

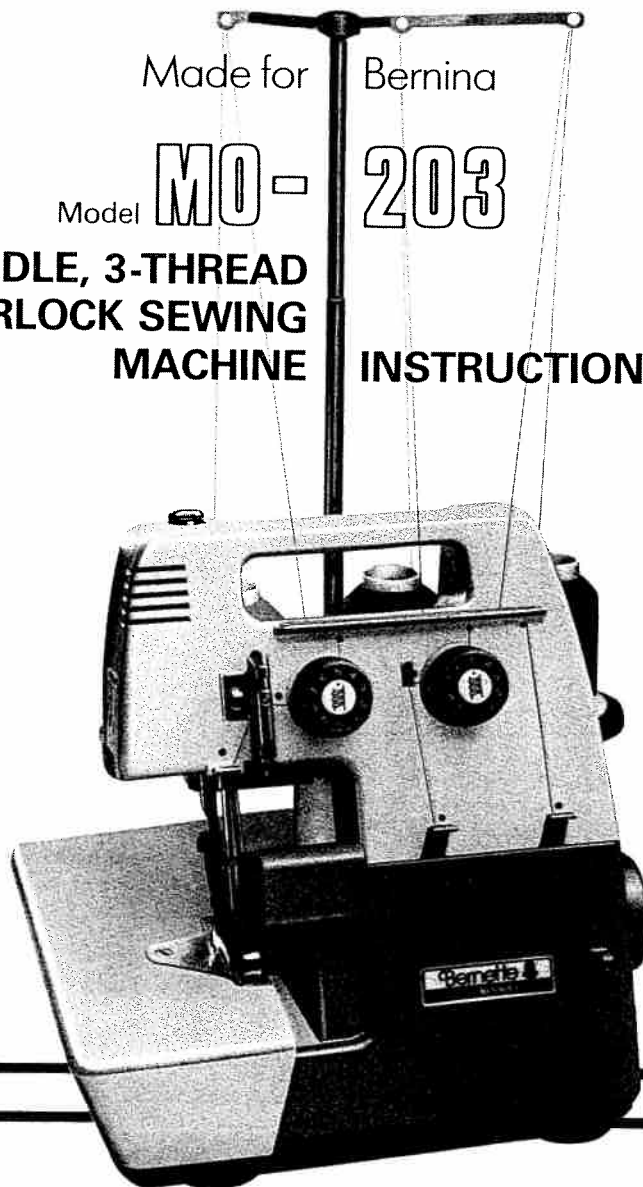
Bernette

Made for Bernina

Model **MO-203**

**1-NEEDLE, 3-THREAD
OVERLOCK SEWING
MACHINE**

INSTRUCTION MANUAL

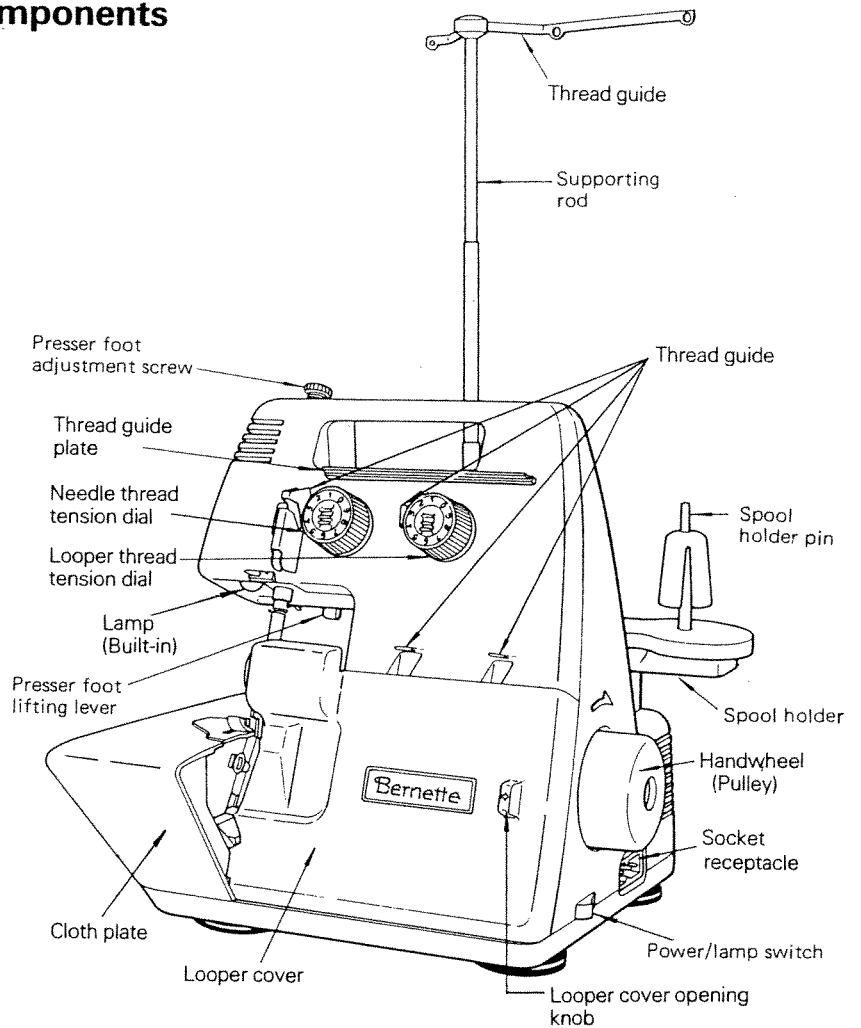


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Names of main components

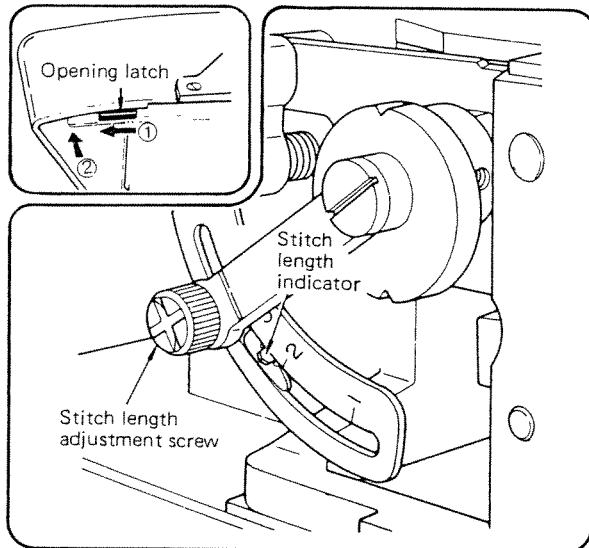
IMPORTANT
SAFETY REGULATIONS
<p>The following safety regulations must be observed without fail:</p> <ul style="list-style-type: none"> - The moving needle and the cutting knives are sources of danger (risk of injury to fingers). The sewing position must, therefore, be kept under constant observation. - Manipulations within the area of movement of the needle, such as changing the needle or cutting knives, or threading the machine and all manipulations with open covers (stitch width or stitch length adjustments), must only be performed with the machine switched off (main switch set to off position). - When cleaning or lubricating the machine or changing the light bulb and interruptions in sewing or after completion of work, the machine must be disconnected from the power supply by pulling out the mains plug. - Repairs to the electric section, especially the changing of the lead wire to the foot control unit, may only be carried out by one of our service agencies.



● View with the cloth plate opened

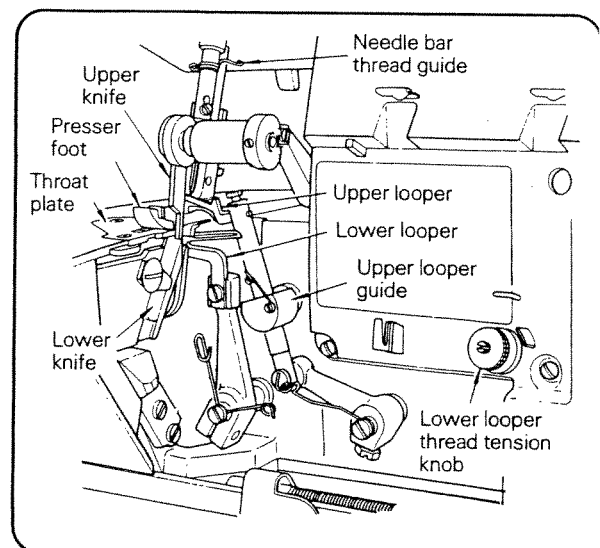
The cloth plate can be opened by using the opening latch as follows:

- ① Pull it towards you.
- ② Push it to the left.



