



User's Manual

KM-380

KM-380B

High-Speed, 1-Needle Lock-Stitch Sewing Machine With Compound Foot & Walking Foot Mechanism



SUNSTAR MACHINERY CO., LTD.

1. For proper use of the machine, thoroughly read this manual before use.
2. Keep this manual in a safe place for future reference in case the machine breaks down.

MME-050509

We thank you very much for choosing our industrial sewing machine, SUNSTAR. Before operating the machine, please read this Instruction Manual carefully, in order to make the most effective use of its various functions through operating it in the correct and most efficient manner.

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Setting the Machine

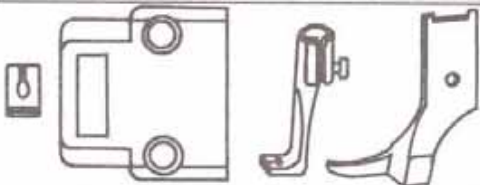
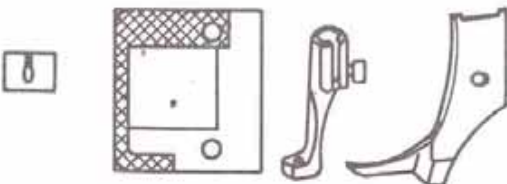
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Abstract

1. Specification

SUNSTAR's KM-380 and KM-380B models are industrial 1-needle lockstitch sewing machines which feature vertical-type hook, slide-type thread take-up, Cylindrical bed, an operating rate of 2,200 S.P.M, and a reverse stitch mechanism.

- 1) Complete operation of the upper feed device synchronised with the motion of the feed dog enables you to prevent the material from puckering, and raises the commercial value of the product, with a stable and finished appearance.
- 2) Stabilization of the upper feed device enables easy sewing in the case of hard-to-feed materials or in the case where there are several layers of thick materials. And, the stitch length dial permits simple adjustment of the stitch length, upto 6 mm, from "Zero".
- 3) The cylindrical bed, contained in a small diameter of 46mm, brings about an excellent result for all kinds of work requiring circular feeding, such as bags, towels, and other small products.
The movement of the feed dog in the model KM-380 is suitable for work requiring powerful feeding, because of it elliptical nature ; whilst the model KM-380B is for work requiring a tape attachment, achieved by a horizontal feed movement.

Model	Feature	Application
KM-380		bags, sacks, shoes, slippers, sandals, caps, and elliptical-shaped products.
KM-380B		bags, sacks, suits, shoes, slippers, sandals, caps, tents, textile-made furniture, and other tape-attached products.

Sewing speed		Max.2, 200 S.P.M
Stitch length		6mm
Presser foot lift	Lever	8mm
	Knee lifter	12mm
Needle		DP×17#18 (Standard)
Hook		Fully-rotating hook
Feed System		Compound feed (Feed dog, Presser foot, Needle)
Reverse sewing		By lever
Lubrication		Drop Lubrication

2. Operation Precautions

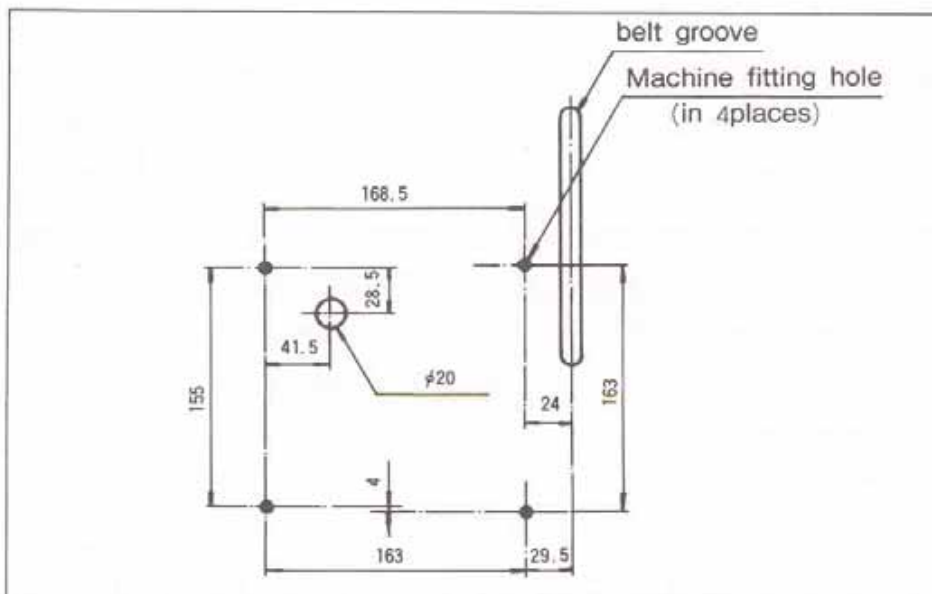
- 1) Confirm that the oil reservoir has been filled with lubricating oil.
- 2) The handwheel must be rotated in a counterclockwise direction when viewed from the pulley side. Never let the machine run in the reverse direction.
- 3) Keep your hands away from the needle when you turn the motor switch "on", or while the machine is being operated.
- 4) Never put your finger into the thread take-up unit during operation.
- 5) Be sure that the machine has fully stopped before handling the pulley or handwheel.
- 6) Keep in mind that the motor does not stop immediately when the motor switch is turned "off", due to inertia. So, wait until the motor completely stops before you tilt the machine head back, or make some adjustments.

