

# ***Yamato***<sup>®</sup>

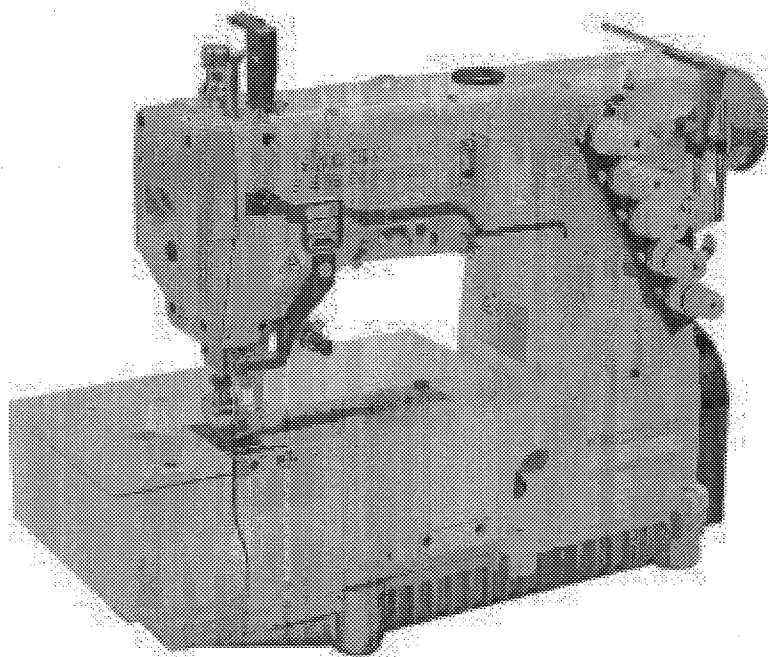
Instruction Manual

HIGH SPEED FLAT BED CHAINSTITCH MACHINE

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**CF2300M**

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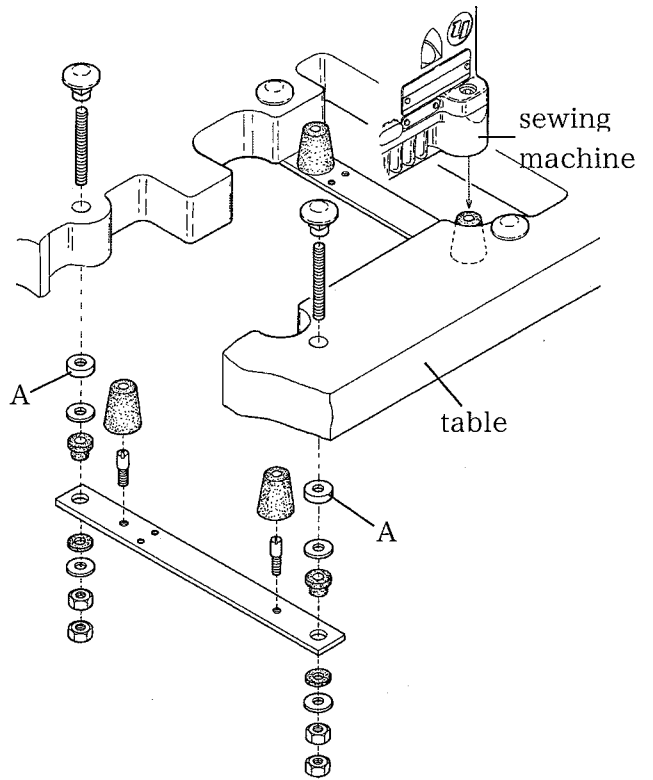
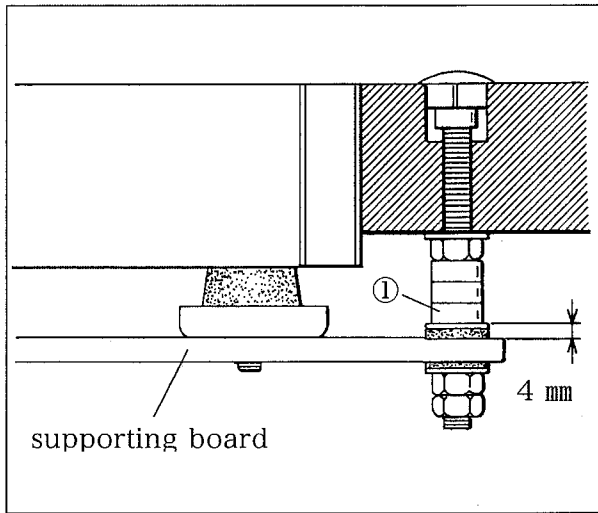
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# 1. Installation

