

ENGLISH

AK-131A/160B
INSTRUCTION MANUAL

No. 40317448

Rev.00

How to install the automatic presser lifter



WARNING :

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

Installation of the automatic presser lifter

1) AK-131A (knee switch type)

Loosen the window plate A setscrews ① (eight places) and the window plate B setscrew ② (one place) on the counter-operator side of the arm to remove the window plates A and B. (Figs. 1 and 2)

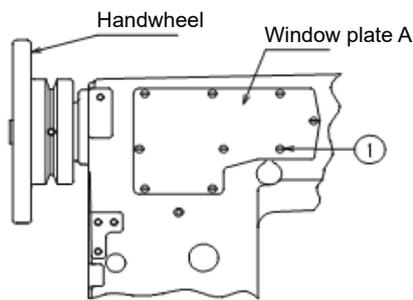


Fig. 1

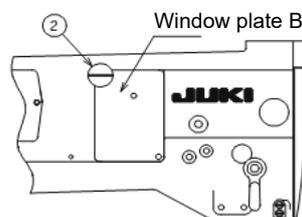


Fig. 2

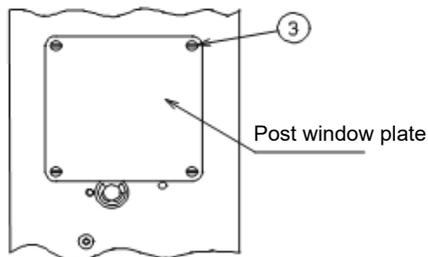


Fig. 3

Loosen the post window plate setscrews ③ (four places) on the counter-operator side of the post and remove the post window plate. (Fig. 3)

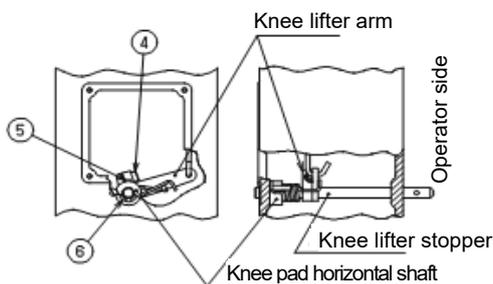


Fig. 4

Loosen the knee lifter arm tightening screw ④ (one place) and the knee lifter stopper setscrew ⑤ (one place). (Fig. 4)

Remove the E-ring ⑥ (one place) attached to the end of the knee pad horizontal shaft and pull out the knee pad horizontal shaft towards the operator. At this time, support the knee lifter arm, knee lifter stopper and the knee lifter spring with your hands to prevent them from falling. (Fig. 4)

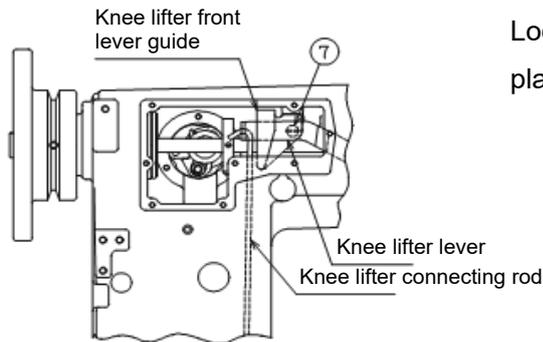


Fig. 5

Loosen the knee lifter front lever guide setscrew ⑦ (one place) and remove the knee lifter front lever guide. (Fig. 5)

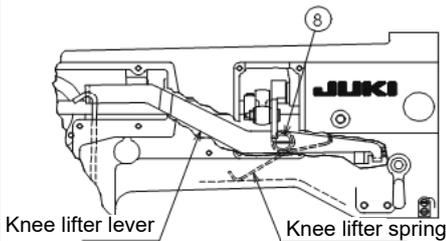


Fig. 6

Remove the knee lifter spring hooked on the knee lifter lever and loosen the knee lifter lever hinge screw ⑧ (one place). After this, remove the knee lifter connecting rod fitted into the end hole of the knee lifter lever from the knee lifter lever, and remove the knee lifter lever and the knee lifter connecting rod from inside the arm. (Figs. 5 and 6)

