



MITSUBISHI INDUSTRIAL SEWING MACHINE

Model

LU2-4400·4420

classes

**Single-Needle, Double-Needle
Compound-Feed
Lockstitch**

PRECAUTIONS BEFORE STARTING TO OPERATE

(1) Safety Precautions

1. Keep your hands and fingers away from the area around the needle and the area around the pulley when turning the power on.
2. Power must be turned off when the machine is not in use, or when the operator leaves his/her seat.
3. Power must be turned off before tilting the machine head, installing or removing the "V" belt, adjusting the machine, or replacing its parts.
4. Avoid placing fingers, hair, bars etc., near the pulley, "V" belt, bobbin winder, or motor when the machine is operating.
5. Do not insert fingers into the thread take-up cover, under/around the needle, or pulley when the machine is operating.
6. If a belt cover, finger guard, and/or eye guard are installed, do not operate the machine without these safety devices.

(2) Precautions before Starting Operation

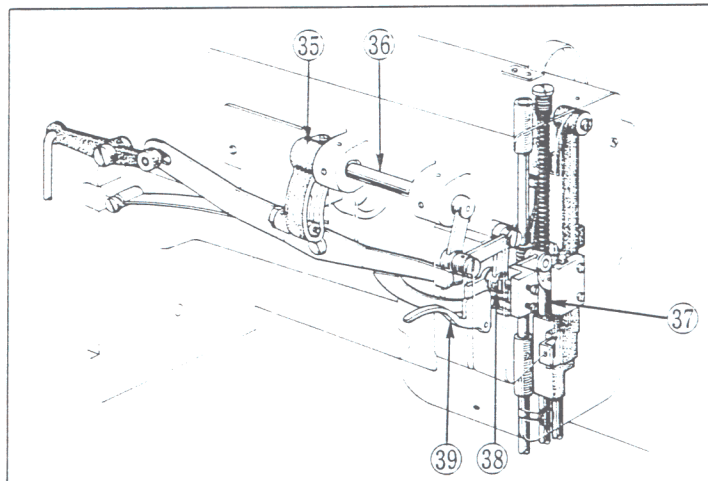
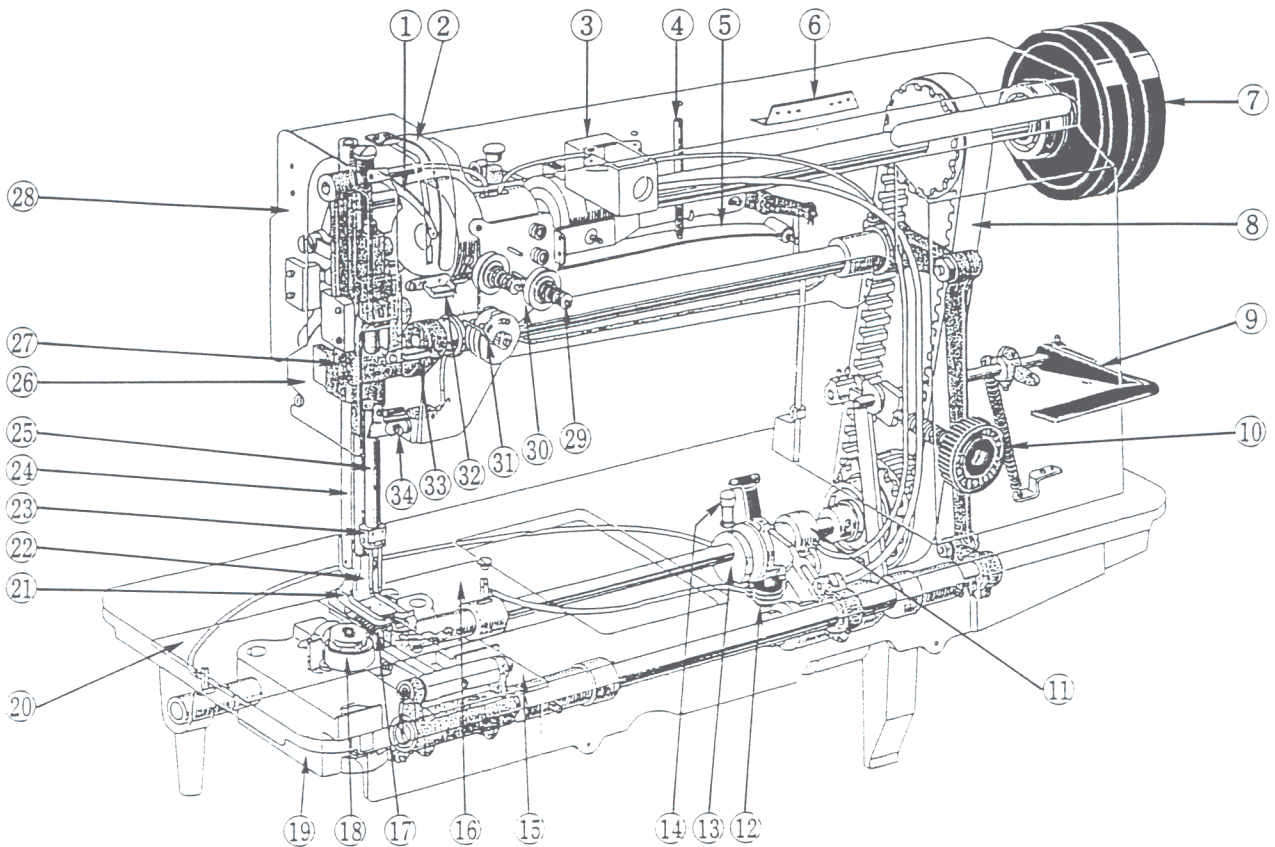
1. If the machine's oil pan has an oil sump, never operate the machine before filling it.
2. If the machine is lubricated by a drop oiler, never operate the machine before lubricating.
3. When a new sewing machine is first turned on, verify the rotational direction of the pulley with the power on.
(The pulley should rotate counterclockwise when viewed from the pulley.)
4. Verify the voltage and (single or three) phase with those given on the motor nameplate.

