

ENGLISH

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IMPORTANT SAFETY INSTRUCTIONS

Putting sewing systems into operation is prohibited until it has been ascertained that the sewing systems in which these sewing machines will be built into, have conformed with the safety regulations in your country. Technical service for those sewing systems is also prohibited.

1. Observe the basic safety measures, including, but not limited to the following ones, whenever you use the machine.
2. Read all the instructions, including, but not limited to this Instruction Manual before you use the machine.
In addition, keep this Instruction Manual so that you may read it at anytime when necessary.
3. Use the machine after it has been ascertained that it conforms with safety rules/standards valid in your country.
4. All safety devices must be in position when the machine is ready for work or in operation.
The operation without the specified safety devices is not allowed.
5. This machine shall be operated by appropriately-trained operators.
6. For your personal protection, we recommend that you wear safety glasses.
7. For the following, turn off the power switch or disconnect the power plug of the machine from the receptacle.
 - 7-1 For threading needle(s), looper, spreader etc. and replacing bobbin.
 - 7-2 For replacing part(s) of needle, presser foot, throat plate, looper, spreader, feed dog, needle guard, folder, cloth guide etc.
 - 7-3 For repair work.
 - 7-4 When leaving the working place or when the working place is unattended.
 - 7-5 When using clutch motors without applying brake, it has to be waited until the motor stopped totally.
8. If you should allow oil, grease, etc. used with the machine and devices to come in contact with your eyes or skin or swallow any of such liquid by mistake, immediately wash the contacted areas and consult a medical doctor.

9. Tampering with the live parts and devices, regardless of whether the machine is powered, is prohibited.
10. Repair, remodeling and adjustment works must only be done by appropriately trained technicians or specially skilled personnel. Only spare parts designated by JUKI can be used for repairs.
11. General maintenance and inspection works have to be done by appropriately trained personnel.
12. Repair and maintenance works of electrical components shall be conducted by qualified electric technicians or under the audit and guidance of specially skilled personnel.
Whenever you find a failure of any of electrical components, immediately stop the machine.
13. Before making repair and maintenance works on the machine equipped with pneumatic parts such as an air cylinder, the air compressor has to be detached from the machine and the compressed air supply has to be cut off. Existing residual air pressure after disconnecting the air compressor from the machine has to be expelled. Exceptions to this are only adjustments and performance checks done by appropriately trained technicians or specially skilled personnel.
14. Periodically clean the machine throughout the period of use.

15. Grounding the machine is always necessary for the normal operation of the machine. The machine has to be operated in an environment that is free from strong noise sources such as high-frequency welder.
16. An appropriate power plug has to be attached to the machine by electric technicians. Power plug has to be connected to a grounded receptacle.

17. The machine is only allowed to be used for the purpose intended. Other used are not allowed.
18. Remodel or modify the machine in accordance with the safety rules/standards while taking all the effective safety measures. JUKI assumes no responsibility for damage caused by remodeling or modification of the machine.

19. Warning hints are marked with the two shown symbols.



Danger of injury to operator or service staff



Items requiring special attention

 	<p>← ①</p> <p>← ②</p> <p>← ③</p>	 	<p>→ ①</p> <p>→ ②</p> <p>→ ③</p>	
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- ① • There is the possibility that slight to serious injury or death may be caused.
• There is the possibility that injury may be caused by touching moving part.
- ② • To perform sewing work with safety guard.
• To perform sewing work with safety cover.
• To perform sewing work with safety protection device.
- ③ • Turn OFF the power and perform "threading", "replacement of bobbin or needle", "cleaning", "adjustment" and "lubrication".

SC-810 for JUS

This model is intended for commercial use.

BEFORE OPERATION

“IMPORTANT SAFETY INSTRUCTIONS”

When using the sewing machine, basic safety precautions should always be followed, including the following: Read all instructions before using

DANGER –To reduce the risk of electric shock:

WARNING –To reduce the risk of burns, fire, electric shock, or injury to persons:

1. Do not allow to be used as a toy. Close attention is necessary when this machine is used by or near children.
2. Use this machine only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.
3. Never operate this machine if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.
4. Never drop or insert any object into any opening.
5. Do not use outdoors.
6. Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
7. To disconnect, turn all controls to the off position, then remove plug from outlet.
8. Never operate the machine unless its oil pan has been filled with oil.

OPERATION PRECAUTIONS

“SAVE THESE INSTRUCTIONS”

1. Never operate the machine with any air openings blocked. Keep ventilation openings of the sewing machine free from the accumulation of lint, dust, and loose cloth.
2. Keep fingers away from all moving parts. Special care is required around the sewing machine needle.
3. Always use the proper needle plate. The wrong plate can cause the needle to break.
4. Do not use bent needles.
5. Do not pull or push fabric while stitching. It may deflect the needle causing it to break.
6. Switch the sewing machine off when making any adjustments in the needle area, such as threading needle, changing needle, threading bobbin, or changing presser foot, and the like.
7. Always disconnect power source from sewing machine when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the Instruction manual.
8. Keep your hands away from the needle when you turn the power switch ON or while the machine is operating.
9. Do not put your fingers into the thread take-up cover while the machine is operating.
10. Be sure to turn the power switch OFF before tilting the machine head or removing the V belt.
11. While the sewing machine is in operation, be careful not to allow your or any other person's head or hands to come close to the handwheel, V belt, bobbin winder or motor. Also, do not place anything close to them. Doing so may be dangerous.
12. If your machine is provided with a belt cover, finger guard or any other protectors, do not operate your machine with any of them removed.
13. To achieve security, be sure that the power supply earth wire has been connected before operating the sewing machine.
14. No motor sound is heard when the sewing machine is not operating. So, do not forget to turn the power OFF at the end of work.
15. When you move the unit from a cold place directly to a warm place, dew condensation may result. Turn ON the power to the unit after you have confirmed there is no fear of dew condensation.
16. In case of thunder, be sure to stop the unit and remove the power plug from the receptacle for extra safety.
17. Whenever you connect/remove the power connector or the like, be sure to turn OFF the power switch beforehand.

FOR SAFE OPERATION



1. To avoid electrical shock hazards, neither open the cover of the electrical box for the motor nor touch the components mounted inside the electrical box while the power switch is ON.



1. So as to avoid personal injuries, never operate the machine with the safety devices such as the belt cover and the eye-guard cover removed.
2. So as to avoid personal injuries caused by being caught in the machine, during operation, be careful not to allow your or any other person's head, hands or clothes to come close to the handwheel, V-belt or motor. Also, do not place anything close to them.
3. So as to avoid injuries to fingers and hands, be careful not to allow your or any other person's fingers to come close to the cloth cutting knife or the needle when turning ON the power or during operation.
4. So as to avoid injuries to fingers and hands, do not place the fingers inside the eye-guard cover.
5. So as to avoid personal injuries caused by abrupt start of the machine, turn OFF the power switch and ascertain that the sewing machine does not run even if the starting pedal is depressed when removing belt cover, motor pulley or V-belt.
6. So as to avoid personal injuries caused by abrupt start of the machine, turn OFF the power switch and ascertain that the sewing machine does not run even if the starting pedal is depressed when performing such works as inspection or adjustment of the sewing machine, cleaning, threading, replacing the needle, etc.
7. So as to avoid electrical shock hazards, do not operate the machine with the power supply earth wire removed.
8. So as to avoid electrical shock hazards and accidents caused by damaged electrical components, be sure to turn OFF the power switch before inserting/ detaching the power plug.
9. So as to avoid personal injuries caused by abrupt start of the machine, turn OFF the power switch when leaving the sewing machine table.
10. So as to avoid personal injuries caused by abrupt start of the machine, turn OFF the power switch when the electricity fails.
11. So as to avoid personal injuries caused by being caught in the machine, the motor pulley should be attached with the pulley cover as well as the catching protection pin.
12. When changing the set value described in the functions for maintenance (attached with * mark) on the function setting list in this Instruction Manual, be sure to purchase the Engineer's Manual and perform the work after fully understanding the contents.

If the set valve is carelessly changed, it is in danger of causing the machine to be broken or the performance to be deteriorated. So, be careful.
13. Be careful of handling this product so as not to pour water or oil, shock by dropping, and the like since this product is a precision instrument.

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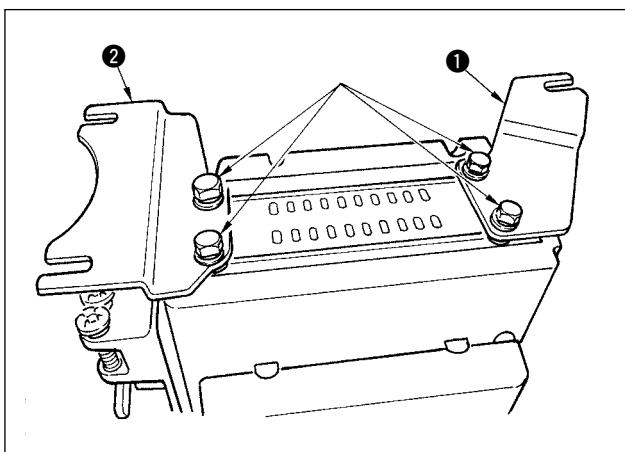
I . SPECIFICATIONS

Supply voltage	Single phase 220 to 240V
Frequency	50 Hz / 60 Hz
Operating environment	Temperature : 0 to 40°C Humidity : 90% or less
Input	320VA

II . SET-UP

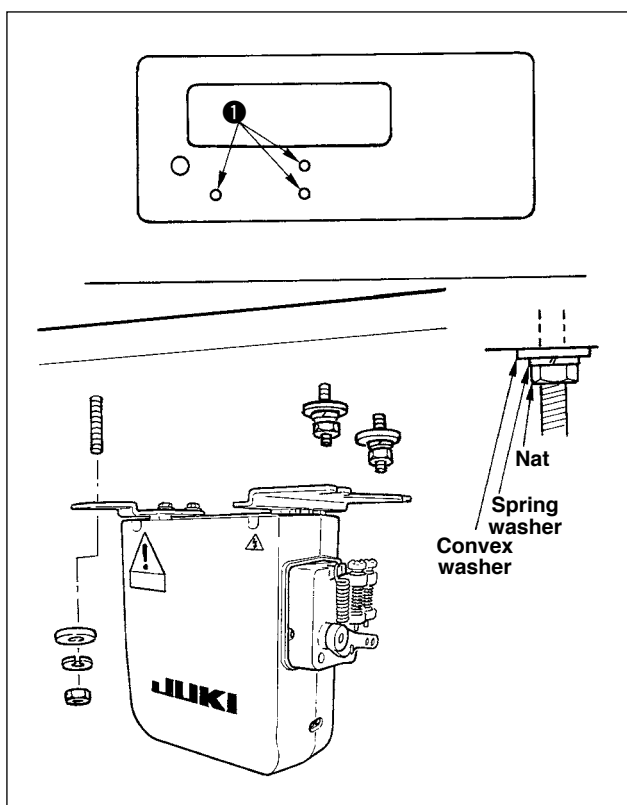
Install the motor unit to the control box following the instructions below.

1. Installing the box bracket



Fix box bracket, right ① and box bracket, left ② in the direction as shown in the figure using the bolts supplied with the unit as accessories.

2. Installing the control box



Install the control box on the table with the fitting bolt asm. supplied with the unit as accessories.

At this time, insert the nuts and washers supplied with the unit as accessories as shown in the figure so that the control box can be securely fixed on the table.

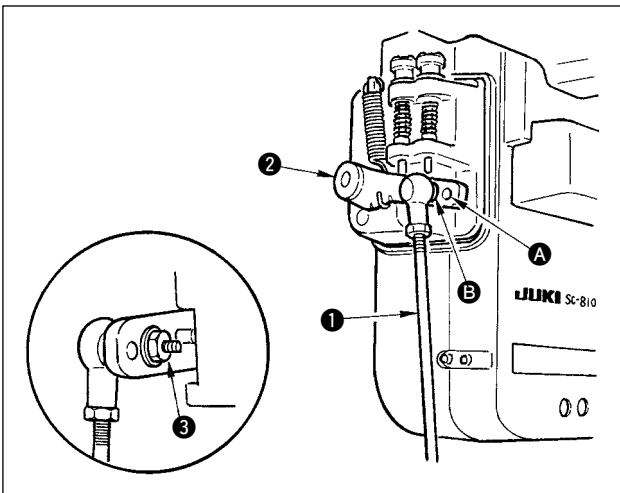
- 1) Press three bolts ① supplied with the unit as accessories into the hanging bolt hole in the table and fix them.
- 2) Temporarily tighten convex washer, spring washer and nut on the side where two bolts are attached.
- 3) Hang the control box to the washer which has been temporarily tightened, and attach convex washer, spring washer and nut to the other bolt on the opposite side.
- 4) After adjusting the installing position of the control box, securely tighten the respective nuts.

3. Attaching the connecting rod



WARNING :

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



- 1) Fix connecting rod ① to installing hole ⑤ of pedal lever ② with nut ③.
- 2) Installing connecting rod ① to installing hole ④ will lengthen the pedal depressing stroke, and the pedal operation at a medium speed will be easier.

