ENGLISH

INSTRUCTION MANUAL

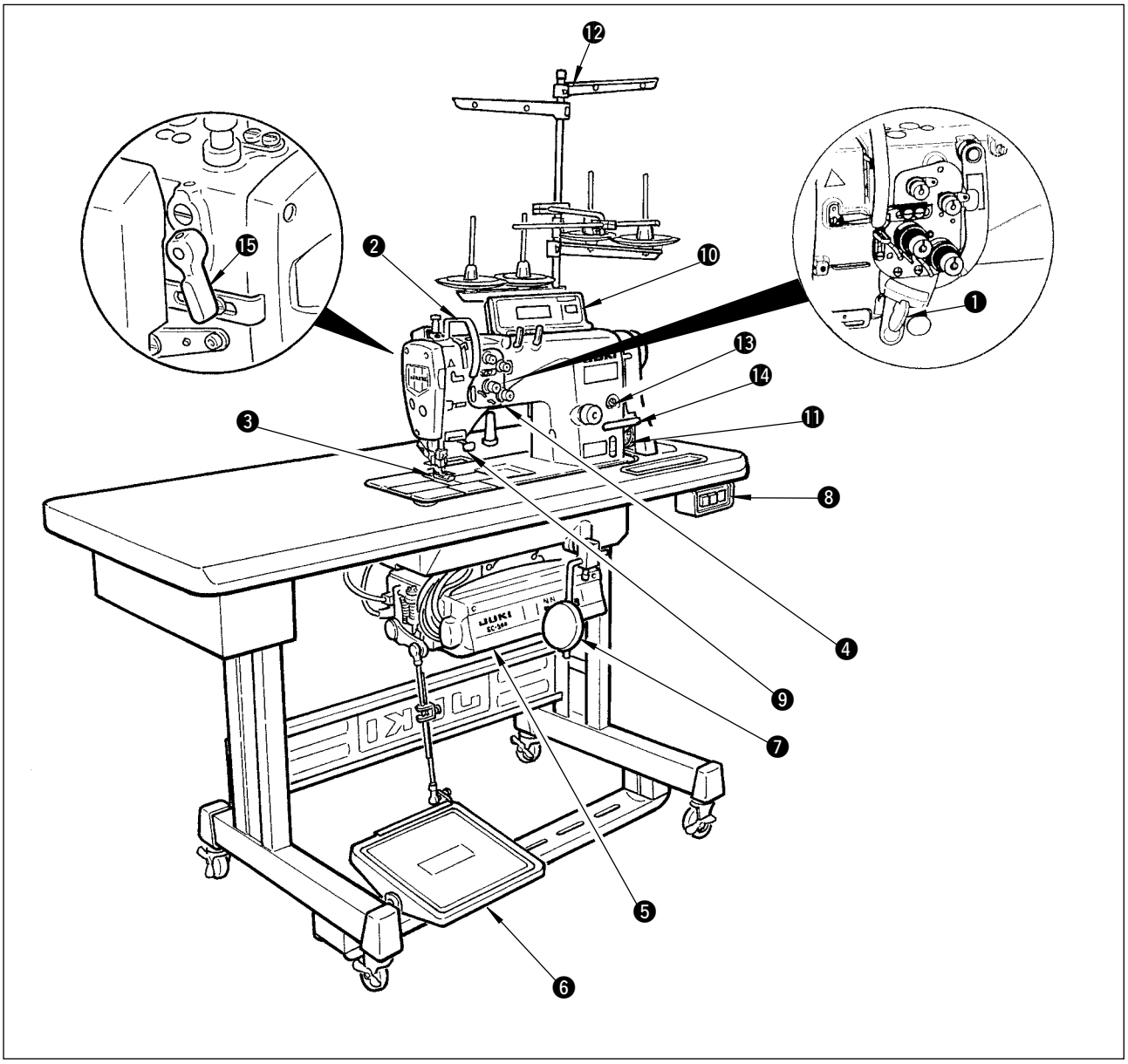
CONTENTS

1. SPECIFICATIONS

Model name	LH-3528	LH-3528-7 (with automatic thread trimmer)
Application	For light- and medium-weight materials	
	S type : standard,F type : foundation, A type : light-weight materials, G type : jeans	
Hook	Small hook	Small hook
Thread trimmer	Not provided	Provided
Separately driven needle bar mechanism	Not provided	Not provided
Max. sewing speed	3,000 rpm	
Needle	DP x 5 #9 to #16 (For F,A and S types), DP x 5 #16 to #22 (G type)	
Gauge size	3/32" to 1-1/2"	1/8" to 1-1/4"
	2.4 to 38.1 mm	3.2 to 31.8 mm
Lift of presser foot	12 mm by knee lifter, 5.5 mm by hand lifter lever	
Lubrication	JUKI NEW DEFRIX OIL No. 1 or JUKI MACHINE OIL #7	
Noise	Workplace-related noise at sewing speed n = 2,700 min^{-1} : L_{PA} ≦ 85 dB(A) Noise measurement according to DIN 45635-48-A-1.	

Model name	LH-3568 (with incorporating corner stitching)	LH-3568-7 (with automatic thread trimmer incorporating corner stitching)
Application	For light- and medium-weight materials	
	S type : standard, G type : jeans	
Hook	Small hook	Small hook
Thread trimmer	Not provided	Provided
Separately driven needle bar mechanism	Provided	Provided
Max. sewing speed	3,000 rpm	
Needle	DP x 5 #9 to #16 (S type), DP x 5 #16 to #22 (G type)	
Gauge size	1/8" to 3/4"	
	3.2 to 19.1 mm	
Lift of presser foot	12 mm by knee lifter, 5.5 mm by hand lifter lever	
Lubrication	JUKI NEW DEFRIX OIL No. 1 or JUKI MACHINE OIL #7	
Noise	Workplace-related noise at sewing speed n = 2,600 min^{-1} : L_{PA} ≦ 85 dB(A) Noise measurement according to DIN 45635-48-A-1.	

2. NAME OF EACH COMPONENT

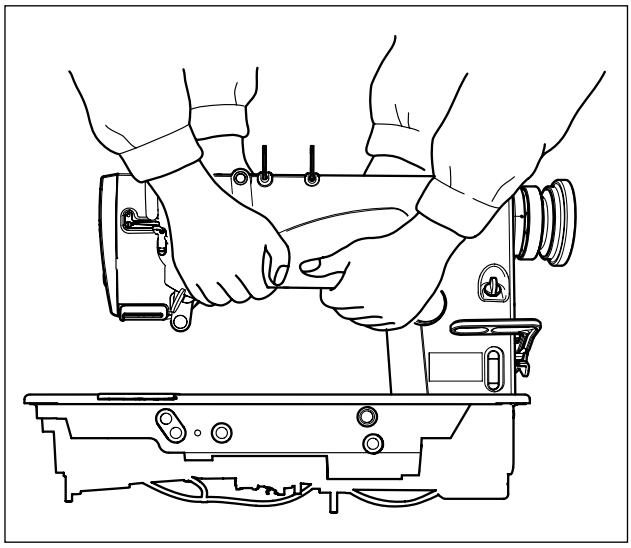


❶ Separately driven needle changeover lever (LH-3568, LH-3568-7 only)
❷ Thread take-up cover
❸ Finger guard
❹ Thread tension controller
❺ Control box
❻ Pedal
❼ Knee pad
❽ Power switch
❾ Reverse feed switch
❿ Operation panel
⓫ Bobbin winder
⓬ Thread stand
⓭ Oil supply opening
⓮ Reverse feed control lever
⓯ Hand lifter lever

3. INSTALLATION

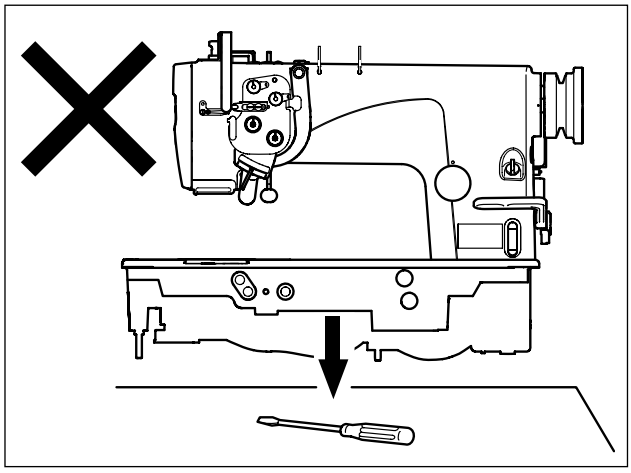
3-1. Caution at the time of set-up

1) Transporting procedure of the sewing machine



Hold and transport the sewing machine with two persons as shown in the illustration.

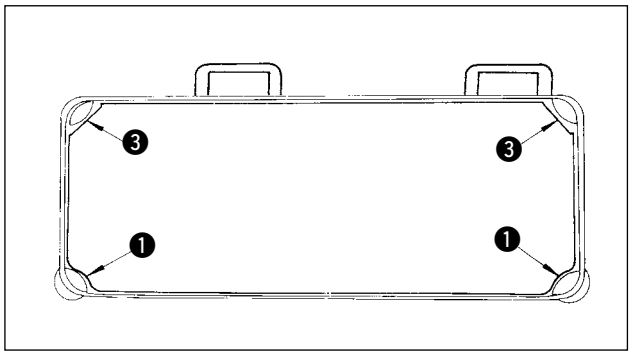
2) Caution when placing the sewing machine



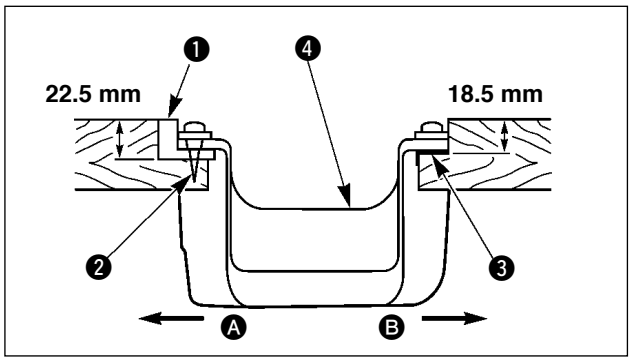
Do not put protruding articles such as the screwdriver and the like at the location where the sewing machine is placed.

3-2. Installation of the sewing machine

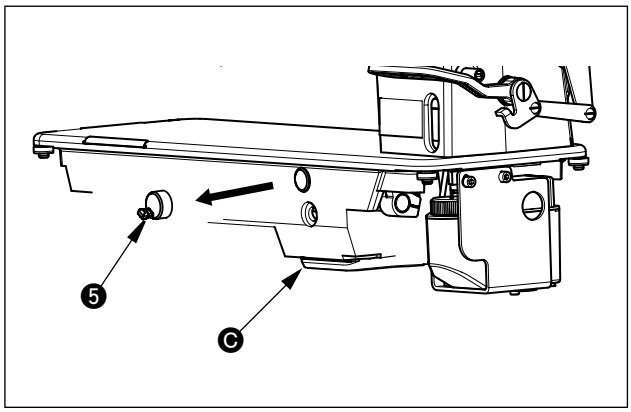
(1) Installing the under cover



1) The under cover should rest on the four corners of the machine table groove.

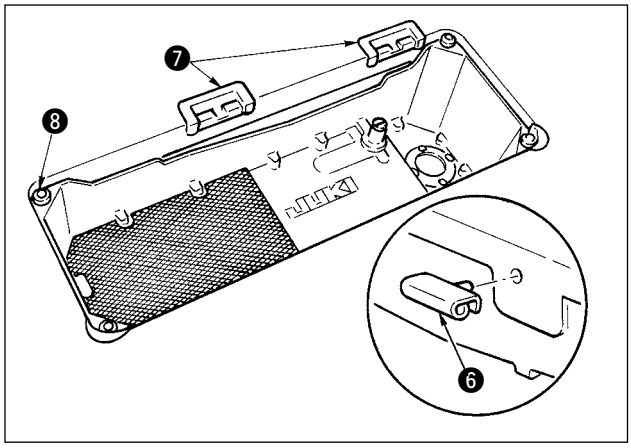


2) Fix two rubber seats ❶ on side Ⓐ (operator' s side) using nails ❷ as illustrated above. Fix two cushion seats ❸ on side Ⓑ (hinged side) using a rubber-based adhesive. Then place under cover ❹ on the fixed seats.

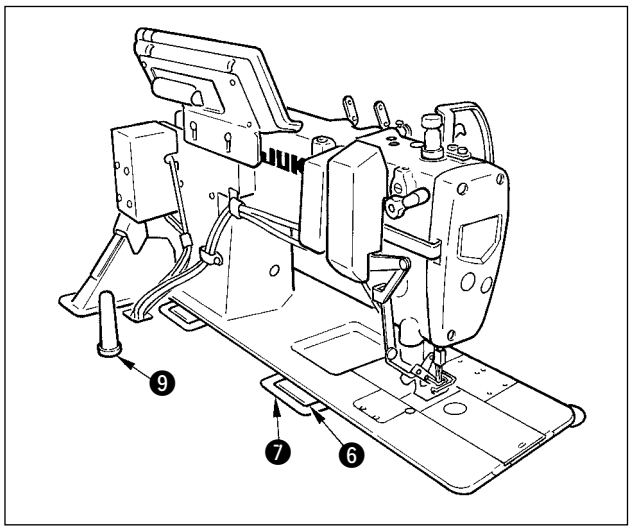


3) Remove air vent cap ❺ attached to the machine bed. (Be sure to attach cap ❺ when transporting the machine head in the state that the machine head is removed from the machine table.)

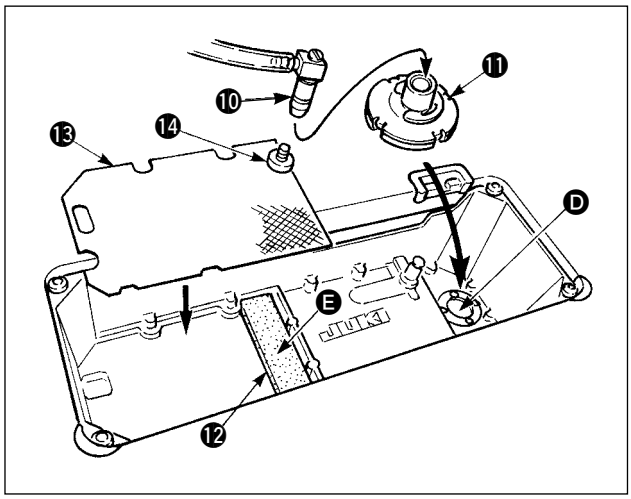
If the sewing machine is operated without removing air vent cap ❺, oil leakage from gear box portion Ⓒ may occur.



4) Insert hinge ❻ into the machine main body. Fit the machine head to table rubber hinges ❼ and place it on head cushions ❽ on the four corners.



5) Attach head support rod ❾ to the table.

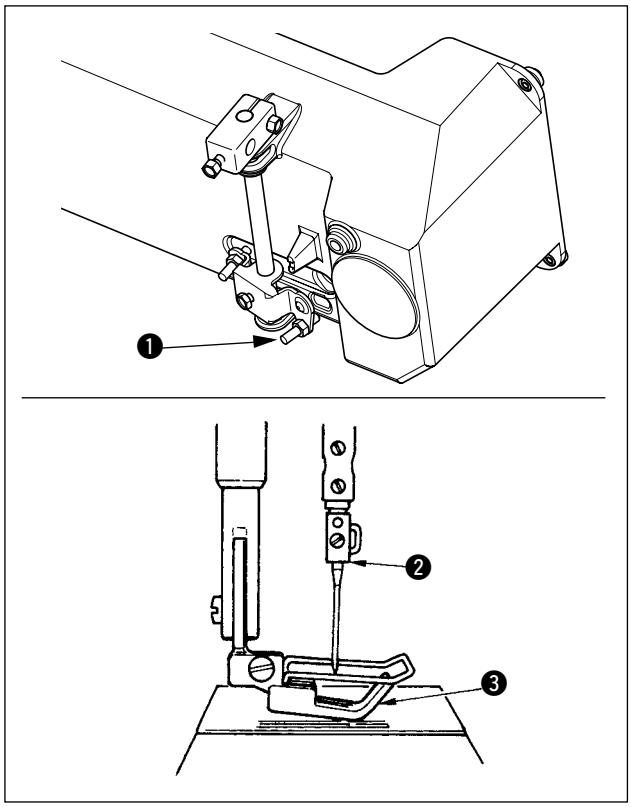


6) Remove inlet port ❿ for circulation which is fixed to the oil tank installing plate, and securely insert it into filter ⓫ until it goes no further after removing cap ⓮ which is attached to the end of the inlet port. Then set the inlet port to Ⓓ.
Place urethan filter ⓬ on Ⓔ, and place filter ⓭ of thin plate type (small mesh plate) on it.

Circulation trouble may occur unless inlet port ❿ for circulation is securely inserted into filer ⓫ until it goes no further.

3-3. Adjusting the height of the knee lifter

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.

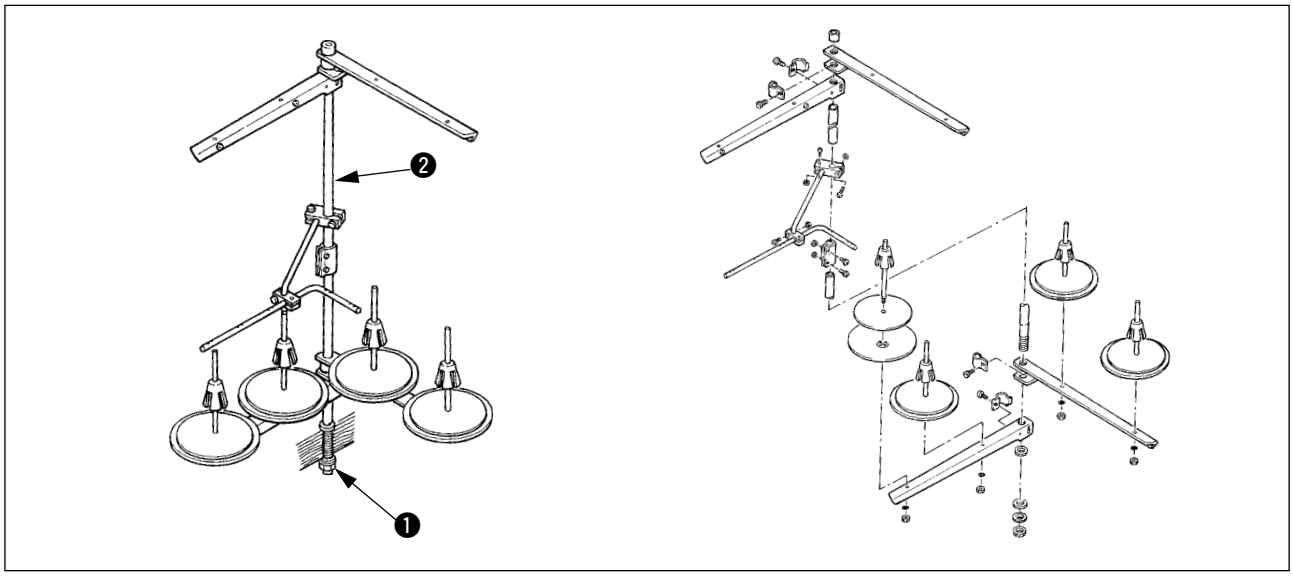


1) The standard height of the presser foot lifted using the knee lifter is 12 mm.
2) You can adjust the presser foot lift up to 13 mm using knee lifter adjust screw ❶.

