



GLOBAL

FS 603 (-NP)

Instruction manual

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INSTRUCTION MANUAL

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Installing the machine head (table-mounted type)

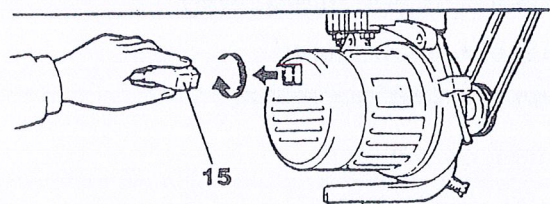
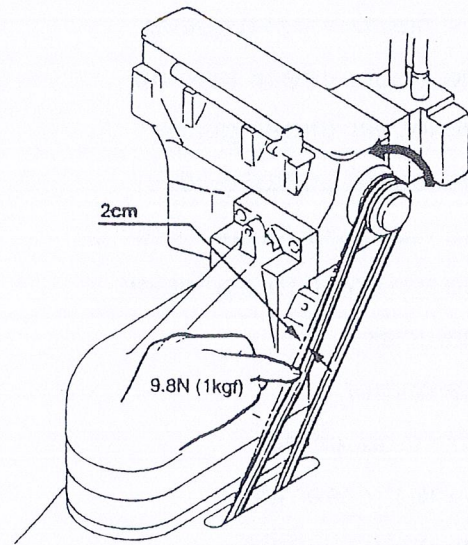
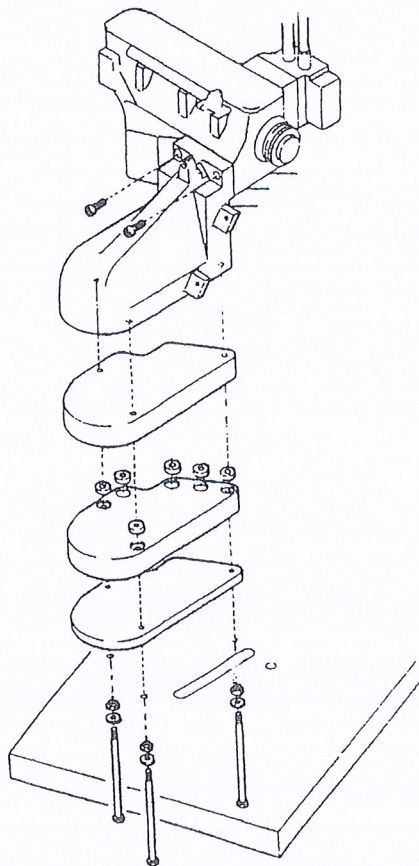
CAUTION

※Always turn off the power, unplug the machine and then well-qualified technicians should install the machine.

1. Firmly Install the machine head onto the machine rest bracket by referring to the illustration. Check there is no play and/or clearance after this installation.
2. Place the V belt. Approximately 2cm deflection should be obtained by pressing the middle of the V belt with 9.8N (1kgf). To achieve this deflection adjust the position of the machine motor.

Direction in which the machine pulley rotates

The machine pulley rotates counterclockwise as seen from the machine pulley. If the machine pulley rotates in the reverse direction, turn motor connector 15 180 in direction of the arrow before establishing a connection.



Installing the belt cover

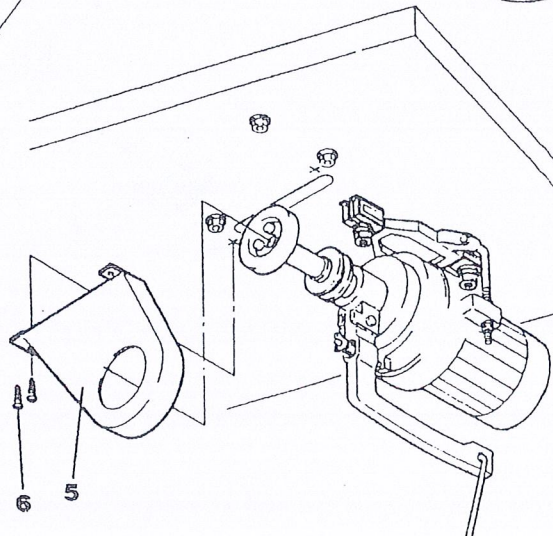
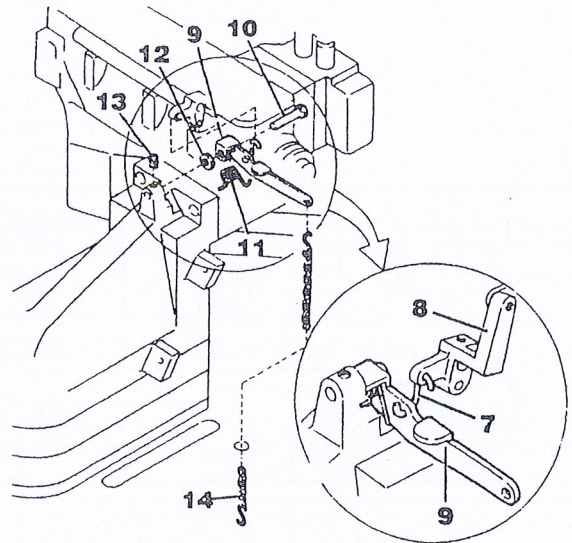
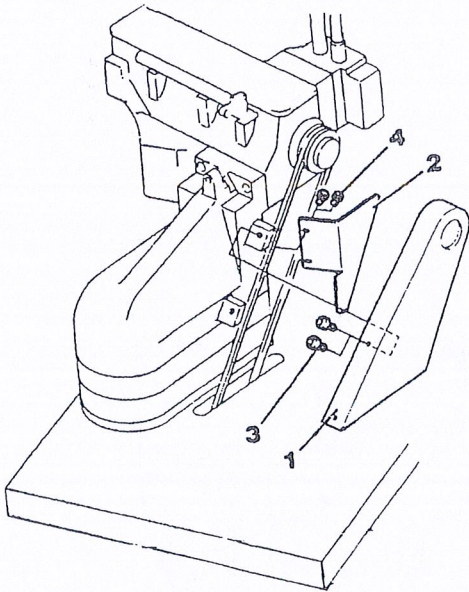
CAUTION

※Always turn off the power, unplug the machine and then well-qualified technicians should install the belt cover.

1. Attach upper belt cover 1 and auxiliary cover 2 to the machine rest bracket with screws 3 and 4 (see the illustration on the right).
2. Install lower belt cover 5 onto the underside of the table with wood screws 6.

Installing the presser foot lift lever

Join lever 8 attached to the machine and presser foot lift lever 9 with link 7 (see the illustration on the right). Attach presser foot lift lever 9, spring 11 and washer 12 to the machine rest bracket with pin 10. Tighten screw 13. Link presser foot lift lever 9 and the treadle with chain 14.



Lubrication

CAUTION

※When lubricating the machine and/or replacing the oil, use Shingling recommended oil. Using other oils may damage the machine.

1. Oil

Use Shingling recommended oil
(P-68 made by Yanase).(ISO Viscosity Grade 68).

2. To fill the machine with oil

Remove plug screws 1 and 2.

Fill the machine with oil until the oil level reaches between H and L. After filling the machine replace plug screws 1 and 2.

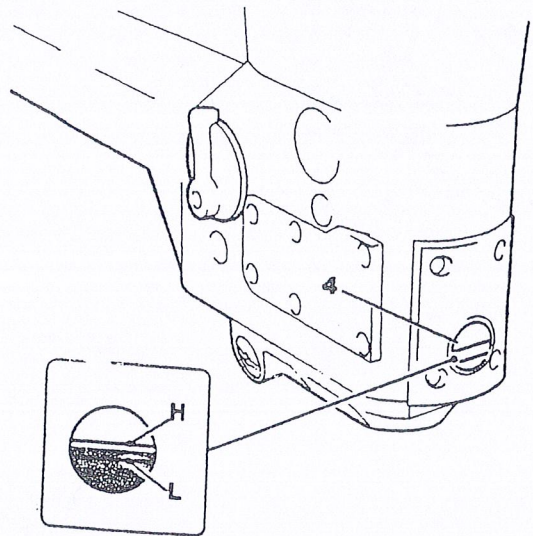
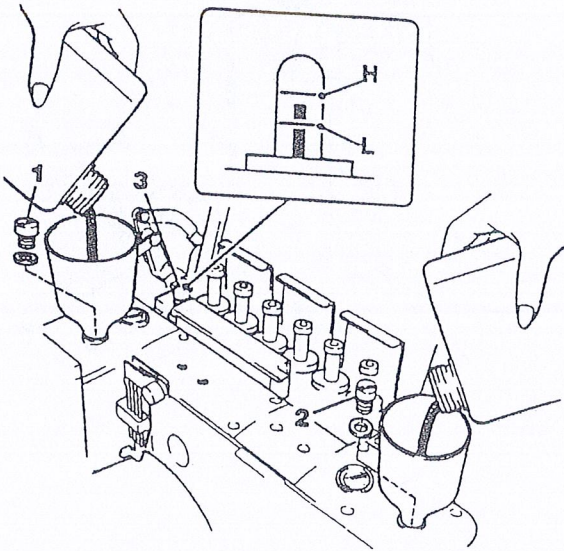
3. Required amount of oil

(H) on oil gauge 3, 4 : Upper limit

(L) on oil gauge 3, 4 : Lower limit

The oil level should always lie between (H) and (L).