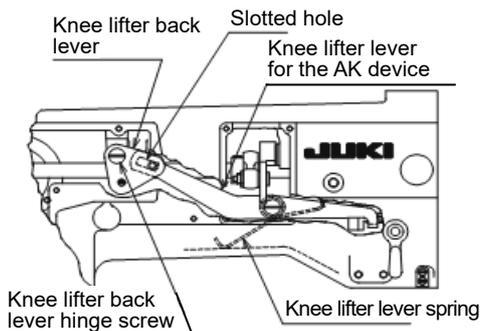


Fig. 7

Secure the knee lifter lever for the AK device in the position of the knee lifter lever removed in the previous step with the knee lifter lever hinge screw, and attach the knee lifter lever spring. (Fig. 7)

With the shaft part of the knee lifter back lever (the part with the roller fitted into the shaft) inserted into the slotted hole of the knee lifter lever, secure the knee lifter back lever with the knee lifter back lever hinge screw for the AK device. (Fig. 7)

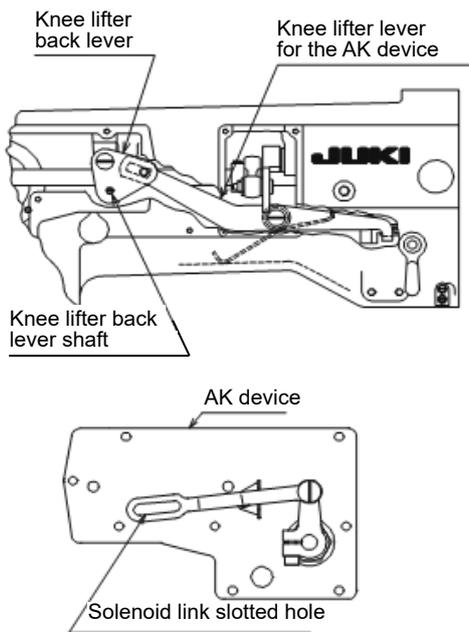


Fig. 8

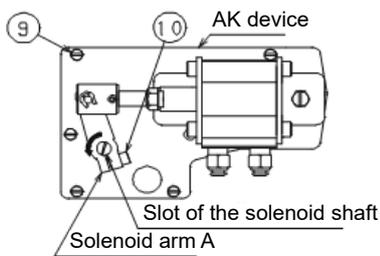


Fig. 9

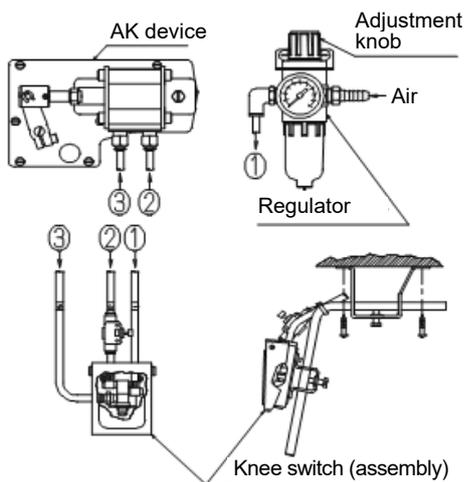


Fig. 10

Install the AK device by fitting the shaft of the knee lifter back lever into the slotted hole of the solenoid link of the AK device, and secure it with the AK device setscrews ⑨ (seven places). After this, with the solenoid arm A tightening screw ⑩ (one place) loosened, insert a screwdriver into the slot on the end face of the solenoid shaft of the AK device and turn it in the direction of the arrow. If the presser foot rises, the AK device is installed correctly.

If the presser foot does not rise, it is likely that the shaft of the knee lifter back lever does not fit into the slotted hole of the AK device's solenoid link, so reinstall the AK device. (Figs. 8 and 9)

Attach the knee switch (assembly) and regulator to the table and table legs. (Fig. 10)

As shown in the figure, insert the air tube included with the AK device into the quick fittings of the AK device, knee switch (assembly), and the regulator. (Fig. 10)

Insert the air tube into the air fitting of the regulator and turn the regulator's air pressure adjustment knob to adjust the air pressure to 0.4 to 0.5 MPa (4 to 5 kgf/cm²). (Fig. 10)