Caution

Do not operate the sewing machine in the state that the presser foot ❸ is lifted by 12 mm or more since the needle bar ❷ comes in contact with the presser foot ❸.

3-4. Installation of thread stand



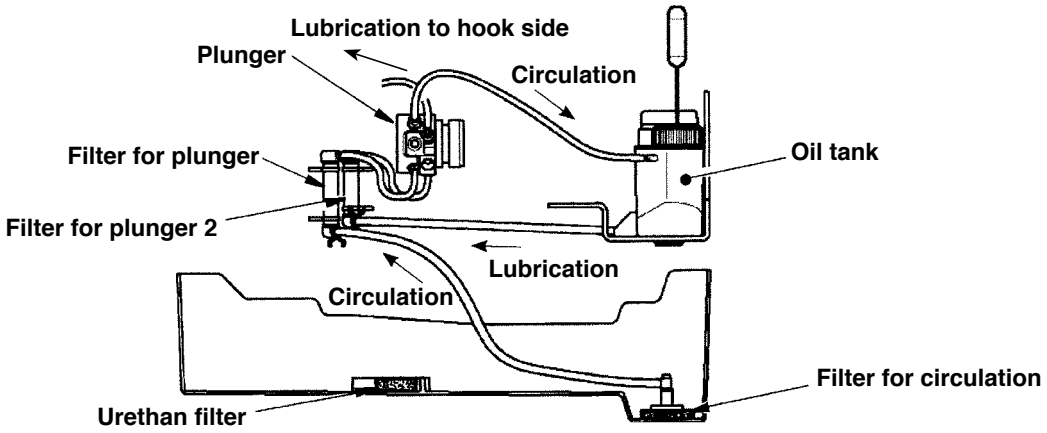
Assemble the thread stand, set it up on the machine table using the installation hole in the table and tighten nut ❶ gently.

When you use power supplied by the overhead power line, pass the power supply cord through hollow spool rest rod ❷.

4. PREPARATION OF THE SEWING MACHINE

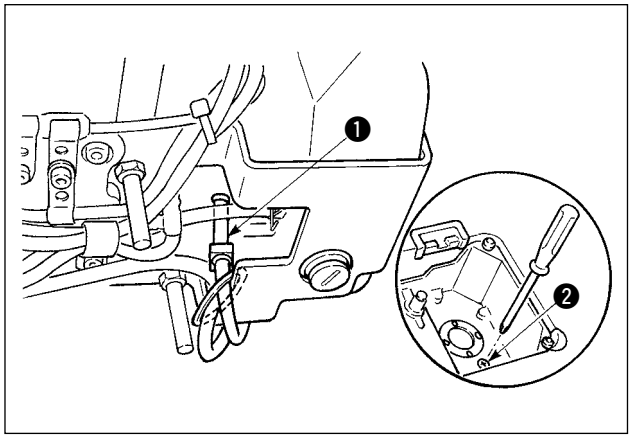
4-1. Method of lubrication

(1) Method of circulating lubrication (when the oil collected in the under cover is reused)



Periodically (approximately once in three months) clean the aforementioned filter sections (four places) in order to use the machine for a long time. When the filter is clogged, lubrication trouble will occur and break-down will be caused.
In addition, when the oil becomes dirty, replace the oil gathered in the oil tank and the under cover.

(2) Method of non-circulation type lubrication (when only the clean oil is always used)



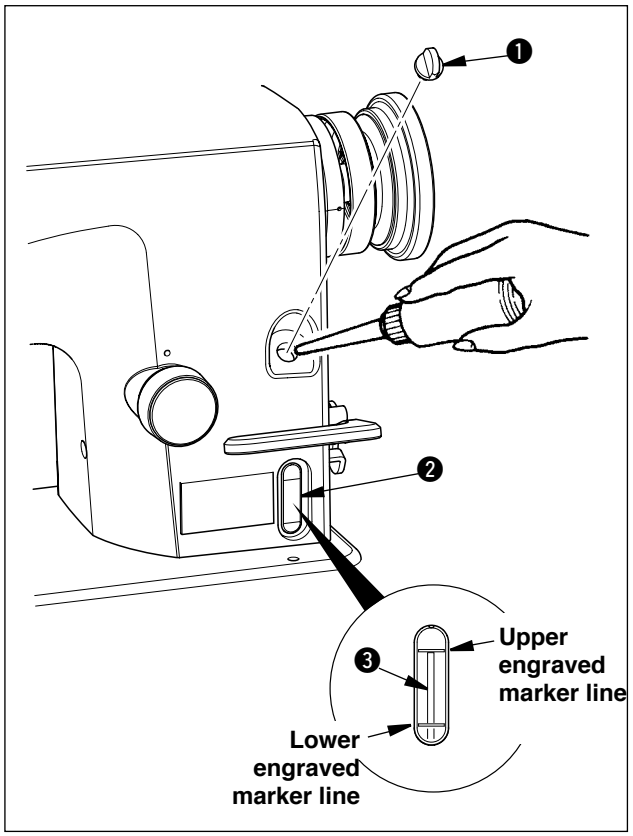
Put the cap to inlet port for circulation ❶ in the same state as that at the time of delivery, and securely fix it to the position where it does not come in contact with the moving section.

* Remove drain screw ❷ and dump the oil which has dropped to the under cover.

When inlet port for circulation ❶ comes in contact with the oil surface, oil is absorbed without passing the filter. As a result, break-down will be caused.

4-2. Lubrication to the oil tank

WARNING :
1. **Do not connect the power plug until the lubrication has been completed so as to prevent accidents due to abrupt start of the sewing machine,**
2. **To prevent the occurrence of an inflammation or rash, immediately wash the related portions if oil adheres to your eyes or other parts of your body.**
3. **If oil is mistakenly swallowed, diarrhea or vomitting may occur. Put oil in a place where children cannot reach.**



Fill the oil tank with oil for hook lubrication before operating the sewing machine.

1) Remove oil hole cap ❶ and fill the oil tank with JUKI NEW DEFRIX OIL No.1 (Part No. : MDFRX1600C0) or JUKI MACHINE OIL #7 (Part No. : MML007600CA) using the oiler supplied with the machine.
2) Fill the oil tank with the oil until the top end of oil amount indicating rod ❸ comes between the upper engraved marker line and the lower engraved marker line of oil amount indicating window ❷.
   If the oil is filled excessively, it will leak from the air vent hole in the oil tank or proper lubrication will be not performed. So, be careful.
3) When you operate the sewing machine, refill oil if the top end of oil amount indicating rod ❸ comes down to the lower engraved marker line of oil amount indicating window ❷.

Caution

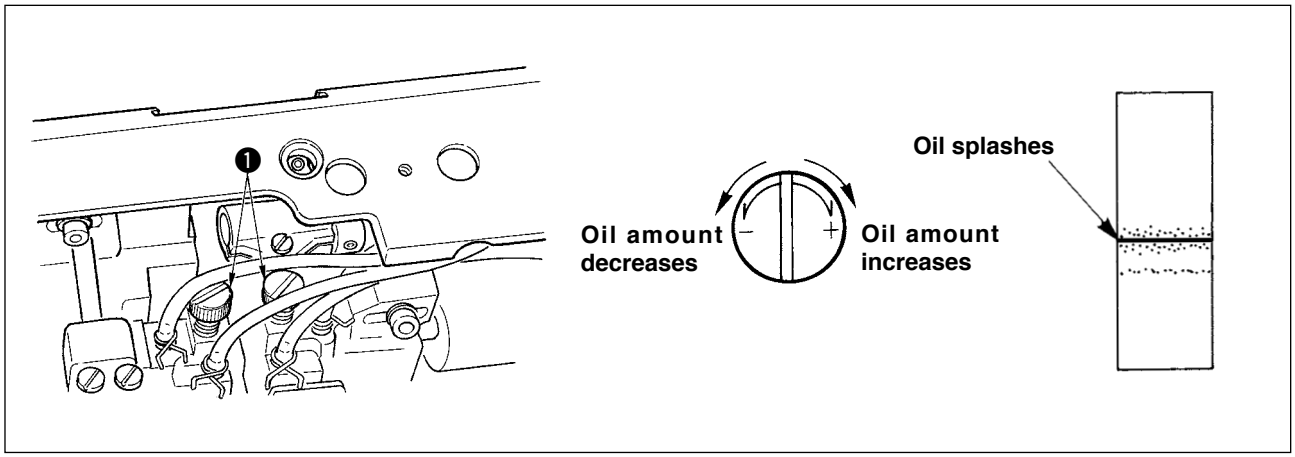
- **When filling the oil tank with the oil initially, make sure that the oil amount indicating rod works. When it does not work at this time, make it work by tilting the sewing machine once.**
- **When you use a new sewing machine or a sewing machine after an extended period of disuse, use the sewing machine after performing break-in at 2,000 rpm or less.**
- **For the oil for hook lubrication, purchase JUKI NEW DEFRIX OIL No. 1 (Part No. : MDFRX1600C0) or JUKI MACHINE OIL #7 (Part No. : MML007600CA).**
- **Be sure to lubricate clean oil.**

Reference

In case of the circulation type lubrication method, when using the sewing machine for the first time, the oil amount in the oil tank decreases until the oil has collected in the filer for circulation. When the top end of oil amount indicating rod is lower than the lower engraved marker line, add the oil to the oil tank again so that the top end enters between the upper and lower engraved marker lines.

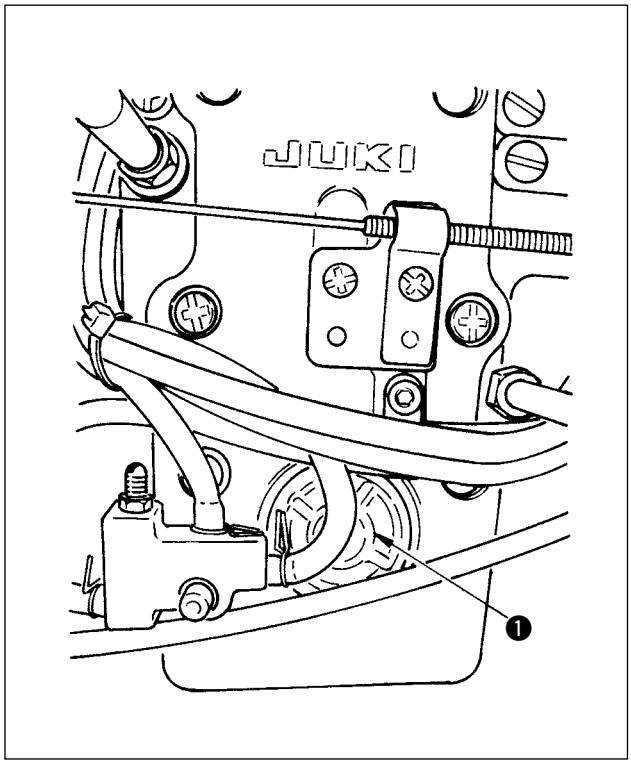
4-3. Adjusting the amount of oil in the hook

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.



Adjust the amount oil using adjusting screw ❶. Turn screw ❶ clockwise to increase the amount of oil in the hook or counterclockwise to decrease it. Measure the amount of oil in five seconds. When the amount of oil is excessively decreased, break-down will be caused. So, be careful.

4-4. Oil in the feed box



When using the sewing machine, make sure that the oil is put in the feed box from oil confirming window ❶.

Caution

Do not add oil to the feed box since the adequate amount of oil which is different from the hook oil has been put in the feed box.

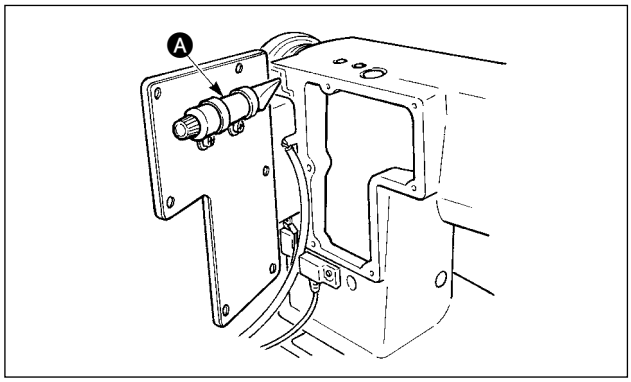
4-5. Applying grease

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.

Periodically perform grease-up to the grease applying places of each model with cotton bar or the like in order to use the sewing machine safely (the standard is once in 2 to 3 years). In case of the sewing machines with thread trimmer (LH-3528-7 and -3568-7), when the time of grease-up has come, the warning alarm sounds. When the alarm sounds, perform the grease-up.

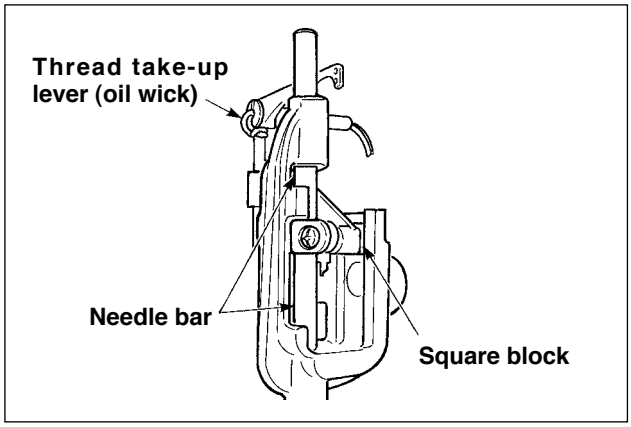
- **Never lubricate oil to the grease applying places.**
- **When grease is applied more than is necessary, there is a fear that grease leaks from the thread take-up lever cover section or the needle bar. So, be careful.**
- **Be sure to use the grease contained in JUKI GREASE A TUBE (Part No. : 40006323) supplied with the machine head as accessories.**

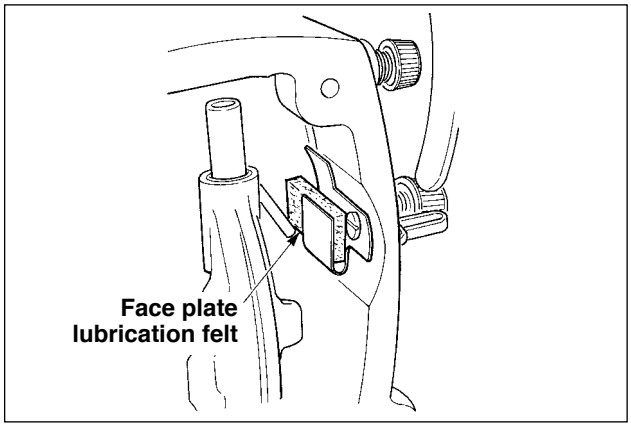
[Grease keeping place]



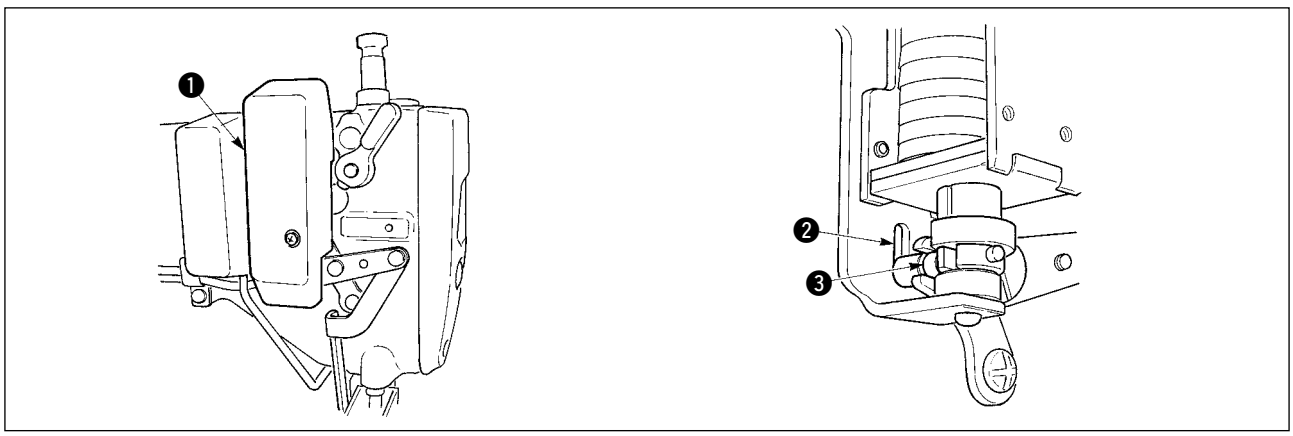
The grease tube is installed on the inside of window plate A.

