

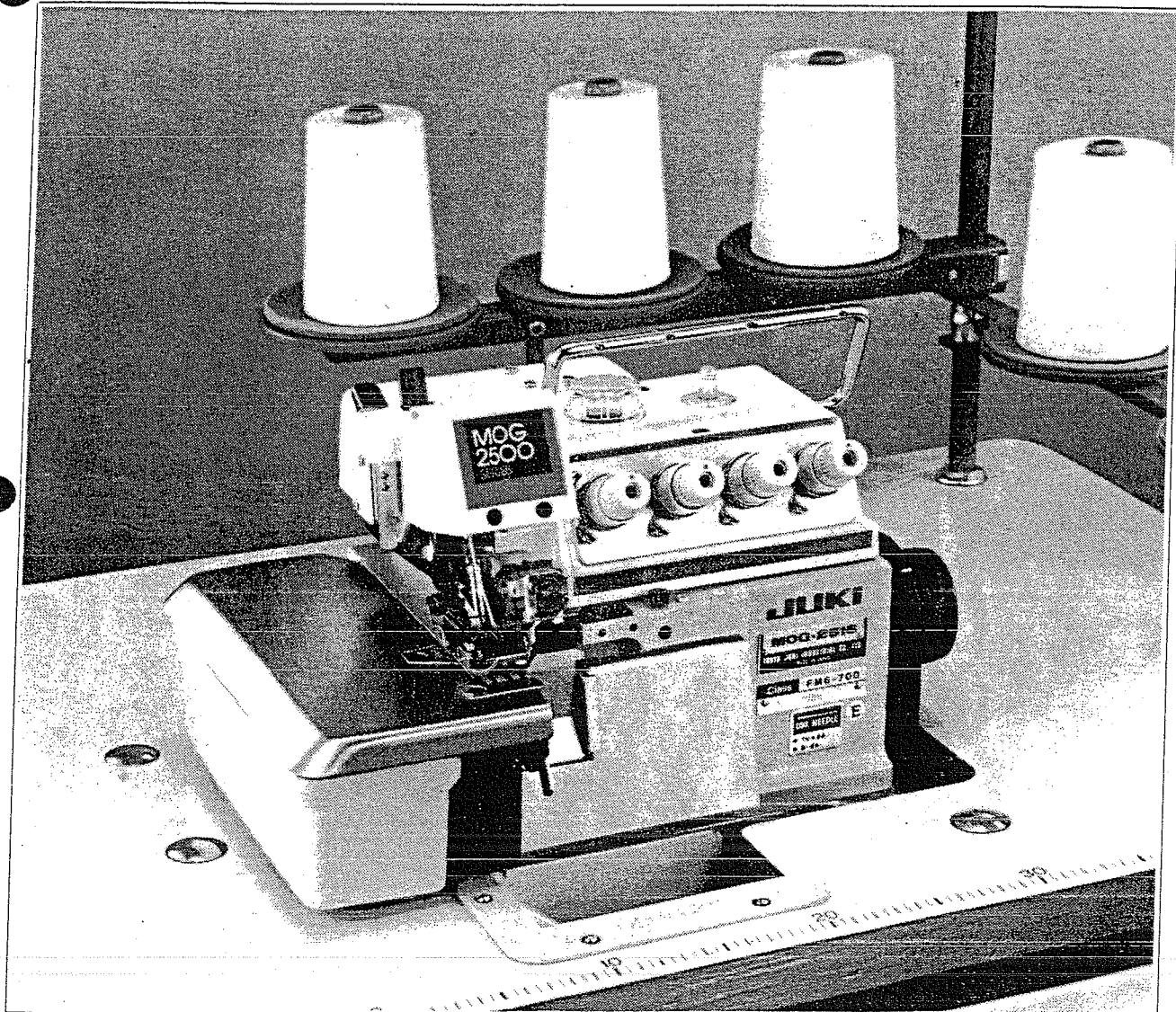
# JUKI

Overlock and safety stitch Industrial sewing machine

## MOG-2500 Series

## MOG-2400 Series

# ENGINEER'S MANUAL



## PREFACE

This Engineer's Manual is written for the technical personnel who are responsible for the service and maintenance of the sewing machines.

The Instruction Book for these machines, intended for the maintenance personnel and operators at a garment factory, contains detailed operating instructions. This Engineer's Manual describes "How to adjust" and "Results of improper adjustment" and also other information which is not covered by the Instruction Book.

It is advisable to use the pertinent Instruction Book and Parts Book together with this manual when carrying out the maintenance of the machines.

This manual mainly consists of three sections: "Adjustment Standard", "How to adjust" and "Results of improper adjustment".

## CONTENTS

1. SPECIFICATIONS .....	1
2. MODEL NUMBERING SYSTEM .....	3
3. STANDARD ADJUSTMENT (FOR MAIN UNIT) .....	4
(1) Height of the Needles .....	4
(2) Position of the Throat Plate .....	4
(3) Length of the Lower Looper Holder .....	6
(4) Adjustment of the Lower Looper .....	6
1) Returning amount of the lower looper .....	6
2) Clearance between the lower looper and the needle .....	6
(5) Position of the Upper Looper Guide .....	8
(6) Position of the Upper Looper Holder .....	8
(7) Position of the Upper Looper .....	10
1) Height of the upper looper .....	10
2) Longitudinal position of the upper looper .....	10
(8) Adjustment of the Double-chain Looper .....	12
1) Returning amount of the double-chain looper .....	12
2) Tilt of the double-chain looper .....	12
3) Longitudinal motion (Avoiding motion) .....	12
4) Clearance between the double-chain looper and the needle .....	12
(9) Position of the Needle Guards .....	14
1) For 1-needle or 2-needle overlock machine .....	14
2) For safety stitch machine .....	14
(10) Height of the Feed Dog .....	16
(11) Tilt of the Feed Dog .....	16
(12) Differential Feed Ratio .....	16
(13) Position of the Presser Foot .....	18
(14) Position of the Upper Knife Arm Shaft .....	18
(15) Positions of the Upper and Lower Knives and Overedging Width .....	18
1) Lower knife .....	18
2) Upper knife .....	18
3) Overedging width .....	18
(16) Resharpener of the Knife .....	20
(17) Position of the Thread Cam .....	20
1) Adjustment of the thread cam .....	20
2) Adjustment of the chain looper thread guide and the hook .....	20
(18) Position of the Needle Thread Presser .....	22
(19) Position of the Thread Guides and the Looper Thread Take-ups .....	24
4. ADDITIONAL INFORMATION AND PRECAUTIONS .....	26
(1) Thread Tension Springs Identified by Colors .....	26
1) Tension of each tension spring .....	26
2) Springs used for each model .....	26
(2) Needle Cooler .....	26
(3) Locking the Feed Cam .....	27
(4) Center-to-center Distance of the Upper Looper Holder .....	27
(5) Assembly Precautions .....	28
1) Parts to be locked using sealant .....	28
2) Precautions in lubrication .....	29
5. ADJUSTMENT OF THE NEEDLE HEIGHT AND LOOPER TIMING .....	31
6. SUBCLASS LIST .....	32
7. TROUBLES AND CORRECTIVE MEASURES .....	33
Main Unit Components .....	33
8. TABLE DIMENSIONS .....	39

# 1. SPECIFICATIONS

## MOG-2500E SERIES

1	Model	MOG-2504E	MOG-2514E	MOG-2516E
2	Machine name	1-needle overlock machine	2-needle overlock machine	Safety stitch machine
3	Stitch type F.S.T.	504	514	516
4	Sewing speed (s.p.m.)	5,500	6,000	6,000 (FF6, FH6) 5,500 (FM6)
5	Stitch length (mm)	2 ~ 5 (0.079" ~ 0.197")		
6	Needle gauge (mm)	—	2 (0.079")	4.8 (0.189")
7	Overedging width (mm)	10 (0.394")	4.8 (0.189"), 6.4 (0.252")	4.8 (0.189"), 6.4 (0.252") 10 (0.394")
8	Differential feed ratio	Gathering 1:1.76 (max. 1:4) Stretching 1:0.64 (max. 1:0.6)	Gathering 1:2.9 (max. 1:4) Stretching 1:1 (max. 1:0.6)	Gathering 1:1.76 (max. 1:4) Stretching 1:0.64 (max. 1:0.6)
9	Needle stroke (mm)	28.1 (1.106")		
10	Needle tilt angle	20°		
11	Needle	TV x 64	DC x 27 (Standard) (DC x 1 also usable)	TV x 64
12	Presser foot lift (mm)	Max. 9 (0.354")	Max. 8 (0.315")	Max. 9 (0.354")
13	Presser foot pressure	Max. 6 kg		
14	Adjustment of stitch length	By pushbutton		
15	Upper knife	Corrugated square knife (Standard)		
16	Differential feed adjustment	By lever + Micro-adjustment		
17	Weight	23 kg		
18	Lubrication	Gear-type automatic lubrication		
19	Lubricating oil	New Defrix Oil No. 2		
20	Needle cooling device	Needle cooler		
21	Needle thread cooling device	Needle thread cooler	Needle thread cooler	—
22	Motor	2P 400W (1/2 HP)		

### MOG-2400E SERIES




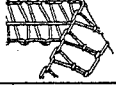
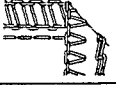
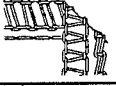
1	Model	MOG-2404E	MOG-2414E	MOG-2416E
2	Machine name	1-needle overlock machine	2-needle overlock machine	Safety stitch machine
3	Stitch type F.S.T.	504	514	516
4	Sewing speed (s.p.m.)	5,500	5,700	5,700 (FF6, FH6) 5,500 (FM6)
5	Stitch length (mm)	2 ~ 5 (0.079" ~ 0.197")		
6	Needle gauge (mm)	-	2 (0.079")	4.8 (0.189")
7	Overedging width (mm)	10 (0.394")	4.8 (0.189"), 6.4 (0.252")	4.8 (0.189"), 6.4 (0.252") 10 (0.394")
8	Differential feed ratio	Gathering 1:1.76 (max. 1:4) Stretching 1:0.64 (max. 1:0.6)	Gathering 1:2.9 (max. 1:4) Stretching 1:1 (max. 1:0.6)	Gathering 1:1.76 (max. 1:4) Stretching 1:0.64 (max. 1:0.6)
9	Needle stroke (mm)	28.1 (1.106")		
10	Needle tilt angle	20°		
11	Needle	TV x 64	DC x 27 (Standard) (DC x 1 also usable)	TV x 64
12	Presser foot lift (mm)	Max. 9 (0.354")	Max. 8 (0.315")	Max. 9 (0.354")
13	Presser foot pressure	Max. 6 kg		
14	Adjustment of stitch length	By pushbutton		
15	Upper knife	Corrugated square knife (Standard)		
16	Differential feed adjustment	By lever		
17	Weight	23 kg		
18	Lubrication	Gear-type automatic lubrication		
19	Lubricating oil	New Defrix Oil No. 2		
20	Needle cooling device	Needle cooler		
21	Needle thread cooling device	Option	Option	-
22	Motor	2P 400W (1/2 HP)		

## 2. MODEL NUMBERING SYSTEM

①

<b>Series code</b>
Classification of series and grade
<b>MOG-25△△E</b> For overedging extra heavy-weight materials
<b>MOG-24△△E</b> For overedging extra heavy-weight materials

②

<b>Seam code</b>	
Stitch type (Conforms to USA standard)	
03	503 
04	504 
05	505 
14	514 
15	515 
16	516 

③

<b>Special specification code</b>	
Special specifications requiring considerable difference in mechanical configuration.	
E	General spec. for export
No-code — General spec. for domestic market	

**MOG-2514□-BH6-630/**




Model No. Code

Subclass Code

⑦

<b>Material code</b>		
Classification based on materials to be used (The figures show grade of material thickness)		
3	Medium-weight materials	Standard (for dress sport wear)
4	Medium-weight materials	Knit sweater, bulky, etc.
5	Heavy-weight materials	
6	Heavy-weight materials	Standard Thick knit
7	Extra heavy-weight materials	Carpet Car mat

⑧

<b>Application code</b>	
Classification based on type of operation	
0	For Runstitching 
3	For piping 
4	For attaching tape 
D	For splicing
E	For car mat

⑨

<b>Special machine code</b>	
Special specifications other than gauge set	
0	Standard

Remarks : A standard MOG machine is equipped with a corrugated square knife (W).

