

***ENGLISH***

**DU-1281-7  
INSTRUCTION MANUAL**

# CONTENTS

<b>1. SPECIFICATIONS .....</b>	<b>1</b>
<b>2. PREPARATION BEFORE OPERATION.....</b>	<b>2</b>
2-1. Installing the knee lifter.....	2
2-2. Installing the waste oil receiver.....	2
2-3. Lubrication .....	3
2-4. Oiling state .....	3
2-5. Adjusting the amount of oil in the hook.....	3
2-6. Adjusting the oil in the pump .....	4
2-7. Installing the synchronizer .....	4
2-8. Installing the belt cover and the bobbin winder .....	4
<b>3. HOW TO ADJUST AND HOW TO USE THE SEWING MACHINE .....</b>	<b>5</b>
3-1. Attaching the needle .....	5
3-2. Threading the machine head .....	5
3-3. Adjusting the stitch length and reverse-feed stitching.....	6
3-4. Indication of the direction of rotation of the bobbin case .....	6
3-5. Thread tension.....	6
3-6. Presser foot pressure.....	7
3-7. How to install the intermediate presser.....	7
3-8. Hand lifter .....	7
3-9. Height of the feed dog.....	8
3-10. Adjusting the inclination of the feed dog .....	8
3-11. Adjusting the stitch length for forward stitching and reverse stitching .....	8
3-12. Adjusting the waling foot and presser foot.....	9
3-13. Needle-to-hook relationship .....	10
3-14. Feed timing .....	10
3-15. Relation between the counter knife and the tip of the thread trimmer blade (left) .....	11
3-16. Adjusting the mesh of the knife .....	11
3-17. Adjusting the thread trimming cam .....	12
3-18. Adjusting the amount of mesh of the thread trimmer blades .....	12
3-19. Adjusting the counter knife pressure .....	13
3-20. Auxiliary thread tension.....	13
3-21. One-touch type manual reverse stitching.....	13
<b>4. TROUBLES IN SEWING AND CORRECTIVE MEASURES.....</b>	<b>14</b>

# 1. SPECIFICATIONS

Application	Pouches, bags, shoes	Needle system	DP x 17 #16 - #23 (Standard #22)
Sewing speed	Max. 2,000 sti/min		DB x 1 #20 - #23
Stitch length	Max. 8 mm	Thread	#8 - #30
Lift of presser foot	Hand lifter : 6 mm	Stitch adjusting method	Dial
	Knee lifter : 16 mm	Lubrication method	Automatic lubrication
Thread take-up lever	Link-type thread take-up lever	Motor to be used	Servomotor
Needle bar stroke	38mm	Oil be used	Spindle oil
Needle to be used	DP x 17 (DB x 1 can be used.)		
Noise	- Equivalent continuous emission sound pressure level (L <sub>pA</sub> ) at the workstation: A-weighted value of 79.0 dB; (Includes K <sub>pA</sub> = 2.5 dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 2,000 sti/min.		

## • Applicable JUKI control box and motor

**SC-921C \*-AA** 

Destination

Classification  
of control box

Control box .....SC-921 (Machine head setting (memory switch No. 95) "du12")

Motor .....M-51N

Position sensor .....SY-2

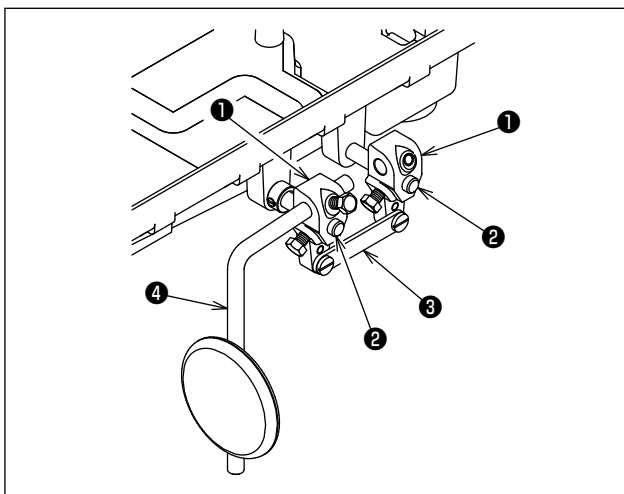
(Synchronizer)

Motor pulley .....Outside diameter: 75 mm (Marker: 80) Part No.: MTSP00750A0

V belt .....Size M M-40 Part No.: MTJV0040000

## 2. PREPARATION BEFORE OPERATION

### 2-1. Installing the knee lifter



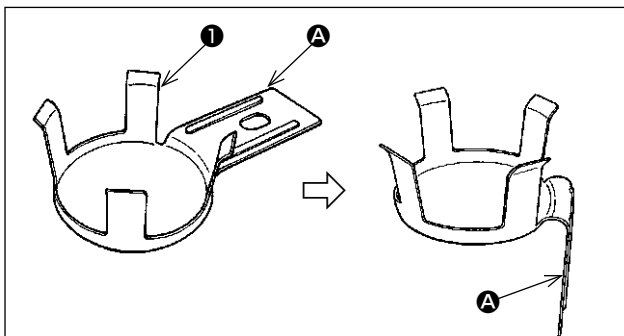
- 1) Fully draw out knee lifter shafts ② toward you. Then, install it on the sewing machine.
- 2) Attach driving arm ① to respective shafts ② .
- 3) Connect right and left driving arms ① together with link ③ .
- 4) Install knee lifter lever ④ to driving arm ① on the left side.

### 2-2. Installing the waste oil receiver

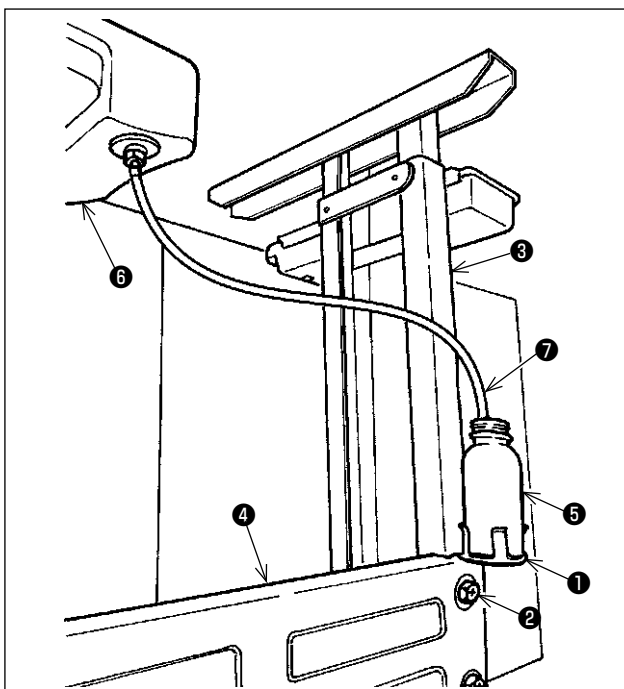


#### WARNING :

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



- 1) Fold mounting section A of waste oil receiver bracket ① at a right angle.



- 2) Remove one lateral bracing strut setscrew ② . Insert folded mounting section A of waste oil receiver bracket ① into the section between strut ③ and lateral bracing strut ④ .
- 3) Tighten lateral bracing strut ④ and waste oil receiver bracket ① with lateral bracing strut setscrew ② together.



