

ENGLISH

**MF-7200D/UT42,45
INSTRUCTION MANUAL**

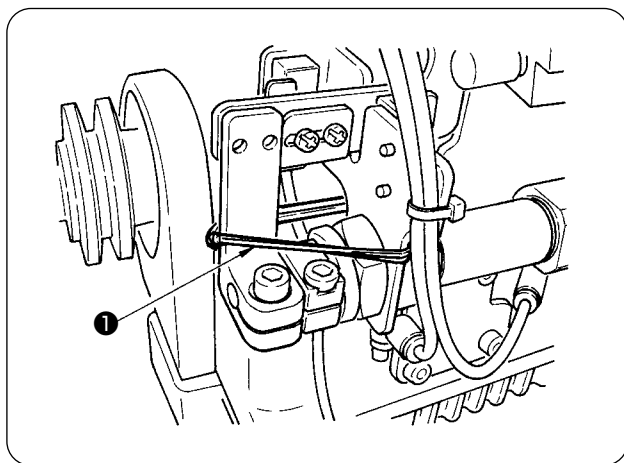
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I. SPECIFICATIONS

Model name	Semi-dry head high-speed, small cylinder-bed coverstitch machine
Model	MF-7200D series
Stitch type	ISO standard 406, 407, 602, and 605
Example of application	Hemming and covering for knits and general knitted fabrics
Max. speed of stitch	Max. 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 : 0.8 to 1 : 1.8 (stitch length : less than 3.2 mm) Micro-differential feed adjustment mechanism is provided. (Micro-adjustment)
Stitch length	1.4 mm to 3.2 mm (can be adjusted up to 4.2 mm)
Needle	UY128GAS #9S to #12S (standard #10S)
Needle bar stroke	31mm
Dimensions	(Height) 450 x (Width) 444 x (Length) 285
Weight	UT42 : 48kg, UT45 : 44kg
Lift of presser foot	6 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 MACHINE OIL 18
Oil reservoir capacity	Oil gauge lower line : 600 cc to upper line : 900 cc
Installation	Top mount type, Semi-submerged type
Noise	- Equivalent continuous emission sound pressure level (L _{pA}) at the workstation : A-weighted value of 80.0 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.

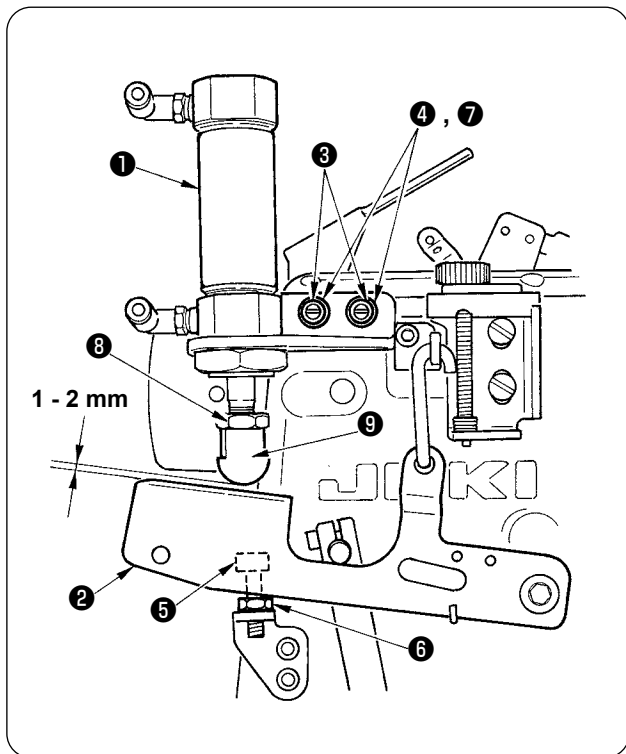
III. INSTALLING THE ACCESSORIES



WARNING :

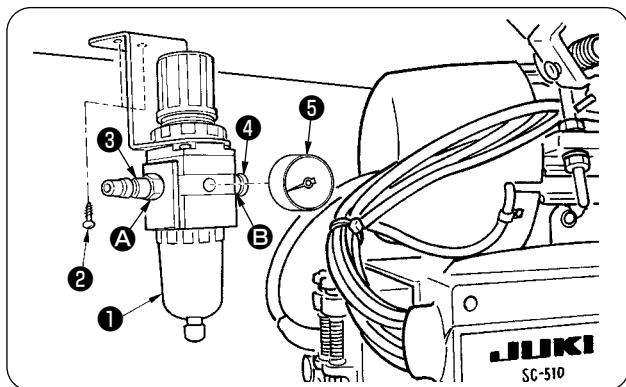
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

1. Installing the presser lifting cylinder (UT45)



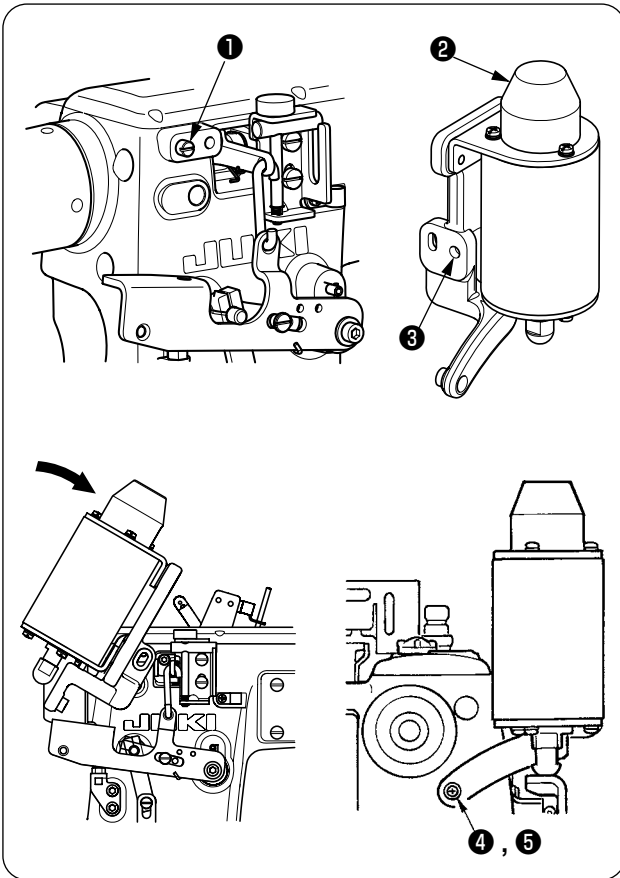
- 1) Install presser lifting cylinder asm. ① to the sewing machine with screws ③, washers ④ and spring washers ⑦.
- 2) Tighten screw ③ in such manner that a clearance of 1 to 2 mm is provided between cap ⑨ at the top end of presser lifting cylinder asm. ① and presser lifting lever ②.
If the clearance cannot be adjusted to 1 to 2 mm, adjust the height of nut ⑧ and cap ⑨ to obtain the correct clearance between the cap and lever.
- 3) Adjust the height of screw ⑤ referring to the Instruction Manual for MF-7200D(VI-16.Adjusting the presser foot lift), and tighten nut ⑥.
- 4) Stroke of cylinder asm. ① is 30 mm. Make sure that presser lifting lever ② comes in contact with screw ⑤ within the range of cylinder stroke.

2. Installing the air regulator (UT45)



- 1) Install pressure gauge ⑤ to regulator main body ①.
- 2) Attach joint ③ to air intake port A, and joint ④ to exhaust port B.
- 3) Install air regulator main body ① under the table with wood screw ②.

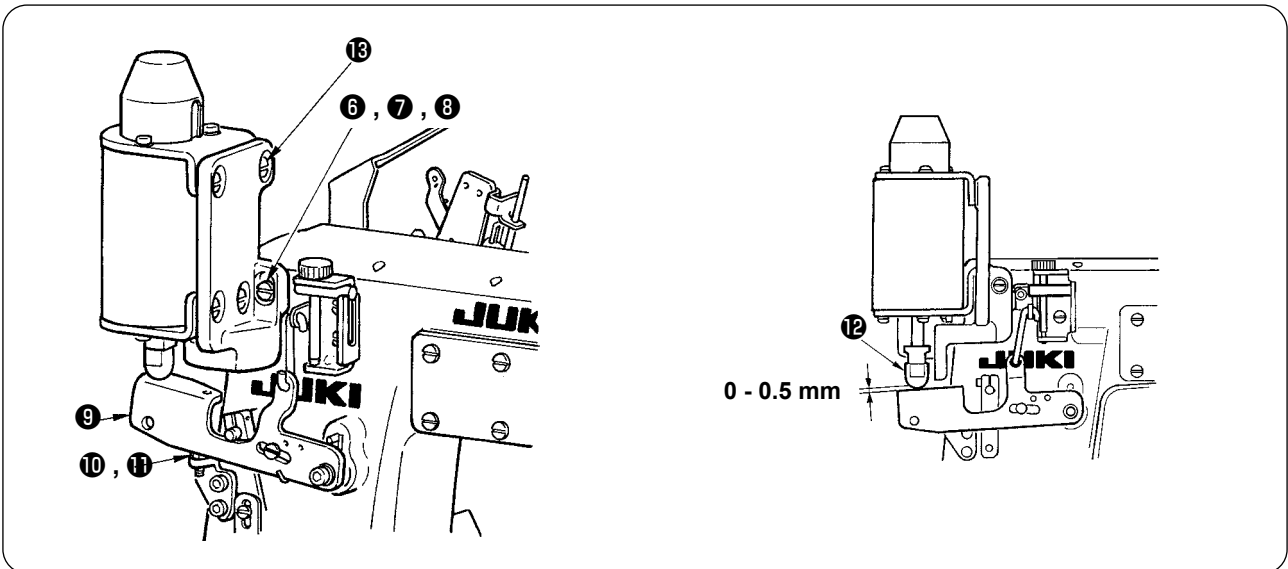
3. Installing the presser lifting solenoid (UT42)



- 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-7200D (VI-16. **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.



