JUKI®

LZH-1290-4
LZH-1290-7

INSTRUCTION MANUAL

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

No.03
40092245

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.

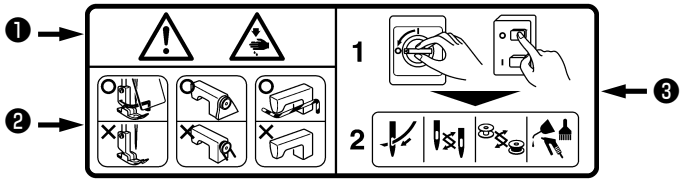
(I) Explanation of risk levels

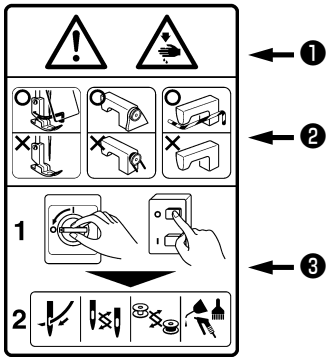
	DANGER : **This indication is given where there is an immediate danger of death or serous injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.**
	WARNING : **This indication is given where there is 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



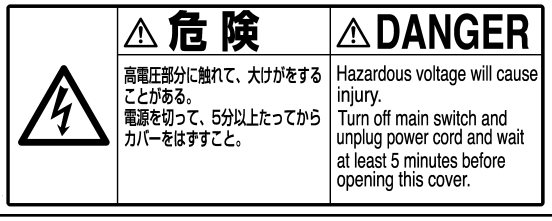


❶ • **There is the possibility that slight to serious injury or death may be caused.**
• There is the possibility that injury may be caused by touching moving part.

❷ • **To perform sewing work with safety guard.**
• To perform sewing work with safety cover.
• To perform sewing work with safety protection device.

❸ • **Be sure to turn the power OFF before carrying out "machine-head threading", "needle changing", "bobbin changing" or "oiling and cleaning".**

Electrical-shock danger label



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 ±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.**

FOR SAFE OPERATION

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 belts.**
4. **During operation, be careful not to allow your or any other person's head, hands or clothes to come close to the handwheel, V belt and motor. 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 :
Note that safety devices such as "eye guard", "finger guard", etc. may be omitted from the illustrations in this Instruction Manual for easy explanation.
When operating the machine, be sure not to remove these 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	LZH-1290 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 AND BOBBIN WINDER 3
4. ATTACHING THE BELT COVER 3
5. INSTALLING THE THREAD GUIDE PIN 3
6. LUBRICATION 4
7. ATTACHING THE NEEDLE 4
8. WINDING THE BOBBIN 5
9. THREADING THE HOOK 5
10. SETTING THE BOBBIN CASE IN THE HOOK AND TAKING IT OUT FROM THE HOOK 6
11. THREADING THE MACHINE 6
12. THREAD TENSION 7
13. THREAD TAKE-UP SPRING 7
14. ADJUSTING THE PRESSURE OF THE PRESSER FOOT 7
15. ADJUSTING THE FEED AMOUNT (STITCH LENGTH) 8
16. ADJUSTING THE FEED MECHANISM 8
17. ADJUSTING THE STITCH WIDTH 9
18. NEEDLE-TO-HOOK RELATION 9
19. AUXILIARY THREAD TENSION 10
20. REPLACING THE COUNTER KNIFE AND MOVING KNIFE 10
21. HOW TO USE THE REVERSE FEED SWITCH LEVER 10
22. ONE-TOUCH TYPE REVERSE FEED STITCHING MECHANISM 10
23. ADJUSTING THE TIMING OF THE THREAD TRIMMING 11
24. ADJUSTING THE BOBBIN THREAD PICKER 11
25. TROUBLES AND CORRECTIVE MEASURES 12

BEFORE OPERATION

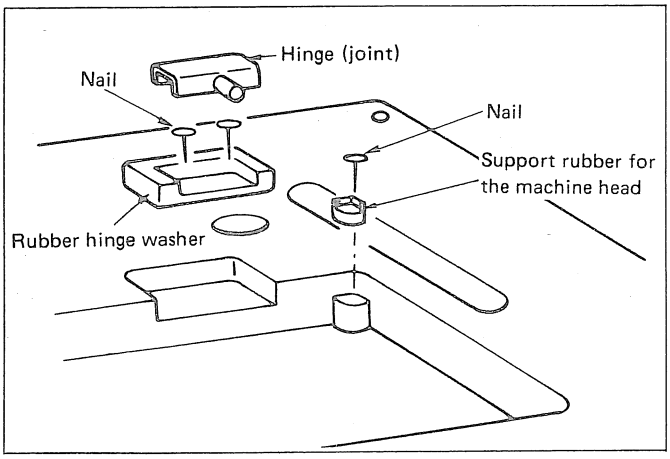
CAUTION :
Check the following so as to prevent maloperation of and damage to the machine.

- **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 1,500 sti/min or less.**
- **Operate the handwheel after the machine has totally stopped.**

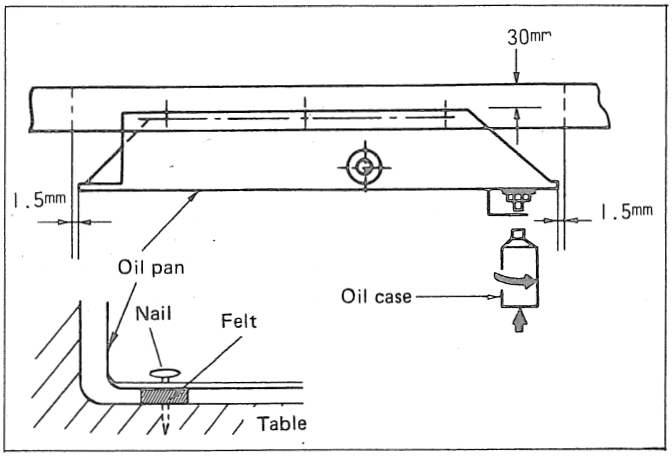
SPECIFICATIONS

Stitch system	1-needle, zigzag lockstitch	Needle	SCHMETZ SY 1906
Application	Standard upper leather of men's shoes, leather	Count of the needle	Nm #90 through #110 (standard: Nm. 100)
Sewing speed	Max. 2,000 sti/min	Count of applicable thread	#50 through #8
Stitch length	Max. 6.0 mm	Stitch adjustment method	By dial
Stitch width	Max. 10.0 mm (standard: 8 mm)	Stitch width adjustment method	By dial
Lift of presser foot	By lifting lever 6 mm By knee lifter 11 mm	Lubrication	By manual
Thread take-up	Link type thread take-up	Mothe Moter used	AC servo motor
Needle bar stroke	35 mm	Lubrication oil	New defrix oil No. 1
Noise	- Equivalent continuous emission sound pressure level (L_{pA}) at the workstation: A-weighted value of 77.0 dB; (Includes K_{pA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 2,000 sti/min.		

