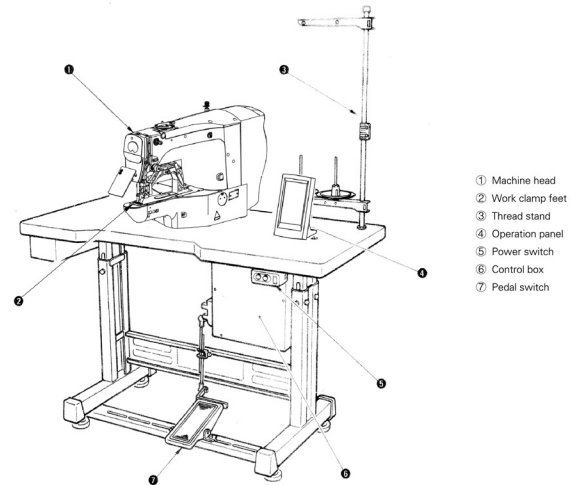智动无限 自控随心
Powermax Motor　Eco-tech Driver

TOUCH SCREEN
INSTRUCTIONS

High-speed bar tacking machine

Thank you for using our Computerized Control System for Special Sewing Machine.
It is appreciated that you do read this manual carefully in order to operate the machine
correctly and effectively. If the user operates the machine contrary to regulations herein,
thus cause loss to user or third party, we will not take responsibility. Besides, you should
keep this manual for future use. For any fault or problem of machine, please ask the
professionals or the technicians authorized by us for repair service

① Machine head
② Work clamp feet
③ Thread stand
④ Operation panel
⑤ Power switch
⑥ Control box
⑦ Pedal switch

1.Signs & Definitions of Safety Marks

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

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

2.Safety Matters for Attention

| ⚠ 危险 Danger | |
| ⚡ | For opening the control box, please turn off the power and take away the plug from socket firstly, and then wait for at least 5 minutes before opening the control box. Touching the part with high voltage will cause the person injury. |

⚠ 注意 Caution	
Usage Environment	
❗	Try not to use this sewing machine near the sources of strong disturbance like high-frequency welding machine. The source of strong disturbance will affect the normal operation of the sewing machine.
❗	The voltage fluctuation shall be within 20% of the rated voltage. The large fluctuation of voltage will affect the normal operations of sewing machine, Therefore a voltage regulator is needed in that situation.
❗	Working temperature: 0℃~50℃. The operation of the sewing machine will be affected by environment with temperature beyond the above range.
❗	Relative Humidity: 5%~95%(No dew inside the machine), or the operation of sewing machine will be affected.
❗	The supply of compressed gas shall be over the consumption required by the sewing machine. The insufficient supply of compressed gas will lead to the abnormal action of sewing machine.
❗	In case of thunder, lightning or storm, please turn off the power and pull plug out the socket. Because these will have influence on the operation of sewing machine.
Installation	
🚫	Please ask the trained technicians to install the sewing machine.
🚫	Don't connect machine to power supply until the installation is finished. Otherwise the action of sewing machine may cause personal injury once the start switch is pressed at that situation by mistake.
⚠	When you tilt or erect the head of sewing machine, please use both of your hand in that operation. And never press the sewing with strength.If the sewing machine loses its balance, it will fall into floor thus causes the personal injury or mechanical damage.
⏚	Grounding is a must. If the grounding cable is not fixed, it may cause the electric-shock and mis-operation of machine

02

| ❗ | The entire cables shall be fixed with a distance at 25mm away from the moving component at least. By the way, don't excessively bend or tightly fixed the cable with nails or clamps, or it may cause the fire or electric shock. |
❗	Please add security cover on the machine head.
Sewing	
🚫	This sewing machine can only be used by the trained staff.
🚫	This sewing machine can only be used by the trained staff.
❗	When operating the sewing machine, please remember to put on the glasses. Otherwise, the broken needle will cause the personal injury in case the needle is broken.
⚠	At following circumstances, please cut off the power at once so as to avoid the personal injury caused by the mis-operation of start switch: 1.Threading on needles; 2. Replacement of needles; 3. The sewing machine is left unused or beyond supervision
⚠	At working, don't touch or lean anything on the moving components, because both of the above behaviors will cause the personal injury or the damage of the sewing machine.
❗	During working, if the mis-operation happens or the abnormal noise or smell is found at the sewing machine, user shall cut off the power at once, and then contact the trained technicians or the supplier of that machine for solution.
❗	For any trouble, please contact the trained technicians or the supplier of that machine.
Maintenance & Inspection	
🚫	Only can the trained technicians perform the repair, maintenance and inspection of this sewing machine.
❗	For the repair, maintenance and inspection of the electrical component, please contact the professionals at the manufacturer of control system in time.
⚠	At following circumstances, please cut off the power and pull off the plug at once so as to avoid the personal injury caused by the mis-operation of start switch:. 1.Repair, adjustment and inspection; 2.Replacement of the component like curve needle, knife and so on
⚠	Before the inspection, adjustment or repair of any gas-driven devices, user shall cut off the gas supply till the pressure indicator falls to 0.
⚠	When adjusting the devices needing the power supply and gas supply, users can't be too careful to follow the entire Safety Matters for Attention
🚫	If the sewing machine damages due to the unauthorized modification, our company will not be responsible for it.

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Contents

General Information

1.1 Specifications of 1900B/1903B

No.	ITEM TYPE	1900B
1	Purpose	Bartacking / Button Lockstitch
2	Sewing Area	X(lateral) direction 40mm × Y(longitudinal) direction 30mm
3	MAX. Sewing Speed	3000rpm（when sewing pitches are less than 4.5mm in X-direction and 3.5mm Y-direction）
4	Stitch Length	0.1mm ~ 10.0mm (adjustable in 0.1mm step)
5	Feed Motion of Work Clamp Foot	Intermittent Feed(2-draft drive by stepping motor)
6	Needle Bar Stroke	41.2mm
7	Needle	DP × 5 #14 (DP × 5 #11(F,M), (DP × 17#21H))
8	Type of driving Work Clamp Foot	Driven by pulse stepping motor
9	Lift of Work Clamp Foot	13mm (Standard), Max. 17mm
10	Total Number of Standard Patterns	50
11	Wiper Type	To work together with Work Clamp Foot driven by Stepping Motor
12	Needle ThreaTension	Electrical Thread Tension Release
13	Shuttle	Standard Semi-rotary Hook（oil wick lubrication）
14	Lubricating Method	Rotary Part：Lubricate with minimum amount
15	LubricatingOil(Liquid)	Ordinary Sewing Machine Lubricating Oil (Liquid)
16	Grease	Ordinary Sewing Machine Grease
17	Data Recording	Flash Memory
18	Enlarging/Reducing Facility	20%~200%(1% step) in X direction and Y direction respectively
19	Enlarging/Reducing Method	By increasing/decreasing the stitch length
20	Max. Sewing Speed Limitation	400~3000rpm (100rpm step)
21	Pattern Selection	Specifying Pattern No. Type(1~200)
22	Bobbin Thread Counter	Up/Down Type (0 ~ 9999)
23	Sewing Machine Motor	500W Compact AC Servomotor (Direct Drive)
24	Dimensions	263mm × 153mm × 212mm
25	Weight	10 Kg
26	Power Consumption	600W
27	Operation Temperature Range	0℃~ 50℃
28	Operation Humidity Range	5% ~ 95%（No Dew Condensation）
29	Line Voltage	Single Phrase AC 220V ± 10%；50~60Hz

The highest sewing speed according to the sewing conditions reduce speed

1.2 Names of main unit
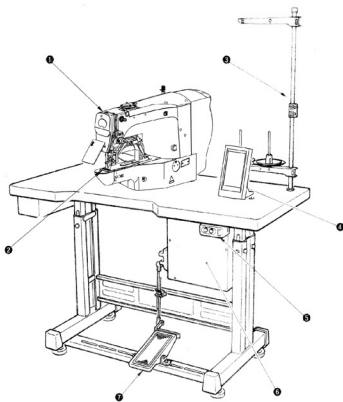
①   Machine head
②   Work clamp feet
③   Thread stand
④   Operation panel
⑤   Power switch
⑥   Control box
⑦   Pedal switch

2、INSTALLATION

2.1 Installing the electrical box
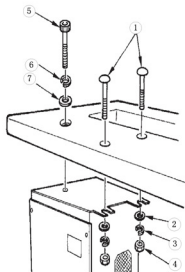
Install the electrical box on the underside of the table
at the location illustrated using: round–head bolt ①, plain washer ②, spring washer ③ and nut ④ supplied with the machine, and using bolt having hexagonal indentation on the head ⑤, spring washer⑥ and plain washer ⑦ supplied with the machine.

2.2 Attaching the connecting rod
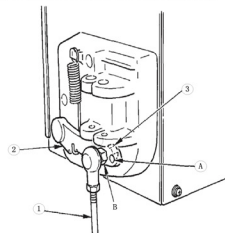
1）Fix connecting rod ② to installing hole Ⓑ of pedal lever ② with nut ③。
2）when connecting rod ① is installed in installing hole Ⓐ , the depressing stroke of the pedal is increased.

2.3 Installing the head support rod
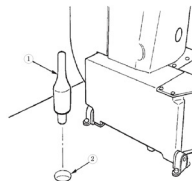
Drive head support rod ① in hole②in the machine table.

2.4 Installing and connecting the power switch
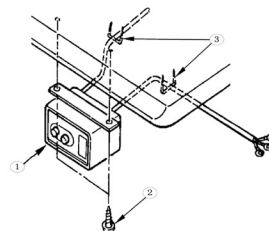
（1）Fix power switch ① under the machine table with wood screws ②.Fix the cable with staples ③ supplied with the machine as accessories in accordance with the forms of use.
※Five staples ③ including the staple for fixing the operation panel cable are supplied as accessories.
（2）Connecting the power source cord
Voltage specifications at the time of delivery from the factory are indicated on the voltage indication seal. Connect the cord in accordance with the specifications.

Voltage specifications at the time of delivery from the factory are indicated on the voltage indication seal. Connect the cord in accordance with the specifications.

2.5 Installation of the sewing machine head
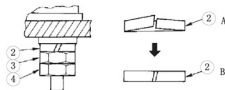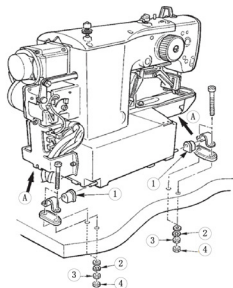
> To prevent possible accidents caused by the full of the sewing machine, perform the work by two persons or more when the machine is moved.

1) Fit hinge rubber ① to the hinge shaft ,and fix the sewing machine main unit.
2) When tightening nut ③ to hinge rubber ①, tighten nut ③ until spring washer ② becomes as B in the illustration, and fix it with nut ④.

> If tightening hinge rubber ① excessively, it will not work properly. So, be careful.
> Hold section Ⓐ when moving the sewingmachine.

2.6 Installing the drain receiver and the head support rubber
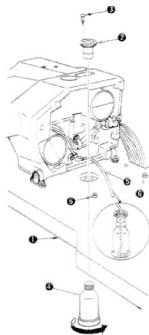
1）Fix drain receiver ② in the installing hole of table ① with four setscrews ③.
2）Screw in drain bin ④ to drain receiver ②.
3）I nsert sewing machine drain pipe ⑤ into drain bin ④.
4）Insert head support rubber ⑥ into table ①.

> 1. Insert drain pipe ⑤ until it will go no further so that it does not come off drain bin ④ when tilting the machine head.
> 2. Remove the tape fixing drain pipe ⑤.

2.7 Safety switch

Remove tape ① fixing the lever section of safety switch ②.

