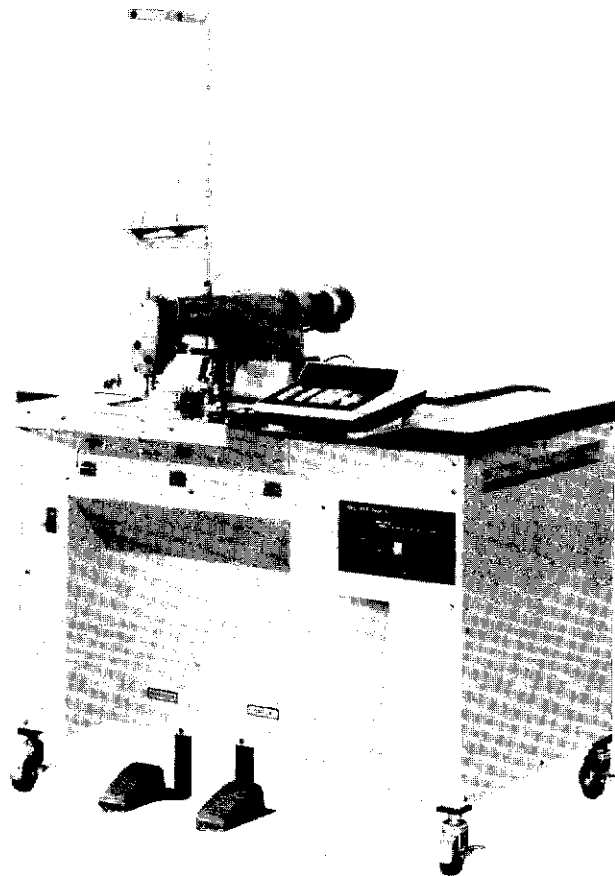


INSTRUCTION MANUAL FOR BROTHER BAS-301



Programmable Electric Lock Stitch Sewing Machine Profile M

**BROTHER INDUSTRIES, LTD.
NAGOYA, JAPAN**

AN OUTLINE OF THIS MACHINE

- ★ The production of the BAS-301 model automatic sewing machine is an event that has been long awaited by the sewing industry.
It is a masterpiece of BROTHER electronic technology, a general-use labor-saving sewing machine suited to a wide range of applications.
One of the greatest features of this machine is that it has a small easy-to-use programmer so that memory cards can be quickly and accurately produced at the sewing factory.

- ★ Once a stitch pattern has been recorded on the memory card, the card can be used indefinitely. The same card can also be used repeatedly for recording other, new stitch patterns. The operator merely needs to hold the sewing material between the foot-presser mechanism and depress the foot pedal. The control of the stitching and even the thread cutting will be automatically performed.

- ★ Alterations of the pattern are accomplished simply by inserting the memory card into the card reader. The introduction of this machine into the sewing industry will bring about the advantages of automation: improved quality and productivity, rationalization of the manufacturing process because unskilled machinists can be employed, and immediate product modification by pattern alteration.

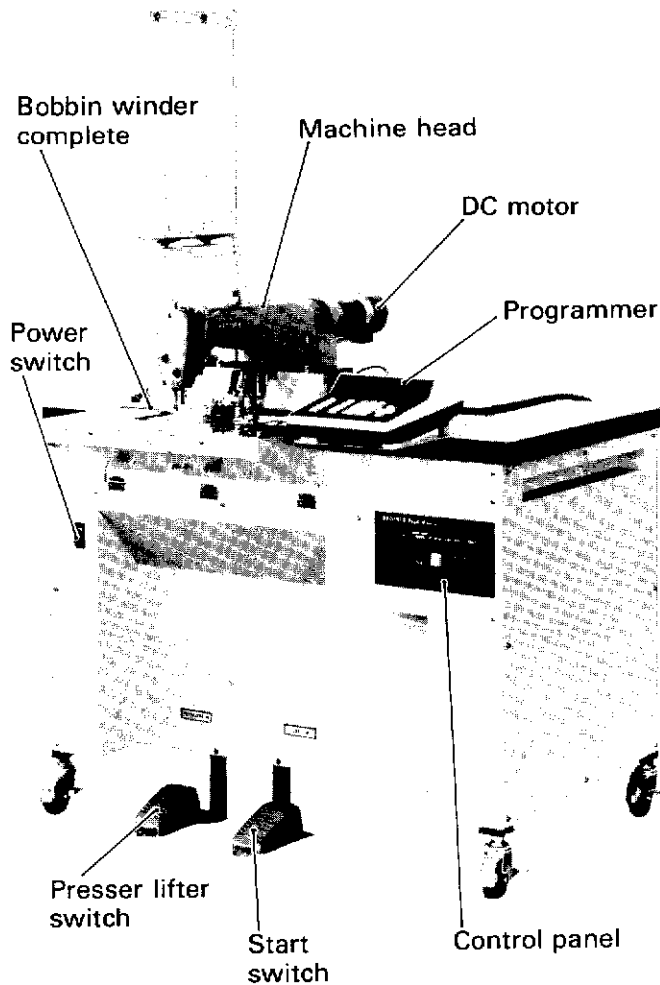
FEATURES OF THIS UNIT

1. Operation requires no special skill or effort because all functions are electronically controlled and sewing of the programmed pattern proceeds automatically.
2. Alterations of the pattern can be accomplished very quickly simply by replacing the memory card.
3. The memory card is produced by the programmer as it traces the position of the stitches of a full-scale reproduction of the pattern.
The programmer immediately memorizes the design.
Compared with conventional pattern sewing machines, this one produces memory cards much faster and more easily.
4. This model has a pulse motor for intermittent feed, thus accurate patterns can be stitched on any kind of cloth, from thin to thick materials.
5. This model has a maximum stitch size 250×105 so that large-scale patterns can be sewn. Intricate and complicated designs are beautifully formed and uniformly finished.
6. A center presser reversing-device has been developed to facilitate and speed up the previously time-consuming operation of sewing such items as rectangular name tags, magic tape, reinforcing cloth, etc.
7. This is a high performance general-use machine with functions suited to a diverse range of sewing applications.

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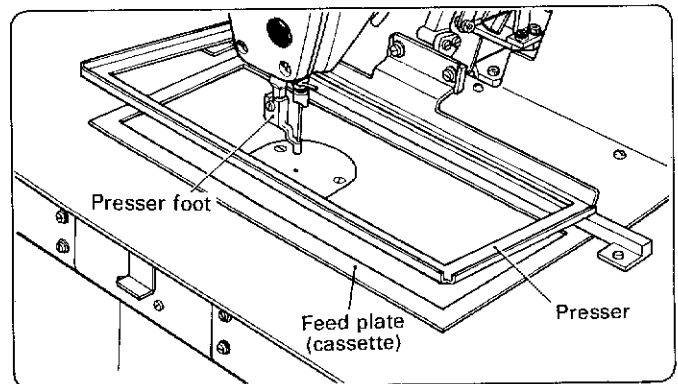
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NAME OF MAJOR PARTS

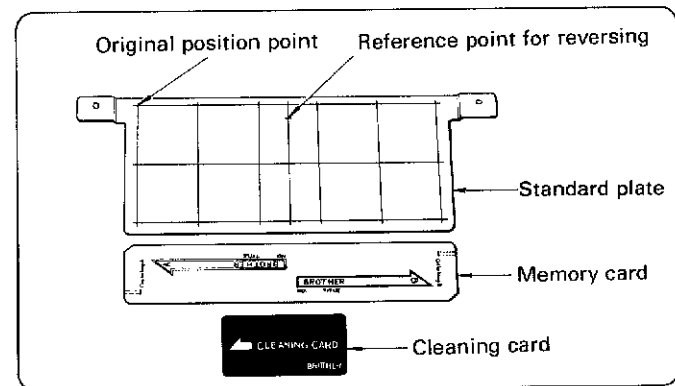
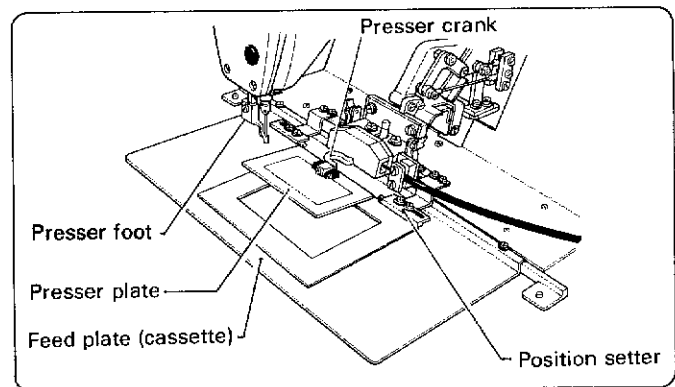


(Note) Be sure to ground the power cord.

