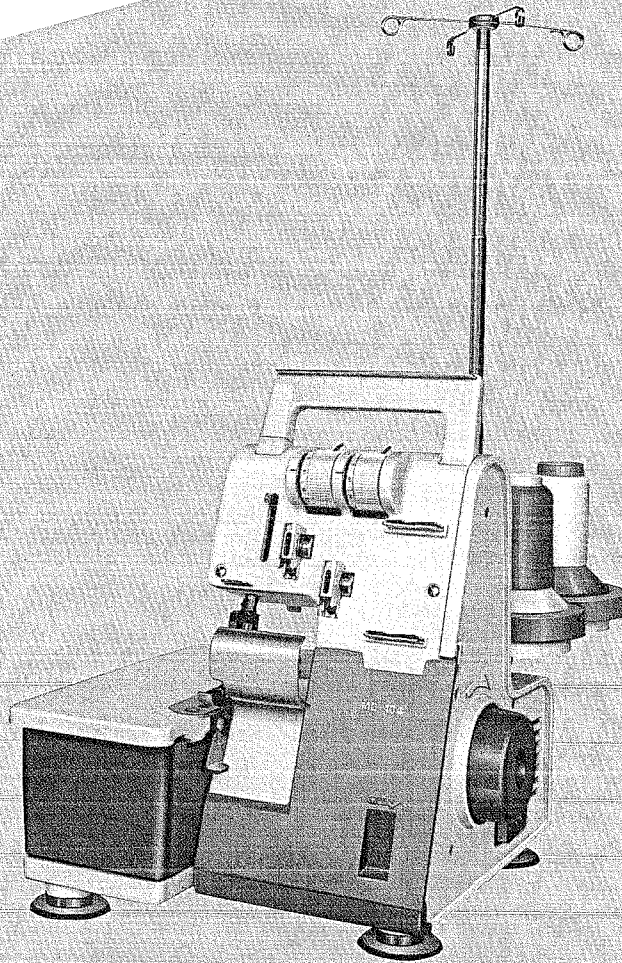


SAFETY STITCH  
SEWING MACHINE

MODEL

**MO-104**

INSTRUCTION BOOK



## INTRODUCTION

---

SAFETY-STITCH SEWING MACHINE MODEL MO-104 is designed to perform the excellent capability of forming the safety seams (overedge stitches, double chain stitches) on various materials including cotton, wool, rayon, tricot, jersey, knitted fabrics etc.

Before starting to operate your MO-104, we want you to carefully read through this INSTRUCTION BOOK which will lead you to operate the machine correctly.

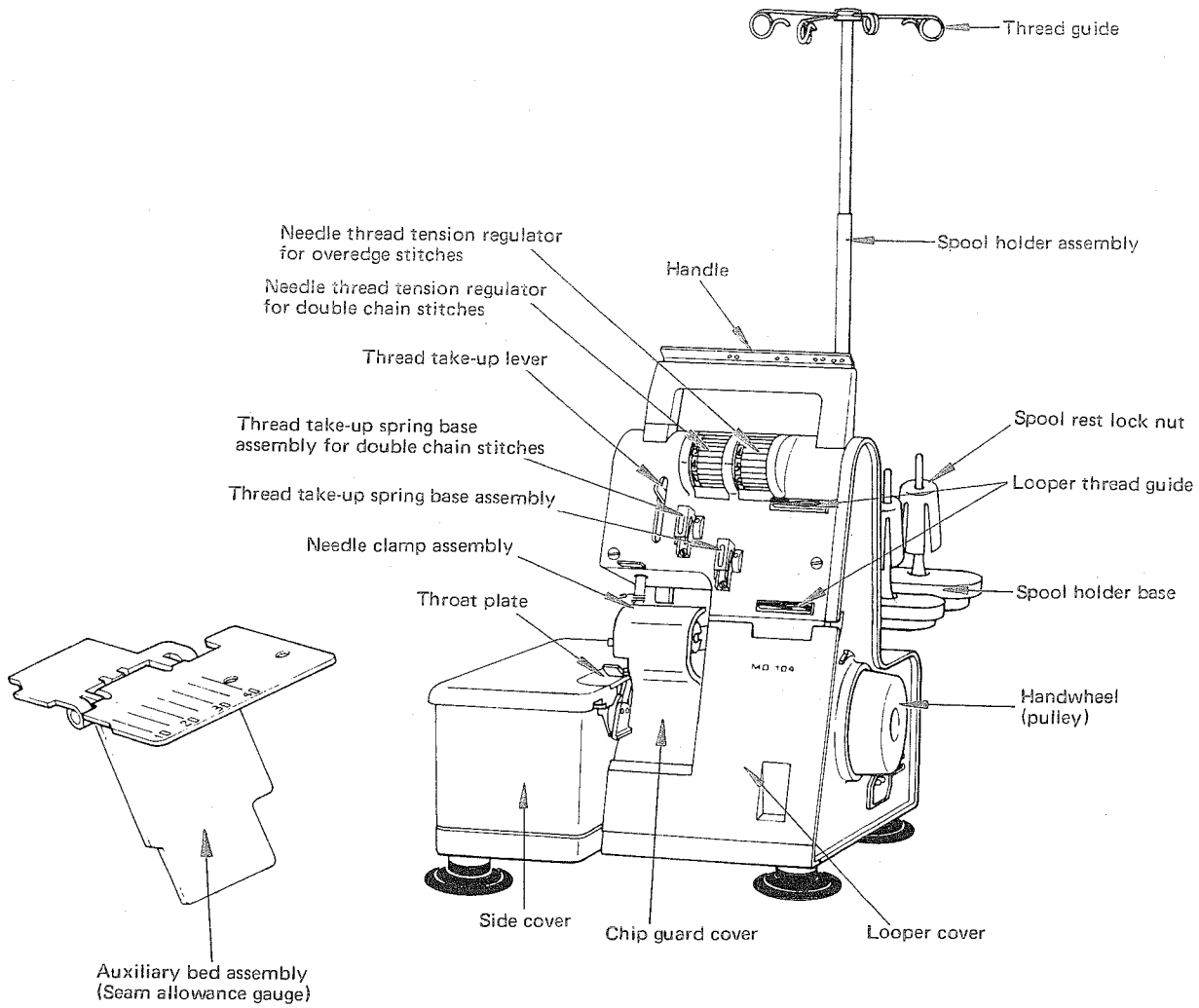
Please do not hesitate to contact the source of your purchase or our service stations for further details.

## CONTENTS

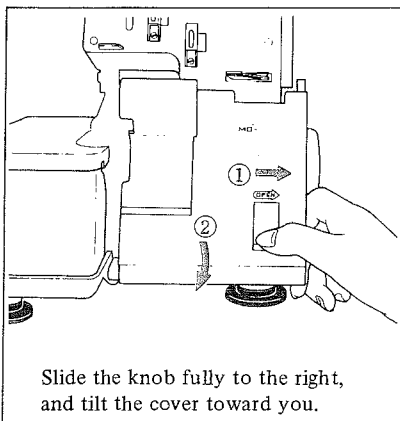
---

Names of main parts	1
How to open the looper cover	1
Inside view of the looper cover	1
Operating the machine	2
How to use the controller	2
Cautions in using the motor	2
When you do not use the machine	2
Setting up the spool holder assembly	3
When using overlocking thread	3
When using home-use thread spools	3
Overedge stitch	4
Threading procedures	4
Stitching procedure	5
Adjusting the thread tension	5
Double chain stitch	6
Threading procedure	6
Forming only the double chain stitches	7
Adjusting the thread tension	7
Safety stitch	8
Threading the machine	8
Adjusting the thread tension	8
Reference table	9
Adjusting the looper tension knob for overedging	10
Attaching the needles	10
Adjusting the stitch dial	11
Adjusting the pressure of the presser foot	11
Replacing the knife	12
How to remove the lower knife	12
How to attach the lower knife	12
Replacing the upper knife	12
Lubricating the machine	13
Troubles & corrective measures	13
Accessories	14
Specification of model MO-104	14
Packing specification	14