> 1. When using the safety switch without removing tape ①, it is very dangerous since the sewing machine works even in the state that it is tilted.
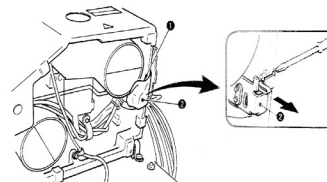> 2. In case error 302 occurs when the sewing machine works after setup, loosen the safety switch fitting screw with a screwdriver, and lower the safety switch ② to the downside of the sewing machine.

2.8 Tilting the sewing machine head
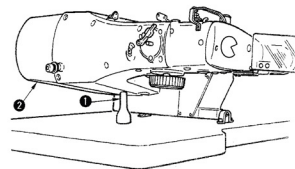
When tilting the sewing machine head, tilt the head gently until it comes in contact with head support rod ①.

> Tilt/raise the sewing machine head with both hands taking care not to allow your fingers to be caught in the head. Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

> 1.Before tilting the sewing machine head, make sure that head support rod ① is attached to the machine table.
> 2.When raising the sewing machine head, do not raise it while holding motor cover ②. It will be the cause of breakage of motor cover ②.
> 3.Be sure to tilt the sewing machine head on a flat place to prevent it from falling

2.9 Installing the operation panel
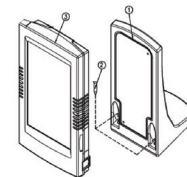
Fix operation panel installing plate ① on the machine table with wood screws ② and pass the cable through hole in the machine table. Fix the operation panel on panel installing plate ① with screws ③ supplied as accessories. Fix the cable on the bottom surface of the table with the staples supplied with the machine as accessories.

2.10 Installing the motor cover
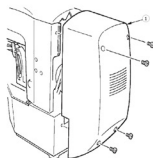
Install motor cover ① on the machine main unit with screws supplied with the machine as accessories.

2.11 Managing the cord
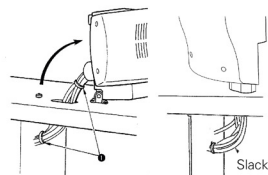
Slack

1) In the state that the sewing machine is tilted, connect the cords, and bundle them with clip band ① as shown in the figure.
2) Fix the cords with cords setting plate ② in the state that the cords slacken as shown in the figure.

> When you tilt the sewing machine, make sure that the sewing machine head support bar is placed on the table.

2.12 Installing the eye protection cover
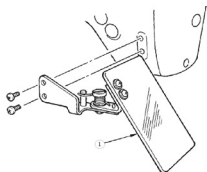
Be sure to attach the eye protection cover ① before using the sewing machine.

> ⚠ Be sure to attach this cover to protect the eyes from the disperse of needle breakage.

2.13 Installing the thread stand
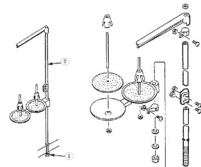
1) Assemble the thread stand unit, and insert it in the hole in the machine table.
2) Tighten locknut ① to fix the thread stand.
3) For ceiling wiring, pass the power cord through spool rest rod ②.

3.1 Lubrication
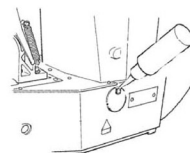
Check that the place between lower line B and upper line A is filled with oil. Fill there with oil using the oiler supplied with the machine as accessories when oil is short.

※The oil tank which is filled with oil is only for lubricating to the hook portion. It is possible to reduce the oil amount when the number of rotation used is low and the oil amount in the hook portion is excessive.

> 1. Do not lubricate to the places other than the oil tank and the hook of Caution 2 below. Trouble of components will be caused.
> 2. When using the sewing machine for the first time or after an extended period of disuse, use the machine after lubricating a small amount of oil to the hook portion.

> ⚠ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

3.2 Attaching the needle
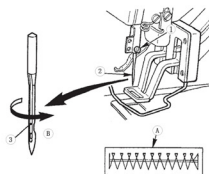

Loosen setscrew ① and hold needle ② with the long groove facing toward you. Then fully insert it into the hole in the needle bar, and tighten setscrew ①.

> If the stitches are made as shown in Ⓐ , attach the needle facing to the direction Ⓑ to a

> ⚠ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

3.3 Threading the machine head

Thin synthetic thread or the like
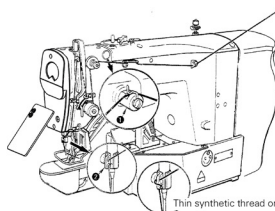
Pull out the thread by approximately 4 cm from the needle after threading through the need

> 1 When the silicon oil is used, thread through thread guide for silicon ①

> ⚠ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

3.4 Installing and removing the bobbin case
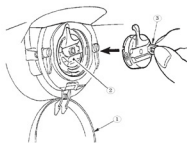
1) Open hook cover ①.
2) Raise latch ③ of bobbin case ②, and remove the bobbin case.
3) When installing the bobbin case, fully insert it into the shuttle shaft, and close the latch.

⚠ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

If it is not fully inserted, bobbin case ② may slip off during sewing.

3.5 Installing the bobbin

1) Set the bobbin q into bobbin case w in the direction shown in the figure.
2) Pass the thread through thread slit ③ of bobbin case ②, and pull the thread as it is. By so doing, the thread will pass under the tension spring and be pulled out from thread hole ④
3) Pass the thread through thread hole ⑤ of the horn section, and pull out the thread by 2.5 cm from the thread hole.

⚠ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

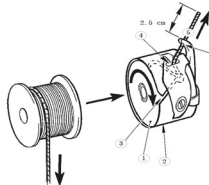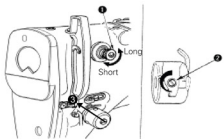If the bobbin is installed in the bobbin case orienting the reverse direction, the bobbin thread pulling out will result in an inconsistent state.
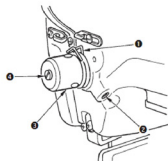
3.6 Adjusting the thread tension

Adjusting the needle thread tension
If thread tension controller No. 2q is turned Upper thread tension, The tension knob (3) Turn right line tight surface, turn left noodles loose.

※The tension is set 1.5 N(spun thread #50). (When thread tension No. 1 is released)

3.7 Adjusting the thread take-up spring

The standard stroke of thread take-up spring ① is 8 to 10 mm, and the pressure at the start is 0.1 to 0.3N.
1) Adjusting the stroke
Loosen setscrew ②, and turn thread tension asm. ③. Turning it clockwise will increase the moving amount and the thread drawing amount will increase.
2) Adjusting the pressure
To change the pressure of the thread take-up spring, insert a thin screwdriver into the slot of thread tension post ④ while screw ② is tightened, and turn it. Turning it clockwise will increase the pressure of the thread take-up spring. Turning it counterclockwise will decrease the pressure.

3.8 Example of the thread tension

When using the sewing machine for the first time, adjust the thread tension referring to the table below.

Thread	Material	Thread take-up spring moving amount [Thread drawing amount]	Strength
Polyester filament thread#50	Woo	10 mm [13 mm]	0.1N
Polyester spun thread #50	Woo	10 mm [13 mm]	0.2N
Polyester spun thread #60[Thread clamp OFF]	T/C broad	8~10 mm [11~13 mm]	0.1N
Cotton thread #50	Denim	10 mm [13 mm]	0.1N
Cotton thread #20	Denim	8~10 mm [11~13 mm]	0.1N

4 Standardization

The function keys use the general figures with the meanings agreed in the trade. The figures are able to be recognized by the users in each country.
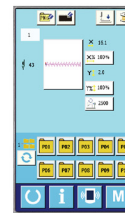
4.1 General Keys

The keys on interfaces for general operations are provided as below:
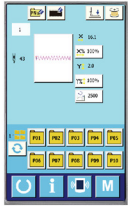
No.	Figure	Function
1		Escape → Quit the setting interface at present. At interface for changing data, this key can cancel the changing data.
2		Enter → Confirm the changed data.
3		Plus → Increase the value.
4		Minus → Decrease the value
5		Reset → Release the Errors
6		Number Input → Activate the number keyboard so that user can input the numbers.
7		Ready Key → Shift between data input interface and sewing interface
8		Information Key → Shift between data input interface and information interface
9		Communication Key → Shift between data input interface and communication interface
10		Mode Key → Shift among data input interface and other detailed setting interfaces

4.2 Basic Operations

① Turn on Power
Turn on power and activate the data input interface.
② Select the Needed Pattern No.
At the present interface, the selected pattern number

will be displayed. Press [   ] to select pattern number.

For the operation of pattern selection, please refer
to [2.7 Pattern Selection].

③ Set Status at "Ready for Sewing"

Press [   ] to change the background color

of LCD to blue, then the system enters the status of
"Ready for Sewing".

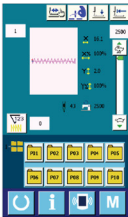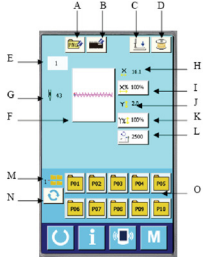④ Start Sewing
Put the material to the presser, and then step on
the pedal to lower the presser and to start the
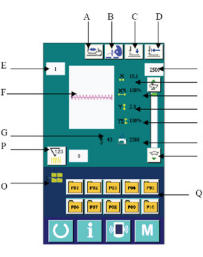sewing machine.

4.3 Operation at Normal Pattern

(1) Interface for Inputting Sewing Data
The interface for inputting sewing data is shown at right.
For the detailed instructions, please refer to List of
Function Keys.

List of Functions Keys：

No.	Functions	Content
A	Pattern Registration	300 normal patterns can be registered.
B	Pattern Naming	14 figures can be inputted at most.
C	Presser foot	Presser it to lower the presser.
D	Winding	Press [ ] again for winding
E	Pattern No. Display	Display the number of the selected pattern.
F	Pattern Shape Selection	The shape of the present pattern is displayed on the button. Press it to have access to Pattern Selection Interface.
G	Pattern Stitch Number	Display the sewing stitch number of the selected pattern
H	X Actual Size Display	Display the actual size of the selected pattern in X direction Via Parameter U64, user can select to input the X direction actual size, and then the system will display the keys for adjusting it.
I	X Scale Rate Setting	The X scale rate of the selected pattern is displayed on that key. Press it to have access to setting interface. This rate is affected by parameter U 64 & U88.
J	Y Actual Size Display	Display the actual size of the selected pattern in Y direction Via Parameter U64, user can select to input the Y direction actual size, and then the system will display the keys for adjusting it.
K	Y Scale Rate Setting	The Y scale rate of the selected pattern is displayed on that key. Press it to have access to setting interface. This rate is affected by parameter U 64 & U88.
L	Max Speed Limitation	Display the limitation value of Max Speed, press it for setting.
M	P Pattern File Folder Selection	Shift P Pattern file folder number in order
N	P Pattern File Folder Number Display	Display the File folder number of the present P pattern.
O	P Pattern Selection	Display the registered P pattern; press it to have access to the interface for inputting P pattern data. At initial status, this button will not be displayed.

(2) Sewing Interface

Press [   ] to have access to the sewing interface,
as shown at right. For the detailed instructions,
please refer to the List of Functions Keys.

List of Function Keys：

No.	Functions	Content
A	Trial Sewing	Press to have access to Trial Sewing Interface, where the pattern shape can be confirmed.
B	Threading	Presser it to lower the presser.
C	Presser down button	Lower the presser. Activate the interface for lowering presser. For lifting presser, please press Lifting Presser on that interface.
D	Return to Origin	After user presses it, the presser will return to the start point and goes up.
E	Pattern Number Display	Display the number of the selected pattern.
F	Pattern Shape Display	Display the shape of the selected pattern
G	Pattern Stitch Number Display	Display the stitch number of the selected pattern.
H	Max Speed Display	Display the max speed limitation
I	X Actual Size Display	Display the actual size of the selected pattern in X direction.
J	X Scale Rate Setting	Display the X scale rate of the selected pattern.
K	Y Actual Size Display	Display the actual size of the selected pattern in Y direction.
L	Y Scale Rate Setting	Display the Y scale rate of the selected pattern.
M	Sewing Speed Display	Display the sewing speed at present.
N	Sewing Speed Setting	Enable to change sewing speed.
O	P Pattern File Folder Number Display	Display the file folder number of the P pattern at present.
P	Counter Setting	Press it to set the type and the present value of counter. ⌸ : Sewing Counter ⌸ : No. Pieces Counter
Q	P Pattern Selection	Display the registered P pattern. Press it to have access to P pattern sewing interface. At initial status, this button will not be displayed.

