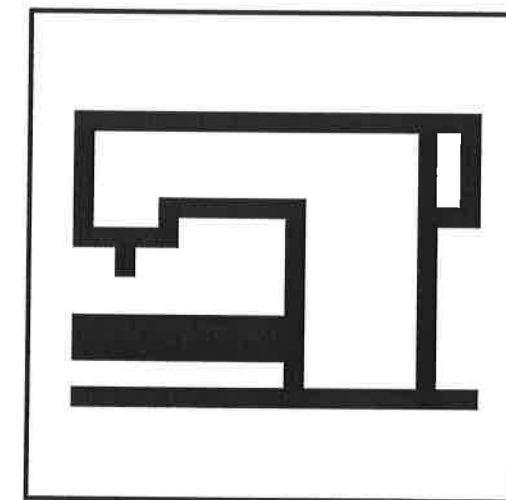


SEIKO

INSTRUCTION MANUAL

BSC-8BL Series

BSC-8BL
BSC-8BL-BTFL
BSC-8BL-BTFL-CD-DS



SEIKO SEWING MACHINE CO., LTD.

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Parts No. IM85503 (1019)



SEIKO SEWING MACHINE CO., LTD.

Thank you very much for buying a SEIKO sewing machine. Before using your new machine, please read the safety instructions below and the explanations given in the instruction manual.


With industrial sewing machines, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up lever, and consequently there is always a danger of injury that can be caused by these parts. Follow the instructions from training personnel and instructors regarding safe and correct operation before operating the machine so that you will know how to use it correctly.

SAFETY INSTRUCTIONS




1 Safety indications and their meanings










This instruction manual and the indications and symbols that are used on the machine itself are provided in order to ensure safe operation of this machine and to prevent accidents and injury to yourself or other people. The meanings of these indications and symbols are given below.

Indications

 CAUTION	The instructions which follow this term indicate situations where failure to follow the instructions could cause injury when using the machine or physical damage to equipment and surroundings.
--	--

Symbols

-  This symbol (△) indicates something that you should be careful of. The picture inside the triangle indicates the nature of the caution that must be taken.
(For example, the symbol at left means "beware of injury".)
-  This symbol (⊘) indicates something that you must not do.
-  This symbol (●) indicates something that you must do. The picture inside the circle indicates the nature of the thing that must be done.
(For example, the symbol at left means "you must make the ground connection".)

 CAUTION	
Environmental requirements	
 <ul style="list-style-type: none">• Use the sewing machine in an area which is free from sources of strong electrical noise such as high-frequency welders. Sources of strong electrical noise may cause problems with correct operation.	 <ul style="list-style-type: none">• The ambient temperature should be within the range of 5°C to 35°C during use. Temperatures which are lower or higher than this may cause problems with correct operation.
 <ul style="list-style-type: none">• Any fluctuations in the power supply voltage should be within ±10% of the rated voltage for the machine. Voltage fluctuations which are greater than this may cause problems with correct operation.	 <ul style="list-style-type: none">• The relative humidity should be within the range of 45% to 85% during use, and no dew formation should occur in any devices. Excessively dry or humid environments and dew formation may cause problems with correct operation.
 <ul style="list-style-type: none">• The power supply capacity should be greater than the requirements for the sewing machine's electrical consumption. Insufficient power supply capacity may cause problems with correct operation.	 <ul style="list-style-type: none">• Avoid exposure to direct sunlight during use. Exposure to direct sunlight may cause problems with correct operation.
 <ul style="list-style-type: none">• The pneumatic delivery capability should be greater than the requirements for the sewing machine's total air consumption. Insufficient pneumatic delivery capability may cause problems with correct operation.	 <ul style="list-style-type: none">• In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet. Lightning may cause problems with correct operation.

2 Notes on safety

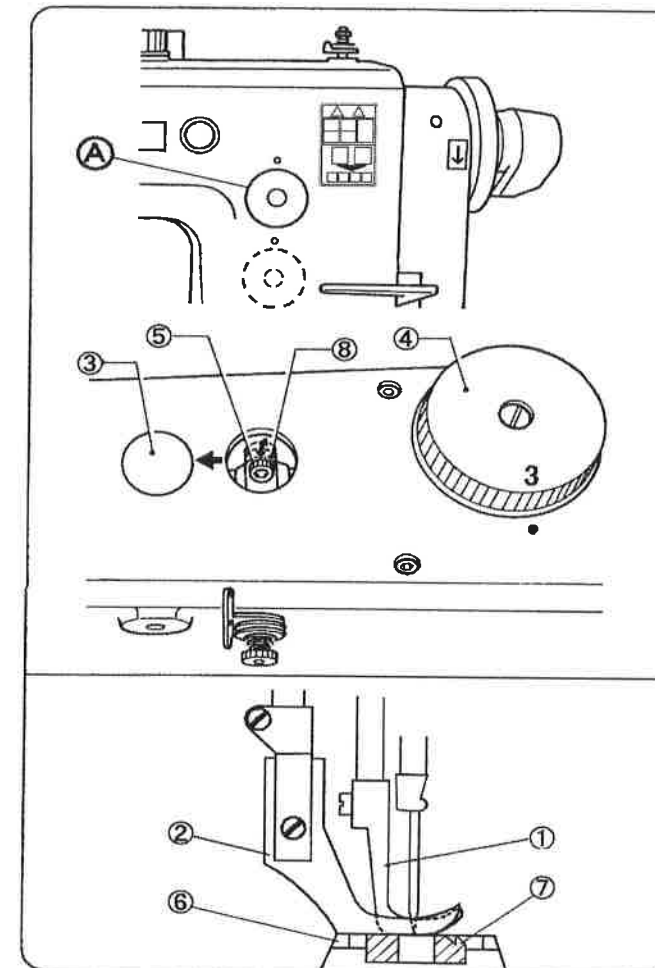
CAUTION

Installation

- ⊘ Machine installation should only be carried out by a qualified technician.
- ⚠ Contact your SEIKO dealer or a qualified electrician for any electrical work that may need to be done.
- ⚠ The sewing machine weighs more than 54kgf. The installation should be carried out by two or more people.
- ⚠ Avoid setting up the sewing machine near sources of strong electrical noise such as highfrequency welding equipment. If this precaution is not taken, incorrect machine operation may result.
- ⊘ Do not connect the power cord until installation is complete, otherwise the machine may operate if the treadle is depressed by mistake, which could result in injury.
- ⚡ Be sure to connect the ground. If the ground connection is not secure, you run the risk of receiving a serious electric shock.
- ⚠ All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electric shocks could occur.
- ⚠ Install the belt guards to the machine head and motor.
- ⚠ If using a work table which has casters, the casters should be secured in such a way so that they cannot move.
- ⚠ Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.
- ⊘ Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil under any circumstances, as they can cause vomiting and diarrhoea. Keep the oil out of the reach of children.

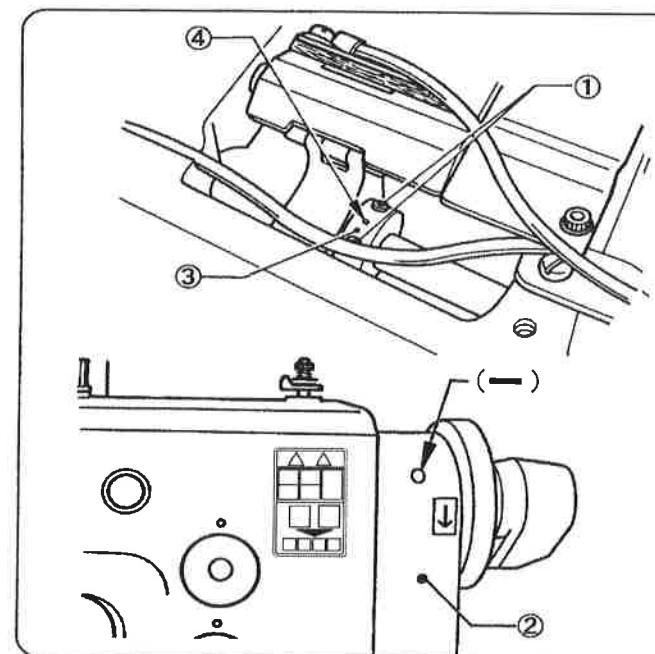
Sewing

- ⊘ This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.
- ⊘ The sewing machine should not be used for any applications other than sewing.
- ⚠ Turn off the power switch at the following times, otherwise the machine may operate if the treadle is depressed by mistake, which could result in injury.
 - When threading the needle
 - When replacing the bobbin and needle
 - When not using the machine and when leaving the machine unattended
- ⚠ When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.
- ⚠ If using a work table which has casters, the casters should be secured in such a way so that they cannot move.
- ⚠ Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.
- ⚠ Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.
- ⚠ Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.
- ⚠ If an error occurs in machine operation, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest SEIKO dealer or a qualified technician.
- ⚠ If the machine develops a problem, contact your nearest SEIKO dealer or a qualified technician.



1. First, carry out the "Needle bar height" and "Needle and feed mechanism timing" adjustments. (Refer to pages 23, 25)
2. Set the feed adjustment dial A to the maximum settings.
3. Remove the rubber cap 3.
4. Turn the alternating presser foot movement dial 4 to the "3" position.
5. Loosen the screw 5.
6. Turn the machine pulley toward you to align the tip of the needle and the top of the feed dog 7 with the top of the needle plate 6.
7. Move the connecting lever 8 to adjust so that both the inner presser foot 1 and outer presser foot 2 are in contact with the top of the needle plate 6 at this time. Then tighten the screw 5.

16-1-10. Adjusting the presser foot timing

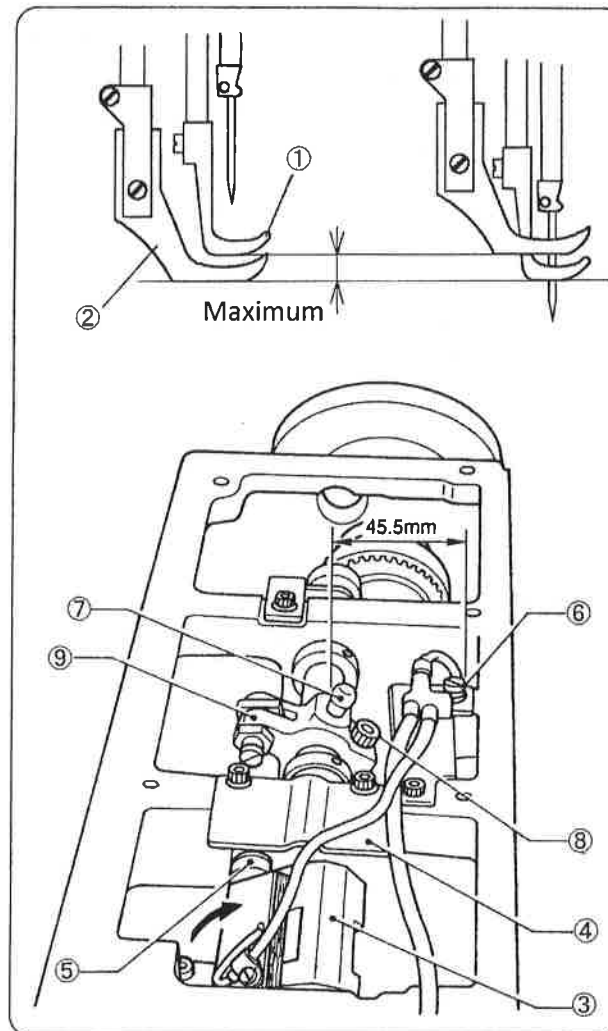


When the presser foot are lowered and the machine pulley is turned toward you, the inner presser foot should touch the feed dog before the needle arrives at the feed dog. Then when the needle lifts up, the tip of the needle should move away from the feed dog before the inner presser foot moves away.

1. Remove the top cover.
2. Loosen the two screws 1.
3. Turn the machine pulley until "—" is visible in the window of the belt guard 2 (highest take-up lever position).
4. Turn inner presser cam 3 to adjust so that the point 4 of inner presser cam 3 is facing straight up.
5. Tighten the screws 1.

* When installing the top cover, set the alternating presser foot movement dial to the "1" position.

16-1-9. Adjusting the alternating presser foot movement amount

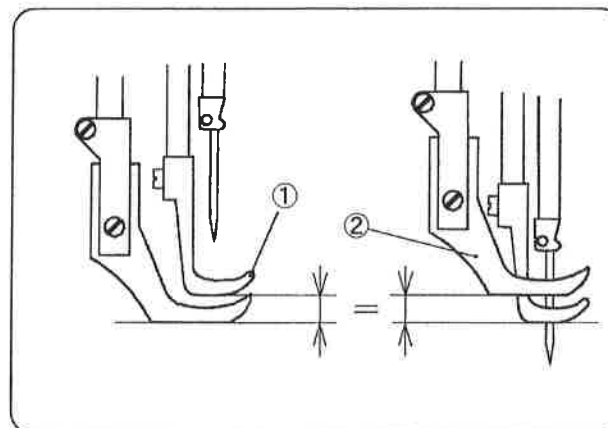


■ Maximum alternating presser foot movement amount

Carry out the following adjustment to set the maximum alternating movement amounts for the inner presser foot ① and outer presser foot ② to the maximum of 7 mm.

1. Remove the top cover.
2. Lift up adjusting bracket ③ so that adjusting bracket collar ⑤ touches the stopper support plate ④.
3. Loosen the bolt ⑧ and turn connecting lever ⑨ to adjust so that the distance from the outer edge of the screw ⑥ to the outer edge of the pin ⑦ is 45.5 mm at this time. Then tighten the bolt ⑧.

* When installing the top cover, set the alternating presser foot movement dial to the "1" position.



■ Inner presser foot and outer presser foot movement amounts

Carry out the following adjustment to make the movement amounts for the inner presser foot ① and outer presser foot ② equal when the presser feet are lowered and the machine pulley is turned.

⚠ CAUTION

Cleaning

- Turn off the power switch before carrying out cleaning, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.
- When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.
- If using a work table which has casters, the casters should be secured in such a way so that they cannot move.
- Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.
- Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil under any circumstances, as they can cause vomiting and diarrhoea. Keep the oil out of the reach of children.

Maintenance and inspection

- Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
- Ask your SEIKO dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.
- Turn off the power switch and disconnect the power cord from the wall outlet at the following times, otherwise the machine may operate if the treadle is depressed by mistake, which could result in injury.
 - When carrying out inspection, adjustment and maintenance
 - When replacing consumable parts such as the rotary hook.
- When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.
- Disconnect the air hoses from the air supply and wait for the needle on the pressure gauge to drop to "0" before carrying out inspection, adjustment and repair of any parts which use the pneumatic equipment.
- If the power switch and air need to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.
- If using a work table which has casters, the casters should be secured in such a way so that they cannot move.
- Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.
- Use only the proper replacement parts as specified by SEIKO.
- If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.
- Any problems in machine operation which result from unauthorized modifications to the machine will not be covered by the warranty.