◀ Clamp parts ▶



◀ Clamp parts ▶ Center presser reversing-device

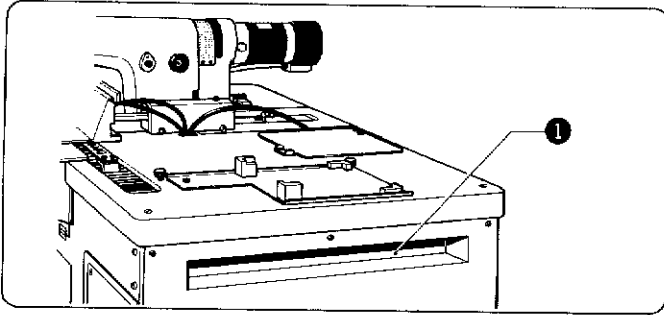


Stitch type	Single needle lock stitch sewing	
Machine type	Single needle automatic thread trimming sewing machine	
Sewing speed	2,000 spm (Intermittent feed) Sewing start and stop: high/low speed automatic changeover	
Pattern size	X course (crosswise) 250 mm Y course (lengthwise) 105 mm (When using center presser reversing-divice) X course (crosswise) 250 mm Y course (lengthwise) 80 mm	
Number of stitches	1,000 max.	
Stitch length	0.2 mm ~ 3 mm Sewing speed 2,000 spm	3.2 mm ~ 6.2 mm Sewing speed 1,000 spm
	*For a seam pitch larger than 3.2 mm, refer to the accompanying "Programmer Instruction Manual."	

Test device	Built-in test function at low speed drive
Safety device	Built-in temporary stop function and automatic built-in emergency stop device using safety circuitry (both with thread trimmer drive) Equipped with lower thread counter
Power	3P, 200V, 600W, motor
Drive motor	DC motor, and pulse motor
Dimensions	1,100 (W), 850 (D), 1,060 (H) mm
Standard accessories	Cleaning card, memory cards (301 models — 3 type only)

INSTALLATION

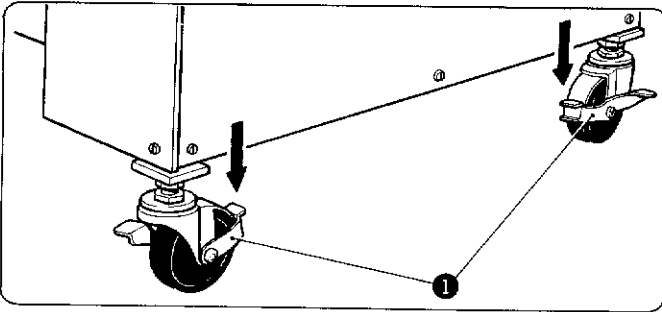
1 Carrying the Machine Head



★ Lift the machine by the recessed grips ① on either side of the body of the machine.

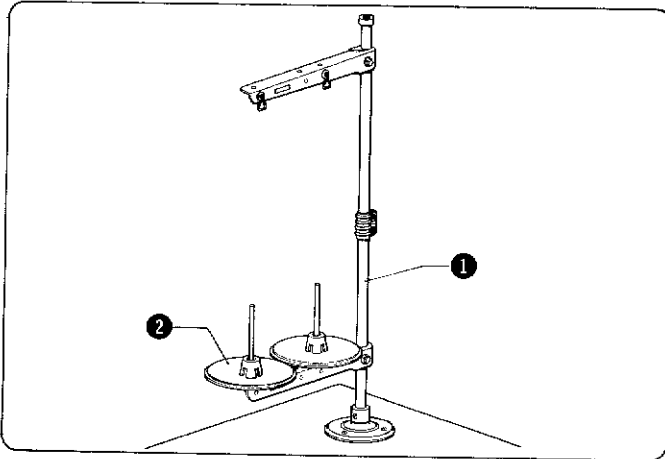
* Never lift the table itself.

2 Installation of the Machine



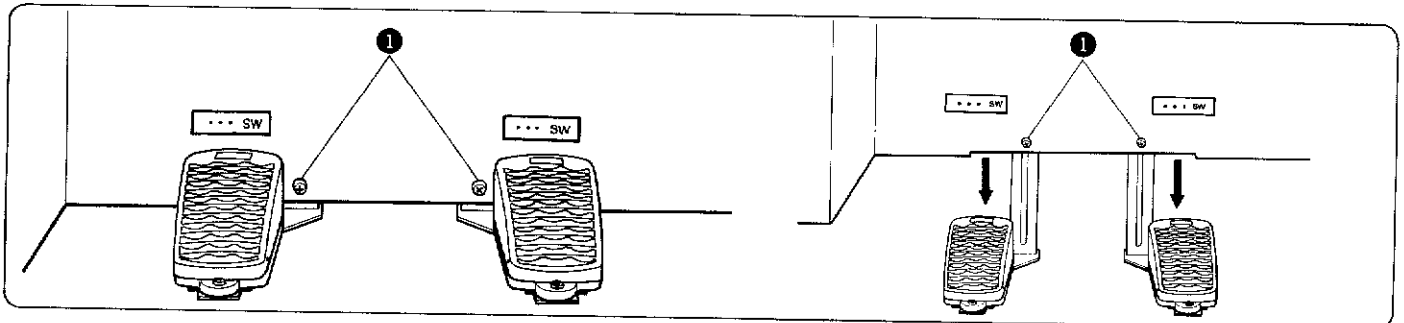
★ Select a place to install the machine, and set it by the casters ① so that it does not move.

3 Installation of the Cotton Stand



★ Install the cotton stand ① so that the spool stand base ② face towards you.

4 Attaching the Pedals (Start Switch · Presser Lifter Switch)

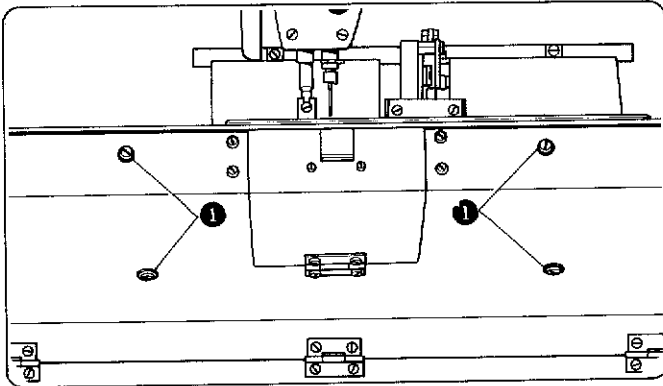


★ Loosen the screws ①, lower both pedals, then lock the pedals in position by tightening the screws ①.

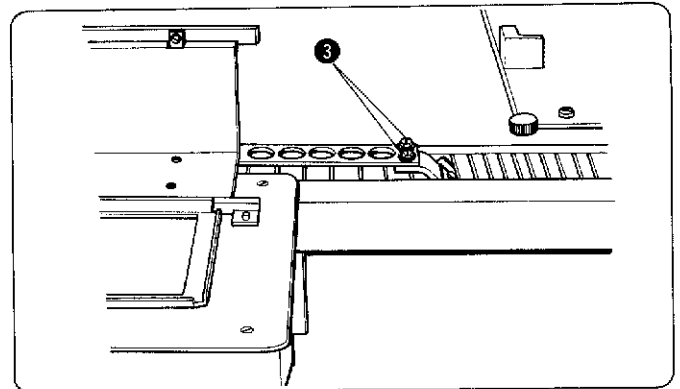
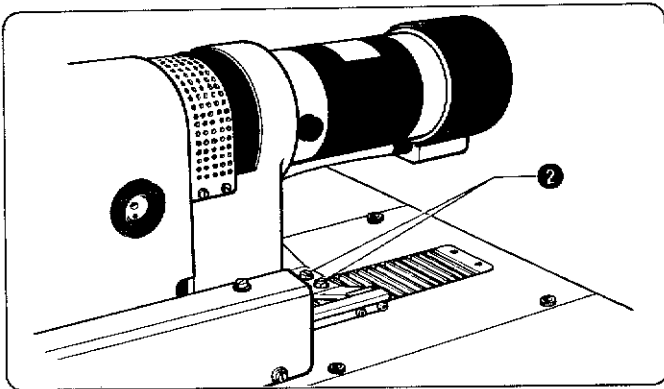
*To prevent damage when transporting or moving the machine, first return the pedals to their original position and fix them in position temporarily.

