

HIGH-SPEED SINGLE-NEEDLE LOCKSTITCH
INDUSTRIAL SEWING MACHINE

MODEL

LS2-1130

INSTRUCTION MANUAL

INTRODUCTION

Thank you very much for purchasing Mitsubishi industrial sewing machine.

Please read this instruction manual before operating the sewing machine. Please read also “Safety Manual”, “Instruction manual for Mitsubishi Limiservo X” and operate the sewing machine correctly and safely.

PRECAUTION BEFORE STARTING OPERATION

1 Safety Precautions

1. When turning the power on, keep your hands and fingers away from the area around/under the needle and the area around the pulley.
2. The power must be turned off when the machine is not used, or when the operator leaves his/her seat.
3. The power must be turned off before tilting the machine head, installing or removing the “V” belt, adjusting the machine, or replacing parts.
4. Avoid placing fingers, hairs, obstacles, etc. near the pulley, “V” belt, bobbin winder wheel, or motor when the machine is in operation. Injury could result.
5. Don't put fingers into the thread take-up lever cover, around/under the needle, or pulley when the machine is in operation.
6. If the belt cover, the finger guard, and/or the eye guard are installed, don't operate the machine without these safety devices.

2 Precaution before Starting Operation

1. If the machine's oil pan has an oil sump, never operate the machine without filling oil in it.
2. If the machine is lubricated by a drop oiler, never operate the machine without lubricating.
3. When a new sewing machine is operated, verify the rotational direction of the pulley with the power on.
(The pulley should rotate counterclockwise when viewed from the pulley.)
4. Verify voltage and (single or three) phase indicated on the nameplate of the motor.

3 Precaution for Operating Conditions

1. Avoid using the machine at abnormally high temperature (35°C or higher) or low temperature (5°C or lower). Otherwise, machine failure may result.
2. Avoid using the machine in dusty conditions.
3. Avoid using the machine in conditions filled with a lot of electric noises such as high-frequency welders.

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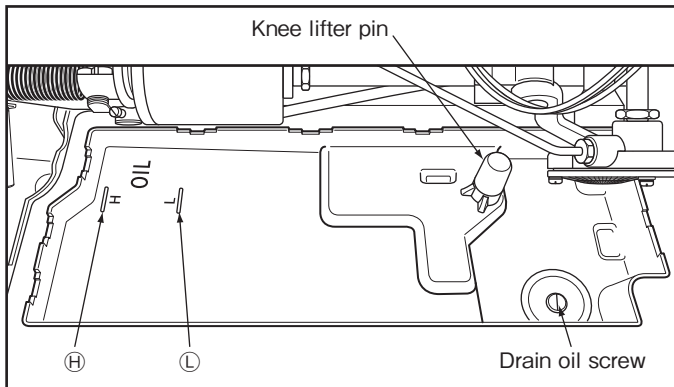
USAGE PRECAUTION

1 Lubrication (1)

Fill the oil reservoir with oil up to “H” line.
Oil level should be periodically checked. If oil level is found below “L” line replenish oil to “H” line.
For oil, use “MC70M” specified by Mitsubishi.

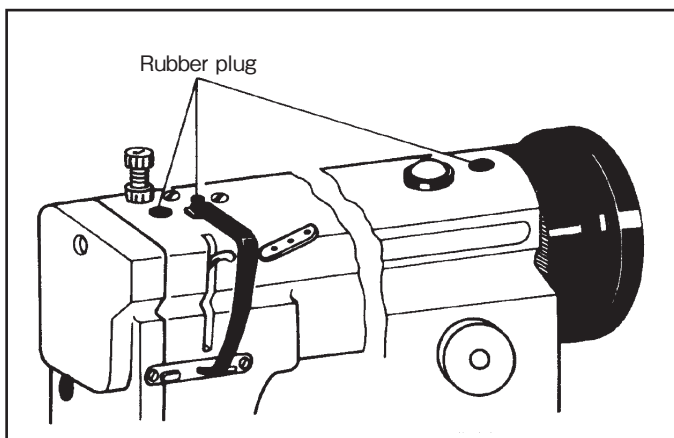
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MC70M : Specific gravity (15°C) = 0.86 (g/cm³)
: Viscosity (40°C) = 10.9 (mm²/s)