[LH-3528, LH-3528-7]



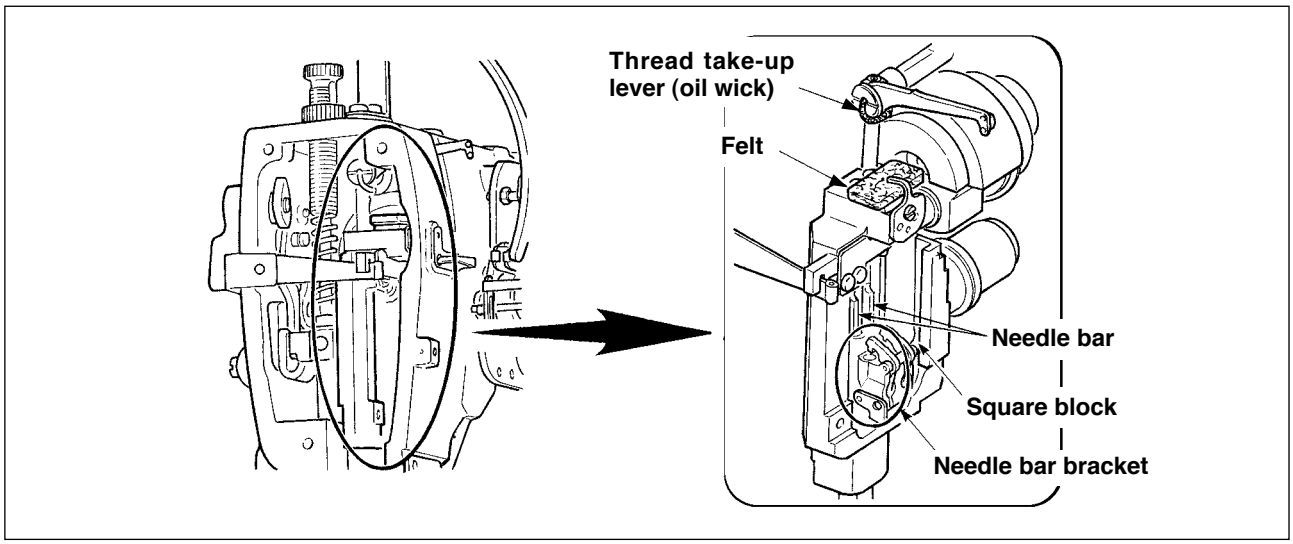


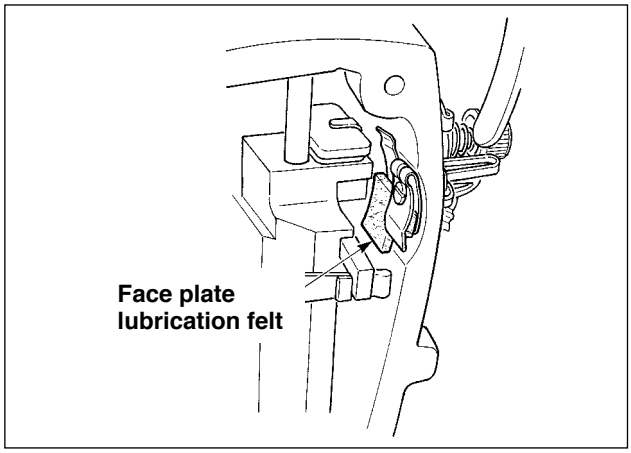
[LH-3528-7, LH-3568-7]



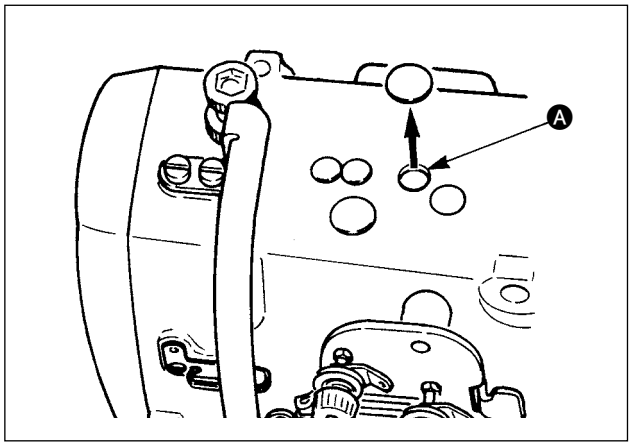
Remove wiper cover ❶, and apply grease to slot section ❷ of wiper solenoid base and wiper link collar ❸.

[LH-3568, LH-3568-7]





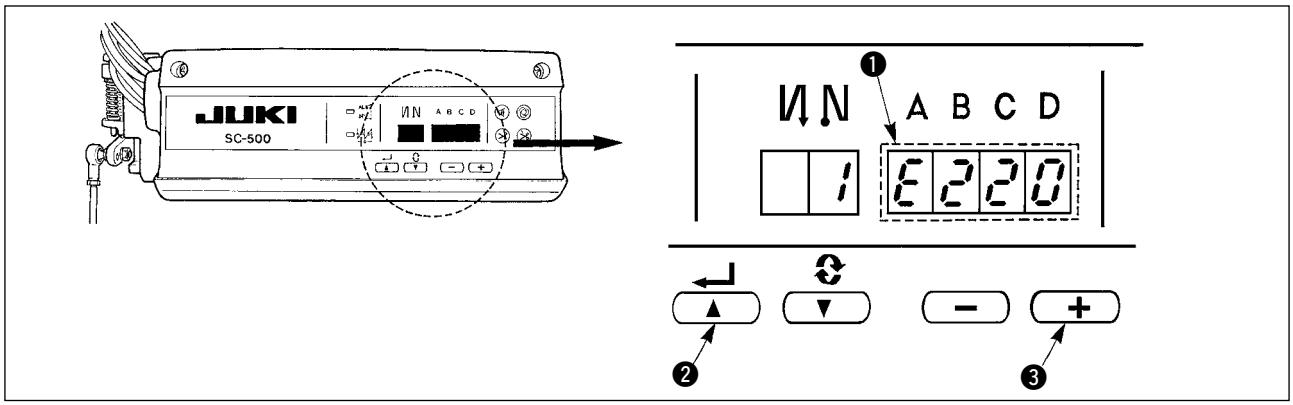
[Common]



Remove the rubber cap, take out the felt in Ⓐ, pour new grease in the hole, and put the felt to which grease has been soaked after removing old grease adhered to the inside of the hole and the felt.

Further, pour grease above the felt and cover it with the rubber cap.

[Releasing procedure of the grease-up warning] For SC-500



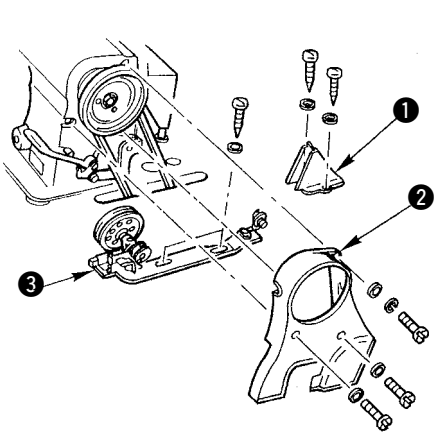
When a certain number of times of sewing has been performed, error code No. 220 ❶ is displayed in the control box at the time of turning ON the power, and warning buzzer sound five times intermittently. This warning informs of the grease replenishment time of the specified place. Be sure to perform grease replenishment to the specified place. For the grease applying place, refer to **"4-5. Applying grease", p.10 and 11**. For the releasing procedure of the warning after grease replenishment, simultaneously pressing ▲ ❷ and + ❸, turn ON the power.

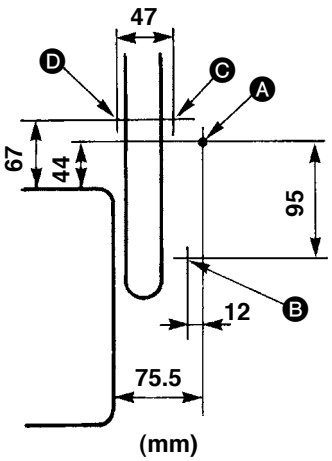
[Releasing procedure of the grease-up "error"] For SC-500

When the machine has been used for a certain period of time without performing grease-up after the display of error code No. 220, error code No. 221 is displayed and the machine stops running.
At this time, be sure to execute grease replenishment to the specified place and perform releasing the error in accordance with the aforementioned description.

4-6. Installing the belt cover and the bobbin thread winder

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.



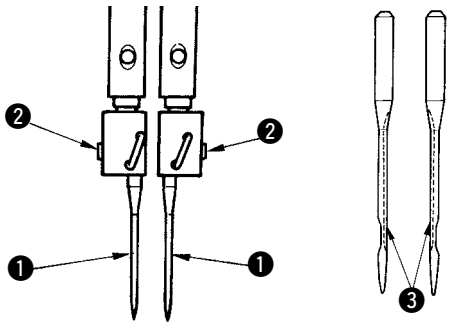


1) Drill guide holes Ⓐ, Ⓑ, Ⓒ and Ⓓ of wood screws in the table.
2) Adjust the position of bobbin thread winder ❸, and fix it to the place of guide holes Ⓐ and Ⓑ with wood screws.
3) Temporarily fix belt cover B ❶ to the place of guide holes Ⓒ and Ⓓ.
4) Install belt cover A ❷ to the arm installing section.
5) Adjust the position of belt cover B ❶ and fix it with wood screw.

4-7. Attaching the needles

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.

[LH-3568, 3568-7]

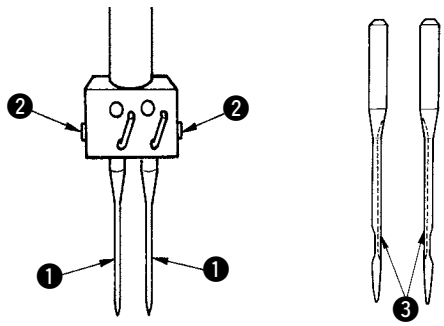


Switch "off" the motor.

Use DPx5 needles.

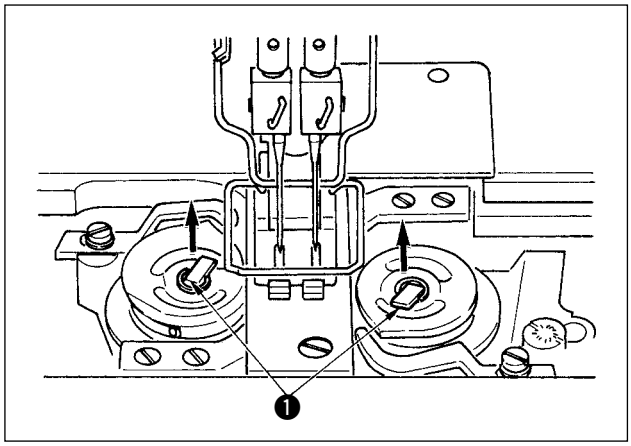
1) Turn the handwheel until the needle bar has come up to the highest point of its stroke.
2) Loosen needle clamp screws ❷ and pick up two needles ❶ in the way that their grooves ❸ are facing outwards.
3) Insert the needles into the needle clamp as far as they will go.
4) Tighten needle clamp screws ❷ firmly.

[LH-3528, 3528-7]



4-8. How to take out the bobbin case

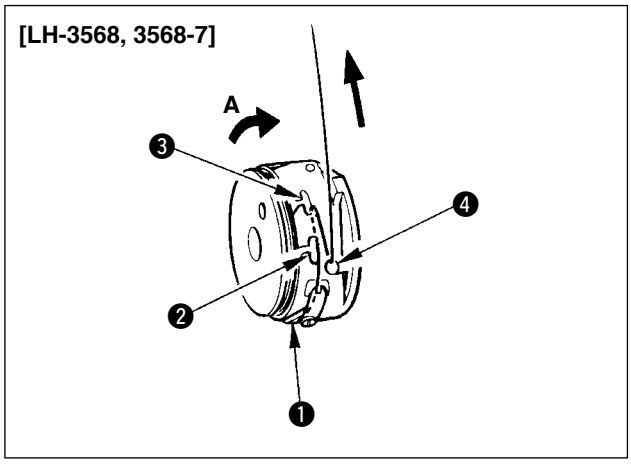
WARNING :
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



1) Lift latch ❶ and take out the bobbin case and the bobbin together.
2) Hold the bobbin case by latch raised, put it into the shaft in the hook correctly and release the latch.

4-9. Insertlng a bobbin in a bobbin case

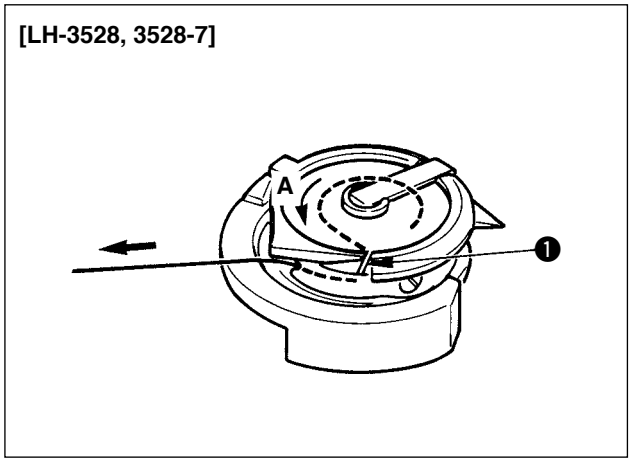
[LH-3568, 3568-7]



[LH-3568, 3568-7]

1) Set a bobbin to the bobbin case so that the bobbin turns in the direction of arrow mark A.
2) Pass the thread through thread slit ❶ in the bobbin case and draw the thread and pull the thread so that it passes under the tension spring.
3) Pass thread through another thread slit ❷ then, pass it through thread slit ❸ on the bobbin case from the inside.
4) Put the thread on bobbin threads slack preventer spring ❹.

[LH-3528, 3528-7]

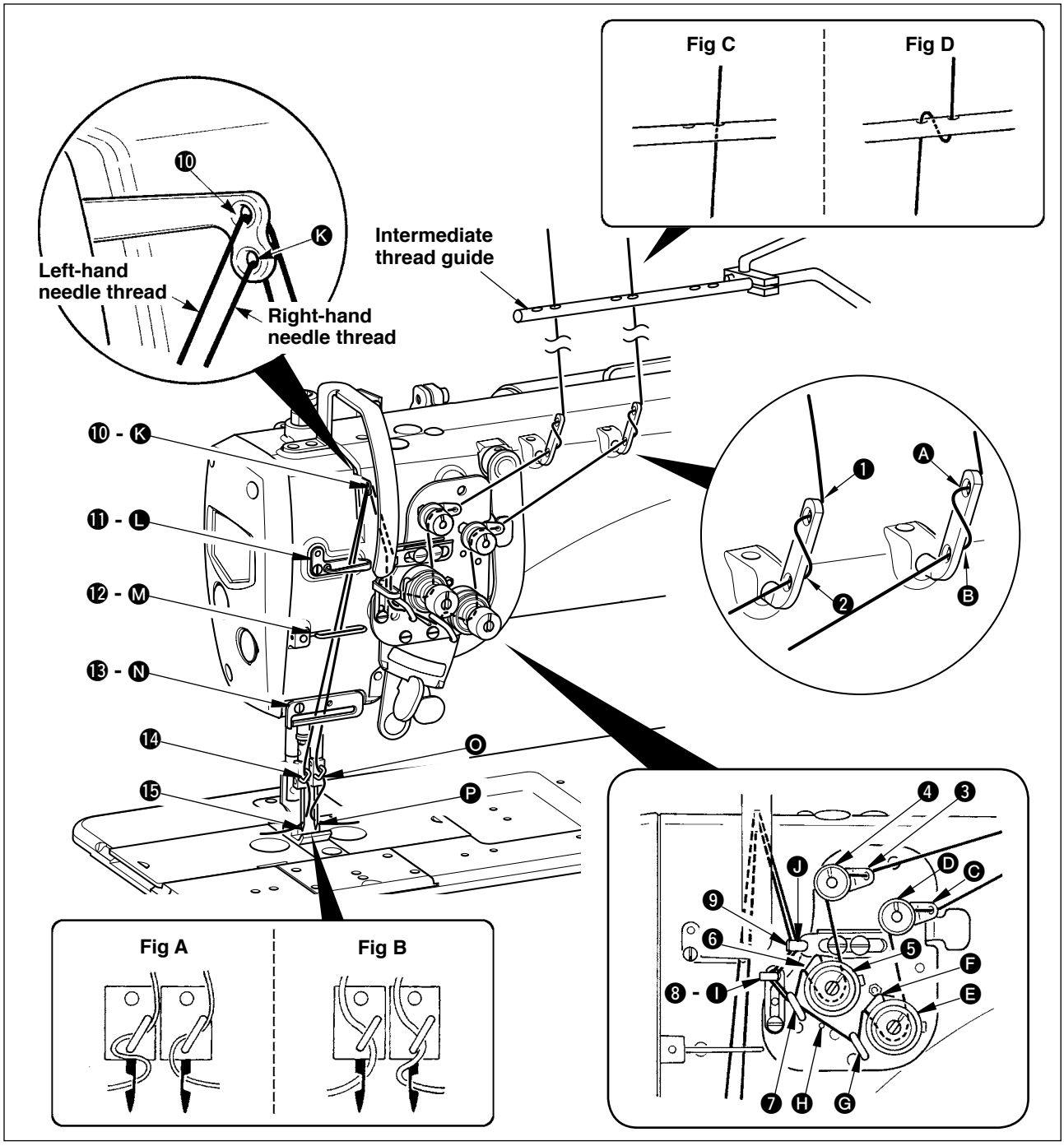


[LH-3528, 3528-7]

1) Set a bobbin to the bobbin case so that the bobbin turns in the direction of arrow mark A.
2) Pass the thread through thread slit ❶ in the hook and draw the thread and pull it so that it passes under the tension spring.

4-10. Threading the machine head

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.

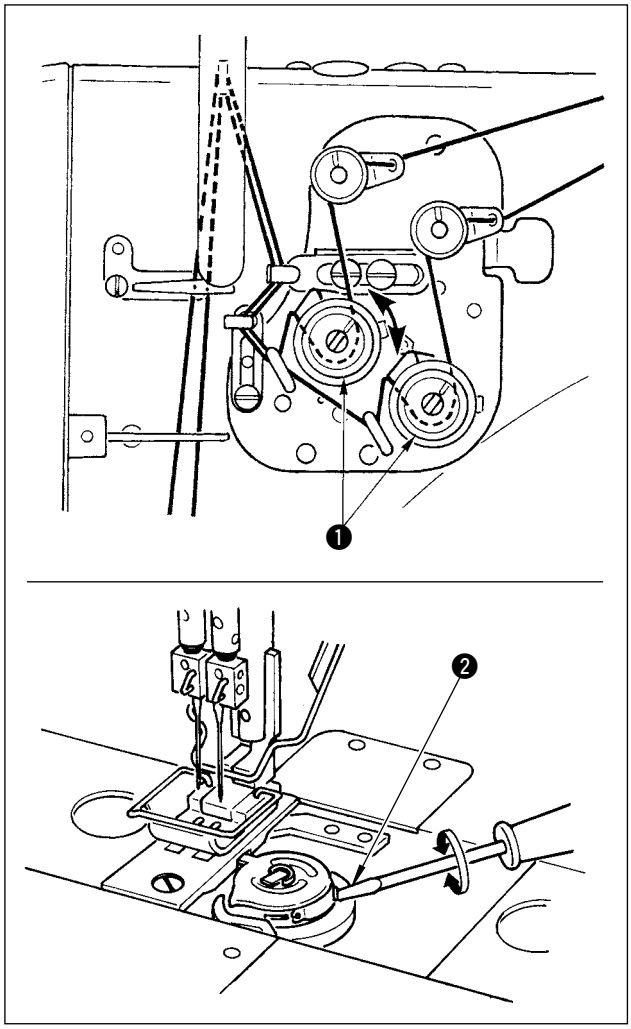


Thread the machine head following the order as illustrated in the figure.
Pass the left-hand needle thread, toward the machine head, in the order of ❶ to ⓯. Pass the right-hand needle thread in the order of Ⓐ to Ⓟ.

