

W600 *Series Technical Manual*



CONTENTS

Threading	29~30	Adjusting Thread Take-up and Thread Guide	
Replacing needles	31	Adjusting needle thread take-up	46
Needles	31	Adjusting needle thread guides	46
Adjusting thread tension	32	Adjusting needle thread guard	46
Adjusting presser foot pressure	32	Adjusting spreader thread take-up	46
Adjusting differential feed ratio	32~33	Adjusting looper thread take-up	47
Adjusting stitch length	33	Installing looper thread guard	47
		Setting thread guides ⑦ and ⑧	47
Installation of Machine		Timing Adjustment	
Schematic diagram	35	Adjusting timing of needle motion and looper left-to-right motion	48
Assembling machine rest board	35	Adjusting timing of needle motion and looper front-to-back-motion	48
Installing swing head	36	Adjusting needle guard (rear) timing	48
Installing belt cover	36	Adjusting spreader timing	49
Lubrication	36	Adjusting needle thread take-up timing	49
To add oil to HR device	37		
Machine pulley turning direction	37	Metering Device Adjustment (MD231)	
		MD231 (elastic feeder)	50
Lubrication		Installing lace guide	50
Oil lever	38	Lubrication	50
Lubrication	38	Lubricating clutch	50
Oil change	38	Lubricating bearings	50
To drain oil	38	Positioning lace guide (lower)	50
Checking and replacing oil filter	38	Positioning elastic guides	51
		Adjusting elastic feeding amount	51~52
Adjustment and Maintenance		Adjusting tension of elastic	52
Adjusting needle height	39	Lace guide (LG210)	52
Adjusting looper	39~40	Installing lace guide	52
Adjusting looper front-to-back-motion	40		
Adjusting needle guard (rear)	41	FT240 (fabric trimmer)	
Adjusting needle guard (front)	41	Lubrication	53
Positioning spreader	42	Adjusting fabric guide	53
Adjusting spreader travel	42	Adjusting presser foot tilt	53
Positioning spreader thread guide	43	Adjusting upper knife pressure	53
Installing thread guide	43	Adjusting lower knife holder lift to right	54
Adjusting feed dog tilt	44	Adjusting the height of upper knife holder	54
Adjusting feed dog height	44	Replacing upper knife	54
Adjusting foot lift	44	Replacing lower knife	54
Adjustments differential Feed Ratio		RP Device (rear puller)	
Differential feed ratio for standard specifications	45	Lubrication	55
To use the differential feed ratio range 1:1.3~1:1.8	45	Manual lever	55
		Adjusting roller pressure	55
		Adjusting fabric feeding amount	55

The following are instructions for operators to operate the machine correctly.

Observe these instructions.

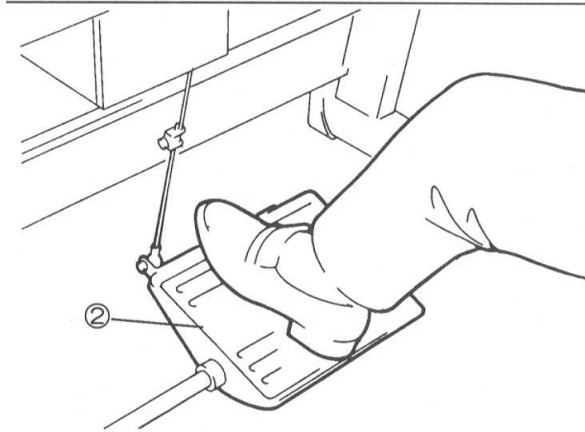
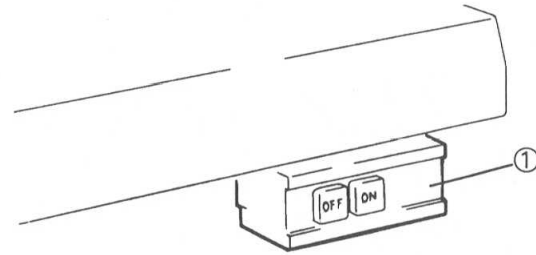
① THREADING

(1) Turn the machine off with the push button ① under the table.

Caution!

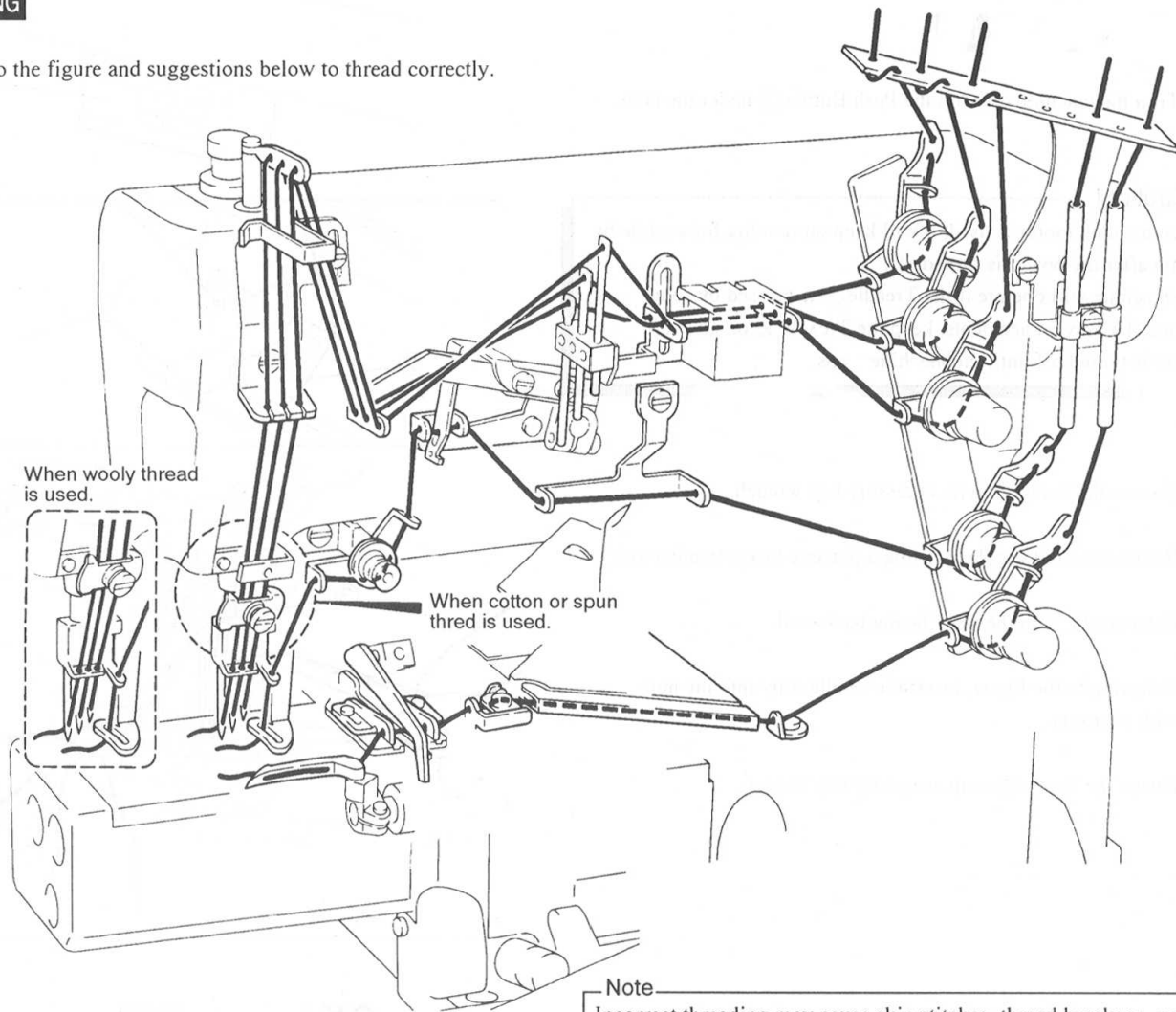
When a clutch motor is used, it will keep on running for a while by inertia after the power is turned off.

The machine will operate if the Treadle ② is pressed by some chance. To prevent accidents, keep the Treadle ② on after the power is turned off until the machine stops.



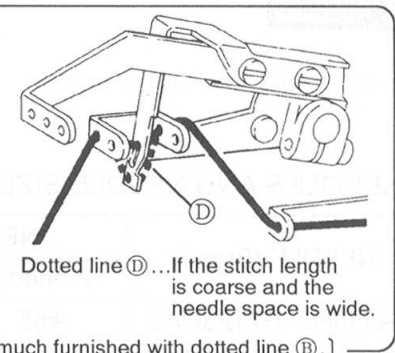
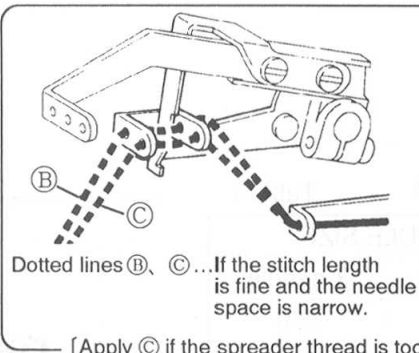
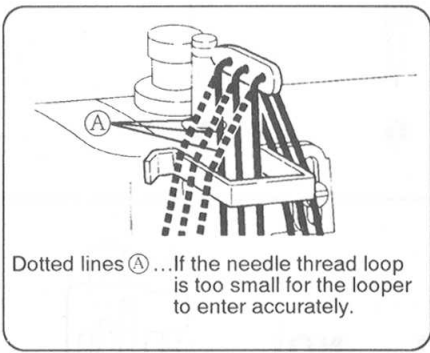
THREADING

(2) Refer to the figure and suggestions below to thread correctly.

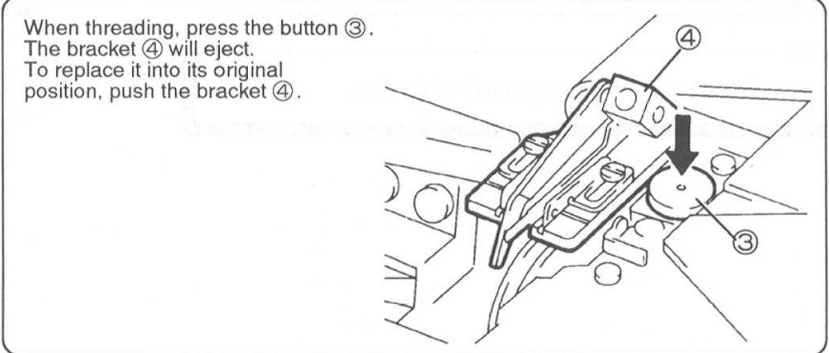
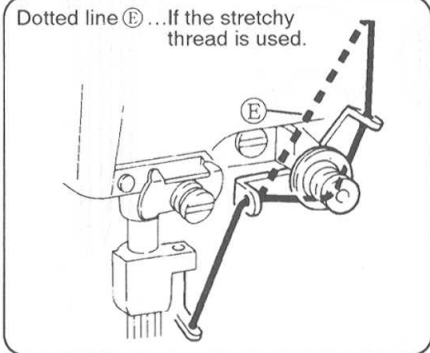


Note
How to thread the machine depends on the sewing conditions such as threads, stitch length or needle space.

Note
Incorrect threading may cause skip stitches, thread breakage, or uneven stitch formation.
Thread the machine correctly as shown below.
For ordinary threading, refer to continuous lines.

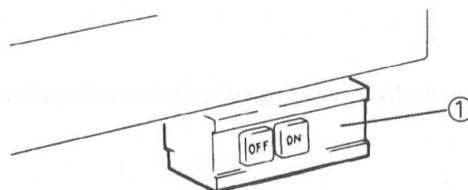


[Apply ③ if the spreader thread is too much furnished with dotted line ②.]



【2】 REPLACING NEEDLES

(1) Turn the machine off with the Push Button ① under the table.



Caution!

When a clutch motor is used, it will keep on running for a while by inertia after the power is turned off.

The machine will operate if the Treadle ② is pressed by some chance. To prevent accidents, keep the Treadle ② on after the power is turned off until the machine stops.



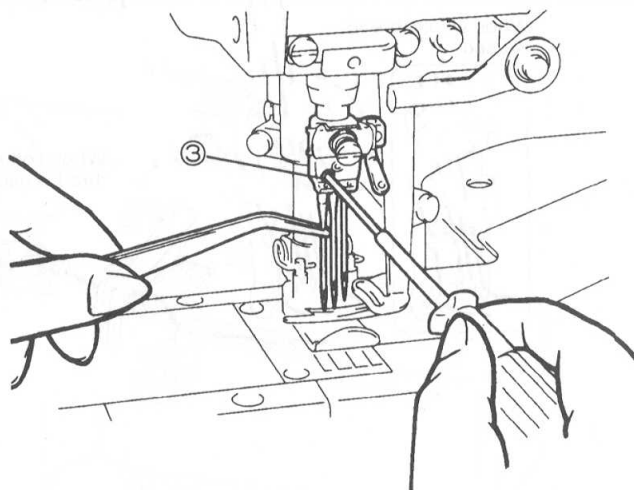
(2) Loosen the Screw ③ with accessory key wrench.

(3) Remove the old needle by using a pincette (accompanied tool.)

(4) Put a needle with the scarf facing backward.

(5) Referring to the figure, insert the needle fully into the hole with tweezers.

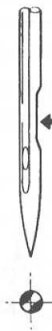
(6) Fasten the Screw ③ with accessory key wrench.



OK!



NO!



← Scarf

【3】 NEEDLES

Refer to the Table 1 for standard needles.

NEEDLES AND NEEDLE SIZES Table 1

NEEDLE (Brand)	NEEDLE SIZE	
	2-needle	3-needle
Schmetz UY128GAS	#65	#70
Organ UY128GAS	# 9	#10

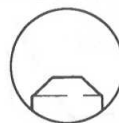
Note

The size of needle depends on the number of needles.

OK!



NO!

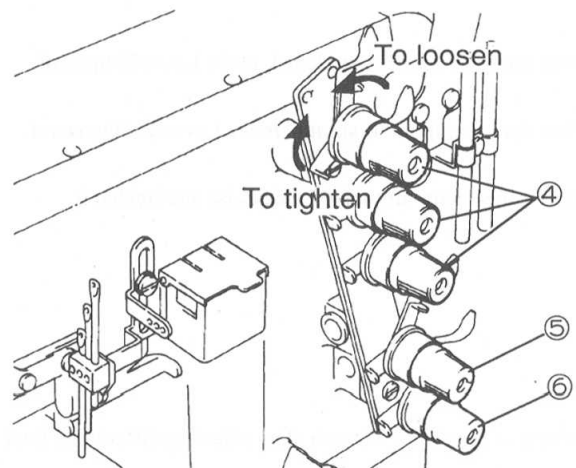


Adjust the machine by trial sewing. Prepare the fabrics and others.

【4】 ADJUSTING THREAD TENSION

Thread tension could be changed according to the sewing conditions such as fabrics, threads, seam width, or stitch length. Adjust Needle Thread Tension Nut ④, Spreader Thread Tension Nut ⑤, and Loper Thread Tension Nut ⑥.

- ★ To increase tension:
Turn each nut clockwise to increase the tension.
- ★ To decrease tension:
Turn each nut counter-clockwise to decrease the tension.