④

Needle gauge code	
Needle gauge (mm)	
O	1-needle
B	2.0 mm
C	2.4 mm
F	4.8 mm

⑤

Overredging width code	
Overredging width (from right needle to fabric edge)	
F	4.8 mm
H	6.4 mm
M	10.0 mm
N	15.0 mm
(With seam open)	

⑥

Feed dog code	
Number of feed dog rows	
6	3-row
7	4-row

Attachment & Device Code

**F/M076/T006**

①  
Shown on Sticker

⑩

Specifying code for class			
These codes indicate partial change or specifying of subclass model components. (See below for the details.)			
Gauges	Upper knife	Square knife	K
		Flat knife	F
		Corrugated square knife	W
	Replacement gauge	Throat plate	E01~
		Feed dog	F01~
		Presser foot	G01~
		Looper	H01~
Attachments	Piping	M075 M076 M056	
	Tape guide	Q056	
Others		A01~	

⑪

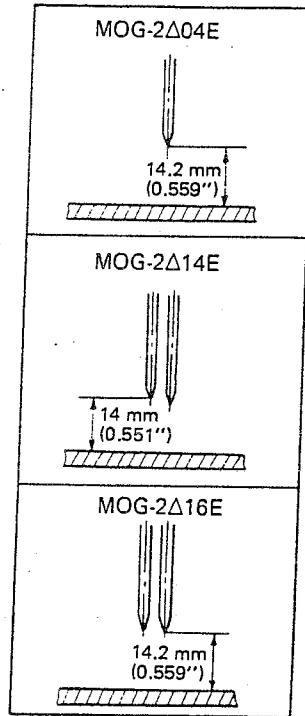
Labor-saving device code	
Device for achieving labor saving, higher productivity, automation and greater ease of operation	
T006	One-touch type thread trimming device
T016	Automatic chain-off thread trimming device
T026	Suction type flat cutter
S095	Cut removing attachment

### 3. STANDARD ADJUSTMENT (FOR MAIN UNIT)

#### Standard Adjustment

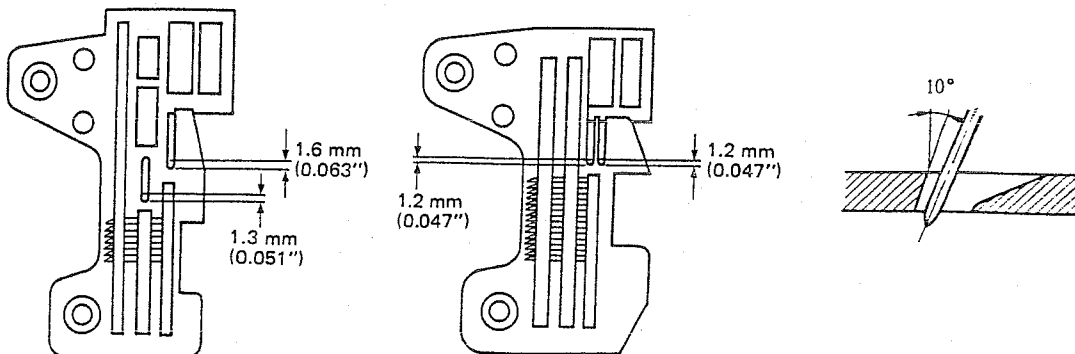
##### (1) Height of the Needles

When the needle(s) is in the highest position, the distance between the needle point(s) and the throat plate surface should be as shown below:



##### (2) Position of the Throat Plate

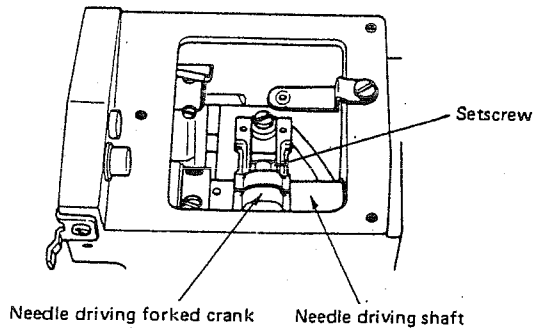
The needle entry point should be such that the distance between the needle slot edge of the throat plate and the needle center is 1.6 mm (0.063") for the overlocking needle, and 1.3 mm (0.051") for the double chain-stitching needle. For the 2Δ14E only, the dimension is 1.2 mm (0.047") for both right and left needles.





### Adjustment Procedures

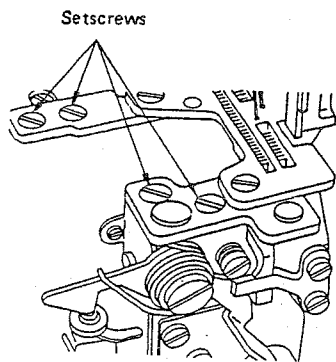
- Take off the upper cover, and loosen the setscrew of the needle driving forked crank to perform the adjustment of the needle height.



**Caution :** Do not fully loosen the setscrew of the needle driving forked crank.

If the needle driving forked crank has been displaced laterally when its setscrew was loosened, fully loosen the setscrew, and turn the handwheel to allow the forked crank to turn until it settles by itself. Then tighten the setscrew to fix the forked crank at that position.

- Loosen the setscrews of the throat plate base to make the adjustment.



### Results of Improper Adjustment

- Any other needle height than specified here will badly affect the action of the lower looper, the timing for catching the upper looper thread, etc.

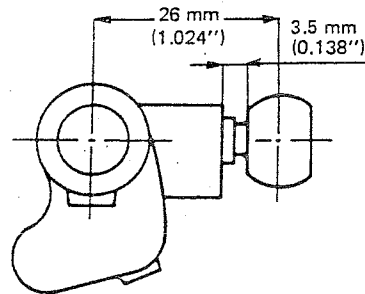
- Improper lateral position of the needle driving forked crank will cause seizure, play, or other troubles.

- Improperly positioned throat plate will cause needle breakage, contact of the needles with the feed dog, or other troubles.

## Standard Adjustment

### (3) Length of the Lower Looter Holder (Applicable only to MOG-2Δ16E group)

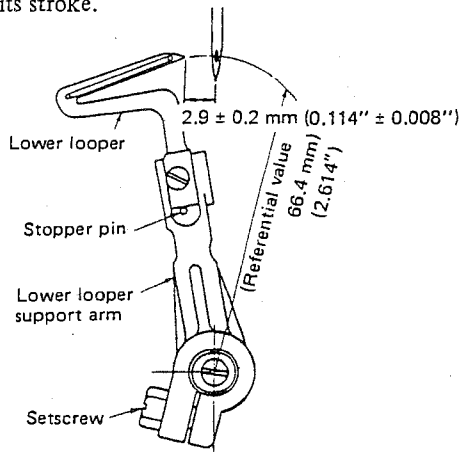
The center-to-center distance should be 26mm (1.024").  
At this time, the clearance between the end surface of the arm and the neck of the ball should be 3.5mm (0.138").



### (4) Adjustment of the Lower Looter

#### 1) Returning amount of the lower looper

The distance between the blade point of the lower looper and the center of the needle should be  $2.9 \pm 0.2$  mm ( $0.114'' \pm 0.008''$ ) when the lower looper is at the extreme left of its stroke.

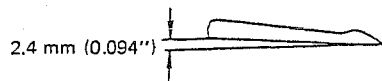


For models other than standard models

Model	Returning amount of the lower looper
2Δ03E-ON6	$2.7 \pm 0.2$ mm ( $0.106'' \pm 0.008''$ )
2Δ05E-OM6	$2.2 \pm 0.2$ mm ( $0.087'' \pm 0.008''$ )
2Δ15E-FF6	$2.7 \pm 0.2$ mm ( $0.106'' \pm 0.008''$ )

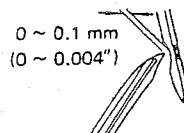
Note : Refer to Subclass List for the triangular marks Δ.

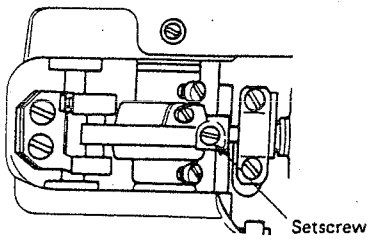
Tilt (applicable only to 2Δ05E)



#### 2) Clearance between the lower looper and the needle

The clearance should be 0 to 0.1mm (0.004").



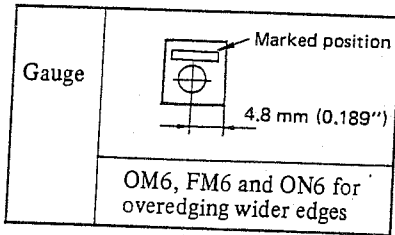
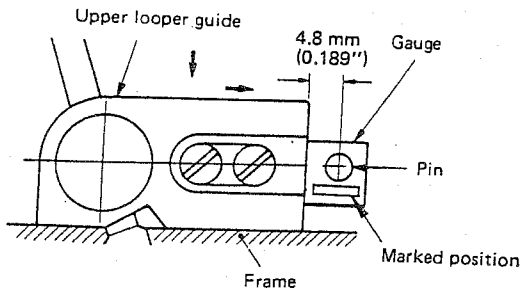
Adjustment Procedures	Results of Improper Adjustment
<ul style="list-style-type: none"> <li>○ Loosen the setscrew of the lower looper holder from the rear of the frame. Since it is difficult to accurately measure the center-to-center distance, perform adjustment to provide a 3.5 mm (0.138") distance between the end surface of the arm and the neck of the ball.</li> </ul> 	<ul style="list-style-type: none"> <li>○ Increasing the center-to-center distance will give a smaller stroke of the double chain looper or lower looper, and decreasing the distance will give larger stroke.</li> </ul>
<ul style="list-style-type: none"> <li>○ Loosen the setscrew of the lower looper support arm to make adjustment of the returning amount of the lower looper.</li> </ul> <p><b>Referential information :</b></p> <ol style="list-style-type: none"> <li>1. The radius of the lower looper will be 66.4mm (2.614") when the lower looper is inserted into the support arm until it contacts with the stopper pin and then fixed.</li> <li>2. The rocking angle of the lower looper will be 29.52°.</li> </ol>	<ul style="list-style-type: none"> <li>○ Excessive return of the lower looper tends to cause stitch skipping when filament thread is used.</li> <li>○ Insufficient return of the lower looper tends to cause needle thread stitch skipping when mixed yarn is used.</li> </ul>
<ul style="list-style-type: none"> <li>○ Loosen the setscrew of the lower looper support arm, and move the lower looper forward or backward together with its support arm.</li> </ul>	<ul style="list-style-type: none"> <li>○ Excessive clearance will often cause needle thread stitch skipping.</li> <li>○ Insufficient clearance will cause needle breakage due to the contact of the looper with the needle, or produce scratches on the blade point of the looper, leading to needle thread breakage or other troubles.</li> </ul>

## Standard Adjustment

### (5) Position of the Upper Looper Guide

Vertical position : To be in close contact with the frame surface

Lateral position : To be pressed against the gauge  
Gauge length : 4.2 mm (0.165")



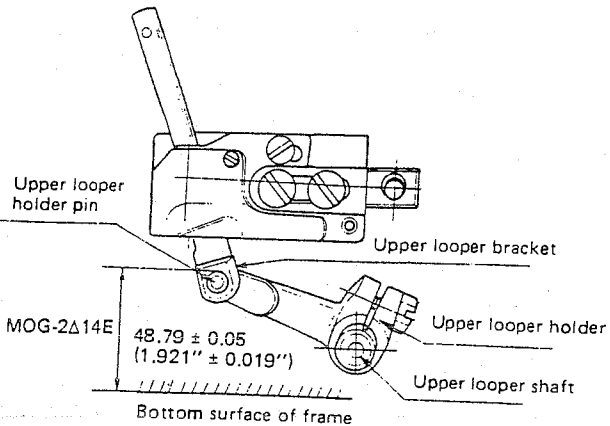
For models other than standard models

Model	Gauge position
MOG-2Δ03E-ON6	4.8 mm (0.189")
MOG-2Δ04E-OM6	↑
MOG-2Δ05E-OM6	↑
MOG-2Δ14E-BF6	4.2 mm (0.165")
MOG-2Δ14E-BH6	↑
MOG-2Δ15E-FF6	↑
MOG-2Δ16E-FF6	↑
MOG-2Δ16E-FH6	↑
MOG-2Δ16E-FM6	4.8 mm (0.189")

Note : Refer to the Subclass List for the triangular marks Δ .

### (6) Position of the Upper Looper Holder

The distance between the frame bottom surface and the upper end of the upper looper holder pin should be as shown below when the upper looper holder is at the highest point of its stroke.



For models other than standard models

Model	Dimension
MOG-2Δ03E-ON6	51.14 ± 0.05 mm (2.013" ± 0.019")
MOG-2Δ04E-OM6	↑
MOG-2Δ05E-OM6	51.51 (2.028")
MOG-2Δ14E-BF6	48.79 (1.921")
MOG-2Δ14E-BH6	↑
MOG-2Δ15E-FF6	↑
MOG-2Δ16E-FF6	↑
MOG-2Δ16E-FH6	↑
MOG-2Δ16E-FM6	51.14 (2.013")

Note : Refer to the Subclass List for the triangular marks Δ .

### Adjustment Procedures

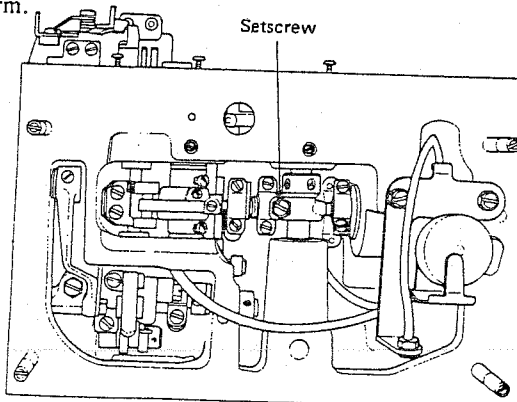
- Fit the gauge onto the gauge fixing pin which has been driven into the frame, and retain it with an O-ring. Then, bring the marked position down to the bottom.
- See the figure at left when making adjustment for models which require other positioning dimensions the standard dimension.
- When installing the upper looper guide, press it against the gauge while keeping the upper looper guide into close contact with the frame surface, then tighten the screws.

### Results of Improper Adjustment

- If the upper looper guide has been improperly positioned vertically, oil leakage or disturbed path of the upper looper with resultant stitch skipping will be caused.
- If the upper looper guide has been inaccurately positioned laterally, stitch skipping or contact with the looper will be caused.

