

ML-111

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		危険	DANGER
		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。	Hazardous voltage will cause injury. Turn off main switch and unplug power cord and wait at least 5 minutes before opening this cover.

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 ML-111 more safely



1. Keep your hands away from needle when you turn ON the power switch or while the machine is in operation.
2. Do not put your fingers into the thread take-up cover while the machine is operating.
3. Turn OFF the power switch when tilting the machine head, or removing the belt cover or the V 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 and thread take-up lever. 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 loopers oscillate at a high speed during operation.
Be sure to keep your hands away from the vicinity of the loopers to protect hands from possible injury during operation. Turn the power OFF before threading the machine head.
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.

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 sewing machine 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.



CAUTION

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

DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

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

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

Model	ML-111
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

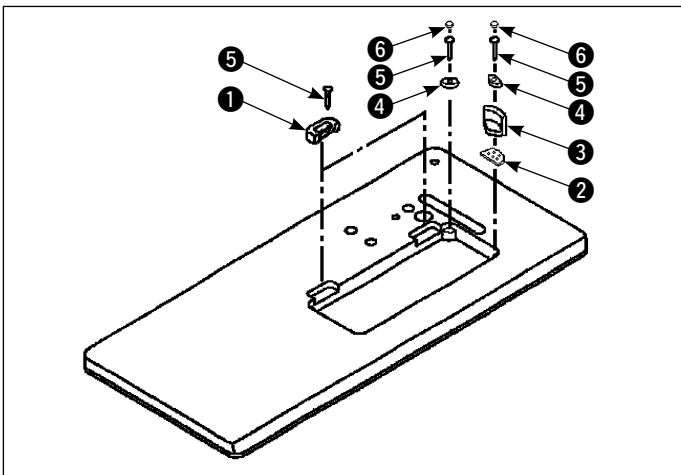
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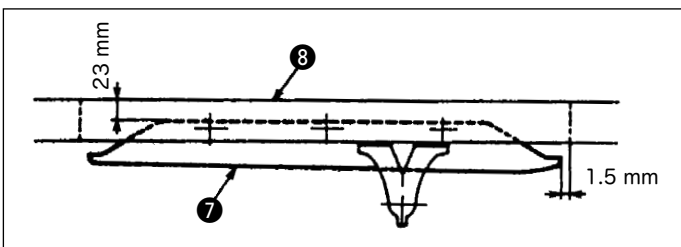
SPECIFICATIONS

Stitch type	1-needle, single-thread, chainstitch	Needle	TV×7 #11 to #14 (standard: #14)
Applications	Basting the suits pieces of light and medium-heavy weight fabrics	Thread take-up	Needle bar thread take-up
Sewing speed	Max. 1,800 sti/min	Looper	Single thread looper, looper shaft dia. Ø4.05
Stitch length	2 to 10 mm (Adjustment is possible to 1 to 10 mm.)	Stitch length adjustment	Dial regulator
Lift of presser foot	Hand lifter 5.5 mm, Knee lifter 12 mm	Lubricating oil	JUKI New defrix oil No.1
Noise	- Equivalent continuous emission sound pressure level (L_{pA}) at the workstation: A-weighted value of 68.5 dB; (Includes $K_{pA} = 2.5$ dB); according to ISO 10821- C.6.2 -ISO 11204 GR2 at 1,800 sti/min.		

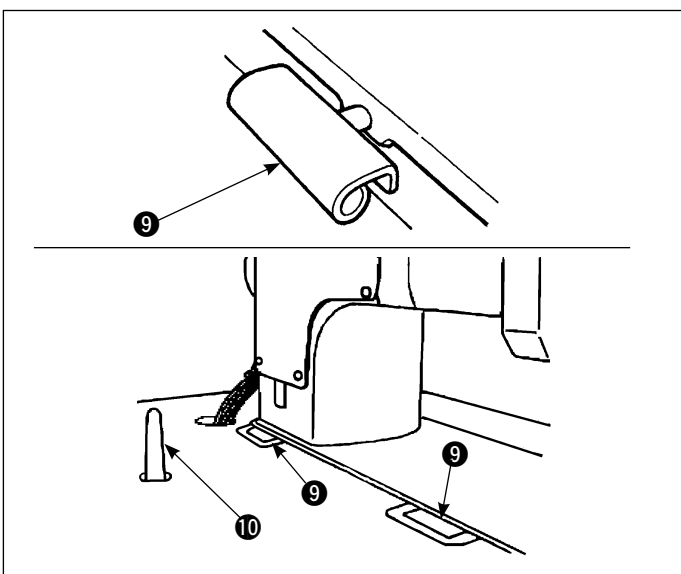
1. INSTALLING THE MACHINE



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 rubber and the head support rubber, etc.
Fix the hinge rubber **1**, the head cushion washer **2**, the head support rubber washer **3** and the head support rubber **4** supplied with the machine on the table using the nails **5**.
Attach the head cushion **6** to the head support rubber **4**.

