

ENGLISH

**AK-157
INSTRUCTION MANUAL**

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1. FEATURES

This is the auto-lifter incorporating the cam which is driven by the stepping motor.

- ① After the presser foot is lifted by the auto-lifter, it is retained at its upper position by the cam. As a result, the power consumption is reduced.
 - ② Since this auto-lifter does not produce solenoid-like impact noise, the comfortable work environment is maintained.
 - ③ Function for reducing the presser foot pressure at the beginning of sewing
In the case the needle thread cannot be brought under the material while the thread presser device (NB device) is used, the assistance function that reduces the presser foot pressure at the beginning of sewing to allow the needle thread to be smoothly brought under the material can be set.
- * Refer to [Handling of troubles that occur at the beginning of sewing] in "**5-2. Adjusting the needle thread presser device**" in the Instruction Manual for how to set the assistance function.

2. INSTALLATION

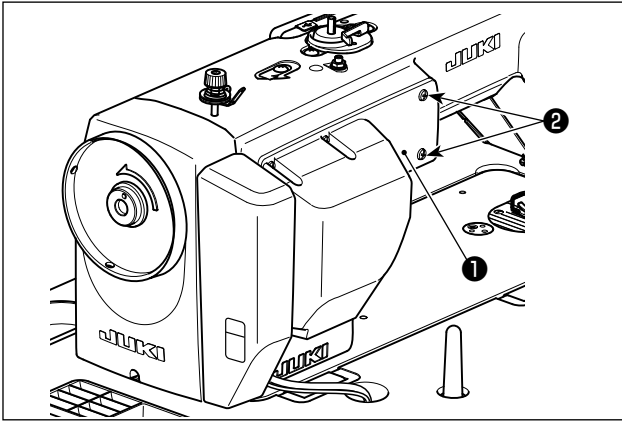
* For the AK device which is purchased in the shipped state, it has already been factory-adjusted.



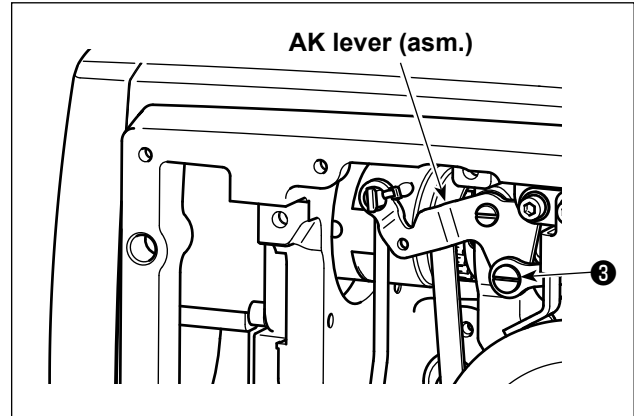
WARNING :

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

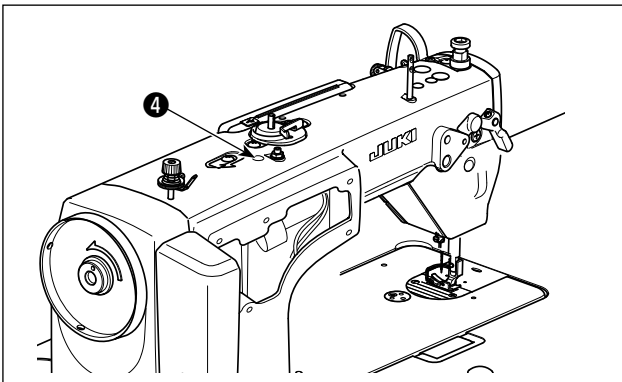
(1) Replacing the AK lever (asm.)



1) Loosen setscrew **2** of side plate **1**. Remove side plate **1**.