3. Warning labels

* The following warning labels appear on the sewing machine.
Please follow the instructions on the labels at all times when using the machine.
If the labels have been removed or are difficult to read, please contact your nearest SEIKO dealer.

1

Caution
Moving parts may cause injury.
Attach all safety devices before using the sewing machine.
Turn off the power switch at the following times.
• When threading the needle
• When replacing the bobbin and needle, knife, rotary hook
• When lubrication, cleaning, adjustment and maintenance

2

Be sure to connect the ground.
If the ground connection is not secure, you run the risk of receiving a serious electric shock.

3

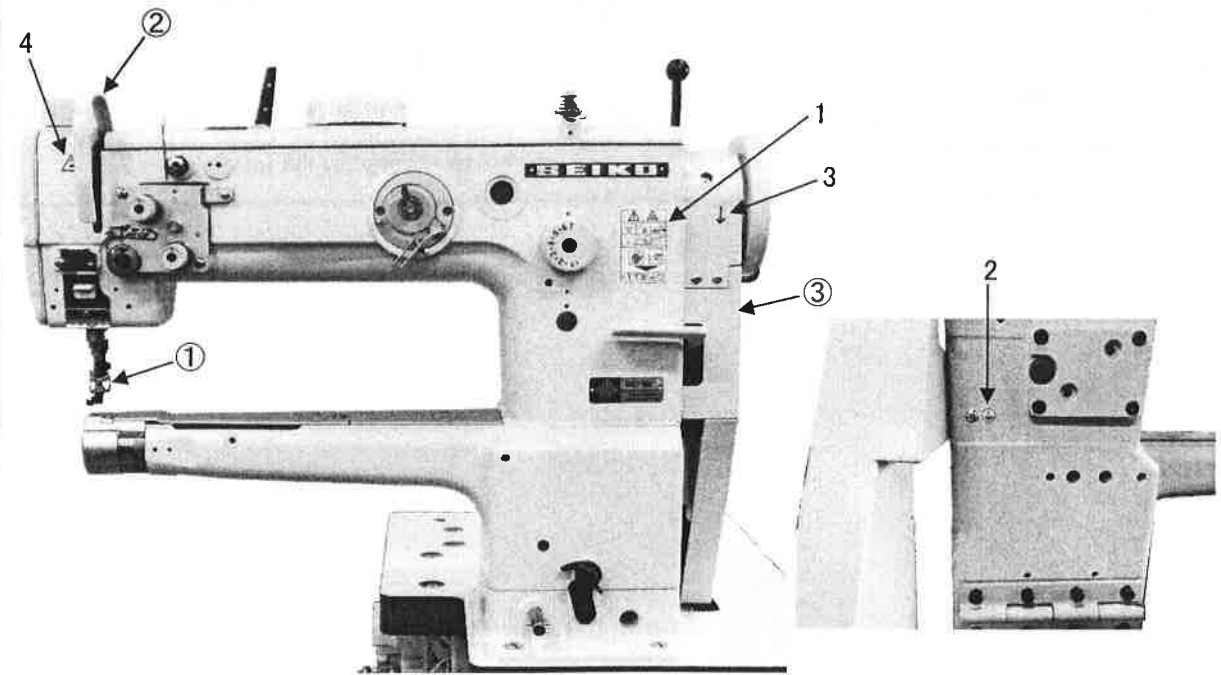
Direction of operation

4

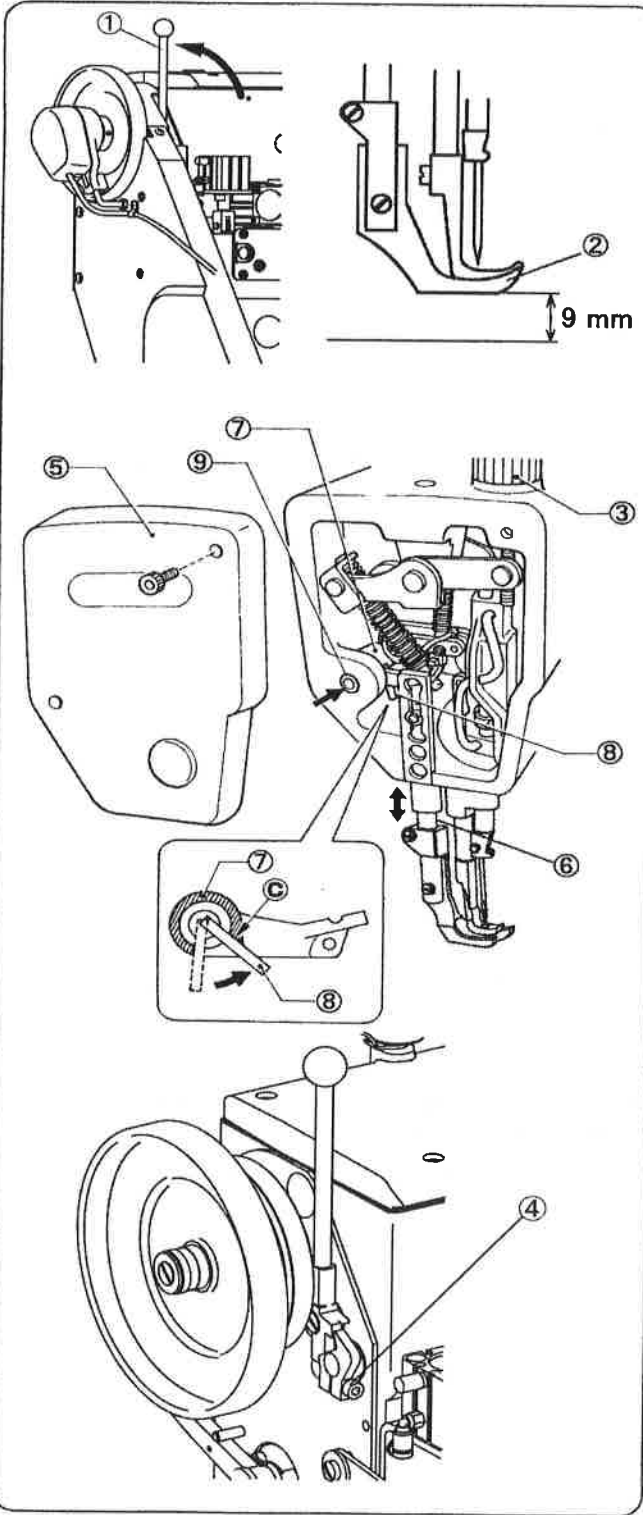
Moving parts may cause injury.

Safety devices

- ① Finger guard
- ② Thread take-up lever cover
- ③ Belt guard, etc.



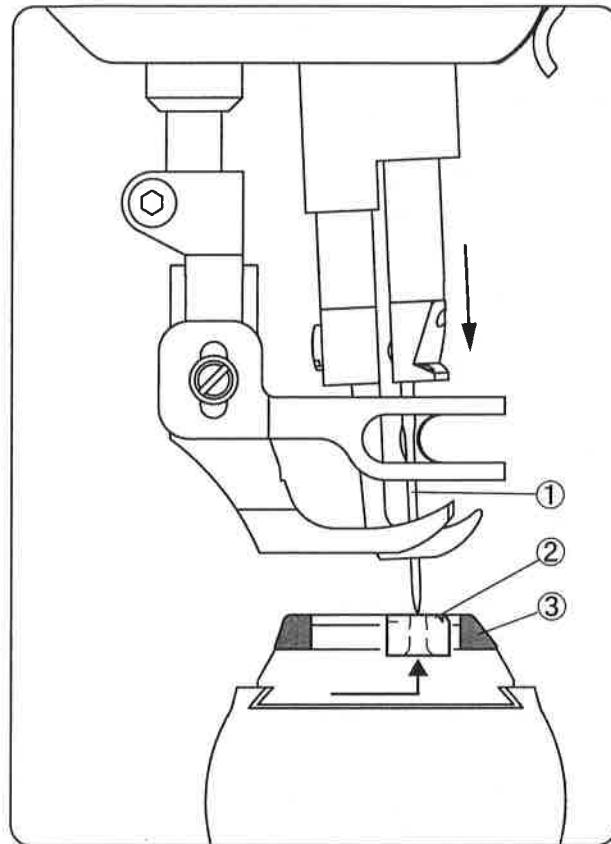
16-1-8. Adjusting the presser foot height



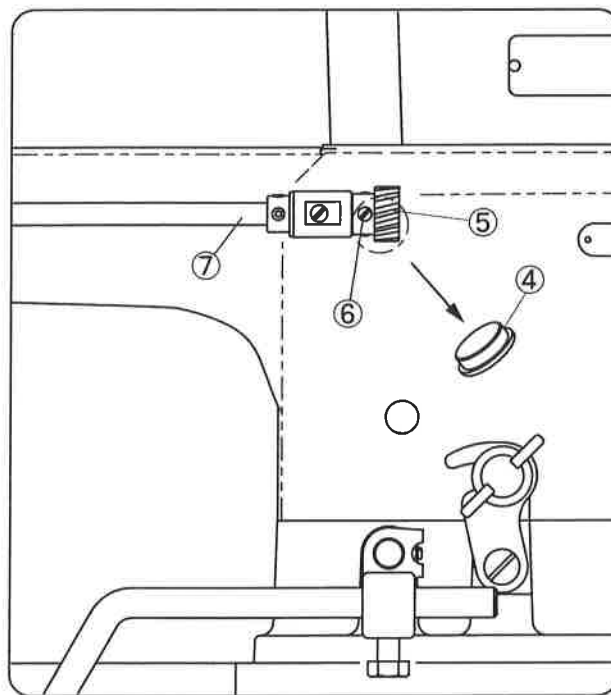
The standard height of the lifting presser foot ② is 9 mm when it is raised by the presser lifter bar ①.

1. Remove the belt guards.
2. Loosen the presser adjusting dial ③, to release the presser foot pressure.
3. Raise the presser lifter bar ① and then loosen the screw ④.
4. Remove the face plate ⑤.
5. Move the lifting presser bar ⑥ up or down to adjust so that the height of the lifting presser foot ② is 9 mm.
6. While the stopper pin ⑧ is touching against the notch ⑦ in the presser foot lifter connection ⑦ and while pushing the presser lifter shaft ⑨ so that there is no play in the thrust direction, tighten the screw ④.
7. Turn the presser adjusting dial ③ to adjust the presser foot pressure. (Refer to page 16.)
8. Install the belt guards. (Refer to page 5.)

16-1-7. Timing of Up and Down feeding of Feed dog



1. Make feeding amount of Feed adjust dial largest.
2. Lower needle bar by turning pulley toward you, and match needle tip and Needle plate ③ upper surface.
3. At this time, Feed dog ② must come up from the nearest position, and upper surfaces of Feed dog and Needle plate must be in same level.
4. To make adjustment, remove Rubber cap ④.
5. Loosen three Screws ⑥ of Hook driving shaft small gear ⑤.
6. Turn Hook driving shaft ⑦, and set Small gear ⑤ so that Needle tip ① and upper surfaces of Feed dog ② and Needle plate ③ come in same height.
7. Fix Rubber cap ④ after adjustment.



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1. MACHINE SPECIFICATIONS

CLASSIFICATION		SPECIFICATIONS		
MODEL		BSC-8BL	BSC-8BL-BTFL	BSC-8BL-BTFL-CD-DS
Max. sewing speed (*1)		2,300s.p.m		
Needle		DPx17 standard #18 (#11～#22)		
Hook		Large horizontal axis hook(2.0times)		
Thread		standard #20 (#30～#8)		
Max. stitch length		7mm		
Feed dog movement		Elliptical motion		
Feed amount adjustment method		Dial type		
Clearance under presser foot	Presser bar lifter	9mm		
	Kee lifter	16mm		
Alternating presser foot movement amount		1～6.5mm		1～7mm
Alternating presser foot movement change switch		Dial type		
Needle bar stroke		37mm		
Thread take-up lever		Slide type		
Diameter of cylinder bed		φ 50		
Working space		W350 X H120 mm		
Bobbin winder		Built-in type located at the front of the sewing machine		
Lubrication		Automatic lubrication type		
Knee-Lifter device		Built into machine		
Quick reverse switch (BT)		—	Automatic Back Tack	
Auto presser foot lifting device		—	Pneumatic	
Alternating presser foot movement change device		—	—	Pneumatic
Stitch length change switch (DS)		—	—	Feed amount changing device
Net weight (Head only)		47 kgf	48 kgf	48 kgf
Machine mounted type Motor (Option)		AC Servo motor		

■ Sewing speed table (-BTFL-CD-DS)

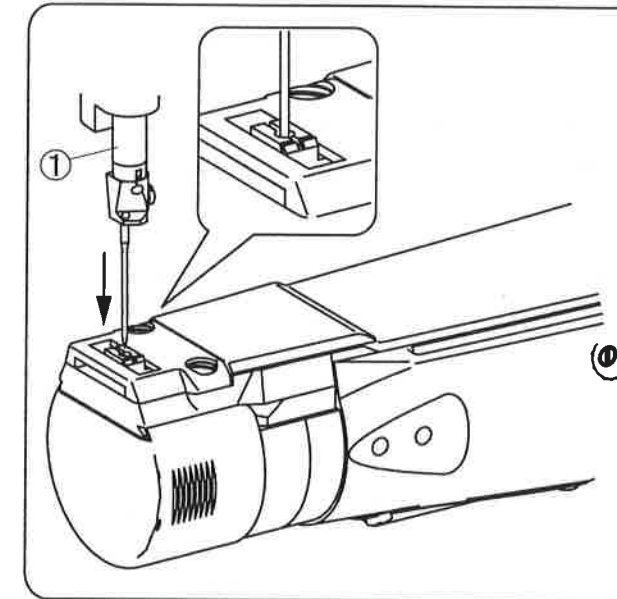
Alternating presser foot movement amount	Stitch length	
	6 mm or less	6~7mm
1.0~4.7 mm	2300 s.p.m.	2000s.p.m.
4.8~7.0 mm	2000 s.p.m.	2000s.p.m.

When setting a moving amount of Alternating Presser Foot, stitch speed is automatically controlled as per above chart according to the set amount.

Caution:

In case of setting stitch length over 6mm, set stitch speed below 2,000 s.p.m. by the motor speed-control button before sewing.

