

ENGLISH

**MF-7900(D)/UT51,52
INSTRUCTION MANUAL**

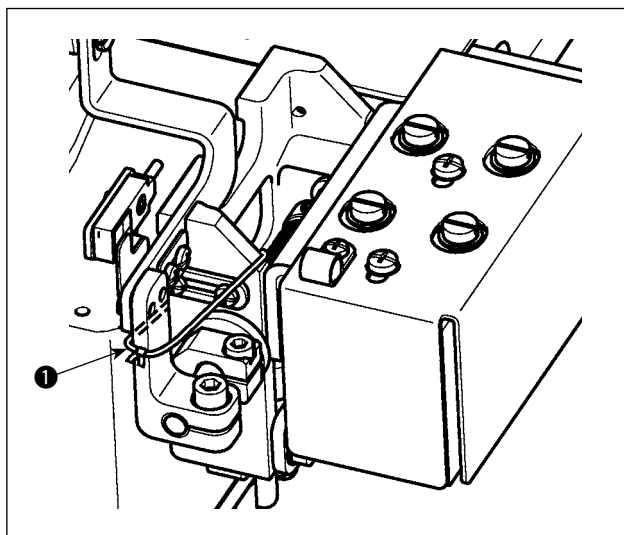
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I . SPECIFICATIONS

Model name	High-speed, cylinder-bed coverstitch machine	Semi-dry head, high-speed, cylinder-bed coverstitch machine
Model	MF-7900 series	MF-7900D series
Stitch type	ISO standard 406, 407, 602, and 605	
Example of application	Hemming and covering for knits and general knitted fabrics	
Sewing speed	Max. 6,500 sti/min (at the time of intermittent operation) V-belt type Max. 6,000 sti/min (at the time of intermittent operation) Direct-drive type Speed of stitch at the delivery: 4,500 sti/min (at the time of intermittent operation)	Max. 5,000 sti/min (at the time of intermittent operation) V-belt type Max. 5,000 sti/min (at the time of intermittent operation) Direct-drive type Speed of stitch at the delivery: 4,000 sti/min (at the time of intermittent operation)
Needle gauge	3-needle 5.6 mm and 6.4 mm 2-needle 3.2 mm, 4.0 mm and 4.8 mm	
Differential feed ratio	1 : 0.9 to 1 : 1.8 (stitch length : less than 2.5 mm) (1 : 0.6 to 1 : 1.1, when the differential link hinge screw is changed) Micro-differential feed adjustment mechanism is provided. (Micro-adjustment)	
Stitch length	0.9 mm to 3.6 mm (can be adjusted up to 4.5 mm)	
Needle	UY128GAS #9S to #14S (standard #10S)	UY128GAS #9S to #12S (standard #10S)
Needle bar stroke	31mm (33 mm when the eccentric pin is changed over)	
Dimensions	(Height) 450 x (Width) 456 x (Length) 331	
Weight	48 kg (With solenoid type thread trimmer) , 42 kg	
Lift of presser foot	8 mm (needle gauge : 5.6 mm without top covering), and 5 mm (with top covering) Micro-lifter mechanism is provided.	
Feed adjustment method	Main feed..... dial type stitch pitch adjustment method Differential feed lever adjustment method (micro-adjustment mechanism is provided.)	
Looper mechanism	Spherical rod drive method	
Lubricating system	Forced lubrication method by gear pump	
Lubricating oil	JUKI GENUINE OIL 18	
Oil reservoir capacity	Oil gauge lower line : 600 cc to upper line : 900 cc	
Installation	Table-mount type, Semi-submerged type	
Noise	- Equivalent continuous emission sound pressure level (L _{pA}) at the workstation: A-weighted value of 79.5 dB; (Includes K _{pA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 4,500 sti/min.	- Equivalent continuous emission sound pressure level (L _{pA}) at the workstation: A-weighted value of 76.5 dB; (Includes K _{pA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 4,000 sti/min.

II . AT THE BEGINNING



Remove fixed band ❶ for transportation before setting up the sewing machine.

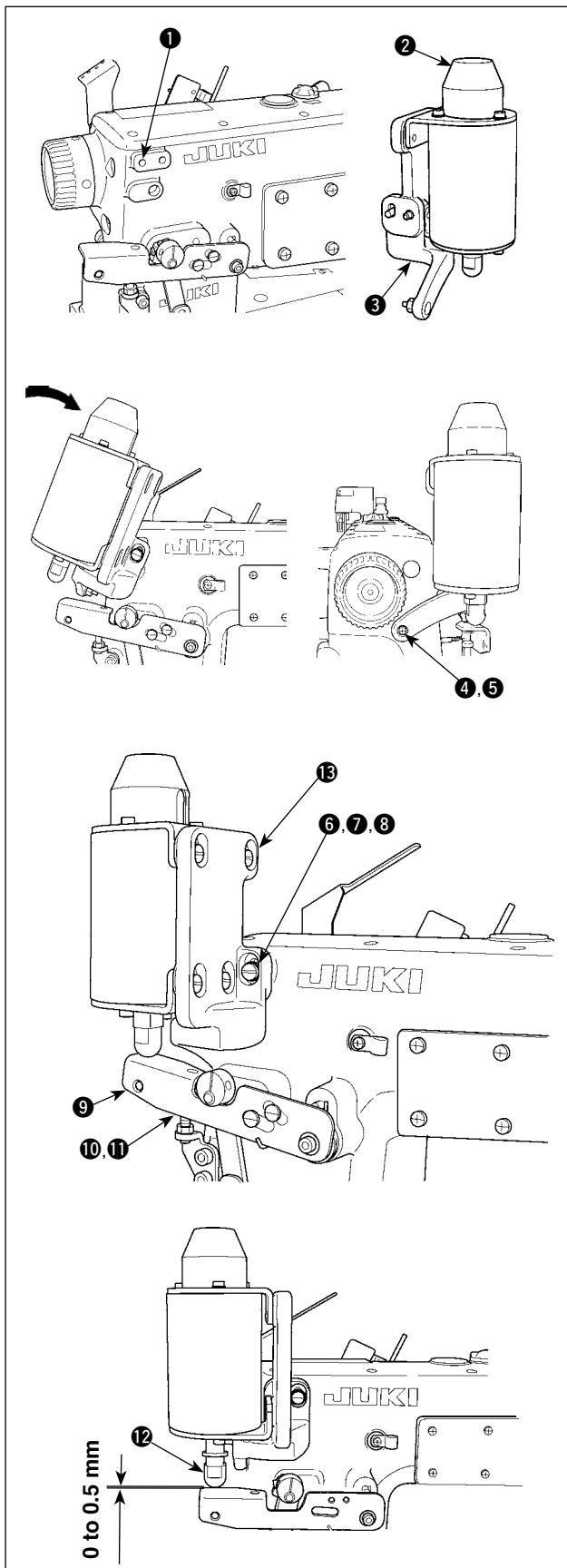
III. INSTALLING THE ACCESSORIES



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 ascertaining that the motor is at rest.

1. Installing the presser lifting solenoid



- 1) Screw solenoid bracket pin ① supplied as accessories in the tap located on the left side of the solenoid installing section.
- 2) Adjust solenoid bracket pin ① to solenoid bracket pin hole ③ of presser lifting solenoid asm. ②, and set the presser lifting solenoid asm. When setting it, insert the presser lifting solenoid asm. into the pin in the state that it is twisted on the right-hand side.
- 3) When it is inserted into the pin, turn the presser lifting solenoid asm. in the reverse direction, and fix it with screw ④ and washer ⑤. Then install it on the machine head with screw ⑥, washer ⑦ and spring washer ⑧.
- 4) Referring to the Instruction Manual for MF-7900 (VI-14. **Adjusting the presser foot lift**), adjust the height of screw ⑩, and tighten nut ⑪.
- 5) Lower presser lifting lever ⑨ until it comes in contact with screw ⑩. Lower top end section ⑫ of presser lifting solenoid asm. ② to the lowest position, and adjust with screws ⑬ (4 places) so that the clearance between top end section ⑫ and presser lifting lever ⑨ is 0 to 0.5 mm.