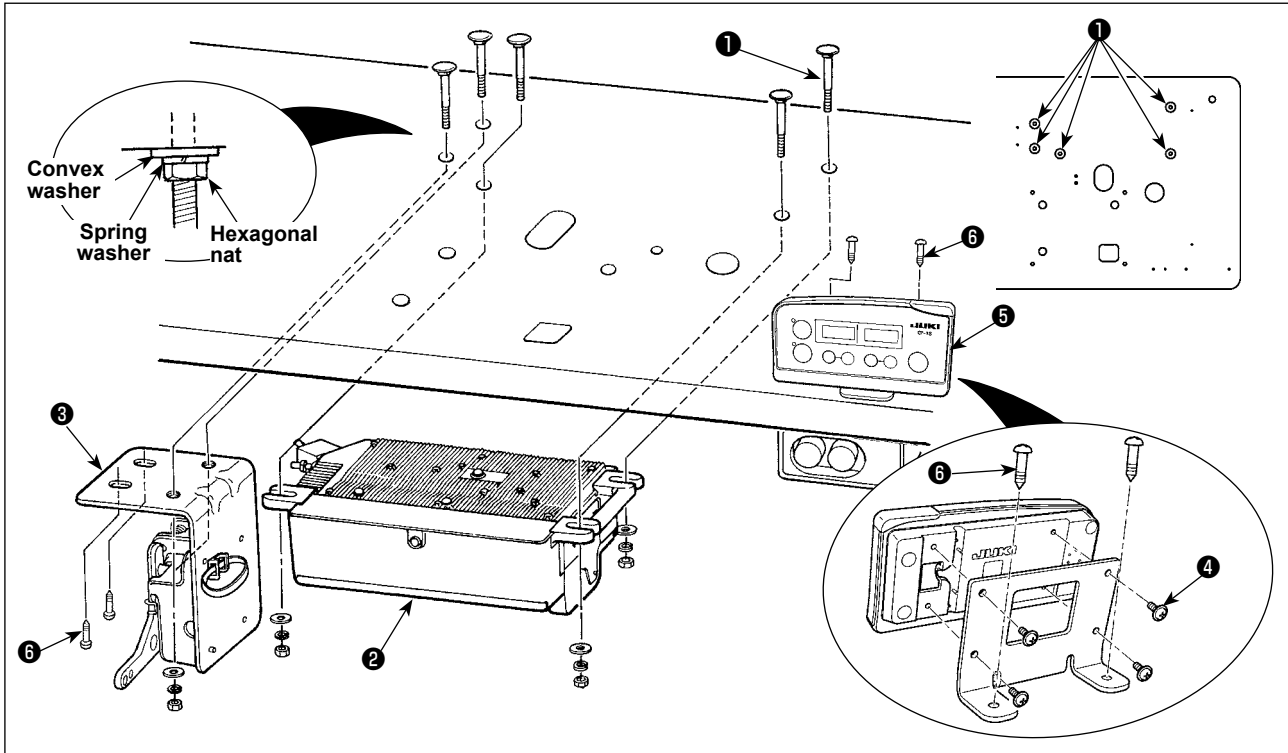
Sound of solenoid may increase during using presser lifter. When it increases, loosen 4 setscrews **13**, lower solenoid to the place where the sound is lessened, and fix 4 setscrews **13**. When adjusting, confirm that presser lifting lever **9** comes in contact with presser height adjustment screw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



4. Installation and setting SC-921

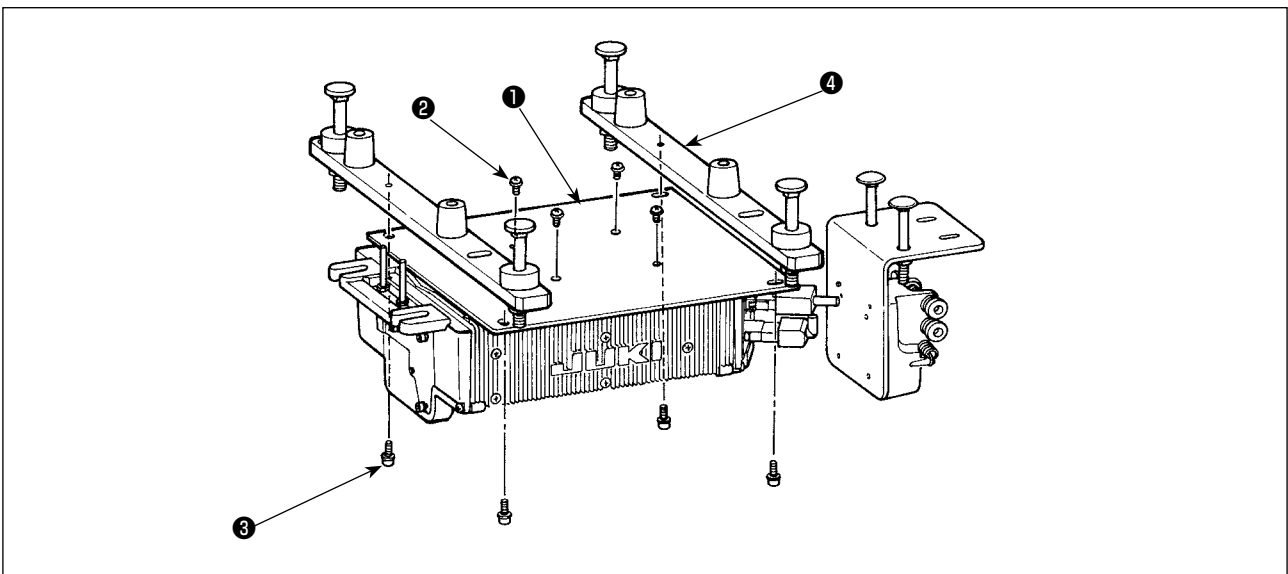
(1) Table-mount type

- * The instructions apply to the case the control box is installed on the table of the MF-7200D.
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.



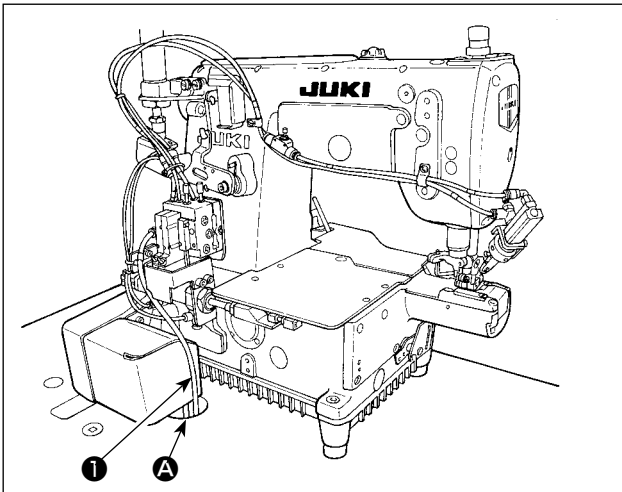
- 1) Install control box **2** and sensor bracket **3** on the table with fitting bolt asm. **1** supplied with the unit as accessories. At this time, insert supplied nuts and washers as shown in the figure so that the control box and sensor bracket are securely fixed.
- 2) Install the control box (or 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 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.
- 4) Install CP-18 panel **5** and sensor bracket **3** on the table with wood screws **6**.

(2) Semi-sunken type

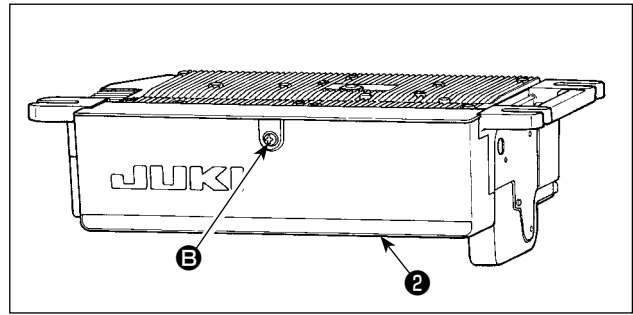


- 1) Install control box mounting plate **1** on the SC-921 with four screws **2**.
- 2) Install the aforementioned assembly on backing plate **4** with four screws **3**.

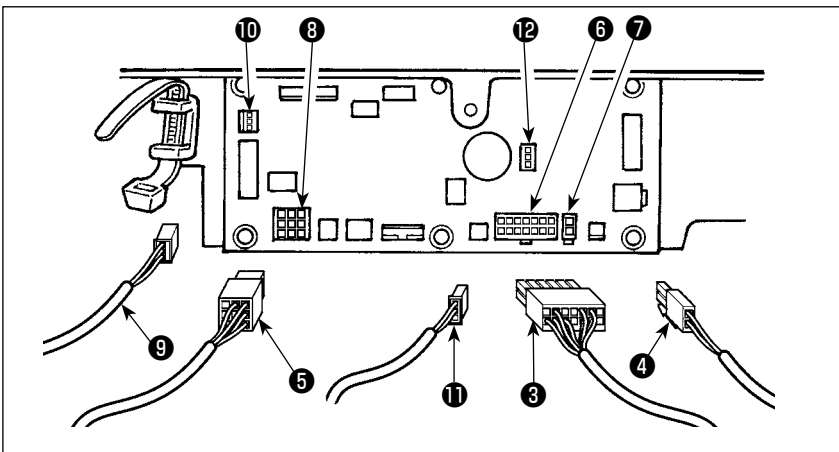
(3) Connecting the cords



- 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.