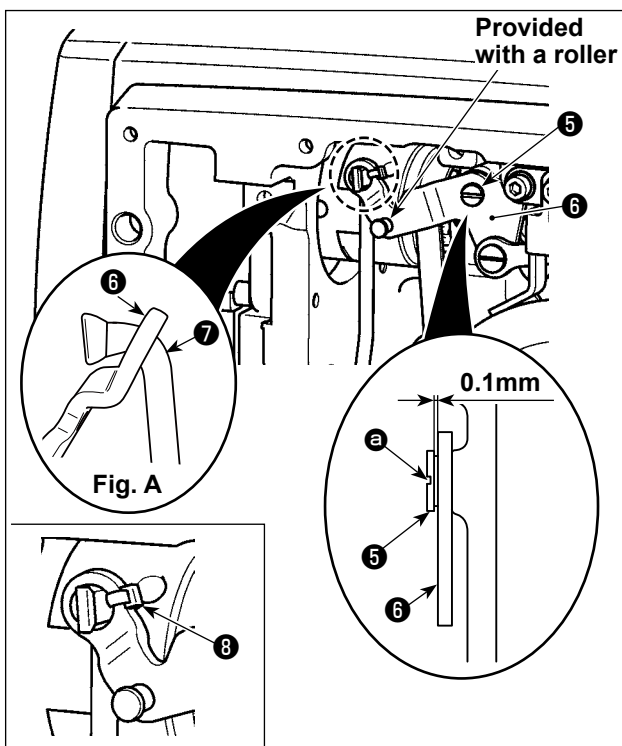
2) Remove knee-lifter bar hinge screw **3**.



3) Loosen presser-lever fulcrum shaft setscrew **4** from above the top of the arm. Remove presser-lever fulcrum shaft **5**.

4) Install AK lever asm. **6** which is provided with a roller instead of the removed parts.

5) Attach knee-lifter connecting rod **7** to the AK lever. Fix cable clip band **8** in the hole through which knee-lifter connecting rod **7** of AK lever is to be passed through. Then, insert knee-lifter connecting rod **7** into the cable clip band.



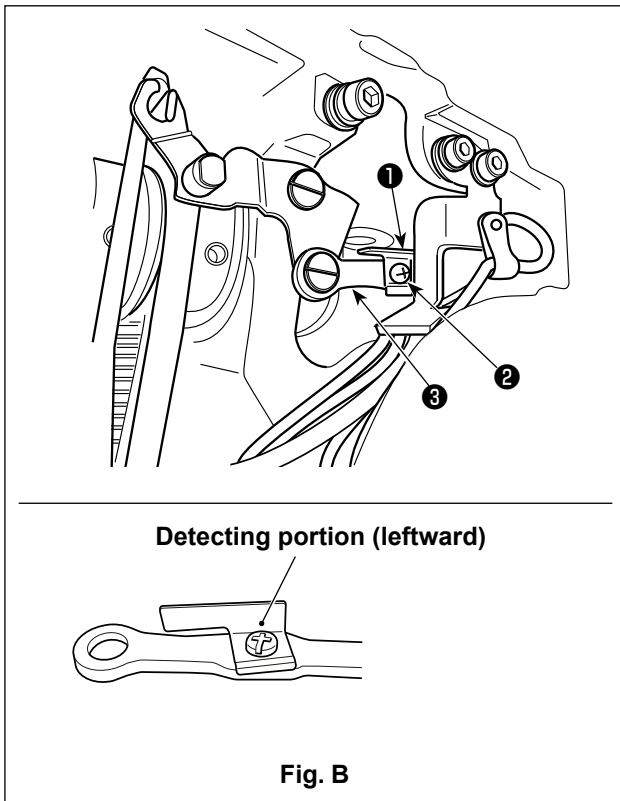
1. Apply the grease supplied with the unit to each joining section.

2. Press AK lever asm. **6** against the sewing machine frame. Then, move the former so that it is spaced 0.1 mm from the latter. In this state, fasten presser lever fulcrum shaft setscrew **4** to secure presser lever fulcrum shaft **5**.

Check to make sure that AK lever asm. **6** moves smoothly.

