

***ENGLISH***

**DDL-9000C-F  
INSTRUCTION MANUAL**

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## 1. SPECIFICATIONS

### 1-1. Specifications of the sewing machine head

#### DDL-9000C-F△△-△B

Face plate portion lubricating method

M	Semi-dry
S	Micro-quantity lubrication

Seam specification

S	Medium-weight materials
H	Heavy-weight materials

Needle thread nipper specification

N	With
O	Without

	DDL-9000C-FMS	DDL-9000C-FSH
Max. sewing speed (standard locus)	Stitch length 0 to 4.00 : 5,000 sti/min Stitch length 4.05 to 5.00 : 4,000 sti/min	Stitch length 0 to 4.00 : 4,500 sti/min Stitch length 4.05 to 5.00 : 4,000 sti/min
Stitch length	5 mm	
Presser foot pressure control	Electronic control	
Needle *1	1738 Nm65 to 110 (DB×1 #9 to 18) 134 Nm65 to 110 (DP×5 #9 to 18)	1738 Nm125 to 160 (DB×1 #20 to 23) 134 Nm125 to 160 (DP×5 #20 to 23)
Lubricating oil	JUKI NEW DEFRIX OIL No. 1 or JUKI CORPORATION GENUINE OIL 7	
Motor	AC servo motor	
Horizontal feed control	Electronic control	
Vertical feed control	Electronic control	
Number of patterns	Sewing pattern .....99 patterns (For the polygonal shape sewing, as many as 10 patterns can be registered.) Cycle sewing pattern .....9 patterns Custom-pitch pattern .....20 patterns Condensation custom pattern .....9 patterns	
Noise	SMS ; - Equivalent continuous emission sound pressure level ( $L_{pA}$ ) at the workstation: A-weighted value of 81.5 dBA ; (Includes $K_{pA} = 2.5$ dBA) ; according to ISO 10821-C.6.2 -ISO 11204 GR2 at 5,000 sti/min. SSH ; - Equivalent continuous emission sound pressure level ( $L_{pA}$ ) at the workstation: A-weighted value of 77.5 dBA ; (Includes $K_{pA} = 2.5$ dBA) ; according to ISO 10821-C.6.2 -ISO 11204 GR2 at 4,500 sti/min.	

- The sewing speed will vary depending on the sewing conditions. The sewing speed preset at the time of shipping is 4,000 sti/min.

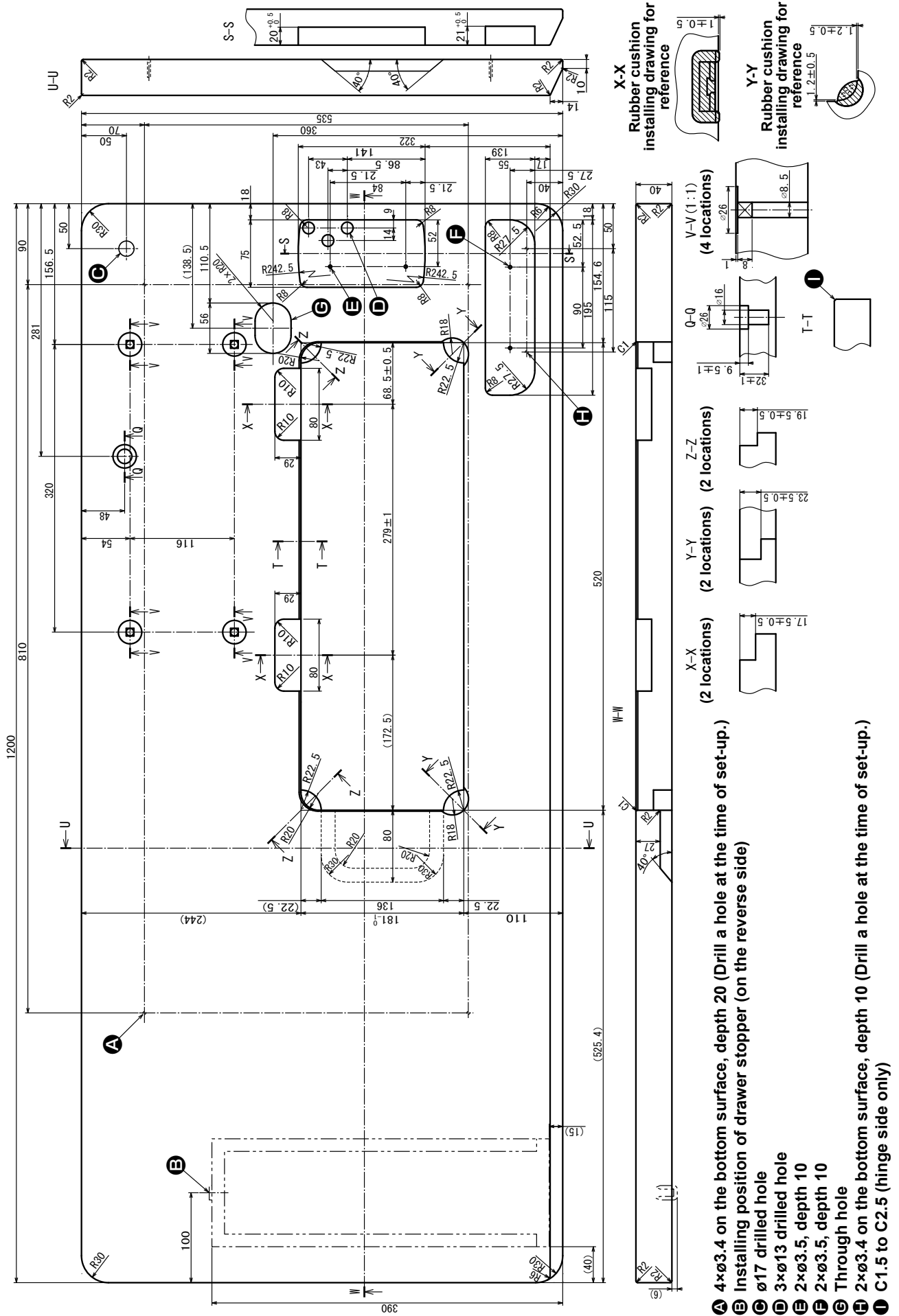
\*1 : Needle used depends on the destination.

### 1-2. Specifications of the control box

Supply voltage	Single phase 100 to 120V	3-phase 200 to 240V	Single phase 220 to 240V	Single phase 220 to 240V CE
Frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
Operating environment	Temperature : 0 to 35°C Humidity : 90% or less	Temperature : 0 to 35°C Humidity : 90% or less	Temperature : 0 to 35°C Humidity : 90% or less	Temperature : 0 to 35°C Humidity : 90% or less
Input	520VA	520VA	520VA	350VA

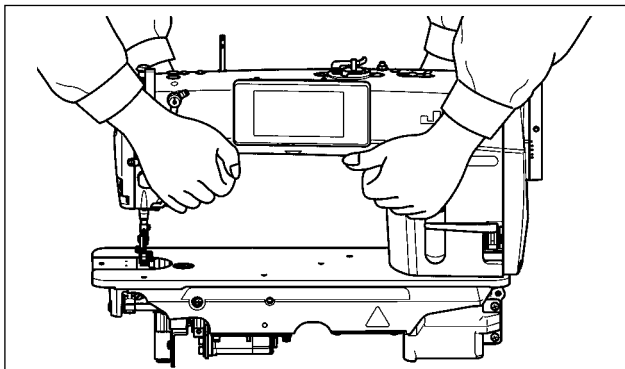
## 2. SET UP

### 2-1. Drawing of table



## 2-2. Cautions when setting up the sewing machine

Thank you very much for the purchase of JUKI Industrial Sewing Machine this time. Make sure of items 2-1 through 2-12 before operating to use this sewing machine with ease.

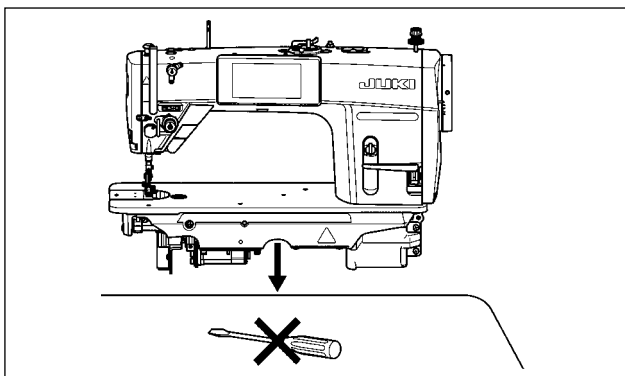


### 2-2-1. How to carry the sewing machine

Carry the sewing machine while holding the machine arm with two persons as shown in the figure.



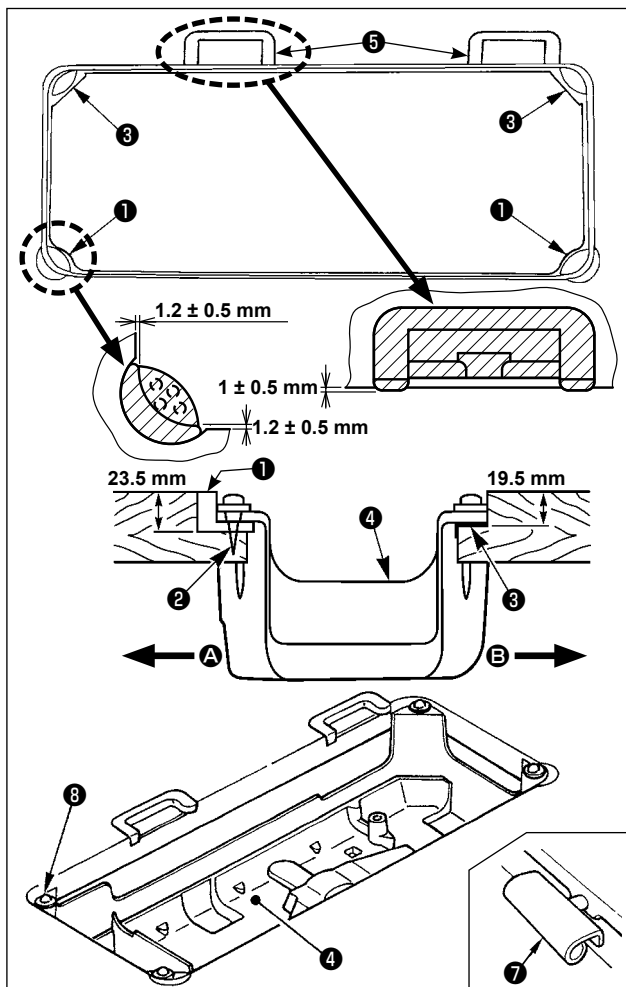
1. Never hold the handwheel since it rotates.
2. Be sure to handle the sewing machine with two persons or more since the sewing machine weighs 40.5 kg or more.



### 2-2-2. Caution when placing the sewing machine

Place the sewing machine on a horizontal and plane place when placing it and do not place any protruding thing such as a screwdriver or the like.

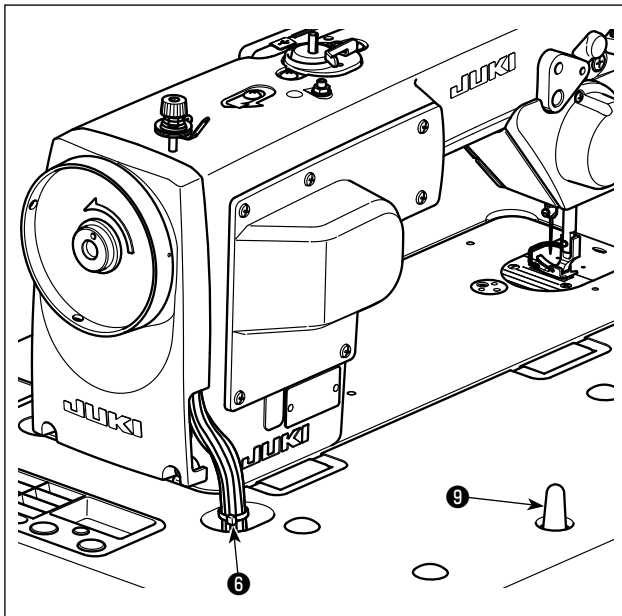
## 2-3. Installation



- 1) The under cover ④ should rest on the four corners of the machine table groove. Mount rubber hinge seat ⑤ on the table and fix it on the table with a nail.
- 2) Fix two rubber seats ① on side A (operator's side) using nails ② as illustrated above. Fix two cushion seats ③ on side B (hinged side) using a rubber-based adhesive. Then place under cover ④ on the fixed seats.
- 3) Fit hinge ⑦ into the opening in the machine bed, and fit the machine head to table rubber hinge seat ⑤ before placing the machine head on cushions ③ on the four corners.



Do not hold the handwheel.



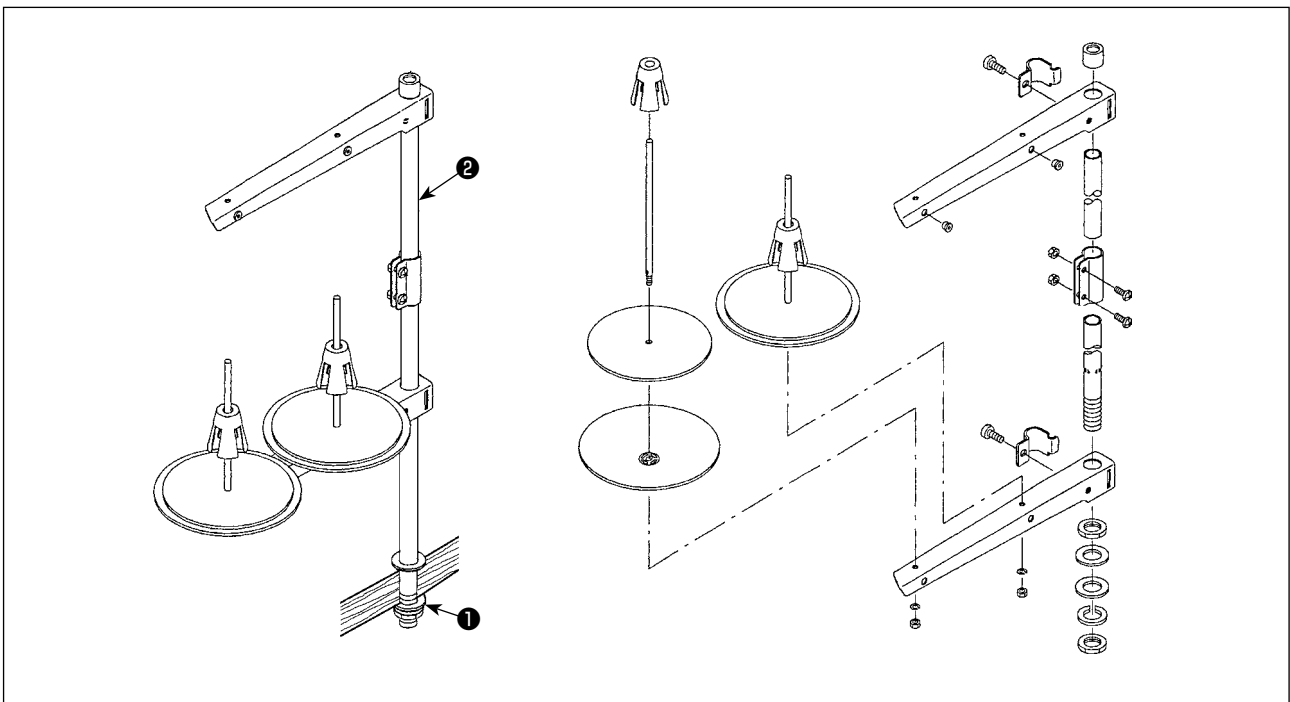
- 4) Securely attach head support rod ⑨ to the table until it goes no further.



Be sure to mount the machine head support rod ⑨ on the machine table so that its height from the table surface becomes 63 to 68 mm. For the sewing machine provided with the AK device, be sure to mount the support rod ⑨ on the table so that its height from the table surface becomes 33 to 38 mm.

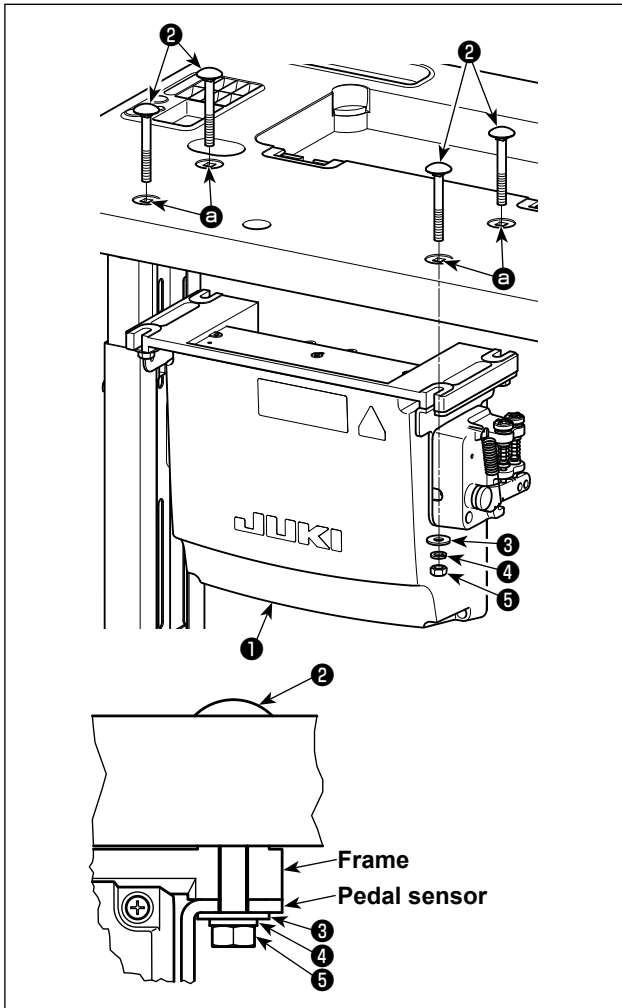
- 5) Bundle cable clip band ⑥ supplied as accessories of the machine head at the root of the cable.

## 2-4. Installing the thread stand



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

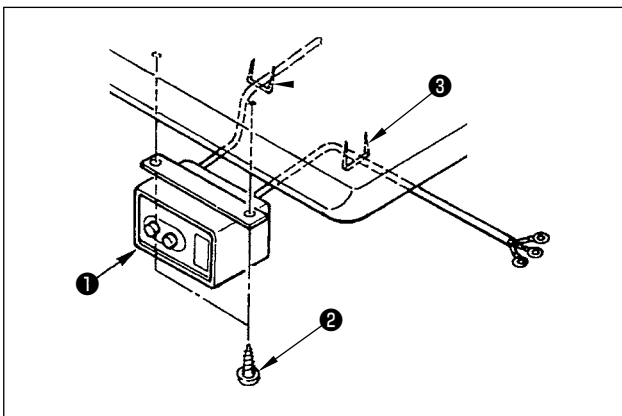
## 2-5. Installing the electrical box



Install control box **1** on the table using four holes **a** in the table. Secure the control box with four bolts **2**, four plain washers **3**, four spring washers **4** and four hexagonal nuts **5** supplied with the control box.

At this time, insert the nut and washer supplied with the unit as accessories as shown in the figure so that the control box is securely fixed.

## 2-6. Connecting the power switch cable



### 2-6-1. Installing the power switch

Fix power switch **1** under the machine table with wood screws **2**.

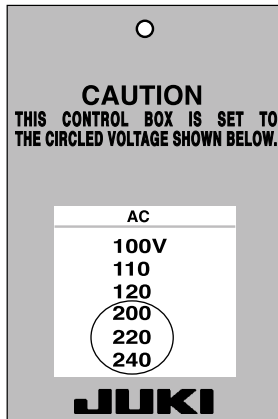
Fix the cable with staples **3** supplied with the machine as accessories in accordance with the forms of use.



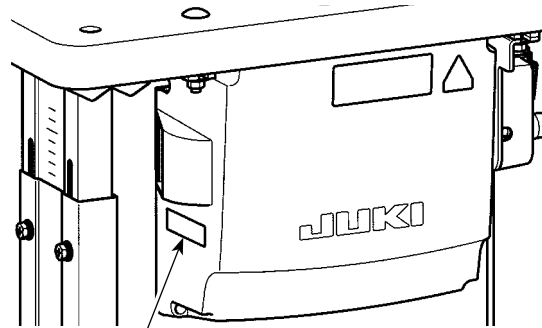
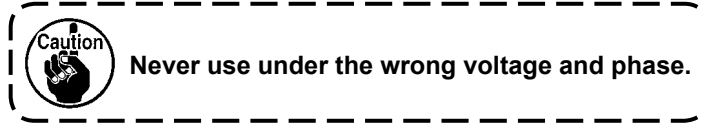
## 2-6-2. Connecting the power source cord

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

Power indication tag

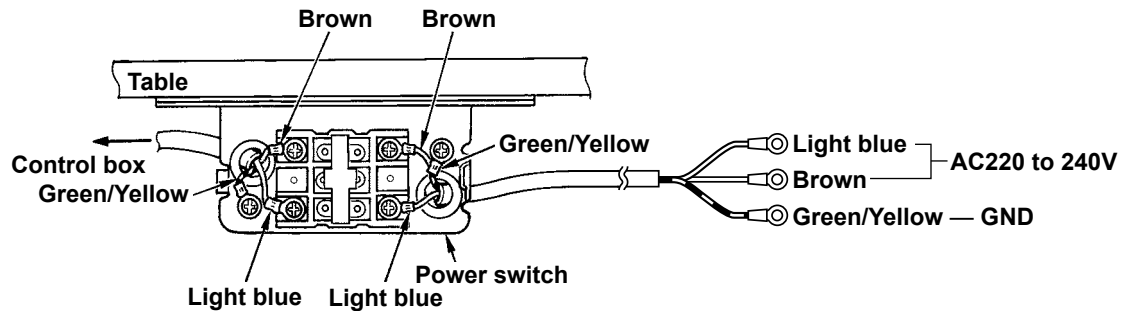


(For example : In the case of 200V)

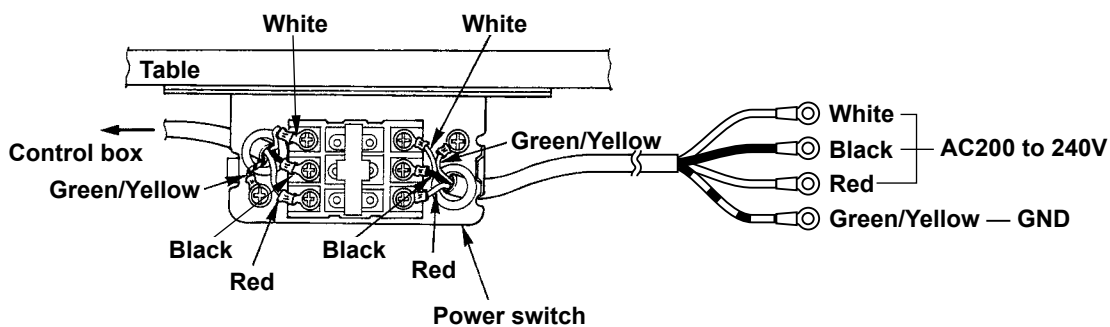


Rating plate

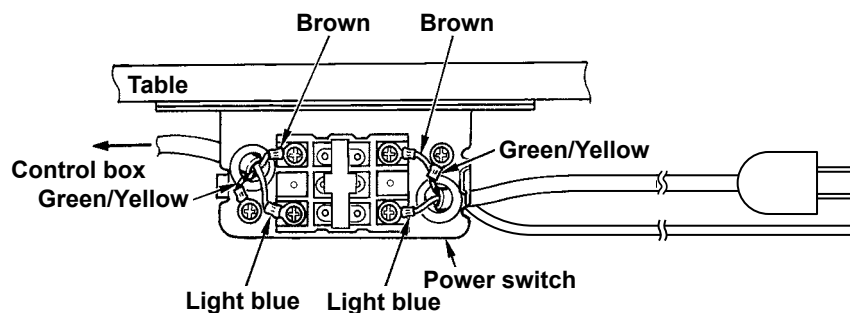
### • Connecting single phase 220 to 240V



### • Connecting 3-phase 200 to 240V

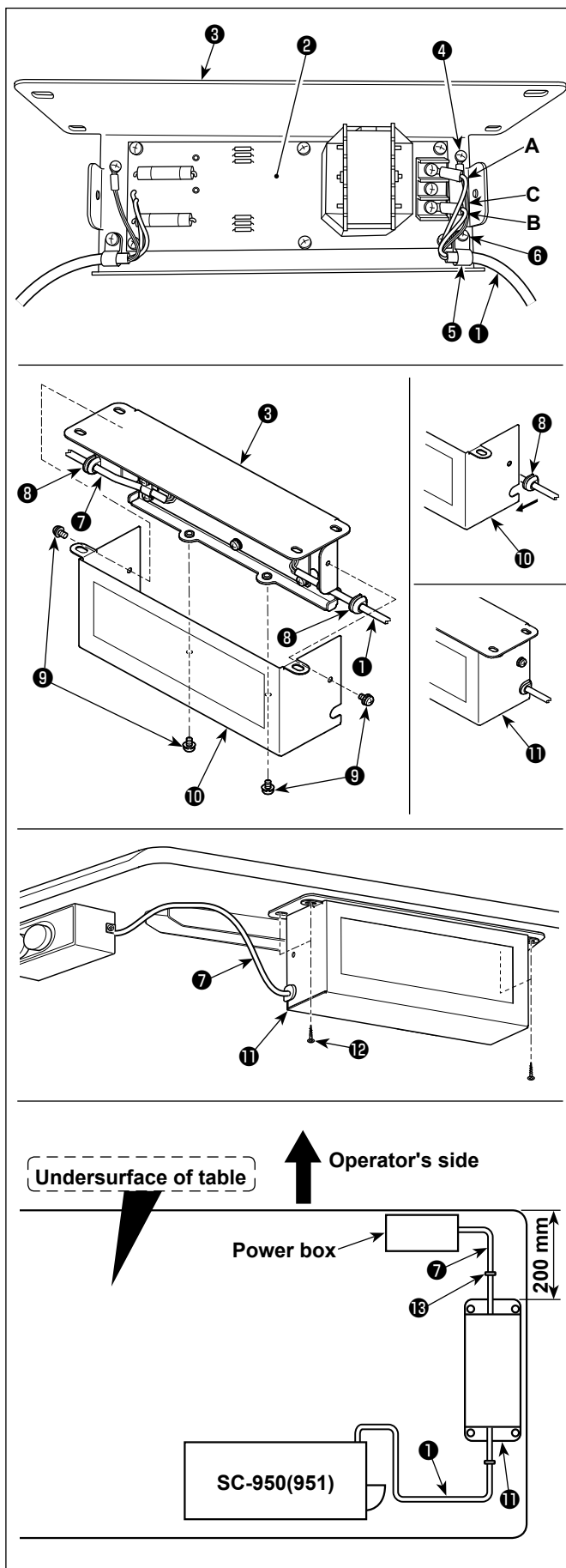


### • Connecting single phase 100 to 120V



## 2-6-3. Installing the reactor box

\* For the EU-type models, install the reactor box that is supplied with the sewing machine.



