for updating. At least select one item
M-060	Some selected update items don't exist.	The item not existing will be cancelled after return.
M-061	Update successful	Update is successful, please restart machine.
M-062	Format U Disk?	Press Enter to perform formatting operation. Press Esc to quit current operation. After formatting, all pattern files will be deleted.
M-063	Can not find U disk	Please insert the U disk for formatting!
M-064	Successful	Current operation is successful!
M-065	Failed	Current operation is failed!
M-066	Cover the pattern with same name in U disk?	Press ENTER to perform the replacement; Press ESC to quit the operation

Number	Name of Malfunction	Sub-information Content
M-067	Fail to correct touching panel	Please correct it again.
M-068	Restore all the settings?	Are You Sure ? Yes：Enter No：X
M-069	Restore the selected item?	Are You Sure ? Yes：Enter No：X
M-70	Not select item	Please select one or more parameters
M-71	SRAM initialization	Clear all data in SRAM. Please turn off power and restore the setting of DIP switch.
M-72	Turn off machine, Bye	-
M-73	Parameter recovery successful	Parameter recovery is successful, please restart machine
M-74	Software version saving successful	Software version is saved to the base catalogue of U disk successfully
M-75	Can not find pattern number	Please select pattern again
M-77	Can not register the sewing method of the pattern as pattern number	Please change sewing method.
M-78	Cannot find corresponding pattern file or fail to load pattern	Please select pattern file again.
M-79	Fail to create pattern file	Please select pattern file again
M-80	Parameter value over limits	Please check parameter setting
M-81	Index number over limits	Please select index number again
M-82	Not find registered pattern in memory	Please save a pattern into memory
M-83	Fail to replace the pattern	-
M-84	Cannot delete reverse sewing data	The selected reverse sewing data is being used !
M-85	Format customized pattern?	Press Enter to perform formatting operation. Press Esc to quit current operation. After formatting, all customized pattern files will be deleted!
M-89	Fail to replace current pattern	The copy group contains the current pattern number. Cannot replace current pattern.
M-90	Cannot find pattern file	Fail to perform operation to pattern file. Please select file again
M-91	Pattern data error	The generated pattern data is wrong, not supported by machine. Please check or select file again
M-92	Cannot delete pattern file	This pattern is forbidden to get deleting
M-93	Step error	The selected step cannot find in current operation. Please select again.
M-94	Load VDT file error	System doesn't support this VDT file or the VDT file is damaged
M-95	Write VDT file error	Fail at writing the VDT file. The number of file is over the max amount supported by system or the file is wrong
M-96	VDT data error	Cannot recognize the VDT data or the VDT file is damaged.
M-97	Can not transfer this pattern	Please confirm pattern
M-98	Format of transferred pattern error	Please confirm pattern
M-99	Data of transferred pattern is too long	Please confirm pattern
M-100	Cannot open the transferred pattern	Please confirm pattern

Number	Name of Malfunction	Sub-information Content
M-101	Cannot delete front reverse sewing file	File is being used
M-102	Cannot delete back reverse sewing file	File is being used
M-103	Sewing range over left limits	Please check parameter setting
M-104	Sewing range over right limits	Please check parameter setting
M-105	Swing over limits	Please check parameter setting
M-106	Feeding amount over limit	Please check parameter setting
M-107	Scale over limits	Please check parameter setting
M-108	Speed over limits	Please check parameter setting
M-109	Pattern number is full	Please delete the idle sewing data
M-110	Single stitch over length limits	The step length is over 12.7 or below 0.1. Please check pattern data.
M-111	Pattern number exited	Select an empty number
M-112	No pattern quoted in continuous sewing	At least add one pattern.
M-113	Stitch number of quoted patterns in continuous sewing is 0	Please change the pattern stitch number
M-114	Front reverse sewing data invalid	-
M-115	Back reverse sewing data invalid	-
M-116	Front reverse sewing stitch number over limits	-
M-117	Back reverse sewing stitch number over limits	-
M-118	Pattern Number Illegal	Please re-pick a number
M-119	Quoted Pattern Not Existed	Please check memory pattern or re-pick a number
M-120	Verification Failure at Updating Main Control Software	-
M-121	Parameter Loading Failure	Please Contact Factory for Repair!
M-122	Calibration Successful	Calibration Successful, please restart machine
M-123	Main Motor Type Change	The type of main motor is changed. Please restart the machine.
M-124	Mirror Pattern. Operation Error	This is the mirror pattern. Can not perform this operation Please change on the original pattern