## 1-1 Supporting board installation (for semi-submerged type)

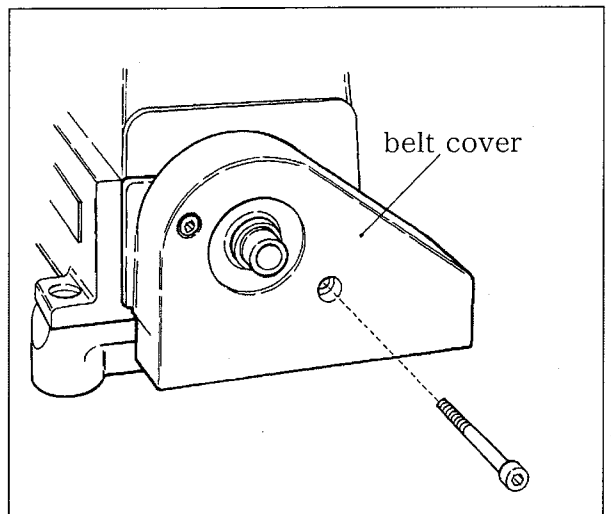


☆Required numbers of spacers①  
CF2300M class

Thickness of Table	Number of ①
40 mm	3pcs. × 4=12
45 mm	2pcs. × 4= 8
50 mm	1pc. × 4= 4

## 1-2 Belt cover attachment

Attach the belt cover to the machine referring to the figure.



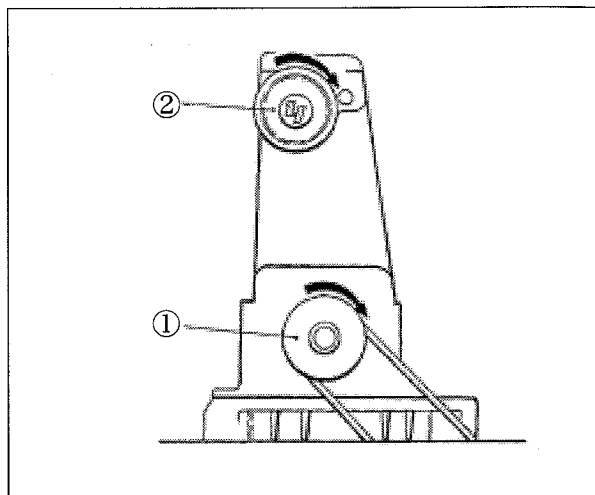
# 2. Sewing speed and Motor

## 2-1 Sewing speed and pulley's rotating direction

The maximum and ordinary sewing speeds are shown in the table below.

The rotating direction of the pulley ① is clockwise as shown in the figure.

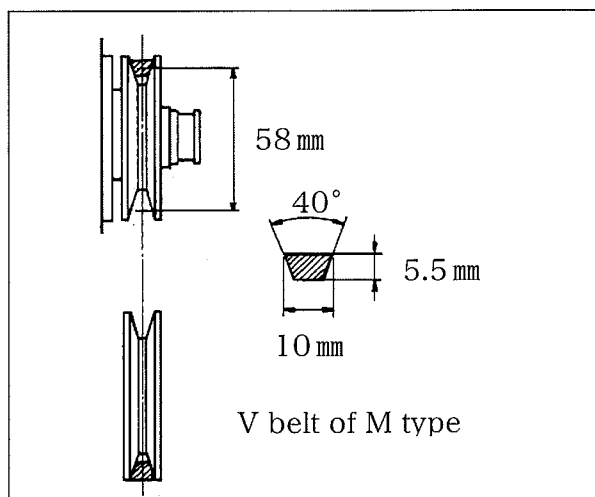
The rotating direction of the handwheel ② is also clockwise.



Model	Max. Sewing Speed	Ordinary Sewing Speed
CF2300M (with spreader)	5,500 r.p.m.	5,000 r.p.m.

## 2-2 Motor and belt

Use a 3-phase, 2-pole 550W (3/4HP) clutch motor and a V belt of M type. Position the motor so that its center aligns with that of the machine pulley when the pedal is toed down and the pulley moves to the left.



Diameter of Motor Pulley (mm)	Sewing Speed (rpm)	
	50Hz	60Hz
80	/	4,500
90	/	5,000
95	4,500	5,300
100	4,800	5,500
105	5,000	/
115	5,500	/

\* Diameters of pulleys on the market are at intervals of 5mm; the above measurements are the nearest values to the calculated ones.

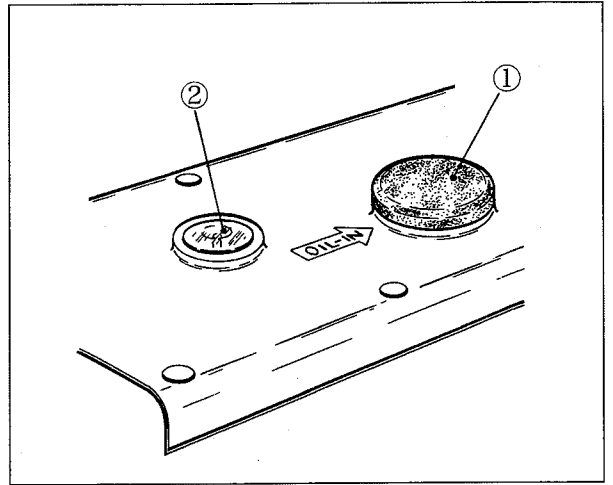
# 3. Lubricating oil

## 3-1 Fitting oil

Use YAMATO SF OIL.