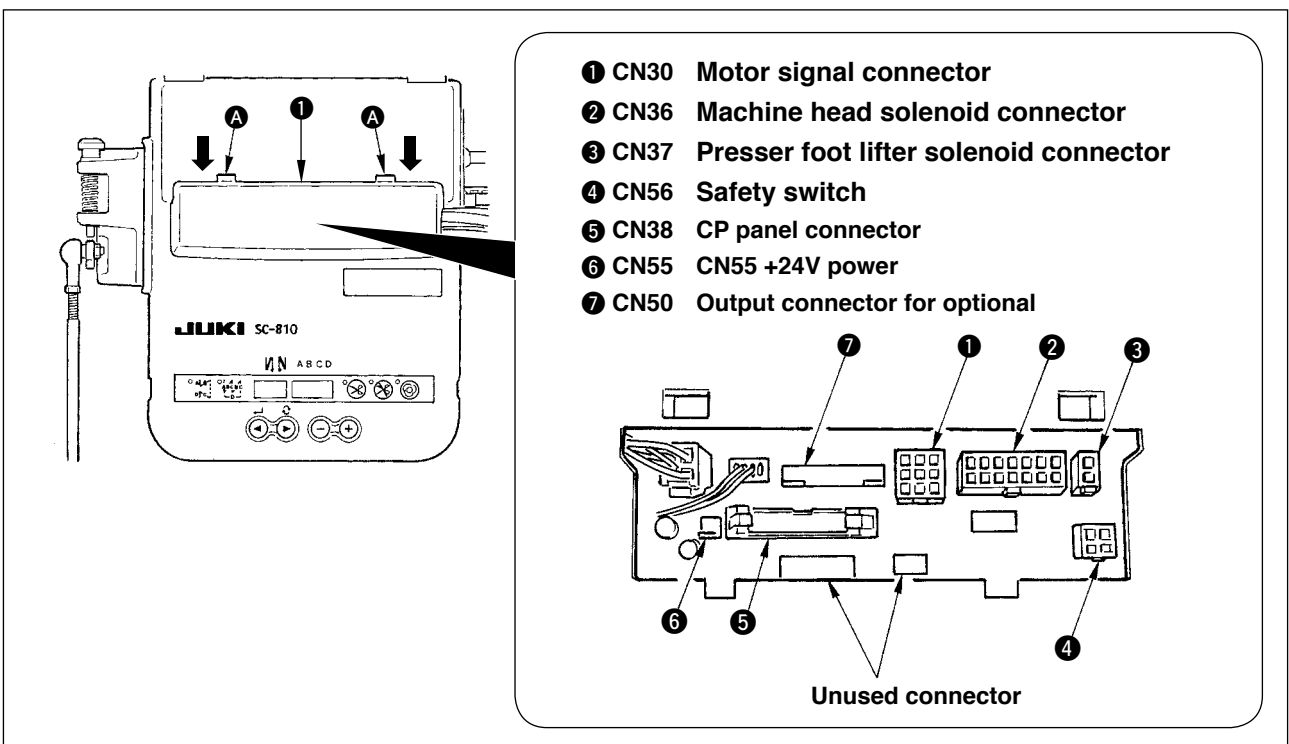
4. Connecting the cords

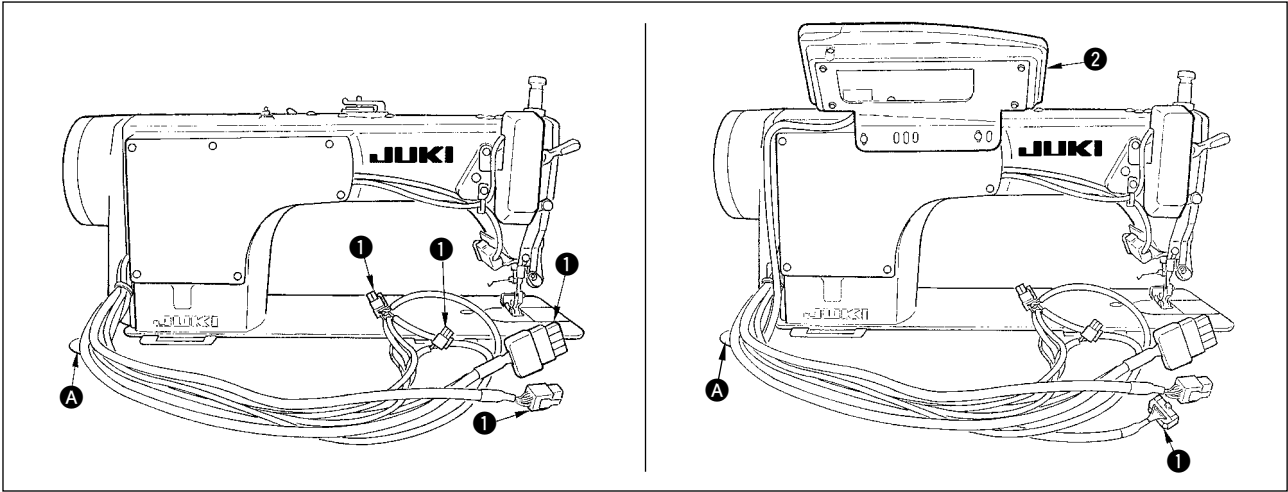


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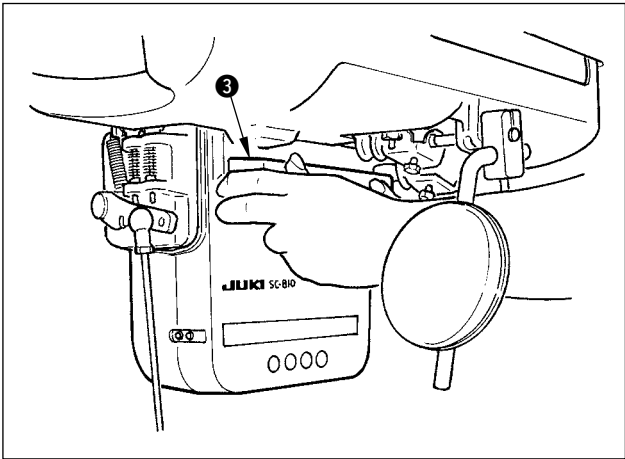
- To prevent personal injury caused by abrupt start of the sewing machine, carry out the work after turning OFF the power switch and a lapse of 5 minutes or more.
- To prevent damage of device caused by maloperation and wrong specifications, be sure to connect all the corresponding connectors to the specified places.
- To prevent personal injury caused by maloperation, be sure to lock the connector with lock.
- As for the details of handling respective devices, read carefully the Instruction Manuals supplied with the devices before handling the devices.

Following connectors are prepared when loosening the connector cover ① fixing screws ② of SC-810 and opening the cover. Connect the machine head connectors to the positions corresponding to each other so as to fit the devices mounted on the machine head.

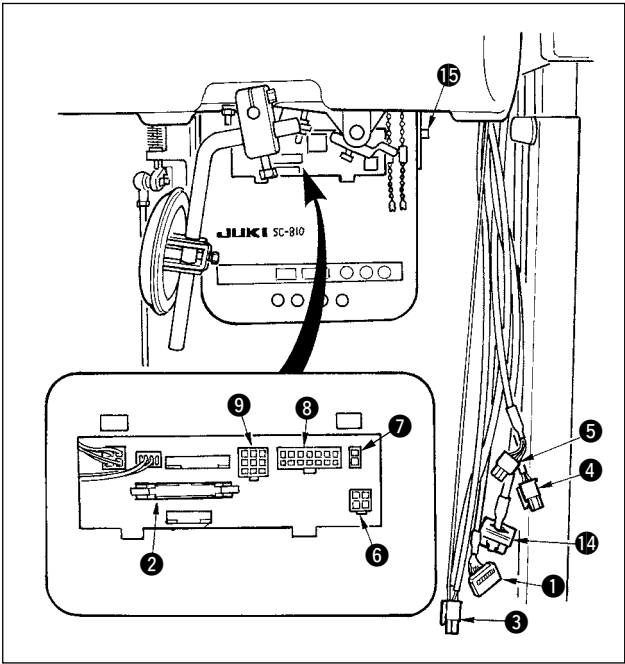




1) Pass cords ① of the thread trimming solenoid, reverse-stitching solenoid, etc. and the cord from the motor through hole ① in the table to route them down under the machine table.



2) Pressing down the protrusion on the top surface of connector cover ③, open the connector cover toward you.

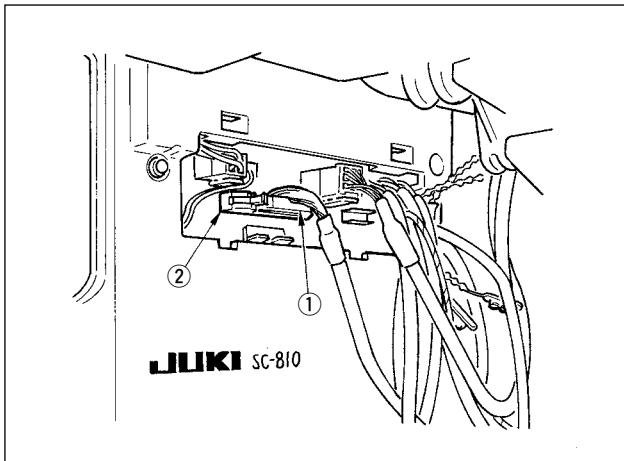


- 3) Connect 14P code ③ coming from the machine head to connector ⑧ (CN36).
- 4) When the optional AK device is attached, connect 2P connector ④ coming from the AK device to connector ⑦ (CN37).
- 5) Connect connector ⑤ coming from the motor to connector ⑨ (CN30) on the circuit board.

(Caution)

- 1. When using the AK device, set it after confirming how to select the auto-lifter function. (Refer to page 25.)
- 2. Be sure to securely insert the respective connectors after checking the inserting directions since all connectors have the inserting directions. (When using a type with lock, insert the connectors until they go to the lock.)

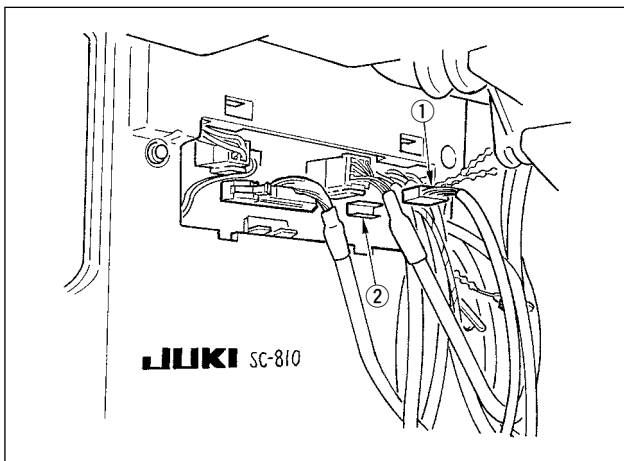
The sewing machine is not actuated unless the connectors are inserted properly. In addition, not only the problem of error warning or the like occurs, but also the sewing machine and the control box are damaged.



[Connection of the connector for CP panel]

Connector for connecting CP-160/170 is prepared. Paying attention to the orientation of the connector ①, connect it to connector ② (CN38) located on the circuit board. After connecting, securely lock the connector.

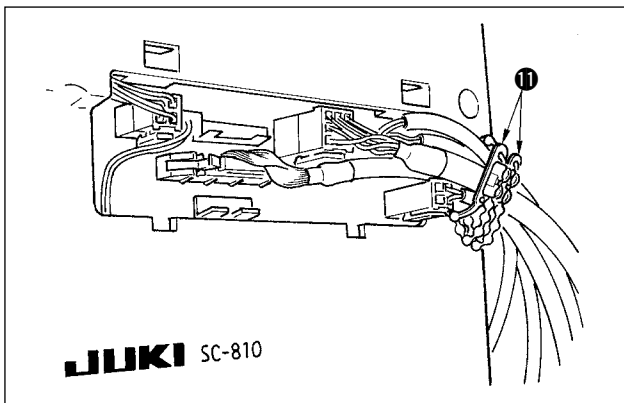
(Caution) Be sure to turn OFF the power before connecting the connector.



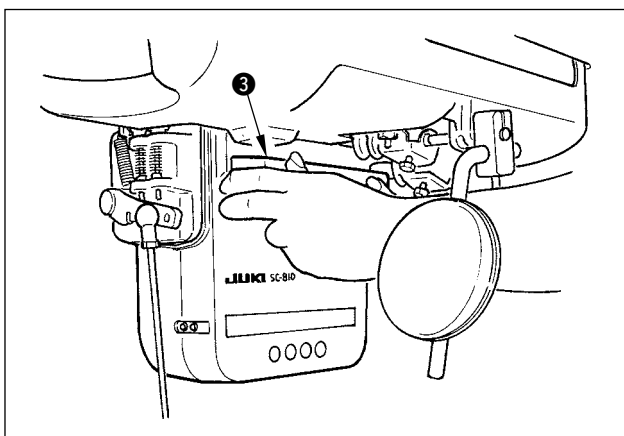
[Connection of the pedal of standing-work machine]

Connect the connector of PK70 ① to connector ② (CN39 : 12P) of SC-810.

(Caution) Be sure to turn OFF the power before connecting the connector.

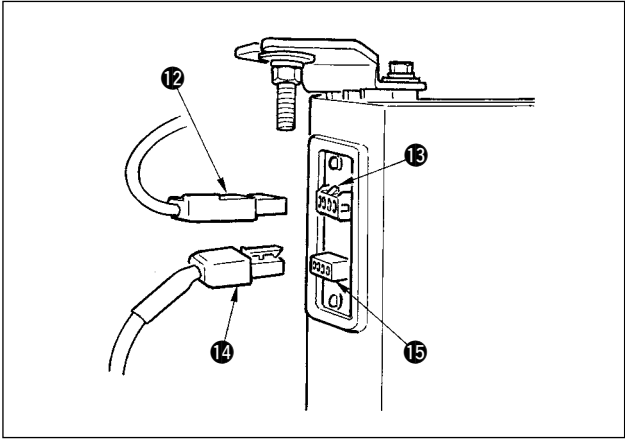


7) After inserting the connector, put all cords together with cable clip band ⑪ located on the side of the box.

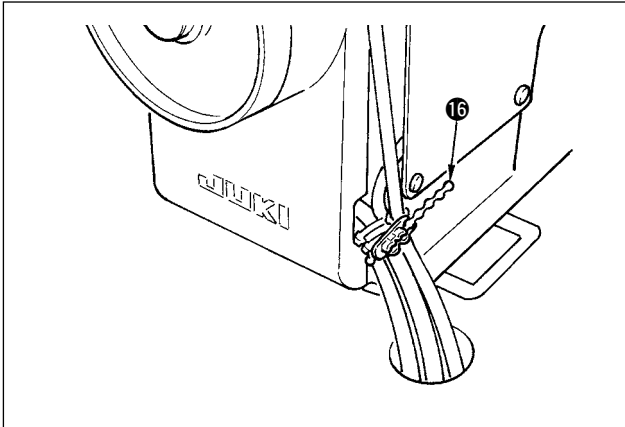


8) Close connector cover ③.

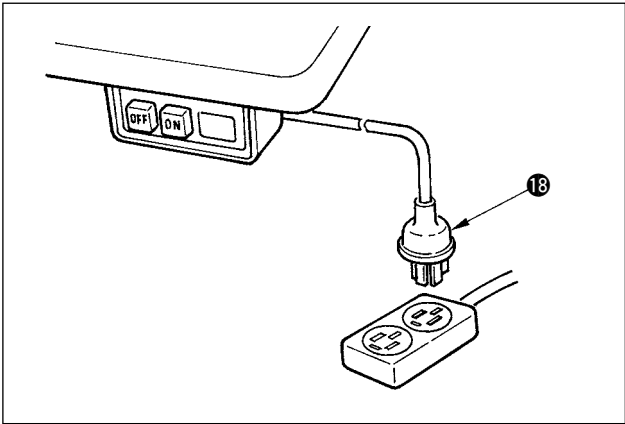
(Caution) Take care not to allow the cord to be caught in connector cover ③.