- 1) Connect the terminals of power cord ① of the SC-950(951) to reactor-box PCB asm. ② and to reactor box mounting plate ③.

Connect brown wire **A** to the first connector and blue wire **B** to the third connector respectively from the top of terminal block on the reactor box PCB asm. using screws. Connect green/yellow wire **C** to reactor box mounting plate ③ with earth setscrew ④.

- 2) Attach cable clip ⑤ to the power cord of SC-950(951). Attach the power cord together with the cable clip to reactor box mounting plate ③ with cable clip setscrew ⑥.

- 3) Attach cord bushes ⑧ to input/output cables ① and ⑦ of the reactor box. Attach both bushes in the same manner.

- 4) Attach reactor box cover ⑩ to reactor box mounting plate ③ with four reactor-box cover setscrews ⑨.

At this time, fix cord bushes ⑧ attached to input/output cables ① and ⑦ in the concave section on reactor box cover ⑩ to eliminate a gap between reactor box ⑪ and cover ⑩.

- 5) Install reactor box ⑪ on the table stand with four accessory wood screws ⑫ at the position that is approximately 200 mm away from the front end of table stand.

Adjust the installing position according to the size of table stand so that the reactor box does not protrude from the edge of table stand.

- 6) Fix input/output cables ① and ⑦ of reactor box ⑪ on the table stand using accessory cord staple ⑬.

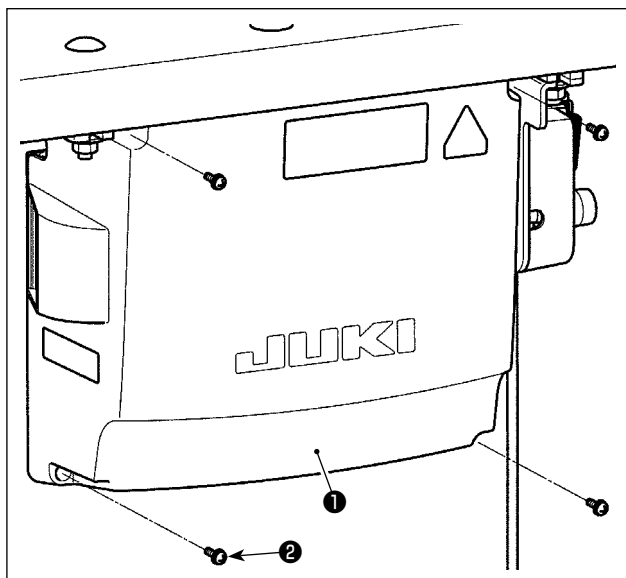
At this time, take care not to cross the input- and output-cables.

## 2-7. Connecting the cords



### DANGER :

1. To prevent personal injuries caused by electric shock hazards or abrupt start of the sewing machine, carry out the work after turning OFF the power switch and a lapse of 5 minutes or more.
2. To prevent accidents caused by unaccustomed work or electric shock, request the electric expert or engineer of our dealers when adjusting the electrical components.



- 1) Loosen four setscrews ② of control box cover ①. Remove control box cover ①.
- 2) Connect the cords to the respective connectors on CTL PWB, PWR PWB. (Fig. 1)



Securely fix the cords to be connected to CN20, CN21 and CN22 with cable clamp ③.

Check the connector markers of CN21 and CN22 to prevent improper connection.

- 3) Fix the ground wire ④ on position A of the control box with a screw. (Fig. 2)

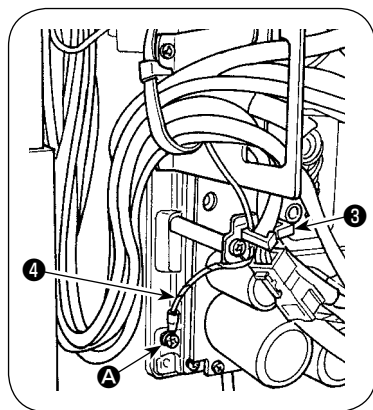
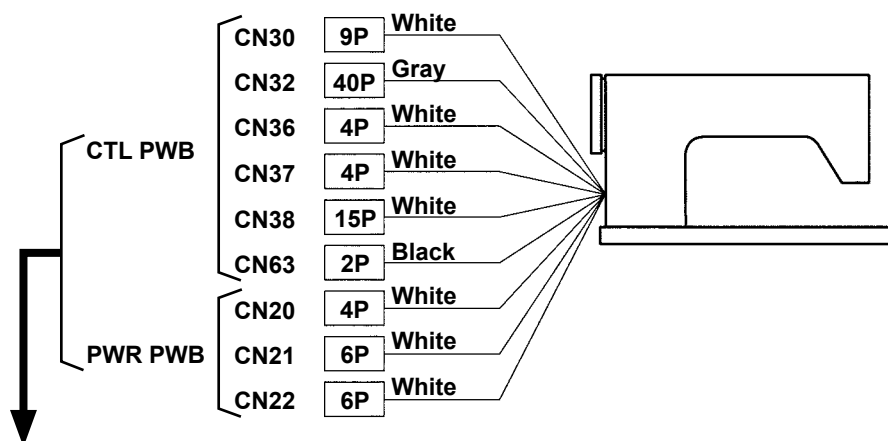


Fig. 2

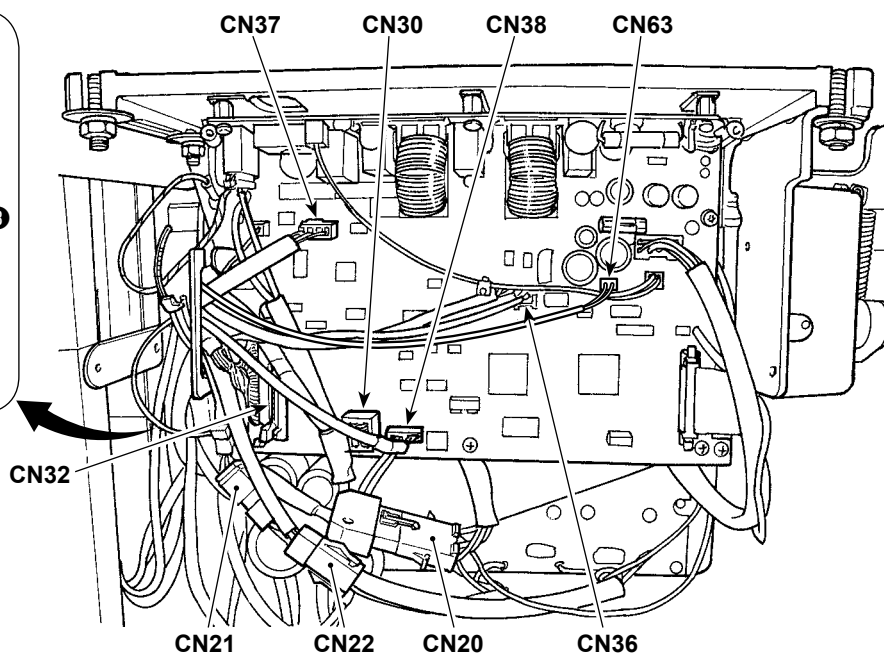


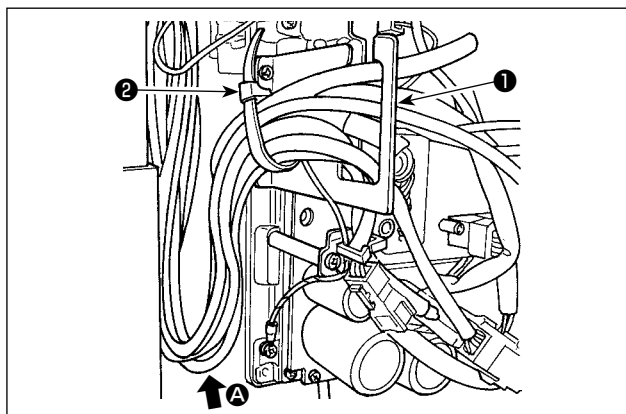
Fig. 1

## 2-8. Handling the cords



### DANGER :

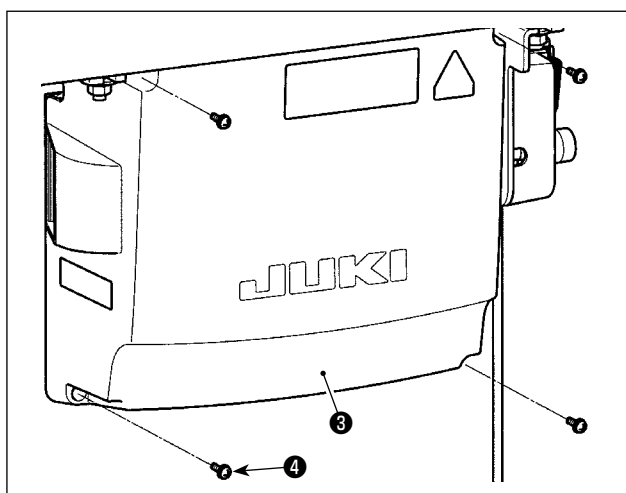
1. To prevent personal injuries caused by electric shock hazards or abrupt start of the sewing machine, carry out the work after turning OFF the power switch and a lapse of 5 minutes or more.
2. To prevent accidents caused by unaccustomed work or electric shock, request the electric expert or engineer of our dealers when adjusting the electrical components.



- 1) Bring the cords under the table into the control box.
- 2) Put the cord brought into the control box through cord exit plate ① and fix cable clip band ②.



Arrange the cord so that it is not tensed or hitched even when the machine head is tilted. (See A section.)



- 3) Install control box cover ③ with four setscrews ④.



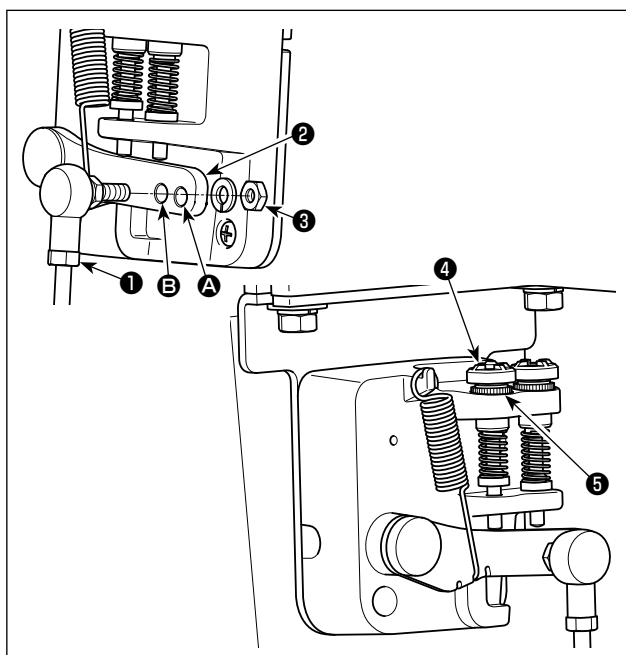
For the purpose of preventing the cord breakage, take care not to allow the cords to be caught between the control box and control box cover ③ when attaching the latter.

## 2-9. Attaching the connecting rod



### WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and a lapse of 5 minutes or more.



- 1) Fix connecting rod ① to installing hole B of pedal lever ② with nut ③.
- 2) Installing connecting rod ① to installing hole A will lengthen the pedal depressing stroke, and the pedal operation at a medium speed will be easier.
- 3) The pressure increases as you turn reverse depressing regulator screw ④ in, and decreases as you turn the screw out.



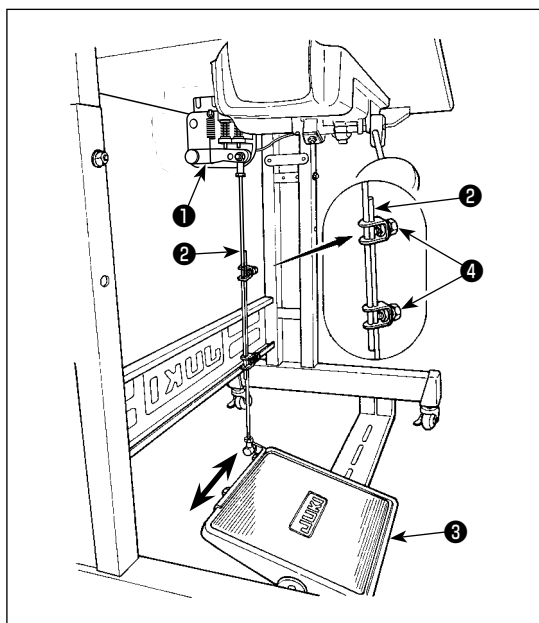
1. If the screw is excessively loosened, the spring will come off. Loosen the screw to such an extent that the top of the screw can be observed from the case.
2. Whenever you have adjusted the screw, be sure to secure the screw by tightening metal nut ⑤ to prevent the screw from loosening.

## 2-10. Adjustment of the pedal



### WARNING :

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



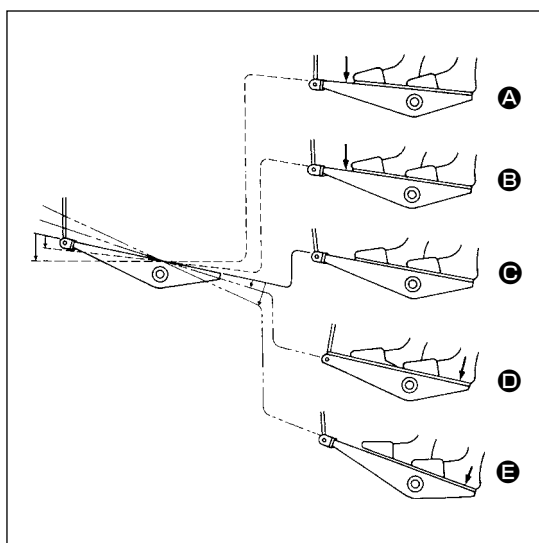
### 2-10-1. Installing the connecting rod

- 1) Move pedal ③ to the right or left as illustrated by the arrows so that motor control lever ① and connecting rod ② are straightened.

### 2-10-2. Adjusting the pedal angle

- 1) The pedal tilt can be freely adjusted by changing the length of the connecting rod ②.
- 2) Loosen adjust screw ④, and adjust the length of connecting rod ②.

## 2-11. Pedal operation



### The pedal is operated in the following four steps :

- 1) The machine runs at low sewing speed when you lightly depress the front part of the pedal. ②
- 2) The machine runs at high sewing speed when you further depress the front part of the pedal. ③ (If the automatic reverse feed stitching has been preset, the machine runs at high speed after it completes reverse feed stitching.)
- 3) The machine stops (with its needle up or down) when you reset the pedal to its original position. ④
- 4) The machine trims threads when you fully depress the back part of the pedal. ⑤

\* When the auto-lifter (AK device) is used, one more operating switch is provided between the sewing machine stop switch and thread trimming switch.

The presser foot goes up when you lightly depress the back part of the pedal ⑤, and if you further depress the back part, the thread trimmer is actuated.

When starting sewing from the state that the presser foot has been lifted with the Auto-lifter and you depress the back part of the pedal, the presser foot only comes down.

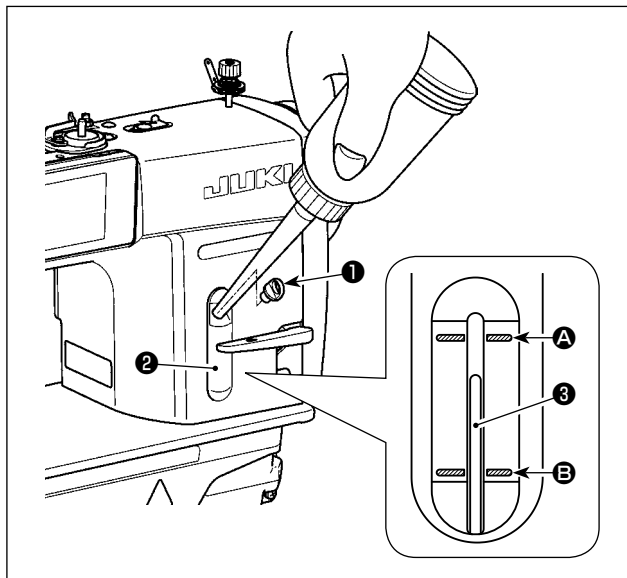
- If you reset the pedal to its neutral position during the automatic reverse feed stitching at seam start, the machine stops after it completes the reverse feed stitching.
- The machine will perform normal thread trimming even if you depress the back part of the pedal immediately following high or low speed sewing.
- The machine will completely perform thread trimming even if you reset the pedal to its neutral position immediately after the machine started thread trimming action.

## 2-12. Lubrication

### WARNING :



1. Do not connect the power plug until the lubrication has been completed so as to prevent accidents due to abrupt start of the sewing machine,
2. To prevent the occurrence of an inflammation or rash, immediately wash the related portions if oil adheres to your eyes or other parts of your body.
3. If oil is mistakenly swallowed, diarrhea or vomiting may occur. Put oil in a place where children cannot reach.



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

- 1) Remove oil hole cap ❶ and fill the oil tank with JUKI NEW DEFRIX OIL No.1 (part number : MD-FRX1600C0) or JUKI CORPORATION GENUINE OIL 7 (part number : 40102087) using the oiler supplied with the machine.
- 2) Fill the oil tank with the oil until the top end of oil amount indicating rod ❸ comes between the upper engraved marker line ❸ and the lower engraved marker line ❸ of oil amount indicating window ❷.  
If the oil is filled excessively, it will leak from the air vent hole in the oil tank or proper lubrication will be not performed. In addition, when the oil is vigorously filled, it may overflow from the oil hole. So, be careful.
- 3) When you operate the sewing machine, refill oil if the top end of oil amount indicating rod ❸ comes down to the lower engraved marker line ❸ of oil amount indicating window ❷.



1. When you use a new sewing machine or a sewing machine after an extended period of disuse, use the sewing machine after performing break-in at 2,000 sti/min or less.
2. For the oil for hook lubrication, purchase JUKI NEW DEFRIX OIL No. 1 (part number : MDFRX1600C0) or JUKI CORPORATION GENUINE OIL 7 (part number : 40102087).
3. Be sure to lubricate clean oil.
4. Do not operate the machine with the oil hole cap ❶ removed. Never remove cap ❶ from the oil inlet in any case other than oiling. In addition, take care not to lose it.

## 2-13. How to use the operation panel (Basic explanation)

### 2-13-1. Selection of the language (operation to be done at first)

Select the language to be displayed on the operation panel when you turn ON the power to your sewing machine for the first time after the purchase. Note that, if you turn the power OFF without selecting the language, the language selection screen will be displayed every time you turn ON the power to the sewing machine.

#### ① Turning ON the power switch



Be aware that the needle bar moves automatically. The needle bar can also be set so that it does not move automatically. Refer to ["4-5. List of memory switch data" p. 58](#) for details.



<Welcome screen>

Firstly, the welcome screen is displayed on the panel. Then, the language selection screen is displayed.

#### ② Selecting the language



<Language selection screen>

Select the language you want to use and press corresponding language button ①.

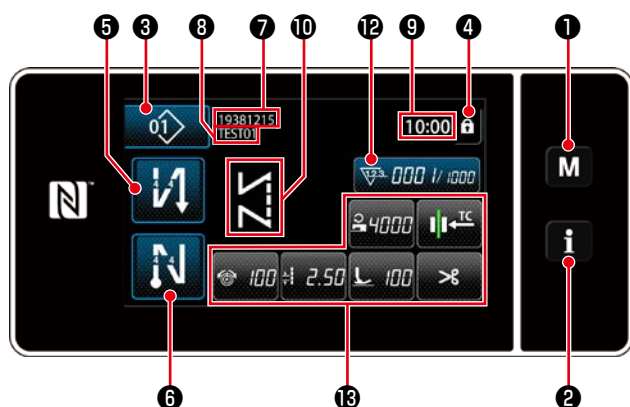
Then, press  ②.

This determines the language to be displayed on the panel.

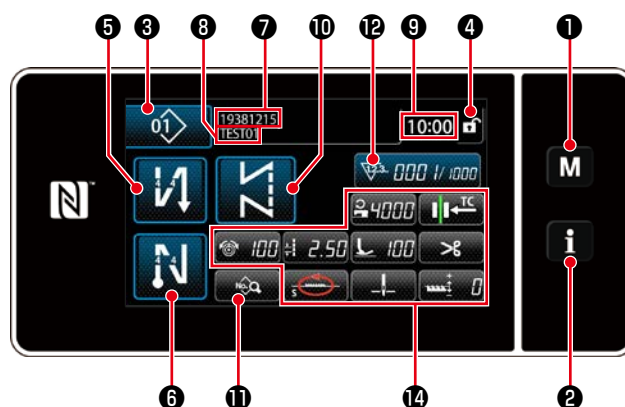
The language to be displayed on the operation panel can be changed using the memory switch U406. Refer to ["4-5. List of memory switch data" p. 58](#) for details.

## 2-13-2. Names and functions of the panel keys

< Operator mode >



< Maintenance personnel mode >



	Switch/display	Description
①	Mode key	This switch is used for displaying the menu screen.
②	Information key	This switch is used for displaying the information screen.
③	Sewing pattern No. button	This switch is used for displaying the number of the sewing pattern.
④	Simplified screen lock button	This button is used for displaying the simplified lock status of the screen on it. Locked:  Unlocked:
⑤	Sewing-start reverse-feed stitch button	This switch is used for changing the ON/OFF status of the reverse feed stitching at the beginning of sewing. When reverse feed stitching at the beginning of sewing is placed in the OFF state,  mark is displayed at the upper left of the button.
⑥	Sewing-end reverse-feed stitch button	This switch is used for changing the ON/OFF status of reverse feed stitching at the end of sewing. When reverse feed stitching at the end of sewing is placed in the OFF state,  mark is displayed at the upper left of the button.
⑦	Part number	In the case the part number/process display is selected with U404, the part number is displayed. In the case the comment display is selected, the comment is displayed.
⑧	Process/comment	In the case the part number/process display is selected with U404, the process is displayed. In the case the comment display is selected, the comment is displayed.
⑨	Clock display	The time set on the sewing machine is displayed in this field in 24-hour system.
⑩	Sewing pattern display	The selected sewing pattern is displayed in this field.
⑪	Sewing data list button	The sewing data list screen is displayed in this field.
⑫	Customization button 1	A selected function can be allocated to and registered with this button. Initially, the sewing counter has been factory-allocate and -registered.
⑬	Customization buttons 2 - 7	A selected function can be allocated to and registered with this button.
⑭	Customization buttons 2 - 10	A selected function can be allocated to and registered with this button.

### \* Confirmation of data

To change the pattern number, press Sewing pattern No. button ③.

Select the sewing pattern you want to use. Then, press to confirm your choice.

For the setting items of the Memory switch or sewing pattern, change the target data and press to confirm the change.

After the setting data on the number of stitches of reverse-feed stitching or the number of stitches of multi-layer stitching has been changed, the changed setting data is confirmed by pressing .



## 2-13-3. Basic operation

### ① Turning ON the power switch



When you turn ON the power switch, the welcome screen is displayed.

### ② Selecting a sewing pattern



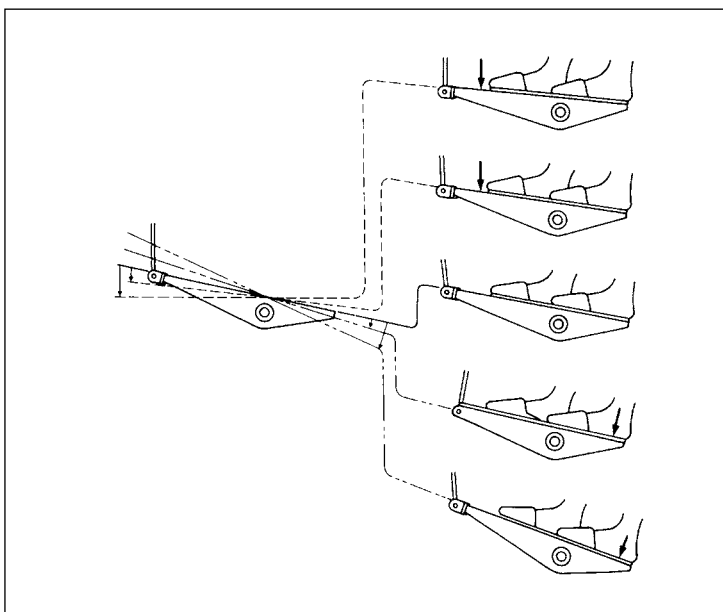
<Sewing screen>

The sewing screen is displayed.

- Select a sewing pattern.  
Refer to **"4-2. Sewing patterns" p. 31** for details.
- Set up functions for the selected sewing pattern.  
Refer to **"4-2-5. Editing the sewing patterns" p. 40** and **"4-2-6. List of pattern functions" p. 42** for details.

\* Changeover between the operator mode and the maintenance personnel mode is carried out by pressing **M** ① and **i** ② simultaneously.

### ③ Starting sewing



When you depress the pedal, the sewing machine starts sewing.

Refer to **"2-11. Pedal operation" p. 10.**

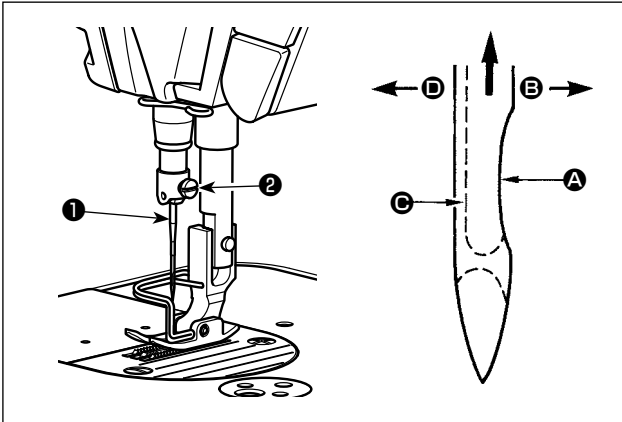
### 3. PREPARATION BEFORE SEWING

#### 3-1. Attaching the needle



**WARNING :**

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



Use the specified needle for the machine. Use the proper needle in accordance with the thickness of thread used and the kinds of the materials.

- 1) Turn the handwheel until the needle bar reaches the highest point of its stroke.
- 2) Loosen screw ②, and hold needle ① with its indented part ① facing exactly to the right in direction ③.
- 3) Insert the needle fully into the hole in the needle bar in the direction of the arrow until the end of hole is reached.

4) Securely tighten screw ②.

5) Check that long groove ④ of the needle is facing exactly to the left in direction ④.



