

ENGLISH

**DDL-8000AS, AB
INSTRUCTION MANUAL**

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1. SPECIFICATIONS

1-1. Specifications of the sewing machine head

DDL-8000A- ○ □ □ ◇ ◇ □ □ ▲

Classification by model

S	Simple type (standard)
B	Better type (with shorter-thread remaining feature)

Classification by lubrication
and sewing specification

MS	Semi-dry type for medi- um-weight materials
SH	Minute-quantity lubrication type for heavy-weight materials

Classification by voltage of electrical box

E	For the Japanese market and export; 3-phase 200-240 V, single-phase 100 - 120 V
K	For export in general and for China; single-phase 220 -240 V
N	CE; single-phase 220 - 240 V

Classification by auto-lifter

AK	Provided with an automatic presser foot lifting device
Space	Not provided with an automatic presser foot lifting device

Classification by nipper and touch-back mechanism

OB	Provided with an one-touch type reverse-feed switch
NB	Provided with a thread nipper device and one-touch type reverse-feed switch

	DDL-8000A-*MS	DDL-8000A-*SH
Max. sewing speed	5,000 sti/min (P = Less than 4) 4,000 sti/min for "P= 4 or more"	4,500 sti/min (P = Less than 4) 4,000 sti/min for "P= 4 or more"
Stitch length	5 mm	
Presser foot lift	Hand lifter	5.5 mm
	Auto lifter	13 mm or more
Audio guidance	Provided	
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	
Noise	*MS ; - Equivalent continuous emission sound pressure level (L _{pA}) at the workstation: A-weighted value of 78.7 dBA ; (Includes K _{pA} = 2.5 dBA) ; according to ISO 10821- C.6.2 -ISO 11204 GR2 at 4,000 sti/min. *SH ; - Equivalent continuous emission sound pressure level (L _{pA}) at the workstation: A-weighted value of 82.0 dBA ; (Includes K _{pA} = 2.5 dBA) ; according to ISO 10821- C.6.2 -ISO 11204 GR2 at 4,000 sti/min.	

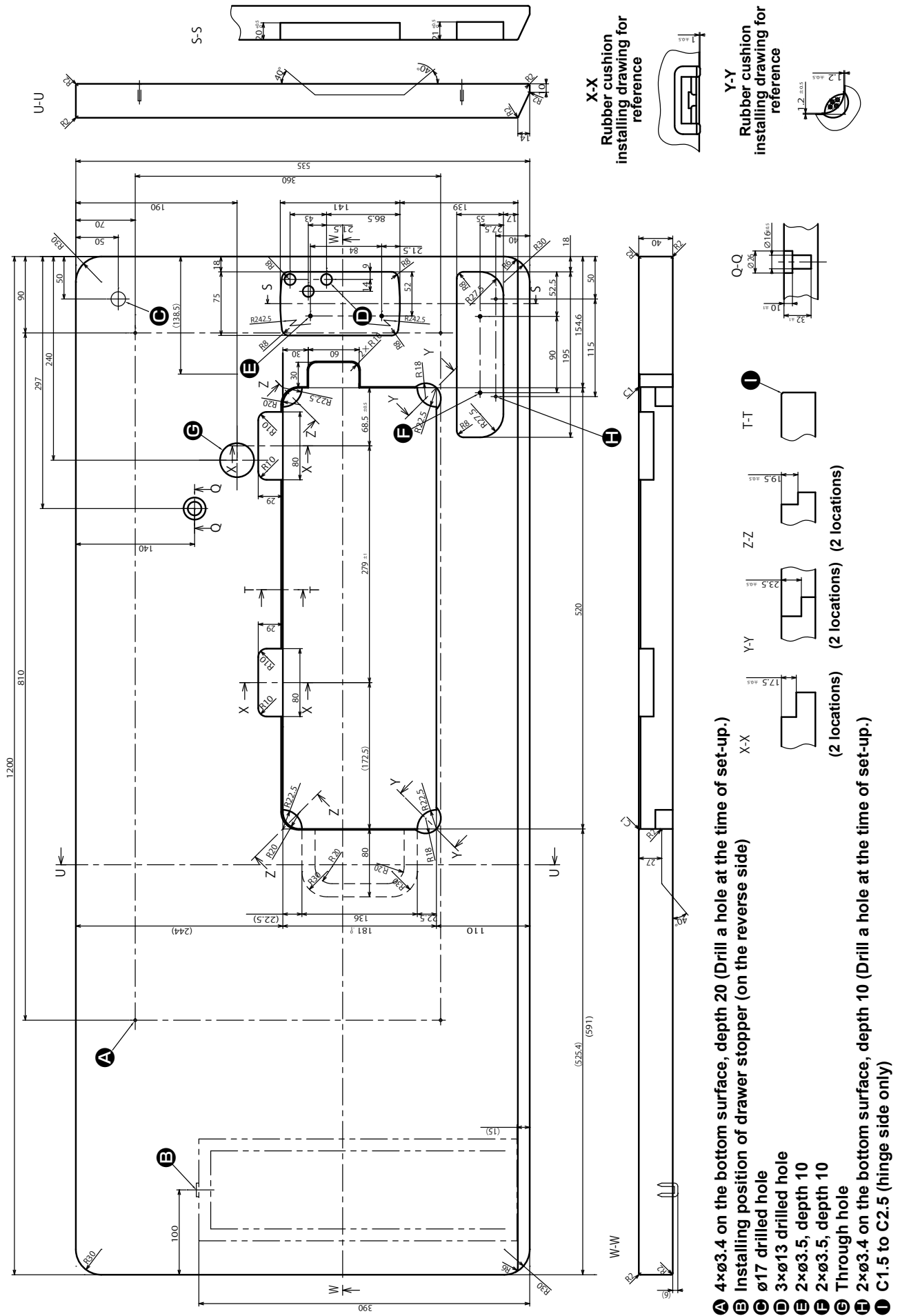
• The sewing speed will vary depending on the sewing conditions. The sewing speed preset at the time of shipping is 4,000 sti/min.

*1 : Needle used depends on the destination.

1-2. Specifications of the control box

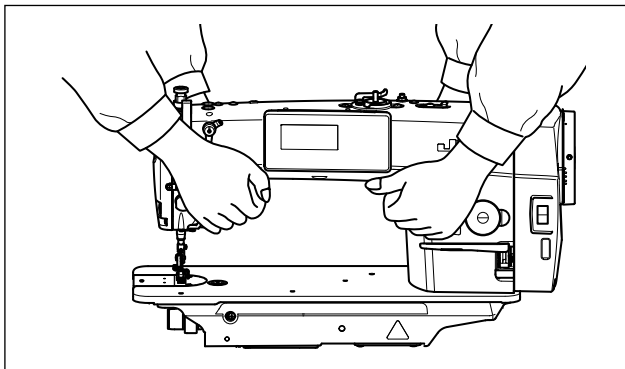
Supply voltage	Single phase 220 to 240V	3-phase 200 to 240V Single phase 100 to 120V
Frequency	50Hz/60Hz	50Hz/60Hz
Operating environment	Temperature : 0 to 35°C Humidity : 90% or less	Temperature : 0 to 35°C Humidity : 90% or less
Input	330VA	330VA

2-1. Drawing of table



2-2. Cautions when setting up the sewing machine

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

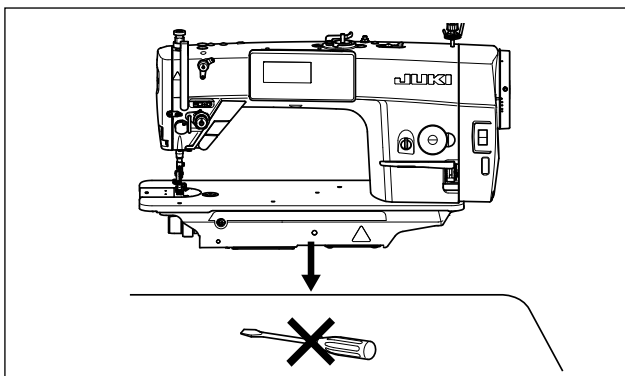


2-2-1. How to carry the sewing machine

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



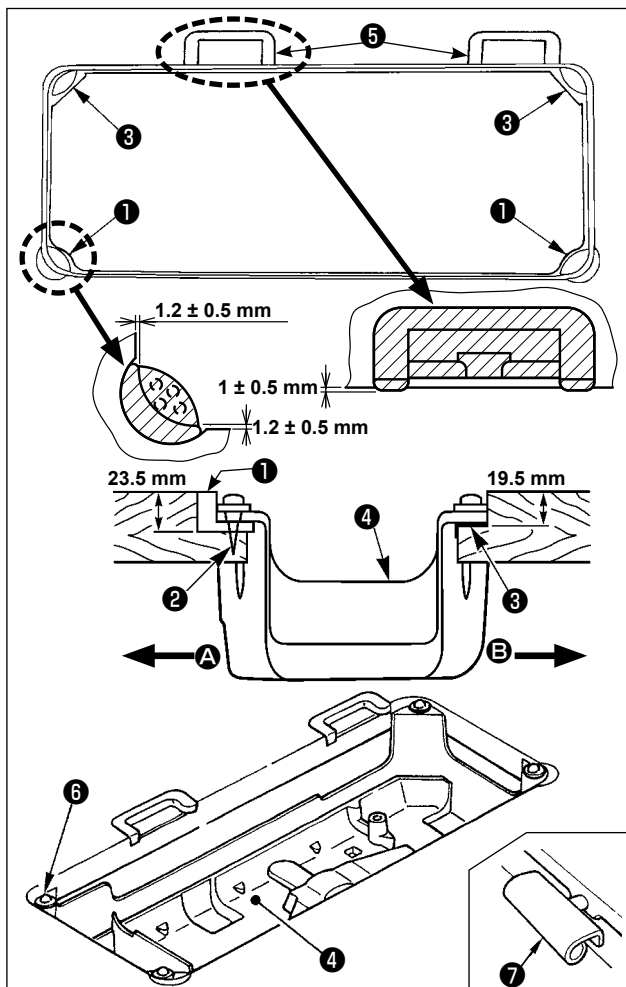
1. Never hold the handwheel since it rotates.
2. Be sure to handle the sewing machine with two persons or more since the sewing machine weighs 40 kg or more.



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

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

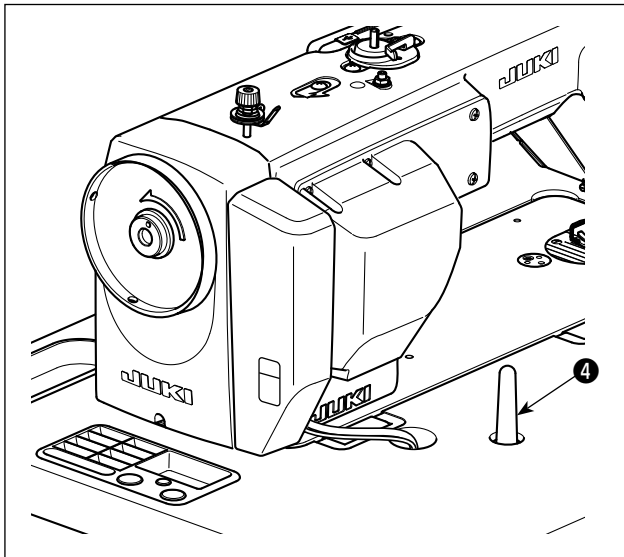
2-3. Installation



- 1) The under cover ④ should rest on the four corners of the machine table groove. Mount rubber hinge seat ⑤ on the table and fix it on the table with a nail.
- 2) Fix two rubber seats ① on side A (operator's side) using nails ② as illustrated above. Fix two cushion seats ③ on side B (hinged side) using a rubber-based adhesive. Then place under cover ④ on the fixed seats.
- 3) Fit hinge ⑦ into the opening in the machine bed, and fit the machine head to table rubber hinge seat ⑤ before placing the machine head on cushions ⑥ on the four corners.



Do not hold the handwheel.

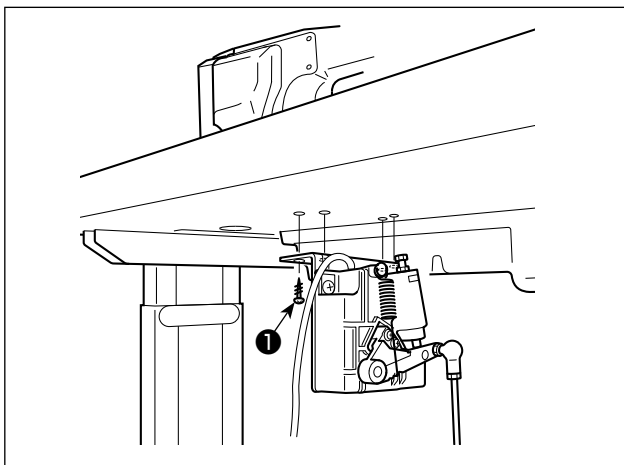


- 4) Securely attach head support rod ④ to the table until it goes no further.



Be sure to mount the machine head support rod ④ on the machine table so that its height from the table surface becomes 56 to 60 mm.

2-4. Installing the pedal sensor



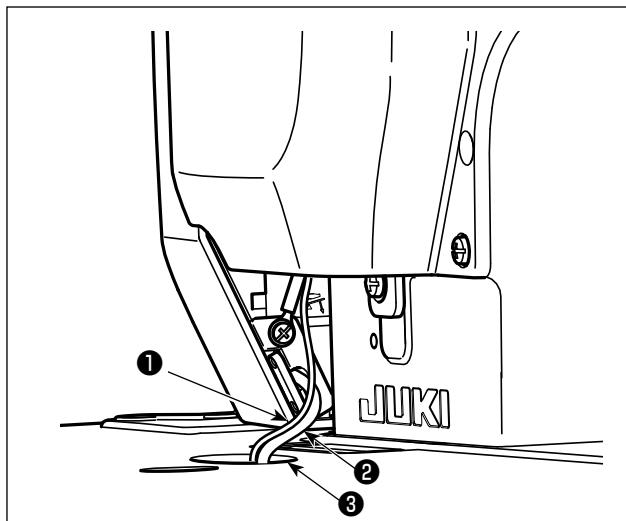
- 1) Install the pedal sensor to the table with mounting screws ① supplied with the unit.
It is necessary to install the pedal sensor at such a position that the connecting rod is perpendicular to the table.
- 2) After the completion of installation of the pedal sensor on the table, place the sewing machine head on the table.

2-5. Connecting the connector

WARNING :



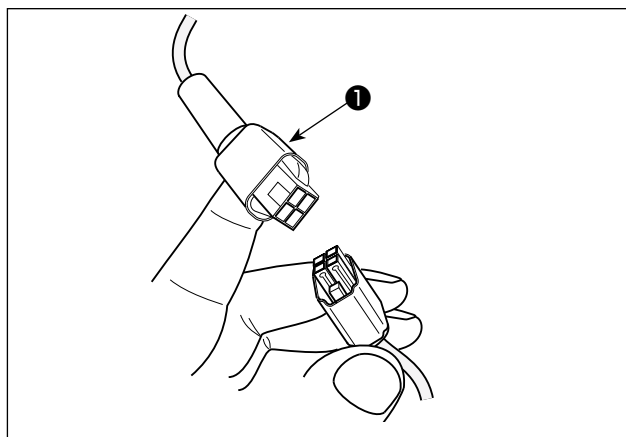
- To protect against personal injury resulting from abrupt start of the sewing machine, be sure to turn the power OFF, unplug the machine and wait for five minutes or more before installing the pedal sensor.
- To prevent damage of device caused by maloperation and wrong specifications, be sure to connect all the corresponding connectors to the specified places. (If any of the connectors is inserted into a wrong connector, not only the device corresponding to the connector can break but also it can start abruptly, inviting the risk of personal injury.)
- To prevent personal injury caused by maloperation, be sure to lock the connector with lock.
- Do not connect the power plug until the connection of cords is completed.
- Fix the cords while taking care not to forcibly bend them or excessively clamp them with staples.
- As for the details of handling respective devices, read carefully the Instruction Manuals supplied with the devices before handling the devices.



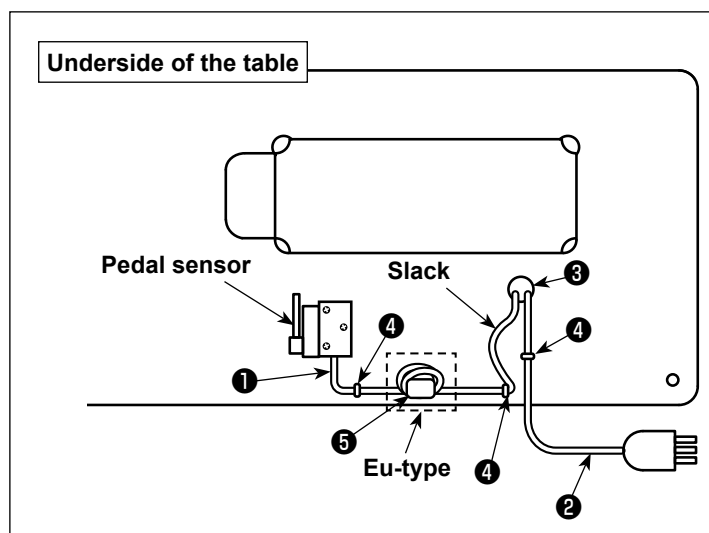
- Caution**

 1. Do not insert the power plug into the wall outlet.
 2. Check to be sure that the power switch is turned OFF.
 3. Be sure to fully insert the connectors into the corresponding ports until they are locked.

1) Draw out pedal sensor cable ① and AC input cable ② coming from the electrical box to the undersurface of the sewing machine table through cable draw-out hole ③ .



2) Connect pedal sensor cable ① and the connector under the table.



3) Secure pedal sensor cable ① and AC input cable ② with staples ④ .

[EU-type models]

Install ring core ⑤ .

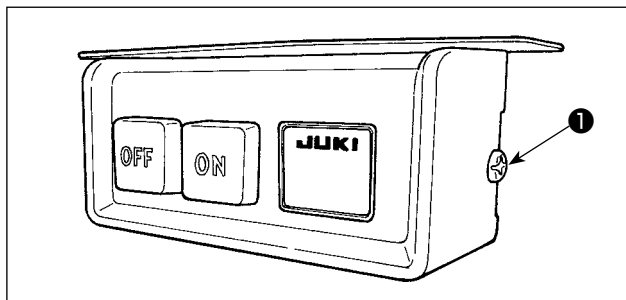
For one ring core ⑤ , clamp the pedal sensor cable ① after winding the cable round the torus of the ring core three times.

2-6. Installing the power switch (for CE)



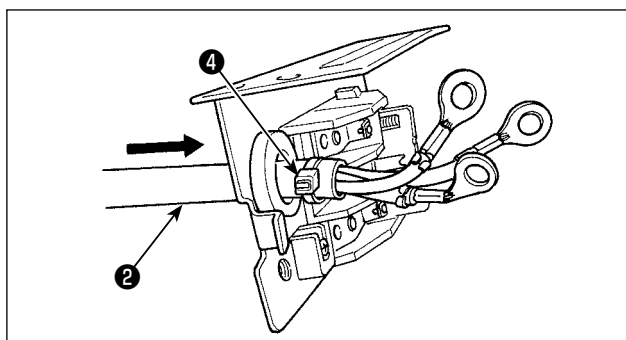
WARNING :

1. Be sure to attach the ground wire (green/yellow) to the specified location (on the ground side).
2. Take care not to allow terminals to come in contact with each other.
3. When closing the power switch cover, take care not to allow the cord to be caught under it.

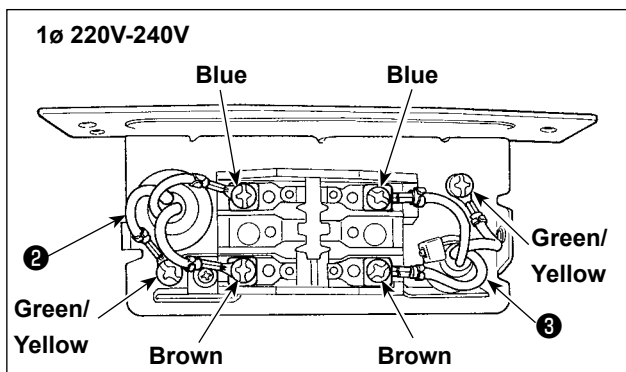


Do not insert the power plug into the plug receptacle.

- 1) Remove screw ① on the side face of the power switch cover to open the power switch cover.



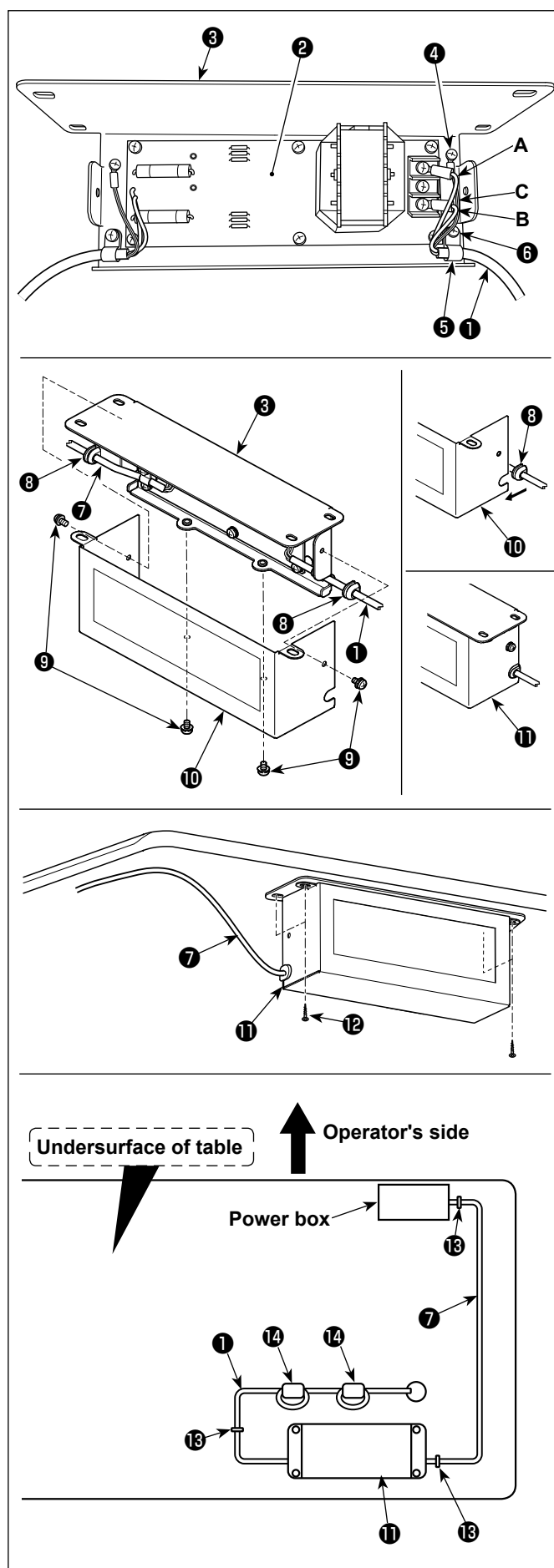
- 2) Pass AC input cord ②, ③ through the rear face of the power switch. Bundle the cord with cable clip band ④ to secure it.



- 3) Securely fix the terminals of the AC input cord ②, ③ by tightening the screws at the specified locations.
- 4) Close the power switch cover. Tighten screw ① on the side face of the power switch cover.