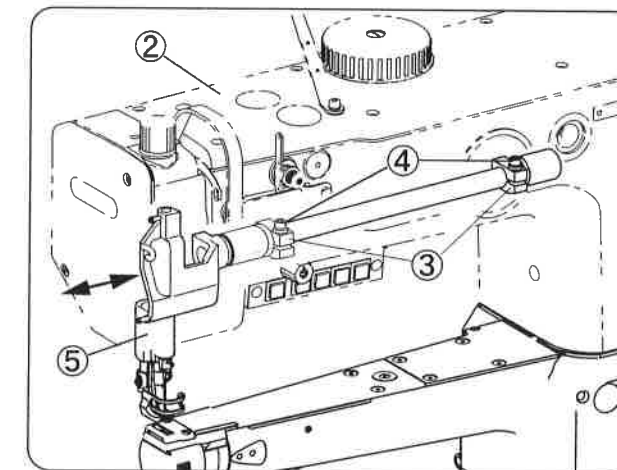
16-1-6. Adjustment of position of Needle and needle hole of Feed dog



Turn pulley slowly, and make sure if Needle comes down in center of needle hole of Feed Dog. If not, make following adjustment.

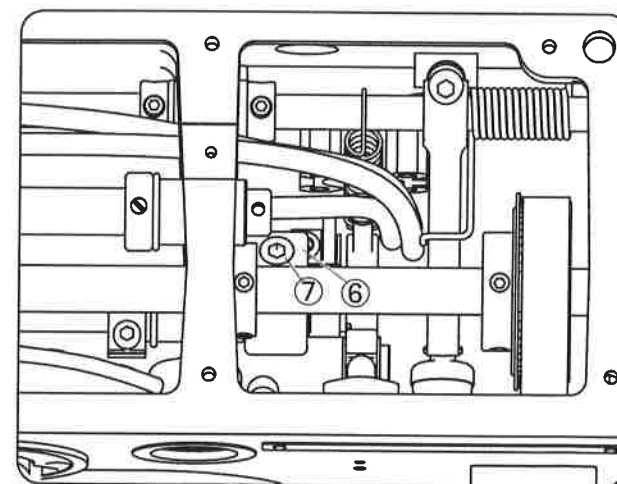
Adjustment for left or right position

1. Remove Upper plate cover ②.
2. Loosen two Screws ④ of Shaft collar ③ of needle bar bracket.
3. Move Needle bar bracket ⑤ left or right, and decide position where Needle comes at center of needle hole of Feed dog. Tighten Screws ④ after adjustment. Make sure to fix Shaft collar ③ without clearance to the metal bushings.

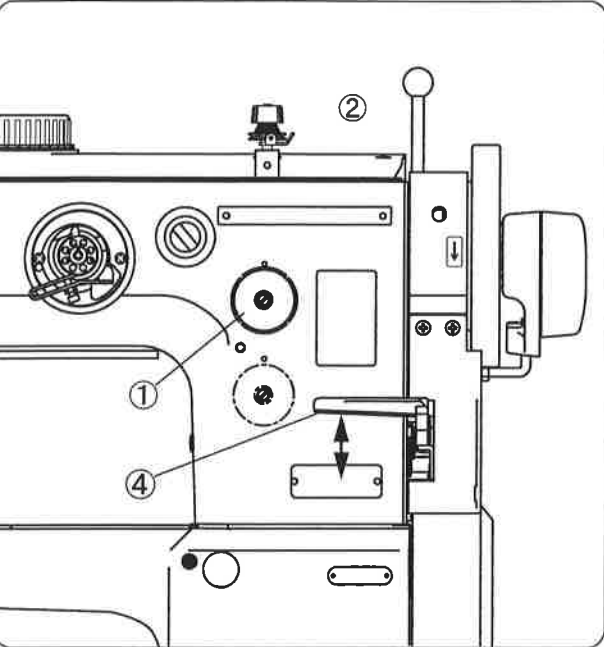


Adjustment for forward and backward position

1. Loosen Screw ⑦ of Upper feed connecting rod ⑥.
2. Move Needle bar bracket ⑤ to match needle position to needle hole of Feed dog. Tighten Screw ⑦ after adjustment.
3. Return Upper plate cover ② and fix it.

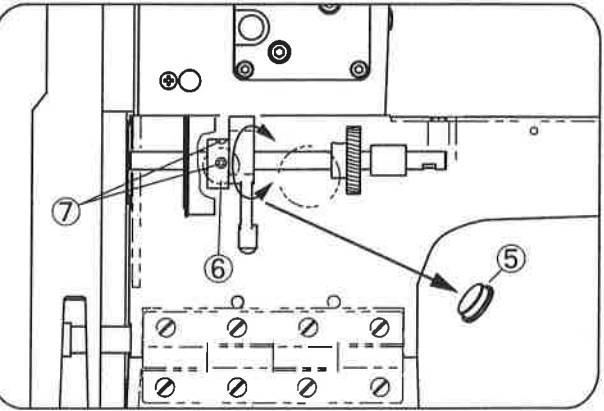
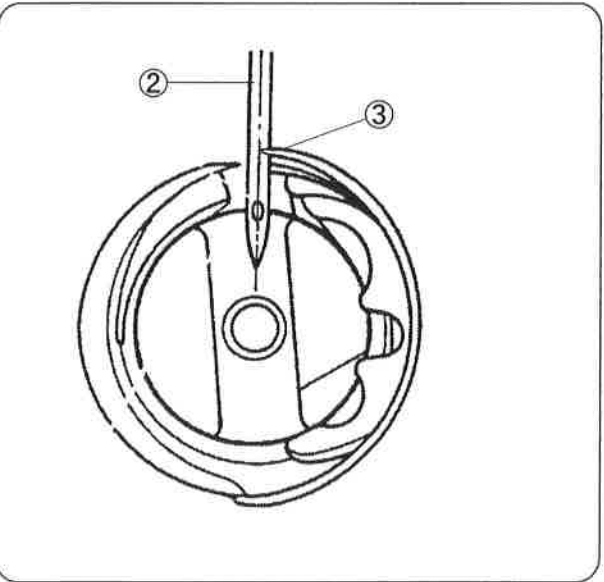


16-1-5. Timing of Needle and Feed dog



Correct timing is that Needle comes in needle hole of Feed dog when Feed dog is feeding. If timing is not correct, it may cause feeding defect or thread tightening defect.

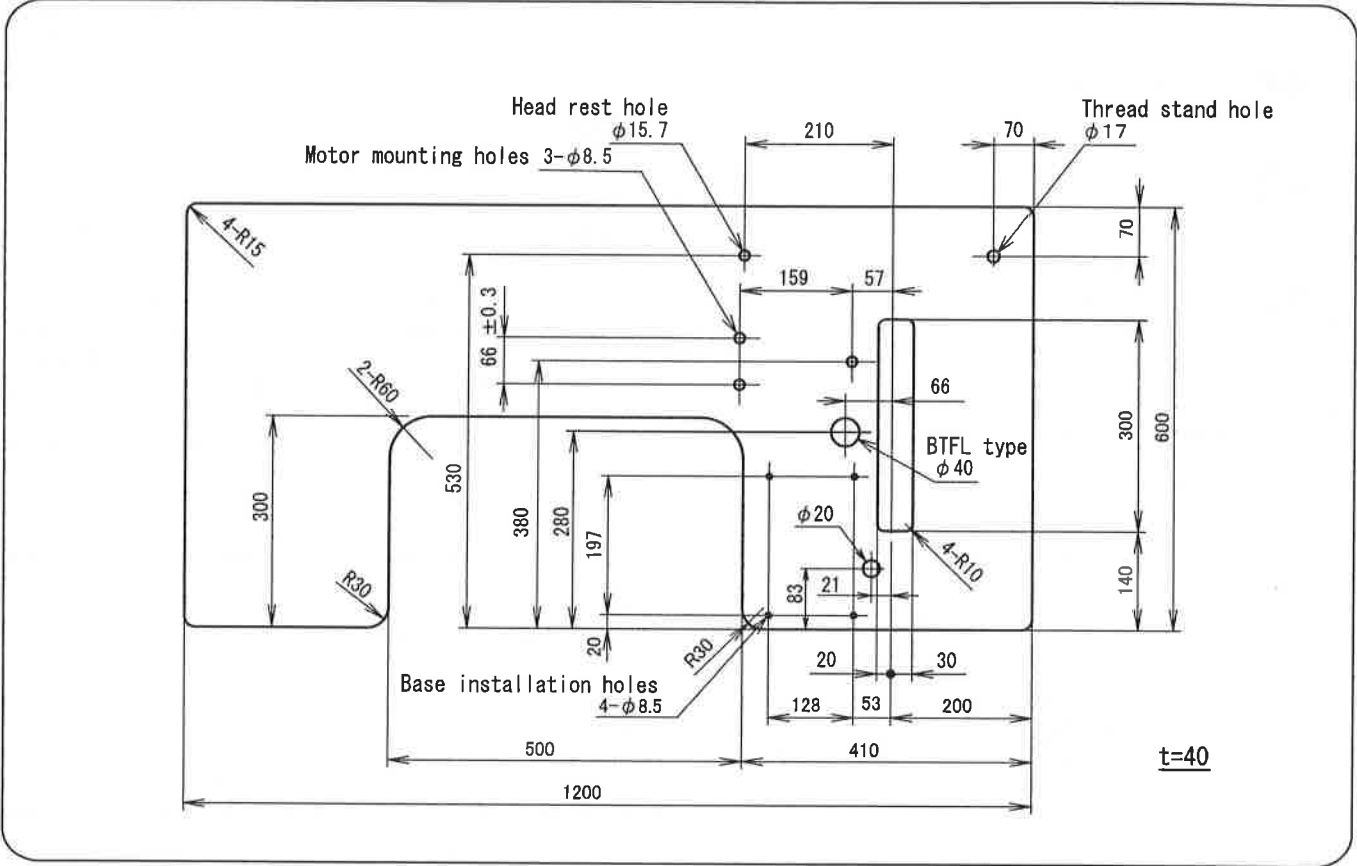
- 1. Make feeding amount largest by tuning Feed adjust dial ①.
- 2. Turn pulley, and match position of Needle ② and Hook tip ③.
- 3. Need to decide position where Needle and Feed dog stay without moving when moving Reverse stitching lever ④ up and down.
- 4. For adjustment, remove Rubber cap ⑤ at machine backside, and loosen two Screws ⑦ of Feed cam ⑥ through this hole. Turn Feed cam ⑥, and decide position where Needle and Feed dog stay.
- 5. Fix Rubber cap ⑤ after adjustment.



2. WORK TABLE AND MOTOR

■ Work Table

- When using a table made by another manufacturer, drill holes in the table as shown in the figure below.
- The top of the table should be 40 mm in thickness and should be strong enough to hold the weight and withstand the vibration of the sewing machine.



■ Motor

⚠ CAUTION

- ⚠ • All cords which are connected to the motor should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electric shocks could occur.
- ⚠ • Install the correct belt guard which corresponds to the motor being used.

<Motor>

- Select the correct motor from those listed in the table.
- Refer to the instruction manual for the motor for details on installing and using the motor.

Power	Motor
Single-phase	HVP-i70
Three-phase	AC Servo motor

<Motor pulley and V-belt>

- Select the right motor pulley and V-belt as per below chart

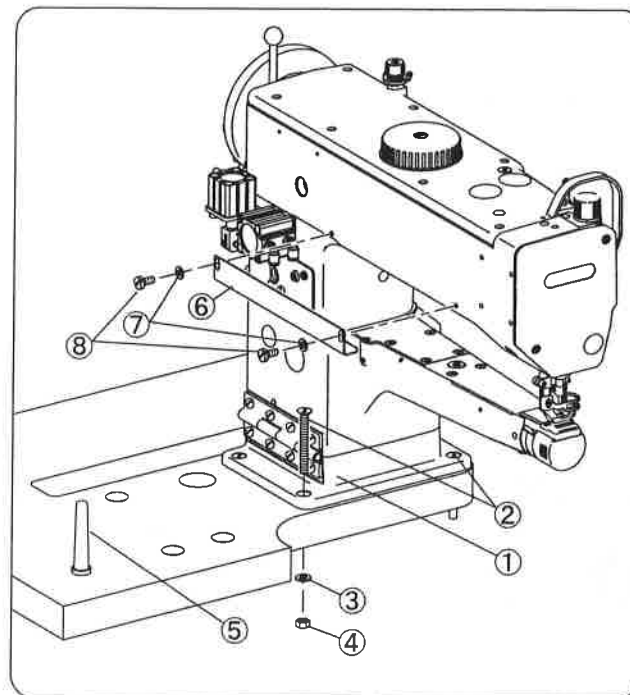
Motor pulley	V-belt
Motor pulley 75	55 inches

3. INSTALLATION

⚠ CAUTION

- ⊘ Machine installation should only be carried out by a qualified technician.
- ⚠ Contact your SEIKO dealer or a qualified electrician for any electrical work that may need to be done.
- ⚠ The sewing machine weighs more than 54kgf. The installation should be carried out by two or more people.
- ⚠ Avoid setting up the sewing machine near sources of strong electrical noise such as highfrequency welding equipment. If this precaution is not taken, incorrect machine operation may result.
- ⊘ Do not connect the power cord until installation is complete, otherwise the machine may operate if the treadle is depressed by mistake, which could result in injury.
- ⚡ Be sure to connect the ground. If the ground connection is not secure, you run the risk of receiving a serious electric shock.
- ⚠ Install the belt guard to the machine head.
- ⚠ Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hands is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.

3-1 Machine head



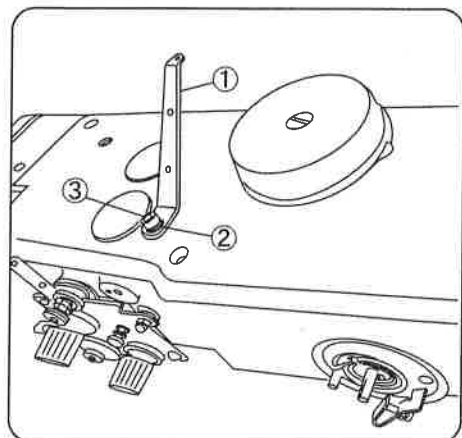
- (1) Fix the machine base① to table with bolt②, washer③, nut④. (4 places)
- (2) Hit head-rest⑤ into table.

Caution:

Please hit head-rest into table firmly. Otherwise, it will be unstable and dangerous when tilting machine backwards.