Method Use

1. Installation

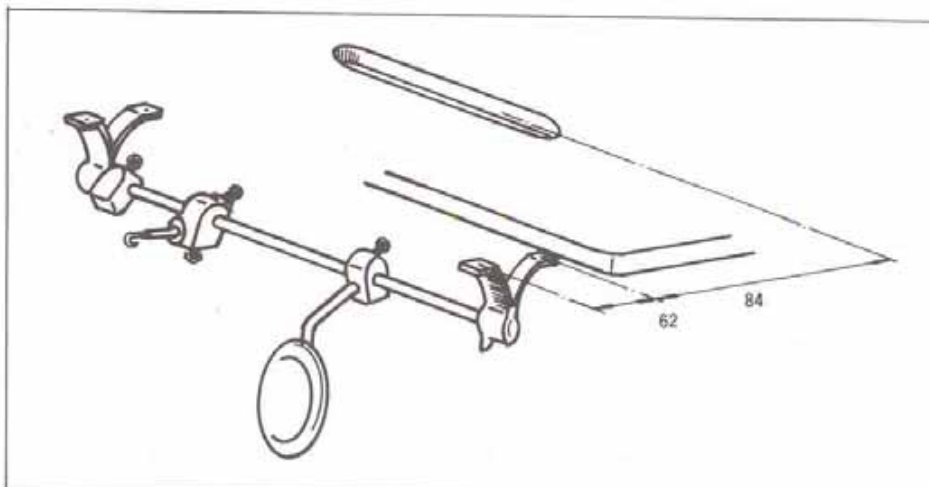
1) Set up

- a) Set up the machine on an even surface, if possible. Poorly-made installation incurs vibration and reduces sewing efficiency.
- b) As illustrated, on the right side, tightly fix clamping bolts, washers, and nuts to the guide holes (in 4 places) in the machine bed and to the hole for the knee lifter, on the basis of the center line of the V-belt groove.



c) Assemble the knee lifter to the position illustrated below.

Poor assembly makes the worker become more fatigued, and results in a drop-off in efficiency.



2) Speed

This machine operates at a max. speed of 2,200 S.P.M. When you need to change the R.P.M in accordance with sewing conditions, change the pulley of the clutch motor.

a) Use an M-type V-belt and pulley.

b) The standard motor to drive this machine is a 200~400 W(2HP) clutch motor.

Sewing speed (S.P.M)	Outer dia. of motor pulley (mm)	
	50Hz	60Hz
	2P	2P
2,200	75	65
2,200	70	55

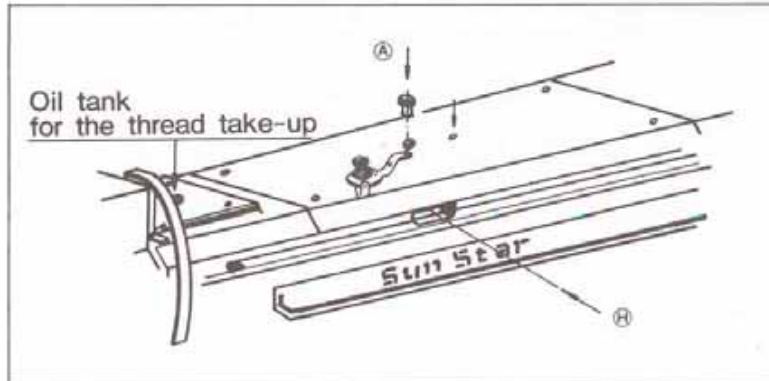
3) Lubrication

Lubricate after cleaning and setting up the machine. Before using, be sure to lubricate by pouring an adequate volume of oil daily into the lubrication hole indicated with a red color.

* When continuously operating the machine, lubricate more than twice a day

* In order to ensure sufficient lubrication of all necessary parts, do not operate continuously until after about 10 minutes from power "on".

a) Fill oil tank (A) up to (H) line, marked with a red color, and be sure to check the oil tank at least once a day.



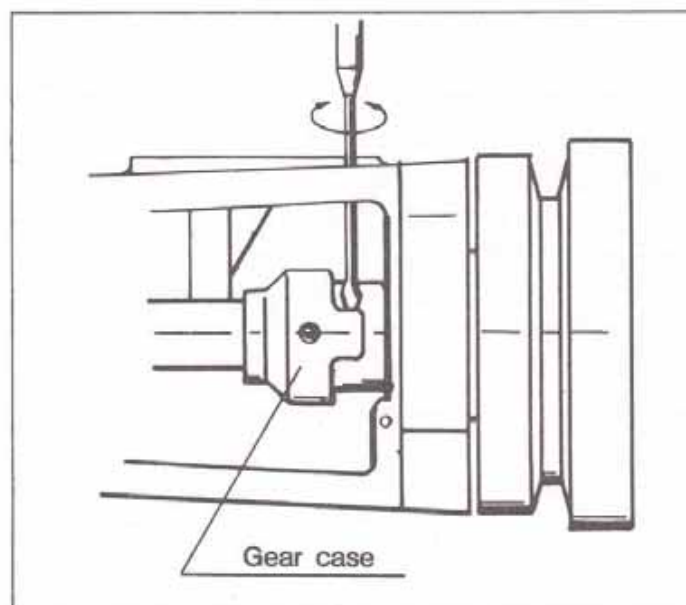
b) Apply grease after loosening the clamp screws on the gear case of the upper shaft.

c) Periodic cleaning

* Periodically clean the feed dog, the upper-and lower-working cam, after a certain specified period of use.

* Get rid of dust attached to the rotating parts of the hook after disassembling the hook cover.