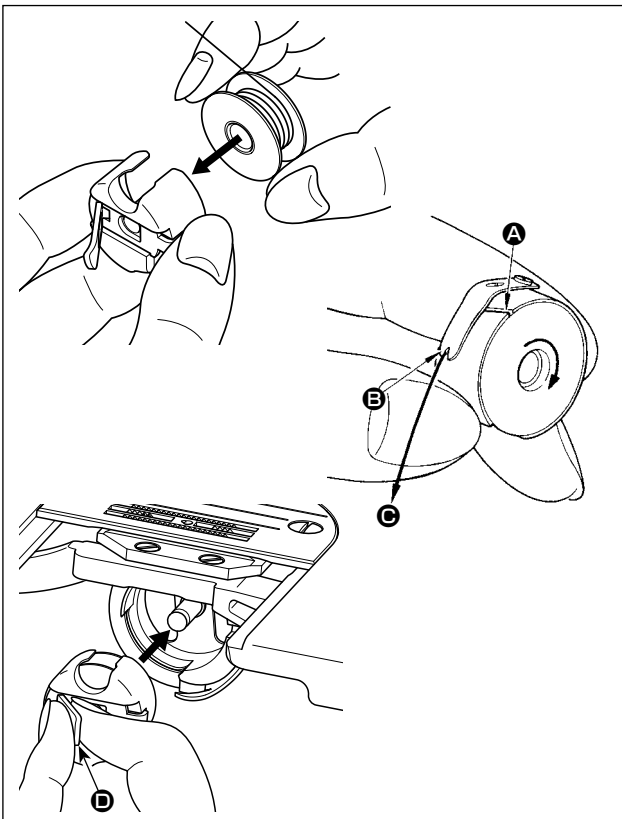
When polyester filament thread is used, if the indented part of the needle is tilted toward operator's side, the loop of thread becomes unstable. As a result, hangnail of thread or thread breakage may occur. For the thread that such phenomenon is likely to occur, it is effective to attach the needle with its indented part slightly slanting on the rear side.

#### 3-2. Removing/fitting the bobbin case



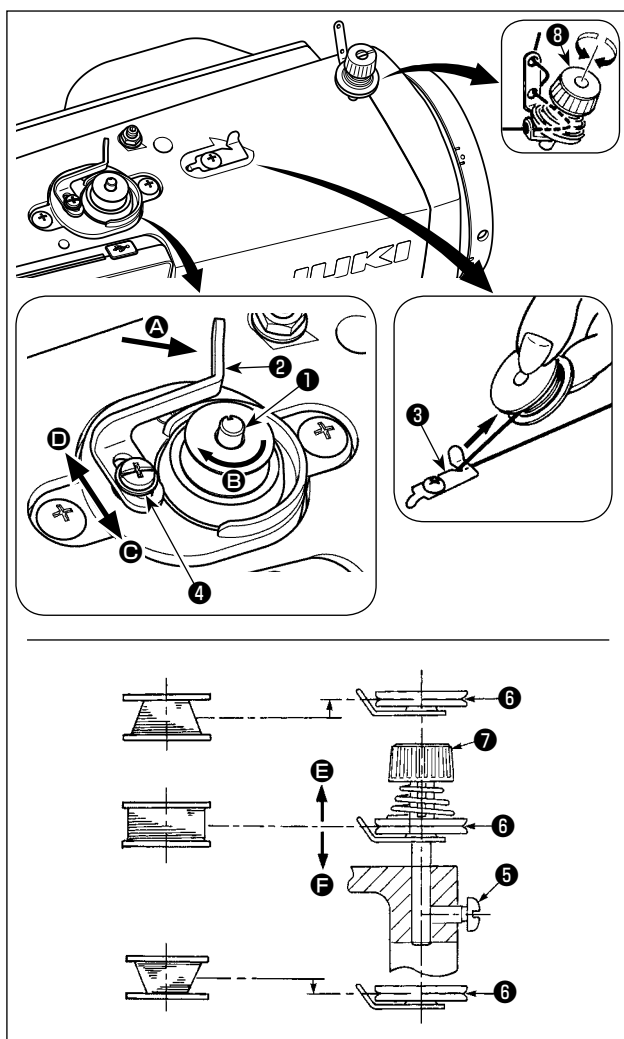
**WARNING :**

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



- 1) Turn the handwheel to lift the needle above the throat plate.
- 2) Install the bobbin in the bobbin case so that the thread wound direction is clockwise.
- 3) Pass the thread through thread slit ① of the bobbin case, and pull the thread in direction ③. By so doing, the thread will pass under the tension spring and come out from notch ②.
- 4) Check that the bobbin rotates in the direction of the arrow when thread is pulled.
- 5) Pinching latch ④ of the bobbin case with fingers, fit the bobbin case in the hook.

### 3-3. Winding the bobbin thread



- 1) Insert the bobbin deep into the bobbin winder spindle ❶ until it will go no further.
- 2) Pass the bobbin thread pulled out from the spool rested on the right side of the thread stand following the order as shown in the figure on the left. Then, wind clockwise the end of the bobbin thread on the bobbin several times. (In case of the aluminum bobbin, after winding clockwise the end of the bobbin thread, wind counterclockwise the thread coming from the bobbin thread tension several times to wind the bobbin thread with ease.)
- 3) Press the bobbin winding lever ❷ in the direction of A and start the sewing machine. The bobbin rotates in the direction of B and the bobbin thread is wound up. The bobbin winder spindle ❶ automatically as soon as the winding is finished.
- 4) Remove the bobbin and cut the bobbin thread with the thread cut retainer ❸.
- 5) When adjusting the winding amount of the bobbin thread, loosen setscrew ❹ and move bobbin winding lever ❷ to the direction of C or D. Then tighten setscrew ❹.  
 To the direction of C : Decrease  
 To the direction of D : Increase

- 6) In case that the bobbin thread is not wound evenly on the bobbin, remove the handwheel, loosen screw ❺ and adjust the height of bobbin thread tension ❽.
  - It is the standard that the center of the bobbin is as high as the center of thread tension disk ❻.
  - Adjust the position of thread tension disk ❻ to the direction of E when the winding amount of the bobbin thread on the lower part of the bobbin is excessive and to the direction F when the winding amount of the bobbin thread on the upper part of the bobbin is excessive.
 After the adjustment, tighten screw ❺.
- 7) To adjust the tension of the bobbin winder, turn the thread tension nut ❷.

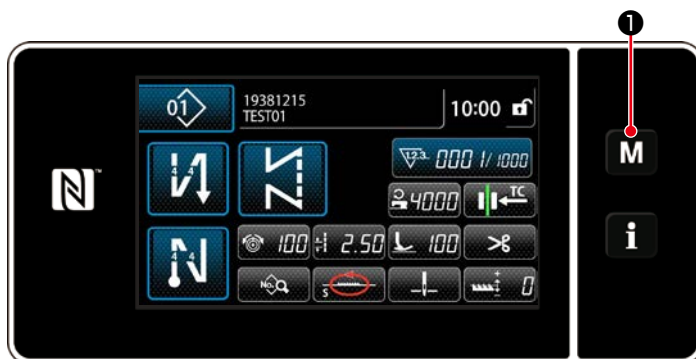


1. When winding the bobbin thread, start the winding in the state that the thread between the bobbin and thread tension disk ❻ is tense.
2. When winding the bobbin thread in the state that sewing is not performed, remove the needle thread from the thread path of thread take-up and remove the bobbin from the hook.
3. There is the possibility that the thread pulled out from the thread stand is loosened due to the influence (direction) of the wind and may be entangled in the handwheel. Be careful of the direction of the wind.

### [Bobbin winding mode]

The bobbin winding mode should be used for winding a bobbin only.

Only the main shaft operates when the pedal is depressed.



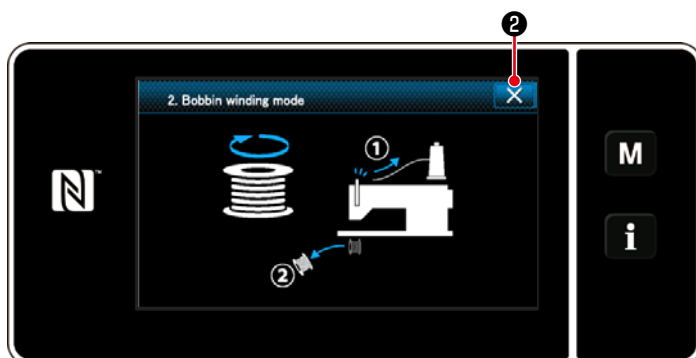
1) Display the mode screen by pressing



1.




2) Select "2. Bobbin winding mode".



3) The sewing machine mode is changed over to the "Bobbin winding mode".

The sewing machine runs with its presser foot up when the pedal is depressed. In this state, a bobbin can be wound. The sewing machine runs only as long as the pedal is depressed.

When  2 is pressed, the sewing machine exits from the "Bobbin winding mode".



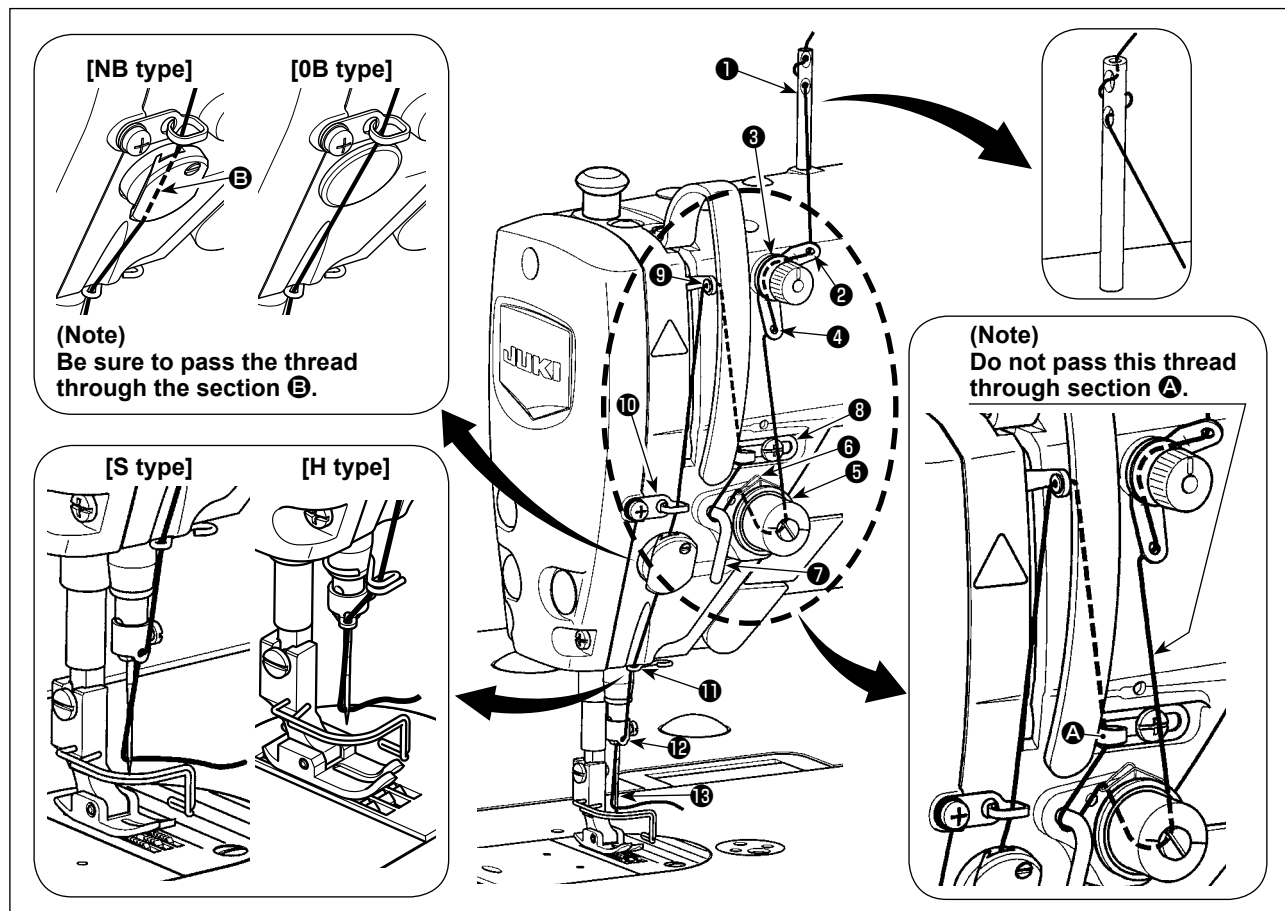
1. When winding the bobbin thread, start the winding in the state that the thread between the bobbin and thread tension disk ⑥ is tense.
2. Remove the needle thread from the thread path of thread take-up and remove the bobbin from the hook.
3. There is the possibility that the thread pulled out from the thread stand is loosened due to the influence (direction) of the wind and may be entangled in the handwheel. Be careful of the direction of the wind.

### 3-4. Threading the machine head

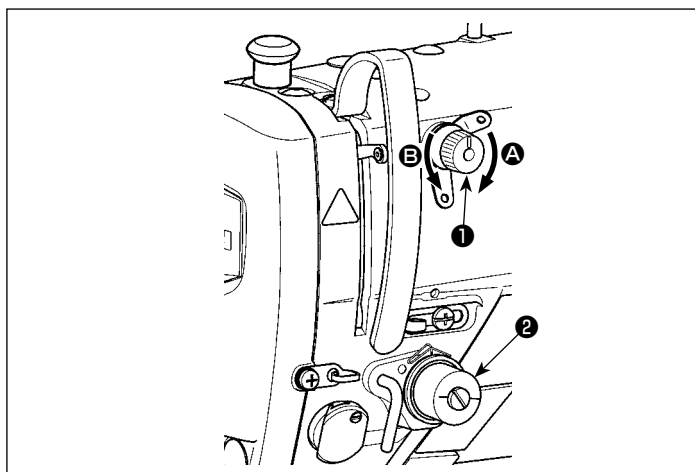


#### **WARNING :**

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

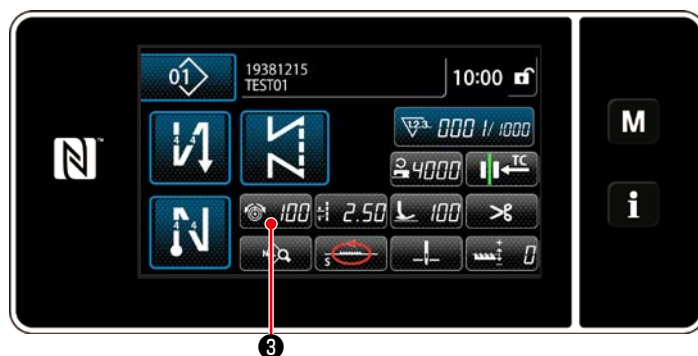


### 3-5. Thread tension



#### 3-5-1. Adjusting the thread tension No. 1 tension

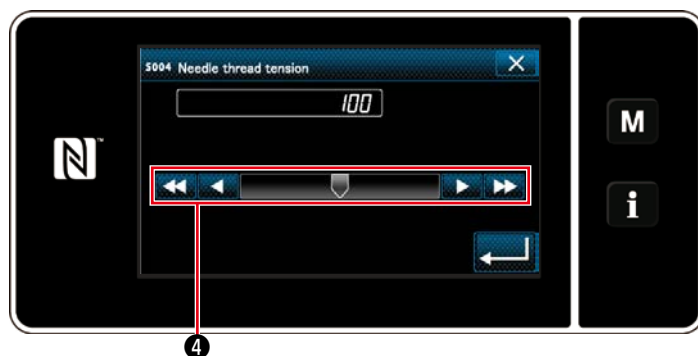
- 1) Turn thread tension No. 1 nut ① clockwise (in direction ➀), to shorten the thread length remaining on the needle after thread trimming or counterclockwise (in direction ➁), to lengthen the thread length.



#### 3-5-2. Adjusting the needle thread tension (Active tension)

Active tension ➂ permits setting of the needle thread tension on the operation panel according to each sewing condition. In addition, the data can be stored in memory.

- 1) Press ➂ to display the needle thread tension input screen. (The numeric value displayed on the screen is the current needle thread tension value.)

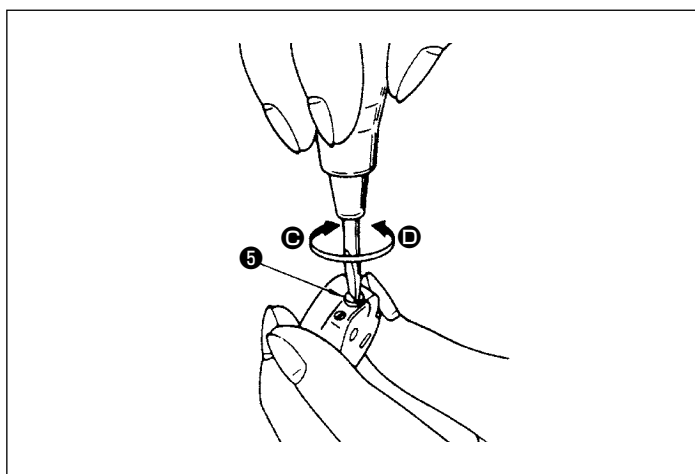


- 2) Change the needle thread tension as desired by pressing ➄.

- 3) There is a setting range of 0 to 200.

When the set value is increased, the tension becomes higher.

\* When the set value is 60 at the time of standard delivery, the thread tension is adjusted to 0.59 N (spun thread #60). (Reference)  
(When thread tension No. 1 is released.)



#### 3-5-3. Adjusting the bobbin thread tension

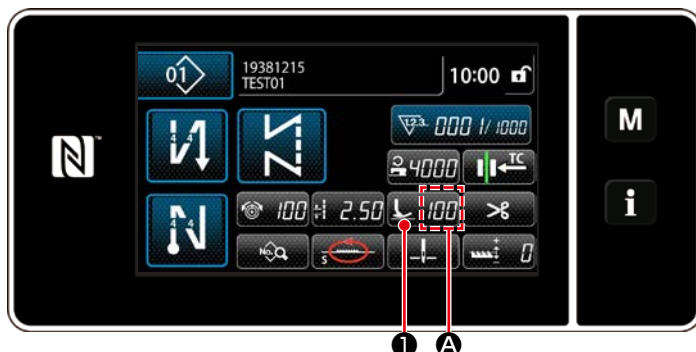
- 1) Turn tension adjusting screw ➅ clockwise (in direction ➃) to increase or counterclockwise (in direction ➄) to reduce the bobbin thread tension.

### 3-6. Presser foot



#### WARNING :

Do not place anything under the presser foot when turning the power ON. If the power is turned ON while placing something under the presser foot, the sewing machine displays E910.



#### 3-6-1. Presser foot pressure

The presser foot pressure is displayed in section **A** on the panel. (Example of display : 100)

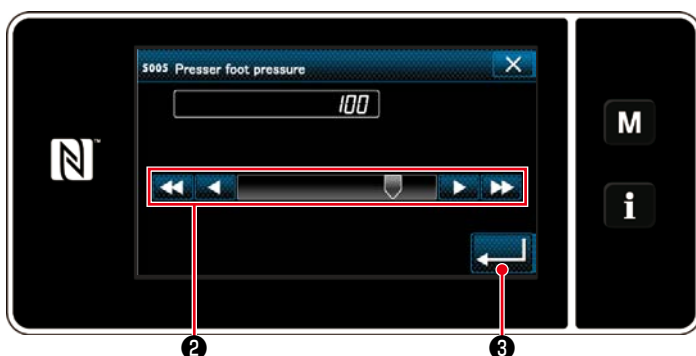
##### [How to change]

1) Display the presser foot pressure entry screen by pressing **1**.

2) Change the presser foot pressure as desired by pressing **2**. (Range of input values on the panel is from 0 to 200.)

\* Refer to the following for a rough indication of the input value on the panel and the presser foot pressure.

3) Confirm your entry by pressing **3**. Then, the sewing screen is displayed.



Input value on the panel	Presser foot pressure (Reference)	
	S type	H type
0	Approx. 10 N (1 kg)	Approx. 30 N (3 kg)
100 (Factory-setting at the time of shipment)	Approx. 40 N (4 kg)	Approx. 60 N (6 kg)



1. To avoid personal injury, never put your fingers under the presser foot.
2. Be aware that the presser foot pressure varies when the presser foot or the throat plate is changed.

#### 3-6-2. Micro-lifter function

Sewing while lifting the presser foot by very small amount is enabled by inputting a negative value on the panel. The micro-lifter function helps reduce slippage and damage of the material in the case of sewing raised fabric such as velvet.

\* Refer to the table shown below for a rough indication of the relation among the value input on the panel, the presser foot height and the presser foot pressure.

Input value on the panel	Presser foot height	Presser foot pressure (Reference)	
		S type	H type
0	0 mm	Approx. 10 N (1 kg)	Approx. 30 N (3 kg)
-350	Approx. 4 mm		

**\*1** The presser foot height 0 mm means the state the sole of presser foot comes in contact with the top surface of throat plate.

**\*2** The presser foot pressure becomes constant by inputting a negative value on the panel.

**\*3** The presser foot pressure varies when the presser foot or the throat plate is changed.

**\*4** Range of input values on the panel is from 0 to -350.



1. Be sure to input a positive value on the operation panel in the case the micro-lifter function is not used. If not, the presser foot is slightly raised and the feed dog is unable to provide a sufficient efficiency of feed.
2. In the case of using the micro-lifter function, the efficiency of feed is likely to be insufficient. To achieve the sufficient efficiency of feed, reduce the sewing speed or help feed the material by hand.



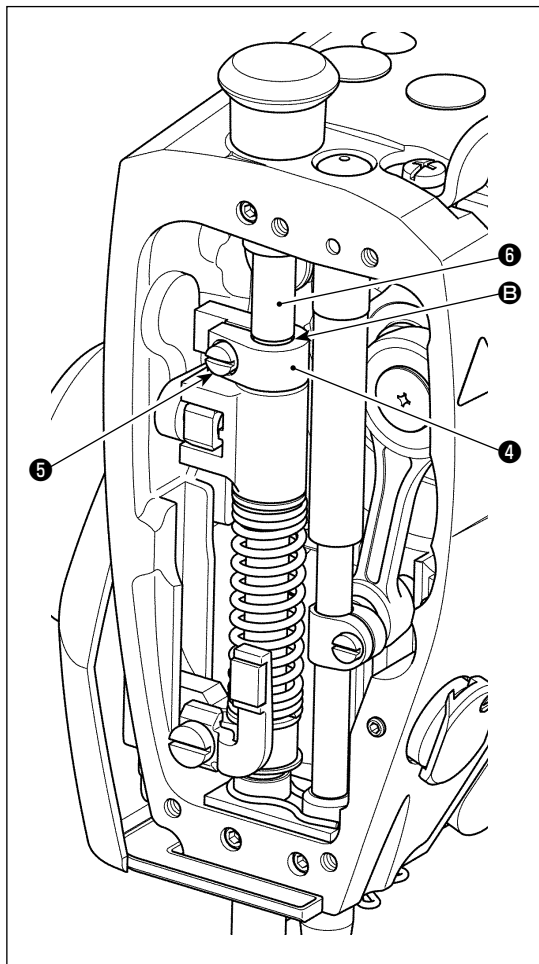
# **WARNING :**

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

## **3-6-3. Changing the initial value of presser foot pressure**

If you want to change the initial value of presser foot pressure, it is possible to change the initial presser foot pressure by changing the mounting position of presser bar position bracket (upper) ④.

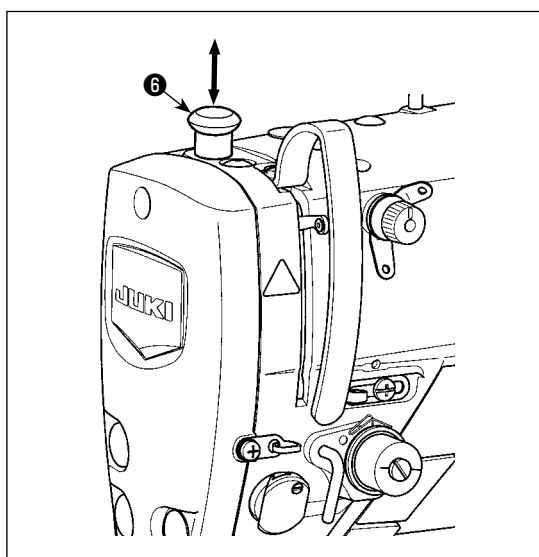
Carry out adjustment according to the sewing process as needed basis.



### **[How to adjust]**

- 1) Turn OFF the power to the sewing machine.
- 2) Remove the face plate.
- 3) Loosen presser bar position bracket (upper) clamping screw ⑤. Adjust the vertical position of presser bar position bracket (upper) ④ using marker line B on presser bar ⑥ as reference.  
\* Adjust the orientation of presser bar position bracket (upper) ④ so that it is in parallel with the face plate.
- 4) After the completion of adjustment, tighten presser bar position bracket (upper) clamping screw ⑤ and attach the face plate.

Position of presser bar position bracket (upper) ④ with respect to marker line B on presser bar ⑥	Presser foot pressure (Reference)	
	S type	H type
4 mm above	Approx. 0 N (0 kg)	Approx. 0 N (0 kg)
1 mm above		Approx. 30 N (3 kg)
0 (just beneath the marker line) (Factory-setting at the time of shipment)	Approx. 10 N (1 kg)	
1 mm below	Approx. 20 N (2 kg)	Approx. 40 N (4 kg)



## **3-6-4. Manual lifter**

The presser foot can be manually lifted/lowered by moving presser bar cap ⑥ up and down while the power to the sewing machine is in the OFF state.

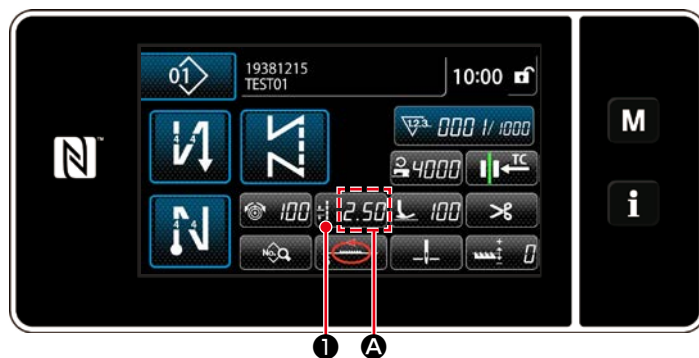
Use this manual lifting feature when replacing the gauge or adjusting the needle entry area.



### 3-7. Adjusting the stitch length



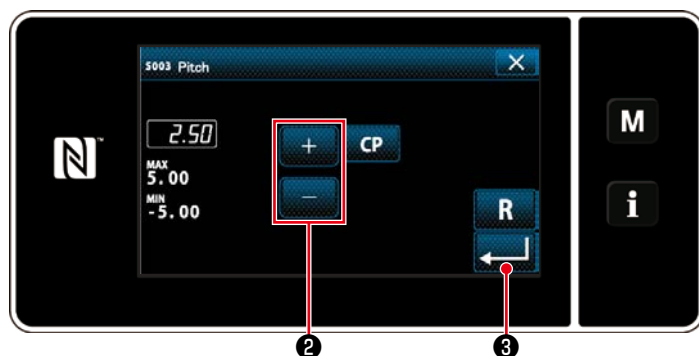
1. There may be the cases where the feed amount of the operation panel and the actual sewing pitch are different from each other in case of the use in the state other than the standard delivery or material used. Compensate the pitch in accordance with the sewing product.
2. Be aware that interference between the throat plate and feed dog can occur depending on the gauge used. Be sure to check the clearance in the gauge to be used. (The clearance must be 0.5 mm or more.)
3. When you have changed the stitch length, feed dog height or feed timing, run the sewing machine at a low speed to make sure that the gauge does not interfere with the changed part.