(3) Fully equipped model

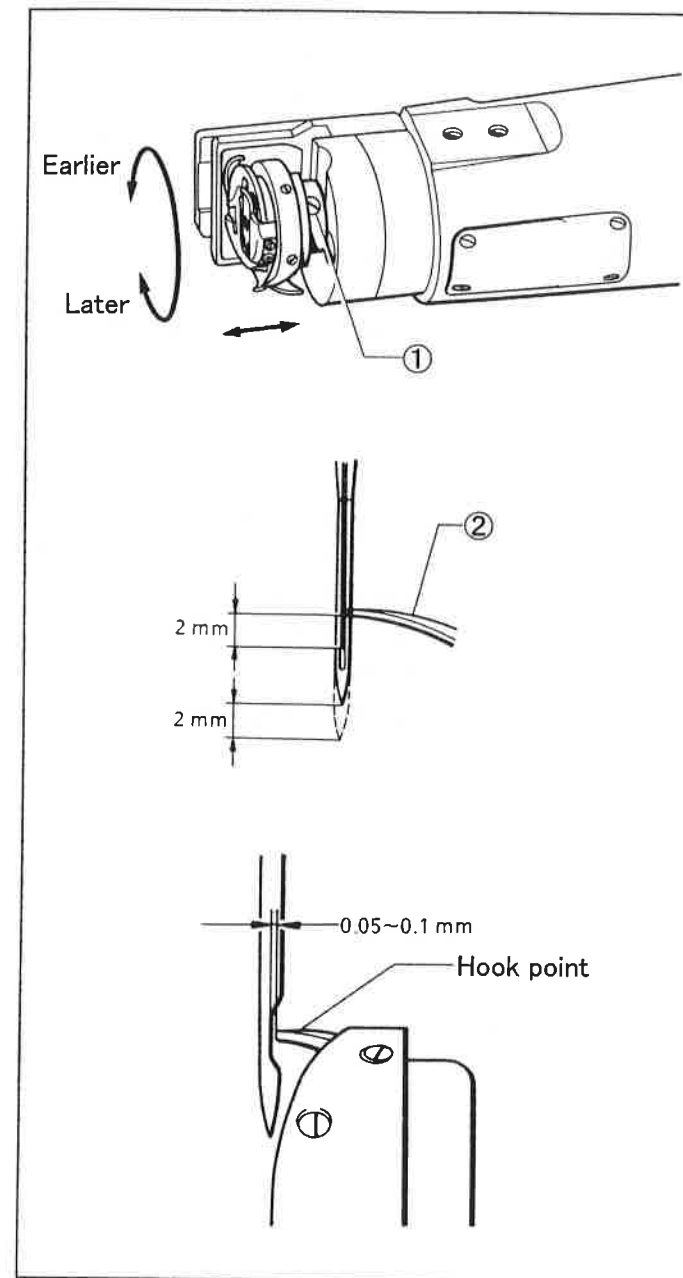
Cover the cord with cover⑥, and fix it with washer⑦ and screw⑧ to the back.



Mounting Thread guide on the arm

Fix Thread guide① with spring washer② and screw③ on the arm.

16-1-4. Adjusting the timing between the needle and the hook

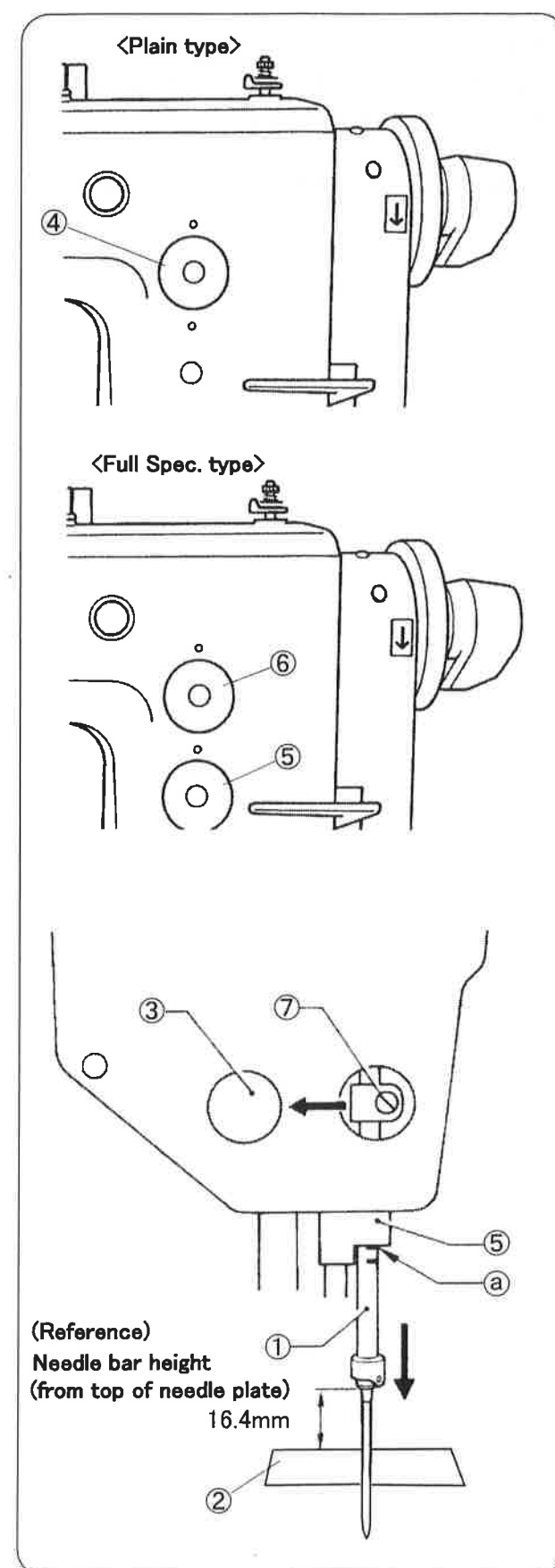


After adjusting the needle bar height, (Refer to page 23) check the timing as follows.

1. Change the stitch length to the smallest possible setting.
2. Turn the pulley until the needle bar is at its lowest position.
Turn the pulley further and check that the hook point is at the center line of the needle when the needle rises 2 mm above its lowest position.
At this time, the clearance between the hook point and the upper end of the needle eye should be 2 mm. Moreover, the clearance between the hook point and the needle hollow should be about 0.05 to 0.1 mm.
* If they are not measured as above, perform the adjustments below.

1. Loosen the three screws①.
2. Adjust the timing. If an earlier timing is required, turn the rotary hook in the direction of revolution.
3. If necessary, adjust the clearance by moving the rotary hook to the right or left.
4. After adjustment, tighten the screws①.

16-1-3. Adjusting the needle bar height



Set the feed adjustment dials to the minimum settings, and then adjust so that the distance from the top of the needle plate ② to the end of the needle bar ① is 16.4 mm when the needle bar ① is at its lowest position.

1. Remove the rubber cap ③.

2. <Plain type>

Set the feed adjustment dial ④ to minimum setting.

<Full spec. type>

Set the feed adjustment dial ⑤ to minimum setting, and then set the feed adjustment dial ⑥ to minimum setting.

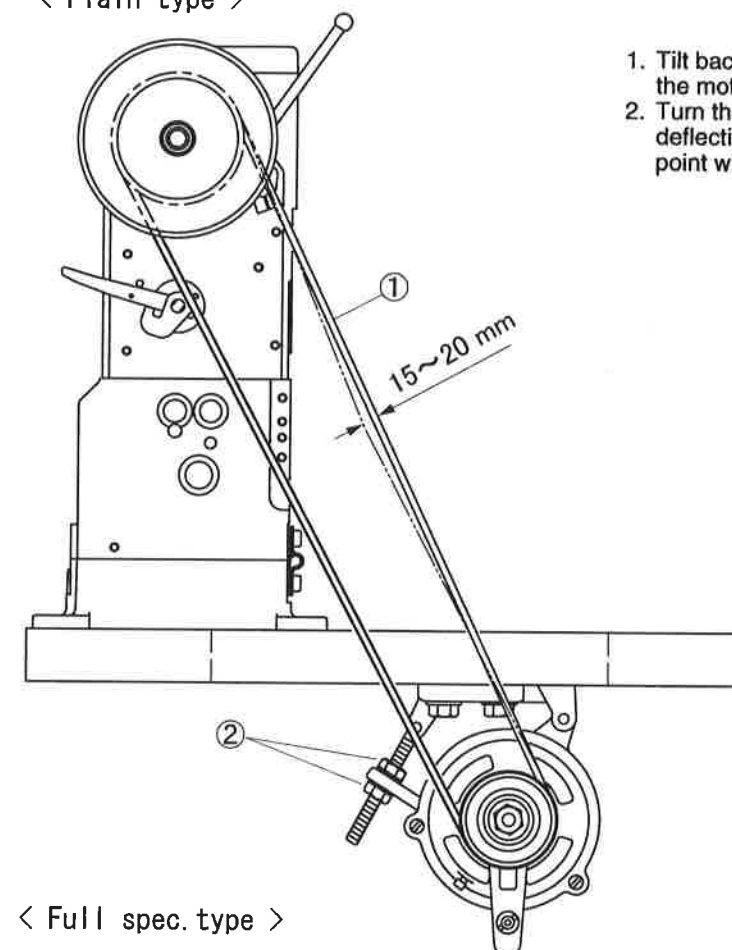
3. Turn the machine pulley to set the needle bar ① to its lowest position.

4. Loosen the screw ⑦, and then move the needle bar ① up or down to adjust so that the distance from the top surface of the needle plate ② to the end of the needle bar ① is 16.4 mm. (At this time, the standard distance can be obtained fairly closely by aligning upper reference line "a" on the needle bar ① with the bottom edge of the needle bar bracket ⑤.)

5. Securely tighten the screw ⑦.

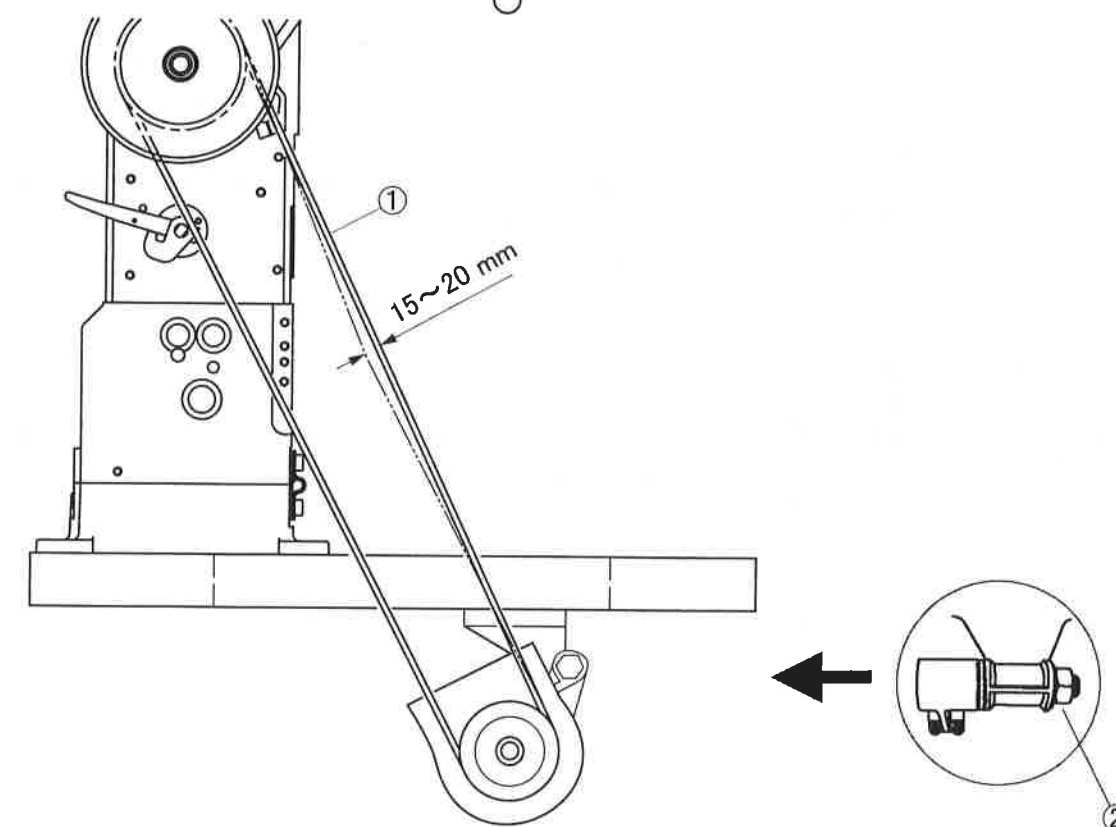
3-2 V-belt

< Plain type >

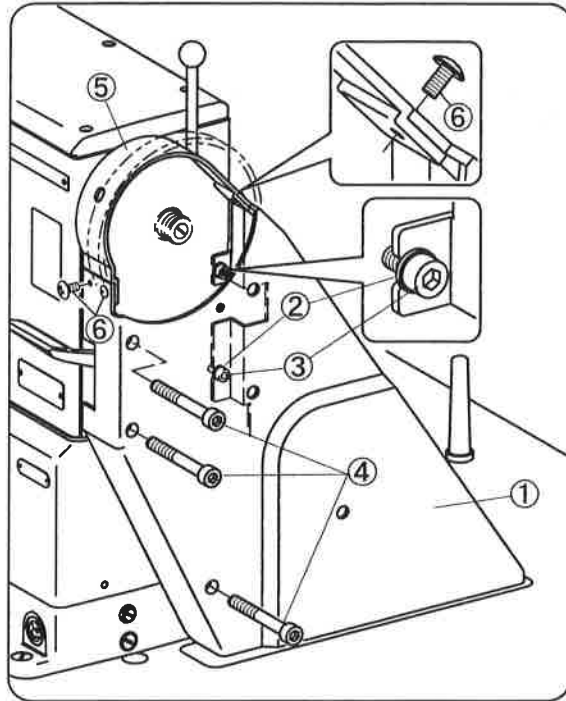


1. Tilt back the machine head, and then place the belt ① onto the motor pulley and the machine pulley.
2. Turn the two nuts ② to adjust so that there is 15 - 20 mm of deflection in the V-belt ① when it is pressed at the midway point with a force of 9.8N(1 kgf).