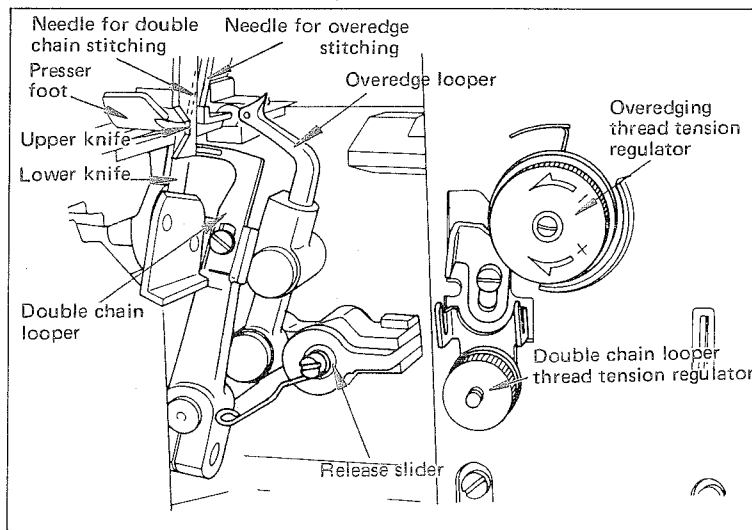
# NAMES OF MAIN PARTS



## □ How to open the looper cover

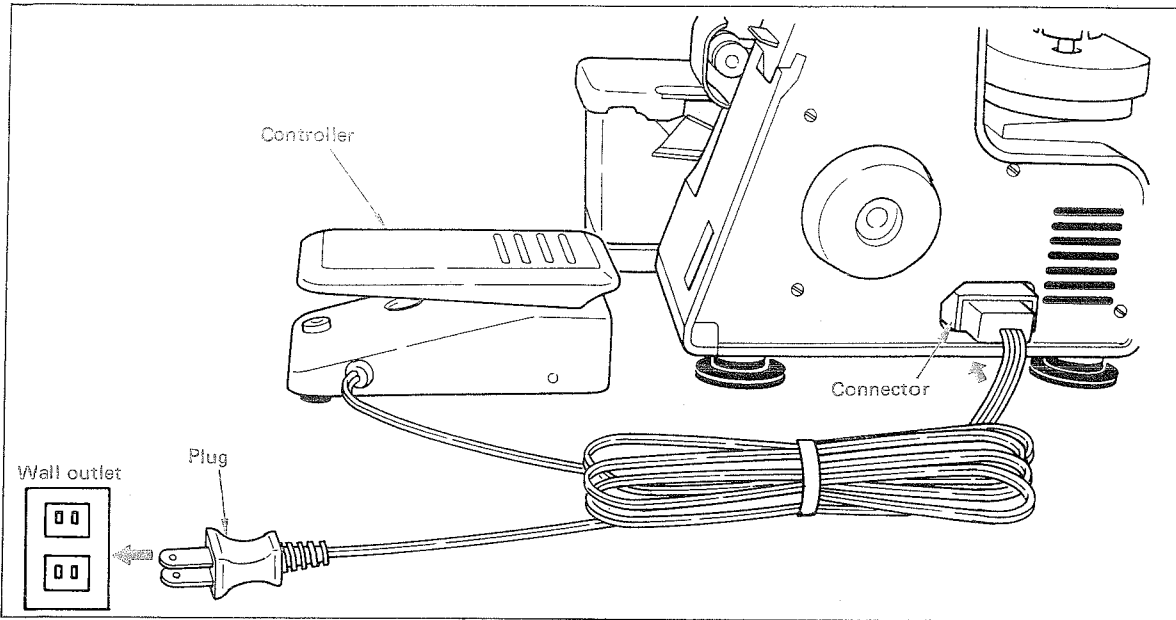


## □ Inside view of the looper cover

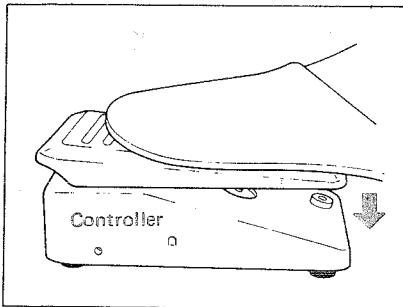


## OPERATING THE MACHINE

When operating the machine, always place it horizontally on a flat desk or table.  
Plug the connector of the controller cord into the receptacle of the main body as illustrated below.  
Then connect the main plug to a wall outlet.



### □ How to use the controller



1. Place your foot on the speed controller as illustrated.
2. You can change the sewing speed by treading the actuator pedal of controller; sewing speed is increased as you press it downwards.

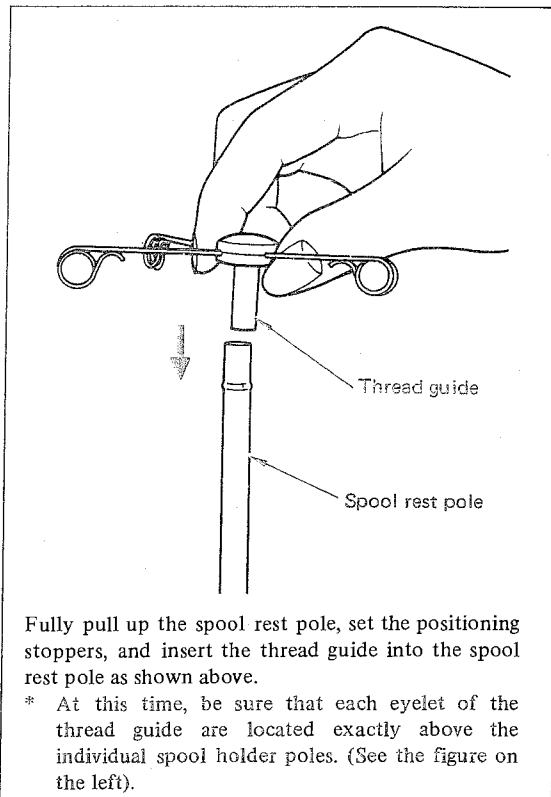
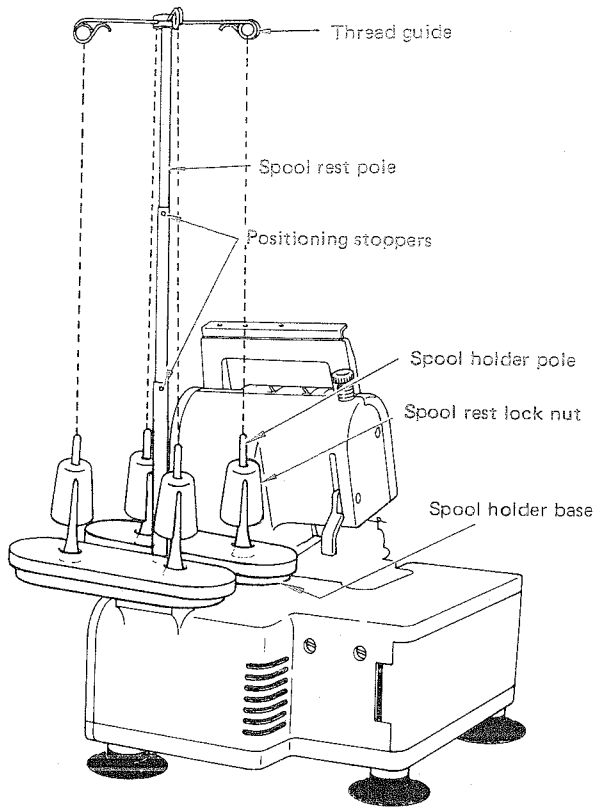
### □ Cautions in using the motor

1. Note that the handwheel (pulley) of this machine rotates in the opposite direction from that of an ordinary home sewing machine because of the different motor used.
2. The controller and motor will get somewhat hot after continuous operation of the machine, however, this will do no harm to the performance of the machine.
3. Be careful not to cover the vents of the motor or controller with fabrics or paper during operation.
4. While the machine is running, you may see small sparks through the vent of the pulley. However, you need not to worry about these sparks since they are normal sparks produced by the rectifying action taken between the carbon brushes and commutators.

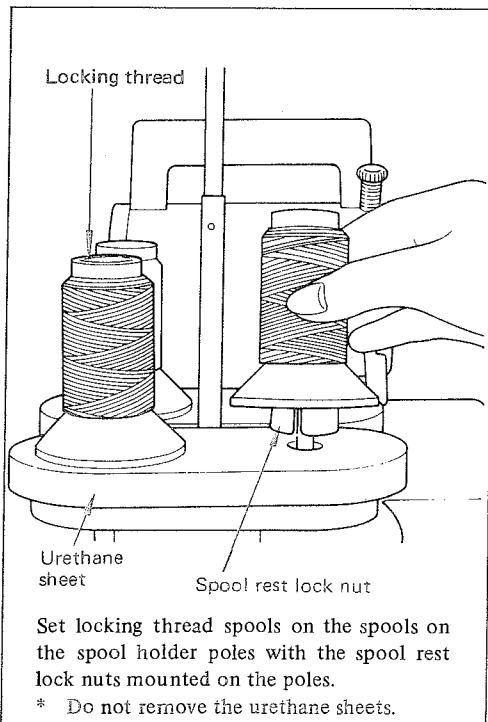
### □ When you do not use the machine

- Be sure to disconnect the plug from the wall outlet.  
At this time, always hold the plug when disconnecting it from the wall outlet.
- Do not place a thing on the controller.