OILING AND DRAINAGE

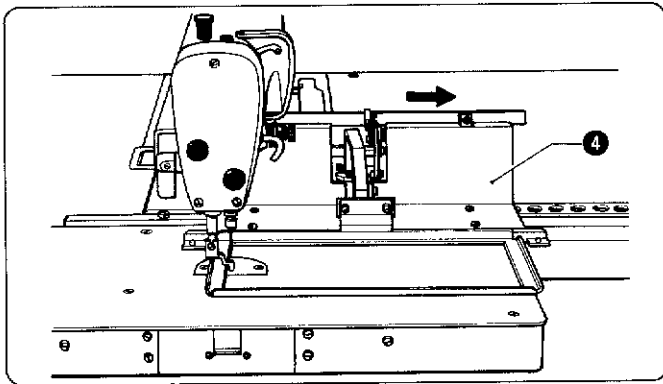
1 Oiling



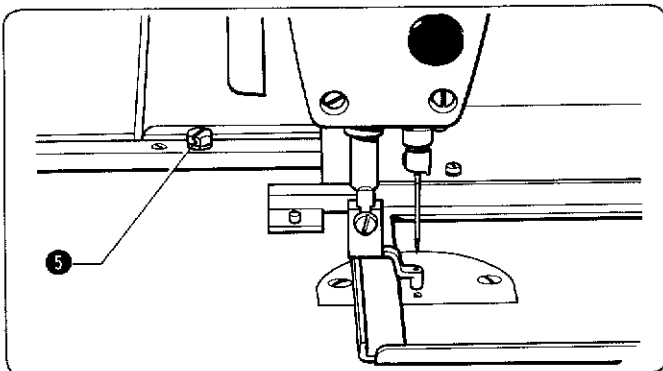
- (1) Remove the 4 screws ① from the cover of the rotary hook, and open the cover downwards.



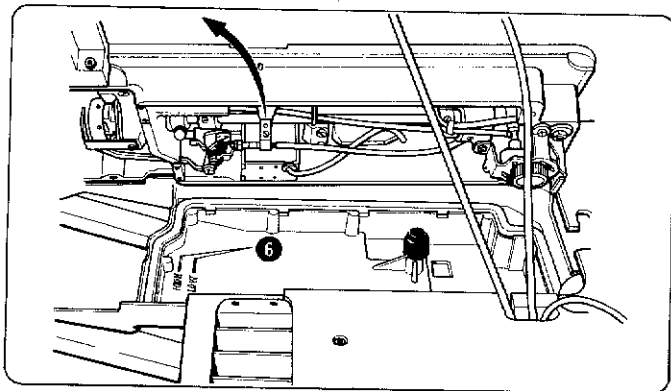
- (2) Loosen and remove both the coupling bolts ② and ③ in the X course, and both those in the Y course.



- (3) Take the feed guide cover ④ in both hands and move it gently to the right edge.



- (4) Take one of the four coupling bolts ② and ③ previously removed, and screw it lightly into the hole ⑤ in the rail.

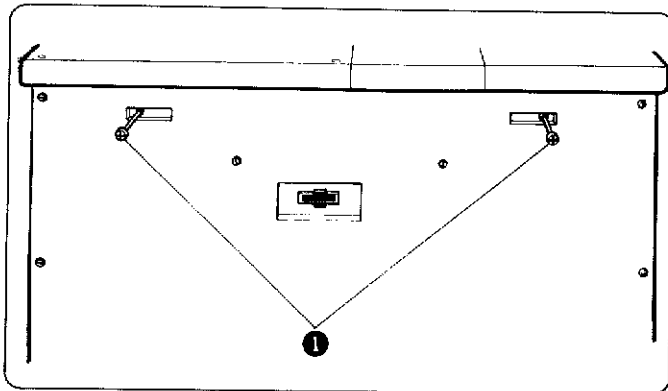


- (5) Tilt the machine head gently to the left side.
- (6) Apply oil up to the oil pan level marks **6**.
- (7) After lubrication return the machine head gently to its original position.
- (8) Loosen and remove the coupling bolt temporarily tightened in step (4).
- (9) Replace the coupling bolts **2** and **3** in their original positions and tighten them.
- (10) Put the cover of the rotary hook back in position and fasten it with the 4 screws.

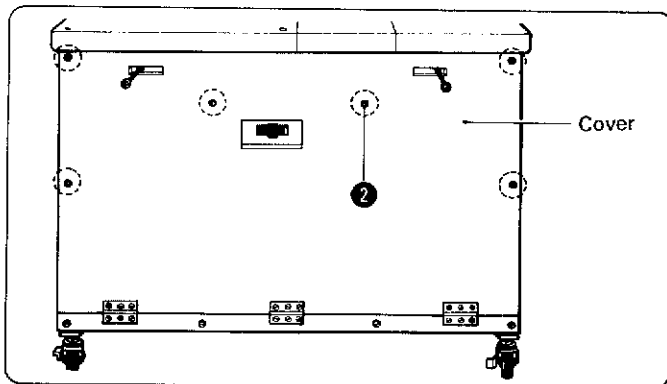
*Tighten the coupling bolts **2** and **3** securely so that vibration will not cause them to become loose.

2 Drainage

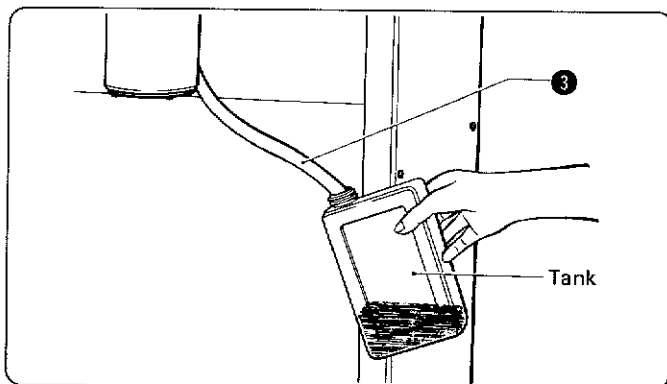
(1) Proceed as explained in steps (1) through (5) above to tilt the machine head.



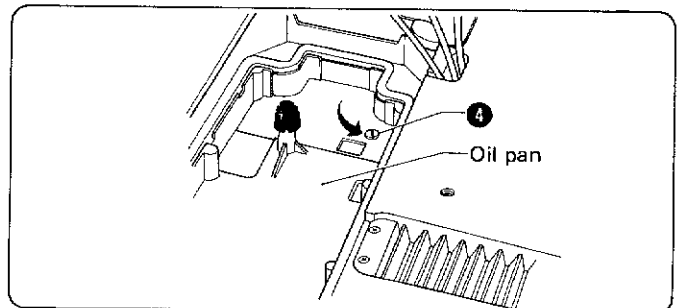
- (2) Loosen the 2 bolts **1** that are screwed into the rear cover of the body of the machine, and pull them out completely. Then fasten them in place by screwing them into the screw sockets.



- (3) Next, remove the 6 screws **2** from the rear cover, and gently open the cover downward to the floor so that it rests on the projecting bolts **1**.



- (4) Draw out the mouth of the drainage hose **3** and insert it into the tank.



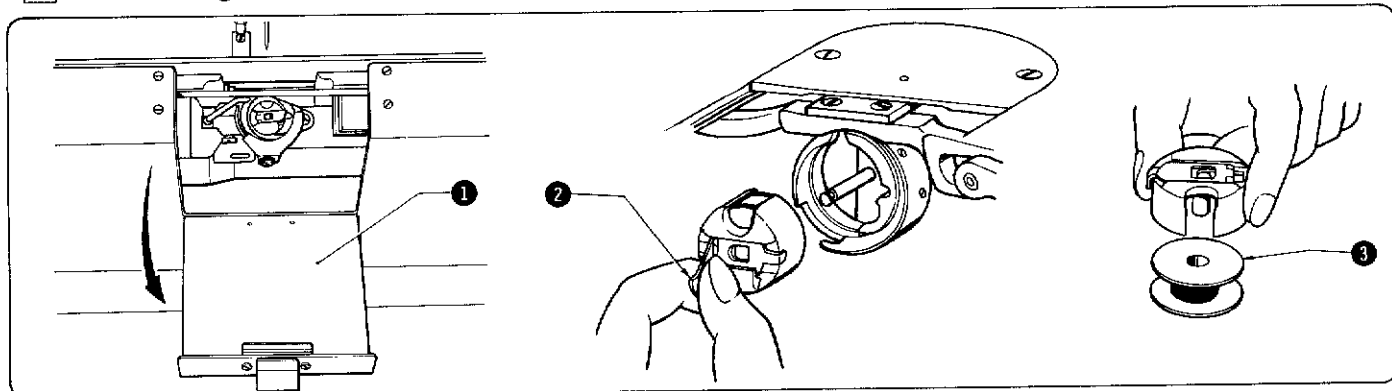
- (5) Loosen the screw **4** in the bottom of the oil pan with a screwdriver. The oil will then begin to flow out.
- (6) When the oil has been drained, tighten screw **4**. Fasten the mouth of the hose back in its original position.
- (7) Go through the reverse procedure of steps (3) and (2) to complete drainage.