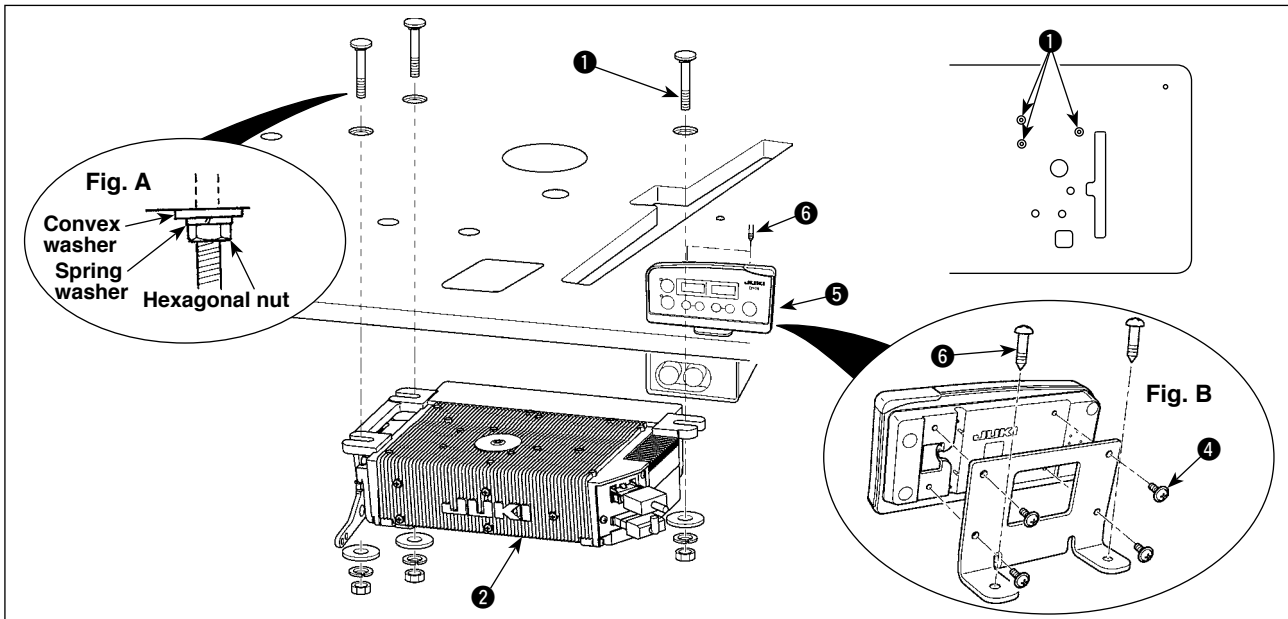


Sound of solenoid may increase during using presser lifter. When it increases, loosen 4 setscrews ⑬, lower solenoid to the place where the sound is lessened, and fix 4 setscrews ⑬. When adjusting, confirm that presser lifting lever ⑨ comes in contact with presser height adjustment screw ⑩.

2. Installation and setting SC-921

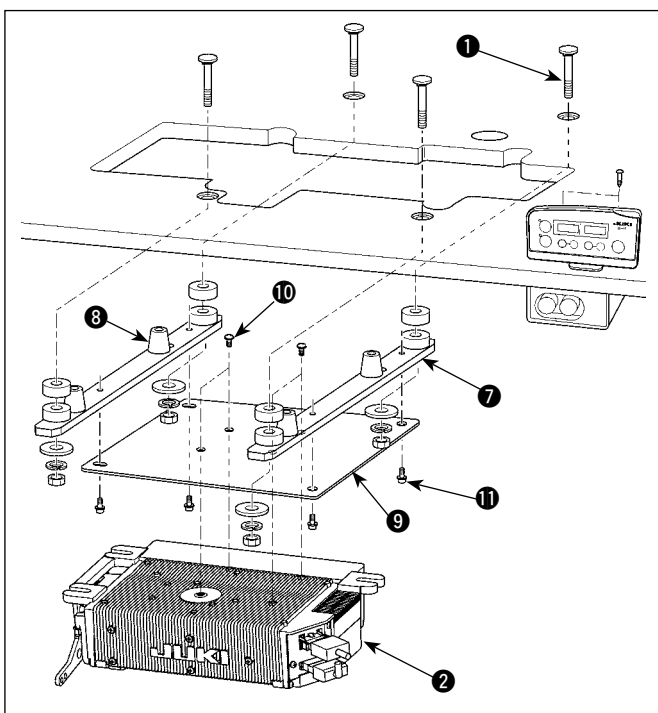
(1) Installing the SC-921 on the table (Table-mount type)

- * The instructions apply to the case the control box is installed on the table of the MF-7900(D).
To use any other machine head, install the control box on the table referring to the Instruction Manual for the main body of the relevant sewing machine.



- 1) Install control box ② on the table with mounting bolt asm. ① supplied with the unit.
At this time, insert the nuts and washers supplied with the unit as illustrated in Figure A so that the support plates and the control box ② are securely fixed.
- 2) Install the control box (or the one equipped with a small sized motor unit) on the table. Then, install the sewing machine head on the table. (Refer to the Instruction Manual for the sewing machine.)
- 3) Install the mounting plate on the CP-18 panel ⑤ with four tapping screws ④ supplied with the unit.
At this time, take care not to allow the cable to be caught under the mounting bracket.
(Install the CP-18 on the table as illustrated in Fig. B.)
- 4) Install CP-18 panel ⑤ on the table with wood screw ⑥.

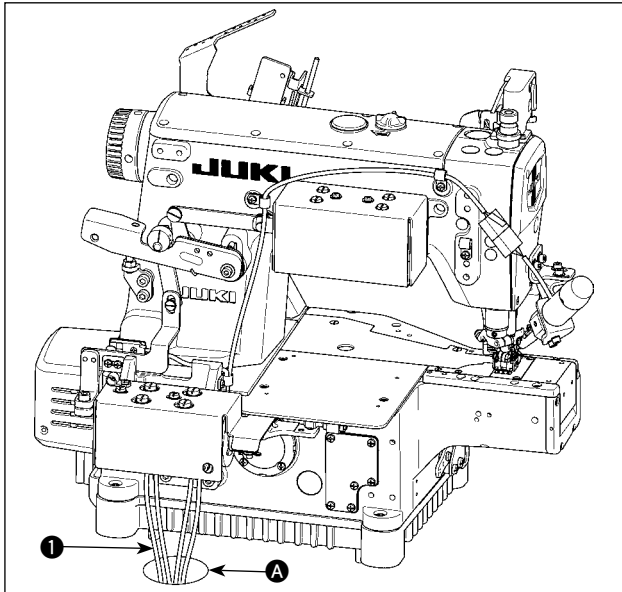
(2) Installing the SC-921 on the table (Semi-submerged type)



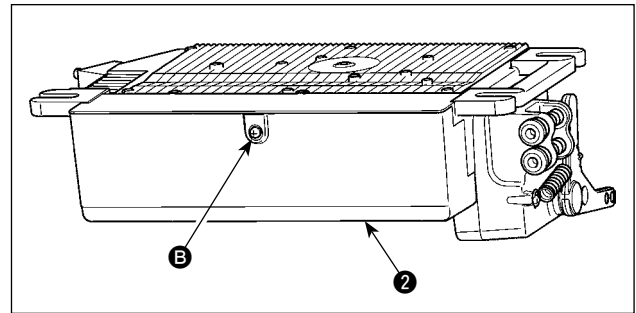
- 1) Install right and left support plates ⑦ and two rubber seats ⑧ of the respective support plates.
- 2) Install control box mounting plate ⑨ on the control box with four screws ⑩.
- 3) Install the parts assembled in Step 2) on the underside of support plates ⑦ with four screws ⑪.
- 4) Install support plates ① and the control box ② on the table with mounting bolts asm. ⑦ supplied with the unit. At this time, insert the nuts and washers supplied with the unit as illustrated in Figure A so that the support plates and the control box ② are securely fixed.