1. **Be careful of threading of needle clamp thread guides (⓮, Ⓞ).**
   - **Figure A for thin filament thread of #60 or less**
   - **Figure B for thick filament thread and polyester spun thread of #50 or more**
2. **Pass right-side needle thread through the upper side of thread guide pin Ⓗ.**
3. **Pass the thread through the intermediate thread guide of LH-3528-7 and -3568-7 as follows.**
   - **Fig. C for polyester spun thread**
   - **Fig. D for synthetic thread**

4-11. Thread tension

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.

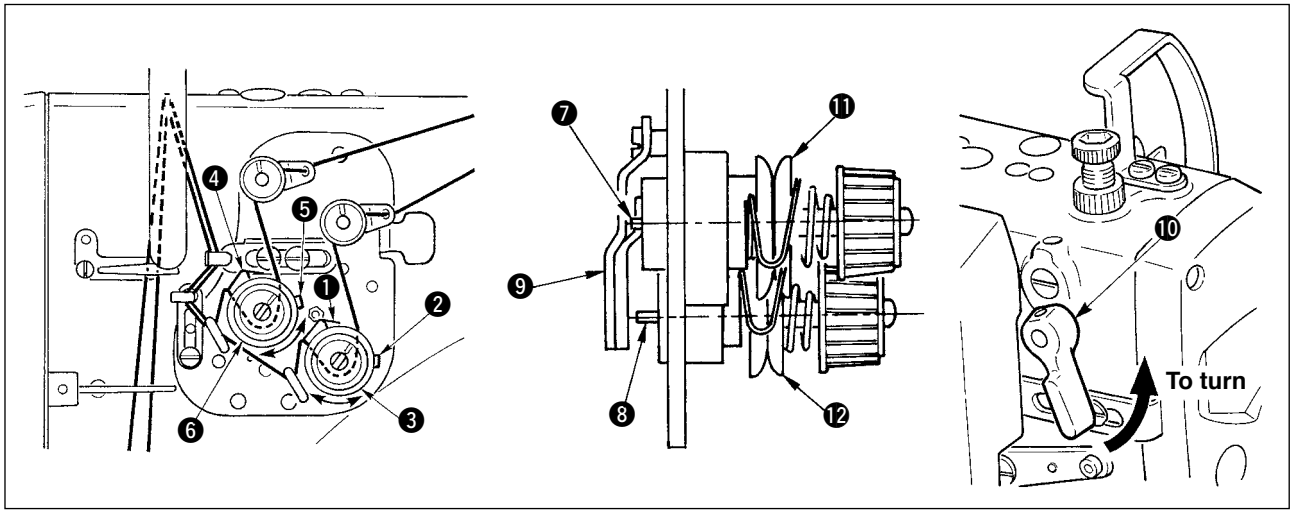


1) Needle thread tension
   Turn thread tension nut No. 2 ❶ clockwise to increase or counterclockwise to reduce the needle thread tension.
2) Bobbin thread tension
   Turn tension adjusting screw ❷ clockwise to increase or counterclockwise to reduce the bobbin thread tension.

4-12. Thread take-up spring

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.

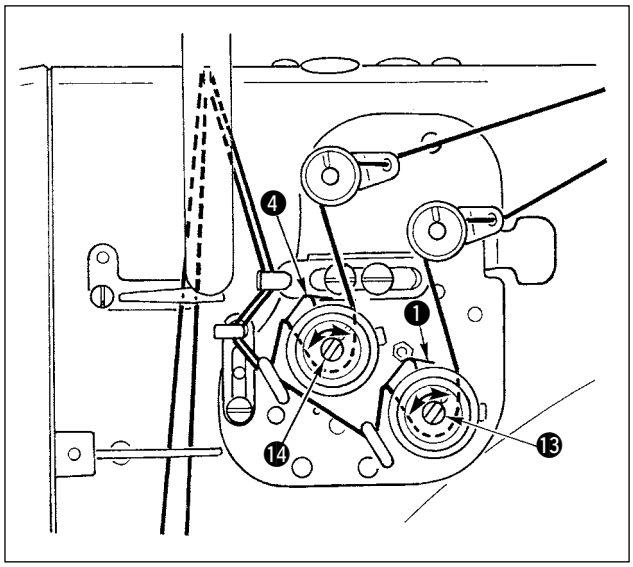
(1) When you want to change the stroke of the thread take-up spring



1) Stroke of thread take-up spring ❶ on the right is adjustable by moving thread tension No. 2 asm. ❸ to the left or right after loosening thread tension No. 2 setscrew ❷.
2) Stroke of thread take-up spring ❹ on the left is adjustable by moving thread tension No. 2 asm. ❻ to the left or right after loosening thread tension No. 2 setscrew ❺.
3) Move thread tension No. 2 asm. ❸ and ❻ to the right to increase or to the left to decrease the stroke of the thread take-up spring.

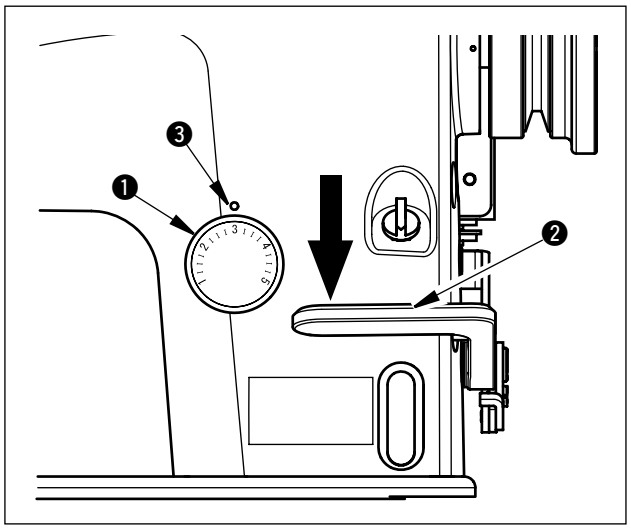
When adjusting the stroke of thread take-up springs ❶ and ❹, thread release pins ❼ and ❽ should not come in contact with disk release plate ❾.
In addition, make sure that thread tension disks ⓫ and ⓬ securely rise when hand lifter lever ⓾ is turned in the direction of the arrow.

(2) When you want to change the tension of the thread take-up spring



1) Tension of thread take-up spring ❶ on the right is adjustable by turning spring stud ⓭ to the right to increase or to the left to reduce.
2) Tension of thread take-up spring ❹ on the left is adjustable by turning spring stud ⓮ to the right to increase or to the left to reduce.

4-13. Adjusting the stitch length



Turn stitch dial ❶ counterclockwise (clockwise) to set the value on the dial corresponding to a desired stitch length to the marker dot ❸ engraved on the machine arm.

When it is hard to turn stitch dial ❶, turn it while slightly depressing reverse feed control lever ❷.

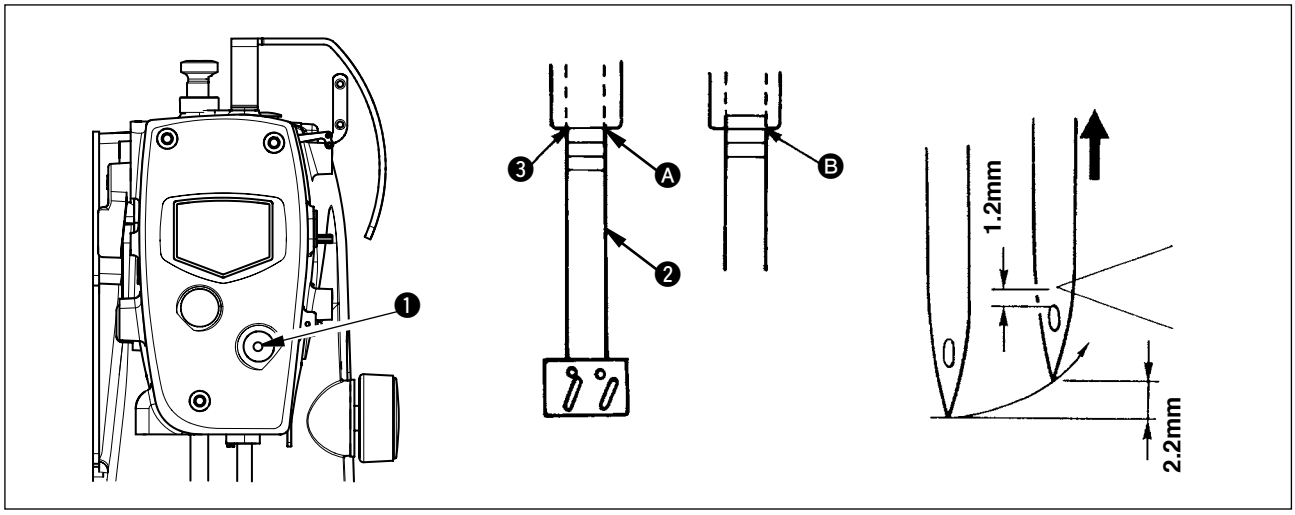
• Reverse feed operation

1) Depress reverse feed control lever ❷.
2) Reverse stitches are made as long as you keep depressing the lever.
3) Release lever, and the machine will run forward.

4-14. Needle-to-hook relation

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.

[LH-3528, 3528-7]



• Adjust the needle and the hook as follows.

1) Adjust the stitch dial to 2.5 on the scale.
2) Turn the handwheel to bring the needle bar to the lowest position and loosen needle bar connecting stud clamping screw ❶.
3) Determine the height of needle bar. The upper two of engraved marker lines are for DP X 5 needle, and the lower two of them are for DP X 17 needle.

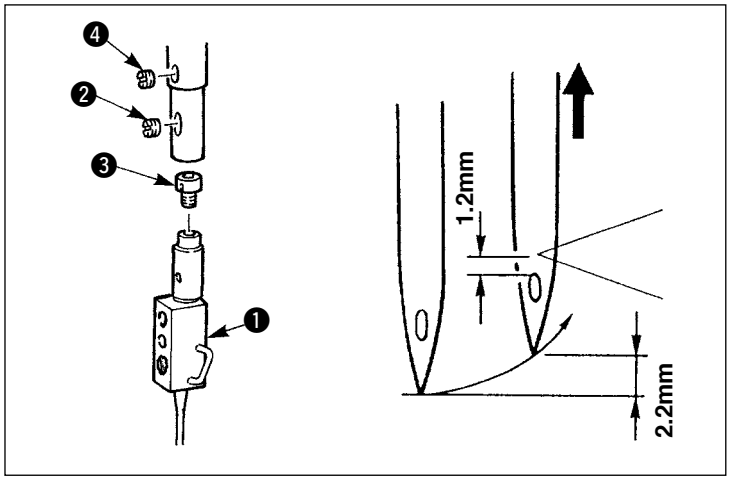
[Adjusting procedure for DP X 5 needle]

Adjust top engraved marker line Ⓐ of needle bar ❷ to the bottom end of needle bar rocking base ❸, and tighten the needle bar connecting stud clamping screw ❶. At this time, the needle bar goes up by 2.2 mm from the lowest position (adjust the second engraved marker line Ⓑ to the bottom end of needle bar rocking base ❸) and the blade point of hook aligns with the center of needle. Then the distance between the top end of needle eyelet and the blade point of hook becomes 1.2 mm.

[Adjusting procedure for DP X 17 needle]

Use the lower two of the engraved marker lines, and perform the adjustment by the same procedure as that of [Adjusting procedure for DP X 5 needle].

[LH-3568, 3568-7]

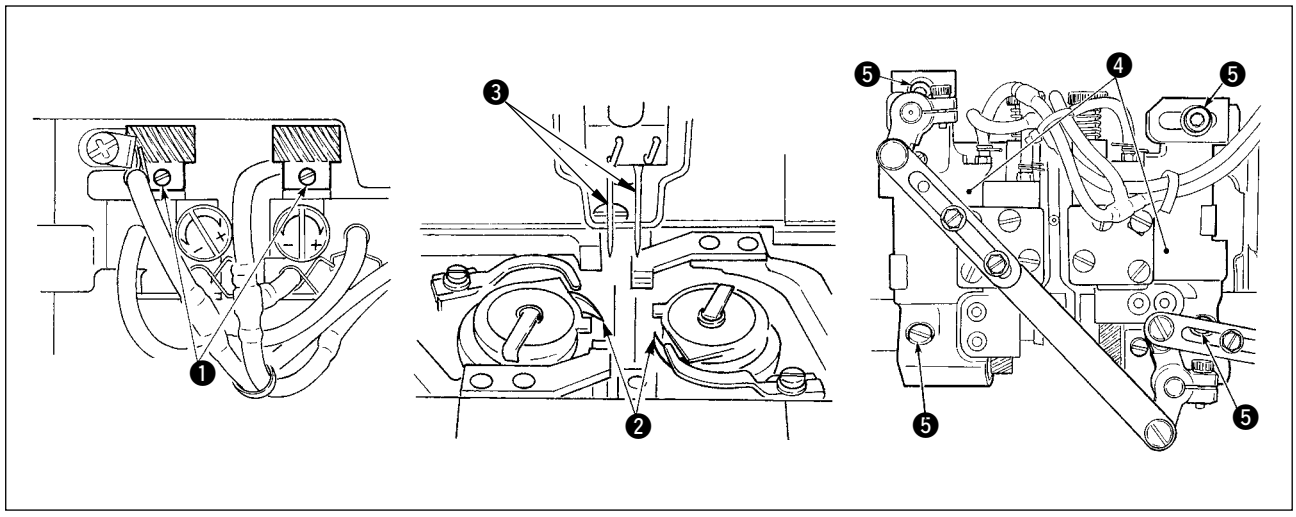


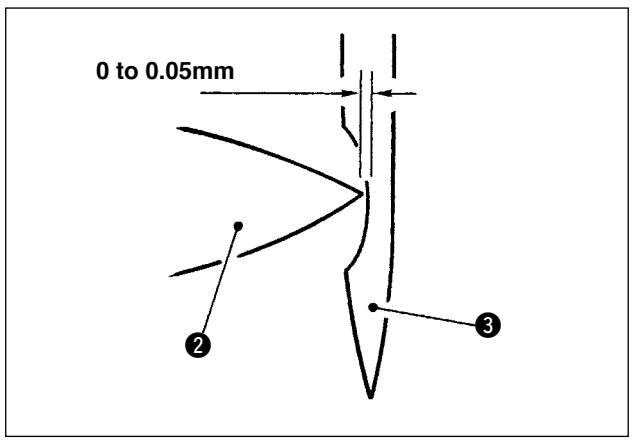
• Adjust the needle and the hook as follows.
[Adjusting procedure for DP X 5 needle]

1) Adjust the stitch dial to 2.5 on the scale.
2) Turn the handwheel to align the blade point of hook with the center of needle when the needle bar goes up by 2.2 mm from the lowest position (lower engraved marker line of the needle bar aligns with the bottom end of the needle bar rocking base). At this time, it is the standard that the distance between the top end of needle eyelet and the blade point of hook becomes 1.2 mm.
3) If the needle-to-hook relation is different from the afore-mentioned standard adjustment, remove needle clamp screw ❷ and turn needle clamp ❶ by one revolution (the extent of adjustment : 0.6mm). The needle-to-hook relation can also be adjusted by removing screw ❹ from the spring shoe and turning spring shoe ❸ by a half revolu tion (the extent of adjustment : 0.3mm).

[Adjusting procedure for DP X 17 needle]

When replacing the needle with DP X 17, replace needle clamp ❶. (Needle clamp for DP X 17 is an optional part.) Use the same engraved marker line of the needle bar for DP X 5. Adjusting procedure is the same as that of DP X 5.





[Common]

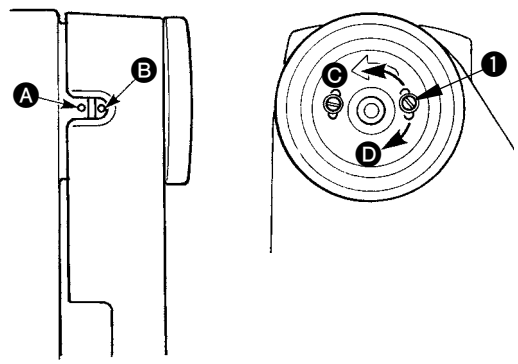
• Determine the position of the hook.

1) Loosen three setscrews ❶ in the screw gear (small), and turn the handwheel to lift the needle bar from its lowest position by 2.2 mm.
2) In this state, loosen four setscrews ❺ in hook driving shaft saddle ❹, and move hook driving shaft saddle ❹ to the right or left to adjust so that a clearance of 0 to 0.05 mm is provided between blade point ❷ of the hook and needle ❸. Then tighten setscrews ❺.
3) Next, in the state described in step 1), align the blade point of hook with the center of needle and tighten setscrews ❶ in the screw gear (small).

4-15. Adjusting the needle stop position

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.

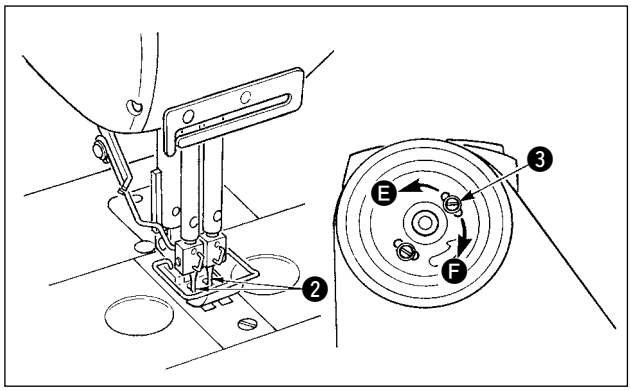
[LH-3528-7, LH-3568-7 only]



(1) Stop position after thread trimming

1) The standard needle stop position is obtained by aligning marker dot Ⓐ on the machine arm with white marker dot Ⓑ on the handwheel.
2) Stop the needle in UP position, turn OFF the power, and loosen screw ❸ to perform adjustment within the slot of the screw. The needle stop timing is advanced if you move the screw in the direction of Ⓒ.
   The needle stop timing is delayed if you move the screw in the direction of Ⓓ.