CORRECT OPERATION

1 Attaching the Needle

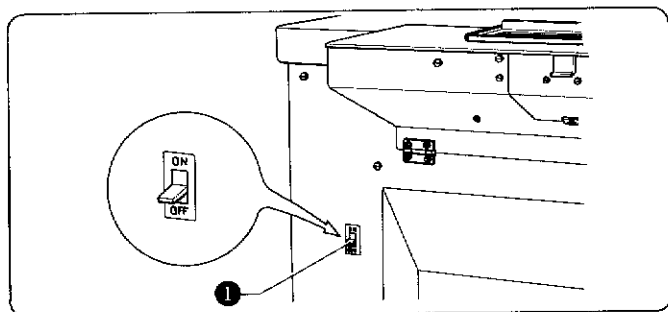
- (1) With the long groove of the needle facing the front, insert the needle completely, and tighten it with the needle clamping screw.

2 Removing the Bobbin Case

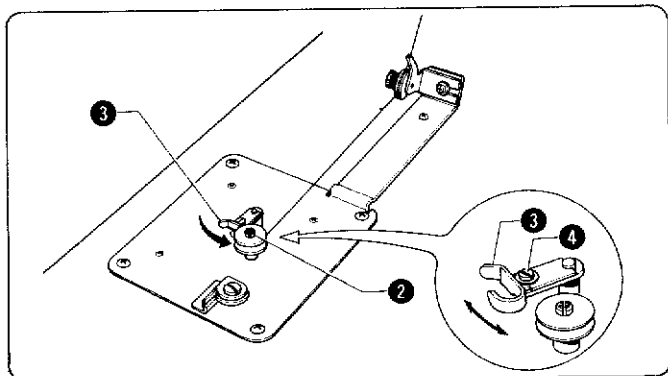


- ★ Open the rotary hook cover ① and remove the bobbin case by its latch ②. (Release the latch, and the bobbin ③ will come out.)

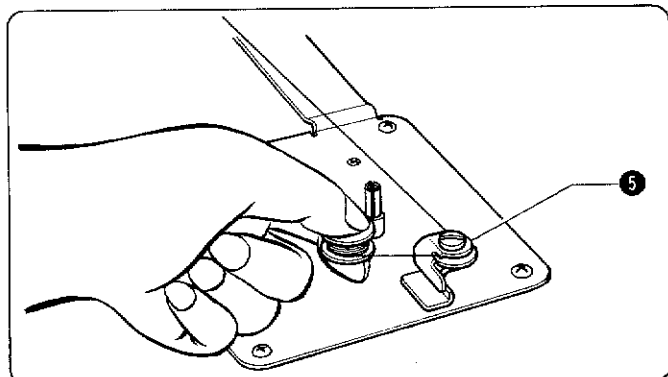
3 Winding the Lower Thread



- (1) Turn the power switch ① ON.

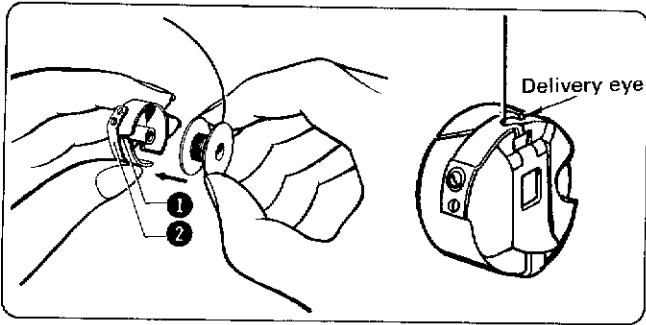


- (2) Fit the empty bobbin onto the bobbin winder spindle ②.
- (3) Draw the thread from the thread holder base, and wind the end of the thread around the bobbin 5 or 6 times to the right.
- (4) Move the lever ③ in the direction of the arrow. The switch will automatically switch "ON", and the bobbin winder spindle will begin to revolve, winding the thread.
- (5) When thread winding is completed the lever will automatically return to its original position and the bobbin winder spindle ② will stop.



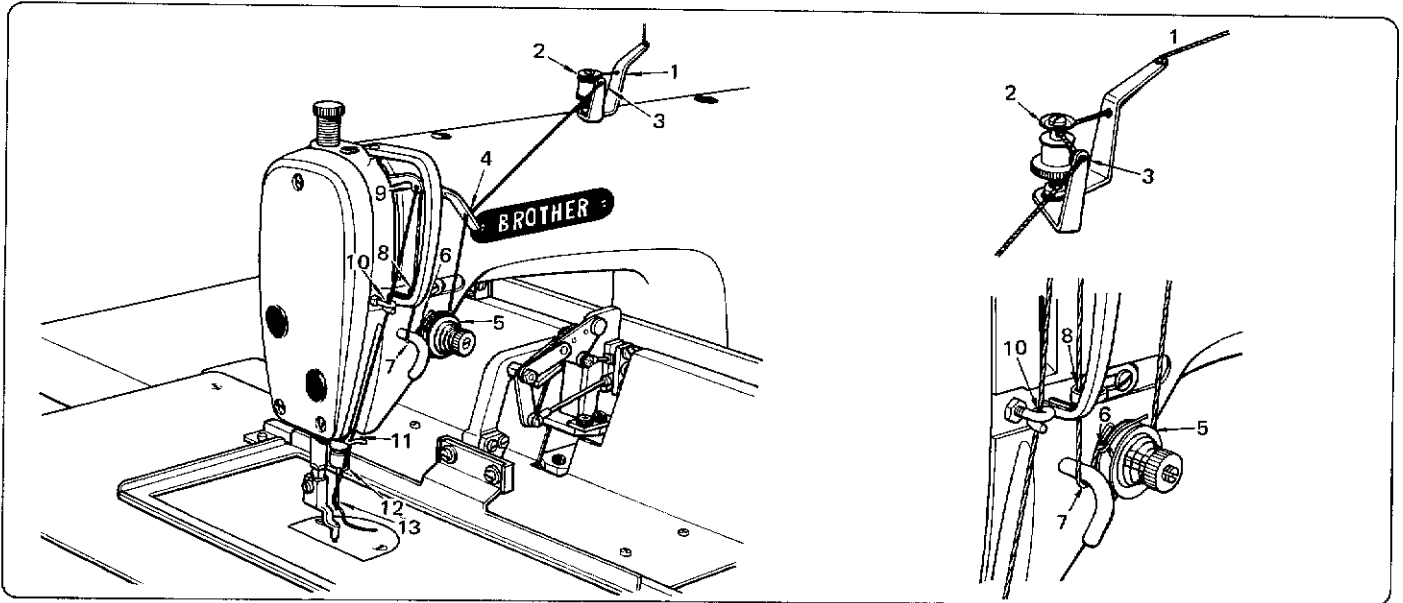
- (6) To alter the bobbin winder capacity, loosen the screw ④ and move the lever ③ the right or left.
- (7) Remove the bobbin from the bobbin winder spindle ②, and draw the thread around the thread trimmer ⑤ to cut the thread. Then take the cut end of the thread from the clamp and wind it around another bobbin, ready for the next bobbin winding.

4 Lower Threading



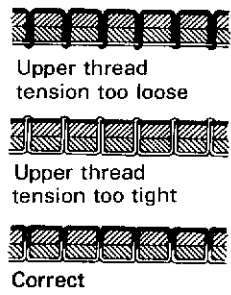
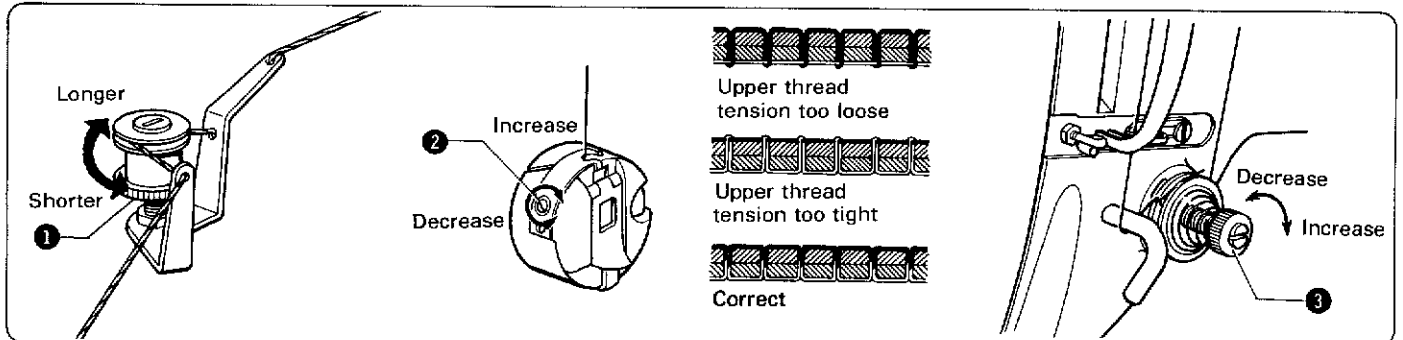
- ★ Insert the bobbin into the bobbin case. Run the thread through slot ① and under tension spring ②. Draw the thread out from the delivery eye at the edge of the tension spring ②.

