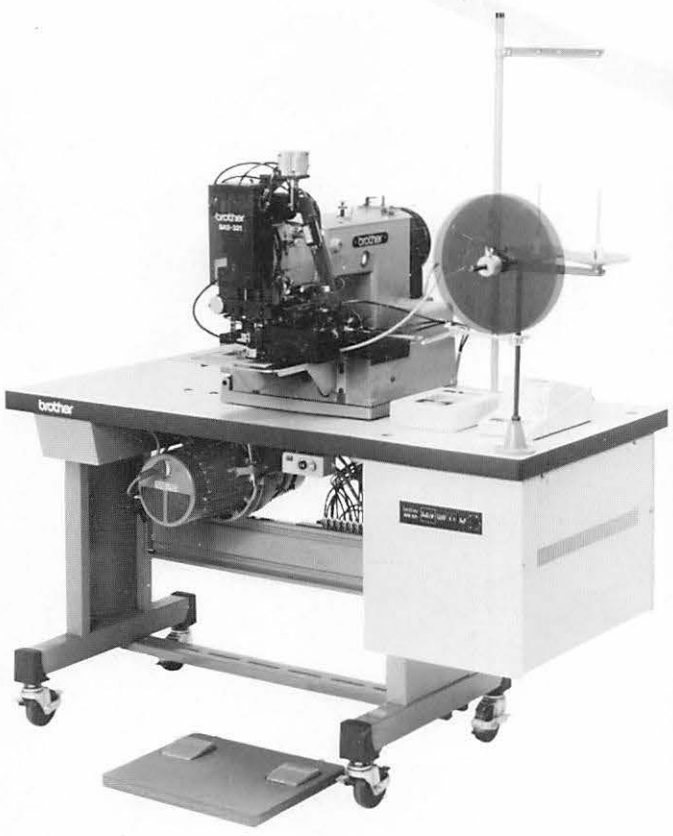
brother

ELECTRONICALLY PROGRAMMABLE LOCK STITCH MACHINE WITH AUTOMATIC NAME LABEL

BAS-321

INSTRUCTION MANUAL



OUTLINE OF THIS MACHINE

This machine is based on the electronically programmable lock stitch machine with cylinder arm BAS-320. The BAS-321 feeds labels from a roll, cuts each label at the prescribed length, folds both edges, positions the label, and sews it onto the garment. This entire series of work steps is done completely automatically, thus greatly simplifying labeling work and assuring more beautiful, more accurate results in a minimum amount of time.

FEATURES OF THIS MACHINE

☆ Automatic label positioning greatly reduces the work of cutting, folding, and other steps involved in labeling, and thus makes a substantial contribution to improving productivity.
A switch allows operation to be changed to one-pedal control.

☆ Simple operation means less operator fatigue, and even relatively inexperienced workers can turn out uniformly accurate, waste-free results.

☆ An electronic sewing machine means that the stitch pattern can be changed quickly and easily simply by changing the microdisk.

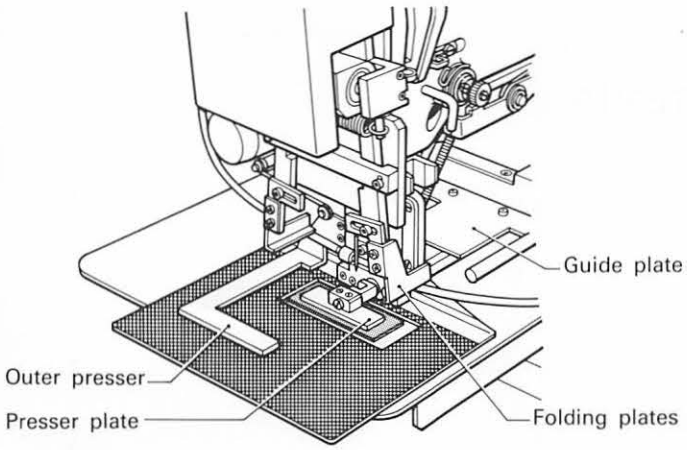
☆ Full-circumference and two-side sewing is possible for labels measuring from 13 (H) × 20 (W) mm to 55 (H) × 80 (W). Also, the label size can be easily changed simply by changing the gauge parts.

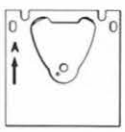
☆ The presser foot mechanism has a two-stage pressing action, so size tags, washing instructions, or other supplementary labels can be easily attached.

Model BAS-321 is the basic model BAS-320 with the addition of a labeling function, so this Instruction Manual deals only with the labeling function and related information. Use this manual together with the basic Instruction Manual.