- 9) Connect connector 4P 12 to connector 13 located on the side of the box.
- 10) Connect motor output cord 14 of the power switch to connector 15.



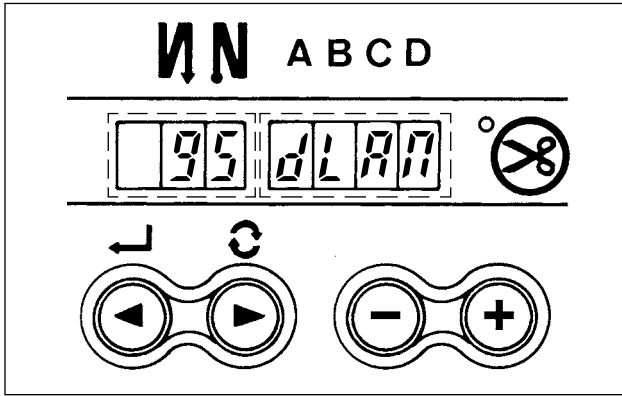
- 11) When using the CP panel, bundle the cables of machine head in one place using cable clip band 16 supplied with CP panel as accessories as shown in the figure.



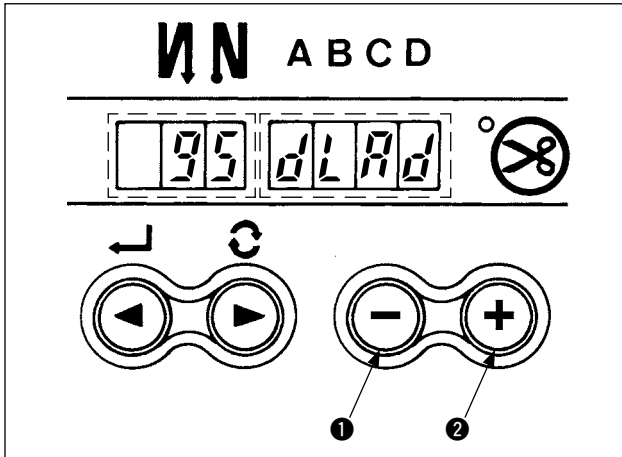
- 12) Make sure that the power switch is turned OFF and insert power supply cord coming from the power switch into the power plug socket.

- (Caution)**
- 1. Check again the supply voltage indicated on the control box before connecting the power cord.
 - 2. Be sure to prepare power plug 18 conformed to the safety standard.
 - 3. Be sure to connect the ground wire (green / yellow).

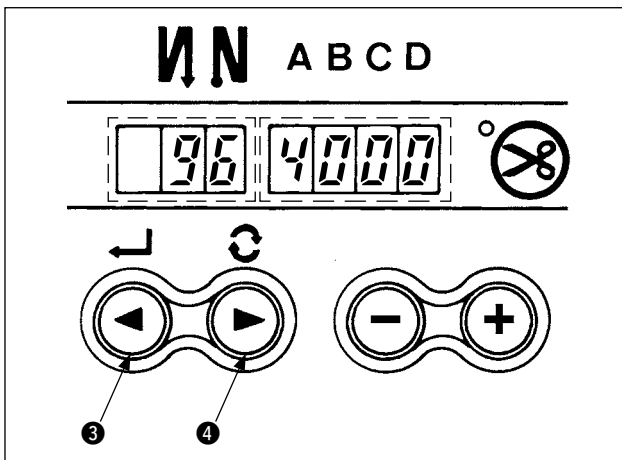
5. Setting procedure of the machine head



- 1) Refer to "III-3. Setting for functions of SC-810", and call the function setting No. 95.



- 2) The type of machine head can be selected by pressing (−) switch ① (+) switch ②).

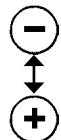


- 3) After selecting the type of machine head, by pressing (◀) switch ③ (▶) switch ④, the step proceeds to 96 or 94, and the display automatically changes to the contents of the setting corresponding with the type of machine head.

(Caution) When the type of machine head is changed, the contents which have been changed before return to the standard set values.

6. Machine head list

No.	Machine head	Type	Contents of display	Number of revolutions at the time of delivery (rpm)	Max. number of revolutions (rpm)
1	DDL-9000A-SS,-MA,-MS	SS/MA/MS	dL R A A	4000	5000
2	DDL-9000A-DS	DS	dL R A d	4000	4000
3	DDL-9000A-SH	SH	dL R A H	4000	4500



* Machine head set at the time of delivery

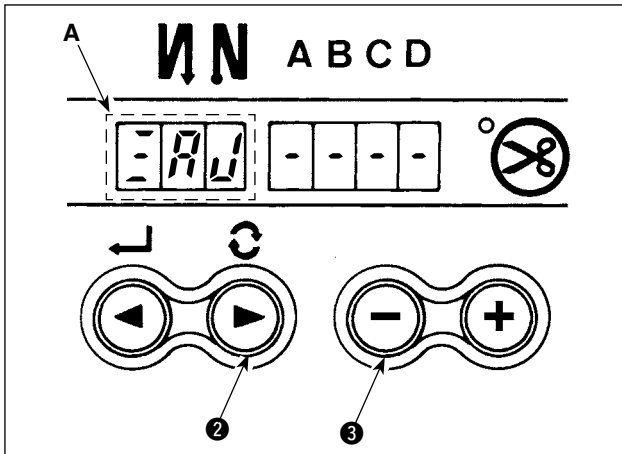
(Caution) Machine type setting of type DS is automatically set and it is not possible to set the machine type with the manual.

7. Adjusting the machine head

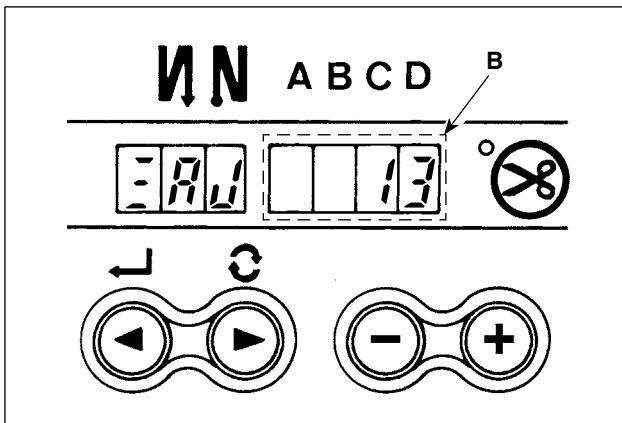


WARNING :

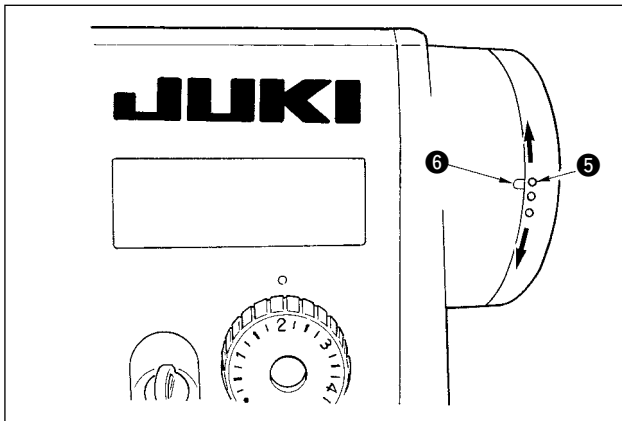
Be sure to perform the angle adjustment of the machine head by the operation below before using the machine head.



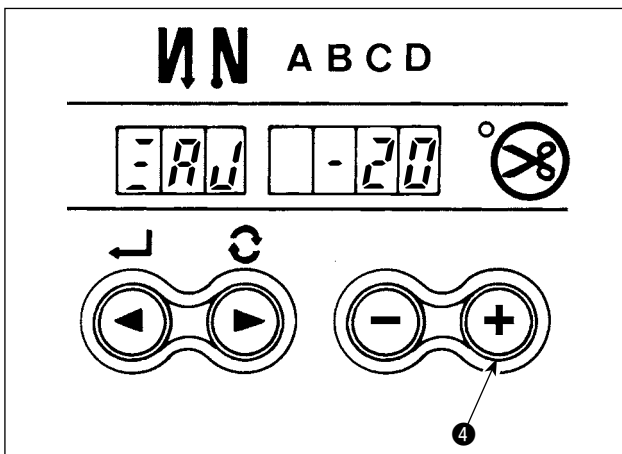
- 1) Simultaneously pressing switch **2** and switch **3**, turn ON the power switch.
- 2) is displayed (**A**) in the indicator and the mode is changed over to the adjustment mode.



- 3) Turn the handwheel by hand and angle **B** is displayed in the indicator when the reference signal has been detected. (The value is a reference value.)



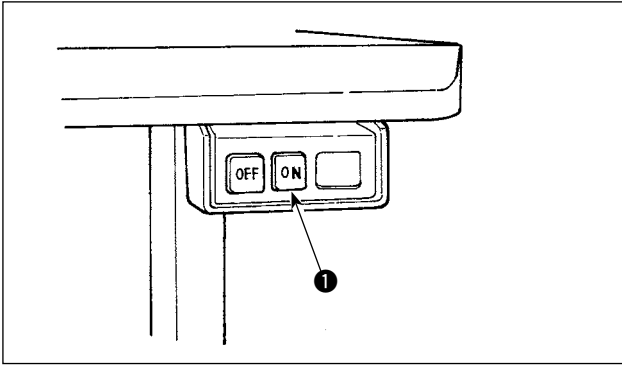
- 4) In this state, align the white dot **5** of the handwheel with the concave **6** of the pulley cover as shown in the figure.



- 5) Press switch **4** to finish the adjustment work. (The value is a reference value.)

III. FOR THE OPERATOR

1. Operating procedure of SC-810

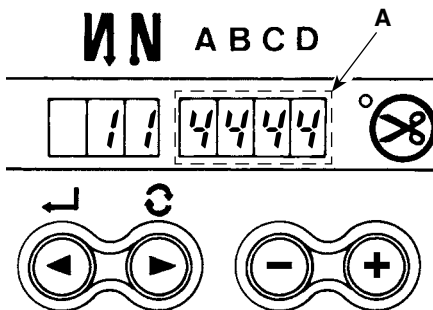


1) Press ON button ❶ of the power switch to turn ON the power.

(Caution) When the power display LED does not light up even when the power switch is turned ON, immediately cut off the power and check the voltage. In addition, re-turn ON the power switch in such a case when 5 minutes or more have passed after turning OFF the power switch. (When overvoltage is entered, the protecting circuit works and the re-turning ON in the state that the power is not completely turned OFF is not accepted.)

Display of power ON

[When operation panel is not connected]

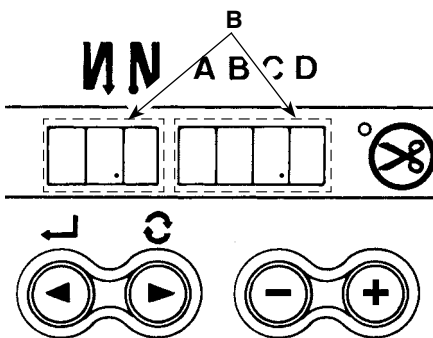


When operation panel (CP-170) is not used

LED of the display of reverse stitching or overlapped stitching at the front cover of control box lights up. (A)

* The power display LED that is built in the machine head lights up according to the machine head.

[When operation panel is connected]



When operation panel (CP-170) is used

Power lamp of CP-170 lights up.

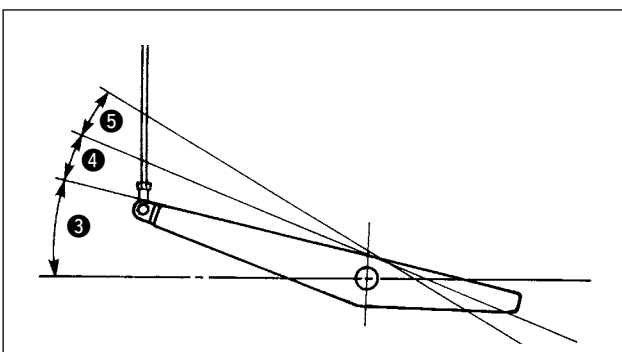
Two dots B of the number indicating window at the front cover of control box light up.

(Caution) When the buzzer continues sounding immediately after turning ON the power, the cord may not be properly connected or power voltage may be not proper. Press OFF button ❷ of the power switch to turn OFF the power.

2) When the needle bar is not in UP position, it automatically turns

to the UP position.

(Caution) When turning ON the power for the first time, there is the case where the timing is slightly retarded to perform the initialization work. When turning ON the power, the needle bar moves. Do not put your hands or things under the needle. al, thread trimming is performed.

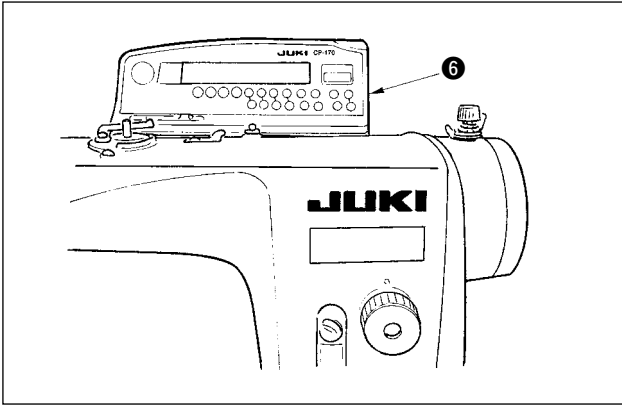


3) When depressing front part ❸ of the pedal, the sewing machine rotates at the number of revolutions in accordance with the depressing amount. When the pedal is returned to the neutral position, the sewing machine stops.

