



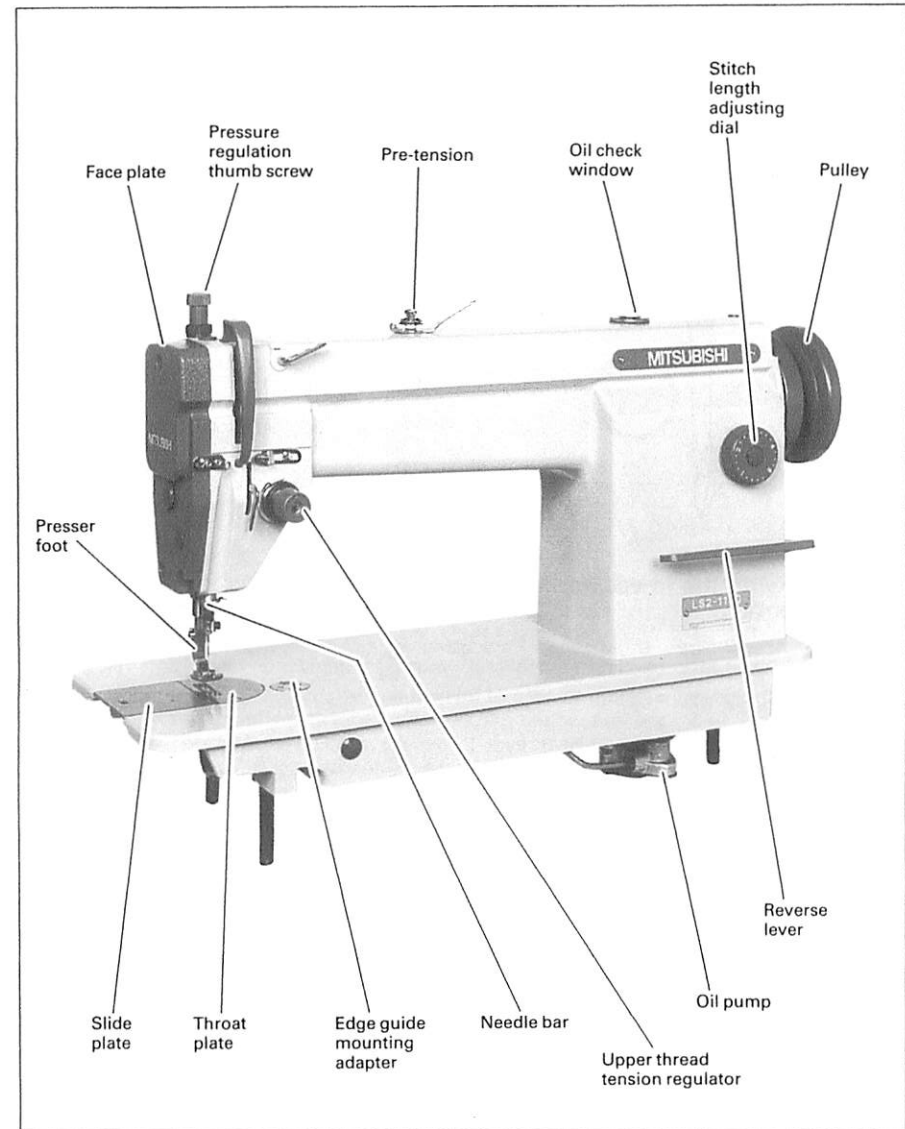
INDUSTRIAL SEWING MACHINE  
MODEL

**LS2-1130**

classes  
High-Speed Single-Needle Lockstitch

INSTRUCTION MANUAL

Main parts name of machine head



#### 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 machine 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.