4.4 Pattern Registration

101-300 normal patterns can be registered at most.

Press [icon] to have access to Pattern Registration Interface

(as shown in right picture)：

① Input Pattern Number

U User can input the pattern number with number keys. If the inputed pattern number exists, the shape and relating data of the registered pattern will be shown on the upper part of the interface. User can find the unregistered pattern number with

[icon] & [icon] .

After confirming the pattern number, user needs to press [icon] to copy the pattern data to the new registered. After this operation, the system will return to the interface for inputting the data of the newly registered pattern. If the inputed pattern number exists, the system will ask user whether to replace the registered pattern

Note: The Basic Patten can not be replaced.

4.5 Pattern Naming
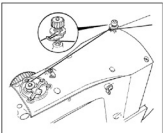
Press [icon] to have access to Pattern Naming interface

(as shown in right picture). 14 figures can be inputted at most.

Right-moving Icon   Left-moving Icon   Backspace

Select the wanted figure; press [icon] to end the operation of Pattern Naming.

Move icon to locate figure. The Backspace is used to clear the figure at that position.
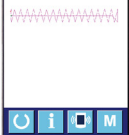
4.6 Winding

① Installation of Bobbin
Insert the bobbin into the winding shaft, then press the bobbin guider in the direction shown by arrow （as shown at right picture）.

② Display the Winding Interface
At sewing data input interface, press [icon] to activate the winding interface （as shown in right picture）.

③ Start Winding
After the user steps on the pedal, the sewing machine starts running and winding the bobbin thread.
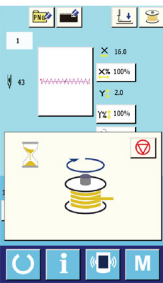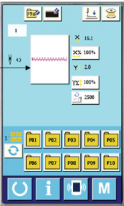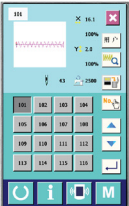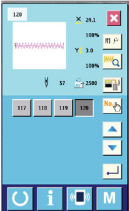
④ Stop Sewing Machine
Press [icon] to stop he sewing machine, and the system returns Normal Mode. Additionally, after user steps on the pedal again during winding the bobbin thread, the sewing machine will stop at winding mode. Stepping on the pedal will have the machine continue winding. Therefore, this function can be used when user needs to wind several bobbins
Note：When the power is turned on or the system is just turned to "main machine input", the machine will not perform winding. Please set pattern shape and press [icon] to display the sewing interface.

4.7 Pattern Selection

① Have Access to Pattern Selection Interface
At the Interface for Inputting Sewing Data (as shown in right picture), user can press the pattern (A) to have access to Pattern Selection Interface. At upper side of that interface the sewing shape of the selected pattern is displayed, while the registered pattern number is displayed at the lower side.

[icon] Pattern Preview   [icon] Pattern Inquiry

[icon] Pattern Deletion   [icon] Transfer Key

② Pattern Selection
16 pattern numbers can be displayed on each page. If the content is more than one page, the Page Keys will be displayed on the interface. When selecting the number of a registered pattern, the pattern shape will be displayed at the upper side of the interface. Press [icon] to finish the operations of Pattern Selection.

③ Patten Inquiry
Press [icon] to activate the Pattern Inquiry Interface. User can input pattern number with the number keys.

④ Pattern Deletion
Select a registered pattern. Pressing [icon] is to delete it. But the pattern that is registered to P Pattern can't be deleted.
Note：The patterns are divided into normal patterns and basic patterns. The basic patterns are the default ones that can't be deleted, while the normal patterns are the patterns made, copied or uploaded by user, which can be deleted or modified.

⑤ Pattern Preview
Press [icon] to preview the pattern in full screen.

4.8 Sewing Data Setting

① Have Access to Sewing Data Setting Interface

At the Interface for Inputting Sewing Data, user can press A, B or C to have access to Scale Rate Setting Interfaces or Max Speed Limitation Interface respectively.
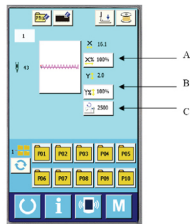
	Item	Value Range	Default Value
A	X Scale Rate Setting	20~2000%	100.0%
B	Y Scale Rate Setting	20~200.0%	100.0%
C	Max Speed Limitation	200~3000rpm	2500rpm

Note 1：The input range and the default value of the Max Speed Limitation are affected by parameter U01.

② Scale Rate Setting

The right picture is the Scale Rate Setting interface, in which the upper side is for X direction and the lower side is for Y direction

A： X Actual Size   B： X Scale Rate
C： Y Actual Size   D： Y Scale Rate

Use [0] ~ [9] and number keyboard or [↑] / [↓] to input value. The inputted figure is inserted at the first position, the figure inputted before will be moved forward one by one. Press [↵] to end the operation, and the system returns to the interface for inputting data.

Note： Press [⟳] to save the set value.
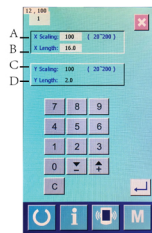
③ Max Speed Limitation Setting

Use [0] ~ [9] and number keyboard or [↑] / [↓] to input value. The inputted figure is inserted at the first position, the figure inputted before will be moved forward one by one. Press [↵] to end the operation, and the system returns to the interface for inputting data.
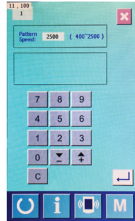
4.9 P Pattern Registration

① Have Access to P Pattern Registration Interface

At the Interface for Inputting Sewing Data, user can press [PNG] to have access to the P Patten Registration Interface (as shown in right picture).

② Input P Pattern Number

Use [0] ~ [9] and number keyboard or [↑] / [↓] to input the number for registration. If the inputted number is a registered one, the pattern shape and relating data will be displayed at the upper side of the interface. In this situation, the operation for registering new pattern will be unavailable.

③ File Folder Number Selection

P pattern number can be registered into 5 file folders, and each one file folder can save 10 P patterns at most. Press [⟳] to select file folder in order.

④ Pattern Number Confirmation

Press [↵] to end the operations of P pattern registration, and the system will return to the Interface for Inputting P Pattern Data.

4.10 Trial Sewing

① Display the Sewing Interface

At Interface for Inputting Sewing Data, after user presses [⟳] , the back ground color of LCD will turn to blue, and the system will display the sewing interface.

② Display the Trial Sewing Interface

At Sewing Interface, user can press [icon] to have system display the Trial Sewing Interface（as shown at right picture）:

[icon] Return to Origin   [icon] Presser Backward

[icon] Presser Forward   [icon] Stop

③ Start Trial Sewing

User needs to step on pedal to lower the presser , and then use [icon] and [icon] to determine the sewing shape. If user holds the key for a while, the presser will keep moving even that key is released. For stopping the machine, user needs to press [icon] .

Press [icon] to return the needle to origin and the system will back to Sewing Interface.

④ End Trial Sewing

After user presses [icon] , the system will return to Sewing Interface from Trial Sewing Interface. If the pattern is not at the start or the end position, user can start sewing in the midway after stepping on the pedal. If user wants to quit the sewing, user will need to press [icon] and turn off the lighting interface. Then the system will display the Sewing Interface and the needle will return to start position.

4.11 Operations on Counter
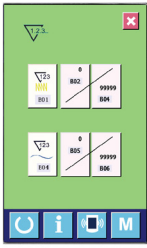
① Display the Counter Setting Interface

At Sewing Interface, user can press [icon] （ [icon] ）to activate the Counter Setting Interface.

[icon] Sewing Counter   [icon] No. Pieces Counter

② Select the Counter Type & Set Counter Value

By selecting [icon] & [icon] , user can determine the type of counter and set the value of the counter.

4.12 Emergent Stop

Set Parameter U31 to select Pause method：

[icon] Operation Panel Pause

When user selects Operation Panel Pause, [icon] will be displayed on the Sewing

① Cutting Thread
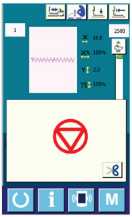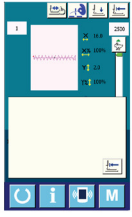
Press [icon] to trim thread.

② Release the Error

please press Origin [icon] to Reset.

③ Restart Sewing

After user steps the pedal, the machine restart sewing.
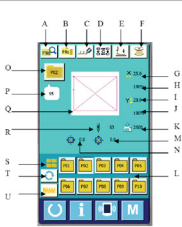
5 Operations on Prompt（P）Pattern

5.1 P Pattern Data Input

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

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

50 P patterns can be registered at most.

List of Function Keys：

No.	Functions	Content
A	P Pattern Edition	Edit the content of P pattern
B	P Pattern Copy	Copy the content of existing P pattern to an empty pattern number
C	Pattern Naming	14 figures can be inputted at most
D	C/P pattern	Select the combination pattern or P pattern
E	Presser foot	Presser it to lower the presser
F	Winding	Wind the thread with a press on 🔄
G	X Actual Size Display	Display the actual size of the selected pattern in X direction
H	X Scale Rate Setting	Display the X scale rate of the selected pattern
I	Y Actual Size Display	Display the actual size of the selected pattern in Y direction
J	Y Scale Rate Setting	Display the Y scale rate of the selected pattern
K	Max Speed Limitation	Display the Max Speed
L	P Pattern Selection	Display the registered P pattern
M	X Travel Amount Display	Display the X travel amount of the currently selected pattern
N	Y Travel Amount Display	Display the Y travel amount of the currently selected pattern
O	P Pattern Number Display	Display the number of the selected pattern
P	Sewing ShapeNumber Display	Display the number of the normal pattern quoted in the existing P pattern
Q	Sewing Shape Selection	Display the sewing shape of the current pattern
R	Pattern Stitch Number Display	Display the stitch number of the currently selected pattern
S	P Pattern File Folder Display	Display the file folder number of the current P pattern
T	P Pattern File Folder Selection	Shift the file folder number of P pattern in sequence
U	Return to Normal Pattern Data Input	Return to the interface for inputting normal pattern data

5.2 P Pattern Edition

① Have Access to P Pattern Edition Interface.

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

② Change the Item Data
   Select the item for changing and set the value.

	Item	Range	Default Value
A	Sewing Shape		
B	File Folder Number	1~5	
C	X Scale Rate	20.0~200.0%	100.0%
D	Y Scale Rate	20.0~200.0%	100.0%
E	Max SpeedL imitation	200~3000rpm	2500rpm
F	X Travel Amount	-20.0~20.0mm	0
G	Y Travel Amount	-20.0~20.0mm	0

③ Confirm the Change of Data

   Take the edition of "X Travel Amount" as example:
   With 0 ~ 9 and keyboard or ⬆ / ⬇ ,
   user can input the value. Press ⏎ to finish the operation.
   ⬆ The Positive Figure   ⬇ The Minus Figure

④ Quit the Edition

   Press ✖ to close P Pattern Edition Interface and the
   system will return to the Interface for Inputting Sewing Data.
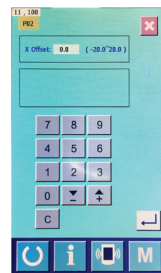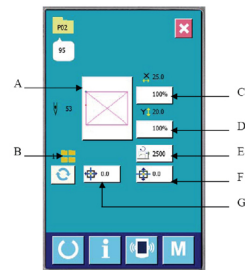
5.3 P Pattern Copy

① Select a Pattern to Be Copied

Press [PNo] to have access to P Pattern Copy Interface (as shown at right picture). Select the number of the pattern that needs copying among the registered ones, and then press [No.] .