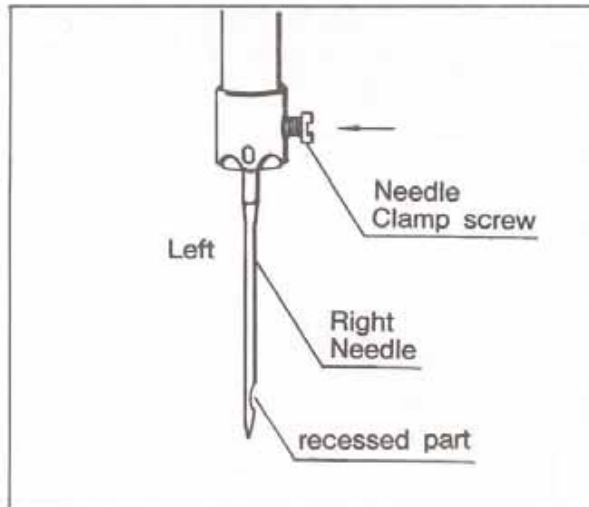
* Get rid of dust around the feed dog after disassembling the throat plate.



2. Attaching the needle

Turn the motor "off", and ensure that the motor has stopped completely. Then, attach the needle to the machine as follows :

- 1) After lifting up the presser foot by using the hand lifter, turn, by hand, the handwheel, to raise the needle bar to its highest point.



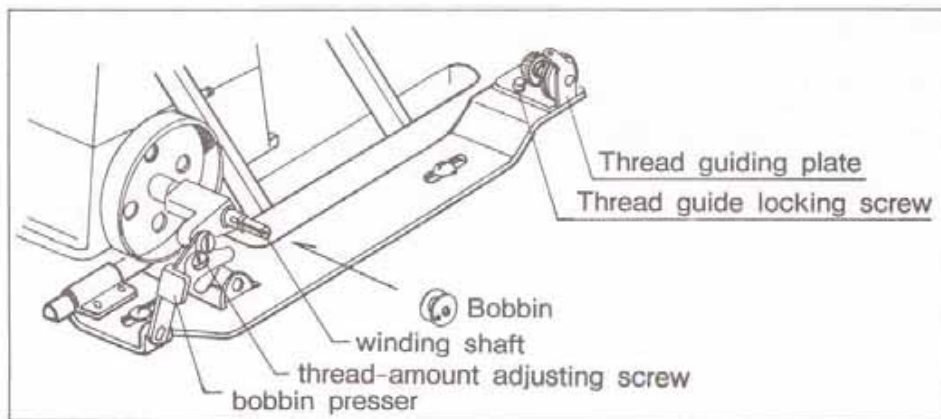
- 2) Loosen the needle clamping screw, and hold the needle so that it faces its recess exactly to the right.
- 3) Insert the needle as far as it will go, and firmly tighten the needle clamping screw.

3. Inserting the bobbin case

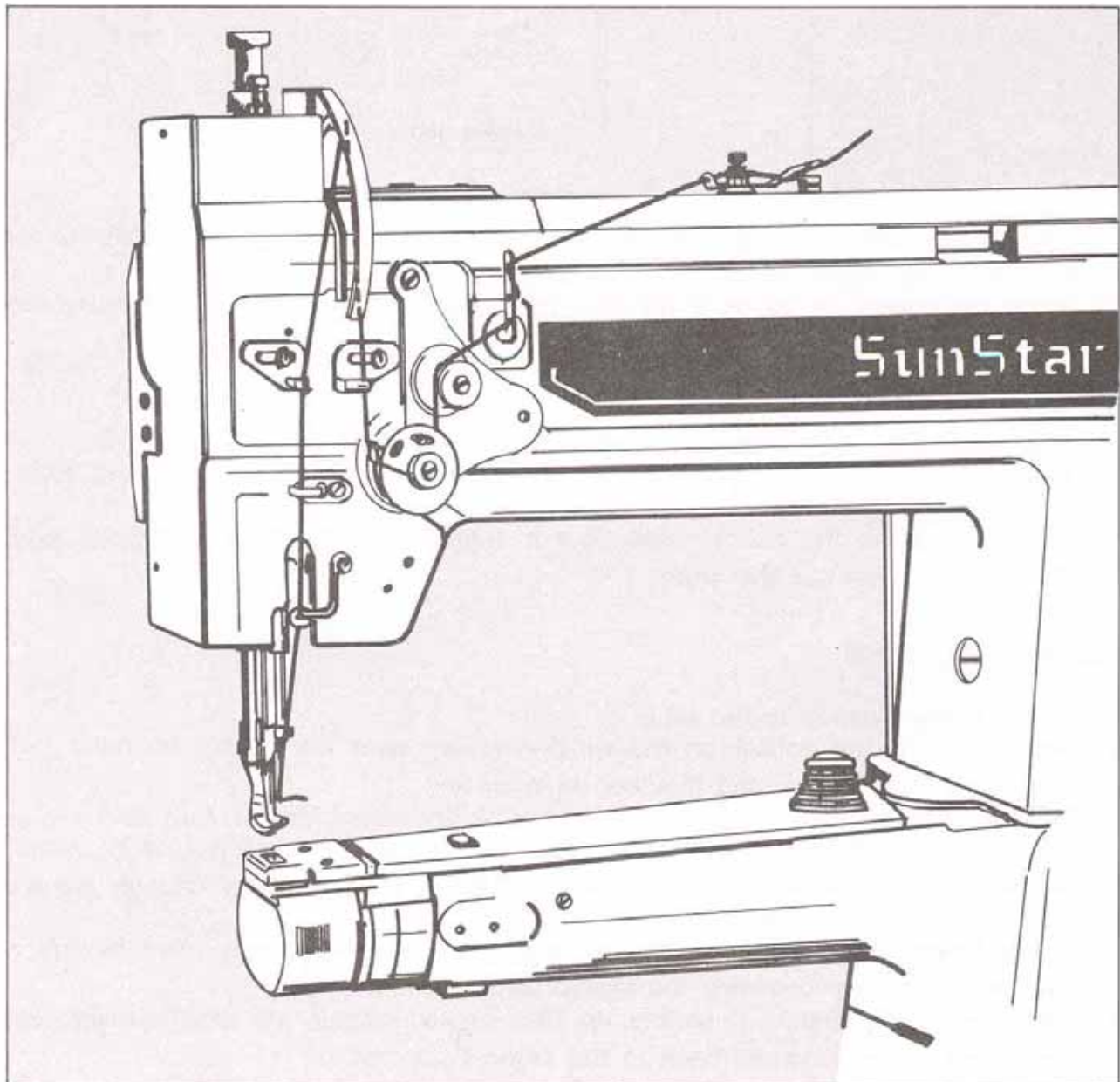
- 1) Turn, by hand, the handwheel to raise the needle to its highest point.
- 2) After disassembling the hook cover, lift up the bobbin case latch and take the bobbin case out.
- 3) When you insert the bobbin case, put it entirely into the hook whilst the latch is lifted up, and set out the latch.

