JUKI

1-NEEDLE, UNISON FEED LOCKSTITCH MACHINE
WITH AUTOMATIC THREAD TRIMMER

DNU-241H-6

INSTRUCTION MANUAL

No.00

19557305

Congratulations on your purchase of the JUKI sewing machine.
Please read this Instruction Manual and the Instruction Manual of the K7H motor carefully before using this machine in order to get the most out of it and to enjoy using it for a long time.

BEFORE OPERATION

1. Never operate your machine unless its oil pan has been filled with oil.
2. After setting up your machine, check the rotational direction of the motor. To do this, turn the handwheel by hand to bring the needle down, and turn the power switch ON while observing the handhweel. (The handwheel should turn counterclockwise as observed from the handwheel side.)
3. For the first month, run the machine at a speed of 2,000 s.p.m. or less.
4. When carrying the machine, do not hold it by the synchronizer located at the rear of the handwheel.
5. Confirm that the voltage and phase (single- or 3-phase) are correct by checking them against the ratings shown on the motor nameplate.
6. Observe the standard thread trimming speed, 185 s.p.m.

OPERATION PRECAUTIONS

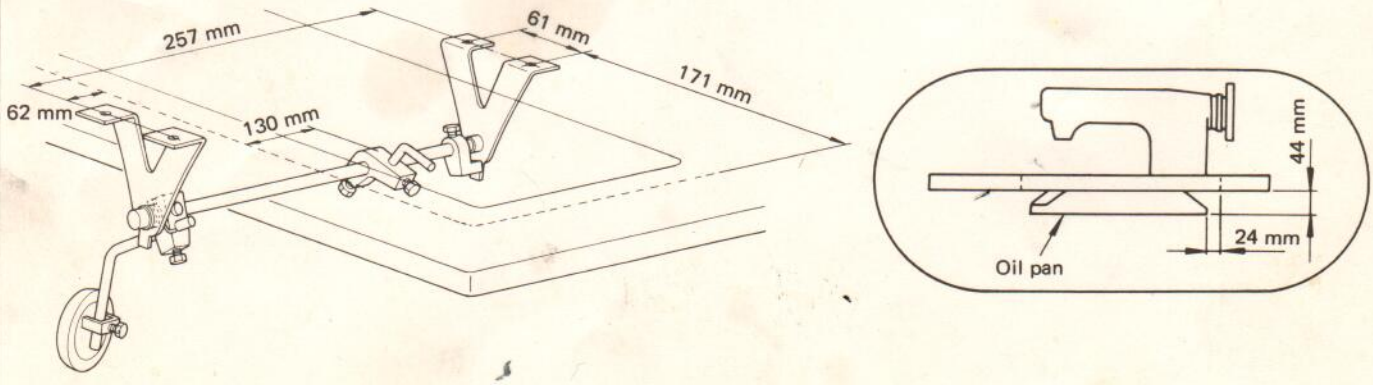
1. Keep your hands away from the needle when you turn the power switch ON or while the machine is operating.
2. Do not put your fingers into the thread take-up cover while the machine is operating.
3. Be sure to turn the power switch OFF before tilting the machine head or removing the V belt.
4. During 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.
5. 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.

SPECIFICATIONS

Application	Medium-weight, heavy-weight materials
Sewing speed	Max. 2,400 s.p.m.
Stitch length	0 to 8 mm
Needle	DP x 17 #23
Lift of presser foot	9 mm by hand lifter, 15 mm by knee lifter
Lubricating oil	New Defrix Oil No. 1

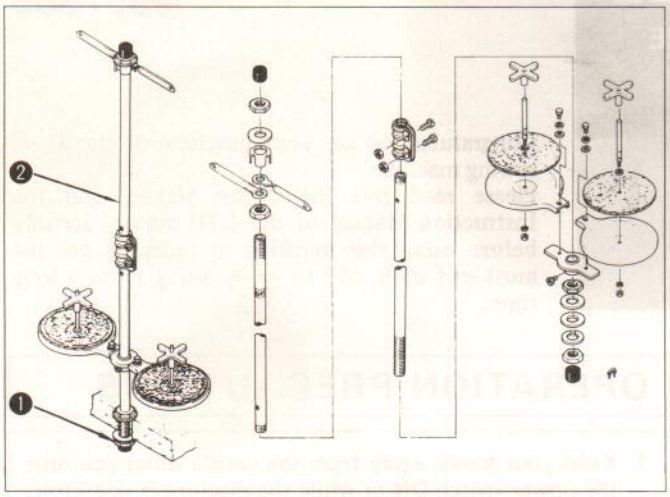
1. SETTING UP THE SEWING MACHINE

Mounting positions of the knee lifter and the oil pan



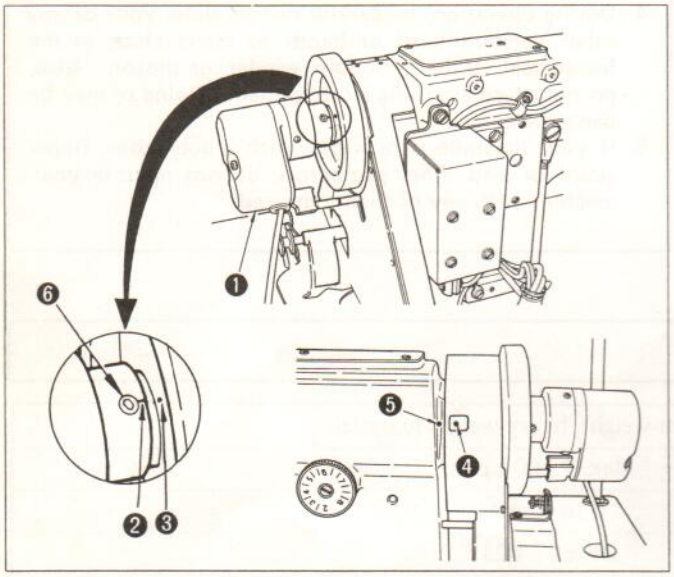
(Note) The knee lifter should be mounted before the motor is installed.

2. INSTALLING THE THREAD STAND



1. Assemble the thread stand, and insert it in the hole in the machine table, and fix it by tightening nut ❶ .
2. For ceiling wiring, pass the power cord through spool rest rod ❷ .

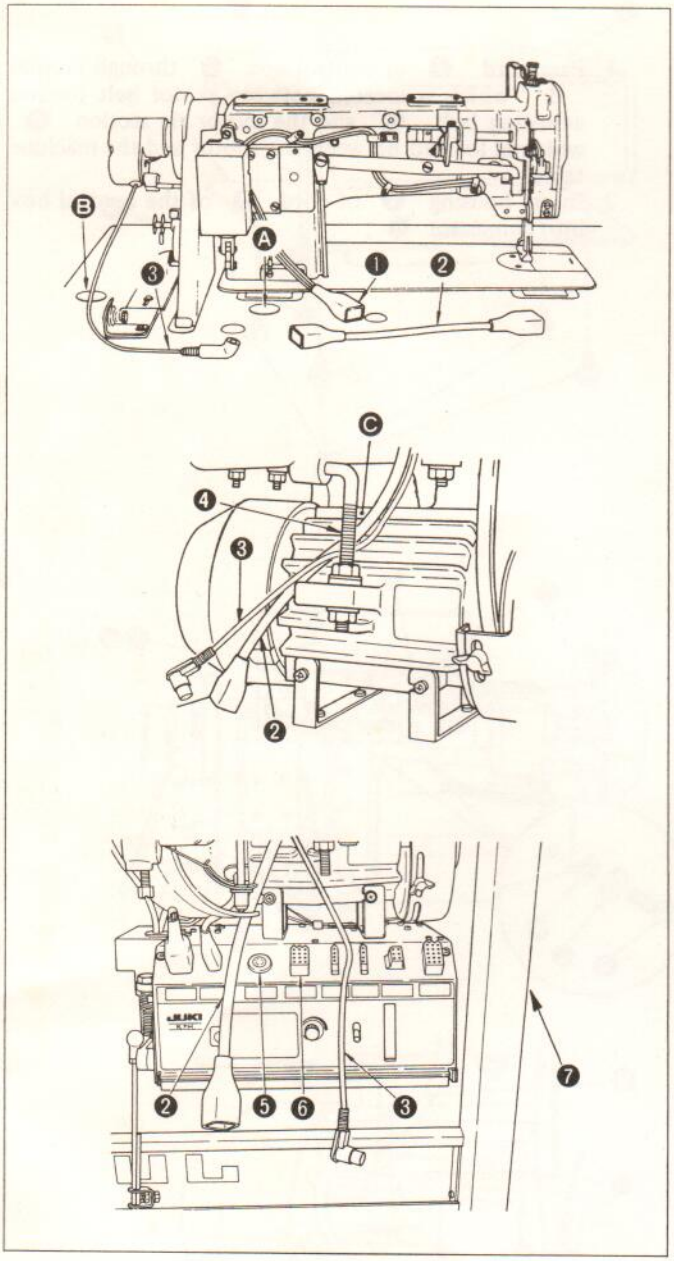
3. INSTALLING THE POSITION SYNCHRONIZER



1. Attach the synchronizer to the handwheel.
2. Align engraved marker line ❷ of synchronizer ❶ with red engraved marker dot ❸ on the handwheel.
3. Turn ON the power to the machine. Adjust so that the machine stops with its needle up using setscrew ❻ in the synchronizer.
4. Perform thread trimming and adjust so that red engraved marker dot ❹ on the handwheel is aligned with red engraved marker dot ❺ on the machine arm using setscrew ❻ in the synchronizer.

(Caution) When making adjustment related to thread trimming, be sure to sew the material during adjustment.

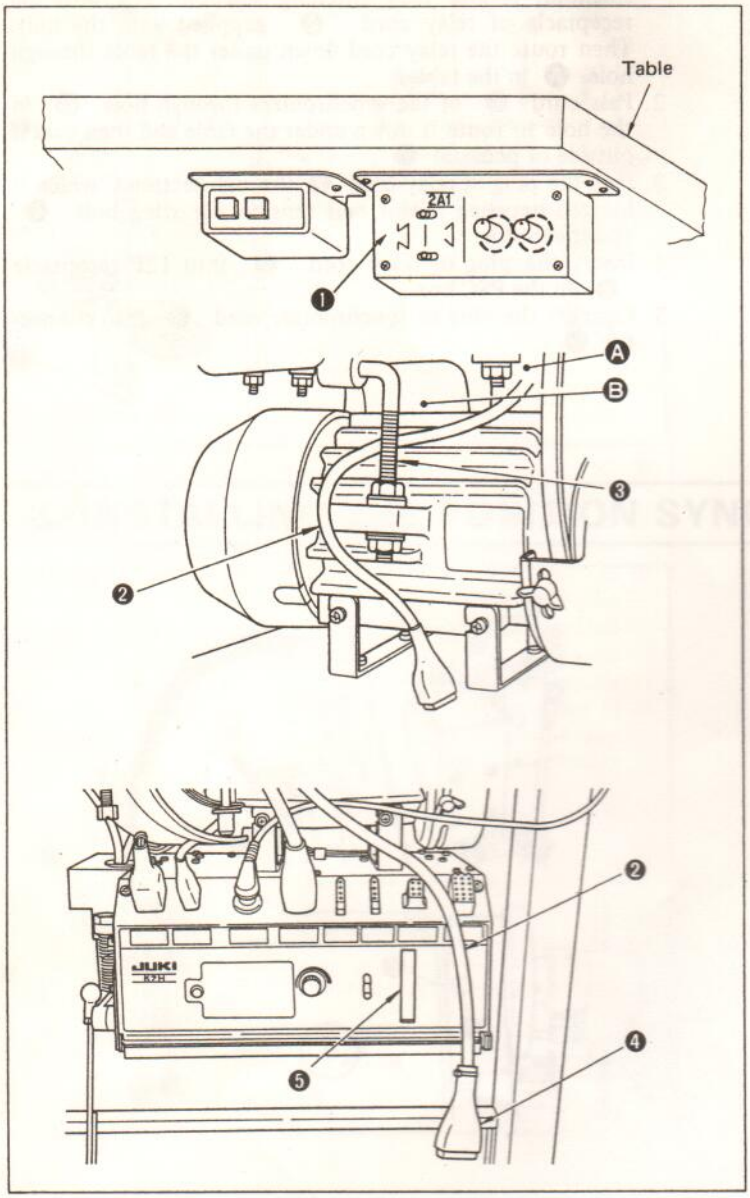
4. CONNECTING THE CORDS



1. Insert cord plug ❶ which combines thread trimming solenoid, reverse feed stitching solenoid, etc. into the receptacle of relay cord ❷ supplied with the unit. Then route the relay cord down under the table through hole Ⓐ in the table.
2. Pass cord ❸ of the synchronizer through hole Ⓑ in the hole to route it down under the table and then pass it outside of pedestal ❼ .
3. Pass the plug of relay cord ❷ through section C which is located between motor belt tension adjusting bolt ❹ and the motor.
4. Insert the plug of relay cord ❷ into 12P receptacle ❻ on the PSC box.
5. Connect the plug of synchronizer cord ❸ into connector ❺ .

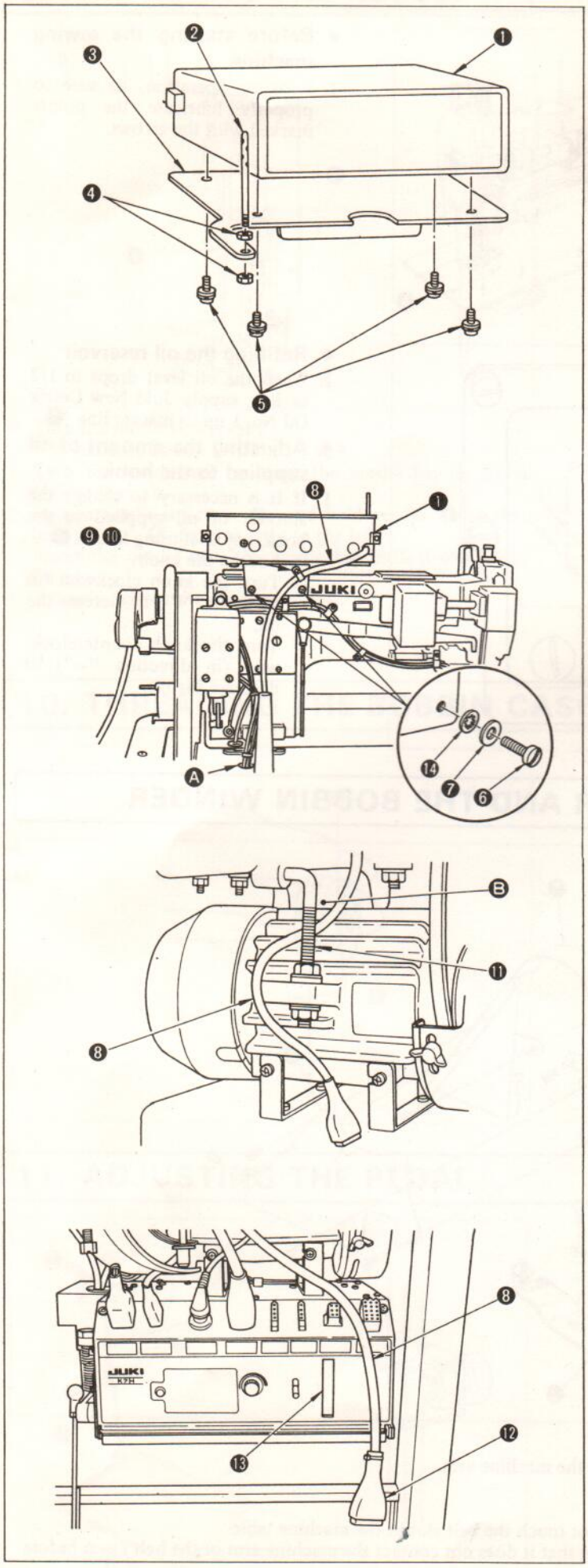
5. INSTALLING AND CONNECTING THE CONTROL BOX

[When the control box 2A1 is used]



