



SINGLE-NEEDLE LOCKSTITCH UPPER AND LOWER FEED  
INDUSTRIAL SEWING MACHINE

MODEL

**DY-253**

INSTRUCTION MANUAL



## INDEX

1. Specification .....	2
2. Main parts name of machine head .....	2
3. Preparation before starting to operate (Lubrication) .....	4
4. How to attach needle .....	6
5. How to wind the lower thread on the bobbin .....	6
6. Threading .....	7
7. Adjustment of stitch length .....	7
8. Adjustment of thread tension .....	8
9. Upper thread tension .....	8
10. Lower thread tension .....	8
11. Adjustment of pressure on pressure foot .....	8
12. Adjustment of walking foot and presser foot .....	9
13. Adjustment of proper timing movement of walking foot .....	10
14. A gap between the presser foot and walking foot .....	10
15. Timing between upper and lower feed .....	11
16. The position of the hook and needle .....	11

## 1. Specification

Sewing material	:	Extra heavy weight material (tent, bag, trunks & seat, etc.)
Max. speed	:	1200 spm.
Needle bar stroke	:	50.8
Thread take up	:	Link motion type (large size)
Hook	:	Large size rotating hook.
Presser bar stroke	:	Hand 12.7mm Pedal 15mm
Max. stitch length	:	12.7mm
Feed mechanism	:	Eccentric mechanism
Feed system	:	Alternating upper & lower feed
Reverse stitching	:	Spring return lever or pedal system
Needle	:	DD x 1 # 25
Stitch type	:	Single needle lockstitch
Lubrication	:	Direct with oil tank
Oil circulation	:	Automatic capillary action of oil wicks
Oil	:	White spindle oil
Table	:	132 type
Motor	:	Mitsubishi clutch motor (400W)

## 2. Main parts name of machine head

- |   |   |  |
|---|---|--|
| 1) Face plate                                   | 12) Thread guide                                | 23) Upper feed lifting rock shaft                  |
| 2) Walking foot pressure regulating thumb screw | 13) Upper thread tension regulator (lower)      | 24) Upper feed rock shaft crank (left)             |
| 3) Presser foot pressure regulating thumb screw | 14) Thread guide                                | 25) Upper feed rock shaft connecting crank (left)  |
| 4) Upper thread tension regulator (upper)       | 15) Slide plate (right)                         | 26) Square block                                   |
| 5) Oil tank (left)                              | 16) Presser foot                                | 27) Connecting lever                               |
| 6) Spool pin                                    | 17) Walking foot                                | 28) Connecting link                                |
| 7) Oil tank (right)                             | 18) Slide plate (left)                          | 29) Oil gauge                                      |
| 8) Balance wheel                                | 19) Needle plate                                | 30) Upper feed rock shaft connecting crank (right) |
| 9) Rubber plug                                  | 20) Knee lifter lever                           | 31) Lifting lever connecting rod                   |
| 10) Reverse stitch lever                        | 21) Upper feed rock shaft                       |  |
| 11) Thread take-up lever                        | 22) Upper feed lifting rock shaft crank (right) |  |