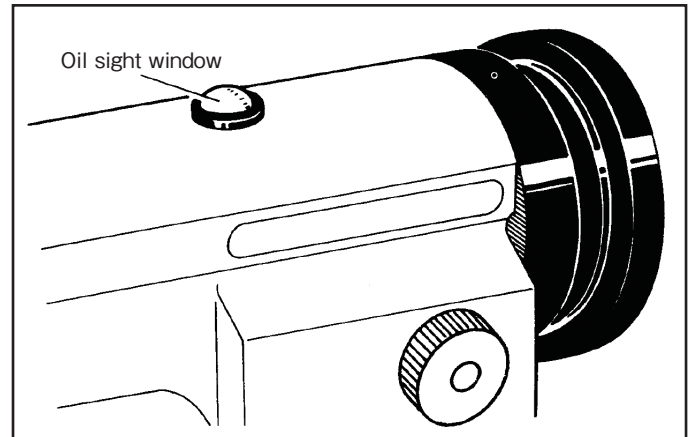
2 Lubrication (2)

When a new sewing machine is used for the first time, or sewing machine left out of use for considerably longtime is used again, remove the rubber plug and replenish a suitable amount of oil as shown in the figure.



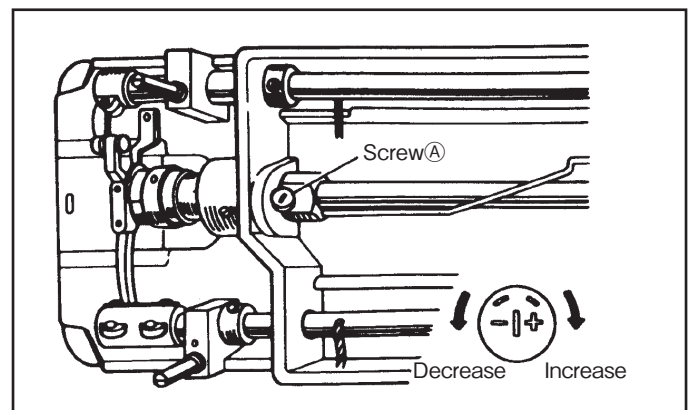
3 Lubrication condition

Check that the oil splashed the oil sight window.



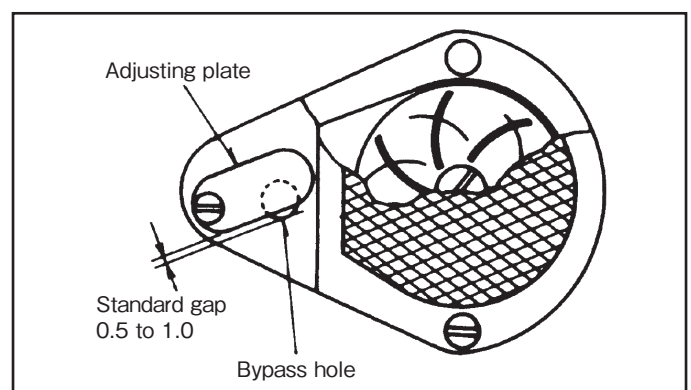
4 Adjustment of lubrication to the rotating hook

Adjust the lubrication amount of the rotating hook by turning the screw (A).



5 Adjustment of the oil pump

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

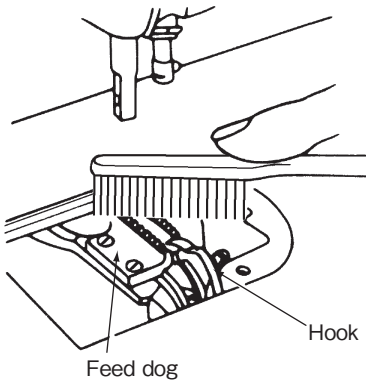


USAGE PRECAUTION

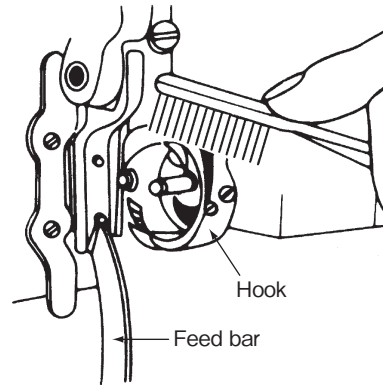
6 Periodical cleaning

1. Machine

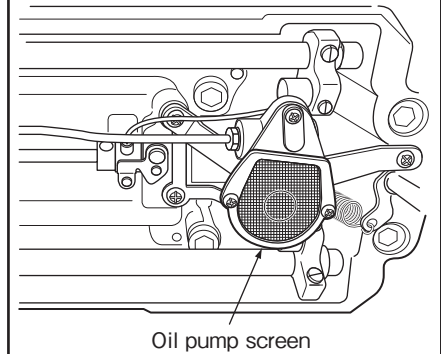
- Remove the throat plate and clean the feed dog. Reassembly should be done by screwing in the screw 2-3 rotations by hand at first, then tightening them evenly using a long-shafted screwdriver.