Caution
Do not operate the machine with screw ❶ loosened. Just loosen the screw, and do not remove it.



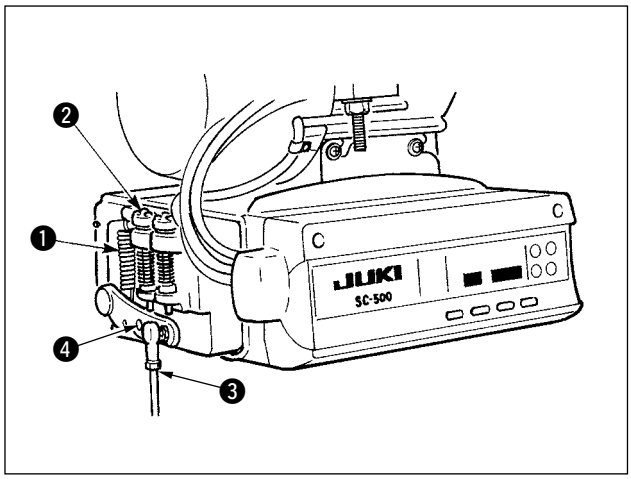
(2) Lower stop position

1) The DOWN needle stop position when the pedal is returned to the neutral position after the front part of the pedal is depressed can be adjusted the same as UP stop. Stop needle ❷ in DOWN position, turn OFF the power, and loosen screw ❸ to perform adjustment within the slot of the screw. The needle stop timing is advanced if you move the screw in the direction of Ⓔ, and the timing is delayed if you move the screw in the direction of Ⓕ.

Caution
Do not operate the machine with screw ❸ loosened. Just loosen the screw, and do not remove it.

4-16. Pedal pressure and pedal stroke

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) Adjusting the pressure required to depress the front part of the pedal

1) This pressure can be adjusted by altering the position of pedal pressure adjusting spring ❶. The pressure decreases when you hook the spring on the left side. On the contrary, the pressure increases when you hook it on the right side.

(2) Adjusting the pressure required to depress the back part of the pedal

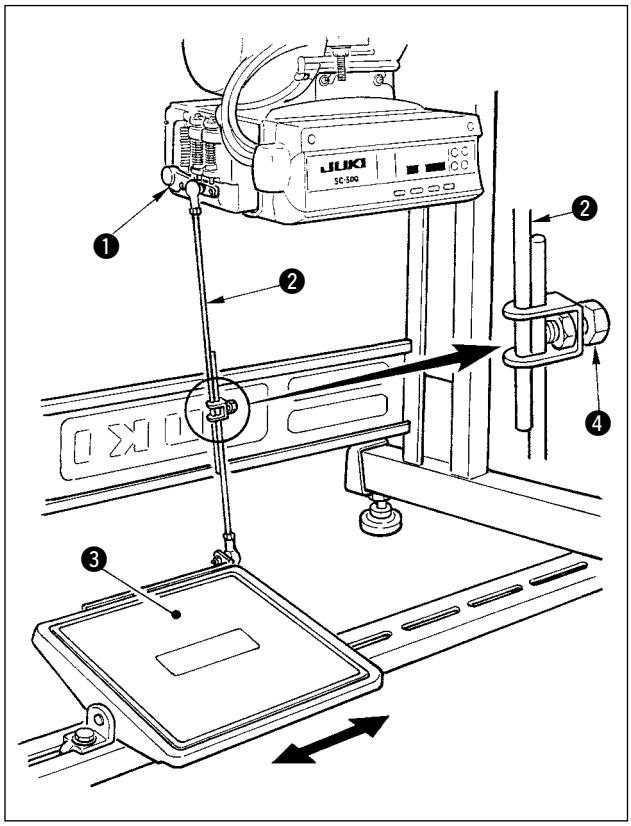
1) This pressure can be adjusted using regulate screw ❷. The pressure increases as you turn the regulator screw in and decreases as you turn the screw out.

(3) Adjusting the pedal stroke

1) The pedal stroke decreases when you insert connecting rod ❸ into the hole ❹ on the left side.

4-17. Adjustment of the pedal

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) Installing the connecting rod

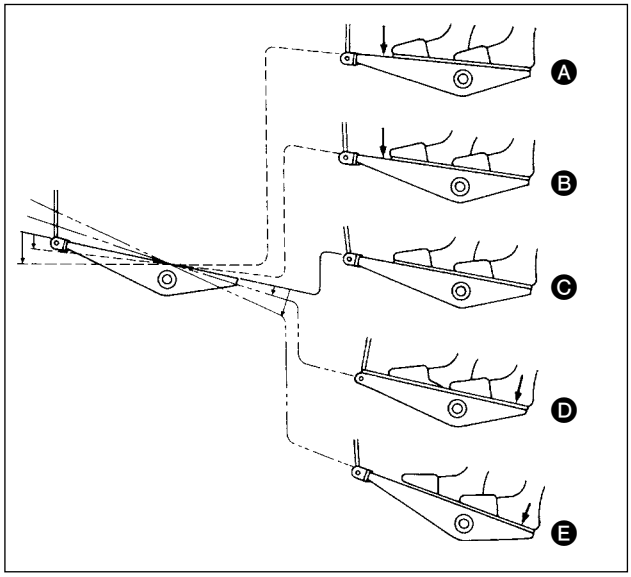
1) Move pedal ❸ to the right or left as illustrated by the arrows so that motor control lever ❶ and connecting rod ❷ are straightened.

(2) Adjusting the pedal angle

1) The pedal tilt can be freely adjusted by changing the length of the connecting rod.
2) Loosen adjust screw ❹, and adjust the length of connecting rod ❷.

5. OPERATION OF THE SEWING MACHINE

5-1. Pedal Operation



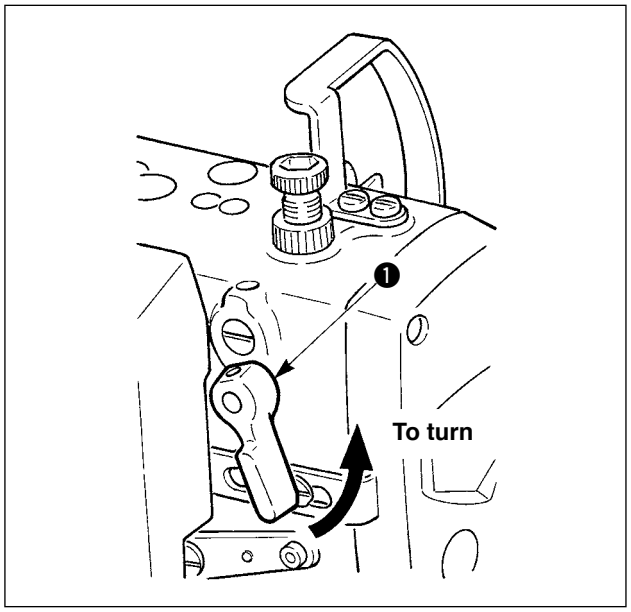
(1) The pedal is operated in the following four steps:

1) The machine runs at low sewing speed when you lightly depress the front part of the pedal. Ⓑ
2) The machine runs at high sewing speed when you further depress the front part of the pedal. Ⓐ
   (If the automatic reverse feed stitehing 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 toits original position. Ⓒ
4) The machine trims threads when you fully depress the back part of the pedal. Ⓔ

* When auto-lifter (AK135) is used, 1-step switch is increased between stop and thread trimming. The presser foot goes up when the back part of the pedal is lightly depressed Ⓓ, and the presser foot comes down once when the back part of the pedal is further strongly depressed. Then the thread trimmer is actuated and the presser foot goes up again.

- If you reset the pedal to its neutral position during the automatic reverse feed stitching at seam start, the machine stops after it cornpletes 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 perforrn thread trimming even if you reset the pedal to its neutral position immediately after the machine started thread trimming action.

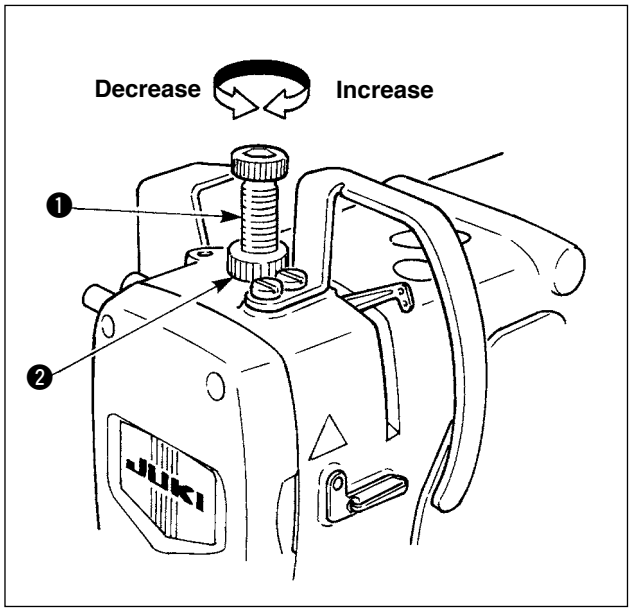
5-2. Hand lifter



1) When you want to keep the presser foot in the lifted position, turn hand lifter ❶ in the direction of the arrow. By so doing, the presser foot rise 5.5 mm.
2) When you want to lower the presser foot, lower the hand lifter. This will return the presser foot to its predeterminded lower position.
3) Operate the knee lifter, and the presser will rise by approximately 12 mm.

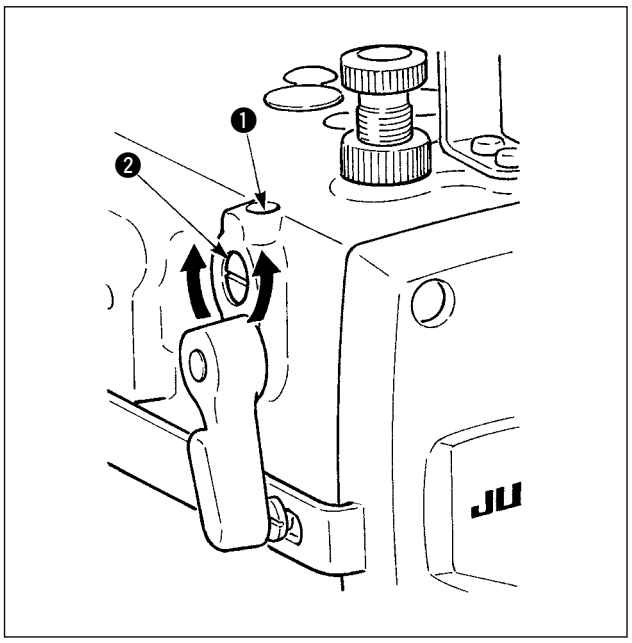
Do not perform thread trimming operation with the presser foot lifted since there is a case where the wiper comes in contact with the presser foot.

5-3. Adjusting the pressure of the presser foot



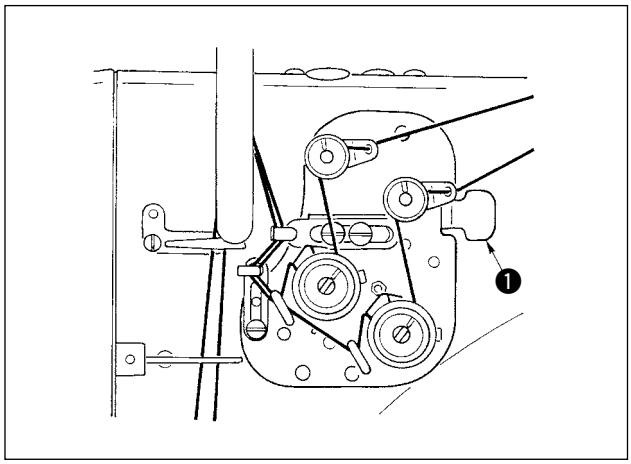
Loosen nut ❷ by turning counterclockwise, and turn presser spring regulator ❶ to adjust the pressure. Turn the regulator clockwise to increase the pressure and turn it counterclockwise to decrease the pressure.
After the adjustment, tighten nut ❷.

5-4. Micro-lifter

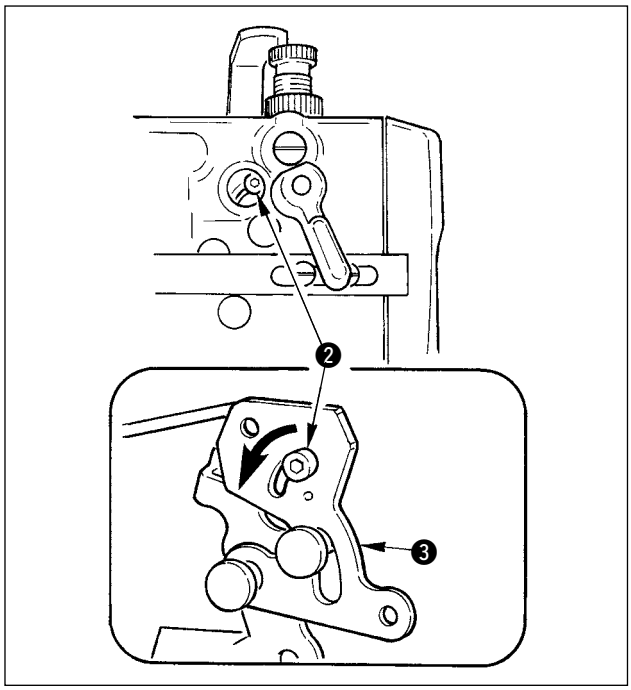


Loosen screw ❶, turn micro-lifter pin ❷, and the height of the presser foot can be adjusted to 0 to 0.5 mm.

5-5. Thread tension release changeover when using the knee lifter



At the time of delivery of LH-3568 and 3568-7, the knee lifter or AK device is not interlocked with the thread tension release of thread tension controller. When releasing the thread tension, press lever ❶ to rise the disks.



• When interlocking the thread tension release

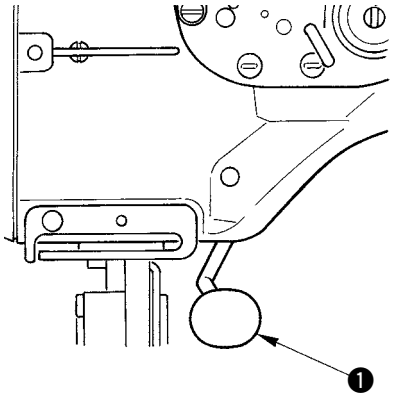
Remove the wiper solenoid in case of the machine with wiper. Remove the cap at the back, loosen screw ❷, move screw ❷ in the direction of arrow up to the end of slot of lifting link ❸, and fix it.

When interlocking the thread tension release :

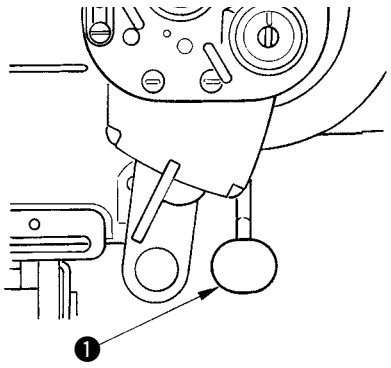
1. **Thread slacks when turning cloth at the corner stitching, and sewing trouble of thread tension release may occur .**
2. **When the wiper is not used at the time of thread trimming, needle thread may be drawn out when removing cloth.**
3. **Just loosen screw ❷, and do not remove it.**

5-6. One-touch manual reverse feed (One-touch reverse feed type)

[LH-3528, 3528-7]



[LH-3568, 3568-7]



• How to use

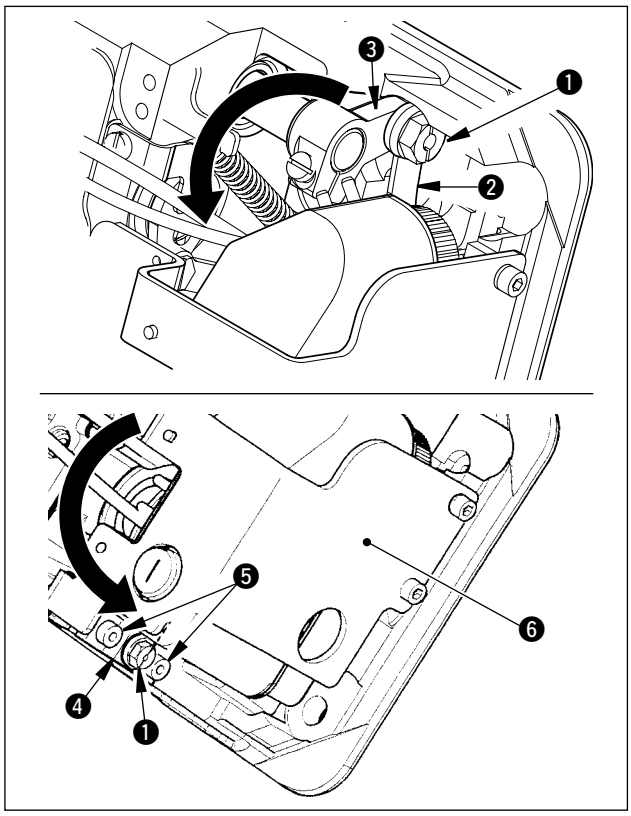
1) Press switch ❶, and the sewing machine will immediately run in the reverse direction to perform the reverse feed stitching.
2) Reverse stitching is made as long as you keep pressing the switch.
3) Release the switch, and the sewing machine will run in the normal direction.

6. MAINTENANCE

6-1. Changing procedure to bottom feed and the adjustment

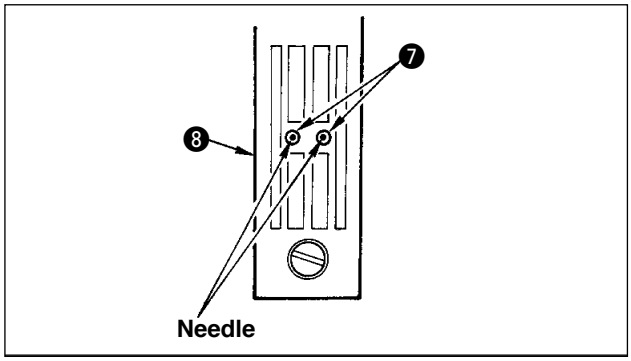
WARNING :
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

[LH-3528]

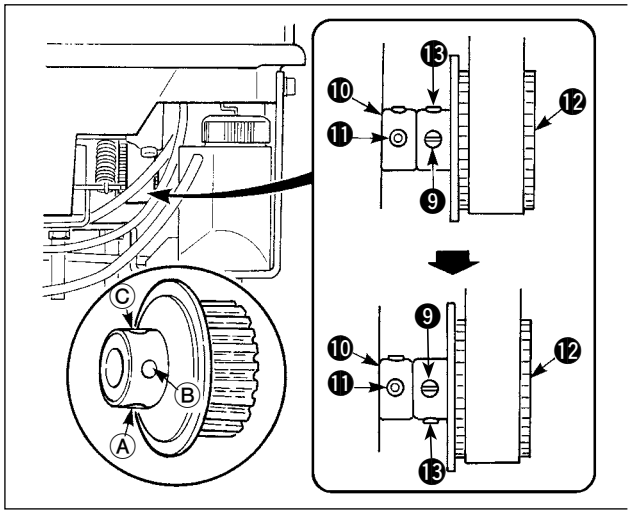


1) Loosen hinge screw ❶ after adjusting the feed dial to the minimum, move needle bar rocking rod ❷ from needle bar rocking rod arm ❸ to needle rocking rod fixing base ❹, and fix it with hinge screw ❶.