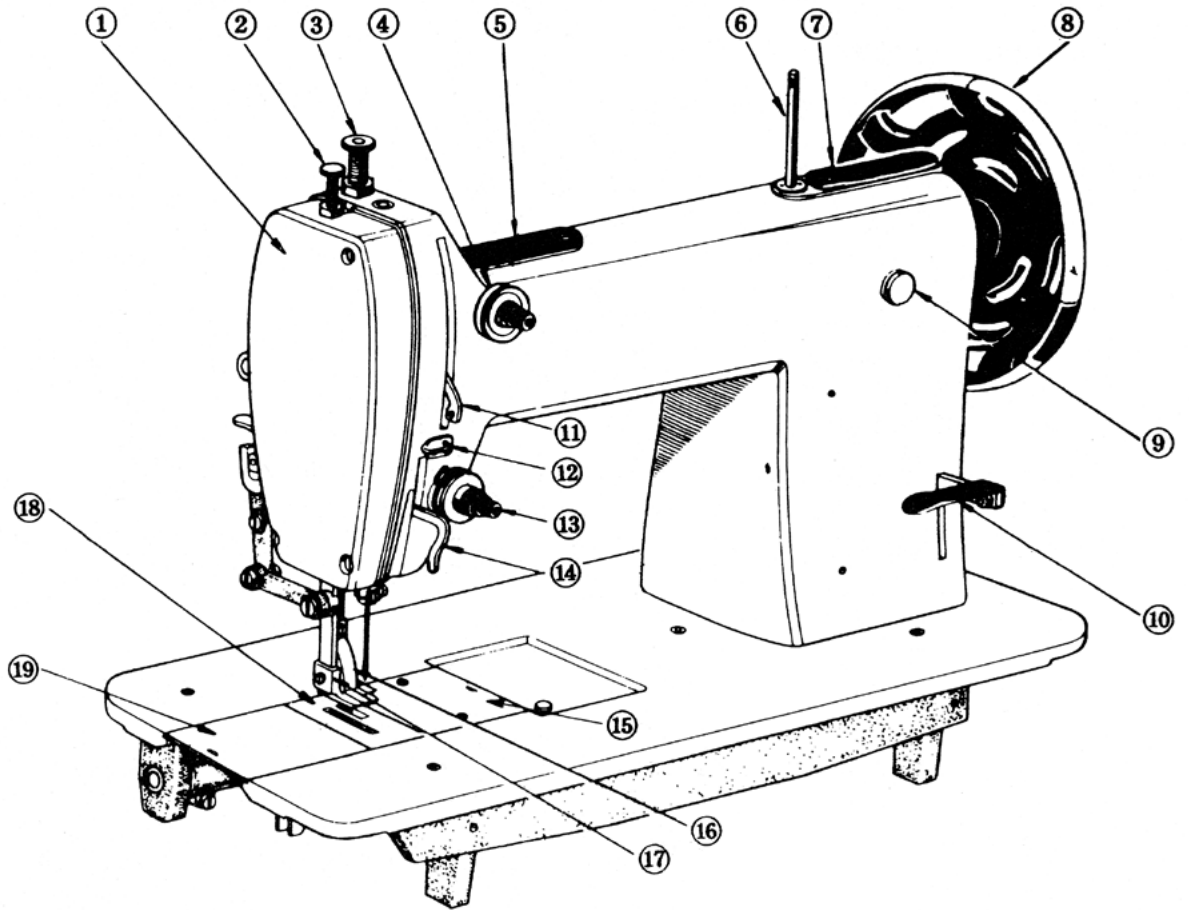


Fig. 1

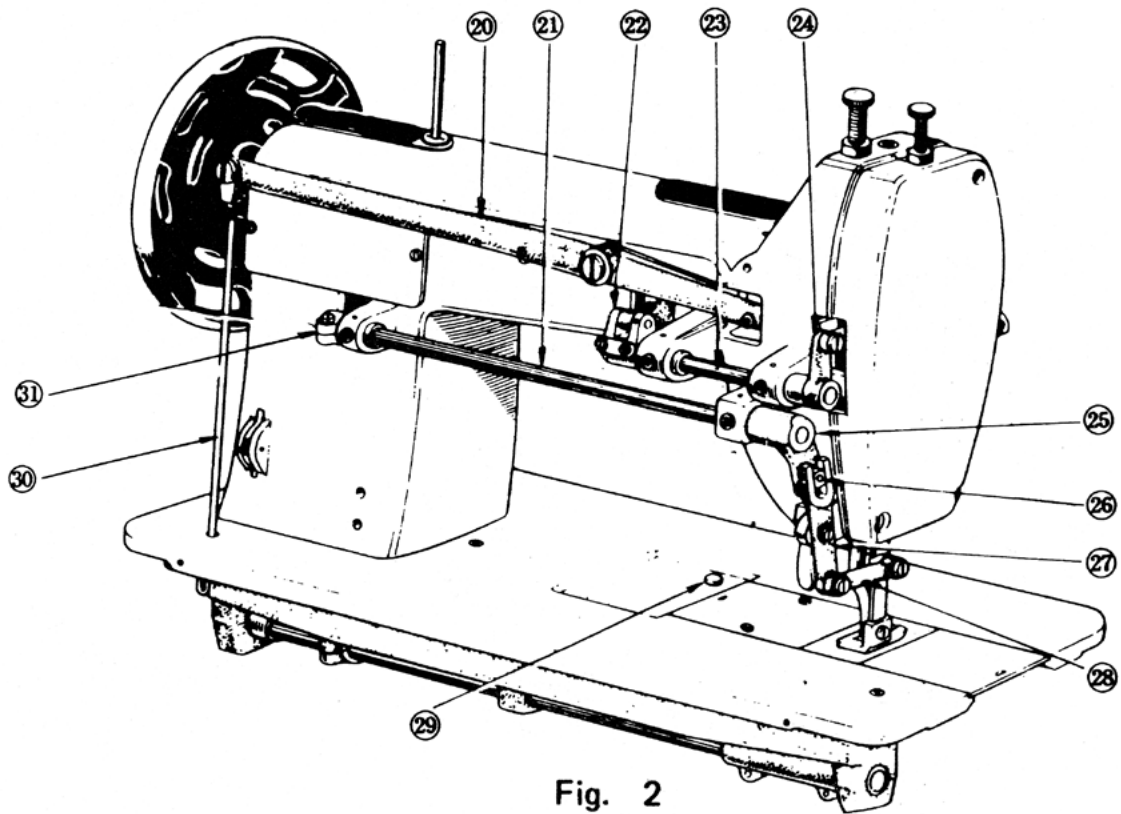


Fig. 2

### 3. Preparation before starting to operate

#### 1) Lubrication before starting to sew:

As the machine is drip lubrication from the oil reservoir, it is necessary to give oil thoroughly into the reservoir before starting operation each day.

Before starting to sew lubricate oil in following order.

##### (1) Lubrication before starting to sew:

Before starting to sew, lubricate oil in the arrowed parts of Fig. 3 to 5.

To lubricate upto the rotating parts of machine, lubricate oil by rotating the balance wheel slowly by hand.

##### (2) Volume of lubrication:

- ⊙ → --- About 5cc
- → --- About 5-6 drops.
- --- About 1-2 drops.