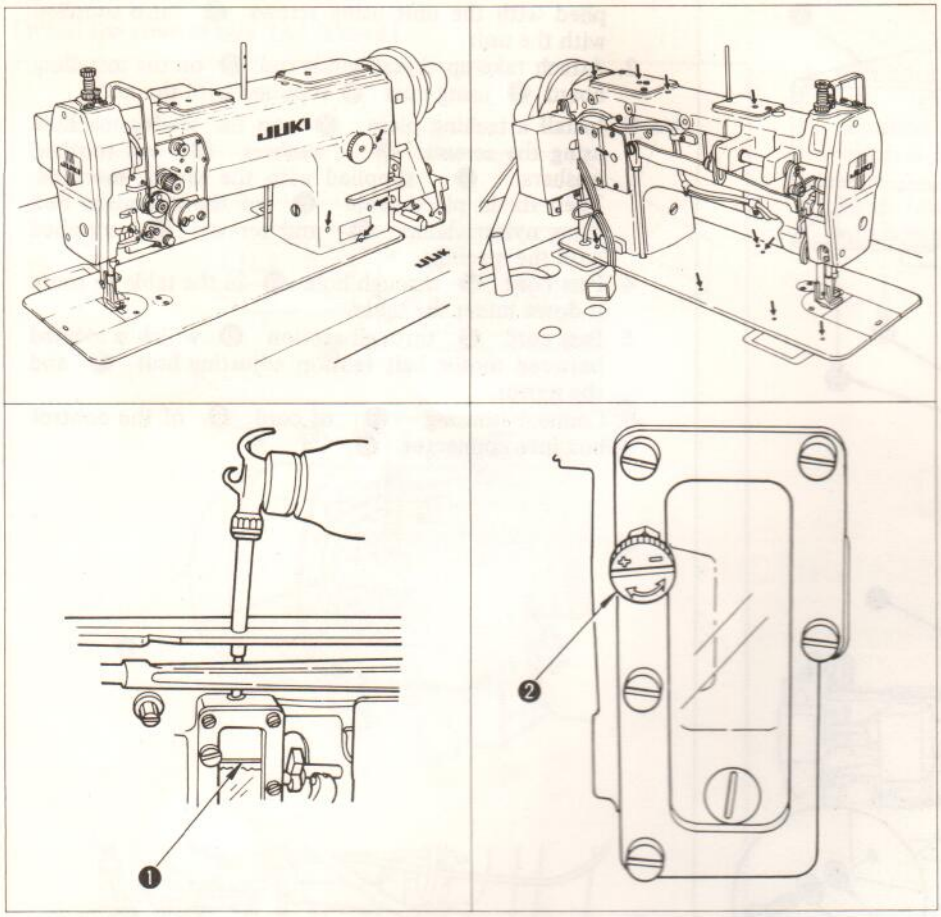
1. Pass cord ❷ of control box ❶ through section B which is located between motor belt tension adjusting bolt ❸ and the motor via section Ⓐ which is located between the motor and the machine table.
2. Insert housing ❹ of cord ❷ of the control box into connector ❺ .

[When the control box 4A1 is used]



1. Install control box ❶ on installing board ❸ supplied with the unit using screws ❺ also supplied with the unit.
2. Attach take-up thread guide rod ❷ on the installing board ❸ using nuts ❹ supplied with the nut.
3. Install attaching plate ❸ on the sewing machine using the screws ❻ , washers ❼ and toothed washers ⓮ supplied with the sewing machine. Then fix in place cable ❽ of the operation box using nylon clamp ❾ and screw ❿ supplied with the machine.
4. Pass cord ❽ through hole Ⓐ in the table to route it down under the table.
5. Pass cord ❽ through section Ⓑ which is located between motor belt tension adjusting bolt ❶ and the motor.
6. Connect housing ⓬ of cord ❽ of the control box into connector ⓭ .

6. LUBRICATION



- **Before starting the sewing machine**

1. Prior to operation, be sure to properly lubricate the points marked with the arrows.

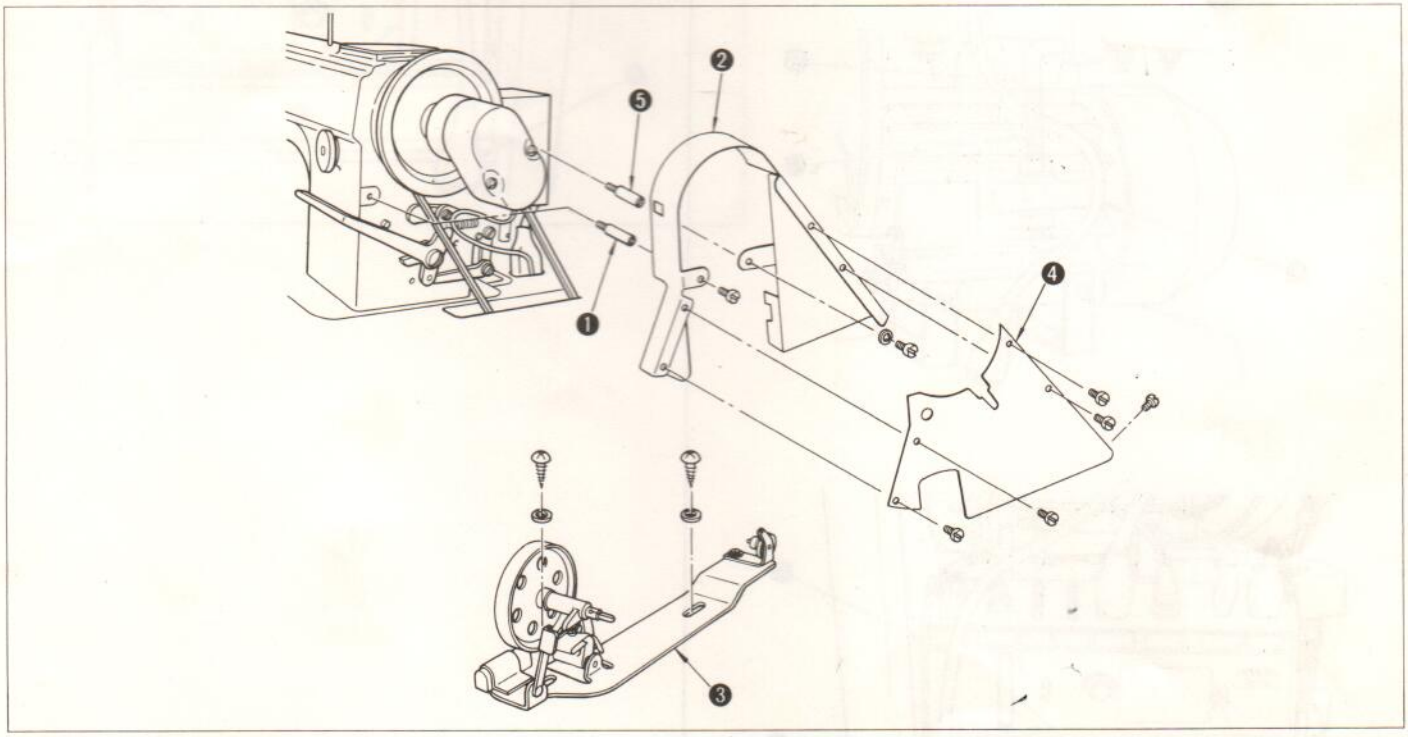
- **Refilling the oil reservoir**

1. When the oil level drops to 1/3 or less, supply Juki New Defrix Oil No. 1 up to marker line ❶ .

- **Adjusting the amount of oil supplied to the hook**

1. If it is necessary to change the amount of oil supplied to the hook, adjust it using knob ❷ .
   - ○ Loosen the knob.
   - ○ Turn the knob clockwise (in direction "+") to increase the oil.
   - ○ Turn the knob counterclockwise (in direction "–") to decrease the oil.

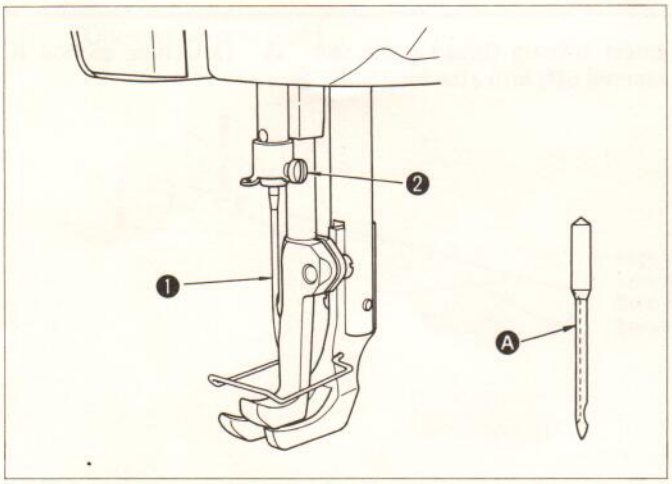
7. INSTALLING THE BELT COVER AND THE BOBBIN WINDER



(Installing Procedure)

1. Insert belt cover support ❶ and ❺ in the tapped hole in the machine arm.
2. Fit belt cover ❷ onto the support and machine arm.
3. Install side plate ❹ .
4. Tilt the machine head, and check that the belt cover does not touch the belt slot in the machine table.
5. Place bobbin winder ❸ in the belt cover, and position it so that it does not contact the machine arm or the belt cover before fixing it with the wooden screws.

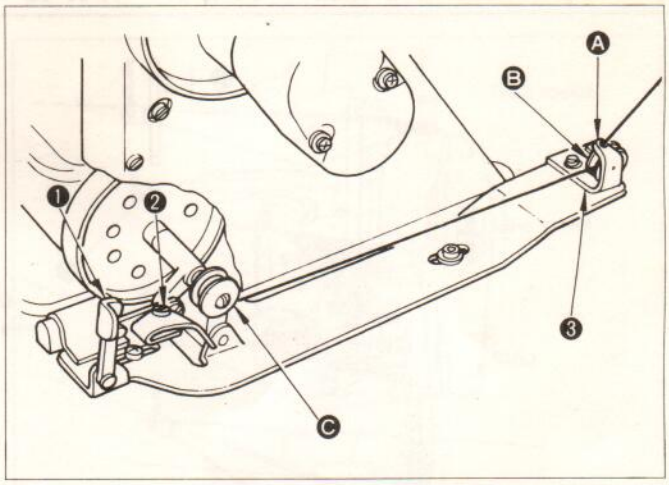
8. ATTACHING THE NEEDLE



- Turn the motor power OFF.
  The standard needle is **DP** x 17 #23.

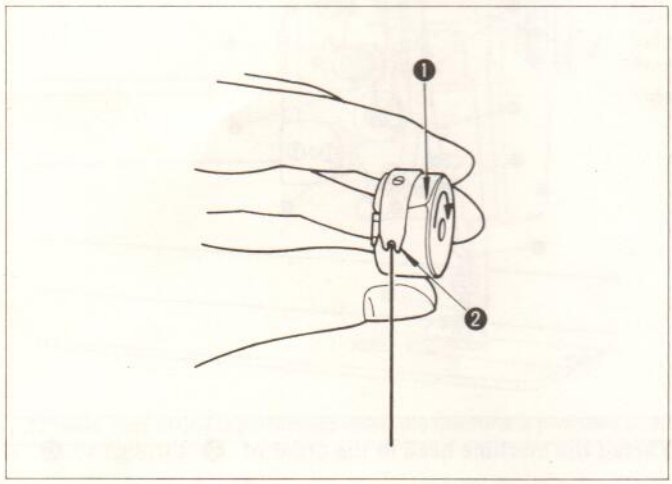
1. Turn the handwheel to move the needle bar up to its highest position.
2. Loosen needle setscrew ❷ , and hold needle ❶ so that long groove Ⓐ faces exactly to the left.
3. Insert the needle into the needle bar until it will go no further.
4. Securely tighten the needle setscrew.

9. WINDING A BOBBIN



1. Route the thread in the order of Ⓐ , Ⓑ and Ⓒ before winding it round the bobbin several times.
2. Set bobbin presser ❶ down to bring the winder in contact with the belt.
3. Adjust screw ❷ so that the bobbin is wound with thread about 80%. Turning the screw clockwise increases the amount of thread wound on the bobbin, and vice versa.
4. If thread is wound unevenly, move winder tension adjustor base ❸ to the right or left to correct it.
5. The moment the bobbin has been wound up, the bobbin presser is released, and the bobbin winder will stop automatically.

10. THREADING THE BOBBIN CASE



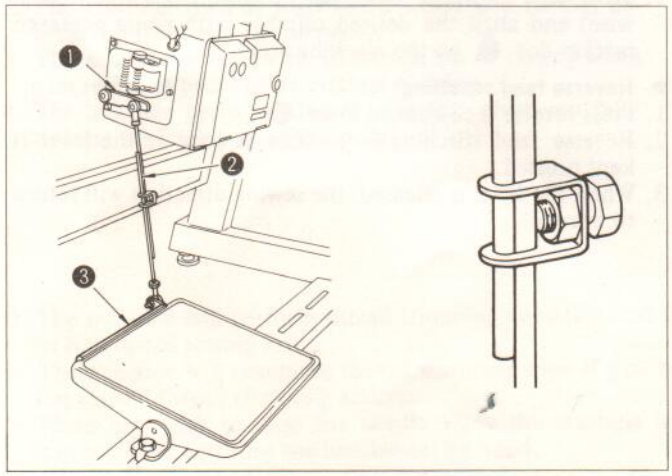
- **Removing the bobbin case**

Raise the bobbin case latch to remove the bobbin case.

- **Threading the bobbin case**

1. Pass the thread through threading slit ❶ in the bobbin case, and route it under tension spring ❷ .
2. Hold the latch of the bobbin case, and set the bobbin case into the hook.

11. ADJUSTING THE PEDAL



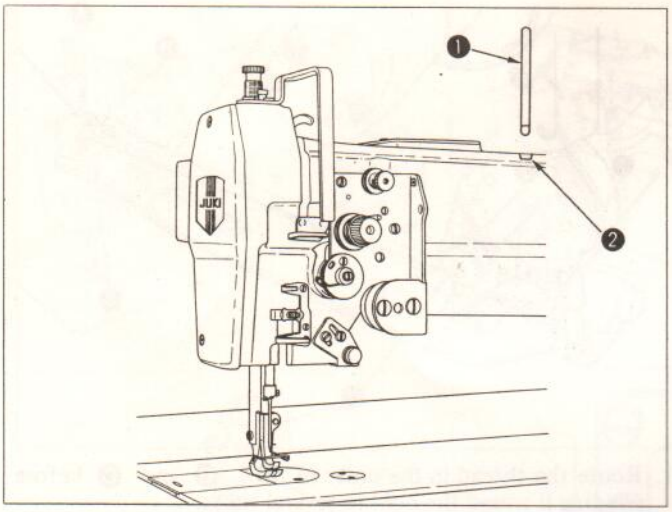
- **Installing the link rod**

1. Move pedal ❸ to the right or left to perform adjustment so that motor control lever ❶ is levelled and link rod ❷ is perpendicular to the pedal.

- **Pedal angle**

1. The pedal angle can be freely changed by adjusting the length of the link rod.
   Loosen the screw, and adjust the length of the link rod.