4. Winding the bobbin

- 1) Fit the bobbin winder to the table.
- 2) After installing the bobbin on the winding shaft, wind the bobbin by hand, with 5 or 6 turns of thread, in the direction of threading.
- 3) Tilt the bobbin presser to bring the bobbin winder wheel into contact with the belt.
- 4) Adjust the thread-amount adjusting screw so that the thread is wound to about 80% of the bobbin capacity ; turn the screw clockwise to increase or counter clock-wise to reduce the amount of thread.
- 5) If the thread does not wind evenly, adjust the thread guiding plate by moving it right and left after loosening the thread guide locking screw.
- 6) As soon as the bobbin is wound up, the bobbin winder will stop automatically as the bobbin presser comes back to the original position.



5. Threading the machine



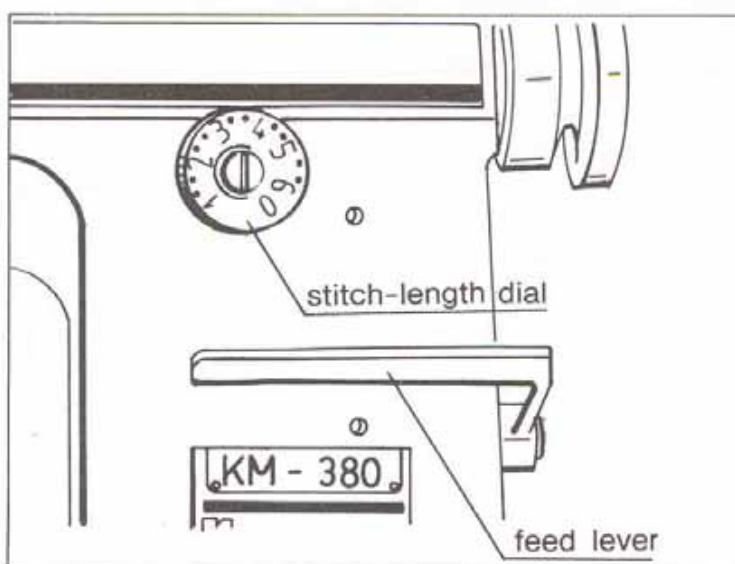
Turn the handwheel by hand to raise the thread take-up to its highest point.

- 1) Thread the machine as illustrated above.
- 2) Thread the needle from left to right.
- 3) Draw the thread to a margin of about 10 cm from the needle.

6. Setting the stitchlength

Turn the stitch-length dial in either direction, to align the desired number to the protruding pin on the machine arm.

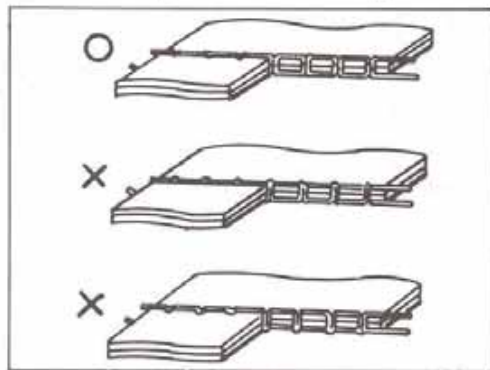
- *The dial calibration is in millimeters.
- *When you want to decrease the stitch-length, turn the dial in the direction of the lower numbers while pressing the feed lever.
- *When reverse sewing, depress the feed lever to perform reverse sewing. If you release the feed lever, it will rise to perform forward sewing.



7. Thread tension

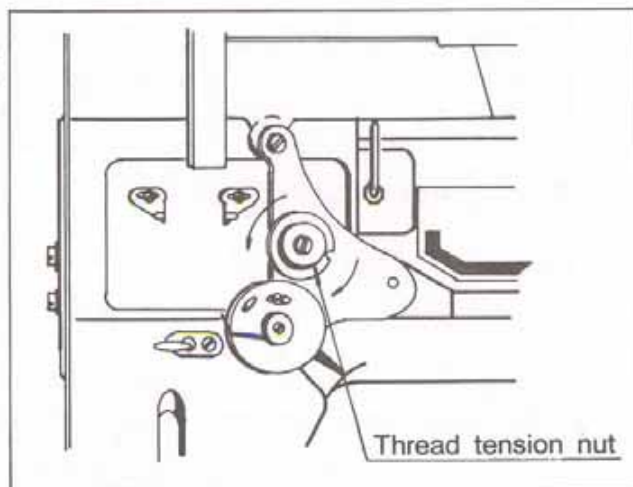
The adjustment of thread tension must match the sewing conditions in relation to with thread, stitch length, and material.

- *Tension is in a good state if both the threads of the needle and bobbin cross each other at the center line of the product, in the direction of depth.
- *This shows that the upper thread tension is stronger than the lower.
- *This shows that the lower is stronger than the upper.