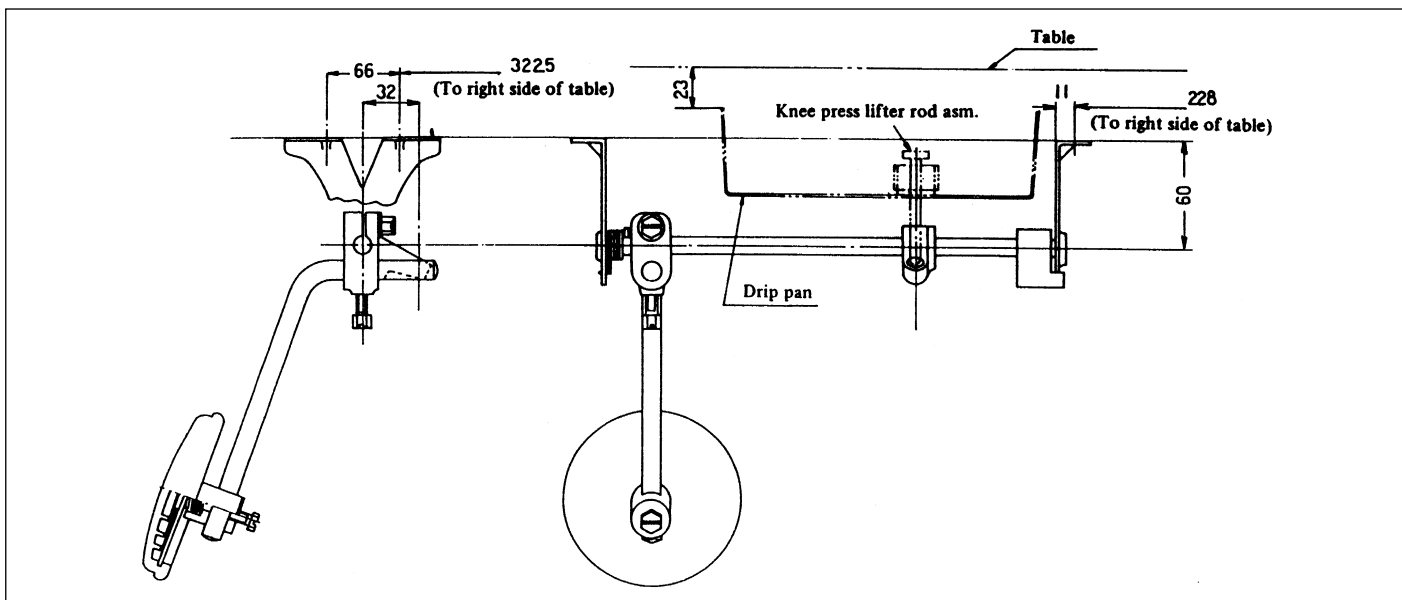


4. Put the drip pan **7** into the machine table **8** from above. Place it so that its right end has a gap of 1.5 mm from the end of the table **8** and its top end is 23 mm above the table **8** surface.
* Make sure that the recessed part of the knee lifter rotation arm is located just under the installation hole for the knee press lifter rod and fix the drip pan **7** in the above-mentioned position by using 6 wood screws.



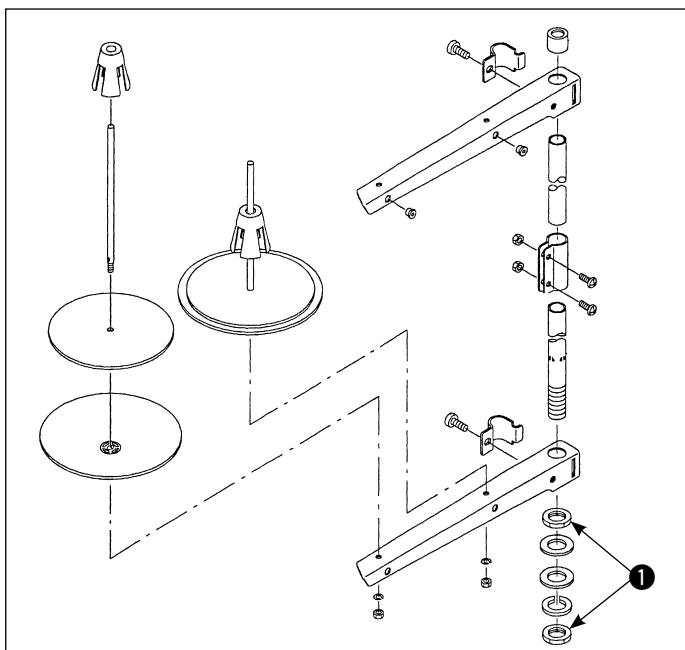
5. Fit hinge **9** into the opening in the machine bed, and fit the machine head to table rubber hinge before placing the machine head on rubber seats on the four corners.
6. Securely attach head support rod **10** to the table until it goes no further.

2. INSTALLING THE KNEE LIFTER COMPONENTS



Attach the knee lifter components using the screws supplied with the machine to the position of the above figure.

3. INSTALLING THE THREAD STAND



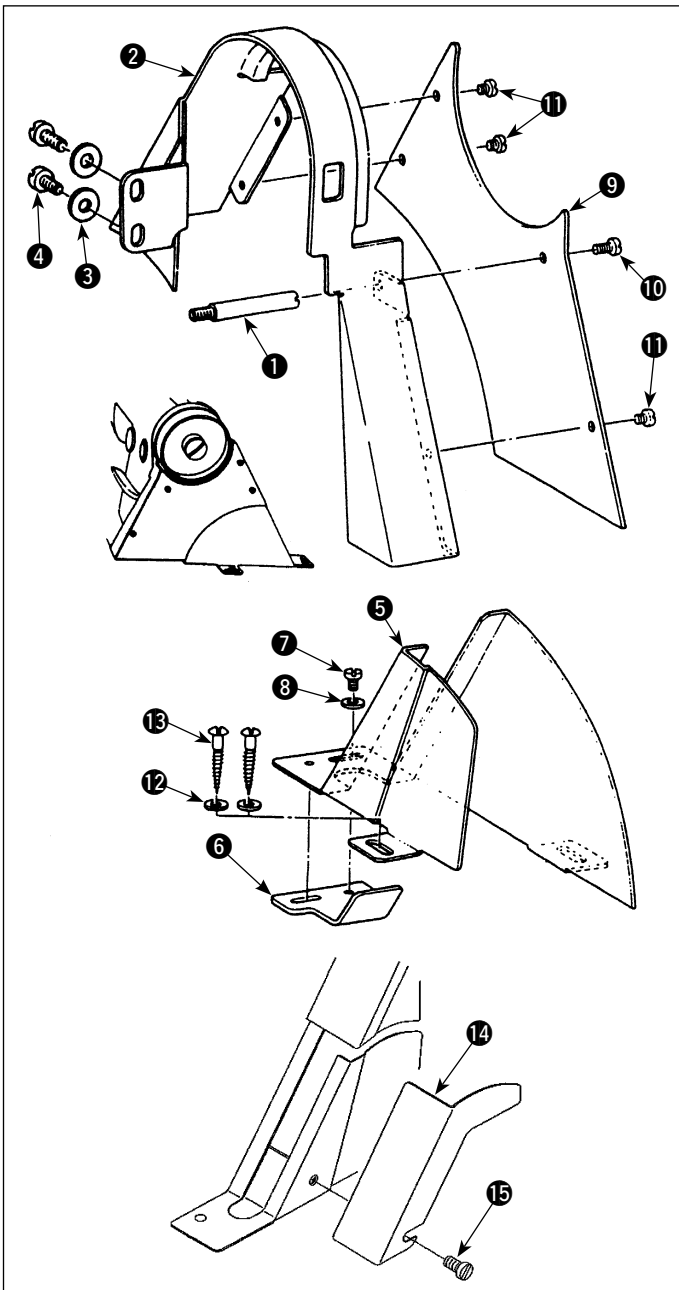
Assemble the thread stand unit, and insert it in the hole in the machine table. Tighten locknut **1** to fix the thread stand.