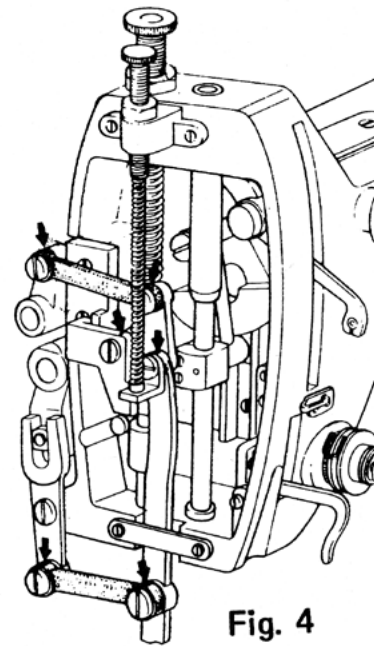


Fig. 4

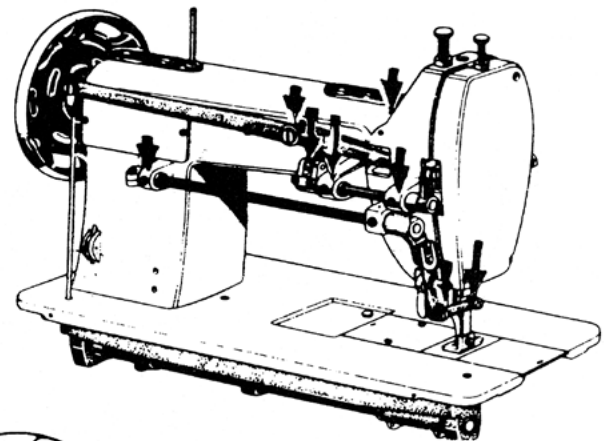


Fig. 5

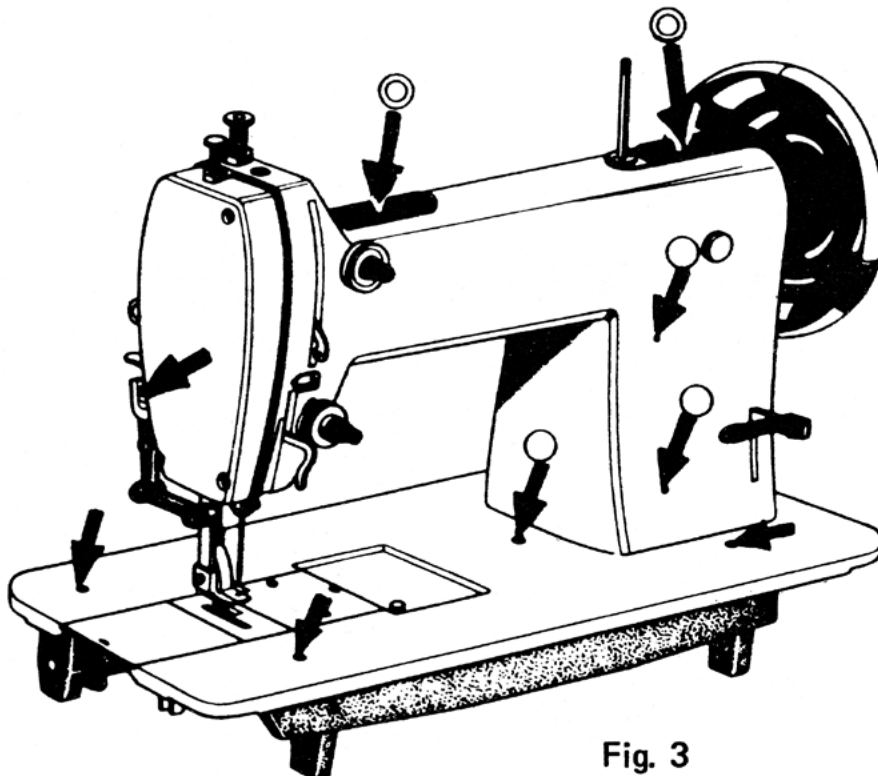


Fig. 3

(3) Lubrication for machine bed oil tank:

Pour oil upto the position on the oil gauge pulling out by hand. (Fig. 6)

In case of oil volume is insufficient, it will not lubricate to respective necessary parts and hook, so be sure to check it occasionally and replenish sufficiently to prevent locking-up of the machine.

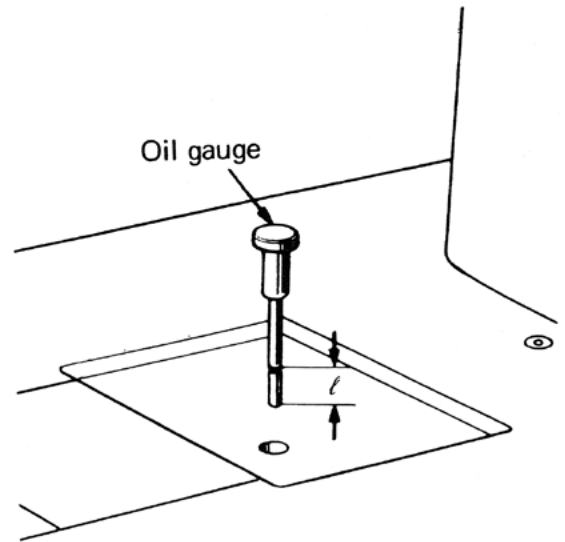


Fig. 6

2) Application of grease:

Apply grease into the gear box by removing the greasing hole screw (A) and (B). (Fig. 7-8)

