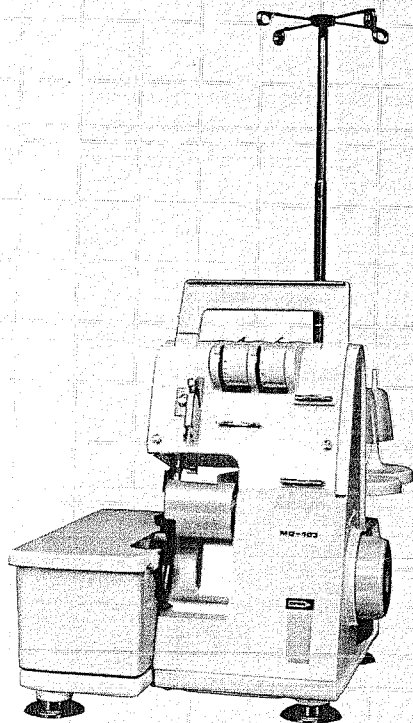




Model MO-103

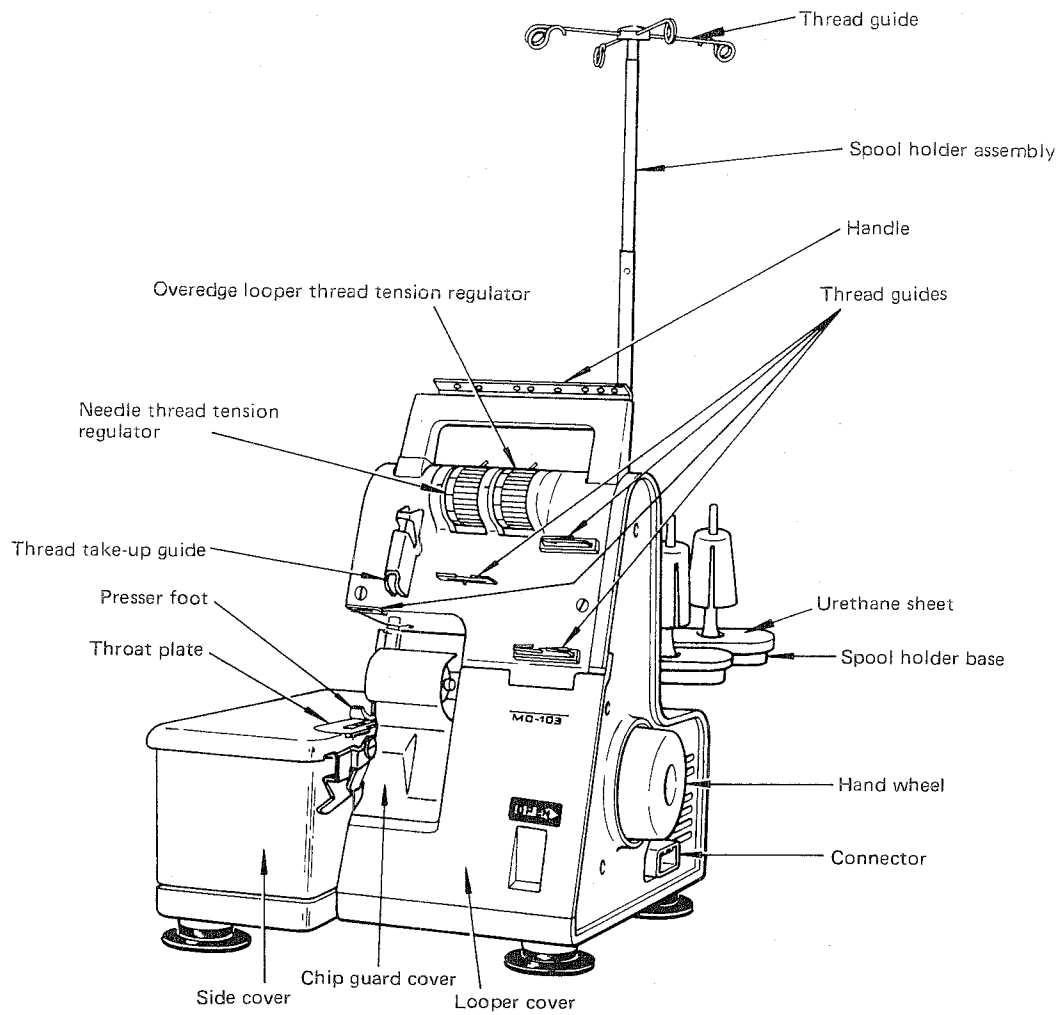
1-Needle, 3-Thread OVER-LOCK Sewing machine Instruction book

OVER-LOCK SEWING MACHINE Model MO-103 (1 needle, 3 threads) is one of the most versatile machine to overcast the edges of various materials from light-weight fabric such as lawn, georgette, tricot and woollens to heavy-weight ones such as cotton, jersey and denim including all other medium-weight fabrics. Before operating your MO-103, carefully read through this INSTRUCTION BOOK to acquire the correct method of operation. Please do not hesitate to enquire of our agent in your area for further details of questions.

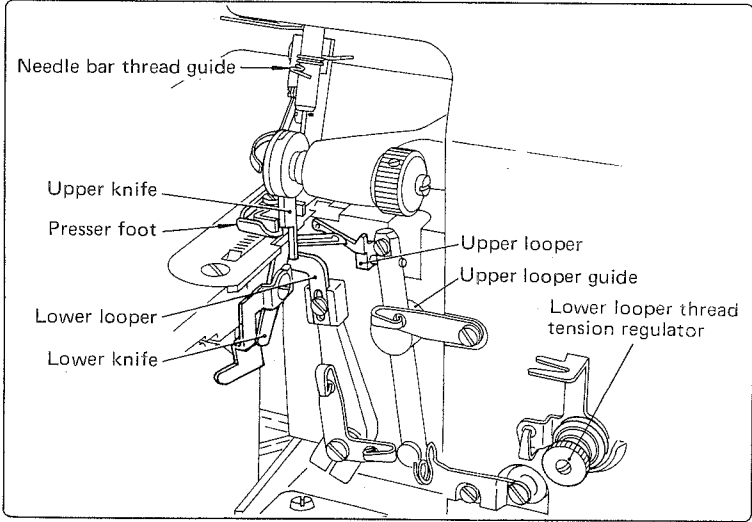
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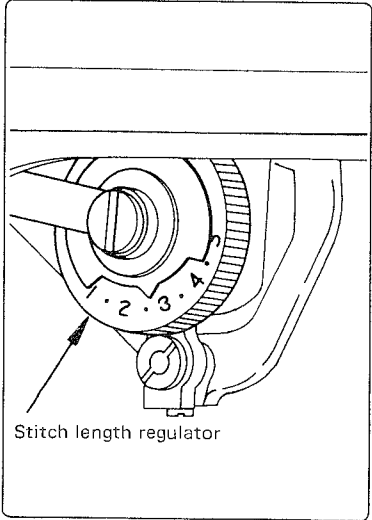
NAMES OF MAIN COMPONENTS