- Lean the machine head and clean the hook and remove any dust and/or lint inside the bobbin case.



- Lean the machine head and remove any dust and/or lint on the oil pump screen.



2. Motor

Remove dust from the motor filter every one or two months. (Continued operation with the filter clogged with lint or dust may overheat the motor.)

3. Control Box

Remove dust from the connector. (If the connector is covered with dust, the machine might malfunction.)

7 Installation of the belt cover

1. Install the belt cover on the machine side for safety. Refer to the provided instruction document contained in the same package.
2. Install the belt cover on the motor side for safety.

8 Precaution on operation

- (1) When the power is turned on or off, keep foot away from the pedal.
- (2) It should be noted that the brake may not work when the power is interrupted or power failure occurs during sewing machine operation.
- (3) Since dust in the control box might cause malfunction or control troubles, be sure to keep the control box cover close during operation.
- (4) Do not apply a multimeter to the control circuit for checking, otherwise voltage of multimeter might damage semiconductor components in the circuit.

HOW TO USE

1 Installation of the needle

Note: Before installing the needles, be sure to turn off the power.

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

Insufficient insertion

Needle distorted

Long groove left side

Note : If thread snapping occurs during reverse sewing with polyester threads, it may be avoided by fitting the needle with the long groove shifted to the front side. Normally, avoid fitting the needle with the groove facing backward.

Both needles DP × 17 and DB × 1 can be used. Use the timing marks as shown in the figure.

Timing mark for DB×1

Timing mark for DP×17

Needle bar

2 Winding of the bobbin thread

Note: When bobbin thread is wound, keep the presser foot lifted.

- Adjustment**
- **Tension of wound thread** Slack winding is recommended for polyester thread and nylon thread.
 - **Conically wound thread** Move the thread guide toward smaller diameter of wound thread layer.
 - **Amount of wound thread** Loosen the winding amount adjustment screw to decrease thread winding amount and tighten the screw to increase thread winding amount.

Thread guide

Winding tension adjustment nut

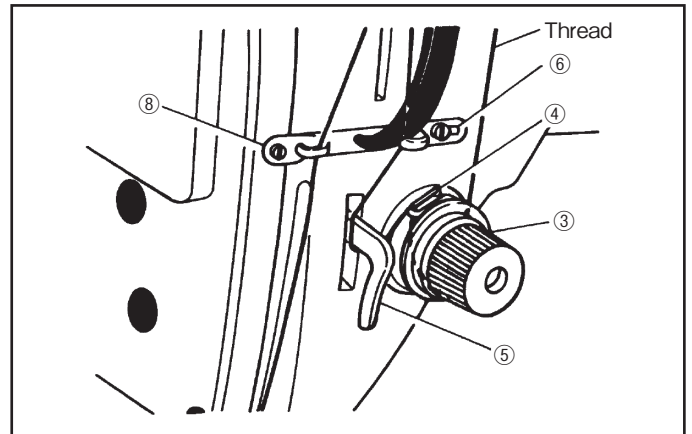
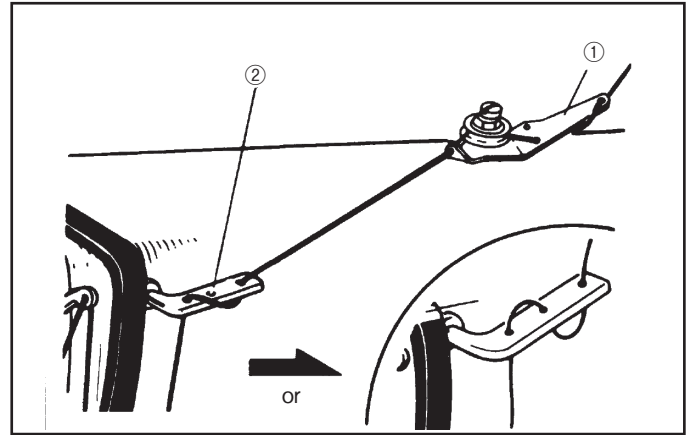
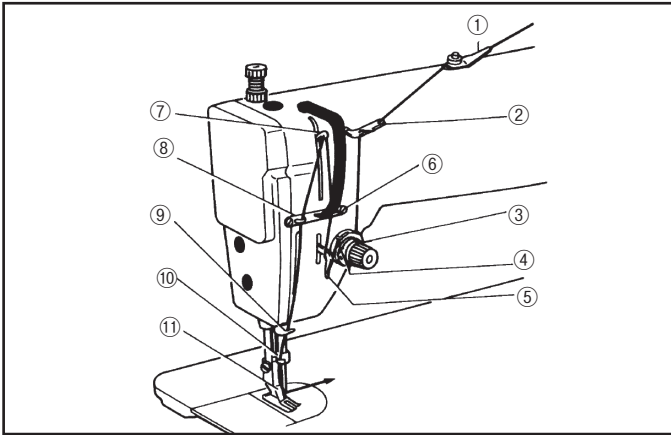
Winding amount adjustment screw