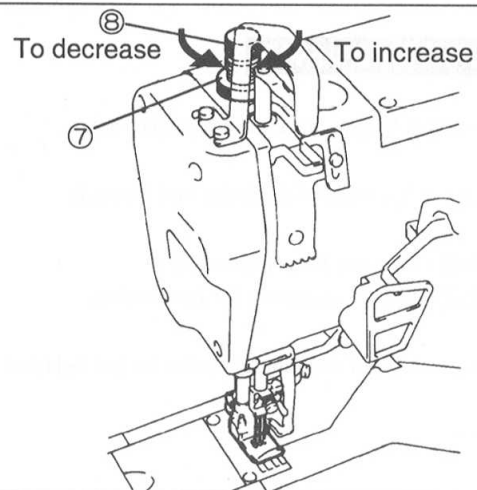


【5】 ADJUSTING PRESSER FOOT PRESSURE

Keep presser foot pressure light, yet sufficient to feed the fabric and obtain the proper stitch formation.

To make this adjustment, loosen Nut ⑦ and

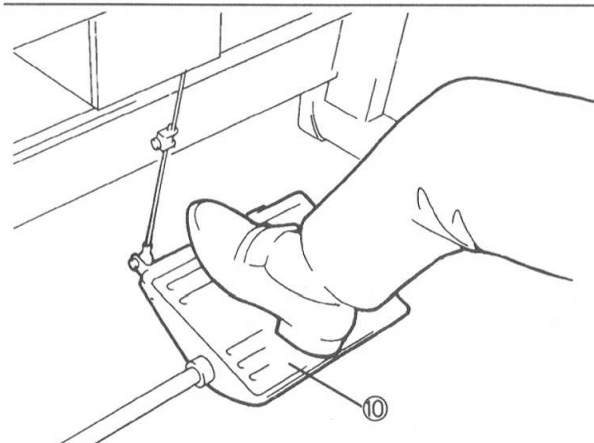
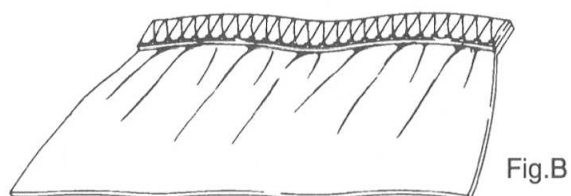
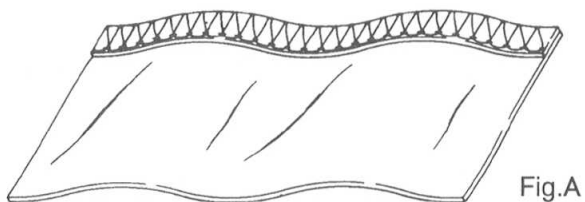
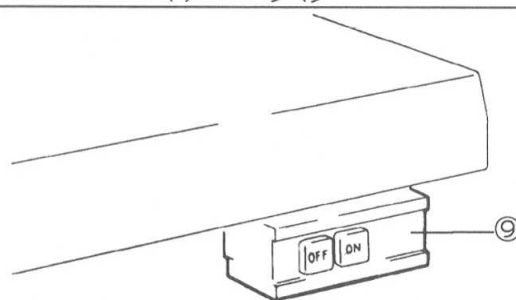
- ★ To increase presser foot pressure:
Turn the Screw ⑧ clockwise to increase presser foot pressure.
- ★ To decrease presser foot pressure:
Turn the Screw ⑧ counter-clockwise to decrease presser foot pressure.



【6】 ADJUSTING DIFFERENTIAL FEED RATIO

Make this adjustment if the sewn fabric is stretched (Fig.A) or shrunk (Fig.B).

- (1) Turn the machine on with the Push Button ⑨ under the table.
- (2) Press the Treadle ⑩ to perform a test sewing operation. It's not necessary to adjust differential feed ratio if the seaming is straight.

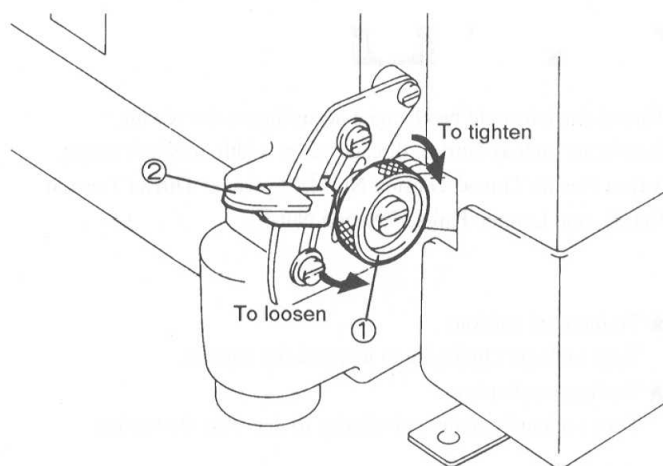


(3) Turn Nut ① counter-clockwise and loosen it to make the adjustment.

★ When the sewn fabric is stretched, move Lever ② upward.

★ When the sewn fabric is shrunk, move Lever ② downward.

(4) After adjustment, turn nut ① clockwise and tighten it.



Make sure to adjust stitch length after adjusting differential feed ratio.

7 ADJUSTING STITCH LENGTH

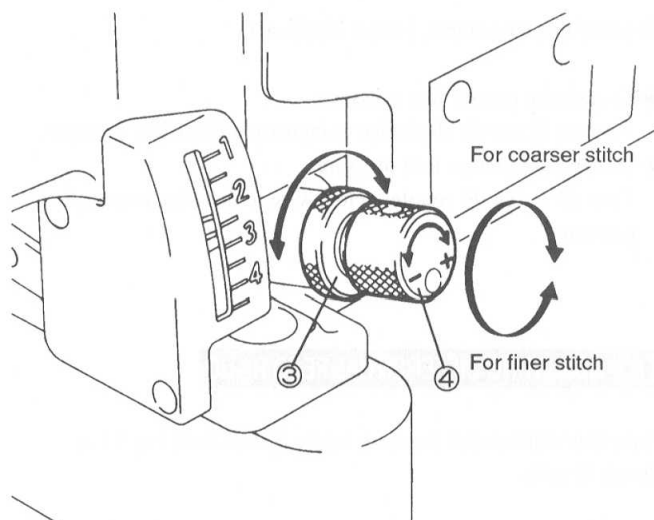
To change the stitch length, make the adjustment below.

(1) Turn Rock Nut ③ counter-clockwise and loosen it.

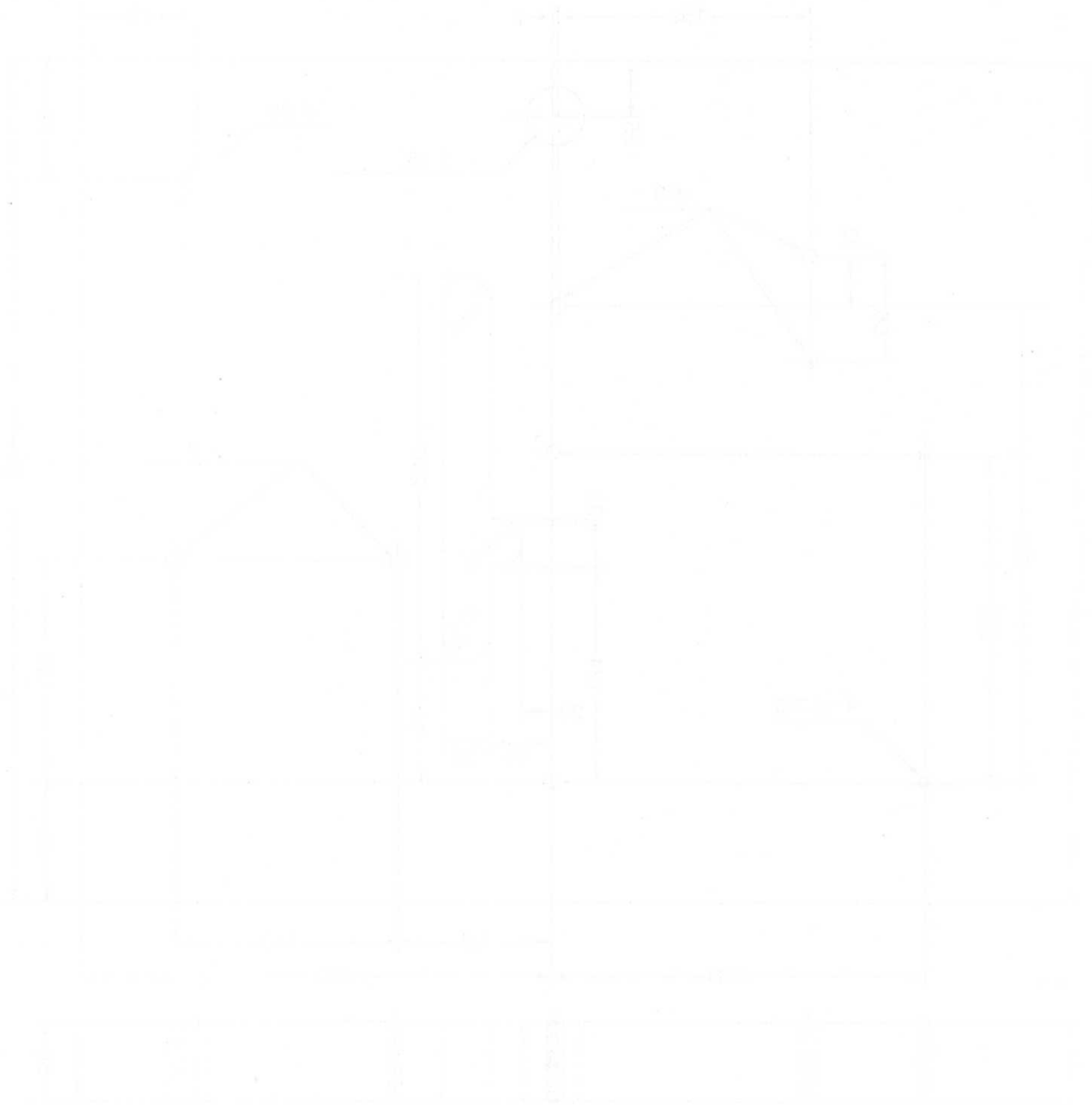
★ Turn Knob ④ clockwise for coarse stitches.

★ Turn Knob ④ counter-clockwise for fine stitches.

(2) After adjustment, turn rock nut ③ clockwise and tighten it.



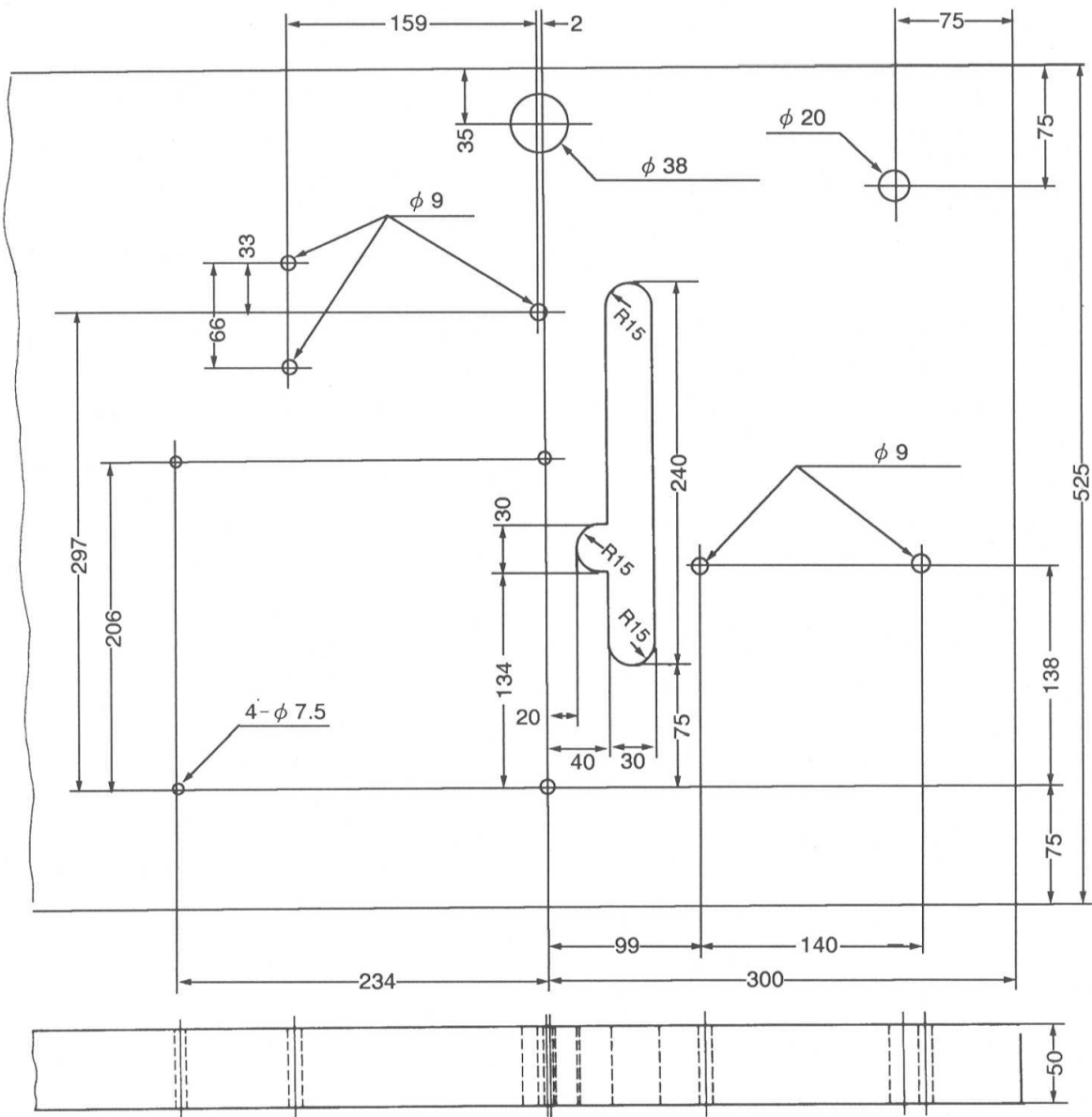
The following are instructions for engineers and service/maintenance personnel.
Observe these instructions.



■ Installation of Machine

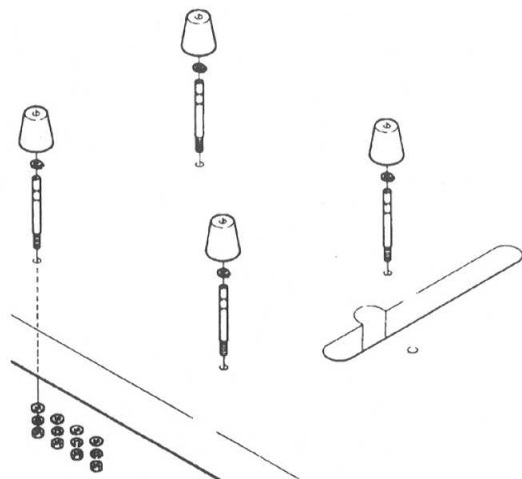
【1】 SCHEMATIC DIAGRAM

Make sure the table is cut as shown in the Figure below.