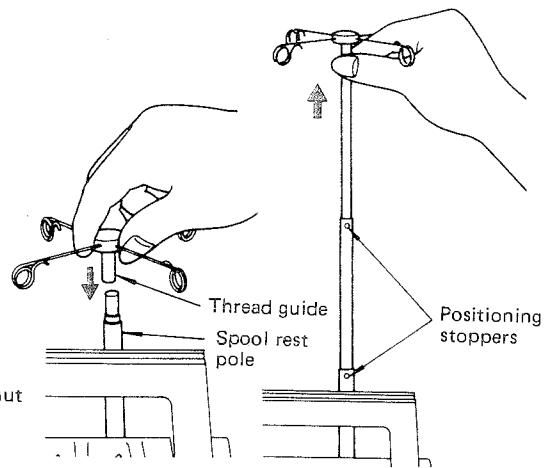
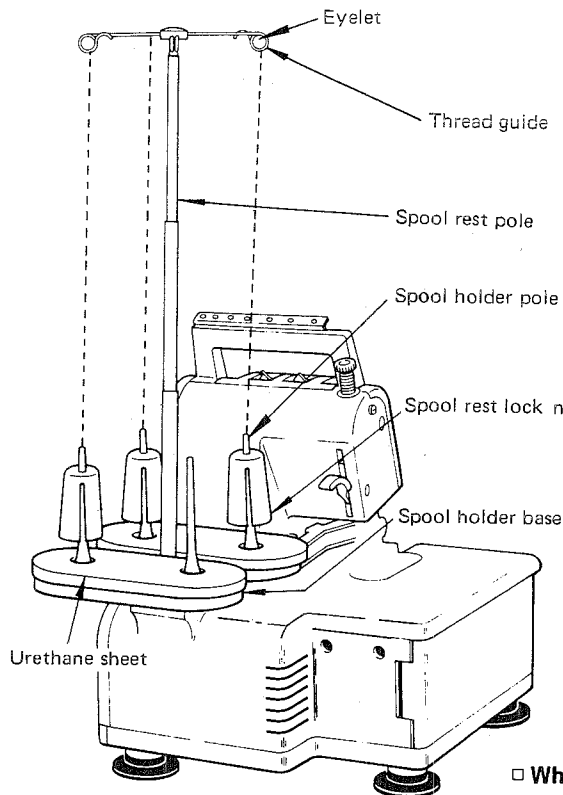
INSIDE VIEW (open the looper cover)



INSIDE VIEW (open the side cover)



HOW TO SET UP THE SPOOL HOLDER

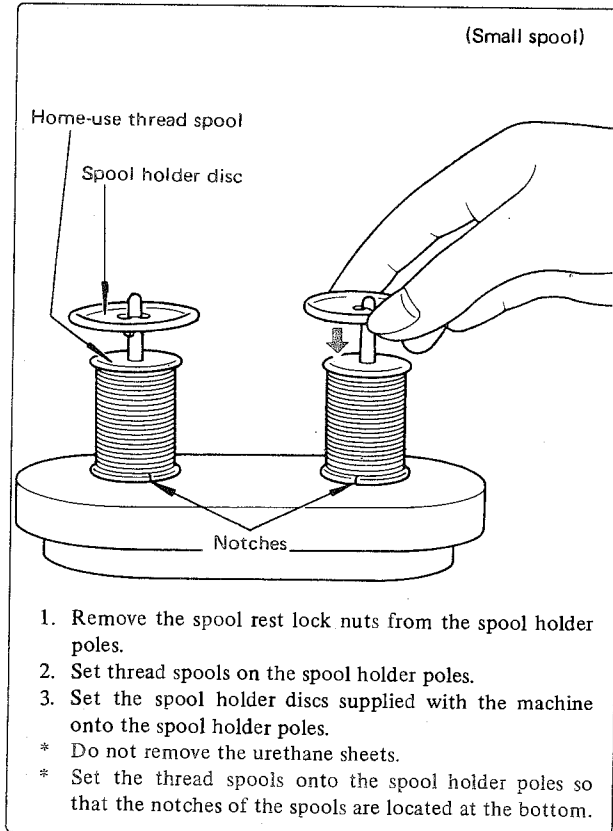
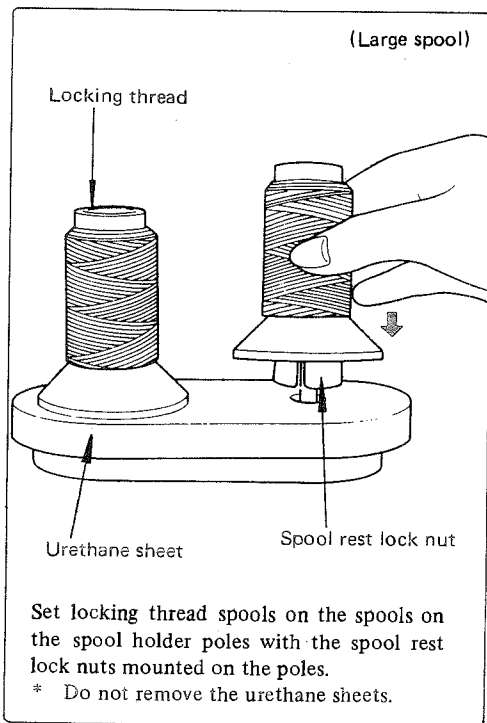


Fully pull up the spool rest pole, set the positioning stoppers, and insert the thread guide into the spool rest pole as shown above.

* At this time, be sure that each eyelet of the thread guide are located exactly above the individual spool holder poles. (See the figure on the left).

□ When using home-use thread spools

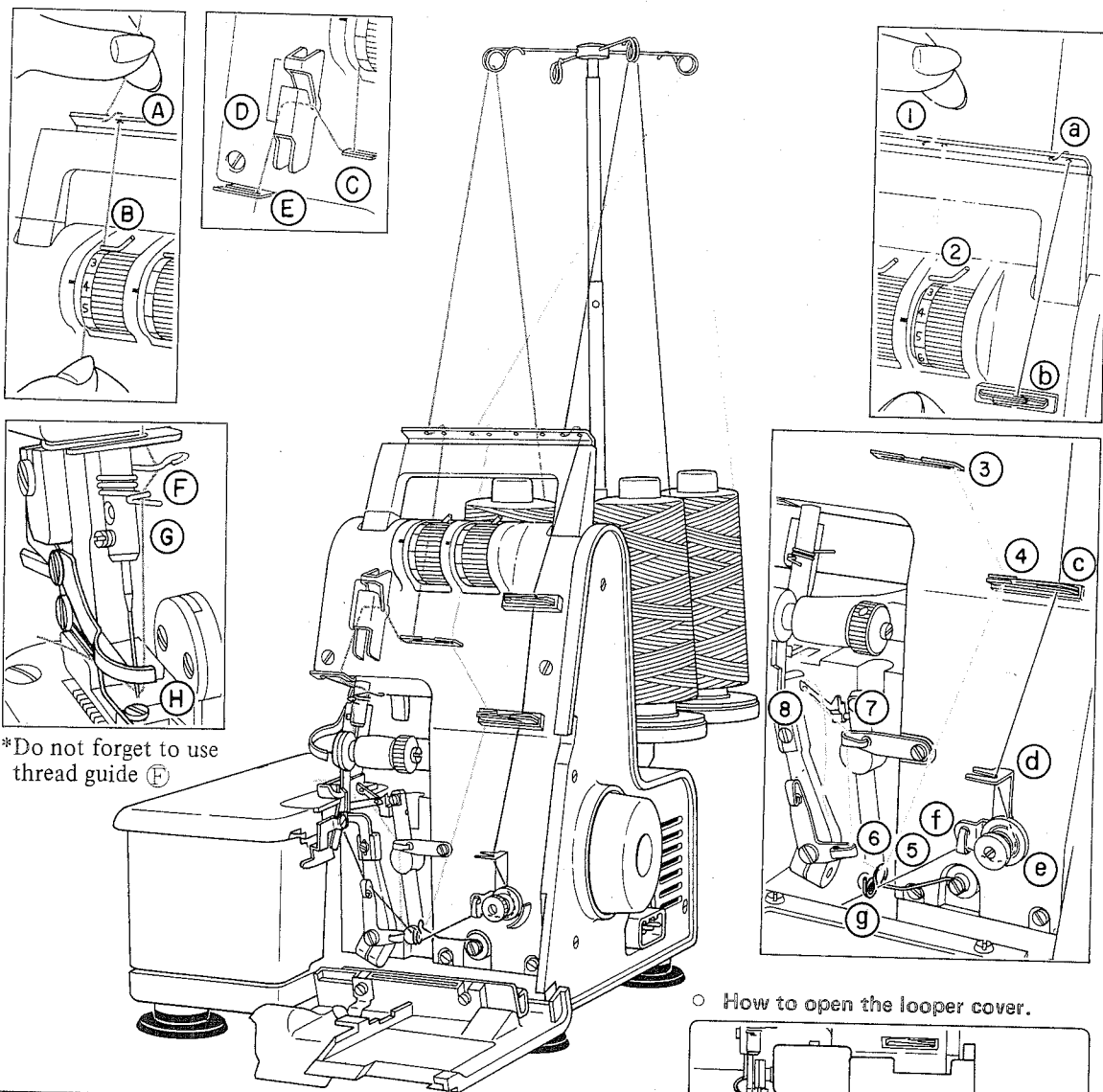
□ When using overlocking thread (It is recommended to use overlocking thread for this machine).



