



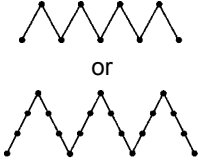
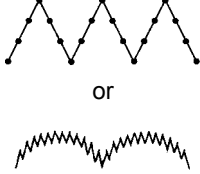
ENGLISH

**LZ-2280A Series
INSTRUCTION MANUAL**

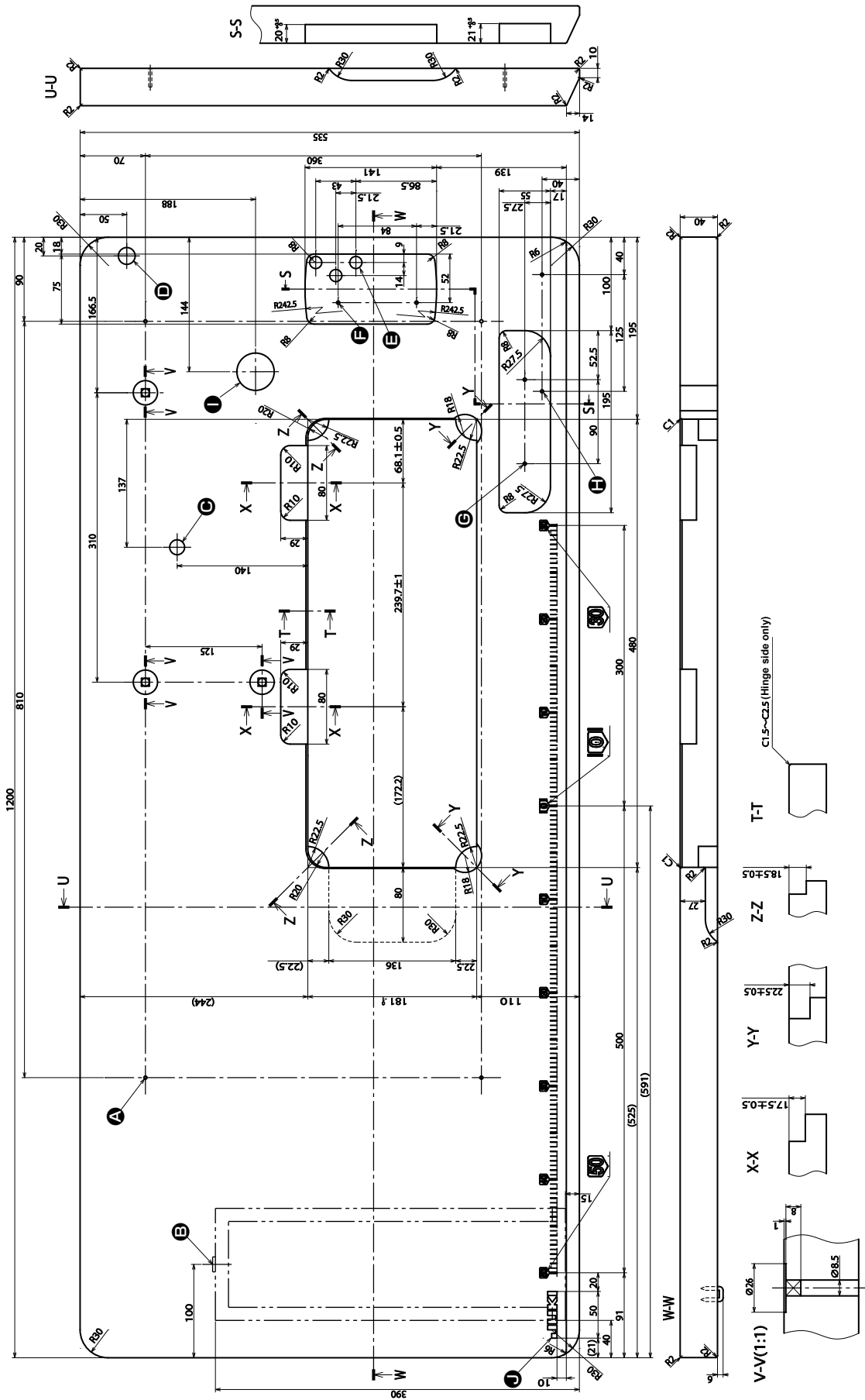
CONTENTS

1. SPECIFICATIONS	1
2. INSTALLATION	4
2-1. Installation of the sewing machine.....	4
2-2. Attaching the belt cover	4
2-3. Inserting the needle	5
2-4. Installing the control panel	6
3. PREPARATION OF THE SEWING MACHINE	6
3-1. Lubrication.....	6
3-2. Adjusting the amount of oil in the hook	7
3-3. Adjusting the amount of oil (oil splashes).....	8
3-4. Winding the bobbin thread.....	9
3-5. Inserting the bobbin case and the bobbin.....	10
3-6. Threading the machine head	11
3-7. Adjusting the pedal.....	11
4. ADJUSTING THE SEWING MACHINE	12
4-1. Adjusting the thread tension	12
4-2. Adjusting the zigzag width.....	13
4-3. Adjusting the pressure of the presser foot	14
4-4. Adjusting the height of the presser bar.....	14
4-5. Adjusting the micro-lifting mechanism of the presser foot.....	14
4-6. Adjusting the stitch length.....	15
4-7. Adjusting the denser stitching	15
4-8. Height and inclination of the feed dog.....	16
4-9. Attaching/removing the hook	16
4-10. Adjusting height of the needle bar	17
4-11. Adjusting the needle-to-hook timing and the needle guard.....	17
4-12. Adjusting the stop position of the needle.....	18
4-13. Adjusting the thread trimmer	19
4-14. Needle thread feeding device	20
4-15. Position of the wiper.....	20
5. OPERATION OF THE SEWING MACHINE	21
5-1. How to operate the pedal (In the case of the direct-drive type sewing machine).....	21
5-2. One-touch type reverse feed switch	21
5-3. Changing over the needle-throwing method.....	22
5-4. LED light	22
6. OPTIONAL	23
6-1. Pedal-operated reverse feed device (RF-1)	23
6-2. Joining foot for the lockstitch presser foot.....	23
6-3. Auxiliary thread take-up kit	23
7. MOTOR PULLEY AND BELT	24
8. TROUBLES AND CORRECTIVE MEASURES	25

1. SPECIFICATIONS

Model	LZ-2280A *		LZ-2284A *			LZ-2287A
Type of zigzag	Standard zigzag		Selectable between standard zigzag stitching and 3-step zigzag stitching			Selectable between 3-step zigzag stitching and 24-stitch standard scallop zigzag stitching
Motor-drive specification	V-belt		V-belt/ Direct drive	Direct drive	V-belt/ Direct drive	V-belt
Specification [* section]	A (Narrow width)	B (Wide width)	-	-7	T	-
Stitch diagram						
Max. zigzag width (mm)	5 [4 at the time of delivery]	8	3-step zigzag : 10 [8 at the time of delivery] Standard zigzag : 5 [5 at the time of delivery]			10 [8 at the time of delivery]
Max. feed pitch (mm)	2.5 (Normal/reverse feed) [2 at the time of delivery]	5 (Normal feed) 4 (Reverse feed)	2.5 (Normal/reverse feed) [2 at the time of delivery]			2.5 (Normal/reverse feed) [2 at the time of delivery]
Max. sewing speed (sti/min)	5,000		5,000 (3-step zigzag : Zigzag width = less or 8 mm) 4,000 (3-step zigzag : Zigzag width = more than 8 mm)			5,000 (Zigzag width = less or 8 mm) 4,000 (Zigzag width = more than 8 mm)
Needle	SCHMETZ 438SUK (Nm75) : Nm65 to 90, DP x 134 (#10) : #9 to 14					
Oil	JUKI CORPORATION GENUINE OIL 7					
Noise	- Equivalent continuous emission sound pressure level (L_{pA}) at the workstation: A-weighted value of 80 dB; (Includes K_{pA} = 2.5 dB); according to ISO 10821- C.6.2 - ISO 11204 GR2 at 4,500 sti/min.			- Equivalent continuous emission sound pressure level (L_{pA}) at the workstation: A-weighted value of 80 dB; (Includes K_{pA} = 2.5 dB); according to ISO 10821- C.6.2 - ISO 11204 GR2 at 4,400 sti/min. - Sound power level (L_{WA}); A-weighted value of 84.6 dB; (Includes K_{WA} = 2.5 dB); according to ISO 10821- C.6.2 - ISO 3744 GR2 at 4,500 sti/min.		

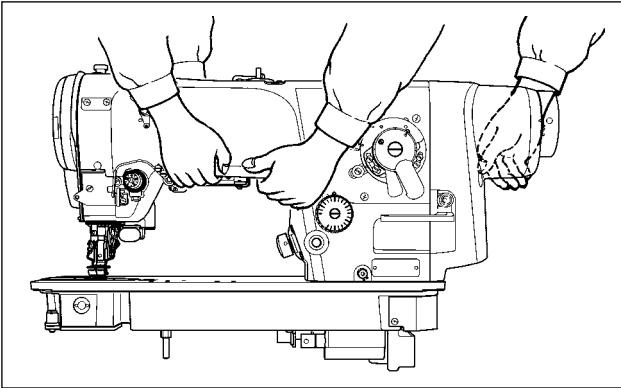
(2) For the direct-drive type



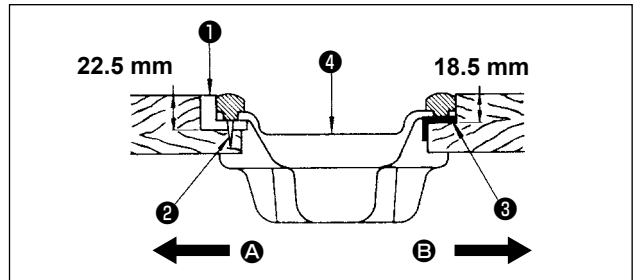
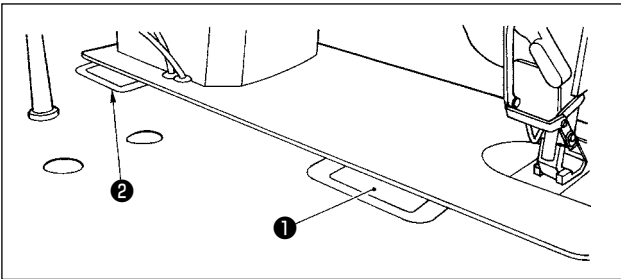
- Ⓐ 4×ø3.4 on the bottom surface, depth 20 (drill a hole at the time of set-up.)
- Ⓑ Installing position of drawer stopper (on the reverse side)
- Ⓒ ø16 depth 30
- Ⓓ ø18 drilled hole
- Ⓔ 3×ø13 drilled hole
- Ⓕ 2×ø3.5 depth 10
- Ⓖ 2×ø3.5 depth 10
- Ⓗ 2×ø3.4 on the bottom surface, depth 10 (drill a hole at the time of set-up.)
- Ⓚ ø40±0.5 drilled hole
- Ⓛ JUKI logotype

2. INSTALLATION

2-1. Installation of the sewing machine



- 1) Carry the sewing machine with two persons as shown in the figure.