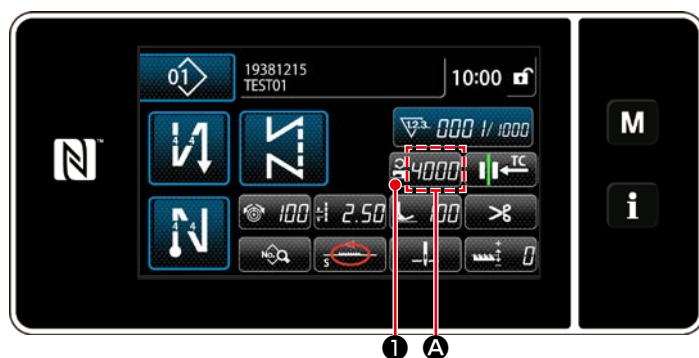
Stitch length is displayed in section **A** on the panel. (Example of display : 2.50 mm)

#### [How to adjust]

- 1) Display the stitch pitch entry screen by pressing **2.50** **1**.
- 2) The value displayed is changed by pressing **+** **2**. (In increments of 0.05 mm ; Input range : -5.00 to 5.00)
- 3) Confirm your entry by pressing **←** **3**. Then, the sewing screen is displayed.



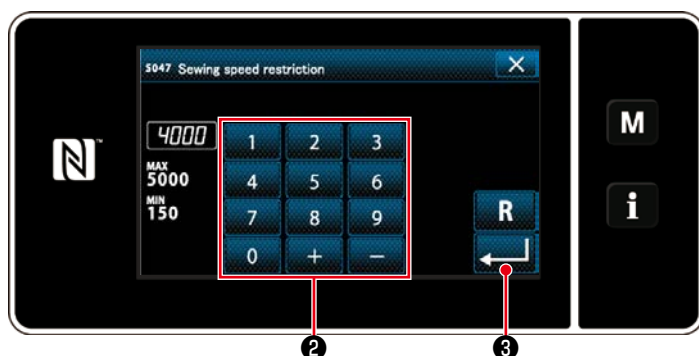
### 3-8. Changing the sewing speed



The sewing speed is displayed in section **A** on the panel. (Example of display : 4,000 sti/min)

#### [How to change]

- 1) Display the sewing speed entry screen by pressing **4000** **1**.
- 2) Change the sewing speed as desired by pressing ten keys **2**.
- 3) Confirm your entry by pressing **←** **3**. Then, the sewing screen is displayed.

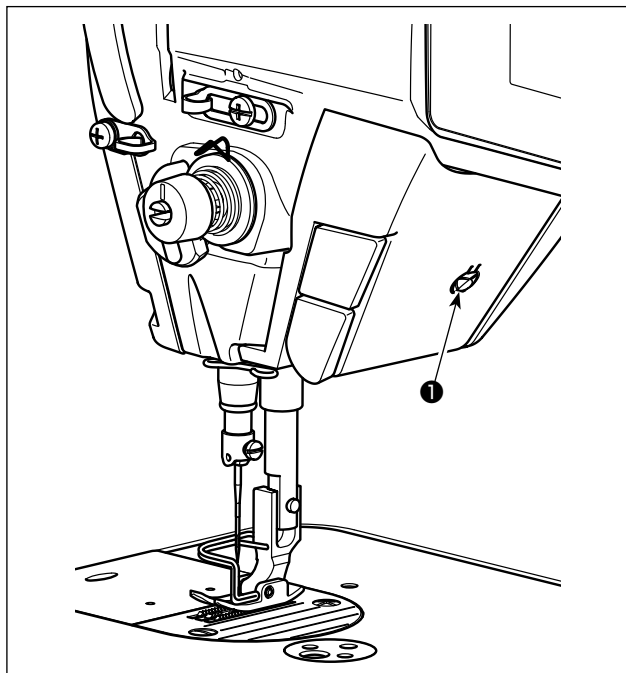


### 3-9. LED hand light



#### **WARNING :**

In order to protect against personal injury due to unexpected start of the sewing machine, never bring hands near the needle entry area or place foot on the pedal during the adjustment of intensity of the LED.



**\* This LED is intended to improve operability of the sewing machine and is not intended for maintenance.**

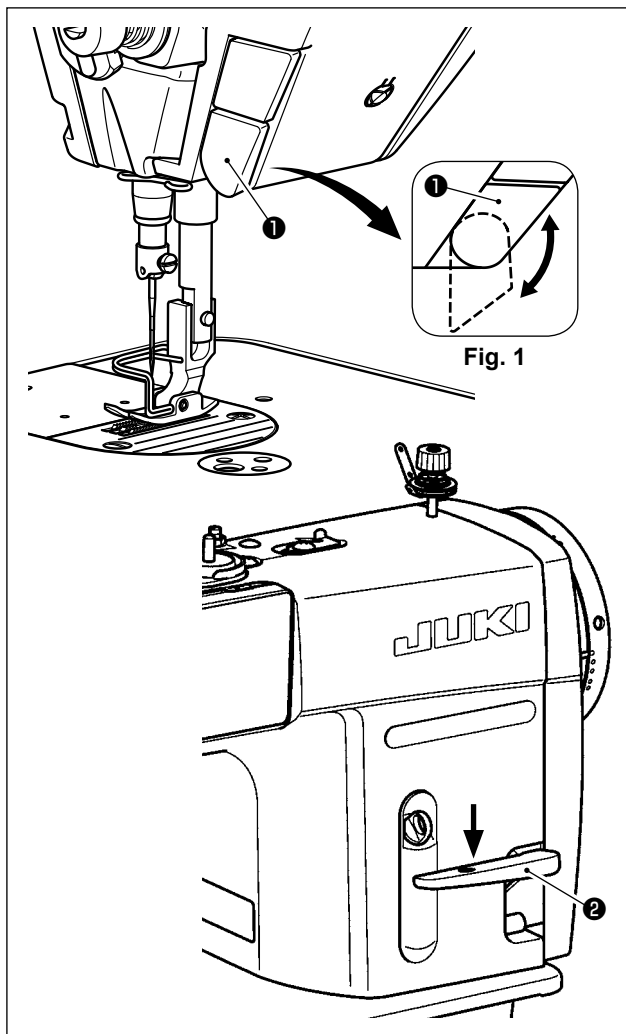
The sewing machine is provided as standard with an LED light which illuminates the needle entry area. Intensity adjustment and turn-off of the light is carried out by pressing switch ①. Every time the switch is pressed, the light is adjusted in intensity in five steps and is turned off in turn.

#### **[Change of intensity]**

1 ⇒ ..... 4 ⇒ 5 ⇒ 6  
Bright ⇒ ..... Dim ⇒ Off ⇒ Bright

In this way, every time the switch ① is pressed, the hand lamp status is changed in repetition.

### 3-10. Reverse feed stitching



#### **[One-touch type reverse feed stitching mechanism]**

The one-touch type reverse feed switch ① is pressed, the machine performs reverse feed stitching.

The machine resumes normal feed stitching the moment the switch lever is released.

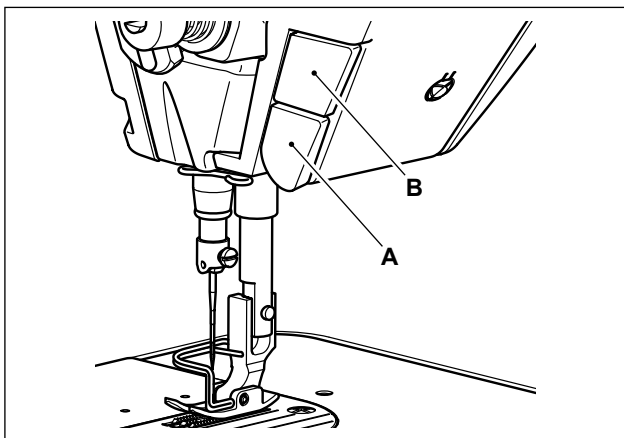
#### **[Reverse feed stitching by means of the reverse feed lever]**

Length of the seam sewn by feeding the material in the normal or reverse direction of feed can be controlled by operating reverse feed lever ②.

#### **[Adjusting the position of one-touch type reverse feed switch]**

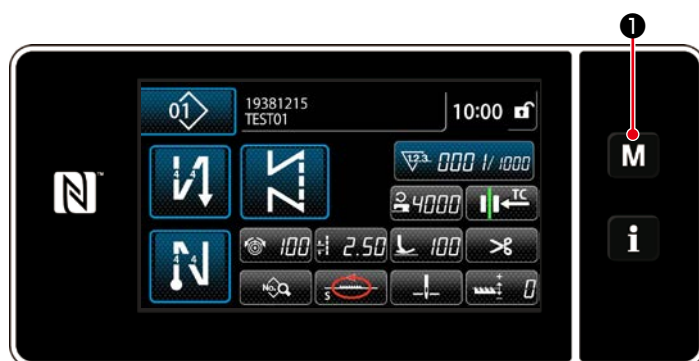
One-touch type reverse feed switch ① can be used at two different positions by turning it. (Fig. 1)

### 3-11. Custom switch

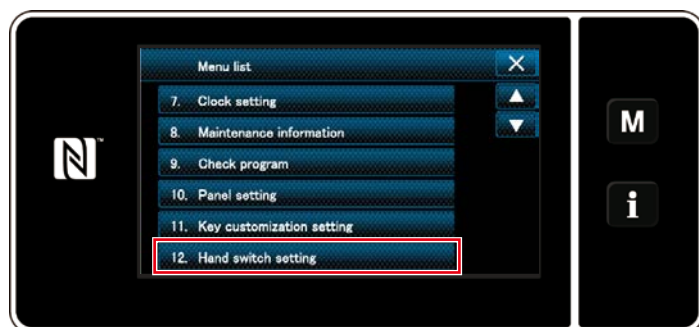


Various operations can be carried out by operating custom switch **B**.

\* Various operations can be allocated also to one-touch type reverse feed switch **A**.



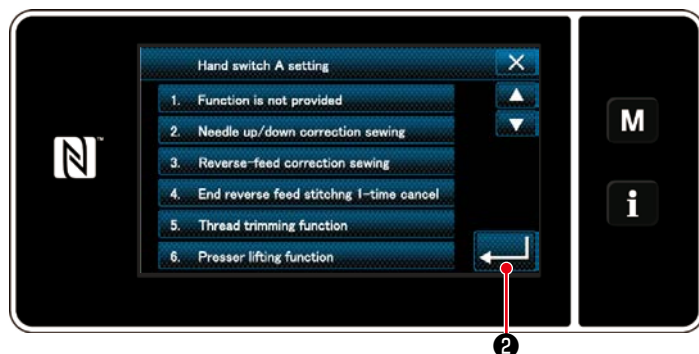
1) Display the mode screen by pressing **M** ①.



2) Select "12. Hand switch setting".



3) Select the switch to be set.



4) Select the function item which is to be assigned to the switch, and press **←** ②.

### [Description of operations of the custom switch]

	Function item		Function item
0	No function	11	Low speed command input
1	Needle up / down compensating stitching	12	High speed command input
2	Back compensating stitching	13	Needle lifting function
3	Function of canceling once reverse feed stitching at the end of sewing	14	Reverse feed stitching switch input
4	Thread trimming function	15	Soft start switch input
5	Presser foot lifting function	16	One-shot speed command switch input
6	One stitch compensating stitching	17	Backward one-shot speed command switch input
7	Function of cancel of reverse feed stitching at start/end	18	Safety switch input
8	Material edge sensor input	19	Automatic reverse feed stitching cancellation/addition switch
9	Function of prohibiting depressing front part of pedal	20	Sewing counter input
10	Function of prohibiting thread trimming output	21	One-touch type changeover switch

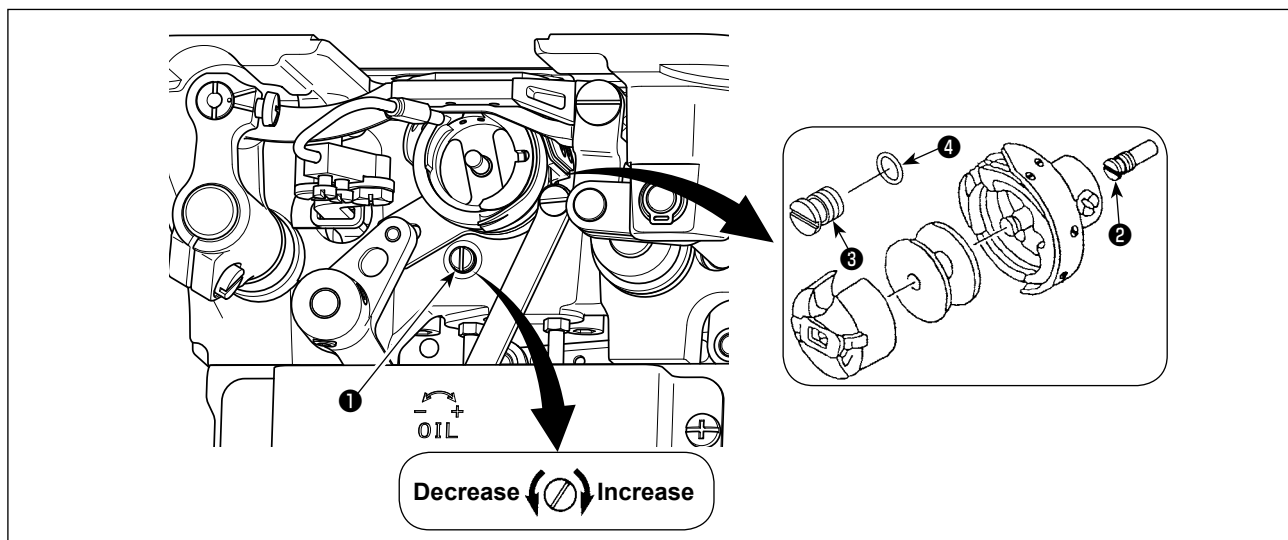
### 3-12. Adjusting the amount of oil (oil splashes) in the hook



#### **WARNING :**

Be extremely careful about the operation of the machine since the amount of oil has to be checked by turning the hook at a high speed.

#### 3-12-1. Adjusting the amount of oil in the hook



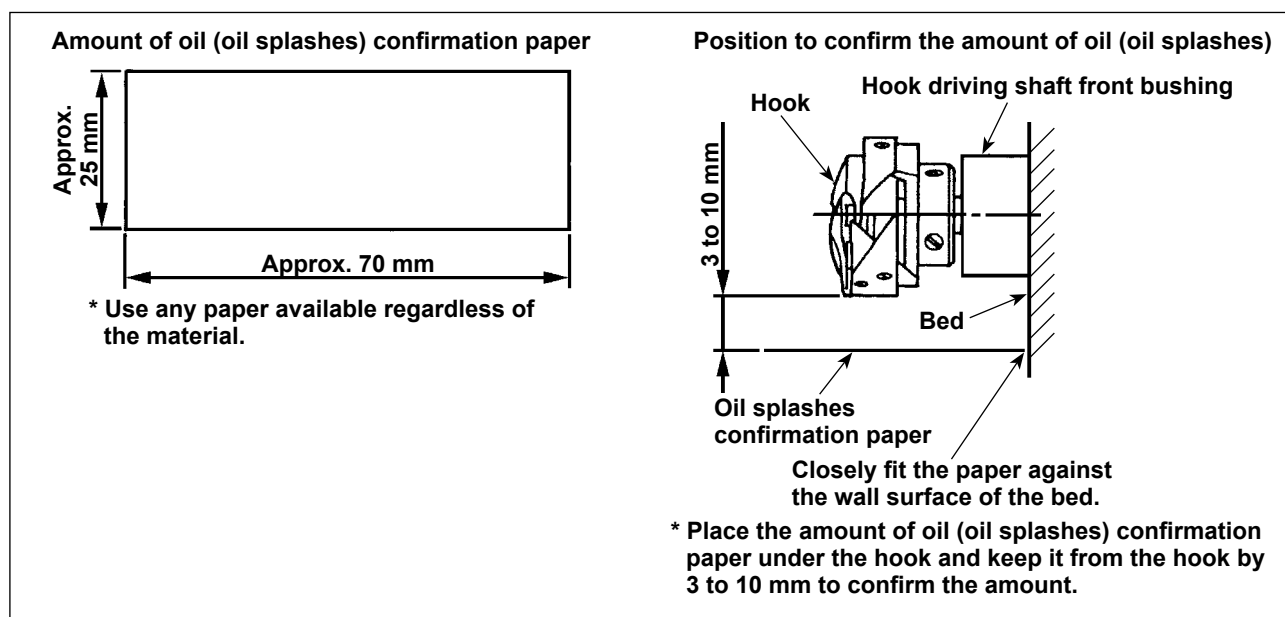
Tighten (turn clockwise) oil amount adjustment screw ❶ to increase the amount of oil in the hook, or loosen (turn counterclockwise) to decrease it.



#### [When using RP hook (hook for dry head) for DDL-9000C-FMS type]

1. Remove hook driving shaft oil wick setscrew ❷ and attach hook driving shaft stopper screw ❸ (part number : 11079506) and rubber ring ❹ (part number : RO036080200).
2. Loosen oil amount adjustment screw ❶ up to the minimum so as to reduce the oil amount in the hook. However, do not completely stop the oil and be careful not to allow oil adjustment screw ❶ to come off.
3. Never drain the oil in the oil tank even when RP hook (hook for dry head) is used.

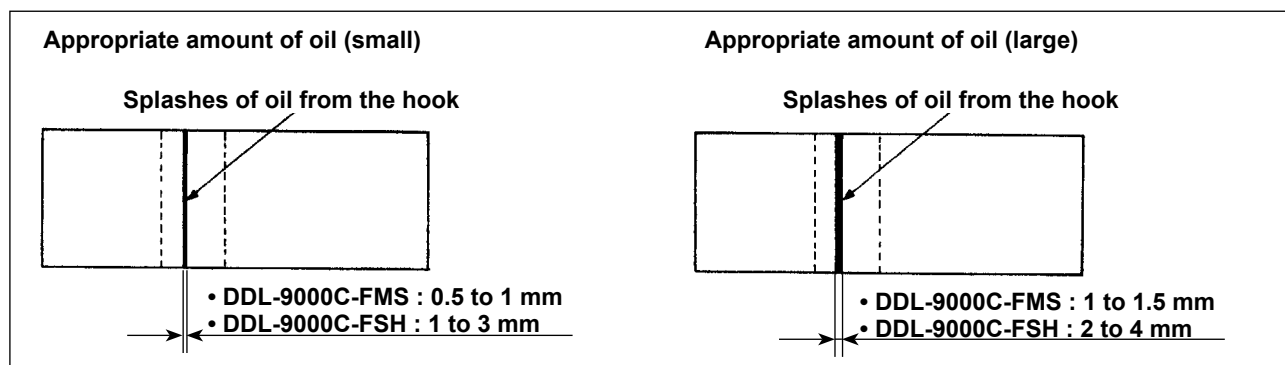
### 3-12-2. How to confirm the amount of oil (oil splashes)



\* When carrying out the procedure described below in 2), confirm the state that the needle thread from the thread take-up lever to the needle and the bobbin thread are removed, the presser foot is lifted and the slide plate is removed. At this time, take extreme caution not to allow your fingers to come in contact with the hook.

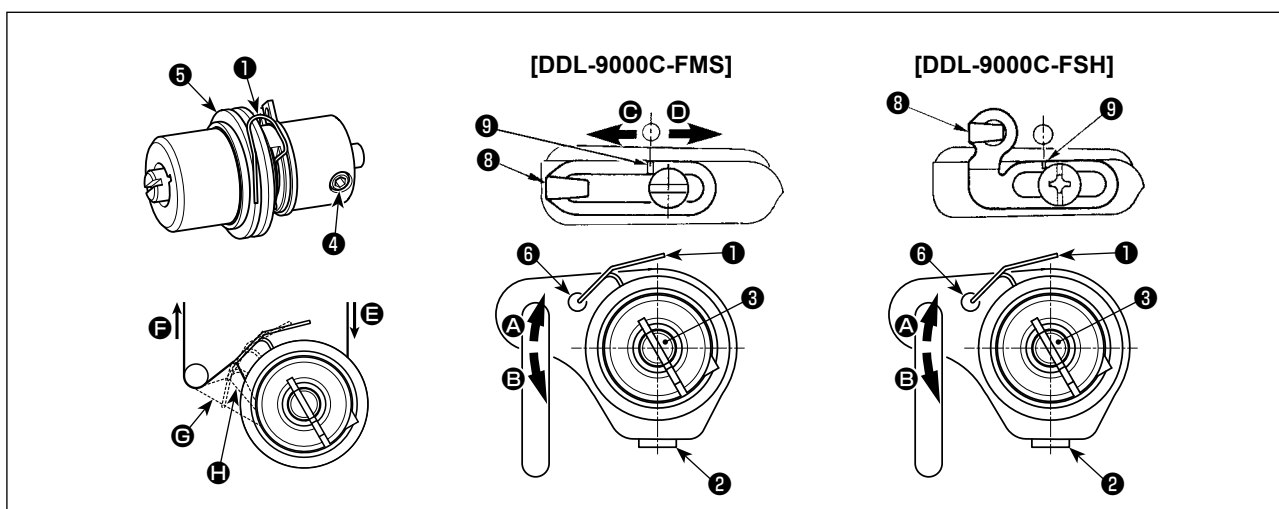
- 1) If the machine has not been sufficiently warmed up for operation, make the machine run idle for approximately three minutes. (Moderate intermittent operation)
- 2) Place the amount of oil (oil splashes) confirmation paper under the hook while the sewing machine is in operation.
- 3) Confirm that oil exists in the oil tank.
- 4) Confirmation of the amount of oil should be completed in five seconds. (Check the period of time with a watch.)

### 3-12-3. Sample showing the appropriate amount of oil



- 1) The state given in the figure above shows the appropriate amount of oil (oil splashes). It is necessary to finely adjust the amount of oil in accordance with the sewing processes. However, do not excessively increase/decrease the amount of oil in the hook. (If the amount of oil is too small, the hook will be seized (the hook will be hot). If the amount of oil is too much, the sewing product may be stained with oil.)
- 2) Check the oil amount (oil splashes) three times (on the three sheets of paper), and adjust so that it should not change.

### 3-13. Adjusting the thread take-up spring and the thread take-up stroke



#### (1) Adjusting the stroke of thread take-up spring ①

- 1) Loosen setscrew ②.
- 2) Turn tension post ③ clockwise (in direction ④), the stroke of the thread take-up spring will be increased, and turn the post ③ counterclockwise (in direction ⑤), the stroke will be decreased.

#### (2) Adjusting the pressure of thread take-up spring ①

- 1) Loosen setscrew ②, and remove thread tension (asm.) ⑤.
- 2) Loosen tension post setscrew ④.
- 3) Turn tension post ③ clockwise (in direction ④), the pressure will be increased, and turn the post ③ counterclockwise (in direction ⑤), the pressure will be decreased.

#### \* Standard state of the thread take-up spring ①

The engraved marker line ⑥ on the machine arm is almost aligned with the top of thread take-up spring. (It is necessary to adjust in accordance with materials and processes.)



To check how the thread take-up spring works, draw out the needle thread in direction ⑦ after having adjusted the thread take-up spring pressure to check whether the thread take-up spring exerts force to the thread up to the last moment (state ⑧) just before the thread comes out from ⑨. If the spring fails to exert force to the spring until the last moment (state ⑩), decrease the thread take-up spring pressure. In addition, the stroke of the thread take-up spring is excessively small, the spring does not work properly. For the general fabrics, a stroke of 10 to 13 mm is proper.

#### (3) Adjusting the thread take-up stroke

- 1) When sewing heavy-weight materials, move thread guide ⑧ to the left (in direction ④) to increase the length of thread pulled out by the thread take-up.
- 2) When sewing light-weight materials, move thread guide ⑧ to the right (in direction ⑤) to decrease the length of thread pulled out by the thread take-up.

#### \* Standard state of the thread guide

- DDL-9000C-FMS : Marker line ⑨ on the thread guide aligns with the center of the setscrew.
- DDL-9000C-FSH : Marker line ⑨ on the thread guide aligns with the center of the marker line on the machine arm.

## 4. HOW TO USE THE OPERATION PANEL

### 4-1. Explanation of the sewing screen (when selecting a sewing pattern)

On the sewing screen, the shape and set values of the currently-sewn sewing pattern are displayed. The display and button operation differ according to the selected sewing pattern.

Note that the sewing screen shows two different displays, i.e., the sewing pattern display and the counter display.

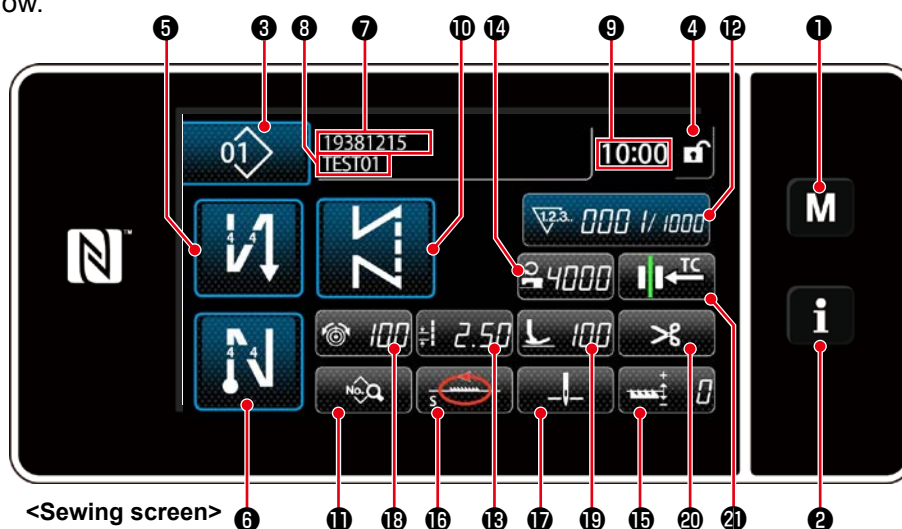
Refer to **"4-3. Counter function" p. 52** for the description of the counter display.

There are two different screen display modes; i.e., **<Operator mode>** and **<Maintenance personnel mode>**.

The mode can be changed over between the operator mode and the maintenance personnel mode by simultaneously pressing the Mode key and the Information key.

#### (1) Sewing screen (when selecting a sewing pattern)

A sewing pattern can be selected with  ⑩. Four different stitch shapes are available as shown below.