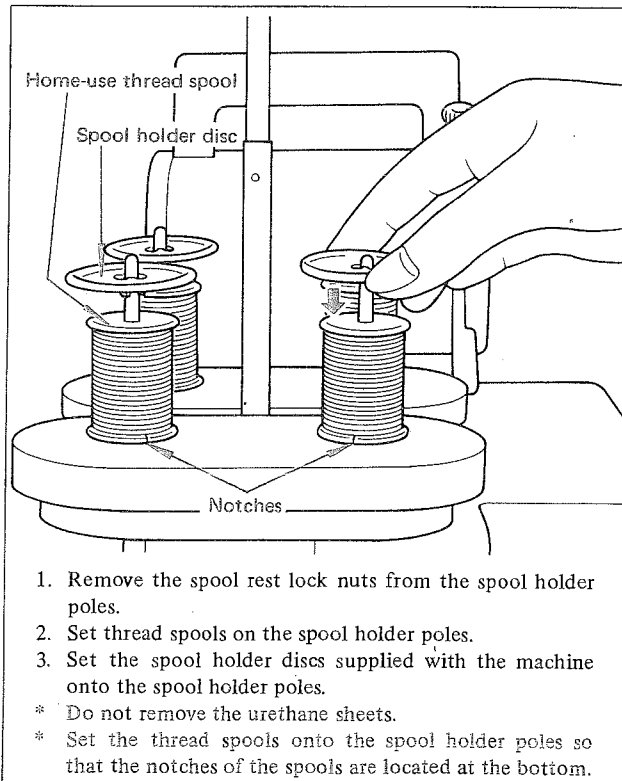
# SETTING UP THE SPOOL HOLDER ASSEMBLY



□ When using overlocking thread (It is recommended to use overlocking thread for this machine).



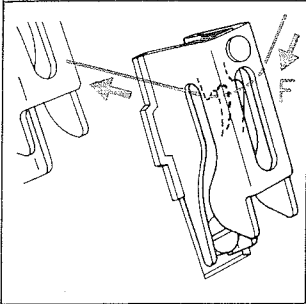
□ When using home-use thread spools



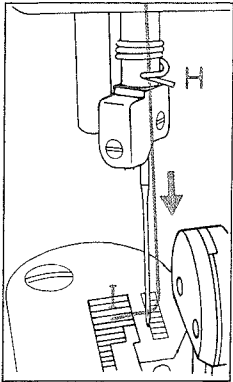
# OVEREDGE STITCH

## □ Threading procedures

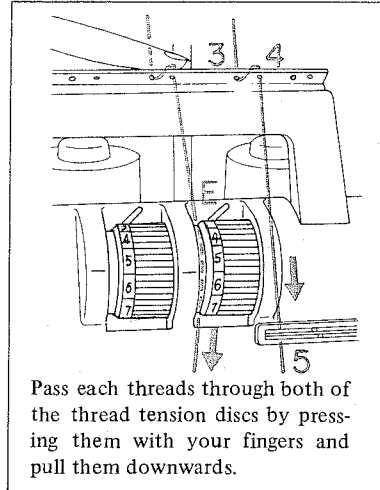
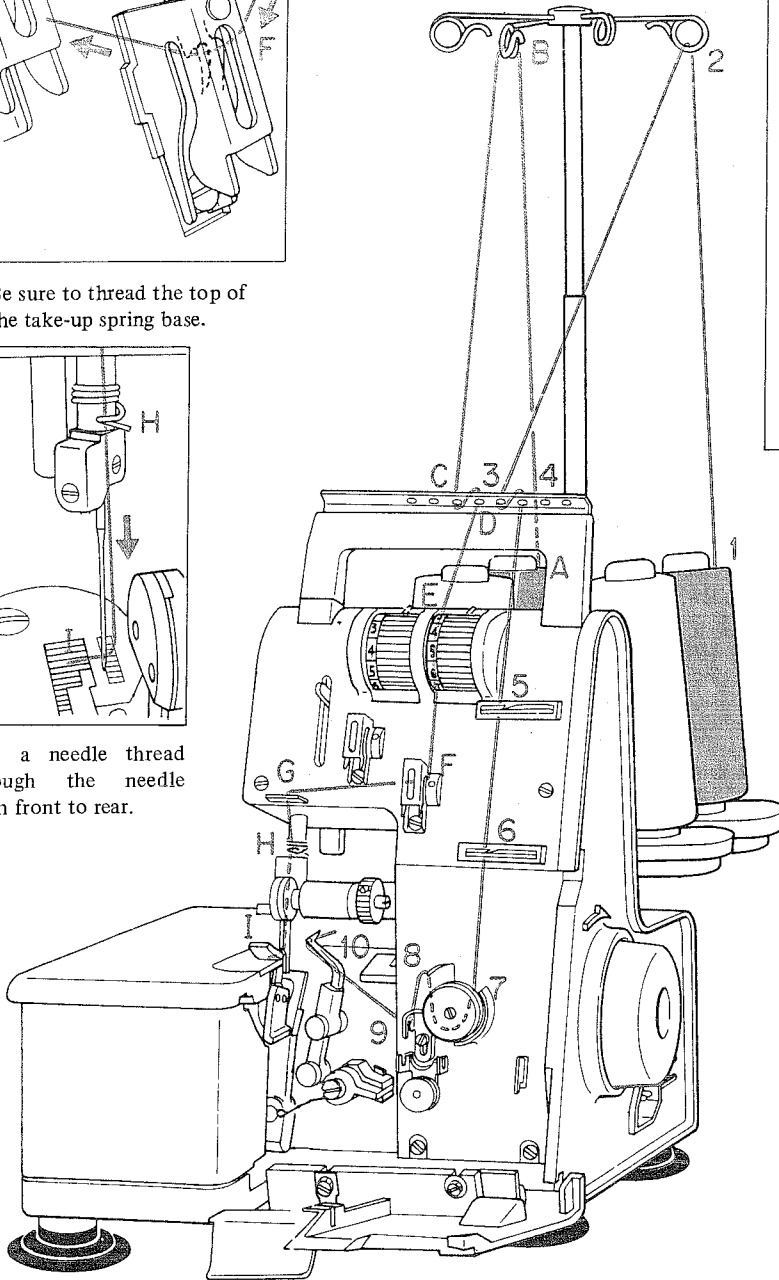
1. When performing overedge stitch, remove the needle for double chain stitch (black needle)
2. First, thread overlocking looper thread in the numerical order (1 to 10) as shown below.
3. Then, thread overlocking needle thread in the alphabetical order (A to I) as shown below.
4. Draw out the both threads from the looper eyelet and needle eyelet by 5cm or more, respectively, and place the two threads under the presser foot.



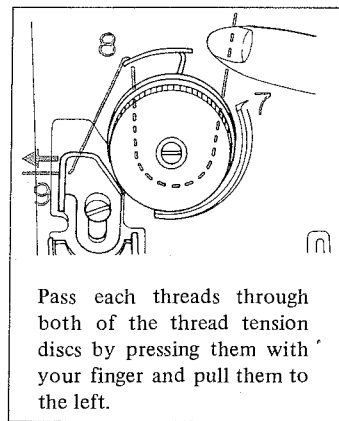
Be sure to thread the top of the take-up spring base.



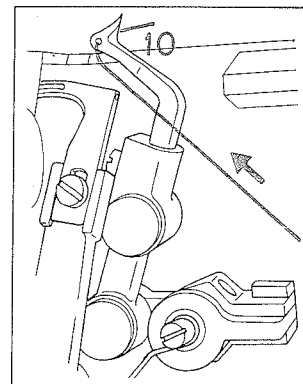
Pass a needle thread through the needle from front to rear.



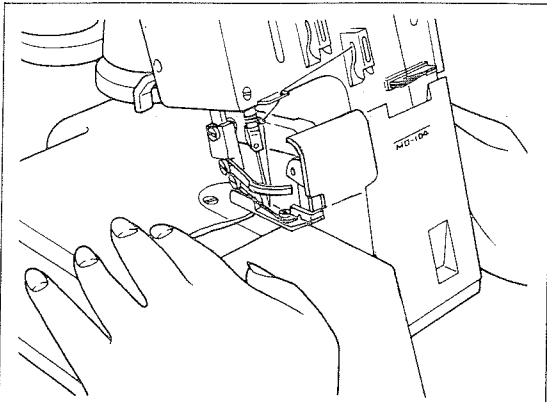
Pass each threads through both of the thread tension discs by pressing them with your fingers and pull them downwards.