Even winding amount of 80% of full capacity

HOW TO USE

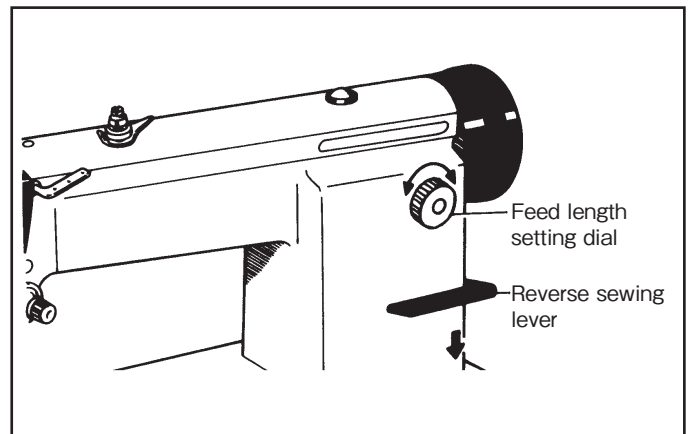
3 Threading of the needle thread

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

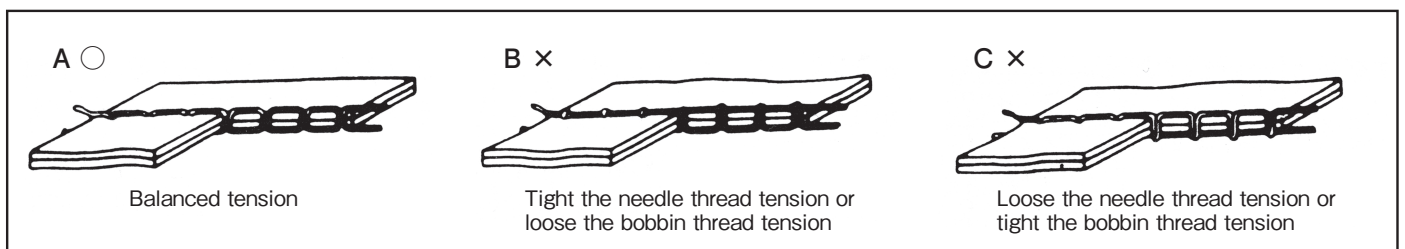


4 Adjustment of feed (stitch) length and backstitch

- Adjustment of feed (stitch) length...Adjust feed length by turning the feed length setting dial while depressing the reverse sewing lever.
- Backstitch...Direction of stitching can be reversed by depressing the reverse sewing lever.