## 3-2 Lubrication

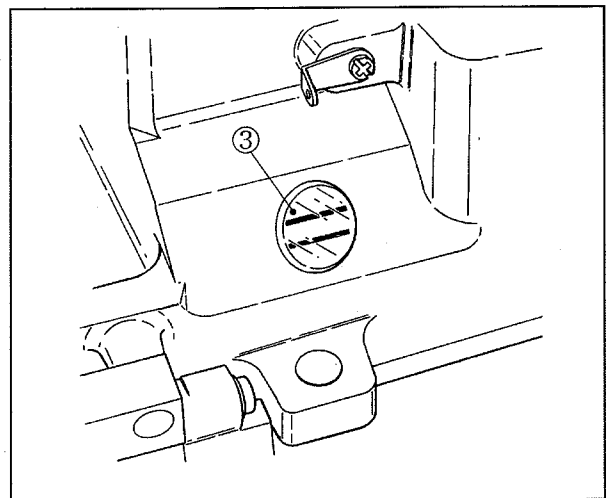
At shipment, oil is drained out of the machine. Before operation, remove the rubber seal plug ① indicated with "OIL-IN" and supply oil to the machine until the oil surface comes to the upper line on the oil sight gauge ③.



## 3-3 Oil sight gauge and oil sight top nozzle

Check the oil sight gauge ③ everyday before operation. when the oil surface is below the lower line, supply oil.

Be sure that oil comes out of the nozzle ② whenever starting the machine.

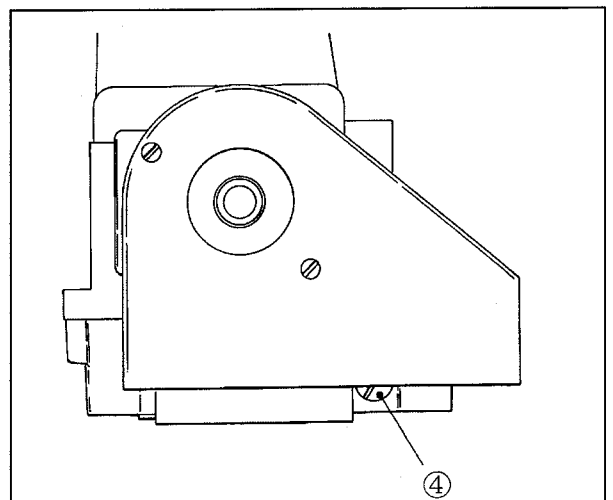


## 3-4 Changing oil

To ensure that a machine offers a long service life, change oil completely after operating a new machine for around 250 hours.

To change oil, take the following steps.

- (1) Remove the V belt from the motor pulley and the machine from the table.
- (2) Remove the screw ④ and drain oil.  
At this moment, be careful so that oil does not attach to the V belt.
- (3) After draining oil, tighten the screw ④ securely.
- (4) To supply new oil, see "5-2 Lubrication".



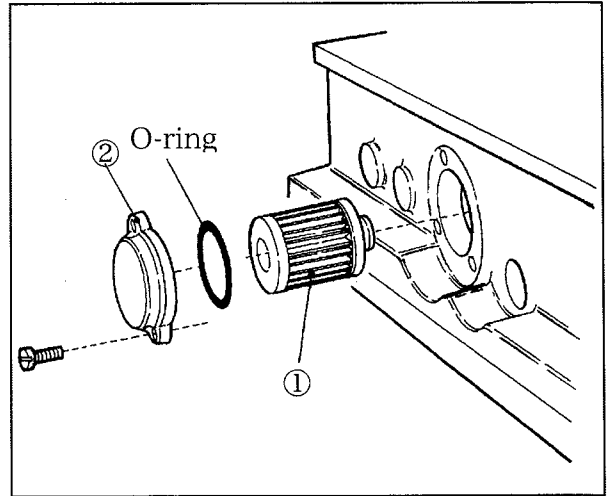
#### 3-5 Checking and changing oil filter

Check the oil filter ① every 6 months or whenever the nozzle splashes no or too little oil even if the oil amount in the oil reservoir is enough.

To check the filter ①, remove the oil filter cap ②.

When the filter ① is clogged, change it with new one.

Note: When removing the cap ②, be careful not to drop the oil remaining in the filter ①.