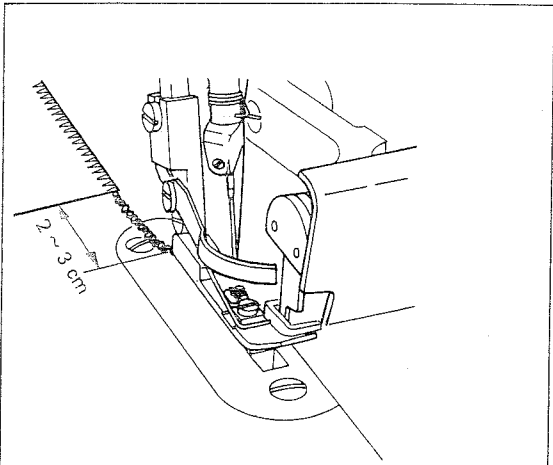
Pass each threads through both of the thread tension discs by pressing them with your finger and pull them to the left.



# STITCHING PROCEDURE



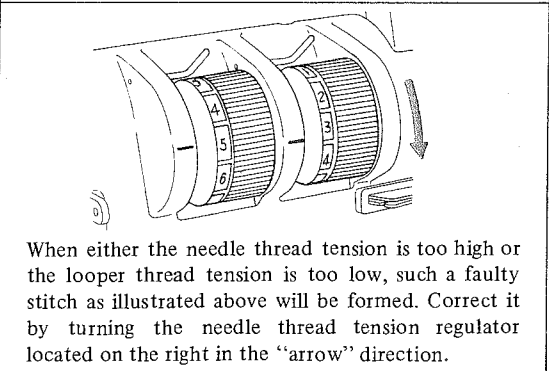
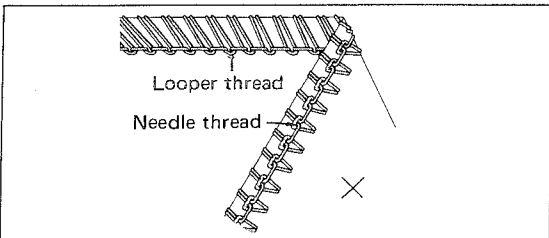
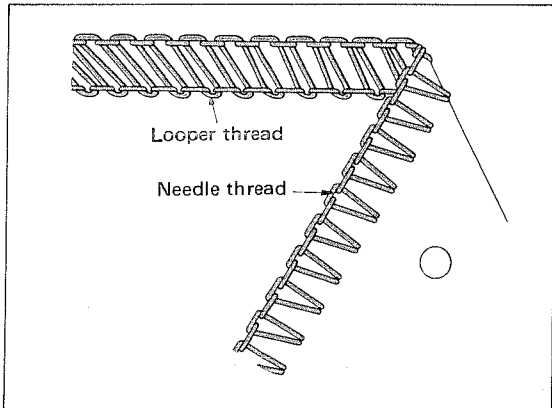
1. Hold the ends of the threaded overedging needle thread and looper thread with your left finger as shown above so that a slight tension is given to these threads.
2. Bring down the presser foot and make a few stitches slowly.



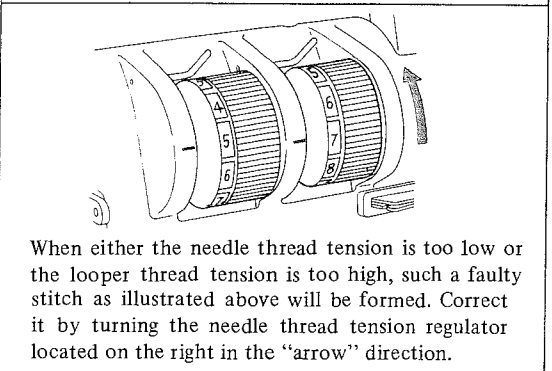
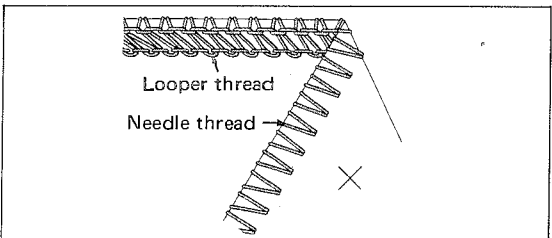
3. At the end of a seam, make 2 to 3 cm idle stitches from the end of a fabric as shown above.

## □ Adjusting the thread tension

The figure on the right shows correct overedge stitches formed. Adjust the thread tension as explained below.



When either the needle thread tension is too high or the looper thread tension is too low, such a faulty stitch as illustrated above will be formed. Correct it by turning the needle thread tension regulator located on the right in the "arrow" direction.



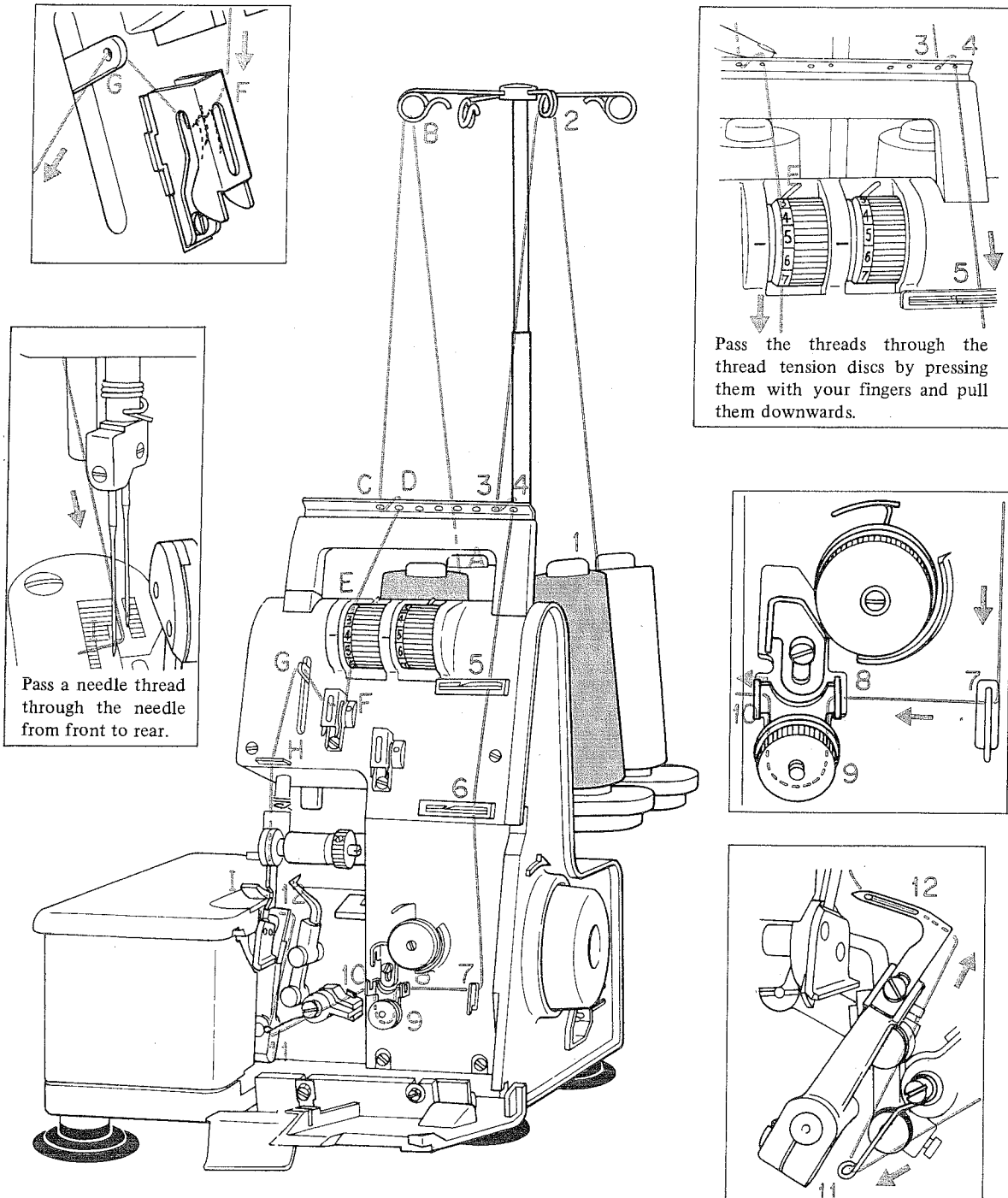
When either the needle thread tension is too low or the looper thread tension is too high, such a faulty stitch as illustrated above will be formed. Correct it by turning the needle thread tension regulator located on the right in the "arrow" direction.