2-7. Installing the reactor box

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



- 1) Connect the terminals of power cord ① of the electrical box to reactor-box PCB asm. ② and to reactor box mounting plate ③. Connect brown wire **A** to the first connector and blue wire **B** to the third connector respectively from the top of terminal block on the reactor box PCB asm. using screws. Connect green/yellow wire **C** to reactor box mounting plate ③ with earth setscrew ④.
- 2) Attach cable clip ⑤ to the power cord of electrical box. Attach the power cord together with the cable clip to reactor box mounting plate ③ with cable clip setscrew ⑥.
- 3) Attach cord bushes ⑧ to input/output cables ① and ⑦ of the reactor box. Attach both bushes in the same manner.
- 4) Attach reactor box cover ⑩ to reactor box mounting plate ③ with four reactor-box cover setscrews ⑨. At this time, fix cord bushes ⑧ attached to input/output cables ① and ⑦ in the concave section on reactor box cover ⑩ to eliminate a gap between reactor box ⑪ and cover ⑩.
- 5) Install reactor box ⑪ on the table stand with four accessory wood screws ⑫. 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) Install accessory ring cores ⑭. For two ring cores ⑭, clamp the power cord of the electrical box after winding the cable round the torus of the ring core twice.
- 7) Fix input/output cables ① and ⑦ of reactor box ⑪ on the table stand using accessory cord staple ⑬. At this time, take care not to cross the input- and output-cables.

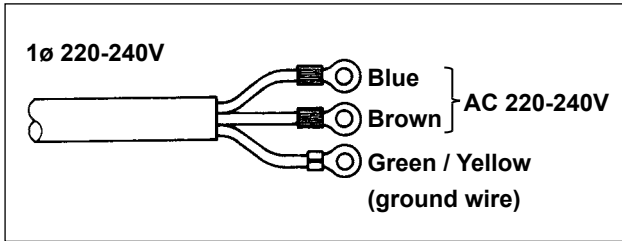
2-8. How to install the power plug



WARNING :

1. Be sure to attach the ground wire (green/yellow) to the specified location (on the ground side).
2. Take care not to allow terminals to come in contact with each other.

2-8-1. Single phase 220 to 240V



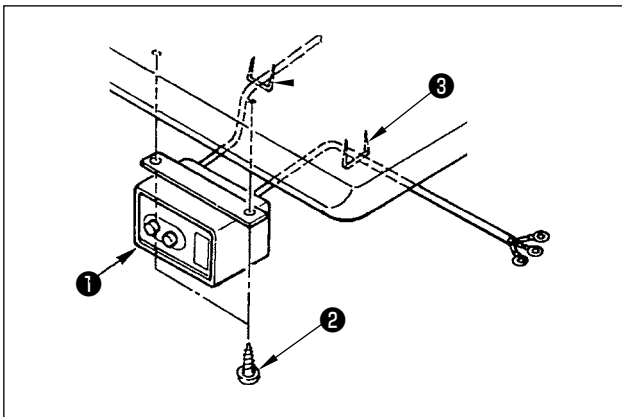
- 1) Connect the power cord to power plug ❶. Connect the blue and brown wires (1ø) to the power supply side and the green/yellow wire to the earth side as illustrated in the figure.



1. Be sure to prepare the power plug ❶ which conforms to the safety standard.
2. Be sure to connect the ground lead (green/yellow) to the grounding side.

2-8-2. 3-phase 200 to 240V, Single phase 100 to 120V

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.



1) Installing the power switch

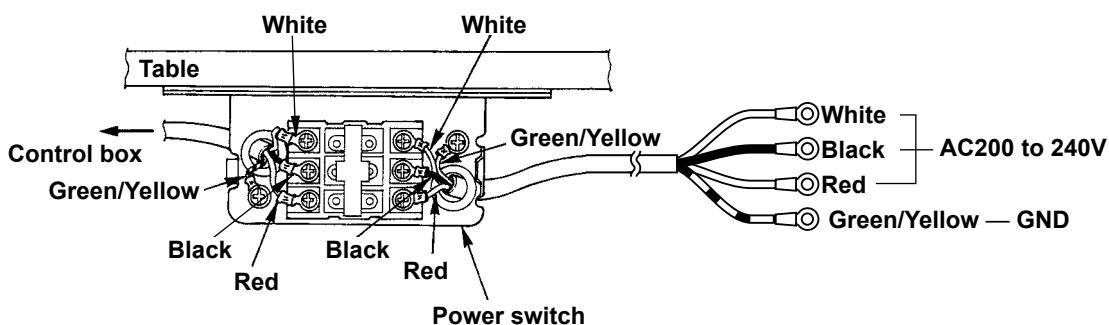
Fix power switch ❶ under the machine table with wood screws ❷.

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

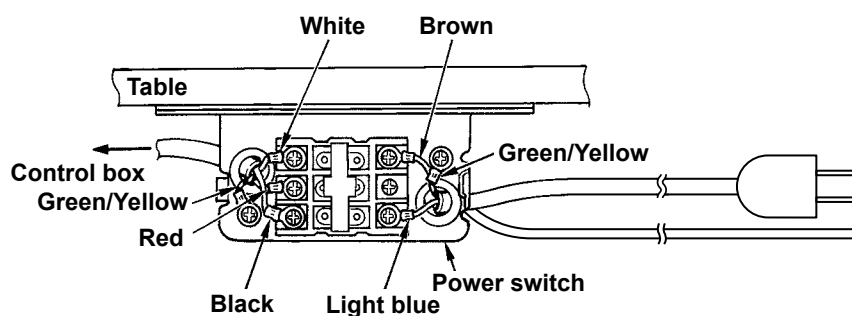
2) How to connect the power switch plug

Connect the power cord coming from the control box to the power switch.

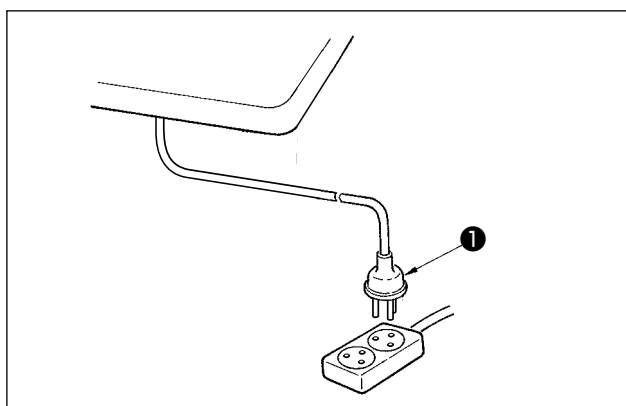
• Connecting 3-phase 200 to 240V



• Connecting single phase 100 to 120V



1. Be sure to prepare the power plug which conforms to the safety standard.
2. Be sure to connect the ground lead (green/yellow) to the grounding side.



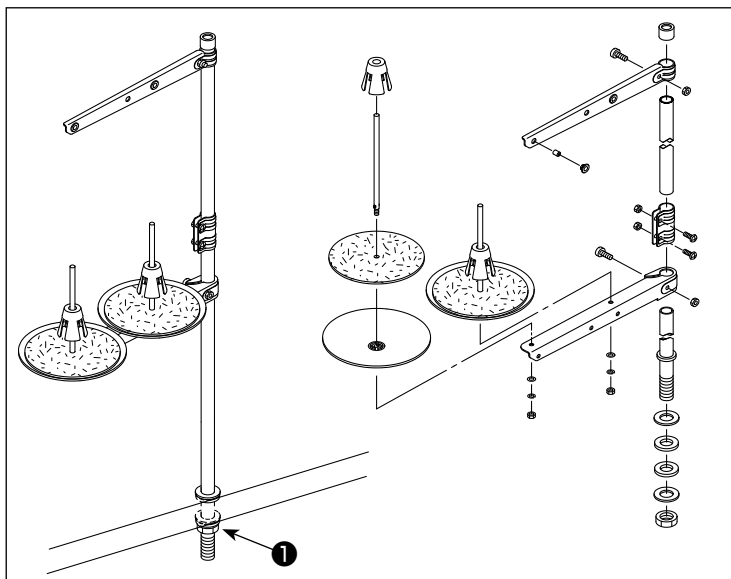
- 2) Check that the power switch is in the OFF state.
Then, insert the power plug ❶ coming from the power switch into the plug receptacle.



In prior to the connection of the power plug ❶, re-check the supply voltage specification indicated on the control box.

* The power plug ❶ is different in shape according to the destination of the sewing machine.

2-9. Installing the thread stand



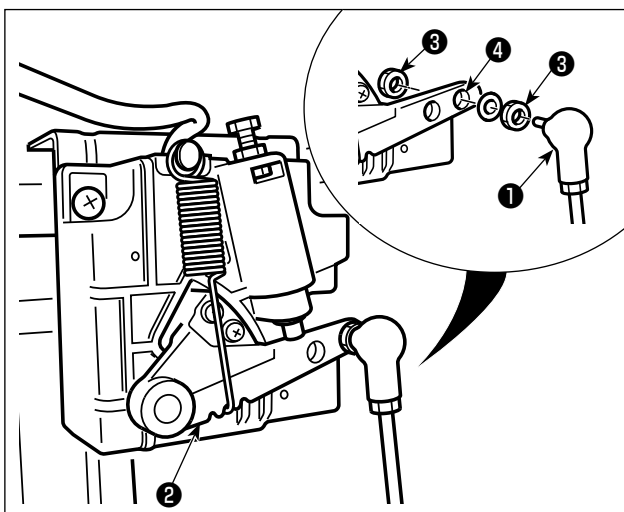
- 1) Assemble the thread stand unit, and insert it in the hole in the machine table.
- 2) Tighten nut ❶.

2-10. 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.



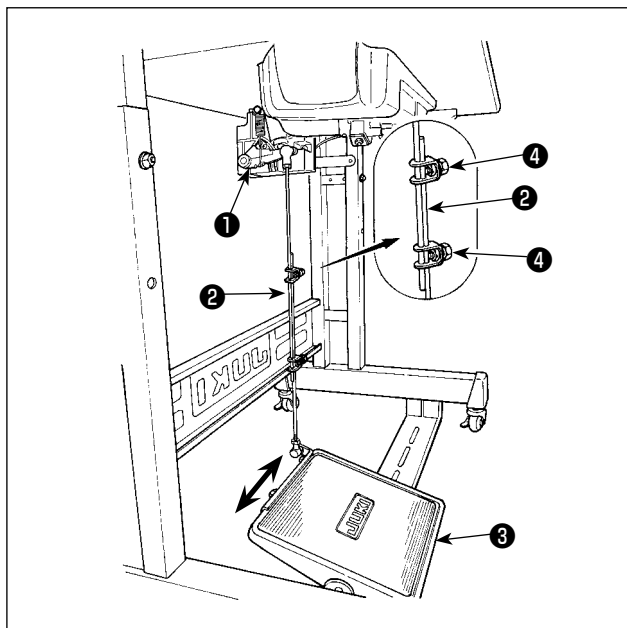
- Fix connecting rod ❶ to installing hole of pedal lever ❷ with nut ❸.

2-11. 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.



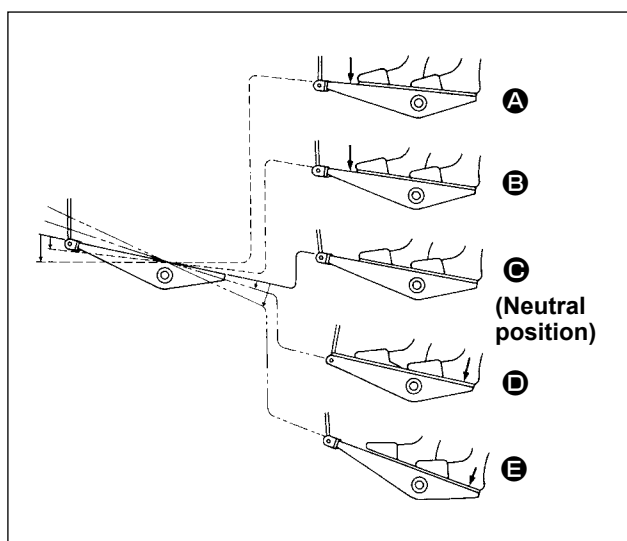
2-11-1. Installing the connecting rod

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

2-11-2. Adjusting the pedal angle

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

2-12. 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. ⑤
- 2) The machine runs at high sewing speed when you further depress the front part of the pedal. ④
(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. ③
- 4) The machine trims threads when you fully depress the back part of the pedal. ⑤

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

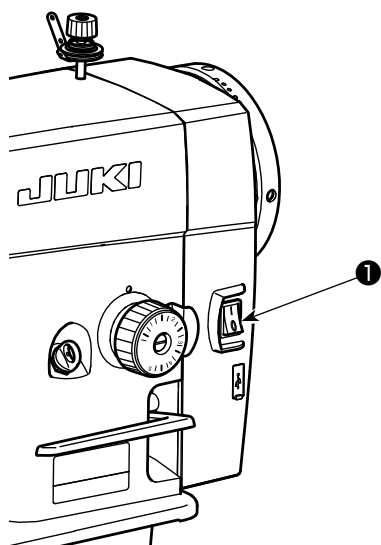
The presser foot goes up when you lightly depress the back part of the pedal ④, and if you further depress the back part, the thread trimmer is actuated.

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.

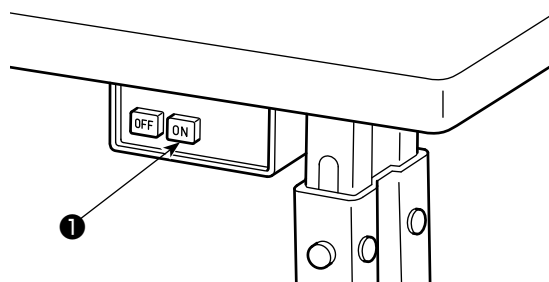
- If you reset the pedal to its neutral position ③ during the automatic reverse feed stitching at seam start, the machine stops after it completes the reverse feed stitching.
 - The machine will perform normal thread trimming even if you depress the back part of the pedal immediately following high or low speed sewing.
 - The machine will completely perform thread trimming even if you reset the pedal to its neutral position ③ immediately after the machine started thread trimming action.
- 5) When you depress lightly the back part of pedal at its neutral position ③ before starting, the pedal is brought to the first presser lifting position ④. When you depress the back part of pedal further, the pedal is brought to the second presser lifting position ⑤.

2-13. Power switch

Single phase 220 to 240V



3-phase 200 to 240V,
Single phase 100 to 120V



1) Lightly press the power switch ❶ by hand to turn the power ON. Power switch ❶ (single phase 220 to 240V) is in the ON state when the "I" mark side is pressed. It is in the OFF state when the "O" side is pressed.

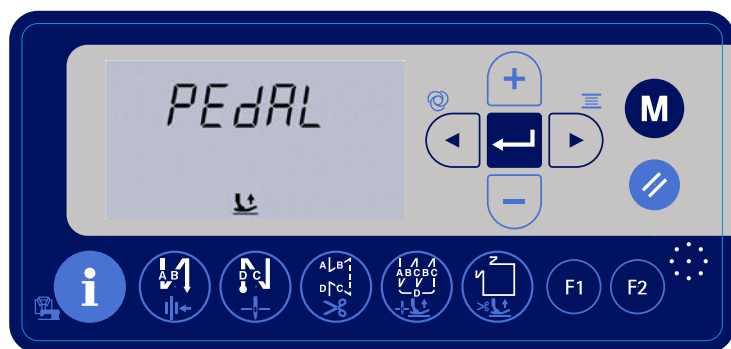
1. Do not strongly tap the power switch by hand.
2. If the power indicator LED on the panel does not light up after having turned ON the power switch ❶, immediately turn OFF the power switch ❶ and check the supply voltage. When you want to re-turn ON power switch ❶ after carrying out the aforementioned steps, it is necessary to wait for five minutes or more after you have turned OFF power switch ❶.
3. Do not place your hand or anything under the needle since the needle bar may automatically move according to the memory switch setting when you turn ON the power to the sewing machine.



2) When you depress the back part of pedal, the needle bar and the presser lifting motor carry out their initial operation to allow the sewing machine to start sewing.



If you attempt to start sewing without depressing the back part of pedal, the warning message screen shown below will be displayed. To prevent this, be sure to start sewing after depressing the back part of pedal.



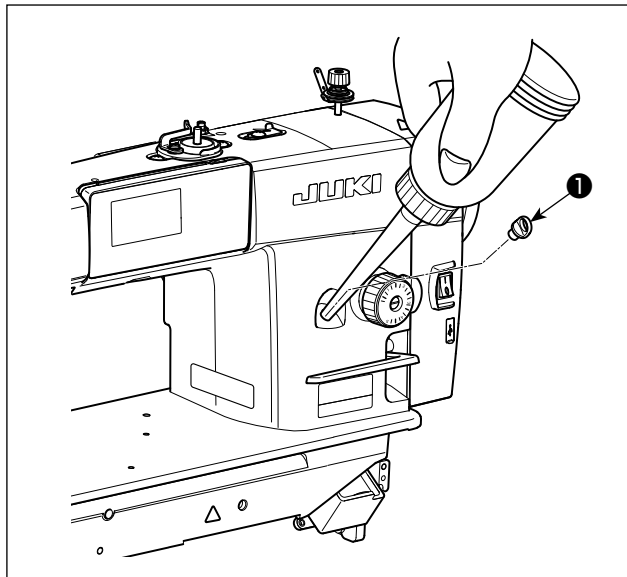
< Origin retrieval screen >

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. In the case of adding oil to the sewing machine while it is energized, do not place your hands into the moving parts for the sake of safety.



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

- 1) Turn ON the power switch. Remove oil hole cap ①. Pour NEW Defrix Oil No. 1 (part number: 40214221 or MDFRX16000C0) supplied with the unit or JUKI CORPORATION GENUINE OIL 7 (part number: 40102087) into the oil tank through the oil hole.
- 2) When the oil amount in the oil tank reaches the maximum amount, flashes on and off on the operation panel and the voice warning is given.

Stop oiling.

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 the remaining amount of oil in the oil tank has reduced, flashes on and off on the operation panel



and the voice warning is given.

Refill the oil tank with oil.



1. When you use a new sewing machine or a sewing machine after an extended period of dis-use, 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 : MD-FRX1600C0) 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 ① removed. Never remove cap ① from the oil inlet in any case other than oiling. In addition, take care not to lose it.

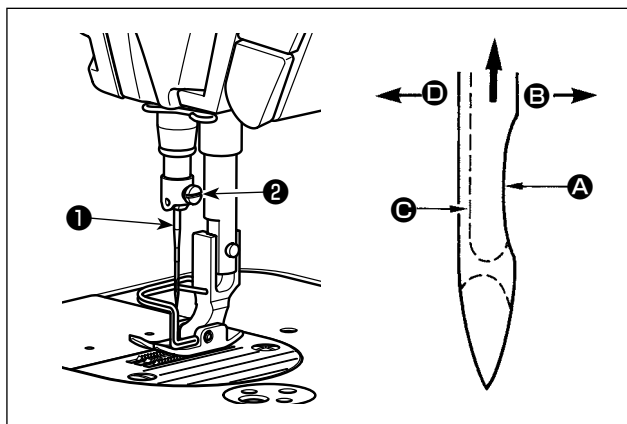
3. PREPARATION BEFORE SEWING

3-1. Attaching the needle



WARNING :

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



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

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

4) Securely tighten screw ②.

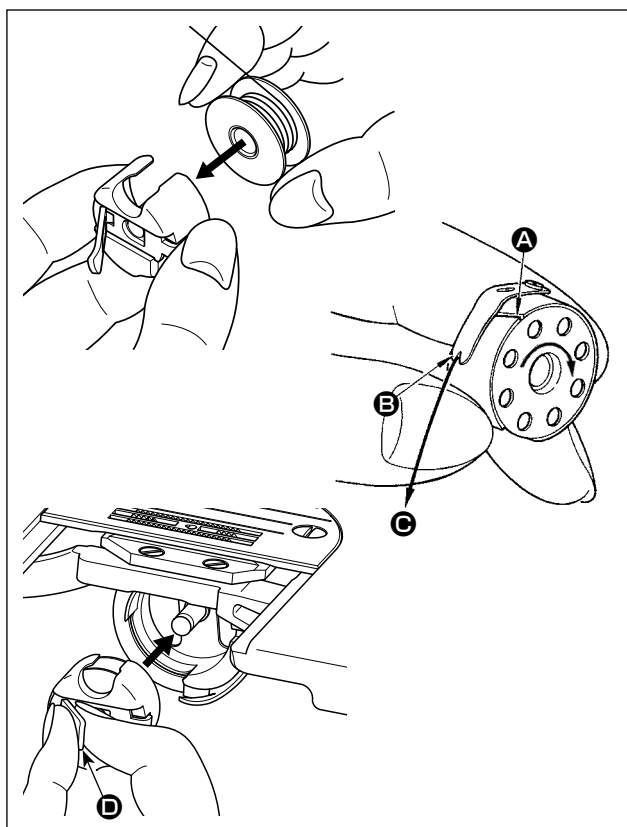
5) Check that long groove ③ of the needle is facing exactly to the left in direction ④.

3-2. Removing/fitting the bobbin case



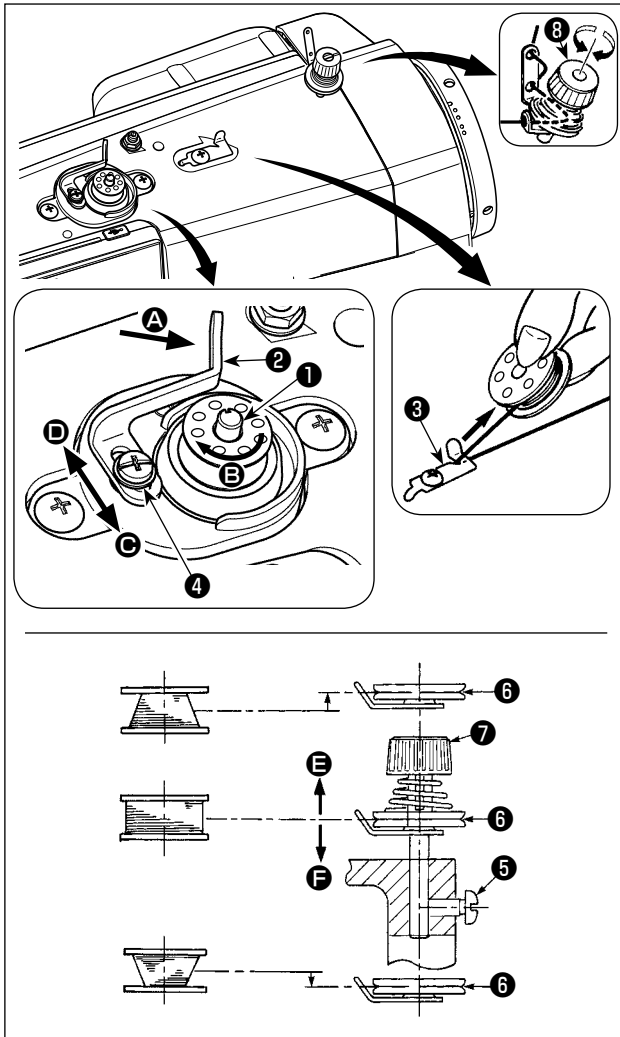
WARNING :

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



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

3-3. Winding the bobbin thread



- 1) Insert the bobbin deep into the bobbin winder spindle ❶ until it will go no further.
- 2) Pass the bobbin thread pulled out from the spool rested on the right side of the thread stand following the order as shown in the figure on the left. Then, wind clockwise the end of the bobbin thread on the bobbin several times.
- 3) Press the bobbin winding lever ❷ in the direction of A and start the sewing machine. The bobbin rotates in the direction of B and the bobbin thread is wound up. The bobbin winder spindle ❶ automatically as soon as the winding is finished.
- 4) Remove the bobbin and cut the bobbin thread with the thread cut retainer ❸.
- 5) When adjusting the winding amount of the bobbin thread, loosen setscrew ❹ and move bobbin winding lever ❷ to the direction of C or D. Then tighten setscrew ❹.
 To the direction of C : Decrease
 To the direction of D : Increase
- 6) In case that the bobbin thread is not wound evenly on the bobbin, remove the handwheel, loosen screw ❺ and adjust the height of bobbin thread tension ❽.

- It is the standard that the center of the bobbin is as high as the center of thread tension disk ❹.
- Adjust the position of thread tension disk ❹ to the direction of E when the winding amount of the bobbin thread on the lower part of the bobbin is excessive and to the direction F when the winding amount of the bobbin thread on the upper part of the bobbin is excessive.