② Input newly Registered Pattern Number

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

When pressing [↻] , user can select the file folder for saving.

Press [↵] to finish the operations for copying the pattern, and the system will return to the Interface for Copying P Pattern

5.4 P Pattern Selection

① Have Access to P Pattern Selection Interface

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

② Select Pattern Number

The relating information of the currently selected pattern is displayed at the upper side of the interface. When user presses [↻] to shift the status of concealing the file folder number, the entire registered P patterns can be displayed.
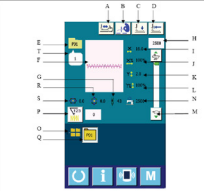
③ Confirm the Selection of Pattern

The operation is same to that of normal pattern selection.

Press [↵] to end the selection.

5.5 P Pattern Sewing

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

List of Functions Keys：

| No.	Functions	Content
A	Trial Sewing	Press to have access to Trial Sewing Interface, where the pattern shape can be confirmed.
B	Threading	Presser it to lower the presser.
C	Presser foot down button	Lower the presser. Activate the interface for lowering presser. For lifting presser, please press Lifting Presser on that interface.
D	Return to Origin	After user presses it, the presser will return to the start point and goes up.
E	Pattern Number Display	Display the number of the selected pattern.
F	Pattern Shape Display	Display the shape of the selected pattern
G	Pattern Stitch Number Display	Display the stitch number of the selected pattern.
H	Max Speed Display	Display the max speed limitation
I	X Actual Size Display	Display the actual size of the selected pattern in X direction.
J	X Scale Rate Setting	Display the X scale rate of the selected pattern.
K	Y Actual Size Display	Display the actual size of the selected pattern in Y direction.
L	Y Scale Rate Setting	Display the Y scale rate of the selected pattern.
M	Sewing Speed Setting	Enable to change sewing speed.
N	Sewing Speed Display	Display the sewing speed at present.
O	P Pattern File Folder Number Display	Display the file folder number of the P pattern at present.
P	Counter Setting	Press it to set the type and the present value of counter. [img] Sewing Counter [img] No. Pieces Counter
Q	P Pattern Selection	Display the registered P pattern. Press it to have access to P pattern sewing interface. At initial status, this button will not be displayed.
R	X Travel Amount Display	Display the X travel amount of the currently selected pattern
S	Y Travel Amount Display	Display the Y travel amount of the currently selected pattern
T	Sewing Shape Number Display	Display the number of the normal pattern quoted in the existing P pattern.

6.1 Adjusting the height of the needle bar

Upper engraved line
上刻线

Engraved Line foy DPX5
Ⓐ DP*5用刻线

Engraved Line foy DPX17
Ⓑ DP*17用刻线

Ⓑ 为仅H、W规格
is for H and W types only

仅F规格
F types only

0.8~1 mm
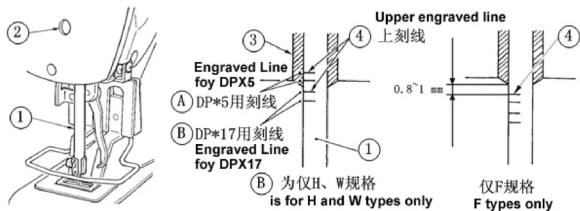
Bring needle bar ① to the lowest position of its stroke. Loosen needle bar connection screw ② and adjust so that upper marker line ④ engraved on the needle bar aligns with the bottom end of needle bar bushing, lower ③. For F type only, adjust the needle bar to the position where it is lowered by 0.8 mm to 1 mm from the center of upper marker line ④ engraved on the needle bar.

When stitch skipping occurs in accordance with the sewing conditions, adjust the height of the needle bar so as to lower it by 0.5 to 1 mm from the needle bar engraved line ④

⚠ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

After the adjustment, make sure that there is no uneven torque.

6.2 Adjusting the needle-to-shuttle relation

⚠ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

Relation between needle and engraved lines
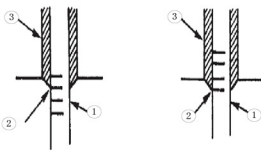
1)Turn the hand wheel by hand. When needle bar ① has gone up, adjust so that lower marker line ② engraved on the needle bar aligns with the bottom end of the needle bar bushing ③, lower.
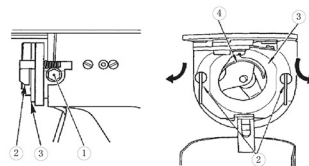
2) Loosen setscrew ① in the driver. Open inner hook pressers ②to the right and left, and remove inner hook presser ③.

At this time, be careful not to let inner hook ④ come off and fall.

0 mm
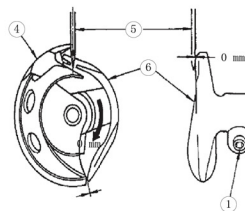
3) Adjust so that the blade point of inner hook ④ aligns with the center of needle ⑤, and that a clearance of 0 mm is provided between the front end of the driver and the needle as the front end face of driver ⑥receives the needle to prevent the needle from being bent. Then tighten setscrew ① of the driver.

0.05~0.1 mm
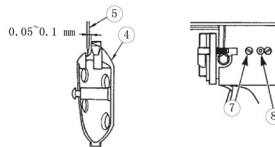
4) Loosen setscrew ⑦of the shuttle, and adjust the longitudinal position of the shuttle. To do this adjustment, turn shuttle race adjusting shaft ⑧ clockwise or counterclockwise to provide a 0.05 to 0.1 mm clearance between needle ⑤ and the blade point of inner hook ④.
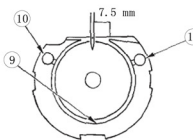
5) After adjusting the longitudinal position of the shuttle, further adjust to provide a 7.5 mm clearance between the needle and the shuttle by adjusting the rotating direction. Then tighten setscrew ⑦ of the shuttle.

7.5 mm

Apply a small amount of oil to race section ⑨ and oil wick ⑩, and use the sewing machine after an extended period of disuse or cleaning the periphery of hook portion.

6.3 Adjusting the lift of the work clamp foot
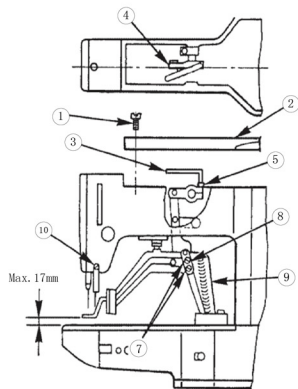
Max. 17mm

⚠️ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

1)With the machine in stop mode, remove six setscrews ① of the top cover, and take off top cover ②.
2)Apply L–shaped wrench ③ to socket bolt ⑤ of clamp ④, and loosen the socket bolt.
3)Push down L–shaped wrench ③ to increase the lift of the work clamp foot, or pull it up to decrease the lift.
4)After the adjustment, securely tighten socket bolt ⑤.
5)If the right and left work clamp feet are not levelled, loosen fixing screw ⑦ and adjust the position of the work clamp foot lever support plate ⑧ to level them.

At this time, be careful not to cause work clamp foot lever support plate ⑧ to interfere with feed bracket ⑨.
If the work clamp foot lever support plate interferes with the wiper, readjust the height of the wiper using setscrew ⑩ in the wiper installing base.

## 6.4 The moving knife and counter knife
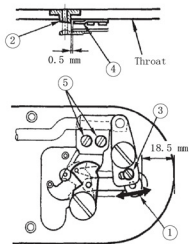
0.5 mm   Throat

18.5 mm

⚠️ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

1) Loosen adjusting screw ③ so that a clearance of 18.5 mm is provided between the front end of the throat plate and the top end of thread trimmer lever, small ①. To adjust, move the moving knife in the direction of arrow.
2) Loosen setscrew ⑤ so that a clearance of 0.5 mm is provided between needle hole guide ② and counter knife ④. To adjust, move the counter knife.

6.5 Adjustment of the wiper

1.5 mm or more   23~25 mm

⚠️ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

1) Loosen screw ① to adjust so that a clearance of 1.5 mm or more is provided between the wiper and the needle.
At this time, the standard of the distance between the wiper and the needle is 23 to 25 mm. By adjusting the distance wide, the work clamp foot can prevent stepping on needle thread when it comes down.
Especially when the thin needle is used, adjust the distance wide to such an extent of 23 mm.
※The position of the needle is when the sewing machine has stopped after the sewing finished.

6.6 Draining waste oil
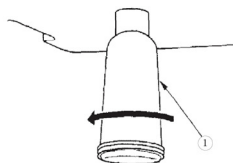
When polyethylene oiler ① becomes filled with oil, remove polyethylene oiler ① and drain the oil.

6.7 Amount of oil supplied to the hook
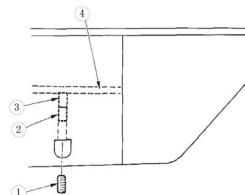
1) Loosen setscrew ① and remove setscrew ①.
2) When screwing in adjustment screw ②, the amount of oil of oil pipe, left ④ can be reduced.
3) After the adjustment, screw in setscrew ① and fix it.

1)The state of standard delivery is the position where ③ is lightly screwed in and returned by 4 turns.
2)When reducing the amount of oil, do not screw in the screw at once. Observe the state for approximately half a day at the position where ③ is screwed in and returned by 2 turns. If reducing is excessive, worn–out of the hook will result.

6.8 Replenishing the designated places with grease

When the sewing machine has been used for a certain number of times of sewing, error code No. E221 is displayed on the operation panel. This display informs the operator of the time to replenishing the designated places with

grease. Be sure to replenish on big connecting link with the grease. Then press [icon] with the first screen NO.E221

to enter password register screen. After input the password then press [icon] to automatically remove count value. [default number is 8000 ten thousand]

(1) Replenishing the eccentric cam section with grease
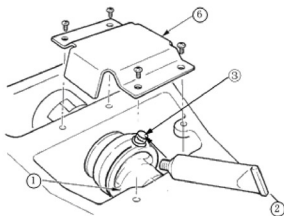
1) open crank rod cover ⑥.
2) remove setscrew③ form the grease inlet cover located at periphery of crank rod①
3) fill coupling with grease② through crank rod①

1. After replenishing the places with grease, the error E221 is displayed again unless the memory
2. Use grease tube supplied as accessories to replenish the designated places below with grease. If grease other than the designated one is replenished, damage of components will be caused.
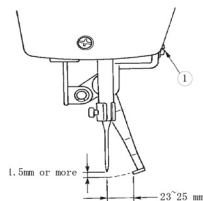
⚠ Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.再进行。

# 7 Operations on Combination（C）Pattern

7.1 C Pattern Data Input

The combination pattern, called as C pattern for short, consists of a group of P patterns, which can contain 30 P patterns at most. In this model, 20 C patterns can be registered into the system at most.

For having access to the Interface of Combination Pattern Data Input (as shown at right), please refer to the content in [8.8 Change Sewing Type]
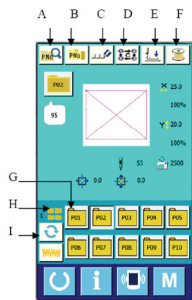
List of Function Keys：

| No.	Function	Contents
A	P Pattern Registration	Register a new P pattern.
B	P Pattern Copy	Copy the content of Current P pattern to an empty pattern number.
C	Pattern Naming	14 figures can be inputted at most.
D	C Pattern Number Selection	The number of the currently selected pattern is displayed on the button. Press it to have access to the C Pattern Selection Interface.
E	Presser foot	Press it to lower the presser.
F	Winding	Wind the thread with a press on [icon] .
G	P Pattern Selection	Display the registered P pattern.
H	P Pattern File Folder Display	Display the file folder number of the current P pattern.
I	P Pattern File Folder Selection	Shift the file folder number of P pattern in sequence.