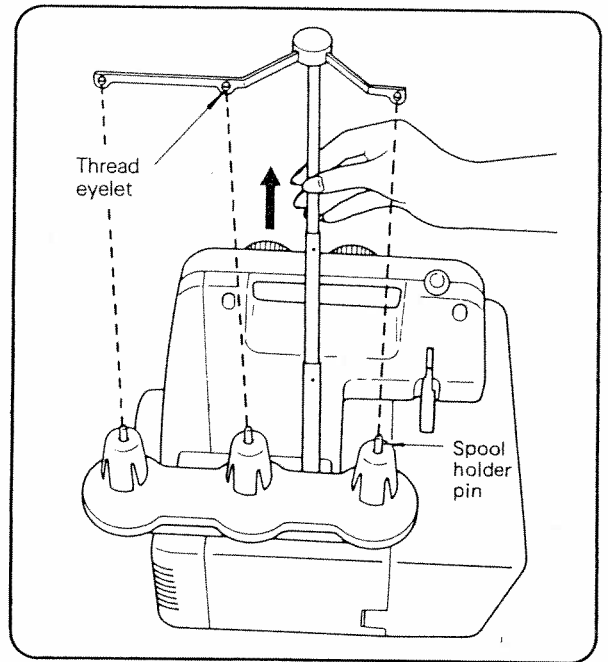
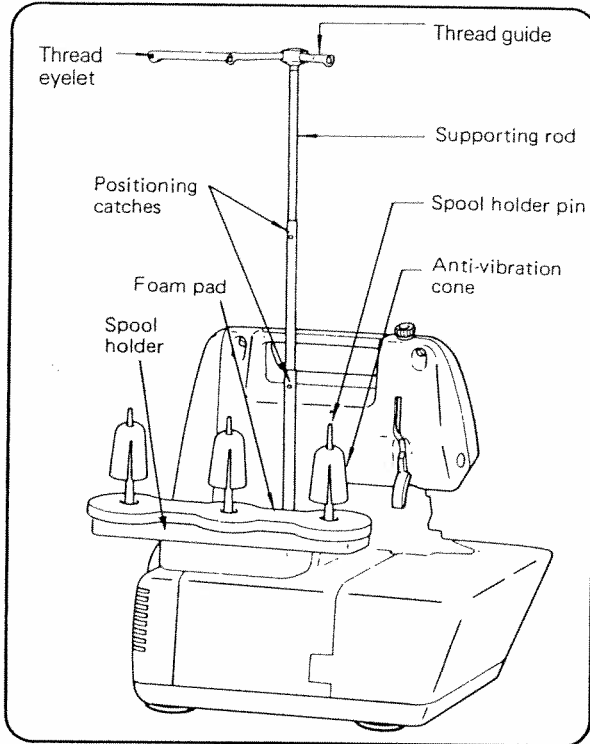
● View with the looper cover opened

To open the looper cover, pull the opening knob to the right and tilt the cover towards you.



How to use the thread stand

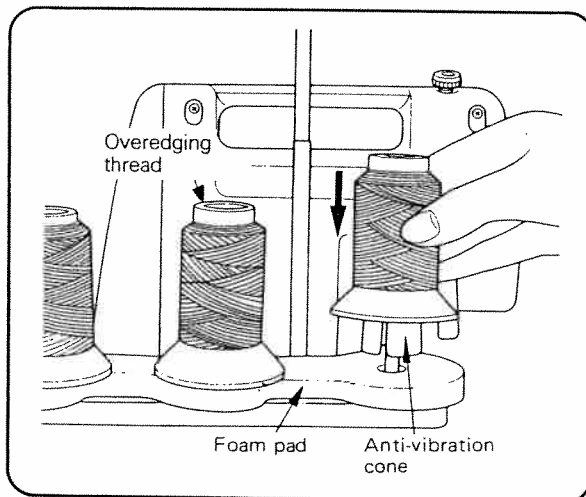
- **Names of thread stand components**



Fully extend the supporting rod until the positioning catches engage.

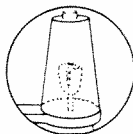
- **For overedging thread**

(It is advisable to use overedging thread for this overlock machine.)



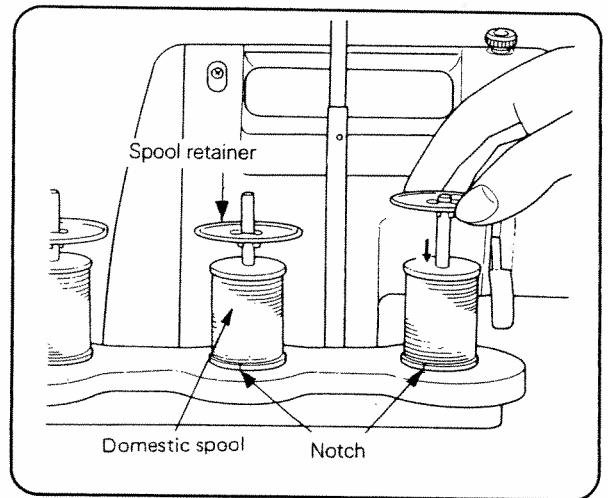
Place thread on to the spool holder pin using the anti-vibration cone.

- Do not remove the foam pad.



When using large spools, turn anti-vibration cone upside down.

- **For domestic spools**



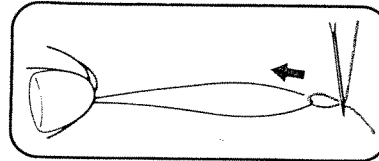
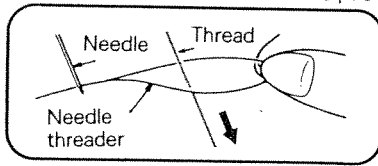
- ① Remove the anti-vibration cone from the spool holder pin.
- ② Place the domestic spool on the spool holder pin.
- ③ Push the spool retainer provided on to the spool.

- Do not remove the foam pad.
- The thread notch on the spool should be at the bottom.

Threading (Looper threads and needle thread)

Correct threading is important otherwise uneven stitches or thread breakage may result. You will find a threading illustration when you open the looper cover. In addition, each thread guide is colored for threading indication.

- The threading may be done more easily by using the needle threader or tweezers provided.

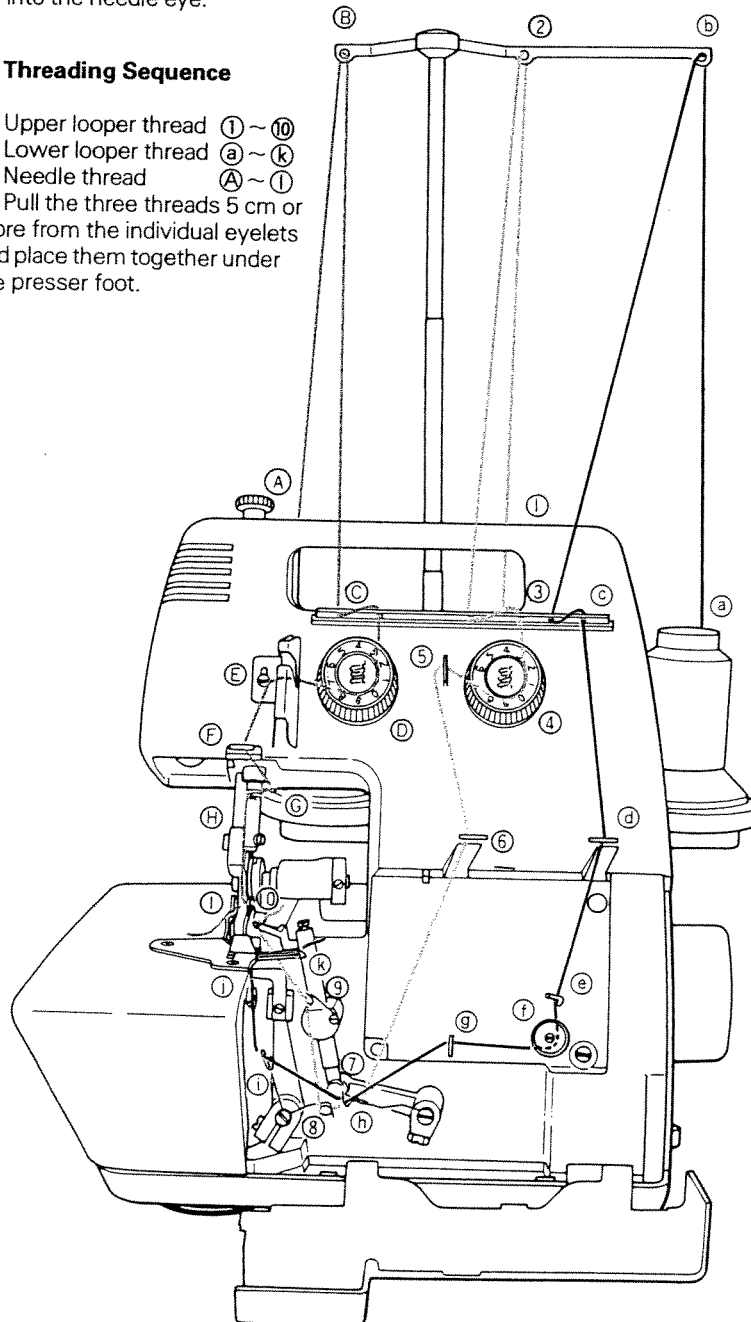


- ① Pass the thread through the needle threader, and insert into the needle eye.