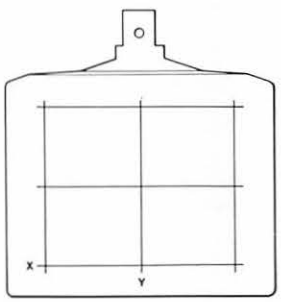
CONTENTS

NAMES OF MAIN PARTS

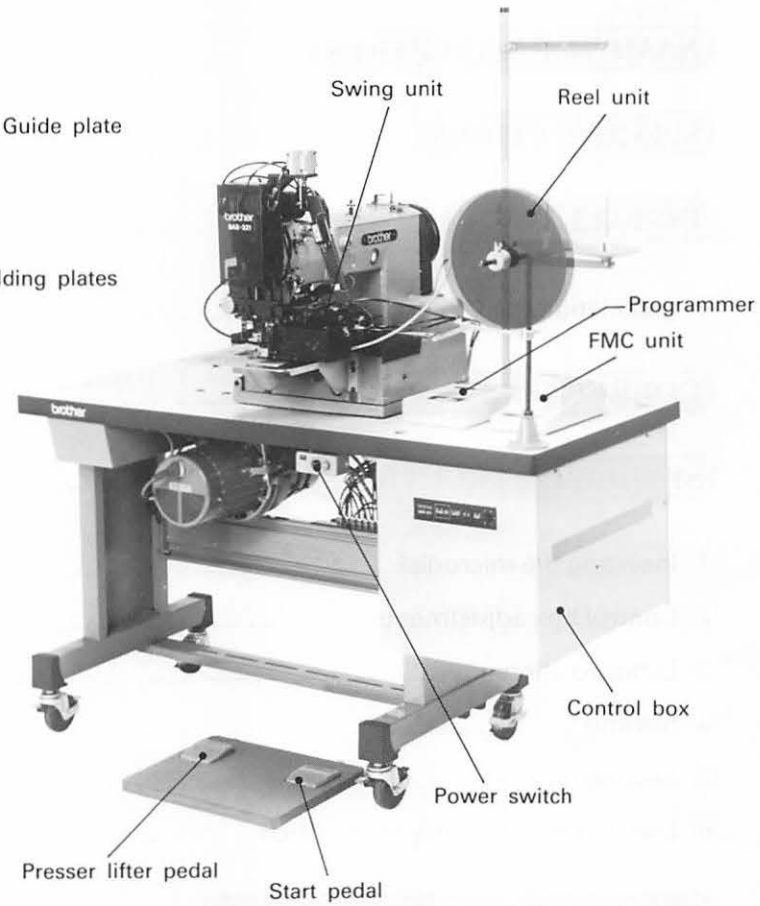




Microdisk



Origin point reference plate

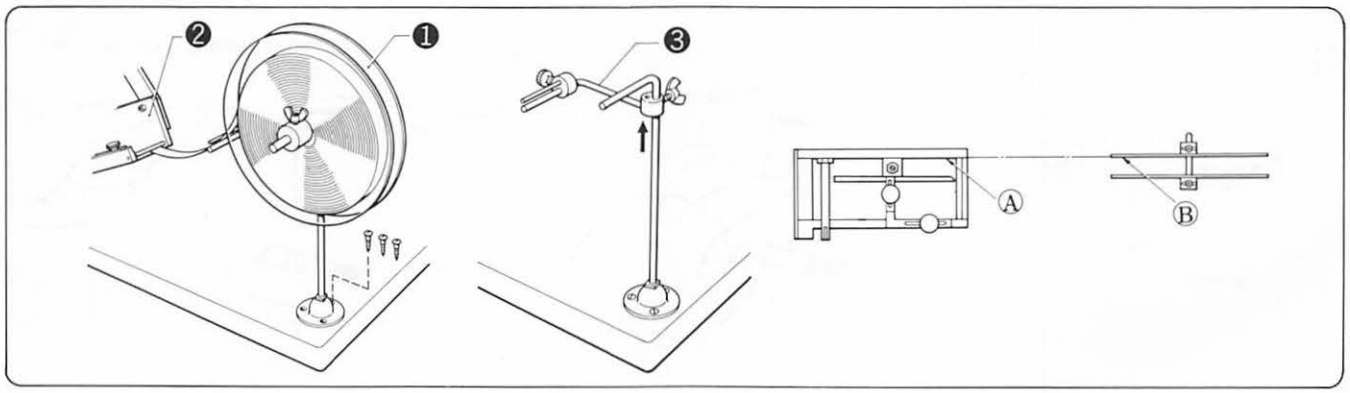


SPECIFICATIONS

Stitch type	Single-needle lock stitch		
Sewing machine used	Cylindrical-arm lock-stitch pattern-stitch sewing machine with two-stage presser lifter mechanism		
Stitch length and maximum sewing speed	0.2 ~ 3.0 mm	3.2 ~ 4.4 mm	4.6 ~ 6.2 mm
	2,000 spm	1,500 spm	1,200 spm
Feed system	Intermittent feed using a pulse motor		
Maximum pattern size	X axis (width): 80 mm, Y axis (height): 55 mm		
Minimum pattern size	X axis (width): 20 mm, Y axis (height): 13 mm		
Number of stitches	Maximum of 2,000 stitches (one side of microdisk)		
Presser lift	20 mm		
Testing device	Built-in low-speed drive operation confirmation function		
Safety device	Built-in emergency stop function and built-in safety circuit for automatic stop in the event of a malfunction		
Machine dimensions	1,200 (W) × 700 (L) × 1,220 (H) mm		
Standard accessories	Microdisks		
Power supply (motor)	Three-phase, 200 V, 600 W		

INSTALLATION

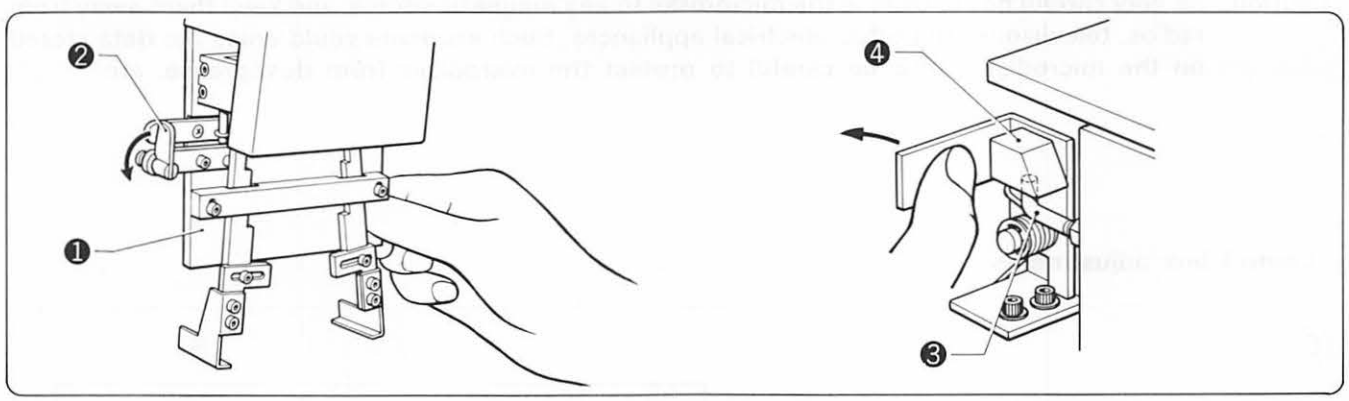
1 Installation of the reel unit



(1) Mount the reel unit ❶ onto the table with surface Ⓐ in alignment with surface Ⓑ of the swing unit ❷.
(2) Attach the label guide ❸ in an appropriate position.

CORRECT OPERATION

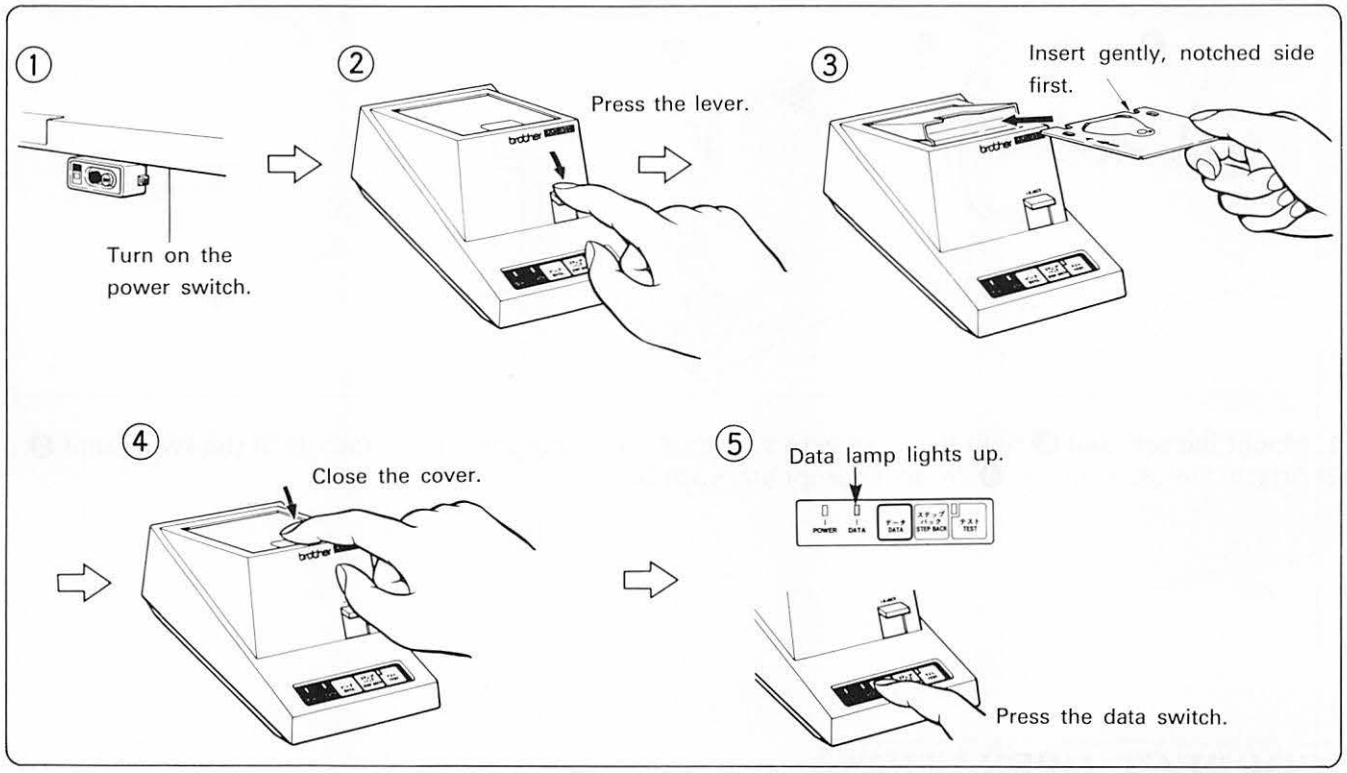
◉ To install the needle and threading the upper thread, raise the feeder base ❶.



(1) Remove the prongs ❷ in the direction indicated by the arrow.
(2) Raise the feeder base ❶ with your right hand and securely attach the lock holder ❸ to the lock stopper ❹.
(3) To lower the feeder base ❶, raise the feeder base ❶ slightly with your right hand, press the lock lever ❺ with your left hand to release the lock, and gently lower the feeder base ❶.
(4) Attach the prongs ❷.