7.2 C Pattern Edition

① Have Access to C Pattern Edition Interface

At Interface of C Pattern Data Input, user can press A to have access to C Pattern Edition Interface.
In initial status, because no sewing shape is registered to P pattern, the first one is displayed as blank.
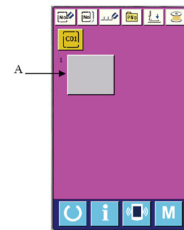
② Select Shape

At C Pattern Edition Interface (the right figure), user can select the P Pattern (B) for registration and then press ↵ to finish the selection.
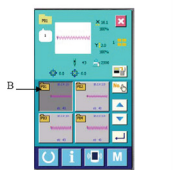
③ Repeat the Registration

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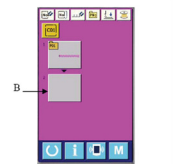
7.3 C Pattern Selection

① Have Access to C Pattern Selection Interface

As shown on the right picture, user can have access to C Pattern Selection Interface by pressing Figure A.
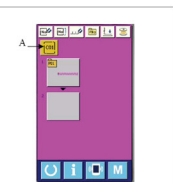
② Select C pattern number

At C Pattern Selection Interface (the right figure), Confirm the number of the needed B pattern (C), and then press ↵ to finish selection.
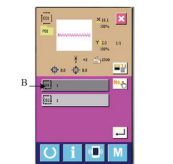
7.4 C Pattern Sewing

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

List of Function Keys：

| No.	Functions	Content
A	Trial Sewing	Press to have access to Trial Sewing Interface, where the pattern shape can be confirmed.
B	Threading	Presser it to lower the presser.
C	Presser foot	Lower the presser. Activate the interface for lowering presser. For lifting presser, please press Lifting Presser on that interface.
D	Return to Origin	After user presses it, the presser will return to the start point and goes up.
E	C Pattern Number Display	Display the number of the currently selected pattern.
F	Pattern Shape Display	Display the shape of the selected pattern.
G	Pattern Stitch Number Display	Display the stitch number of the selected pattern.
H	Max Speed Display	Display the max speed limitation.
I	X Actual Size Display	Display the actual size of the selected pattern in X direction.
J	X Scale Rate Setting	Display the X scale rate of the selected pattern.
K	Y Actual Size Display	Display the actual size of the selected pattern in Y direction.
L	Y Scale Rate Setting	Display the Y scale rate of the selected pattern.
M	Sewing Speed Setting	Enable to change sewing speed.
N	Sewing Speed Display	Display the sewing speed at present.
O	X Travel Amount Display	Display the X travel amount of the currently selected pattern.
P	Y Travel Amount Display	Display the Y travel amount of the currently selected pattern.
Q	Counter Setting	Press it to set the type and the present value of counter. Sewing Counter No. Pieces Counter
R	P Pattern Selection	Display the registered P pattern.

8.1 Pattern Edition Mode

User can press to shift the data input interface to the Mode Selection Interface (as shown at right picture), where user can make some detailed settings and editions.

For the detailed operations and settings at Mode Selection Interface, please refer to 【8 Mode and Parameter Setting】.

Press to have access to the Interface for Selecting Edition

Mode, as shown at right figure.

Press to have access to Standard Interface

for Pattern Edition, as shown in the right picture：

List of Function Keys：

pattern	Function	Contents
load	Read pattern	Enter the interface of selecting modified pattern
----	Select the type of line	Enter the interface of selecting the type of editing line
code	Select function code	Enter the interface of selecting function code
	Move needle	Move needle
1	Select moving speed	Select moving speed (1-3)
	Quickly select line	Quickly select line
	Go zero	Go zero

pattern	Function	Contents
	Presser foot down/up	Presser foot down/up
输入结束	End Of Input	When selecting poly line / curve to confirm the input end
✕	Exit edit mode	Exit edit mode
Save	Save	Save the edit pattern
	Inflection point confirmed	Confirm inflection point when input curve
	Cancel unacknowledged point	Cancel unacknowledged point
C	Cancel confirmed point	Cancel confirmed point
↵	Confirm input point	Confirm input point

A straight line edit (edit other patterns are similar) as an example:

【 Operation points 】

1) Please specify a linear input （ ⎓ ） .

2) points input : Sewing a straight line between the current position (has entered) and any input points.

For example : Pattern in the following figure (4.5 stitches) data production process.
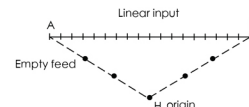
Pattern Analysis:

Between point H from point A is empty feed.

Sewing in a straight line (Select line input mode) between point A to point B.

【operating steps】

1、After setting pitch is complete above the operation, enter the pattern editing mode

2、Enter the interface of editing pattern，determine the way of empty feed.

3、Touch the arrow keys and run needle to the point A.

· Touch the arrow keys to move the needle from point H to point A.

· Touch ↵ to confirm point A (after confirming the pattern is generated like the right figure).

4、Change the input method, select a linear input.

· Touch ⎓ (select the line input).

· Confirm pointing straight input

· Touch ↵ to return pattern edit screen

5、Sewing a straight line through the point A to point B.

· Touch key to set the pattern making speed:

speed 1

speed 2

speed 3

· Touch the direction keys and move needle from Point A to Point B.

· T ouch ↵ key to confirm point B.

6、In the additional directory of editing pattern，touch Save to enter the page of saving pattern .

Item	Content
Pitch:	Pattern's pitch
Input point:	The number of the current input point
Needle number:	Total needle number of the current pattern
X:/Y:	Absolute coordinates
ABX:/ABY:	Relative coordinates

8.1.1 Linear selection

In the editing interface, click the button of selecting liner to enter the liner selection interface, as shown on the right.

The figure is divided into four parts:

The first part is based linear selection area, including empty shift , points, lines, arcs, circles, poly lines, splines, and so on;The second part is offset function editing area;The third part is herringbone stitch function editing area;The fourth part is tacking function editing area.

Click [icon] key, enter the interface of offset function setting, as the picture shows.

Click [icon] key,enter the interface of offset function setting, as the picture shows.

Select [icon] or [icon] , click [icon] button, enter the different interface of tacking, as shown right.

8.1.2 Save Pattern data

In the edit interface, click [save] button, enter saving page, like right figure.

Input pattern ID number, save the pattern.
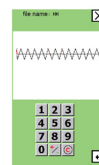
8.2 Pattern Modify

In the edit interface, click [load] ,enter the interface of selecting pattern, select the pattern you want to modify, after confirming, go to pattern modify page, like right figure.

List of Function Keys：

pattern	Function	Contents
Del Needle	Delete the stitch	This function only deletes the current stitch, graphic original shape does not change.
Add Needle	Add the stitch	Adding a stitch between the two stitches, graphic original shape does not change.
MV Needle	Move the stitch	Move a stitch, after modifying others stitches' position are fixed
MV Pattern	Move pattern	Move the entire pattern (moving start sewing point)
Reinforce	Before and after reverse stitching	Add before and after reverse stitching reverse stitching

pattern	Function	Contents
Mod Section	Segment modification	Modify a segment of selected pattern(using straight line or empty feed in place)
MV Section	Segment movement	Move one segment of selected pattern(using straight line or empty feed in place)
Cp Pattern	Copy	Copy the whole graph (start sewing point)
Mirror	Mirroring	The origin, X-axis or Y-axis as a baseline to mirror the entire graphic
Rotate	Rotation	Centered at the origin, in accordance with the input angle, rotating the whole pattern

Delete a stitch (modify other patterns are similar) as an example:

The function only deletes the current stitch, pattern original shape does not change.

For example:Use the function of deleting the current stitch to modify the figure① to figure②. Remove the point B in figure① .

figure①　　　figure②

After deleting the stitch, if the stitch length is more than 12.7mm，then system sends the alarm .Therefor，please make sure that the operation is carried out under the modified stitch length no more than 12.7mm case.

【 Instructions 】

1、The operation proceeds as described above and then enter pattern modification interface, as shown in FIG.	
2、Select the function of deleting the current stitch　, enter the modified jogging page.	
3、Enter the page of jogging orientation and move the needle to the position you want to modify. Use　/　to move the needle to point B (The position of deleting stitch).	
4、Touch　to confirm.	
5、Save pattern, click　, go to saving pattern interface, input pattern ID number, save the pattern.	

9 Information Functions
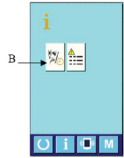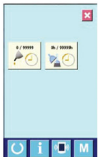
The Information Functions contain the following three functions：
1）The oil replacement (grease−up) time, needle replacement time, cleaning time, etc. can be specified and the warning notice can be performed after the lapse of the specified time.
2）Speed can be checked at a glance and the target achieving consciousness as a line or group is increased as well by the function to display the target output and the actual output.
3）Display the threading picture

9.1 Maintenance & Repair Information

① Display Information Interface At Sewing Data Input Interface, user can Press Information Key (A) to activate the Information Interface.	
② Display Maintenance & Repair Interface Please press　(B) at Information Interface	
③ At Maintenance & Repair Interface, the system will display the information of the following two items. Cleaning Time (Hour) Oil Replacement Time (Hour)	

9.2 Input Time for Maintenance & Repair

① Display Maintenance & Repair Interface

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

B →

② Set Maintenance & Repair Item

If the value of this item is set at 0, the function of maintenance & repair will be stopped. Input the value via keyboard,

and press ↵ to confirm the input.

Exp. Pressing ⏱ is to set the cleaning time.

③ Set Maintenance & Repair Item

If the value of this item is set at 0, the function of maintenance & repair will be stopped. Input the value via keyboard,

and press ↵ to confirm the input.

Alarm Records
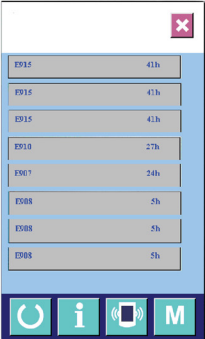
9.3 Alarm Records

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

The following are the prompt code for each item:
• Needle Replacement : M012
• Cleaning Time : M013
• Oil Replacement Time: M014

9.4 Alarm Record

At Maintenance Level, press ▤ to inquire the alarm records.

In the figure E915   41h ,
"41h" the smaller number means the later happening, the E915 is the code of error, Press to the detailed information of alarm.

E915	41h
E915	41h
E915	41h
E910	27h
E007	24h
E008	5h
E008	5h
E008	5h

10 Communication Functions

10.1 Data Format

The sewing patterns in the formats of .VDT and .PAT are supported by the system: When saving data to U disk, user needs to save it in the file folder with name of DH_PAT, or the file is unable to be loaded.

10.2 Data Management

① Display Communication Interface

At Interface for Inputting Sewing Data, user needs to press

Communication Key to activate the Communication Interface

② Select Communication Method

There are 2 communication methods:

 Input Data from U disk to operation panel

 Input Data from operation panel to U disk

Please select the wanted method of communication.

③ Operations of Inputting Data from U Disk to Operation Panel

(1) Selection of Pattern in U Disk

After user presses , the U Disk Pattern Selection Interface

will be Displayed.Please select the needed data file.

Select parameters, the system pattern or user pattern to upgrade.
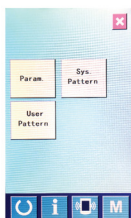
10.3 How to Update

① Download parameters

Insert U disk, USBOK light, display manufacturers parameters,

after selecting, press ⏎ to download parameters.

② System pattern download

Insert U disk, USBOK light, display system pattern, after selecting,

press ⏎ to download system pattern.

③ User pattern download

Insert U disk, USBOK light, display user pattern, after selecting,

press ⏎ to download user pattern.

④ Upgrade panel program

Insert U disk, USBOK light, display panel program is detected,

press ⏎ to upgrade.

