

DU-141H-4
DU-141H-7

INSTRUCTION MANUAL

NOTE : Read safety instructions carefully and understand them before using.
 Retain this Instruction Manual for future reference.

TO ENSURE SAFE USE OF YOUR SEWING MACHINE

For the sewing machine, automatic machine and ancillary devices (hereinafter collectively referred to as "machine"), it is inevitable to conduct sewing work near moving parts of the machine. This means that there is always a possibility of unintentionally coming in contact with the moving parts. Operators who actually operate the machine and maintenance personnel who are involved in maintenance and repair of the machine are strongly recommended to carefully read to fully understand the following **SAFETY PRECAUTIONS** before using/maintaining the machine. The content of the **SAFETY PRECAUTIONS** includes items which are not contained in the specifications of your product.

The risk indications are classified into the following three different categories to help understand the meaning of the labels. Be sure to fully understand the following description and strictly observe the instructions.

(I) Explanation of risk levels

	DANGER : This indication is given where there is an immediate danger of death or serious injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.
	WARNING : This indication is given where there is a potentiality for death or serious injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.
	CAUTION : This indication is given where there is a danger of medium to minor injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.
	Items requiring special attention.

(II) Explanation of pictorial warning indications and warning labels

Pictorial warning indication		There is a risk of injury if contacting a moving section.	Pictorial warning indication		Be aware that holding the sewing machine during operation can hurt your hands.
		There is a risk of electrical shock if contacting a high-voltage section.			There is a risk of entanglement in the belt resulting in injury.
		There is a risk of a burn if contacting a high-temperature section.			There is a risk of injury if you touch the button carrier.
		Be aware that eye deficiency can be caused by looking directly at the laser beam.	Indication label		The correct direction is indicated.
		There is a risk of contact between your head and the sewing machine.			Connection of a earth cable is indicated.

Warning label			
	<p>① • There is the possibility that slight to serious injury or death may be caused.</p> <p>• There is the possibility that injury may be caused by touching moving part.</p> <p>② • To perform sewing work with safety guard.</p> <p>• To perform sewing work with safety cover.</p> <p>• To perform sewing work with safety protection device.</p> <p>③ • Be sure to turn the power OFF before carrying out "machine-head threading", "needle changing", "bobbin changing" or "oiling and cleaning".</p>		
Electrical-shock danger label		<p>危険</p> <p>高電圧部分に触れて、大けがをすることがある。 電源を切って、5分以上たってからカバーをはずすこと。</p>	<p>DANGER</p> <p>Hazardous voltage will cause injury. Turn off main switch and unplug power cord and wait at least 5 minutes before opening this cover.</p>

SAFETY PRECAUTIONS

Accident means "to cause personal injury or death or damage to property."



DANGER

1. When it is necessary to open the control box containing electrical parts, be sure to turn the power off and wait for five minutes or more before opening the cover in order to prevent accident leading to electrical shock.



CAUTION

Basic precaution

1. Be sure to read the instruction manual and other explanatory documents supplied with accessories of the machine before using the machine. Carefully keep the instruction manual and the explanatory documents at hand for quick reference.
2. The content of this section includes items which are not contained in the specifications of your product.
3. Be sure to wear safety goggles to protect against accident caused by needle breakage.
4. Those who use a heart pacer have to use the machine after consultation with a medical specialist.

Safety devices and warning labels

1. Be sure to operate the machine after verifying that safety device(s) is correctly installed in place and works normally in order to prevent accident caused by lack of the device(s).
2. If any of the safety devices is removed, be sure to replace it and verify that it works normally in order to prevent accident that can result in personal injury or death.
3. Be sure to keep the warning labels adhered on the machine clearly visible in order to prevent accident that can result in personal injury or death. If any of the labels has stained or come unstuck, be sure to change it with a new one.

Application and modification

1. Never use the machine for any application other than its intended one and in any manner other than that prescribed in the instruction manual in order to prevent accident that can result in personal injury or death. JUKI assumes no responsibility for damages or personal injury or death resulting from the use of the machine for any application other than the intended one.
2. Never modify and alter the machine in order to prevent accident that can result in personal injury or death. JUKI assumes no responsibility for damages or personal injury or death resulting from the machine which has been modified or altered.

Education and training

1. In order to prevent accident resulting from unfamiliarity with the machine, the machine has to be used only by the operator who has been trained/educated by the employer with respect to the machine operation and how to operate the machine with safety to acquire adequate knowledge and operation skill. To ensure the above, the employer has to establish an education/training plan for the operators and educate/train them beforehand.

Items for which the power to the machine has to be turned off

Turning the power off: Turning the power switch off, then removing the power plug from the outlet.
This applies to the following.

1. Be sure to immediately turn the power off if any abnormality or failure is found or in the case of power failure in order to protect against accident that can result in personal injury or death.
2. To protect against accident resulting from abrupt start of the machine, be sure to carry out the following operations after turning the power off. For the machine incorporating a clutch motor, in particular, be sure to carry out the following operations after turning the power off and verifying that the machine stops completely.
 - 2-1. For example, threading the parts such as the needle, looper, spreader etc. which have to be threaded, or changing the bobbin.
 - 2-2. For example, changing or adjusting all component parts of the machine.
 - 2-3. For example, when inspecting, repairing or cleaning the machine or leaving the machine.
3. Be sure to remove the power plug by holding the plug section instead of the cord section in order to prevent electrical-shock, earth-leakage or fire accident.
4. Be sure to turn the power off whenever the machine is left unattended between works.
5. Be sure to turn the power off in the case of power failure in order to prevent accident resulting of breakage of electrical components.

PRECAUTIONS TO BE TAKEN IN VARIOUS OPERATION STAGES

Transportation

1. Be sure to lift and move the machine in a safe manner taking the machine weight in consideration. Refer to the text of the instruction manual for the mass of the machine.
2. Be sure to take sufficient safety measures to prevent falling or dropping before lifting or moving the machine in order to protect against accident that can result in personal injury or death.
3. Once the machine has been unpacked, never re-pack it for transportation to protect the machine against breakage resulting from unexpected accident or dropping.

Unpacking

1. Be sure to unpack the machine in the prescribed order in order to prevent accident that can result in personal injury or death. In the case the machine is crated, in particular, be sure to carefully check nails. The nails have to be removed.
2. Be sure to check the machine for the position of its center of gravity and take it out from the package carefully in order to prevent accident that can result in personal injury or death.

Installation

(I) Table and table stand

1. Be sure to use JUKI genuine table and table stand in order to prevent accident that can result in personal injury or death. If it is inevitable to use a table and table stand which are not JUKI genuine ones, select the table and table stand which are able to support the machine weight and reaction force during operation.
2. If casters are fitted to the table stand, be sure to use the casters with a locking mechanism and lock them to secure the machine during the operation, maintenance, inspection and repair in order to prevent accident that can result in personal injury or death.

(II) Cable and wiring

1. Be sure to prevent an extra force from being applied to the cable during the use in order to prevent electrical-shock, earth-leakage or fire accident. In addition, if it is necessary to cable near the operating section such as the V-belt, be sure to provide a space of 30 mm or more between the operating section and the cable.
2. Be sure to avoid starburst connection in order to prevent electrical-shock, earth-leakage or fire accident.
3. Be sure to securely connect the connectors in order to prevent electrical-shock, earth-leakage or fire accident. In addition, be sure to remove the connector while holding its connector section.

(III) Grounding

1. Be sure to have an electrical expert install an appropriate power plug in order to prevent accident caused by earth-leakage or dielectric strength voltage fault. In addition, be sure to connect the power plug to the grounded outlet without exceptions.
2. Be sure to ground the earth cable in order to prevent accident caused by earth leakage.

(IV) Motor

1. Be sure to use the specified rated motor (JUKI genuine product) in order to prevent accident caused by burnout.
2. If a commercially available clutch motor is used with the machine, be sure to select one with an entanglement preventive pulley cover in order to protect against being entangled by the V-belt.

Before operation

1. Be sure to make sure that the connectors and cables are free from damage, dropout and looseness before turning the power on in order to prevent accident resulting in personal injury or death.
2. Never put your hand into the moving sections of the machine in order to prevent accident that can result in personal injury or death.
In addition, check to be sure that the direction of rotation of the pulley agrees with the arrow shown on pulley.
3. If the table stand with casters is used, be sure to secure the table stand by locking the casters or with adjusters, if provided, in order to protect against accident caused by abrupt start of the machine.

During operation

1. Be sure not to put your fingers, hair or clothing close to the moving sections such as the handwheel, hand pulley and motor or place something near those sections while the machine is in operation in order to prevent accident caused by entanglement that can result in personal injury or death.
2. Be sure not to place your fingers near the surround area of the needle or inside the thread take-up lever cover when turning the power on or while the machine is in operation in order to prevent accident that can result in personal injury or death.
3. The machine runs at a high speed. Never bring your hands near the moving sections such as looper, spreader, needle bar, hook and cloth trimming knife during operation in order to protect your hands against injury. In addition, be sure to turn the power off and check to be sure that the machine completely stops before changing the thread.
4. Be careful not to allow your fingers or any other parts of your body to be caught between the machine and table when removing the machine from or replacing it on the table in order to prevent accident that can result in personal injury or death.