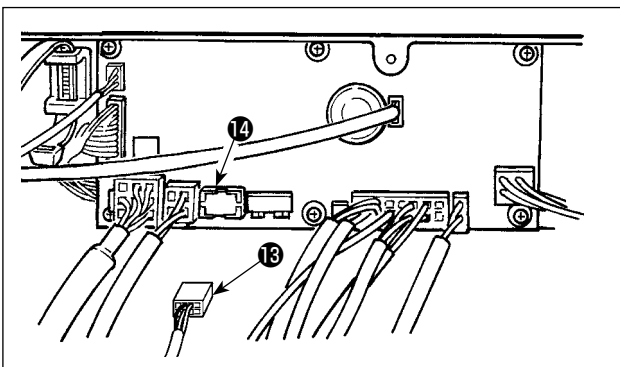


- 3) Connect 14P code **3** coming from the machine head to connector **6** (CN36).
- 4) Insert 3P cord **9** coming from the machine head into connector **10** (CN42).
- 5) When the optional AK device is attached, connect 2P connector **4** coming from the AK device to connector **7** (CN37).

- 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).

- (Caution)**
1. When using the AK device, set whether to use the AK device after confirming how to select the auto-lifter function. (Refer to “(6) Setting of the auto lifter function” p. 8.)
 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]

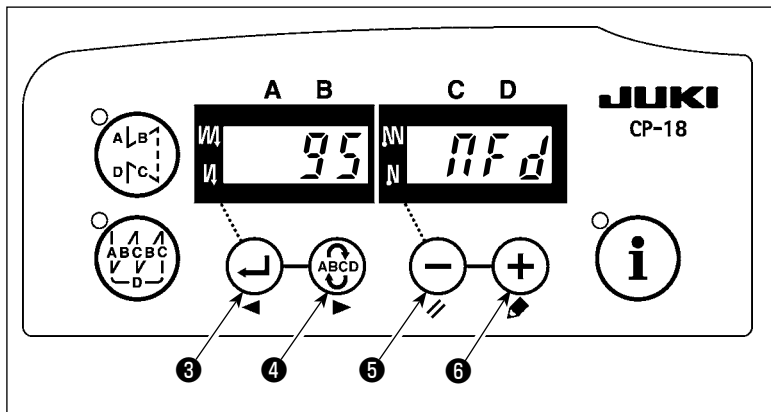


The connector for the operation panel is provided. Paying attention to the orientation of the connector **13**, connect it to connector (CN38) **14** located on the circuit board. After connecting, securely lock the connector.

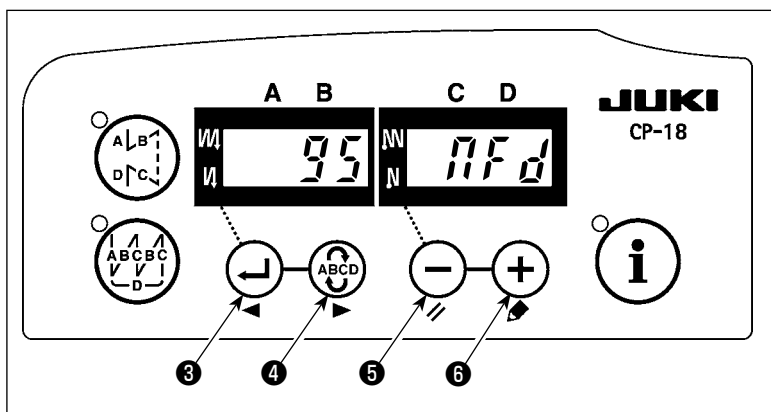
- (Caution)** Be sure to turn OFF the power before connecting the connector.

(4) Setting procedure of the machine head

(Caution) 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.

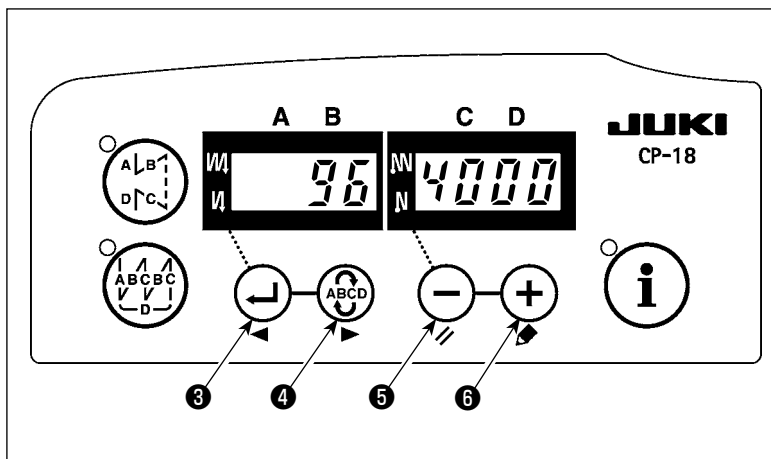


1) Call function setting No. 95.



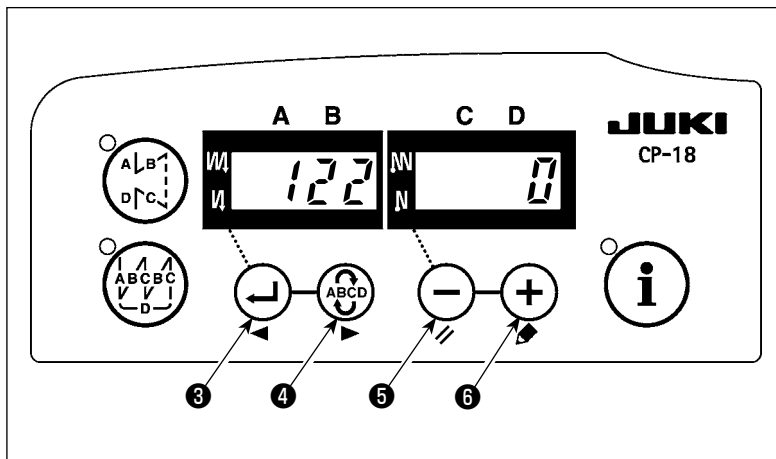
2) The type of machine head can be selected by pressing \ominus switch 5 (\oplus switch 6).

* Refer to the "List of machine heads" on the separate sheet or the Instruction Manual for the machine head of your sewing machine for the type of the machine head.

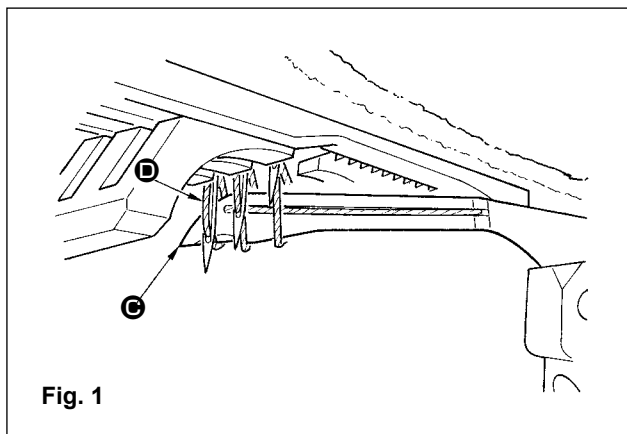


3) After selecting the type of machine head, by pressing \leftarrow switch 3 (\rightarrow switch 4), the step proceeds to 96 or 94, and the display automatically changes to the contents of the setting corresponding with the type of machine head.

(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 $\pm 15^\circ$).

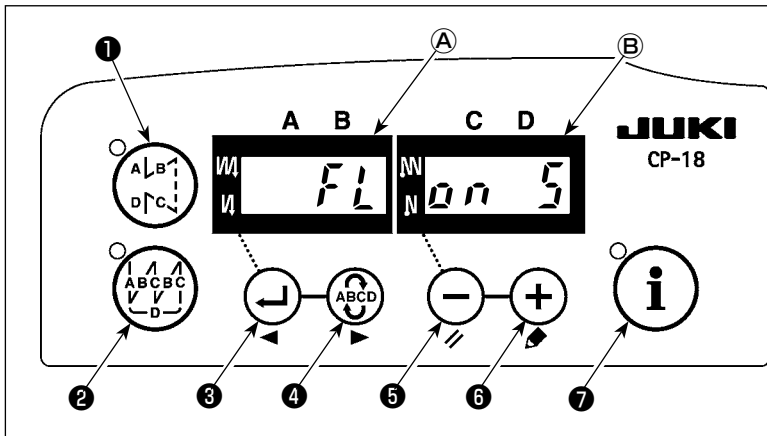


(6) Setting of the auto lifter function



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 **5** held pressed.
- 2) "FL ON" is displayed on indicators **A** and **B** 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 **6** .

(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.)

- (Caution)**
1. To perform re-turning 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.

