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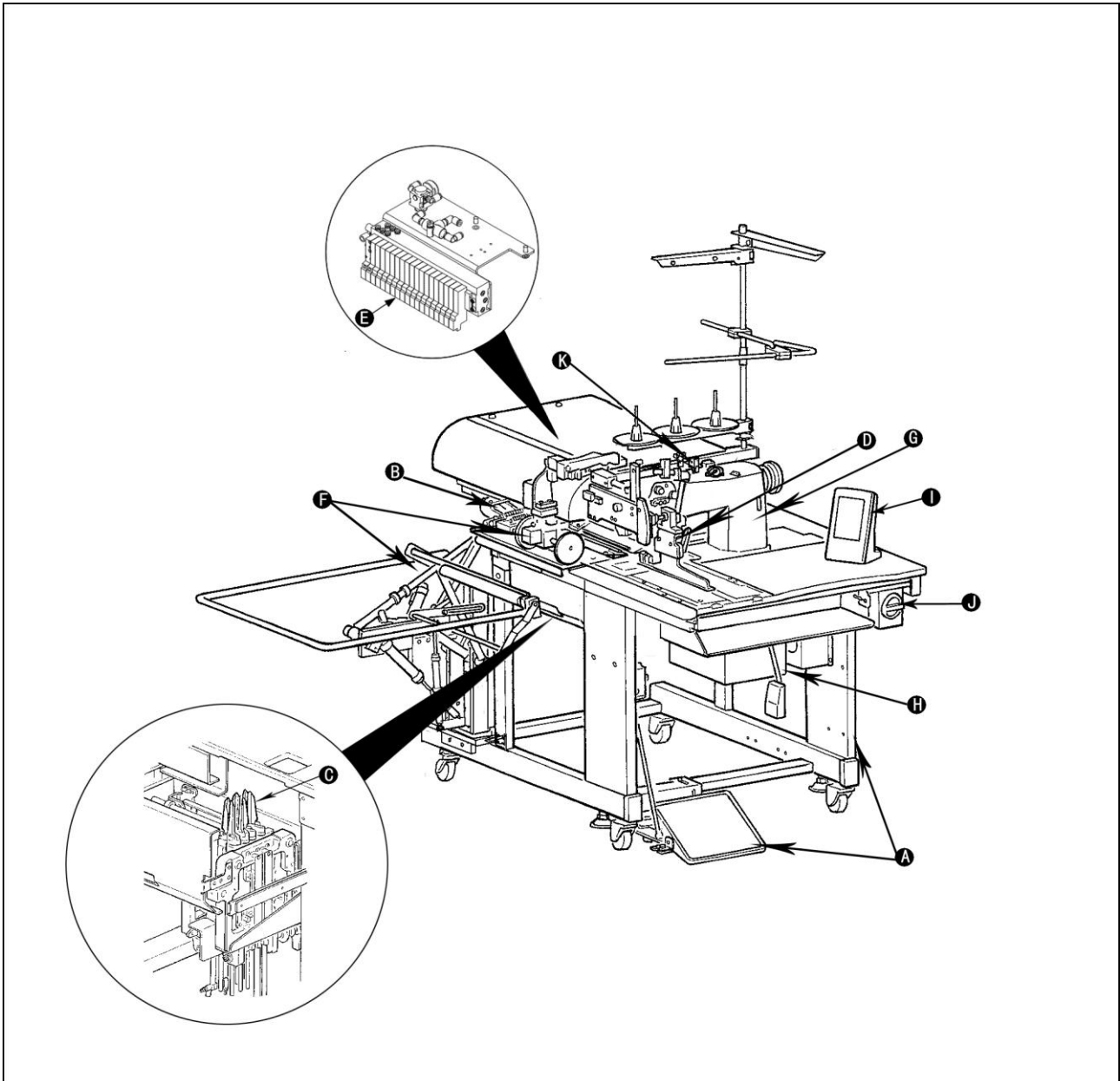
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I. CAUTIONS BEFORE OPERATION

Following items have to be checked every working day before the operation of the machine and before the start of work hours.

1. **Ascertain that the sewing machine is filled with the predetermined amount of oil.**
2. **Never operate the machine unless the lubricating part in the hook has been filled up with oil.**
3. **Ascertain that the pressure gauge indicates the designated air pressure of 0.5 MPa.**
※ (This is necessary particularly when the compressor is stopped for a lunch break or the like.)
If the compressed air pressure is equal to or less than the designated value, troubles such as interference between the parts can occur. It is therefore necessary to carefully check the compressed air pressure.
4. **Check whether the needle thread/bobbin thread need to be replenished.**
5. **To perform sewing immediately after turning ON the power switch, perform trial stitching first, then proceed with sewing of actual products after the test sewing.**
6. **In order to prevent the optical fiber sensor of the bobbin thread remaining amount detecting device from showing a detecting failure, be sure to clean thread waste around the hook using an air gun once or more times a day.**
7. **In order to protect the flap sensor from showing a detecting failure, be sure to clean dust on the reflecting tapes of the folding plate using an air gun once or more times a day.**

II. CONFIGURATION OF THE MACHINE



The T5878-68/78 consists mainly of the following units.

- Ⓐ Frame and structural components (Framesewing table, covers, foot switch, etc.)
- Ⓑ Clamp foot unit and feed mechanism
- Ⓒ Corner knife unit
- Ⓓ Middle Pressure Plate unit(Middle Pressure Plate components and its driving components)
- Ⓔ Solenoid valve control unit (solenoid valve control devices and pipings)
- Ⓕ Stacker unit (Optional)
- Ⓖ Sewing machine head
- Ⓗ Electric control unit (Control panel)
- Ⓘ Operation panel
- Ⓙ Power switch
- Ⓚ Temporary stop switch

With this machine consisting of the aforementioned 11 units, you can do desired welting work simply by setting materials (garment body, interlining piece, welting patch, etc.) in place and operating the switches on the operation panel. In addition, when temporary stop switch Ⓚ is pressed during operation of the device, the device stops.

III. SPECIFICATIONS

1. MECHANICAL SPECIFICATIONS

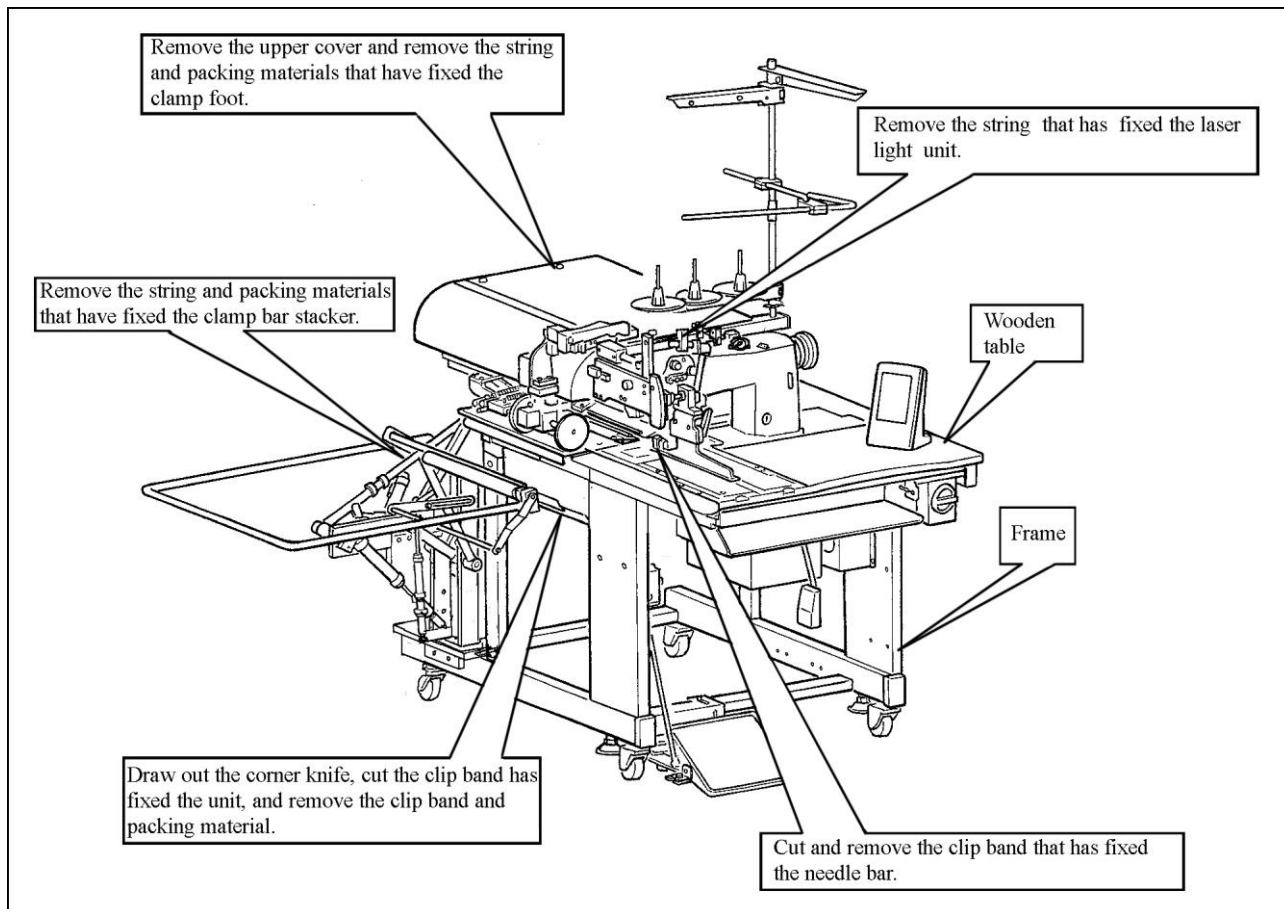
1	Machine type	T5878-68	T5878-78
2	Sewing speed	3,000rpm	
3	Stitch length	Lockstitch:2.0 ~ 3.4mm(standard 2.5mm) Condensation stitch:0.5 ~ 1.5mm(standard 1.0mm) backstitch:0.5 ~ 3.0mm(standard 2.0mm) Condensation/Back stitch selectable	
4	Types of welt	Parallel single welt、parallel double welt Flap selectable	Parallel single welt、parallel double welt,slant single welt, slant double welt. Flap selectable.
5	Pocket lip size (Welt length)	Possible to set in increments of 0.1 mm within the range of 18 mm (min.) to 220 mm (max.) * Parallel flap : Min. 47.5 mm * Slant flap: Dependent on deflection amount	
6	Welting width (Needle gauge)	8、10、12、14、16、18、20mm Attention:with mandril:8、10、12mm	
7	Needles	ORGAN MT x 190 # 14 ~ # 18(standard # 16)	ORGAN.DP x 17 # 14 ~ # 18(standard # 16)
8	Thread	Spun thread #60 (Recommended)	
9	Hook	Full rotary, vertical-axis, self-lubrication hook.	
10	Thread take-up lever	Slide thread take-up lever	
11	Needle bar stroke	33.3mm	
12	Cloth feed mechanism	Driven by stepping motor	
13	Control	By a micro-computer	
14	Safety mechanism	Machine operation is automatically stopped if the cloth feed mechanism error detector, the needle thread breakage detector or any of the various safety devices is actuated.	
15	Lubricating oil	sewing-machine oil	
16	Operating air pressure	0.5MPa	
17	Air consumption	Approx 40dm ³ /min	
18	Dimensions of machine	Width : 1,095 mm (1,580 mm - when including the stacker) Length : 1,500 mm Height : 1,165 mm (1,800 mm - when including the thread stand)	
19	Weight	239kg	

2. ELECTRICAL SPECIFICATIONS

1	The number of independent sewing patterns that can be stored in memory	99(1 ~ 99)
2	The number of alternate sewing patterns that can be stored in memory	20(1 ~ 20)
3	The number of cycles that can be stored in memory	20(1 ~ 20)
4	Input power: Single phase/3-phase	220V 50/60Hz Voltage fluctuation : Within $\pm 5\%$ of the rated voltage
5	Power consumption	350W

IV. INSTALLATION

1. REMOVING PACKING MATERIALS

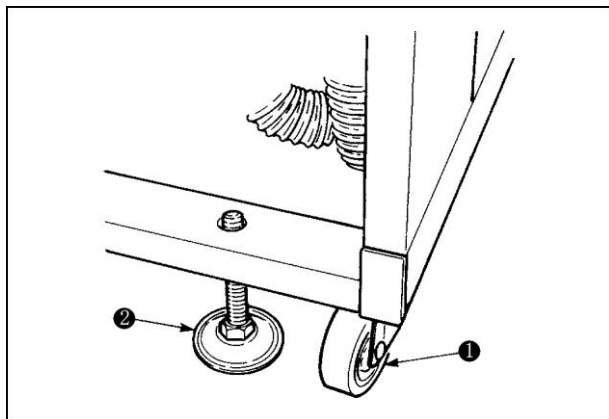


2. SECURING THE MACHINE

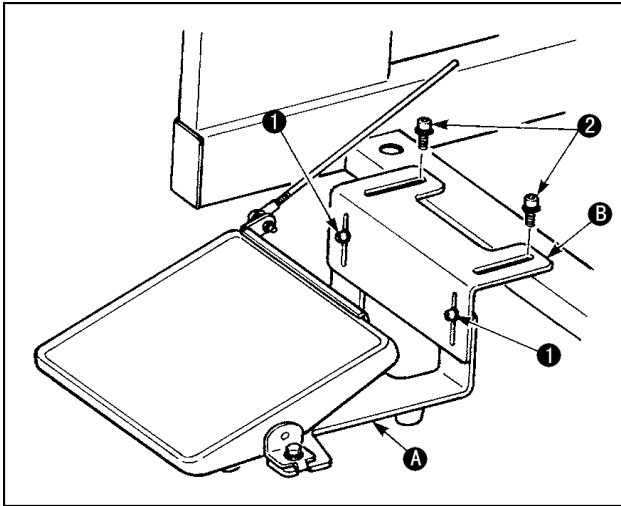


CAUTION

To prevent a fatal accident, lower and fix adjust bolts 2 (4 places) located at the side of caster ① after moving the machine to the level and stabilized place.



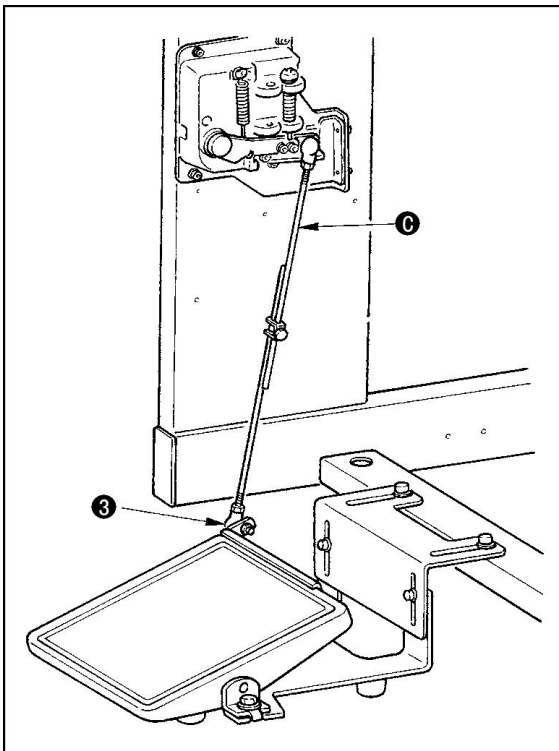
3. CONNECTING THE FOOT PEDAL



- 1) Install the pedal base to the machine frame with screws ②.
- 2) Connect pedal bases ① and ② with two screws ①.



Position of the pedal can be optionally adjusted within the range of the slot.

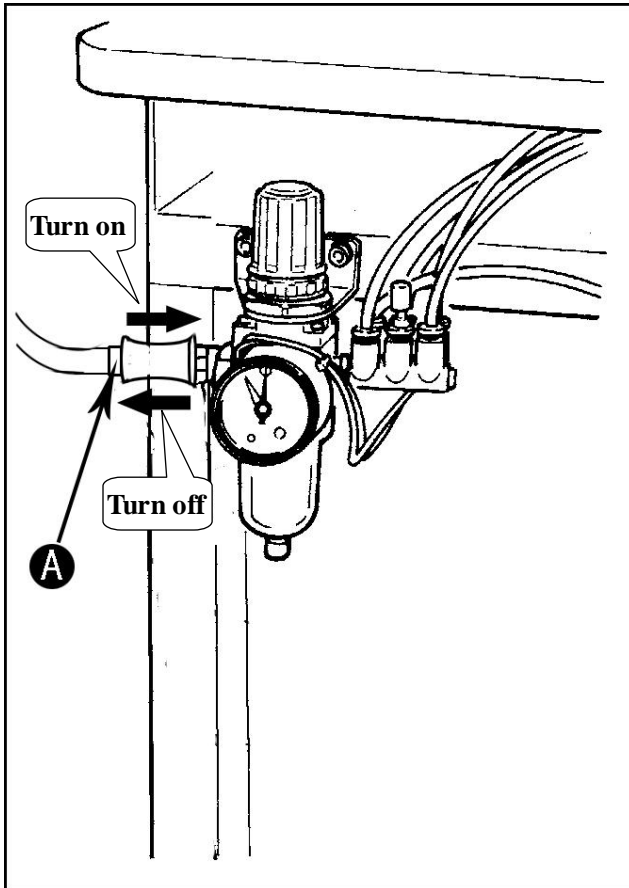


- 3) Connect the connecting rods with fixing screw ③.



When connecting, do not connect the rods with connecting rod ③ on the sensor side pulled downward

4. CONNECTING THE AIR COUPLER

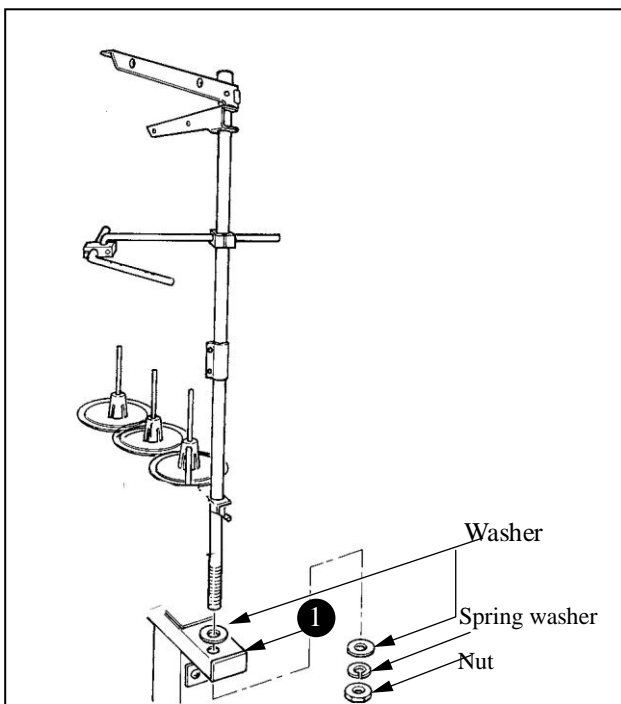


Connect one end of slide valve ① with air hose from the attachment .



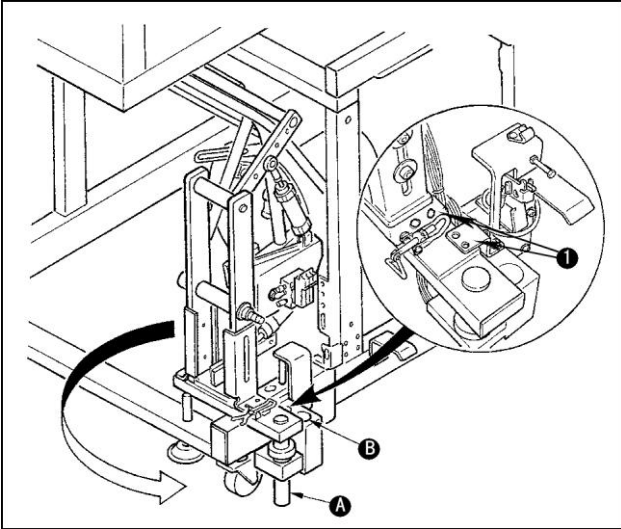
Connect air hose to the main unit with air cock closed, then carefully open air cock ,and turn on the slide valve to allow the compressed air to be supplied.
Make sure that the pressure gauge of the regulator reads 0.5 MPa.

5. ASSEMBLING THE THREAD STAND AND ATTACHING IT



Putting nut and washer between main unit frame ① and fix the thread stand as illustrated in the left-hand figure.

6. INSTALLING CLAMP BAR STACKER

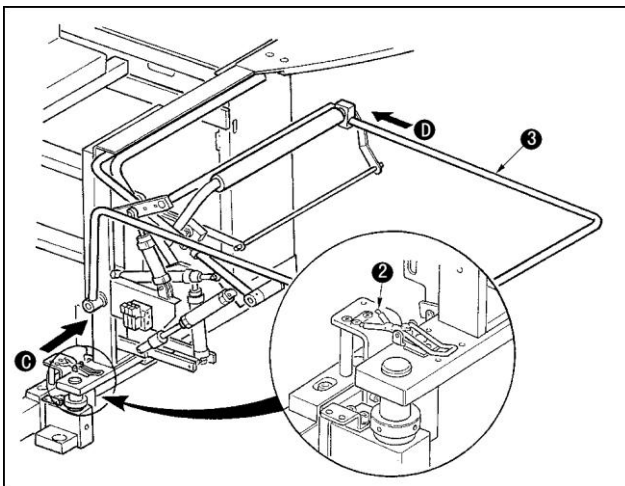


Clamp bar stacker is delivered in the state that it is fixed in the frame at the time of delivery with the clamp bar stacker mounted. It is necessary to change the installing position to the normal using position

- 1) Loosen two setscrews on the stacker fixing plate ①.
- 2) Turn the whole stacker in the direction of the arrow and take it out from inside of the frame.
- 3) Change stacker turning shaft ① section to stacker base hole ②.



At this time, take care to prevent the stacker cord, the air piping, etc. from being caught.



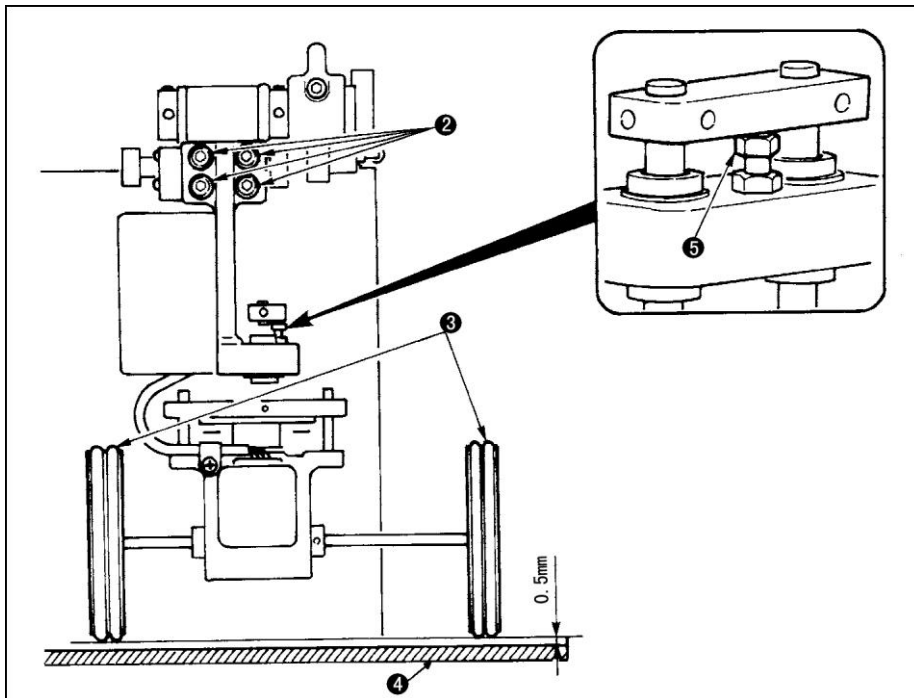
- 4) Lock the whole stacker with hinge ②.
- 5) Enter safety bar 3 from ③ and ④ directions and fix it at the position where is almost parallel to the floor.



At this time, confirm that air is being supplied.

7. INSTALLING ROLLER STACKER (OPTIONAL)

(1) Adjusting the position



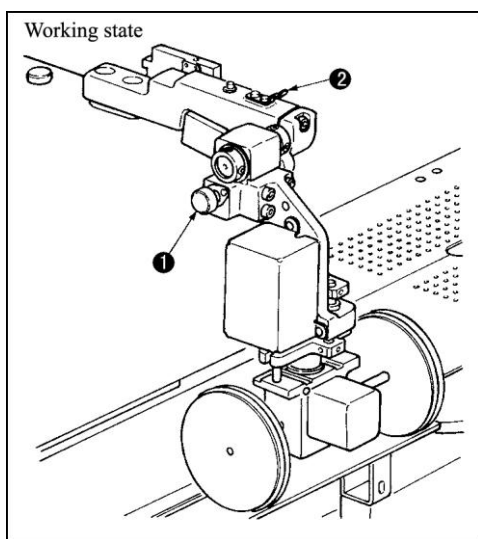
1) Confirming parallelism
Make sure that stacker table ④ and rubber roller ③ are installed parallel with each other.

If not, loosen four setscrews ② to adjust.

2) Confirming the clearance.
Make sure that the clearance between stacker table ③ and rubber roller ③ is approximately 0.5 mm.

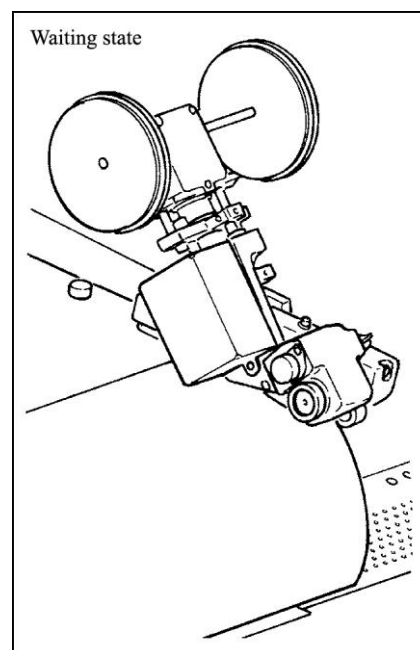
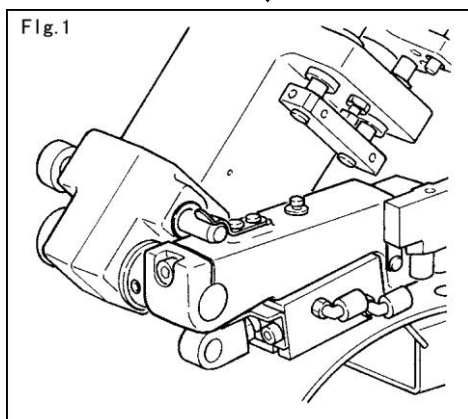
If not, loosen nut ⑤ to adjust.

(2) Maintenance

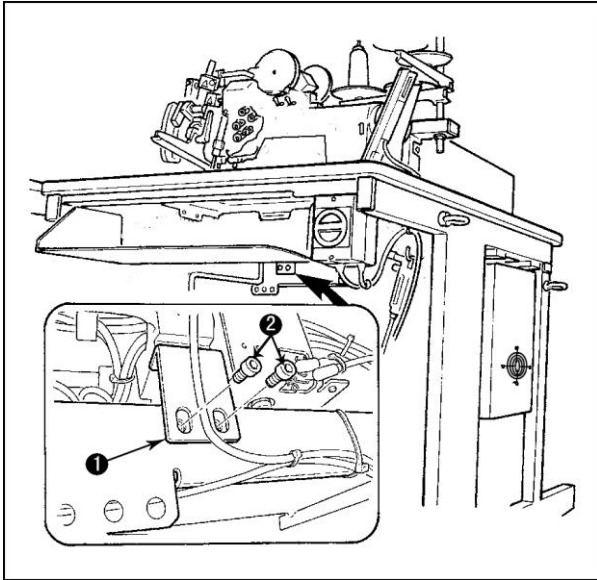


When the roller stacker is not used or adjusting the corner knife, the roller stacker can be turned upward with the procedure below.

Draw release lever ① and couple the roller stacker with fixed spring ② (refer to Fig. 1). Then the roller stacker is put in the waiting state.



8. REMOVING THE HEAD FIXING PLATE

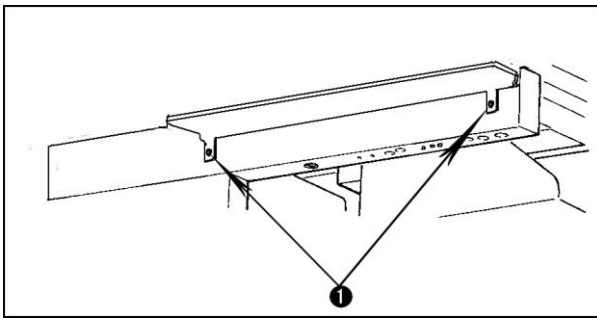


Remove fixing screws ② of head fixing plate ① .



Be sure to fix the machine and the frame when performing re-transportation.

9. INSTALLING THE SUB-TABLE

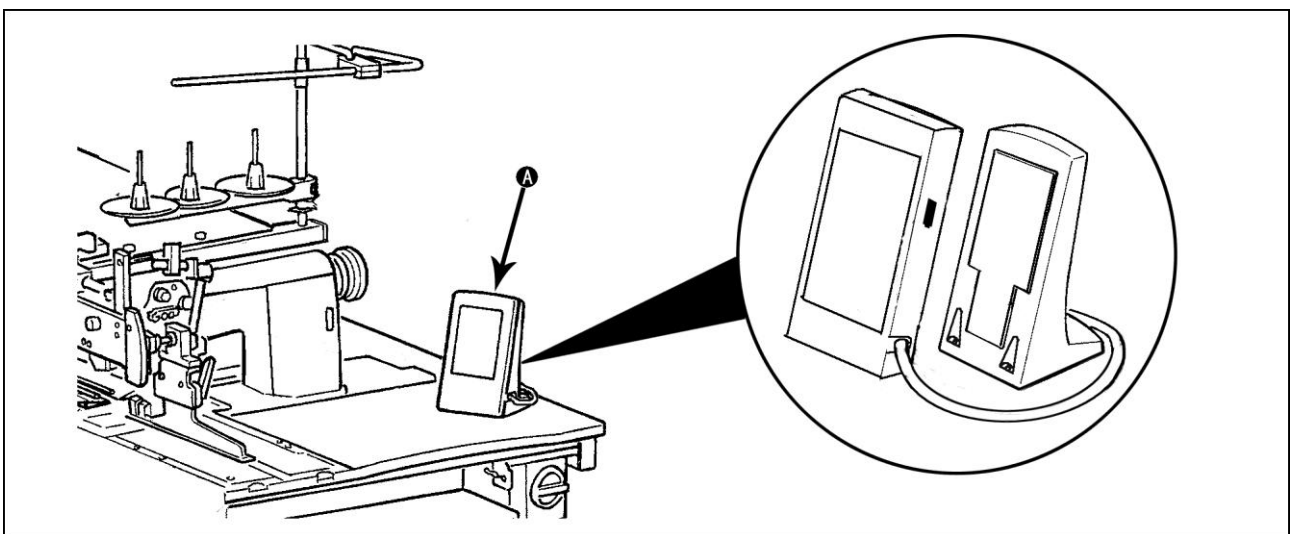


Install the sub-table with two screws as shown in the figure



At this time, fix the sub-table so as to be flush with the main table.

10. INSTALLING OPERATION PANEL



As shown in the figure above, cut and remove the clip band that has fixed the installing operation panel on frame.



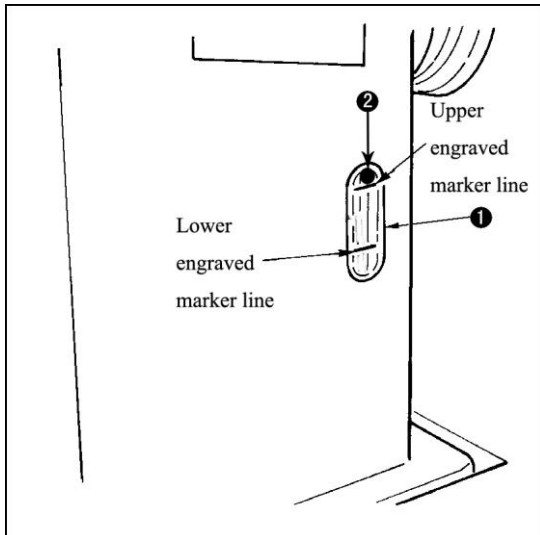
To prevent malfunction due to static electricity, install operation panel on the panel base to use and do not change the position of the panel base.

11. LUBRICATING THE OIL TANK



CAUTION

1. To prevent accidents caused by abrupt start of the sewing machine, do not connect the power plug until lubrication has been completed.
2. To prevent inflammation or rash, immediately wash the part when oil has stuck to your eyes or body.
3. If oil has been swallowed, diarrhea or vomiting may occur. Put oil to the place where children cannot reach.