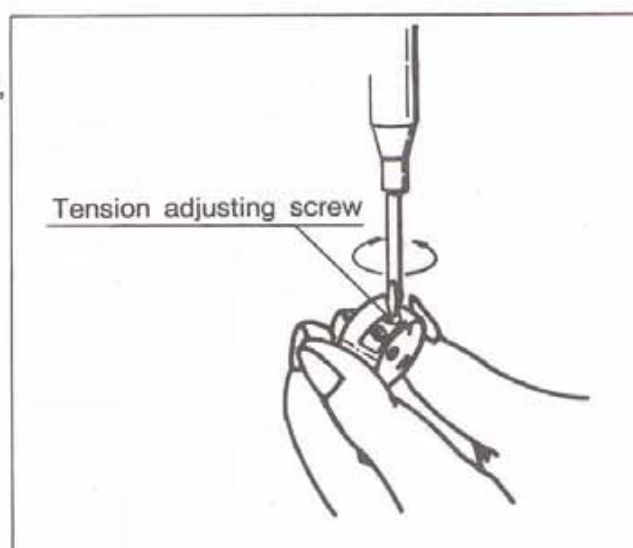
1) Adjusting the needle thread tension

Adjust the needle thread tension by turning the thread tension nut in accordance with sewing conditions ; turn clockwise to increase, or counterclockwise to reduce, the tension.



2) Adjusting the bobbin thread tension

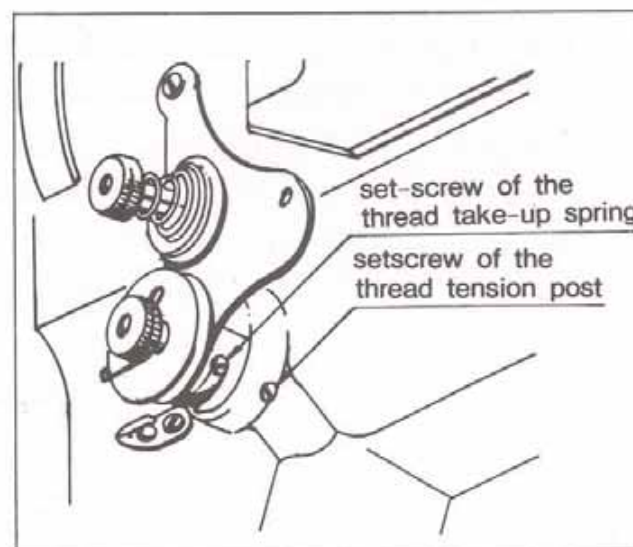
When tightening the tension adjusting screw, the tension will be increased. And when loosening the screw, the tension is 30 to 50g as standard.



8. Thread take-up spring

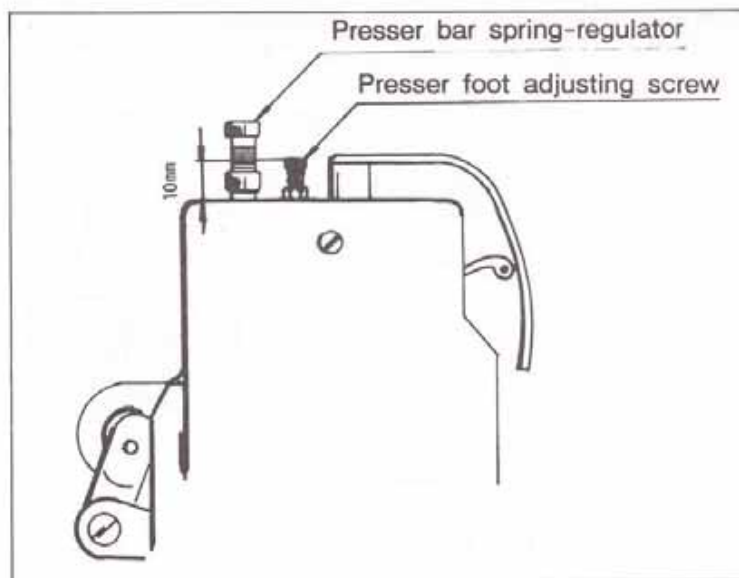
*When adjusting the stroke of the thread take-up spring, loosen the setscrew for its stopper. If you turn the tension post clockwise, the stroke of the thread take-up spring will be increased. And, if you turn the post counter clockwise, the stroke will be decreased.

*When adjusting the pressure of the thread take-up spring, you can do so by turning the edge groove of the thread tension post with a driver ; turn the post counterclockwise to increase, or clockwise to reduce, the pressure.



9. Presser foot pressure

Turn the presser spring-regulator clockwise to increase, or counterclockwise to reduce, the pressing force of the presser bar. The projection of the Presser foot adjusting screw is recommended to be about 10mm



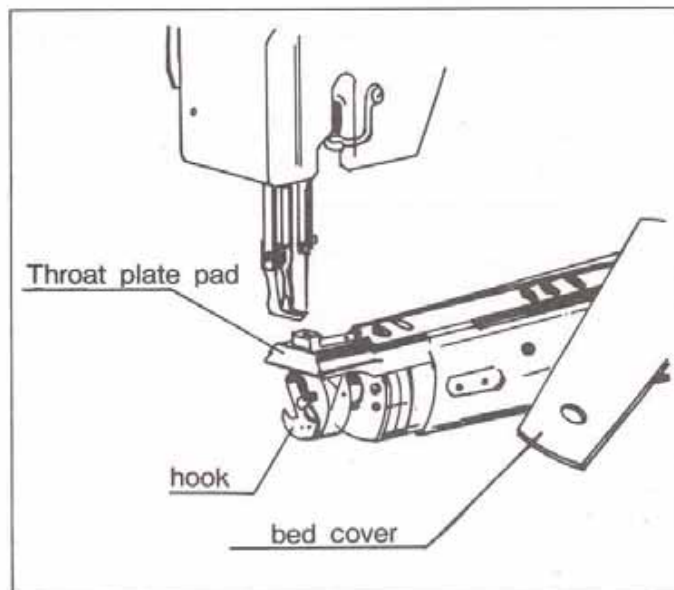
10. Handling the hook

* Disassemble the hook as follows :

- 1) Turn, by hand, the handwheel to raise the needle to its highest point.
- 2) Disassemble the hook cover, the bobbin case, and throat, plate.
- 3) Lay the upper cover of the bed forward, and loosen the 4 setscrews of the throat plate pad.
- 4) Remove the hook while lifting up the front of the pad after loosening the setscrew.