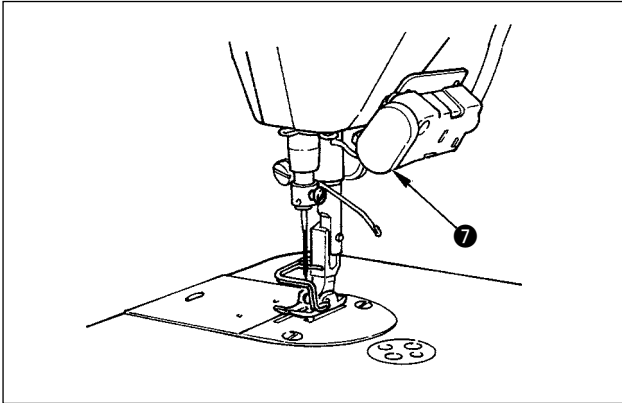
4) When lightly depressing back part ❹ of the pedal, the presser goes up. (PFL type only)

5) When strongly depressing back part ❺ of the pedal, thread trimming is performed.

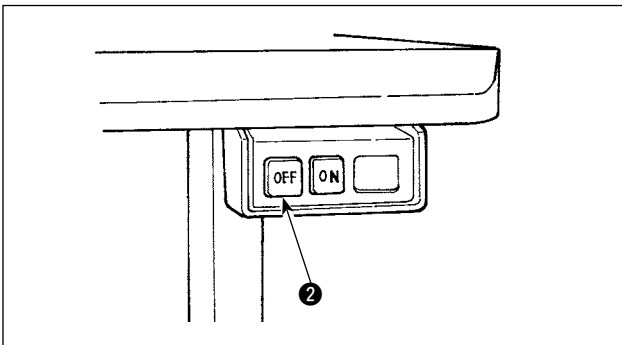
(Caution) For KFL and PFL types, thread trimming entering point is different from each other.



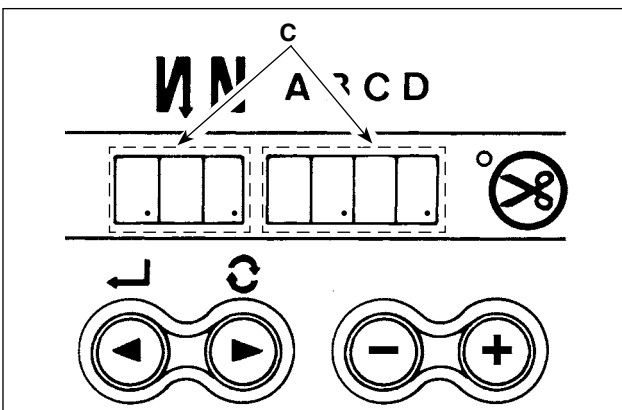
- 6) When operation panel **6** is connected, various sewing patterns such as reverse feed stitching at sewing start, reverse feed stitching at sewing end, etc. can be set. Refer to the Instruction Manual for the operation panel for the details.



- 7) When pressing touch-back switch **7**, reverse feed can be performed.

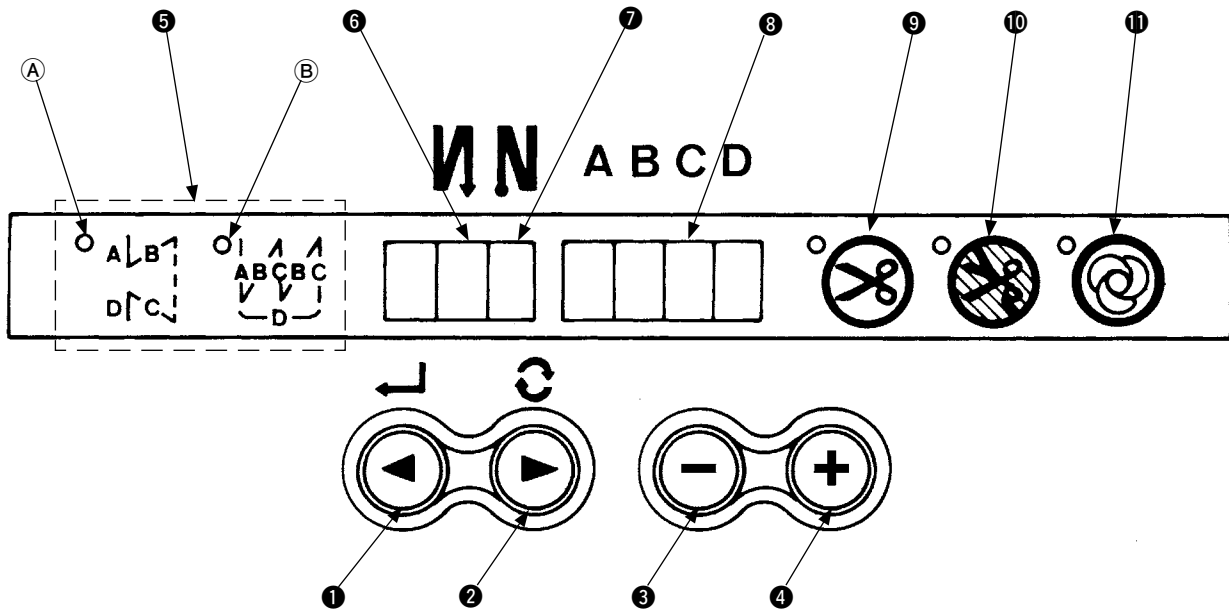


- 8) When sewing is completed, press OFF button **2** of the power switch to turn OFF the power switch after confirming that the sewing machine has stopped.



Four dots (C) in the numeral indicating window momentarily light up as shown in the figure, showing that the state has moved to the power OFF state.

2. Explanation of the operation panel



- ① / switch : Used for determining the contents of setting. When this switch is pressed, flashing stops and the contents of setting are determined.
- ② / switch : Used for changing the contents of setting. When this switch is pressed, changeable positions flash on and off. By pressing the switch, flashing position shifts in the right direction.
- ③ switch : Used for changing the contents of the selected display (flashing section). When this switch is pressed, the contents of the display increase.
- ④ switch : Used for changing the contents of the selected display (flashing section). When this switch is pressed, the contents of the display decrease.
- ⑤ PATTERN SELECTION display : The selected LED lamp lights up in case of ① reverse stitching LED and ② overlapped stitching.
- ⑥ REVERSE STITCHING AT START display : Rendered effective when reverse stitching pattern is selected.
 “ - ” Without reverse stitching display / “ / ” Reverse stitching display / “ // ” Double reverse stitching display
- ⑦ REVERSE STITCHING AT END display : Rendered effective when reverse stitching pattern is selected.
 “ - ” Without reverse stitching display / “ / ” Reverse stitching display / “ // ” Double reverse stitching display
- ⑧ NUMBER OF STITCHES display : Number of stitches of reverse stitching or overlapped stitching is displayed.
- ⑨ AUTOMATIC THREAD TRIMMING display : Lights up when the automatic thread trimming by depressing the front part of the pedal is selected.
 (Lights up when the overlapped stitching is selected.)
- ⑩ THREAD TRIMMING PROHIBITION display : Lights up when the thread trimming prohibition is selected.
 Function setting No. 9
- ⑪ ONE-SHOT AUTOMATIC STITCHING display : Lights up when the one-shot automatic stitching is selected.
 (Lights up when the overlapped stitching is selected.)

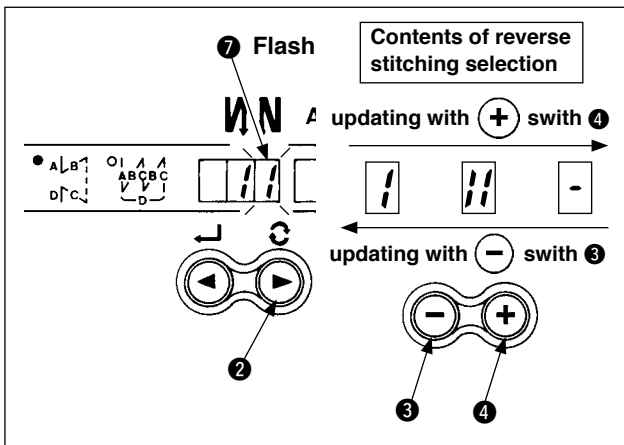
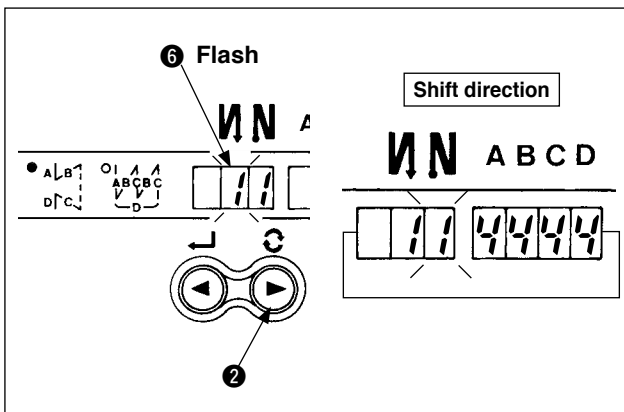
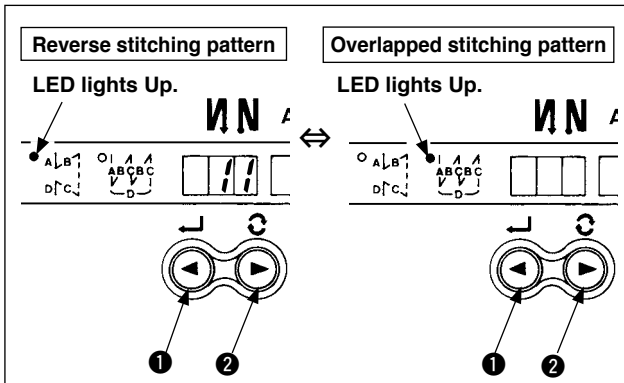
Operating procedure of the sewing pattern

(1) Reverse stitching pattern

Reverse stitching patterns below can be set by using the operation panel.

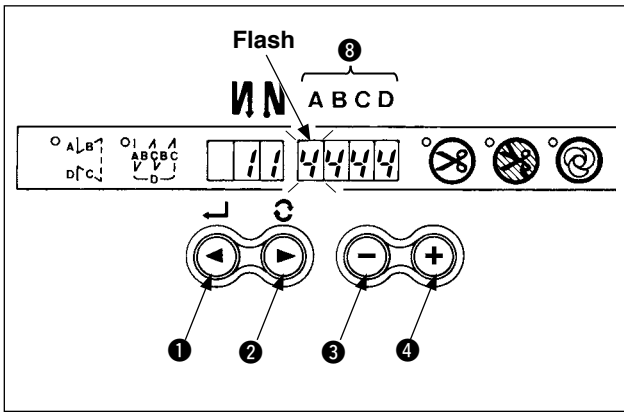
Reverse stitching patterns that can be set

Reverse stitching at start display	-	/	-	/	//	-	//	/	//
Sewing pattern									
Reverse stitching at end display	-	-	/	/	-	//	//	//	/



[Setting procedure of the reverse stitching]

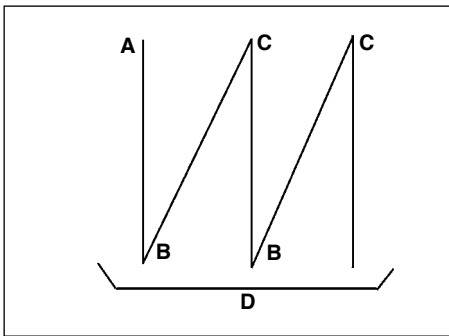
- 1) Hold pressing / switch 2, and press / switch 1 to select the reverse stitching pattern.
(Every time / switch 1 is pressed, reverse stitching pattern/overlapped stitching pattern change over alternately.)
- 2) Press / switch 2 to make reverse stitching at start display 6 flash on and off.
Every time / switch 2 is pressed, the flashing position shifts in the right direction.
(Caution) The sewing machine does not start in the flashing state.
- 3) Press switch 4 or switch 3 and select the reverse stitching pattern.
Reverse stitching patterns and displays are as follows.
 - : Reverse stitching
 - : Double reverse stitching
 - : Without reverse stitching
- 4) Press / switch 2 to make reverse stitching at end display 7 flash on and off, and set the pattern in the same way as step 3).



- 5) Press / switch **2** to make number of stitches display **8** flash on and off, and set the number of stitches for the respective processes of the stitching.
- 6) Press switch **4** or switch **3** to change the number of stitches.
The number of stitches can be changed up to as many as 15 stitches for the A, B, C, and D processes respectively.
However, displays are as follows.
10 stitches = A, 11 stitches = b, 12 stitches = c, 13 stitches = d, 14 stitches = E and 15 stitches = F
- 7) When the setting of all items has been completed, press / switch **1** to determine the contents of the setting. (Flashing stops.)

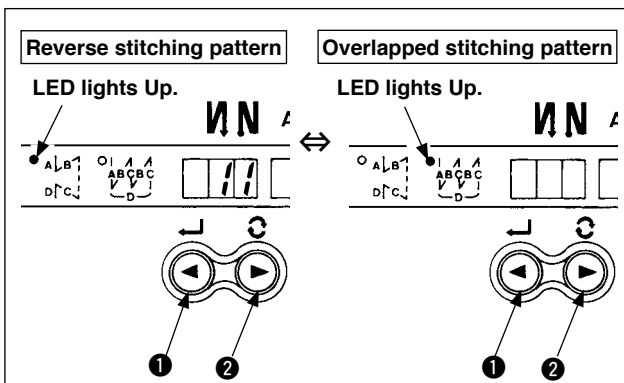
(2) Overlapped stitching pattern

Overlapped stitching patterns below can be set by using the operation panel.



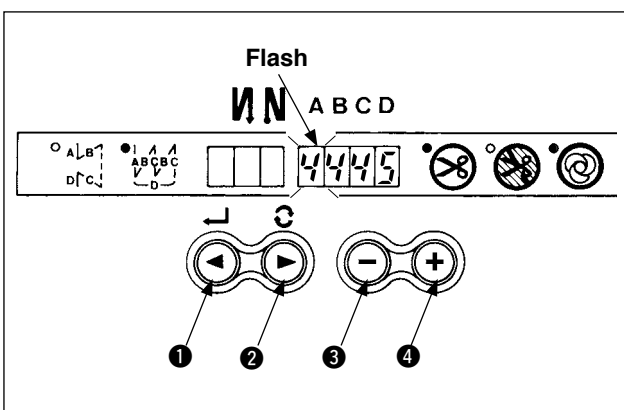
- A : Number of stitches of normal stitching setting
0 to 15 (F) stitches
- B : Number of stitches of reverse stitching setting
0 to 15 (F) stitches
- C : Number of stitches of normal stitching setting
0 to 15 (F) stitches
- D : Number of times of repetition
0 to 9 times

(Caution) When process D is set to 5 times, the sewing is repeated as A → B → C → B → C.