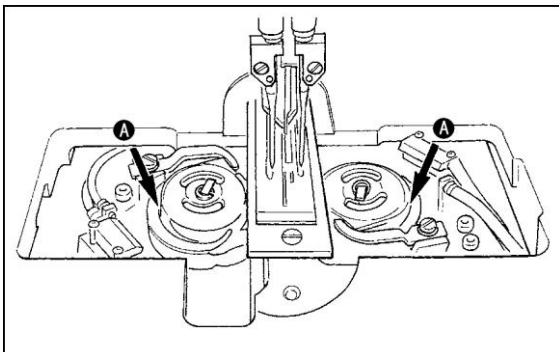
Fill the oil tank ① with the oil for hook lubrication before operating the sewing machine.

- 1) Remove oil cap ② and fill the oil tank with the oil for hook lubrication by using the oiler supplied with the machine as accessories.



To prevent entering of dust, be sure to attach the cap for use.

- 2) Fill the oil tank with the oil until the top end of oil comes between the upper engraved marker line and the lower engraved marker line. When oil amount is excessively large, oil leaks from the air hole or adequate lubrication cannot be performed. So, be careful.



- 3) When operating the sewing machine and the top of oil amount has lowered up to oil amount indicating window 2,



At the time of initial filling, fill the oil tank with oil of 200cc as the standard . When operating a newly installed machine or a machine which has not been used for a relatively long period of time, make the machine run at 2,000 sti/min or less for the purpose of break-in. In addition, use the machine after applying oil to races ① of the right/left hooks.


Buy the oil for hook.

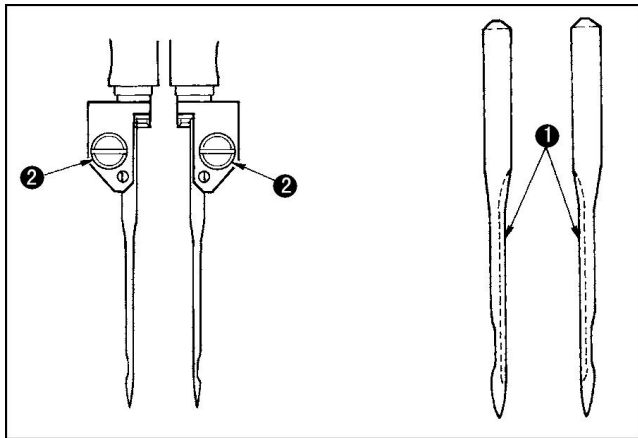
Be sure to fill the oil tank with clean oil. Never fill the oil tank with dirty oil.

V. PREPARATION OF THE SEWING MACHINE

1. HOW TO OPERATE THE SEWING MACHINE HEAD

(1) How to attach the needles

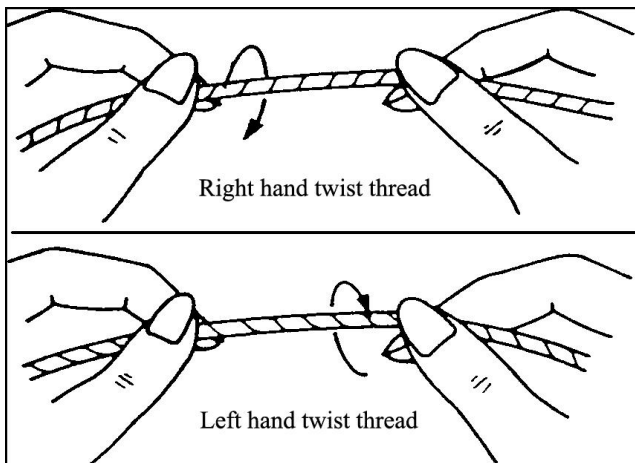
 CAUTION	Turn OFF the power before starting the work so as to prevents accidents caused by abrupt start of the sewing machine.
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The needles of 5878-68 is MT*190 and 5878-78 is DP×17#14~18 (standard #16) .Use the specified needle please.

Insert left- and right-hand sides needles as far as they will go pointing their long grooves ① at each other and tighten needle clamp screws ②.


(2) Thread used

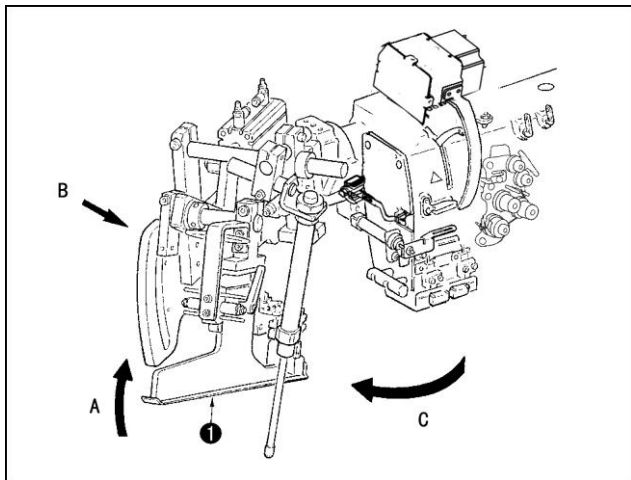


- Use the left hand twist thread for the needle thread
- Either twist thread will do for the bobbin thread.


	Use a new thread which is uniformly twisted.
---	--


(3) How to pass the needle thread

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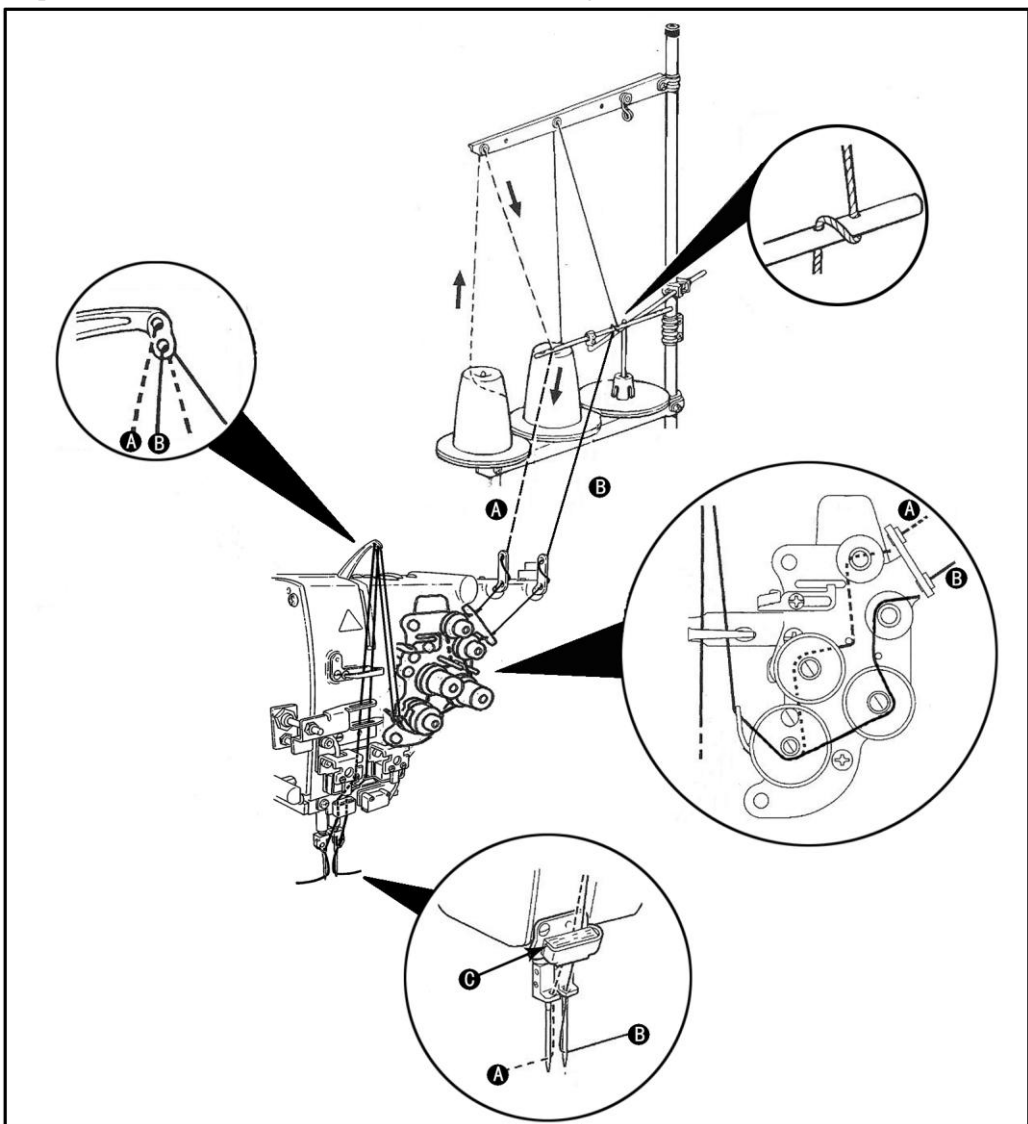



1) Lift center foot ① in the direction A, Hold section B by hand and turn the whole center foot in the direction C.

	Be sure to press section B since welting width maybe come improper when the middle pressure plate is pressed and turned in the direction C.
---	---

	Middle pressure plate is locked with the ball plunger. Rather strongly turn the middle pressure plate in the direction C to release the lock.
---	---

2) Then pass needle thread in the order as shown in the figure below.



	Periodically replace thread guide felt C. Sewing trouble due to rough motion of thread during sewing can be prevented.
---	--

Pass the needle thread in the illustrated order.
 Left-hand side needle thread toward the sewing machine → ①
 Right-hand side needle thread toward the sewing machine → ②

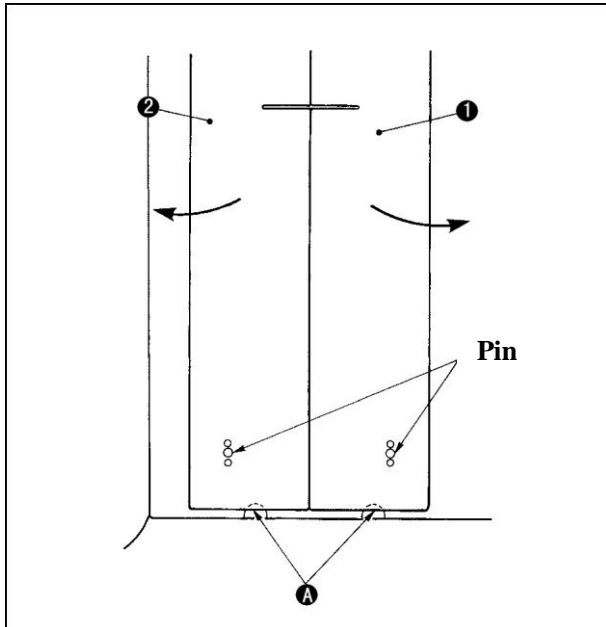
2. HOW TO REMOVE THE SEWING TABLE



CAUTION

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

(1) When replacing the bobbin thread




- 1) Move the clamp foot to the rear end of its stroke.
- 2) Insert your fingers into notches (A) in the bottom of right- and left-hand sewing tables (1) and (2), and push up the sewing tables.
- 3) Move the tables in the direction of the arrow keeping the above state, and you can see the bobbin case.



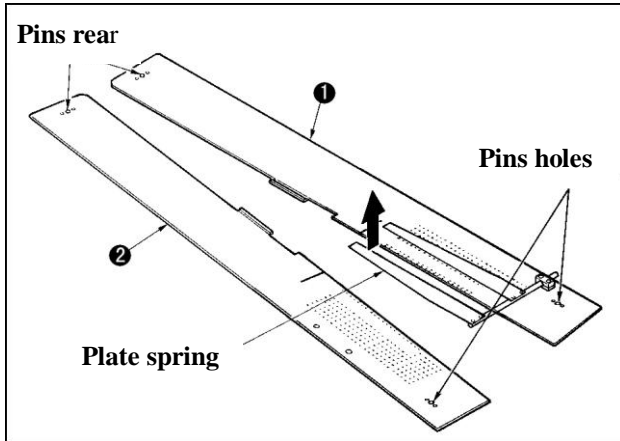
At this time, move the sewing tables so as not to allow the sewing tables to come in contact with the needles.

- 4) After replacing the bobbin thread, return the sewing tables in place by following the above-mentioned steps of procedure in the reverse order. Now, firmly set the sewing tables on the throat plates and the pins.

(2) Cautions to be taken when the sewing tables are removed

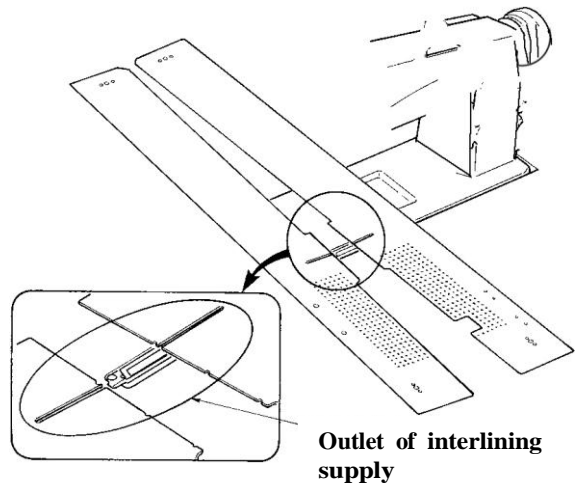
 CAUTION	Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.
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When you remove the sewing tables, be sure to accurately set them by following the points below.



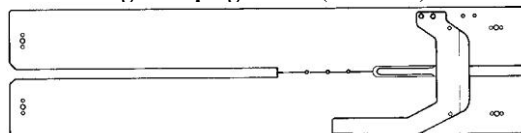
- 1) Securely fit the pins, rear (left) (right) over the pin holes.
- 2) Securely fit pin holes, front (left) (right) over the pins.

- 1、 In case of the machine provided with automatic interlining supplying device, return the sewing tables to their home positions while lifting the sewing tables so that the plate spring section is not bent.

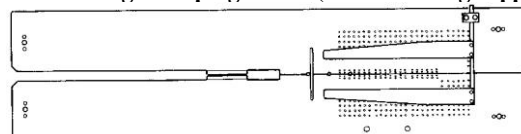


- 2、 In case of removing the sewing tables with the types below, take care not to bend pocket bag clamping device and interlining clamping device.

1. Pocket bag clamping device (standard)



2. Pocket bag clamping device (for interlining supply)



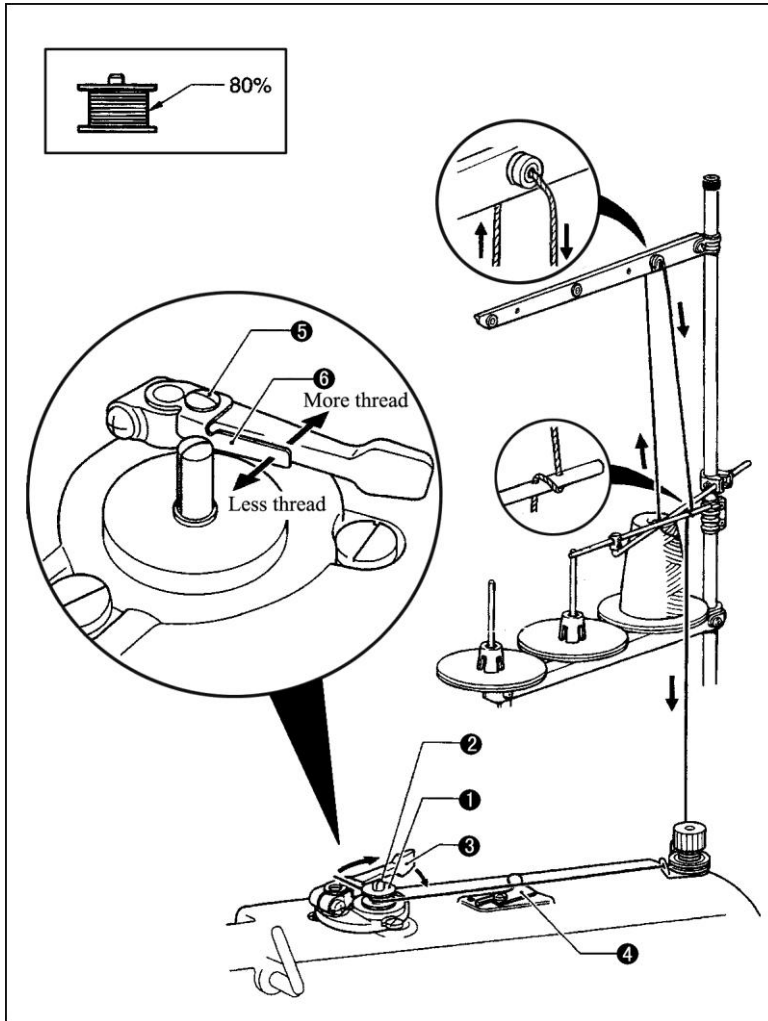
3. HOW TO WIND THE BOBBINS



CAUTION

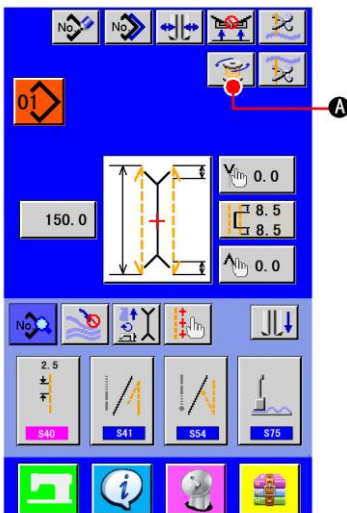
To prevent damage, avoid contact with bobbins while the machine is in operation.


(1) Place bobbin

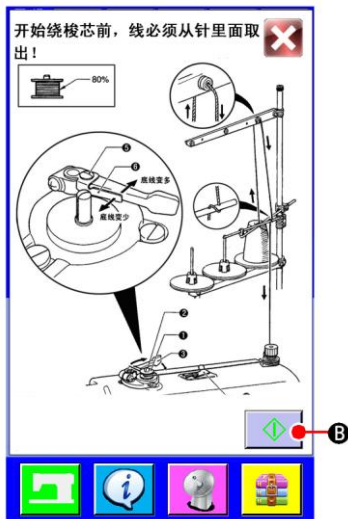


- 1) Place the bobbin ① onto the bobbin winder shaft ② .
- 2) Wind the thread several times around the bobbin ① in the direction indicated by the arrow.
* Check that the thread is not loose anywhere along the thread path .
- 3) Push the bobbin presser arm ③ toward the bobbin ① .


(2) Winding the lower thread



- 1) After complete the first step , Press the button  ① in the sewing screen, Then the lower thread winding screen (screenA) is displayed.



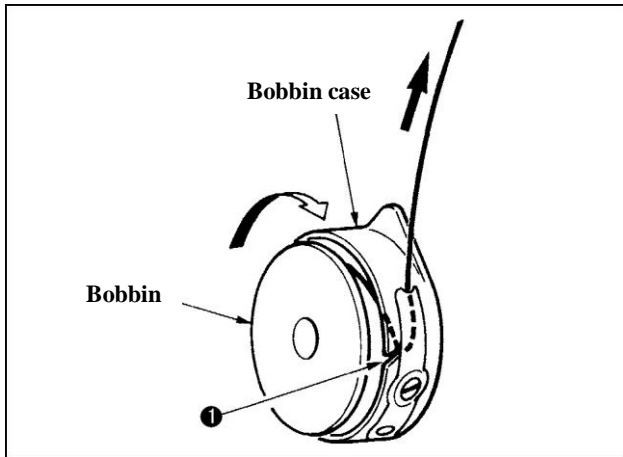
Lower thread winding screen (screenA)

- 2) Make sure the thread is out of the needle ,and then press the button  (B),lower thread winding will start.
- 3) Once winding of the lower thread is completed,the bobbin presser arm ③ will return automatically.
- 4) Then ,press the botton (B) to stop and remove the bobbin,cut the thread with the knife ④ .



1. To ensure the appropriate remaining amount of bobbin thread, it is important to wind the bobbin uniformly. Be sure to check that the bobbin is uniformly wound particularly at the start of bobbin winding.
2. It is most suitable to wind the bobbin with thread to approximately 80% of the outer diameter of the bobbin.
 - * Loosen the screw ⑤ and move the bobbin presser ⑥ to adjust the amount of thread wound onto the bobbin .
3. Do not press lever ① except when winding bobbin thread ⑥ .

4. HOW TO THREAD THE BOBBIN CASE



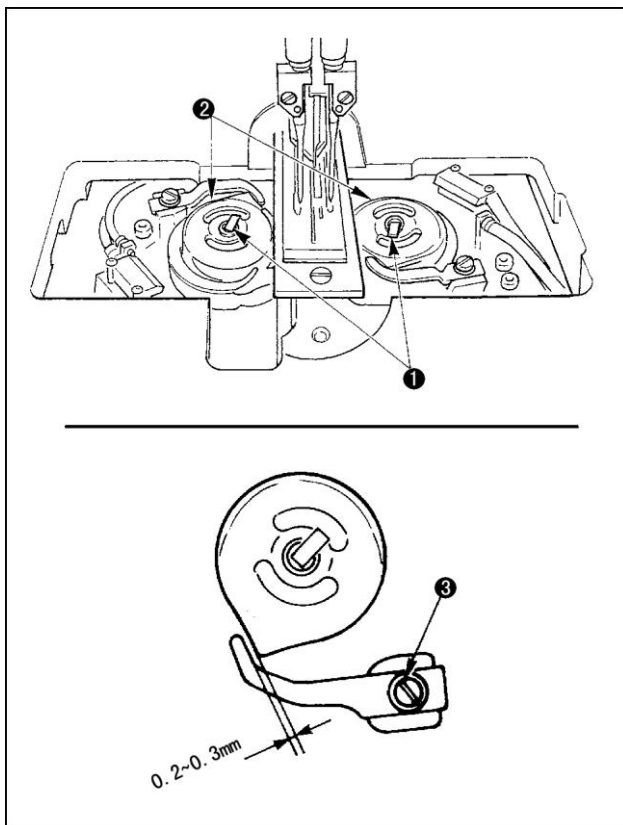
- 1) Hold in hand a bobbin in the way that it spins clockwise and put it into the bobbin case.
- 2) Pass the thread through slot ① in the bobbin case.
- 3) Pull the thread to pass it under the tension spring.

5. HOW TO INSTALL THE BOBBIN CASE



CAUTION

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

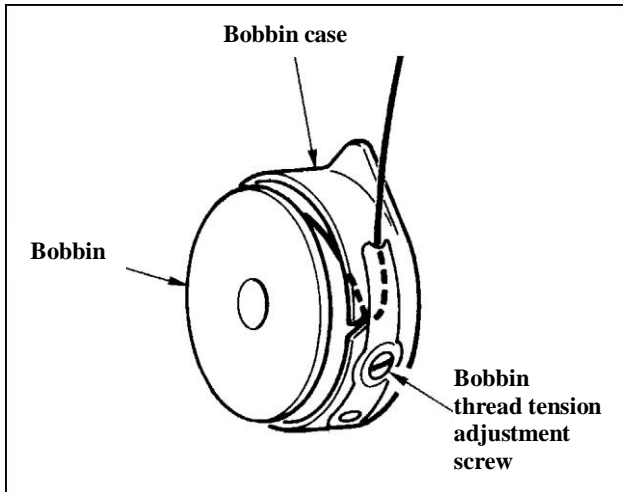


- 1) Raise hook levers ① and take out the bobbin cases together with the bobbins.
- 2) When fitting, fit the bobbin cases into the hook driving shaft and tilt levers ①.

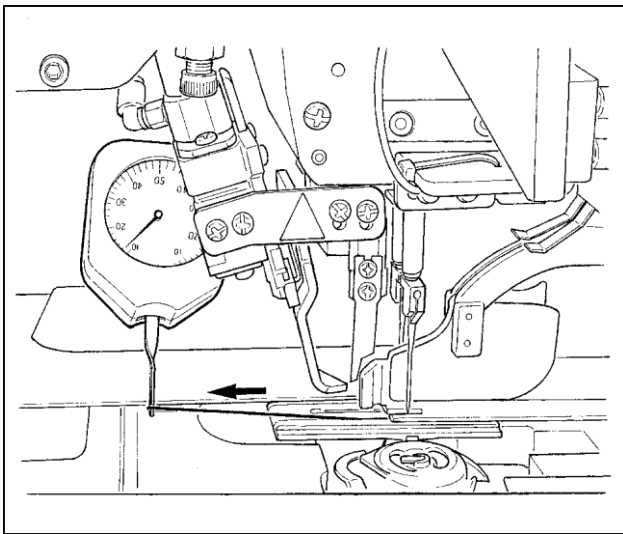


When bobbin cases, left and right, ② are replaced, make sure that the clearance between the opener which is extremely recessed and the bobbin case is 0.2 to 0.3mm. If the clearance is not 0.2 to 0.3 mm, loosen setscrew ③ and adjust it.

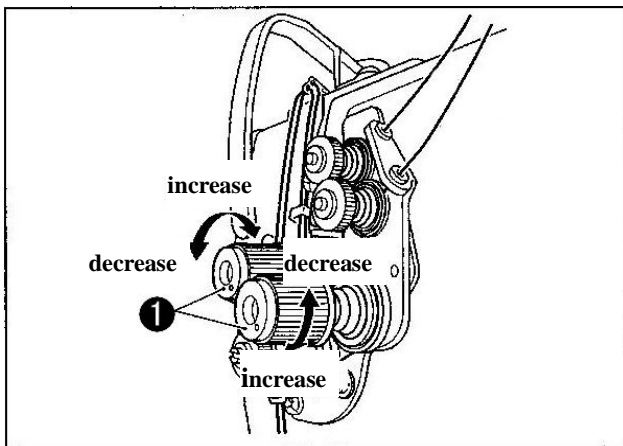
6. HOW TO ADJUST THE THREAD TENSION



- 1) Adjusting bobbin thread tension
Turn bobbin thread tension adjustment screw clockwise to increase the bobbin thread tension or turn the screw counterclockwise to decrease it.

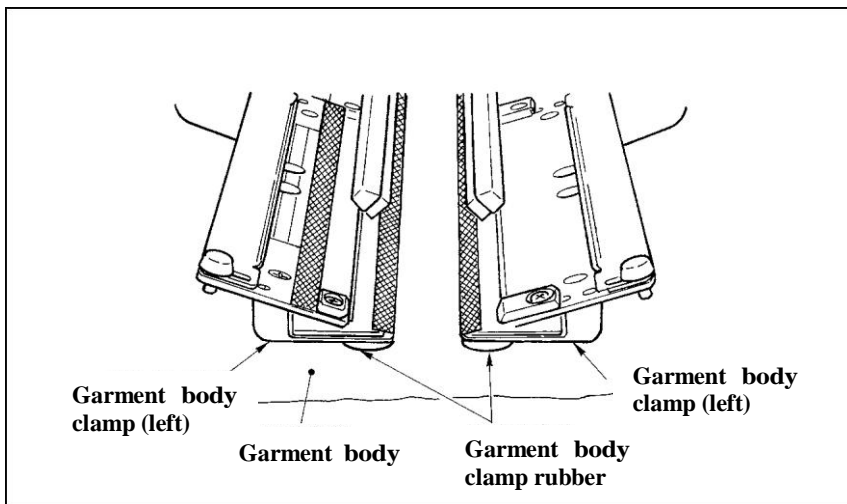


As shown in the left-hand figure, standard bobbin thread tension is 0.25 ~ 0.35N when measuring with the tension gauge.



- 2) Adjusting needle thread tension
First, adjust the right- and left-hand bobbin thread tension.
Then in accordance with the bobbin thread tension obtained, adjust the right- and left-hand sides needle threads tension appropriately by turning thread tension adjustments nuts ①.
* Turning the nuts clockwise will increase the thread tension or turning them counterclockwise to decrease it.

7. SETTING THE MATERIAL TO BE SEWN



Use a garment body that is larger than the garment body clamp rubber piece adhered under the right and left garment body clamps .

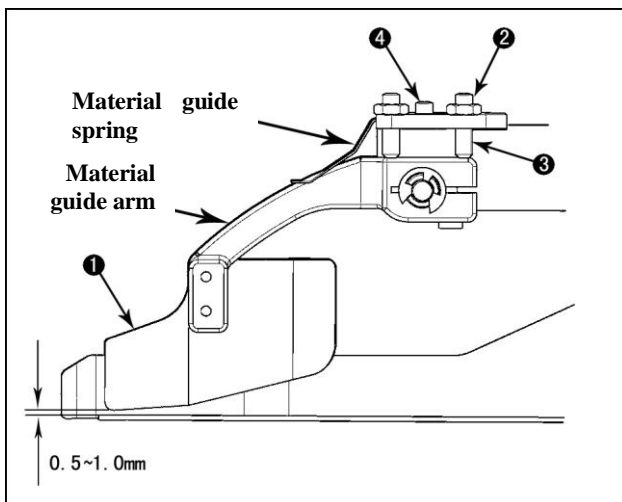
If a garment body of which size is smaller than the garment body clamp rubber piece , the rubber piece can come off or the machine can malfunction.

If it is necessary to use a small material, mount a shim type gauge (optional) on the machine.

8. ADJUSTING THE MATERIAL GUIDE

Material guide functions to stabilize the welt patch at the edge of the machine needle.

Adjust the height and the presser pressure of material guide ① in accordance with the thickness of material.

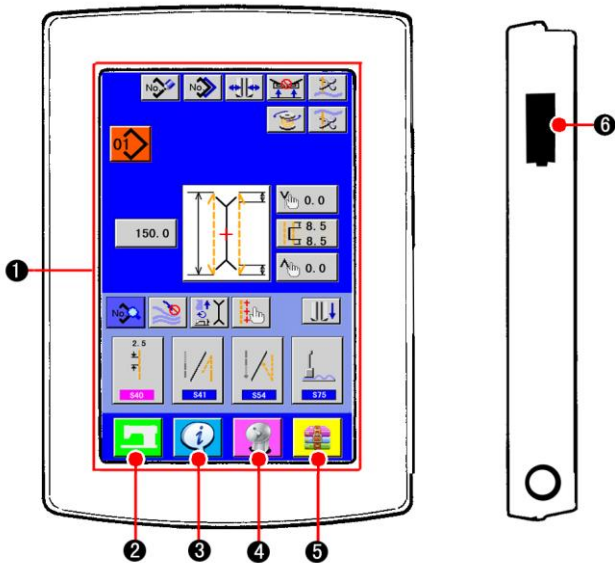






- 1) The height of material guide can be adjusted by loosening nut 2 and screw 3.
(Clearance between material guide and welt patch scale has been adjusted to 0.5 to 1.0 mm at the time of delivery.)
- 2) Presser pressure can be adjusted with spring pressure adjust screw 4.
(Adjust the pressure so that there is no excessive resistance when the material passes.)

VI. HOW TO USE THE OPERATION PANEL

1. BASIC OPERATION OF THE OPERATION PANEL

(1) Configuration of the operation panel



symbol	name	description
1	TOUCH PANEL, LCD display section	
2	 READY key	Change-over of the data input screen and the sewing screen is performed.
3	 INFORMATION key	Change-over of the data input screen and the information screen is performed.
4	 COMMUNICATION key	Change-over of the data input screen and the communication screen is performed.
5	 MODE CHANGEOVER key	Change-over of the data input screen and the mode change-over screen which performs various details setting
6	USB PORT	Open the lid before use.

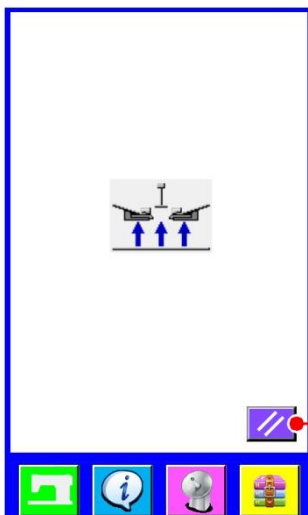
Caution When READY key is pressed first after turning ON the power, origin retrieval of the clamp foot is performed. At this time, the clamp foot moves. So, be careful.

(2) Buttons used in common

Buttons that perform common operation in the respective screens of the operation panel are as described below.

Pictograph	Name	Description
	CANCEL button	Pop-up screen is closed. In case of the data change screen, the data during changing can be cancelled.
	ENTER button	Data changed are determined.
	UP SCROLL button	This button scrolls button or display upward.
	DOWN SCROLL button	This button scrolls button or display downward.
	RESET button	This button releases error and the like.
	NUMBER INPUT button	Ten keys are displayed and input of number can be performed.

(3) Basic operation



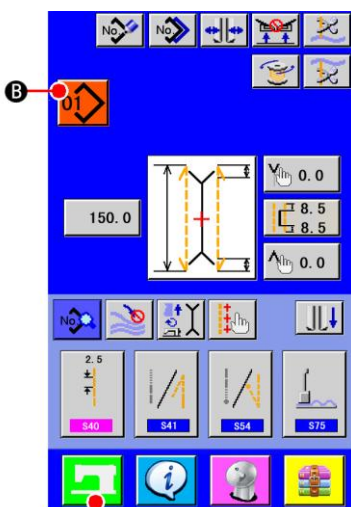
1) Turn ON the power switch.