6 Appendix 3

6.1 Installation Size of Control Box

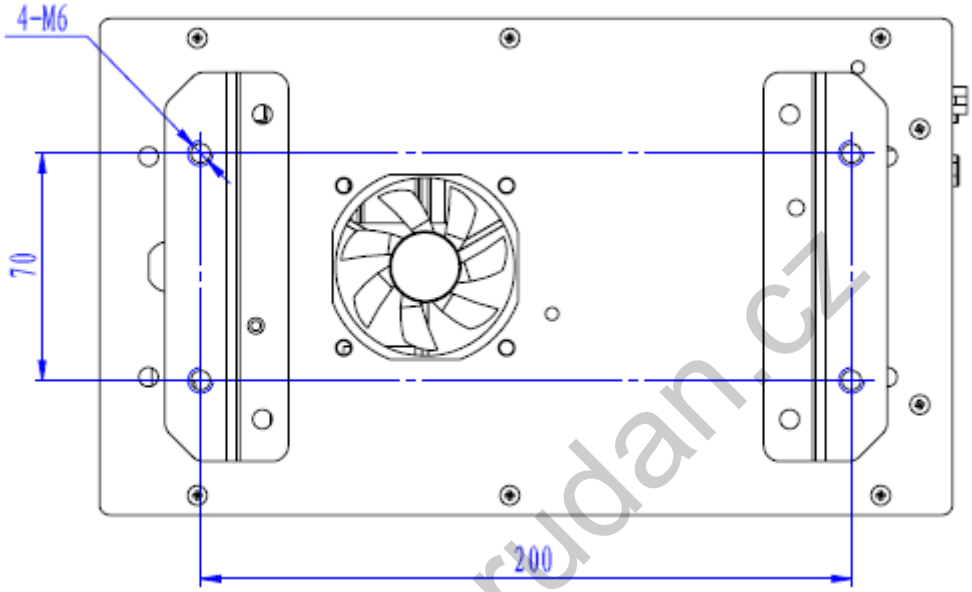


Figure 1 Installation Size (4 Holes)