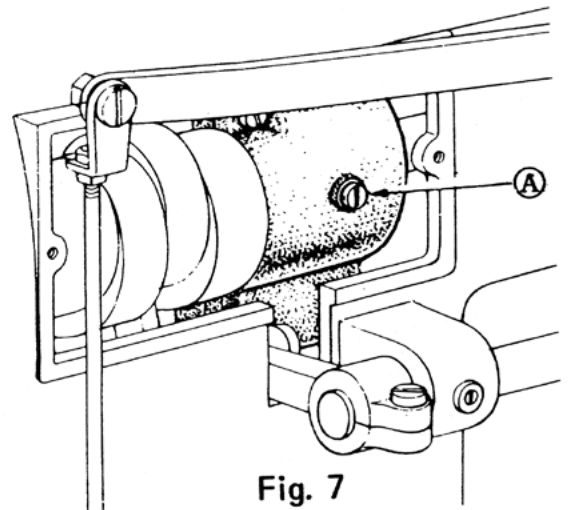


Fig. 7

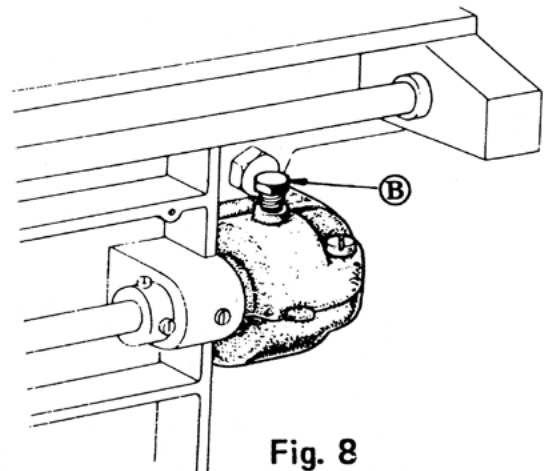
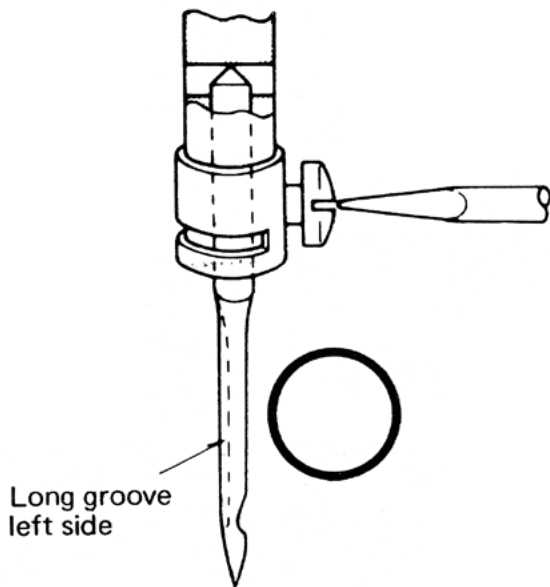


Fig. 8

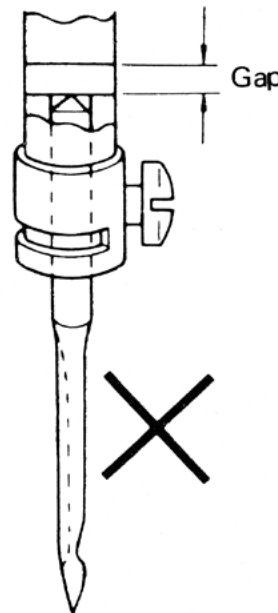
#### 4. How to attach needle:

Note: Before making the following adjustment, switch off the power source by all means.

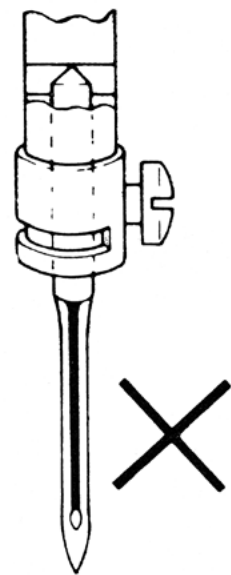
Insert the needle upto the bottom of needle clamp and tighten the screw keeping the long groove side of needle toward the left.



Insufficient insertion



Needle distorted



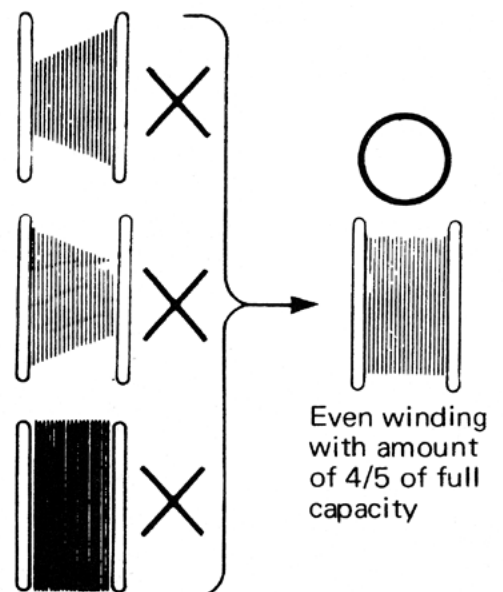
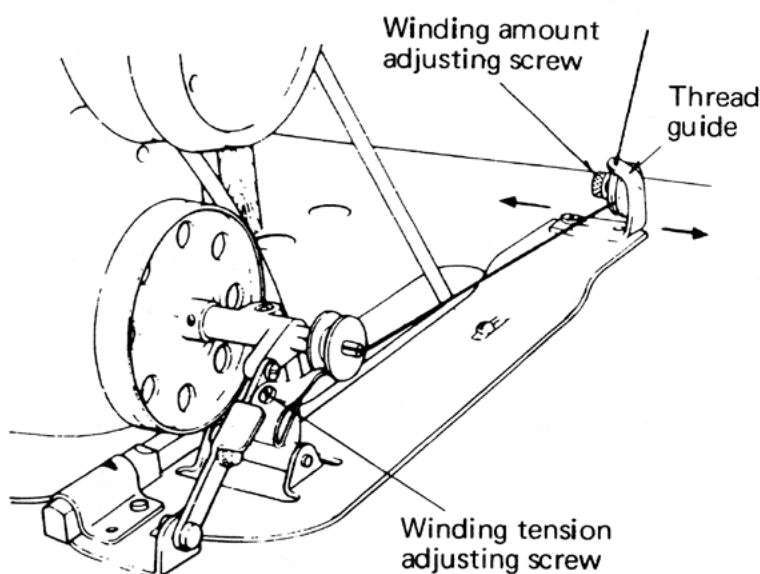
#### 5. How to wind the lower thread on the bobbin

Note: In case of rotate the machine with sewing, keep the presser foot raised.

Adjustment: \*\* Strength of winding: Particularly in case of nylon or tetoron thread. It is desirable the bobbin is wound enough loose.

\*\* Uneven winding: In case of uneven winding, adjust the thread guide slightly toward less wound part of bobbin so that to obtain even winding.

\*\* Winding amount of thread: When the winding amount of thread is excessive loosen adjusting screw and tighten when insufficient.





## 6. Threading

Raise the thread take-up lever to its highest position and thread the upper thread in the following order.