First, turn ON the power switch.


Reset pop-up screen is displayed after displaying WELCOME screen.

Press RESET button  (A).

Caution When RESET button is pressed, the binder goes up. So, be careful.



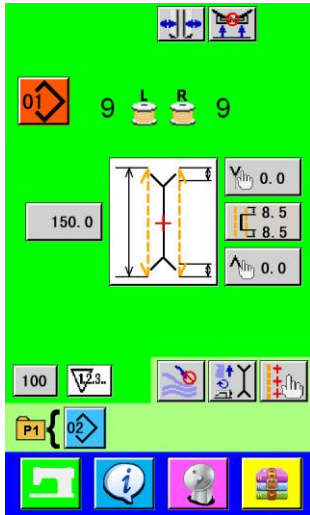
2) Select pattern No. you desire to sew.

When PATTERN NO. button  (B) is pressed, the pattern No. can be selected. For the selecting procedure of pattern No., see "VI-6(1) Performing the selection of pattern".

At the time of your purchase, pattern Nos. 1 to 10 have been registered. Change the sewing data in accordance with the sewing types for use. (The number to which the pattern has not been registered is not displayed.)


Reference For the detailed explanation of input screen, see "VI -2. EXPLANATION OF THE BASIC SCREEN".


The independent sewing input screen (screen A)

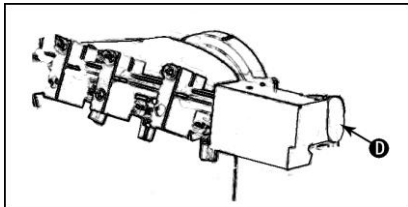


Sewing screen (screen B)


3) Start sewing

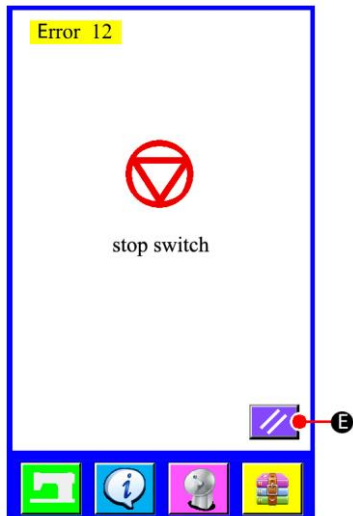
When READY key  is pressed in the independent sewing input screen (screen A), the green sewing screen (screen B) is displayed and the sewing operation is started by the pedal operation.


 For the details of the sewing screen, see "VI-2. EXPLANATION OF THE BASIC SCREEN".



4) To stop the device during operation

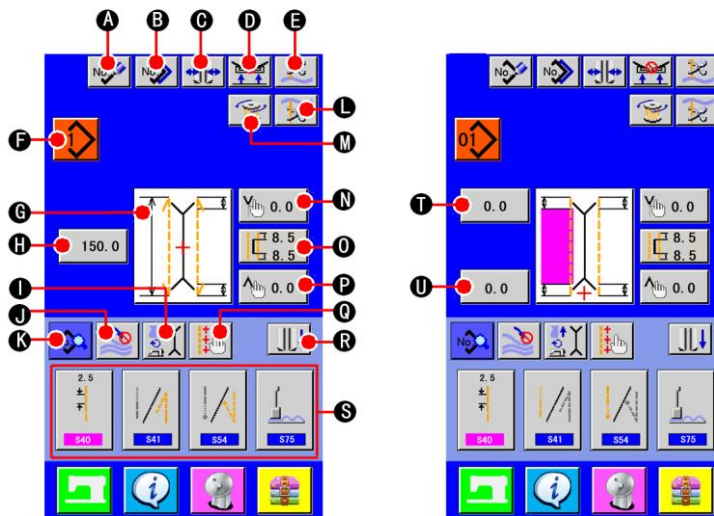
When temporary stop switch  is pressed during sewing, the device can be stopped.



At this time, the error screen is displayed to inform that stop switch is pressed. When RESET button  is pressed, the error is released and the screen returns to the input screen.

2. EXPLANATION OF THE BASIC SCREEN

(1) Input screen (Independent sewing mode)

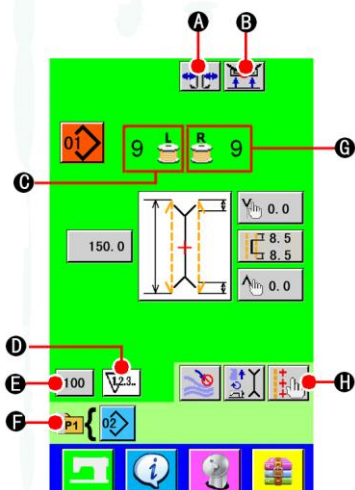


Symbol	Name of button	Description
A	NEW CREATION button	Independent sewing pattern new creation screen is displayed and new register of the pattern data can be performed.
B	COPY button	Independent sewing copy source pattern list screen is displayed and the pattern can be copied.
C	TYPE OF WELT CHANGE-OVER button	Type of welt change-over screen is displayed, and change-over of type of welt and adjustment of parallelism of the center foot can be performed.
D	CLAMP UP PROHIBITION AT SEWING END button	When this button is pressed, the clamp is returned in the lowered state at sewing end. It is convenient to use this button at the time of adjusting the marking light or trial sewing.
E	NEEDLE THREAD TRIMMING button	When this button is pressed, needle thread trimming knife comes down and the needle
F	PATTERN NO. LIST button	Pattern No. list screen is displayed and the pattern data can be selected.
G	SEWING MODE SETTING button	Sewing mode S03 is selected.
H	L SIZE LENGTH SETTING button	In case of L size sewing, sewing length S04 is set.
I	MOTION MODE SETTING button	With/without S01 of motion of sewing machine motor, center knife and corner knife.
J	STACKER MOTION/STOP CHANGE-OVER button	This button selects motion/stop S69 and S70 of stacker.
K	SEWING DATA DISPLAY button	Sewing pattern edit screen is displayed. Detailed sewing data that are not displayed in the input screen can be selected and edited.
L	BOBBIN THREAD TRIMMING button	Bobbin thread trimming knife opens while this button is pressed.
M	WIND BOBBIN button	Open the middle pressure plate ,lower thread winding willstart automatically while this button is pressed.
N	CORNER KNIFE MOTION POSITION AT SEWING START SETTING button	Cutting position S19 of corner knife at sewing start is set.
O	CENTER KNIFE SETTING button	Center knife data edit screen is displayed, and center knife cutting position of sewing start S17 and sewing end S18 is set.
P	CORNER KNIFE MOTION POSITION AT SEWING END SETTING button	Cutting position S20 of corner knife at sewing end is set.
Q	MARKING LIGHT SETTING button	Marking light setting screen is displayed, and changeover of marking light irradiation position S05 and setting of change of marking light set value S30 , S31 and S32 are performed.
R	CLAMP FOOT MOVE button	Clamp foot is moved to the front or to the back.
S	SEWING DATA SHORTCUT button	Shortcut buttons (max. 4 items) of the sewing data that are set in customizing in the sewing
T	FLAP DROP DATA AT SEWING START SETTING button	Flap concealed stitching data at sewing start S08 or S10 is set.
U	FLAP DROP DATA AT SEWING END SETTING button	Flap concealed stitching data at sewing end S09 or S11 is set.

* It is possible to customize display/non-display of the respective buttons.

For the details, refer to "VI-11. CUSTOMIZING THE DATA INPUT SCREEN ".

(2) Sewing screen (Independent sewing mode)

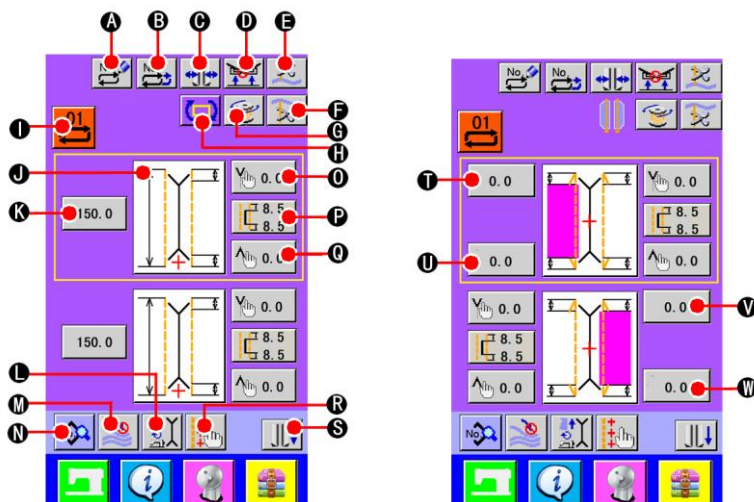


Symbol	Name of button	Description
A	TYPE OF WELT CHANGE-OVER button	Type of welt change-over screen is displayed and change-over of type of welt and adjustment of parallelism of the center foot can be performed.
B	CLAMP UP PROHIBITION AT SEWING END button	When this button is pressed, the clamp is returned in the lowered state at sewing end. It is convenient to use this button at the time of adjustment of marking light or trial sewing.
C	BOBBIN THREAD (LEFT) REMAINING AMOUNT VALUE	This button detects reflecting light from bobbin and informs that bobbin thread remaining amount is running out. When one stitching completes, the counter value is subtracted and the count-up screen is displayed when "0" is reached. * This button is displayed only when the reflecting light from bobbin is detected.
D	COUNTER CHANGE-OVER button	When this button is pressed, the display of sewing counter and number of pcs counter is changed over.
E	COUNTER VALUE CHANGE button	This button changes the counter value which is displayed at present.
F	DIRECT PATTERN LIST button	Direct pattern list screen is displayed and selection of the sewing data can be performed.
G	BOBBIN THREAD (RIGHT) REMAINING AMOUNT VALUE	This button detects reflecting light from bobbin and informs that bobbin thread remaining amount is running out. When one stitching completes, the counter value is subtracted, and the count-up screen is displayed when "0" is reached. * This button is displayed only when the reflecting light from bobbin is detected.
H	MARKING LIGHT SETTING button	Marking light setting screen is displayed, and changeover of marking light irradiation position S05 and setting of change of marking light set value S30 , S31 and S32 are performed.

* It is possible to customize display/non-display of the respective buttons.

For the details, refer to "VI-11. CUSTOMIZING THE DATA INPUT SCREEN".

(3) Input screen (Alternate sewing mode)

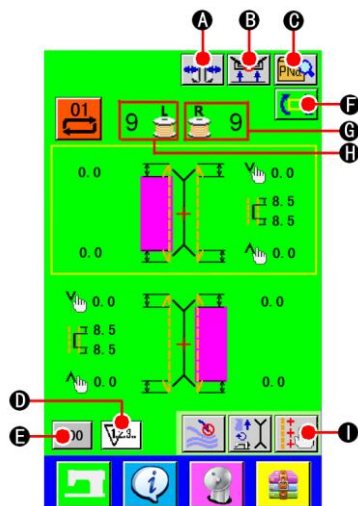


Symbol	Name of button	Description
A	NEW CREATION button	Independent sewing pattern new creation screen is displayed and new register of the pattern data can be performed.
B	COPY button	Independent sewing copy source pattern list screen is displayed and the pattern can be copied.
C	TYPE OF WELT CHANGE-OVER button	Type of welt change-over screen is displayed, and change-over of type of welt and adjustment of parallelism of the center foot can be performed.
D	CLAMP UP PROHIBITION AT SEWING END button	When this button is pressed, the clamp is returned in the lowered state at sewing end. It is convenient to use this button at the time of adjusting the marking light or trial sewing.
E	NEEDLE THREAD TRIMMING button	When this button is pressed, needle thread trimming knife comes down and the needle
F	BOBBIN THREAD TRIMMING button	Bobbin thread trimming knife opens while this button is pressed.
G	WIND BOBBIN button	Open the middle pressure plate ,lower thread winding willstart automatically while this button is pressed.
H	NEXT SEWING DATA CHANGE-OVER button	Sewing pattern to be sewn next which is enclosed with yellow frame is changed over. * This is not displayed when flap priority sewing selection S02 is ON.
I	PATTERN NO. LIST button	Pattern No. list screen is displayed and the pattern data can be selected.
J	SEWING MODE SETTING button	Sewing mode S03 is selected.
K	L SIZE LENGTH SETTING button	In case of L size sewing, sewing length S04 is set.
L	MOTION MODE SETTING button	With/without S01 of motion of sewing machine motor, center knife and corner knife.
M	STACKER MOTION/STOP CHANGE-OVER button	This button selects motion/stop S69 and S70 of stacker.
N	SEWING DATA DISPLAY button	Sewing pattern edit screen is displayed. Detailed sewing data that are not displayed in the input screen can be selected and edited.
O	CORNER KNIFE MOTION POSITION AT SEWING START SETTING button	Cutting position S19 of corner knife at sewing start is set.
P	CENTER KNIFE SETTING button	Center knife data edit screen is displayed and center knife cutting position of sewing start S17 and sewing end S18 .
Q	CORNER KNIFE MOTION POSITION AT SEWING END SETTING button	Cutting position S20 of corner knife at sewing end is set
R	MARKING LIGHT SETTING button	Marking light setting screen is displayed, and changeover of marking light irradiation position S05 and setting of change of marking light set value S30 , S31 and S32 are performed.
S	CLAMP FOOT MOVE button	Clamp foot is moved to the front or to the back.
T、V	FLAP CONCEALED STITCHING DATA AT SEWING START SETTING button	Flap concealed stitching data at sewing start S08 or S10 is set.。
U、W	FLAP CONCEALED STITCHING DATA AT SEWING END SETTING button	Flap concealed stitching data at sewing end S09 or S11 is set.

* It is possible to customize display/non-display of the respective buttons.

For the details, refer to "VI-11. CUSTOMIZING THE DATA INPUT SCREEN " .

(4) Sewing screen (Alternate sewing mode)

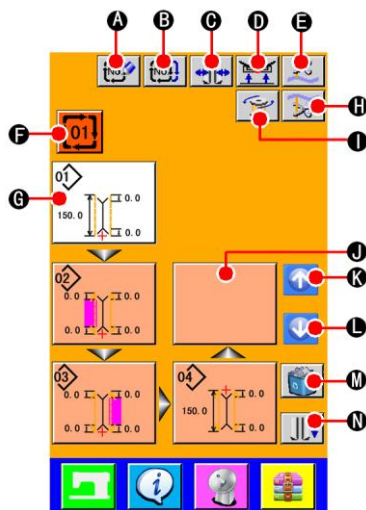


Symbol	Name of button	Description
A	TYPE OF WELT CHANGE-OVER button	Type of welt change-over screen is displayed and change-over of type of welt and adjustment of parallelism of the center foot can be performed.
B	CLAMP UP PROHIBITION AT SEWING END button	When this button is pressed, the clamp is returned in the lowered state at sewing end. It is convenient to use this button at the time of adjustment of marking light or trial sewing.
C	DIRECT PATTERN LIST button	Direct pattern list screen is displayed and selection of the sewing data can be performed.
D	COUNTER CHANGE-OVER button	When this button is pressed, display of sewing counter and number of pcs counter is changed over. This button is displayed only when both sewing counter and number of pcs counter are ON.
E	COUNTER VALUE CHANGE button	Counter value which is displayed at present is changed.
F	NEXT SEWING DATA CHANGE-OVER button	Sewing pattern to be sewn next which is enclosed with yellow frame is changed over. * This is not displayed when flap priority sewing selection S02 is ON.
G	BOBBIN THREAD (RIGHT) REMAINING AMOUNT VALUE	This button detects reflecting light from bobbin and informs that bobbin thread remaining amount is running out. When one stitching completes, the counter value is subtracted, and the count-up screen is displayed when "0" is reached. * This button is displayed only when the reflecting light from bobbin is detected.
D	BOBBIN THREAD (LEFT) REMAINING AMOUNT VALUE	This button detects reflecting light from bobbin and informs that bobbin thread remaining amount is running out. When one stitching completes, the counter value is subtracted and the count-up screen is displayed when "0" is reached. * This button is displayed only when the reflecting light from bobbin is detected.
I	MARKING LIGHT SETTING button	Marking light setting screen is displayed, and changeover of marking light irradiation position S05 and setting of change of marking light set value S30 , S31 and S32 are performed

* It is possible to customize display/non-display of the respective buttons.

For the details, refer to "VI-11. CUSTOMIZING THE DATA INPUT SCREEN "

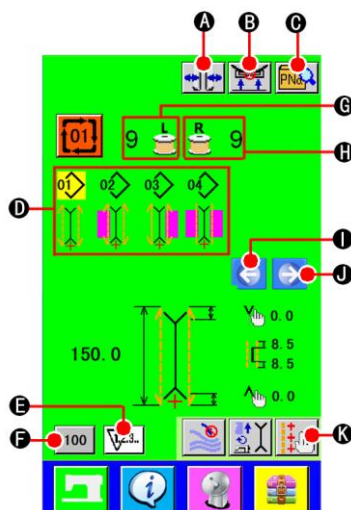
(5) Input screen (Cycle sewing mode)



Symbol	Name of button	Description
A	NEW CREATION button	Cycle sewing data No. new creation screen is displayed and new register of cycle sewing data can be performed.
B	COPY button	Cycle sewing data copy source No. list screen is displayed and cycle sewing data can be copied.
C	CHARACTER INPUT button	Character input screen is displayed and name can be inputted to the cycle sewing data.
D	TYPE OF WELT CHANGE-OVER button	Type of welt change-over screen is displayed and change-over of type of welt, and adjustment of parallelism of the center foot can be performed.
E	CLAMP UP PROHIBITION AT SEWING END button	When this button is held pressed, the clamp is returned in the lowered state at the time of sewing end.
F	CYCLE SEWING DATA NO. LIST button	Cycle sewing data No. list screen is displayed and the cycle sewing data can be selected.
G	PATTERN DATA EDIT button	Edit of pattern data which have been registered to cycle sewing data can be performed.
H	BOBBIN THREAD TRIMMING button	While this button is held pressed, bobbin thread trimming knife opens.
I	WIND BOBBIN button	Open the middle pressure plate ,lower thread winding will start automatically while this button is pressed.
J	PATTERN DATA EDIT button (blank)	When this blank button is pressed, the pattern list screen to register the pattern data to the cycle sewing data is displayed, and it is possible to select and register the pattern data.
K	CYCLE RETURN button	Pattern data to be sewn next which is displayed with white emphasis is moved forward by one. In case of first pattern, it moves to the last pattern.
L	CYCLE FEED button	Pattern data to be sewn next which is displayed with white emphasis is moved backward by one. In case of the last pattern, it moves to the first pattern.
M	PATTERN DATA DELETION button	Pattern data which is displayed with white emphasis is deleted from register.
N	CLAMP FOOT MOVE button	Clamp foot is moved to the front or to the back.

* It is possible to customize display/non-display of the respective buttons.
For the details, refer to "VI-11. CUSTOMIZING THE DATA INPUT SCREEN".

(6) Sewing screen (Cycle sewing mode)



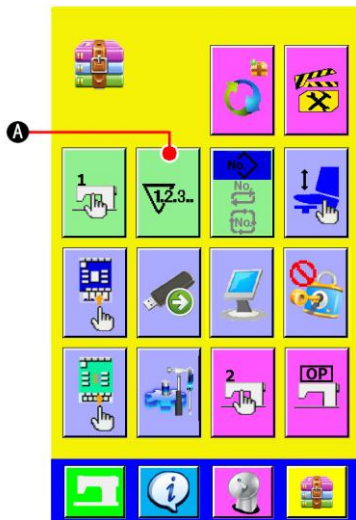
Symbol	Name of button	Description
A	TYPE OF WELT CHANGE-OVER button	Type of welt change-over screen is displayed, and change-over of type of welt and adjustment of parallelism of the center foot can be performed.
B	CLAMP UP PROHIBITION AT SEWING END	When this button is held pressed, the clamp is returned in the lowered state at the time of sewing end.
C	DIRECT PATTERN LIST button	Direct pattern list screen is displayed and selection of the sewing data can be performed.
D	CYCLE DATA display	All pattern data that have been registered to the cycle sewing data are displayed.
E	COUNTER CHANGE-OVER button	When this button is pressed, display of sewing counter and number of pcs counter is changed over. This button is displayed only when both sewing counter and number of pcs counter are ON.
F	COUNTER VALUE CHANGE button	Counter value which is displayed at present is changed.
G	BOBBIN THREAD (LEFT) REMAINING AMOUNT	This button detects reflecting light from bobbin and informs that bobbin thread remaining amount is running out. When one stitching completes, the counter value is subtracted, and the counter-up screen is displayed when "0" is reached.
H	BOBBIN THREAD (RIGHT) REMAINING AMOUNT	This button detects light from bobbin and informs that bobbin thread remaining amount is running out. When one stitching completes, the counter value is subtracted, and the counter-up screen is displayed when "0" is reached.
I	LEFT SCROLL button	Pattern data to be sewn next is moved forward by one. In case of the first pattern, it
J	RIGHT SCROLL button	Pattern data to be sewn next is moved backward by one. In case of the last pattern, it moves to the first pattern.
K	MARKING LIGHT SETTING button	Marking light setting screen is displayed, and changeover of marking light irradiation position S05 and setting of change of marking light set value S30 , S31 and S32 are performed.

* It is possible to customize display/non-display of the respective buttons.



For the details, refer to "VI-11. CUSTOMIZING THE DATA INPUT SCREEN".

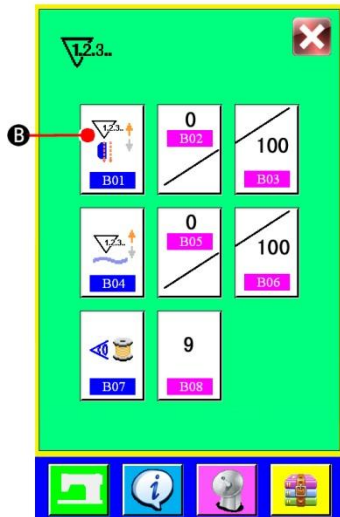
3. USING THE COUNTER

(1) Setting procedure of the counter




1) **Display the counter setting screen.**

Press MODE CHANGEOVER key  from the input screen and COUNTER SETTING button  (A) is displayed on the screen. Press this button and "COUNTER SETTING screen (screen A) " is displayed.

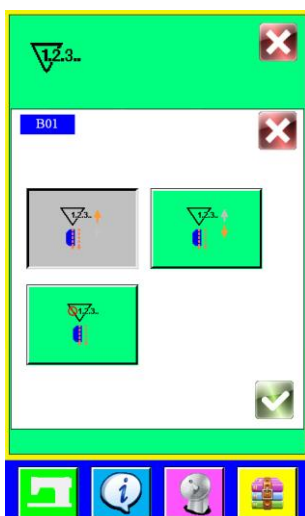


2) **Select the kind of counter.**

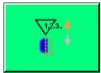
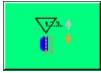
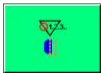
There are three kinds of counters with this sewing machine, sewing counter, number of pcs counter and bobbin thread remaining amount adjustment counter.

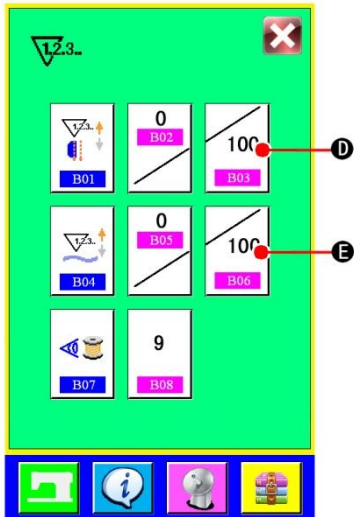
Press sewing counter button  (B) in "counter setting screen (screen A)", and "sewing counter setting screen (screen B) "is displayed. Then the kind of counter can be set.

Counter setting screen (screen A)



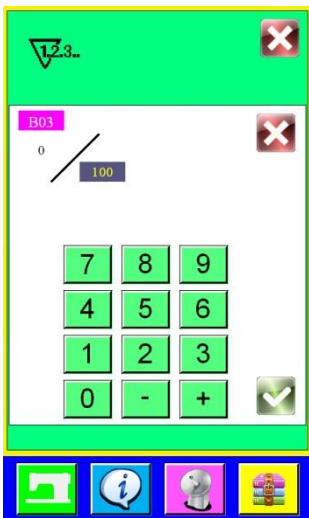
Sewing counter setting screen (screen B)

【Sewing counter】	
	UP counter Every time one sewing is performed, the existing value is counter up. When the existing value is equal to the set value, the count- up screen is displayed.
	DOWN counter Every time one sewing is performed, the existing value is counted down. When the existing value is reached to "0", the count-up screen is displayed.
	Counter unused Sewing counter is set to the prohibition.



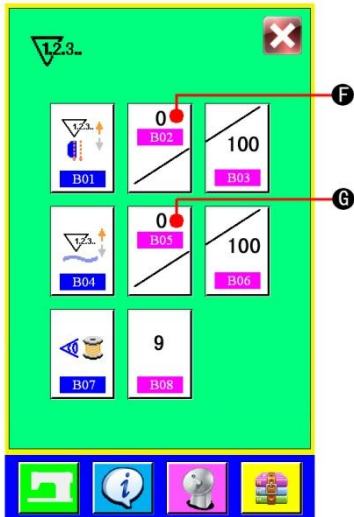
3) **Changing the target value of the counter**

In case of the sewing counter, press button (D) and in case of the number of pcs counter, press button (E) and “Numerical setting pop-up screen (screen C)” is displayed. Then the target value of counter can be set.





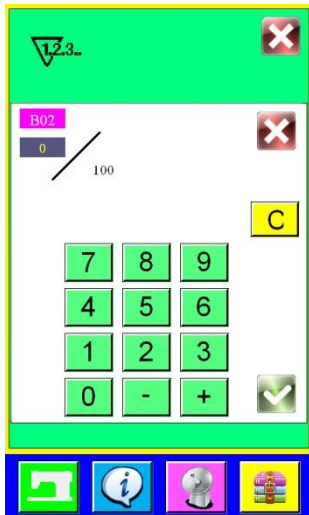
Numerical setting pop-up screen (screen C)

Here, input the target value of counter. When “0” is inputted to the target value of counter, only the existing value is displayed during sewing and the count-up screen is not displayed.



4) **Change the existing value of counter**

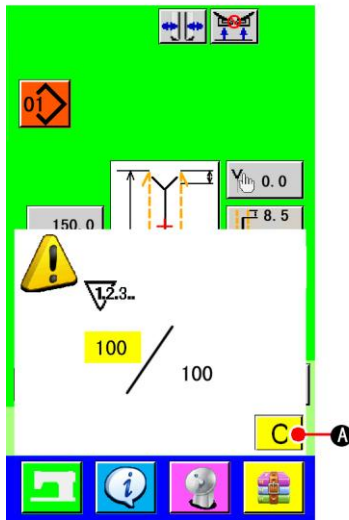
In case of the sewing counter, press button  and in case of the number of pcs. counter, press  and “Numerical setting pop-up screen (screen D)” is displayed. Then the existing value of counter can be set.



Here, input the existing value of counter.

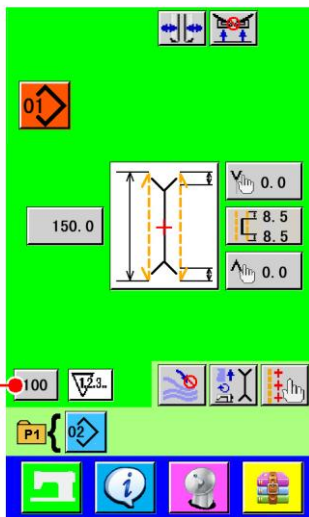
Numerical setting pop-up screen (screen D)

(2) Releasing procedure of count-up



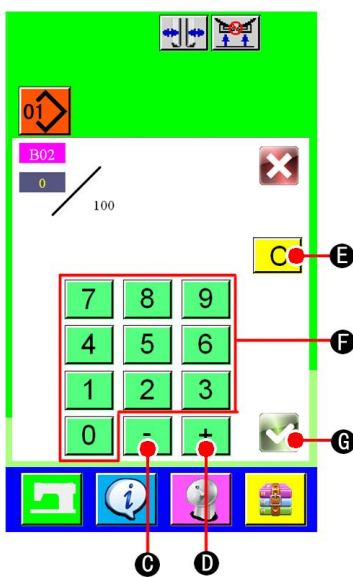
During the sewing work, the count-up condition is reached the count-up screen is displayed and the buzzer sounds. Press CLEAR button **C** ^(A) to reset the counter, and the screen returns to the sewing screen. And, counting starts again.

(3) Counter value changing procedure during sewing



1) Display the counter value change screen

When you desire to change the counter value during the sewing work, press COUNTER VALUE CHANGE button **100** ^(A) on the sewing screen. Counter value change screen is displayed.



2) Change the counter value

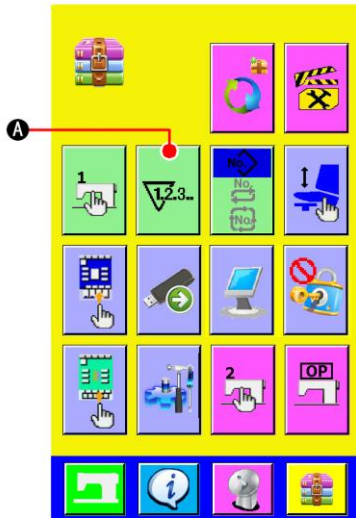
Change the counter value with TEN keys **0** ~ **9** ^(F) or “-” “+” button **-** ^(C) (**+** ^(D)).

3) Determine the counter value


Press ENTER button **✓** ^(G) and the data is determined. When you desire to clear the counter value, press CLEAR button **C** ^(E).


4. USING THE BOBBIN THREAD AMOUNT ADJUSTMENT COUNTER

(1) Setting procedure of the bobbin thread remaining amount adjustment counter

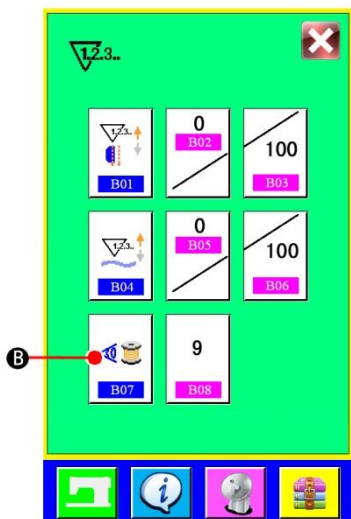


1) Display the counter setting screen

Press MODE CHANGEOVER key  from the input screen ,


COUNTER SETTING button  (A) is displayed on the screen .

Press this button and “Counter setting screen (screen A) “is displayed



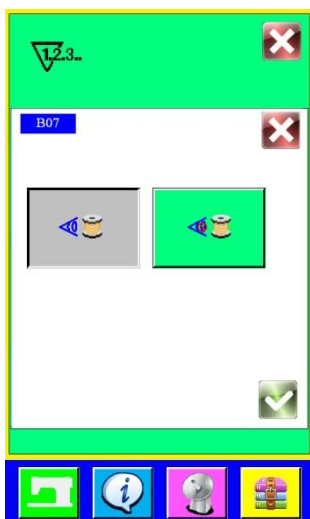
2) Set the bobbin thread remaining amount adjustment counter to ON.

Press BOBBIN THRESD REMAINING AMOUNT ADJUSTMENT



COUNTER MOTION SETTING button  B, and “bobbin thread

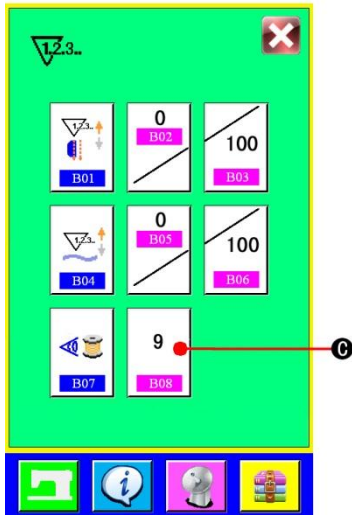
remaining amount adjustment counter setting pop-up screen (screen B)” is displayed. Then the bobbin thread remaining amount adjustment counter motion (ON/OFF) can be set .

Counter setting screen (screen A)



Bobbin thread remaining amount adjustment counter setting pop-up screen (screen B)


【Bobbin thread remaining amount detection】	
	Bobbin thread remaining amount adjustment counter ON: The counter detects the reflecting light from bobbin and informs that bobbin thread remaining amount is running out. Every time one sewing is performed, the counter value is subtracted and the count-up screen is displayed when the existing value is reached to “0”.
	Bobbin thread remaining amount adjustment counter OFF Bobbin thread remaining amount detection is set to the prohibition.

