

DSC-245,-4,-7 DSC-245V,-4,-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 DSC-245,-4,-7,DSC-245V,-4,-7 more safely



1. To avoid personal injury, never put your fingers under the needle when you turn ON the power switch or operate the sewing machine.
2. To avoid personal injury, never put your fingers into the thread take-up cover while the sewing machine is in operation.
3. Turn OFF the power switch when tilting the machine head, or removing the belt cover or the V belts.
4. To prevent possible personal injury caused by being caught in the machine, keep your fingers, head and clothes away from the handwheel and the thread take-up while the sewing machine is in operation. In addition, place nothing around it.
5. To avoid personal injury, never operate the sewing machine with the finger guard removed.
6. To avoid personal injury, be careful not to allow your fingers in the machine when tilting the machine head.



1. For the safety, never operate the sewing machine with the ground wire for the power supply removed.
2. Be sure to turn OFF the power switch in prior when connecting/disconnecting the power plug.
3. When thunders occurs, stop the work for the safety and disconnect the power plug.
4. When the sewing machine is suddenly moved from a cold place to a warm place, there is a case where dew condensation may occur. Turn ON the power after there is no worry of the drop of water.
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.

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.
- 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 2,000 sti/min or less.
- When carrying the machine, do not hold it by the synchronizer located at the rear of the handwheel.
- Operate the handwheel after the machine has totally stopped.
- Observe the standard thread trimming speed, 185 sti/min.

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	DSC-240 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

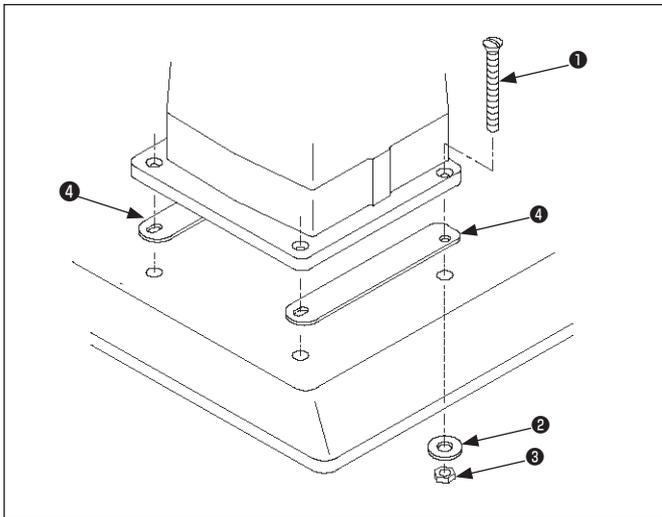
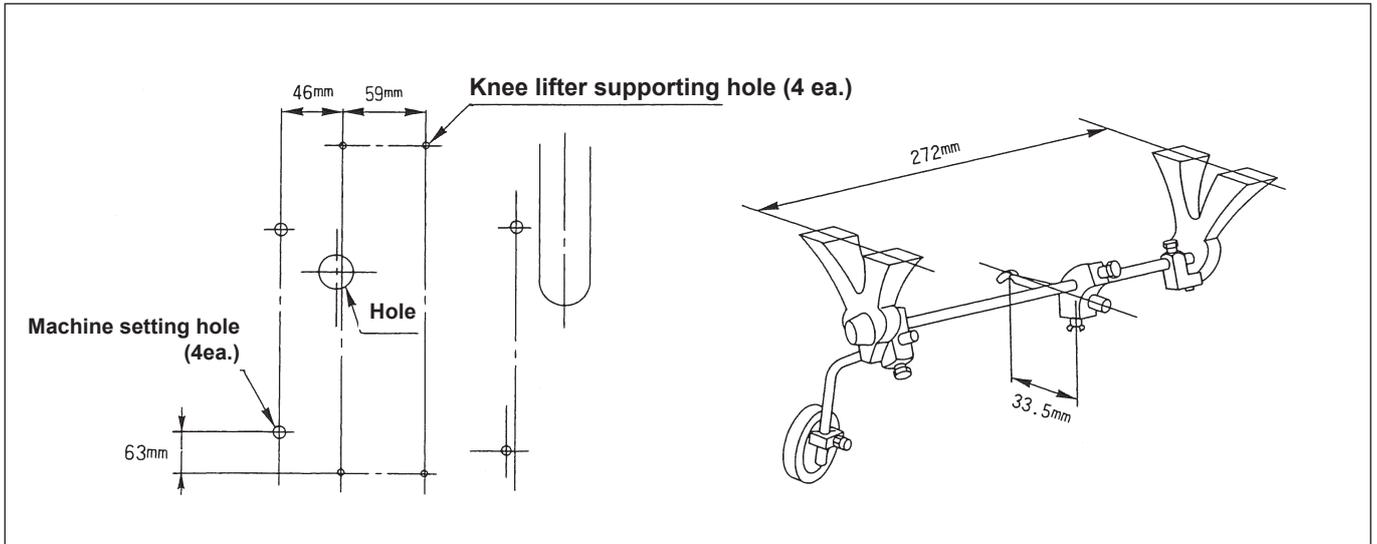
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SPECIFICATIONS

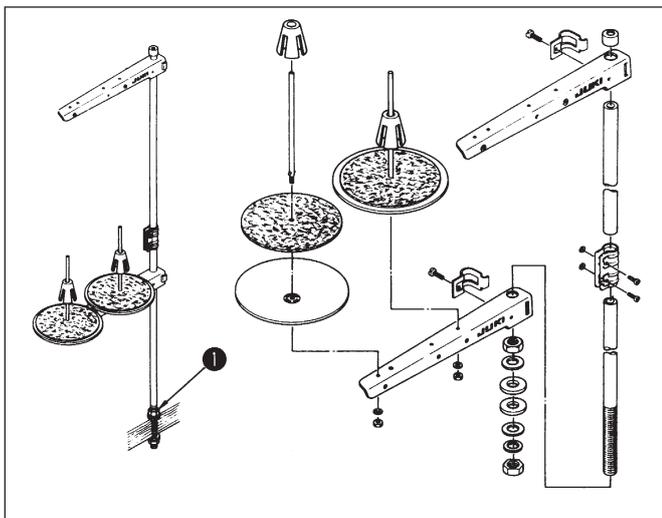
Model	DSC-245	DSC-245-4,-7	DSC-245V	DSC-245V-4,-7
Type of sewing machine head	Cylinder-bed, 1-needle, unison-feed lockstitch machine	Cylinder-bed, 1-needle, unison-feed lockstitch machine with an automatic thread trimmer	Cylinder-bed, 1-needle, unison-feed lockstitch machine (horizontal drop feed)	Cylinder-bed, 1-needle, unison-feed lockstitch machine with an automatic thread trimmer (horizontal drop feed)
Usage	Suited for sewing medium weight materials			
Sewing speed	Max. 2,200 sti/min			
Stitch length	0 to 6 mm			
Lift of presser foot	Hand lifter 9 mm Knee lifter 15 mm	Hand lifter 8 mm Knee lifter 13 mm	Hand lifter 9 mm Knee lifter 15 mm	Hand lifter 8 mm Knee lifter 13 mm
Thread take-up lever	Slide type thread take-up			
Needle bar stroke	36 mm			
Needle to be used	GROZ-BECKERT 135×17 Nm90 to Nm130 (Standard Nm110)			
Needle system	#50 to #20			
Stitch adjusting method	Dial			
Lubrication method	By an oiler. Only the hook is automatically lubricated by a plunger pump .			
Motor to be used	400W Electro-stop motor (4P)	AC servo motor	400W Electro-stop motor (4P)	AC servo motor
Oil to be used	New Defrix Oil No.1			
Noise	<ul style="list-style-type: none"> - Equivalent continuous emission sound pressure level (L_{pA}) at the workstation : <li style="padding-left: 20px;">A-weighted value of 83.0 dB; (Includes K_{pA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 2,200 sti/min. - Sound power level (L_{WA}) ; <li style="padding-left: 20px;">A-weighted value of 89.5 dB; (Includes K_{WA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 3744 GR2 at 2,200 sti/min. 	<ul style="list-style-type: none"> - Equivalent continuous emission sound pressure level (L_{pA}) at the workstation : <li style="padding-left: 20px;">A-weighted value of 78.0 dB; (Includes K_{pA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 2,200 sti/min. 	<ul style="list-style-type: none"> - Equivalent continuous emission sound pressure level (L_{pA}) at the workstation : <li style="padding-left: 20px;">A-weighted value of 83.0 dB; (Includes K_{pA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 2,200 sti/min. - Sound power level (L_{WA}) ; <li style="padding-left: 20px;">A-weighted value of 89.5 dB; (Includes K_{WA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 3744 GR2 at 2,200 sti/min. 	<ul style="list-style-type: none"> - Equivalent continuous emission sound pressure level (L_{pA}) at the workstation : <li style="padding-left: 20px;">A-weighted value of 78.0 dB; (Includes K_{pA} = 2.5 dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 2,200 sti/min.

1.SETTING UP THE SEWING MACHINE



1. Mounting position of the knee lifter
(Caution)
The knee lifter should be mounted before the motor is installed.
2. Carry the sewing machine with two persons.
(Caution) Do not hold the handwheel.
3. Do not put protruding articles such as the screwdriver and the like at the location where the sewing machine is placed.
4. Setting the sewing machine
Holding countersunk screw ①, washer ② and nut ③ supplied with the unit, fix the sewing machine on the table with aligned with rubber packing ④ at four locations.
5. Securely attach head support rod to the table until it goes no further.