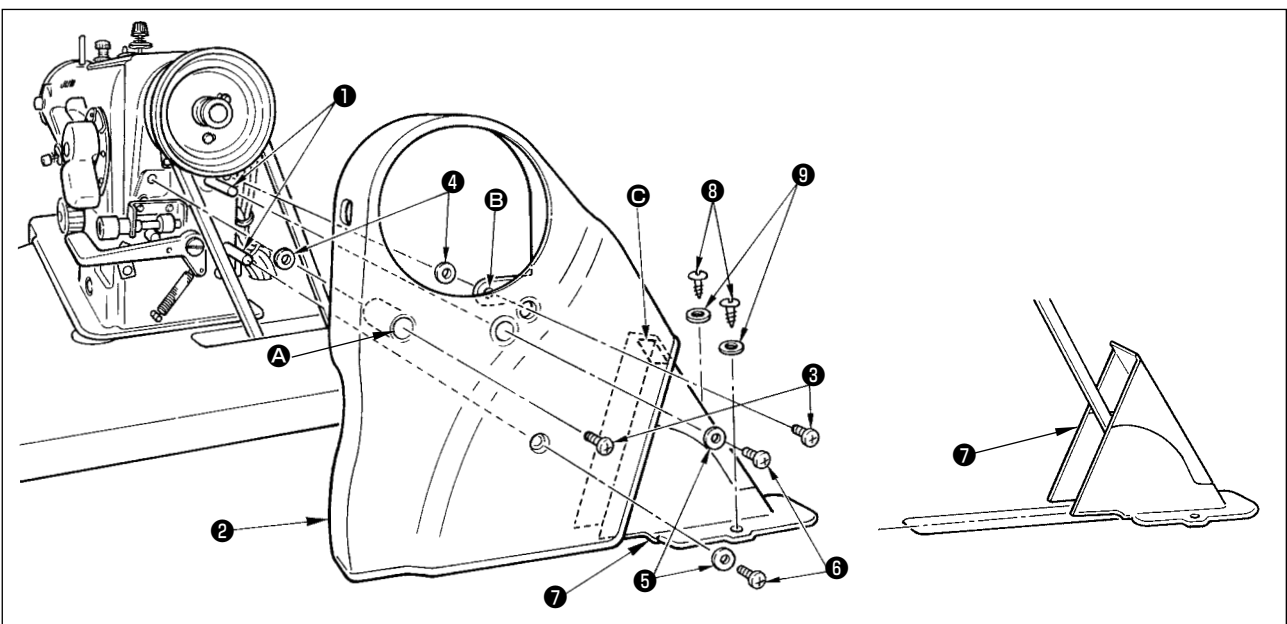
- 2) Attaching the oil pan
Hammer the nails ② on the two support rubber seats ① of the machine head on operators' side A of the protruding section of the table, and fix the two cushion seats ③ of the machine head on hinging side B with rubber adhesive agent. Now, put the oil pan ④ on the cushions.
- 3) Attaching the hinge
Fit the hinge ① in the hole in the bed and engage it with the rubber hinge ② of the table. Put the machine head down on the cushions located at the four corners.

2-2. Attaching the belt cover



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



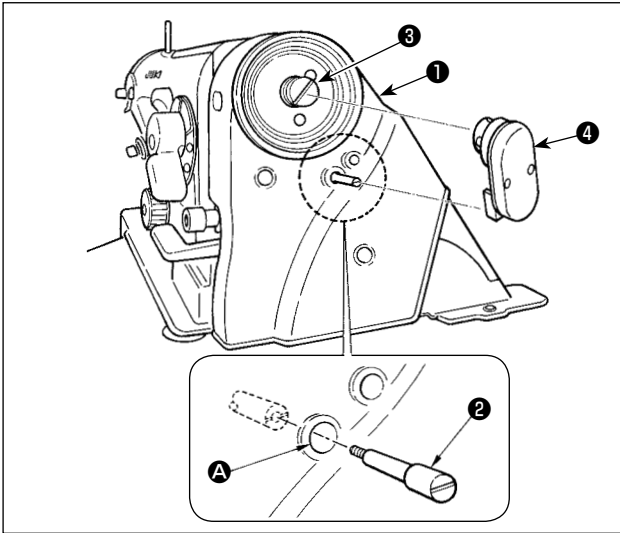
- 1) Securely attach two belt cover studs ① to the screw holes in the machine arm.
- 2) Put setscrews ③ in hole A of belt cover A ② and section B, and fix them with setscrew washers ④.
- 3) Attach belt cover A ② to the machine arm from the slanted rear side so that it covers the belt.

- 4) Fix setscrews ③ to the screw holes in the machine arm, and washers ⑤ and setscrews ⑥ to the belt cover supports.
- 5) Insert belt cover B asm. ⑦ from the rear of belt cover A ② and fix it at the position where rubber section ④ of belt cover B asm. ⑦ lightly comes in contact with the belt cover A. At this time, attach the belt cover B asm. at the position where the light and left sides are equal in terms of the long hole of the table with wood screw ⑧ and washer ⑨.

■ **In case of using a market-available needle positioner**

Adjust so that the needle always stops at the position higher than the cloth to make the sewing work very effective. In this case the needle positioner can be used.

Install the needle positioner in the manner as described below.



- 1) Install adapter ③ to the rear end section of the main shaft.
- 2) Loosen four setscrews in belt cover A ① and temporarily tighten them.
- 3) Remove the setscrew in hole A among the four setscrews and fix synchronizer support ② to the belt cover stud.
Then perform final tightening of the setscrews of the whole belt cover.
- 4) Attach the synchronizer ④ of the needle positioner as shown in the figure on the left.



If the commercially-available needle positioner is used, a separately-available exclusive part should be purchased.

- Synchronizer support ②
- Adapter ③

part No. : 22535462

1 pc

part No. : 40109125

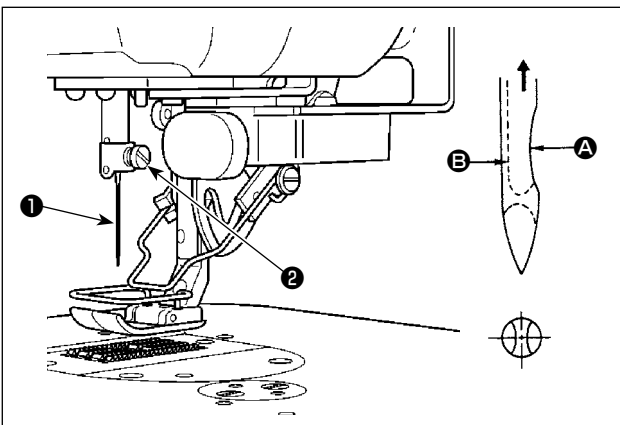
1 pc

2-3. Inserting the needle



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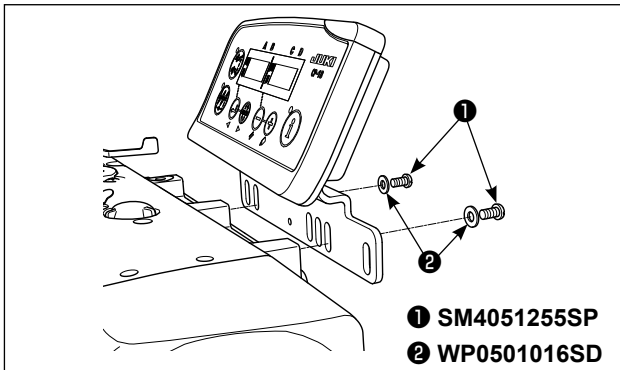
- 1) Turn the handwheel by hand to raise the needle bar to the highest point.
- 2) Loosen the needle clamp screw ②. Hold the needle ① so that the long groove B on the needle is facing exactly toward you.
- 3) Insert the needle deep into the hole of the needle bar in the direction of the arrow until it will go no further.
- 4) Securely tighten the screw ②.
- 5) Confirm that the long groove B on the needle faces toward you.

2-4. Installing the control panel



WARNING :

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In the case the sewing machine with a direct-drive motor is used, install the control panel to the sewing machine.

The control panel comes in four different types.

Panel	Part No.	Remarks
CP-18A	40088591	Simplified type
CP-180A	40088333	Multi-functional type
IT-10	40108380	Intelligent terminal (Simplified type)
IT-100	40108876	Intelligent terminal (Multi-functional type)

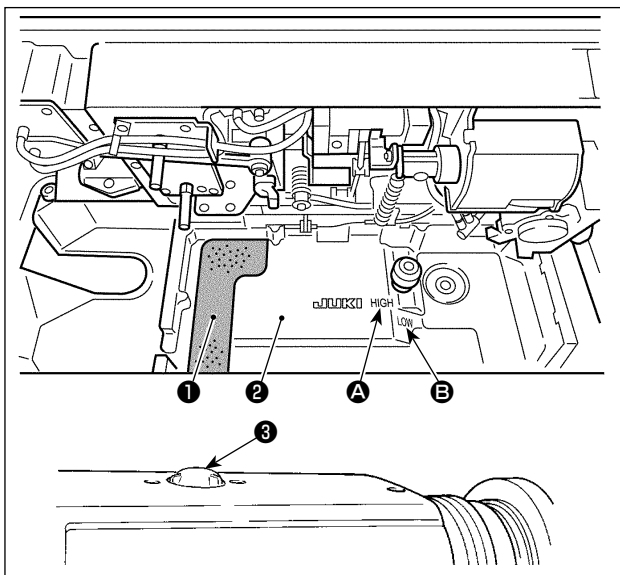
3. PREPARATION OF THE SEWING MACHINE

3-1. Lubrication



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) Put foamed polyurethane pad ① in the oil pan ②.
- 2) Fill the oil pan ② with JUKI CORPORATION GENUINE OIL 7 up to the level of "HIGH" mark ④.
- 3) Add the oil as soon as the oil level comes down to "LOW" mark ⑤ or lower.
- 4) Run the sewing machine after the lubrication. As long as the machine is lubricated normally, the oil splash is seen through the oil sight window ③. (The amount of splashing oil does not depend on the amount of oil.)

* If dust has gathered in the oil pan, remove it. When changing the sewing machine oil, squeeze urethane foam ① and remove dust from it.



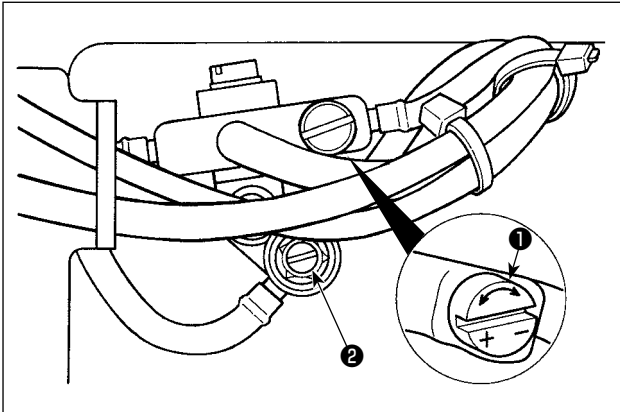
1. When using a new sewing machine for the first time or using the sewing machine which has not been used for a long time, run the sewing machine at a low speed (approximately 2,000 sti/min) for approximately ten minutes.
2. When the machine is continuously used at a low speed (2,000 sti/min or less), make the machine run idle at a high speed (4,000 sti/min or more) for approximately 5 minutes once a week.
3. Use clean oil and when the oil becomes dirty, replace it with clean oil as soon as possible. When you continue to use the machine with dirty oil, the trouble will be caused.

3-2. Adjusting the amount of oil in the hook



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



Tilt the machine head, and adjust the amount of oil in the hook by turning the oil amount adjustment screw ❶ mounted on the gear box B.

Turn the adjusting screw in the “+” direction (counter-clockwise) to increase the amount of oil in the hook.

Turn the adjusting screw in the “-” direction (clockwise) to decrease it.

1. After the adjustment, idle the sewing machine at the sewing speed to be used for sewing about 30 seconds. Then, check the oil quantity by comparing with the sample which shows the appropriate oil splash (marks).
2. When adjusting the amount of oil in the hook, perform the adjustment in a way of reducing the oil amount after somewhat increasing it.
3. The amount of oil in the hook has been adjusted at the max. sewing speed at the time of delivery. When you always use the sewing machine at low sewing speed, there is a possibility that trouble occurs due to the lack of amount of oil in the hook. When the sewing machine is used always at low sewing speed, perform the adjustment of the amount of oil in the hook.
4. There is a possibility of causing oil leakage from the hook shaft section since oil does not return to the oil tank when oil amount adjustment screw ❶ is used in fully-tightened state. Do not use the screw in fully-tightened state. In addition, when the amount of oil in the hook is not obtained unless oil amount adjustment screw ❶ is near in fully-tightened state, it is considered that hook shaft oil wick (JUKI Part No. 11015906) is clogged or the like. Replace the hook shaft oil wick.
5. Never adjust screw ❷ of the hook oil quantity adjusting valve since it is fixed.