# 4. Proper operation

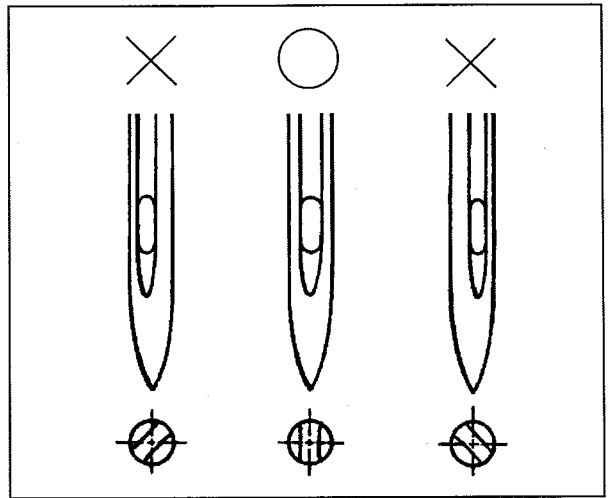
## 4-1 Fitting needle

Use UY128GAS needles.

Japanese sizes	9	10	11	12	13	14
Metric sizes	65	70	75	80	85	90

## 4-2 Needle installation

When changing a needle, install a needle so that its groove faces straight backward as shown in the figure.



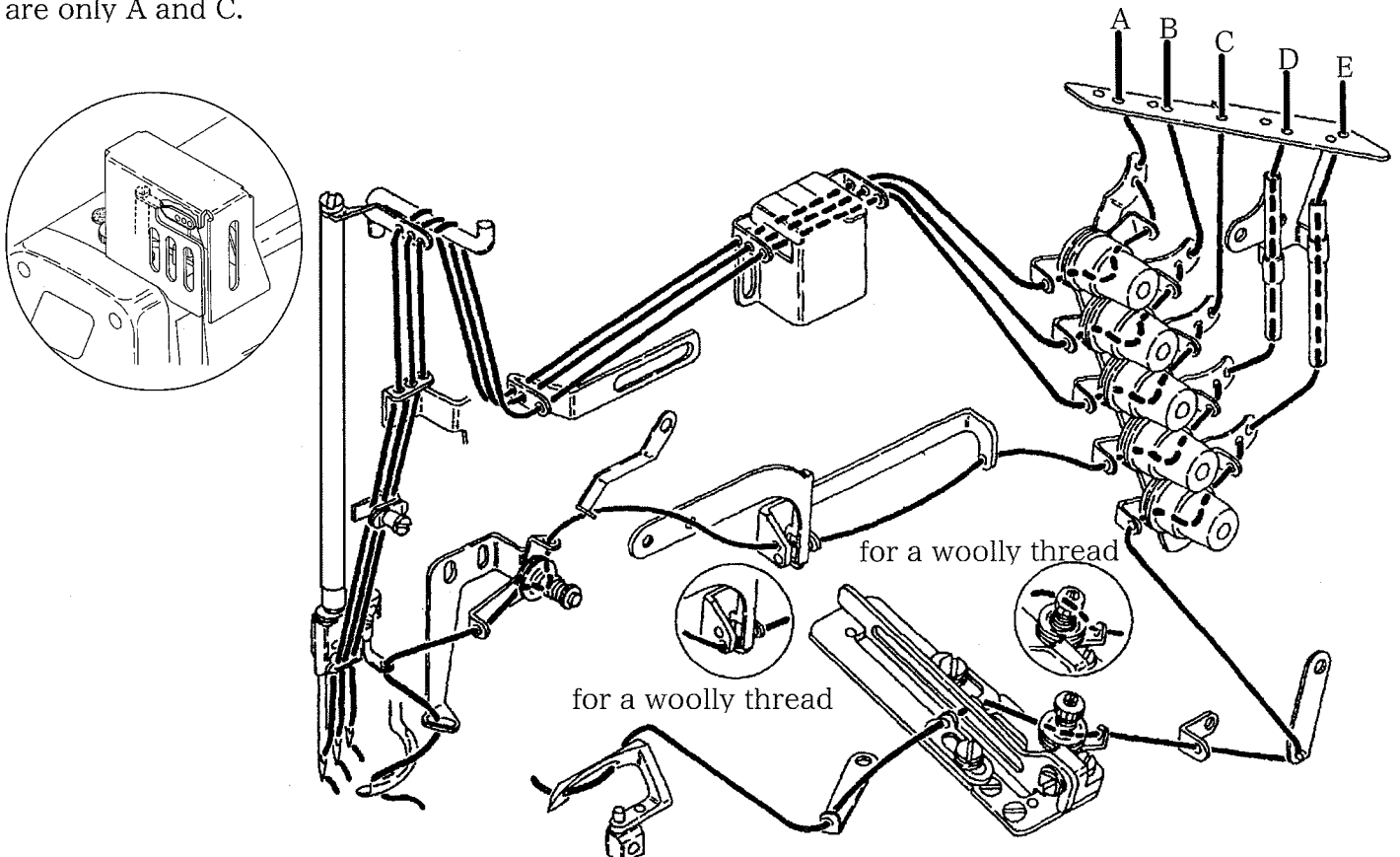
## 4-3 Threading

Thread the machine correctly referring to the figure.

Incorrect threading can cause troubles such as skip stitches, thread breakage, and uneven seams.

