ENGLISH

DDL-9000C-S
INSTRUCTION MANUAL

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1. SPECIFICATIONS

1-1. Specifications of the sewing machine head

DDL-9000C-S△ △- △B-AK154

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
0	Without

Auto-lifer

AK154	With
-	Without

		DDL-9000C-SMS	DDL-9000C-SSH
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 lift	Hand lifter	5.5 mm	
	Knee lifter	15 mm or more	
	AK154	13 mm or more	
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	
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.

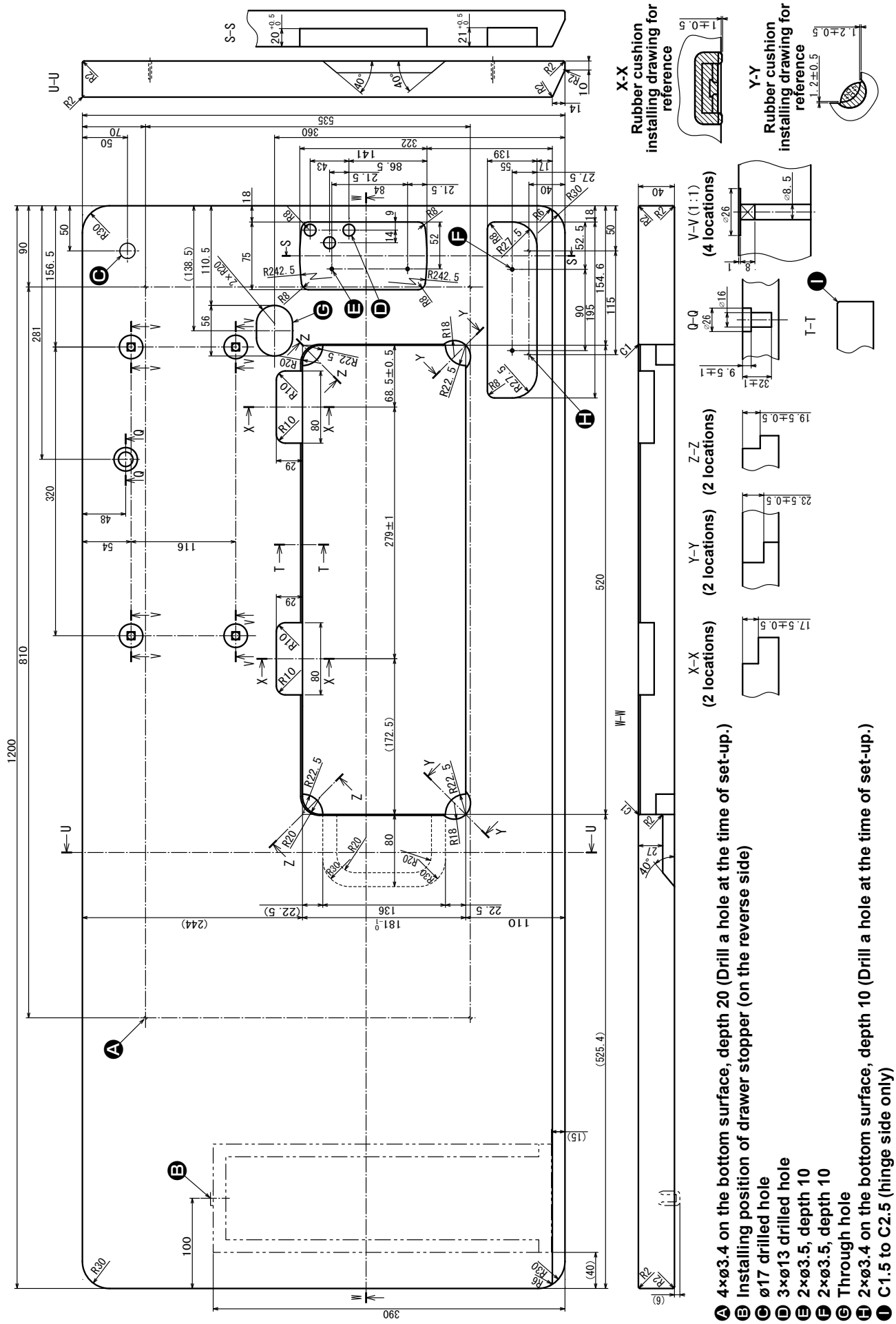
***1 : Needle used depends on the destination.**

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

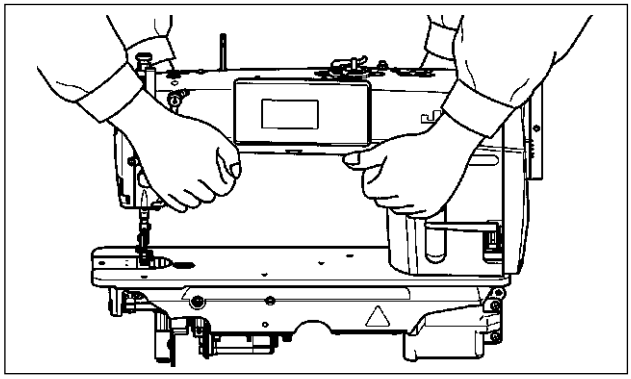
2-1. Drawing of table



- Ⓐ 4×ø3.4 on the bottom surface, depth 20 (Drill a hole at the time of set-up.)
- Ⓑ Installing position of drawer stopper (on the reverse side)
- Ⓒ ø17 drilled hole
- Ⓓ 3×ø13 drilled hole
- Ⓔ 2×ø3.5, depth 10
- Ⓕ 2×ø3.5, depth 10
- Ⓖ Through hole
- Ⓗ 2×ø3.4 on the bottom surface, depth 10 (Drill a hole at the time of set-up.)
- Ⓘ C1.5 to C2.5 (hinge side only)

2-2. Cautions when setting up the sewing machine

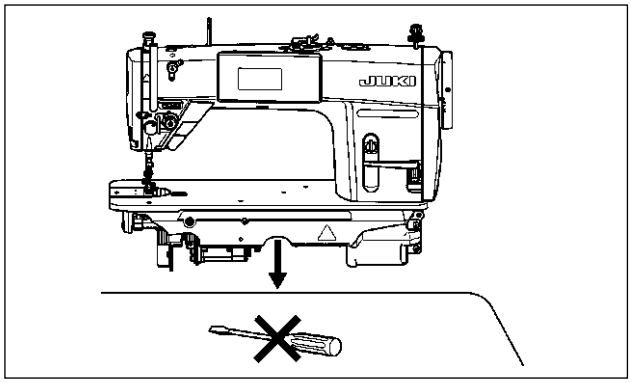
Thank you very much for the purchase of JUKI Industrial Sewing Machine this time. Make sure of items 2-1 through 2-14 before operating to use this sewing machine with ease.



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.

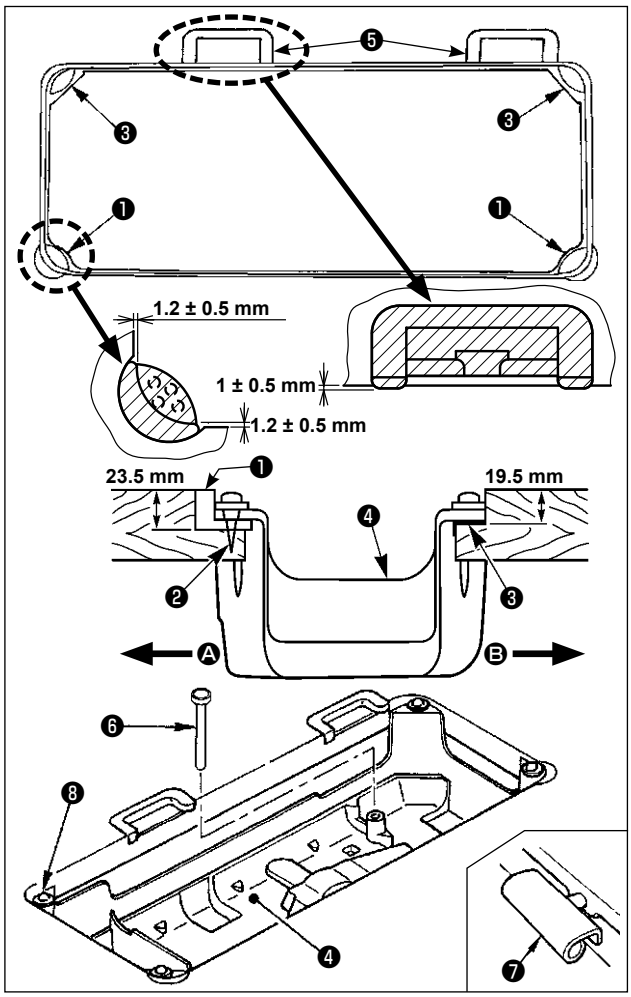
1. Never hold the handwheel since it rotates.
2. Be sure to handle the sewing machine with two persons or more since the sewing machine weighs 40.5 kg or more.



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

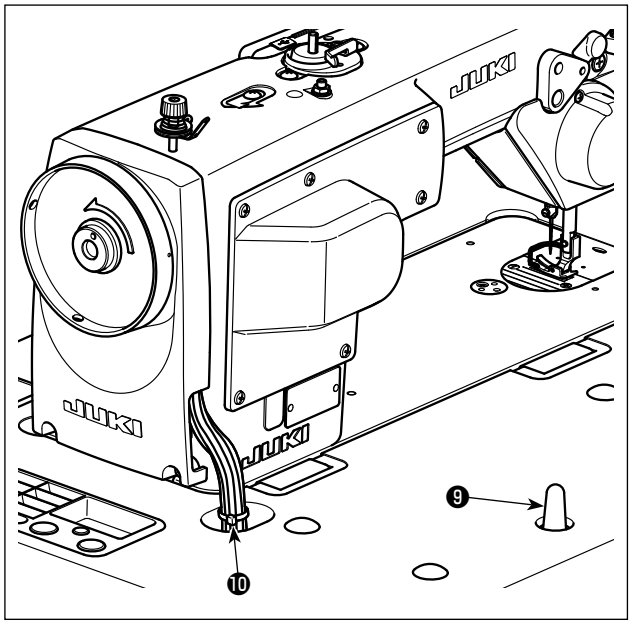
Place the sewing machine on a horizontal and plane place when placing it and do not place any protruding thing such as a screwdriver or the like.

2-3. Installation



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

Do not hold the handwheel.

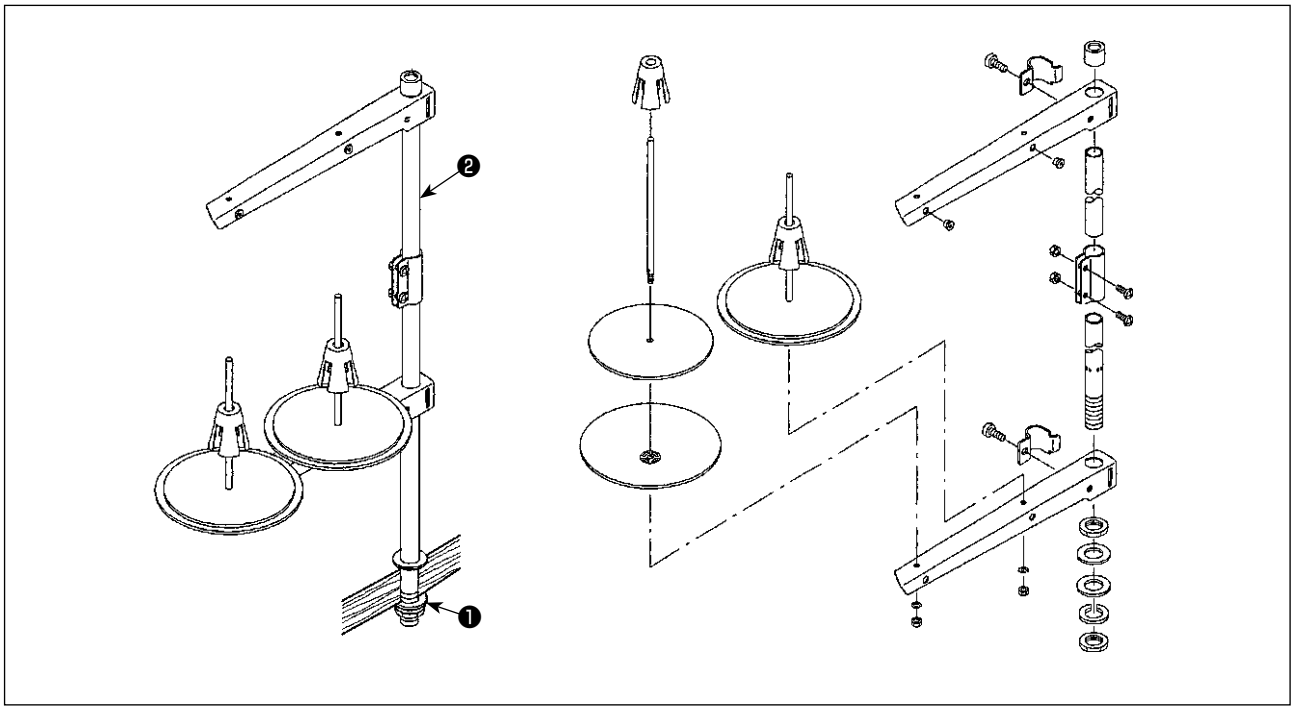


4) Securely attach head support rod ❾ to the table until it goes no further.

Be sure to mount the machine head support rod ❾ 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 ❾ on the table so that its height from the table surface becomes 33 to 38 mm.

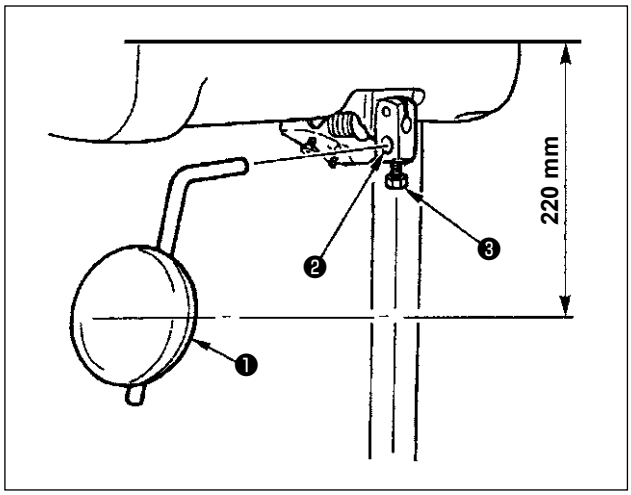
5) Bundle cable clip band ❿ supplied as accessories of the machine head at the root of the cable.

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 ❶.
3) For ceiling wiring, pass the power cord through spool rest rod ❷.

2-5. Attaching the knee lifter pad

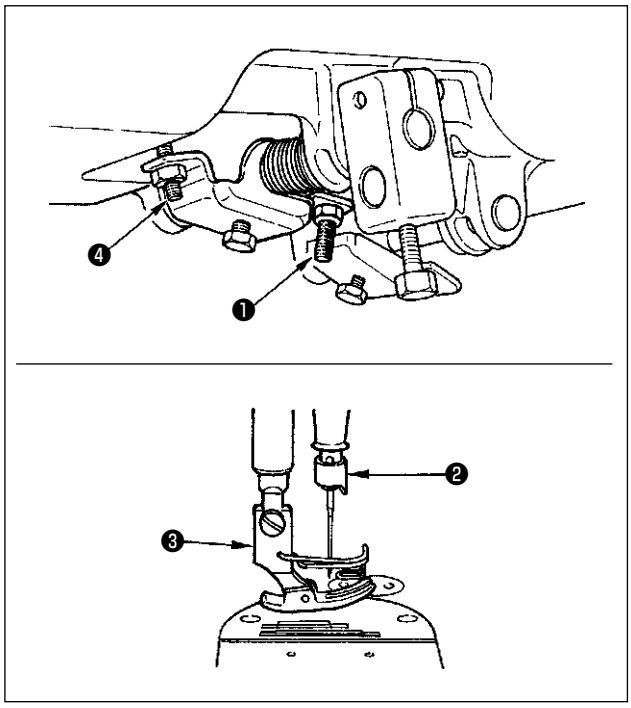


Insert knee lifter pad ❶ into attaching hole ❷ and tighten it with bolt ❸.

* Adjust the position of knee lifter pad ❶ to a convenient place.
  For the reference dimension, the position is 220 mm from the bottom face of table.

2-6. Adjusting the height of the knee lifter

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

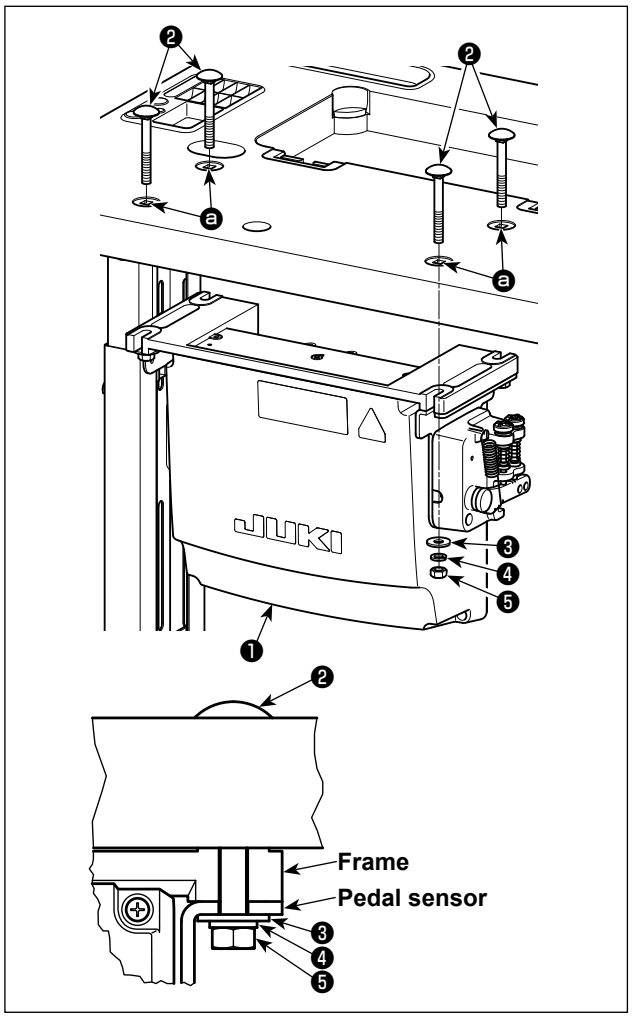


The standard height of the presser foot lifted using the knee lifter is 10 mm.
You can adjust the presser foot lift up to 15 mm using knee lifter adjust screw ❶.

1. Do not operate the sewing machine in the state that the presser foot ❸ is lifted by 10 mm or more since the needle bar ❷ comes in contact with the presser foot ❸.

2. Knee lifter initial position
If the adjustment screw ❹ is over tightened, the sewing machine will operate in a state where the presser foot is lifted up, causing defective sewing or noise.

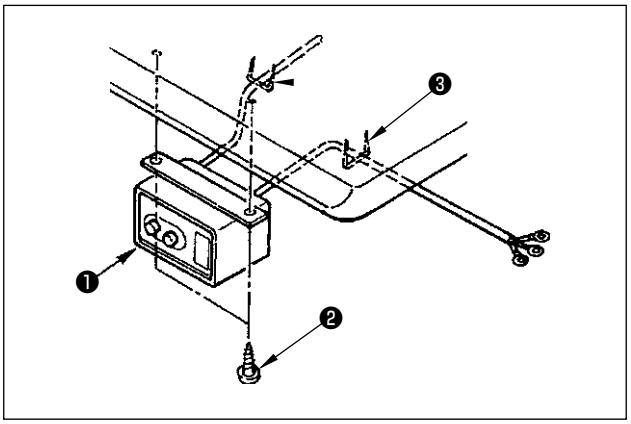
2-7. Installing the electrical box



Install control box ❶ on the table using four holes ⓐ in the table. Secure the control box with four bolts ❷, four plain washers ❸, four spring washers ❹ and four hexagonal nuts ❺ 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.

2-8. Connecting the power switch cable



2-8-1. Installing the power switch

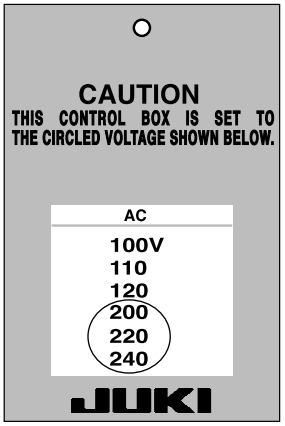
Fix power switch ❶ under the machine table with wood screws ❷.

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

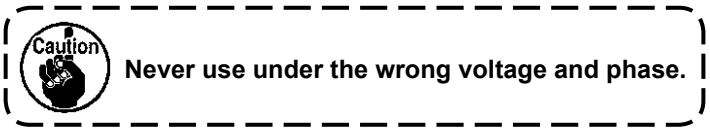
2-8-2. Connecting the power source cord

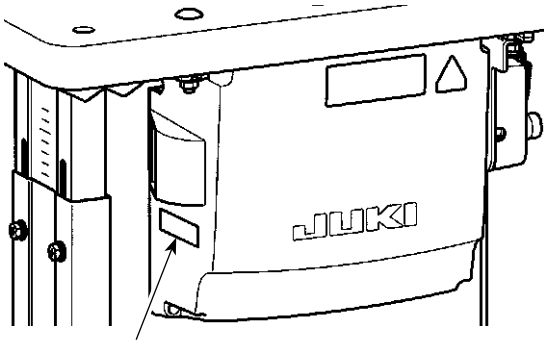
Voltage specifications at the time of delivery from the factory are indicated on the voltage indication seal.
Connect the cord in accordance with the specifications.

Power indication tag

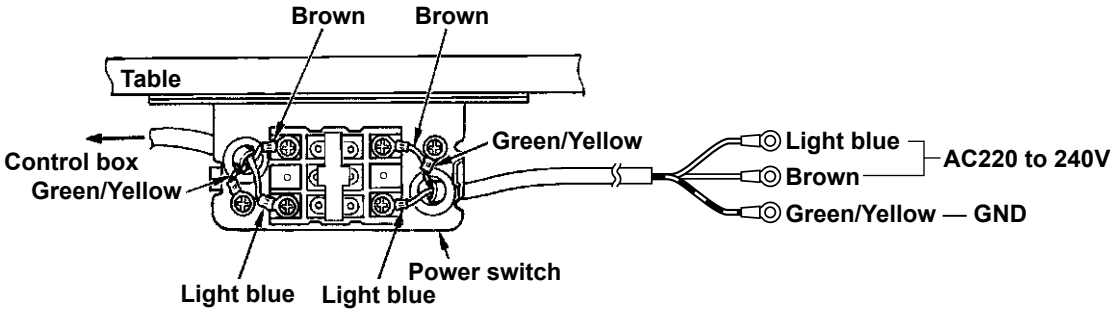


(For example : In the case of 200V)

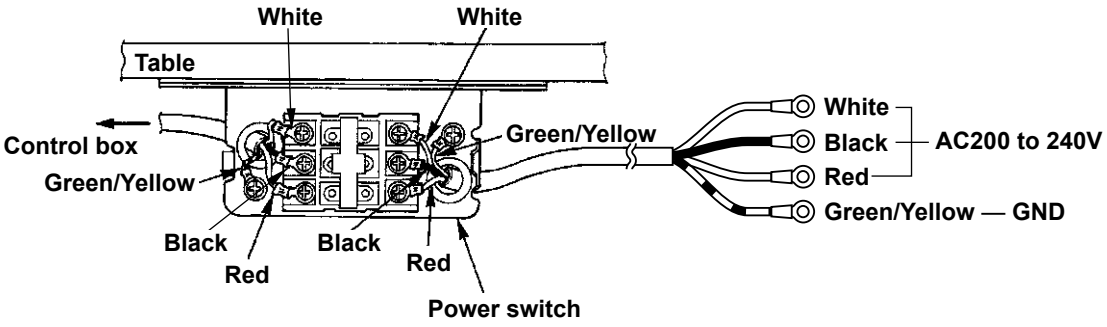




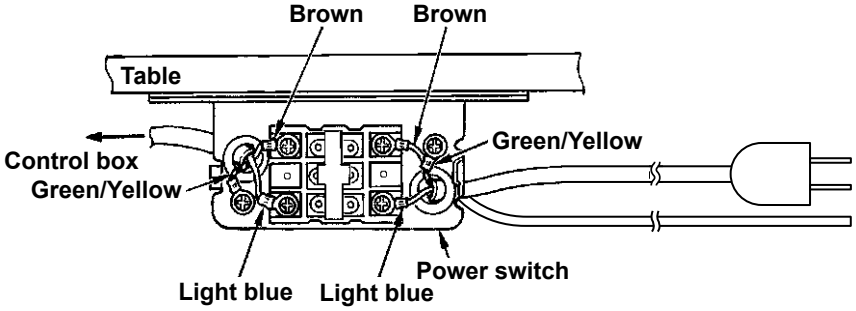
• **Connecting single phase 220 to 240V**



• **Connecting 3-phase 200 to 240V**

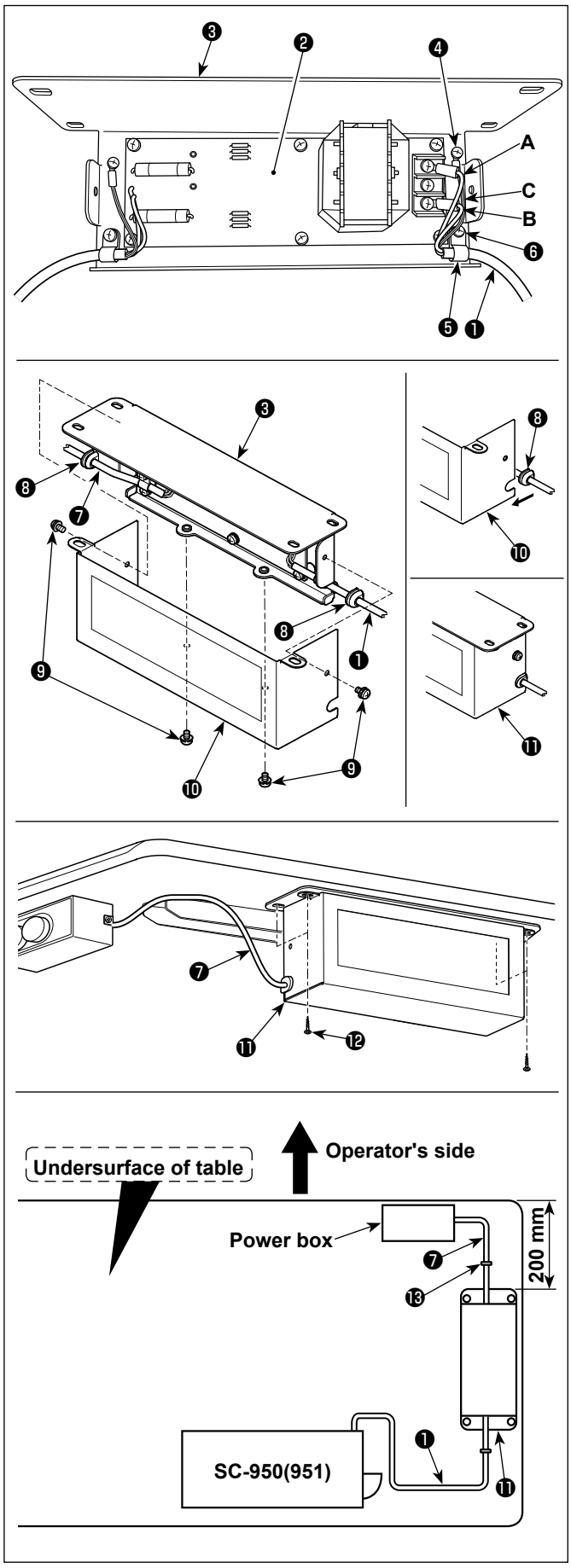


• **Connecting single phase 100 to 120V**



2-8-3. Installing the reactor box

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



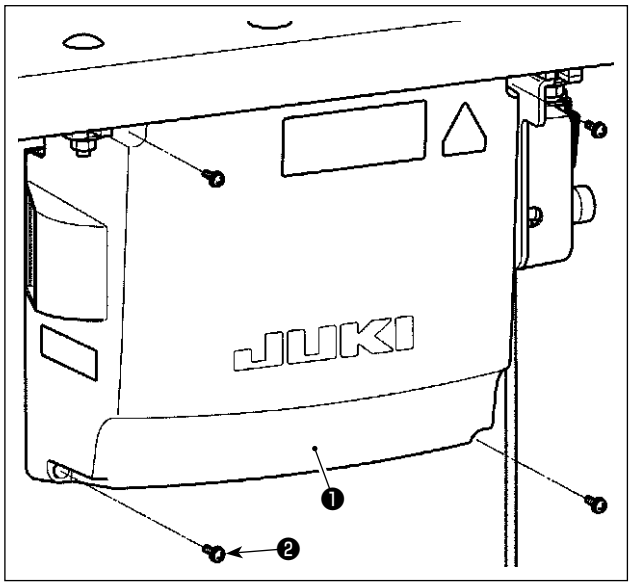
1) Connect the terminals of power cord ❶ of the SC-950(951) to reactor-box PCB asm. ❷ and to reactor box mounting plate ❸.
   Connect brown wire **A** to the first connector and blue wire **B** to the third connector respectively from the top of terminal block on the reactor box PCB asm. using screws. Connect green/yellow wire **C** to reactor box mounting plate ❸ with earth setscrew ❹.
2) Attach cable clip ❺ to the power cord of SC-950(951). Attach the power cord together with the cable clip to reactor box mounting plate ❸ with cable clip setscrew ❻.
3) Attach cord bushes ❽ to input/output cables ❶ and ❼ of the reactor box. Attach both bushes in the same manner.
4) Attach reactor box cover ❿ to reactor box mounting plate ❸ with four reactor-box cover setscrews ❾.
   At this time, fix cord bushes ❽ attached to input/output cables ❶ and ❼ in the concave section on reactor box cover ❿ to eliminate a gap between reactor box ⓫ and cover ❿.
5) Install reactor box ⓫ on the table stand with four accessory wood screws ⓬ 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 ❶ and ❼ of reactor box ⓫ on the table stand using accessory cord staple ⓭.
   At this time, take care not to cross the input- and output-cables.

2-9. 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.

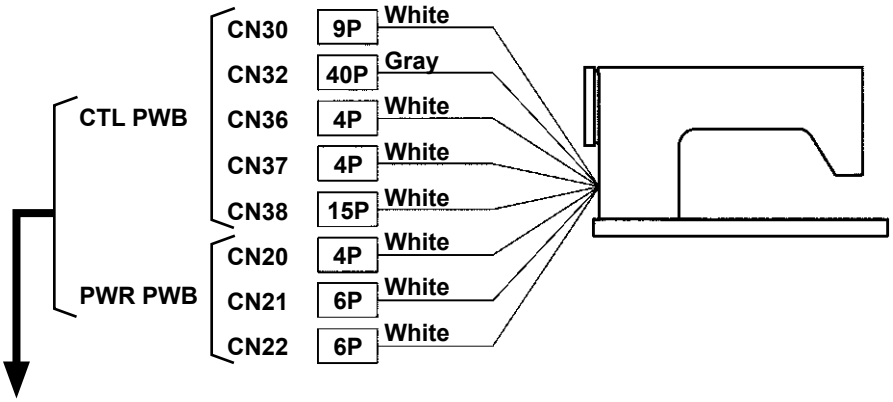


1) Loosen four setscrews ❷ of control box cover ❶. Remove control box cover ❶.

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

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



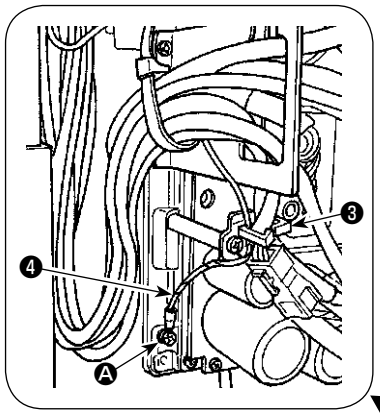


Fig. 2

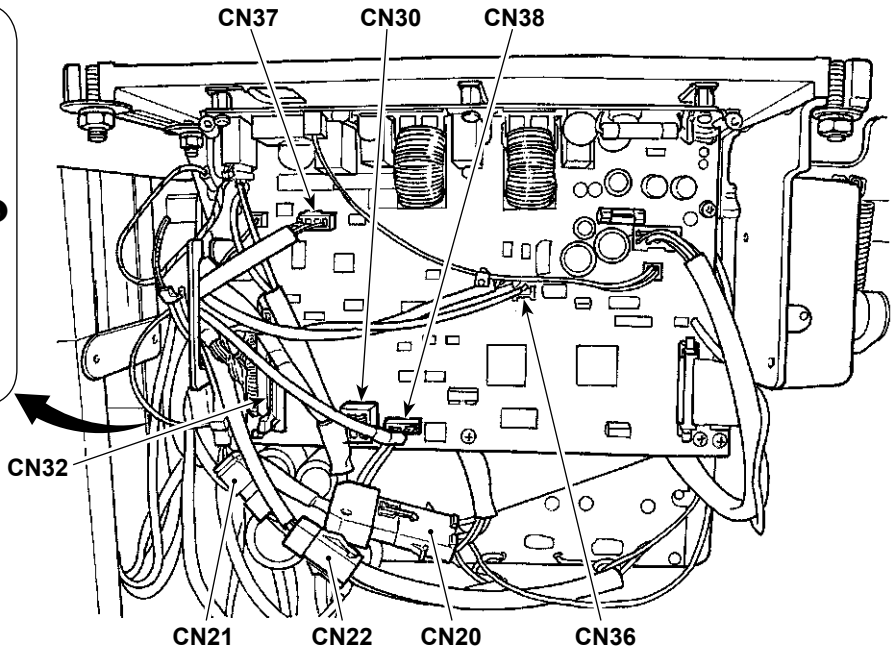
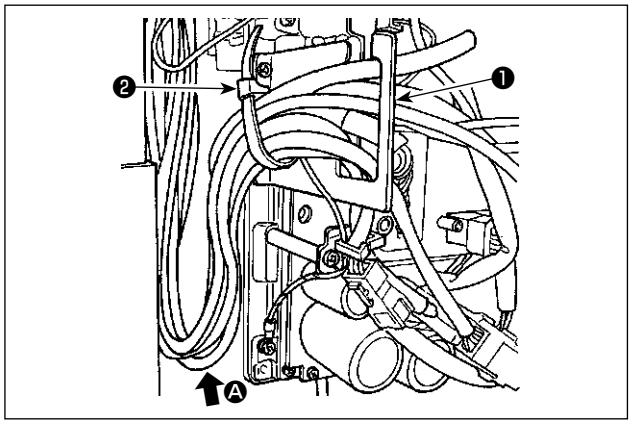


Fig. 1

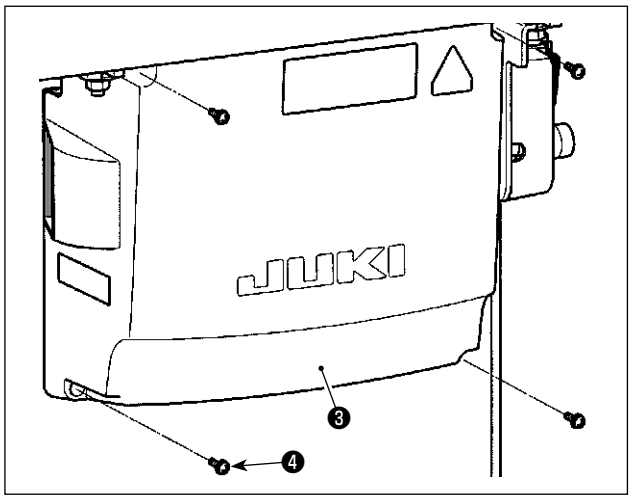
2-10. Handling the cords

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 ❶ and fix cable clip band ❷.

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

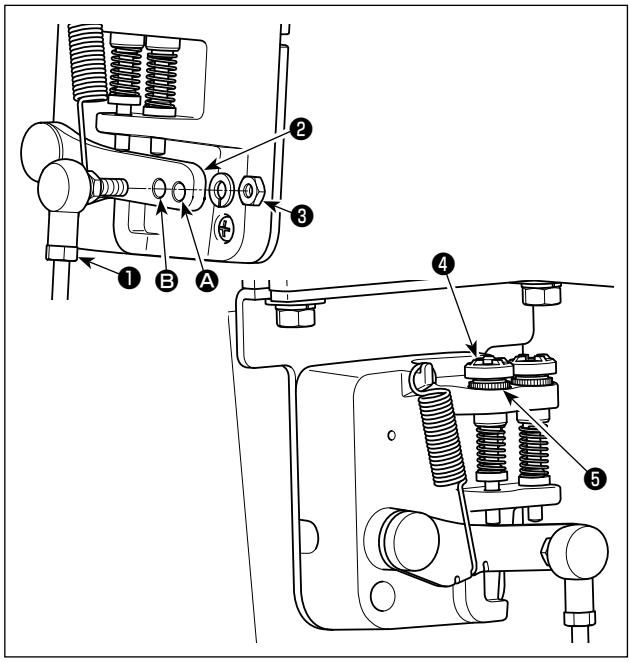


3) Install control box cover ❸ with four setscrews ❹.

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 ❸ when attaching the latter.

2-11. 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.

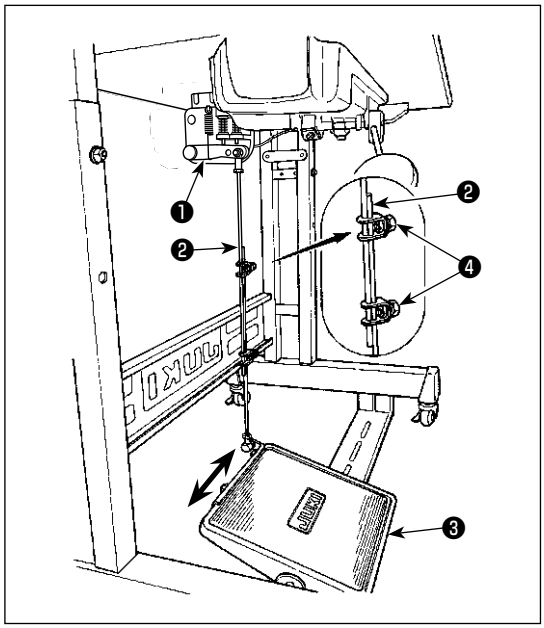


1) Fix connecting rod ❶ to installing hole Ⓑ of pedal lever ❷ with nut ❸.
2) Installing connecting rod ❶ to installing hole Ⓐ will lengthen the pedal depressing stroke, and the pedal operation at a medium speed will be easier.
3) The pressure increases as you turn reverse depressing regulator screw ❹ 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 ❺ to prevent the screw from loosening.

2-12. 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.



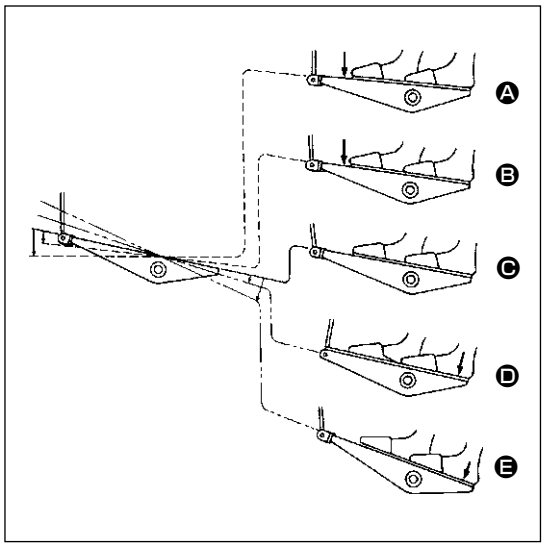
2-12-1. Installing the connecting rod

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

2-12-2. Adjusting the pedal angle

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

2-13. 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) The machine runs at high sewing speed when you further depress the front part of the pedal. Ⓐ (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) The machine trims threads when you fully depress the back part of the pedal. Ⓔ

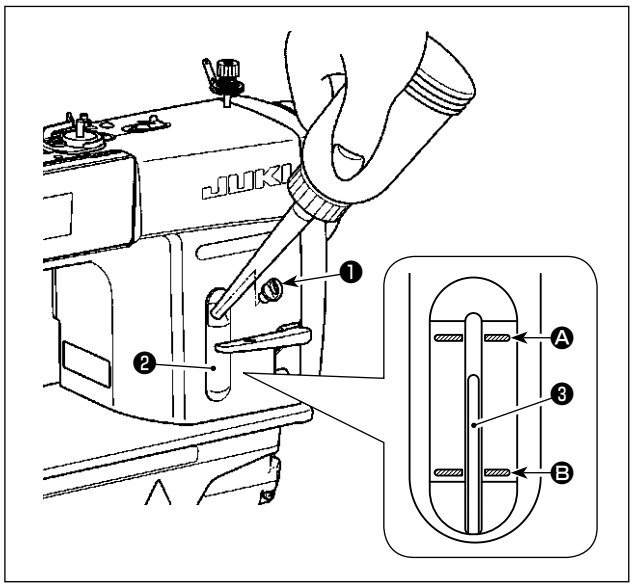
* When the auto-lifer (AK device) is used, one more operating switch is provided between the sewing machine stop switch and thread trimming switch.
The presser foot goes up when you lightly depress the back part of the pedal Ⓓ, and if you further depress the back part, the thread trimmer is actuated.
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.