After the adjustment, tighten screw ❺.

- 7) To adjust the tension of the bobbin winder, turn the thread tension nut ❷.



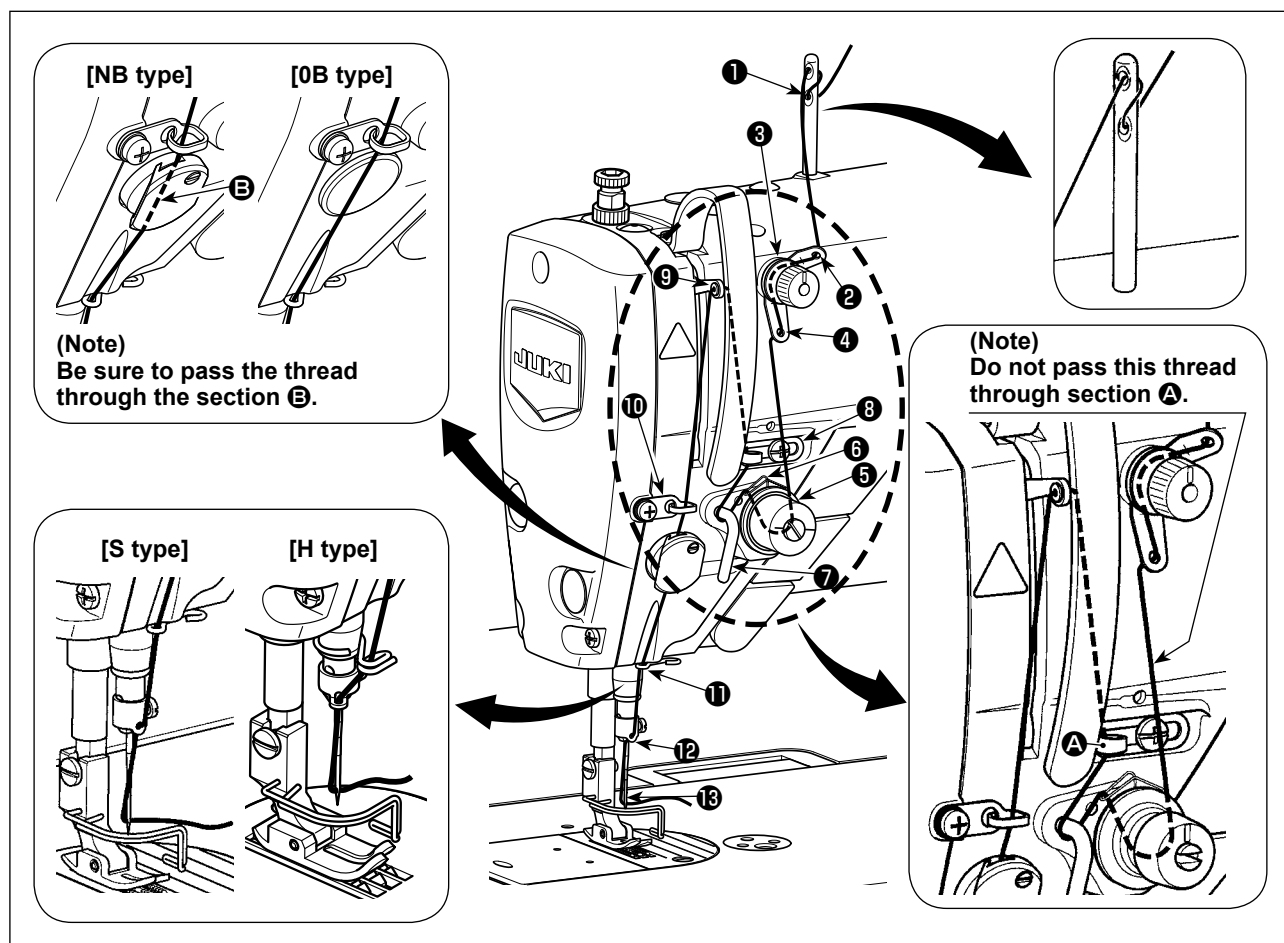
1. When winding the bobbin thread, start the winding in the state that the thread between the bobbin and thread tension disk ❹ is tense.
2. When winding the bobbin thread in the state that sewing is not performed, remove the needle thread from the thread path of thread take-up and remove the bobbin from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

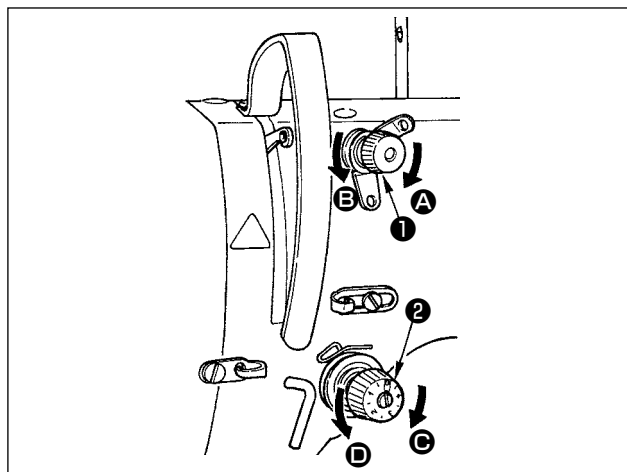


WARNING :

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

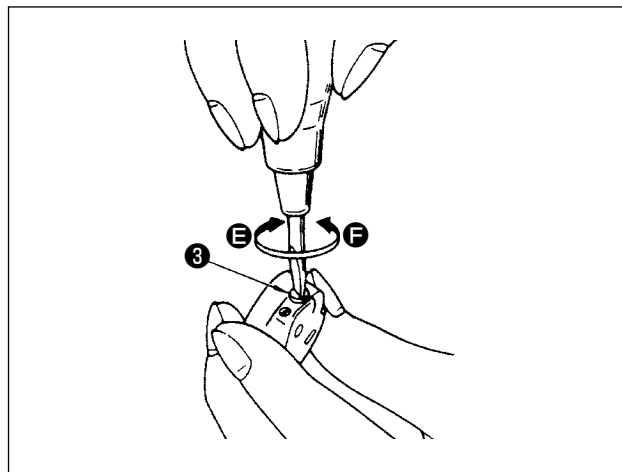


3-5. Thread tension



3-5-1. Adjusting the needle thread tension

- 1) Turn thread tension No. 1 nut ① clockwise (in direction ①), to shorten the thread length remaining on the needle after thread trimming or counterclockwise (in direction ②), to lengthen the thread length.
- 2) Turn thread tension nut ② clockwise (in direction ③) to increase or counterclockwise (in direction ④) to reduce the needle thread tension.



3-5-2. Adjusting the bobbin thread tension

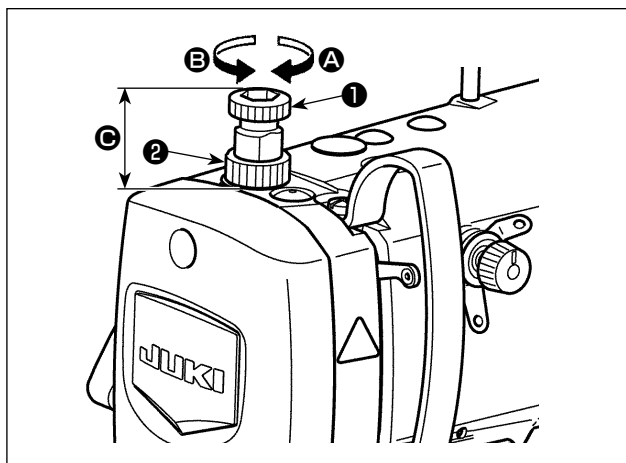
- 1) Turn tension adjusting screw ③ clockwise (in direction ⑤) to increase or counterclockwise (in direction ⑥) to reduce the bobbin thread tension.

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

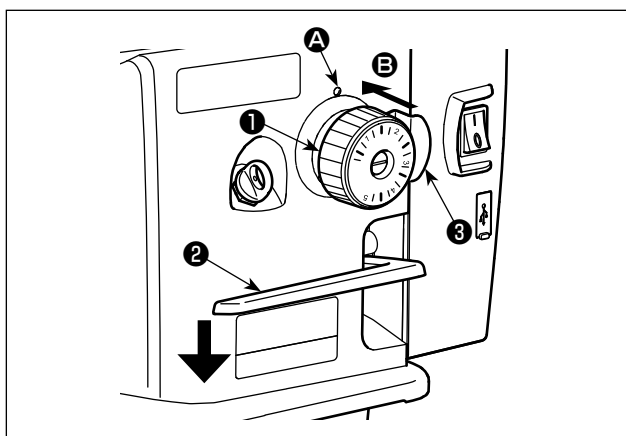
The standard value of the height C of presser spring regulator ① is as follows :

- 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

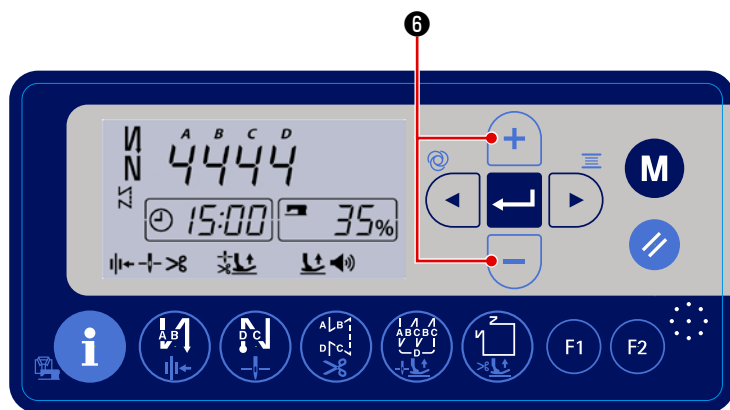


* The dial calibration is in millimeters.



- 1) Turn stitch length dial ① in the direction of the arrow, and align the desired number to marker dot A on the machine arm.
- 2) To change over the feed scale mark from "large" to "small", turn stitch dial ① while pressing feed lever ② in the direction of the arrow and pressing stopper ③ in the direction of arrow B (toward the back of the arm).
- 3) To change over the feed scale mark from "small" to "large", turn stitch dial ① while pressing stopper ③ in the direction of arrow B (toward the back of the arm).
- 4) Release stopper ③ to fix stitch dial ① .

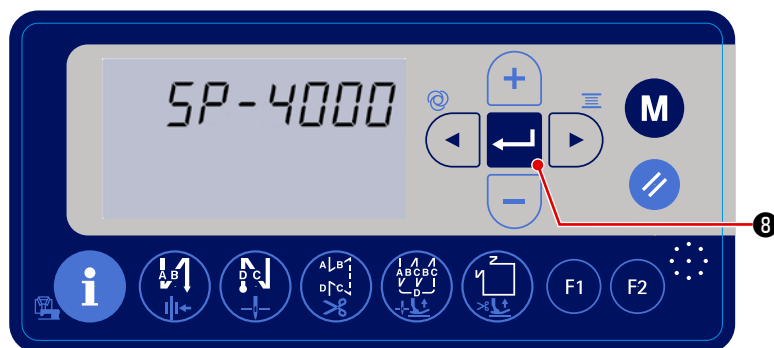
3-8. Changing the sewing speed


The sewing speed can be changed with   **6** on the normal sewing screen.



[How to change the sewing speed]

1) The sewing speed change screen is displayed by pressing   **6** on the normal sewing screen. On the sewing speed change screen, the sewing speed can be changed.



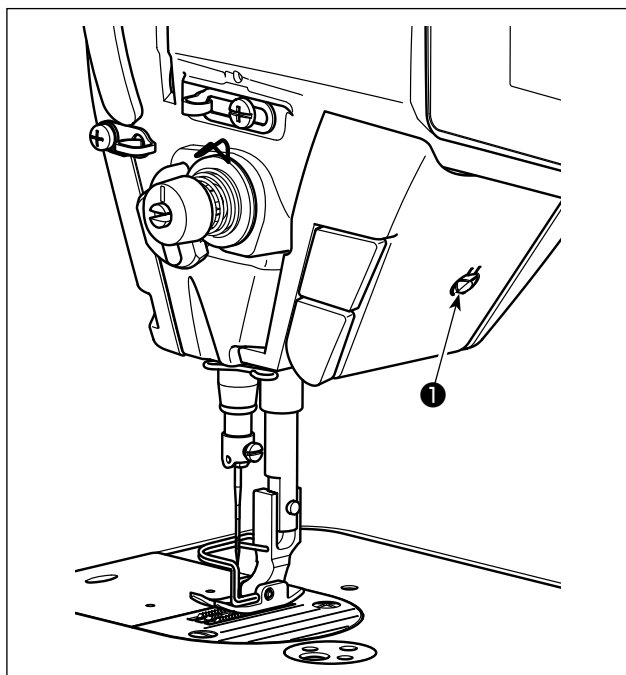
2) Press  **8** to determine the set value. Then, the sewing machine returns to the normal sewing state.

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.**

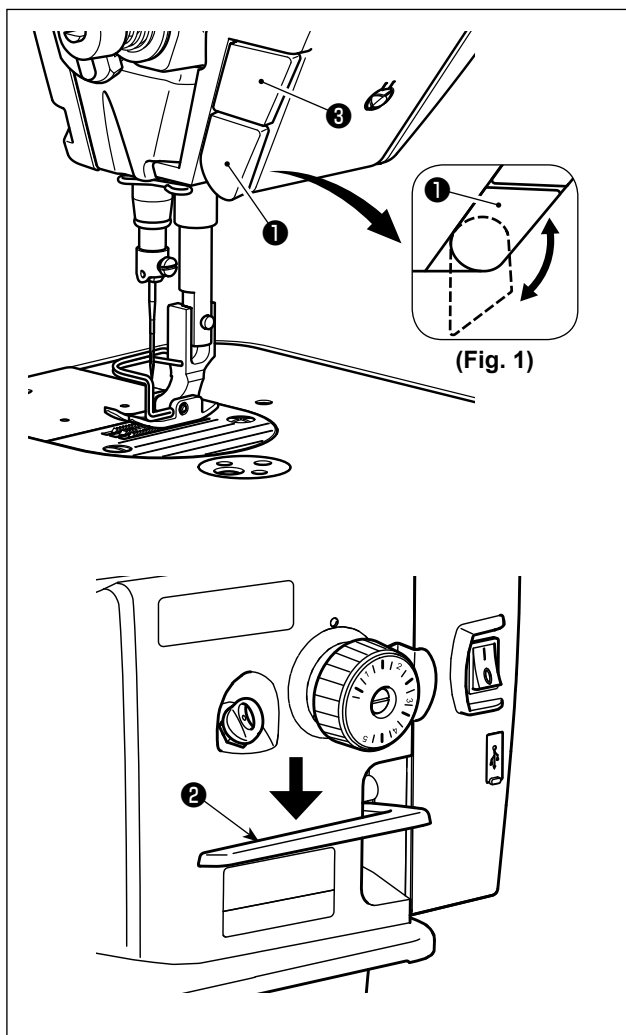
The sewing machine is provided as standard with an LED light which illuminates the needle entry area. Intensity adjustment and turn-off of the light is carried out by pressing switch ❶. Every time the switch is pressed, the light is adjusted in intensity in five steps and is turned off in turn.

[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



[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)

[Needle up/down switch]

The needle can be moved up and down to change the needle position by a half stitch by pressing needle up/down switch ❸.

(The function of this switch can be changed to 1-stitch correction, etc. by carrying out the procedure described in **"4-6. Function setting" p. 32**.)

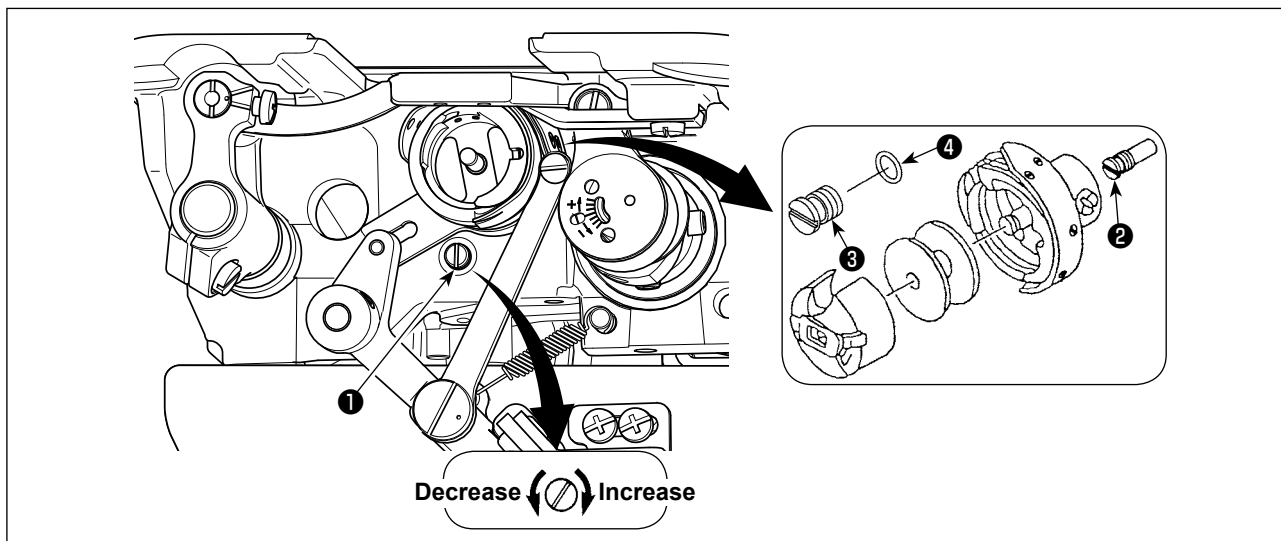
3-11. Adjusting the amount of oil (oil splashes) in the hook



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.

3-11-1. Adjusting the amount of oil in the hook



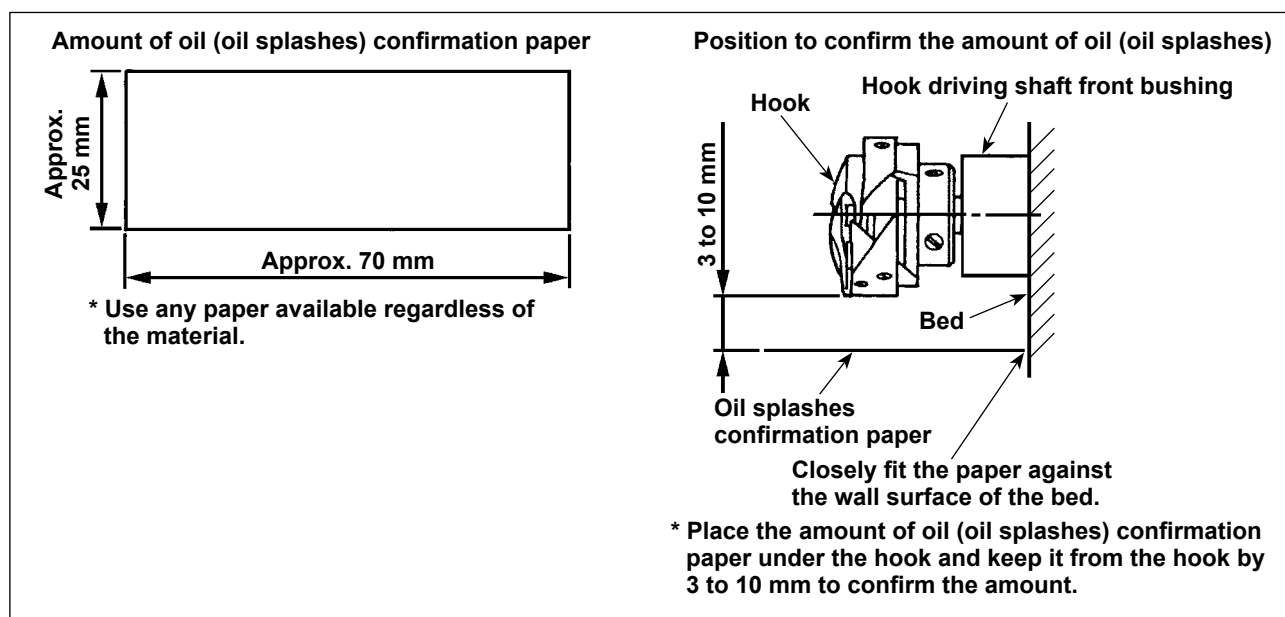
Tighten (turn clockwise) oil amount adjustment screw ❶ to increase the amount of oil in the hook, or loosen (turn counterclockwise) to decrease it.



[When using RP hook (hook for dry head) for DDL-8000A-*MS 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.

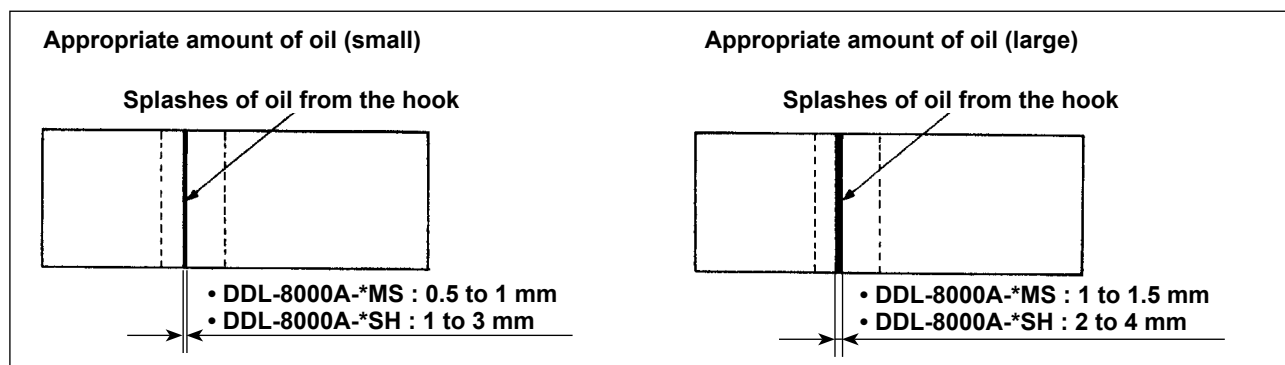
3-11-2. How to confirm the amount of oil (oil splashes)



* 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.

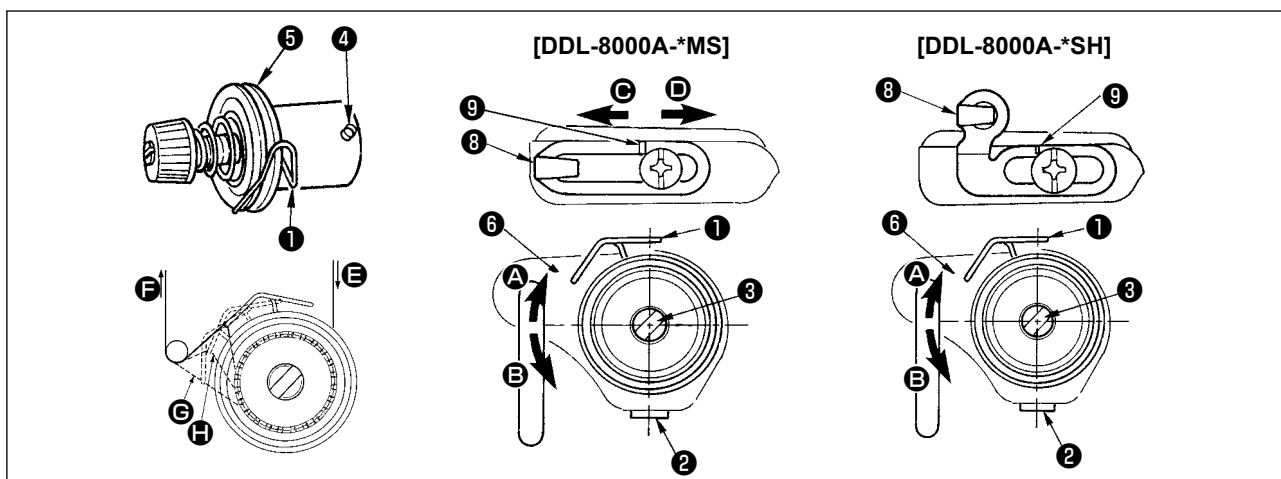
- 1) If the machine has not been sufficiently warmed up for operation, make the machine run idle for approximately three minutes. (Moderate intermittent operation)
- 2) Place the amount of oil (oil splashes) confirmation paper under the hook while the sewing machine is in operation.
- 3) Confirm that 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.)