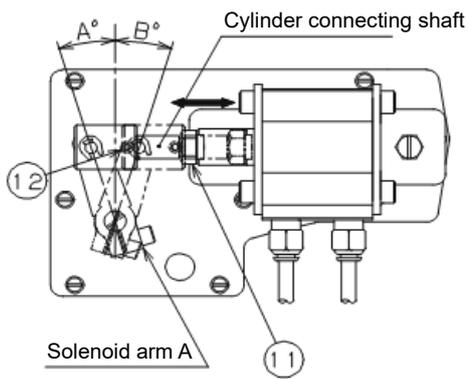


Fig. 11

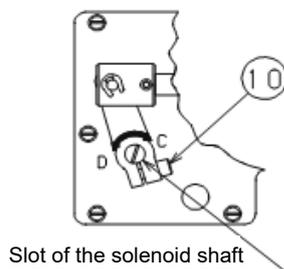


Fig. 12

Activate the knee switch (assembly) to move the air cylinder. At this time, visually check that the operating angles A and B of the solenoid arm A are equal. If they are not equal, loosen the cylinder connecting shaft nut ⑪ (one place) and solenoid collar setscrew ⑫ (one place), turn the cylinder connecting shaft, and adjust solenoid arm operating angles A and B so that they are equal. After adjustment, tighten the cylinder connecting shaft nut ⑪ (one place) and the solenoid collar setscrew ⑫ (one place). (Fig. 11)

Tighten the solenoid arm A tightening screw ⑩ (one place) to secure the solenoid arm A. Then, activate the knee switch and check the presser lifting amount. The presser lifting amount varies depending on the specifications of the sewing machine, so check the "Presser lifting amount by model" table below. If it is significantly different from the standard adjustment value, loosen the solenoid arm A tightening screw ⑩ (one place), insert a screwdriver into the slot on the end face of the solenoid shaft, turn the solenoid shaft, and tighten the solenoid arm A tightening screw ⑩ (one place). Then activate the knee switch (assembly) again and check the presser lifting amount. (Fig. 12)

Turning the solenoid shaft in the C direction decreases the presser lifting amount, and turning it in the D direction increases the presser lifting amount.

Secure the post window plate to the counter-operator side of the post with the setscrews ③ (four places). (Fig. 3)

Secure the window plate A to the counter-operator side of the arm with the setscrews ① (eight places) and the window plate B with the setscrew ② (one place). (Figs. 1 and 2)

Presser lifting amount by model

Model	PLC-1690		PLC-1691
Type of throat plate	Flat type (Standard)	Curved type (Optional)	Curved type (Standard)
Presser lifting amount	15 mm	10.5 mm	10.5 mm



WARNING :

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

2) AK-160B (pedal switch type)

Loosen the window plate A setscrews ① (eight places) and the window plate B setscrew ② (one place) on the counter-operator side of the arm to remove the window plates A and B. (Figs. 13 and 14)

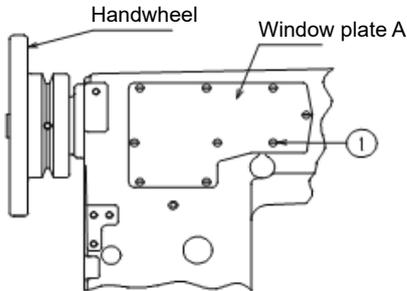


Fig. 13

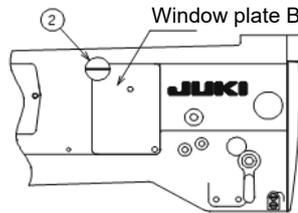


Fig. 14

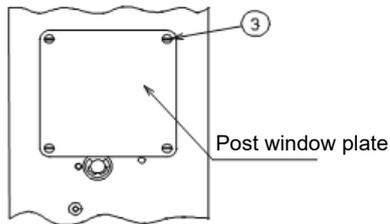


Fig. 15

Loosen the post window plate setscrews ③ (four places) on the counter-operator side of the post and remove the post window plate. (Fig. 15)

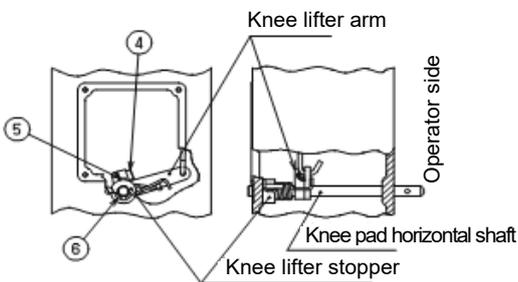


Fig. 16

Loosen the knee lifter arm tightening screw ④ (one place) and the knee lifter stopper setscrew ⑤ (one place). (Fig. 16)