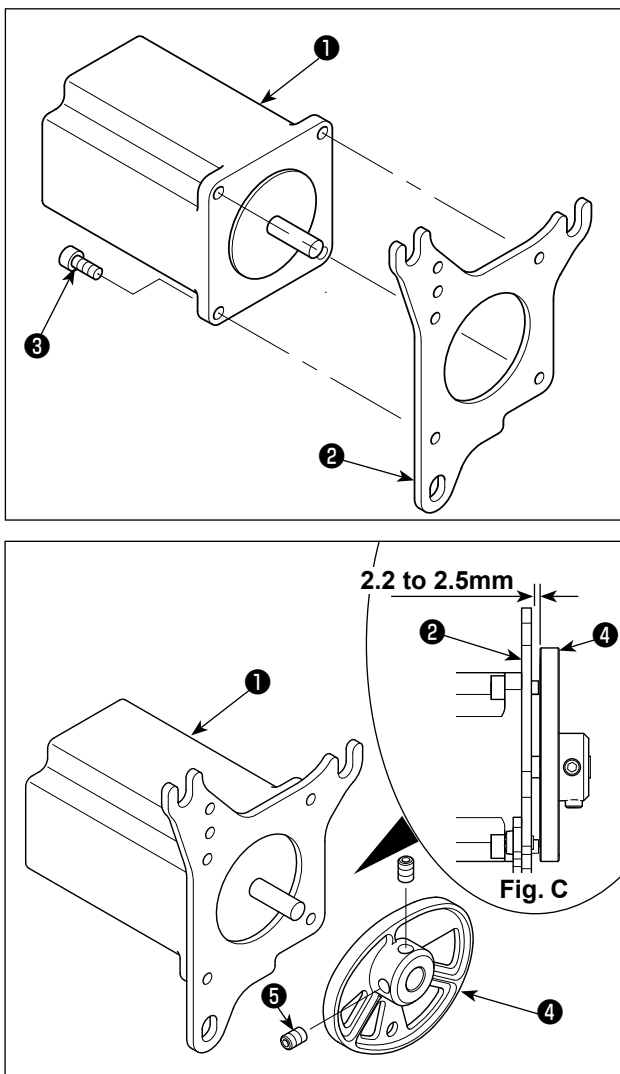
Check to make sure that the slit **a** in presser lever fulcrum shaft **5** is positioned horizontally.

(2) Installing the presser sensor detection plate



- 1) Attach presser detector plate ① to knee lifter link plate ③ with screw ② .
At this time, the orientation of presser detector plate ① should be as shown in Fig. B