IV. AIR PIPING DRAWING (UT45)

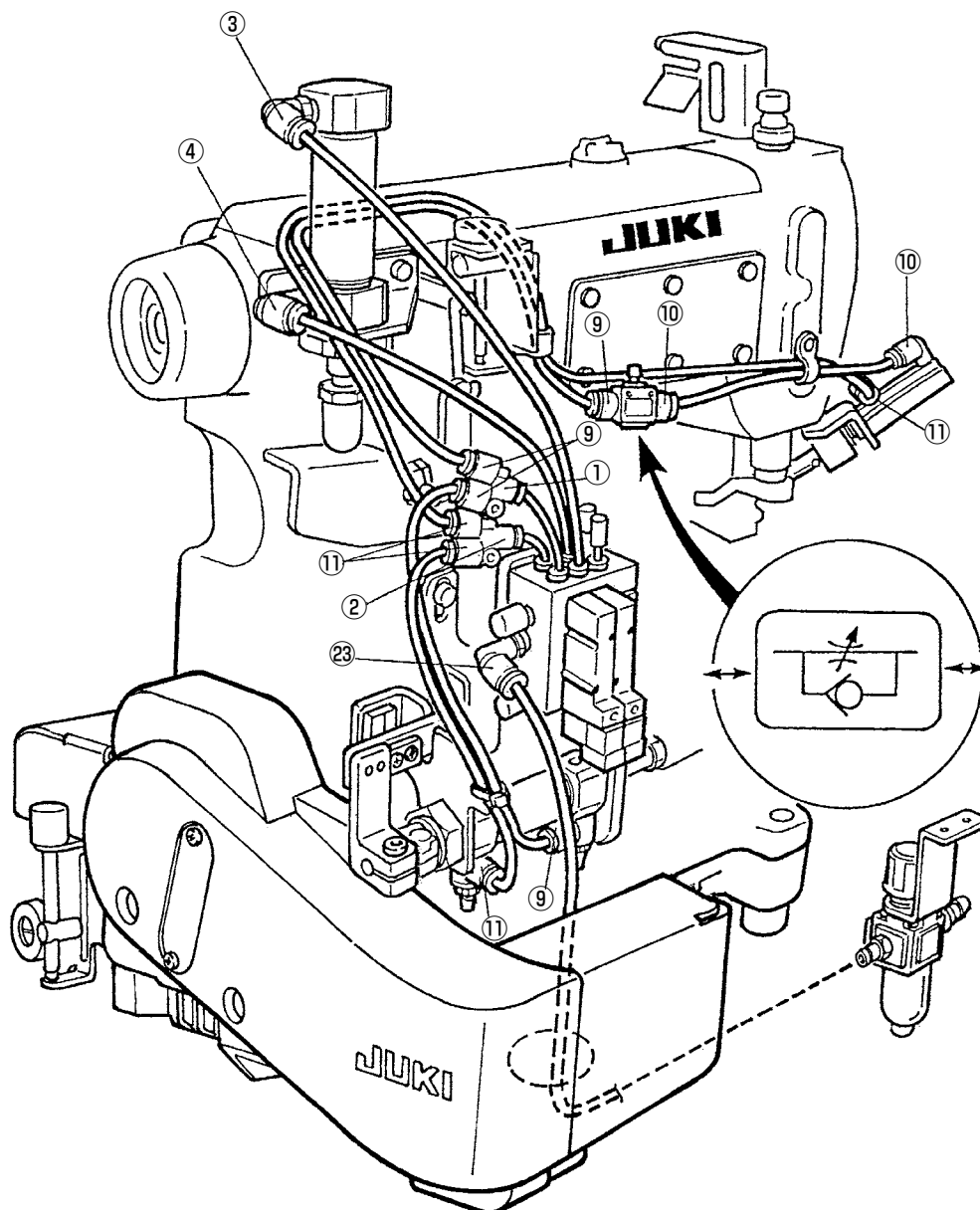


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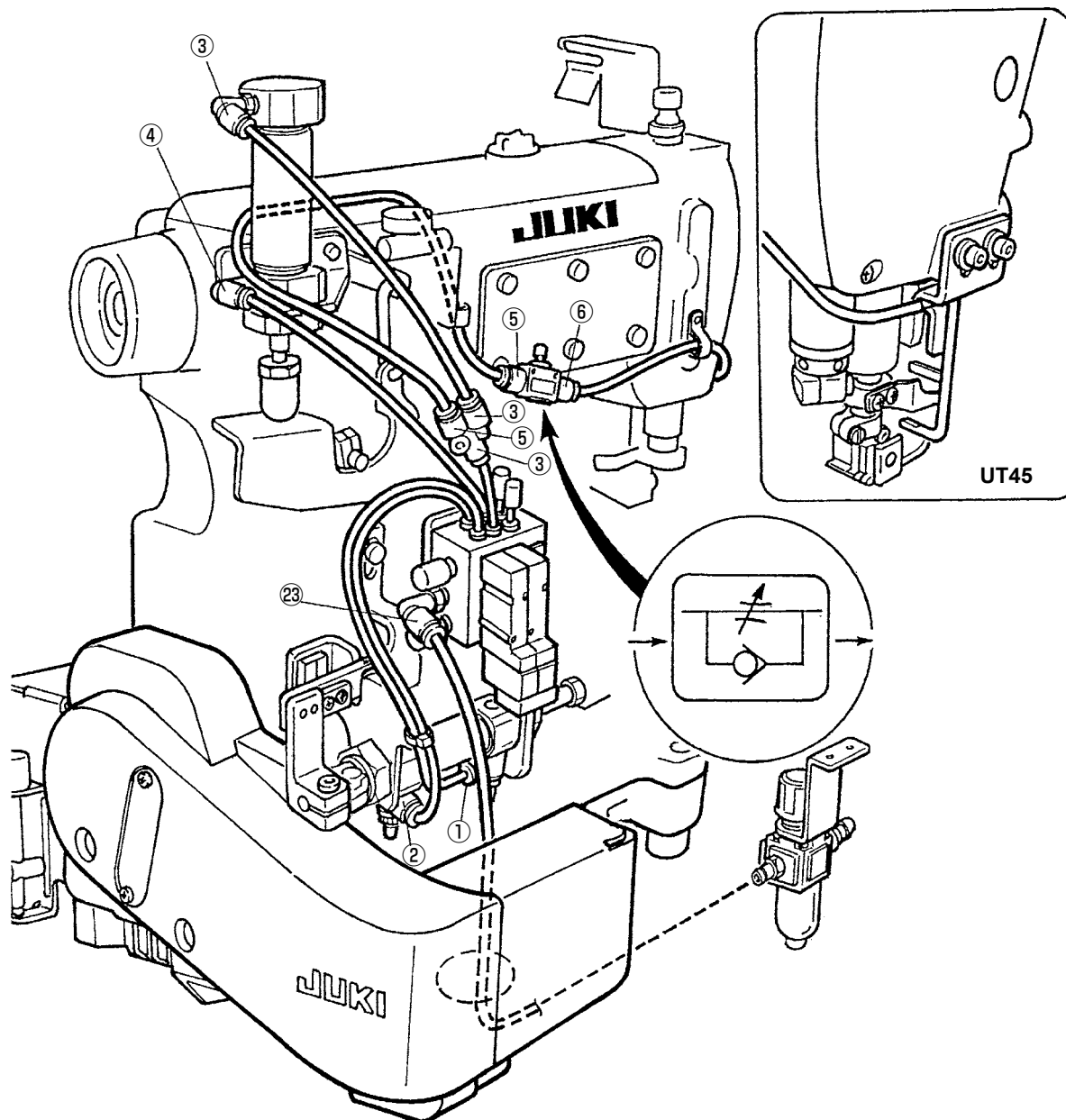
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest. In addition, cut the air supply from air compressor.

1. Piping of the thread trimmer device

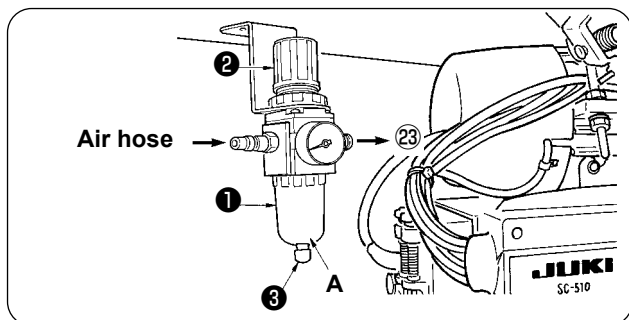
1. Piping drawing with the needle thread trimmer.



2. Piping drawing for air blow.



2. Adjusting the air regulator



- 1) Insert the air hose to air regulator ① .
- 2) Use the air pressure at 0.4 to 0.5 MPa (4 to 5 kgf/cm²).
- 3) Draw up regulator knob ② , turn knob ② and adjust the pointer to 0.4 to 0.5 MPa to adjust the air pressure.
- 4) After the adjustment, press downward regulator knob ② .
- 5) When drainage is collected at section A of regulator ① during using, press drain cock ③ to discharge the drainage.