- * The steps of procedure from the next one and beyond are same with those for the table-fixed type machine head.

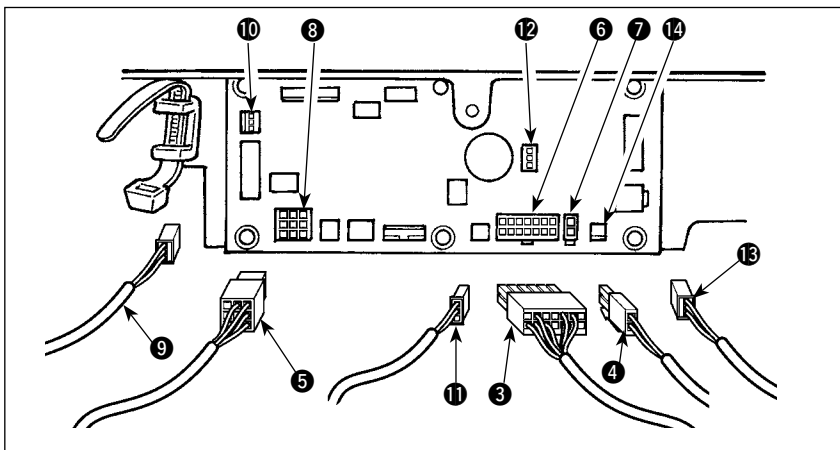
(3) Connecting the cords



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



- 2) Loosen screw B in cover 2 with a screwdriver to open the cover.



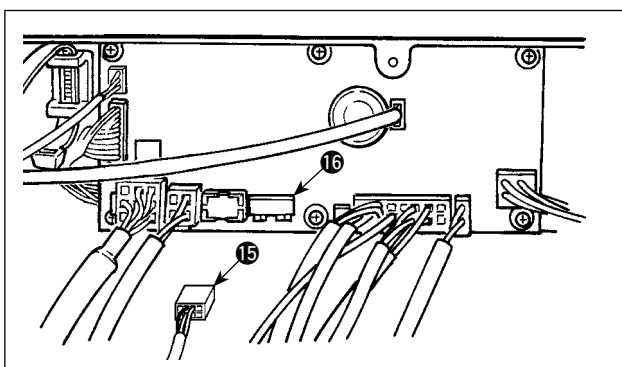
- 3) Connect 14P code 3 coming from the machine head to connector 6 (CN36).
- 4) Insert 3P cord 9 coming from the machine head into connector 10 (CN42).
- 5) Insert presser foot lifter cord 2P 4 into connector 7 (CN37).
- 6) Connect connector 5 coming from the motor to connector 8 (CN30) on the circuit board.

- 7) Insert pedal sensor cable 11 into connector 12 (CN34).
- 8) Insert motor fan cord 13 into connector 14.



1. When using the AK device, set whether to use the AK device after confirming how to select the auto-lifter function. (Refer to “III-2.(6) Setting of the auto lifter function” p. 7.)
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.

[Connecting the connector for the operation panel]



The connector for the operation panel is provided. Paying attention to the orientation of the connector 15, connect it to connector (CN38) 16 located on the circuit board. After the insertion, securely lock the connectors to prevent them from coming off easily.

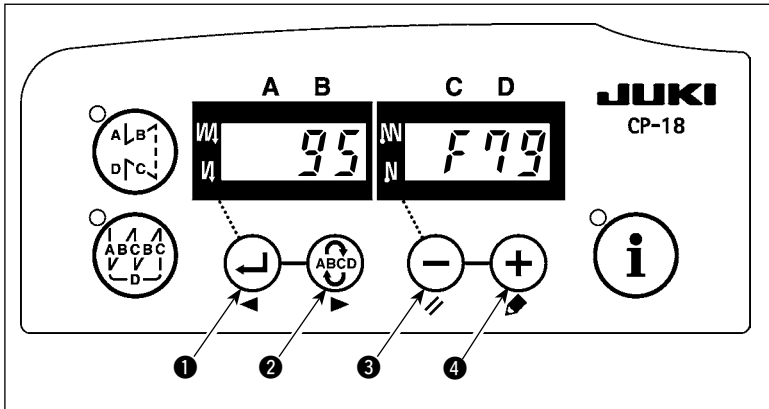


Be sure to turn OFF the power before connecting the connector.

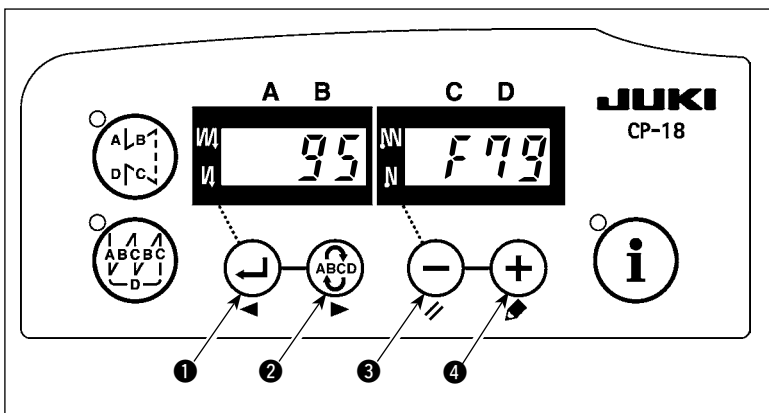
(4) Setting procedure of the machine head



For the operation panel other than CP-18, refer to the Instruction Manual for the operation panel to be used for the setting procedure of the machine head.



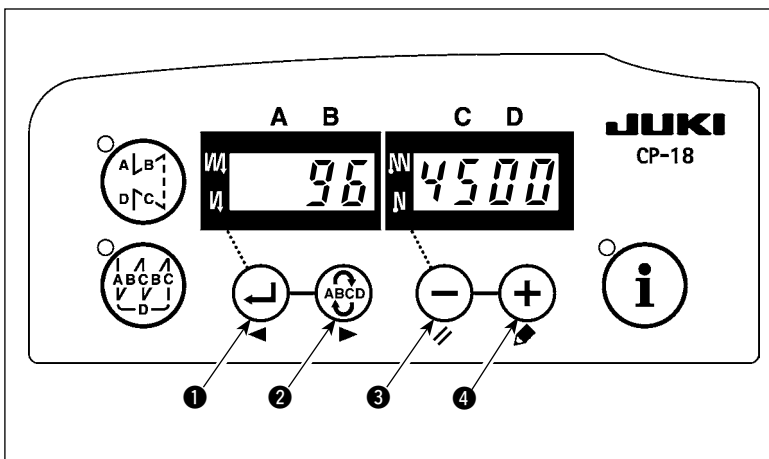
1) Call function setting No. 95.



2) The type of machine head can be selected by pressing switch **3** (switch **4**).

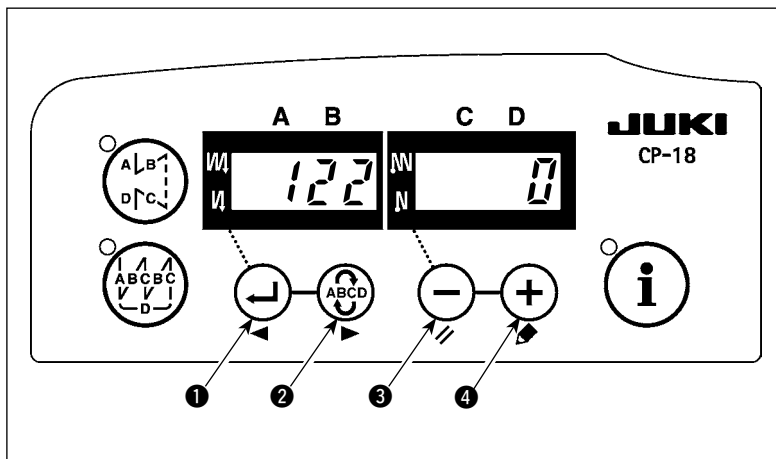
* Refer to the "**MACHINE HEAD LIST**" on the separate sheet or the Instruction Manual for the machine head of your sewing machine for the type of the machine head.