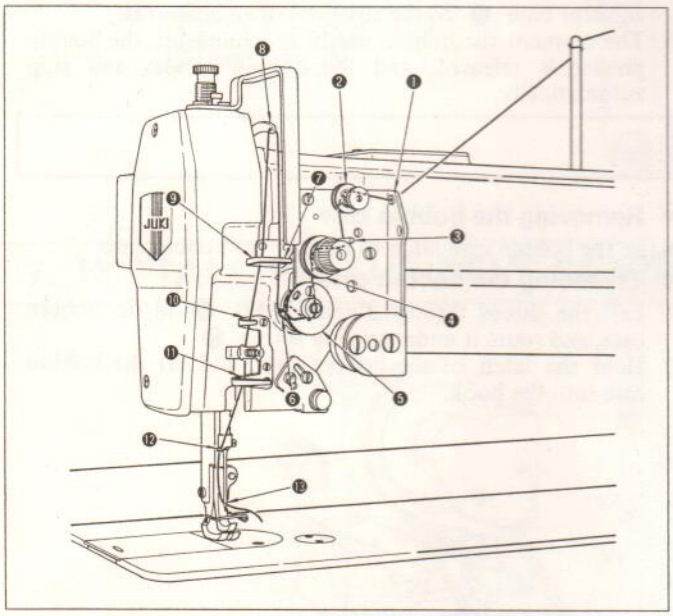
12. INSTALLING THE TAKE-UP THREAD GUIDE ROD (when the control box 4AI is not used)



Insert take-up thread guide rod ❶ (attaching section is tapered off) into attaching hole ❷ .

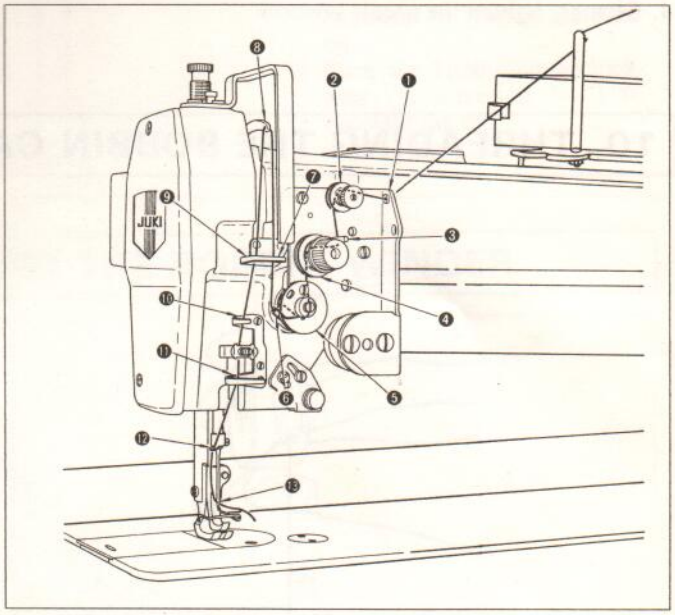
13. THREAD THE MACHINE HEAD

- **When the control box 4A1 is not installed on the machine head**



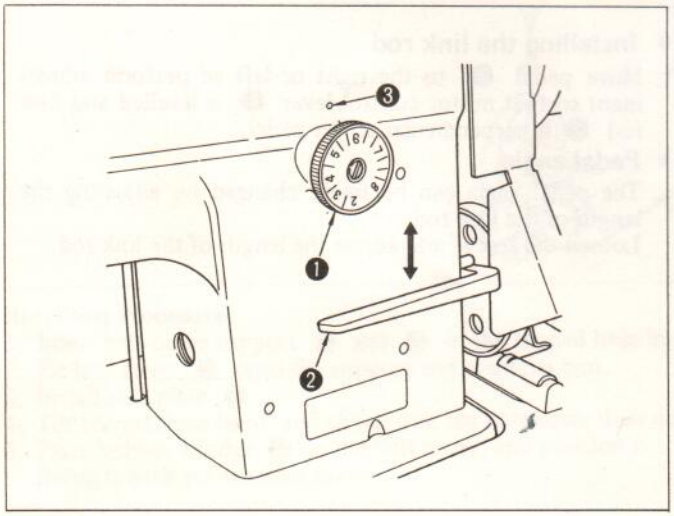
Thread the machine head in the order of ❶ through to ⓭ .

- **When the control box 4A1 is installed on the machine head**



Thread the machine head in the order of ❶ through to ⓭ .

14. ADJUSTING THE STITCH LENGTH



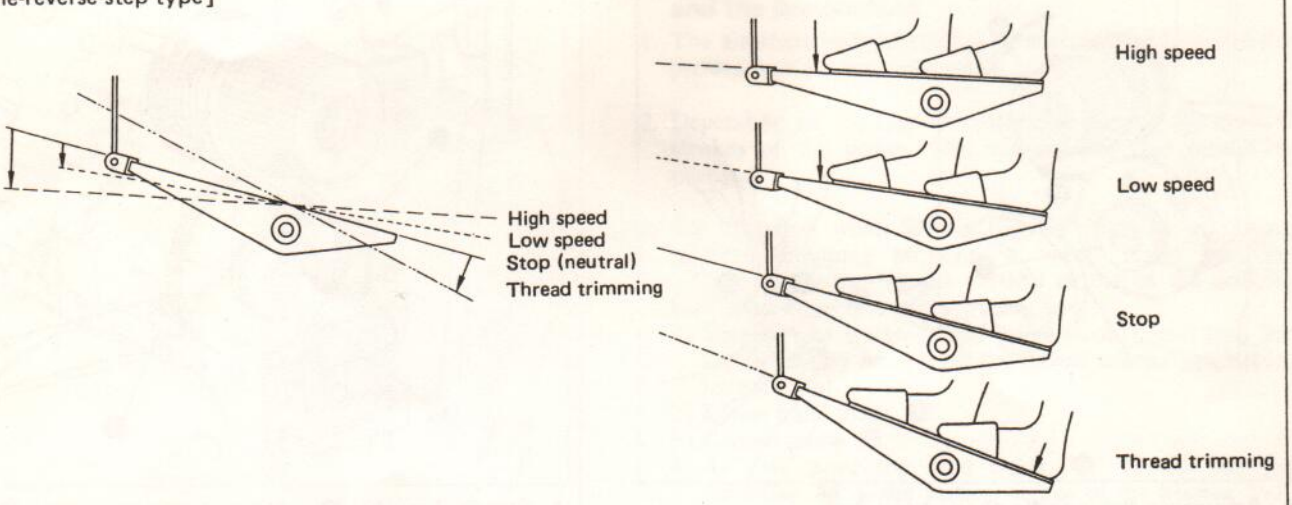
1. Turn feed regulator dial ❶ counterclockwise (clockwise) and align the desired number with white engraved marker dot ❸ on the machine arm.

- **Reverse feed stitching**

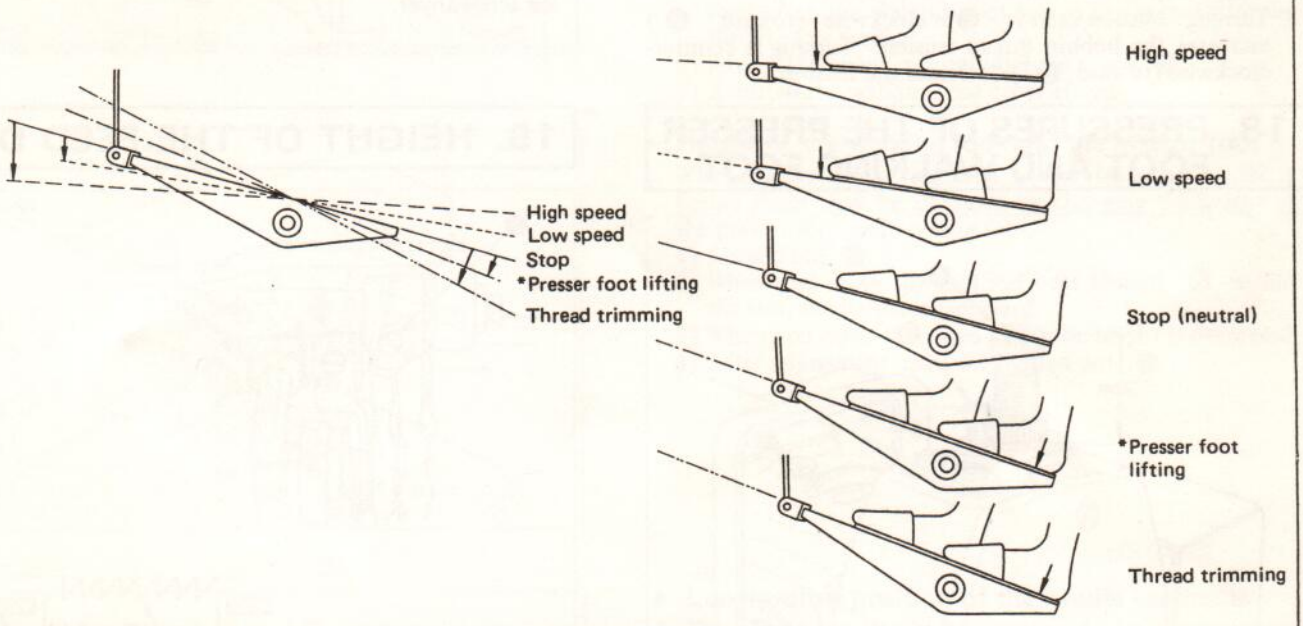
1. Press reverse feed control lever ❷ .
2. Reverse feed stitching is possible as long as the lever is kept pressed.
3. When the lever is released, the sewing direction will return to normal.

15. PEDAL OPERATION

[One-reverse-step type]



[Two-reverse-step type]



*Presser foot lifting is performed when the machine is provided with an AK auto-lifter.

[One-reverse-step type]

The pedal is operated in the following four stages.

1. The machine runs at low sewing speed when you lightly depress the front part of the pedal.
2. The machine runs at high speed when you further depress the front part of the pedal.
3. The machine stops (with its needle up or down) when you reset the pedal to its original position.
4. The machine performs thread trimming when you fully depress the back part of the pedal.

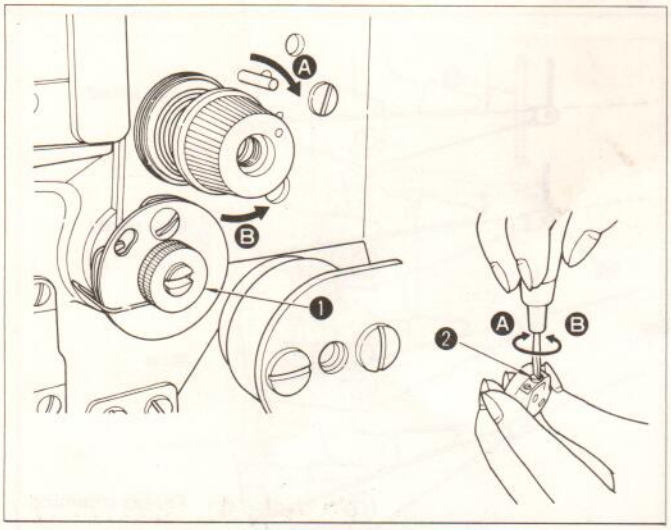
[Two-reverse-step type]

The pedal is operated in the following five stages.

1. The machine runs at low sewing speed when you lightly depress the front part of the pedal.
2. The machine runs at high speed when you further depress the front part of the pedal.
3. The machine stops (with its needle up or down) when you reset the pedal to its original position.
4. The presser foot goes up when you lightly depress the back part of the pedal. (When your machine is provided with an AK auto-lifter.)
5. The presser foot comes down, the machine performs thread trimming, and then the machine stops with its needle up when you further depress the back part of the pedal.

- The machine will perform thread trimming normally even if you depress the back part of the pedal abruptly from its low-speed or high-speed sewing state.
- The machine will complete thread trimming even if you reset the pedal to its neutral position immediately after the machine has started thread trimming action.
- When you wish to raise the needle when the machine has stopped with its needle down, let the machine perform thread trimming once or turn the handwheel by hand.

16. THREAD TENSION



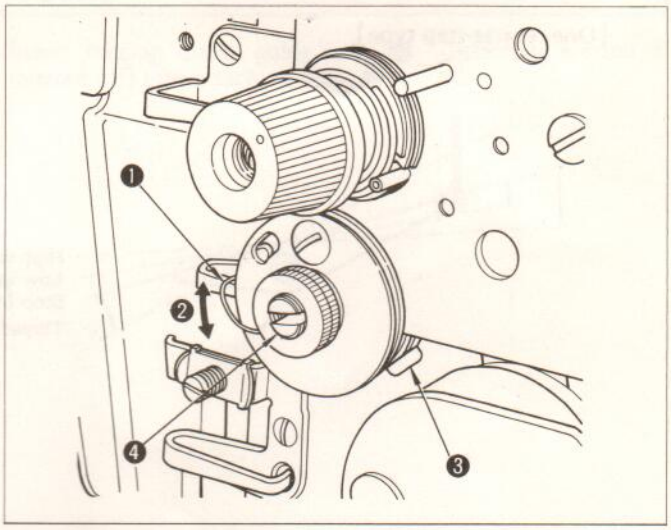
- **Adjusting the needle thread tension**

1. Turning tension nut ❶ clockwise (toward Ⓐ) increases the needle thread tension. Turning it counterclockwise (toward Ⓑ) decreases the tension.

- **Adjusting the bobbin thread tension**

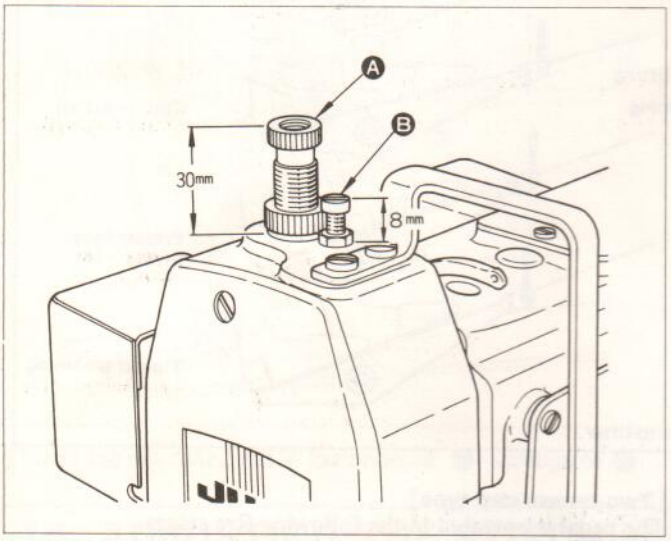
1. Turning tension screw ❷ clockwise (toward Ⓐ) increases the bobbin thread tension. Turning it counterclockwise (toward Ⓑ) decreases the tension.

17. THREAD TAKE-UP SPRING



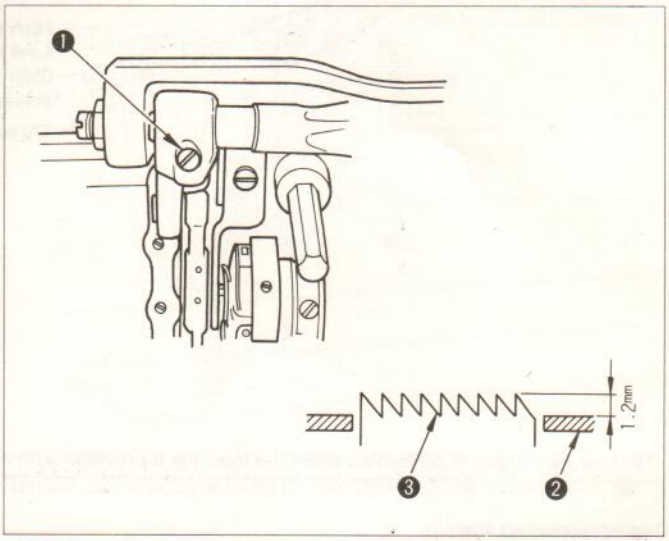
1. Standard stroke ❷ of thread take-up spring ❶ is 8 to 10 mm. To adjust the stroke, loosen setscrew ❸ , and turn whole thread controller ❹ .
2. The standard spring tension is 40 to 50 g.
3. To adjust the tension, turn the thread tension post, using a screwdriver.