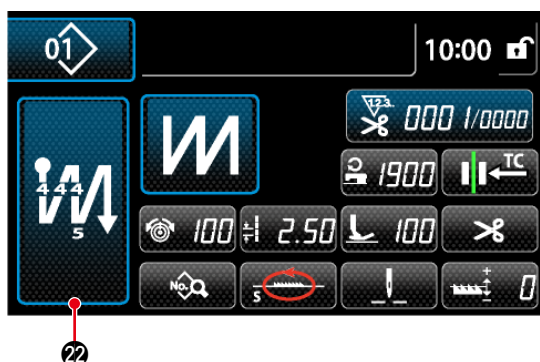
#### Free stitching pattern



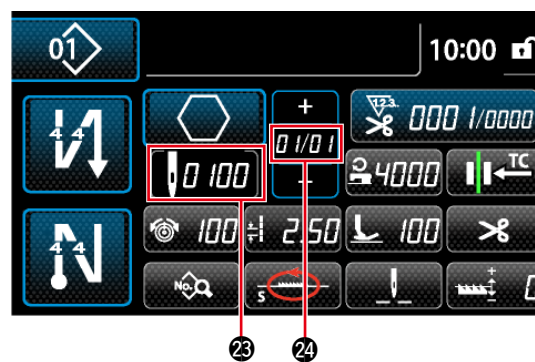
#### Constant-dimension sewing pattern







#### Multi-layer stitching pattern



#### Polygonal-shape stitching pattern





	Switch/display	Description
①	Mode key	<p>This switch is used for displaying the menu screen.</p> <p>Level 1 is displayed by pressing this switch in the normal manner. Level 2 or Level 3 is displayed by keeping this switch held pressed for three seconds or more for the former or six seconds or more for the latter.</p> <p>The mode is changed over between the operator mode and maintenance personnel mode by pressing the Mode key and the Information key simultaneously.</p>
②	Information key	<p>This switch is used for displaying the information screen.</p> <p>Level 1 or Level 2 is displayed by pressing this switch in the normal manner for the former or by keeping it held pressed for three seconds or more for the latter.</p> <p>The mode is changed over between the operator mode and maintenance personnel mode by pressing the Information key and the Mode key simultaneously.</p>
③	Sewing pattern No. button	Sewing pattern list screen is displayed. The currently-selected sewing pattern number is displayed on this button. (P01 – P99)
④	Simplified screen lock button	<p>This is button is used for changing over the operation status of buttons displayed on the screen between enable and disable.</p> <p>This button is used for displaying the simplified lock status of the screen on it.</p> <p>Locked:  Unlocked: </p> <p>Once the button operation is locked using the simplified screen lock button, operation of the buttons displayed on the screen, excluding this button will be disabled.</p>
⑤	Sewing-start reverse-feed stitch button	<p>This switch is used for changing the ON/OFF status of the reverse feed stitching at the beginning of sewing. When reverse feed stitching at the beginning of sewing is placed in the OFF state,  mark is displayed at the upper left of the button.</p> <p>The reverse feed stitching (at start) edit screen is displayed by keeping this key held pressed for one second.</p> <p>* This button is displayed for free stitching, constant-dimension sewing or polygonal-shape stitching.</p>
⑥	Sewing-end reverse-feed stitch button	<p>This switch is used for changing the ON/OFF status of reverse feed stitching at the end of sewing. When reverse feed stitching at the end of sewing is placed in the OFF state,  mark is displayed at the upper left of the button.</p> <p>The reverse feed stitching (at end) edit screen is displayed by keeping this key held pressed for one second.</p> <p>* This button is displayed for free stitching, constant-dimension sewing or polygonal-shape stitching.</p>
⑦	Part number	The part number is displayed in this field.
⑧	Process/comment	The process or comment is displayed in this field.
⑨	Clock display	The time set on the sewing machine is displayed in this field in 24-hour system.
⑩ *	Pattern shape button	<p>Selected sewing pattern is displayed on this screen.</p> <p>Four different sewing patterns are available, i.e., free stitching pattern, constant-dimension sewing pattern, multi-layer stitching pattern and polygonal-shape stitching pattern.</p> <p>The shape selection screen is displayed by pressing this button.</p>



	Switch/display	Description
⑪ *	Sewing data list button	The sewing data list screen is displayed in this field.
⑫	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "sewing counter". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
⑬	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "pitch". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
⑭	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "sewing speed". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
⑮ *	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "correction of feed dog height ". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
⑯ *	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "feed locus". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
⑰ *	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "stop position of needle bar". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
⑱	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "needle thread tension". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
⑲	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "presser foot pressure". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
⑳	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "prohibition of thread trimming". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
㉑	Customization button	A selected function can be allocated to and registered with this button. This button has been initially set to the "feed timing". Refer to <b>"4-2-6. List of pattern functions" p. 42.</b>
㉒	Multi-layer stitching button	The multi-layer stitching setting screen is displayed by keeping this button held pressed for one second. Refer to <b>"4-2-5. Editing the sewing patterns" p. 40.</b> * This button is displayed when multi-layer stitching is selected.
㉓	Number of stitches	This button is used for displaying the number of stitches of constant-dimension sewing or the number of stitches registered for each step of polygonal-shape stitching. * This button is displayed when constant-dimension sewing or polygonal-shape stitching is selected.
㉔	Display of the number of steps of a polygonal-shape stitching pattern	This button is displayed when constant-dimension sewing or polygonal-shape stitching is selected (1 to 20). * This button is displayed when polygonal-shape stitching is selected.

\* Only in the case the maintenance personnel mode is selected.

## 4-2. Sewing patterns

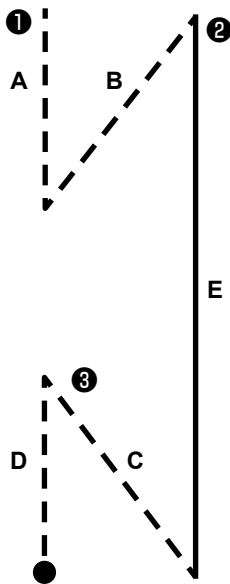
Patterns which are frequently sewn can be registered as sewing patterns.

Once the patterns are registered as sewing patterns, the desired sewing pattern can be called up only by selecting its sewing pattern number.

As many as 99 different patterns can be registered as sewing patterns.

### 4-2-1. Sewing pattern configuration

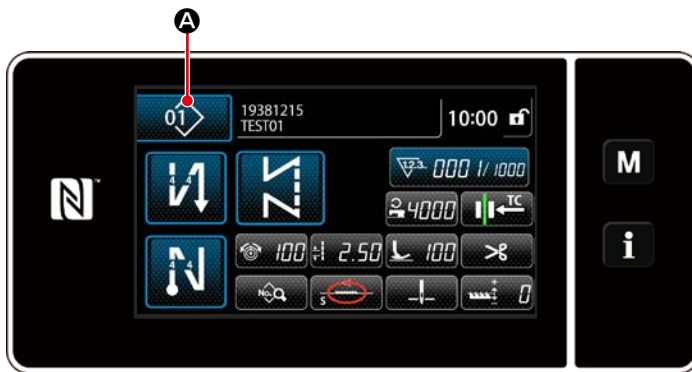
One sewing pattern consists of four elements, i.e., reverse feed stitching (at start), main stitching, reverse feed stitching (at end) and pattern function.



Pattern No. 1 - No. 99	
①	Reverse feed stitching (at start) section Refer to <a href="#">"4-2-3. Reverse feed stitching (at start) pattern" p. 34.</a>
②	Main stitching section <ul style="list-style-type: none"><li>· Free stitching</li><li>· Constant-dimension sewing</li><li>· Multi-layer stitching</li><li>· Polygonal-shape stitching</li></ul> Refer to <a href="#">"4-2-5. Editing the sewing patterns" p. 40.</a>
③	Reverse feed stitching (at end) section Refer to <a href="#">"4-2-7. Reverse feed stitching (at end) pattern" p. 45.</a>
④	Pattern function Refer to <a href="#">"4-2-5. Editing the sewing patterns" p. 40.</a>

#### 4-2-2. List of sewing patterns

The list of stored sewing patterns are displayed on the screen. Under the maintenance personnel mode, sewing patterns can be created, copied and deleted.

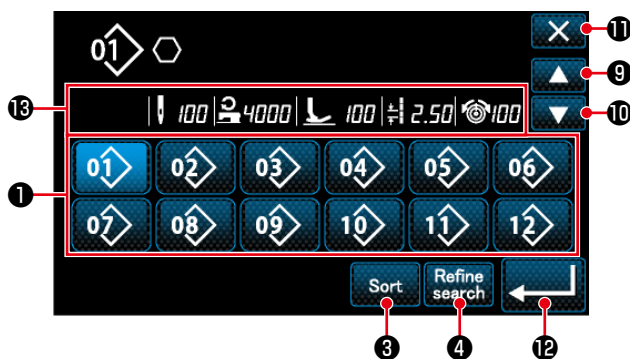


<Sewing screen (operator mode)>

Press **A** on the sewing screen of each mode.

The sewing pattern list screen is displayed.

Pattern list screen: In numerical order  
(Operator mode)



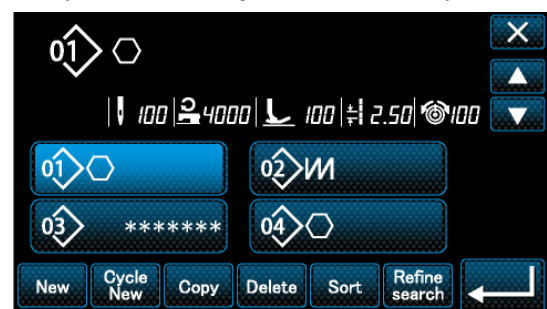
Pattern list screen: In alphabetical order  
(Operator mode)



Pattern list screen: In numerical order  
(Maintenance personnel mode)



Pattern list screen: In alphabetical order  
(Maintenance personnel mode)



	Name	Function
❶	Pattern No. button	This button is used for displaying numbers of the registered sewing patterns and cycle patterns. (Cycle pattern numbers that are not registered are not displayed.) When this button is pressed, the sewing pattern is put into the selected state. Display range: Sewing pattern numbers 1 to 99 and cycle patterns 1 to 9.
❷	Registered character button	Sewing pattern is displayed and the pattern is put into the selected state by pressing this button.
❸	Sorting button	This button is used for sorting the registered patterns in the order of sewing pattern number, process, part number or comment.
❹	Refining button	This button is used for displaying the refiner setting screen.
❺	New sewing pattern creation button	This button is used for creating a new sewing pattern. * This button is only displayed under the maintenance personnel mode.
❻	New cycle pattern creation button	This button is used for creating a new cycle pattern. * This button is only displayed under the maintenance personnel mode.
❼	Pattern copy button	This button is used for copying a sewing pattern or cycle pattern and registering the copied pattern with new number. * This button is only displayed under the maintenance personnel mode.
❽	Pattern delete button	This button is used for displaying the pattern deletion confirmation message. In the case there is only one registered pattern, the pattern cannot be deleted. * This button is only displayed under the maintenance personnel mode.
❾	Scroll (up) button	This button is used for displaying the previous page.
❿	Scroll (down) button	This button is used for displaying the next page.
⓫	Close button	This button is used for cancelling the selected pattern and displaying the sewing screen.
⓬	Enter button	This button is used for confirming the selected pattern and displaying the sewing screen.
⓭	Display of pattern data being selected	This button is used for displaying data on the pattern that is being selected.

### 4-2-3. Reverse feed stitching (at start) pattern

A stitch shape of the reverse feed stitching (at start) is set by following the steps of procedure described below.

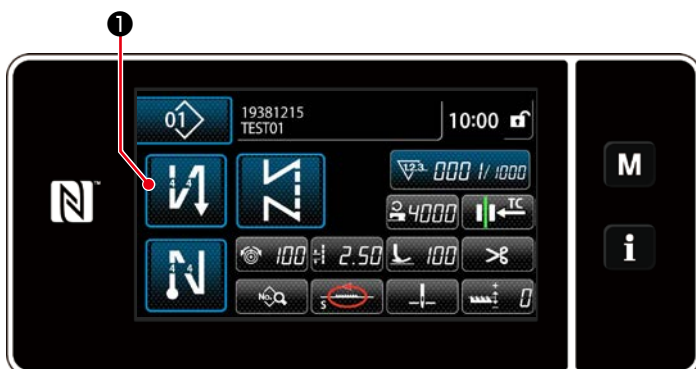
#### (1) Enabling the reverse feed stitching (at start) pattern



The sewing-start reverse feed stitching pattern can be operated when the sewing-start reverse feed stitching function is placed in the ON state (no mark is not displayed). If this function is placed in the OFF state, press the sewing start reverse feed stitch button to switch off the mark display to enable the sewing-start reverse feed stitching function.

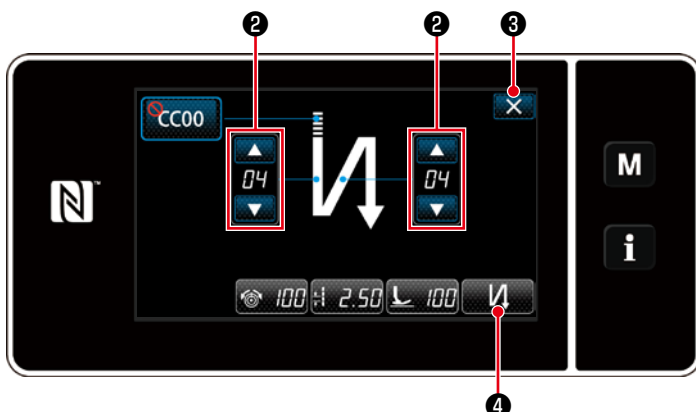
#### (2) Changing the number of stitches and pitch of reverse feed stitching (at start) pattern

##### ① Displaying the edit screen for reverse feed stitching (at start)



① held pressed for one second. The reverse feed stitching (at start) edit screen is displayed.

##### ② Setting the shape, the number of stitches and pitch of reverse feed stitching (at start)



<Edit screen for reverse feed stitching (start)>

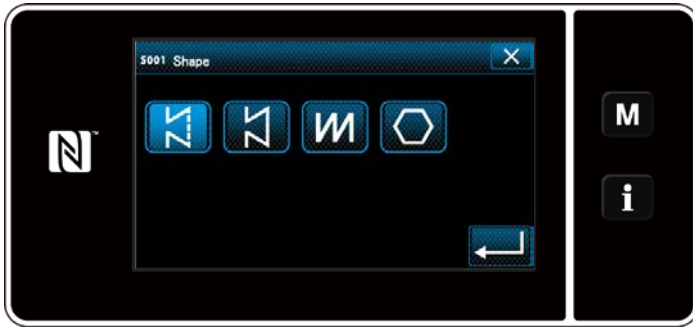
Change the numeric value with the up/down arrow buttons ②.


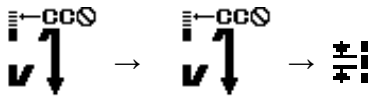

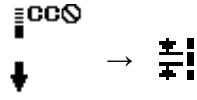

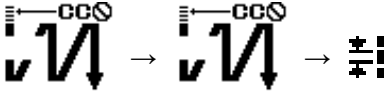


The value you have entered is confirmed by pressing the 'X' button ③. Then, the sewing screen is displayed.

Press the 'Reverse feed stitching (at start)' button ④ to select the type of sewing.

The type of sewing you have selected is confirmed by pressing the 'Enter' button.

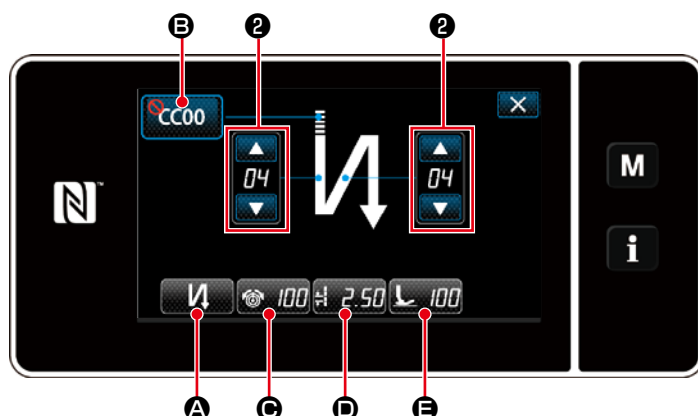
"Type of stitch" and "edit item" that can be selected are as follows:




Type of stitch	Edit item
<b>Reverse feed stitching</b>  Reverse feed stitching is performed once at the beginning of sewing.	Number of stitches A    Number of stitches B    Pitch 
<b>Condensation</b>  Stitch pitch at the beginning of sewing is reduced.	Number of stitches A    Pitch 
<b>Double reverse feed stitching</b>  Reverse feed stitching is performed twice at the beginning of sewing.	Number of stitches A    Number of stitches B    Pitch 
<b>Condensation custom</b>  The number of stitches and pitch of condensation can be set as desired.	Condensation custom No. 

◆ For the maintenance personnel mode

① Display the sewing-start reverse-feed stitching edit screen and set up a shape

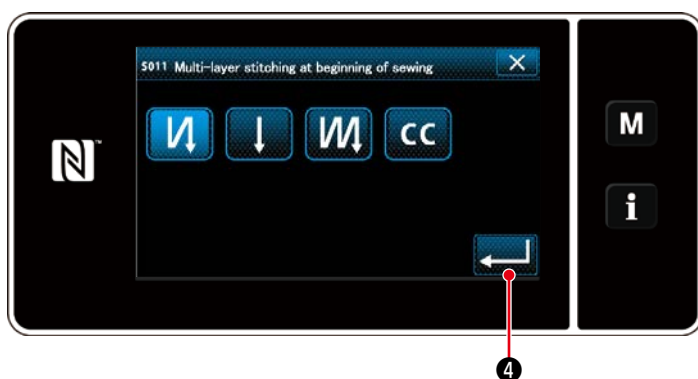


<Sewing-start reverse-feed stitching screen (maintenance personnel mode)>



1. Display the sewing-start reverse-feed stitching edit screen referring to the case of the operator mode.
2. Change the number of stitches of sewing-start reverse-feed stitching with .

② .

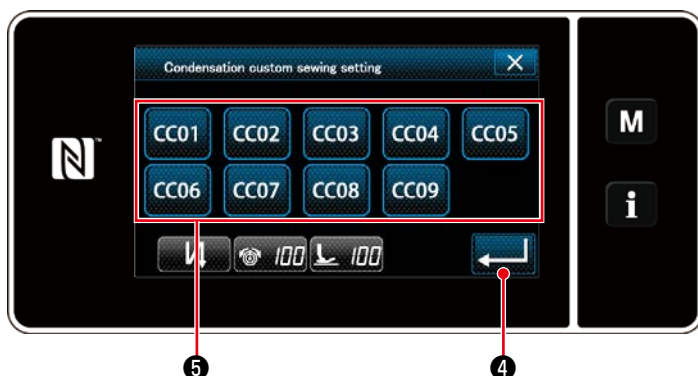
• Selecting the type of sewing-start reverse-feed stitching (A)






<Type of reverse-feed stitching input screen>

1. Press  (A). Then, the type of reverse-feed stitching input screen is displayed. Select the desired type of sewing-start reverse-feed stitching pattern from three different types; i.e., reverse-feed stitching (single), condensation stitching and double reverse-feed stitching.
2. Press  (4) to confirm the aforementioned operation and return the current screen to the sewing-start reverse-feed stitching screen.

• Selecting the condensation custom (B)

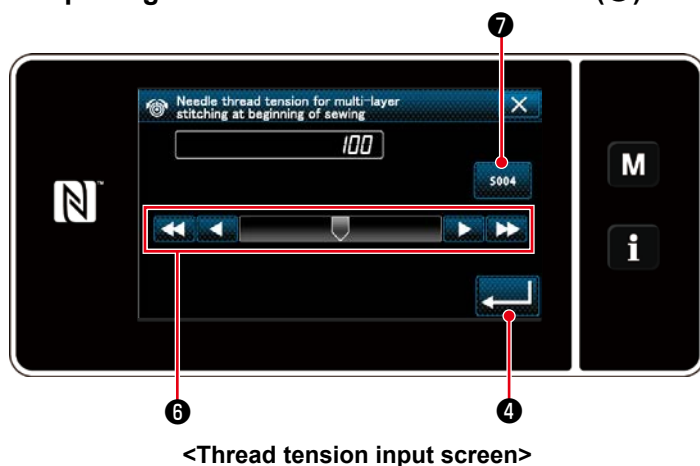





<Condensation custom selection screen>

1. Press  (B). Then, the condensation custom selection screen is displayed.  
\* In the case the condensation custom button is not used,  mark is displayed.
2. Press button (5) to select the condensation custom.
3. Press  (4) to confirm the aforementioned operation and return the current screen to the sewing-start reverse-feed stitching screen.

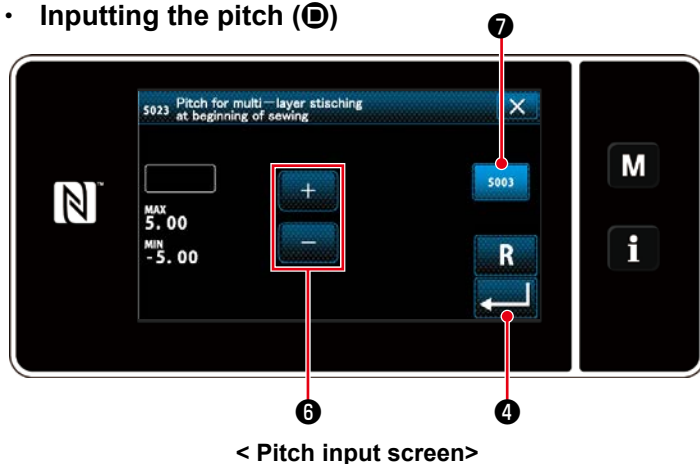





• Inputting the needle-thread tension value (Ⓒ)



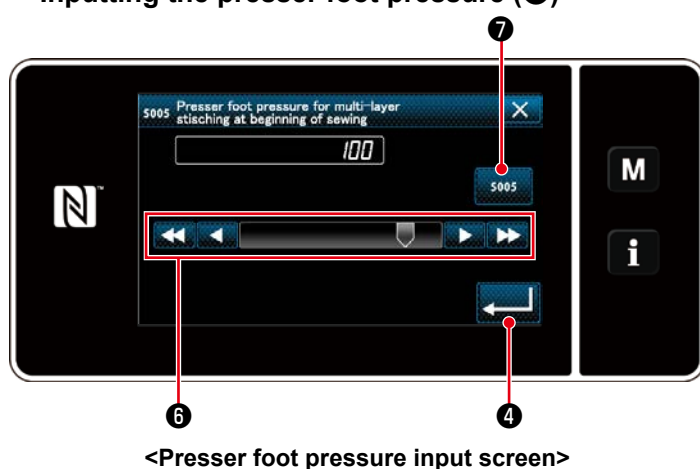
1. Press  Ⓒ. Then, the thread tension input screen is displayed. Input a thread tension (0 to 200) with button 6.
- \*  Ⓒ is not displayed when 7 is selected.
2. Press  4 to confirm the aforementioned operation and display the sewing-start reverse-feed stitching screen.




• Inputting the pitch (Ⓓ)



1. Press  Ⓓ. Then, the pitch input screen is displayed. Input a pitch (-5.00 to 5.00) with button 6.
- \*  Ⓓ is not displayed when 7 is selected.
2. Press  4 to confirm the aforementioned operation and display the sewing-start reverse-feed stitching screen.

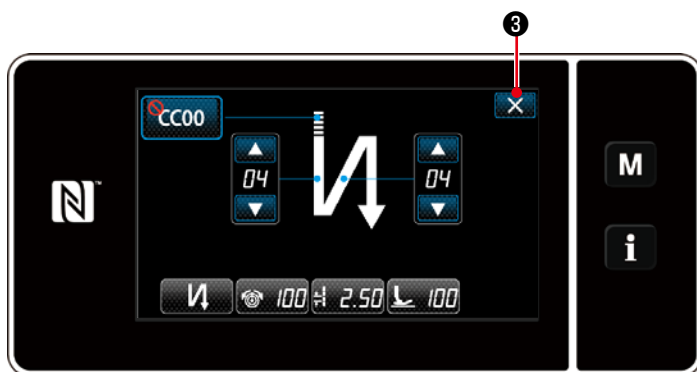
• Inputting the presser foot pressure (Ⓔ)




1. Press  Ⓔ. Then, the presser foot pressure input screen is displayed. Input a presser foot pressure with button 6. (-10 to 200)
- \*  Ⓔ is not displayed when 7 is selected.
2. Press  4 to confirm the aforementioned operation and display the sewing-start reverse-feed stitching screen.



② Applying the changed items



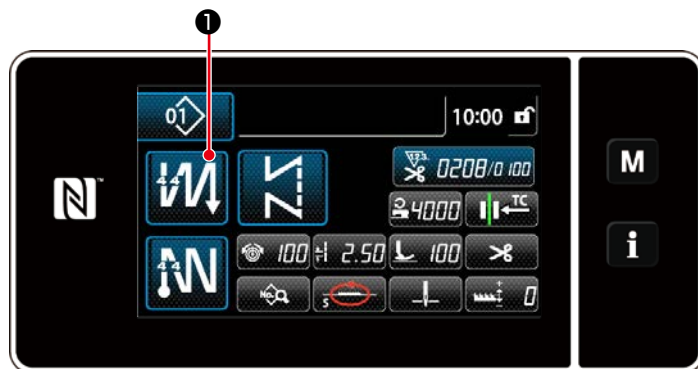
<Sewing-start reverse-feed stitching screen  
(maintenance personnel mode)>

Press  ③ to confirm the aforementioned operation and return the current screen to the sewing screen.


#### 4-2-4. Double reverse-feed stitch

Configuring the double reverse-feed stitching pattern shape.

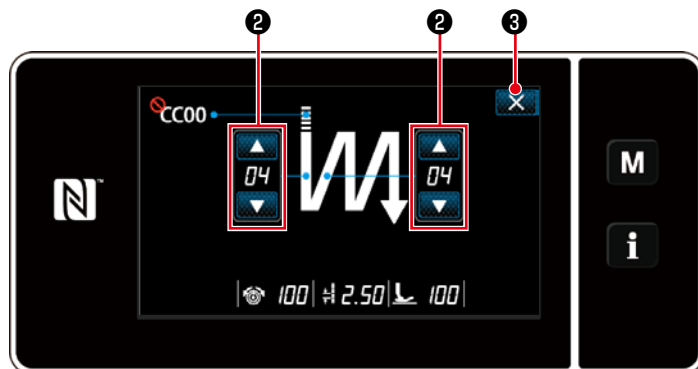
##### ① Displaying the double reverse-feed stitching setting screen





<Sewing screen>

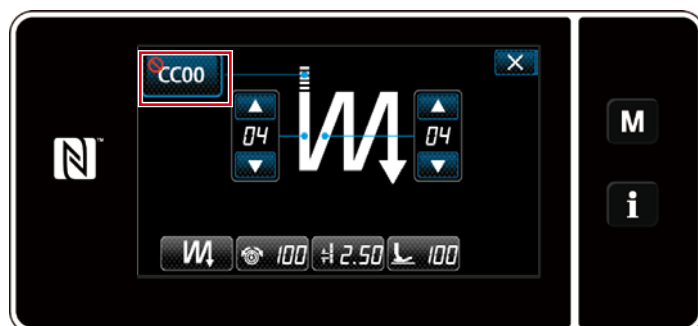
Keep  ① held pressed for one second on the screen which appears when a double reverse feed stitching pattern is selected to display the double reverse feed stitching edit screen.

##### ② Configuring the double reverse-feed stitching pattern shape



<Double reverse-feed stitching edit screen (operator mode)>

1. Set the number of stitches with  ② .
2. Press  ③ to confirm the set value and return the current screen to the sewing screen.



<Double reverse-feed stitching edit screen (maintenance personnel mode)>

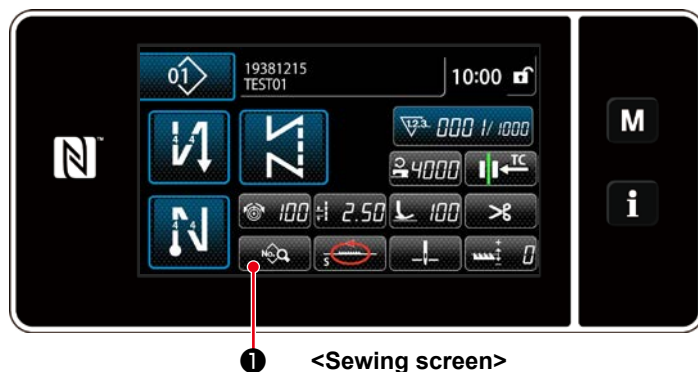
Under the maintenance personnel mode, the condensation custom can be set in addition to the aforementioned types of stitching. (In the case of setting data for using the condensation custom)


Set up the condensation custom referring to "4-2-3. Sewing-start reverse-feed stitching pattern, (2) For the maintenance personnel mode".