4. INSTALLING THE BELT COVER



WARNING :

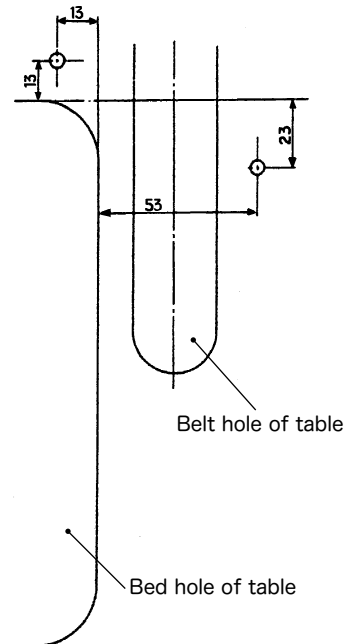
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



The standard installing position of the belt cover and bobbin winder is as shown in the figure below. Install them according to the steps of procedure as described below.

<Installing procedure>

1. Screw belt cover strut **1** into the tapped hole located under the handwheel of the machine arm.
2. Tighten two washers **3** and two screws **4** in the belt cover mounting screw holes near the side plate to secure belt cover body (A) **2**.
3. Install belt support **6** on belt cover body (B) **5** using washer **7** and screw **8**.
4. Put belt cover body (B) **5** inside belt cover body (A) **2**.
5. Install belt cover lid **9** on belt cover body (A) **2** using screws **10** and **11**.
6. Make sure that belt cover body (B) **5** does not come in contact with belt cover body (A) **2**. Then, secure the belt cover (B) **5** on the table using washers **12** and screws **13**.
7. Install belt cover (D) **14** on belt cover body (B) **5** using screw **15**.

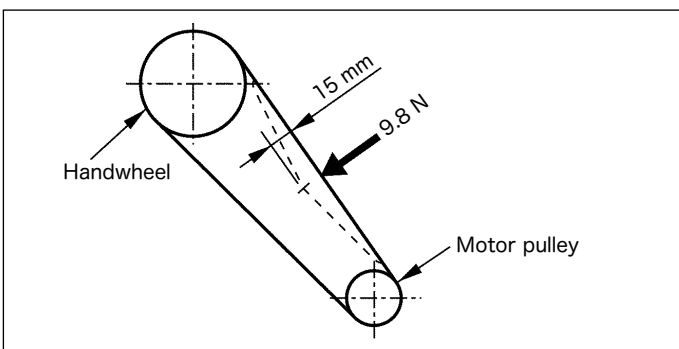


5. ADJUSTING THE BELT TENSION



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.

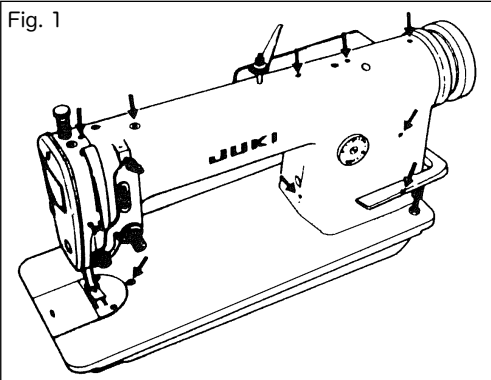
6. LUBRICATION



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.

Fig. 1



Lubricate the arrow points shown in Fig. 1 and 4. They must be lubricated at least twice a day when the machine is continuously operated. Use JUKI New Defrix Oil No. 1.

(Caution) Before starting the first operation of your newly installed machine, lubricate the following parts without fail.

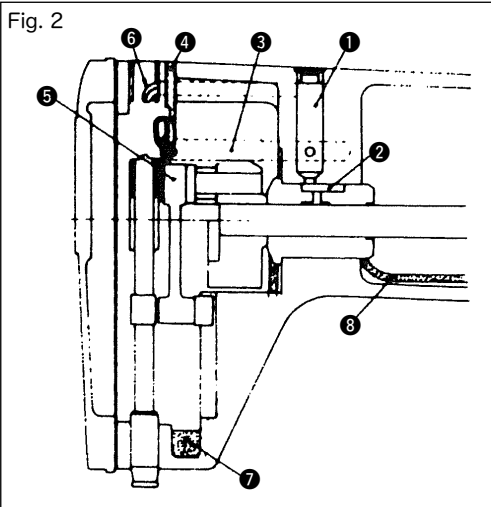
1. Needle bar crank (See Fig. 2 a~d Fig. 5)

Pour oil into the oil hole ① on the front of the machine arm, and the oil will flow through main shaft front bushing ②, oil felt ③ and the oil wick and will reach oil pipe ④ to lubricate needle bar crank rod ⑤.

On the other hand, another oil wick allows the oil to lubricate the needle bar through needle bar upper bushing ⑥.

Thus, the needle bar crank mechanism is completely lubricated. After lubrication, the used oil gathering in the front part ⑦ of the machine arm is collected by the drip pan on the bottom of the machine through oil return felt ⑧.

Fig. 2



2. Feed mechanism (Fig. 3)

The lubricating oil poured into the oil reservoir ⑨ flows to lubricate feed regulator connecting link ⑬, pit-man ⑭ and feed driving shaft connecting rod ⑮ through the oil wicks ⑩, ⑪ and ⑫ respectively.

3. Feed driving and feed bar (Fig. 4)

Lubricate all the arrow points as illustrated from the bottom of the machine bed.

The center of feed rock shaft ⑰ and feed bar shaft ⑱ are lubricated through oil wick ⑯.

4. Filling the gear case with grease. (Fig. 6 and Fig. 7)

Regularly fill the gear case by removing plug screws ⑲ and ⑳.

As soon as the oil seals which prevent grease from leaking are found damaged or worn after long period of use, replace them immediately.