# DOUBLE CHAIN STITCH

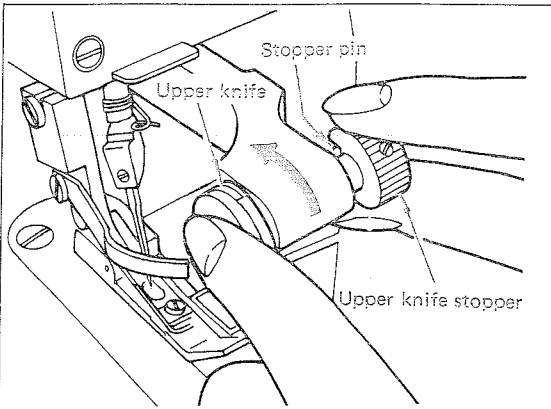
## □ Threading procedure

1. First, thread double chain looper thread in the numerical order (1 to 12) as shown below.
2. Then, thread double chain needle thread in the alphabetical order (A to I) as shown below.
3. Draw out the both threads from the looper eyelet and needle eyelet by 5 cm or more, respectively, and place the two threads together under the presser foot.

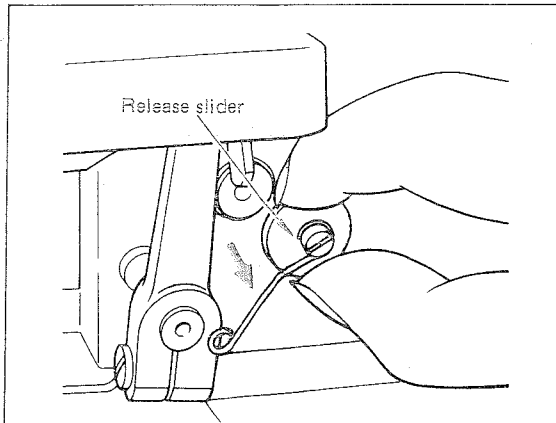
\* Attach two needles to the machine for the double chain stitch.



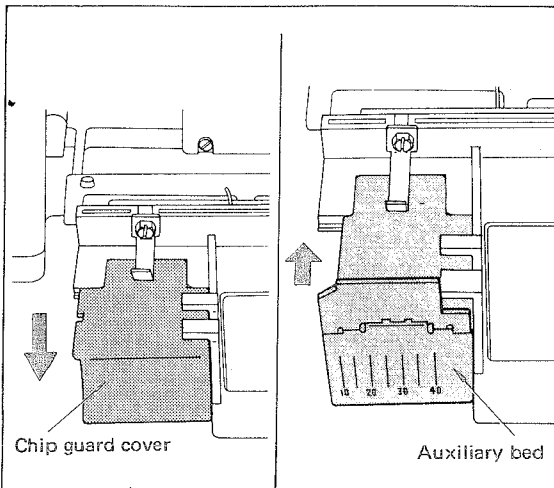
□ **Forming only the double chain stitches**



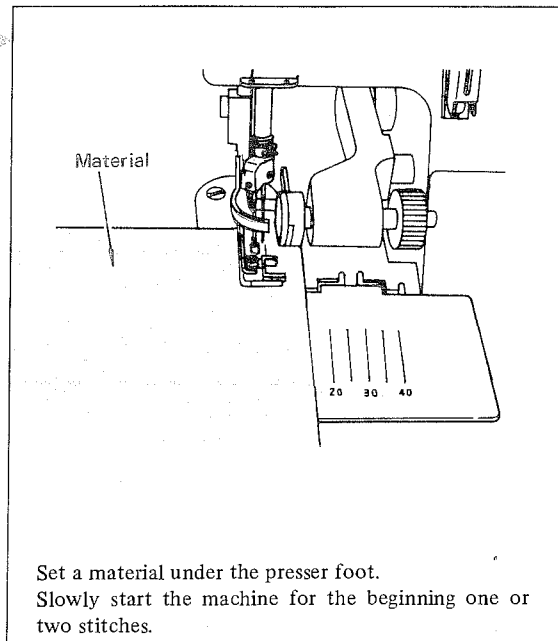
Turn the blade point of the upper knife backwards as shown in the illustration by pushing the upper knife holder and allow the stopper pin to rest in the recess.



Pull the release slider toward you as far as it goes as shown in the illustration, and the overedge looper will not work.

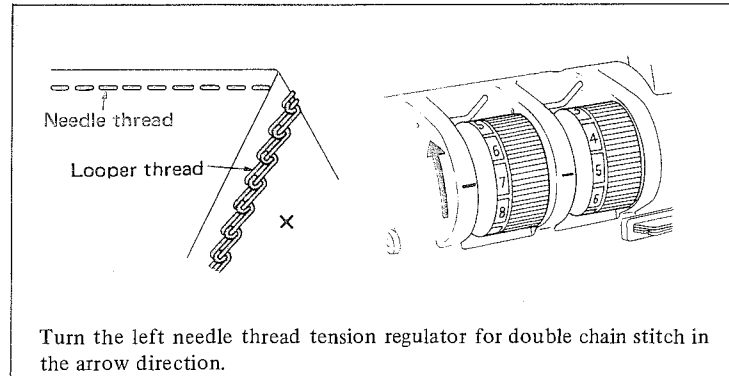
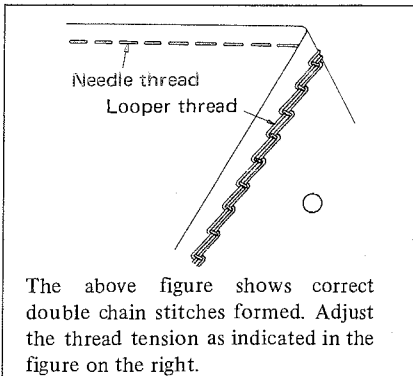


Remove the looper cover and take out the chip guard cover as illustrated. Reset the auxiliary bed to the position as illustrated and fix the looper cover to its original position.



Set a material under the presser foot. Slowly start the machine for the beginning one or two stitches.

□ **Adjusting the thread tension**

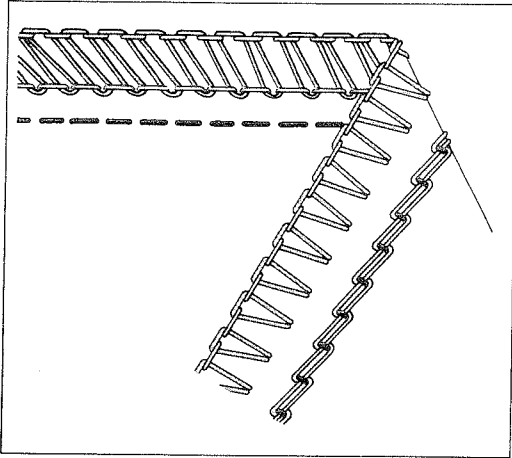


## SAFETY STITCH

### □ Threading the machine

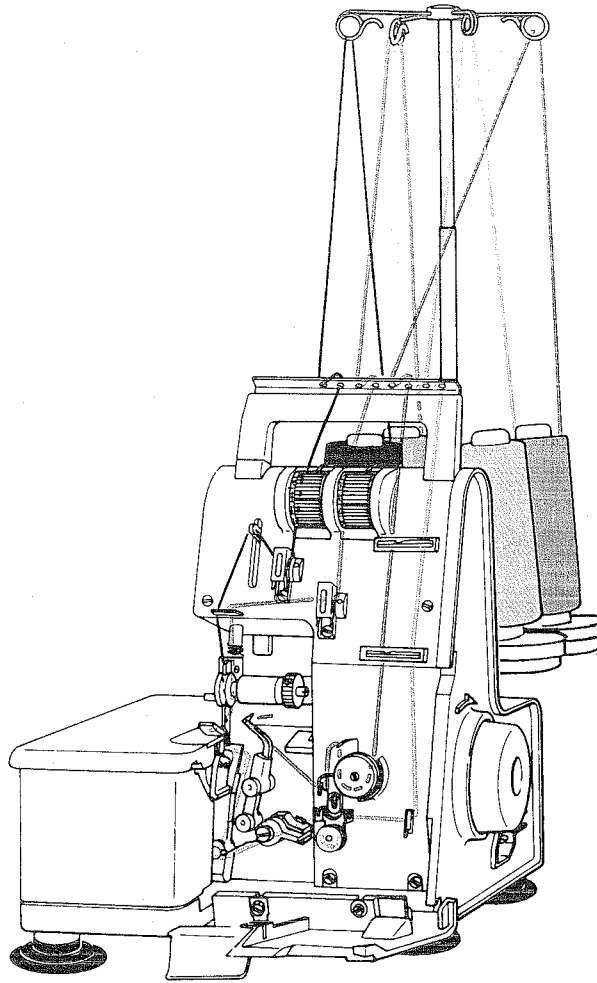
Pass four threads through the machine as shown on the right in accordance with "Threading the machine" explained previously for overedge stitch and double chain stitch.