(3) Precautions for Operating Conditions

1. Avoid using the machine at abnormally high temperatures (35°C or higher) or low temperatures (5°C or lower). Otherwise, machine failure may result.
2. Avoid using the machine in dusty conditions.

INSTRUCTION MANUAL

Name of major parts

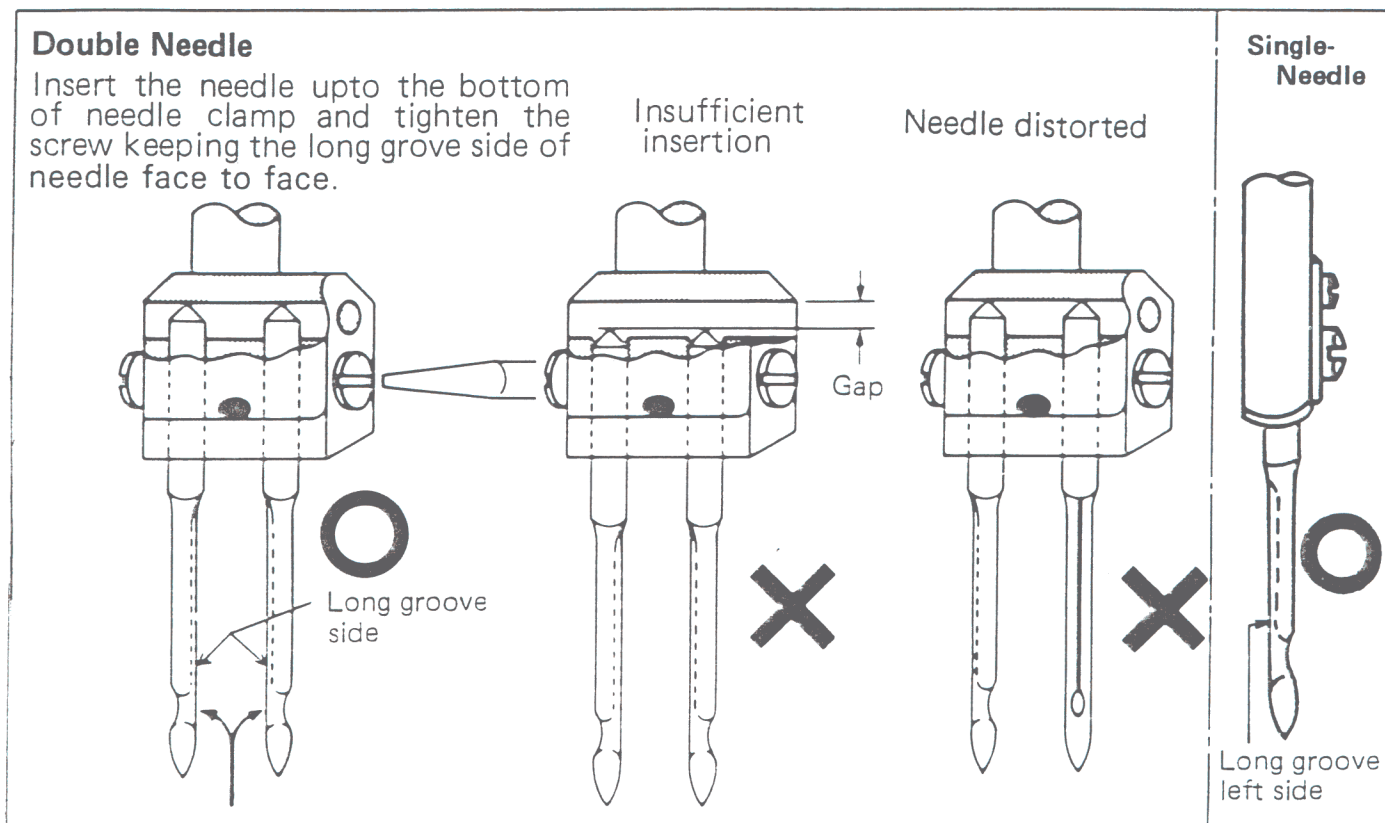


- | | | |
|--------------------------------|----------------------------|---------------------------------------|
| 1) Thread take-up lever | 14) Push button | 27) Needle bar guide bracket |
| 2) Thread take-up lever cover | 15) Slide plate (front) | 28) Adapter plate |
| 3) Oil tank | 16) Slide plate (right) | 29) Thread tension adjusting nut |
| 4) Presser adjusting screw | 17) Feed dog | 30) Thread tension regulator complete |
| 5) Presser plate spring | 18) Hook complete | 31) Thread take-up spring |
| 6) Thread guide | 19) Hook saddle | 32) Thread guide (upper) |
| 7) Balance wheel | 20) Slide plate (left) | 33) Thread guide (middle) |
| 8) Cog belt | 21) Presser foot (outside) | 34) Thread guide (lower) |
| 9) Feed reverse lever | 22) Presser foot (inside) | 35) Crank |
| 10) Stitch length setting dial | 23) Needle clamp | 36) Crank shaft |
| 11) Oiling system | 24) Presser bar (outside) | 37) Presser bar (inside) |
| 12) Filter | 25) Needle bar | 38) Bell crank |
| 13) Feed cam | 26) Face plate | 39) Presser lifter |