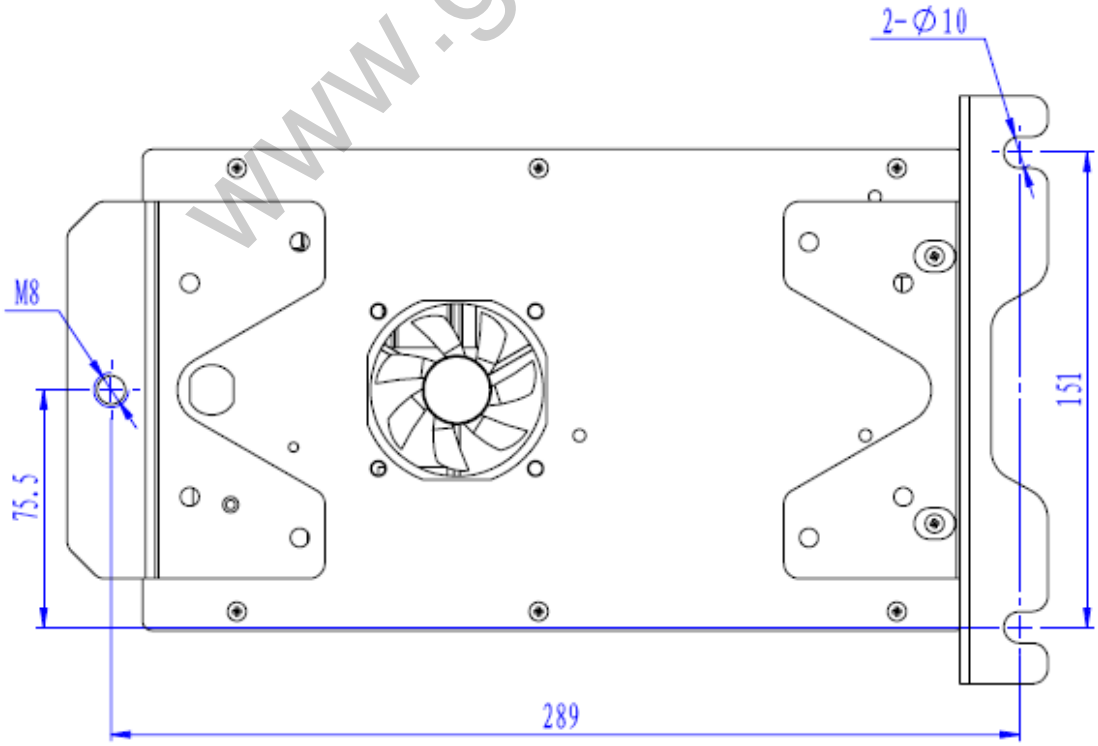
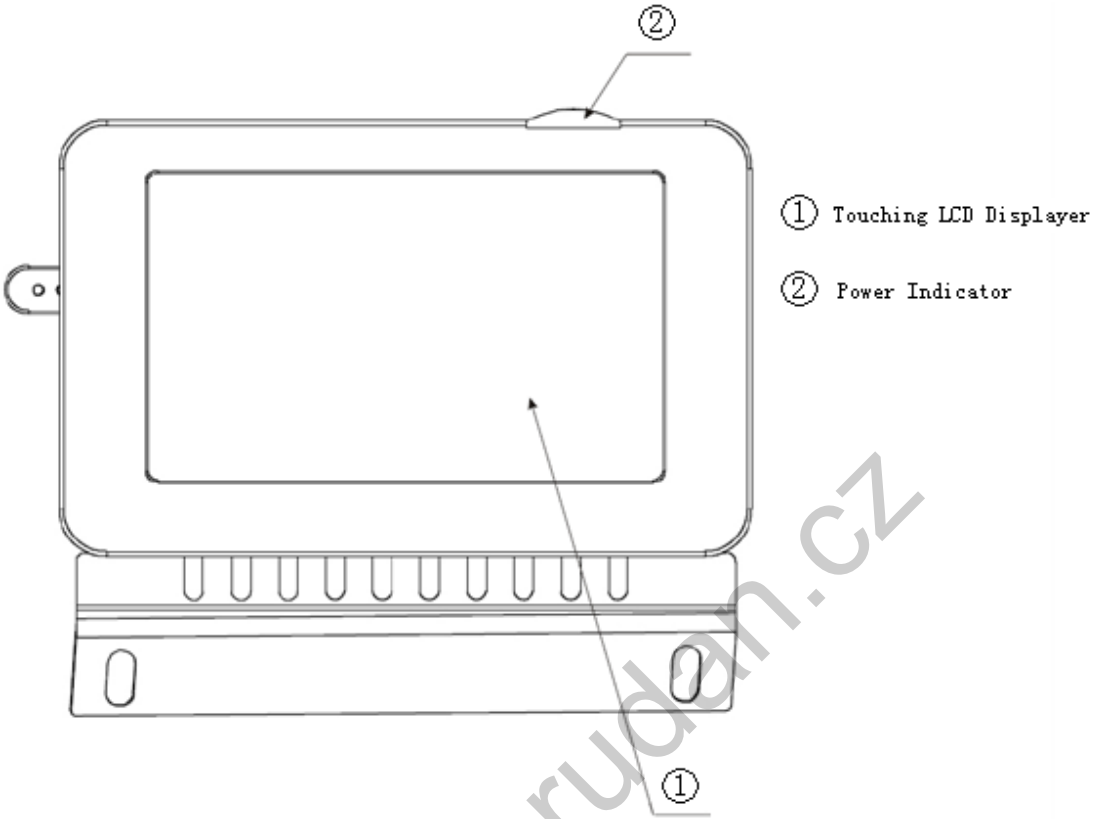
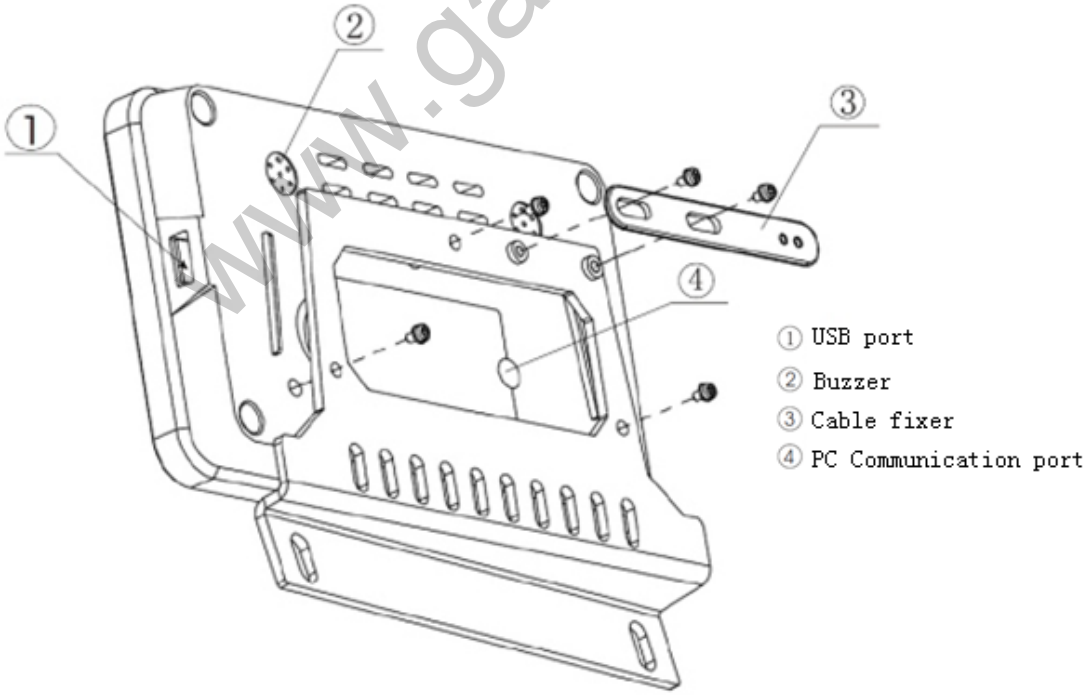