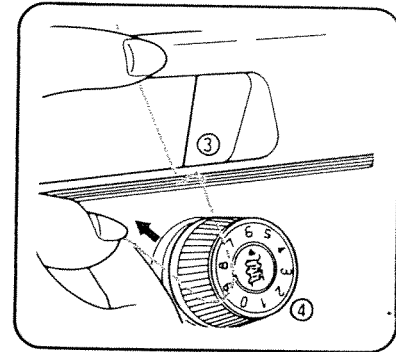
- ② Pull the needle threader in the arrowed direction.

• Threading Sequence

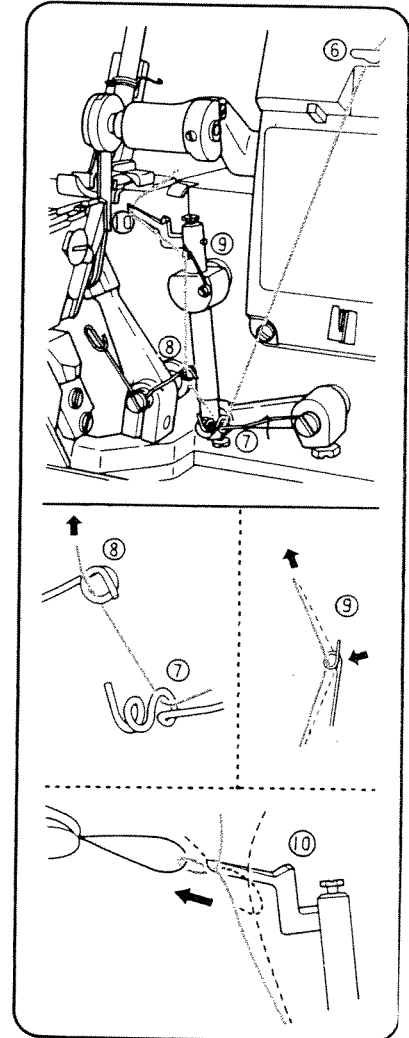
- ① Upper looper thread ① ~ ⑩
 - ② Lower looper thread a ~ k
 - ③ Needle thread A ~ I
- Pull the three threads 5 cm or more from the individual eyelets and place them together under the presser foot.



Threading Sequence 1: Upper looper



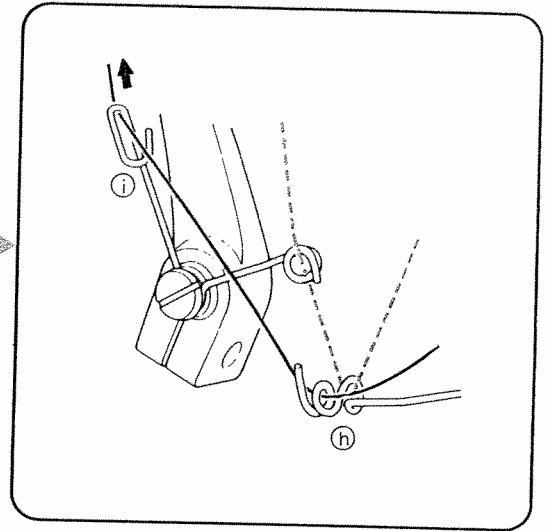
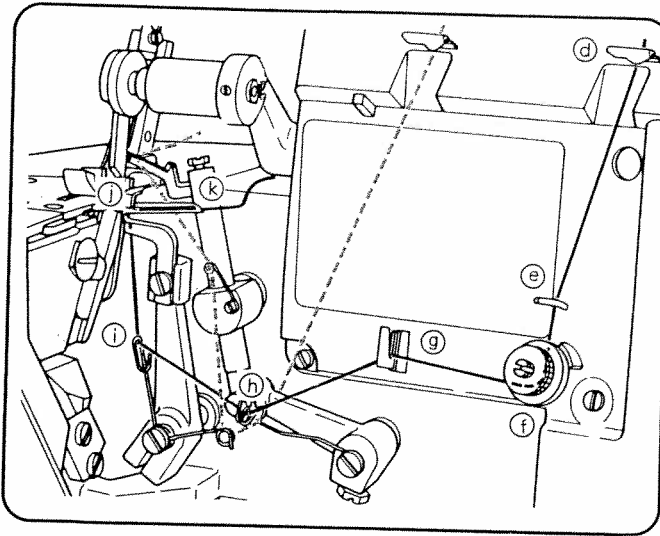
Thread 4 by holding the thread with your finger and pulling it strongly to the left.



Threading the loopers may be done more easily by using the needle threader.

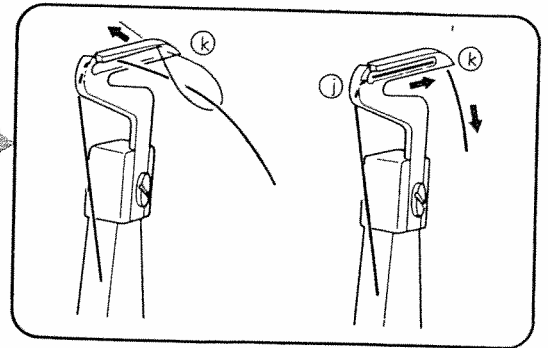
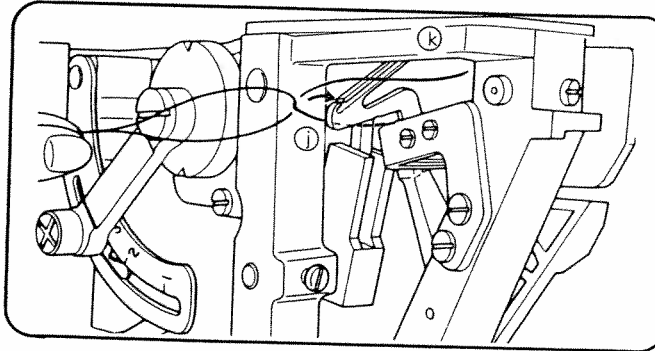
Threading Sequence 2:
Lower looper

Threading (h) and (i)



Threading (j)

Threading (k)



Turn the handwheel until the lower looper reaches its leftmost position. Then pass the needle threader through the looper as shown in the figure above and place the thread in the lower looper groove.

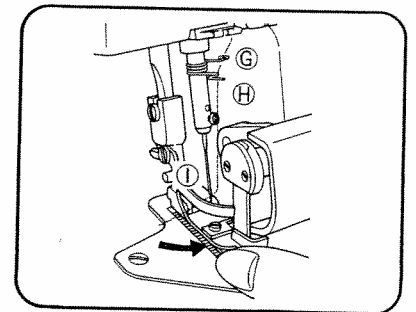
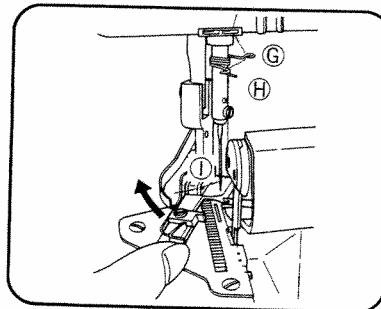
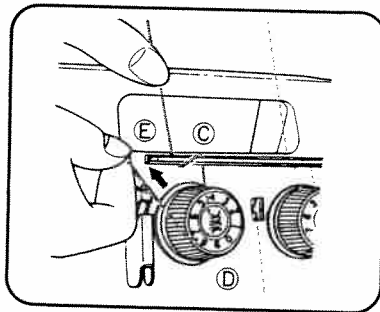
When the thread has been placed in the groove, turn the handwheel until the lower looper reaches its rightmost position. Then use the needle threader to thread the lower looper eyelet.

- When you replace the upper looper thread and lower looper thread, threading can be done quickly if you knot the thread near the spool to take it out.

Threading Sequence 3: Using the swing-out foot mechanism: Needle thread:

Threading (D) (E)

Threading (I)



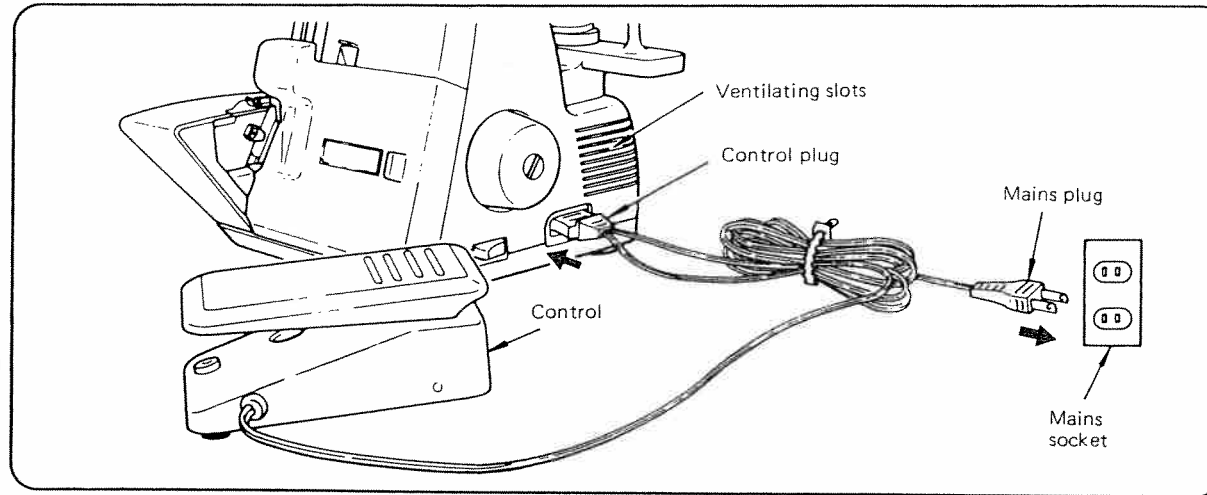
To thread (D), hold the thread with your finger and pull it strongly to the left.