Type of machine head	Model name
F79	MF-7900/UT51
F79d	MF-7900D/UT51
F79P	MF-7900/UT52
	MF-7900D/UT52



3) After selecting the type of machine head, by pressing switch **1** (switch **2**), 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.

(5) Setting the lower stop position of the needle bar



Call function setting No. 122. Check to be sure that the lower stop position of the needle bar is as shown in **Fig. 1**. If not, adjust the lower stop position of the needle bar properly using function setting No. 122. (Adjustment can be made within the range of $\pm 15^\circ$).

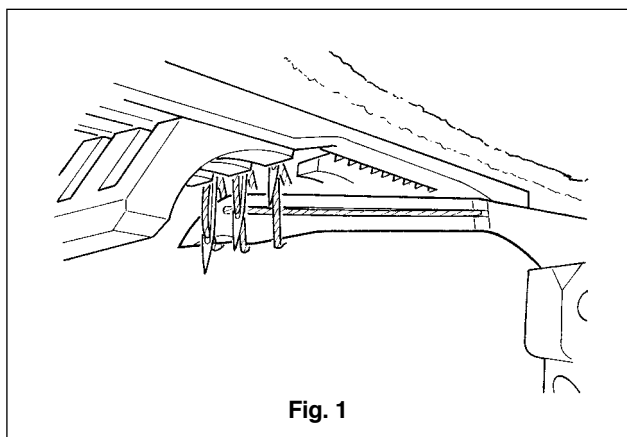


Fig. 1

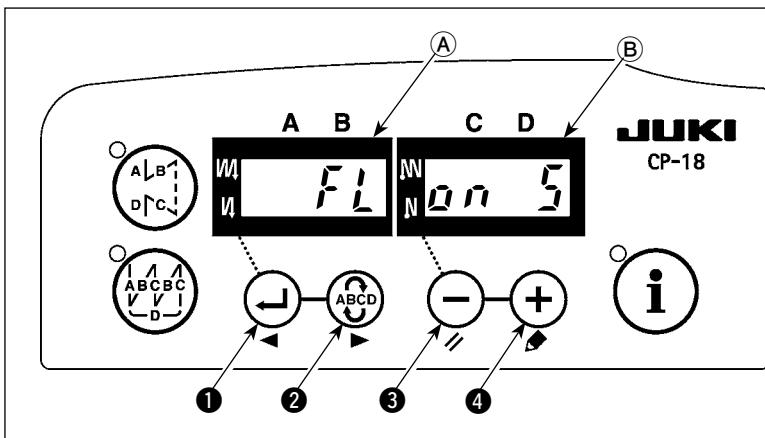
(6) Setting of the auto lifter function



WARNING :

When the solenoid is used with the air drive setting, the solenoid may be burned out. So, do not mistake the setting.

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



- 1) Turn ON the power switch with switch held pressed.
- 2) "FL ON" is displayed on indicators and with a blip to make the auto lifter function 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 : Auto-lifter device becomes effective. Selection of the auto-lifter device of solenoid drive (+33V) or of air drive (+24V) can be performed with switch .

(Changeover is performed to drive power +33V or +24V of CN37.)

Solenoid drive display (+33V)

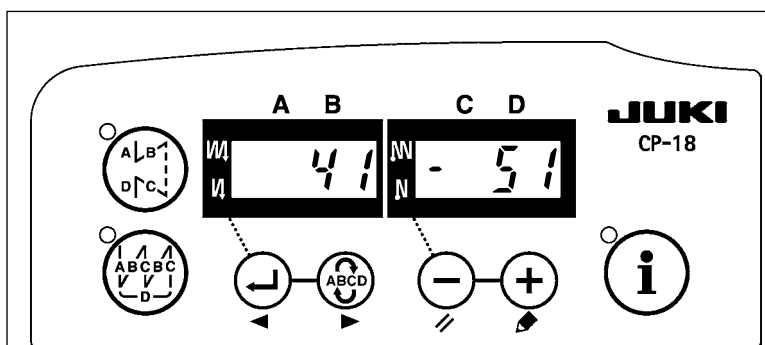
Air drive display (+24V)

FL OFF : Auto-lifter function does not work. (Similarly, the presser foot is not automatically lifted when programmed stitching is completed.)



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" 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.

(7) Setting of the pedal stroke



: Lifting start position of pedal presser lifter

↓

: Pedal stroke of thread trimming start

↓

When using the top covering thread, perform the setting below.

- Set so that thread trimming operation can be performed before using the auto-lifter.
- Set the lifting start position of the pedal presser lifter of the function setting No. 41 to "-21/-51" and the pedal stroke of the thread trimming start of the function setting No. 43 to "-51/-21" respectively.



Occurrence of stitch skipping, thread trimming failure, or stitch trouble may be caused unless the setting is changed. So, be careful.

IV. THREADING THE MACHINE HEAD

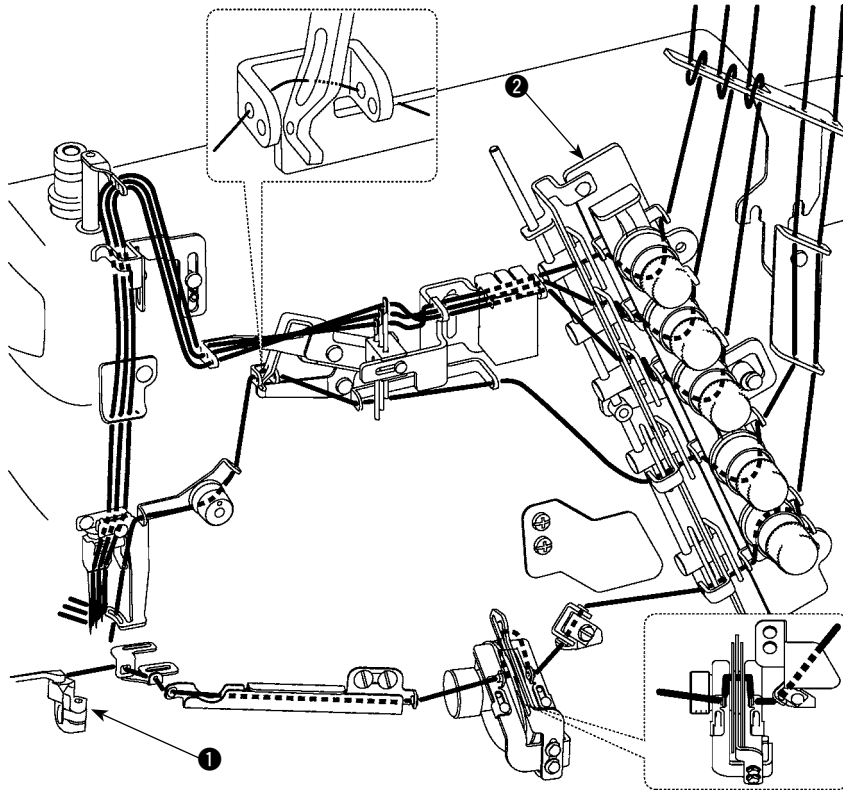


WARNING :

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 ascertaining that the motor is at rest. If threading is wrong, stitch skipping, thread breakage, needle breakage or irregular stitches will be caused. So, be careful.