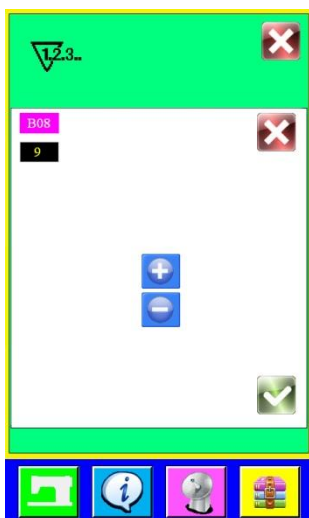


Counter setting screen(screenA)

3) **Set the bobbin thread remaining amount adjustment value**

Press BOBBIN THREAD REMAINING AMOUNT ADJUSTMENT

VALUE SETTING button  and the bobbin thread remaining amount adjustment value setting screen (screen B) is displayed.



Bobbin thread remaining amount adjustment value setting screen (screen B)

Here, input the bobbin thread remaining amount adjustment value (0 to 9). Set the number of times of sewing from detecting run-out of bobbin thread by the sensor to performing the count-up display.



When you desire to lengthen the remaining length bobbin thread:

→ Decrease the number (toward “0”).

When you desire to shorten the remaining length of bobbin thread:

→ Increase the number (toward 9).

* **Setting of the bobbin thread remaining amount adjustment counter** *

- 1) Set the bobbin thread remaining amount adjustment counter to the value shown in the table below.
- 2) Start the sewing to perform regular sewing. In case of test sewing, adjust the sewing length to that to be sewn in the actual process.
- 3) As you continue sewing, the bobbin thread is gradually reduced and the run-out of bobbin thread is displayed in the screen when the bobbin sensor detects the reflecting light.
- 4) At this time, check the length of bobbin thread remaining on the bobbin and properly modify the value on the counter.
- 5) Increasing the counter value by 1 will shorten the remaining length of bobbin thread by the amount that is consumed for one time of sewing.
- 6) The remaining length of bobbin thread at the time when the indication of run-out of bobbin thread varies by a certain extent. This variation depends on the type of thread, sewing length and the winding way of thread. The remaining length of bobbin thread is shown, as a guide, in the table below. Correct the counter value in accordance with sewing conditions and the like so that the bobbin thread does not completely run out during sewing.

[The table shows the counter value when the sewing length is set to 150 mm]

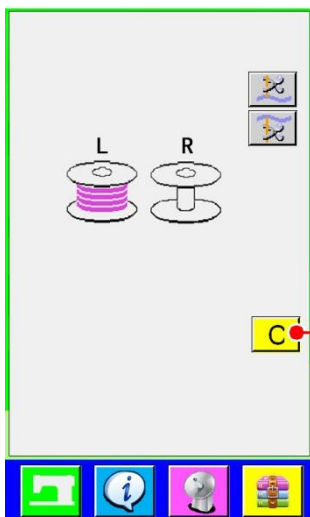
Thread count	Counter value	Bobbin thread remaining length for reference (m)
# 40	1	0.4~2.6
# 50	2	0.2~2.6
# 60	2	0.4~2.8
# 80	3	0.1~3.0



- The bobbin thread remaining length has to be re-adjusted in the case described below.
 1. When the sewing length for the sewing product has been changed.
 2. When the thread count of bobbin thread has been changed.
- The value of bobbin thread remaining amount counter is cleared by inputting the value of the bobbin thread remaining amount adjustment counter.

- 7) If the bobbin has run out of thread, the bobbin thread remaining amount detecting device is incapable of performing “bobbin thread remaining amount detection”. So, it is very important to specify a value on the bobbin thread remaining amount adjustment counter to allow the device to give the indication of “run-out 1) of bobbin thread” when the sufficient amount of bobbin thread remains.

(2) Releasing procedure of the bobbin thread remaining amount detection count-up



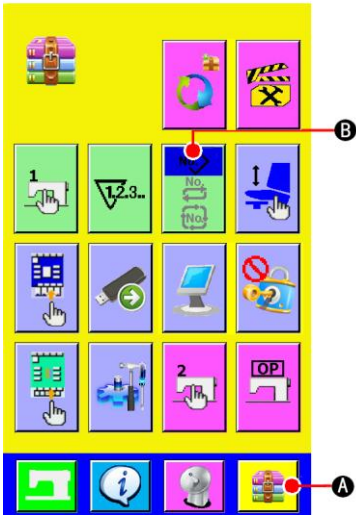
When the bobbin thread remaining amount counter value becomes “0” at the sewing end, the count-up screen is displayed and the buzzer sounds. Replace the bobbin thread of the bobbin where the bobbin thread remains few.

When CLEAR button **C** (A) is pressed, the bobbin thread remaining amount counter value is reset and the screen returns to the sewing screen.

5. CHANGING THE SEWING MODE

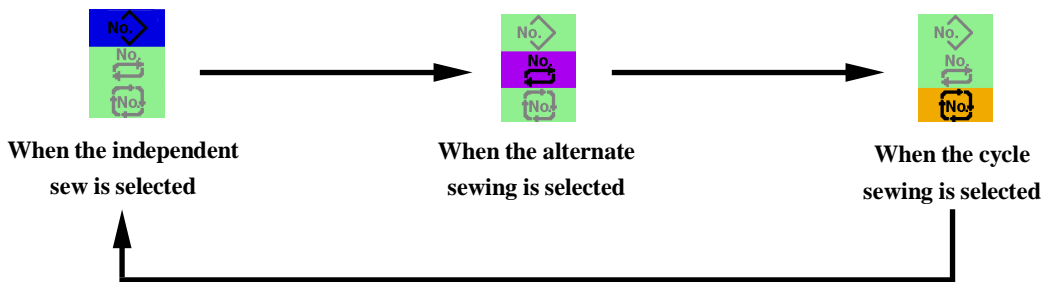
1) Display the sewing mode selection screen

Press SEWING MODE CHANGEOVER key  (A) and the mode change-over screen is displayed.




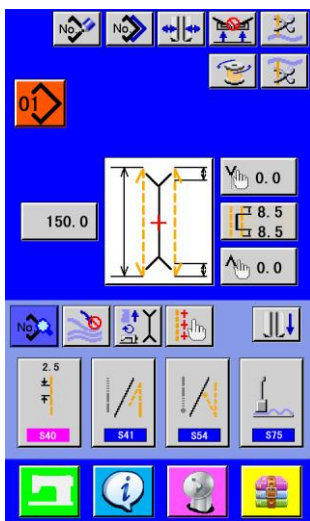
2) Select the sewing mode

Press MODE SELECTION button (B) and the indication of button is changed.

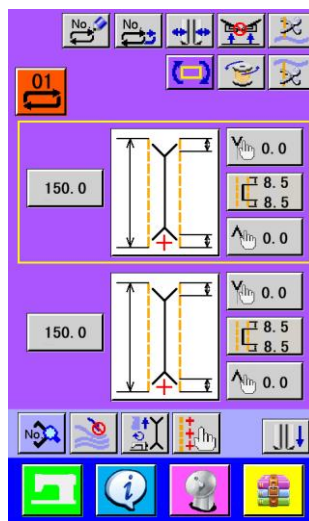


3) Determine the sewing mode.

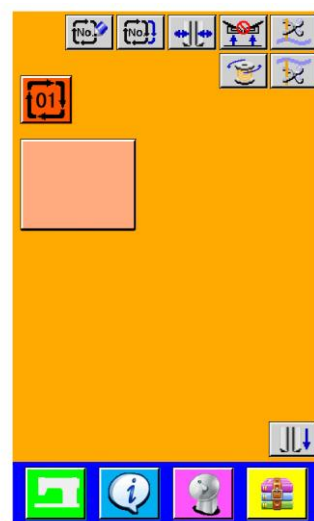
Press MODE CHANGEOVER key  (A) and the data input screen of the selected sewing mode is displayed.



Alternate sewing input screen



Independent sewing input screen



Cycle sewing input screen

6. USING THE SEWING PATTERN

(1) Performing the selection of pattern

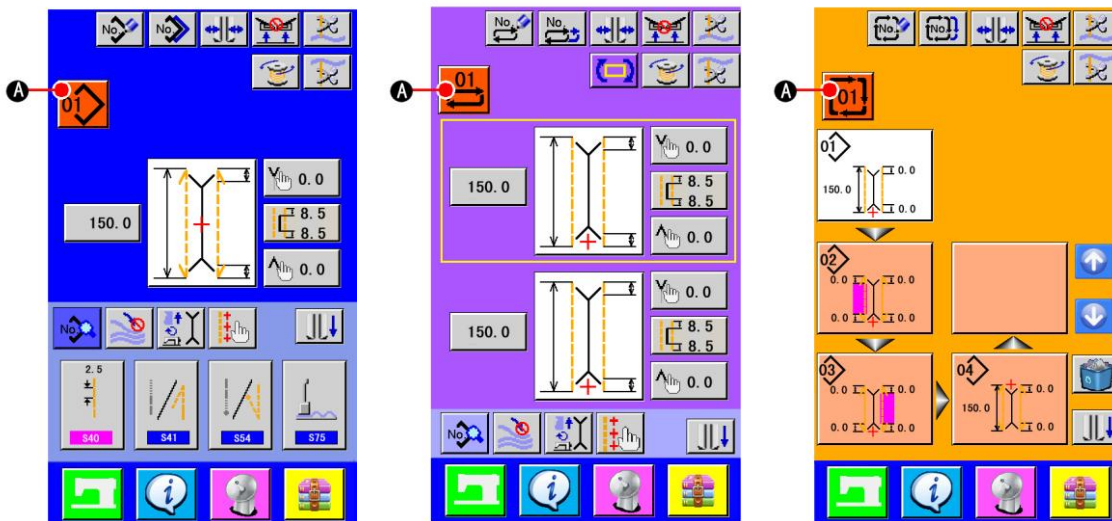
1) Display the input screen

When the input screen of independent sewing mode, alternate sewing mode and cycle sewing mode is displayed, the selection of pattern can be selected.

By customizing the sewing screen, the selection of pattern can be performed from the sewing screen as well

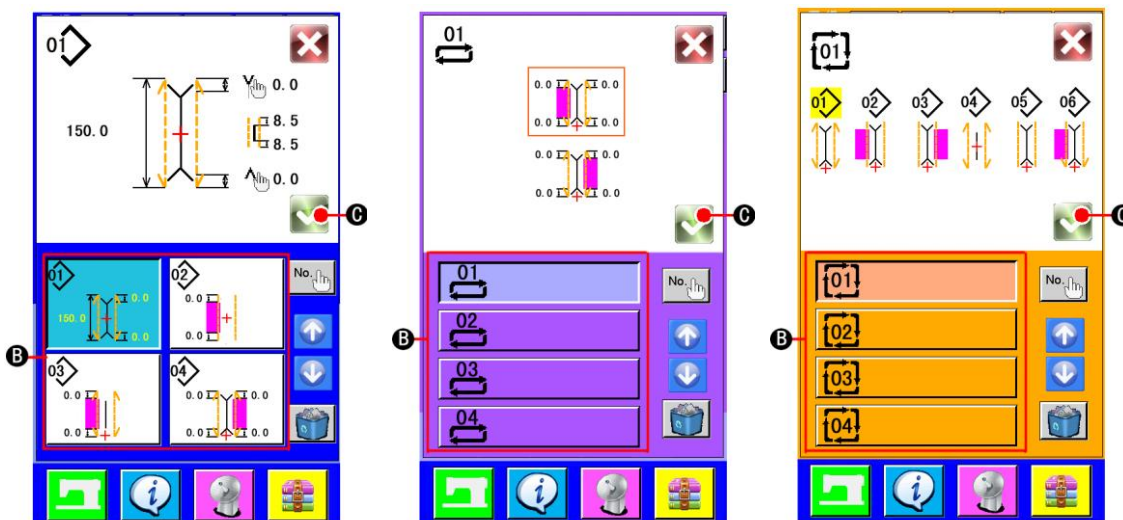
2) Call the pattern list screen

Press PATTERN LIST button ,  or  (A) and the pattern list screen is displayed.




3) Select the pattern

Press pattern data you desire to select (B).



4) Determine the pattern

When ENTER button  (C) is pressed, the pattern is selected and the screen returns to the input screen.

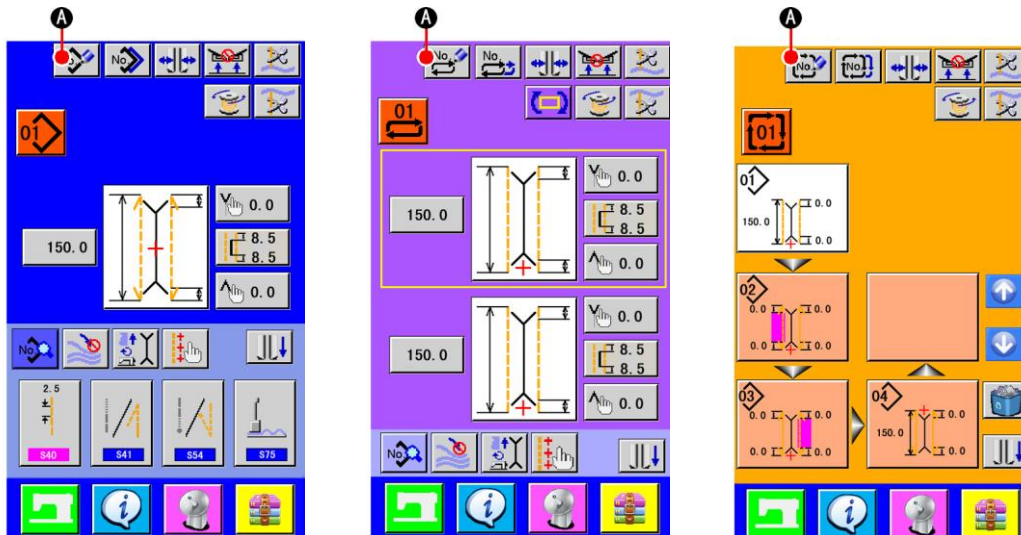
(2) Performing the new creation of pattern

1) Display the input screen

When the input screen of independent sewing mode, alternate sewing mode and cycle sewing mode is displayed, the new creation of pattern can be performed.

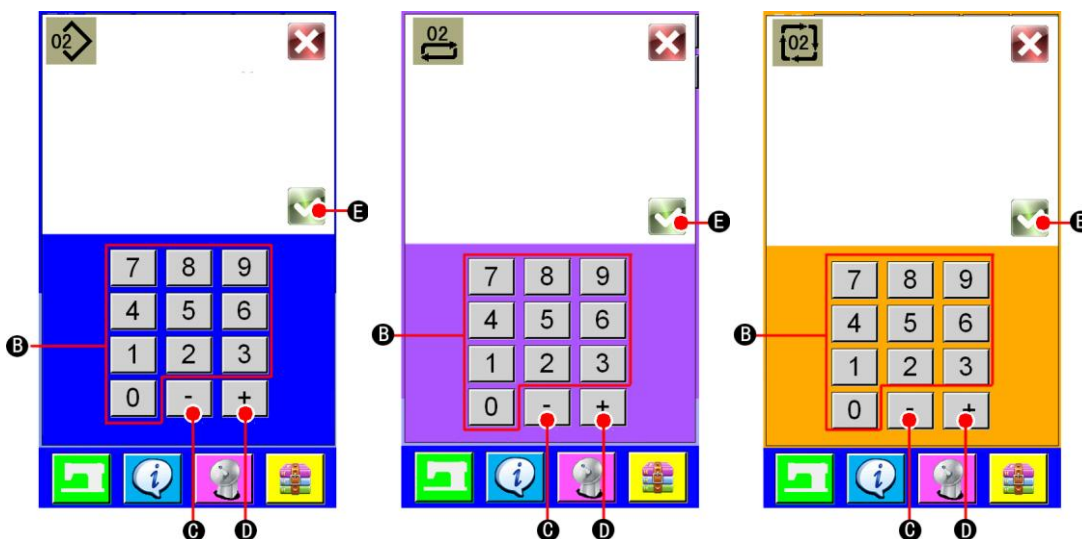
2) Call the sewing pattern new creation screen

Press NEW CREATION button ,  or  (A) and the pattern new creation screen is displayed.




3) Input the pattern No.

Input pattern NO, you desire to newly create with the keys **1** to **9** (B). It is possible to retrieve pattern NO. which has not been registered yet with “-”, “+” button **-** (C) and **+** (D).



4) Determine the pattern No.

When ENTER button  (E) is pressed, the pattern NO. to newly create is determined and the screen returns to the input screen

(3) Copying the pattern

The pattern which has been already registered can be copied to the sewing pattern which has not registered yet. Copying of overwriting of pattern is prohibited. So, when you desire to overwrite, perform it after erasing the pattern once.

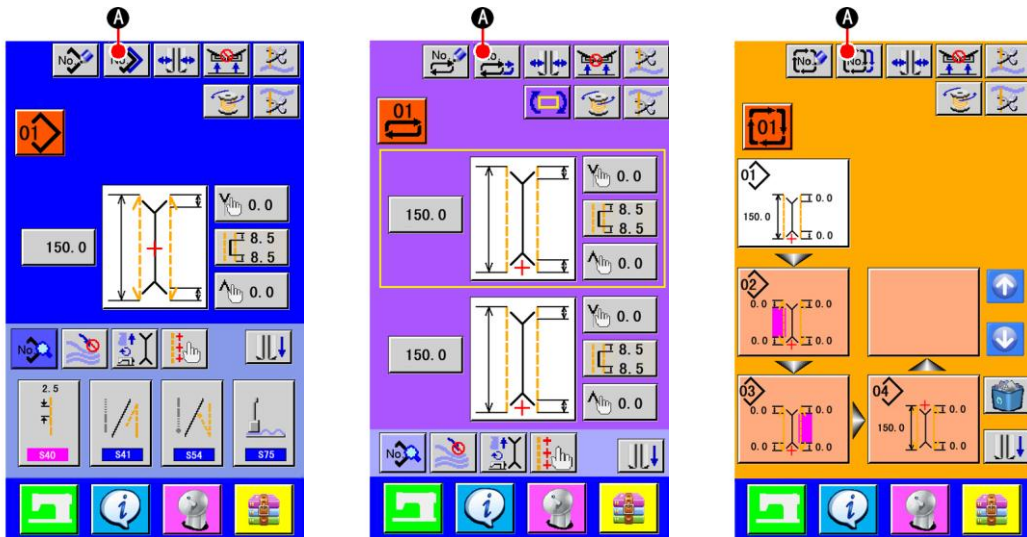
→For the erasing procedure, see "[VI-6.\(4\) Erasing the pattern](#)".



When performing copying the pattern No. which has been already registered, copy disapproved error (E401) is displayed.

1) Display the input screen

When the input screen of independent sewing mode, alternate sewing mode and the cycle sewing mode is displayed, it is possible to copy.




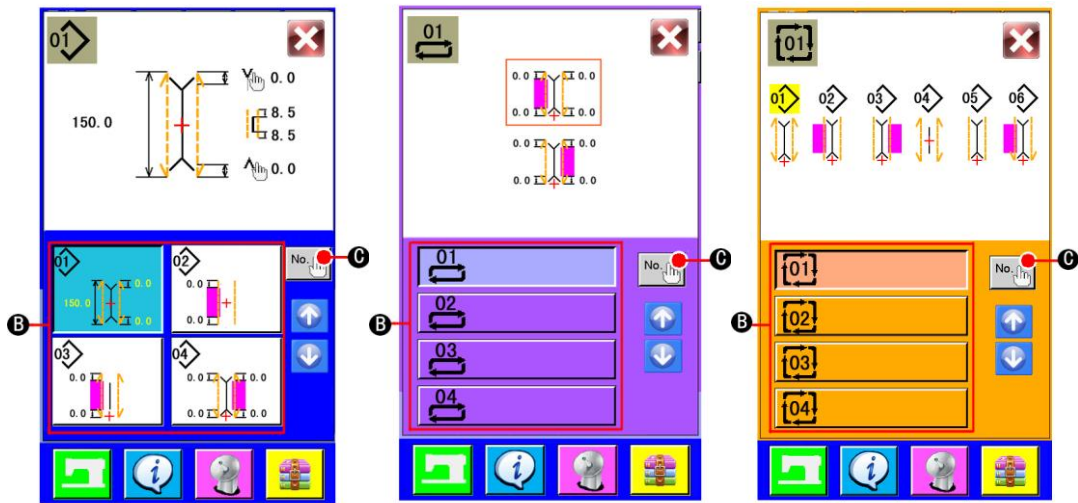
2) Call the pattern No. list screen of the copy source

Press PATTERN COPY button ,  or  (A) and the copy source pattern list screen is displayed.

3) Select the pattern of copy source





Select the pattern of copy source from PATTERN LIST button (B).

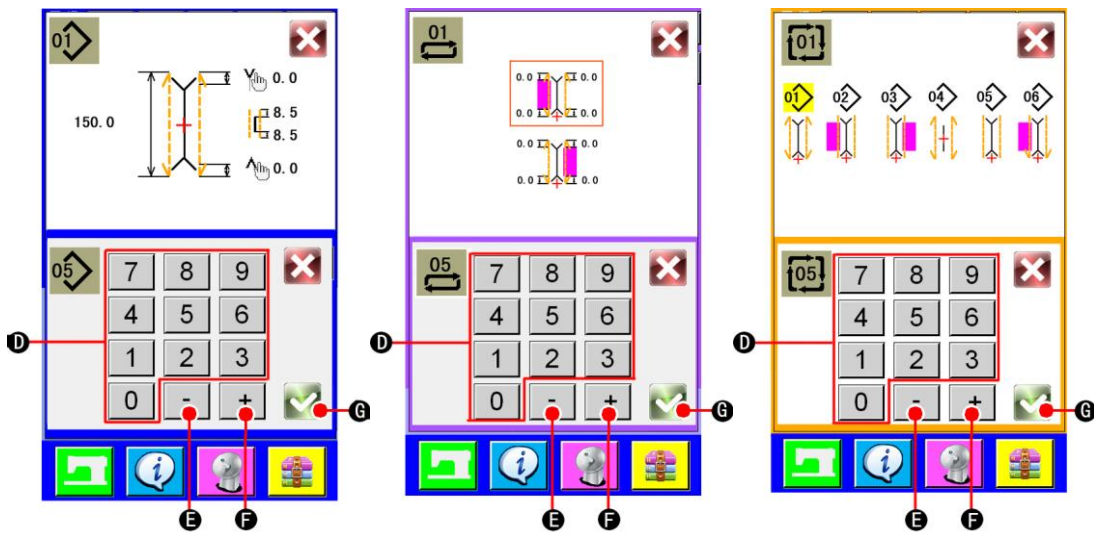
Next, press COPY DESTINATION NO. INPUT button  (C) and the copy destination input screen(screen B) is displayed.



Copy destination No. input screen (screen A)


4) Input the pattern No. of copy destination

Input the pattern No. of copy destination with ten keys  or  (D). It is possible to retrieve the pattern No. which has not been used yet with -,+ buttons  (E) and  (F).



Copy destination No. input screen (screen B)

5) Start copying

When ENTER button  (G) is pressed, copying start . The pattern No. which has been copied is in the selection state and returns to the copy source pattern list screen (screen A).

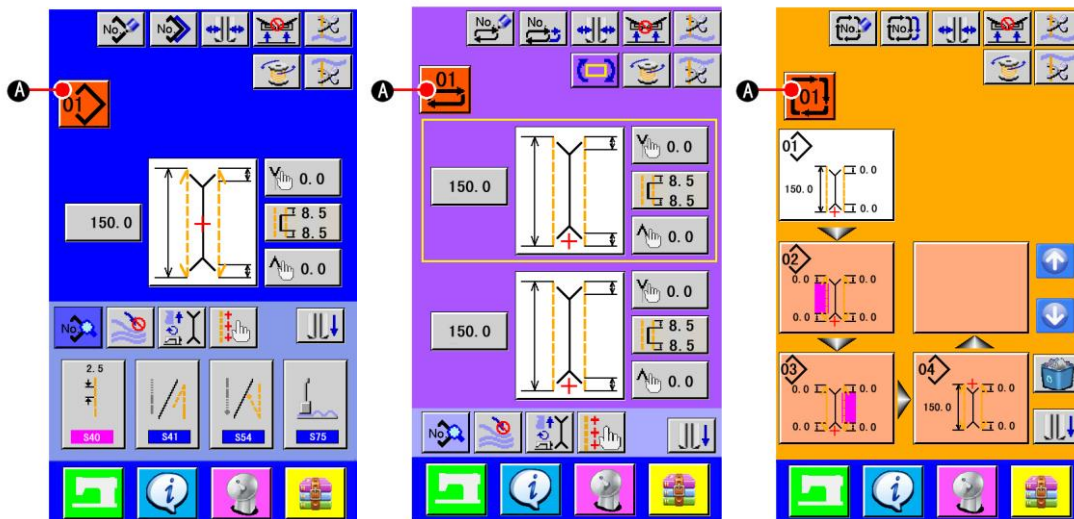
(4) Erasing the pattern

1) Display the input screen

When the input screen of independent sewing mode, alternate sewing mode and cycle sewing mode is displayed, it is possible to erase the pattern.


2) Call the pattern list screen

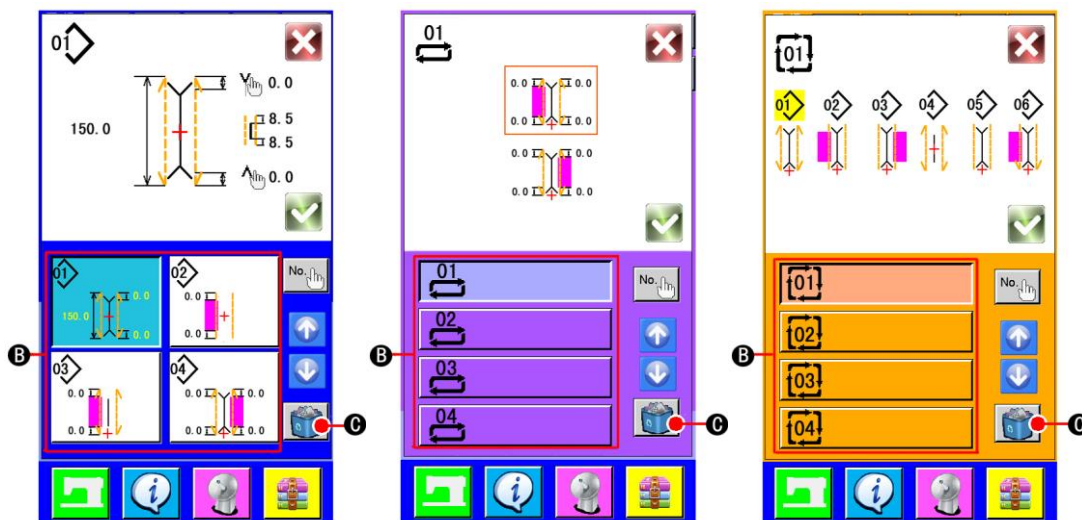
Press PATTERN LIST button ,  or  (A) and the pattern No. list screen (screen A) is displayed



3) Select the pattern to be erased


Select the pattern to be erased from pattern list button (B).


Next, press ERASE button  (C) and the pattern erase confirmation screen is displayed



Pattern No. list screen (screen A)

4) Determine the pattern to be erased

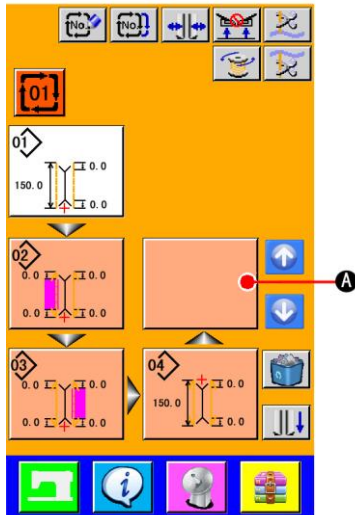
Press ENTER button  in the pattern erase confirmation screen and the pattern is erased. When CANCEL

button  is pressed, the screen returns to the original screen A without erasing the pattern.

(5) Editing procedure of the cycle sewing data



1) Display the cycle sewing input screen


When the input screen of cycle sewing is displayed, it is possible to edit the cycle sewing data.

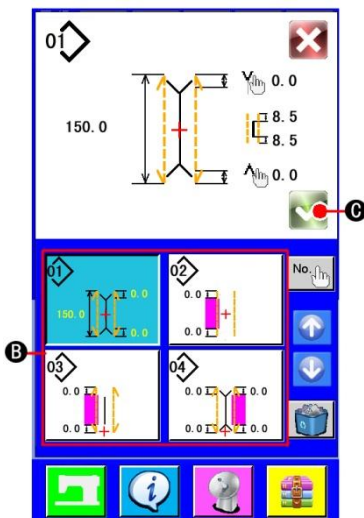


Cycle sewing input screen
(screen A)

2) Register the pattern data

Press BLANK button  (A) and the pattern list screen (screen B) is displayed. Select the pattern data you desire to register from PATTERN LIST button (B) and press ENTER button  (C). Then the selected pattern data is registered to the blank section.

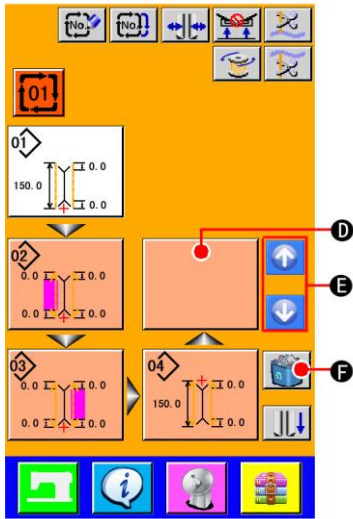
When the first pattern data is registered, BLANK button  is displayed in the second place. Repeat the operation of (2) in case of need.



Pattern list screen (screen B)







As many as 6 pattern data can be registered to the cycle sewing data.

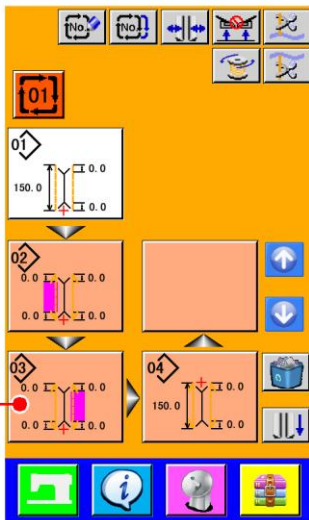


Cycle sewing input screen (screen C)


3) Erase the registered pattern data

Press ERASE button  (F) and the pattern data which is displayed with white emphasis is erased. Select the pattern data you desire to erase with UP/DOWN SCROLL buttons  and  (E) and erase it.

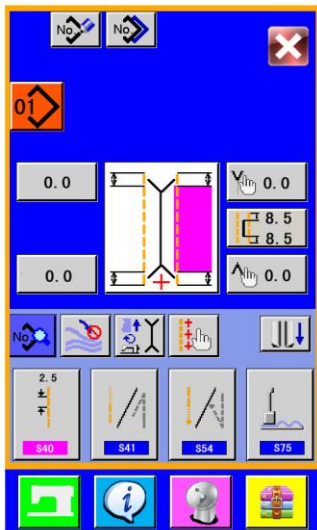
 The pattern data which is displayed with white emphasis is the pattern data to be sewn next. So, move it in accordance with the sewing work.



4) Edit the registered pattern data

Press PATTERN DATA button  (G) you desire to edit and the pattern data edit screen (screen D) is displayed in pop-up.

→refer to "VI-2-(1) Input screen (Independent sewing mode)".



Pattern data edit screen (screen D)

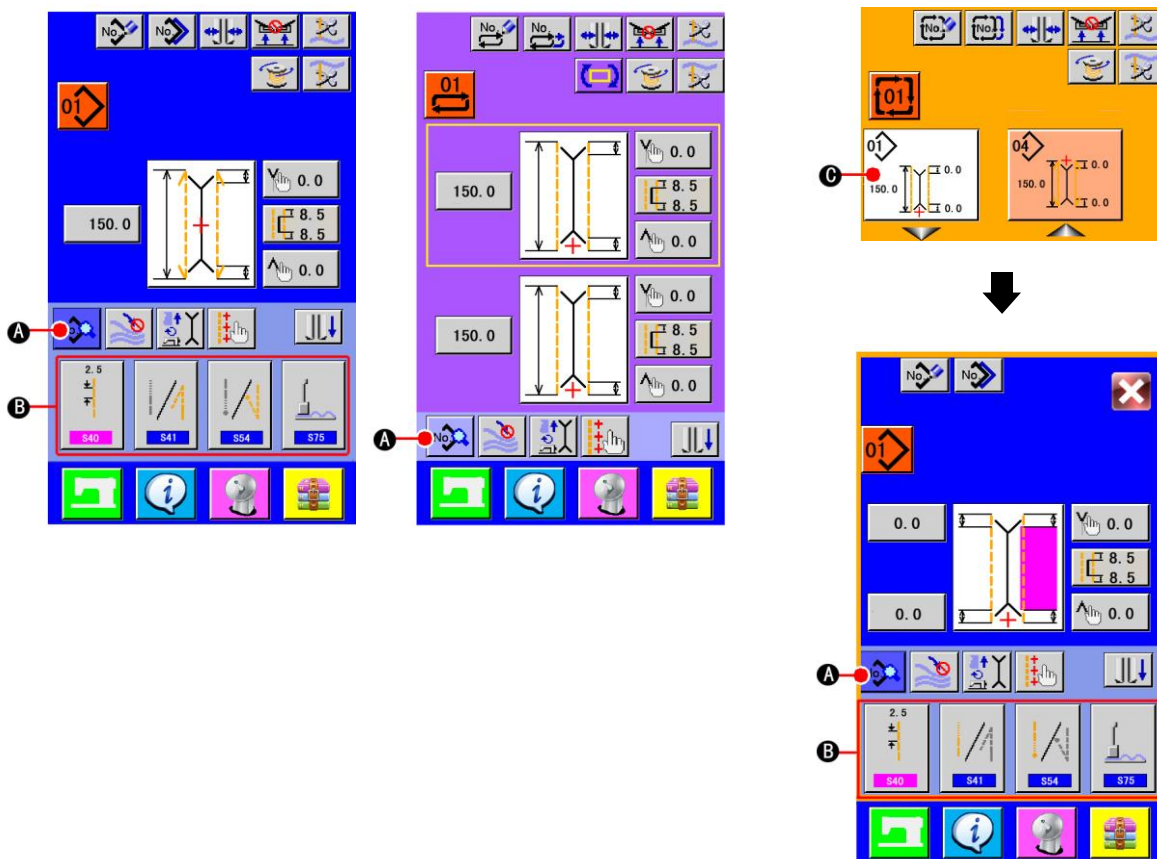
7. CHANGING THE SEWING DATA

(1) Changing procedure of the sewing data

1) Display the input screen

When the input screen of independent sewing mode, alternate sewing mode and cycle sewing mode is displayed it is possible to change the swing data.