### (Adjustment order)

1. Loosen the setscrew of the upper looper ball arm.
2. Position the upper looper holder so that it smoothly moves when it is allowed to have a slightly larger stroke than that of the upper looper clamp, then tighten the setscrew of the upper looper holder. (Make sure that the upper looper holder smoothly moves together with the shaft.)
3. Then properly adjust the distance between the bottom surface of the frame and the top of the upper looper holder pin before tightening the setscrew of the upper looper ball arm.



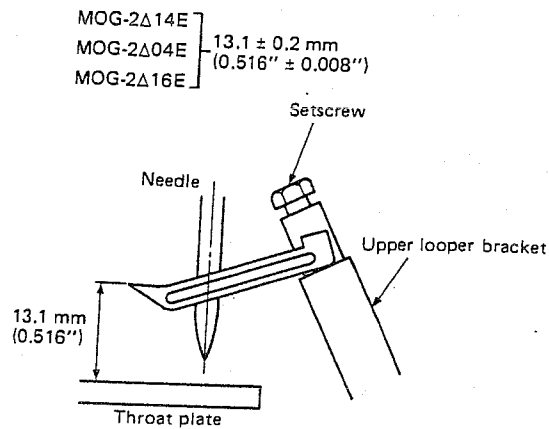
- Inaccurately positioned upper looper holder will cause excessive projection of the upper looper, resulting in stitch skipping or other troubles.
- If the upper looper ball arm has been improperly positioned longitudinally, seizure will result (mainly because the arm sticks when it goes up).

## Standard Adjustment

### (7) Position of the Upper Loooper

#### 1) Height of the upper looper

The distance between the throat plate surface and the blade point of the looper should be as follows when the upper looper is at the extreme left of its travel.



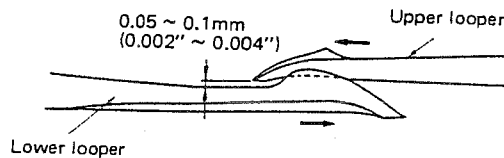
For models other than standard models

Model	Dimension
MOG-2Δ03E-ON6	$13.3 \pm 0.2 \text{ mm}$ ( $0.524'' \pm 0.008''$ )
MOG-2Δ04E-OM6	13.1 (0.516")
MOG-2Δ05E-OM6	↑
MOG-2Δ14E-BF6	↑
MOG-2Δ14E-BH6	↑
MOG-2Δ15E-FF6	13.3 (0.524")
MOG-2Δ16E-FF6	13.1 (0.516")
MOG-2Δ16E-FH6	↑
MOG-2Δ16E-FM6	↑

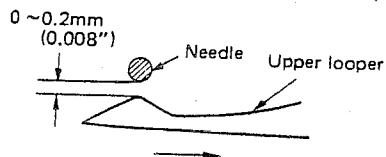
Note : Refer to Subclass List for the triangular marks Δ.

#### 2) Longitudinal position of the upper looper

- ① The clearance between the upper and lower loopers should be 0.05 to 0.1mm (0.002"~ 0.004") when they cross with each other.



- ② The clearance between the upper looper and the needle should be 0 to 0.2mm (0.008").



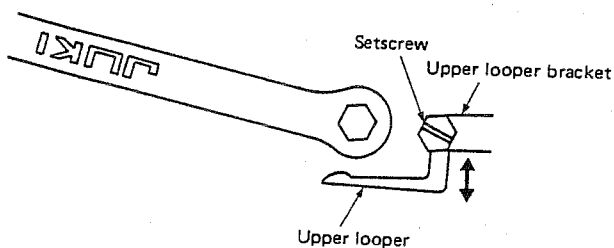
### Adjustment Procedures

- Fit a hexagonal spanner (5 mm) (0.197") onto the setscrew at the end of the upper looper bracket to adjust the height of the upper looper. When adjusting the height, pay attention also to the clearance produced between the upper looper and lower looper at the time of their crossing.

### Results of Improper Adjustment

- If the upper looper has been positioned too high, an excessive clearance will be produced between the upper looper and the needle. As a result, the upper looper thread will fail to catch the needle thread, and stitch skipping occur.
- On the contrary, if the upper looper has been positioned too low, the needle point will hit the looper, causing needle breakage. Also the looper will touch other component when the presser foot goes up.

- Use the setscrew at the end of the upper looper bracket to move the looper forward or backward for positioning it.



Tighten the setscrew with a 28 kg-cm torque. A torque of approx. 28 kg-cm is given when you hold the supplied spanner (5 x 6) at its middle and fully tighten the setscrew.

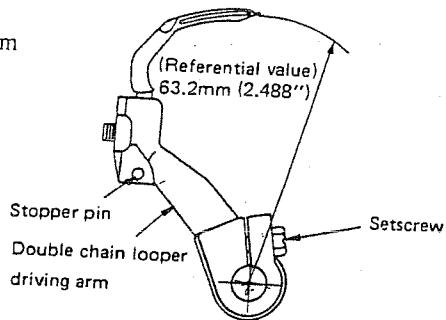
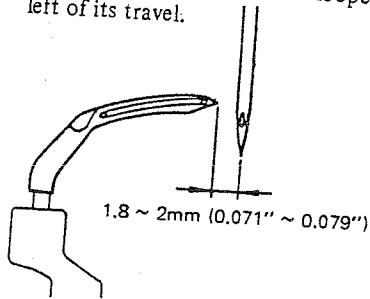
- Excessive clearance will cause stitch skipping.
- Insufficient clearance will cause the upper looper to come in contact with the lower looper.

## Standard Adjustment

### (8) Adjustment of the Double-chain Looper (Applicable only to MOG-2Δ16E group)

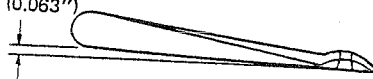
#### 1) Returning amount of the double chain looper

The distance between the needle center and the blade point of the double chain looper should be 1.8 to 2 mm (0.071" ~ 0.079") when the looper is at the extreme left of its travel.



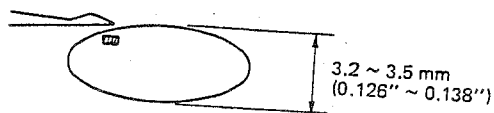
#### 2) Tilt of the double-chain looper

The tilt of the double-chain looper should be 1.6 mm (0.063").



#### 3) Longitudinal motion (Avoiding motion)

The standard minor axis of the elliptical motion should be 3.5 mm (0.138") (central value).



Note : The avoiding motion should be adjusted in accordance with Needle System No.

#### 4) Clearance between the double-chain looper and the needle

The clearance should be 0.05 to 0.1 mm (0.002" ~ 0.004").





### Adjustment Procedures

### Results of Improper Adjustment

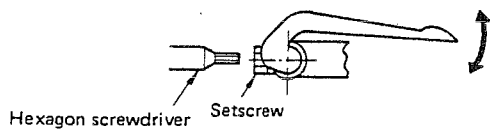
- Loosen the setscrew of the double-chain looper driving arm to make this adjustment.

**Referential information :**

The radius of the double chain looper driving arm will be 63.2 mm (2.488") when it is lowered until it comes in contact with the stopper.

- Excessive return of the double chain looper will cause frequent stitch skipping.
- Insufficient return of the double chain looper will cause frequent needle thread stitch skipping when a mixed yarn is used.

- Adjust the tilt of the double chain looper by its setscrew.



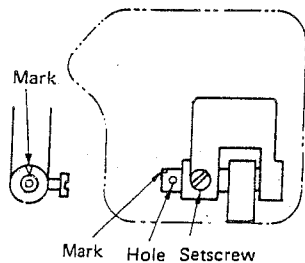
- Any greater or smaller tilt than the standard tilt will cause the double chain looper to come in contact with the needle guard.

- Opening the cover on the back of the frame, loosen the setscrew, and insert a  $\phi 2$  rod into the hole to turn it to make adjustment.

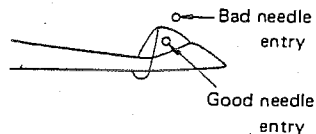
Mark on the top : Standard

Mark on this side : Min.

Mark on the farther side : Standard (Max.)

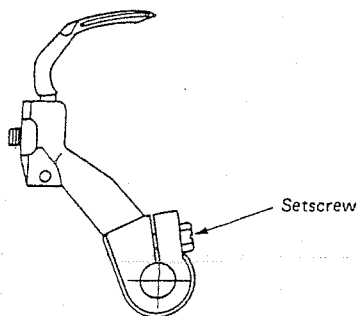


- If the avoiding motion is too large, triangle stitch skipping will often occur.



- Insufficient avoiding motion will cause the needle point to hit the looper, producing scratches on the needle point or looper.

- Loosen the setscrew of the double chain looper driving arm, and move the double chain looper forward or backward together with its driving arm.



- Excessive clearance will cause frequent needle thread stitch skipping.
- Insufficient clearance will cause the looper to hit the needle, leading to needle breakage or scratches on the looper blade point with consequent needle thread breakage.

## Standard Adjustment

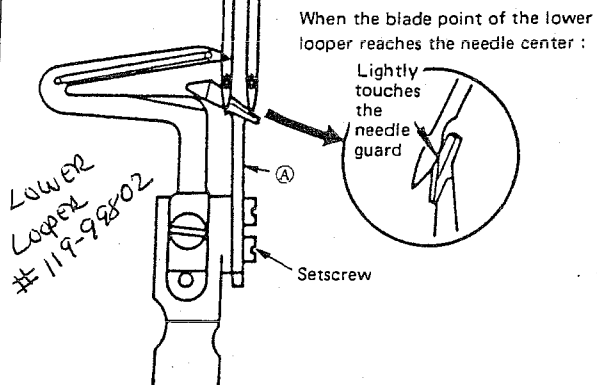
### (9) Position of the Needle Guards

#### 1) For 1-needle or 2-needle overlock machine

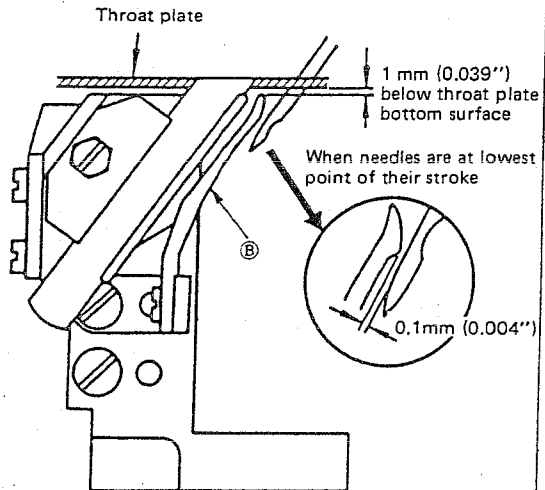
The overlock machine has two needle guards, A and B. The needle guard B should be located 1 mm (0.039") below the throat plate bottom surface.

Needle guard A

(Traveling needle guard)



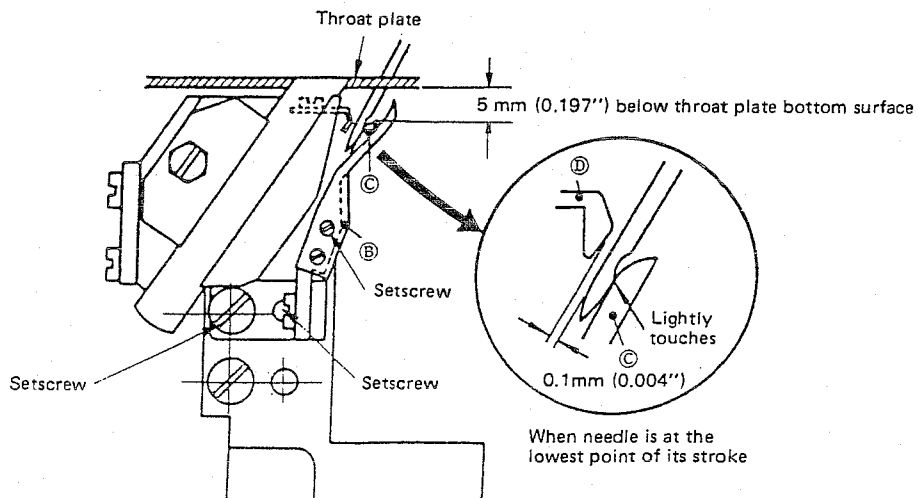
Needle guard B



#### 2) For safety stitch machine

The safety stitch machine has four needle guards, A, B, C and D. Needle guards A and B are positioned in the same manner as those for the overlock machine.

Needle guard C should be positioned 5 mm (0.197") below the throat plate bottom surface.

