GT1790DAT-S / -K / -SL

INSTRUCTION MANUAL

COMPUTER CONTROLLED, HIGH SPEED, LOCKSTITCH
BUTTON HOLE SEWING MACHINE

TYPICAL

Table of Contents

1 Overview

1.1 Functions and Index Parameters

See Table 1 for details of functions and parameters of the series of CNC AC servo system.

Table 1: Comparison Table of Functions and Parameters

S/N	Item / Model	1790DS
1	Wide	5mm (dissociation energy: 0.05mm)
2	Size of knife (length of knife)	6.4~31.8mm（1/4"~11/4"）
3	Sewing length (max.)	41mm (max. sewing length of optional accessory is 120mm)
4	Sewing speed	Standard: 3600rpm; max.: 4200rpm
5	Speed control mode	Control panel input
6	Needle used	DP×5 # 11J ~ # 14J
7	Stroke of needle bar	34.6 mm
8	Take-up-lever	Chained take-up-lever
9	Rotating shuttle	DP type fully-automatic rotatably refueling rotating shuttle
10	Rise of presser foot	14mm (can be set at will) Max. 17mm (when reversing the needle)
11	Driving mode of lifting presser foot	Pulse motor type (1 pedal · 2 pedals)
12	Thread winding function	Built-in frame head type (thread can be wound only when the machine is driven)
13	Driving mode for feeding rag	Pulse motor type
14	Driving mode of swing needle	Pulse motor type
15	Driving mode of knife	Pulse motor type
16	Tension function of surface thread	Tensioning mode of electromagnet Data of each part (tension of paralleling part and kit part) can be set by operation on the control panel
17	Shapes of seam stitch	30 shapes, including angular shape, radial shape, circular shape, etc. (selected on the control panel)
18	Number of patterns recorded	999 patterns
19	Data memory media	USB flash disk
20	1/2 re-switch	Each pattern can be set
21	Motor	Small AC servo motor, 400W, direct drive type
22	Dimension	Machine tool: width: 200mm, height: 360mm, and length: 570mm

| 23	Weight of frame head	65Kg
24	Rated power	600W
25	Operating temperature range	0℃～45℃
26	Operating humidity range	35%～85%
27	Supply voltage	AC 220V ± 10%；50/60Hz

Specification of presser foot

	Specification of presser foot 1	Specification of presser foot 2	Specification of presser foot 3	Specification of presser foot 5
Width	4mm	5mm	5mm	3-6mm(set at will)
Sewing length (max.)	25mm	35mm	41mm	10-120mm (set at will)

1.2 Operating Mode

The operating panel adopts the touch operation technology advanced in the industry, and the user-friendly interface and convenient control bring revolutionary changes to daily use of users. Users can touch the screen with their fingers or other objects to complete the corresponding operations.
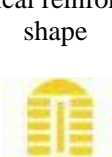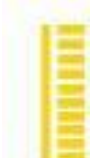
Function buttons include ready button, information button, mode button and communication button. The specific operating method is described in later chapters.
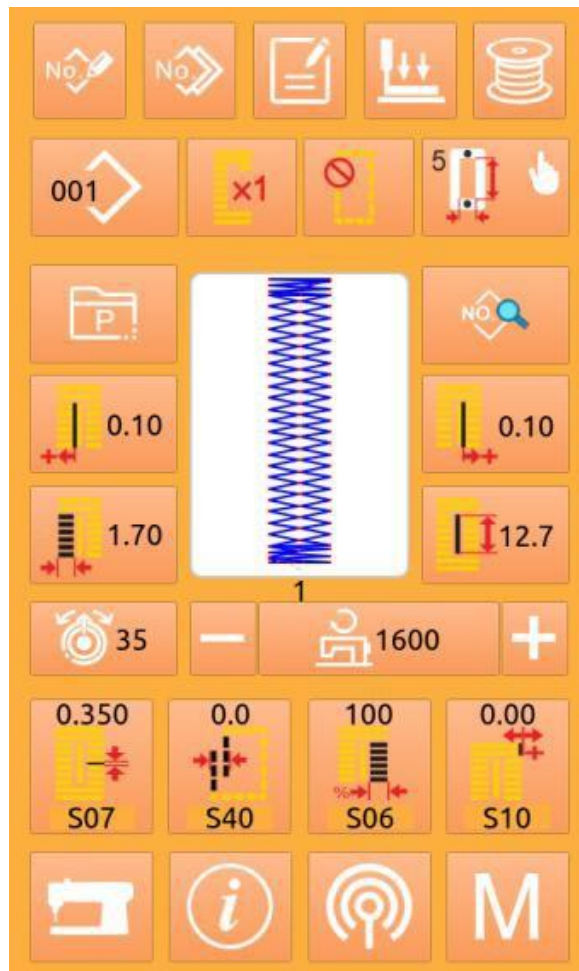
⚠ **Warning**

Users shall avoid touching the screen with sharp objects during use, so as not to cause permanent damage to the touch screen.

1.3 List of Basic Sewing Shapes

01 Square	02 Round	03 Radial square	04 Radial	05 Radial linear fixed shape
06 Radial conical fixed shape	07 Round-eye square	08 Round-eye radial shape	09 Round-eye linear reinforced shape	10 Round-eye conical reinforced shape
11 Semicircle	12 Rounded square	13 Semicircular square	14 Semi-circular linear reinforced shape	15 Semi-circular conical reinforced shape
16 Round-eye semi-circle	17 Round-eye round	18 Square radial shape	19 Square semicircle	20 Square round
21 Square linear reinforced shape	22 Square conical reinforced shape	23 Radial semicircle	24 Radial round	25 Semi-circular radial shape
26 Semi-circular round	27 Reinforcement seam	28 Right cut-off of reinforcement seam	29 Left cut-off of reinforcement seam	30 Central cut-off of reinforcement seam
31 Straight stitch bottoming				

1.4 Preparation Before Sewing

1.4.1 Installation method of needle

⚠ Warning	To prevent personal accidents caused by starting suddenly, please turn off the power and make sure the motor is completely stopped before operation.

1）Turn the flywheel to raise the needle to the highest position.

2）View from the front side of the sewing machine, turn the concave part of the needle horizontally to the front side A.

3）Insert the needle into the deep of the hole on the needle bar

4）Tighten the fixing screw of the needle ❶
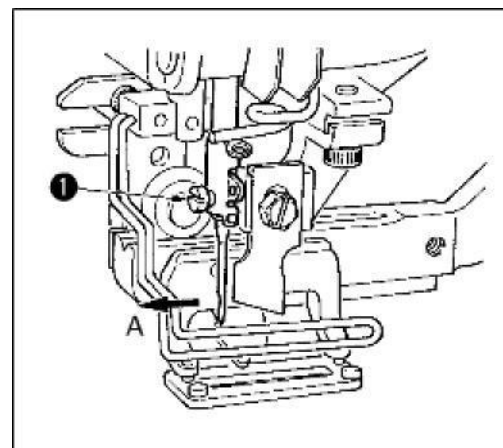
※ The needle shall be of DP×5 # 11J ~ # 14J

Note: Turn off the power supply when installing the needle.

1.4.2 Threading method of upper thread

⚠ Warning	To prevent personal accidents caused by starting suddenly, please turn off the power and make sure the motor is completely stopped before operation.

Cotton thread, sewing thread

Chemical fiber thread
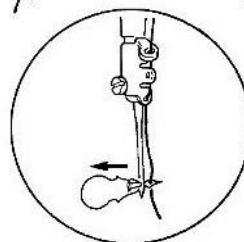
Proceed from 1~10 in sequence as shown on the figure above. Use a threader to put on the thread easily and quickly.

1.4.3 Installation method of bobbin case

⚠ Warning	To prevent personal accidents caused by starting suddenly, please turn off the power and make sure the motor is completely stopped before operation.

① Pull up the bobbin case gripper

② Insert the middle rotating shuttle shaft ❶, and then close the gripper. You can hear a clicking sound when the bobbin case is pressed to a certain position.

※ **If the bobbin case is not located in the specified position, the shuttle cock will fly out after sewing to wind the upper thread on the bobbin shaft.**
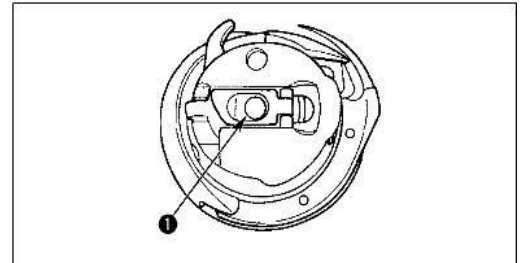
The standard rotating shuttle and the dry rotating shuttle cannot be used together due to their different shapes.

1.4.4 Threading method of bobbin case

⚠ Warning	To prevent personal accidents caused by starting suddenly, please turn off the power and make sure the motor is completely stopped before operation.

Straight lockhole seam   Pinked seam

Shuttle cock   Bobbin case

1）Insert the shuttle cock into the bobbin case according to the direction shown by the arrow;

2）Thread the sewing thread through the thread hole ❶, thread it under the tension spring ❷, and then thread it through the thread hole ❸ and pull it out from ❹

※ Note: The threading methods at ❹ are different for straight lockhole seam and pinked seam

1.4.5 Adjustment method of tensile force of bobbin thread

⚠ Warning	To prevent personal accidents caused by starting suddenly, please turn off the power and make sure the motor is completely stopped before operation.

When the thread hole ❶ of the bobbin case is located at top, pull the bobbin thread out from upward, and then adjust the tension as follows

Rotate the thread tension screw ❷ to the right to increase the tension of the bobbin thread; rotate it to the left to weak the tension of the bottom thread

※ **When using chemical fiber thread, slightly reduce the tension, and when using the cotton thread, slightly increase the tension.**

※ **After adjusting the tension of the bobbin thread, please confirm the thread tension setting in sewing parameters**
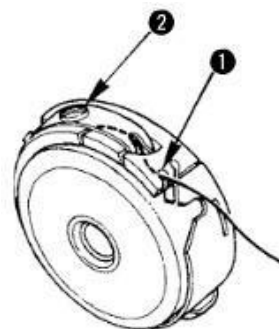
Straight lockhole seam	0.05~0.15N	Hold the thread end from the bobbin case by hand and gently swing it up and down, so as to lower the bobbin case slightly.
Pinked seam	0.15~0.3N	Hold the thread end from the bobbin case by hand and swing it with slightly strong force lower the bobbin case.

1.4.6 Installation method of knife

⚠ Warning	To prevent personal accidents caused by starting suddenly, please turn off the power and make sure the motor is completely stopped before operation.

1）Remove the fixing screw ❷ of the knife, and then remove the knife ❶ and spacer

After pressing the knife by hand, adjust the distance between the knife and the top of the needle bed to 1~2mm as shown on the figure, install the spacer and tighten the fixing screw.
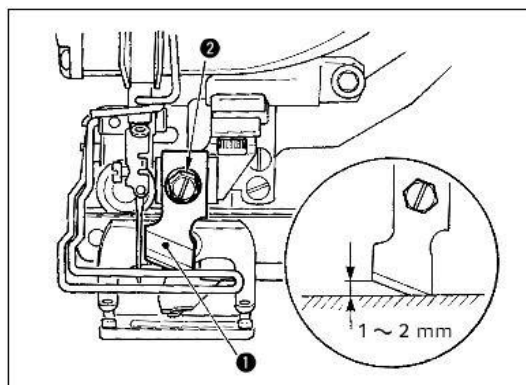
Note: If the size of the rag knife is expressed in inch system, refer to the conversion table below to determine the length of the rag knife.

Inch to Metric Conversion

Size of knife (inch)	Size of knife (metric) mm
1/4	6.40
3/8	9.50
7/16	11.10
1/2	12.70
9/16	14.30
5/8	15.90
11/16	17.50
3/4	19.10
13/16	20.60
7/8	22.20
1	25.40
1 1/8	28.60
1 1/4	31.80
1 3/8	34.90
1 1/2	38.10

## 1.4.7 Machine oil filling method

⚠ Warning	To prevent personal accidents caused by starting suddenly, please turn off the power and make sure the motor is completely stopped before operation.

Detail Diagram of Oil Adjustment Part

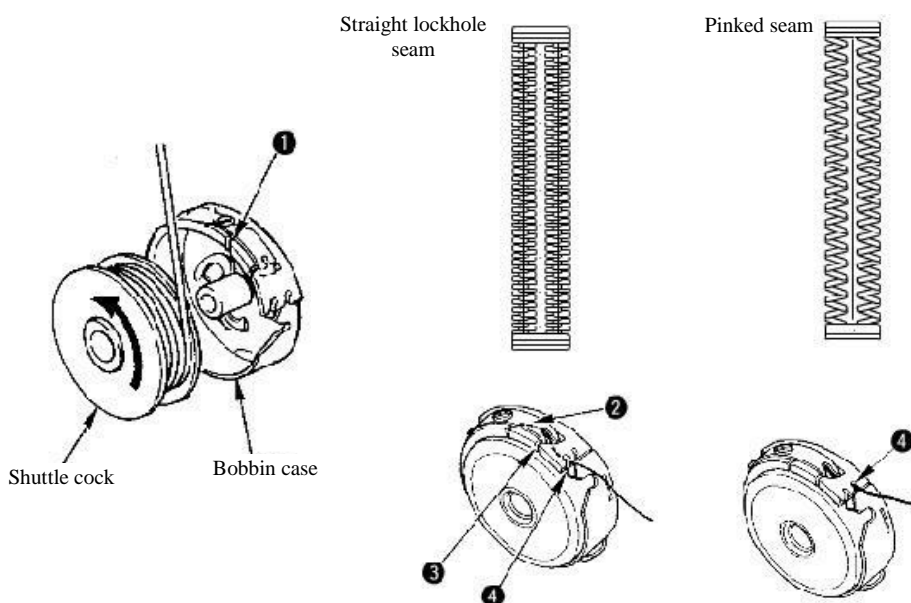Oil supply pipe

❸

❷

Few

⬆ Oil supply quantity

⬇ More
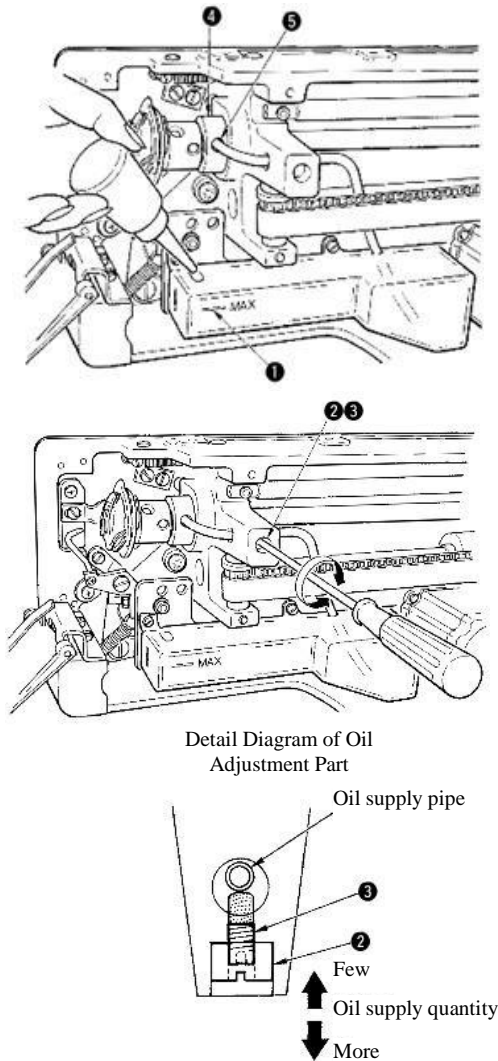
1） Add the oil to the filling tank

● Add the machine oil to the level of ❶MAX mark

2） Adjust the oil quantity of rotating shuttle

● Loosen the oil quantity adjusting and fixing screw ❷, then adjust the oil quantity with the oil quantity adjusting screw ❸

● When adjusting the oil quantity of the rotating shuttle, tighten the oil quantity adjusting screw ❸ to reduce the oil quantity

● After adjusting the oil quantity, please fix it with the fixing screw ❷.

● For the new sewing machine or the sewing machine has not been used for a long time, remove the bobbin case and add 2-3 drops of machine oil to the edge of the bobbin case before use. Add a few drops of machine oil to the oil filling hole ❺ of the metal parts ❹ in front of the lower shaft, so that the oil can be infiltrated into the felt inside.

1.4.8 Installation method of handle
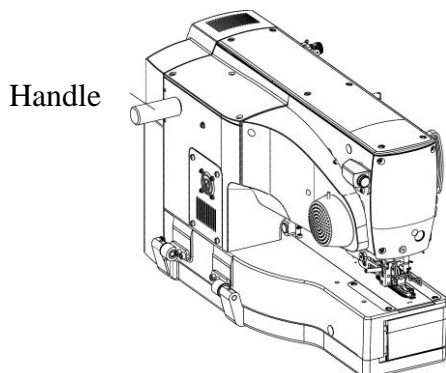
Handle

1） Installation Method of Handle

● After unpacking, install the handle on the left side of the case (as shown on the figure), so as to handle the machine conveniently.

● Remove the handle after handling.

2 Operating Instructions

2.1 Name and Description of Each Part

(Front) (Right side)
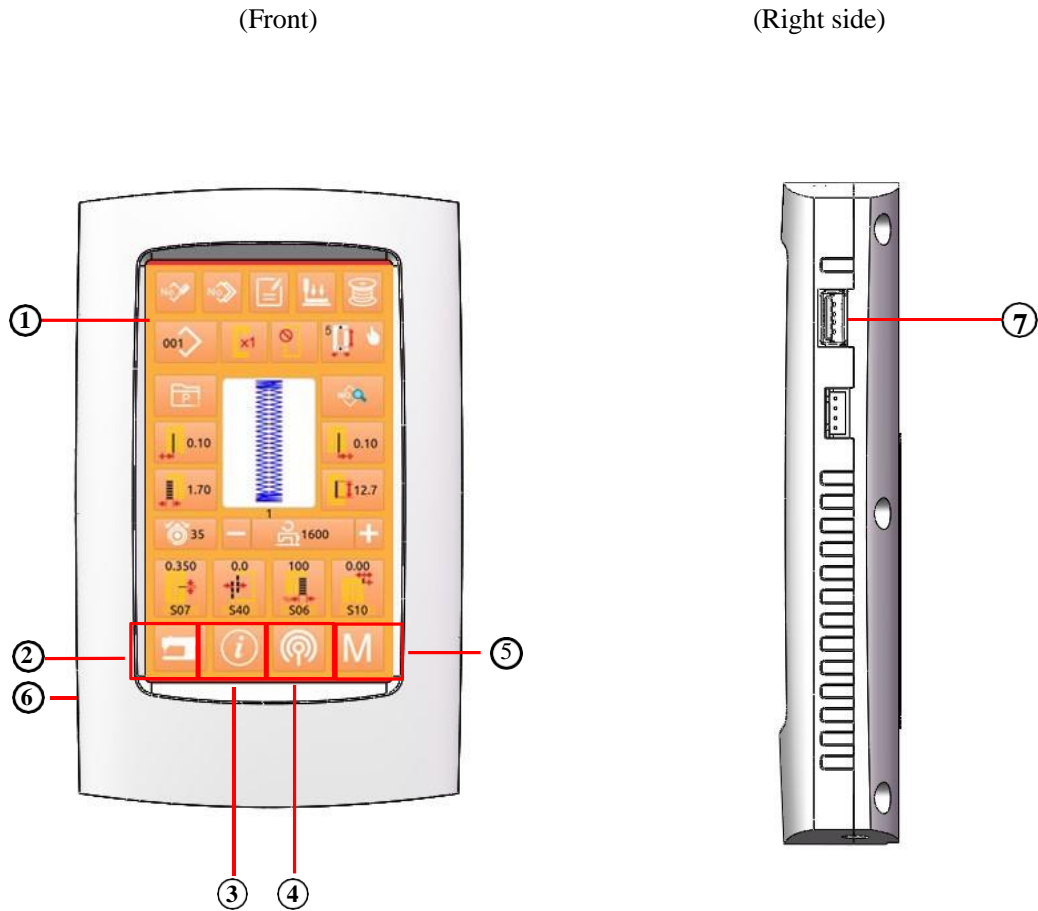
① Liquid crystal display of touch panel

② Ready button → Switch the data input interface and the sewing interface

③ Information button → Switch the data input interface and the information interface

④ Communication button → Switch the data input interface and the communication interface

⑤ Mode button → Switch the data input interface and switching interfaces of various detailed settings

⑥ Cable

⑦ USB flash disk socket

2.2　General Buttons

Buttons for common operations on each interface are shown below.