5. Be sure to turn the power off and check to be sure that the machine and motor completely stop before removing the belt cover and V-belt in order to prevent accident caused by abrupt start of the machine or motor.
6. If a servomotor is used with the machine, the motor does not produce noise while the machine is at rest. Be sure not to forget to turn the power off in order to prevent accident caused by abrupt start of the motor.
7. Never use the machine with the cooling opening of the motor power box shielded in order to prevent fire accident by overheat.

Lubrication

1. Be sure to use JUKI genuine oil and JUKI genuine grease to the parts to be lubricated.
2. If the oil adheres on your eye or body, be sure to immediately wash it off in order to prevent inflammation or irritation.
3. If the oil is swallowed unintentionally, be sure to immediately consult a medical doctor in order to prevent diarrhea or vomiting.

Maintenance

1. In prevention of accident caused by unfamiliarity with the machine, repair and adjustment has to be carried out by a service technician who is thoroughly familiar with the machine within the scope defined in the instruction manual. Be sure to use JUKI genuine parts when replacing any of the machine parts. JUKI assumes no responsibility for any accident caused by improper repair or adjustment or the use of any part other than JUKI genuine one.
2. In prevention of accident caused by unfamiliarity with the machine or electrical-shock accident, be sure to ask an electrical technician of your company or JUKI or distributor in your area for repair and maintenance (including wiring) of electrical components.
3. When carrying out repair or maintenance of the machine which uses air-driven parts such as an air cylinder, be sure to remove the air supply pipe to expel air remaining in the machine beforehand, in order to prevent accident caused by abrupt start of the air-driven parts.
4. Be sure to check that screws and nuts are free from looseness after completion of repair, adjustment and part replacement.
5. Be sure to periodically clean up the machine during its duration of use. Be sure to turn the power off and verify that the machine and motor stop completely before cleaning the machine in order to prevent accident caused by abrupt start of the machine or motor.
6. Be sure to turn the power off and verify that the machine and motor stop completely before carrying out maintenance, inspection or repair of the machine. (For the machine with a clutch motor, the motor will keep running for a while by inertia even after turning the power off. So, be careful.)
7. If the machine cannot be normally operated after repair or adjustment, immediately stop operation and contact JUKI or the distributor in your area for repair in order to prevent accident that can result in personal injury or death.
8. If the fuse has blown, be sure to turn the power off and eliminate the cause of blowing of the fuse and replace the blown fuse with a new one in order to prevent accident that can result in personal injury or death.
9. Be sure to periodically clean up the air vent of the fan and inspect the area around the wiring in order to prevent fire accident of the motor.

Operating environment

1. Be sure to use the machine under the environment which is not affected by strong noise source (electromagnetic waves) such as a high-frequency welder in order to prevent accident caused by malfunction of the machine.
2. Never operate the machine in any place where the voltage fluctuates by more than "rated voltage $\pm 10\%$ " in order to prevent accident caused by malfunction of the machine.
3. Be sure to verify that the air-driven device such as an air cylinder operates at the specified air pressure before using it in order to prevent accident caused by malfunction of the machine.
4. To use the machine with safety, be sure to use it under the environment which satisfies the following conditions:

Ambient temperature during operation	5°C to 35°C
Relative humidity during operation	35 % to 85 %
5. Dew condensation can occur if bringing the machine suddenly from a cold environment to a warm one. So, be sure to turn the power on after having waited for a sufficient period of time until there is no sign of water droplet in order to prevent accident caused by breakage or malfunction of the electrical components.
6. Be sure to stop operation when lightning flashes for the sake of safety and remove the power plug in order to prevent accident caused by breakage or malfunction of the electrical components.
7. Depending on the radio wave signal condition, the machine may generate noise in the TV or radio. If this occurs, use the TV or radio with kept well away from the machine.
8. In order to ensure the work environment, local laws and regulations in the country where the sewing machine is installed shall be followed.
In the case the noise control is necessary, an ear protector or other protective gear should be worn according to the applicable laws and regulations.
9. Disposal of products and packages and treatment of used lubricating oil should be carried out properly according to the relevant laws of the country in which the sewing machine is used.

Precautions to be taken so as to use the DU-141H-4 and DU-141H-7 more safely



1. Keep your hands away from needle when you turn ON the power switch or while the machine is in operation.
2. Do not put your fingers into the thread take-up cover while the machine is operating.
3. Turn OFF the power switch when tilting the machine head, or removing the belt cover or the V belt.
4. During operation, be careful not to allow your or any other person's head, hands or clothes to come close to the handwheel and the thread take-up. Also, do not place anything close to them.
5. Do not operate your machine with the belt cover and finger guard removed.
6. When tilting the machine head, be sure to confirm that the head support bar is properly attached to your machine head, and be careful not to allow your fingers or the like to be pinched in the machine head.



1. To ensure safety, never operate the machine with the ground wire for the power supply removed.
2. When inserting/removing the power plug, the power switch has to be turned OFF in advance.
3. In time of thunder and lightening, stop your work and disconnect the power plug from the receptacle so as to ensure safety.
4. If the machine is suddenly moved from a cold place to a warm place, dew condensation may be observed. In this case, turn ON the power to the machine after you have confirmed that there is no danger of water drops in the machine.
5. To prevent fires, periodically draw out the power plug from the plug socket and clean the root of the pins and the space between pins.
6. The hook rotates at a high speed while the machine is in operation.
To prevent possible injury to hands, be sure to keep your hands away from the vicinity of the hook during operation. In addition, be sure to turn OFF the power to the machine when replacing the bobbin.
7. To avoid possible accidents due to abrupt start of the machine, be sure to turn OFF the power to the machine.
8. Be careful of handling this product so as not to pour water or oil, shock by dropping, and the like since this product is a precision instrument.
9. When tilting or returning the sewing machine to the home position, hold the upper side of the machine head with both hands and perform the work quietly so that fingers or the like are not caught in the machine.



CAUTION

In addition, be aware that the safety devices such as the "eye protection cover" and "finger guard" are sometimes omitted in the sketches, illustrations and figures included in the Instruction Manual for the explanation's sake. In the practical use, never remove those safety devices.

DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

We hereby declare that the sewing machine (sewing head) described below ;

1. Must not be put into service until the machinery to which it is incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC, and
2. Conforms to the essential requirements of the Directive 2006/42/EC, described in the technical documentation, and
3. To be prepared with the above technical documentation compiled in accordance with part B of Annex VII, and
4. Also to conform to the RoHS Directive 2011/65/EU
5. Relevant information on which should be transmitted in response to a reasoned request by the national authorities, by the electronic method or other according to the request.

Model	DU-140 Series
Description	Industrial Sewing Machine
Function	make stitches and sew

Applied harmonized standards, in particular :
EN ISO12100, EN ISO10821, EN 50581

Manufacturer :
JUKI CORPORATION
2-11-1, Tsurumaki, Tama-shi, Tokyo, Japan

CONTENTS

BEFORE OPERATION	1
SPECIFICATIONS	1
1. INSTALLATION OF THE MACHINE	1
2. ADJUSTING THE BELT TENSION	2
3. INSTALLATION OF THREAD STAND	3
4. ATTACHING THE BELT COVER AND BOBBIN WINDER.....	3
5. LUBRICATION	4
6. ATTACHING THE NEEDLE.....	4
7. WINDING A BOBBIN	5
8. THREADING THE BOBBIN CASE	5
9. INSTALLING THE TAKE-UP THREAD GUIDE ROD.....	5
10. THREAD THE MACHINE HEAD.....	6
11. ADJUSTING THE STITCH LENGTH	6
12. THREAD TENSION	7
13. THREAD TAKE-UP SPRING.....	7
14. PRESSURES OF THE PRESSER FOOT AND WALKING FOOT	7
15. HEIGHT OF THE FEED DOG.....	8
16. ADJUSTING THE WALKING FOOT AND THE PRESSER FOOT	8
17. NEEDLE-TO-HOOK RELATIONSHIP	9
18. AUXILIARY THREAD TENSION CONTROLLER.....	10
19. PRESSURE OF THE FIXED KNIFE.....	10
20. ONE-TOUCH TYPE REVERSE FEED STITCHING MECHANISM	10
21. HOME POSITION OF THE ROTARY KNIFE	11
22. ADJUSTING THE THREAD TRIMMING CAM	11
23. HOW TO MANUALLY OPERATE THE THREAD TRIMMER	11
24. HOW TO REPLACE THE KNIVES	12
25. SEWING SPEED VS. ALTERNATE LIFTS	12
26. TROUBLES AND CORRECTIVE MEASURES	13

BEFORE OPERATION



CAUTION :
Check the following so as to prevent maloperation of and damage to the machine.