4. Manual lubrication



CAUTION

※Always turn off the power and unplug the machine when you apply oil by hand.

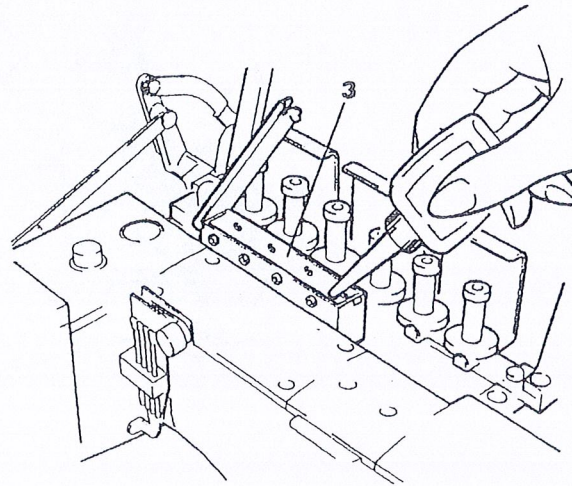
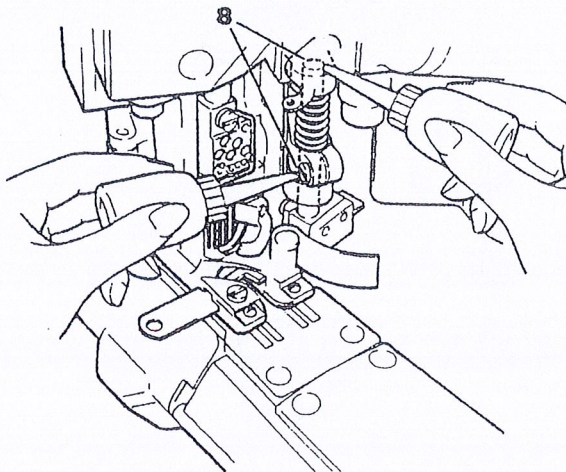
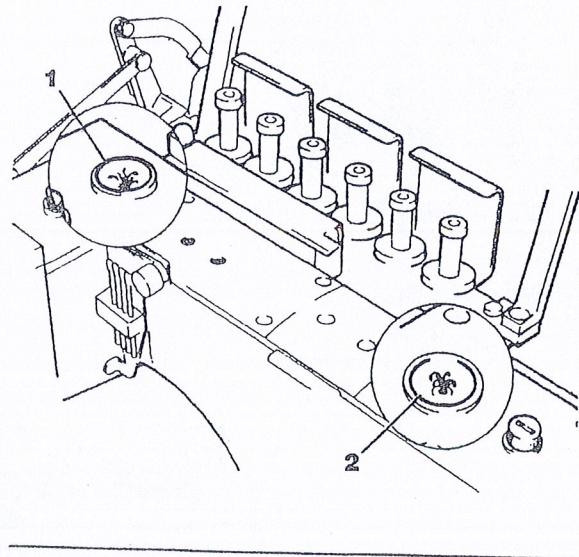
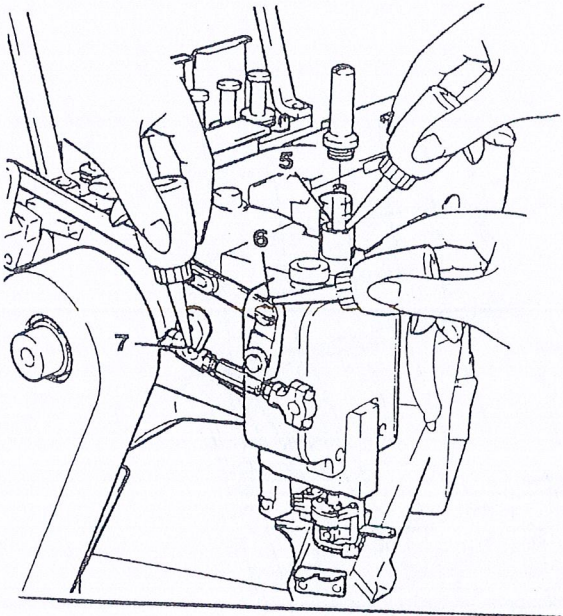
Apply 2 or 3 drops of oil to needle bar 5, presser foot lift link 6, rod 7 and crank 8 by hand when the machine is used for the first time or has been left unused for some time.

5. Checking oil circulation

Run the machine and check for the proper oil flow after filling the machine with oil. This can be seen on the oil flow sight windows 1 and 2.

Silicone oil for H.R. device

If the threads do not move smoothly, fill silicone oil reservoir 3 with silicon oil.