S/N	Icon	Function	Remark
1	✕	Cancel button → Exit the current setting interface. Cancel the changed data in the data change interface.	
2	✓	OK button → Confirm the changed data.	
3	▲+	UP button → Increase the value upward.	
4	▼−	DOWN button → Decrease the value downward.	

2.3　Basic Operation

① **Turn on the power switch**

First, confirm whether the type of the set presser foot (A) and the type of the installed presser foot are the same.

② **Select the pattern number to be sewn**

After the power is turned on, the data input interface appears. Select the pattern number appearing in the upper part of the interface, and then press the button (B) to select the pattern number (The pattern number that is not registered is not displayed.)
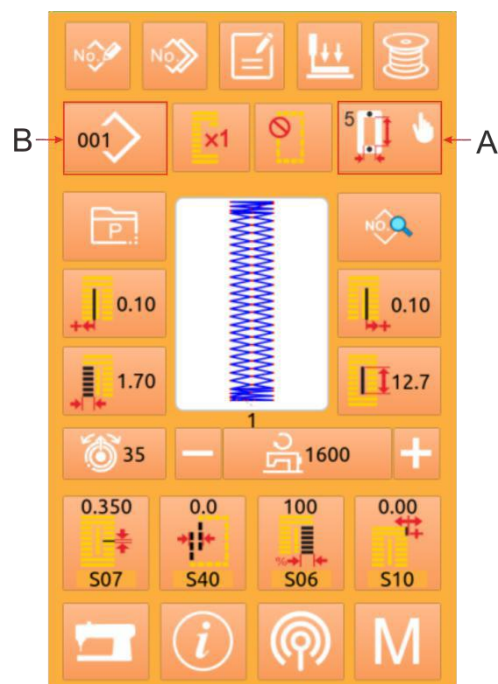
③ Set to sewable state

After the Ready button ⬚ is pressed, the background color of the LCD display is changed to blue that is ready for sewing. In the right figure, A stands for speed setting and B stands for the user management display.

④ Start to sew

Put the sewing product on the presser foot part, press the pedal to start the sewing machine and begin to sew.
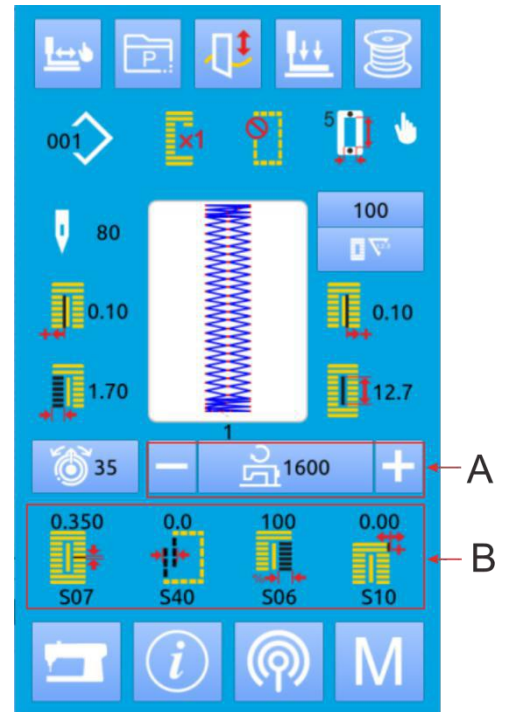
2.4 Operation of General Patterns

The setting and sewing interface of general patterns are shown in the right figure. See "4. General Pattern Sewing" for the detailed functions of each button.
The general sewing mode is the default mode of the system, namely the general sewing mode when the system is delivered.

Operating steps:

① Press the mode button **M** to enter the mode setting

② Press **Sewing type** button to select the general sewing mode

③ Press the OK button to return to the previous interface, then press the Mode button **M** to display the main interface of the general sewing
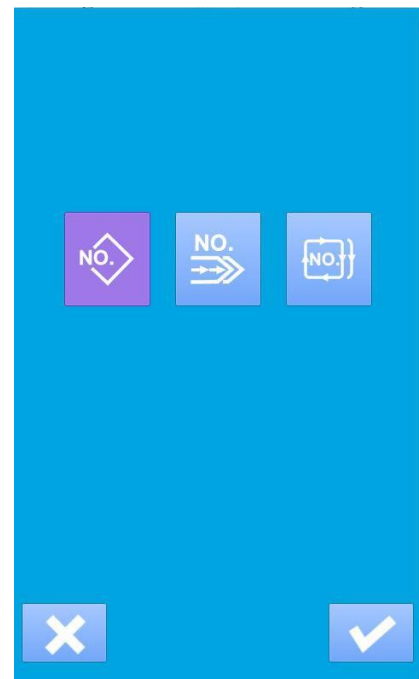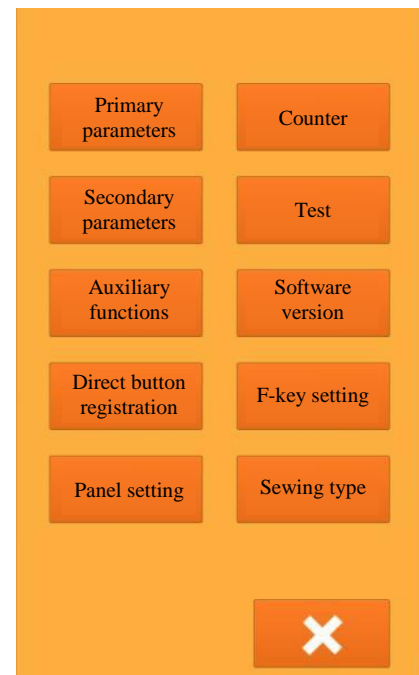
3 General Pattern Sewing
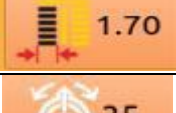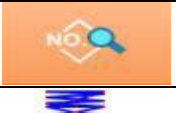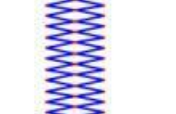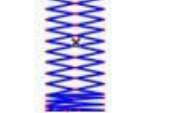
The default mode of the system is general pattern sewing mode when the system is delivered. The operating steps of this mode are described in "3. Operating Instructions". This section describes the operations of buttons for general pattern sewing.
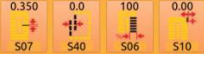
3.1 Interface Function Buttons

(1) Sewing data input interface

The data input interface is shown in the right figure. See description table of the function buttons for detailed functions.
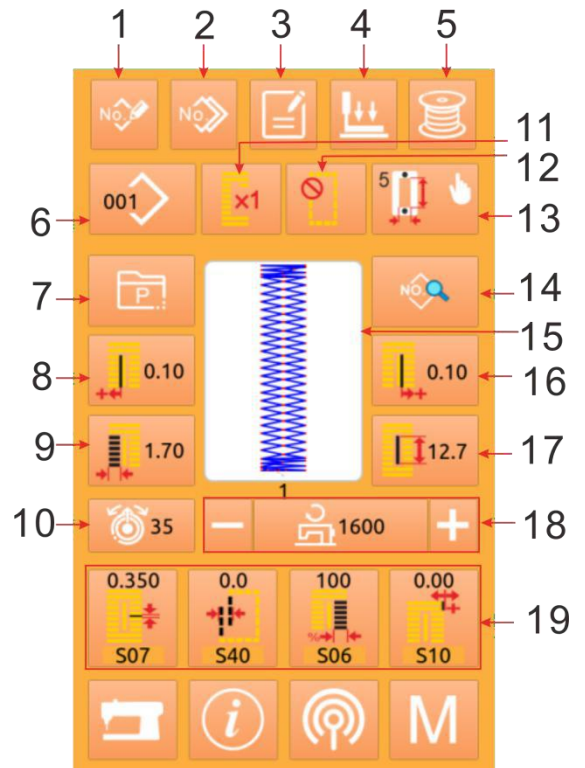
S/N	Icon	Function	Remark
1		Pattern registration	
2		Pattern copy	
3		Pattern naming	
4		Threading (presser foot down)	Replace the needle in this state
5		Winding	
6	001	Selection of patterns	Press this button to enter the pattern selection interface
7		Direct selection button	
8	0.10	Width of left knife slot	
9	1.70	Width of left covered seam	Shapes 27, 29 are not supported
10	35	Tension setting of upper thread (S51, S52, S55, S56)	S52 and S56 are affected by the sewing data switch
11	×1	Double stitch/single stitch setting	Shapes 27, 28, 29 are not supported
12		Setting of downstitching times	Shape 30 is not supported
13	5	Type selection of presser foot	
14		Sewing data setting	
15		Sewing shape selection	Click on the pattern to enter the sewing shape selection
16	0.10	Width of right knife slot	
17	12.7	Rag cutting length	

18	1600	Sewing speed	1. Press the +/- button to change the sewing speed 2. Click the speed button to set the sewing speed directly
19	0.350 0.0 100 0.00 S07 S40 S06 S10	Pattern parameters	Set parameter options
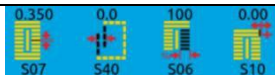
(2) Sewing interface

Press [icon] to enter the sewing interface as shown on the right figure. See the description table of function buttons for detailed functions
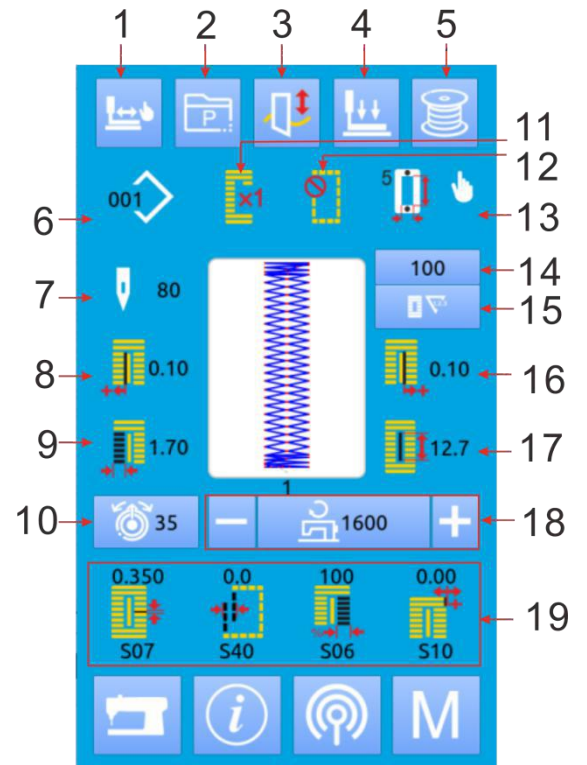
Description of function buttons:

S/N	Icon	Function	Remark
1	[icon]	Trial Sewing	Trial sewing of patterns
2	[icon]	P Pattern selection button	
3	[icon]	[icon] : Enabling of knife [icon] : Disabling of knife	Switch the enabling of knife (Pattern parameters are ineffective when the knife is disabled)
4	[icon]	Threading (presser foot down)	
5	[icon]	Winding	
6	[icon] 001	Display of pattern number	
7	[icon] 80	Display of total number of stitches	

S/N	Icon	Function	Remark
8	0.10	Width of left knife slot	
9	1.70	Width of left covered seam	
10	20	Tension setting of upper thread. The displayed value stands for the tension of the left covered seam	Enter tension setting interface to set tensions S51,S52,S55,S56
11	×1	Display of single stitch/double stitch	
12		Display of downstitching times	
13	5	Type selection of presser foot	
14	100	Display of counter value	
15		Display of counter mode : Sewing counter : Stitch counter	
16	0.10	Width of right knife slot	
17	12.7	Length of button hole	
18	− 4100 +	Speed setting	Affected by parameter k07
19	0.350 0.0 100 0.00 S07 S40 S06 S10	User management display	

3.2   Pattern Registration

At most 999 general patterns can be registered. Press

[NO] to enter the pattern registration interface (as shown on the right figure).

① **Enter the pattern number**

The pattern number you want to enter can be entered through the numeric buttons. If you enter a pattern number that already exists, a prompt of whether overwriting the existing pattern will appear on the interface. The unregistered pattern number can be retrieved through the buttons ▲+   ▼−.
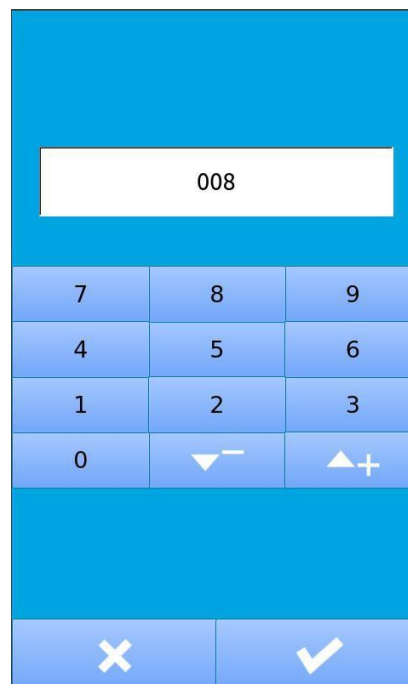
② **Select the sewing shape**

Enter the seam shape selection interface (as shown on the right figure) after confirming the pattern number. After selecting the pattern shape, press the OK button

✔ to complete the registration of the new pattern and return to the main interface, and then set the initial value of the sewing data according to the selected sewing shape.

If pressing the Exit button ✕ to directly exits the selection, the pattern is not registered.
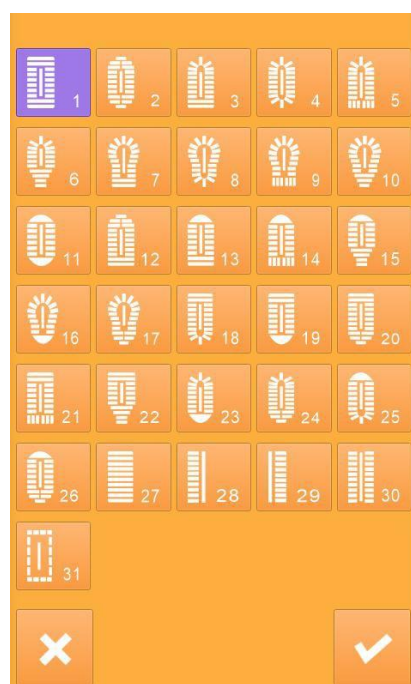
Note: The number of sewing shapes is affected by parameter K04. See Section 4.9 Sewing Shape Selection.

3.3 Pattern Copy

① **Select the pattern to be copied**

Press ![icon] to enter the pattern copy interface (as shown on the right figure).

A. Select and press the number of the pattern to be copied among the registered patterns, and then press

![icon] to enter the registration number input interface.

B. Press the Exit button to directly exit pattern copy
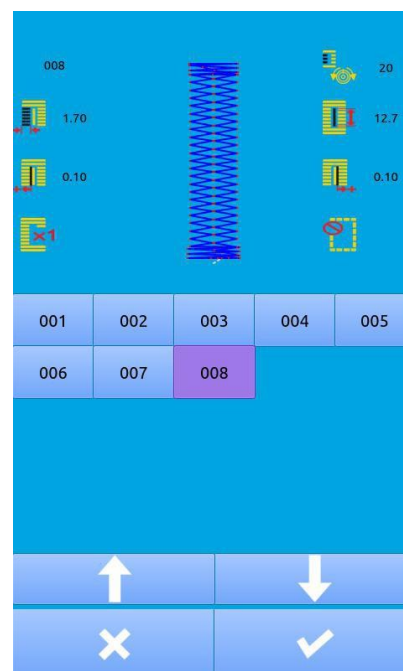
② Enter the newly registered pattern number

The sewing shape and related sewing data of the pattern to be copied are displayed on the upper part of the interface, and the unregistered pattern number is selected through the numeric button. The pattern number that has been registered cannot be registered repeatedly.
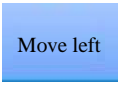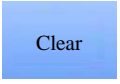
A. Press ![icon] to complete the pattern copy and return to the main pattern interface.

B. Press the Exit button ![icon] to directly exit number input interface

3.4   Pattern Naming

Press [icon] to enter the pattern naming interface (as shown on the right figure). At most 12 characters can be entered.

[Move right]: Cursor right movement button

[Move left]: Cursor left movement button

[Clear]: Clear all button

A. Select the character you want to input and press [icon] to complete pattern naming.

B. Move the cursor to determine the position of the character, and press the Delete button to eliminate the character in that position.

C. Press the Exit button [icon] to directly exit.

3.5   Threading

Press [icon] on the input interface to enter the threading interface, at this time the presser foot declines; press [icon] on the threading interface to raise the presser foot and return to the main interface.
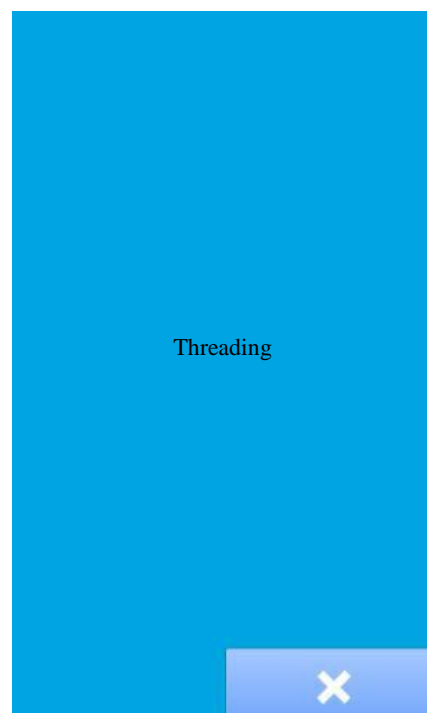
3.6　Winding

① Install the shuttle cock

Insert the shuttle cock into the winding shaft. Then, wind the thread in the direction shown on the figure (as shown on the right figure).
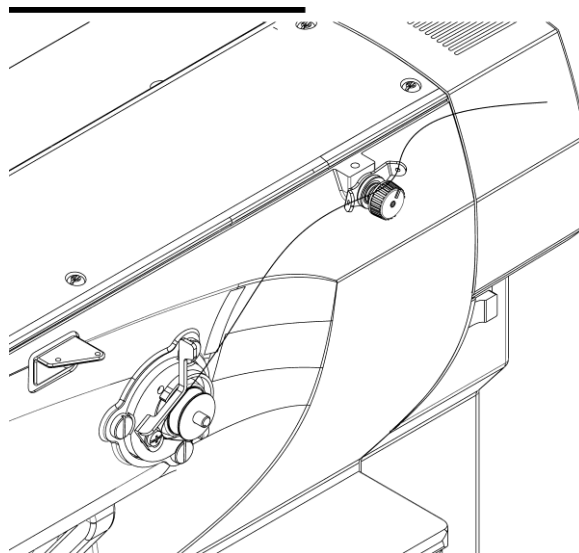
② Display the bobbin thread winding interface

After the winding button on the data input interface (orange) or the sewing interface (blue) is pressed, the winding interface appears (as shown on the right figure).

③ Start winding

After the startup pedal button is pressed, the sewing machine starts winding the bobbin thread.

④ Shut down the sewing machine

Shut down the sewing machine by pressing the stop button and return to the normal mode. In addition, the sewing machine is shut down on the winding mode by pressing the pedal again during winding of the bobbin thread, so that the bobbin thread can be wound by pressing the startup pedal. This function can be enabled when several shuttle cocks are wound.
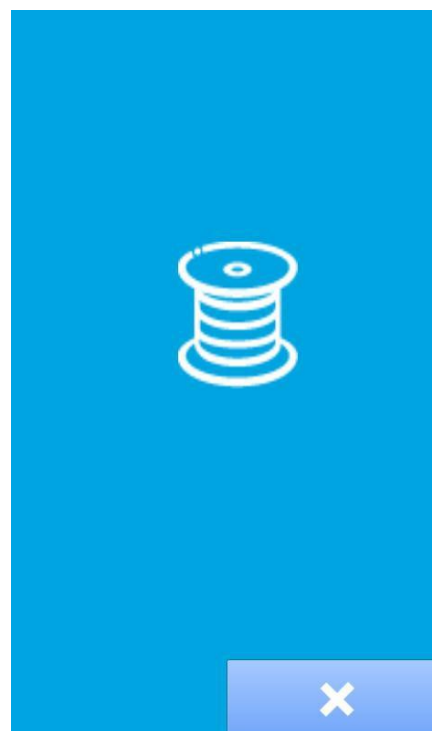
3.7   Selection of Presser Foot Type

① **Display the data input interface**

The set content can only be changed on the data input interface (orange). If the sewing surface (blue) appears, press the Ready button to display the data input interface.