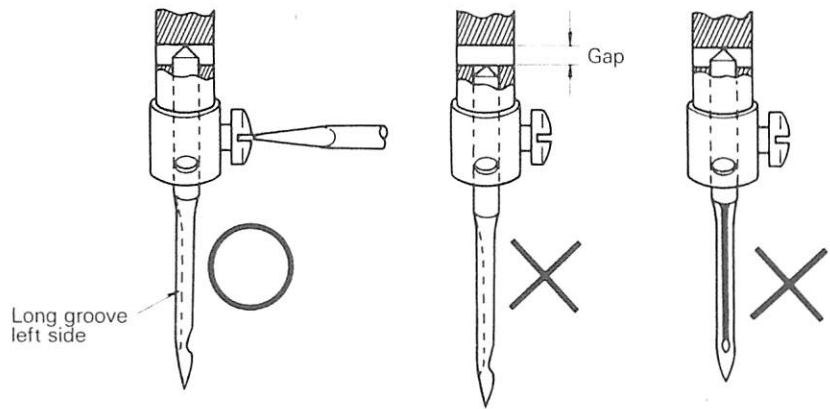
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# How to use the machine

## 1. How to attach needle:

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

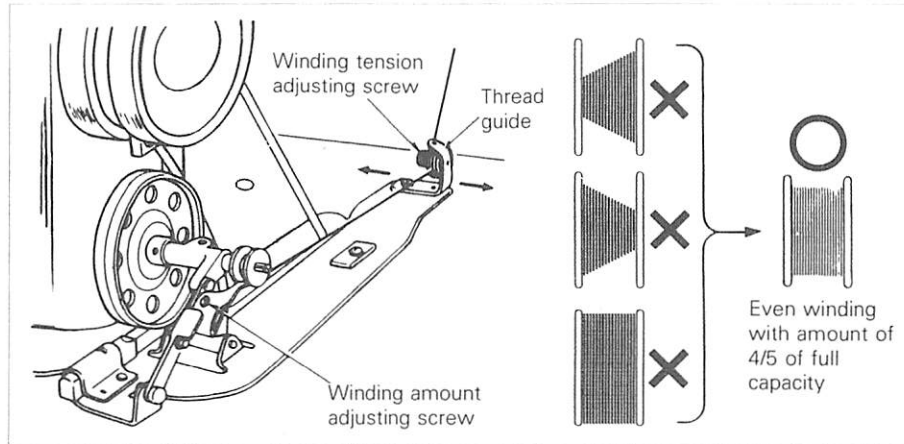
Insert the needle into the bottom of needle clamp and tighten the screw keeping the long groove side of needle toward the left.



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

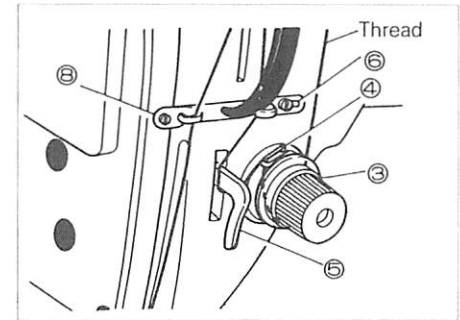
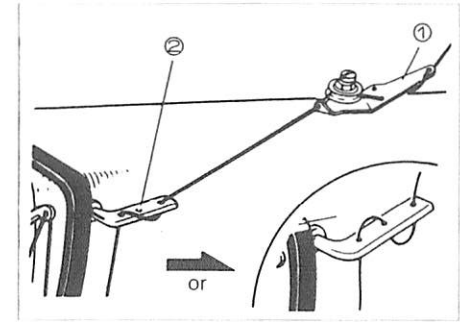
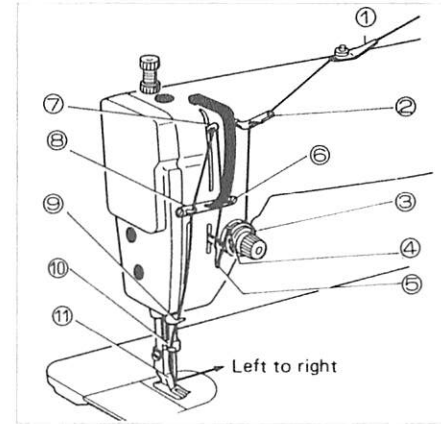
Note: In case of rotating the machine without sewing, keep the presser foot raised.