HOW TO THREAD THE MACHINE

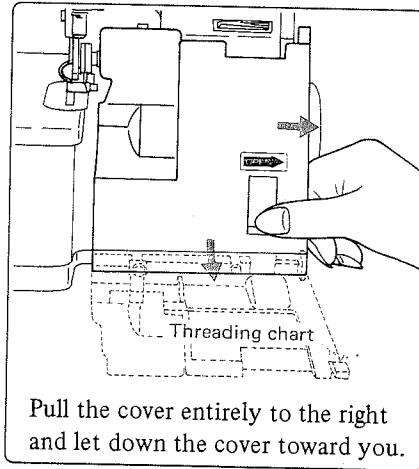
Thread the machine carefully in the correct order, in order to prevent the thread from breaking or making a wrong stitch.

Use a threading chart supplied with the machine or the chart drawn on the inside of the looper cover.

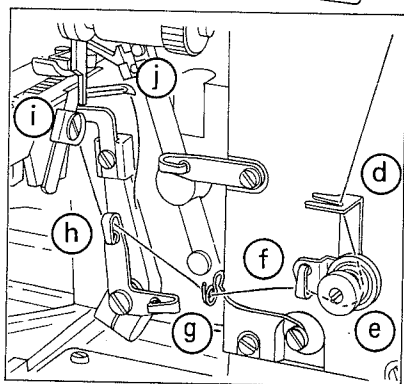


*Do not forget to use thread guide **F**

○ How to open the looper cover.



Pull the cover entirely to the right and let down the cover toward you.

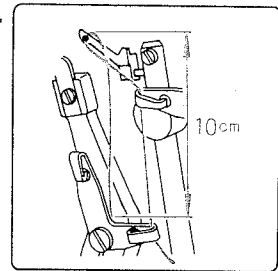


*Refer to 2 of page 4 for the details of thread guides **i** and **j**.

Thread the machine according to the order as shown in the illustration of page 3.

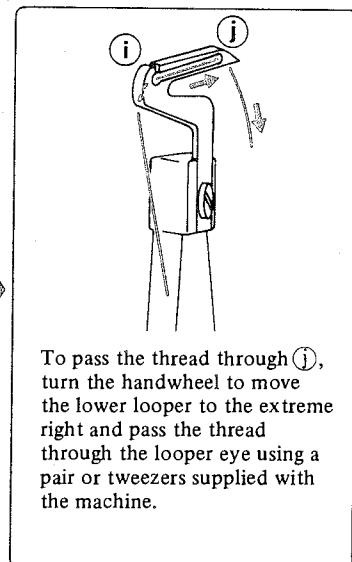
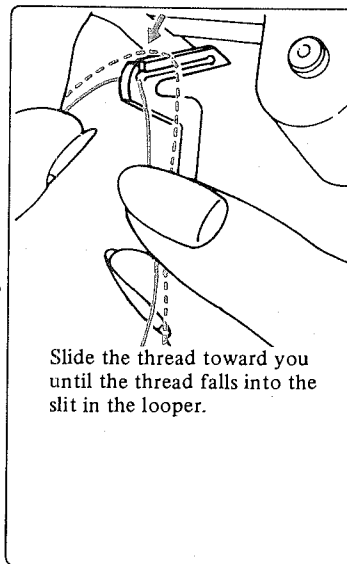
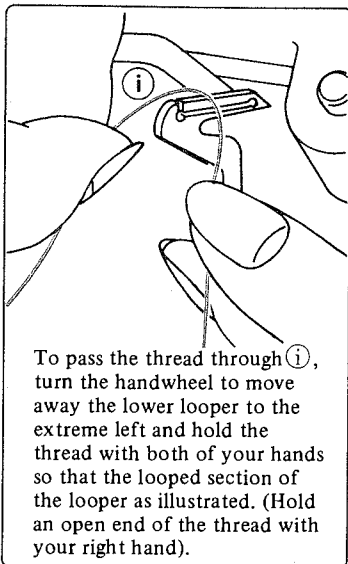
1. Firstly thread the machine with an upper looper thread (off orange-color) in the numerical order. Leave the end of a thread about 10 cm (4") trailing from the looper eye.

* Use a pair of tweezers supplied with the machine to pass the thread through the looper eye ③.

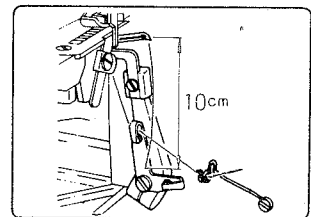


2. Secondary, thread the machine with a lower looper thread (orange-color) in the order of ① to ①.

Pass the thread through ① and ① in the way as illustrated below;

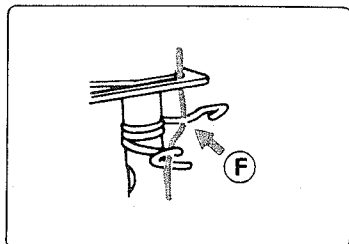


Leave the end of the thread about 10 cm (4") trailing from the looper eye. →

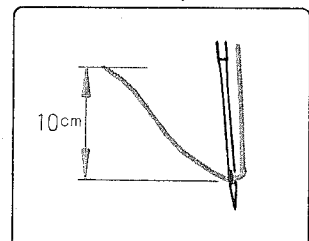


3. Lastly thread the machine with a needle thread (gray-color) in the order of ① to ①.

Do not forget to pass the thread through ①.