Fig. 3

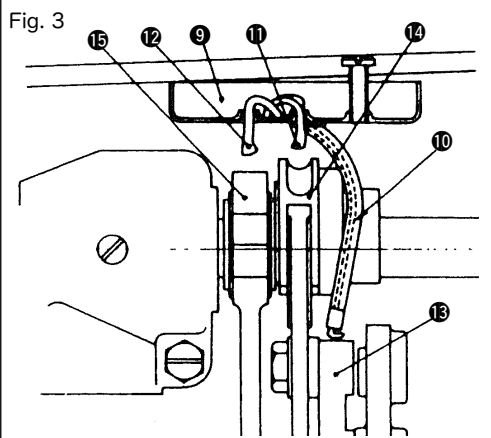


Fig. 4

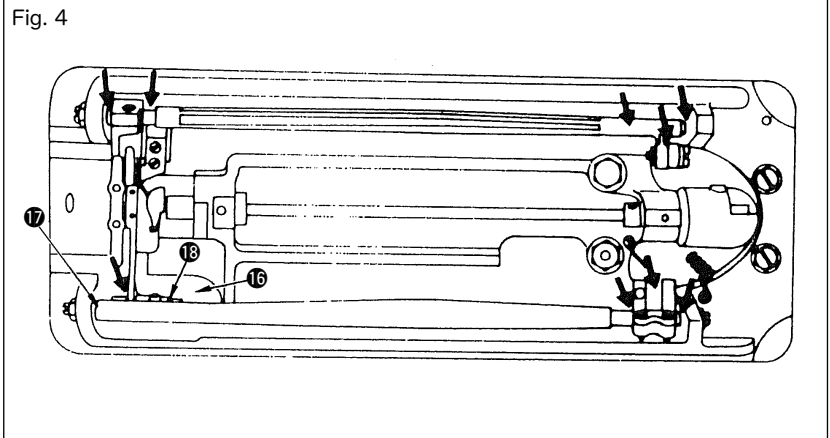


Fig. 5

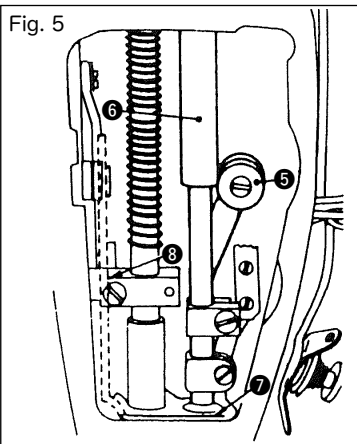


Fig. 6

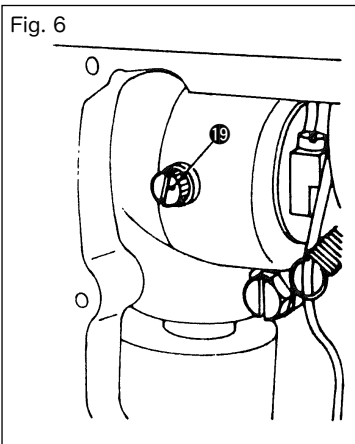
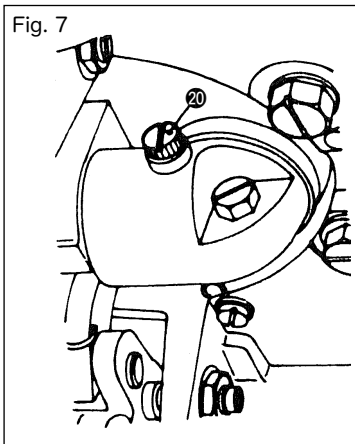


Fig. 7

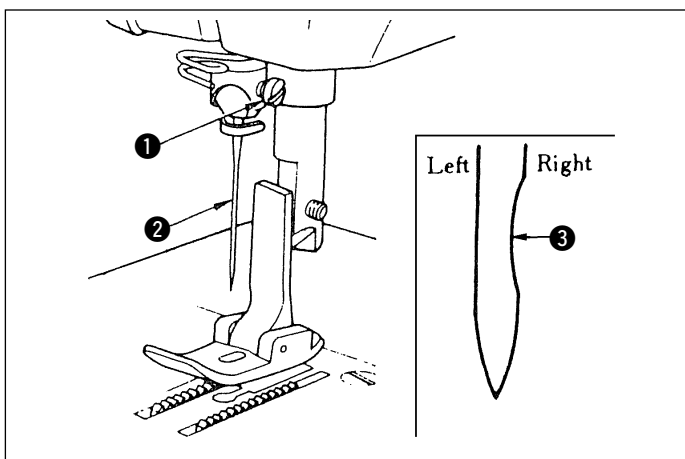


7. ATTACHING THE NEEDLE



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.



Use a TV x 7 needle with the most suitable size according to the thread No. and kind of material.

1. Manually rotate the handwheel until the needle bar reaches its highest position.
2. Loosen the needle clamp screw ①.
3. Hold a needle ② by facing its groove ③ to the right.
4. Insert the needle ② into the needle hole as far as it can go.
5. Securely tighten the needle clamp screw ①.