3-3. Adjusting the amount of oil (oil splashes)

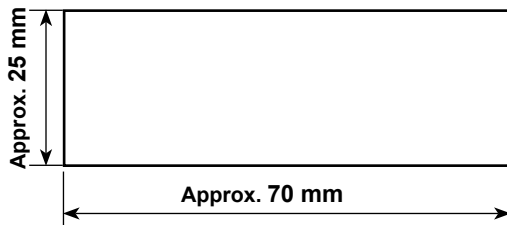


WARNING :

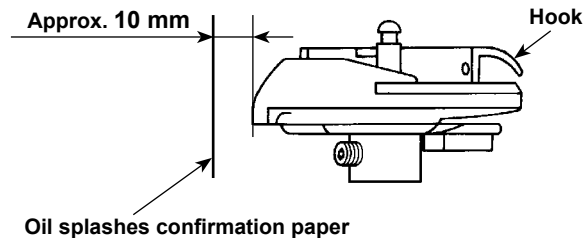
Be extremely careful about the operation of the machine since the amount of oil has to be checked by turning the hook at a high speed.

(1) Confirmation of the amount of oil in the hook

① Amount of oil (oil splashes) confirmation paper



② Position to confirm the amount of oil (oil splashes)

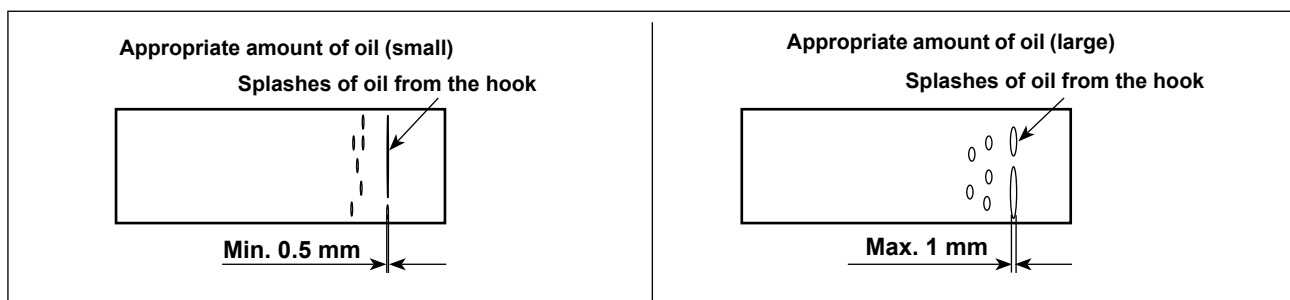


* Use any paper available regardless of the material.

* When carrying out the procedure described below in 1) and 2), confirm the state that the needle thread from the thread take-up lever to the needle and the bobbin thread are removed, the presser foot is lifted and the slide plate is removed. At this time, take extreme caution not to allow your fingers to come in contact with the hook.

- 1) If the machine has not been sufficiently warmed up for operation, make the machine run idle for approximately three minutes. (Moderate intermittent operation)
- 2) Place the amount of oil (oil spots) confirmation paper under the hook immediately after the machine stops running.
- 3) Confirm the height of the oil surface in the oil reservoir is within the range between "HIGH" and "LOW".
- 4) Confirmation of the amount of oil should be completed in five seconds. (Check the period of time with a watch.)

(2) Sample showing the appropriate amount of oil in the hook



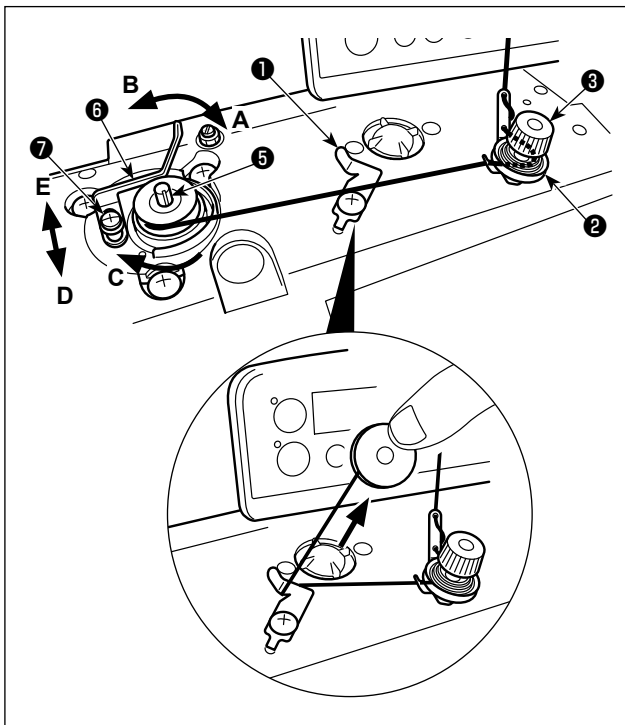
- 1) The amount of oil shown in the samples on the left should be finely adjusted in accordance with sewing processes.
Be careful not to excessively increase/decrease the amount of oil in the hook. (If the amount of oil is too small, the hook will be seized (the hook will be hot). If the amount of oil is too much, the sewing product may be stained with oil.)
- 2) Adjust the amount of oil in the hook so that the oil amount (oil splashes) should not change while checking the oil amount three times (on the three sheets of paper).

3-4. Winding the bobbin thread

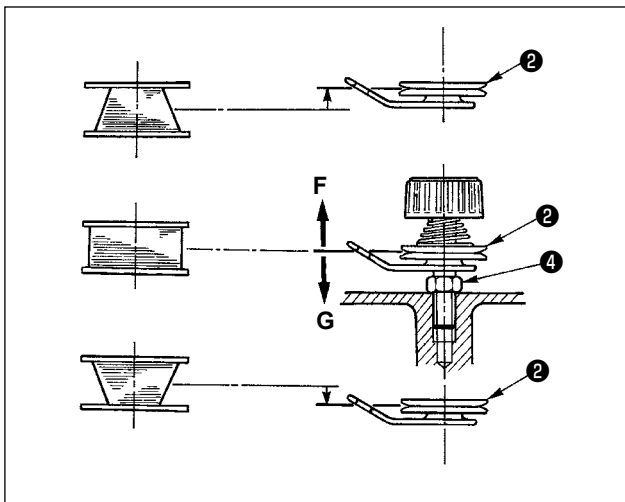


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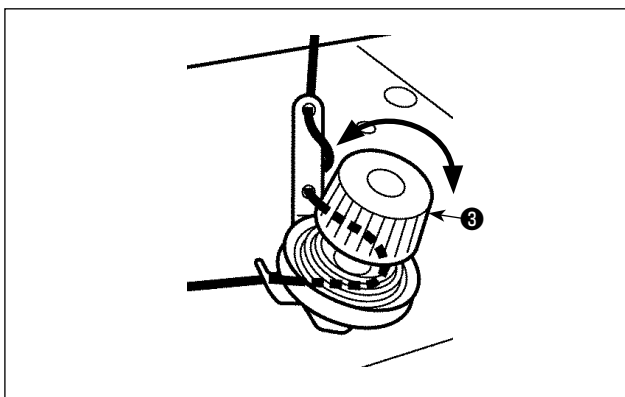


- 1) Insert the bobbin deep into the bobbin winder spindle ⑤ until it will go no further.
- 2) Pass the bobbin thread pulled out from the spool rested on the right side of the thread stand following the order as shown in the figure on the left. Then, wind the end of the bobbin thread on the bobbin several times.
- 3) Press the bobbin winder trip latch ⑥ in the direction of A and start the sewing machine. The bobbin rotates in the direction of C and the bobbin thread is wound up. The bobbin winder spindle ⑤ will automatically stop as soon as the winding is finished.
- 4) Remove the bobbin and cut the bobbin thread with the thread cut retainer ①.
- 5) To adjust the winding amount of the bobbin thread, loosen the setscrew ⑦ and move the bobbin winder trip latch ⑥ to the direction A or B. Then, tighten the setscrew ⑦.
To the direction D : Decrease
To the direction E : Increase



- 6) In case that the bobbin thread is not wound evenly on the bobbin, loosen the nut ④ and turn the bobbin thread tension to adjust the height of the thread tension disk ②.
 - It is the standard that the center of the bobbin is as high as the center of the thread tension disk ②.
 - Move the position of the thread tension disk ② to the direction F as shown in the figure on the left when the winding amount of the bobbin thread on the lower part of the bobbin is excessive and to the direction G as shown in the figure on the left when the winding amount of the bobbin thread on the upper part of the bobbin is excessive.

After the adjustment, tighten the nut ④.



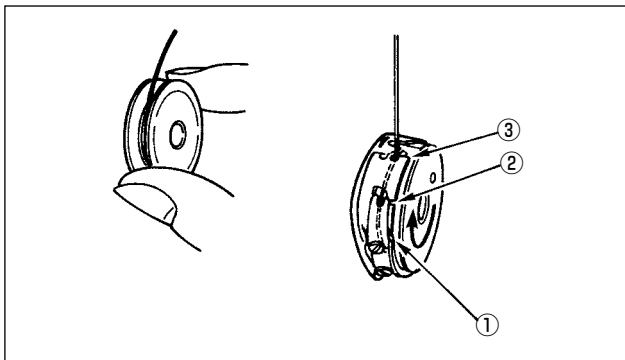
- 7) Turn the thread tension nut ③ to adjust the tension of the bobbin thread winder.

3-5. Inserting the bobbin case and the bobbin



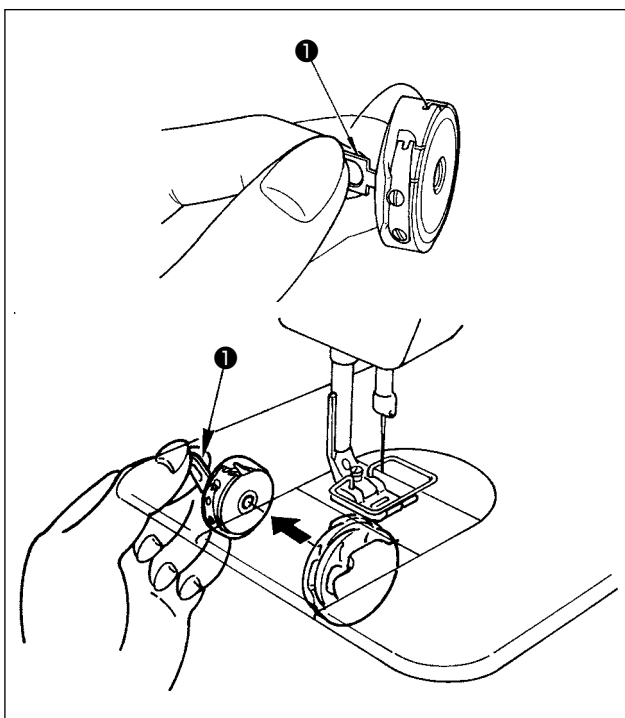
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Placing a bobbin into the bobbin case

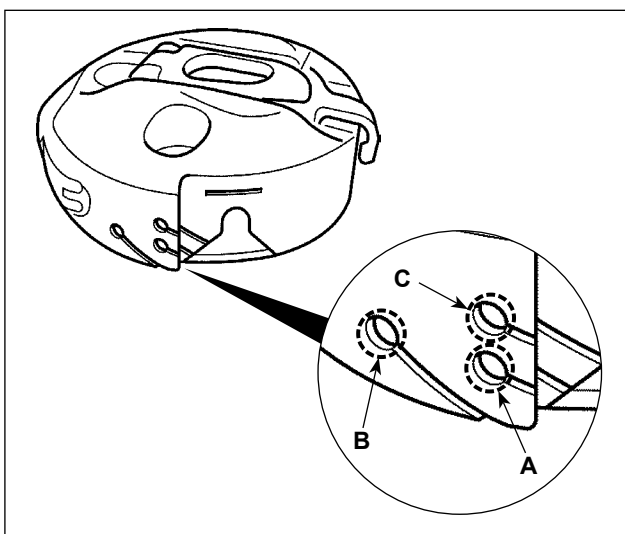
- 1) Take a bobbin by your right hand with the thread drawn out about 5 cm and place it into the bobbin case as illustrated.
- 2) Thread the bobbin case in the order of the numbers and pull it out through the thread path as illustrated.
- 3) When the bobbin is correctly loaded in the bobbin case, the bobbin rotates in the direction of the arrow when the thread is pulled.



Inserting and removing the bobbin case

- 1) Turn the handwheel by hand to raise the needle to the highest point.
- 2) Raise the bobbin case latch ① and hold it between your two fingers as shown in the figure on the left.
- 3) Insert the bobbin case as it is being held into the sewing hook shaft as far as it will go by putting your hand from the under of the oil reservoir.
- 4) Release the bobbin case latch to let it steadily rest in the closing position.