## 4-2-5. Editing the sewing patterns

(1) Edit method (in the case free stitching, constant-dimension sewing or multi-layer stitching is selected)

### ① Displaying the sewing pattern edit screen



On the sewing screen which is displayed in the case free stitching, constant-dimension sewing or multi-layer stitching is selected, press  ① to display the sewing pattern edit screen.

### ② Editing the sewing pattern



On this screen, the pattern functions can be edited separately.

Refer to "[4-2-6. List of pattern functions](#)" p. 42 for the function items that can be edited.

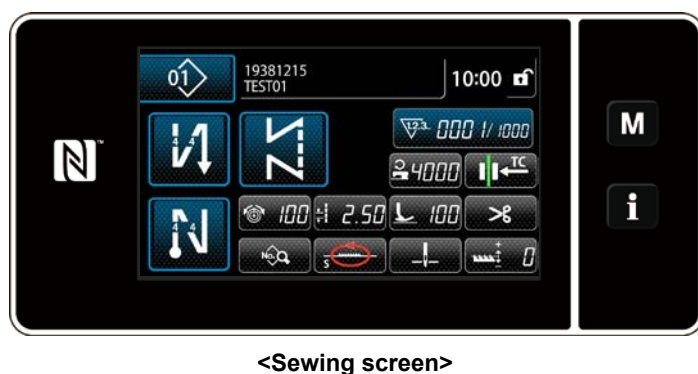
Change the respective items and press



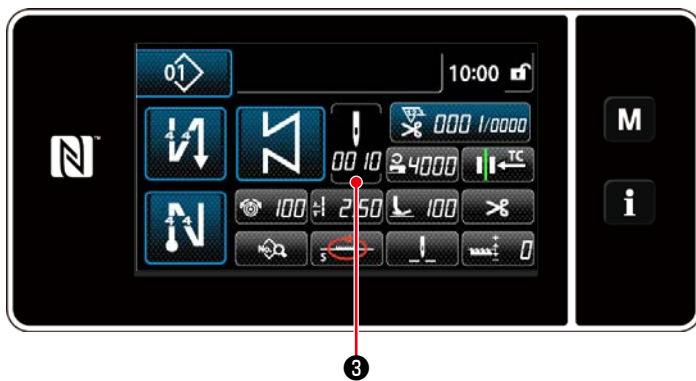
to confirm the change.


Press  ② to display the sewing screen.

### ③ Performing sewing using the edited sewing pattern



Data you have changed is displayed on the screen.




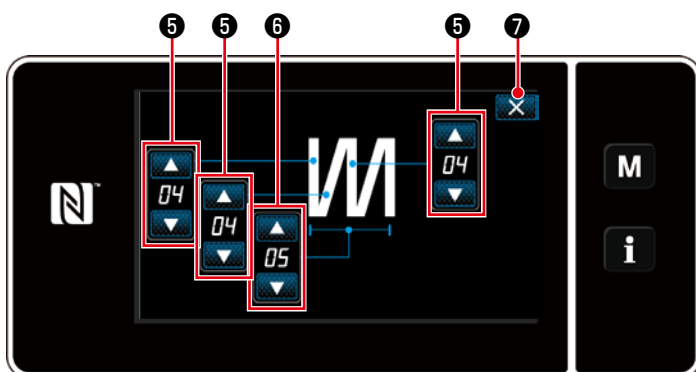
- \* In the case the constant-dimension sewing pattern is selected, the teaching screen is displayed by pressing  ③ during setting of the number of stitches. (Only in the case the number of stitches can be changed)  
Refer to **"4-2-8. Teaching function"** p. 46 for the teaching function.






<Number of stitches input screen>



- \* When a multi-layer stitching pattern is selected, the multi-layer stitching pattern edit screen is displayed by keeping  ④ held pressed for one second.

































<Multi-layer stitching edit screen (operator mode)>

1. Set the number of stitches with  ⑤ .
2. Set the number of times of double reverse feed stitching with  ⑥ .
3. Press  ⑦ to confirm the set value and return the current screen to the sewing screen.

## 4-2-6. List of pattern functions

### (1) Setting items under the pattern sewing mode






Data No.	Item name	Input range			
S001	Shape	Free 	Constant dimension 	Multi-layered 	Polygonal shape 
S002	Number of stitches/ Number of times	—	1 to 2000	1 to 15	—
S003	Pitch	-5.00 to 5.00 / Custom pitch No.1 to 20			—
S004	Thread tension	0 to 200			
S005	Presser foot pressure	-350 to 200			
S041	Stop position of needle bar	 : Stop with the needle down  : Stop with the needle up			—
S042	Thread presser	 : OFF /  : ON			
S043	Prohibition of thread trimming	 : OFF /  : ON			
S044	One-shot	—	 : OFF  : ON	—	—
S045	Thread trimming after one-shot	—	 : OFF  : ON	—	 : OFF  : ON
S046	Shorter-thread remaining	 : OFF /  : ON			
S047	Limit on sewing speed	150 to U096			—
S048	Feed locus	S -  - / A -  - / C -  - / B -  -			
S049	Feed timing	-30 to 30°			
S050	Correction of feed dog height	-4 to 8			—
S051	Correction value for stitch pitch of reverse feed stitching	-5.00 to 5.00			
S052	Multi-layered part detection sensor value	1000 to 3000			
S053	Number of stitches to start sewing after the detection of multi-layered part	0 to 200			

Data No.	Item name	Input range		
S061 *1	Limit on sewing speed	150 to U096 / Common setting S047	—	150 to U096 / Common setting S047
S062 *1	Pitch	-5.00 to 5.00 / Common setting S003	—	-5.00 to 5.00 / Common setting S003
S063 *1	Thread tension	0 to 200		
S064 *1	Presser foot pressure	-350 to 200		
S065 *1	Correction of feed dog height	-4 to 8	—	-4 to 8
S066 *1	Feed locus	S  / A  / C  / B 	—	S  / A  / C  / B 
S068 *2	Part number	- 24 characters		
S069 *2	Process	- 24 characters		
S070 *2	Comment	50 characters		

\*1. This is the one-touch type changeover function. Refer to "[4-2-9. One-touch type changeover button](#)" p. 48.

\*2. Only the limited number of characters is displayed.

## (2) Setting items for the polygonal-shape stitching steps

Step 1		
	Item name	Input range
S071	Number of stitches	1 to 2000
S072	Pitch	-5.00 to 5.00 / Custom pitch No.1 to 20
S073	Thread tension	0 to 200
S074	Presser foot pressure	-350 to 200
S075	Correction of feed dog height	-4 to 8
S076	Stop position of needle bar	 : Stop with the needle down  : Stop with the needle up  : Thread trimming
S077	Stop position of presser foot	0 to 15.0 mm
S078	One-shot	 : OFF /  : ON
S079	Limit on sewing speed	150 to U096
↓		
Step 2		

\* Setting items and the input range are same as those of step 1.

\* Step numbers can be set to Step 20.



**After you have changed the setting, check to make sure that the feed dog does not come in contact with the throat plate.**



**Be aware that the stitch pitch may change if you have changed the locus or the feed dog height. It is, therefore, necessary to carry out trial stitching first before using the machine for production.**

#### 4-2-7. Reverse feed stitching (at end) pattern

A stitch shape of reverse feed stitching (at end) is set by following the steps of procedure described below.

##### (1) Enabling the reverse feed stitching (at end) pattern




The sewing-end reverse feed stitching pattern can be operated when the sewing-end reverse feed stitching function is placed in the ON state (  mark is not displayed). If this function is placed in the OFF state press the sewing end reverse feed stitch button to switch off  mark display to enable the sewing-end reverse feed stitching function.

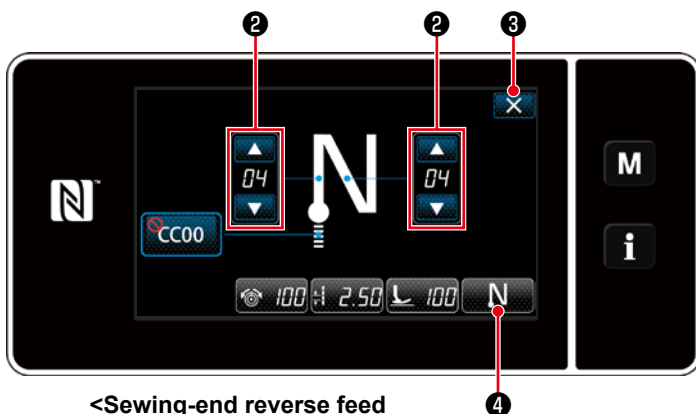
##### (2) Changing the number of stitches and pitch of reverse feed stitching (at end) pattern

###### ① Displaying the edit screen for reverse feed stitching (at end)





Keep  ① held pressed for one second. The reverse feed stitching (at end) edit screen is displayed.


###### ② Setting the shape, the number of stitches and pitch of reverse feed stitching (at end)




<Sewing-end reverse feed stitching edit screen>

Change the numeric value with  ② .

The value you have entered is confirmed by pressing  ③ . Then, the sewing screen is displayed.

Press  ④ to select the type of sewing.

The type of sewing you have selected is confirmed by pressing .

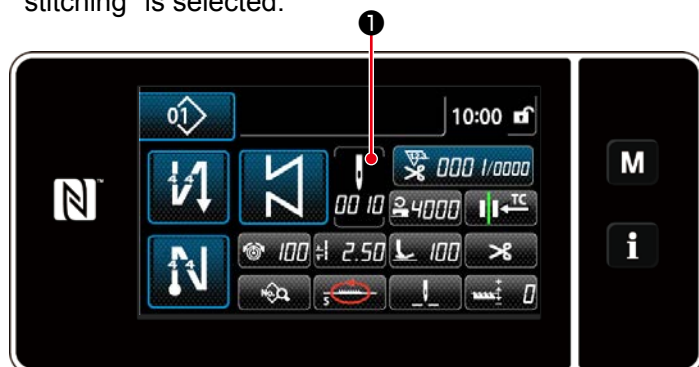


## 4-2-8. Teaching function

This is the function that enables entry of the number of stitches of a sewing pattern using the actual number of stitches sewn.

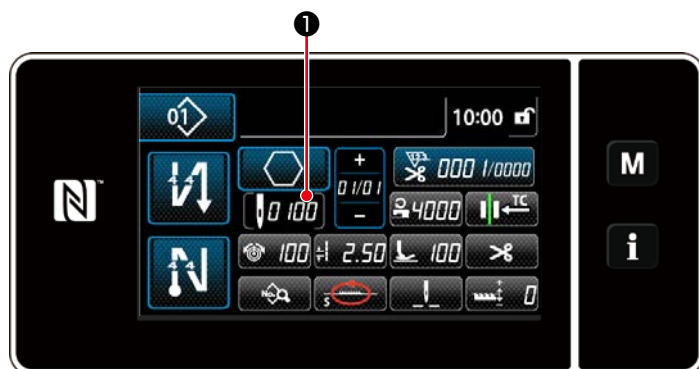
This function screen can be displayed from the sewing pattern edit screen.

\* The teaching function can be used in the case the "constant-dimension sewing" or "polygonal-shape stitching" is selected.



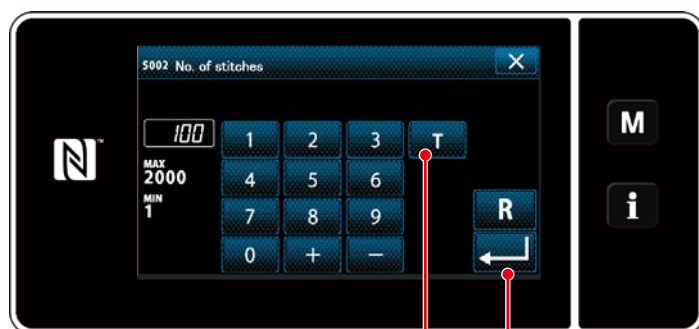
<Sewing screen (constant-dimension sewing)  
(Maintenance personnel mode)>

Press **1** on the sewing data list screen.  
Then, the number of stitches input screen is displayed.



<Sewing screen (polygonal-shape stitching)  
(Maintenance personnel mode)>

### (1) How to set (constant-dimension sewing)



<Number of stitches entry  
screen>

#### ① Turning ON the teaching function

Press **T** **2** to turn ON the teaching function.

#### ② Starting teaching

The input value is set to 0 (zero). Depress the pedal to start sewing. Count the number of stitches until the sewing machine stops.

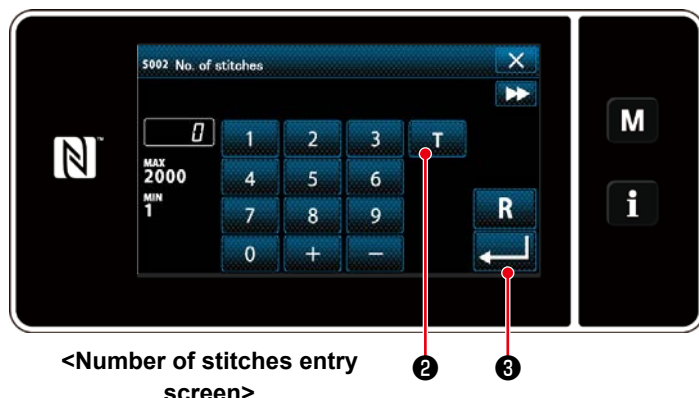
#### ③ Confirming the data entered under the teaching mode

Confirm the data entered under the teaching mode with **R** **3**.

Return the current screen to the sewing screen (maintenance personnel mode).

## (2) How to set (polygonal-shape stitching)

### ① Turning ON the teaching function

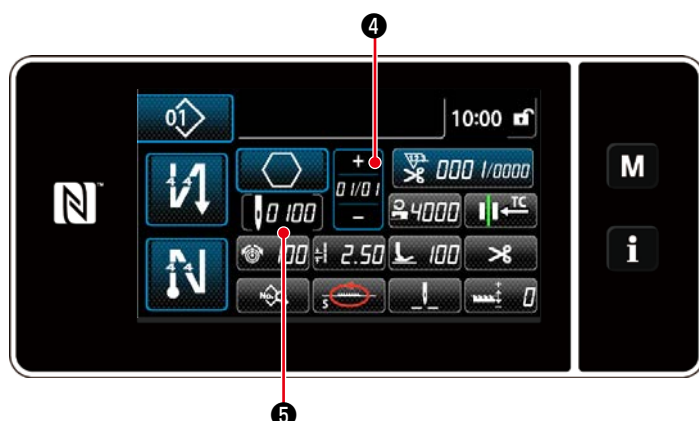


Press **T** ② to turn ON the teaching function.

### ② Start teaching, and confirm data on a step-by-step basis

The input value is set to 0 (zero). Depress the pedal to start sewing. Count the number of stitches until the sewing machine stops.

#### 1. In the case of starting the teaching by operation on the operation panel



Carry out the step until its end is reached (the last stitch is sewn). Then, press **↩** ③ to confirm the teaching data.

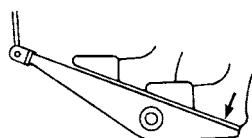
Return the current screen to the sewing screen (maintenance personnel mode).

Press **+** ④ to confirm the teaching data

on the current step. Press **100** ⑤ to change the current screen to the number of stitches input screen for the next step.

If no further step to be registered is present, this operation will be disabled.

#### 2. In the case of starting the teaching using the pedal



After the completion of sewing steps (the last stitch), depress the back part of pedal. Then, the data entered for the current step under the teaching mode is confirmed and the screen is changed to the teaching screen for the next step.

If no further step to be registered is present, this operation will be disabled.

#### 4-2-9. One-touch type changeover button

In the case the one-touch function is assigned to the custom switch, the pitch, sewing speed and feed dog height can be changed over by pressing the custom switch.

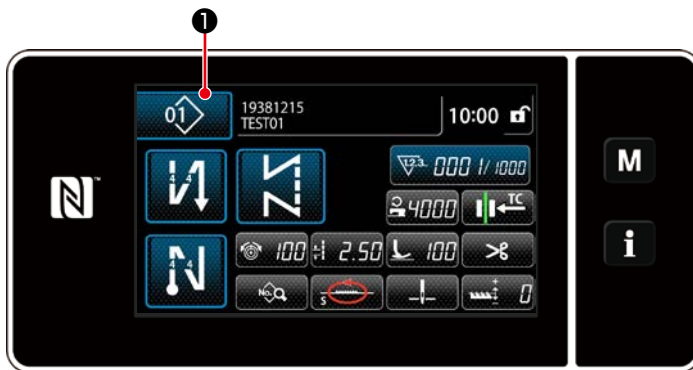
S003 Pitch	⇔	S062 One-touch type changeover of pitch
S004 Thread tension	⇔	S063 One-touch type thread tension
S005 Presser foot pressure	⇔	S064 One-touch type presser foot pressure
S047 Sewing speed	⇔	S061 One-touch type changeover of sewing speed
S050 Feed dog height	⇔	S065 One-touch type changeover of feed dog height
S048 Feed locus	⇔	S066 One-touch type changeover of feed locus

Refer to **"3-11. Custom switch" p. 24.**

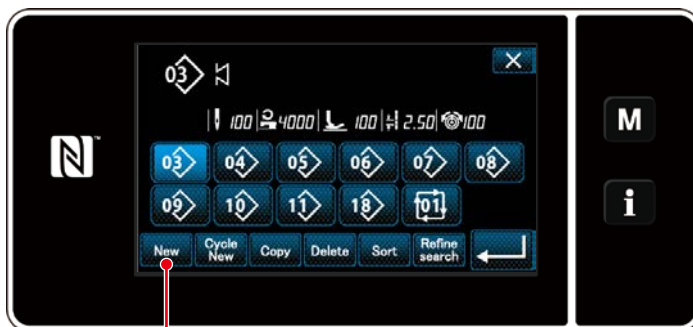
#### 4-2-10. Registration of a new sewing pattern

A newly-created sewing pattern is registered by following the steps of procedure described below.

##### ① Selecting the new-pattern creating function



1. Press **01** ① to display the sewing pattern management screen.



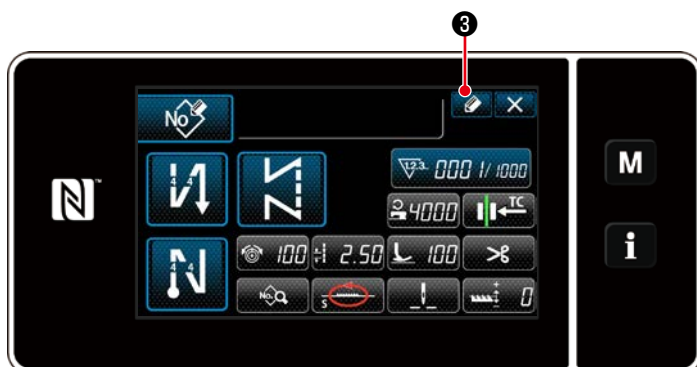
2. Press **New** ②.


② <Sewing pattern management screen>

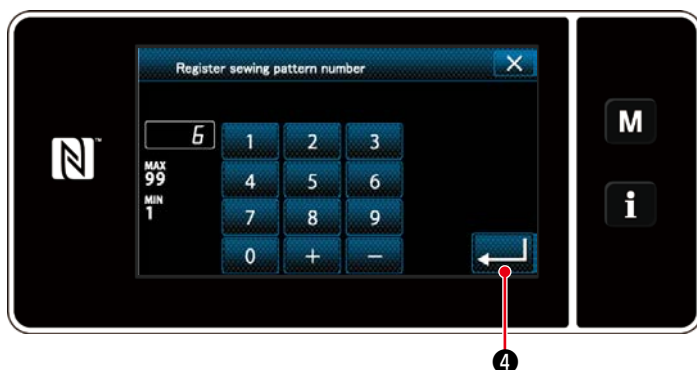


3. Select the desired sewing shape (free stitching, constant-dimension sewing, multi-layer stitching, polygonal shape stitching).


## ② Selecting the new sewing pattern number



1. Press  ③ to display the sewing pattern No. registration.



2. Enter the pattern number to be registered using the numeric keypad.

3. Press  ④ to confirm the pattern number you have entered.  
The sewing pattern management screen is displayed.

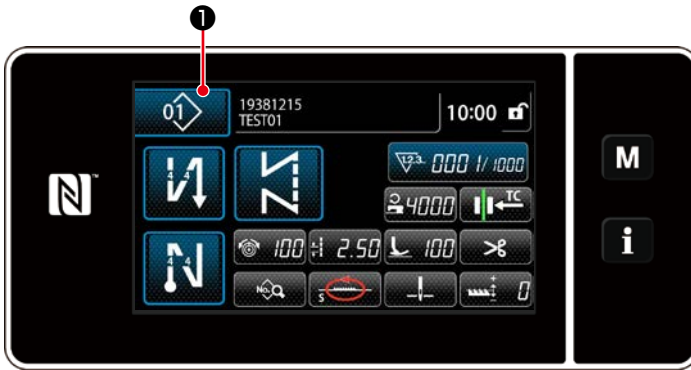
## ③ Confirming the data on the created sewing pattern



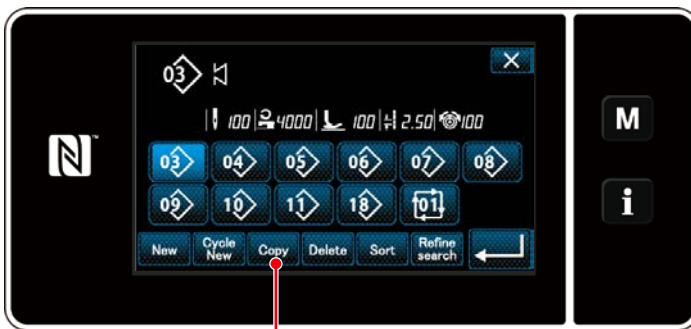
The newly created sewing pattern is displayed.

<Sewing screen>

#### 4-2-11. Copying a pattern

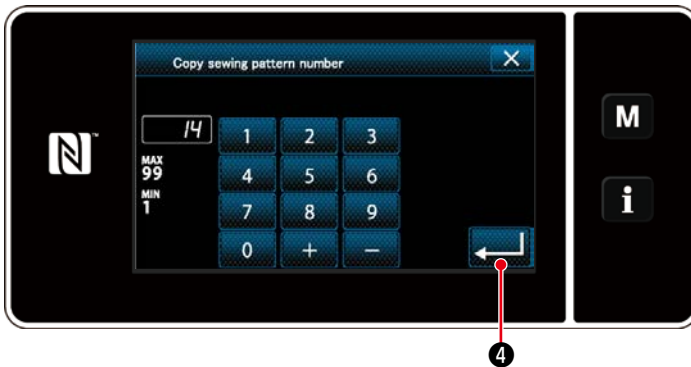


1. Press **01** **1** to display the sewing pattern management screen.

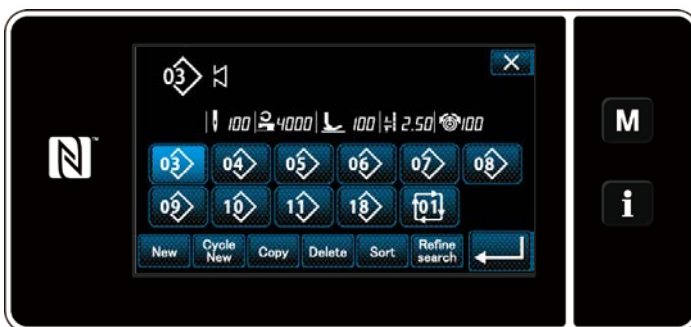


2. Press **Copy** **2**.

**2** <Sewing pattern management screen>



3. Input a copy pattern number with the numeric keypad.
4. Press **↩** **4** to confirm the pattern number you have entered.



5. The newly created sewing pattern is displayed.

### 4-3. Counter function




This function counts sewing in the predetermined unit and gives a visible alarm on the screen when the preset value is reached.

#### 4-3-1. Displaying the sewing screen under the counter display mode



Three different types of the counter are available, i.e., the bobbin thread counter, the sewing counter and the pitch time counter.

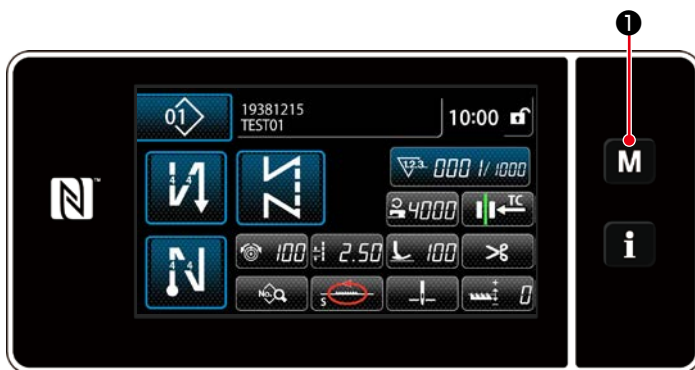
#### 4-3-2. Types of the counter

	<p><b>Bobbin thread counter</b></p> <p>The bobbin thread counter adds one to its current value every time the sewing machine sews 10 stitches.</p> <p>When the preset value is reached, the count-completion screen is displayed.</p> <p>* Refer to <a href="#">"4-3-4. How to reset the count-completion state" p. 56.</a></p>
	<p><b>Sewing counter</b></p> <p>The sewing counter adds one to its current value every time one stitch shape is sewn.</p> <p>When the preset value is reached, the count-completion screen is displayed.</p> <p>* Refer to <a href="#">"4-3-4. How to reset the count-completion state" p. 56.</a></p>
	<p><b>Pitch time counter</b></p> <p>The pitch time counter adds one to its current value every time one stitch shape is sewn. The target value counter adds one to its current value on the preset pitch-by-pitch basis.</p> <p>* Refer to <a href="#">"4-3-4. How to reset the count-completion state" p. 56.</a></p>



### 4-3-3. How to set the counter

#### ① Selecting the counter setting



1. Display the mode screen by pressing

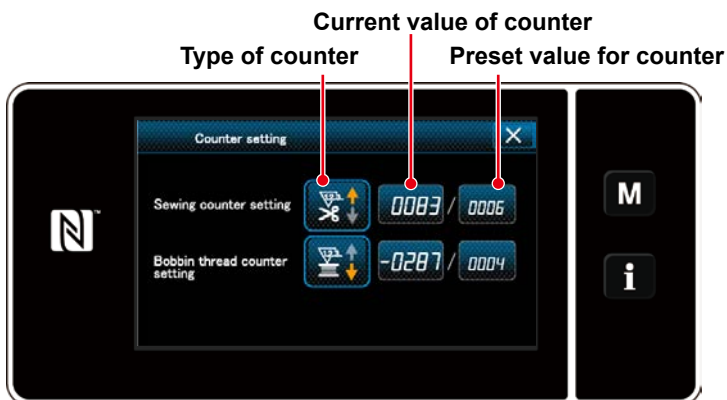


2. Select the "Counter setting".

<Mode screen>

#### ② Setting the type of counter, current value of counter and preset value for counter

The sewing counter and the bobbin counter should be set following the same procedure.