【2】 ASSEMBLING MACHINE REST BOARD

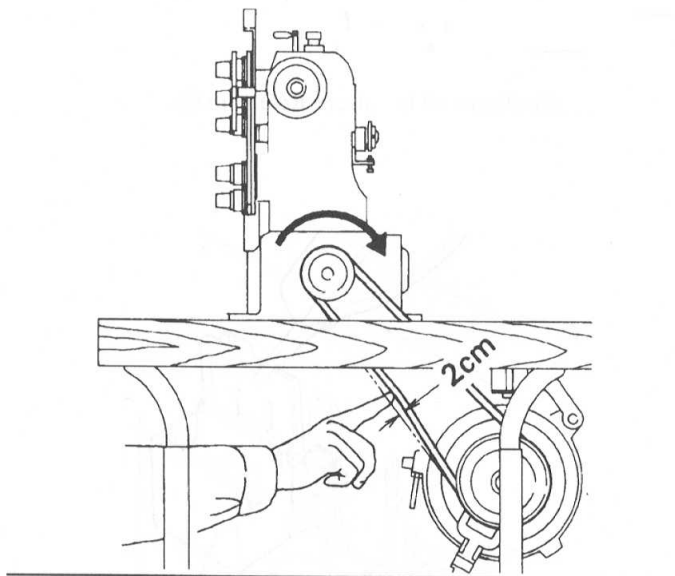
Assemble the rest board as illustrated in the Figure. Make sure to assemble everything securely without any slackness or looseness.



3 INSTALLING SEWING HEAD

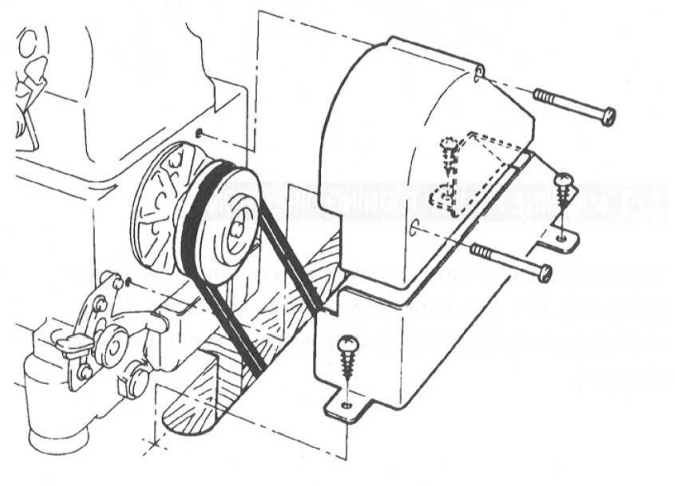
Mount the sewing head on the table board. After placing the belt, install belt cover.

Adjust the height of the motor. The deflection on the belt should be approximately 2cm when you press the middle point of the belt.



4 INSTALLING BELT COVER

Install the belt cover referring to the Figure.



5 LUBRICATION

(1) Oil

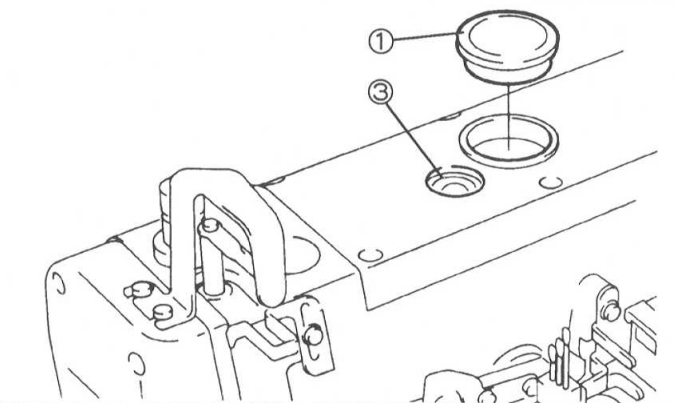
Use Mobil Velocite oil No.10.

(2) To fill the machine with oil

Remove Oil Plug ① and fill the machine with oil until the oil level reaches line (H) on Oil Sight Gauge ②.

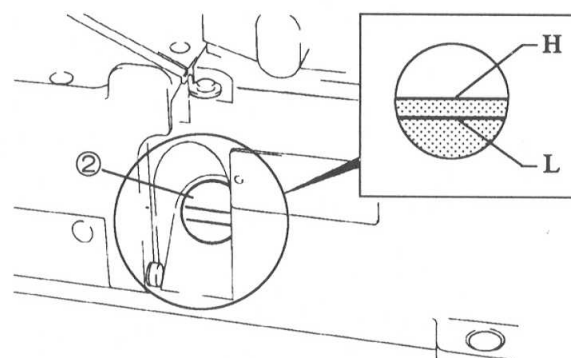
(3) Checking oil circulation

After filling the machine with oil, check to see if the oil is splashed onto Oil Flow Sight Window ③ as you run the machine.



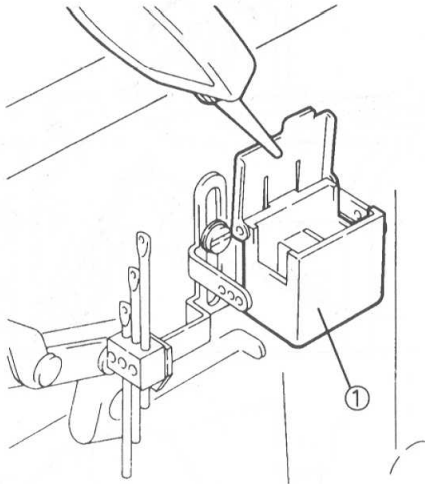
Note

If the oil is not splashed onto the window, check the oil filter referring to page 38 [CHECKING AND REPLACING THE OIL FILTER].

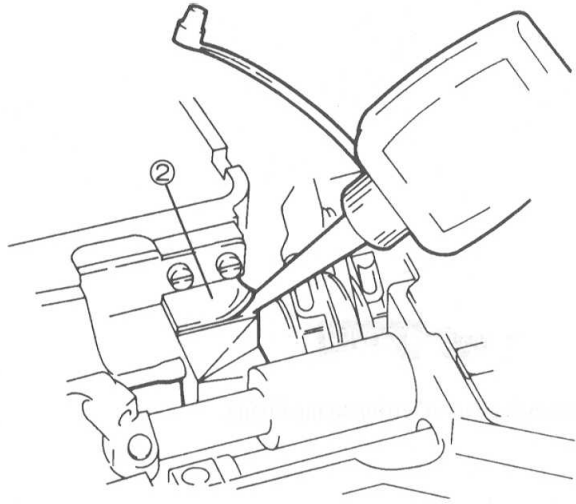


【6】 TO ADD OIL TO HR DEVICE

Be sure to add silicone oil to Silicone Reservoirs ①.

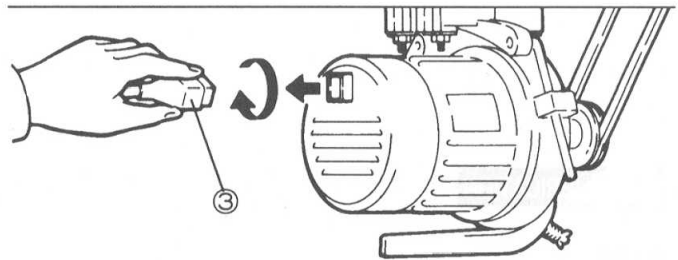


Note
Only silicone oil should be used.



【7】 MACHINE PULLEY TURNING DIRECTION

The machine pulley turns clockwise as seen from the machine pulley end. If it turns in the reverse direction (counter-clockwise), turn Connector ③ of the machine motor in 180° and reinsert it.

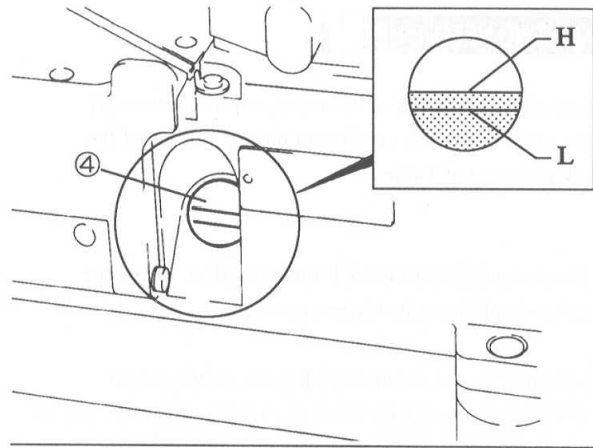


■ Lubrication

(1) OIL LEVEL

After filling the machine with oil, the oil level should lie between lines (H) and (L).

Add oil when the oil level reaches or goes below line (L).



(2) LUBRICATION

When the machine is used for the first time or has not been used for some time, add an adequate amount of oil by hand to lubricate Needle Bar (5).

(3) OIL CHANGE

Replace oil one month after the first use and every six months thereafter.

Note

Be sure to replace oil before it is contaminated. Old oil can be a trouble of the machine.

(4) TO DRAIN OIL

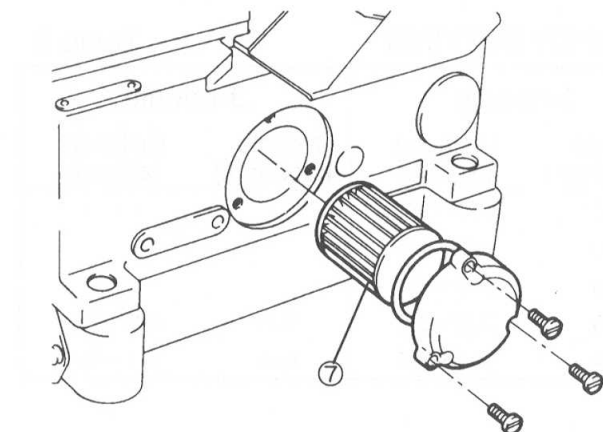
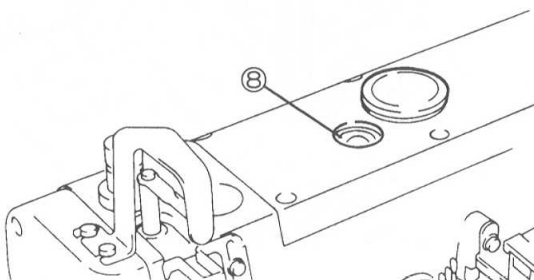
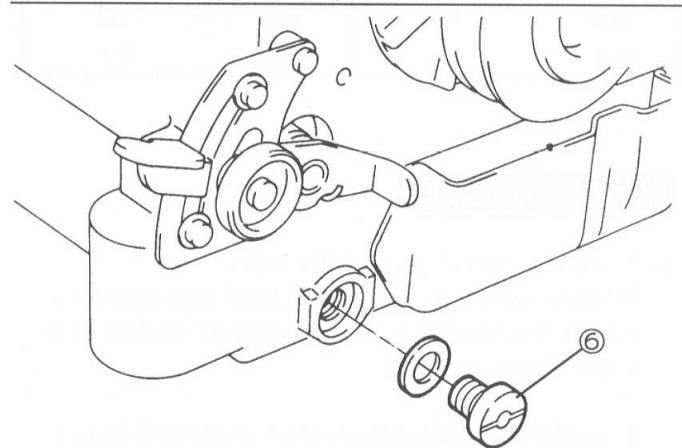
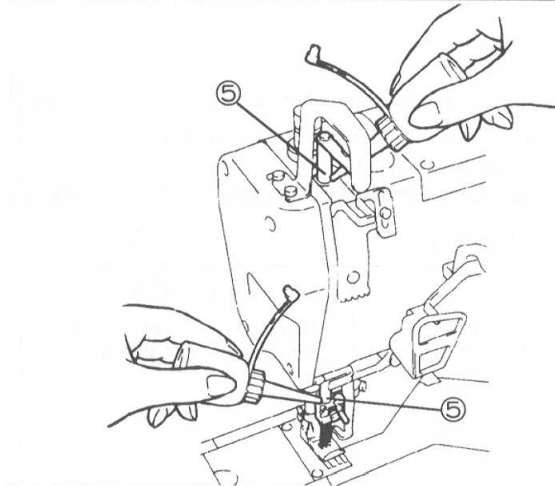
Remove plug screw and Gasket (6) on the right side of the oil pan.

(5) CHECKING AND REPLACING OIL FILTER

To fill the machine with oil properly, Oil Filter (7) should not be choked. Check and clean it every six months.

Note

Clean the oil filter thoroughly or replace it if necessary when the amount of splashing oil in Window (8) is very little, the oil is not jetted onto Window (8), or some bubbles can be found in the oil, in spite of the machine being filled with the required amount of oil.



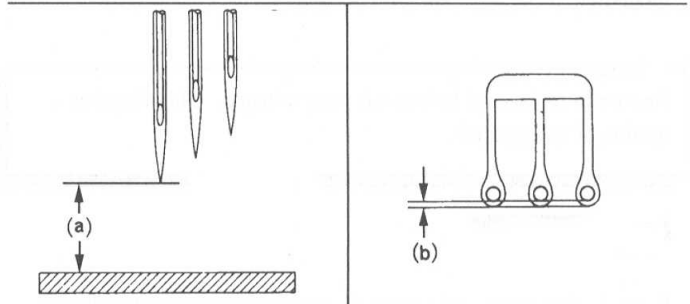
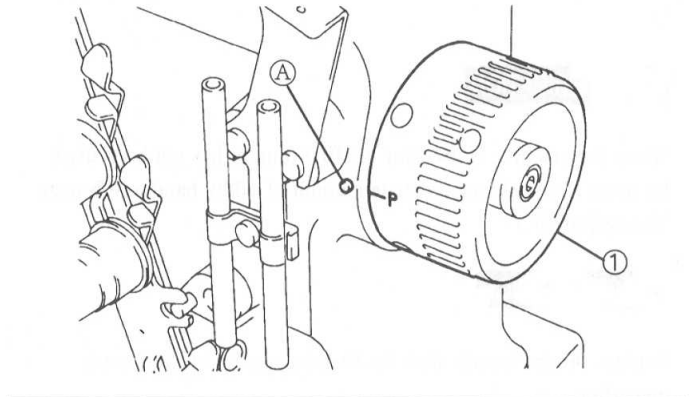
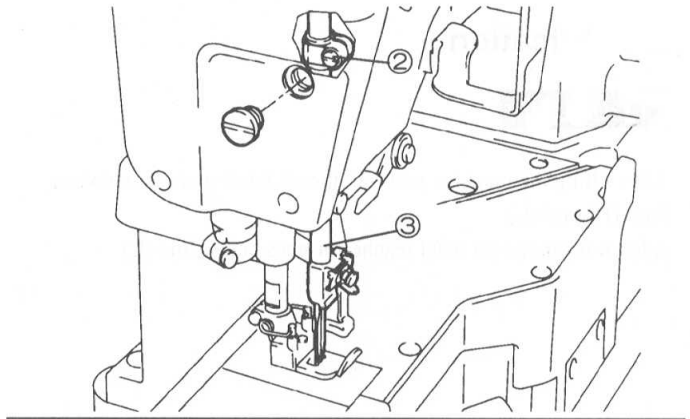
■ Adjustment and Maintenance

【1】 ADJUSTING NEEDLE HEIGHT

When the needle is at the top of its stroke, adjust distance (a) between the point of the left needle and the top surface of the needle plate referring to Table 5.

- (1) Turn Handwheel ① until mark P meets mark A. Then the needle bar should be at its highest position.
- (2) Loosen Screw ② and obtain the adequate needle height corresponding to the needle space by moving the needle bar up or down as required.

Note
After this adjustment, prior to tightening Screw ②, make sure that clearance (b) between the needles and the needle drop ends are even with the needle bar lowered.