* Reverse the above procedures when removing the bobbin case.



How to use the bobbin case thread hole

- 1) For normal sewing, use hole **A**. To increase the thread tension when the needle throws to the left, use hole **B**. (Hole **C** is intended for special processes.)

There may be a case where several stitches at the start of sewing are difficult to be knotted when thread trimmer is used with thin filament thread such as (#50, #60 or #80) using hole **B**. At this time, use the other hole or perform the sewing starting from the right.

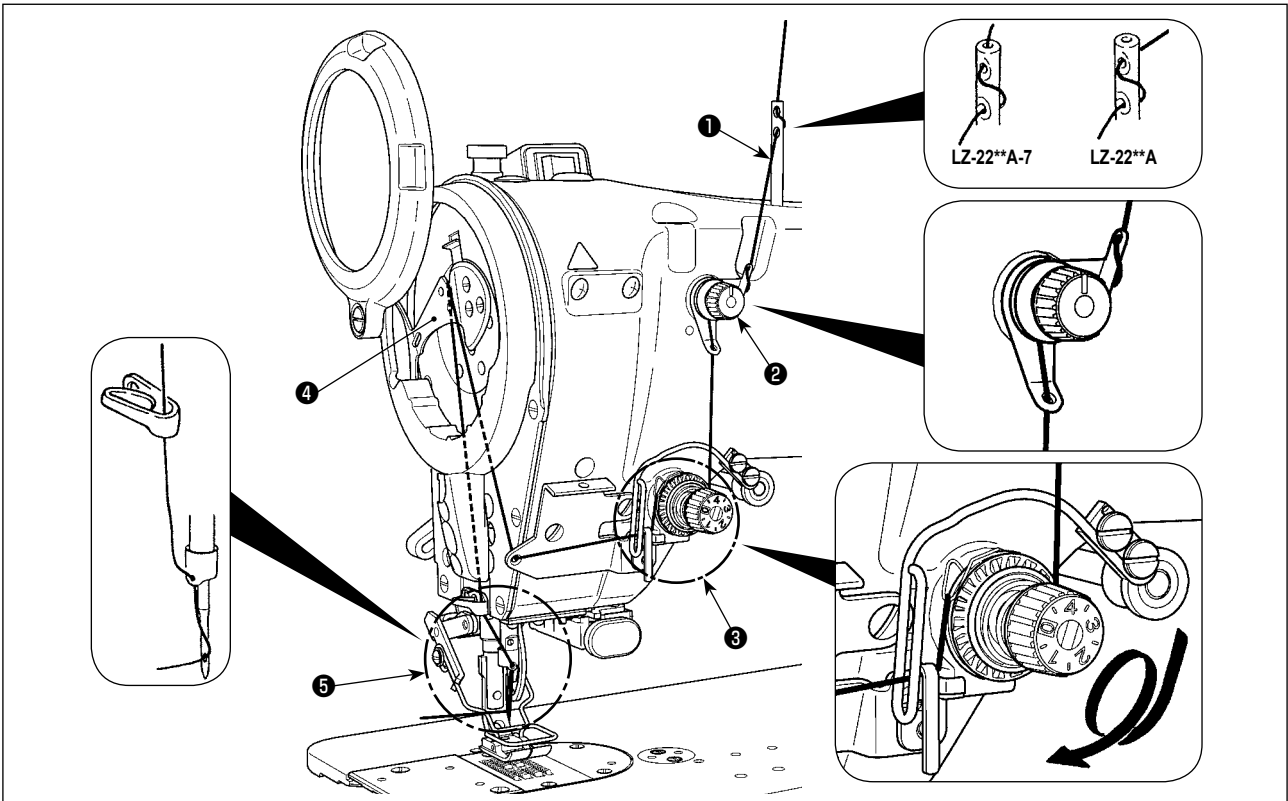


3-6. Threading the machine head



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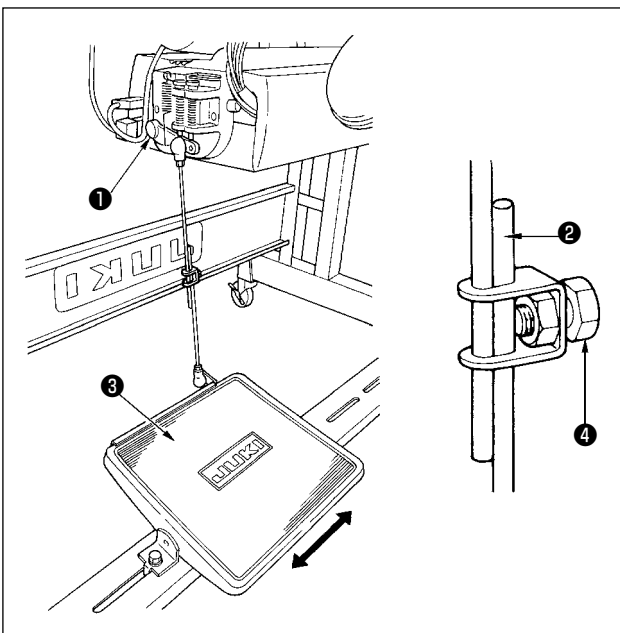
- 1) Turn the handwheel by hand to raise the needle to the highest point.
- 2) Pass the thread in the order of the numbers as illustrated.
- 3) Pull out the thread about 10 cm from the needle after passing it through the needle.

3-7. Adjusting the pedal



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(1) Attaching the connecting rod

- 1) Move the pedal adjusting plate **3** in the direction of the arrow to make the motor control lever **1** and the pedal connecting rod **2** straight.

(2) Inclination of the pedal

- 1) Inclination of the pedal can be adjusted by changing the length of the pedal connecting rod **2**.
- 2) Loosen the adjusting screw **4**, and move up or down the connecting rod **2** to change its length as desired.

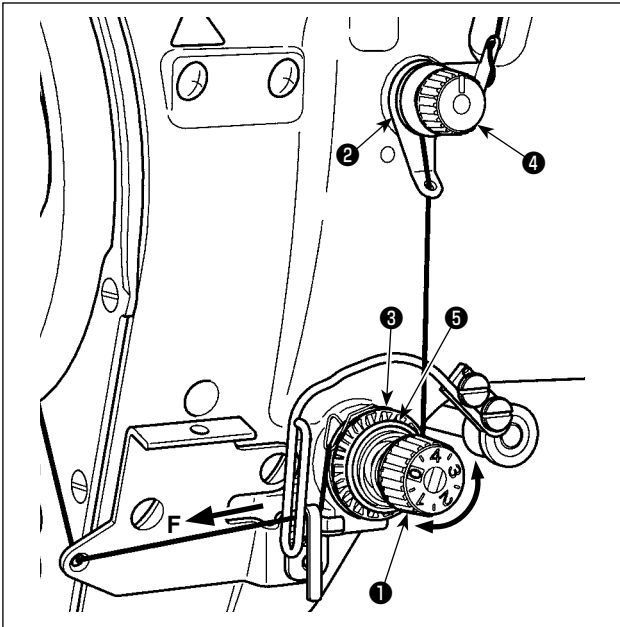
4. ADJUSTING THE SEWING MACHINE

4-1. Adjusting the thread tension

WARNING :



In case of thread-breakage, it may occur that the thread tangles on the thread take-up lever. In such a case, turn the power off, raise the thread take-up cover and remove the thread which has twined around the thread take-up. At this time, be extremely careful to protect your hand from being cut by the knife.



(1) Adjusting the needle thread tension

- 1) Adjust the needle thread tension using the tension nut **1**.

Turning the tension nut clockwise increases the needle thread tension, or counterclockwise decreases it.

1. If the thread tension of pre-tension **2** is too low, the thread may slip out of rotary disc **3**. Adjust the thread tension of the pre-tension, using pre-tension adjusting nut **4** taking care of tension balance between the pre-tension and the rotary disc.



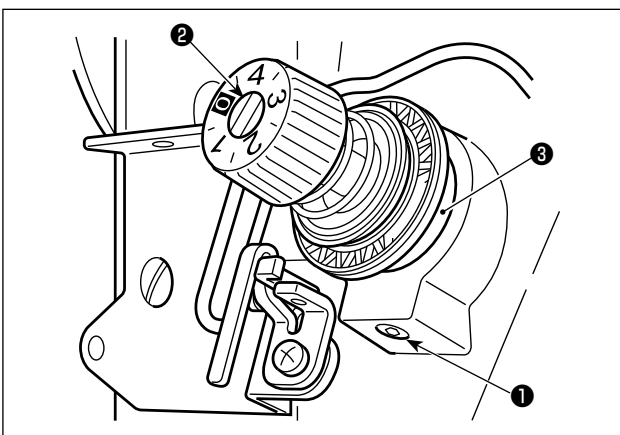
2. When setting the needle thread tension, draw the thread in the direction F to check that rotary disc **3** smoothly rotates with no slippage. If the rotary disk slips, tighten pretension adjusting nut **4**.

3. Thread tension disc felt **5** is a consumable part.



When rotary disc **3** slips, there is a possibility that the thread tension disc felt has been consumed. Replace the felt with new one (Part No. : 22528509 x 4 pcs.).

4. When thick thread (approximately #30 or lower) is used for needle thread, thread tension is apt to be insufficient with the rotary tension controller of the standard delivery. In this case, use the optional thread tension disk asm. (part No. : 40017095).



(2) Adjusting the thread take-up spring

- 1) To change the tension of the thread take-up spring, firmly tighten the screw **1** which fastens the tension post socket to the machine arm and insert the blade of a screwdriver into the slot in the tension post **2** to adjust the tension of the thread take-up spring.

Turn it clockwise to increase.

Turn it counterclockwise to decrease.

- 2) To change the amount of thread taken by the thread take-up spring, loosen the clamping screw **1** of the tension post socket and turn the tension post socket **3**.

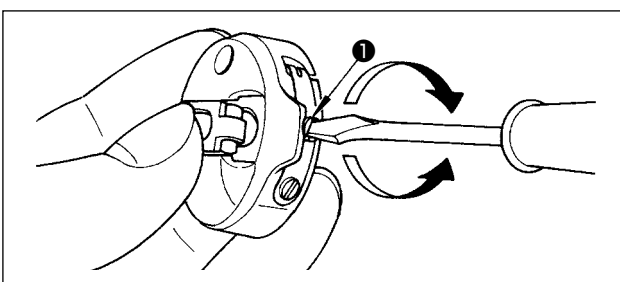
Adjustable range of the amount of thread taken by the thread take-up spring : 6 to 10 mm

(3) Adjusting the bobbin thread tension

- 1) The tension of the bobbin thread is adjusted by turning the tension adjusting screw **1**.

Turn it clockwise to increase.

Turn it counterclockwise to decrease.

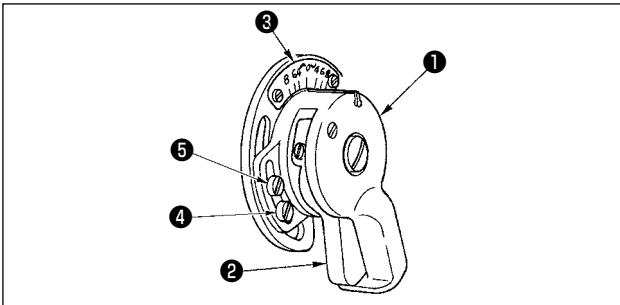


4-2. Adjusting the zigzag width



WARNING :

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(1) Adjusting the zigzag width

The zigzag width is adjusted by the knob ①.

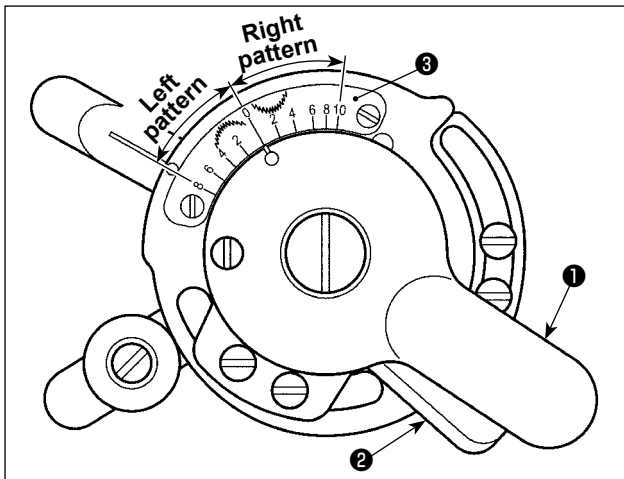
- 1) Push the lever ② with your finger.
- 2) Turn the knob as you are pushing the lever and set the pointing line to a desired zigzag width which is indicated by the zigzag width scale ③ in mm.
- 3) Release the lever, and the knob will be locked up in the given position.