2.INSTALLING THE THREAD STAND



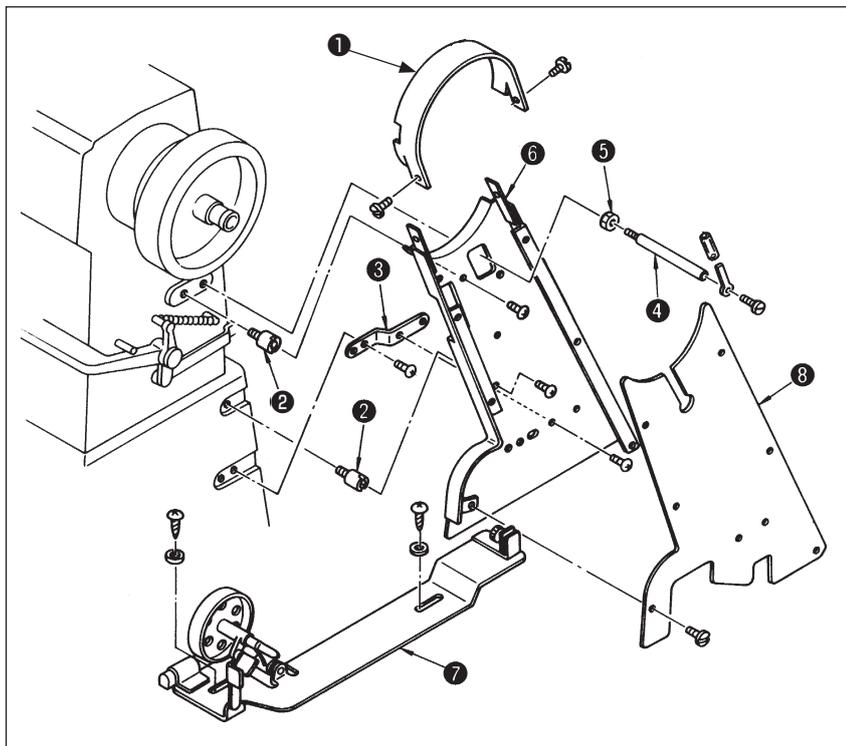
1. Assemble the thread stand, and insert it in the hole in the machine table, and fix it by tightening nut ①.

3.INSTALLING THE BELT COVER AND THE BOBBIN WINDER



WARNING :

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



(Installing procedure)

1. Insert support **1** of the belt cover into the tapped hole in the machine arm. Install belt cover support **2** and belt cover support plate **3** in the tapped holes in the machine bed.
2. Set locknut **5** in synchronizer support shaft **4** and install it in the tapped hole in the machine arm.
3. Install belt cover **6** .
4. Fit bobbin winder **7** in the belt cover, and adjust the position of the bobbin winder so that it does not come in contact with the sewing machine and the belt cover. Then fix the bobbin winder using the wooden screws.
5. Install cover **8** of the belt cover.
6. Tilt the machine head and check that the belt cover does not come in contact with the belt groove in the table

(Caution)

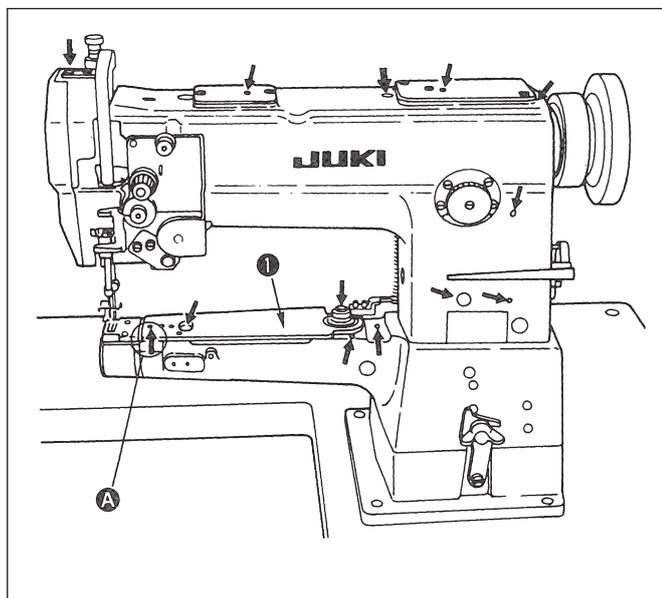
Tilt the machine head after removing the hook for the knee lifter.

4.LUBRICATION



WARNING :

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

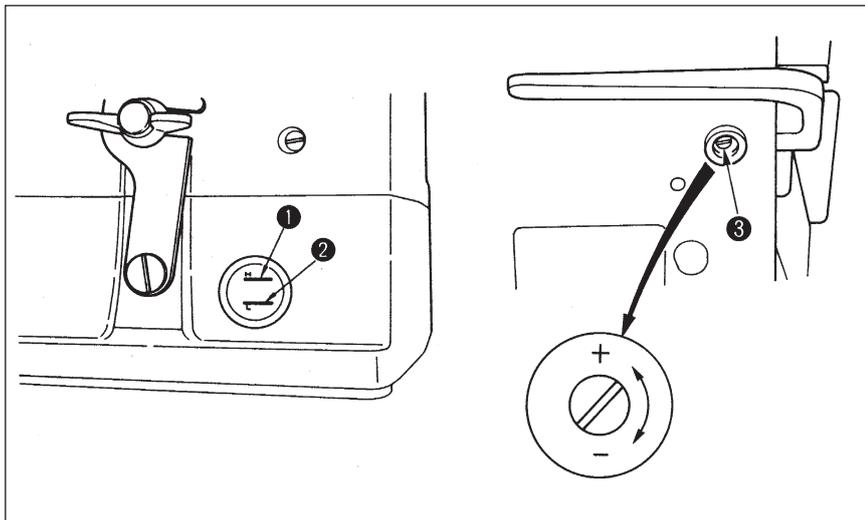


• **Before starting the sewing machine**

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

(Caution)

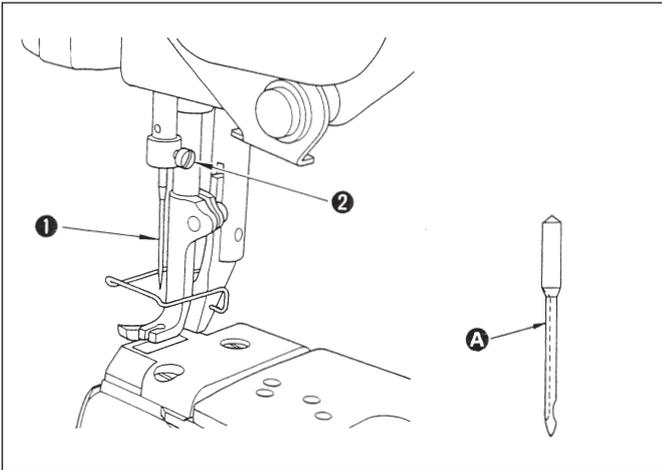
About lubrication to section **A** : In DSC-245V,-4,-7, lubricate after pulling top cover of the bed **1** toward you.



- **Lubricating the bed support base**
 1. Pour JUKI Defrix Oil No.1 into the bed support base until H mark ① is reached.
 2. If the level of the oil surface has come down below L mark ② ,add some amount of oil accordingly.
- **Adjusting the amount of oil in the hook**
 1. Turn the oil amount adjustment screw ③ mounted on the arm in the direction of the " ⊖ " to decrease the amount of oil in the hook,or in the direction of the " ⊕ " to increase it.

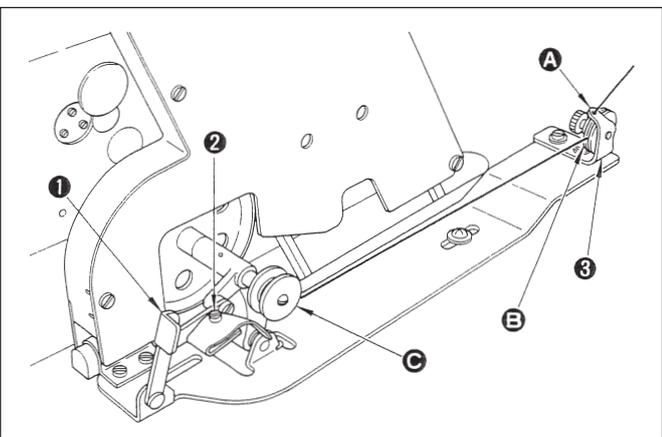
5.ATTACHING THE NEEDLE

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



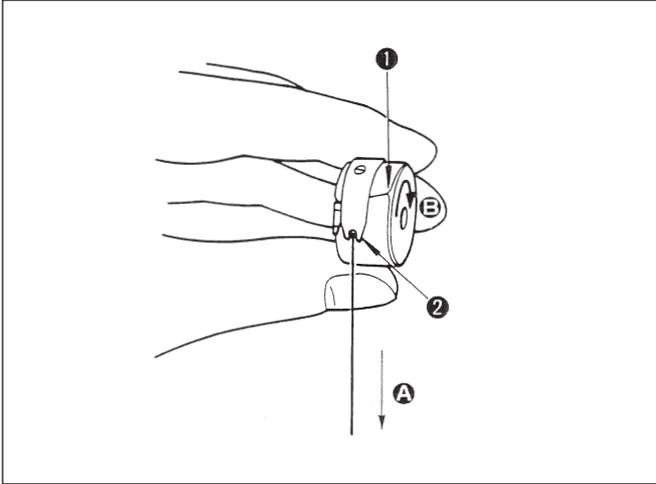
1. Turn the handwheel to move the needle bar up to its highest position.
 2. Loosen the needle setscrew ② ,and hold needle ① so that long groove A faces exactly to the left.
 3. Insert the needle ① into the needle bar until it will go no further. Securely tighten the needle setscrew ② .
- The standard needle is Groz 135 x 17 Nm 110.**

6.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 ② clockwise increases the amount of thread wound on the bobbin,and vice versa.
4. If thread is wound unevenly,move winder tension adjuster base ③ to the right or left to correct it.
5. The moment the bobbin has been wound up,the bobbin presser ① is released,and the bobbin winder will stop automatically.

7.THREADING THE BOBBIN CASE



- **Removing the bobbin case**

Raise the bobbin case latch to remove the bobbin case.