SEWING INSTRUCTIONS

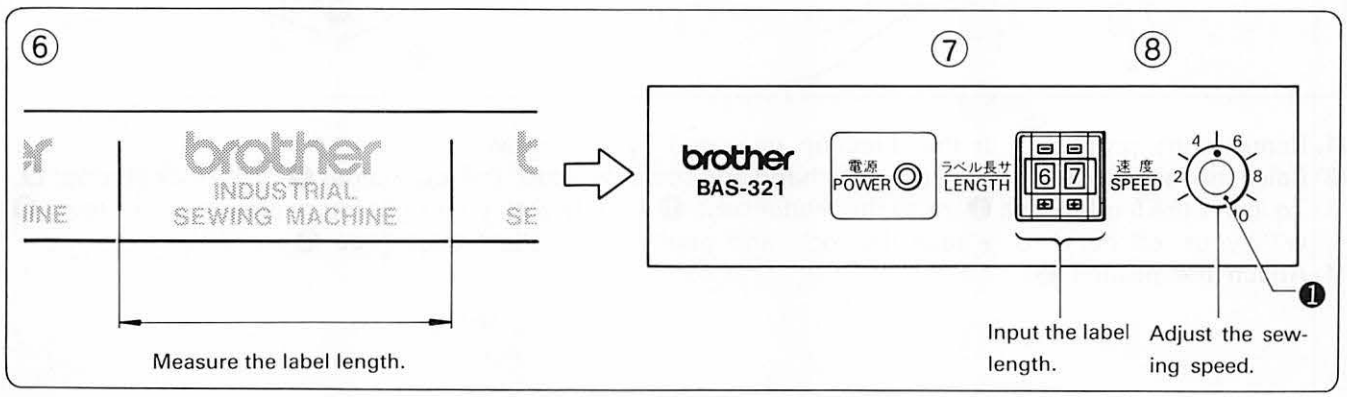
1 Inserting the microdisk.



Two different patterns can be recorded on each microdisk (one pattern on each side). Also, each side can be programmed for up to 2,000 stitches.

Caution: Be very careful not to expose the microdisks to any magnetic source, and keep them away from radios, televisions, and other electrical appliances. Such exposure could erase the data stored on the microdisks. Also be careful to protect the microdisks from dust,grease, etc.

2 Control box adjustments



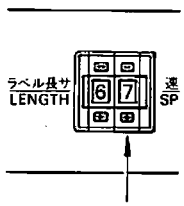
(1) The sewing speed can be adjusted within a continuous range using the speed control ❶.

(2) The sewing speed will vary according to the stitch length, refer to the table at right.
If the stitch length is not specified, or if it is set above 6.2 mm, it will automatically be set to 2.0 mm.

Stitch length (mm)	0.2~3.0	3.2~4.4	4.6~6.2
Sewing speed (spm)	850~2000	550~1500	400~1200

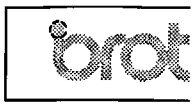
3 Label positioning

⑨



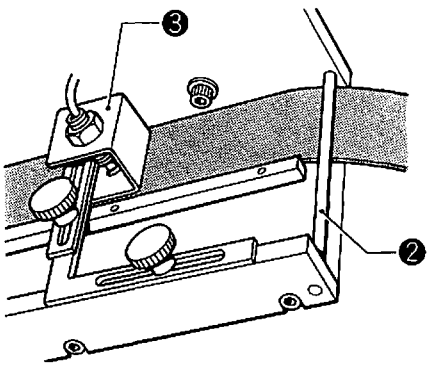
Set to odd or even according to the color of the letters and markings on the label.

Dark-ON .....Set the counter to **an odd number** to have the sensor detect a dark-colored letter or marking on the label.



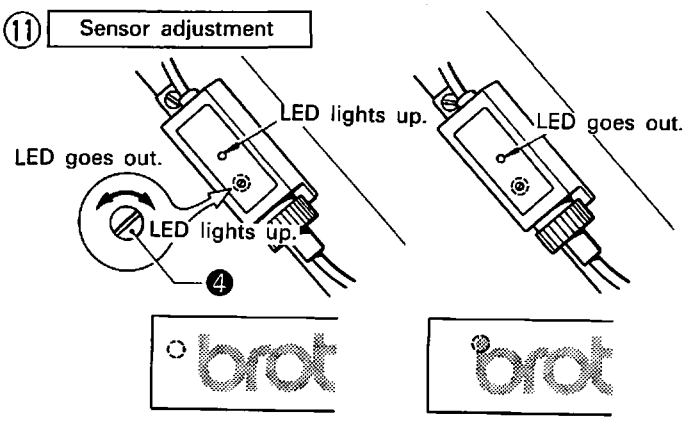
Light-ON .....Set the counter to **an even number** to have the sensor detect a light-colored letter or marking on the label.

⑩



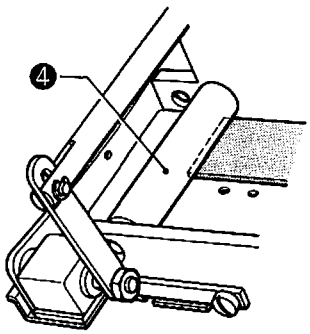
Pass the labels under the label guide shaft ❷ and the sensor holder ❸.

⑪ Sensor adjustment



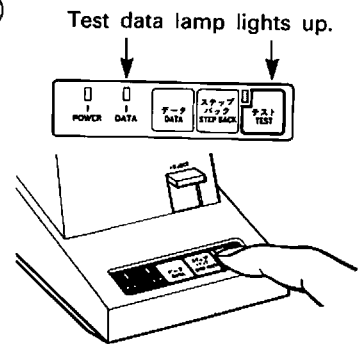
Turn the adjustment screw ❹ so that the sensor LED lights up at the light-colored portions of the label and goes out at the dark-colored portions.

⑫



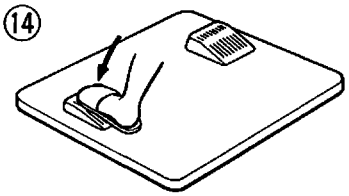
Insert the end of the label into the drive roller ❹.

⑬

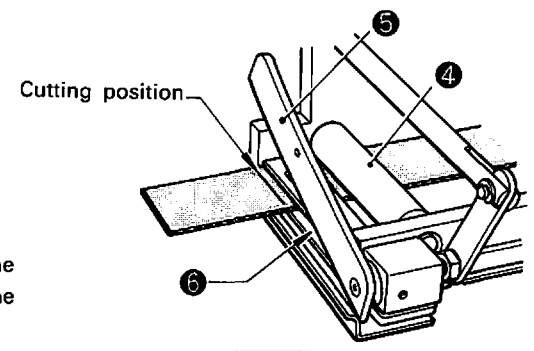


First press the test switch and then the data switch. (The label test mode will begin.)

⑭



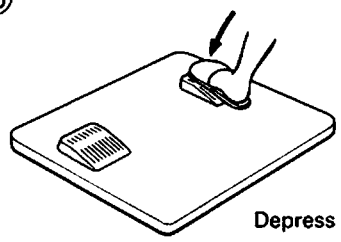
Depress the presser lifter pedal.
*The upper cutter ❺ will rise and the drive roller ❹ will turn to feed the labels.

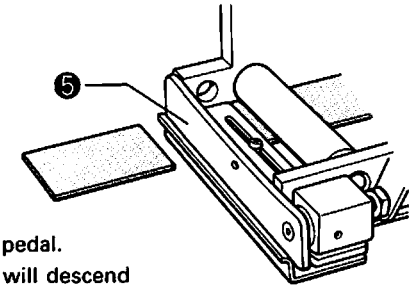


⑮

Pull the label and align the cutting position with the lower cutter ❻.

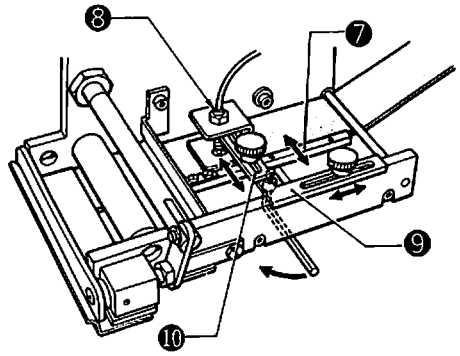
⑯





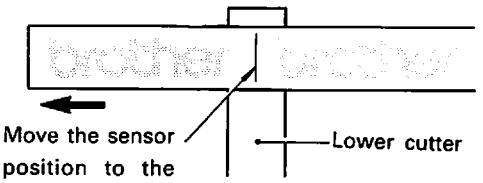
Depress the start pedal.
*The upper cutter will descend and cut the label.