3-11-3. 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.

3-12. Adjusting the thread take-up spring and the thread take-up stroke



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

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

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

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



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

(3) Adjusting the thread take-up stroke

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

* Standard state of the thread guide

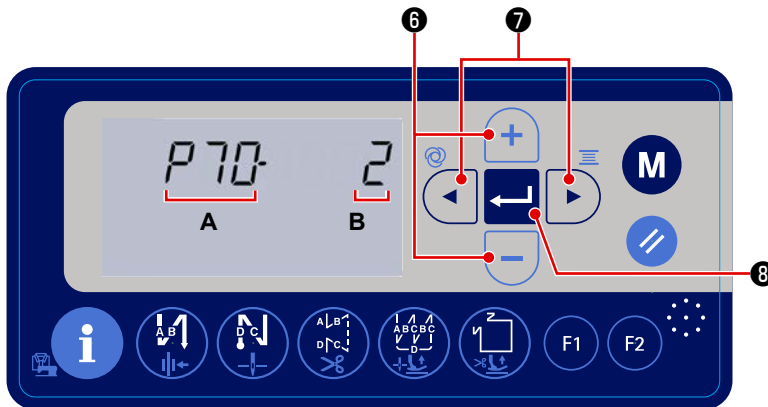
The standard distance between the right end face of thread guide and the screw head is as follows:

	[DDL-8000A-*MS]	[DDL-8000A-*SH]
< Destination AA and BB >		
< Destination GG >		





4. FOR THE OPERATOR

4-1. How to set the machine head and to initialize data (the factory-set state at the time of shipment)

* This item has been factory-adjusted at the time of shipment. Carry out the machine head setting procedure in the case the control box is replaced, or in any case where it is necessary.



1) Refer to **"4-6. Function setting"** p. 32 and call the function setting No. P70 (A).


2) Press   **7** to flash the set value (B) on and off. In this state, select the corresponding type of machine head by pressing   **6**.

Set value = 2: DDL8000ASMS

Set value = 3: DDL8000ASSH


Set value = 4: DDL8000ABMS


Set value = 5: DDL8000ABSH

3) Data is initialized by pressing  **8**. Then, the sewing machine returns to the normal sewing state.

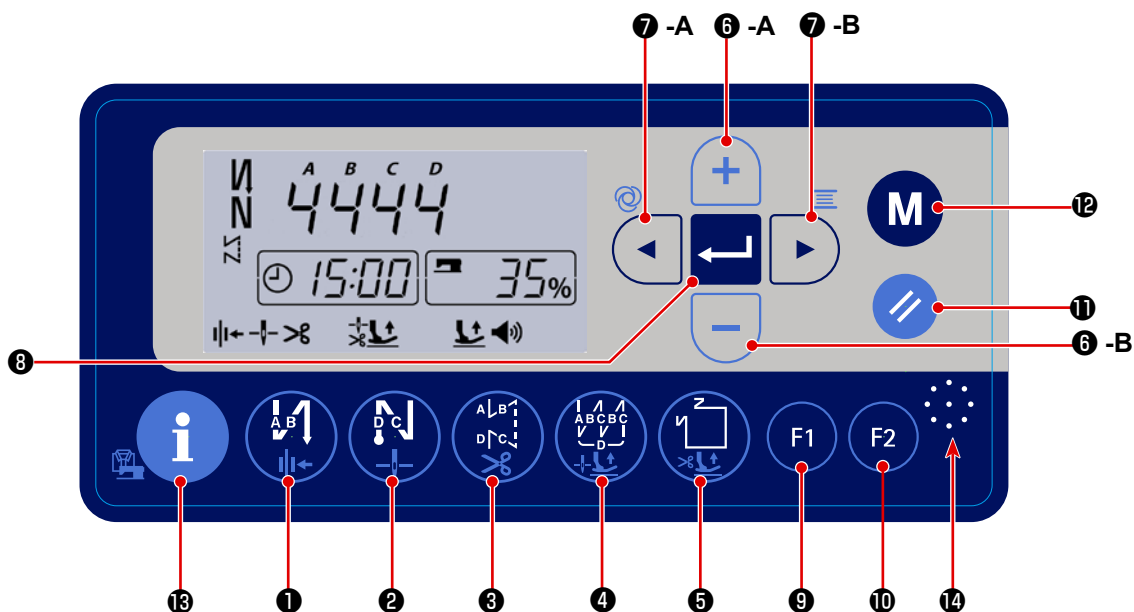
* If you want to initialize the data, change the setting of the type of machine head to a different type, then select the desired type of machine head.

Example) In the case the selected type of machine head is "2":










P70 Change the selected type of machine head from "2" to "3". Press  **8**.

Change the selected type of machine head again from "3" to "2". Press  **8**.

4-2. Operation panel

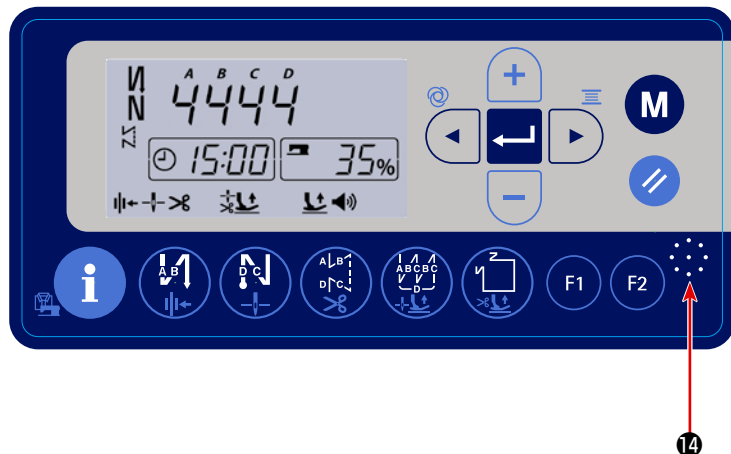


No.		How long the key must be pressed	Function
①		Short time	Used to changing over the automatic reverse feed stitching at the beginning of sewing to: Reverse feed stitching / Double reverse feed stitching / Disable
		Long time	Used to change over the thread clamp operation between enable / disable
②		Short time	Used to change over the automatic reverse feed stitching at the end of sewing to: Reverse feed stitching / Double reverse feed stitching / Disable
		Long time	Used to change over the needle bar stop position at the time of stopping the sewing machine between up and down
③		Short time	Used to set the type of stitching to free stitching
		Long time	Used to change over the thread trimming operation between enable / disable.
④		Short time	Used to set the type of stitching to overlapped stitching
		Long time	Used to change over the lifting of the presser foot during sewing between "automatically lift / not lift".
⑤		Short time	Used to carry out setting of the polygonal-shape stitching.
		Long time	Used to changeover the automatic lifting of presser foot after thread trimming between lift / not lift
⑥	A	Short time	Used to increase the maximum sewing speed
	B	Short time	Used to decrease the maximum sewing speed

No.			How long the key must be pressed	Function
7	A		Short time	Used to set the number of reverse feed stitches (ABCD) at the beginning and end of sewing
			Long time	Used to change over the one-shot operation between enable / disable
	B		Short time	Used to set the number of reverse feed stitches (ABCD) at the beginning and end of sewing
			Long time	Used to set the bobbin counter
8			Short time	Used to determine the set data
9		Short time	Used to display the parameters registered to function key F1	
		Long time	Used to register a parameter to function key F1	
10		Short time	Used to display the parameters registered to function key F2	
		Long time	Used to register a parameter to function key F2	
11		Short time	Used to return the data being edited to the initial state	
12		Short time	Used to set the sewing machine clock right	
		Long time	Used to set the memory switch	
13		Short time	Used to change over the display to the thread trimming counter display	
14		-	Speaker for the audio guidance	

4-3. Audio guidance

The audio guidance provides the following information when turning ON / OFF the power to the sewing machine, operating the sewing machine and operating the operation panel. The guidance sound is emitted from

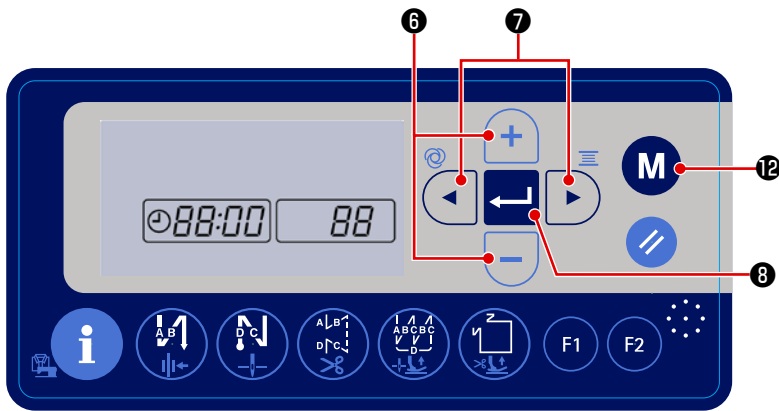




- ① At the time of turning the power ON "Hello. (month) (day), (date)" etc.
- ② At the time of turning the power OFF "Thank you for your hard work." etc.
- ③ At the time of operating the sewing machine "Oil level is low. Please refuel."
 "Oil tank is full."
 "Bobbin thread will be running out."
 Guidance on the production support
 "The current productivity achievement rate is at 105%"
 etc.
 "Kindly refer to the "Lists of errors" by using the QR
 code.", etc.
- ④ At the time of operating the operation panel The audio guide provides the modified parameter content.

4-4. Setting the clock


The time displayed on the operation panel can be changed.

- 1) Press **M** ⑫ in the normal sewing state to display the time change screen.



- 2) The time setting items flash on and off in the order of "year", "month", "day ", "hour", "minute" and "second". Select the item you want to change with   ⑦ . Then, change the value of that item with

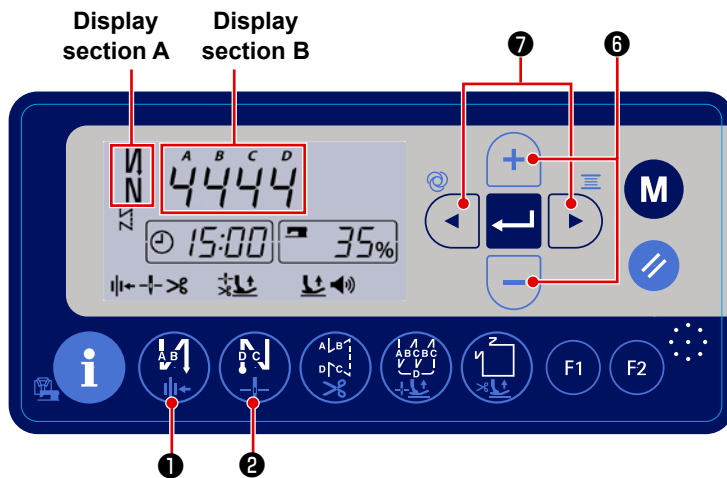


- 3) Press  ⑧ to determine the set value. Then, the sewing machine returns to the normal sewing state.


4-5. Operating procedure of the sewing pattern


4-5-1. Reverse feed stitching pattern

Reverse feed stitching at sewing start and reverse feed stitching at sewing end can be separately programmed.







[Setting procedure of the reverse feed stitching]

- 1) The reverse feed stitching pattern at the beginning of sewing can be changed over to "enable / double reverse feed stitching / disable" by pressing  **1**.

The reverse feed stitching pattern at the end of sewing can be changed over to "enable / double reverse feed stitching / disable" by pressing  **2**.

The current setting state of the reverse feed stitching is displayed on the display section **A**.

- 2) Press   **7** to put the sewing machine in the state where the number of reverse feed stitches can be set. At this time, one of the items shown in the display section **B** flashes on and off. Move the item that flashes on and off to the target process (A, B, C or D) you want to set. Then, change the set value for that process with   **6**.

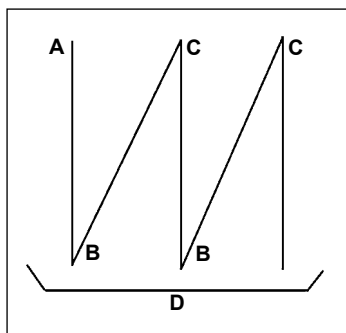


The number which exceeds 9 is indicated as follows:

A = 10, b = 11, c = 12, d = 13, E = 14, and F = 15.

4-5-2. Overlapped stitching pattern

Overlapped stitching pattern can be programmed.



A : Number of stitches of normal stitching setting : 1 to 15 stitches

B : Number of stitches of reverse stitching setting : 1 to 15 stitches

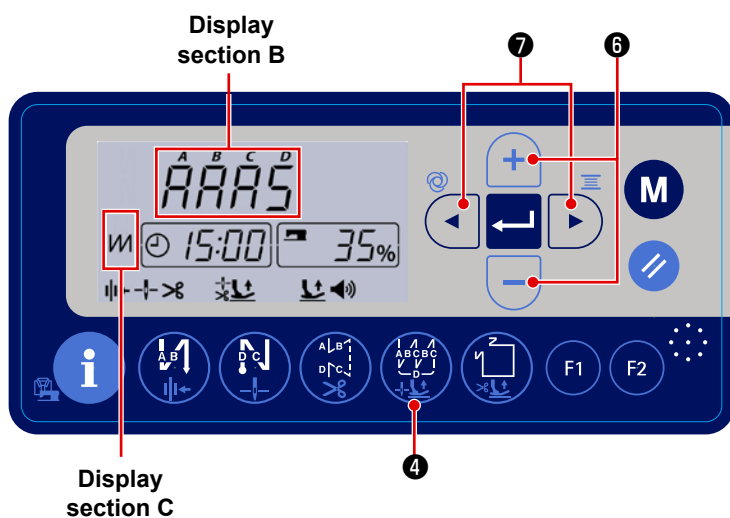
C : Number of stitches of normal stitching setting : 1 to 15 stitches


D : Number of times of repetition : 1 to 15 times


- Caution**



 1. When process D is set to 5 times, the sewing is repeated as A → B → C → B → C.
 2. The number which exceeds 9 is indicated as follows:
A = 10, b = 11, c = 12, d = 13, E = 14, and F = 15.

[Setting procedure of the overlapped stitching]



- 1) Press  **4** to enable the overlapped stitching pattern.

When the overlapped stitching pattern is enabled,  is displayed in the display section C.

- 2) Press   **7** to put the sewing machine to the overlapped stitching setting state. In this state, one of the items displayed in the display section B flashes on and off.
- 3) Move the process that flashes on and off to the process (A, B, C or D) you want to set. Then, change the number of stitches and the number of times with




4-5-3. Polygonal-shape stitching pattern


A polygonal-shape stitching pattern can be set.



As many as nine different patterns can be set.

In addition, nine steps of stitching can be set in one pattern.

[How to set a polygonal-shape stitching pattern]

- 1) Press  **5** to put the sewing machine to the constant-dimension stitching pattern setting state. In this state, one of the processes **A**, **B** and **C** flashes on and off.

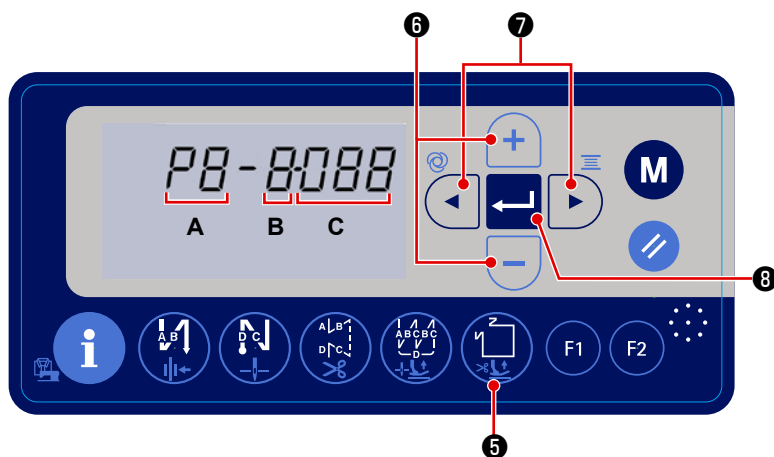
- 2) Move the process that flashes on and off to the process (**A**, **B** or **C**) you want to set with   **7**.

Then, change the set value for that process with   **6**.

A : Selection of the pattern number

B : Select what number of the step

C : Set number of stitches of **B**



* Constant-dimension stitching (Straight stitching)

(Example) Select the pattern number to **A**.

Set **B** to "1". Set the number stitches (1 - 999) of the first step to **C**.

Set **B** to 2. Set **C** to 0 (zero).

- * Setting **C** to "0" means the end of constant-dimension stitching. In this case, the number of seams to be sewn using the constant-dimension stitching becomes "1".

After the completion of setting, press  **8** to determine the data.

* Polygonal-shape stitching (label sewing)

(Example) Select the pattern number to **A**.

Set **B** to "1". Set the number of stitches (1 - 999) in the first step to **C**.

Similarly, set **B** to 2, to 3 and to 4 in sequence to set the number of stitches (1 to 999) of the second, third and fourth seam line.

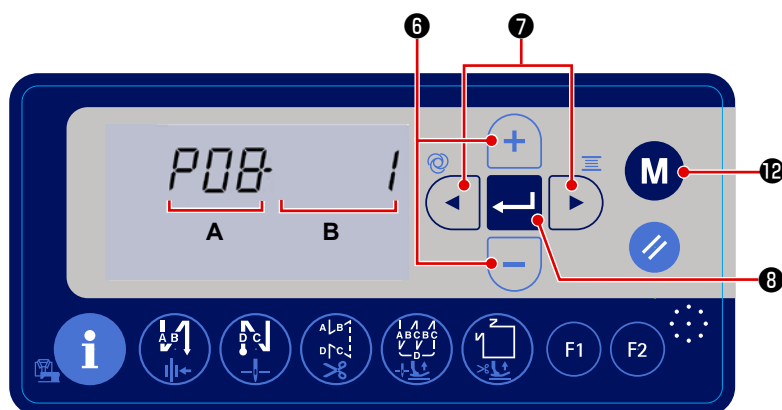
Set **B** to 5. Set **C** to 0 (zero).

- * Setting **C** to 0 (zero) means the end of polygonal-shape stitching. In this case, the number of seams to be sewn using the polygonal-shape stitching becomes "4".

- * In the initial setting, a polygonal-shape stitching pattern consisting of four steps (each steps consist of 12 stitches) has been factory set.

4-6. Function setting

The set value of the function setting can be changed.



1) The function setting screen is displayed by keeping **M** 12 held pressed for three seconds in the normal sewing state.

A indicates the function setting number.
B indicates the set value for that function setting number.

2) Press 7 to flash function setting No. **A** on and off. In this state, press 6 to select the function setting number you want to set.

(The figure shows the function setting No. P08, that is used for setting the number stitches to be sewn using the soft-start function.)

3) Press 7 to flash setting No. **B** on and off. In this state, change the set value by pressing 6.

4) Press 8 to determine the set value.

5) Press **M** 12 to return the sewing machine to the normal sewing state.

In the case of changing the set value for other function setting number, repeat the steps of procedure 2), 3) and 4). Then, finally carry out step of procedure 5).

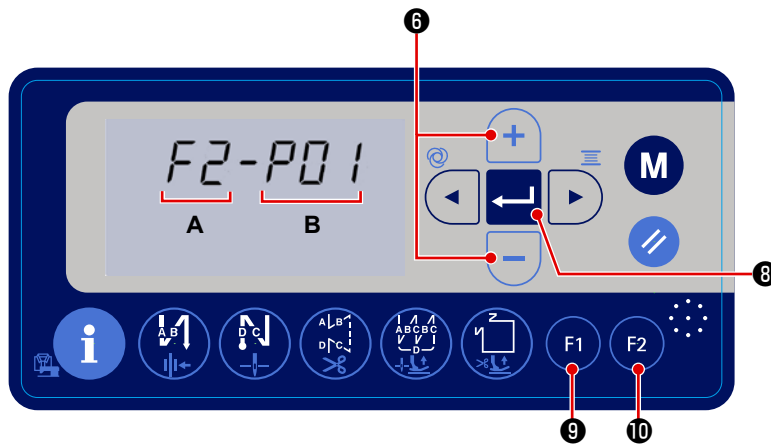
6) The function setting items are classified into two different levels; user level and service level.

In the case of displaying the function setting items that are classified to the service level, turn the power ON while keeping **M** 12 held pressed.

4-7. Setting the function keys (F1 and F2)

The functions you use frequently can be registered to these two function keys.

The set value of the function setting number that is registered can be directly changed by pressing **F1** **9** and **F2** **10**.



1) The function setting screen is displayed by keeping **F1** **9** switch or **F2** **10** switch held pressed for three seconds in the normal sewing state.

A indicates the function setting number.
B indicates the set value for that function setting number.

2) The display section **A** shows the function switch F1 or F2 you have pressed. The display section **B** shows the currently-registered function setting number that is flashing on and off.

3) Select the function setting number you want to register by pressing **+** **6** or **-** **6**.

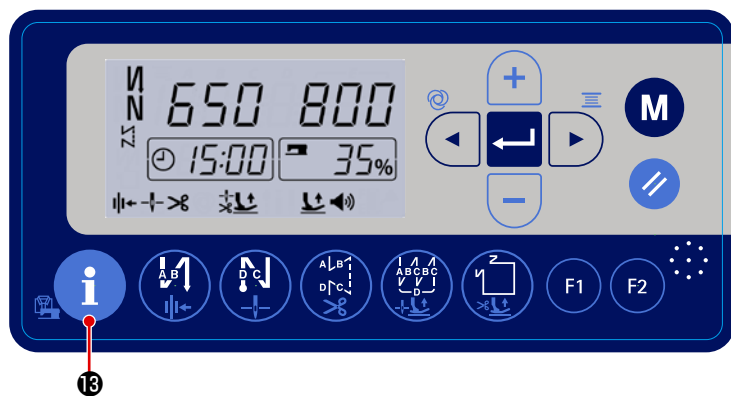
4) Press **↩** **8** to determine the function setting number to be registered. Then, the sewing machine returns to the normal setting state.

* If you want to registered the function setting that belongs to the service level, the power should be turned ON, in prior, while keeping **M** **12** held pressed. Then, return to the sewing screen by pressing **M** **12**. On the sewing screen, carry out the aforementioned steps of procedure 1) to 4).


4-8. Production support function

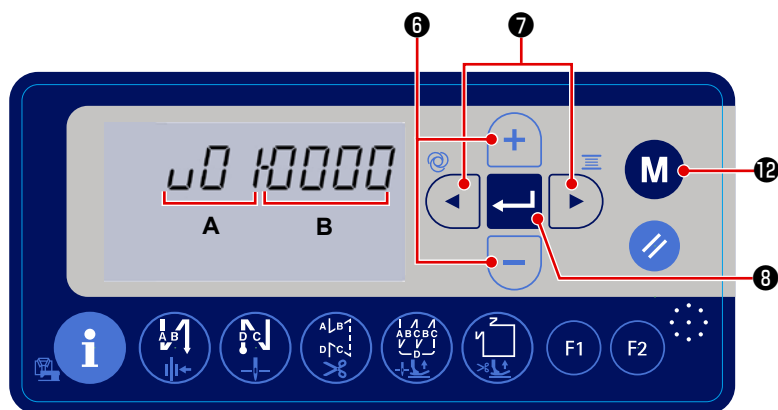
The production support function provides two different functions to allow the operator to know the production status; one is "to know productivity based on the daily operation rate of the sewing machine" and the other is "to know the progress of sewing work based on the number of times of thread trimming".

4-8-1. How to set the production support parameters











< Production support screen >

- 1) Press  **13** in the normal sewing state to display the production support screen.