How to use the machine

1. How to attach needle

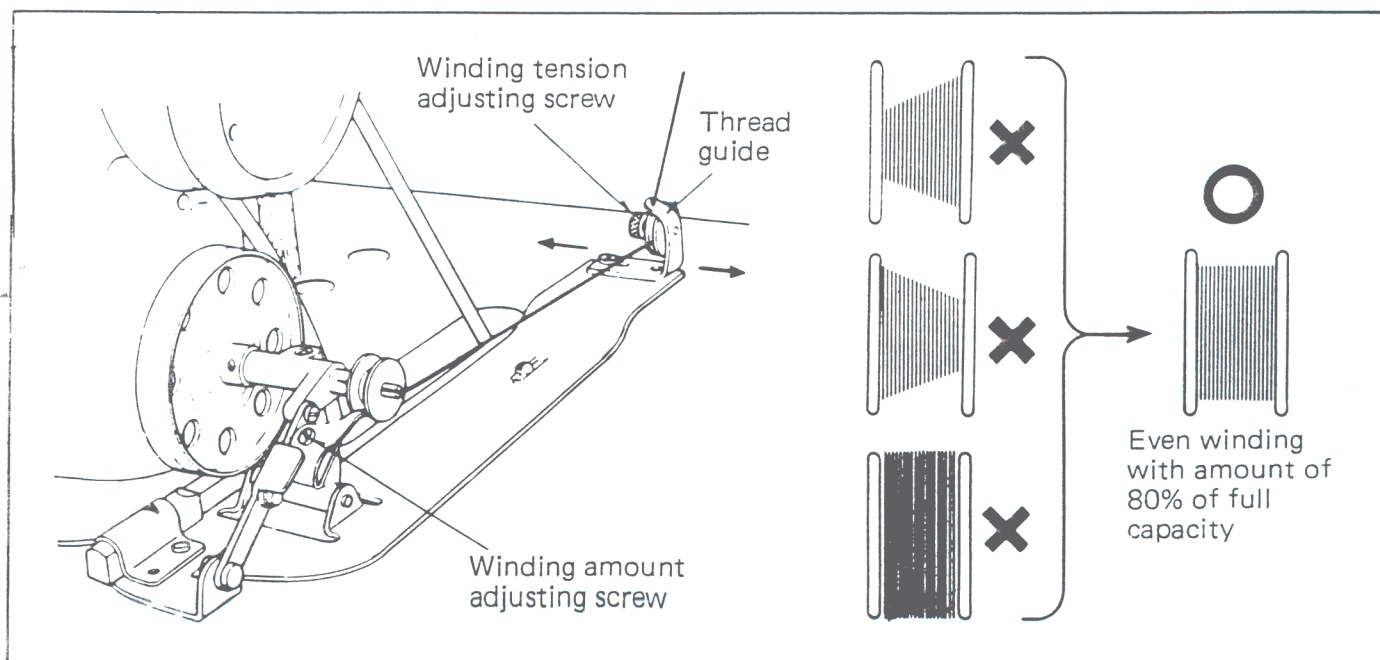
Note: Before making the following adjustment, switch off the power source by all means.



2. How to wind the bobbin

Note: In case of rotating the machine without sewing, keep the presser foot raised.

- Adjustment: ** Tightness of winding: Particularly in case of nylon or tetron thread. It is desirable that the bobbin is wound loose enough.
- ** Uneven winding: In case of uneven winding, adjust the thread guide slightly toward the less wound part of bobbin so that to obtain even winding.
- ** Winding amount of thread: When the winding amount of thread is excessive loosen the adjusting screw and tighten when insufficient.



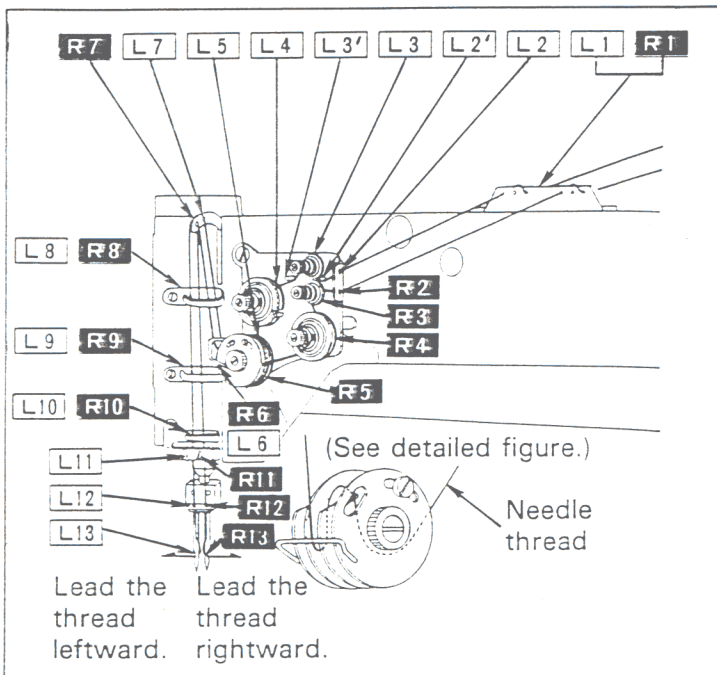
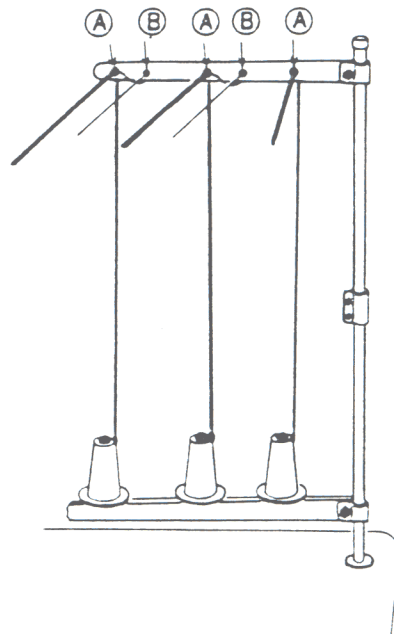
How to use the machine