18. PRESSURES OF THE PRESSER FOOT AND WALKING FOOT



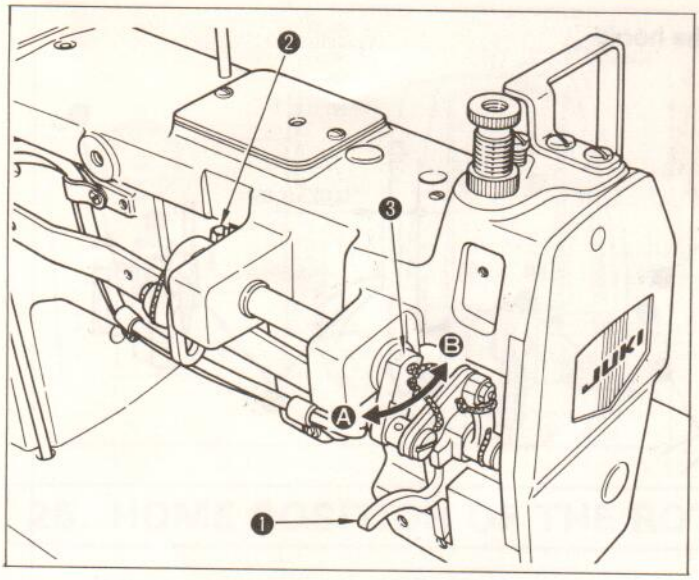
1. The pressure of presser foot Ⓐ (standard height of the presser foot pressure regulator: 30 mm) and walking foot Ⓑ can be adjusted according to the type of material.
※It is advisable to minimize the pressures of both feet.

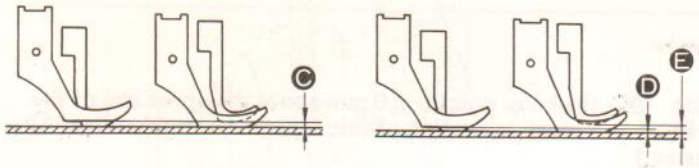
19. HEIGHT OF THE FEED DOG



1. Feed dog ❸ is factory-adjusted to jut out 1.2 mm from the surface of throat plate ❷ .
When the feed dog height needs to be adjusted according to the sewing specifications or after the feed dog is replaced, do as follows:
1) Loosen screw ❶ .
2) Move the feed bar up or down to perform adjustment, then securely tighten the screw.

20. ADJUSTING THE WALKING FOOT AND THE PRESSER FOOT



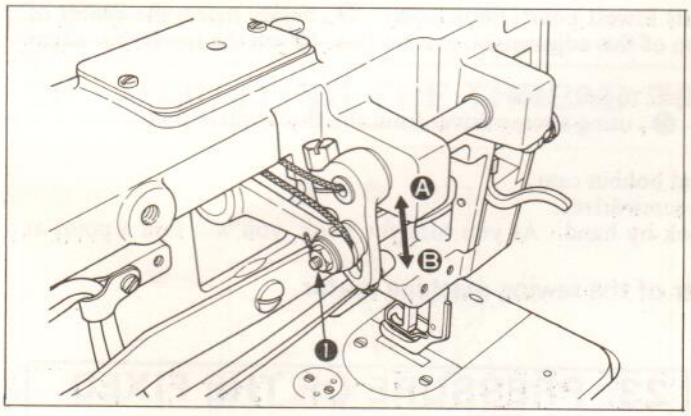


• Alternate vertical motions of the walking foot and the presser foot

1. The alternate vertical strokes of the walking foot and the presser foot are normally equal.

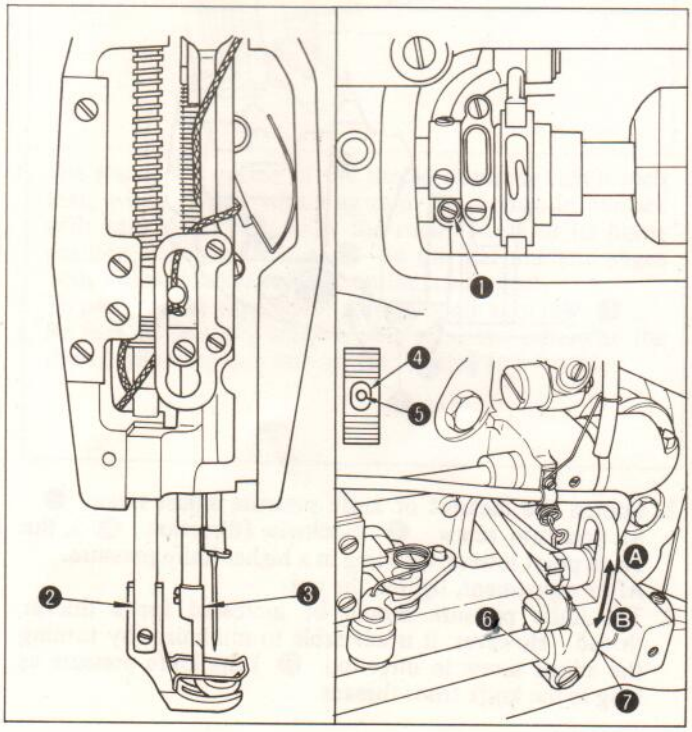
2. Depending on the type of material, however, the vertical strokes of the presser foot and walking foot should be changed.

3. For instance, when sewing slippery material or sewing many overlapping sections, a better result may be obtained by adjusting the vertical stroke of the walking foot larger than that of the presser foot.
   1) Remove the walking foot cover (front), and turn the handwheel by hand until the thread take-up reaches its lowest point.
   2) Lower hand lifter ❶ .
   3) Loosen screw ❷ .
   4) As you move top feed crank ❸ to the left (in direction Ⓐ), the vertical stroke of the presser foot decreases Ⓓ , whereas the vertical stroke of the walking foot increases Ⓔ .
   5) On the contrary, as you move the top feed crank to the right (in direction Ⓑ), the vertical stroke of the walking foot becomes closer Ⓒ to that of the presser foot when the walking foot sole is in contact with the throat plate surface.
   6) After adjustment, securely tighten screw ❷ .
   7) Reinstall the walking foot cover (front).



• Height of the walking foot and the presser foot

1. When sewing elastic material or overlapping sections, a better result may be obtained by changing the height of the presser foot and walking foot.
   1) Loosen nut ❶ .
   2) When you move the cam rod boss toward Ⓐ within the slot, the height is increased.
   3) When you move it toward Ⓑ , the height is decreased.
   4) After adjustment, securely tighten nut ❶ .



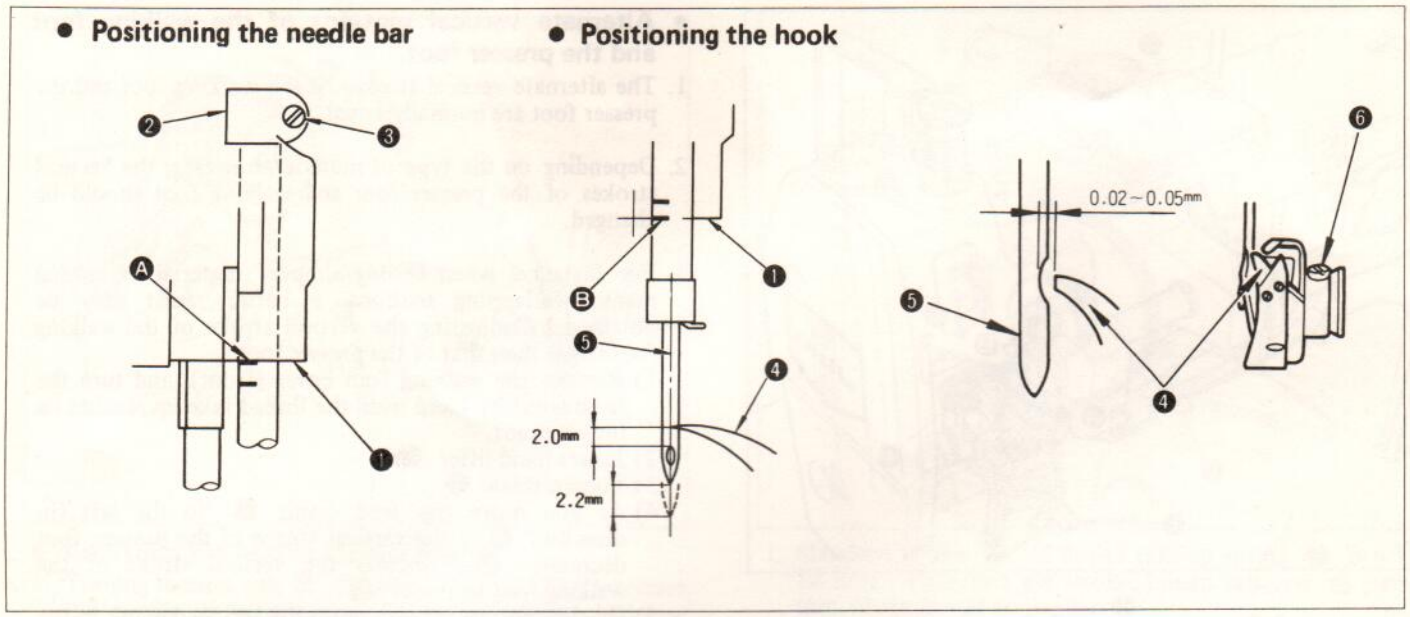
• Longitudinal position of the needle bar frame

1. The needle bar should be positioned with respect to the walking foot so that the needle stays at the center of the needle hole in the walking foot throughout the feed motion of the walking foot.
   Adjust the position of the needle bar frame as follows:
   1) Loosen screw ❶ .
   2) Properly adjust the distance between presser bar ❷ and walking foot bar ❸ , and tighten screw ❶ .
   3) Lower the needle bar so that needle ❺ enters needle hole ❹ in the feed dog.
   4) Loosen screw ❻ .
   5) Adjust the position of the feed dog so that needle ❺ enters the center of needle hole ❹ in the feed dog. Then, tighten screw ❻ .

• Differential feed motion of the needle bar frame

1. Loosen hinge screw ❼ . As you move it in direction Ⓐ , the stroke of the needle bar frame is increased, and differential feed with respect to the feed dog is provided. As you move it in direction Ⓑ , the stroke is decreased.
   (Precaution)
   Be sure to make this adjustment within the needle hole in the feed dog.

21. NEEDLE-TO-HOOK RELATIONSHIP



• **< First, set the needle bar at the proper height as follows >**

1. Set the stitch length dial at "0".
   Adjust so that, when hook point ❹ meets the center of needle ❺ , the hook point is 2.0 mm above the upper end of the needle eyelet. Then tighten screw ❸ of needle bar bracket ❷ . (As a rough indication of this adjustment, marker line Ⓐ on the needle bar aligns with the bottom face of the needle bar frame.)

• **Then, adjust the timing between the needle and the hook as follows:**

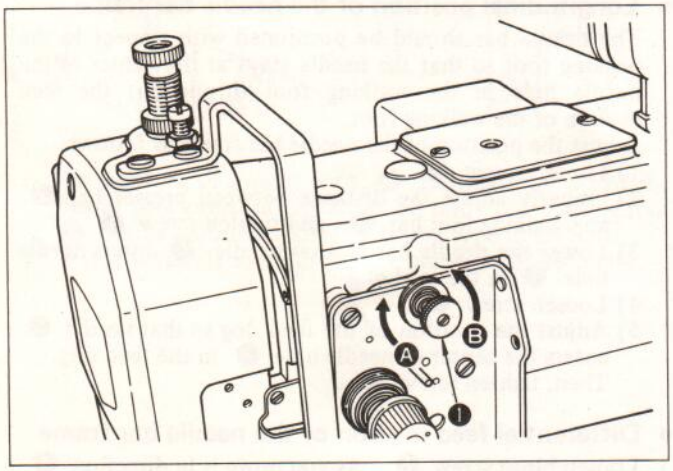
2. Adjust so that, when the needle bar goes up to 2.2 mm above its lowest point, hook point ❹ nearly meets the center of needle ❺ . Then tighten setscrew ❻ . (As a rough indication of this adjustment, marker line Ⓑ on the needle bar aligns with the bottom face of the needle bar frame.)
3. Adjust the clearance between needle ❺ and hook point ❹ to 0.02 to 0.05 mm.
4. To adjust the hook, remove the throat plate, and loosen setscrew ❻ , using a screwdriver from the throat plate side.

• **How to remove the hook**

1. Remove the bobbin case retainer, then remove the throat plate and bobbin case.
2. Loosen the three hook setscrews from the top of the bed, using a screwdriver.
3. Bring the needle bar up to its highest position, and turn the hook by hand. As you turn the hook, you will find a point at which the hook comes off.

※ **Before making the adjustment, be sure to turn the power of the sewing machine motor.**

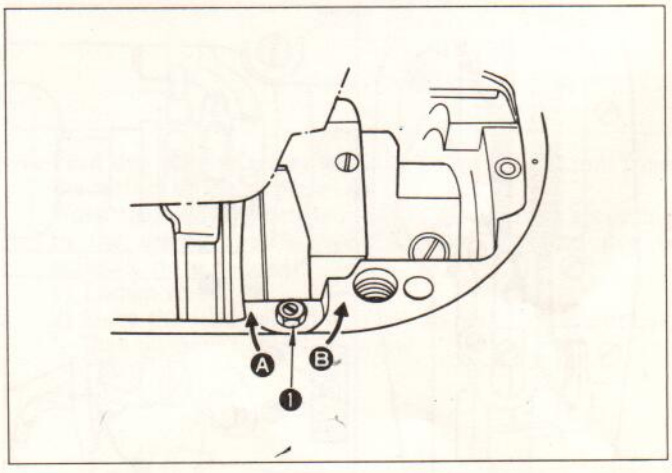
22. AUXILIARY THREAD TENSION CONTROLLER



1. Adjust the auxiliary thread tension using nut ❶ .

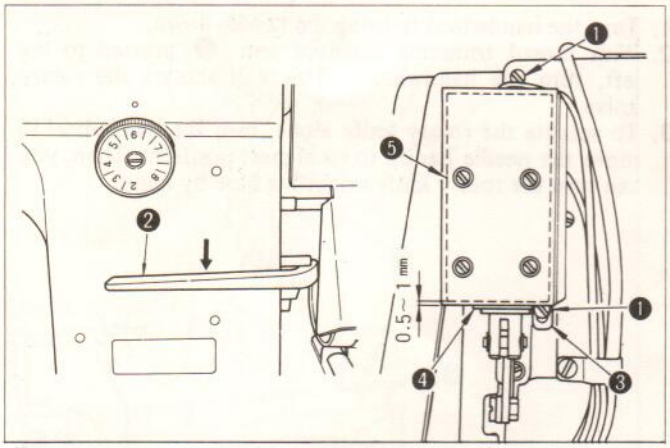
1) Turn the nut in direction Ⓐ → Tension increases and the needle thread shortens.
2) Turn the nut in direction Ⓑ → Tension decreases and the needle thread lengthens.
3) Decrease the tension when using a thin thread or if cloth slippage often occurs.
4) Increase the tension when using a thick thread or if upper cloth tends to slip forward.