The sewing data which are frequently used can be registered to SEWING DATA SHORTCUT button (B) in the input screen and be set directly. In addition, the detailed sewing data can be set by pressing No (A).



1. When changing the sewing data of cycle sewing mode, press PATTERN DATA EDIT button (C) and it is possible to change.



2. In case of alternate sewing mode, SEWING DATA SHORTCUT button (B) is not displayed.

3. For SEWING DATA SHORTCUT button (B), refer to "VI-11. CUSTOMIZING THE DATA INPUT SCREEN"

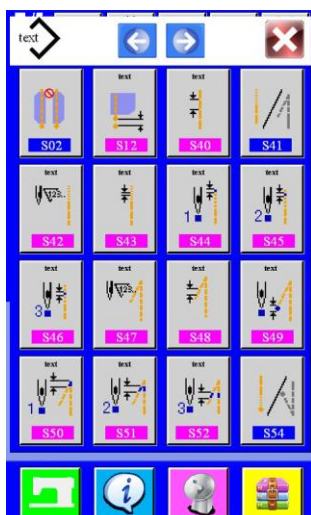
4. For the details of sewing data, refer to "1) Items displayed in the data input screen of VI-7-(2) Sewing data list"

2) Select the sewing data to be changed

Press No (A) and the sewing data list screen (screen A) is displayed. Then select the data you desire to change.






















Data items which are not used due to the shape are not displayed. So, be careful.






















Sewing data list screen (screen A)

(2) Sewing data list

1) Items that are displayed in the data input screen













No.	Item	Setting range / Edit unit	Initial value
S01	<p>Motion mode change-over With/without of motion of sewing machine motor, center knife and corner knife is selected.</p>  Cloth feed mode  Cloth feed, sewing machine thread trimming and center knife mode  Cloth feed, sewing machine thread trimming  Cloth feed, sewing machine thread trimming, center knife and corner knife mode	---	
S03	<p>Sewing mode change-over Sewing mode is selected. * In case of alternate sewing, flap priority sewing is set with S02.</p>  L size sewing  Left flap sewing  Right flap sewing  Flap priority sewing	---	
S04	<p>L size setting In case of L size sewing, the sewing length is set. * It is possible to set only when setting L size sewing S03.</p> 	18.0~220.0 / 0.1mm	150.0mm
S05	<p>Marking light irradiation position change-over Sewing start irradiation/sewing end irradiation/center irradiation is selected.</p>  Sewing start irradiation  Sewing end irradiation  Center irradiation	---	
S08	<p>Flap concealed stitching data (Left sewing start) Position of sewing start of left-hand flap is adjusted. * It is possible to set only when is set to flap sewing S03.</p> 	-9.9~9.9 / 0.1mm	0.0mm
S09	<p>Flap concealed stitching data (Left sewing end) Position of sewing end of left-hand flap is adjusted. * It is possible to set only when is set to flap sewing S03.</p> 	-9.9~9.9 / 0.1mm	0.0mm
S10	<p>Flap concealed stitching data (Right sewing start) Position of sewing start of right-hand flap is adjusted. * It is possible to set only when is set to flap sewing S03.</p> 	-9.9~9.9 / 0.1mm	0.0mm
S11	<p>Flap concealed stitching data (Right sewing end) Position of sewing end of right-hand flap is adjusted. * It is possible to set only when is set to flap sewing S03.</p> 	-9.9 ~ 9.9 / 0.1mm	0.0mm


No.	Item	Setting range / Edit unit	Initial value
S13	Changeover of deflection direction at the start of sewing Changeover of deflection direction at the start of sewing is performed. 	---	
S14	Deflection amount at the start of sewing In case the start of sewing is the slant sewing setting, deflection amount is compensated. In case the start of sewing is the parallel sewing setting, deflection amount cannot be compensated. (Remark: This parameter is only displayed in the slanted pocket machine.) 	0.5~10.0 / 0.1mm	0.0mm
S15	Changeover of deflection direction at the end of sewing Changeover of deflection direction at the end of sewing is performed. (Remark: This parameter is only displayed in the slanted pocket machine.) 	---	
S16	Deflection amount at the end of sewing In case the end of sewing is the slant sewing setting, deflection amount is compensated. In case the end of sewing is the parallel sewing setting, deflection amount cannot be compensated. 	0.5~10.0 / 0.1mm	0.0mm
S17 S18	Center knife actuating position setting Cutting position of center knife at sewing start/sewing end is set.  Sewing start center knife position  Sewing end center knife position	0.0~25.0 / 0.1mm	7.0mm
S19	Corner knife actuating position at sewing start Cutting position of corner knife at sewing start is set. 	-9.9~9.9 / 0.1mm	0.0mm
S20	Corner knife actuating position at sewing end Cutting position of corner knife at sewing end is set. 	-9.9~9.9 / 0.1mm	0.0mm
S30 S31 S32	Marking light setting Marking light irradiation position in each case of sewing start irradiation/ sewing end irradiation/center irradiation is set.  Sewing start irradiation  Sewing end irradiation  Center irradiation	* Sewing start irradiation: 0~100.0. Center irradiation : 160.0~220.0. Sewing end irradiation 270.0~330.0 / 0.1mm	180.0mm








No.	Item	Setting range / Edit unit	Initial value
<p>S69</p>	<p>Roller stacker stop/motion change-over Stop/motion of roller stacker is selected. * It is displayed only when SP-47 is set to roller stacker mounting.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Stop</p> </div> <div style="text-align: center;">  <p>Motion</p> </div> </div>	---	
<p>S70</p>	<p>Clamp bar stacker stop/motion change-over Stop/motion of clamp bar stacker is selected. * It is displayed only when SP-46 is set to clamp bar stacker mounting.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Stop</p> </div> <div style="text-align: center;">  <p>Motion</p> </div> </div>	---	

..Item that is not displayed due to other setting state.




2) Items that are displayed in the sewing data list screen

No.	Item	Setting range / Edit unit	Initial value
S02	<p>Flap priority sewing selection Flap priority sewing mode is selected. * It is possible to set only when alternate sewing mode is set.</p>  Flap priority sewing prohibited  Flap priority sewing mode	---	
S12	<p>Flap forced stop data When flap sewing end is not detected, the machine stops after sewing as long as the set length from rear reference position. * It is possible to set only when S03 is set to flap sewing.</p> 	0.0~10.0 / 0.1mm	5.0mm
S40	<p>Lockstitch pitch Sewing pitch of lockstitch section is set.</p> 	2.0~3.4 / 0.1mm	2.5mm
S41	<p>Selection of condensation/back tack at sewing start Condensation/back tack at sewing start is selected.</p>  Condensation  Back tack	---	
S42	<p>Number of condensation stitches at sewing start Number of condensation stitches at sewing start is set. * It is possible to set only when S41 is set to selection of condensation.</p> 	3~19 / 1 stitch	5 stitch
S43	<p>Condensation pitch at sewing start Condensation sewing pitch at sewing start is set. * It is possible to set only when S41 is set to selection of condensation.</p> 	0.5~1.5 / 0.1mm	1.0mm
S44	<p>First stitch pitch of condensation sewing at sewing start First stitch pitch of condensation sewing at sewing start is set. * It is possible to set only when S41 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/back tack detailed setting. * It is possible to set only when the start of sewing is parallel.</p> 	0.1~1.5 / 0.1mm	1.0mm
S45	<p>Second stitch pitch of condensation sewing at sewing start Second stitch pitch of condensation sewing at sewing start is set. * It is possible to set only when S41 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/back tack detailed setting. * It is possible to set only when the start of sewing is parallel.</p> 	0.1~1.5 / 0.1mm	1.0mm







 --Item that is not displayed due to other setting state.

No.	Item	Setting range / Edit unit	Initial value
S46	<p>Third stitch pitch of condensation sewing at sewing start Third stitch pitch of condensation sewing at sewing start is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S41 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/back tack detailed setting. * It is possible to set only when the start of sewing is parallel. 	0.1~1.5 / 0.1mm	1.0mm
S47	<p>Number of back tack stitches at sewing start Number of back tack stitches at sewing start is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S41 is set to selection of back tack. 	1~12 / 1stitch	3stitch
S48	<p>Back tack pitch at sewing start Back tack sewing pitch at sewing start is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S41 is set to selection of back tack. 	0.5~3.0 / 0.1mm	2.0mm
S49	<p>Back tack tie stitch pitch at sewing start Back tack tie stitch at sewing start is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S41 is set to selection of back tack. 	-2.0~2.0 / 0.1mm	-1.5mm
S50	<p>First stitch pitch of return of back tack at sewing start First stitch pitch of return section of back tack sewing at sewing start is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S41 is set to selection of back tack. * It is possible to set only when U24 is set to selection of condensation/back tack detailed setting. * It is possible to set only when the start of sewing is parallel. 	0.1~3.0 / 0.1mm	2.0mm
S51	<p>Second stitch pitch of return of back tack at sewing start Second stitch pitch of return section of back tack sewing at sewing start is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S41 is set to selection of back tack. * It is possible to set only when U24 is set to selection of condensation/back tack detailed setting. * It is possible to set only when the start of sewing is parallel. 	0.1~3.0 / 0.1mm	2.0mm
S52	<p>Third stitch pitch of return of back tack at sewing start Third stitch pitch of return section of back tack sewing at sewing start is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S41 is set to selection of back tack. * It is possible to set only when U24 is set to selection of condensation/back tack detailed setting. * It is possible to set only when the start of sewing is parallel. 	0.1~3.0 / 0.1mm	2.0mm












..Item that is not displayed due to other setting state.

No.	Item	Setting range / Edit unit	Initial value
S54	Selection of condensation/back tack at sewing end Selection of condensation/back tack at sewing end is performed.  condensation  back tack	---	
S55	Back tack pitch at sewing end Back tack sewing pitch at sewing end is set. * It is possible to set only when S54 is set to selection of back tack.	3~19 / 1 stitch	5stitch
S56	Condensation pitch at sewing end Condensation sewing pitch at sewing end is set. * It is possible to set only when S54 is set to selection of condensation.	0.5~1.5 / 0.1mm	1.0mm
S57	The last stitch pitch of condensation The last stitch pitch of condensation sewing at sewing end is set. * It is possible to set only when S54 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/ back tack detailed setting. * It is possible to set only when the start of sewing is parallel.	0.1~1.5 / 0.1mm	1.0mm
S58	Pitch of one stitch before the last stitch of condensation Pitch of one stitch before the last stitch of condensation sewing at sewing end is set. * It is possible to set only when S54 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/ back tack detailed setting. * It is possible to set only when the start of sewing is parallel.	0.1~1.5 / 0.1mm	1.0mm
S59	Pitch of two stitch before the last stitch of condensation Pitch of two stitch before the last stitch of condensation sewing at sewing end is set. * It is possible to set only when S54 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/ back tack detailed setting. * It is possible to set only when the start of sewing is parallel.	0.1~1.5 / 0.1mm	1.0mm
S60	Number of back tack stitches at sewing end Number of back tack stitches at sewing end is set. * It is possible to set only when S54 is set to selection of back tack.	1~12 / 1stitch	3stitch
S61	Back tack pitch at sewing end Back tack sewing pitch at sewing end is set. * It is possible to set only when S54 is set to selection of back tack.	0.5~3.0 / 0.1mm	2.0mm

..Item that is not displayed due to other setting state.

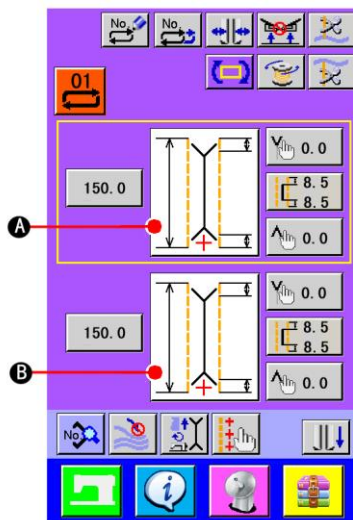
No.	Item	Setting range / Edit unit	Initial value
S63	<p>First stitch pitch of return of back tack at sewing end</p> <p>First stitch pitch of return section of back tack sewing at sewing end is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S54 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/ back tack detailed setting. * It is possible to set only when the start of sewing is parallel. 	0.1~3.0 / 0.1mm	2.0mm
S64	<p>Second stitch pitch of return of back tack at sewing end</p> <p>Second stitch pitch of return section of back tack sewing at sewing end is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S54 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/ back tack detailed setting. * It is possible to set only when the start of sewing is parallel. 	0.1~3.0 / 0.1mm	2.0mm
S65	<p>Third stitch pitch of return of back tack at sewing end</p> <p>Third stitch pitch of return section of back tack sewing at sewing end is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S54 is set to selection of condensation. * It is possible to set only when U24 is set to selection of condensation/ back tack detailed setting. * It is possible to set only when the start of sewing is parallel. 	0.1~3.0 / 0.1mm	2.0mm
S67	<p>The last stitch pitch of back tack at sewing end</p> <p>The last stitch pitch of back tack at sewing end is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S54 is set to selection of condensation. 	-2.0~2.0 / 0.1mm	-1.5mm
S68	<p>Compensation of back tack return at sewing end</p> <p>Compensation value of back tack return at sewing end is set.</p> <ul style="list-style-type: none"> * It is possible to set only when S54 is set to selection of condensation. 	-2.0~2.0 / 0.1mm	1.0mm
S71	<p>Stacking position</p> <p>After moving clamp foot as far as the set distance from the position of corner knife, stacker is actuated. (+ : rear side, - : front side).</p> <ul style="list-style-type: none"> * Range of actuating amount is limited by the position of clamp foot at the time of sewing end. * Use SP-46 clamp bar stacker or SP-47 roller stacker. In addition, it is possible to set only when S69 roller stacker motion setting or S70 clamp bar stacker motion setting is performed. 	-500~500 / 1mm	0mm

...Item that is not displayed due to other setting state.

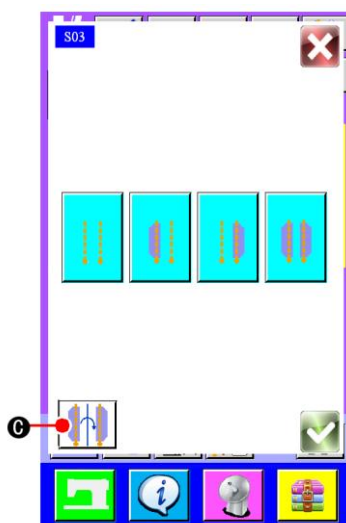
No.	Item	Setting range / Edit unit	Initial value
S72	Stacker timer 1 Roller rotation time is set. When material sensor has detected without material before setting time, rotation stops. * S72 SP-47 roller stacker option is used and it is possible to set only when S69 roller stacker motion is set. 	0.0~9.9 / 0.0 sec	1.0 sec
S73	Jump feed speed up to the position of sewing start Jump feed speed up to the position of sewing start is set. 	3~10 / 1	5
S74	Jump feed speed up to the position of corner knife Jump feed speed up to the position of corner knife is set. 	3~10 / 1	5
S75	Middle mandril device stop/motion change-over Stop/motion of middle mandril device is selected. * It is possible to set only when SA117 middle mandril option is used.  Stop  Motion	---	
S77	Revise the length of sewing Revise the length of sewing. 	-9.9~9.9 / 0.1mm	0.0mm
S78	Sewing speed under the high-speed mode Number of revolutions at lockstitch section is set. 	1000~ 3000 / 100rpm	2500rpm
S79	Sewing speed under the low-speed mode Number of revolutions at condensation and back tack sewing sections is set. * It is limited by S78 sewing speed under the high-speed mode. 	1000~ 2500 / 100rpm	1500rpm
S80	The distance of left-hand flap check points to sewing point Set the distance of left-hand flap check points to sewing point. 	30~45mm	37mm
S81	The distance of right-hand flap check points to sewing point Set the distance of right-hand lap check points to sewing point. 	30~45mm	37mm

---Item that is not displayed due to other setting state.

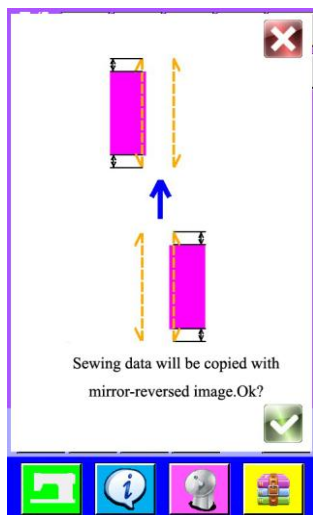
(3) Copying function of the upper and lower alternate sewing data




- 1) **Display the alternate sewing input screen.**
When the input screen of the alternate sewing mode is displayed, it is possible to copy the upper and lower data.
- 2) **Call the sewing mode changeover screen.**
Press SEWING MODE SETTING button to display the sewing mode changeover screen. When you desire to copy the upper sewing data to the lower sewing data, press button (B) on the lower side and you desire to copy the lower sewing data to the upper sewing data, press button (A) on the upper side.




- 3) **Copy the alternate sewing data.**
Press UPPER/LOWER SEWING DATA COPY button (C) in the sewing mode changeover screen.



4) Start copying.

When ENTER button  is pressed in the copy confirmation screen, the left and right sewing data are inversely copied. When

CANCEL button  is pressed, the screen returns to the original sewing mode changeover screen without copying.

※ **The sewin data below are inversed from the left to the right at the time of copying. (Other sewing data are copied without inversion.)**

No.	Item
S03	Sewing mode changeover
S08	Flap concealed stitching data (Left sewing start)
S09	Flap concealed stitching data (Left sewing end)
S10	Flap concealed stitching data (Right sewing start)
S11	Flap concealed stitching data (Right sewing end)
S13	Changeover of deflection direction at the start of sewing
S15	Changeover of deflection direction at the end of sewing
S25	Setting of right width of corner knife at the start of sewing
S26	Setting of left width of corner knife at the start of sewing
S27	Setting of right width of corner knife at the end of sewing
S28	Setting of left width of corner knife at the end of sewing

8. CHANGING THE MEMORY SWITCH DATA


(1) Changing procedure of the memory switch data

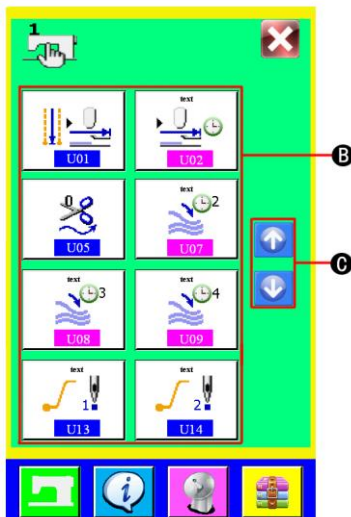


1) Display the memory switch data list screen





Press MODE CHANGE-OVER key  and the memory switch button



 is displayed. When this button is pressed, the memory switch data list (screen A) is displayed.



2) Select the memory switch button you desire to change









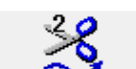

Press UP/DOWN SCROLL button  or   and select DATA ITEM button  you desire to change.

Memory switch data list screen
(screen A)
















(2) Memory switch data list


1) Level 1


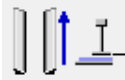
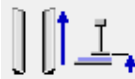







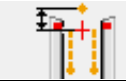

Memory switch data (level 1) are the motion data that the sewing machine has in common and the data that operate on all sewing patterns in common.

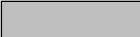
No.	Item	Setting range / Edit unit	Initial value
U01	Change-over of the position of clamp foot after sewing end Position of clamp foot after sewing end is selected from Stop at front end/Return to medium/Clamp return/Stop at rear end.  Stop at front end  Return to medium  Clamp return  Stop at rear end		
U02	Front end motion start waiting time Waiting time up to the start of front end motion of clamp foot is set. * It is possible to set only when U01 is set to the stop at front end. 		
U05	Thread trimming timing Thread trimming timing after sewing is selected from Standard/ Medium/Longest and length of thread at sewing end is adjusted.  Standard 0  Medium 1  Longest 2		
U07	Stacher timer 2 Waiting time from the start of clamp motion to hold material on the stacher base to release the material presser is set. * It is possible to set only when SP-46 clamp bar stacher option is used.	0.00~9.99 / 0.01 sec	0.70sec
U08	Stacher timer 3 Motion time of material sweeping bar is set. * It is possible to set only when SP-46 clamp bar stacher option is used.	0.00~9.99 / 0.01sec	0.70 sec
U09	Stacher timer 4 Time to advance timing to release the sewing product by lifting clamp foot is set. When clamping a short sewing product, the amount to drop by tare is adjusted. * It is possible to set only when SP-46 clamp bar stacher option is used.	0.00~9.99 / 0.01sec	0.00sec
U13	Soft start, first stitch Number of revolutions of first stitch at sewing start is limited.	500~2500 / 100rpm	500rpm
U14	Soft start, second stitch Number of revolutions of second stitch at sewing start is limited.	500~2500 / 100rpm	700rpm

---Item that is not displayed due to other setting state.

No.	Item	Setting range / Edit unit	Initial value
U15	Soft start, second stitch Number of revolutions of second stitch at sewing start is limited.	500~2500 / 100rpm	1000rpm
U16	Return speed of clamp foot Return speed of clamp foot is set.	3~9 / 1	7
U17	Thread breakage detection With/without thread breakage detection is selected.  With thread breakage detection  Without thread breakage detection	---	
U18	Flap presser motion mode Motion order of flap presser is selected.  From right  From left  Right/Left at the same time  Side where flap is put * When right and left are simultaneously actuated with customizing of pedal setting, this parameter is neglected and the right and left are simultaneously actuated.	---	
U19	Clamp foot down order change-over Lowering order of clamp foot is selected.  From right  From left  Right/Left at the same time * When right and left are simultaneously actuated with customizing of pedal setting, this parameter is neglected and the right and left are simultaneously actuated.	---	
U20	Folding plate motion mode “Return/No return” of folding plate when corner knife projects is selected.  Return  No Return	---	









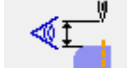








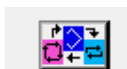

 ...Item that is not displayed due to other setting state.







No.	Item	Setting range / Edit unit	Initial value
U21	Center foot pressure reduction rise prohibition Pressure reduction rise of the center foot at the time of jump feed is prohibited.  Pressure reduction rise is prohibited  Pressure reduction rise	---	
U22	Standing pedal continuous depressing timer effective/ineffective change-over Effective/ineffective of standing pedal continuous depressing timer is selected. * It is possible to set only when K54 one-shot pedal is set.  Ineffective  effective	---	
U23	Standing pedal continuous depressing timer When performing sewing product setting work with the standing pedal depressed, the time interval when the respective devices operate in order is set. * It is possible to set only when K54 one-shot pedal is set. 	0.1~2.0 / 0.1sec	0.5sec
U24	Condensation/back tack detailed setting Detailed setting “Perform/Not perform” of pitch of condensation/back tack section is selected.  Perform  Not perform	---	
U25	Flap stopper position In case of flap sewing, sewing start irradiation position of marking light (distance from needle) is set * Setting is only the irradiation position of marking light. Actual sewing position is the flap end position detected by the flap sensor. 	80.0~280.0 / 0.1mm	80.0mm
U28	Number of stitches of grease-up Number of stitches of sewing machine motion after replenishing grease is indicated. * When pressing CLEAR button, number of stitches is cleared to “0”. Be sure to clear after replenishing grease. 	---	---
U29	Language selection Language to be indicated in the panel is selected. <div style="display: flex; justify-content: space-around;"> <div data-bbox="312 1715 539 1760"> English English </div> <div data-bbox="727 1715 960 1760"> 中文 Chinese </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div data-bbox="312 1805 571 1850"> Indonesia Indonesian </div> </div>	---	No selection

 ...Item that is not displayed due to other setting state.

2) Level 2

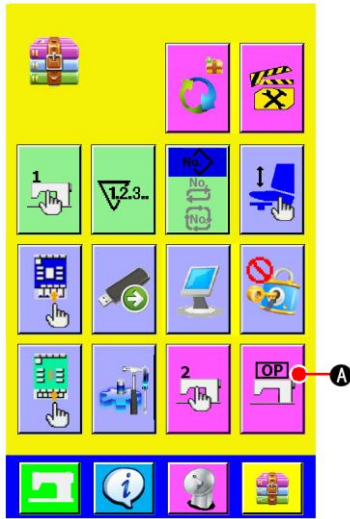
Memory switch data (level 2) are the motion data that the sewing machine has in common and the data that operate on all sewing patterns in common. The data are for the maintenance personnel and possible to edit by pressing the mode switch as long as 6 seconds.

No.	Item	Setting range / Edit unit	Initial value
U30	Pedal operation mode change-over Mode to be used for foot pedal is set.  7-step pedal mode  1-shot pedal mode	---	
U31	Speed of center knife cutting The speed of center knife cutting can be set. 	800~2500 / 100	1400
U32	Setting of intermittent feed prohibition Perform/not perform intermittent feed sewing is selected. * When performing intermittent sewing, the max. sewing speed of sewing machine is limited 1,500rpm.  Perform intermittent feed sewing  No perform intermittent feed sewing	---	
U33	Change-over of flap concealed stitching data edit reference Making the flap concealed stitching data that is set from panel the compensation value from the flap detecting end or the distance from detecting sensor to sewing start is selected.  Flap detecting end compensation  Sensor compensation	---	
U34	Setting of Swinging needle to section of back tack Set whether need to open sewing needle bar function to back tack  OFF  ON	---	
U35	Selection of reflecting tape check mode ON/OFF of reflecting tape check mode is set. When ON is set, the clamp foot is automatically comes lowered with the first clamp foot advance motion after turning ON the power and deterioration check of reflecting tape is performed. * Clamp foot is automatically lowered. Be sure to use this function only in case of shim type.  OFF  ON	---	
U36	Selection of mode change-over button display in the pattern list screen Mode change-over button is displayed in the pattern list screen and data of different mode can be selected.  Non-display  Display	---	



No.	Item	Setting range / Edit unit	Initial value
U39	Center knife lowering time Center knife lowering time is set. 	10~100 / 1	40
U40	Center knife one-shot motion prohibition setting With/without one-shot motion to properly cut the cutting position of center knife on the side of the end of sewing is selected.  With one-shot motion  One-shot motion prohibited	---	
U41	Clamp foot motor origin compensation Origin of clamp foot motor is compensated. 	-10.0~10.0 / 0.1mm	0.0mm
U42	Corner knife motor origin compensation Origin of corner knife motor is compensated. 	-5.0~5.0 / 0.1mm	0.0mm

9. PERFORMING OPTIONAL SETTING

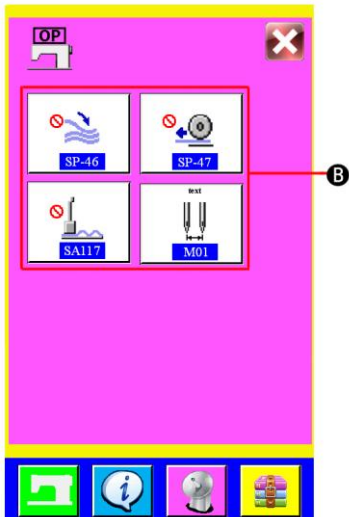
(1) Changing procedure of the optional setting



1) Displaying the optional setting list screen

Pressing MODE CHANGEOVER key , OPTIONAL SETTING button  (A) is displayed on the screen.

Press this button and the optional setting list screen (screen A) is displayed.













2) Selecting the option setting you want to change

Select DATA ITEM button (B) you want to change.

Optional setting list screen (screen A)

(2) Optional setting list

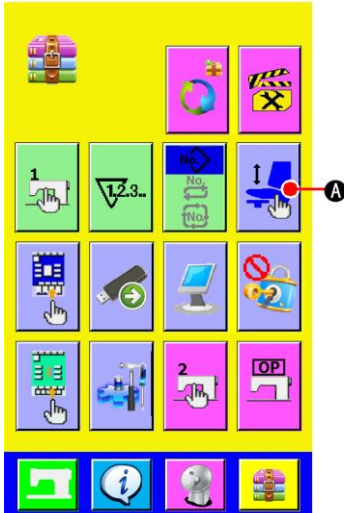
By setting the optional mounted state, it is possible to perform the respective optional operations.

No.	Item	Setting range / Edit unit	Initial value
SP-46	Clamp bar stacker mounting/not mounting is set  Not mounting  Mounting	---	
SP-47	Roller stacker mounting/not mounting is set.  Not mounting  Mounting	---	
SA117	Middle mandril mounting/not mounting is set.  Not mounting  Mounting	---	
MO1	Gauge size Gauge size of sewing machine is set. 	8~20 / 2mm	10mm

10. CUSTOMIZING THE PEDAL OPERATION

Operation functions of “Center foot down”, “Flap presser down”, etc. in terms of the number of the respective depressing steps of the pedal can be optionally registered in accordance with the using conditions. In addition, the customized pedal operation data can have as many as 5 kinds. Select and use them.

(1) Method to select and use the customized data

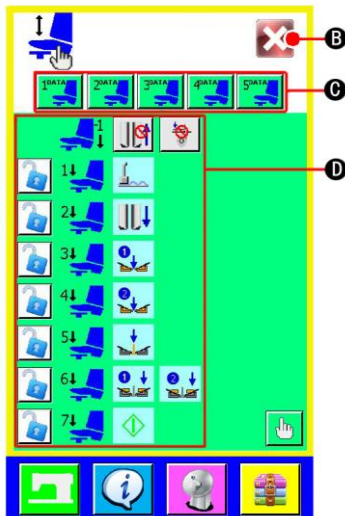




1) Display the pedal customizing screen

Press MODE CHANGEOVER key  and PEDAL CUSTOMIZING

button  is displayed on the screen.

Press this button and the pedal customizing screen (screen A) is displayed.

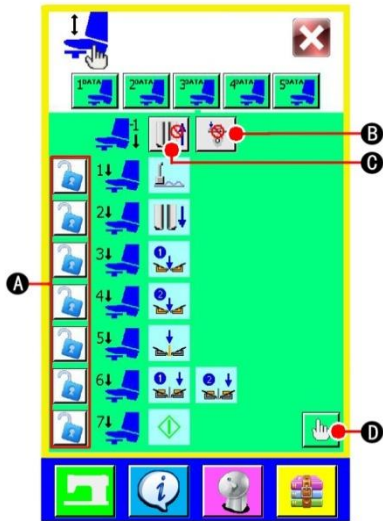



2) Select from button  5 kinds of pedal operation that are registered as customized. At this time, the contents of selected pedal operation data are displayed at .



3) When SCREEN END button   is pressed, the selected pedal operation data is determined and the screen returns to the original screen.


Pedal customizing screen (screen A)



(2) Customizing the pedal operation data






- 1) Press button  (C), and set whether to make the clamp foot recede or not with the pedal depressed to the reverse step.

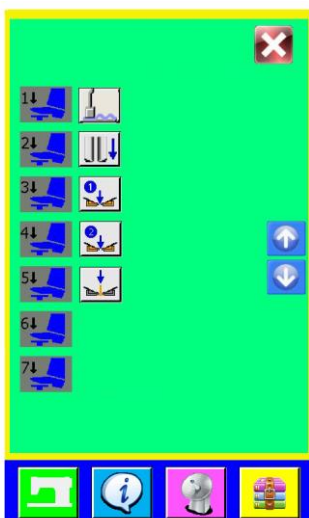
Display	Description
	To make clamp foot recede
	Not to make clamp foot recede

- 2) Press button  (B), and set whether or not the interlining presser actuate with the pedal depressed to the reverse step.