**Firmly tighten lateral bracing strut setscrew ② .**

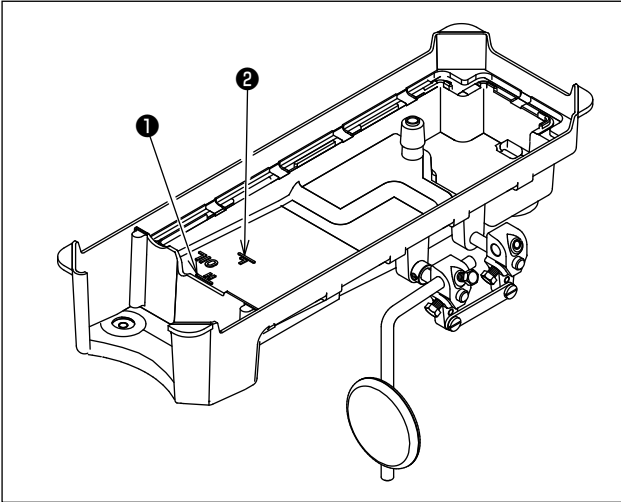
- 4) Place waste oil receiver ⑤ on waste oil receiver bracket ① . Insert tube ⑦ coming from oil pan ⑥ into waste oil receiver ⑤ .
- \* Adjust the length of tube ⑦ according to the distance between oil pan ⑥ and waste oil receiver ⑤ .

## 2-3. Lubrication



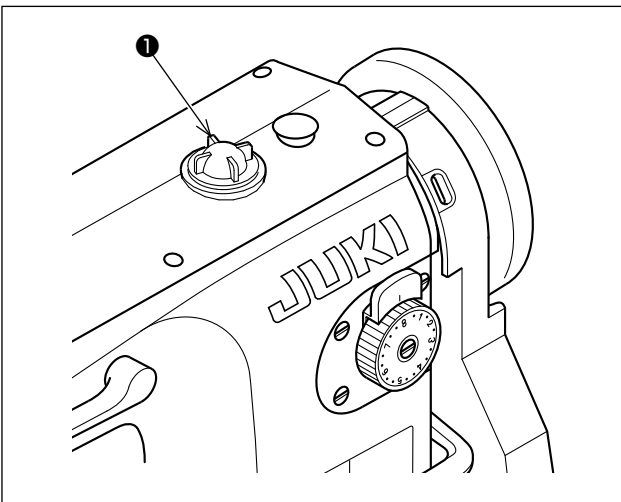
### WARNING :

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



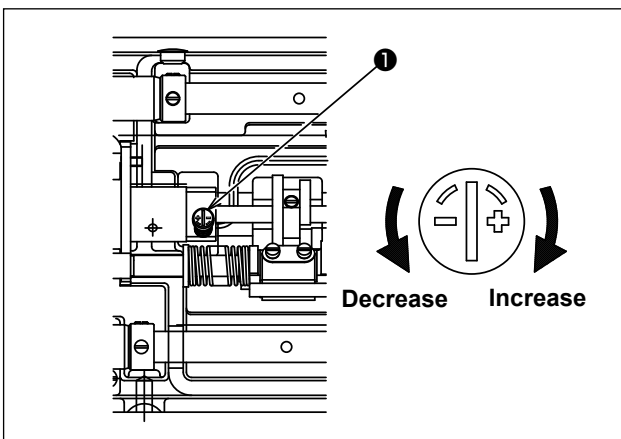
- 1) Fill the oil tank with oil up to line H ① .
- 2) Carry out periodical inspection while the sewing machine is in use to check the oil quantity. If the oil surface level is below line L ② , add oil until the oil surface reaches line H ① .  
(Use "spindle oil".)

## 2-4. Oiling state



Run the sewing machine to check how oil splashes on oil sight glass ① .

## 2-5. Adjusting the amount of oil in the hook



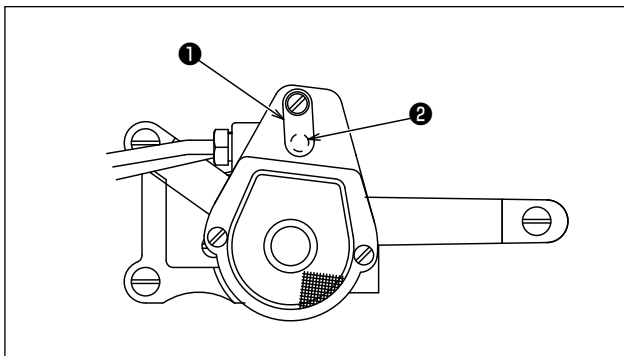
Turn screw ① to adjust the oil quantity.

Turning screw ① in the "+" direction increases the oil quantity, or in the "-" direction decreases it.



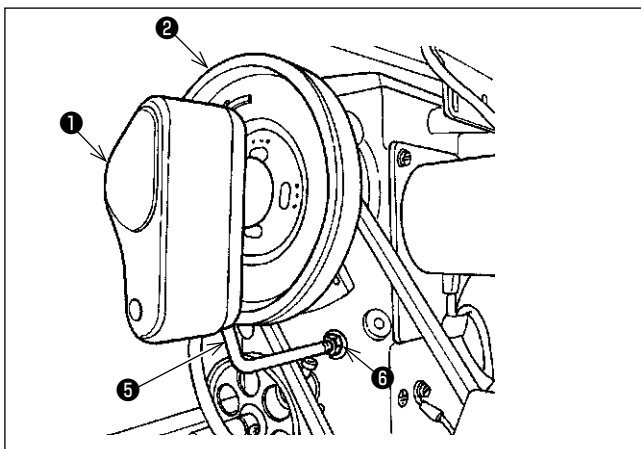
After adjusting the oil quantity with the screw, run the sewing machine idle for 30 seconds or more. Then, check the oil being splashed from the hook.

## 2-6. Adjusting the oil in the pump

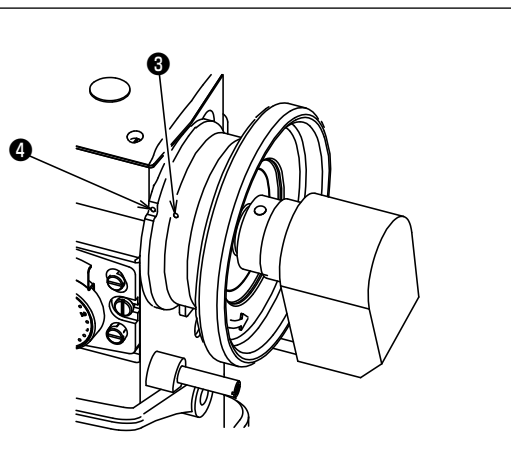


- 1) In the standard state, bypass hole ② is fully closed with adjusting plate ①.
- 2) The wider bypass hole ② is opened, the less the oil quantity becomes.

## 2-7. Installing the synchronizer



- 1) Screw whirl-stop ⑤ into the tapped hole in the arm in the figure and fix it with nut ⑥.
- 2) Mount synchronizer ① on handwheel ②.
- 3) Move whirl-stop ⑤ to adjust the position at which the needle stops.  
Determine the stop position by adjusting the installing angle of the synchronizer ①.