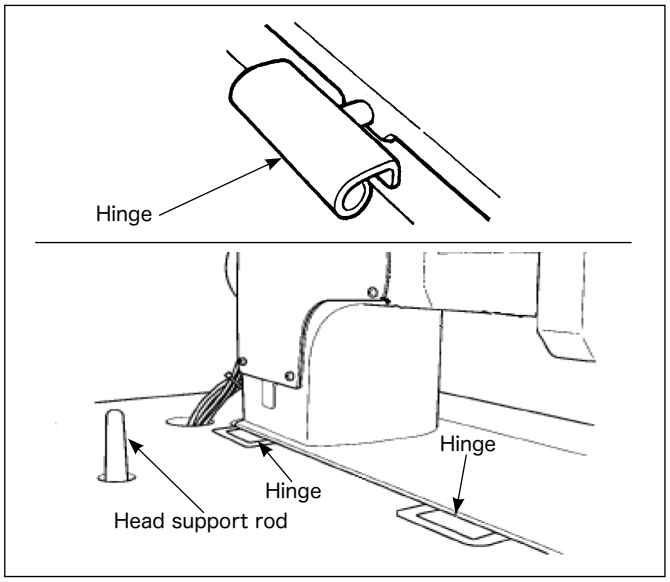
1. INSTALLATION OF THE MACHINE



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. Attaching the hinge washer and rubber cushion
   Fix the rubber hinge washer, the head support rubber supplied with the machine on the table using the nails.



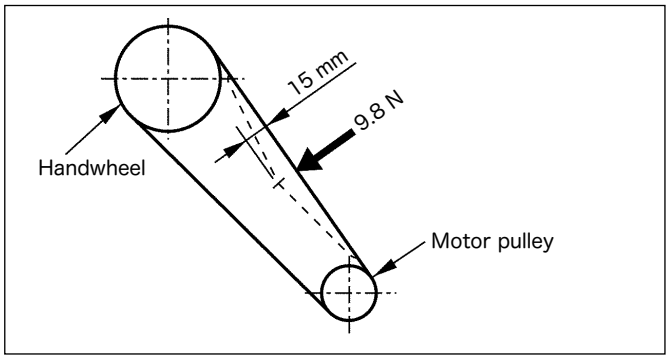
4. Installing the oil pan
   Fix the oil pan supplied with the unit on the table using the six nails. Insert the felt supplied with the machine between the table and the oil pan.



5. Fit hinge 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 to the table until it goes no further.

2. ADJUSTING THE BELT TENSION

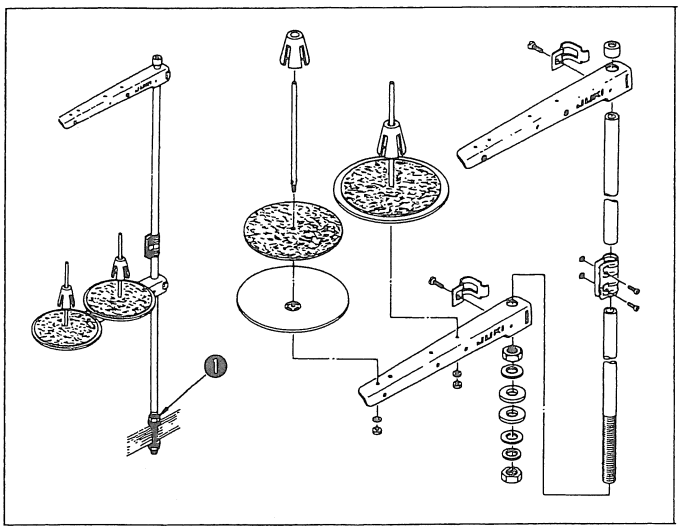
WARNING :
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



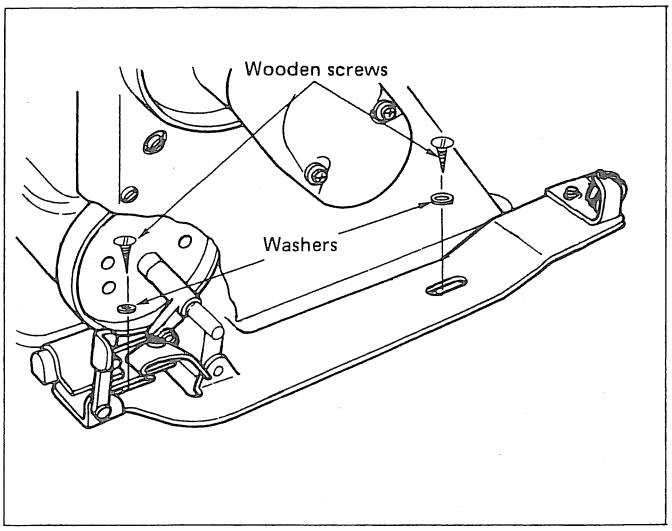
Adjust the belt tension with the height of the motor so that the belt sags 15 mm when the center of V belt is applied with a 9.8 N load.

3. INSTALLATION OF THREAD STAND 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.



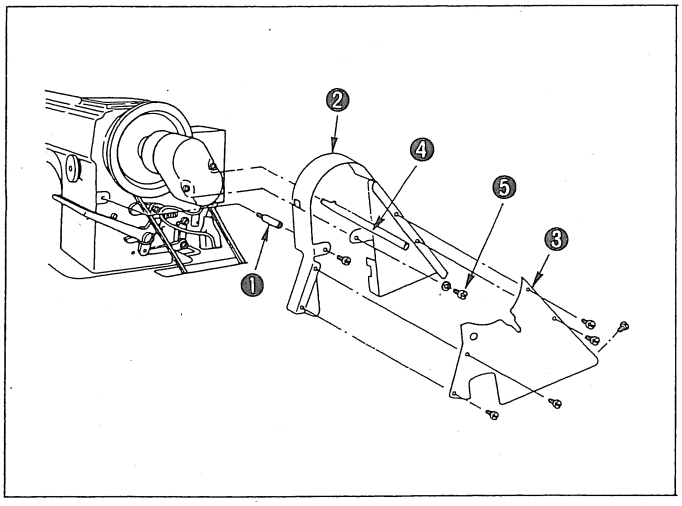
Assemble the thread stand, set it up on the machine table using the installation hole in the table and tighten nut ① gently.



Place the bobbin winder in the belt cover and adjust the position of the bobbin winder so that it does not come in contact with the arm and belt cover. Then fix the bobbin winder using the wooden screws.

4. ATTACHING THE BELT COVER

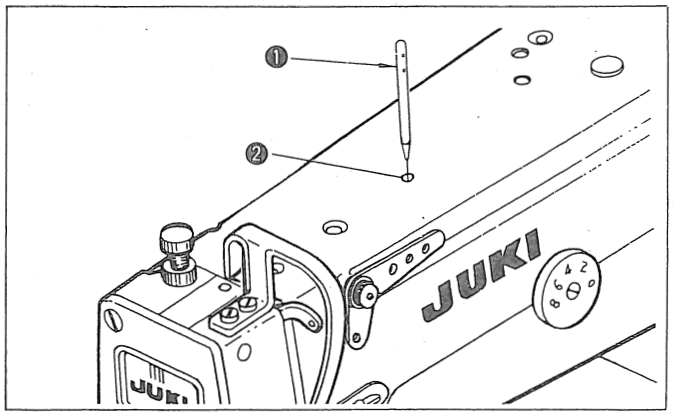
WARNING :
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



[Steps of procedure]

1. Fit the V belt on the pulley of the sewing machine.
2. Screw belt cover post ① and synchronizer support shaft ④ into the tapped holes in the machine arm.
3. Attach belt cover ② to the post, and fix the post and belt cover onto the arm using screw ⑤.
4. Attach top cover ③ to the belt cover.
5. Tilt the machine head and confirm that the belt cover does not touch the belt groove in the table. Also confirm that the belt cover does not come into contact with the hand-wheel. Then tighten all the screws.