2-14. 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 vomitting 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 Ⓐ and the lower engraved marker line Ⓑ 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 Ⓑ 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.

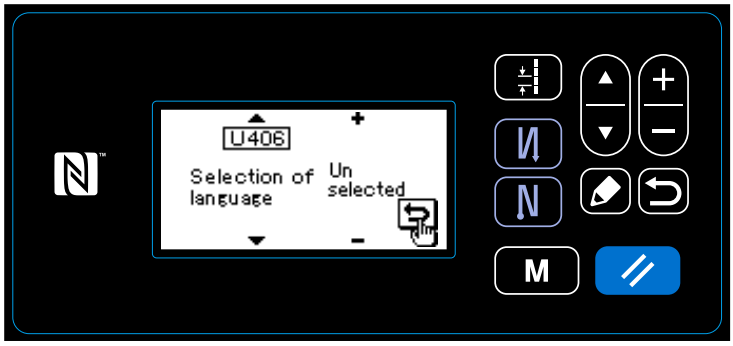
2-15. How to use the operation panel (Basic explanation)

2-15-1. 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

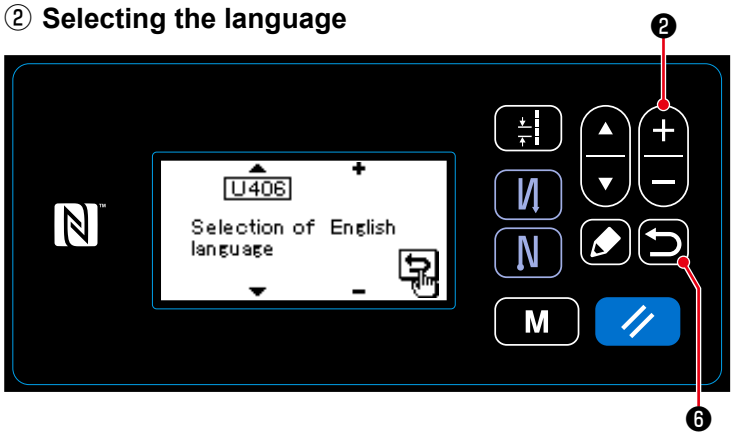
Be aware that the needle bar moves automatically. The needle bar can also be set so that it does not move automatically. Refer to "4-5. List of memory switch data" p. 48 for details.



<Language selection screen>

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

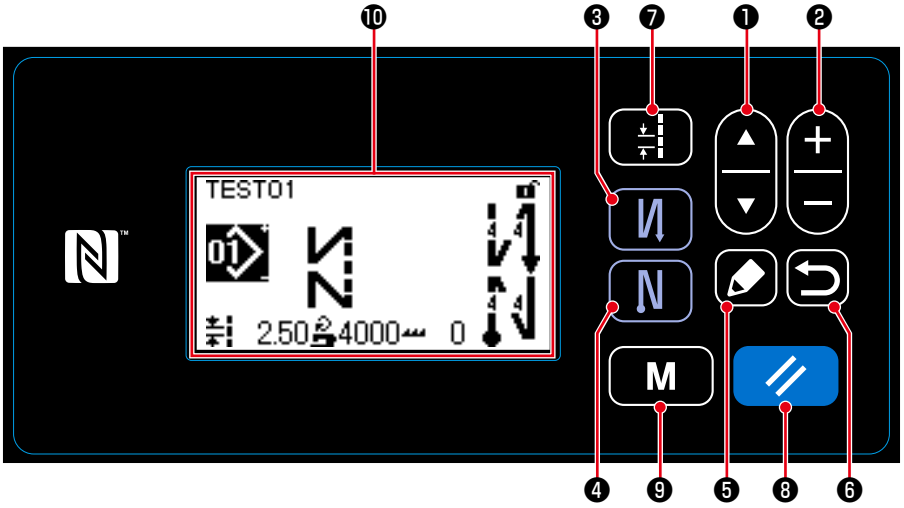
② Selecting the language



Select the desired language to be displayed on the operation panel with ❷. Then, press ❻. This confirms your language selection.

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. 48** for details.

2-15-2. Names and functions of the panel keys



	Switch/display	Description
❶	Item selection key	This key is used for changing over the screen display or for displaying the edit screen. Refer to the explanation of each screen for details.
❷	Data change key	This key is used for changing the currently-displayed pattern number or for changing the numeric value shown on the counter. Refer to the explanation of each screen for details.
❸	Reverse feed stitching (at start) key	This key is used for selecting whether or not the reverse feed stitching is performed at the beginning of sewing. The reverse feed stitching (at start) edit screen is displayed by keeping this key held pressed for one second.
❹	Reverse feed stitching (at end) key	This key is used for selecting whether or not the reverse feed stitching is performed at the end of sewing. The reverse feed stitching (at end) edit screen is displayed by keeping this key held pressed for one second.
❺	Edit key	This key is used for displaying the edit screen, item section screen or details screen.
❻	Return key	This key is used for returning the screen to the previous one.
❼	Pitch key	This key is used for displaying the pitch entry screen.
❽	Reset key	This key is used for resetting the error, for resetting the counter and for initial setting of the feed. The operation panel is placed in the simple-lock state by keeping this key held pressed for one second. The panel is released from the lock state by operating this key in the same manner again. Refer to **"8-7-1. Simple lock" p. 99**.
❾	Mode key	This key is used for displaying the mode screen. · The user level is displayed by operating this key in the normal manner. · The serviceperson level is displayed by keeping the key held pressed for three seconds.
❿	Liquid crystal display section	Each screen is displayed on this LCD.

*** Confirmation of data**

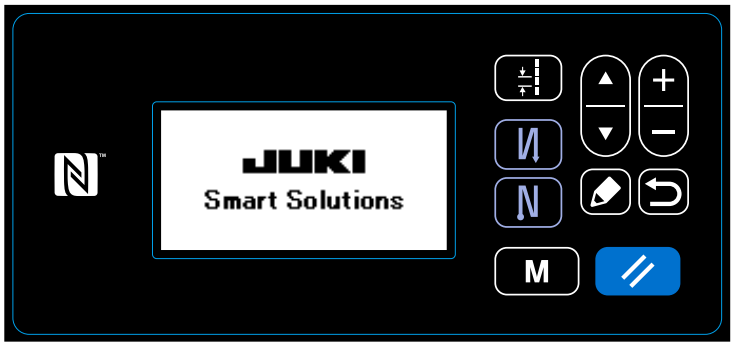
Change in the pattern number is confirmed at the moment Data change key ❷ is pressed.

For the setting items of the memory switch and pattern number, the setting is changed by pressing Data change key ❷ and confirmed by pressing Return key ❻ .

The new setting of data of a setting item is also confirmed by selecting other setting item with Item selection key ❶ after making a change.

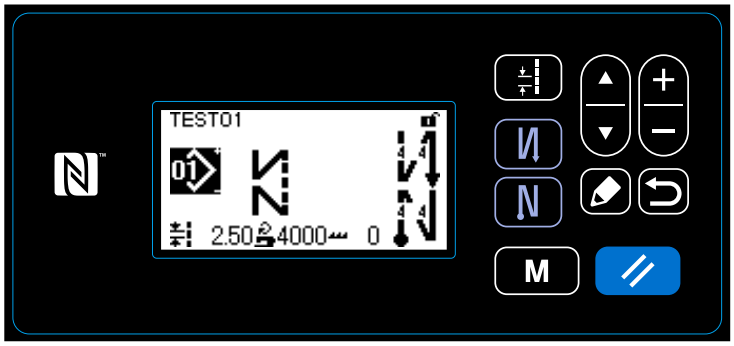
2-15-3. Basic operation

① Turning ON the power switch



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

② Selecting a sewing pattern

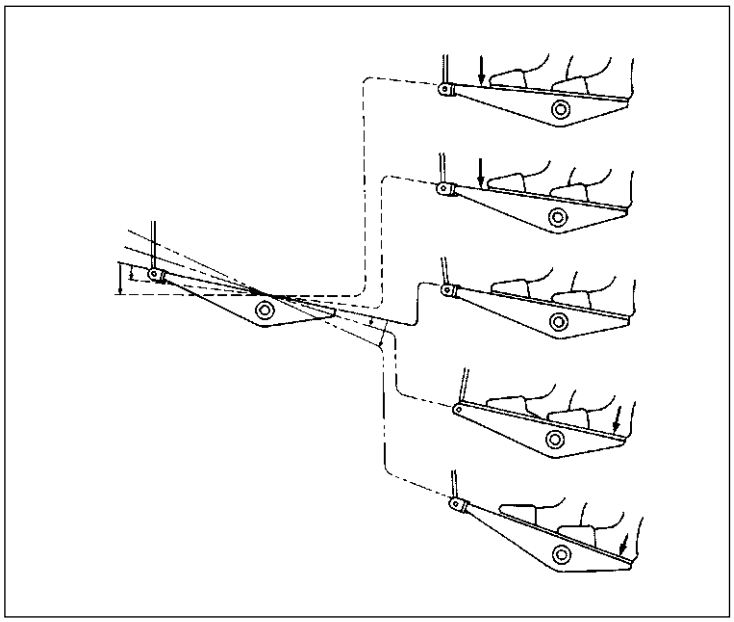


<Sewing screen>

The sewing screen is displayed.

- Select a sewing pattern.
  Refer to **"4-2. Sewing patterns" p. 30** for details.
- Set up functions for the selected sewing pattern.
  Refer to **"4-2-3. Editing the sewing patterns" p. 33** and **"4-2-4. List of pattern functions" p. 35** for details.

③ Starting sewing

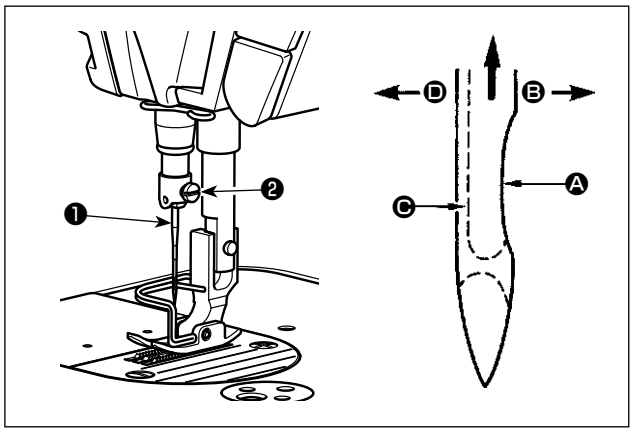


When you depress the pedal, the sewing machine starts sewing.
Refer to **"2-13. Pedal operation" p. 11**.

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.



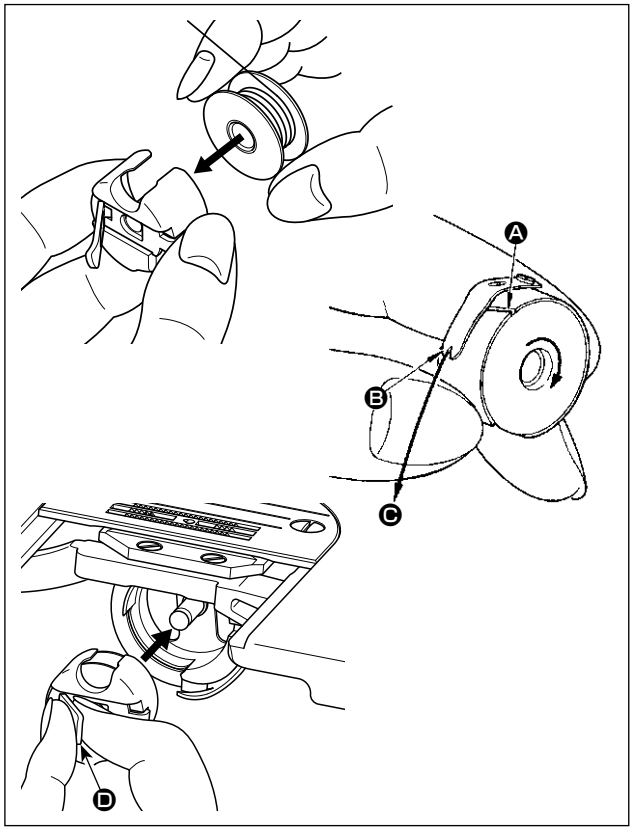
Use the specified needle for the machine. Use the proper needle in accordance with the thickness of thread used and the kinds of the materials.

1) Turn the handwheel until the needle bar reaches the highest point of its stroke.
2) Loosen screw ❷, and hold needle ❶ with its indented part Ⓐ facing exactly to the right in direction Ⓑ.
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 ❷.
5) Check that long groove Ⓒ of the needle is facing exactly to the left in direction Ⓓ.

Caution
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.

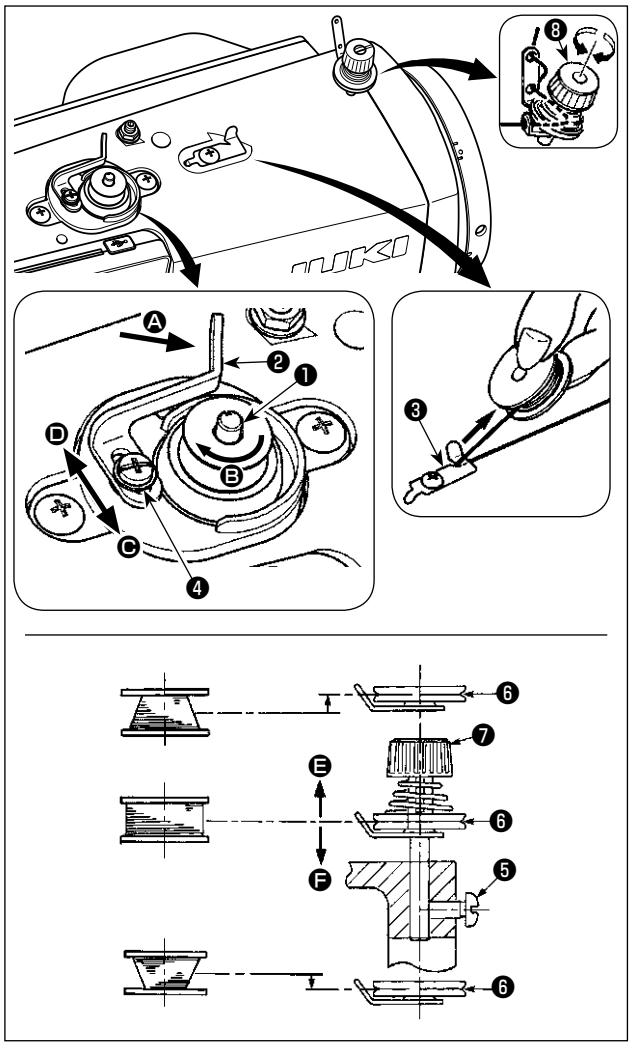
3-2. Removing/fitting the bobbin case

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 Ⓐ of the bobbin case, and pull the thread in direction Ⓒ. By so doing, the thread will pass under the tension spring and come out from notch Ⓑ.
4) Check that the bobbin rotates in the direction of the arrow when thread is pulled.
5) Pinching latch Ⓓ of the bobbin case with fingers, fit the bobbin case in the hook.

3-3. Winding the bobbin thread

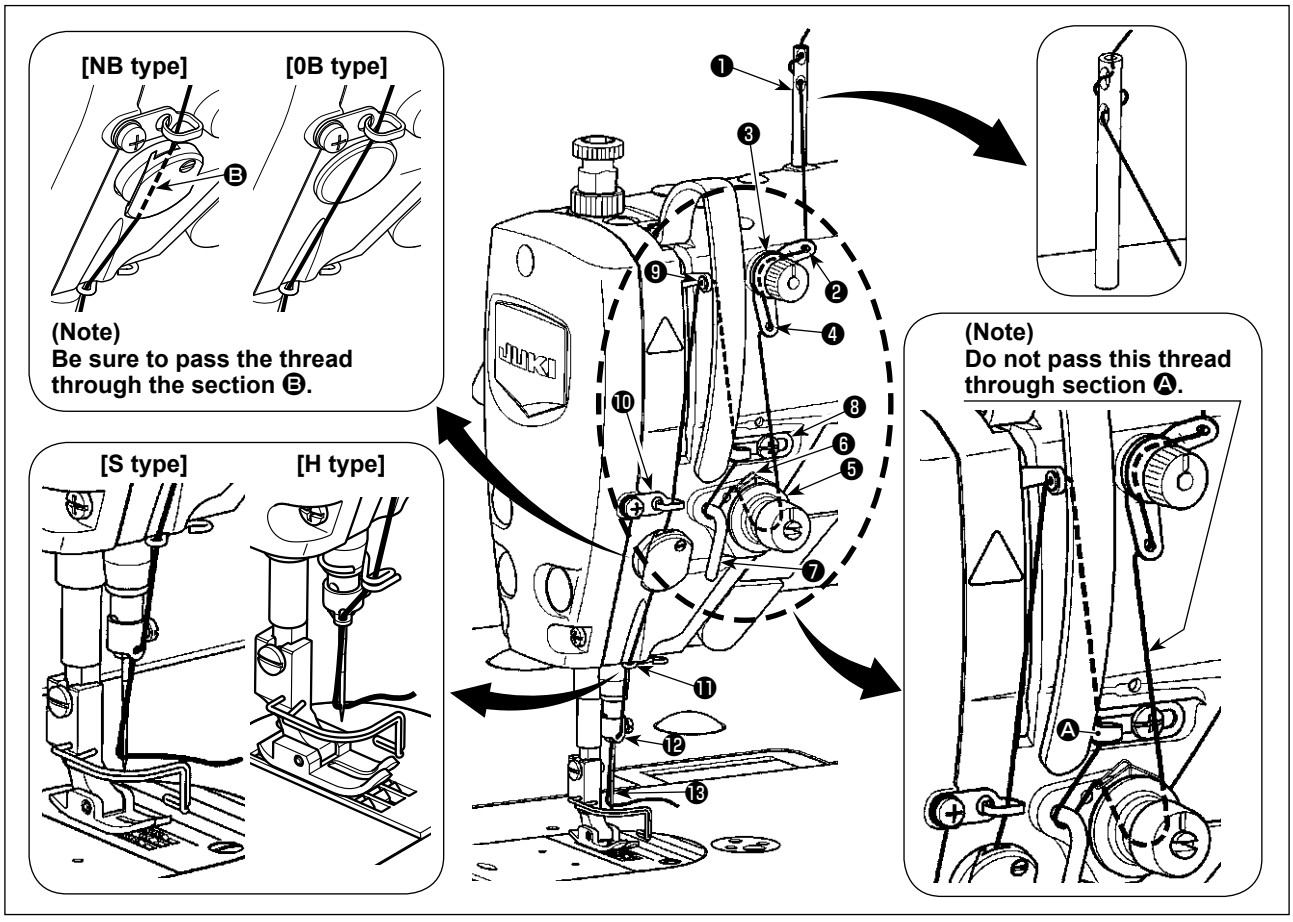


1) Insert the bobbin deep into the bobbin winder spindle ❶ until it will go no further.
2) Pass the bobbin thread pulled out from the spool rested on the right side of the thread stand following the order as shown in the figure on the left. Then, wind clockwise the end of the bobbin thread on the bobbin 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 Ⓐ and start the sewing machine. The bobbin rotates in the direction of Ⓑ 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 Ⓒ or Ⓓ. Then tighten setscrew ❹.
   To the direction of Ⓒ : Decrease
   To the direction of Ⓓ : 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 Ⓔ when the winding amount of the bobbin thread on the lower part of the bobbin is excessive and to the direction Ⓕ 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 ❼.

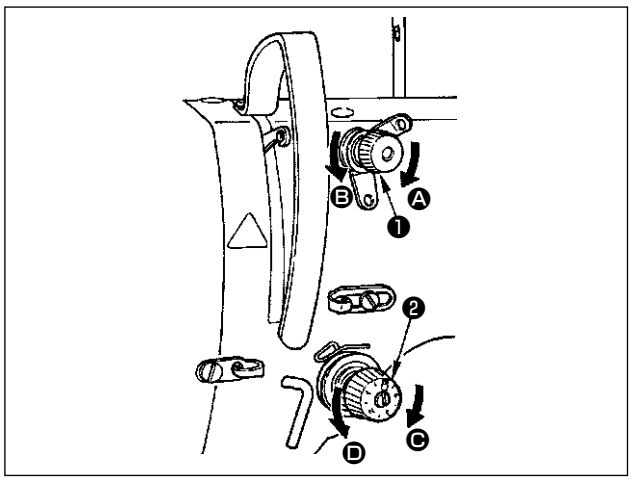
1. When winding the bobbin thread, start the winding in the state that the thread between the bobbin and thread tension disk ❻ is tense.
2. When winding the bobbin thread in the state that sewing is not performed, remove the needle thread from the thread path of thread take-up and remove the bobbin from 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.

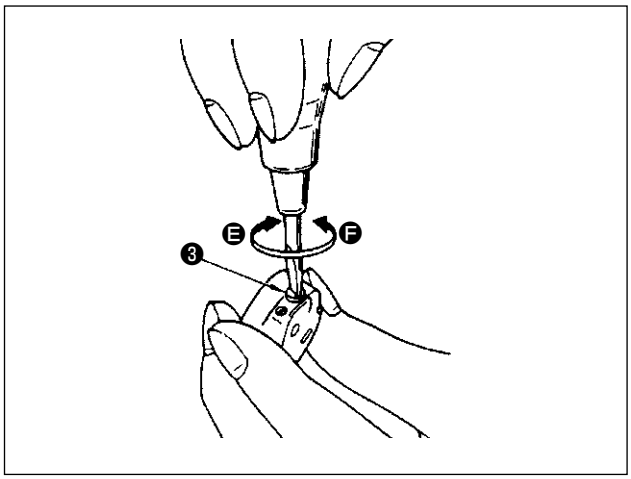
3-4. Threading the machine head

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 needle thread tension

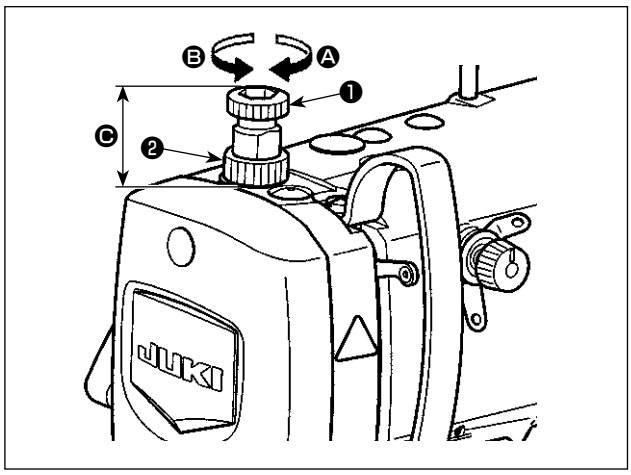
1) Turn thread tension No. 1 nut ❶ clockwise (in direction Ⓐ), to shorten the thread length remaining on the needle after thread trimming or counterclockwise (in direction Ⓑ), to lengthen the thread length.
2) Turn thread tension nut ❷ clockwise (in direction Ⓒ) to increase or counterclockwise (in direction Ⓓ) to reduce the needle thread tension.

3-5-2. Adjusting the bobbin thread tension

1) Turn tension adjusting screw ❸ clockwise (in direction Ⓔ) to increase or counterclockwise (in direction Ⓕ) to reduce the bobbin thread tension.

3-6. Presser foot pressure

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



1) Loosen nut ❷. As you turn presser spring regulator ❶ clockwise (in direction Ⓐ), the presser foot pressure will be increased.
2) As you turn the presser spring regulator ❶ counter-clockwise (in direction Ⓑ), the pressure will be decreased.
3) After adjustment, tighten nut ❷.

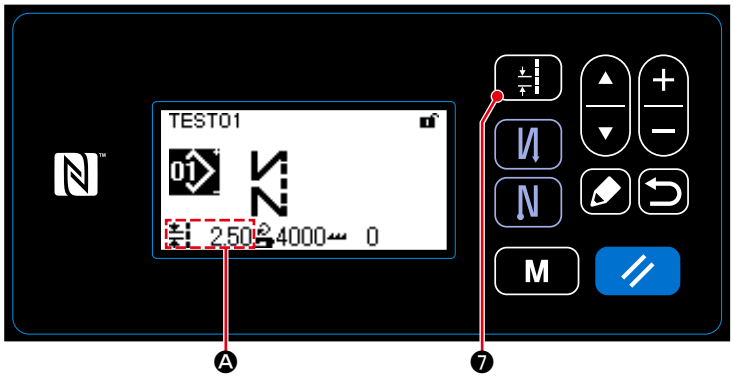
The standard value of the height Ⓒ of presser spring regulator ❶ is as follows :

- S type : 31.5 to 29 mm
  (approx. 40 to 45 N / 4 to 4.5 kg)
- H type : 31.5 to 28 mm
  (approx. 50 to 60 N / 5 to 6 kg)

To avoid personal injury, never put your fingers under the presser foot.

3-7. Adjusting the stitch length

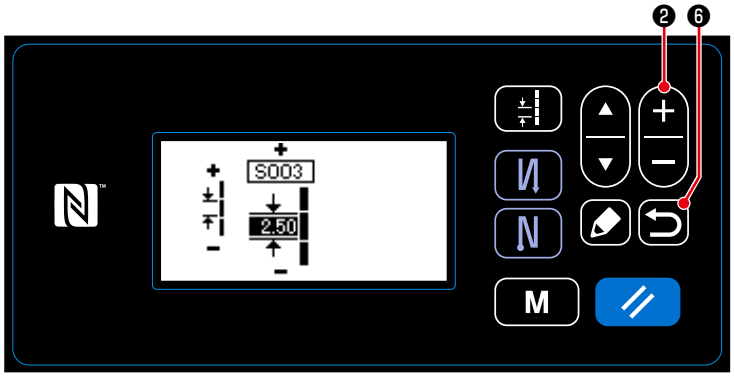
1. **There may be the cases where the feed amount of the operation panel and the actual sewing pitch are different from each other in case of the use in the state other than the standard delivery or material used. Compensate the pitch in accordance with the sewing product.**
2. **Be aware that interference 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 Ⓐ on the panel. (Example of display : 2.50 mm)

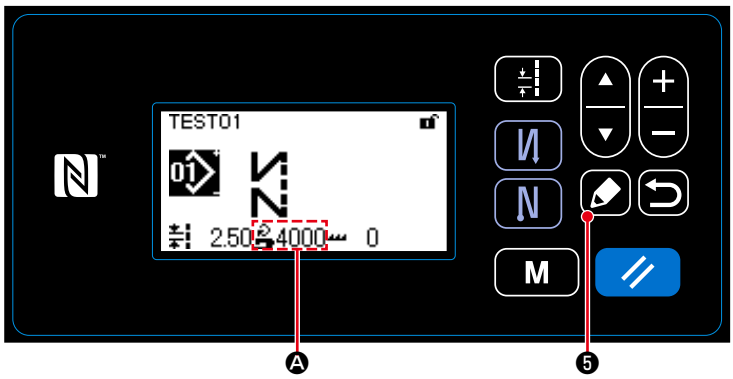
[How to adjust]

1) Display the stitch pitch entry screen by pressing ❼.



2) The value displayed is changed by pressing ❷. (In increments of 0.05 mm ; Input range : -5.00 to 5.00)
3) Confirm your entry by pressing ❻. Then, the sewing screen is displayed.

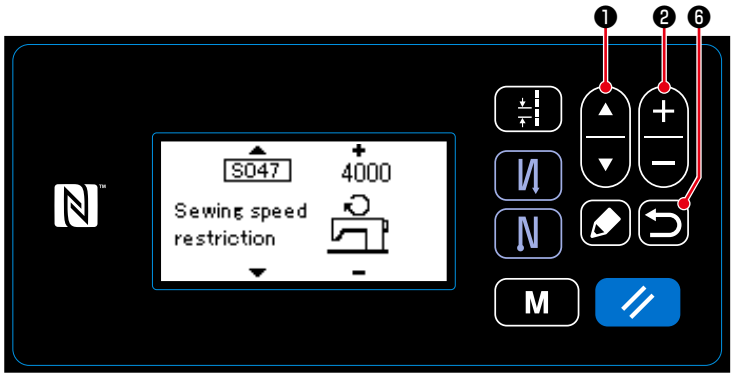
3-8. Changing the sewing speed



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

[How to change]

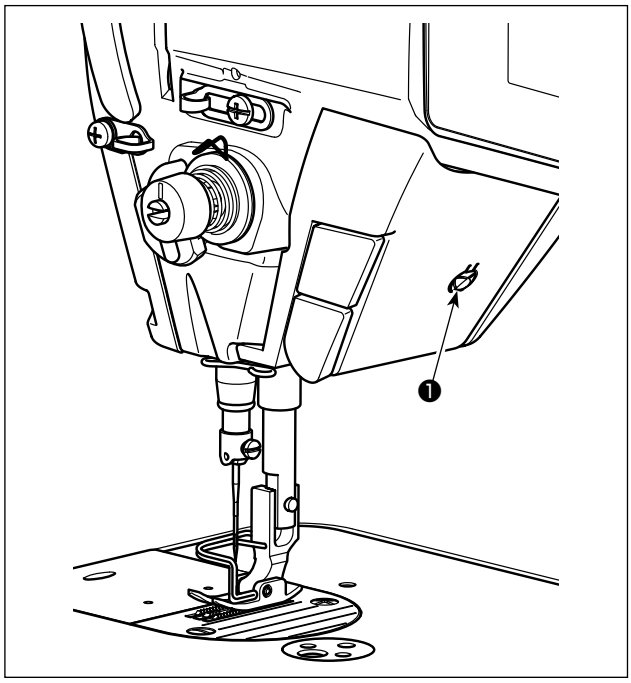
1) Display the sewing data edit screen by pressing ❺.



2) Display "S047" by pressing ❶.
3) Change the sewing speed as desired by pressing ❷.
4) Confirm your entry by pressing ❻. 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 ❶. 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 ⇒ 1
Bright ⇒ ..... Dim ⇒ Off ⇒ Bright

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

3-10. Reverse feed stitching

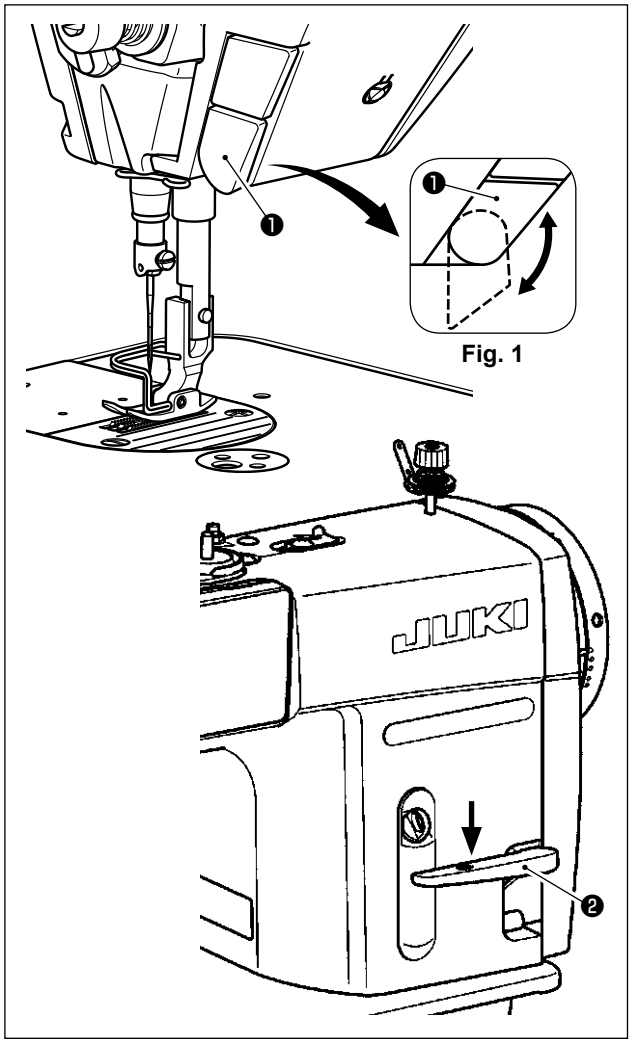


Fig. 1

[One-touch type reverse feed stitching mechanism]

The one-touch type reverse feed switch ❶ is pressed, the machine performs reverse feed stitching.
The machine resumes normal feed stitching the moment the switch lever is released.

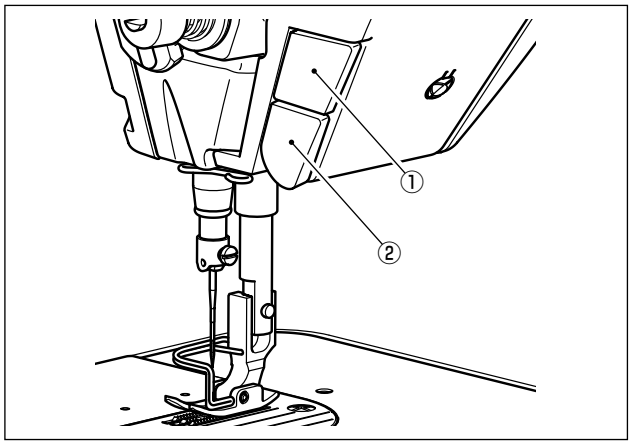
[Reverse feed stitching by means of the reverse feed lever]

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 ❷.

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

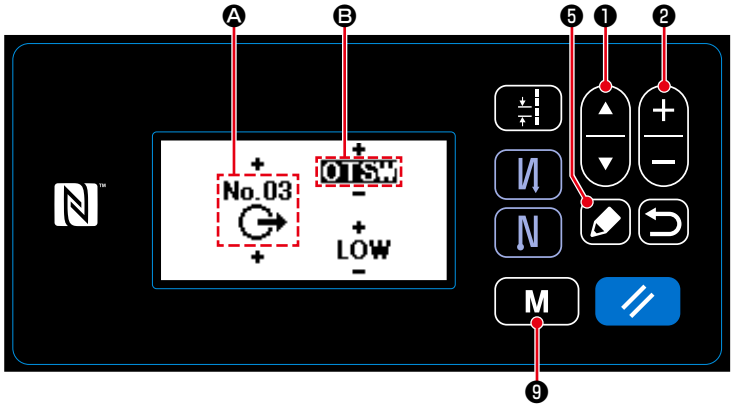
One-touch type reverse feed switch ❶ can be used at two different positions by turning it. (Fig. 1)

3-11. Custom switch



Various operations can be carried out by operating custom switch ①.

* Various operations can be allocated also to one-touch type reverse feed switch ②.



[Description of operations of the custom switch]

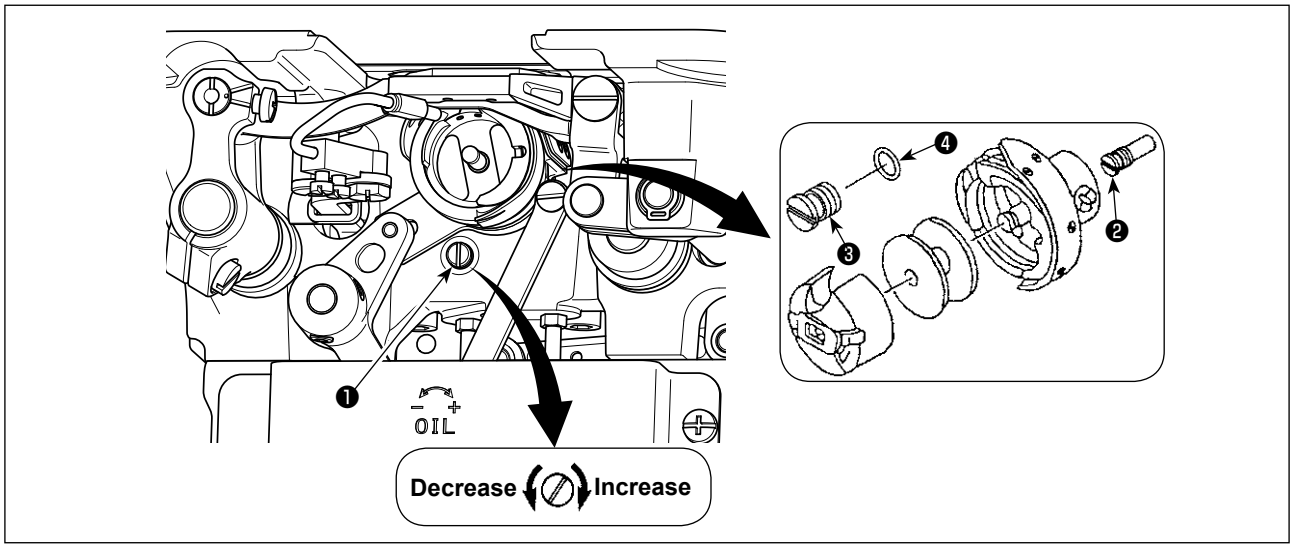
	Abbre-viation	Function item
0	noP	No function
1	HS	Needle up / down compensating stitching
2	bHS	Back compensating stitching
3	EbT	Function of canceling once reverse feed stitching at the end of sewing
4	TSW	Thread trimming function
5	FL	Presser foot lifting function
6	oHS	One stitch compensating stitching
7	SEbT	Function of cancel of reverse feed stitching at start/ end
8	Ed	Material edge sensor input
9	LinH	Function of prohibiting depressing front part of pedal
10	TinH	Function of prohibiting thread trimming output
11	LSSW	Low speed command input
12	HSSW	High speed command input
13	USW	Needle lifting function
14	bT	Reverse feed stitching switch input
15	SoFT	Soft start switch input
16	oSSW	One-shot speed command switch input
17	bKoS	Backward one-shot speed command switch input
18	SFSW	Safety switch input
19	AUbT	Automatic reverse feed stitching cancellation/addition switch
20	CUnT	Sewing counter input
21	OTSW	One-touch type changeover switch

1) Keep M ❾ held pressed for six seconds.
2) Select "12. Optional I/O setting" with ▲▼❶. Then, press ✎❺.
3) To set up a function of custom switch ① :
   Select input number Ⓐ with ▲▼❶.
   Enter "3" with +−❷.
   Select function item Ⓑ with ▲▼❶.
   Enter the function item with +−❷.
   Display HIGH/LOW selection with ▲▼❶, and enter "LOW" with +−❷.
4) To set up a function of one-touch type reverse feed switch ② :
   Select input number Ⓐ with ▲▼❶.
   Enter "1" with +−❷.
   Select function item Ⓑ with ▲▼❶.
   Enter the function item with +−❷.
   Display HIGH/LOW selection with ▲▼❶, and enter "LOW" with +−❷.

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

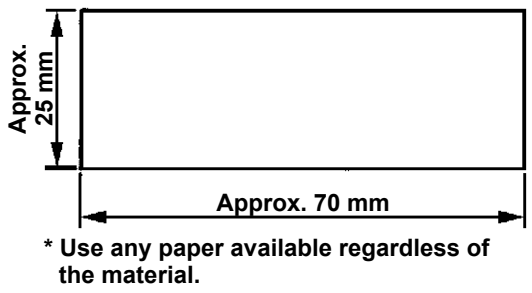


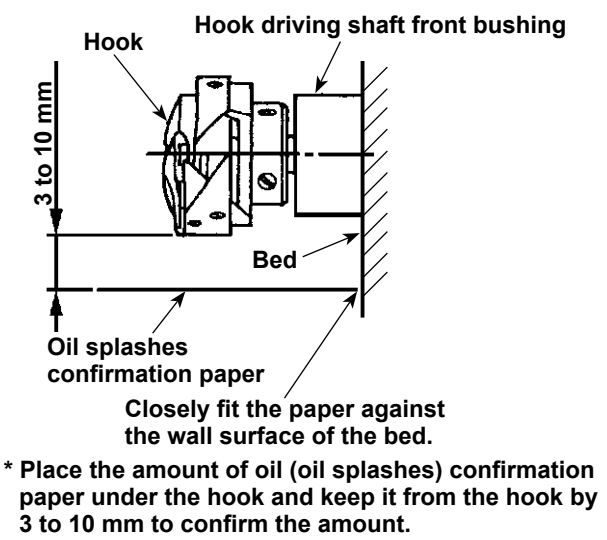
Tighten (turn clockwise) oil amount adjustment screw ❶ to increase the amount of oil in the hook, or loosen (turn counterclockwise) to decrease it.