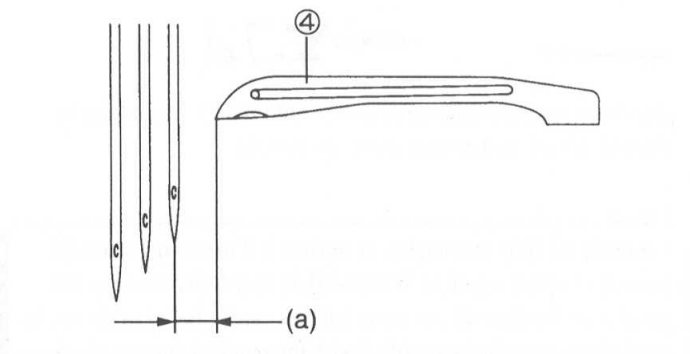
NEEDLE HEIGHT Table 1

2-needle		3-needle	
Needle space(mm)	Left needle height (a)(mm)	Needle space(mm)	Left needle height (a)(mm)
3.2	9.1		
4.0	8.6		
4.8	8.2		
5.6	7.8	5.6	7.8
6.4	7.4	6.4	7.4

【2】 ADJUSTING LOOPER

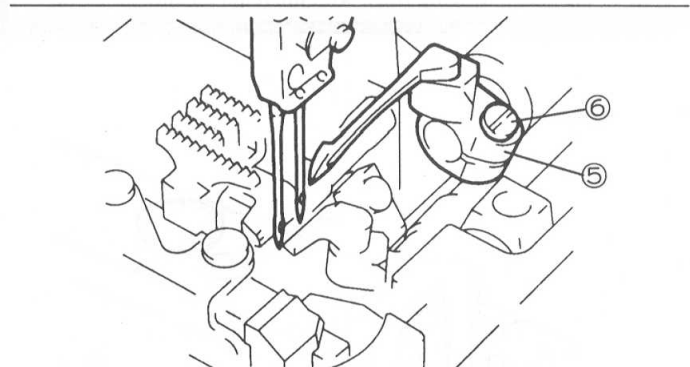
- (1) To adjust the setting distance of the looper
When the looper is at right end of its travel, adjust distance (a) between the center line of the right needle and the point of the looper referring to Table 2.

To make this adjustment, loosen Screw ⑥ and move Looper Holder ⑤ right or left as required.



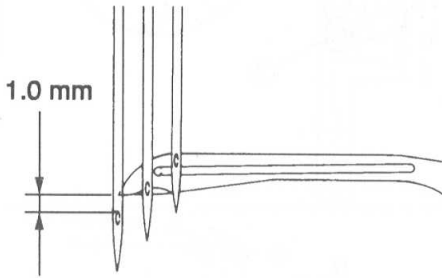
LOOPER SETTING Table 2

2-needle		3-needle	
Needle space(mm)	Distance (a)(mm)	Needle space(mm)	Distance (a)(mm)
3.2	4.7~5.0		
4.0	4.3~4.6		
4.8	3.9~4.2		
5.6	3.5~3.8	5.6	3.5~3.8
6.4	3.1~3.4	6.4	3.1~3.4



(2) Checking the position of looper and left needle

- ★ When the looper point is behind the left needle centerline, it should be 1mm above the top of the left needle eye.



(3) To adjust the looper forward or backward

When the point of the looper reaches the center line of the left needle from right end of its travel, the clearance between the left needle and the point of the looper should be 0.05mm - 0.1mm.

- ★ For 3-needle machines, when the point of the looper reaches the center line of the middle needle from right end of its travel, check to see if the clearance between the middle needle and the point of the looper is 0 - 0.05mm.

To make this adjustment, loosen Screw ⑥ and move Looper Holder ⑤ back or forth.

Note

The right needle should touch the looper point slightly, as it passes the right needle center line from right (the needle guard does not work then).

[3] ADJUSTING LOOPER FRONT-TO-BACK MOTION

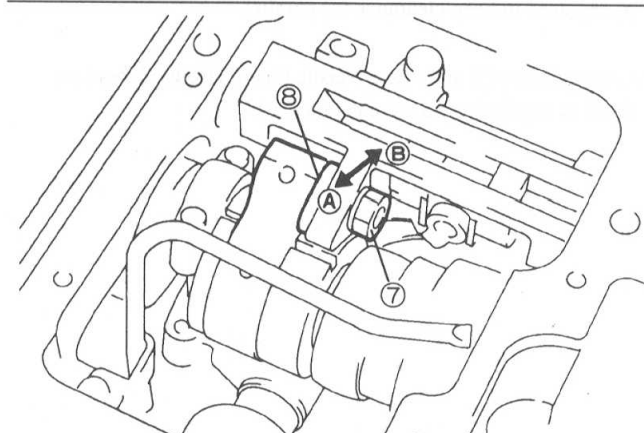
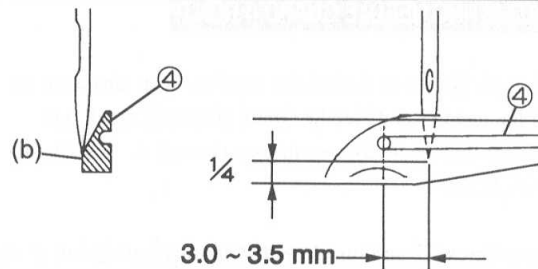
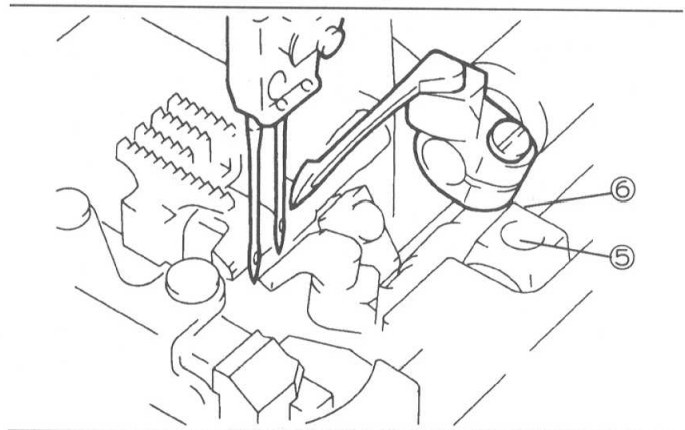
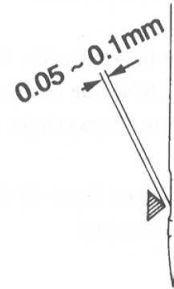
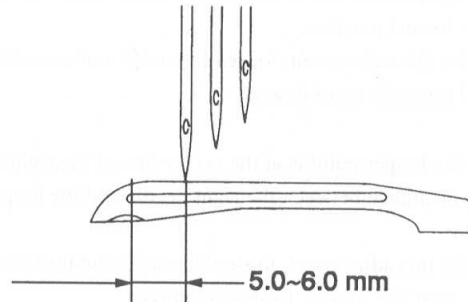
Make this adjustment only when you use needles of extremely different size.

As Looper ④ passes the front of the needles to the right, the clearance between the center of looper eye and left needle center line is approximately 3.0 - 3.5mm. The left needle point should touch (d) of the looper slightly (see Figure). Adjustment is as follows.

When looper ④ passes the front of the needles to the right from its extreme left end of its travel and the clearance between the center of looper eye and left needle centerline is approximately 3.0-3.5mm, make adjustment so that the point of the left needle and (b) of the looper (see Fig.) touch each other slightly in the following manner.

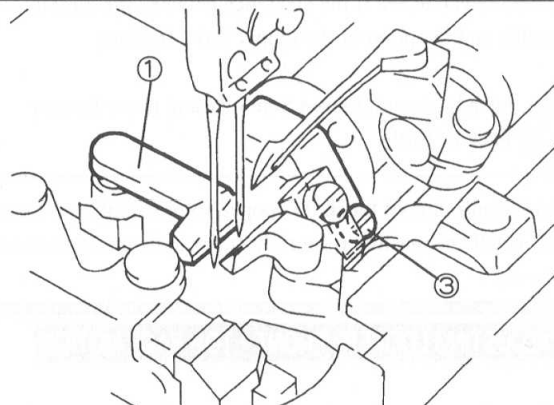
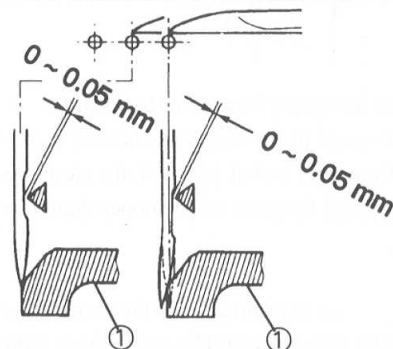
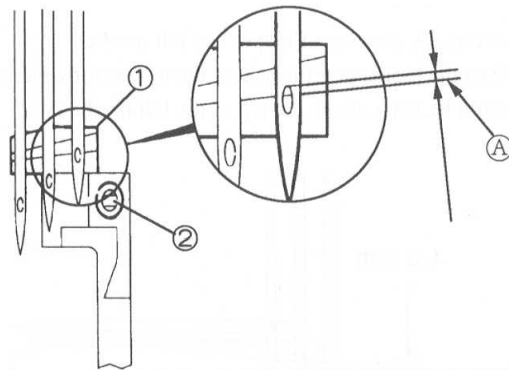
- (1) Readjust the looper front-to-back motion according to the needle size.
- (2) If an extremely thin needle is used:
Loosen Nut ⑦ and move the Crank Pin ⑧ in the back direction A as illustrated.
- (3) If an extremely thick needle is used:
Loosen Nut ⑦ and move the Crank pin ⑧ in the forward direction B as illustrated.

- ★ When the left needle comes down and reaches the surface of the looper, the distance between the looper eye center and the left needle center line should be 5.0mm - 6.0mm.



【4】 ADJUSTING NEEDLE GUARD (REAR)

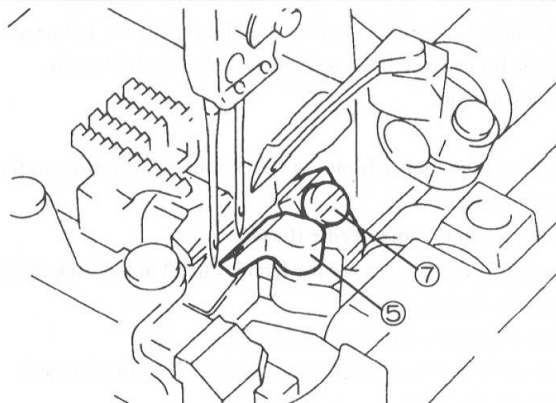
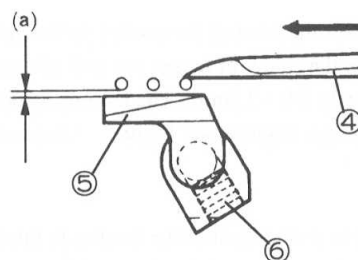
- (1) Place the line (A) of Needle Guard (rear) ① 1/3 below the top of the right needle eye as shown in Figure when the needle bar is at its lowest position.
To make this adjustment, loosen Screw ② and move Needle Guard (rear) ① up or down.
- (2) When the looper point is at the center line of the right needle, set the clearance between the right needle and the looper at 0 - 0.05mm.
To make this adjustment, loosen Screw ③ and move Needle Guard (rear) ① back or forth as required.
- (3) When the looper point is at the center line of the right needle, the right needle should touch Needle Guard (rear) ① slightly, keeping 0 - 0.05mm clearance between the right needle and the looper point.
To make this adjustment, loosen Screw ③ and turn the needle guard (rear) left or right as required.



【5】 ADJUSTING NEEDLE GUARD (FRONT)

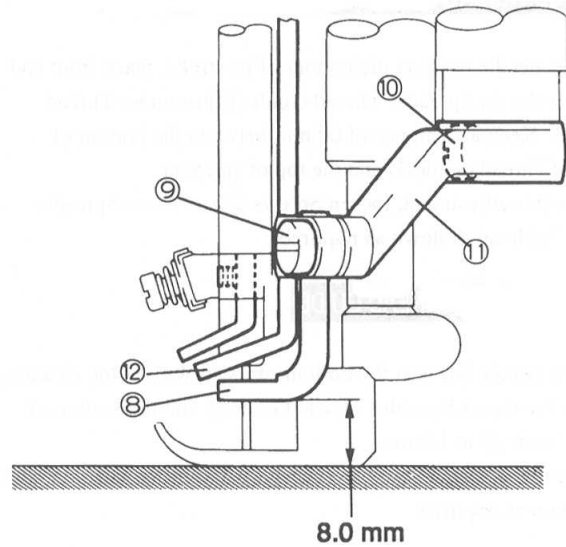
As the Looper ④ passes behind the needles, keep clearance (a) between the needles and Needle Guard (front) ⑤ small, yet sufficient for the needle threads to pass through it. Follow the procedures below.

- (1) Loosen Screw ⑥ and turn Needle Guard (front) ⑤ left or right as required to keep clearance (a) parallel.
- (2) Loosen Screw ⑦ and move Needle Guard (front) ⑤ back or forth as required to adjust clearance (a).



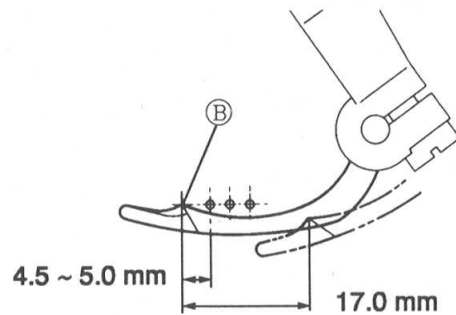
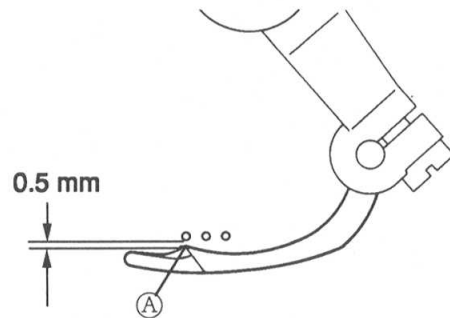
【6】 POSITIONING SPREADER

- (1) Height: The height of Spreader ⑧ from the needle plate surface should be 8.0mm.
To make this adjustment, tighten Screw ⑨ lightly and move Spreader ⑧ up or down as required.
- (2) Front-to-back and left-to-right positioning: As Spreader ⑧ moves from its right end to the left, the clearance between point (A) of the spreader and the left needle should be 0.5mm. When Spreader ⑧ reaches the left end of its travel, the distance between point (B) of the spreader and the center of the left needle should be 4.5 - 5.0mm.
To make this adjustment, loosen Screws ⑨ and ⑩ lightly. While turning Lever 11 left or right, move Spreader ⑧ back or forth as required.



Note

1. When making the above adjustment, make sure the point of the thread carrying notch passes points (A) and (B) correctly as you turn the handwheel.
2. When the spreader thread is not wholly hooked by the spreader due to the number of the thread and/or the fabric thickness, shift point (B) to the left not exceeding 6.0mm in order to install Spreader Guide 12 as close to the needle holder as possible.
If the spreader thread is still not properly hooked after the above adjustment, increase the spreader travel within 18.0mm.

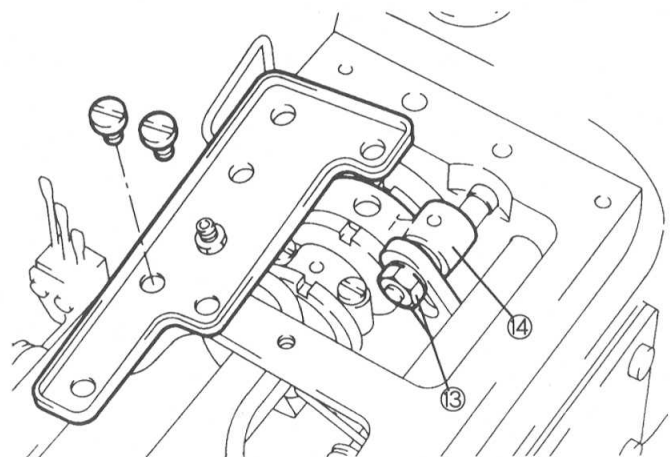


【7】 ADJUSTING SPREADER TRAVEL

The travel of Spreader ⑧ is 17.0mm.