Display	Description
	To actuate
	Not to actuate

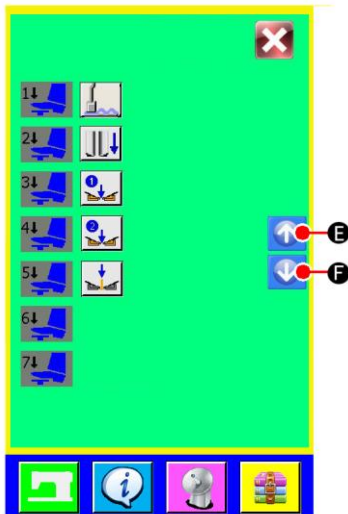
- 3) Press button  (A) and set whether or not to lock the respective pedal operations of first to seventh steps. In case of “lock”, even when the pedal is released, the motion state by pedal operation is held unless the pedal is depressed to the reverse step or reset of pedal is performed.




Display	Description
	To lock
	Not to lock

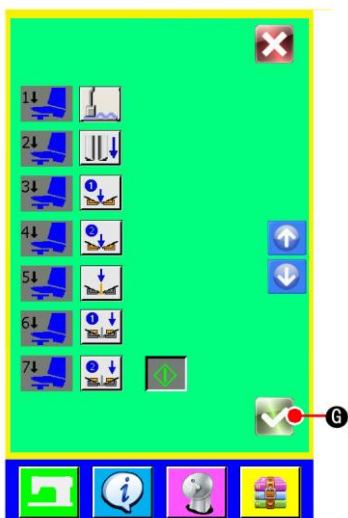



Pedal motion function setting screen
(screen A)


- 4) Press button  (D), and the pedal motion function setting screen (screen A) is displayed. Then the motion function to be registered to the number of the respective pedal steps can be set.











- 5) Functions below can be registered from first step in order. Functions that can be registered are in the state of button as , and displayed in order. When the button is pressed, the color changes and the function is registered. The number of pedal steps is advanced with  (E). When the number of pedal steps is returned with  (F), it becomes the state before one.



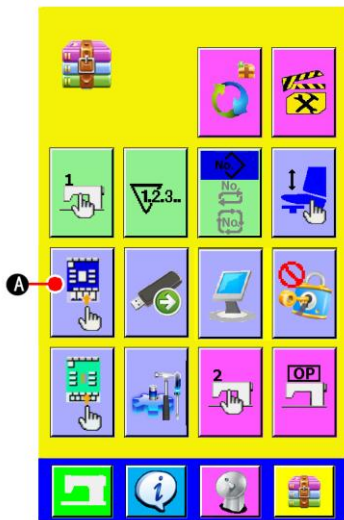
- 6) When functions are registered up to the last, ENTER button  (G) is displayed. Press it to determine the registered data.

- * It is possible to clear and register the number of pedal steps.
- * When the function is determined without registering MACHINE START , knee switch start is applied.
- * Whether or not the clamp foot comes down from right or left is determined by **U19** clamp foot lowering order change-over. When right and left are set to the same time, even if the independent motion is set in this screen, the right and the left actuate at the same time.
- * Whether or not the flap presser comes down from right or left is determined by **U18** flap presser lowering order change-over. When right and left are set to the same time, even if the independent motion is set in this screen, the right and the left actuate at the same time.


Display	Description	Display	Description
	Middle mandril (optional)		Center foot down
	Vacuum suction		Flap presser one side down
	Clamp foot one side down		Flap presser remaining side down
	Clamp foot remaining side down		Machine start


11. CUSTOMIZING THE DATA INPUT SCREEN

Buttons displayed in the data input screen can be customized in accordance with the customers' using conditions.

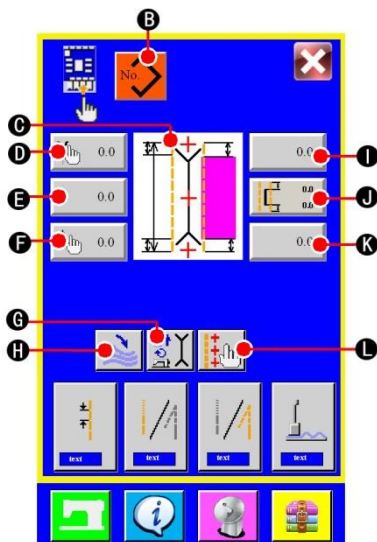


1) Display the customizing screen of the input screen

Pressing MODE CHANGEOVER key , and CUSTOMIZE button























 (A) is displayed on the screen.

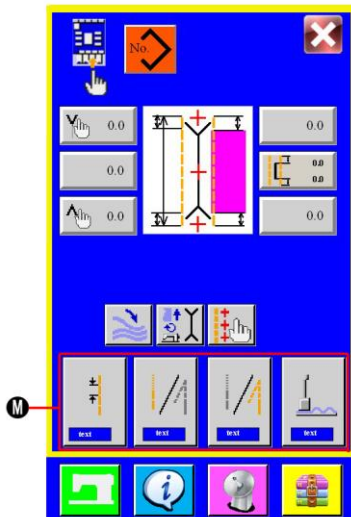
When this button is pressed, the customizing screen of the input screen is displayed.



2) Select the conditions of buttons

Every time the buttons from (B) to (L) are pressed, display/non display of the buttons can be changed over. Customize and use the buttons in accordance with the customers' using conditions.

Symbol	Display	Non display	Description	Initial state
B			Pattern list button	Display
C			Sewing mode change-over	Display
D			Flap concealed stitching data (Left sewing start)	Display
E			L size setting	Display
F			Flap concealed stitching data (Left sewing end)	Display
G			Motion mode change-over	Display
H			Stacker stop/motion change-over	Display
I			Corner knife motion position at sewing start	Display
J			Center knife motion position setting	Display
K			Corner knife motion position at sewing end	Display
L			Marking light setting	Display



3) Register the sewing data to SEWING DATA CUSTOMIZING button

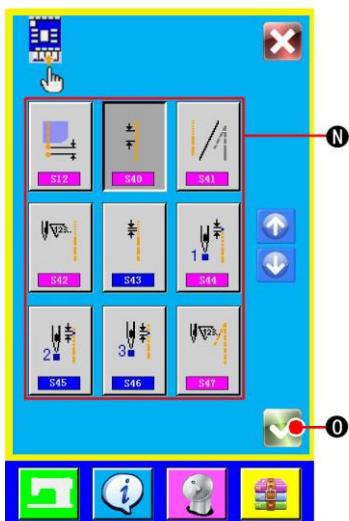
Up to 4 sewing data can be registered to SEWING DATA CUSTOMIZE buttons (M). Register and use the sewing data that are frequently used.

When pressing CUSTOMIZING button (M) you desire to register, the sewing data list (screen A) is displayed.

4) Select the sewing data to be registered

Select the sewing data you desire to register with SEWING DATA button (N).

When the selected button is pressed twice, the selection is released.



5) Register the data to the customizing button

When ENTER button (O) is pressed, register to the customizing button ends, and the screen returns to the customizing screen of the input screen. The registered sewing data is displayed on CUSTOMIZING button (M).

Sewing data list screen (screen A)

The data below have been registered in order from the left at the time of your purchase.

a. Lockstitch pitch

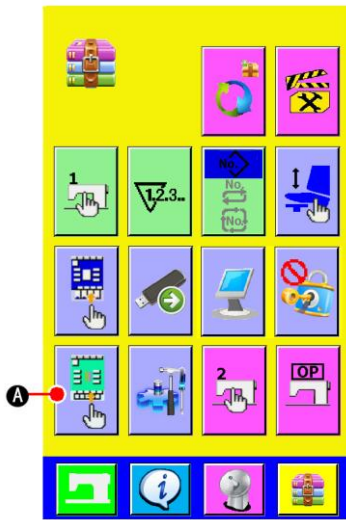
b. Condensation/back tack at sewing start

c. Condensation/back tack at sewing end

d. Middle mandril stop/motion change-over


12. PERFORMING THE CUSTOMIZING SETTING OF THE SEWING SCREEN

Buttons displayed in the data input screen can be customized in accordance with the customers' using conditions.

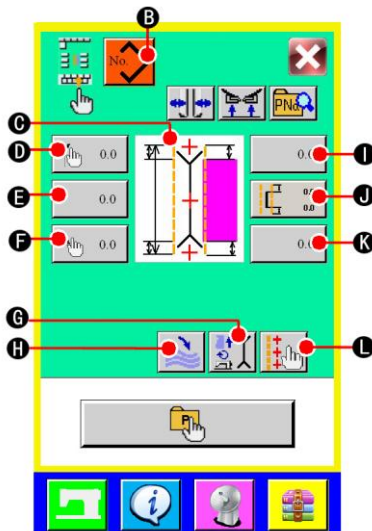


1) Display the customizing screen of the sewing screen

Pressing MODE CHANGEOVER key , SEWING SCREEN























CUSTOMIZING button  (A) is displayed on the screen

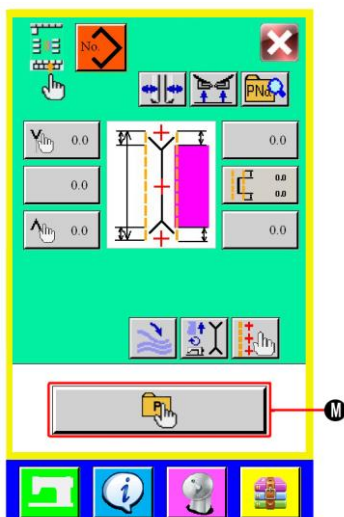
Press this button and the customizing screen of sewing screen is displayed



2) Set the conditions of buttons

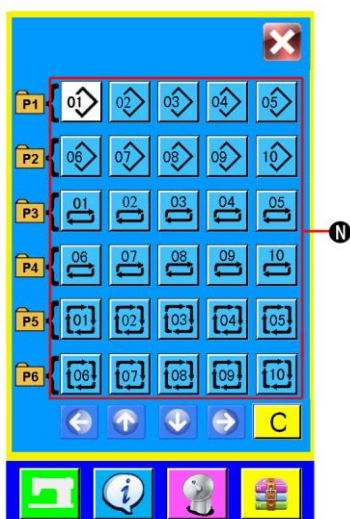
Every time the buttons from (B) to (L) are pressed, button display/non display can be changed over. Customize and use the buttons in accordance with the customers' using conditions.

Symbol	Display	Non display	Description	Initial state
B			Pattern list button	Non display
C			Sewing mode change-over	Non display
D			Flap concealed stitching data (Left sewing start)	Non display
E			L size setting	Non display
F			Flap concealed stitching data (Left sewing end)	Non display
G			Motion mode change-over	Non display
H			Stacker stop/motion change-over	Non display
I			Corner knife motion position at sewing start	Non display
J			Center knife motion position setting	Non display
K			Corner knife motion position at sewing end	Non display
L			Marking light setting	Non display



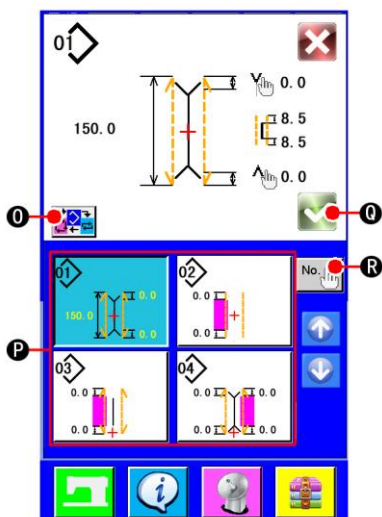
3) Register the direct pattern.

When DIRECT PATTERN REGISTER button (M) is pressed, the direct pattern register list screen (screen A) is displayed.



Direct pattern list screen (Screen A)

In the direct pattern list screen, the pattern data of independent sewing /alternate sewing/ cycle sewing can be freely registered up to 30. Register and use the pattern data that are frequently used. Press PATTERN LIST button (N) and the direct pattern selection screen (screen B) is displayed.




Direct pattern selection screen (Screen B)

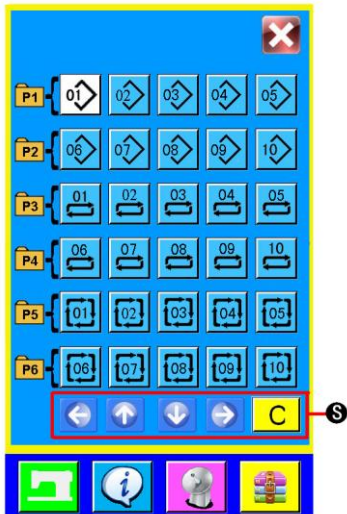
Select the pattern you desire to register with PATTERN SELECTION button (P). In addition, the ten keys are displayed by pressing NO.

INPUT button (R) and the pattern you desire to register can be selected by inputting the ten keys.

When ENTER button (Q) is pressed, register to the direct button is completed and the screen returns to the direct pattern list screen (screen A).

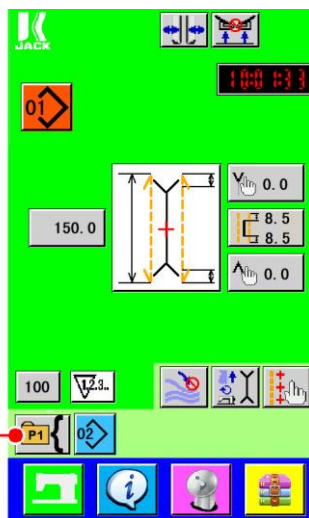
When MODE CHANGEOVER button (O) is pressed, the sewing mode is changed over to independent sewing → alternate sewing → cycle sewing.

 The direct buttons have not been registered at the time of your purchase.



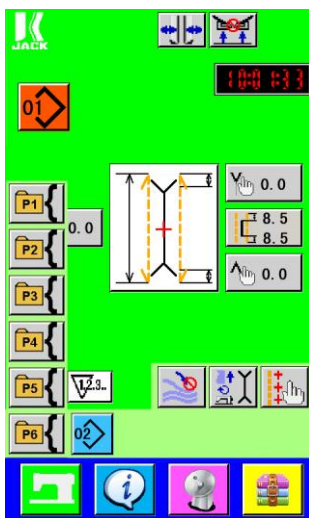
4) Delete the registered direct pattern.

In the direct pattern register list screen (screen A) , According to the up, down, left and right button , choose the pattern of the number and then press the CLEAR button **C** can delete .



5) Choose parameter set of registered direct pattern

In sewing screen ,press the button (T) and six parameter set will displayed to choose .As shown in the following picture.



13. I/O TEST

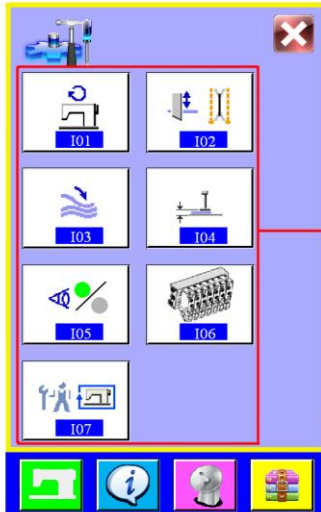
(1) Test method of I/O port



1) Display I/O test screen

Pressing MODE CHANGEOVER key  and the information screen is displayed. Pressing I/O TEST button  (A) and the I/O test screen (screen A) is displayed.

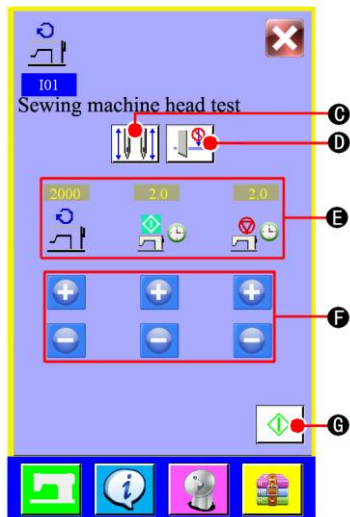
※ This function can only be used by maintainer, so, users need to enter a password to access, and you can get the password from manufacturer.



I/Otest screen (screen A)

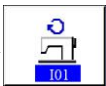
2) Select the IO port button (B) you want to test .


IO1	Sewing machine head test
IO2	Center motor test
IO3	Stacker test
IO4	Center foot test
IO5	Input port test
IO6	Output port test
IO7	Sewing machine running test






Sewing machine head test screen (screen B)



3) IO1 sewing machine head test

Press the sewing machine head test button  and the sewing machine head test screen (screen B) is displayed.

- ① Press button , and set whether to switch double needle or not .

Display	Description
	To switch double needle
	Not to switch double needle


- ② Press button , and set whether to actuate middle knife action or not .



Display	Description
	To actuate
	Not to actuate




- ③ Press up/down button      to adjust  the motor speed of machine head  , starting time  and stopping time 

- ④ Press START KEY   to start testing.

4) IO2 center motor test

- ① Press button , and set whether to put down the center knife or not.

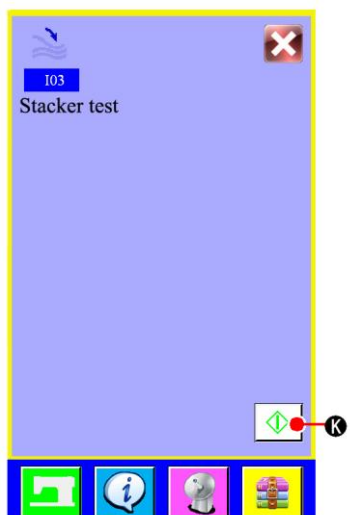
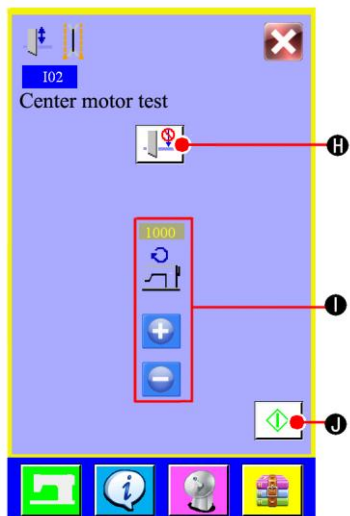
Display	Description
	To put down the center knife
	Not to put down the center knife

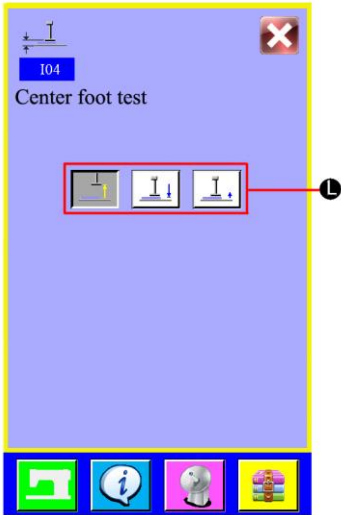
- ② Press up/down button    to adjust the motor speed of center knife.

- ③ Press START KEY   to start testing.

5) IO3 stacker test




Press START KEY   to start testing.

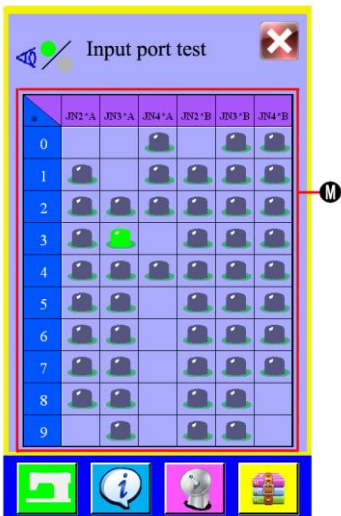




6) IO4 center foot test



Select the center foot mode button (L) you want to test.

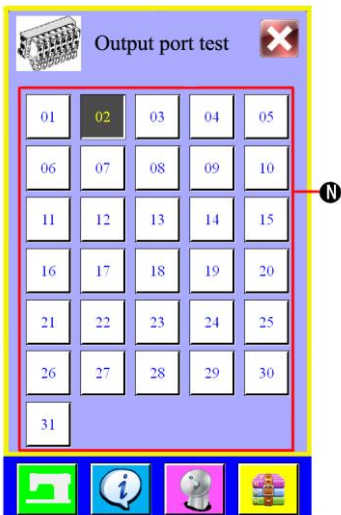
Display	Description
	Lift the center foot test
	Lay down the center foot test
	Center foot pressure reduction rise test



7) IO5 input port test



Select the input port (sensor) button (M) you want to test. The test port number is JN33A as at left.

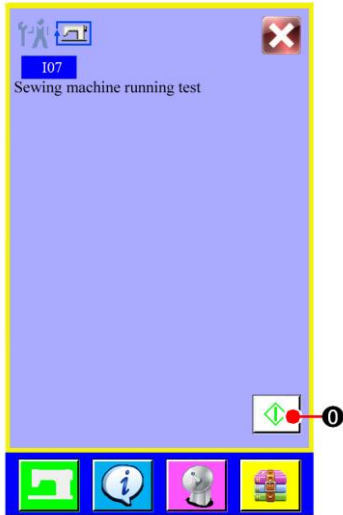
Display	Description
	Signal
	No signal



8) IO6 output port test

Select the output port (magnetic valve) button (N) you want to test.

Display	Description
	To actuate
	Not to actuate



9) **IO7 sewing machine running test**

Press START KEY  ① to start testing.

(2) Input port (sensor) list

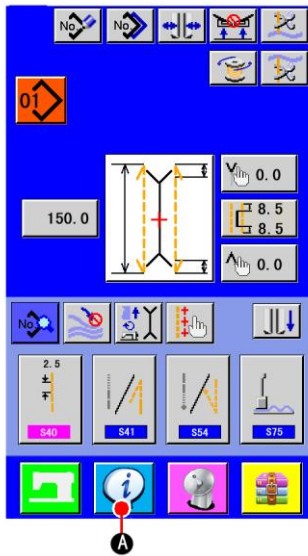
Name	Port of 5878-68	Port of 5878-78
Center foot open detection	JN21A	
Center foot up detection	JN25A	
Clamp foot back position	JN26A	
Motor position of swing needle	JN27A	
Lower position of roller stacker	JN28A	
Cloth detection	JN32A	
Knee pedal switch	JN21B	
Moving side index motor origin of corner knife	JN29B	
Fixing side index motor origin of corner knife	JN30B	
Air pressure detection	JN31B	
180-degree detection	JN32B	
Open /close corner knife signal	JN33B	
Corner knife moving side, right lowering detection	JN25B	JN37B
Corner knife moving side, right lifting detection	JN26B	JN38B
Corner knife fixing side, right lowering detection	JN27B	JN39B
Corner knife fixing side, right lifting detection	JN28B	JN40B
Motor position of corner knife moving	JN41B	
Left base line feedback signal	JN43B	
Right base line feedback signal	JN44B	
Up detection of stacker (cloth bar)	JN45B-13	
Homing signal of stacker (spread cloth pole)	JN45B-16(JN46B)	
Stacker open /closed detection	JN45B-19(JN47B)	
Emergency stop signal	JN36A	
Thread breakage detection (left)	JN37A	
Thread breakage detection (right)	JN38A	
Flap sensor (left)	JN39A	
Flap sensor (right)	JN40A	
Flap angle sensor (left)	JN41A	
Flap angle sensor (right)	JN42A	

(3) Output port (magnetic valve) list


Center knife moving	EC01
Upper thread scissors	EC02
Basr line scissors	EC03
Send line	EC04
Loose line	EC05
Blow line fur	EC06
Pocket lining clamp moving (fabric)	EC07
Middle mandril	EC08
Decompress lift of center foot	EC09
Corner knife fixing cut	EC10
Corner knifef moving cut	EC11
Left flap presser	EC12
Right flap presser	EC13
Stick left fold piece out	EC14
Stick right fold piece out	EC15
Center foot uplift	EC16
Center foot press down	EC17
Left clamp foot double-welt changeover value	EC18
Left clamp foot single-welt changeover value	EC19
Right clamp foot double-welt changeover value	EC20
Right clamp foot single-welt changeover value	EC21
Left clamp foot uplift	EC22
Left clamp foot press down	EC23
Right clamp foot uplift	EC24
Right clamp foot press down	EC25
Right needle bar separation	EC26
Left needle bar separation	EC27
Third step (Stacker)	EC28
First step (Stacker)	EC29
Second step (Stacker)	EC30
Roller stacker	EC31

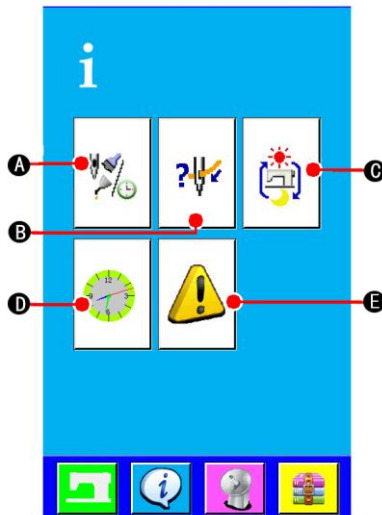
14. USING THE INFORMATION

There are four functions below, in the information function.



Display the information screen

Press INFORMATION key  (A) of the switch seat section in the input screen and the information screen (screen A) is displayed.



Information screen (screen A)

Ⓐ Maintenance inspection information

Oil replacement (grease-up) time, needle replacement time, cleaning time, etc. are specified, and when the specified time has passed, the warning notice can be performed.

→see "VI-14-(1) Observing the maintenance inspection information".

Ⓑ Threading diagram

Ⓒ Operation information

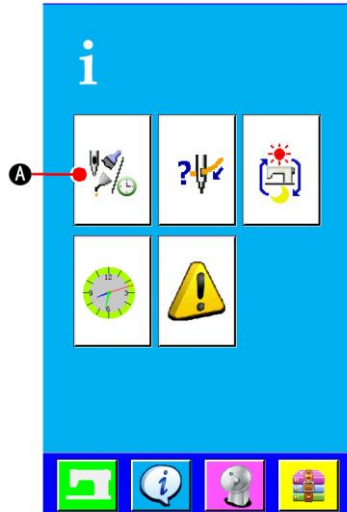
Ⓓ Clock display information

Current date/time is set.

Ⓔ Error record information

Records the mistake happened in the machine since operation

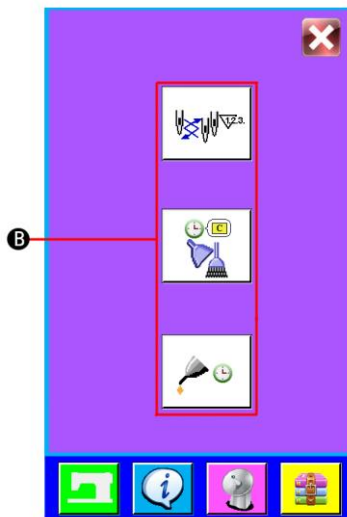
(1) Observing the maintenance inspection information



1) Display the maintenance information screen

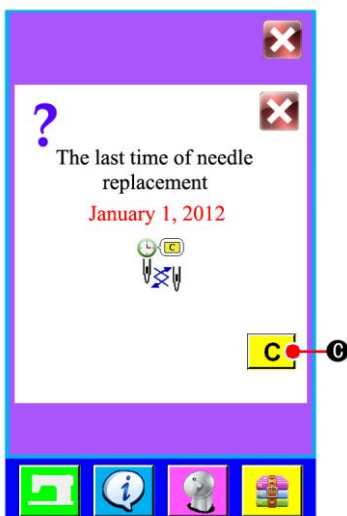
Press MAINTENANCE INSPECTION INFORMATION SCREEN

DISPLAY button  (A) of the information screen.




Three items of the information below are displayed in the maintenance inspection information screen.

- Needle replacement
- Cleaning time
- Oil replacement time

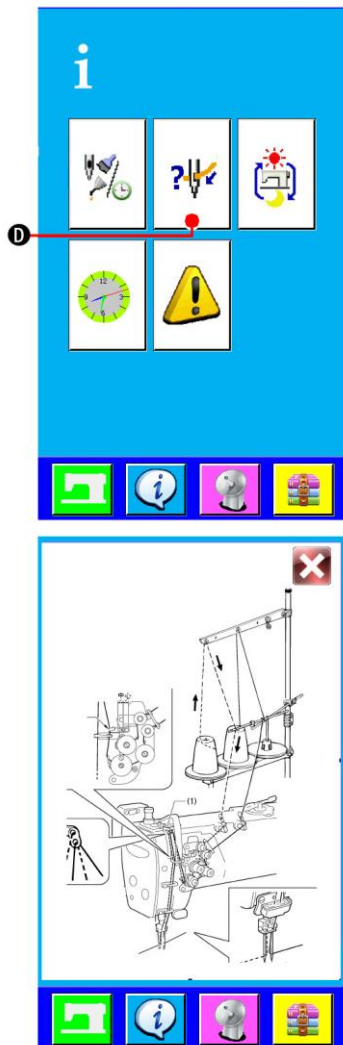


2) Clear the replacement time

Press ITEM button (B) you desire to clear and the replacement time

clear screen is displayed. Press CLEAR button  (C) and the remaining time up to the replacement is cleared.

(2) The threading diagram



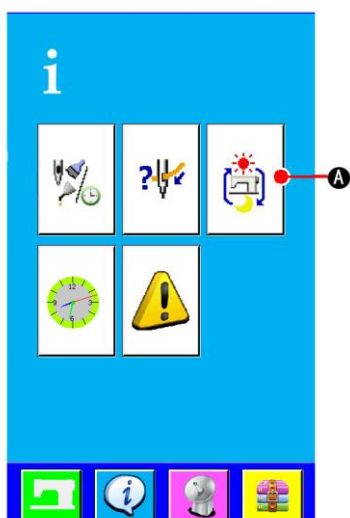
Display the threading diagram

Press THREADING button  (D) displayed in the maintenance

inspection information screen and the needle thread threading screen is displayed.


See when performing threading.

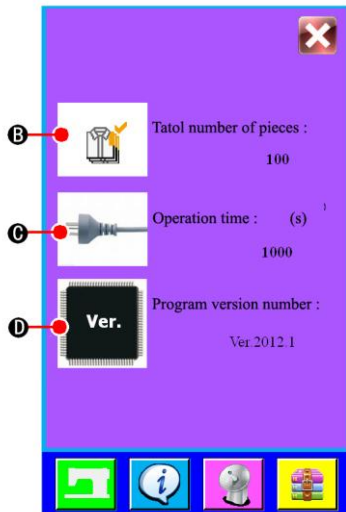
(3) Operation information of the machine



1) Display the operation information

Press OPERATION INFORMATION SCREEN DISPLAY button

 (A) in the information screen. The operation information screen (screen A) is displayed.



The operation information screen (screen A)

2) Information on the following 3 items is displayed in the operation information screen.

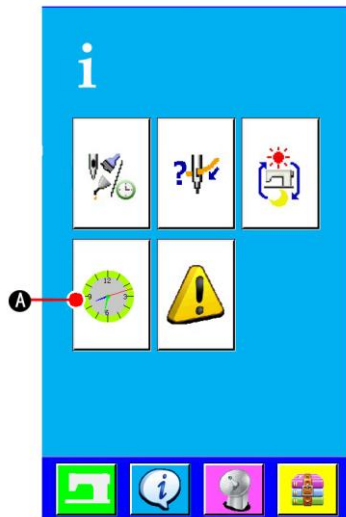
Ⓑ : This item automatically displays the total number of pieces.

Ⓒ : This item automatically displays the operation time.


Ⓓ : This item automatically displays the program version number.

(4) Clock display information

Date/Time can be adjusted when it is incorrect.



1) Display the clock information screen

Pressing CLOCK DISPLAY INFORMATION button  Ⓐ in the information screen, and date/time adjustment screen (screen A) is displayed.



Date/Time adjustment screen (screen A)

2) Modify date/time

Click the information you want to modify. Press ok key to save the alteration and Press the cancel button cancel the revise.

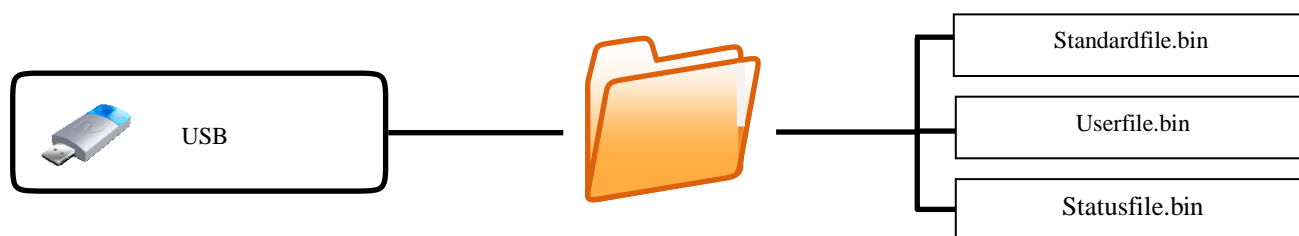
15. USING THE COMMUNICATION FUNCTION

Communication function can download the sewing data created with other sewing machine . In addition, the function can upload the aforementioned data to the USB. As the means of communication, USB are prepared.