* When assembling the hook, do the above in reverse.

Be sure to insert the projection pin of the pad into the hook.



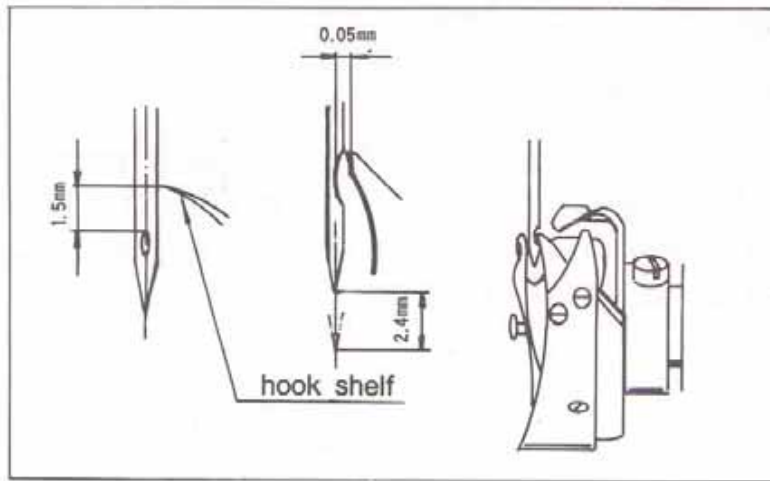
Setting the Machine

1. Needle-to-hook relationship

* When raising the needle to 2.4mm above the lowest point of its stroke,

- 1) Adjust to provide a distance of 1.5mm between the hook blade point and the height of the eye of needle, such that the hook blade point is in line with the center of the needle.
- 2) Provide a clearance of 0.05mm between the surface of the needle and the hook blade point, then securely tighten the setscrews.

* When adjusting the timing between needle and hook, do after setting the stitch-length dial to "O".

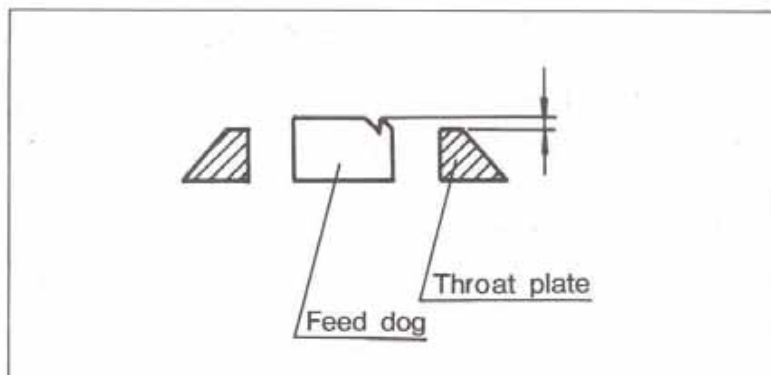


2. Height of the feed dog

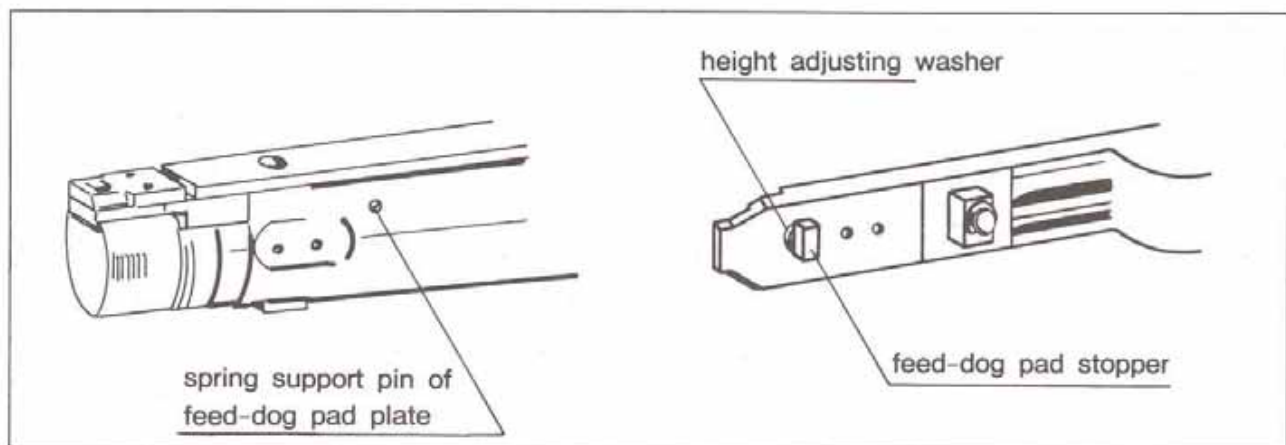
*The standard height of the feed dog is 1mm above from the throat plate's surface when it reaches the highest point of its trajectory.

When adjusting the height of the feed-dog :

- 1) Loosen the stopper nut of the feed-dog pad, then change the height by adjusting the washer of the feed dog.
- 2) Tighten the nut, while being careful of the locking direction of the feed-dog pad stopper when changed.