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



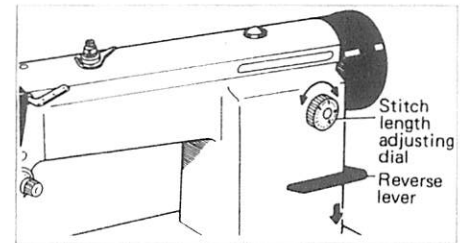
## 3. Threading

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



## 4. Adjustment of stitch length & reverse lever

Note: For desired stitch length, push the reverse lever downward and adjust by stitch length adjusting dial.



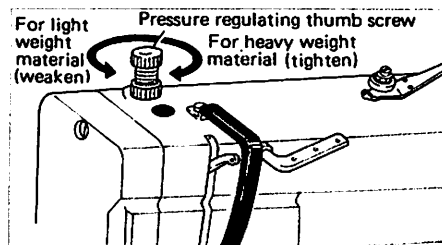
## 5. Adjustment of thread guide

For adjustment of the attaching position of the thread guide influence tightness of stitches, adjust the attaching to materials to be sewn and sewing specifications.

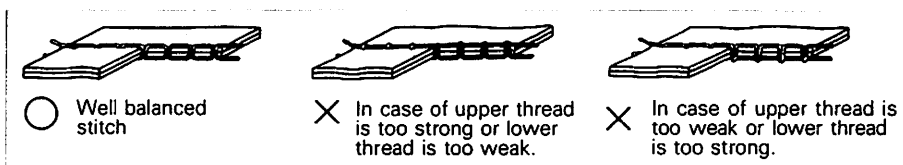
|                       | 1     | 2      | 3     |
|-----------------------|-------|--------|-------|
| Thread guide position | left  | Center | Right |
| Material weight       | Heavy | Medium | Light |

## 6. Adjustment of pressure on presser foot

Pressure on the presser foot is to be adjusted in accordance with materials to be sewn.



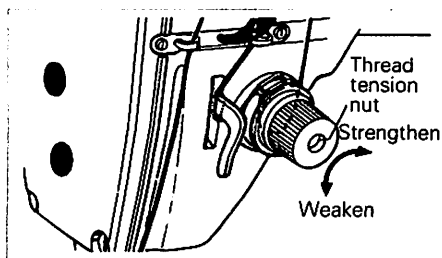
## 7. Adjustment of thread tension:



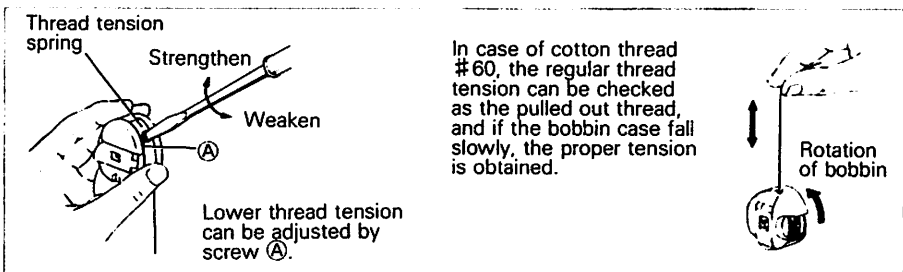
## 8. Upper thread tension:

- \*\* 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.

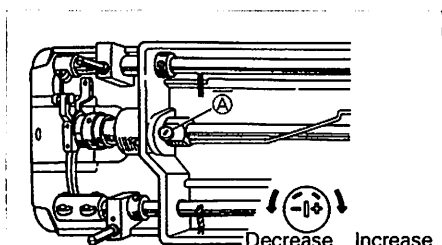


## 9. Lower thread tension:



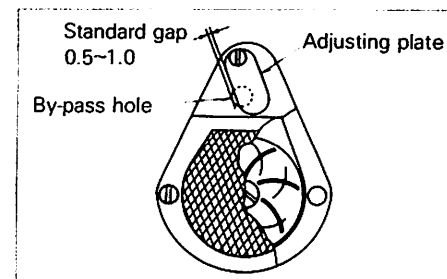
## 10. Adjustment of hook oil lubrication:

Adjustment is made by rotating screw (A).