- 1 Turn the handwheel until the needle reaches its highest position.
- 2 Lift the presser foot and TURN THE FOOT TO THE LEFT.
- 3 Insert the thread into the needle eye.
- 4 After threading, TURN THE PRESSER FOOT TO THE RIGHT to its original position.

Attention: When the presser foot is turned to the left, for safety reasons the MACHINE CAN NOT BE OPERATED!

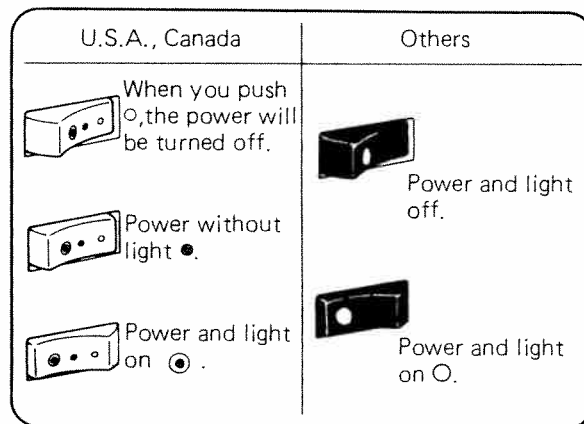
How to use the foot control

① Connecting the foot control

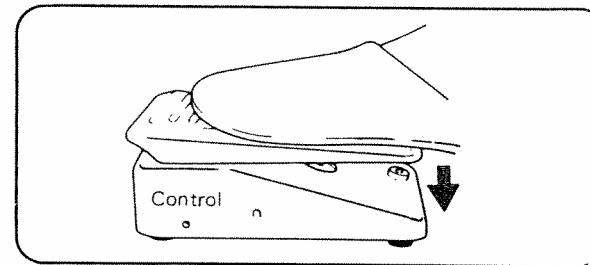


Connect the foot control plug to the machine socket as shown above, and then connect the mains plug to the mains socket.

② Depressing the power/lamp switch



③ Depressing the foot control



- ① Place your foot on the control as shown above.
- ② The sewing speed will increase as you increase the pressure on the control. Adjust the sewing speed by adjusting the pressure on the control.

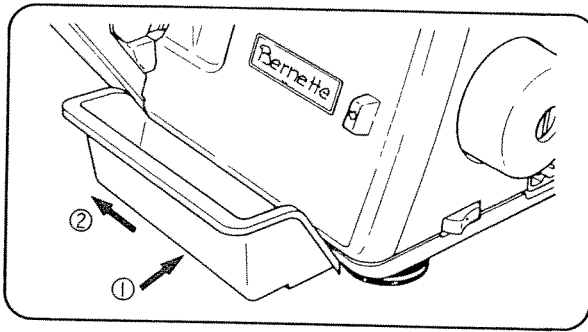
● Caution

- ① Unlike a home sewing machine, the motor drives the handwheel backwards as opposed to forwards.
- ② During prolonged operation of your machine, the motor and control will get warm but this will not harm the machine.
- ③ Be careful not to cover the ventilating slots of the motor and control with fabric or paper during operation.
- ④ When the motor is running, you may see small sparks through the ventilating slots on the handwheel side. These are perfectly normal.

● CAUTION: When machine is not in use.

- ① Turn off the power/lamp switch.
- ② Remember to disconnect the plug from the mains socket. Be sure to hold the plug when unplugging it.
- ③ Do not put anything on the control.

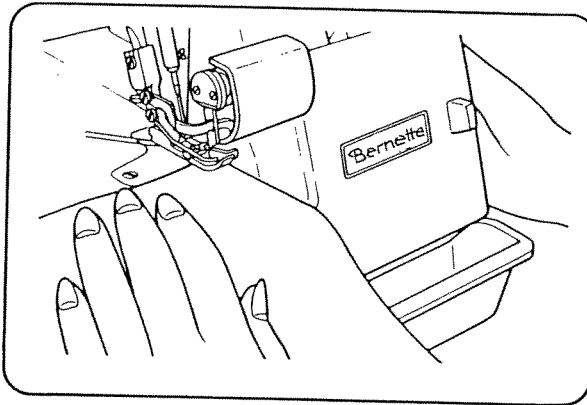
Operating the machine



• How to use the waste receptacle

The waste receptacle provided with the machine is used to collect fabric scraps during sewing. Position the waste receptacle as follows.

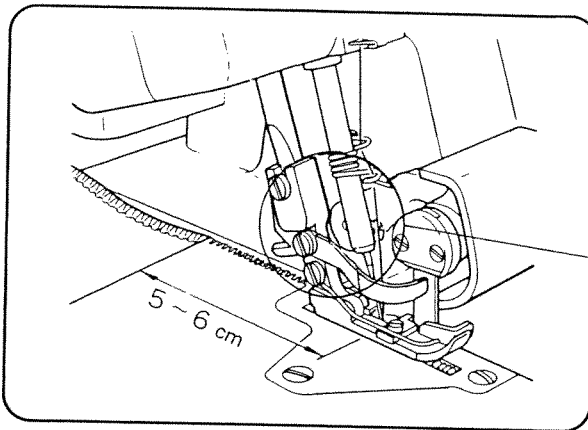
- ① Place the waste receptacle between the machine and the table.
 - ② Push the waste receptacle against the looper cover and move it to the left.
- When the waste receptacle is full, remove and empty it.



• Trial Sewing — After you have finished the necessary threading, do trial sewing.

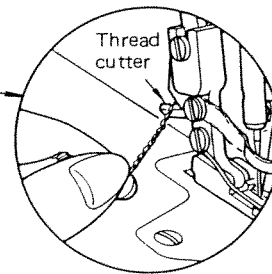
When the overedger has been threaded for the first time or re-threaded because of thread breakage during sewing, start sewing in the following manner.

- ① Place the needle thread, upper looper thread and lower looper thread under the presser foot.
 - ② Turn the handwheel two or three times backwards with your right hand to check that the threads lie correctly.
 - ③ Then place fabric for trial sewing under the presser foot and start sewing.
- Make sure that the presser foot has come down before you start sewing.

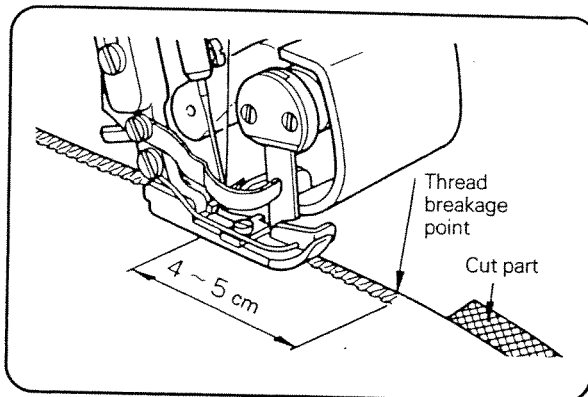


• How to remove a finished piece of work

- ① When work is finished, continue running the machine so that a chain of thread 5–6 cm long is made as shown in fig. left. Cut with thread cutter.



- ② Leave this chain ready to start next row of sewing.



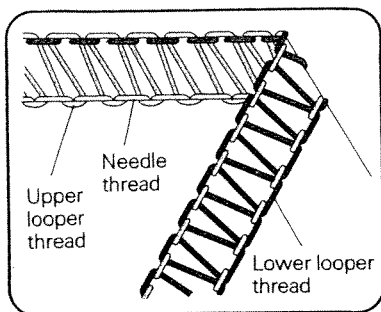
• If thread breaks during sewing

- ① If you have thread breakage during sewing, remove the work from the machine and re-thread the machine as you threaded it at the beginning.
- If you re-thread the lower looper because of thread breakage during sewing, draw out the needle thread from the needle eye.
 - If the upper looper thread has broken, turn the handwheel to bring the upper looper to its lowest position before re-threading it.
- ② Reset the work so that the part which is 4 to 5 cm before the thread breakage point is located under the presser foot, and restart sewing over the stitches previously sewn.

Adjusting the thread tension

Check the stitches formed each time the type of fabric or the count of thread is changed, and adjust the thread tension of the machine accordingly.