5 Upper Threading

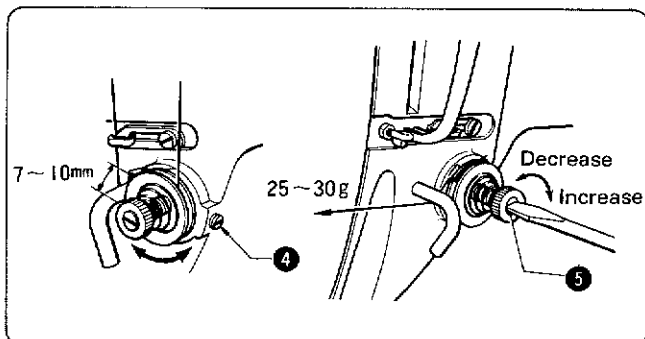


- ★ Thread the machine in numerical order.

6 Thread Tension



- ★ Turn the tension screw ① to adjust the loose end of cut thread from the tip of the needle to a length of approximately 35 ~ 40 mm.
- ★ To adjust the lower thread tension, hold the bobbin case by the end of the thread, and turn the tension screw ② until it is just able to prevent the bobbin case from falling.
- ★ To adjust the upper thread tension, first lower the presser foot, and then turn the tension screw ③.

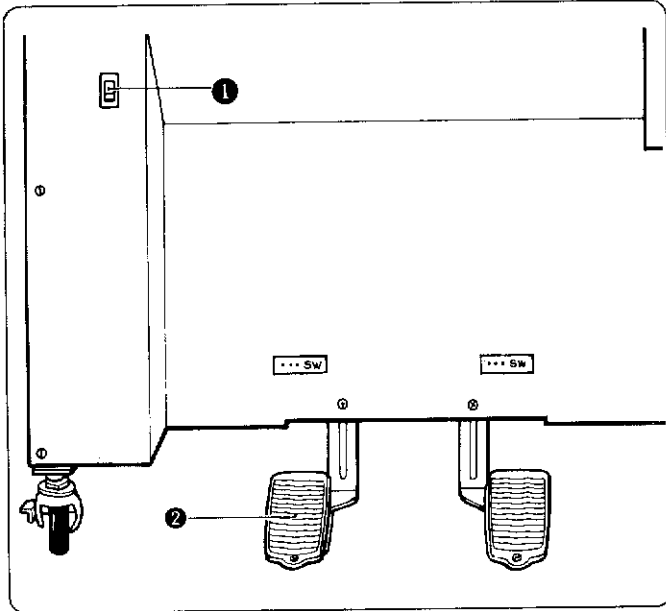


Thread take-up spring

- ★ Operating stroke of thread take-up spring is 7 ~ 10 mm as standard. At this time, the tension is 25 ~ 30 grams as standard.
- ★ In case of adjustment on operating range, loosen the screw ④ and turn the upper thread tension assembly to a proper degree.
- ★ In case of adjustment on tension, put a screw driver into the slot of tension stud ⑤ and turn it as required.

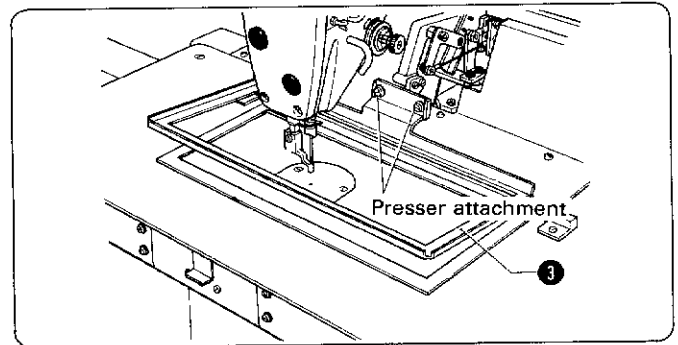
SEWING

1 Before Beginning to Sew

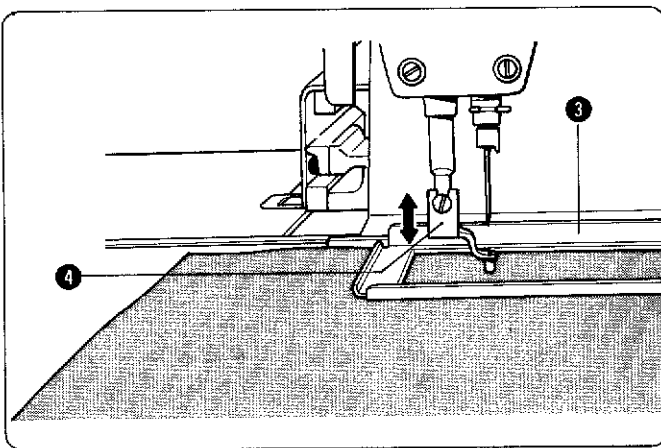


- (1) Turn the power switch ❶ ON.
- (2) Depress the presser lifter switch ❷, raise the presser attachment, and attach the presser ❸.

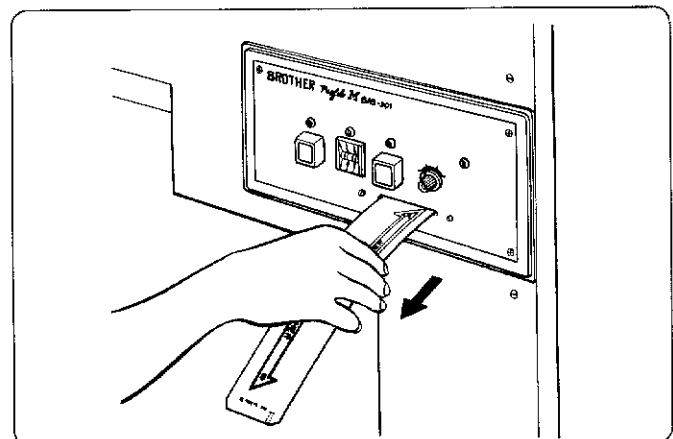
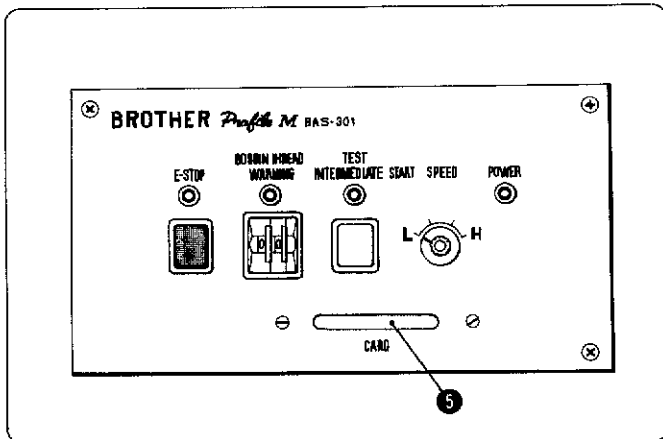
* If the presser is already installed, proceed to the next step.



- (3) Set the cassette or the material to be sewn.
- (4) Depress the presser lifter switch again, and raise the presser ❸.
- (5) Turn the power switch ❶ OFF.

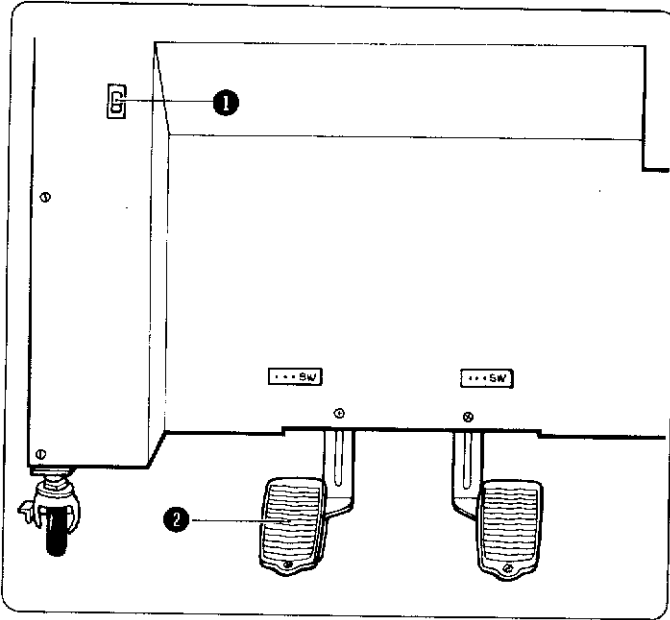


- (6) Move the presser ❸, and adjust the height of the presser foot ❹. (Refer to the section "Presser Foot Adjustment" on page 11 for the adjustment procedure.)
- (7) Turn the power switch ❶ ON again.