To make this adjustment, loosen Nut ⑬ and

- ★ Moving up Rod ⑭ decreases the spreader travel.
- ★ Moving down Rod ⑭ increases the spreader travel.



【8】 POSITIONING SPREADER THREAD GUIDE

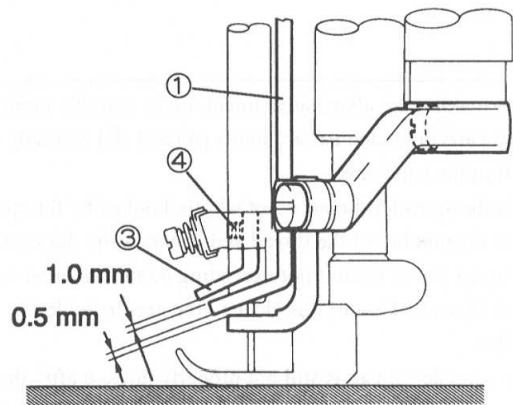
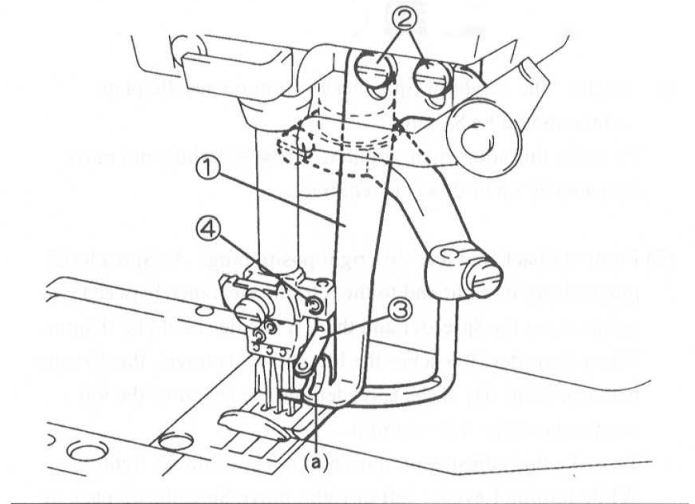
When the needle bar is at the bottom of its stroke, place front end (a) of the slot on Spreader Thread Guide ① just under Thread Guide ③. Keep a clearance of 0.5mm between the bottom of Spreader Thread Guide ① and the top of spreader.

To make this adjustment, loosen Screws ② and move Spreader Thread Guide up or down as required.

【9】 INSTALLING THREAD GUIDE

When the needle bar is at the bottom of its stroke, set the clearance between the top of Spreader Thread Guide ① and the bottom of Thread Guide ③ to 1.0mm.

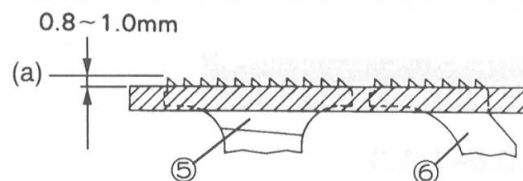
To make this adjustment, loosen Screw ④ and move Thread Guide up or down as required.



【10】 ADJUSTING FEED DOG TILT

When the feed dogs are in their highest position, keep the straight line (a) formed by the tips of the feed dog teeth parallel with the top surface of the needle plate.

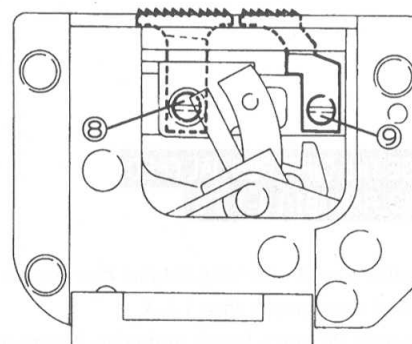
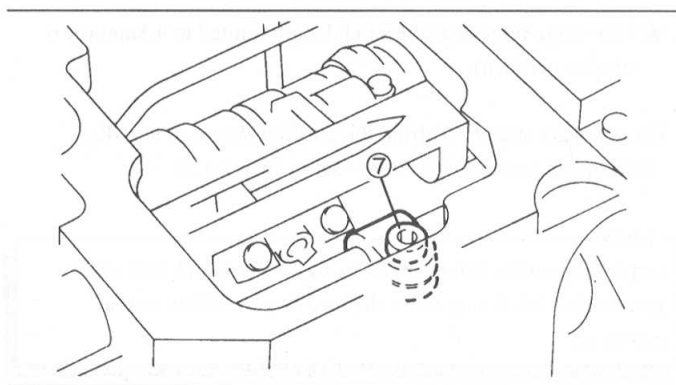
To make this adjustment, loosen Screw ⑦ and move the tips of differential feed dog up or down.



【11】 ADJUSTING FEED DOG HEIGHT

When the feed dogs are in their highest position, keep the straight line (a) formed by the tips of the feed dog teeth 0.8 - 1.0mm above the needle plate.

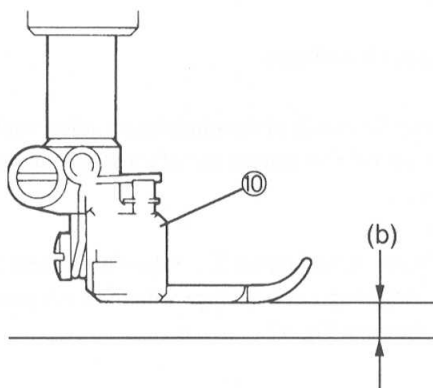
To make this adjustment, loosen Screws ⑧ and ⑨, and move the feed dogs ⑤ and ⑥ up or down as required.



【12】 ADJUSTING FOOT LIFT

When Presser Foot ⑩ is raised, the distance (b) between the presser foot and the needle plate should be as shown in Table 3. Adjustment procedures are as follows.

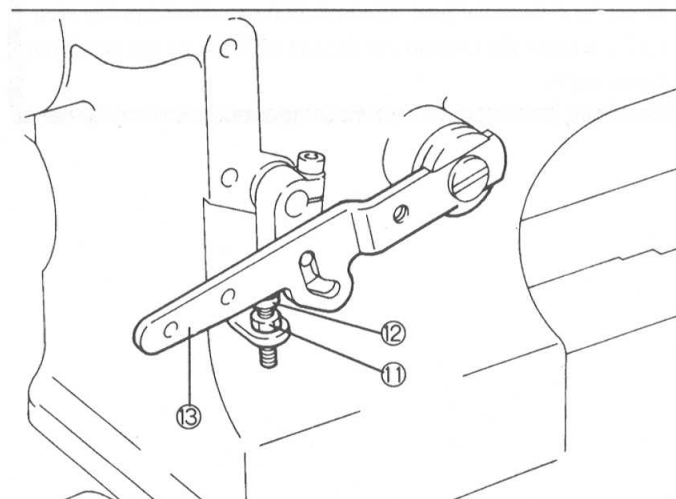
- (1) Turn the machine pulley until the feed dogs are at the bottom of its stroke.
- (2) Loosen Nut ⑪ and tighten Screw ⑫ (turn clockwise).
- (3) Lower Lever ⑬ and raise Presser Foot ⑩ to the height required for your machine type. Turn Screw ⑫ to the left (counter-clockwise) until its head contacts Lever ⑬ then tighten Nut ⑪.



FOOT LIFT

Table 3

Machine type	Foot lift (mm)	
	2-needle	3-needle
W664 - 01	5.8	5.0
W644 - 01	6.3	6.3
W664 - 05	5.4	4.5
W644 - 05	6.3	6.3



■ Adjusting differential Feed Ratio

【1】 DIFFERENTIAL FEED RATIO FOR STANDARD SPECIFICATIONS

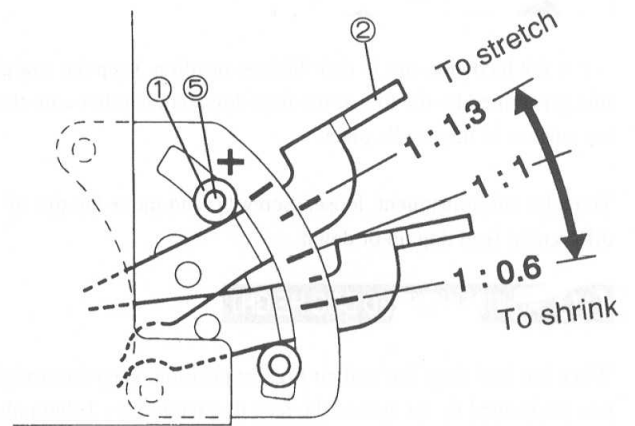
1:0.6~1:1.3

★ This range represents the stitch length limited to 4.5mm (or 6 stitches per inch).

Do not move stopper ① from the position shown in Fig. 40. (Adjusting Lever ② is factory-set to keep 1:1.3)

Note

Depending on the stitch length, using a differential feed ratio greater than 1:1.3 may cause the feed dog to collide and be damaged.



【2】 TO USE THE DIFFERENTIAL FEED RATIO RANGE 1:1.3~1:1.8

Sewing conditions such as sewing blanket may require the differential feed ratio greater than 1:1.3.

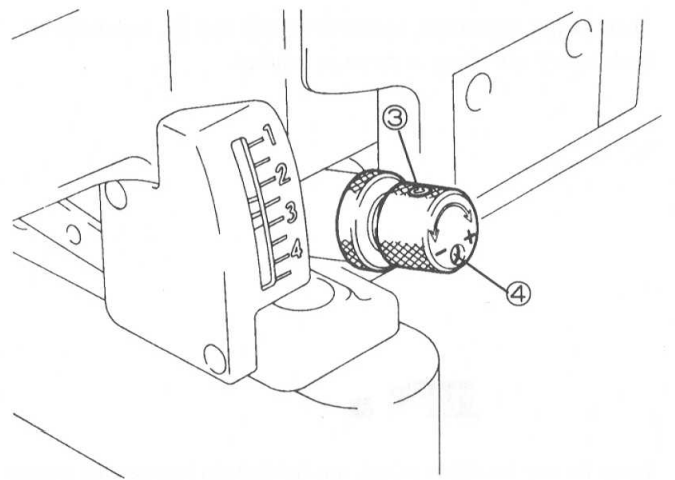
★ This represents the stitch length limited to 3.3mm (or 8 stitches per inch).

Follow the procedures below.

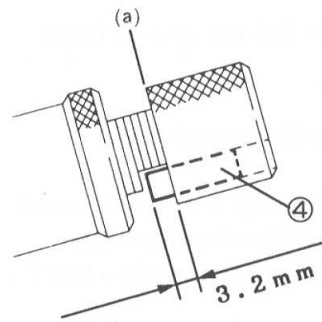
- (1) Loosen two Screws ③ of the stitch length adjust knob. Regulate the knob so that the end of Pin ④ jut out by 3.2mm shown as (a).
- (2) Loosen Screw ⑤ on Stopper ①. Adjust the stopper so that the mark on Adjusting Lever ② align with the 1:1.8 position on the scale as shown in Fig. 42.

Note

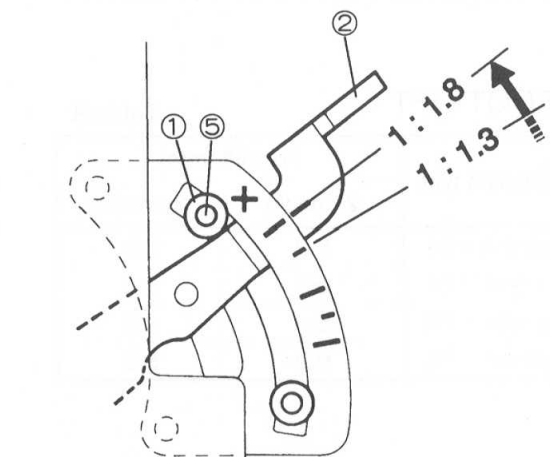
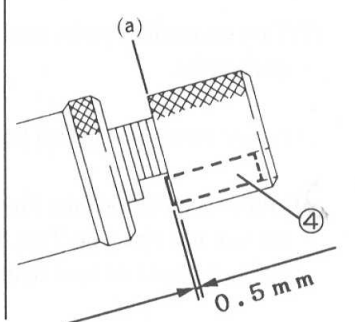
To set the differential feed ratio back to the standard (smaller than 1:1.3), readjust the knob so that the end of Pin ④ jut out by 0.5mm shown as (a).



To use differential feed ratio greater than 1:1.3



To set the differential feed ratio standard



■ Adjusting Thread Take – up and Thread Guide

【1】 ADJUSTING NEEDLE THREAD TAKE-UP

When the needle bar is at the bottom of its stroke, the top surface of Bracket ⑥ should be horizontal. To make this adjustment, loosen Screw ⑦ and turn the bracket right or left.

There should be 75mm between line(a) on the bracket and (b) on the needle thread take-up in the standard setting. To make this adjustment, loosen Screw ⑧ and turn the needle thread take-up right or left.

Moving needle thread take-up to the left (-) loosens the needle thread tension.

Moving needle thread take-up to the right (+) tightens the needle thread tension.

Note

When making the above adjustment, make sure that the Spreader Thread Take-up ⑩ is in position.

【2】 ADJUSTING NEEDLE THREAD GUIDE

● Needle thread guide ⑪

The distance between the center of Screw ⑫ and that of the eyelet should be 7.0mm. To make this adjustment, loosen Screw ⑫ and move Needle Thread Guide ⑪ up or down as required.

● Needle thread guides ⑬, ⑭, ⑮

Adjust the distance between the center of Screw ⑫ and that of each thread guide (see the dimensions in the illustration on right). To make this adjustment, loosen Screws ⑯, ⑰, and ⑱ and move Needle Thread Guides ⑬, ⑭, and ⑮ up or down as required.

Note

● Moving up needle thread guides tighten the needle thread tension.

● Moving down needle thread guides loosen the needle thread tension.

【3】 ADJUSTING NEEDLE THREAD GUARD

Tighten the Screw ⑳ at the center of the slot on Needle Thread Guard ⑭ to position it. Needle Thread Guard ⑭ functions to change the form of the loop when the looper enters the needle thread loop.