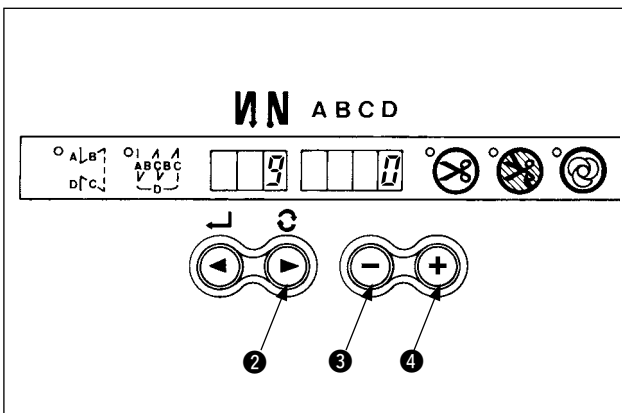
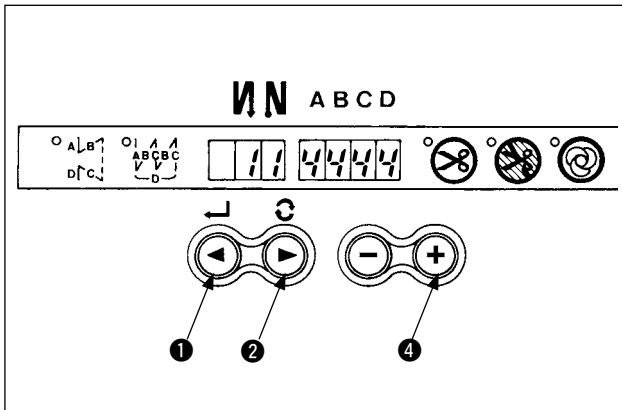
[Setting procedure of the overlapped stitching]

- 1) Hold pressing / switch **2**, and press / switch **1** to select the overlapped stitching pattern.
(Every time / switch **1** is pressed, reverse stitching pattern/overlapped stitching pattern change over alternately.)
 - 2) The number of stitches for process A becomes in flashing state.
 - 3) Every time / switch **2** is pressed, the flashing position shifts in the right direction and the display of the process where setting can be changed flashes on and off.
 - 4) Press switch **4** or switch **3** to change the number of stitches.
 - 5) When the setting of all processes has been completed, press / switch **1** to determine the contents of the setting. (Flashing stops.)
- (Caution)** When the overlapped stitching is selected, the automatic operation display flashes on and off. It is not possible to release the automatic operation.



(3) Special setting

For the thread trimming prohibiting function which is displayed in the front panel, it is possible to change the set value by directly moving to the function setting mode while the power is turned ON in addition to the normal function setting procedure.



[Moving procedure to the function setting mode]

- 1) Hold pressing / switch ②, and press switch ④ to move to the function setting mode.

(Caution) Function setting No. 9 is displayed immediately after the changeover.

- 2) When returning to the normal mode, press / switch ① and determine the contents of the setting.

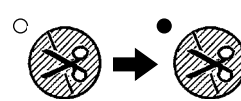
- ① Thread trimming prohibition function setting (Function setting No. 9)

Thread trimming operation at normal stitching and overlapped stitching can be prohibited by selecting the thread trimming prohibition.

It is possible to change the set value with switch ④ or switch ③.

0 : Thread trimming is effective.

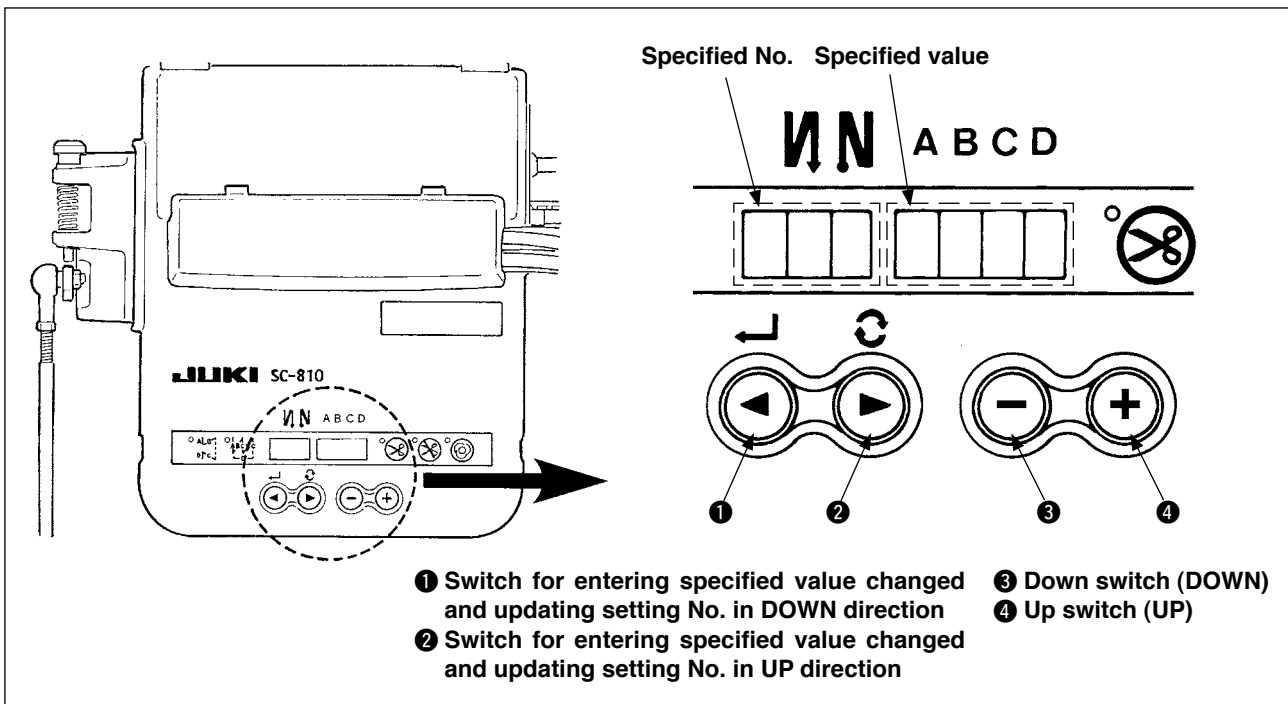
1 : Thread trimming is prohibited.



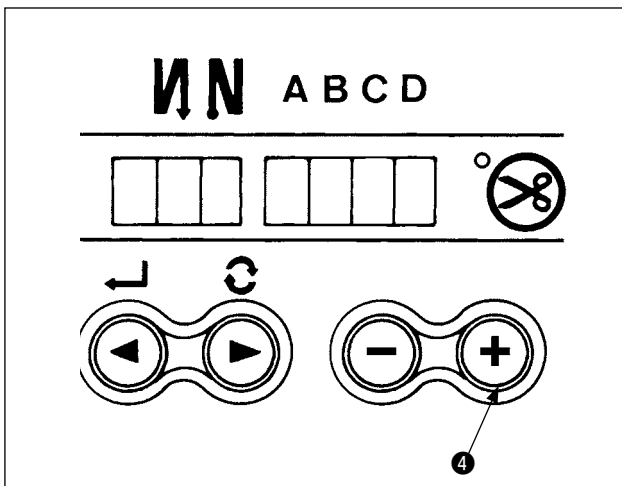
When "1" is selected, the thread trimming prohibition display lights up when the mode is returned to the normal one.

3. Setting for functions of SC-810

Functions can be selected and specified by means of the four setting switches and light emitting diode located inside the front cover of the SC-810.

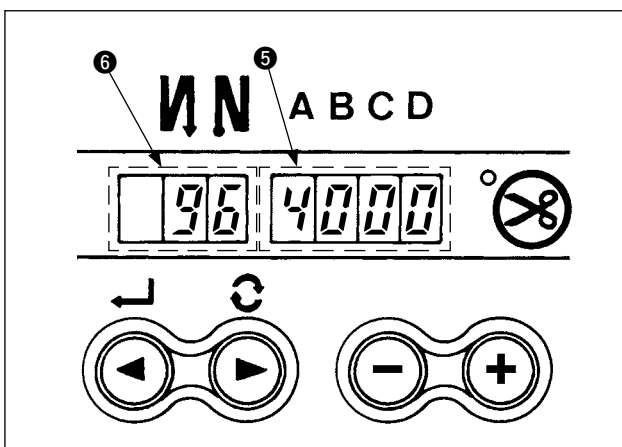


- (Caution)
- Do not perform switch operations other than those described in the following explanations.
 - Be sure to re-turn the power switch ON after one second or more has passed. If the power is turned ON immediately after turning it OFF, the sewing machine may not work normally. In this case, turn ON the power again.

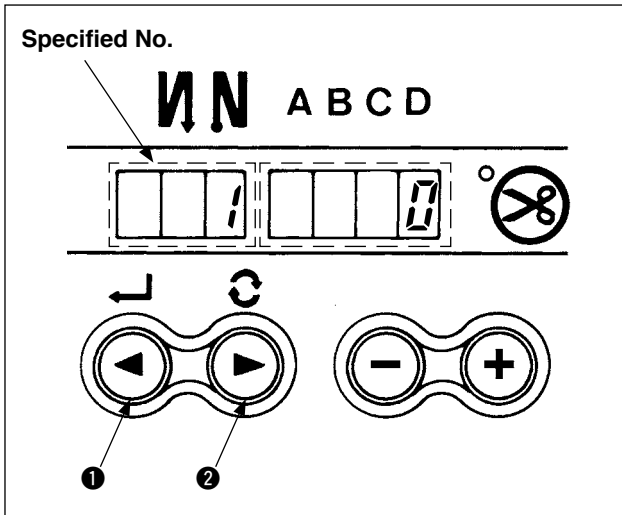


How to change over to the function setting mode

- 1) Turn OFF the power to the unit.
- 2) Pressing **+** switch **4**, turn ON the power to the unit.

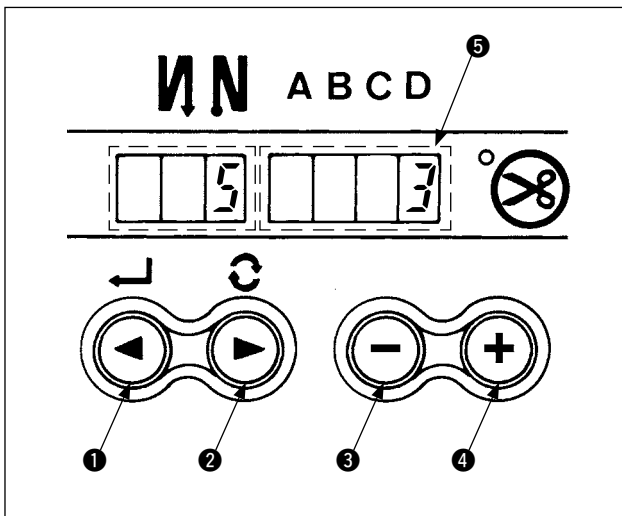


- 3) Indication **5** and **6** will be shown on the screen display.
(The indication item shows the item, the setting of which was changed the last time.)
- * If the indication fails to change, re-perform the procedures 1) and 2).



- 4) When you want to advance the setting No., press / switch ② to advance the setting No.
When you want to return the setting No., press / switch ① to return the setting No.

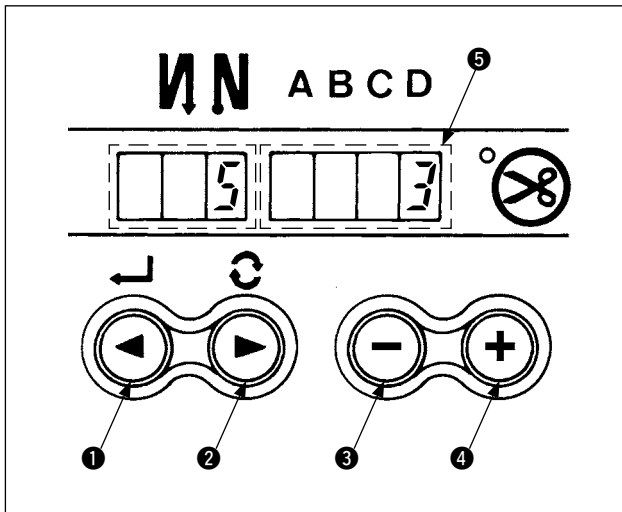
(Caution) When / switch ① (/ switch ②) is held pressing, the setting No. will return (will advance) continuously.
When the setting No. is advanced (returned), the contents which are before by one (after by one) will be determined. So, be careful when changing the contents (up/down switch is touched).



EXAMPLE) CHANGING THE FLICKER REDUCING FUNCTION (SETTING No. 5)

Press / switch ② several times to adjust set No. to "5". Press switch ⑤ three times to change the set No. to "3" since the current set value is displayed on LED ④. (Standard : "0")

(Caution) Keep pressing switch ④ or switch ③, and the setting value can be changed continuously.



- 5) When the change has been completed, press / switch ① or / switch ② to specify the changed value.

(Caution) 1. When turning OFF the power before performing this work, the contents which have been changed are not updated.
2. Press / switch ①, and screen display will change to the contents of the setting No. which is before by one.
3. Press / switch ②, and screen display will change to the contents of next setting No. After completing the operation, turn OFF the power and turn ON the power again to return to the normal operation.

After completing the operation, turn OFF the power and turn ON the power again to return to the normal operation.

* Simultaneously press switch ③ and switch ④, and the setting contents of set No. will return to the initial value.