When hinge screw ❶ is difficult to turn, perform the work after removing oil tank ❻.



2) After replacing the feed dog and the throat plate with the components for bottom feed, adjust the position of needle rocking rod fixing base ❹ so that the needle center aligns with needle holes ❼ in throat plate ❽, and fix setscrews ❺.

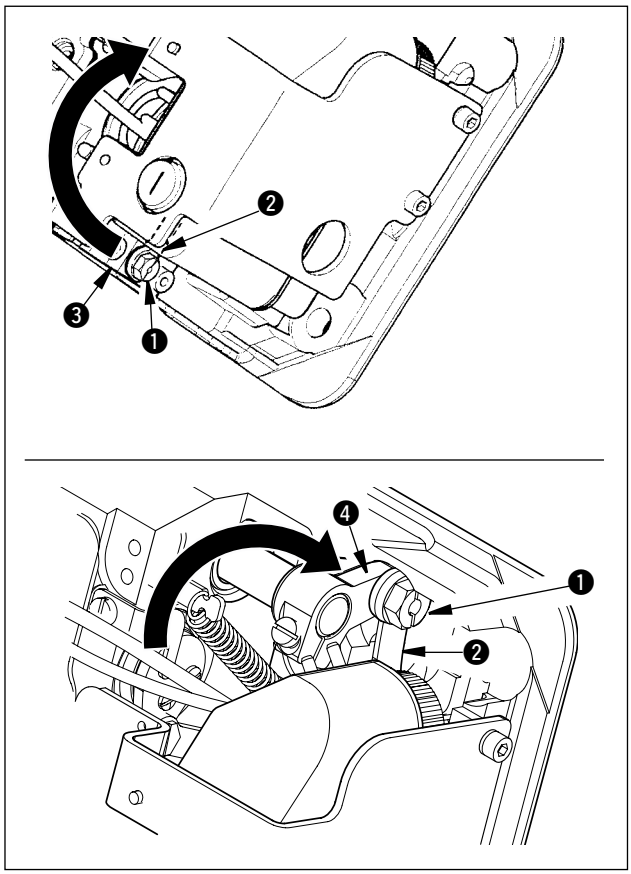


3) Loosen setscrews ❾and⓭(2 places) in sprocket ⓬. Loosen the setscrews in the order of ⓭ and ❾. At this time, remove screw No. 1❾ which is put in screw hole Ⓐ in sprocket ⓬, and put it in screw hole Ⓒ which is located on the opposite side at 180˚.
Turn the pulley by 180˚ without turning the hook driving shaft, align the flat section of the hook driving shaft with screw hole Ⓒ in sprocket ⓬, and fix with setscrews ❾. Screw No. 1⓫ in the hook driving shaft rear bearing ❿ aligns with the flat section of the hook driving shaft. Make the state as the standard.
Then fix screw No. 2⓭ which is put in screw hole Ⓑ in sprocket ⓬ as well.

6-2. Changing procedure to needle feed and the adjustment

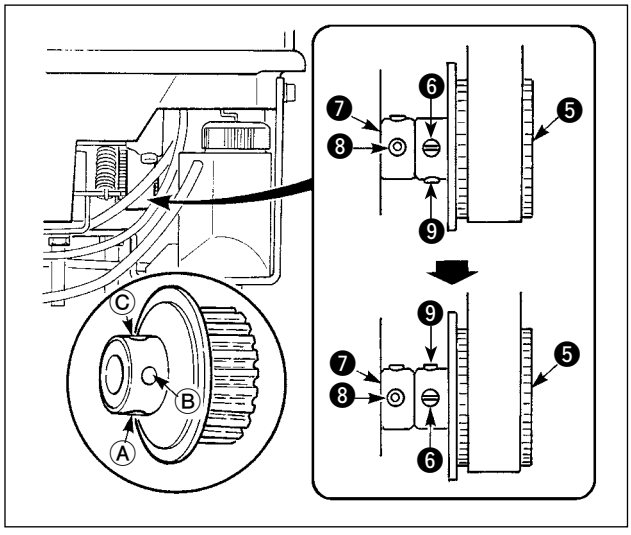
WARNING :
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

[LH-3528]



The procedure is the reverse of "6-1. Changing procedure to bottom feed and the adjustment".

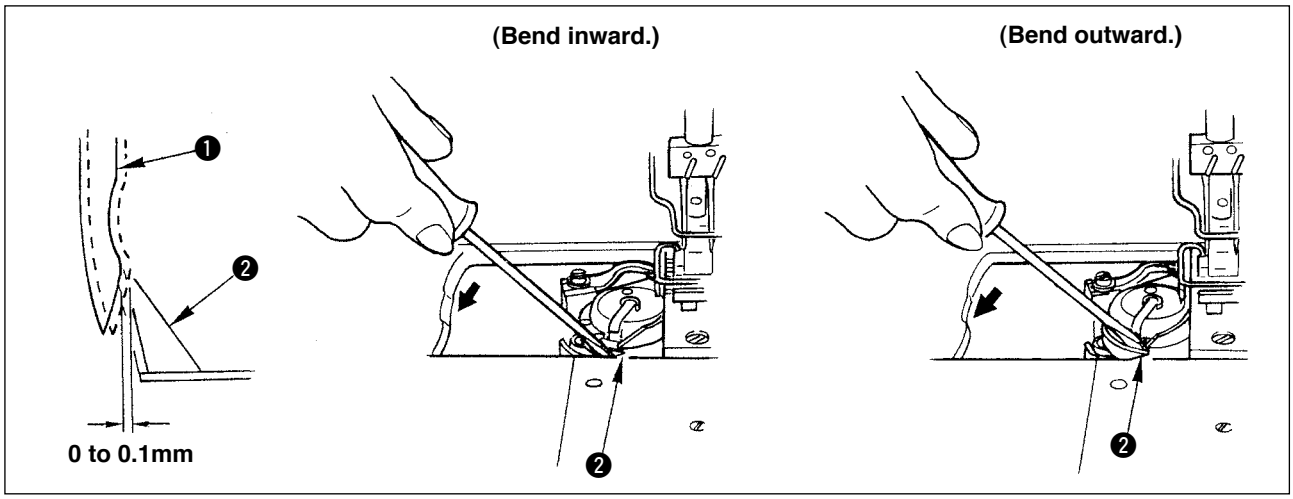
Loosen hinge screw ❶, move needle bar rocking rod ❷ from needle rocking rod fixing base ❸ to needle bar rocking rod arm ❹, and fix it with hinge screw ❶.
Replace the feed dog and the throat plate with the components for needle feed.



Loosen setscrews ❻ and ❾(2 places) in sprocket ❺. Loosen the setscrews in the order of ❾ and ❻. At this time, remove the setscrew ❻ which is put in screw hole Ⓒ, and put it in screw hole Ⓐ which is located on the opposite side at 180˚.
Turn the pulley by 180˚ without turning the hook driving shaft, align the flat section of the hook driving shaft with screw hole Ⓐ in sprocket ❺, and fix with setscrews ❻. It is the standard that screw No. 1 ❽ in hook driving shaft rear bearing ❼ aligns with the flat section of the hook driving shaft.
Then fix screw No. 2 ❾ which is put in screw hole Ⓑ in sprocket ❺ as well.

6-3. Adjusting the hook 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.

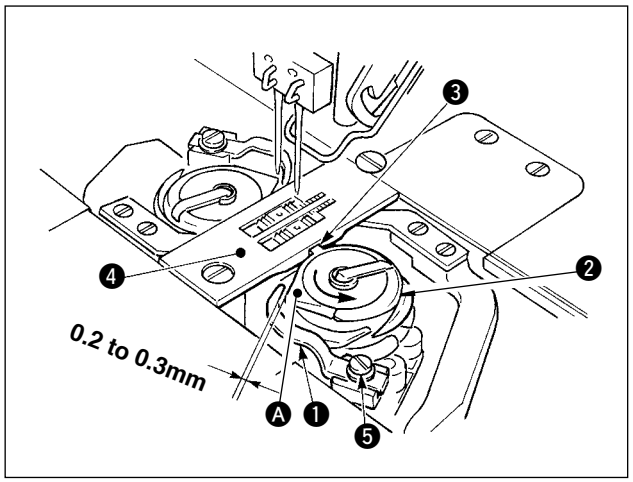


When replacing the hook, confirm the position of the needle guard.
The standard position is the state that hook needle guard ❷ comes in contact with the side of needle ❶ and the needle is along the hook needle guard by 0 to 0.1mm. If not, adjust by bending the hook needle guard.

1) When bending the hook needle guard inward, perform by entering a screwdriver to the outside of the hook needle guard.
2) When bending the hook needle guard outward, perform by entering a screwdriver to the inside of the hook needle guard.

6-4. Adjusting the inner hook guide

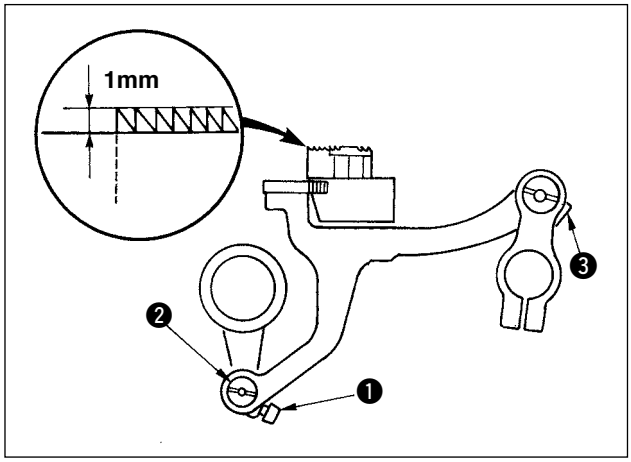
WARNING :
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



1) Turn the handwheel in the normal direction to bring inner hook guide ❶ to the extreme rear position.
2) Turn bobbin case ❷ in the direction of the arrow, and make inner hook stopper ❸ come in contact with the groove of throat plate ❹.
3) Loosen inner hook guide setscrew ❺, and set the clearance between the inner hook guide and protrusion Ⓐ of the bobbin case to 0.2 to 0.3 mm.

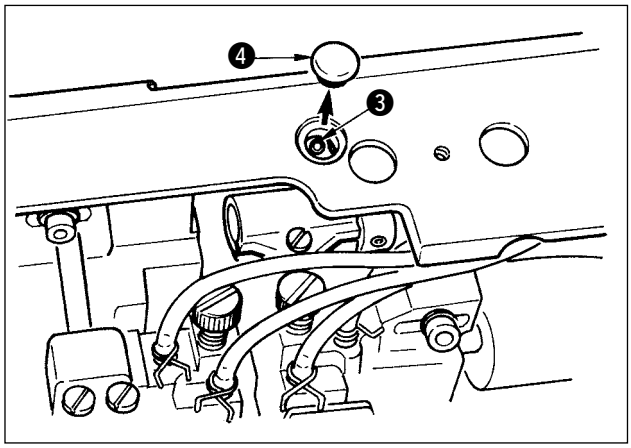
6-5. Adjusting the height and the inclination of the feed dog

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.



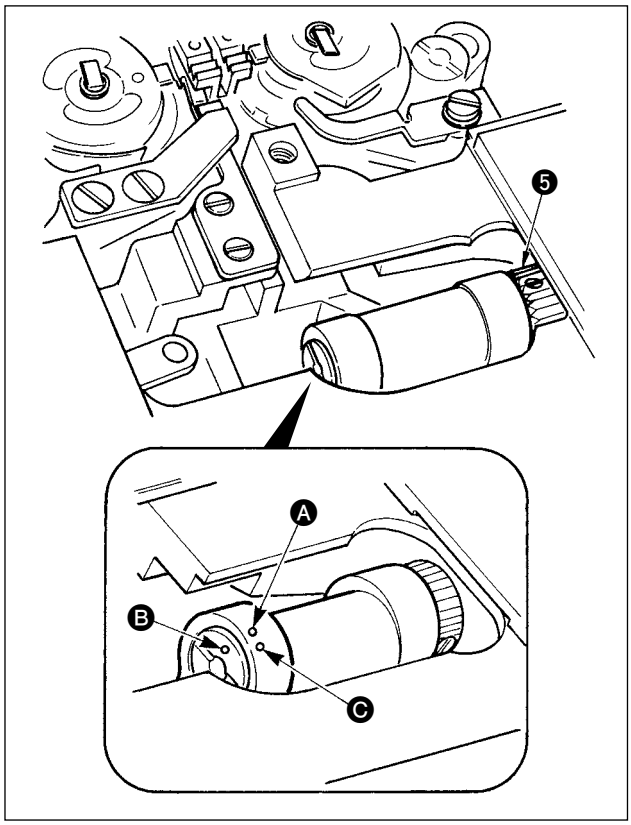
(1) Adjusting the height

1) Loosen bottom feed link setscrew ❶, and turn feed driving link shaft ❷ to adjust the height. Standard height is 1 mm from the throat plate in the highest position.



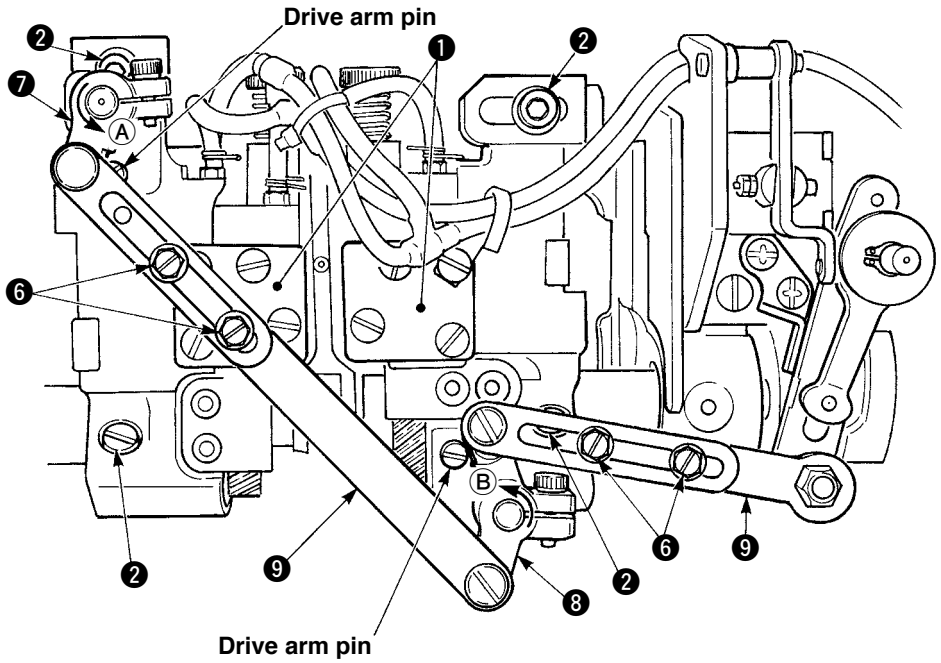
(2) Inclination

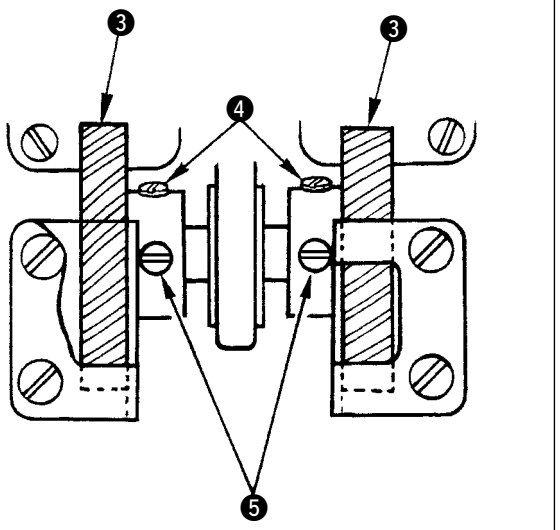
1) Remove cap ❹ on the side of machine bed, loosen feed bar shaft setscrew ❸, and turn knurled section ❺ to adjust the inclination. Standard inclination is the position where engraved marker dot Ⓐ of feed bar arm aligns with engraved marker dot Ⓑ of feed bar shaft. (Engraved marker dot Ⓒ is for LH-4100.)



6-6. Replacing the gauge

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.





- **Move of the hook shaft saddle when replacing the gauge**

1) Loosen screws No. 2 ❹ of hook driving shaft gears ❸.
2) Align the needle with the blade point of hook.
3) Slightly loosen screws No. 1 ❺ of hook driving shaft gears ❸ so that the screws does not come off the flat section of the hook driving shaft.

Sewing machine with thread trimmer
- Loosen setscrews ❻ of connecting link (asm.) ❾.

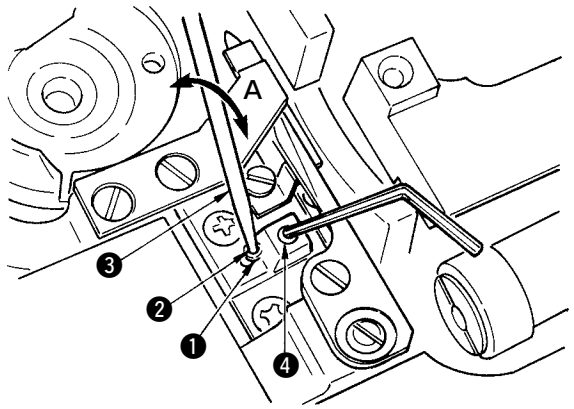
4) Loosen two setscrews ❷ of hook shaft saddle ❶, and move the hook shaft saddle.
(At this time, the hook drive shaft gear moves as well, and needle-to-hook timing does not shift.)
5) Set the clearance between the needle and the blade point of hook to 0 to 0.05 mm.
6) Tighten two setscrews ❷ of the hook shaft saddle.
7) Tighten from screws No. 1 ❺ at the position where hook driving shaft gear ❸ comes in contact with hook shaft saddle ❶. Then tighten screws No. 2.