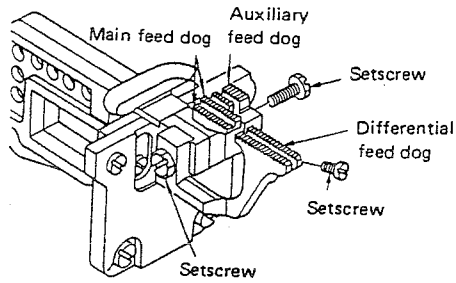
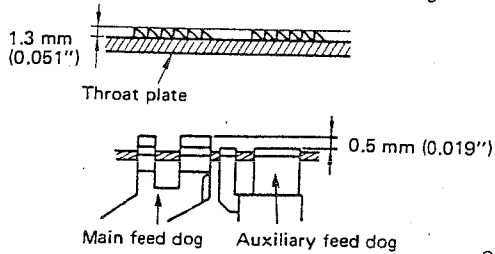


Adjustment Procedures	Results of Improper Adjustment
<ul style="list-style-type: none"> <li>○ Adjust the clearance between needle guard <b>A</b> and the needles by the setscrews of the needle guard.</li> <li>○ Turn the setscrew of the needle guard holder to adjust the clearance between needle guard <b>B</b> and the needles. Adjust the vertical position of the needle guard by its setscrews.</li> </ul>	<ul style="list-style-type: none"> <li>○ Excessively close contact between needle guard <b>A</b> and the needles will lead to needle bend or stitch skipping.</li> <li>○ A clearance left between needle guard <b>A</b> and the needles will cause the looper blade point to come in contact with the needles, leading to needle or blade point breakage or other troubles.</li> <li>○ If needle guard <b>B</b> is too high, thread loops will be damaged with resultant stitch skipping. Also, double chain loops will be affected, causing double chain stitch skipping.</li> <li>○ If needle guard <b>B</b> is too low, the needle cooling felt will be lowered, resulting in deteriorated effect of the cooling and needle guard.</li> <li>○ Excessive clearance between needle guard <b>B</b> and the needle will cause stitch skipping due to needle shake. On the contrary, insufficient clearance will cause the needle guards to catch the needles between them, leading to wear and scratches on the needle guards.</li> </ul>
<ul style="list-style-type: none"> <li>○ Adjust the clearance between needle guard <b>C</b> and the needles by turning the setscrew of the needle guard holder. Adjust the vertical position of the needle guard by its setscrew. At this time, needle guard <b>B</b> gets out of position, therefore it must be re-positioned.</li> <li>○ Needle guard <b>D</b> can not be adjusted in height. Adjust the clearance between needle guard <b>D</b> and needles by the needle guard setscrew.</li> </ul>	<ul style="list-style-type: none"> <li>○ If needle guard <b>C</b> is too high, the needle thread loops will be damaged, and stitch skipping occur. If it is too low, the needle points will be come blunt.</li> <li>○ If the clearance between needle guard <b>C</b> and the needles is too large, the double chain looper blade point will come in contact with the needles, causing the breakage of the needles or looper blade point. No clearance left between them will cause them to come in excessively close contact with each other, and wear and scratches on the needle guard will occur.</li> <li>○ Excessive clearance left between needle guard <b>D</b> and the needles will cause stitch skipping due to needle shake, and insufficient clearance will cause the needle guards to catch the needles between them, leading to wear and scratches on the needle guards.</li> </ul>

## Standard Adjustment

### (10) Height of the Feed Dog

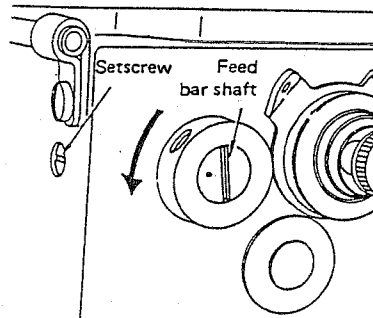
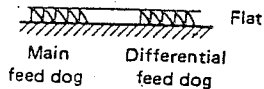
The main feed dog should protrude 1.3 mm (0.051") from the throat plate top surface when it is in its highest position, and the auxiliary feed dog, 0.5 mm (0.019") lower than the main feed dog.



○ The feed dog height is 1.2 mm (0.047") for only 2Δ14E.

### (11) Tilt of the Feed Dog

When the feed dogs have come up most, they should be flat.



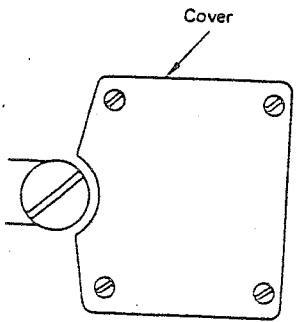
### (12) Differential Feed Ratio

Generally, the adjustment of differential feed is made by the differential feed adjusting lever. However, if the desired adjustment cannot be made by this lever, the differential feed ratio should be changed.

<p>(Standard) Gathering: 1:1.76 Stretching: 1:0.64</p>	<p>(Max. stretching) Gathering: 1:1.6 Stretching: 1:0.6</p>	<p>(Max. gathering) Gathering: 1:4 Stretching: 1:1.3 *Virtually no stretching</p>
--	---	---

(For 2Δ14E only) Gathering: 1:2.9  
Stretching: 1:1

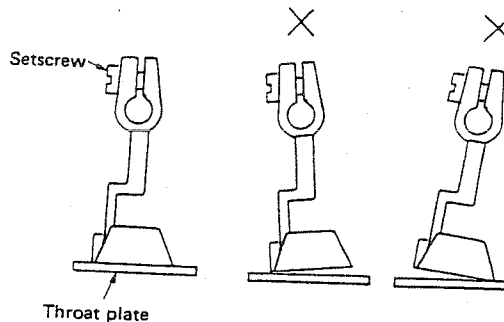
Adjustment Procedures	Results of Improper Adjustment
<ul style="list-style-type: none"> <li>○ Perform adjustment by the setscrews.</li> </ul>	<ul style="list-style-type: none"> <li>○ If the feed dogs are too high, the needles will be deflected and broken when sewing heavy-weight materials. When sewing light-weight materials, the feed dogs may scratch them.</li> <li>○ If the feed dogs are too low, insufficient feed power will result.</li> <li>○ If the auxiliary feed dog is too high, chain-off thread will be often jammed.</li> <li>○ If the main feed dog and differential feed dog are set at different heights, proper differential feeding action will be hindered.</li> </ul>
<ul style="list-style-type: none"> <li>○ The feed bar shaft consists of an eccentric shaft. Loosen the setscrew to perform adjustment.</li> <li>When the marker dot is set at middle <ul style="list-style-type: none"> <li>..... The feed dog will be flat.</li> </ul> </li> <li>When the marker dot is set at bottom <ul style="list-style-type: none"> <li>..... The feed dog will be tilted with its front up (when the shaft is turned in the direction of the arrow).</li> </ul> </li> <li>When the marker dot is set at top <ul style="list-style-type: none"> <li>..... The feed dog will be tilted with its front down.</li> </ul> </li> </ul> <p>Note : The marker dot should be used just as a measure. Confirm the accurate tilt of the feed dog by observing the feed dog itself.</p>	<ul style="list-style-type: none"> <li>○ When tilted with the front up Good material catching will be obtained.</li> <li>○ When tilted with the front down Uneven feed will be effectively prevented.</li> </ul>
<ul style="list-style-type: none"> <li>○ Removing the cover on the rear of the frame, loosen the nut of the main feed pin to adjust the position of the pin.</li> </ul> <p>The standard adjustment is obtained by aligning the upper marker line with the center of the nut.</p> <p>When the pin is set in its highest position</p> <ul style="list-style-type: none"> <li>..... Max. stretching is provided.</li> </ul> <p>When the pin is set in its lowest position</p> <ul style="list-style-type: none"> <li>..... Max. gathering is obtained.</li> </ul>	



## Standard Adjustment

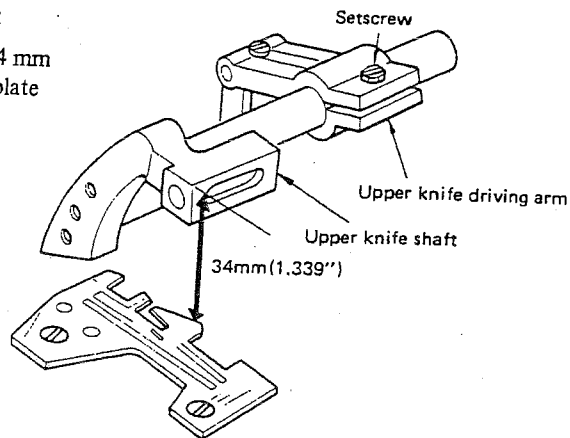
### (13) Position of the Presser Foot

The presser foot should be positioned so that the feed dogs go down under the specified presser foot pressure, and the presser foot sole comes in contact evenly with the throat plate surface.



### (14) Position of the Upper Knife Arm Shaft

The upper knife shaft should be positioned 34 mm (1.339") above the top surface of the throat plate when it is in its highest position.



### (15) Positions of the Upper and Lower Knives and Overedging Width

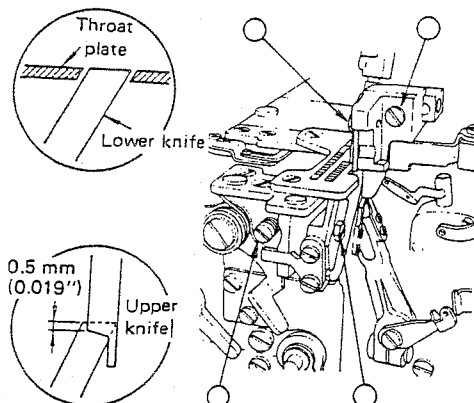
#### 1) Lower knife

The vertical position of the lower knife should be adjusted to make its blade top end flush with the throat plate top surface. The lateral positioning should be done in accordance with the desired overedging width.

#### 2) Upper knife

The upper knife should be positioned vertically so that it overlaps with the lower knife 0.5 (0.019") to 1 mm (0.039") when the upper knife is at the lowest point of its travel.

The lateral positioning should be done in accordance with the desired overedging width.



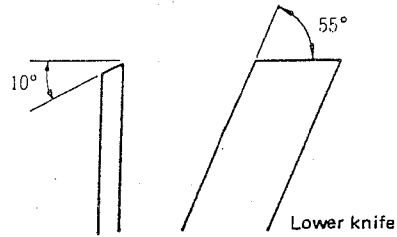
#### 3) Overedging width

Overedging widths from 4.8 (0.189") to 10 mm (0.394") mm are obtainable by replacing the components or by using subclass machines.

Adjustment Procedures	Results of Improper Adjustment
<ul style="list-style-type: none"> <li>○ Loosen the setscrew, and perform adjustment so that the presser foot sole comes in contact evenly with the throat plate top surface. Accurate adjustment can be made by using two pieces of thin paper to check for even drawing-out tension.</li> <li>○ Even contact of the presser foot with the throat plate top surface is achieved rather easily by tightening the screw while pushing the right side of the presser foot.</li> </ul>	<ul style="list-style-type: none"> <li>○ Uneven contact will result in bad straight material feed or weak feed power.</li> </ul>
<ul style="list-style-type: none"> <li>○ Removing the upper cover, loosen the setscrews of the upper knife driving arm, and turn the upper knife shaft to perform vertical positioning.</li> </ul> <p><b>Caution :</b> Be sure to fully tighten the setscrews since the knife shaft is subjected to high load.</p>	<ul style="list-style-type: none"> <li>○ Improperly positioned upper knife arm shaft will come in contact with the frame. If it is moved with the position of the upper knife unchanged, proper overlapping of the knives will be disturbed, prohibiting sharp knife cutting.</li> </ul>
<ul style="list-style-type: none"> <li>○ Adjust the vertical position of the lower knife by screw ①.</li> <li>○ Adjust the lateral position of the lower knife by screw ②.</li> </ul> <p><b>On completion of the adjustment, be sure to securely tighten the screws.</b> Loose screws will badly affect the durability of the knife.</p> <p>Tighten the screws at about the center of the overlap of the upper and lower knives.</p> <ul style="list-style-type: none"> <li>○ Adjust the vertical position of the upper knife by screw ④.</li> <li>○ Adjust the lateral position of the upper knife by screw ③.</li> <li>○ Adjust the overedging width in the following way: Laterally position the upper knife before loosening screw ②. Tighten screw ② when the upper knife has settled by itself under the pressure applied by the spring. Repeat this adjustment procedure to obtain the desired overedging width.</li> </ul> <div data-bbox="536 1543 792 1648" style="text-align: center;"> </div>	<ul style="list-style-type: none"> <li>○ The lower knife, if positioned too high, will catch materials or cause poor material clamp by the presser foot.</li> <li>○ If the lower knife is positioned too low, the cutting width will be changed or materials will be caught by the lower knife.</li> <li>○ The upper knife, if positioned too high, will fail to cut materials.</li> <li>○ Unsharp cutting or abnormal wear on the knives will result unless the lower knife is laterally adjusted and fixed in a position where it has settled by itself under the pressure applied by the upper knife spring.</li> </ul>

## Standard Adjustment

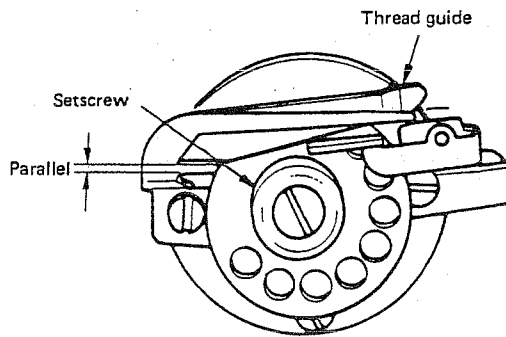
### (16) Resharpener of the Knife



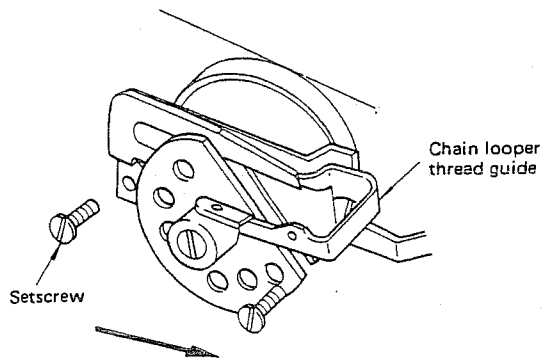
### (17) Position of the Thread Cam (Applicable only to MOG-2Δ16E group)

#### 1) Adjustment of the thread cam

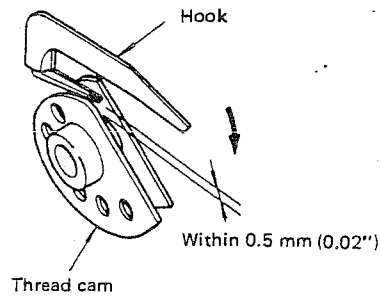
When the needles are in the highest position of their stroke, the straight part of the thread cam should be parallel to the thread guide.