10.4 Instructions on Parameter Back−up

① Display Communication Interface

At Sewing Interface, user needs to hold

 to the copy status。

② Selection of Parameter Copy Type、 Copy Parameter from Panel to U Disk（Parameter Back-up）
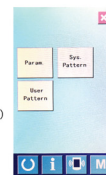
11.1 Have Access to Mode & Parameter Setting

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

Hold **M** for 3 seconds to have access to Mode Setting Level 2 Interface;

hold ▮ 2 seconds to have access to Mode Setting Level 3 Interface.

Mode Setting Level 1 Interface

Mode Setting Level 2 Interface

Mode Setting Level 3 Interface

List of Function Keys：

No.	Figure	Functions	Content
1		Level 1 Parameters Setting	Set the Level 1 (U) parameters
2		Counter Setting	Set the type of counter, counting value and default value
3		Sewing Type Setting	Shift between normal pattern sewing and combination pattern sewing
4		Pattern Edition	Have access to pattern edition status
5		Pattern Lock Setting	Setting the pattern lock num

No.	Figure	Functions	Content
6	Ver.	Software Version Inquiry	Inquire the versions of the current panel, main controller and motor
7	↑l	Keyboard Lock	Lock some functions that can be set.
8		Test Mode	Set the mechanical devices and LCD
9	Par·II	Level 2 Parameters Setting	Set the Level 2 (K) parameters
10	Par·III	Level 3 Parameters Setting	Set the Level 3(P) parameters

11.2 Level 1 Parameters Setting

① Parameter Setting

Press **Par·I** to have access to Level 1 Parameters Setting Interface (as shown in right picture). Check Detailed Information of Parameters

② List of Level 1 Parameters

No.	Parameter	Range	Change Step	Default Setting
U01	Max Sewing Speed	400~3000rpm	100rpm	2500rpm
U09	Thread Tension Changeover Timing at thread-trimming	-20~7	1	7
U10	Start Speed of 1st Stitch	400~1500rpm	100rpm	400rpm
U11	Start Speed of 2nd Stitch	400~3000rpm	100rpm	600rpm
U12	Start Speed of 3rd Stitch	400~3000rpm	100rpm	900rpm
U13	Start Speed of 4th Stitch	400~3000rpm	100rpm	3000rpm
U14	Start Speed of 5th Stitch	400~3000rpm	100rpm	3000rpm
U15	thread tension at the sewing start	0~200	1	70
U16	Thread Tension Changeover Phase at Sewing Start	-22~30	1	0
U17	X/Y scale enlargement, Max.speed whether could be changed	0: Yes 1: No	1	0
U18	Counter Operation	0: Production Counter (adding) 1: Bobbing thread counter (subtracting)	1	0
U31	Sewing machine operation can be stopped with panel key (clear key)、pedal	0: disable 1: stop with panel key 2: stop with pedal	1	2
U32	Buzzer Sound	0: Without buzzer sound 1: Panel operation sound	1	1
U36	Feed timing is selected.	−8～16	1	0
U37	Sequence of origin retrieval and lifting presser at sewing end	0: Retrieval at first,then lifting; 1: Both actions at sa metime 2: Retrieval at first,lifting by hand	1	1
U39	Search Origin at Sewing End	0: Not Search 1: Search	1	0
U40	Origin-Searching at Sewing Combination Patterns	0: Origin 1: Search Origin at Finishing Each Pattern 2: Search Origin at Finishing Each Cycle	1	0
U42	Needle Rod Stop Position	0: Upper Position 1: Highest Point	1	0
U46	Permit Trimming the Thread	0: Permit 1: Forbid	1	0
U49	Winding Speed Setting	800~2000	100rpm	1600rpm
U200	Language selection	0: Chinese 1: English	1	0

11.3 Level 2 Parameters Setting

① Parameter Setting

Press [Par.-II] to have

access to Level 1 Parameters Setting Interface (as shown in right picture).

② Input the password to enter

③ List of Level 2 Parameters

No.	Parameters	Range	Changing Unit	Default Setting
K20	Position of Standard Pedal brake	10~80	1	30
K21	Position of Standard Pedal Step 1	150-280	1	240
K22	Position of Standard Pedal Step 2	300-380	1	330
K23	Starting Position of Standard Pedal	400-480	1	430
K27	Speed of Lowering Presser	100-4000pps	10	4000
K28	Speed of Lifting Presser	100-4000pps	10	2800
K29	Speed of Trimming•Presser after Sewing	100-4000pps	10	4000
K38	Presser Status after Sewin	0: Lift Up 1: Depress Pedal to Lift Up the Presser	1	0
K43	Trimming Speed	400~800rpm	100rpm	800rpm
K44	Feeding Cloth When Trimming at the Direction of Easy Trimming	0: No 1: Yes	1	0
K45	Diameter of Thread Guider when Feeding at the time of Trimming	16~40 (1.6mm~4.0mm)	1	16
K56	Move Rage +X Direction	0~50mm	1mm	20mm
K57	Move Range − X Direction	0~50mm	1mm	-20mm
K58	Move Range + Y Direction	0~30mm	1mm	10mm
K59	Move Range − Y Direction	0~30mm	1mm	-20mm
K63	The current parameter of sewing machine head	0~5	1	0
K68	Stop Position Compensation	-100-+100	1	33
K120	Lubrication Alarm Stitch Number	3000~12000	10000 needle	8000
K130	Thread-wiping	Controlled by Solenoid 0: OFF 1: ON	1	0

No.	Parameters	Range	Changing Unit	Default Setting
K135	Stop at origin when sewing end No Yes	0: No 1: Yes	1	0
K138	Thread Tension Control Method	0: Juki Method; 1: Branch Method	1	1
K149	Change LOGO	Change LOGO 0:JACK 1:POW	1	0
K150	Head Tilt Switch Permit Forbid	0: Permit 1: Forbid	1	0
K200	Language selection	0: Chinese 1: English	1	0
K202	Selection of language	0: Chinese 1: English	1	0
K70	Voice Volume Setting	0-100	1	50

11.4 Counter Setting

Press [1 2 3] to have access to the Counter Setting Interface

(as shown in right picture).

① Set the Current Value and the Set Value of Counter

A is the Current Value of Counter. Pressing that figure is to have access to the Interface for Setting Current Value of Counter.B is the Set Value of Counter. When it is 0, the counter will only count number instead of sending alarm. Pressing that figure is to have access to the Interface for Setting the Set Value.

② Counter Type Selection

Pressing [B01] or [B04] is to activate the Counter Type Selection Interface.

[123] : Sewing Up Counter

Every time, one shape is sewn, the existing value adds one up. When the current value is equal to the set value, the system will display the warning interface of counter exceed. Press [↵] to restore the current value to the set value.

[123] : Sewing Down Counter

Every time, one shape is sewn, the existing value deducts one down. When the existing value is reached to "0", the system will display the warning interface of counter exceed. Press to restore the current value of counter to 99999.

: Turn off Sewing Counter

③ Selection of No. Pieces Counter

: No. Pieces Up Counter

Every time, one cycle is sewn, the existing value adds one up.
When the current value is equal to the set value, the system will display
the warning interface of counter exceed. Press ⏎ to restore the
current value to the set value.

: No. Pieces Down Counter

Every time, one cycle is sewn, the existing value deducts one down. When the
existing value is reached to "0", the system will display the warning interface of
counter exceed. Then the current value restores to 99999.

: Turn off No. Pieces Counter

11.5 Have Access to Pattern Edition

Press 🖼 to have access to the Interface for Selecting Edition Mode .

11.6 Pat Lock Setting

In Setting Mode, press ▦ to have access to the interface for
setting pattern lock, where will display all the pattern numbers.
8 numbers are in one page. If user needs lock a pattern, he will only
need to press the corresponding number. The selected pattern number
will be displayed in shadow and marked dot.

11.7 Software Version Inquiry

At Mode Setting Interface, user can press Ver to check the
software version of system.

Version of Panel
Version of Main Controller
Version of Main Motor
Version of Stepping Motor
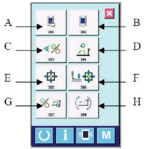
11.8 Test Mode

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

The following is the list of each figure :

No.	Name
A	I01 Touching Panel Correction
B	I02 LCD Test
C	I03 Input Test
D	I04 Speed Measurement
E	I05 XY Motor Origin Test
F	I06 Presser/ Origin Sensor Test
G	I07 Output Test
H	I08 Continuous Running

(1) Touching Panel Correction

In the interface of mode test, press 🔲
(I01Touching Panel Correction) to have access to the Interface of
Touching Panel Correction (as shown in right). The corrections on
four points are needed, so we advise user to click the black spot
with touching pen or the like. The system will automatically return to
the previous interface upon the ending of correction.

(2) LCD Test

In the interface of testing mode, press 🔲
(I02 LCD Test) to have access to the Interface for Testing LCD
(as shown in right).

(3) Input Signal Test

At Test Mode Interface, user can press (03 Input Test) to have access to the Input Test Interface (as Shown at right picture), where user can confirm the input status of various switches and sensors

ON：Turn On   X Motor Sensor   Thread-trimming Motor Sensor

OFF：Turn Off   Y Motor Sensor   Presser Motor Origin Sensor

Start Switch（Pedal）   Head Tilt Switch

Presser Switch（Pedal）   Simulate Presser Test（Pedal）

(4) Speed Measurement

① Display Speed Measurement Interface

At Test Mode Interface, user can press (I04 Speed Measurement) to have access to Speed Measurement Interface (as shown in right picture), where user can check the main motor speed.

② Speed Measurement Setting

By using and , user can set the speed of the main motor.

After pressing the 开始, the main motor will run at the set speed. at this moment, the actually measured speed is displayed at .

Press 停止 to stop the machine.

(5) XY Motor Origin Sensor Test

In the interface of Test Mode, user can press (I07 XY Motor Origin Sensor Test) to enter the interface for testing the output of XY motor and sensors (as shown in right figure). If user doesn't activate the ready status at power-on nor press 归零 to search the origin, the user can use the direction keys to move motor directly and have the system display the ON/OFF status of XY sensors (so that user can know whether the XY motor driving and the sensors are normal); if user has activated the ready status at power-on or pressed 归零 to search the origin in this interface, the user can only move XY motor with direction keys after pressing 归零 to search origin at each time for entering the I07 mode. At this moment, it is the adjustment for the Xy origin. The coordinates displayed in red are the deviation value of the origin while the white coordinates are the current position of the pressing frame. Pressing 保存 is to set the current position as the origin.

(6) Presser Motor / Origin Sensor Detection

At Test Mode Interface, user can press (I06 Speed Measurement) Position A displays the status (ON/OFF) of presser origin sensor.

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

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

A: Presser Motor Origin Sensor   E: Thread-cutting Position   I: Reverse movement step

B: Thread-trimming Motor Sensor   F: Thread-wiping Position   J: Presser up Position

C: Presser Down Position   G: Forward movement step

D: Thread-separating Position   H: Movement to the next position

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

(7) Output Test Method

At Test Mode Interface, user can press (I07 Output Test) to have access to the Output Test Interface (as shown in right picture), where user can check the output status of solenoid.
Thread-loosing
Thread-wiping
Press The corresponding figure to have access to the output conditions of each device.
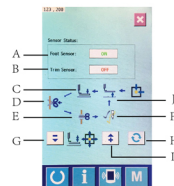
(8) Continuous Running

① Display Continuous Running Interface

At Test Mode Interface, user can press (I08 Continuous Running) to have access to Continuous Running Interface (as shown in right picture).

Action Interval   Gusseting Origin Test

② Settings on Continuous Running

By clicking the figures at Continuous Running Interface, user can set the Action Interval and the Gusseting Origin Test. Press Enter to return to Sewing Data Input Interface and then press . After stepping the pedal, user can perform the continuous running operation
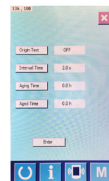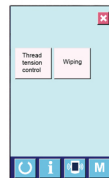
11.9 Keyboard Lock

At Setting Mode Interface, user can press [↑↓] to activate Keyboard Lock Setting Interface.