② **Call the presser foot type selection interface**

After the presser foot type selection button (A) is pressed, the presser foot type selection interface appears (as shown on the right figure).
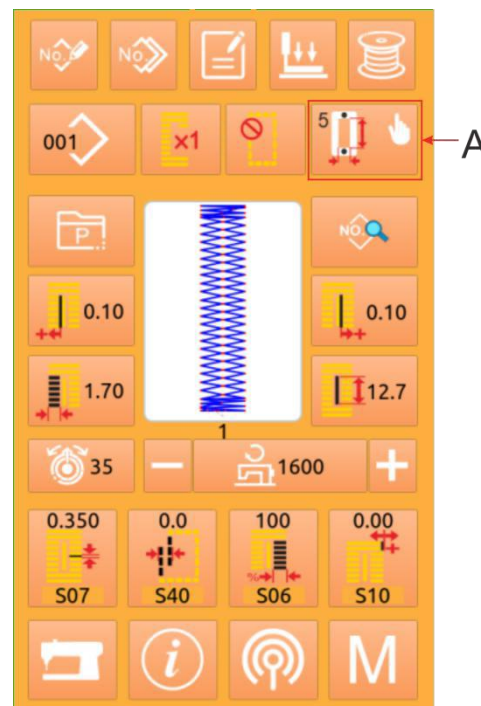
③ **Select the presser foot type**

Press the button (B) for the presser foot type installed on the sewing machine. The pressed button flips and appears. Set the presser foot type according to the table below.

	Type	**Presser foot model**
1 25×4 mm	Type 1	
2 35×5 mm	Type 2	
3 41×5 mm	Type 3	
5	Type 5	The length and width of the presser foot can be set

※ If selecting the presser foot other than type 1 to 3, set to type 5. Change the memory switch (level 1) according to the used parameter U15 presser foot and the width parameter U16 presser foot length. If type 5 is selected, the swing width of the presser foot is up to 6mm; if the length is more than 41mm, the crank of the presser foot and rag feeding plate must be changed.
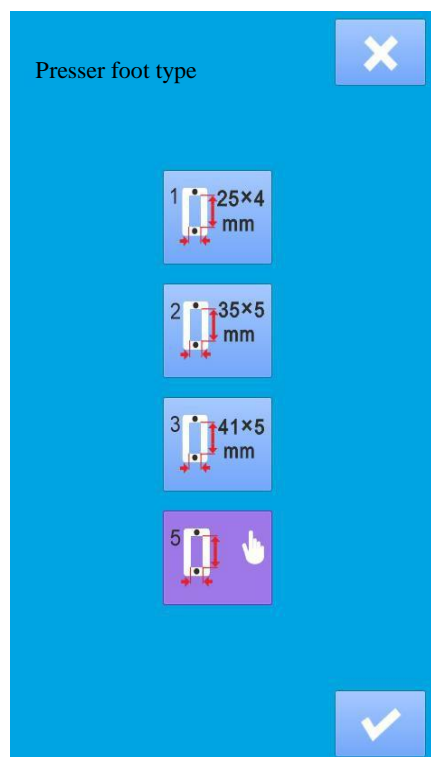
④ **Set the range of type 5 presser foot**

After selecting type 5 presser foot, enter the presser foot
size setting interface, press the button A
to set the width of the presser foot through the numeric
keyboard, with a range of 3.0~10.0mm
Press the button B to set the length of the presser foot
through the numeric keyboard, with a range of
10.0~150.0mm

Press ![check] to save the setting and exit after setting,
then return to the main input interface directly, and

then press ![x]. Cancel the setting and return to the
previous interface step ③ to select the model of the
presser foot again
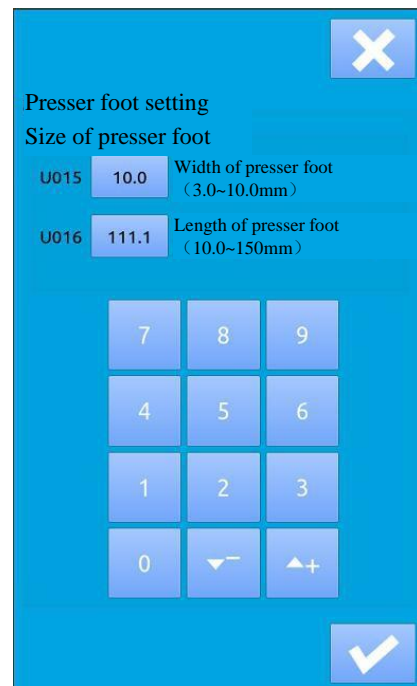
⑤ **Determine the presser foot type**

Press the OK button ![check] to exit the presser foot type
change interface and complete the change. Press the Exit

button ![x] to exit directly

3.8   Pattern Selection

Press to enter the pattern selection interface (as shown on the right figure).The sewing shape and related data of the currently selected pattern are displayed at the top and the registered pattern number is displayed at the bottom.
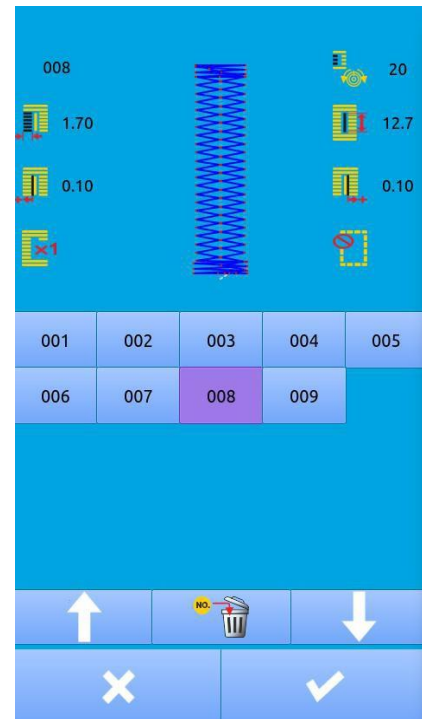
: Pattern deletion

① **Select the pattern**

20 pattern numbers can be displayed on each page. If there are more than one page, pages can be turned through and . When the registered pattern number is selected, the contents of the selected pattern are displayed on the top.

Press to complete the pattern selection.

Press the Exit button to directly exit pattern selection.

② **Pattern deletion**

Select the registered pattern, and then press to delete the pattern. But the three patterns below cannot be deleted. A: The pattern included in the backstitch
B: The pattern included in the circular seam
C: The pattern registered to P

3.9   Sewing Shape Selection

Press to enter the sewing shape selection interface

Select the pattern shape

Press the selected pattern shape button, and then press to end the selection. Press the Exit button to exit directly.

Note: The pattern selected by this function is the default parameter shape. The pattern parameters can be set according to needs, and the system does not save the them by default. Refer to 4.2 Pattern Registration for data saved.

3.10 Sewing Data Setting

① **Change the sewing data**

Press [icon] to enter the sewing setting interface (as shown on the right figure). Select the sewing data you want to modify and then enter the setting status.

Press [icon] to exit the sewing data setting. Example:
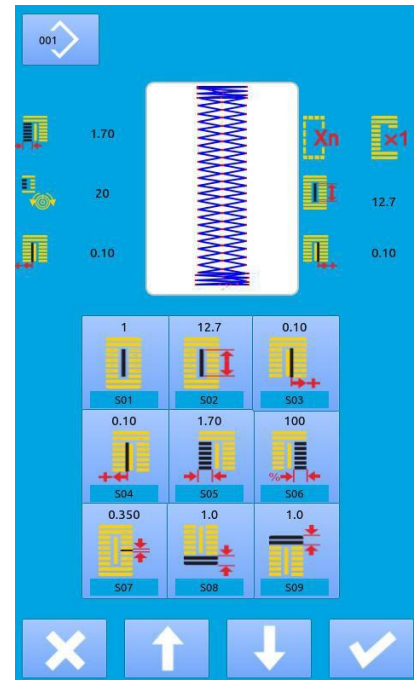
Select [S02 icon] to enter the interface (as shown on the right figure)

Select to enter the interface (as shown on the right figure)
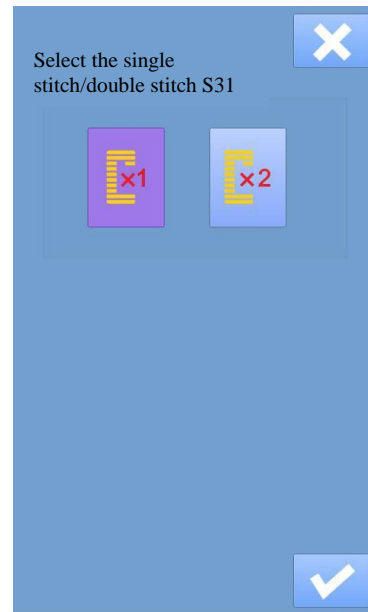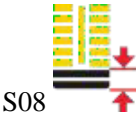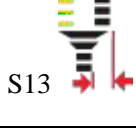
② **Sewing data table**

The sewing data is related to the selected sewing shape. If the shapes are different, the sewing data are different, and the initial values of the sewing data are also different.
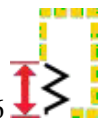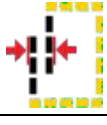
In the mode state, partial the sewing data can be set to open or not. In addition, partial sewing data are influenced by other sewing data.

Number	Item	Setting range	Editing Unit	Remark
S01	Sewing shape Select according to Section 2.12 Sewing Shape.	1~30	1	Note 5
S02	Rag cutting length Set the length that the rag knife cuts the sewing product. Set the sewing length when the sewing shapes are 27, 28, 29, or 30. Set the parameter U19 (cutting numbers of the rag knife) to valid, and then cut off the sewing product according to the size of knife set by U18 (size of rag knife).	3.0~120.0	0.1mm	
S03	Right width of knife slot Set the gap between the knife and the right parallel part.	-2.00~2.00	0.05mm	
S04	Left width of knife slot Set the gap between the knife and the left parallel part.	-2.00~2.00	0.05mm	
S05	Width of left covered seam Set the covered width of the left parallel part.	0.10~5.00	0.05mm	
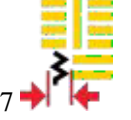
Number	Item	Setting range	Editing Unit	Note
S06	Ratio of left shape to right shape Set the expansion and reduction ratio of the right shape centered on the position of the knife	50~150	1%	
S07	Spacing between the parallel parts Set the sewing spacing between the left and right parallel parts.	0.200~2.500	0.025mm	
S08	The length of the second reinforcement seam Set the length of the reinforcement seam on the front side Square on bottom　　Straight reinforcement on bottom 　　Taper on bottom	0.2~5.0	0.1mm	
S09	The length of the first reinforcement seam Set the length of the reinforcement seam on the internal side. Above square	0.2~5.0	0.1mm	
S10	Correct the right reinforcement width Adjust the covered seam part on the right side of the reinforcement part. Correct the first and second reinforcement parts. Square on top　Square on bottom　Straight reinforcement on bottom	-1.00~1.00	0.05mm	
S11	Correct the left reinforcement width Adjust the covered seam part on the left side of the reinforcement part.	-1.00~1.00	0.05mm	
S12	Symmetrical reinforcement of left taper Set the length of reinforcement part capable of forming the tapered reinforcement shape.	0.00~3.00	0.05mm	
S13	Symmetrical reinforcement of right taper Set the length of reinforcement part capable of forming the tapered reinforcement shape.	0.00~3.00	0.05mm	Note 1
S14	Length of round-eye shape Set the length from the center of the round-eye hole to the top side of the round-eye shape.	1.0~10.0	0.1mm	Note 1
S15	Number of stitches of round-eye shape Set the number of stitches in a range of 90 degrees of the upper part of the round-eye shape.	1~8	1	Note 1

Number	Item	Setting range	Editing Unit	Note
S16	Width of round-eye shape Set the horizontal size of the inner side of the round-eye shape. The actual needling point is the size after the width of the S04 left knife slot is added.	1.0~10.0	0.1mm	Note 1
S17	Length of round-eye shape: Set the longitudinal size of the inner side of the round-eye shape.	1.0~10.0	0.1mm	Note 1
S18	Length of round: Set the length from the center to the top side of the round. Round on top Radial shape on top Half round on top Round on bottom Radial shape on bottom Half round on bottom	1.0~5.0	0.1mm	Note 1
S19	Number of stitches of radial shape Set the number of stitches in a range of 90 degrees of the upper part of the radial shape.	1~8	1	Note 1
S20	Radial shape reinforcement: Set whether having the radial shape reinforcement : No : Yes			Note 1 Note 2
S21	Spacing between reinforcement parts: Set the sewing spacing of the reinforcement part Square on top Round on top Half round on top Square on bottom Round on bottom Half round on bottom Straight reinforcement on bottom Taper on bottom	0.200~2.500	0.025	
S22	The first clearance Set the clearance between the first reinforcement part and the knife slot. Suitable for full shapes.	0.0~4.0	0.1mm	
S23	The second clearance Set the clearance between the second reinforcement part and the knife slot. Suitable for full shapes.	0.0~4.0	0.1mm	
S31	Single stitch/double stitch ×1 ×2 : Single stitch : Double stitch			

Number	Item	Setting range	Editing Unit	Note
S32	Select cross double sewing When setting the operation of double sewing, select needling at the parallel parts at overlapping sewing or select cross sewing. : Double sewing : Cross sewing			Note 3
S33	Correction of the double sewing width When setting the operation of double sewing, set the covered width flux of the first turn.	0.0~2.0	0.1mm	Note 3
S34	Downstitching times: Set the downstitching times. : No downstitching : 1 to 9 times	0~9	1 time	
S35	Downstitching spacing Set the sewing spacing when downstitching	1.0~5.0	0.1mm	Note 3
S36	Rolled length when downstitching Set the rolled length of the upper thread for sewing when downstitching	2.0~20.0	0.1mm	Note 3
S37	Rolled spacing when downstitching Set the rolled spacing of the upper thread for sewing when downstitching	0.2~5.0	0.1mm	Note 3
S38	Rolled width when downstitching Set the rolled width of the upper thread for sewing when downstitching	0.0~4.0	0.1mm	Note 3
S39	Correction at front and rear of downstitching and needling points When sewing more than 2 turns, set the correction amount at front and rear of needling point	0.0~2.5	0.1mm	Note 2 Note 3
S40	Correction at left and right of downstitching and needling points When sewing more than 2 turns, set the correction amount at left and right needling point	0.0~1.0	0.1mm	Note 3
S41	Correction on the left side when downstitching Set the correction amount at the reference sewing position where correcting the downstitching from the center of the left covered seam to the left and right sides	-2.0~2.0	0.1mm	Note 2 Note 3

Number	Item	Setting range	Editing Unit	Note
S42	Correction on the right side when downstitching Set the correction amount at the reference sewing position where correcting the downstitching from the center of the right covered seam to the left and right sides	-2.0~2.0	0.1mm	Note 2 Note 3
S44	Setting of downstitching speed Set the downstitching speed	400~4200	100rpm	Note 3 Note 4
S51	Tension of left parallel part Set the tension of the upper thread of the left parallel part.	0~200	1	
S52	Tension of right parallel part Set the tension of the upper thread of the right parallel part.	0~200	1	Note 2
S53	Tension of left parallel part (the first turn of double stitch) For double stitch, set the tension of the upper thread of the left parallel part of the first turn.	0~200	1	Note 2 Note 3
S54	Tension of the right parallel part (the first turn of double stitch) For double stitch, set the tension of the right parallel part of the first turn.	0~200	1	Note 2 Note 3
S55	Tension of the first reinforcement part Set the tension of the upper thread of the first reinforcement part.	0~200	1	
S56	Tension of the second reinforcement part Set the tension of the upper thread of the second reinforcement part.	0~200	1	Note 2
S57	Setting of the tension of the upper thread at the beginning of sewing Set the tension of the upper thread of the reinforcement seam at the beginning of sewing.	0~200	1	
S58	Setting of the tension of the upper thread when downstitching Set the tension of the upper thread when downstitching	0~200	1	Note 3

S59	Start the first reinforcement sewing, and adjust ACT synchronously Adjust the tension of the upper thread of the first reinforcement part, and output it synchronously.	-5~5	1 stitch	Note 2
S60	Start sewing the right covered seam, and adjust ACT synchronously Adjust the tension of the upper thread of the covered seam sewing part, and output it synchronously.	-5~5	1 stitch	Note 2
S61	Start the second reinforcement sewing, and adjust ACT synchronously Adjust the tension of the upper thread of the second reinforcement part, and output it synchronously.	-5~5	1 stitch	Note 2
S62	Setting of the number of stitches at the beginning of sewing Set the number of stitches of reinforcement sewing at the beginning of sewing	0~8	1 stitch	
S63	Setting of sewing spacing at the beginning of sewing Set the reinforcement sewing spacing at the beginning of sewing	0.00~0.70	0.05mm	Note 2
S64	Reinforcement sewing width at the beginning of sewing Set the reinforcement sewing width at the beginning of sewing	0.0~3.0	0.1mm	
S65	Longitudinal correction of the reinforcement sewing at the beginning of sewing Set the starting position of the reinforcement sewing in the longitudinal direction at the beginning of sewing	0.0~5.0	0.1mm	Note 2
S66	Horizontal correction of the reinforcement sewing at the beginning of sewing Set the starting position of the reinforcement sewing in the horizontal direction at the beginning of sewing	0.0~2.0	0.1mm	Note 2
S67	Reinforcement sewing width at the end of sewing Set the reinforcement sewing width at the end of sewing	0.1~1.5	0.1mm	
S68	Number of stitches of reinforcement sewing at the end of sewing Set the number of stitches of reinforcement sewing at the end of sewing	0~8	1 stitch	

S69		Longitudinal correction of the reinforcement sewing at the end of sewing Set the starting position of the reinforcement sewing in the longitudinal direction at the end of sewing	0.0~5.0	0.1mm	Note 2
S70		Horizontal correction of the reinforcement sewing at the end of sewing Set the starting position of the reinforcement sewing in the horizontal direction at the end of sewing	0.0~2.0	0.1mm	Note 2
S81		Action of knife: Set whether the usual rag knife moves : Disable the action of the usual knife : Enable the action of the usual knife			
S83		The first turn knife for double stitching For double stitching, Set the rag knife of the first turn moves. : Disable the action of the usual knife : Enable the action of the usual knife			Note 2 Note 3
S84		Maximum speed limit Set the maximum speed of the sewing machine. Limited by parameter K07 (maximum speed limit setting).	400~4200	100rpm	Note 4
S86		Forward spacing Set the sewing spacing on the forward side of the bar shape (shape of S01:N0.27, 28, 29, 30).	0.200~2.500	0.025	Note 1
S87		Forward width Set the sewing width on the forward side of the bar shape (shape of S01:N0.27, 28, 29, 30).	0.10~3.00	0.05mm	Note 1
S88		Return spacing Set the sewing spacing on the return side of the bar shape (shape of S01:N0.27, 28, 29, 30).	0.200~2.500	0.025mm	Note 1
S89		Return width Set the sewing width on the return side of the bar shape (shape of S01:N0.27, 28, 29, 30).	0.10~3.00	0.05mm	Note 1

Note 1: If the shapes are different, the display is different.

Note 2: Set to display after opening.

Note 3: Display after selecting the

function

Note 4: Limited by parameter K07 (maximum speed limit setting).

Note 5: When changing the shape of the first fixing seam, pay attention to modify the sewing parameters for that shape, otherwise it may affect the generation of the template data or the sewing effect.

3.11 Direct Selection of Patterns

Register 10 frequently used patterns to the direct

selection button and press [ ] on the input

interface to enter the selection interface.
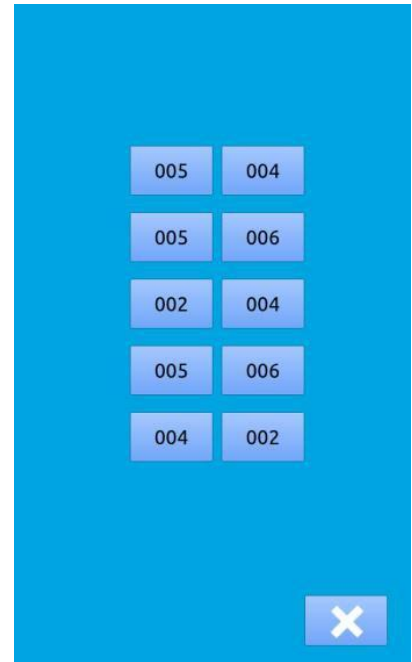
3.12 Trial Sewing of General Patterns

① **Display the sewing interface**

After the Ready button [icon] on the data input interface is pressed, the background color of the LCD display is changed to blue and the sewing interface appears as shown on the right figure.

② **Display the trial sewing interface**

On the sewing interface, press [icon] to enter the trial sewing interface (as shown on the right figure).