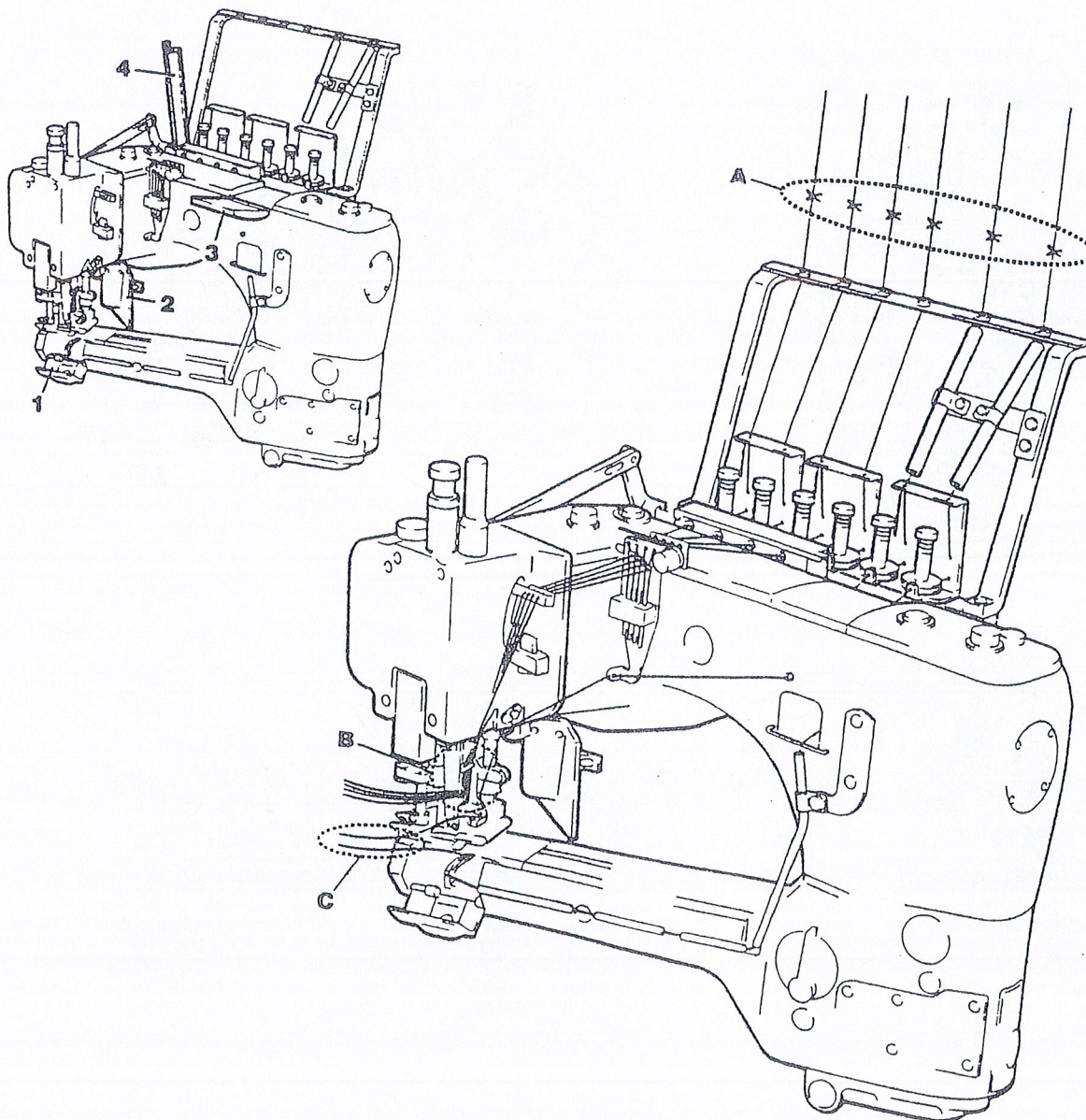
Threading

CAUTION

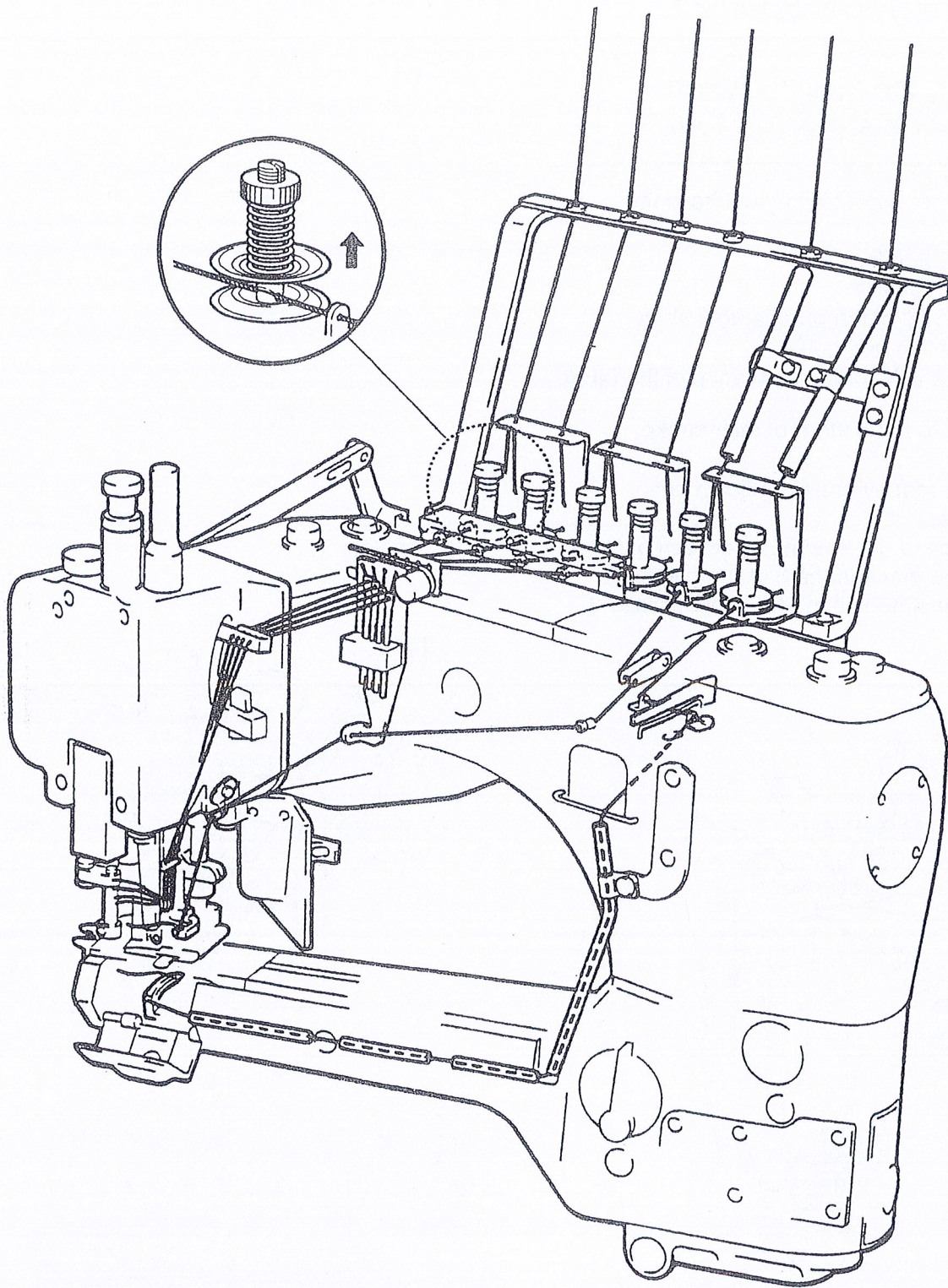
※Always turn off the power and unplug the machine when you thread the machine.

1. Open covers 1, 2, 3 and 4.
2. In case the machine is threaded previously
 - A : Knot the preset thread and the thread being used together to thread the machine.
 - B : Needle thread
Trim the knots off neatly before passing through the eye of the needle to thread.
 - C : Looper thread, Top cover thread
Trim the knots off neatly after passing through the eye of the looper.

Be sure to thread the machine correctly by referring to the threading diagram. (See page 6)



Threading diagram



Adjusting presser foot pressure

The presser foot pressure should be as light as possible, yet be sufficient to feed the fabric and obtain the proper stitch formation. Adjustment is made by loosening nut 1 and turning screw 2 as required. After this adjustment tighten nut 1.

Adjusting the up-and-down position of the presser foot

Moving up the presser foot slightly will have the following effects.

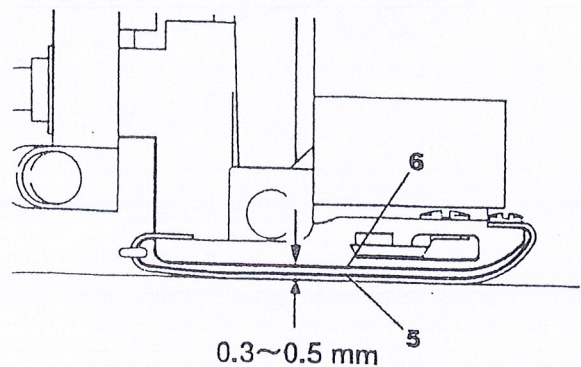
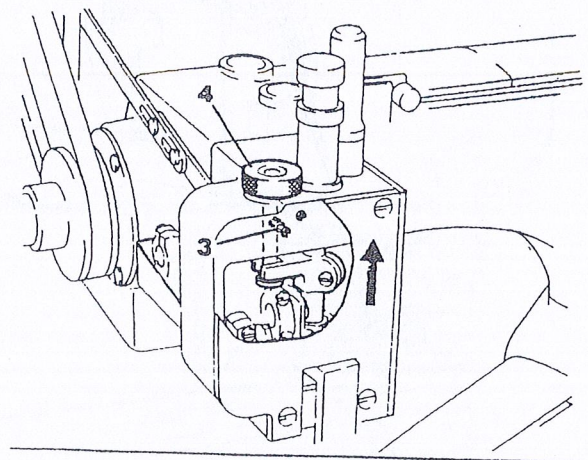
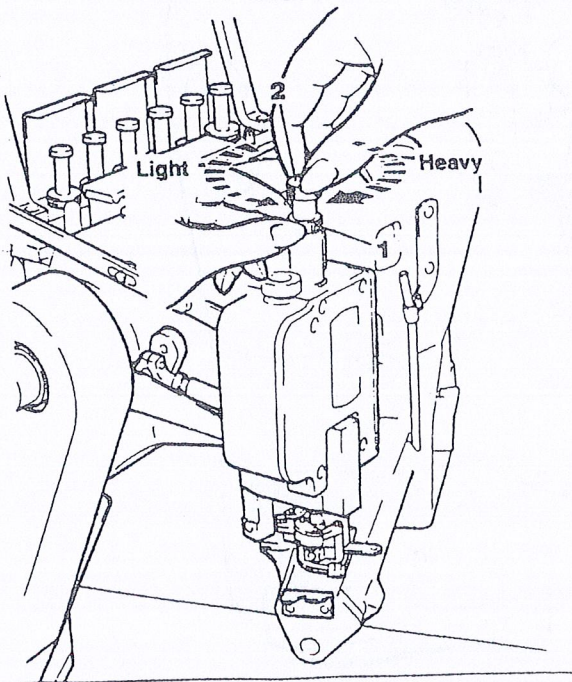
- ⊙Prevents seam jamming.
- ⊙Prevents fabric damage.
- ⊙Increases durability of the presser foot shoe.
- ⊙Decreases vibration and noise.
- ⊙Can make a fine adjustment to overlap of the fabric.

Bring the needles to the bottom of their stroke.

Loosen screw 3.

Raise the presser foot by turning adjustment screw 4 clockwise.

Create a clearance of 0.3 ~ 0.5mm between presser foot shoe 5 and bottom surface 6 of the presser foot. After this adjustment is made, tighten screw 3.



Adjusting the differential feed ratio

To increase the differential feed ratio, turn lever 1 clockwise.