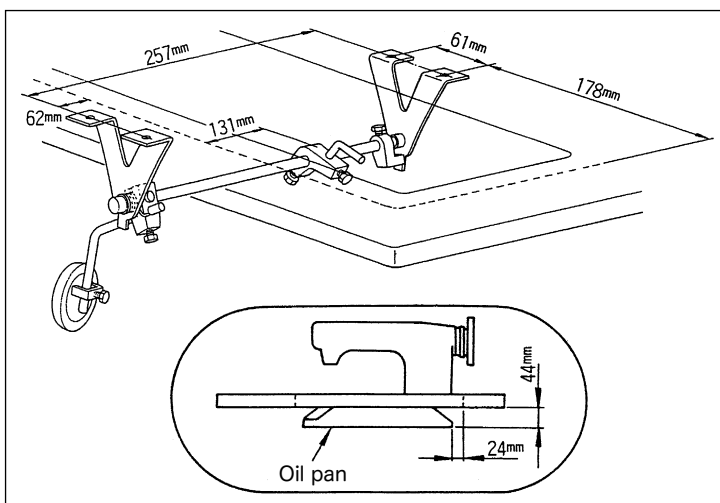
- Before you put the machine into operation for the first time after the set-up, clean it thoroughly .
Remove all dust gathering during transportation and oil it well.
- Confirm that voltage has been correctly set.
Confirm that the power plug has been properly connected to the power supply.
- Never use the machine in the state where the voltage type is different from the designated one.
- The direction of normal rotation of the machine is counterclockwise as observed from the pulley side.
Take care not to allow the machine to rotate in the reverse direction.
- When tilting the machine head, tilt it after removing knee lifter hook.
- Never operate the machine unless the machine head and the oil tank have been filled with oil.
- For a test run, remove the bobbin and the needle thread.
- For the first month, decrease the sewing speed and run the sewing machine at a speed of 1,800 sti/min or less.
- Operate the handwheel after the machine has totally stopped.

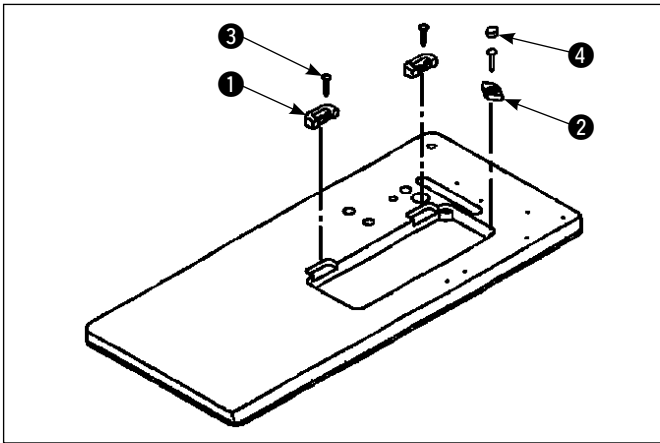
SPECIFICATIONS

Stitch system	1-needle, top & bottom feed, lockstitch machine	Needle	Schmetz 1738 Nm125 to Nm160 (standard: Nm130)
Application	Medium- to heavy-weight materials		(Schmetz 135×17 Nm90 to Nm160)
Sewing speed	Max. 2,000 sti/min	Count of thread to be used	#40 to #8
Stitch length	Max. 9 mm	Stitch adjustment method	By dial
Lift of presser foot	By lifting lever 6 mm, By knee lifter 15 mm	Lubrication method	By an oiler (The hook is automatically lubricated.)
Thread take-up	Link type thread take-up	Motor to be used	AC servo motor
Needle bar stroke	37 mm	Lubrication oil	JUKI New defrix oil No.1
Noise	- Equivalent continuous emission sound pressure level (L_{pA}) at the workstation: A-weighted value of 77.5 dB; (Includes $K_{pA} = 2.5$ dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 2,000 sti/min.		

1. INSTALLATION OF THE MACHINE

1. Carry the sewing machine with two persons.
(Caution) Do not hold the handwheel.
2. Do not put protruding articles such as the screwdriver and the like at the location where the sewing machine is placed.
3. Mounting positions of the knee lifter and the oil pan
(Caution) The knee lifter should be mounted before the motor is installed.

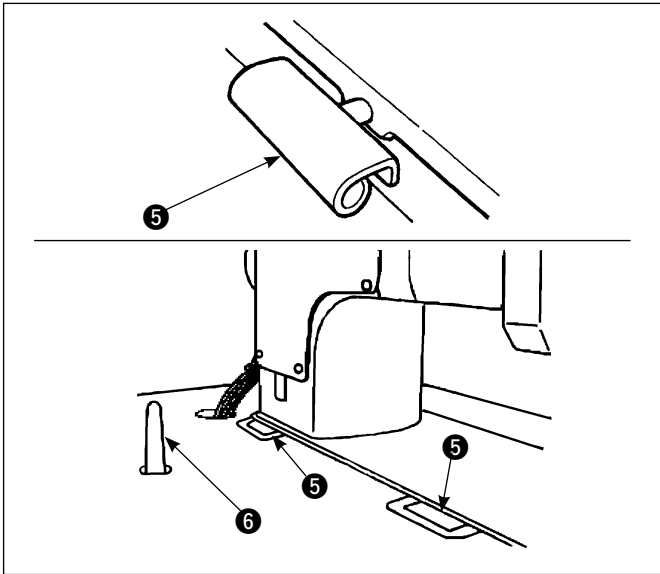




4. Attaching the hinge washer and rubber cushion

Fix the rubber hinge washer ①, the head support rubber ② supplied with the machine on the table using the nails ③.

Put the head cushion ④ into the head support rubber ②.



5. Fit hinge ⑤ into the opening in the machine bed, and fit the machine head to table rubber hinge before placing the machine head on rubber seats on the four corners.

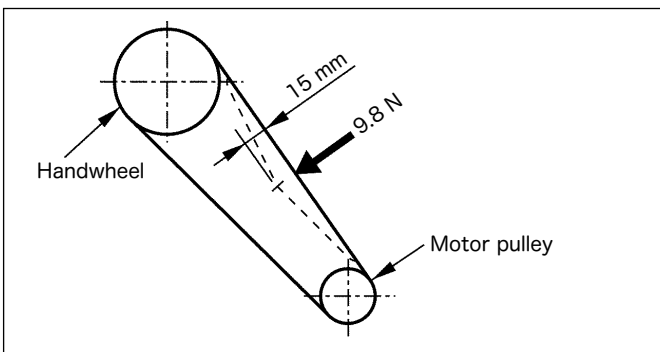
6. Securely attach head support rod ⑥ to the table until it goes no further.

2. ADJUSTING THE BELT TENSION



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



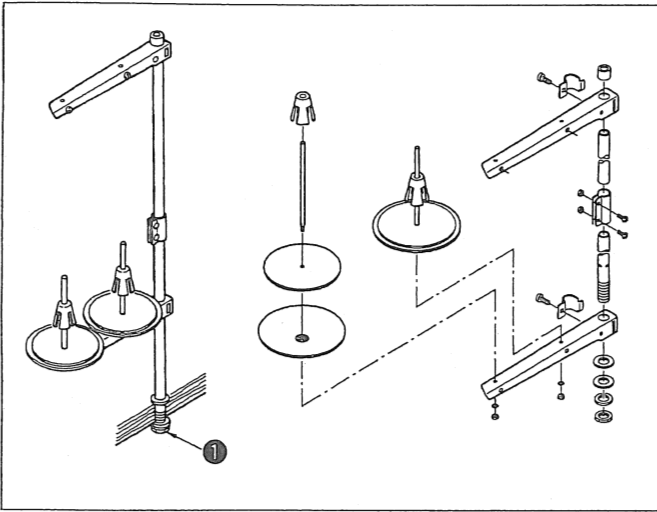
Adjust the belt tension with the height of the motor so that the belt sags 15 mm when the center of V belt is applied with a 9.8 N load.