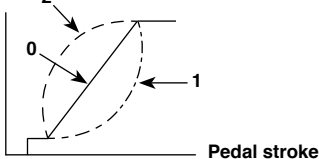
4. Function setting list

No	Item	Description	Setting range	Indication of function setting	Ref. page
1	Soft start function	The number of stitches to be sewn at a low speed when the soft-start function is used at the start of sewing. 0 : Soft-start function is not operative.	0 to 9 (Stitches)	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value="1"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	19
5	Flicker reducing function	Flicker reducing function (If the hand lamp flickers). 0 : Flicker reducing function is not operative. 1 : Less effective → 3 : Highly effective	0 to 3	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value="5"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	19
6	Bobbin thread counting function	Bobbin thread counting function 0 : Bobbin thread counting function is not operative. 1 : Bobbin thread counting function is operative.	0/1	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value="6"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="1"/>	19
7	Unit of bobbin thread counting down	Unit of bobbin thread counting down 0 : Count/10 stitches 1 : Count/15 stitches 2 : Count/20 stitches	0 to 2	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value="7"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	
8	Number of rotation of reverse feed stitching	Sewing speed of reverse feed stitching	150 to 3,000 (r.p.m.)	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value="8"/> <input type="text" value=""/> <input type="text" value="1"/> <input type="text" value="9"/> <input type="text" value="0"/> <input type="text" value="0"/>	
9	Thread trimming prohibiting function	Thread trimming prohibiting function (used in case of without panel). 0 : Thread trimming prohibiting function is not operative. 1 : Thread trimming is prohibited. (Output of solenoid is prohibited. : Thread trimmer and wiper)	0/1	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value="9"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	19
10	Setting of needle bar stop position when the sewing machine stops.	Position of needle bar is specified when the sewing machine stops. 0 : Predetermined lowest position 1 : Predetermined highest position	0/1	<input type="text" value=""/> <input type="text" value="1"/> <input type="text" value="0"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	19
11	Click sound of key switch mounted on PSC	Click sound of key switch mounted on PSC is specified. 0 : Click is not operative. 1 : Click is operative.	0/1	<input type="text" value=""/> <input type="text" value="1"/> <input type="text" value="1"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="1"/>	20
13	Function of prohibiting start of the sewing machine by bobbin thread counter	Function of prohibiting start of the sewing machine by bobbin thread counting 0 : When counting is out (-1 or less) Function of prohibiting start of the sewing machine is not operative. 1 : When counting is out (-1 or less) Function of prohibiting start of the sewing machine after thread trimming is operative. 2 : When counting is out (-1 or less), the sewing machine stops once. Function of prohibiting start of the sewing machine after thread trimming is operative.	0 to 2	<input type="text" value=""/> <input type="text" value="1"/> <input type="text" value="3"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	
14	Sewing counter	Counting function of sewing (number of completion of process) 0 : Sewing counter function is not operative. 1 : Sewing counter function is operative.	0/1	<input type="text" value=""/> <input type="text" value="1"/> <input type="text" value="4"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="1"/>	20
21	Function of neutral presser lifting	Function of lifting presser foot when the pedal is in neutral position. 0 : Function of neutral automatic presser lifting is not operative. 1 : Selection of function of neutral presser lifting.	0/1	<input type="text" value=""/> <input type="text" value="2"/> <input type="text" value="1"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	20
22	Function of changeover of compensating switch on the operation panel function	Function of needle up/down compensating switch on the operation panel can be changed. 0 : Needle up/down compensation 1 : One stitch compensation	0/1	<input type="text" value=""/> <input type="text" value="2"/> <input type="text" value="2"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	20
25	Thread trimming motion condition	This function sets the thread trimming motion after DOWN position has been off by turning handwheel by hand. 0 : Thread trimming after turning handwheel by hand is permitted. 1 : Thread trimming after turning handwheel by hand is prohibited.	0/1	<input type="text" value=""/> <input type="text" value="2"/> <input type="text" value="5"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="1"/>	20
29	Initial motion time of back-tack	This function sets the suction time of initial motion of back-tack solenoid.	50 to 500 (ms)	<input type="text" value=""/> <input type="text" value="2"/> <input type="text" value="9"/> <input type="text" value=""/> <input type="text" value="2"/> <input type="text" value="5"/> <input type="text" value="0"/>	
30	Function of reverse feed stitching on the way	Function of reverse feed stitching on the way 0 : Function of reverse stitching on the way is not operative. 1 : Function of reverse feed stitching on the way is operative.	0/1	<input type="text" value=""/> <input type="text" value="3"/> <input type="text" value="0"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="0"/>	21
31	Number of stitches of reverse feed stitching on the way	Number of stitches of reverse feed stitching on the way.	0 to 19 (Stitches)	<input type="text" value=""/> <input type="text" value="3"/> <input type="text" value="1"/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> <input type="text" value="4"/>	21

* 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. (Descriptions of setting in this list are the standard values at the time of delivery of DDL-9000A.) However, contents of function setting are subject to change for improvement of function and performance without notice.

No	Item	Description	Setting range	Indication of function setting	Ref. page
32	Effective condition of reverse feed stitching on the way when the sewing machine is stopping.	Effective condition of reverse feed stitching on the way 0 : Function is not operative when the sewing machine stops. 1 : Function is operative when the sewing machine stops.	0/1	<input type="checkbox"/> <input checked="" type="checkbox"/> 3 2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0	21
33	Thread trimming function by reverse feed stitching on the way	Thread trimming function by reverse feed stitching on the way 0 : Automatic thread trimming function after completion of reverse feed stitching on the way is not operative. 1 : Automatic thread trimming after completion of reverse feed stitching on the way is performed.	0/1	<input type="checkbox"/> <input checked="" type="checkbox"/> 3 3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0	21
* 35	Number of rotation at a low speed	Lowest speed by pedal	150 to 250 (r.p.m.)	<input type="checkbox"/> <input checked="" type="checkbox"/> 3 5 <input type="checkbox"/> <input type="checkbox"/> 2 0 0	
37	Number of rotation of soft-start	Sewing speed at the start of sewing (soft-start)(The max. value depends on the number of rotation of the sewing machine head.)	150 to MAX (r.p.m.)	<input type="checkbox"/> <input checked="" type="checkbox"/> 3 7 <input type="checkbox"/> <input type="checkbox"/> 8 0 0	19
38	One-shot speed	One-shot speed (The max. value depends on the number of rotation of the sewing machine head.)	150 to MAX (r.p.m.)	<input type="checkbox"/> <input checked="" type="checkbox"/> 3 8 <input type="checkbox"/> <input type="checkbox"/> 2 5 0 0	21
* 39	Pedal stroke at the start of rotation	Position where the sewing machine starts rotating from pedal neutral position (Pedal stroke)	10 to 50 (0.1 mm)	<input type="checkbox"/> <input checked="" type="checkbox"/> 3 9 <input type="checkbox"/> <input type="checkbox"/> 3 0	
* 40	Low speed section of pedal	Position where the sewing machine starts accelerating from pedal neutral position (Pedal stroke)	10 to 100 (0.1 mm)	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 0 <input type="checkbox"/> <input type="checkbox"/> 6 0	
* 41	Starting position of lifting presser foot by pedal	Position where the cloth presser starts lifting from pedal neutral position (Pedal stroke)	- 60 to -10 (0.1mm)	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 1 <input type="checkbox"/> <input type="checkbox"/> - 2 1	
* 42	Starting position of lowering presser foot	Starting position of lowering presser foot Stroke from the neutral position	8 to 50 (0.1 mm)	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 2 <input type="checkbox"/> <input type="checkbox"/> 1 0	
* 43	Pedal stroke 2 for starting thread trimming	Position 2 where the thread trimming starts from pedal neutral position(When the function of lifting presser foot by pedal is provided.) (Pedal stroke)	- 60 to -10 (0.1 mm)	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 3 <input type="checkbox"/> <input type="checkbox"/> - 5 1	
* 44	Pedal stroke for reaching the maximum number of rotation	Position where the sewing machine reaches its highest sewing speed from pedal neutral position (Pedal stroke)	10 to -150 (0.1 mm)	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 4 <input type="checkbox"/> <input type="checkbox"/> 1 5 0	
* 45	Compensation of neutral point of the pedal	Compensation value of the pedal sensor	-15 to 15	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 5 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0 (Compensation value display)	
47	Auto-lifter selecting function	Limitation time of waiting for lifting solenoid type auto-lifter device	10 to 600 (second)	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 7 <input type="checkbox"/> <input type="checkbox"/> 6 0	21
* 48	Pedal stroke 1 for starting thread trimming	Position where thread trimming starts from pedal neutral position (Standard pedal) (Pedal stroke)	- 60 to 10 (0.1 mm)	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 8 <input type="checkbox"/> <input type="checkbox"/> - 3 5	
49	Lowering time of presser foot	Lowering time of presser foot after the pedal has been depressed. (Start of rotation of the sewing machine is delayed during this time.)	0 to 250 (10 ms)	<input type="checkbox"/> <input checked="" type="checkbox"/> 4 9 <input type="checkbox"/> <input type="checkbox"/> 1 4 0	
51	Compensation of solenoid-on timing of reverse feed stitching at the start of sewing	Compensation of starting the solenoid for reverse feed stitching when reverse feed stitching at the start of sewing is performed.	- 36 to 36 (10°)	<input type="checkbox"/> <input checked="" type="checkbox"/> 5 1 <input type="checkbox"/> <input type="checkbox"/> - 7	22
52	Compensation of solenoid-off timing of reverse feed stitching at the start of sewing	Compensation of releasing the solenoid for reverse feed stitching when reverse feed stitching at the start of sewing is performed.	- 36 to 36 (10°)	<input type="checkbox"/> <input checked="" type="checkbox"/> 5 2 <input type="checkbox"/> <input type="checkbox"/> 7	22
53	Compensation of solenoid-off timing of reverse feed stitching at the end of sewing	Compensation of releasing the solenoid for reverse feed stitching when reverse feed stitching at the end of sewing is performed.	- 36 to 36 (10°)	<input type="checkbox"/> <input checked="" type="checkbox"/> 5 3 <input type="checkbox"/> <input type="checkbox"/> 1 4	22

* 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. (Descriptions of setting in this list are the standard values at the time of delivery of DDL-9000A.) However, contents of function setting are subject to change for improvement of function and performance without notice.

No	Item	Description	Setting range	Indication of function setting	Ref. page
55	Foot lift after thread trimming	Function of lifting presser foot at the time of (after) thread trimming 0 : Not provided with the function of lifting presser foot after thread trimming 1 : Provided with the function of lifting presser foot automatically after thread trimming	0/1	<input type="checkbox"/> 5 <input type="checkbox"/> 5 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1	23
56	Reverse revolution to lift the needle after thread trimming	Function of reverse revolution to lift the needle at the time of (after) thread trimming 0 : Not provided with the function of reverse revolution to lift the needle after thread trimming 1 : Provided with the function of reverse revolution to lift the needle after thread trimming	0/1	<input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0	23
58	Function of holding predetermined upper/lower position of the needle bar	Function of holding predetermined upper/lower position of the needle bar 0 : Not provided with the function of holding predetermined upper/lower position of the needle bar 1 : Provided with the function of holding predetermined upper/lower position of the needle bar (Holding force weak) 2 : Provided with the function of holding predetermined upper/lower position of the needle bar (Holding force medium) 3 : Provided with the function of holding predetermined upper/lower position of the needle bar (Holding force strong)	0 to 3	<input type="checkbox"/> 5 <input type="checkbox"/> 8 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0	23
59	Function of Auto/Manual change-over of reverse feed stitching at the start of sewing	This function can specify the sewing speed of reverse feed stitching at the start of sewing. 0 : The speed will depend on the manual operation by pedal, etc. 1 : The speed will depend on the specified reverse feed stitching speed (No. 8).	0/1	<input type="checkbox"/> 5 <input type="checkbox"/> 9 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1	23
60	Function of stop immediately after reverse feed stitching at the start of sewing	Function at the time of completion of reverse feed stitching at the start of sewing 0 : Not provided with the function of temporary stop of the sewing machine at the time of completion of reverse feed stitching at the start of sewing 1 : Provided with the function of temporary stop of the sewing machine at the time of completion of reverse feed stitching at the start of sewing.	0/1	<input type="checkbox"/> 6 <input type="checkbox"/> 0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0	23
64	Change-over speed of EBT (end back tack)	Initial speed when starting reverse feed stitching at the sewing end	0 to 250 (r.p.m.)	<input type="checkbox"/> 6 <input type="checkbox"/> 4 <input type="checkbox"/> <input type="checkbox"/> 1 <input type="checkbox"/> 8 <input type="checkbox"/> 0	
73	Retry function	This function is used when needle cannot pierce materials . 0 : Normal 1 : Retry function is provided.	0/1	<input type="checkbox"/> 7 <input type="checkbox"/> 3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1	24
* 84	Presser lifter solenoid initial motion suction time	Suction motion time of presser lifter solenoid 50 to 500 ms	50 to 500 (ms)	<input type="checkbox"/> 8 <input type="checkbox"/> 4 <input type="checkbox"/> <input type="checkbox"/> 2 <input type="checkbox"/> 5 <input type="checkbox"/> 0	
87	Function of pedal curve selection	Pedal curve is selected. (Improving pedal inching operation) 	0/1/2	<input type="checkbox"/> 8 <input type="checkbox"/> 7 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0	24
90	Initial motion up stop function	This function sets automatic up stop function immediately after turning ON the power. 0 : on 1 : off	0/1	<input type="checkbox"/> 9 <input type="checkbox"/> 0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1	
* 91	Function of prohibiting compensation operation after turning handwheel by hand	It is effective in combination with the machine head provided with tension release function. 0 : Tension release function is ineffective. 1 : Tension release function is effective.	0/1	<input type="checkbox"/> 9 <input type="checkbox"/> 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1	
92	Function of reducing speed of reverse feed stitching at the start of sewing	Function to reduce speed at the time of completion of reverse feed stitching at the start of sewing. 0 : Speed is not reduced. 1 : Speed is reduced.	0/1	<input type="checkbox"/> 9 <input type="checkbox"/> 2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0	23
93	Function added to needle up/down compensating switch	Operation of needle up/down compensating switch is changed after turning ON the power or thread trimming. 0 : Normal (needle up/down compensating stitching only) 1 : One stitch compensating stitching is performed only when aforementioned changeover is made. (Upper stop → upper stop)	0/1	<input type="checkbox"/> 9 <input type="checkbox"/> 3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0	24
95	Head selection	This function selects the head to be connected. dIAM : DDL-9000A SS/MA/MS dAd : DDL-9000A DS dIAH : DDL-9000A SH		<input type="checkbox"/> 9 <input type="checkbox"/> 5 <input type="checkbox"/> d <input type="checkbox"/> L <input type="checkbox"/> A <input type="checkbox"/> M	24
96	Max. number of rotation setting	Max. number of rotation of the sewing machine head can be set.	150 to MAX (r.p.m.)	<input type="checkbox"/> 9 <input type="checkbox"/> 6 <input type="checkbox"/> 4 <input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> 0	24
120	Main shaft reference angle compensation	Main shaft reference angle is compensated.	-35 to 35	1 2 0 - * *	24
121	Up position starting angle compensation	Angle to detect UP position starting is compensated.	-15 to 15	1 2 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5	24
122	DOWN position starting angle compensation	Angle to detect DOWN position starting is compensated.	-15 to 15	1 2 2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> *	24

* 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. (Descriptions of setting in this list are the standard values at the time of delivery of DDL-9000A.) However, contents of function setting are subject to change for improvement of function and performance without notice.