This will shrink the finished fabric. To decrease the differential feed ratio, turn lever 1 counterclockwise. This will stretch the finished fabric.

Adjusting stitch length

⚠ CAUTION

✳ Always turn off the power and unplug the machine when adjusting the stitch length.

Remove screw 2. Loosen screw 3.

To produce coarse stitches, move up link 4.

To produce fine stitches, move down link 4.

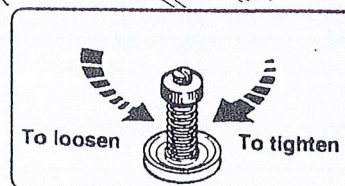
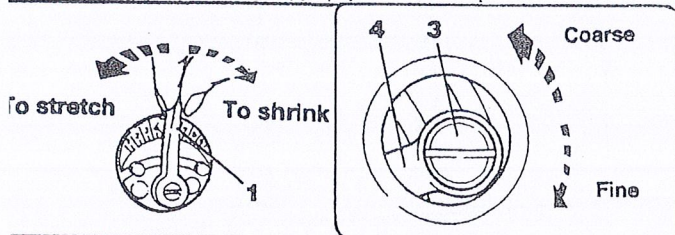
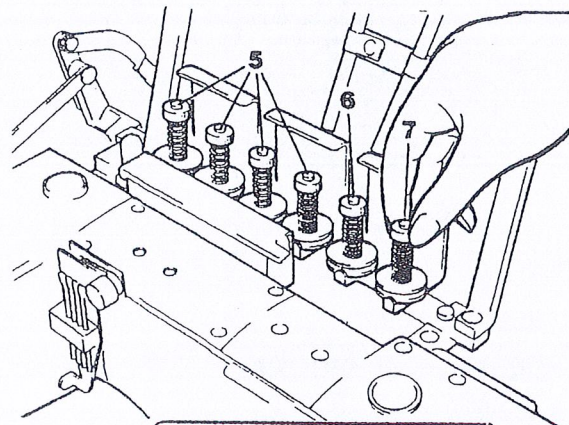
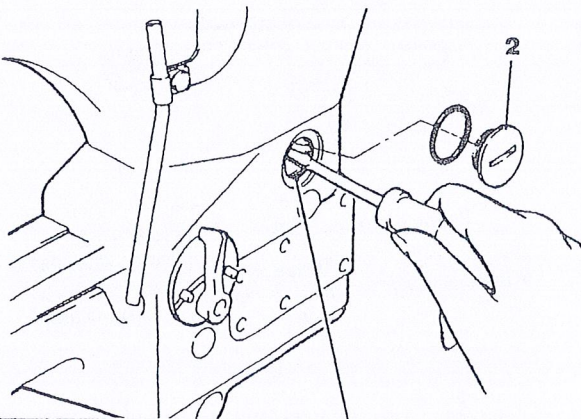
Note

Stitch length adjustment must only be made after the differential feed ratio has been changed.

Adjusting the thread tension

To obtain the proper thread tension, adjust needle thread tension knobs 5, top cover thread tension knobs 6 and looper thread tension knob 7.

To tighten the thread, turn each knob clockwise.
To loosen the thread, turn each knob counterclockwise.
Each thread tension should be as light as possible, yet be sufficient to produce balanced and beautiful stitches.



Replacing the needle

! CAUTION

※Always turn off the power and unplug the machine when you replace the needle(s).

1. Loosen screw 1 with the small slotted screwdriver supplied with the machine.
2. Remove the old needle(s) by using a pincette (provided as accessories).
3. Fix the needle so that its scarf faces the rear side of machine.
4. Insert a new needle into the needle hole as far it will go by using a pincette.
5. Tighten screw 1 with the small slotted screwdriver supplied with the machine.

Replacing the fabric guide (SL703, 713)

! CAUTION

When replacing the fabric guide, always turn off the power and unplug the machine.

Fabric guides

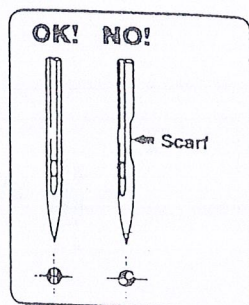
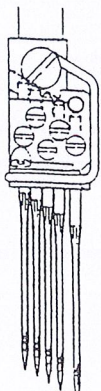
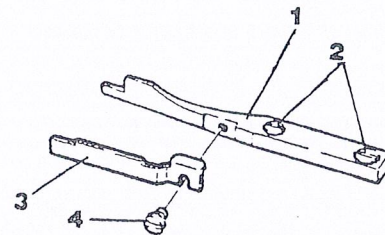
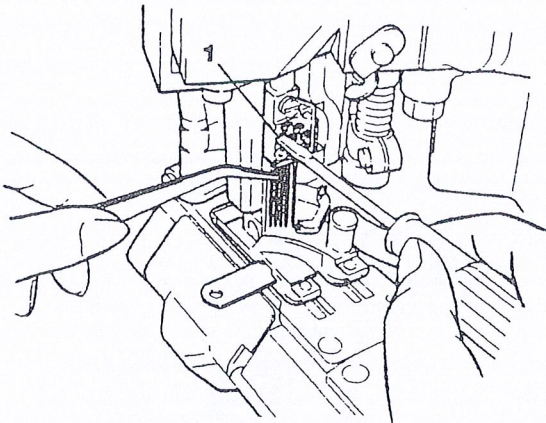
Fabric guide for FS703: Two types of fabric guides are available.

A : for light to medium weight fabrics **B** : for heavy weight fabric Fabric guide designed for FS713.

Select one according to the fabric to be used.

Remove screws 2 and then replace fabric guide 1.

©If the fabric is sewn unevenly, attach flat spring 3 to fabricguide 1 with screw 4.



Fabric guide for FS703

A type for light to medium weight fabrics

B type for heavy weight fabrics

Fabric guide designed for FS713

for light to heavy weight fabrics



Replacing the knives

⚠ CAUTION

※Always turn off the power and shut down the air compressor first, and then well-qualified technicians should replace the knives.

⚠ Pay close attention to the knife edges not to injure your hands and/or finger.

Replacing the upper knife

Loosen screw 5. Raise upper knife clamp 6. Then replace the upper knife.

⊙There should be an overlap of 0.5 ~1.0mm of upper knife 7 and lower knife 8 with the upper knife at the extreme left end of its travel. Adjustment is made by moving upper knife 7. After this adjustment tighten screw 5.

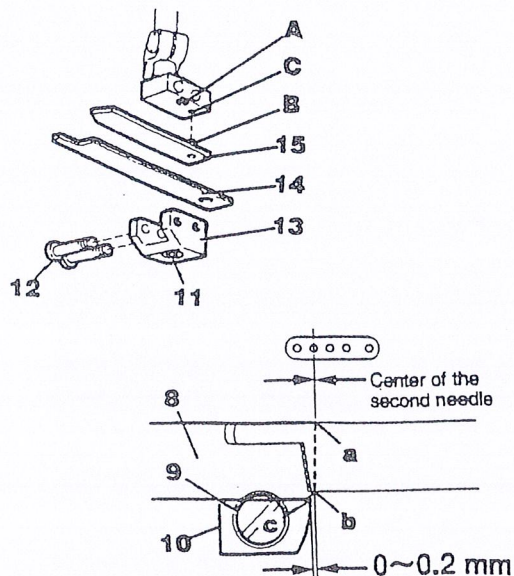
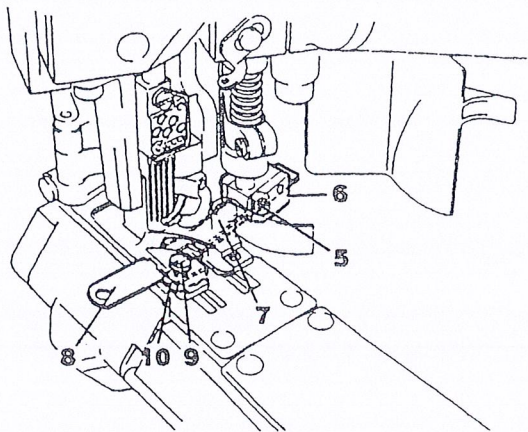
⊙To adjust the angle in the horizontal direction when the upper and lower knives overlap. Remove parts 11 to 15 in sequence. Turn screw A as required. When replacing the parts, check to make sure screw B does not protrude from the bottom surface of upper knife presser 15, and then fit screw B into hole C.

Replacing the lower knife

Loosen screw 9. Raise upper knife clamp 6.

⊙Align point a of the lower knife with the center of the second needle by adjusting the position of the lower knife (standard). A fine adjustment should be made according to the fabric to be used.

⊙Adjust the position of lower knife clamp 10 so that the distance from point b of lower knife 8 to corner c of lower knife clamp 10 is 0.2mm. After this adjustment tighten screw 9.