[Standard threading for the machine with automatic thread trimmer]

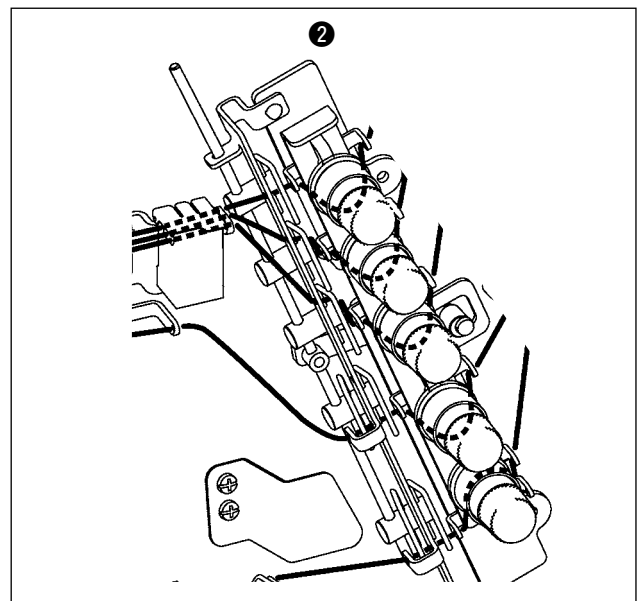
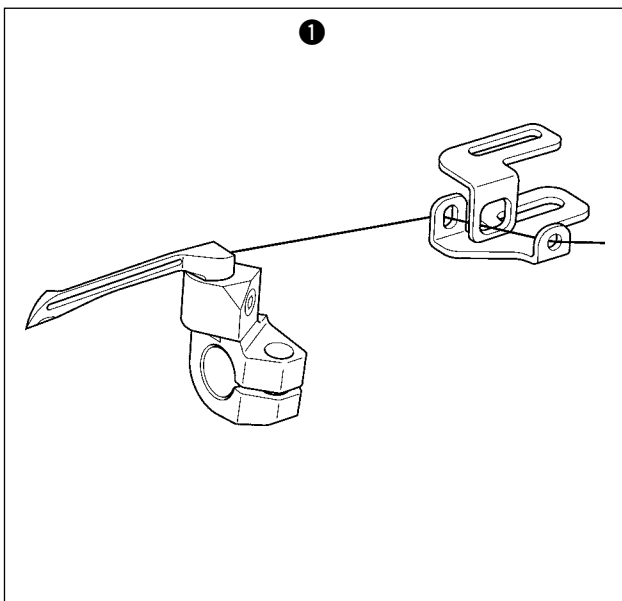
Thread the machine head according to the following threading illustrations.



* For the adjustment procedure other than the above, refer to the Instruction Manual for MF-7900.



When the small thread tension in the face plate is used for the machine with the thread trimmer device, the length of remaining needle thread after thread trimming becomes short and slip-off of thread at the start of sewing may occur.



V. ADJUSTING THE LOOPER THREAD TRIMMER MECHANISM

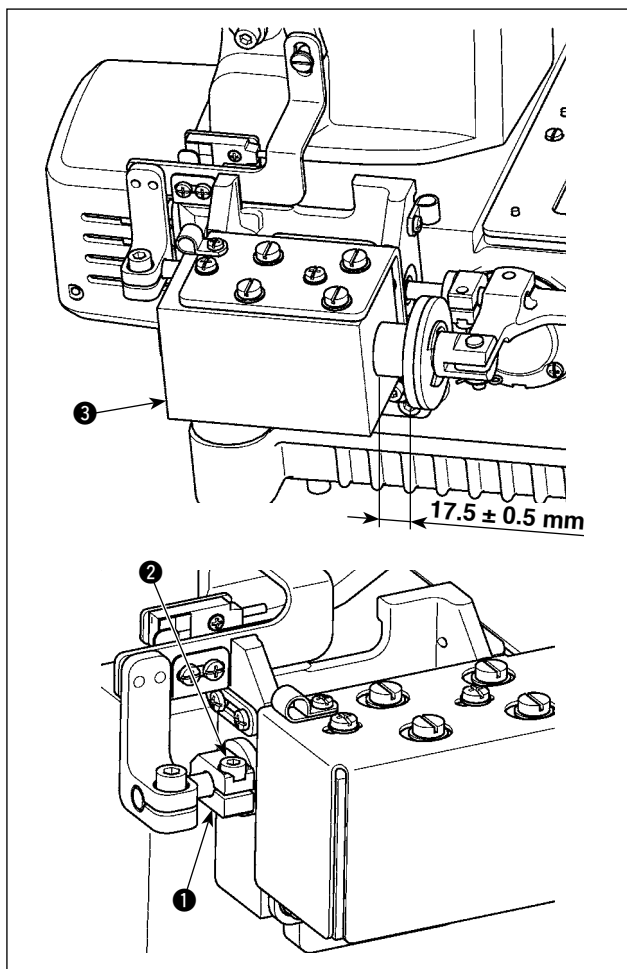


WARNING :

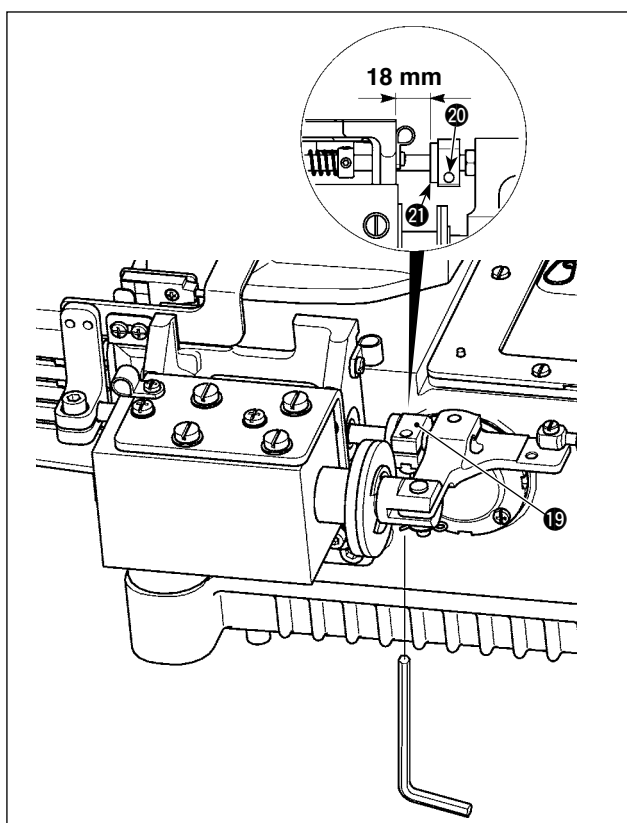
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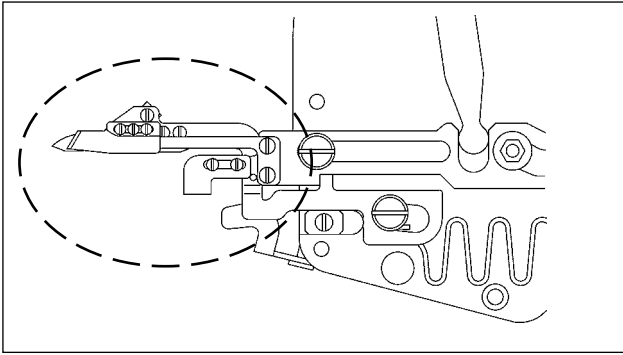
1. Adjusting the looper thread trimmer solenoid

- 1) Stroke of looper thread trimmer solenoid **3** is 17.5 ± 0.5 mm. When adjusting the stroke, loosen setscrew **2** of collar **1** and move collar **1** to the right or left to adjust.