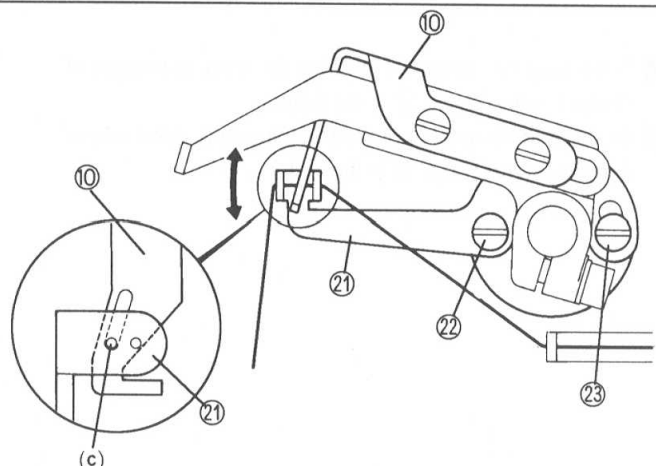
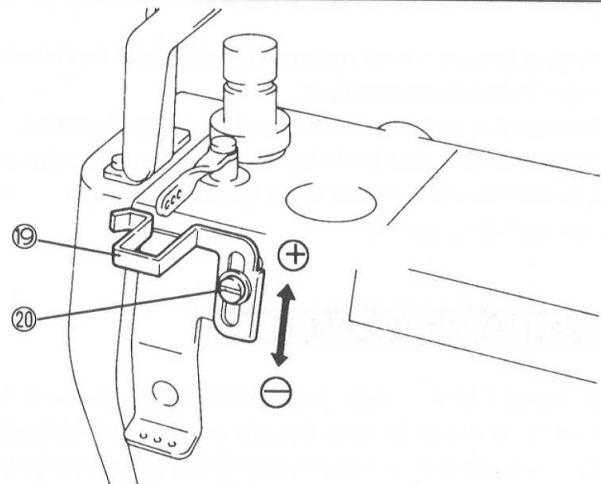
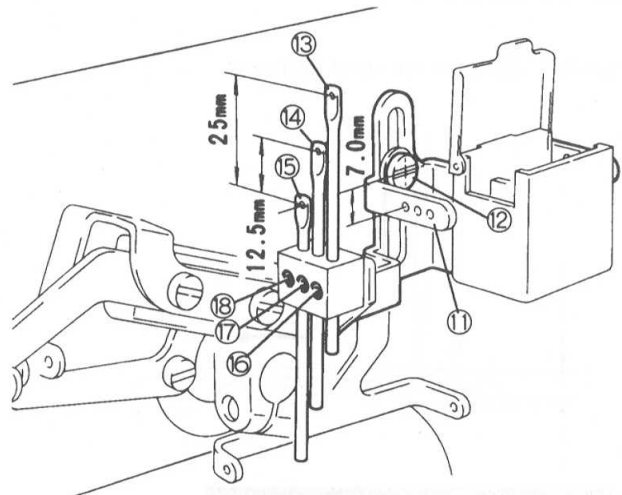
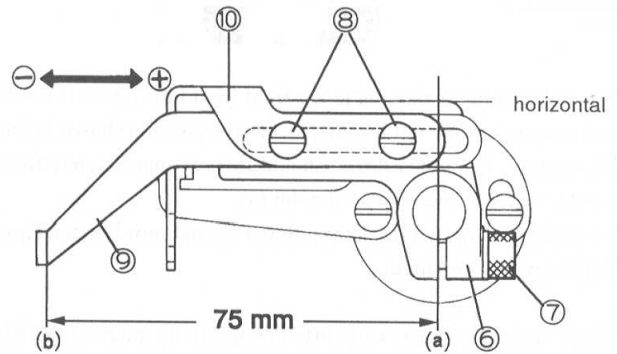
• Moving Needle Thread Guard ⑭ toward (+) makes the loop larger.

• Moving Needle Thread Guard ⑭ toward (-) makes the loop smaller.

【4】 ADJUSTING SPREADER THREAD TAKE-UP

When Spreader Thread Take-up ⑩ is at the top of its stroke, align hole(c) on Spreader Thread Guide ⑳ with the bottom of the slot on Spreader thread Take-up ⑩ as shown in the illustration on right.

To make this adjustment, loosen Screws ㉒ and ㉓, and move Spreader Thread Guide ㉑ up or down as required.



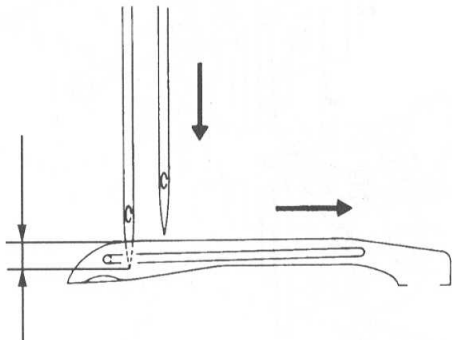
【5】 ADJUSTING LOOPER THREAD TAKE-UP

When the looper is moving to the right from left end of its travel and the point of the left needle reaches the position shown in the illustrations, the looper thread should cast off appropriately from Looper Thread Take-up ① at point (a).

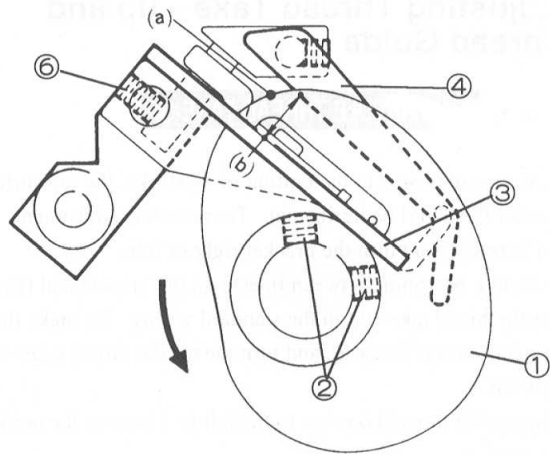
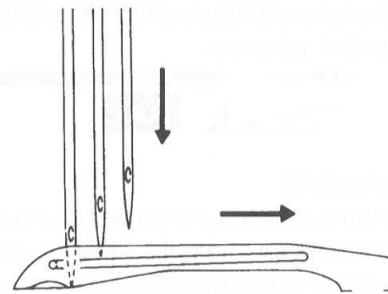
To make this adjustment, loosen Screw ② and turn Looper Thread Take-up ① as required.

When the looper thread casts off at point (a), the point of the left needle should be:

[2- needle]...2/3 below the top of the looper.



[3- needle]...at the bottom of the looper.



【6】 INSTALLING LOOPER THREAD GUARD

The distance between the top surface of Bracket ③ and the bottom of Looper Thread Guard should be:

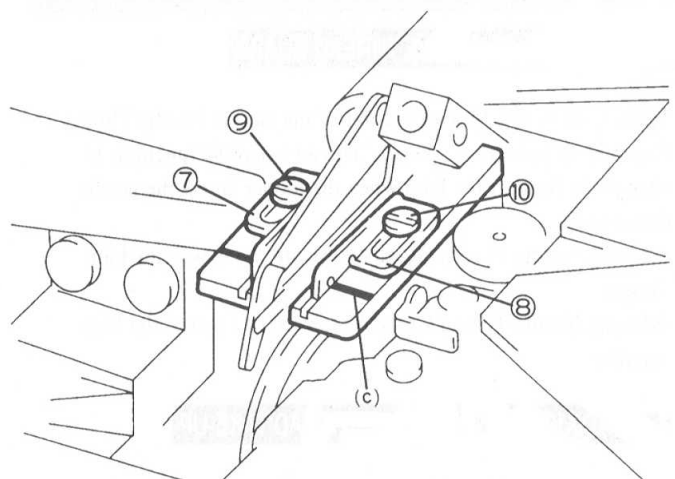
- Wider when you need more looper thread (3- needle machines).
- Narrower when you need less looper thread (2- needle machines).

To make this adjustment, loosen Screw ⑤ and move Looper Thread Guard ④ as required.

【7】 SETTING THREAD GUIDES ⑦ AND ⑧

The positions of Thread Guides ⑦ and ⑧ depend on the amount of provided looper thread. To make this adjustment, loosen Screws ⑨ and ⑩. Align the slots of Thread Guides ⑦ and ⑧ with the marks on the bracket.

- To increase the amount of thread in the seam, move eyes of Thread Guides ⑦ and ⑧ to the front.
- To decrease the amount of thread in the seam, move eyes of Thread Guides ⑦ and ⑧ to the back.



■ Timing Adjustment

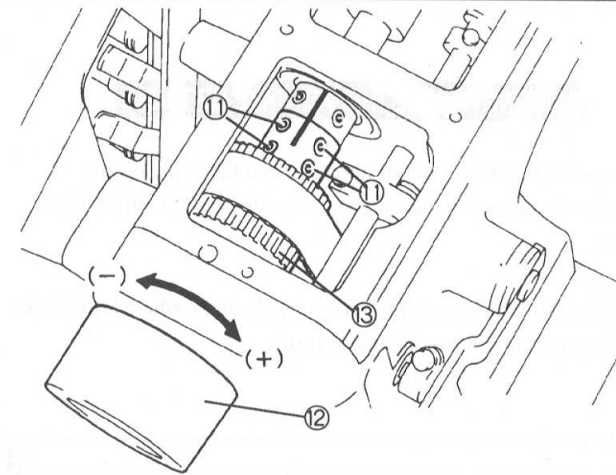
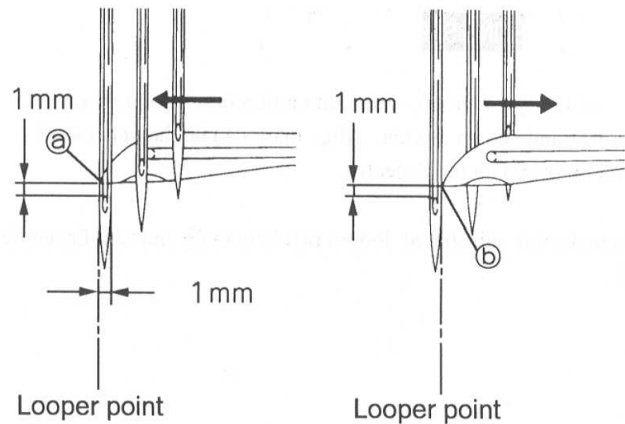
【1】 ADJUSTING TIMING OF NEEDLE MOTION AND LOOPER LEFT - TO - RIGHT MOTION

Adjust the looper left-to-right motion in relation to the needle bar up-and-down motion.

Maintain the same needle bar height (1mm above the needle eye) when the looper point reaches point(a) in its movement to the left from the right end (on the back side of the needle), and when the looper point reaches point(b) in its movement to the right from the left end (on the front side of the needle).

To make this adjustment, loosen four Screws ⑪, and turn Handwheel ⑫ to move Belt Gear ⑬.

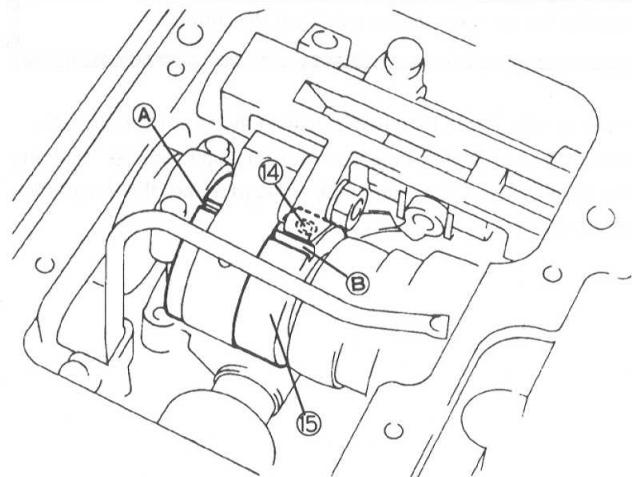
- Turning the handwheel toward (+) advances the timing at which the looper moves to the left on the back side of the needle.
- Turning the handwheel toward (-) slows the timing at which the looper moves to the left on the back side of the needle.



【2】 ADJUSTING TIMING OF NEEDLE MOTION AND LOOPER FRONT - TO - BACK MOTION

Adjust the looper front-to-back motion in relation to the needle bar up-and-down motion. Align the mark (A) on the crank shaft with the mark (B) on Eccentric.

To make this adjustment, loosen Screw ⑭ and turn Eccentric ⑮.

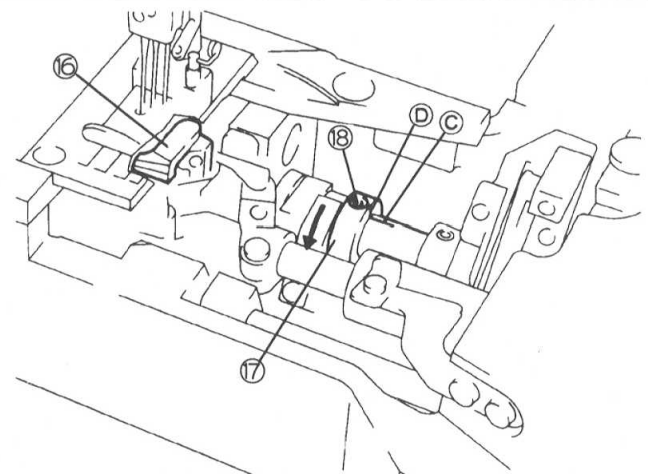


【3】 ADJUSTING NEEDLE GUARD (REAR) TIMING

Adjust the Needle Guard (rear) ⑯ front-to-back motion in relation to the needle up-and-down motion. Align the mark (C) on the crank shaft with the mark (D) on Eccentric.

To make this adjustment, loosen Screw ⑰ and turn Eccentric ⑱.

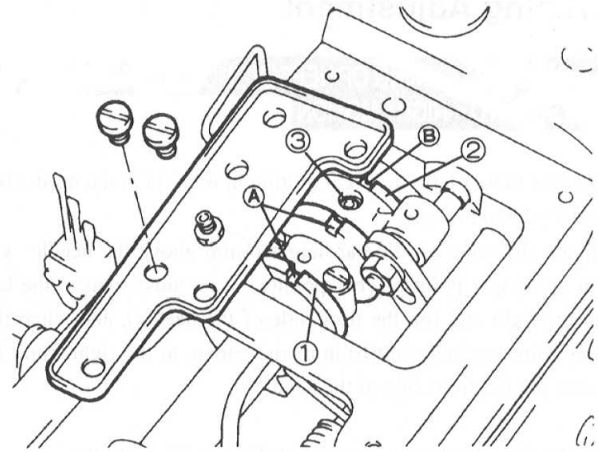
- The use of cotton yard may make the needle thread loop larger and the loop may touch Needle Thread Guard (rear) ⑯. In this case, loosen Screw ⑰ and move Eccentric ⑱ in the direction of arrow shown in the figure.



[4] ADJUSTING SPREADER TIMING

Adjust the spreader left-to-right motion in relation to the needle bar up-and-down motion. Align mark (A) on the upper shaft with mark (B) on the Eccentric.

To make this adjustment, loosen two Screws ③ and turn Eccentric ②.



[5] ADJUSTING NEEDLE THREAD TAKE-UP TIMING

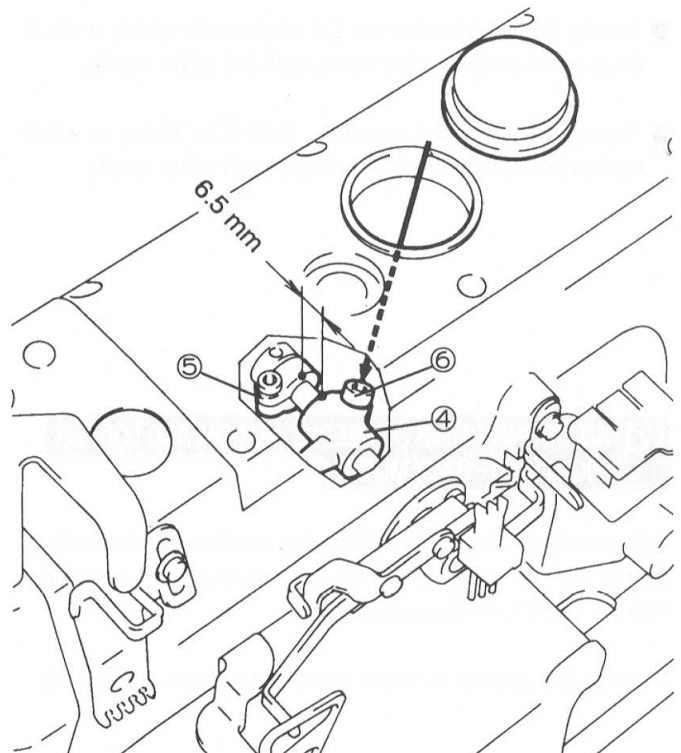
When adjusting the timing of needle thread take-up, set the clearance between Needle Thread Take-up ④ and Collar ⑤ to 6.5mm.