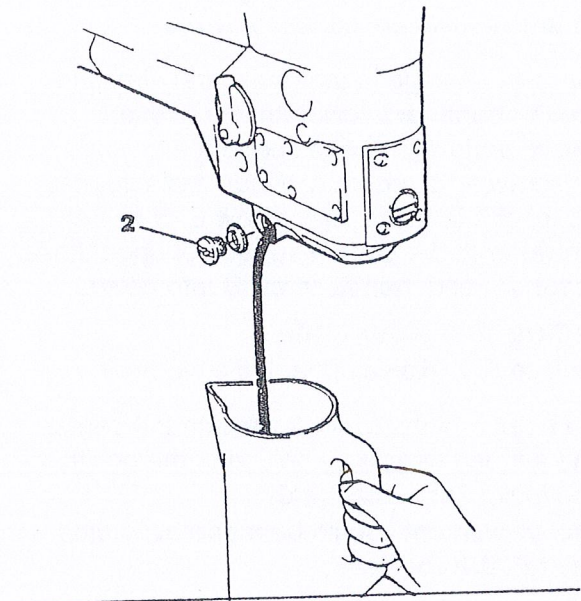
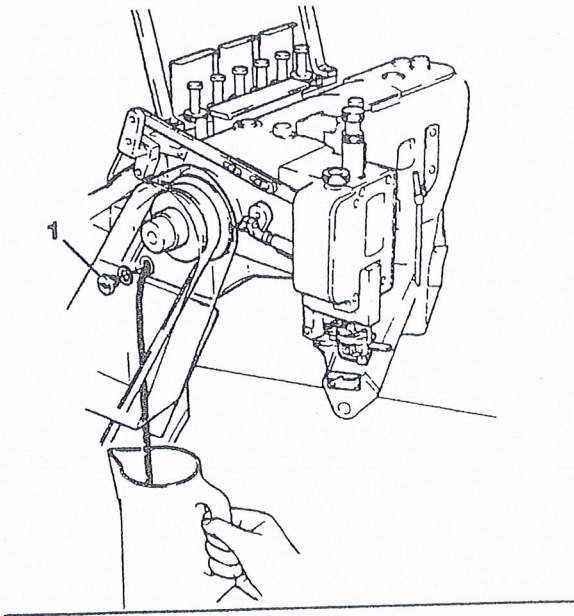


Oil replacement

Replace the oil one month after the first use and thereafter every six months. If you keep using the old oil, it may cause the damage to the machine.

To drain the oil

1. Remove plug screws 1 and 2. Drain the oil.
2. After draining the oil replace plug screws 1 and 2.



Adjusting the needle guard

⚠ CAUTION

※When adjusting the needle guard, always turn off the power and unplug the machine.

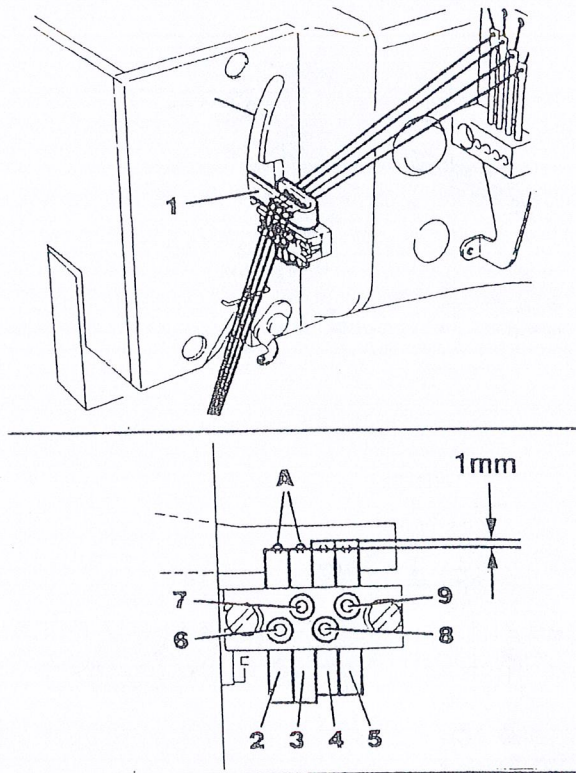
Bring needle thread take-up 1 to the bottom of its travel. Loosen screws 6 and 7. Align the top ends of needle guards 2 and 3 with the centers of eyelets A on needle thread take-up 1 (standard). Tighten screws 6 and 7 temporarily.

Loosen screws 8 and 9. Achieve a distance of 1mm from the top ends of needle thread guards 2 and 3 to those of needle thread guards 4 and 5 by adjusting needle thread guards 4 and 5 (standard). Tighten screws 8 and 9 temporarily.

◎To increase the size of the needle thread loop, move up needle guards 2, 3, 4 and 5.

◎To decrease the size of the needle thread loop, move down needle guards 2, 3, 4 and 5.

Obtain the proper needle thread loop by moving up or down needle thread guards 2, 3, 4 and 5. After this adjustment tighten screws 6, 7, 8 and 9.



Adjusting the needle thread guides

There should be a distance of 10mm from the centers of the eyelets on needle thread guides 10 to those on bracket 11.

Adjustment is made by loosening screws 12 and moving up or down needle thread guides 10 (standard). After this adjustment is made, tighten screws 12 temporarily.

⊙To loosen the needle thread, move up needle thread guides 10.

⊙To tighten the needle thread, move down needle thread guides 10.

After this adjustment is made, tighten screws 12.

Adjusting the needle thread presser spring.

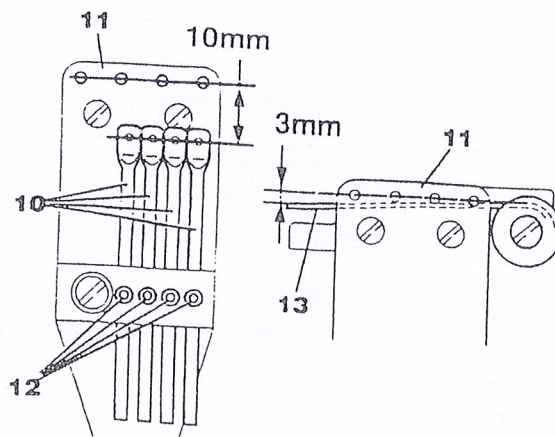
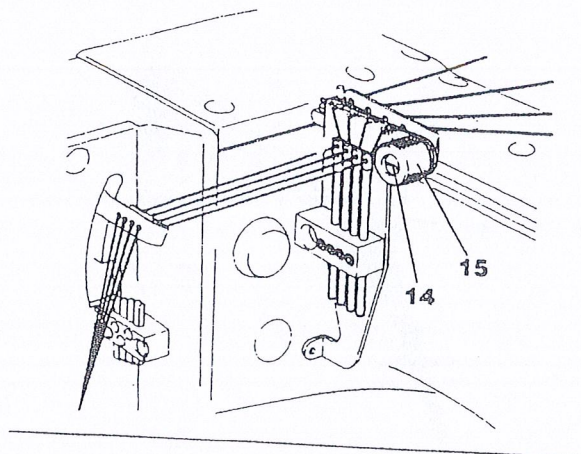
The end of needle thread presser spring 13 should be 3mm lowered from that in the horizontal position.

To make this adjustment, loosen screw 14 and turn knob 15.

After this adjustment is made, tighten screw 14.

※If you want to remove the fabric from the presser foot during sewing, rotate the machine pulley in the reverse direction.

Thanks to needle thread presser spring 13, the needle thread loops are not produced on the front of the needles.



Adjusting the looper thread take-up

⚠ CAUTION

- ※Always turn off the power, unplug the machine and then well-qualified technicians should adjust the looper thread take-up.