#### 2) Adjustment of the chain looper thread guide and the hook



Set the chain looper thread guide at the slot end on the operator's side.



Set the hook closest to the thread cam inner boss.



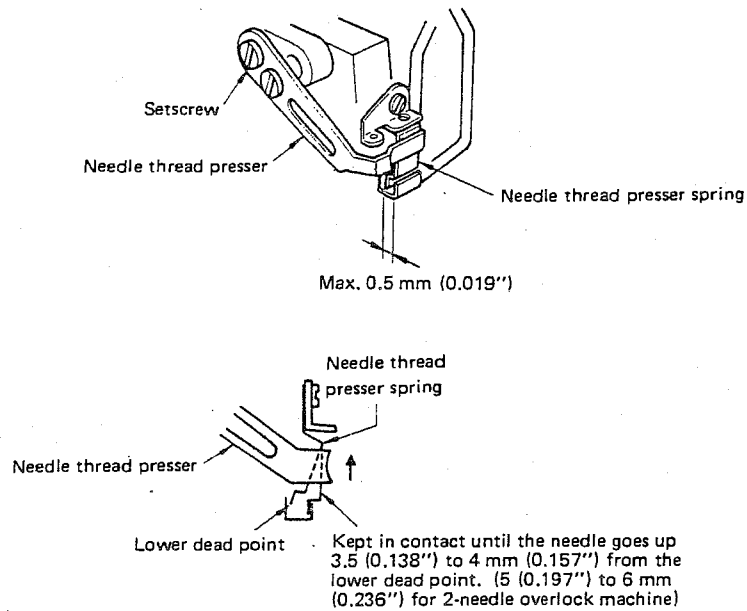


## Standard Adjustment

### (18) Position of the Needle Thread Presser

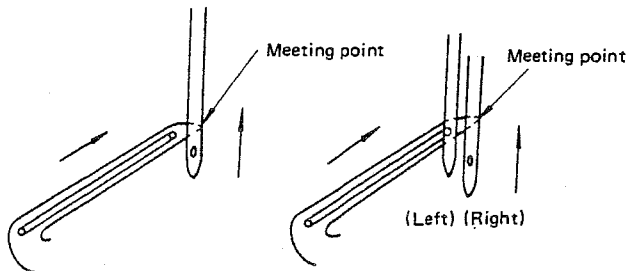
For a 1-needle overlock machine or a safety stitch machine, the needle thread presser should be kept in contact with the needle thread presser spring until the needle goes up 3.5 (0.138") to 4 mm (0.157") from its lower dead point.

For a 2-needle overlock machine, the needle thread presser should be kept in contact with the spring until the needles go up 5 (0.197") to 6 mm (0.236") from their lower dead point.



### Adjustment Procedures

- Using the setscrews, adjust the position of the needle thread presser so that it lightly touches the needle thread presser spring when the needle goes up 3.5 (0.138") to 4 mm (0.157") (5 (0.197") to 6 mm (0.236") for 2-needle overlock machine) from the lowest point of its stroke. At this time, make sure that the needle thread presser spring lightly holds the needle thread until the lower looper catches the needle thread.



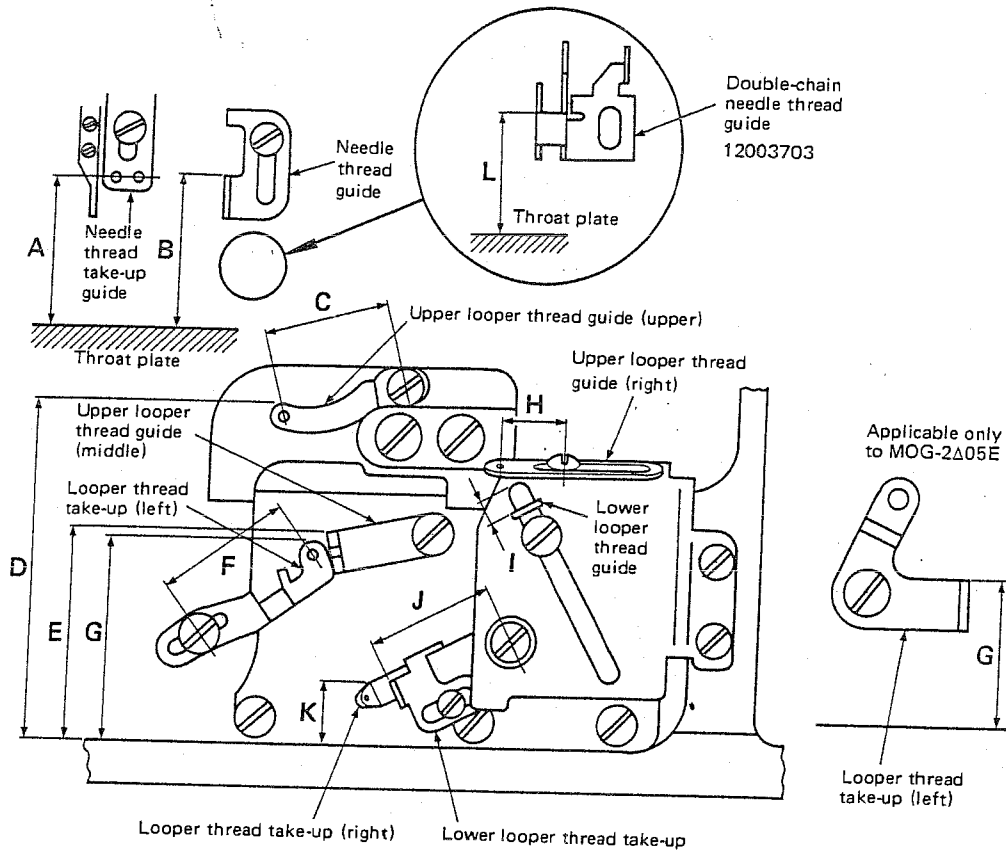
1-needle overlock machine (2Δ04E)  
2-needle overlock machine (2Δ14E)  
Safety stitch machine (2Δ16E)

### Results of Improper Adjustment

- Excessive spring flexure will lead to breakage of the spring.
- If the spring flexure is not enough, the spring will fail to hold the needle thread until the needle goes up 3.5 (0.138") to 4 mm (0.157") (5 (0.197") to 6 mm (0.236") for 2-needle overlock machine) from its lowest point, often resulting in needle thread stitch skipping due to too large thread loops.

## Standard Adjustment

### (19) Position of the Thread Guides and the Loper Thread Take-ups



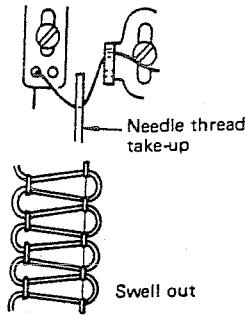
Required adjustment values when the upper looper is in its fully retracted position

(Unit: mm)

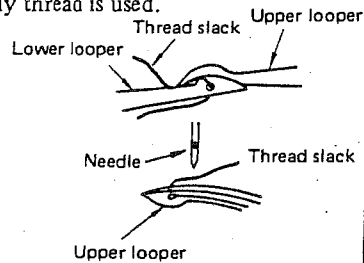
Symbol	MOG-2Δ04E	MOG-2Δ14E	MOG-2Δ16E		MOG-2Δ03E	MOG-2Δ05E	MOG-2Δ15E
	OM6	BH6 · BF6	FF6 · FH6	FM6	ON6	OM6	FF6
A	76	←	75	←	81	80	←
B	73	←	←	←	84	82	←
C	22	←	←	←			
D	63	←	←	←		63	
E	41	←	←	←		41	
F	26	←	←	←	23		26
G	44	41	44	←	←	20.5	44
H	26.5	18	9	26.5		15	
I	1	17	←	1	2	1	15
J	22.5	19.5	22.5	←	22	18.5	19
K	9	13	9	←	11	15	11
L			58.5	←			58.5

## Adjustment Procedures

- Perform the adjustment by the setscrews.
- Set distance F a little smaller when using synthetic thread or the like which tends to form stitches swelling out of the cloth edge. A smaller F is effective for preventing stitch skipping.



- Distance G is related to the vertical knotting point of the upper and lower looper threads. Set this distance larger for woolly thread, and set it smaller for thin thread which is likely to cause stitch skipping.
- It is desirable to set distance H larger for stretchy threads such as woolly thread.
- Set distance K larger if stitch skipping occurs due to looper thread slack. Set it smaller for better appearance and touch of produced stitches when woolly thread is used.



## Results of Improper Adjustment

- Distance A
  - When it is set smaller, better tightness of needle thread stitches will be obtained.
  - When set larger, loose needle thread stitches will result.
- Distance B
  - When it is set smaller, better tightness of needle thread stitches will be obtained.
  - When it is set larger, loose needle thread stitches will result.
- Distance C, D, and E exert least influence on stitch formation, however, improper setting of these distances will cause contact between the moving parts.
- Distance G
  - When it is set larger, the amount of the upper looper thread will be increased.
  - When it is set smaller, the amount of the upper looper thread will be decreased.
- Distance H
  - When it is set larger, the amount of the upper looper thread will be increased.
  - When it is set smaller, the amount of the upper looper thread will be decreased.
- Distance I
  - When it is set larger, the amount of the lower looper thread will be decreased.
  - When it is set smaller, the amount of the lower looper thread will be increased.
- Distance J
  - When it is set larger, the amount of the lower looper thread will be increased.
  - When it is set smaller, the amount of the lower looper thread will be decreased.
- Distance F
  - When it is set larger, the amount of the upper and lower looper threads will be increased.
  - When it is set smaller, the amount of the upper and lower looper threads will be decreased.
- Distance K
  - When it is set larger, the amount of the upper and lower looper threads will be decreased.
  - When it is set smaller, the amount of the upper and lower looper threads will be increased.

#### 4. ADDITIONAL INFORMATION AND PRECAUTIONS

##### (1) Thread Tension Springs Identified by Colors

1) Tension of each tension spring

Part No.	Color	Natural length	Working length	Weight required to compress spring to working length
12025854	Purple	19.5 mm (0.768")	11.5 mm (0.453")	910 g ± 50 g
12025953	Green	↑	↑	640 g ± 50 g
11956752	Red	↑	↑	430 g ± 50 g
11956950	Yellow	17.8 mm (0.701")	9.8 mm (0.386")	320 g ± 35 g
11956851	Blue	17.3 mm (0.681")	9.3 mm (0.366")	150 g ± 20 g
11957057	Colorless	(Faint blue)		

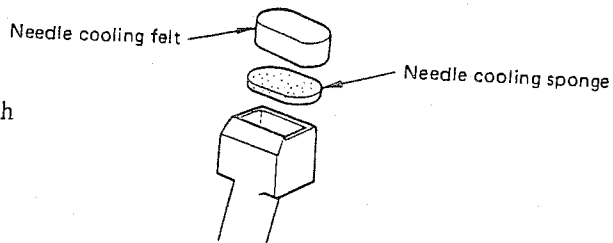
##### 2) Springs used for each model

Model	Where to use	Needle thread	Double chain needle thread	Upper looper	Lower looper
MOG -2Δ03N-ON6		Blue	-	-	Yellow
2Δ04N-OM6		Purple	-	Yellow	Red
2Δ05N-OM6		Yellow	-	Yellow	Green
2Δ14N-BF6		Purple, Yellow	-	Blue	Yellow
2Δ14N-BH6		Purple, Yellow	-	Blue	Yellow
2Δ15N-FF6		Yellow	Green	-	Red
2Δ16N-FF6		Purple	Green	Red	Red
2Δ16N-FH6		Purple	Green	Red	Red
2Δ16N-FM6		Purple	Green	Red	Red

##### (2) Needle Cooler

A machine of this series is provided with a needle cooler to prevent needle thread breakage caused by needle heat. The needle cooling effect may be enhanced by removing the needle cooling sponge in the cooler, which serves to prevent excessive supply of the coolant. However, when the sponge has been removed, the coolant may leak out due to fibrous dust. Therefore, always wipe off such dust around the needle cooling felt.

Whenever adjusting the needle cooler, be careful not to cause the cooler to come into contact with the movable needle guard.



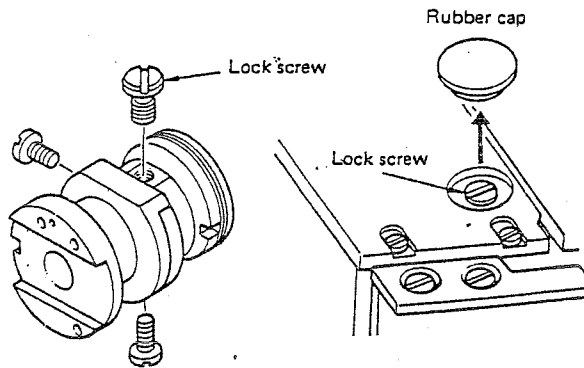
### (3) Locking the Feed Cam

No problem occurs in normal operation even if the cam is not locked.