To make this adjustment, loosen Screw ⑥ on Needle Thread Take-up Crank ④ and move it back or forth.

Note

Needle thread take-up timing is adjusted to be simultaneous with the needle bar up-and-down motion at the shipment.

★ If the needle thread loop is too large in the use of cotton yarn, loosen Screw ⑥ of Needle Thread Take-up Crank ④. Moving the needle thread take-up crank forward makes the thread loop smaller.



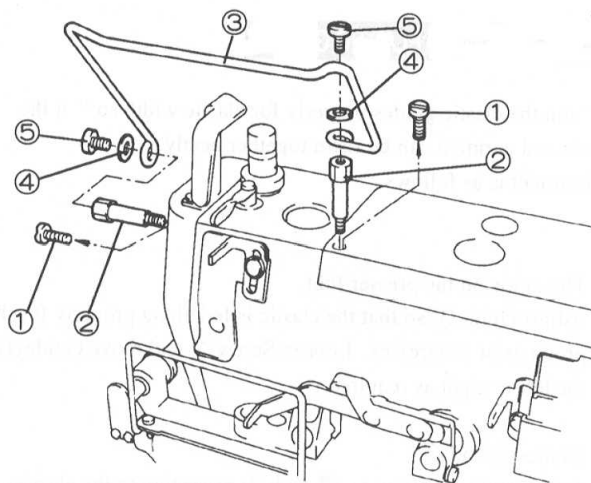
■ Metering Device Adjustment (MD231)

【1】 MD231(ELASTIC FEEDER)

This elastic feeder can feed the desired amount of elastic or lace of up to approximately 40mm in width and from 0.9 to 3.5mm in length per stitch.

【2】 INSTALLING LACE GUIDE

To install the Lace Guide③, remove Screw① and put in ② to ⑤ in order referring to the figure.

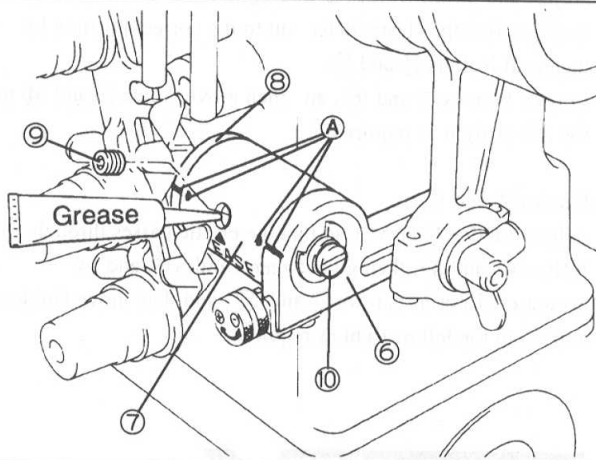


【3】 LUBRICATION

The clutch and the bearings of the elastic feeder are prefilled with grease. Always keep them filled with grease.

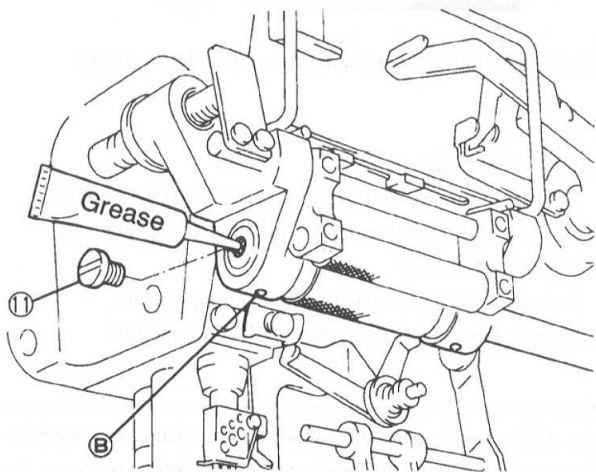
【4】 LUBRICATING CLUTCH

Align marks A on Crank (6), Sleeve (7), and Stop Plate (8), and remove Screw (9). Then apply grease appropriately. To check the grease circulation, remove Screw (10) on the right-hand end of the shaft.



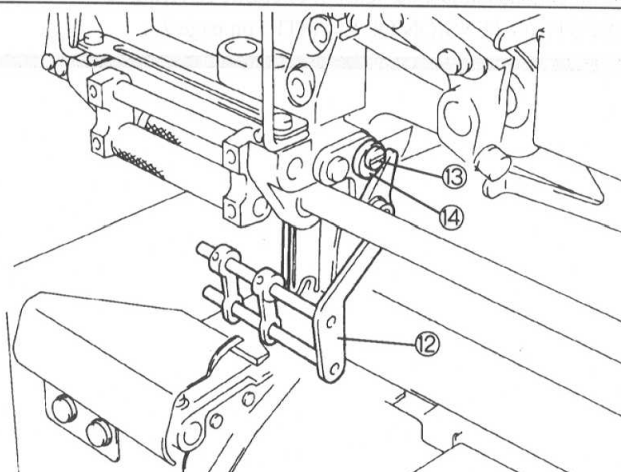
【5】 LUBRICATING BEARINGS

To lubricate the bearings, remove Screw (11) on the left-hand end of the shaft and then apply grease. Check Hole B on the bottom of the bearings for grease circulation.



【6】 POSITIONING LACE GUIDE (LOWER)

Install Lace Guide (lower) (12) as close to the needles as possible, yet not to touch the spreader or anything. To make this adjustment, loosen Screw (3) and turn Stopper (14) as required.



【7】 POSITIONING ELASTIC GUIDES

Position the elastic guides properly for elastic width so that the elastic and garment can be sewn together neatly. Adjustment is as follows.

(1) The guide on the presser foot

Adjust Guide ① so that the elastic is fed along properly for the products or progresses. Loosen Screw ② and move Guide ① to the left or right as required.

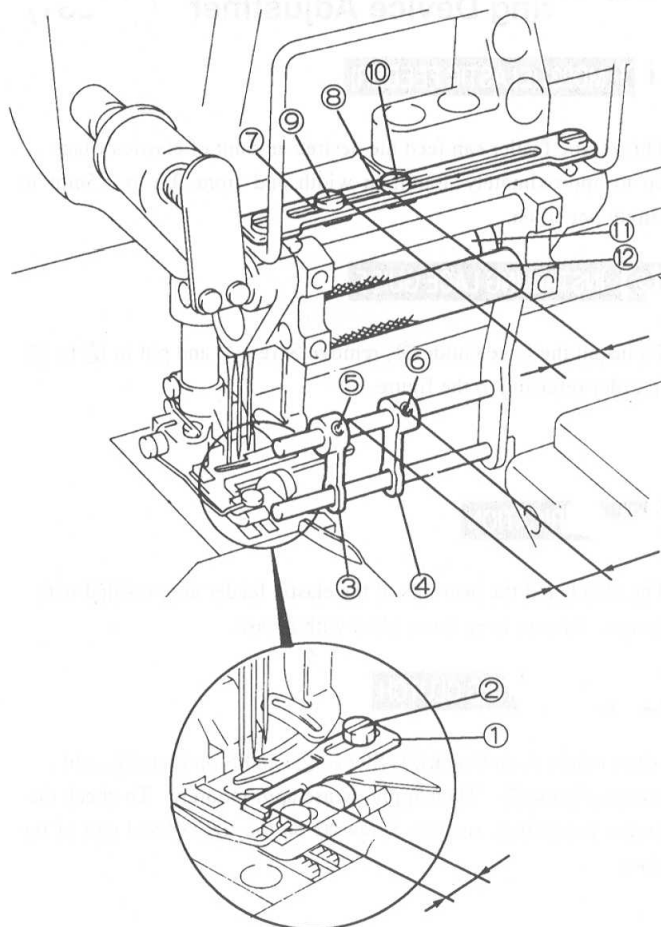
(2) Guides ③ and ④

Adjust and install Guides ③ and ④ according to the elastic width so that the elastic is fed out to the correct position by means of Rollers ⑪ and ⑫.

Loosen Screws ⑤ and ⑥, and then move Guide ③ and ④ to the left or right as required.

(3) Guides ⑦ and ⑧

Adjust Guides ⑦ and ⑧ so that the elastic passes through Rollers ⑪ and ⑫, then go between Guides ③ and ④ accurately. Loosen Screws ⑨ and ⑩, and then move Guides ⑦ and ⑧ to the left or right as required.



【8】 ADJUSTING ELASTIC FEEDING AMOUNT

Two kinds of settings are available for this elastic feeder.

(1) Standard settings

Adjustable range of the feeding amount is 0.9 - 2.2mm.

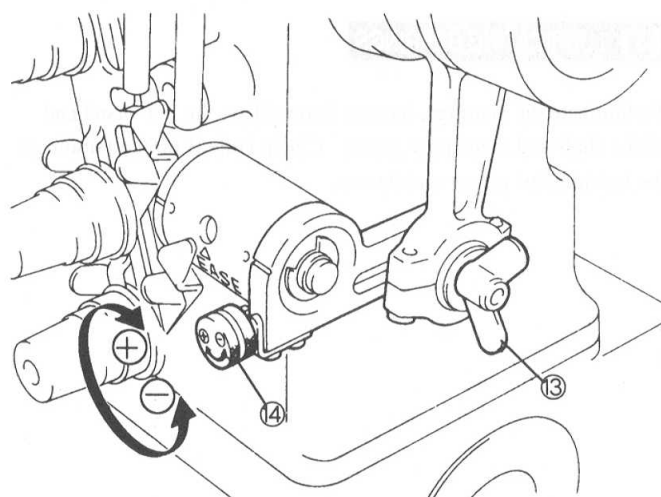
To make this adjustment, loosen Wing Nut ⑬ and turn Adjusting Screw ⑭.

Turning towerd (+) increases the feeding amount.

Turning towerd (-) decreases the feeding amount.

Note

If the proper feeding amount cannot be obtained after the above adjustment, also adjust the tension of elastic referring to ADJUSTING TENSION OF ELASTIC on page 24.



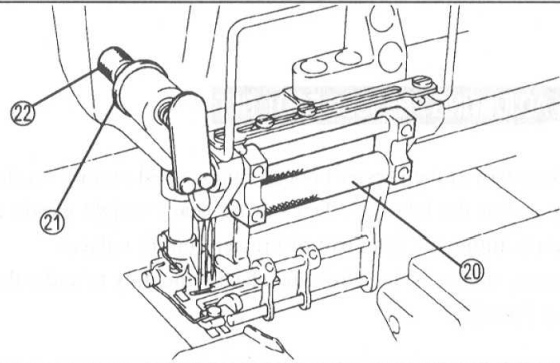
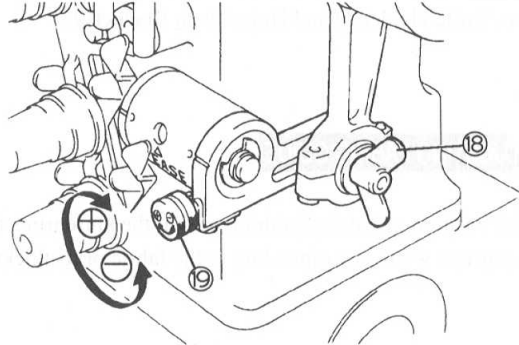
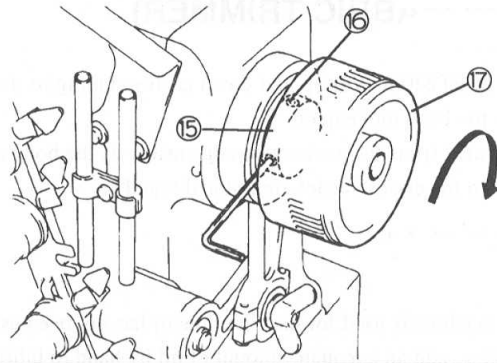
(2) Special settings

Adjustable range of the feeding amount is 1.4mm - 3.5mm. To change from the standard settings to the special settings, follow the procedures below.

1. Loosen two Screws ⑬ on Eccentric ⑮.
2. Hold Eccentric ⑮ in position by inserting a key wrench into any one of two Screws ⑬. Turn Handwheel ⑰ clockwise until it stops and tighten Screws ⑬ in order to secure Eccentric ⑮.
3. Loosen Wing Nut ⑱ and turn Screw ⑲.
Turning toward (+) increases the feeding amount.
Turning toward (-) decreases the feeding amount.

Note

If the proper feeding amount cannot be obtained after the above adjustment, also adjust the tension of elastic referring to "ADJUSTING TENSION OF ELASTIC" below.



【9】 ADJUSTING TENSION OF ELASTIC

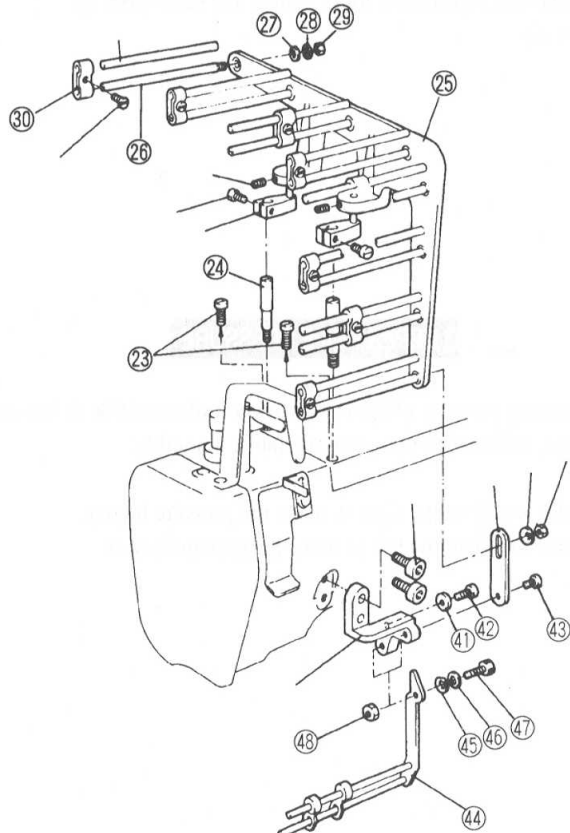
Loosen Nut ⑳ and turn Screw ㉒ to make the adjustment.
Increasing the pressure feeds more elastic.
Decreasing the pressure feeds less elastic.

【10】 LACE GUIDE (LG210)

This lace guide corrects the uneven flow of lace for stable stitches. When using the lace which tends to flow unevenly, pass through more number of guide bars. When using the lace which tends to flow smoothly, pass through less number of guide bars.

【11】 INSTALLING LACE GUIDE

To install the lace guide ㉓, remove Screw ㉔ and put in ㉕ to ㉗ in order referring to the figure.