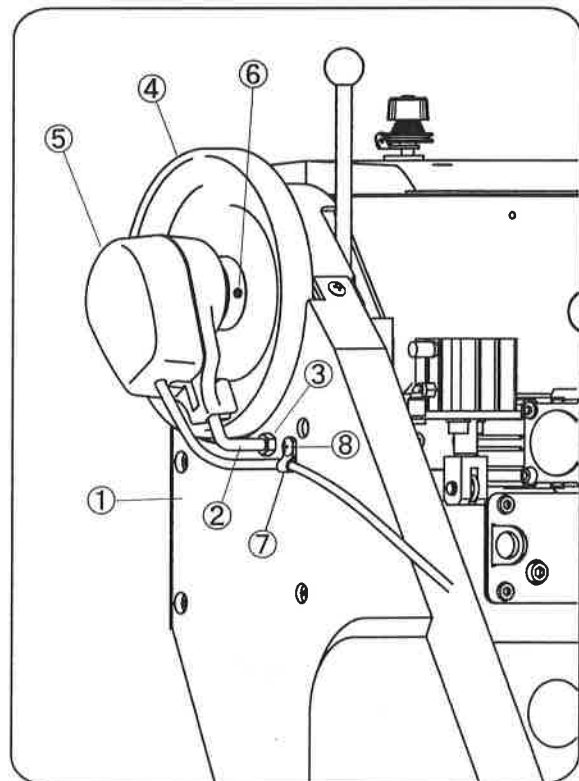
< Full spec. type >



3-3 Belt guard



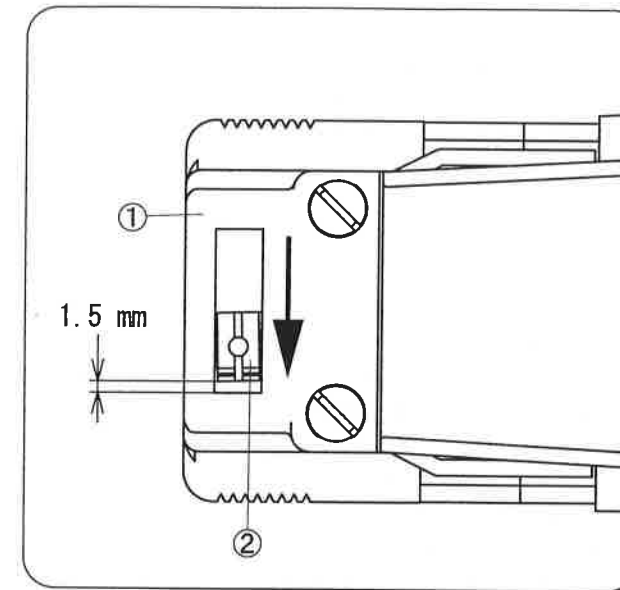
- (1) Fix Belt guard① at 2 places with washer② and screw③ on the sewing machine.
- (2) Fix Belt guard① at 3 places with screw④ on the sewing machine.
- (3) Fix upper cover⑤ at 3 places with screw⑥ at Belt guard①.



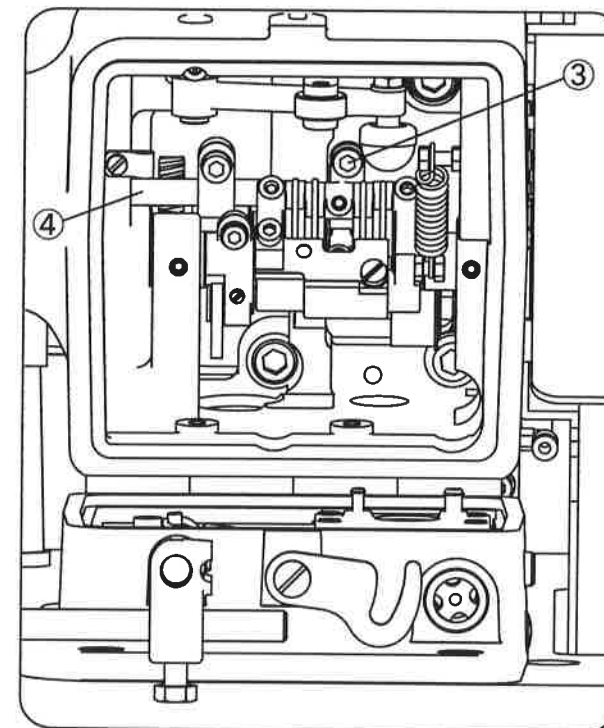
How to fix Synchronizer (Fully equipped model)

- (1) Pinch Synchronizer holding rod② with 2 nuts③ and fix loosely at Belt guard①.
- (2) Place Synchronizer⑤ onto convex ring of pulley and adjust its position in order to firmly fit holding rod② into groove. Fix Synchronizer at 2 places with screw⑥.
- (3) Securely tighten holding rod with 2 nuts③ so that Synchronizer can move lightly.
- (4) Securely hold Synchronizer cord with clamp⑦ and screw⑧ on belt guard.

16-1-2. Adjustment of Feed Dog position



1. Make feeding amount largest.
2. Turn pulley, and set Feed dog ② at the nearest position.
3. Make a 1.5mm clearance from this side end of Needle plate ① groove to Feed dog ②.
4. To change Feed dog ② position, tilt machine, loosen Screw ③ at bottom and adjust by turning Feed driving rock shaft ④.
5. Tighten Screw ③ after adjustment.



16. STANDARD ADJUSTMENTS

⚠ CAUTION



• Maintenance and inspection of the sewing machine should only be carried out by qualified personnel.



• Ask your SEIKO dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.



• If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.



• Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.



• Turn off the power switch and disconnect the power cord from the wall outlet at the following times, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.

• When carrying out inspection, adjustment and maintenance
• When replacing consumable parts such as the rotary hook

• When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.



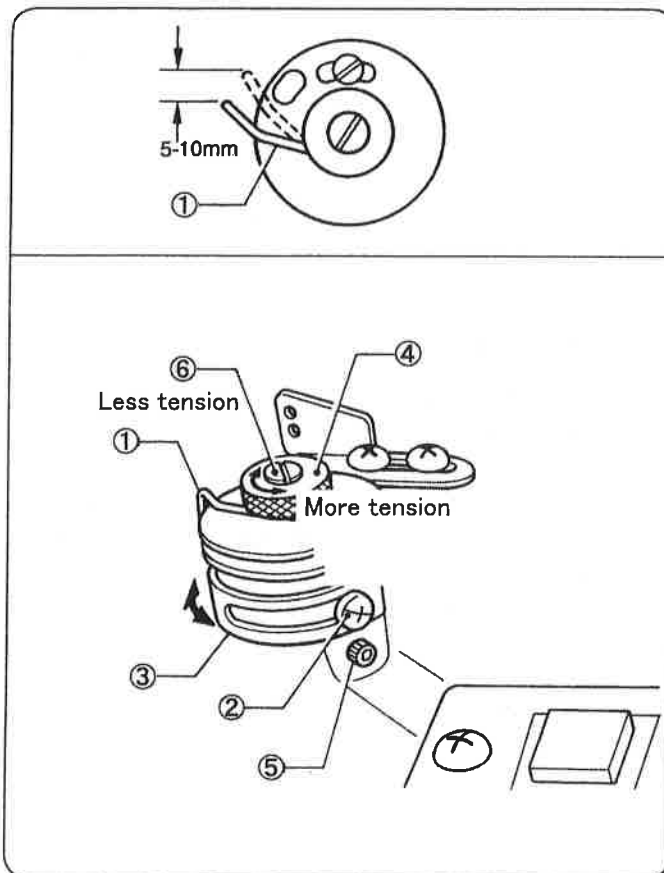
• Disconnect the air hoses from the air supply and wait for the needle on the pressure gauge to drop to "0" before carrying out inspection, adjustment and repair of any parts which use the pneumatic equipment.



• If the power switch and air need to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.

16-1. Adjusting the machine head

16-1-1. Adjusting the thread controller spring



■ Thread controller spring position

The standard operating range for the thread controller spring ① is 5 - 10 mm.

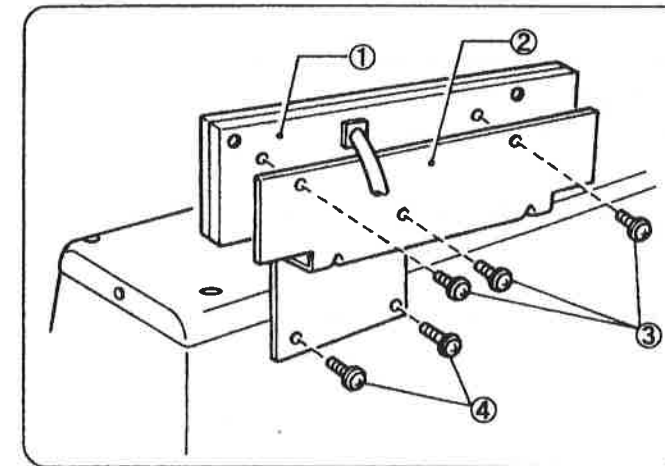
1. Loosen the screw ② and then turn the stopper ③ to adjust the operating range.
2. Tighten the screw ②.

■ Thread controller spring tension

The standard tension for the thread controller spring ① is 0.39 - 0.78 N (40 - 80 gf).

1. Loosen the nut ④.
2. Loosen the bolt ⑤, and then turn the tension adjusting stud ⑥ to adjust the tension.
3. Tighten the bolt ⑤, and then tighten the nut ④.

3-4. Operation panel (Option)



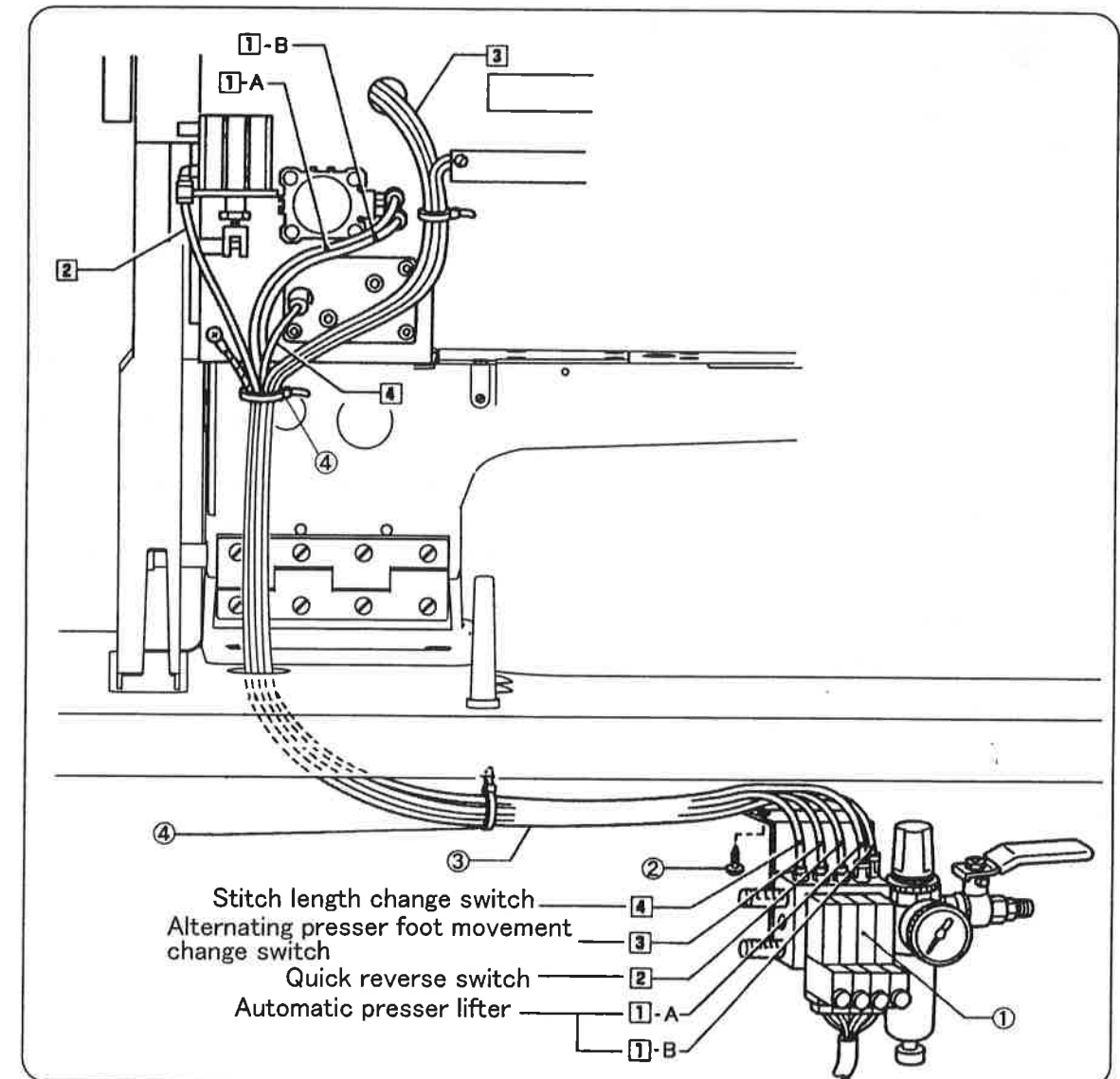
1. Install the operating panel ① to the set plate ② with the three screws ③.
2. Install the set plate ② to the rear of the machine head with the two screws ④.

* The screws ③ are M4 screws with a length of 10 mm, and the screws ④ are M4 screws with a length of 12 mm. Be careful not to get these screws mixed up.

3-5. Air unit (Full spec.type)

3-5-1. Installation

1. Install the air unit ① to the underside of the work table with the two wood screws ②. (Refer to the work table processing diagram on page 2.)
2. Connect the five air tubes ③ as shown in the illustration at right.
3. Bind the air tubes ③ and other cords above and below the work table using the two bands ④.

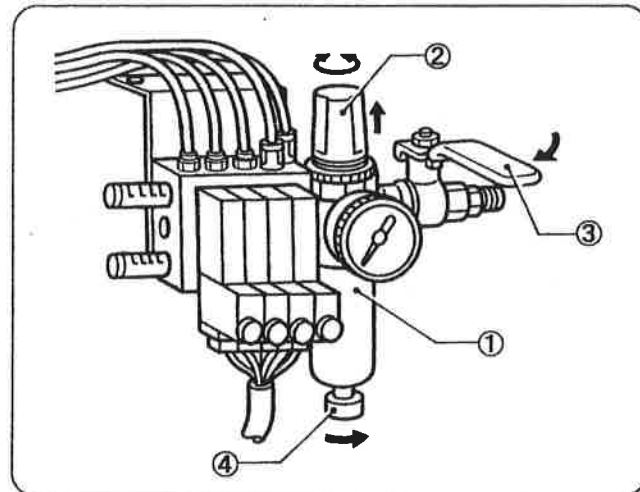


3-5-2 Adjusting the air pressure

CAUTION



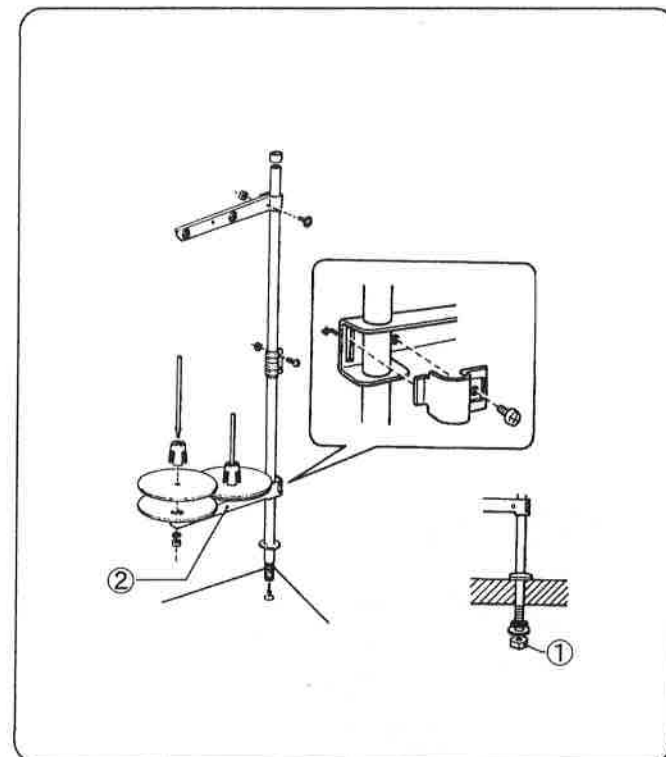
- If the power switch and air need to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.