[When using RP hook (hook for dry head) for DDL-9000C-SMS 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)

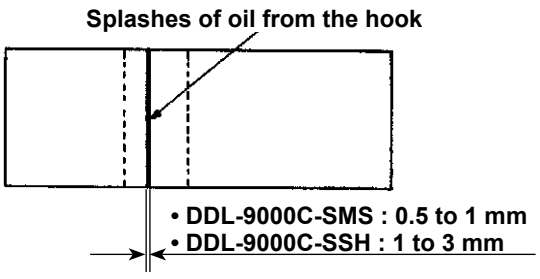


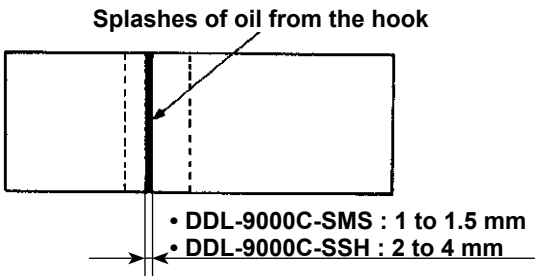


*** When carrying out the procedure described below in 2), confirm the state that the needle thread from the thread take-up lever to the needle and the bobbin thread are removed, the presser foot is lifted and the slide plate is removed. At this time, take extreme caution not to allow your fingers to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

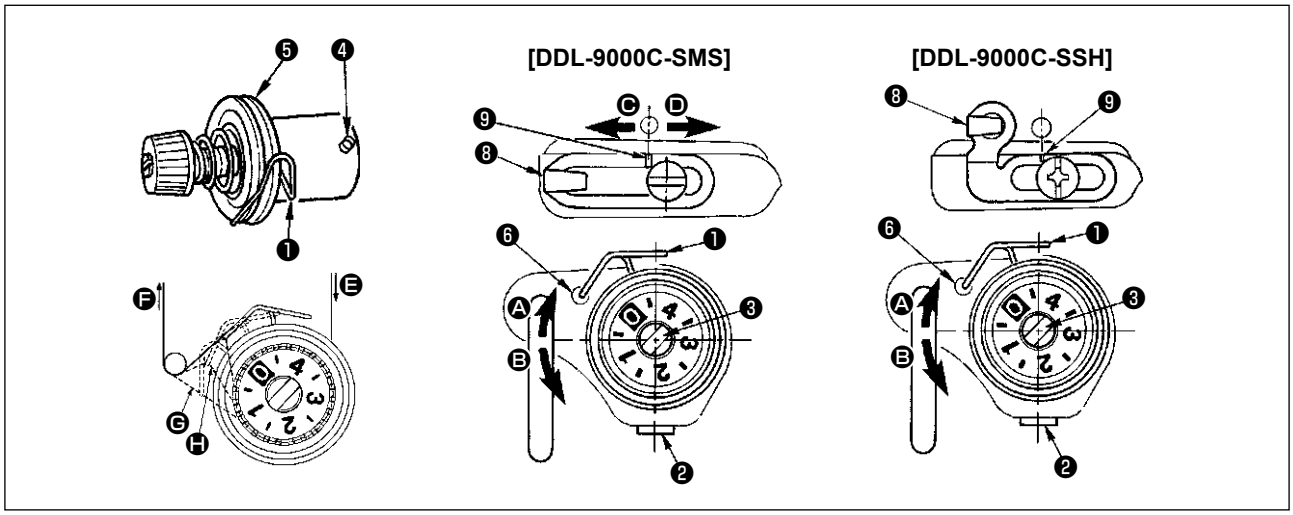
3-12-3. Sample showing the appropriate amount of oil





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 ❶

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

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

1) Loosen setscrew ❷, and remove thread tension (asm.) ❺.
2) Loosen tension post setscrew ❹.
3) Turn tension post ❸ clockwise (in direction Ⓐ), the pressure will be increased, and turn the post ❸ counterclockwise (in direction Ⓑ), the pressure will be decreased.

*** Standard state of the thread take-up spring ❶**

The engraved marker line ❻ 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 Ⓕ 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 Ⓖ) just before the thread comes out from Ⓔ. If the spring fails to exert force to the spring until the last moment (state Ⓗ), 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

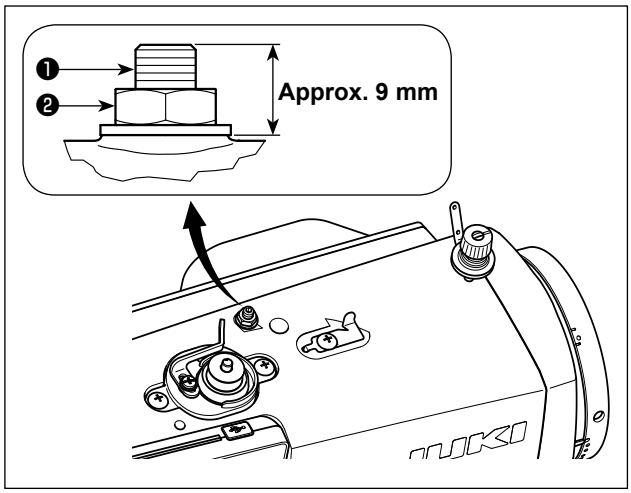
1) When sewing heavy-weight materials, move thread guide ❽ to the left (in direction Ⓒ) to increase the length of thread pulled out by the thread take-up.
2) When sewing light-weight materials, move thread guide ❽ to the right (in direction Ⓓ) to decrease the length of thread pulled out by the thread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

*** Standard state of the thread guide**

• DDL-9000C-SMS : Marker line ❾ on the thread guide aligns with the center of the setscrew.
• DDL-9000C-SSH : Marker line ❾ on the thread guide aligns with the center of the marker line on the machine arm.

3-14. Micro-lifting mechanism of the presser foot

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



When sewing velvet or the like which is fluffy, slippage of material or damage of material is reduced by using screw ❶ for presser foot micro-lifting. Lower the presser foot and set the state that the feed dog is lower than the throat plate.
Gradually tighten screw ❶ for presser foot micro-lifting in the state that nut ❷ is loosened, finely adjust the position of the presser foot until it matches the material, and fix it with nut ❷.

When the presser foot micro-lifting mechanism is not used, adjust the height of screw ❶ so that it is higher by approximately 9 mm than the sewing machine. If the sewing machine is operated in the state that the micro-lifting mechanism is working, sufficient feed force cannot be obtained.

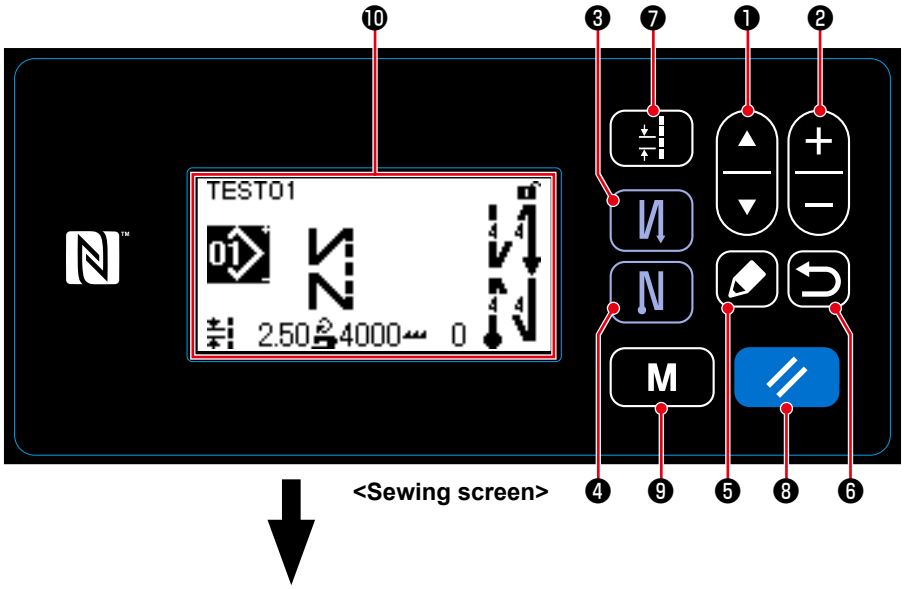
4. HOW TO USE THE OPERATION PANEL

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. 43** for the description of the counter display.

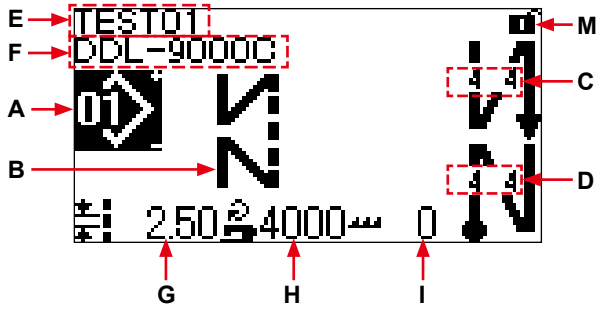
(1) Sewing screen (when selecting a sewing pattern)

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

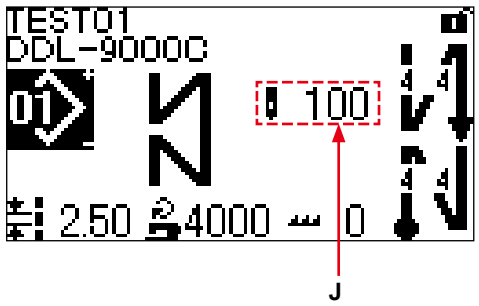


<Sewing screen>

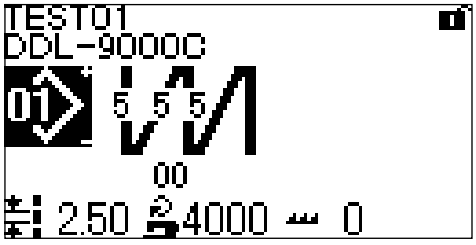
Free stitching pattern



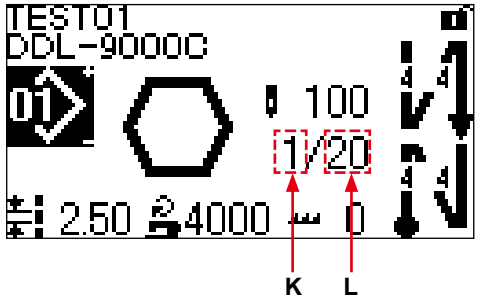
Constant-dimension sewing pattern



Multi-layer stitching pattern



Polygonal-shape stitching pattern



	Switch/display	Description
❶	Item selection key	This key is used for changing over the display of screen shown below: Pattern display / Sewing counter / Bobbin counter display * This key cannot be operated during sewing. * Refer to **"4-3. Counter function" p. 43** for the description of the counter display.
❷	Data change key	This key is used for selecting the registered patterns one after another in the following order. Sewing patterns No. 1 …99 → Cycle patterns No. 1 ….9 * This key can be operated only in the case the pattern number change is permitted. * This key cannot be operated during sewing. * Refer to **"8-2. Cycle pattern" p. 80** for the cycle patterns.
❸	Reverse feed stitching (at start) key	This key is used for selecting whether or not the reverse feed stitching is performed at the beginning of sewing. The reverse feed stitching (at start) edit screen is displayed by keeping this key held pressed for one second.
❹	Reverse feed stitching (at end) key	This key is used for selecting whether or not the reverse feed stitching is performed at the end of sewing. The reverse feed stitching (at end) edit screen is displayed by keeping this key held pressed for one second.
❺	Edit key	This key is used for displaying the sewing pattern edit screen when the free stitching pattern, constant-dimension sewing pattern or multi-layer stitching pattern is selected, or for displaying the polygonal-shape stitching pattern edit screen when that pattern is selected.
❻	Return key	This key is not used.
❼	Pitch key	This key is used for displaying the pitch entry screen.
❽	Reset key	In the case the operation panel is placed in the simple-lock state, enable/ disable of the simple- lock function is changed over by keeping this key held pressed for one second.
❾	Mode key	This key is used for displaying the mode screen. · The user level is displayed by operating this key in the normal manner. · The serviceperson level is displayed by keeping the key held pressed for three seconds.
❿	Sewing screen display	Selected sewing pattern is displayed on this screen. Four different sewing patterns are available, i.e., free stitching pattern, constant-dimension sewing pattern, multi-layer stitching pattern and polygonal-shape stitching pattern.
A	Sewing pattern No.	Sewing pattern number of the currently-selected pattern is displayed. (No. 1 - No. 99)
B	Stitch shape	Stitch shape of the currently-selected sewing pattern is displayed.
C	Number of stitches of reverse feed stitching (at start) A, B	Numbers of stitches of reverse feed stitching at the beginning of sewing A and B are displayed. (0 to 99 stitches) * These numbers of stitches are only displayed in the case the reverse feed stitching is performed at the beginning of sewing. Refer to **"4-2-2. Reverse feed stitching (at start) pattern" p. 31**.

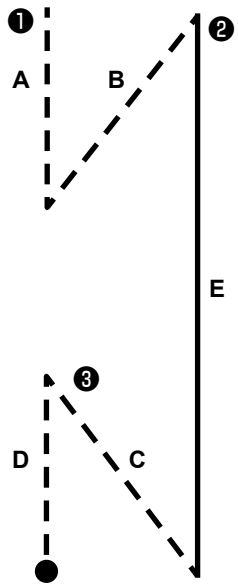
	Switch/display	Description
D	Number of stitches of reverse feed stitching (at end) C, D	Numbers of stitches of reverse feed stitching at the end of sewing C and D are displayed. (0 to 99 stitches) * These numbers of stitches are only displayed in the case the reverse feed stitching is performed at the end of sewing. Refer to **"4-2-5. Reverse feed stitching (at end) pattern" p. 37**.
E	Part number	The part number (0 to 24 characters) is displayed.
F	Process/Comment	Depending on the setting of memory switch U404, either the part number/process or the comment is displayed. (0 to 24 characters) Refer to **"4-5. List of memory switch data" p. 48**.
G	Pitch	Depending on the setting of memory switch U401, either the "pitch (-5.00 - 5.00)", the "number of stitches per inch" or the "number of stitches in 3 cm" is displayed. * In the case the custom pitch is selected, the custom pitch pattern number is displayed. Refer to **"8-5. Custom pitch" p. 87**.
H	Limit on sewing speed	The currently-set limit on the maximum sewing speed is displayed. (150 sti/min -)
I	Correction value for feed dog height	The correction value for the feed dog height with respect to the currently-selected sewing pattern is displayed.
J	Number of stitches of pattern	In the case the constant-dimension sewing pattern is selected, the total number of stitches of the sewing pattern is displayed, and in the case the polygonal-shape stitching pattern is selected, the number of stitches of the current step is displayed. (1 to 2,000 stitches for both numbers of stitches) * The number of stitches of pattern is displayed in the case the constant-dimension sewing pattern or the polygonal-shape stitching pattern is selected.
K	Current step of polygonal-shape stitching pattern	The current step is displayed. (1 - 20) * The current step of polygonal-shape stitching pattern is displayed in the case the polygonal-shape stitching pattern is selected.
L	Total number of steps of polygonal-shape stitching pattern	The total number of steps is displayed. (1 - 20) * Total number of steps of polygonal-shape stitching pattern is displayed in the case the polygonal-shape stitching pattern is selected.
M	Simple-lock status pictograph	The status (enable/disable) of the simple lock is displayed. Refer to **"8-7-1. Simple lock" p. 99**.

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.



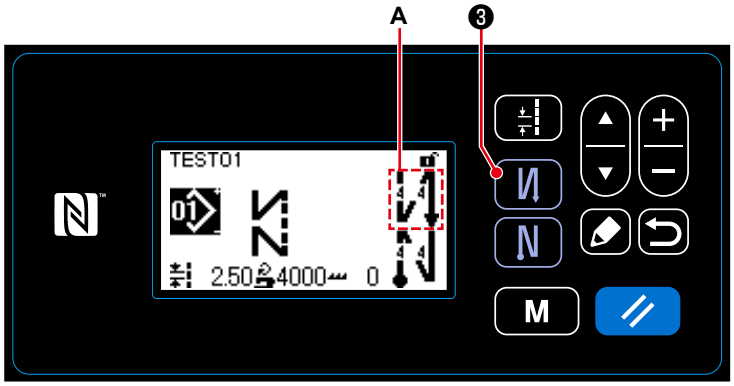
	Pattern No. 1 - No. 99
❶	Reverse feed stitching (at start) section Refer to **"4-2-2. Reverse feed stitching (at start) pattern" p. 31**.
❷	Main stitching section · Free stitching · Constant-dimension sewing · Multi-layer stitching · Polygonal-shape stitching Refer to **"4-2-3. Editing the sewing patterns" p. 33** and **"8-1. Setting up the polygonal-shape stitching" p. 78**.
❸	Reverse feed stitching (at end) section Refer to **"4-2-5. Reverse feed stitching (at end) pattern" p. 37**.

❹	Pattern function Refer to **"4-2-3. Editing the sewing patterns" p. 33**.

4-2-2. 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.

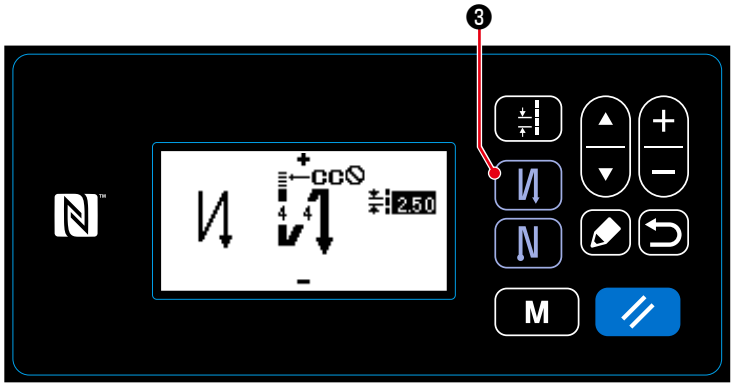
(1) Enabling the reverse feed stitching (at start) pattern



In the state pictograph **A** is displayed on the screen, the reverse feed stitching (at start) is enabled.
If pictograph **A** is not displayed on the screen, press ❸ to display it to enable the reverse feed stitching (at start).

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

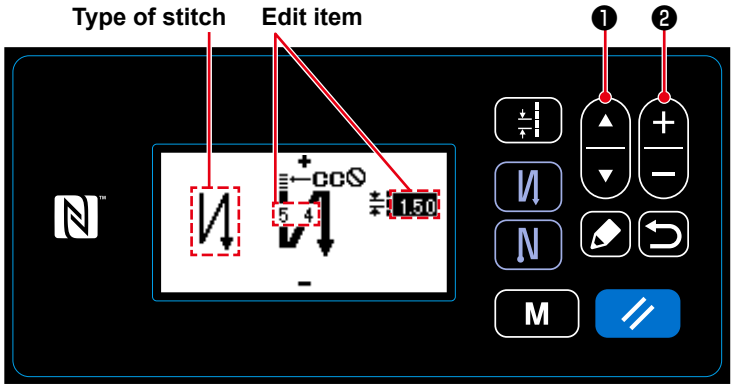
① **Displaying the edit screen for reverse feed stitching (at start)**



<Edit screen for reverse feed stitching (start)>

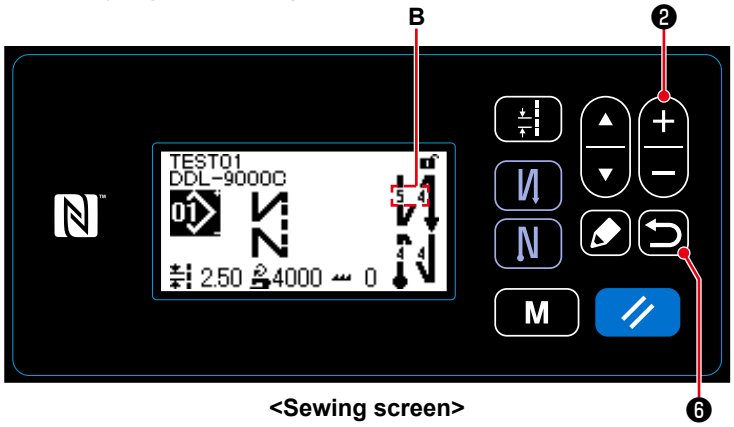
Keep ❸ held pressed for one second. The reverse feed stitching (at start) edit screen is displayed.

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



Select the type of stitch with ❷.
Select the edit item of the reverse feed stitching (at start) with ❶.
After the selection of the edit item, change the numeric value with ❷.

③ Applying the changed item



<Sewing screen>

After the change in the numeric value, press ❻ to return the screen to the sewing screen.
The data **B** you have changed is displayed.

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

Every time ❷ is pressed, the edit item is changed one after another.

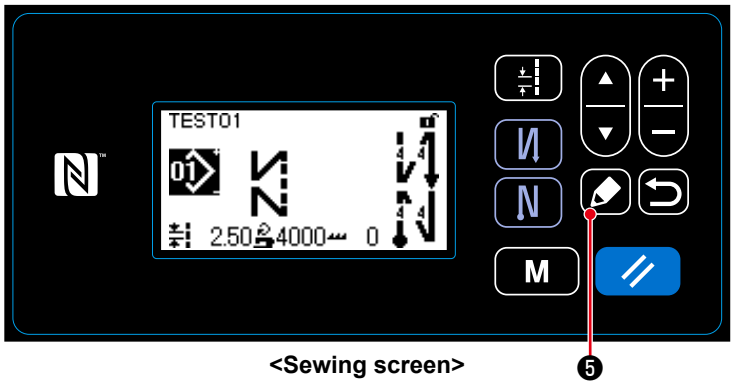
Type of stitch	Edit item
Reverse feed stitching Reverse feed stitching is performed once at the beginning of sewing.	Number of stitches A → Number of stitches B → Pitch
Condensation Stitch pitch at the beginning of sewing is reduced.	Number of stitches A → Pitch
Double reverse feed stitching Reverse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

4-2-3. Editing the sewing patterns

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

* In the case polygonal-shape stitching is selected, refer to **"8-1. Setting up the polygonal-shape stitching" p. 78**.

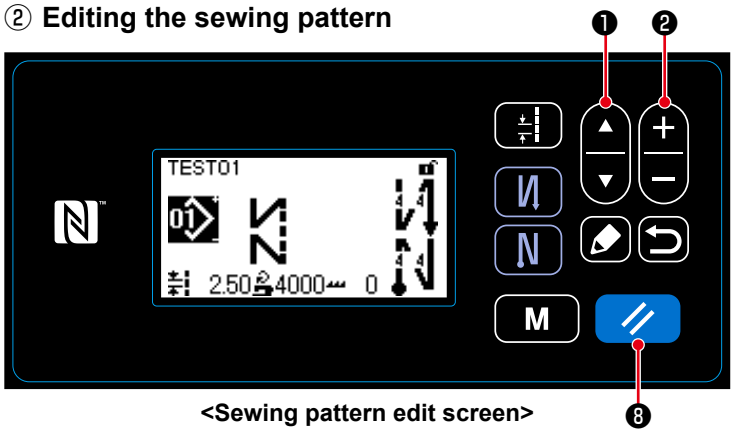
① Displaying the sewing pattern edit screen



<Sewing screen>

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

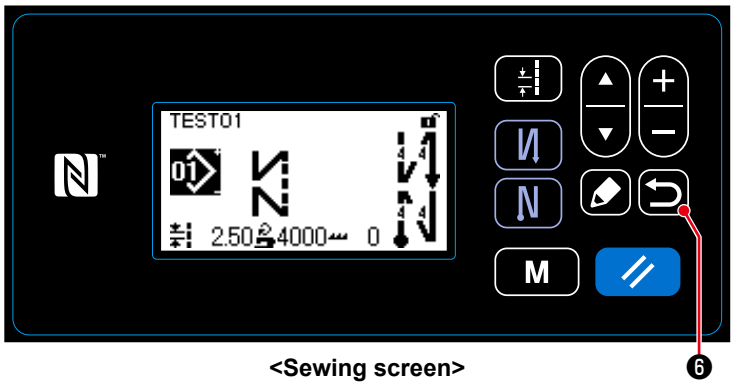
② Editing the sewing pattern



<Sewing pattern edit screen>

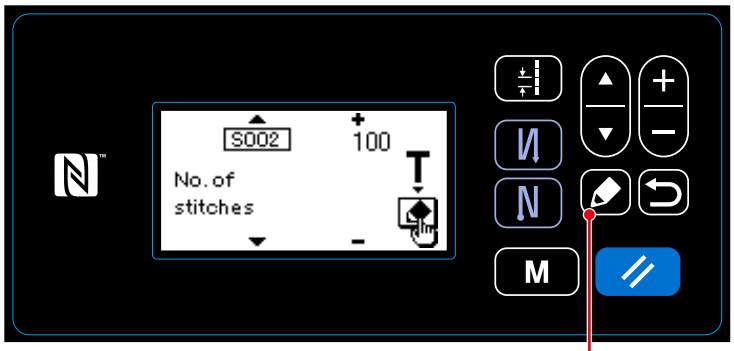
On this screen, the pattern functions can be edited separately.
Refer to **"4-2-4. List of pattern functions" p. 35** for the function items that can be edited.
Select the edit item with ▲ ▼ ❶. Input a desired numeric value or make ON/OFF selection with + − ❷.
Return the item value to the previous one (before editing) with // ❽. The initial state is retrieved by keeping this key held pressed for one second.

③ Performing sewing using the edited sewing pattern



<Sewing screen>

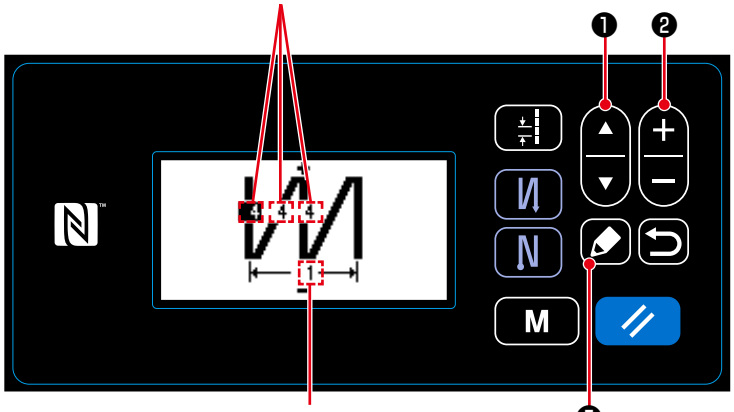
Change the item, then return the screen to the sewing screen with ↩ ❻.
Data you have changed is displayed on the screen.



<Number of stitches setting screen> ❺

* In the case the constant-dimension sewing pattern is selected, the teaching screen is displayed by pressing ❺ during setting of the number of stitches. (Only in the case the number of stitches can be changed.)
Refer to **"4-2-6. Teaching function" p. 38** for the teaching function.

The number of stitches



The number of times of multi-layer stitching ❺

<Multi-layer stitching pattern edit screen>

* When a multi-layer stitching pattern is selected, the multi-layer stitching pattern edit screen is displayed by keeping ❺ held pressed for one second.
Select an edit item with ❶.
Change the numeric value with ❷.

4-2-4. 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			—
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	-50 to 50°			
S050	Correction of feed dog height	-4 to 8			—
S051	Correction value for stitch pitch of reverse feed stitching	-5.00 to 5.00			
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
S065 *1	Correction of feed dog height	-4 to 8		—	-4 to 8

Data No.	Item name	Input range		
S066 *1	Feed locus	S - / A - / C - / B -	—	S - / A - / C - / B -
S068	Part number	- 24 characters *2		
S069	Process	- 24 characters		
S070	Comment	50 characters		

***1 : This is the one-touch type changeover function. Refer to "4-2-7. One-touch type changeover button" p. 40.**

***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
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 numeric values are same with those of Step 1.

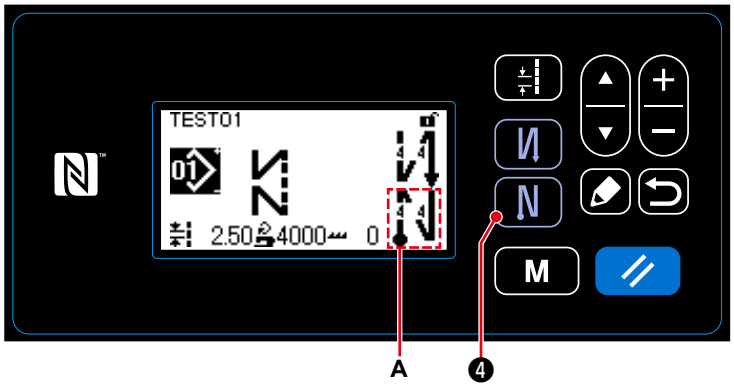
* Step numbers can be set to Step 20.

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 feed locus or the feed dog height. It is, therefore, necessary to carry out trial stitching first before using the machine for production.

4-2-5. 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.

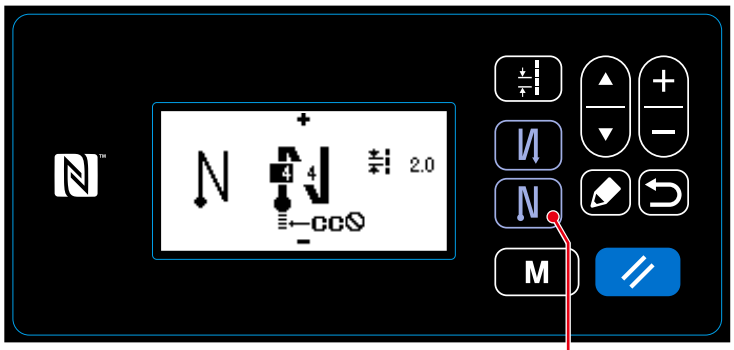
(1) Enabling the reverse feed stitching (at end) pattern



When pictograph **A** is displayed on the screen, reverse feed stitching (at end) is enabled.
If pictograph **A** is not displayed on the screen, press ❹ to display it to enable reverse feed stitching (at end).

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

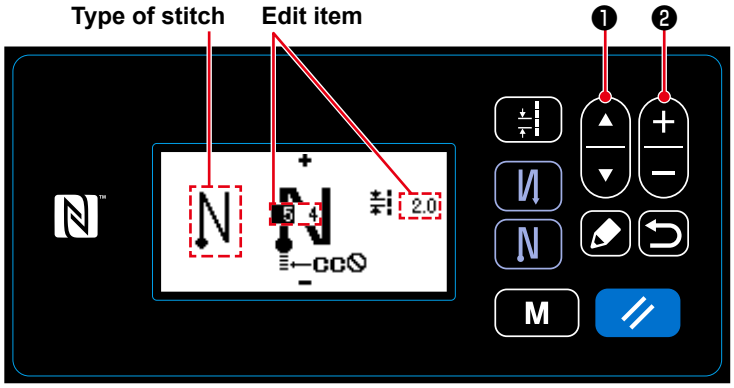
① Displaying the edit screen for reverse feed stitching (at end)



<Reverse feed stitching (at end) screen>

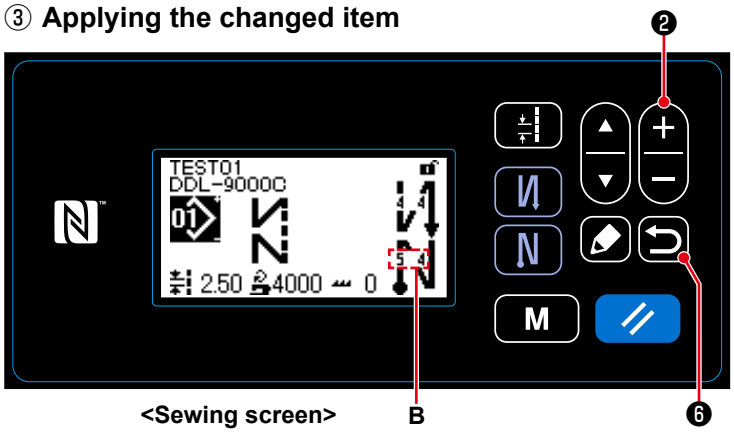
Keep ❹ held pressed for one second. The reverse feed stitching (at end) edit screen is displayed.

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



Select the type of stitch with ❷.
Select the edit item of the reverse feed stitching (at end) with ❶.
After the selection of the edit item, change the numeric value with ❷.

③ Applying the changed item



<Sewing screen>

After the change in the numeric value, press ❻ to return the screen to the sewing screen. The data **B** you have changed is displayed.

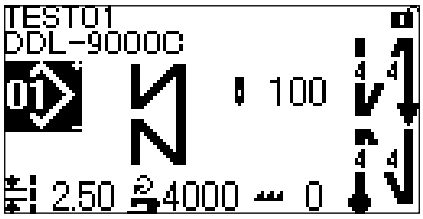
"Type of stitch" and "edit items" that can be selected are same with those of the reverse feed stitching (at start).
Every time ❷ is pressed, the edit item is changed one after another.

4-2-6. Teaching function

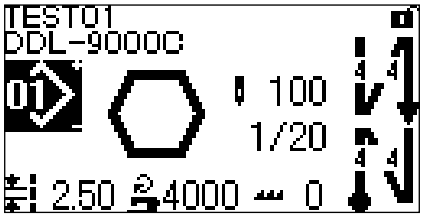
This is the function that enables entry of the number of stitches of a sewing pattern using the actual number of stitches sewn.

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

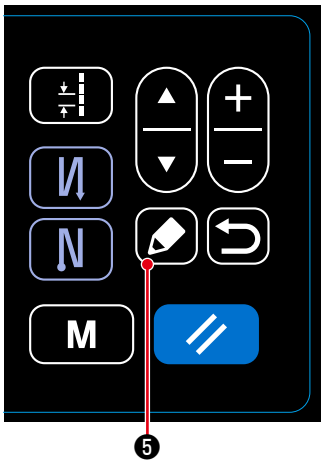
* The teaching function can be used in the case the "constant-dimension sewing" or "polygonal-shape stitching" is selected.



<Sewing screen (constant-dimension sewing)>



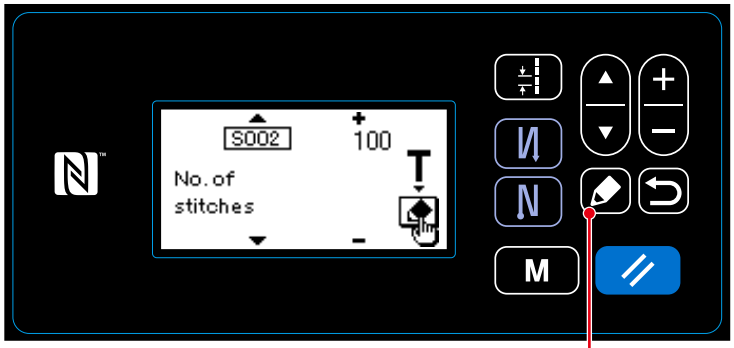
<Sewing screen (polygonal-shape stitching)>



The sewing pattern edit screen is displayed by pressing ❺ on the sewing screen.

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

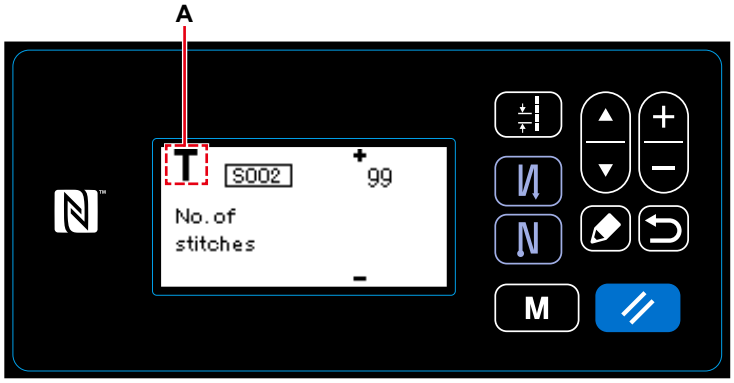
① Displaying the teaching screen



<Number of stitches entry screen>

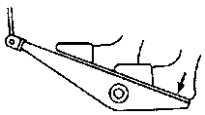
When S002 Stitch number setting function is selected on the sewing pattern edit screen, press ❺ to display the teaching screen.

② Starting teaching



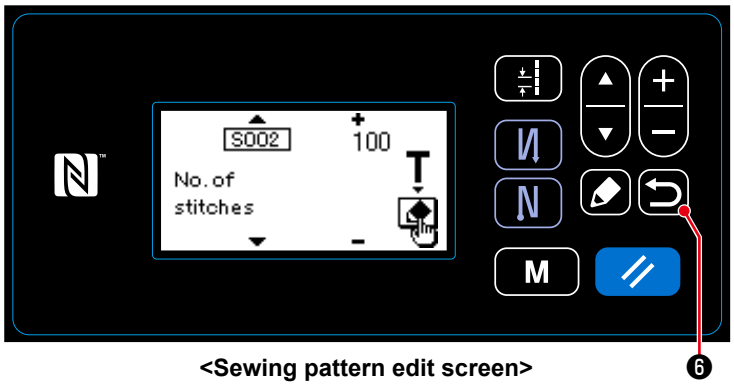
<Teaching screen>

Pictograph **A** is displayed on the screen to show that the operation panel is placed in the teaching mode.



After the completion of sewing of the sewing pattern (the last stitch), depress the back part of the pedal.

③ Confirming the data entered under the teaching mode



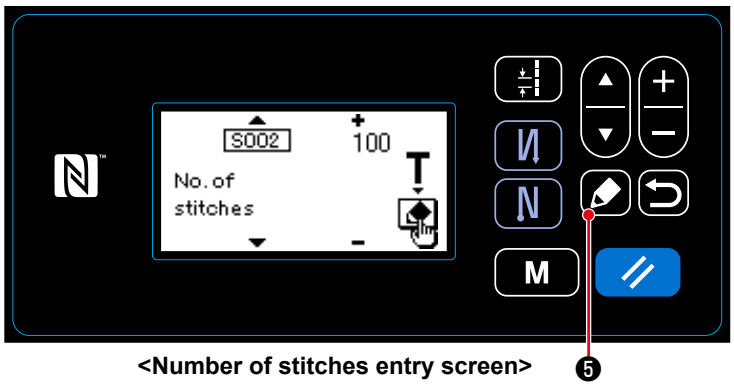
<Sewing pattern edit screen>

Confirm the data entered under the teaching mode with ⏎ ❻.

Then, the screen returns to the sewing pattern edit screen.

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

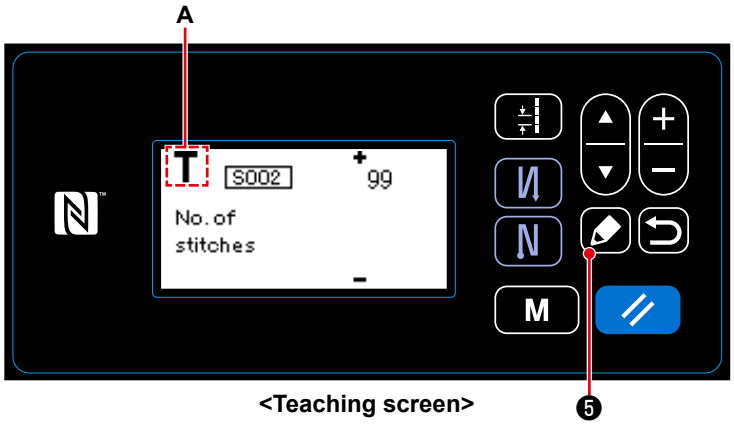
① Displaying the teaching screen



<Number of stitches entry screen>

When S002 Stitch number setting function is selected on the sewing pattern edit screen, press ✎ ❺ to display the teaching screen.

② Starting teaching



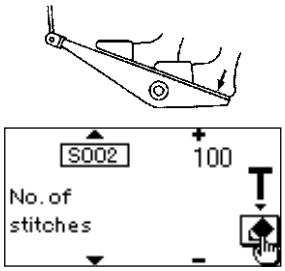
<Teaching screen>

Pictograph **A** is displayed on the screen to show that the operation panel is placed in the teaching mode.

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

After the completion of sewing steps (the last stitch), press ✎ ❺. 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.

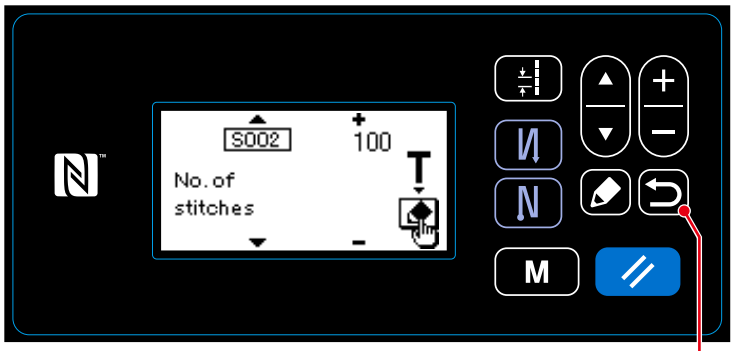
2. In the case of starting the teaching using the pedal



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.

③ Confirming the data entered under the teaching mode



<Sewing pattern edit screen>

Confirm the data entered under the teaching mode with ❻.

Then, the screen returns to the sewing pattern edit screen.

4-2-7. 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.