23. PRESSURE OF THE FIXED KNIFE



1. Loosen the locknut of knife pressure adjust screw ❶ . As you turn screw ❶ clockwise (direction Ⓐ), the blade point lowers, resulting in a higher knife pressure. After adjustment, tighten the nut.
2. The knife pressure should be increased for a thicker thread. However, it is advisable to minimize (by turning the adjust screw in direction Ⓑ) the knife pressure as long as the knife trims threads.

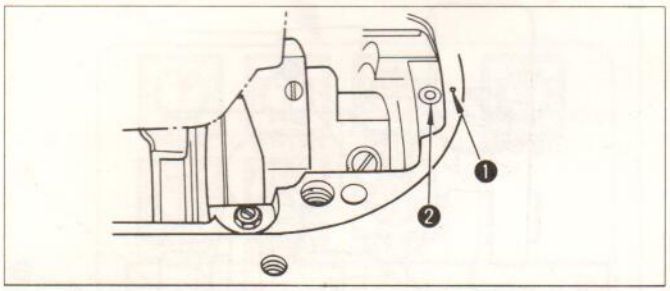
24. ONE-TOUCH TYPE REVERSE FEED STITCHING MECHANISM



- **Position of the reverse feed solenoid**

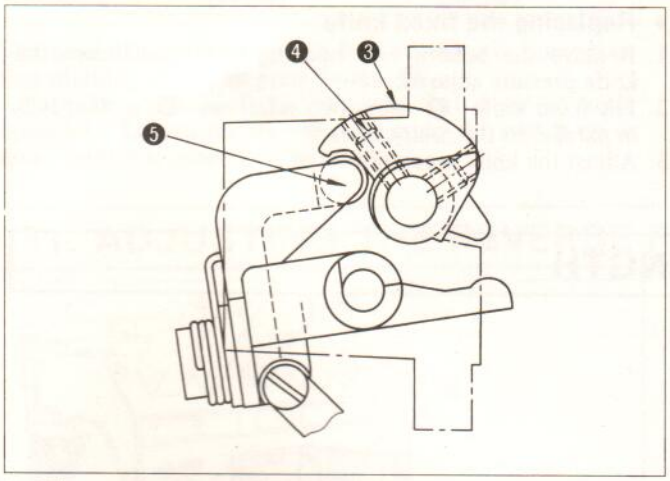
1. Set the stitch length dial at the maximum.
2. Loosen two setscrews of the solenoid mounting base.
3. Push feed lever ❷ down until it bottoms, and move solenoid mounting base ❸ up or down to adjust the inner clearance between rubber packing ❹ on the plunger and reverse feed solenoid ❺ to 0.5 to 1 mm. Tighten setscrew ❶ .

25. HOME POSITION OF THE ROTARY KNIFE

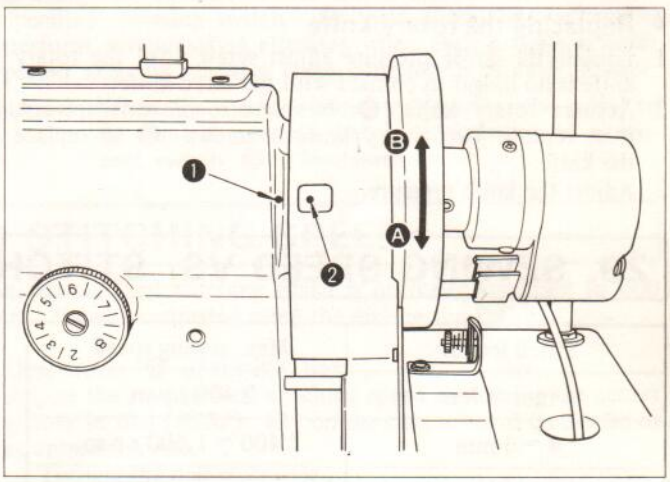


1. The standard home position of the knife is such that, when the rotary knife is in its front end position, the maximum overlap between the rotary knife and its blade is 1 to 1.5 mm.
2. At this time, marker dot ❶ on the machine bed aligns with the lubricating hole in rotary knife bracket ❷ .

26. ADJUSTING THE THREAD TRIMMING CAM

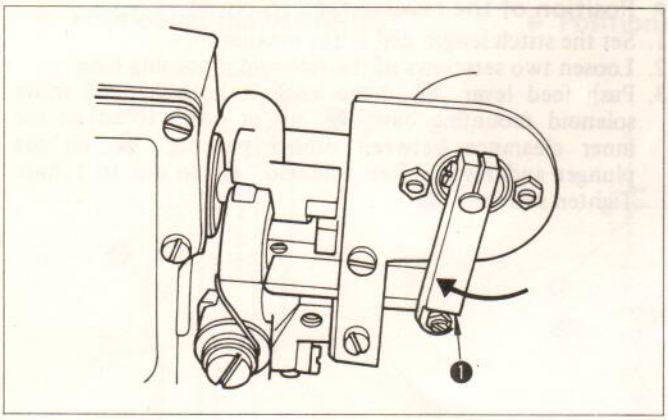


1. The standard position of the thread trimming cam is such that, when thread trimming cam ❸ comes in contact with cam roller ❺ with the rotary knife in its home position, red marker dot ❶ on the machine arm aligns with yellow marker dot ❷ on the handwheel.
2. To perform the adjustment above, loosen setscrew ❹ .
3. Be sure to securely retighten the setscrew, otherwise the thread trimming cam may rotate, leading to a trouble.



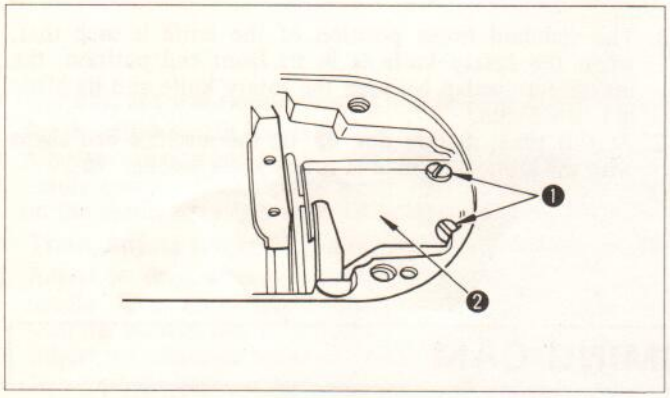
(Precaution)
When using an untwisted synthetic thread, turn the handwheel in direction Ⓐ to move the marker dot 5mm from the standard position to adjust the cam.
When using a thin synthetic thread, turn the handwheel in direction Ⓑ to move the marker dot 5mm from the standard position.

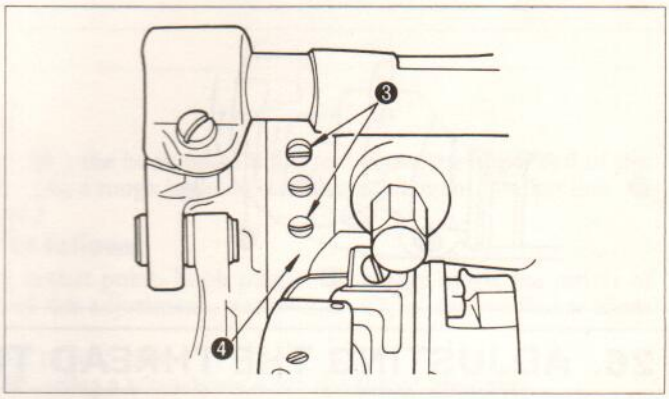
27. HOW TO MANUALLY OPERATE THE THREAD TRIMMER



1. Turn the handwheel to bring the needle down.
2. With thread trimming solenoid arm ❶ pressed to the left, turn the handwheel. This will actuate the rotary knive.
3. To actuate the rotary knife alone, turn the handwheel to move the needle bar up to its highest position. Then, you can turn the rotary knife mounting base by hand.

28. HOW TO REPLACE THE KNIVES





- **Replacing the rotary knife**

1. Loosen the knife pressure adjust screw until the rotary knife is no longer in contact with the fixed knife.
2. Actuate rotary knife ❷ by hand to move it upward, then remove two rotary knife setscrews ❶ to replace the knife.
3. Adjust the knife pressure.

- **Replacing the fixed knife**

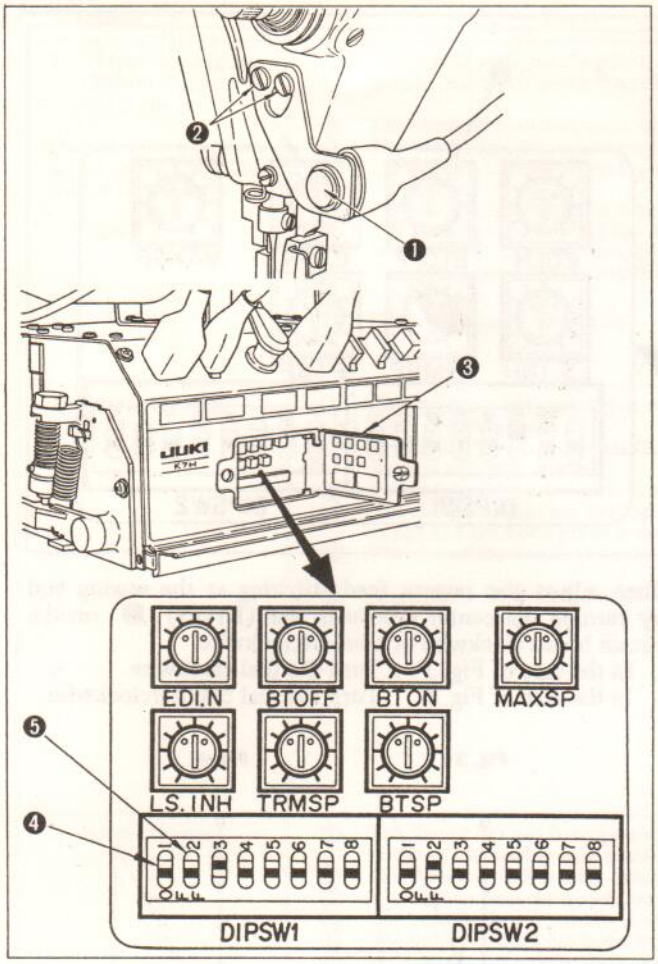
1. Remove the bobbin case opening lever, and loosen the knife pressure adjust screw.
2. Fix fixed knife ❹ using two setscrews ❸ so that it is in parallel to the rotary knife.
3. Adjust the knife pressure.

29. SEWING SPEED VS. STITCH LENGTH

Stitch length	Max. sewing speed
4 mm or less	2,400 s.p.m.
4 ~ 6 mm	2,400 ~ 1,600 s.p.m.
6 ~ 8 mm	1,600 ~ 1,200 s.p.m.

It is advisable to observe the sewing speeds given above as much as possible.

30. ONE-TOUCH TYPE MANUAL REVERSE FEED STITCHING/COMPENSATING STITCHING



The machine performs reverse feed stitching or compensating stitching when you press switch ❶ .
Adjust the position of the switch so that it can be easily operated. Loosen screws ❷ and move the switch up or down until it is properly positioned.

[Manual reverse feed stitching]

1. If you press switch ❶ when the machine feeds the material in the normal direction, the machine will immediately start feeding the material in the reverse direction and perform reverse feed stitching.
2. The machine performs reverse feed stitching as long as the switch is kept pressed.
3. The machine resumes normal feed stitching immediately after you have released the switch.

(Caution) If the control box 4A1 is used and sewing patterns 2 through to 5 are specified, manual reverse feed stitching is impossible.
Refer to the Instruction Manual of the K7H motor for the operation of the control box 4A1.

[Compensating stitching]

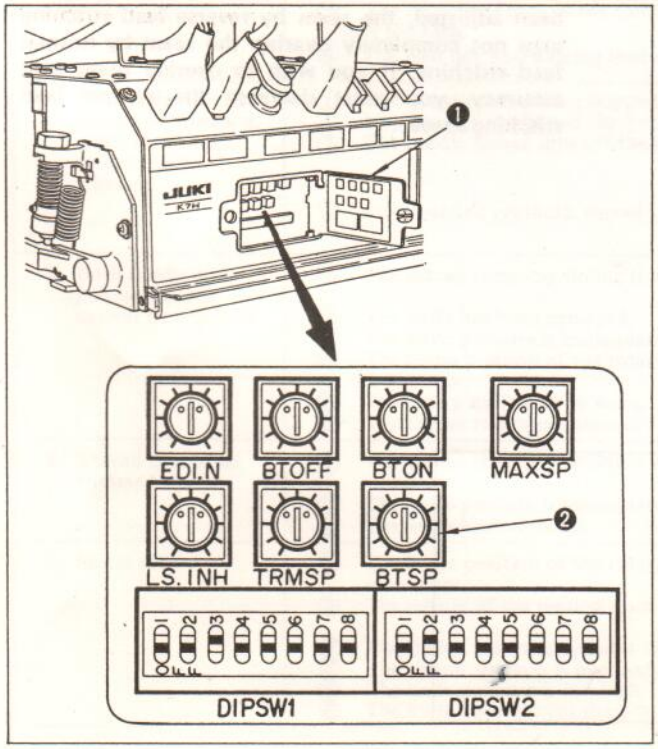
1. Open cover ❸ of the PSC box and set 1 ❹ of the DIP switch DIPSW1 to its ON position.
2. When the sewing machine stops with the pedal in its neutral position, the machine will perform compensating stitching by pressing switch ❶ .

(Caution) If switch ❶ is pressed when the machine runs, the machine will perform reverse feed stitching. So be careful.

3. The machine performs compensating stitching as long as the switch is kept pressed.
4. The machine stops compensating stitching by releasing the switch.
5. If 2 ❺ of the DIP switch DIPSW1 is set to its ON position, the machine will perform compensating stitching by half a stitch or the DIP switch DIPSW1-2 is set to its OFF position, the machine will perform compensating stitching by one stitch.
6. If using the control box 4A1 and sewing pattern 3 and 4 are specified, pressing switch ❶ will allow the machine to perform compensating stitching when each process is completed and the machine stops completion of each process.

(Caution) When the machine stops by resetting the pedal to its neutral position before completion of a process, switch ❶ is inoperative.

31. ADJUSTING THE REVERSE FEED STITCHING SPEED

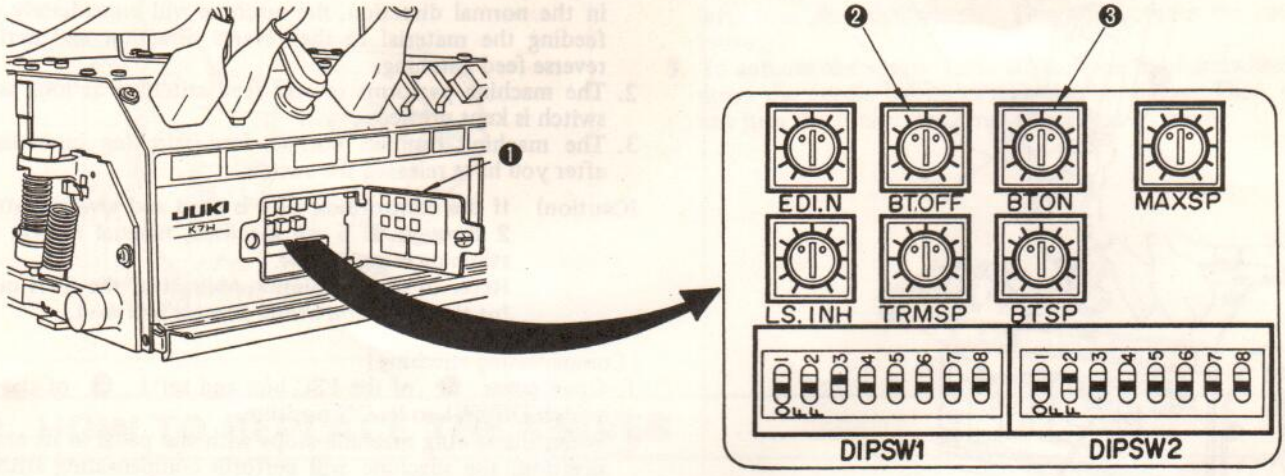


The reverse feed stitching speed is normally specified to 600 s.p.m. It can be adjusted using the dials in the PSC box.