8. THREADING THE MACHINE

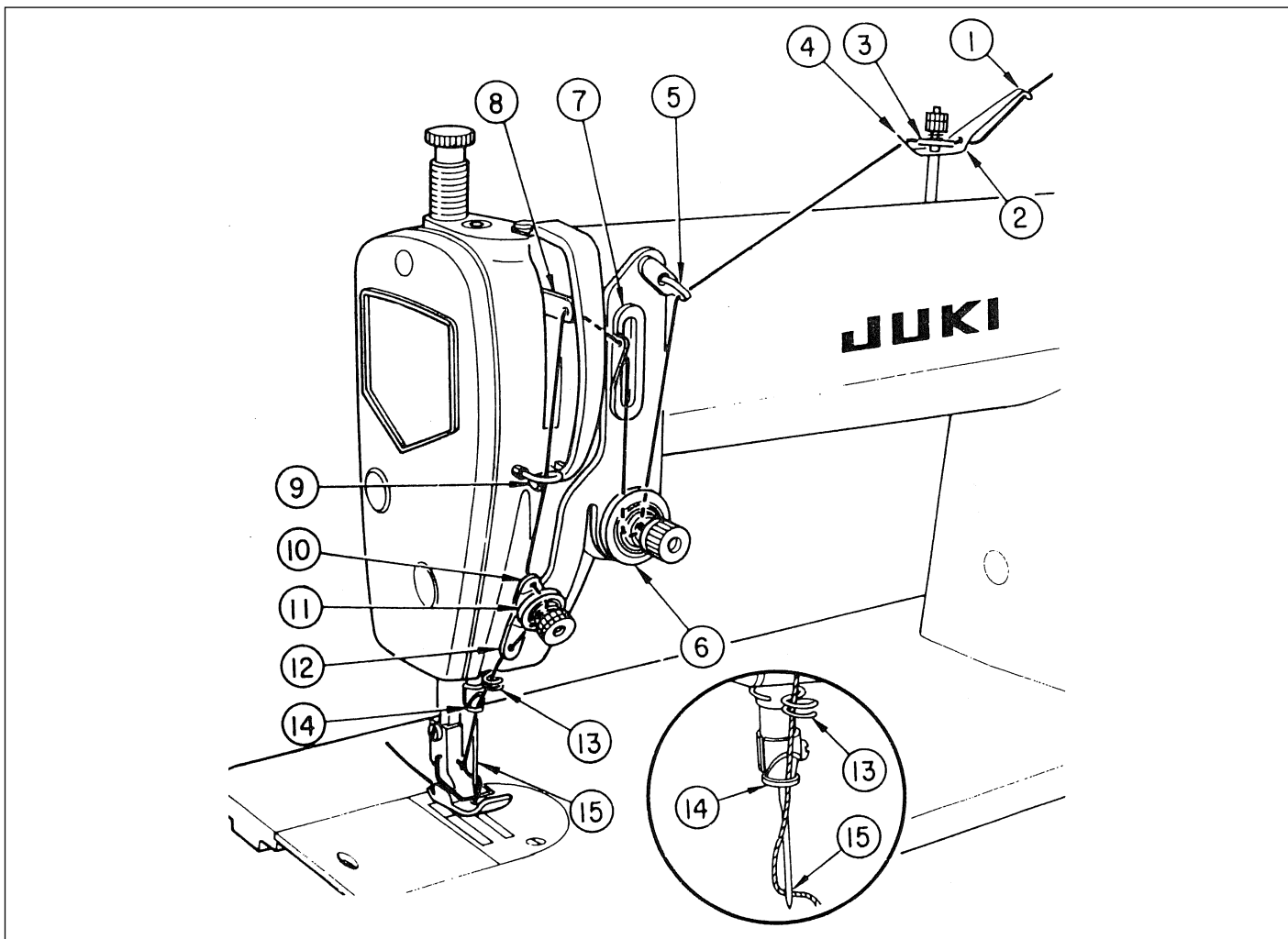


WARNING :

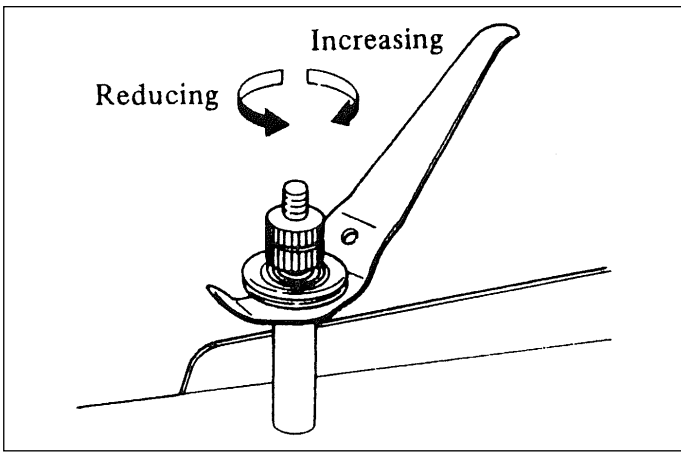
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.

Manually rotate the handwheel until the thread take-up level reaches the highest position.

1. Thread the machine in the order shown below.
2. Thread the needle from left to right.
3. Leave about 10 cm of thread from the needle eye with which to begin sewing.

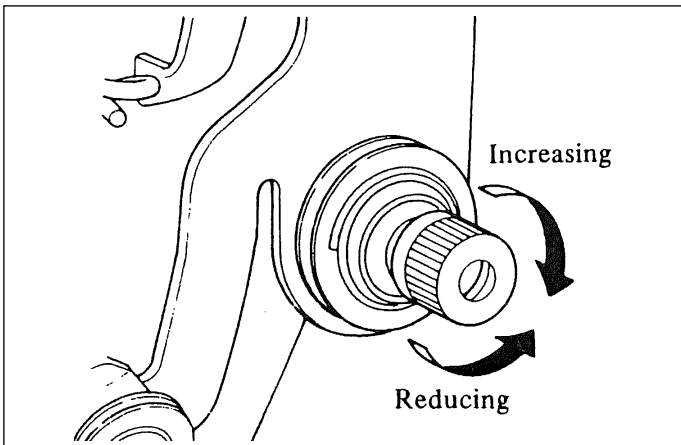


9. THREAD TENSION

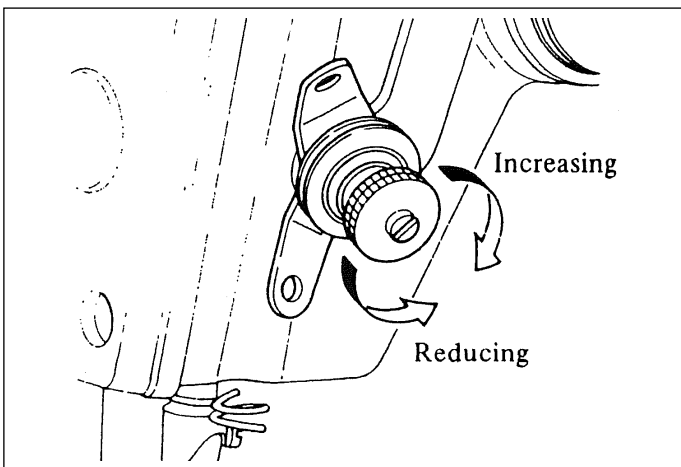


Thread tension is adjusted by the tension nut.

1. Turn the tension nut clockwise for increasing the tension.
 2. Turn the tension nut counterclockwise for reducing the tension.
- * Reduce the tension of the tension spring No. 1 to the lowest to the extent that it allows the thread to stably run. (0.01 to 0.02 N)



The tension spring No. 2 mainly controls the tension of the stitch formation.