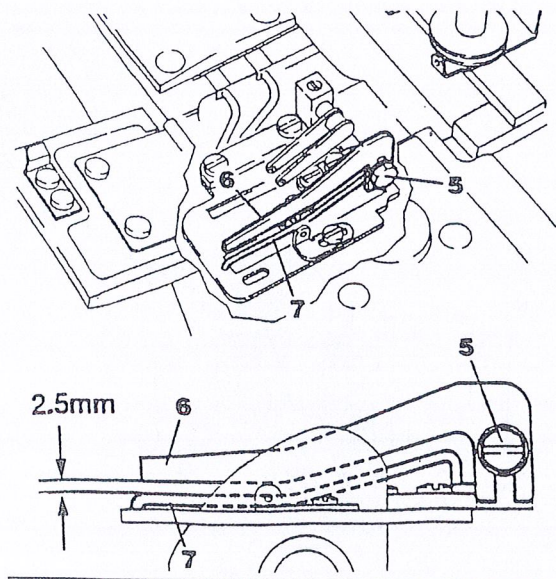
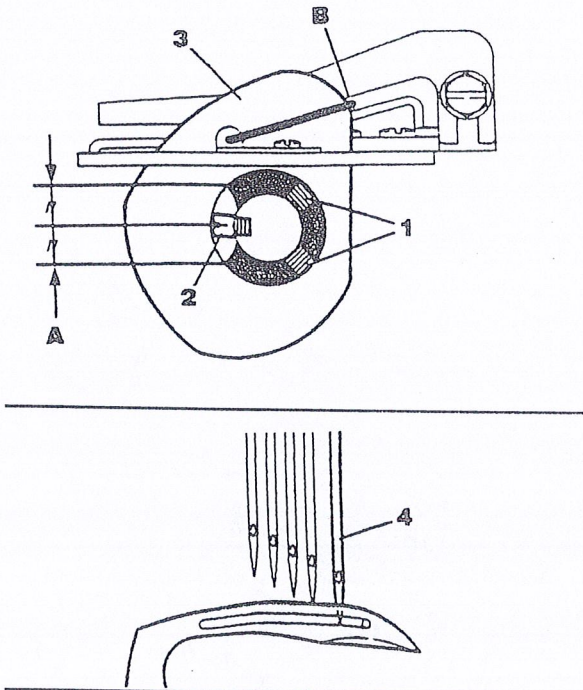
Loosen screws 1. Center screw 2 in slot A.
Tighten screw 1 temporarily.
When retainer 4 descends to the position illustrated on the right while the looper is moving to the left from the extreme right end of its travel, the looper thread should cast off from the looper thread take-up at point B.
To make this adjustment, loosen screws 1 and turn looper thread take-up 3 as required.
After this adjustment is made, tighten screws 1.

Adjusting the looper thread guide

⚠ CAUTION

- ※Always turn off the power, unplug the machine and then well-qualified technicians should adjust the looper thread guide.

There should be a 2.5 mm clearance between looper thread guide 6 and looper thread guard 7 (see the illustration on the right).
Adjustment is made by loosening screw 5 and moving looper thread guide 6 up or down.
After this adjustment is made, tighten screw 5.



Adjusting the looper thread guides

CAUTION

※Always turn off the power, unplug the machine and then well-qualified technicians should adjust the looper thread guides.

Loosen screws 8 and 9. Move looper thread guides 10 and 11 all the way in the direction of A by referring to the illustration on the right (standard). Tighten screws 8 and 9 temporarily.

- ◎To increase the amount of looper thread to be supplied, move looper thread guides 10 and 11 in the direction of B.
- ◎To decrease the amount of looper thread to be supplied, move looper thread guides 10 and 11 in the direction of A.

After this adjustment is made, tighten screws 8 and 9.

Adjusting the top cover thread take-up

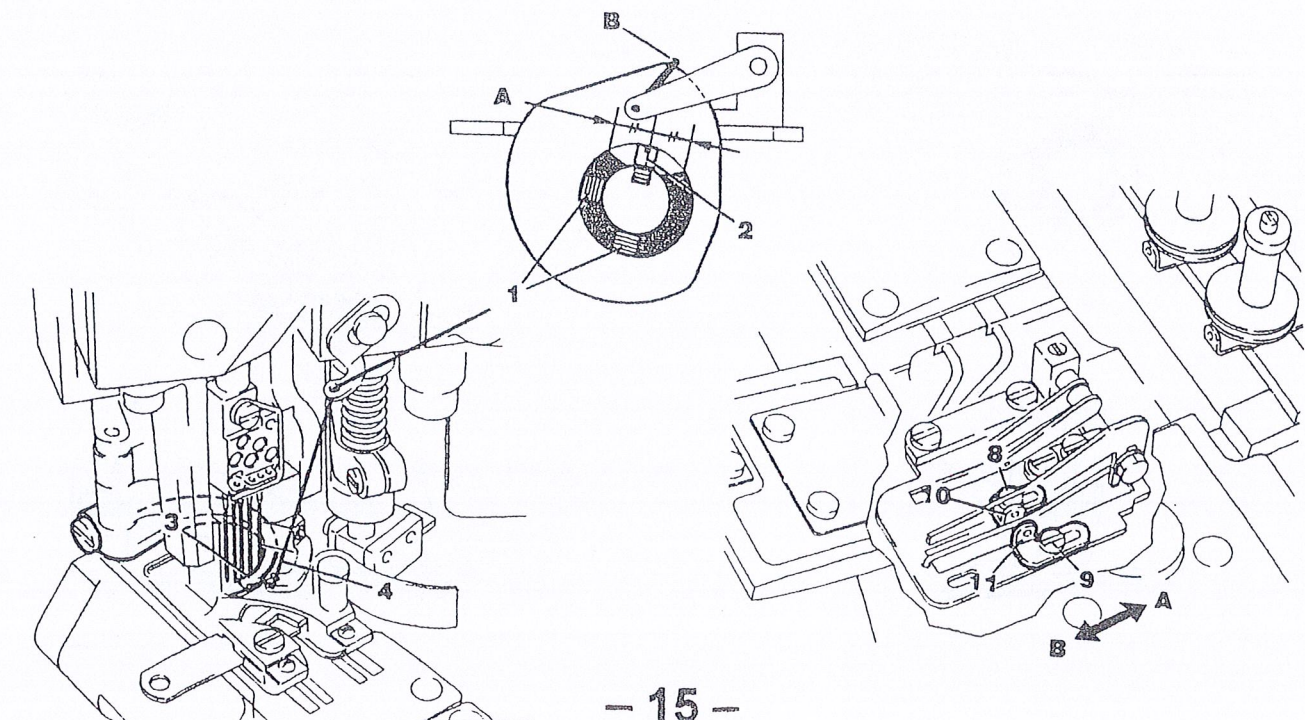
CAUTION

※Always turn off the power, unplug the machine and then well-qualified technicians should adjust the top cover thread take-up.

Loosen screws 1. Center screw 2 in slot A. Tighten screws 1 temporarily.

The top cover thread should cast off from the top cover thread take-up at point B after hook 3 passes over top cover thread 4 while hook 3 travels to the left from the right.

After this adjustment is made, tighten screws 1.



Adjusting the top cover thread guide

CAUTION

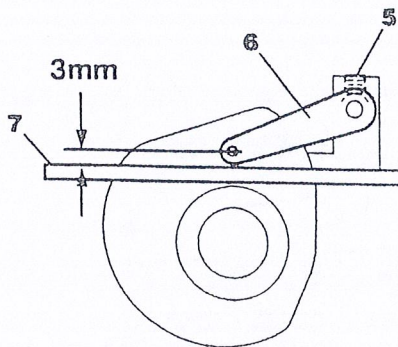
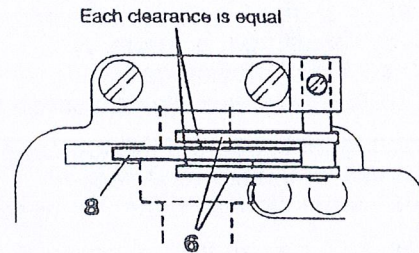
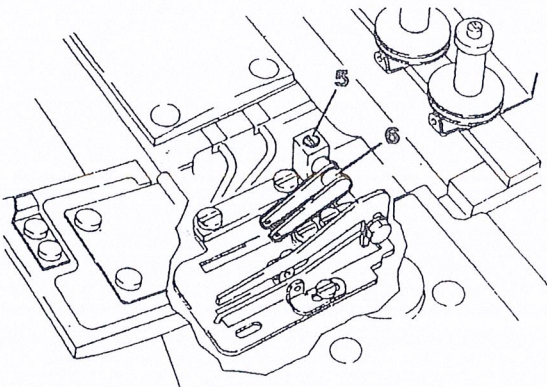
※Always turn off the power, unplug the machine and then well-qualified technicians should adjust the top cover thread guide.

There should be a distance of 3.0mm (standard) from the center of the eyelet on thread guide 6 to the top surface of installation bracket 7.

Adjustment is made by loosening screw 5 and moving thread guide 6. To decrease the amount of top cover thread to be supplied, move up thread guide 6.

After the adjustment tighten screw 5.

※After the above adjustment is made, check to see if each clearance between top cover thread take-up 8 and thread guide 6 is equal.



Adjusting the hook

⚠ CAUTION

※ Always turn off the power, unplug the machine and then well-qualified technicians should adjust the hook.

Bring hook 1 to the extreme right end of its travel. Loosen screw 2.

Achieve a distance of 0.5mm (standard) from hook 1 to retainer 3 (see A in the illustration on the right). After this adjustment is made, tighten screw 2. Check to see during test sewing if top cover thread 4 goes under the hook when the hook moves to the left. If it does not, loosen screw 2 and increase distance A.