3. INSTALLATION OF THREAD STAND



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



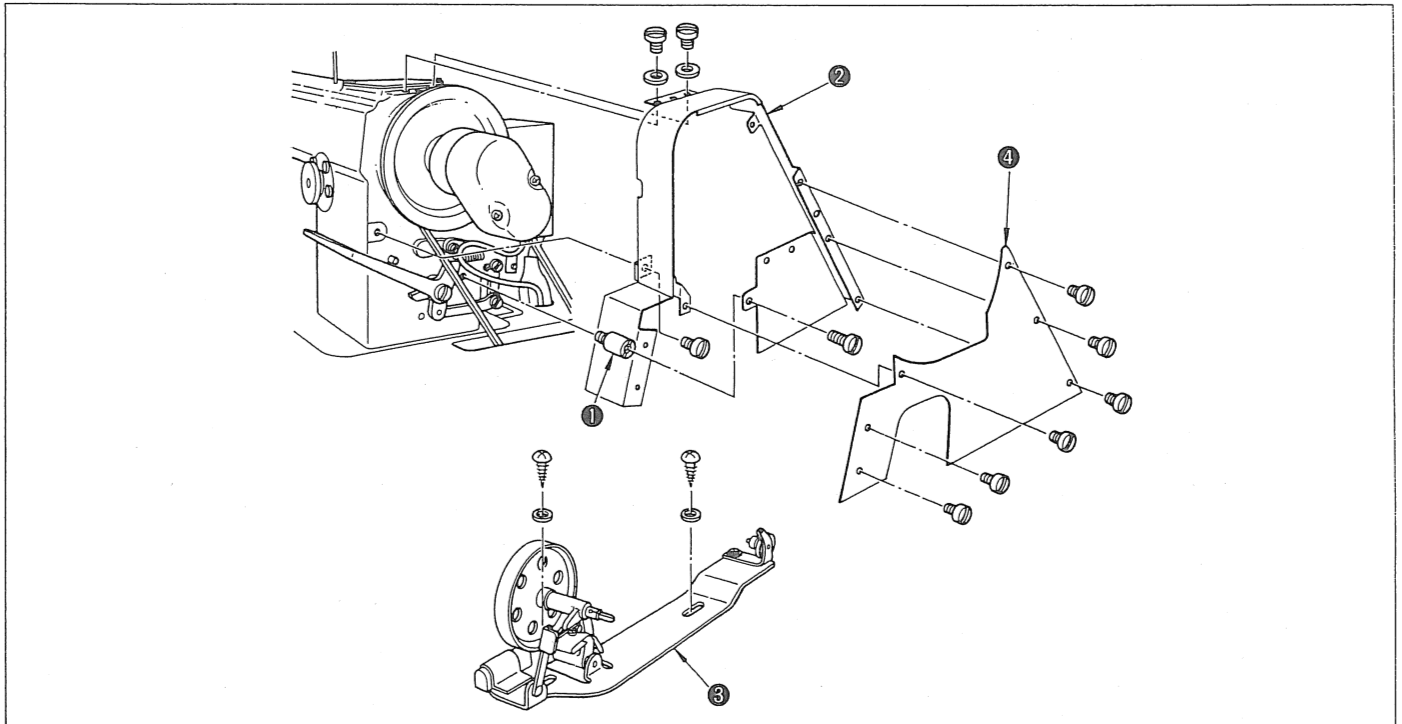
- 1) Assemble the thread stand unit, and insert it in the hole in the machine table.
- 2) Tighten locknut ❶ to fix the thread stand.

4. ATTACHING THE BELT COVER AND BOBBIN WINDER



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



(Installing Procedure)

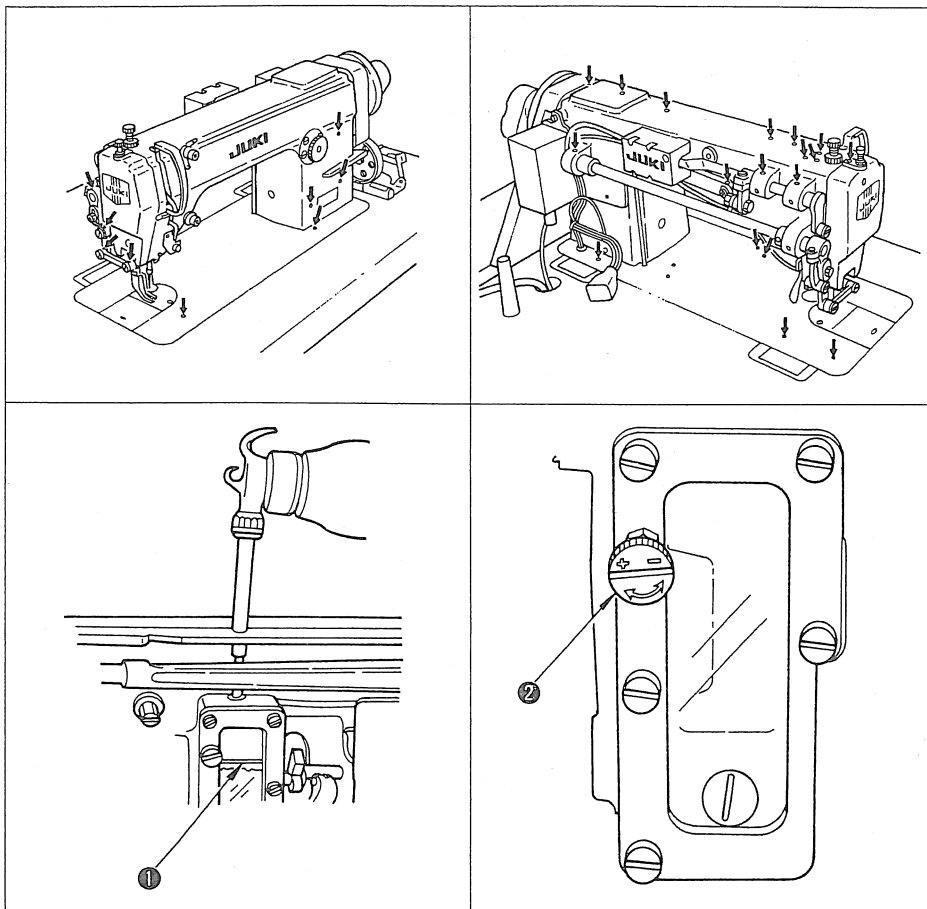
1. Insert belt cover support ❶ in the tapped hole in the machine arm.
2. Fit belt cover ❷ onto the support and machine arm.
3. Install side plate ❹ .
4. Tilt the machine head, and check that the belt cover does not touch the belt slot in the machine table.
5. Place bobbin winder ❸ in the belt cover,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

5. LUBRICATION



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



★ Before starting the sewing machine

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

★ Refilling the oil reservoir

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

★ Adjusting the amount of oil supplied to the hook

If it is necessary to change the amount of oil supplied to the hook, adjust it using knob ② .

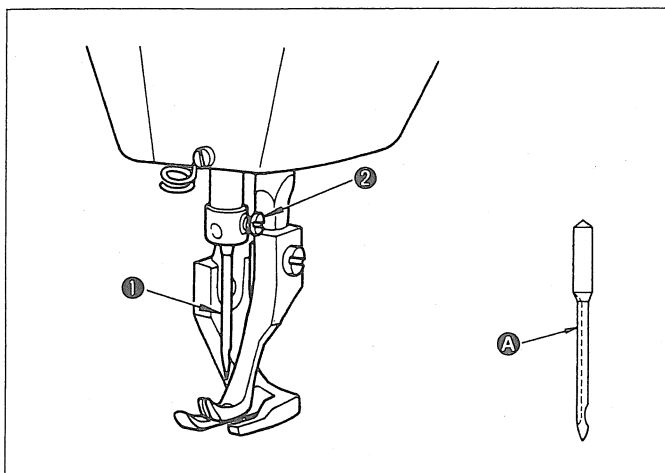
- Loosen the knob.
- Turn the knob clockwise (in direction “+”) to increase the oil supplied, or turn it counter-clockwise (in direction “-”) to decrease it.

6. ATTACHING THE NEEDLE



WARNING :

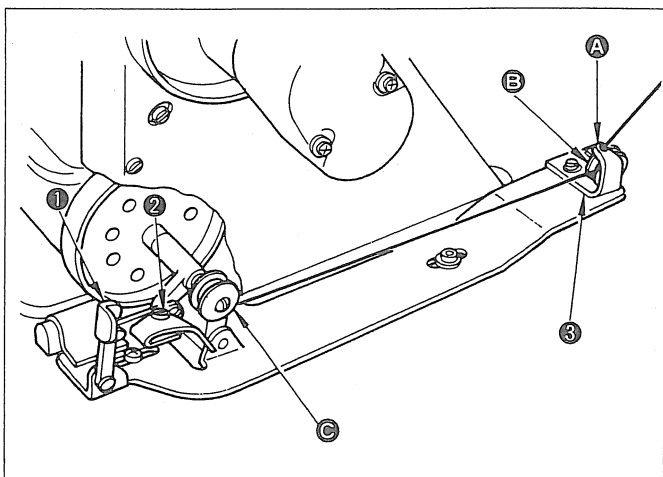
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



The standard needle is Schmetz 1738, however, Schmetz 135 × 17 may also be used.

1. Turn the handwheel to move the needle bar up to its highest position.
2. Loosen needle setscrew ② , and hold needle ① so that long groove A 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.

7. WINDING A BOBBIN



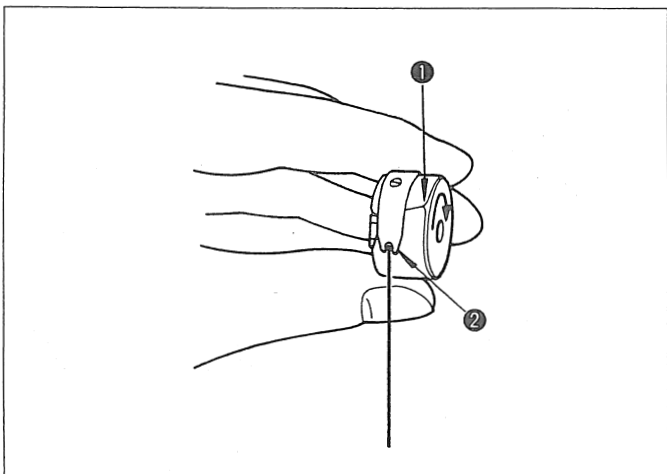
1. Route the thread in the order of A , B and C before winding it round the bobbin several times.
2. Set bobbin presser ① down to bring the winder in contact with the belt.
3. Adjust screw ② so that the bobbin is wound with thread about 80%. Turning the screw clockwise increases the amount of thread wound on the bobbin, and vice versa.
4. If thread is wound unevenly, move winder tension adjustor base ③ 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.