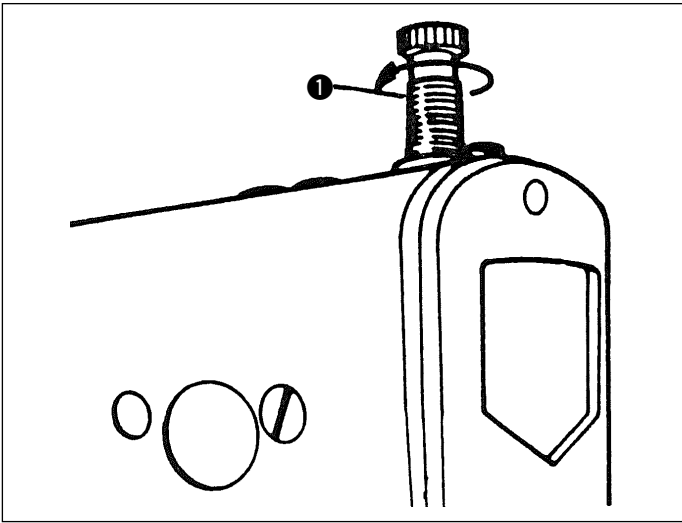
The tension spring No. 3 prevents stitches from forming irregular seam on the bottom face of fabrics. If any irregular stitches are formed on the bottom face of fabric, increase its tension to the extent not to form puckering stitches instead.

10. PRESSER FOOT AND FEED DOG



WARNING :

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

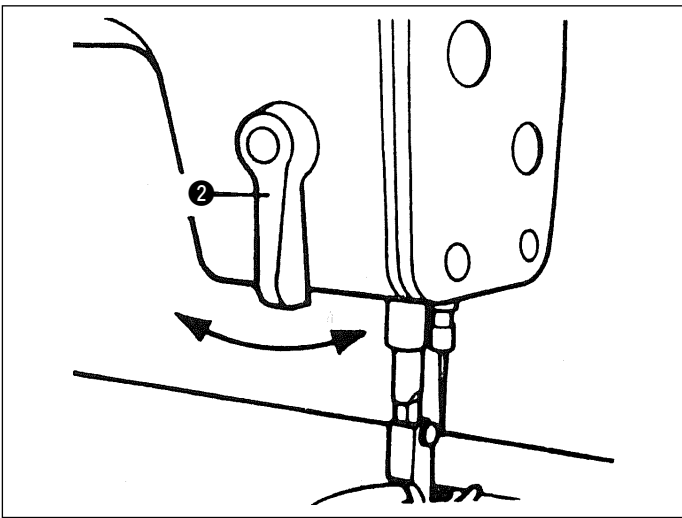


Pressure of the presser foot:

Adjust the presser spring regulator ① for a proper pressure:

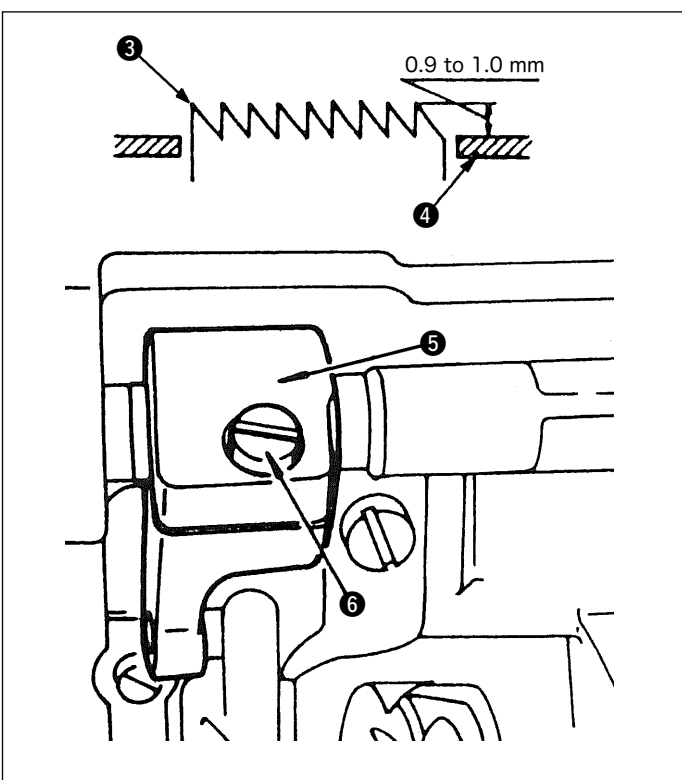
1. Turn in the clockwise direction for increasing the pressure.
2. Turn in the counterclockwise direction for reducing the pressure.

It is advisable to set it to about 39.2 N for general cloths.



Presser lifter

1. Turn the hand lifter ② behind the face plate to either left or right, and the presser foot will be lifted up.
2. The presser foot is held 5.5 mm above the throat plate.
3. Depress the knee lifter once, and the presser foot will be lowered to its working position.
4. When using the knee lifter, the presser foot will go up 12 mm above the throat plate.



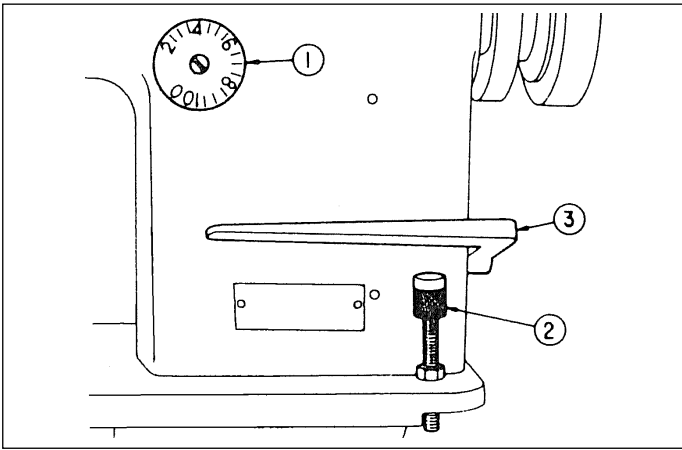
Height of the feed dog

The feed dog ③ has been adjusted before shipment to raise 0.9 to 1.0 mm above the top level of the throat plate ④.

For adjusting the height of the feed dog ③;

1. Loosen the screw ⑥ of the feed driving shaft crank ⑤.
2. Adjust the feed bar for a proper height by moving it up and down.
3. Securely tighten the screw ⑥.

11. STITCH LENGTH



The stitch length is adjustable with the stitch dial which is calibrated in mm.