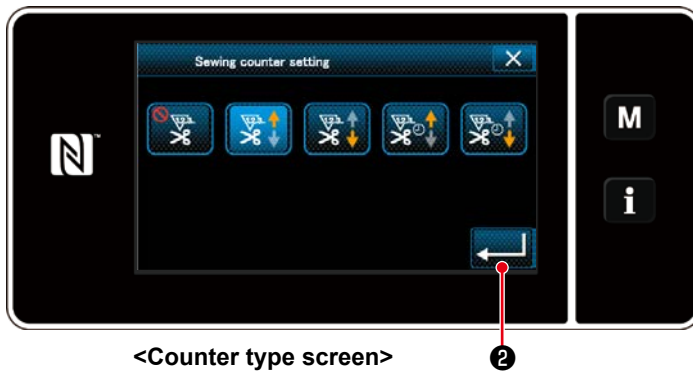



1. The counter setting screen is displayed to enable setting.

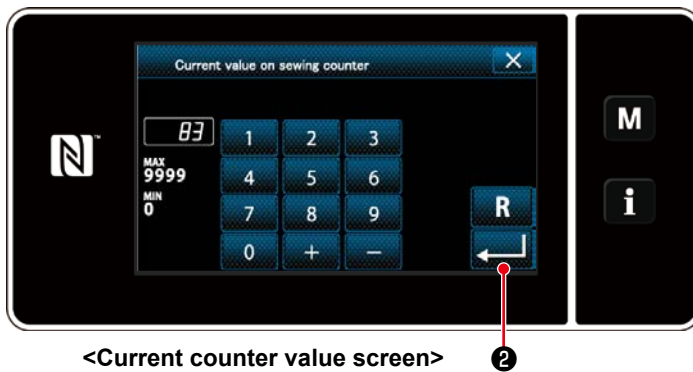
2. Press the button of the desired item. Then, the change screen corresponding to that item is displayed.


<Counter setting screen>

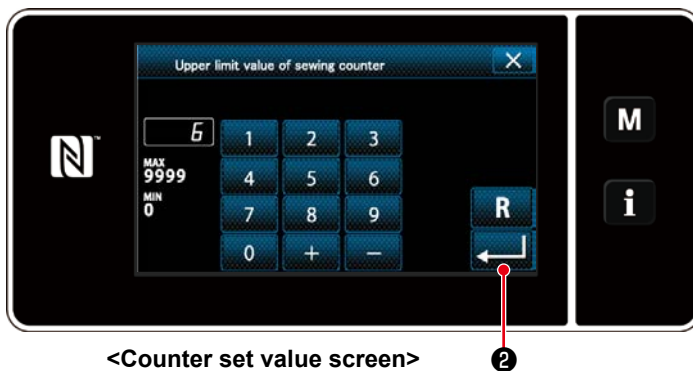







1. Select the desired type of counter.
2. Press  ② to confirm the type of counter you have selected.





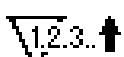

1. Select the current counter value.
2. Enter with the numeric keypad.
3. Press  ② to confirm the type of counter you have selected.



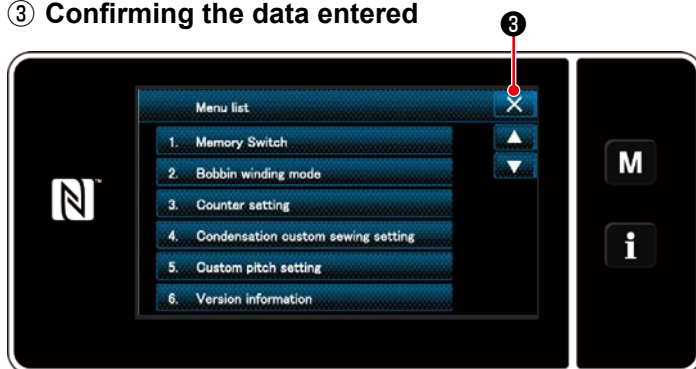
1. Select the counter set value.
2. Enter with the numeric keypad.
3. Press  ② to confirm the type of counter you have selected.

Bobbin thread counter	
	<p><b>UP counter (adding method):</b></p> <p>The bobbin thread counter adds one to its current value every time the sewing machine sews 10 stitches. When the current value reaches the preset value, the count-completion screen is displayed.</p>
	<p><b>DOWN counter (subtracting method):</b></p> <p>The bobbin thread counter subtracts one from its current value every time the sewing machine sews 10 stitches. When the current value becomes 0 (zero), the count-completion screen is displayed.</p>
—	<p><b>Disuse of counter:</b></p> <p>The bobbin thread counter counts nothing even when the sewing machine performs sewing. The count-completion screen is, therefore, not displayed.</p>

Sewing counter	
	<p><b>UP counter (adding method):</b></p> <p>The counter adds one to its current value every time the sewing machine sews one stitch shape. When the current value reaches the preset value, the count-completion screen is displayed.</p>
	<p><b>DOWN counter (subtracting method):</b></p> <p>The counter subtracts one from its current value every time the sewing machine sews one stitch shape. When the current value becomes 0 (zero), the count-completion screen is displayed.</p>
—	<p><b>Disuse of counter:</b></p> <p>The sewing counter counts nothing even when the sewing machine performs sewing. The count-completion screen is, therefore, not displayed.</p>

Pitch time counter	
	<p><b>UP counter (adding method):</b></p> <p>The counter adds one to its current value every time the sewing machine sews one stitch shape. When the current value reaches the preset value, the count-completion screen is displayed.</p>
	<p><b>DOWN counter (subtracting method):</b></p> <p>The counter subtracts one from its current value every time the sewing machine sews one stitch shape. When the current value becomes 0 (zero), the count-completion screen is displayed.</p>
—	<p><b>Disuse of counter:</b></p> <p>The sewing counter counts nothing even when the sewing machine performs sewing. The count-completion screen is, therefore, not displayed.</p>

### ③ Confirming the data entered



<Mode screen>

Confirm the data on counter setting items you have entered. Then, press **X** ③ to return the screen to the mode screen.

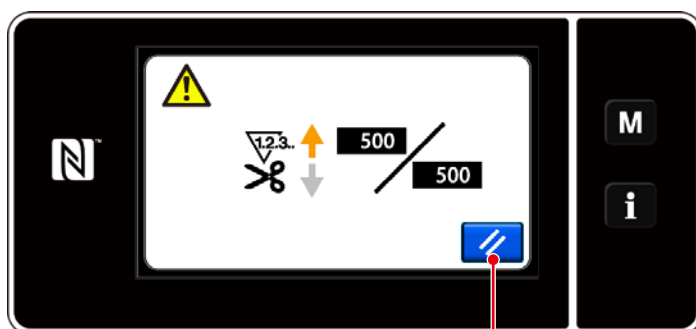
When you press **X** ③ again, the screen is returned to the sewing screen.



<Sewing screen (counter)>

The data on the counter function entered is displayed.

### 4-3-4. How to reset the count-completion state



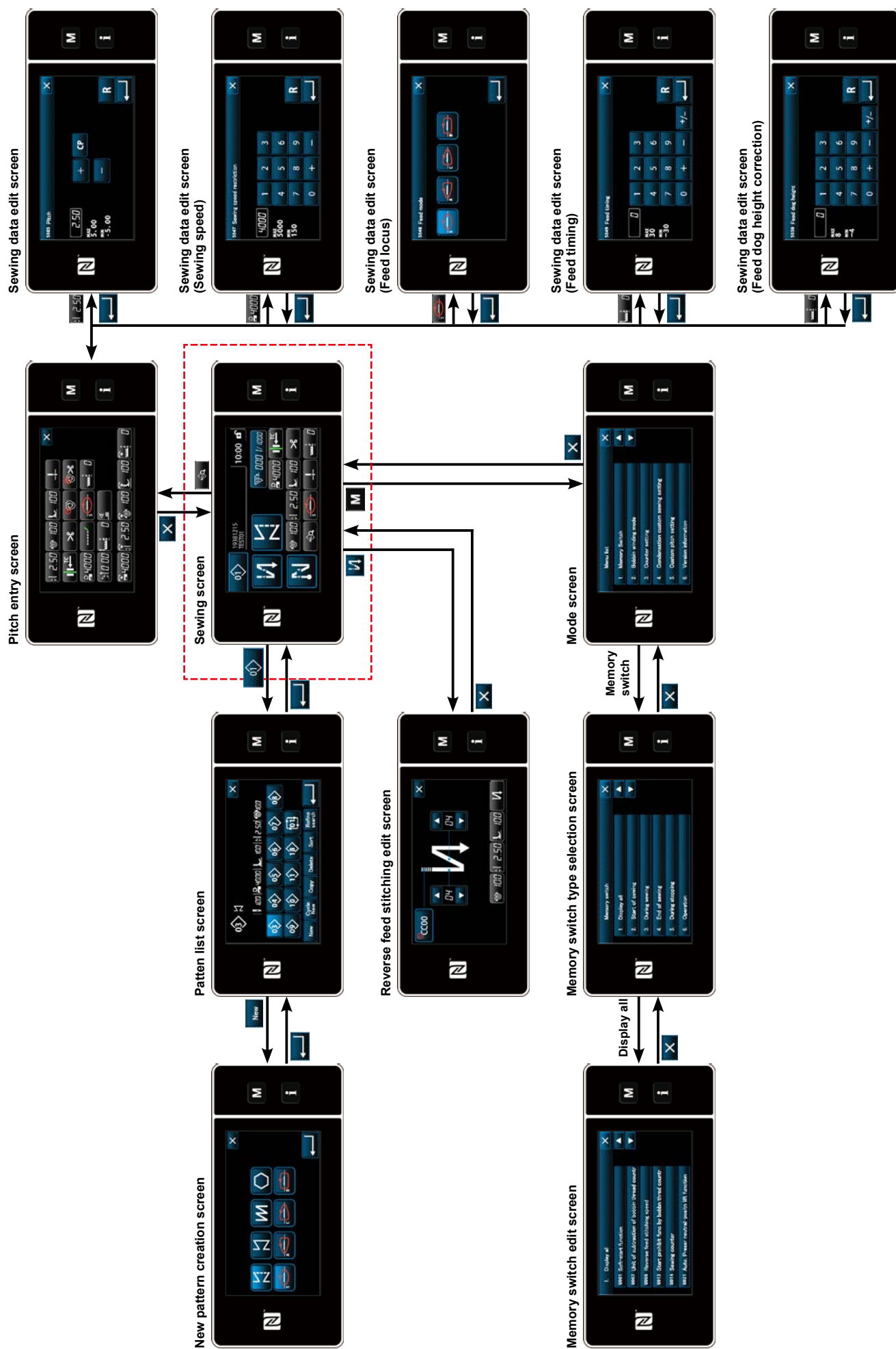
<Count-completion screen>

When the predetermined conditions are satisfied during sewing, the count-completion screen is displayed.

The counter is reset by pressing **//** ①.

Then, the mode is returned to the sewing mode. In this mode, the counter starts counting again.

#### 4-4. Simplified chart of panel displays



#### 4-5. List of memory switch data

No.	Item	Setting range	Unit
U001	<b>Soft-start function</b> The initial value differs with the machine head. (0: OFF)	0 to 9	Stitch
U007	<b>Bobbin thread count-down unit</b> 0: 10 stitches / 1: 15 stitches / 2: 20 stitches	0 to 2	—
U008	<b>Reverse feed stitching speed</b> The initial value differs with the machine head. The number of revolutions set with this memory switch is given precedence even if it is lower than the lowest speed by pedal.	150 to 3000	sti/min
U013	<b>Bobbin thread count stop function</b> 0: Sewing machine start prohibition function is disabled even when the counter completes counting (negative value). 1: When the counter completes counting, the sewing machine start after thread trimming is prohibited. 2: When the counter completes counting, the sewing machine temporarily stops and the start of sewing machine after thread trimming is prohibited. * Note that the prohibition function is disabled in the case the initial value of counter is 0 (zero).	0 to 2	—
U014	<b>Sewing count function</b> 1: Automatic sewing counter / 2: Sewing counter switch input	1 to 2	—
U021	<b>Presser foot lift when the pedal is in its neutral position</b> 0: Disabled / 1: Enabled	0 to 1	—
U025	<b>Operation after manual turning (thread trimming)</b> This memory switch is used for setting the thread trimmer operation after the sewing machine has moved from its upper/lower stop position by manual turning of handwheel. 0: Permitted / 1: Prohibited	0 to 1	—
U035	<b>Minimum speed of the pedal</b> The maximum number of revolutions during thread trimming differs with the machine head.	150 to Max. of thread trimming	sti/min
U036	<b>Speed during thread trimming</b> The maximum number of revolutions during thread trimming differs with the machine head.	150 to Max. of thread trimming	sti/min
U037	<b>Speed during soft start</b> The maximum number of revolutions during soft start differs with the machine head. The number of revolutions set with this memory switch is given precedence even if it is lower than the lowest speed by pedal.	100 to Max.	sti/min
U038	<b>Speed during one-shot stitching</b> The maximum number of revolutions during soft start differs with the machine head.	100 to Max.	sti/min
U039	<b>Start position of rotation</b>	10 to 5000	—
U040	<b>Start position of acceleration</b>	10 to 1000	—
U041	<b>Start position of lifting of presser foot</b>	-500 to -10	—
U042	<b>Start position of lowering of presser foot</b>	10 to 500	—
U043	<b>Start position of thread trimming</b>	-1000 to -100	—
U044	<b>Position that maximum sewing speed is reached</b>	10 to 15000	—
U045	<b>Pedal neutral-position correction value</b>	-150 to 150	—

No.	Item	Setting range	Unit
U049	<b>Presser foot lowering time</b> The initial value differs with the machine head.	0 to 500	ms
U051	<b>Correction of turning-ON of reverse feed stitching (at start)</b>	-50 to 50	Degree
U052	<b>Correction of turning-OFF of reverse feed stitching (at start)</b>	-50 to 50	Degree
U053	<b>Correction of turning-OFF of reverse feed stitching (at end)</b>	-50 to 50	Degree
U055	<b>Presser foot lift after thread trimming</b> The initial value differs with the machine head. dLb = 1 (Note: The presser foot must not come down when the presser foot is at its neutral position during lifting after thread trimming) 0: OFF / 1: ON	0 to 1	—
U056	<b>Reverse-rotation needle-up after thread trimming</b> The initial value differs with the machine head. 0: OFF / 1: ON	0 to 1	—
U057	<b>Function for lowering the feed dog during thread trimming</b> The presser foot height is fixed at 0 (zero) during thread trimming. 0: OFF / 1: ON	0 to 1	—
U059	<b>Selection of reverse feed stitching (at start) operation</b> 0: Manual / 1: Automatic	0 to 1	—
U060	<b>Stop after reverse feed stitching (at start)</b> The stop function stops the sewing machine temporarily regardless of the operating status of the pedal. 0: OFF / 1: ON	0 to 1	—
U064	<b>Sewing speed at the start of reverse feed stitching (at end)</b>	0 to 250	sti/min
U087	<b>Pedal acceleration characteristic</b> 0: Standard / -1 to -10: Square / 1 to 10: Square root	-10 to 10	—
U090	<b>Initial-start upper-position stopping function</b> 0: The sewing machine stops with its needle up after checking the panel. 1: The machine automatically stops with its needle up.	0 to 1	—
U096	<b>Maximum sewing speed</b> The initial value differs with the machine head.	150 to Max.	sti/min
U120	<b>Main shaft reference angle correction</b> The main shaft reference signal angle (0 degree) is corrected with the value set using this memory switch.	-60 to 60	Degree
U121	<b>Upper stop position angle correction</b> The position at which the sewing machine stops with its needle down is corrected.	-15 to 15	Degree
U122	<b>Lower stop position angle correction</b> The position at which the sewing machine stops with its needle up is corrected.	-15 to 15	Degree
U182	<b>Sewing counter stopping function</b> 0: The sewing machine does not stop even when the sewing counter completes counting. 1: When the counter completes counting, the sewing machine start after thread trimming is prohibited. * Note that the prohibition function is disabled in the case the initial value of counter is 0 (zero).	0 to 1	—
U183	<b>Number of times of thread trimming for sewing counter</b>	1 to 20	—

No.	Item	Setting range	Unit
U280	<b>Number of condensation stitches at the end of sewing before shorter-thread remaining type thread trimmer operates</b> When the shorter-thread remaining function is placed in ON, this memory switch is used for setting the number of condensation stitches to be sewn before thread trimming.	1 to 9	Stitch
U281	<b>Pitch of condensation stitches at the sewing end before shorter-thread remaining type thread trimmer operates</b> When the shorter-thread remaining function is placed in ON, this memory switch is used for setting the stitch pitch of condensation stitches to be sewn before thread trimming.	0 to 2.5	0.05 mm
U286	<b>Sewing speed during thread presser operation</b> This memory switch is used for setting the speed to be employed when the thread presser operates.	100 to 3000	sti/min
U288	<b>Thread presser ON angle</b> This memory switch is used for setting the angle at which the thread presser is turned ON at the start of sewing.	180 to 290	Degree
U289	<b>Thread presser OFF angle</b> This memory switch is used for setting the angle at which the thread presser is turned OFF at the start of sewing.	210 to 359	Degree
U290	<b>AK operating time when the thread presser operates</b> The time to turn ON the AK device that operates when the thread presser operates.	0 to 50	ms
U292	<b>Soft-start resetting angel when the thread presser operates</b> This memory switch is used for setting the angle at which the soft-start is reset. * The setting is enabled when the thread presser operates.	180 to 900	Degree
U293	<b>Sewing speed resetting angle when the thread presser operates</b> This memory switch is used for setting the angle at which the sewing speed employed when the thread presser operates is reset. * The setting is enabled when the thread presser operates.	0 to 720	Degree
U326	<b>Feed dog travel to 0 position when lifting the presser foot</b> The feed dog height is set to 0 (zero) when lifting the presser foot. The material on the sewing machine can be handled with ease when this function is used. 0: OFF / 1: ON	0 to 1	—
U400	<b>Panel operation mode</b> This memory switch is used for specifying the mode of the sewing screen that is displayed at the time of startup. 0: Maintenance personnel mode / 1: Operator mode	0 to 1	—
U401	<b>Input unit of pitch</b> 0: Pitch (mm) / 1: Number of stitches per inch 2: Number of stitches in 3 cm	0 to 2	—
U402	<b>Automatic lock time</b> The sewing machine is automatically locked in the case the operation panel is not operated for a predetermined period of time.	0 to 300	Second
U404	<b>Selection of part number and process / comment display</b> This memory switch is used for specifying either the part number/process is displayed or comment is displayed on the sewing screen. 0: Part number/process / 1: Comment	0 to 1	—
U406	<b>Language selection</b> 0: Not yet selected / 1: Japanese / 2: English / 3: Chinese	0 to 3	—
U407	<b>Operating sound of panel</b> 0: OFF / 1: ON	0 to 1	—

#### 4-6. List of errors

Error code	Description of error	Cause	Item to be checked
E000	Execution of data initialization (This is not an error.)	<ul style="list-style-type: none"> <li>In the case the machine head is changed.</li> <li>In the case the initialization operation is executed.</li> </ul>	
E007	Motor overload	<ul style="list-style-type: none"> <li>In the case the machine head is changed.</li> </ul>	
E009	Overtime of solenoid energization	<ul style="list-style-type: none"> <li>In the case the machine head is locked.</li> <li>In the case of sewing extra-heavy weight material that exceeds the guaranteed material thickness.</li> <li>In the case the motor fails to rotate.</li> <li>In the case of the motor or driver failure.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the pulley is entangled with thread.</li> <li>Check whether the motor output connector has loosened.</li> <li>Check whether the motor can be turned smoothly by hand.</li> </ul>
E011	Media is not inserted	<ul style="list-style-type: none"> <li>In the case no media is inserted.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the power OFF and check for a media.</li> </ul>
E012	Read error	<ul style="list-style-type: none"> <li>In the case data stored on the media cannot be read.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the power OFF and check for a media.</li> </ul>
E013	Write error	<ul style="list-style-type: none"> <li>In the case data cannot be written on the media.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the power OFF and check for a media.</li> </ul>
E014	Write protect	<ul style="list-style-type: none"> <li>In the case the media is placed in the write-prohibition state.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the power OFF and check for a media.</li> </ul>
E015	Format error	<ul style="list-style-type: none"> <li>In the case formatting of the media cannot be carried out.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the power OFF and check for a media.</li> </ul>
E016	External media over-capacity	<ul style="list-style-type: none"> <li>In the case the capacity of media is not enough.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the power OFF and check for a media.</li> </ul>
E032	File compatibility error	<ul style="list-style-type: none"> <li>In the case the file is not compatible.</li> </ul>	<ul style="list-style-type: none"> <li>Turn the power OFF and check for a media.</li> </ul>
E071	Slip-off of the motor connector	<ul style="list-style-type: none"> <li>In the case the motor connector has slipped off.</li> <li>Motor current detection circuit has broken.</li> <li>In the case there is no current feedback.</li> </ul>	<ul style="list-style-type: none"> <li>Check for looseness and slip-off of the motor output connector.</li> </ul>
E072	Motor overload when the thread trimmer operates	<ul style="list-style-type: none"> <li>Overload state occurs while the thread trimming operates.</li> </ul>	
E081	Feed driving motor lock	<ul style="list-style-type: none"> <li>In the case the feed driving motor is locked.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the feed driving motor operates smoothly.</li> </ul>
E204	USB insertion	<ul style="list-style-type: none"> <li>In the case the sewing machine is started up without removing the USB thumb drive.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the USB thumb drive.</li> </ul>
E220	Warning against shortage of grease	<ul style="list-style-type: none"> <li>When the predetermined number of stitches is reached.</li> </ul>	<ul style="list-style-type: none"> <li>Add grease to the specified points of sewing machine and reset the error.</li> </ul>
E221	Grease-shortage error	<ul style="list-style-type: none"> <li>In the case the sewing machine cannot continue sewing since the predetermined number of stitches is reached.</li> </ul>	<ul style="list-style-type: none"> <li>Add grease to the specified points of sewing machine and reset the error.</li> </ul>



Error code	Description of error	Cause	Item to be checked
E302	Head-tilt detection error (When the safety switch operates)	<ul style="list-style-type: none"> <li>In the case the Tilt detection switch is turned ON when the power to the sewing machine remains ON.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the machine head is tilted before turning OFF the power switch (The sewing machine operation is prohibited for the sake of safety.)</li> <li>Check whether the head-tilt detection switch cord is caught under the machine head, etc.</li> <li>For the head-tilt detection switch cord, check the cable of the INT PCB.</li> </ul>
E303	Meniscus sensor error	<ul style="list-style-type: none"> <li>In the case the meniscus sensor signal cannot be detected</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the machine head model setting matches the actual machine head.</li> <li>Check for a break in the motor encoder connector.</li> </ul>
E704	Data failure (system-version mismatch)	<ul style="list-style-type: none"> <li>In the case the system version does not match the machine head setting.</li> </ul>	<ul style="list-style-type: none"> <li>Re-write the system version to the applicable one.</li> </ul>
E730	Encoder fault	<ul style="list-style-type: none"> <li>In the case the motor signal is not input properly.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the motor signal connector (CN39) has loosened or slipped off.</li> <li>Check whether the motor signal cord has broken by being caught under the machine head.</li> <li>Check whether the insertion direction of the motor encoder connector is correct.</li> </ul>
E731	Motor hole sensor fault		
E733	Reverse rotation of motor	<ul style="list-style-type: none"> <li>When the motor runs at a speed of 500 sti/min. or more, the motor runs in the reverse direction of the indicated direction of rotation.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the main shaft motor encoder wire connection is correct.</li> <li>Check whether the main shaft motor wire connection for power is correct.</li> </ul>
E811	Over-voltage	<ul style="list-style-type: none"> <li>In the case a voltage that is equal to or more than the guaranteed voltage is input.</li> <li>In the case a voltage of 200 V is applied though the voltage is set to 100 V.</li> <li>In the case a voltage of 220 V is input to the box of "JA: 120 V".</li> <li>In the case a voltage of 400 V is applied to the box of "CE: 230 V".</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the supply voltage of "rated supply voltage <math>\pm 10</math> % or more" is applied.</li> <li>Check whether the 100 V/200 V changeover connector is set correctly.</li> </ul> <p>In the above-described cases, the power PCB has broken.</p>
E813	Low voltage	<ul style="list-style-type: none"> <li>In the case a voltage that is equal to or less than the guaranteed voltage is input</li> <li>In the case a voltage of 100 V is applied though the voltage is set to 200 V</li> <li>In the case a voltage of 120 V is input to the box of "JUS: 220 V"</li> <li>In the case the internal circuit has broken due to the application of over-voltage</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the supply voltage of "rated supply voltage -10 % or less" is applied.</li> <li>Check whether the 100 V/200 V changeover connector is set correctly.</li> </ul> <p>In the above-described cases, the power PCB has broken.</p>
E815	Regenerative resistor is not connected	<ul style="list-style-type: none"> <li>In the case the regenerative resistor is not connected.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the regenerative resistor is connected to the regenerative resistor connector (CN11).</li> </ul>

Error code	Description of error	Cause	Item to be checked
E903	85-V power supply fault	<ul style="list-style-type: none"> <li>In the case the 85-V voltage is not properly output.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the motor is faulty</li> <li>Check the F2 fuse.</li> </ul>
E904	24-V power supply fault	<ul style="list-style-type: none"> <li>In the case the 24-V voltage is not properly output.</li> </ul>	
E910	The presser motor origin retrieval error	<ul style="list-style-type: none"> <li>In the case the presser motor has failed to return to its origin.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the presser setting is correct (memory switch No. 23).</li> <li>Check whether the presser motor origin has been correctly adjusted.</li> </ul>
E912	Main shaft motor speed detection error	<ul style="list-style-type: none"> <li>In the case the main shaft motor runs at a speed that exceeds the assumed speed.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether connection encoder wire of the main shaft motor is correct.</li> <li>Check whether connection of the main shaft motor wire is correct.</li> </ul>
E915	Failure of communication with operation panel	<ul style="list-style-type: none"> <li>In the case the operation panel connector is not inserted properly.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether CN38 of the CTL PCB or CN200 of the panel is connected properly or whether the cable has broken.</li> </ul>
E922	Main shaft control failure	<ul style="list-style-type: none"> <li>In the case the main shaft fails to operate as assumed.</li> </ul>	
E924	Motor driver fault	<ul style="list-style-type: none"> <li>In the case the motor driver has broken.</li> </ul>	
E946	Machine-head EEPROM write error	<ul style="list-style-type: none"> <li>In the case data cannot be written on the machine-head EEPROM.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the machine-head INT PCB is connected properly.</li> </ul>
E955	Electric current sensor error	<ul style="list-style-type: none"> <li>The electric current of the main shaft motor exceeds the assumed value.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether connection of the main-shaft motor wire for power is correct.</li> </ul>
E961	Pitch motor deviation error	<ul style="list-style-type: none"> <li>In the case the pitch motor fails to operate because of an excessive load.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the pitch motor runs smoothly.</li> </ul>
E962	Presser motor deviation error	<ul style="list-style-type: none"> <li>In the case the presser fails to operate because of an excessive load.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the presser motor runs smoothly.</li> </ul>
E971	Feed horizontal motor IPM over-current protection	<ul style="list-style-type: none"> <li>Pitch motor maloperation.</li> </ul>	
E972	Feed horizontal motor overload	<ul style="list-style-type: none"> <li>In the case the pitch motor is applied with an excessive load.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the pitch motor runs smoothly.</li> </ul>
E973	Feed vertical motor IPM over-current protection	<ul style="list-style-type: none"> <li>Feed driving motor maloperation.</li> </ul>	
E974	Feed vertical motor overload	<ul style="list-style-type: none"> <li>In the case the feed driving motor is applied with an excessive load.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the feed driving motor runs smoothly.</li> </ul>
E975	Presser motor IPM over-current protection	<ul style="list-style-type: none"> <li>Presser motor maloperation.</li> </ul>	
E976	Presser horizontal motor overload	<ul style="list-style-type: none"> <li>In the case the presser motor is applied with an excessive load.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the presser motor runs smoothly.</li> </ul>
E985	Return-to-origin error of pitch motor or feed driving motor	<ul style="list-style-type: none"> <li>In the case the pitch motor has failed to return to its origin.</li> <li>In the case the feed driving motor has failed to return to its origin.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether the origin of the pitch motor has been adjusted properly.</li> <li>Check whether the origin of the feed driving motor has been adjusted properly.</li> </ul>

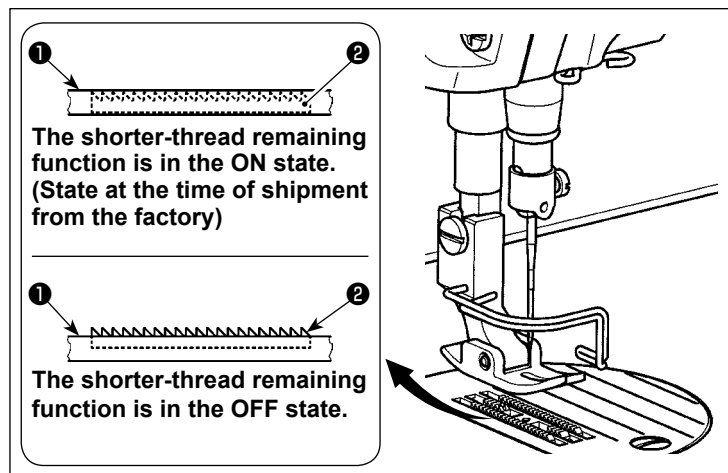
## 5. MAIN NEW FUNCTIONS

As a result of computerization of the feed mechanism, various adjustments can be carried out. Refer to **"4-2. Sewing patterns" p. 31** for details.