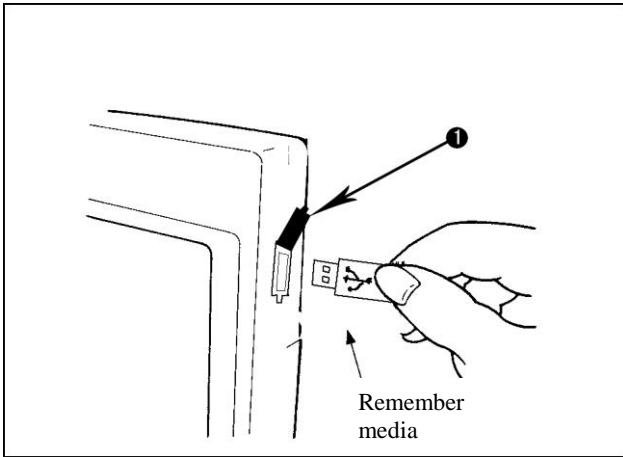
(1) Handling possible data

Data name	Extension	Description of data
Sewing data	***.BIN	Sewing data created by the sewing machine exclusive

(2) The structure of the media folder



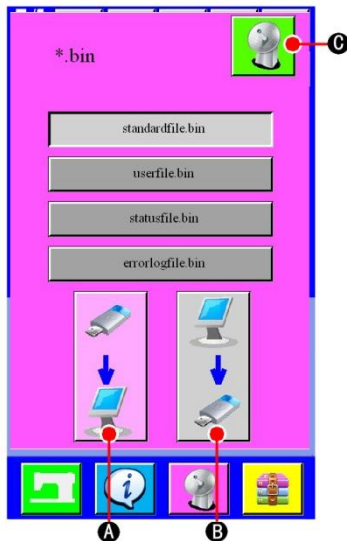
(3) Performing communication by using the media



Uncover the black rubber cover ①, and insert USB into communication port just as pictured at left.

- * After communication, close the cover, so that dust, oil or other foreign material does not adhere to it. If the contact part becomes dirty, failure of contact will be caused.

(4) Take-in of the data



1) Display the communication screen

When COMMUNICATION key  of switch seat section is pressed in the input screen, the communication screen (screen A) is displayed.

2) Select the communication method


There are two communication method as described below:

Ⓐ Writing data from USB to operation panel.

Ⓑ Writing data from operation panel to USB.

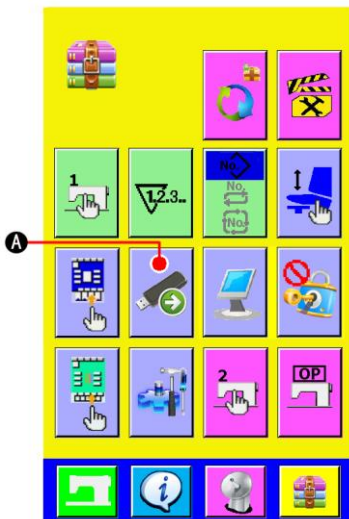
Select the button of communication method you desire.



3) Start communication

When COMMUNICATION START button  ③ is pressed, the data communication starts.

16. UPDATING PROGRAM OF OPERATION PANEL

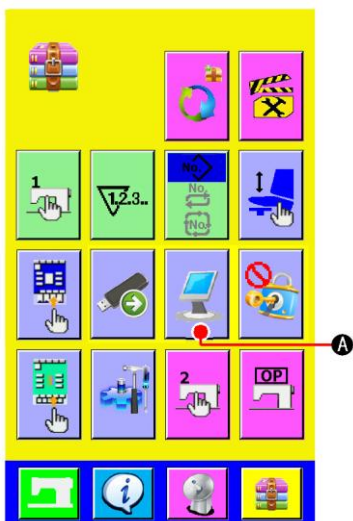
Display the screen of updating program .





Press MODE CHANGEOVER key  and PROGRAM UPDATE button  (A) is displayed on the screen. When this button is pressed, the screen of updating program by USB is displayed.

17. SYSTEM SETUP

Changing the system Settings.

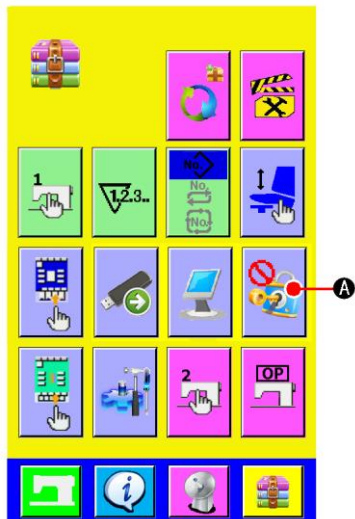




Press MODE CHANGEOVER key  and SYSTEM SETUP button  (A) is displayed. When this button is pressed, the system setup screen (screenA) is displayed.

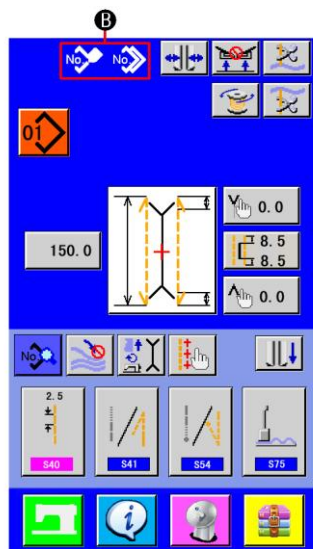




System setup screen (screenA)

18. LOCK COPY AND NEW FUCTION

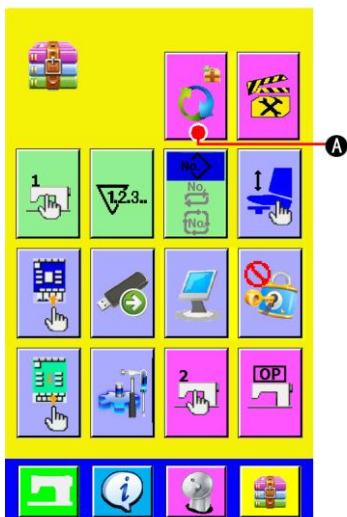




Press MODE CHANGEOVER key  and LOCK COPY AND NEW FUCTION button  (A) is displayed. Press this button, you can set lock or unlock. The copy and new function button of the sewing screen will convert to type (B) in the lock state.



Display	Description
	Unlock
	Lock

19. PARAMETER INITIALIZATION



Press MODE CHANGEOVER key  and PARAMETER INITIALIZATION button  (A) is displayed. Press this button, you can initialize the parameter.

VII. MAINTENANCE

1. INSPECTION

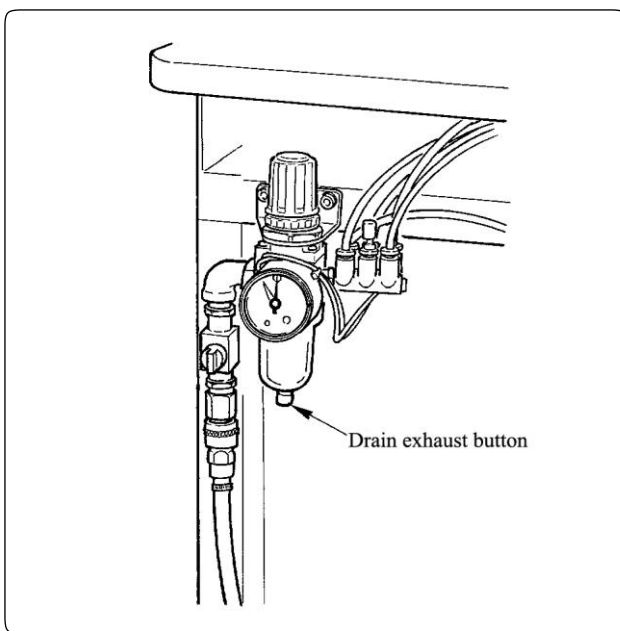
Be sure to periodically execute the maintenance and inspection to keep the performance of this machine. Be sure to periodically execute the work since machine trouble may be caused unless the maintenance and inspection are performed.

(1) Maintenance and inspection of the pneumatic device



CAUTION

To prevent accidents caused by abrupt start of the sewing machine, do not place hand(s), foot, face or tools on the machine moving part.



- Discharge the drain of filter every day.
Press the drain exhaust button located at the bottom of filter to exhaust the drain.

(2) Maintenance and inspection related to the sewing machine




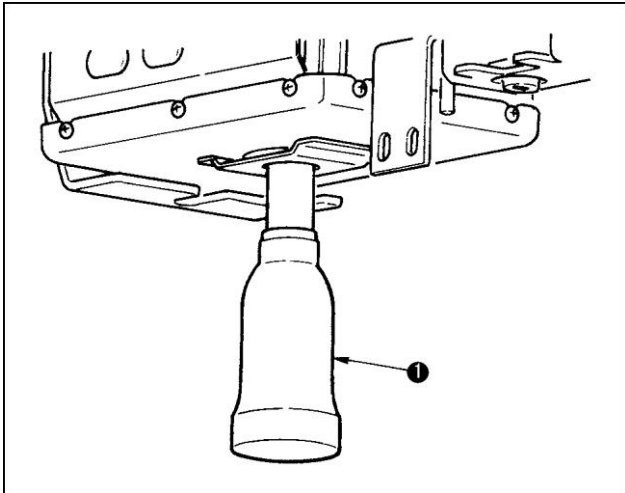
CAUTION

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

- When dust adheres to the small places of the machine such as clamp foot or the like, normal operation is disturbed. Be sure to perform cleaning before the work. In addition, be sure to clean the thread waste in the hook cover once a week.
- Check the sharpness of center knife and corner knife before the work, and try to replace it in good time.
- Periodically replace the thread guide felt. (Refer to "V-1-(3) **How to pass the needle thread**".)


(3) With regard to the waste oil of the hook oil

 CAUTION	Turn OFF the power before starting the work so as to prevents accidents caused by abrupt start of the sewing machine.
--	---

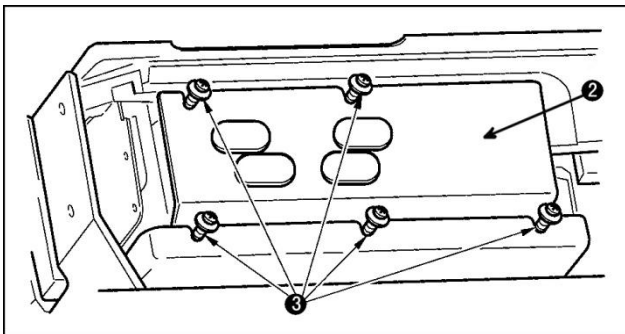


Turn and remove the oil can, and drain the waste oil when the waste oil gathered in approximately half of oil can ① located on the machine bed cover.

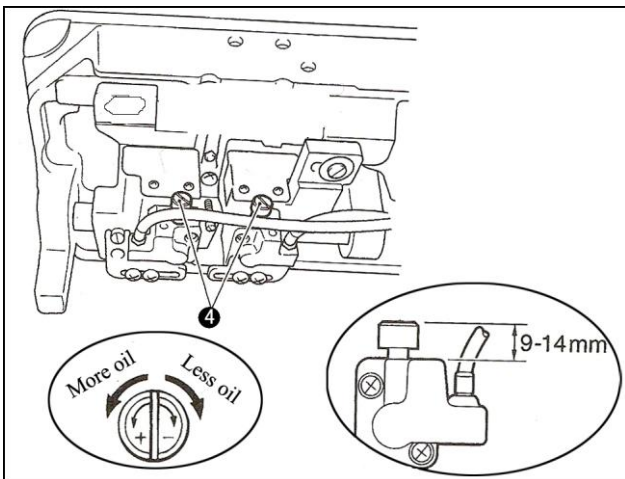
(4) With regard to the cleaning of the hook shaft base

 CAUTION	Turn OFF the power before starting the work so as to prevents accidents caused by abrupt start of the sewing machine.
---	---

Periodically clean the waste cloth or the like gathered in the hook oil cover.



Raise the machine head and remove oil cover ② after loosening setscrews ③ (5 places).



Clean the inside of hook oil cover ④

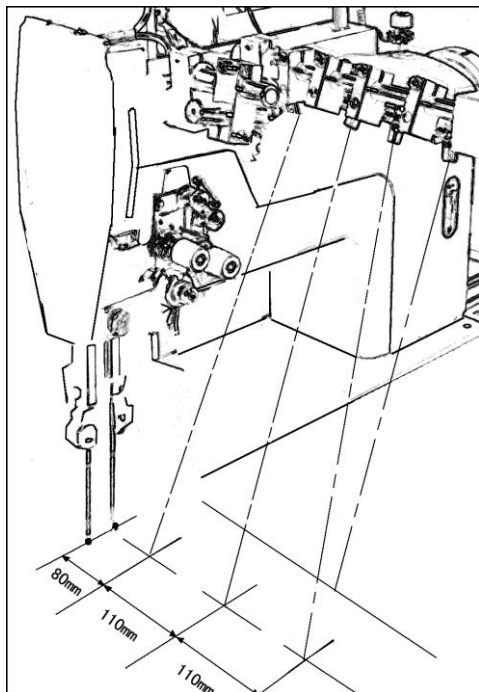
2. MARKING LIGHT



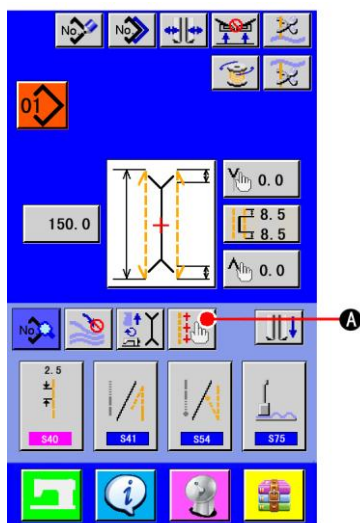
WARNING

1. If the laser light directly enters the eye, eyesight trouble may be caused. Do not look into the laser inlet/outlet.
2. Never perform installing/removing of the marking lamp with the power turning ON. In addition, do not use the light other than marking.

Marking light for sewing reference setting

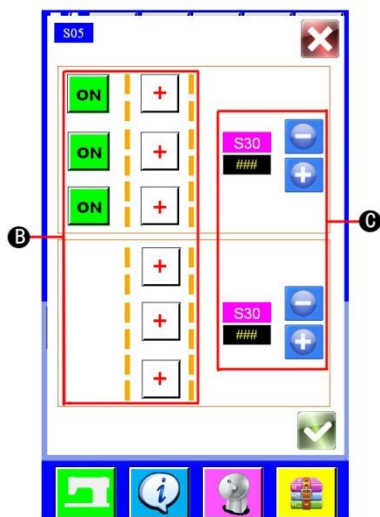


The light of marking light on the front side observed from the operator side is used for longitudinal line reference setting and that in the rear side is used for lateral line reference setting



Press button (A) in the input screen and the marking light setting screen is displayed. Then the irradiation position of marking light can be adjusted.

Lateral line irradiation position of marking light is determined by the sewing type, and the irradiation position is manually moved by (B) [S05 change-over of sewing start irradiation/sewing end irradiation /center irradiation] and [S04 L size setting] .





When you desire to move the marking light irradiation position in terms of the sewing position, set each compensation value of (C) for use.

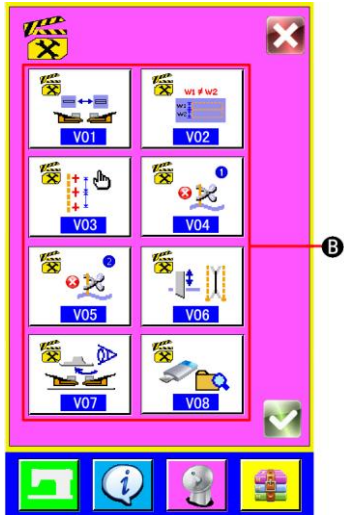
- S30 : Sewing start irradiation position compensation
- S31 : Sewing end irradiation position compensation
- S32 : Center irradiation position compensation

3. MAINTENANCE VIDEO

FAQ (Frequently Asked Question) maintenance method.



Press MODE CHANGEOVER key  and PARAMETER INITIALIZATION button  (A) is displayed. Press this button , Maintenance video screen(screen A) is displayed.








Choose one of the video press OK button and VIDEO PLAYER screen (screen B) displayed.

V01	Replacing procedure between double-welt and single-welt
V02	The left and right of sewing products are not the same
V03	Adjust the position of the laser
V04	Unable to trimming- Adjust the fitting clearance of blade
V05	Unable to trimming- Adjust the position of the scissors
V06	Adjustment of the center knife position
V07	False alarms of center foot opened
V08	Other video: After press, the U disk dialog box jump out and after loading the U disk, select video files in the file list and then play the video.

Maintenance video screen(screen A)

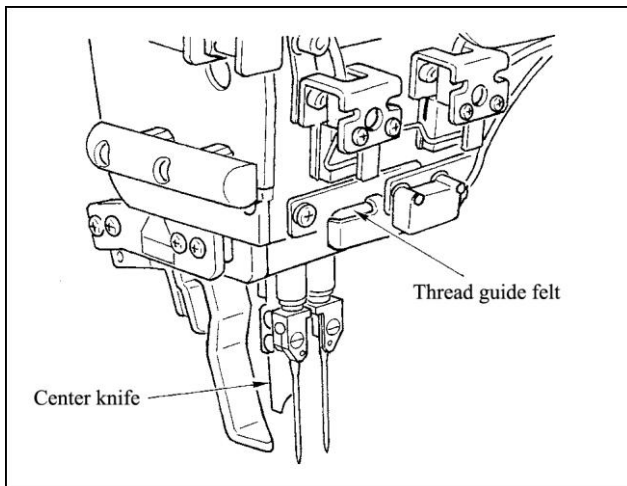


Video player screen (screen B)

	Start/pause button	Play or pause the video
	Backword button	Rewind 10s.
	Forword button	Fast forward 10s.
	Stop button	Video back to the starting position
	Exit button	Exit player

4. CONSUMABLE REPLACEMENT COMPONENTS

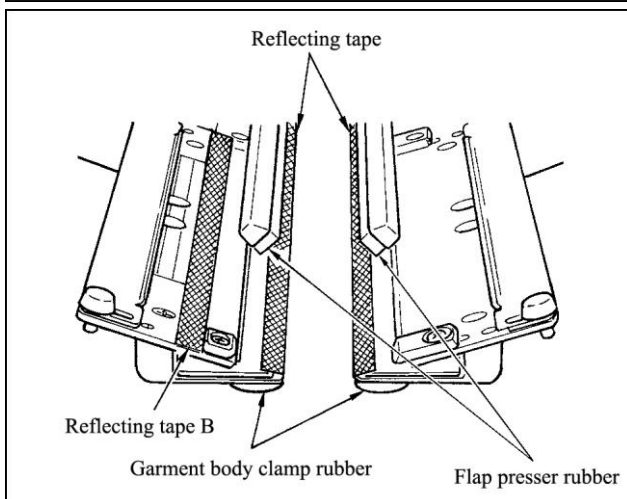
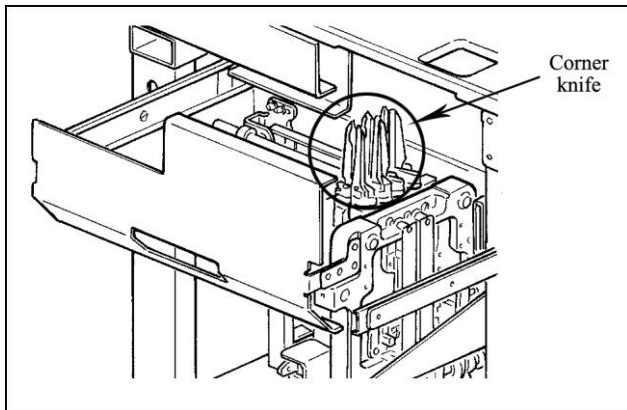
The components below are the consumable ones. Periodically replace them.



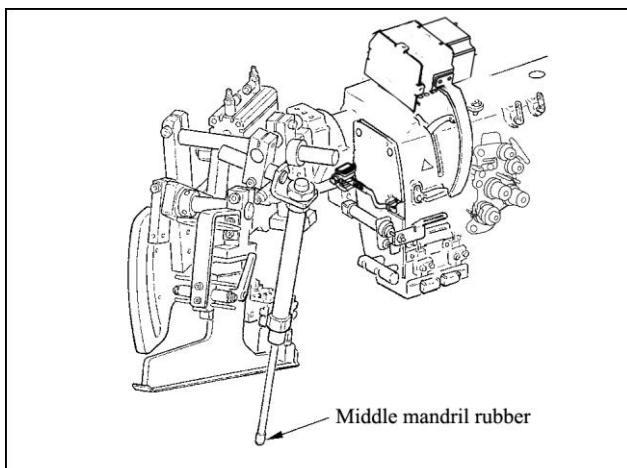
- **Thread guide felt**
The part where thread passes is worn out and rough motion of thread is apt to occur unless it is periodically replaced.

- **Center knife**
- **Corner knife A**
- **Corner knife B**
- **Corner knife C**

Sharpness is deteriorated and sewing quality is influenced unless it is periodically replaced.



- **Reflecting tape**
- **Reflecting tape B**
Accuracy of detection of flap is deteriorated and sewing quality is influenced unless it is periodically replaced.
- **Garment body clamp rubber**
- **Flap presser rubber**
Pressing of material is deteriorated and sewing quality is influenced unless it is periodically replaced



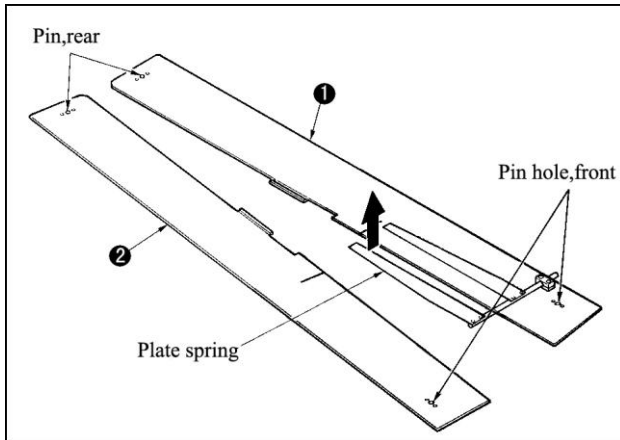
- **Middle mandril rubber**
Pressing of material is deteriorated and sewing quality is influenced unless it is periodically replaced.

5. TILTING THE MACHINE

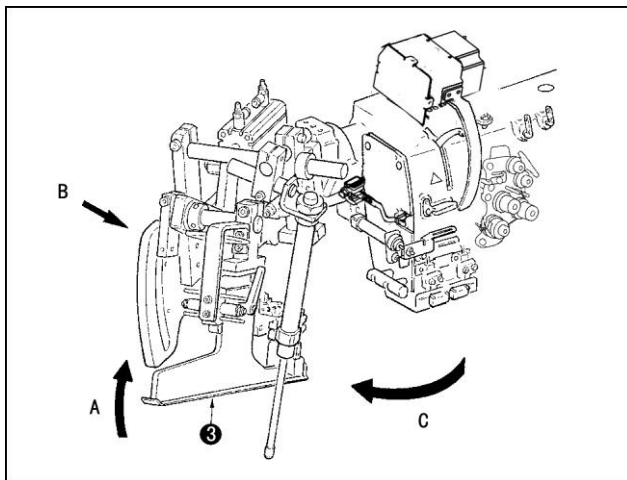


CAUTION

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine. When tilting/raising the machine, be careful not to allow your hands, fingers or any other part of your body to be caught in the related parts.



- 1) Remove sewing tables ① and ②.

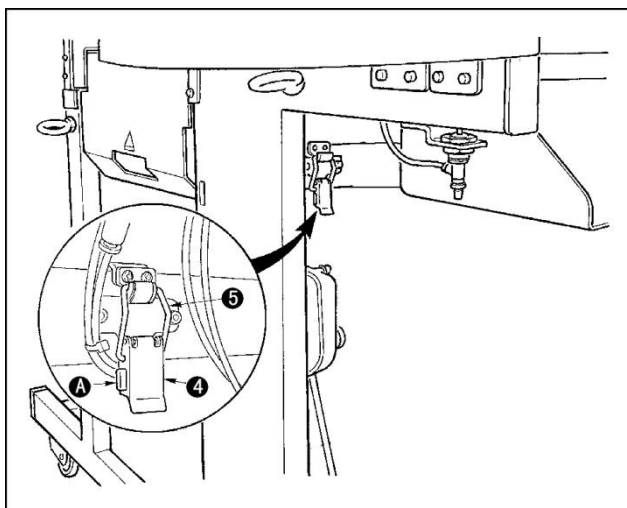


- 2) Turn the center foot unit

Lift center foot ③ in the direction A, support section B by hand and turn the whole center foot in the direction C.



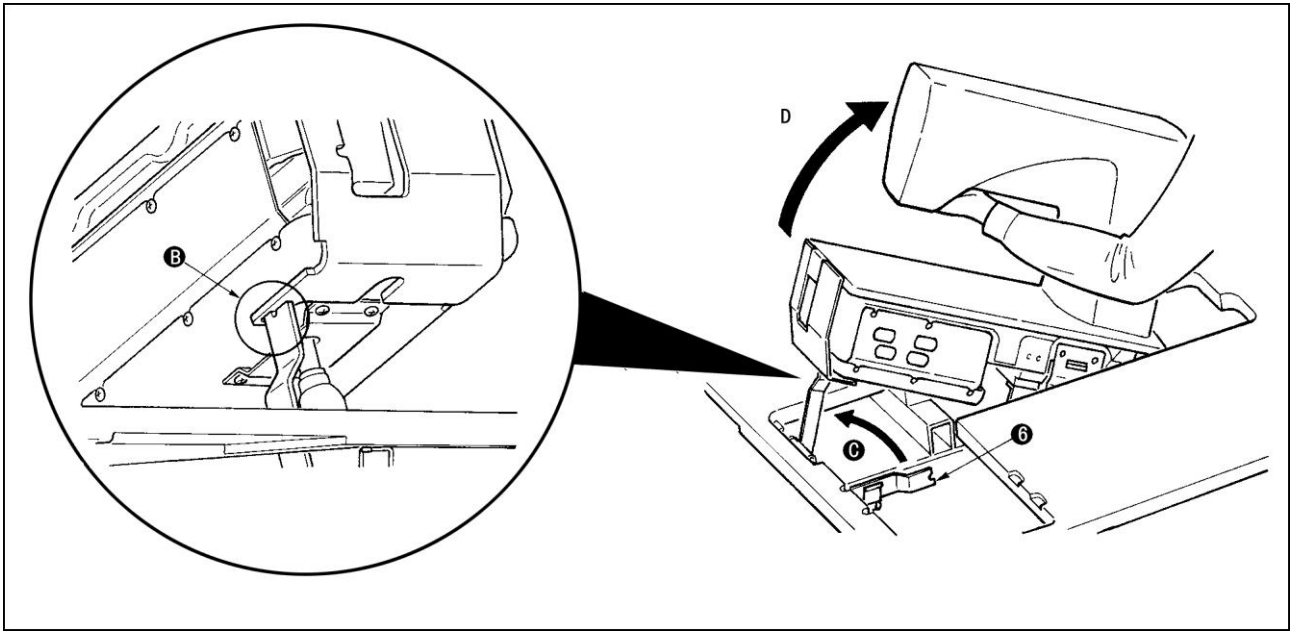
Binder is locked with ball plunger. Turn it rather strongly in the direction of C to release the lock.



- 3) Release machine fixing hinge.

Pressing section A release machine fixing hinge

- ④ and remove hinge hook ⑤.



- 4) Turn the sewing machine.
Hold the bottom side of the machine arm and lift the whole sewing machine in the direction D.
Lift the sewing machine fixing plate ⑥ in the direction ③, put the point of the sewing machine fixing plate ⑥ to the hole of the machine bed, and fix the sewing machine. (Refer to ②).
- 5) When returning the sewing machine, set the sewing machine by reversing the procedure.



Be sure to perform with two persons or more.

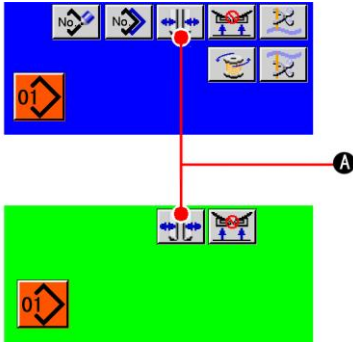
6. REPLACING PROCEDURE BETWEEN DOUBLE-WELT AND SINGLE-WELT




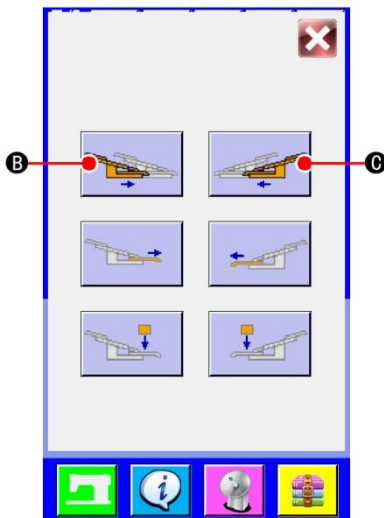
CAUTION

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

(1) Replacing procedure between double-welt and single-welt

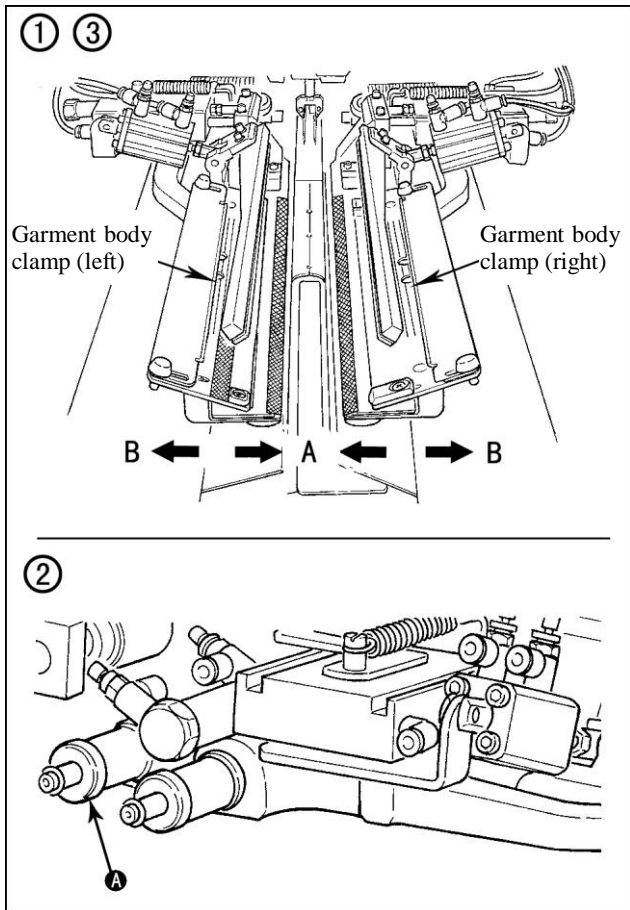


- 1) Turn ON the power and advance the clamp foot.
- 2) Press button  (A) to display the type of welt setting screen.

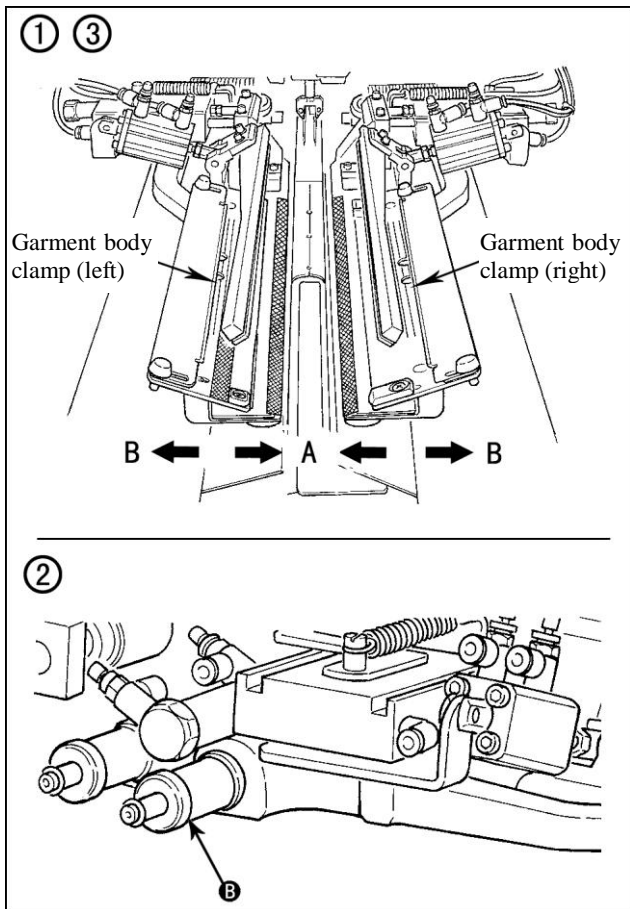


- 3) When button (B) is pressed, the left garment body clamp operates between inside and outside alternately. When button (C) is pressed, the right garment body clamp operates between inside and outside alternately. Select the position of left and right garment body clamps in accordance with the sewing type.
In addition, press buttons (B) and (C) to operate the garment body clamp between inside and outside at the time of fine adjustment of the position of garment body clamps which is explained later.