3. Threading of needle threads

(1) Pass each needle thread through thread guide (A).

Note: When thin slippery thread (polyester thread or filament thread, for example) is used, pass the thread through thread guide (B) as well.

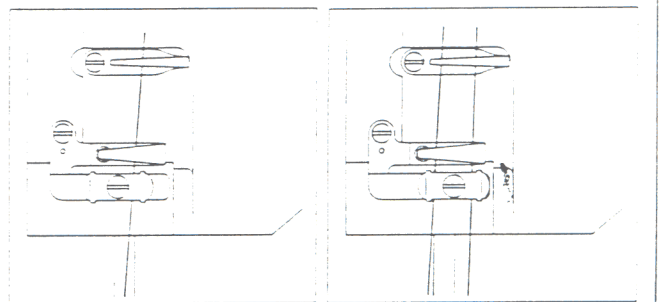
(2) With the take-up lever located at the upper most position, pass each needle thread in the order shown in the following figure.



L11, R11 Detail

LU2-4400

LU2-4420



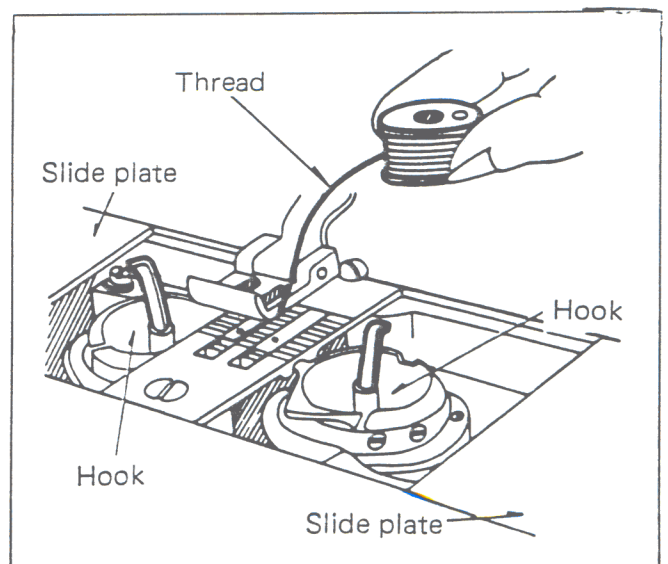
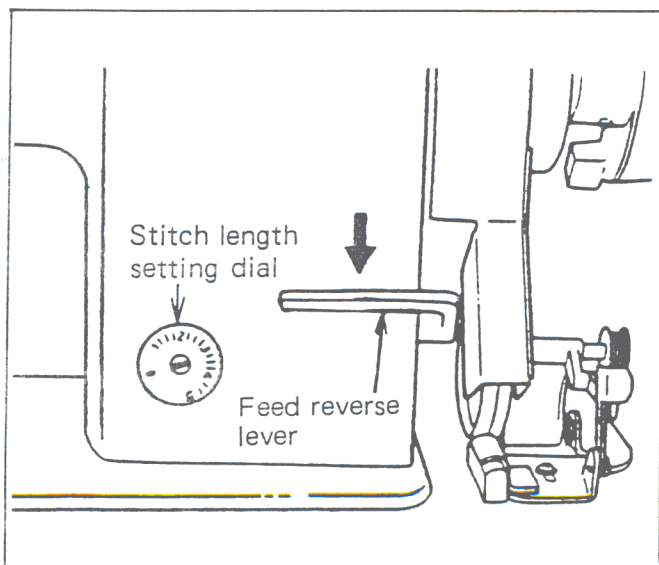
4. Adjustment of stitch length and reverse-stitch operation

Note: To make stitch length shorter, depress the reverse lever and turn the stitch length setting dial.

Reverse-stitch operation ... Stitching goes back while the feed reverse lever is held down.

5. How to place the bobbin into the hook

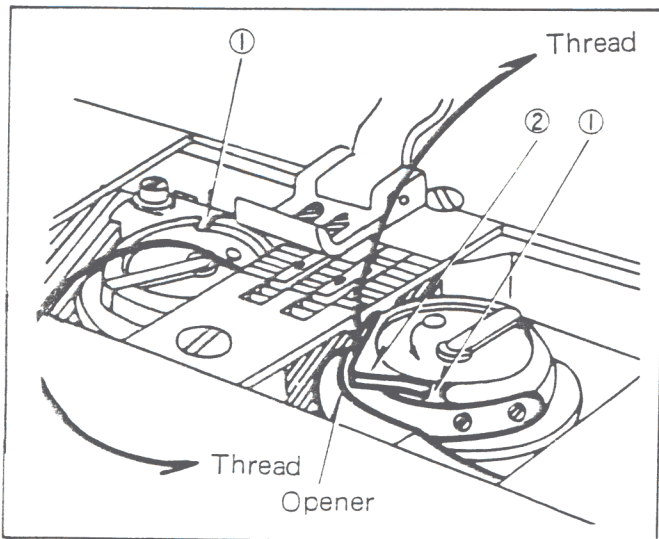
Note: In case of placing the bobbin into the hook, place the bobbin by making winding toward the thread in correct direction shown in Fig.