[icon] : Return to origin		[icon] : Sewing command	
[icon] : Backward		[icon] : Thread trimming command	
[icon] : Forward		[icon] : Empty feed command	
[icon] : Tension at needle location point		[icon] : Thread tension command	
[icon] : Current number of stitches/Total number of stitches		[icon] : Knife drive command	

③ **Start trial sewing**

Press Return to origin button [icon], back button [icon] and

forward button [icon] to start the single-step trial sewing. On this mode, press the pedal switch to start the sewing machine and complete the remaining number of stitches.

B. Press and hold [icon] [icon] to conduct the trial sewing for the whole pattern.
C. When trial sewing is conducted, the corresponding command mark on the left side will appear according to the sewing data.

For example: When the sewing data is trimming thread, the icon changes to [icon]

④ **End trial sewing**

Press the Cancel button [icon] to exit the trial sewing pinterface, and then return to the sewing interface.

3.13 Tension Setting of Upper Thread

(I)When changing the tension value of the thread

① Display the data input interface

Change the tension of the upper thread on the data input interface (orange) or the sewing interface (blue). If the sewing surface (blue) appears, press the Ready button to display the data input interface (orange).

② Call out the upper thread tension change interface

After the upper thread tension button is pressed, the upper thread tension change interface appears (as shown on the right figure).

③ Change the tension of the upper thread

Change the tension of the upper thread of the parallel part on the upper thread tension change interface

Tension of the upper thread of force and reinforcement

part. Press , .

 , to set S51,S52,S55,S56 respectively

④ End the change of the tension of the upper thread

Press the Cancel button to close the upper thread tension change interface for completing the change.

(range: 1-200)
Group 1

38
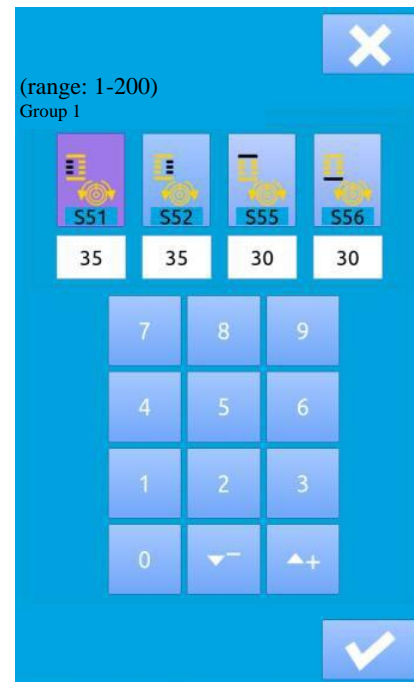
3.14 Operation of Counter

(1) Setting method of the counter

① Display the counter interface

After the button [image] ([image]) on the setting interface is pressed, the counter setting interface appears.

[image] : Sewing counter type

[image] : Stitch counter type

Select [image] and [image] to set the counter type and its current count value.

A. Press [image] to set Valid and return to the main interface.

B. Press [image] to cancel the operation and return to the main interface.
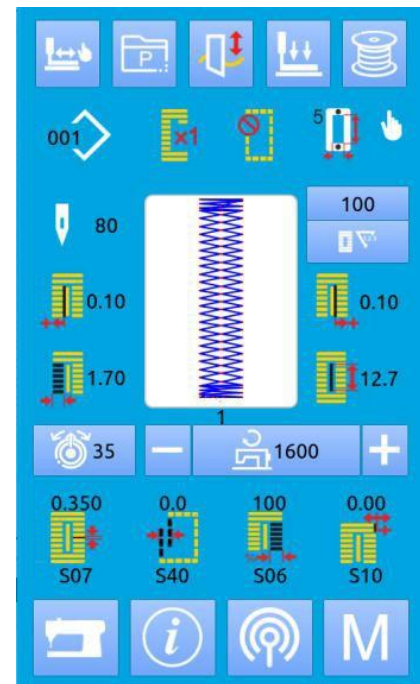
3.15 Emergency Stop

During sewing, after the stop switch is pressed, the sewing machine interrupts sewing and stops rotating. At this time, the interface displayed is as shown on the right figure:

The stop switch is pressed
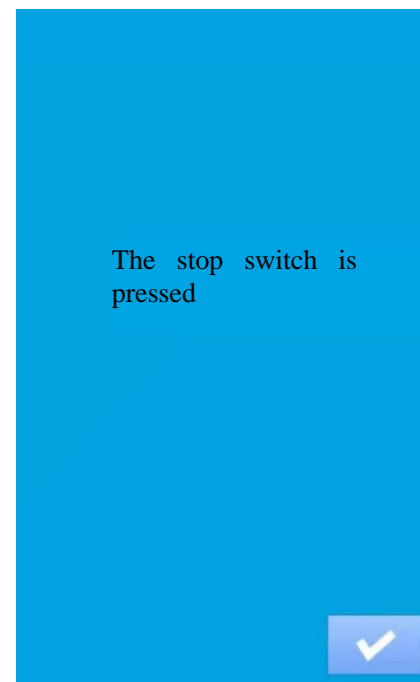
Press ![checkmark] to remove the abnormality; the single-step operation interface pops up (as shown on the right figure).

The settings are the same as that of the trial sewing state.

Press the pedal to continue sewing
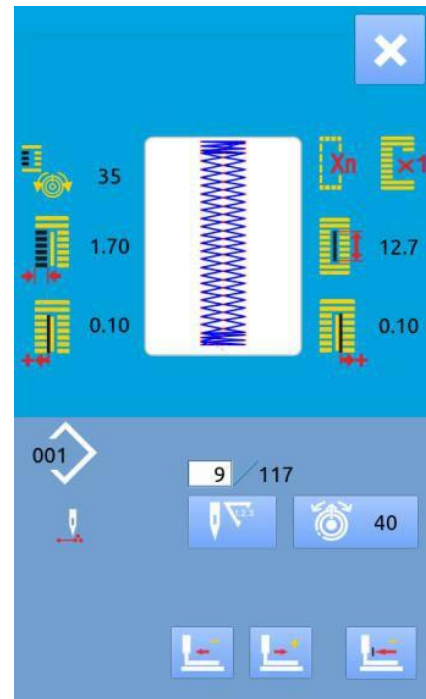
4 Backstitch Pattern Sewing
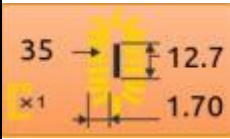
This type of sewing does not lift the presser foot, and at most 6 shapes can be sewed continuously.

At most 50 backstitch patterns can be registered.

4.1 Function Description

S/N	Icon	Function	Remark
1		New pattern registration	
2		Pattern copy	
3		Pattern naming	
4		Threading	
5		Winding	
6	01	Backstitch pattern selection	
7		All clear button	Clear all sub-pattern data of the current backstitch pattern
8	1	Sewing order	
9	0.0	Rag feeding amount input button	

10	001	Sub-pattern selection button	
11	35 → 12.7 ×1 1.70	Sewing data editing	

4.2　Backstitch Editing

4.2.1　Backstitch pattern selection

Press the button 10 to enter the pattern selection

interface (as shown on the right figure). Operate

according to the steps below:

A. View the pattern information registered in the

continuous sewing data through and .

B. Press the Delete button to delete the selected pattern.

C. Select the appropriate pattern, press to end the

selection and return to the main interface.

D. Press to cancel the selection and return to the main interface.
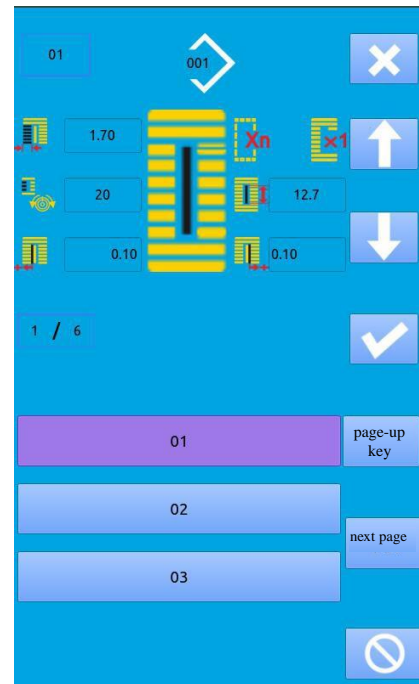
4.2.2 Backstitch pattern editing

① **Rag feeding amount setting**

Press the button A [   ] in Figure 1 below to enter the rag feeding amount setting interface (as shown on Figure 2).
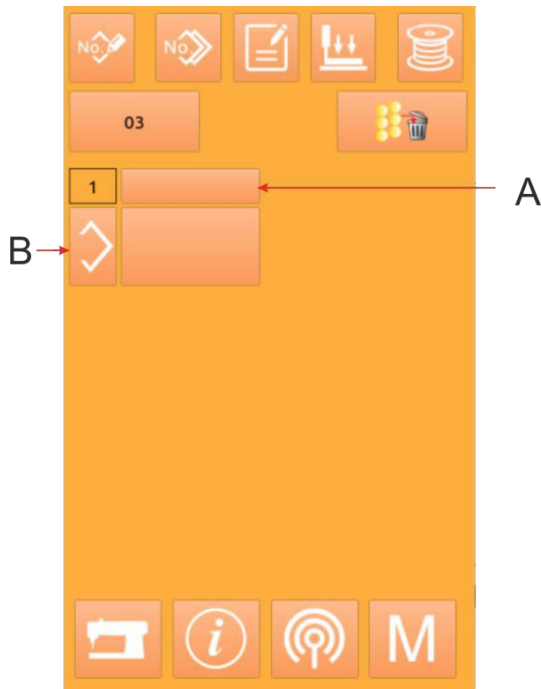
Figure 1
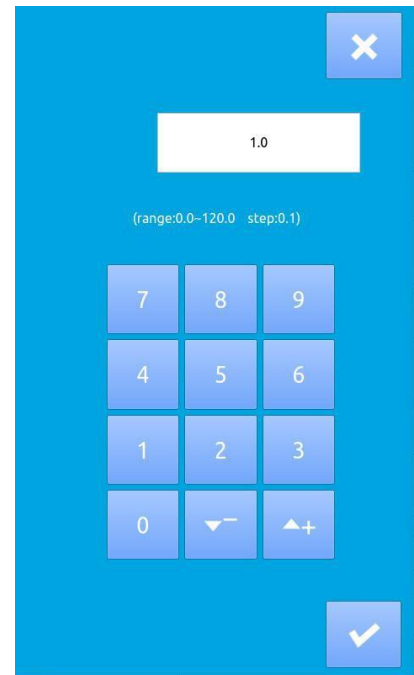
Figure 2

② **Select the pattern**

Press B [icon] to enter the pattern selection interface (as shown on the right figure). A. There are two ways to select the pattern on this interface. Directly press the pattern number button to select

B. Press [icon] to eliminate the currently selected pattern. C. Press [icon] to cancel the selection operation.
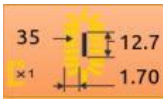
D. Select the appropriate pattern, and press [icon] to confirm the selection
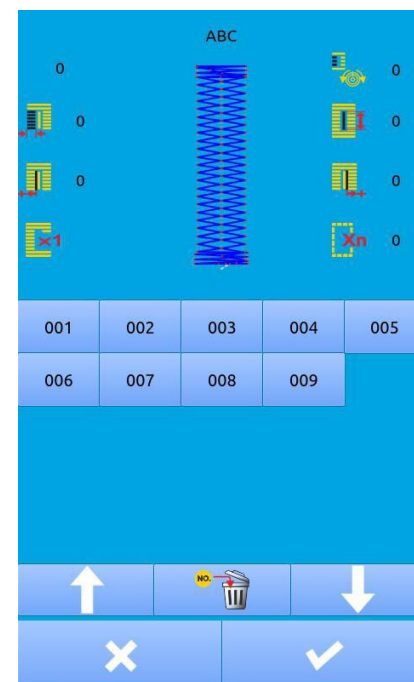
③ **Sewing data change**

Press [icon: 35 → 12.7, ×1 1.70] to enter the sewing data setting interface
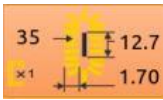
(as shown on the right figure 2).
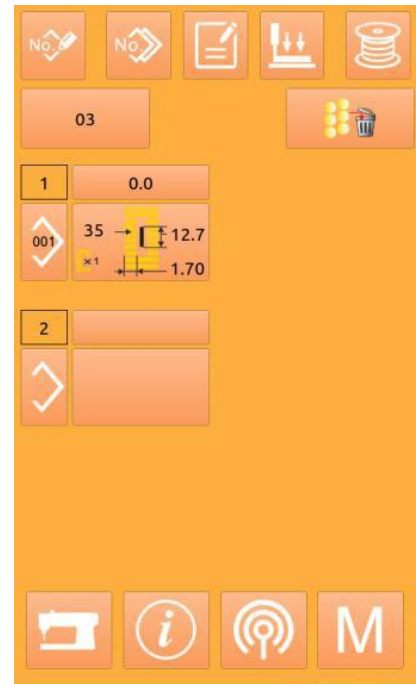
④ **Sewing data change**

Refer to 4.10 Sewing Data Setting to set parameters

for the sub-patterns of the continuous patterns

4.2.3 **Backstitch pattern registration**

At most 50 backstitch patterns can be registered. Press [icon]
to enter the backstitch pattern registration interface (as shown
on the right figure):

① **Enter the pattern number**

Select the pattern number you want to enter through
the numeric buttons. The pattern number that has
been registered cannot be registered repeatedly. The
unregistered pattern number can be retrieved

through the buttons [icon] [icon]
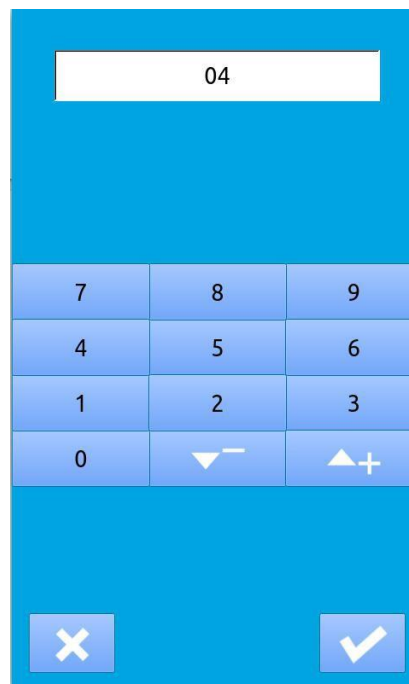
② **Backstitch editing**

Press [icon] after determining the pattern number to
enter the Backstitch editing interface (as shown on the
right figure).
Refer to Section "4.2.2" for the subsequent operations.
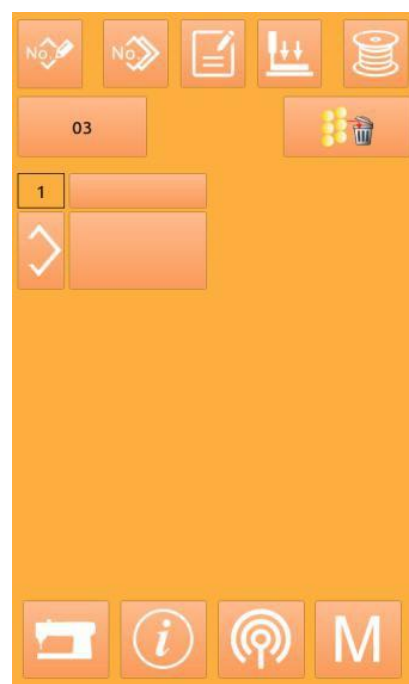
4.2.4 Backstitch pattern copy

① Select the pattern to be copied

Press ![icon] to enter the pattern copy interface (as shown on the right figure). Select and press the number of the pattern to be copied among the registered patterns.

Press ![icon] and ![icon] to view the shapes of the patterns contained in the backstitch.

Press ![icon] to cancel the copy operation.
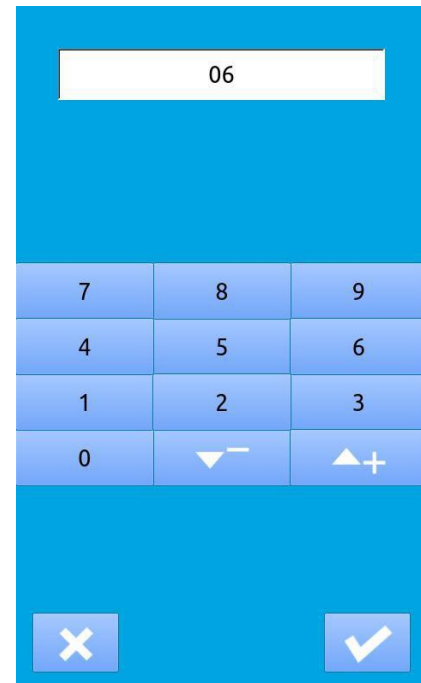
② Enter the newly registered pattern number

The sewing shape and related sewing data of the pattern to be copied are displayed on the upper part of the interface, and the unregistered pattern number is selected through the numeric button. Press ![icon] to complete the pattern copy operation.

Press ![icon] to cancel the operation and return to the previous interface.

※ **The pattern number that has been registered cannot be registered repeatedly.**
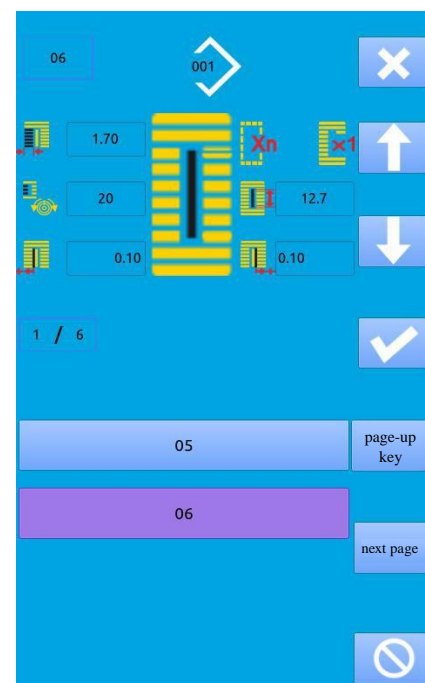
4.2.5 Backstitch pattern deletion

① **Select the pattern to be deleted**

Press the button A to select the pattern and press

to return to the main interface as shown on the

right figure.

Press to delete the backstitch pattern and

delete all the current sub-patterns.
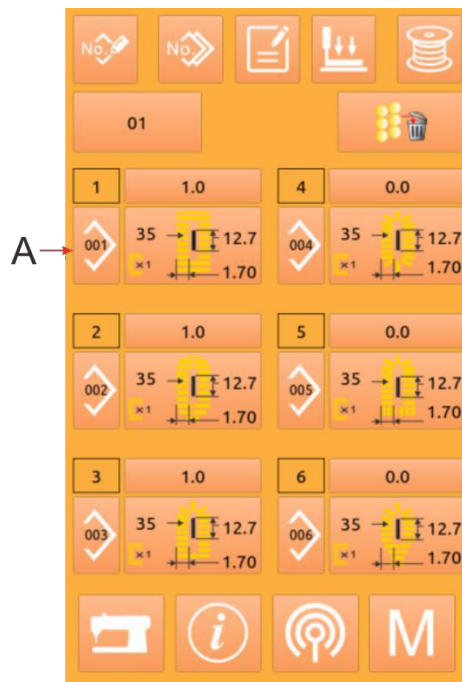
② **Confirm whether deleting**

Press to complete the pattern deletion operation.

Press to cancel the deletion operation.

Whether to delete all
sub-patterns
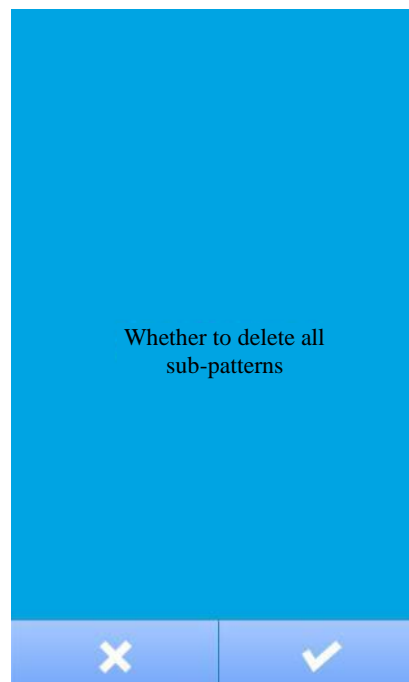
③ **Complete deletion**

After deleting the backstitch pattern, return to the main
interface of backstitch to re-edit the pattern.
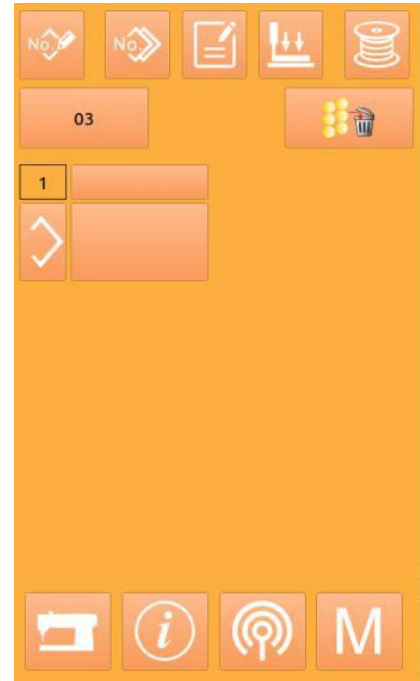
4.3 Continuous Sewing Interface

Press [image] to enter the sewing interface (as shown
on the right figure).