The air pressure should be set to 0.49 MPa (5 kgf/cm²) before use.

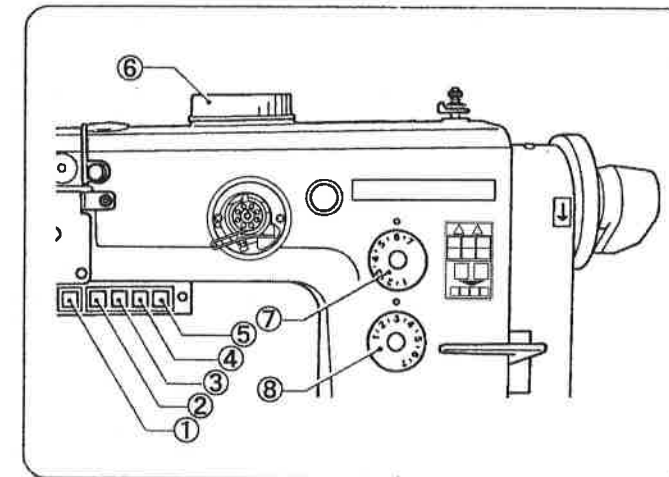
1. Pull up the knob ② of the air unit ①, and turn it to adjust the air pressure.
 2. After adjusting, push the knob ② back in.
- * When releasing the air, close the cock ③ and loosen the knob ④ by turning it in the direction of the arrow.

3-6. Thread stand



Assemble the thread stand as shown in the illustration, and then install it to the work table.

- Securely tighten the nut ① so that the thread stand does not move.
- When installing the thread stand, raise the spool holder ② to a position where it does not touch the machine head when the machine head is tilted back.



③ Auto backtack select switch



- If this switch ③ is pressed when either start backtacking or end backtacking has been set to ON at the operation panel, backtacking is canceled for the first time only. Furthermore, if this switch ③ is pressed when neither start nor end backtacking has been set, backtacking is carried out for the first time only. (The number of backtack stitches sewn at this time will equal the number previously set.)

④ Half stitch switch



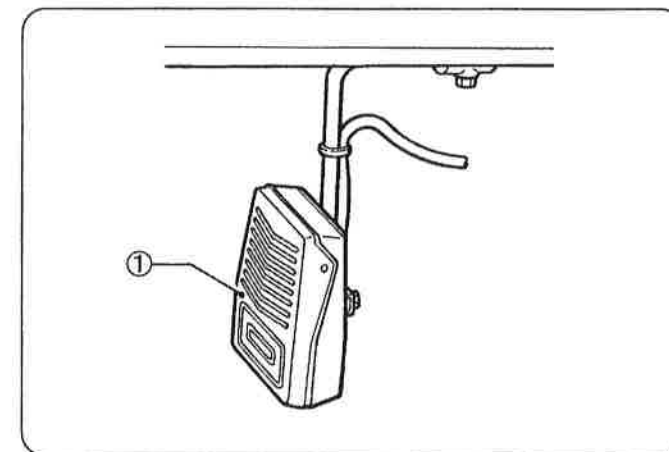
- If this switch ④ is pressed while the machine is at the needle down stop position, the needle will move up to the needle up stop position. (It will not move after thread trimming has been carried out.)

⑤ Stitch length change switch

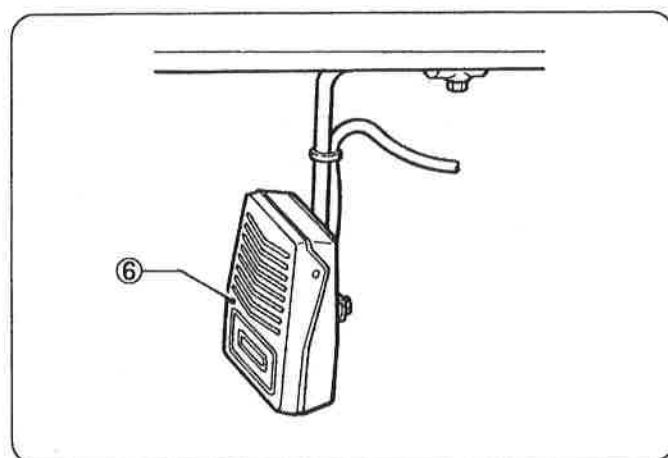


- The stitch length changes alternately between two different stitch length settings each time this switch ⑤ is pressed.
 - OFF ... Sewing is carried out using the stitch length set by feed adjustment dial ⑦ (longer stitch length).
 - ON ... Sewing is carried out using the stitch length set by feed adjustment dial ⑧ (shorter stitch length).
- (Refer to page 17 for details.)

15. USING THE KNEE SWITCH (Full spec. type)



- When the knee switch ① is pressed, the presser foot is raised.
- Furthermore, the knee switch ① can also be used as an alternating presser foot movement change switch by changing the parameter setting for the motor control box.
- * However, if this is done, the presser foot lifting function will not be available.



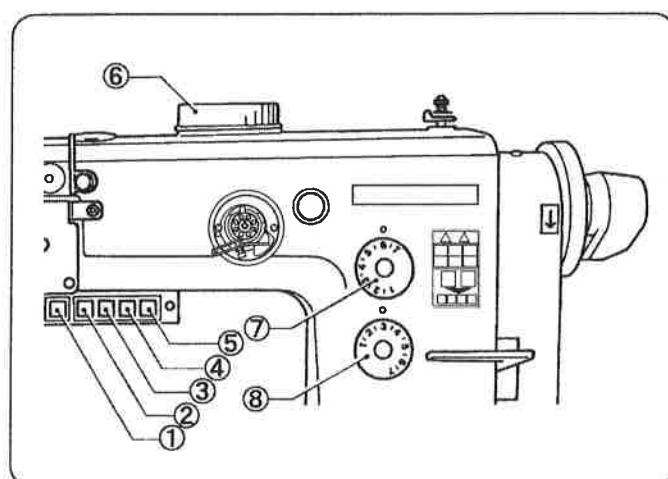
* The knee switch ⑥ can also be used to change the alternating presser foot movement amount.

(1) Change the parameter setting for the motor control box. (Refer to the separate instruction manual for the motor.)

(2) The alternating presser foot will change between the movement amount set by the alternating presser foot movement dial ③ and the maximum movement amount [7 mm] each time the knee switch ⑥ is pressed.

(The indicator for the alternating presser foot movement change switch ⑤ will turn on and off in accordance with the knee switch ⑥ operation so that you can check the current movement amount.)

14. USING THE MANUAL SWITCHES (Full spec. type)



① Quick reverse switch



*Backtacking is carried out during sewing only while this switch is being pressed.

② Alternating presser foot movement change switch

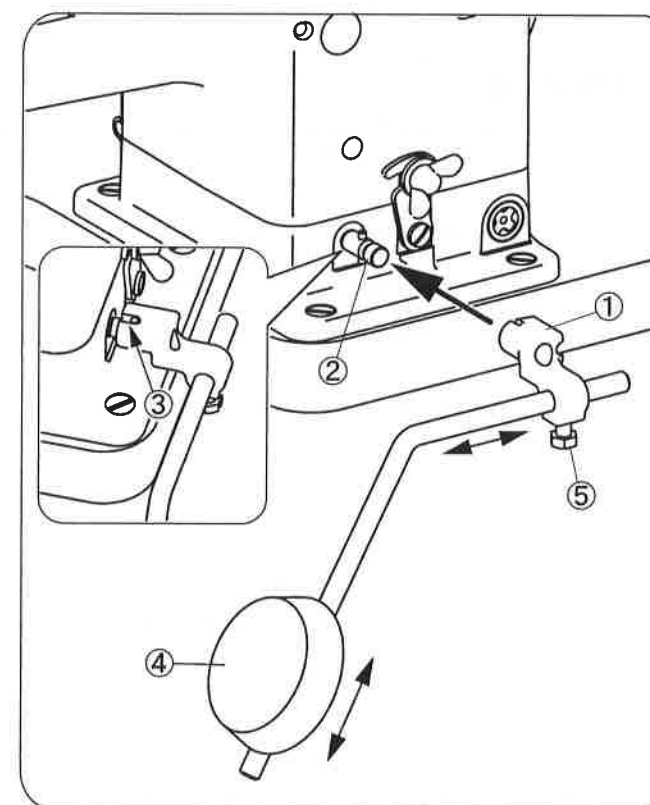


*The sewing machine can be switched between two different alternating presser foot movement amounts each time this switch ② is pressed.

* If the indicator is turned off, the alternating presser foot movement amount equals the amount set by the alternating presser foot movement dial ⑥.

* If the indicator is turned on, the alternating presser foot movement amount equals the maximum movement amount [7 mm]. (Refer to page 18 for details)

3-7. Knee lifter

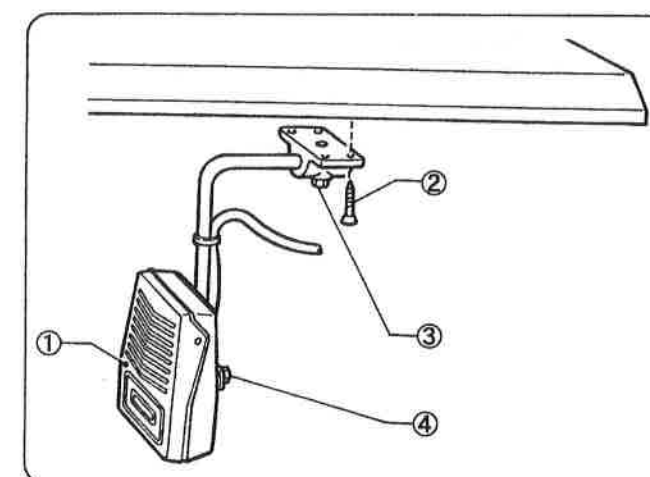


(1) Fix Knee Lifter set ① on Knee Lifter shaft ②. At this time, align shaft pin and groove ③.

(2) Move and adjust knee cover ④ to position that you can operate knee-lifting easier.

Loosen screw ⑤ and slide knee lifter rod to adjust position in lateral direction.

3-8. Knee switch (Full Spec. type)



1. Install the knee switch ① to the underside of the work table with the four wood screws ②.

2. Loosen the bolts ③ and ④, and then adjust the position of the knee switch ① so that it can be operated easily with your knee.

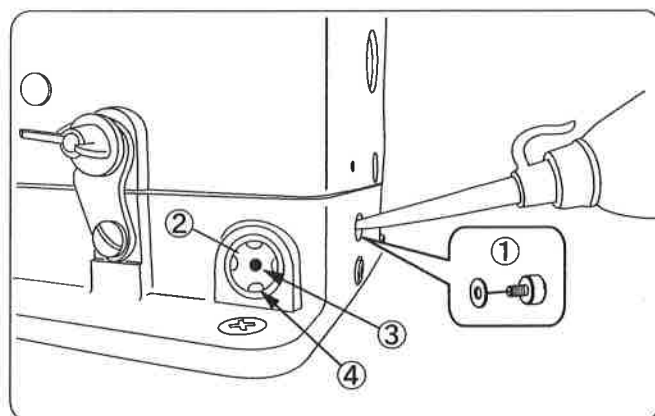
3. Tighten the bolts ③ and ④.

4. LUBRICATION

CAUTION

- Do not connect the power switch until lubrication has been completed, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.
- Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil under any circumstances, as it can cause vomiting and diarrhoea. Keep the oil out of the reach of children.

- The sewing machine should always be lubricated and the oil supply replenished before it is used for the first time, and also after long periods of non-use.
- Use only the lubricating oil specified by SEIKO.

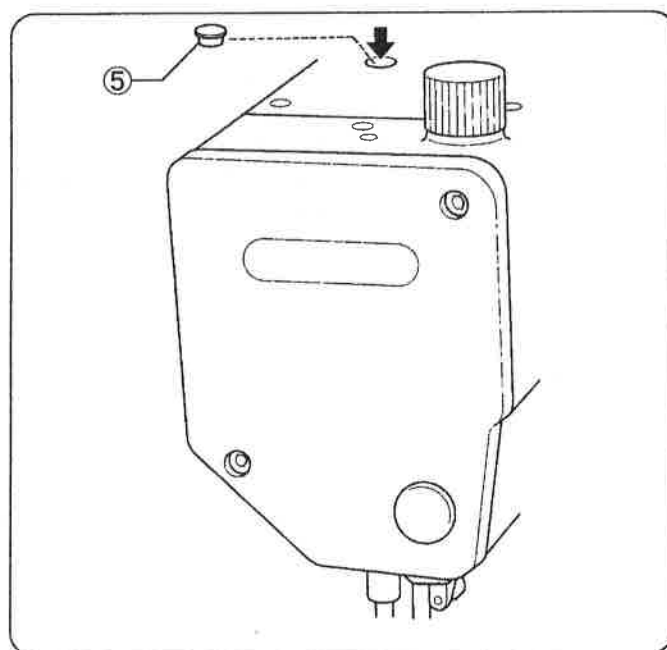


Lubrication

- Remove a plug (1) of oil tank inlet.
- Refill lubricant oil from tank inlet until red color point (3) at center of oil gauge (2).
- Securely screw plug (1) after oil injection is completed.

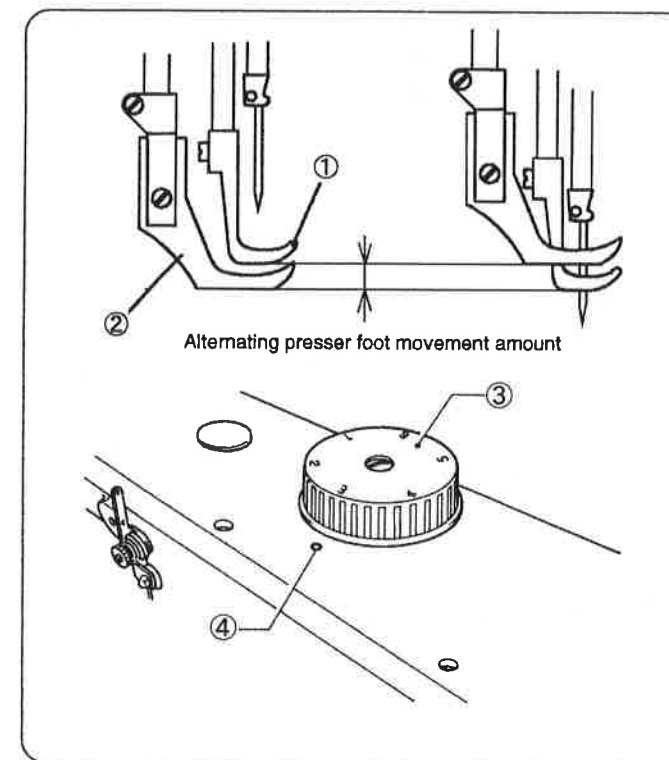
※ Refill lubricant oil when gauge shows oil position at bottom (4).