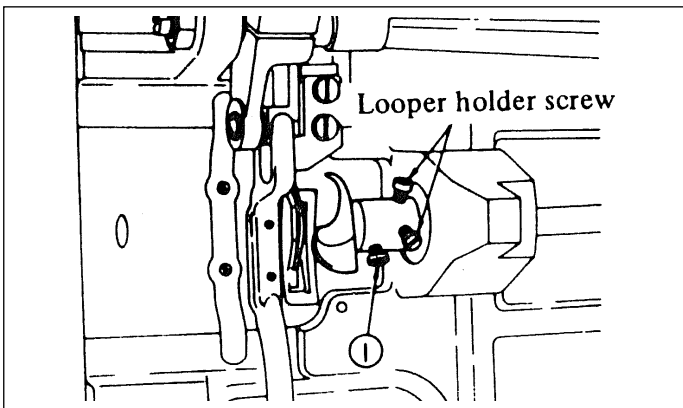
1. Rotate stitch dial ① in either direction and
 2. Set a desired length to the feed regulator stop pin on the machine arm.
- * The maximum stitch length is 10 mm.
 - * The stopper ② at the standard height blocks the reverse feed control lever ③ when the stitch length is set to "0".
Raise stopper ② by loosening its knurled head nut to block the feed control lever at a higher position, and a finer stitch will be produced in the normal feed.

12. HOW TO REMOVE THE LOOPER



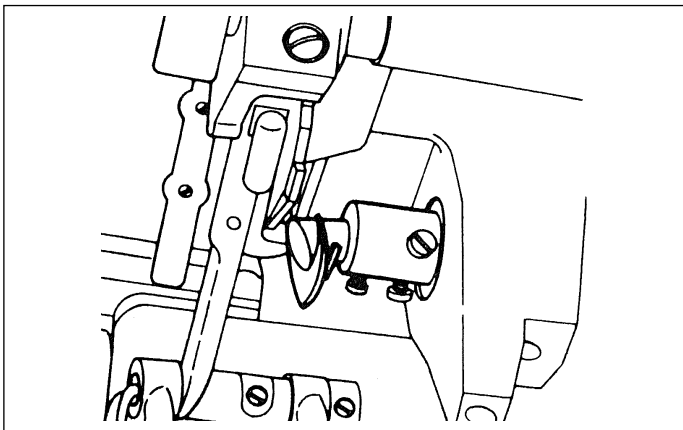
WARNING :

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.

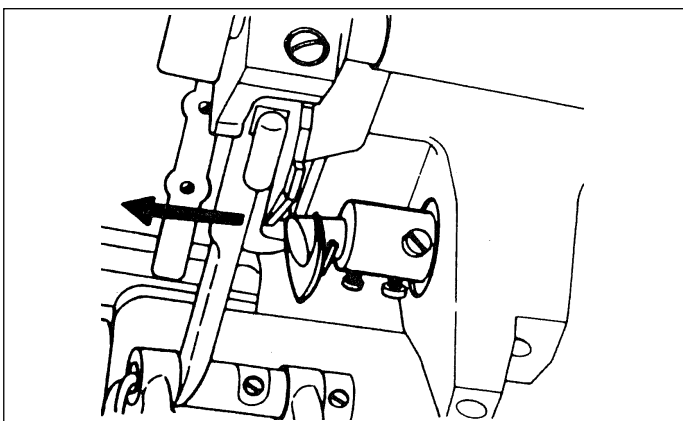


When the looper got entangled in the thread during operation or is to be replaced remove it in the following way;

1. Manually rotate the handwheel until it is positioned as illustrated.
2. Loosen looper setscrew ①.



3. Rotate the handwheel until it is positioned as illustrated.



4. Pull out the looper towards left (arrow direction).

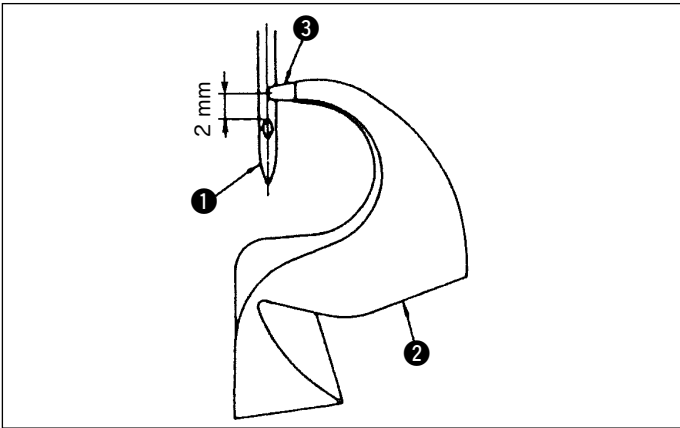
* Reverse the above procedure for attaching the looper.

13. RELATION BETWEEN THE NEEDLE AND THE LOOPER



WARNING :

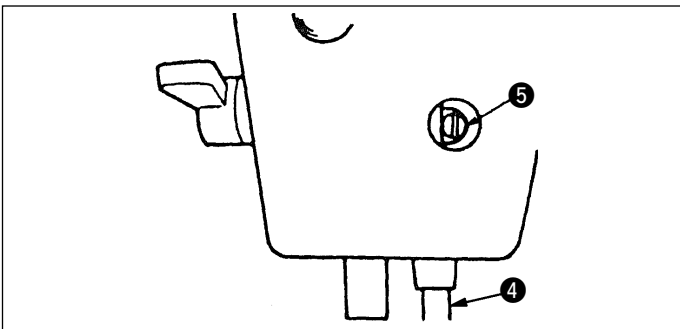
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



Standard position of the looper:

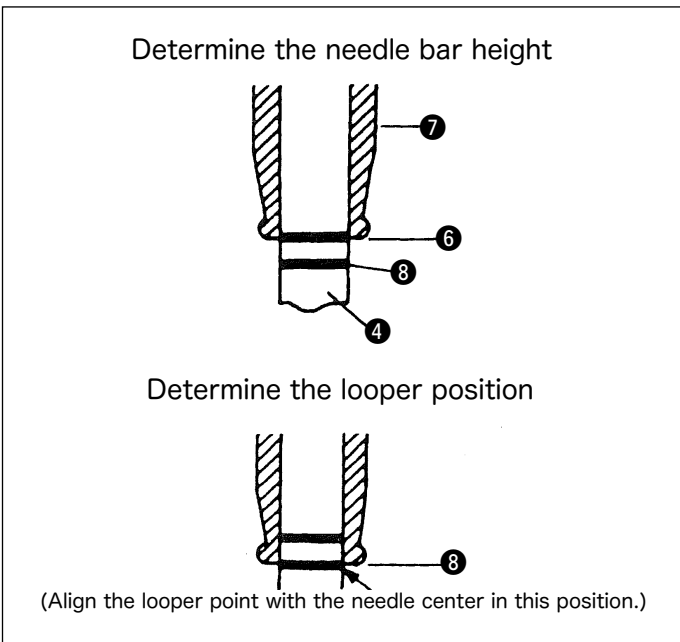
When the needle ① goes up 2 mm from its lowest position,

- 1) The looper point ③ must align with the needle ① center and
- 2) The looper point ③ must be 2 mm away from the top end of the needle eye.