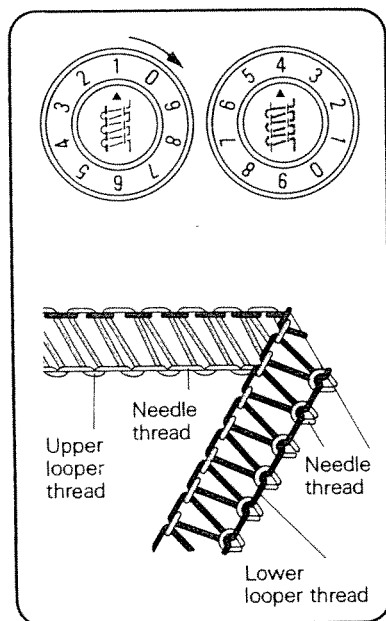
• Correct thread tension



Standard thread tension setting		
Fabrics	Needle thread dial	Upper looper thread dial
Light-weight	2~4	3~5
Medium-weight	3~6	3~5
Heavy-weight	4~7	3~5

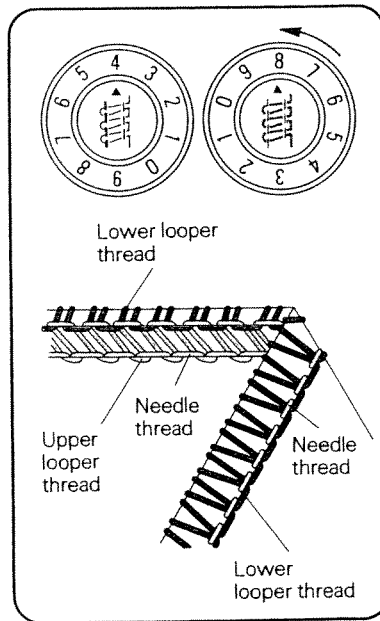
• These standard settings are applicable to overedging polyester spun thread (#80 ~ #90).

• The needle thread tension is too low



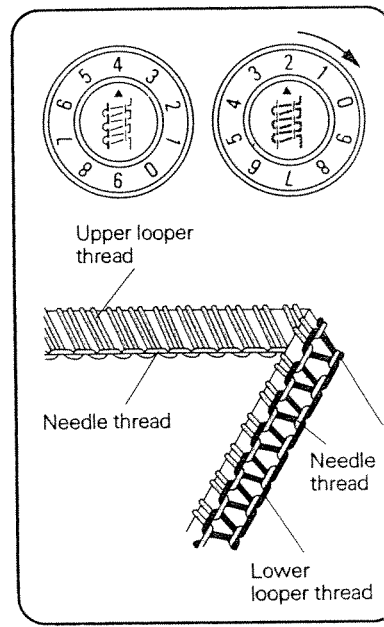
Turn the dial in the direction indicated to set it at a higher number.

• The upper looper thread tension is too high



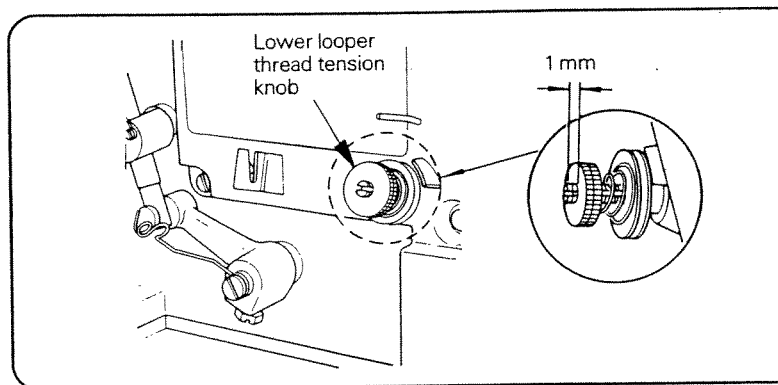
Turn the dial in the direction indicated to set it at a lower number.

• The upper looper thread tension is too low

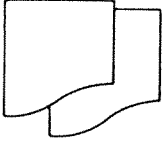

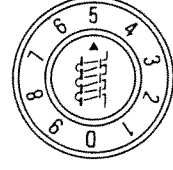
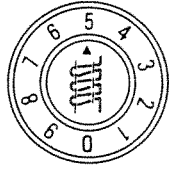
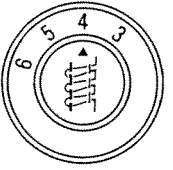
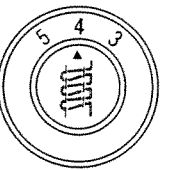
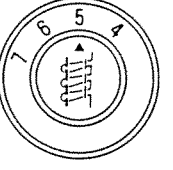
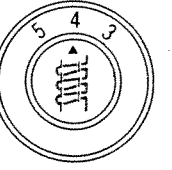


Turn the dial in the direction indicated to set it at a higher number.

There is no need to adjust the lower looper thread tension since it has been factory-adjusted to suit all types of fabric. If you move it by mistake, reset it as shown in the figure right.



How to set the dials according to each fabric, thread and needle

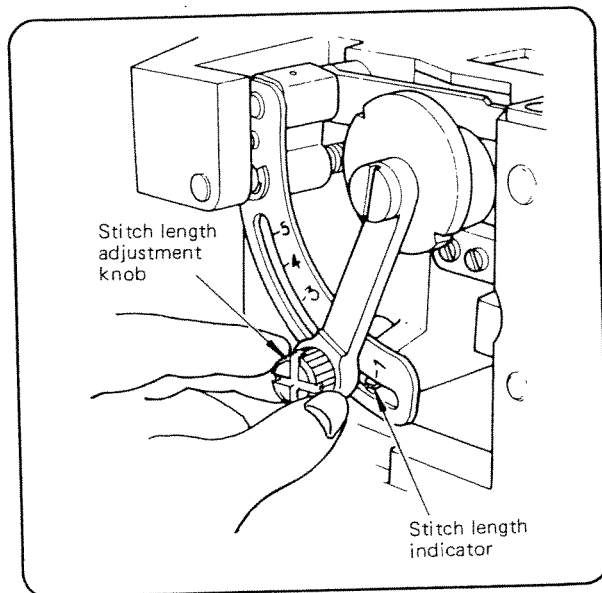
Fabric, Thread and Needle				Standard thread tension setting			
Fabric		Threads		Needle	Needle thread tension dial	Upper looper thread tension dial	
		Overedging thread	Domestic spool				
		Light-weight fabrics	Lawn Georgette Crepede Chine Organdie Voile		Spun thread (Polyester) #90 Filament thread #90	Synthetic fiber thread #90~#100 Cotton thread #80~#100 Silk thread #100	BL x 1 No. 11 DB x 1 No. 11 or 287 WH No. 80/70
Medium-weight fabrics	Broad cloth Serge Gingham Sakker Poplin Shantung Velveteen Muslin Corduroy Poral Jersey		Spun thread (Polyester) #90 Filament thread #90 Cotton thread #80	Synthetic fiber thread #60~#90 Cotton thread #60~#80 Silk thread #50			
Heavy-weight fabrics	Denim Tweed Drill Velour		Spun thread (Polyester) #90 Filament thread #90 Cotton thread #60	Synthetic fiber thread #60 Cotton thread #60~#80 Silk thread #50			

- A needle DB x 1 KN No. 10 is best suited for sewing nylon or tetoron smooth materials.
- Needle system 287 WH No. 80 or 70 can also be used.
- The mark "#" represents the count (thickness) of the thread.

Adjusting the stitch length · Presser foot pressure

● Adjusting the stitch length

The stitch length of this machine has been factory-adjusted to 2.5 mm. It is usually unnecessary to adjust the stitch length, but if you need to do it as follows:



- ① Open the cloth plate.
- ② Hold the handwheel with your right hand, and loosen the stitch length adjustment knob.
- ③ Move the stitch length adjustment knob up or down to make adjustment. (Adjustable within the range of 1 to 5 mm)
- ④ Set the stitch length indicator to the number required, and retighten the stitch length adjustment knob.