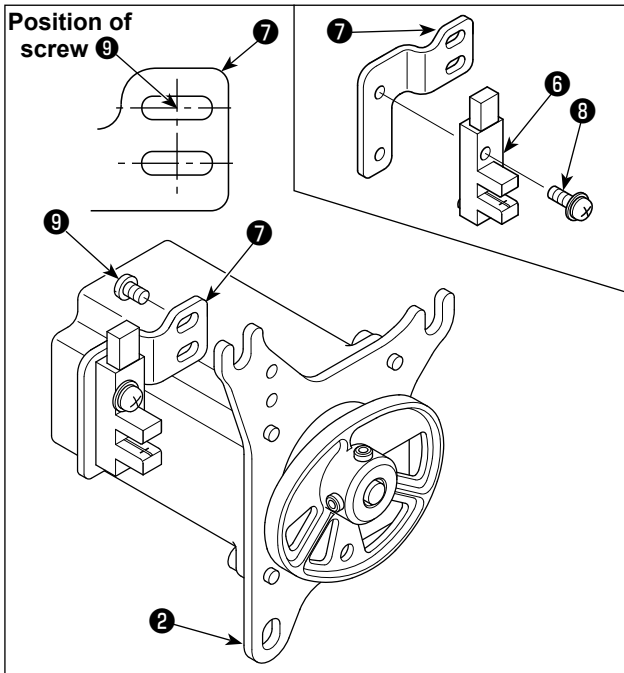
(3) Subassembling the AK motor



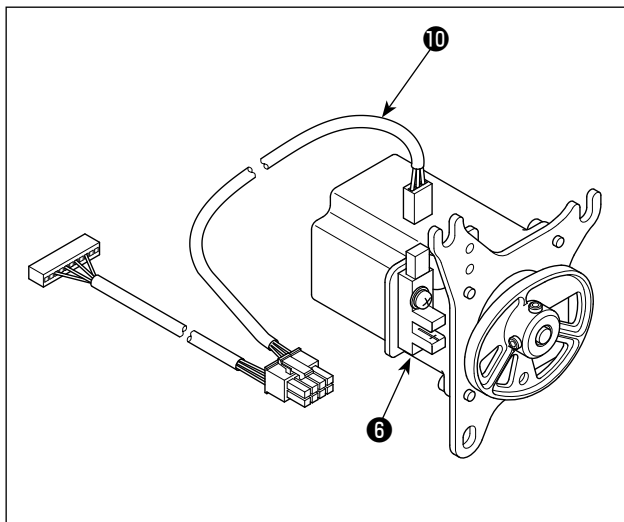
- 1) Attach presser lifter motor ① to motor mounting plate ② with four hexagon socket head bolts ③ .

- 2) Attach cam ④ to presser lifter motor ① with setscrew ⑤ .
At this time, adjust the clearance provided between motor mounting plate ② and cam ④ to 2.2 to 2.5 mm.
(See Fig. C.)

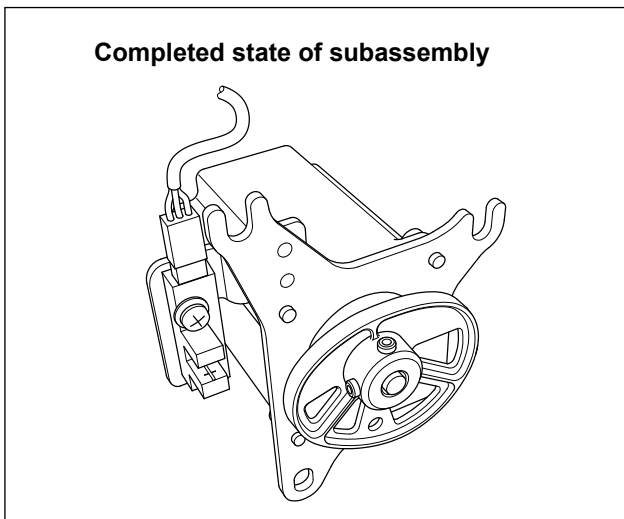
* It is recommended to sub-assemble the parts while putting a 2.5-mm hexagonal wrench key between the motor mounting plate and cam to obtain the clearance of 2.2 to 2.5 mm.



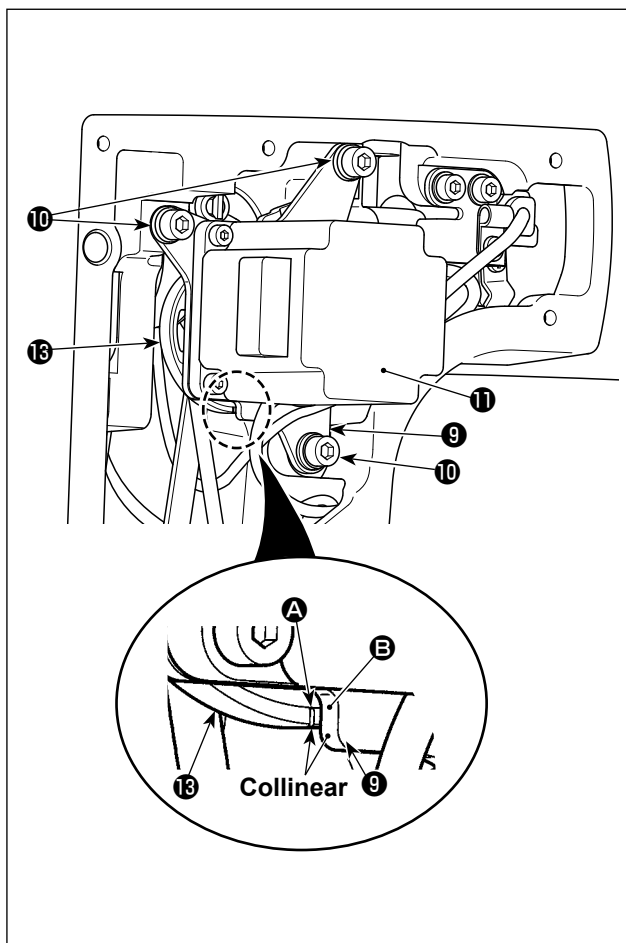
- 3) Attach sensor 6 to sensor mounting plate 7 with screw with washer 8 .
Attach sensor mounting plate 7 to motor mounting plate 2 with screw 9 .
At this time, attach the sensor mounting plate 7 by tightening screw 9 at its center of slot.