5. Detailed explanation of selection of functions

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

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.

1 **0**

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. 37)

3 **7** **8** **0** **0**

Data setting range

150 to MAX. rpm <50 rpm>

② Flicker reducing function (Function setting No. 5)

The function reduces flickering of the hand lamp at the start of sewing. The higher the set value increases, the more effective the function will work.

5 **0**

Setting range : 0 to 3

0 : Flicker reducing function does not work.

to

3 : Flickering is effectively reduced.

(Caution) The more effective the flicker reducing function works (the more the set value is made), the lower the start-up speed of the sewing machine will become.

③ Bobbin thread counting function (Function setting No. 6)

When the control panel (CP-160/CP-170) is used, the function subtracts from the predetermined value and indicates the used amount of bobbin thread.

For the details, refer to the instruction manual for the control panel.

(Caution) When setting is "0", LED display on the operation panel goes out, and the bobbin thread count function becomes invalid.

For the details, refer to "Caution" of "⑦ Sewing counting function (Function setting No. 14)"

④ Thread trimming prohibiting function (Function setting No. 9)

This function turns OFF thread trimming solenoid output and wiper solenoid output when thread trimming is actuated. [If the control panel (CP-160/CP-170) is used with the sewing machine, this function will work in accordance with the function setting on the control panel.]

By this function, separate sewing material can be spliced and sewn without trimming thread.

9 **0**

0 : off Thread trimming is operative. (thread can be trimmed).

1 : on Thread trimming is inoperative. (thread can not be trimmed).

⑤ Setting of the needle bar stop position when the sewing machine stops (Function setting No. 10)

The position of the needle bar when the pedal is in its neutral position is specified.

1 **0** **0**

0 : Down The needle bar stops in the lowest position of its stroke.

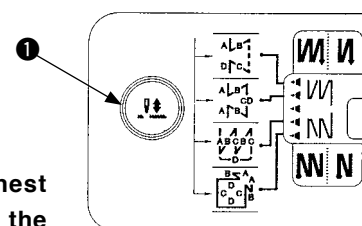
1 : Up The needle bar stops in the highest position of its stroke.

When connecting CP-160/CP-170, holding pressing needle up/down compensating switch ❶, turn ON the power and the stop position can be changed.

n **P** **L** **o** Down stop position

n **P** **U** **P** Up stop position

(Caution) If the stop position of the needle bar is set to the highest position, the thread trimming action will be taken after the needle bar comes down once to the lowest position.



⑫ **Function of reverse feed stitching on the way (Function setting Nos. 30 to 33)**

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. 30 Function of reverse feed stitching on the way is selected.
 3 0 0 : off Normal back-tack function
 0 1 : on Function of reverse feed stitching on the way

Function setting No. 31 Number of stitches performing reverse feed stitching is set.
 3 1 Setting range
 4 0 to 19 stitches

Function setting No. 32 Effective condition of reverse feed stitching on the way
 3 2 0 : off Inoperative when the sewing machine stops.
 0 (Reverse feed stitching on the way functions only when the sewing machine is running.)
 1 : on Operative when the sewing machine stops.
 (Reverse feed stitching on the way functions both when the sewing machine is running and stops.)

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

Function setting No. 33 Thread trimming is performed when reverse feed stitching on the way is completed.
 3 3 0 : off Without thread trimming
 0 1 : on Thread trimming is executed.

Actions under each setting state

Application	Function setting			Output function
	No.30	No.32	No.33	
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. 31 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. 31 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. 31 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. 31 has been performed.

- ① Used as the normal reverse feed stitching touch-back switch.
- ② Used for reinforcing seam (press sewing) of the pleats. (It works only when the sewing machine is running.)
- 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 when the sewing machine is running. It is especially effective when the sewing machine is used as the standing-work machine.)
- 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.)

⑬ **Number of rotation of one-shot stitching (Function setting No. 38)**

This function can set, by the pedal operation of one time, the sewing speed of one-shot stitching when the sewing machine continues stitching until completing the number of stitches specified or detecting the material end.

Setting range

150 to MAX. rpm. <50 / rpm>

- (Caution) 1. Setting of one-shot stitching is made by the operation panel of the CP-160/CP-170.
2. The max. number of rotation of one-shot stitching is limited by the model of the sewing machine head.

⑭ **Holding time of lifting presser foot (Function setting No. 47)**

Solenoid type presser foot lifter (No. 46 0) can adjust the holding time control of lifting presser foot.

This function automatically lowers the presser foot when the time set with the setting No. 47 has passed after lifting the presser foot.

When the pneumatic type presser foot lifter (No. 46 1) is selected, the holding time control of lifting presser foot is limitless regardless of the set value.

Setting range

10 to 600 sec <10 / sec>

⑮ **Compensation of timing of the solenoid for reverse feed stitching (Function setting No. 51 to 53)**

When the normal and reverse feed stitches are not uniform under the automatic reverse feed stitching action, this function can change the ON / OFF timing of the solenoid for back tack and compensate the timing.

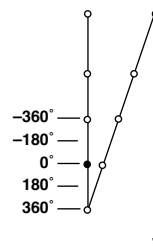
① Compensation of on-timing of solenoid for reverse feed stitching at the start of sewing (Function setting No. 51)

On-timing of solenoid for reverse feed stitching at the start of sewing can be compensated by the unit of angle.

Adjusting range

- 36 to 36 <1 / 10°>

Set value	Compensation angle	Number of stitches of compensation
- 36	- 360°	- 1
- 18	- 180°	- 0.5
0	0°	0
18	180°	0.5
36	360°	1



* When the point before 1 stitch is regarded as 0°, compensation is possible by 360° (1 stitch) in front and in the rear.

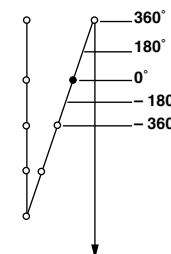
② Compensation of off-timing of solenoid for reverse feed stitching at the start of sewing (Function setting No. 52)

Off-timing of solenoid for reverse feed stitching at the start of sewing can be compensated by the unit of angle.

Adjusting range

- 36 to 36 <1 / 10°>

Set value	Compensation angle	Number of stitches of compensation
- 36	- 360°	- 1
- 18	- 180°	- 0.5
0	0°	0
18	180°	0.5
36	360°	1



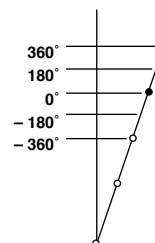
③ Compensation of off-timing of solenoid for reverse feed stitching at the end of sewing (Function setting No. 53)

Off-timing of solenoid for reverse feed stitching at the start of sewing can be compensated by the unit of angle.

Adjusting range

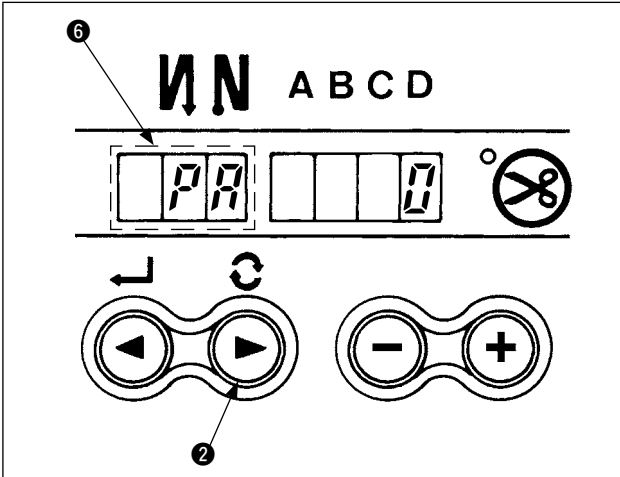
- 36 to 36 <1 / 10°>

Set value	Compensation angle	Number of stitches of compensation
- 36	- 360°	- 1
- 18	- 180°	- 0.5
0	0°	0
18	180°	0.5
36	360°	1



6. Automatic compensation of neutral point of the pedal sensor

Whenever the pedal sensor, spring, etc. are replaced, be sure to perform following operation :



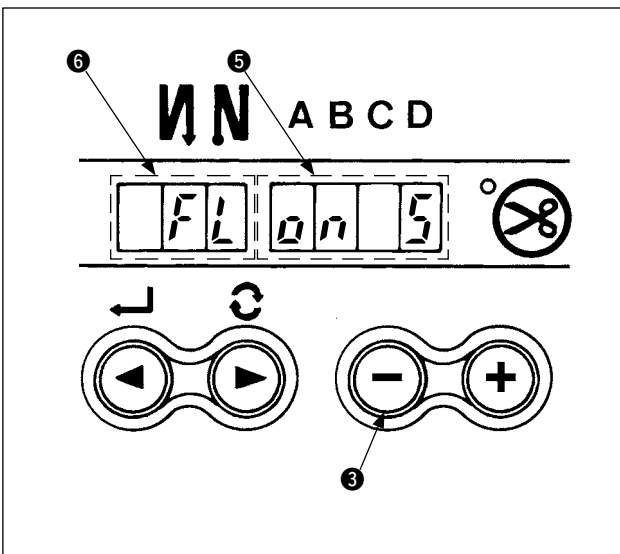
- 1) Pressing switch ②, turn ON the power switch.
- 2) Indication on the screen will be as illustrated in ⑥. At this time, the value indicated in the 7 segments of four figures is the compensation value.

(Caution) 1. At this time, the pedal sensor does not work properly if the pedal is depressed. Do not place the foot or any object on the pedal. Warning sound “peeps” and the compensation value is not displayed.

2. When any thing other than number is displayed in 7 segment of 4 digits, refer to the Engineer’s Manual.

- 3) Turn OFF the power switch, and turn ON the power switch again to return to the normal mode.

7. Setting of the auto lifter function



When the auto-lifter device (AK) is attached, this function makes the function of auto-lifter work.

- 1) Turn ON the power switch while pressing switch ③ inside the control box.
- 2) LED display is turned to ⑤, ⑥ (FL ON S) with “beep”, and the function of auto-lifter becomes effective.
- 3) Turn OFF the power switch, and turn ON the power switch again to return to the normal mode.
- 4) Repeat the operation 1) to 3), and LED display is turned to (FL OFF). Then, the function of auto-lifter does not work.

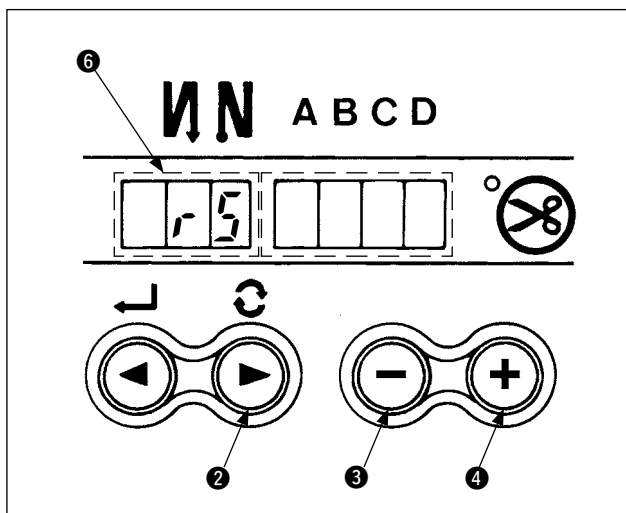
FL ON S : Auto-lifter device becomes effective.

FL OFF : Auto-lifter function does not work. (Standard at the time of delivery)

(Similarly, the presser foot is not automatically lifted when programmed stitching is completed.)

- (Caution)
1. To perform re-returning ON of the power, be sure to perform after the time of one second or more has passed.
(If ON / OFF operation of the power is performed quickly, setting may be not changed over well.)
 2. Auto-lifter is not actuated unless this function is properly selected.
 3. When “FL ON S” is selected without installing the auto-lifter device, starting is momentarily delayed at the start of sewing. In addition, be sure to select “FL OFF” when the auto-lifter is not installed since the touch-back switch may not work.

8. Initialization of the setting data



All contents of function setting of SC-300 can be returned to the standard set values.

- 1) Pressing all switches ②, ③ and ④, turn ON the power switch.
- 2) LED displays indication ⑥ with the sound “peep”, and initialization starts.
- 3) The buzzer sounds after approximately one second (single sound three times, “peep”, “peep”, and “peep”), and the setting data returns to the standard setting value.

(Caution) Do not turn OFF the power on the way of initializing operation. Program of the main unit may be broken.

- 4) Turn OFF the power switch, and turn ON the power switch again to return to the normal mode.

- (Caution)**
1. When this operation is performed, the neutral compensation value of the pedal sensor becomes “0”. Accordingly, be sure to execute the operation of automatic pedal sensor neutral compensation before using the sewing machine. (Refer to page 25.)
 2. Even when this operation is performed, the sewing data set by the operation panel cannot be initialized.

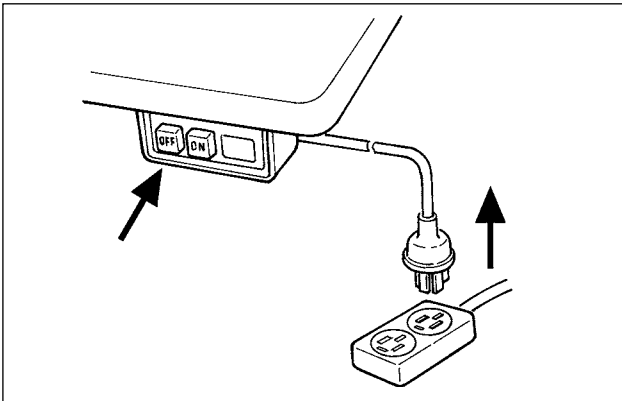
IV. MAINTENANCE

1. Replacing the fuse



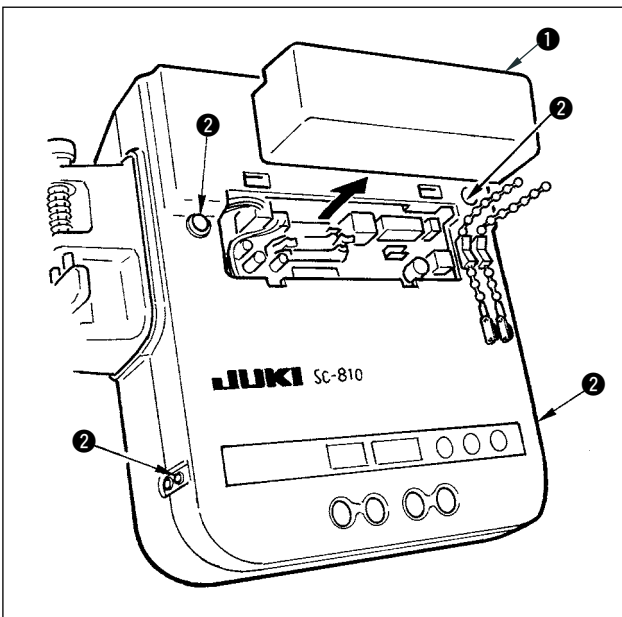
WARNING :

To prevent personal injuries caused by electric shock hazards or abrupt start of the sewing machine, remove the cover after turning OFF the power switch and a lapse of 5 minutes or more. To prevent personal injuries, when a fuse has blown out, be sure to replace it with a new one with the same capacity after turning OFF the power switch and removing the cause of the blown-out of the fuse.