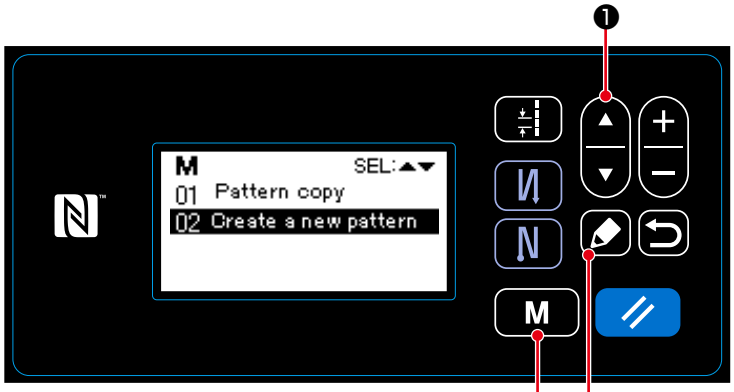
S003 Pitch	⇔	S062 One-touch type changeover of pitch
S047 Sewing speed	⇔	S061 One-touch type changeover of sewing speed
S050 Feed dog height	⇔	S065 One-touch type changeover of feed dog height
S048 Feed locus	⇔	S066 One-touch type changeover of feed locus

Refer to **"3-11. Custom switch" p. 22**.

4-2-8. Registration of a new sewing pattern

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

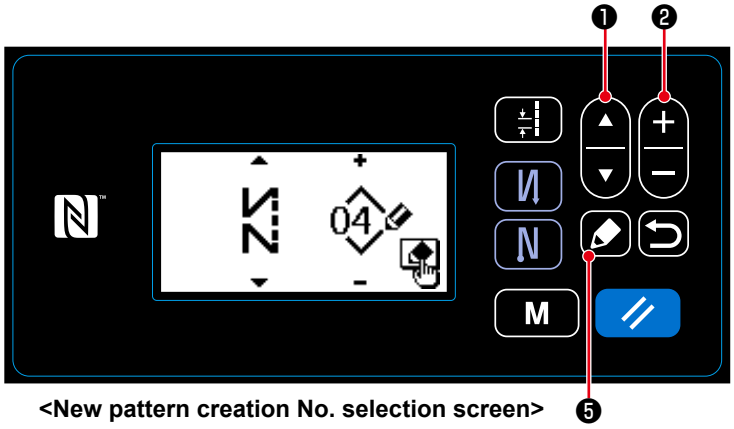
① Selecting the new-pattern creating function



<Sewing pattern management screen>

1. Select the sewing pattern management screen by pressing M ❾. Then, press ❺.
2. Select the new-pattern creation with ❶.
3. Confirm the selection with ❺.
   Then, the new-pattern creation number selection screen is displayed.

② Selecting the new sewing pattern number

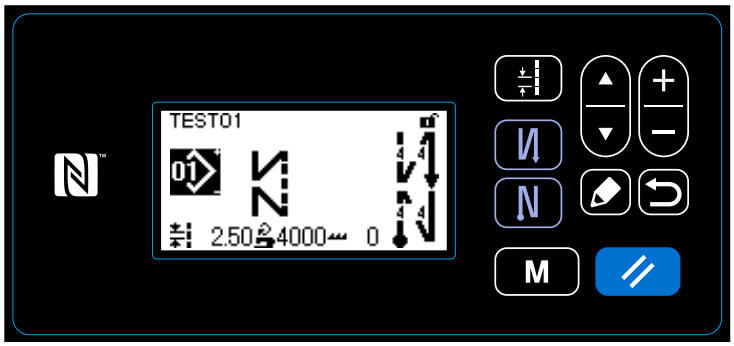


<New pattern creation No. selection screen>

1. Select the stitch shape with ❶.
2. Select the sewing pattern No. with ❷.
3. Press ❺ to confirm the selection.

The sewing pattern management screen is displayed.

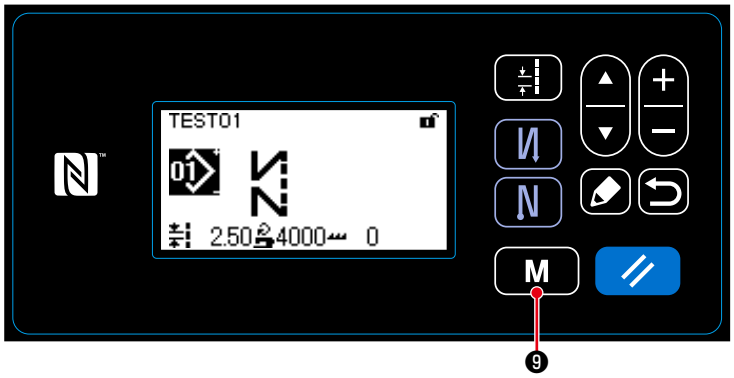
③ Confirming the data on the created sewing pattern



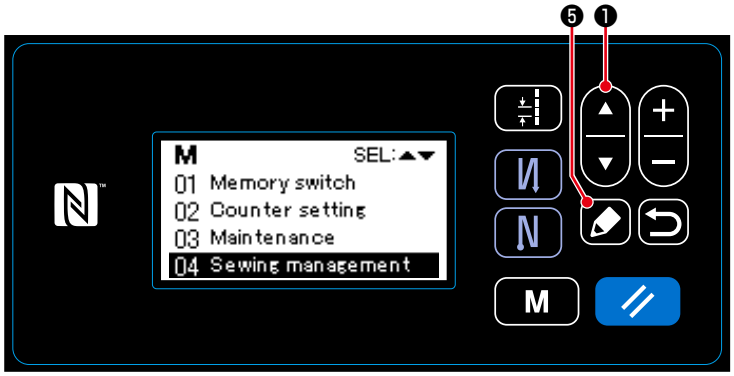
<Sewing screen>

The newly created sewing pattern is displayed.

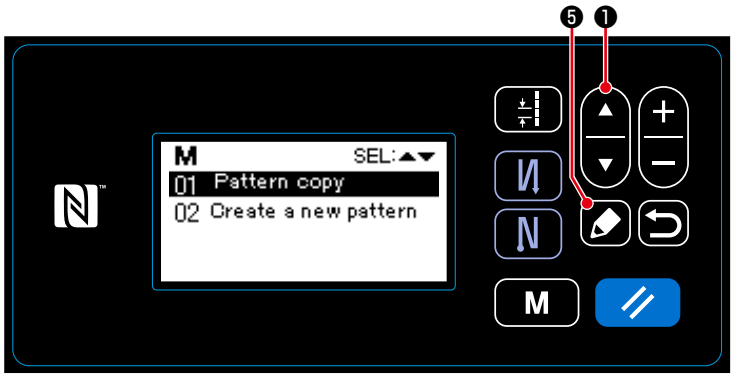
4-2-9. Copying a pattern



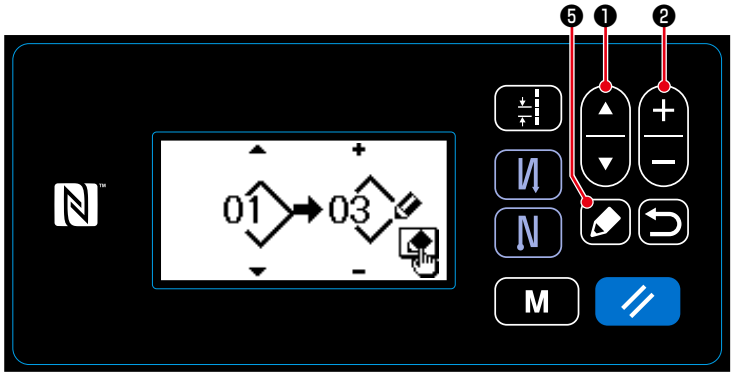
1. Press **M** ❾.



2. Select "04 Sewing management" by pressing ▲ ▼ ❶. Press ✎ ❺.



3. Select "01 Pattern copy" by pressing ▲ ▼ ❶. Press ✎ ❺.

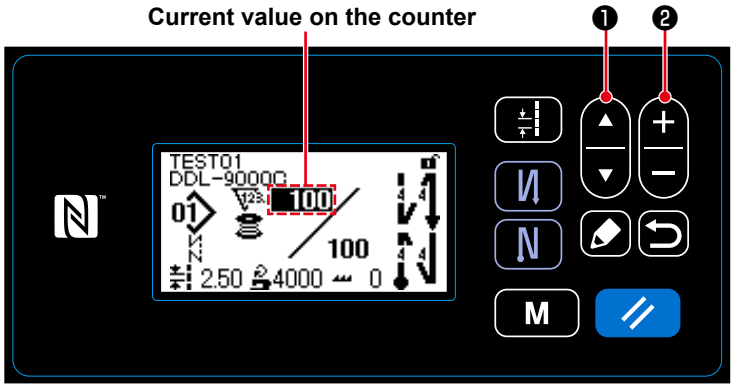


4. Enter a source pattern number by pressing ▲ ▼ ❶.
5. Enter a pattern number to be given to the pattern to be copied from the above-selected source pattern by pressing + − ❷.
6. Copy the pattern by pressing ✎ ❺.

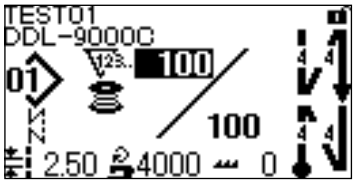
4-3. Counter function

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

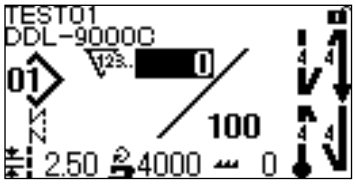
4-3-1. Displaying the sewing screen under the counter display mode



1. Press ▲ ▼ ❶ on the sewing screen.
2. The screen display is changed over to display the sewing screen under the counter display mode.
   The current value shown on the counter can be increased/decreased using + − ❷.

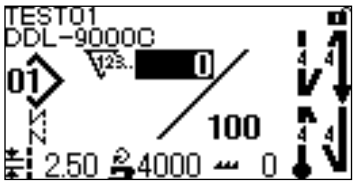


Bobbin thread counter



Sewing counter

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



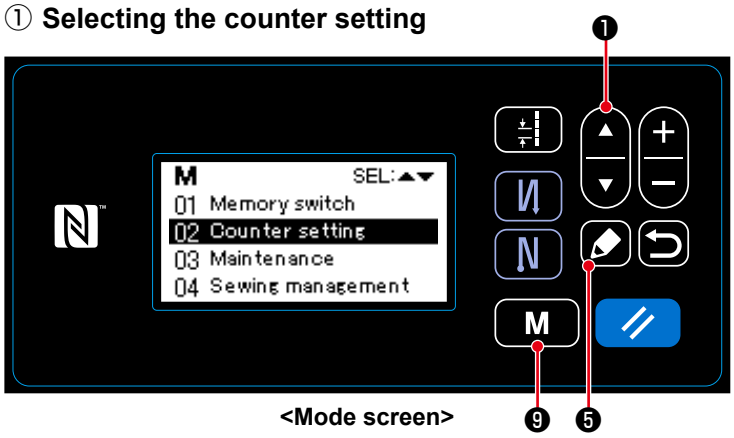
Pitch time counter

4-3-2. Types of the counter

	Bobbin thread counter The bobbin thread counter adds one to its current value every time the sewing machine sews 10 stitches. When the preset value is reached, the count-completion screen is displayed. * Refer to **"4-3-4. How to reset the count-completion state" p. 46**.
	Sewing counter The sewing counter adds one to its current value every time one stitch shape is sewn. When the preset value is reached, the count-completion screen is displayed. * Refer to **"4-3-4. How to reset the count-completion state" p. 46**.
	Pitch time counter 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. * Refer to **"4-3-4. How to reset the count-completion state" p. 46**.

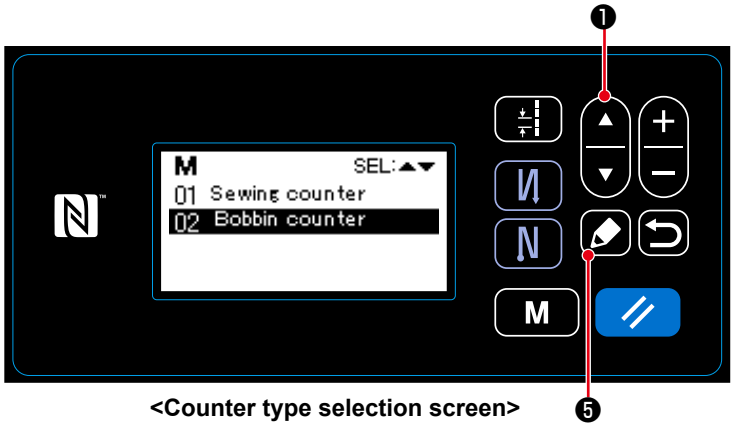
4-3-3. How to set the counter

① Selecting the counter setting



<Mode screen>

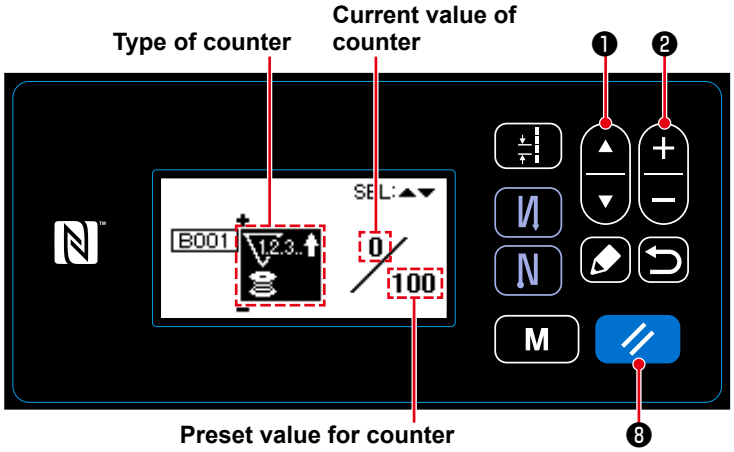
1. Display the mode screen by pressing M ❾.
2. Select the "02 Counter setting" with ▲▼ ❶, and press ✎ ❺.



<Counter type selection screen>

1. Select the type of counter for setting with ▲▼ ❶.
2. Press ✎ ❺ to confirm the selection.

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



<Counter setting screen>

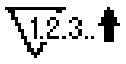
The counter setting screen is displayed to enable setting of data on the counter.

· Every time ▲▼ ❶ is pressed, the screen display that is shown in reverse video changes in the order of "Type of counter", "Current value of counter" and "Preset value for counter" to enable setting of data on the item shown in reverse video.

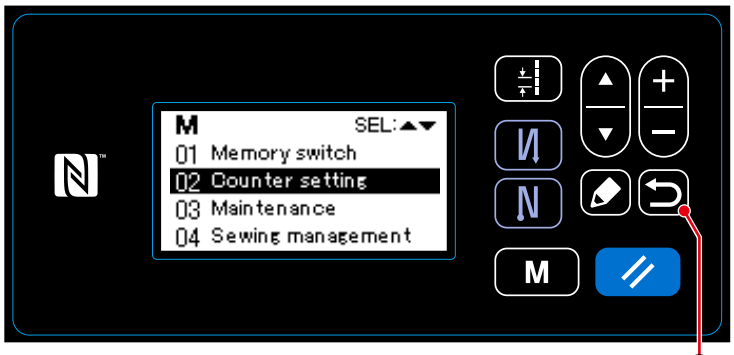
· Change the type of counter or the value of counter with +− ❷ when the relevant item is shown in reverse video.

* If // ❽ is pressed in the case the sewing counter is selected, the current value of the sewing counter will be changed to 0 (zero). In the case the bobbin thread counter is selected, the current value of the bobbin thread counter is made to be equal to the preset value by pressing // ❽.

Bobbin thread counter	
	UP counter (adding method): 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.
	DOWN counter (subtracting method): 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.
—	**Disuse of counter:** The bobbin thread counter counts nothing even when the sewing machine performs sewing. The count-completion screen is, therefore, not displayed.

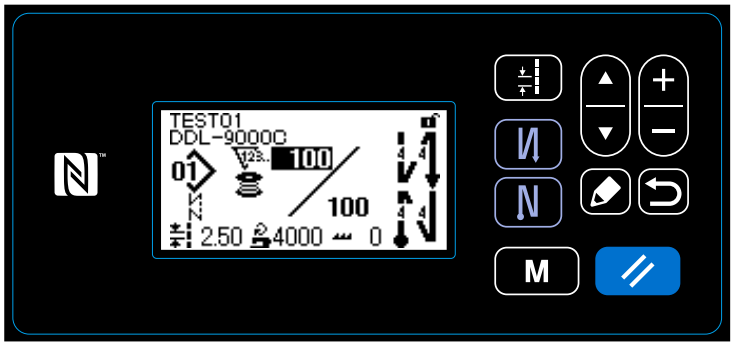
Sewing counter	
	**UP counter (adding method):** The counter adds one to its current value every time the sewing machine sews one stitch shape. When the current value reaches the preset value, the count-completion screen is displayed.
	DOWN counter (subtracting method): The counter subtracts one from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

③ Confirming the data entered



<Mode screen>

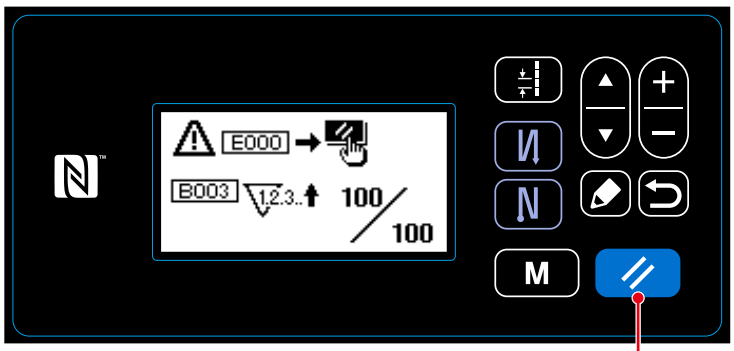
The data on the counter function entered is confirmed by pressing ❻. Then, the screen is returned to the mode screen. With another press on ❻, the screen is returned to the sewing screen.



<Sewing screen (counter)>

The data on the counter function entered is displayed.

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



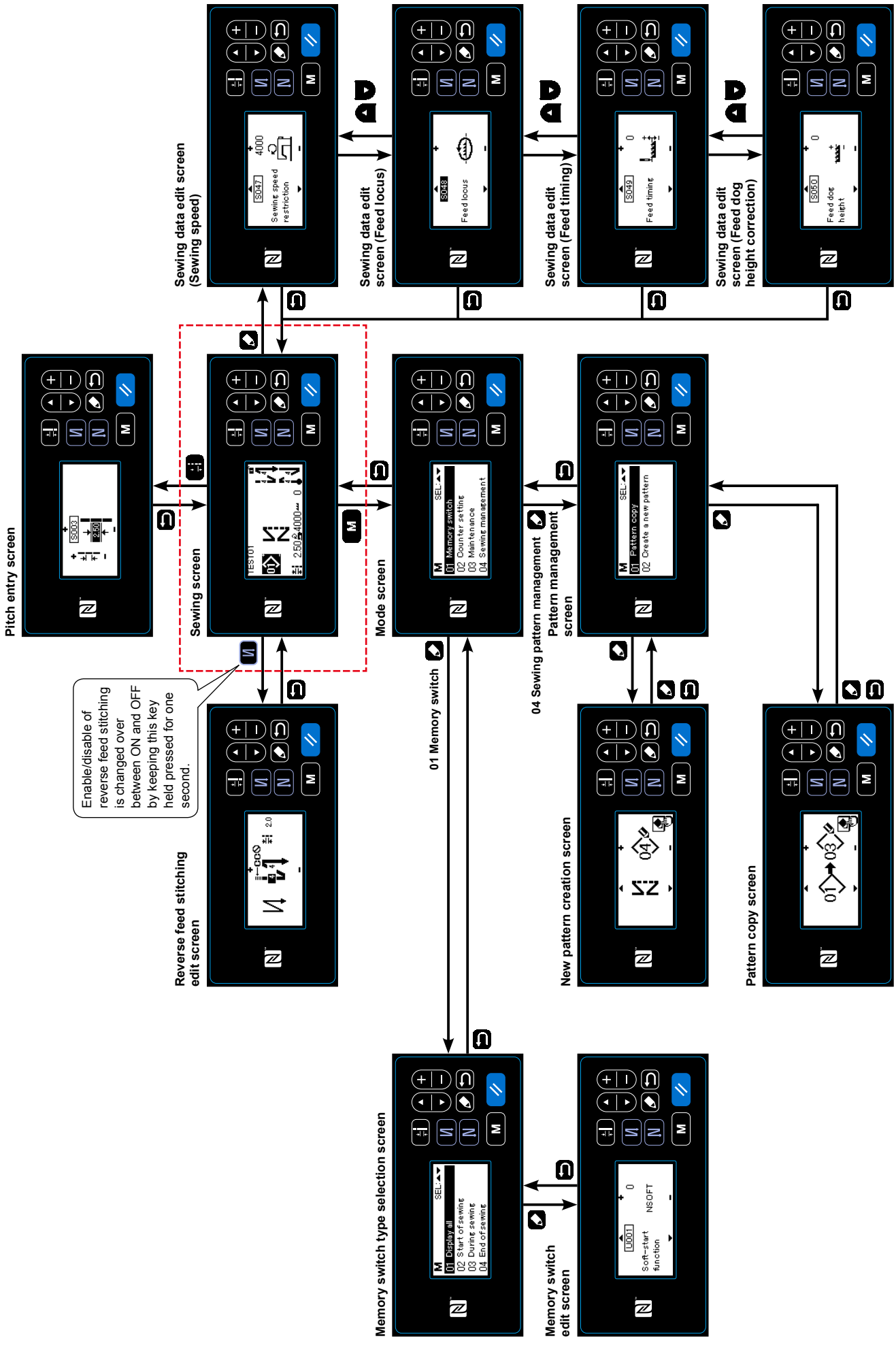
<Count-completion screen>

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

The counter is reset by pressing ❽.

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	**Soft-start function** The initial value differs with the machine head. (0: OFF)	0 to 9	Stitch
U007	**Bobbin thread count-down unit** 0: 10 stitches / 1: 15 stitches / 2: 20 stitches	0 to 2	—
U008	**Reverse feed stitching speed** 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	**Bobbin thread count stop function** 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	**Sewing count function** 1: Automatic sewing counter / 2: Sewing counter switch input	1 to 2	—
U021	**Presser foot lift when the pedal is in its neutral position** 0: Disabled / 1: Enabled	0 to 1	—
U025	**Operation after manual turning (thread trimming)** 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	**Minimum speed of the pedal** The maximum number of revolutions during thread trimming differs with the machine head.	150 to Max. of thread trimming	sti/min
U036	**Speed during thread trimming** The maximum number of revolutions during thread trimming differs with the machine head.	150 to Max. of thread trimming	sti/min
U037	**Speed during soft start** 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	**Speed during one-shot stitching** The maximum number of revolutions during soft start differs with the machine head.	100 to Max.	sti/min
U039	**Start position of rotation**	10 to 5000	—
U040	**Start position of acceleration**	10 to 1000	—
U041	**Start position of lifting of presser foot**	-500 to -10	—
U042	**Start position of lowering of presser foot**	10 to 500	—
U043	**Start position of thread trimming**	-1000 to -100	—
U044	**Position that maximum sewing speed is reached**	10 to 15000	—
U045	**Pedal neutral-position correction value**	-150 to 150	—

No.	Item	Setting range	Unit
U047	**Presser-foot lift finishing position** The position to which the presser foot goes up when the back part of the pedal is depressed to its first step (1st-step spring position)	-1000 to -100	—
U049	**Presser foot lowering time** The initial value differs with the machine head.	0 to 500	ms
U051	**Correction of turning-ON of reverse feed stitching (at start)**	-50 to 50	Degree
U052	**Correction of turning-OFF of reverse feed stitching (at start)**	-50 to 50	Degree
U053	**Correction of turning-OFF of reverse feed stitching (at end)**	-50 to 50	Degree
U055	**Presser foot lift after thread trimming** 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: No lift / 1: Lift	0 to 1	—
U056	**Reverse-rotation needle-up after thread trimming** The initial value differs with the machine head. 0: Reverse-rotation needle-up is not performed / 1: Reverse-rotation needle-up is performed	0 to 1	—
U057	**Function for lowering the feed dog during thread trimming** The presser foot height is fixed at 0 (zero) during thread trimming. 0: OFF / 1: ON	0 to 1	—
U059	**Selection of revere feed stitching (at start) operation** 0: Manual / 1: Automatic	0 to 1	—
U060	**Stop after reverse feed stitching (at start)** The stop function stops the sewing machine temporarily regardless of the operating status of the pedal. 0: OFF / 1: ON	0 to 1	—
U064	**Sewing speed at the start of reverse feed stitching (at end)**	150 to 1000	sti/min
U068	**Presser foot lifting operation changeover** The presser foot lifting operation when depressing the back part of pedal is changed over. 0 : 2-step operation / 1 : Manual operation depending on the pedal stroke when the back part of pedal is depressed	0 to 1	—
U069	**Presser-foot 1st step lifting height** Maximum height of presser foot at the 1st step of its lifting operation when the back part of pedal is depressed	0.1 to 8.5	mm
U070	**Presser-foot 2nd step lifting height** Maximum height of presser foot at the 2nd step of its lifting operation when the back part of pedal is depressed. (When the back part of pedal is depressed until the thread trimming position is reached after the presser foot comes down after thread trimming.)	8.5 to 13.5	mm
U087	**Pedal acceleration characteristic** 0: Standard / -1 to -10: Low-frequency low acceleration / 1 to 10: Low-frequency high acceleration	-10 to 10	—
U090	**Initial-start upper-position stopping function** 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	**Maximum sewing speed** The initial value differs with the machine head.	150 to Max.	sti/min

No.	Item	Setting range	Unit
U120	**Main shaft reference angle correction** The main shaft reference signal angle (0 degree) is corrected with the value set using this memory switch.	-60 to 60	Degree
U121	**Upper stop position angle correction** The position at which the sewing machine stops with its needle down is corrected.	-15 to 15	Degree
U122	**Lower stop position angle correction** The position at which the sewing machine stops with its needle up is corrected.	-15 to 15	Degree
U182	**Sewing counter stopping function** 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	**Number of times of thread trimming for sewing counter**	1 to 20	—
U280	**Number of condensation stitches at the end of sewing before shorter-thread remaining type thread trimmer operates** 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	**Pitch of condensation stitches at the sewing end before shorter-thread remaining type thread trimmer operates** 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	**Sewing speed during thread presser operation** This memory switch is used for setting the speed to be employed when the thread presser operates.	100 to 3000	sti/min
U288	**Thread presser ON angle** 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	**Thread presser OFF angle** 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	**AK operating time when the thread presser operates** The time to turn ON the AK device that operates when the thread presser operates.	0 to 50	ms
U292	**Soft-start resetting angel when the thread presser operates** 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	**Sewing speed resetting angle when the thread presser operates** 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
U294	**Thread-presser initial suction time**	4 to 10	ms
U326	**Feed dog travel to 0 position when lifting the presser foot** 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	—

No.	Item	Setting range	Unit
U401	**Input unit of pitch** 0: Pitch (mm) / 1: Number of stitches per inch 2: Number of stitches in 3 cm	0 to 2	—
U402	**Automatic lock time** 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	**Selection of part number and process / comment display** 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	**Language selection** 0: Not yet selected / 1: Japanese / 2: English / 3: Chinese	0 to 3	—
U407	**Operating sound of panel** 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.)	• In the case the machine head is changed. • In the case the initialization operation is executed.	
E007	Motor overload	• In the case the machine head is changed.	
E009	Overtime of solenoid energization	• In the case the machine head is locked. • In the case of sewing extra-heavy weight material that exceeds the guaranteed material thickness. • In the case the motor fails to rotate. • In the case of the motor or driver failure.	• Check whether the pulley is entangled with thread. • Check whether the motor output connector has loosened. • Check whether the motor can be turned smoothly by hand.
E011	Media is not inserted	• In the case no media is inserted.	• Turn the power OFF and check for a media.
E012	Read error	• In the case data stored on the media cannot be read.	• Turn the power OFF and check for a media.
E013	Write error	• In the case data cannot be written on the media.	• Turn the power OFF and check for a media.
E014	Write protect	• In the case the media is placed in the write-prohibition state.	• Turn the power OFF and check for a media.
E015	Format error	• In the case formatting of the media cannot be carried out.	• Turn the power OFF and check for a media.
E016	External media over-capacity	• In the case the capacity of media is not enough.	• Turn the power OFF and check for a media.
E032	File compatibility error	• In the case the file is not compatible.	• Turn the power OFF and check for a media.
E071	Slip-off of the motor connector	• In the case the motor connector has slipped off. • Motor current detection circuit has broken. • In the case there is no current feedback.	• Check for looseness and slip-off of the motor output connector.
E072	Motor overload when the thread trimmer operates	• Overload state occurs while the thread trimming operates.	
E081	Feed driving motor lock	• In the case the feed driving motor is locked.	• Check whether the feed driving motor operates smoothly.
E204	USB insertion	• In the case the sewing machine is started up without removing the USB thumb drive.	• Remove the USB thumb drive.
E220	Warning against shortage of grease	• When the predetermined number of stitches is reached.	• Add grease to the specified points of sewing machine and reset the error.
E221	Grease-shortage error	• In the case the sewing machine cannot continue sewing since the predetermined number of stitches is reached.	• Add grease to the specified points of sewing machine and reset the error.

Error code	Description of error	Cause	Item to be checked
E302	Head-tilt detection error (When the safety switch operates)	• In the case the Tilt detection switch is turned ON when the power to the sewing machine remains ON.	• Check whether the machine head is tilted before turning OFF the power switch (The sewing machine operation is prohibited for the sake of safety.) • Check whether the head-tilt detection switch cord is caught under the machine head, etc. • For the head-tilt detection switch cord, check the cable of the INT PCB.
E303	Meniscus sensor error	• In the case the meniscus sensor signal cannot be detected	• Check whether the machine head model setting matches the actual machine head. • Check for a break in the motor encoder connector.
E704	Data failure (system-version mismatch)	• In the case the system version does not match the machine head setting.	• Re-write the system version to the applicable one.
E730	Encoder fault	• In the case the motor signal is not input properly.	• Check whether the motor signal connector (CN39) has loosened or slipped off. • Check whether the motor signal cord has broken by being caught under the machine head. • Check whether the insertion direction of the motor encoder connector is correct.
E731	Motor hole sensor fault		
E733	Reverse rotation of motor	• 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.	• Check whether the main shaft motor encoder wire connection is correct. • Check whether the main shaft motor wire connection for power is correct.
E811	Over-voltage	• In the case a voltage that is equal to or more than the guaranteed voltage is input. • In the case a voltage of 200 V is applied though the voltage is set to 100 V. • In the case a voltage of 220 V is input to the box of "JA: 120 V". • In the case a voltage of 400 V is applied to the box of "CE: 230 V".	• Check whether the supply voltage of "rated supply voltage ±10 % or more" is applied. • Check whether the 100 V/200 V changeover connector is set correctly. In the above-described cases, the power PCB has broken.
E813	Low voltage	• In the case a voltage that is equal to or less than the guaranteed voltage is input • In the case a voltage of 100 V is applied though the voltage is set to 200 V • In he case a voltage of 120 V is input to the box of "JUS: 220 V" • In the case the internal circuit has broken due to the application of over-voltage	• Check whether the supply voltage of "rated supply voltage -10 % or less" is applied. • Check whether the 100 V/200 V changeover connector is set correctly. In the above-described cases, the power PCB has broken.
E815	Regenerative resistor is not connected	• In the case the regenerative resistor is not connected.	• Check whether the regenerative resister is connected to the regenerative resistor connector (CN11).

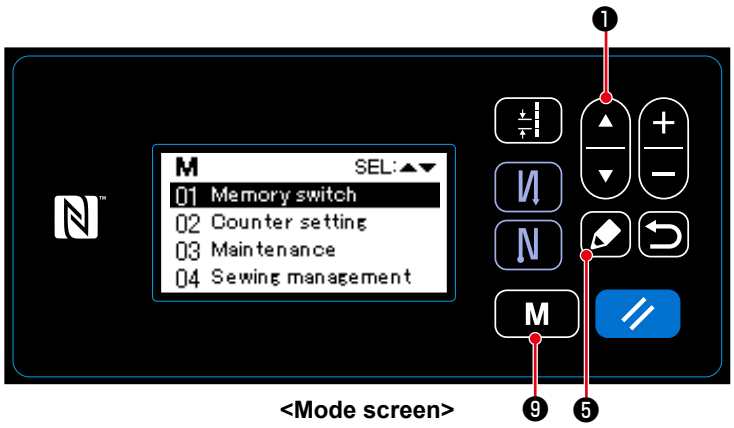
Error code	Description of error	Cause	Item to be checked
E903	85-V power supply fault	• In the case the 85-V voltage is not properly output.	• Check whether the motor is faulty • Check the F2 fuse.
E904	24-V power supply fault	• In the case the 24-V voltage is not properly output.	
E910	The presser motor origin retrieval error	• In the case the presser motor has failed to return to its origin.	• Check whether the presser setting is correct (memory switch No. 23). • Check whether the presser motor origin has been correctly adjusted.
E912	Main shaft motor speed detection error	• In the case the main shaft motor runs at a speed that exceeds the assumed speed.	• Check whether connection encoder wire of the main shaft motor is correct. • Check whether connection of the main shaft motor wire is correct.
E915	Failure of communication with operation panel	• In the case the operation panel connector is not inserted properly.	• Check whether CN38 of the CTL PCB or CN200 of the panel is connected properly or whether the cable has broken.
E922	Main shaft control failure	• In the case the main shaft fails to operate as assumed.	
E924	Motor driver fault	• In the case the motor driver has broken.	
E946	Machine-head EEPROM write error	• In the case data cannot be written on the machine-head EEPROM.	• Check whether the machine-head INT PCB is connected properly.
E955	Electric current sensor error	• The electric current of the main shaft motor exceeds the assumed value.	• Check whether connection of the main-shaft motor wire for power is correct.
E961	Pitch motor deviation error	• In the case the pitch motor fails to operate because of an excessive load.	• Check whether the pitch motor runs smoothly.
E962	Presser motor deviation error	• In the case the presser fails to operate because of an excessive load.	• Check whether the presser motor runs smoothly.
E971	Feed horizontal motor IPM over-current protection	• Pitch motor maloperation.	
E972	Feed horizontal motor overload	• In the case the pitch motor is applied with an excessive load.	• Check whether the pitch motor runs smoothly.
E973	Feed vertical motor IPM over-current protection	• Feed driving motor maloperation.	
E974	Feed vertical motor overload	• In the case the feed driving motor is applied with an excessive load.	• Check whether the feed driving motor runs smoothly.
E975	Presser motor IPM over-current protection	• Presser motor maloperation.	
E976	Presser horizontal motor overload	• In the case the presser motor is applied with an excessive load.	• Check whether the presser motor runs smoothly.
E985	Return-to-origin error of pitch motor or feed driving motor	• In the case the pitch motor has failed to return to its origin. • In the case the feed driving motor has failed to return to its origin.	• Check whether the origin of the pitch motor has been adjusted properly. • Check whether the origin of the feed driving motor has been adjusted properly.

4-7. Memory switch data

The memory switch data is the sewing machine operation data which commonly affects all sewing patterns and cycle patterns.

4-7-1. Setting up the memory switch data

① Selecting the category of the memory switch data.

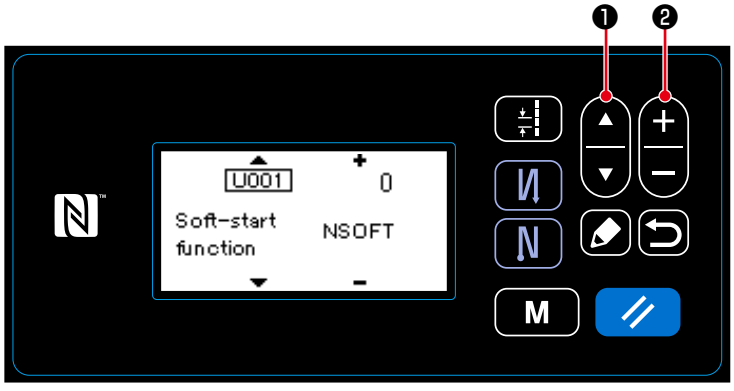


<Mode screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "01 Memory switch" by pressing ▲▼ ❶ . Then press ✎ ❺ to display the memory switch category selection screen.
3. Select "01 Display all" by pressing ▲▼ ❶ . Then, press ✎ ❺ to display the memory switch setting screen.

* In the case any item other than "01 Display all" is selected, only the memory switch which corresponds to the selected item is displayed on the memory switch setting screen.

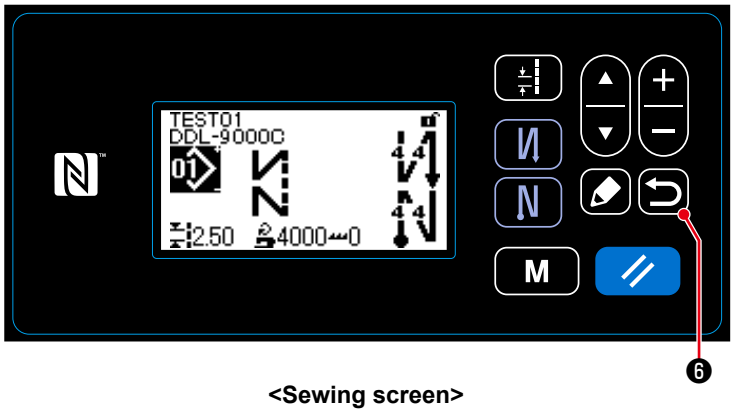
② Setting the memory switch



<Memory switch setting scree>

1. Select the memory switch by pressing ▲▼ ❶ . Then, edit the memory switch by pressing + − ❷ .

③ Confirming the data entered



<Sewing screen>

1. Press ❻ to confirm the data and return the current screen to the memory switch category selection screen.
   Press ❻ again to return the current screen to the mode screen.
   Press ❻ yet again to return the current screen to the sewing screen.

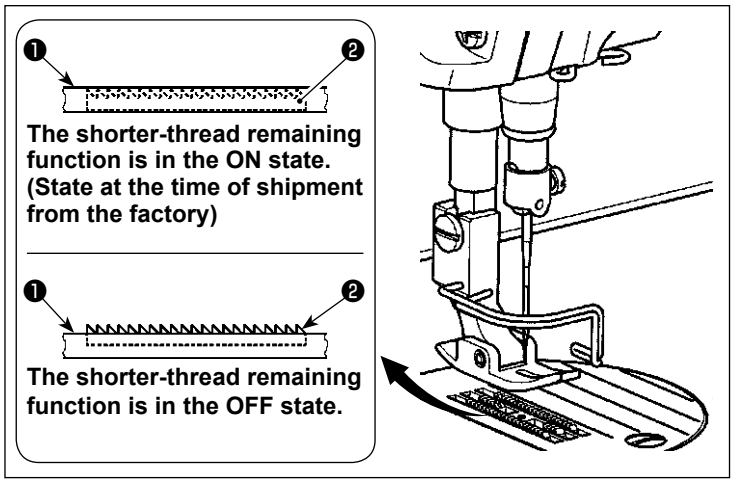
5. MAIN NEW FUNCTIONS

As a result of computerization of the feed mechanism, various adjustments can be carried out. Refer to **"4-2. Sewing patterns" p. 30** for details.

Caution

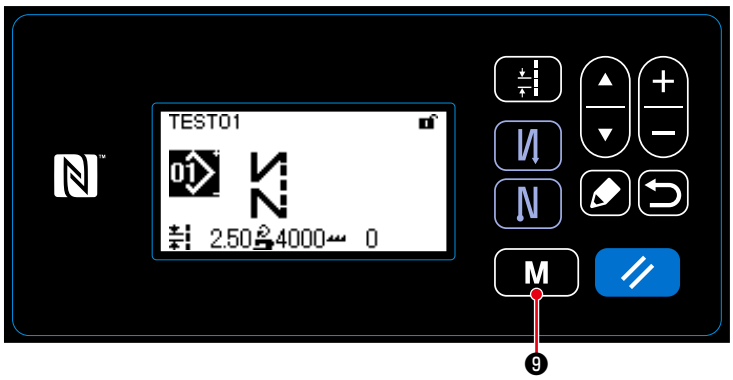
Due to computerization of the feed mechanism, the machine generates noise that is specific to the stepping motor when it runs at a low speed. This noise is not a sign of fault.