Sewing machine with thread trimmer
- Make driving arms ❼ and ❽ come in contact with the driving arm pin in the directions of Ⓐ and Ⓑ respectively and tighten four setscrews ❻ in connecting link (asm.) ❾.

6-7. Adjusting the thread presser spring

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.

[LH-3528-7, LH-3568-7 only]



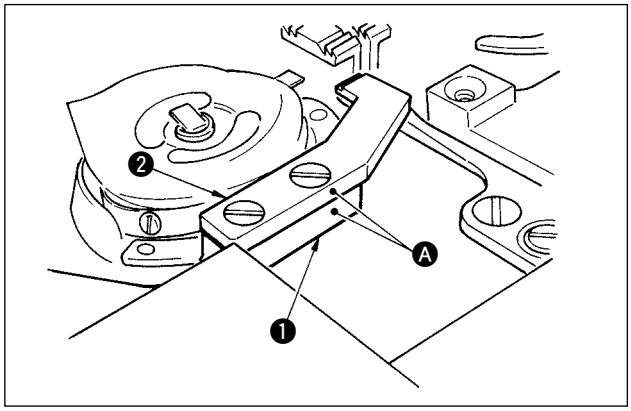
Insert a rod (thin rod, wrench, etc.) into adjusting hole ❷ in thread presser spring base ❶, and loosen setscrew ❹ with a hexagonal wrench key of 1.5 mm.

Adjust the thread presser spring by moving rod ❸ in the direction of arrow mark A, and fix it with setscrew ❹.

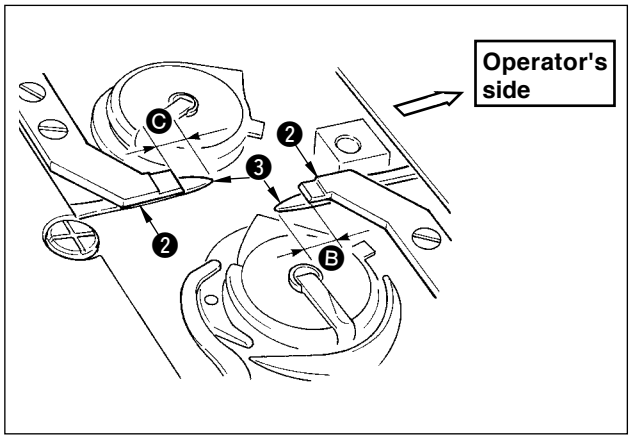
Clamp trouble occurs even when the thread presser spring pressure is excessive or insufficient. So, be careful.

6-8. Adjusting the position of the moving knife

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.

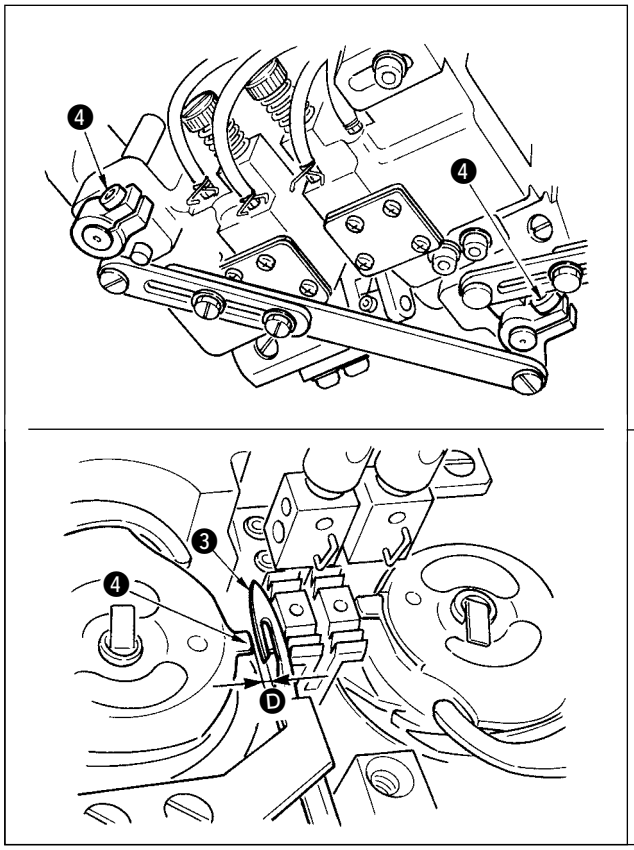


1) Align counter knife base ❶ with plane Ⓐ of counter knife ❷.



2) Loosen clamp screw ❹ located in the rear of machine bed and adjust so that distance Ⓑ between the top end of moving knife ❸ at the time of waiting and the top end of counter knife ❷ becomes the dimension as shown in the list below.

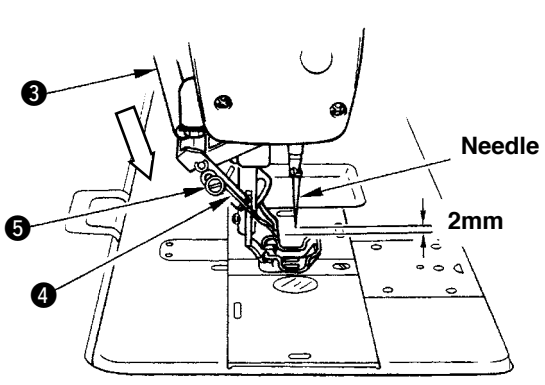
	Ⓑ (Left)	Ⓒ (Right)
LH-3528-7	4.3	2.2
LH-3568-7	3.5	2.7

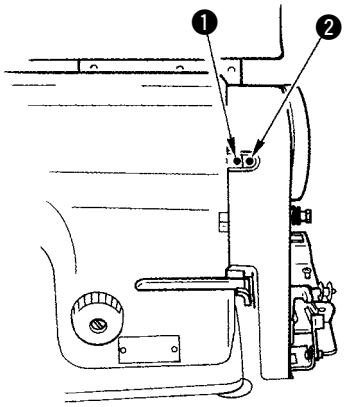


3) Set clearance Ⓓ between moving knife ❸ and the inner hook to 0.3 ± 0.1 mm when moving knife ❸ works. Loosen moving knife setscrews ❻ and ❼, and adjust the clearance.

6-9. Position of the wiper

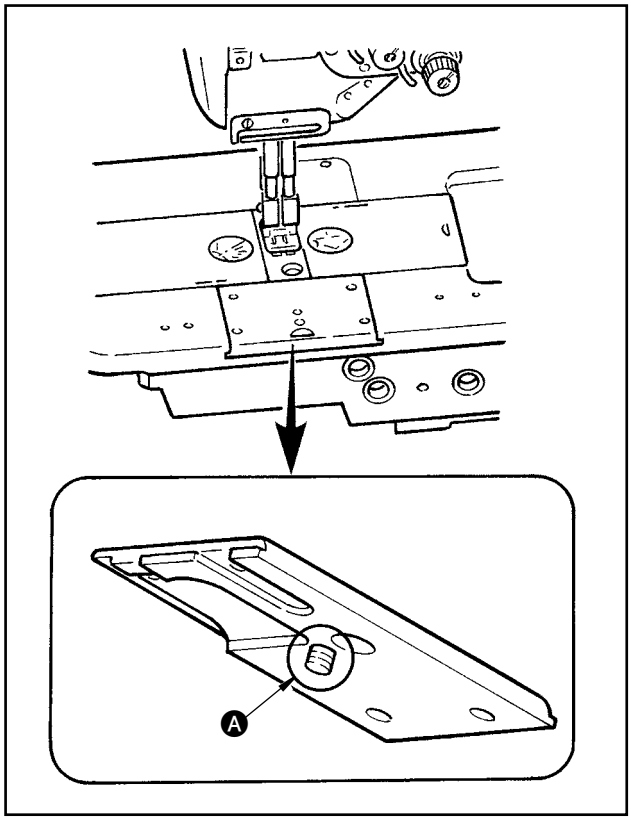
WARNING :
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.





1) Adjust engraved marker dot ❶ on the machine arm to white engraved marker dot ❷ on the handwheel (second white engraved marker dot in the rotating direction of the sewing machine).
2) Move rod ❸ in the direction of the arrow, and adjust with two clamping screws ❺ so that the clearance between the top end of needle and wiper ❹ is approximately 2 mm.

6-10. Caution when installing the attachments

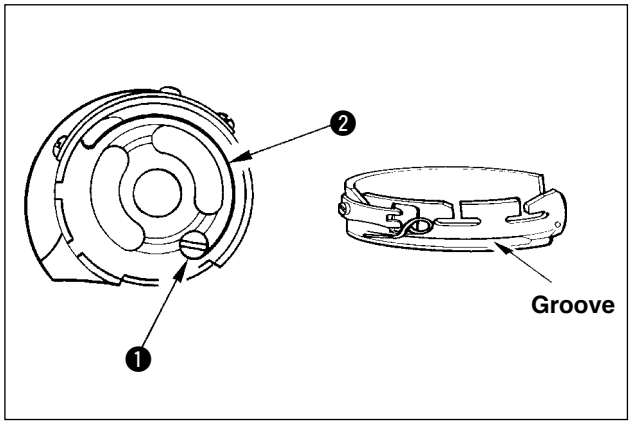


Be careful that screw Ⓐ does not protrude in the rear of the bed slide when fixing the attachment to the bed slide with the screw.

Caution

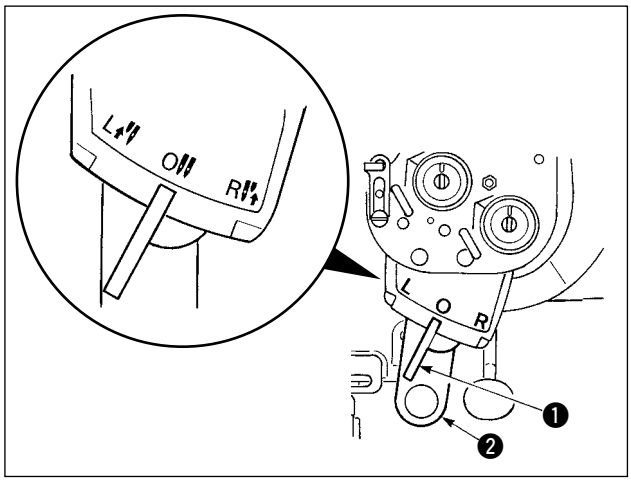
When it protrudes as shown in the figure, the screw interferes with other components and breakdown will be caused.

6-11. Replacing the bobbin thread slack preventer sprlng (For LH-3568, 3568-7)



1) Loosen screw ❶ and remove bobbin thread slack preventer spring ❷ from the groove on the bobbin case.
2) Fit bobbin thread slack preventer spring ❷ which replaces the removed spring in the bobbin case through the groove.
3) Fix bobbin thread slack preventer spring ❷ in the bobbin case by tighten screw ❶. At this time, carefully check the operating range and tension or the spring.

6-12. Stop of the needle bars and angle of corners for corners stitching (For LH-3568, 3568-7)



• Stop of the needle bar

When change lever ❶ is moved to position L, the left-hand needle bar stops, and when it is moved to position R, the right-hand needle bar stops.

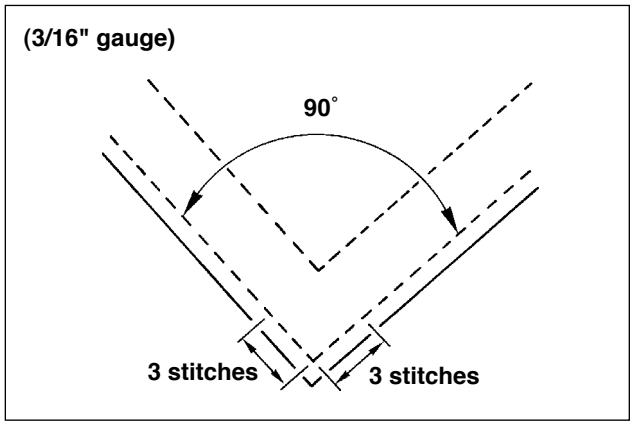
• When returning to 2-needle operation

Press change fixing lever ❷. Change lever ❶ returns to the position "0", and the machine returns to 2-needle sewing.

• Relation between the angle of corners and stitch length

To perform corner stitching with accuracy, the stitch length can be determined referring to the table of the number of stitches by gauges.
However, check whether the stitch length determined really matches the corner by actually sewing it.

(Example) To sew a correr of 90˚ of angle using a 3/16" gauge with the stitch length specified to 1.6mm, the number of stiches can be obtained in the following way. Observe the "90˚" columns on the table of the number of stitches by stitch length gauges to search for the column in which "1.6" is indicated. Then, you can find "3" on the top of the "1.6" lines. This means the number of stitches is 3.



- **If sewing a corner of which angle is 40˚ or less, the thread take-up amount of the bobbin thread slack preventer spring will be insufficient. In this case, the thread will remain on the wrong side of the material.**
- **When performing the operation of changeover of separately driven needle bar, perform the work after stopping the sewing machine once.**
  When the operation of changeover is performed at 1,000 rpm or more, break-down will be caused.)
- **When the sewing machine is used as the substitute for 1-needle sewing machine in the state of separately driven needle bar, break-down of the sewing machine will be caused. When performing sewing with 1-needle sewing machine, remove one of two needles and use the sewing machine in the state that two needle bars operate.**

7. STITCH-TO-ANGLE TABLE BY GAUGE (PITCH AND mm CONVERSION TABLE)

1/8"(3.17mm)

Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40		4.4	2.9	2.2	1.7	1.5			
50		3.4	2.3	1.7					
60		2.7	1.8						
70	4.5	2.3	1.5						
80	3.8	1.9							
90	3.2	1.6							
100	2.6								

3/16"(4.76mm)

Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40				3.3	2.6	2.2	1.9	1.6	1.5
50			3.4	2.6	2.0	1.7	1.5		
60			2.7	2.1	1.6	1.4			
70		3.4	2.3	1.7	1.4				
80		2.8	1.9	1.4					
90	4.8	2.4	1.6						
100	4.0	2.0							

1/4"(6.35mm)

Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40				4.4	3.5	2.9	2.5	2.2	2.0
50			4.6	3.4	2.8	2.3	2.0	1.7	1.6
60			3.7	2.8	2.2	1.9	1.6		
70		4.6	3.1	2.3	1.9	1.6			
80		3.8	2.6	1.9	1.6				
90		3.2	2.2	1.6					
100		2.7	1.8						

5/16"(7.93mm)

Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40					4.4	3.7	3.2	2.8	2.5
50				4.3	3.4	2.9	2.5	2.2	1.9
60			4.6	3.5	2.8	2.3	2.0	1.8	1.6
70			3.8	2.9	2.3	1.9	1.7	1.5	
80		4.8	3.2	2.4	1.9	1.6			
90		4.0	2.7	2.0	1.6				
100		3.4	2.3	1.7					

1/2"(12.7mm)

Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40						5.8	5.0	4.4	3.9
50					5.5	4.5	3.9	3.4	3.0
60				5.5	4.4	3.7	3.1	2.8	2.4
70				4.5	3.6	3.0	2.6	2.3	2.0
80			5.1	3.8	3.1	2.5	2.2	1.9	1.7
90			4.2	3.2	2.5	2.1	1.8	1.6	1.4
100		5.3	3.6	2.7	2.1	1.8	1.5	1.3	

5/32"(3.96mm)

Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40			3.6	2.7	2.2	1.8	1.6		
50		4.2	2.8	2.1	1.7				
60		3.4	2.3	1.7					
70		2.8	1.9						
80	4.7	2.4	1.6						
90	4.0	2.0							
100	3.3	1.7							

7/32"(5.56mm)

Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40			5.1	3.8	3.1	2.5	2.2	1.9	1.7
50			4.0	3.0	2.4	2.0	1.7	1.5	
60		4.8	3.2	2.4	1.9	1.6			
70		4.6	2.6	2.0	1.6				
80		3.3	2.2	1.7					
90	5.6	2.8	1.9	1.4					
100	4.7	2.3	1.6						

9/32"(7.14mm)

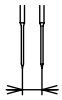
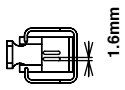
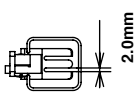
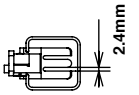
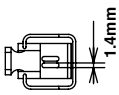
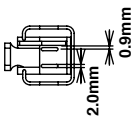
Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40				4.9	3.9	3.3	2.8	2.5	2.2
50			5.1	3.8	3.1	2.6	2.2	1.9	1.7
60			4.1	3.1	2.5	2.1	1.8	1.5	
70		5.1	3.4	2.5	2.0	1.7	1.5		
80		4.3	2.8	2.1	1.7	1.4			
90		3.6	2.4	1.8	1.4				
100		3.0	2.0	1.5					

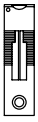
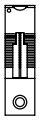
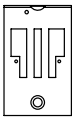
3/8"(9.52mm)

Turning angle \ Number of stitches	1	2	3	4	5	6	7	8	9
40						4.4	3.7	3.3	2.9
50					4.1	3.4	2.9	2.6	2.3
60				4.1	3.3	2.7	2.4	2.1	1.8
70			4.5	3.4	2.7	2.3	1.9	1.7	
80			3.8	2.8	2.3	1.9	1.6		
90		4.8	3.2	2.4	1.9	1.6			
100		4.0	2.7	2.0	1.6				

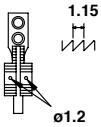
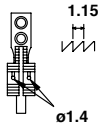
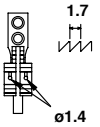
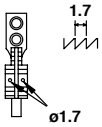
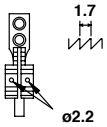
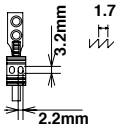
8. GAUGE SETS

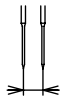
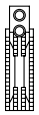
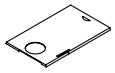
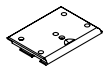
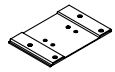
(1) LH-3528