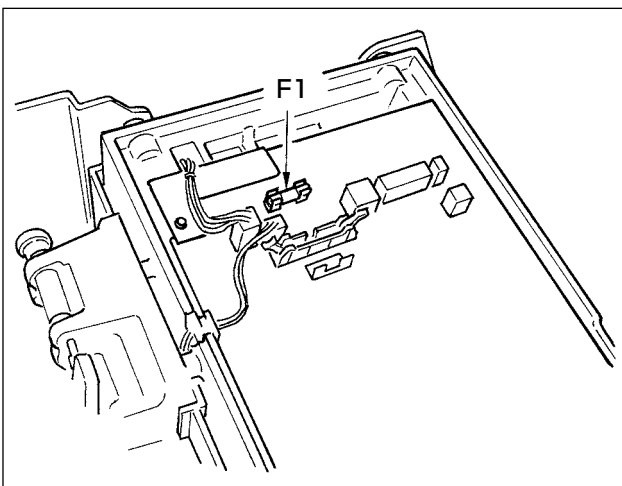


- 1) Press the OFF button of the power switch to turn OFF the power after confirming that the sewing machine has stopped.
- 2) Draw out the power cord coming from the power plug socket after confirming that the power switch is turned OFF. Perform the work of step 3) after confirming that the power has been cut and it has passed for 5 minutes or more.

[Replacing F1 fuse of CTL circuit board (solenoid protection fuse)]

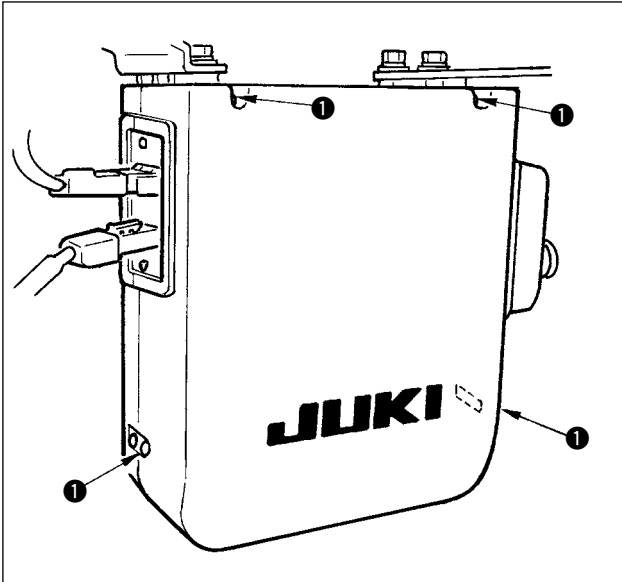


- 3) Remove connector cover ①.
- 4) Remove all connectors of the machine head.
- 5) Remove four setscrews ② of the front cover and remove the cover.

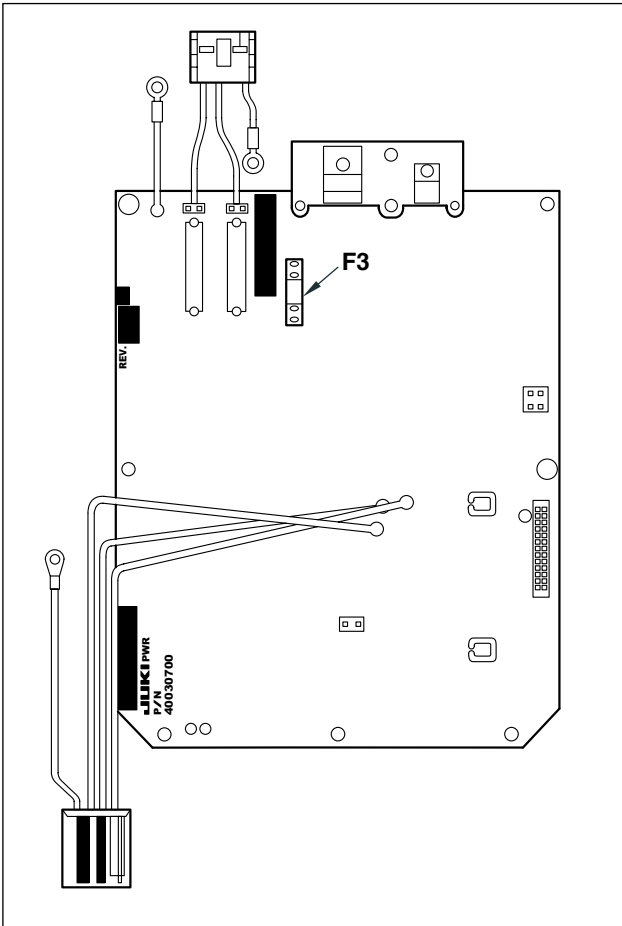


- 6) Replace F1 fuse 6.3A on the CTL circuit board with the fuse supplied with the unit as accessories.
- 7) Close the front cover and attach it with four setscrews ②.
- 8) Attach the connectors that have been removed.
(Caution) All connectors have their inserting directions. Check the directions and securely connect them.
- 9) Close the connectors as before and fix them with the cable clip band while taking care not to allow the cords to be caught in the machine.

[Replacing F3 fuse of PWR circuit board (power circuit protection fuse)]



- 1) After confirming that the sewing machine has stopped, press OFF button of the power switch to turn OFF the power.
- 2) After confirming that the power switch has been turned OFF, draw out the power cord from the power receptacle. Perform the next work after confirming that the power has been turned OFF and five minutes or more have passed.
- 3) Remove four setscrews ❶ of the rear cover and remove the rear cover.



- 4) Replace F3 fuse 3.15A of PWR circuit board with the fuse supplied with the unit as accessories.
- 5) Fix the rear cover with four setscrews ❶.

2. Error codes

In case of the following, check again before you judge the case as trouble.



WARNING :

To prevent personal injuries caused by electric shock hazards or abrupt start of the sewing machine, remove the cover after turning OFF the power switch and a lapse of 5 minutes or more, and confirm the trouble to manage.

* This device is designed so that "system-down" occurs to protect the breakdown of electrical components when high-voltage such as thunders, etc. is applied for a short time.

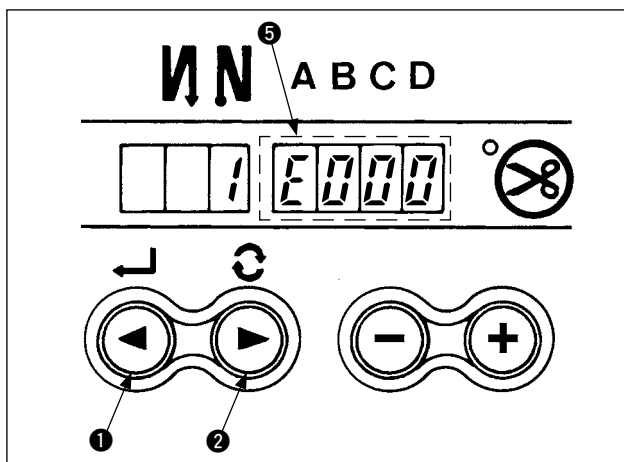
At this time, the indication goes out and the sewing machine does not operate.

<Corrective measure>

Turn OFF the power switch, remove the cause and turn ON the power switch after the red LED inside the control box that can be seen from the power connector section has gone out.

Phenomenon	Cause	Corrective measure
Solenoids for thread trimming, reverse feed, wiper, etc. fail to work. Hand lamp does not light up.	When the fuse for solenoid power protection has blown out	Check the fuse for solenoid power protection.
Even when depressing the pedal immediately after turning ON the power, the sewing machine does not run. When depressing the pedal after depressing the back part of pedal once, the sewing machine runs.	Neutral position of the pedal has varied. (Neutral position may be shifted when changing spring pressure of the pedal or the like.)	Execute the automatic neutral correction function of the pedal sensor.
The sewing machine does not stop even when the pedal is returned to its neutral position.		
Stop position of the sewing machine varies (irregular).	When tightening the screw in the handwheel is forgotten at the time of adjustment of needle stop position.	Securely tighten the screw in the handwheel.
Presser foot does not go up even when auto-lifter device is attached.	Auto-lifter function is OFF.	Select "FL ON S" by auto-lifter function selection.
	Pedal system is set to KFL system.	When lifting the presser foot by depressing the back part of pedal, change the setting to PFL setting. (For the setting procedure, refer to the Engineer's Manual.)
	Cord of auto-lifter device is not connected to connector (CN37).	Connect the cord properly.
Touch-back switch fails to work.	Presser foot is going up by auto-lifter device.	Operate the switch after the presser foot lowered.
	Auto-lifter device is not attached. However, auto-lifter function is ON.	Select "FL OFF" when auto-lifter device is not attached.
UP position move fails to work when all lamps on the panel light up.	The mode is in the function setting mode. The switch on the CTL p.c.b. is pressed by the bound cords and the aforementioned mode resulted.	Remove the front cover, and arrange the cords by the regular binding procedure described in the Instruction Manual.
Sewing machine fails to run.	Motor output cord (4P) is disconnected.	Connect the cord properly.
	Connector (CN30) of motor signal cord is disconnected.	Connect the cord properly.

In addition, there are the following error codes in this device. These error codes interlock (or limit function) and inform the problem so that the problem is not enlarged when any problem is discovered. When you request our service, please confirm the error codes.



Checking procedure of the error code

- 1) Pressing switch ① in the control box, turn ON the power switch.
 - 2) LED becomes display ⑤ with the sound of "peep" and the latest error code is displayed.
 - 3) Confirmation of the contents of previous error can be performed by operating switches ① or ②.
- (Caution) When operating switch ①, one before the existing error code is displayed. When operating switch ②, one after the existing error code is displayed.

Error code list



WARNING :

To prevent personal injuries caused by electric shock hazards or abrupt start of the sewing machine, remove the cover after turning OFF the power switch and a lapse of 5 minutes or more, and confirm the trouble to manage.

No.	Description of error detected	Cause of occurrence expected	Items to be checked
E000	Execution of data initialization (This is not the error.)	<ul style="list-style-type: none"> When the machine head is changed. When the initialization operation is executed 	
E003	Disconnection of synchronizer connector	<ul style="list-style-type: none"> When position detection signal is not input from the sewing machine head synchronizer. When the synchronizer has broken. 	<ul style="list-style-type: none"> Check the synchronizer connector (CN33) for loose connection and disconnection. Check whether the synchronizer cord has broken since the cord is caught in the machine head. Tension of the belt
E004	Synchronizer lower position sensor failure		
E005	Synchronizer upper position sensor failure		
E007	Overload of motor	<ul style="list-style-type: none"> When the machine head is locked. When sewing extra-heavy material beyond the guarantee of the machine head. When the motor does not run. Motor or driver is broken. 	<ul style="list-style-type: none"> Check whether the thread has been entangled in the motor pulley. Check the motor output connector (4P) for loose connection and disconnection. Check whether there is any holdup when turning the motor by hand.
E303	Woodruff plate sensor error	<ul style="list-style-type: none"> When the motor signal is not properly inputted. 	<ul style="list-style-type: none"> Check the motor signal connector (CN30) for loose connection and disconnection. Check whether the motor signal cord has broken since the cord is caught in the machine head.
E730	Motor hole sensor failure		
E731	Bobbin thread remaining amount sensor unit failure		
E808	Solenoid voltage abnormality	<ul style="list-style-type: none"> Short-circuit of solenoid cord 	<ul style="list-style-type: none"> Check that cord is caught in the metallic section.
E809	Presser lifter solenoid switch abnormality	<ul style="list-style-type: none"> When solenoid, the specification of which is different is used 	<ul style="list-style-type: none"> Solenoid resistance
E810	Solenoid current abnormality	<ul style="list-style-type: none"> Solenoid rare short-circuit. 	<ul style="list-style-type: none"> Solenoid resistance
E811	Overvoltage	<ul style="list-style-type: none"> When voltage higher than guaranteed one is inputted. 400V is applied to the box of 220V (230V) <p>In these cases, there is the possibility that the power circuit board has broken.</p>	<ul style="list-style-type: none"> Check whether the applied power voltage is higher than the rated voltage + (plus) 10% or more. Check whether voltage setting of 220/230/240 V is improperly set.
E813	Low voltage	<ul style="list-style-type: none"> When voltage lower than guaranteed one is inputted. 110V has been inputted to SC-810 of 220V specifications. 110V is applied to the box of 220V. Inner circuit is broken by the applied overvoltage 	<ul style="list-style-type: none"> Check whether the voltage is lower than the rated voltage – (minus) 10% or less. Check whether regenerative resistance connector (CN11) is disconnected. Check whether fuse or regenerative resistance is broken.
E904	Solenoid power abnormality	<ul style="list-style-type: none"> Solenoid power protection fuse has broken. 	<ul style="list-style-type: none"> Confirmation of solenoid power protection fuse (Error indication is displayed only for approximately 0.5 second immediately after turning ON the power.)
E906	Operation panel transmission failure	<ul style="list-style-type: none"> Disconnection of operation panel cord Operation panel has broken. 	<ul style="list-style-type: none"> Check the operation panel connector (CN38) for loose connection and disconnection. Check whether the operation panel cord has broken since the cord is caught in the machine head.
E924	Encoder failure	<ul style="list-style-type: none"> Motor driver has broken. Motor overload operation 	<ul style="list-style-type: none"> Motor driver heat is excessive.