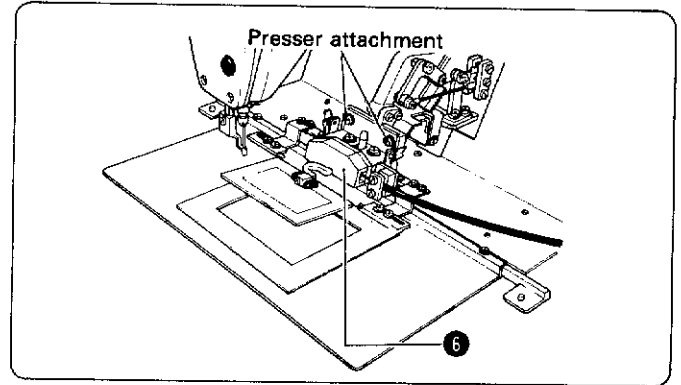
- (8) Insert the sewing pattern memory card gently into the card insertion slot ❺. The memory card will be automatically fed into the machine and returned again.
- (9) The returned card will automatically stop at a fixed position. Make sure that the memory card has stopped, and then take it out from the machine.
- (10) When the start switch is depressed, the presser foot will return first to the original position, then move to the initial sewing position and stop.

◀ When using the center presser reversing-device ▶

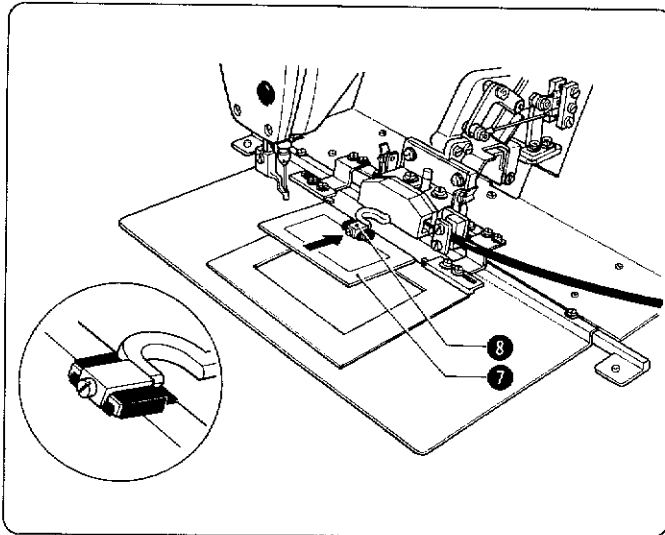


- (1) Turn the power switch ① ON.
- (2) Depress the presser lifter switch ② to raise the presser holder. Then attach the center presser reversing-device ⑥.

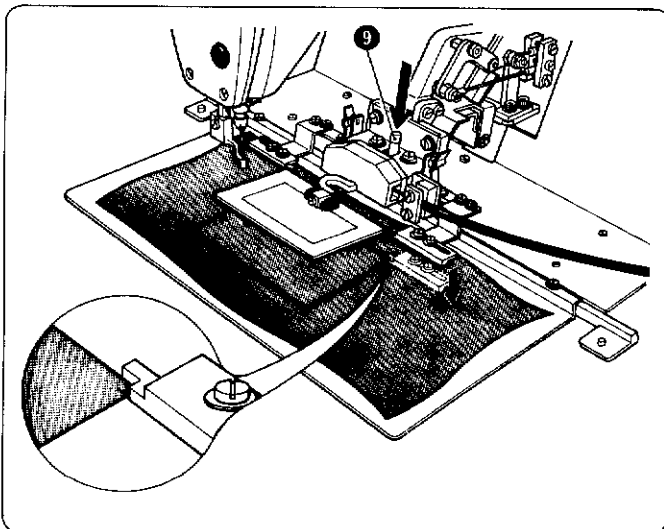
*If the center presser reversing-device ⑥ is already attached, start from the next step.



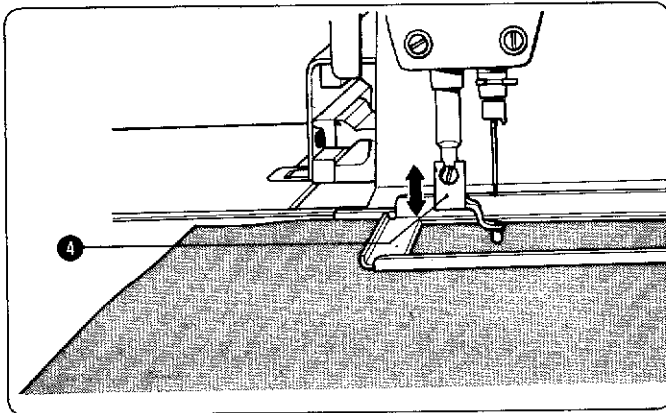
- (3) Install the presser plate ⑦ onto the presser plate holder ⑧.



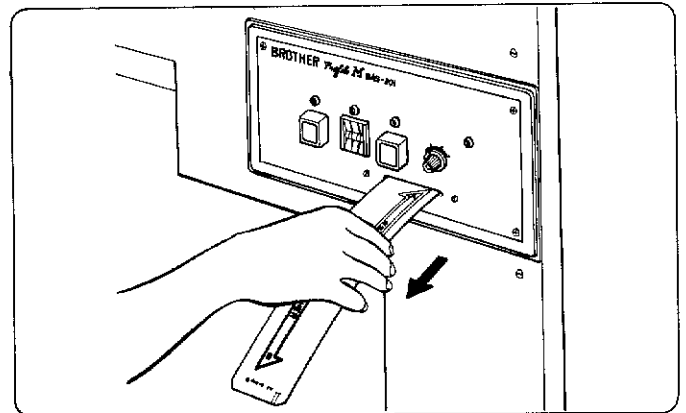
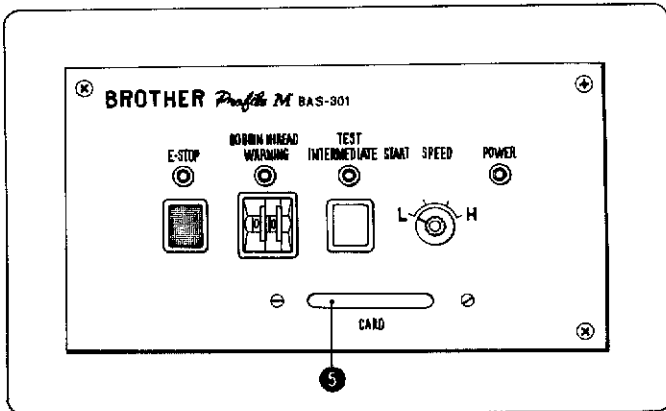
- (4) Set the cassette or the material to be sewn. Lower the position setter by pressing the position-setter shaft ⑨. Set the material to be sewn to fit the position setter.



- (5) Depress the presser lifter switch ② again, and raise the presser.
- (6) Turn the power switch ① OFF.



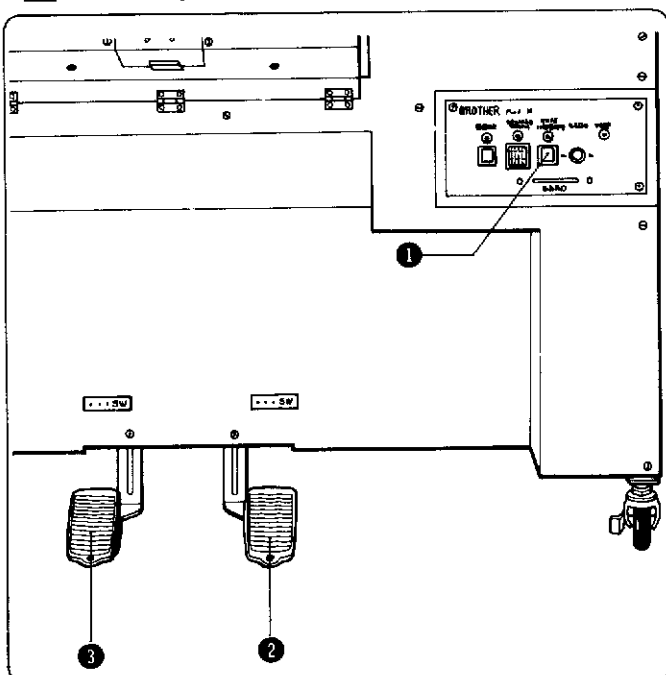
- (7) Move the presser, and adjust the height of the presser foot ④.
(Refer to the section "Presser Foot Adjustment" on page 11 for the adjustment procedure.)
- (8) Turn the power switch ① ON again.



- (9) Insert the sewing pattern memory card gently into the card insertion slot ⑤.
The memory card will be automatically fed into the machine and returned again.
- (11) When the start switch is depressed, the presser will first move to the origin and then move to the initial sewing position.
It will stop at this position.