(2) Fine adjustment of the position of garment body clamp

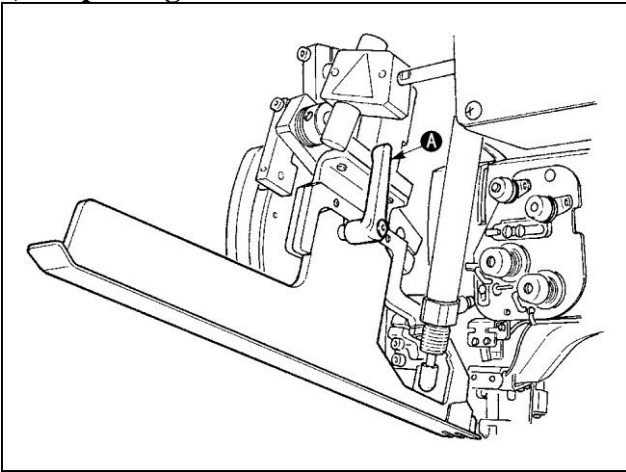


- Fine adjustment of double-welt type
- 1) Move the position of garment body clamp to outside (direction B) on the panel.
- 2) It is possible to perform the fine adjustment of the position of garment body with adjustment knob for double-welt (A).
- Move it clockwise to outside (direction B) and counterclockwise to inside (direction A).
- 3) Move the position of garment body clamp to inside (direction A) on the panel and confirm the position.

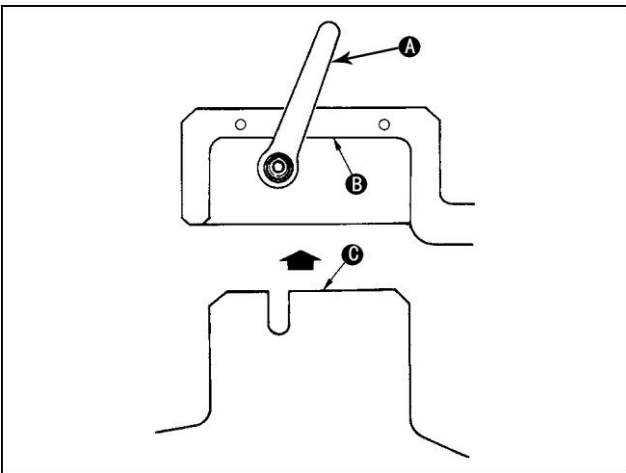


- Fine adjustment of single-welt type
- 1) Move the position of garment body clamp to inside (direction A) on the panel.
- 2) It is possible to perform the fine adjustment of the position with adjustment knob for single-welt (B).
- Move it clockwise to inside (direction A) and counterclockwise to outside.
- 3) Move the position of garment body clamp to outside (direction B) on the panel and confirm the position.

(3) Replacing the center foot



- 1) Turn lever (A) counterclockwise with the center foot lifted as shown in the left, and remove welting patch scale for double-welt (single-welt) (asm.).



- 2) Set welting patch scale for double-welt (single-welt) (asm.) and fix it with lever (A)



When fixing the welting patch scale for double-welt (single-welt) (asm.), perform fixing in the state that plane (B) comes in contact with plane (C).

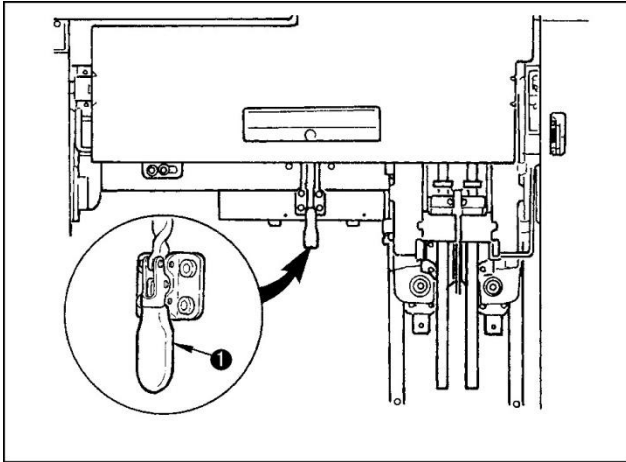
7. CORNER KNIFE



CAUTION

1. Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.
2. Do not touch your fingers or hands to the blade section of knife, so as to prevent fatal accidents.
3. Perform the adjustment work by the maintenance engineers who are familiar with the sewing machine and trained for the safety so as to prevent accidents caused by unfamiliarity or wrong adjustment.

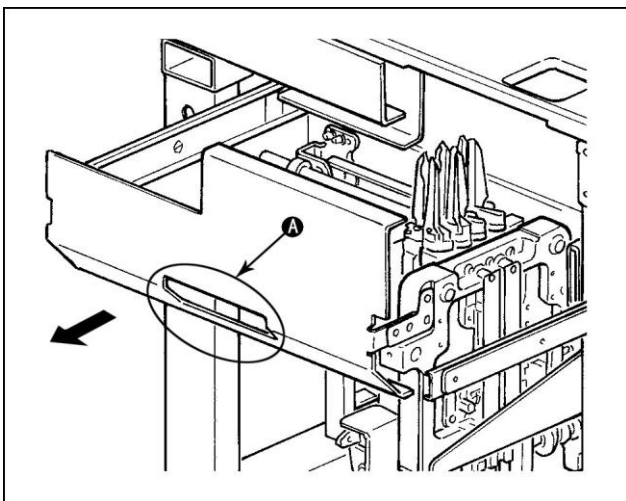
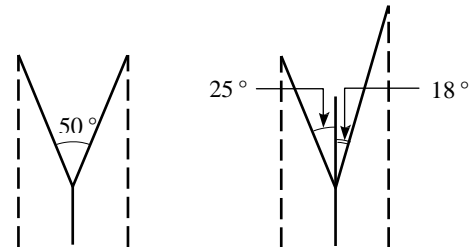
(1) Corner knife unit



- 1) Release toggle clamp ①.



Adjusting angle of the corner knife of this model has been factory-adjusted to approximately 50° for the parallel sewing (one side 25° each) or approximately 43° (25° and 18°) for deflection amount of 4 mm or more at the time of delivery.



- 2) Hold section ① and draw out the drawer in the direction of the arrow.



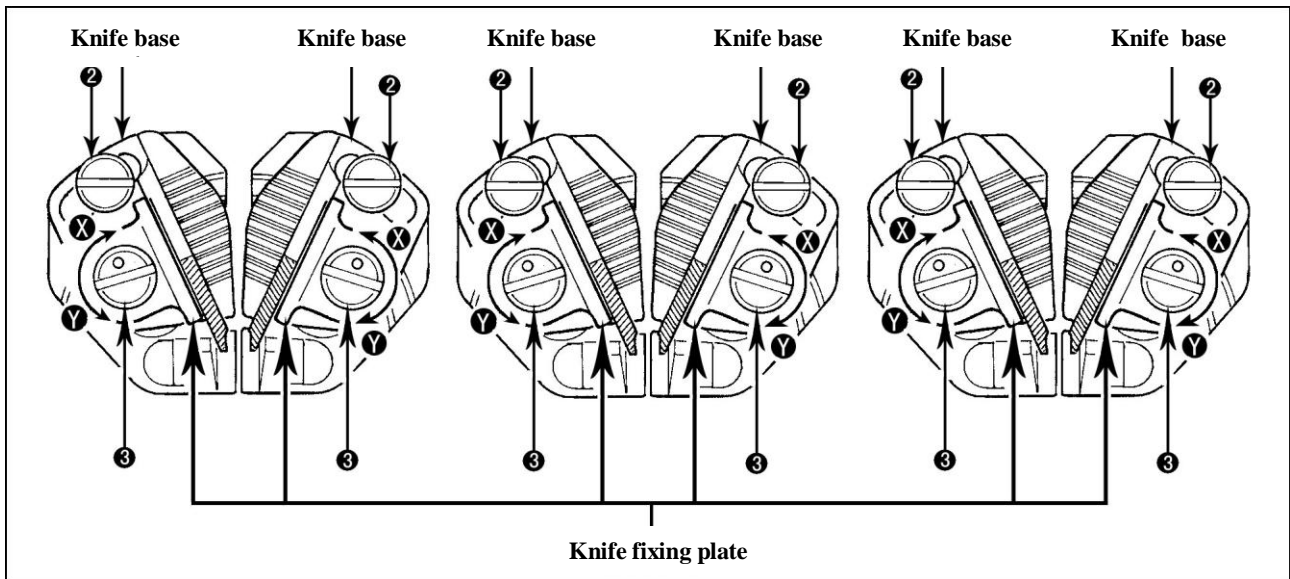
Draw it out, until it goes no further.

- 3) After the adjustment, return the drawer to its home position and fix it with toggle clamp ①.

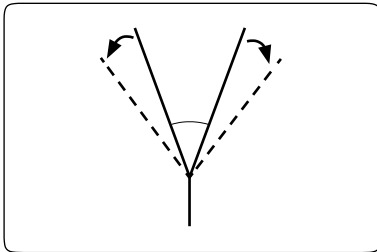


When returning the drawer, return corner knife on the moving side 4 to the initial position.

(2) Adjusting the corner knife



[Adjusting the open angle of knife]

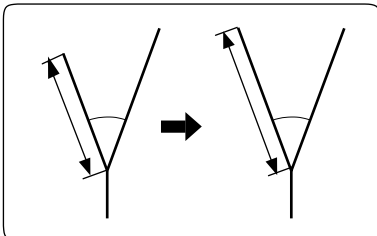


Loosen angle adjustment screws ②, adjust knife bases and fix the screws.



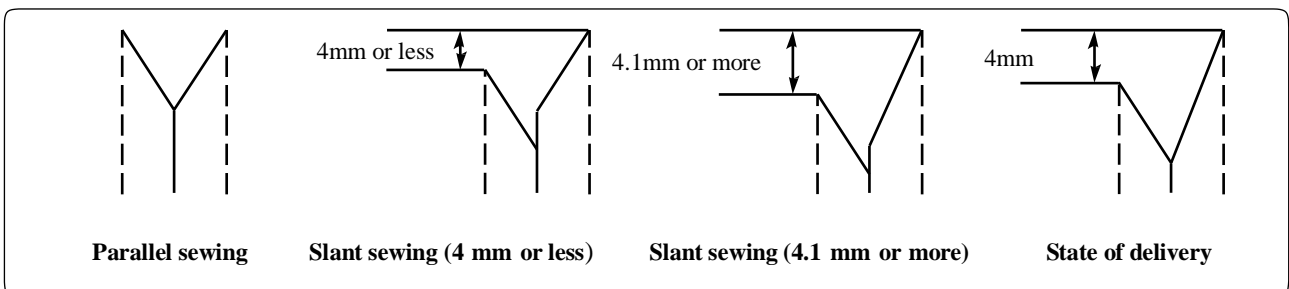
Direction of rotation to loosen left/right knives is different from each other.

[Adjusting the cutting length of knife]



- 1) Turn eccentric pin ③ in the direction of the arrow mark Y with a flat-blade screwdriver or the like and loosen the knife.
- 2) Tilt the knife and adjust the cutting length.
- 3) Turn eccentric pin ③ in the direction of the arrow mark X with a flat-blade screwdriver or the like and fix the knife.

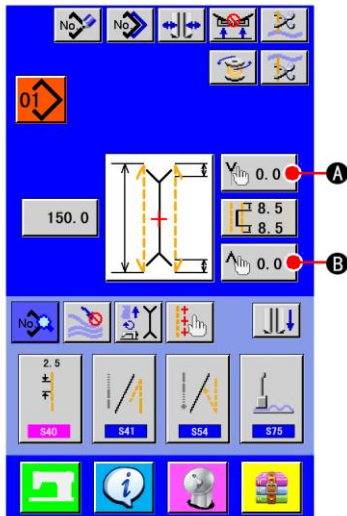
[Adjusting place]



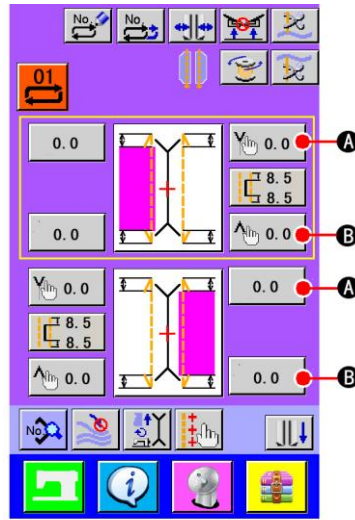
- 1) Adjusting place of the knife at the time of parallel sewing and slant deflection amount 4 mm or less.
Adjust the knife of the center.
Adjust the knife with the parallel sewing.
 - 2) Adjusting place of the knife at the time of deflection amount 4.1 mm or more.
For the adjustment of knife that seams appear on the outside, perform the adjustment of outside knife ; For the adjustment of knife that seams enter on the inside, perform the adjustment of center knife .
- ★ The difference of length in the longitudinal direction between the center knife and the outside knife is 4 mm in the state of delivery.

(3) Corner knife actuating position setting procedure

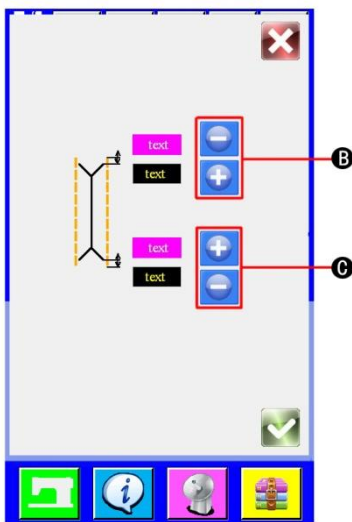
By pressing corner knife actuating position setting button (A or B), it is possible to set the corner knife actuating position.



Independent sewing mode / cycle sewing mode



Alternate sewing mode



Corner knife actuating position setting screen (Screen A)

Setting of corner knife actuating position

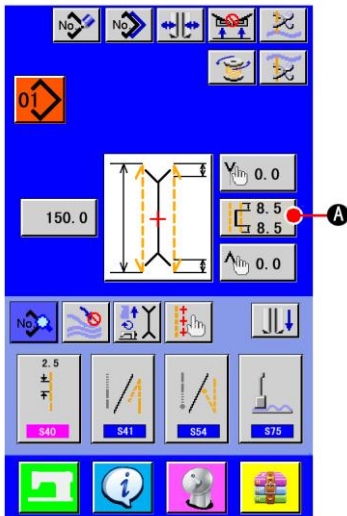
For the setting of corner knife actuating position, there are 2 kinds of at the start of sewing and at the end of sewing.

It is possible to set by pressing “+” button and “-” button respectively.

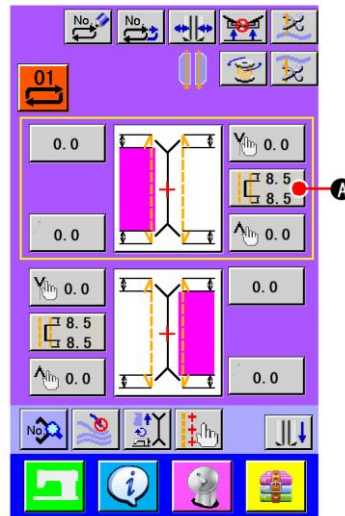
8. CENTER KNIFE

Center knife actuating position setting procedure

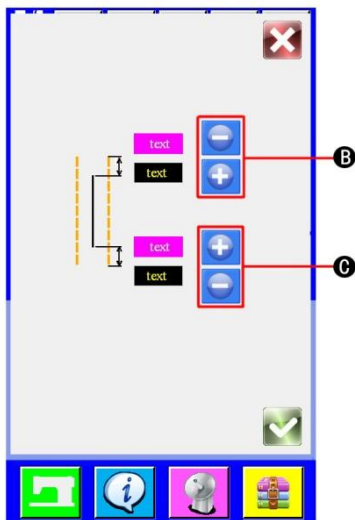
It is possible to set the center knife actuating position by pressing CENTER KNIFE MOTION POSITION SETTING button (A).



Independent sewing mode / cycle sewing mode



Alternate sewing mode

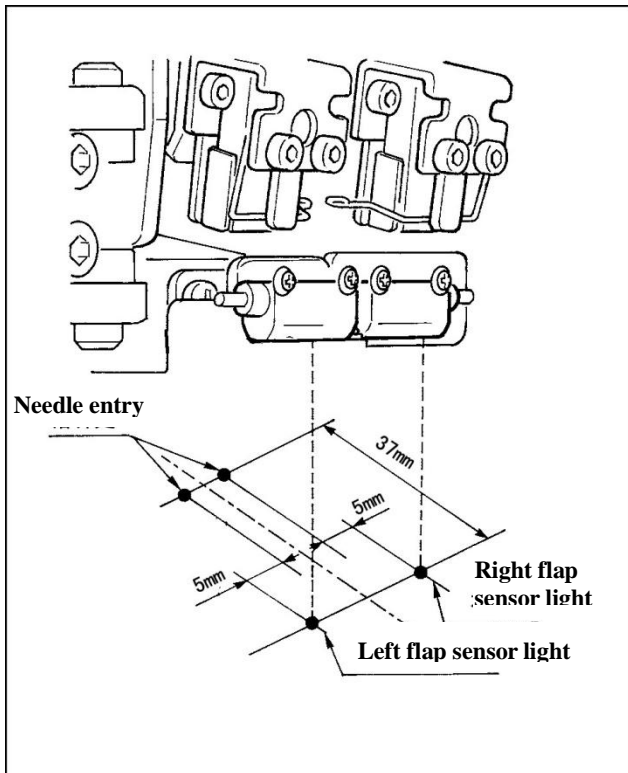


Setting of the center knife actuating position

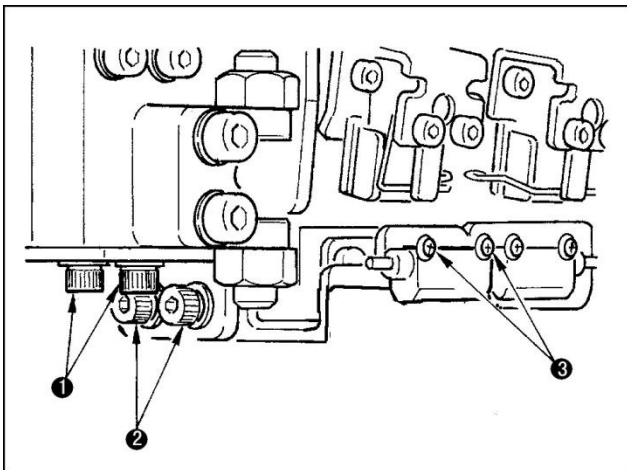
For the setting of center knife actuating position ,there are 2 kinds of at the start of sewing and at the end of sewing. It is possible to set by pressing “+” button and “-” button respectively.

See **S17** and **S18** of "VI-7.(2)Sewing data list".

9. ADJUSTING THE POSITION OF THE SENSOR FOR DETECTING FLAPS



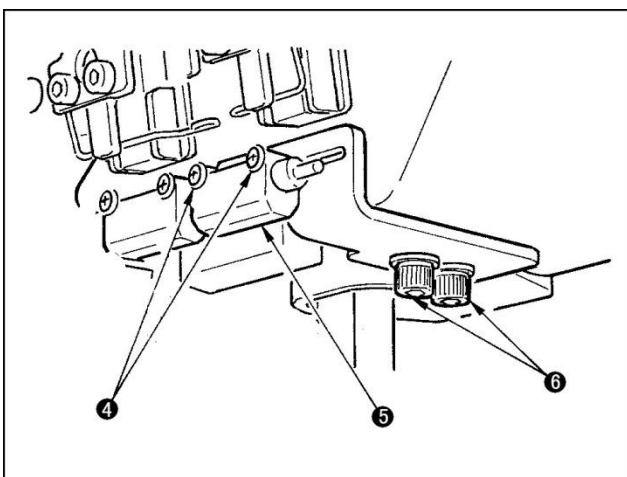
- 1) Adjust the positions of both right and left sensors for detecting flaps to outside of 4.5 to 5 mm from the needle entry and the sewing direction (longitudinal direction) of both right and left sensors to the position of 37 mm from the needle entry on the operator side.



- 2) Adjust the lateral direction of sensor for detecting left flap and flap angle detection sensor ① by loosening setscrews ② and moving the sensors together with sheet metal in the lateral direction.
- 3) Adjust the sewing direction of sensor for detecting left flap and flap angle detection sensor ① by loosening setscrews ③ and moving the sensors in the longitudinal direction



It is not necessary to loosen setscrews 7 when adjusting the position of sensors.



- 4) Adjust the lateral direction of sensor for detecting right flap 4 by loosening setscrews 5 and moving the sensor in the lateral direction.
- 5) Adjust the sewing direction of sensor for detecting right flap 4 by loosening screws 6 and moving the sensor in the longitudinal direction.



After the adjustment, be sure to perform trial sewing and adjust the flap sewing position with the panel.

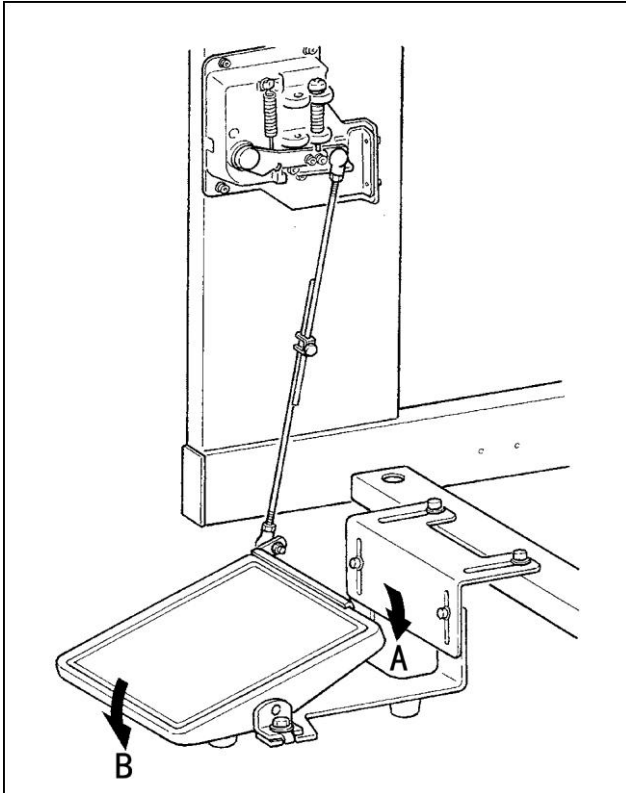
10. CAUSES AND CORRECTIVE MEASURES AGAINST TROUBLES WITH THE BOBBIN THREAD REMAINING AMOUNT DETECTING DEVICE

Phenomenon	Cause	Corrective measure
<p>1) The bobbin thread remaining amount detecting function fails to work even when the bobbin thread has run out.</p>	<p>1) The bobbin thread remaining amount adjusting counter has been improperly set.</p> <p>2) The start position of bobbin wining is defective.</p> <p>3) The sensor amplifier fails to turn ON/OFF because of the stained lens.</p> <p>4) Sensor unit installing position.</p> <p>5) The bobbin used is not the exclusive one for the bobbin thread remaining amount detecting device.</p> <p>6) The bobbin case used is not the exclusive one for the bobbin thread remaining amount detecting device.</p> <p>7) The bobbin winder fails to wind the bobbin uniformly.</p> <p>8) The sensor cable connection failure.</p>	<ul style="list-style-type: none"> ● Check the specified data on the bobbin thread remaining adjusting counter “B008”. If the value of “B008” is excessive, bobbin thread will run out before bobbin thread remaining amount detection count-up occurs. Refer to “VI-4 USING THE BOBBIN THREAD AMOUNT ADJUSTMENT COUNTER”. ● Start winding a bobbin from the recess designated. ● Check whether the solenoid valve for the bobbin thread remaining amount detecting device operates normally. ● Wipe clean the lens surface of the optical fiber unit. ● Check that the spot of sensor light irradiates the position of reflecting tape of bobbin. ● Use the exclusive bobbin for the bobbin thread remaining amount detecting device. ● Use the exclusive bobbin case for the bobbin thread remaining amount detecting device. ● Properly adjust the bobbin winder. ● Check how the sensor scale and MAIN circuit board are connected.

11. HOW TO ADJUST THE FOOT PEDAL

The foot pedal of this device is so designed that an analog type pedal sensor detects the depressing depth of the foot pedal and the detected voltage value is taken as the operation step of the pedal. However, the voltage value of the pedal sensor changes with a lapse of time. As a result, the depressing depth of the foot pedal can fail to match the operation step of the pedal. In this case, adjust the foot pedal as described below.

In addition, the adjustment value of the pedal is stored in memory of EEPROM of MAIN circuit board. If the circuit board is replaced, adjust the foot pedal taking the same procedure.




The pedal has 7 steps in the direction A and one step in the direction B.

Perform the panel setting in the respective steps.




1) Display the pedal customizing screen

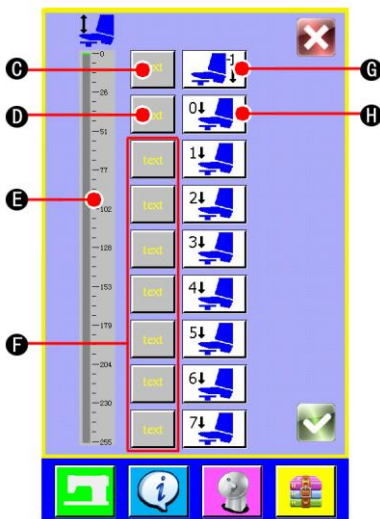
Keep pressing MODE CHANGE-OVER key  for three seconds

and PEDAL CUSTOMIZING button  (A) displayed on the screen

changes the color from green to light blue. Press this button and the pedal customizing screen of maintenance personnel level is displayed.



- 2) When FOOT PEDAL ADJUSTMENT button  (B) is pressed the foot pedal adjustment screen is displayed and the number of steps in terms of the depressing depth of the foot pedal is set.





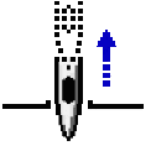
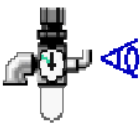

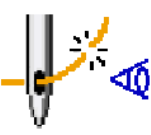
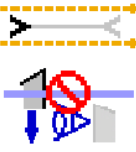



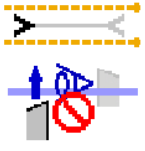
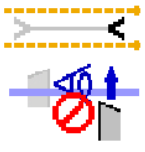
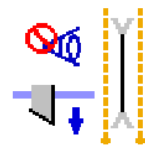
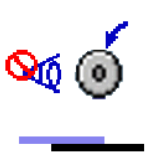



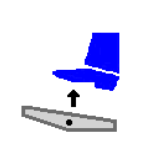
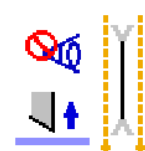

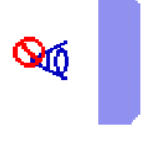
- 3) Pedal sensor voltage value in the present pedal depressing state is displayed in the range of 0 to 255 in the volume bar indication (E).
 First, press PEDAL DEPRESSED TO REVERSE STEP INPUT button (G) with the foot pedal depressed to the reverse step. Voltage value of this time is inputted to (C). Next, press FREE INPUT button (H) with the foot pedal free. Voltage value of this time is inputted to (D). Using the same procedure, perform setting of first to seventh steps of the foot pedal, and input the voltage value of the respective pedal positions to buttons, (C) and (D) (F).




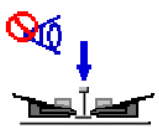
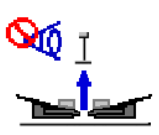
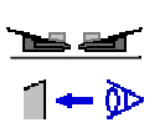







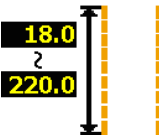
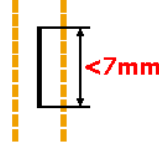

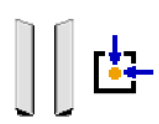
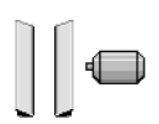
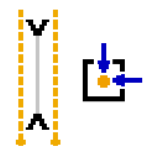
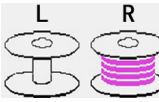
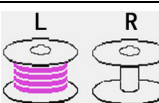

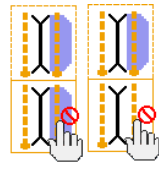
Set the voltage value so as to increase as the number of steps of the foot pedal increases.

12. ERROR CODE LIST

Error code		Description of error	Reason	How to recover
E01		Copy file ok,Do you want to reset system?	---	---
E03		Pattern NO.error	This numbers does not exist in the registered program	Create a new number to this program
E06		Data write from U-disk cannot be performed	Cannot write data to the Udisk	Check out whether the digital U disk is working fine
E09		Data write from LCD cannot be performed	Data write from the user list of screen cannot be performed.	Check out whether the list is right.
E10		Needle hasnot return to the upper position	Needle drifts off upper position	Turn the handwheel, let needle return to the upper position.
E11		Air pressure drop	Air pressure is low	Possible to re-start after reset
E12		Stop switch	When stop swich is pressed.	Possible to re-start after reset
E13		Thread breakage	1、 Thread tension adjustment is bad 2、 Pass thread parts have the burr.	Possible to re-start after reset
E21		Corner knife on the moving side is held lifted	Detect the state of corner knife on the moving side down-sensor	Turn OFF the power
E22		Corner knife on the fixing side is held lifted	Detect the state of corner knife on the fixing side down-sensor	Turn OFF the power

Error code		Description of error	Reason	How to recover
E23		Corner knife on the moving side fails to lift	Detect the state of corner knife on the moving side up-sensor	Possible to re-start after reset
E24		Corner knife on the fixing side fails to lift	Detect the state of corner knife on the fixing side up-sensor	Possible to re-start after reset
E25		Center knife does not lower	Detect center knife cylinder sensor	Possible to re-start after reset
E26		Roller stacker lower end sensor does not detect.	Detect roller stacker lower end sensor	Possible to re-start after reset
E27		Clamp bar stacker material presser sensor is gone past.	Detect material presser sensor	Turn OFF the power
E28		Clamp bar stacker material sweeper origin sensor is gone past	Detect material sweeper origin sensor	Turn OFF the power
E30		Roller stacker lift sensor cannot detect.	Detect roller stacker lift sensor	Possible to re-start after reset
E31		Pedal continuous depressing error	Testing the current value of foot pedals	Reset-key (Foot pedals value normal to resolve the mistake)
E32		Center knife does not upper	Center knife upper detection sensor cannot detect.	Possible to re-start after reset
E33		Clamp bar stacker open	Stacker position sensor detect no signal	Possible to re-start after reset
E35		Flap sensor have no signal	---	Possible to re-start after reset

Error code		Description of error	Reason	How to recover
E36		Flap rear end cannot be detected	Error is displayed after end of sewing.	Possible to re-start after reset
E37		Flap front end cannot be detected	- - -	Possible to re-start after reset
E38		Material sensor error	Material remains after end of stacker operation.	Resume automatic after removing the mistake
E39		Center foot no down	Center foot bottom sensor detection error	Possible to re-start after reset
E40		Center foot no up	Center foot top sensor detection error	Possible to re-start after reset
E41		Corner knife drawer detection error	Corner knife components machinery no position	Possible to re-start after reset
E42		Center foot open detection error	Center foot does not back to position	Error will automatic discharge after backing to position.
E43		Copy disapproved	When trying to perform overwriting copy on the pattern No. which has been already registered	Possible to recover with CANCEL button
E44		Erasing disapproved	When trying to delete the pattern used in the cycle sewing	Possible to recover with CANCEL button
E45		New creation disapproved	When the registered pattern is selected to the new creation pattern No.	Possible to recover with CANCEL button

Error code		Description of error	Reason	How to recover
E46		Data of designated No. does not exist.	When data of designated No. does not exist in media or server	Possible to recover with CANCEL button
E50		L size length is too short.	When sewing cannot be performed since the inputted L size length beyond the range of allowed	Possible to re-start after reset
E51		Size of middle knife cutting length is too long.	When sewing cannot be performed since the inputted size of middle knife cutting length is too long	Possible to re-start after reset
E60		Communication error	Communication abnormality between operation panel and electric cabinet	Turn OFF the power
E61		Wrong front position for clamp foot	Front position sensor misplaced	Possible to re-start after reset
E62		Back position sensor of clamp foot abnormality	Wrong back position for clamp foot	Possible to re-start after reset
E63		Corner knife no reparations	Sensor misplaced	Possible to re-start after reset
E64		No thread in left bobbin	Left bottom line residual counter for 0	1、 Changing base line; 2、 Press CLEAR button, and reset the bottom line residual counter.
E65		No thread in right bobbin	Right bottom line residual counter for 0	1、 Changing base line; 2、 Press CLEAR button, and reset the bottom line residual counter.
E66		Confirm delete?	---	---
E68		Combination data other than right/left flap sewing is set at the time of flap priority setting of alternate sewing mode.	Pattern S03=0 exists in alternate sewing mode	Reset

Error code		Description of error	Reason	How to recover
Warn 1	---	Sewing counter already stop counting	Current value is equal to the target	Electric cabinet should come to be banned after the warning.Press CLEAR button to release warning screen and clearing current value to counter again and then electric cabinet can run again