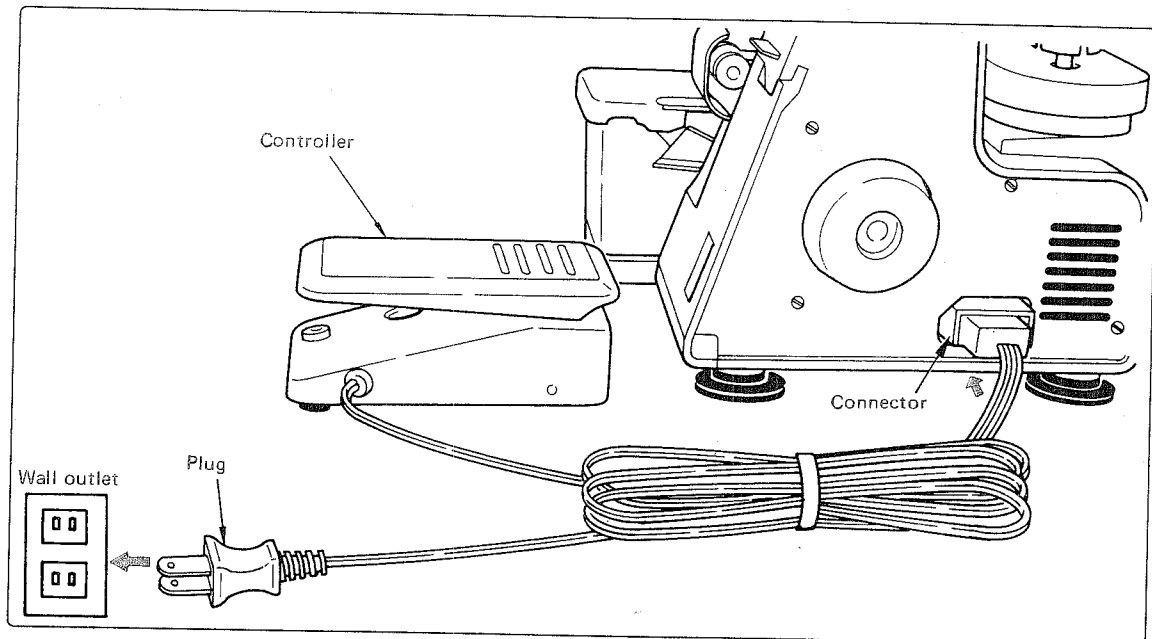


Leave the end of the thread about 10 cm (4") trailing from the needle eye. ↓

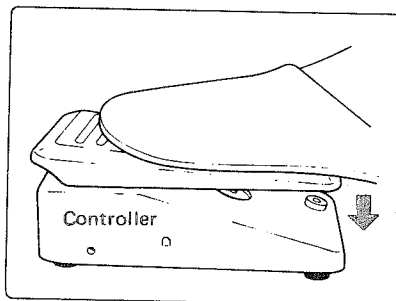


HOW TO OPERATE THE MACHINE

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 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

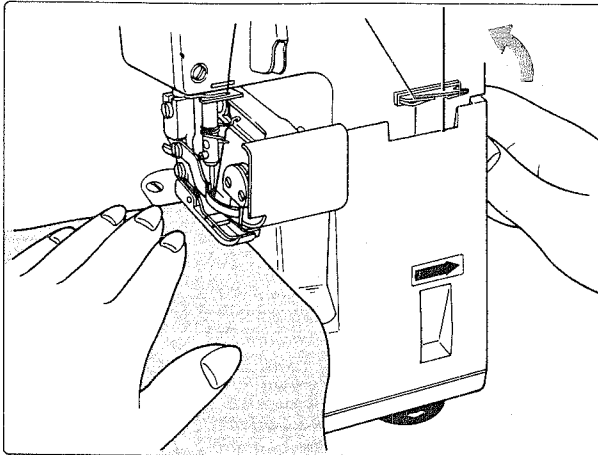
1. Note that the handwheel (pulley) of this machine rotates in the opposite direction from that of an ordinary home sewing machine because of the different motor used.
2. The controller and motor will get somewhat hot after continuous operation of the machine, however, this will do no harm to the performance 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.

HOW TO USE THE MACHINE

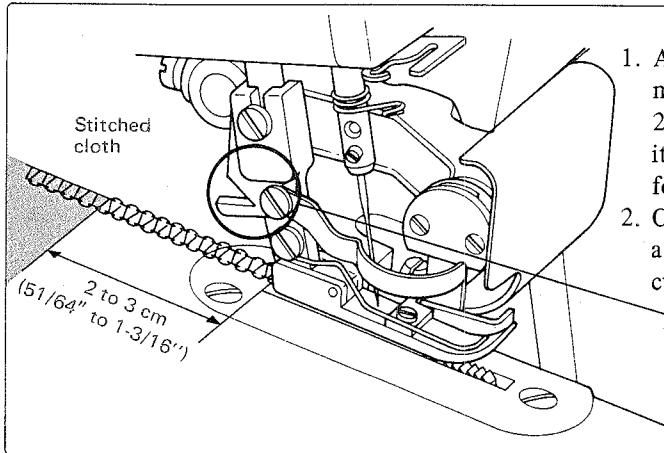
Stitching on trial – Run the threaded machine on trial



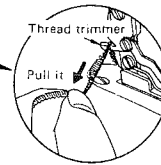
Start of stitching – After the machine is newly threaded or rethreaded due to breakage of a thread, start stitching in the following way:

1. Place a test cloth under the presser foot. (The test cloth must be in the position to be stitched.)
2. Rotate by hand the handwheel 2 to 3 turns in the clockwise direction. Make sure that the threads are properly interlooped and then start stitching by depressing the speed controller.

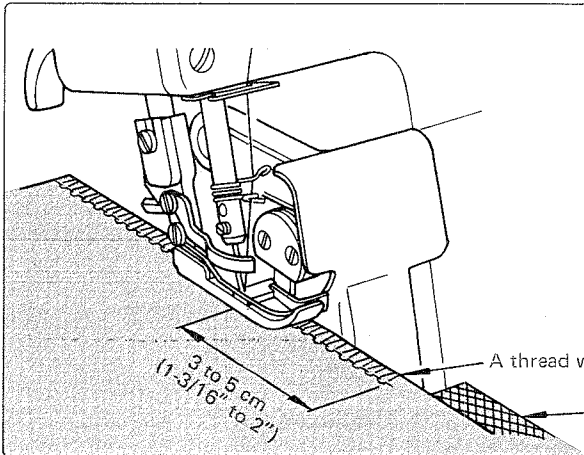
When removing a stitched cloth from the sewing machine



1. After a cloth has been stitched, let the machine to produce a chain-off thread of 2 to 3 cm (51/64" to 1-3/16") long and cut it by the thread trimmer on the presser foot.
2. Continue to stitch the next workpiece with a chain-off thread left on the machine after cutting.



If a thread is broken while stitching

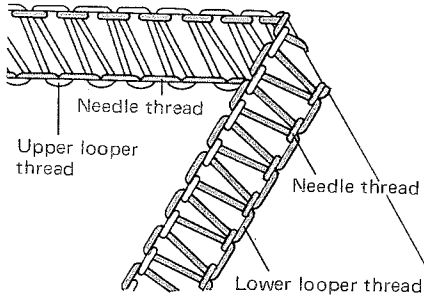


1. When a thread is accidentally broken while stitching, removing the cloth from the machine and thread the machine in the same way as before.
2. Place the cloth under presser foot in the way that the stitching work is resumed about 3 to 5 cm (1-3/16" to 2") back from the point at which the thread was broken and start stitching.