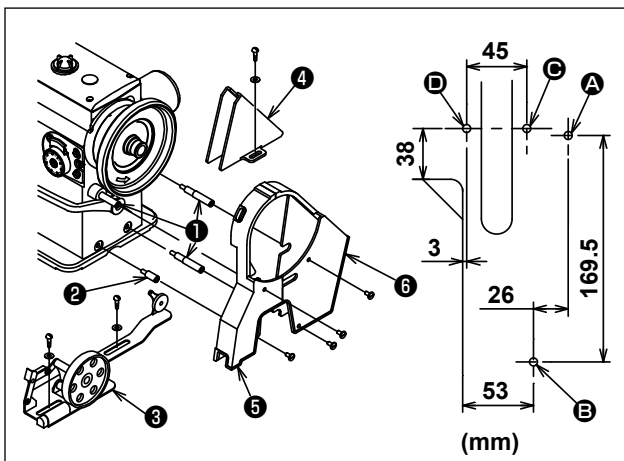
- \* Needle-up stop position  
Align white marker dot ③ on the handwheel with black marker dot ④ on the machine arm.
- \* Needle-down stop position  
Align black marker dot ③ on the handwheel with black marker dot ④ on the machine arm.

## 2-8. Installing the belt cover and the bobbin winder



### WARNING :

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



- 1) Bore wood-screw guide holes ①, ②, ③ and ④ in the table.
- 2) Fit belt cover struts ① and ② in tapped holes in the machine arm.
- 3) Adjust the position of bobbin winder ③ and fix it in guide holes ① and ② with wood screws.
- 4) Temporarily fix belt cover C ④ in guide holes ③ and ④.
- 5) Mount belt cover A ⑤ and belt cover B ⑥ to struts ① and ②.
- 6) Adjust the position of belt cover C ④ and fix it with the wood screw.

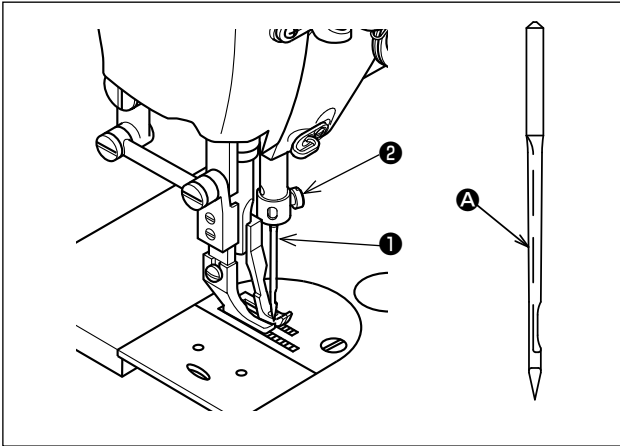
### 3. HOW TO ADJUST AND HOW TO USE THE SEWING MACHINE

#### 3-1. Attaching the needle



**WARNING :**

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



The standard needle is DPx17. DBx1 needle is also applicable.

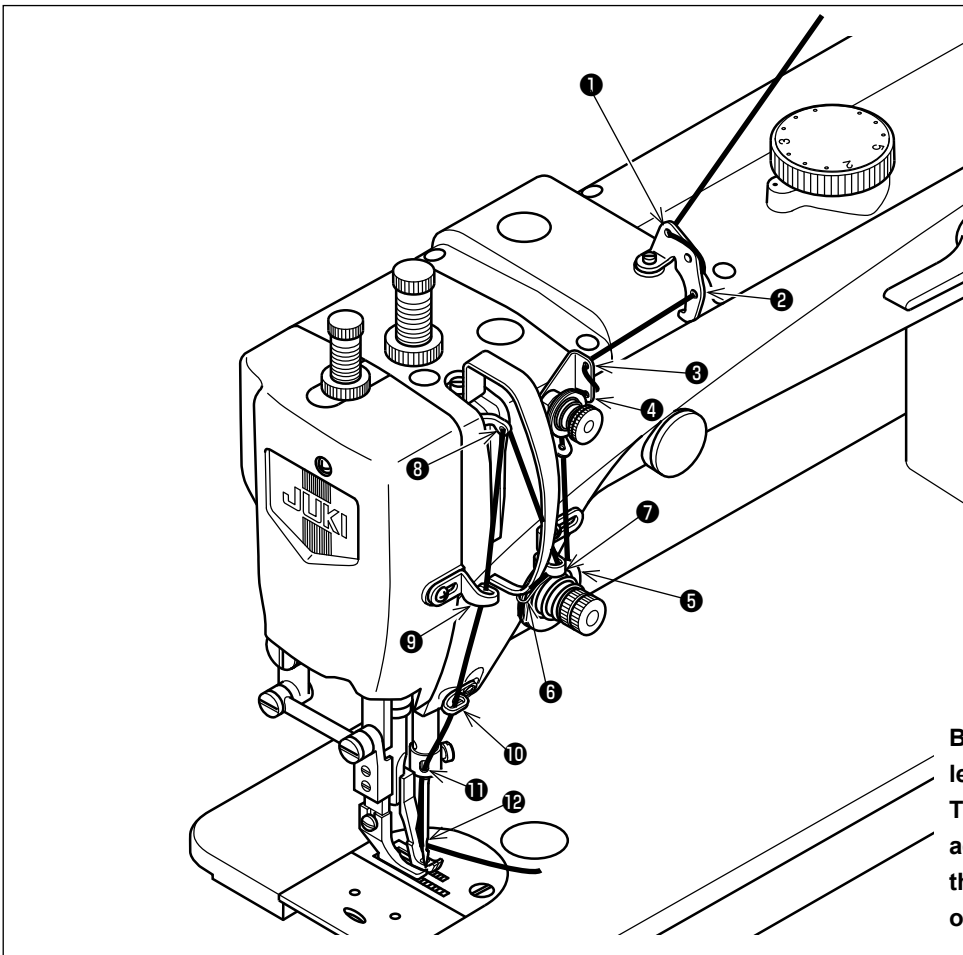
- 1) Turn the handwheel to move the needle bar up to its highest position.
- 2) Loosen needle clamping screw ②, and hold needle ① so that long groove A in needle ① faces exactly to the left.
- 3) Insert the needle into the needle ① bar until it will go no further. Securely tighten the needle clamping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

#### 3-2. Threading the machine head



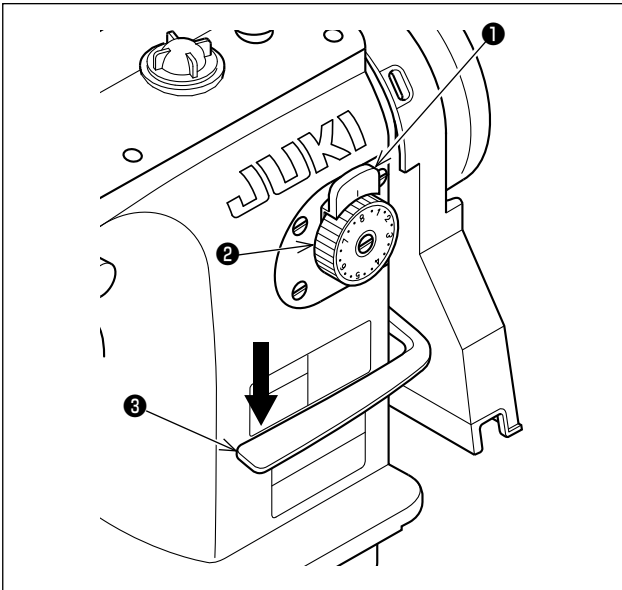
**WARNING :**

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



Bring the thread take-up lever to its highest position. Thread the machine head according to the numbers in the figure in the numerical order.