V. THREADING THE MACHINE HEAD

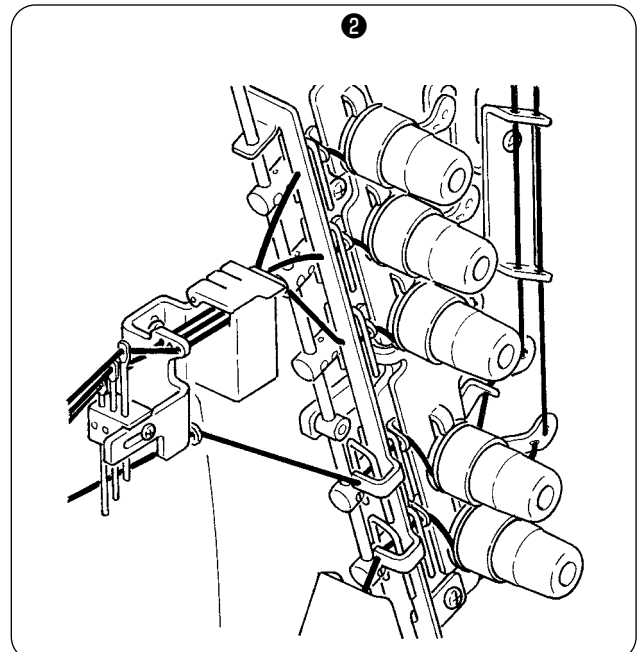
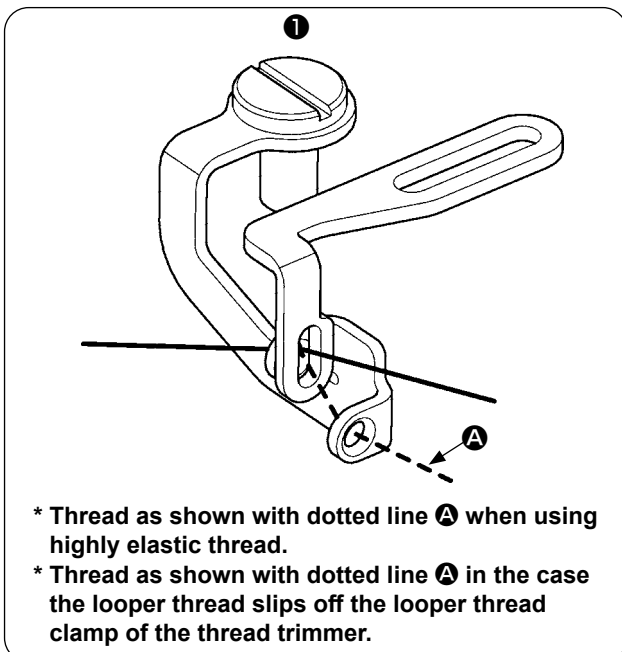
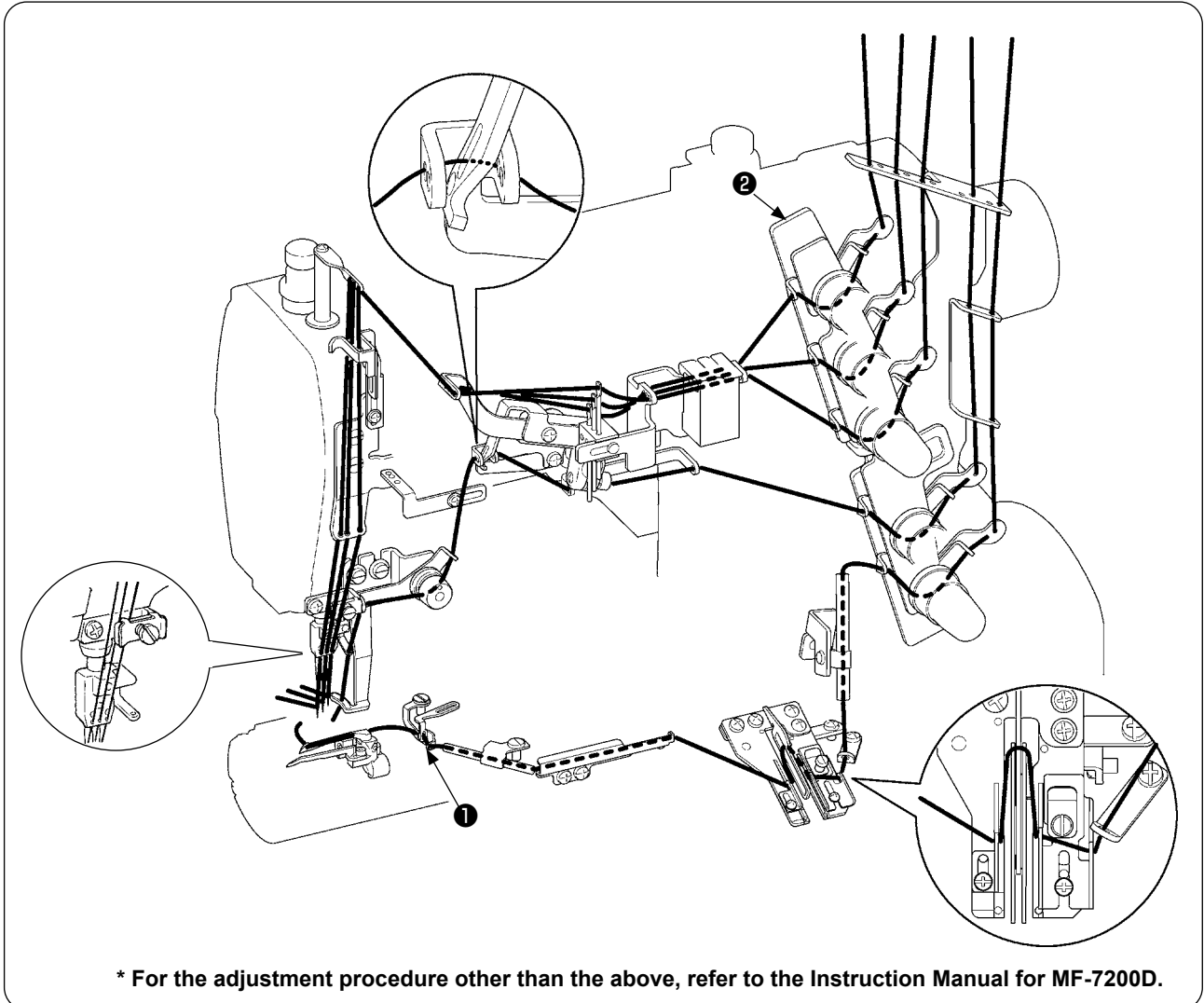


WARNING :

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.

1. Standard threading for the machine with automatic thread trimmer

Thread the machine head according to the following threading illustrations.



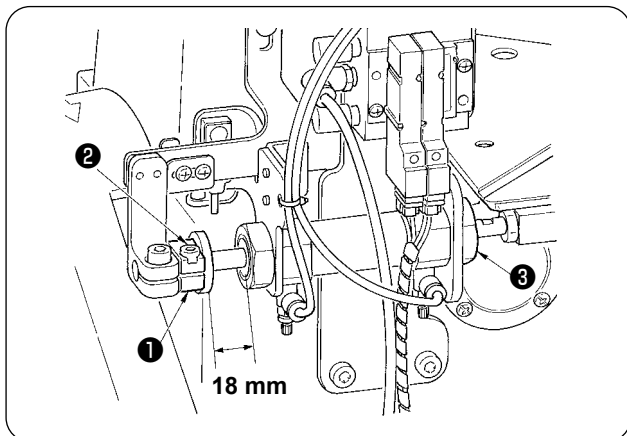
VI. ADJUSTING THE LOOPER THREAD TRIMMER MECHANISM



WARNING :

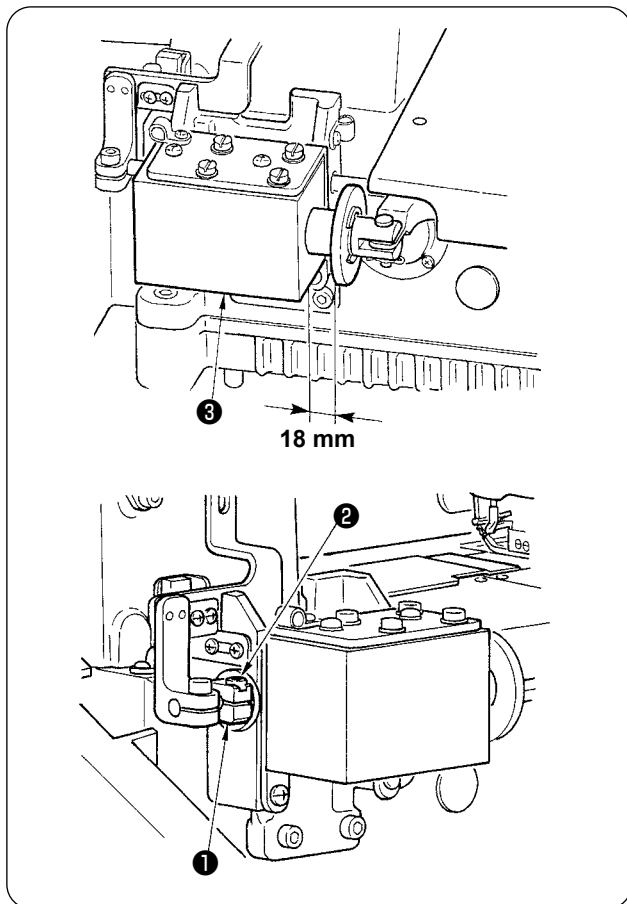
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest. In addition, cut the air supply from air compressor.(UT45)

1. Adjusting the thread trimmer air cylinder (UT45)

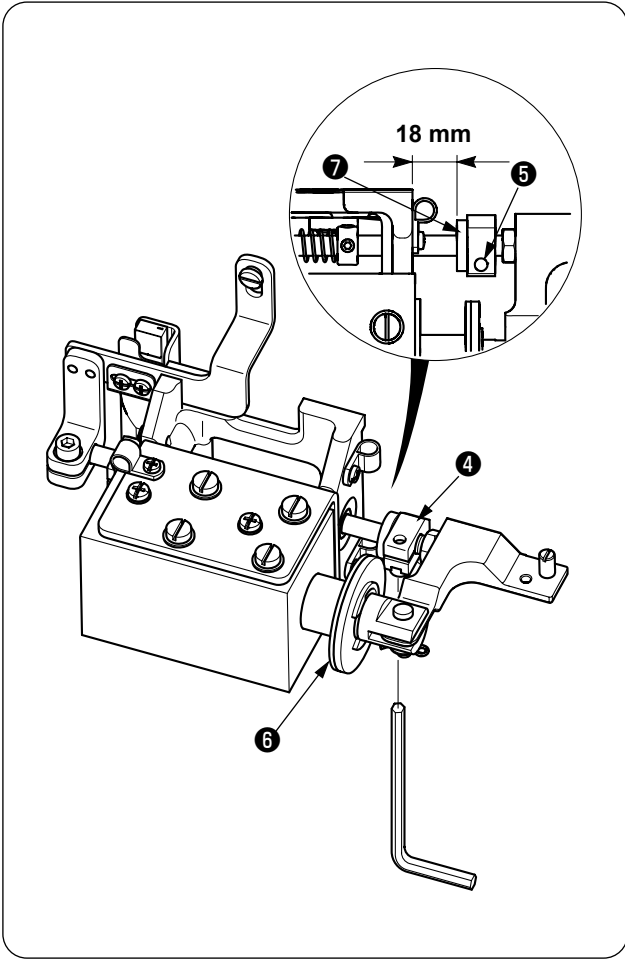


- 1) Stroke of air cylinder ③ is 18 mm. When adjusting the stroke, loosen setscrew ② of collar ① and move collar ① to the right or left to adjust.