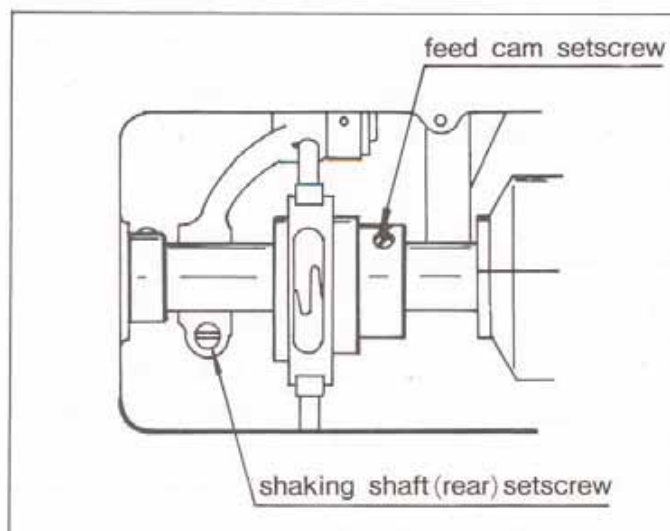


*Be sure to disassemble the feed dog pad lever after disassembling the spring support pin of the feed-dog pad plate.



3. Positioning the feed cam

- 1) Turn, by hand, the stitch-length dial to the maximum number.
- 2) Fix the feed cam to the position to enable alignment of the hook blade point with the center of the needle, by turning the handwheel by hand. At this moment, the exact position of the feed cam is that where the needle is not moved even when the feed lever is moved up and down.
- 3) Fix the feed cam at the point where the needle is not moved, even when moving the feed lever up and down, while turning the feed cam whilst loosening the setscrew of the feed cam.

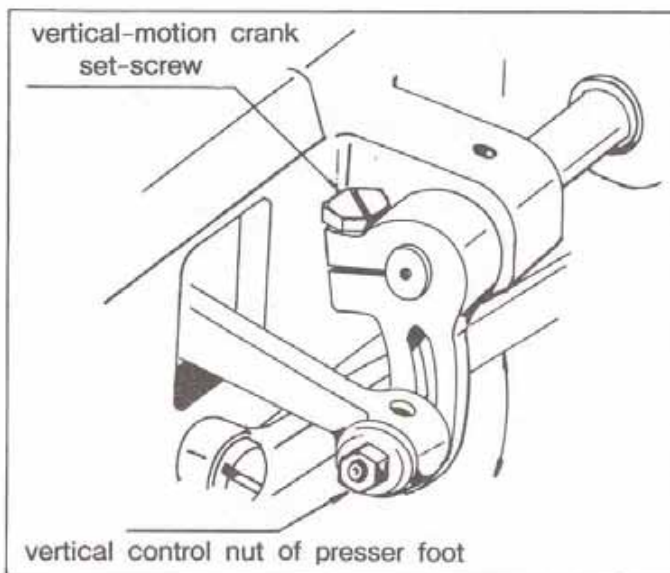


4. Adjusting the main and auxiliary presser feet.

1) Adjustment of the working height.

It is advisable to adjust the working height of the main and auxiliary presser feet when sewing some high elastic or thick materials.

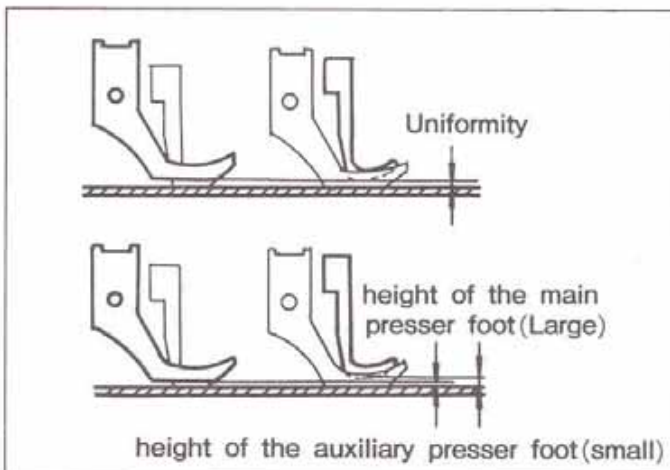
- a) Loosen the adjusting screw of the presser foot.
- b) Fix the screw to the upper side of the presser foot working crank to increase the working height, or to the lower side to reduce the height.



2) Adjustment of the stroke

Well-finished products will be obtained by adjusting the working stroke of the presser foot up or down.