8. THREADING THE BOBBIN CASE



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



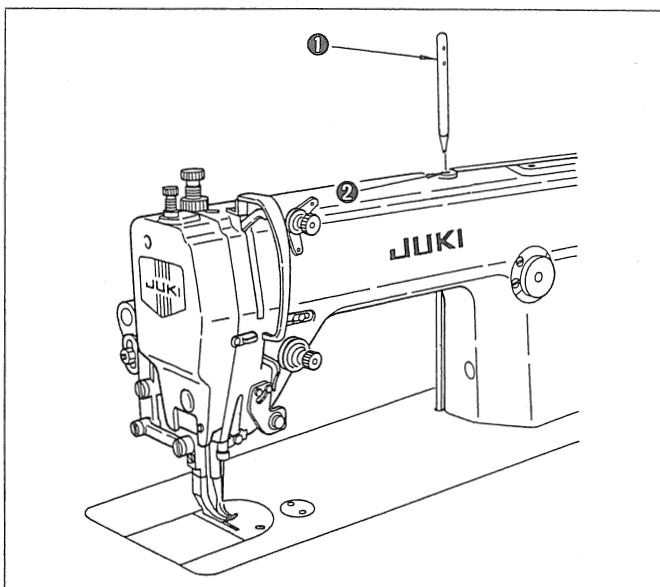
★ Removing the bobbin case

Raise the bobbin case latch to remove the bobbin case.

★ Threading the bobbin case

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

9. INSTALLING THE TAKE-UP THREAD GUIDE ROD



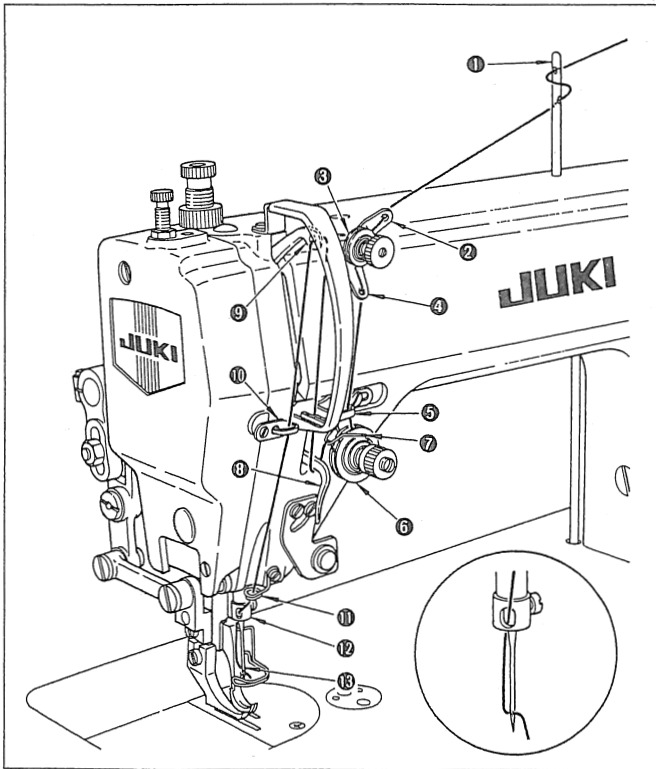
Insert take-up thread guide rod ① (attaching section is tapered off) into attaching hole ② .

10. THREAD THE MACHINE HEAD



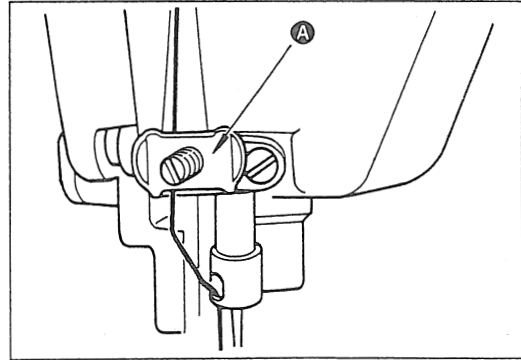
WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.

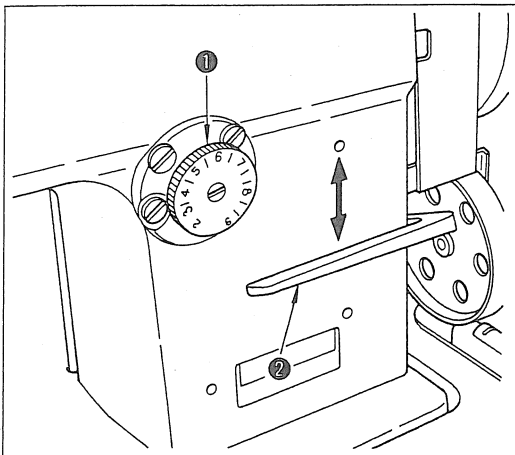


Thread the machine head in the order of ① through to ⑬.

* If using a tetron thread or the like, the thread may come off the needle eyelet after thread trimming. In this case, replace the take-up thread guide which is currently used with take-up thread guide **A** supplied with the machine. (Refer to the figure in the lower.)



11. ADJUSTING THE STITCH LENGTH



Turn stitch length dial ① counterclockwise or clockwise to bring the desired value at the top.

★ How to engage the reverse feed stitching

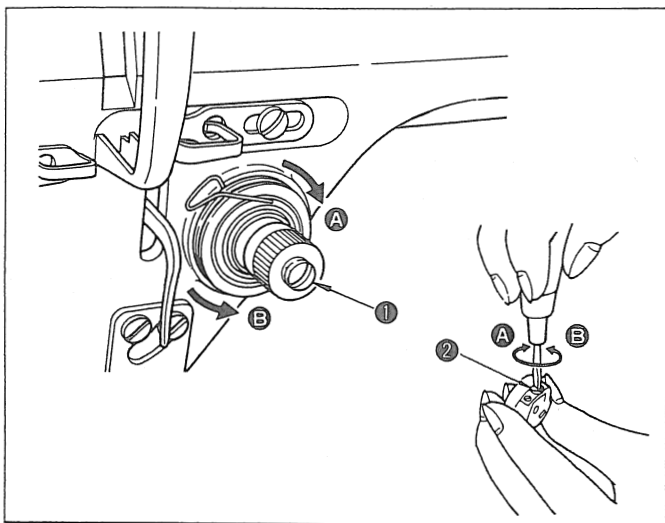
1. Push feed lever ② down.
2. The machine performs reverse feed stitching as long as the lever is held depressed.
3. The moment you release the lever, the machine resumes the normal stitching mode.

12. THREAD TENSION



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



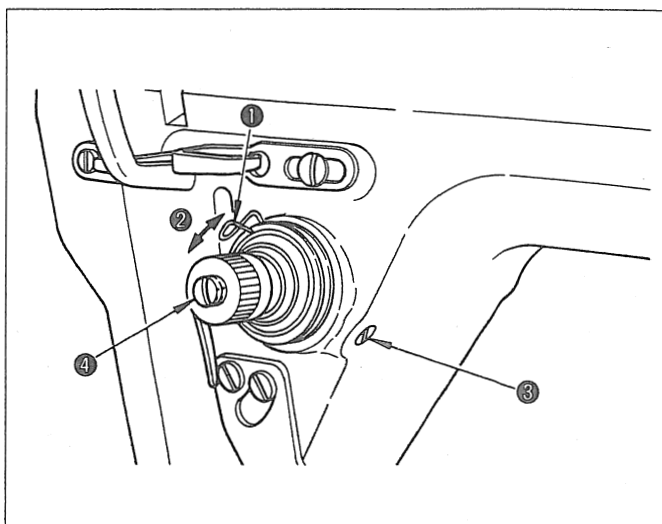
★ Adjusting the needle thread tension

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

★ Adjusting the bobbin thread tension

Turning tension screw ② clockwise (toward A) increases the bobbin thread tension. Turning it counterclockwise (toward B) decreases the tension.

13. THREAD TAKE-UP SPRING

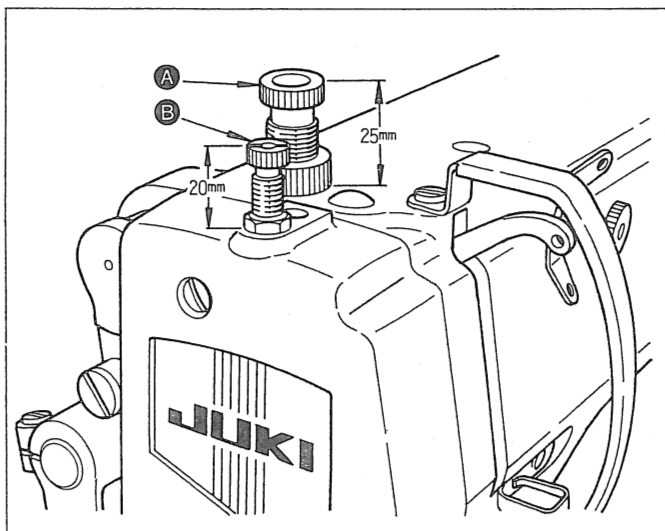


Standard stroke ② of thread take-up spring ① is 8 to 10 mm. To adjust the stroke, loosen setscrew ③, and turn whole thread controller ④.