- 4) Connect junction cable 10 to sensor 6 .



(4) Installing the AK motor

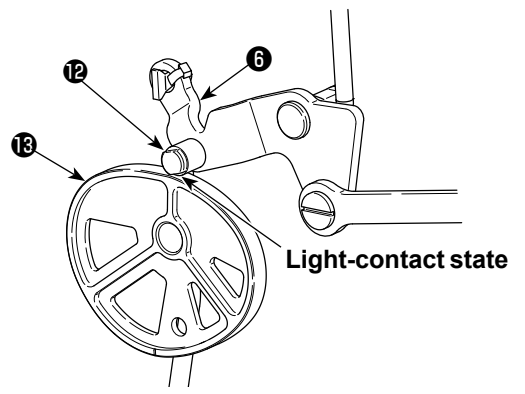
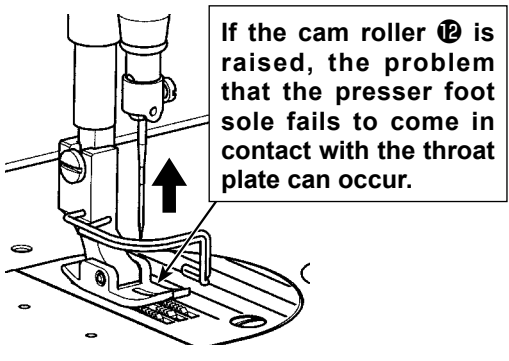


- 1) There is a marker line on the surface of cam 13. Adjust so that marker line A on the cam and end face B of motor fixing plate 9 are collinear to each other.
- 2) Temporarily fix presser motor asm. 11 with three presser motor asm. setscrews 10. At this time, move presser motor asm. 11 up and down to adjust its position to such a position that it does not lift up cam roller 12. (After the adjustment, the presser foot is in the floating state.)

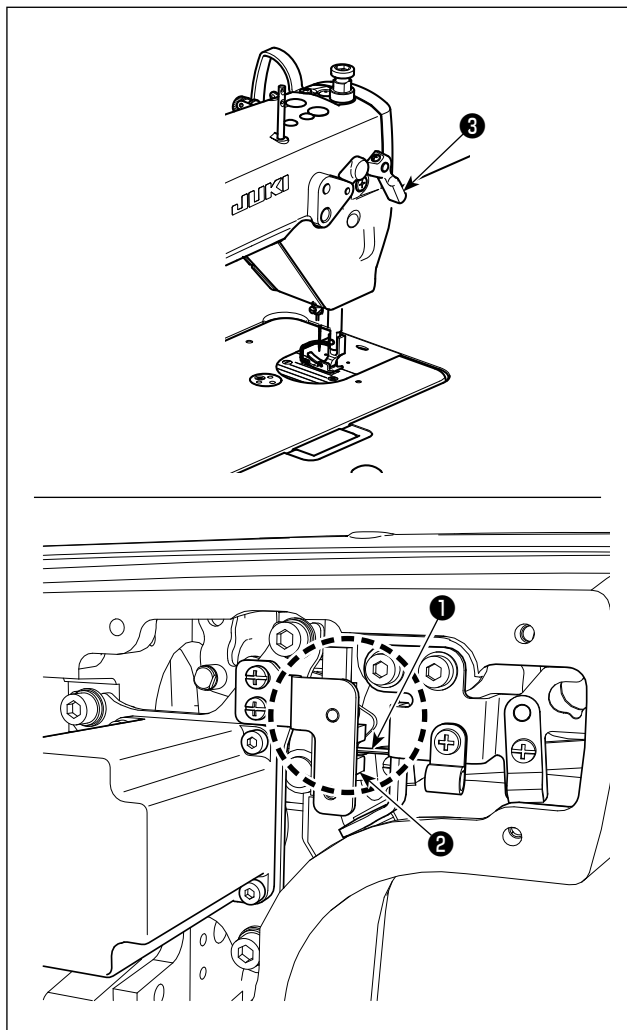
Adjust presser motor asm. 11 so that cables and wires located inside the sewing machine are positioned above the fixing plate 9. If the cables and wires are positioned under the fixing plate 9, they will interfere with the cam 13.