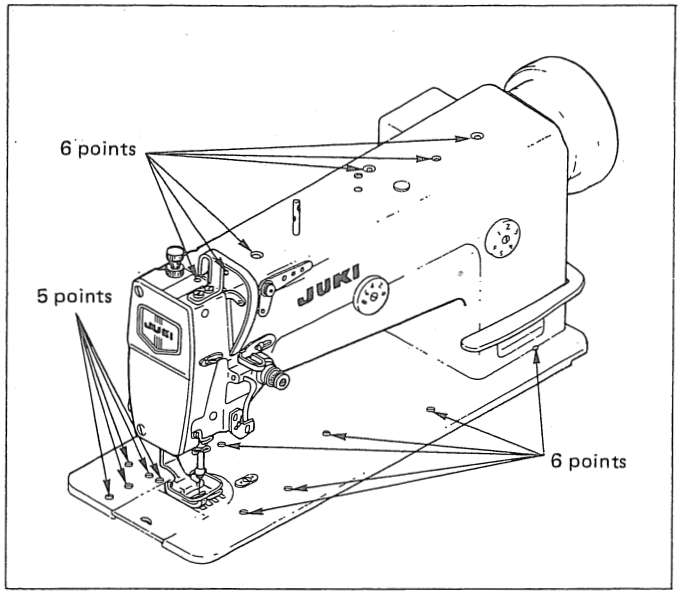
5. INSTALLING THE THREAD GUIDE PIN



Insert thread guide pin ① (with tapered end) into attaching hole ②.

6. 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 operating the machine every working day:**

1. Be sure to pour five or six drops of the lubrication oil the points indicated with the arrow before starting operation of the sewing machine.

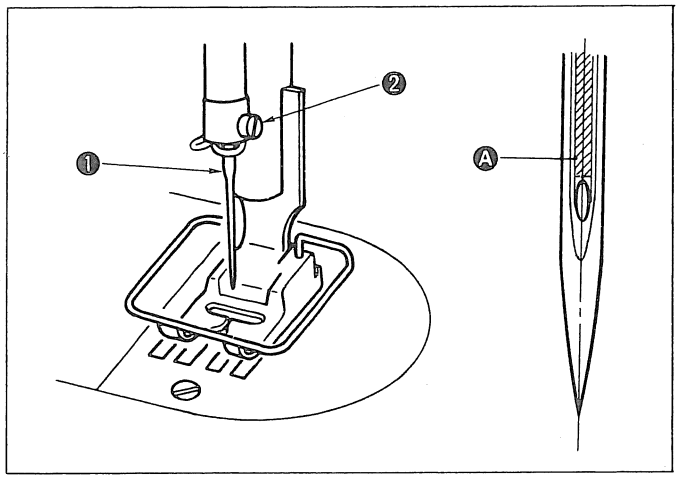
Top surface of the arm	6 points
Center part of the bed	6 points
Upper section of the hook	5 points

2. Be sure to lubricate the inner part of the thread path presser in the hook.
3. Use the JUKI New Defrix Oil No. 1 as lubrication oil.

(Caution) **Before operating newly installed machines or machines which have not been used for a relatively long period of time, apply oil as indicated in steps 1 and 2.**
Be sure to apply a few drops of oil in the hook twice a day, i.e., in the morning and noon.

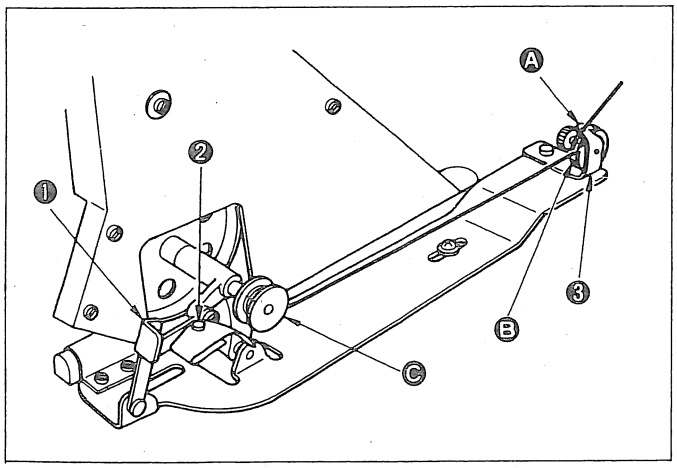
7. ATTACHING THE NEEDLE

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.

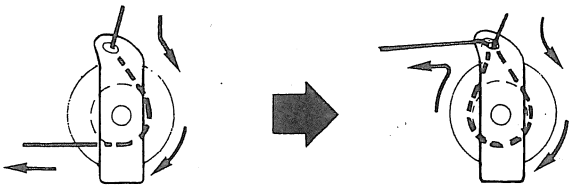


1. Apply a SCHMETZ SY1906 needle. (The standard type is Nm100.)
2. Turn the handwheel until the needle bar is brought to the highest position of its stroke.
3. Loosen needle clamp screw ② and hold needle ① so that long groove Ⓐ in needle ① and the needle eyelet are facing exactly toward you.
4. Insert the needle deep into the clamp hole until it will go no further.
5. Tighten the needle clamp screw firmly.
6. The attaching direction of the needle is very important to prevent sewing troubles including stitch skipping. Be sure to attach the needle correctly taking care of its attaching direction.

8. WINDING THE BOBBIN

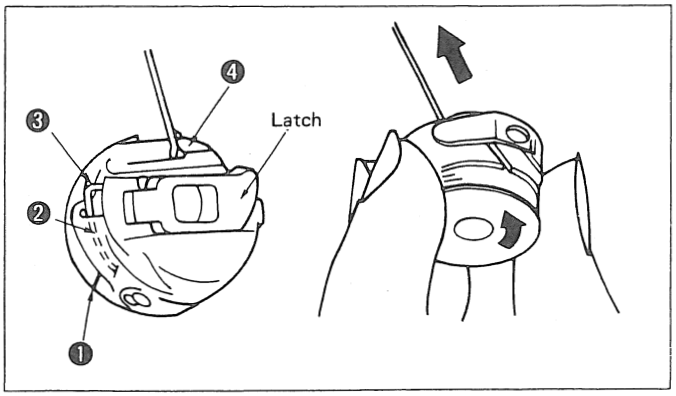


1. Pass the bobbin thread through Ⓐ, Ⓑ and Ⓒ in the written order and then wind it several turns round the bobbin.
2. Tilt bobbin presser ① permitting the bobbin winder pulley to touch the belt.
3. Adjust screw ② to adjust the bobbin thread amount turned round the bobbin so that the bobbin is wound about 80% of its capacity. Turning the screw clockwise will increase or counterclockwise to reduce the amount of bobbin thread to be wound.
4. If the bobbin is wound unevenly, adjust it by moving the position of tension bracket ③ to the left or the right.
5. When the bobbin is filled up, the bobbin presser automatically comes off and the bobbin winder pulley automatically stops running.
6. If the thread is likely to come off at point Ⓐ, pass the bobbin thread as illustrated in the following figure.