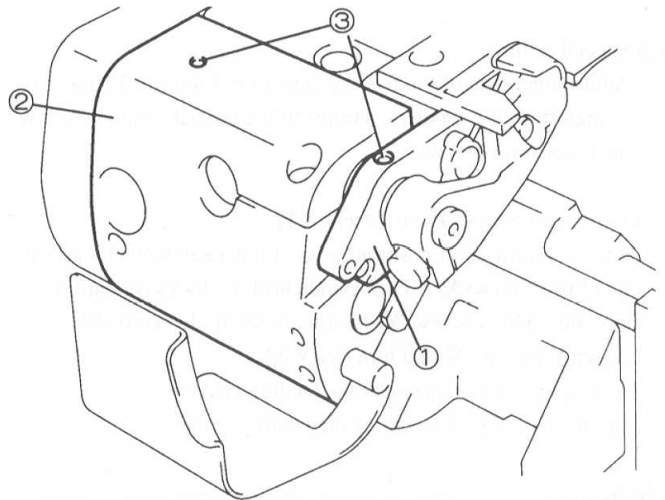
■ FT240 (FABRIC TRIMMER)

The knife of FT240 moves up and down corresponding to the feed dog front-to-back movement.

This equipment trims the excess raw edge neatly as the body and the lace from the elastic feeder are seamed together.

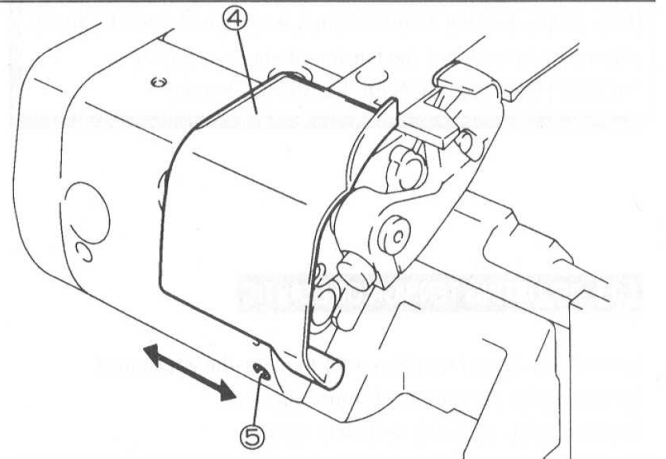
【1】 LUBRICATION

When the machine is used for the first time or has not been used for some time, add an adequate amount of oil by hand to lubricate the Lower Knife Holder ① and Holes ③ on Bracket ②.



【2】 ADJUSTING FABRIC GUIDE

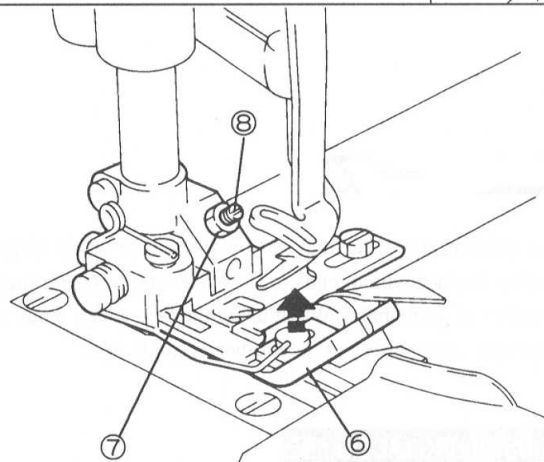
Adjust the position of Fabric Guide ④ so that the knife trims the edge of constant width corresponding to the fabric or its thickness.



【3】 ADJUSTING PRESSER FOOT TILT

The front part of the Presser Foot ⑥ can be tilted upward for the elastic and/or the fabric. When sewing heavy weight elastic onto the fabric, tilting the front part of Presser Foot ⑥ reduces resistance, and feeds the fabric and elastic smoothly to under the Presser Foot ⑥.

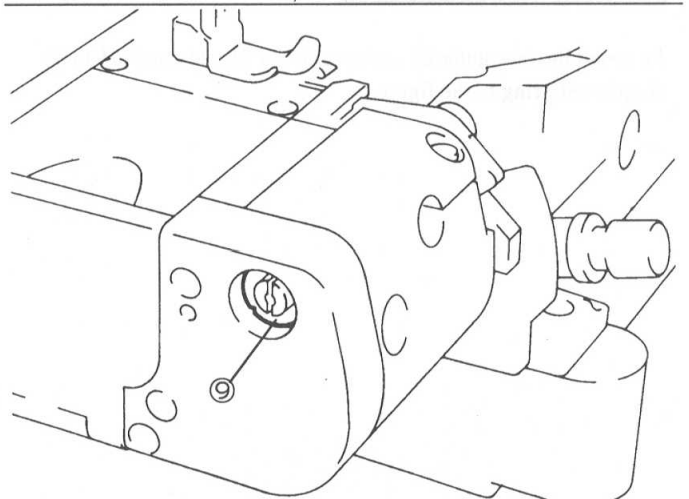
To make this adjustment, loose Nut ⑤ and turn Screw ⑧ clockwise.



【4】 ADJUSTING UPPER KNIFE PRESSURE

The gearing pressure of upper and lower knife should be as low as possible, still sufficient to trim the fabric smoothly.

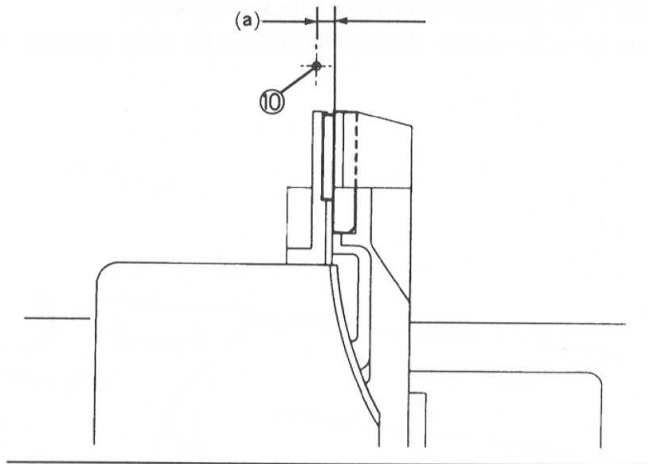
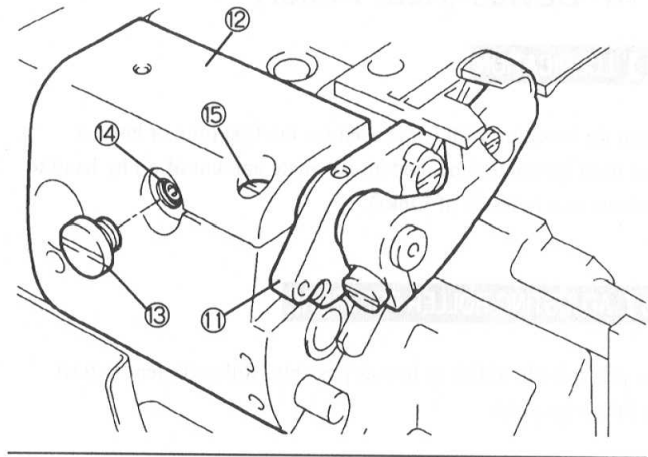
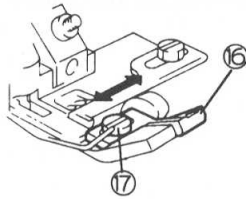
Turn the Nut ⑨ to the right to make the pressure higher.
Turn the Nut ⑨ to the left to make the pressure lower.



【5】 ADJUSTING LOWER KNIFE HOLDER LEFT TO RIGHT

To make the width from the Right Needle ⑩ to the trimmed edge uniform (a), adjust Lower Knife Holder ⑪ left or right. Adjustment is as follows.

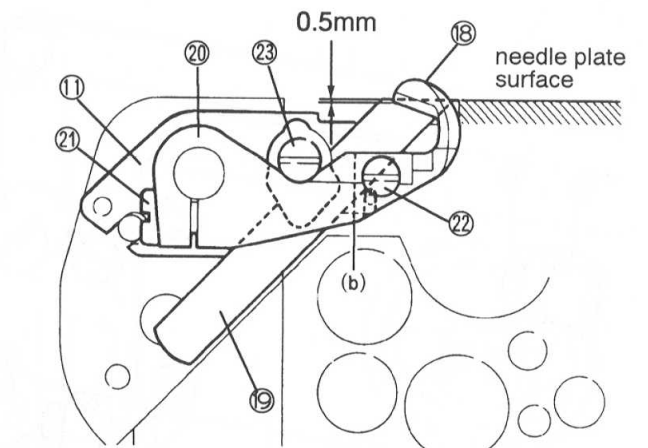
- (1) Remove the Screw ⑬ on the Bracket ⑫ of Lower Knife Holder. Loosen Screws ⑭ and ⑮, and Screw ⑰ on Elastic Guide ⑱, and move the Lower Needle Holder left or right.
- (2) Readjust the Upper Knife Pressure.



【6】 ADJUSTING THE HEIGHT OF UPPER KNIFE HOLDER

Adjust the height of Upper Knife Holder ⑳ so that the overlap of the edges of the Upper Knife ⑱ and the Lower Knife ⑲ is approximately 0.5mm when the Upper Knife ⑱ is at the bottom of its stroke.

To make this adjustment, bring the upper knife at the bottom of its stroke. Then loosen Screw ㉑ and move Upper Knife Holder ㉒ up or down as required.



【7】 REPLACING UPPER KNIFE

- (1) Remove the Screw ㉑, then remove the used Upper Knife ⑱.
- (2) To install the new knife, fit end (a) of the upper knife firmly to Upper Knife Holder ㉒ and tighten Screw ⑩ securely.
- (3) Turn the machine pulley until the Upper Knife ⑱ is at the bottom of its stroke. Check to see if the overlap of the point of the upper knife and the Lower Knife ⑲ is approximately 0.5mm.

If the measure is improper, readjust the height of upper knife holder.

- (4) Place a thread between the upper and lower knives and then turn the machine pulley to check the cutting action.

【8】 REPLACING LOWER KNIFE

- (1) Loosen Screw ㉑, move Upper Knife Holder ㉒ to the right and then remove used Lower Knife ⑲.
- (2) Move Upper Knife Holder ㉒, then insert new Lower Knife ⑲ into the ditch of Lower Knife Holder ⑪. The cutting edge should be flush with the top surface of the needle plate, then tighten Screw ㉑.
- (3) Place a thread between the upper and lower knives and then turn the machine pulley to check the cutting action.

■ RP Device (Rear Puller)

【1】 LUBRICATION

When the machine with RP is used for the first time or has not been used for some time, add an adequate amount of oil by hand to lubricate two holes ② of Link ①.

【3】 ADJUSTING ROLLER PRESSURE

The pressure should be as low as possible, still sufficient to feed the fabric smoothly.

- Turn Screw ④ clockwise to increase the spring pressure.
- Turn Screw ④ counter-clockwise to decrease the spring pressure.

【2】 MANUAL LEVER

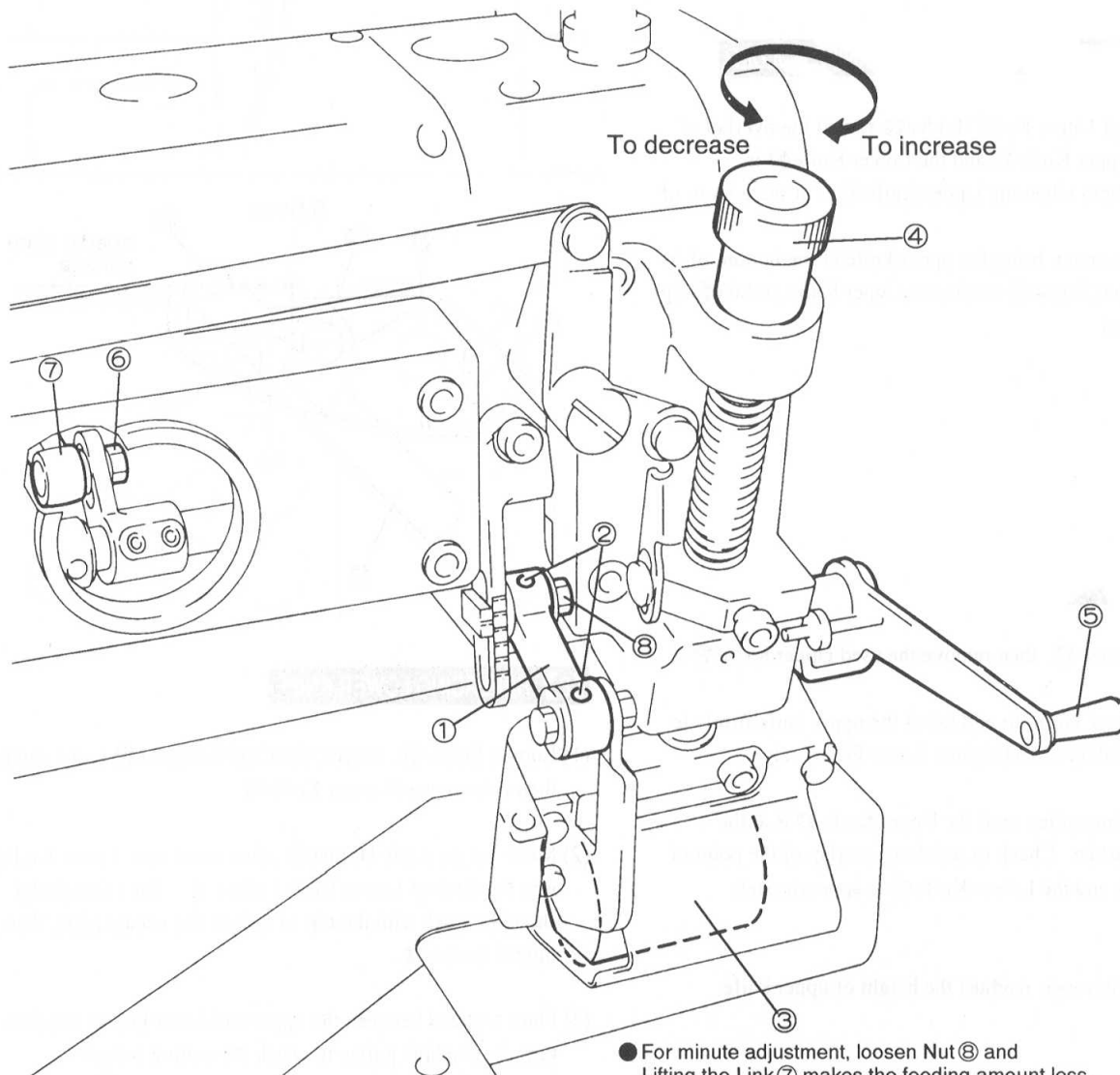
Move Lever ⑤ up when positioning or removing the fabric, or the RP device is not used.

Move Lever ⑤ down when the RP device is used.

【4】 ADJUSTING FABRIC FEEDING AMOUNT

Make an adjustment so that the fabric feeding amount is the same as machine's sewing amount.

- For rough adjustment, loosen Nut ⑥ and Lifting the Rod ⑦ makes the feeding amount less.
Lowering the Rod ⑦ makes the feeding amount more.



- For minute adjustment, loosen Nut ⑧ and Lifting the Link ⑦ makes the feeding amount less.
Lowering the Link ⑦ makes the feeding amount more.

ペガサスミシン製造株式会社

本社 〒553 大阪市福島区鷺洲5-7-2 TEL (06) 458-4739

PEGASUS SEWING MACHINE MFG.CO.,LTD.

5-7-2, Sagisu, Fukushima-ku, Osaka 553, Japan Phone : (06) 458-4739

Cat. No. 9645△ Printed December, 1995

© 1995 PEGASUS SEWING MACHINE MFG. CO., LTD.

このマニュアルに記載された内容は、改良のため予告無く変更することがあります。
The description in this MANUAL is subject to change without notice.