5-1. Shorter-thread remaining thread trimming



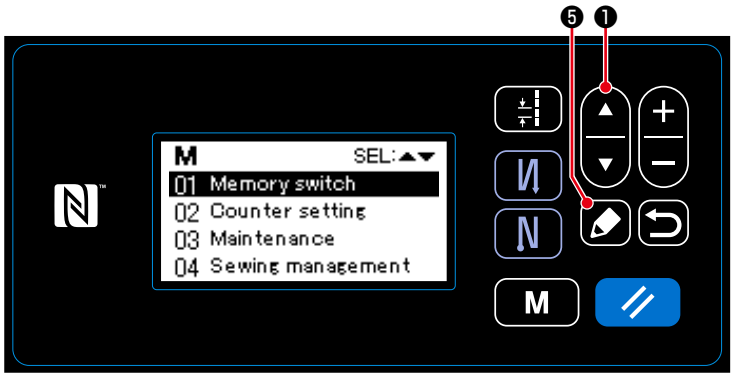
The length of needle thread remaining on the material after thread trimming is reduced by operating the thread trimmer with feed dog ❶ lowered.
In addition, since feed dog ❶ does not protrude from throat plate ❷, the material can be placed/removed on/from the sewing machine with ease.

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

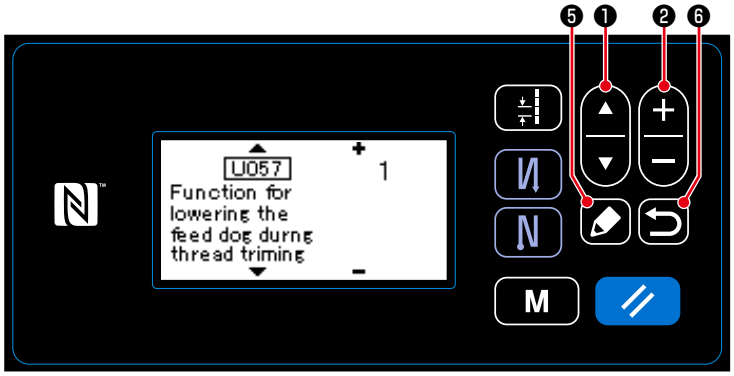


[How to set the feed dog]

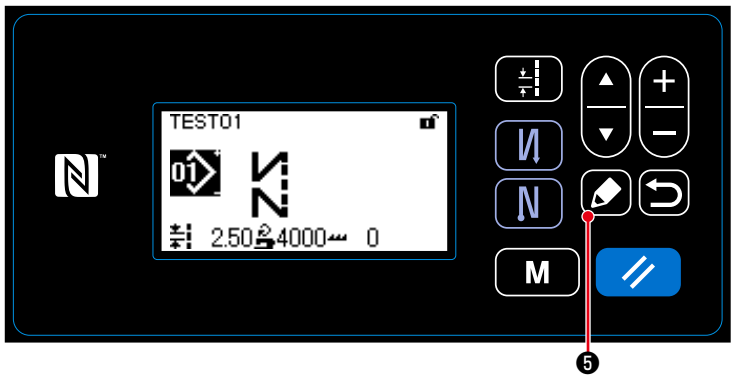
1) Press ❾.



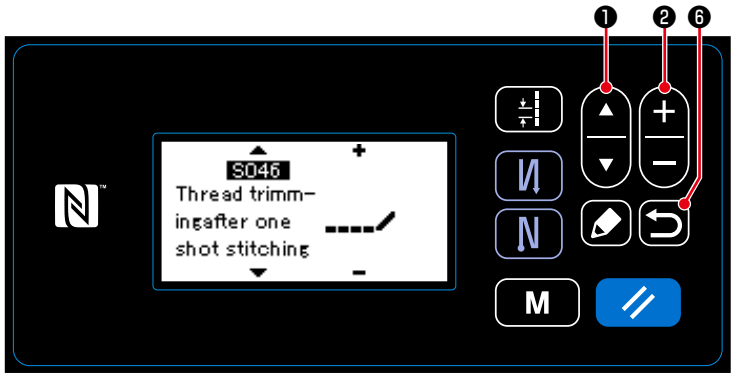
2) Select "01 Memory switch" by pressing ❶. Press ❺.



3) Select "U057" by pressing ❶.
Press ❺.
4) Select the feed dog status during thread trimming (0 : Feed dog DOWN, 1 : Feed dog UP) by pressing ❷.
5) Confirm your entry by pressing ❻.
Then, the sewing screen is displayed.



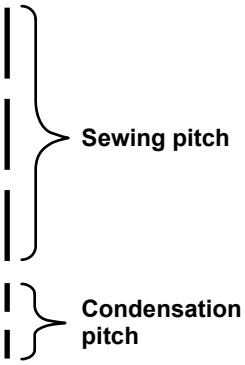
[How to set the condensation stitch]
1) Display the sewing data edit screen by pressing ❺.



2) Display "S046" by pressing ❶.
3) Set the shorter-thread remaining thread trimming function in the ON/OFF state (With/without condensation stitch) by pressing ❷.
4) Confirm your entry by pressing ❻.
Then, the sewing screen is displayed.

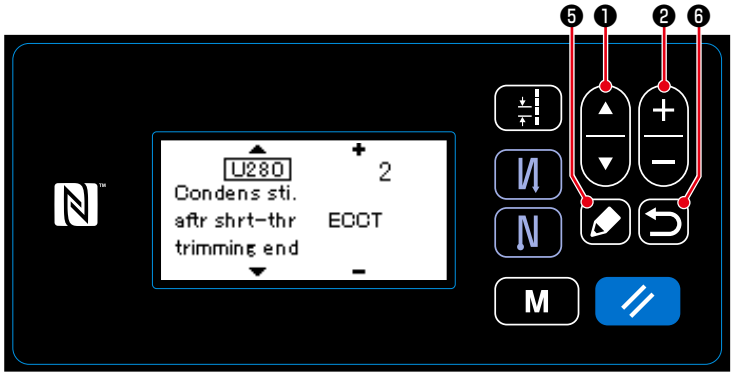
The condensation operation should be turned OFF before thread trimming is performed at a position where there is no material since thread loop formation at the time of thread trimming becomes unstable.
In addition, the thread take-up spring stroke should be adjusted to be slightly larger.

[How to adjust condensation pitch]



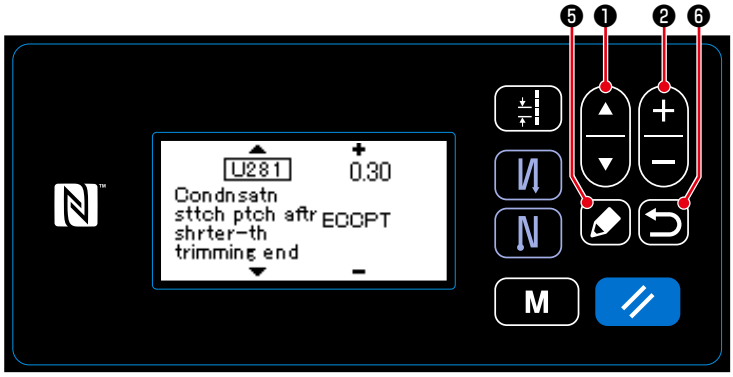
In the case of carrying out shorter-thread remaining thread trimming (when condensation is placed in ON), set values of the condensation pitch and the number of stitches are adjustable. Adjust those set values appropriately according to the item to be sewn.

[Setting the number of condensation stitches]



1) Select "U280" by pressing ▲ ▼ ❶.
   Press ✎ ❺.
2) Press + − ❷ and enter the number of condensation stitches at the end of sewing for shorter-thread remaining thread trimming.
   (Factory-set value: 2)
3) Confirm your entry by pressing ↩ ❻.
   Then, the sewing screen is displayed.

[Setting the condensation pitch]



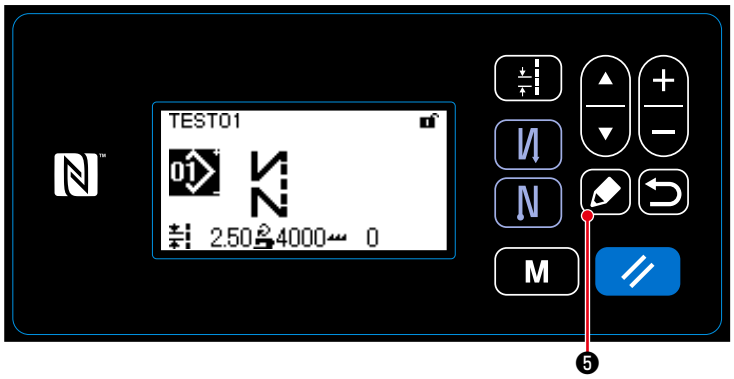
1) Select "U281" by pressing ▲ ▼ ❶.
   Press ✎ ❺.
2) Press + − ❷ and enter the condensation pitch at the end of sewing for shorter-thread remaining thread trimming.
   (Factory-set value: S type 0.3; H type 0.5)
3) Confirm your entry by pressing ↩ ❻.
   Then, the sewing screen is displayed.

Caution

If the condensation pitch is decreased, the phenomenon where the needle enters the same needle entry point will likely to occur, resulting in unstable formation of thread loop at the time of thread trimming. As a result, thread trimming fault is likely to occur. It is therefore necessary to adjust the condensation pitch carefully. (The needle entry phenomenon differs according to the material to be sewn and the needle count, the pitch should be increased if thread trimming failure occurs.)

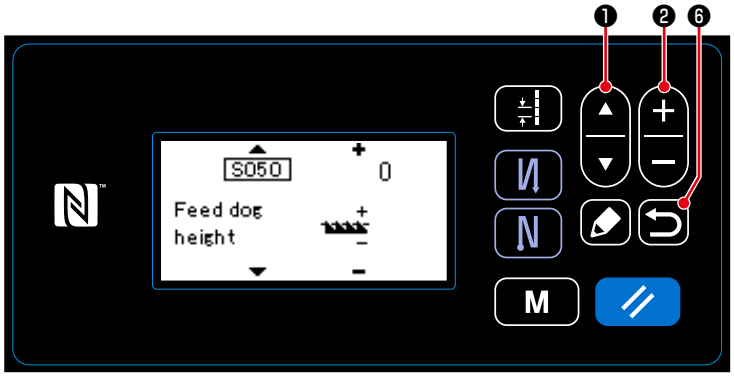
5-2. Adjusting the feed dog height

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 ❺.



2) Display "S050" by pressing ❶.
3) Change the feed dog height by pressing ❷.
* Refer to the following for the adjustable range of the feed dog height.
4) Confirm your entry by pressing ❻. Then, the sewing screen is displayed.

[DDL-9000C-SMS]

Feed dog height (mm)	0.60	0.65	0.70	0.75	0.80	085	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-SSH]

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

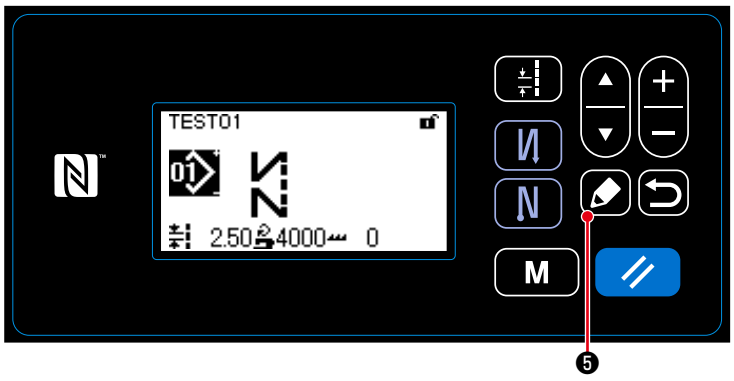
Low ←←← ↑ →→→ High

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

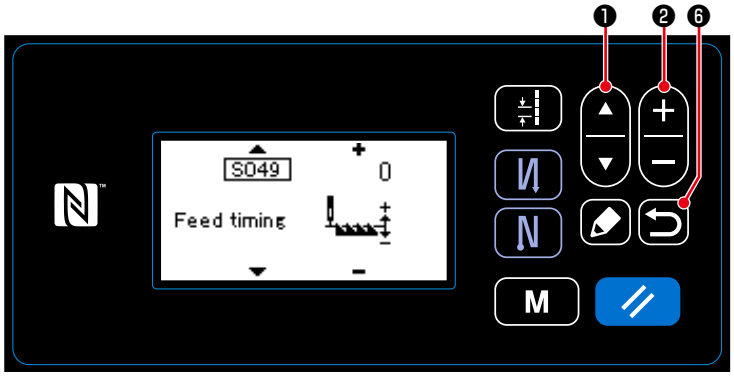
When you have changed the stitch length, feed dog height or feed timing, run the sewing machine at a low speed to make sure that the gauge does not interfere with the changed part.



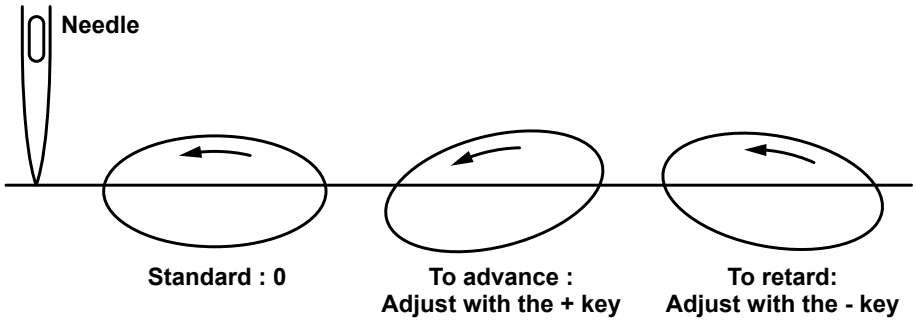
Timing between the needle and feed can be adjusted on the operation panel.

[How to adjust]

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

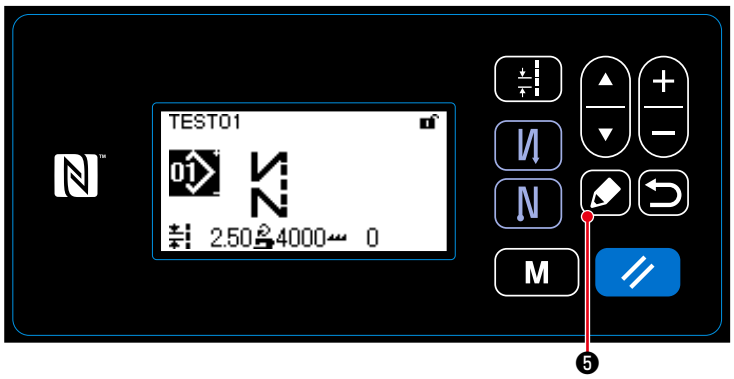


2) Display "S049" by pressing ❶.
3) Change the feed timing by pressing ❷.
(+ : To advance; - : To retard)
4) Confirm your entry by pressing ❻.
Then, the sewing screen is displayed.



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.**

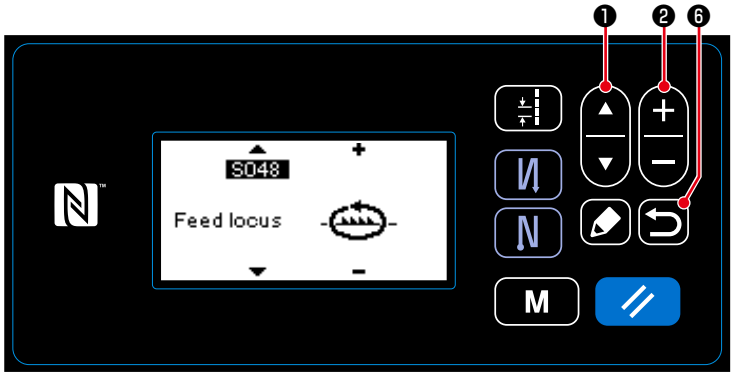
5-4. Changing the feed locus



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 ❺.



2) Display "S048" by pressing ❶.

3) Change the feed locus by pressing ❷.

* Refer to the following for the types of feed locus.

4) Confirm your entry by pressing ❻. Then, the sewing screen is displayed.

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

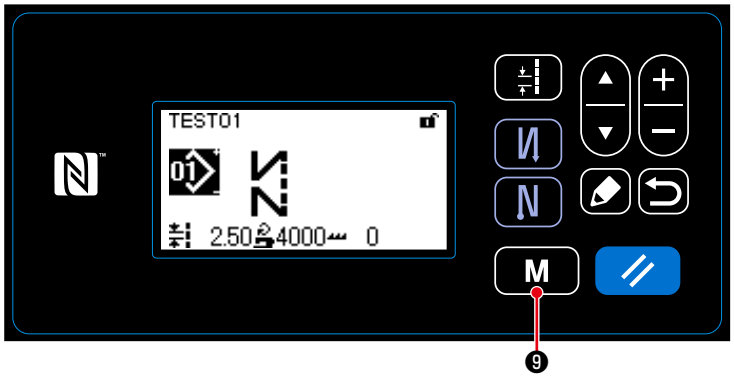
6. CARE

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

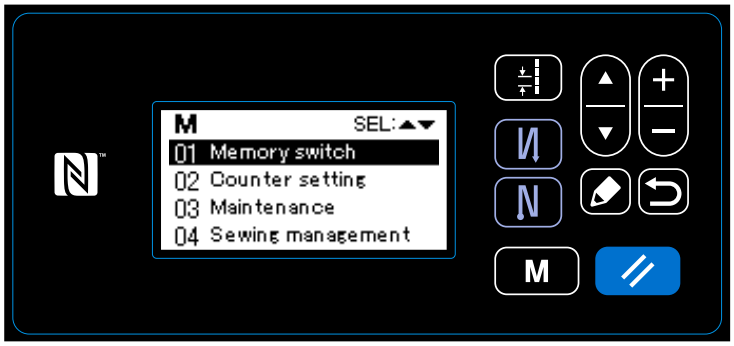
6-1. Maintenance mode

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

Caution **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 ❾.

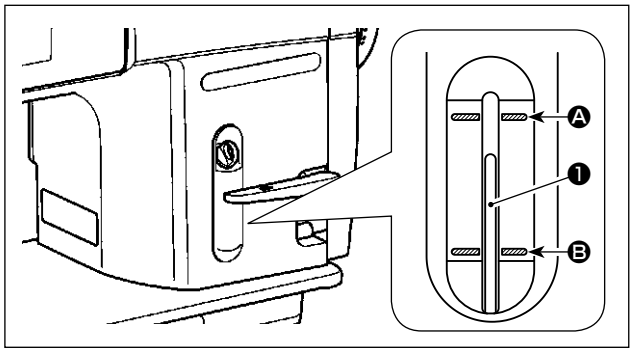


2) The screen is changed over to the maintenance mode screen.

Caution **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

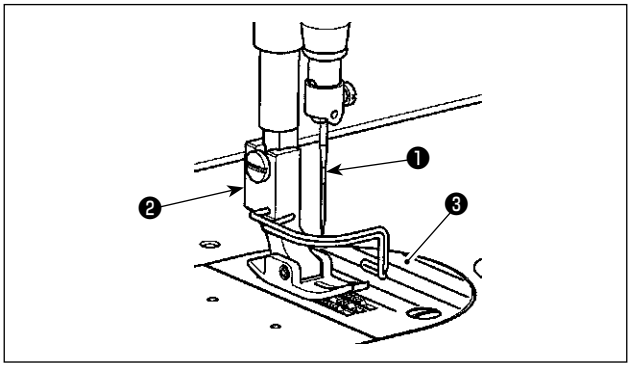
WARNING :
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



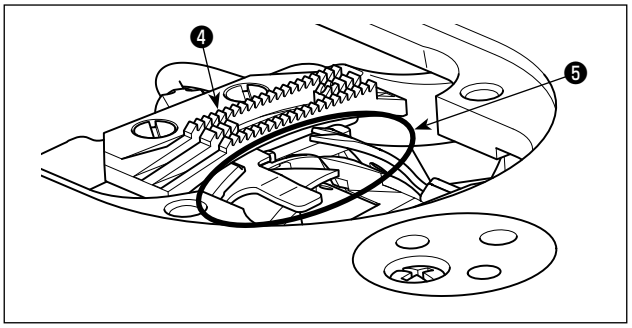
Confirm that the top of oil amount indicating rod ❶ is between the upper engraved marker line Ⓐ and the lower engraved marker line Ⓑ of the oil amount indicating window. (For the details, refer to **"2-14. Lubrication" p. 12**.)

6-3. Cleaning

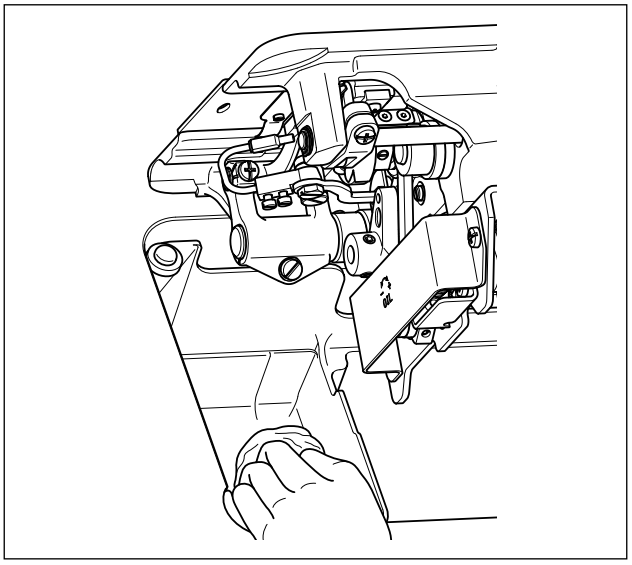
WARNING :
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



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.

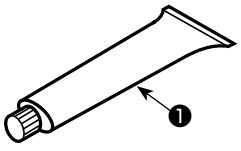


3) Tilt the machine head and wipe out the dirt of bobbin case and the like with soft cloth, and confirm that there is no scratch. Wipe out with the cloth dust and hook oil drained in the under cover near the hook.

6-4. Applying grease

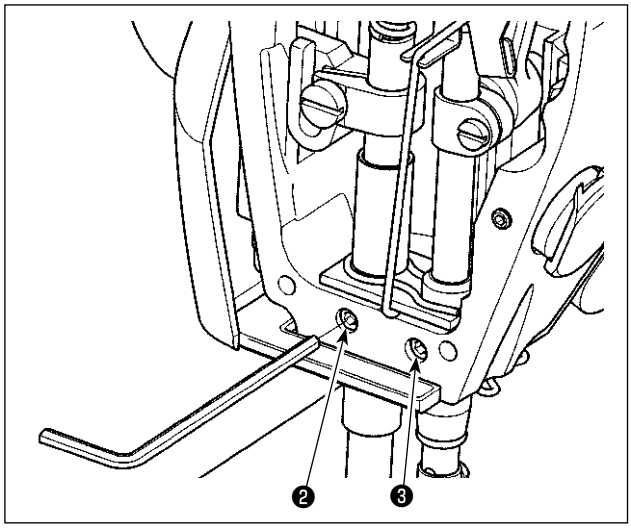
WARNING :
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

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).



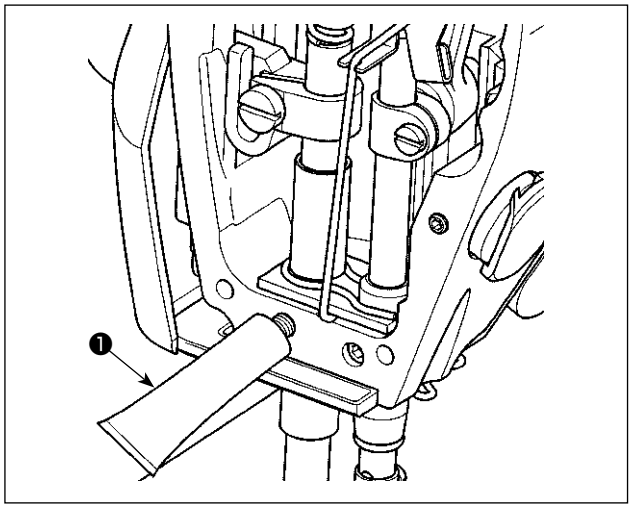
6-5. Applying grease to the needle bar lower bushing and the presser bar bushing

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.

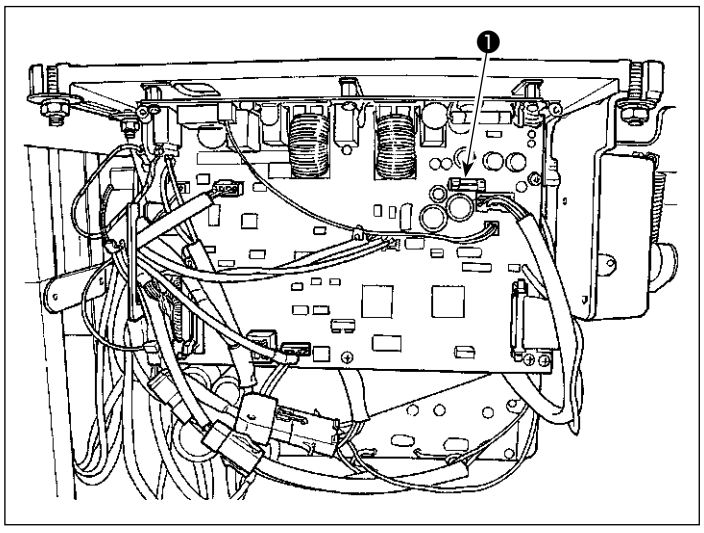
1) Remove the face plate.
2) Remove presser bar bushing greasing screw ❷ and needle bar lower bushing greasing screw ❸ (only for the DDL-9000C-SMS) with a hexagonal wrench.



3) Remove the cap of exclusive grease tube ❶. Insert its tip into the oil hole and replenish grease from exclusive grease tube ❶.
   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.

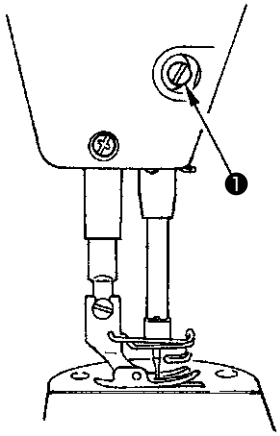


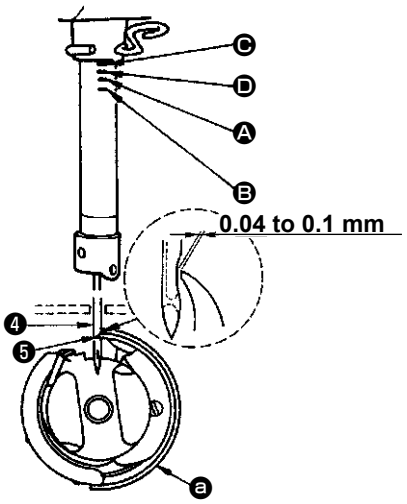
The machine uses the following one fuse :
MAIN PWB
❶ For 85V power supply protection
5A (time-lag fuse)

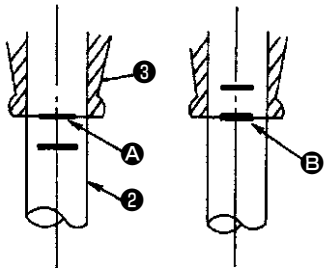
7. ADJUSTMENT OF THE MACHINE HEAD (APPLICATION)

7-1. Needle-to-hook relationship

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







Adjust the timing between the needle and the hook as follows :

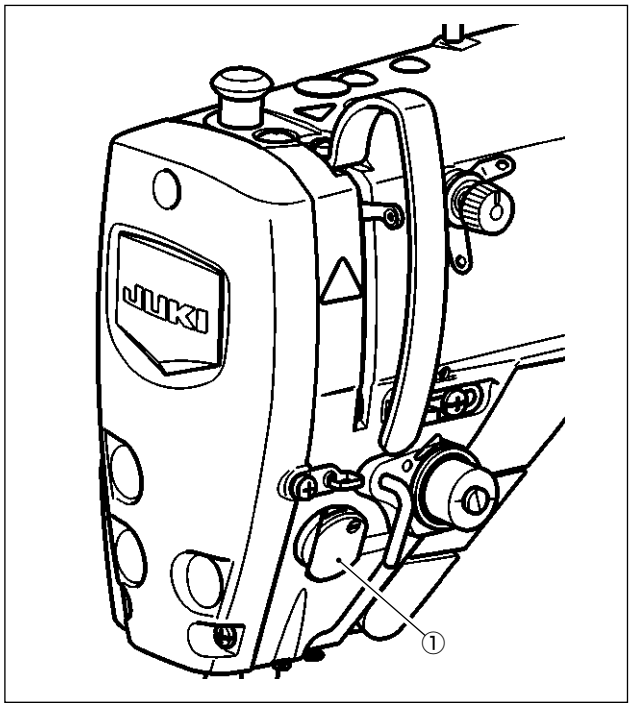
1) Adjusting the needle bar height. Turn the handwheel to bright the needle bar down to the lowest point of its stroke, and loosen setscrew ❶.
2) Adjusting the needle bar height. Align marker line (For a DB needle : marker line Ⓐ, For a DA needle : marker line Ⓒ) on needle bar ❷ with the bottom end of needle bar lower bushing ❸, then tighten setscrew ❶.
3) Position the needle and the hook ⓐ.
   Loosen the three hook setscrews, turn the handwheel in normal rotation and align marker line (For a DB needle : marker line Ⓑ, For a DA needle : marker line Ⓓ) on ascending needle bar ❷ with the bottom end of needle bar lower bushing ❸.
4) In this state, align hook blade point ❺ with the center of needle ❹. Provide a clearance of 0.04 to 0.1 mm (reference value) between the needle and the hook, then securely tighten the three hook setscrews.

Caution

1. If the clearance between the blade point of hook and the needle is smaller than the specified value, the blade point of hook will be damaged. If the clearance is larger, stitch skipping will result.
2. The needle bar of the DDL-9000C-FMS is processed with special black coating. In the case you find it difficult to visually check the location of marker lines, illuminate the needle bar with a flashlight or the like to make it easier.

7-2. Adjusting the needle thread presser device

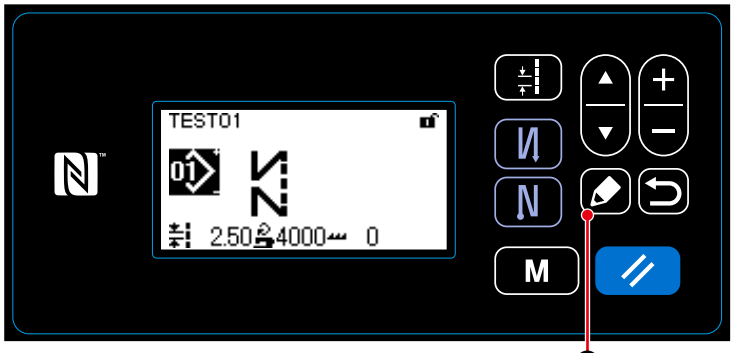
WARNING :
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



The needle thread presser device is able to tuck the needle thread on the wrong side of material as in the case of the conventional wiper device.

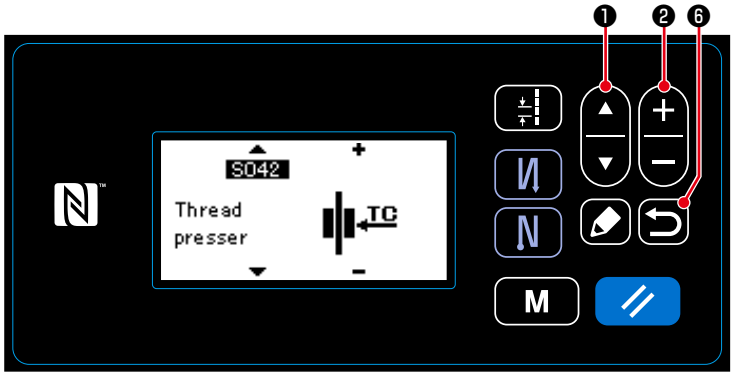
[Feature]

- So-called "bird's nest phenomenon" which appears on the wrong side of material can be reduced by using needle thread presser device ① in combination with condensation stitching.
- Operability around the needle entry point is improved.
- Applicability of various kinds of attachments designed for use around the needle entry point is improved.



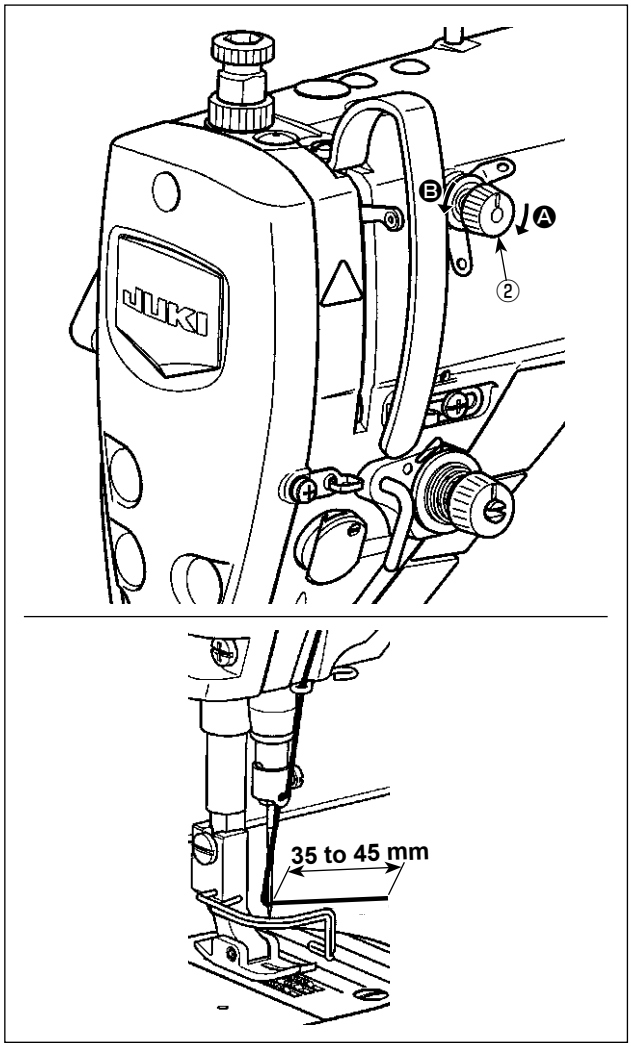
[How to set up the needle thread presser device]

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



2) Display "S042" by pressing ❶.
3) Set ON/OFF status of the needle thread presser device by pressing ❷.
   * The ON/OFF status of the needle thread presser device has been factory-set to "ON" at the time of shipment.
4) Confirm your entry by pressing ❻. Then, the sewing screen is displayed.

Caution
In the case the memory switch "U056 Reverse-rotation needle-up after thread trimming" is enabled, the length of needle thread becomes longer. So, in this case, the needle thread presser device should be set to "OFF".



[Adjusting the remaining length of needle thread]

Adjust the length of needle thread remaining at the needle to 35 to 45 mm (for both the S and H types) by turning thread tension No. 1 nut ②.

1) Turn thread tension No. 1 nut ② clockwise (in direction Ⓐ), to shorten the thread length remaining on the needle after thread trimming or counter-clockwise (in direction Ⓑ), to lengthen the thread length.

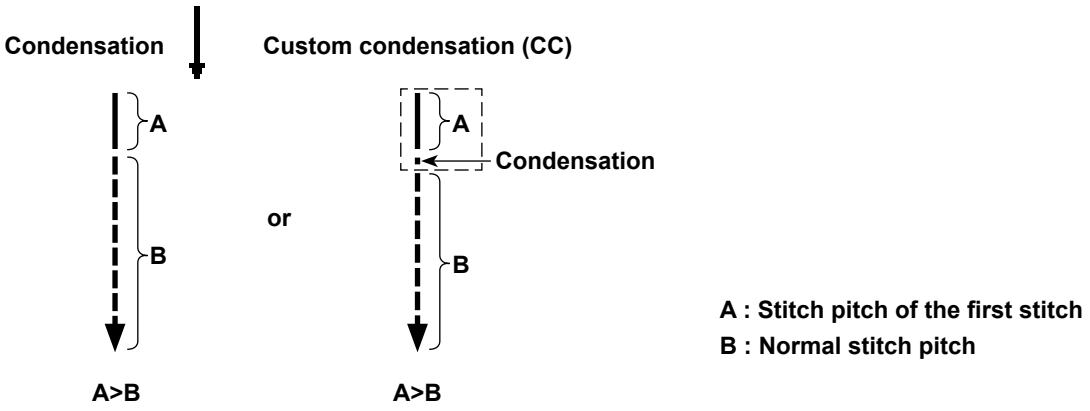
So-called "bird's nest phenomenon" is reduced by shortening the length of needle thread remaining at the needle. In this case, however, the needle thread is likely to slip off the needle eyelet. To reduce slip-off of the needle thread, sewing speed at the beginning of sewing should be reduced.
[Memory switch]
- **U286 Sewing speed during thread presser operation : Reduce (Factory-adjusted to 300 sti/min at the time of shipment)**
- **U293 Sewing speed resetting angle when the thread presser operates : Retard (Factory-adjusted to 340 degrees at the time of shipment)**

With respect to the memory switch settings, a sewing speed of 250 sti/min is recommended for "U286 Sewing speed during thread presser operation", and an angle of 720 degrees is recommended for "U293 Sewing speed resetting angle when the thread presser operates".

No.	Item	Setting range	Unit
U286	**Sewing speed during thread presser operation** This memory switch is used for setting the speed to be employed when the thread presser operates.	100 to 3000	sti/min
U293	**Sewing speed resetting angle when the thread presser operates** 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

[To reduce bird's nest (thread tangling) at the beginning of sewing]

In addition to the aforementioned adjustment, so-called "bird's nest phenomenon" is reduced by increasing the pitch of the first stitch at the beginning of sewing.

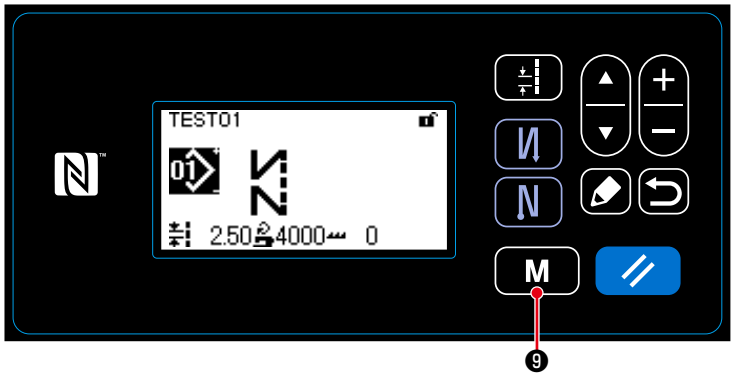


[Response to problems occurring at the beginning of sewing]

- In the case needle thread breakage occurs when using a thin thread or fragile thread
- In the case needle thread is not tucked on the wrong side of material
- In the case needle thread breakage occurs when starting sewing from the material end (such as sewing the material with needle thread tucked on the undersurface of material)

If any of the aforementioned problems occurs, the assist function which works to reduce the presser foot pressure at the beginning of sewing can be set by using the auto-lifter device (AK-154)

* The AK-154 can be optionally installed. (Part number: 40174617)
* In the case the AK-154 is not used, the presser foot pressure should be reduced to allow the needle thread to be released smoothly. (The recommended presser foot pressure is 30 N (3 kg) or less.)
  Adjust the presser foot pressure and the sewing speed appropriately to prevent insufficient feed efficiency due to jumping or other faults of the presser foot. Confirm the adjustment result by actually sewing the material.

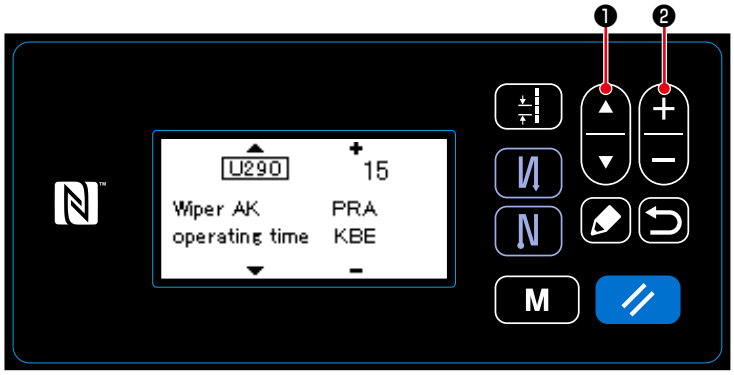


[How to set up the auto-lifter function]

When installing the auto-lifter device (AK), the function of auto-lifter is actuated.

1) Turn ON the power switch.

2) Press M ❾.



3) Move the cursor to ”U290” by pressing ❶. Input the lifting time using with ❷.

Factory-set value : 20

Adjustable range : 0 to 50

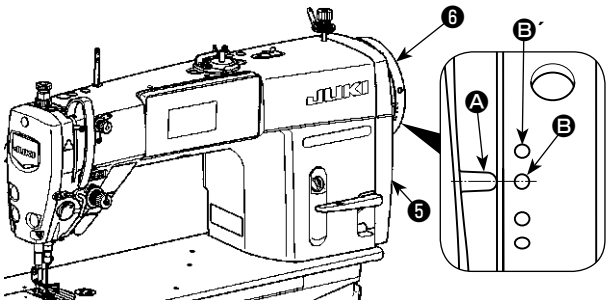
The longer the lifting time is increased, the higher the presser foot sole is brought up above the throat plate.