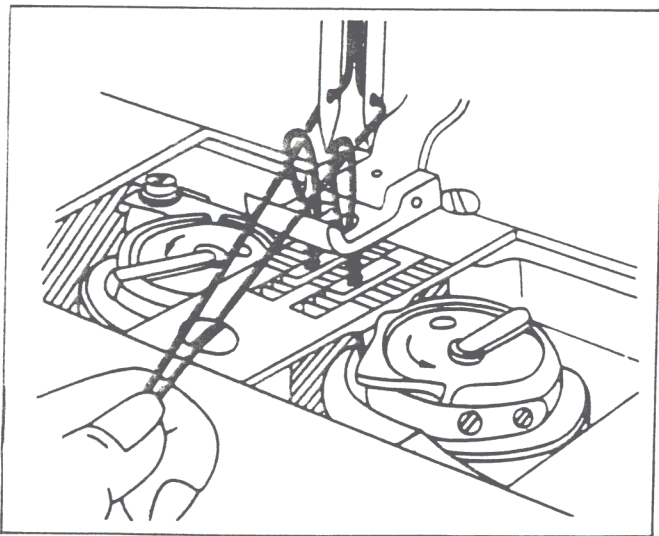
How to use the machine

6. Bobbin threading

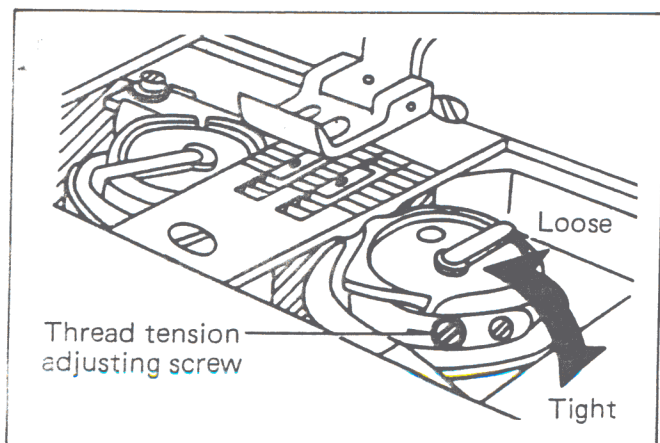
1) Lead the end of thread to the groove of the hook ① shown in Fig. and beneath the horn ②, pull the thread out.



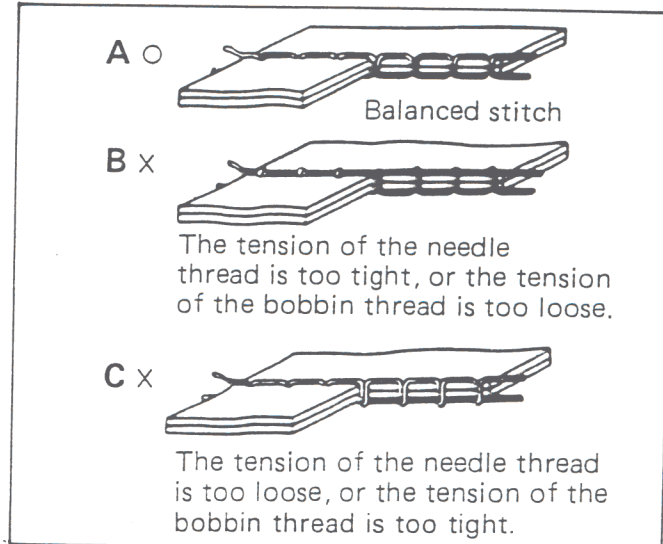
2) Holding the end of the needle threads by left hand and turn the balance wheel slowly. Pull out the lower threads and keep them away from the underneath of the presser foot.