Due to computerization of the feed mechanism, the machine generates noise that is specific to the stepping motor when it runs at a low speed. This noise is not a sign of fault.

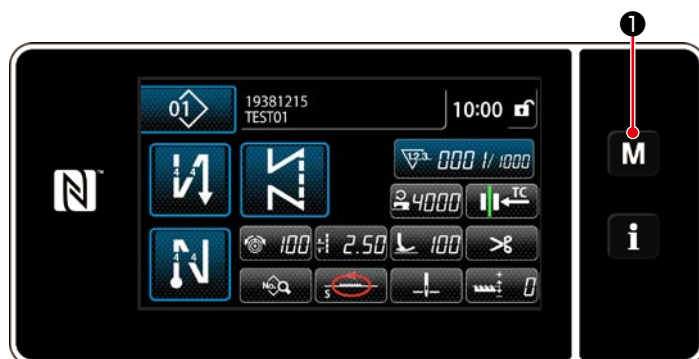
### 5-1. Shorter-thread remaining thread trimming



The length of needle thread remaining on the material after thread trimming is reduced by operating the thread trimmer with feed dog ① lowered.

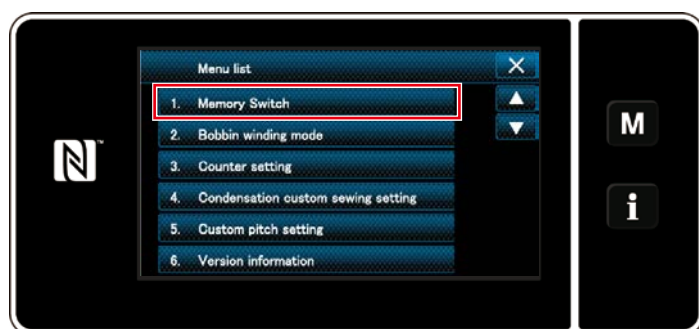
In addition, since feed dog ① does not protrude from throat plate ②, the material can be placed/removed on/from the sewing machine with ease.

\* The setting of "Lowering/Not lowering the feed dog during thread trimming" can be changed over with "Memory switch U057".

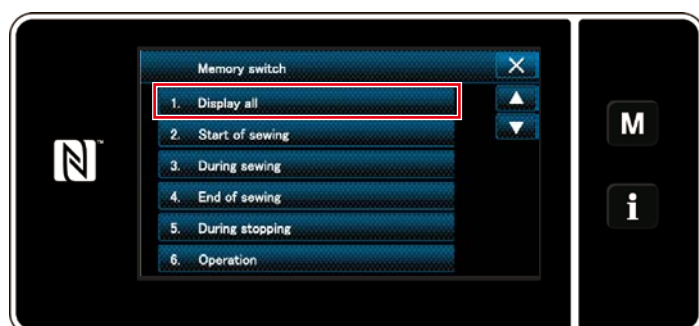


#### [How to set the feed dog]

- 1) Display the mode screen by pressing **M** ①.



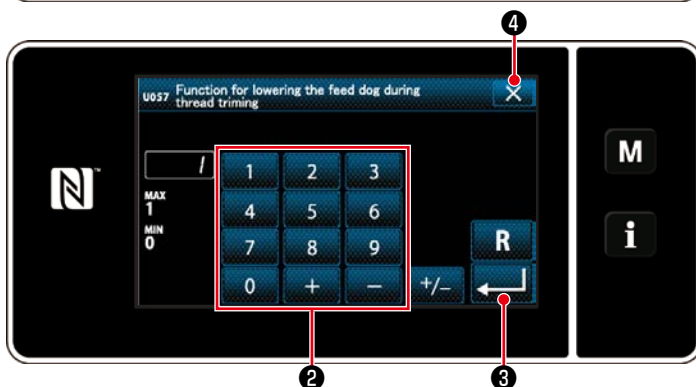
- 2) Select "1. Memory switch".




- 3) Select "1. Display all".




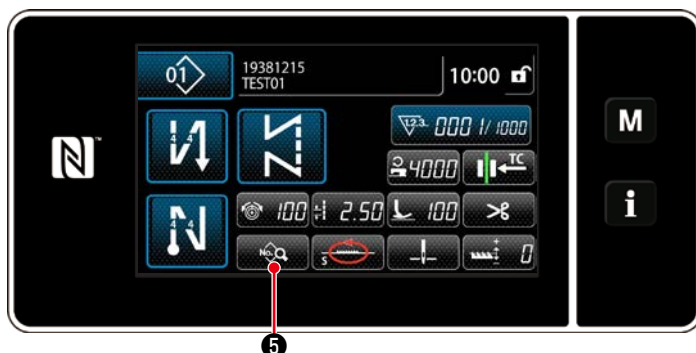
4) Select "U057 Function for lowering the feed dog during thread trimming".



5) Select the feed dog status during thread trimming (0 : Feed dog DOWN, 1 : Feed dog UP) by pressing ten keys ②.

6) Confirm your entry by pressing  ③.


7) Display the sewing screen by pressing  ④.



#### [How to set the condensation stitch]


1) Display the sewing data edit screen by pressing  ⑤.




2) Display "S046 Thread trimming after one shot stitching" by pressing  ⑥.



3) Set the shorter-thread remaining thread trimming function in the ON/OFF state (With/without condensation stitch).

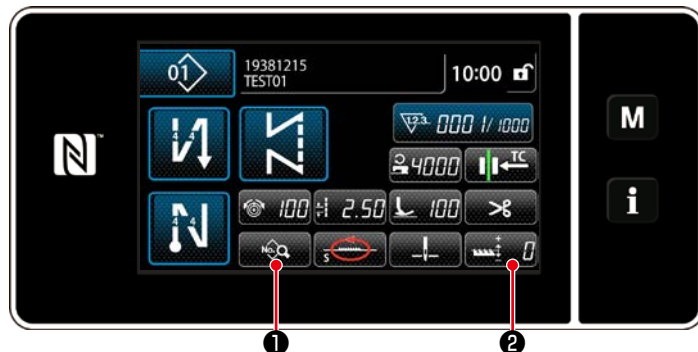
4) Confirm your entry by pressing  ⑦.

5) Display the sewing screen by pressing  ⑧.



## 5-2. Adjusting the feed dog height

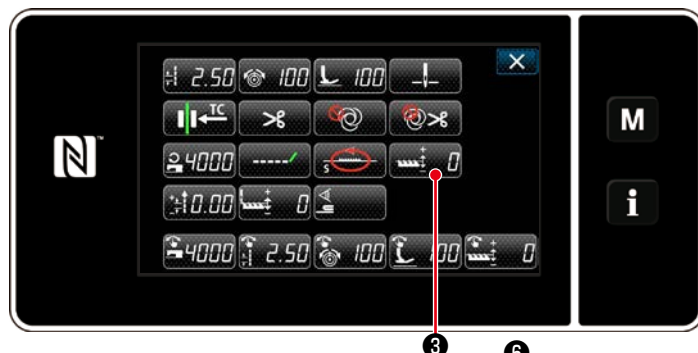



1. Be aware that interference between the throat plate and feed dog can occur depending on the gauge used. Be sure to check the clearance in the gauge to be used. (The clearance must be 0.5 mm or more.)
2. When you have changed the stitch length, feed dog height or feed timing, run the sewing machine at a low speed to make sure that the gauge does not interfere with the changed part.





### [How to adjust]

- 1) Display the sewing data edit screen by pressing  ①.  
Or, display "S050 Feed dog height" by pressing  ②.



- 2) Display "S050 Feed dog height" by pressing  ③.



- 3) Change the feed dog height by pressing ten keys and +/- keys ④.  
\* Refer to the following for the adjustable range of the feed dog height.
- 4) Confirm your entry by pressing  ⑤.
- 5) Display the sewing screen by pressing  ⑥.

### [DDL-9000C-FMS]

Feed dog height (mm)	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20
Input value on the panel	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8

Low ←←←



→→→ High

Standard

(Factory-setting at the time of shipment)

### [DDL-9000C-FSH]

Feed dog height (mm)	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60
Input value on the panel	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8

Low ←←←



→→→ High

Standard

(Factory-setting at the time of shipment)

\* Range of input values on the panel is from -4 to 8.

### 5-3. Operating timing of the feed



When you have changed the stitch length, feed dog height or feed timing, run the sewing machine at a low speed to make sure that the gauge does not interfere with the changed part.



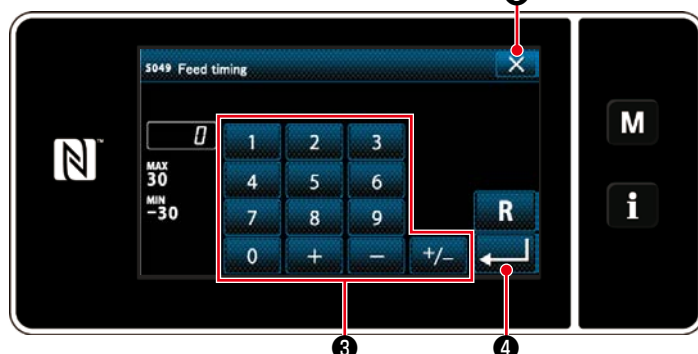
Timing between the needle and feed can be adjusted on the operation panel.

#### [How to adjust]

1) Display the sewing data edit screen by pressing  ①.





2) Display "S049 Feed timing" by pressing  ②.

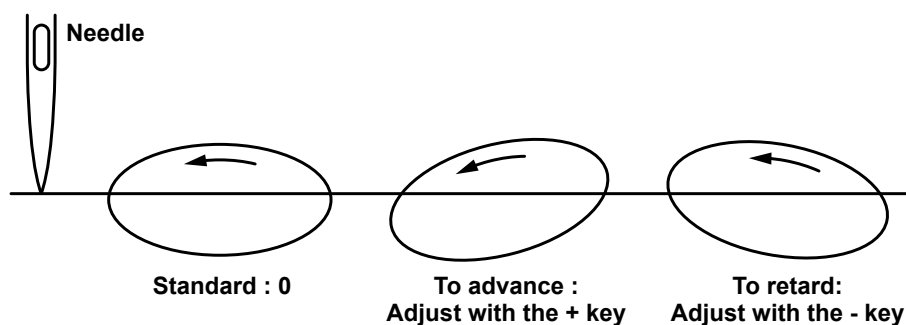


3) Change the feed timing by pressing ten keys and +/- keys ③.

(+ : To advance; - : To retard)

4) Confirm your entry by pressing  ④.

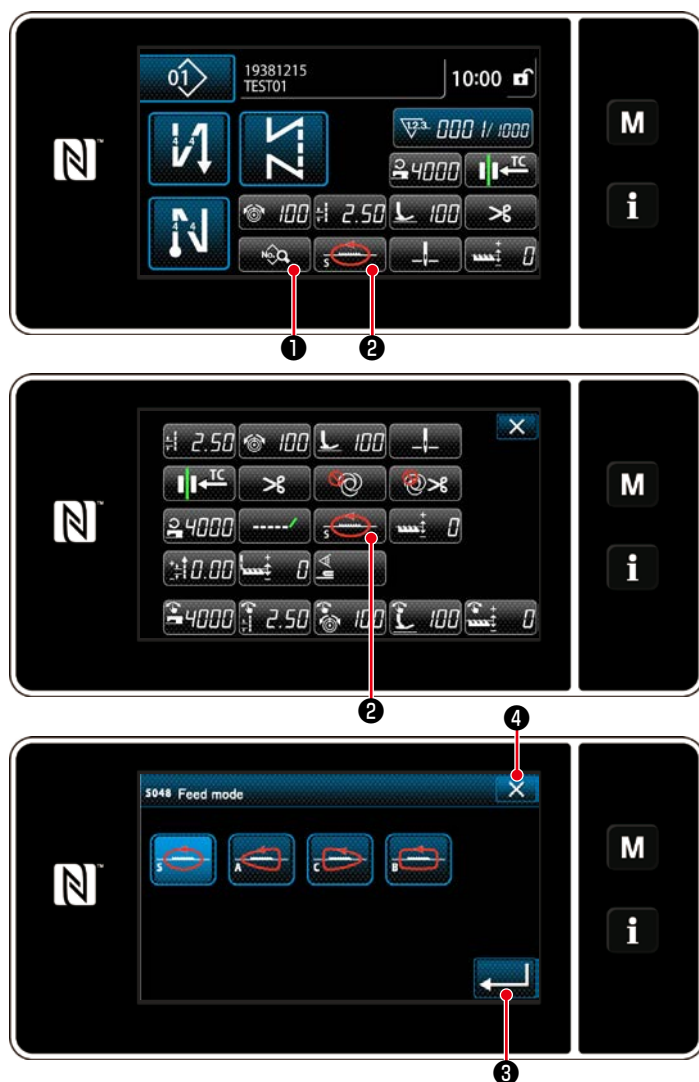
5) Display the sewing screen by pressing  ⑤.



1. The feed timing differs with the set value. (Image figure as observed from the face plate side)
2. The stitch length changes by adjusting the feed timing. Carry out adjustment while actually carrying out sewing for the purpose of checking the stitch length.












## 5-4. Changing the feed locus



The feed locus can be changed according to the item to be sewn.

### [How to change]

- 1) Display the sewing data edit screen by pressing  ①.  
Or, display "S048 Feed mode" by pressing  ②.
- 2) Display "S048 Feed mode" by pressing  ③.
- 3) Change the feed locus.  
\* Refer to the following for the types of feed locus.
- 4) Confirm your entry by pressing  ④.
- 5) Display the sewing screen by pressing  ⑤.

Feed locus (shape) [Image figure]	Name	Characteristics (movement of the feed dog)	Stitch length and sewing speed
	S (Standard)	Standard smooth elliptical locus	0 to 4.00 mm : 5,000 sti/min (H type : 4,500 sti/min) 4.05 to 5.00 mm : 4,000 sti/min
	A	During ascending, the feed dog goes straight up and moves in parallel in terms of longitudinal direction.	0 to 5.00 mm : 4,000 sti/min
	C	When the needle penetrates the material, the feed dog sinks straight down. As a result, the bent-needle problem rarely occurs.	0 to 5.00 mm : 4,000 sti/min
	B	The feed dog goes straight up and sinks straight down. Since it sinks straight down during descending, the bent-needle problem rarely occurs. With this type of locus, the stitch length does not change largely even when the feed dog height is changed.	0 to 5.00 mm : 2,500 sti/min

## 6. CARE

Perform the maintenance below every day for longer use of your machine.

### 6-1. Maintenance mode

Use this mode for the maintenance of the sewing machine such as adjustment of the hook timing and re-  
placement of the gauge.



While the sewing machine is placed in the maintenance mode, it will not start even if the pedal is depressed.



1) Display the mode screen by pressing



**1**.



2) The screen is changed over to the maintenance mode screen.



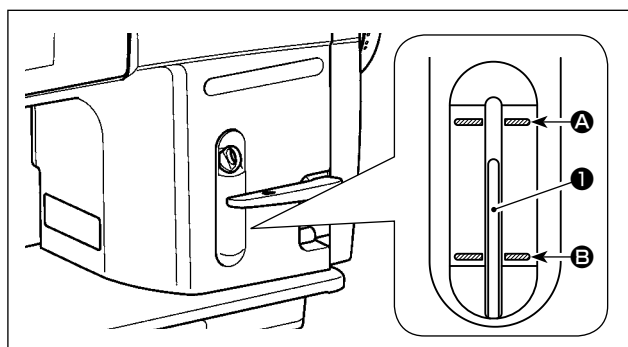
Be sure to check that the screen has changed to the maintenance mode screen so as to prevent accidents caused by abrupt start of the sewing machine.

### 6-2. Confirmation of the amount of oil in the hook oil tank



#### WARNING :

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



Confirm that the top of oil amount indicating rod **1** is between the upper engraved marker line **A** and the lower engraved marker line **B** of the oil amount indicating window. (For the details, refer to **"2-12. Lubrication" p. 11.**)

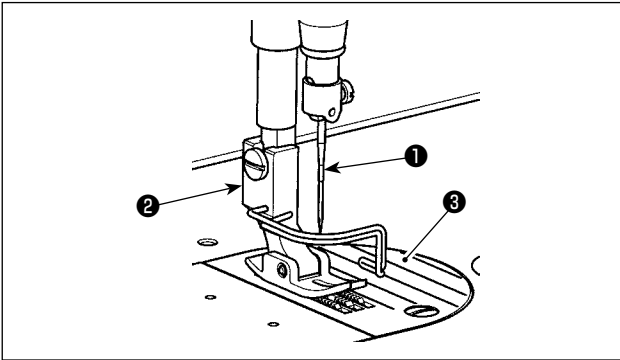


## 6-3. Cleaning

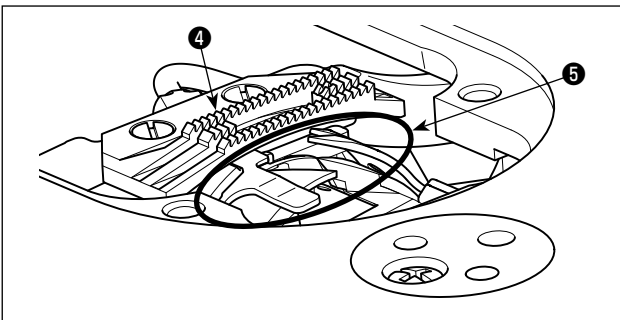


### WARNING :

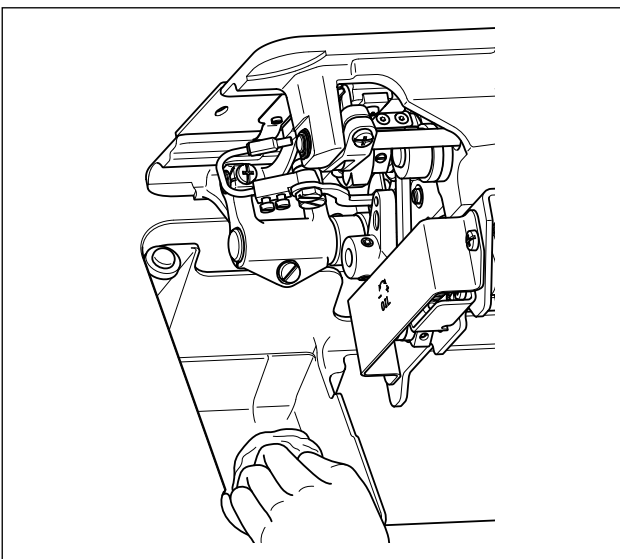
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



- 1) Remove needle ❶, presser foot ❷ and throat plate ❸.



- 2) Remove dust adhered to feed dog ❹ and thread trimmer unit ❺ with a soft brush or cloth.



- 3) Tilt the machine head and wipe out the dirt of bobbin case and the like with soft cloth, and confirm that there is no scratch. Wipe out with the cloth dust and hook oil drained in the under cover near the hook.

## 6-4. Applying grease

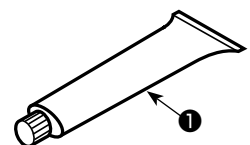


### WARNING :

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



1. When the machine needs replenishment of grease, an alarm sounds. Once the alarm sounds, replenish grease. In the case the machine is used under harsh environment, it is recommended to replenish grease once a year for ensuring effective greasing.
2. Do not apply oil to the sections which are lubricated with grease.
3. Be aware that grease can leak from the thread take-up cover and needle bar if the amount of grease is excessive.
4. Be sure to use JUKI GREASE A TUBE ❶ (part number : 40006323).

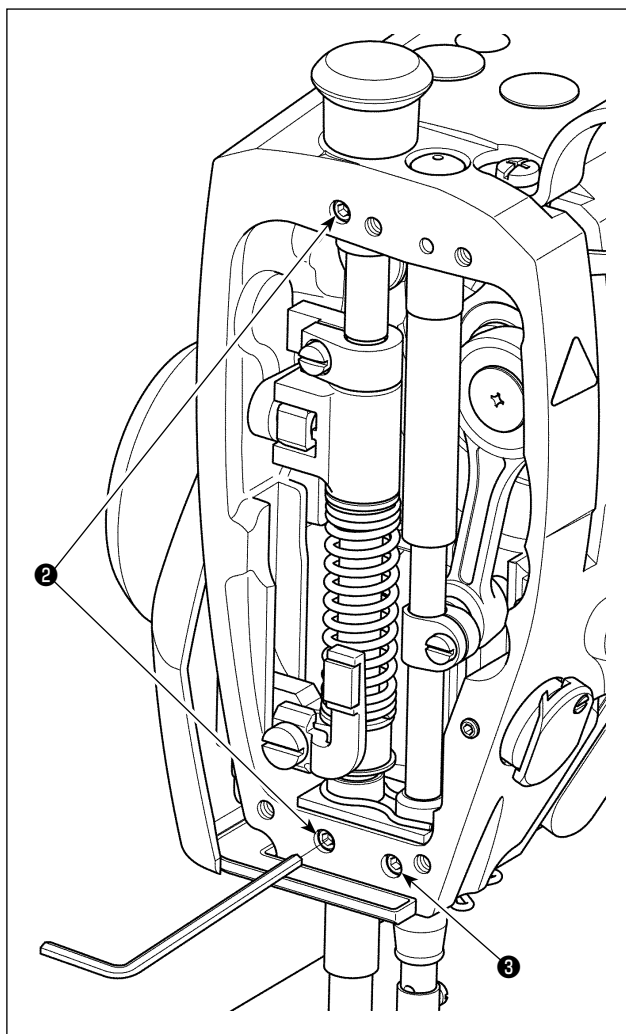


## 6-5. Applying grease to the needle bar lower bushing and the presser bar bushing



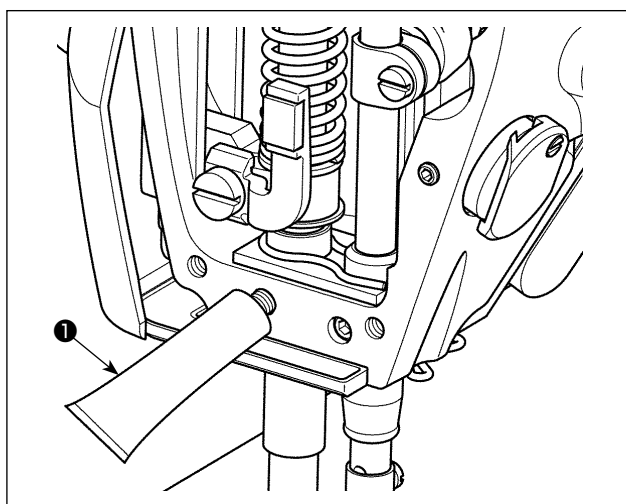
### WARNING :

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



Carry out greasing with the needle bar installed.

- 1) Remove the face plate.
- 2) Remove presser bar bushing greasing screw ② and needle bar lower bushing greasing screw ③ (only for the DDL-9000C-FMS) with a hexagonal wrench.



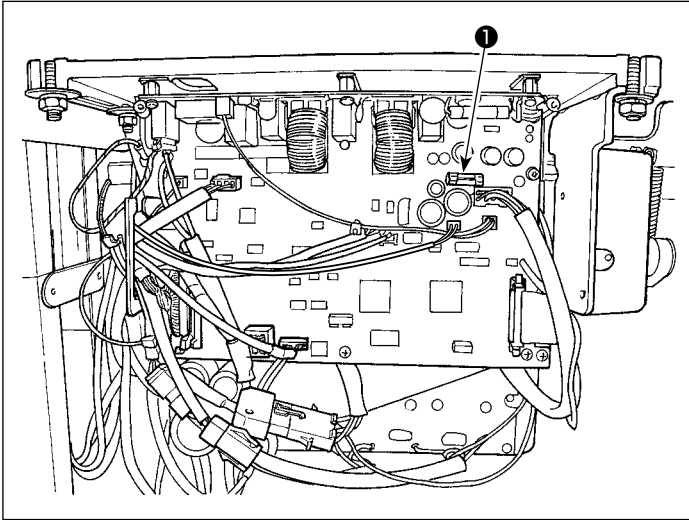
- 3) Remove the cap of exclusive grease tube ①. Insert its tip into the oil hole and replenish grease from exclusive grease tube ①. At this time, add grease until it overflows the oil hole.
- 4) Push overflowing exclusive grease with the oil filling screw into the oil hole.
- 5) Wipe the excess of grease off the area around the oil hole.

## 6-6. Replacing the fuse



### **DANGER :**

1. To avoid electrical shock hazards, turn OFF the power and open the control box cover after about five minutes have passed.
2. Open the control box cover after turning OFF the power without fail. Then, replace with a new fuse with the specified capacity.



The machine uses the following one fuse :

MAIN PWB

- ① For 85V power supply protection  
5A (time-lag fuse)