4.3.1 Function description

S/N	Icon	Function	Remark
1		Trial Sewing	
2		Enabling of knife	Switch the enabling of knife
3		Threading (presser foot down)	
4		Winding	
5		Display of pattern number	
6		Tension setting of upper thread	
7		Width display of left covered seam	
8		Left width display of knife slot	
9		Right width display of knife slot	
10		Length of button hole	
11		Display of single stitch/multiple stitch	
12		Display of downstitching times	
13		Number display of stitches	
14		Display of current sewing speed	
15		Display of counter value : Stitch counter : Sewing counter	
16		Speed setting	
17		Pattern number entered in the backstitch data	
18		Display of sewing shape	

4.3.2 Trial sewing of backstitch

(1) Display the sewing interface

After the Ready button [ ] on the data input interface is pressed, the background color of the LCD display is changed to blue and the sewing interface appears
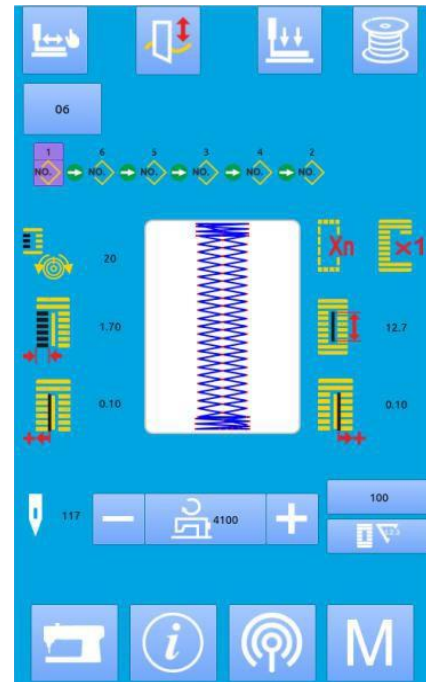
(2)   Display the trial sewing interface

On the sewing interface, press [ ] to enter the trial sewing interface (as shown on the right figure).

	Return to origin		Sewing command
	Backward		Thread trimming command
	Forward		Empty feed command
40	Tension at needle location point		Thread tension command
	Current number of stitches/Total number of stitches		Knife drive command
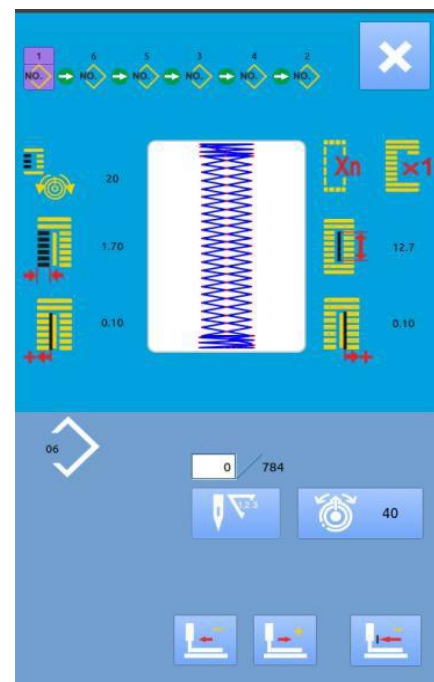
(3) Start trial sewing

Press Return to origin button [ ], back button [ ] and forward button [ ] to start the single-step trial sewing. On this mode, press the pedal switch to start the sewing machine and complete the remaining number of stitches.

(4)   End trial sewing

Press the Cancel button [ ] to exit the trial sewing interface, and then return to the sewing interface.

5 Circular Seam Pattern Sewing

After this function is enabled, multiple patterns can be sewed in a circular sequence. At most 30 patterns can be entered for a circular seam pattern, and at most 50 circular patterns can be registered.

5.1 Function Description

S/N	Icon	Function	Remark
1		New pattern registration	
2		Pattern copy	
3		Pattern naming	
4		Threading	
5		Winding	
6	01	Circular seam pattern selection	
7		Sewn clothing selection	
8		Sewing data modification	
9~12	→ ↓ ↑ ←	Cursor movement button	
13	NO.	Pattern selection button	
14		Sub-pattern clear button	Clear the sub-pattern at the position selected by the cursor
15		All sub-pattern clear button	Clear all sub-patterns entered in the current cycle sewing data
16	④ Number in	Sewing order	

5.2 Circular Seam Editing

5.2.1 Pattern registration

Enter the pattern number through the numeric keyboard.

Press [✓] to end the selection.

Press [✗] to exit the selection.

5.2.2 Pattern copy

① **Select the pattern to be copied**

Press [NO.] to enter the pattern copy interface (as shown on the right figure). Select the number of the pattern to be copied among the registered patterns and press [NO.].

Press [✗] to exit copy operation.

② **Enter the newly registered pattern number**

The patterns to be copied are displayed on the upper part of the interface, and the unregistered pattern number is selected through the numeric button. The pattern number that has been registered cannot be registered repeatedly.

Press [✓] to complete the pattern copy operation.

Press [✗] to exit number entry.
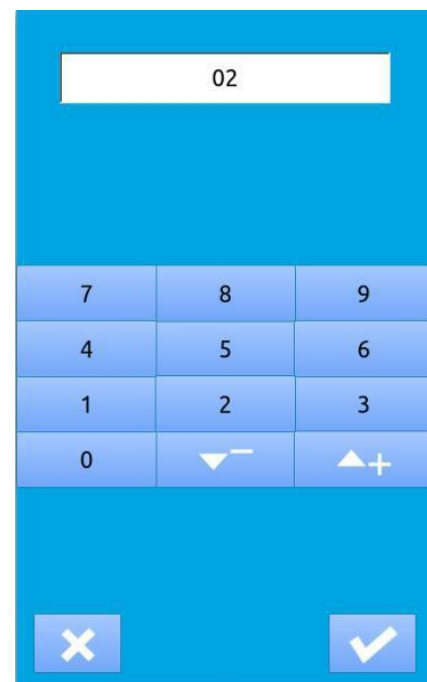
5.2.3   Circular seam pattern selection

Press [01] to enter the circular seam pattern selection interface (as shown on the right figure).

Operations are the same as that of the general pattern selection.

Press [X] to exit pattern selection.

5.2.4   Circular seam pattern editing

① **Start editing**

Select the desired position through direction buttons

←   →   ↓   ↑ .

Press NO. to enter the pattern selection interface (as shown on the right figure).
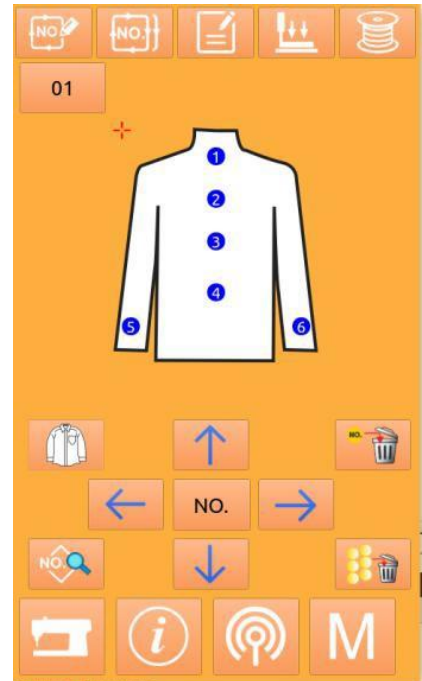
② **Pattern selection**

: Pattern deletion
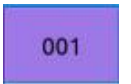
001 : Pattern selection

Select the appropriate pattern, and press ✓ to end

selection Press ✗ not to select but to directly exit
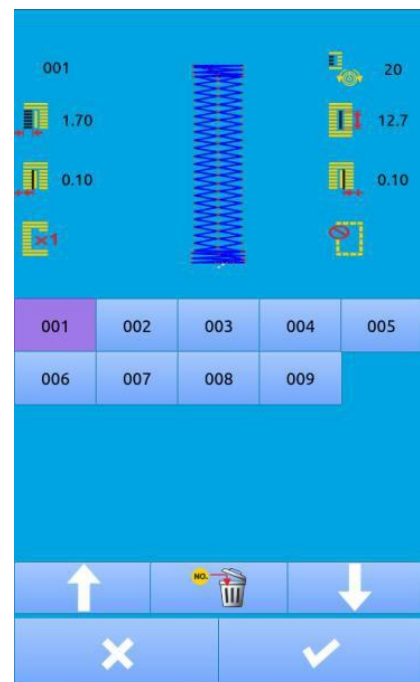
③ **Sewing data change**

Move the cursor to the position of the pattern to be changed and press [NO] to enter the

sewing data setting interface (as shown on the figure below). Press [×] to exit the

corresponding sewing data change interface
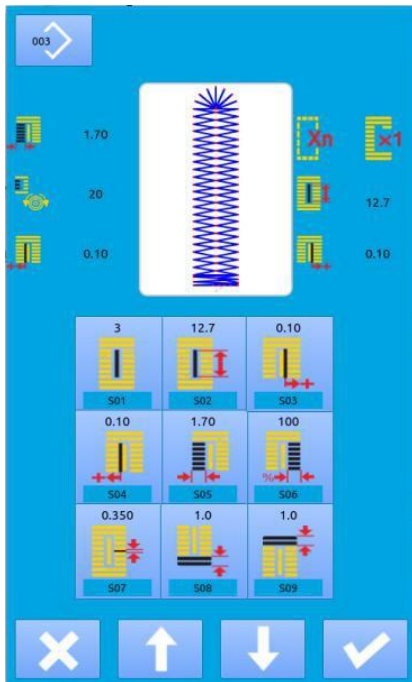
The left figure shows the modification of general pattern sewing data. Refer to Section 4.10 Sewing Data Setting for details.

The right figure shows the editing of the backstitch pattern sewing data. Refer to Continuous Sewing Data Input.

5.2.5   Change of sewing clothes

Press to enter the sewn clothing selection interface (as shown on the right figure), and then change the reference image for changing the sewing data input interface.

Press to exit and press to select Take Effect.

Press to enter the sewing interface (as shown on the right figure).
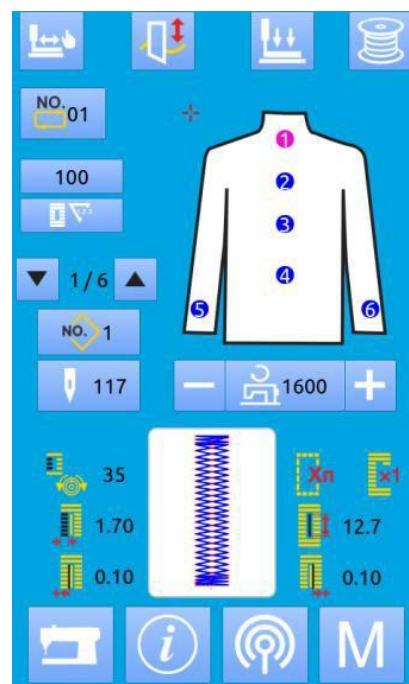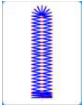
5.3 Cycle Sewing Interface

5.3.1 Function description

S/N	Icon	Function	Remark
1		Trial Sewing	
2		Enabling of knife	Switch the enabling of knife
3		Threading (presser foot down)	
4		Winding	
5	NO.01	The sequence number of current pattern sewing	
6		Display of counter value : Sewing counter : Stitch counter	
7	▼ 1/6 ▲	Minus operation for sewing sequence	Reverse to the previous sewing sequence
7	▼ 1/6 ▲	Minus operation for sewing sequence	Reverse to the previous sewing sequence

8	NO. 1	Display of pattern number	
9	117	Number display of stitches	
10		Tension setting of upper thread	
11		Width display of left covered seam	
12		Left width display of knife slot	
13	Xn	Display of downstitching times	
14	×1	Display of single stitch/double stitch	
15		Length of button hole	
16		Right width display of knife slot	
17	4100	Display of current sewing speed	
18		Display of sewing shape	

5.3.2 **Trial sewing of circular seam**

（1）**Display the sewing interface**

After the Ready button [⌷] on the data input interface is
pressed, the background color of the LCD display is changed
to blue and the sewing interface appears

（2）**Display the trial sewing interface**

On the sewing interface, press [⌷] to enter the trial
sewing interface (as shown on the right figure).

[icon]	Return to origin	[icon]	Sewing command
[icon]	Backward	[icon]	Thread trimming command
[icon]	Forward	[icon]	Empty feed command
[icon]	Tension at needle location point	[icon]	Thread tension command
[icon]	Current number of stitches/Total number of stitches	[icon]	Knife drive command

（3）**Start trial sewing**

Press Return to origin button [icon], back button [icon]

and forward button [icon] to start the single-step trial
sewing. On this mode, press the pedal switch to start the
sewing machine and complete the remaining number of
stitches.

（4）**End trial sewing**

Press the Cancel button [X] to exit the trial sewing
interface, and then return to the sewing interface.

6 Mode Setting

Press ![M] to switch between the data input interface and the mode interface (as shown on the right figure), and then conduct some detailed setting and editing operations on this interface.

Primary parameters	Counter
Secondary parameters	Test
Auxiliary functions	Software version
Direct button registration	F-key setting
Panel setting	Sewing type
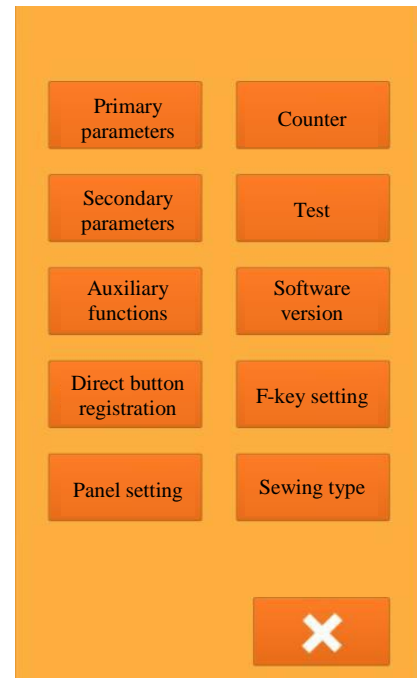
6.1 Function Description

S/N	Icon	Function	remark
1	Primary parameters	Primary parameter setting	
2	Counter	Counter setting	
3	Secondary parameters	Secondary parameter setting	
4	Test	Test	
5	Auxiliary functions	Auxiliary functions	
6	Software version	Software version view	
7	Direct button registration	Direct button registration	
8	F-key setting	F-key setting	
9	Panel setting	Panel setting	
10	Sewing type	Sewing type setting	

6.2 Primary Parameter Setting

① Parameter setting

Select [ ] to enter the primary parameter setting interface (as shown on the right figure) Press [ ] to exit the parameter setting interface

U001	14.0	The highest position where the presser foot can be lift
U002	6.0	The middle position where the presser foot can be lift
U003	0.0	The highest rag putting position where the presser foot can be lift
U004	80%	The pressing position of double pedal
U005	50%	Presser foot lift position of double pedal
U006	33	Tension setting of upper thread at the end of sewing
U007	35	Tension setting of upper thread when trimming the thread
U008	60	Tension setting of upper thread when downstitching
U009	400	Soft start speed setting (the first stitch)
U010	400	Soft start speed setting (the second stitch)

Select U002 to enter the interface

Select U19 to enter the interface

6.0

Range: 0.0-14.0 Step length: 0.1

U002: The middle position where the presser foot can be lift
Set the height of the middle position for pedal moving
Setting range: 0-14.0
Editing unit: 0.1
Initial value: 6.0mm

7	8	9
4	5	6
1	2	3
0	▼−	▲+
c	−	.

Effective
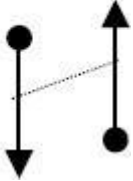
U019: Invalid/valid for the cutting action function of number of rag knife
Setting range: [invalid, valid]
Editing unit:
Initial value: Invalid
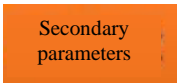
Primary parameter table

S/N	Item	Setting range	Editing Unit	Factory setting
U001	The highest position where the presser foot can be lift Set the height of the highest position for pedal moving.	0~17.0	0.1mm	14.mm
U002	The middle position where the presser foot can be lift Set the height of the middle position for pedal moving	0~14.0	0.1mm	6.0mm
U003	The rag putting position when the presser foot lifts Set the height of the rag putting position for pedal moving.	0~14.0	0.1mm	0
U004	The pressing position of double pedal Operation when setting double pedal.	5~95	1%	80%
U005	Presser foot lift position of double pedal Operation when setting double pedal.	5~95	1%	50%
	Press volume of pedal U04 pressing position of double pedal (%)			
U006	Tension setting of upper thread at the end of sewing	0~200	1	33
U007	Tension setting of upper thread when trimming the thread	0~200	1	35
U008	Tension setting of upper thread when downstitching	0~200	1	60
U009	Set the soft start speed (the first stitch)	400~4200	100rpm	400rpm
U010	Set the soft start speed (the second stitch)	400~4200	100rpm	400rpm
U011	Set the soft start speed (the third stitch)	400~4200	100rpm	2000rpm
U012	Set the soft start speed (the fourth stitch)	400~4200	100rpm	3000rpm
U013	Set the soft start speed (the fifth stitch)	400~4200	100rpm	3600rpm
U014	Presser foot type (type 1, 2, 3, 5) Type 1: 25 x 4 Type 2: 35 x 5 Type 3: 41 x 5 Type 5: custom	1,2,3,5		Type 1
U015	Width of presser foot (type 5) After U14 is set to type 5, the parameter is opened.	3.0~10.0	0.1mm	3.0mm
U016	Length of presser foot (type 5) After U14 is set to type 5, the parameter is opened.	10.0~120.0	0.5mm	10.0mm
U017	Starting position of sewing (rag feeding direction) Set the starting position for sewing the presser foot when moving the starting position due to the high and low presser foots.	2.5~110.0	0.1mm	2.5mm

S/N	Item	Setting range	Editing Unit	Factory setting
U018	Size of rag knife	3.0~32.0	0.1mm	32.0mm
U019	Several action function of rag knife	ON, OFF		ON
U020	Thread breakage detection function	ON, OFF		ON
U021	When the Ready button is ON, the position of the presser foot is set as that the position of the presser foot UP: Rise DN: Down	UP, DN		UP
U022	Presser foot position at the end of cycle sewing Set the presser foot position at the end of cycle sewing (valid for single pedal only) UP: Rise DN: Down	UP, DN		UP
U023	Distance start for trimming the upper thread Distance start for opening the scissor through the upper thread trimming motor after entering the command of starting sewing.	0~15.0	0.1mm	1.8mm
U024	Distance start for trimming the bobbin thread Distance start for opening the scissor through the bobbin thread trimming motor after setting the command of starting sewing.	0~15.0	0.1mm	1.5mm
U025	Counter update unit Unit setting the updating of the sewing counter.	1~30	1	1
U026	Total count non-displayed/displayed	ON, OFF		OFF
U500	Language selection	Chinese and English		Chinese
U201	Fault inquiry	ON, OFF		OFF

6.3 Secondary Parameter Setting

① Parameter setting

On the setting mode, select [Secondary parameters] to enter the secondary parameter setting interface (as shown on the right figure). Refer to "6.2 Primary Parameter Setting" for the operating method.