9. THREADING THE HOOK

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.



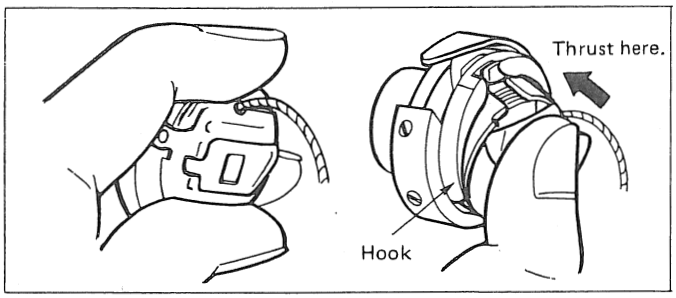
- **Taking out the bobbin case**
  Raise the latch and take out the bobbin together.
- **Threading the bobbin case**

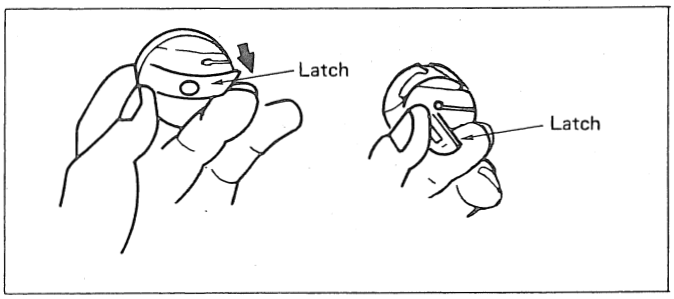
1. Pass the bobbin thread through threading slit ① in the bobbin case and then draw the thread under tension spring ② .
2. Let the thread pass through groove ③ into the bobbin case, hook it on thread guide ④ and draw it out from the bobbin case.

* Make sure that the bobbin revolves in the direction of the arrow when you draw the thread.

10. SETTING THE BOBBIN CASE IN THE HOOK AND TAKING IT OUT FROM THE HOOK

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.



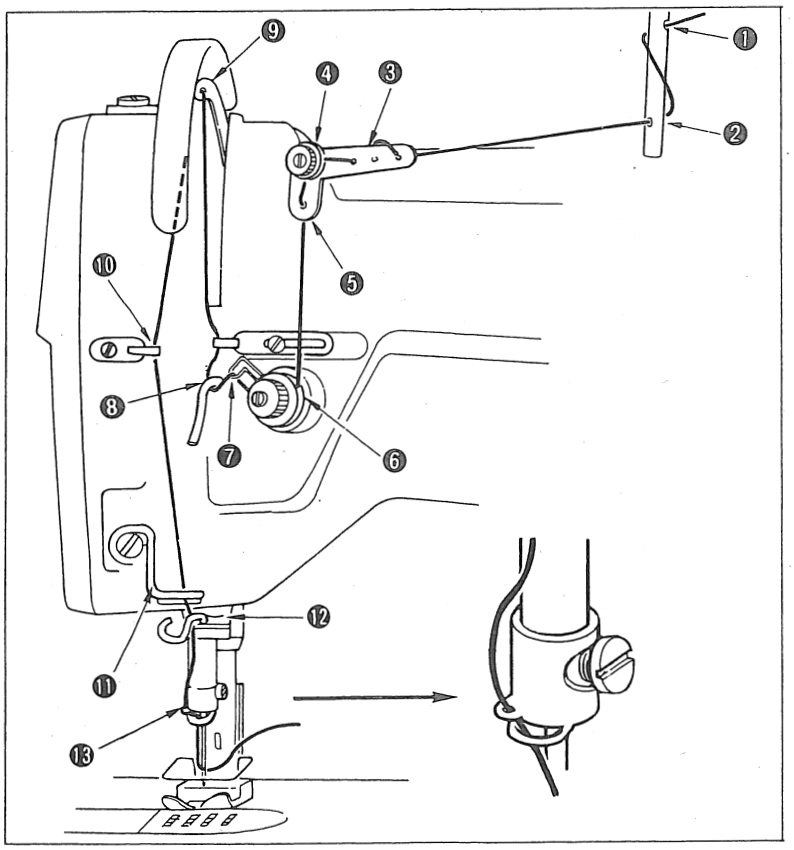


- **Setting the bobbin case in the hook**
  Fit the bobbin in the bobbin case. Hold the bobbin case by your left hand, and set the bobbin case on the hook shaft from above. Then hold the latch of the bobbin case with your thumb, and thrust the bobbin case in the hook until it clicks.

- **Taking out the bobbin case out of the hook**
  Lift the latch of the bobbin case slightly with your tip of the nail, fully lift the latch and take out the bobbin case supporting it with your fingers.

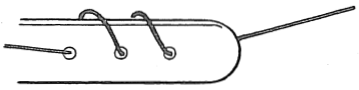
11. THREADING THE MACHINE

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.



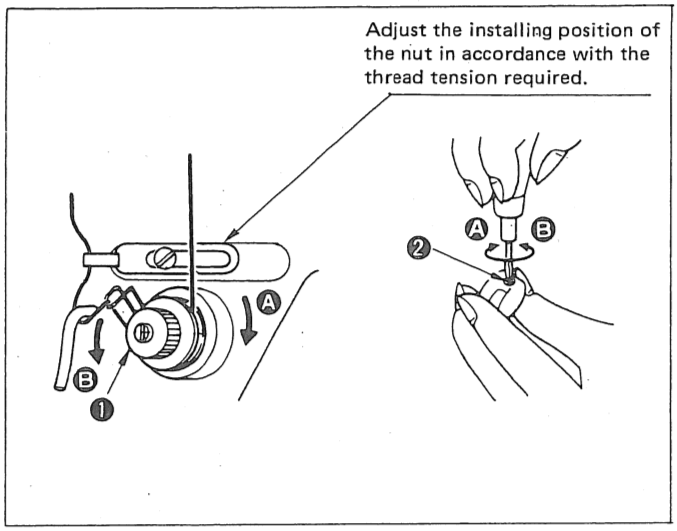
Thread the machine as illustrated in the order of ① through ⑬.

★ If the thread is likely to flap, thread the three holes in section ③ as illustrated in the following figure.



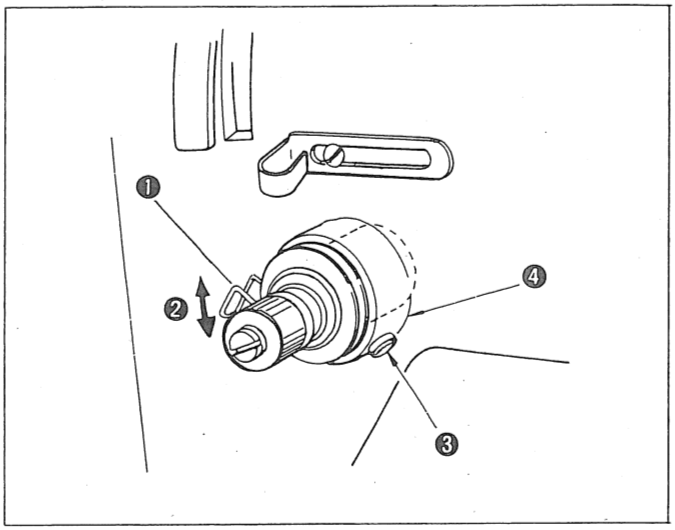
12. THREAD TENSION

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.