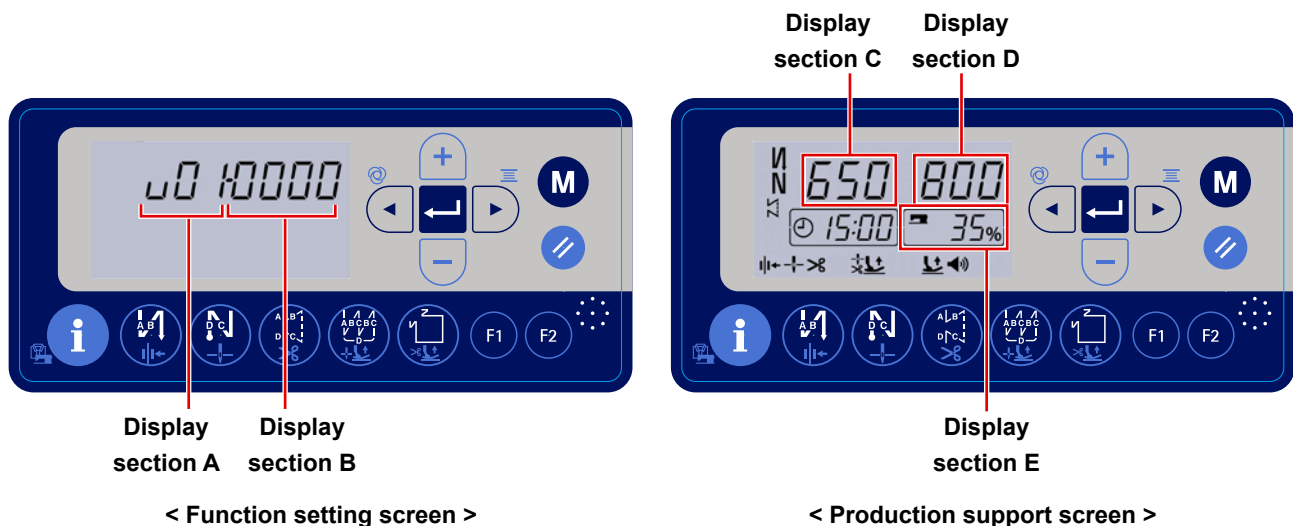
- 2) Display the production support parameters by keeping **M** **12** held pressed for three seconds on this screen.

- 3) Press   **7** to flash the parameter No. **A** on and off. In this state, select the parameter number you want to set by pressing   **6**.

- 4) Press   **7** to flash the set value **B** on and off. In this state, change the set value by pressing   **6**.

- 5) Press  **8** to determine the set value. Press **M** **12** to return the screen to the previous screen.

4-8-2. List of production support parameters



No.	Item		Setting range	Initial value
U01	Target number of pieces to be produced per day	The target number of pieces to be produced within the work hours set with parameters U03 and U04 is set with this parameter. (Display section B)	1 to 1999	1000
U02	Number of times of thread trimming for one count of product	The number of times of thread trimming to be carried out until the counter counts one is set with this parameter. (Display section B)	1 to 99	1
U03 to U04	Work hours (from the starting time to the finishing time)	The starting time and the finishing time of sewing work is set with this parameter. * The operation rate is calculated using the work hours excluding the time of work breaks.	0:00 to 23:59	8:00 to 17:00
U05 to U06	Work break 1 (from the starting time to the finishing time)	The starting time and the finishing time of a work break is set with this parameter. In the case no work break is provided, this parameters should be "0000". (Caution) * For U05 - U06, U07 - U08 and U09 - U10, enter the time in the order from the earliest to latest. * In the case the work break is not provided within the work hours (U03 - U04), "non" will be displayed. Only the data for which "non" is not displayed are effective.	0:00 to 23:59	0:00 to 0:00
U07 to U08	Work break 2 (from the starting time to the finishing time)			0:00 to 0:00
U09 to U10	Work break 3 (from the starting time to the finishing time)			0:00 to 0:00
U11	Type of display of the target number of pieces to be produced	The type of display for the target number of pieces to be produced (display section D) is changed over with this parameter. 1: The target number of pieces at the current time is displayed by calculating it at all times. * Display section E : The actual number of pieces produced at the current time / The target number of pieces to be produced at the current time × 100 (%) 0: The target number of pieces to be produced for the day is displayed. * Display section E : The actual number of pieces produced for the day / The target number of pieces to be produced for the day × 100 (%)	0 - 1	0
U12	Changeover of the display of operation rate between ON / OFF	The display of the operation rate (display section E) is changed over between ON / OFF. 1: Operation rate is displayed 0: Operation rate is not displayed	0 - 1	1

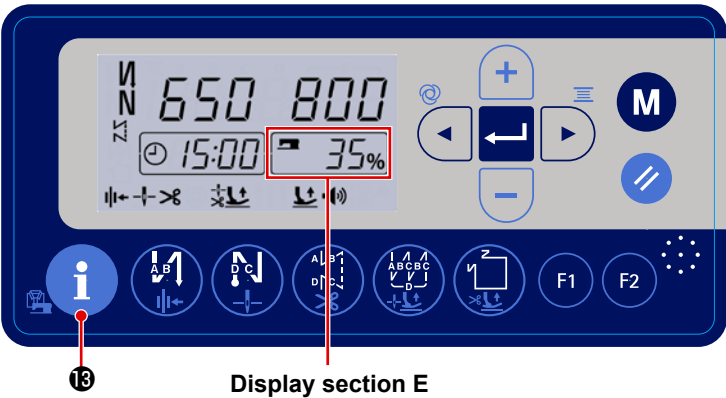
* In the case the daily production quantity exceeds 1999, set the production support parameter:U02 to "10". Then, the "number of pieces counter" adds one every time the sewing machine has carried out thread trimming by 10 times.

4-8-3. How to display the operation rate of the sewing machine

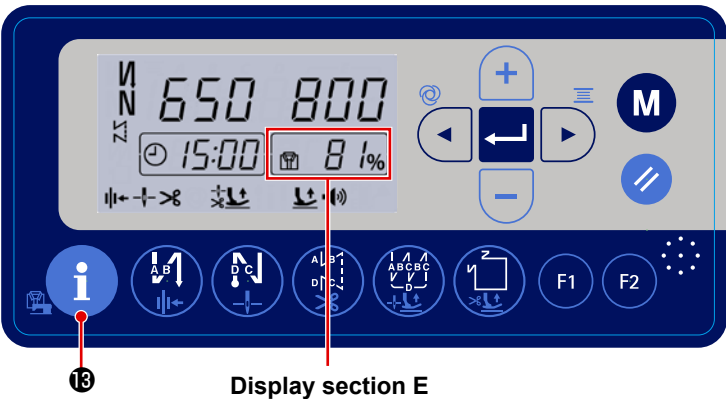
1) Setting the production support parameters

No.	Item		Setting range	Initial value
U12	Changeover of the display of operation rate between ON / OFF	The display of the operation rate (display section E) is changed over between ON / OFF. 1: Operation rate is displayed 0: Operation rate is not displayed	0 - 1	1

When this parameter is set to "1", the operation rate of the sewing machine is displayed in the normal sewing state and on the production support screen. (Display section E)



< Sewing-machine operation state display state >



< Target achievement rate display screen >


Operation rate calculating method:

Time during which the sewing machine runs from the starting time
(U03) of work hours to the current time
(excluding the work break)

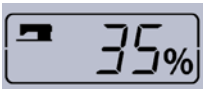
Operation rate
of the sewing
machine =

Work hours from the work starting time (U03) to the current time
(excluding the work break)

× 100

2) When you keep  13 held pressed for three seconds, the display on the display section E is changed over between the "operation rate of sewing machine" and the "target achievement rate".

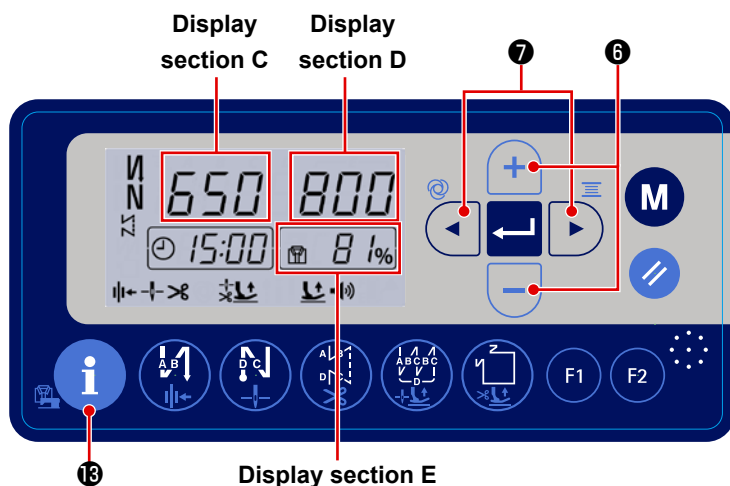
Display section E:
Display of the sewing-machine operation rate



Display section E:
Display of the target achievement rate



4-8-4. How to display the number of pieces produced



< Number of pieces produced display screen >

- 1) Press in the normal sewing state. Then, the “number of pieces produced” display screen displayed.

- 2) The number of pieces produced for the data is displayed on the display section **C**. Every time the sewing machine performs sewing and thread trimming, "1" is added to the current value displayed in the display section **C**.

The number of pieces produced for the day displayed in the display section **C** can be increased / decreased by pressing **6**.

- * The number of pieces produced and the target number of pieces are reset to 0 (zero) two hours before the starting time of work hours (U03).
- 3) The item displayed in the display section **D** can be changed over by setting the production support parameter.

No.	Item		Setting range	Initial value
U11	Type of display of the target number of pieces to be produced	<p>The type of display for the target number of pieces to be produced (display section D) is changed over with this parameter.</p> <p>1: The target number of pieces at the current time is displayed by calculating it at all times.</p> <p>* Display section E: The actual number of pieces produced at the current time / The target number of pieces to be produced at the current time × 100 (%)</p> <p>0: The target number of pieces to be produced for the day is displayed.</p> <p>* Display section E: The actual number of pieces produced for the day / The target number of pieces to be produced for the day × 100 (%)</p>	0 - 1	0

- * Changeover of the aforementioned type of display will also change the method to calculate the percentage of the number of pieces produced that is displayed in the display section **E**.

4-9. Function setting list

No.	Item	Description	Level	Setting range	Default
P01	Maximum sewing speed	The maximum sewing speed reached by fully depressing the pedal is set with this function setting item. The maximum sewing speed can be changed within the sewing speed range specified for [P68 Maximum sewing speed]. * The maximum sewing speed can also be changed using the + - switch on the operation panel.	U	100-[P68] (sti/min)	SMS, BMS : 4000 SSH, BSH : 3500
P02	Tilt of the pedal	Change in the sewing speed with respect to the depressing depth of the pedal is set with this function setting item. The sewing speed is increased abruptly when this parameter is set to a large value, or increased slowly when this parameter is set to a small value.	S	10-100(%)	80
P04	Reverse feed stitching speed at the beginning of sewing	The sewing speed to be used during the reverse feed stitching at the beginning of sewing is set with this function setting item.	U	100-3000 (sti/min)	1900
P05	Reverse feed stitching speed at the end of sewing	The sewing speed to be used during the reverse feed stitching at the end of sewing is set with this function setting item.	U	100-3000 (sti/min)	1900
P06	Overlapped stitching speed	The sewing speed to be used during the overlapped stitching is set with this function setting item. * This speed can also be changed using the relevant switch on the operation panel.	U	100-3000 (sti/min)	1900
P07	Sewing speed for soft start	The sewing speed for soft start at the beginning of sewing is set with this function setting item.	U	100-1500 (sti/min)	800
P08	Soft start function	The number of stitches to be sewn with the soft-start function at the beginning of sewing is set with this function setting item. 0: The soft-start function is not selected 1 - 9: The number of stitches to be sewn with the soft-start function	U	0-99 (Stitches)	1
P09	Sewing speed for the polygonal-shape stitching	Sewing speed for the polygonal-shape stitching is set with this function setting item. * The sewing speed can also be changed using the + - switch on the operation panel.	U	200-[P68] (sti/min)	SMS, BMS : 4000 SSH, BSH : 3500
P10	Setting of the reverse feed stitching at the end of end of polygonal-shape stitching	Whether the reverse feed stitching is automatically carried out at the end of polygonal-shape stitching is set with this function setting item. ON: Reverse feed stitching is automatically performed at the end of sewing OFF: Sewing machine stops sewing before starting reverse feed stitching at the end of sewing. It performs reverse feed stitching when the front part of pedal is depressed.	U	ON/OFF	ON
P12	Changeover of the reverse feed stitching at the start of sewing between Auto / Manual	The sewing speed for the reverse feed stitching at the beginning of sewing is set with this function setting item. 0: The reverse feed stitching is performed by manually operating the pedal. 1: The reverse feed stitching is performed at the sewing speed set with [P04 Reverse feed stitching speed at the beginning of sewing].	U	0-1	1
P13	Function of stop immediately after the reverse feed stitching at the beginning of sewing	Operation to be carried out at the end of the reverse feed stitching at the beginning of sewing is selected with this function setting item. CON: The sewing machine does not stop temporarily after completion of the reverse feed stitching at the beginning of sewing STP: The sewing machine stops temporarily after completion of the reverse feed stitching at the beginning of sewing	U	CON/STP	CON
P15	Changeover of the needle up/down correction function	The function of needle up/down correction switch is changed over with this function setting item. 0: Needle up/down correction 1: One stitch correction 2: Continuous half stitch 3: Continuous one stitch	U	0-3	0
P16	Speed limit to reverse-feed stitching	The speed limit applied when reverse feed stitching is carried out is set with this function. 10 - 4000: Sewing is performed at the set sewing speed	S	100-4000 (sti/min)	2000
P18	Correction of solenoid-on timing for the reverse feed stitching at the beginning of sewing	Stitch alignment can be carried out by changing the timing of actuating the reverse-feed stitching solenoid at the time of reverse feed stitching at the beginning of sewing. When the set value for this parameter is increased, the length of stitch at the end of A process is increased and the length of stitch at the beginning of B process is decreased.	U	0-200	123
P19	Correction of solenoid-off timing for the reverse feed stitching at the beginning of sewing	Stitch alignment can be carried out by changing the timing of releasing the reverse-feed stitching solenoid at the time of reverse feed stitching at the beginning of sewing. When the set value for this parameter is increased, the length of stitch at the beginning of B process is increased.	U	0-200	130
* P21	Low-speed section by pedal	Acceleration position by pedal operation is set.	S	30-1000	520
* P22	Sewing starting position by pedal	Sewing starting position by pedal operation is set.	S	30-1000	420
* P23	Position to lift the presser foot by pedal	The position to lift the presser foot by operating the pedal is set with this function setting item.	S	30-1000	270
* P24	Position to perform thread trimming by pedal	The position to perform thread trimming by operating the pedal is set with this function setting item.	S	30-500	130

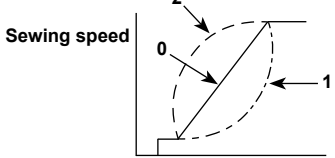
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No.	Item	Description	Level	Setting range	Default
P25	Correction of solenoid-on timing for the reverse feed stitching at the end of sewing	Stitch alignment can be carried out by changing the timing of actuating the reverse-feed stitching solenoid at the time of reverse feed stitching at the end of sewing. When the set value for this parameter is increased, the length of stitch at the beginning of C process is increased.	U	0-200	123
P26	Correction of solenoid-off timing for the reverse feed stitching at the end of sewing	Stitch alignment can be carried out by changing the timing of releasing the reverse-feed stitching solenoid at the time of reverse feed stitching at the end of sewing. When the set value for this parameter is increased, the length of stitch at the end of C process is decreased and the length of stitch at the beginning of D process is increased.	U	0-200	130
* P29	Brake force of the main shaft at the time of stopping the sewing machine on the way	Main shaft brake force is adjusted with this function setting item for preventing the sewing machine from overrunning before stopping on the way.	S	1-45	30
P32	Correction of solenoid-on timing for the overlapped stitching	Stitch alignment can be carried out by changing the timing of actuating the reverse feed stitching solenoid at the time of overlapped stitching. When the set value for this parameter is increased, the length of stitch at the end of A (C) process is increased and the length of stitch at the beginning of B process is decreased.	U	0-200	SMS, BMS : 105 SSH, BSH : 92
P33	Correction of solenoid-off timing for the overlapped stitching	Stitch alignment can be carried out by changing the timing of releasing the reverse-feed stitching solenoid at the time of overlapped stitching. When the set value for this parameter is increased, the length of stitch at the end of B process is increased and the length of stitch at the beginning of C process is decreased.	U	0-200	SMS, BMS : 105 SSH, BSH : 100
P37	First current value (ON duty) of thread clamp	The first current value (ON duty) for the thread clamp is set with this function setting item. * Refer to the "explanation of the thread clamp solenoid operation" in the Engineer's Manual for details.	U	0-100	SMS, BMS : 40 SSH, BSH : 50
* P44	Brake force of the main shaft at the time of stopping the sewing machine after thread trimming	Main shaft brake force is adjusted with this function setting item for preventing the sewing machine from overrunning before stopping.	S	1-45	16
P45	ON duty of the reverse feed stitching solenoid	Output duty of the reverse feed stitching solenoid when the solenoid is in the ON state is set with this function setting item.	S	1-50	30
P46	Setting of the function of reverse revolution to lift the needle	This function rotates the main shaft in the reverse direction of sewing to bring the needle bar to the highest position. ON: Reverse-revolution operation is in the ON state OFF: Reverse-revolution operation is in the OFF state	U	ON/OFF	OFF
P47	Reverse revolution angle to lift the needle	The operating angle of the reverse-revolution to lift the needle is adjusted with this function setting item.	S	50-200 (1/4°)	160
P48	Sewing speed at a low speed	The minimum sewing speed of the sewing machine by operating the pedal is set with this function setting item.	U	100-500 (sti/min)	200
P49	Sewing speed for thread trimming	Sewing speed to be used when performing thread trimming is set with this function setting item.	U	100-500 (sti/min)	210
* P50	2nd thread trimming speed	Sewing speed is decreased in the latter half of thread trimming operation. That sewing speed is set with this function setting item. * In the case this speed is set to "0" (zero), the sewing machine runs at the 1st thread trimming speed.	S	0-500 (sti/min)	180
* P51	Timing to change over to the 2nd thread trimming speed	The timing to change over the sewing speed to the 2nd thread trimming speed is set with this function setting item.	S	270-370(°)	320
* P52	Time to wait for sewing after lowering the presser foot	The time to wait for starting sewing after the presser foot is lowered is set with this function setting item.	S	10-500(ms)	120
P53	Setting of operation of the presser foot when the back part of pedal is depressed	The operation of the presser foot when the back part of pedal is depressed is set with this function setting item. 0: Presser foot does not operate even when the back part of pedal is depressed. 1: Presser foot goes up to the 1st presser-foot lifting position when the back part of pedal is depressed by half of the depth. It goes up to the 2nd presser-foot lifting position when the back part of the pedal is further depressed. 2: Presser foot does not operate even when the back part of pedal is depressed. It goes up to the 2nd presser-foot lifting position when the back part of the pedal is further depressed.	U	0-2	1
P68	Maximum sewing speed	The maximum sewing speed is set with this function setting item. (The MAX value differs with the type of machine head. SMS, BMS : 5000 SSH, BSH : 4500)	S	100-MAX (sti/min)	SMS, BMS : 4000 SSH, BSH : 3500
P70	Machine head selection (Initialization of data)	Machine head type is selected with this function setting item. 2 : DDL-8000ASMS 3 : DDL-8000ASSH 4 : DDL-8000ABMS 5 : DDL-8000ABSH * When you select the corresponding machine head and press the enter switch, all existing data are initialized to the initial values for the machine head you have selected.	S	2-5	2
P72	Adjustment mode for the needle-up stop angle	The current main shaft angle is always displayed in the data display section. When you turn the pulley to bring the main shaft to the needle-up stop position and press the enter switch, the needle-up angle and needle-down angle of the main shaft are automatically set.	S	0-1439 (1/4°)	

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No.	Item	Description	Level	Setting range	Default
	P73	Adjustment mode for the needle-down stop angle			
		The current main shaft angle is always displayed in the data display section. When you turn the pulley to bring the main shaft to the needle-down stop position and press the enter switch, the only the needle-down angle of the main shaft is automatically set.	S	0-1439 (1/4°)	
*	P74	Back-tack solenoid OFF parameter			
		Back-tack solenoid OFF parameter * Refer to the explanation of operation of the BT solenoid in the Engineer's Manual for details.	S	0-990	3
*	P75	Back-tack solenoid OFF parameter			
		Back-tack solenoid OFF parameter * Refer to the explanation of operation of the BT solenoid in the Engineer's Manual for details.	S	0-990	10
*	P76	Back-tack solenoid ON parameter			
		Back-tack solenoid ON parameter * Refer to the explanation of operation of the BT solenoid in the Engineer's Manual for details.	S	10-990	200
	P77	Back-tack solenoid ON timing at the end of sewing			
		The BT solenoid ON timing at the end of sewing is set with this function setting item. * This parameter applies only to the free stitching.	U	50-500	150
	P78	Thread clamp ON angle			
		ON-angle of the thread clamp is set with this function setting item.	U	0-359 (°)	190
	P79	Thread clamp OFF angle			
		OFF-angle of the thread clamp is set with this function setting item.	U	0-359 (°)	300
	P93	Reaction time when the back part of pedal is depressed			
		The reaction time required to start lifting of the presser foot after the back part of the pedal is depressed is set with this function setting item.	S	10-990(ms)	100
	P109	Wiper operation timing			
		The waiting time required until the wiper starts operation after the sewing machine stops with its needle up.	S	5-990	5
	P110	Waiting time until the sewing machine starts next sewing			
		The waiting time required until the sewing machine starts next sewing after the thread trimming solenoid is turned OFF.	S	0-500	250
	P113	Bobbin counter			
		The largest value that the bobbin counter can count is set with this function setting item. When the counter reaches that value, it stops counting.	U	0-9999 (10 stitches)	500
*	P114	Reverse feed solenoid operation stopping angle (start)			
		The angle at which the solenoid output is prohibited (start) after pressing the reverse-feed stitching on the way switch.	S	0-359 (°)	262
*	P115	Reverse feed solenoid operation stopping angle (end)			
		The angle at which the solenoid output is prohibited (end) after pressing the reverse-feed stitching on the way switch.	S	0-359 (°)	112
	P116	Function of prohibiting the correction operation after turning the handwheel by hand			
		The correction stitching function when turning the pulley by hand upon completion of the polygonal-shape stitching is set with this function setting item. 0: Correction sewing function is enabled 1: Correction sewing function is disabled	U	0-1	0
	P117	Thread trimming operation after turning the handwheel by hand			
		The thread trimming operation after turning the pulley by hand to move the sewing machine from the upper and lower positions is set with this function setting item. 0: Thread trimming operation is carried out after turning the pulley by hand 1: Thread trimming operation is not carried out after turning the pulley by hand.	U	0-1	1
	P118	Setting of the needle up/down switch operation after thread trimming			
		The operation of the needle up/down switch after thread trimming is set with this function setting item. 0: Needle up/down operation is carried out 1: One-stitch operation is carried out	U	0-1	0
	P128	Number of condensation stitches at the beginning of sewing			
		The number of condensation stitches at the beginning of sewing is set with this function setting item.	U	0-5(stitches)	0
	P129	Number of condensation stitches at the end of sewing			
		The number of condensation stitches at the end of sewing is set with this function setting item.	U	0-5(stitches)	SMS, SSH : 0 BMS, BSH : 2
	P130	Condensation stitching speed at the end of sewing			
		The sewing speed for condensation stitching at the end of sewing is set with this function setting item.	U	100-1900 (sti/min)	310
	P131	Condensation stitching speed at the beginning of sewing			
		The sewing speed for condensation stitching at the beginning of sewing is set with this function setting item.	U	0-1900 (sti/min)	310
*	P132	Condensation solenoid operation starting duty			
		ON duty of the condensation solenoid when it starts operation is set with this function setting item.	S	1-80(%)	55
*	P133	Condensation solenoid duty while it is in operation			
		The duty of the condensation solenoid while it is in operation is set with this function setting item.	S	1-80(%)	10
*	P134	Condensation solenoid operation starting time			
		The operation starting time for the condensation solenoid is set with this function setting item.	S	10-150(ms)	115
*	P135	Condensation solenoid operation starting angle			
		The operation starting angle for the condensation solenoid is set with this function setting item.	S	10-359(°)	75
	P136	Selection of the presser foot operation when the power is turned ON			
		Operation of the presser foot when the power is turned ON is selected with this function setting item. 0: The presser foot does not operate (It operates when the back part of the pedal is depressed.) 1: The presser foot goes up after automatically retrieving the origin 2: The presser foot comes down after automatically retrieving the origin	U	0-2	0