1. Open cover ❶ of the PSC box.
2. Adjust the reverse feed stitching speed by turning the center groove in dial (BTSP) ❷ on the circuit board clockwise or counterclockwise.
   Turning the dial clockwise . . . . .
   The reverse feed stitching speed is increased.
   Turning the dial counterclockwise . . . . .
   The reverse feed stitching speed is decreased.

(Caution) If the reverse feed stitching speed is changed, the seam of the reverse feed stitching may fail to overlap with the seam of the normal feed stitching with accuracy. In this case, make an adjustment referring to "31. Aligning the seam for automatic reverse feed stitching".

32. ALIGNING THE SEAM FOR AUTOMATIC REVERSE FEED STITCHING



The seam made by automatic reverse feed stitching have been adjusted to overlap with the seam made by normal feed stitching. However, if the reverse feed stitches do not overlap with the normal feed stitches due to the change of reverse feed stitching speed or type of the material used, make a proper adjustment using the dials in the PSC box.

1. Set the number of stitches for process A and process B of reverse feed stitching at the sewing start to the same value.
2. Set the number of stitches for process C and process D of reverse feed stitching at the sewing end to the same value.
   [If using the control box (2A1), the number of stitches for reverse feed stitching at the sewing end is automatically set to the same value as that at the sewing start.]
3. Open cover ❶ of the PSC box.
4. At first, adjust the reverse feed stitching at the sewing end by turning the center groove in dial (BTOFF) ❷ on the circuit board clockwise or counterclockwise.
   In the case of Fig. 1 . . .Turn the dial clockwise.
   In the case of Fig. 2 . . .Turn the dial counterclockwise.

Fig. 1

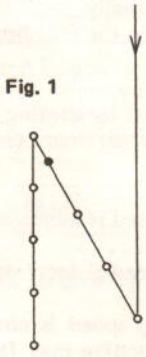
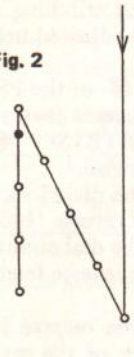


Fig. 2



5. Then adjust the reverse feed stitching at the sewing end by turning the center groove in dial (BTON) ❸ on the circuit board clockwise or counterclockwise.
   In the case of Fig. 3 . . .Turn the dial clockwise.
   In the case of Fig. 4 . . .Turn the dial counterclockwise.

Fig. 3

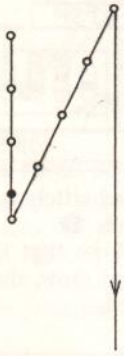


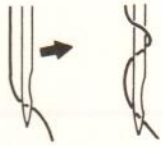
Fig. 4

(Caution) **Even if the seam of the reverse feed stitching has been adjusted, the seam by reverse feed stitching may not completely overlap the seam by normal feed stitching. If you wish to overlap them with accuracy, you must decrease the reverse feed stitching speed.**

Noise

Workplace-related noise at sewing speed
n= 1,870 min^{-1} : L_{PA} 84 dB(A)
Noise measurement according to DIN 45635-48-A-1.

33. TROUBLES AND CORRECTIVE MEASURES

Trouble	Cause	Corrective measures
1. Thread breakage (Thread frays or wears out.) (Needle thread remains 2 to 3 cm on the wrong side of the cloth.)	① The thread path, needle point, hook point or bobbin case positioning finger has scratches. ② The needle thread tension is too high. ③ The needle hits the hook point. ④ Lubrication to hook is inadequate. ⑤ The needle thread tension is too low. ⑥ The thread take-up spring has an excessively high tension while it has an excessively small stroke. ⑦ The timing between the needle and hook is too early or late. ⑧ The bobbin races frequently.	○ Remove the scratches on the hook point using a fine sand paper. Buff the bobbin case positioning finger. ○ Properly adjust the needle thread tension. ○ See "21. NEEDLE-TO-HOOK RELATIONSHIP". ○ Properly adjust the lubrication. See "6. LUBRICATION". ○ Properly adjust the needle thread tension. ○ Decrease the tension, and increase the stroke. ○ See "21. NEEDLE-TO-HOOK RELATIONSHIP". ○ Use the racing-proof spring, or increase the spring pressure. Alternatively reduce the thread trimming speed.
2. Stitch skipping	① The clearance between the needle and the hook point is too large. ② The timing between the needle and the hook point is too early or late. ③ The presser foot pressure is too low. ④ The clearance between the top edge of the needle eyelet and the hook point is not correct. ⑤ The size of the needle is wrong. ⑥ A synthetic fiber thread or thin thread is used.	○ See "21. NEEDLE-TO-HOOK RELATIONSHIP". ○ See "21. NEEDLE-TO-HOOK RELATIONSHIP". ○ Increase the presser foot pressure. ○ See "21. NEEDLE-TO-HOOK RELATIONSHIP". ○ Replace the needle by one which is one grade thicker. ○ Wind the thread round the needle as illustrated. 
3. Loose stitches	① The thread has not been passed through the notch of the bobbin case tension spring. ② The thread path is poorly finished. ③ The bobbin does not rotate smoothly. ④ The bobbin thread tension is too low. ⑤ The bobbin thread has been wound too tight. ⑥ An untwisted synthetic thread is used.	○ Properly thread the bobbin case. ○ Grind it using a fine sand paper or a buff. ○ Replace the bobbin or hook. ○ Properly adjust the tension. ○ Decrease the bobbin thread winding tension. ○ Slightly reduce the sewing speed. (2,000 s.p.m.)
4. A few stitches are skipped	① The bobbin thread is too short. ② The bobbin thread breaks. ③ A nylon thread is used when sewing light-weight material.	○ Replace the bobbin by a standard one (aluminum). ○ Decrease the bobbin thread tension and the thread trimming speed. ○ Use the soft start function.
5. The thread slips off the needle upon being trimmed.	① The tension of the auxiliary thread tension controller is too high. ② The thread trimming timing is too early. ③ The returning force of the thread take-up spring is too high. ④ The feed dog and walking foot cut thread.	○ Decrease the tension. ○ See "26. ADJUSTING THE THREAD TRIMMING CAM". ○ See "12. THREADING THE MACHINE HEAD". Replace the thread guide. ○ Change the walking foot.
6. The needle thread cannot be trimmed, while the bobbin thread can be trimmed.	① The last stitch has been skipped. (The clearance between the needle and the hook is too large.) ② The needle thread slips off the rotary knife. ③ An untwisted synthetic thread is used.	○ See "21. NEEDLE-TO-HOOK RELATIONSHIP". ○ Replace the throat plate with one having a smaller needle hole. ○ See "26. ADJUSTING THE THREAD TRIMMING CAM.
7. Both needle and bobbin threads cannot be trimmed	① The thread trimming timing is wrong. ② The knife has been damaged. ③ The knife pressure is inadequate. ④ The home position of the rotary knife is inaccurate. ⑤ The rotary knife fails to work. ⑥ The thread trimming solenoid fails to work.	○ See "26. ADJUSTING THE THREAD TRIMMING CAM". ○ Replace the knife. ○ Increase the knife pressure. ○ See "26. ADJUSTING THE THREAD TRIMMING CAM". ○ Check it by actuating it by hand. ○ Check the motor solenoid for proper operation.
8. Thread cannot be trimmed sharply.	① The thread trimming timing is wrong. ② The knife pressure is inadequate. ③ The knife blade is blunt.	○ See "26. ADJUSTING THE THREAD TRIMMING CAM". ○ Increase the knife pressure. ○ Replace the knife.
9. Motor stop	① The home position of the rotary knife is inaccurate. ② The release of the tension discs is inadequate. ③ The thread trimming speed is slow. ④ The thread trimmer is overloaded. ⑤ The knife pressure is too high. ⑥ The knife does not cut sharply.	○ See "26. ADJUSTING THE THREAD TRIMMING CAM". ○ See "26. ADJUSTING THE THREAD TRIMMING CAM". ○ Increase the thread trimming speed. ○ Disassemble it to identify the cause. ○ Decrease the knife pressure. ○ Replace the knife.

MEMO

JUKI

To order or for further information, please contact :

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CHOFU-SHI, TOKYO 182, JAPAN
PHONE : 03(3430)4001~5
FAX : 03(3430)4909・4914・4984
TELEX : J22967

Please do not hesitate to contact our distributors or agents in your area for further information when necessary.

* The description covered in this instruction manual is subject to change for improvement of the commodity without notice.

96・07 Printed in Japan (F)

JUKI®

Sewing machine for leather and heavy-weight materials

DU-141H-7, DNU-241H-7
DSU-142-7, -144-7, -145-7
DSC-244-7, -244V-7, -245-7, -245V-7, -246-7, -246V-7
PLW-1245-7, -1246-7, -1257-7, -1264-7, -1266-7
LZH-1290-7, LU-1114-7
INSTRUCTION MANUAL (SUPPLEMENT)

No.00

29186707

Congratulations on your purchase of a JUKI sewing machine.
To get the most out of many functions of the machine, it is necessary to use the unit correctly.
Please read this Instruction Manual carefully before using it.
We hope you will enjoy use for your machine for a long time.
After you have read this Instruction Manual, keep it taking care not to lose it.

APPLICATION OF THE INSTRUCTION MANUAL (SUPPLEMENT) (READ THIS SECTION FIRSTLY.)

This Instruction Manual (supplement) gives additional explanation to the Instruction Manual for the respective models of sewing machines.

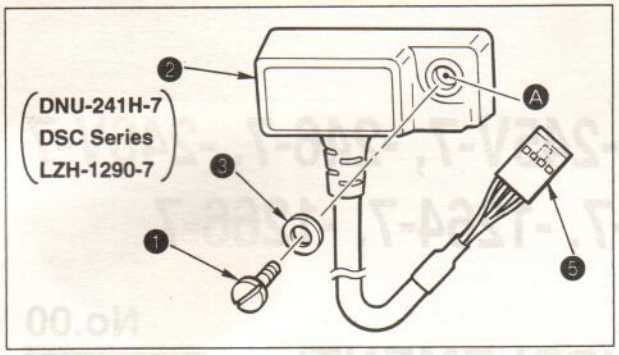
1) Refer to the Instruction Manual(supplement)for the items shown in the table below.(Do not refer to the Instruction Manual for the sewing machine.)

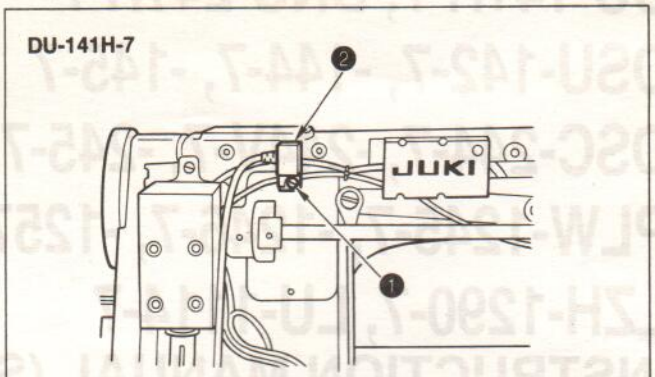
Item in the Instruction Manual (supplement)	Page	Item in the Instruction Manual for the sewing machine
1. Installing the resistor pack	2	—
2. Installing and connecting the operation box	3, 4	⬅ Installing and connecting the operation box
3. Pedal pressure and stroke	4	—
4. Installing and connecting the AK device (for the sewing machine provided with an AK device)	5, 6	—
5. Threading the panel thread guide (only for PLW series of sewing machine)	6	—
6. AK device (for the sewing machine provided with an AK device)	7	—
7. CP-30 and -33 control panels	8	—
8. One-touch utility manual reverse feed stitching	8	⬅ One-touch utility manual reverse feed stitching/ compensation stitching

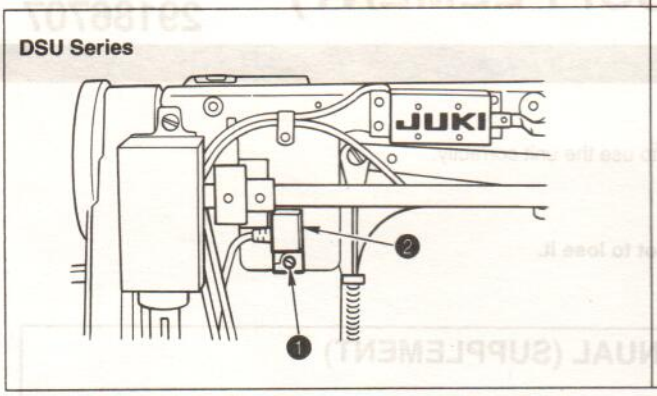
2) Refer to the following Instruction Manual for the items shown in the table below. (Do not refer to the Instruction Manual for the sewing machine.)