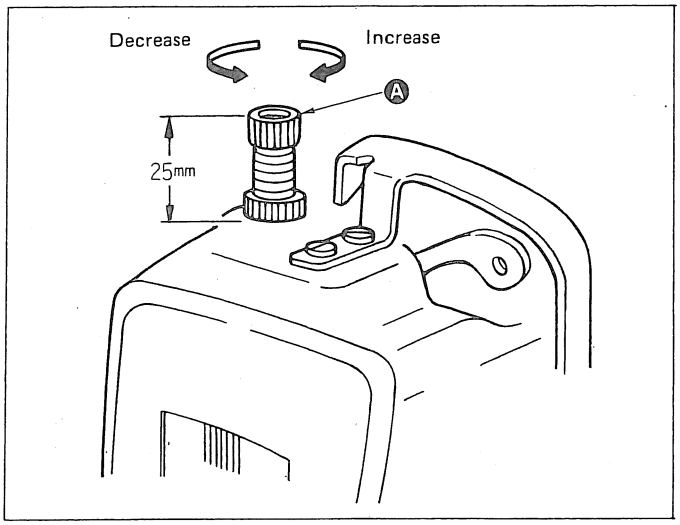
- **Adjusting the needle thread tension**
  Turning thread tension nut No. 2 ❶ clockwise Ⓐ will increase the needle thread tension or counterclockwise Ⓑ will decrease it.
- **Adjusting the bobbin thread tension**
  Turning thread tension adjusting screw ❷ clockwise Ⓐ will increase the bobbin thread tension or counterclockwise Ⓑ will decrease it.

13. THREAD TAKE-UP SPRING



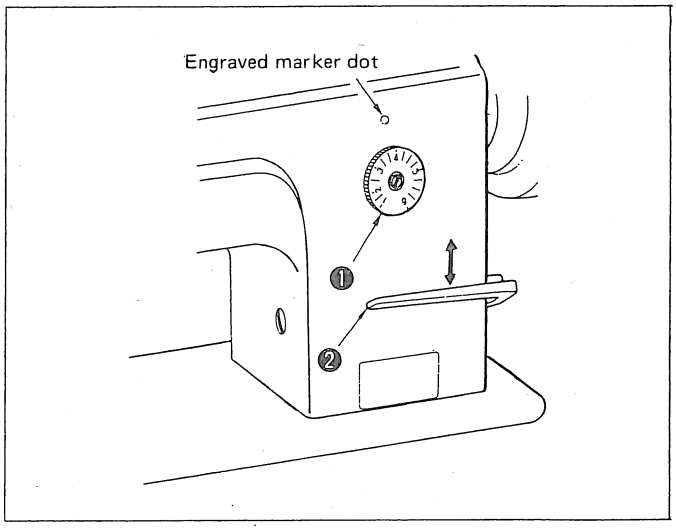
1. Standard stroke ❷ of thread take-up ❶ is normally 6 to 8 mm. To adjust the stroke, loosen setscrew ❸ in the tension post socket and move tension post socket ❹ .
2. Standard tension of the spring is normally 20 to 40g.
3. To change the tension of the spring, fit a screwdriver in the groove in the tension post and turn it for adjustment.

14. ADJUSTING THE PRESSURE OF THE PRESSER FOOT



1. According to the type of the sewing product, adjust the pressure of the presser foot by turning pressure regulating screw Ⓐ .
2. Turning the screw clockwise will increase the pressure of the presser foot or counterclockwise will decrease it.
   For general leather materials, the appropriate height of the pressure regulating screw is approximately 25 mm.

15. ADJUSTING THE FEED AMOUNT (STITCH LENGTH)



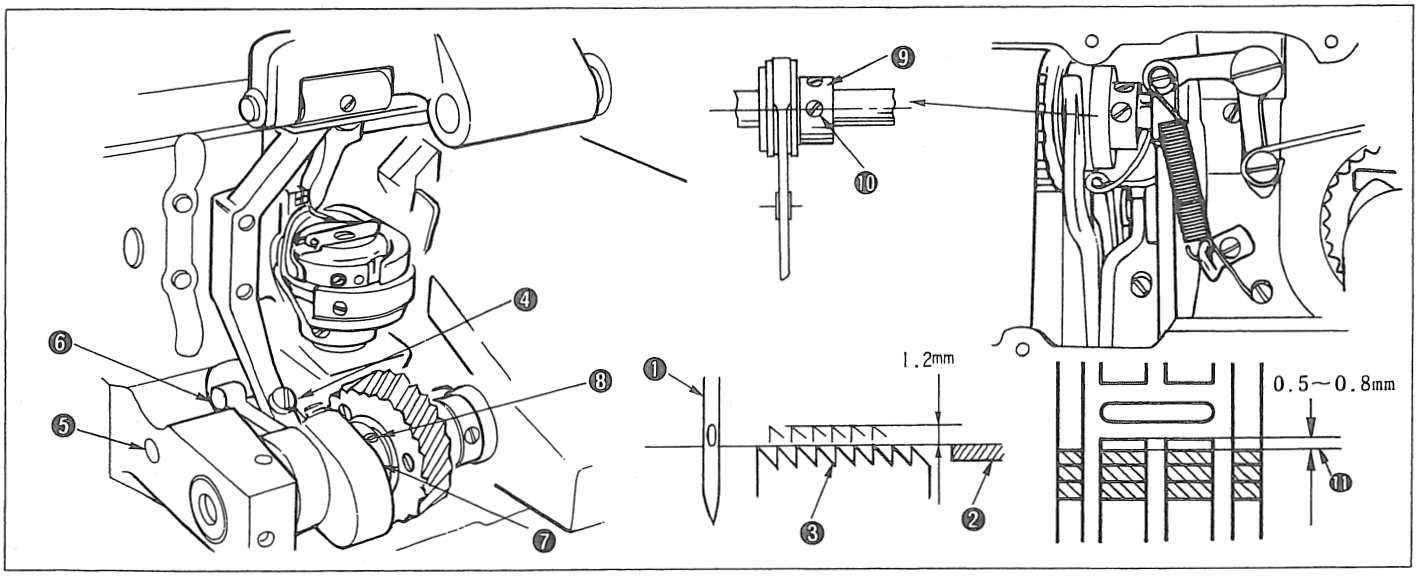
Align the desired stitch length on the dial with the engraved marker dot turning feed adjusting dial ❶ clockwise or counterclockwise until the desired stitch length comes to the top of the dial.

- **Reverse feed stitching**

1. Depress reverse feed control lever ❷ .
2. Reverse feed stitching is performed as long as you deep depressing the lever.
3. Release the lever, and the machine will run in the normal stitching direction.