• When using new machine, keep refilling lubricant oil until oil comes all over and stable.



- Remove the rubber cap (5).
- Pour about 10 ml of lubricating oil in through the oil hole.
- Replace the rubber cap (5).

13. ALTERNATING PRESSER FOOT MOVEMENT AMOUNT



The alternating movement amount for the inner presser foot (1) and the outer presser foot (2) can be adjusted within the range of 1-7 mm using the alternating presser foot movement dial (3). Turn the alternating presser foot movement dial (3) clockwise or counterclockwise to align the number (mm) with the mark (4).

* For full spec. type, the sewing speed is controlled automatically in accordance with the alternating presser foot movement amount setting. (Refer to "Sewing speed table" on page 1).

Using the alternating presser foot movement change switch (Full Spec. type)

This switch can be used to change between two types of alternating movement: the movement amount set by the alternating presser foot movement dial (3) and the maximum movement amount [7 mm].

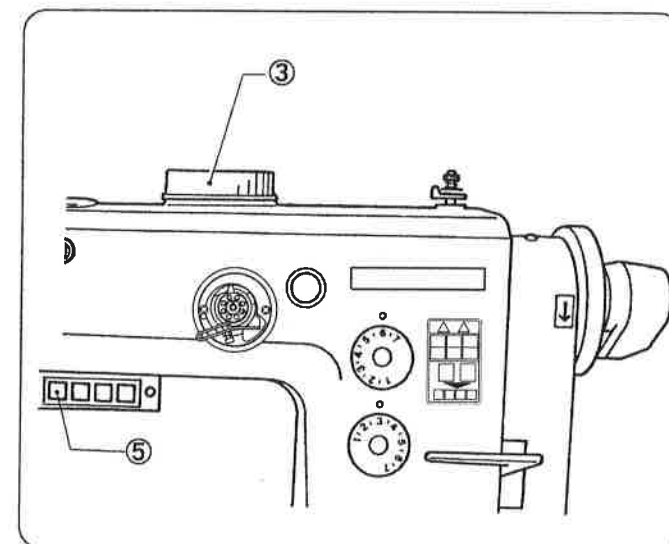
Alternating presser foot movement change switch (5).



OFF ... The alternating presser foot movement amount equals the amount set by the alternating presser foot movement dial (3).

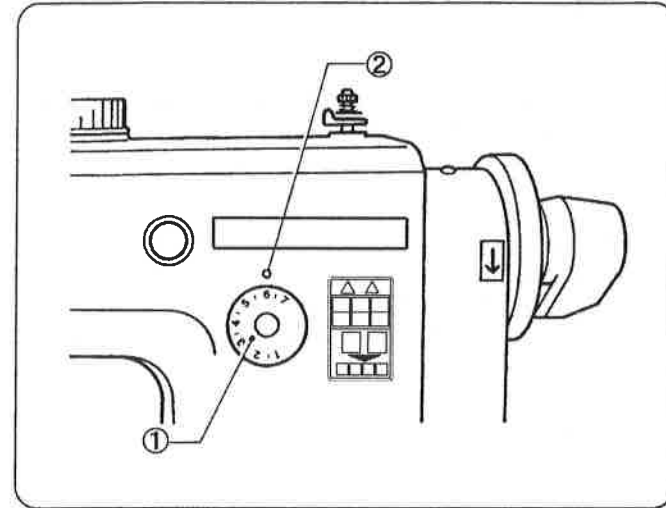


ON ... The alternating presser foot movement amount equals the maximum movement amount [7 mm].



- Turn the alternating presser foot movement dial (3) to set the alternating presser foot movement amount in accordance with the material which is normally sewn.
- Check that the indicator for the alternating presser foot movement change switch (5) is turned off, and then start sewing.
- When you reach a thick joint in the material while sewing, press the alternating presser foot movement change switch (5). (The indicator will turn on and the alternating presser foot movement amount will change to the maximum amount [7 mm].)

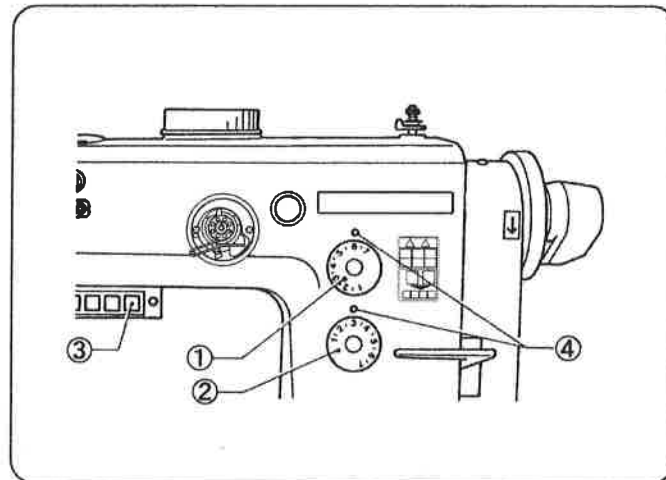
11. ADJUSTING THE STITCH LENGTH (Plain type)



Turn the feed adjustment dial ① clockwise or counterclockwise to align the number with the mark ②.
* The greater the number, the longer the stitch length.

12. ADJUSTING THE STITCH LENGTH (Full spec. type)

- The feed adjustment dials ① and ② can be used to set two different types of stitch length. The machine switches between the two different stitch lengths each time the stitch length change switch ③ is pressed.
- Set the stitch lengths by turning feed adjustment dials ① and ② clockwise or counterclockwise to align the numbers with the marks ④.
- * The greater the number, the longer the stitch length.



CAUTION: Forcibly turning the dial may damage the sewing machine.
Set the upper dial to a higher number than the lower dial.

■ **Adjusting the normal stitch length**
(When using only one type of stitch length)
In this case adjust feed adjustment dial ① only.

NOTE:

- Feed Adjustment dial ② is not used at this time, so set it to the smallest number.
- Check that the indicator for the stitch length change switch ③ is turned off.

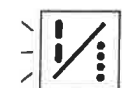
■ Setting two different stitch lengths

- Use feed adjustment dial ① to set the longer stitch length.
- Use feed adjustment dial ② to set the shorter stitch length.
- * It is not possible to use feed adjustment dial ① to set the shorter stitch length and feed adjustment dial ② to set the longer stitch length.
- The sewing machine will switch between the two stitch lengths each time the stitch length change switch ③ is pressed.
(The stitch length will be changed momentarily even if sewing is in progress.)

Stitch length change switch ③



OFF ... Sewing is carried out using the stitch length set by feed adjustment dial ① (longer stitch length).

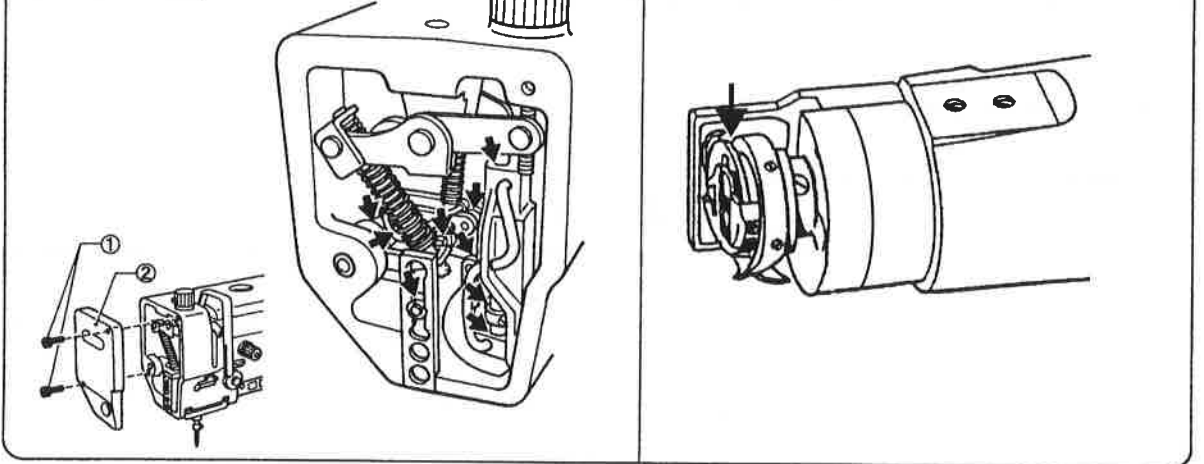


ON ... Sewing is carried out using the stitch length set by feed adjustment dial ② (shorter stitch length).

■ Oiling

Add 1-2 drops of oil in the places indicated by the arrows.

Remove the two bolts ①, and then remove the face plate ②.

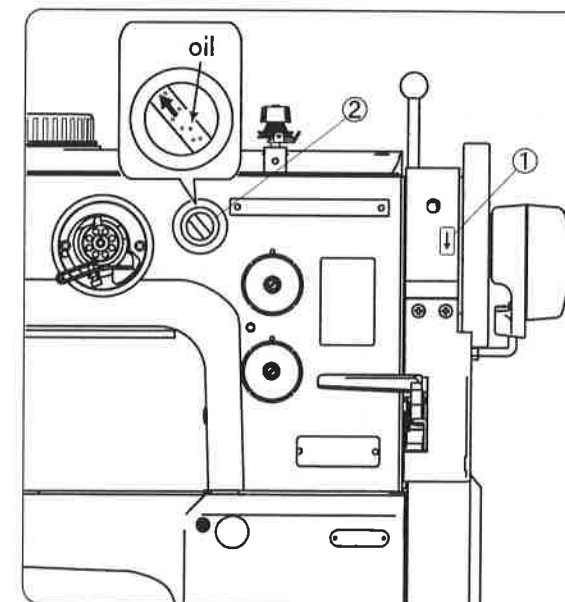


5. CHECKING THE MACHINE PULLEY ROTATING DIRECTION

! CAUTION



- Do not touch any of the moving parts or place any objects against the machine while sewing, as this may result in personal injury or damage to the machine.



- Insert the power cord plug into the wall outlet, and then turn on the power switch.
- Depress the treadle slightly and check that the machine pulley starts to turn in the direction of the arrow ①.
- * If the direction of rotation is reversed, change the direction of rotation to the correct direction while referring to the instruction manual for the motor.
- Depress the treadle gently and check that the oil level rises in the oil sight glass ②.
- * It takes approximately one minute for the oil to travel through the machine head.

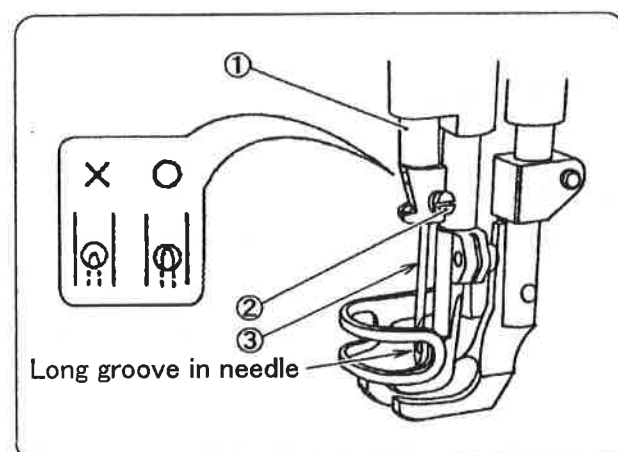
6. PREPARATION BEFORE SEWING

6-1. Installing the needle

CAUTION



- Turn off the power switch before installing the needle, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.
- * When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.



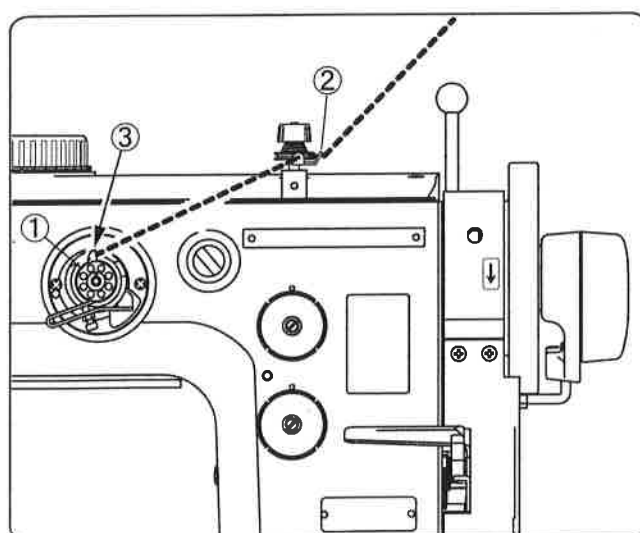
1. Turn the machine pulley to move the needle bar ① to its highest position.
2. Loosen the screw ②.
3. Insert the needle ③ in a straight line as far as it will go, making sure that the long groove on the needle is at the left, and then securely tighten the screw ②.

6-2. Winding the lower thread

CAUTION

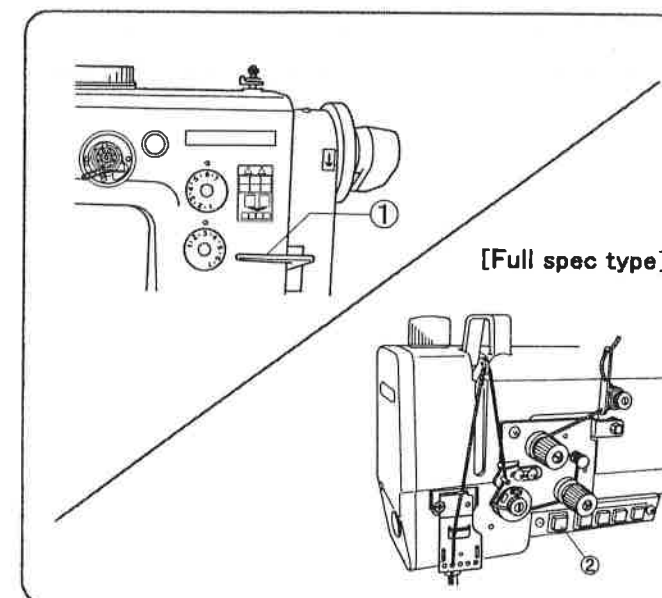


- Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.



1. Push Bobbin ① onto Bobbin winding shaft.
2. Pass thread through thread tension ②.
3. Cut thread with trimming knife ③.