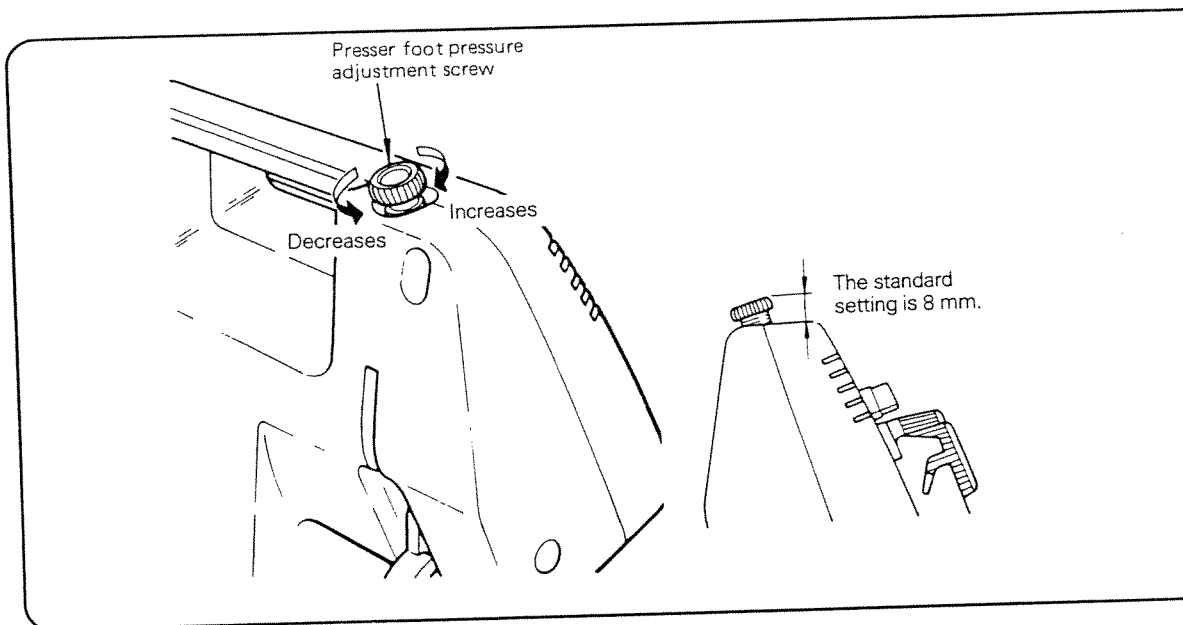
● Presser foot pressure

The presser foot pressure of the overedger has been factory-adjusted and requires no particular readjustment according to type of fabric (light- or heavy-weight). However, if you need to adjust the presser foot pressure, do as follows:

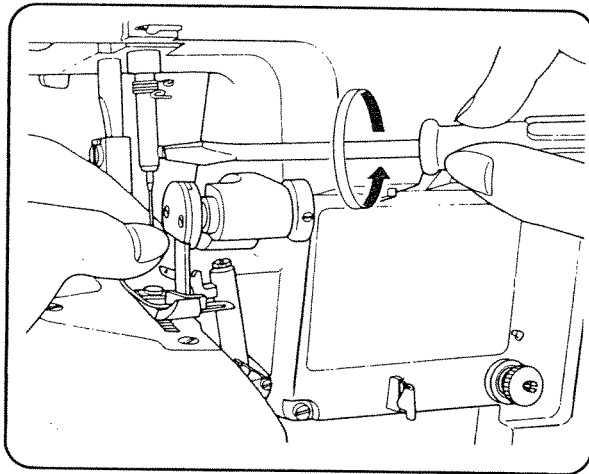
Use the presser foot pressure adjustment screw to make the adjustment.

- ① Decrease the pressure when sewing light-weight fabrics.

- ② Increase the pressure when sewing heavy-weight fabrics.
- Do this by turning the presser foot pressure adjustment screw in the directions indicated in the figure below.

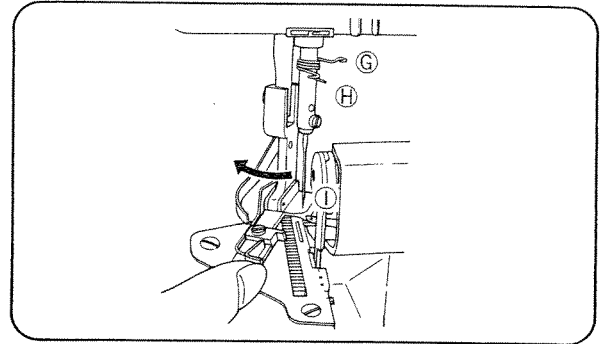


Removing and inserting the needle



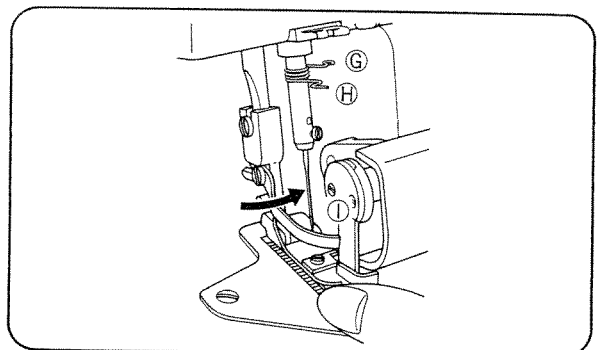
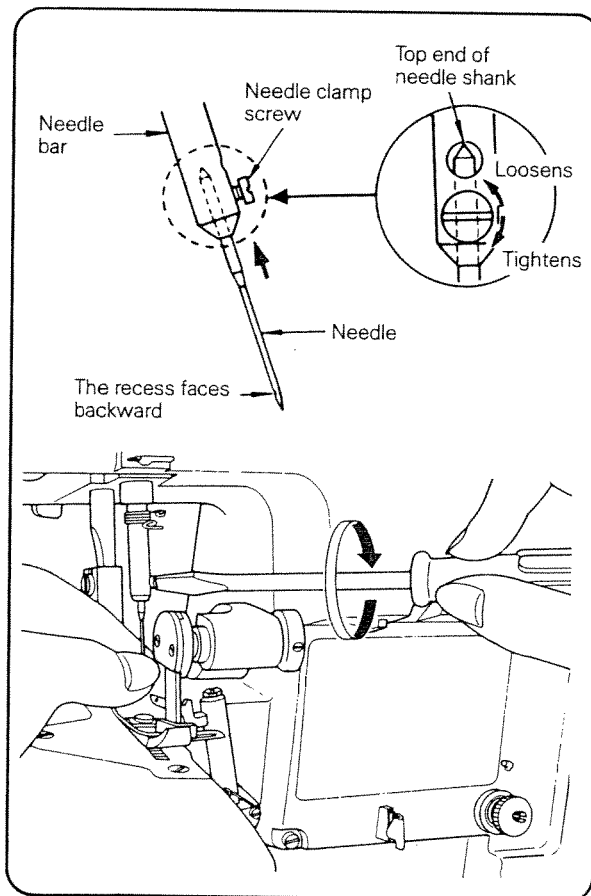
● Removing the needle ● Swing-out foot

- ① Turn the handwheel until the needle reaches its highest position.
- ② Lift the presser foot and turn it to the left.
- ③ To remove the needle, loosen the needle clamp screws by turning them in the direction indicated.

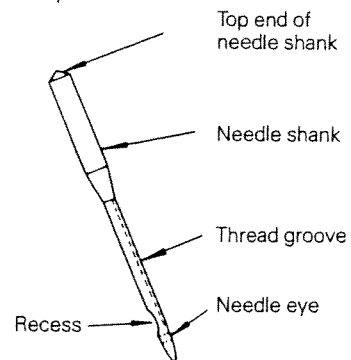


● Inserting the needle

- ① Turn the handwheel until the needle reaches its highest position.
- ② Lift the presser foot and turn it to the left.
- ③ Hold the needle with its recess facing backwards and insert it fully into the needle bar.
 - Make sure that the top end of the needle shank is in contact with the stop for the needle bar.
 - Refer to the needle attaching label on the left side of the machine.
- ④ Hold the needle firmly to keep it in position and tighten the needle clamp screws securely.
- ⑤ Turn the presser foot to the right to its original position as illustrated.



Names of parts of needle



● Selecting the needle

The standard needle to be used with this overedger is BL x 1 No. 11. (A needle of DB x 1 No. 11 may be also used.)

- A No. 11 needle can also be used for sewing heavy-light fabrics (denim etc.)
- A DB x 1KN No. 10 needle will give better results when sewing nylon or tetron knit.

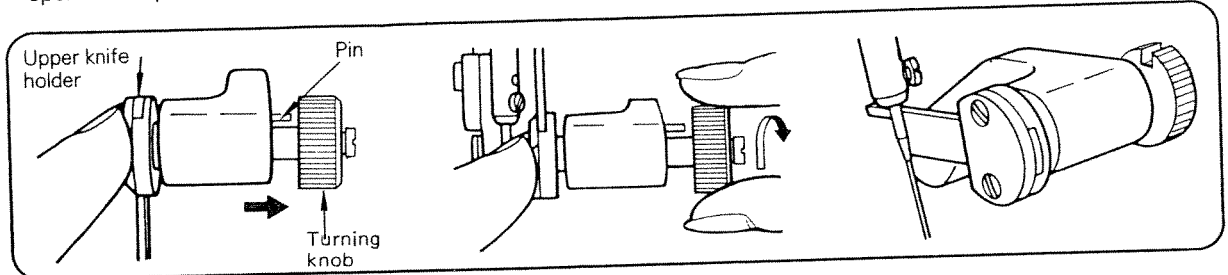
Replacing the knives

The lower knife could wear out, and therefore might need replacing when it is blunt.

- **CAUTION:** Be sure to disconnect the power plug from the mains socket before replacing the lower knife.