Securely tighten three presser motor asm. setscrews 10 while bringing cam roller 12 and cam 13 into light contact with each other. (Check to make sure that the presser foot sole does not float above the feed dog.)

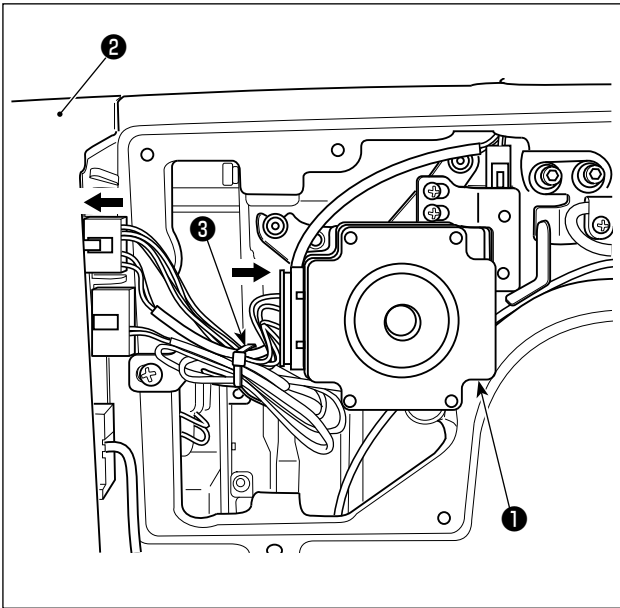


(5) Checking the assembly



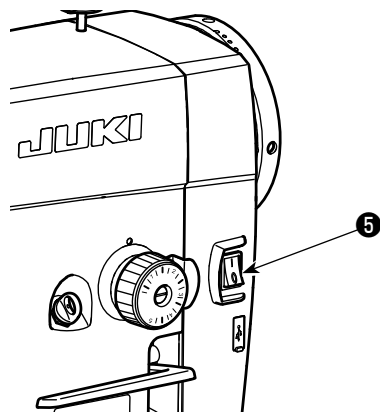
- 1) Operate presser foot lifting lever ③ to check to make sure that detector plate ① does not interfere with sensor ② .

(6) Connection

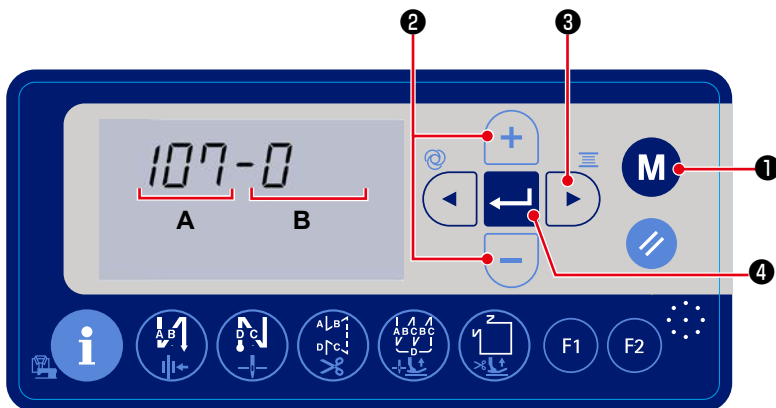


- 1) Connect the junction cable connector to presser foot lifting motor **1** and electrical box **2**. Bind the extra length of cable with cable clip band **3**.