Adjustment of the looper position:

1. Turn the handwheel until the needle bar ④ reaches its lowest position.
2. Loosen the needle bar connection screw ⑤.

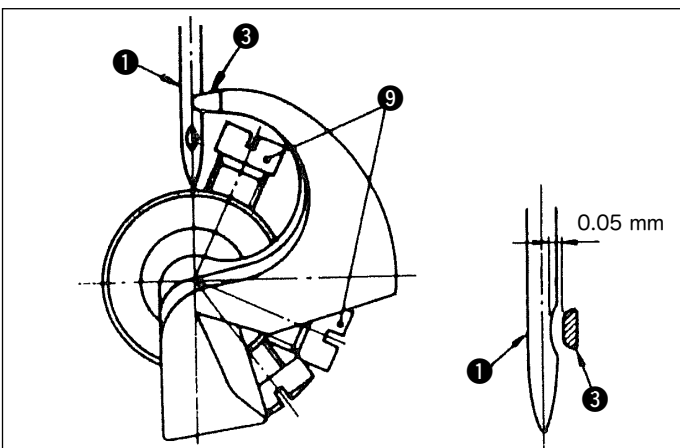


(Determine the needle bar height)

3. Align the upper mark line ⑥ of the needle bar ④ with the bottom end of the needle bar lower bushing ⑦.
4. Tighten the needle bar connection screw ⑤.

(Determine the looper position)

5. Loosen 2 setscrews of the looper holder (see above figure of last page) so that the looper ② can be rotated by hand.
6. By holding the looper ② with your fingers in the thread hooking position.
7. Turn the handwheel until the lower mark line ⑧ of the needle bar ④ aligns with the bottom end of the needle bar lower bushing ⑦.



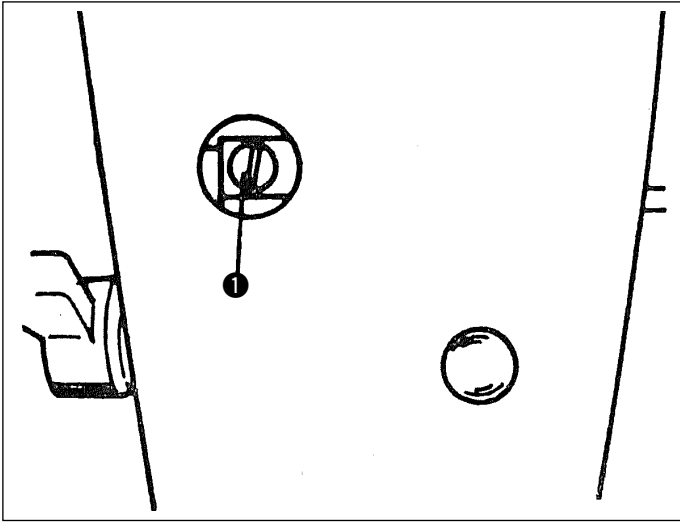
8. Align the looper point ③ with the needle ① center in this position.
9. Leave a clearance of 0.05 mm or less between the looper point ③ and the needle ①.
10. Securely tighten the looper holder screws ⑨.

14. HEIGHT OF THE PRESSER BAR



WARNING :

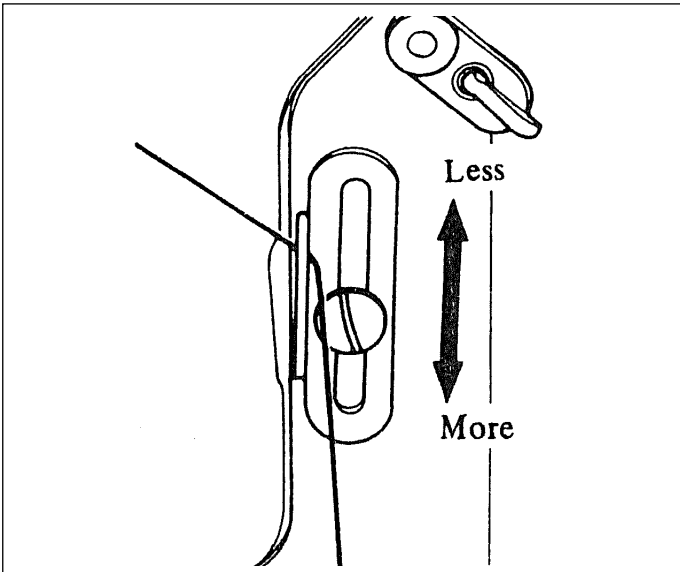
To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



After replacing a presser foot or when the presser bar height is changed, adjust the presser bar position as follows;

1. Loosen the clamp screw ❶ of the presser bar guide bracket by inserting a screw driver through the adjusting hole on the face plate,
2. Retighten the screw ❶ securely after positioning the presser bar.

15. LENGTH OF THE THREAD TAKEN UP BY THE THREAD TAKE-UP LEVER



In order to always produce perfect stitches, it is advisable to adjust the length of the thread taken up by the thread take-up lever according to each sewing condition like the type of material and the stitch length.

1. When sewing a heavy weight material slide the thread guide upward to shorten the thread.
2. When sewing a light weight material, slide the thread guide downward to lengthen the thread. This adjustment is also effective to prevent stitch-skipping.

16. MOTOR PULLEY AND SEWING SPEED

- 1) Use the 3-phase 200W 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
ML-111	1,700 sti/min	ϕ 67.4	4	50 Hz	1,430 rpm	ϕ 80
				60 Hz	1,715 rpm	ϕ 65
	1,800 sti/min			50 Hz	1,430 rpm	ϕ 85
				60 Hz	1,715 rpm	ϕ 70

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

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Please do not hesitate to contact our distributors or agents in your area for further information when necessary.
* **The description covered in this instruction manual is subject to change for improvement of the commodity without notice.**