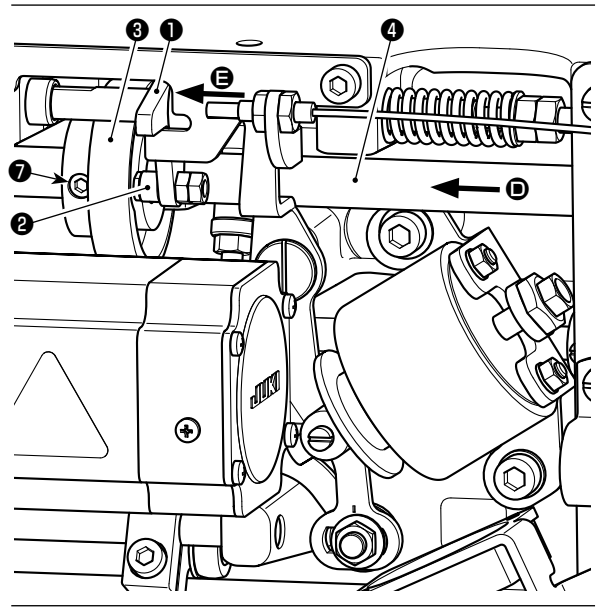
1. The amount of uplift of the presser foot above the throat plate varies according to the material thickness of the item to be sewn and the presser foot pressure. Be sure to check the actual condition before starting sewing.

2. If the adjustment value of the operating time of the AK-154 is increased while the presser foot pressure is high, the operating noise will become larger. Adjust the adjustment value of the operating time of the AK-154 and the pressure foot pressure while visually checking the needle thread.

7-3. Adjusting the thread trimmer

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





Turn thread trimming cam ❸ in the direction of arrow until the outer periphery of thread trimming cam groove Ⓒ comes in contact with roller ❷ and stops. At this position, fix thread trimming cam setscrew ❼.

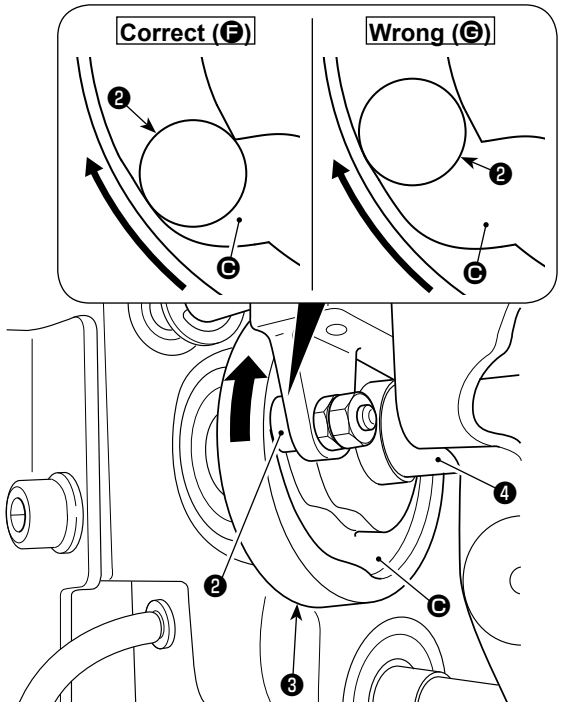


Illustration as observed from Ⓓ (right side face)

7-3-1. For checking of the thread trimming cam timing

The purpose of the adjustment of the thread trimming cam is to align marker line Ⓐ on pulley cover ❺ with green marker dot Ⓑ (H type : White marker dot Ⓑ´) on handwheel ❻.

1) Tilt the sewing machine head.
2) Turn handwheel ❻ by hand in the normal direction of rotation until the thread take-up lever goes up slightly below the upper dead point. Press cam follower ❶ with fingers to the left (in direction of arrow Ⓔ) to fit roller ❷ to in groove Ⓒ in thread trimming cam ❸.
3) In this state, turn handwheel ❻ in the direction which is opposite to the normal direction of rotation until handwheel ❻ will go no further. (If the handwheel is turned further, it reaches the position at which cam follower ❶ starts moving.)
   At this time, marker line Ⓐ on pulley cover ❺ aligns with green marker dot Ⓑ on handwheel ❻.

7-3-2. Adjustment of the thread trimming cam timing

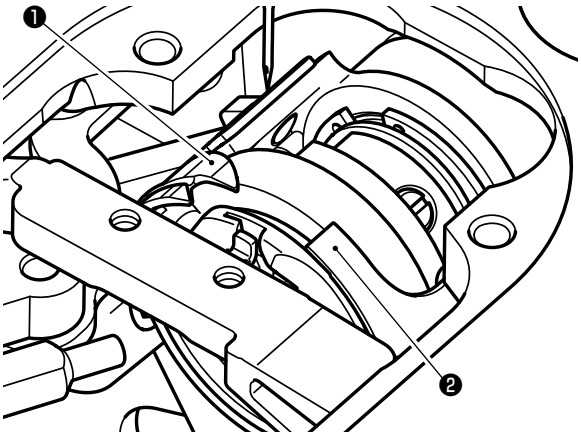
1) Tilt the sewing machine head.
2) Loosen the screws No.1 and No. 2 of thread trimming cam setscrew ❼ in the written order.
3) Align marker line Ⓐ on pulley cover ❺ with green marker dot Ⓑ on handwheel ❻. (H type : White marker dot Ⓑ´)
4) Pressing cam follower ❶ to the left (in the direction of arrow Ⓔ), engage thread trimming cam ❸ with roller ❷. Then, turn only thread trimming cam ❸ with fingers in the direction which is opposite to the normal direction of rotation of feed driving shaft ❹ until it will go no further without turning feed driving shaft ❹. At this position, tighten the screws No. 1 and No. 2 of thread trimming cam setscrew ❼ in the written order while pressing thread trimming cam ❸ against roller ❷.

1. In the case of using a high-count filament thread, thread loop formation may be unstable. If faulty loop spreading occurs in this state, correct the thread trimming cam timing by aligning the marker line on the pulley cover with the red marker dot, instead of the green marker dot, on the handwheel.

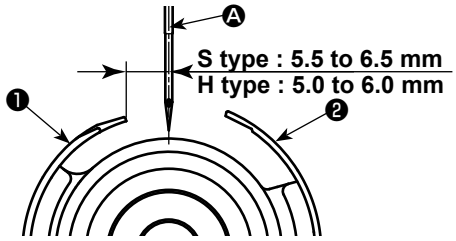
2. The alignment point between thread trimming cam ❸ and roller ❷ is position (Ⓕ) from which cam follower ❶ starts moving. Position (Ⓖ) at which you feel that thread trimming cam ❸ comes in contact with roller ❷ for the first time during adjustment is not the correct alignment position.
   *** Be sure to correct the thread trimming cam timing carefully since it largely affects the loop spreading timing.**

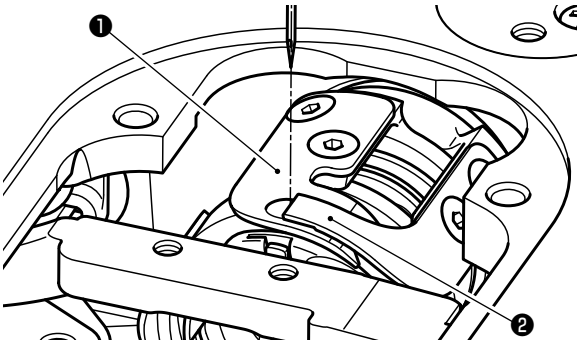
7-3-3. Checking of the knife unit

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

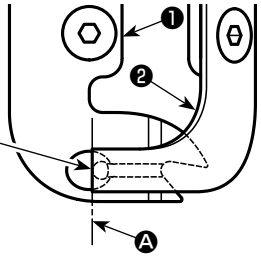


Standby state of the knife

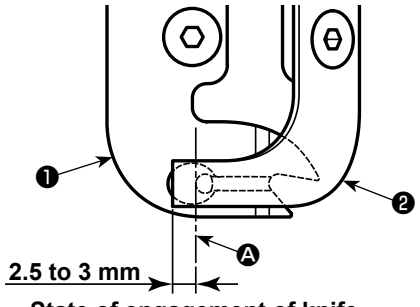




Aligning state of salient portion of loop spreading knife and thread trimming knife



Far end of the hole in loop spreading knife ❶ aligns with the tip of thread trimming knife ❷



State of engagement of knife

1) Check to make sure that the power switch is in the OFF state. Remove the gauge (presser foot, throat plate and feed dog) from around the needle.
2) In the standby state of loop spreading knife ❶, the distance from center of needle Ⓐ to the tip of loop spreading knife ❶ is 5.5 to 6.5 mm (H type : 5.0 to 6.0 mm).

Caution
Be aware that, if the distance between loop spreading knife ❶ and center of needle Ⓐ is reduced, thread loop is likely to interfere with loop spreading knife ❶.

* Refer to **"7-3-4. Adjustment of the knife unit" p. 72** for how to adjust it.

3) The purpose of adjustment of the aligning position of loop spreading knife ❶ and thread trimming knife ❷ (far end of the hole in loop spreading knife ❶ and the tip of thread trimming knife ❷) is to align the aforementioned aligning position with center of needle Ⓐ.

Caution
Be aware that, if the aligning position of the loop spreading knife and the thread trimming knife does not align with center of needle Ⓐ, the length of thread remaining on the material after thread trimming will be longer.

4) The amount of engagement between loop spreading knife ❶ and thread trimming knife ❷ is 2.5 to 3 mm as measured from center of needle Ⓐ.

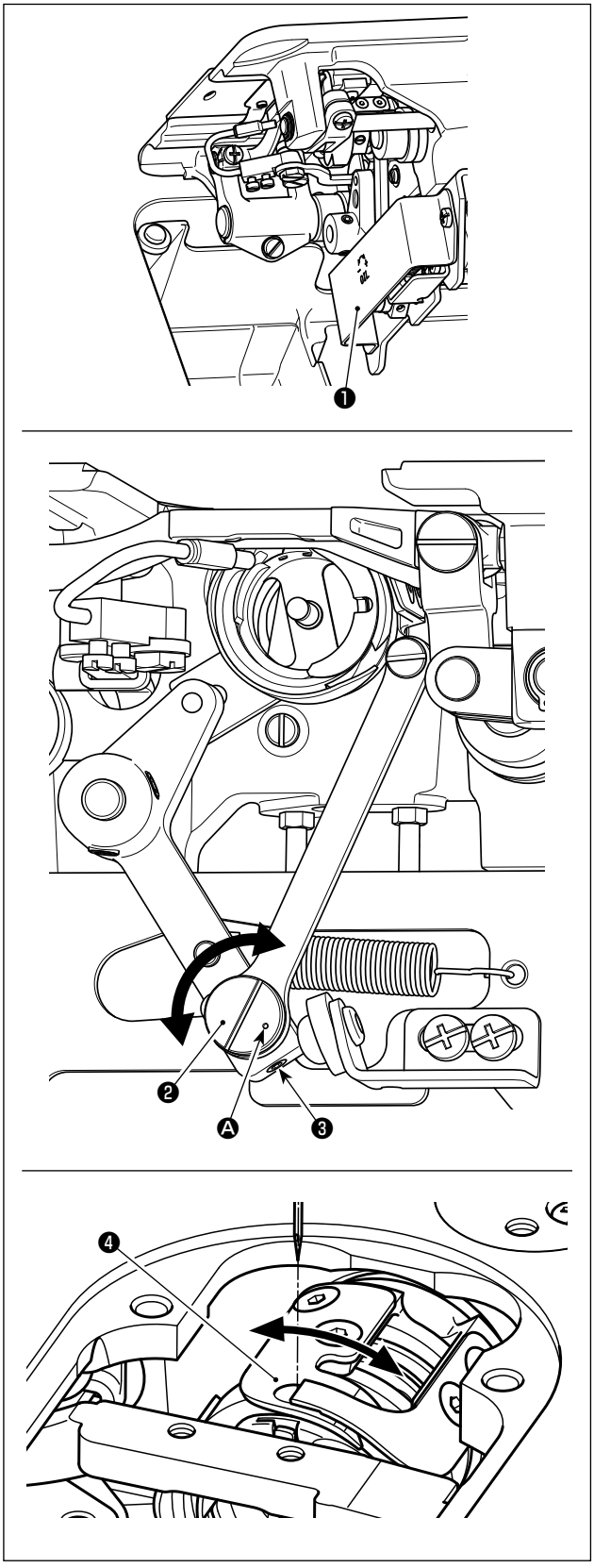
Caution
Be aware that, if the amount of engagement between them is insufficient, faulty thread trimming can occur.

* Refer to **"7-3-4. Adjustment of the knife unit" p. 72** for how to adjust it.

Caution
The needle thread may be trimmed excessively short in the case thread such as filament thread which is likely to cause unstable thread loop formation is used or thread trimming is carried out at a position where there is no material. If the aforementioned phenomenon occurs, it should be corrected by carrying out the below-stated procedure.
- **Make the thread take-up spring stroke larger than the standard value.**
- **Make the pitch for thread trimming during condensation stitch larger than the standard pitch.**
- **Turn OFF the condensation stitch operation when carrying out thread trimming at a position where there is no material.**

7-3-4. Adjustment of the knife unit

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



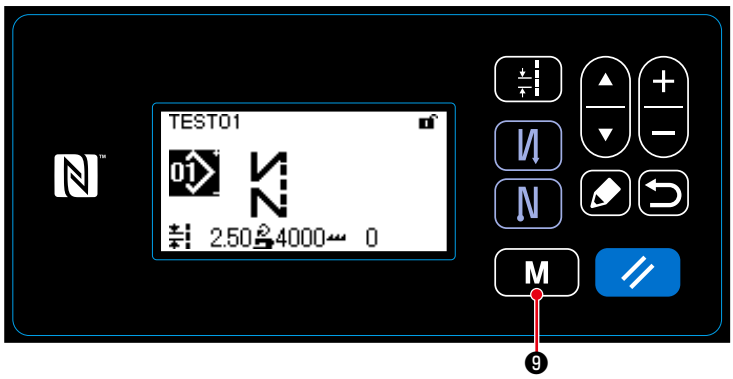
1) Check to make sure that the power switch is in the OFF state. Remove the gauge (presser foot, throat plate and feed dog) from around the needle.
2) Tilt the sewing machine head.
3) Remove protective cover ❶.
4) Loosen loop spreading knife eccentric pin setscrews ❸ (two pieces). Turn loop spreading knife eccentric pin ❷ with a flat-blade screwdriver to finely adjust the rotational-direction position of loop spreading knife ❹.
5) After the adjustment, tighten loop spreading knife eccentric pin setscrews ❸ (two pieces).
6) Attach protective cover ❶ back in place.

Position of marker dot Ⓐ on loop spreading knife eccentric pin ❷ should be adjusted only from the operator's side.

7-3-5. Adjustment of thread trimming speed

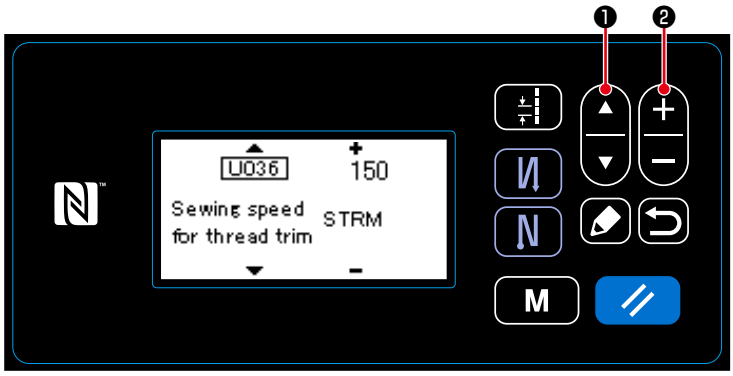
The thread trimming speed has been adjusted to 300 sti/min (H type : 220 sti/min) at the time of shipment. This means that the high-speed thread trimming has been selected.

Depending on the type of thread to be used, the thread trimming speed should be increased. On the other hand, in the case of using fragile thread (such as a high-count filament type thread or cotton thread), the thread trimming speed should be decreased to reduce damage to the thread.
Thread trimming speed should be adjusted when appropriate according to the sewing process.



[How to adjust]

1) Press M ❾.

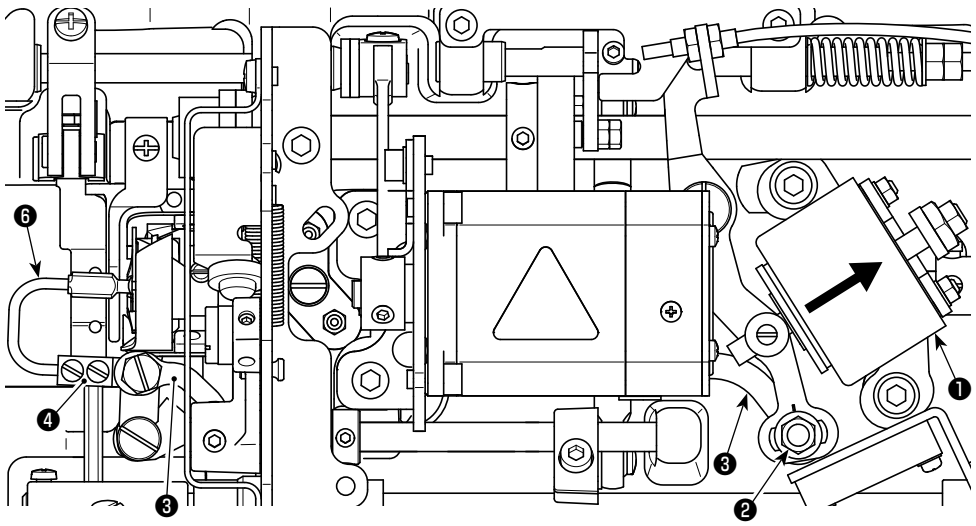


2) Press ▲ ▼ ❶ to align the cursor on "U036". Input a thread trimming speed with + − ❷.

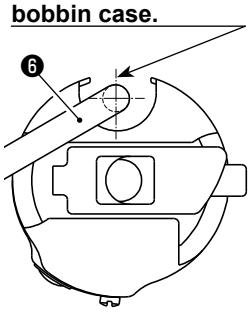
No.	Item	Setting range	Unit
U036	**Speed during thread trimming** The maximum number of revolutions during thread trimming differs with the machine head.	150 to Max. of thread trimming	sti/min

7-4. Adjustment of the picker

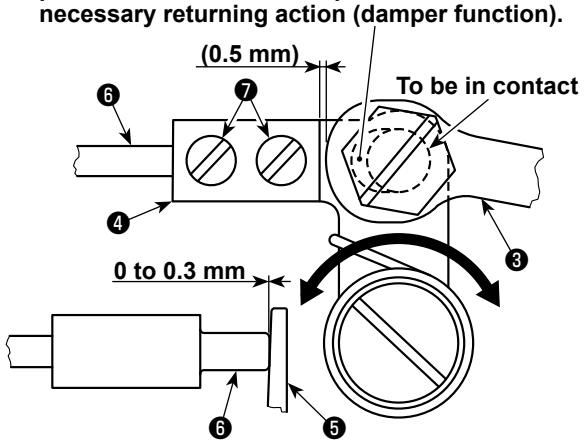
WARNING :
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



In the standard adjustment state of the picker, the center of picker ❻ is almost aligned with the center of U-shape section of bobbin case.



Once the standard adjustment is carried out correctly, there is a slot-shape space in picker link ❸ to allow the picker to make a necessary returning action (damper function).



The picker device is used in order to stabilize idling of the bobbin at the time of thread trimming.

When it is necessary to check how the picker is adjusted, install the bobbin case and bobbin in the hook first, then check the picker.

7-4-1. Checking the standard adjustment

1) Check to make sure that the power switch is in the "OFF" state. Tilt the sewing machine.
2) Bring thread trimming solenoid ❶ in the pull-in state by hand.
3) In this state, the standard adjustment value of the clearance between picker link ❸ and picker arm ❹ is 0.5 mm. At this time, a clearance of 0 to 0.3 mm is provided between bobbin ❺ and picker ❻.

7-4-2. Standard adjustment

1) Loosen picker link pin nut ❷ (9 mm). Carry out adjustment by moving picker link ❸ to the right and left.
2) After the adjustment, tighten picker link pin nut ❷.

7-4-3. Standard adjustment (Adjustment at the tip position)

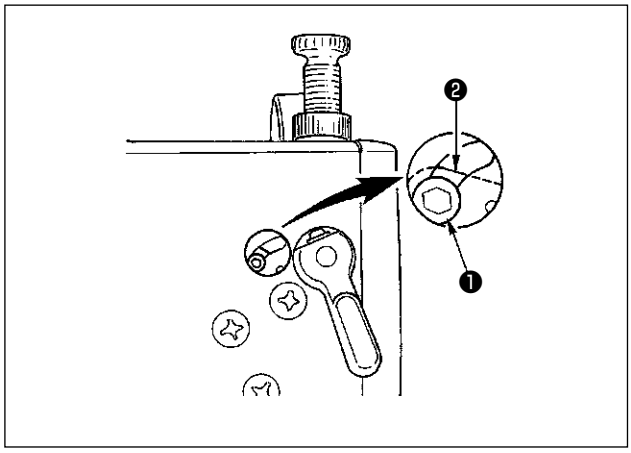
1) Loosen picker setscrews ❼ (two pieces). Adjust the position of picker.
2) After the adjustment, tighten picker setscrews ❼ (two pieces).

1. If there is no clearance between bobbin ❺ and the tip of picker ❻, picker ❻ strongly press bobbin ❺. As a result, the bobbin fails to supply a required length of bobbin thread at the time of thread trimming. In this case, the bobbin thread is likely to be trimmed short and thread slip-off at the beginning of sewing is likely to occur.

2. If there is an excessively large clearance between bobbin ❺ and the tip of picker ❻, thread required for thread trimming may slip off the tip of picker and the length of needle thread remaining at the needle tip after thread trimming will be short. In addition, bobbin ❺ is likely to idle frequently at the time of thread trimming causing problems at the beginning of sewing.

7-5. Thread tension release releasing mechanism

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



By means of the thread tension release releasing mechanism, sewing can be performed without slackening the needle thread tension even when the presser foot is lifted during sewing.
(Even when the presser foot is slightly lifted at the thick overlapped section by the knee lifter, this mechanism can prevent the thread tension from being changed.)

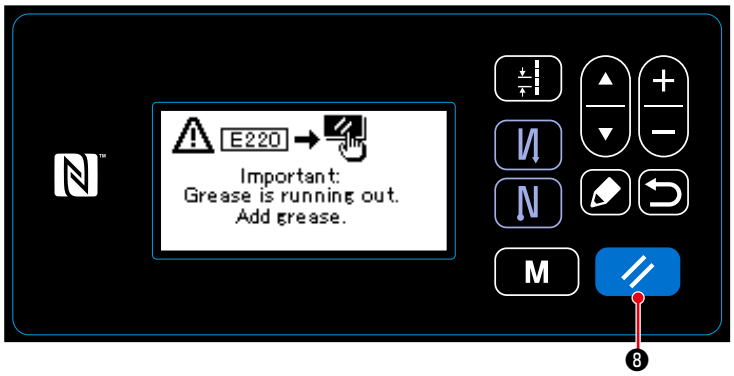
[How to release]

1) Remove the cap in the machine head and loosen thread tension release changeover screw ❶ using a hexagon wrench.
2) Fix screw ❶ on the top of thread tension release changeover plate ❷.
   The thread tension disk does not rise even when the presser foot is lifted, and the needle thread tension is not loosened. (The thread tension disk rises only when thread trimming is performed.)

Caution

Do not use screw ❶ at any position other than the top or bottom position of the thread tension release changeover plate ❷.
*** The screw has been factory-set to the bottom position at the time of delivery.**

7-6. Grease shortage alarm



7-6-1. Regarding the grease shortage alarm

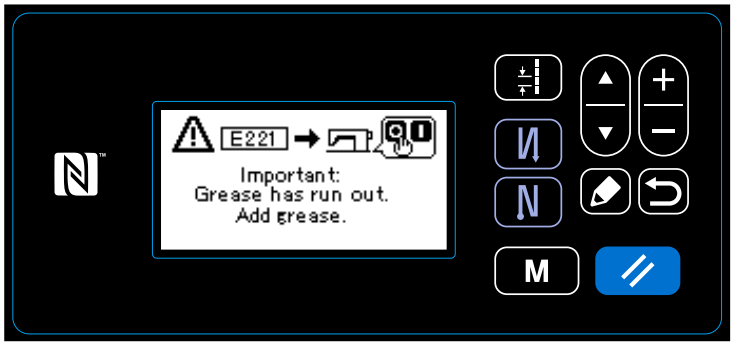
When the time of maintenance of grease approaches, the error message "E220 Warning against shortage of grease" is displayed.

This error is reset by pressing ❽. In this state, the sewing machine can be continuously used for a certain period of time.

Caution

Once the error message E220 is displayed, be sure to add grease for maintenance.

* Refer to **"7-6-3. Regarding K118 error resetting procedure" p. 77** in the case of carrying out error resetting (K118).

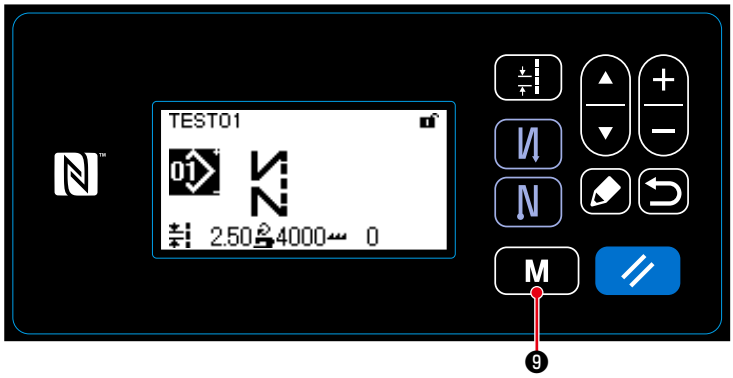


7-6-2. E221 Grease-shortage error

If the error message "E220" is not reset, the error message "E221 Grease-shortage error" will be displayed.

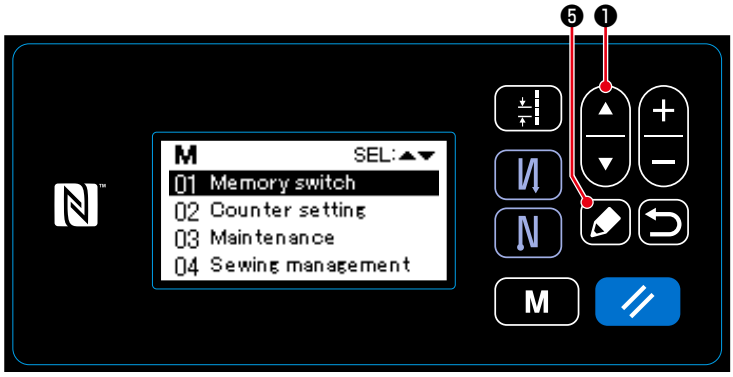
In this case, the sewing machine operation is disabled. Be sure to add grease and carry out error resetting (K118).

* Refer to **"7-6-3. Regarding K118 error resetting procedure" p. 77** in the case of carrying out error resetting (K118).

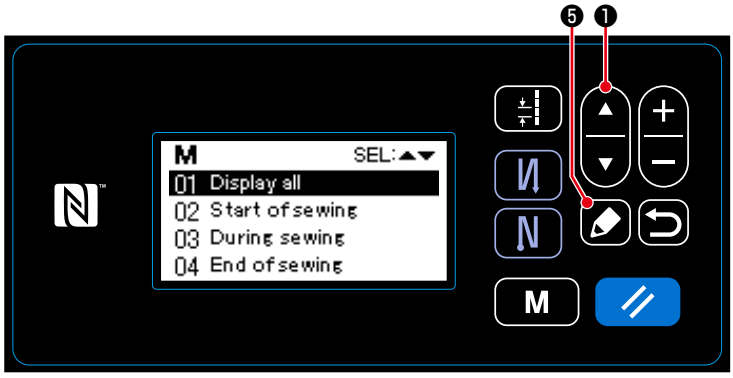


7-6-3. Regarding K118 error resetting procedure

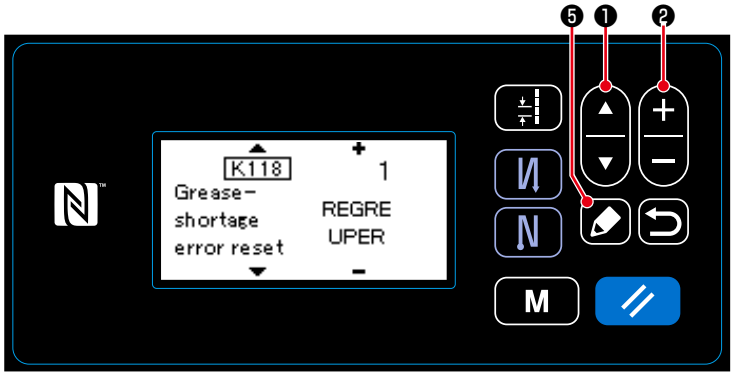
1) Keep M ❾ held pressed for six seconds.



2) Select "01 Memory switch" by pressing ❶. Press ❺.



3) Select "01 Display all" by pressing ❶. Press ❺.



4) Select "K118" by pressing ❶.

5) Press ❷ to set the setting to "1". Then, press ❺.

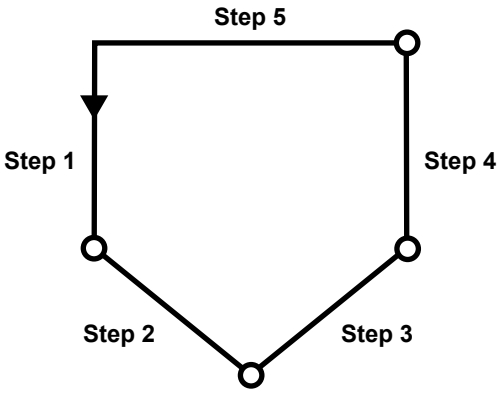
This resets the error to bring the sewing machine back to the normal operation. The sewing machine can run normally until the next maintenance period is reached.

8. HOW TO USE THE OPERATION PANEL (APPLICATION)

8-1. Setting up the polygonal-shape stitching

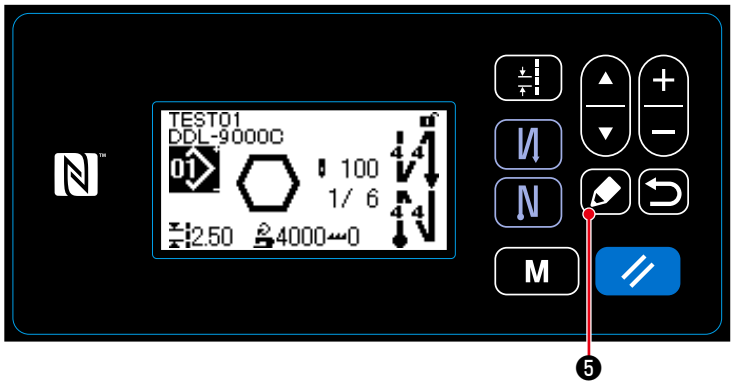
A polygonal-shape stitching pattern consists of 20 steps (at the maximum) of constant-dimension sewing patterns. Specific sewing conditions can be set on a step-by-step basis.

<Example of pattern>



8-1-1. Edit method

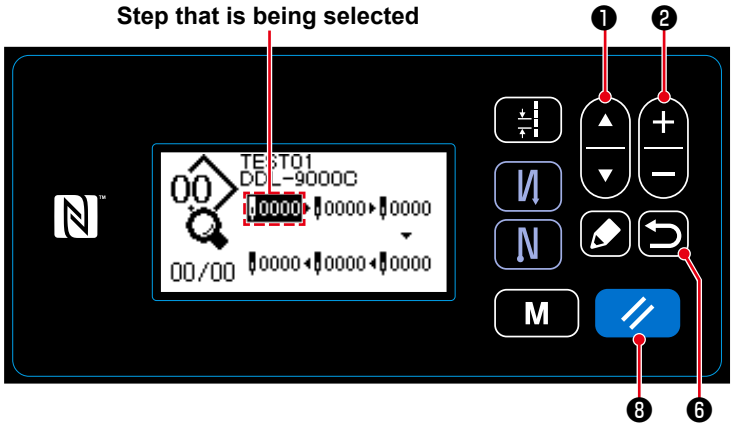
① Displaying the polygonal-shape stitching pattern edit screen



<Sewing screen (Polygonal-shape stitching pattern)>

Keep ❺ held pressed for one second on the sewing screen which appears when the polygonal-shape stitching is selected. Then, the polygonal-shape stitching pattern edit screen is displayed.

② Selecting the step to edit



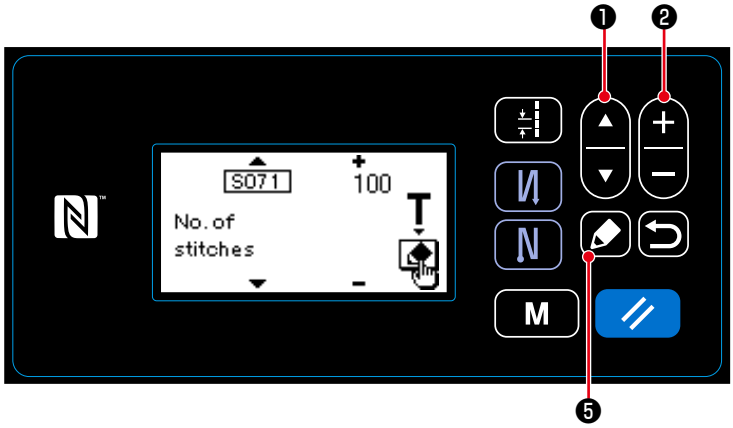
<Polygonal-shape stitching pattern edit screen>

1. Select a step by pressing ❶.
   (The step that is being selected is displayed in reverse video.)
2. In the case there is an unused step(s), a step(s) can be added by following the procedure described below. The step adding procedure is cancelled and the current screen is returned to the sewing screen by pressing ❻. (The step is displayed as a tentative step "" during the adding procedure. The tentative step is confirmed as an added step by setting the number of stitches and pitch.)

- A step is added after the currently-selected step by pressing "+", or before the currently-selected step by pressing "−" of ❷.
- A step is added at the end of steps by pressing "▼" of ❶ while the leading step is being selected.
- A step is added at the end of steps by pressing "▲" of ❶ while the ending step is being selected.

3. The step that is being selected can be deleted by pressing ❽. All the steps in a polygonal-shape stitching pattern can be deleted by keeping it held pressed for one second.

③ Setting the number of stitches and pitch of the selected step



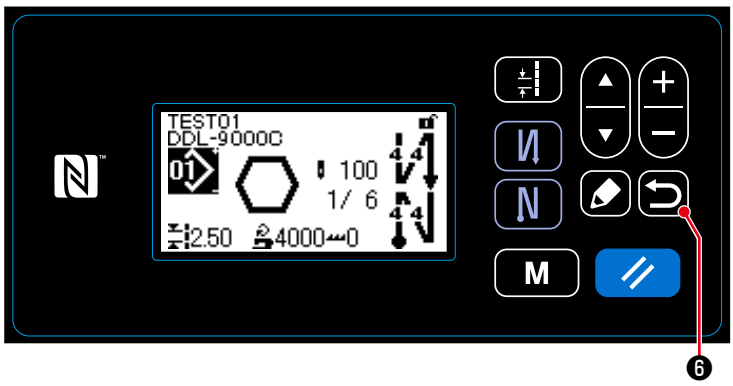
<Polygonal-shape stitching pattern step edit screen>

1. Press ❺ while a step is being selected. Then, the polygonal-shape stitching pattern step edit screen is displayed.
2. Select an item to edit by pressing ❶. Then, edit the item by pressing ❷. Items that can be edited in this procedure are same with those of sewing pattern that can be edited.

Refer to **"4-2-4.(2) Setting items for the polygonal-shape stitching steps" p.36**.

* The teaching screen is displayed by pressing ❺ during selection of the number of stitches. (Only in the case the number of stitches can be changed.) Refer to **"4-2-6. Teaching function" p.38.**

④ Performing sewing using the edited sewing pattern

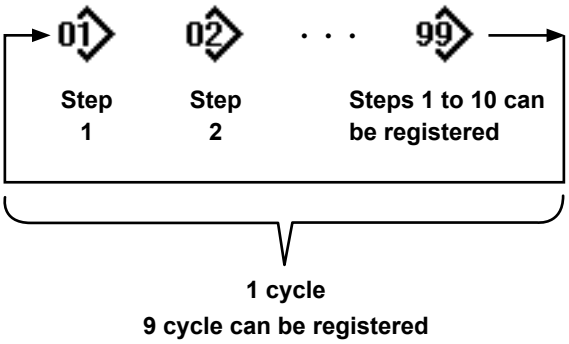


<Sewing screen (Polygonal-shape stitching pattern)>

Press ❻ to confirm the data and return the current screen to the polygonal-shape stitching pattern edit screen. This screen reflects the data you have set in the aforementioned procedure.

Press ❻ again to return the current screen to the sewing screen of the polygonal-shape stitching pattern you have edited.

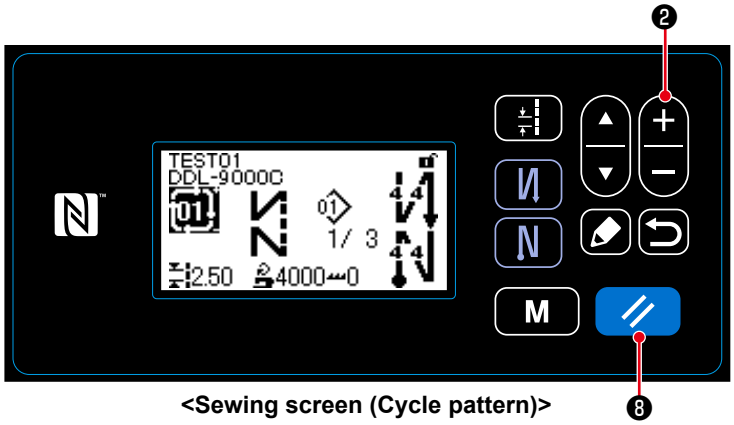
8-2. Cycle pattern



It is possible to combine several different sewing patterns as one cycle pattern for sewing.
As many as 10 patterns can be input in one cycle pattern. This function is helpful in the case several different patterns are regularly repeated in a product sewing process.

As many as 9 cycle patterns can be registered.
Copy the cycle pattern when necessary.

8-2-1. Selecting the cycle pattern



<Sewing screen (Cycle pattern)>

Press + − ❷ on the sewing screen.

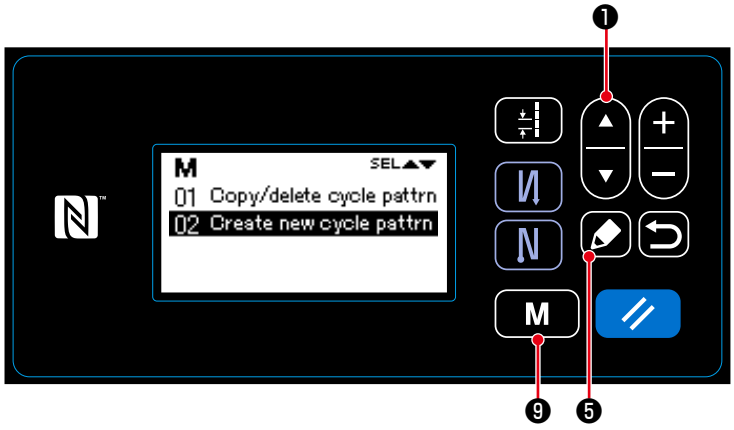
The registered patterns are displayed in sequence. Cycle patterns are displayed after sewing patterns.
Sewing is enabled by selecting a desired cycle pattern number.

No cycle pattern has been factory-registered at the time of shipment. Create a new cycle pattern(s) referring to **"8-2-2. Creating a new cycle pattern" p.81**.

* It is possible to return the current step to the previous step and to sew the latter again by pressing // ❽ on the cycle pattern sewing screen.

8-2-2. Creating a new cycle pattern

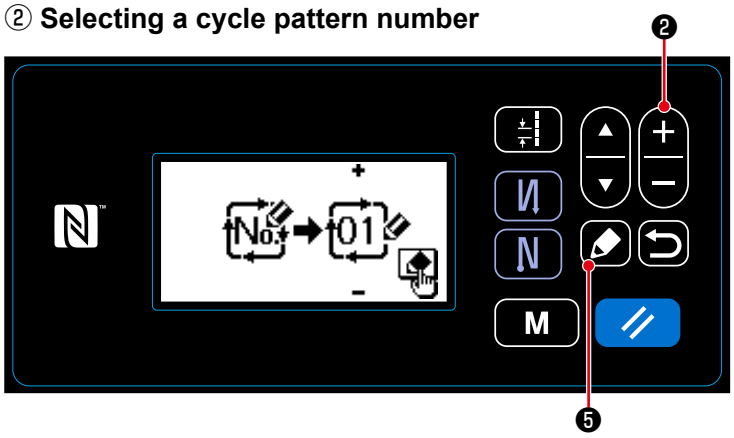
① Selecting the new cycle pattern creating function



<Cycle pattern management screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "04 Cycle management" by pressing ▲ ▼ ❶ Then, press ✎ ❺ to display the cycle pattern management screen.
3. Select "02 Create new cycle pattrn" by pressing ▲ ▼ ❶ . Then, press ✎ ❺ to display the new cycle pattern creation screen.