⑰



Position the label guides ❼ lightly in contact with the label.

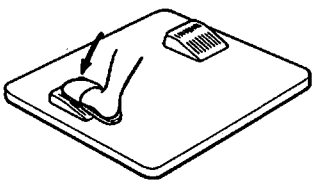
⑱ Sensor position adjustment

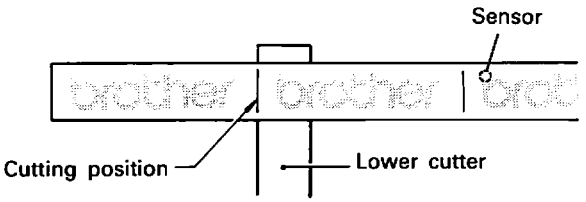


Move the sensor position to the left.

Determine which part of the letters or markings on the label are to be detected by the sensor ❽ and adjust the sensor position by moving sensor mounting bases A❾ and B❿.

⑲



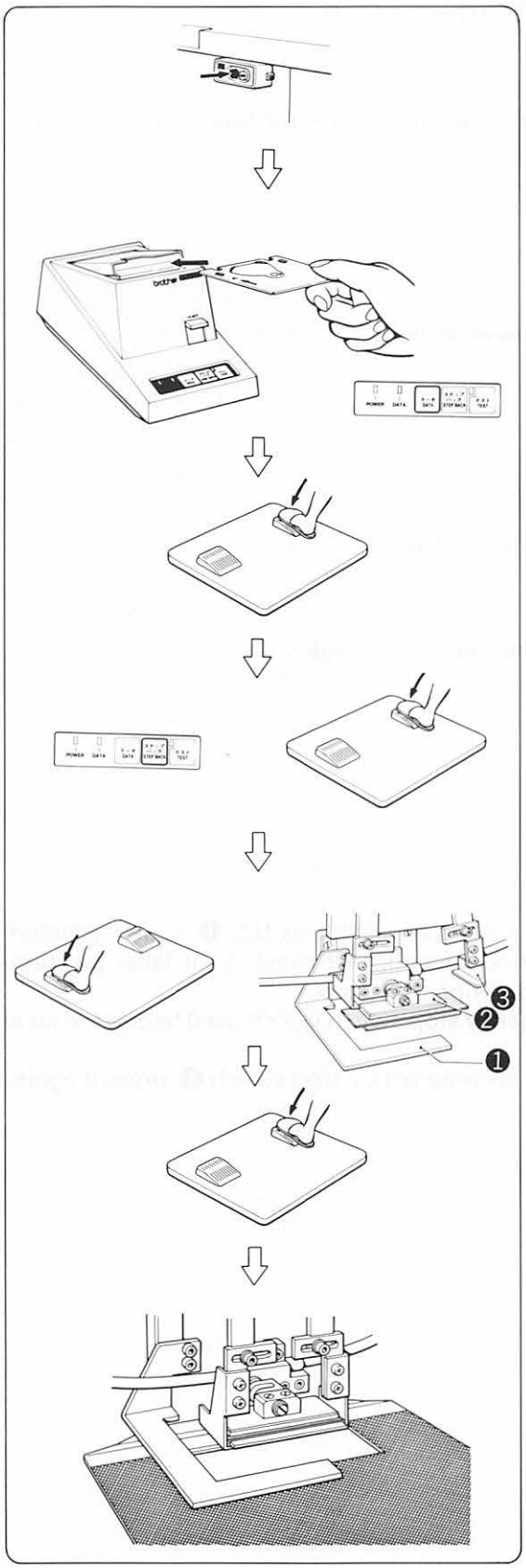


Depress the presser lifter pedal depressed, confirm that the label cutting position is aligned with the lower cutter. If it is not aligned correctly, readjust the sensor position.

⑳ Depress the presser lifter pedal again and reconfirm that the label cutting position is correctly aligned with the lower cutter.

㉑ Press the emergency stop switch to end the label test mode, and then press the emergency stop switch again.

4 Sewing



(1) Turn on the power switch.

(2) Insert the microdisk into the FMC unit and press the data switch.
(The data lamp will light up and the data will be input. When data input is complete the data lamp will go out.)

(3) Depress the start pedal.
(The feed will move to the origin point and then return to the sewing start point.)

(4) While pressing the step-back switch, depress the start pedal.
(This is usually not necessary, but should be done if the pulley has been turned and the needle stop position changed.)

(5) Depress the presser lifter pedal.
(The outer presser and the presser plate will both rise and the label will be positioned automatically.)

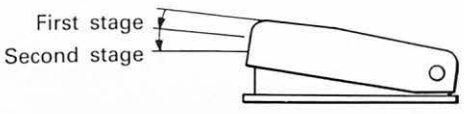
(6) Insert the material under the outer presser and the presser plate.

(7) Depress the presser lifter pedal again.
(The outer presser ❶, the presser plate ❷, and the folding plates ❸ will descend.)

(8) Depress the start pedal.
(The folding plates will open and rise and the machine will begin sewing.)

(9) When sewing is finished, the outer presser and the presser plate will rise, and the next label will be positioned automatically.

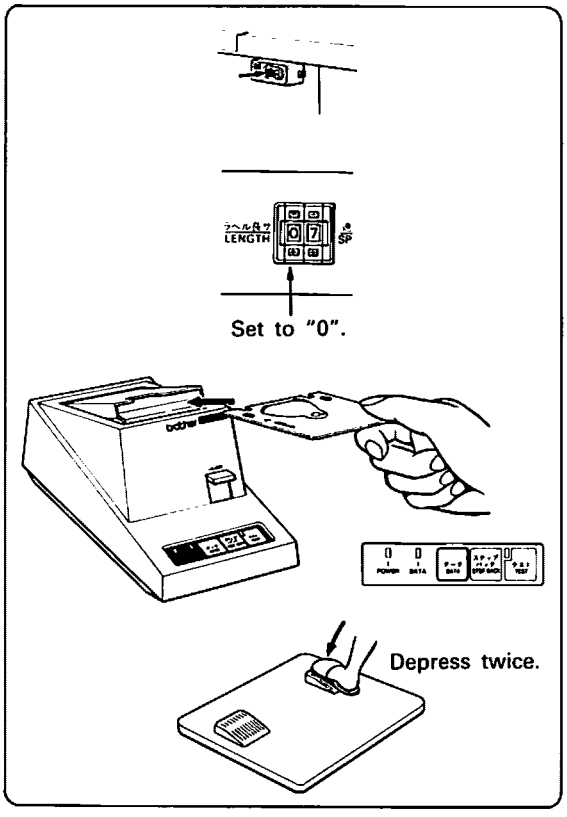
◉ Presser movement



◎ When the presser descends
First stage—The outer presser will descend.
Second stage—The presser plate will descend.

◎ When the presser rises
First stage
Second stage } Both will rise together.

5 Sewing tensions



(1) Turn on the power switch.

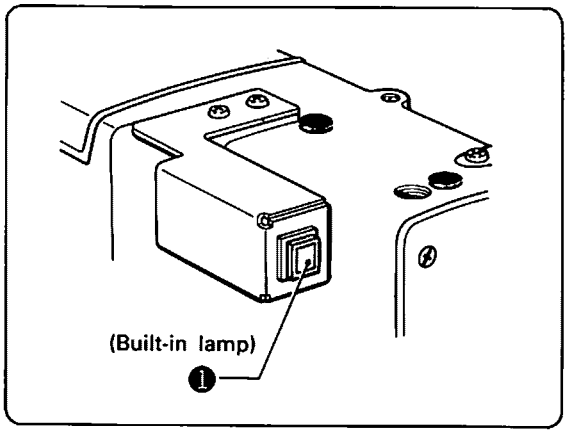
(2) Set the left digit of the control box counter to "0".

(3) Press the data switch.

(4) Depress the start pedal

(5) Depress the start pedal again.