① Operation for Keyboard Lock

[↑↓] : Keyboard Unlocked   [↑↓] : Keyboard Locked

② Display of Keyboard Lock Status

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

③ Range of Keyboard Lock
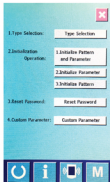
1、Interface of Normal Sewing Data Input:
1) Pattern Registration
2) Pattern Naming
3) Scale Rate Setting
4) Max Speed Limitation
5) P Pattern Registration
6) Pattern Deletion

2、Normal Sewing Interface:
1) Frame-moving
2) Counter Setting

3、P Pattern Input Interface:
1) P Pattern Edition
2) P Pattern Copy
3) P Pattern Naming
4) Pattern Deletion

4、P Pattern Sewing Interface:
1) Counter Setting

5、C Pattern Data Input Interface:
1) C Pattern Registration
2) C Pattern Copy
3) C Pattern Naming
4) C Pattern Edition
5) Patter Deletion

6、C Pattern Sewing Interface:
1) Counter Setting

7、Parameter Setting Mode:
1) Level 1 Parameter
2) Level 2 Parameter
3) Counter edition
4) Test Mode

11.10 Button–stitching Function Setting

① Setting Operation

At Setting mode Level 2 Interface, user can press [Init] to have access to Level 2 Parameter Setting Interface (as shown in right figure). For the operating methods,

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Press [STN] and click [←], it is promoted if convert to BUTTON ATTACHING MACHINE. Press [←] to start converting. Or press [✕] to exit. After transform is completed, Please re-power.

When loading the basic patterns for the new model successfully, the system will activate the Sewing Data Input Interface, as the right picture shows.
Button-stitching function is set successfully!

12 System Principle of Controller

12.1 Structure of Control System

12.1.1 Diagram of this Control System
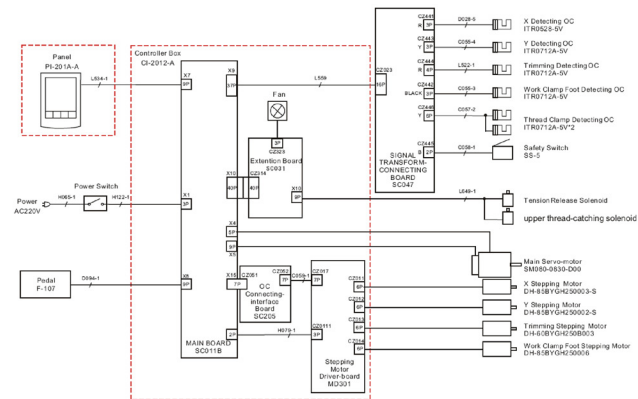
12.1.2
External Cable Connection of Control Box

The plug of each external cable has a number corresponding to the code on the socket.
Please connect them correspondingly.
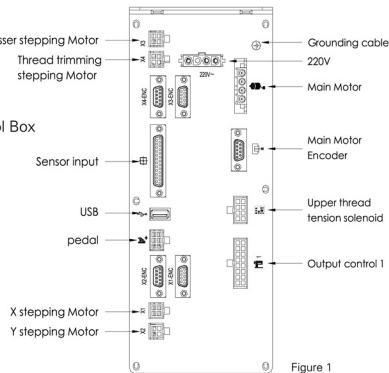
Figure 1

12.2 List of Patterns in Bar-tacking Controller

12.2.1 Table of the 1900B Standard Patterns

NO.	Stitch Diagram	Numbers of Stitches	L×W (mm)	NO.	Stitch Diagram	Numbers of Stitches	L×W (mm)	NO.	Stitch Diagram	Numbers of Stitches	L×W (mm)	NO.	Stitch Diagram	Numbers of Stitches	L×W (mm)
1		41	16.1×2	2		41	10.2×2	45		75	2.4×30	46		41	2.4×30
3		41	16×2.4	4		41	24×3	47		89	8×8	48		98	8×8
5		27	10.1×2	6		27	16×2.4	49		147	8×8	50		163	8×8
7		35	10.1×2	8		35	16×2.4	51		110	7.9×7.9	52		120	7.9×7.9
9		55	24×3	10		63	24×3	53		130	7.9×7.9	54		51	12.4×10.2
11		20	6.1×2.4	12		27	6.2×2.4	55		50	12.4×10.2	56		52	21×6
13		35	6.1×2.4	14		14	8×2	57		57	21×6	58		103	19×3
15		20	8×2	16		27	8×2	59		115	40×5	60		115	40×5
17		19	10×0.1	18		39	10×0.2	61		93	5×30	62		109	5×30
19		27	25.2×0.4	20		35	25.2×0.2	63		108	40×30	64		80	40×30
21		39	25.2×0.3	22		43	35×0.4	65		64	40×30	66		96	30×30
23		27	4×20	24		35	4×20	67		76	30×30	68		60	30×30
25		41	4×20	26		55	4×20	69		52	40×30	70		40	40×30
27		17	0×20	28		20	0×10	71		32	40×30	72		44	30×30
29		20	0×20	30		27	0×20	73		36	30×30	74		28	30×30
31		51	10.1×7	32		62	12.1×7	75		60	40×30	76		48	40×30
33		28	10.1×6.2	34		37	12.1×6.1	77		36	40×30	78		56	30×30
35		47	7×10	36		47	7×10	79		44	30×30	80		36	30×30
37		89	24×3	38		27	8×2	81		67	40×30	82		51	40×30
39		25	11.8×12	40		45	12×12	83		39	40×30	84		55	30×30
41		28	2.4×20	42		38	2.4×25	85		35	30×30	86		42	30×30
43		38	2.4×25	44		57	2.4×30	87		32	30.1×30	88		26	30×30

NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]
89		74	20×24	90		54	20×24	95		51	25×20	96		45	25×20
91		65	20×20	92		49	20×20	97		42	25×20	98		33	25×20
93		39	20×20	94		63	25×20	99		27	25×20	100		88	30×25

12.2.1 Table of the 1900B Standard Patterns

NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]
1		41	16.1×2	2		41	10.2×2	37		89	24×3	38		27	8×2
3		41	16×2.4	4		41	24×3	39		25	11.8×12	40		45	12×12
5		27	10.1×2	6		27	16×2.4	41		28	2.4×20	42		38	2.4×25
7		35	10.1×2	8		35	16×2.4	43		38	2.4×25	44		57	2.4×30
9		55	24×3	10		63	24×3	45		141	10×30	46		122	10×30
11		20	6.1×2.4	12		27	6.2×2.4	47		97	10×30	48		109	10.1×30
13		35	6.1×2.4	14		14	8×2	49		122	10.1×30	50		265	10×30
15		20	8×2	16		27	8×2	51		108	40×30	52		80	40×30
17		20	10×0	18		27	10×0	53		64	40×30	54		96	30×30
19		27	25.2×0	20		35	24.8×0	55		76	30×30	56		60	30×30
21		40	25.2×0	22		43	35×0	57		52	40×30	58		40	40×30
23		27	4×20	24		35	4×20	59		32	40×30	60		44	30×30
25		41	4×20	26		55	4×20	61		36	30×30	62		28	30×30
27		17	0×20	28		20	0×10	63		60	40×30	64		48	40×30
29		20	0×20	30		27	0×20	65		36	40×30	66		56	30×30
31		51	10.1×7	32		62	12.1×7	67		44	30×30	68		36	30×30
33		23	10.2×6	34		30	12×6	69		67	40×30	70		51	40×30
35		47	7×10	36		47	7×10	71		39	40×30	72		55	30×30

NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]	NO.	Stitch Diagram	Numbers of Stitches	L×W [mm]
73		43	30×30	74		35	30×30	87		115	40×5	88		115	40×5
75		42	30×30	76		145	16.2×16.2	89		308	6×25	90		257	6×25
77		153	12×12.4	78		103	30×25	91		65	20×20	92		49	20×20
79		82	30×25	80		64	30×25	93		39	20×20	94		63	25×20
81		80	20×30	82		60	30×30	95		51	25×20	96		45	25×20
83		80	30×20	84		60	30×20	97		42	25×20	98		33	25×20
85		74	20×24	86		54	20×24	99		111	60×40	100		91	60×40

13. Explanation of the 1903B,computer-controlled high-speed lockstitch button sewing machine

13.1 Specifications

Different specifications from those of the1900B only are described.

(1)Sewing speed·······································Max.2,700rpm

(2)Needle································· DP×17 ＃14

(3)Lifting method of the work clamp foot···Stepping motor

(4)Lift of the work clamp foot··················Max.13mm

(5)Number of standard patterns···············50 patterns

(6)Wiper method··························Interlocked with work clamp
foot lifter driven by stepping motor

13.2 Installation of the sewing machine and preparation of the operation
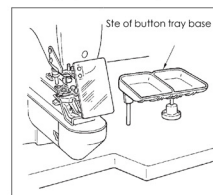
Ste of button tray base

⚠ To prevent possible accidents caused by the full of the sewing machine, perform the work by two persons or

1) Installation of the sewing machine head and the control box is the same as that of the 1900B.Refer to the instruction manual for the 1900B.

2) Install a set of the button tray base to a convenient place for the work as the set is included in the accessories.

3) The way of operation is the same as that of the 1900B

Make sure before operation that the needle does not strike against the button hole.

Needle and thread will vary in accordance with thesewing conditions. When using the needle and thethread, select them referring to the left table. Cotton thread and polyester spun thread are recommended.

13.3 Needle and thread

Needle	Needle thread	Bobbin thread
DP×17＃14	＃60	＃80
	＃60	＃60
	＃50	＃60
	＃40	＃60

13.4 Table of the standard patterns

13.4.1 Table of the 1903B Standard Patterns

Pattern No.	Stitch shape	Number of threads (thread)	Standard sewing size X(mm)	Standard sewing size Y(mm)	Pattern No.	Stitch shape	Number of threads (thread)	Standard sewing size X(mm)	Standard sewing size Y(mm)
1 · 34		6-6			18 · 44		6		
2 · 35		8-8			19 · 45		8		
3		10-10			20		10	3.4	0
4		12-12			21		12		
5 · 36		6-6			22		16		
6 · 37		8-8			23 · 46		6		
7		10-10			24		10	0	3.4
8		12-12			25		12		
9 · 38		6-6			26 · 47		6-6		
10 · 39		8-8	3.4	3.4	27		10-10	3.4	3.4
11		10-10			28 · 48		6-6		
12 · 40		6-6			29		10-10		
13 · 41		8-8			30 · 49		5-5-5		
14		10-10			31		8-8-8		
15 · 42		6-6			32 · 50		5-5-5	3.0	2.5
16 · 43		8-8			33		8-8-8		
17		10-10							

※The standard sewing sizes of X and Y are when the enlargement / reduction rate is 100%. Use the pattern No. 34 to No.50 when the button hole is small (ø1.5 mm or less).

13.4.2 Selection of the sewing pattern and the sewing width

(1) Selection of the sewing pattern is the same as that of the 1900B.

(2) When the distance between holes of the button used does not fit the standard sewing width of the sewing pattern No.. adjust the sewing width by enlarging、reducing the sewing width. The way of enlarging、reducing is the same as that of the 1900B. Refer to the table given below for the scale for enlargement、reduction in terms of the sewing width.

(3) After changing the sewing pattern No. and the sewing width, make sure of the needle entry point. As for the way of confirmation, refer to the confirmation of the shape of sewing pattern in the instruction manual for the 1900B.