● Removing the lower knife

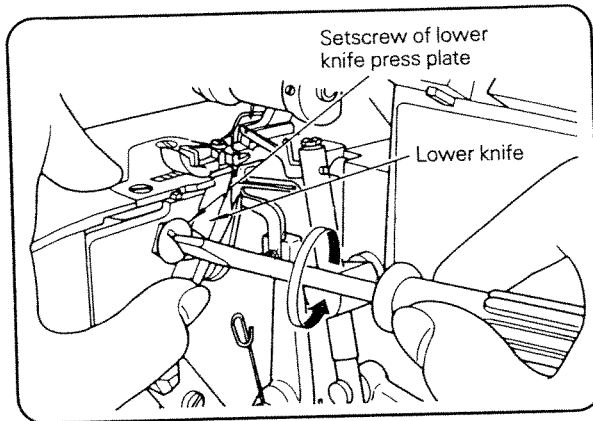
- ① Turn the handwheel until the knife reaches its highest position. Then open the looper cover.



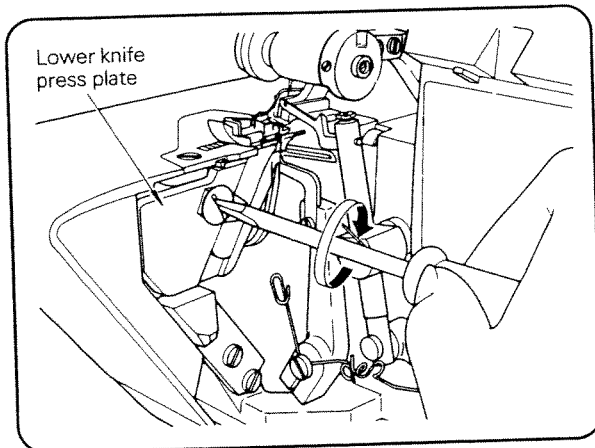
- ② Push the upper knife holder fully to the right which will release the turning knob from the pin.

- ③ Turn the knob in the direction indicated.

- ④ Turn the knob until it is in the position shown above.



- ⑤ Loosen the setscrew of the lower knife press plate to remove the lower knife as shown in the figure left. (A spare lower knife is provided as an accessory.)



● Attaching the lower knife

- ① Fit the lower knife in the lower knife holder groove as shown in the figure.
- ② Position the cutting edge of the lower knife so that it is flush with the throat plate surface. Then secure by tightening the setscrew.

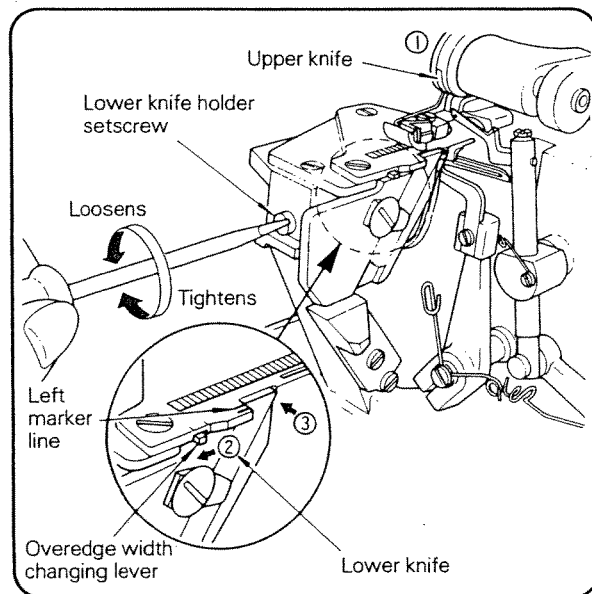
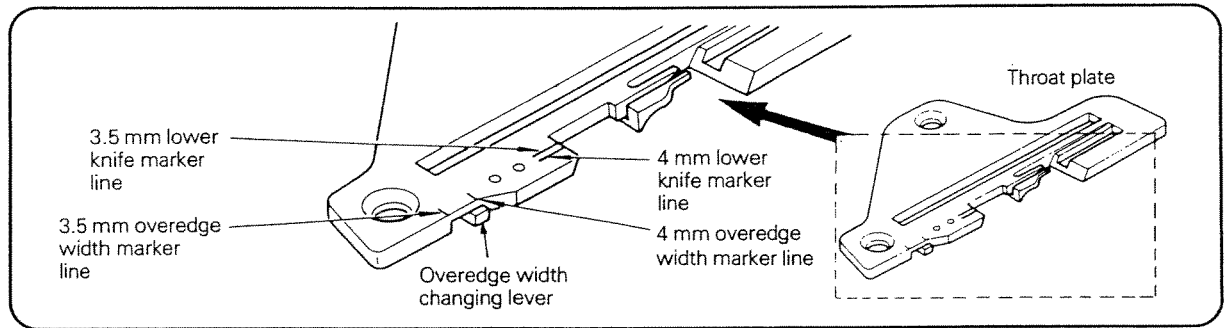
- After you have finished replacing the lower knife, push the upper knife holder fully to the right and turn it towards you, until the pin engages with the turning knob.

● Replacing the upper knife

The upper knife (movable knife) of a BERNETTE machine is made of special material called cemented carbide and does not usually need to be replaced. However, if its blade is chipped, it must be replaced. Replacement knives can be purchased from your local BERNETTE dealer.

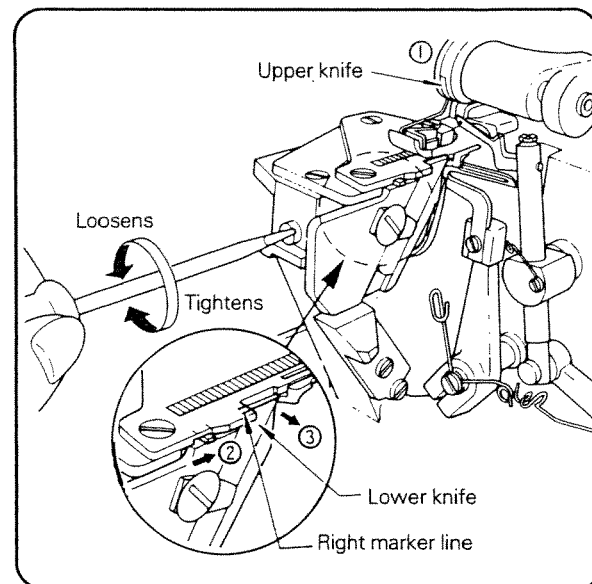
Adjusting the overedge width

This machine has been factory-set to a 3.5 mm overedge width. However, the overedge width can be easily changed from 3.5 mm to 4 mm as required.



● Adjustment for 3.5 mm overedge width

- ① Turn back the upper knife. (Refer to "Removing the lower knife".)
- ② Move the overedge width changing lever towards you.
- ③ Loosen the lower knife holder setscrew and move the lower knife. Align the left marker line on the throat plate with the right end of the lower knife, and make minute adjustment while checking the stitches formed. (Refer to "ADJUSTING THE THREAD TENSION" for the thread tension.)

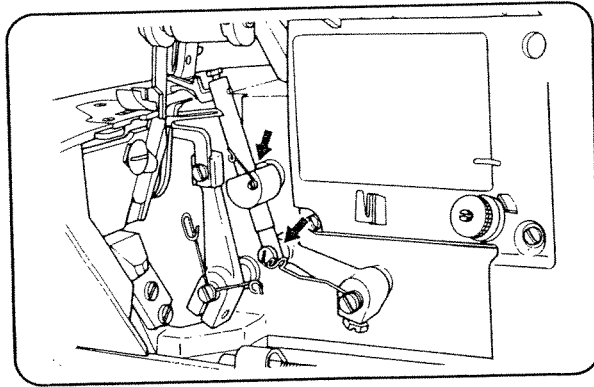


● Adjustment for 4 mm overedge width

- ① Turn back the upper knife. (Refer to "Removing the lower knife".)
- ② Move the overedge width changing lever away from you.
- ③ Loosen the lower knife holder setscrew and move the lower knife. Align the right marker line on the throat plate with the right end of the lower knife, and perform minute adjustment while checking the stitches formed. (Refer to "ADJUSTING THE THREAD TENSION" for the thread tension.)

Lubrication · Replacing the bulb

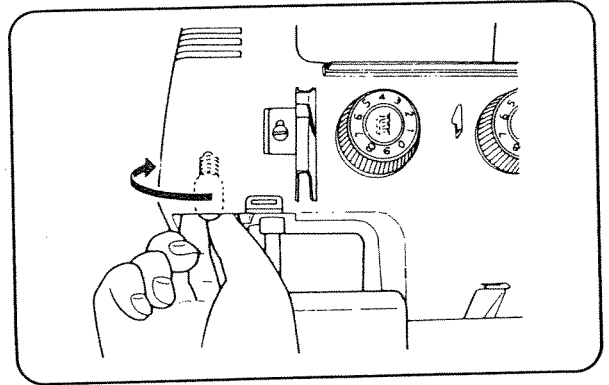
● Lubricating the machine



This machine requires less lubrication since its major components are made of special material. However, the machine will operate smoothly for a long time if you lubricate the points shown above.

- Apply one or two drops of oil for each lubrication.

● Replacing the bulb



If the bulb has burnt out, a new bulb can be purchased at your local dealer.