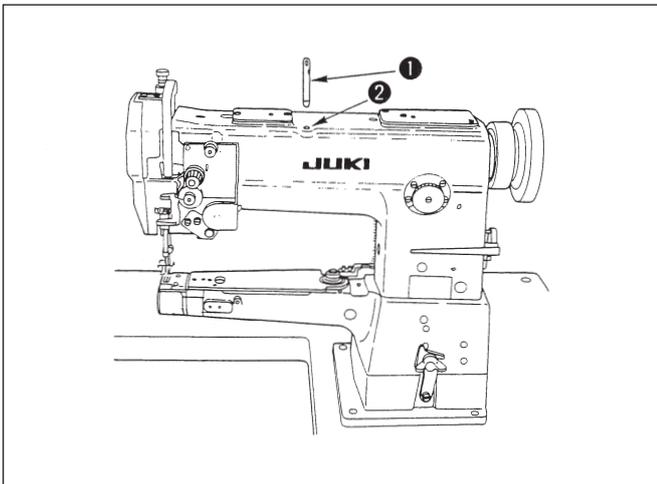
- **Threading the bobbin case**

1. Pass the thread through threading slit 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.

(Caution)

When setting the bobbin in the bobbin case, pay attention to the winding direction of the bobbin thread. (When the bobbin is correctly set in the bobbin case, the bobbin turns in the direction of arrow ③ by pulling the thread in the direction of arrow ④)

8.INSTALLING THE TAKE-UP THREAD GUIDE ROD



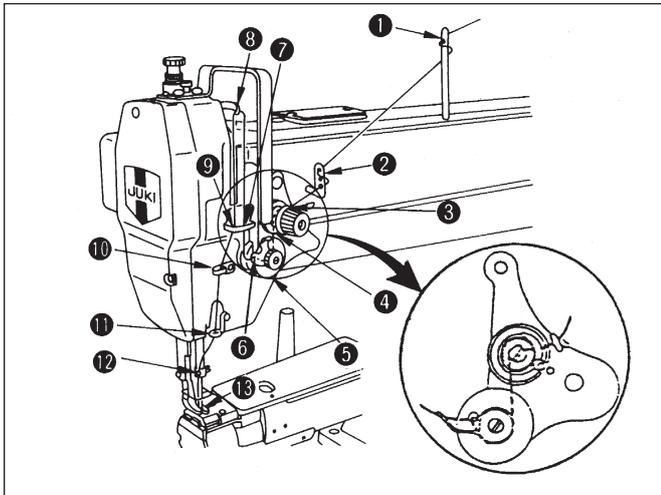
Insert take-up thread guide rod ① attaching section is tapered of into attaching hole ② .

9.THREAD THE MACHINE HEAD



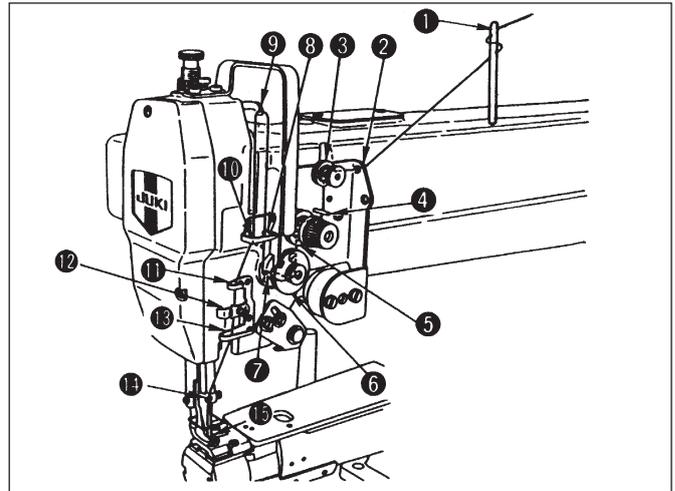
WARNING :

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



(For the DSC-245,DSC-245V)

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

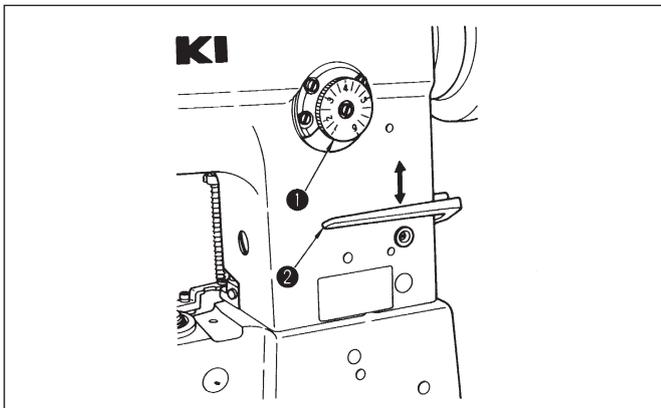


(For the DSC-245-7,DSC-245V-7)

Thread the machine head in the order of ❶ through to ❷. (Caution)

Be sure to pass the thread through the left-hand side of the screw at point ❷.

10.ADJUSTING THE STITCH LENGTH



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

• How to engage the reverse feed stitching

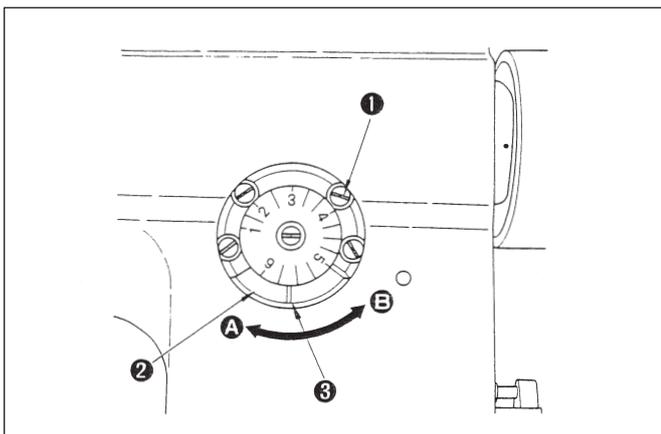
1. Push feed lever ❷ down.
2. The machine performs reverse feed stitching as long as the lever is held depressed.
3. The moment you release the lever, the machine resumes the normal stitching mode.

11.FORWARD/REVERSE SEAM RATIO



WARNING :

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



The seam ratio of forward stitch and reverse stitch is adjusted to be 1:1, but sometimes it shifts according to the sewing condition.

In order to adjust it to 1:1.

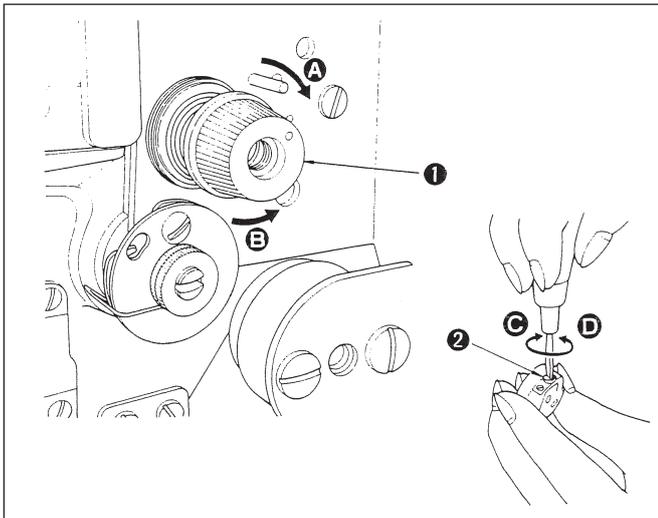
1. Loosen four feed regulating stud metal setscrews ❶.
2. When increasing the forward stitch pitch, turn the slotted portion ❸ of eccentric bushing ❷ clockwise in the direction A by the screwdriver.
3. When decreasing the forward stitch pitch, turn eccentric bushing ❷ counterclockwise in the direction B.
4. After adjustment, tighten four setscrews ❶.

12.THREAD TENSION



WARNING :

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



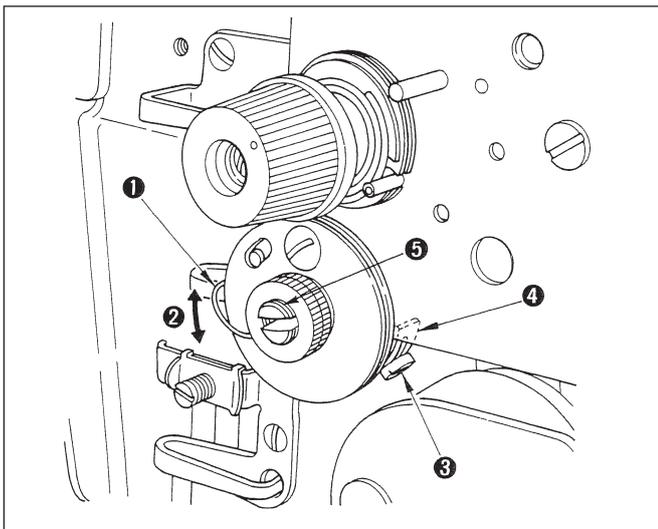
• Adjusting the needle thread tension

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

• Adjusting the bobbin thread tension

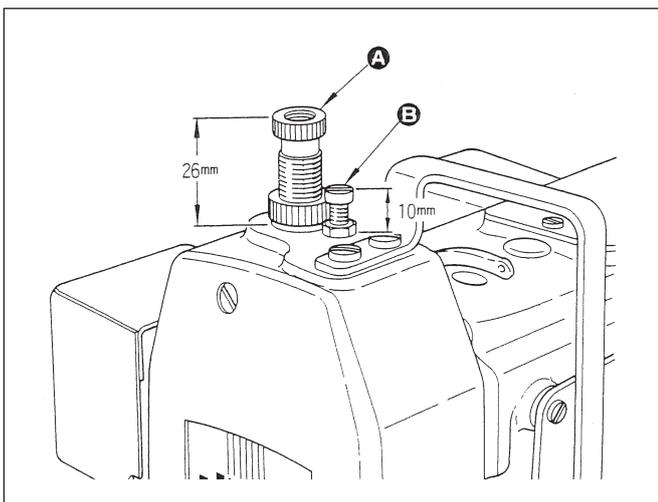
Turning tension screw ② clockwise (toward ②C) increases the bobbin thread tension. Turning it counterclockwise (toward ②D) decreases the tension.

13.THREAD TAKE-UP SPRING



1. 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.
2. The standard spring tension is 40 to 50 g.
3. To adjust the tension, turn the thread tension post ⑤, using a screwdriver.