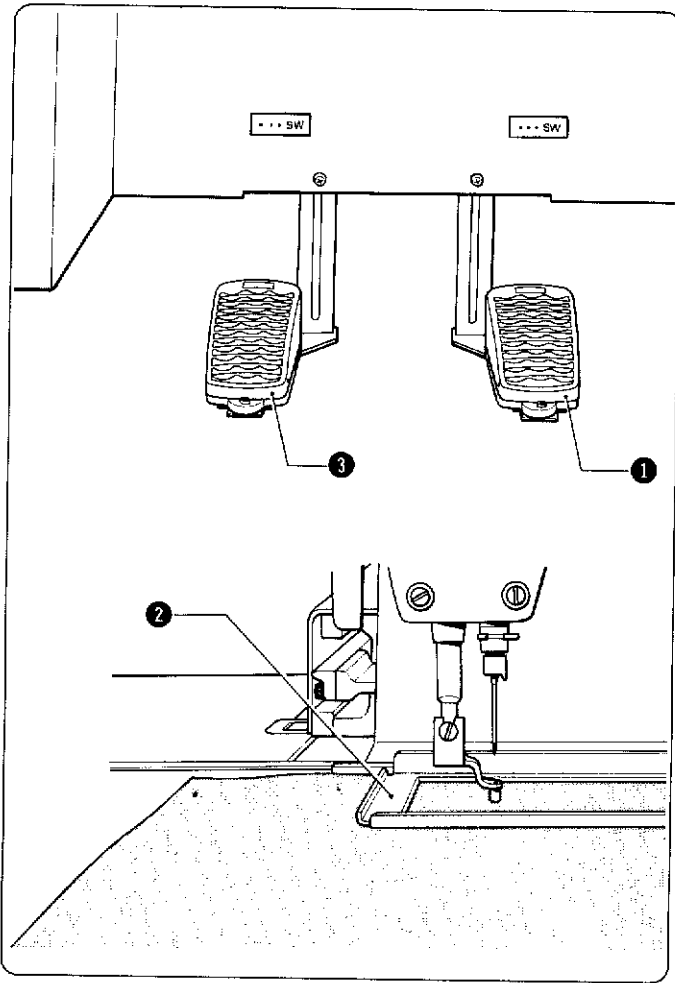
- (10) The returned card will automatically stop at a fixed position.
Make sure that the memory card has stopped, and then take it out from the machine.

2 Testing



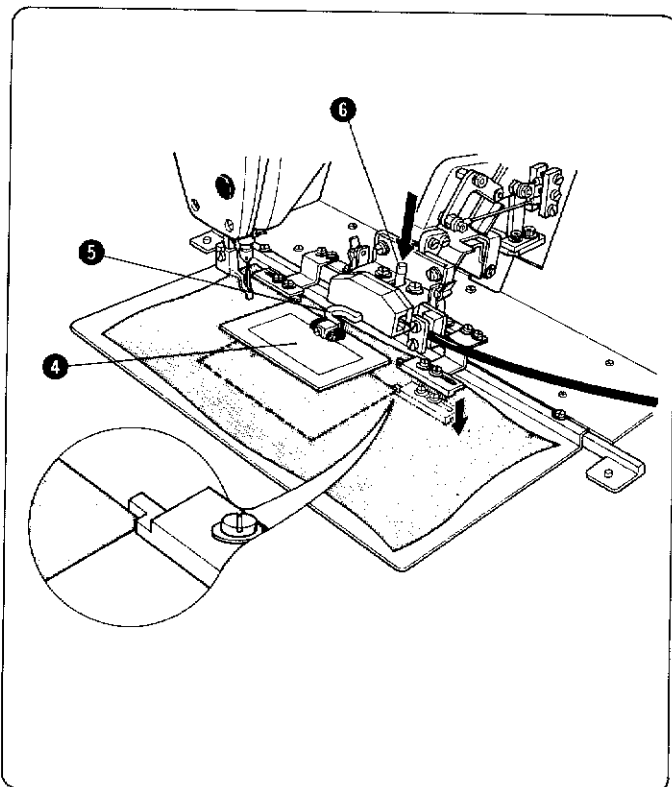
- (1) Press the test/midway sewing button ①. The green lamp will illuminate.
- (2) When the start switch ② is depressed, the machine itself will remain still, and the presser only will begin to trace the pattern, moving along each stitch position at low speed. (Depress the presser lifter switch ③ for fast-forward speed.)
- (3) Check that the presser is following the pattern as programmed. At the same time, check that the presser is operating correctly in relation to the presser foot.
(Check presser plate/presser crank at this time if using the center presser reversing-device.)
- (4) After confirming the programmed operation, press the test/midway sewing switch ① to turn it OFF. The green lamp will cease to illuminate.

3 Sewing



- (1) When the start switch ① is depressed, the sewing machine will begin to operate at high speed.
- (2) As soon as the sewing has been completed, the presser ② will automatically return to the initial sewing position, rise, and stop.
- (3) Remove the cassette or sewing material.
- (4) With the presser ② raised, insert the next cassette or the material to be sewn. Then depress the presser lifter switch ③ and the presser will then come down to firmly clamp the material. Repeat this sequence of operations to continue sewing.

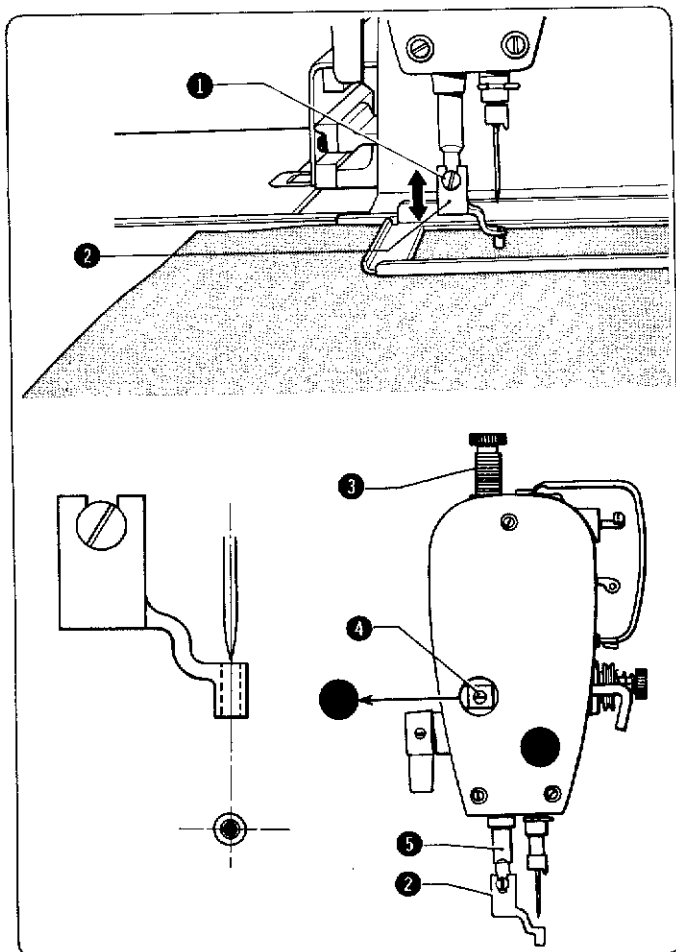
◀ When using the center presser reversing-divice ▶



- (1) Depress the presser lifter switch ③ to raise the presser plate ④.
(The presser crank ⑤ will return to the initial sewing position.)
 - (2) Reset the cassette or sewing material. Press the position-setter shaft ⑥ to lower the position setter. Set the sewing material to fit the position setter.
 - (3) Depress the presser lifter switch ③ to lower the presser plate ④.
 - (4) When the start switch ① is depressed, the sewing machine will begin to operate at high speed.
(Once the sewing has been completed, the presser plate ④ will return to the initial sewing position and rise.)
 - (5) Remove the cassette or sewing material. Repeat this sequence of operations to continue sewing.
- *After completing the test, the presser plate ④ must be raised or the machine will not operate when the start switch is depressed.

STANDARD ADJUSTMENTS

1 Presser Foot Adjustment



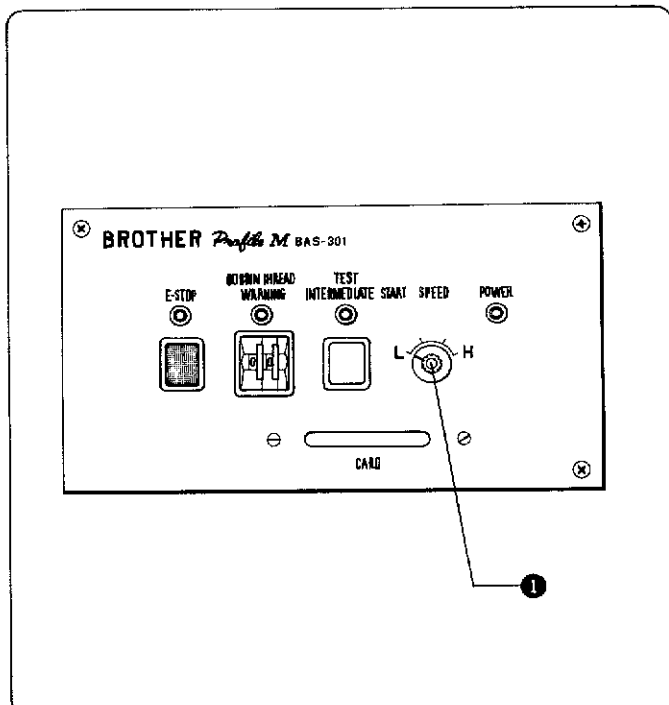
- ★ Loosen the screw ① and adjust the position of the presser foot ② so that its base lightly touches the material. Then tighten the screw.