(However, locked cam will prevent wear on the cam.)

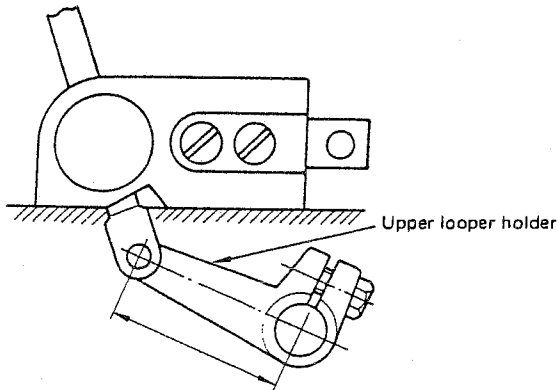
To lock the feed cam, remove the rubber cap and tighten the lock screw when it comes to the top.

(The lock screw comes to the top when the "L" mark on the machine pulley has nearly reached the top for the 2Δ14E, or when "5" mark has nearly reached the top for other models.)



### (4) Center-to-center Distance of the Upper Looper Holder

The standard center-to-center distances are as shown below.



MOG-2Δ04E 40 mm (1.575")  
 MOG-2Δ14E 37.5 mm (1.476")

For models other than standard

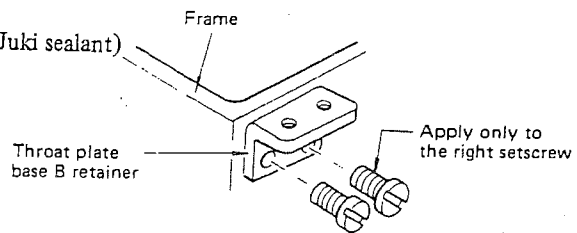
Model	Center-to-center
MOG-2Δ03E-ON6	40 (1.575")
MOG-2Δ04E-OM6	↑
MOG-2Δ05E-OM6	↑
MOG-2Δ14E-BF6 BH6	37.5 (1.476") ↑
MOG-2Δ15E-FF6	37.5 (1.476")
MOG-2Δ16E-FF6 FH6 FM6	37.5 (1.476") ↑ 40 (1.575")

Note : See Subclass List for triangular marks Δ.

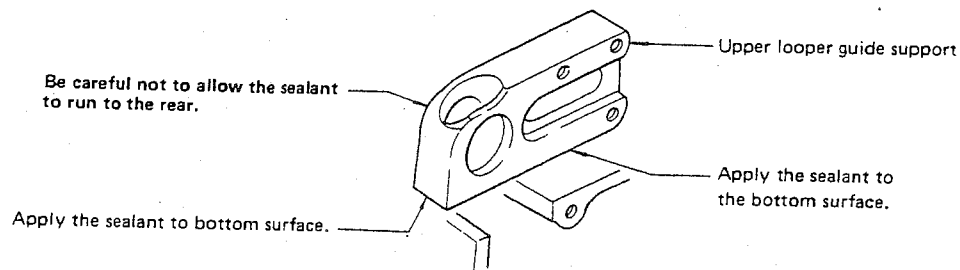
## (5) Assembly Precautions

### 1) Parts to be locked using sealant

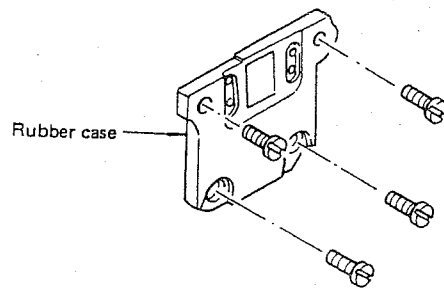
- ① Setscrews of the throat plate base B retainer (Juki sealant)  
Apply the sealant only to the right setscrew.



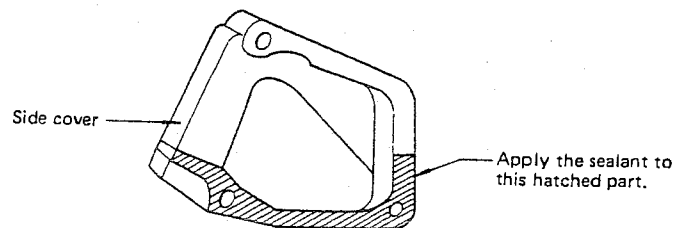
- ② Bottom surface of the upper looper guide support (Three-bond TB1102)  
Apply the sealant to the bottom surface of the upper looper guide support, which contacts with the frame surface.



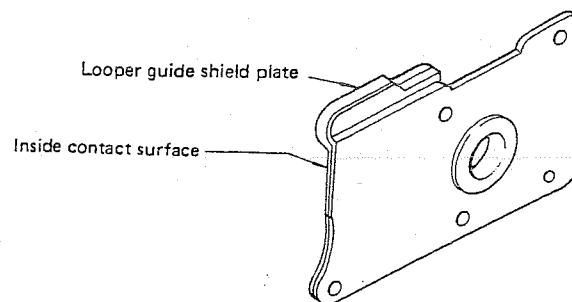
- ③ Setscrews of the rubber case (Juki sealant)  
Apply the sealant to the four setscrews.



- ④ Lower part of the side cover (Juki sealant)  
Apply the sealant to the hatched portion shown at right.



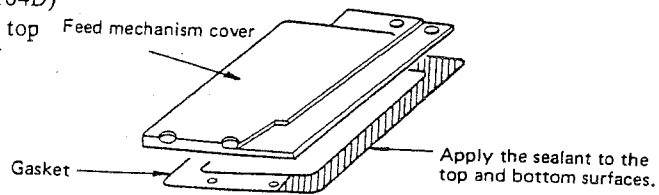
- ⑤ Looper guide oil shield plate assembly (Juki sealant)  
Apply the sealant to the inside of the oil shield plate





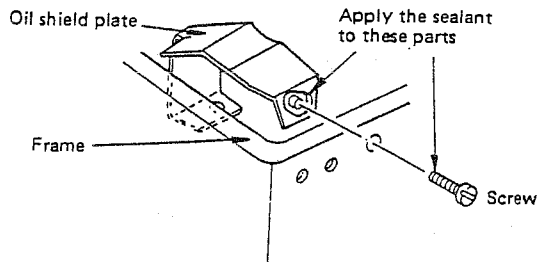
⑥ Feed mechanism cover gasket (Three-bond 1104D)

Apply the sealant to the hatched parts on the top and bottom surfaces of the gasket.



⑦ Oil shield plate (Juki sealant)

Apply the sealant to the area around the screw hole in the oil shield plate and to the tip of the screw.

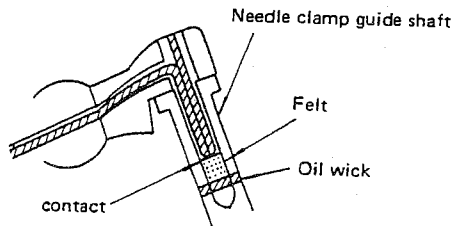


2) Precautions in lubrication

① Needle clamp guide shaft assembly

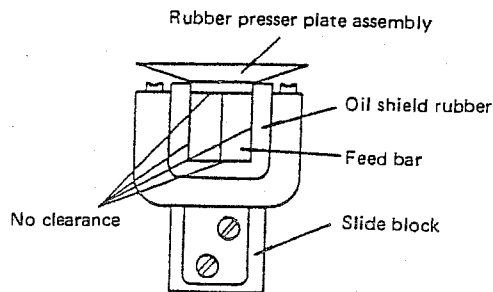
- Make sure to bring the oil wick into contact with the felt.
- The oil wick is slightly shorter than the bore of the guide shaft. Push the oil wick into the bore so that it is placed evenly on either side.

**Note :** The oil wick shall not extend beyond the outer diameter of the needle clamp guide shaft.

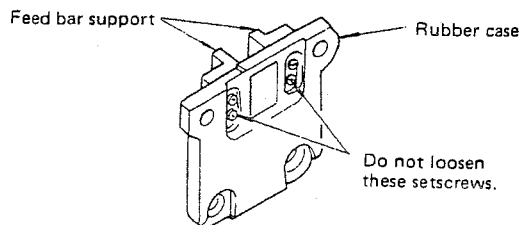


② Feed bar assembly

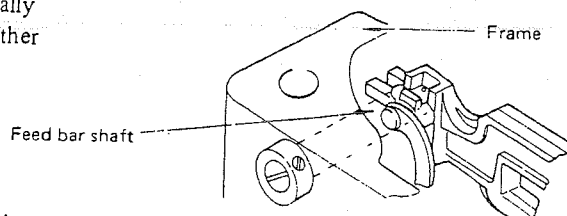
- Make the rubber presser plate assembly flush with the upper side of the feed bar.
- Set the oil shield rubber on the slide block so that it contacts evenly with the lower side of the feed bar and is evenly positioned on the right and left. Ensure that no clearance is left vertically and laterally.



- Avoid loosening the setscrews of the feed bar support so as not to disturb the clearance between the support and the feed bar. If its setscrews should be loosened, attach the support very carefully not to leave any clearance or uneven contact.

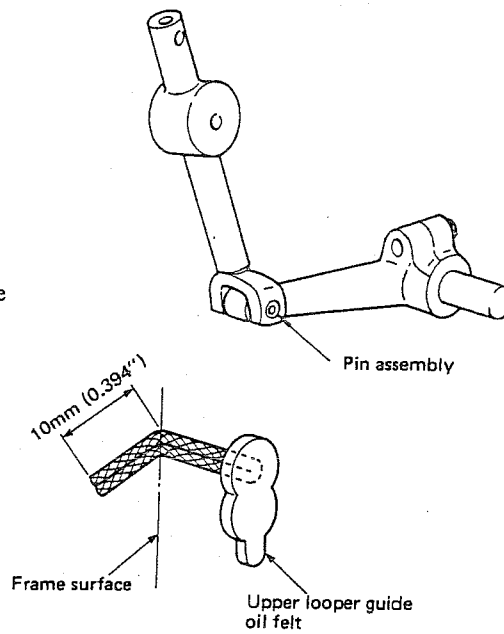


To adjust the needle entry point after gauge replacement, move the feed bar support to the right or left together with the rubber case, and laterally move the feed bar shaft on the back for further adjustment as required.



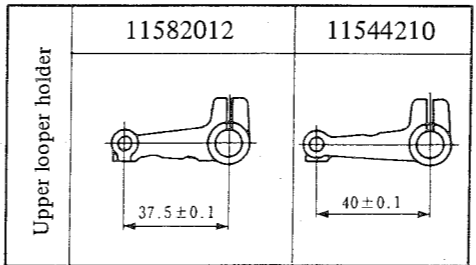
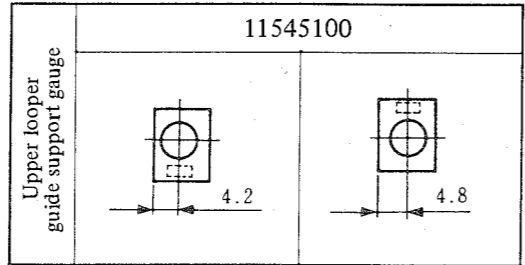
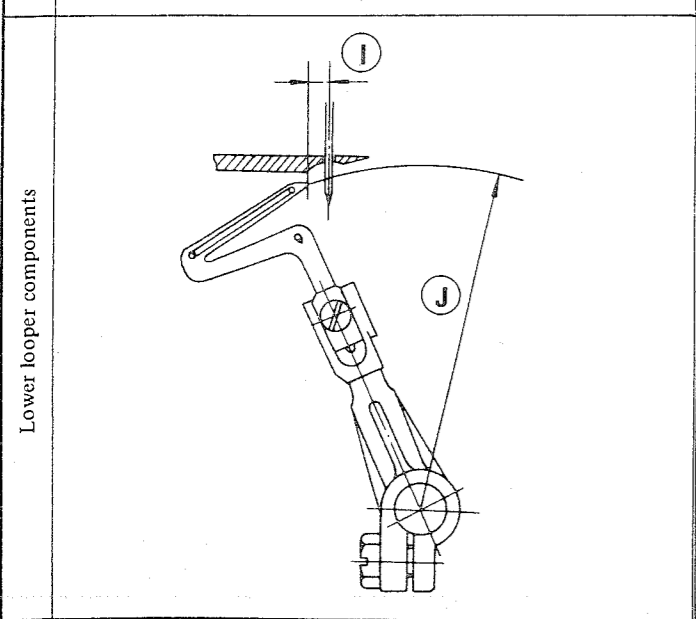
③ Upper looper guide assembly

- Be sure to cut the oil wick in the pin assembly at the both ends of the pin assembly. (The oil wick should not extend beyond the both ends of the pin assembly.)
- The oil felt is lubricated by the oil wick in the frame.  
Take care not to make the oil wick too long.  
Space the four oil wicks 10 mm (0.394") from the frame inner surface.