14.PRESSURES OF THE PRESSER FOOT AND WALKING FOOT



The pressure of walking foot (height of adjustment screw ①A : Standard 26 mm) or the presser foot (height of the adjustment screw ①B Standard 10 mm) can be adjusted in accordance with the type of sewing product to be used.

(Caution)

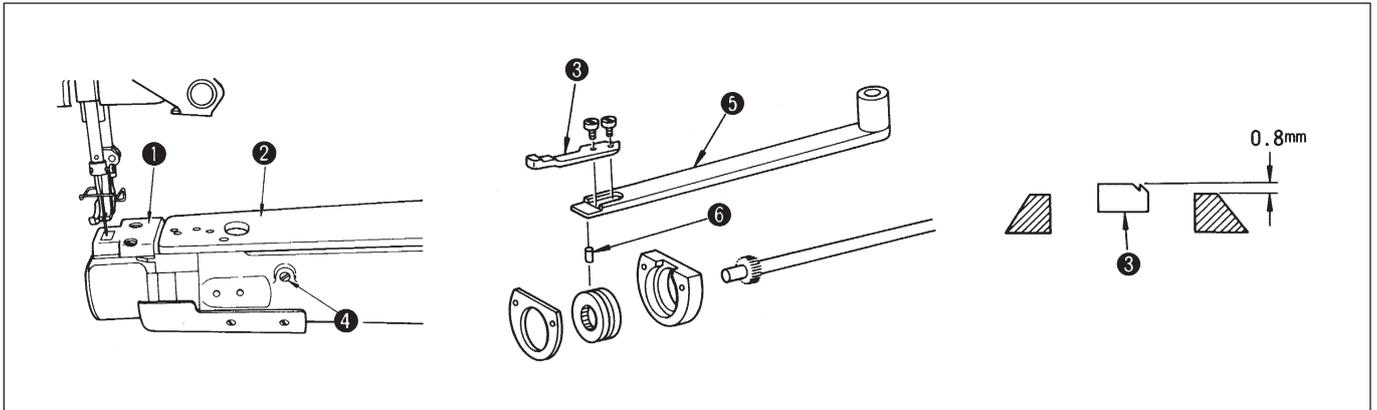
It is advisable to minimize the pressures of both feet.

15.HEIGHT OF THE FEED DOG (DSC-245,-4,-7)



WARNING :

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



Feed dog ③ is factory-adjusted to jut out 0.8 mm from the surface of throat plate ① .How to adjust the height of the feed dog.

- 1) Remove throat plate ① ,bed upper cover ② and spring support shaft ④ to extract feed bar ⑤ .
- 2) Remove pin ⑥ .
- 3) Replace pin ⑥ .

(Note)

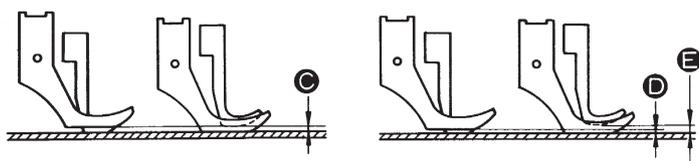
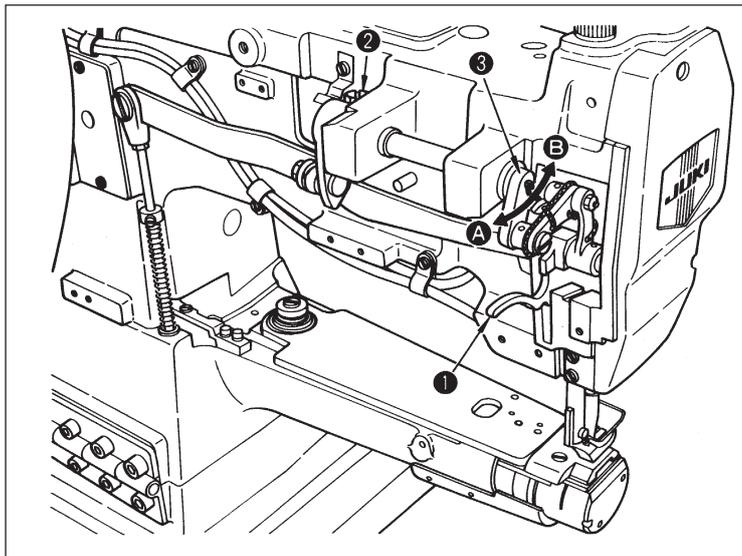
Marker lines are marked. When making the height of the feed dog high,use the pin having more marker lines,and when making the height low,use the pin having less marker lines.

16.ADJUSTING THE WALKING FOOT AND THE PRESSER FOOT



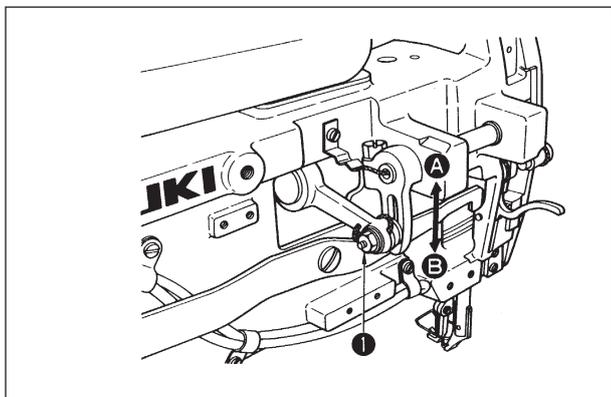
WARNING :

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



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

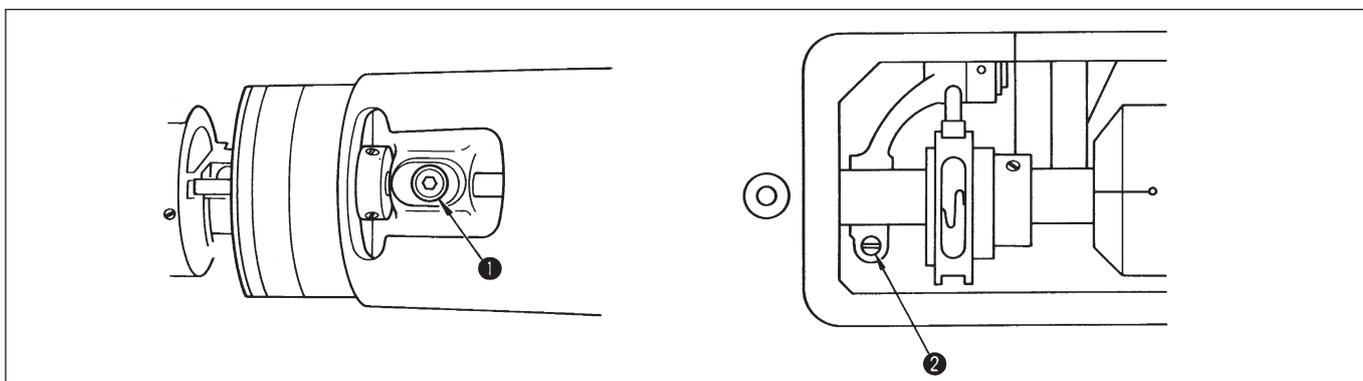
1. The alternate vertical strokes of the walking foot and the presser foot are normally equal.
2. Depending on the type of material, however, the vertical strokes of the presser foot and walking foot should be changed.
3. For instance, when sewing slippery material or sewing many overlapping sections,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



• Height of the walking foot and the presser foot

When sewing elastic material or overlapping sections, a better result may be obtained by changing the height of the presser foot and walking foot.

- 1) Loosen nut ① .
- 2) When you move the cam rod boss toward A within the slot, the height is increased.
- 3) When you move it toward B, the height is decreased.
- 4) After adjustment, securely tighten nut ① .



• Adjusting the longitudinal position of the needle bar frame

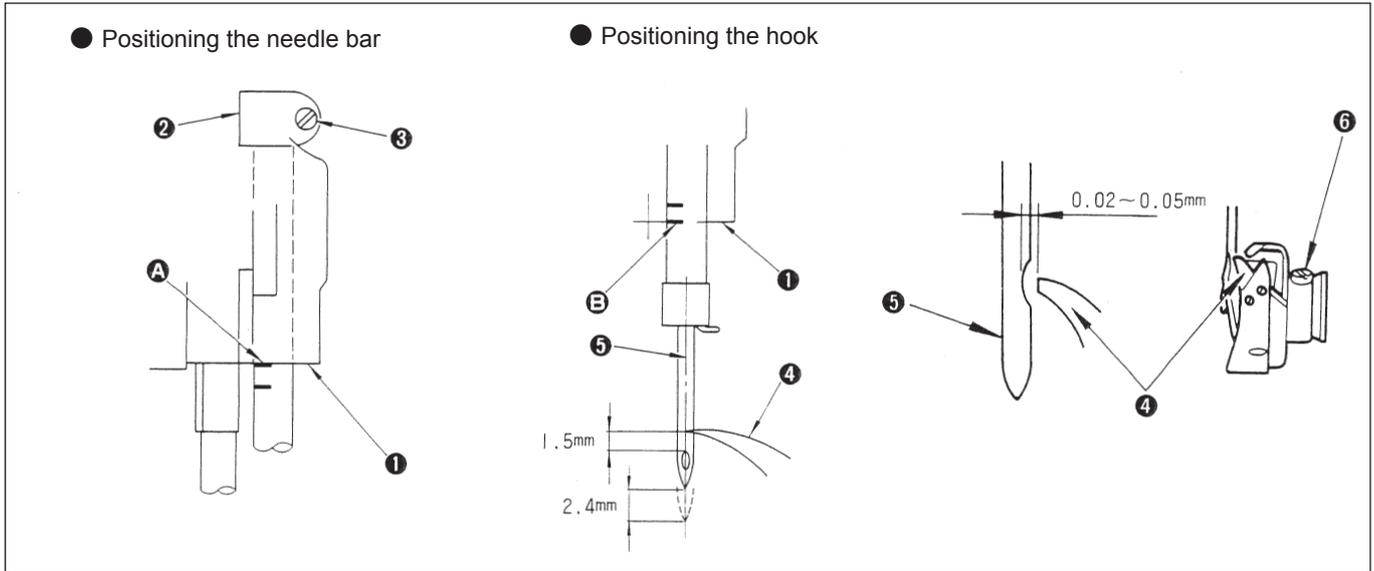
1. Turn the feed regulator dial to maximum.
2. Turning the handwheel slowly to this side, loosen and adjust screw ① in the rear arm of the feed bar frame so that the feed does not contact with the front and back of the slot of the throat plate at the time of normal/reverse stitch motion.
3. Next, turn the feed regulator dial clockwise, set the feed pitch at "0" and loosen screw ② in the rear arm of the needle bar frame.
4. Turning the handwheel, move the needle bar frame so that the needle enters the center of needle hole, and tighten the screw.