\* The stitching procedure is the same as that for the overedge stitch.

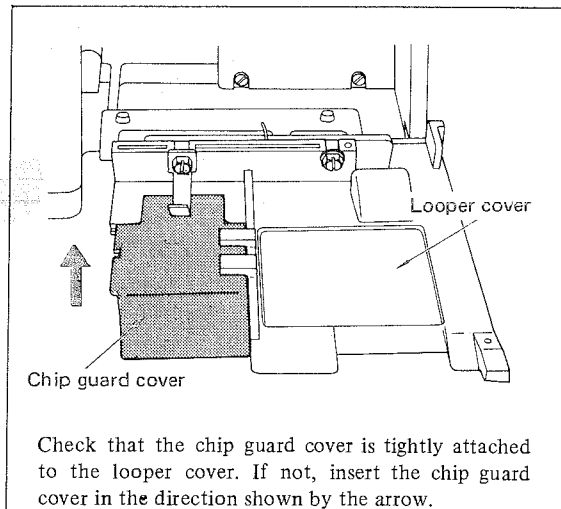
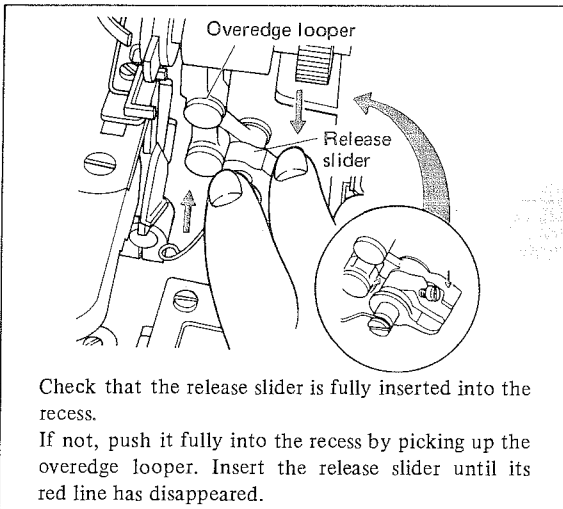


### □ Adjusting the thread tension

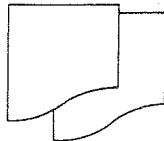
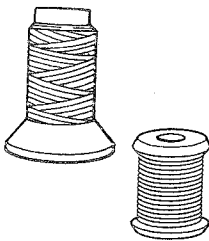

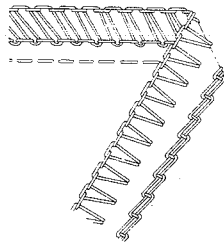
Adjust the correct thread tension according to the procedure mentioned for the overedge and double chain stitches.



### \* Make sure the following points:

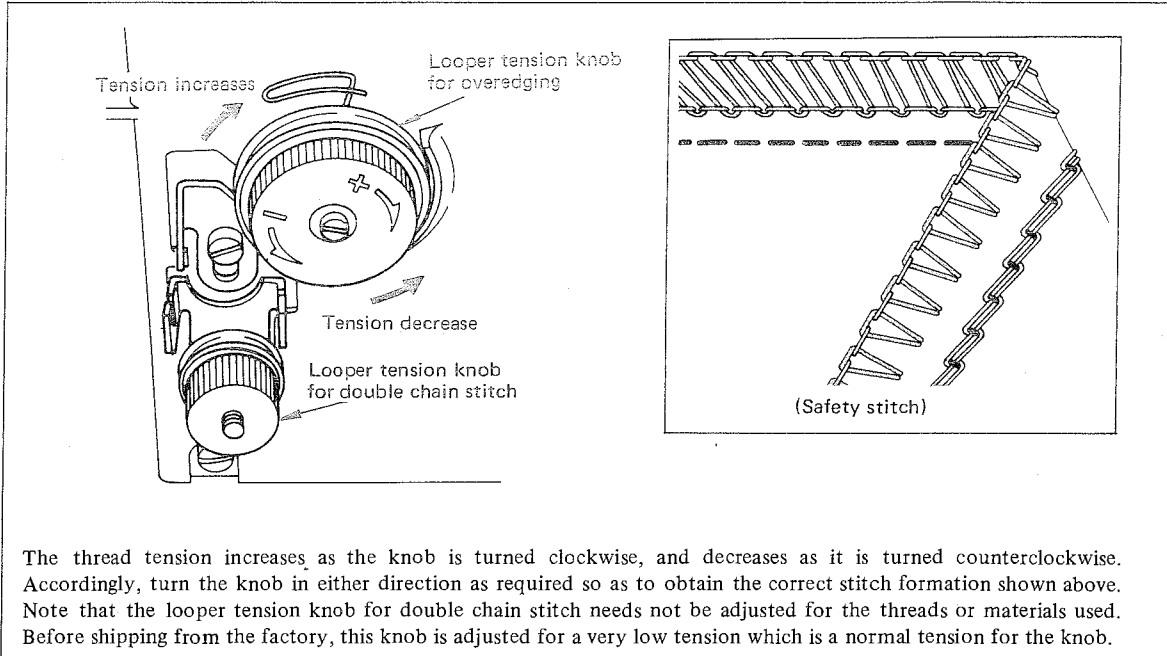


REFERENCE TABLE (MATERIAL/THREAD/NEEDLE/STITCH LENGTH)

	Material	Thread	Needle	Stitch Length
				
Light-weight materials	Thin tricot, Taffeta, Silk crepe de chine, Lining materials	Cotton #80 ~ #100 Silk #80 ~ #100	BL x 1 No. 14 (exclusively used for overedge stitch)  JL x 1 No. 14 (exclusively used for double chain stitch)	Overedge stitch 2.5mm ~ 4mm (7/64" ~ 5/32")  Double chain stitch 2mm ~ 3mm (5/64" ~ 1/8")
Medium-weight materials	Cotton, Tricot, Linen, Satin, Ordinary clothing materials	Cotton #60 ~ #100 Silk #50 ~ #100 Synthetic fiber thread #60 ~ #80	BL x 1 No. 14 (exclusively used for overedge stitch)  JL x 1 No. 14 (exclusively used for double chain stitch)	Overedge stitch 2.5mm ~ 4mm (7/64" ~ 5/32")  Double-chain stitch 2mm ~ 3mm (5/64" ~ 1/8")
Heavy-weight materials	Tweed, Coating, Denim, Heavy-weight coating	Cotton #40 ~ #60 Silk #40 ~ #60	BL x 1 No. 14 (exclusively used for overedge stitch)  JL x 1 No. 14 (exclusively used for double chain stitch)	Overedge stitch 3mm ~ 4.5mm (1/8" ~ 3/16")  Double-chain stitch 2mm ~ 4mm (5/64" ~ 5/32")
Knitted fabrics	Knitted fabric Jersey	Cotton #60 ~ #80 Woolly nylon and synthetic fiber thread #60 ~ #80	BL x 1 No. 11 (exclusively used for overedge stitch)  JL x 1 No. 14 (exclusively used for double chain stitch)	Overedge stitch 2.5mm ~ 4mm (7/64" ~ 5/32")  Double-chain stitch 2mm ~ 4mm (5/64" ~ 5/32")