(4) Table of XY scale in terms of the sewing width

X.Y(mm)	2.4	2.6	2.8	3.0	3.2	3.4	3.6	4.0	4.3	4.5	4.7	5.2	5.6	6.0	6.2	6.4
%	71	76	82	88	94	100	106	118	126	132	138	153	165	176	182	188

13.5 Position of the button clamp jaw lever

1) Hold **M** for 3 seconds to have access to Mode Setting Level 2 Interface.

2) Place a button in button clamp jaw levers ① .
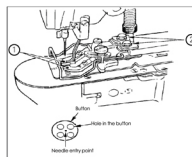
3) press 🔧 to have access to the Test Mode Interface

4) At Test Mode Interface, user can press ✛ (I07XY Motor Origin Test) to activate Output Test Interface (as shown in Lower left picture)，Pressing 归零 is to turn the coordinates of X/Y to the origin，Turn the hand pulley and check that the center of the needle enters the center of the button

5) If the center of the needle is not located in the center of the button, loosen screws ② in the button clamp jaw lever base to adjust so that the center of the needle enters the center of the button; or adjusting the X、Y position of the sensitive film.

6) After the adjustment, perform the confirmation of the pattern shape and make sure that the needle surely has entered the button hole.

7) Origin Retrieval,refer to the "2.3.2"
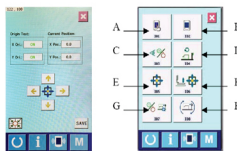
When change of the shape of button, change of the sewing pattern or enlargement/reduction of the sewing width is performed, make sure of the shape of the sewing pattern. If the needle extends outside the button hole or the sewing pattern extends outside the button clamp unit, the needle interferes with the button hole or the button clamp unit, resulting in the danger of the needle breakage or the like.

When change of the shape of the button, change of the sewing pattern or enlargement/reduction of the sewing width is performed, make sure of the shape of the sewing pattern. If the feed plate interferes with the shape of the sewing pattern, it will result in the danger of the needle breakage or the like. Also, if the pedal is depressed during the adjustment, the button clamp unit will go up or come down. So, be careful.
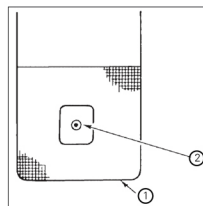
13.6 Adjusting the feed plate

1) Hold **M** for 3 seconds to have access to Mode Setting Level 2 Interface.

2) press 🔧 to have access to the Test Mode Interface

3) At Test Mode Interface, user can press ✛ (I07XY Motor Origin Test) to activate Output Test Interface，Pressing 归零 is to turn the coordinates of X/Y to the origin.

4) Adjust feed plate ① so that needle hole guide ② comes to the center of the recessed part of feed plate ① .

13.7 Adjusting the button clamp jaw lever
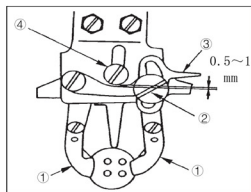
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

Bring the machine to its stop−motion state. Then lift button clamp ① . Loosen screw ② in the button clamp jaw lever and adjust so that a clearance of 0.5 to 1mm is provided between button clamp jaw lever ③ and hinge screw ④ when placing a button in between button clamps ① . Then tighten screw ② in the button clamp jaw lever.

13.8 Adjusting the lifting amount of the button clamp
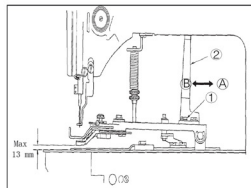
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

Loosen two setscrews ① , and move moving plate ② back and forth in the direction of arrow to adjust. The lifting amount of the button clamp will be decreased when moving plate ② is moved in the direction of Ⓐ , and be increased when it is moved in the direction of Ⓑ . After the adjustment, securely tighten setscrews ① .

13.9 Adjustment of the wiper spring
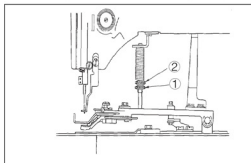
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

The pressure of the work clamp unit should be minimized as long as the material does not warp during sewing. Loosen adjusting screw ① and turn adjusting screw ② to obtain the aforementioned pressure.

13.10 Adjustment of the wiper spring
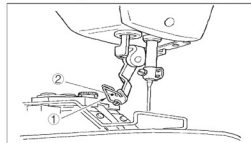
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.If the retaining of the needle thread is excessive, the thread may protrude from the upper side of the button.

Wiper spring ① retains the needle thread after thread trimming in between wiper ② and the wiper spring. Correct properly the tension of wiper spring ① so that the tension at that time becomes 20 to 30g (a little higher tension than that of the bobbin thread coming out of the bobbin case).

13.11 Installing the save button bar (accessory part)
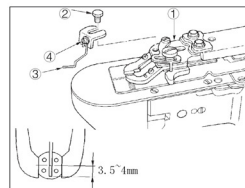
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

1) Install save button bar ③ on button clamp base ① with hexagon screw ② .
2) Adjust so that a clearance of 3.5 to 4 mm is provided between the center of the button and the top end of the save button bar.
3) To adjust the raising amount of the save button bar, loosen screw ④ , and move the save button bar up or down.

14 List of Warning

| Indication	Name of the Error	Description of the Error	Corrective Message
E 10	Pattern No. Error	Back-up pattern No. has not been registered in the data ROM, or it is set to readout inoperative. Pattern No. is set to "0" .	Press the Reset and check the pattern No. Check the contents of memory switch No.201.
E 30	Needle Bar Up Position Error	Needle Bar is Out of the Needle Up Position	Turn the hand pulley to return the needle bar to its UP position.
E 40	Sewing Area Error	The sewing area is beyond the limit.	Press Reset and check the pattern and X/Y scale rate.
E 43	Enlargement Error	The sewing pitch is beyond 10mm.	Press Reset and check the pattern and X/Y scale rate.
E 45	Pattern Data Error	The pattern data cannot be adopted.	Turn OFF the power and check the data ROM.
E 46	Pattern Data Error	The pattern data cannot be adopted.	Turn OFF the power and check the data ROM.
E 50	Temporary Stop	Temporary stop by operating the Reset while sewing machine is running.	Re-start or return-to-origin after thread trimming by pressing Reset.
E 221	Grease Replenishing Warning Error	Sewing machine has stopped since the time of replenishing the designated place with grease has come.	Immediately perform replenishing with grease and set the memory switch No. 245 to "0" with Reset.
E 302	Head Tilt Error	Head tilt detection switch is turned ON.	The sewing machine cannot be operated with the head tilted. Or you can short circuit the blue 2P coupling on SC202B with a short circuit block.
E 303	90V Power Supply Error	The 90V power voltage is too low	Turn OFF the power for a while and then Turn ON the power again.

Indication	Name of the Error	Description of the Error	Corrective Message
E 305	Work Clamp Foot Position Error	The work clamp foot is not in the proper position.	Turn OFF the power and check whether X9 circuit is disconnected or loose.
E 405	Overcurrent of X Step Motor	The detection of X step motor current is unnormal.	Turn off the power, and then turn it on after a short while. If the problem can not be solved, please replace the stepping board
E 406	Overcurrent of Y Step Motor	The detection of Y step motor current is unnormal.	Turn off the power, and then turn it on after a short while. If the problem can not be solved, please replace the stepping board
E 411	Feed Trouble Error	Timing lag between feed and main shaft has occurred.	Turn OFF the power and check whether coupling of the main motor is loose.
E 412	Feed Trouble Error	Timing lag between feed and main shaft has occurred.	Turn OFF the power and check whether coupling of the main motor is loose.
E 413	Step Number in X Direction Abnormal	After finishing a work, the main controller finds the order received by stepping board in X direction is different from the order of step numbers given by the main controller.	Turn off the power, and then turn it on after a short while. If the problem can not be solved, please replace the stepping board
E 414	Step Number in Y Direction Abnormal	After finishing a work, the main controller finds the order received by stepping board in Y direction is different from the order of step numbers given by the main controller.	Turn off the power, and then turn it on after a short while. If the problem can not be solved, please replace the stepping board
E 435	Overcurrent of Presser Step Motor	The detection of Presser step motor current is unnormal.	Turn off the power, and then turn it on after a short while. If the problem can not be solved, please replace the stepping board
E 733	Overcurrent of Main Servo Motor	The motor stops.	Make sure that the machine is not locked, and then check weather the Encoder cable is connected well.
E 739	Main Shaft Motor Overload	The load of main shaft motor is too large that the power is beyond the bearing capacity of motor.	Turn off the power. Turn on the power after a short while. Replace the main shaft motor to see whether the motor is damaged. If the problem can not be solved, please replace the main board.
E 740	Main Shaft Speed Motor Abnormal	The speed of main shaft motor is over the normal range.	Turn off the power. Turn on the power after a short while. Replace the main shaft motor to see whether the motor is damaged. If the problem can not be solved, please replace the main board.
E 741	Main Shaft Speed Motor Abnormal	The speed of main shaft motor is over the normal range.	Turn off the power. Turn on the power after a short while. Replace the main shaft motor to see whether the motor is damaged. If the problem can not be solved, please replace the main board.
E 811	over-voltage when the machine is off		Turn off the power and check if the input voltage is too high (higher than 264V).
E 812	over-voltage in operation		Turn off the power and check if the input voltage is too high (higher than 264V).

Indication	Name of the Error	Description of the Error	Corrective Message
E 813	system under-voltage		Turn off power and check if the input voltage is too low (lower than 176V).
E 814	solenoid circuit failure		Turn off the power, check if the solenoid is connected correctly and if it is loose or damaged.
E 815	electrical current checking circuit failure		Turn off the power, restart after 30 seconds to see if it works well. If not, try several more times. If such failure happens frequently, seek technical support.
E 816	locked motor roller		Turn off the power , check if the motor input plug is off, loose or damaged, or if there is something twined on the machine head.
E 817	Machine head needle positioning failure		Turn off the power and check whether the servo motor encoder coupling is disconnected or loose.
E 818	Motor original angle checking failure		Please try 2 to 3 more times after power off, if it still does not work, please seek technical support.
E 907	X Origin Retrieval Error	X origin sensor does not change	Turn OFF the power supply and check whether CZ021 and X1/Input coupling is disconnected or loose.
E 908	Y Origin Retrieval Error	Y origin sensor does not change	Turn OFF the power supply and check whether CZ022 and X2/Input coupling is disconnected or loose.
E 910	Work clamp foot Origin Retrieval Error	Work clamp foot origin sensor does not change.	Turn OFF the power switch and check whether CZ025 and coupling X3/Input are disconnected or loose.
E 911	X stepping motor is busy	The controller of X motor resends the action order when the X motort is in action	Turn off the power, and then turn it on after a short while. If the problem can not be solved, please replace the stepping board.
E 912	Y stepping motor is busy	The controller of Y motor resends the action order when the Y motort is in action.	Turn off the power, and then turn it on after a short while. If the problem can not be solved, please replace the stepping board.
E 915	Communication Error between Panel and Main Board	Communication between the Panel and Main Board cannot be performed.	Turn OFF the power and turn ON the power again after some time Check the panel, communication cable and the main board.
E 916	Communication Error between Main Board and Step Motor Driver Board	Communication between the Main Board and the Step Motor Driver Board cannot be performed.	Turn OFF the power and turn ON the power again after some time Check the Main Board, communication cable and the Step Motor Driver Board .
E 917	Communication Error between Main Board and Step Motor Driver Board	Communication between the Main Board and the Step Motor Driver Board cannot be performed.	Turn OFF the power and turn ON the power again after some time Check the Main Board, communication cable and the Step Motor Driver Board .
E 918	Presser stepping motor is busy.	The controller of presser motor resends the action order when the presser mototr is in action.	Turn off the power, and then turn it on after a short while. If the problem can not be solved, please replace the stepping board.
E 947	Communication Error between Main Board and Step Motor Driver Board	Communication between the Main Board and the Step Motor Driver Board cannot be performed.	Turn OFF the power and turn ON the power again after some time Check the Main Board, communication cable and the Step Motor Driver Board.