A, B, C: needle threads, D: top cover thread, E: looper thread

The figure shows the threading for a 3-needle machine. In a 2-needle machine, needle threads are only A and C.



## 4. Proper operation

### 4-4 Thread tension

Thread tension changes according to kinds of threads, needle distances, stitch lengths, and so on. According to sewing conditions, adjust each thread tension as low as possible to form stable stitches.

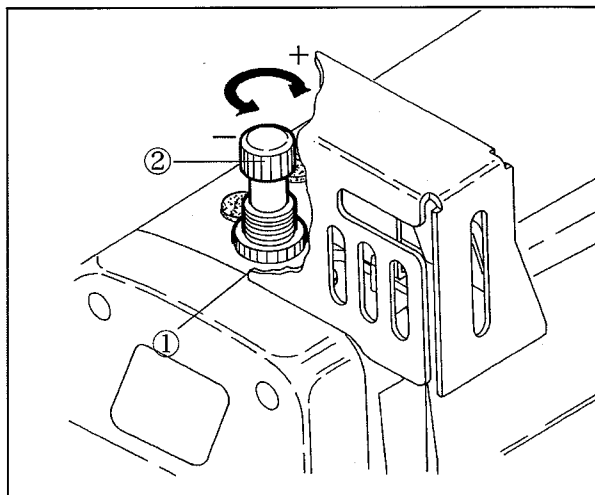
### 4-5 Presser foot pressure

Adjust the presser foot pressure as low as possible to form stable stitches.

To change the pressure, loosen the lock nut ① and turn the adjusting screw ②.

To increase the pressure, turn the screw ② clockwise.

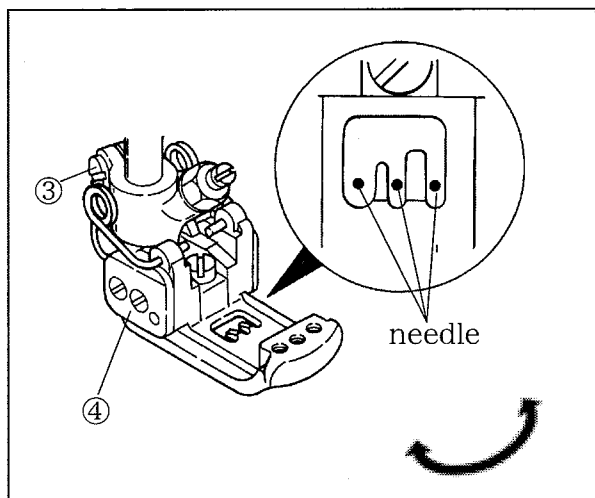
To decrease the pressure, turn the screw ② counterclockwise.



### 4-6 Presser foot adjustment

Loosen the screw ③ and move the presser foot ④'s yielding section to the left or right so that the needles pass the needle hole centers. This is the proper left-and-right position of the yielding section.

Then, tighten the screw ③ securely.





## 4-7 Stitch length adjustment

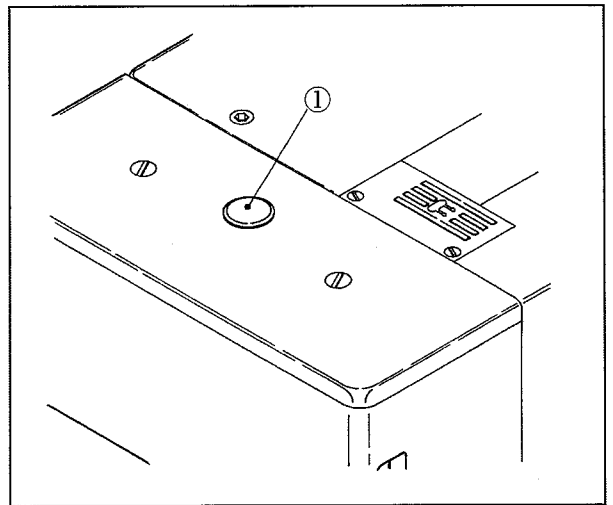
### WARNING

When changing the stitch length, ALWAYS turn the power switch OFF.

The stitch length can be adjusted from 1.4mm to 3.6 mm.

The table below shows numbers of stitches per inch and per 30 mm when the stitch length is 3.6, 2.4, and 1.4 mm.