6 Use of the emergency stop switch

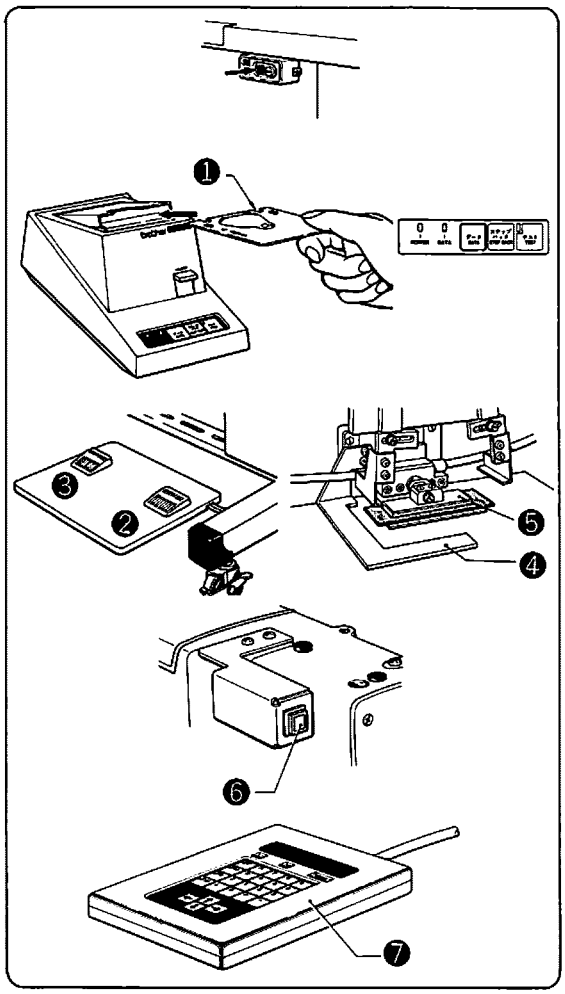


(1) Press the emergency stop switch ❶ if any problem occurs during sewing, test running, or label positioning; all operation will stop.
The emergency stop switch is also used to end the label test mode.
(2) To release the emergency stop switch ❶, press it again.

PROGRAMMING INSTRUCTIONS

[1] Preparation

Use the following procedure to position the label.



(1) Turn on the power switch.

(2) Insert the microdisk ❶ into the FMC unit and press the data switch.

(3) Depress the start pedal ❷.

(4) Depress the presser lifter pedal ❸.

(5) Insert the material under the outer preser ❹ and the presser plate ❺.

(6) Depress the presser lifter pedal ❸.

(7) Press the emergency stop switch ❻, and then press it again to release it.

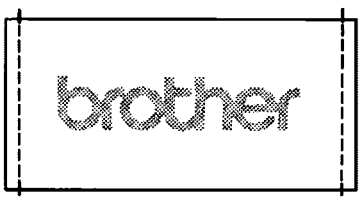
(8) Remove the microdisk and insert a new one.

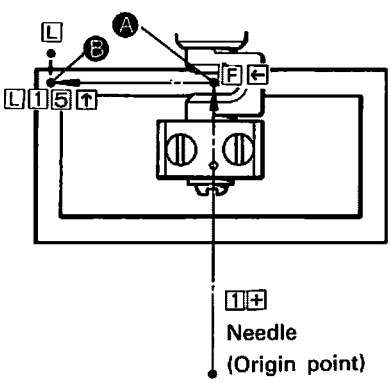
(9) Get the programmer ❼ ready.

[2] Writing a program

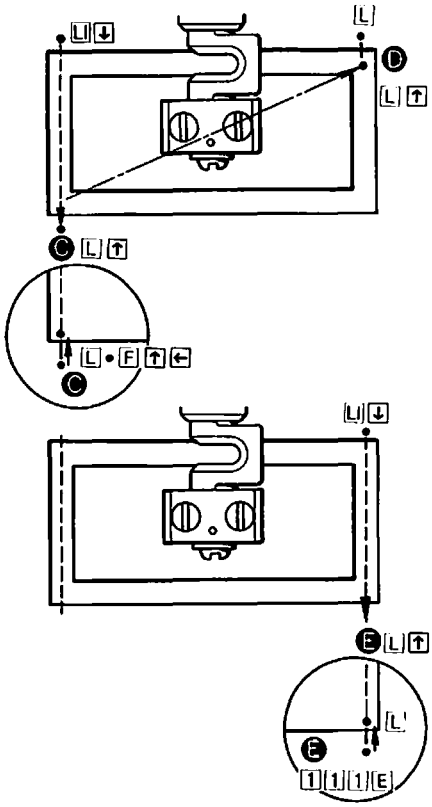
For detailed information on the programs, refer to the separate Instruction Manual for the programmer.

Example 1: Sewing two vertical sides with backstitches at tbeginning and end.



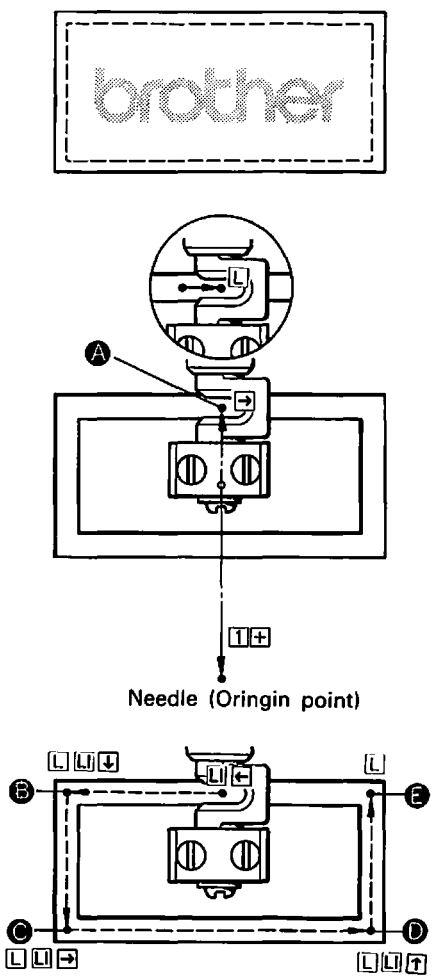


① Press the [P] key to change to the program mode.
② Press the [1+] key to move the needle to the crank.
Set the sewing origin point Ⓐ.
③ Turn the pulley to lower the needle to near the label.
④ Press the [F] key, and then press the [←] direction key to move the needle to the sewing start point Ⓑ.
⑤ Press the [L] key to set the sewing start pointⒷ.
⑥ Input the stitch length.
Stitch length 3 mm ÷ feed pitch 0.2 mm = 15
Press the [1] key and the [5] key.
⑦ Press the [↑] direction key. (Advance the backstitch amount.)
For a backstitch of 1 mm, the feed pitch is 0.2 mm, so continue until the Y display reads [05].
⑧ Press the [L] key.

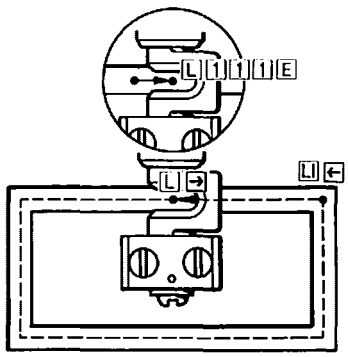


⑨ Press the [LI] key, and then press the [↓] direction key to move slightly past the end of the label to point ©.
⑩ Press the [L] key to set point ©.
⑪ Press the [↑] direction key. (Advance the backstitch amount.)
⑫ Press the [L] key.
⑬ Press the [F] key.
⑭ Turn the pulley to raise the needle.
⑮ Press the [→] and [↑] direction keys to move to the next sewing start point ⓓ.
⑯ Turn the pulley to lower the needle.
⑰ Press the [L] key to set the sewing start point ⓓ.
⑱ Press the [↑] direction key. (Advance the backstitch amount.)
⑲ Press the [L] key.
⑳ Press the [LI] key, and then press the [↓] direction key to move slightly past the end of the label to point Ⓔ.
㉑ Press the [L] key to set point Ⓔ.
㉒ Press the [↑] direction key. (Advance the backstitch amount).
㉓ Press the [L] key.
㉔ Turn the pulley to raise the needle.
㉕ Press the [1] key three times and the [E] key once to end the program.
㉖ Press the data switch.
(Confirm that the data lamp lights up twice and then goes out.)
㉗ Press the [P] key to change to the sewing mode.