* If the presser foot is lowered too far the material will slip out of place when sewn. If the presser foot is too high it may cause skipped stitches.

- ★ Turn the machine pulley by hand and confirm that the needle will go through the hole of the foot presser ②. Loosen the screws indicated by the numbers ③ and ④ and rotate the presser bar ⑤. Tighten the screw ④ at the point where the needle hole of the presser foot ② and the needle coincide. After the adjustment, tighten the other screw ③.

2 To Change Sewing Speeds

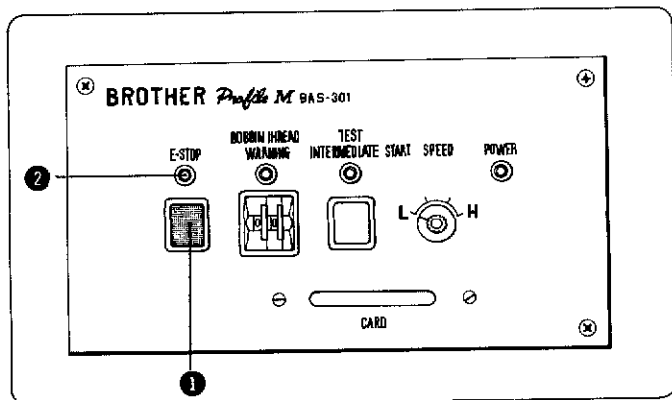
- ★ Four different speeds can be selected with maximum speed at 2,000 spm (1,000 spm).



- (1) To change the sewing speed, stop the machine, then turn the speed adjustment ①.

* The speed will not change if the adjustment ① is turned while the machine is in operation. The machine must first be stopped.

5 Using the Emergency Stop Button



(1) When the emergency stop button ① is pressed ON while sewing:

★ The emergency stop lamp ② will illuminate and the machine will stop.

Remove the cause of the malfunction, and then press the emergency stop button again.

The thread will be cut automatically, and the emergency stop will be cancelled.

*When the emergency stop button is ON and the lamp is illuminated, the sewing machine will not function even if both pedals are depressed.

(2) When the machine returns to normal operation:

★ If the start switch is depressed after releasing the emergency stop, the presser foot will return to the original initial position, then automatically move to the initial sewing position. Proceed with the following operating procedure.

(3) When the emergency stop button is pressed ON during test sewing:

★ The emergency stop lamp will illuminate, and the machine will immediately cease to operate. The emergency stop is cancelled when the emergency stop button is pressed again. The automatic thread trimmer will not operate in this case.

Proceed as in step (2) to set the machine in normal working order.

(4) When the machine malfunctions:

★ If an overload or anything out-of-order occurs to the sewing machine or to the presser during operation, the machine will automatically make an emergency stop and the lamp will illuminate.

Proceed as in step (2) to set the machine in normal working order.

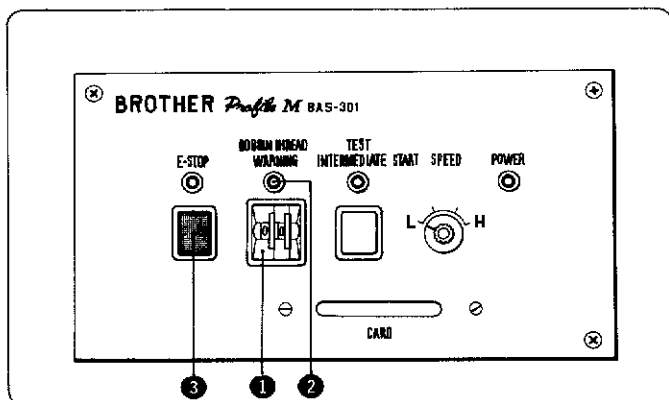
(5) When you forget to insert the memory card:

★ Depress the start switch and the presser will move to the origin. The emergency stop lamp will illuminate when the presser reaches this position, and the machine will not function even if the start switch and presser lifter switch are depressed. Press the emergency stop button, check that the lamp has extinguished, and then insert the prescribed memory card. The machine will return to normal operation.

(Note) When something is out-of-order with this unit, always turn OFF the power switch before opening the rear cover.

6 Use of the Lower thread Counter

★ Calculate the number of pieces of material that can be sewn with the amount of thread on the bobbin. Set the lower thread counter to this number to prevent sewing with no lower thread.



(1) Set the number of pieces of material to be sewn on the lower thread counter ①.

(The lower thread counter ① can be set from (0 1) to 99 (9 9) pieces of material. If the lower thread counter ① is set to (0 0), any number of pieces of material will be sewn regardless of the number shown on the counter.)

(2) When the number of pieces set on the lower thread counter ① has been sewn, the lower thread counter lamp ② will flash on and off. (The machine will then cease to operate, even if the start switch is depressed.)

(3) After changing the bobbin, press the emergency stop button ③.

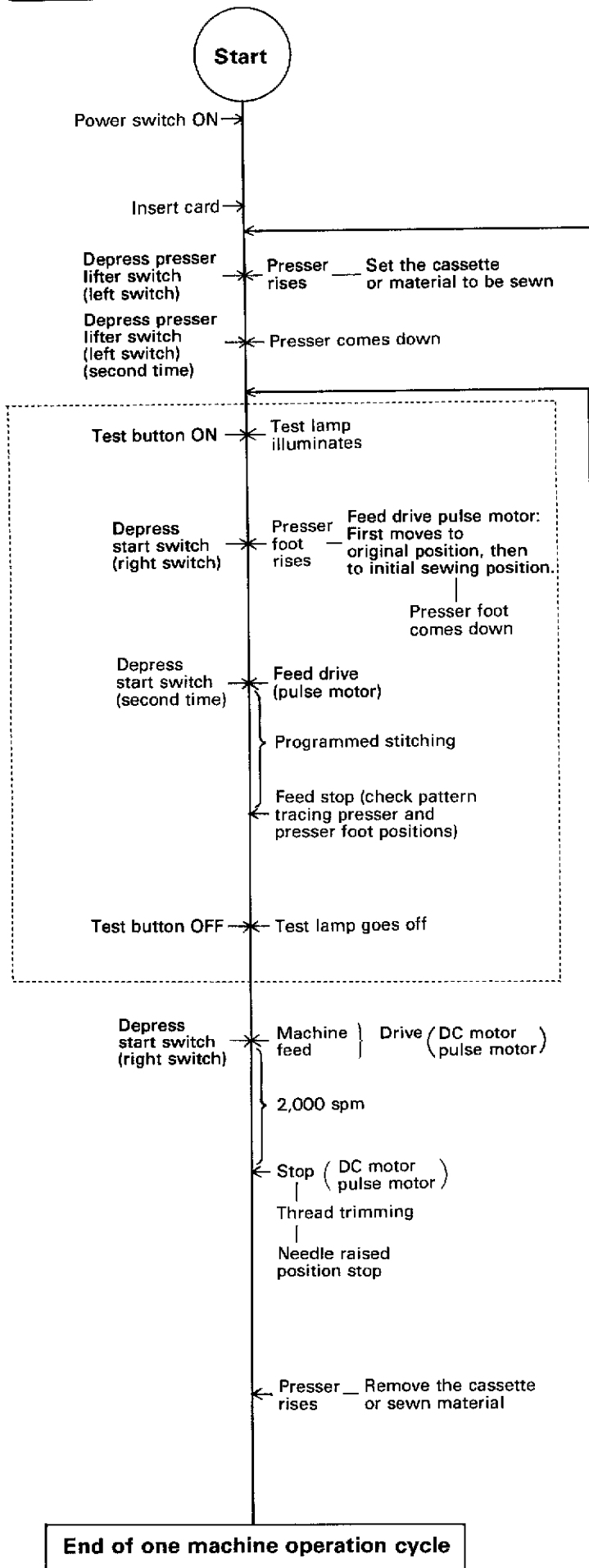
(The lower thread counter lamp ② will cease to illuminate and the machine can be operated again.)

*Caution

If the emergency stop button ③ is pressed without changing the bobbin, the machine will operate even though the bobbin is empty.



OPERATION FLOW CHART



When using the cleaning card.
Refer to page 12 ④.

	Case A	Case B	Case C
Press emergency button (lamp illuminates)		○	
Press emergency button (lamp goes off)	○	○	
Insert cleaning card (lamp illuminates)	○	○	○
Press emergency button (lamp goes off)	○	○	○
Insert memory card	○	○	○

After pattern alterations