Stitch Length (mm)	Stitches per	
	Inch	30 mm
3.6	7	8
2.4	10.5	12.5
1.4	18	21



### ☆How to change stitch length

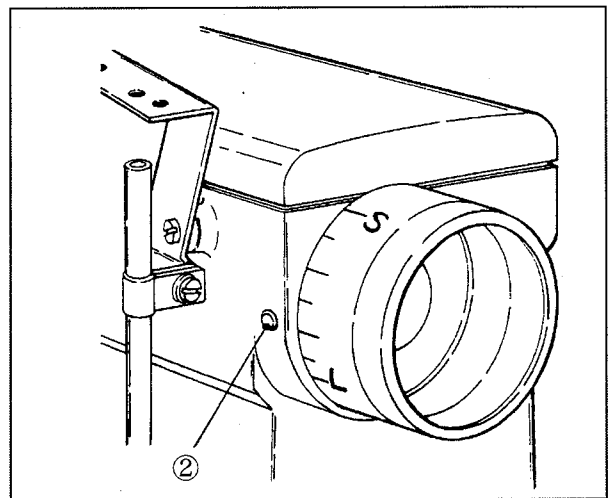
Keep pressing the pushbutton ① lightly and rotate the machine pulley. At a certain point, the button ① enters into the machine. Here, press strongly the button ① and rotate the machine pulley.

To lengthen the stitch length, rotate the pulley clockwise.

When "L" mark is set to the mark ②, the stitch length is 3.6mm.

To shorten the stitch length, rotate the pulley counterclockwise.

When "S" mark is set to the mark ②, the stitch length is 1.4mm.



## 4. Proper operation

### 4-8 Differential feed adjustment

#### (1) Normal differential feed (gather sewing)

Loosen the nut ① and move the lever ② up or down.

Then, set it at a desired position by tightening the nut ① securely.

When the lever ② is set to the scale (long) ③, the ratio of the main feed to the differential feed is 1 : 1.

To obtain normal differential feed, raise the lever ② to the arrow direction X from this position.

The scales indicate 1 : 1.25, 1 : 1.5, 1 : 1.75, 1 : 2 from the scale ③ up.

#### (2) Reverse differential feed (stretch sewing)

To obtain reverse differential feed, lower the lever ② to the arrow direction Y from the scale ③.

When it is set to "S", the ratio of the main feed to the differential feed is 1 : 0.7.

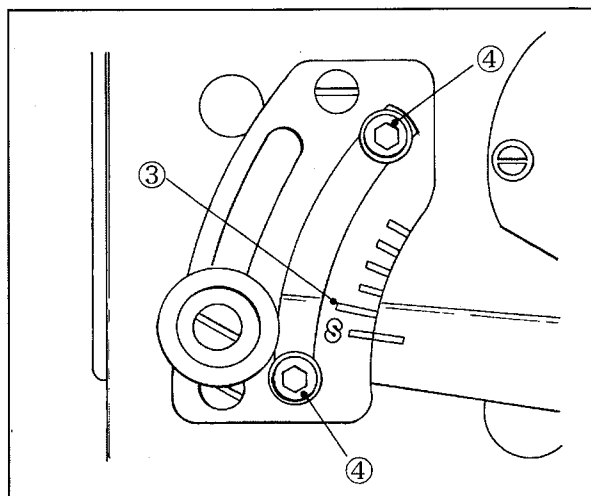
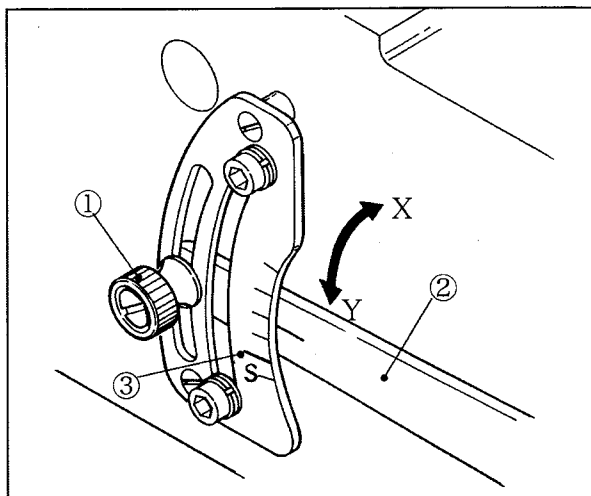
#### (3) Differential feed adjustment during operation

To adjust the differential feed during operation, connect a chain to the lever ②.

Use the two stoppers ④ to limit the lever ②'s movable range during operation.

☆The range of differential ratio changes according to the stitch length.

Please refer to the table below.



Stitch Length	Max. Normal Differential Ratio	Max. Reverse Differential Ratio
3.6 mm	1 : 1.2	1 : 0.7
2.5 mm	1 : 1.6	1 : 0.7
2.0 mm	1 : 1.8	1 : 0.7
1.4 mm	1 : 2	1 : 0.7

## 4-9 HR and SP devices

When sewing at high speeds or using synthetic threads or materials, thread breakage and skip stitches often happen. To reduce these problems, use the HR device ( a needle point cooling device) and the SP device ( a needle thread oiling device). Use silicon oil (dimethyl silicon oil) for these devices.