### 3-3. Adjusting the stitch length and reverse-feed stitching



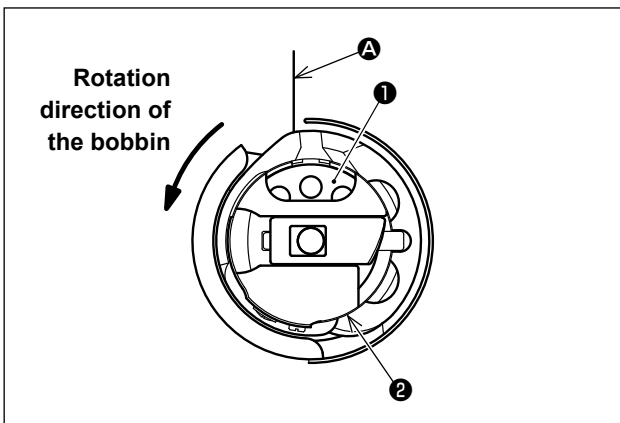
To change the stitch length, press push-lever ① and turn stitch dial ② .

#### [Reverse feed stitching]

Push reverse feed lever ③ down. The machine performs reverse feed stitching as long as the lever is held depressed.

Release the lever, and the machine will immediately resume the forward stitching mode.

### 3-4. Indication of the direction of rotation of the bobbin case



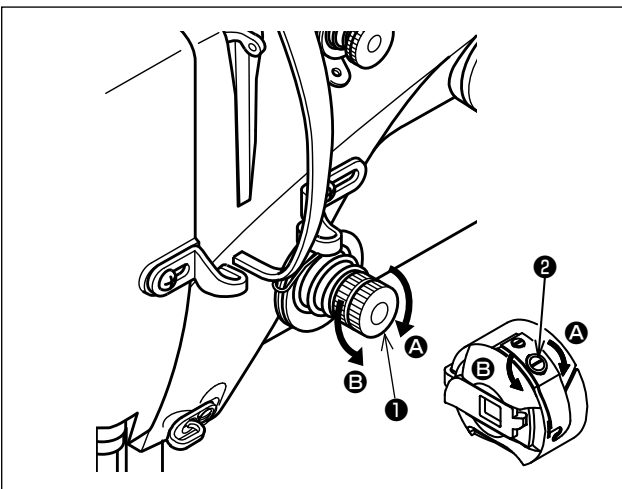
Fit a bobbin ① in bobbin case ② to allow bobbin ① to turn in the direction of the arrow when drawing bobbin thread ④.

### 3-5. Thread tension



#### WARNING :

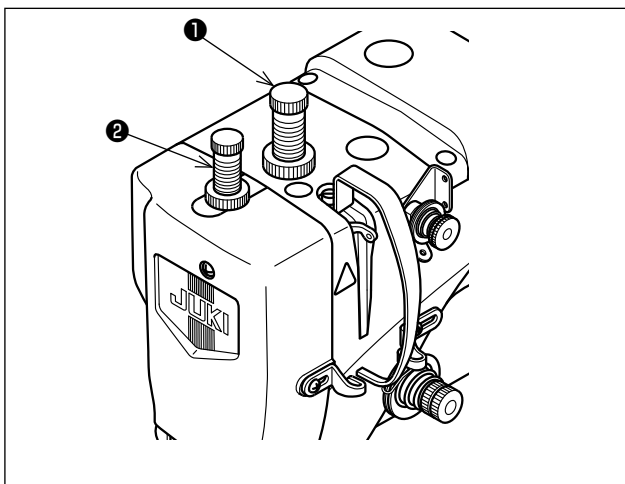
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



- 1) Adjusting the needle thread tension  
Turn tension nut ① toward ④ to increase the needle thread tension, or toward ⑤ to decrease it.
- 2) Adjusting the bobbin thread tension  
Turn thread tension screw ② toward ④ to increase the bobbin thread tension, or toward ⑤ to decrease it.



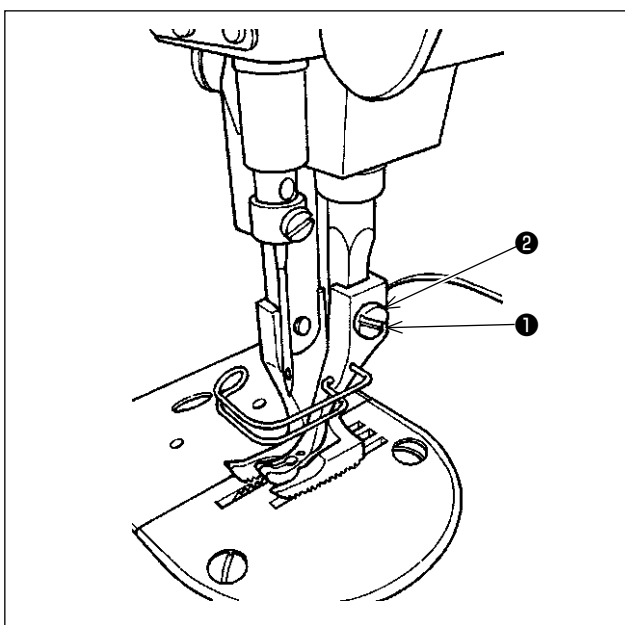
### 3-6. Presser foot pressure



- 1) Adjust the pressure of the presser foot according to the sewing product.
- 2) The pressure of the presser foot ① and that of the walking foot ② can be adjusted separately.

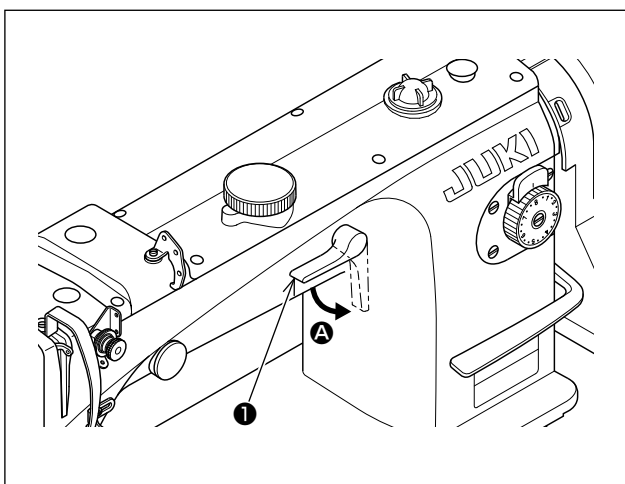
\* Use the machine with the minimum pressure which is necessary.

### 3-7. How to install the intermediate presser



Tighten screw ② while shifting intermediate presser ① upward.

### 3-8. Hand lifter



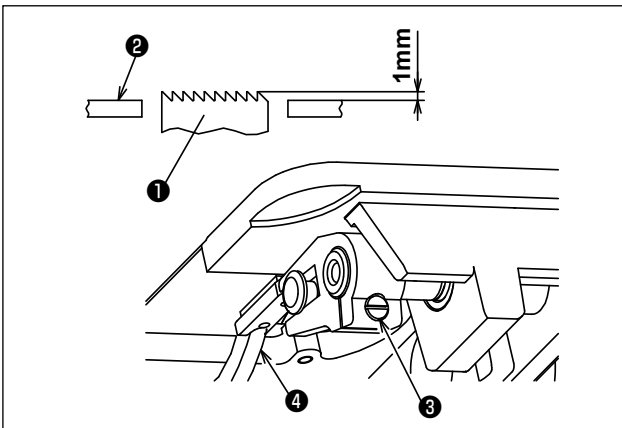
Turning presser bar lifting lever ① in the direction of arrow A lifts the presser foot.