5 Balance of threads tension

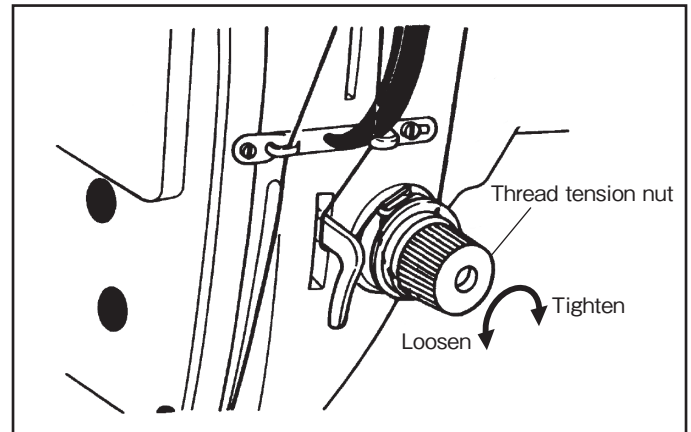


HOW TO USE

6 Adjustment of the needle thread tension

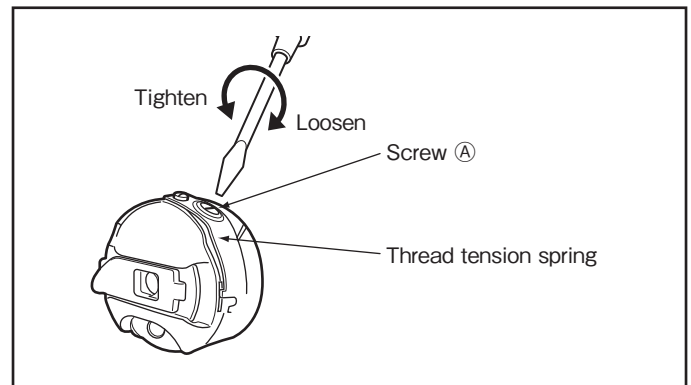
- The needle thread tension should be adjusted on the basis of the bobbin thread tension.
- Adjust the needle thread tension by turning the thread tension nut.

The needle thread tension can be also adjusted by changing intensity and movable range of the thread take-up spring in case of sewing the special fabric and thread.



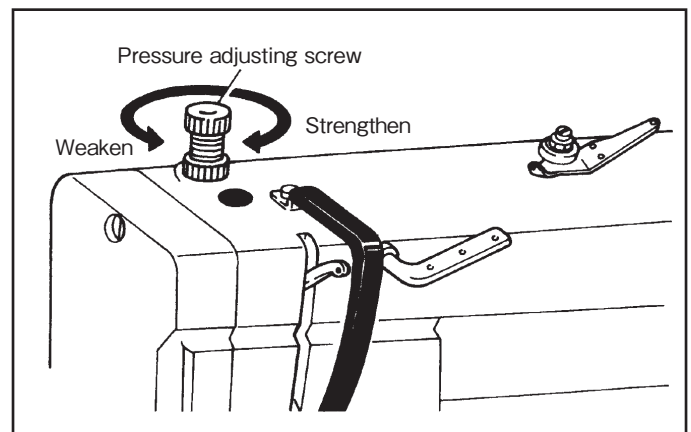
7 Adjustment of the bobbin thread tension

- The bobbin thread tension can be adjusted by turning the screw ①.



8 Adjustment of the presser foot pressure

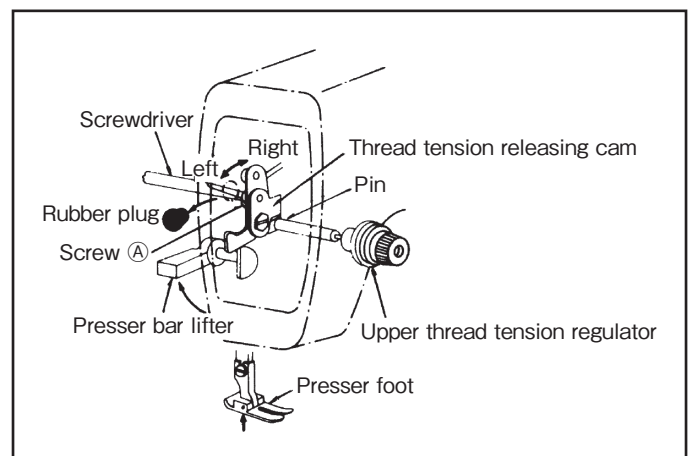
- Adjust the presser foot pressure according to the fabric by turning the pressure adjusting screw.
- Sewing pressure should be adjusted to the minimum required strength.



9 Adjustment of the timing to open tension disc of the needle thread tension regulator

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

- (1) Remove the rubber plug and loosen the screw ①.
 - (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 ① after 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

LS2-1130 Specifications

Specifications		Model	LS2-1130-M0B	LS2-1130-H0B	LS2-1130-B0B
		Application		Medium-heavy	Heavy
Max. sewing speed (rpm)		4500	3500		
Stitch length (mm)		0 to 5	0 to 7		
Needle bar stroke (mm)		30.5	35.0		
Thread take-up lever stroke (mm)		61.3		72.0	
Feed dog height (mm)		0.8	1.0	1.2	
Presser foot stroke (mm)	Hand	6			
	Knee	13			
Needle		DB × 1 #14	DB × 1 #22		
Hook (vertical rotating hook)		Standard	Standard for heavy	Large	
Lubrication system		Automatic lubrication			
Bed dimensions (mm)		475 × 178			

Note: ● The bobbin should be of high quality free from deformation.

● Some materials and/or sewing conditions may require specifications other than those listed above.

● These specifications are subject to change for machine improvement.

MITSUBISHI ELECTRIC CORPORATION

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