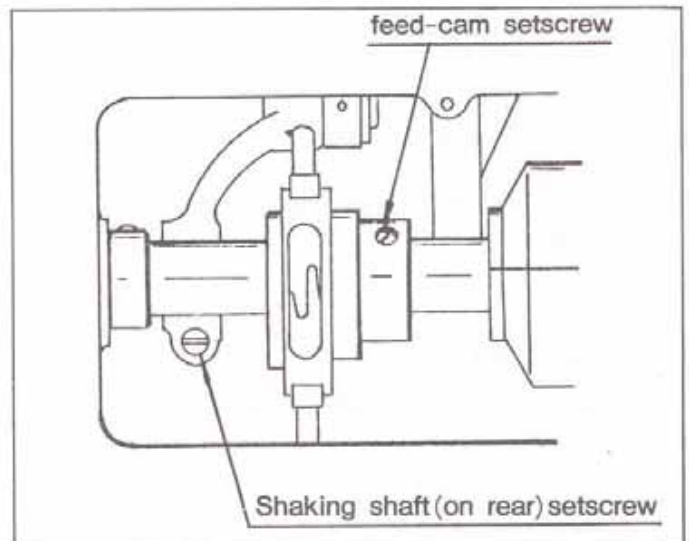
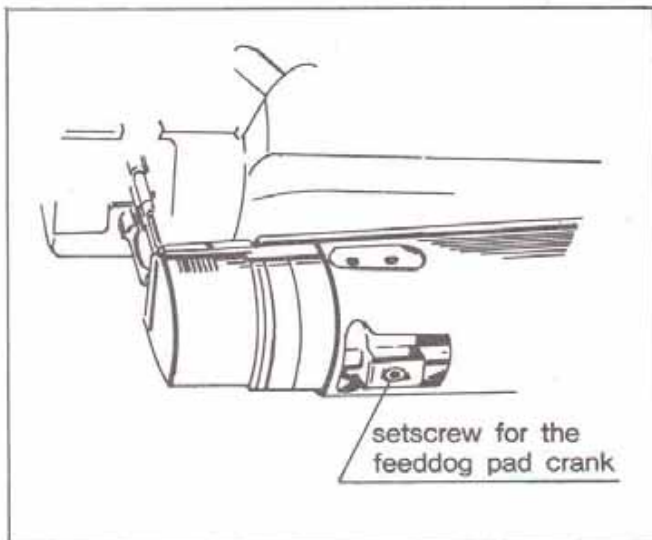
- a) Press the Presser foot lifter.
- b) Loosen the adjusting screw of the presser foot working crank when the lower surface of the presser feet is fully in contact touch with the upper surface of the throat plate, by turning the handwheel by hand.



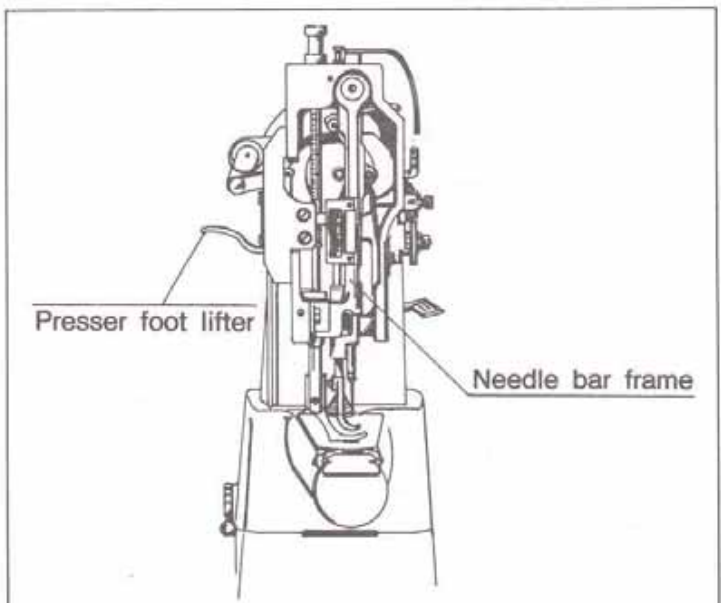
- c) In this state, turn, by hand, the handwheel in the forwards direction so that the stroke of the main presser foot is higher than that of the auxiliary presser foot, or in the reverse direction so that the stroke of the auxiliary presser foot is higher than that of the main presser foot.
- d) By so doing, the distance between the two presser feet will be increased by rotation of handwheel.

5. Adjusting the needle bar

- 1) Turn the stitch-length dial to its maximum.
- 2) Adjust by turning the setscrew of the feed dog crank to contact the groove of the throat plate, while turning by hand the handwheel in the forwards direction and operating the feed lever up and down.
- 3) Loosen the setscrew of the shaking shaft crank (on rear) after positioning the stitch length dial to "0".



- 4) Fix the crank set-screw so that the needle is in line with the center of the needle eye of the feed log, by turning the handwheel by hand.



CONVERSION TABLE

Milli Meter to Inch

1 mm	.....5/128"	
1.5mm	.....1/16"	less 1/256
2 mm	.....1/16"	plus 1/64
2.5mm	.....3/32"	plus 1/256
3mm	.....1/8"	less 1/128
3.5mm	.....1/8"	plus 3/256
4 mm	.....5/32"	
4.5mm	.....5/32"	plus 5/256
5 mm	.....3/16"	plus 1/128
5.5mm	.....7/32"	less 1/256
6 mm	.....1/4"	less 1/64
6.5mm	.....1/4"	plus 1/256
7 mm	.....1/4"	plus 3/128
7.5mm	.....9/32"	plus 3/256
8 mm	.....5/16"	
8.5mm	.....5/16"	plus 5/256
9 mm	.....3/8"	less 3/128
9.5mm	.....3/8"	less 1/256
10mm	.....3/8"	plus 1/64
11mm	.....7/16"	less 1/128
12mm	.....15/32"	plus 1/256
13mm	.....33/64"	less 1/256
14mm	.....35/64"	plus 3/640
15mm	.....9/16"	plus 3/128
16mm	.....5/8"	plus 3/640
17mm	.....43/64"	less 1/256
18mm	.....11/16"	plus 1/64
19mm	.....3/4"	plus 3/128
20mm	.....25/32"	

Inch to MilliMeter

1"	.....25.4mm
1/2"	.....12.7mm
1/4"	.....6.35mm
3/4"	.....19.05mm
1/8"	.....3.175mm
3/8"	.....9.525mm
5/8"	.....15.875mm
7/8"	.....22.225mm
1/16"	.....1.5785mm
3/16"	.....4.7625mm
5/16"	.....7.9375mm
7/16"	.....11.1125mm
9/16"	.....14.2875mm
11/16"	.....17.4625mm
13/16"	.....20.6375mm
15/16"	.....23.8125mm
1/32"	.....0.79375mm
1/64"	.....0.396875mm
1/128"	.....0.19844mm