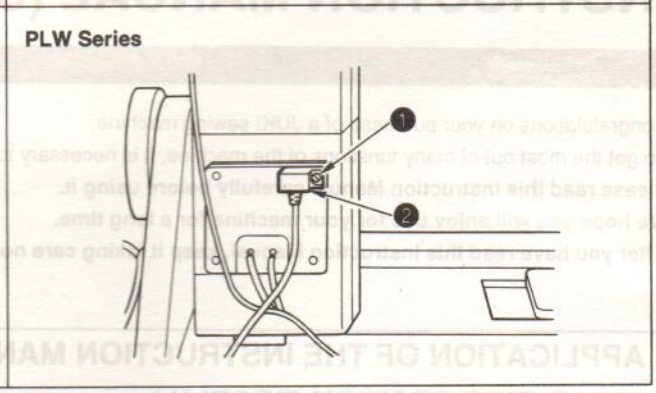
Item in the Instruction Manual for the sewing machine		Instruction Manual	Item	Page
Connecting the cords	➡	SC-1	I.2. Connecting the cords	2, 3
Motor(only for the Instruction Manual for LZH-1290-6)	➡	SC-1	I.7. Motor	4
Adjusting the reverse feed stitching speed	➡	SC-1	II.1. Setting for the functions of SC-1 II.3. Function setting table (Function setting No. 8"S-BT")	5, 6 7, 8
Adjusting stitches for automatic reverse feed stitching	➡	CP-130, -230 -133, -233	Adjust the number of stitches for automatic reverse feed stitching in accordance with "3. How to operate the control panel for sewing stitching patterns"	
	➡	SC-1	II.1. Setting for the functions of SC-1 Decrease the sewing speed in accordance with " II.3 .Function setting table(Function setting No. 8 "S-BT")"	5, 6 7, 8

1. INSTALLING THE RESISTOR PACK



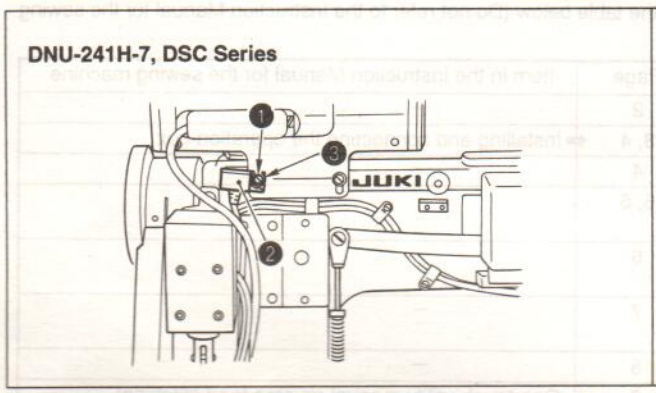


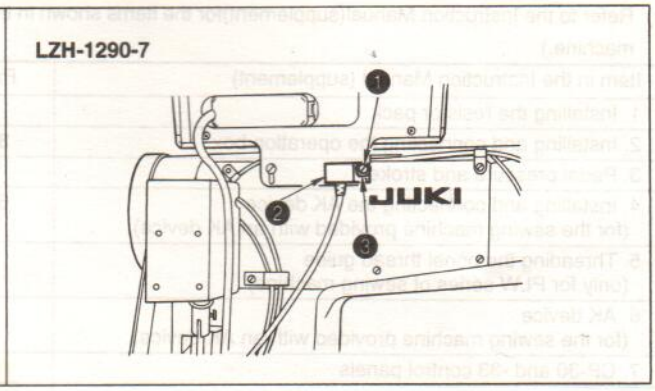




[DU-141H-7, DSU Series, PLW Series]

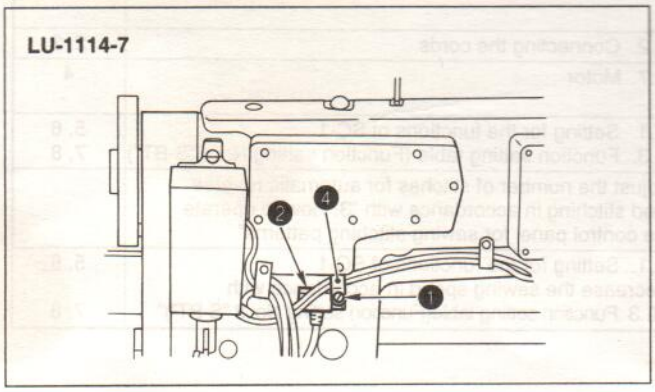
Remove screw ❶ from the sewing machine and attach resistor pack ❷ to the sewing machine through hole Ⓐ.





[DNU-241H-7, DSC Series, LZH-1290-7]

1) Install the control panel to the sewing machine in accordance with "2. Installing and connecting the operation box."
2) Remove screw ❶ and washer ❸ from the control panel and put them through hole Ⓐ in resistor pack ❷.
3) Then, attach the resistor pack to the machine by putting the screw and washer through the hole in the control panel.



[LU-1114-7]

1) Remove screw ❶ together with cord clamp ❹ from the sewing machine.
2) Attach the resistor pack to the machine by putting the screw through hole Ⓐ in resistor pack ❷.

(Caution) 1. For each model of sewing machine, connect ❺-pin plug ❺ of the resistor pack to the connector with the identification mark " TYPE " on the PSC box.(Refer to " I.2. Connecting the cords" in the Instruction Manual for the SC-1.)

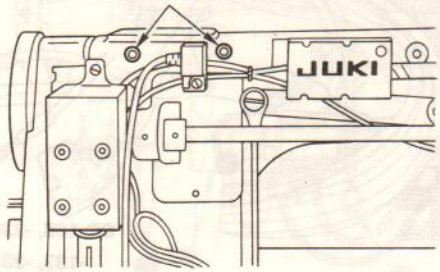
2. In some districts, the resistor pack need not to be installed/connected to the sewing machine. (In this case, the machine is not supplied with a resistor pack as an accessory.)

2. INSTALLING AND CONNECTING THE OPERATION BOX

(1) Installing the operation box

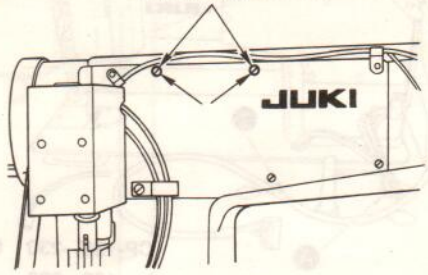
DU-141H-7, DNU-241H-7, DSU Series, DSC Series

Installing position

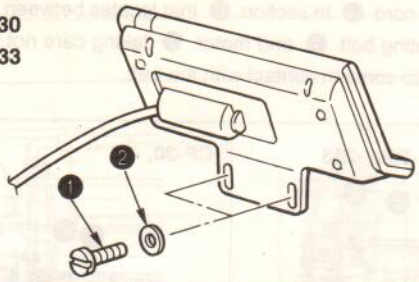


LZH-1290-7

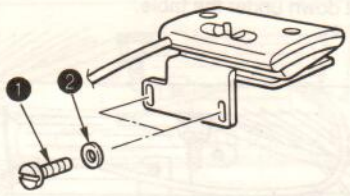
Installing position



CP-130, -230
-133, -233



CP-30
-33



[DU-141H-7, DNU-241H-7, DSU Series, DSC Series]

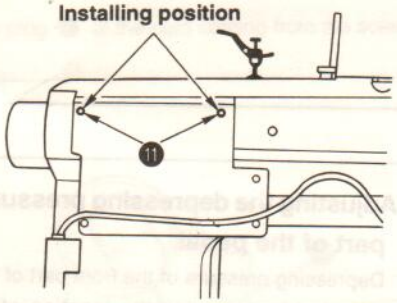
Attach the control panel to the sewing machine using screws ❶ and washers ❷ supplied with the unit.

[LZH-1290-7]

1) Remove screws ❸ from the sewing machine.
2) Attach the control panel to the sewing machine using screws ❶ and washers ❷ supplied with the unit.

PLW Series

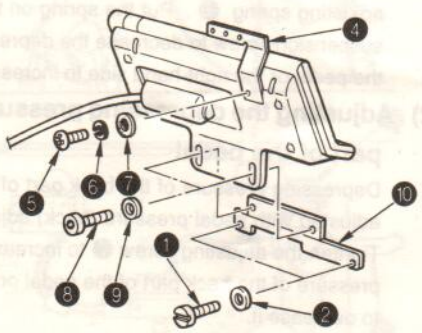
Installing position



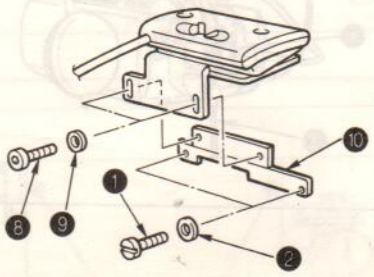
[PLW Series]

1) Attach control panel thread guide ❹ to the control panel using screw ❺, spring washer ❻ and washer ❼ supplied with the unit.
   (When CP-130, -230, -133 or -233 is used)
2) Install the control panel onto installing plate ❿ using screw ❽ and washer ❾ supplied with the machine head.
3) Remove screw ⓫ from the sewing machine.
4) Attach installing plate ❿ to the sewing machine using screw ❶ and washer ❷ supplied with the control panel.

CP-130, -230
-133, -233



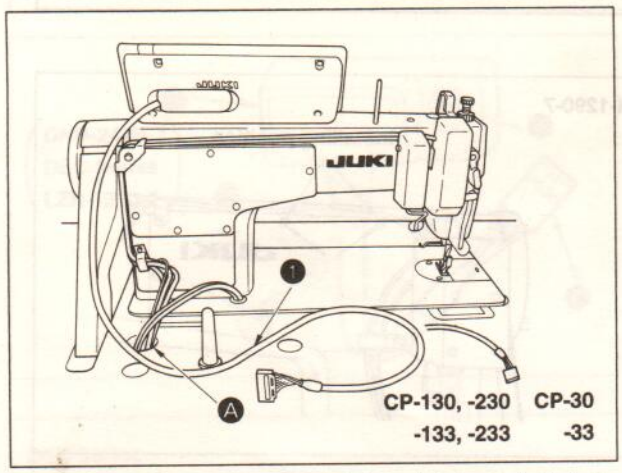
CP-30
-33



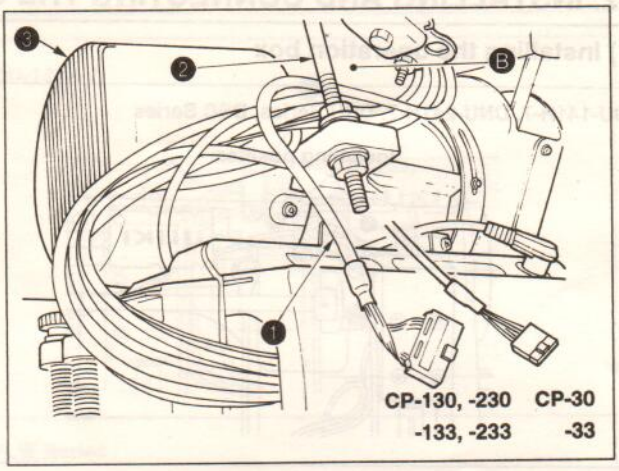
[LU-1114-7]

Refer to the Instruction Manual for the control panel (when CP-130, -133, -230 or -233 is used), the Instruction Manual for CP-30 or that for CP-33.

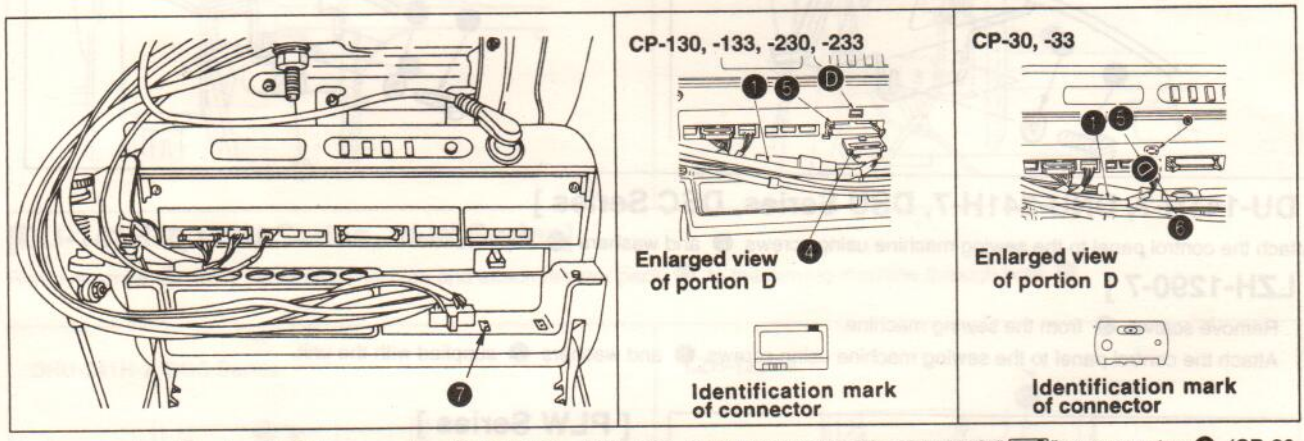
(2) Connecting the cords



1) Pass cord ❶ of the control panel through hole Ⓐ in the table and route it down under the table.

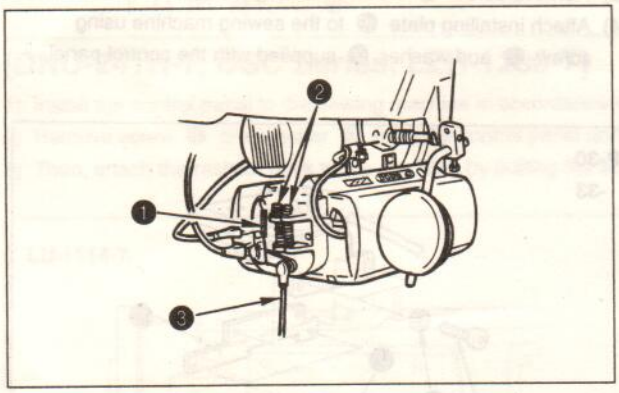


2) Pass cord ❶ in section Ⓑ that locates between belt tension adjusting bolt ❷ and motor ❸ taking care not to allow the cord to come in contact with the belt.



3) Connect plug ❹ of cord ❶ to connector ❺ (CP-130, -133, -230, -233) with the identification mark "▭" or connector ❻ (CP-30, -33) with the identification mark "▭".

3. PEDAL PRESSURE AND STROKE



(1) Adjusting the depressing pressure of the front part of the pedal

Depressing pressure of the front part of the pedal can be adjusted by changing the location of pedal pressure adjusting spring ❶. Put the spring on the left-hand side suspension screw to decrease the depressing pressure of the pedal or the right-hand side to increase it.

(2) Adjusting the depressing pressure of the back part of the pedal

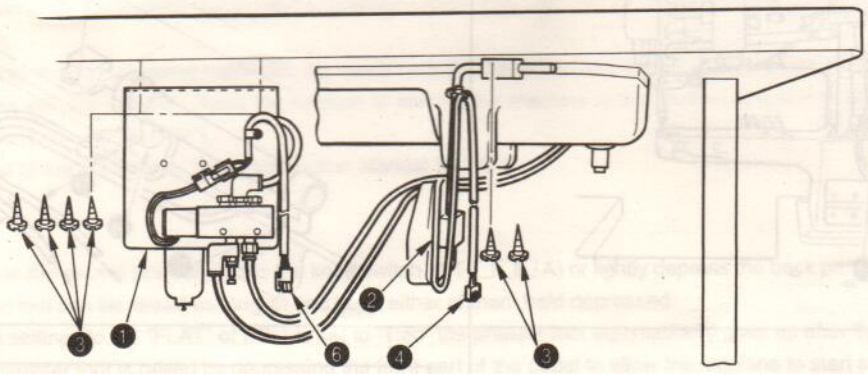
Depressing pressure of the back part of the pedal can be adjusted with pedal pressure (back) adjusting screw ❷. Tighten the adjusting screw ❷ to increase the depressing pressure of the back part of the pedal or loosen the screw to decrease it.

(3) Adjusting the depressing stroke of the pedal

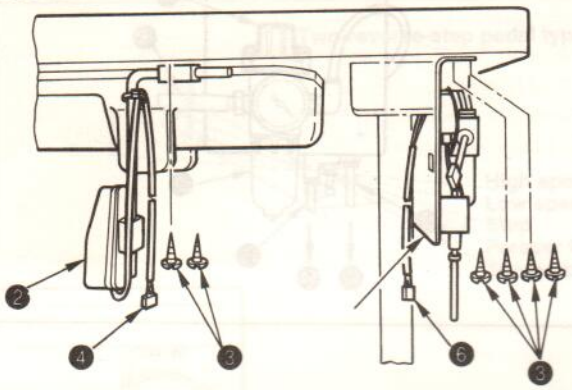
Remove connecting rod ❸ from the current position and attach it to the left-hand side hole, and the stroke will be decreased.