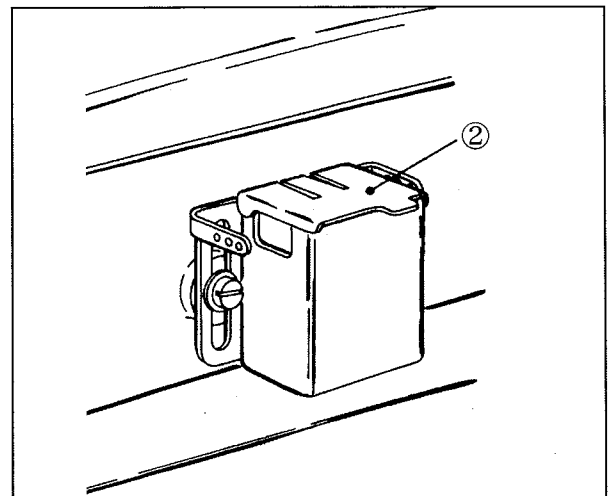
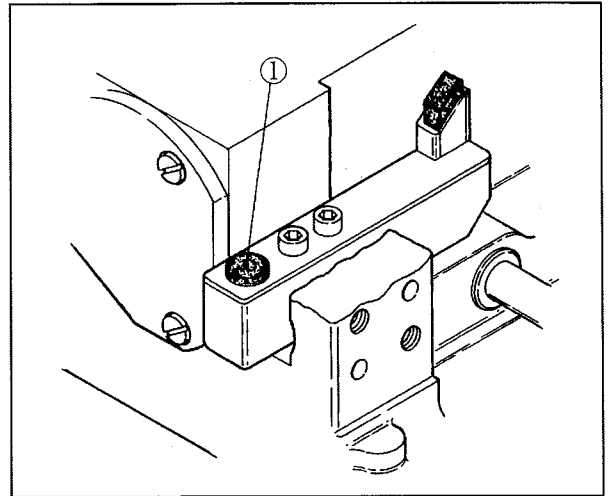
Note: Check sometimes the oil amount by removing the plug ① of the HR container and opening the lid ② of the SP container.

When the amount is low, supply oil.

When not using the HR and SP devices, remove the felts from the devices.

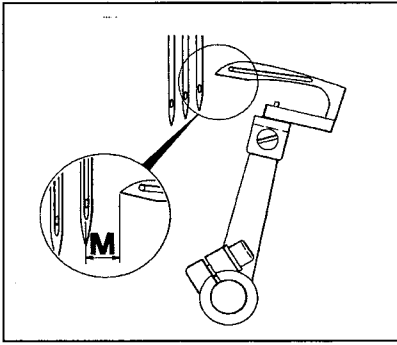
### **CAUTION**

- ◇ When the device is not used, remove the felts ① and ② from the device. If it is left in the device, the sewing condition may be adversely affected.
- ◇ When silicone oil is adhered to other than the device, be sure to wipe it off. If this precaution is not observed, a failure may result in the machine.

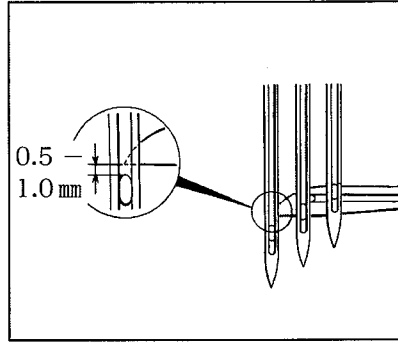


# 5. Adjustments

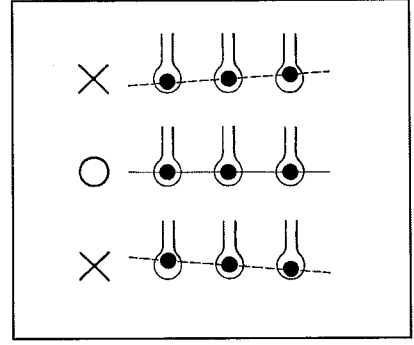
Looper's receding amount



Needle bar height

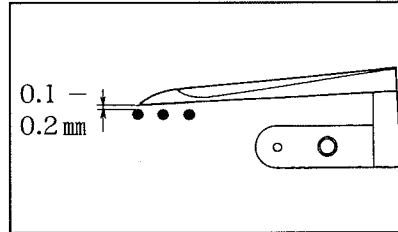


Needles and stitch plate

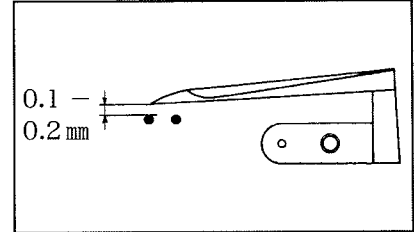


Needle Distance (Mark)	M
3.2 mm	4.4 mm
4.0 mm	4.0 mm
4.8 mm	3.6 mm
5.6 mm	3.2 mm
6.4 mm	2.8 mm