Code	Needle gauze size		Presser foot asm.					
			 1.6mm	 2.0mm	 2.4mm		 1.4mm	 0.9mm 2.0mm
	inch	mm		**Tip-divided**	**Tip-divided**	**Lower feed**		**Swivel guide**
A	3/32	2.4	22637557	–	–	–	–	–
B	1/8	3.2	22637656	40035896	–	10391852	22627152	22647051
C	5/32	4.0	22637755	40035897	–	–	–	–
D	3/16	4.8	22637854	22640353	22816557	10392058	22627350	22647150
E	7/32	5.6	–	22640452	–	–	✻ 22627459	✻ 22647259
F	1/4	6.4	22638050	22640551	22816755	10392256	22627558	22647358
G	9/32	7.1	22638258	22640759	–	–	22627657	22647457
H	5/16	7.9	22638357	22640858	22816953	–	22627756	22647556
K	3/8	9.5	22638456	22640957	22817050	–	–	–
W	7/16	11.1	–	22641054	40033941	–	–	–
L	1/2	12.7	22638753	22641252	–	10392751	–	–
M	5/8	15.9	–	22641351	–	–	–	–
N	3/4	19.1	22638951	22641450	40033947	10393056	–	–
P	7/8	22.2	22639157	22641658	–	22844450	–	–
Q	1	25.4	22639256	22641757	–	22844559	–	–
R	1-1/8	28.6	22639355	22641856	40033953	–	–	–
S	1-1/4	31.8	22639454	22641955	–	–	–	–
T	1-3/8	34.9	–	22642052	–	–	–	–
U	1-1/2	38.1	–	22642151	–	–	–	–
Stitch spec.		A	★					
		F					★	★ (Tape attaching)
		S		★				
		G			★	★		
		Lower feed						

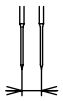
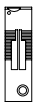
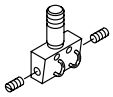
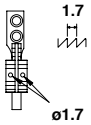
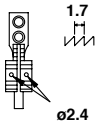
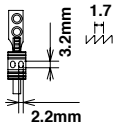
Code	Needle gauze size		Throat Plate			
						
	inch	mm		**With taping**	**Lower feed**	**Lower feed**
A	3/32	2.4	22625008	–	–	–
B	1/8	3.2	22625107	22628002	22845200	–
C	5/32	4.0	22625206	–	–	–
D	3/16	4.8	22625305	22628200	22845408	–
E	7/32	5.6	22625404	22628309	–	–
F	1/4	6.4	22625503	22628408	22845606	–
G	9/32	7.1	22625602	22628507	–	–
H	5/16	7.9	22625701	22628606	–	–
K	3/8	9.5	22625800	–	–	–
W	7/16	11.1	22625909	–	–	–
L	1/2	12.7	22626006	–	–	22846109
M	5/8	15.9	22626105	–	–	–
N	3/4	19.1	22626204	–	–	22846307
P	7/8	22.2	22626303	–	–	22846406
Q	1	25.4	22626402	–	–	22846505
R	1-1/8	28.6	22626501	–	–	–
S	1-1/4	31.8	22626600	–	–	–
T	1-3/8	34.9	22626709	–	–	–
U	1-1/2	38.1	22626808	–	–	–
Stitch spec.		A	Spec. common	Spec. common		
		F				
		S				
		G				
		Lower feed			★	★

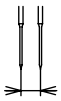
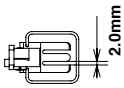
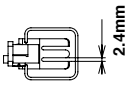
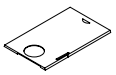
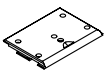
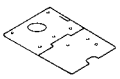
✻ · · · Special order parts

Code	Needle gauze size		Feed dog					
								
	inch	mm		**Option**				**Option**
A	3/32	2.4	40033714	–	–	–	–	–
B	1/8	3.2	40033715	40035883	40033563	–	–	–
C	5/32	4.0	40033716	–	–	40025784	–	–
D	3/16	4.8	40033718	40035884	40033564	40025785	B1613512D0H	40025801
E	7/32	5.6	–	40035885	40033565	40025786	–	–
F	1/4	6.4	40033720	40035886	40033566	40025787	B1613512F0H	40025803
G	9/32	7.1	40033722	40035887	40033567	40025788	–	–
H	5/16	7.9	40033723	40035888	40033568	40025789	B1613512H0H	40025805
K	3/8	9.5	40033724	–	–	40025790	B1613512K0H	40025806
W	7/16	11.1	–	–	–	40025791	B1613512W0H	40025807
L	1/2	12.7	40033727	–	–	40025792	–	–
M	5/8	15.9	–	–	–	40025793	–	–
N	3/4	19.1	40033729	–	–	40025794	B1613512N0H	40025810
P	7/8	22.2	40033731	–	–	40025795	–	–
Q	1	25.4	40033732	–	–	40025796	–	–
R	1-1/8	28.6	40033733	–	–	40025797	B1613512R0H	40025813
S	1-1/4	31.8	40033734	–	–	40025798	–	–
T	1-3/8	34.9	–	–	–	40025799	–	–
U	1-1/2	38.1	–	–	–	40025800	–	–
Stitch spec.		A	★					
		F		★	★			
		S				★		
		G					★	★
		Lower feed						

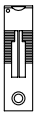
Code	Needle gauze size		Feed dog		Needle clamp asm.	Sliding plate asm.			
									
	inch	mm	**Lower feed**	**Lower feed**		**(Left)**	**(Right)**	**(Front)**	**Tape attaching (Front)**
A	3/32	2.4	–	–	40035875				
B	1/8	3.2	23205107	–	40026027				
C	5/32	4.0	–	–	40026029				
D	3/16	4.8	23205305	–	40026031				
E	7/32	5.6	–	–	40026033				
F	1/4	6.4	23205503	–	40026035	22601058	22600555		
G	9/32	7.1	–	–	40026037				
H	5/16	7.9	–	–	40026039				
K	3/8	9.5	–	–	40026041				
W	7/16	11.1	–	–	40026043			40042874	23206709
L	1/2	12.7	–	22848105	40026045				
M	5/8	15.9	–	–	40026047	22601157	22600654		
N	3/4	19.1	–	22848303	40026049				
P	7/8	22.2	–	22848402	40026051				
Q	1	25.4	–	22848501	40026053	22601256	22600753		
R	1-1/8	28.6	–	–	40026055				
S	1-1/4	31.8	–	–	40026057				
T	1-3/8	34.9	–	–	40026059	22601355	22600852		
U	1-1/2	38.1	–	–	40026061				
Stitch spec.		A			Spec. common	Spec. common	Spec. common	Spec. common	
		F							★ (Tape attaching)
		S							
		G							
		Lower feed	★	★					

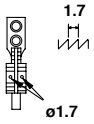
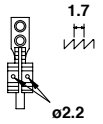
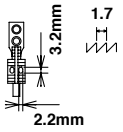
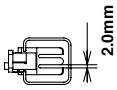
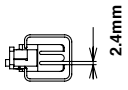
(2) LH-3528-7

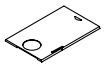
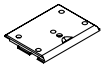
Code	Needle gauze size		Throat Plate	Needle clamp asm.	Feed dog		
							
	inch	mm					**Option**
B	1/8	3.2	40035881	40026027	40035890	–	–
C	5/32	4.0	40025485	40026029	40025817	–	–
D	3/16	4.8	40025490	40026031	40025818	40035891	40025831
E	7/32	5.6	40025491	40026033	40025819	–	–
F	1/4	6.4	40025492	40026035	40026715	40035892	40025833
G	9/32	7.1	40025493	40026037	40025820	–	–
H	5/16	7.9	40025494	40026039	40025821	–	–
K	3/8	9.5	40025495	40026041	40025822	–	–
W	7/16	11.1	–	–	–	–	–
L	1/2	12.7	40025498	40026045	40025824	40035894	40025838
M	5/8	15.9	40025499	40026047	40025825	–	–
N	3/4	19.1	40025500	40026049	40025826	–	–
P	7/8	22.2	40025502	40026051	40025827	–	–
Q	1	25.4	40025503	40026053	40025828	–	–
R	1-1/8	28.6	40025504	40026055	40025829	–	–
S	1-1/4	31.8	40025505	40026057	40025830	–	–
Stitch spec.		S	Spec. common	Spec. common	★		
		G				★	★

Code	Needle gauze size		Presser foot asm.		Sliding plate asm.			
								
	inch	mm	**Tip-divided**	**Tip-divided**	**(Left)**	**(Right)**	**(Front)**	**(Left) Option**
B	1/8	3.2	40035896	–	40025247	40025235	40042880	40031536
C	5/32	4.0	40035897	–				
D	3/16	4.8	22640353	22816557				
E	7/32	5.6	22640452	–				
F	1/4	6.4	22640551	22816755				
G	9/32	7.1	22640759	–				
H	5/16	7.9	22640858	–				
K	3/8	9.5	22640957	–				
W	7/16	11.1	–	–				
L	1/2	12.7	22641252	22817159	40025248	40025236		40045729
M	5/8	15.9	22641351	–				
N	3/4	19.1	22641450	–				
P	7/8	22.2	22641658	–	40025249	40025239		40045730
Q	1	25.4	22641757	–				
R	1-1/8	28.6	22641856	–				
S	1-1/4	31.8	22641955	–	40025250	40025240		40045731
Stitch spec.		S	★		Spec. common	Spec. common	Spec. common	Spec. common
		G		★				

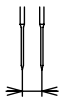
(3) LH-3568

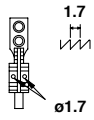
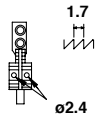
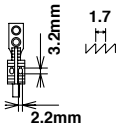
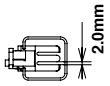
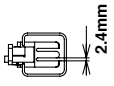
Code	Needle gauze size		Feed dog	Needle clamp asm. (DP5)		Needle clamp asm. (DP17)	
							
	inch	mm		(Left)	(Right)	Option (Left)	Option (Right)
B	1/8	3.2	22625107	40035761	40035771	40035877	40035878
C	5/32	4.0	22625206	40035762	40035772	40026063	40026084
D	3/16	4.8	22625305	40035763	40035773	40026065	40026086
E	7/32	5.6	22625404	40035764	40035774	40026067	40026088
F	1/4	6.4	22625503	40029561	40029562	40026069	40026090
G	9/32	7.1	22625602	40035765	40035775	40026070	40026091
H	5/16	7.9	22625701	40035766	40035776	40026072	40026093
K	3/8	9.5	22625800	40035767	40035777	40026074	40026095
L	1/2	12.7	22626006	40035768	40035778	40026076	40026097
M	5/8	15.9	22626105	40035769	40035779	40026078	40026099
N	3/4	19.1	22626204	40035770	40035780	40026080	40026101
Stitch spec.		S	Spec. common	Spec. common	Spec. common	Spec. common	Spec. common
		G					

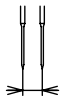
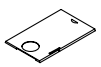
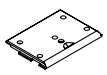
Code	Needle gauze size		Feed dog			Presser foot asm.	
							
	inch	mm			Option	Tip-divided	Tip-divided
B	1/8	3.2	–	–	–	40035896	–
C	5/32	4.0	40025784	–	–	40035897	–
D	3/16	4.8	40025785	B1613512D0H	40025801	22640353	22816557
E	7/32	5.6	40025786	–	–	22640452	–
F	1/4	6.4	40025787	B1613512F0H	40025803	22640551	22816755
G	9/32	7.1	40025788	–	–	22640759	–
H	5/16	7.9	40025789	–	–	22640858	–
K	3/8	9.5	40025790	B1613512K0H	40025806	22640957	22817050
L	1/2	12.7	40025792	–	–	22641252	–
M	5/8	15.9	40025793	–	–	22641351	–
N	3/4	19.1	–	B1613512N0H	40025810	–	40033947
		S	★			★	
		G		★	★		★

Code	Needle gauze size		Sliding plate asm.		
					
	inch	mm	(Left)	(Right)	(Front)
B	1/8	3.2	22601058	22600555	40034931
C	5/32	4.0			
D	3/16	4.8			
E	7/32	5.6			
F	1/4	6.4			
G	9/32	7.1			
H	5/16	7.9			
K	3/8	9.5			
L	1/2	12.7	22601157	22600654	
M	5/8	15.9			
N	3/4	19.1			
Stitch spec.		S	Spec. common	Spec. common	Spec. common
		G			

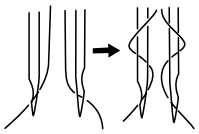
(4) LH-3568-7

Code	Needle gauze size		Feed dog	Needle clamp asm. (DP5)		Needle clamp asm. (DP17)	
							
	inch	mm		(Left)	(Right)	Option (Left)	Option (Right)
B	1/8	3.2	40035881	40035761	40035771	40035877	40035878
C	5/32	4.0	40025485	40035762	40035772	40026063	40026084
D	3/16	4.8	40025490	40035763	40035773	40026065	40026086
E	7/32	5.6	40025491	40035764	40035774	40026067	40026088
F	1/4	6.4	40025492	40029561	40029562	40026069	40026090
G	9/32	7.1	40025493	40035765	40035775	40026070	40026091
H	5/16	7.9	40025494	40035766	40035776	40026072	40026093
K	3/8	9.5	40025495	40035767	40035777	40026074	40026095
L	1/2	12.7	40025498	40035768	40035778	40026076	40026097
M	5/8	15.9	40025499	40035769	40035779	40026078	40026099
N	3/4	19.1	40025500	40035770	40035780	40026080	40026101
P	7/8	22.2	40025502	–	–	–	–
Q	1	25.4	40025503	–	–	–	–
R	1-1/8	28.6	40025504	–	–	–	–
S	1-1/4	31.8	40025505	–	–	–	–
Stitch spec.		S	Spec. common	Spec. common	Spec. common	Spec. common	Spec. common
		G					

Code	Needle gauze size		Feed dog			Presser foot asm.	
							
	inch	mm			Option	Tip-divided	Tip-divided
B	1/8	3.2	40035890	–	–	40035896	–
C	5/32	4.0	40025817	–	–	40035897	–
D	3/16	4.8	40025818	40035891	40025831	22640353	22816557
E	7/32	5.6	40025819	–	–	22640452	–
F	1/4	6.4	40026715	40035892	40025833	22640551	22816755
G	9/32	7.1	40025820	–	–	22640759	–
H	5/16	7.9	40025821	–	–	22640858	–
K	3/8	9.5	40025822	40035893	40025836	22640957	22817050
L	1/2	12.7	40025824	–	–	22641252	–
M	5/8	15.9	40025825	–	–	22641351	–
N	3/4	19.1	–	40035895	40025840	–	40033947
P	7/8	22.2	–	–	–	–	–
Q	1	25.4	–	–	–	–	–
R	1-1/8	28.6	–	–	–	–	–
S	1-1/4	31.8	–	–	–	–	–
Stitch spec.		S	★			★	
		G		★	★		★

Code	Needle gauze size		Sliding plate asm.		
					
	inch	mm	(Left)	(Right)	(Front)
B	1/8	3.2	40025247	40025235	40031358
C	5/32	4.0			
D	3/16	4.8			
E	7/32	5.6			
F	1/4	6.4			
G	9/32	7.1			
H	5/16	7.9			
K	3/8	9.5			
L	1/2	12.7	40025248	40025236	
M	5/8	15.9			
N	3/4	19.1			
Q	1	25.4	40025249	40025239	
Stitch spec.		S	Spec. common	Spec. common	Spec. common
		G			

9. TROUBLES AND CORRECTIVE MEASURES

TROUBLES	CAUSES	CORRECTIVE MEASURES
1. Thread breakage (Thread is untwisted or scraped.)	① There is a sharp edge or burr on the thread path, needle point, hook blade point or bobbin case resting groove on the throat plate.	○ Remove sharp edge or burr using a fine sandpaper. Polish the surface of the bobbin case resting groove on the throat plate using a buffing wheel.
	② Needle thread tension is too high.	○ Adjust the needle thread tension.
	③ Bobbin case opening lever provides an excessive clearance at the bobbin case.	○ Reduce the clearance. (Refer to "6-4. Adjusting the inner hook guide".)
	④ Hook blade point hits the needle.	○ Refer to "4-14. Needle-to-hook relation".
	⑤ Hook is not lubricated properly.	○ Increase the amount of oil supplied to the hook according to "4-3. Adjusting the amount of oil in the hook".
(Needle thread 2 to 3 cm is left on the wrong side of the fabric.)	⑥ Needle thread tension is too low.	○ Adjust the needle thread tension.
	⑦ Thread take-up spring is too tight and its stroke is too small.	○ Reduce the tension of the spring and increase the stroke.
	⑧ Needle-to-hook timing is wrong.	○ Refer to "4-14. Needle-to-hook relation".
	⑨ Thread untwists.	○ Wind the thread on the needle. 
	⑩ Uniform thread loops cannot be formed when making chain-off thread.	○ Use the thread guide equipped with felt pad.
2. Stitch skipping	① Clearance between the needle and the hook blade point is too great.	○ Refer to "4-14. Needle-to-hook relation".
	② Needle-to-hook relation is wrong.	○ Refer to "4-14. Needle-to-hook relation".
	③ Pressing force of the presser foot is not enough.	○ Tighten the presser spring regulator.
	④ Needle bar height is wrong.	○ Refer to "4-14. Needle-to-hook relation".
	⑤ Needles are a little too thin.	○ Replace the needle by thicker ones.
	⑥ Synthetic thread or thin thread is used.	○ Wind the thread on the needle.
3. Loose stitch	① Bobbin thread does not pass through the forked end of the tension spring on the bobbin case.	○ Thread the bobbin case correctly.
	② Thread path has rough surface.	○ Remove rough surface using a fine sandpaper or polish the surface using a buffing wheel.
	③ Bobbin does not spin smoothly.	○ Replace the bobbin or the hook.
	④ Bobbin case opening lever provides too much clearance at the bobbin.	○ Refer to "6-4. Adjusting the inner hook guide".
	⑤ Bobbin thread tension is too low.	○ Adjust the bobbin thread tension.
	⑥ Bobbin is wound too tightly.	○ Adjust the tension components on the bobbin winder.

10. MOTOR PULLEY AND BELT

(1) Motor pulley and belt for the machine without thread trimmer are as described below.

1) Use a clutch motor with an output 400 W (2P).
2) Use M type V belt.
3) The relation between the motor pulley, belt length and number of revolutions of sewing machine is as shown in the list below.

LH-3528, LH-3568					
Motor pulley		Sewing speed (rpm)		Belt	
Outer diameter(mm)	Part No.	50Hz	60Hz	Length	Part No.
75	MTKP0070000	3000	-	43 inches	MTJVM00430A
70	MTKP0065000	2790	-		
65	MTKP0060000	2580	3000	42 inches	MTJVM00420A
60	MTKP0055000	2370	2740		

* The effective motor pulley diameter is obtained by subtracting 5 mm from the outer diameter.
* The motor should rotate counterclockwise when viewed from the pulley side. Be careful not to rotate it in the counter direction.

(2) For the machine with thread trimmer

Use M type 43-inch belt (MTJVM00430A) for SC-500.