The standard spring tension is 0.39 to 0.49N.

To adjust the tension, turn the thread tension post, using a screwdriver.

14. PRESSURES OF THE PRESSER FOOT AND WALKING FOOT



The pressures of presser foot A (standard height of the presser foot pressure regulator: 25 mm) and walking foot B (standard height of the walking foot pressure regulator: 20 mm) can be adjusted according to the type of materials.

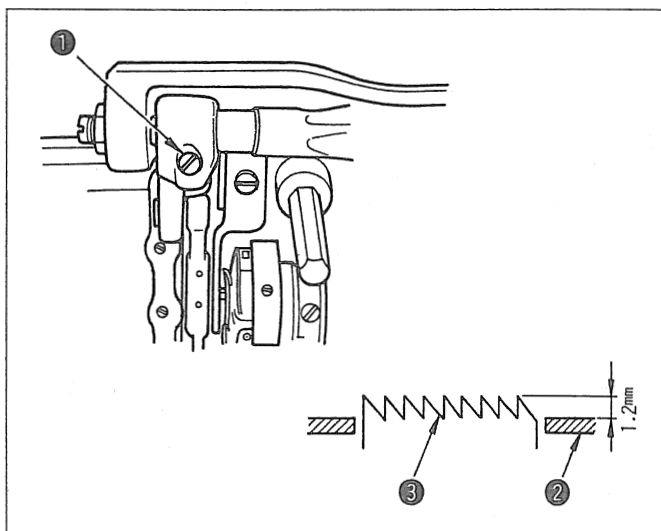
* It is advisable to minimize the pressures of both feet.

15. HEIGHT OF THE FEED DOG



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



Feed dog ③ is factory-adjusted to jut out 1.2 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:

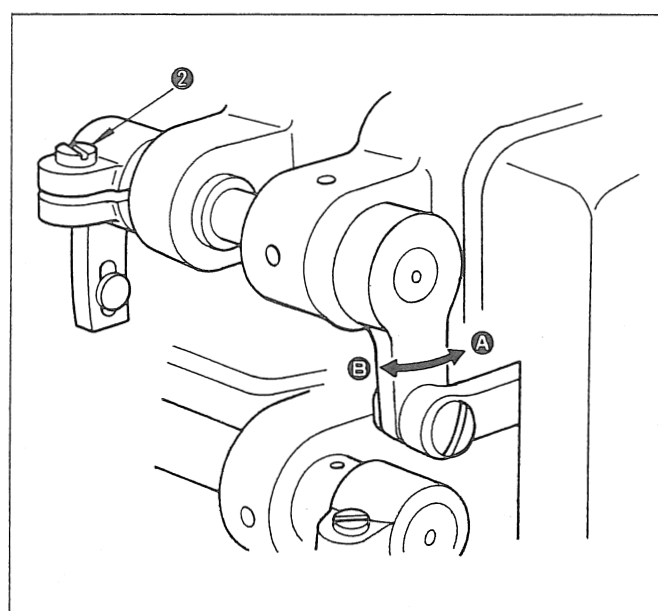
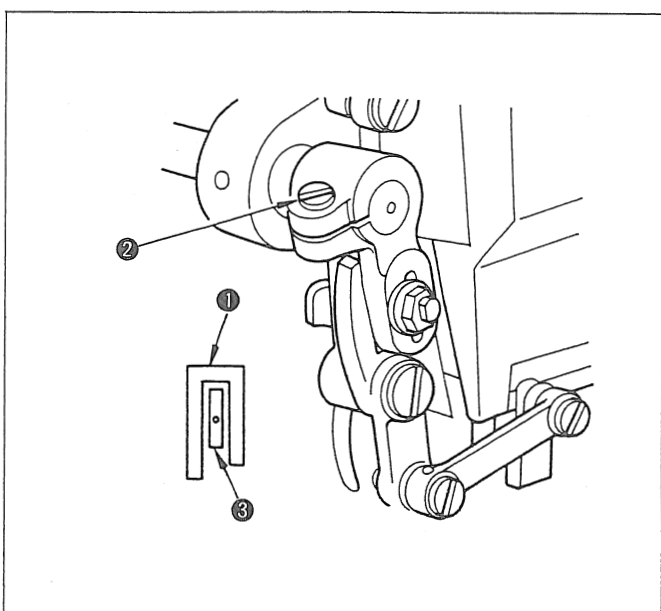
1. Loosen screw ① .
2. Move the feed bar up or down to perform adjustment,] then securely tighten the screw.

16. ADJUSTING THE WALKING FOOT AND THE PRESSER FOOT



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



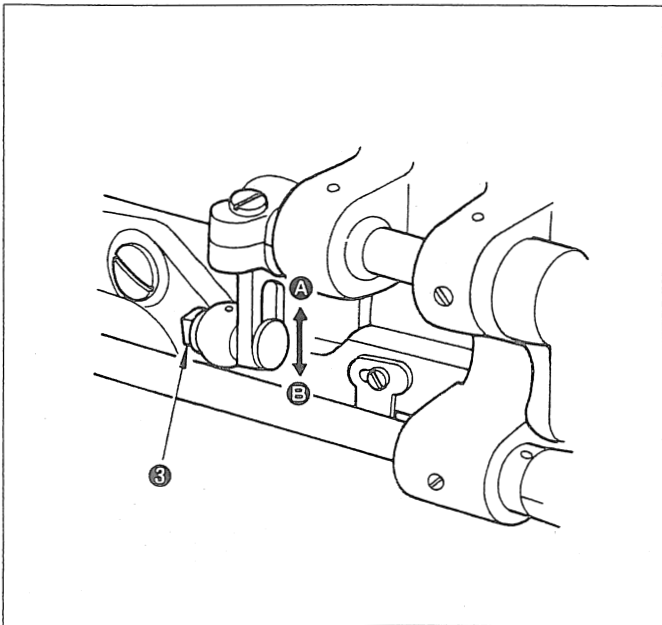
★ Longitudinal position of the walking foot

1. Set the stitch length at the maximum, and turn the handwheel until walking foot ① reaches its front end position.
With the walking foot in that position, loosen screw ② .
2. Bring the walking foot as close to presser foot ③ as possible to the extension that it does not come in contact with the back face of the presser foot.
3. Securely tighten screw ② .

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

The alternate vertical strokes of the walking foot and the presser foot are normally equal. Depending on the type of materials, however, the vertical stroke of the presser foot may be set smaller than that of the walking foot.

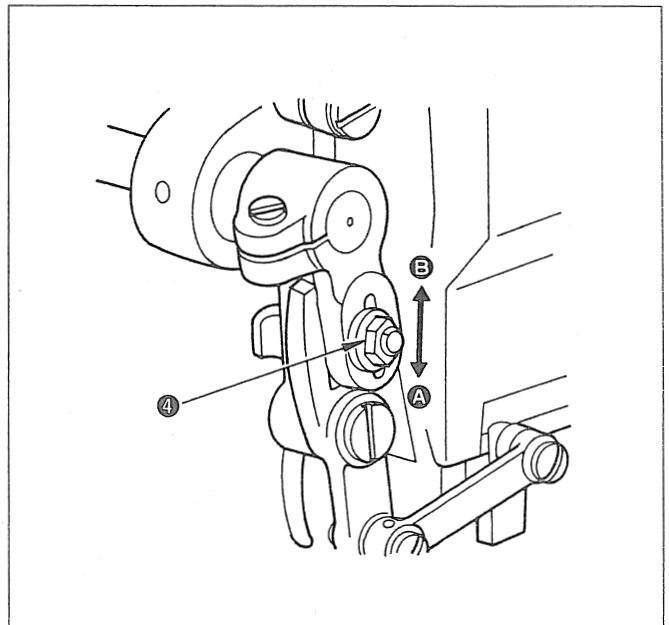
1. Loosen screw ② .
2. Raise the thread take-up to its highest position, and lower the hand lifter.
 - When you move the top feed crank to the right (toward A), the vertical strokes of both feet will be identical.
 - As you move the top feed crank to the left (toward B), the stroke of the presser foot decreases.



★ **Height of the walking foot and the presser foot**

The height of the walking foot and the presser foot are normally minimized. Their height may be changed, depending on the type of materials.