17.NEEDLE-TO-HOOKRELATIONSHIP



WARNING :

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



- **First, set the needle bar at the proper height as follows**

Set the stitch length dial at "0".

Adjust so that, when hook point ④ meets the center of needle ⑤, the hook point is 1.5 mm above the upper end of the needle eyelet. Then tighten screw ③ of needle bar bracket ②. (As a rough indication of this adjustment, marker line A on the needle bar aligns with the bottom face of the needle bar frame ①.)

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

Adjust so that, when the needle bar goes up to 2.4 mm above its lowest point, hook point ⑥ nearly meets the center of needle ④. Then tighten setscrew ⑤. (As a rough indication of this adjustment, marker line B on the needle bar aligns with the bottom face of the needle bar frame ①.)

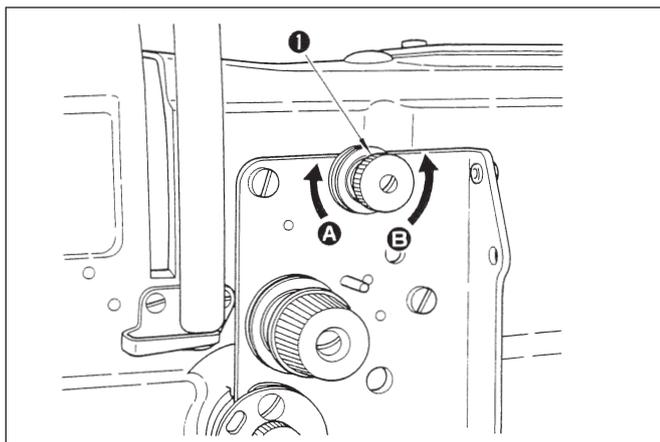
- **How to remove the hook**

1. Turn the handwheel to bring the needle bar up to its highest position.
2. Remove the hook cover, the bobbin case, the throat plate and the top cover of the bed.
3. Loosen four throat plate frame setscrews.
4. Loosen the hook setscrew, and extract the hook so as to lift the front edge of the throat plate frame.

(Note)

When installing the hook, tighten the throat plate frame after checking that the protruding portion of the hook stopper in the throat plate frame are properly inserted in the slot in the bobbin case retainer.

18.AUXILIARY THREAD TENSION CONTROLLER (DSC-245-4,-7, DSC-245V-4,-7)



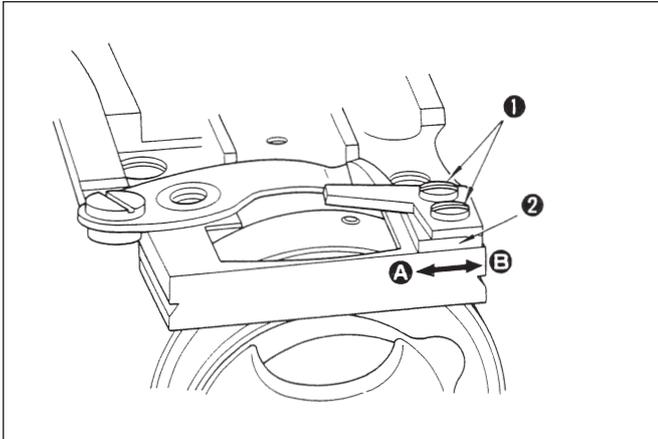
1. Adjust the auxiliary thread tension using nut ①.
 - 1) Turn the nut in direction A
→ Tension increases and the needle thread shortens.
 - 2) Turn the nut in direction B
→ Tension decreases and the needle thread lengthens.
- 3) Decrease the tension when using a thin thread or if cloth slippage often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

19. ADJUSTING THE PRESSURE OF THE FIXED KNIFE (DSC-245-4,-7, DSC-245V-4,-7)



WARNING :

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



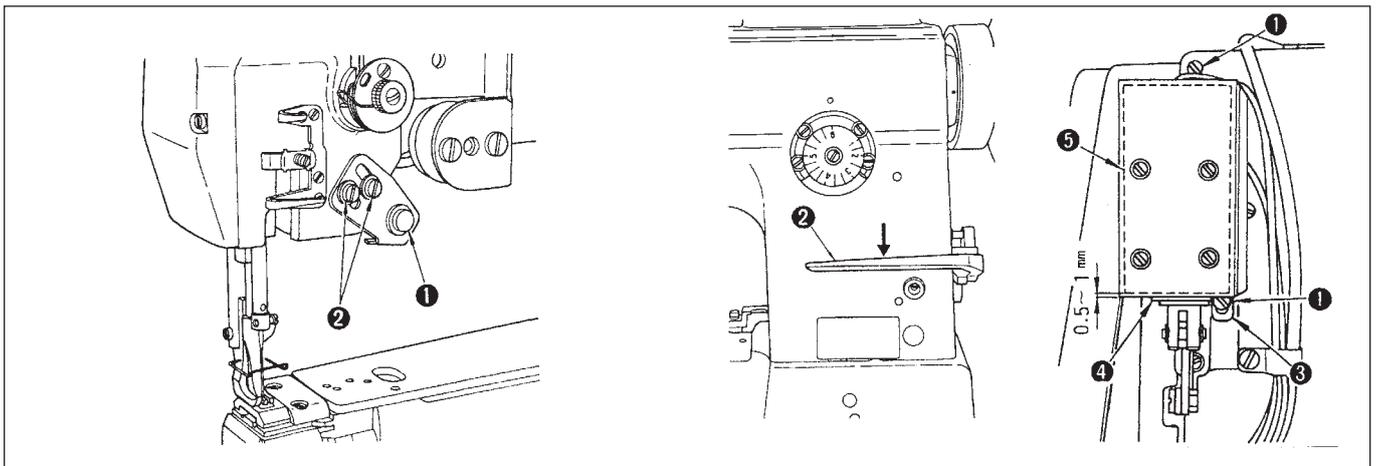
1. Loosen two setscrews ① of the fixed knife and move adjusting plate ② for the knife pressure to direction ④ resulting in a higher knife pressure. After adjustment, tighten the setscrews.
2. The knife pressure should be increased for a thicker thread. However, it is advisable to minimize (by turning the adjust screw in direction ⑤) the knife pressure as long as the knife trims threads.

20. ONE-TOUCH TYPE REVERSE FEED STITCHING MECHANISM (DSC-245-4,-7, DSC-245V-4,-7)



WARNING :

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



• How to operate

1. The moment you press switch ①, the sewing machine performs reverse feed stitching.
2. The machine continues reverse feed stitching as long as the switch is held pressed.
3. When you release the switch, the machine resumes normal stitching.

• Position of the switch

1. Set the switch in an easy-to-operate position.
2. Loosen screws ②, and move the switch up or down to adjust its position.

• Position of the reverse feed solenoid

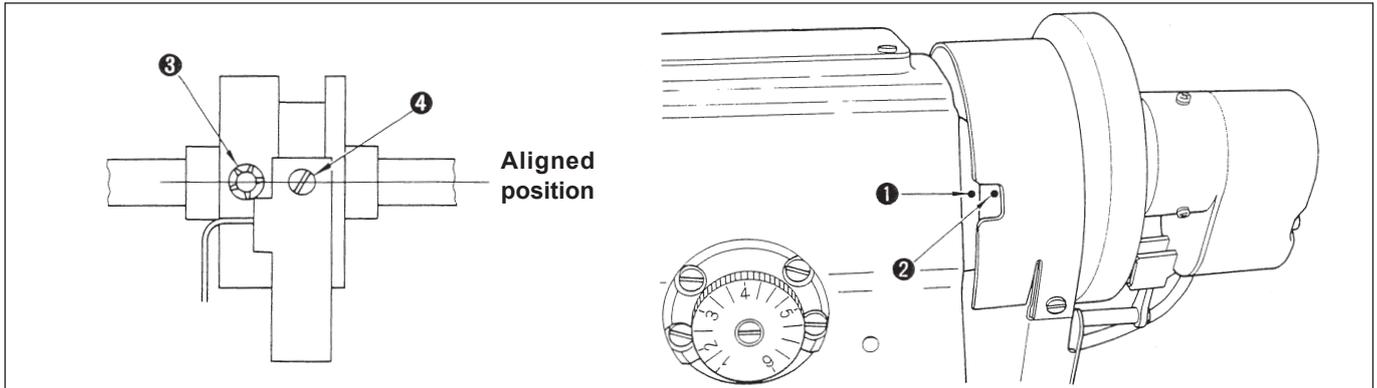
1. Set the stitch length dial at the maximum.
2. Loosen two setscrews ① of the solenoid mounting base.
3. Push feed lever ② down until it bottoms, and move solenoid mounting base ③ up or down to adjust the inner clearance between rubber packing ④ on the plunger and reverse feed solenoid ⑤ to 0.5 to 1mm.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

21.ADJUSTING THE THREAD TRIMMING CAM



WARNING :

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



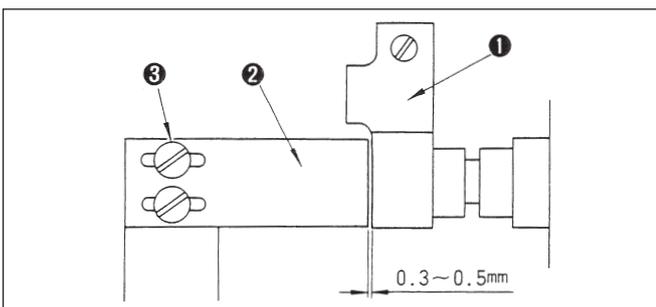
1. Turning the handwheel, align red marker dot ① in the machine arm with white marker dot ② in the hand wheel.
2. Turn the thread trimming cam until first screw ③ in the thread trimming cam aligns with cam roller shaft ④ in the cam roller arm, and tighten the screw at the aligned position.