16. ADJUSTING THE FEED 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.



- Feed timing
  1. The center of feed dog ❸ should align with the surface of throat plate ❷ when the bottom end of the needle eyelet in needle ❶ is flush with the surface of throat plate ❷ with the feed amount minimized.
- Adjusting the height of the feed dog
  1. Loosen screw ❹ , insert a screwdriver through hole ❺ to turn eccentric shaft ❻ . At this time, adjust so that the highest position of feed dog ❸ is 1 or 2 mm higher than the surface of throat plate ❷ with the presser foot raised.

- When the feed dog is attached in position, the clearance illustrated in the figure ⓫ should be provided when the feed dog reaches 1ts front end position with the feed amount maximized. If the clearance is too large, the feed mechanism may come in contact with the hook. On the other hand, if the clearance is too small. the feed mechanism may come in contact with the bed or the throat plate. (When the feed amount is maximized.)

- Adjusting the cams

(Feed driving cam)

Loosen the two screws in feed driving cam ❼ . Make the needle bar descend from its highest dead point by 8 mm. Now adjust so that first screw ❽ on the handwheel comes just in front of you turning the handwheel in the normal direction.

(Feed rock cam)

Loosen the two screws in feed rock cam ❾ . Bring the needle bar to its lowest dead point. Now adjust so that the second screw faces the side plate turning the handwheel in the normal direction.

17. ADJUSTING THE STITCH WIDTH

WARNING :
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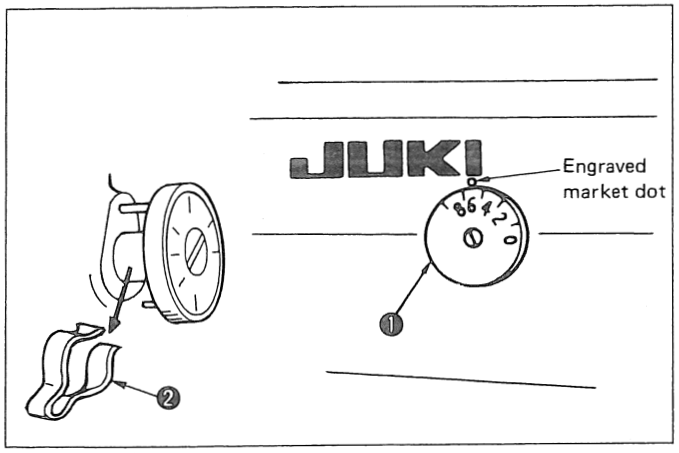
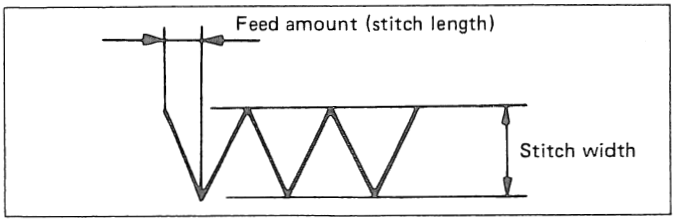


1. Align the desired stitch width on the dial with the engraved marker dot turning stitch width adjusting dial ❶ clockwise (counterclockwise) until the desired stitch width comes to the top of the dial.
2. If operating the machine with the stitch width set to 8 mm or more, remove the dial stopper ❷ and replace the throat plate and the presser foot with those for 10 mm.



18. NEEDLE-TO-HOOK RELATION

WARNING :
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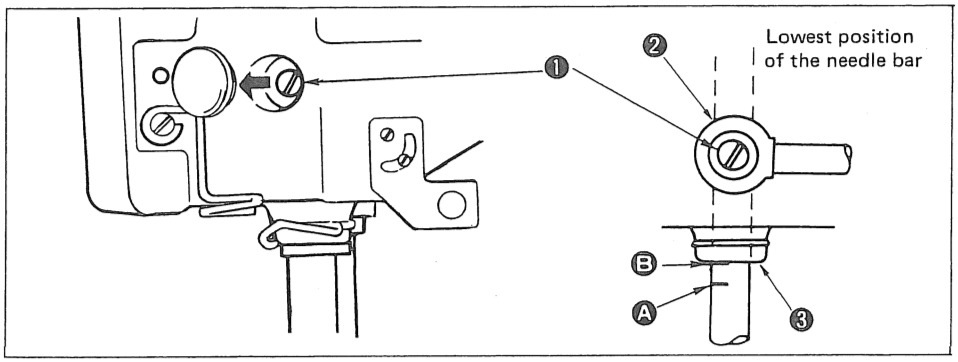
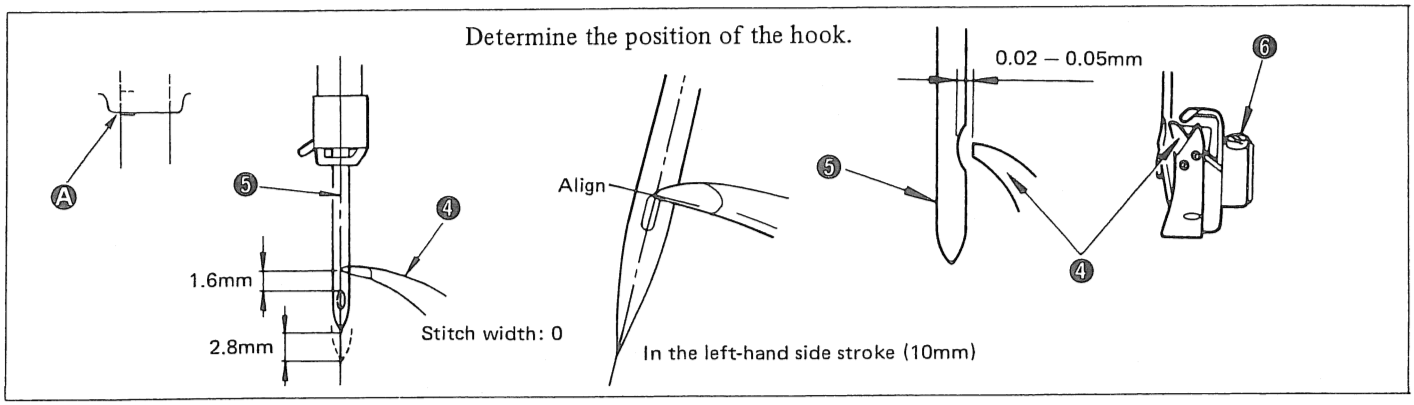


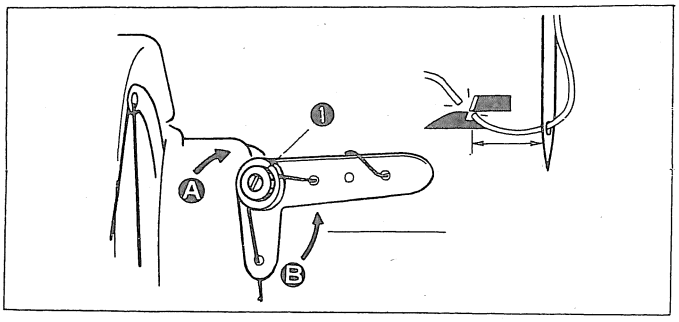
Draw out the rubber cock to allow screw ❶ in the needle bar to appear.