Press [×] to exit the parameter setting interface

K001	2	Pedal selection
K003	ON	Disable the function of selecting the presser foot type
K004	0	Sewing shape selection level
K005	3	Power of rag knife
K006	0	Machine model selection
K007	4200	Setting of maximum sewing speed
K008	-30	Correction of tension deviation of upper thread
K009	0	Output time of tension change value of upper thread
K010	OFF	Retrieval function of each reference point
K011	OFF	Reverse needle lift

Secondary parameter table

S/N	Item	Setting range	Editing Unit	Factory setting
K001	Select the pedal D: Double pedal S-1: Single pedal (without intermediate position) S-2: Single pedal (with intermediate position) S-3: Simulated single pedal (without middle position) S-4: Simulated single pedal (with intermediate position) S-5: Simulated single pedal (with return pedal)	D, S-1, S-2 S-3 S-4 S-5		2
K003	Disable the function of selecting the presser foot type OFF: Prohibit change ON: Allow to change	ON, OFF		ON
K004	Sewing shape selection level (12/20/30)	0~2		0
K005	Power of rag knife Set the output power of knife	0~3	1	3
K006	Select the machine model (0 - standard type, 1 - dry type)	0~1	1	0
K007	Setting of maximum sewing speed When K06 is dry type, the maximum speed is automatically limited to 3300rpm. ※ Protected by passwords	400~4200	100rpm	4200rpm
K008	Correction of tension deviation of upper thread Correct the output value of the tension of all balance upper threads.	-30~30	1	-30
K009	Output time of tension change value of upper thread After relevant data about the tension of the upper thread is changed, the changed value is output only at the set time.	0~20	1s	0
K010	Retrieval function at each reference point Perform retrieval at reference point at the end of sewing. OFF: None 1: After the end of sewing 2: After the end of circular sewing	OFF, 1, 2		OFF
K011	Reverse needle lifts After U01 is set to 14.0mm and above when the presser foot raises to the highest, lift the needle automatically and reversely to shut down the sewing machine. The action can be set to disable. OFF: Prohibit lifting reversely ON: Allow to lift reversely	ON, OFF		OFF
K18	Directly select the button to display OFF: Not displayed ON: Displayed	ON, OFF		OFF
K19	Trim the thread during continuous sewing When disabled, empty feed is set to invalid, and the registered pattern is sewn to the same position, which is the overlapping sewing. OFF: Prohibited ON: Allowed	ON, OFF		ON

S/N	Item	Setting range	Editing Unit	Factory setting
K21	Opening amount of the bobbin thread trimming motor at the beginning of sewing Opening amount of the bobbin thread trimming scissor at the beginning of sewing	1~15	1 pulse	8
K22	Selection of presser foot lifting speed	1~3	1	1
K23	Presser foot abnormality detection position	0~10.0	0.1	1.0

6.4 Counter Setting

Press `Counter` to enter the counter setting interface (as shown on the right figure). Operating steps:

① **Select sewing counter type**

Select the sewing count and piece count function

② **Set the current value and the set value**

Press the "Current value" button or "Set value" button among the selected types to conduct relevant operations.

③ **Select add or subtract count**

Press the "Add" or "Subtract" button among the selected types to conduct relevant operations.
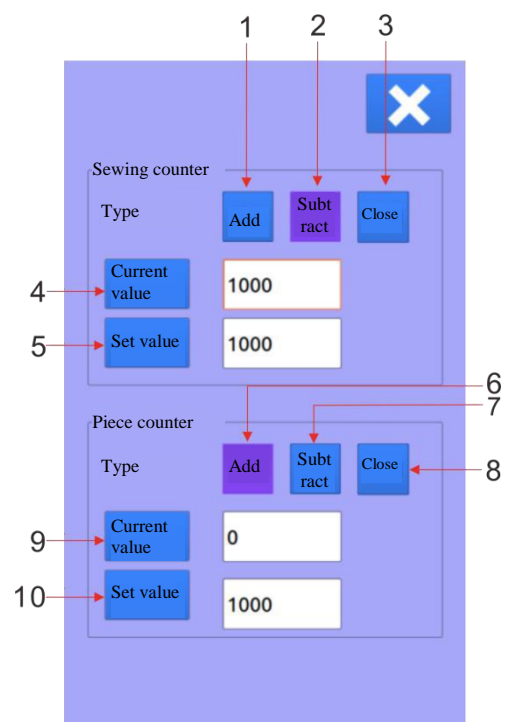
Press [X] to exit the counter setting interface. Press

[✓] to complete the setting and exit.

Addition count of sewing:

Add the count on the current value after sewing 1 shape of sewing product. When the current value is equal to the set value, the counter overflow alarm interface appears. After the button is pressed, the current value of the counter returns to 0.

Subtract count of sewing:

Subtract 1 from the current value after sewing 1 shape of sewing product. When the current value is equal to 0, the counter overflow alarm interface appears. After the button is pressed, the current value of the counter returns to the set value.

Addition count by the piece:

Add the count on the current value after sewing 1 circular seam or 1 backstitch. When the current value is equal to the set value, the counter overflow alarm interface appears. After the button is pressed, the current value of the counter returns to 0.

Subtract count by the piece:

Subtract 1 from the current value after sewing 1 circular seam or 1 backstitch. When the current value is equal to 0, the counter overflow alarm interface appears. After the button is pressed, the current value of the counter returns to the set value.
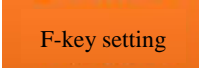
④ **Turn off the counter**

Press the "Off" button among the selected types to turn off the counter.

6.4.1 Introduction to function

S/N	Function	Remark
1	Addition count of sewing counter	
2	Subtract count of sewing counter	
3	Turn off the sewing counter	
4	Set the current value of the sewing counter	
5	Set the set value of the sewing counter	
6	Addition count of piece counter	
7	Subtract count of piece counter	
8	Turn off the stitch counter	
9	Set the current value of the piece counter	
10	Set the set value of the piece counter	

6.5 User Management Item Setting

Register the frequently used sewing data to the

management button for use. Press [F-key setting] to enter

the mode setting interface (as shown on the right figure).

Press "[F-key setting]" to enter the management button for registration

Primary parameters	Counter
Secondary parameters	Test
Auxiliary functions	Software version
Direct button registration	F-key setting
Panel setting	Sewing type
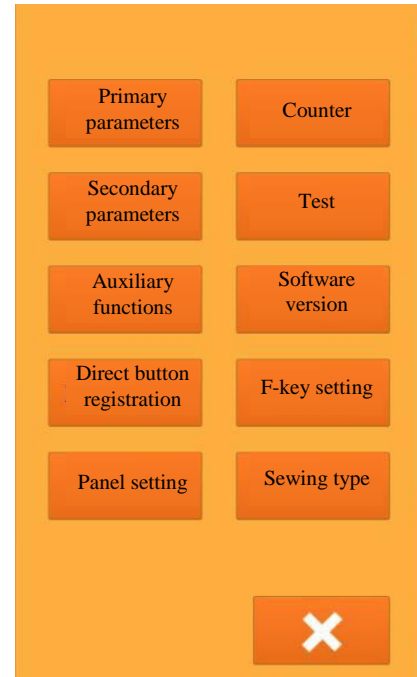
① **Registration management button**

At most 4 management buttons can be registered.
Four (4) management registration buttons are displayed on
the current interface. After the button of the position to be
registered, the sewing data selection interface appears (as
shown on the right figure).

Press [X] to exit the user management item setting interface
Select the sewing data to be registered and press

[✓] to end the registration. The newly registered
sewing data are displayed on the user management
interface.
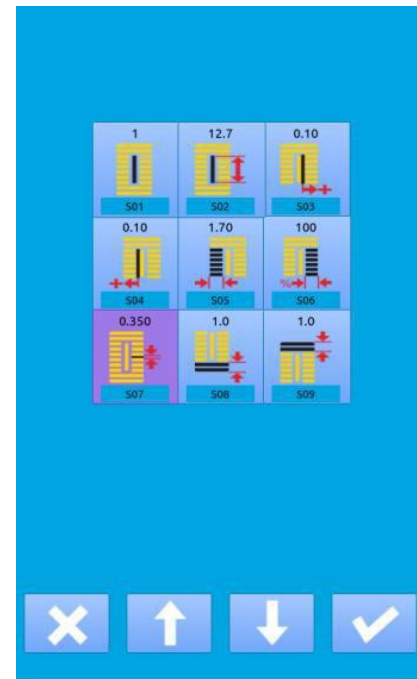
② **Factory registration status**

Register from left to right as leaving factory:

 : S07 spacing between parallel parts

Set the sewing spacing between the left and right parallel parts.

 : S67 width of reinforcement sewing at the end of sewing

Set the width of reinforcement sewing at the end of sewing:

 : S06 ratio of the left shape to the right shape

Set the expansion and reduction ratio of the right shape centered on the

position of the knife
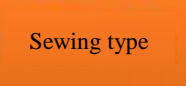
 : S10 correction of right reinforcement width

Adjust the covered seam part on the right side of the

reinforcement part. Correct the first and second reinforcement

parts.

Square on top Square on bottom Straight reinforcement on bottom

6.6   Change of Sewing Type

Press [Sewing type] to enter the sewing type selection interface (as shown on the right figure).

: General seam

: Backstitch

: Circular seam
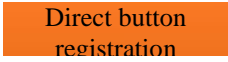
After determining the sewing type, press [✓] to end and return to the mode interface. After exiting the mode interface, the data input interface of the selected sewing type appears.

Press [✗] to exit the sewing type change interface. The original sewing type is unchanged.
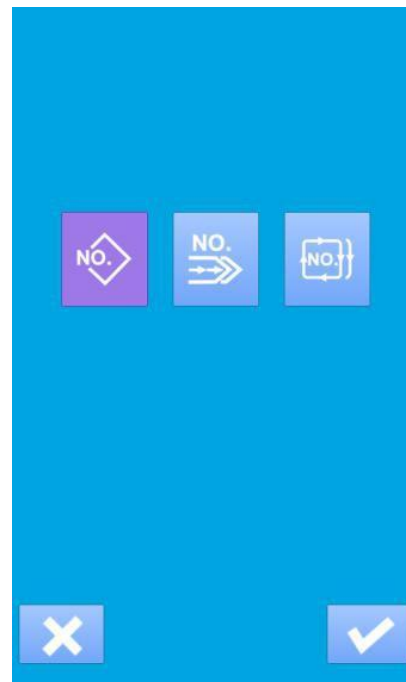
6.7 Registering Patterns to Direct Button

Register the frequently used pattern numbers to the direct button for use.

Press [Direct button registration] to enter the direct button registration Interface (as shown on the right figure).

Press [✗] to disable the pattern registration function.

005	004
005	006
002	004
005	006
004	002
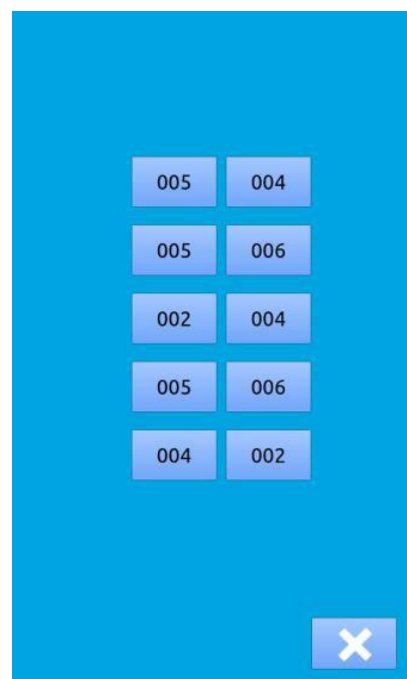
At most 10 patterns can be registered. Select the button to be registered among the 10 direct buttons to enter the pattern selection interface (as shown on the right figure).

005 : Pattern inquiry

: Clear the currently registered pattern

: Confirm the selection

: Exit
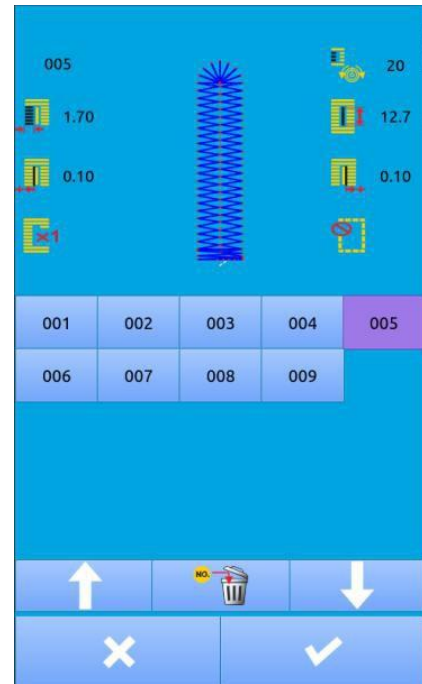
6.8 Detection Mode

On the **M** mode, press " **Test** " to enter the detection mode interface (as shown in the right figure).

The function description of each icon is detailed in the table below.

S/N	Name
A	I01 upper trimming thread
B	I02 lower trimming thread
C	I03 input detection
D	I06 output detection
E	I07 speed measurement
F	I08 continuous operation
J	I09 pedal calibration
H	I10 origin position adjustment
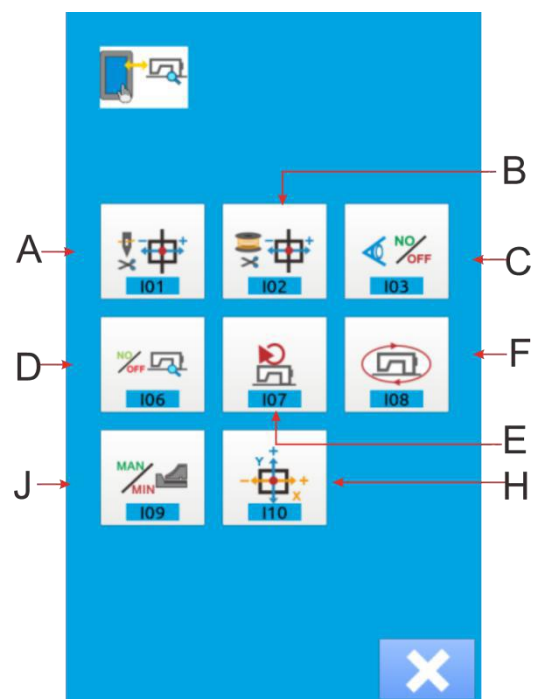
Press to exit the detection mode interface

（1） Adjustment method of upper trimming thread

① Adjustment method of upper trimming thread

Press ![I01] (I01 upper trimming thread) on the detection mode interface to enter the upper trimming thread adjustment interface (as shown on the right figure).

Upper trimming thread:

S/N	Name	Range	Initial value
A	**Origin position**		
B	Starting position	-10~10	0
C	Opening position	-95~-80	-86
D	Position to be cut	0~20	10
E	Position after trimming	30~50	40

② Select the mode position to be adjusted

Press ![icon] to select the position (A, B, C, D) to be adjusted, and then press the plus button or the minus button to adjust the desired value. Then press the F button ![icon] to return to the origin position.

Press ![icon] to complete the whole test at once

③ Press the button ![X] to return to the detection mode interface.
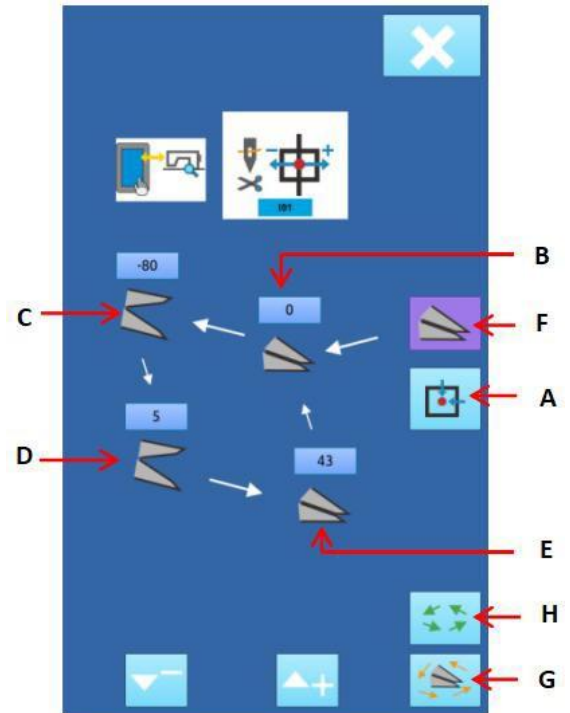
（2） Adjustment method of lower trimming thread

① Adjustment method of lower trimming thread

Press ![I02] (I02 lower trimming thread) on the detection mode interface to enter the lower trimming thread adjustment interface (as shown on the right figure).

Lower trimming thread:

S/N	Name	Range	Initial value
A	**Origin position**		
B	Opening position	-40~-15	-30
C	Position to be cut	-10~10	0
D	Position after trimming	40~60	50
E	Starting position	-10~15	0

② Select the mode position to be adjusted

Press ![icon] to select the position (A, B, C, D) to be adjusted, and then press the plus button ![icon] or the minus button ![icon] to adjust the desired value. Press the F button ![icon] to return to the origin position. Press " ![icon] " to complete the whole test at once, and press ![X] to return to the detection mode interface.
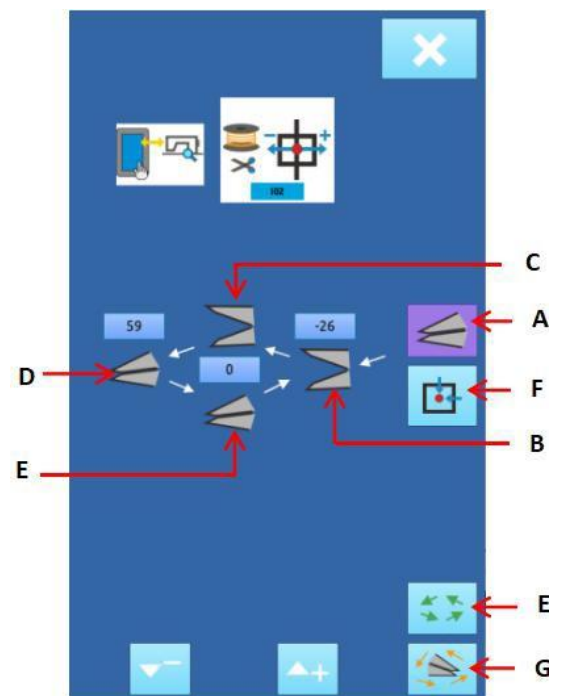
（3） **Input signal detection method**

Press the ![I03] (I03 input detection) on the detection mode interface to

enter the input detection interface (as shown on the right figure), and confirm the input status of various switches and sensors on the interface.

1: ON

A: Pedal amount

B: Pedal sensor

C: thread breakage detection

D: Knife sensor

E: Frame head overturn sensor

F: Stop switch

G: Swing needle sensor

H: meniscus sensor of sewing machine

I: Y rag feeding origin detection

J: Presser foot origin detection

K: Origin detection of upper thread trimming motor   L: Origin detection of bobbin thread trimming motor

103 inspection sensor	
A → Pedal amount	0
B → Pedal sensor	0
C → Thread breakage detection	0
D → Knife sensor	0
E → Frame head overturn sensor	0
F → Stop switch	0
G → Swing needle sensor	0
H → Meniscus sensor of sewing machine	0
I → Y rag feeding origin detection	0
J → Presser foot origin detection	0
K → Origin detection of upper thread trimming motor	0
L → Origin detection of bobbin thread trimming motor	0
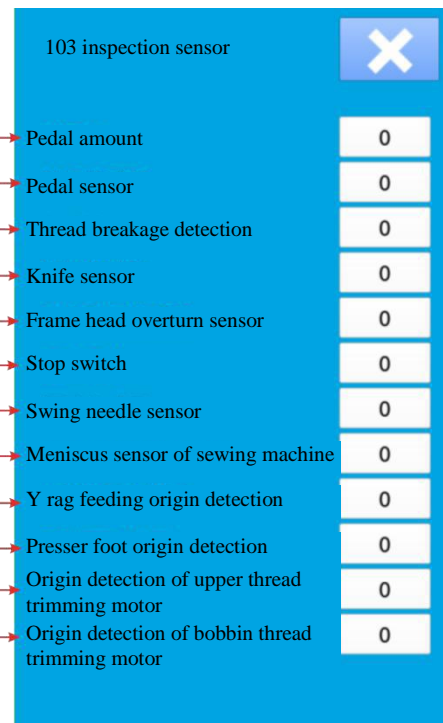
（4） **Output detection method**

Press ![I06] (I06 output thread) on the detection mode interface to enter the output detection interface (as shown on the right figure).

The output statuses that can be detected on the interface include:

A: Thread tension electromagnet

B: Knife motor detection

C: Cycloidal motor detection

D: Rag feeding motor detection

E: Presser foot motor detection

106 Output detection	
A → Thread tension	0
B → Knife	0
C → Cycloidal motor	0
D → Rag feeding motor	0
E → Presser foot motor	0

- When pressing A~E, press ![▲+] and ![▼−] to test the work of the motor

- Press ![×] to exit the output detection interface

※ **Pay attention that the sewing machine will work accordingly.**

（5）**Speed measurement**

① **Display the speed measurement interface**

Press (I07 speed measurement) on the detection mode interface to enter the speed measurement interface (as shown on the right figure), and then test the speed of the spindle motor.

Press the Exit button to exit the speed measurement interface.

② **Speed measurement setting**

Press the plus button "+" and the minus button "-" to set the speed of the spindle motor.