### 3-9. Height of the feed dog



**WARNING :**

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



Feed dog ① is factory-adjusted to jut out 1.0 mm from the surface of throat plate ② .

When the feed dog height needs to be adjusted according to the sewing specifications or after the feed dog is replaced, do as follows :

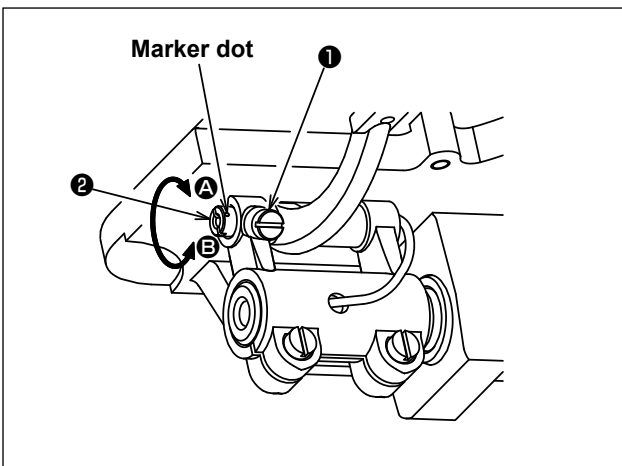
- 1) Loosen screw ③ .
- 2) Move feed bar ④ up and down to adjust the height of the feed dog. Then, firmly tighten the clamping screw.

### 3-10. Adjusting the inclination of the feed dog



**WARNING :**

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



The feed dog has been factory-adjusted so that it is levelled (horizontal state).

Adjust the inclination of the feed dog according to the sewing conditions.

- 1) Loosen feed rock shaft crank setscrew ① .
- 2) Turn the eccentric shaft in direction ④ (to lower the front section) or direction ⑤ (to raise the front section) while pressing the slot in eccentric shaft ② with a screwdriver.
- 3) After the adjustment, firmly tighten feed rock shaft crank setscrew ① .

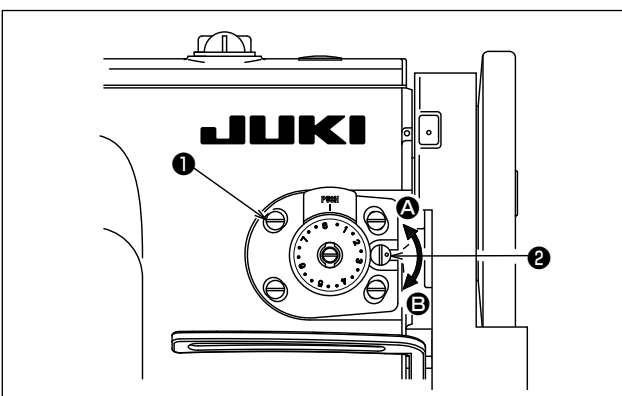
Position of marker dot on eccentric shaft	Feed dog
⊕ Standard	Standard
⊕ Directly above	
⊕ Directly below	

### 3-11. Adjusting the stitch length for forward stitching and reverse stitching



**WARNING :**

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



- 1) Loosen mounting base setscrews ① (four).
- 2) Turning stitch adjusting pin ② with a screwdriver in direction ④ increases the stitch length for forward stitching.
- 3) Turning stitch adjusting pin ② with a screwdriver in direction ⑤ decreases the stitch length for reverse stitching.
- 4) After the adjustment, firmly tighten mounting base setscrews ① (four).

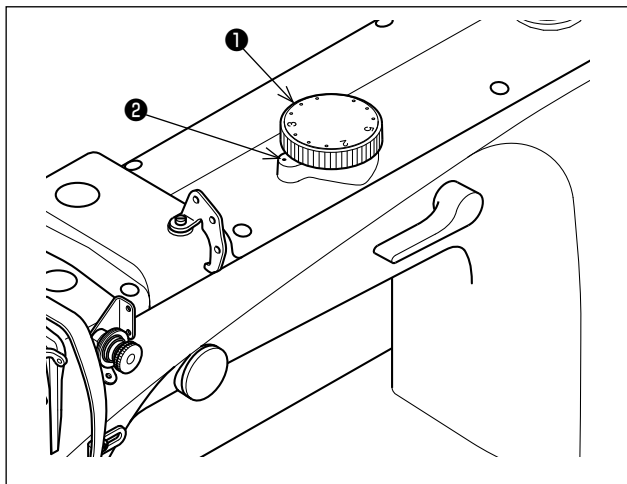
### 3-12. Adjusting the waling foot and presser foot



#### WARNING :

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

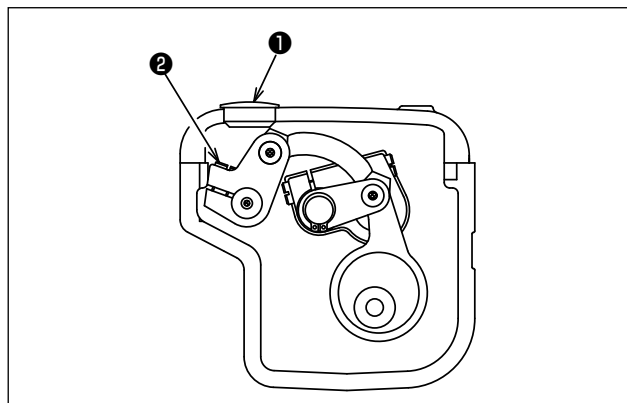
#### (1) Amount of the alternating vertical movement of the walking foot and presser foot



- 1) Amount of the alternating vertical movement of the walking foot and presser foot is to be adjusted with alternating vertical movement dial ① on the top cover.
- 2) Align the number on the alternating vertical movement dial with marker dot ② on the top cover.
- 3) The number on the alternating vertical movement dial indicates the lift amount of the walking foot and presser foot when the vertical movement amount of the walking foot and that of the presser foot are adjusted equally.

- 4) In the case the vertical movement amount of the walking foot and that of the presser foot are adjusted equally, the lift amount can be adjusted from 2.0 mm to 5.0 mm with the alternating vertical movement dial.

#### (2) To change the balance of the alternating vertical movement between the walking foot and presser foot

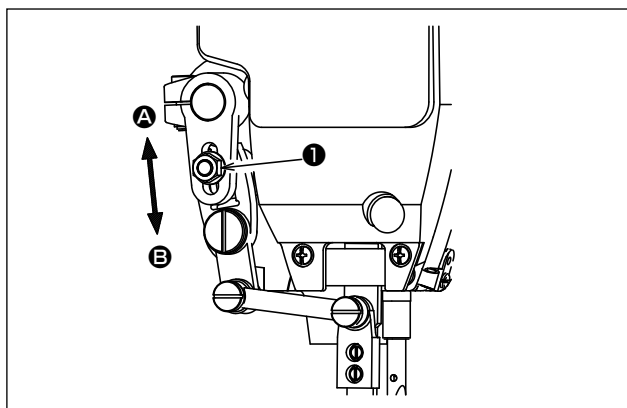


The vertical movement amount of the walking foot and that of the presser foot are equal as standard. It is possible to slightly reduce the vertical movement amount of the presser foot according to the sewing product.

- \* For example, in the case it is desired to increase the vertical movement amount of the waling foot and decrease that of the presser foot
- 1) Remove rubber plug ① of the top cover.
  - 2) Turn the handwheel until the presser foot slightly goes up from the throat plate and stop there.

- 3) Loosen walking bar adjusting lever clamping screw ② .
- 4) Since the presser foot comes down to the surface of the throat plate by the spring force, re-tighten walking bar adjusting lever clamping screw ② at that position.