5. ADJUSTMENT OF THE NEEDLE HEIGHT AND LOOPER TIMING


Needle height	1-needle overlock machine/ safety stitch machine		2-needle overlock machine		Classification	Description Subclass	Needle height		Upper looper components						Lower looper components		Double-chain looper	
	A	B	C	D			E	F	G	H	H	I	J	Return of double-chain looper	Radius of double-chain looper			
																1-needle 2-needle (left)	2-needle (right)	Upper looper height (central value)
Upper looper components					1-needle overlock machine	2Δ03N-ON6	14	—	13.3	5.5	51.14	4.8	—	40 (11544210)	2.7	66.4	—	—
						2Δ04N-OM6	14.2	—	13.1	5.4	51.14	4.8	—	40 (11544210)	2.9	66.4	—	—
						2Δ05N-OM6	14	—	13.1	6.3	51.51	4.8	—	40 (11544210)	2.2	66.4	—	—
						2Δ04N-OF6	14.2	—	13.1	5.2	48.79	4.2	1.5 (Juki sealant) 582012)	—	2.9	66.4	—	—
						2Δ04N-OH6	14.2	—	13.1	5.2	48.79	4.2	37.5 (11582012)	—	2.9	66.4	—	—
					2-needle overlock machine	2Δ14N-BF6 -BH6	14	12.6	13.1	5.2	48.79	4.2	37.5 (11582012)	—	2.9	66.4	—	—
						2Δ14N-BF7	14	12.6	13.1	5.2	48.79	4.2	37.5 (11582012)	—	2.9	66.4	—	—
						2Δ14N-BH7	14	12.6	13.1	5.2	48.79	4.2	37.5 (11582012)	—	2.9	66.4	—	—
					Safety stitch machine	2Δ15N-FF6	14.2	—	13.3	5.3	48.79	4.2	37.5 (11582012)	—	2.7	66.4	1.8 ~ 2	63.2
						2Δ16N-FF6 -FH6	14.2	—	13.1	5.2	48.79	4.2	37.5 (11582012)	—	2.9	66.4	1.8 ~ 2	63.2
						2Δ16N-FM6	14.2	—	13.1	5.4	51.14	4.8	—	40 (11544210)	2.9	66.4	1.8 ~ 2	63.2

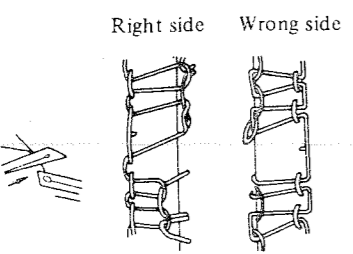
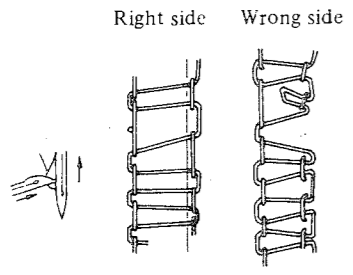


6. TROUBLES AND CORRECTIVE MEASURES

(1) Main unit components

Trouble	Case (1)	Case (2)	Check and Corrective measures
1. Needle thread breakage	Threading	The thread is entangled with the thread guide, or the machine head has been incorrectly threaded.	Refer to the threading diagram.
	Thread path	Scratches, burrs or rust on the pawls or needle holes of the throat plate, stitch tongue, lower looper, double chain looper, needle thread take-up, needle thread presser spring, thread guide, or tension discs causes friction.	Remove such scratches, burrs, etc. and perform thread path finishing. Replace major components such as looper, which have been deformed, causing thread breakage.
	Needle guard	The needle hits the needle guard intensely, and sharp edges are produced on them, causing thread breakage.	Replace the needle and needle guard if they have worn.
	Needle	The needle is too thin for the thread.	Replace the needle by a proper one.
	Needle heat	The needle gets very hot, depending on the type of materials, number of plies and sewing speed, and causes the thread to burn and break.	Use a thinner needle. Reduce the sewing speed. Use the needle cooler. Use an S-point needle or needle for synthetic thread.
	Thread	The thread is weak because of its poor quality.	Replace the thread by one with good quality.
	Thread tension	The thread tension is too high.	Reduce the thread tension. Check whether the needle thread take-up guide and needle thread guide are positioned too high, causing such excessive thread tension.
	Contact	The double chain looper or lower looper has been improperly positioned and strikes the feed dog or throat plate.	Properly position the double chain looper or lower looper.
	Needle thread clamp (only for double chain stitch)	A sharp edge has been produced on the tip of the needle thread clamp	Remove the sharp edge using buff or the like, and eliminate the cause for the sharp edge.
	Double thread hooking (only for double chain stitch)	Poor drawing up of the needle thread causes the looper to catch it again	Increase the needle thread tension. Properly position the thread cam Properly position the double-chain needle thread guide.
	Defective double chain-off thread (only for double chain stitch)	Refer to the clause referring to defective double chain-off thread.	
2. Loper thread breakage	Threading	The thread is entangled with the thread guide, or the looper has been incorrectly threaded.	Refer to the threading diagram.
	Thread path	Scratches, burrs, rust, etc. on the pawl of the throat plate, stitch tongue, looper, looper thread take-up, thread guide, or tension discs causes friction.	Remove such scratches, burrs, etc. and carry out thread path finishing. Replace loopers or other components which have been deformed, causing thread breakage.
	Adjustment of the looper thread take-up	The looper thread take-up or thread guide has been improperly positioned, causing excessive thread tension.	Refer to the pertinent Standard Adjustment.
	Thread tension	The looper thread tension is too high.	Reduce the tension while checking the tension balance other looper thread.
	Thread	The thread is weak because of its poor quality.	Replace the thread by one with good quality.
	Position of the thread guides	The upper looper thread guide is too high, and the thread taking balance is disturbed, resulting in the thread breakage.	Refer to the pertinent Standard Adjustment.
	Double chain looper avoid (only for double chain stitch)	The double chain looper strikes the needle at the back, causing the thread breakage.	Correct the longitudinal motion of the double chain looper so as not to cause the looper to strike the needle.
	Needle heat	The needle gets hot, and the looper thread breaks when it comes in contact with the hot needle at the time of needle stop.	Refer to the clause relating to the needle heat causing needle thread breakage.

Trouble	Case (1)	Case (2)	Check and Corrective measures
3. Needle breakage	Needle entry	The needle entry has not been correctly adjusted, and the needle strikes the throat plate or presser foot.	Correct the needle entry.
	Upper looper position	The upper looper juts out too much or it is too low.	Refer to the related Standard Adjustment.
	Contact with the looper	The needle strikes the looper, resulting in needle breakage.	Re-position the looper so that it does not come in contact with the needle. Adjust the longitudinal motion of the double chain looper for the contact of its back with the needle.
	Needle guards	A needle guard has been improperly positioned, causing the needle point to strike it.	Refer to the pertinent Standard Adjustment.
	Needle No.	The needle is too thin for the materials.	Replace the needle with a thicker one.
	Thread tension	The thread tension is too high.	Reduce the thread tension.
	Height of the feed dog or needle	The feed dog is too high, or the needle is too low, causing the needle to deflect with resultant needle breakage.	Refer to the related Standard Adjustment.
4. The needle point is crushed. (Double chain stitch needle)	Needle guard	The needle guard C is too low, or its longitudinal position is not correct.	Increase the height of the needle guard C. Check the clearance between the needle and needle guard.
	Contact with the looper	The tilt of the looper is not correct. The longitudinal motion of the looper is not correct.	Check the tilt of the looper. Correct the longitudinal motion of the looper, and increase the clearance between the looper and needle when the looper reaches its most retracted position.
5. Overlocking needle thread stitches are skipped.  The lower looper fails to catch needle thread loops.	Lower looper	The blade point has defective shape and does not catch needle thread loops.	Replace the lower looper
	Adjustment of the loopers.	The clearance or the amount of return is not correct.	Refer to the relevant Standard Adjustment.
	Needle thread presser	The duration in which the presser holds the needle thread is not correct, and unstable loop result.	Refer to the pertinent Standard Adjustment.
	Needle	The needle is bent or improperly oriented. A needle or DC x 1 is used.	Replace the bent needle. Correctly orient and attach the needle. Use a DC x J27 needle for a stretchy thread.
	Needle guards	Incorrect height or clearance prohibits correct guide for the needle. If a needle guard is too high, loops are crushed with consequent stitch skipping.	Refer to the pertinent Standard Adjustment.
	Height of needle	The needle has incorrect height and does not properly pick up loops even if the looper has a correct return.	Refer to the related Standard Adjustment
	Needle heat	Stitch skipping occurs before the thread breaks due to needle heat.	Refer to the clause relating to the needle thread breakage due to needle heat.
	Positioning of the needle thread take-up guide and needle thread guide	They are positioned too high, and the needle thread take-up takes too much thread, producing too small loops.	Refer to the pertinent Standard Adjustment.
	Threading	The thread has been entangled with a thread guide. Threading has not been correctly done.	See the threading diagram.
	6. Lower looper stitches are skipped.  The upper looper does not catch the lower looper thread.	Upper looper	The blade point has a bad shape, and fails to catch the loops.
Lower looper		The dimensions shown at right are not correct.	Replace the lower looper having a deformed tip.
Adjustment of the loopers		The feed amount of the lower looper, height of the upper looper, or clearance produced at time of crossing of the upper and lower loopers is not correct.	Refer to the relevant Standard Adjustment.
Thread amount		Too much lower looper thread is fed, giving slack of thread. 	Slightly lower the looper thread take-up (left) (reduction in distance G), or slightly reduce distance F to decrease the amount of thread.
			Slightly raise the looper thread take-up (right) (increase in dimension K) to decrease the amount of thread. Lower the lower looper thread guide (increase in distance I), and decrease distance J to reduce the amount of thread.
Threading		The thread has been entangled with a thread guide. Threading has not been done correctly.	Refer to the threading diagram.

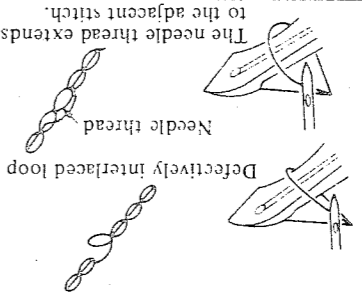


Trouble	Case (1)	Case (2)	Check and corrective measures
<p>7. Upper looper thread stitches are skipped.</p> <p>The needle does not take the upper looper thread.</p>	Threading	The thread has been entangled with a thread guide. Threading has not been done correctly.	See the threading diagram.
	Needle height	The needle, if positioned too high or low, may fail to catch the upper looper thread.	Refer to the related Standard Adjustment.
	Needle	The needle is bent or crushed in its point.	Replace the needle. At this time, be sure to eliminate the cause for such needle bend or needle point crush.
	Adjustment of the upper looper.	The height of the blade point is not correct, making the upper looper unable to properly pass the thread to the needle. The clearance between the needle and the back of the upper looper is not correct.	Refer to the relevant Standard Adjustment.
	Amount of thread	Excessive upper looper thread is fed, producing slack of thread.	<p>Slightly lower the looper thread take-up (reduction in distance G) or slightly reduce distance F to decrease the amount of thread. Make the upper looper thread guide (right) shorter decrease in distance H) to reduce the amount of thread.</p> <p>Slightly raise the looper thread take-up (right) (increase in distance K) to decrease the amount of thread.</p> <p>If the thread tension is not enough, increase it.</p>
<p>8. Double chain stitches are skipped.</p> <p>The double chain looper fails to catch needle thread loops.</p>	Needle height	If the needle height is not correct, stitch skipping occurs even when the return of the chain looper is correct.	Refer to the pertinent Standard Adjustment.
	Needle	The needle is bent or attached with wrong orientation. A DC x 1 needle is used.	Replace the bent needle. (Remove the cause for the needle bend.) Correct the orientation of the needle. Use a DC x 27 needle (with a better recess configuration).
	Double chain looper	The lower part of the blade point has been deformed, and the blade point falls loops.	Replace the double chain looper.
	Adjustment of looper	Clearances or returning amount is not correct.	Refer to the related Standard Adjustment.
	Thread tension	The thread tension is too high, preventing formation of good loops.	Reduce the tension. However, be careful not to reduce the tension too much, otherwise unstable loops will result.
	Needle guards	A needle guard is too high, and loops are crushed. The clearance is too big, causing the needle to shake.	Refer to the relevant Standard Adjustment.
	Needle heat	The thread breaks due to heat generated on the needle, depending on the type of materials, number of plies, and sewing speed.	Use a thinner needle. Reduce the sewing speed. Check the coolant if necessary.
<p>9. Triangle double chain looper thread stitches are skipped.</p> <p>The needle fails to catch the double chain looper thread.</p>	The needle point is crushed.	The needle point has been crushed and got thicker and shorter.	Refer to the clause relating to the needle point crush.
	Double chain looper	The thread hole in the tip has worn, and the looper thread does not reach the needle as shown at right.	<p>Replace the double chain looper.</p>
	Adjustment of looper	Excessive return or longitudinal motion will often cause this stitch skipping.	Refer to the pertinent Standard Adjustment.
	Thread cam timing	The thread cam timing is too early, causing the looper thread to slack before the needle enters a thread triangle.	Refer to the pertinent Standard Adjustment.
	Thread tension	The lower thread tension is very low, and the thread is not stretched.	Increase the thread tension a little.
	Threading	The area around the thread cam has been threaded erroneously.	Correct the threading.

Trouble	Case (1)	Case (2)	Check and Corrective measures
---------	----------	----------	-------------------------------

10. Triangle double chain needle thread stitches are skipped.

The needle fails to catch the needle thread loop on the double chain looper, resulting in the stitch skipping shown below.



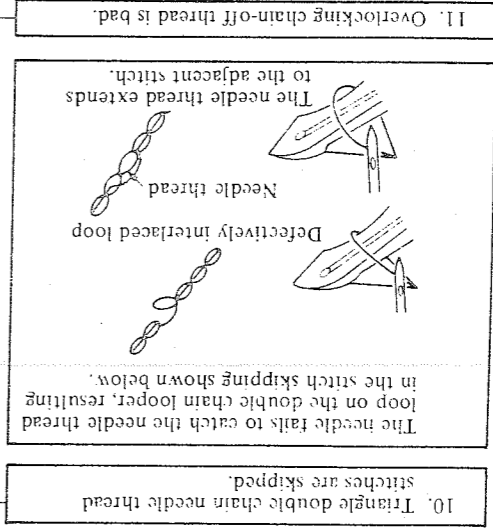
The needle thread extends to the adjacent stitch.