Example 2: Sewing full circumference with backstitches at beginning and end.



① Press the [P] key to change to the program mode.
② Press the [1+] key to move the needle to the crank.
Set the sewing origin point Ⓐ.
③ Turn the pulley to lower the neeedle to near the label.
④ Input the stitch length.
Stitch length 3 mm ÷ feed pitch 0.2 mm = 15
Press the [1] key and the [5] key.
⑤ Press the [→] direction key. (Advance the backstitch amount.)
For a backstitch of 1 mm, the feed pitch is 0.2 mm, so continue until the X display reads [05].
⑥ Press the [L] key.
⑦ Press the [LI] key, and then press the [←] direction key to move to point Ⓑ.
⑧ Press the [L] direction key to set point Ⓑ.
⑨ Press the [LI] key, and then press the [↓] direction key to move to point ©.
(Make a memo of the number indicated in the Y display.)
⑩ Press the [L] key to set point ©.
⑪ Press the [LI] key, and then press the [→] direction key to move to point ⓓ.
⑫ Press the [L] key to set point ⓓ.
⑬ Press the [LI] key, and then press the [↑] direction key to move to point Ⓔ, feeding to the number noted in step ⑩.
⑭ Press the [L] key to set point Ⓔ.

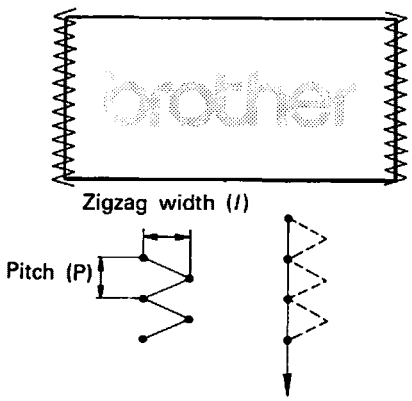


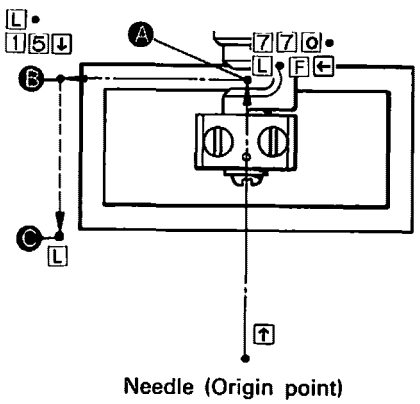
⑮ Press the LI key, and then press the ← direction key to move to the sewing end point.(Part way, turn the plley to raise the needle.)
⑯ Press the L key.

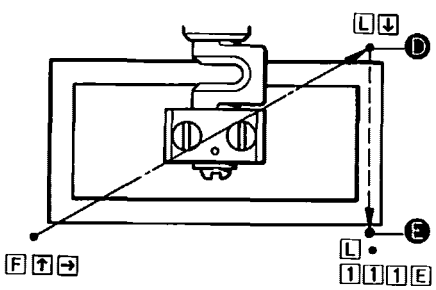
⑰ Press the → direction key. (Advance the backstitch amount. Continue until the X display reads 05.
⑱ Press the L key.

⑲ Turn the pulley to raise the needle.
⑳ Press the 1 key three times and the E key once.
㉑ Press the data switch.
(Confirm that the data lamp lights up twice and then goes out.)
㉒ Press the P key to change to the sewing mode.

Example 3: Zigzag sewing on two sides







① Press the P key to change to the program mode.
② Press the ↑ direction key to move the needle to the crank.
③ Turn the pulley to lower the needle to near the lable.
④ Input the zigzag width (7 7 ?).
Zigzag width (/) 3 mm ÷ pitch (P) 3 mm − 1 = 0
* The zigzag width sewings to the left when facing the sewing direction.
Press the 7 key twice and the 0 key once.
⑤ Press the L key to set the sewing origin point Ⓐ.
⑥ Press the F key, and then press the ← direction key to move the needle to the sewing start point Ⓑ.
⑦ Press the L key to set the sewing start point Ⓑ.

⑧ Input the stitch length.
Stitch length 3 mm ÷ feed pitch 0.2 mm = 15
Press the 1 key and the 5 key.
⑨ Press the ↓ direction key to move to the sewing end point Ⓒ.
⑩ Press the L key to set point Ⓒ.

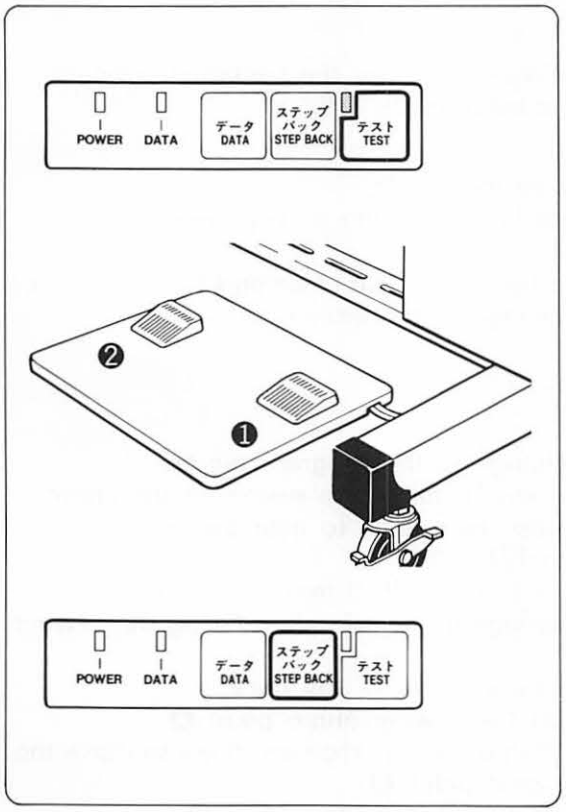
⑪ Turn the pulley to raise the needle.

⑫ Press the F key.
⑬ Press the ↑ and → direction keys to move to the next sewing start point Ⓓ.
⑭ Turn the pulley to lower the needle.
⑮ Press the L key to set the sewing start point Ⓓ.

⑯ Press the ↓ direction key to move to the sewing end point Ⓔ.
⑰ Press the L key to set point Ⓔ.

⑱ Turn the pulley to raise the needle.
⑲ Press the 1 key three times and the E key once.
⑳ Press the data switch.
(Confirm that the data lamp lights up twice and then goes out.)
㉑ Press the P key to change to the sewing mode.

3 Program confirmation



(1) Press the test switch.
(The test lamp will light up.)
(2) Depress the start pedal ❶.
(The feed will advance to the origin point and then return to the sewing start point.)
(3) Depress the start pedal again.
(Feed will advace one stitch at a time.)

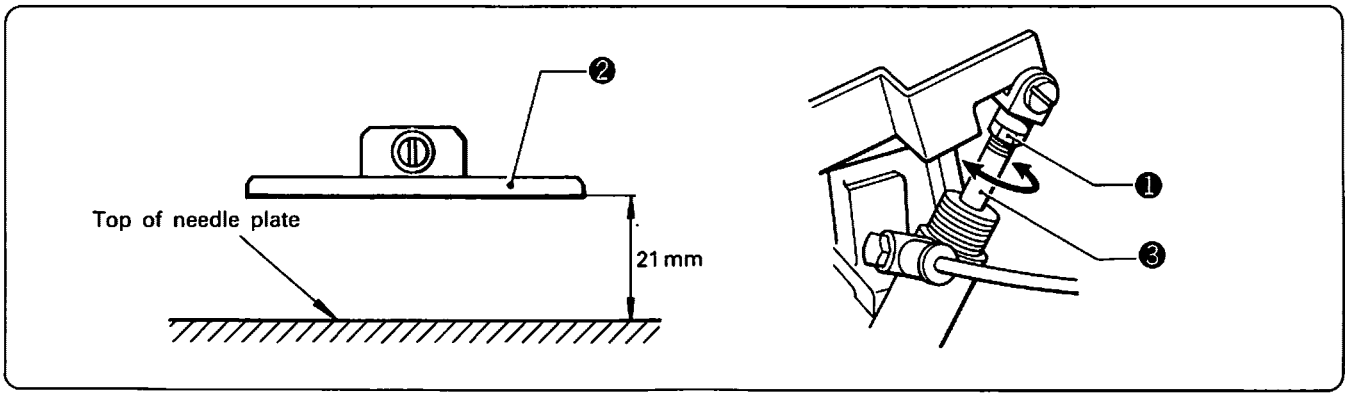
To increase the feed speed, depress the presser lifter pedal ❷.
To stop feed during the test, press the test switch.
Also, to return the feed, press the step-back switch; the feed will return one stitch at a time while the switch is being pressed.
To resume the feed, press the test switch again.