Remove the E-ring ⑥ (one place) attached to the end of the knee pad horizontal shaft and pull out the knee pad horizontal shaft towards the operator. At this time, support the knee lifter arm, knee lifter stopper and the knee lifter spring with your hands to prevent them from falling. (Fig. 16)

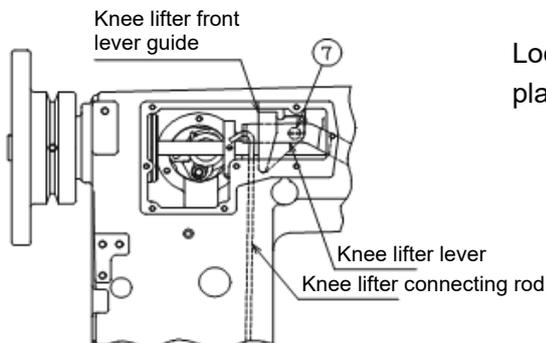


Fig. 17

Loosen the knee lifter front lever guide setscrew ⑦ (one place) and remove the knee lifter front lever guide. (Fig. 17)

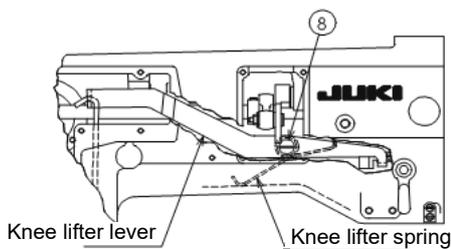


Fig. 18

Remove the knee lifter spring hooked on the knee lifter lever and loosen the knee lifter lever hinge screw ⑧ (one place). After this, remove the knee lifter connecting rod fitted into the end hole of the knee lifter lever from the knee lifter lever, and remove the knee lifter lever and the knee lifter connecting rod from inside the arm. (Figs. 17 and 18)

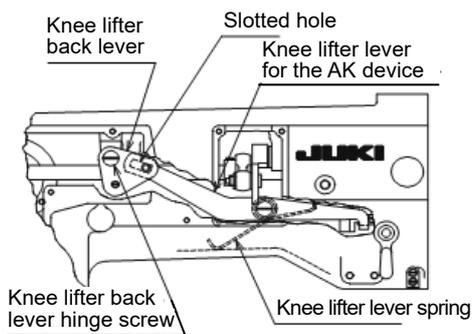


Fig. 19

Secure the knee lifter lever for the AK device in the position of the knee lifter lever removed in the previous step with the knee lifter lever hinge screw, and attach the knee lifter lever spring. (Fig. 19)

With the shaft part of the knee lifter back lever (the part with the roller fitted into the shaft) inserted into the slotted hole of the knee lifter lever, secure the knee lifter back lever with the hinge screw for the AK device. (Fig. 19)

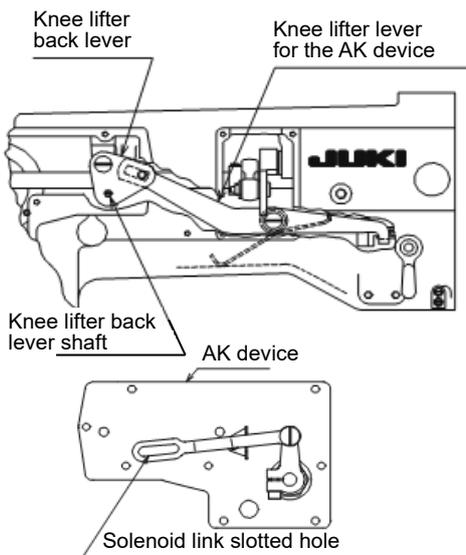


Fig. 20

Install the AK device by fitting the shaft of the knee lifter back lever into the slotted hole of the solenoid link of the AK device, and secure it with the AK device setscrews ⑨ (seven places). After this, with the solenoid arm A tightening screw ⑩ (one place) loosened, insert a screwdriver into the slot on the end face of the solenoid shaft of the AK device and turn it in the direction of the arrow. If the presser foot rises, the AK device is installed correctly.