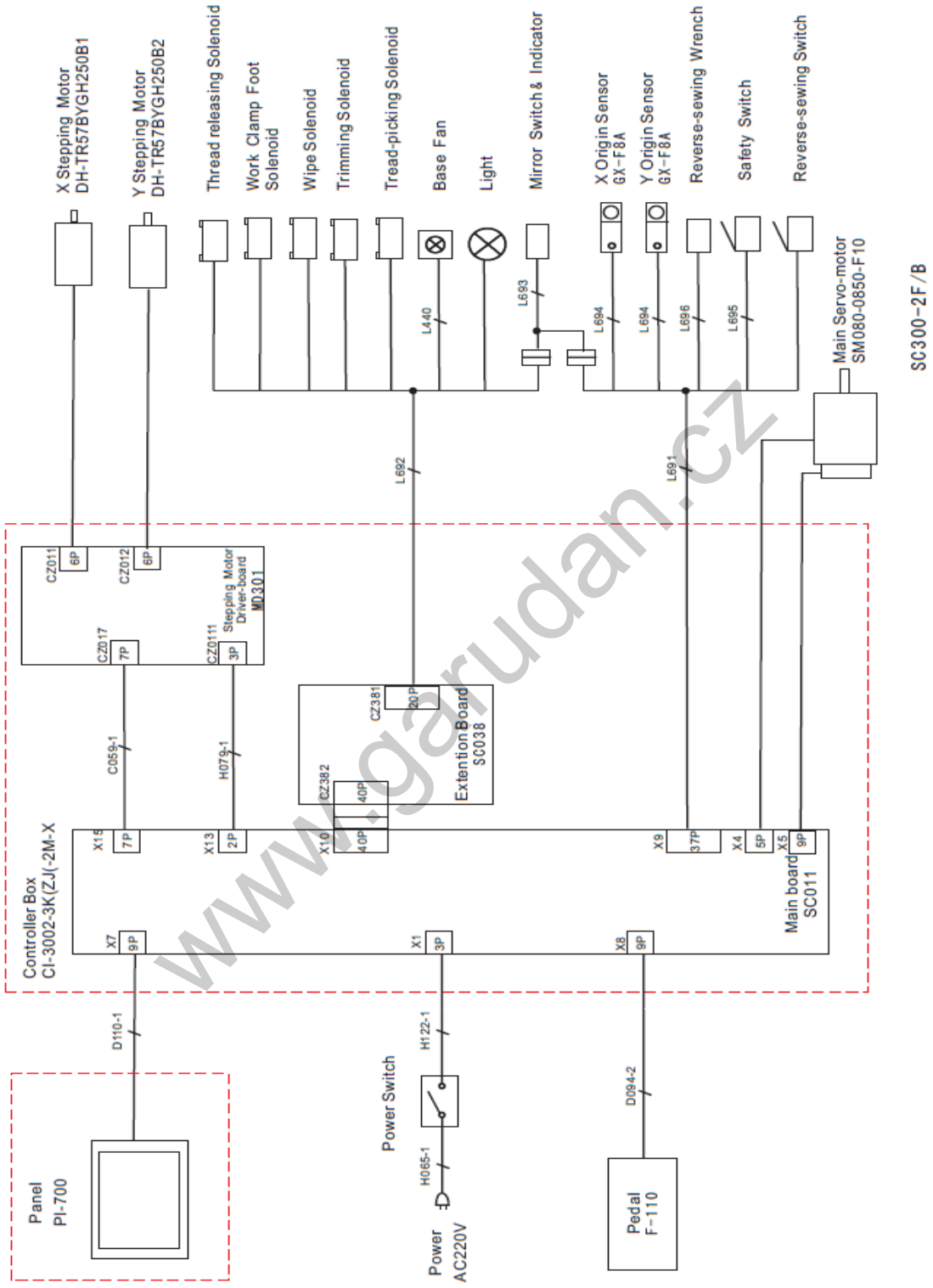
Figure 2 Installation Size (3 Holes)

6.2 Installation Size of Touching Panel





6.3 SC300 Diagram



【Note 1】Double stepping model has no reverse sewing solenoid

【Note 2】Single stepping model (with trimming function)has no Y stepping motor, Y origin sensor, reverse sewing lever.

【Note 3】Single stepping model (with trimming function) has no solenoids, Y stepping motor, Y origin sensor, fan, reverse switch and reverse lever.