How to adjust the thread tension

Your model MO-103 is designed to minimize the frequency of thread tension adjustment which is absolutely necessary for the usual sewing machines when a different kind of material or thread is used. When an extra heavy or fine material is stitched or the stitch formation is found abnormal, adjust the thread tension in the following way;

A correctly formed stitch

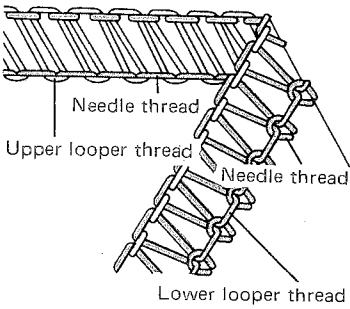
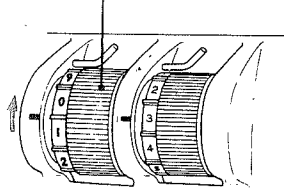


Needle thread
Upper looper thread
Needle thread
Lower looper thread

Standard thread tension setting		
Material	Needle thread tension	Upper looper thread tension
Light-weight	2 ~ 3	2 ~ 4
Medium-weight	3 ~ 4	2 ~ 4
Heavy-weight	4 ~ 5	2 ~ 4

When the needle thread tension is too low;

Needle thread tension regulator

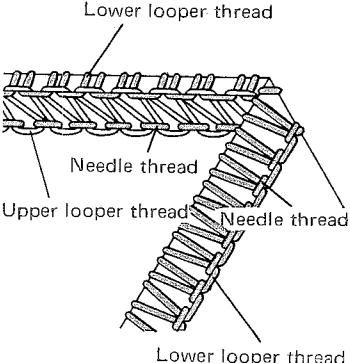
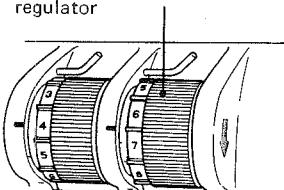


Needle thread
Upper looper thread
Needle thread
Lower looper thread

Set the tension regulator to a larger figure

When the upper looper thread tension is too high;

Upper looper thread tension regulator

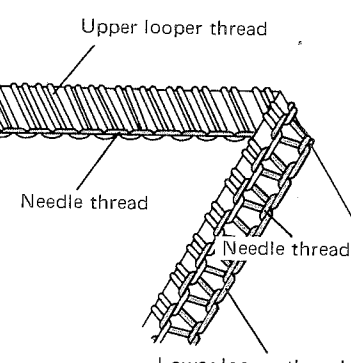
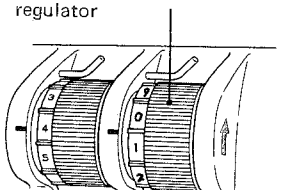


Lower looper thread
Needle thread
Upper looper thread
Needle thread
Lower looper thread

Set the tension regulator to a smaller figure.

When the upper looper thread tension is too low;

Upper looper thread tension regulator

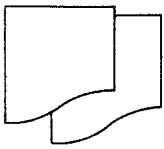
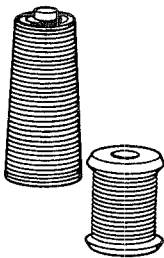
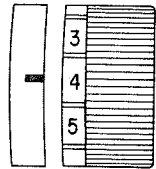
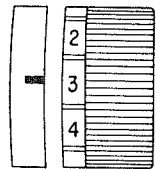
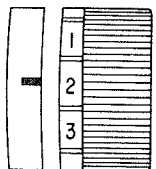
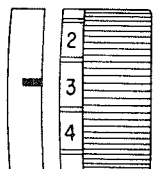
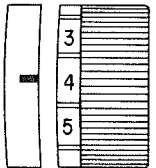
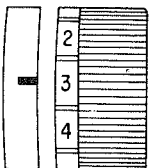
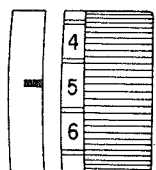
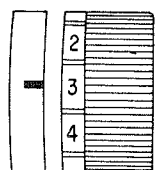


Upper looper thread
Needle thread
Needle thread
Lower looper thread

Set the tension regulator to a larger figure.

* It is not necessary to readjust the lower looper thread tension which has been adjusted to meet a variety of materials.

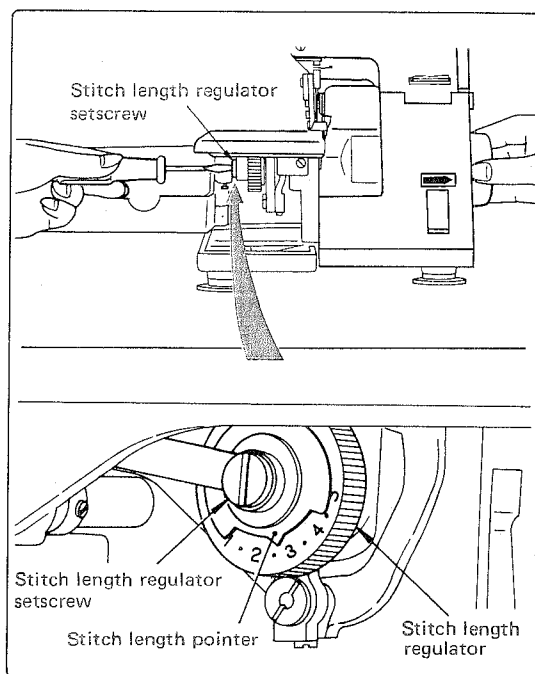
Thread tension table

	Kinds of cloth, thread and needle			Needle thread tension	Upper looper thread tension
	Cloth	Thread	Needle		
					
Light-weight material	Lawn	Cotton #80 to #90 Polyester spun #80 to #90 Polyester filament #80 to #90	BL x 1, No. 11 DB x 1, No. 11	 (2 ~ 3)	 (2 ~ 4) Reduce the thread tension by 0.5 to 1.0 scale when a filament thread is used.
	Georgette				
	Tricot				
	Woolens				
	Silk				
Medium-weight material	Ordinary cotton	Cotton #60 to #90 Polyester spun #60 to #90 Polyester filament #60 to #90	DB x 1KN, No. 10 is best suited. BL x 1, No. 11 DB x 1, No. 11	 (3 ~ 4)	 (2 ~ 4) Reduce the thread tension by 0.5 to 1.0 scale when a filament thread is used.
	Smooth knit fabric made of nylon or tetoron				
	Synthetic				
	Light-weight jersey				
	Ordinary woolens				
Heavy-weight material	Denim	Cotton, #50 to #60 Tetoron spun, #50 to #60 Tetoron filament #50 to #60		 (4 ~ 5)	 (2 ~ 4)
	Jersey				
	Coatings				

* The needle DB x 1KN, No. 10 is best suited for nylon and tetoron knitted fabrics.

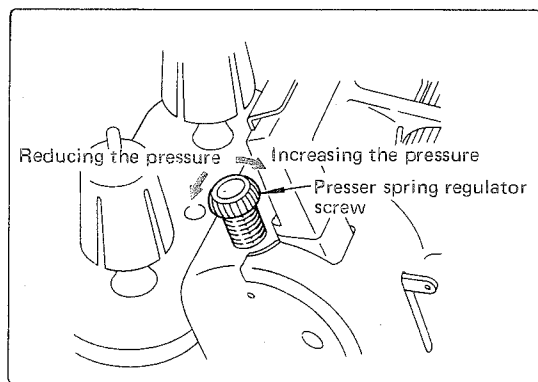
How to adjust the stitch length

1. Open the side cover, hold the handwheel by your right hand not to allow it to turn and loosen the stitch length regulator setscrew using a screw driver supplied with the machine.
2. Adjust the stitch length regulator to a desired position on the scale.
3. After setting the stitch length regulator, firmly tighten the setscrew.



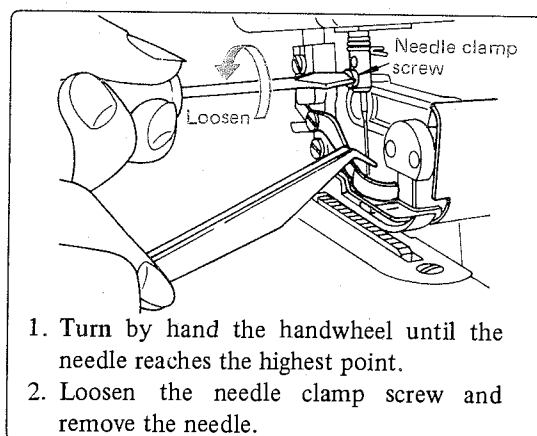
Pressure of the presser foot

It is not necessary to readjust the pressure of the presser foot even though the sewing material is either a light-weight (tricot, de chine etc.) or heavy-weight.