9. BACKTACKING



<Plain type>

When the reverse lever ① is pressed during sewing, the feed direction will be reversed. When it is released, the feed direction will return to normal.

<Full spec. type>

When the reverse lever ① or the quick reverse switch ② is pressed during sewing, the feed direction will be reversed. When it is released, the feed direction will return to normal.

10. ADJUSTING THE PRESSER FOOT PRESSURE

Correct Stitches

← Upper thread

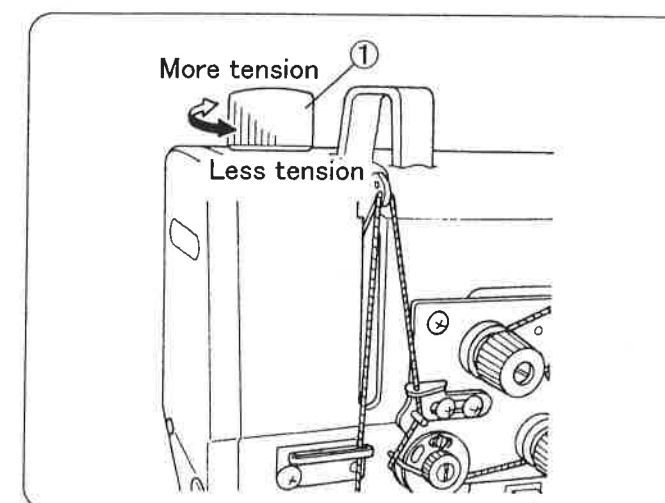
Skipped stitches occur

Uneven stitch length

Stitches are puckered




- Increase the pressure.

- Decrease the pressure.



- If the presser adjusting dial ① is turned clockwise, the presser foot pressure will become stronger, and if it is turned counter-clockwise, the pressure will become weaker.
- The presser foot pressure should be as weak as possible, but strong enough so that the material does not slip.

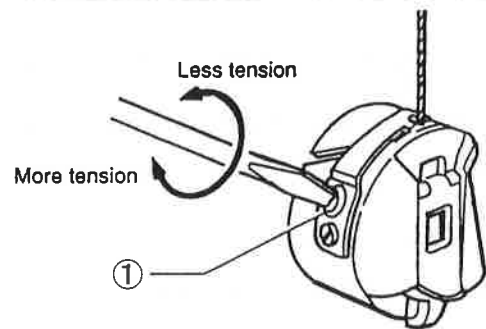
8. ADJUSTING THE THREAD TENSION

-  Good even stitches
- ×  Upper thread tension too strong or lower thread tension too weak
- ×  Upper thread tension too weak or lower thread tension too strong

■ Lower thread tension

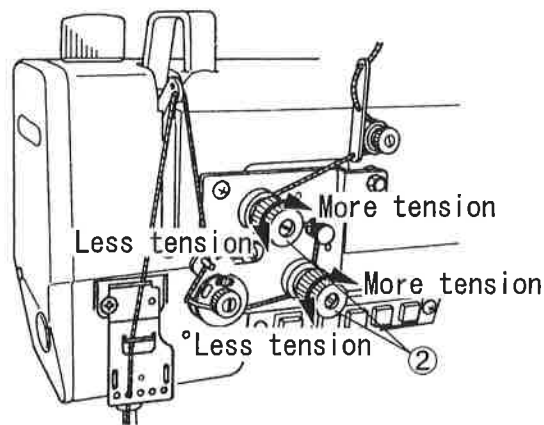
⚠ CAUTION

- Turn off the power switch before adjusting the thread tension, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.
- When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.



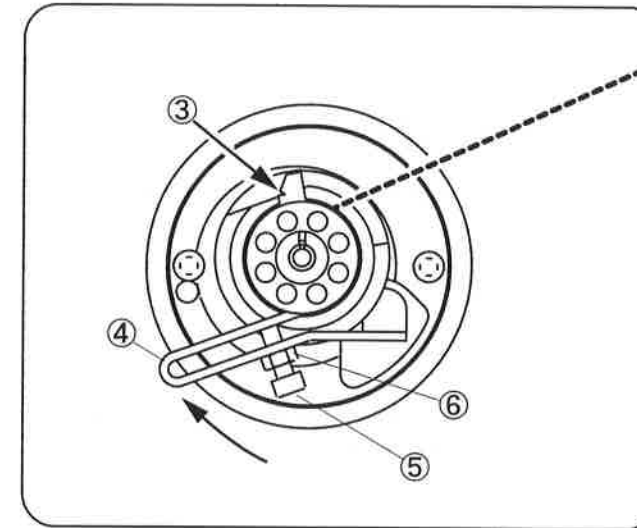
Turn the adjustment screw ① to adjust the lower thread tension.

■ Upper thread tension



After the lower thread tension has been adjusted, adjust the upper thread tension so that a good, even stitch is obtained.

1. Lower the presser foot.
2. Adjust by turning the thread tension nut ②.



4. Turn ON the power switch.
5. Push Bibbon presser lever ④ towards Bobbin.
6. Step on pedal, then lower thread will be wound.
7. Bobbin presser lever ④ will automatically return when lower thread winding is completed.
8. Remove Bobbin and cut thread with trimming knife ③.

Note: Thread wound amount should be lower than 80% of Bobbin capacity.

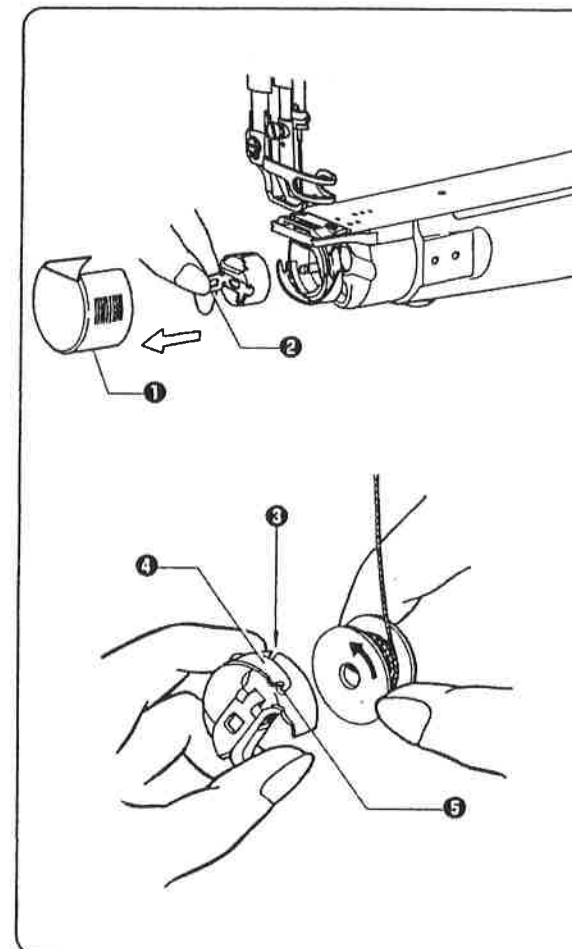
※ Loosen nut ⑥ and adjust thread winding amount with screw ⑤.

More winding when loosening screw, less winding when tightening.

6-3. Inserting and removing the bobbin and threading the lower thread

⚠ CAUTION

- Turn off the power supply before installing the bobbin. The motor will keep turning even after the power is switched off as a result of the motor's inertia.



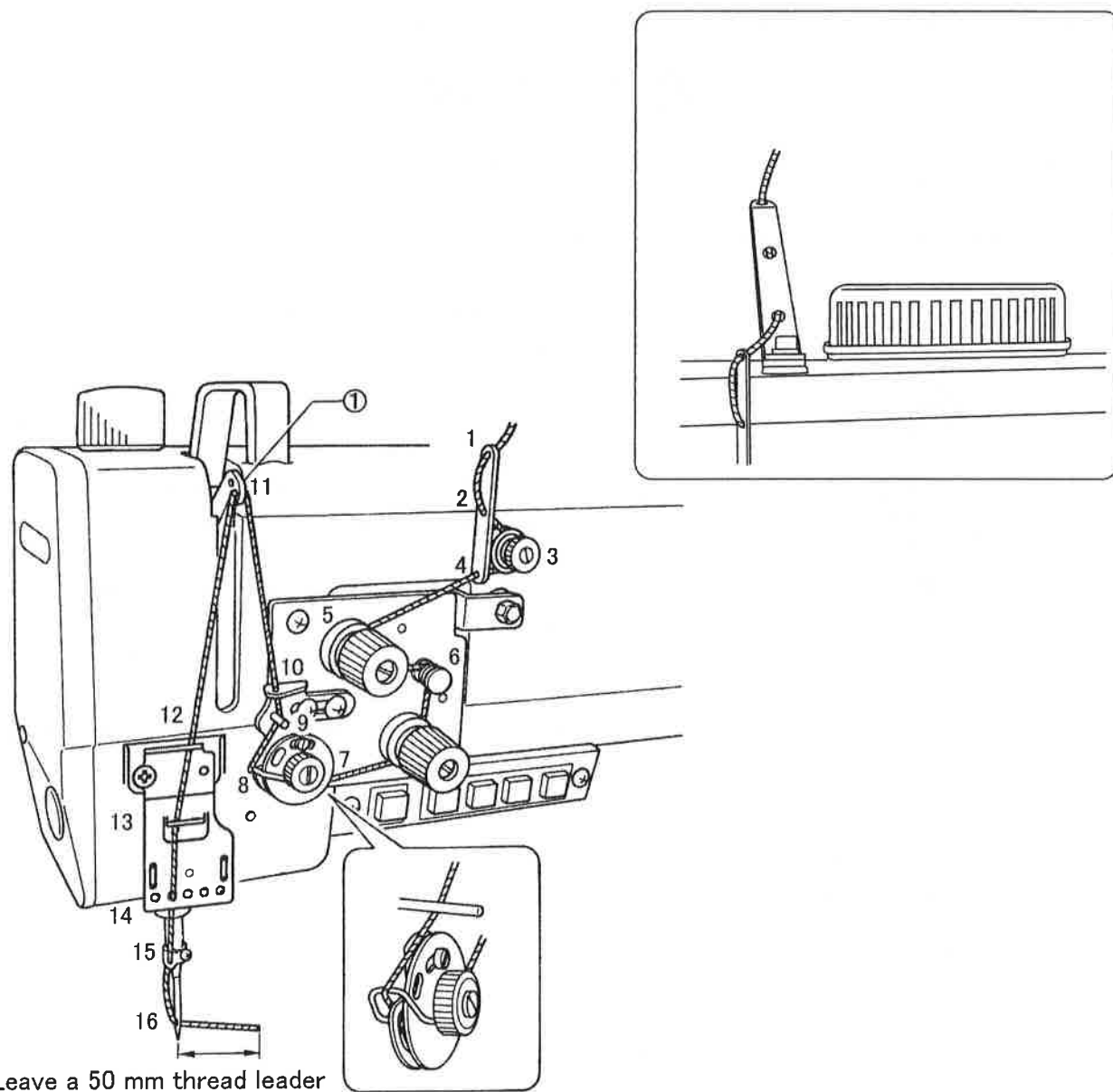
1. Turn the pulley to raise the needle bar to its highest point. Draw out the cylinder ①.
2. Pull up the latch ② and remove the bobbin case.
3. While holding the bobbin so that the thread winds to the right, insert the bobbin into the bobbin case.
4. Pass the thread through the slot ③ and under the tension spring ④, and then pull it out from the thread guide ⑤.
5. Pull the end of the thread out about 5 cm. Raise the latch ②, keeping the slot in the bobbin case facing up. Fit the bobbin case into the hook as deeply as it will go, then depress the latch securely.
6. Close the cylinder ①, leaving sufficient space for passage of the thread.

6-4. Threading the upper thread

⚠ CAUTION

- Turn off the power switch before threading the upper thread, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.
- When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.

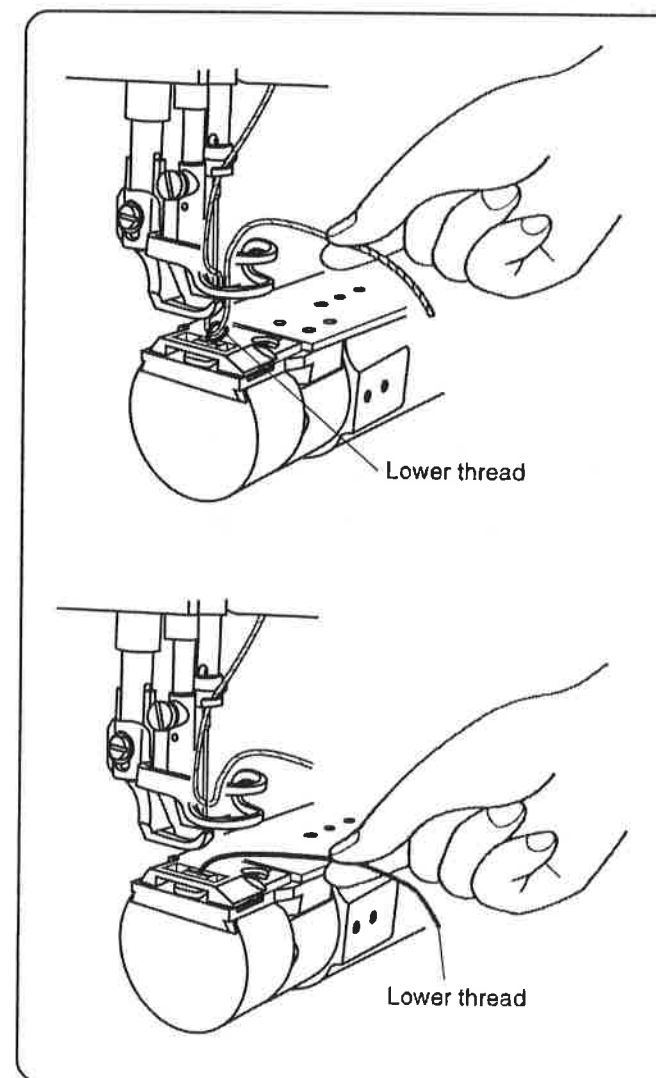
Raise the thread take-up lever ① before threading the upper thread. This will make threading easier and it will prevent the thread from coming out at the sewing start.



7. SEWING

⚠ CAUTION

- Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.
- Turn off the power switch at the following times.
The machine may operate if the treadle is pressed by mistake, which could result in injury.
 - When threading the needle
 - When replacing the needle and bobbin
 - When not using the machine and when leaving the machine unattended
- Do not touch any of the moving parts or place any objects against the machine while sewing, as this may result in personal injury or damage to the machine.



1. While holding the upper thread with your fingers, turn the machine pulley by hand toward you until the lower thread comes out onto the feed dog.
2. Pull the lower thread toward you and check that it pulls out smoothly.
3. Turn on the power switch.
4. Depress the treadle to start sewing.