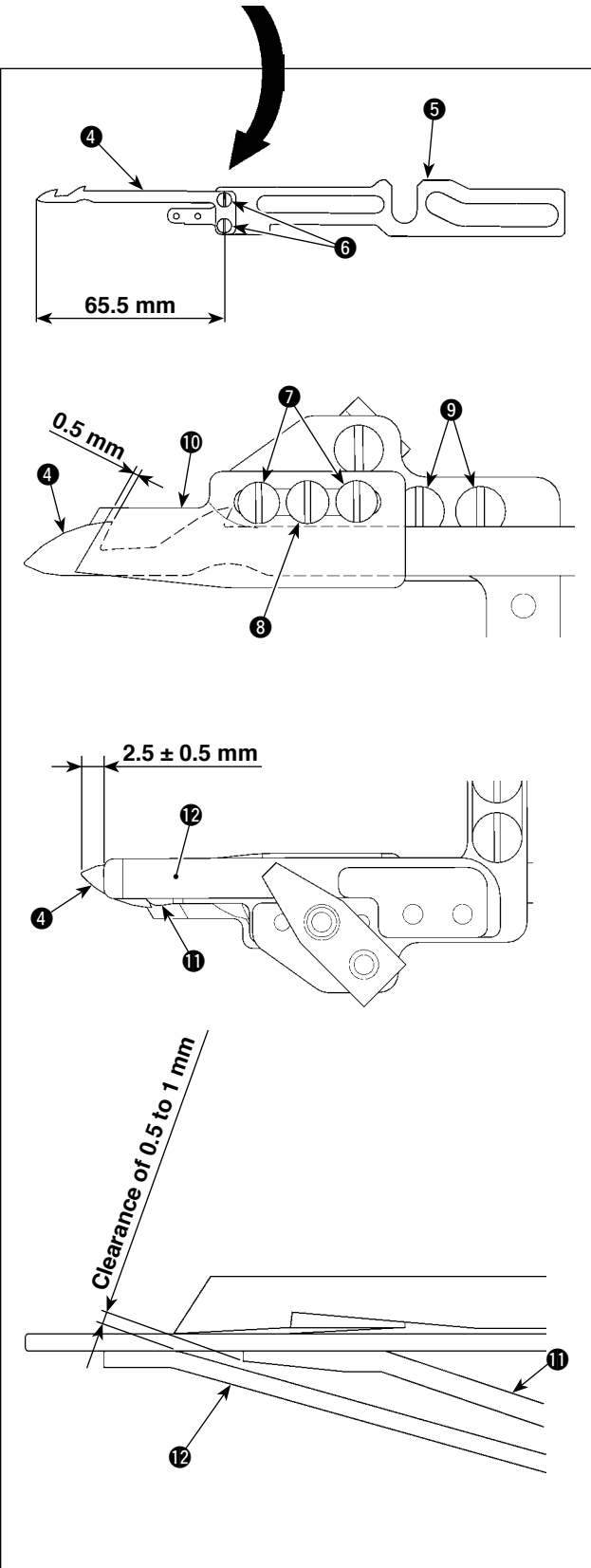
- 2) After adjusting the stroke, loosen screw **20** from the lower side, and move collar **19** to the left and right to adjust so that the distance between rubber cushion **21** and UT base is 18 mm.





2. Adjusting the Lower knife

- 1) Set lower knife **4** and lower knife holder **5** with setscrews **6** at the position of the illustration.



3. Adjusting the position of clamp pressure adjusting spring

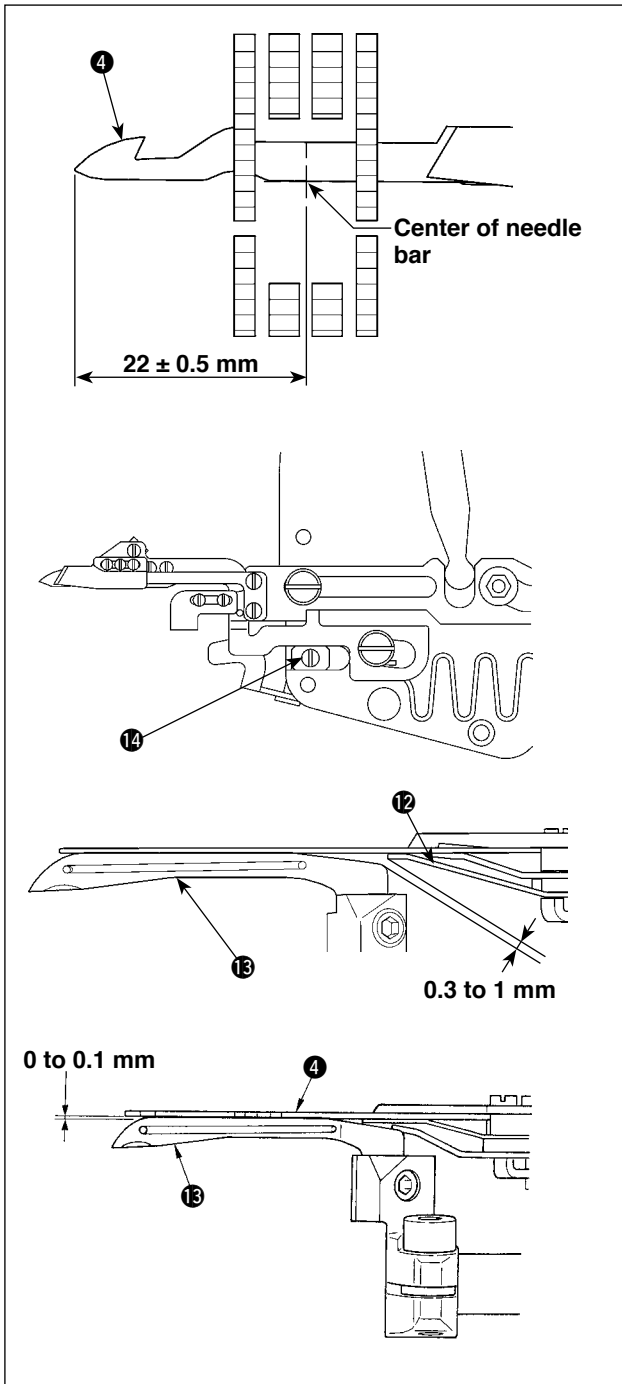
- 1) Loosen screws **9**.
- 2) Adjust so that a clearance of 2.5 ± 0.5 mm is provided between the top end of clamp pressure adjusting spring **12** and the top end of lower knife **4** when the lower knife **4** is brought to the rightmost position.
- 3) After the adjustment, tighten screws **9**.

4. Adjusting the knife engagement and the knife pressure adjusting spring

- 1) Loosen screws **7** and **8**, and adjust the position of upper knife **10** so that the engagement of the upper knife **10** with the lower knife **4** is 0.5 mm when lower knife **4** moves to the extreme right.
- 2) At the same time, adjust so that a clearance of 0.5 to 1 mm is provided between knife pressure adjusting spring **11** and clamp pressure adjusting spring **12**.
- 3) After the adjustment, tighten screws **7**.

5. Adjusting the pressure of clamp spring

- 1) The looper thread is held by clamp pressure adjusting spring **12** after thread trimming.
- 2) Holding pressure of the looper thread can be adjusted by turning screw **8**.
- 3) When screw **8** is turned clockwise, the holding pressure is increased and turned counterclockwise, the pressure is decreased.
- 4) Make the holding pressure as low as possible within the range of holding the looper thread.



6. Initial position of the looper thread trimmer mechanism

When lower knife ④ is located at its leftmost position, the top end of the lower knife ④ has to be spaced 22 ± 0.5 mm from the center of needle bar.

7. Adjusting the stopper

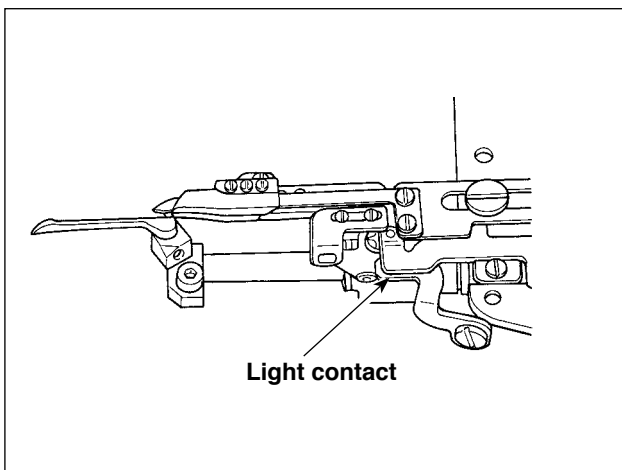
Adjust the position of stopper ⑭ so that a clearance of 0.3 to 1 mm is provided between looper ⑬ and clamp pressure adjusting spring ⑫ when the counter knife is located at its leftmost position (forward end).