After this adjustment is made, slightly press up hook 1. Tighten screw 2.

Adjusting the carrier

⚠ CAUTION

※ Always turn off the power, unplug the machine and then well-qualified technicians should adjust the carrier.

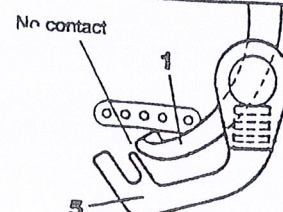
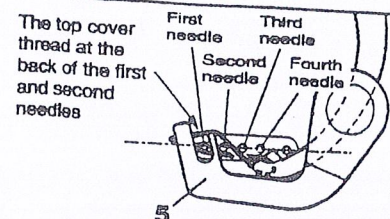
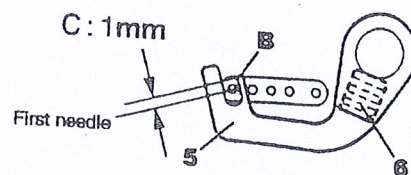
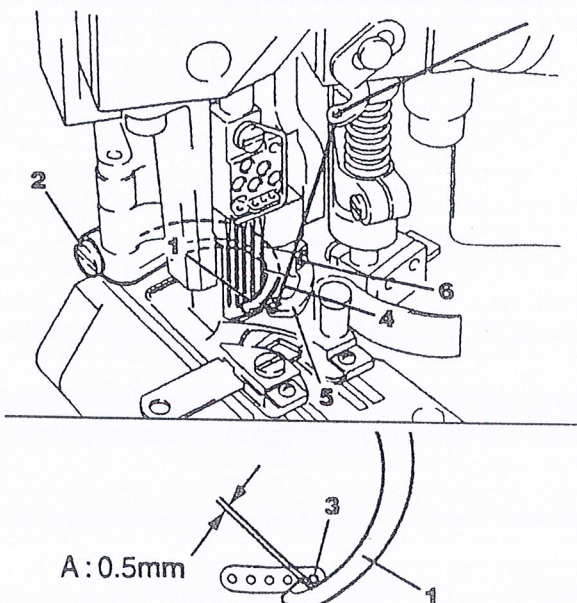
1. There should be a distance of 1mm C from point B of the carrier to the center of the first needle when carrier 5 comes closest to the first needle. Adjustment is made by loosening screw 6 and moving carrier 5. After this adjustment is made, tighten screw 6.

Check to see during test sewing if the top cover thread is at the back of the first and second needles with the carrier closest to the first needle.

If it is not, increase C (be careful that carrier 5 does not contact the first needle).

If the top cover thread reaches the point of the third needle at its back, decrease C.

2. Check to make sure that hook 1 does not contact carrier 5 when they come closest to each other.



Replacing the presser foot

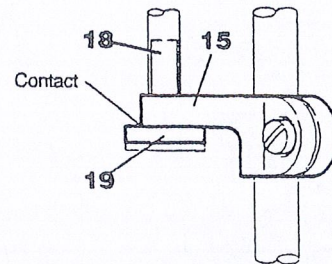
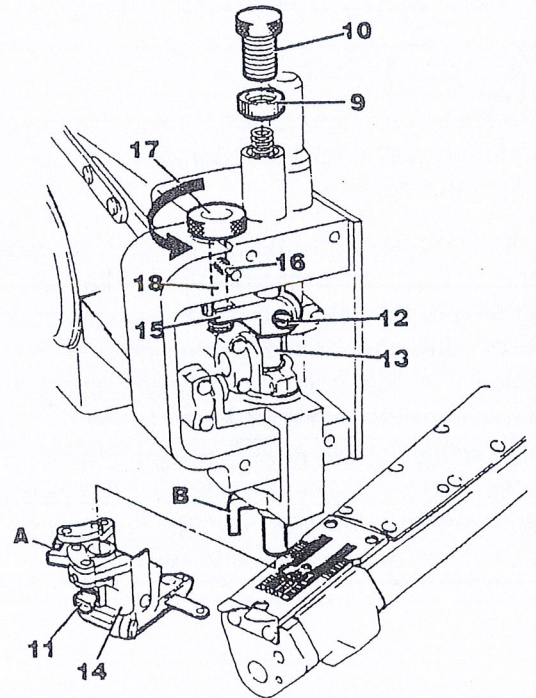
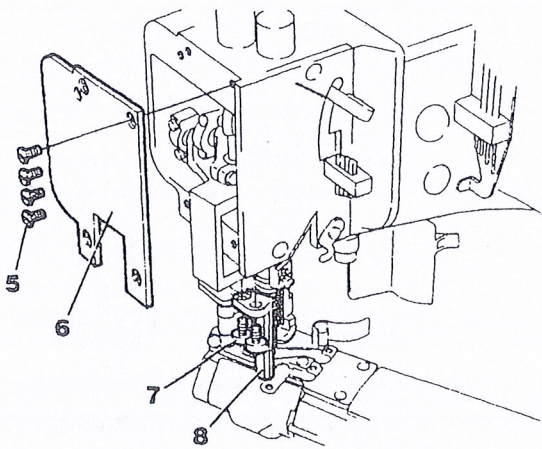
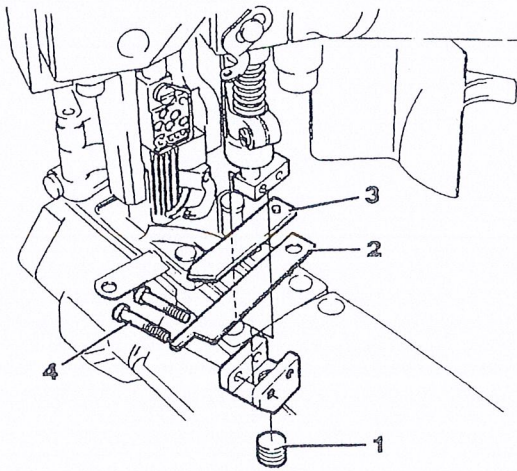
⚠ CAUTION

※Always turn off the power, shut down the Compressor and then well-qualified technicians should replace the presser foot.

⚠ Pay close attention to the knife edges not to injure your hands and/or finger.

Removing the presser foot

1. Bring the needles to the top of their stroke.
Loosen screw 1. Remove upper knife 2 and auxiliary plate 3 (if it is difficult to remove auxiliary plate 3, loosen screws 4).
2. Remove screws 5, side cover 6, screws 7 and presser foot guide (left) 8.
3. Loosen nut 9 and remove adjustment screw 10.
Loosen screws 11 and 12. Raise presser bar 13 until it is removed from the presser foot.
4. Remove the presser foot.



Reinstalling the presser foot

Reinstall the presser foot by following the removal steps in reverse.

- ⊙ When reinstalling the presser foot, fit crank shaft B into segment A. Check to see if the presser foot is parallel with the feed dogs.
- ⊙ Presser foot guide (left) 8 should not move left to right, but slightly move up and down after it is reinstalled.
- ⊙ To reinstall presser bar guide 15, reinstall adjustment screw 10 and bring the presser foot to its lowest position first. Bring guide pin 18 to its lowest position by loosening screw 16 and turning adjustment screw 17 counterclockwise. Check to see if presser bar guide 15 contacts cushion rubber 19 on the guide pin.

Adjust the knives by referring to "Replacing the knives" (see page 20).

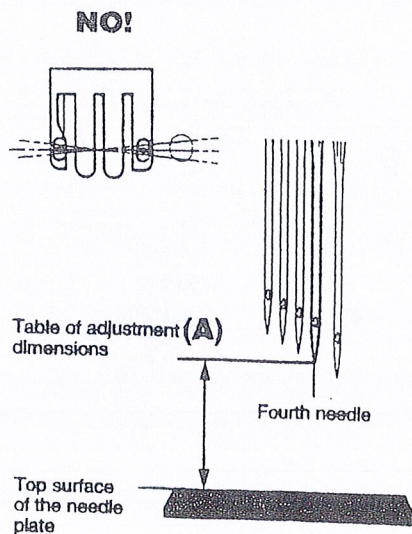
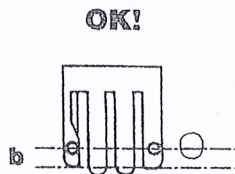
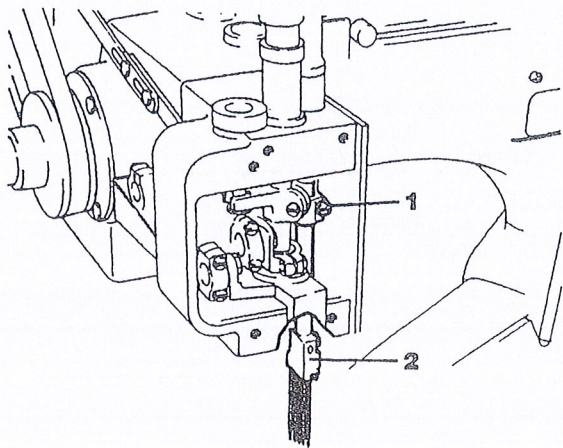
Adjusting the needle height

⚠ CAUTION

※ Always turn off the power, unplug the machine and then well-qualified technicians should adjust the needle

Adjust distance (A) from the point of the fourth needle to the top surface of the needle plate according to the machine to be used (see the table of adjustment dimensions on page 29). Adjust the needle height by loosening screw 1 and moving needle holder 2 up or down.