22.ADJUSTING THE CAM ROLLER ARM AND THE CAM ROLLER ARM PRESSER (DSC-245-4,-7, DSC-245V-4,-7)



WARNING :

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



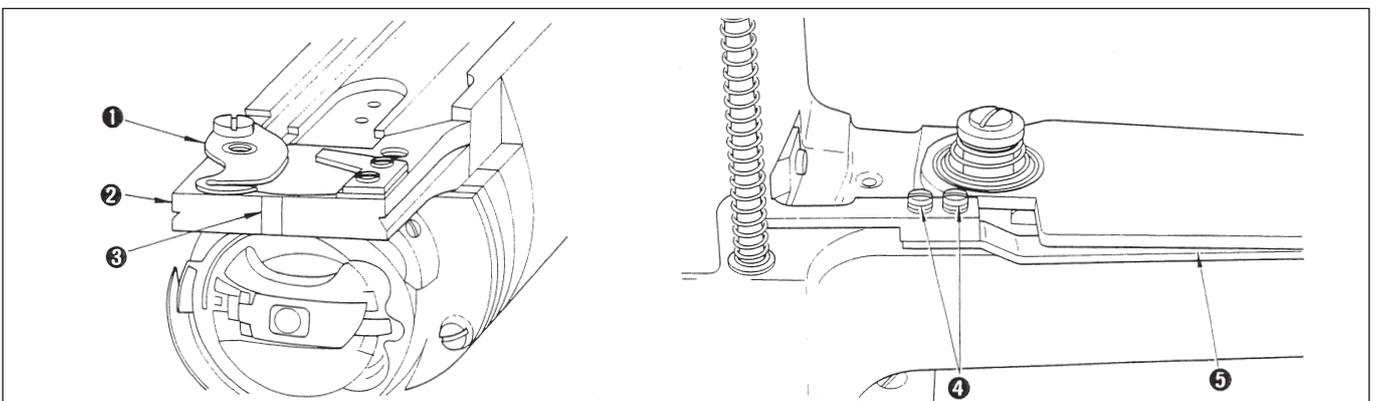
1. Adjust clearance so as to be 0.3 to 0.5 mm between cam roller arm ① and cam roller arm presser ② in case of no thread trimming by loosening setscrew ③ in the cam roller arm presser.
2. After adjustment, tighten the setscrew ③.

23.ADJUSTING MAX MOVING STROKE OF THE ROTARY KNIFE (DSC-245-4,-7, DSC-245V-4,-7)



WARNING :

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



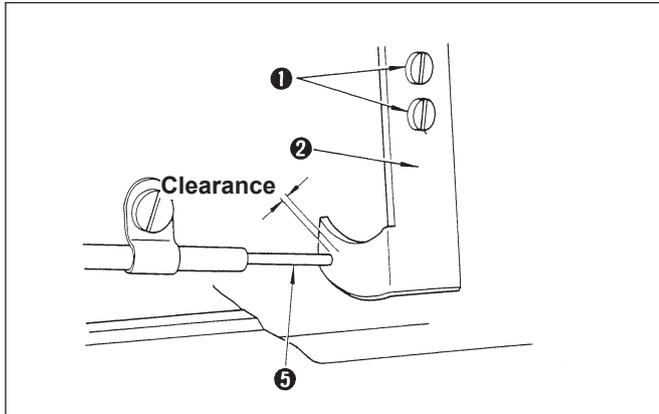
1. Turn the handwheel by hand and insert the trimmer. (When the needle comes down to its lower end, turn the handwheel to actuate the thread trimmer while pushing the picker driving plate backwards.)
2. Loosen setscrew ④ in the driving plate and adjust the length of driving plate ⑤ so that the edge of the rotary knife moves to marker line ③ in the throat plate frame ② when the moving stroke of rotary knife ① is max.
 - Increasing the driving plate length will decrease the travel distance of the moving knife. Decreasing the driving plate length will increase it.

24.ADJUSTING THE OPERATING STROKE OF THE PICKER (DSC-245-4,-7, DSC-245V-4,-7)

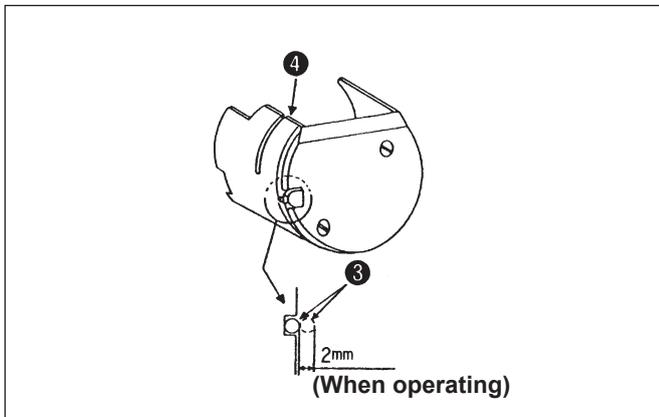


WARNING :

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



1. Turning the handwheel, align the red marker dot in the machine arm with the white marker dot in the handwheel.
2. Loosen setscrew ① in the picker driving plate and push picker driving plate ② by hand.



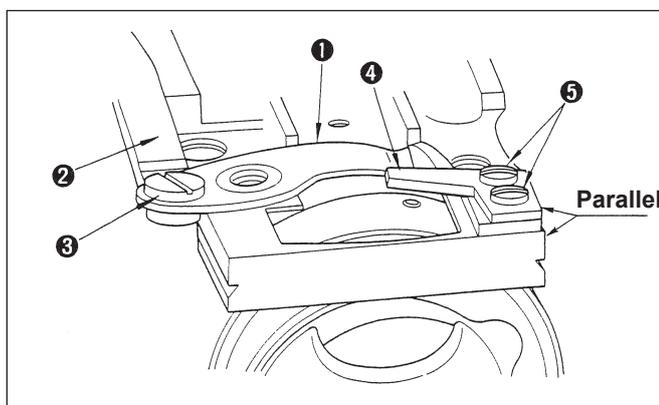
3. Adjust the position of the picker driving plate so that picker ③ operates 2 mm longer from the end face of hook cover ④ .
4. After adjustment,tighten the setscrew.
 - o When the clearance between the picker driving bar ⑤ and the picker driving plate is large,the operating stroke decreases,and when it is small,the operating stroke increases.

25.HOW TO REPLACE THE KNIVES (DSC-245-4,-7, DSC-245V-4,-7)



WARNING :

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



1. Remove the throat plate and the feed dog.
2. Rotary knife ① can be removed by removing connecting screw ③ in driving plate ② , and fixed knife ④ can be done by removing setscrew ⑤ of the fixed knife.
3. After replacement,adjust the knife pressure.
(Method for adjusting the knife pressure,see 「19. ADJUSTING THE PRESSURE OF THE FIXED KNIFE」)

(Caution)

Attach the counter knife so that it is in parallel to the throat plate base.

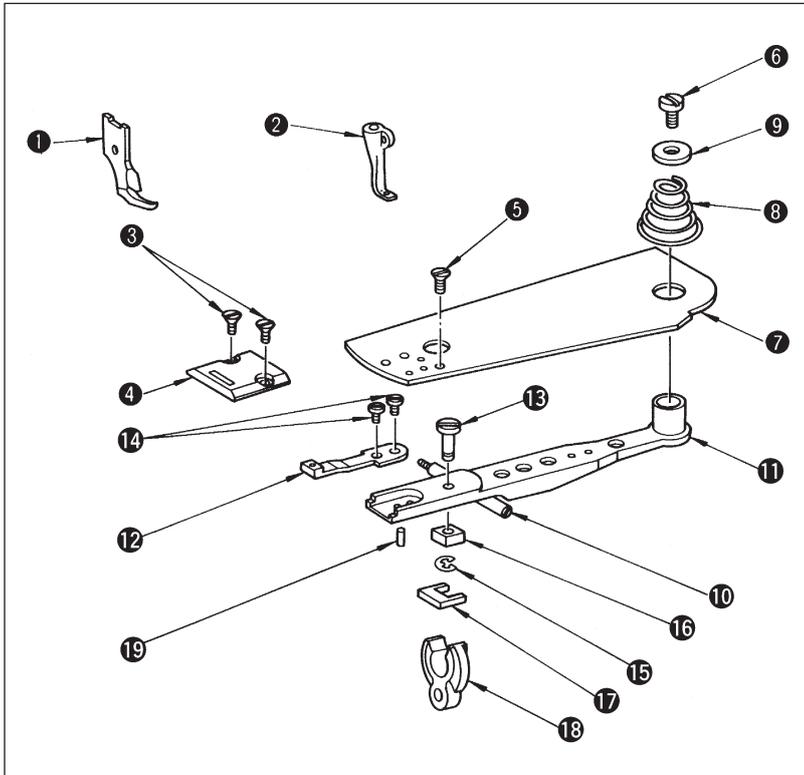
26.HOW TO CHANGE FROM ELLIPTICAL FEED TO HORIZONTAL FEED



WARNING :

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

This model can be changed to horizontal feed suitable for attaching tapes by replacing parts.