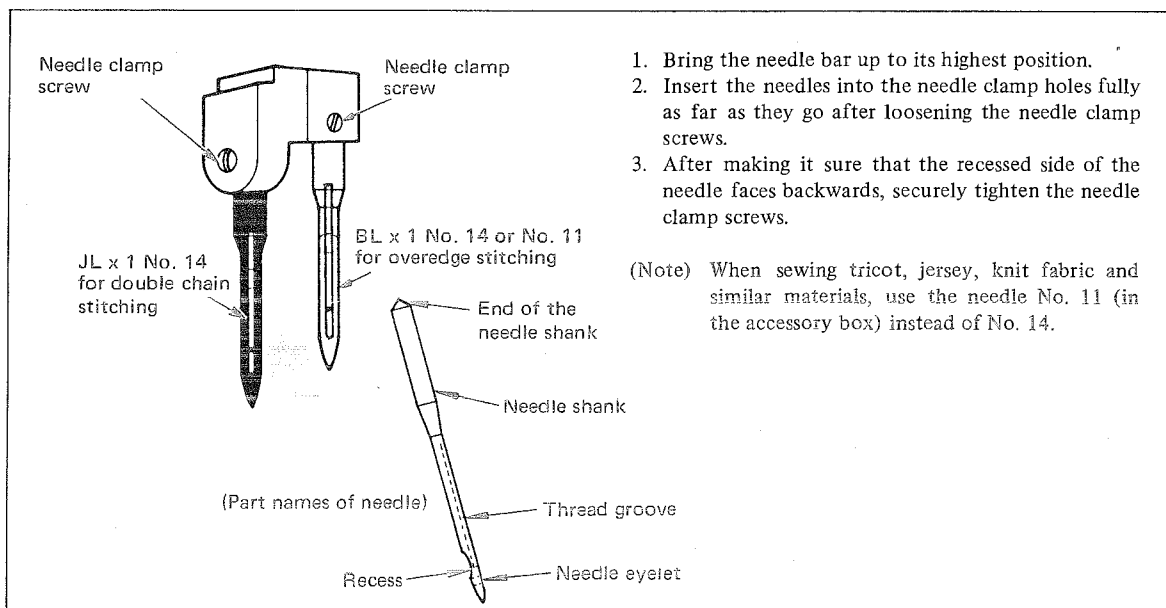
## ADJUSTING THE LOOPER TENSION KNOB FOR OVEREDGING

This looper tension knob for overedging has been adjusted to meet practically all types of materials, and therefore no particular readjustment is required. However, if readjustment is required, perform as follows:

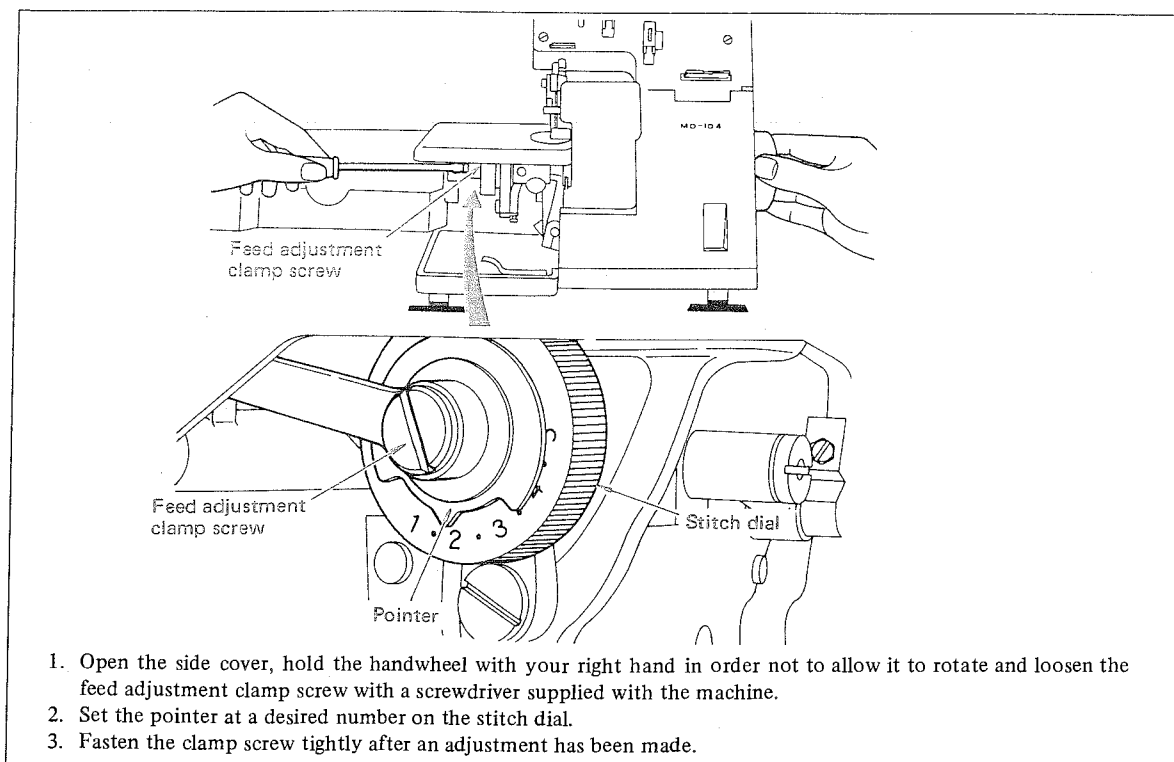


## ATTACHING THE NEEDLES

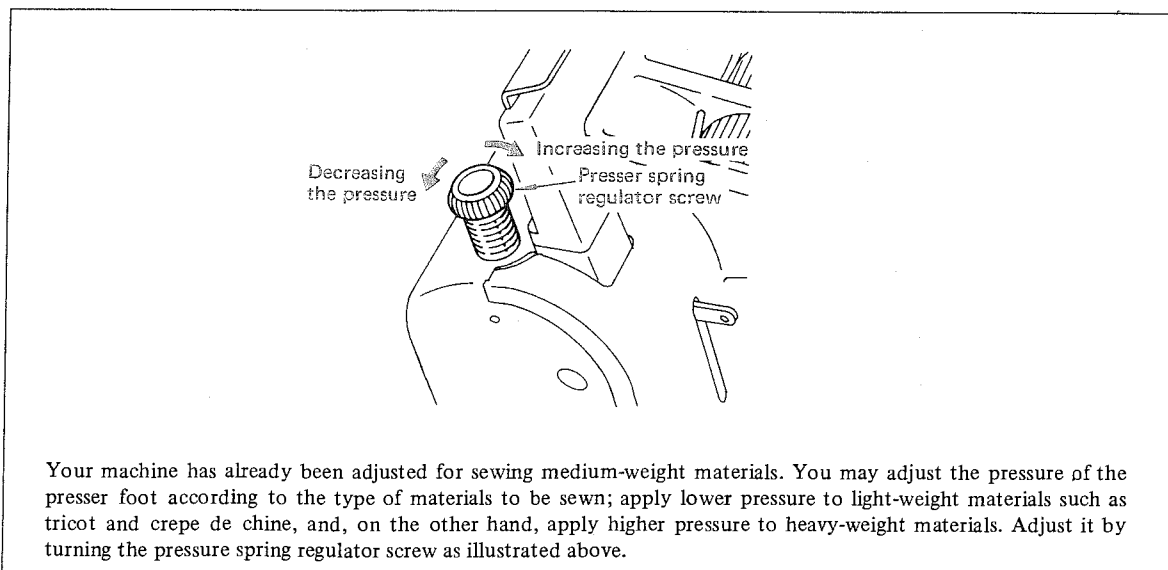
The type of needles to be used for this machine is BL x 1 (exclusively used for overedging) No. 11, No. 14 and JL x 1 (exclusively used for double chain stitching) No. 14. The standard size is No. 14, but you have to decide it depending on the physical characteristics of the sewing material and also the thickness of sewing threads to be used.



## ADJUSTING THE STITCH DIAL



## ADJUSTING THE PRESSURE OF THE PRESSER FOOT



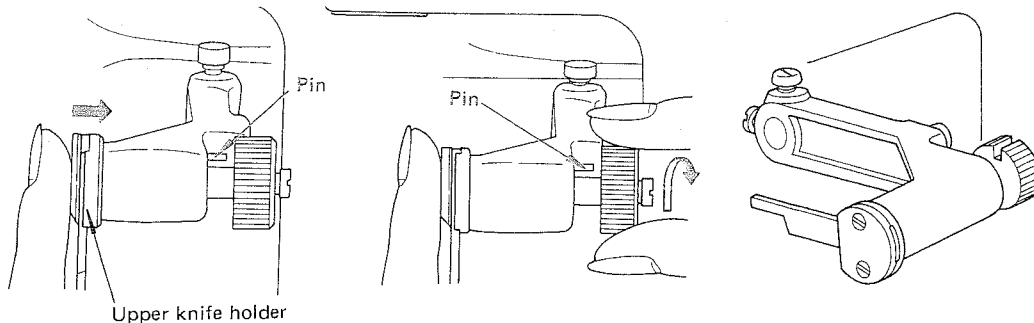
## REPLACING THE KNIFE

The lower knife must be replaced as soon as it has become dull.

\* Don't forget to disconnect the power plug from the wall outlet before starting this work.

### □ How to remove the lower knife

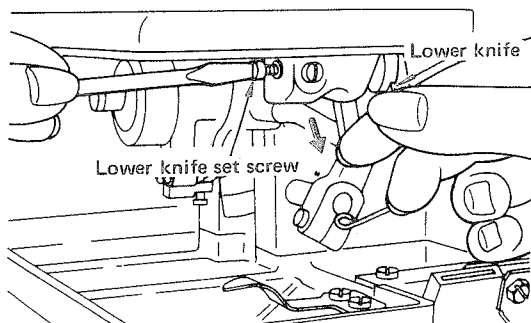
Turn the handwheel until the knife reaches its highest position, then open the looper cover.