- **Determine the position of the needle and the hook.**

1. Set the stitch width adjusting dial to 0.
2. Adjust so that a clearance of 2.8 mm is provided between the top end of the needle eyelet and the blade point of the hook when blade point ❹ of the hook meets the center of needle ❺ , and slightly tighten screw ❻ in the hook.
   (As reference, upper engraved marker line Ⓐ in the needle bar is aligned with bottom face ❸ of the needle bar frame.)
   Adjust so that blade point ❹ of the hook is aligned with the center of needle ❺ when the needle bar ascends 1.6 mm from the lowest position of its stroke. Then tighten setscrew ❻ of the hook. Marker line Ⓑ engraved on the needle bar should align with bottom face ❸ of the needle bar frame (as reference).
3. A clearance of 0.02 to 0.05 mm should be provided between needle ❺ and blade point ❹ of the hook.
4. Set the stitch width adjusting dial to 8, and confirm that the needle bar does not come in contact with the needle and the clearance between them is not too large when the needle bar is moved to the right and left. Then firmly tighten screw ❻ in the hook. (When the needle bar is brought to its leftmost position (when the stitch width adjusting dial is set to 10), the top end of the needle eyelet aligns with the blade point of the hook.

19. AUXILIARY THREAD TENSION

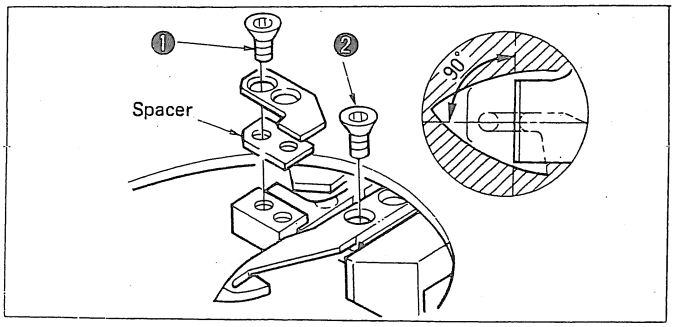


1. Adjust the length of thread remaining on the needle after thread trimming using auxiliary thread tension nut ① .

1) Turning the nut in direction Ⓐ will increase the thread tension → The needle thread will be shortened.
2) Turning the nut in direction Ⓑ will decrease the thread tension → The needle thread will be lengthened.
3) When the thread is trimmed away from the material: → Decrease the thread tension.
4) The standard length of thread remaining on the needle after thread trimming is 50 to 60 mm.

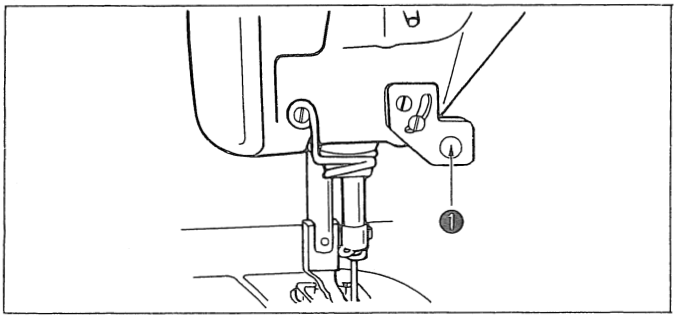
20. REPLACING THE COUNTER KNIFE AND MOVING KNIFE

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.



1. Remove the throat plate and the feed dog. Let the machine perform thread trimming manually to allow the moving knife to move forward.
2. Remove screw ① in the counter knife, and replace the counter knife. Place the spacer under the counter knife.
3. Move the moving knife mounting base back and forth, and remove screw ② in the moving knife. Then replace the moving knife.

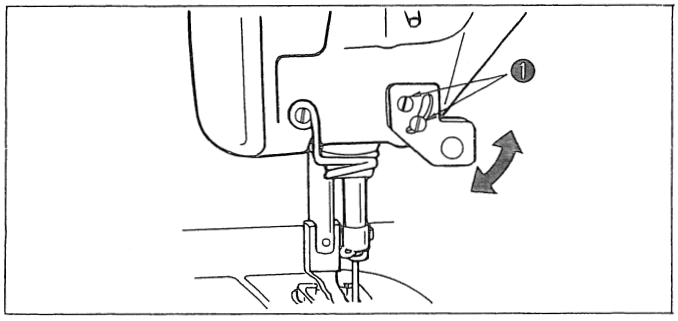
21. HOW TO USE THE REVERSE FEED SWITCH LEVER



1. Depress switch ① , and the machine will immediately run in the reverse direction.
2. Reverse stitch is made as long as you keep depressing the switch lever.
3. Release the switch for forward sewing.

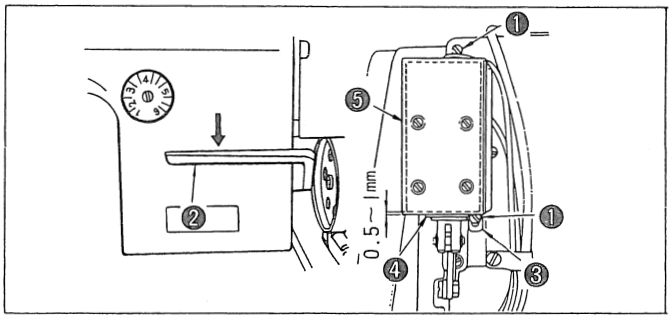
22. ONE-TOUCH TYPE REVERSE FEED STITCHING MECHANISM

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 switch**

1. Adjust the position of the switch for your convenience.
2. Loosen screw ① and adjust the position as desired.



- **Position of the reverse feed solenoid**

1. Set the stitch dial to the maximum value.
2. Loosen two screws ① which fix the solenoid in place.
3. Depress switch lever ② fully downwards, provide a 0.5 to 1.0 mm clearance between solenoid ⑤ and resilient plate ④ on the plunger by moving solenoid bracket ③ up and down and tighten screws ①.

23. ADJUSTING THE TIMING OF THE THREAD TRIMMING

WARNING :
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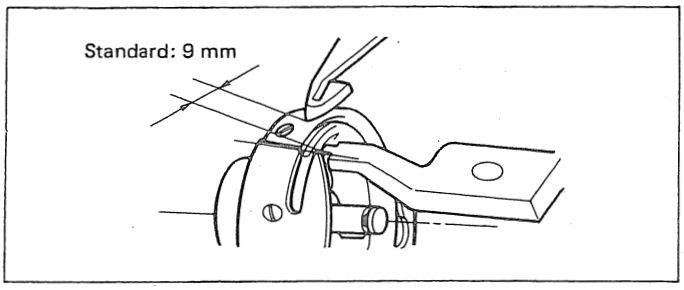

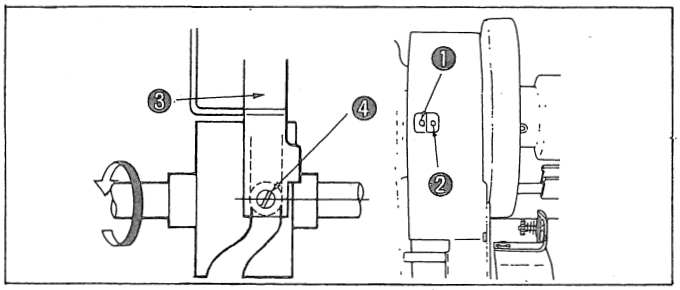

1. Turn the handwheel until red marker dot engraved on the arm aligns with black marker dot ② engraved on the handwheel.
2. Loosen the screw in the thread trimmer cam, fit cam roller ④ of cam roller arm ③ in the groove and turn the thread trimmer cam in the direction of the arrow until it stops as illustrated in the figure. Now, tighten the screw.
3. Let the machine perform thread trimming manually to make the moving knife move forward until the leftmost end of the stopper is flush with the blade point of the hook. At this time, a clearance of 9 mm should be provided between the top end of the knife and the blade point of the hook. Adjust the clearance to 9 mm by finely adjusting the hook timing.