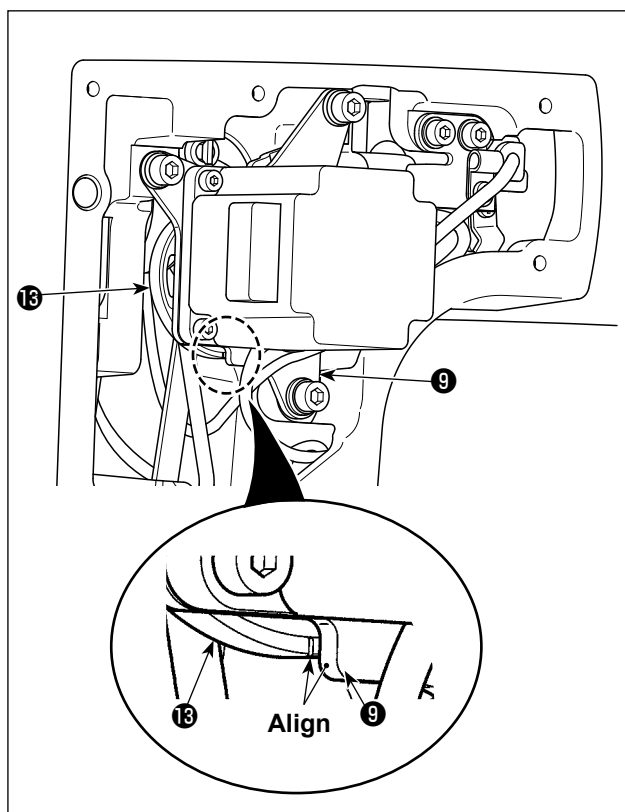
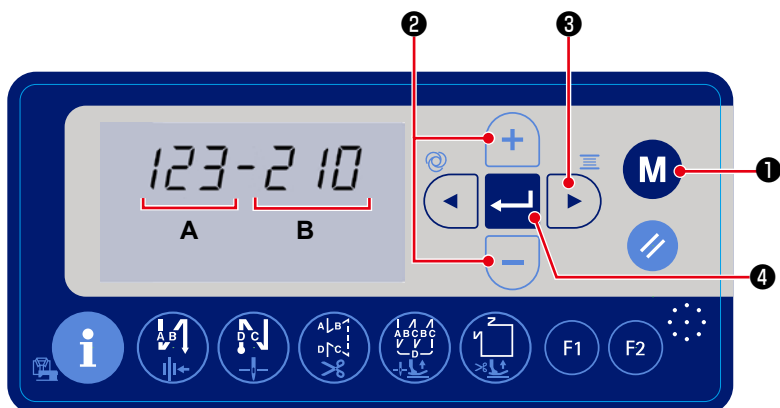
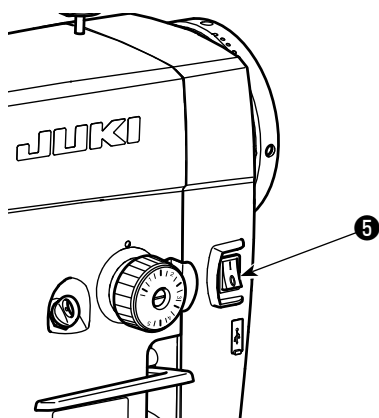
(7) Selecting with / without the AK device



- 1) Turn power **5** ON while keeping **M** **1** held pressed. The function setting screen is displayed.
- 2) Press **+** **-** **2** to set setting No. **A** to "107". Then, press **▶** **3** to flash set value **B** ON and OFF.
- 3) Press **+** **-** **2** to set the set value **B** to "0". Then, press **↵** **4**.



(8) Adjusting the sensor



1) Turn power 5 ON while keeping **M** 1 held pressed. The function setting screen is displayed.

2) Press **M** 1.

The screen is changed over to the sewing mode screen.

3) Depress the back part of pedal. The origin is retrieved and the presser foot is held at its upper position. Depress the back part of pedal again to lift the presser foot.

4) Keep **M** 1 held pressed.

The function setting screen is displayed.

5) While the function setting No. flashes ON and OFF, press **+**

- 2 to set the function setting No. A to "123".

6) Press **▶** 3 to flash set value B ON and OFF.

Press **+** **-** 2. Then the cam rotates by the number of pulses corresponding to the number of times you have pressed **+**

- 2 by pressing **←** 4.

Adjust so that the marker line on the cam 13 is aligned with the edge of plate 9.

* If you have failed to follow the correct step of procedure in the middle of operation, do not press **←** 4. Instead, press **M** 1 to exit from the function setting screen.

With the aforementioned measure, it is possible to exit from the function setting screen without saving the data you have changed.