7. Bobbin thread tension



8. Adjustment of thread tension

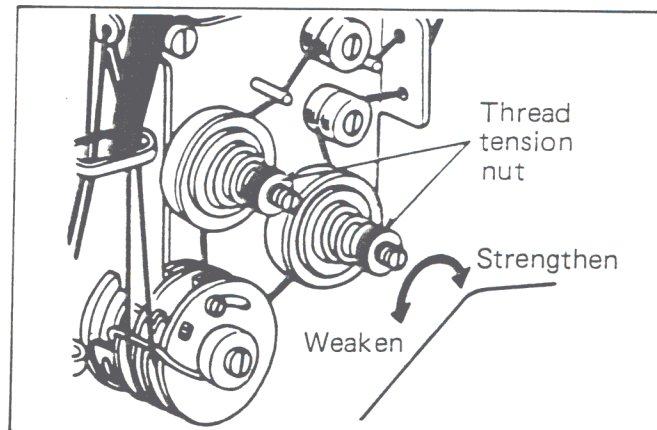


9. Needle thread tension

**Needle thread is adjusted according to the bobbin thread tension.

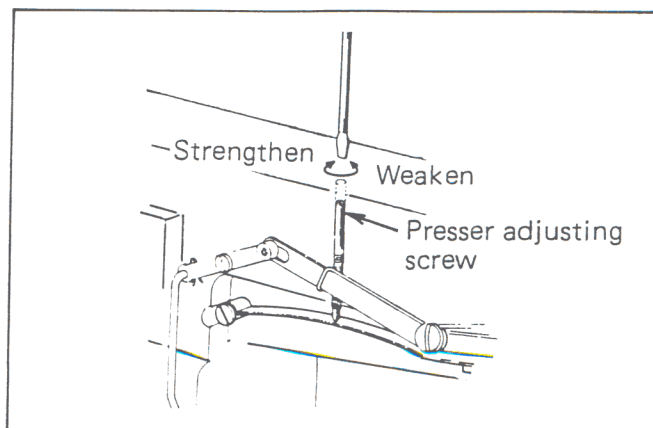
**Needle thread tension is adjusted by tension regulating thumb nut.

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



10. Adjustment of presser

Adjust the pressure according to the fabric.

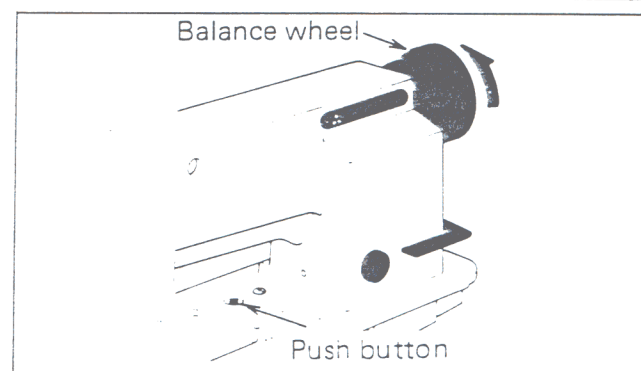
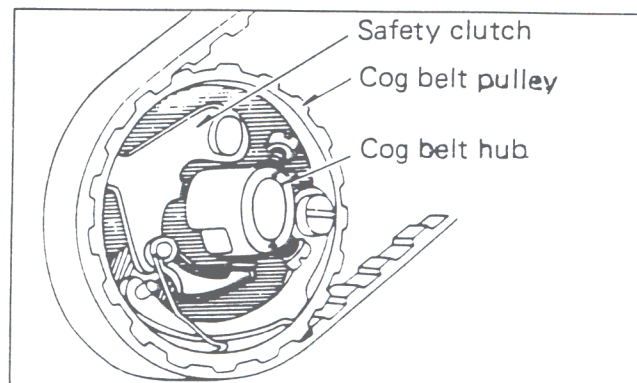


11. SAFETY CLUTCH DEVICE:

Safety clutch device is installed to prevent the hook and cog belt from damage in case the thread is caught into the hook when the machine is loaded abnormally during operation.

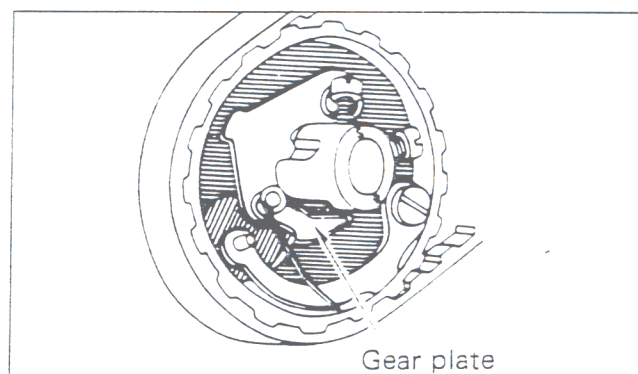
1) FUNCTION OF SAFETY CLUTCH.

- 1) When the safety clutch acts, the cog belt pulley will be unloaded, then the rotation of hook shaft will stop. The arm shaft only will rotate. Stop the operation of machine.
- 2) Clean the thread thoroughly which is caught into the hook.
- 3) Turn the cog belt hub by hand, and check whether the hook shaft rotates lightly and properly, place the clutch device as follows.



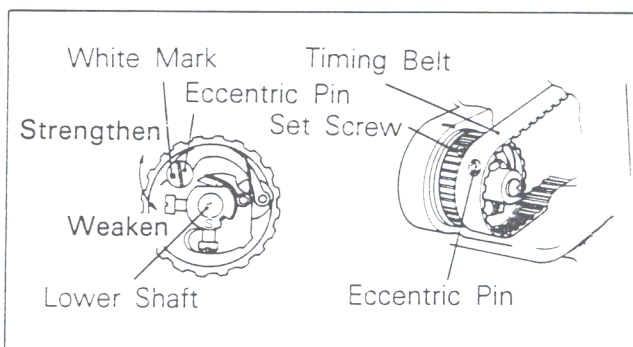
2) HOW TO SET THE SAFETY CLUTCH.

- 1) While pressing down the push button on the opposite side of bed by left hand, turn the balance wheel slowly by right hand away from you as shown in the figure.
- 2) The balance wheel will stop by the gear plate, but turn the balance wheel more firmly.
- 3) Release the push button.
- 4) As shown in the Figure, the safety clutch device is set.



3) FORCE APPLIED TO THE SAFETY CLUTCH.