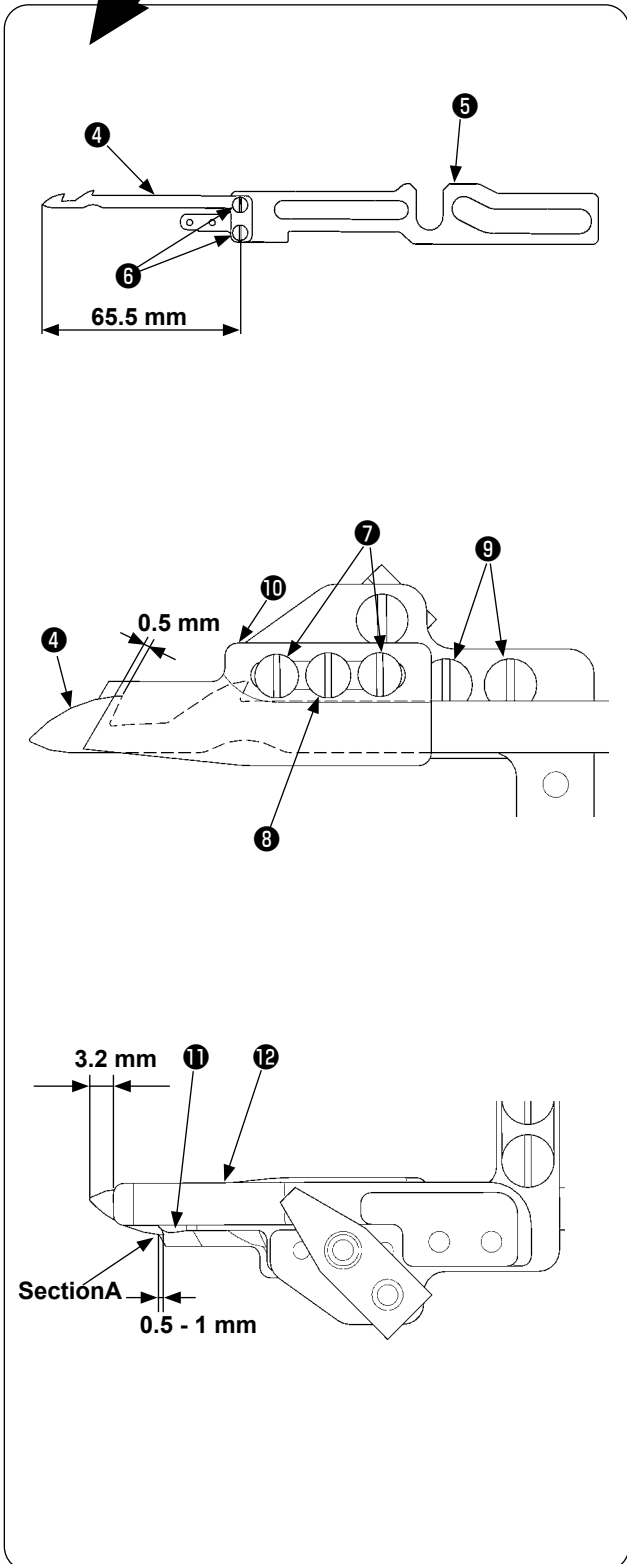
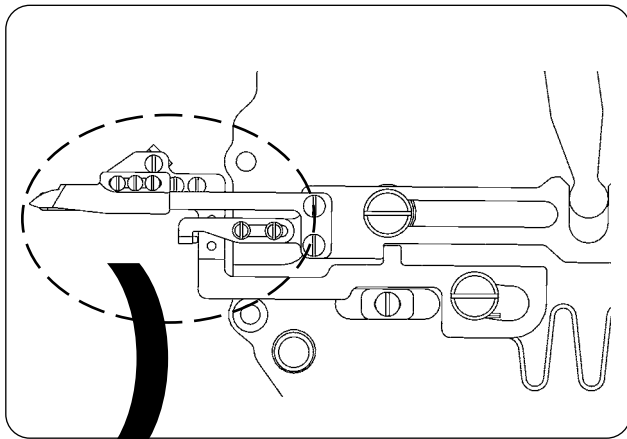
2. Adjusting the looper thread trimmer solenoid (UT42)



- 1) Stroke of looper thread trimmer solenoid ③ is 18 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 **5** from the lower side, and move collar **4** to the left and right to adjust so that the stroke becomes 18 mm, same as that of the looper thread trimming solenoid. When the magnet works, confirm that rubber seat **7** comes in contact with UT base at the same time as rubber cushion **6** comes in contact with the magnet main body.



3. Adjusting the Lower knife

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

4. Engaging the knives and adjusting the clamp spring

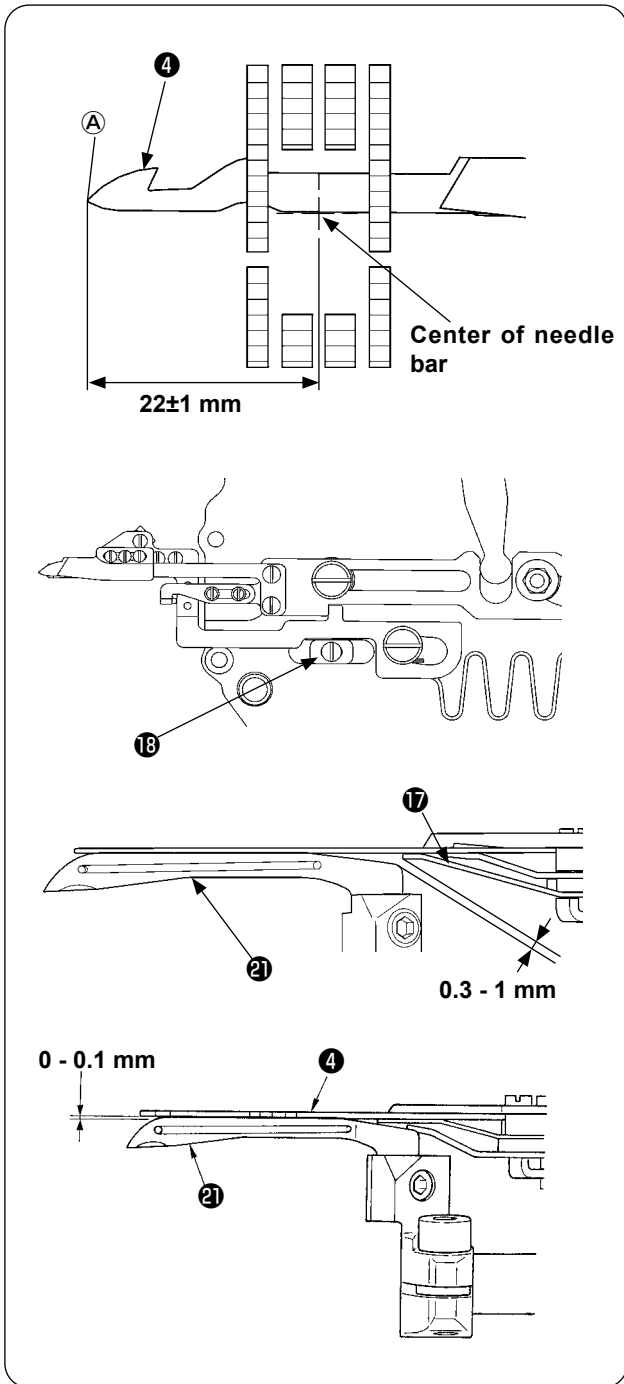
- 1) Loosen screws **7** and **8** , and adjust the position of upper knife **10** so that the engagement of the upper knife **10** with the lower knife is 0.5 mm when lower knife **4** moves to the extreme right.
- 2) At the same time, adjust so that the distance from the top end of clamp spring **11** to that of lower knife **4** is 3.2 mm.
- 3) After the adjustment, tighten screws **7** .

5. Adjusting the position of clamp pressure adjusting spring

- 1) Loosen screws **9** and adjust the position of clamp pressure adjusting spring **12** so that the distance from the top end of clamp pressure adjusting spring **12** to section **A** of upper knife **10** is 0.5 to 1 mm.
- 2) After the adjustment, tighten screws **9** .

6. Adjusting the pressure of clamp spring

- 1) Loper thread is held by clamp spring **11** 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.



7. Initial position of the lower thread trimmer mechanism

When looper thread trimmer **4** is located at its leftmost position, the top end of the looper thread trimmer has to be spaced 22 ± 1 mm from the center of needle bar.

8. Adjusting the stopper

Check the leftmost point with the pneumatic device turned on. Adjustment should be carried out with the air pressure set at 0.5 MPa.

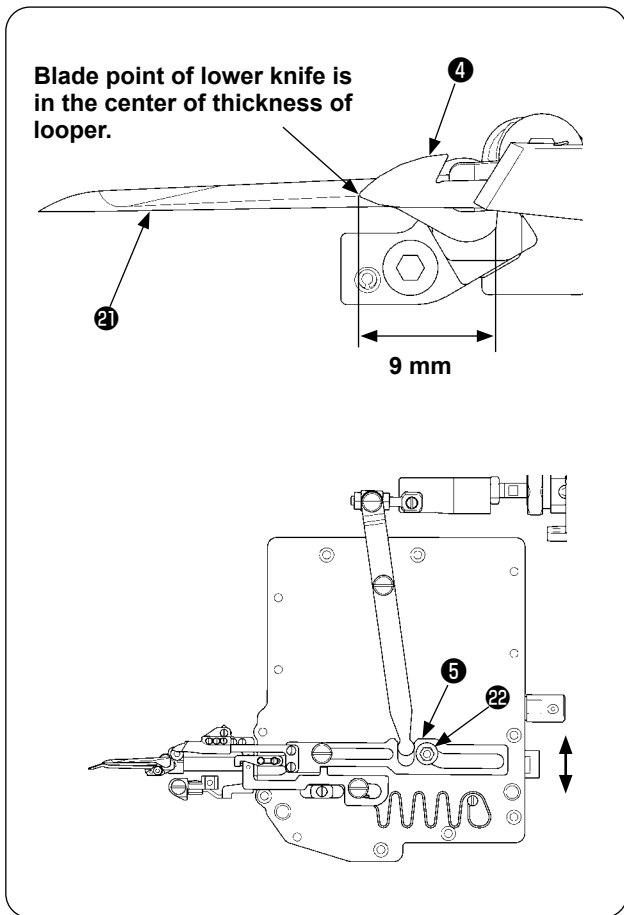
Adjust the position of stopper **18** so that a clearance of 0.3 to 1 mm is provided between looper **21** and clamp spring **17** when the counter knife is located at its leftmost position (forward end).