8. Adjusting the height of the lower knife

When the needle is positioned at its upper dead point, the clearance of 0 to 0.1 mm has to be provided between the under surface of lower knife ④ and the top surface of looper ⑬.

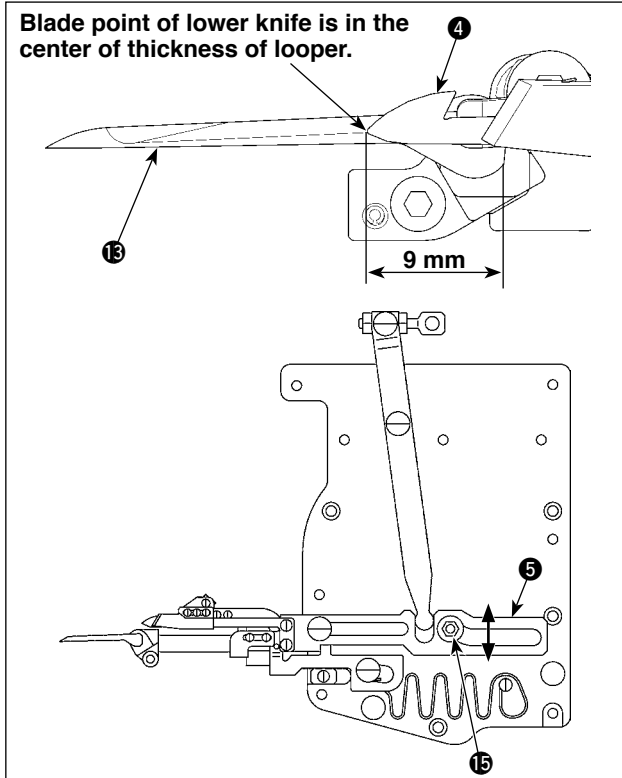


Perform the work with the needle bar at the highest position when actuating the thread trimmer mechanism by hand.



9. Adjusting the lower knife holder guide

When the lower knife moves from right to left, the lower knife holder should lightly come in contact with the guide.

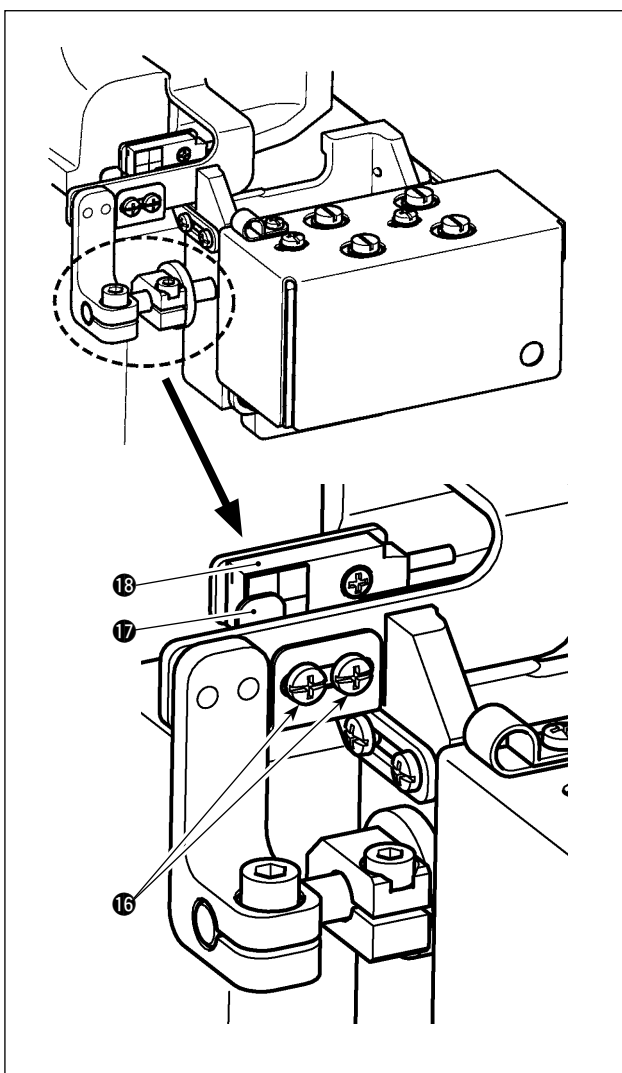


10. Adjusting the longitudinal position of the blade point of lower knife

- 1) Bring the needle bar to its highest position.
- 2) Adjust so that the blade point of lower knife 4 is in the center of the thickness of looper 13 when the clearance between the right-hand edge of looper 13 and the blade point of lower knife 4 is 9 mm.
- 3) Loosen nut 15, move lower knife holder 5 to and fro, and adjust the position of the blade point of lower knife 4.
- 4) After the adjustment, tighten nut 15.



Perform the work with the needle bar at the highest position when actuating the thread trimmer mechanism by hand.



11. Adjusting the thread trimmer sensor

The safety switch is installed so that the sewing machine does not start unless the looper thread trimmer device returns to its home position.

- 1) Loosen setscrews 16.
- 2) Adjust switch plate 17 so that LED of thread trimmer sensor 18 lights up in the state that the thread trimmer device is fully returned to its home position.
- 3) Tighten setscrews 16.



Perform the work with the needle bar at the highest position when actuating the thread trimmer mechanism by hand.

VI. ADJUSTING THE THREAD RELEASE MECHANISM

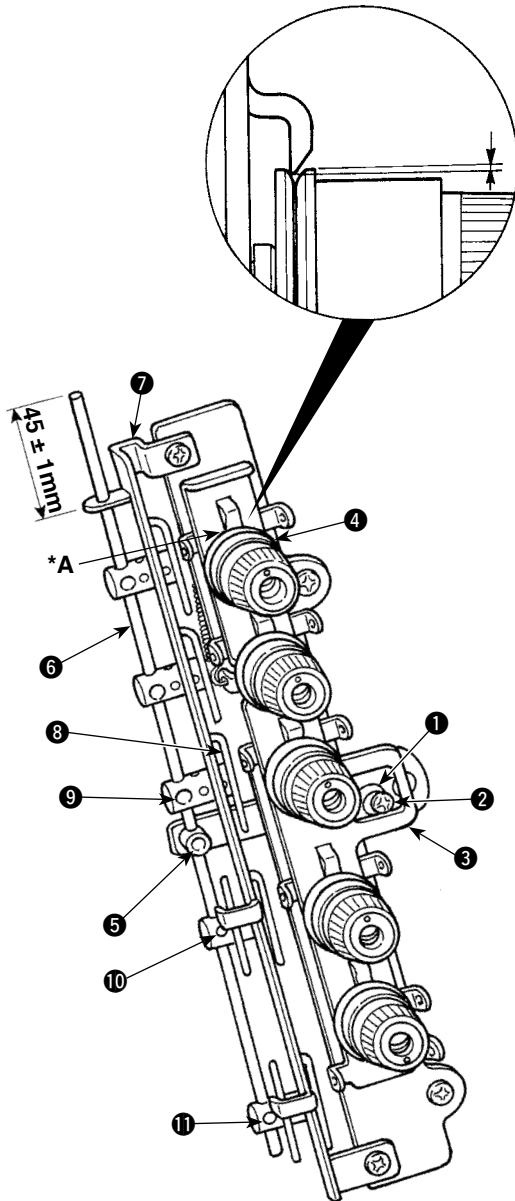


WARNING :

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 ascertaining that the motor is at rest.