For information on how to revise a program, refer to "HOW TO REVISE THE PROGRAM" on page 20 of the separate Insturction Manual for the programmer.

STANDARD ADJUSTMENTS

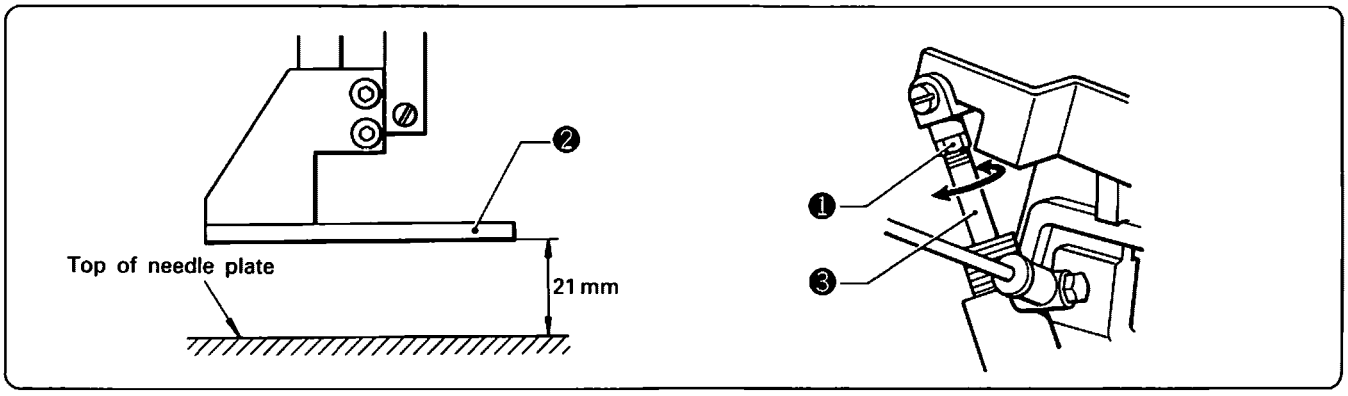
Make the adjustments while the machine is in the conditions indicated in steps ① through ⑫ in the operation flowchart.

1 Presser plate lift (step ①)



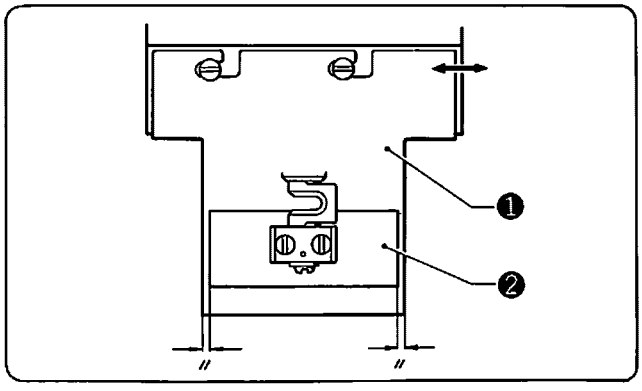
(1) Close the air cock.
(2) Loosen the nut ❶ on the right cylinder and turn the piston shaft ❸ to adjust so that the distance between the bottom of the presser plate ❷ and the top of the needle plate is 21 mm.

2 Outer presser lift



(1) Close the air cock.
(2) Loosen the nut ❶ on the left cylinder and turn the piston shaft ❸ to adjust so that the distance between the bottom of the outer presser ❷ and the top of the needle plate is 21 mm.

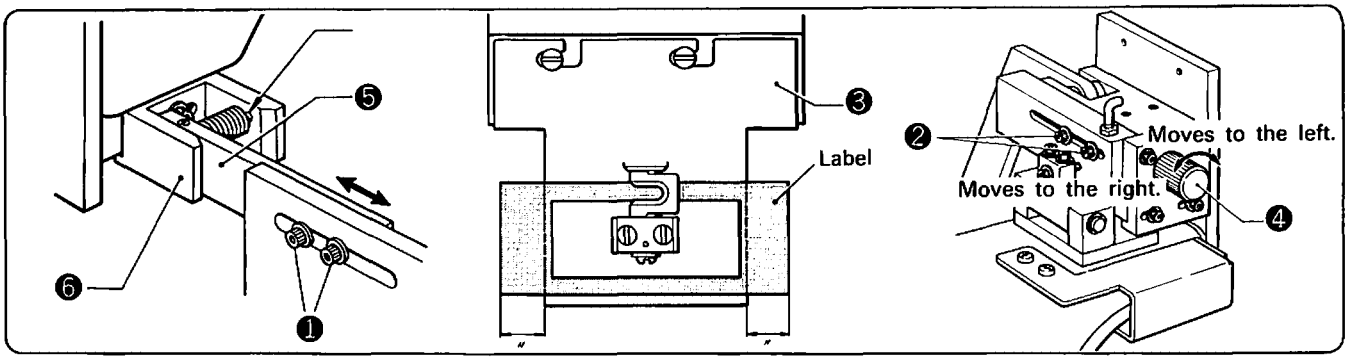
3 Guide plate position (step ②)



(1) Move the guide plate ❶ left and right to adjust it so that it is centered beneath the presser plate ❷.

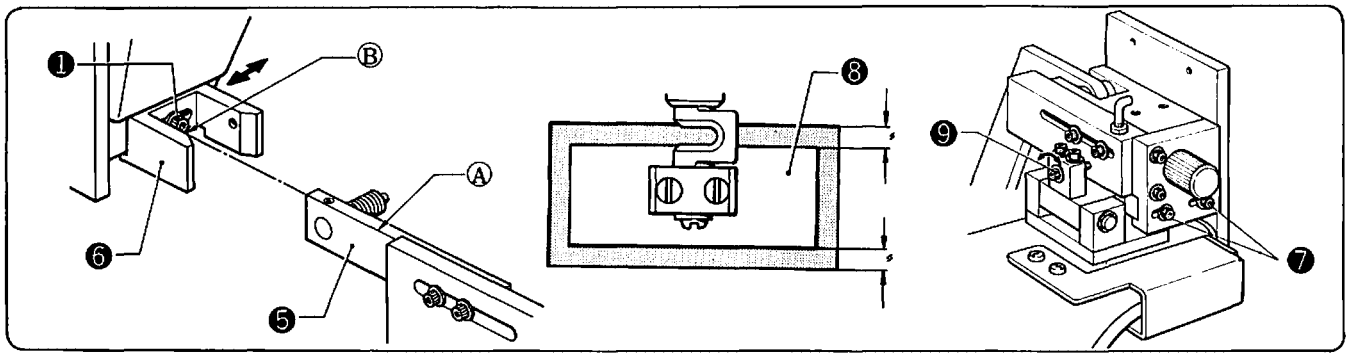
4 Swing unit position (step ④)