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No.	Item	Description	Level	Setting range	Default
P138	Function of pedal curve selection	Pedal curve is selected. (Improving pedal inching operation) 	U	0-2	0
P139	Function of reverse feed stitching on the way	The function activated when the reverse feed stitching on the way switch is pressed is selected with this function setting item. 0: Normal back-tack function 1: Function of reverse feed stitching on the way is enabled	U	0-1	0
P140	Number of stitches of reverse feed stitching on the way	The number of stitches of reverse feed stitching on the way is set with this function setting item.	U	1-19	4
P141	Condition to be satisfied to enable the reverse feed stitching on the way while the sewing machine is at rest	The condition to be satisfied to enable the reverse feed stitching switch while the sewing machine is at rest is set with this function setting item. 0: Disabled while the sewing machine is at rest 1: Enabled while the sewing machine is at rest	U	0-1	0
P142	Thread trimming function after performing reverse feed stitching on the way	Automatic thread trimming operation after performing the reverse feed stitching on the way is set with this function setting item. 0: Automatic thread trimming is not performed after the completion of reverse feed stitching on the way 1: Automatic thread trimming is performed after the completion of reverse feed stitching on the way	U	0-1	0
P143	Sewing speed for reverse feed stitching on the way	Sewing speed during the reverse feed stitching on the way is set with this function setting item.	U	200-3000 (sti/min)	1900
P145	ON/OFF of the data output to JANET	Output of data to JANET is set with this function setting item.	S	0-9999	0
P146	Waiting time to start operation of thread pulling cylinder	Waiting time until the start of operation of the (bird's nest preventing) thread pulling cylinder is set with this function setting item.	U	0-990	200
P147	Thread pulling cylinder ON time	The time to turn ON the (bird's nest preventing) thread pulling cylinder is set with this function setting item.	U	0-990	300
P148	Time until sewing starts after turning OFF the thread pulling cylinder	The waiting time required until the sewing machine starts next sewing after turning OFF the (bird's nest preventing) thread pulling cylinder is set with this function setting item.	S	0-990	30
* P149	Back-tack solenoid ON parameter	Back-tack solenoid ON parameter * Refer to the explanation of operation of the BT solenoid in the Engineer's Manual for details.	S	50-100	50
* P150	Back-tack solenoid OFF parameter	Back-tack solenoid OFF parameter * Refer to the explanation of operation of the BT solenoid in the Engineer's Manual for details.	S	2-500	2
P151	ON/OFF of the bird's nest preventing operation	(Bird's nest preventing) ON/OFF of the bird's nest preventing operation is set with this function setting item.	U	0-1	0
P152	Waiting time until the wiper cylinder starts operation	(Bird's nest preventing) The waiting time required until the wiper cylinder starts operation is set with this function setting item.	S	0-990(ms)	110
P153	Wiper cylinder ON time	(Bird's nest preventing) ON time of the wiper cylinder is set with this function setting item.	U	0-990(ms)	100
P154	Time until sewing starts after turning OFF the wiper cylinder	(Bird's nest preventing) The waiting time required until the sewing machine starts the next sewing after turning OFF the wiper cylinder is set with this function setting item.	S	0-990(ms)	30
P159	Suction ON/OFF	(Bird's nest preventing) ON/OFF of the suction device is set with this function setting item.	S	0-1	1
P160	Suction time	(Bird's nest preventing) Suction time is set with this function setting item.	S	5-5000(ms)	650
P161	The presser foot lifting operation ON/OFF when the thread clamp works	The presser foot lifting operation ON/OFF when the thread clamp works is set with this function setting item. 0: OFF 1: ON	S	0-1	0
P162	The angle at which the presser foot starts going up when the thread clamp works.	The angle at which the presser foot starts going up when the thread clamp work is set with this function setting item.	S	0-359	100
P163	Ending angle of soft start for the thread clamp	The ending angle of the soft start for the thread clamp is set with this function setting item. * Refer to the explanation of operation of the thread clamp solenoid in the Engineer's Manual for details.	U	0-359	340
P164	Setting of the lifting amount of the presser foot when the thread clamp works	The lifting amount of the presser foot when the thread clamp works is set with this function setting item.	S	0-500	50
P165	Time during which the presser foot goes up when clamping the thread	The time during which the presser foot goes up when clamping the thread is set with this function setting item.	S	1-990	20
P166	1st electric current time for thread clamp	Period of time during which the 1st electric current is fed applied to the thread clamp is set with this function setting item. * Refer to the explanation of operation of the thread clamp solenoid in the Engineer's Manual for details.	U	1-990	7

* Do not change the set values with asterisk (*) mark as they are functions for maintenance. If the standard set value set at the time of delivery is changed, it is in danger of causing the machine to be broken or the performance to be deteriorated. If it is necessary to change the set value, please purchase the Engineer's Manual and follow the instructions.

No.	Item	Description	Level	Setting range	Default
P167	2nd electric current value for thread clamp (ON duty)	"ON duty" is set in order to determine the 2nd electric current value of the thread clamp * Refer to the explanation of operation of the thread clamp solenoid in the Engineer's Manual for details.	U	0-100	69
* P168	Back-tack solenoid ON parameter	Back-tack solenoid ON parameter * Refer to the explanation of operation of the back-tack solenoid in the Engineer's Manual for details.	S	1-200	25
* P169	Back-tack solenoid ON parameter	Back-tack solenoid ON parameter * Refer to the explanation of operation of the back-tack solenoid in the Engineer's Manual for details.	S	1-200	40
* P170	Back-tack solenoid OFF parameter	Back-tack solenoid OFF parameter * Refer to the explanation of operation of the back-tack solenoid in the Engineer's Manual for details.	S	1-200	10

* Do not change the set values with asterisk (*) mark as they are functions for maintenance. If the standard set value set at the time of delivery is changed, it is in danger of causing the machine to be broken or the performance to be deteriorated. If it is necessary to change the set value, please purchase the Engineer's Manual and follow the instructions.

No.	Item	Description	Level	Setting range	Default
J04	Selection of language for the audio function	The language for the audio function is selected with this function setting item. 1: Chinese 2: English 3. Other language 1 4. Other language 2	U	1-4	2
J05	Audio ON/OFF function	ON/OFF of the audio guidance is set with this function setting item. 0: All audio guidance is set to OFF 1: Only the panel operation guidance is enabled 2: All audio guidance is set to ON. * When this item is set to "1", the audio guidance for "③ At the time of operating the sewing machine; Guidance on the production support" ("4-3. Audio guidance" p. 26) is placed in OFF.	U	0-2	2
J10	Setting of brightness of the backlight	Brightness of the backlight is set with this function setting item.	U	1-3	3
J11	Energy saving mode	Time to turn OFF the backlight of LCD when the panel is not operated is set with this function setting item. 0: The backlight is not turned OFF 1 - 20: Time to be elapsed before turning OFF the backlight	U	0-20(min)	0
J14	Password	If the password is set to a number other than "0000", the password entry screen will be displayed before displaying the function setting screen by pressing the M switch.	S	0000-9999	0

No.	Item	Description	Level	Setting range	Default
N01	Main software version	Main software version is displayed with this function setting item.	U		
N02	Panel software version	Panel software version is displayed with this function setting item.	U		
N14	ST motor software version	Version of the stepping motor control software is displayed with this function setting item.	U		
N15	Number of stitches to stop the grease counter	The number of stitches sewn is monitored in order to notify the operator of the timing of replenishing grease. Unit: (× 100,000 stitches) When the grease counter value reaches 800,000,000 stitches, the grease shortage warning "E220" occurs. When the grease counter value reaches 900,000,000 stitches, the grease shortage error "E221" occurs. * The grease counter is cleared to "0" (zero).	S		
N20	Audio guidance version	Version of the audio guidance is displayed with this function setting item.	U		

4-10. Detailed explanation of selection of functions

① Selection of the soft-start function (Function setting No. P08)

The needle thread may fail to interlace with the bobbin thread at the start of sewing when the stitching pitch (stitch length) is small or a thick needle is used. To solve such problem, this function (called "soft-start") is used to limit the sewing speed, thereby assuring successful formation of the starting stitches.

- P 0 8** 0 : The function is not selected.
 1 to 9 : The number of stitches to be sewn under the soft-start mode.

The sewing speed limited by the soft-start function can be changed. **(Function setting No. P07)**

- P 0 7** Data setting range : 100 to 1500 [sti/min] <10 sti/min>

② Changeover of the needle up/down switch function (Function setting No. P15)

The function of the needle up/down switch is changed over with this function setting number.

- P 1 5** 0 : Needle up/down correction
 1 : One-stitch correction
 2 : Continuous half stitch
 3 : Continuous one stitch

③ Function of reverse feed stitching on the way (Function setting Nos. P139 to P143)

Functions of the limit of number of stitches and thread trimming command can be added to the touch back switch on the sewing machine head.

Function setting No.139 Function of reverse feed stitching on the way is selected.

- 1 3 9** 0 : OFF Normal back-tack function
 1 : ON Function of reverse feed stitching on the way

Function setting No.140 Number of stitches performing reverse feed stitching is set.

- 1 4 0** Setting range : 0 to 19 stitches

Function setting No.141 Effective condition of reverse feed stitching on the way

- 1 4 1** 0 : OFF Inoperative when the sewing machine stops. (The reverse feed stitching on the way functions only while the sewing machine is in operation.)
 1 : ON Operative when the sewing machine stops. (The reverse feed stitching on the way functions while both the sewing machine is in operation and is at rest.)

(Caution) Either condition is operative when the sewing machine is running.

Function setting No.142 Thread trimming is performed when reverse feed stitching on the way is completed.

- 1 4 2** 0 : OFF Without thread trimming
 1 : ON Thread trimming is executed.

Function setting No.143 Set the sewing speed when the reverse feed stitching at midpoint of sewing is performed.

- 1 4 3** Setting range : 200 to 3000 [sti/min] <10 sti/min>

Application	Function setting			Output function
	No. P139	No. P141	No. P142	
①	0	0 or 1	0 or 1	It works as normal touch-back switch.
②	1	0	0	When operating touch-back switch at the time of depressing front part of the pedal, reverse feed stitching as many as the number of stitches specified by the function setting No. P140 can be performed.
③	1	1	0	When operating touch-back switch at the time of either stop of the sewing machine or depressing front part of the pedal, reverse feed stitching as many as the number of stitches specified by the function setting No. P140 can be performed.
④	1	0	1	When operating touch-back switch at the time of depressing front part of the pedal, automatic thread trimming is performed after reverse feed stitching as many as the number of stitches specified by the function setting No. P140 has been performed.
⑤	1	1	1	When operating touch-back switch at the time of either stop of the sewing machine or depressing front part of the pedal, automatic thread trimming is performed after reverse feed stitching as many as the number of stitches specified by the function setting No. P140 has been performed.

Actions under each setting state

- ① Used as the normal reverse feed stitching touch-back switch.
- ② Used for reinforcing seam (press sewing) of the pleats. (It works only while the sewing machine is in operation)
- ③ Used for reinforcing seam (press sewing) of the pleats. (It works either when the sewing machine stops or when the sewing machine is running.)
- ④ Used as starting switch for reverse feed stitching at the sewing end. (Used as the substitute for thread trimming by depressing back part of the pedal. It works only while the sewing machine is in operation. This is especially effective when the sewing machine used as the sewing machine for standing work.)
- ⑤ Used as starting switch for reverse feed stitching at the sewing end. (Used as the substitute for thread trimming by depressing back part of the pedal. It works either when the sewing machine stops or when the sewing machine is running. It is especially effective when the sewing machine is used as the standing-work machine.)

④ How to balance stitches for [Start Back-Tacking] (Function setting Nos. P18 and P19)

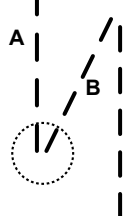
Example) Step 1: Setting stitch number for Start Back-Tacking A and B = 3

Step 2: Sewing the pattern in normal speed.

Step 3: If unbalanced situation is appeared please correct it as below:

Suggestion: Select the balance stitches for Section A before selecting for B.

Start point - - -

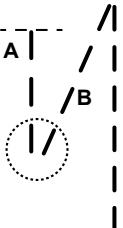


Case 1 : Longer A and shorter B

Adjustment : [P18] Decrease the set value.

A becomes shorter and B becomes longer.

Start point - - -



Case 2 : Shorter A and longer B

Adjustment : [P18] Increase the set value.

A becomes longer and B becomes shorter.

Start point - - -

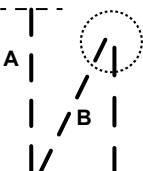


Case 3 : Normal A and longer B

Adjustment : [P19] Decrease the set value.

B becomes shorter.

Start point - - -



Case 4 : Normal A and shorter B

Adjustment : [P19] Increase the set value.

B becomes longer.

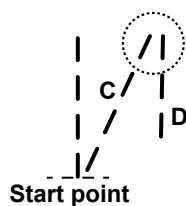
⑤ **How to balance stitches for [End Back-Tacking] (Function setting Nos. P25, P26 and P77)**

Example) Step 1: Setting stitch number for End Back-Tacking C and D = 3

Step 2: Sewing the pattern in normal speed.

Step 3: If unbalanced situation is appeared please correct it as below:

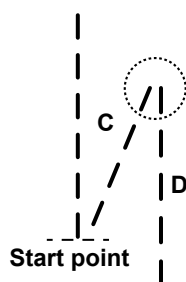
Suggestion: Select the balance stitches for Section C before selecting for D.



Case 1 : Longer C and shorter D

Adjustment : [P26] Decrease the set value.

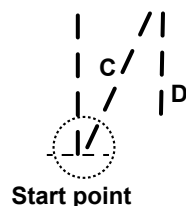
C becomes shorter and D becomes longer.



Case 2 : Shorter C and normal D

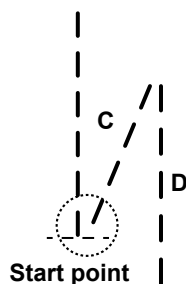
Adjustment : [P26] Increase the set value.

C becomes longer and D becomes shorter.



Case 3 : C is longer.

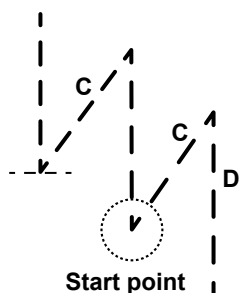
Adjustment : [P77] Change the set value to such a value that shortens C.



Case 4 : C is short.

Adjustment : [P77] Increase the set value.

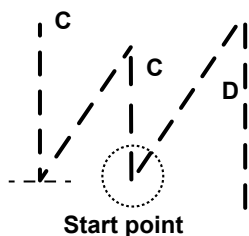
C becomes longer.



Case 5 : Normal C and longer D

Adjustment : [P25] Decrease the set value.

C becomes longer and D becomes shorter.



Case 6 : Normal C and shorter D

Adjustment : [P25] Increase the set value.

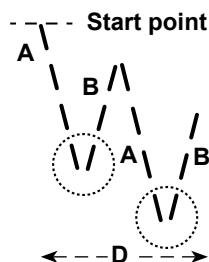
C becomes shorter and D becomes longer.

⑥ How to balance stitches for [Bar Tacking] (Function setting Nos. P32 and P33)

Example) Step 1: Setting stitch number for Bar-Tacking A = B = 4 and turns of Bar-Tacking D = 4

Step 2: Sewing the pattern in normal speed.

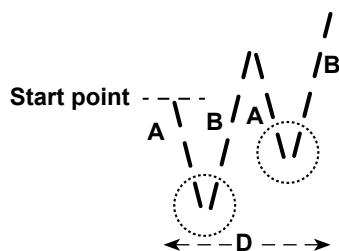
Step 3: If unbalanced situation is appeared please correct it as below:



Case 1 : Longer A and shorter B

Adjustment : [P32] Decrease the set value.

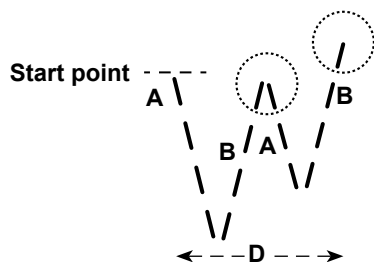
A becomes shorter and B becomes longer.



Case 2 : Shorter A and normal B

Adjustment : [P32] Increase the set value.

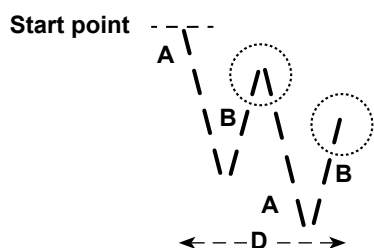
A becomes longer and B becomes shorter.



Case 3 : Normal A and longer B

Adjustment : [P33] Decrease the set value.

B becomes shorter.



Case 4 : Normal A and shorter B

Adjustment : [P33] Increase the set value.

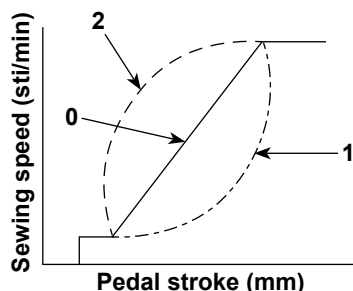
B becomes longer.

⑦ Function of pedal curve selection (Function setting No. P138)

This function can perform the selection of the curve of sewing speed of the sewing machine against the depressing amount of the pedal.

Change to this function when you feel that inching operation is hard or that pedal response is slow.

- 1 3 8** 0 : Sewing speed in terms of the depressing amount of the pedal increases linearly.
 1 : Reaction to intermediate speed in terms of the depressing amount of the pedal is delayed.
 2 : Reaction to intermediate speed in terms of the depressing amount of the pedal is advanced.



⑧ Selection of the presser foot operation when the power is turned ON (Function setting No. P136)

The needle bar goes up to its upper position and the presser motor carries out origin retrieval operation immediately after the power is turned ON.

- 1 3 6** 0: Neither the needle bar nor the presser motor (Operates when the back part of pedal is depressed)
 1: Needle bar goes up to its upper position and the presser motor automatically goes up after automatic origin retrieval.
 2: Needle bar automatically goes up to its upper position and the presser motor comes down after automatic origin retrieval.

⑨ Setting of the operation of needle up/down switch after thread trimming (Function setting No. P118)

One stitch operation can be performed only when the needle up / down compensating switch is pressed at the time of upper stop immediately after turning ON the power switch or upper stop immediately after thread trimming.

- 1 1 8** 0 : Normal (Only needle up / down compensating stitching operation)
 1 : One stitch compensating stitching operation (upper stop / upper stop) is performed only when aforementioned changeover is made.

⑩ Setting of max. sewing speed (Function setting No. P68)

This function can set the max. sewing speed you desire to use.

Upper limit of the set value varies in accordance with the sewing machine head to be connected.

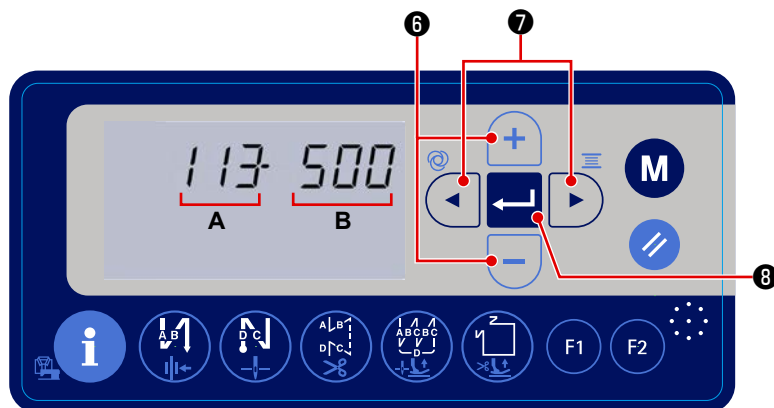
- P 6 8** Setting range : 100 to MAX. sti/min <10 / sti/min>
 DDL8000ASMS, BMS : 5000 sti/min
 DDL8000ASSH, BSH : 4000 sti/min

⑪ Number of condensation stitches at the end of sewing (Function setting No. P129)





For the sewing machine head provided with the condensation stitching function, the number of stitches at the end of sewing has been factory-set to "two" at the time of shipment.

4-11. How to use the bobbin counter


In the case the number of stitches that can be counted on the bobbin counter (Function setting number P113) is set to "x10", the bobbin count complete screen is displayed when the bobbin counter reaches the set value to notify the operator that the bobbin has to be changed.

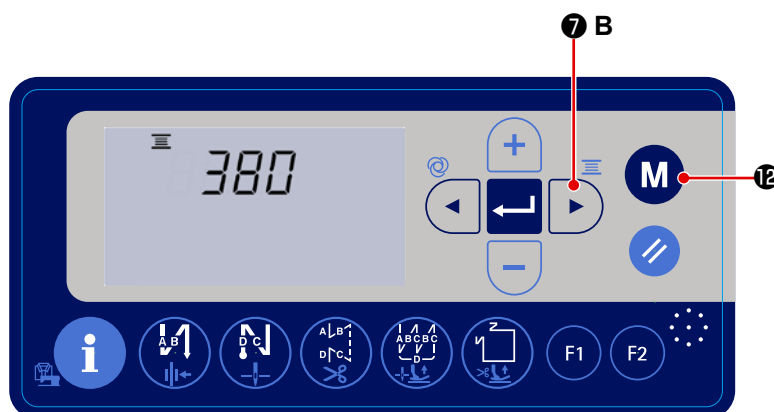



- 1) Call function setting No. P113 referring to **"4-6. Function setting" p. 32.**

- 2) Press   **7** to flash the set value **B** on and off. Then, set the bobbin counter value by pressing   **6**.

When the bobbin counter reaches the "bobbin counter value x 10", the bobbin count complete screen is displayed.

- 3) Press  **8** to determine the set value and return the sewing machine to the normal sewing state.



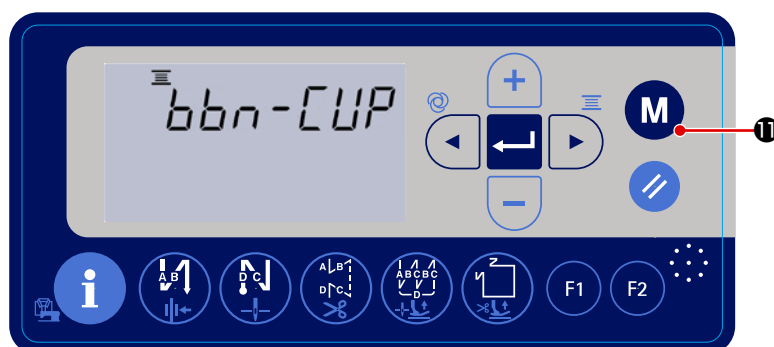
- 4) The current value on the bobbin counter can be checked by keeping  **7**


B held pressed for three seconds in the normal sewing state.

The current value on the bobbin counter is displayed. Every time the sewing machine has sewn 10 stitches, "1" is added to the current value on the bobbin counter.

When you press  **12** switch is pressed, the sewing machine returns to the normal sewing state.