- To change their height, loosen nut ③, then adjust the position of the cam rod boss.
 - When you set the cam rod boss at the height position within the slot, the height will be set at maximum (5 mm) ①.
 - When you set it at the lowest position, the height will be set at minimum (2 mm) ②.
- (See "25. SEWING SPEEDS VS. ALTERNATE LIFTS")




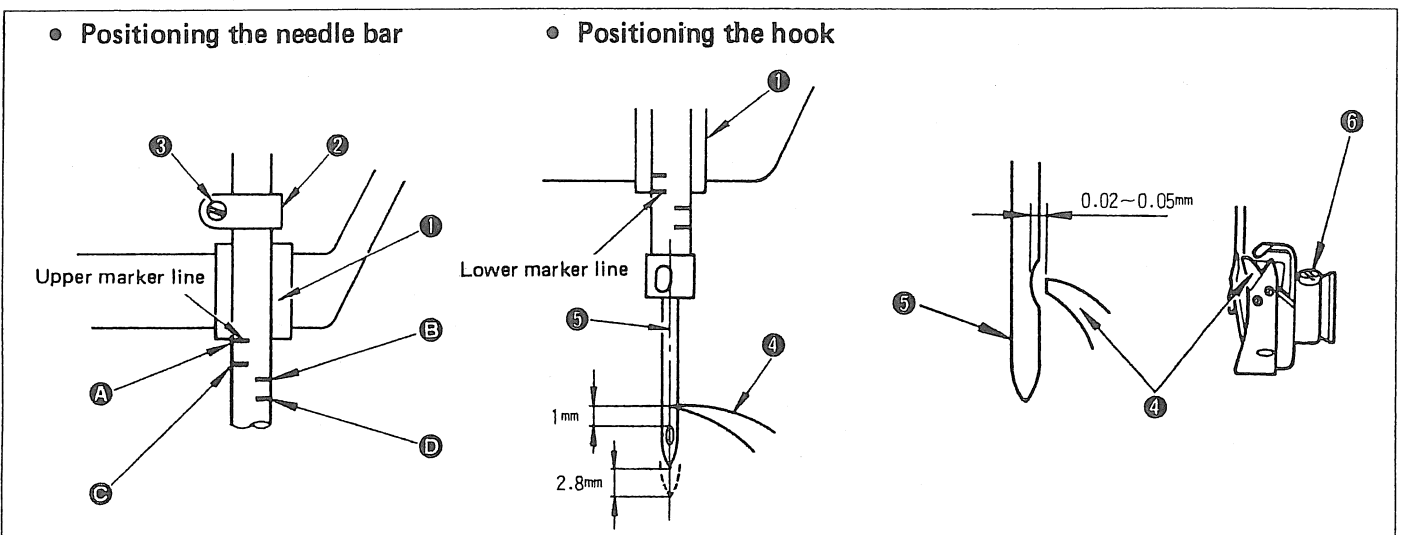
★ **Feed pitch of the walking foot**

The ratio of the bottom feed to the top feed is factory-adjusted to 1:1. If necessary, the top feed amount may be changed as follows:

- Loosen nut ④, and move the slide block up (toward ②) to decrease the feed pitch, or move it down (toward ①) to increase the pitch.

17. NEEDLE-TO-HOOK RELATIONSHIP

 **WARNING :**
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



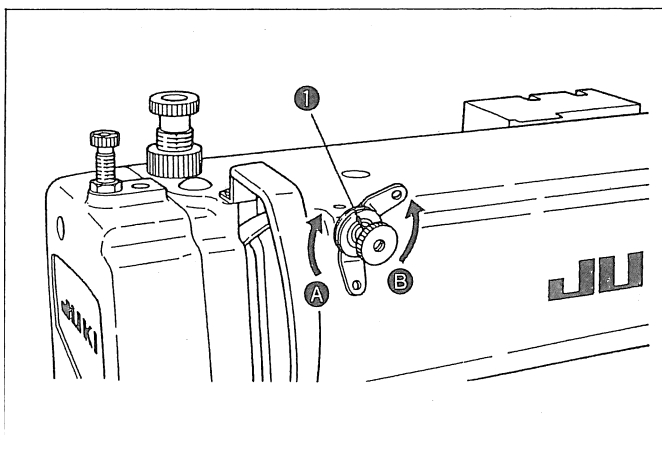
★ **Set the needle bar at the proper height first as follows:**

1. Bring the needle bar down to its lowest position, and adjust so that the specified marker line (the 4th line ① from the bottom for a Schmetz 1738 needle, or the 2nd line ② from the bottom for a Schmetz 135 × 17 needle) on the needle bar aligns with the bottom end of needle bar lower bushing ①. Then, tighten screw ③ of needle bar clamp ②.

★ **Adjust the timing between the needle and the hook as follows:**

2. Adjust so that the specified marker line (the 3rd line ③ from the bottom for a Schmetz 1738 needle, or line ④ at the bottom for a Schmetz 135 × 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, then tighten hook setscrew ⑥.
3. Adjust the clearance between needle ⑤ and hook point ④ to 0.02 to 0.05 mm.
4. To adjust the hook, remove the throat plate, and loosen hook setscrew ⑥ from the throat plate side, using a screwdriver.

18. AUXILIARY THREAD TENSION CONTROLLER



Adjust the auxiliary thread tension using nut ① .

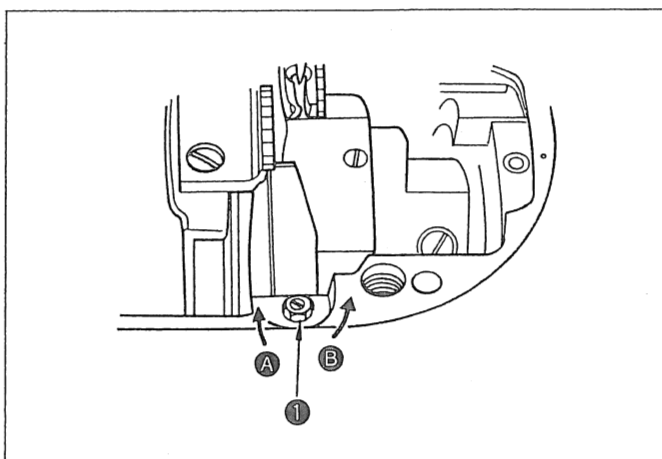
- Turn the nut in direction ① (A) → Tension increases and the needle thread shortens.
- Turn the nut in direction ① (B) → Tension decreases and the needle thread lengthens.
- Decrease the tension when using a thin thread or if cloth slippage often occurs.
- Increase the tension when using a thick thread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

19. PRESSURE OF THE FIXED KNIFE



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



As you turn knife pressure adjust screw ① clockwise (in direction ① (A)), the blade point lowers, resulting in a higher knife pressure.

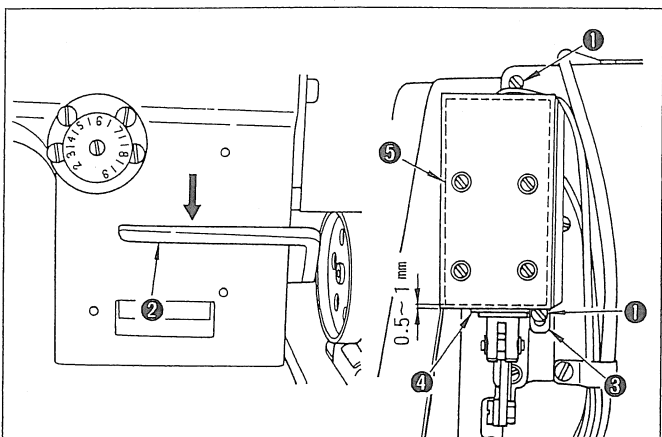
- * The knife pressure should be increased for a thicker thread. However, it is advisable to minimize (by turning the adjust screw in direction ① (B)) the knife pressure as long as the knife can trim threads.

20. ONE-TOUCH TYPE REVERSE FEED STITCHING MECHANISM



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



★ Position of the reverse feed solenoid

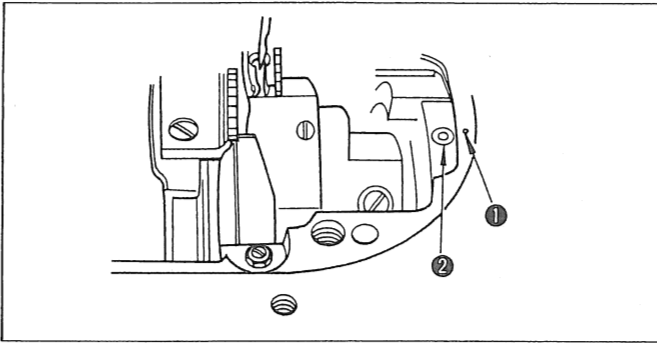
1. Set the stitch length dial at the maximum.
2. Loosen two setscrews of the solenoid mounting base.
3. Push feed lever ② down until it bottoms, and move solenoid mounting base ③ up or down to adjust the inner clearance between rubber packing ④ on the plunger and reverse feed solenoid ⑤ to 0.5 to 1 mm. Tighten setscrew ① .

21. HOME POSITION OF THE ROTARY KNIFE



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



The standard home position of the knife is such that marker dot ① of the machine bed is aligned with the lubricating hole of rotary knife mounting base ②.