1. Lateral position



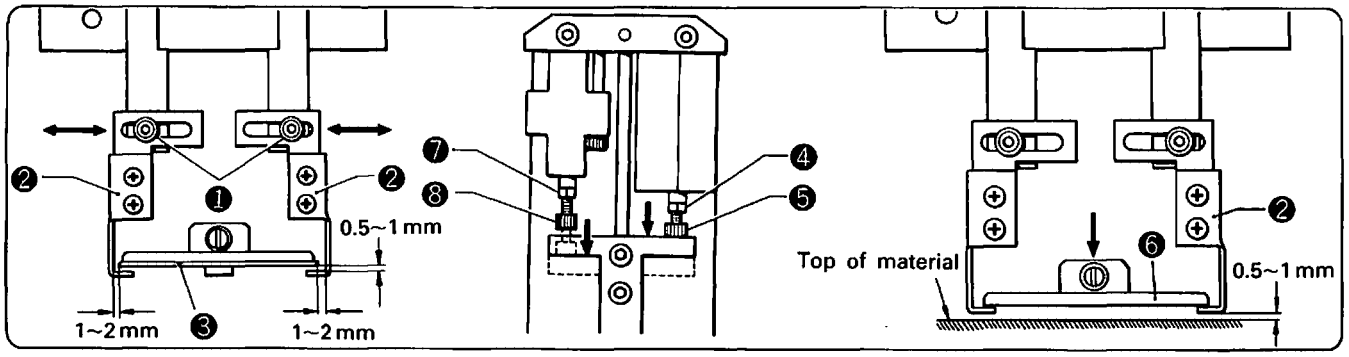
(1) Loosen screw ❶.
(2) Loosen screw ❷.
Turn the slide adjusting screw ❹ to adjust the swing unit so that the label is centered over the guide plate ❸.
(3) Move the positioning guide ❺ left and right so that the end of the guide is aligned with the hole in the positioning adjustment base ❻.

2. Longitudinal position



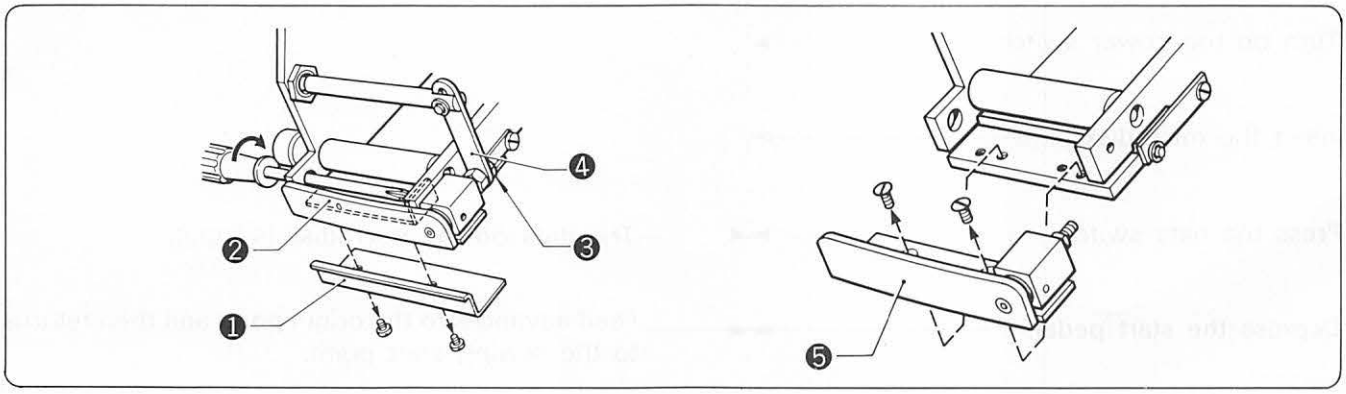
(1) Loosen screw ❶.
(2) Loosen screw ❼, and then turn screw ❾ to adjust the swing unit so that the label is centered beneath the presser plate ❽.
(3) Move the positioning adjustment base ❻ back and forth so that surface Ⓐ of the positioning guide ❺ and surface Ⓑ of the positioning adjustment base ❻ are aligned.

5 Folding plate positions (steps ⑧ and ⑩)



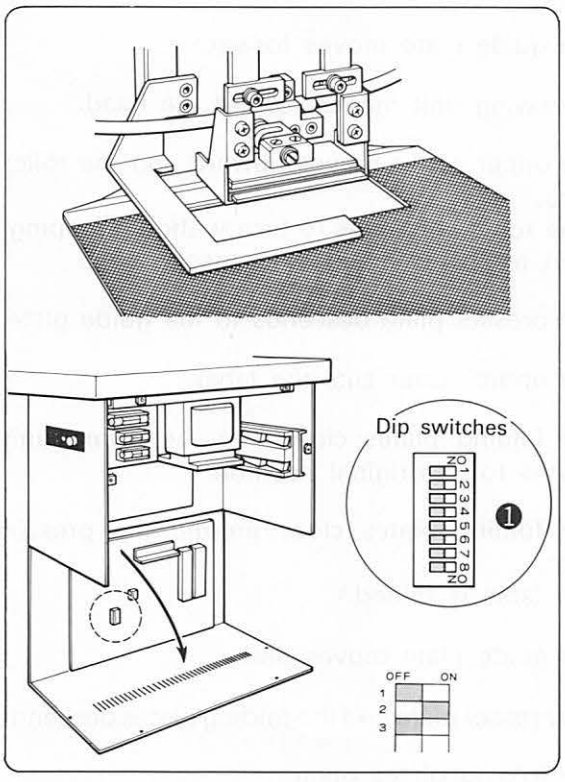
(1) Loosen screws ❶ and adjust the folding plates so that the left and right clearances between the folding plates ❷ and the guide plate are each 1 to 2 mm.
Also, loosen nut ❹ and adjust bolt ❺ so that the vertical clearance between the folding plates ❷ and the guide plate ❸ is 0.5 to 1 mm.
(2) Loosen nut ❼ and adjust bolt ❽ so that the clearance between the folding plates ❷ and the material is 0,5 to 1 mm when the folding plates ❷ and the presser plate ❻ are lowered to the top of the material.

6 Cutter replacement



(1) Remeove the cutter cover ❶ and the label presser ❷.
(2) Loosen nut ❸ and remove the cutter oepration lever ❹.
(3) Replace the cutters as a set.

7 Switching to auto mode

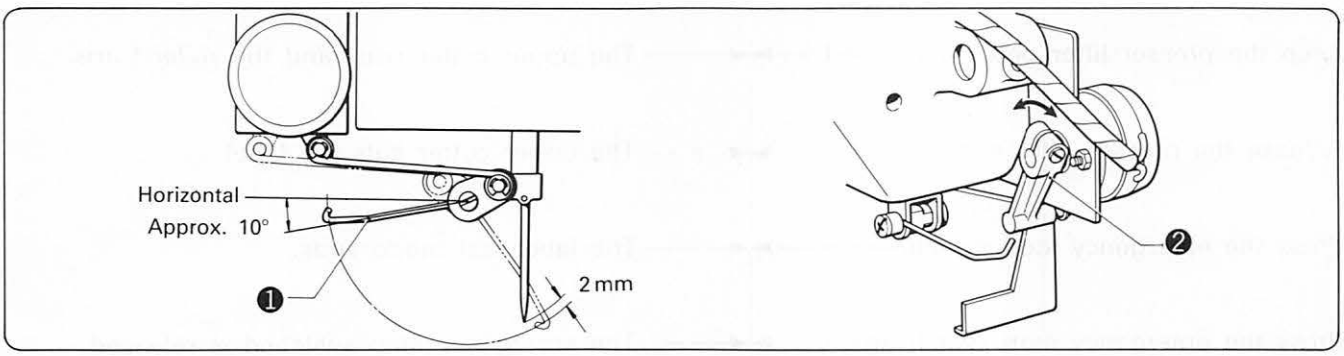


○Standard operation
(1) Depress the presser lifter pedal to lower the presser.
(2) Depress the start pedal to begin sewing.

≪ Changing the dip switch setting ≫
(1) After first turning off the power switch, open the control box.
(2) Change the setting of the number 2 dip switch ❶, located at the lower left of the control circuit board.

○Operation after changing the dip switch setting
(1) When the start pedal is depressed the presser will descend and sewing will begin.

8 Wiper position



(1) Adjust the solenoid lever ❷ so that the wiper ❶ is slightly (approximately 10°) below horizontal at the stop position.
(2) Move the wiper ❶ in and out so that when it operates the clearance between it and the tip of the needle is approximately 2 mm.

OPERATION FLOWCHART