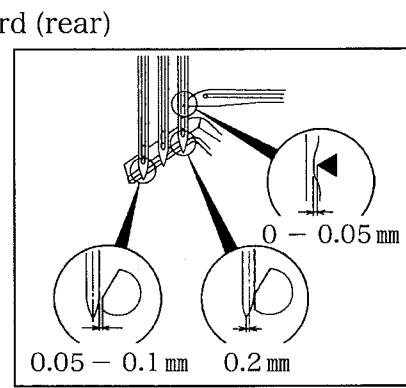
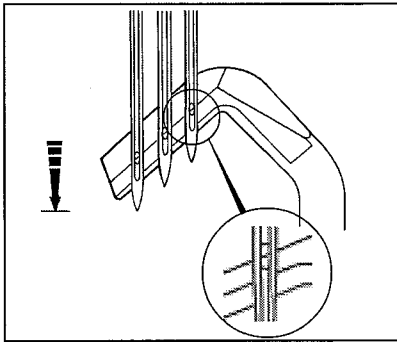
Three needles



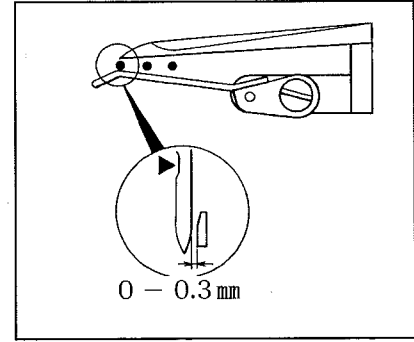
Two needles



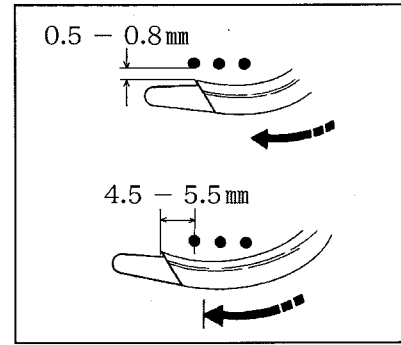
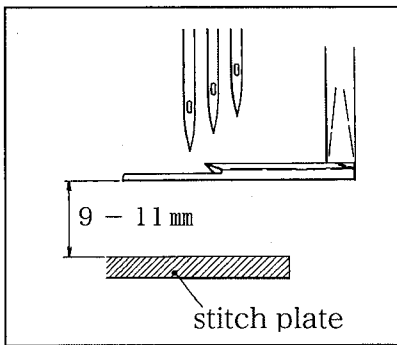
Needle guard (rear)



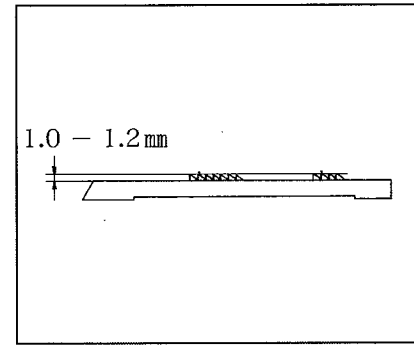
Needle guard (front)



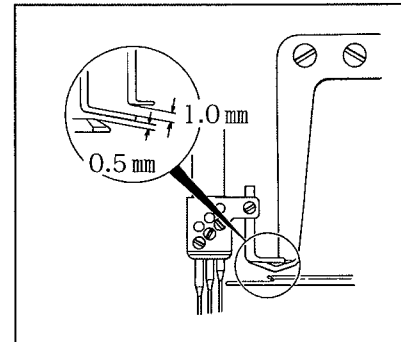
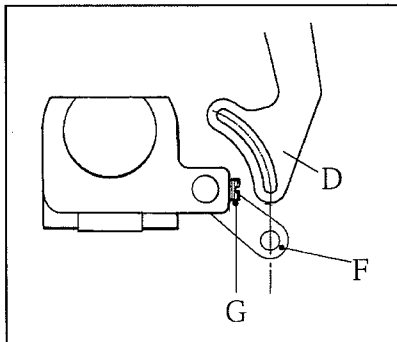
Spreader



Feed dog height



Top cover thread guide



# 6. Specification

Dimensions	Length 500mm Width 250mm Height 430mm
Weight	41 kg
Stitch Type	ISO 406, 407, 602, 605
Applications	Plain and joint sewing for knitted materials
Sewing Speed	Up to 5,500 r.p.m. (with spreader)
Stitch Length	1.4 – 3.6mm    7 – 18 stitches per inch (25.4mm) 8 – 21 stitches per 30 mm
Needle System	UY128GAS #65 – #90
Needle Distance	2 needles : 3.2, 4.0mm 3 needles : 4.8, 5.6, 6.4 mm
Needle Stroke	31 mm
Presser Foot Lift	7.0mm (with spreader)
Feed Regulation	Pushbutton system
Differential Ratio	Maximum normal differential ratio : 1 : 2 Maximum reverse differential ratio : 1 : 0.7
Differential Feed Regulation	Adjustment during operation is also possible by moving external lever
Lubrication	Automatic lubrication by trochoid-shaped pump
Lubricating oil	YAMATO SF OIL
Capacity of Oil Reservoir	1,100 cc
Installation	Semi-submerged type

***Yamato***  
***YAMATO SEWING MACHINE***

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