- * For the LZ-2284A and -2287A, the needle throwing width has been factory-set to 8 mm at the time of shipment. It should be noted, however, the needle throwing width can be increased to 10 mm at the maximum by changing the throat plate and feed dog and changing the location of stopper screws ④ and ⑤. In this case, adjust the height of the needle bar so that the blade point of the hook passes the upper end of the needle eyelet when the needle throws to the leftmost end of its zigzag stroke. In the case the needle throwing width exceeds 8 mm, however, the sewing machine should be operated at 4,000 sti/min or less.

Presser foot	22580369
Throat plate	10041010
Feed dog	10047017



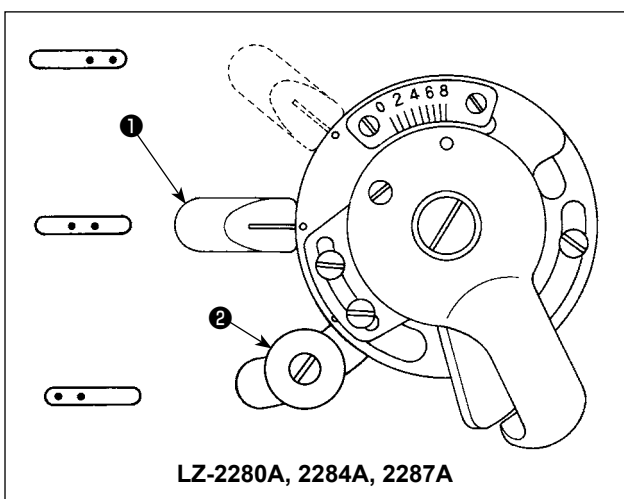
1. Take care not to tighten the screws ④ and ⑤ too firm causing the breakage of the knob ①.
2. For the LZ-2284A, the maximum needle throwing width of the standard zigzag stitching is 5 mm.
3. It is necessary to bring the needle bar to its upper stop position to carry out adjustment of the needle throwing width. Turn the handwheel by hand to check that the needle does not interfere with the presser foot.



(2) Pattern inversion adjustment

- * In the case the LZ-2287A is used for sewing a scallop pattern, the pattern can be inverted. Normally, the right pattern is sewn.

- 1) Push the lever ② with your finger.
- 2) Turn the knob as you are pushing the lever and set the pointing line to a desired zigzag width which is indicated by the zigzag width scale ③ in mm.
- 3) Release the lever, and the knob will be locked up in the given position.



(3) Adjusting the needle position

- * JUKI models LZ-2280A, -2284A and -2287A have the needle position changing lever by which the needle position can be changed as desired.

To change the needle entry point, move needle position changing lever ① as shown in the figure.

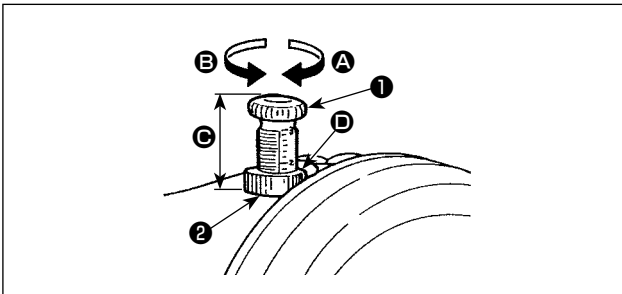
For the LZ-2284A, loosen screw ② and move needle position changing lever ① to adjust the needle entry point. After the adjustment, tighten screw ②.

4-3. Adjusting the pressure of the presser foot



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



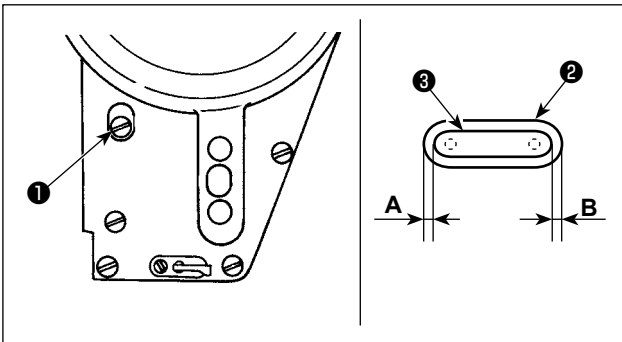
- 1) Turn the presser spring regulator ❶ clockwise **A** to increase the pressure given by the presser foot.
 - 2) Turn the presser spring regulator counterclockwise **B** to decrease it.
- * Height **C** of the presser spring regulator ❶ can be measured by reading the scale mark of presser spring regulator ❶ on top surface **D** of nut **E**. Use the measurement for the management of sewing processes, etc.

4-4. Adjusting the height of the presser bar



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) Adjust the height of the needle bar by loosening presser bar bracket setscrew ❶ when adjustment is necessary.
- 2) After the adjustment, securely tighten the screw.

In order to prevent the needle breakage due to interference between the needle and the presser foot, adjust so that the clearance between needle hole ❸ in the presser foot and needle hole ❸ in the throat plate is equal at both sides (A = B). Then, tighten setscrew ❶.

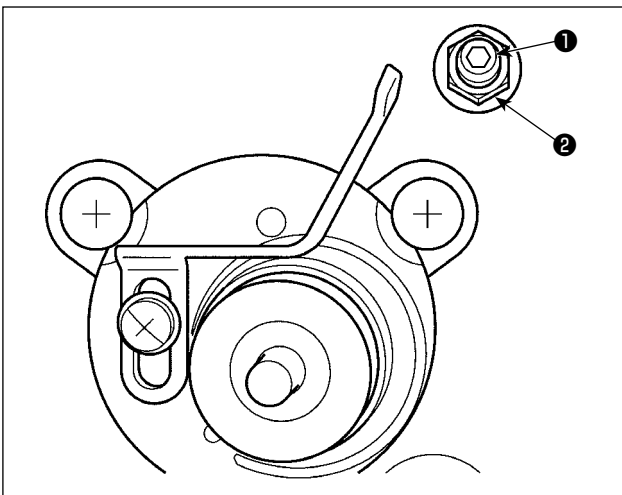


4-5. Adjusting the micro-lifting mechanism of the presser foot



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



Some type of material needs to be sewn with the presser foot slightly lifted.

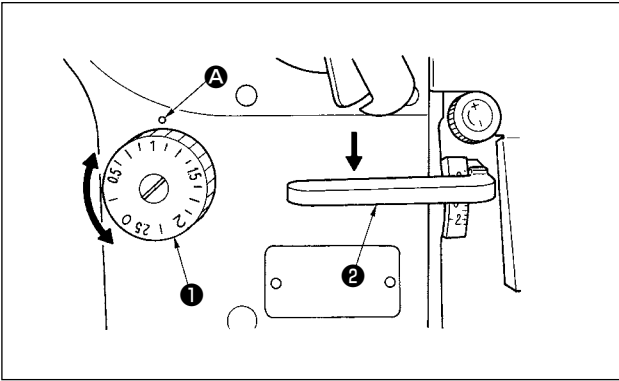
In this case, perform this adjustment following the procedure described below.

- 1) Loosen nut ❷. Turn the micro-lifter floating amount by turning the micro-lifter floating screw ❶.
- 2) Turn presser foot floating screw ❶ clockwise until the presser foot goes up by the required amount. Then, tighten nut ❷ to fix the presser foot.

If you do not use the micro-lifting mechanism of the presser foot, fully return the presser foot micro-lifting screw ❶ to its home position. The standard of lifting amount of the presser foot is as thick as a sheet of paper.



4-6. Adjusting the stitch length

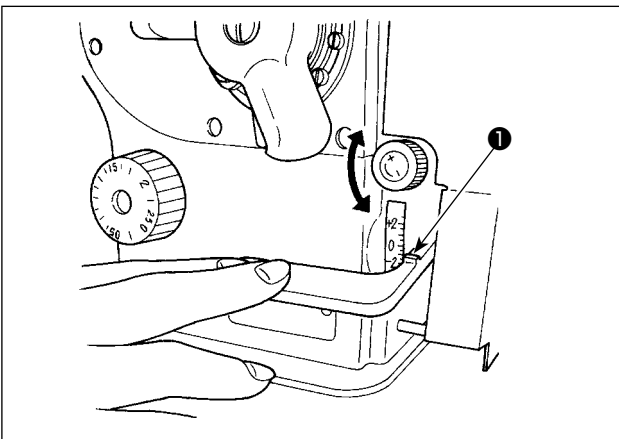


- 1) Turn the stitch length dial ❶ in the direction of the arrow so that the number corresponding to the desired stitch length meets the marker dot ❷ engraved on the machine arm.
- 2) Numbers on the stitch length dial are calibrated in “mm”.
- 3) To change the stitch length from a larger value to a small value, turn the stitch length dial ❶ while pressing the feed lever ❷ in the direction of the arrow.

To perform reverse feed stitching, press down the feed lever ❷. The sewing machine performs reverse feed stitching as long as you keep the feed lever held pressed. The feed lever will return to its home position and the sewing machine will run in the normal stitching direction when you release the feed lever.

- * The graduations on the dial are mere reference. So, adjust the denser stitching while actually observing the finished seam.

4-7. Adjusting the denser stitching



Stitch length can be reduced at the start or end of sewing. This feature is used for fastening stitch.

- 1) Feed lever is moved by turning the dial while keeping the feed lever held depressed. Adjust the stitch pitch for condensation stitching while observing the scale mark which aligns with marker line ❶ on the top surface of the lever.
- 2) Turn the dial in the “+” direction to reduce the reverse feed stitch length (i.e. the feeding direction gradually changes to the normal one). “+2” means “normal feed stitch length is 2 mm” and “-2” means “reverse feed stitch length is 2 mm”.
- 3) The denser stitching can be adjusted under the normal stitching mode (when the one-touch type reverse feed switch is actuated, the feed will not move in the reverse direction but the normal feed stitch length will be reduced).

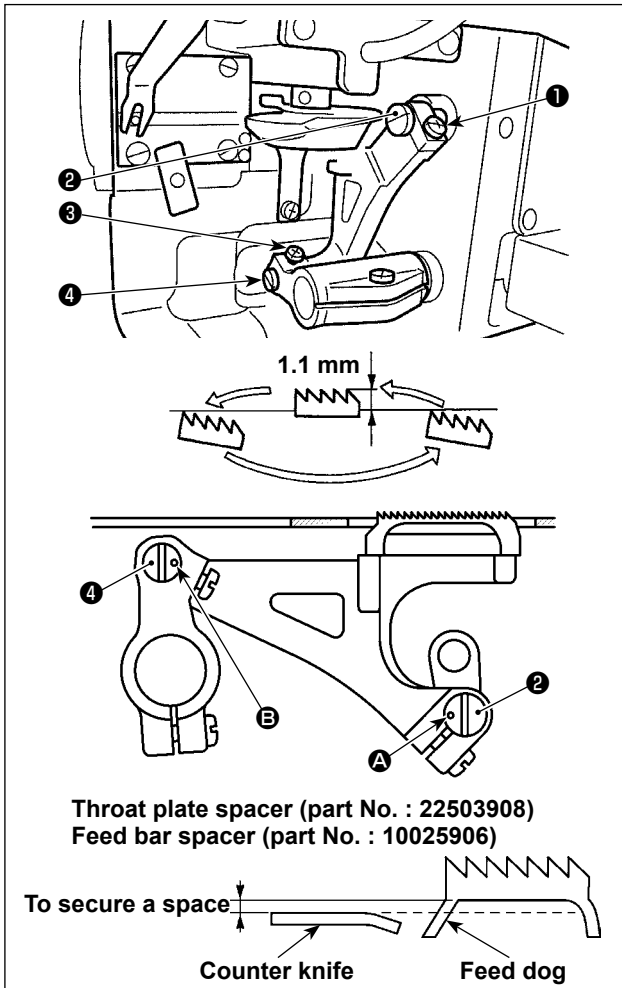
- * For the LZ-2280AB, +5 means “forward feed by 5 mm” and -4 means “reverse feed by 4 mm”.