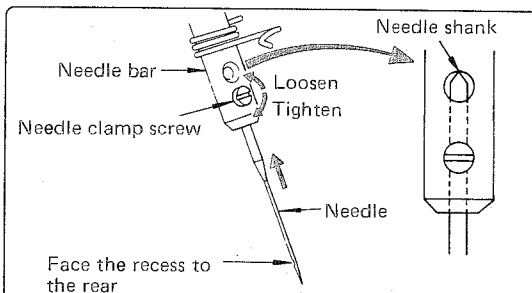


How to attach and remove the needle

Removing the needle from the machine



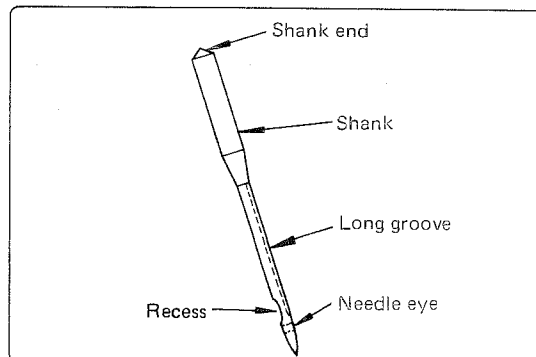
Attaching the needle to the machine



Let the needle bar go up to the highest point (in the same position as it was removed) and insert the needle.

1. Insert the needle into the needle hole in the needle bar as far as it will go with its recess facing backward.
2. Firmly hold the needle not to allow it to turn round and securely tighten the needle clamp screw.

Names of a needle



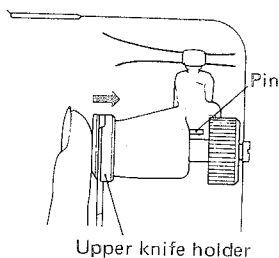
How to replace the knife

Renew the knife as soon as it becomes dull.

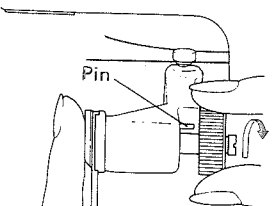
- * Replace only the lower knife (fixed knife).
It is not necessary to replace the upper knife (movable knife), because it is made of hard metal (Cemented carbide).

Remove the lower knife in the following order;

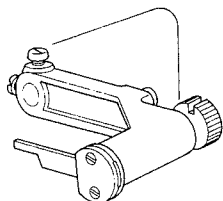
1. Pull out the power supply cord from the wall outlet.
2. Turn by hand the handwheel until the knife reaches the highest point.
3. Open the looper cover. (See p. 3)
4. Turn down the upper knife in the following way;



- A. 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.

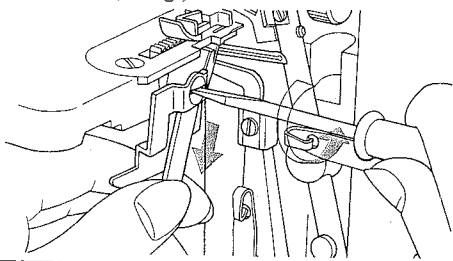


- B. Turn the upper knife holder in the arrow direction while it is released from the pin.

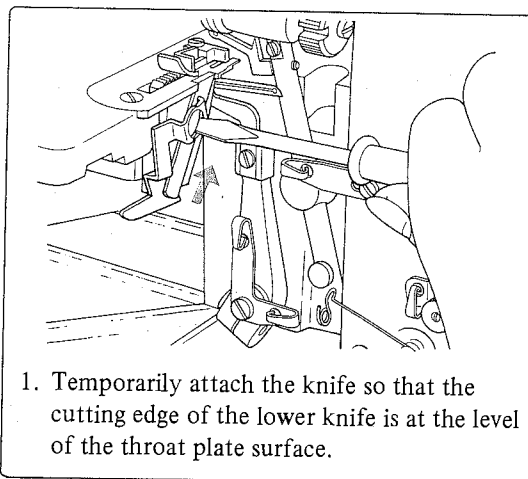


- C. And the upper knife holder will rest in the position as illustrated.

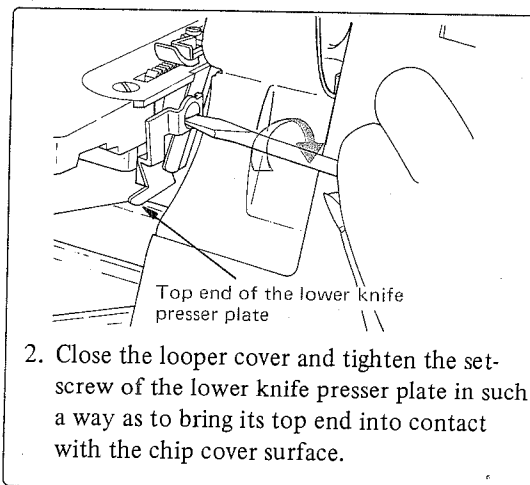
5. Loosen the setscrew of the lower knife presser plate as illustrated and remove the knife. (You will find a spare knife in the accessory bag.)



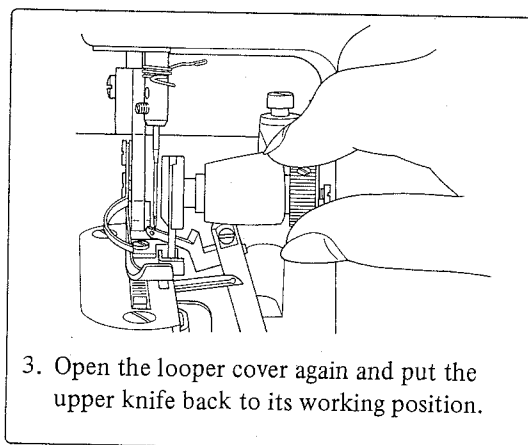
Attach a lower knife in the following way;



1. Temporarily attach the knife so that the cutting edge of the lower knife is at the level of the throat plate surface.



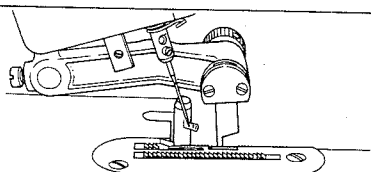
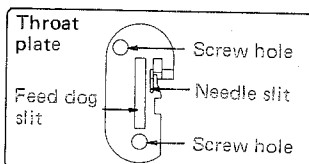
2. Close the looper cover and tighten the set-screw of the lower knife presser plate in such a way as to bring its top end into contact with the chip cover surface.



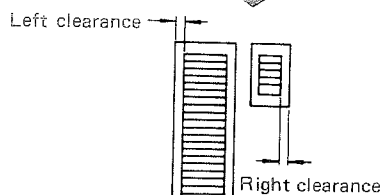
3. Open the looper cover again and put the upper knife back to its working position.

ADJUSTMENT OF THE THROAT PLATE POSITION

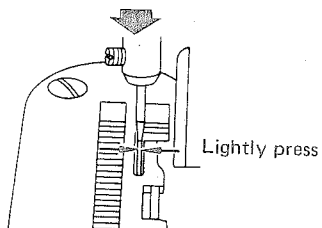
Re-attach the throat plate as illustrated below if it has been removed for doing lapping stitch.



1. Turn by hand the handwheel until the needle bar reaches the highest point.

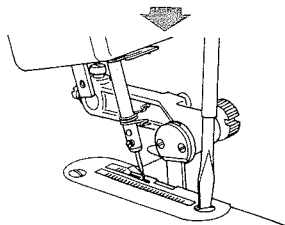


2. Position the throat plate to provide equal clearance at both sides of the feed dog and temporarily tighten the setscrews.