#### (3) Adjusting the feed pitch of the walking foot



Top feed amount has been adjusted to 1:1 with respect to the bottom feed amount. However, it is possible to change the top feed amount with respect to the bottom feed amount according to sewing conditions.

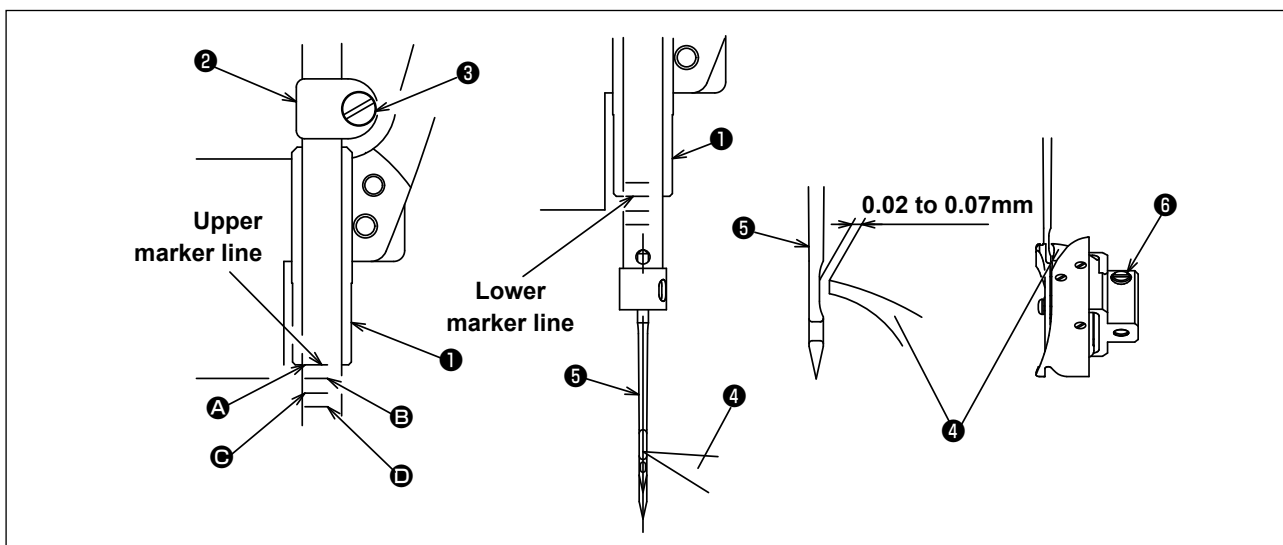
- Loosen nut ① . Adjust the position of the block up and down.
- \* Upper position → Feed pitch, small ①
- \* Lower position → Feed pitch, large ②

### 3-13. Needle-to-hook relationship



#### WARNING :

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



#### 1) Positioning the needle bar.

Tighten needle bar connection screw **3** in needle bar connection **2** so that the marker line of the needle bar aligns with the bottom end of needle bar lower bushing **1** at the lowest position of the needle bar.

(Fourth line **A** from the bottom for a DB x 1, second line **C** from the bottom for DP x 17)



After the height of the needle bar has been properly adjusted, check that the needle bar does not come in contact with the walking foot.

#### 2) Position the needle and the hook.

Adjust so that the specified marker line (third line **B** from the bottom for a DB x 1 needle, or line **D** at the bottom for a DP x 17 needle) on the ascending needle bar aligns with the bottom end of lower bushing **1**. Further adjust to make hook point **4** nearly meet the center of needle **5**, and adjust the clearance between needle **5** and hook point **4** to 0.02 to 0.07 mm. Then tighten hook screw **6**.

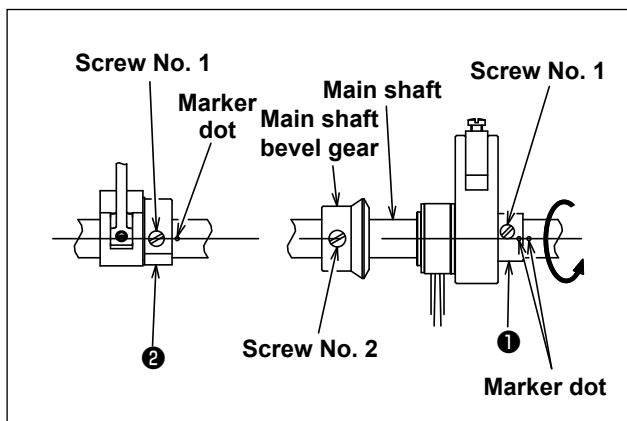
#### 3) To adjust the hook, remove the throat plate first. Loosen hook setscrew **6** with a screwdriver and adjust the hook position from the throat plate side.

### 3-14. Feed timing



#### WARNING :

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



#### 1) Standard installing position of feed eccentric cam **1** and that of walking bar lifting eccentric cam **2** are as shown in the figure.

#### 2) To adjust the feed timing, open the top cover and change the installing position of the feed eccentric cam of the walking foot.

#### 3) Timing is advanced by adjusting feed eccentric cam **1** in the direction of the arrow.

Timing is retarded by adjusting it in the opposite direction of the arrow.



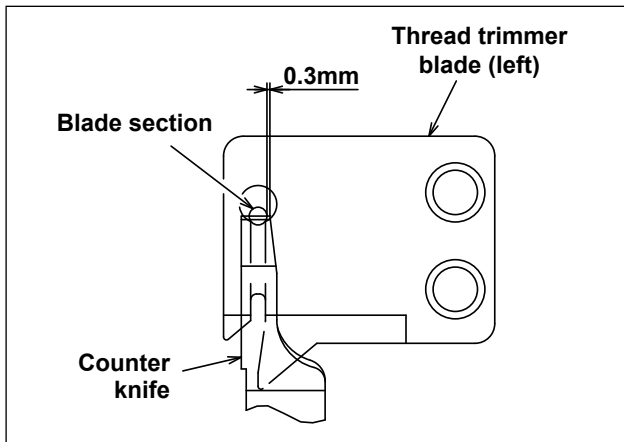
If the timing is too late, needle breakage can result. Adjust the timing appropriately according to the stitch length.

### 3-15. Relation between the counter knife and the tip of the thread trimmer blade (left)



**WARNING :**

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



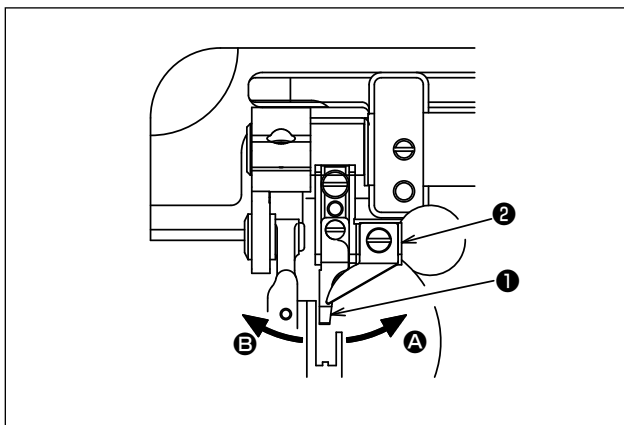
1) The standard position of the thread trimmer and that of the counter knife are as shown in the figure.

2) If the dimension in the figure is larger than 0.3 mm, a three-thread trimming error can occur causing slip-off of the needle thread after thread trimming. So, be careful.