## 11. Adjustment of oil pump:

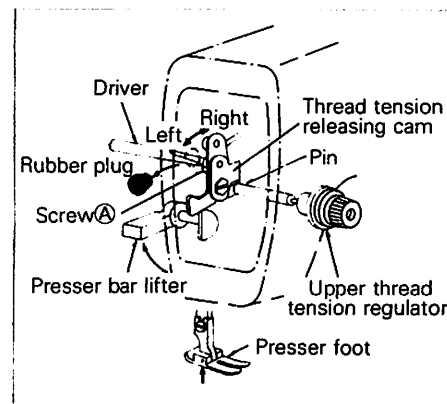
For the regular sewing, it is not necessary for the adjustment of oil pump, but in case of low speed operation, if oil flow amount for oil check window on the machine arm is reduced, close the oil bypass hole of oil pump.



## 12. Adjustment of timing to open tension disc of upper thread tension regulator

Adjust timing with the following knack as timing to open the tension disc can be adjusted for the clearance (within the limits of 2~7mm) of presser foot.

1. Remove the rubber plug and loosen the screw (A)
  2. Move the thread tension releasing cam to the right or the left.
    - Positioned to the right... quick
    - Positioned to the left... slow
  3. Tighten the screw (A) after the opening condition of the thread tension disc has been checked.
- It is convenient to operate by fitting the same thickness of plate as the clearance of the presser foot you intend to loosen beneath the presser foot.



## Specifications

| MODEL        | MATERIAL WEIGHT | SPEED Max | ROTARY HOCK Lub/Aut | NEEDLE | FEED DOG      | STITCH LENGTH | PRESSER BAR STROKE KNEE/HAND | NEEDLE BAR STROKE |
|--------------|-----------------|-----------|---------------------|--------|---------------|---------------|------------------------------|-------------------|
| LS2-1130-MOB | Standard        | 4500 spm  | standard            | DBX1   | 3 Pieces type | 0~5mm         | 13/6mm                       | 30.5mm            |
| LS2-1130-HOB | heavy           | 3500 spm  | heavy               | DBX1   | 3 Pieces type | 0~7mm         | 13/6mm                       | 33.0mm            |
| LS2-1130-BOB | heavy           | 3500 spm  | Large size heavy    | DBX1   | 3 Pieces type | 0~7mm         | 13/6mm                       | 35.0mm            |

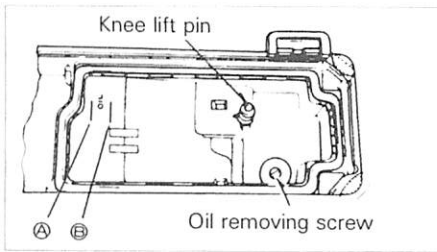


## Precaution before starting to operate

### 1. Lubrication-1

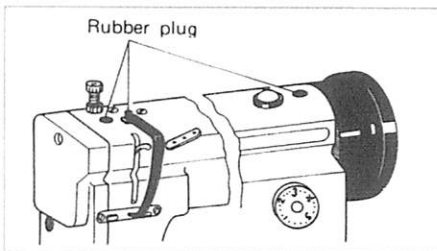
Before starting to operate pour oil up the position (A) of oil tank. While operating you are requested to check the oil volume periodically, and in case oil volume would come less than the position (B) replenish oil up to the position (A).

Use MC70M oil specified by Mitsubishi.



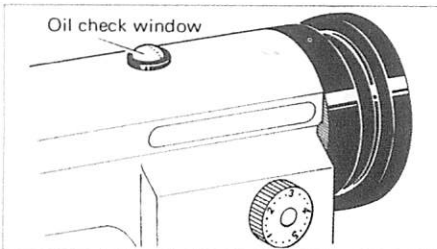
### 2. Lubrication-2

When starting to sew initially and after kept idle for a long time without using it is essential to oil enough through the oil holes in the rubber plug.