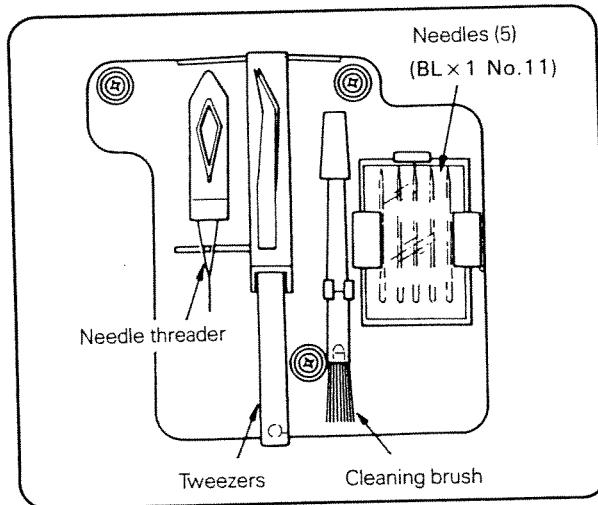
- The consumption power of the lamp is 15 watt.
- **CAUTION:** Make sure the power/lamp switch is off before replacing the bulb.

Specification of package & accessories

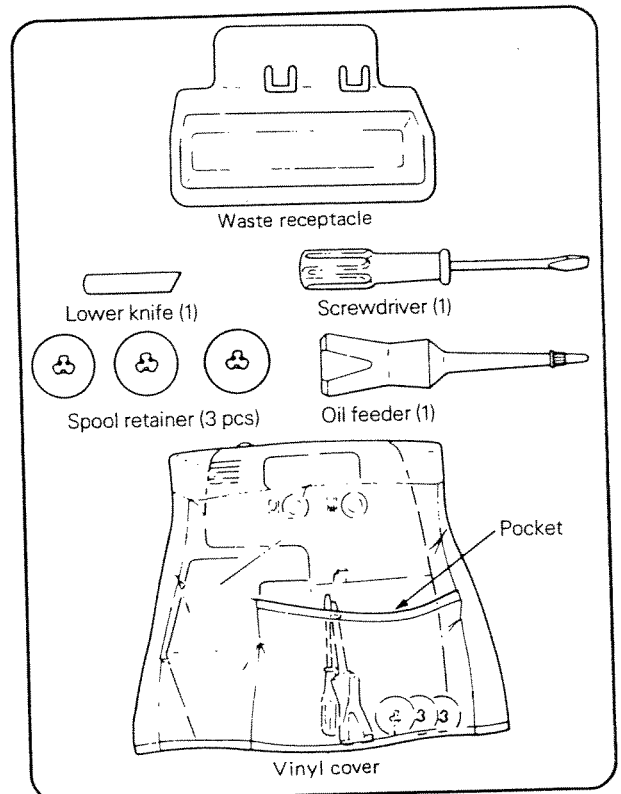
● Specification of package

- | | | |
|--------------------------------|-------|-------|
| 1. Sewing machine (with motor) | _____ | 1 set |
| 2. Foot control | _____ | 1 set |
| 3. Instruction manual | _____ | One |
| 4. Inspection certificate | _____ | One |
| 5. Accessories and case | _____ | 1 set |
- (See the specification of the accessories and the accessories in the looper cover.)

● Accessories kept in the looper cover.



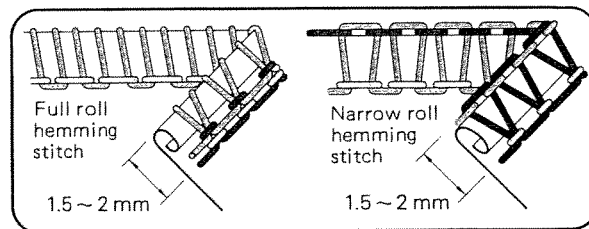
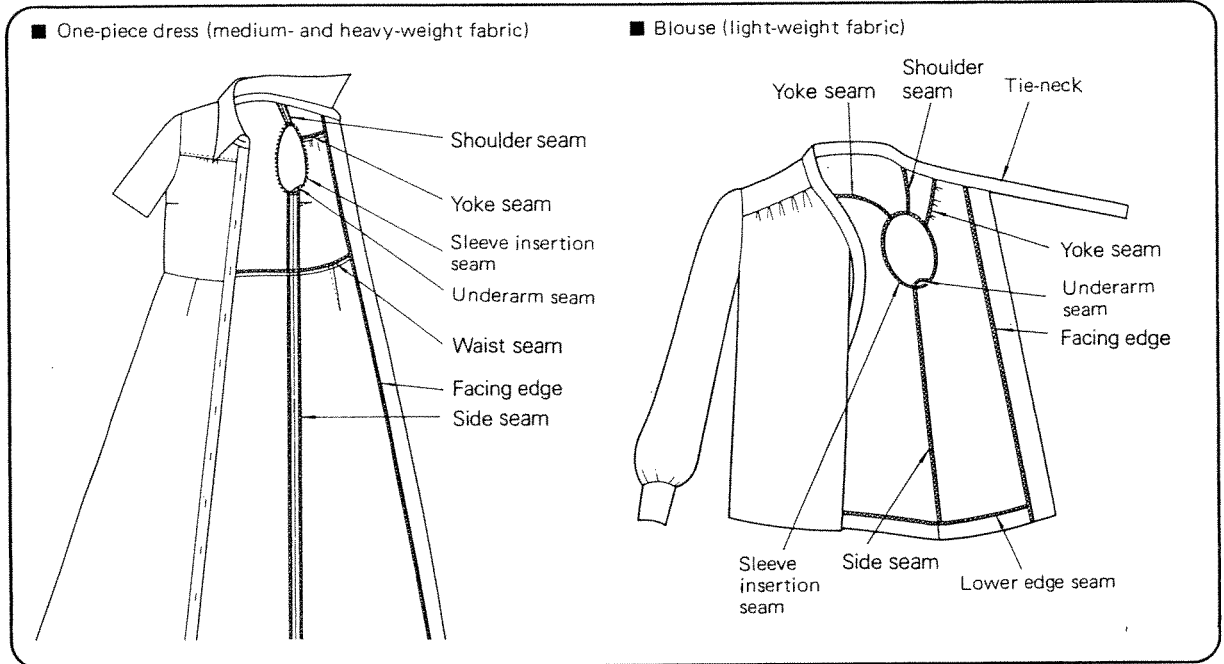
● Specification of the accessories



- It is advisable to keep the lower knife, screwdriver, spool retainer and oil feeder in the pocket of the cover.

Applications · Roll Hemming attachment (Available separately)

- **Application** – This machine is suitable for sewing the following:



- **Roll hemming attachment** (Available separately)

By using the roll hemming throat plate and presser foot and roll hemming thread tensioner, you can make narrow and full roll hemming stitches for rolled hems on articles such as scarves and handkerchieves.

- For details of how to use the roll hemming attachment, see the manual provided with it.
- The attachment can be purchased from your local BERNETTE dealer.

● Specification table of MO-203

Description	Specification
Number of threads	3
Needle	BL × 1 · DB × 1 No. 11 (A DB × 1 KKN No. 10 needle is best suited for sewing knits) Needle system 287 WH No. 80 or 70 can also be used.
Overedge width	3.5 mm and 4.0 mm (By slide-changing)
Stitch length (feed amount)	1 ~ 5 mm (Standard feed amount: 2.5 mm)
Lift of presser foot	4 mm
Sewing speed	Up to 1500 s.p.m.
Size	300 (W) × 265 (D) × 280 (H) mm
Weight	7 kg

● **Before calling for service**

The following problems are not caused by your machine. Check them again in accordance with the table below before calling for service.

Problem	Cause (Reason)	Corrective action	Page
Fabrics are not fed.	① The presser foot pressure is not high enough.	Turn the presser foot pressure adjust screw clockwise to increase the presser foot pressure.	9
Needle breakage	① The needle is bent or the needle point is blunt.	Replace with a new needle.	10
	② The needle has been improperly attached to the needle bar. ③ You have forcibly pulled the materials.	Attach the needle correctly to the needle bar. Lightly put your hand on the edges of the fabrics while you are sewing.	10
Thread breakage	① Threading is wrong.	Thread the machine correctly.	3, 4
	② Thread tension is too high.	Decrease the thread tension.	7
	③ The needle has been improperly attached to the needle bar.	Attach the needle correctly to the needle bar.	10
Stitches are skipped.	① The needle is bent or the point is blunt.	Replace with a new needle.	10
	② The needle has been improperly attached to the needle bar.	Correctly attach the needle to the needle bar.	10
	③ The machine has been improperly threaded.	Thread the machine correctly.	3, 4
Stitch tension is bad.	① Thread tension is not correct.	Correct the thread tension.	7
Workpieces are puckered.	① The needle thread tension is too high.	Set the needle thread tension dial to a smaller number.	7
	② The machine has been improperly threaded, or a thread has been caught at some unnecessary point.	Re-thread the machine correctly.	3, 4
Troubles with motor.	① The motor produces noises.	} Replace the carbon brush. Ask your dealer to replace the carbon brush.	
	② The motor will not run at all.		
	③ Unusually large sparks are produced.		

If the above corrective actions do not solve your problem, contact your dealer.