- 1) The force applied to the safety clutch is the smallest when the white mark of the eccentric pin faces the center of the lower shaft. The force proportionally increases as the white mark faces the outside.
- 2) To adjust the force, slide the timing belt, loosen the set screw, and turn the eccentric pin.
- 3) After the adjustment, make sure to fasten the set screw.

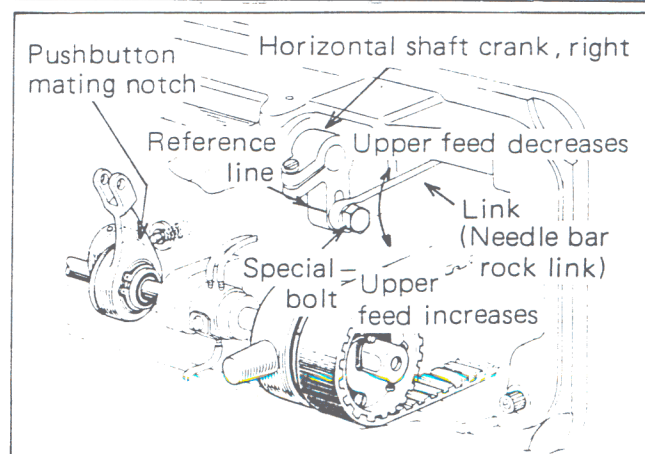


12. UPPER FEED ADJUSTMENT (NEEDLE SIDE)

If the uneven feeding occurs according to the fabric, adjust the long hole of the horizontal feed shaft crank (right) to adjust the upper feed length.

(How to adjust)

- 1) Loosen the special bolt.
- 2) Move the special bolt upward to decrease upper feed.
- 3) Move the special bolt downward to increase the upper feed. The upper feed and the lower feed theoretically becomes equal at the reference line on the horizontal feed shaft crank.
- 4) Securely tighten the special bolt after adjustment.



How to use the machine

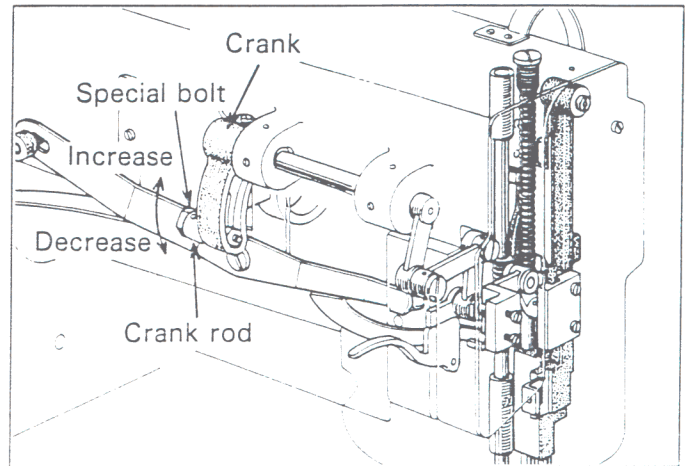
13. Outside presser foot and inside presser vertical stroke adjustment

When fabric with large elasticity is sewn, or when thickness of fabric changes, the vertical stroke (movable range) of the presser feet should be adjusted as follows:

Adjustment

- 1) Loosen the special bolt.
- 2) The vertical strokes of the presser feet become maximum when the crank rod is moved upward and set.
- 3) The vertical strokes become minimum when the nut is moved downward and set.
- 4) After the adjustment, fully tighten the special bolt.

The vertical strokes of the presser feet can be adjusted within a range from 6 mm to 2mm.



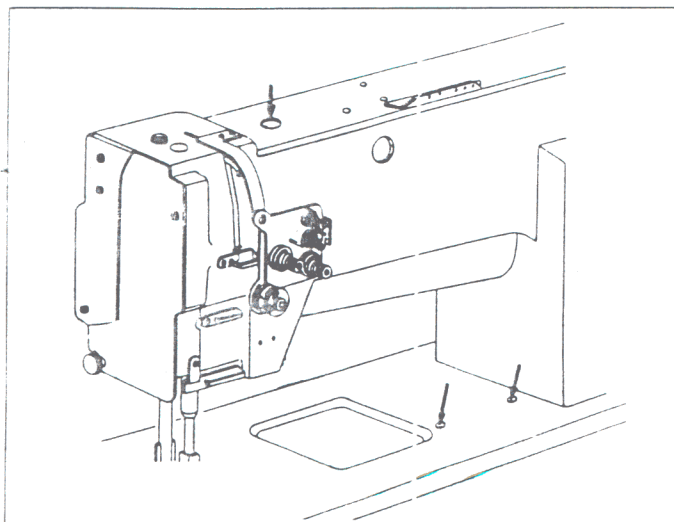
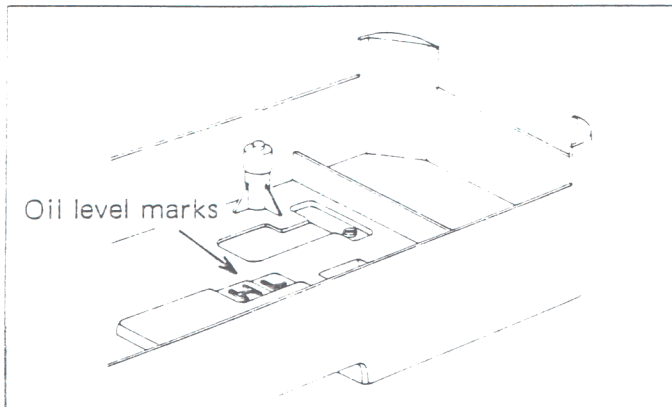
Cautions on use

1. Lubrication (1)

Fill the oil tank with lubricating oil until oil level reaches "H" mark.