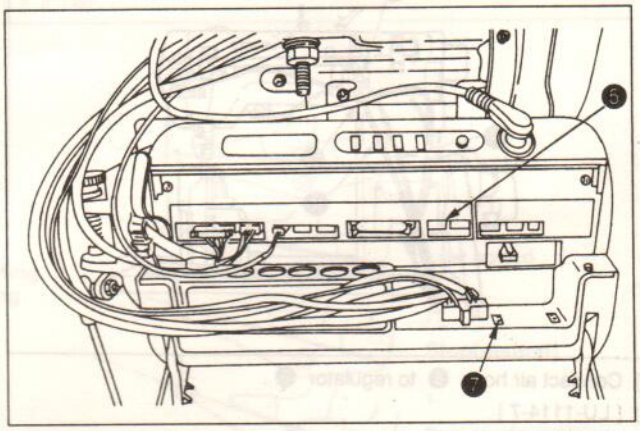
4. INSTALLING AND CONNECTING THE AK DEVICE

DU-141H-7, DNU-241H-7, DSU Series, DSC Series, PLW Series, LZH-1290-7



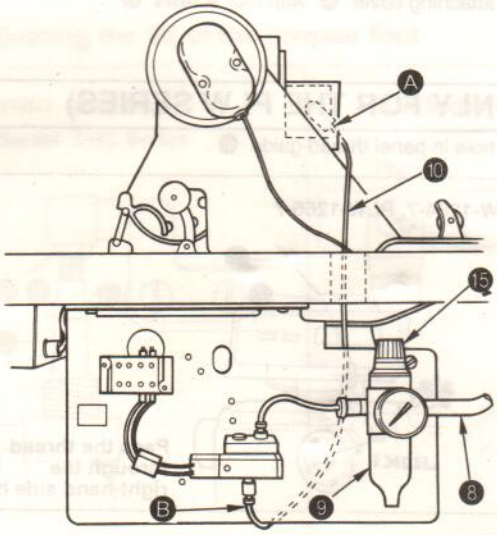
LU-1114-7

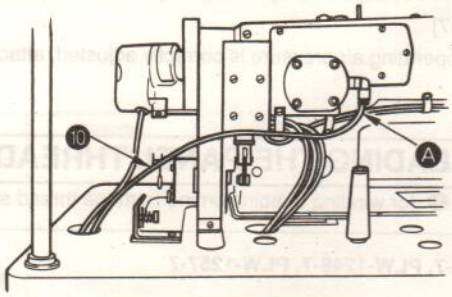


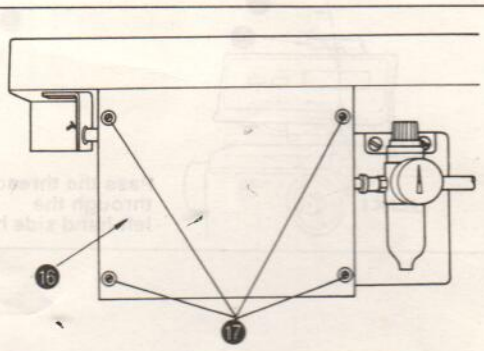


1) After the sewing machine has been set up, attach solenoid valve installing plate ❶, knee switch (asm.) ❷ (AK-□□□A) to the underside of the table with wooden screws ❸ supplied with the unit.
2) Connect 12-pin plug ❹ coming from knee switch (asm.) ❷ to connector ❺ with the identification mark "▰" on the PSC box. (AK-□□□A)
3) Connect 2-pin plug ❻ of the cord coming from the solenoid valve to connector ❼ with the identification mark "▙".

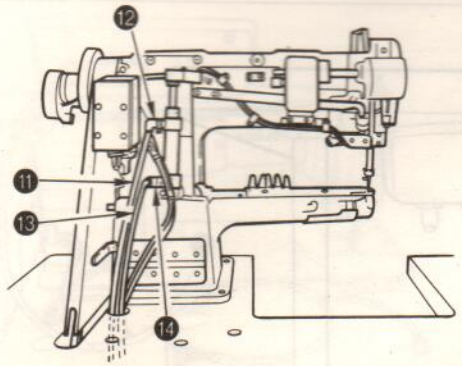
LU-1114-7



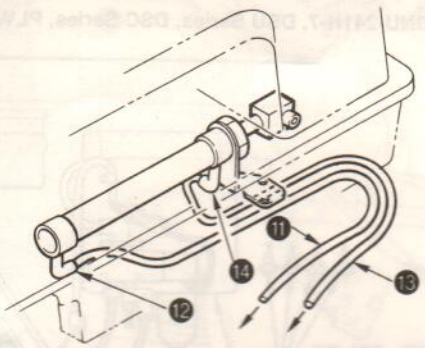




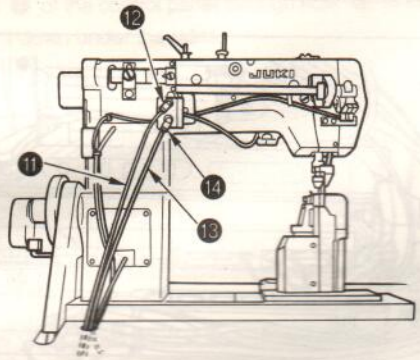
DU-141H-7, DNU-241H-7, DSC Series, DSU Series

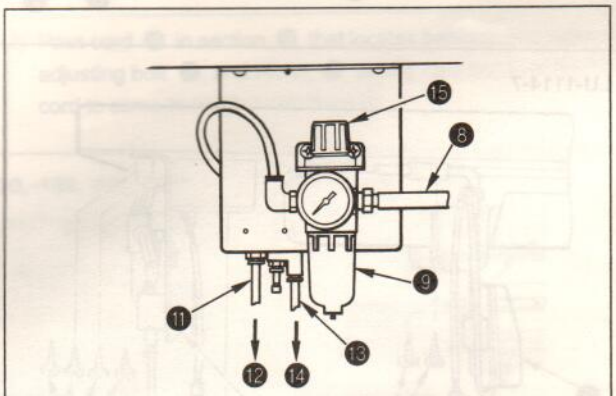


LZH-1290-7



PLW Series





4) Connect air hose ❽ to regulator ❾.

5) [LU-1114-7]
Connect air hose ❿ from Ⓐ to Ⓑ.
[Models other than LU-1114-7]
Connect air hose ⓫ to quick coupling joint ⓬ and air hose ⓭ to quick coupling joint ⓮.

(Caution) 1.Take care not to insert the air hoses to wrong quick coupling joints.
2.Fully insert the air hoses into the quick coupling joints taking care not to allow air to leak.
3.Carefully prevent the air hoses from bending.

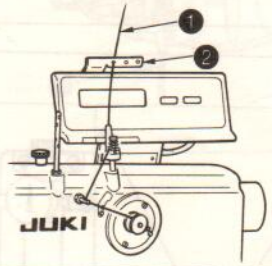
6) After the completion of piping, adjust the operating air pressure to 0.4 to 0.5 MPa (4 to 5 kgf/cm^2) using knob ⓯ of regulator ❾.
(For LU-1114-7, adjust the operating air pressure to 0.55 MPa (5.5 kgf/cm^2).)

7) [LU-1114-7]
After the operating air pressure is correctly adjusted, attach solenoid valve attaching cover ⓰ with four screws ⓱.

5. THREADING THE PANEL THREAD GUIDE (ONLY FOR THE PLW SERIES)

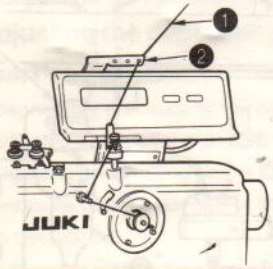
Pass thread ❶ for winding bobbin coming from the thread stand through the hole in panel thread guide ❷.

PLW-1245-7, PLW-1246-7, PLW-1257-7



Pass the thread through the left-hand side hole.

PLW-1264-7, PLW-1266-7



Pass the thread through the right-hand side hole.

6. AK DEVICE (FOR THE SEWING MACHINE PROVIDED WITH AN AK DEVICE)

(1) Setting for the functions of SC-1

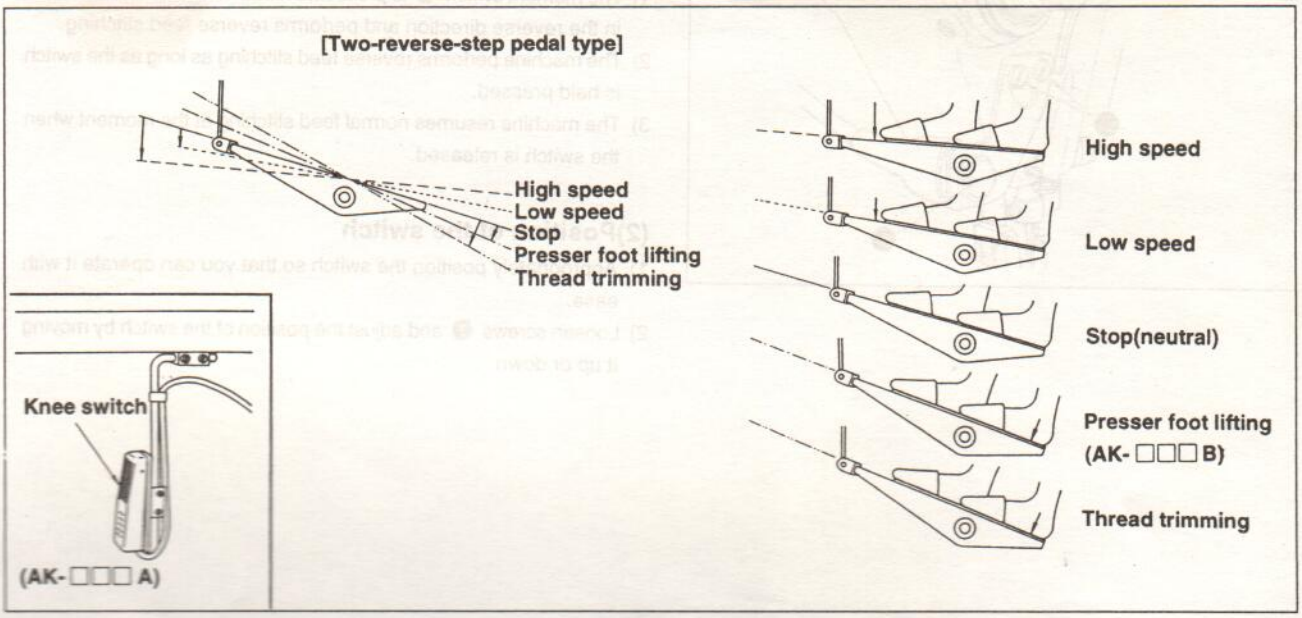
Pedal lifter function (AK- □□□ B) (function setting No. 50 "PFL"), function to lift the presser foot after thread trimming (function setting No. 55 "FLAT") and function to lift the presser foot to neutral position (when "" switch is ON) can be made operative by specifying the PSC box appropriately.

If, for LU-1114-7 or other models of sewing machines, the needle juts out under the presser foot when the presser foot is raised after thread trimming and interferes with the material, make the function to revolve the machine in the reverse direction to lift the needle after thread trimming (function setting No. 56 "RATRM").

Refer to " Ⅱ. Operation of the control box" in the Instruction Manual for SC-1.

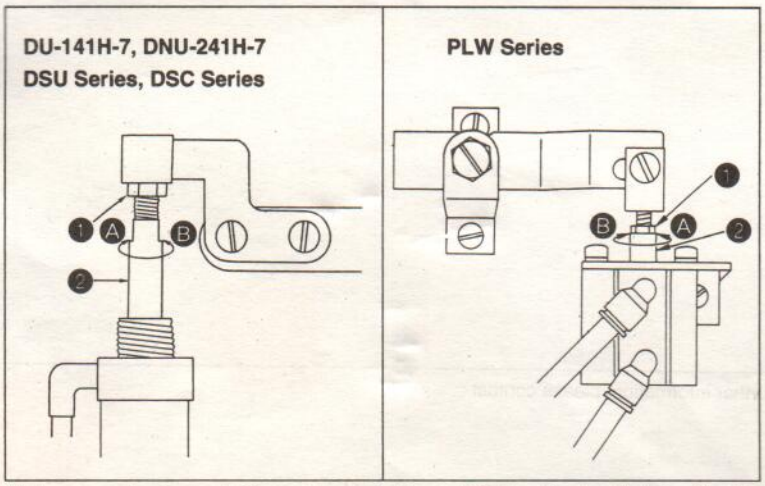
(2) How to use

1) When the pedal is in the neutral position, press the knee switch (AK- □□□ A) or lightly depress the back part of the pedal (AK- □□□ B), and the presser foot can be raised as long as you keep either of them held depressed.
2) When the function setting No. 55 "FLAT" of SC-1 is set to "1:on" the presser foot automatically goes up after thread trimming.
   - In this case, the presser foot is raised by depressing the front part of the pedal to allow the machine to start sewing.
   - Presser foot can be lowerd by depressing the knee switch once and returning it to the home position (AK- □□□ A) or depressing the back part of the pedal and returning it to the neutral position (AK- □□□ B) .



(Caution) The presser foot lifting function controlled by the pedal (AK- □□□ B) is only effective when the function setting No. 50 "PFL" of the PSC box of SC-1 type AB is set to "1:on".

(3) Adjusting the lift of the presser foot

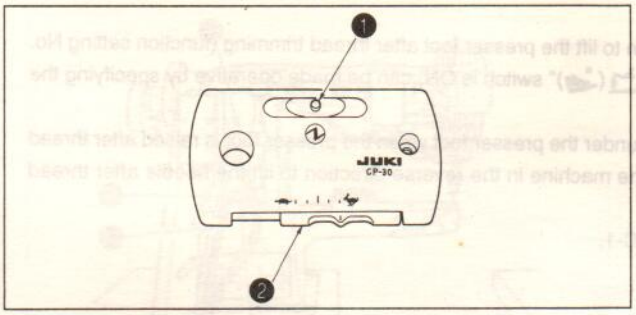


Sewing machine	Part to go up	Lifting amount (mm)
DU-141H-7	Lift of the intermediate presser	15
DNU-241H-7	Lift of the feeding frame	15
DSU Series	Lift of the intermediate presser	13
DSC Series	Lift of the feeding frame	13
PLW Series	Lift of the top roller	9

(For the LZH-1290-7 and LU-1114-7, the lift of the intermediate presser is set to 15 mm.)

1) Loosen adjusting nut ❶ and turn cylinder rod ❷ to adjust so that the lift of the relevant presser foot is set to the aforementioned values when the cylinder is fully retracts. Turn cylinder rod ❷ in direction Ⓐ to decrease the lifting amount or in direction Ⓑ to increase it.
2) After the completion of the adjustment, tighten adjusting nut ❶ .

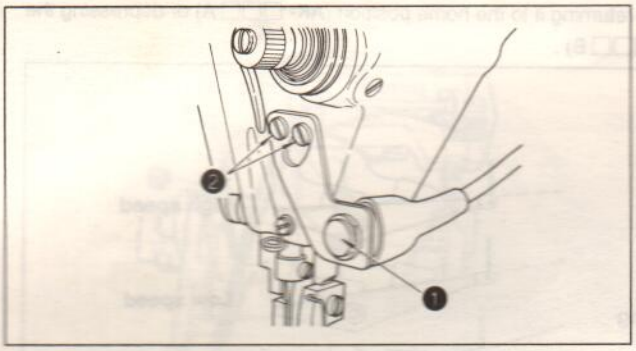
7. CP-30, -33 CONTROL PANEL



❶ Power indicator LED : Lights up when the power switch is turned ON.

❷ Max. sewing speed control variable resistor : The max. sewing speed is limited to a certain value when it is moved to the left (🐢).

8. ONE-TOUCH UTILITY MANUAL REVERSE FEED STITCHING



(1)How to operate

1) The moment switch ❶ is pressed, the machine feeds the material in the reverse direction and performs reverse feed stitching.
2) The machine performs reverse feed stitching as long as the switch is held pressed.
3) The machine resumes normal feed stitching at the moment when the switch is released.

(2)Position of the switch

1) Appropriately position the switch so that you can operate it with ease.
2) Loosen screws ❷ and adjust the position of the switch by moving it up or down.

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Please do not hesitate to contact our distributors or agents in your area for further information when necessary.

*** The description covered in this instruction manual is subject to change for improvement of the commodity without notice.**

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