9. Adjusting the height of the lower knife

When the needle is positioned at its upper dead point, a clearance of 0 to 0.1 mm has to be provided between the under surface of looper thread trimmer **4** and the top surface of looper **21**.



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



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 21 when the clearance between the right-hand edge of looper 21 and the blade point of lower knife 4 is 9 mm.
- 3) Loosen nut 22, 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 22.



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

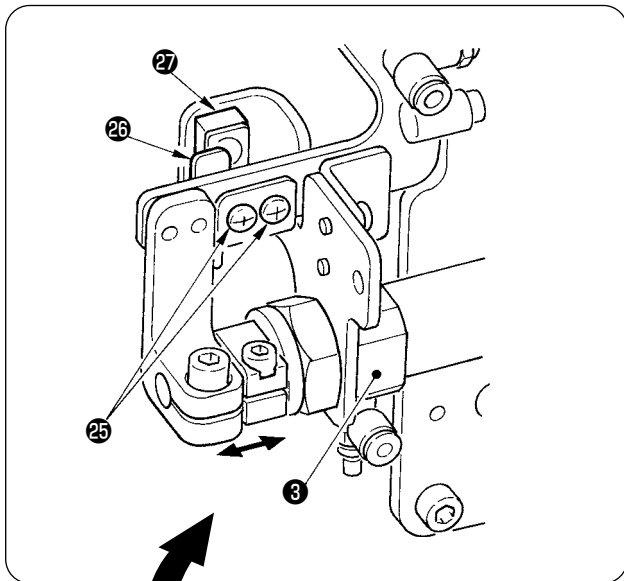
11. Adjusting the thread trimmer sensor

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

- 1) Loosen setscrews 25.
- 2) Adjust switch plate 26 so that LED of thread trimmer sensor 27 lights up in the state that the thread trimmer device is fully returned to its home position.
- 3) Tighten setscrews 25.



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



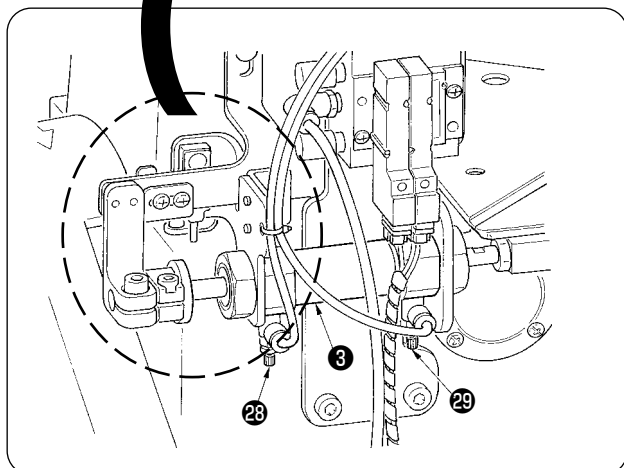
12. Adjusting the speed of lower thread trimmer (UT45)

Speed of the lower thread trimmer device can be changed with speed controllers 28 and 29 of air cylinder 3.

- 1) When you desire to change the protruding speed of lower knife, loosen the nut of speed controller 28, and turn the adjustment screw. When you desire to change the returning speed of lower knife, loosen the nut of speed controller 29, and turn the adjustment screw.
- 2) After the adjustment, tighten the nuts of speed controllers 28 and 29.



- When the protruding speed of lower knife is slow, thread trimming failure will be caused.
- When the returning speed of lower knife is fast, lower thread clamp failure or uneven needle thread remaining length will be caused.



VII. ADJUSTING THE THREAD RELEASE MECHANISM

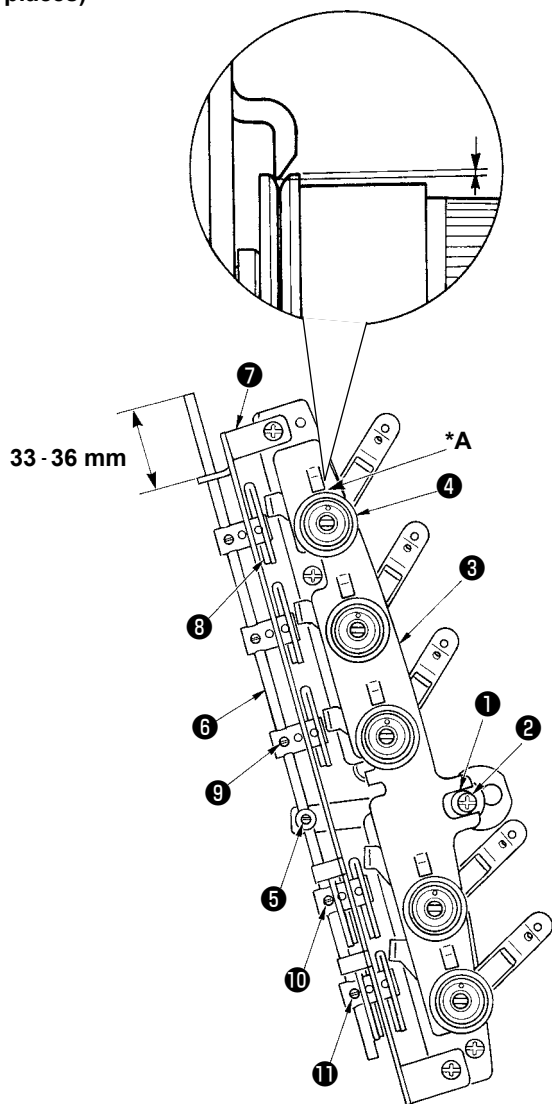


WARNING :

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. In addition, cut the air supply from air compressor. (UT45)

*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 the dimension from the top end of thread release rod ⑥ to the top end of thread guide ⑦ to 33 to 36 mm, and 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.



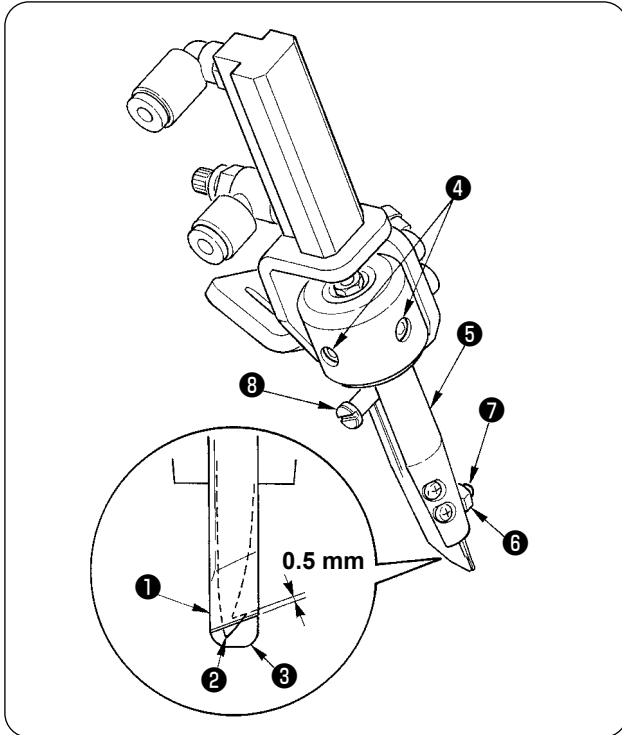
When the thread remaining length at the start of sewing is short, stitch skipping or slip-off of thread from needle eyelet at the start of sewing is apt to occur.

VIII. ADJUSTING THE TOP COVERING THREAD TRIMMER MECHANISM (UT45)



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. In addition, cut the air supply from air compressor.



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 set-screws ④ and move knife holder ⑤ up or down to adjust.

2. Adjusting the pressure of clamp spring

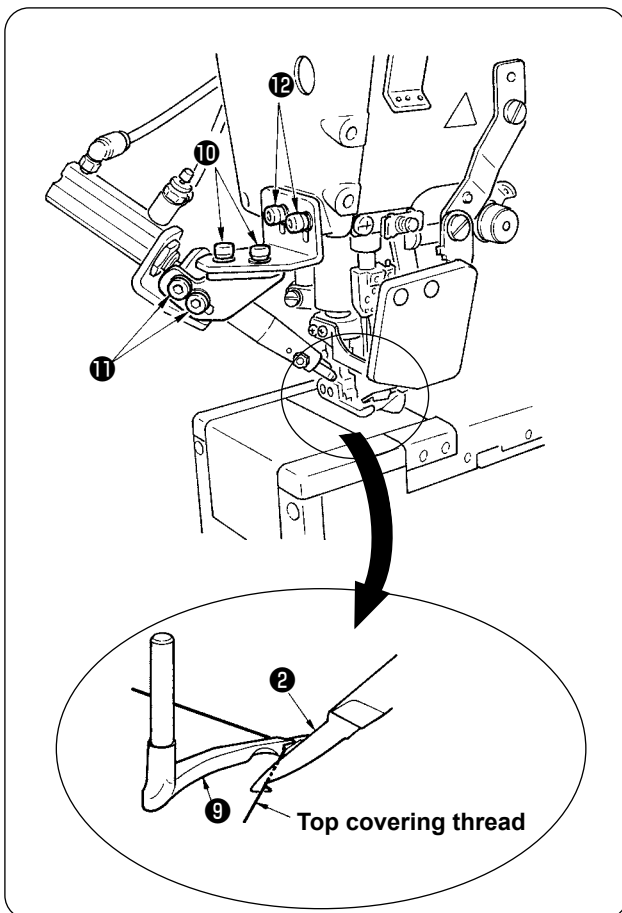
- 1) Top covering thread is held with clamp spring ③ after thread trimming.
- 2) Holding pressure can be adjusted by loosening nut ⑥ and turning screw ⑦ .
- 3) Holding pressure is increased when tightening screw ⑦ and it is decreased when loosening screw ⑦ .
- 4) After the adjustment, tighten nut ⑥ .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