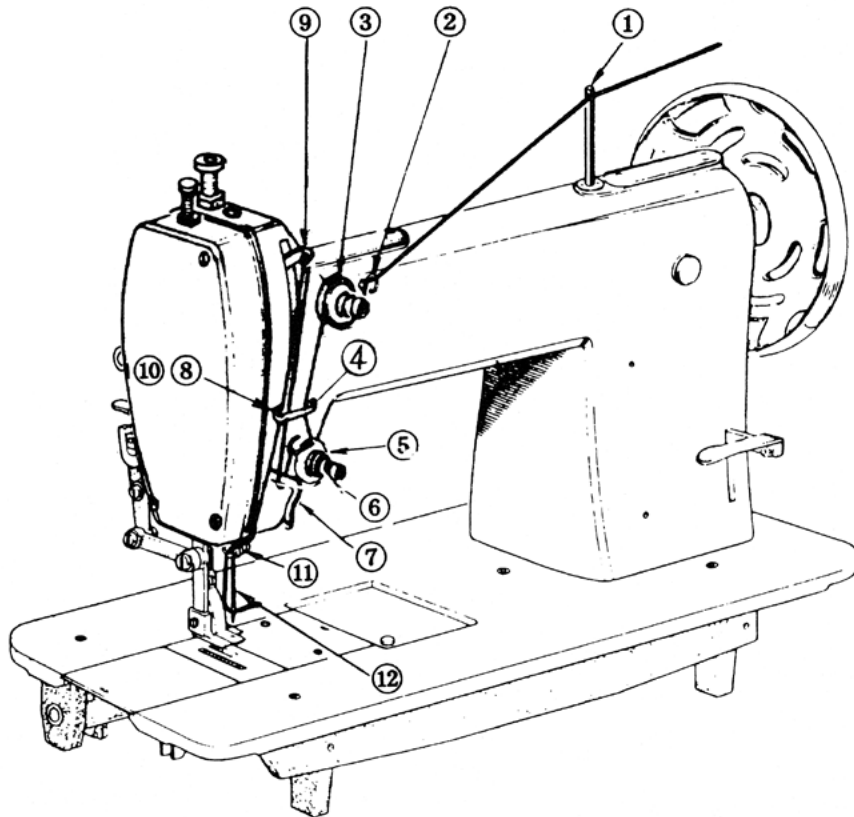
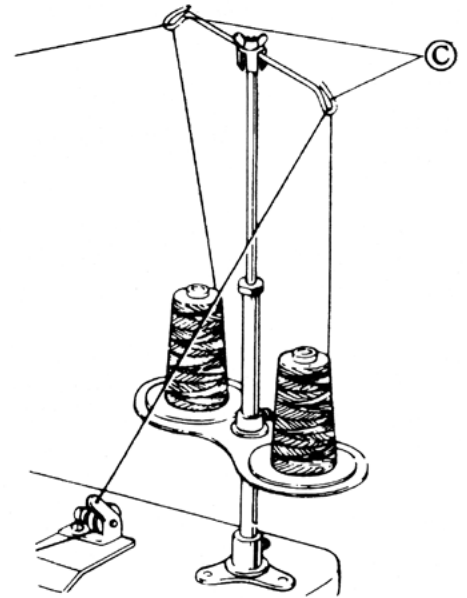


Fig. 9

Note: The thread guide (C) of cotton stand is to be put just above of spool.



## 7. Adjustment of stitch length

- (1) Remove the rubber plug (A) on the machine arm.
- (2) Loosen the two screw (B) by rotating the balance wheel by hand (Fig. 11).
- (3) Then rotate the balance wheel by about  $90^{\circ}$  ( $\frac{1}{4}$  rotation) toward the other side and adjust the stitch length by adjusting screw (C). To increase the stitch length turn it anticlockwise and to shorten clockwise (Fig. 12).
- (4) After the adjustment tighten the screw (B) firmly.
- (5) The screw (D) is not required to loosen (Fig. 11).

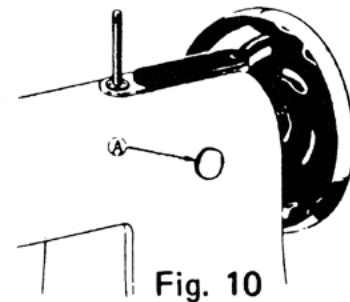


Fig. 10

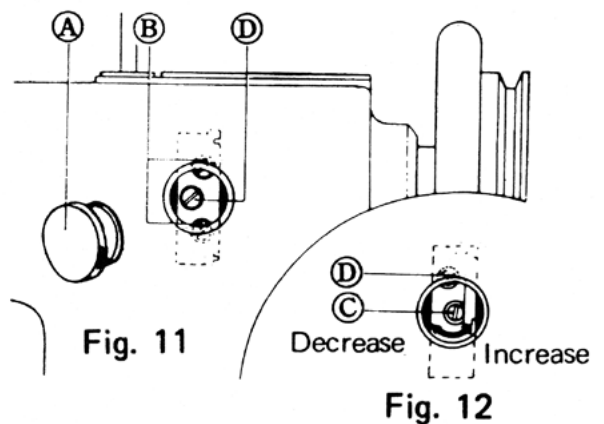
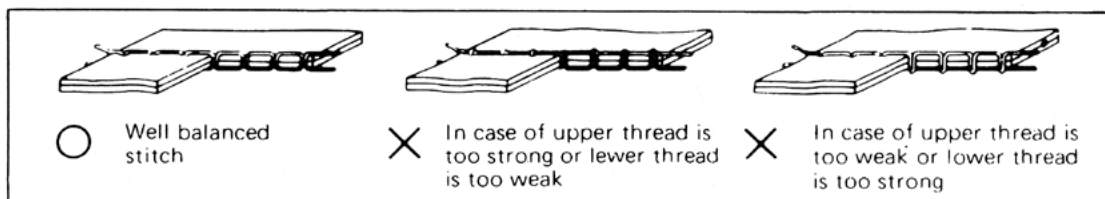


Fig. 11

Fig. 12

## 8. Adjustment of thread tension

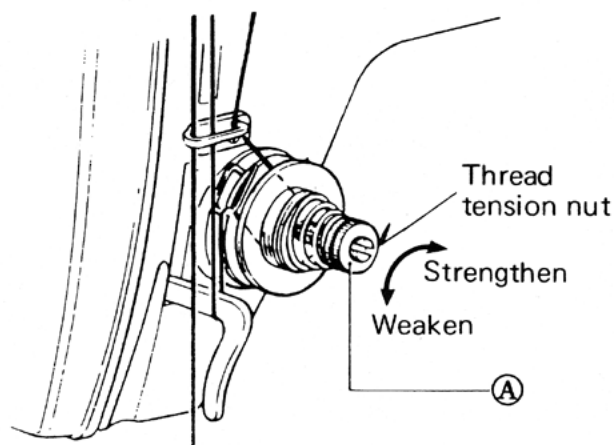


## 9. Upper thread tension

\*\* Upper thread is adjusted according to the lower thread tension.