4-8. Height and inclination of the feed dog



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



(1) Height of the feed dog

- 1) To adjust the height of the feed dog, loosen the screw ① and turn the feed driving link shaft ② using a screwdriver.
- 2) The standard height of the feed dog is 1.1 mm. (Reference) Marker dot A on feed driving link shaft ② and marker dot B on feed bar shaft ④ should respectively face inward.
- 3) To adjust the inclination of the feed dog, loosen the screw ③ and turn the feed bar shaft ④ inserting a screwdriver through the adjustment hole in the machine bed.
- 4) For the machine with a thread trimmer, there can be no space between the counter knife and the underside of the feed dog when adjusting the feed mechanism (change in height and timing) or using a commercially-available feed dog. In this case, place a feed bar spacer (part number : 10025906) under the feed mechanism and a throat plate spacer (part number : 22503908) under the throat plate so as to secure a space between the counter knife and the underside of the feed dog.

(2) Inclination of the feed dog

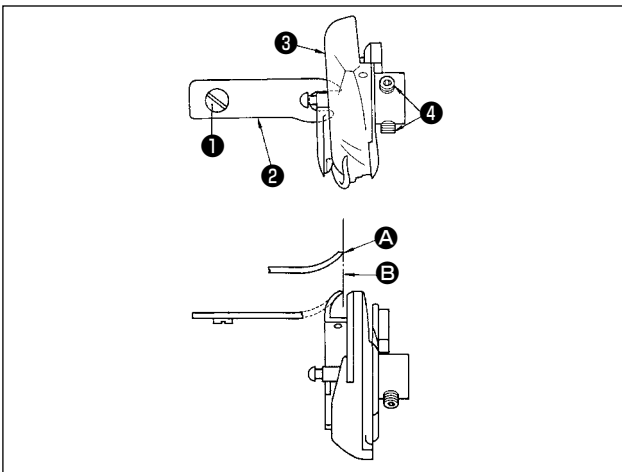
The standard inclination of the feed dog is obtained by adjusting so that the feed dog becomes level when the feed dog reaches its highest position.

4-9. Attaching/removing the hook



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



When you replace the sewing hook, remove it in the following procedures;

- 1) Turn the handwheel until the needle reaches to its highest position.
 - 2) Remove the needle, presser foot, throat plate, feed dog and bobbin case from the machine.
 - 3) Remove the setscrew ① and take out the bobbin case positioning finger ②.
 - 4) Loosen the two screws ④ and remove the sewing hook ③.
- * Reverse the above procedures when inserting the sewing hook.
At this time, make sure that top end A of the bobbin case positioning finger is aligned with line B as shown in the figure on the left. Never let A protrude from line B.



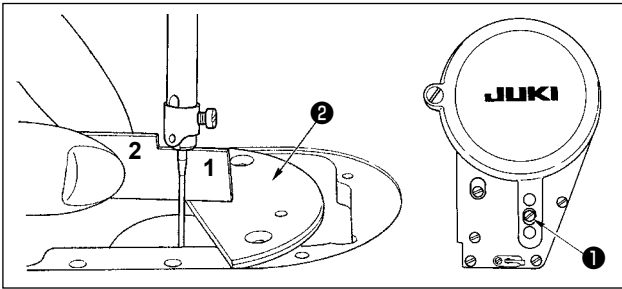
The hook is exclusively designed to the LZ-2280A Series model of sewing machine. When placing an order for the hook in case of replacement or the like, designate it with its part number. Hook: 22525877

4-10. Adjusting height of the needle bar



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) Set the zigzag width to "0". Bring the needle to the center of the zigzag stroke.
- 2) Remove the presser foot, throat plate, semicircle plate ② and feed dog.
- 3) Place half-moon shaped plate ② on the throat-plate installing surface of the bed. Loosen set-screw ①. Adjust so that the distance from the top surface of the half-moon shaped plate ② to the bottom end of the needle bar equals to the height of timing gauge 1.



1. Thickness of the semicircle plate ② is different from that of the throat plate. So, be sure to use the semicircle plate ② when adjusting the height of the needle bar.

Be sure to perform the adjustment with zigzag width set to zero and with the needle positioned at the center of the zigzag stroke.

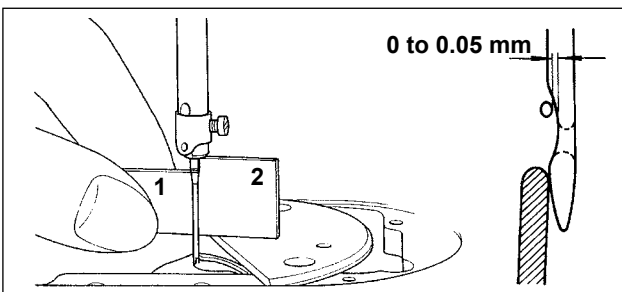
2. For the LZ-2280AA, timing gauge D should be used.
For the LZ-2280AB, -2284A* and -2287A, timing gauge E should be used.

4-11. Adjusting the needle-to-hook timing and the needle guard



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



(1) Positioning the hook

- 1) After the completion of the adjustment of the needle bar height, adjust the hook using timing gauge 2 so that the blade point of the hook is aligned with the center of the needle.
- 2) At this time, the blade point of the hook should slightly come in contact with the needle when the needle guard does not touch the needle.

(2) Confirmation

In the case of the maximum needle throwing width (adjustment at the time of shipment: LZ-2280AA: 4 mm; Other models: 8 mm), check to be sure that the distance from the top end of the needle eyelet to the blade point of the hook is 0.2 to 0.5 mm while the needle throws to the left.

- * If the zigzag width of 10 mm is used or the shape of indented part of the needle is different from that of indented part of the needle at the time of delivery, re-adjust the height of the needle bar.

(3) Adjusting the needle guard

- 1) Maximize the zigzag width. Bend the needle guard to adjust so that the needle does not come in contact with the blade point of the both at the leftmost and rightmost positions of the zigzag stroke. At this time, adjust the clearance provided between the needle and the blade point of the hook to 0 to 0.05 mm.
- 2) The needle guard functions to keep the needle away from the blade point of the hook, thereby preventing damage to the blade point of the hook. Whenever you have replaced the hook with a new one, be sure to adjust the position of the needle guard.



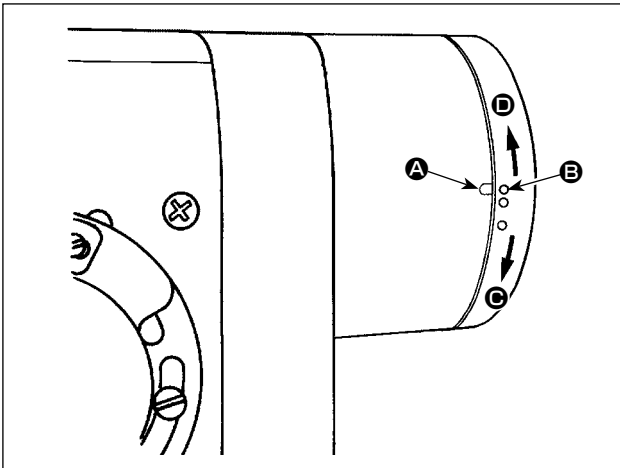
When thread breakage has occurred, there is a case where thread is caught in the hook. Be sure to perform sewing after removing the thread caught in the hook.

4-12. Adjusting the stop position of the needle

WARNING :



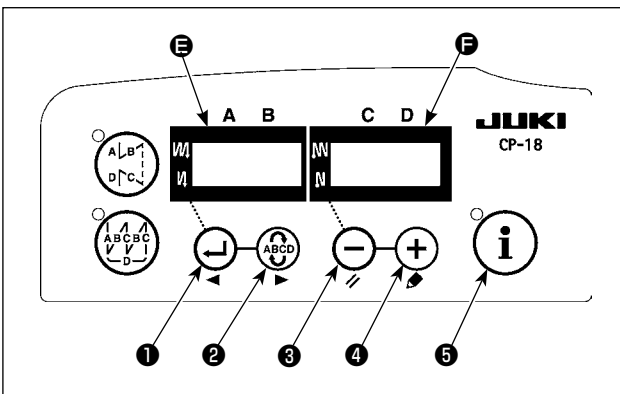
1. Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.
2. Do not perform switch operations other than those described in the following explanations.
3. Be sure to re-turn the power switch ON after one second or more has passed. If the power is turned ON immediately after turning it OFF, the sewing machine may not work normally. In this case, turn ON the power again.



(1) Stop position after thread trimming

- 1) The standard needle stop position is obtained by aligning marker dot **A** on the pulley cover with white marker dot **B** on the handwheel.

* For the details, refer to the Instruction Manual for the control box together.



(2) Adjusting procedure of the needle up/down stop position

* When the panel other than CP-18 is used, refer to the explanation of each panel.

- 1) Turn OFF the power to the machine.
- 2) Turn the power ON while pushing the switch **5** on the operation panel.
- 3) The screen display **E** indicates the setting No. 96 and **F** indicates the sewing speed. (When the screen display is not changed, operate again steps 1) and 2).

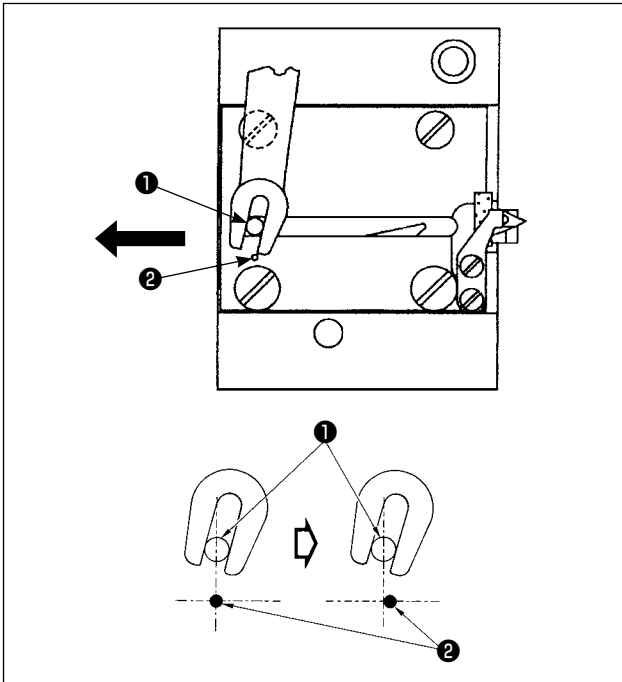
- 4) Update the setting No. by switch **1** or switch **2**.
Setting No. 121 : Needle UP stop position
Setting No. 122 : Needle DOWN stop position
- 5) Specify the setting contents **F** within the range of -15 to 15 with switch **3** or switch **4**.
(Standard is "0". The numeric of set value indicates the approximate rotating angle. (When the numeric is set to the "+" direction, the needle UP stop position is lowered. (Direction **C**)
When the numeric is set to "-" direction, the needle UP stop position is raised. (Direction **D**))
- 6) After completion of the setting, press switch **1** or switch **2** to determine the updated value. (When turning OFF the power to the machine before performing this work, the contents are not updated.)
- 7) After completion of the operation, turn OFF the power to the machine. The normal operation can be performed by turning ON the power to the machine again.

4-13. Adjusting the thread trimmer



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



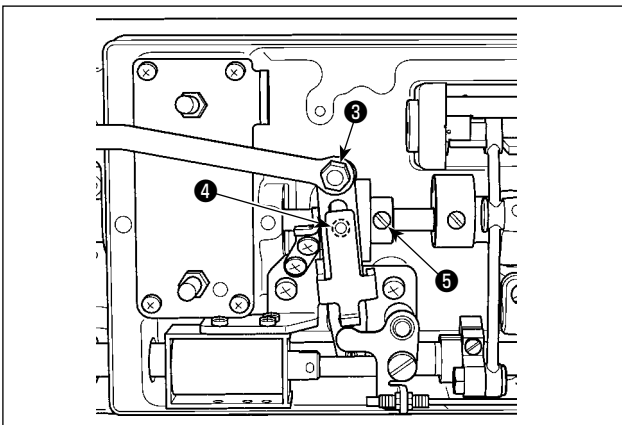
(1) Initial position of the moving knife

When the moving knife is in its initial position, the moving knife pin ① should be aligned with the engraved marker dot ② as shown in the figure on the left.