⊙ After adjusting the needle height, check for the relationship between the slots on the needle plate and the needles (see the illustration below). Clearance b should be equal.



Adjusting the looper

⚠ CAUTION

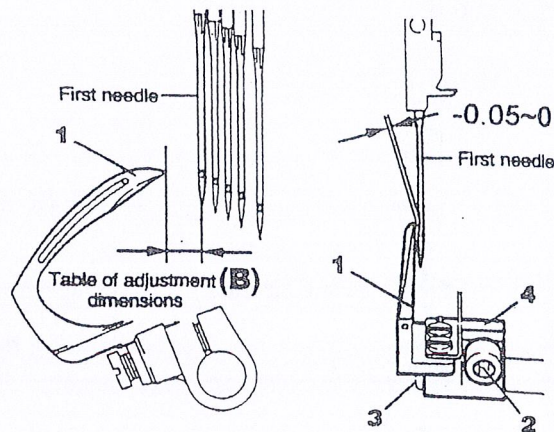
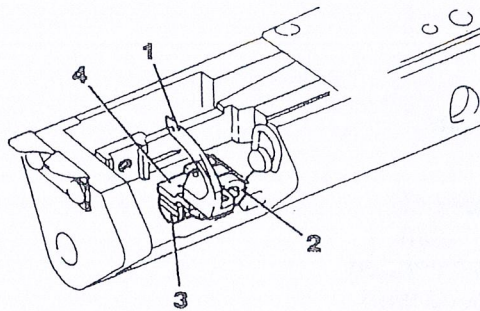
※ Always turn off the power, unplug the machine and then well-qualified technicians should adjust the looper.

1. To adjust the looper-needle setting distance

When looper 1 is at the extreme left end of its travel, adjust looper-needle setting distance B from the center of the first needle to the point of the looper according to the machine to be used (see the table of adjustment dimensions on page 29). Adjustment is made by loosening screw 2 and moving looper holder 4 to the left or right. After this adjustment is made, tighten screw 2 temporarily.

2. To adjust the looper front to back

When the point of the looper reaches the center of the first needle from the extreme left end of its travel, there should be a front-to-back distance of $-0.05\sim 0\text{mm}$ from the first needle to the point of the looper. Adjustment is made by turning screw 3 and moving the looper holder front to back. After this adjustment is made, tighten screw 2.



Adjusting the needle guard (rear)

⚠ CAUTION

※Always turn off the power, unplug the machine and then well-qualified technicians should adjust the needle guard (rear).

When rear needle guard 1 comes closest to the first needle, there should be a clearance of 0~0.2mm between rear needle guard 1 and the first needle. Adjustment is made by loosening screw 2 and moving the rear needle guard front to back. After this adjustment is made, tighten screw 2.

Adjusting the looper guard

⚠ CAUTION

※Always turn off the power, unplug the machine and then well-qualified technicians should adjust the looper guard.

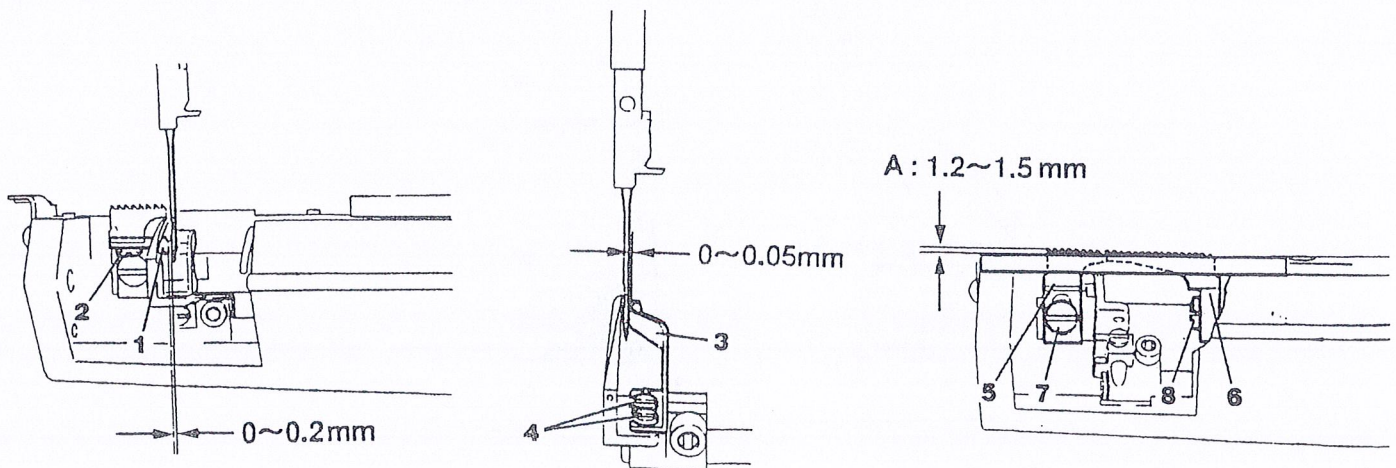
When looper guard 3 comes closest to the first needle, there should be a clearance of 0 ~ 0.05 mm between looper guard 3 and the first needle. Adjustment is made by loosening screws 4 and moving the looper guard front to back. After this adjustment is made, tighten screws 4.

Adjusting the feed dog height

⚠ CAUTION

※Always turn off the power, unplug the machine and then well-qualified technicians should adjust the feed dog height.

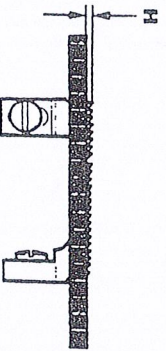
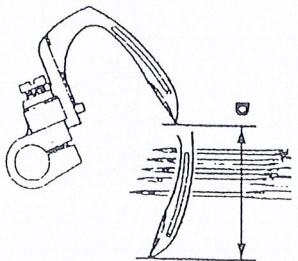
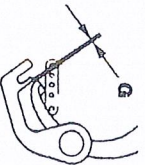
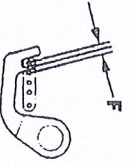
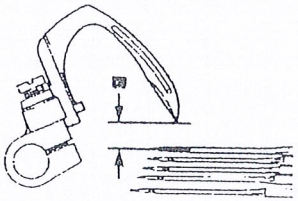
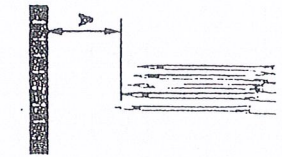
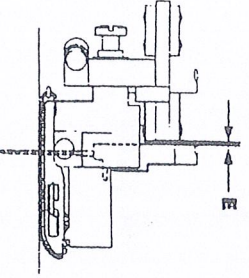
When the feed dogs are at their highest point of travel, there should be a distance of 1.2~1.5mm from the top surface of the needle plate to extended line A from the tips of main 5 and differential 6 feed dogs. Adjustment is made by loosening screws 7 and 8, and moving feed dogs 5 and 6 up or down. After the above adjustment, tighten screws 7 and 8.



Adjustment dimensions

(mm)

Subclass	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Needle heightg (Fourth needle) (A)	Looper			Carrier			Main feed dog height (H)
			Looper-needle setting distance (B)	Front-to-back movement (C)	Travel (D)	Distance to the needle holder (E)	Position (F)	Distance to the hook (G)	
SL-701	452	13.6mm	4.3~4.5mm	2.3~2.4mm	24.9mm	0.4mm	Middle of the first and second needles	0.4~0.7mm	1.2~1.5mm
SL-703	460	13.3mm	4.1~4.3mm	2.3~2.4mm	24.9mm	0.4mm		0.4~0.7mm	1.2~1.5mm
SL-713									



SL-700 Series subclass specifications

SL-700 Series



Application	Fabric weight	Subclass	Number of needles	Number of threads	Needle space (mm)	Max. stitch length	Diff. feed ratio	Presser foot lift (mm)	Max. speed (rpm)	Remarks
Flatseaming	light-medium	SL-703	4	6	5.2-6.0	2.5	0.7~1.5	5.5	4,200	Double edge trimming, with a groove 3.3mm deep on the back of the presser foot
										Knives located toward the operator, double edge trimming