After the button is pressed, the spindle motor will

rotate at the set speed. Press to shut down the machine

（6）**Continuous operation**

① **Display the continuous operation interface**

Press (I08 continuous operation) on the detection mode interface to enter the continuous operation interface (as shown on the right figure).
A: Action interval B: Decreasing origin detection

Press the Exit button to exit the continuous operation interface.

② **Continuous operation setting**

Click the "Action interval" input box and the "Aging mode" input box under continuous operation state, and enter the set values through the numeric keyboard to set the action interval and aging mode.

Press and depress the pedal to start continuous operation. During the continuous operation, pause continuous operation through the pause switch, or stop the continuous operation by pressing the pedal or pressing the pause switch after the action is completed and the presser foot is raised.
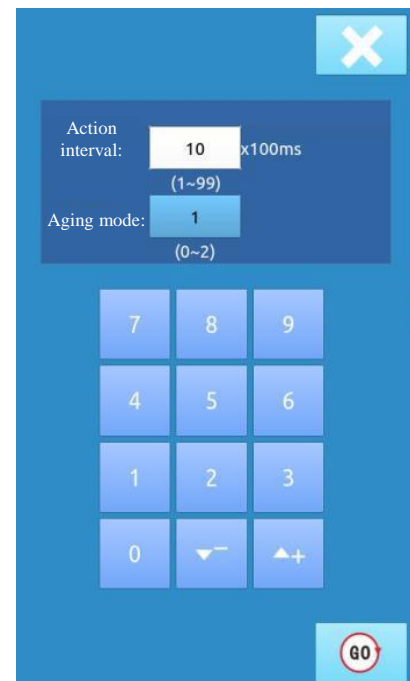
(7) Simulate the pedal calibration

① **Press I09 ![MAN MIN I09]** **button to enter the pedal calibration interface**

② **Simulate the pedal calibration interface as shown on the right figure**

A: Press the pedal to the maximum

B: Press the pedal to the first gear

C: Release the pedal to the balance position

D: Press the pedal reversely to the maximum

③ **Pedal calibration method:**

1. Press and hold the button A, press the pedal to the

maximum amount, and press ![check] to save the current input value of the pedal;

2.

Press and hold the button B, press the pedal to the first gear, and press

![check] to save the current input value of the pedal;

3.

Press and hold the button C, release the pedal to the

balance position, press ![check] again to save the current input value of the pedal;

4. Press and hold the button D, press the pedal reversely

to the maximum amount, press ![check] again to save the current input value of the pedal.

5. After saving the four input values of the pedal

and completing pedal calibration, press ![X] to exit the current interface.
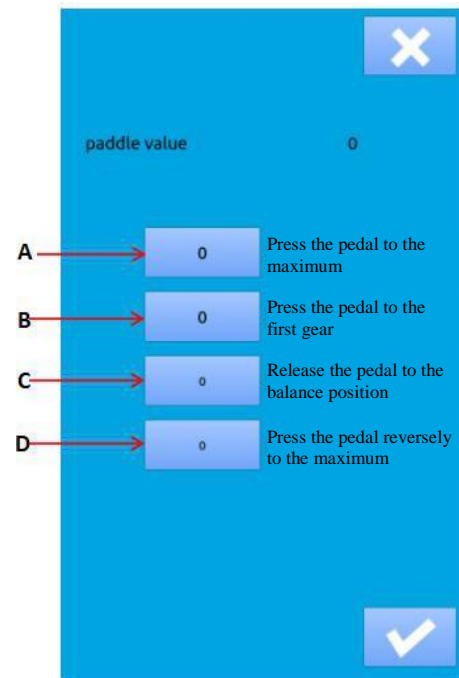
(8) Origin adjustment
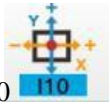
Press I10 ![I10 icon] to enter the origin adjustment interface as shown in figure.
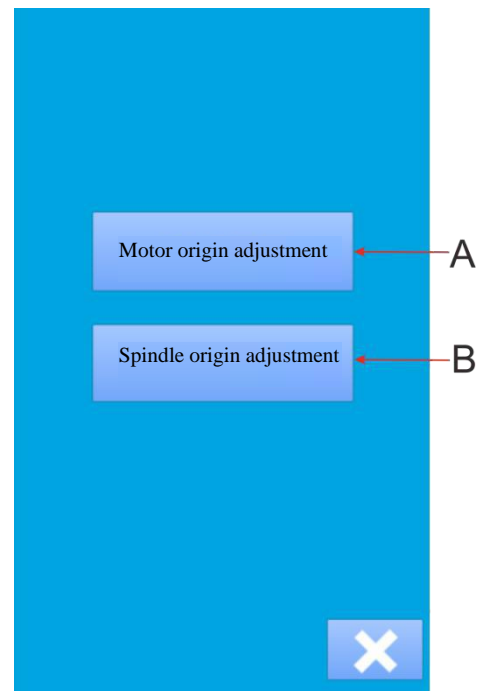
1. Motor origin adjustment

Press the button A to enter the motor origin adjustment interface as shown in the figure, press the button 1/2/3/4 (hold the button), press ![plus] and ![minus] to adjust the X/Y/Z/E motor origin position. After adjustment, press ![check] (the pressed button is lifted) to save the current adjustment value, and click the button ![X] to exit.

Press the button ![origin] to find the origin for test.

A → Motor origin adjustment

B → Spindle origin adjustment

1 :	0	X swing needle origin position
2 :	0	Y rag feeding origin position
3 :	0	Z presser foot origin position
4 :	0	E knife origin position
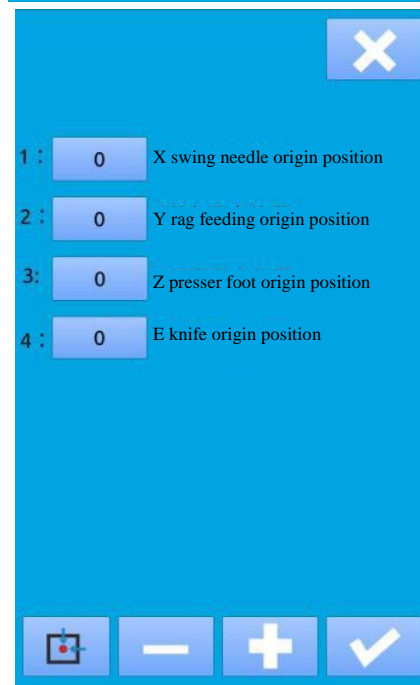
2. Spindle origin adjustment

Press the button B to enter the spindle origin adjustment interface as shown on the figure.
 C: Current display value of the spindle angle
        (If the display value is 65,535 or -1, rotate the spindle according to the direction of the hand wheel arrow until the value displayed is between 0~360)
D: The stopping angle value stored in the frame head memory

        Spindle origin adjustment method: When the spindle is rotated according to the hand wheel arrow direction until the value displayed between 0 and 360, stop the needle bar at the desired stopping position, press the button D (hold the button) and then press
to save the value displayed at the current position C, namely the spindle stopping position, press to exit.

7. Communication Function

The following functions can be realized through the communication function.

➢ Copy the sewing data prepared by other sewing machines or by the pattern making software to the operating panel through a USB flash disk.

➢ Copy the sewing data in the operating panel to the USB flash disk.

7.1 About Data Capable of Being Processed

The sewing data capable of being processed are as follows:

Data type	Standard format
EPD	LBH00[0-9][0-9][1-9].VDT

7.2 Pattern Transmission

1.Copy pattern files from the USB flash disk to the operating panel

After the communication button ![communication button] is pressed on the data input interface, the communication interface appears as shown on the right figure.
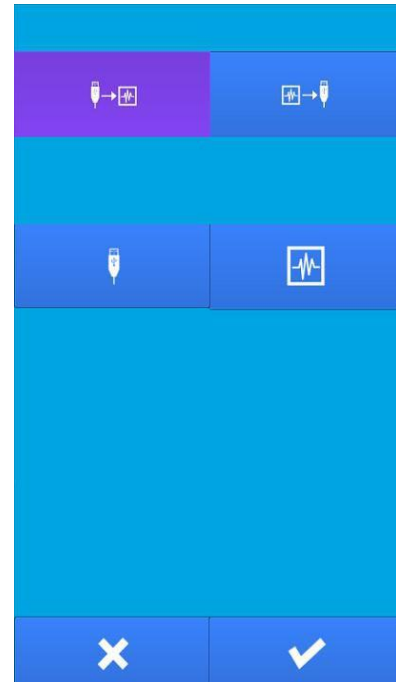
1）Select the button ![button] through which copying the pattern file from the USB flash disk to the operating panel.

2）Press the USB flash disk button ![USB button] to display the USB flash disk file interface as shown on the right figure. Find the file to be copied and press the OK button ![OK button]

.
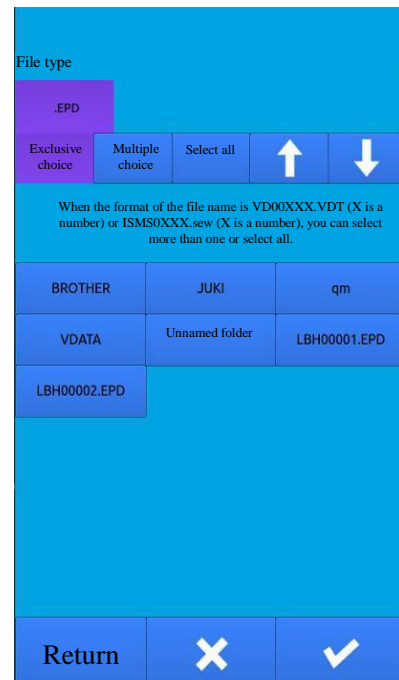
3) After the operating panel button ![icon] is pressed, the Enter File Number Interface appears as shown on the right figure.

The file number is that of the file copied to the operating panel.

After entering the file number, press the OK button.

![icon]
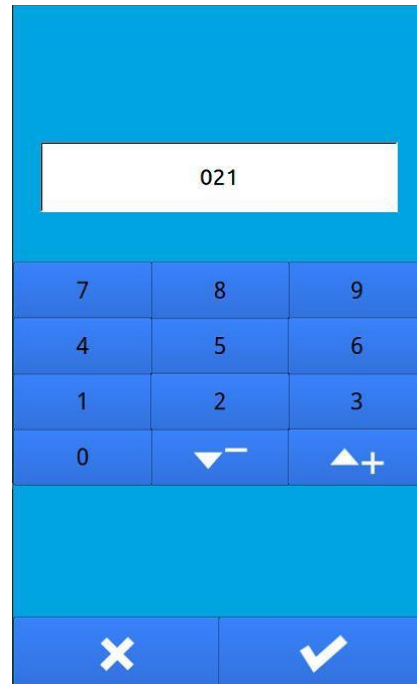
4) After selecting the file from the U flash disk and entering the operating panel file number, press the OK button ![icon] as shown on the right figure, so as to copy the file from the U flash disk to the operating panel.
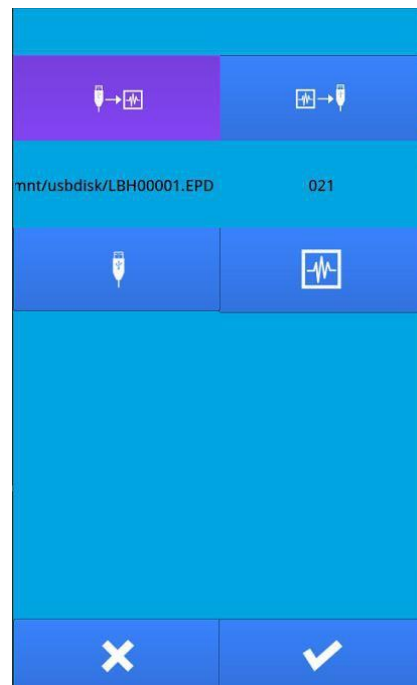
2.Save the files copied from the operating panel to the U flash disk

After the communication button is pressed on the data input interface, the communication interface appears as shown on the right figure.

1）Check the button through which copying the pattern file from the operating panel to the USB flash disk;
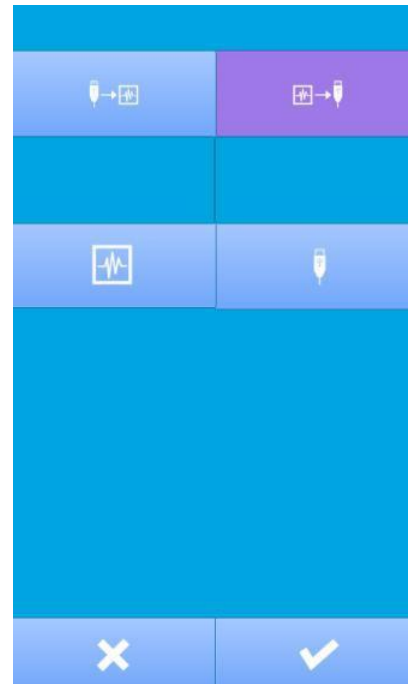
2）After the operating panel button is pressed, the Select Operating Panel File interface appears as shown on the right figure. Find the file to be copied and press the OK button

.

Exclusive choice	Multiple choice	Select all		
When the format of the file name is VD00XXX.VDT (X is a number), you can select more than one or select all.				
LBH00001.EPD	LBH00002.EPD	LBH00003.EPD
LBH00004.EPD	LBH00005.EPD	LBH00006.EPD
LBH00007.EPD	LBH00008.EPD	LBH00009.EPD
LBH00010.EPD	LBH00011.EPD	
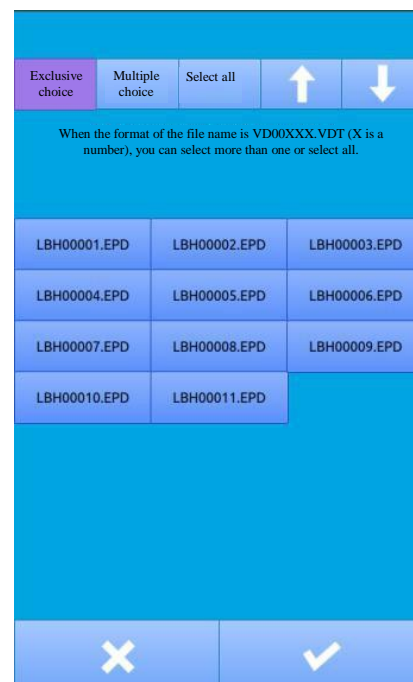
3) After the USB flash disk button is pressed, the input file number interface appears as shown on the right figure. This file number is that of the file copied to the USB flash disk.

After entering the file number, press the OK button .

4) After selecting the file from the operating panel and entering the file number of the USB flash disk, press the OK button as shown on the right figure so as to copy the file in the operating panel to the USB flash disk.

8 Software Upgrade

（1） **Display the auxiliary interface**

Press " Auxiliary functions " on the M mode to enter the setting interface as shown on the right figure

System upgrade	Restore factory settings
Clear the general pattern	Clear the continuous pattern
Clear the C pattern	Clear the super configuration
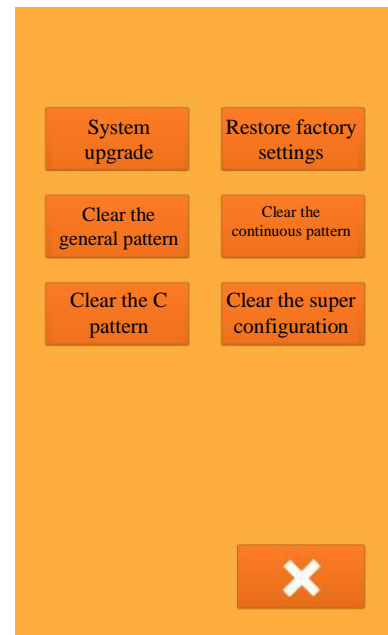
（2） **Display the upgrade interface**

Press " System upgrade " on the M mode to enter the upgrade interface as shown on the right figure

A: Panel upgrade
B: Control board upgrade
C: Boot image upgrade
D: Translation file upgrade
E: Kernel upgrade
F: Sound file upgrade

Panel upgrade	Control panel upgrade
Boot image upgrade	Translation file upgrade
A → 面板升级 Kernel upgrade	控制板升级 ← B Sound upgrade
C → 开机图片升级	翻译文件升级 ← D
E → 内核升级	声音升级 ← F
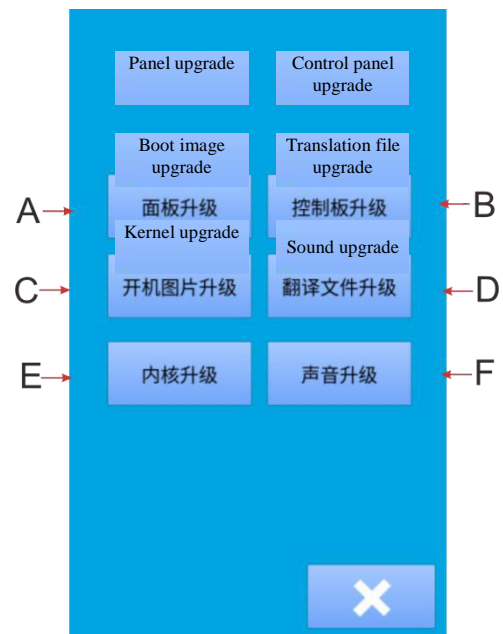
8.1 Panel Upgrade

The upper computer (panel) can be upgraded through this program and the USB flash disk. Before upgrading, copy the new version of the program panel file and qm folder to the main directory of the USB flash disk, then insert the USB flash disk into the panel, and then upgrade the panel program by the panel upgrade. After upgrade is completed successfully, a prompt that "success, please restart" appears. Restart the machine.

8.2 Lower Computer Upgrade

The lower computer (control board) can be upgraded through this program and the USB flash disk. Before upgrading, copy the new version of the program (NC1790A.bin file) to the main directory of the USB flash disk, then insert the USB flash disk into the panel, and then upgrade the control board program by the lower computer upgrade. After upgrade is completed successfully, a prompt that "success, please restart" appears. Restart the machine.

8.3 Boot Image Upgrade

If you want to change the image displayed when the panel starts, you can send us the image you want to display, and then we will modify the image to a file of the specified format and send it to you. You put the modified image file LOGO.BIN into the USB flash disk, then insert the USB flash disk to the panel, and then click "change" button to change the boot image. A prompt of success will appear after change.

8.4 Translation File Upgrade

If you want to repair the translation file, you can copy the qm folder to the main directory of the USB flash disk, then insert the USB flash disk into the panel, and then upgrade the translation file by the panel upgrade. After upgrade is completed successfully, a prompt that "success, please restart" appears. Restart the machine.

8.5 Kernel Upgrade
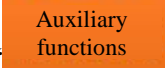
When you need to upgrade the kernel, we will provide you with the conprog.bin file. You can put this file into the USB flash disk, insert the USB flash disk into the panel, and then click the "kernel upgrade" button to upgrade after the panel recognizes the USB flash disk. After upgrade is completed successfully, the prompt that "update successfully" will appear.

8.6 Prompt Tone Upgrade

When you need to upgrade the button prompt tone, we will provide you with the wxaudio file holder. You can put this file holder into the USB flash disk, insert the USB flash disk into the panel, and then click the "prompt upgrade" button to upgrade after the panel recognizes the USB flash disk. After upgrade is completed successfully, the prompt that "update successfully" will appear.

9 System Recovery

(1) Display the auxiliary interface

Press "[Auxiliary functions]" on the M mode to enter the

setting interface as shown on the right figure

System upgrade	Restore factory settings
Clear the general pattern	Clear the continuous pattern
Clear the C pattern	Clear the super configuration
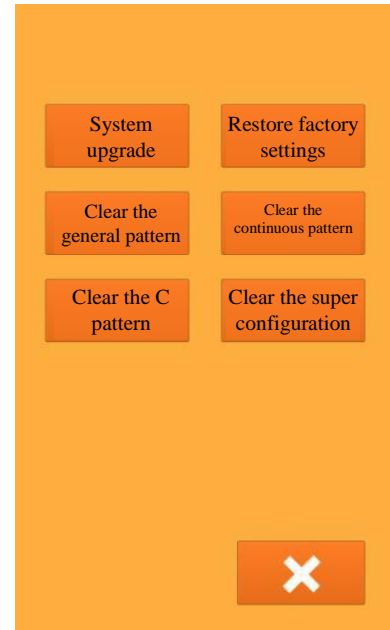
(2) The system restores to its initial values

A: Restore factory settings

   (primary parameters and secondary

parameters restore to the default value)

B: Clear the general pattern

C: Clear the

continuous pattern

D: Clear the

circular pattern

E: Clear the super configuration (internal data)

10 Information Function

There are two information
functions.

1) View version model

2) Set the time.