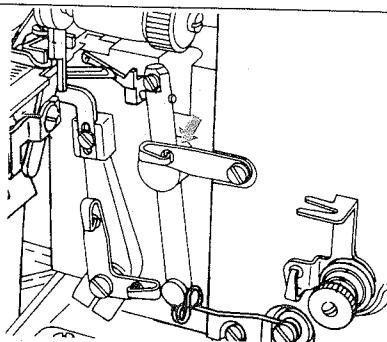
3. Turn by hand the handwheel until the needle reaches the lowest point to make sure that the needle in the needle slit does not touch the throat plate. To check this, lightly press the needle alternately from both sides to ensure that a clearance between them permits the needle to bend.

* If the needle touches the throat plate, adjust the position of the throat plate after loosening the setscrews. At the same time, make sure that the feed dog does not touch the throat plate by turning the handwheel.



4. After the throat plate is accurately positioned, firmly tighten the setscrews.

LUBRICATING THE MACHINE

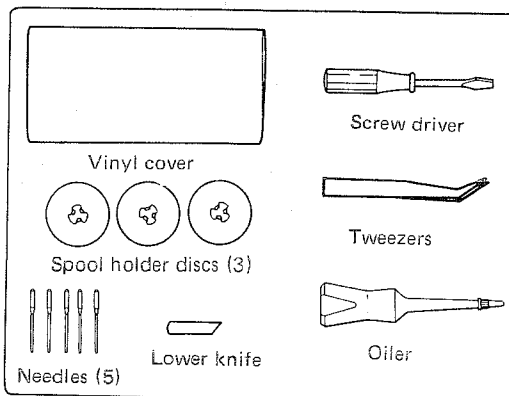


Before starting to operate the machine, apply one or two drops of lubricating oil through the oil holes specified in the illustration.

PACKING DETAILS

- | | |
|------------------------------|--------|
| 1. Sewing machine with motor | 1 set |
| 2. Controller | 1 pce. |
| 3. Instruction book | 1 copy |
| 4. Threading chart | 1 pce. |
| 5. Accessory bag | 1 pce. |
| 6. Spool holder base | 1 pce. |

STANDARD ACCESSORIES



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If your MO-103 is in trouble, remove the cause of trouble in the way as shown below;

TROUBLE	CAUSE	CORRECTIVE MEASURES
The machine does not feed the cloth.	○ Pressure applied by the presser foot is not enough.	Increase the pressure of the presser foot by turning clockwise the presser spring regulator screw.
The needle is broken.	○ The needle is not straight or the needle point is not sharp. ○ The needle is not installed in the correct manner. ○ The cloth was forcibly pulled away while being sewn.	Replace the needle. Reinstall the needle in the correct order. Do not apply unnecessary force to the cloth while stitching.
The thread is broken.	○ The machine is wrongly threaded. ○ Thread tension is too high. ○ The needle is wrongly installed.	Thread the machine in the correct order. (See P. 3 and P. 4) See P. 7 and P. 8 See P. 9
Some stitches are skipped.	○ The needle is not straight or the needle point is not sharp. ○ The needle is wrongly installed. ○ The machine is wrongly threaded.	Replace the needle. Reinstall the needle. Thread the machine in the correct order.
Stitch is not properly formed.	○ Thread tension is not properly adjusted.	See P. 7 and P. 8
The stitch puckers the cloth	○ The needle thread tension is too high. ○ The machine is wrongly threaded or the thread gets entangled in the machine.	Reduce the needle thread tension by means of the needle thread tension regulator. Thread the machine in the correct order.
The motor does not run or runs a noise or relatively intensive sparks.	○ The carbon brushes have worn out.	Renew the carbon brushes. (Note) Ask the carbon brush seller to replace.

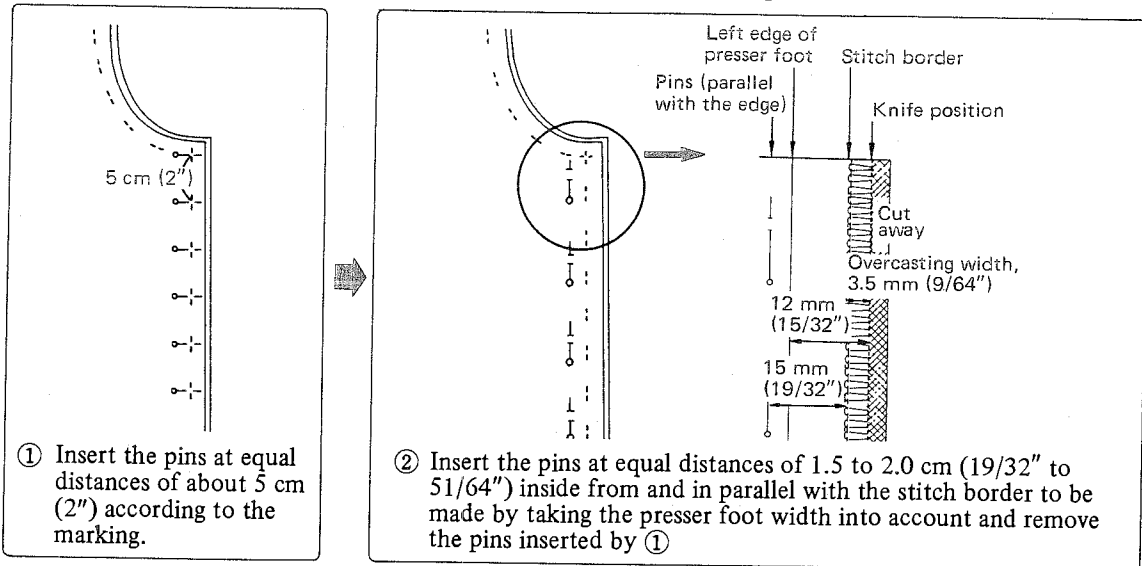
SPECIFICATIONS

Number of threads : 3 threads
Needle : BL x 1, DB x 1, No. 11
(DB x 1KN, No. 10 is suitable for knits)
Overcasting width : 3.5 mm (9/64")
Stitch length : 1 to 5 mm (3/64" to 13/64")
(Standard stitch length : 2.5 mm (3/32"))
Presser foot lift : 4.5 mm (11/64")
Sewing speed : Max. 1,500 s.p.m.
Dimensions : 236 (W) x 263 (D) x 280 (H) mm
(9-19/64" (W) x 10-23/64" (D) x 11-1/32" (H))
Weight (Net) : 9.0 Kg.

HOW TO STITCH

○ Making a running and overcasting seam

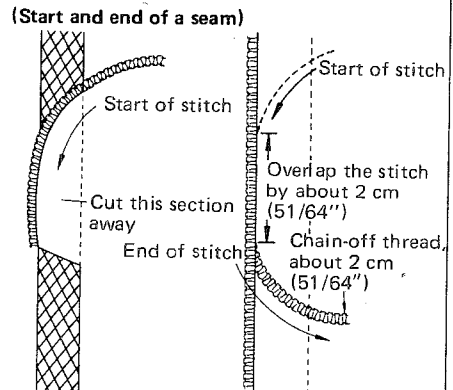
Since your MO-103 has a knife to cut the cloth edge, you can not stitch the cloth with the basting pins inserted as you can do with a home-use zigzag sewing machine. The best way is to sew the cloth which has been basted before hand. Alternatively, you can save time by inserting the pins in parallel with the cloth edge and sew 2 or more pieces of fabric together without removing the pins.