1. When the gauge size which is more than that delivered as standard or the gauge size of other manufactures is used, and the counter knife interferes with the feed dog, loosen nut ③, move the initial position of moving knife pin ① to the left from engraved maker dot ② by approximately one half of engraved marker dot ② and fix the pin.

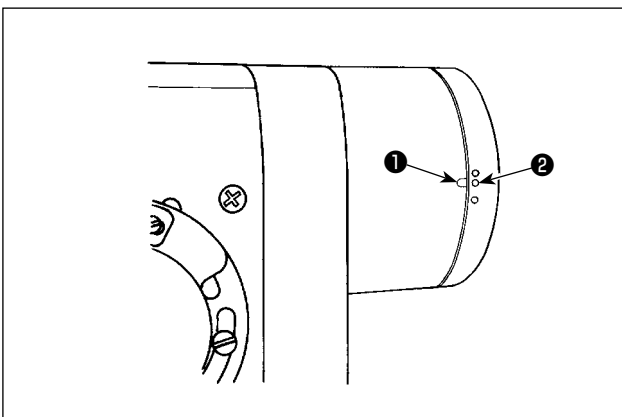


2. Guarantee of the sharpness of the thread trimmer knife unit is #80 to #50. When using thick threads thicker than these Nos., replace the knife with thread trimmer knife unit for thick thread (Part No. : 22556054).



If the initial position of the moving knife is not correct

Loosen the nut ③, and move the moving knife to the right or left until the pin ① meets the marker dot ②. Then, tighten the nut ③.



(2) Adjusting the thread trimming timing

Put the roller ④ in the cam groove. Now, gradually turn the handwheel in the reverse direction. The handwheel will go no further when the marker dot ① engraved on the pulley cover is aligned with the green marker dot ② engraved on the handwheel.

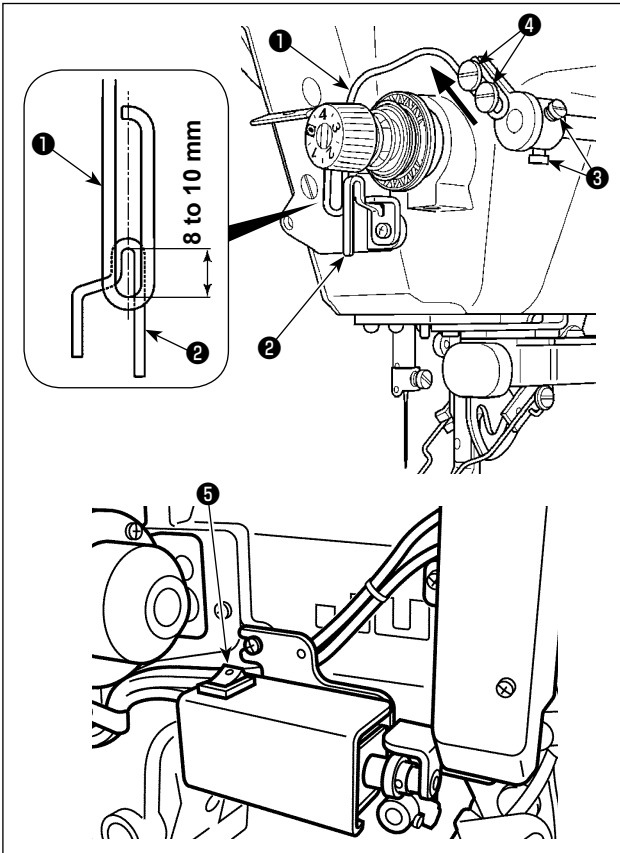
To adjust the thread trimming cam, align the green marker dot on the pulley cover with the red marker dot on the handwheel, put the roller in the groove of the thread trimming cam, and turn the handwheel in the direction opposite to the direction of rotation of the hook driving shaft until it will go no further. Now, tighten the two screws ⑤.

4-14. Needle thread feeding device



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



(1) Position of the feeding wire

Adjust the installing position of the feeding wire ① so that a distance of 8 to 10 mm is provided between the guide portion ② of the thread guide and the top end of the wire. Then, tighten the two screws ③.



At this time, adjust the longitudinal position of thread draw-out wire ① so that thread draw-out wire is brought to the approximate center of thread take-up thread guide ②.

(2) Adjusting the stroke of the feeding wire

- 1) Increase the feeding amount of the needle thread if the needle thread fails to interlace with the bobbin thread or is likely to slip out of the needle eyelet at the start of sewing.
- 2) Loosen two setscrews ④. Shift thread draw-out wire ① in the direction of the arrow.



If the feeding amount of the needle thread is excessive, the thread will be likely to break.

(3) When turning OFF the feeding device

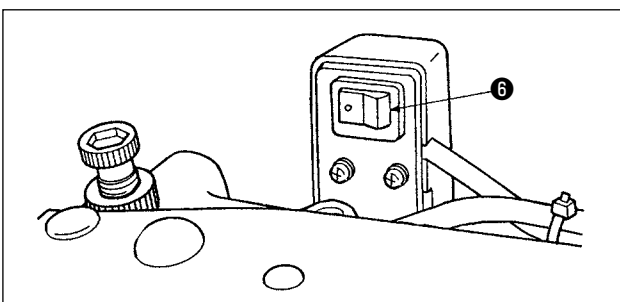
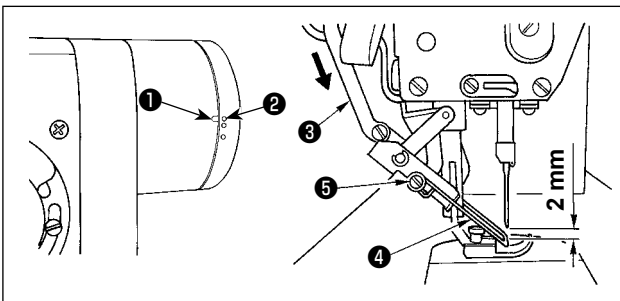
If it is not necessary to operate thread draw-out wire ①, turn off draw-out switch ⑤ on the rear face of the sewing machine.

4-15. Position of the wiper



WARNING :

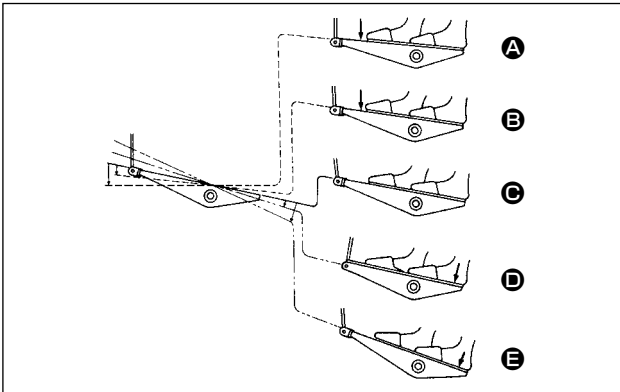
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) Align the marker dot ① engraved on the pulley cover with the white marker dot ② engraved on the handwheel (the 3rd white marker dot in terms of the direction of rotation of the sewing machine).
- 2) Move the rod ③ in the direction of the arrow, and adjust the clamping screw ⑤ so that an approximate 2 mm clearance is provided between the top end of the needle and the wiper ④.
- 3) For the sewing machine provided with a wiper, turn off wiper seesaw switch ⑥ in the case the wiper is not necessary to be used.

5. OPERATION OF THE SEWING MACHINE

5-1. How to operate the pedal (In the case of the direct-drive type sewing machine)

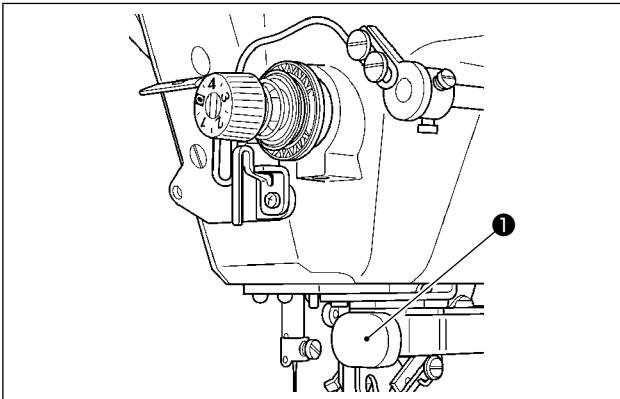


The pedal is operated in the following four steps:

- 1) The machine runs at low sewing speed when you lightly depress the front part of the pedal. **B**
- 2) The machine runs at high sewing speed when you further depress the front part of the pedal. **A** (If the automatic reverse feed stitching has been preset, the machine runs at high speed after it completes reverse feed stitching.)
- 3) The machine stops (with its needle up or down) when you reset the pedal to its original position. **C**
- 4) The machine trims threads when you fully depress the back part of the pedal. **E**

- * Thread trimming operation is only carried out on the sewing machine provided with a thread trimmer.
- * When the auto-lifer (AK device) is used, one more operating switch is provided between the sewing machine stop switch and thread trimming switch. The presser foot goes up when you lightly depress the back part of the pedal **D**, and if you further depress the back part, the thread trimmer is actuated. When starting sewing from the state that the presser foot has been lifted with the Auto-lifer and you depress the back part of the pedal, the presser foot only comes down.
- If you reset the pedal to its neutral position during the automatic reverse feed stitching at seam start, the machine stops after it completes the reverse feed stitching.
- The machine will perform normal thread trimming even if you depress the back part of the pedal immediately following high or low speed sewing.
- The machine will completely perform thread trimming even if you reset the pedal to its neutral position immediately after the machine started thread trimming action.

5-2. One-touch type reverse feed switch



*** Only for the sewing machine provided with a one-touch type reverse feed stitching function**

(1) How to use the reverse feed switch

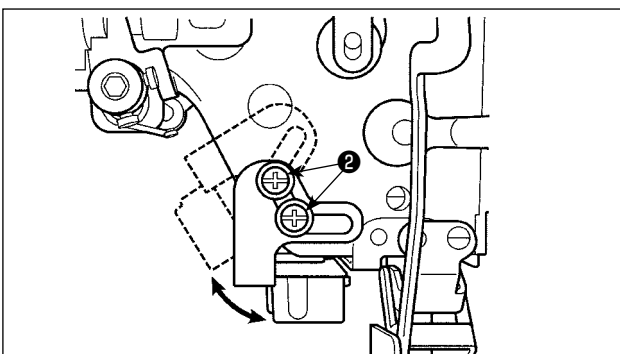
- 1) Press down the switch **1**, and the machine will immediately run in the reverse direction.
- 2) Reverse stitching is performed as long as you keep the switch held pressed down.
- 3) Release the switch, and the machine will immediately run in the normal direction.

* If you purchase the option kit, it can be retro-fitted to the sewing machine to carry out one-touch type manual reverse feed stitching. (One-touch type manual reverse feed stitching kit, part number: 40135177)



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



(2) Position of the reverse feed switch

The position of the switch can be adjusted to an easy-to-operate position, according to the sewing process.