② Selecting a cycle pattern number

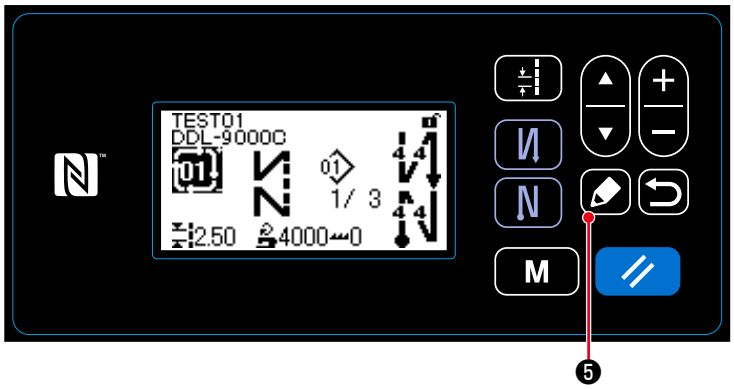


<New cycle pattern creation No. selection screen>

1. Select No. 1 by pressing + − ❷ .
2. Press ✎ ❺ to confirm the data and return the current screen to the cycle pattern management screen.

8-2-3. Editing the cycle patterns

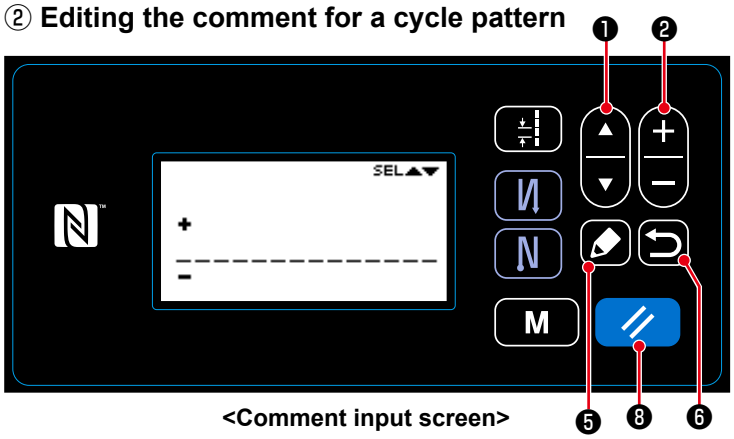
① Displaying the cycle pattern edit screen



<Sewing screen(Cycle pattern)>

The cycle pattern edit screen is displayed by pressing ❺ on the sewing screen which appears when the cycle pattern is selected.

② Editing the comment for a cycle pattern

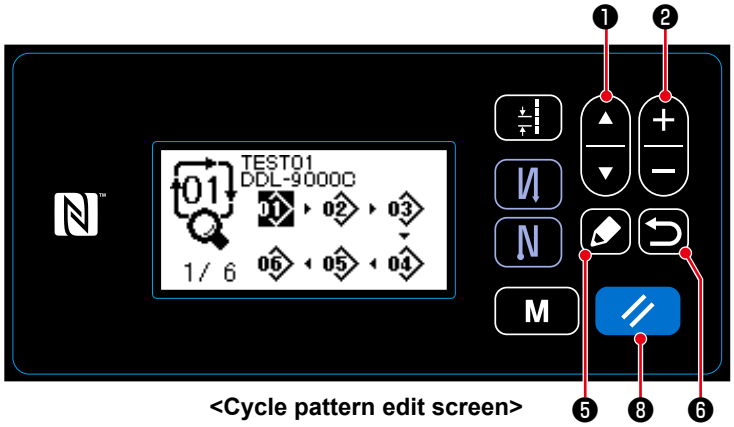


<Comment input screen>

1. Select a comment by pressing ❶ . Select a comment by pressing ❺ to display the comment input screen.
2. Select what number of character to edit by pressing ❶ . Then, press ❷ to input a new character. The "+/−" is displayed at the top and bottom of the selected character.)
3. The selected character can be deleted by pressing ❽ . All characters can be deleted by keeping it held pressed for one second.
4. Press ❻ to confirm the data and return the current screen to the cycle pattern edit screen.

Character can be input
A-Z, 0-9, ., +, –, /, #, (Space) and (Break)

③ Editing cycle pattern steps

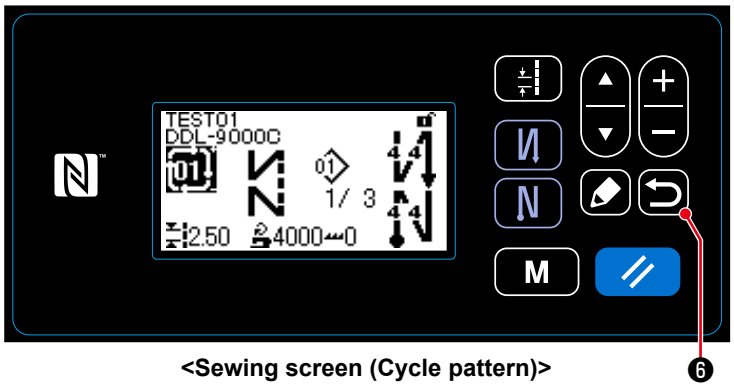


<Cycle pattern edit screen>

1. Select a step by pressing ▲ ▼ ❶ .
2. Pattern number of a step can be changed by pressing + − ❷ while the step is being selected.

3. Addition of a step can be canceled and the sewing screen is displayed by pressing ❻ . (The step is displayed as a tentative step "Make" during adding procedure. The tentative step is confirmed as an added step by setting the pattern number.)
   - Press ❺ to add a step before the step which is being selected.
   - A step is added at the end of steps by pressing "▲" of ▲ ▼ ❶ while the ending step is being selected.
4. The step that is being selected can be deleted by pressing // ❽ . All steps included in a cycle pattern can be deleted by keeping // ❽ held pressed for one second.

④ Confirming the edit data



<Sewing screen (Cycle pattern)>

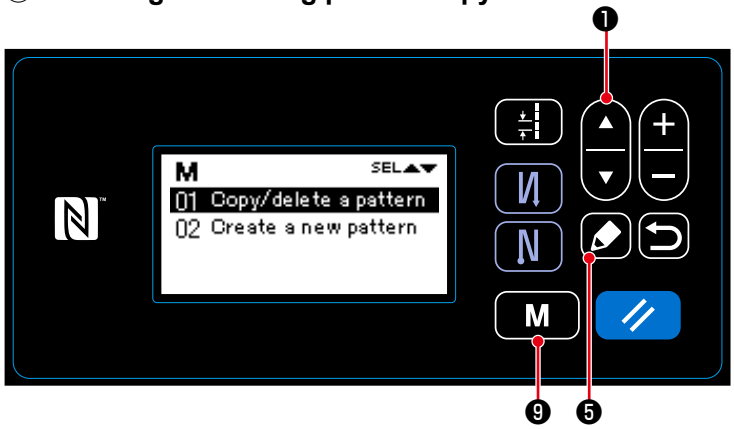
Press ❻ to confirm the data and return the current screen to the sewing screen of the edited cycle pattern.

8-3. Copying a pattern

The selected pattern (sewing pattern and cycle pattern) can be copied to any other pattern of the specified number. The existing pattern cannot be overwritten. Delete it first and copy the selected pattern.

8-3-1. Copying a sewing pattern

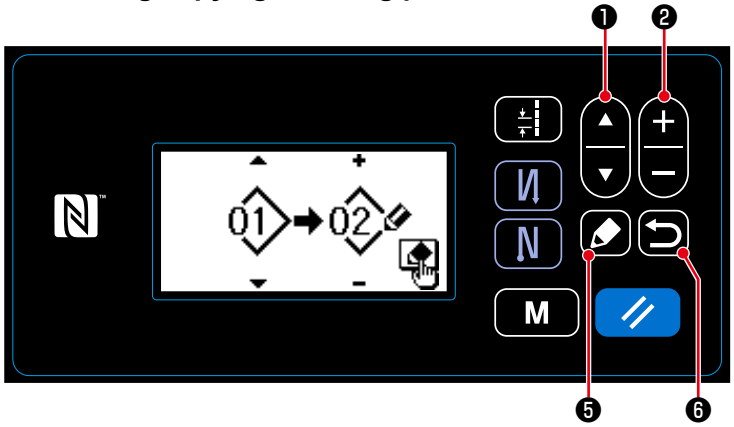
① Selecting the sewing pattern copy function



<Sewing pattern management screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "03 Sewing management" by pressing ▲ ▼ ❶. Then, press ✎ ❺ to display the sewing pattern management screen.
3. Select "01 Copy/delete a pattern" by pressing ▲ ▼ ❶. Then, press ✎ ❺ to display the sewing pattern copy/deletion screen.

② Creating/copying a sewing pattern



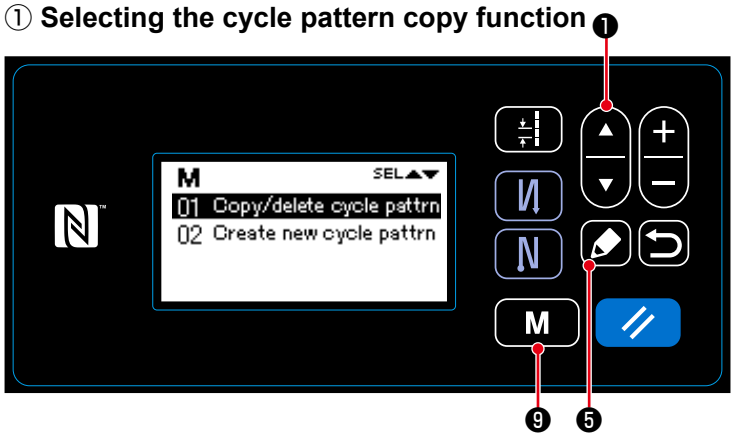
<Sewing pattern copy/deletion screen>

1. Select a source pattern number by pressing ▲ ▼ ❶. Select a destination pattern number by pressing + − ❷.

2. Execute or cancel copy of the pattern following the procedure described below.
   - Press ✎ ❺ to execute copy. Then, the current screen is returned to the sewing pattern management screen.
   - Press ⮌ ❻ to display the copy cancellation confirmation screen. Press ⮌ ❻ again to cancel copy. Then, the current screen is returned to the sewing pattern management screen.

8-3-2. Copying a cycle pattern

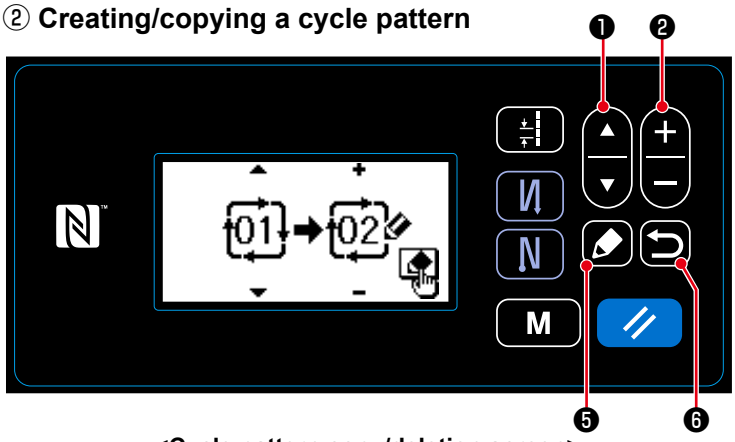
① Selecting the cycle pattern copy function



<Cycle pattern management screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "04 Cycle management" by pressing ▲ ▼ ❶ . Then, press ✎ ❺ to display the cycle pattern management screen.
3. Select "01 Copy/delete cycle pattrn" by pressing ▲ ▼ ❶ . Then, press ✎ ❺ to display the cycle pattern copy/deletion screen.

② Creating/copying a cycle pattern



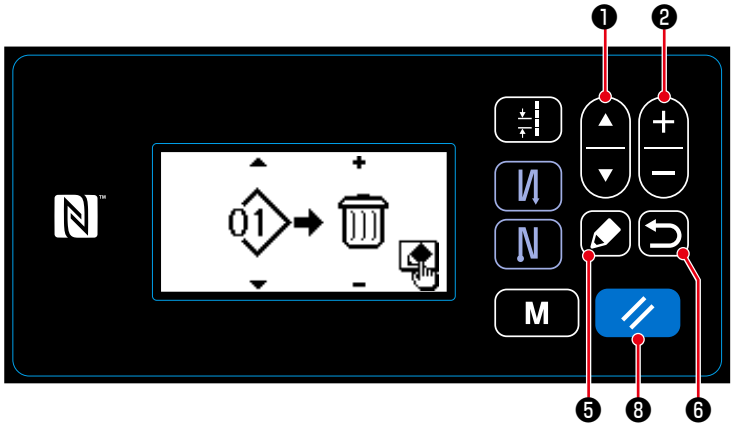
<Cycle pattern copy/deletion screen>

1. Select a source pattern number by pressing ▲ ▼ ❶ . Select a destination pattern number by pressing + − ❷ .

2. Execute or cancel copy of the cycle pattern following the procedure described below.
   - Press ✎ ❺ to execute copy. Then, the current screen is returned to the cycle pattern management screen.
   - Press ⮌ ❻ to display the copy cancellation confirmation screen. Press ⮌ ❻ again to cancel copy. Then, the current screen is returned to the cycle pattern management screen.

8-4. Deleting a pattern

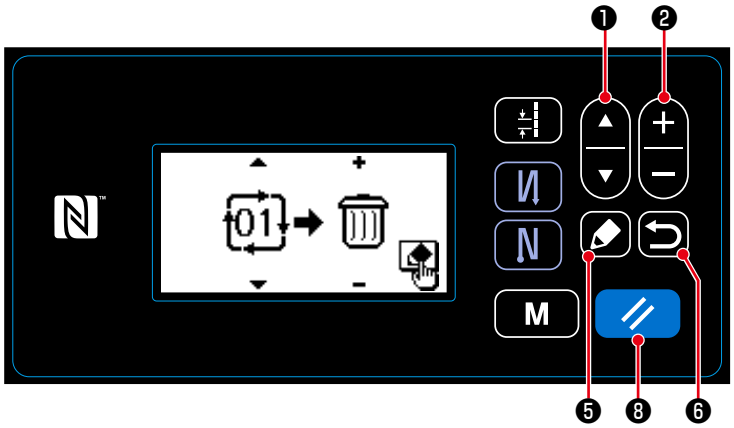
8-4-1. Deleting a sewing pattern



<Sewing pattern copy/deletion screen>

1. Display the sewing pattern copy/deletion screen referring to **"8-3-1. Copying a sewing pattern" p.84**.
2. Select a sewing pattern No. to delete by pressing ▲ ▼ ❶. Select the trash by pressing + − ❷.
3. Press ❺ to display the deletion confirmation screen. Press ❽ to delete the pattern.
4. Execute or cancel deletion following the procedure described below.
   - Press ❽ to execute deletion. Then, the current screen is returned to the sewing pattern management screen.
   - Press ❻ to cancel deletion. Then, the current screen is returned to the sewing pattern copy/deletion screen.

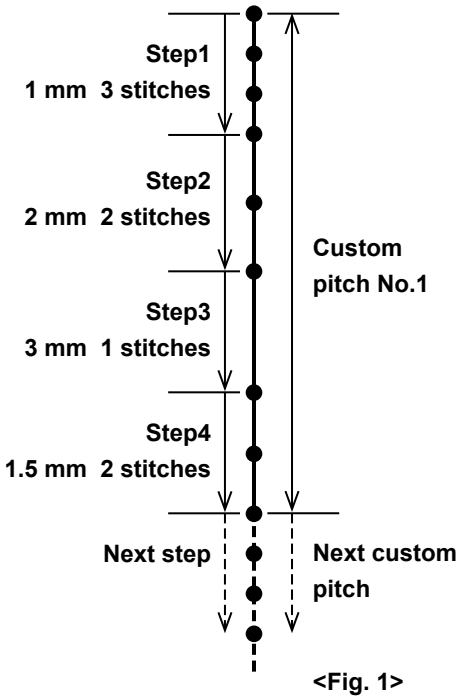
8-4-2. Deleting a cycle pattern



<Cycle pattern copy/deletion screen>

1. Display the cycle pattern copy/deletion screen referring to **"8-3-2. Copying a cycle pattern" p.85**.
2. Select a cycle pattern No. to delete by pressing ▲ ▼ ❶. Select the trash by pressing + − ❷.
3. Press ❺ to display the deletion confirmation screen. Press ❽ to delete the pattern.
4. Execute or cancel deletion following the procedure described below.
   - Press ❽ to execute deletion. Then, the current screen is returned to the cycle pattern management screen.
   - Press ❻ to cancel deletion. Then, the current screen is returned to the cycle pattern copy/deletion screen.

8-5. Custom pitch



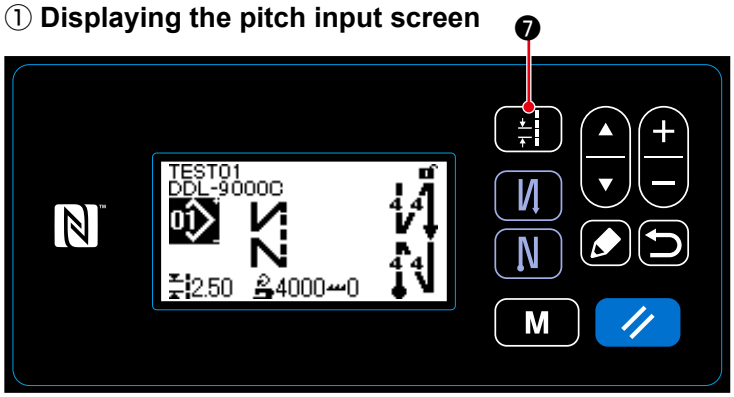
<Fig. 1>

It is possible to register as many as 20 different sewing designs each of which consists of several different pitches (10 steps at the maximum).
As many as 100 stitches of the same pitch can be set in one step.

8-5-1. Selecting a custom pitch

Select an already-created custom pitch.

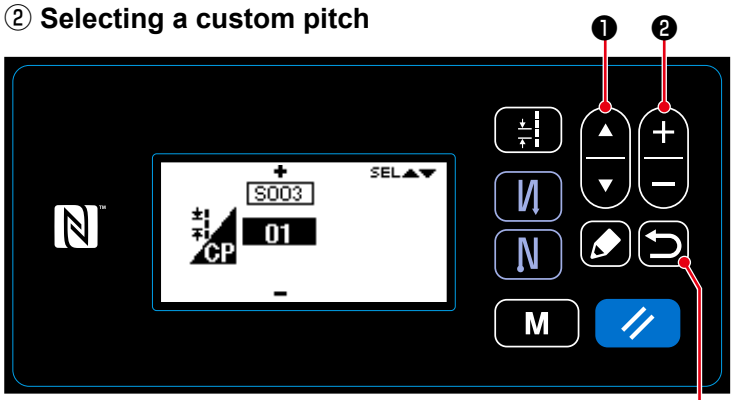
① Displaying the pitch input screen



<Sewing screen>

Press ❼ on the sewing screen to display the pitch input screen.

② Selecting a custom pitch



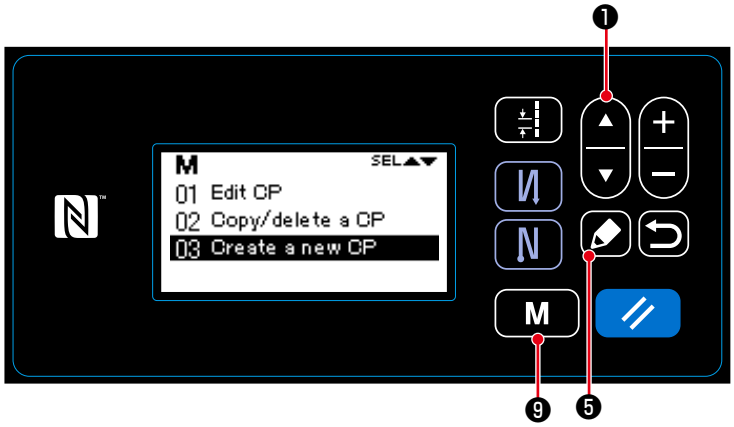
<Pitch input screen>

1. Select a custom pitch with ❶.
2. Press ❷ to display the desired custom pitch number.
3. Press ❻ to confirm your selection and display the sewing screen.

8-5-2. Creating a new custom pitch

Create the new custom pitch No. 1 shown in <Fig. 1> as an example.

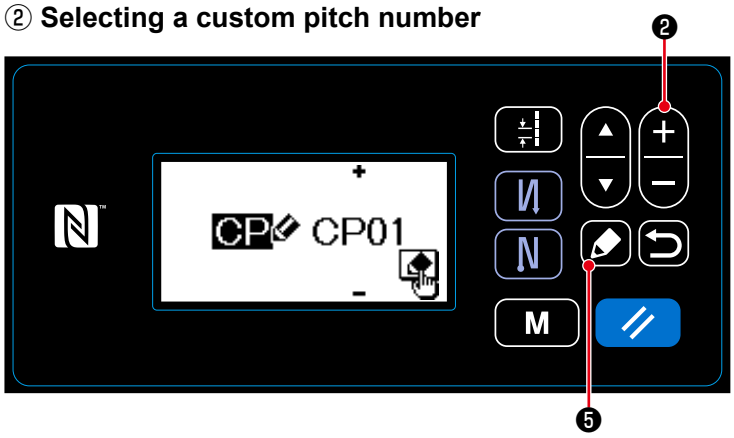
① Selecting the new custom pitch creating function



<Custom pitch management screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "05 CP management" by pressing ❶ Then, press ❺ to display the custom pitch management screen.
3. Select "03 Create a new CP" by pressing ❶ . Then, press ❺ to display the new custom pitch creation screen.

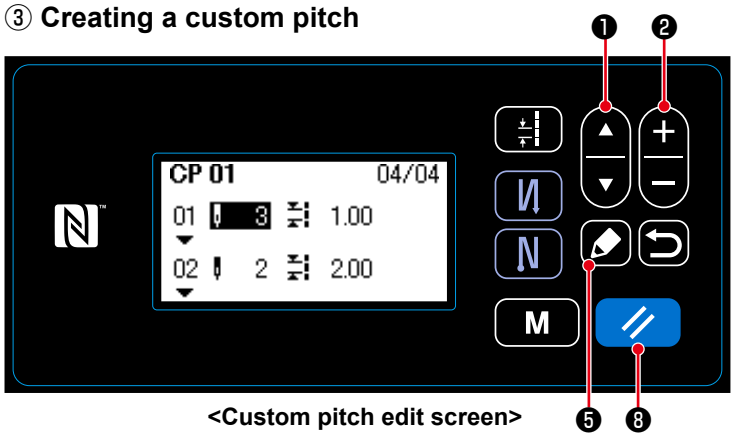
② Selecting a custom pitch number



<New custom pitch creation No. selection screen>

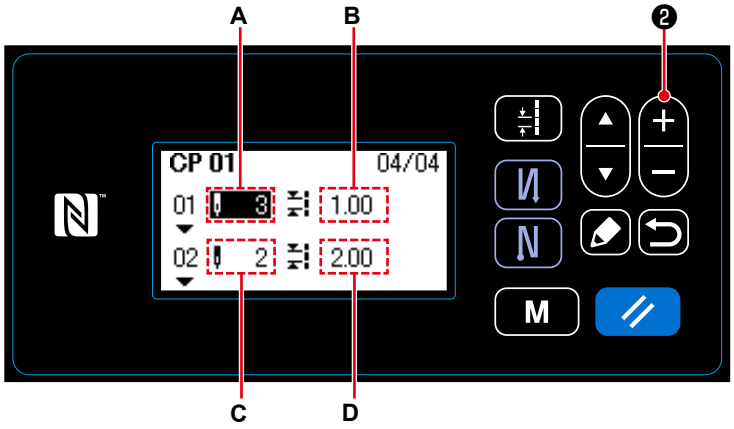
1. Select No. 1 by pressing ❷ .
2. Press ❺ to display the new custom pitch creation screen.

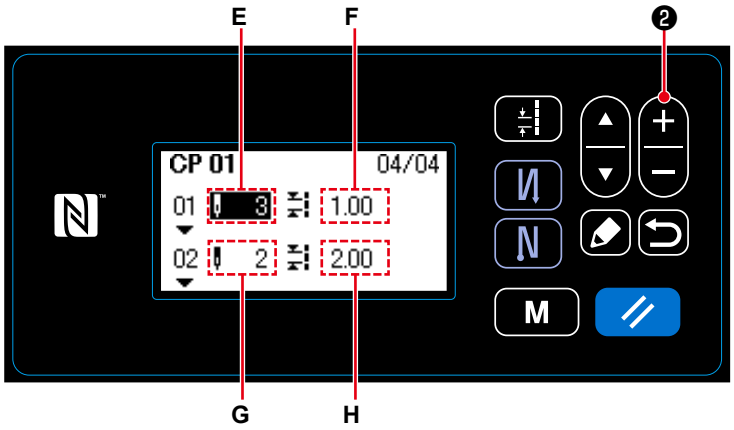
③ Creating a custom pitch



<Custom pitch edit screen>

1. Select the number of stitches or the pitch by pressing ❶ .
2. The numeric value which is being selected can be changed by pressing ❷ .
3. In the case there is an unused step(s), a step(s) can be added before the step which is being selected by pressing ❺ .
4. Press ❽ to delete the step which is being selected.





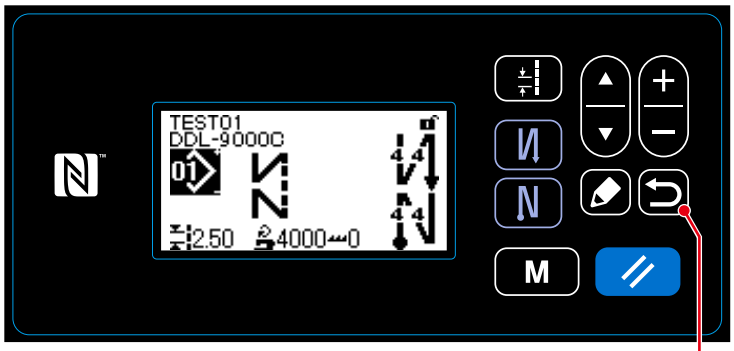
<Custom pitch edit screen>

1) In the case of setting the number of stitches
   The number of stitches can be input in the range from 0 to 100.
   Set the number of stitches **A** for step 1 to 3 by pressing + − ❷ .

2) In the case of setting the pitch
   The pitch can be input in the range from –5.00 to 5.00 mm.
   Set the pitch **B** for step 1 to 1.00 mm by pressing + − ❷ .

3) Carry out the following setting in the similar manner.
   For step 2, set the number of stitches **C** to 2, and the pitch **D** to 2.00 mm.
   For step 3, set the number of stitches **E** to 1, and the pitch **F** to 3.00 mm.
   For step 4, set the number of stitches **G** to 2, and the pitch **H** to 1.50 mm.

④ Confirming the numeric value



<Sewing screen>

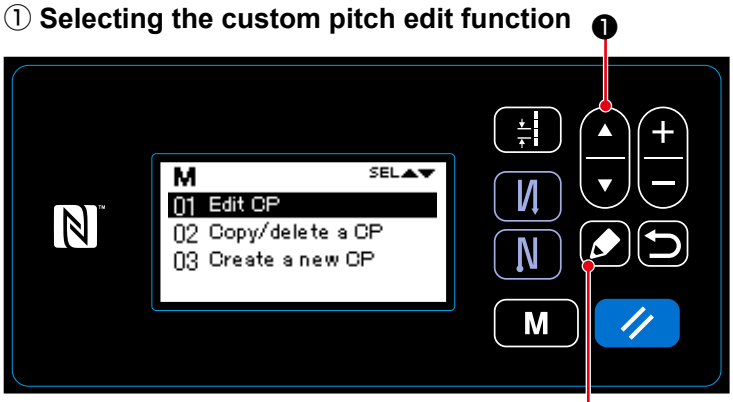
Press ❻ to confirm the data and return the current screen to the Custom pitch management screen.

Press ❻ again to return the current screen to the mode screen.

Press ❻ yet again to return the current screen to the sewing screen.

8-5-3. Custom pitch edit function

① Selecting the custom pitch edit function



<Custom pitch management screen>

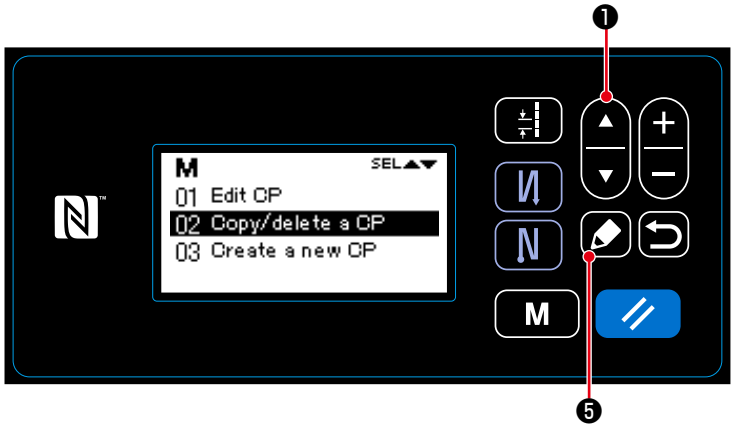
1. Display the custom pitch management screen referring to **"8-5-2. Creating a new custom pitch" p.88**.
2. Select "01 Edit CP" by pressing ▲ ▼ ❶. Then, press ❺ to display the custom pitch management screen.

Hereafter, the steps of procedure to be taken are same with those in the case of creating a new custom pitch.
Refer to **"8-5-2. Creating a new custom pitch" p.88**.

8-5-4. Copying/deleting a custom pitch

(1) Copying a custom pitch

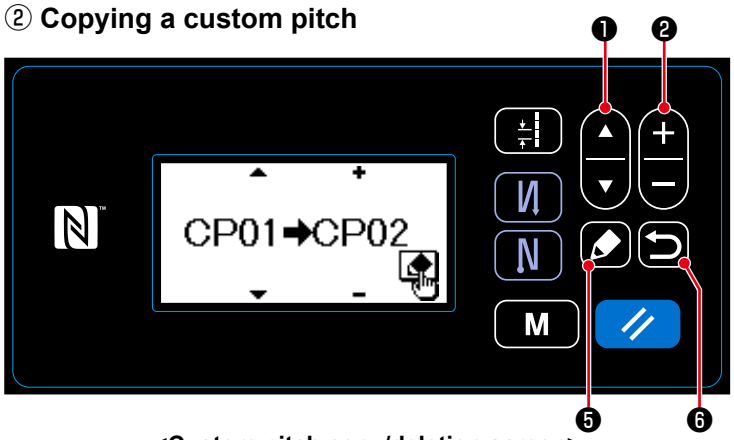
① Selecting the custom pitch copy function



<Custom pitch management screen>

1. Display the custom pitch management screen referring to **"8-5-2. Creating a new custom pitch" p.88**.
2. Select "02 Copy/delete a CP" by pressing ▲ ▼ ❶. Then, press ❺ to display the custom pitch copy/deletion screen.

② Copying a custom pitch

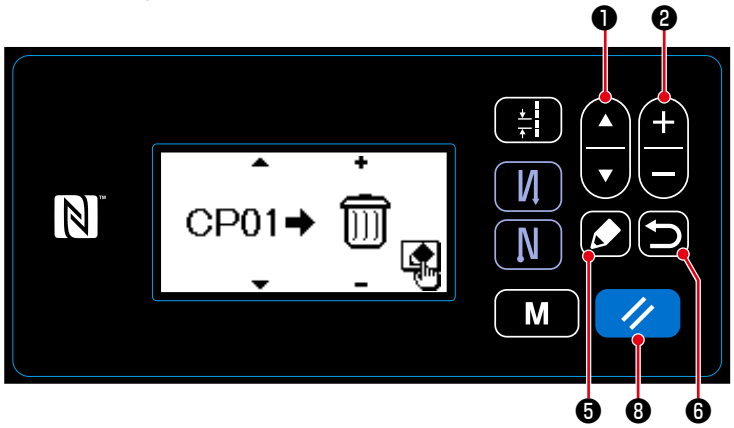


<Custom pitch copy/deletion screen>

1. Select a source custom pitch number by pressing ▲ ▼ ❶. Select a destination custom pitch number by pressing + − ❷.
2. Execute or cancel copy of the pattern following the procedure described below.

- Press ❺ to execute copy. Then, the current screen is returned to the custom pitch management screen.
- Press ❻ to display the copy cancellation confirmation screen. Press ❻ again to cancel copy. Then, the current screen is returned to the custom pitch management screen.

(2) Deleting a custom pitch

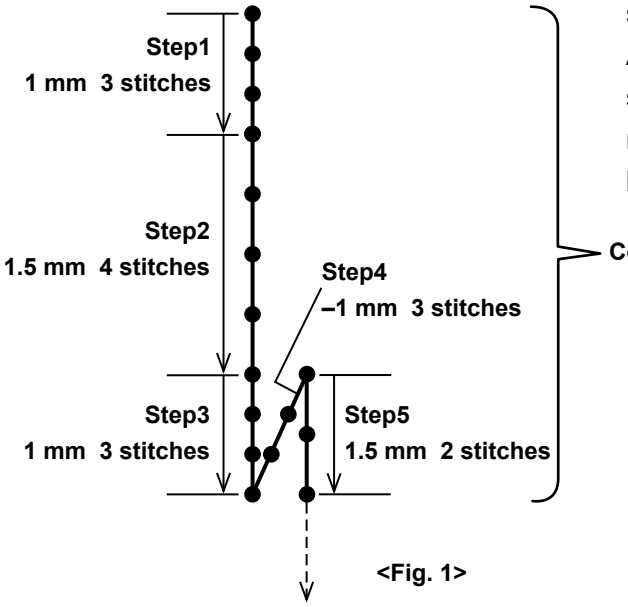


<Custom pitch copy/deletion screen>

1. Display the custom pitch copy/deletion screen referring to **"8-5-4.(1) Copying a custom pitch" p.91**.
2. Select a custom pitch No. to delete by pressing ▲ ▼ ❶. Select the trash by pressing + − ❷.
3. Press ❺ to display the deletion confirmation screen.

4. Execute or cancel deletion following the procedure described below.
   - Press // ❽ to execute deletion. Then, the current screen is returned to the custom pitch management screen.
   - Press ❻ to cancel deletion. Then, the current screen is returned to the custom pitch copy/deletion screen.

8-6. Condensation custom pattern

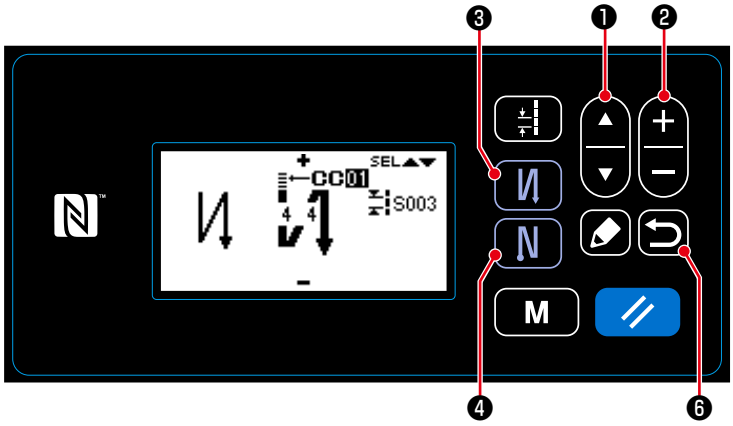


<Fig. 1>

Condensation stitches can be sewn while specifying needle entry points as desired, by setting a condensation custom.
As many as 20 steps can be created in one condensation custom pattern. For each step, as many as nine different patterns of start and end of sewing can be registered.

8-6-1. Selecting the condensation custom

Select an already-created condensation custom.



<Edit screen for reverse feed stitching (start)>

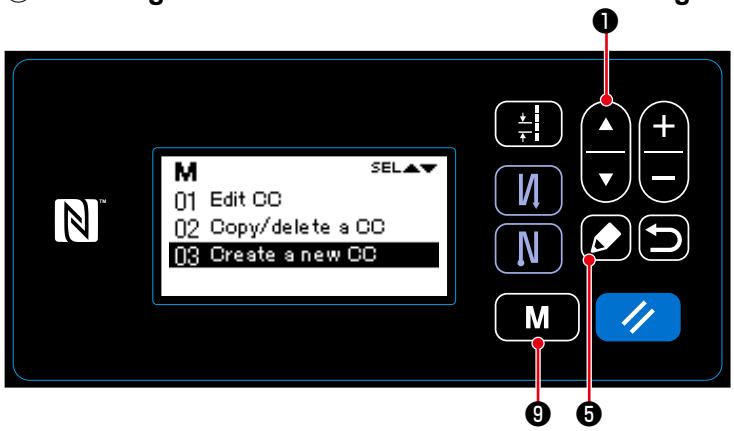
1. On the sewing screen, keep ❸ held pressed for one second to display the reverse-feed stitching (at start) edit screen.
2. Select the condensation custom A by pressing ❶.
3. Select the condensation custom number by pressing ❷.
4. Press ❻ to confirm the data and return the current screen to the sewing screen.

* The condensation custom of the reverse-feed stitching (at end) can be selected in the similar manner.
Press ❹ to display the reverse-feed stitching (at end) edit screen.

8-6-2. Creating a new condensation custom

Create the new condensation custom No. 1 shown in <Fig. 1> as an example.

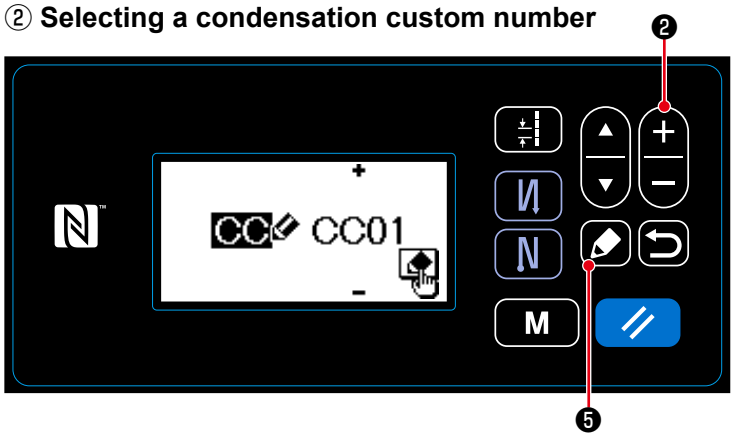
① Selecting the new condensation custom creating function



<Condensation custom management screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "06 CC management" by pressing ❶ Then, press ❺ to display the condensation custom management screen.
3. Select "03 Create a new CC" by pressing ❶ . Then, press ❺ to display the new condensation custom creation screen.