1. Removing process

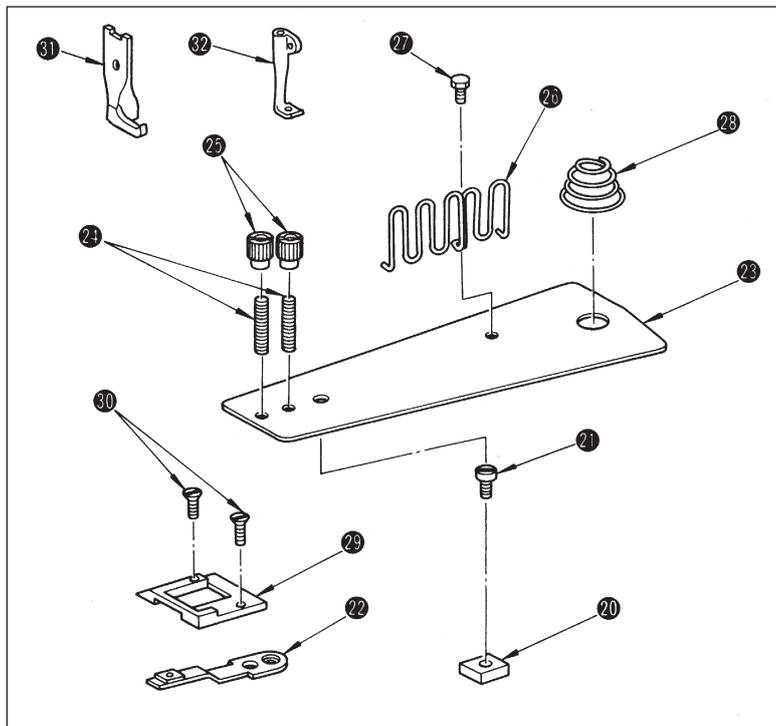
- 1) Remove presser foot ① and walking foot ② .
- 2) Loosen throat plate setscrew ③ and re-
move throat plate ④ .
- 3) Loosen setscrew ⑤ and cap screw ⑥ ,and
remove bed top cover ⑦ ,bed top cover
spring ⑧ and feed bar hinge stud cap ⑨ .
- 4) Remove spring support shaft ⑩ .
- 5) Remove feed bar ⑪ .(At this time,remove
it with feed ⑫ and feed bar hinge stud ⑬ ,
etc. mounted.)
- 6) Remove setscrew ⑭ to remove feed ⑫
from feed bar ⑪ .
- 7) Remove E ring ⑮ ,and remove feed bar
block B ⑯ from feed bar hinge stud ⑬ .
- 8) Loosen feed bar hinge stud ⑬ and remove
it from feed bar ⑪ .
- 9) Remove feed bar block A ⑰ from feed
bar rocker arm ⑱ .(it is unnecessary to
remove ⑱ .)
- 10) Remove upper/lower feed pin ⑲ .

List of parts to be replaced

Note	No.	Part No.	Part Name	Q'ty	Remarks
	1	B15242450A0	Presser foot (asm.)	1	
	2	B1470245000	Walking foot	1	
	3	SS2110915SP	Throat plate setscrew	2	11/64 threads 40, L=8.5
	4	B1105245000	Throat plate	1	
*		D1105245E00	Throat plate	1	
	5	SS2090710TP	Bed top cover setscrew	1	9/64 threads 40, L=7
★	6	B1653245000	Feed bar cap screw	1	9/64 threads 40, L=10
	7	B1173245000	Bed top cover	1	
*		D1173245E00	Bed top cover	1	
	8	B1175245000	Bed top cover spring	1	
★	9	B1640245000	Feed bar hinge stud cap	1	
★	10	B1638245000	Spring support shaft	1	
★	11	D1606245E00	Feed bar	1	
	12	B1613245000	Feed	1	
*		D1613245E0A	Feed		
	13	B1645245000	Feed bar block hinge stud	1	
★	14	B1652245000	Feed bar setscrew	2	1/8 threads 44, L=3.7
	15	RE0300000K0	E ring	1	
	16	B1644245000	Feed bar block B	1	
	17	D1643245000	Feed bar block A	1	
★	18	B1603245000	Feed bar rocker arm	1	
	19	B163224500C	Upper/lower feed pin	1	

(Caution) 1. The parts attached with an asterisk(*) are the exclusive parts for the DSC-245-4 or 7.

2. ★ marks mean the parts used succeedingly after replacement.



2. Installation process

- 1) Install feed bar block ② on feed bar rocker arm ① .
- 2) Install feed bar block hinge stud ③ on feed bar ① .
- 3) Temporarily install feed ② on feed bar ① .
- 4) Install feed bar ① on which feed bar block hinge stud ③ and feed ② have been mounted.
- 5) Install spring support shaft ⑩ .
- 6) Tighten feed ② so that the needle locates in the center of needle hole.
- 7) Screw binder setscrew ④ into bed top cover ⑫ .At this time,install binder setscrew ④ after applying adhesive to it.
- 8) Screw binder lock nut ⑤ into binder setscrew ④ .
- 9) Install tape guide ⑬ on bed top cover ⑫ by tape guide setscrew ⑦ .
- 10) After performing 7), 8) and 9), install bed top cover ⑫ .
- 11) After installing bed top cover spring ⑮ and feed bar hinge stud cap ⑨ ,tighten feed bar hinge stud cap screw ⑥ .
- 12) Install throat plate ⑲ and fix it by throat setscrew ⑩ .
- 13) Install presser foot (asm.) ⑳ and walking foot ㉑ .

List of parts to be replaced

Note	No.	Part No.	Part Name	Q'ty	Remarks
	20	MAQ09210000	Feed bar block	1	
	21	MAQ09211000	Feed bar block hinge stud	1	
*		MAQ09411000	Feed bar block hinge stud	1	
	22	MAQ09209000	Feed	1	For attaching a narrow tape
		MAQ09309000	Feed	1	For attaching a broad tape
*		MAQ09409000	Feed	1	For attaching a narrow tape
*		MAQ09509000	Feed	1	For attaching a broad tape
	23	MAQ09202000	Bed top cover	1	
*		MAQ09402000	Bed top cover	1	
	24	MAQ09204000	Binder setscrew	2	11/64 threads 40
	25	MAQ09205000	Binder lock nut	2	11/64 threads 40
	26	MAQ09206000	Tape guide	1	
	27	SS7110510SP	Tape guide setscrew	1	11/64 threads 40, L=5
	28	MAQ09203000	Bed top cover spring	1	
	29	MAQ09201000	Throat plate	1	
*		MAQ09401000	Throat plate	1	
	30	SS2110930SP	Throat plate setscrew	2	11/64 threads 40, L=8.5
	31	MAQ092080A0	Presser foot (asm.)	1	For attaching a narrow tape
		MAQ093080A0	Presser foot (asm.)	1	For attaching a broad tape
	32	MAQ09207000	Walking foot	1	For attaching a narrow tape
		MAQ09307000	Walking foot	1	For attaching a broad tape

(Caution) The parts attached with an asterisk(*) are the exclusive parts for the DSC-245-4 or 7.

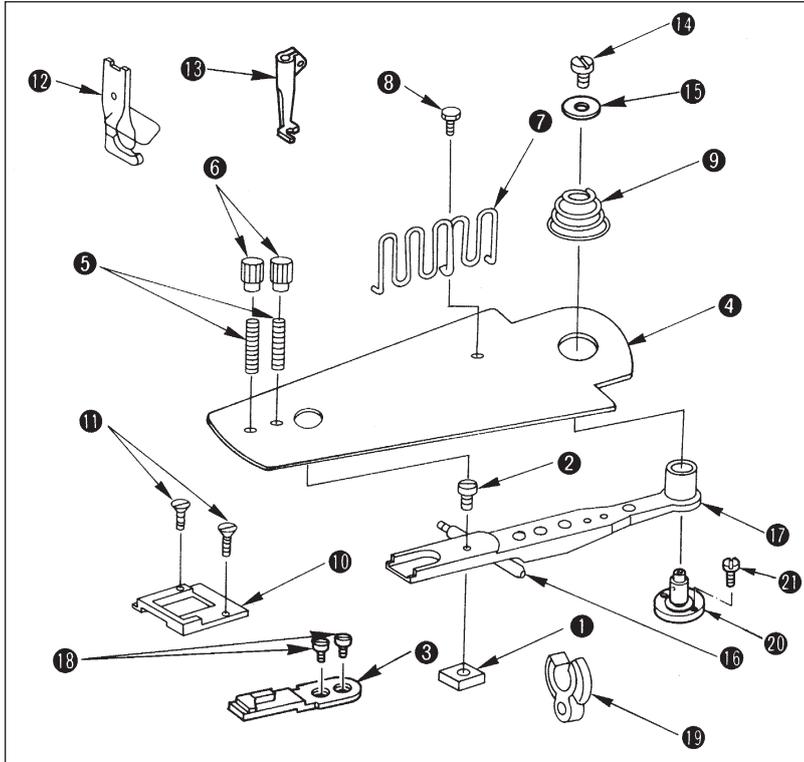
27.HOW TO CHANGE FROM HORIZONTAL FEED TO ELLIPTICAL FEED



WARNING :

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

This model can be changed to elliptical feed by changing the related parts accordingly.



1. Removing process

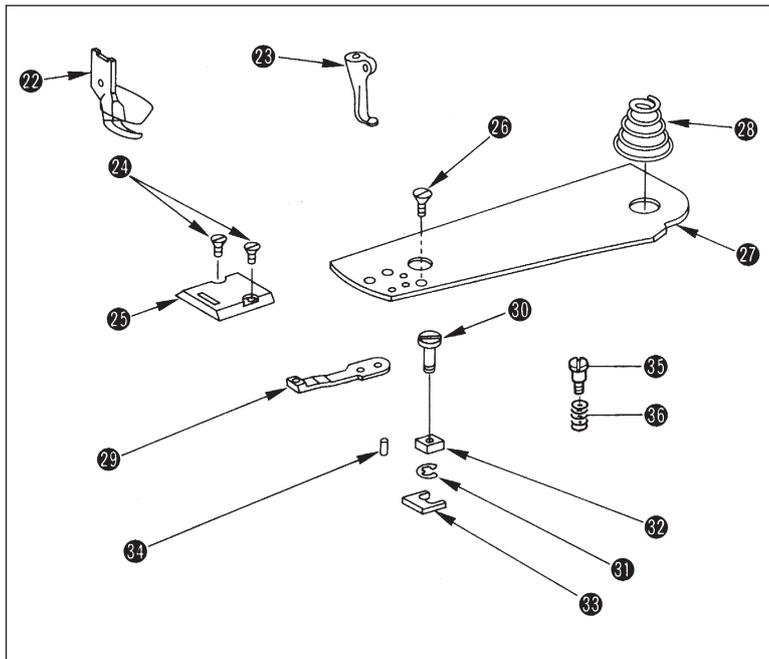
- 1) Remove presser foot (asm.) ⑫ and walking foot ⑬ .
- 2) Loosen throat plate setscrew ⑪ and remove throat plate ⑩ .
- 3) Loosen screw ⑭ in the feed bar shaft cover, and remove top cover ④ of the bed, top cover spring ⑨ of the bed and cover ⑮ of feed bar shaft.
- 4) Remove the feed unit with tape guide ⑦ , screw ⑧ in the tape guide, screws ⑤ in the binder and nuts ⑥ of the screws in the binder attached on top cover ④ of the bed.
- 5) Remove spring support shaft ⑯ .
- 6) Remove feed bar ⑰ . (At this time, it should be removed with feed ③ , feed bar block shaft ② attached in place.)
- 7) Remove feed bar block ① from feed bar oscillating arm ⑱ .
- 8) Remove feed bar block shaft ② from feed bar ⑰ .
- 9) Loosen screws ⑱ in the feed, and remove feed ③ .
- 10) Remove feed bar stud ⑳ , screw ㉑ .