### 3. Condition of oil lubrication

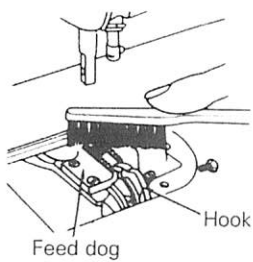
While operating the machine it is necessary to check the condition of oil lubrication through the oil check window.



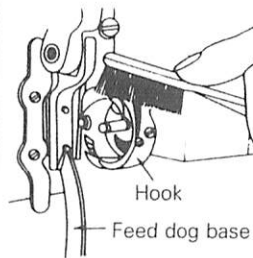
### 4. Periodical cleaning

\* Remove the throat plate and clean the feed dog.

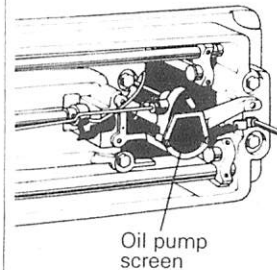
\* Remove the throat plate and clean the feed dog.



\* Lay down the machine head and clean the hook.



\* Lay down the machine head and clean the oil pump screen.



## Trouble & repair

| Trouble          | Causes   | Repairing  |
|------------------|--|--|
| Skip stitching   | 1) Needle <ul style="list-style-type: none"> <li>* Bent</li> <li>* Not suited with thread</li> </ul>   | Change the needle with new one.<br>Replace with proper one according to the thickness of thread.   |
|                  | 2) Wrong attached needle <ul style="list-style-type: none"> <li>* Insertion not enough</li> <li>* Needle distorted</li> <li>* Attached with its opposite side</li> </ul>   | Insert properly as per instruction manual.<br><br>Attach the needle as its hole faces side ways. (But, using the nylon or polyester thread, distance the needle hole somewhat, after checking of loop finish.)<br><br>Correct the attaching side, attach the needle keeping its groove side toward the left, and concave side toward the right.                                    |
| Irregular stitch | 1) Upper thread tension too weak<br>2) Thread take-up spring too weak<br>3) Lower thread tension too weak  | Turn the upper thread tension regulator thumb nut to the right to strengthen.<br>Turn the tension stud the right to strengthen.<br><br>Turn the bobbin case tension screw to the right to strengthen.  |
| Thread cuts      | 1) Poor thread   | Change the thread with better quality one.   |
|                  | 2) Needle <ul style="list-style-type: none"> <li>* Needle bent</li> <li>* Wrong attached needle</li> <li>* Thread too big for the needle size</li> </ul>   | Change the needle with new one.<br>See No.2 of skip stitching.<br><br>Either change with proper size thread or with proper needle.   |
|                  | 3) Upper thread tension too strong <ul style="list-style-type: none"> <li>* Dust deposit between tension discs</li> <li>* Excessive or uneven winding of lower thread on the bobbin</li> <li>* Dust deposit in bobbin case</li> <li>* Damaged thread tension on bobbin case</li> <li>* Wrong inserted bobbin into bobbin case</li> </ul> | Turn the tension regulator nut to the left to weaken.<br><br>Remove the tension discs and clean by brush.<br><br>Rewinding correctly with the winding amount of 4/5 of its full capacity.<br><br>Remove the bobbin case and clean by brush.<br><br>Change with new one.<br><br>Replace the bobbin correctly, so that to rotate the bobbin clockwise when the thread is pulled-out. |
| Puckering        | 1) Needle & thread too big for fabric  | Change with proper size needle and thread for fabric.  |
|                  | 2) Thread tension (upper or lower thread)  | Adjust the thread tension by regulator thumb nut, take-up spring, adjusting screw on the bobbin case.  |
|                  | 3) Pressure of presser foot  | Weaken by turning the regulating thumb screw to the left.  |