24. ADJUSTING THE BOBBIN THREAD PICKER

WARNING :
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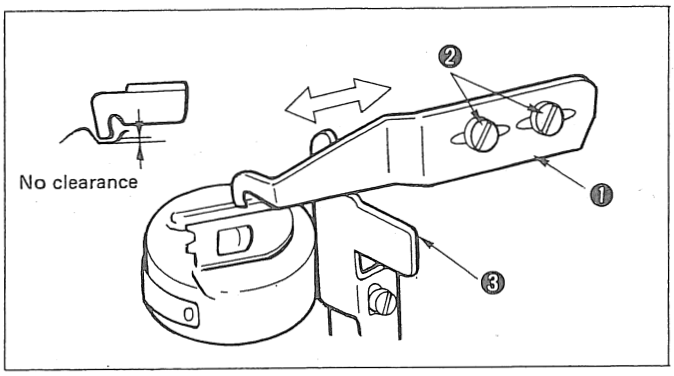
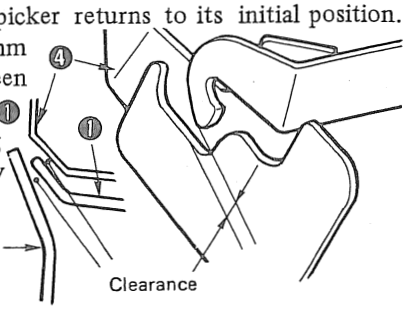


1. Bobbin thread picker ① should move smoothly on the bobbin case without hitched when thread trimming is manually performed. To permit this, adjust so that there is no clearance between the groove in the bobbin case and the picker.
2. Tighten setscrews ② taking care that the picker does not protrude from wiper ③ when the picker returns to its initial position.
3. A clearance of 0.5 to 1 mm should be provided between clamp spring ④ and picker ① and between clamp spring ④ and wiper ③ respectively in the said parts are in the initial position.



25. TROUBLES AND CORRECTIVE MEASURES

TROUBLES	CAUSES	CORRECTIVE MEASURES
1. Thread breakage (Thread is untwisted or scraped)	1 There is a scratched or damaged part on the thread path, needle point, book blade point, periphery of the hook or stopper.	○ Remove sharp edges or burrs using a fine sandpaper. Buff up the damaged part of those components.
	2 Needle thread tension is too high.	○ Adjust the needle thread tension.
	3 Hook blade point hits the needle.	○ Adjust the clearance.
	4 Needle thread tension is too low.	○ Adjust the "needle-to-hook relation" according to 18.
	5 Thread take-up spring is too tight and its stroke is too small.	○ Adjust the needle thread tension.
	6 Needle-to-hook relation is wrong.	○ Reduce the tension of the spring and increase the stroke. ○ Adjust the "needle-to-hook relation" according to 18.
2. Stitch skipping	1 Clearance between the needle and the hook blade point is too great.	○ Adjust the "needle-to-hook relation" accroding to 18.
	2 Needle-to-hook relation is wrong.	○ Adjust the "needle-to-hook relation" according to 18.
	3 Needle thread tension is too high.	○ Adjust the needle thread tension properly. to 18.
	4 The distance between the top end of the needle eyelet and the blade point of the hook is incorrect.	○ Adjust the "needle-to-hook relation" according to 18.
	5 Needles are a little too thin.	○ Replace the needles by thicker ones.
3. Loose stitch	1 Bobbin thread does not pass through the tension spring on the bobbin case.	○ Thread the bobbin case correctly.
	2 Thread path has rough surface.	○ Remove rough surface using a fine sandpaper or polish the surface using a buffing wheel.
	3 Bobbin does not spin smoothly.	○ Clean up inside the bobbin case, or replace the bobbin.
	4 Bobbin thread tension is too low.	○ Adjust the bobbin thread tension.
	5 Bobbin is wound too tightly.	
	6 Bobbin thread does not pass through the bobbin thread guide hole in the bobbin case.	○ Thread the bobbin thread guide hole.
4. Stitch jamming at the sewing start	1 The edge of the material is not fed properly.	○ Replace the throat plate and the feed dog with optional throat plate and feed dog.
	2 The surface of the material is hitched on the sole of the presser foot.	○ Replace the presser foot with an optional one.
	3 Stitches sewn are caught in the presser foot.	○ Replace the presser foot with the presser foot provided with a recess (optional).
5. Needle thread cannot be trimmed.	1 Needle thread tension is too high at the time of thread trimming.	○ Adjust the auxiliary thread tension, referring to "19. Auxiliary thread tension".
	2 The timing of the thread trimming timing is incorrect.	○ Refer to "23. Adjusting the timing of the thread trimming".
6. The needle thread cannot be trimmed when trimming it away from the material. This phenomenon is frequently observed. Sometimes, the needle thread is likely to split or break at the time of thread trimming.	1 Thread is not consistently fed at the time of blind-stitching.	○ Use the arm thread guide (disk presser type) supplied as an accessory.
	2 Stitch skips at the time of blind-stitching.	○ Check the hook timing. Refer to "18. Needle-to hook relation".

TROUBLES	CAUSES	CORRECTIVE MEASURES
7. The thread is not cut sharp.	1 The knives are not engaged properly. 2 The knife blades are damaged.	○ Adjust the installation of the counter knife. Refer to "20. Replacing the counter knife and moving knife". ○ Replace the counter knife or the moving knife.
8. Seam is not properly formed at the sewing start.	1 The threads fail to interlace at the sewing start with ease. 2 The length of thread in the needle eyelet is too short at the sewing start. 3 Needle thread tension is too high.	○ If using a thin thread, apply the presser foot (optional) which is designed to be exclusively used with thin threads. ○ Actuate the soft-start function. ○ Pass the needle thread under the presser foot at the sewing start. ○ Adjust so that the length of the needle thread remaining in the needle eyelet becomes longer. Refer to "19. Auxiliary thread tension". ○ Decrease the needle thread tension. Refer to "12. Thread tension".
9. The needle thread is likely to remain at the sewing start.	1 Length of the needle thread in the needle eyelet is too long. 2 Needle thread is left at the sewing start.	○ Shorten the needle thread in the needle eyelet. Refer to "19. Auxiliary thread tension". ○ Use the arm thread guide (disk presser type) supplied as an accessory.
10. Length of the needle thread remaining in the needle eyelet is too short.	1 Needle thread tension at the time of thread trimming is too high. 2 Needle thread tension at the thread trimming is not consistent.	○ Decrease the auxiliary thread tension. Refer to "19. Auxiliary thread tension". ○ Use the arm thread guide (disk presser type) supplied as an accessory.

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

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