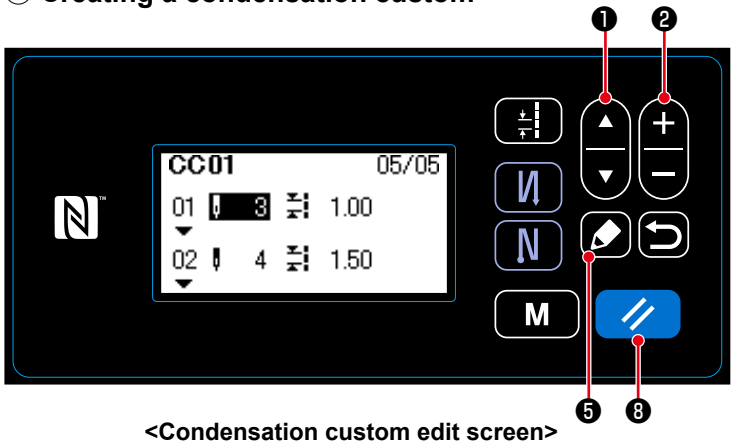
② Selecting a condensation custom number



<New condensation custom creation No. selection screen>

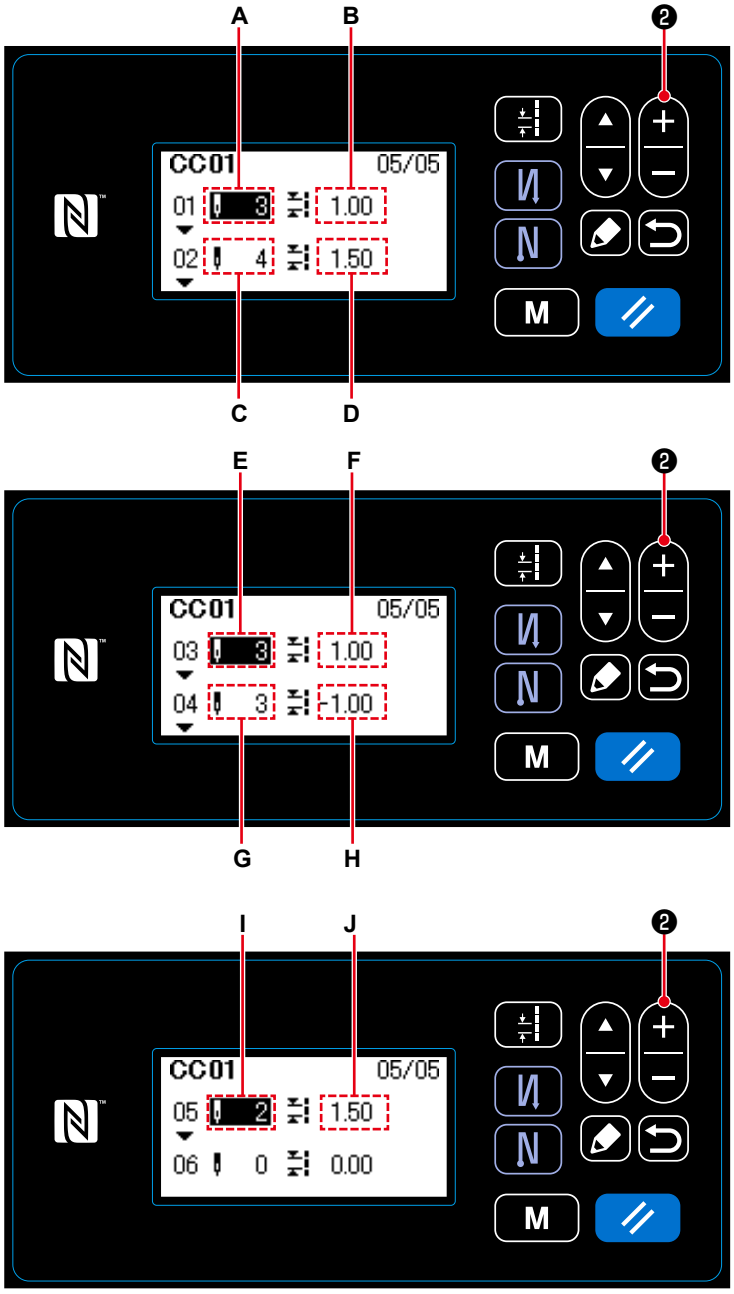
1. Select No. 1 by pressing ❷ .
2. Press ❺ to display the new condensation custom creation screen.

③ Creating a condensation custom



<Condensation custom edit screen>

1. Select the number of stitches or the pitch by pressing ❶ .
2. The numeric value which is being selected can be changed by pressing ❷ .
3. In the case there is an unused step(s), a step(s) can be added before the step which is being selected by pressing ❺ .
4. Press ❽ to delete the step which is being selected.



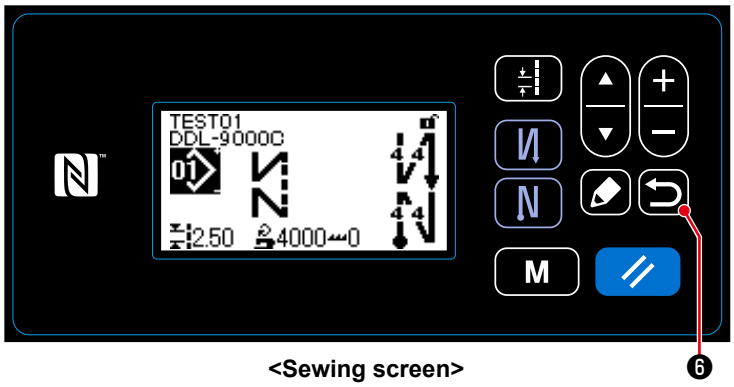
<Condensation custom edit screen>

1) In the case of setting the number of stitches
   The number of stitches can be input in the range from 1 to 100.
   Set the number of stitches **A** for step 1 to 3 by pressing + − ❷ .

2) In the case of setting the pitch
   The pitch can be input in the range from –5.00 to 5.00 mm.
   Set the pitch **B** for step 1 to 1.00 mm by pressing + − ❷ .

3) Carry out the following setting in the similar manner.
   For step 2, set the number of stitches **C** to 4, and the pitch **D** to 1.50 mm.
   For step 3, set the number of stitches **E** to 3, and the pitch **F** to 1.00 mm.
   For step 4, set the number of stitches **G** to 3, and the pitch **H** to –1.00 mm.
   For step5, set the number of stitches **I** to 2, and the pitch **J** to 1.50 mm.

④ Confirming the numeric value



<Sewing screen>

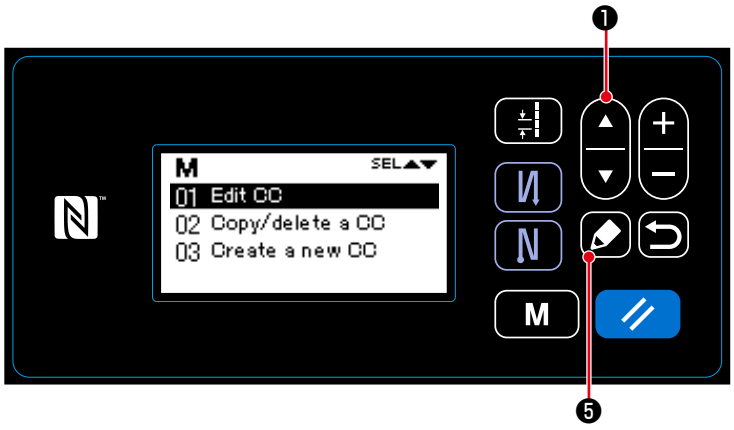
Press ❻ to confirm the data and return the current screen to the new condensation custom creation screen.

Press ❻ again to return the current screen to the condensation custom management screen.

Press ❻ yet again to return the current screen to the sewing screen.

8-6-3. Condensation custom edit function

① Selecting the condensation custom edit function



<Condensation custom management screen>

1. Display the condensation custom management screen referring to **"8-6-2. Creating a new condensation custom" p.94**.
2. Select "01 Edit CC" by pressing ❶ . Then, press ❺ to display the condensation custom management screen.

Hereafter, the steps of procedure to be taken are same with those in the case of creating a new condensation custom. Refer to **"8-6-2. Creating a new condensation custom" p.94**.

8-6-4. Copying/deleting a condensation custom

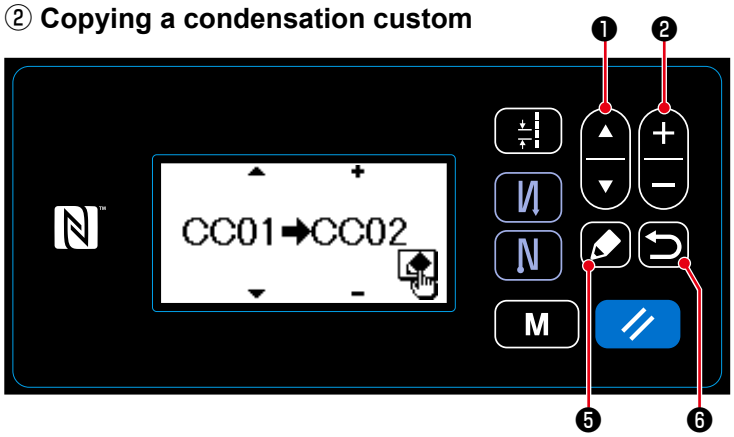
(1) Copying a condensation custom

① Selecting the condensation custom copy function

<Condensation custom management screen>

1. Display the condensation custom management screen referring to **"8-6-2. Creating a new condensation custom" p.94**.
2. Select "02 Copy/delete a CC" by pressing ▲ ▼ ❶. Then, press ✎ ❺ to display the condensation custom copy/deletion screen.

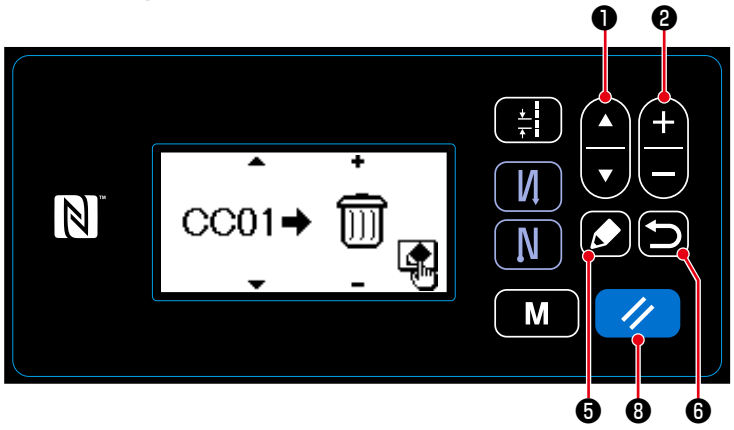
② Copying a condensation custom



<Condensation custom copy/deletion screen>

1. Select a source condensation custom number by pressing ▲ ▼ ❶. Select a destination condensation custom number by pressing + − ❷.
2. Execute or cancel copy of the pattern following the procedure described below.
   - Press ✎ ❺ to execute copy. Then, the current screen is returned to the condensation custom management screen.
   - Press ↩ ❻ to display the copy cancellation confirmation screen. Press ↩ ❻ again to cancel copy. Then, the current screen is returned to the condensation custom management screen.

(2) Deleting a condensation custom



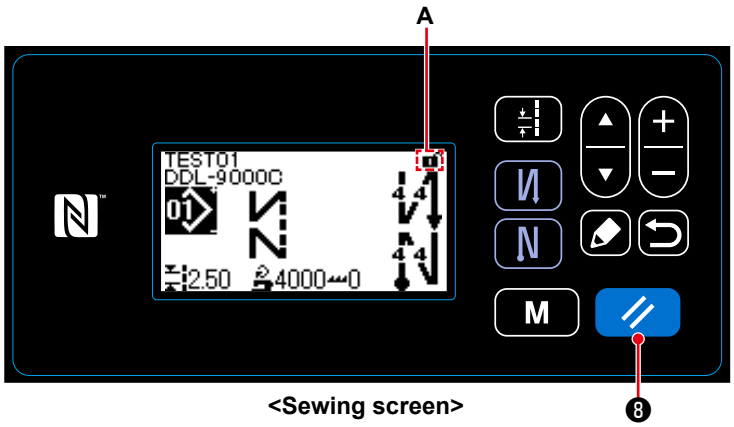
<Condensation custom copy/deletion screen>

1. Display the condensation custom copy/deletion screen referring to **"8-6-4.(1) Copying a condensation custom" p.97**.
2. Select a condensation custom No. to delete by pressing ▲ ▼ ❶. Select the trash by pressing + − ❷.
3. Press ❺ to display the deletion confirmation screen.
4. Execute or cancel deletion following the procedure described below.
   - Press // ❽ to execute deletion. Then, the current screen is returned to the condensation custom management screen.
   - Press ↩ ❻ to cancel deletion. Then, the current screen is returned to the condensation custom copy/deletion screen.

8-7. Information

8-7-1. Simple lock

Once the simple lock is enabled, key operation can be disabled if no operation is carried out on the sewing screen for a certain period of time, thereby preventing maloperation.



<Sewing screen>

The status of the simple lock can be changed over between enable/disable by keeping ❽ held pressed for one second on the sewing screen.
Pictograph display A will be as shown below:

: Simple lock is enabled
: Simple lock is disabled

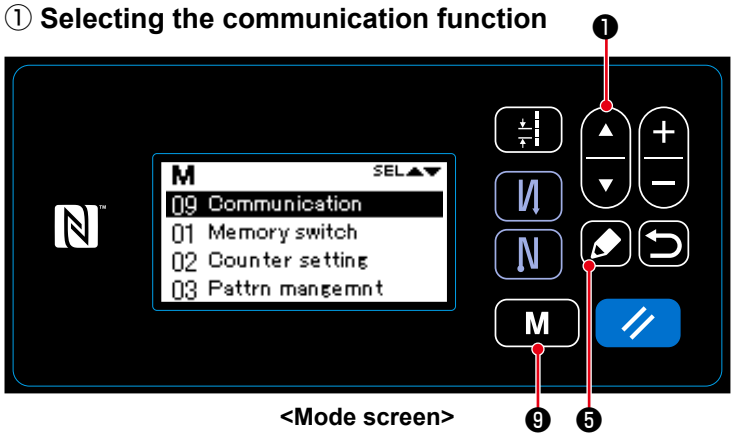
* In the shipped state, simple lock of the operation panel is enabled automatically if no operation is carried out for one minutes.
* The time to be elapsed until the simple lock is enabled can be set with the memory switch U402. Refer to **"4-5. List of memory switch data" p.48** for details.
* Even if the simple lock is disabled once, the status of the simple lock will return to "enable" if no operation is carried out in a certain period of time. In the case you do not want to use the simple lock function, set U402 to 0 (zero).

8-7-2. Communication function

Data can be input/output by means of a USB thumb drive.

(1) How to use the communication function

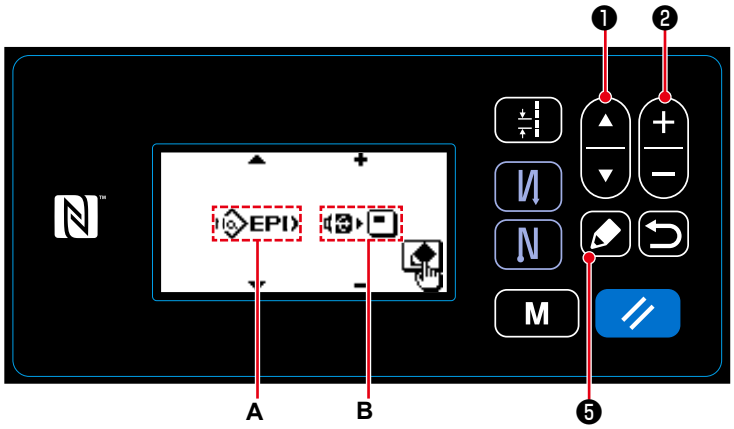
① **Selecting the communication function**



<Mode screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "09 Communication" by pressing ▲ ▼ ❶ . Then, press ✎ ❺ to display the communication data/direction selection screen.

② **Selecting the communication data and communication direction**



<Communication data/communication direction selection screen>

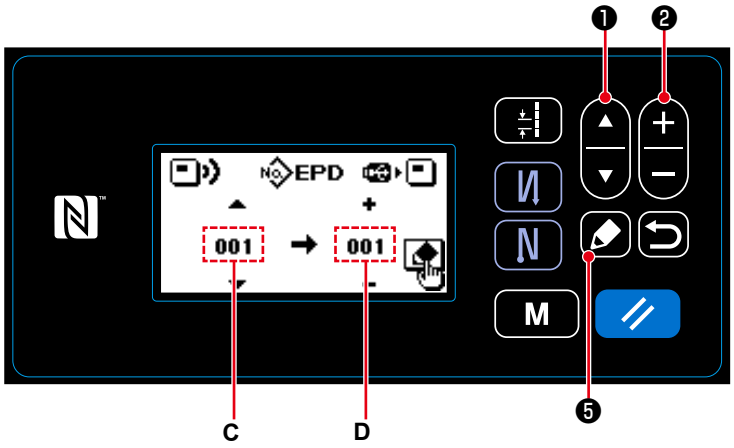
1. Select the communication data **A** by pressing ▲ ▼ ❶ . (Refer to **"8-7-2.(2) List of communication data formats" p.101**.)
2. Select the communication data **B** by pressing + − ❷ .

: Data stored on the operation panel is written to the USB thumb drive.

: Data stored on the USB thumb drive is written to the operation panel.

3. Press ✎ ❺ Data stored on the USB thumb drive is written to the operation panel.

③ Selecting the target data number



<Communication data number selection screen>

1. Select the source data No. **C** by pressing ▲ ▼ ❶.
2. Select the destination data number **D** by pressing + − ❷.
3. Press ❺ to display the during-communication screen and write the data.
   After the completion of writing, the current screen returns to the communication data number selection screen.

* If the "POWER OFF" screen prompt is displayed after the completion of writing, turn the power OFF.

(2) List of communication data formats

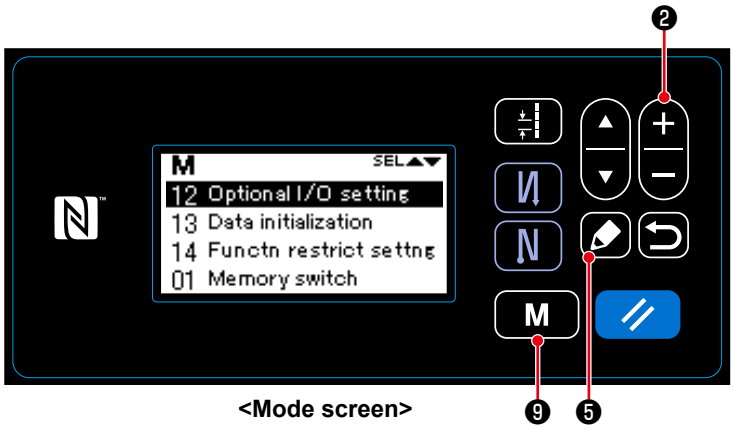
Data name	Pictograph	Extension	Description of data
Sewing data	EPD	DDL00XXX.EPD (XXX:001~999)	Data format of sewing shapes and number of stitches created on the sewing machine. This format is specific to the DDL-9000C.
Custom pitch data	CP	VD00XXX.VDT (XXX:001~999)	It is the data of needle entry point created with PM-1, and the data format that can be operated in common between JUKI sewing machines.
Condensation custom data	CC	VD00XXX.VDT (XXX:001~999)	It is the data of needle entry point created with PM-1, and the data format that can be operated in common between JUKI sewing machines.

8-8. How to set up the functions

8-8-1. How to change over to the function setting mode

(1) Setting the optional input/output

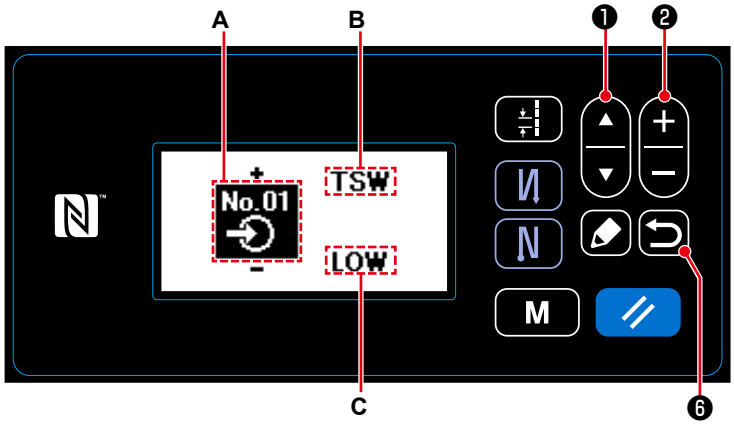
① **Selecting the optional input/output setting function**



<Mode screen>

1. Keep M ❾ held pressed for six seconds on the sewing screen to display the mode screen.
2. Select "12 Optional I/O setting" by pressing ❷. Then, press ❺ to display the optional input/output setting screen.

② **Setting the optional input/output**



<Setting the optional input/output screen>

1. Select the input/output port No. **A** by pressing ❷.
2. Select the function **B** by pressing ❶. Then, set up the function by pressing ❷. (Refer to **"8-8-2. List of function settings" p.103** for the selectable functions.)
3. Select the HIGH/LOW level **C** by pressing ❶. Then, set the HIGH/LOW level by pressing ❷.
4. Press ❻ to confirm the data and return the current screen to the mode screen.

8-8-2. List of function settings

(1) List of input functions

	Abbreviation	Function item
0	NOP	No function
1	HS	Needle up/down correction stitching
2	BHS	Reverse-feed correction stitching
3	EBT	Function for cancelling reverse-feed stitching (at end) once
4	TSW	Thread trimmer function
5	FL	Presser lifter function
6	OHS	1-stitch correction stitching
7	SEBT	Function for cancelling reverse-feed stitching (at start) (at end)
8	LINH	Function for prohibiting depress on the front part of pedal
9	TINH	Thread trimmer output prohibition function
10	LSSW	Low-speed command input
11	HSSW	High-speed command input
12	USW	Needle lifter function
13	BT	Reverse-feed stitching switch input
14	SOFT	Soft-start switch input
15	OSSW	One-shot speed command switch input
16	BKOS	Reverse-feed one-shot speed command switch input
17	SFSW	Safety switch input
18	AUBT	Automatic reverse-feed stitching cancellation/addition switch
19	CUNT	Sewing counter input
20	OTSW	One-touch change-over switch
21	ED	Material-end sensor input

(2) List of output functions

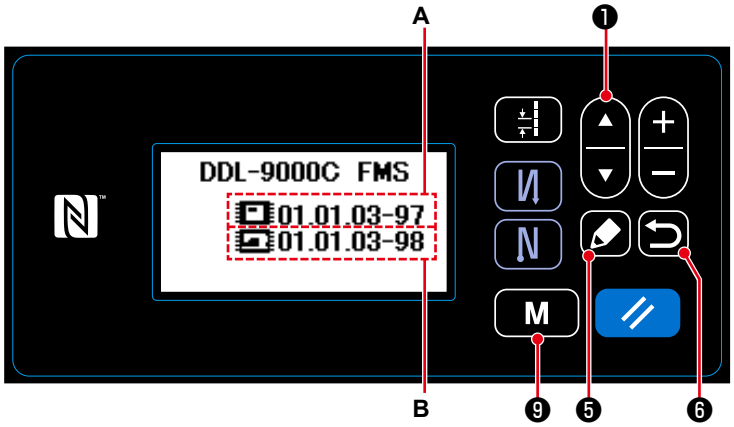
	Abbreviation	Function item
0	NOP	No function
1	TRM	Thread trimmer output
2	NIP	Thread presser output
3	FL	Presser lifter output
4	BT	Reverse-feed stitching output
5	SSTA	Sewing machine stop-state output
6	COOL	Needle cooler output
7	LSWO	Rotation command output

8-8-3. Details of each selection function

Various functions can be selected on the mode screen.

(1) Checking the version information

① **Displaying the version information**

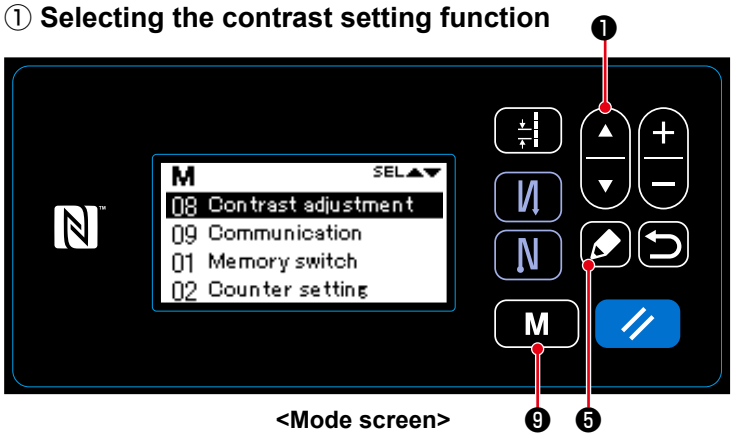


<Version information screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "07 Version" by pressing ▲ ▼ ❶ . Then, press ✎ ❺ to display the version information screen. **A** represents the version of the panel software. **B** represents the version of the main-body software.
3. Press ⮌ ❻ again to return the current screen to the sewing screen.
   Press ⮌ ❻ yet again to return the current screen to the mode screen.

(2) Adjusting the contrast of the LCD of the operation panel

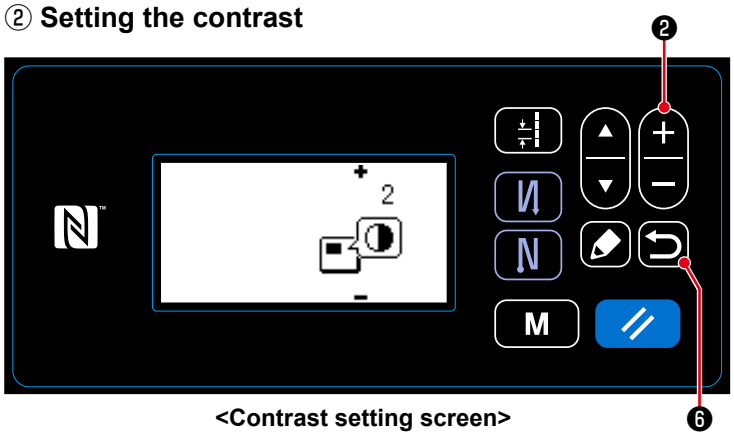
① **Selecting the contrast setting function**



<Mode screen>

1. Press M ❾ on the sewing screen to display the mode screen.
2. Select "08 Contrast adjustment" by pressing ▲ ▼ ❶ . Then, press ✎ ❺ to display the contrast setting screen.

② **Setting the contrast**



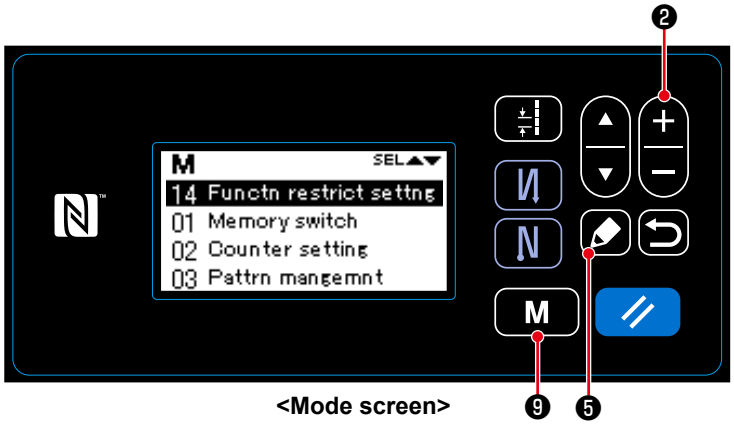
<Contrast setting screen>

1. Set the contrast by pressing + − ❷ .
   Setting range : 0 (dark) to 4 (bright)
2. Press ⮌ ❻ to confirm the data and return the current screen to the sewing screen.
   Press ⮌ ❻ yet again to return the current screen to the mode screen.

(3) Setting the key-lock and the password

Specific key operation can be prohibited to disable change in data by enabling the key-lock. Furthermore, change in the status of the key-lock between enable/disable can be prohibited by setting a four-digit password.

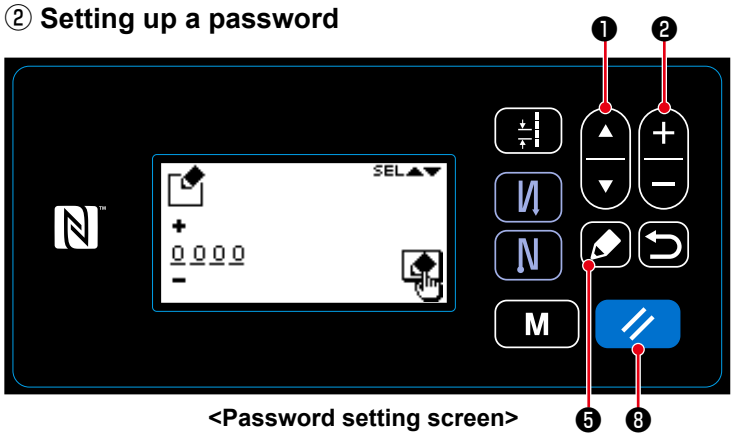
① Selecting the function restriction setting function



<Mode screen>

1. Keep M ❾ held pressed for six seconds on the sewing screen to display the mode screen.
2. Select "14 Functn restrict settng" by pressing + − ❷. Then, press ❺ to display the function restriction setting management screen.

② Setting up a password

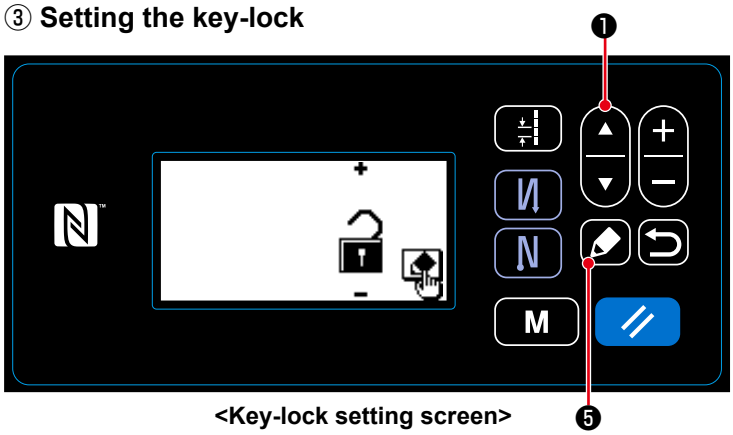


<Password setting screen>

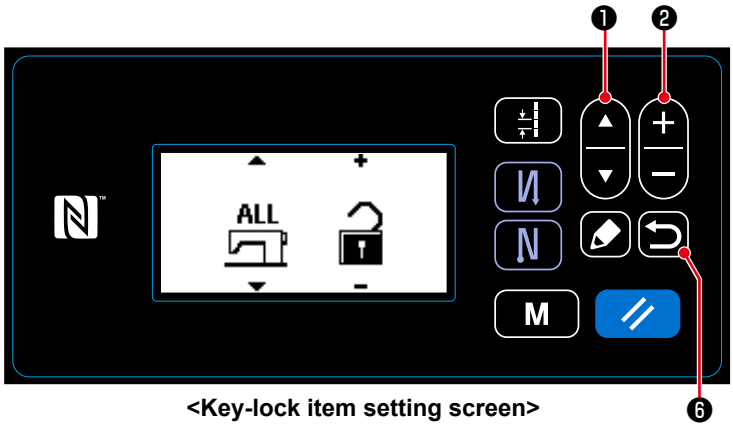
1. Select "01 Password setting" by pressing ▲ ▼ ❶. Then, press ❺ to display the Password setting screen. (Initially, four figures "0000" is displayed.)
2. Select what number of the four figures to edit by pressing ▲ ▼ ❶. Then, input a new figure by pressing + − ❷. The "+/−" is displayed at the top and bottom of the selected figure.)
3. Only the selected figure can be deleted by pressing // ❽. All figures can be returned to "0000" by keeping it held pressed for one second.
4. Press ❺ to confirm the four figure as a password and return the current screen to the function restriction setting management screen.

* The password status can be returned to "not set" state by keeping // ❽ held pressed for three seconds.

③ Setting the key-lock



<Key-lock setting screen>



<Key-lock item setting screen>

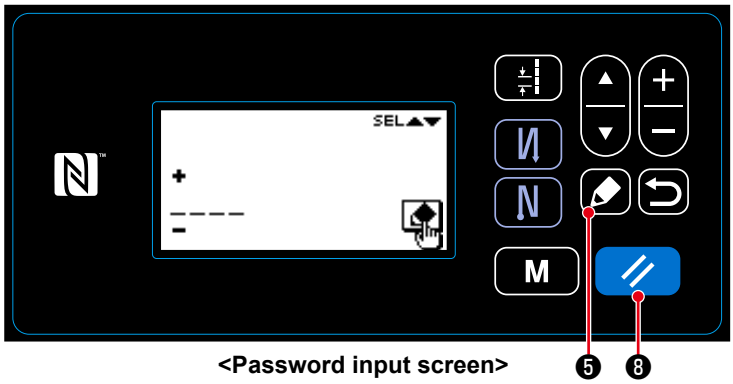
1. Select "02 Fnction-limit change" by pressing ▲▼ ❶ on the function restriction setting management screen. Then, press ✎ ❺ to display the key-lock setting screen.
2. Press ✎ ❺ to display the key-lock item setting screen.
3. Select the function by pressing ▲▼ ❶ . Then, set enable/disable of the key-lock on the selected function by pressing +− ❷ .
4. Press ↩ ❻ to confirm the data and return the current screen to the key-lock item setting screen.
5. Set the key-lock to enable by pressing +− ❷ on the key-lock setting screen.
6. Press ↩ ❻ to confirm the data and return the current screen to the function restriction setting management screen.

* Be aware that the key-lock will be disabled regardless of how the key-lock items have been set on the key-lock item setting screen, once the key-lock is set to disable on the key-lock setting screen as shown in the table below.

Setting on the key-lock setting screen	Setting on the key-lock item setting screen (key-lock setting on a function-by-function basis)	Key-lock status
Key-lock is enabled	Function 1 : Key-lock is enabled	Key-lock is enabled
	Function 2 : Key-lock is disabled	Key-lock is disabled
	…	…
Key-lock is disabled	Function 1 : Key-lock is enabled	Key-lock is disabled
	Function 2 : Key-lock is disabled	Key-lock is disabled
	…	…

* In the case the password has been set up and the key-lock has been enabled, the password input screen is displayed when the mode key is pressed on the sewing screen. (Refer to the description given below for the operation procedure.)
  Once the correct password is input, input of the password is not required until the power is turned OFF.
  Be aware that, even if the password has been set, the mode screen can be displayed without inputting the password in the case the key-lock is disabled.

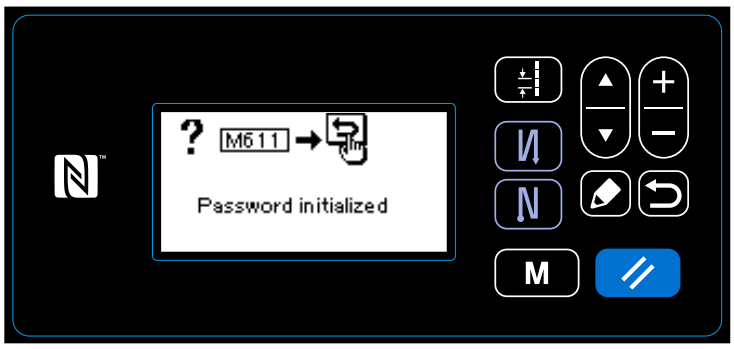
Password	Key-lock	Input of the password before displaying the mode screen
Set up already	Enabled	Necessary
Set up already	Disabled	Unnecessary



<Password input screen>

1. Input the password on the password input screen. Then, press ❺.
   (Refer to **"8-8-3.(3) ② Setting up a password" p.105** for how to input the password.)
2. If the correct password is input, the mode screen will be displayed.
3. If a wrong password is input, the error screen will be displayed.
   Press ❽ to reset the error and return the error screen to the password input screen.

* If you forget your password, you can return the password setup status to "not set" state. (Even if you carry out the procedure described below, any data other than the password data will not be deleted.)



<Password initialization completion message screen>

1. Open the control box. Place DIP switch 2 on the main body PCB in ON. Then, turn the power ON.
2. After the password initialization completion message screen is displayed, turn the power OFF.
3. Place DIP switch 2 back in OFF. When the power is turned ON again, the sewing machine starts up in the "password is not set" state.

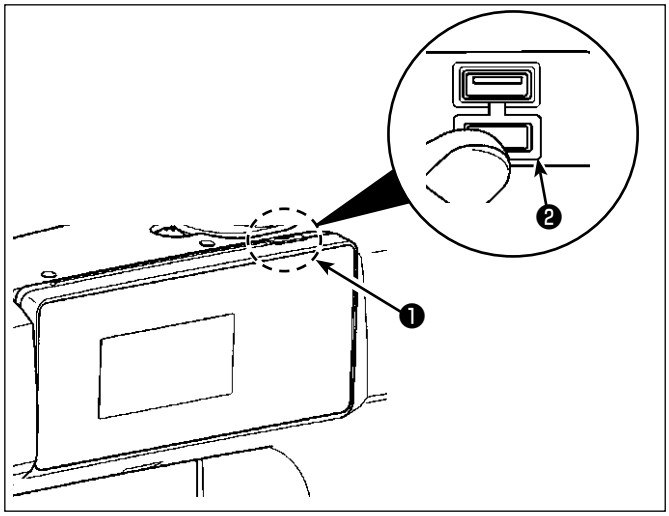
8-9. External interface

8-9-1. USB

(1) About the USB

Sewing data, custom pitch data and condensation custom data can be copied on a commercially-available USB thumb drive.
Refer to **"8-7-2. Communication function" p.100** for details of how to copy the sewing data on a USB thumb drive.

① Position of the USB connector



1. USB thumb drive insertion position
   The USB connector is provided on top ❶ of the operation panel.
   To use a USB thumb drive, remove connector cover ❷ and insert the USB thumb drive into the USB connector.

* In the case a USB thumb drive is not used, the USB connector should be protected with connector cover ❷ without exceptions.
If dust or the like enters the USB connector, a failure can be caused.

② Precautions to be taken when handling USB devices

- Do not connect to the USB connection terminal other than the USB memory.
  It may cause failure.
- Do not leave the USB device or USB cable connected to the USB port while the sewing machine is in operation. The machine vibration can damage the port section resulting in loss of data stored on the USB device or breakage of the USB device or sewing machine.
- Do not insert/remove a USB device during reading a program or sewing data.
  It may cause data breakage or malfunction.
- When the storage space of a USB device is partitioned, only one partition is accessible.
- Never forcefully insert a USB thumb drive into the USB connector while carefully checking the orientation of the USB thumb drive. Forceful insertion of the USB thumb drive can cause failure.
- JUKI does not compensate for loss of data stored on the USB device caused by using it with this sewing machine.
- In principle, connect only one USB thumb drive to the operation panel. When two or more devices/media are connected/inserted, the machine will only recognize one of them. Refer to the USB specifications.
- Do not turn the power OFF while the data on the USB flash drive is being accessed.

③ USB specifications

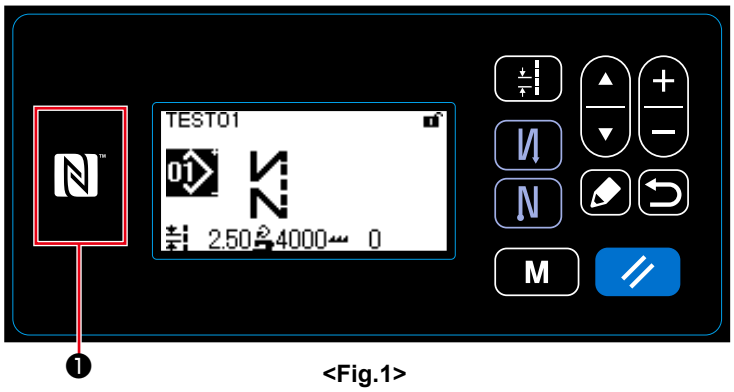
- Conform to USB 1.1 standard
- Applicable devices *1 ___ USB memory
- Format supported _____ FAT 12, FAT 16, FAT 32
- Applicable medium size _ 4.1MB ~ (2TB)
- Consumption current ___ The rated consumption current of the applicable USB devices is 500 mA at the maximum.

*1: JUKI does not guarantee operation of all applicable devices. Some device may not operate due to a compatibility problem.

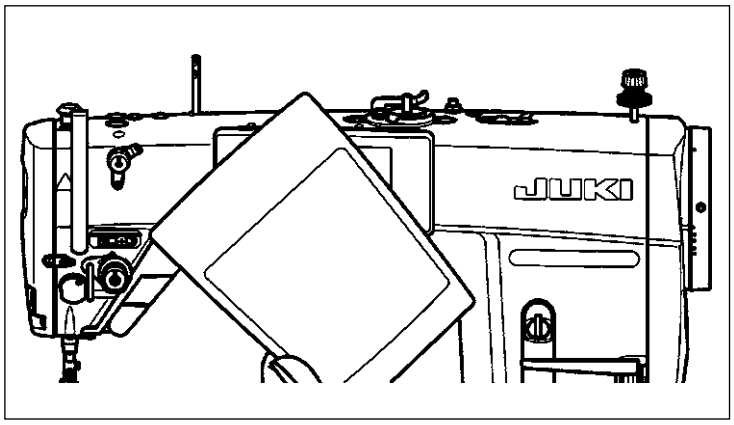
8-9-2. NFC

The operation panel supports NFC (Near Field Communication).
Sewing data, maintenance information or the like can be viewed, edited, copied, etc., on an Android terminal (such as tablet and smartphone) on which JUKI application for Android [JUKI Smart App] has been installed, by means of the NFC communication function.
Refer to the Instruction Manual for JUKI Smart App for details of JUKI application for Android [JUKI Smart App].

① Position of the NFC antenna



<Fig.1>



<Fig.2>

1. Position of the NFC antenna
   In the case of carrying out the NFC communication between the sewing machine and a tablet or smartphone, bring the antenna of the tablet or smartphone near to NFC mark ❶ as shown in Fig. 2.

* If the NFC communication has failed, error message will be displayed on the tablet/smartphone screen.
When the error message is displayed on the screen, carry out the NFC communication again.

② Precautions to be taken when handling NFC

- The position of the NFC antenna varies according to the tablet/smartphone used.
  Be sure to read the instruction manual of your device before using the NFC communication function.
- To use the NFC communication function, place the NFC communication function setting in "Enable" while referring to the instruction manual for your tablet/smartphone.