Upper knife holder  
Push the upper knife holder in the arrow direction as far as it will go, and the assembly will be released from the stopper pin.

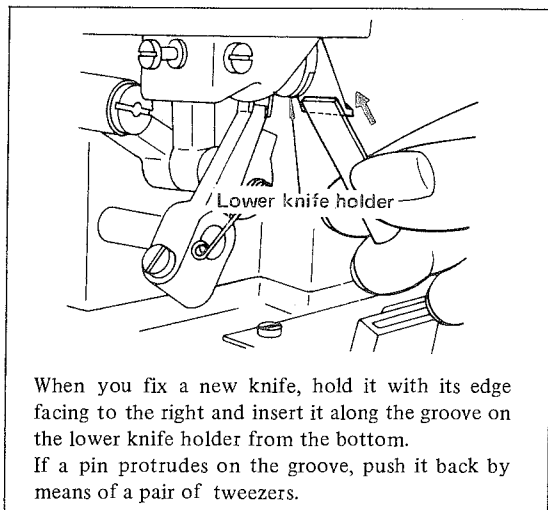
Pin  
Turn the upper knife holder in the arrow direction while it is released from the pin.

And the upper knife holder will rest in the position as illustrated.



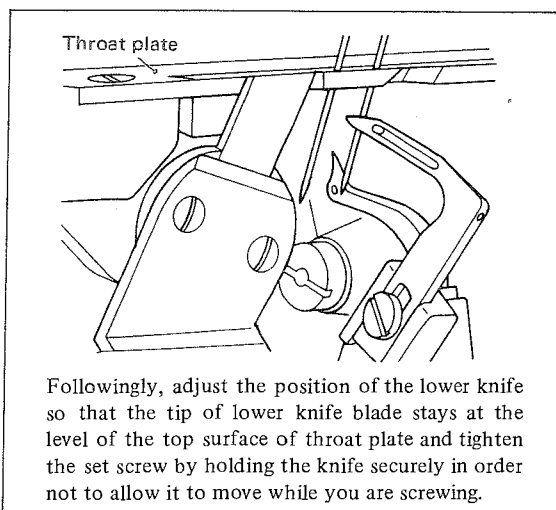
Loosen the lower knife set screw and pull out the knife downwards.

### □ How to attach the lower knife



Lower knife holder  
When you fix a new knife, hold it with its edge facing to the right and insert it along the groove on the lower knife holder from the bottom.

If a pin protrudes on the groove, push it back by means of a pair of tweezers.

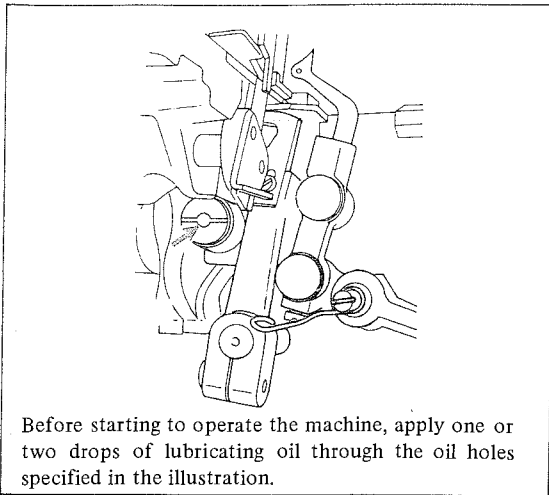


Throat plate  
Followingly, adjust the position of the lower knife so that the tip of lower knife blade stays at the level of the top surface of throat plate and tighten the set screw by holding the knife securely in order not to allow it to move while you are screwing.

### □ Replacing the upper knife

Since the upper knife (movable knife) of your overlock sewing machine is made of a special material (cemented carbide), it is not usually required to replace the upper knife. However, if the blade point of the knife should chip, the knife must be replaced. In this case, contact the source of your purchase.

## LUBRICATING THE MACHINE



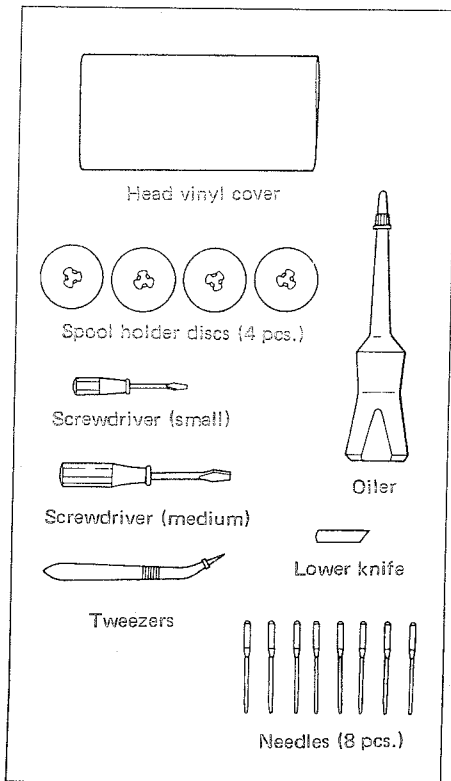
Before starting to operate the machine, apply one or two drops of lubricating oil through the oil holes specified in the illustration.

## TROUBLES & CORRECTIVE MEASURES

The following table is used for troubleshooting of the machine.

Troubles	Causes	Corrective measures	Page
Material is not fed properly.	<ul style="list-style-type: none"> <li>○ The pressure applied by the presser foot to the material is not enough.</li> </ul>	<ul style="list-style-type: none"> <li>○ Increase the pressure by turning the presser spring regulator screw clockwise.</li> </ul>	11
Needle is broken.	<ul style="list-style-type: none"> <li>○ The needle has been bent or its point is not sharp.</li> <li>○ The needle has been installed in a wrong way.</li> <li>○ A material was forcibly pulled manually.</li> </ul>	<ul style="list-style-type: none"> <li>○ Replace the needle.</li> <li>○ Install it correctly.</li> <li>○ While a material is being sewn, you should not pull or push it. Guide it gently.</li> </ul>	10
Thread is broken.	<ul style="list-style-type: none"> <li>○ Threading order is wrong.</li> <li>○ Thread tension is too high.</li> <li>○ The needle has been installed in a wrong way.</li> </ul>	<ul style="list-style-type: none"> <li>○ Thread the machine again in correct way.</li> </ul>	4, 6, 8 5, 7, 8 10
Stitch is skipping	<ul style="list-style-type: none"> <li>○ The needle has been bent or its point has been dull.</li> <li>○ The needle has been installed in a wrong way.</li> <li>○ Threading order is wrong.</li> <li>○ The pressure of the presser foot is not enough.</li> </ul>	<ul style="list-style-type: none"> <li>○ Replace the needle.</li> <li>○ Install it correctly.</li> <li>○ Thread the machine correctly.</li> <li>○ Increase the pressure by turning the presser spring regulator screw clockwise.</li> </ul>	10 10 4, 6, 8 11
Correct stitches are not formed.	<ul style="list-style-type: none"> <li>○ The thread tension is not correct.</li> </ul>		5, 7, 8
Stitch line wrinkles the material.	<ul style="list-style-type: none"> <li>○ Thread tension is too high.</li> <li>○ Threading order is wrong or the thread is caught at other places than specified.</li> </ul>	<ul style="list-style-type: none"> <li>○ Decrease the thread tension, especially when sewing a light-weight material.</li> <li>○ Check and correct it.</li> </ul>	5, 7, 8 4, 6, 8
Motor is not in order.	<ul style="list-style-type: none"> <li>○ It makes a noise.</li> <li>○ It does not run at all.</li> <li>○ It makes abnormally extensive sparks.</li> </ul>	<ul style="list-style-type: none"> <li>○ Replace the carbon brush.</li> </ul> <p>(Note) Spare carbon brushes are available at our agents in your area.</p>	

## ACCESSORIES



## SPECIFICATION OF MODEL MO-104

Sewing speed	Max. 1,500 s.p.m.
Overedge width	4mm
Needle gauge	3.2mm (1/8")
Stitch length	2 to 5mm (5/64" to 13/64")
Presser foot lift	4.5mm (11/64")
Needles	BLx1, #11, #14, JLx1, #14
Dimension	263mm(W) x 236mm(D) x 280mm(H)
Weight	9.5 kg

## PACKING SPECIFICATION

1. Machine head (with motor) 1 set.
2. Controller assembly 1 set.
3. Instruction book 1 copy
4. Accessory bag 1 pc.
5. Thread guide 1 pc.
6. Inspection certificate 1 copy
7. Auxiliary bed 1 pc.