*A

Clearance between click and disk is 0.2 to 0.5 mm.
(5 places)



1. Adjusting the disk-rise

- 1) Loosen setscrew ② in adjustment cam ①, turn adjustment cam ① and disk-rise plate ③ moves up or down.
- 2) Adjust the clearance between the click section of disk-rise plate ③ and thread tension disk ④ to 0.2 to 0.5 mm, and tighten setscrew ②.
- 3) If the click section of disk-rise plate ③ comes in contact with thread tension disk ④, sewing trouble will be caused. So, be careful.

2. Adjusting the thread release hook

- 1) Loosen setscrew ⑤. Adjust so that the top end of tension release rod ⑥ is spaced 45 ± 1 mm from the top end of take-up thread guide ⑦. Then, tighten setscrew ⑤.
 - 2) Loosen setscrew ⑨, move the position of thread release hook ⑧ up or down, and the thread remaining length at the start of sewing can be adjusted.
- When the position of thread release hook ⑧ is raised, the thread remaining length at the start of sewing is decreased and when it is lowered, the thread remaining length at the start of sewing is increased.
 - If stitch skipping occurs at the beginning of sewing when using non-elastic thread, properly adjust the remaining length of top-covering thread at the start of sewing using setscrew ⑩ and minimize the remaining length of looper thread at the start of sewing using screw ⑪.



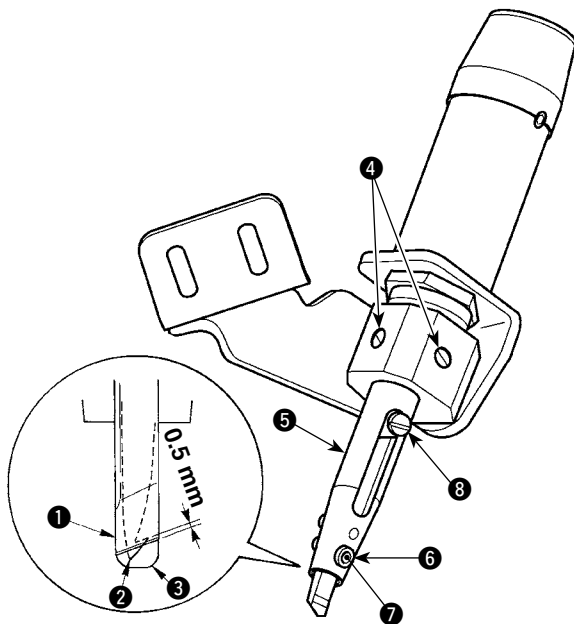
When the thread remaining length at the start of sewing is short, stitch skipping or slip-off of thread from needle eyelet at the start of sewing is apt to occur.

VII. ADJUSTING THE TOP COVERING THREAD TRIMMER MECHANISM



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 ascertaining that the motor is at rest.

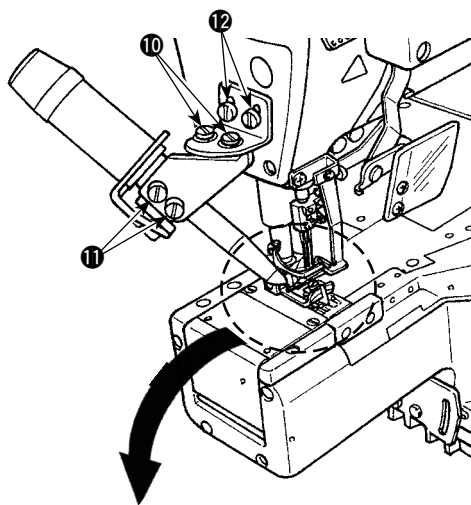


1. Adjusting the engagement of knives

- 1) Adjust so that the engagement of fixed knife ① with moving knife ② is 0.5 mm.
- 2) When adjusting the engagement, loosen setscrews ④ and move knife holder ⑤ up or down to adjust.

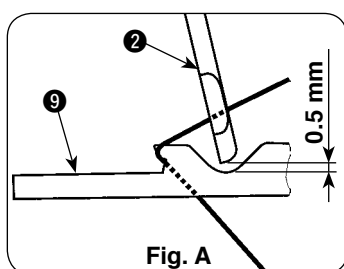
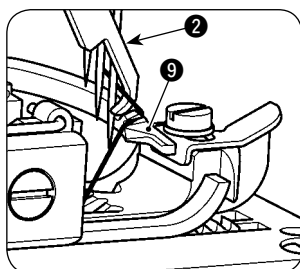
2. Adjusting the pressure of clamp spring

- 1) Top covering thread is held with clamp spring ③ after thread trimming.
- 2) Holding pressure can be adjusted by loosening nut ⑥ and turning screw ⑦.
- 3) Holding pressure is increased when tightening screw ⑦ and it is decreased when loosening screw ⑦.
- 4) After the adjustment, tighten nut ⑥.
- 5) Make the holding pressure as low as possible within the range of holding the top covering thread.



3. Adjusting the position of the blade point of moving knife

- 1) Bring the needle bar to its highest position.
 - 2) When hinge screw ⑧ is lowered, moving knife ② lowers together.
 - 3) Adjust so that the hook of moving knife ② enters the recess in the top face of spreader ⑨ to be brought to the position where the moving knife catches the top covering thread when moving knife ② is brought to the lowermost position. Then, tighten screws ⑩, ⑪ and ⑫.
- Adjust the moving knife vertically so that a clearance of 0.5 mm is provided between the recess section of spreader ⑨ and the moving knife, and laterally so that the moving knife ② is brought to the center of the width of recess in spreader, as illustrated in Figure A.
- 4) Screws ⑫ are for adjusting vertical position of the knife, screws ⑩ for adjusting lateral position of the knife, and screws ⑪ for adjusting angle of the knife.



Make sure that the moving knife does not interfere with other components such as presser, needle, spreader, etc. within the working range of moving knife ②.

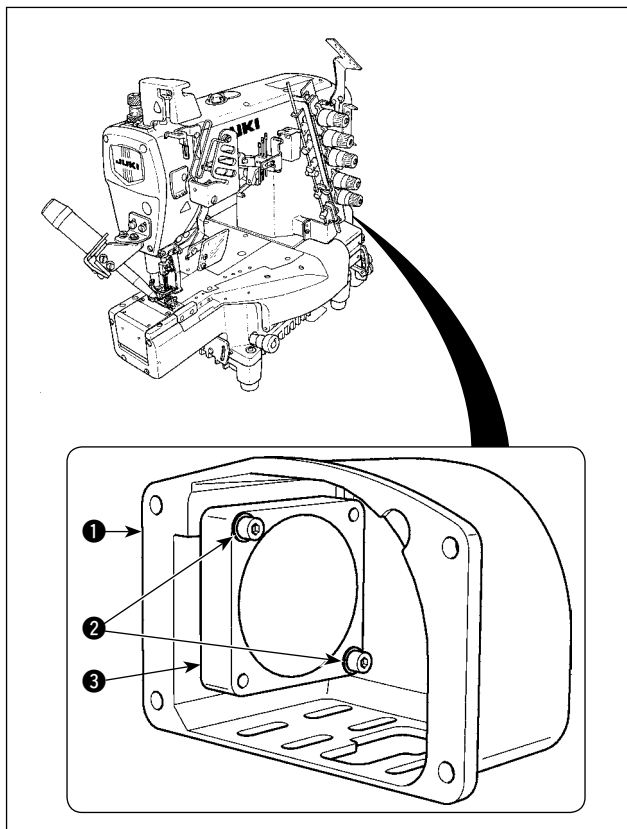
VIII. MAINTENANCE



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 ascertaining that the motor is at rest.

1. Cleaning the motor fan



Open the motor cover **1** and remove the screws **2**.
Clean up the periphery of the motor fan **3** and the motor cover **1**.

After the completion of cleaning, re-install the motor fan **3** and the motor cover **1**.