\*\* Upper thread tension is adjusted by tension regulating thumb nut.

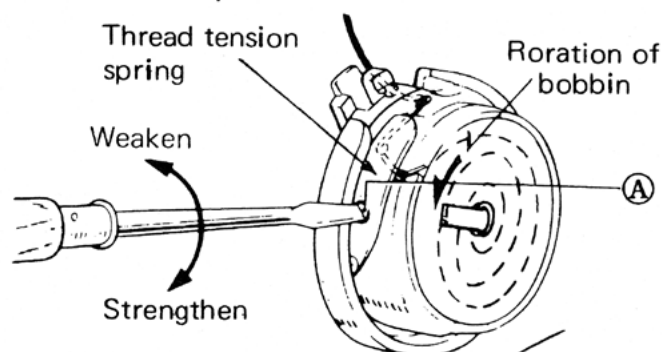
For special fabric sewing with special thread, the desired tension can be obtained by adjusting the strength and operating range of thread take-up spring.



## 10. Lower thread tension

Lower thread tension can be adjusted by screw A.

In case of cotton thread No.3, the regular thread tension can be checked as the following. Hold the end of pulled out thread, and if the bobbin case fall slowly, the proper tension is obtained.



## 11. Adjustment of pressure of the presser foot

Adjustment of pressure of presser foot can be done by means of the presser regulating thumb screw Ⓑ (large).

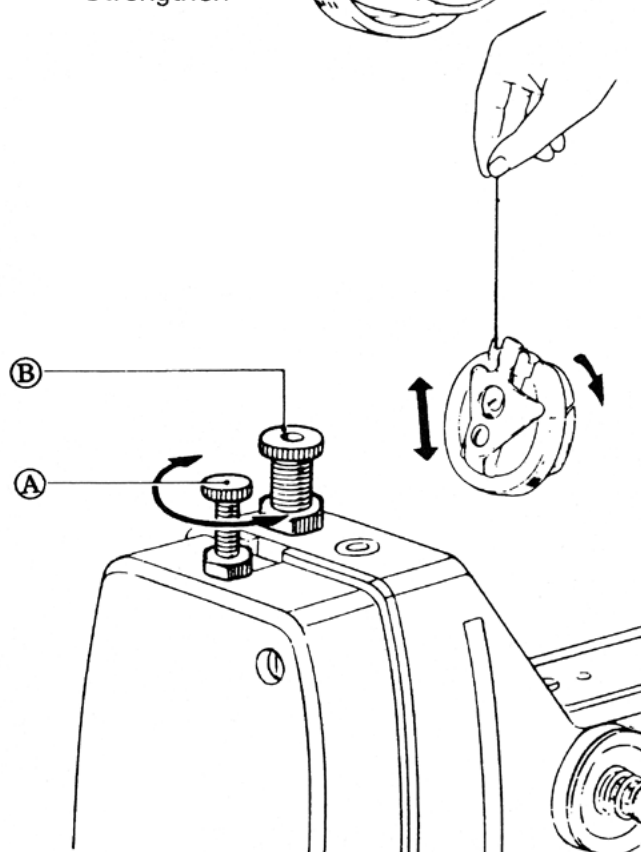
Turn the screw to the right to strengthen.

Turn the screw to the left to weaken.

Adjustment of pressure of walking foot can be done by means of the presser regulating thumb screw Ⓐ (small).

Turn the screw to the right to strengthen.

Turn the screw to the left to weaken.



## 12. Adjustment of walking foot and presser foot

### 1) Adjustment of alternating movement and height

The amount of movement is evenly adjusted as it is. But adjust the walking foot and presser foot alternating movement changing it evenly according to the material to be sewn so that more smooth normal feeding can be obtained.

For instance, in case of sewing up a slipping material, decrease the presser foot movement and increase the walking foot movement so that you can have effectiveness.

#### How to adjust (Fig. 13)

- (1) Rotate the balance wheel by hand and stop it when the thread take-up lever would be downward to its lowest position.
- (2) Lower the presser bar lifter.
- (3) Loosen the two screw(A) of the upper feed lifting rock shaft crank(right).
- (4) In proposition to moving the upper feed lifting rock shaft crank(left) to the right, the presser foot movement would be decreased and walking foot movement would be increased.
- (5) On the contrary, in case move to the left, the opposit effectiveness would be resulted.
- (6) After the adjustment tighten the two screws(A) firmly.