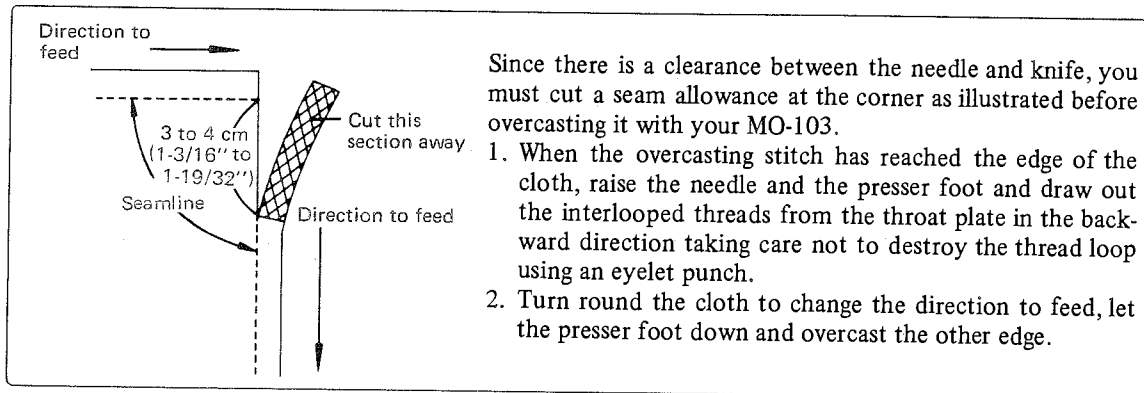
○ Overcasting the hem of the skirt

Overcast the hem with an even hemming width in the case of tight-skirt of similar garment of which the hem can be sewn without distributing the ease.

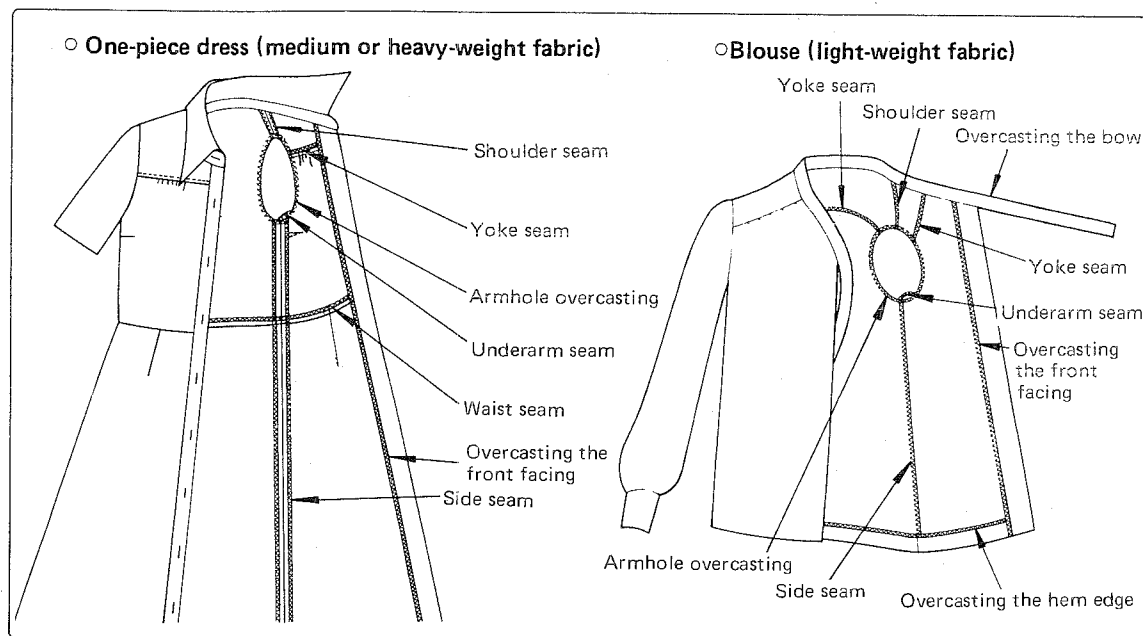
When overcasting the hem of a skirt with the flare, it is necessary to baste the edge to distribute the ease evenly using a straight stitch machine beforehand. To overcast it, place the cloth obliquely under the presser foot and overcast it with a curve. At the end of a seam, extend the stitch to cover a part of the start stitch by about 2 cm (51/64"), produce a chain-off thread of about 2 cm (51/64") trailing from the cloth edge and cut the thread. The chain-off thread left at the end of a seam prevents the stitch from ravelling out. Put the chain-off thread into the hem while finishing.



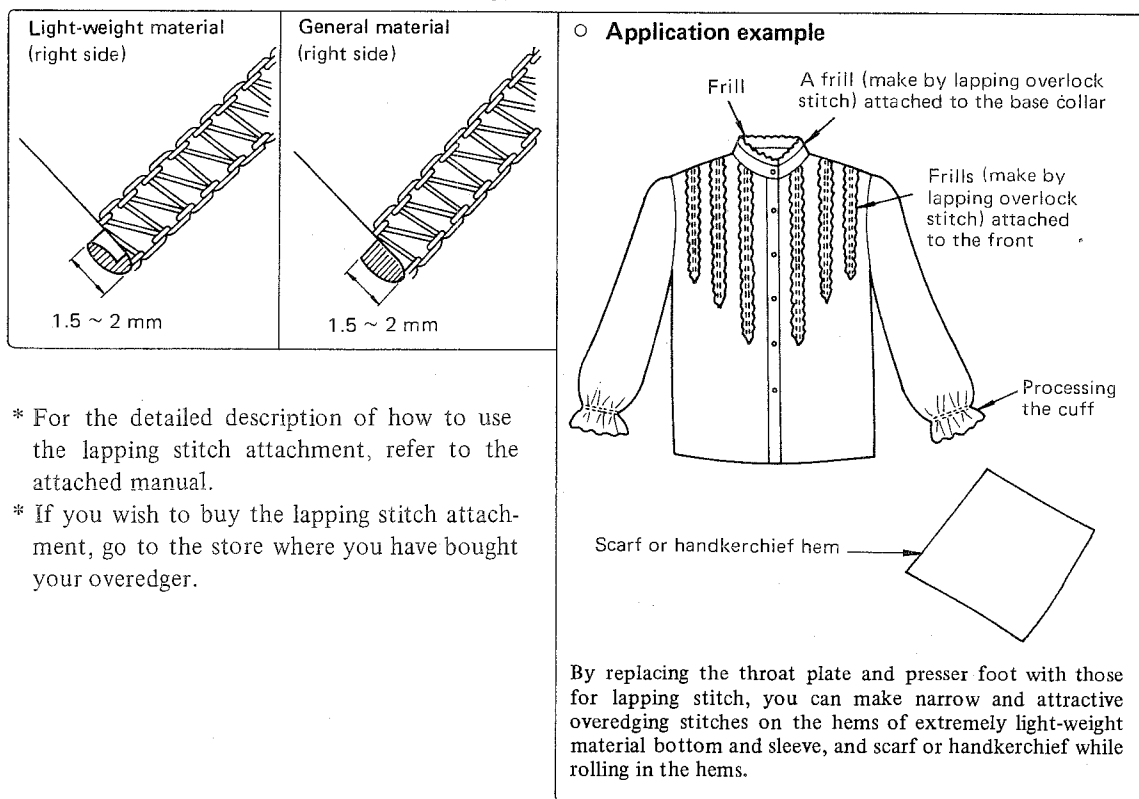
○ Overcasting the corner



REPRESENTATIVE STITCHES



LAPPING STITCH ATTACHMENT (Option)



- * For the detailed description of how to use the lapping stitch attachment, refer to the attached manual.
- * If you wish to buy the lapping stitch attachment, go to the store where you have bought your overedger.