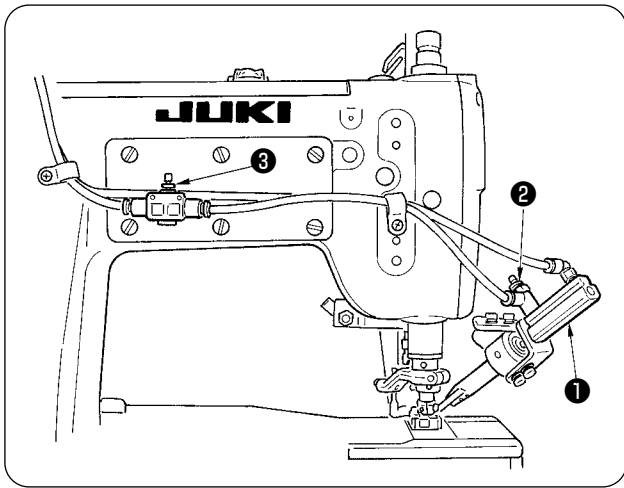
3. Adjusting the position of the blade point of moving knife

- 1) Bring the needle bar to its highest position.
- 2) When hinge screw ⑧ is lowered, moving knife ② lowers together.
- 3) Adjust the moving knife to the position where the hook section of moving knife ② enters the concave of the bottom surface of spreader ⑨ and catches the top covering thread in the state that moving knife ② is fully lowered. After the adjustment, tighten screws ⑩ ⑪ and ⑫ .
- 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 .





4. Adjusting the speed of moving knife

Stroke of air cylinder ① is 20 mm.

Speed of the moving knife can be changed with speed controllers ② and ③ .

1) When you desire to change the protruding speed of moving knife, loosen the nut of speed controller ② and turn the adjustment screw.

When you desire to change the returning speed of moving knife, loosen the nut of speed controller ③ and turn the adjustment screw.

2) After the adjustment, tighten the nuts of speed controllers ② and ③ .



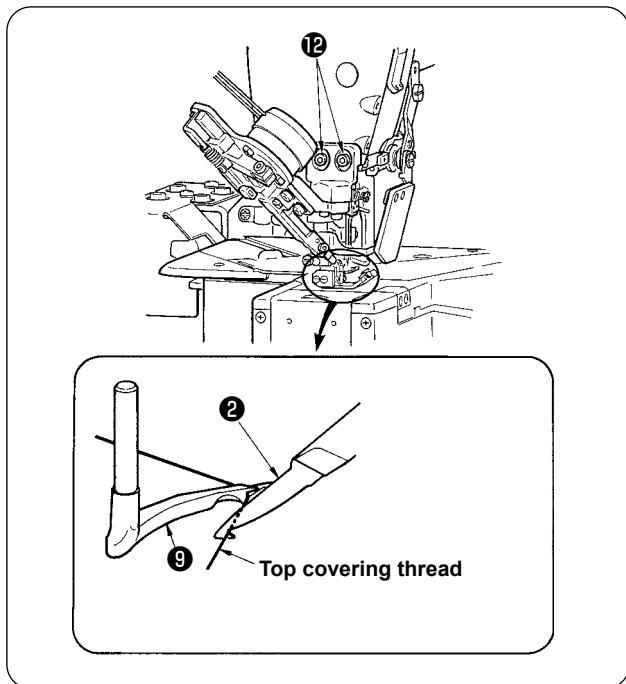
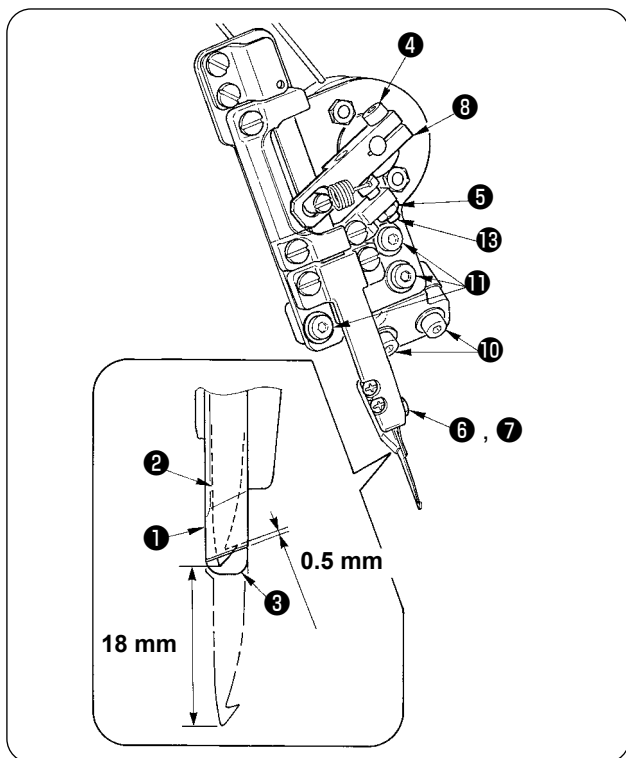
- When the protruding speed of moving knife is slow, thread trimming failure will be caused.
- When the returning speed of moving knife is fast, needle thread clamp failure will be caused.

IX. ADJUSTING THE TOP COVERING THREAD TRIMMER MECHANISM (UT42)



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 knife

- 1) Adjust so that the engagement of fixed knife ① with moving knife ② is 0.5 mm.
- 2) When adjusting the engagement, loosen set-screw ④ and adjust lever ⑧ .

2. Adjusting the moving knife stroke

- 1) Adjust so that the stroke of moving knife is 18 mm.
- 2) Loosen nut ⑤ , adjust screw for the stopper ⑬ , and adjust the stroke of moving knife ② .



Perform the adjustment of the stroke of moving knife after adjusting the engagement of the knives.

3. 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.

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

- 1) Bring the needle bar to its highest position.
- 2) When lever ⑧ is lowered, moving knife ② lowers together.
- 3) Adjust the moving knife to the position where the hook section of moving knife ② enters the concave of the bottom surface of spreader ⑨ and catches the top covering thread in the state that moving knife ② is fully lowered. After the adjustment, tighten screws ⑩ ⑪ and ⑫ .
- 4) Screw ⑩ is for adjusting the lateral position of knife, screw ⑪ for adjusting the angle of knife, and screw ⑫ for adjusting the vertical position of 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 .

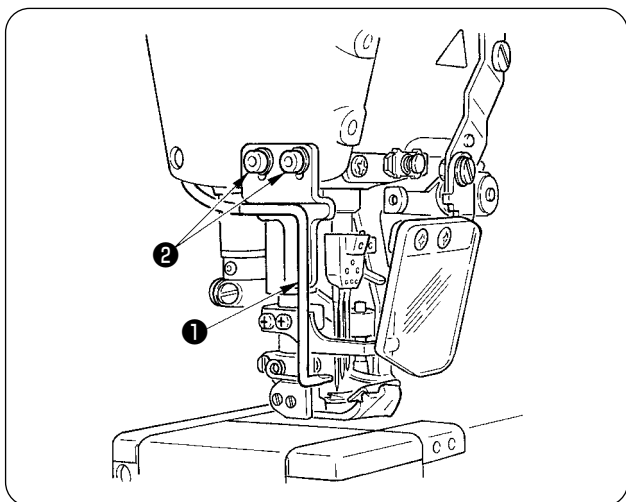
X. ADJUSTING THE AIR-BLOW WIPER (UT45)



WARNING :

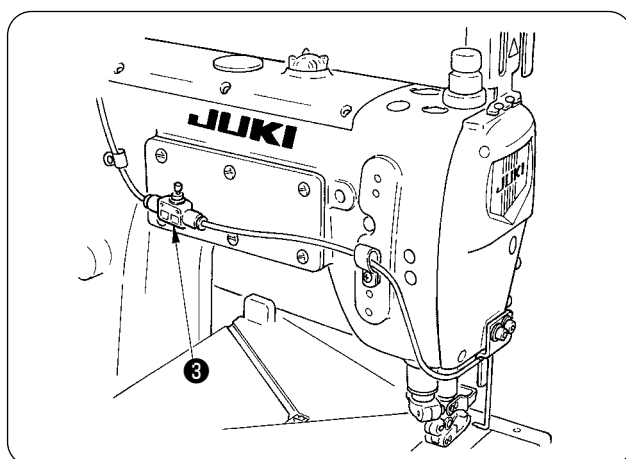
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest. In addition, cut the air supply from air compressor.

1. Installing the air-blow wiper



- 1) When using air-blow wiper ①, remove the top covering thread trimmer device.
- 2) Tighten air-blow wiper ① with setscrews ②.
- 3) Perform piping referring to “IV. AIR PIPING DRAWING (UT45)”.

2. Adjusting the air-blow wiper



Adjust the air-blow position of air-blow wiper ①.

- 1) Adjust so that the air outlet of air-blow wiper ① is positioned in the rear of needle and slightly on the lower side of needle eyelet of the left needle when the needle bar is in the highest position.
- 2) After the adjustment, temporarily tighten setscrews ②.
- 3) Supply air from the air compressor and turn the power ON.
- 4) When the back part of the pedal of sewing machine is depressed, the presser goes up and simultaneously air blows from air-blow wiper ①. Re-adjust the position of air-blow wiper ① so that air blows only to the needle thread in the rear of the needle eyelet.
- 5) After the re-adjustment, tighten setscrews ②.



- When air blows in front of the needle, needle thread slips from the needle eyelet. So, be careful.
- Adjust the air-blow strength with speed controller ③.
- Handwheel may rotate up to the fixed position when turning ON the power. So, be careful.