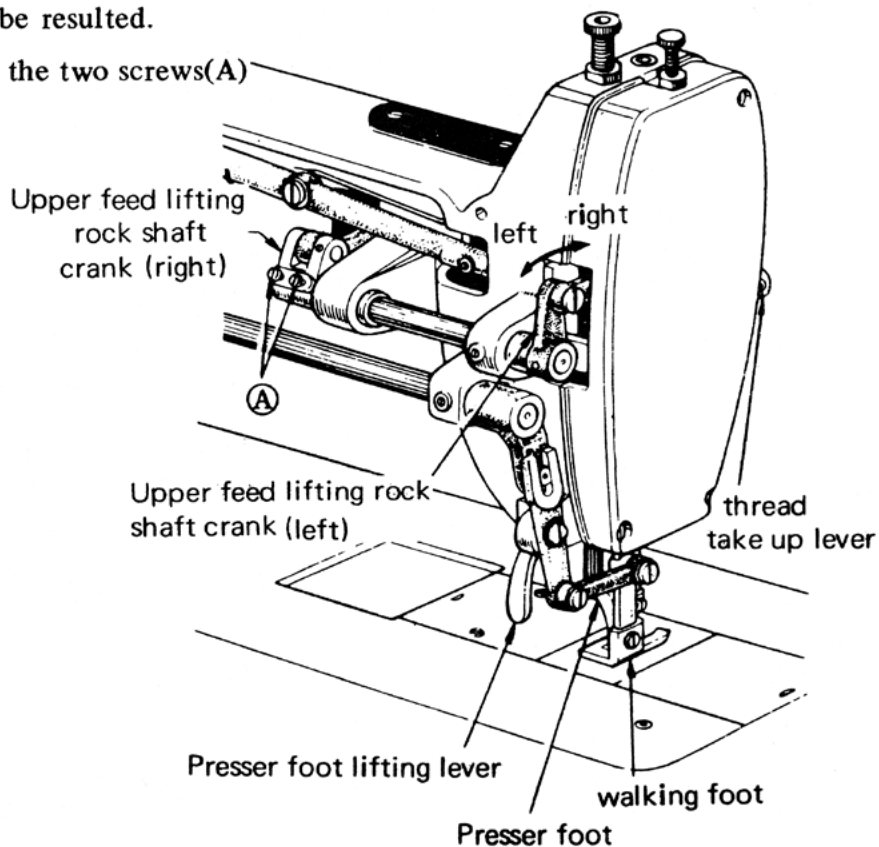


Fig. 13

### 13. Adjustment of proper timing movement of walking foot

According to variation of fabrics to be sewn appropriate stitching adjustment can be obtained by means of making a timing of the walking foot movement faster or slower against the feed dog movement.

#### How to adjust (Fig. 14)

- (1) Loosen the eccentric ring set screw(B) on the back of arm.
- (2) While fixed the eccentric by hand or screw driver, adjust it rotating the balance wheel slowly by hand.
- (3) Rotate the balance wheel toward your side so that the timing of walking foot movement would be slower.
- (4) Rotate the balance wheel toward the other side so that the timing of walking foot movement would be faster.
- (5) After the adjustment tighten the screw(B) firmly pushing the eccentric ring to the way of arrow shown in Fig.

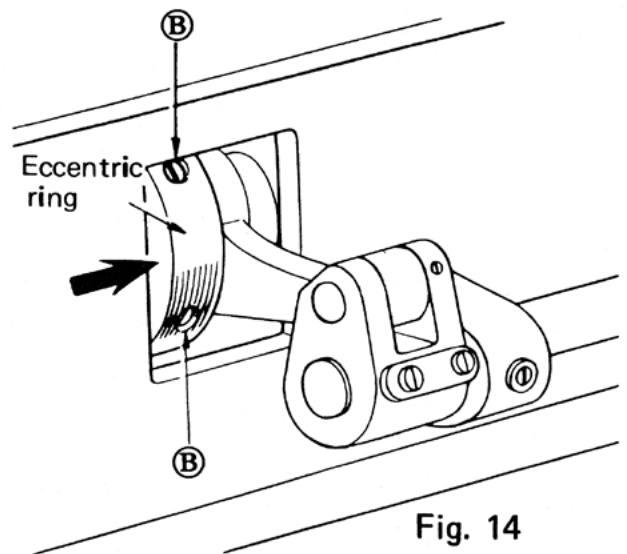


Fig. 14

### 14. A gap between the presser foot and walking foot

In case of gap(C) of presser foot and walking foot is wider excessively, and either presser feet are touched please adjust it in the position described as following.

#### How to adjust

- (1) Loosen the screw(D) on the upper feed rock shaft crank(right).
- (2) Adjust the gap properly moving the walking foot back and forth.
- (3) After the adjustment tighten the screw(D) firmly.

On the delivery machine is adjusted for narrowest gap of 3mm when the maximum stitch length of 12.7mm.