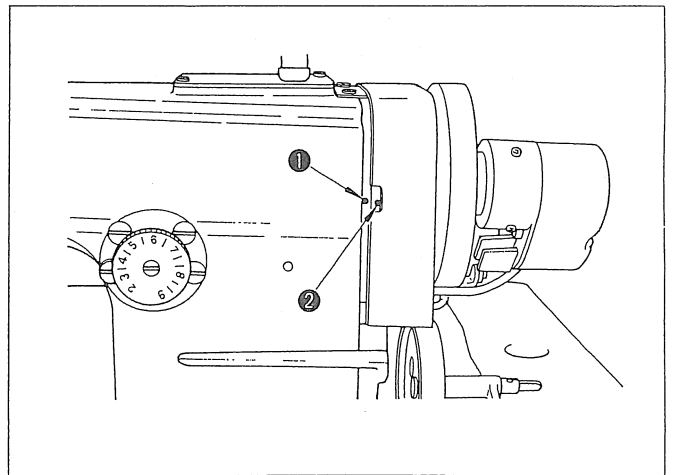
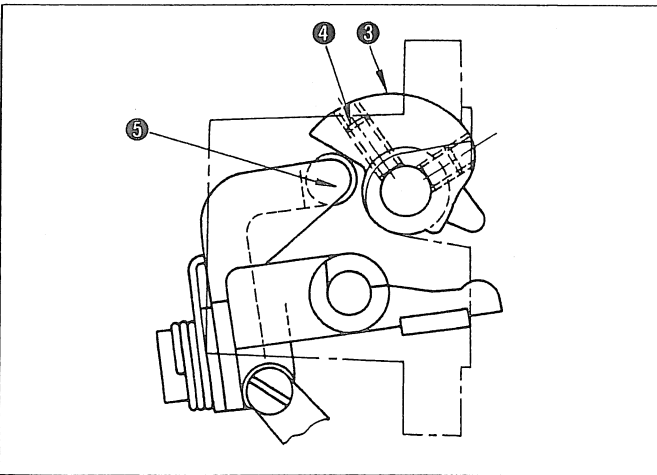
When the knife is actuated according to the procedure described in “23. HOW TO MANUALLY OPERATE THE THREAD TRIMMER”, the maximum overlap between the rotary knife blade and the fixed knife blade should be 1 to 1.5 mm.

22. ADJUSTING THE THREAD TRIMMING CAM



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



The standard position of the thread trimming cam is such that, when thread trimming cam ③ comes in contact with cam roller ⑤ with the rotary knife in its home position, red marker dot ① on the machine arm aligns with yellow marker dot ② on the handwheel.

To perform the adjustment above, loosen setscrew ④.

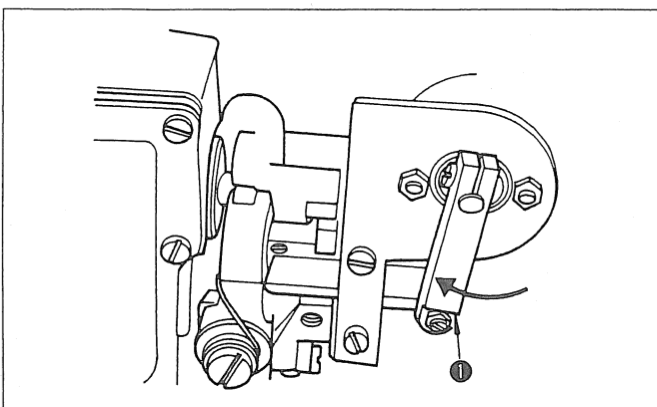
* Be sure to securely retighten the setscrew, otherwise the thread trimming cam may rotate, leading to a trouble.

23. HOW TO MANUALLY OPERATE THE THREAD TRIMMER



WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



Turn the handwheel to bring the needle down.

With thread trimming solenoid arm ① pressed to the left, turn the handwheel. This will actuate the rotary knife.

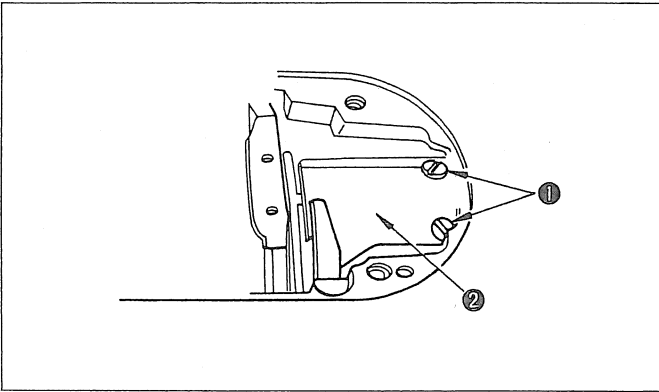
To actuate the rotary knife alone, turn the handwheel to move the needle bar up to its highest position. Then, you can turn the rotary knife mounting base by hand.

24. HOW TO REPLACE THE KNIVES



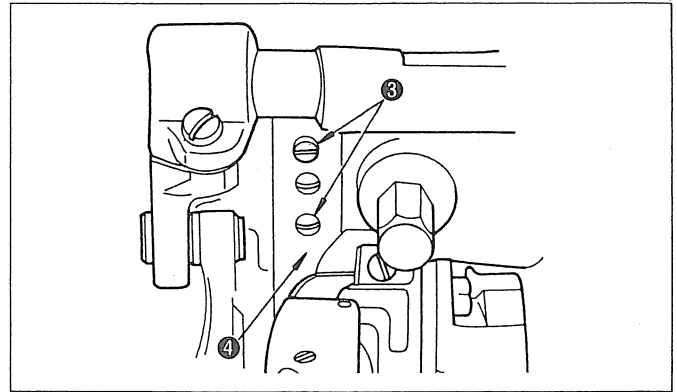
WARNING :

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



★ 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 ② by hand to move it upward, then remove two rotary knife setscrews ① to replace the knife.
3. Adjust the knife pressure.



★ Replacing the fixed knife

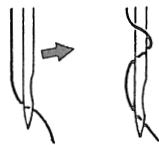
1. Remove the bobbin case opening lever, and loosen the knife pressure adjust screw.
2. Fix fixed knife ④ using two setscrews ③ so that it is in parallel to the rotary knife.
3. Adjust the knife pressure.

25. SEWING SPEED VS. ALTERNATE LIFTS

Alternate lift	Max. sewing speed
5 mm (Max)	1,700 sti/min
4 mm	1,800 sti/min
3 mm or less	2,000 sti/min

* If you set the sewing speed at higher than those listed above, the feed pitch will not agree with the setting on the dial.

26. 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.)	<ol style="list-style-type: none"> (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. 	<ul style="list-style-type: none"> ○ 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 "17. NEEDLE-TO-HOOK RELATIONSHIP". ○ Properly adjust the lubrication. ○ See "5. LUBRICATION". ○ Properly adjust the needle thread tension. ○ Decrease the tension, and increase the stroke. ○ See "17. NEEDLE-TO-HOOK RELATIONSHIP".
2. Stitch skipping	<ol style="list-style-type: none"> (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. 	<ul style="list-style-type: none"> ○ See "17. NEEDLE-TO-HOOK RELATIONSHIP". ○ See "17. NEEDLE-TO-HOOK RELATIONSHIP". ○ Increase the presser foot pressure. ○ See "17. NEEDLE-TO-HOOK RELATIONSHIP". ○ Replace the needle by one which is one grade thicker. ○ Wind the thread round the needle as illustrated. <div style="text-align: center;">  </div>
3. Loose stitches	<ol style="list-style-type: none"> (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. 	<ul style="list-style-type: none"> ○ 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.
4. A few stitches are skipped	<ol style="list-style-type: none"> (1) The bobbin thread is too short. (2) The bobbin thread breaks. 	<ul style="list-style-type: none"> ○ Replace the bobbin by a standard one (aluminum). ○ Decrease the bobbin thread tension and the thread trimming speed.
5. The thread slips off the needle upon being trimmed.	<ol style="list-style-type: none"> (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. 	<ul style="list-style-type: none"> ○ Decrease the tension. ○ See "22. ADJUSTING THE THREAD TRIMMING CAM". ○ See "10. THREADING THE MACHINE HEAD". Replace the thread guide.
6. The needle thread cannot be trimmed, while the bobbin thread can be trimmed.	<ol style="list-style-type: none"> (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. 	<ul style="list-style-type: none"> ○ See "17. NEEDLE-TO-HOOK RELATIONSHIP". ○ Replace the throat plate with one having a smaller needle hole.
7. Both needle and bobbin threads cannot be trimmed	<ol style="list-style-type: none"> (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. 	<ul style="list-style-type: none"> ○ See "22. ADJUSTING THE THREAD TRIMMING CAM". ○ Replace the knife. ○ Increase the knife pressure. ○ See "22. 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.	<ol style="list-style-type: none"> (1) The thread trimming timing is wrong. (2) The knife pressure is inadequate. (3) The knife blade is blunt. 	<ul style="list-style-type: none"> ○ See "22. ADJUSTING THE THREAD TRIMMING CAM". ○ Increase the knife pressure. ○ Replace the knife.
9. Motor stop	<ol style="list-style-type: none"> (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. 	<ul style="list-style-type: none"> ○ See "22. ADJUSTING THE THREAD TRIMMING CAM". ○ See "22. ADJUSTING THE THREAD TRIMMING CAM". ○ Increase the thread trimming speed. ○ Disassemble it to identify the cause. ○ Decrease the knife pressure. ○ Replace the knife.

JUKI®

JUKI CORPORATION
SEWING MACHINERY BUSINESS UNIT
2-11-1, TSURUMAKI, TAMA-SHI,
TOKYO, 206-8551, JAPAN
PHONE : (81)42-357-2371
FAX : (81)42-357-2380
<http://www.juki.com>



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.**