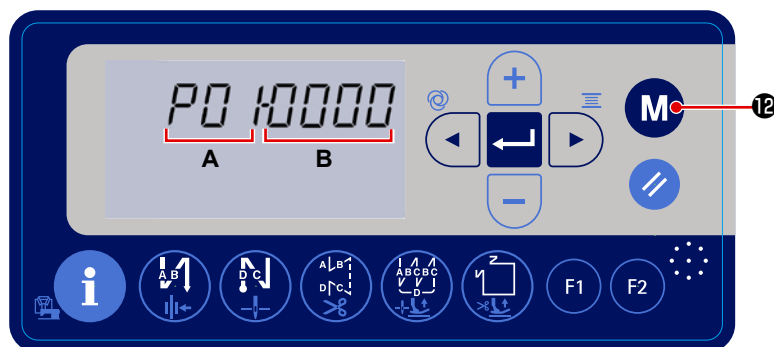
- 5) Carry out sewing. When the bobbin counter value becomes "0" (zero), the count complete screen is displayed.



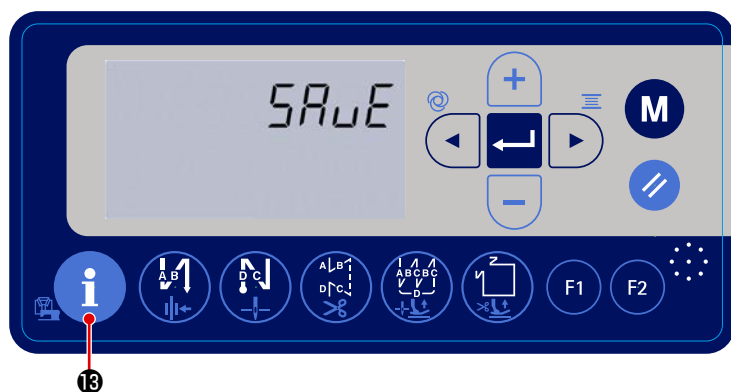
When you press  **11**, the current value on the bobbin counter returns to the value set with "function setting No. P113 Bobbin counter" and the sewing machine returns to the normal sewing state.

4-12. Initialization of function setting data

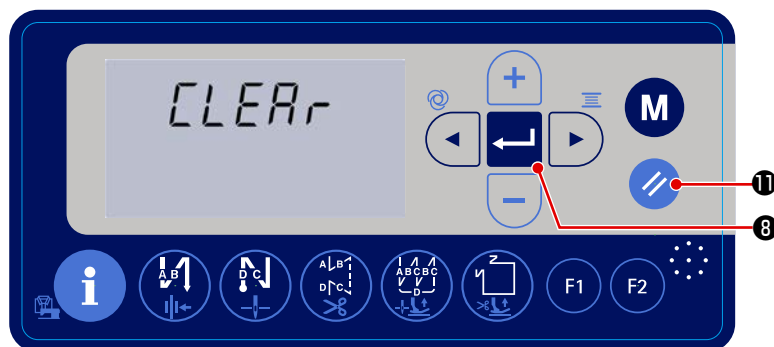
The function setting data that are changed arbitrarily by the customer can be stored in memory. The current function setting data can be restored to the aforementioned data.



- 1) When you keep **M** **12** held pressed for three seconds in the normal sewing state, the function setting screen is displayed.
Refer to **"4-6. Function setting" p. 32.**



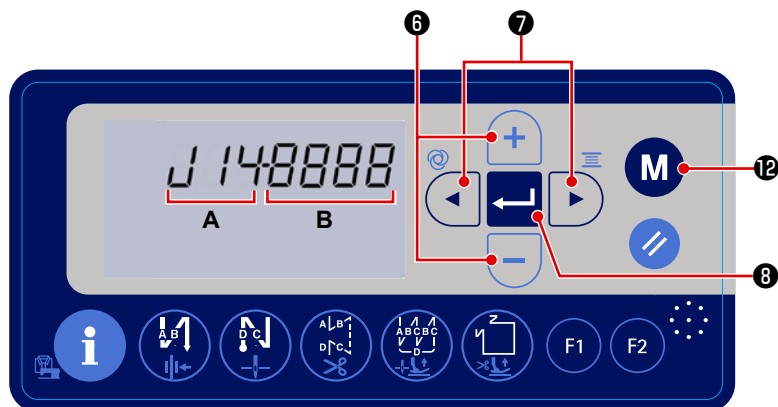
- 2) When you keep **i** **13** held pressed for three seconds on the function setting screen, all function setting data are stored in memory and the "SAVE" screen is displayed for a brief second.







- 3) When you keep **//** **11** held pressed for six seconds, the data initialization confirmation screen is displayed.
- 4) When you press **←** **8**, all of the current function setting data are initialized to the function setting data to those stored in memory in the aforementioned steps of procedure 1) and 2), and returns the sewing machine to the normal sewing state.

4-13. Password lock

It is possible to lock the operation for setting the functions by keeping **M** **12** held pressed, with the password.




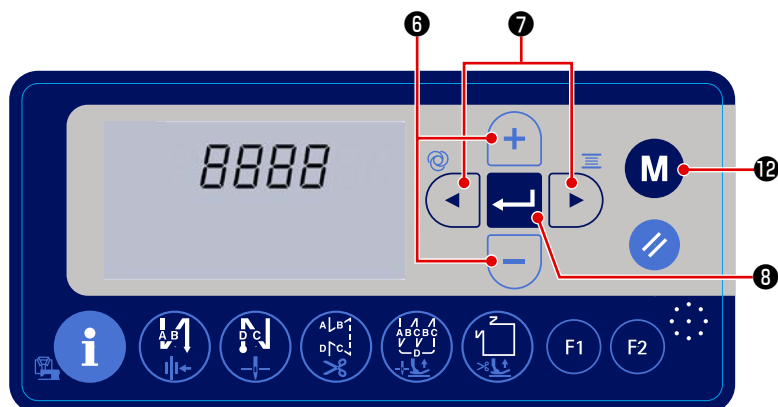
- 1) Call the function setting No. J14 referring to referring to **"4-6. Function setting" p. 32.**

- 2) Press   **7** to flash the setting item **B**. In this state, set a 4-digit password by pressing   **6**.








Write down the password you have set so to remember it.

- 3) Press  **8** to determine the password and return the sewing machine to the normal sewing state.



- 4) If the password is set to a number other than "0000", the password entry screen will be displayed before displaying the function setting screen by pressing the **M** **12** held pressed for three seconds.

- 5) Enter the four-digit password you have set to the [function setting No. J14] using   **7** and   **6**.

- 6) The function setting screen is displayed by pressing  **8**. On this screen, the functions can be set.

4-14. About the USB

WARNING :

The device to be connected to the USB port should have the rated current value or less as shown below.



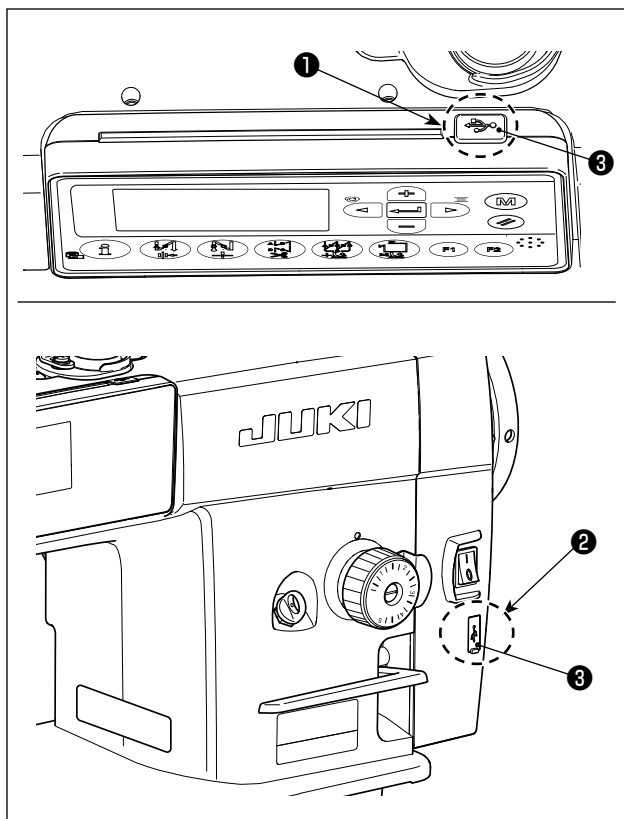
If any device rated current value of which is higher than the rated current value, the main body of the sewing machine or the USB device connected can be damaged or malfunction.

Rated current value of the USB port

USB port on the electrical box side: Maximum rated current value of 1 A

USB port on the operation panel side: Maximum rated current value of 0.5 A

4-14-1. Insertion position of the USB thumb drive



The USB connectors are equipped on upper section ❶ of the operation panel and electrical box ❷ .

To use a USB thumb drive, remove connector cover ❸ and insert the USB thumb drive into the USB connector.

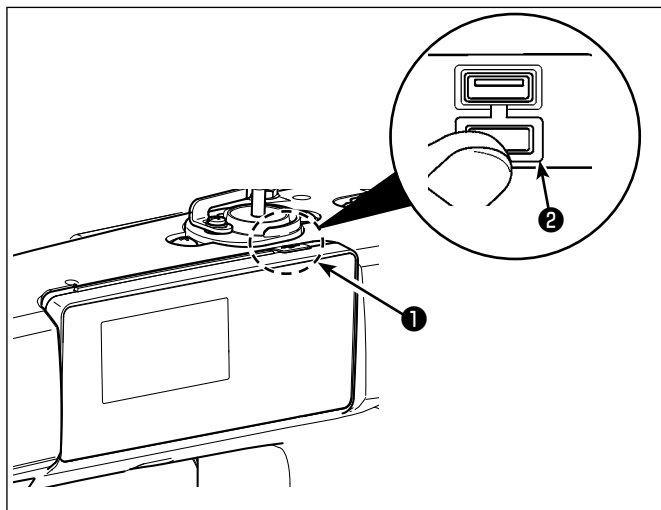
* In the case a USB thumb drive is not used, the USB connector should be protected with connector cover ❸ without exceptions.

If dust or the like enters the USB connector, a failure can be caused.

4-14-2. Upgrading of the program by means of a USB

It is possible to upgrade the program by means of a commercially-available USB thumb drive.

① Position of the USB connector



[USB thumb drive insertion position]

The USB connector is provided on top ① of the operation panel.

To use a USB thumb drive, remove connector cover ② 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 ② 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 insert/remove the USB thumb drive while the sewing machine is reading the program. 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.

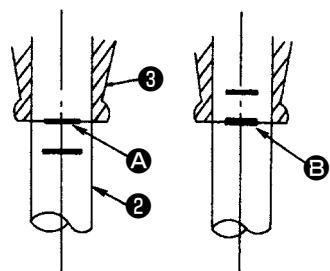
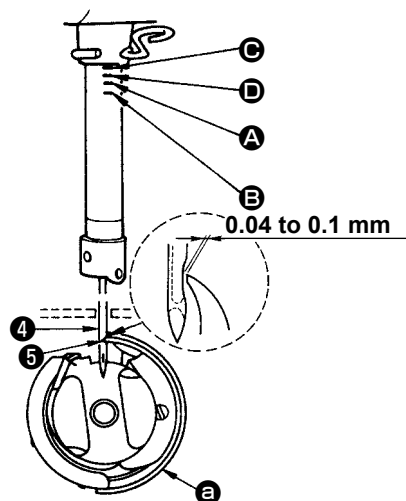
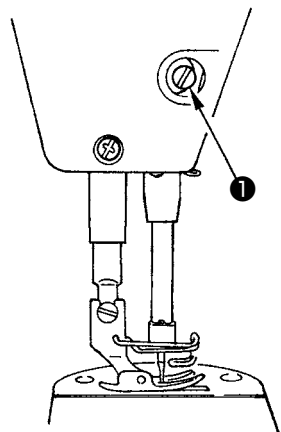
5. ADJUSTMENT OF THE MACHINE HEAD (APPLICATION)

5-1. 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 hand-wheel to bring the needle bar down to the lowest point of its stroke, and loosen setscrew ① .
- 2) Adjusting the needle bar height. Align marker line (For a DB needle : marker line ①, For a DA needle : marker line ②) on needle bar ② with the bottom end of needle bar lower bushing ③ , then tighten setscrew ① .

- 3) Position the needle and the hook ①.

Loosen the three hook setscrews, turn the hand-wheel in normal rotation and align marker line (For a DB needle : marker line ②, For a DA needle : marker line ③) on ascending needle bar ② with the bottom end of needle bar lower bushing ③ .

- 4) In this state, align hook blade point ⑤ with the center of needle ④ . 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.



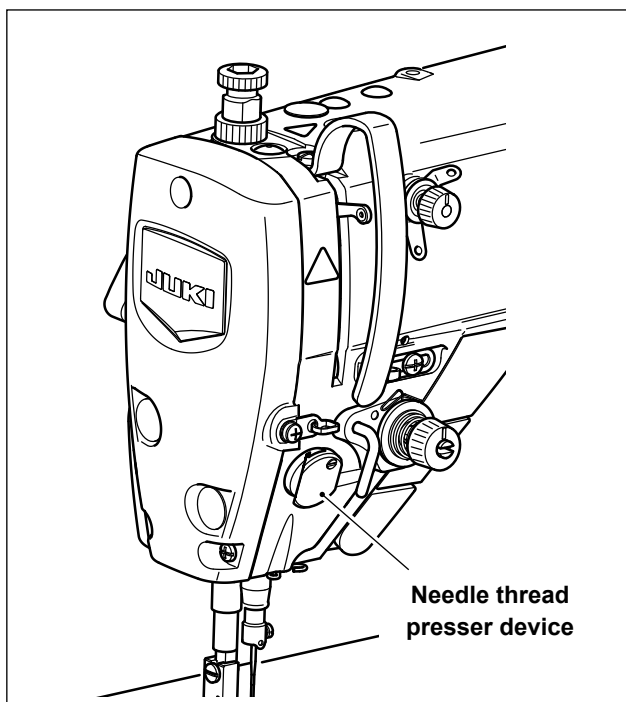
If the clearance between the blade point of hook and the needle is smaller than the specified value, the blade point of hook will be damaged. If the clearance is larger, stitch skipping will result.

5-2. 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.

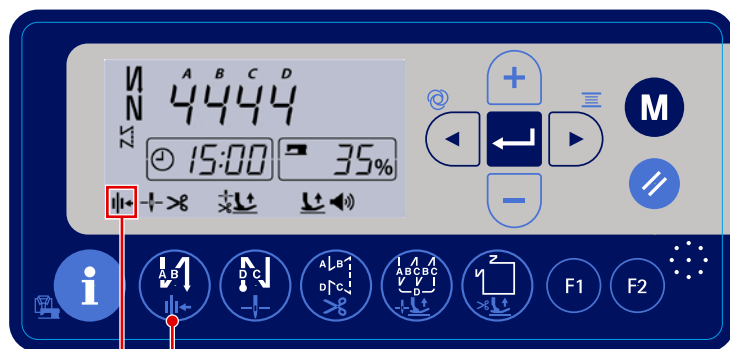


[Feature]


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.

- 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 the needle thread presser device]



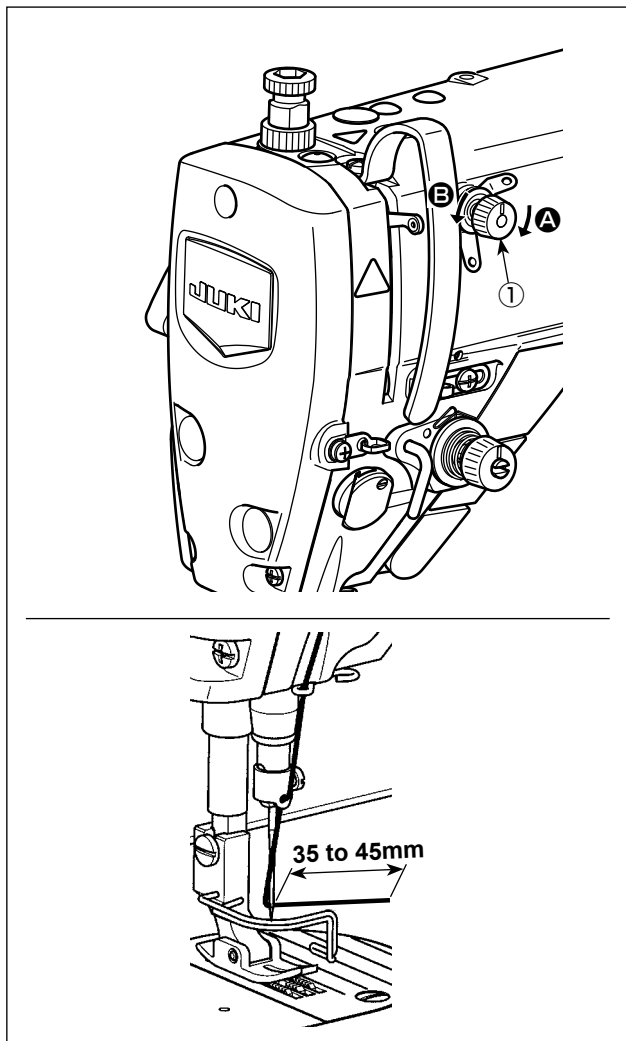
Display section C

Keep thread presser operation enable / disable switch  13 held pressed to change over the ON/OFF of the thread presser.

When the thread presser device is set to ON, the thread presser icon is displayed on display section C.



In the case the memory switch "Reverse-rotation needle-up after thread trimming, p.46" is used, the length of needle thread remaining after thread trimming becomes longer. So, in this case, the needle thread clamp 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 ① .

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

[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 presser foot pressure should be reduced to allow the needle thread pinched between the presser foot and the material 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. After the adjustment, confirm the adjustment result by actually sewing the material.

Needle thread breakage can be reduced and the needle thread can be smoothly tucked in to the undersurface of material by lifting the presser foot by a minute amount at the beginning of sewing.

(Set the parameter P161 to 1, and adjust the parameters P162, P164 and P165.)



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 is increased while the presser foot pressure is high, the operating noise will become larger. Adjust the adjustment value and the presser foot pressure while visually checking the needle thread condition.

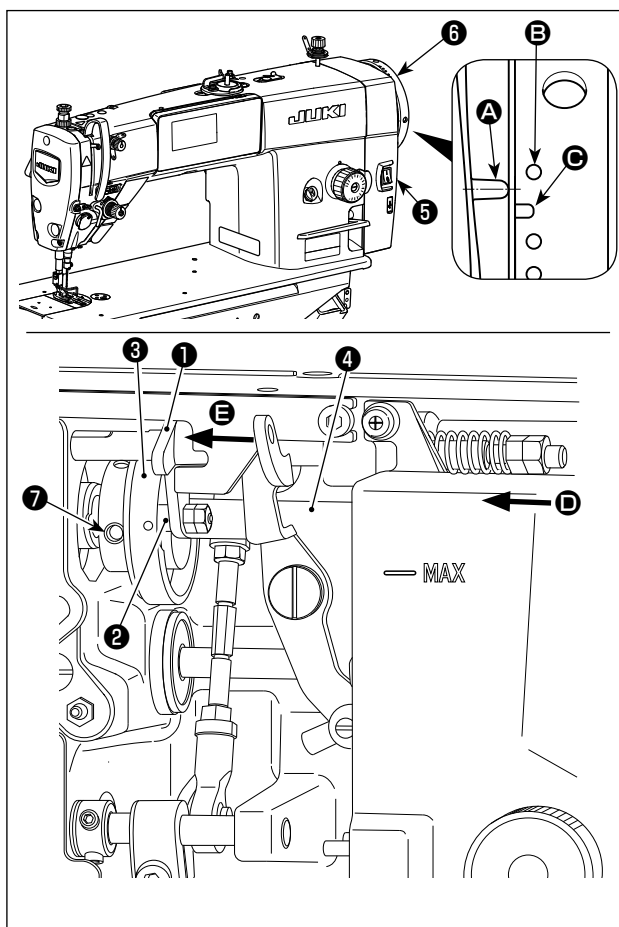
No.	Description	Setting range	Default
P161	ON / OFF of the presser lifting operation when clamping the thread is set with the function setting item. 0: OFF 1: ON	0-1	0
P162	Degree of an angle at which the presser foot starts going up when clamping the thread Degree of an angle at which the presser foot starts going up when clamping the thread is set with function setting item.	0-359	100
P164	Setting of the amount of lift of the presser foot when clamping the thread The amount of lift of the presser foot when clamping the thread is set with this function setting item.	0-500	50
P165	Time during which the presser foot goes up when clamping the thread The time during which the presser foot goes up when clamping the thread is set with this function setting item.	1-990	20

5-3. 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 ③ in the direction of arrow until the outer periphery of thread trimming cam groove ② comes in contact with roller ② and stops. At this position, fix thread trimming cam setscrew ⑦.

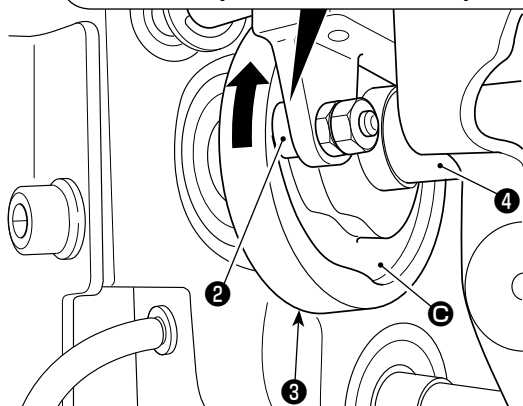
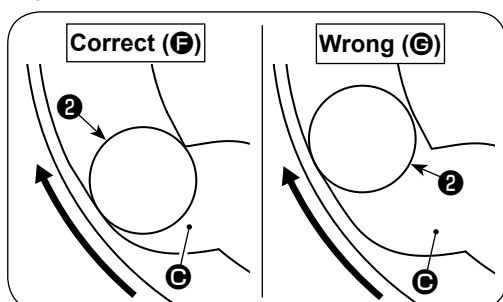


Illustration as observed from ④ (right side face)

5-3-1. For checking of the thread trimming cam timing

The purpose of the adjustment of the thread trimming is to bring marker line ① on electrical box cover ⑤ to the portion between the colorless marker dots ② and ③ on handwheel ⑥.

- 1) Tilt the sewing machine head.
- 2) Turn handwheel ⑥ 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 ① with fingers to the left (in direction of arrow ⑤) to fit roller ② to in groove ③ in thread trimming cam ③.
- 3) In this state, turn handwheel ⑥ in the direction which is opposite to the normal direction of rotation until handwheel ⑥ will go no further. (If the handwheel is turned further, it reaches the position at which cam follower ① starts moving.) At this time, adjust so that the marker line ① on electrical box cover ⑤ is brought to the portion between the colorless marker dots ② and ③ on handwheel ⑥.

5-3-2. 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 ⑦ in the written order.
- 3) Align marker line ① on electrical box cover ⑤ with the colorless marker dot ② on handwheel ⑥.
- 4) Pressing cam follower ① to the left (in the direction of arrow ⑤), engage thread trimming cam ③ with roller ②. Then, turn only thread trimming cam ③ with fingers in the direction which is opposite to the normal direction of rotation of feed driving shaft ④ until it will go no further without turning feed driving shaft ④. At this position, tighten the screws No. 1 and No. 2 of thread trimming cam setscrew ⑦ in the written order while pressing thread trimming cam ③ against roller ②.



The alignment point between thread trimming cam ③ and roller ② is position (F) from which cam follower ① starts moving. Position (G) at which you feel that thread trimming cam ③ comes in contact with roller ② for the first time during adjustment is not the correct alignment position.

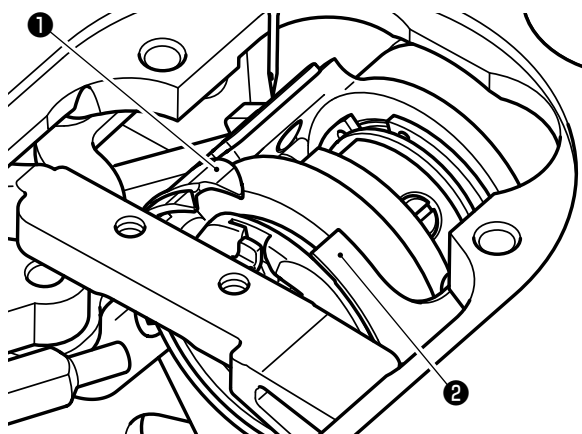
* Be sure to correct the thread trimming cam timing carefully since it largely affects the loop spreading timing.