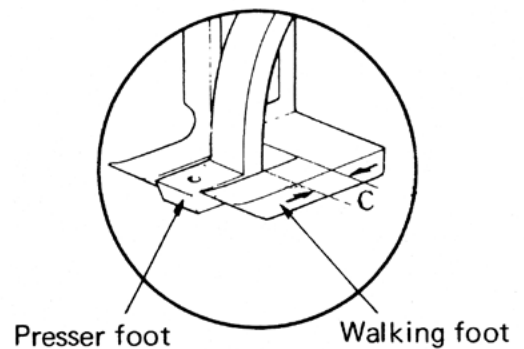


Fig. 15

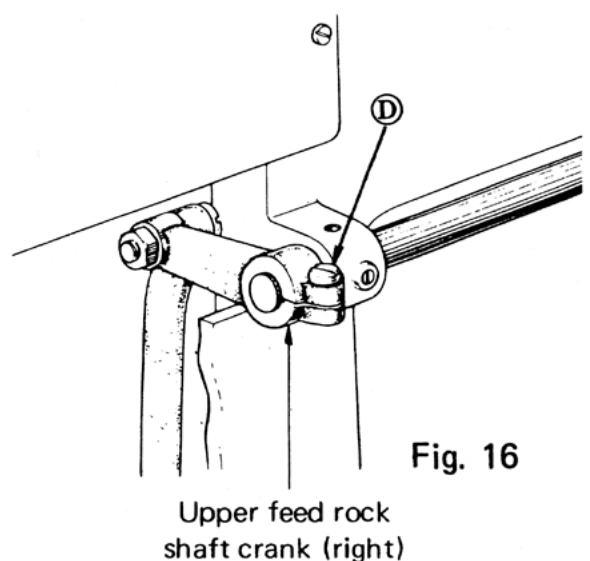


Fig. 16

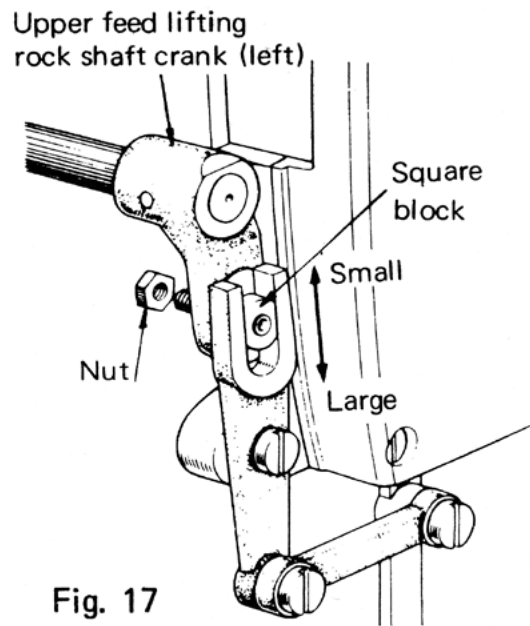
Upper feed rock shaft crank (right)

## 15. Timing between upper and lower feed

The amount of feed dog movement is evenly adjusted for the upper feed amount. But according to the material to be sewn appropriate stitching can be obtained by means of making a timing of the walking foot movement faster or slower against the feed dog movement.

### How to adjust (Fig. 17)

- (1) Loosen then nut on the upper feed lifting rock shaft crank (left).
- (2) To decrease the movement, slide the square block upward and to increase for the downward.
- (3) After the adjustment tighten the nut firmly.



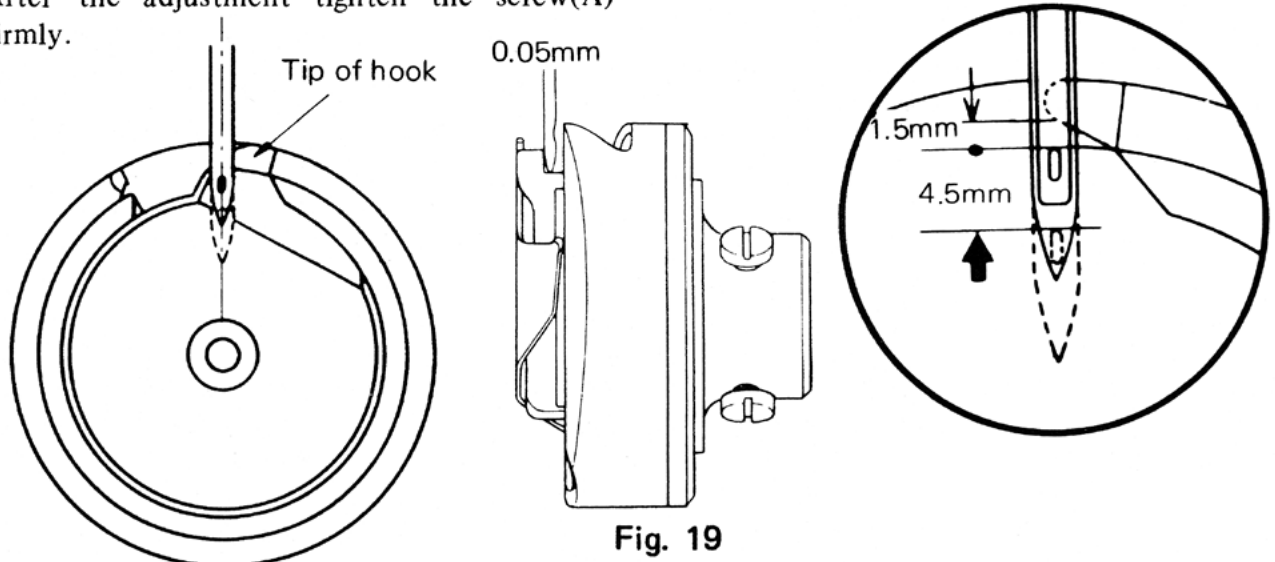
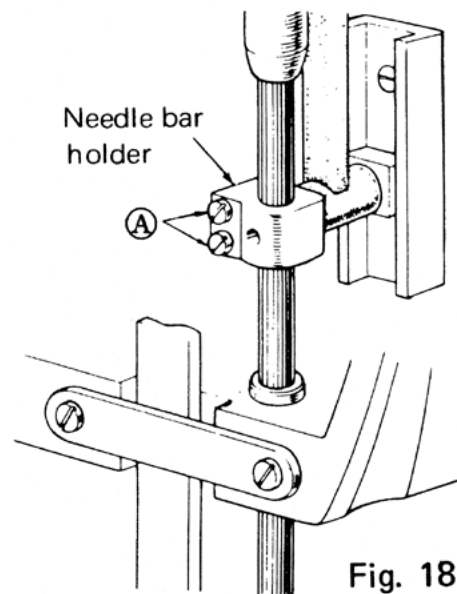
## 16. The position of the hook and needle

- (1) Turn the balance wheel by hand so that the needle comes to its lowest position. Thereafter, raise the needle by 4.5mm from the lowest position, and then adjust the hook so that the tip of hook comes to the center line of the needle (Fig.19).

At the same time, adjust the height of needle so that the gap between upper side of needle thread hole and the tip of hook would be 1.5mm.

- (2) The gap between the concave face of the needle and tip of hook would be approx. 0.05mm as shown in Fig. 19.
- (3) To adjust the height of needle, loosen the screw (A) of the needle bar holder (Fig. 18) and move the needle bar up and down by hand.

After the adjustment tighten the screw(A) firmly.



# MEMO



**MITSUBISHI ELECTRIC CORPORATION**

Printed in Japan

From the library of Superior Sewing Machine & Supply LLC - [www.supsew.com](http://www.supsew.com)