On the other hand, if the dimension is excessively small, a thread trimming error can be caused. So, be careful.

\* Adjusting the counter knife

Adjust the counter knife by moving counter knife blade ① or knife mounting base ② in the direction A or B.

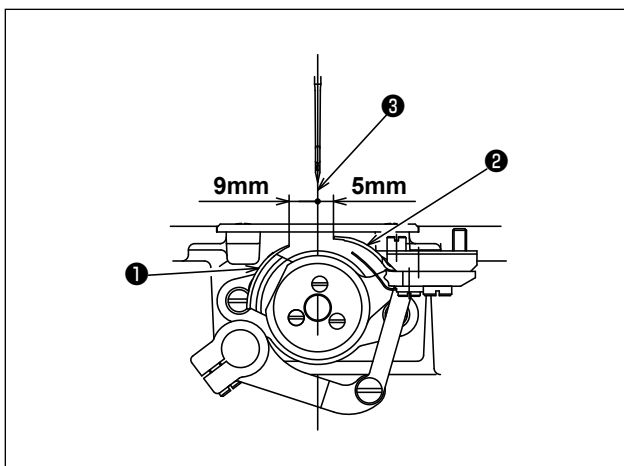


### 3-16. Adjusting the mesh of the knife



**WARNING :**

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



Position of the thread trimmer (left) ① and counter knife ②

The standard positioning of the thread trimmer (left) ① and counter knife ② is as illustrated in the figure.

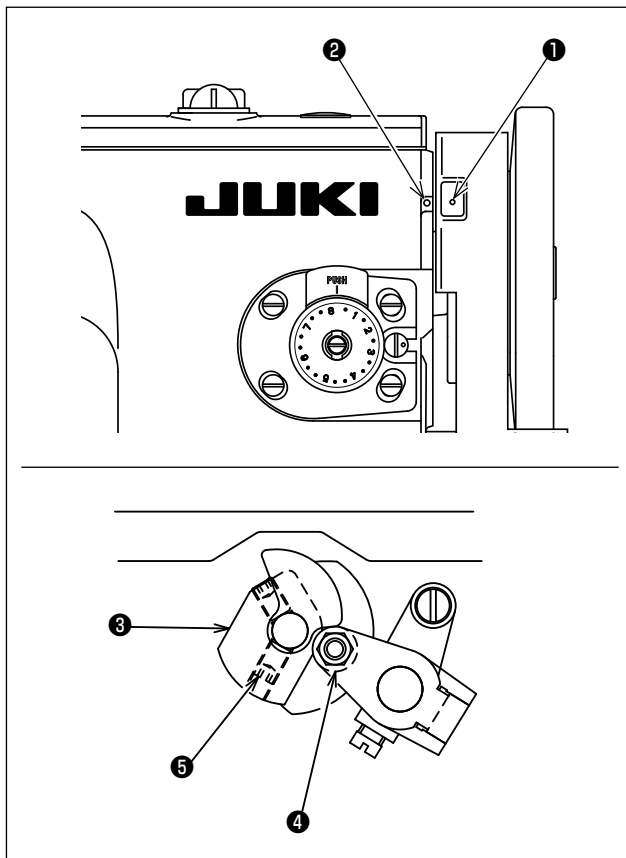
The thread trimmer (left) ① should be 9 mm and the counter knife ② should be 5 mm away from the center of the needle ③ .

### 3-17. Adjusting the thread trimming cam



#### WARNING :

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



Standard position of the thread trimming cam is obtained when green marker dot 1 on the handwheel aligns with marker dot 2 on the machine arm in the case the thread trimmer is located at its initial position and thread trimming cam 3 comes in contact with cam roller 4 .

Loosen thread trimming cam setscrew 5 and carry out adjustment.



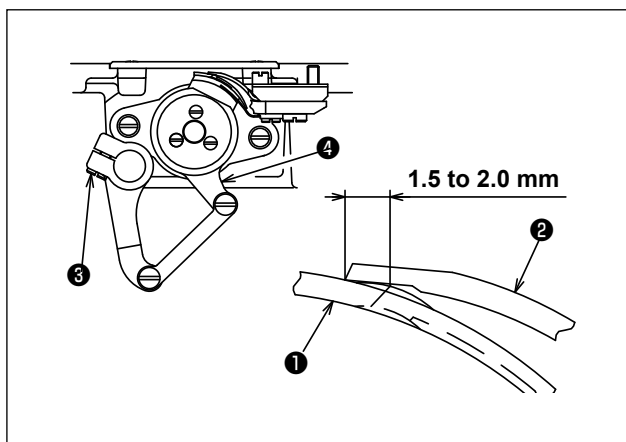
If the setscrew is not securely tightened, the thread trimming cam can rotate causing a faulty thread trimming. So, be careful.

### 3-18. Adjusting the amount of mesh of the thread trimmer blades



#### WARNING :

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



When knife 1 reaches its travel end, the standard depth of mesh between knife 1 and counter knife 2 is 1.5 to 2.0 mm.

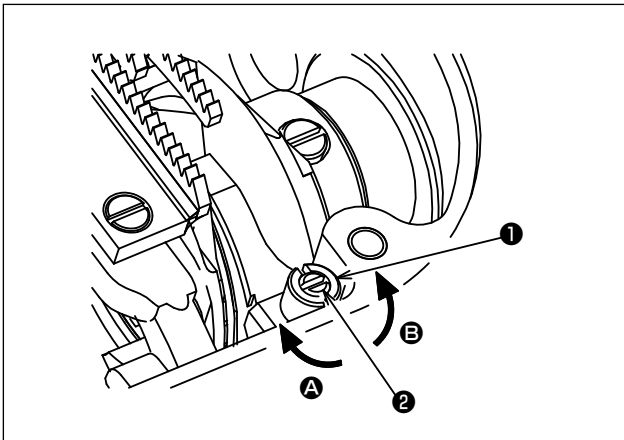
- 1) Turn the handwheel by hand and move the knife 1 upward.
- 2) Loosen driving arm clamping screw 3 . Manually adjust the knife mounting base 4 .
- 3) Securely tighten driving arm clamping screw 3 .

### 3-19. Adjusting the counter knife pressure



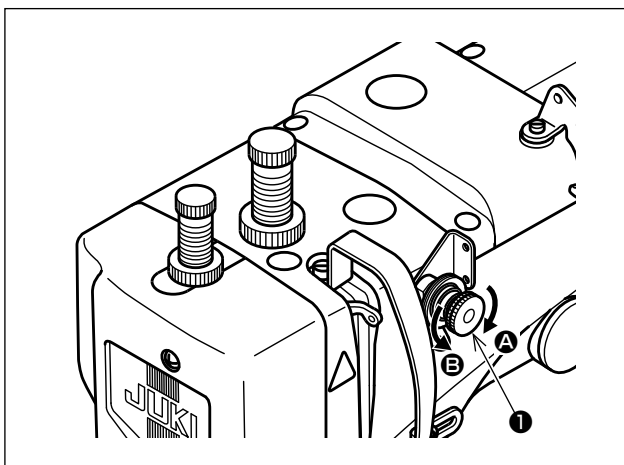
#### WARNING :

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



- 1) Loosen locknut **1** of knife pressure regulating screw **2** . Turning screw **2** in direction **A** lowers the blade tip to increase the knife pressure. After the adjustment, tighten the nut.
- 2) As the thread thickness increases, the knife pressure should be increased. However, it is necessary to minimize the knife pressure as long as the thread is trimmed by turning the screw in direction **B** .