List of parts to be replaced

Note	No.	Part No.	Part Name	Q'ty	Remarks
	1	MAQ09210000	Feed bar block	1	
	2	MAQ09211000	Feed bar block shaft	1	
*		MAQ09411000	Feed bar block shaft	1	
	3	MAN10451000	Feed	1	
*		21305206	Feed	1	
	4	MAQ09202000	Top cover of bed	1	
*		MAQ09402000	Top cover of bed	1	
	5	MAQ09204000	Screw in binder	2	11/64 40 thread ridges
	6	MAQ09205000	Nut of screw in binder	2	11/64 40 thread ridges
	7	MAQ09206000	Tape guide	1	
	8	SS7110510SP	Screw in tape guide	1	11/64 40 thread ridges, L=5
	9	MAQ09203000	Spring of top cover of bed	1	
*	10	MAQ09201000	Throat plate	1	
		MAQ09401000	Throat plate	1	
	11	SS2110930SP	Screw in throat plate	2	11/64 40 thread ridges, L=8.5
	12	MAQ093080A0	Presser foot (asm.)	1	
★	13	MAN10452000	Walking foot	1	
★	14	B1653245000	Screw in the feed bar shaft cover	1	9/64 40 thread ridges, L=10
★	15	B1640245000	Cover of feed bar shaft	1	
★	16	B1638245000	Spring support shaft	1	
★	17	D1606245E00	Feed bar	1	
★	18	B1652245000	Screw in feed	2	1/8 44 thread ridges, L=3.7
	19	B1603245000	Feed bar oscillating arm	1	
	20	B1639245000	Feed bar hinge stud	1	
	21	SS7110910SP	Feed bar hinge stud screw	2	

(Caution) 1. The parts attached with an asterisk(*) are the exclusive parts for the DSC-245V-4 or 7.

2. ★ marks mean the parts used succeeding after replacement.



2. Installation process

- 1) Fit spring 36 over screw 35. In this state, fix feed bar hinge stud 20.
- 2) Attach feed driving pin 34 in place.
- 3) Attach feed bar block A 33 on feed bar oscillating arm 19.
- 4) Attach feed bar block shaft 30 on feed bar 17.
- 5) Attach feed bar block B 32 in feed bar block shaft 30 using E ring 31.
- 6) Attach feed 29 on feed bar 17 with feed set-screw 18.
- 7) Attach feed bar block shaft 30 and feed bar 17 on which feed 29 has been attached in place on feed bar hinge stud 20.
- 8) Install spring support shaft 16 in place.
- 9) Tighten feed setscrew 18 to allow the needle to come just at the center of the needle hole in the feed 29.
- 10) Top cover spring 28 of the bed, feed bar shaft cover 15 and screw 14 of the feed bar shaft cover 15 in place.
- 11) Fix top cover 27 of the bed by tightening screw 26 in the top cover of the bed.
- 12) Attach throat plate 25 in place and fix it using screw 24 of the throat plate.
- 13) Install presser foot (asm.) 22 and walking foot 23 in place.

List of parts to be replaced

Note	No.	Part No.	Part Name	Q'ty	Remarks
	22	B15242450A0	Presser foot (asm.)	1	
	23	B1470245000	Walking foot	1	
	24	SS2110915SP	Screw in throat plate	2	11/64 40 thread ridges, L=8.5
	25	B1105245000	Throat plate	1	
*		D1105245E00	Throat plate	1	
	26	SS2090710TP	Screw in top cover of bed	1	9/64 40 thread ridges, L=7
	27	B1173245000	Top cover of bed	1	
*		D1173245E00	Top cover of bed	1	
	28	B1175245000	Spring of top cover of bed	1	
	29	B1613245000	Feed	1	
*		D1613245E0A	Feed	1	
	30	B1645245000	Feed bar block	1	
	31	RE0300000K0	E ring	1	
	32	B1644245000	Feed bar block B	1	
	33	B1643145000	Feed bar block A	1	
	34	B163224500C	Feed driving pin	1	Selective part (caution 2)
	35	B1641245000	Feed bar hinge stud screw	2	
	36	B1642245000	Feed bar hinge stud screw spring	2	

(Caution)

1. The parts attached with an asterisk (*) are the exclusive parts for the DSC-245V-4 or -7.
2. The feed driving pin has engraved marker lines. Use the pin which has many marker lines to raise the feed dog, or use the pin with less marker lines to lower it.

Part No.	B163224500A	B163224500B	B163224500C	B163224500D	B163224500E
Length(mm)	5.7±0.05	5.9±0.05	6.1±0.05	6.3±0.05	6.5±0.05
Number of marker lines	1	2	3	4	5

28.MOTOR PULLEY AND SEWING SPEED (DSC-245, DSC-245V)

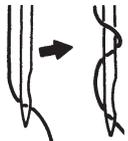
- 1 . Use the 3-phase 400 W AC clutch motor.
- 2 . Use an M type V belt.
- 3 . The following table shows the relationship among the motor pulley and the sewing speed.

Model	Sewing speed	Effective diameter of handwheel	Number of poles	Frequency	Rotational speed of motor	Effective diameter of motor pulley
DSC-245	2,200 sti/min	ø76.0	4	50Hz	1430 rpm	ø115
DSC-245V				60Hz	1715 rpm	ø95

(Caution)

The effective diameter of the motor pulley is obtained by subtracting 5 mm from the outside diameter.

29.TROUBLES AND CORRECTIVE MEASURES

Trouble	Cause	Corrective measures
<p>1.Thread breakage (Thread frays or wears out.)</p> <p>(Needle thread remains 2 to 3 cm on the wrong side of the cloth.)</p>	<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. ⑧ The bobbin races frequently. 	<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 "4.LUBRICATION". ○ Properly adjust the needle thread tension. ○ Decrease the tension,and increase the stroke. ○ See "17.NEEDLE-TO-HOOK RELATIONSHIP". ○ Increase the spring pressure. Alternatively,reduce the thread trimming speed.
<p>2.Stitch skipping</p>	<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. 
<p>3.Loose stitches</p>	<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. ⑥ An untwisted synthetic thread is used. ⑦ A coated cloth or nylon yarn is used. 	<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. ○ Properly adjust the needle thread tension. ○ Slightly reduce the sewing speed.(2,000 sti/min) ○ Use a ball-point needle..
<p>4.A few stitches are skipped.</p>	<ol style="list-style-type: none"> ① The bobbin thread is too short. ② The bobbin thread breaks. ③ A nylon thread is used when sewing lightweight material. 	<ul style="list-style-type: none"> ○ Replace the bobbin by a standard one (aluminum). ○ Decrease the bobbin thread tension and the thread trimming speed. ○ Use the soft start function.
<p>5.The thread slips off</p>	<ol style="list-style-type: none"> ① The tension of the auxiliary thread tension ② Thread take-up timing is too early. ③ Returning force of the thread take-up spring is excessively strong. ④ The feed dog and walking foot trims thread. ⑤ Actuating quantity of the picker is inadequate. 	<ul style="list-style-type: none"> ○ Decrease the tension. ○ See "21.ADJUSTING THE THREAD TRIMMING CAM". ○ See "9.THREAD THE MACHINE HEAD". Replace the thread guide with an appropriate one. ○ Replace the walking foot with an appropriate one. ○ See "24.ADJUSTING THE OPERATING STROKE OF THE PICKER".
<p>6.The needle thread cannot be trimmed. (The bobbin thread can be trimmed.)</p>	<ol style="list-style-type: none"> ① The last stitch has been skipped.(The clearance between the needle and the hook is too large.) 	<ul style="list-style-type: none"> ○ See "17.NEEDLE-TO-HOOK RELATIONSHIP".
<p>7.Both needle and bobbin threads cannot be trimmed.</p>	<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 movement of the rotary knife is short. ⑤ The thread trimming solenoid fails to work. 	<ul style="list-style-type: none"> ○ See "21.ADJUSTING THE THREAD TRIMMING TIMING". ○ Replace the knife. ○ Increase the knife pressure. ○ See "23.ADJUSTING MAX. MOVING POSITION OF THE ROTARY KNIFE". ○ Check the motor solenoid for proper operation.
<p>8.Thread cannot be trimmed sharply.</p>	<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 TIMING". ○ Increase the knife pressure. ○ Replace the knife.
<p>9.Chain off thread doesn't come out.</p>	<ol style="list-style-type: none"> ① Breakage due to thread frayed caused by standing and flapping of thread. ② Breakage between the bottom face of the presser foot and the contact face with throat plate. 	<ul style="list-style-type: none"> ○ Use the furnished thread guide and the presser foot with a slot.
<p>10.Stepped part is clogged.</p>	<ol style="list-style-type: none"> ① The presser foot slips when riding on the stepped part. 	<ul style="list-style-type: none"> ○ Use B15242450AB presser foot (option) and B147024500B walking foot (option).
<p>11.When the alternate lift is increased,the pitch cannot be achieved as per the scale.</p>	<ol style="list-style-type: none"> ① Sewing speed is too fast,resulting in reducing the feed force. 	<ul style="list-style-type: none"> ○ Reduce the sewing speed.



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