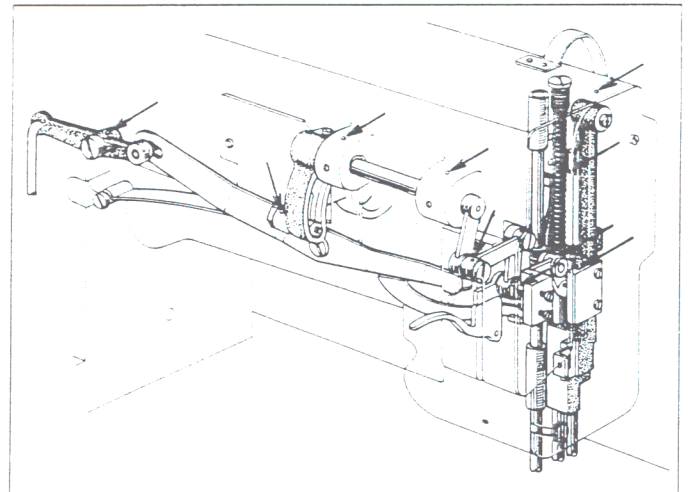
Periodically check oil level during operation and if oil level is found below "L", add oil to "H" mark.

For oil, use MC70M specified by Mitsubishi.



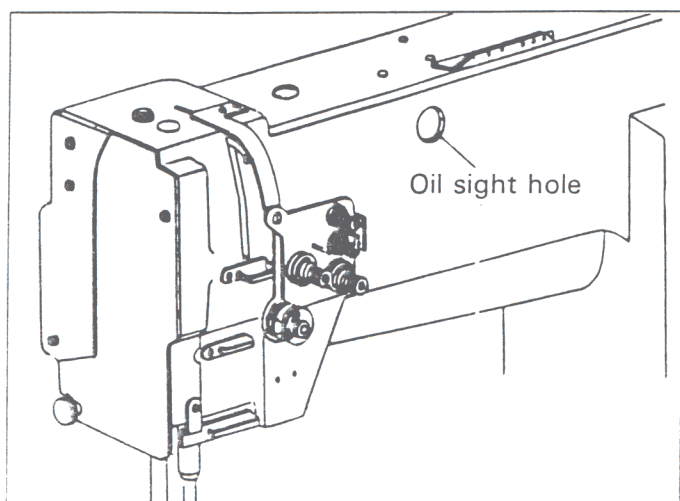
2. Lubrication (2)

When the sewing machine is used for the first time, or operated after long stop, a suitable quantity of oil should be applied to the place indicated by arrow in the below figures.

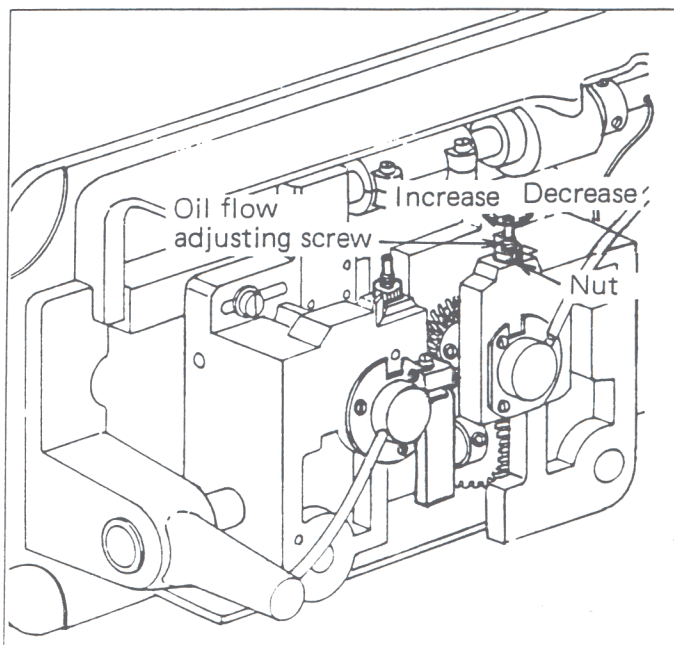


3. Oiling condition

See dripping of oil through the oil sight hole to check oiling condition during operation.



4. Adjustment of lubrication to hook



Specifications

Model...LU2-4400-BOB, LU2-4420-BOB

Application	Heavy material	Thread take-up lever	Slider
Max. sewing speed (spm)	2000	Hook	Full rotation, horizontal large bobbin, with automatic lubrication
Stitch length (mm)	0~9	Needle No.	DP × 17 ≒ 23
Needle-bar stroke (mm)	36	Lubrication system	Automatic lubrication (manual oiling, partially)
Presser foot stroke (mm)	Hand 8 mm, Knee lifter 16 mm	Oil	MC70M
Vertical stroke of upper feed (mm)	2~6	*Needle gage (mm)	6.4 (standard), 3.2, 4, 4.8, 8, 9.5, 12.7, 16, 19, 25.4
Presser foot drive method	Bell crank	Table	Model LT (Bed dimension: 517 × 178 mm)
Stitch adjustment	Dial	Motor	Mitsubishi clutch motor 400W
Reverse sewing	Lever		

*Applicable only for LU2-4420-BOB

- Notes:
- Some materials, gauge sizes, and/or sewing conditions may require specifications other than those listed above.
 - This specification is subject to change for machine improvement.

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