5-3-3. Checking of the knife unit

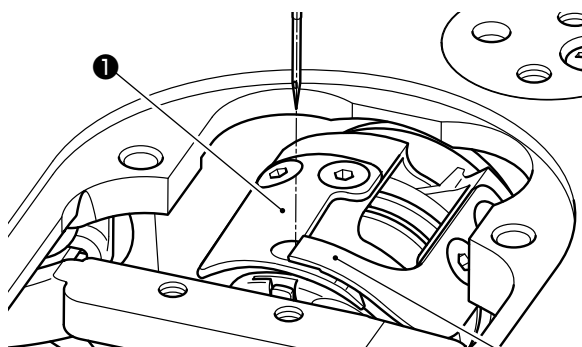
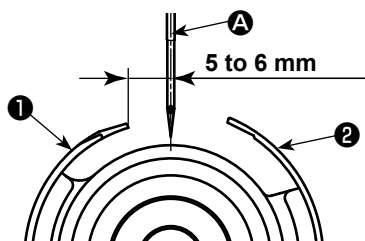


WARNING :

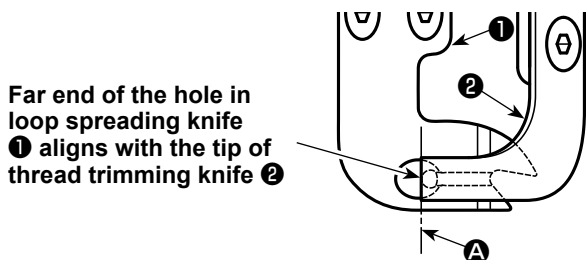
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



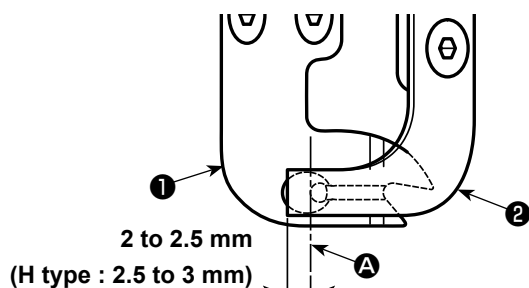
Standby state of the knife



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



Far end of the hole in loop spreading knife ① aligns with the tip of thread trimming knife ②



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 ①, the distance from center of needle A to the tip of loop spreading knife ① is 5 to 6 mm.



Be aware that, if the distance between loop spreading knife ① and center of needle A is reduced, thread loop is likely to interfere with loop spreading knife ①.

- * Refer to "5-3-4. Adjustment of the knife unit" p. 60 for how to adjust it.
- 3) The purpose of adjustment of the aligning position of loop spreading knife ① and thread trimming knife ② (far end of the hole in loop spreading knife ① and the tip of thread trimming knife ②) is to align the aforementioned aligning position with center of needle A.



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

- 4) The amount of engagement between loop spreading knife ① and thread trimming knife ② is 2 to 2.5 mm (H type : 2.5 to 3 mm) as measured from center of needle A.



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

- * Refer to "5-3-4. Adjustment of the knife unit" p. 60 for how to adjust it.



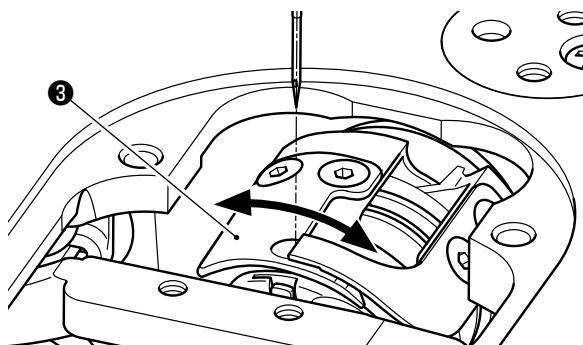
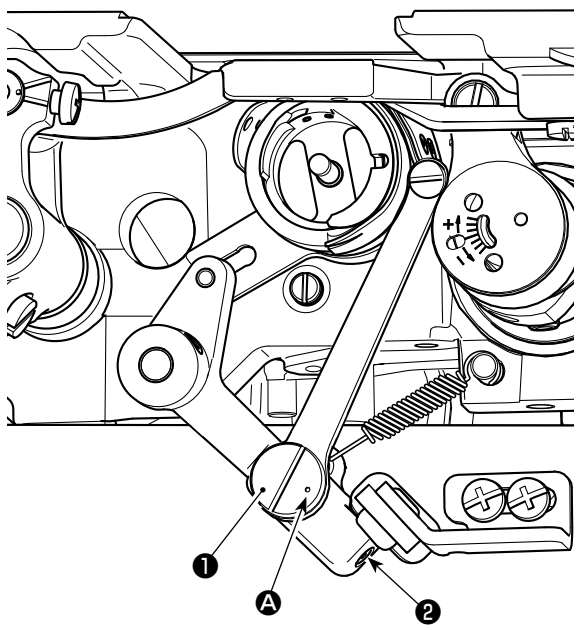
In the case of using a thread that is likely to cause unstable thread loop formation, the needle thread may be trimmed extremely short when thread trimming is carried out at a position where no material is present. In this case, correct the aforementioned problem by increasing the thread take-up spring stroke to a value that is larger than the standard value.

5-3-4. 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) Loosen loop spreading knife eccentric pin setscrews ② (two pieces). Turn loop spreading knife eccentric pin ① with a flat-blade screwdriver to finely adjust the rotational-direction position of loop spreading knife ③.
- 4) After the adjustment, tighten loop spreading knife eccentric pin setscrews ② (two pieces).



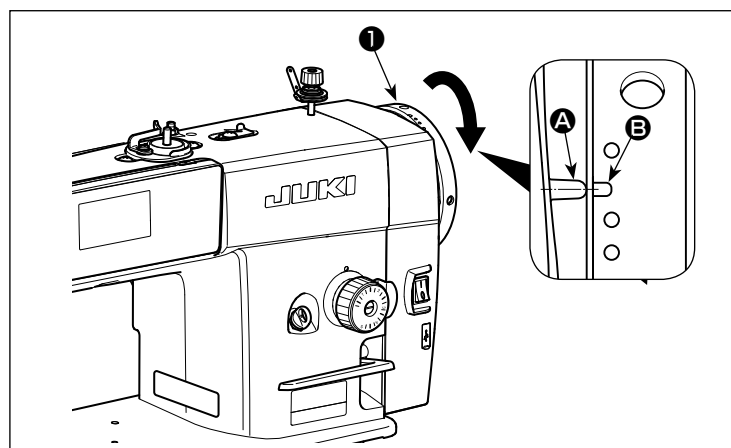
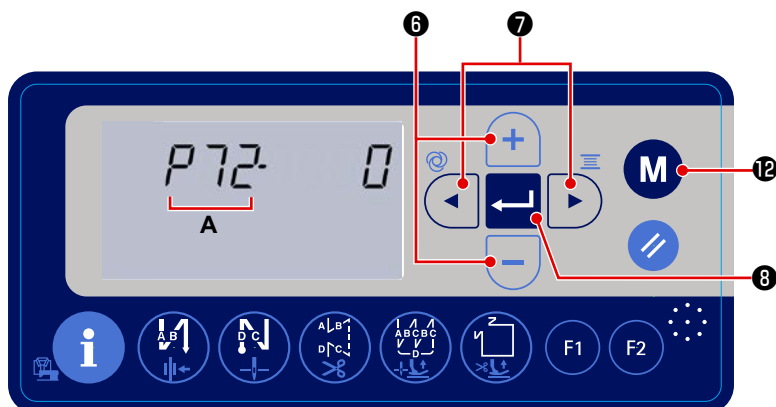
Position of marker dot A on loop

spreading knife eccentric pin ① should be adjusted only from the operator's side.

5-4. Adjusting the main shaft stop position



If the position of the marker line (blue) on the handwheel is too far from the position of the marker line (blue) on the cover after thread trimming, machine head angle should be adjusted following the steps of procedure described below.



- 1) The function setting screen is displayed by keeping **M** 12 held pressed for three seconds on the normal sewing state.
- 2) Press 7 to flash function setting No. **A** on and off. In this state, press 6 to select parameter P72.
- 3) Turn handwheel 1 in the normal direction of rotation to align marker line **A** on the electrical box cover with marker line **B** on the handwheel.
- 4) Press 8 to determine the setting.
- 5) Press **M** 12 to return the sewing machine to the sewing state.

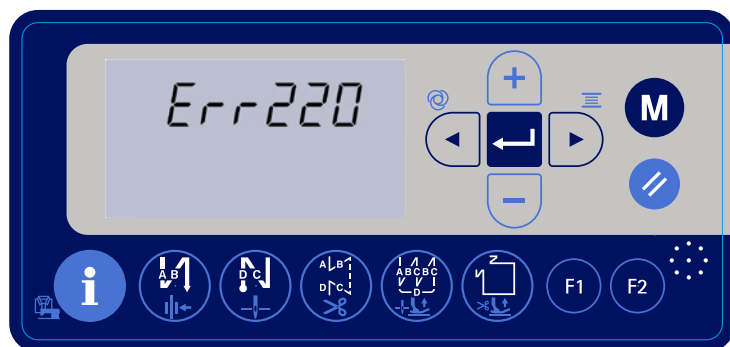
5-5. Grease shortage warning

5-5-1. Grease shortage warning

When the time of maintenance for adding the grease, "E220 Grease shortage warning" error is displayed for three seconds after turning the power ON. In this state, however, the sewing machine can be used for a certain period time.



Once E220 error is displayed, be sure to replenish the sewing machine with grease without exceptions.

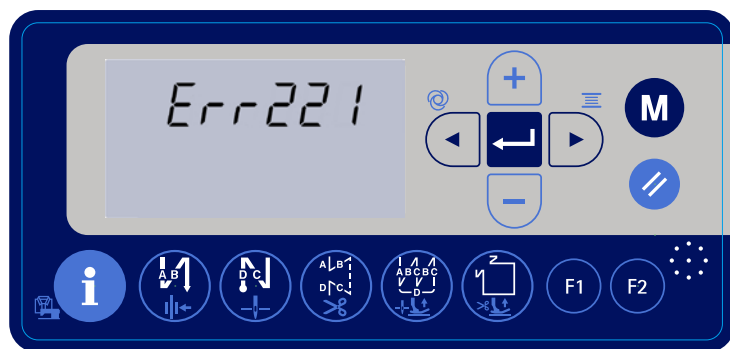


- * To reset the error (to clear n15), refer to **"5-5-3. How to reset the grease shortage error"** p. 63.

5-5-2. Grease shortage error

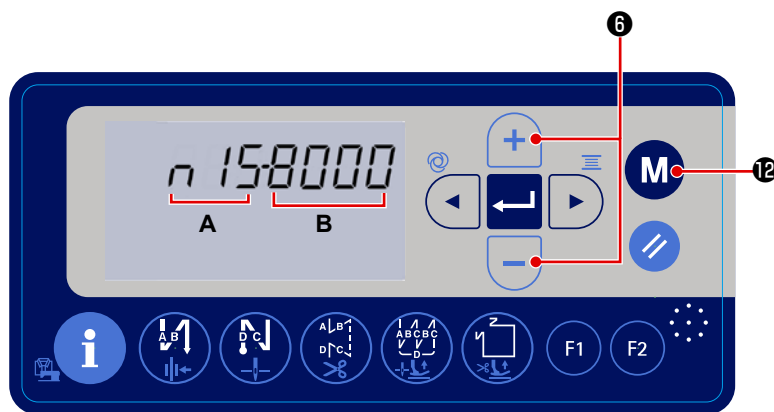
If the error E220 is not reset, "E221 Grease shortage error" will be continuously displayed.

If this state continues, the sewing machine operation will be disabled. To prevent this, be sure to reset the error (to clear n15) after carrying out the maintenance for replenishing the sewing machine with grease.



- * To reset the error (to clear n15), refer to **"5-5-3. How to reset the grease shortage error"** p. 63.

5-5-3. How to reset the grease shortage error



- 1) Turn ON the power to the sewing machine while keeping **M** **12** held pressed.
Then, the function setting screen is displayed.
A shows the function setting number, and **B** shows the set value for the function setting number.

- 2) While the function setting number (**A**) is flashing on and off, press switch **+** **-** **6** to select the function setting No. n15.
- 3) Press **//** **11** to clear the set value (**B**) to "0" (zero).
* The grease shortage error is reset by carrying out this operation.
- 4) Press **M** **12** to return the sewing machine to the normal sewing state.

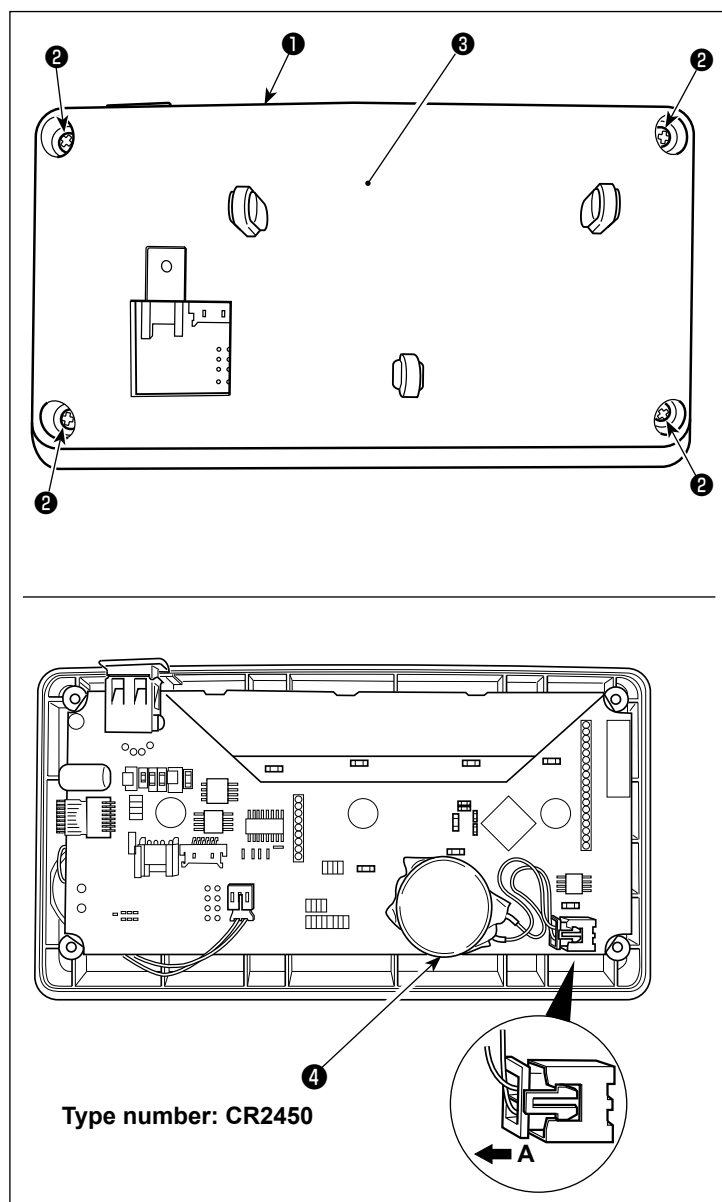
5-6. Disposal of batteries



The operation panel has a built-in battery in order to operate the clock even when the power is turned OFF.

Be sure to dispose of the battery following the local laws and regulations.

[How to remove the battery]



- 1) Remove panel ① from the main body of sewing machine.
- 2) Loosen screw ② from the rear surface of the operation panel. Detach case ③.
- 3) ④ is the battery for clock.
Type number: CR2450
- 4) Pull out the connector in the direction of A. Detach the whole main body of battery together with its case from the PCB. (The battery is secure on the PCB with double-faced adhesive tape.)

6. CARE

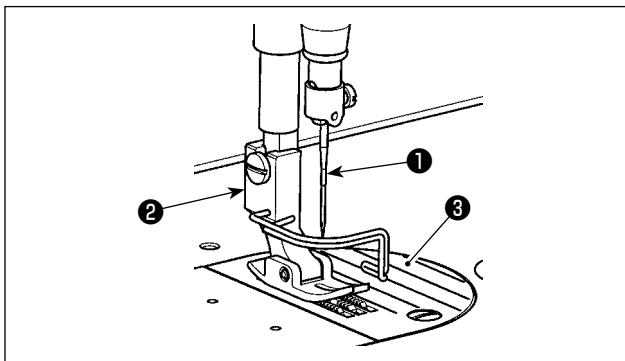
Perform the maintenance below every day for longer use of your machine.

6-1. Cleaning

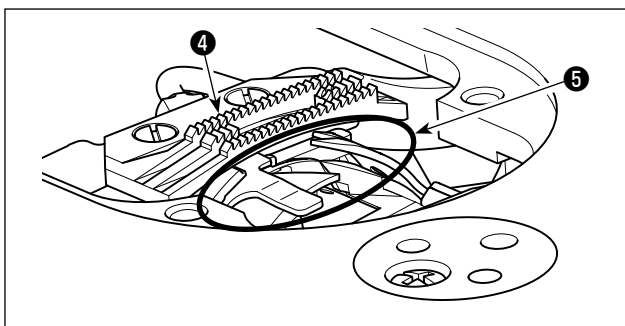


WARNING :

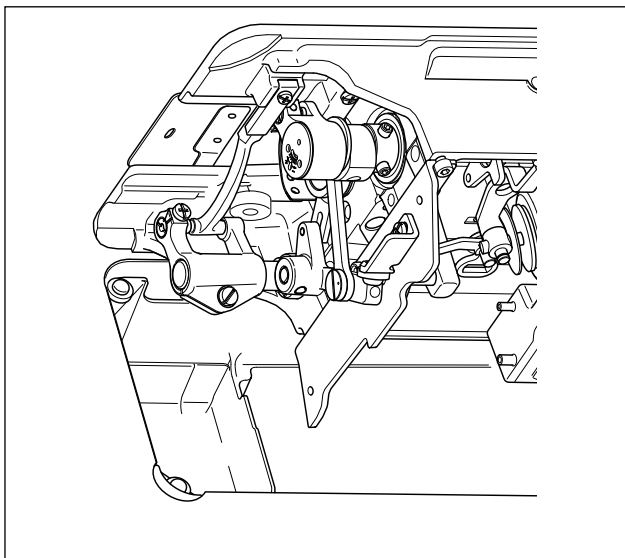
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



- 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.

6-2. Applying grease

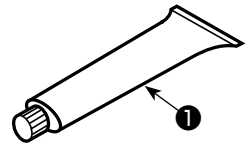


WARNING :

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).



6-3. Applying grease to the needle bar lower bushing

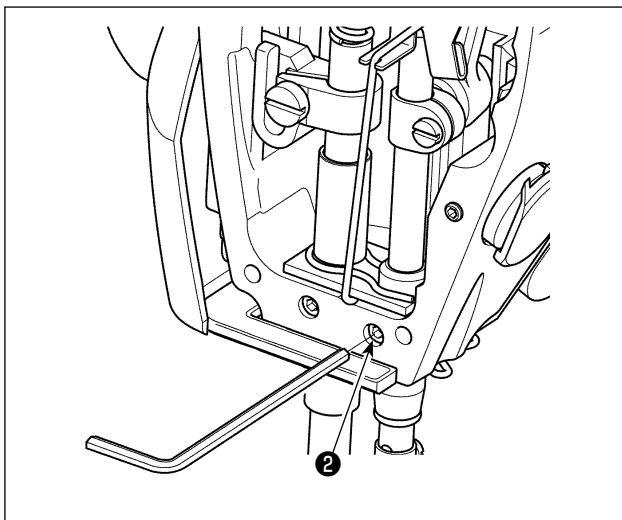


WARNING :

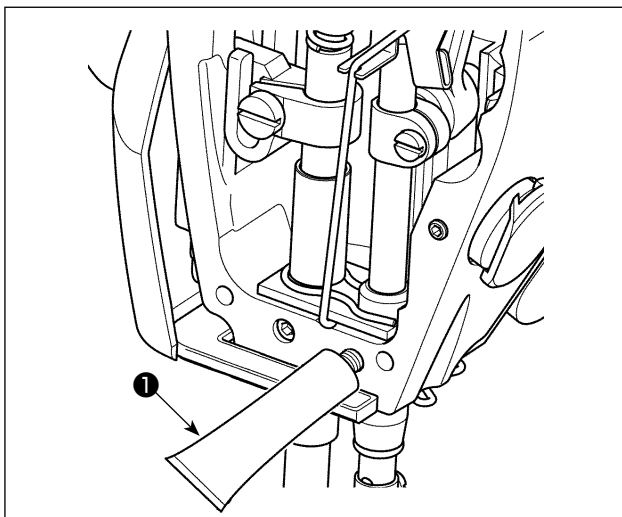
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



Carry out greasing with the needle bar installed.



- 1) Remove the face plate.
- 2) Remove needle bar lower bushing greasing screw ❷ (only for the DDL-8000A-PMS) with a hexagonal wrench key.



- 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.

7. LIST OF ERROR CODES

Error number	Description	How to correct
E001	High-voltage error (320 V or more)	Turn the power OFF. Check the supply voltage.
E002	Low-voltage error (170 V or less)	Turn the power OFF. Check the supply voltage.
E003 E003P	CPU communication fault	Turn the power OFF. Check the connection of the connector to the operation panel and the cable.
E005	Pedal connection fault	Turn the power OFF. Check the connection of the connector to the pedal and the cable.
E007	Main shaft rotation fault	Check whether the main shaft motor is locked by turning the pulley. Check the connection encoder cable and motor power cable to the connectors. Check whether the supply voltage is normal. Check whether the sewing speed is set extremely high.
E009 E011	Encoder Z-phase detection fault	Turn the power OFF. Check the connection of the motor encoder cable to the connector.
E014	Encoder AB-phase detection fault	Turn the power OFF. Check the connection of the motor encoder cable to the connector.
E015	Main shaft motor overcurrent error	Turn the power OFF. Then, re-turn the power ON.
E017	Machine head tilting error	Raise the machine head. Then, turn the power OFF and re-turn the power ON. Check whether the machine head tilt switch has broken.
E020	Main shaft rotation fault	Turn the power OFF. Check the connection of the main shaft motor encoder cable and motor power cable to the connectors.
E030	Communication fault between the main CPU and the presser motor CPU	Turn the power OFF. Check whether the presser motor is locked. Check the connection of the presser motor to the connector.
E031	Presser motor overcurrent error	Turn the power OFF. Check whether the presser motor is locked. Check the connection of the presser motor to the connector.
E032	Presser motor origin retrieval error	Turn the power OFF. Check whether the presser motor is locked. Check the connection of the presser motor and origin sensor to the connectors.
E040	Crystal oscillator fault	Turn the power OFF. Change the panel PCB with a new one.
E041	MAIN software communication error	Press the RESET button. Display the MAIN software rewriting screen. Then, rewrite the MAIN software.
E042	ST motor software communication error	Press the RESET button. Display the ST motor software rewriting screen. Then, rewrite the ST motor software.
E044	Screen reading software communication error	Press the RESET button. Display the screen reading software rewriting screen. Then, rewrite the screen reading software.
E050 to E059	MAIN software write error	Check the connection of the USB thumb drive. Check whether or not the file contained in the USB thumb drive has broken.
E060 to E069	PANEL software write error	
E070 to E079	ST motor software write error	
E080 to E08A	Screen reading software write error	

Error number	Description	How to correct
E220	Grease shortage warning	Carry out maintenance for replenishing the grease. Then, reset the error (to clear n15). Refer to "5-5. Grease shortage warning" p. 62.
E221	Grease-shortage error	Carry out maintenance for replenishing the grease. Then, reset the error (to clear n15). Refer to "5-5. Grease shortage warning" p. 62.