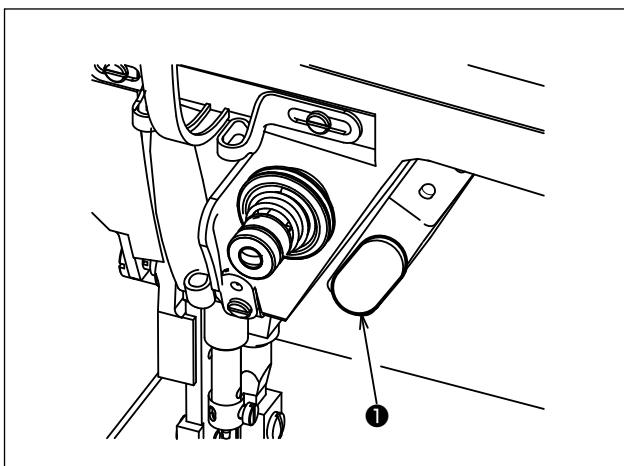
### 3-20. Auxiliary thread tension



Adjust the auxiliary thread tension with auxiliary thread tension nut **1** .


- 1) Direction **A** to increase the tension →  
The remaining length of the needle thread after thread trimming is shortened
- 2) Direction **B** to decrease the tension →  
The remaining length of the needle thread after thread trimming is lengthened.

### 3-21. One-touch type manual reverse stitching



- 1) The sewing machine immediately is brought into the reverse feed mode and starts reverse stitching only by pressing switch **1** .
- 2) Reverse stitching can be carried out as long as the switch is held pressed.
- 3) The sewing machine is brought into the normal feed mode by releasing the switch.

## 4. TROUBLES IN SEWING AND CORRECTIVE MEASURES

Trouble	Cause	Corrective measure
<p>1. Thread breakage. (Thread is untwisted or scraped.)</p> <p>(Needle thread remains on the wrong side of the material by 2 to 3 cm.)</p>	<ol style="list-style-type: none"> <li>① Thread path, needle tip, hook blade tip or bobbin case positioning finger has flaws.</li> <li>② The needle thread tension is excessive.</li> <li>③ The needle comes in contact with the hook point.</li> <li>④ Hook is not lubricated properly.</li> <li>⑤ Needle thread tension is too low.</li> <li>⑥ Thread take-up spring is too tight and its stroke is too small.</li> <li>⑦ The timing between the needle and hook is too early or too late.</li> </ol>	<ul style="list-style-type: none"> <li>○ Remove the scratches on the hook point using a fine emery paper. Finish the bobbin case positioning finger by buffing.</li> <li>○ Adjust the needle thread tension properly.</li> <li>○ Refer to <b>"3-13. Needle-to-hook relationship"p.10.</b></li> <li>○ Increase the amount of oil supplied to the hook according to <b>"2-5. Adjusting the amount of oil in the hook"p.3.</b></li> <li>○ Adjust the needle thread tension.</li> <li>○ Reduce the tension of the spring and increase the stroke.</li> <li>○ Refer to <b>"3-13. Needle-to-hook relationship"p.10.</b></li> </ul>
<p>2. Stitch skipping.</p>	<ol style="list-style-type: none"> <li>① The clearance between the needle and the hook point is too large.</li> <li>② The timing between the needle and hook is too early or too late.</li> <li>③ The pressure of the presser foot is too low.</li> <li>④ The clearance provided between the top end of the needle eyelet and the hook blade point is not correct.</li> <li>⑤ The needle number selected is improper.</li> <li>⑥ When using synthetic thread and thin thread.</li> </ol>	<ul style="list-style-type: none"> <li>○ Refer to <b>"3-13. Needle-to-hook relationship"p.10.</b></li> <li>○ Refer to <b>"3-13. Needle-to-hook relationship"p.10.</b></li> <li>○ Tighten the pressure regulator.</li> <li>○ Refer to <b>"3-13. Needle-to-hook relationship"p.10.</b></li> <li>○ Replace the needle with one which is one count thicker.</li> <li>○ Wind the needle thread on the needle.</li> </ul> <div style="text-align: center; margin-top: 10px;">  </div>
<p>3. Loose stitches.</p>	<ol style="list-style-type: none"> <li>① Bobbin thread does not pass through the forked end of the tension spring on the bobbin case.</li> <li>② Thread path has rough surface.</li> <li>③ Bobbin does not spin smoothly.</li> <li>④ Bobbin thread tension is too low.</li> <li>⑤ Bobbin is wound too tightly.</li> <li>⑥ The needle thread cannot be pulled up when sewing heavy-weight materials such as tent fabrics.</li> </ol>	<ul style="list-style-type: none"> <li>○ Properly thread the bobbin case.</li> <li>○ Grind it using a fine emery paper or buff it up.</li> <li>○ Replace the bobbin or the bobbin case.</li> <li>○ Decrease the bobbin thread tension.</li> <li>○ Increase the bobbin thread tension.</li> <li>○ Retard the feed timing. Refer to <b>"3-14. Feed timing"p.10.</b></li> </ul>
<p>4. Needle thread slips out of the needle eyelet simultaneously with thread trimming.</p>	<ol style="list-style-type: none"> <li>① Auxiliary thread tension is too high.</li> <li>② Thread trimming timing is too early.</li> <li>③ Returning force of the thread take-up spring is too strong.</li> </ol>	<ul style="list-style-type: none"> <li>○ Decrease the auxiliary thread tension.</li> <li>○ Refer to <b>"3-17. Adjusting the thread trimming cam"p.12.</b></li> <li>○ Refer to <b>"3-2. Threading the machine head"p.5.</b> Replace the take-up thread guide.</li> </ul>
<p>5. Needle thread cannot be trimmed. (Bobbin thread can be trimmed.)</p>	<ol style="list-style-type: none"> <li>① Last stitch skips. (Clearance between the needle and the hook is too large)</li> </ol>	<ul style="list-style-type: none"> <li>○ Refer to <b>"3-13. Needle-to-hook relationship"p.10.</b></li> </ul>
<p>6. Neither the needle thread nor the bobbin thread are trimmed.</p>	<ol style="list-style-type: none"> <li>① Thread trimming timing is not correct.</li> <li>② Thread trimmer blade breakage</li> <li>③ Knife pressure is inadequate.</li> <li>④ Initial position of the thread trimmer is faulty.</li> <li>⑤ Thread trimmer fails to operate.</li> <li>⑥ Thread trimming solenoid fails to operate.</li> </ol>	<ul style="list-style-type: none"> <li>○ Refer to <b>"3-17. Adjusting the thread trimming cam"p.12.</b></li> <li>○ Replace the thread trimmer blade with a new one.</li> <li>○ Increase the knife pressure.</li> <li>○ Refer to <b>"3-17. Adjusting the thread trimming cam"p.12.</b></li> <li>○ Manual check is necessary.</li> <li>○ The motor solenoid operation needs to be checked.</li> </ul>
<p>7. Thread is not trimmed sharply.</p>	<ol style="list-style-type: none"> <li>① Thread trimming timing is not correct.</li> <li>② Knife pressure is inadequate.</li> <li>③ The blade is not sharp.</li> </ol>	<ul style="list-style-type: none"> <li>○ Refer to <b>"3-17. Adjusting the thread trimming cam"p.12.</b></li> <li>○ Increase the knife pressure.</li> <li>○ Replace the thread trimmer blade with a new one.</li> </ul>