Needle thread

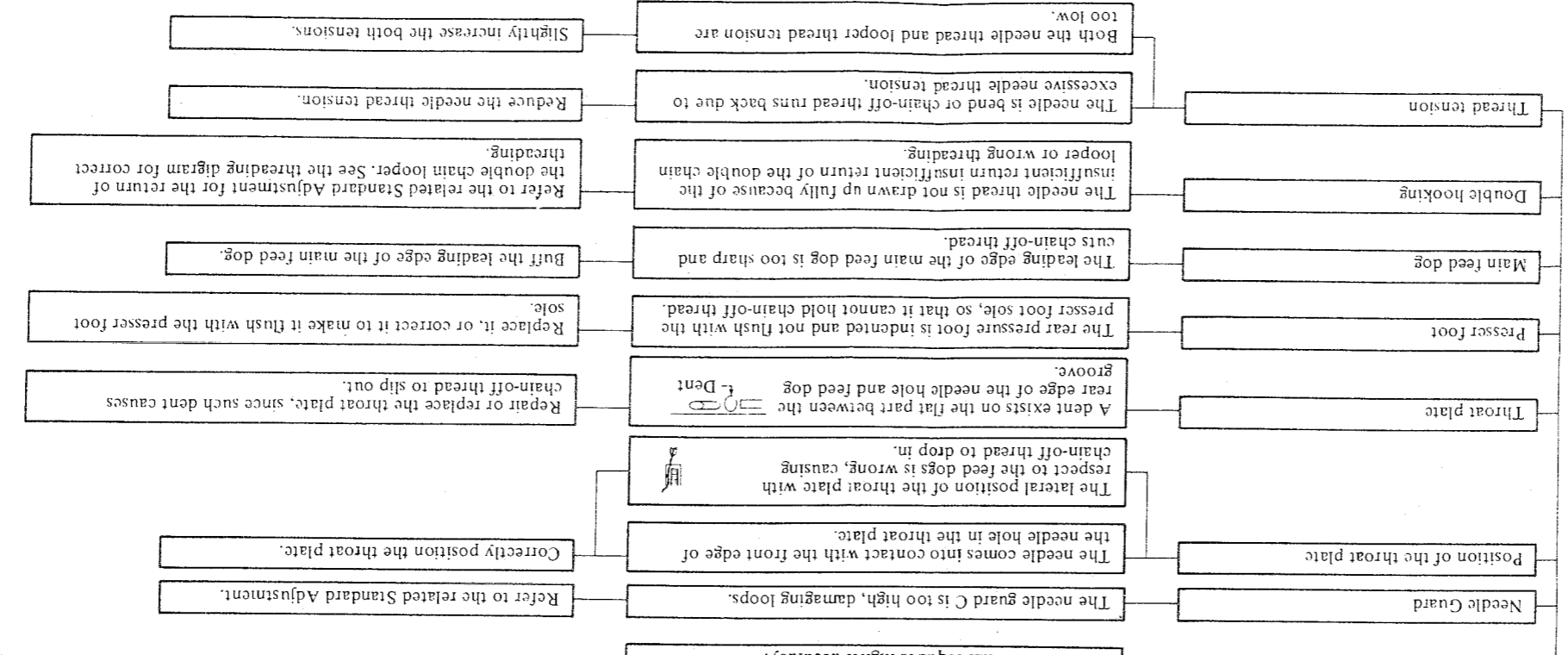
Defectively interlaced loop

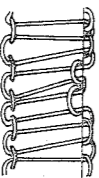
11. Overlocking chain-off thread is bad.

(Provided that no chain-off trouble occurred when sewing operation was done with materials set on the machine.)

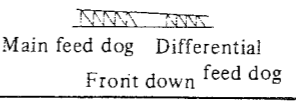
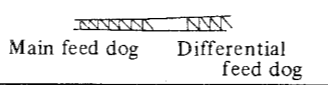
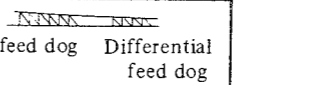


12. Problems with double chain stitch chain-off thread



Trouble	Case (1)	Case (2)	Check and Corrective measures
13. Overlocking needle thread is loose.	Position of the needle thread take-up guide and needle thread guide	They are positioned too high, and the thread take-up draws out excessive needle thread.	Refer to the pertinent Standard Adjustment.
	Thread tension	The thread tension balance has been disturbed.	Refer to the Standard Adjustment for the looper thread take-up components, and increase the tension if necessary.
	Needle	The needle is too thin for the thread used.	Replace it with a proper one.
14. Double chain stitch needle thread is loose.	Thread tension	The looper thread tension is too high, and the needle thread tension is too low.	Reduce the looper thread tension to a minimum, and increase the needle thread tension.
	Thread cam	The thread cam draws out an insufficient amount of thread. The thread cam timing is bad.	Refer to the relevant Standard Adjustment. Refer to the relevant Standard Adjustment.
	Needle	The needle is too thin for the thread used.	Replace the needle with a proper one.
15. Uneven overlocking stitches	Looper thread tension	The upper and lower looper thread tensions are not enough.	Slightly increase the upper and lower looper thread tensions.
<p>The knotting position of the upper and lower threads varies as shown below.</p> 	Looper thread take-up	The looper thread take-up (left) is too high.	Slightly lower the looper thread take-up (left)
	Knife width	The knife width is unsuited for the overedging width.	Make the overedging width slightly smaller than that given for the knife width.
	Thread path	Scratches on the thread path catch thread.	Check the thread path for scratches.
	Presser foot	The presser foot comes into contact unevenly with the throat plate and feed dogs and tends to meander.	Make the presser foot come into contact with them evenly.
	16. Uneven double chain stitches	Thread tension	The looper thread tension is not enough.
Presser foot	The presser foot comes into contact with the throat plate unevenly.	Make the presser foot come into contact with the throat plate evenly.	
	The presser foot pressure is not enough.	Increase the presser foot pressure.	
Knife width	The material is pulled because of the knife width unsuited to the overedging width.	Make the overedging width slightly smaller than that gives for the knife width.	
17. The looper thread bulges out	Knife width	The knife width is too small for the overedging width.	Use a knife having width suited to the overedging width.
	Looper thread take-up adjustment	The looper thread take-up draws out excessive looper thread.	Decrease the radius of the looper thread take-up (left) (reduction in dimensions F). Raise the looper thread take-up (right) (increase in distance K)
18. Looper thread bite	Knife width	The knife width is too large for the overedging width.	Use a knife having width suited to the overedging width.
	Adjustment of the looper thread take-up	The looper thread take-up draws out insufficient amount of looper thread.	Increase the radius of the looper thread take-up (left) (increase dimension F). Lower the looper thread take-up (right) (reduction in distance K)
19. Knotting position is not correct.	Threading	Re-threading after thread breakage, etc. has been done erroneously.	See the threading diagram.
	Adjustment of the looper thread take-up	The height of the looper thread take-up (left) is not correct.	Raise the looper thread take-up (left) to increase the amount of upper looper thread, and the knotting position moves toward the lower looper side.
		The upper looper thread guide (right) is too short.	Increase distance H.

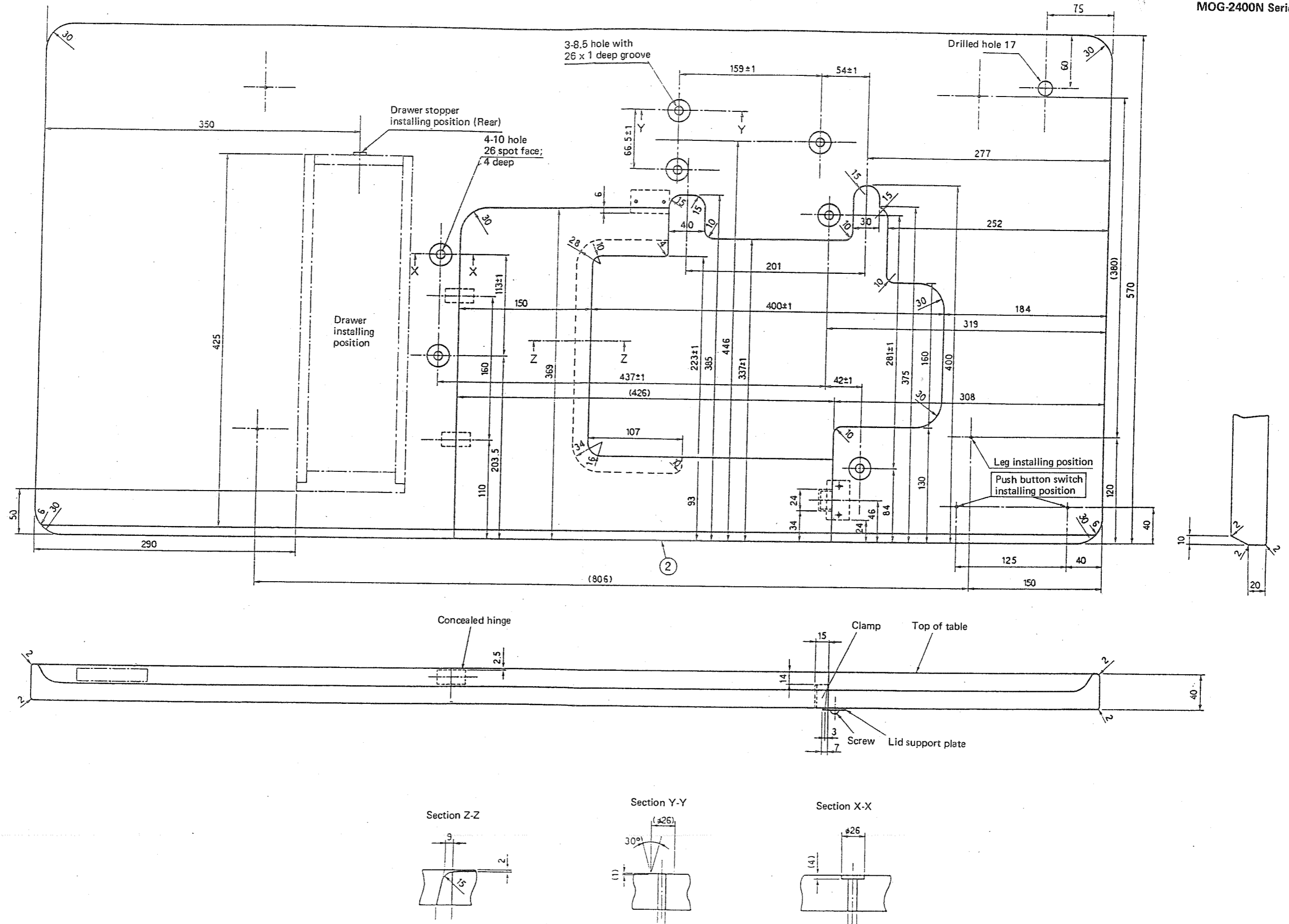


Trouble	Case (1)	Case (2)	Check and Corrective measures
20. Uneven material feed	Presser foot pressure	The presser foot pressure is too high.	Reduce the presser foot pressure except for the uneven material feed due to puckering.
	Presser foot	The hinge is too stiff.	Remove the stiffness provided no hinge play is produced.
		Scratches on or defective finish on the presser foot sole produce friction between the presser foot and materials.	Buff the presser foot sole for good surface finish.
	Tilt of feed dogs	The front is too high.	Make the front down. However, be sure to align the differential feed dog with the main feed dog. 
	Height of feed dogs	A difference in level exists between the main feed dog and differential feed dog.	Eliminate the difference in level.
	Adjustment of differential feed	The differential feed has been improperly adjusted.	Provide differential feed suited to the material.
21. Puckering (main concerned with double chain stitch)	Needle	The needle is too thick.	Use a thin needle as much as possible.
	Thread	The thread used is too thick.	Use a thin thread as much as possible.
	Thread tension	Both the needle thread and looper thread tensions are too high.	Reduce the both thread tensions to a minimum.
	Throat plate	The throat plate has a large needle hole.	Replace the throat plate with one with a small needle hole.
	Thread cam timing	The thread cam timing is too late.	Advance the cam timing. Refer to the related Standard Adjustment.
	Feed dogs	The leading edge of the feed dog teeth has been rounded off.	Replace the feed dog.
		The feed dogs are tilted with their front up. 	Tilt them with their front down. 
		A difference in level exists between the main feed dog and differential feed dog.	Eliminate such difference in level.
	Presser foot pressure	The presser foot pressure is not high enough, providing poor ironing effect.	Increase the presser foot pressure.
	Differential feed ratio	The differential feed ratio has been set for gathering.	Set it for stretching. When stretching light-weight materials, be careful not to cause the presser foot to contact unevenly with the materials.
Thread amount	The looper thread amount is not enough, causing excessively tensed stitches.	Bring the thread cam thread guide fully to the front to increase the amount of looper thread.	

7. DIMENSIONS OF TABLE

(1) Dimensions of Table (fully-sunken type)

Applicable models :  
 MOG-2500N Series  
 MOG-2400N Series



(Note) All dimensions are in millimeter.

Table part No. 11959558