If the presser foot does not rise, it is likely that the shaft of the knee lifter back lever does not fit into the slotted hole of the AK device's solenoid link, so reinstall the AK device. (Figs. 20 and 21)

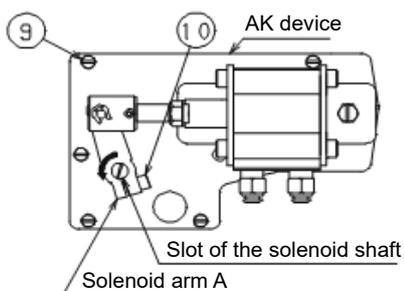


Fig. 21

Install the air-related parts (assembly) to the table. (Fig. 22)

As shown in the figure, insert the air tube included with the AK device into the quick fittings of the AK device and air-related parts (assembly). (Fig. 22)

Connect the wiring from the solenoid valve of the air-related parts (assembly) to the motor being used. For details, refer to the instruction manual of the motor. (Fig. 22)

Insert the air tube into the air fitting of the air-related parts (assembly) and turn the regulator's air pressure adjustment knob to adjust the air pressure to 0.4 to 0.5 MPa (4 to 5 kgf/cm²). (Fig. 22)

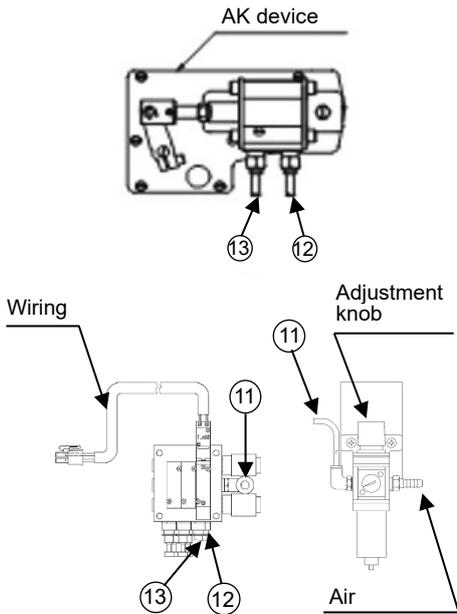


Fig. 22

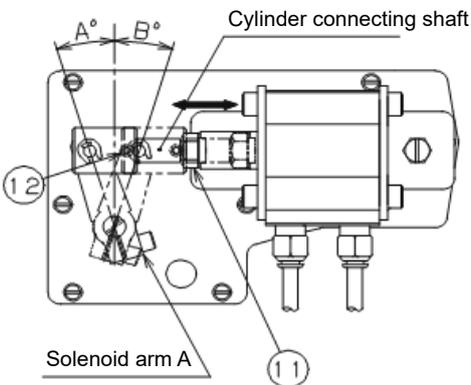


Fig. 23

Turn on the motor and depress the back part of the pedal to move the air cylinder. At this time, visually check that the operating angles A and B of the solenoid arm A are equal. If they are not equal, loosen the cylinder connecting shaft nut ⑪ (one place) and solenoid collar setscrew ⑫ (one place), turn the cylinder connecting shaft, and adjust solenoid arm operating angles A and B so that they are equal. After adjustment, tighten the cylinder connecting shaft nut ⑪ (one place) and the solenoid collar setscrew ⑫ (one place). (Fig. 23)

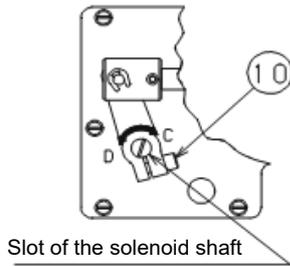


Fig. 24

Tighten the solenoid arm A tightening screw to secure the solenoid arm A. Then, depress the back part of the pedal and check the presser lifting amount. The presser lifting amount varies depending on the specifications of the sewing machine, so check the “Presser lifting amount by model” table below. If it is significantly different from the standard adjustment value, loosen the solenoid arm A tightening screw ⑩ (one place), insert a screwdriver into the slot on the end face of the solenoid shaft, turn the solenoid shaft, and tighten the solenoid arm A tightening screw ⑩ (one place). Then depress the back part of the pedal again and check the presser lifting amount. (Fig. 24)

Turning the solenoid shaft in the C direction decreases the presser lifting amount, and turning it in the D direction increases the presser lifting amount.

Secure the post window plate to the counter-operator side of the post with the setscrews ③ (four places). (Fig. 15)

Secure the window plate A to the counter-operator side of the arm with the setscrews ① (eight places) and the window plate B with the setscrew ② (one place). (Figs. 13 and 14)

Presser lifting amount by model

Model	PLC-1690		PLC-1691
Type of throat plate	Flat type (Standard)	Curved type (Optional)	Curved type (Standard)
Presser lifting amount	15 mm	10.5 mm	10.5 mm