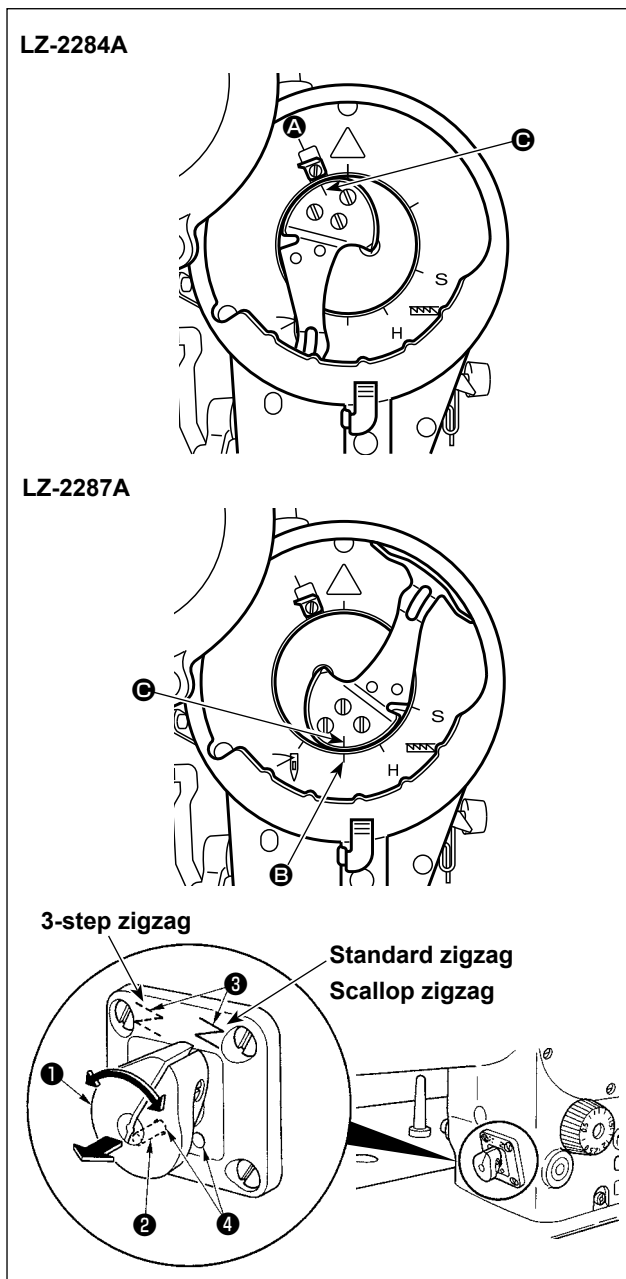
- 1) Loosen screws **2** on the rear face of the sewing machine. Then, adjust the position of the switch.

5-3. Changing over the needle-throwing method



WARNING :

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



For the LZ-2284A, needle-throwing method is selectable between the standard zigzag stitching and 3-step zigzag stitching. For the LZ-2287A, it is selectable between the 3-step stitching and scallop zigzag stitching.

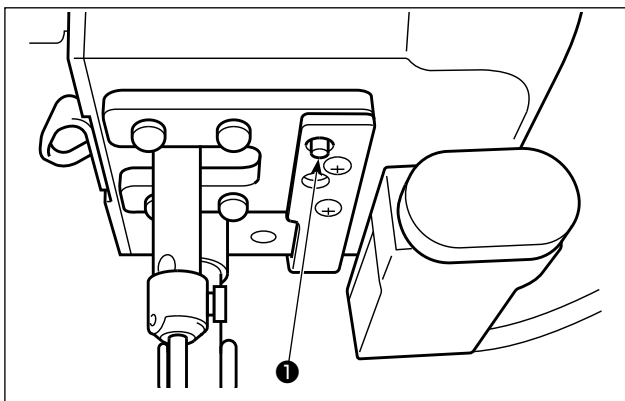
- 1) Turn the handwheel to respectively align marker dot ● with the following.
 - * LZ-2284A: Toward thread take-up knife ●
 - * LZ-2287A: Toward the lower end of the needle bar ●
- 2) Pull changeover lever ① toward this side and pull out lock pin ② from positioning hole ④.
- 3) Slightly turn the handwheel forward and backward to turn change-over lever ① so that the lever aligns with desired zigzag mark ③ to find the change-over point.
- 4) At the change-over position, securely insert lock pin ② into positioning hole ④ to complete the setting.
- 5) If the pattern cannot be changed over, give the handwheel a turn and repeat the aforementioned steps from 1).

Make sure that lock pin ② is securely placed in positioning hole ④.



In addition, never operate the sewing machine in the state that lock pin ② is not placed in positioning hole ④ (on the way of changeover). It will cause the trouble of the sewing machine.

5-4. LED light

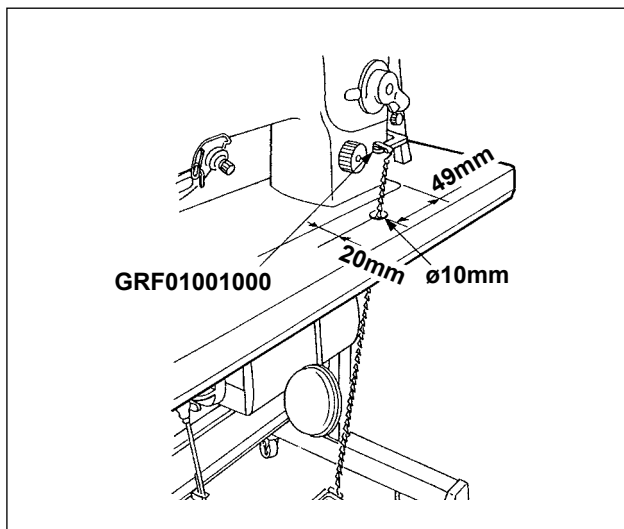


The LZ-2284A with a direct-drive motor is provided with an LED light.

- 1) The brightness of the LED light with brightness adjustment switch ① shown in the figure at the left. (In three steps)
[Brightness: High → Medium → Low → OFF]
- 2) When the LED light is re-turned on after it has been turned off, the brightness returns to "High".

6. OPTIONAL

6-1. Pedal-operated reverse feed device (RF-1)

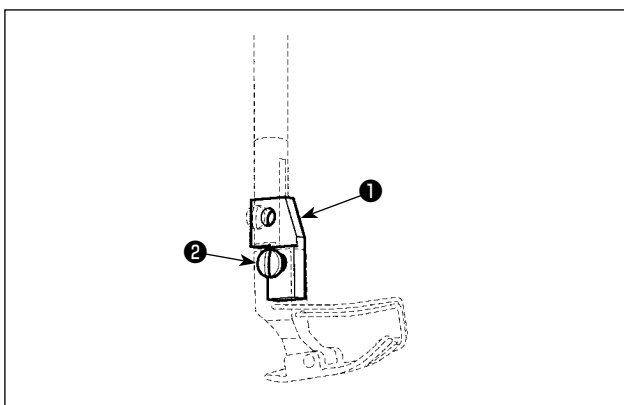


When you sew bulky materials, it is not easy to operate the feed lever with your right hand to make the machine perform reverse feed stitching.

In this case, attach the RF-1 device to your sewing machine. This device allows you to reverse the sewing directions as desired with your foot instead of your right hand.

The figure on the left shows the device installed on the sewing machine. When using the device, be sure to replace the feed lever tension spring (B1646555000) mounted on the machine with the spring (MAT80117S00) supplied with the RF-1.

6-2. Joining foot for the lockstitch presser foot



To use the presser foot for lockstitch, the "joining foot for the lockstitch presser foot" has to be used.

- ❶ Joining foot for the lockstitch presser foot (Part No.: D1551586000)
- ❷ Setscrew (Part No.: SS7090910SP)

6-3. Auxiliary thread take-up kit

In the case the sewing machine is used for blind stitching and high-speed sewing processes, it is recommended to use the "auxiliary thread take-up kit" which helps stabilize the needle thread loops.

Thread breakage and stitch skipping can be prevented by stabilizing the needle thread loops.

* Auxiliary thread take-up kit Part No.: 40135178

7. MOTOR PULLEY AND BELT

(1) In the case of the belt type sewing machine

- 1) The driving motor of this machine is a 450 watts (2P) clutch motor.
- 2) Use the M type V belt.
- 3) The attainable sewing speeds are determined by the diameter of the motor pulley and the length of the belt as listed below.

Outer diameter of motor pulley (mm)	Motor pulley part No.	Sewing speed (sti/min)		Belt length mm (inch)	Belt part No.
		50 Hz	60 Hz		
135	MTSP0135000A	5,480	-	1,168 (46)	MTJVM004600
130	MTSP0130000A	5,270	-		
125	MTSP0125000A	5,060	-	1,143 (45)	MTJVM004500
120	MTSP0120000A	4,850	-		
115	MTSP0115000A	4,630	-		
110	MTSP0110000A	4,440	5,330	1,118 (44)	MTJVM004400
105	MTSP0105000A	4,250	5,040		
100	MTSP0100000A	4,000	4,780		
95	MTSP0095000A	3,820	4,540		
90	MTSP0090000A	3,610	4,320	1,092 (43)	MTJVM004300
85	MTSP0085000A	3,390	4,000		
80	MTSP0080000A	3,160	3,790		
75	MTSP0075000A	2,950	3,520		
70	MTSP0070000A	2,740	3,260		
65	MTSP0065000A	2,530	3,020	1,067 (42)	MTJVM004200
60	MTSP0060000A	2,320	2,760		

(2) In the case of the direct-drive type sewing machine

- 1) Be sure to use the control box, SC-920A (Ver. 04 or later).

8. TROUBLES AND CORRECTIVE MEASURES

Trouble	Cause	Corrective measures	See page	
Thread breakage	① When the thread gets entangled in the thread take-up lever.	Remove the entanglement.	11	
	② When the needle thread is threaded in a wrong way.	Thread it correctly.	11	
	③ When the thread gets entangled in the sewing hook.	Remove the entanglement.	17	
	④ When the needle thread is excessively tight or loose.	Adjust the thread tension.	12	
	⑤ When the needle thread slips in the rotary tension.	Increase the tension of the pretension disk.	12	
	⑥ When the tension of the thread take-up spring is excessively high or low.	Adjust the tension of the take-up spring.	12	
	⑦ When the stroke of the thread take-up spring is excessively large or small.	Adjust the stroke of the take-up spring. (8 to 12 mm)	12	
	⑧ When the timing of the sewing hook and the needle is not matched.	Adjust the timing.	17	
	⑨ When there is a scratch on the thread path of hook, bobbin case, thread take-up lever or any other part.	Remove such a scratch or replace the component.		
	⑩ When the thread is not suitable. a. The quality of the thread is poor. b. The thread is too thick for the needle. c. The thread is broken by heat.	Use a thread of good quality. Use a suitable thread or needle. Use JUKI Silicone Oil Lubricant unit.		
	⑪ When the stitch is skipped.	Refer to the following paragraphs, Stitch skipping.		
Stitch skipping	① When the needle is inserted in a wrong way. a. The needle is not entirely inserted into the needle bar. b. The needle eye is not facing straight to the operator. c. The needle is facing backwards.	Fully insert the needle. Let the needle eye face straight to the operator. Let the long groove on the needle face to the operator.	5 5 5	
	② When the needle itself is not suitable. a. The needle is bent. b. The quality of the needle is not good. c. The needle is too thin for the thread. d. Blunt needle is used.	Replace it with a new needle. Use a needle of good quality. Use a suitable needle or thread. Replace it with a new needle.	5 5 5 5	
	③ When the hook blade point is not sharp enough or damaged.	Resharpen the hook or replace it.	17	
	④ When the timing of the sewing hook and the needle is not matched.	Adjust the timing properly.	17	
	⑤ When the height of the needle bar is not correct.	Adjust the height of the needle bar.	17	
	⑥ When the clearance between the needle and the sewing hook is too great.	Adjust the clearance.	17	
	Loose stitch	① When the needle thread tension is too low.	Increase the needle thread tension.	12
		② When the tension of the thread take-up spring is too low.	Increase the tension of the spring.	12
		③ When the tension of the bobbin thread is too high.	Decrease the bobbin thread tension.	12
		④ When the timing of the sewing hook and the needle is not matched.	Adjust the timing correctly.	17
⑤ When the thread is too thick for the needle.		Use a suitable needle or thread.		
⑥ Thread slips out of the rotary tension.		Increase the tension of the pretension disk.	12	

Trouble	Cause	Corrective measures	See page
Irregular stitch tightness	① When the bobbin thread tension is too low.	Increase the bobbin thread tension.	12
	② When the bobbin thread is not wound correctly.	Wind up the bobbin thread evenly.	9
	③ When there is a scratch on the thread path of the sewing hook, bobbin case, thread take-up lever or any other parts.	Remove such a scratch or replace the component.	
Needle breakage	① When the needle is bent.	Replace it with a new needle.	5
	② When the quality of the needle is not good.	Use a needle of good quality.	
	③ When the needle is not entirely inserted into the needle bar.	Insert the needle into the needle bar as far as it will go.	5
	④ When the needle hits the sewing hook.	Adjust the timing and clearance between the needle and the sewing hook and also the position of the needle guard.	17
	⑤ The needle is too thin for the sewing material and thread.	Replace a suitable needle.	
	⑥ The needle hole in the throat plate is too narrow.		
	⑦ The needle hits against the throat plate.		
	⑧ The needle hits against the presser foot.		