Click the button "" in the input interface to enter
the information inquiry interface as shown on the figure
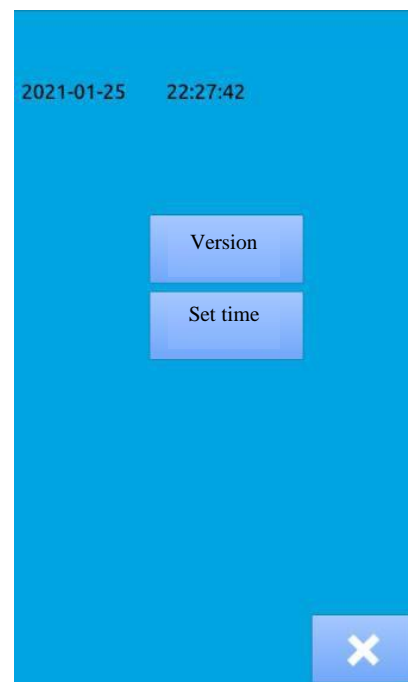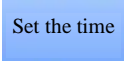
10.1 View Version

Press the button [Version] to view the version number,
kernel information and so on of the machine as shown on the
figure

Version of the upper computer:
buttonholing machine
V1.0.34LJ(8.0)(XT)
Version of lower computer: 0
Version of kernel: 2020.10
Machine type: 5780
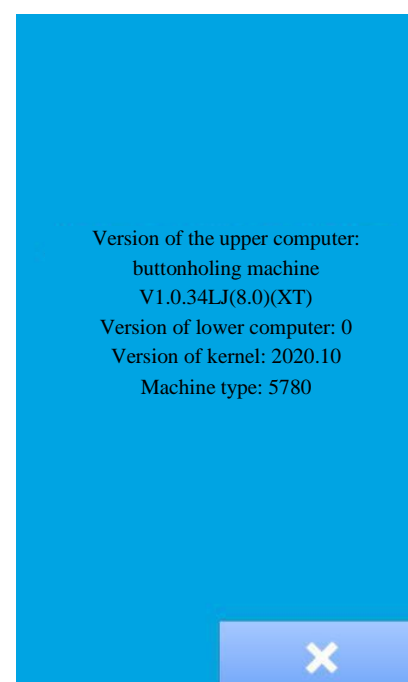
10.2 Time Setting

Press [Set the time] button to enter the interface for setting the time as shown on the figure

Date setting: 2021-01-25

Time setting: 22:34:14

Note: Please enter the correct time, otherwise the machine cannot be used normally
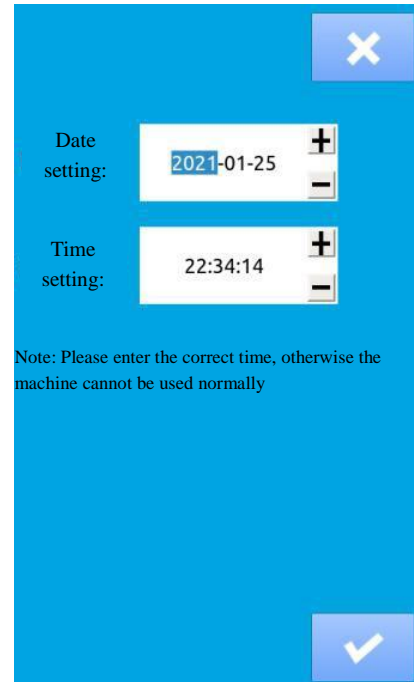
11 Alarm Record

Press and hold the button in the input interface to enter the error record inquiry interface as shown on Figure 1

1. Inquire the error record, press the button [i] to enter the interface for viewing the error information

2. Delete the error record as shown on Figure 2, press " [✔] " to prompt whether to delete the error record, and then delete the error record

Figure 1

Whether delete the error record?

Figure 2

View the error record

Delete the error record
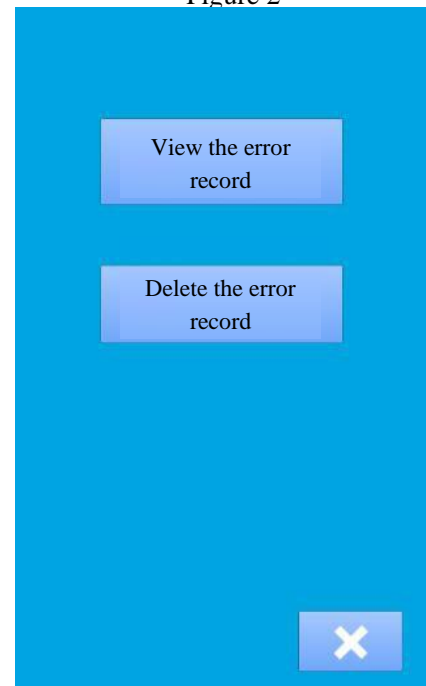
12 Appendix 1

12.1 List of Alarm Information

Fault number	Fault name	Reset method
E-007	Spindle motor is locked	
E-023	Presser foot motor is abnormal	
E-024	Pattern size breaks bounds	
E-025	Upper trimming thread motor is abnormal	
E-026	Lower trimming thread motor is abnormal	
E-030	Stopping position on the needle is deviated	Press reset to simulate sewing, and press the pedal to continue sewing.
E-042	Operation is abnormal	
E-043	Amplification is abnormal	
E-050	The stop switch is pressed	Press reset to enter simulated seam
E-052	Thread breakage is detected	Press reset to simulate sewing, and press the pedal to continue sewing.
E-061	Memory switch data is error	
E-062	Number of sewing stitches exceeds limit	
E-081	X motor is out of adjustment	
E-082	Y motor is out of adjustment	
E-083	Presser foot position is abnormal	
E-098	Number of stitches is insufficient	Reset
E-099	Knife drops mistakenly	
E-302	The frame head is put down	
E-303	Z-shaft sensor is abnormal	Check the presser foot motor
E-304	Knife sensor is abnormal	
E-430	Addend is counted abnormally	
E-485	The downstitching times are not set	
E-486	Eyelet buttonhole knife is too short	

Fault number	Fault name	Reset method
E-487	Eyelet buttonhole shape is too short	
E-488	Correction of tapered reinforcement is error	
E-489	Knife size is error	
E-492	The downstitching size breaks bounds	
E-493	The size of presser foot of the reinforcement seam breaks bounds at the end of sewing	Check the parameters of the reinforcement part at the end of sewing
E-494	The size of presser foot of the reinforcement seam breaks bounds at the beginning of sewing	Check the parameters of the reinforcement part at the beginning of sewing
E-495	The size of presser foot is wrong (width direction only, right side)	Check width-related parameter settings
E-496	The size of presser foot is wrong (width direction only, left side)	Check width-related parameter settings
E-497	The size of presser foot is error (length direction, at front)	Check length-related parameter settings
E-498	The size of presser foot is error (width direction, left and right)	Check width-related parameter settings
E-499	The size of presser foot is error (length direction, inner side)	Check length-related parameter settings
E-730	Spindle motor is abnormal	Check the servo board and servo motor
E-731	Spindle motor sensor is defective	Check the servo motor
E-733	Spindle motor rotates reversely	Check the servo motor
E-801	Power supply is under voltage	
E-802	Detect the power failure	
E-901	Spindle motor IPM is abnormal	
E-902	Spindle motor is in an overcurrent situation	
E-903	Pulse motor power supply is abnormal	
E-904	Relay power supply is abnormal	
E-905	Temperature of servo board is too high	
E-906	Temperature of main circuit board is too high	
E-907	X-shaft origin retrieval is error	Check the main board and X-shaft motor
E-908	Y-shaft origin retrieval is error	Check the main board and Y-shaft motor
E-909	Upper trimming thread origin retrieval is abnormal	Check upper trimming thread motor and sensor
E-910	Presser foot motor cannot find the origin	Check the presser foot motor and main board
E-911	Lower trimming thread origin retrieval is abnormal	Check the lower trimming thread motor and sensor
E-912	Sewing speed is abnormal	
E-918	The temperature of the main control board is too high	
E-998	Presser foot deviation is abnormal	Check the presser foot motor
E-999	Knife cannot return to the origin	Check the knife motor

Fault number	Fault name	Reset method
E-452	The frame head memory is not connected	Check whether the frame head memory is connected
E-502	Stitch distance is out of range	Internal error
E-201	X-shaft position is error	Check the X-shaft motor
E-202	X-shaft is in an overcurrent situation	Check the main board and X-shaft motor
E-203	X-shaft cannot move	Check the main board and X-shaft motor
E-204	X-shaft is out of control	Check the main board and X-shaft motor
E-212	Y-shaft is in an overcurrent situation	Check the main board and Y-shaft motor
E-213	Y-shaft cannot move	Check the main board and Y-shaft motor
E-214	Y-shaft is out of control	Check the main board and Y-shaft motor
E-222	Presser foot motor is in an overcurrent situation	Check the main board and presser foot motor
E-223	Presser foot motor cannot move	Check the main board and presser foot motor
E-224	Presser foot is out of control	Check the main board and presser foot motor
E-231	Knife motor position is error	Check the main board and knife motor
E-232	Knife motor is in an overcurrent situation	Check the main board and knife motor
E-233	Knife motor cannot move	Check the main board and knife motor
E-234	Knife motor is out of control	Check the main board and knife motor
E-310	Knife motor is abnormal	Check the knife motor
E-705	Power supply is disconnected	Check whether the power supply is disconnected

12.2   List of Initial Value Data of Shapes

The table below shows the List of Initial Value Data of Shapes.

S/N	Item	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
S01	**Sewing shape**	**mm**															
S02	Rag cutting length	mm	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
S03	Right width of knife slot	mm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
S04	Left width of knife slot	mm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
S05	Width of left covered seam	mm	1.70	1.70	1.70	1.70	1.70	1.70	1.40	1.40	1.40	1.40	1.70	1.70	1.70	1.70	1.70
S06	Ratio of left shape to right shape	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
S07	Spacing between the parallel parts	mm	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
S08	Length of the second reinforcement seam	mm	1.0	—	1.0	—	1.5	3.0	1.0	—	1.5	3.0		1.0	1.0	1.5	3.0
S09	Length of the first reinforcement seam	mm	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S10	Compensation to width of the right reinforcement	mm	0	—	0	—	0	—	0	—	0	—	—	0	0	0	—
S11	Compensation to width of the left reinforcement	mm	0	—	0	—	0	—	0	—	0	—	—	0	0	0	—
S12	Symmetrical reinforcement of left taper	mm	—	—	—	—	—	0.85	—	—	—	0.85	—	—	—	—	0.85
S13	Symmetrical reinforcement of right taper	mm	—	—	—	—	—	0.85	—	—	—	0.85	—	—	—	—	0.85
S14	Length of round head buttonhole shape	mm	—	—	—	—	—	—	2.0	2.0	2.0	2.0	—	—	—	—	—
S15	Number of stitches of round head buttonhole	Stitch	—	—	—	—	—	—	3	3	3	3	—	—	—	—	—
S16	Width of round head buttonhole	mm	—	—	—	—	—	—	1.0	1.0	1.0	1.0	—	—	—	—	—
S17	Length of round head buttonhole	mm	—	—	—	—	—	—	3.0	3.0	3.0	3.0	—	—	—	—	—
S18	Length of round shape	mm	—	2.0	2.0	2.0	2.0	2.0	—	2.0	—	—	2.0	2.0	2.0	2.0	2.0
S19	Number of stitches of radial shape	Stitch	—	—	3	3	3	3	—	3	—	—	—	—	—	—	—
S20	Radial shape reinforcement Yes/No	—	—	—	No	No	No	No	—	No	—	—	—	—	—	—	—
S21	Spacing between the reinforcement parts	mm	0.30	0.30	0.30	-	0.30	0.30	0.30	-	0.30	0.30	0.25	0.30	0.25	0.25	0.25
S22	The first clearance	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
S23	The second clearance	mm	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
S31	Single/double stitch	—	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch
S32	Select double stitch	—	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
S33	Compensate width of double stitch	mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S34	Downstitching times	Times	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S35	Downstitching speed	mm	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
S36	Rolled length when downstitching	mm	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
S37	Rolled spacing when downstitching	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
S38	Rolled width when downstitching	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
S39	Compensate at front and rear of downstitching and needling points	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
S40	Compensate at left and right of downstitching and needling points	mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S41	Compensate at the left side when downstitching	mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S42	Compensate the right side when downstitching	mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S44	Set the downstitching speed	mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
S45	overcast stitching function Yes/No	—	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
S46	Width of overcast stitch	mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
S47	Gap between overcast stitches	mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

S/N	Item	Unit															
S51	Left parallel tension	—	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
S52	Right parallel tension	—	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
S53	Left parallel tension (the first circulation of double stitch)	—	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
S54	Right parallel tension (the first circulation of double stitch)	—	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
S55	Tension of the first reinforcement part	—	35	60	120	35	35	35	60	60	60	60	60	60	60	60	60
S56	Tension of the second reinforcement part	—	35	60	35	35	35	35	60	60	60	60	60	60	60	60	606
S57	Set the tension of the upper thread at the beginning of sewing	—	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
S58	Set the tension of the upper tension when downstitching	—	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
S59	Start sewing the first reinforcement seam, and adjust AC synchronously	Stitch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S60	Start sewing the right whipstitch, and adjust ACT synchronously	Stitch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S61	Start sewing the second reinforcement seam and adjust AC synchronously	Stitch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S62	Number of reinforcement stitches at beginning of sewing	Stitch	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
S63	Reinforcement gap at beginning of sewing	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S64	Width at beginning of sewing	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
S65	Vertical correction of reinforcement seam at beginning of sewing	mm	0	1.5	0	1.5	0	0	0	1.5	0	0	1.5	0	0	0	0
S66	Horizontal correction of reinforcement seam at the beginning of sewing	mm	0	0	0	0	0	0.7	0	0	0	0.7	0	0	0	0	0.7
S67	Width of reinforcement at the end of sewing	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
S68	Number of reinforcement stitches at the end of sewing	Stitch	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
S69	Vertical correction of reinforcement seam at the end of sewing	mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S70	Horizontal correction of reinforcement seam at the end of sewing	mm	0.9	0.9	0.9	0.9	0	0.7	0.9	0.9	0	0.7	0.9	0.9	0.9	0	0.7
S81	Knife moves Yes/No	—	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
S83	The first circulation of the double stitch Knife moves Yes/No	—	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
S84	Maximum speed limit	rpm	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
S86	Forward distance	mm															
S87	Forward width	mm															
S88	Return spacing	mm															
S89	Return width	mm															

S/N	Item	Unit															
S01	Sewing shape	mm	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
S02	Rag cutting length	mm	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	13	19.1	19.1	19.1
S03	Right width of knife slot	mm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	—	—	0.10	0.10
S04	Left width of knife slot	mm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	—	0.10	—	0.10
S05	Width of left covered seam	mm	1.40	1.40	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	—	—	—	—

No.	Parameter	Unit															
S06	Ratio of left shape to right shape	%	100	100	100	100	100	100	100	100	100	100	100	—	—	—	—
S07	Spacing between the parallel parts	mm	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	—	—	—	—
S08	Length of the second reinforcement seam	mm	—	—	—	—	—	1.5	3.0	—	—	—	—	—	—	—	—
S09	Length of the first reinforcement seam	mm	—	—	1.0	1.0	1.0	1.0	1.0	—	—	—	—	—	—	—	—
S10	Compensation to width of the right reinforcement	mm	—	—	0	0	0	0	0	—	—	—	—	—	—	—	—
S11	Compensation to width of the left reinforcement	mm	—	—	0	0	0	0	0	—	—	—	—	—	—	—	—
S12	Symmetrical reinforcement of left taper	mm	—	—	—	—	—	—	0.85	—	—	—	—	—	—	—	—
S13	Symmetrical reinforcement of right taper	mm	—	—	—	—	—	—	0.85	—	—	—	—	—	—	—	—
S14	Length of round head buttonhole	mm	2.0	2.0	—	—	—	—	—	—	—	—	—	—	—	—	—
S15	Number of stitches of round head buttonhole	Stitch	3	3	—	—	—	—	—	—	—	—	—	—	—	—	—
S16	Width of round head buttonhole	mm	1.0	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—
S17	Width of round head buttonhole	mm	3.0	3.0	—	—	—	—	—	—	—	—	—	—	—	—	—
S18	Length of round shape	mm	2.0	2.0	2.0	2.0	2.0	—	—	2.0	2.0	2.0	2.0	—	—	—	—
S19	Number of stitches of radial shape	Stitch	—	—	3	—	—	—	—	3	3	3	—	—	—	—	—
S20	Radial shape reinforcement Yes/No	—	—	—	No	—	—	—	—	No	No	No	—	—	—	—	—
S21	Spacing between the reinforcement parts	mm	0.25	0.30	0.30	0.25	0.30	0.30	0.30	0.25	0.30	0.25	0.25	—	—	—	—
S22	The first clearance	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	—	2.0	2.0	2.0
S23	The second clearance	mm	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	—	2.0	2.0	2.0
S31	Single/double stitch	—	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	Single stitch	—	—	—	Single stitch
S32	Select double stitch	—	<	<	<	<	<	<	<	<	<	<	<	—	—	—	<
S33	Compensate width of double stitch	mm	0	0	0	0	0	0	0	0	0	0	0	—	—	—	—
S34	Downstitching times	Times	0	0	0	0	0	0	0	0	0	0	0	3	2	2	—
S35	Downstitching speed	mm	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	—
S36	Rolled length when downstitching	mm	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	—
S37	Rolled spacing when downstitching	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	—
S38	Rolled width when downstitching	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	—
S39	Compensate at front and rear of downstitching and needling points	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	—
S40	Compensate at left and right of downstitching and needling points	mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—
S41	Compensate at the left side when downstitching	mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—
S42	Compensate the right side when downstitching	mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—
S44	Set the downstitching speed	mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	—
S45	overcast stitching function Yes/No	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—
S46	Width of overcast stitch	mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	—	—	—	—	—
S47	Gap between overcast stitches	mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	—	—	—	—	—
S51	Left parallel tension	—	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
S52	Right parallel tension	—	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
S53	Left parallel tension (the first circulation of double stitch)	—	—	60	60	60	60	60	60	60	60	60	60	—	—	—	—
S54	Right parallel tension (the first circulation of double stitch)	—	—	60	60	60	60	60	60	60	60	60	60	—	—	—	—
S55	Tension of the first reinforcement part	—	—	60	60	60	60	60	60	60	60	60	60	—	—	—	—
S56	Tension of the first reinforcement part	—	—	60	60	60	60	60	60	60	60	60	60	—	—	—	—

S57	Set the tension of the upper thread at the beginning of sewing	—	25	25	25	25	25	25	25	25	25	25
S58	Set the tension of the upper tension when downstitching	—	80	80	80	80	80	80	80	80	80	80
S59	Start sewing the first reinforcement seam, and adjust AC synchronously	Stitch	0	0	0	0	0	0	0	0	0	0
S60	Start sewing the right whipstitch, and adjust ACT synchronously	Stitch	0	0	0	0	0	0	0	0	0	0
S61	Start sewing the second reinforcement seam and adjust AC synchronously	Stitch	0	0	0	0	0	0	0	0	0	0
S62	Number of reinforcement stitches at beginning of sewing	Stitch	3	3	3	3	3	3	3	3	3	3
S63	Reinforcement gap at beginning of sewing	-	0	0	0	0	0	0	0	0	0	0
S64	Width at beginning of sewing	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
S65	Vertical correction of reinforcement seam at the beginning of sewing	mm	1.5	1.5	1.5	1.5	1.5	0	0	1.5	1.5	1.5
S66	Horizontal correction of reinforcement seam at the beginning of sewing	mm	0	0	0	0	0	0	0.7	0	0	0
S67	Width of reinforcement at the end of sewing	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
S68	Number of reinforcement stitches at the end of sewing	Stitch	3	3	3	3	3	3	3	3	3	3
S69	Vertical correction of reinforcement seam at the end of sewing	mm	0	0	0	0	0	0	0	0	0	0
S70	Horizontal correction of reinforcement seam at the end of sewing	mm	0.9	0.9	0.9	0.9	0.9	0	0.7	0.9	0.9	0.9
S81	Knife moves Yes/No	—	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
S83	The first circulation of the double stitch Knife moves Yes/No	—	No	No	No	No	No	No	No	No	No	No
S84	Maximum speed limit	rpm	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
S86	Forward distance	mm										
S87	Forward width	mm										

| S88 | Return spacing | mm | | | | | | | | | |
| S89 | Return width | mm | | | | | | | | | |

GT1790DAT-

COMPUTER CONTROLLED, HIGH SPEED, LOCKSTITCH
BUTTON HOLE SEWING MACHINE

This machine may only be used by adequately trained operators after having fully read and understood the instruction manual.

Parts are subject in design changes without prior notice .

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